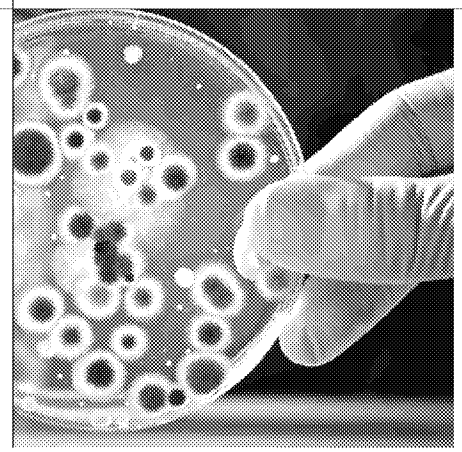
ENVIRONMENTAL HEALTH
& ENGINEERING, INC.

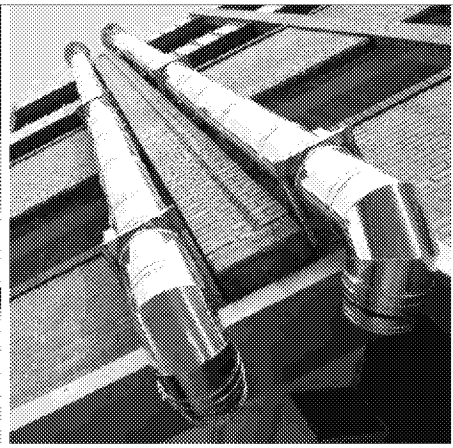
Data Package

Prepared by:
Environmental Health & Engineering, Inc.
180 Wells Avenue, Suite 200, Newton, MA
02459-3328 800-825-5343

May 21, 2019

EH&E Project #P22437





FIELD DATA SHEETS AND INTERNAL CHAINS OF CUSTODY

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FIELD DATA SHEETS AND INTERNAL CHAINS OF CUSTODY

Field Data Sheets dated October 23, 2018

ATTACHMENT 1

BULK SAMPLE FIELD DATA

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman Rubin

Date: 10/23/2018

Job Site: 17600 147th ST S.E. MONROE, WA unit 50E

Project#: 22437

Field Person(s): (WEST COAST SELF STORAGE) K. COGHLAN

Sample Type: Teacher Material (SVEC)

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
183376	9:12	BIN #1, BAG #7	S	FILTER MEDIA
183377		BIN #1, BAG #9		DUST COLLECTED FROM unit VENT.
183378		BIN #1, BAG #1		School Papers
183379		BIN #1, BAG #1A		School Papers
183380	9:24	BIN #1, BAG #2		School Papers
183381	9:27	BIN #2		YARN SAMPLES
183382	9:44	BIN #2		SAMPLE OF Purple BAG
183383	9:56	BIN #3		FABRIC SAMPLES
—	—	BIN #4 — NOT SAMPLED		NOT SAMPLED
183384	10:12	BIN #5		Papers FROM # LAB REPORT
183385	10:20	BIN #6 - BOOKS		"GROWING WILD"; "Terror AT THE ZOO";
—	—			"The LIBRARY CARD"; PAPER
183386	10:35	BIN #7		CARPET SAMPLE - BROWN/TAN
183387	10:42	BIN #7		HEPA FILTER + BLACK PRE FILTER
—	—	BIN #8 — NOT SAMPLED		NOT SAMPLED
183388	10:50	BIN #9		HEPA FILTER FROM AIR CLEANER - WHITE
183389	10:52	BIN #9		PRE FILTER FROM AIR CLEANER - BLACK
—	—	BIN #10 - NOT SAMPLED		NOT SAMPLED
—	—	BIN #11 - NOT SAMPLED		NOT SAMPLED

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

BULK SAMPLE FIELD DATA

ATTACHMENT 1

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: FRIEDMAN RUBIN

Date: 10/23/2018

Job Site: 17600 147th ST S.E., MONROE, WA UNIT 50E

Project#: 22432

Field Person(s): (WEST COAST SELF STORAGE)

Sample Type: Teacher MATERIAL (SVEC)

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
—	—	BIN #12 - NOT SAMPLED	—	NOT SAMPLED
183390	11:06	BIN #14	S	Yellow + Paisley CLOTH
183391	11:13	BIN #13	S	Unlabeled Green Binder - PAGES
—	—			w/ PLASTIC LAMINATE
183392	11:22	HISTORY BOOK - NO BIN		Papers FROM HISTORY BOOK + COVER

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Chain of Custody Form dated October 23, 2018

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE ATTACHMENT 2 2018

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: Phil Glynn
EHHE, INC

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N/A

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
183376	BULK -	FOR SHIPMENT	
183377	MATERIAL		N/A
183378		TO EHHE, INC.	
183379			
183380		180 WELLS AVE	
183381			
183382		NEWTON, MA BY	
183383			
183384		FEDEX OVERNIGHT	
183385			
183386		[SHIPPED ON BLUE ICE	
183387		IN SEALED COOLER]	
183388			
183389			
183390			
183391			

Special instructions:
183392

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other SHIP TO EHHE
☐ Fax results 781-247-4305
☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com
☐ Additional report recipient _____

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 10/23/2018
Received by: [signature] of (company name) FEDEX Date: 10/23/2018
Relinquished by: [signature] of (company name) FEDEX Date: 10/24/2018
Received by: [signature] of (company name) EH&E Date: 10/24/2018
Relinquished by: _____ of (company name) _____ Date: _____
Received by: _____ of (company name) _____ Date: _____
Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Field Data Sheet dated November 1, 2018

BULK SAMPLE FIELD DATA

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman Rubin

Date: 11/1/2018

Job Site: 180 Wells Ave Newton, MA

Project#: 22437

Field Person(s): K. Coghlan

Sample Type: BULK + WIPES

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
✓ 183384-PCB	8½x11"	Papers From LAB Report - # 4 (page)	WIPE	#183384 From Field Data Sheet [PCB]
✓ 183384-DIF	↓	" "	WIPE	" " [Dioxin/Furan]
✓ 183391-PCB	8½"x11"	Papers From Green Binder	WIPE	#183391 From Field Data Sheet [PCB]
✓ 183391-DIF	↓	" "	WIPE	" " [Dioxin/Furan]
✓ 183392-PCB	8¼"x10"	History Book 8¼"x10"	WIPE	#183392 From Field Data Sheet [PCB]
✓ 183392-DIF	↓	" " ↓ ↓	WIPE	" " [Dioxin/Furan]
✓ 183376		Filter Media; HEPA + Charcoal	BULK	#183376 From Field Data Sheet [PCB/Dioxin/Furan]
✓ 183393		Dust From Rooms 5+9 (composite)	BULK	#183393 From Field Data Sheet [PCB/Dioxin/Furan]
✓ 183386		Carpet Sample	BULK	#183386 From Field Data Sheet [PCB/Dioxin/Furan]
✓ 183387		HEPA + Charcoal Filter	BULK	#183387 From Field Data Sheet PCB/Dioxin/Fur.
✓ 183388		HEPA Filter From Air Cleaner	BULK	#183388 From Field Data Sheet PCB/
✓ 183389		Charcoal Filter From Air Cleaner	BULK	#183389 From Field Data Sheet Dioxin/Furan
✓ 183399		Field Trip Blank	WIPE	N.A.

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Field Data Sheet dated December 10, 2018

BULK SAMPLE FIELD DATA

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman & Rubin

Date: 12/10/2018

Job Site: 180 Wells Ave Newton, MA

Project#: 22437

Field Person(s): K. Coghlan

Sample Type: Micro Vacum

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
*183395	3:05 pm	2 pgs History Book + 2 Pages Lab Report	S	Pgs 87+89 History Book (#183392); 11/6/16 Report (183384)
*183396	3:16 pm	2 pgs Cassett + Duell's Toxicology; 2 pgs EHE Proposal	S	Control Samples; Older Text Book + Freshly Printed pages
**183397	3:18 pm	———	FB	End Caps/Plugs Removed during sampling
* All Samples we 25-mm MCE 3-pc. cassettes; 0.8 µm pore size; Flow Rate ~10.0 LPM				
** FB - No Air Drawn Thru Cassette/Filter				
Samples collected inside Fume Hood Pre-cleaned w/ 70% IPA + Lint Free Towels.				

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Field Data Sheet dated January 3, 2019

BULK SAMPLE FIELD DATA

ATTACHMENT 12

Environmental Health & Engineering, Inc.
117 Fourth Avenue, Needham, MA 02494
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman / Rubin

Date: 1/3/2019

Job Site: S.U.E.C., Monroe, WA (Provided by Cynthia Yost)

Project#: 22437

Field Person(s): T. Truong / K. Coghlan

Sample Type: Bulk-carpet

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
184816	8:35	Classroom/Library Bldg., Rm-10, outside door	S	Cynthia Yost collected samples of carpet in
184817	8:36	Classroom/Library Bldg., East Pod, inner	S	East Pod/Classrooms prior to removal by
184818	8:37	Classroom/Library Bldg., Rm-9, Inner door	S	SUEC/Monroe School district over
184819	8:38	Classroom/Library Bldg., Rm-11, by Door	S	the Christmas break in December 2015
184820	8:39	Classroom/Library Bldg., Rm-10, Desk	S	
184821	8:40	Classroom/Library Bldg., Rm-12, outside door	S	
184822	8:41	Classroom/Library Bldg., Rm-12, inside door	S	
184823	8:43	Annex Bldg., Room D	S	Balcony air spill, carpet test @ 870 mg/kg (PCBs)

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Field Data Sheets dated January 4, 2019

BULK SAMPLE FIELD DATA

ATTACHMENT 12 Page 1 of 12

Environmental Health & Engineering, Inc.
117 Fourth Avenue, Needham, MA 02494
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman / Rubin

Date: 1/4/2019

Job Site: S.V.E.C., Monroe, WA

Project#: 22437

Field Person(s): T. Truong / K. Paghlen

Sample Type: WIPE

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
184831	12:23	Room 5, (Classroom/Library Bldg.) unit ventilator surface, interior	S	100 cm² template outer of black mastic covering fanhousing
184832	12:35	Field Blank from Veritex	FB	
184833	12:55	Common Area, (Classroom/Library Bldg.) East Pod, outside Rm-8 + 12	S-PCBs	100 cm² Template on top of file cabinet
184834	12:49	" ↓ "	S-Dioxin	" ↓ "
184835	13:25	Gym Bldg, Boy's Locker Room, ceiling wipe	S-Dioxin	Black soot-like Residue on ceiling, near toilet (7.25"x3")
⊗ 184836	13:27	" *VOID* ↓ *VOID* "	S-PCBs	" *VOID - SAMPLE DROPPED* " (7.5"x3")
184837	13:33	Gym Bldg., Boy's Locker Room, ceiling wipe	S-PCBs	Black soot-like residue on ceiling, near toilet (6"x3")
184838	13:49	Gym Bldg., Boy's Locker Room, ceiling wipe	S-	Black soot-like residue on ceiling, 2nd set from toilet (8.25"x3")
184839	13:53	" ↓ "	S-	" ↓ " (9.25"x3.25")
184840	14:10	Gym Bldg., Girl's Locker Room, ceiling wipe	S-PCBs	Black soot-like residue on ceiling, near entrance (6.5"x3.5")
184841	14:12	" ↓ "	S-Dioxin	" ↓ " (5⅝"x3.5")
184842	14:26	Gym Bldg., Girl's Locker Room, ceiling wipe	S-PCBs	Black soot-like residue on ceiling, middle stalls (5.25"x3.75")
184843	14:31	" ↓ "	S-Dioxin	" ↓ " (5⅜"x3.5")
184847		Annex Bldg, Prep Room Btwn Rms A+C	S-PCBs	Top of wooden Cabinet on Right - 100 cm² Template
184848		Annex Bldg Prep Room Btwn Rms A+C	S-Dioxin	" ↓ "
184850		Transportation Bldg., storage shed	S-PCBs	Black, solid tar-like substance on Aluminum base
184851		" "	S-Dioxin	Plate, white (area sampled not recorded)

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

⊗ Sample void

q:\sampling\Field Data Sheets\Bulk Sample Field Data

Revision 1/3/08

ED_004522_00089767-00017

BULK SAMPLE FIELD DATA

ATTACHMENT 1 Page 1 of 1

Environmental Health & Engineering, Inc.
117 Fourth Avenue, Needham, MA 02494
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman / Rubin

Date: 1/4/2019

Job Site: S.V.E.C., Monroe, WA

Project#: 22437

Field Person(s): T. Truong / K. Coghlan

Sample Type: Bulk

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
184824	10:28	Room 20, (Classroom/Library BLDG.) Dust from U.V. Filter	S - PCB	Unit ventilator filter, dust on surface, collected w/ Tweezer
184825	10:37	Classroom/Library BLDG., Rm-20, unit vent.	S - PCB (Held sub-sample)	tan colored carpet remnant in unit ventilator
184826	10:40	" ↓ "	S	Mastic / Levelastic under carpet
184827	11:27	Classroom/Library BLDG., Rm-11, unit ventilator	S - PCBs	Dust from U.V. filter, collected w/ Tweezers
184828	11:28	Classroom/Library BLDG. Rm-11, Carpet	S	Carpet remnant from under wall w/ white Board
184829	12:07	Classroom/Library BLDG. ~~Rm-5~~ (MB) Rm-5 unit ventilator	S	Dust from U.V. filter, collected w/ Tweezers
184830	12:08	Classroom/Library BLDG. Rm-5, unit ventilator	S (Held sub-sample)	Carpet remnant from inside U.V., tan-colored
184844	15:10	Annex BLDG., unit ventilator, o/s Rm-3	S	Vacuum sample of dust from inside unit heater in hallway
184845	15:13	" ↓ "	S	" ↓ "
184846	15:29	Annex BLDG., Prep Room btwn Rms A+C	S	Vacuum sample inside R/A/Ex. Ductwork + Register
184849		Transportation BLDG., storage shed	S	Black, socio tar-like material on aluminum hose plate
184852		Transportation BLDG., storage shed	S	" ↓ "

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

q:\sampling\Field Data Sheets\Bulk Sample Field Data

Revision 1/3/08

Chain of Custody Forms dated January 4, 2019

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1

DATE: 1/4/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: EHE, Inc
Newton, MA

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
184824	BULK	SAMPLES SHIPPED TO:	1/4/2019
184825		EHE INC,	
184826		180 WELLS AVENUE	
184827		SUITE 200	
184828		NEWTON, MA 02459	
184829			
184830			
184844			
184845			
184846			
184849			
184852			
184831	WIPE		
184832			
184833			
184834			

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other SAMPLE SHIPMENT

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☐ Additional report recipient _____

Each signatory please return one copy of this form to the above address

Relinquished by: _____ of Environmental Health & Engineering, Inc. Date: 1/4/2019

Received by: FEDEX of (company name) FEDEX Date: 1/4/2019

Relinquished by: FEDEX of (company name) FEDEX Date: 1/7/2019

Received by: _____ of (company name) EHE Date: 1/7/2019

Relinquished by: _____ of (company name) EHE Date: 1/7/2019

Received by: _____ of (company name) EHE Date: 1/7/2019

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 2

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1

DATE: 1/4/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: EHHE, Inc.
Newton, MA

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22432

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
184835	WIPE	SAMPLES SHIPPED TO:	1/4/2019
184836		EHHE, Inc.	
184837		180 WELLS AVE	
184838		SUITE 200	
184839		Newton, MA 02459	
184840			
184841			
184842			
184843			
184844			
184848			
184850			
184851			

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other SAMPLE SHIPPED

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☐ Additional report recipient _____

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 1/4/2019

Received by: FEDEX of (company name) FEDEX Date: 1/4/2019

Relinquished by: FEDEX of (company name) FEDEX Date: 1/7/2019

Received by: [signature] of (company name) EHE Date: 1/7/2019

Relinquished by: [signature] of (company name) EHE Date: 1/7/2019

Received by: [signature] of (company name) EHE Date: 1/7/2019

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 2 of 2

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Field Data Sheets dated January 10 and 11, 2019

BULK SAMPLE FIELD DATA

ATTACHMENT 1

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman / Rubin

Date: 1/10/19 + 1/11/19

Job Site: S.V.E.C. Monroe, WA (samples processed at EHE, Newton, MA)

Project#: 22437

Field Person(s): K. Caghlan

Sample Type: Bulk

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
187056	1:48 pm	Annex BLDG, unit vent. O/S Rm-B	S-PCB	FIELD ID 184844 + 184845
187057	1:49 pm	" ↓ "	S-D/F	" ↓ "
187058	1:55 pm	Annex BLDG., Prep Room BTWN Rm A + C	S-PCB	FIELD ID 184846
187059	1:56 pm	" ↓ "	S-D/F	" ↓ "
187060	2:29 pm	Room 20, Classroom/Library BLDG., U.V.	S-D/F	Dust from unit vent - FIELD ID 184824
187061	2:35 pm	Classroom/Library BLDG, Room-20, U.V.	S-D/F	Tan carpet Remnant - FIELD ID 184825
187062	2:37 pm	Classroom/Library BLDG, Rm-20 U.V.	S-PCB	Tan carpet Remnant - FIELD ID 184825
187063	2:46 pm	Classroom/Library BLDG, Rm-11, U.V.	S-D/F	Dust from U.V. Filter - FIELD ID 184827
187064	2:52 pm	Classroom/Library BLDG., Rm-11, ~~U.V.~~ KMC	S-PCB	Tan carpet Remnant ~~in U.V.~~ under wall KMC - FIELD ID 184828
187065	1/11 2:28 pm	Classroom/Library BLDG., Rm-5, unit vent. (U.V.)	S-D/F	Dust from U.V. Filter - FIELD ID 184829
187066	1/11 2:39	Classroom/Library BLDG., Rm-5, U.V.	S-PCB	Tan carpet remnant inside U.V. - FIELD ID 184830
187067	1/11 2:40	" ↓ "	S-D/F	" ↓ "
187068	1/11 3:01	Transportation BLDG., Storage Shed	S-D/F	Black tar-like Residue from aluminum base plate - FIELD ID 184849
187069	1/11 3:18	Transportation BLDG., Storage Shed	S-D/F	" ↓ " FIELD ID 184852
187070	1/11 3:42	Annex BLDG, Room D, carpet	S-PCB	Carpet w/ ballast oil spill, Field ID 184823
187071	1/11 3:44	" ↓ "	S-D/F	" ↓ "
187072	1/11 6:20	Classroom/Library BLDG, Rm-10, outside door	S-PCB	Sample from cynthia yost - FIELD ID 184816
187073	1/11 6:22	" ↓ "	S-D/F	" ↓ "

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

ATTACHMENT 1

BULK SAMPLE FIELD DATA

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman / Rubin

Date: 1/14/2015

Job Site: S.U.E.C., Monroe, WA (samples processed at EHE, Newton, MA)

Project#: 22437

Field Person(s): K. Coghlan

Sample Type: BULK - CARPET

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
187074	1/11 6:30	CLASSROOM/LIBRARY BLDG, East Pod, inner	S-PCB	FIELD ID 184817
187075	1/11 6:30	" ↓ "	S-D/F	" ↓ "
187076	1/11 6:35	CLASSROOM/LIBRARY BLDG, Rm-9, inner door	S-PCB	FIELD ID 184818
187077	1/11 6:36	" ↓ "	S-D/F	" ↓ "
187078	1/11 6:40	CLASSROOM/LIBRARY BLDG, Rm-9, by door	S-PCB	FIELD ID 184819
187079	1/11 6:41	" ↓ "	S-D/F	" ↓ "
187080	1/11 6:46	CLASSROOM/LIBRARY BLDG, Rm-10, Desk	S-PCB	FIELD ID 184820
187081	1/11 6:46	" ↓ "	S-D/F	" ↓ "
187082	1/11 6:52	CLASSROOM/LIBRARY BLDG, Rm-12, outside door	S-PCB	FIELD ID 184821
187083	1/11 6:53	" ↓ "	S-D/F	" ↓ "
187084	1/11 6:58	CLASSROOM/LIBRARY BLDG, Rm-12, inside	S-PCB	FIELD ID 184822
187085	1/11 6:59	" ↓ "	S-D/F	" ↓ "
187086	1/14 4:05 pm	CONTAINER BLANK	MB	
187087	1/14 4:10 pm	CONTAINER BLANK	MB	SMALL CONTAINER, black top
187088	1/14 4:11 pm	CONTAINER BLANK	MB	Large Container, white top

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Field Data Sheets dated January 31, 2019

ATTACHMENT 1

BULK SAMPLE FIELD DATA

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman + Rubin / S.V.E.C. - Monroe, WA

Date: 1/31/2019

Job Site: 180 Wells Ave (Prep) collected at SVEC Monroe, WA

Project#: 22437

Field Person(s): K. Roghlan

Sample Type: BULK/WIPES

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
187065	(from 1/10+1/11)	CLASSROOM LIBRARY BLDG, Rm-5	S-DIF	UNIT VENT FILTER, DUST FROM SURFACE
187089	3:18 pm	WIPE OUTER BAG FROM SAMPLE 184816	S-PCB	12" X10" OUTER SIDE OF 2nd BAG
187090	3:21 pm	WIPE OUTER BAG FROM SAMPLE 184814	S-PCB	12" X10" OUTER SIDE OF 2nd BAG
187091	3:26 pm	WIPE OUTER BAG FROM SAMPLE 184820	S-PCB	12" X10" OUTER SIDE OF 2nd BAG
187092	3:31 pm	WIPE OUTER FROM SAMPLE 184821	S-PCB	12" X10" OUTER SIDE OF 2nd BAG
187093	3:35 pm	WIPE OUTER BAG FROM SAMPLE 184822	S-PCB	12" X10" OUTER SIDE OF 2nd BAG
187094		NO SAMPLE		ID VOID
187095	3:40 pm	WIPE OUTER BAG FROM SAMPLE 184819	S-PCB	12" X10" OUTER SIDE OF 2nd BAG
187096	3:44 pm	WIPE OUTER BAG FROM SAMPLE 184817	S-PCB	12" X10" OUTER SIDE OF 2nd BAG
187097	3:48 pm	SAMPLE COLLECTED FROM Knife + Blade	MB-DIF	AFTER CLEANING w/ Soap/water + Alcohol pad
187098		" SAMPLE 184817 "	MB-PCB	" SAMPLE # 184817 "
187099		SAMPLE collected FROM Knife + BLADE	MB-DIF	AFTER CLEANING w/ Soap/water + Alcohol pad
187100		" SAMPLE 184823 "	MB-PCB	SAMPLE # 184823
187101	3:56 pm	WIPE INNER BAG FROM SAMPLE 184821	S-PCB	11" X10.5" OUTER SIDE OF INNER BAG
187102	3:55 pm	WIPE INNER BAG FROM SAMPLE 184819	S-PCB	11" X10.5" OUTER ~~SIDE~~ SIDE OF INNER BAG
187103	3:59 pm	WIPE INNER BAG FROM SAMPLE 184817	S-PCB	11" X10.5" OUTER SIDE OF INNER BAG
187104	4:20	FIELD BLANK - WIPE	FB-PCB	(HANDLED WIPES w/ Gloved hand)

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Field Data Sheets dated February 12, 2019

ATTACHMENT 1

BULK SAMPLE FIELD DATA

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman Rubin,

Date: 2/12/2019

Job Site: 180 Wells Ave Newton, MA (Samples from SVEC Monroe, WA)

Project#: 22437

Field Person(s): K. Coghlan

Sample Type: WIPES

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
187105	4:20PM	TAN CARPET, FIELD ID 184822	S-WIPE	CARPET; WIPE OF SURFACE (10CMX10CM)
187106	4:28PM	TAN CARPET, FIELD ID 184819	↓	CARPET; WIPE OF SURFACE (10CMX10CM)
187107	4:42PM	TAN CARPET; FIELD ID 184818	↓	CARPET: WIPE OF SURFACE (10CMX10CM)
187108	4:53PM	TAN CARPET; FIELD ID 184823	↓	CARPET: WIPE OF SURFACE ( )
187109	4:48PM	FIELD BLANK - WIPE	F.B.	Field BLANK -

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Field Data Sheets dated February 27, 2019

BULK SAMPLE FIELD DATA

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman + Robin

Date: 2/27/2019

Job Site: 180 Wells Ave, Newton, MA (SVEC, Monroe, WA)

Project#: 22437

Field Person(s): K. Coghlan

Sample Type:

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
187110	4:10 pm	Zefon DUST COLLECTOR NOZZLE - ORANGE	MB-PCB	LAB TO WIPE NOZZLE
187111	4:10 pm	Zefon DUST COLLECTOR NOZZLE - ORANGE	MB-D/F	" "
187112	4:12 pm	EMPTY PLASTIC SAMPLE CONTAINER U-Line	MB-PCB	Clear container, white top, S-14887 1 oz
187113	4:12 pm	EMPTY PLASTIC SAMPLE CONTAINER U-Line	MB-D/F	" " S-14887 1 oz.
187114	4:18 pm	FORCEPS - Sterile - Unomedical	MB-PCB	IN MANUFACTURER'S PACKAGING
187115	4:18 pm	FORCEPS - Sterile - Unomedical	MB-D/F	" "
187116	4:28 pm	DUST/DIRT FROM TAN CARPET	S-PCB	FIELD ID 184817
187117	4:28 pm	DUST/DIRT FROM TAN CARPET	S-PCB	FIELD ID 184819
187118	4:28 pm	DUST/DIRT FROM TAN CARPET	S-PCB	FIELD ID 184821
187119	5:03 pm	TAN CARPET SAMPLE	S-D-PCB	FIELD ID 184817
187120	5:12 pm	TAN CARPET SAMPLE	S-D-PCB	FIELD ID 184818
187121	5:19 pm	TAN CARPET SAMPLE	S-D-D/F	FIELD ID 184819
187122	5:26 pm	TAN CARPET SAMPLE	S-D-D/F	FIELD ID 184822
187123	5:33	TAN/RED CARPET SAMPLE	S-D-PCB	FIELD ID 184823

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

Field Data Sheet dated April 16, 2019

BULK SAMPLE FIELD DATA

ATTACHMENT 11 Page 1 of 1

Environmental Health & Engineering, Inc.
180 Wells Avenue, Newton, MA 02459
TEL: (781) 247-4300
FAX: (781) 247-4305

Client: Friedman + Rubin

Date: 4/16/19

Job Site: SVEC, Monroe, WA

Project#: 22437

Field Person(s): K. Coghlan

Sample Type: WIPES - Dioxin/Furan

SAMPLE ID	TIME	LOCATION (BUILDING, FLOOR ETC.)	QA TYPE	SAMPLE DESCRIPTION
187124	11:45	WIPE OF INSIDE GLASS JAR + LID	MB	8.02. GLASS JAR W/ TEFLON TOP
187125	11:47	" "	MB	" "
187126	11:50	" "	MB	" "

QA TYPES: S = Sample, D = Duplicate, R= Replicate, A = Ambient, FB = Field Blank, MB = Media Blank)

CHAINS OF CUSTODY AND LABORATORY REPORTS

Chain of Custody Forms (COC ID 188529, 188530) dated November 2, 2018

ALS

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Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 188529

Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 [illegible]
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

ATTACHMENT 1

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	22437 - Friedman Rubin	A	PCB_Wipe_Total (8082 PCBs)
Work Order		Project Number	# 22437	B	1613B Dioxin/Furans Full List - WIPES
Company Name	Environmental Health & Engineerin	Bill To Company	EH+E, Inc.	C	~~1668A WHO12 PCB Congeners~~ KMC
Send Report To	Kevin M. Coghlan	Invoice Attn	Stephanie Mahoney	D	PCB BULK (8082)
Address	180 Wells Avenue, Suite 200,	Address	180 Wells Ave. Suite 200	E	1613B Dioxin/Furan Full List - BULK
				F	
City/State/Zip	Newton, MA 02459	City/State/Zip	Newton, MA 02459	G	
Phone	(781) 24-7.43	Phone	1-800-825-5343	H	
Fax		Fax		I	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	smahoney@eheinc.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C (KMC)	D	E	F	G	H	I	J	Hold
1	183384-PCB Wipe of Lab Report	11/1/2018	—	Wipe	—	1	✓	✓									
2	183384-D/F Wipe of Lab Report	11/1/2018	—	Wipe	—	1	✓	✓									
3	183391-PCB Wipe of Green Binder Paper	11/1/2018	—	Wipe	—	1	✓	✓									
4	183391-D/F Wipe of Green Binder Papers	11/1/2018	—	Wipe	—	1	✓	✓									
5	183392-PCB Wipe of History Book	11/1/2018	—	Wipe	—	1	✓	✓									
6	183392-D/F Wipe of History Book	11/1/2018	—	Wipe	—	1	✓	✓									
7	183376 Bulk Filter Media	11/1/2018	—	Bulk	—	1				✓	✓						
8	183393 Dust from Rms 5+9	11/1/2018	—	Bulk	—	1				✓	✓						
9	183386 Carpet Sample	11/1/2018	—	Bulk	—	1				✓	✓						
10	183387 Filter Media	11/1/2018	—	Bulk	—	1				✓	✓						

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Kevin Coghlan [signature]	FedEx / Cooler	[X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other	

Relinquished by:	Date:	Time:	Received by:	Notes:
Kevin Coghlan	11/2/2018	11:25 AM	[signature]	PCB & Dioxin Wipe & ~~PUF Analysis~~ Bulk Analysis
Relinquished by:	Date:	Time:	Received by (Laboratory):	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
		[X] Level II Std QC [ ] Level III Std QC/Raw Data [ ] Level IV SW846/CLP [ ] Other [ ] TRRP Checklist [ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

Page 2 of 2

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Spring City, PA
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

ATTACHMENT 1

COC ID: 188530

ALS Project Manager:
ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	22437-Friedman Rubin	A	PCB_Wipe_Total (8082 PCBs)
Work Order		Project Number	# 22437	B	1613B Dioxin/Furans Full List
Company Name	Environmental Health & Engineerin	Bill To Company	EH&E, Inc.	C	~~1668A-WHD12 PCB Congeners~~
Send Report To	Kevin M. Coglan	Invoice Attn	Stephanie Mahoney	D	PCB Bulk (8082)
Address	180 Wells Avenue, Suite 200,	Address	180 Wells Ave Suite 200	E	1613B Dioxin/Furan Full List - Bulk
				F	
City/State/Zip	Newton, MA 02459	City/State/Zip	Newton, MA 02459	G	
Phone	(781) 24-7.43	Phone	1-800-825-5343	H	
Fax		Fax		I	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	SMahoney@eheinc.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	183388 HEPA FILTER	11/1/2018	—	BULK	—	1				✓	✓						
2	183389 CHARCOAL FILTER	11/1/2018	—	BULK	—	1				✓	✓						
3	183394 FIELD/TRIP BLANK	11/1/2018	—	WIPE	—	1	✓	✓									
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Kevin Coghlan [signature]

Shipment Method: FedEx/Cooler

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date: (Kev)

Relinquished by:	Date:	Time:	Received by: Philip Colyer
Relinquished by:	Date:	Time:	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & ~~PUF Analysis~~ Bulk Analysis

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
[X] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Laboratory Report (Work Order HS18110258) dated November 30, 2018

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

November 30, 2018

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS18110258**

Laboratory Results for: **22437-Friedman Rubin #22437**

Dear Kevin,

ALS Environmental received 13 sample(s) on Nov 05, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: COREY.GRANDITS
Corey Grandits
Project Manager

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Work Order: HS18110258

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18110258-01	183384-PCB Wipe of Lab Report	Wipe		01-Nov-2018 06:40	05-Nov-2018 09:45	☐
HS18110258-02	183384-D/F Wipe of Lab Report	Wipe		01-Nov-2018 06:50	05-Nov-2018 09:45	☐
HS18110258-03	183391-PCB Wipe of Green Binder Papers	Wipe		01-Nov-2018 07:05	05-Nov-2018 09:45	☐
HS18110258-04	183391-D/F Wipe of Green Binder Papes	Wipe		01-Nov-2018 07:05	05-Nov-2018 09:45	☐
HS18110258-05	183392-PCB Wipe of History Book	Wipe		01-Nov-2018 07:17	05-Nov-2018 09:45	☐
HS18110258-06	183392-D/F Wipe of History Book	Wipe		01-Nov-2018 07:17	05-Nov-2018 09:45	☐
HS18110258-07	183376 Bulk Filter Media	Solid		01-Nov-2018 00:00	05-Nov-2018 09:45	☐
HS18110258-08	183393 Dust from RMS 5+9	Solid		01-Nov-2018 00:00	05-Nov-2018 09:45	☐
HS18110258-09	183386 Carpet Sample	Solid		01-Nov-2018 00:00	05-Nov-2018 09:45	☐
HS18110258-10	183387 Filter Media	Solid		01-Nov-2018 00:00	05-Nov-2018 09:45	☐
HS18110258-11	183388 Hepa Filter	Solid		01-Nov-2018 00:00	05-Nov-2018 09:45	☐
HS18110258-12	183389 Charcoal Filter	Solid		01-Nov-2018 00:00	05-Nov-2018 09:45	☐
HS18110258-13	183394 Field Trip Blank	Wipe		01-Nov-2018 00:00	05-Nov-2018 09:45	☐

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Work Order: HS18110258

CASE NARRATIVE

Work Order Comments

- The analysis for Dioxins/Furans was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

ECD Organics by Method SW8082

Batch ID: 134992

Sample ID: 183386 Carpet Sample (HS18110258-09)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Batch ID: 134350

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Batch ID: 134347

Sample ID: HS18110339-01MS

- MS and MSD are for an unrelated sample

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**	
Project:	22437-Friedman Rubin #22437	WorkOrder:HS18110258	
Sample ID:	183384-PCB Wipe of Lab Report	Lab ID:HS18110258-01	
Collection Date:	01-Nov-2018 06:40	Matrix:Wipe	

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 07-Nov-2018		Analyst: JLJ
Aroclor 1016		U	500	500	ng, Total	1	08-Nov-2018 15:58
Aroclor 1221		U	500	500	ng, Total	1	08-Nov-2018 15:58
Aroclor 1232		U	500	500	ng, Total	1	08-Nov-2018 15:58
Aroclor 1242		U	500	500	ng, Total	1	08-Nov-2018 15:58
Aroclor 1248		U	500	500	ng, Total	1	08-Nov-2018 15:58
Aroclor 1254		U	500	500	ng, Total	1	08-Nov-2018 15:58
Aroclor 1260		U	500	500	ng, Total	1	08-Nov-2018 15:58
PCBs (Total)		U	500	500	ng, Total	1	08-Nov-2018 15:58
Surr: Decachlorobiphenyl	*109*			*30-150*	*%REC*	*1*	*08-Nov-2018 15:58*
Surr: Tetrachloro-m-xylene	*97.5*			*30-150*	*%REC*	*1*	*08-Nov-2018 15:58*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437-Friedman Rubin #22437	WorkOrder:HS18110258
Sample ID:	183384-D/F Wipe of Lab Report	Lab ID:HS18110258-02
Collection Date:	01-Nov-2018 06:50	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	**See Attached.**		**0**	**0**		1	30-Nov-2018 17:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**	
Project:	22437-Friedman Rubin #22437	WorkOrder:	HS18110258
Sample ID:	183391-PCB Wipe of Green Binder Papers	Lab ID:	HS18110258-03
Collection Date:	01-Nov-2018 07:05	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 07-Nov-2018		Analyst: JLJ
Aroclor 1016		U	500	500	ng, Total	1	08-Nov-2018 16:14
Aroclor 1221		U	500	500	ng, Total	1	08-Nov-2018 16:14
Aroclor 1232		U	500	500	ng, Total	1	08-Nov-2018 16:14
Aroclor 1242		U	500	500	ng, Total	1	08-Nov-2018 16:14
Aroclor 1248		U	500	500	ng, Total	1	08-Nov-2018 16:14
Aroclor 1254		U	500	500	ng, Total	1	08-Nov-2018 16:14
Aroclor 1260		U	500	500	ng, Total	1	08-Nov-2018 16:14
PCBs (Total)		U	500	500	ng, Total	1	08-Nov-2018 16:14
Surr: Decachlorobiphenyl	*114*			*30-150*	*%REC*	*1*	*08-Nov-2018 16:14*
Surr: Tetrachloro-m-xylene	*102*			*30-150*	*%REC*	*1*	*08-Nov-2018 16:14*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437-Friedman Rubin #22437	WorkOrder:HS18110258
Sample ID:	183391-D/F Wipe of Green Binder Papes	Lab ID:HS18110258-04
Collection Date:	01-Nov-2018 07:05	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	**See Attached.**		**0**	**0**		1	30-Nov-2018 17:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437-Friedman Rubin #22437 WorkOrder:HS18110258
Sample ID: 183392-PCB Wipe of History Book Lab ID:HS18110258-05
Collection Date: 01-Nov-2018 07:17 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 07-Nov-2018		Analyst: JLJ
Aroclor 1016		U	500	500	ng, Total	1	08-Nov-2018 16:30
Aroclor 1221		U	500	500	ng, Total	1	08-Nov-2018 16:30
Aroclor 1232		U	500	500	ng, Total	1	08-Nov-2018 16:30
Aroclor 1242		U	500	500	ng, Total	1	08-Nov-2018 16:30
Aroclor 1248		U	500	500	ng, Total	1	08-Nov-2018 16:30
Aroclor 1254		U	500	500	ng, Total	1	08-Nov-2018 16:30
Aroclor 1260		U	500	500	ng, Total	1	08-Nov-2018 16:30
PCBs (Total)		U	500	500	ng, Total	1	08-Nov-2018 16:30
Surr: Decachlorobiphenyl	*116*			*30-150*	*%REC*	*1*	*08-Nov-2018 16:30*
Surr: Tetrachloro-m-xylene	*107*			*30-150*	*%REC*	*1*	*08-Nov-2018 16:30*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437-Friedman Rubin #22437	WorkOrder:HS18110258
Sample ID:	183392-D/F Wipe of History Book	Lab ID:HS18110258-06
Collection Date:	01-Nov-2018 07:17	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	**See Attached.**		**0**	**0**		1	30-Nov-2018 17:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Sample ID: 183376 Bulk Filter Media
Collection Date: 01-Nov-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18110258
Lab ID:HS18110258-07
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3546/3665A / 07-Nov-2018		Analyst: JLJ
Aroclor 1016	U		4.2	17	ug/Kg	1	08-Nov-2018 12:17
Aroclor 1221	U		5.6	17	ug/Kg	1	08-Nov-2018 12:17
Aroclor 1232	U		4.5	17	ug/Kg	1	08-Nov-2018 12:17
Aroclor 1242	U		5.8	17	ug/Kg	1	08-Nov-2018 12:17
Aroclor 1248	U		5.8	17	ug/Kg	1	08-Nov-2018 12:17
Aroclor 1254	U		4.7	17	ug/Kg	1	08-Nov-2018 12:17
Aroclor 1260	U		4.0	17	ug/Kg	1	08-Nov-2018 12:17
Surr: Decachlorobiphenyl	*113*			*54-143*	*%REC*	*1*	*08-Nov-2018 12:17*
Surr: Tetrachloro-m-xylene	*81.2*			*50-140*	*%REC*	*1*	*08-Nov-2018 12:17*
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	**See Attached.**		**0**	**0**		1	30-Nov-2018 17:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Sample ID: 183393 Dust from RMS 5+9
Collection Date: 01-Nov-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18110258
Lab ID:HS18110258-08
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3546/3665A / 28-Nov-2018		Analyst: JLJ
Aroclor 1016		U	300	1200	ug/Kg	1	29-Nov-2018 11:39
Aroclor 1221		U	400	1200	ug/Kg	1	29-Nov-2018 11:39
Aroclor 1232		U	320	1200	ug/Kg	1	29-Nov-2018 11:39
Aroclor 1242		U	420	1200	ug/Kg	1	29-Nov-2018 11:39
Aroclor 1248		U	420	1200	ug/Kg	1	29-Nov-2018 11:39
Aroclor 1254		U	340	1200	ug/Kg	1	29-Nov-2018 11:39
Aroclor 1260		U	290	1200	ug/Kg	1	29-Nov-2018 11:39
Surr: Decachlorobiphenyl	*57.5*			*54-143*	*%REC*	*1*	*29-Nov-2018 11:39*
Surr: Tetrachloro-m-xylene	*68.1*			*50-140*	*%REC*	*1*	*29-Nov-2018 11:39*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Sample ID: 183386 Carpet Sample
Collection Date: 01-Nov-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18110258
Lab ID:HS18110258-09
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3546/3665A / 28-Nov-2018		Analyst: JLJ
Aroclor 1016	U		5500	22000	ug/Kg	100	29-Nov-2018 15:34
Aroclor 1221	U		7300	22000	ug/Kg	100	29-Nov-2018 15:34
Aroclor 1232	U		5900	22000	ug/Kg	100	29-Nov-2018 15:34
Aroclor 1242	U		7700	22000	ug/Kg	100	29-Nov-2018 15:34
Aroclor 1248	U		7700	22000	ug/Kg	100	29-Nov-2018 15:34
Aroclor 1254	**130,000**		**6100**	**22000**	**ug/Kg**	100	29-Nov-2018 15:34
Aroclor 1260	U		5200	22000	ug/Kg	100	29-Nov-2018 15:34
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*100*	*29-Nov-2018 15:34*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*100*	*29-Nov-2018 15:34*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Sample ID: 183387 Filter Media
Collection Date: 01-Nov-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18110258
Lab ID:HS18110258-10
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3546/3665A / 07-Nov-2018		Analyst: JLJ
Aroclor 1016	U		4.2	17	ug/Kg	1	08-Nov-2018 12:33
Aroclor 1221	U		5.5	17	ug/Kg	1	08-Nov-2018 12:33
Aroclor 1232	U		4.4	17	ug/Kg	1	08-Nov-2018 12:33
Aroclor 1242	U		5.8	17	ug/Kg	1	08-Nov-2018 12:33
Aroclor 1248	U		5.8	17	ug/Kg	1	08-Nov-2018 12:33
Aroclor 1254	U		4.6	17	ug/Kg	1	08-Nov-2018 12:33
Aroclor 1260	U		4.0	17	ug/Kg	1	08-Nov-2018 12:33
Surr: Decachlorobiphenyl	*123*			*54-143*	*%REC*	*1*	*08-Nov-2018 12:33*
Surr: Tetrachloro-m-xylene	*96.0*			*50-140*	*%REC*	*1*	*08-Nov-2018 12:33*
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	**See Attached.**		**0**	**0**		1	30-Nov-2018 17:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Sample ID: 183388 Hepa Filter
Collection Date: 01-Nov-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18110258
Lab ID:HS18110258-11
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3546/3665A / 07-Nov-2018		Analyst: JLJ
Aroclor 1016	U		4.2	17	ug/Kg	1	08-Nov-2018 12:49
Aroclor 1221	U		5.6	17	ug/Kg	1	08-Nov-2018 12:49
Aroclor 1232	U		4.5	17	ug/Kg	1	08-Nov-2018 12:49
Aroclor 1242	U		5.9	17	ug/Kg	1	08-Nov-2018 12:49
Aroclor 1248	U		5.9	17	ug/Kg	1	08-Nov-2018 12:49
Aroclor 1254	U		4.7	17	ug/Kg	1	08-Nov-2018 12:49
Aroclor 1260	U		4.0	17	ug/Kg	1	08-Nov-2018 12:49
Surr: Decachlorobiphenyl	*130*			*54-143*	*%REC*	*1*	*08-Nov-2018 12:49*
Surr: Tetrachloro-m-xylene	*110*			*50-140*	*%REC*	*1*	*08-Nov-2018 12:49*
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	**See Attached.**		**0**	**0**		1	30-Nov-2018 17:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
Sample ID: 183389 Charcoal Filter
Collection Date: 01-Nov-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18110258
Lab ID:HS18110258-12
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3546/3665A / 07-Nov-2018		Analyst: JLJ
Aroclor 1016	U		4.2	17	ug/Kg	1	08-Nov-2018 13:04
Aroclor 1221	U		5.6	17	ug/Kg	1	08-Nov-2018 13:04
Aroclor 1232	U		4.5	17	ug/Kg	1	08-Nov-2018 13:04
Aroclor 1242	U		5.9	17	ug/Kg	1	08-Nov-2018 13:04
Aroclor 1248	U		5.9	17	ug/Kg	1	08-Nov-2018 13:04
Aroclor 1254	U		4.7	17	ug/Kg	1	08-Nov-2018 13:04
Aroclor 1260	**28**		**4.0**	**17**	**ug/Kg**	1	08-Nov-2018 13:04
Surr: Decachlorobiphenyl	*139*			*54-143*	*%REC*	*1*	*08-Nov-2018 13:04*
Surr: Tetrachloro-m-xylene	*137*			*50-140*	*%REC*	*1*	*08-Nov-2018 13:04*
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	**See Attached.**		**0**	**0**		1	30-Nov-2018 17:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

WEIGHT LOG

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: HS18110258

Batch ID: 134347 **Method:** PCBS BY SW8082A **Prep:** PCBPR_MW

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18110258-07	1	15.13	5 (mL)	0.3305
HS18110258-10	1	15.18	5 (mL)	0.3294
HS18110258-11	1	15.11	5 (mL)	0.3309
HS18110258-12	1	15.07	5 (mL)	0.3318

Batch ID: 134350 **Method:** PCBS BY SW8082A **Prep:** PCBWIPEPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18110258-01	1	1	10 (mL)	10
HS18110258-03	1	1	10 (mL)	10
HS18110258-05	1	1	10 (mL)	10

Batch ID: 134992 **Method:** PCBS BY SW8082A **Prep:** PCBPR_MW

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18110258-08	1	0.21	5 (mL)	23.81
HS18110258-09	1	1.15	5 (mL)	4.348

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: HS18110258

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 134347	**Test Name :** PCBS BY SW8082A			**Matrix:** Solid		
HS18110258-07	183376 Bulk Filter Media	01 Nov 2018 00:00		07 Nov 2018 13:00	08 Nov 2018 12:17	1
HS18110258-10	183387 Filter Media	01 Nov 2018 00:00		07 Nov 2018 13:00	08 Nov 2018 12:33	1
HS18110258-11	183388 Hepa Filter	01 Nov 2018 00:00		07 Nov 2018 13:00	08 Nov 2018 12:49	1
HS18110258-12	183389 Charcoal Filter	01 Nov 2018 00:00		07 Nov 2018 13:00	08 Nov 2018 13:04	1
Batch ID 134350	**Test Name :** PCBS BY SW8082A			**Matrix:** Wipe		
HS18110258-01	183384-PCB Wipe of Lab Report	01 Nov 2018 06:40		07 Nov 2018 13:00	08 Nov 2018 15:58	1
HS18110258-03	183391-PCB Wipe of Green Binder Papers	01 Nov 2018 07:05		07 Nov 2018 13:00	08 Nov 2018 16:14	1
HS18110258-05	183392-PCB Wipe of History Book	01 Nov 2018 07:17		07 Nov 2018 13:00	08 Nov 2018 16:30	1
Batch ID 134992	**Test Name :** PCBS BY SW8082A			**Matrix:** Solid		
HS18110258-08	183393 Dust from RMS 5+9	01 Nov 2018 00:00		28 Nov 2018 10:00	29 Nov 2018 11:39	1
HS18110258-09	183386 Carpet Sample	01 Nov 2018 00:00		28 Nov 2018 10:00	29 Nov 2018 15:34	100
Batch ID R328428	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Solid		
HS18110258-07	183376 Bulk Filter Media	01 Nov 2018 00:00			30 Nov 2018 17:56	1
HS18110258-10	183387 Filter Media	01 Nov 2018 00:00			30 Nov 2018 17:56	1
HS18110258-11	183388 Hepa Filter	01 Nov 2018 00:00			30 Nov 2018 17:56	1
HS18110258-12	183389 Charcoal Filter	01 Nov 2018 00:00			30 Nov 2018 17:56	1
Batch ID R328428	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Wipe		
HS18110258-02	183384-D/F Wipe of Lab Report	01 Nov 2018 06:50			30 Nov 2018 17:56	1
HS18110258-04	183391-D/F Wipe of Green Binder Papes	01 Nov 2018 07:05			30 Nov 2018 17:56	1
HS18110258-06	183392-D/F Wipe of History Book	01 Nov 2018 07:17			30 Nov 2018 17:56	1

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: HS18110258

QC BATCH REPORT

Batch ID: 134347 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-134347** Units: **ug/Kg** Analysis Date: **08-Nov-2018 02:50**
Client ID: Run ID: **ECD_7_327051** SeqNo: **4809733** PrepDate: **07-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	17								
Aroclor 1221	U	17								
Aroclor 1232	U	17								
Aroclor 1242	U	17								
Aroclor 1248	U	17								
Aroclor 1254	U	17								
Aroclor 1260	U	17								
Surr: Decachlorobiphenyl	*6.59*	*1.6*	*6.667*	*0*	*98.9*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.554*	*1.6*	*6.667*	*0*	*98.3*	*50 - 140*				

LCS Sample ID: **LCS-134347** Units: **ug/Kg** Analysis Date: **08-Nov-2018 03:06**
Client ID: Run ID: **ECD_7_327051** SeqNo: **4809734** PrepDate: **07-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	157.9	17	166.7	0	94.7	53 - 135				
Aroclor 1260	183.5	17	166.7	0	110	54 - 137				
Surr: Decachlorobiphenyl	*6.619*	*1.6*	*6.667*	*0*	*99.3*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.766*	*1.6*	*6.667*	*0*	*101*	*50 - 140*				

MS Sample ID: **HS18110339-01MS** Units: **ug/Kg** Analysis Date: **08-Nov-2018 03:37**
Client ID: Run ID: **ECD_7_327051** SeqNo: **4809736** PrepDate: **07-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	173.2	17	164.9	0	105	53 - 135				
Aroclor 1260	239.3	17	164.9	0	145	54 - 137				S
Surr: Decachlorobiphenyl	*10.37*	*1.6*	*6.597*	*0*	*157*	*54 - 143*				S
Surr: Tetrachloro-m-xylene	*6.096*	*1.6*	*6.597*	*0*	*92.4*	*50 - 140*				

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: HS18110258

QC BATCH REPORT

Batch ID: 134347 **Instrument: ECD_7** **Method: SW8082**

MSD Sample ID: **HS18110339-01MSD** Units: **ug/Kg** Analysis Date: **08-Nov-2018 03:53**
Client ID: Run ID: **ECD_7_327051** SeqNo: **4809737** PrepDate: **07-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	151.5	16	164.6	0	92.1	53 - 135	173.2	13.3	30	
Aroclor 1260	231.5	16	164.6	0	141	54 - 137	239.3	3.34	30	S
Surr: Decachlorobiphenyl	*9.866*	*1.6*	*6.584*	*0*	*150*	*54 - 143*	*10.37*	*4.98*	*30*	S
Surr: Tetrachloro-m-xylene	*5.651*	*1.6*	*6.584*	*0*	*85.8*	*50 - 140*	*6.096*	*7.57*	*30*	

The following samples were analyzed in this batch: HS18110258-07 HS18110258-10 HS18110258-11 HS18110258-12

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: HS18110258

QC BATCH REPORT

Batch ID: 134350 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-134350** Units: **ng, Total** Analysis Date: **08-Nov-2018 15:11**
Client ID: Run ID: **ECD_7_327097** SeqNo: **4810587** PrepDate: **07-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	500								
Aroclor 1221	U	500								
Aroclor 1232	U	500								
Aroclor 1242	U	500								
Aroclor 1248	U	500								
Aroclor 1254	U	500								
Aroclor 1260	U	500								
PCBs (Total)	U	500								
Surr: Decachlorobiphenyl	*194.2*	*0*	*200*	*0*	*97.1*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*183.8*	*0*	*200*	*0*	*91.9*	*30 - 150*				

LCS Sample ID: **LCS-134350** Units: **ng, Total** Analysis Date: **08-Nov-2018 15:27**
Client ID: Run ID: **ECD_7_327097** SeqNo: **4810588** PrepDate: **07-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4233	500	5000	0	84.7	50 - 130				
Aroclor 1260	4748	500	5000	0	95.0	50 - 130				
Surr: Decachlorobiphenyl	*177.2*	*0*	*200*	*0*	*88.6*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*181.8*	*0*	*200*	*0*	*90.9*	*30 - 150*				

LCSD Sample ID: **LCSD-134350** Units: **ng, Total** Analysis Date: **08-Nov-2018 15:42**
Client ID: Run ID: **ECD_7_327097** SeqNo: **4810589** PrepDate: **07-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4701	500	5000	0	94.0	50 - 130	4233	10.5	30	
Aroclor 1260	5238	500	5000	0	105	50 - 130	4748	9.82	30	
Surr: Decachlorobiphenyl	*203.3*	*0*	*200*	*0*	*102*	*30 - 150*	*177.2*	*13.7*	*30*	
Surr: Tetrachloro-m-xylene	*202*	*0*	*200*	*0*	*101*	*30 - 150*	*181.8*	*10.5*	*30*	

The following samples were analyzed in this batch: HS18110258-01 HS18110258-03 HS18110258-05

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: HS18110258

QC BATCH REPORT

Batch ID: 134992 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-134992** Units: **ug/Kg** Analysis Date: **28-Nov-2018 20:00**
Client ID: Run ID: **ECD_7_328286** SeqNo: **4842345** PrepDate: **28-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	17								
Aroclor 1221	U	17								
Aroclor 1232	U	17								
Aroclor 1242	U	17								
Aroclor 1248	U	17								
Aroclor 1254	U	17								
Aroclor 1260	U	17								
Surr: Decachlorobiphenyl	*7.081*	*1.6*	*6.667*	*0*	*106*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.166*	*1.6*	*6.667*	*0*	*92.5*	*50 - 140*				

LCS Sample ID: **LCS-134992** Units: **ug/Kg** Analysis Date: **28-Nov-2018 20:16**
Client ID: Run ID: **ECD_7_328286** SeqNo: **4842346** PrepDate: **28-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	151.5	17	166.7	0	90.9	53 - 135				
Aroclor 1260	183.8	17	166.7	0	110	54 - 137				
Surr: Decachlorobiphenyl	*7.556*	*1.6*	*6.667*	*0*	*113*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.332*	*1.6*	*6.667*	*0*	*95.0*	*50 - 140*				

MS Sample ID: **HS18111335-01MS** Units: **ug/Kg** Analysis Date: **28-Nov-2018 21:03**
Client ID: Run ID: **ECD_7_328286** SeqNo: **4842348** PrepDate: **28-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	153.9	16	161.1	0	95.5	53 - 135				
Aroclor 1260	154.5	16	161.1	0	95.9	54 - 137				
Surr: Decachlorobiphenyl	*7.471*	*1.5*	*6.444*	*0*	*116*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.832*	*1.5*	*6.444*	*0*	*106*	*50 - 140*				

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ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: HS18110258

QC BATCH REPORT

Batch ID: 134992 **Instrument: ECD_7** **Method: SW8082**

MSD Sample ID: **HS18111335-01MSD** Units: **ug/Kg** Analysis Date: **28-Nov-2018 21:18**
Client ID: Run ID: **ECD_7_328286** SeqNo: **4842349** PrepDate: **28-Nov-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	148.1	16	162.4	0	91.2	53 - 135	153.9	3.88	30	
Aroclor 1260	150	16	162.4	0	92.4	54 - 137	154.5	3	30	
Surr: Decachlorobiphenyl	*7.275*	*1.6*	*6.494*	*0*	*112*	*54 - 143*	*7.471*	*2.65*	*30*	
Surr: Tetrachloro-m-xylene	*7.589*	*1.6*	*6.494*	*0*	*117*	*50 - 140*	*6.832*	*10.5*	*30*	

The following samples were analyzed in this batch: HS18110258-08 HS18110258-09

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ALS Houston, US Date: 30-Nov-18

Client: Environmental Health & Engineering
Project: 22437-Friedman Rubin #22437
WorkOrder: **HS18110258**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
Date	

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
North Carolina	624-2018	31-Dec-2018
Arkansas	88-0356	27-Mar-2019
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	22-Dec-2018
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019

ALS Houston, US Date: 30-Nov-18

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Work Order: HS18110258
Date/Time Received: **05-Nov-2018 09:45**
Received by: **PJM**

Checklist completed by: *Jared R. Makan* (eSignature) 6-Nov-2018 (Date)
Reviewed by: *Corey Grandits* (eSignature) 20-Nov-2018 (Date)

Matrices: **Solid,Wipe**
Carrier name: **FedEx Priority Overnight**

	Yes	No	Not Present / N/A
Shipping container/cooler in good condition?	☑	☐	Not Present ☐
Custody seals intact on shipping container/cooler?	☑	☐	Not Present ☐
Custody seals intact on sample bottles?	☐	☐	Not Present ☑
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
TX1005 solids received in hermetically sealed vials?	☐	☐	N/A ☑
Sufficient sample volume for indicated test?	☐	☑	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	
Temperature(s)/Thermometer(s):	8.8c/8.5c UC/C		IR25
Cooler(s)/Kit(s):	44450		
Date/Time sample(s) sent to storage:	11/05/2018 14:30		
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑
pH adjusted by:			

Login Notes: Collection time not listed on COC, samples logged in with times on containers: Insufficient sample volume to run 183393, 183386 & 183394.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070

Chain of Custody

Page 1 of 2

COC ID: 18852

HS18110258 ATTACHMENT 1

Environmental Health & Engineering
22437-Friedman Rubin #22437

ALS Project Manager:

Customer Information		Project Information	
Purchase Order		Project Name	22437 - Friedman Rubin
Work Order		Project Number	#22437
Company Name	Environmental Health & Engineerin	Bill To Company	EHE, Inc.
Send Report To	Kevin M. Coglan	Invoice Attn	Stephanie Mahoney
Address	180 Wells Avenue, Suite 200,	Address	180 Wells Ave Suite 200
City/State/Zip	Newton, MA 02459	City/State/Zip	Newton, MA 02459
Phone	(781) 24-7.43	Phone	1-800-825-5343
Fax		Fax	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	smahoney@eheinc.com

A	PCB_Wipe_Total (8082 PCBs)
B	1613B Dioxin/Furans Full List - WIPES
C	~~4668A WHO12 PCB Congeners~~ KMC
D	PCB BULK (8082)
E	1613B DIOXIN/FURAN FULL LIST - BULK
F	
G	
H	
I	
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C (KMC)	D	E	F	G	H	I	J	Hold
1	183384-PCB WIPE OF LAB REPORT	11/1/2018	—	WIPE	—	1	✓	✓									
2	183384-D/F WIPE OF LAB REPORT	11/1/2018	—	WIPE	—	1	✓	✓									
3	183391-PCB WIPE OF GREEN BINDER PAPERS	11/1/2018	—	WIPE	—	1	✓	✓									
4	183391-D/F Wipe of Green Binder Papers	11/1/2018	—	WIPE	—	1	✓	✓									
5	183392-PCB Wipe of History Book	11/1/2018	—	WIPE	—	1	✓	✓									
6	183392-D/F Wipe of History Book	11/1/2018	—	WIPE	—	1	✓	✓									
7	183376 BULK FILTER MEDIA	11/1/2018	—	BULK	—	1				✓	✓						
8	183393 DUST FROM RMS 5+9	11/1/2018	—	BULK	—	1				✓	✓						
9	183386 CARPET SAMPLE	11/1/2018	—	BULK	—	1				✓	✓						
10	183387 FILTER MEDIA	11/1/2018	—	BULK	—	1				✓	✓						

Sampler(s) Please Print & Sign: KEVIN COGHLAN

Shipment Method: FEDEX / Cooler

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Kevin Coghlan	11/2/2018	11:25 AM	Philip Cogan
Relinquished by:	Date:	Time:	Received by (Laboratory):
	11-3-18	9:45 PM	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & ~~PUF Analysis~~ KMC BULK ANALYSIS

Cooler ID	Cooler Temp.
44450	NC / 8.8C
1R25	CF-0.3

QC Package: (Check One Box Below)
[X] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070

Chain of Custody Form

HS18110258 ATTACHMENT 1

Page 2 of 2

COC ID: 188530

Environmental Health & Engineering
22437-Friedman Rubin

ALS Project Manager:

Customer Information		Project Information	
Purchase Order		Project Name	22437-Friedman Rubin
Work Order		Project Number	# 22437
Company Name	Environmental Health & Engineerin	Bill To Company	EHE Inc.
Send Report To	Kevin M. Coglan	Invoice Attn	Stephanie Mahoney
Address	180 Wells Avenue, Suite 200,	Address	180 Wells Ave Suite 200
City/State/Zip	Newton, MA 02459	City/State/Zip	Newton, MA 02459
Phone	(781) 24-7.43	Phone	1-800-825-5343
Fax		Fax	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	SMahoney@eheinc.com

A	PCB_Wipe_Total (8082 PCBs)
B	1613B_Dioxin/Furans Full List
C	~~1668A WHO12 PCB Congeners~~
D	PCB BULK (8082)
E	1613B DIOXIN/FURAN FULL LIST - BULK
F	
G	
H	
I	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	KM	D	E	F	G	H	I	J	Hold
1	183388 HEPA-FILTER	11/1/2018	—	BULK	—	1				✓	✓						
2	183389 CHARCOAL FILTER	11/1/2018	—	BULK	—	1				✓	✓						
3	183394 FIELD/TRIP BLANK	11/1/2018	—	WIPE	—	1	✓	✓									
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: KEVIN COGHLAN

Shipment Method: FED Ex/Cooler

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date: KM

Relinquished by:	Date:	Time:	Received by: Philip Colyer	
Relinquished by:	Date: 11-3-18	Time: 9:45	Received by (Laboratory): PM	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Notes: PCB & Dioxin Wipe & ~~PUF Analysis~~ Bulk Analysis

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
[X] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRRP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

44450

CUSTODY SEAL

Date: 11/2/2018 Time: 11:28 Am
Name: Kevin Coghlan
Company: Eate, Inc.

Seal Broken By: PM
Date: 11/03/18

44450 NOV 03 2018

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

44450

CUSTODY SEAL

Date: 11/2/2018 Time: 11:30 Am
Name: Kevin Coghlan
Company: Eate, Inc.

Seal Broken By: PM
Date: 11/03/18

ORIGIN ID:PMXA (800) 825-5343
ENVIRONMENTAL HEALTH & ENGINEERING
180 WELLS AVE STE 200
NEWTON CENTER, MA 02459
UNITED STATES US

SHIP DATE: 02NOV18
ACTWGT: 10.00 LB
CAD: 006894732/SSFE1922
DIMS: 24x14x13 IN
BILL THIRD PARTY

TO CLIENT SERVICES
ALS ENVIRONMENTAL HOUSTON LAB
10450 STANCLIFF RD STE 210
HOUSTON TX 77099
(281) 530-5656
TRU:
PO:
REF:
DEPT:

44450

FedEx Express

E

TRK# 0215 8079 4000 3302

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 SGRA

77099
TX-US IAH

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November 30, 2018

Service Request No:E1801036

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for:

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory November 12, 2018
For your reference, these analyses have been assigned our service request number **E1801036.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My direct line is 281-575-2146. You may also contact me via email at Corey.Grandits@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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HS18110258

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Client:	ALS	**Service Request No.:**	E1801036
Project:	HS18110258	**Date Received:**	11/12/18
Sample Matrix:	Solid/Wipe		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Seven samples were received for analysis at ALS Environmental in Houston on 11/12/18.

The samples were received at 2.6°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1800467EQ1800474: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within control limits.

B flags – Method Blanks

The Method Blanks EQ1800467-01 and EQ1800474-01 contained low levels of target compounds above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Y flags – Cleanup Standard

The recoveries for the cleanup standard, 37Cl-2,3,7,8-TCDD are below control limits in sample E1801036-002, E1801036-003, E1801036-005, LCS EQ1800467-02, and DLCS EQ1800467-03. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

Y flags – Labeled Standards

Select labeled standards recovered below control limits, re-analysis confirmed.

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

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K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

P flag

Chlorodiphenyl ether interference was present at target analyte 1,2,3,6,7,8-HxCDF. Report result should be considered an estimate.

Dilutions

The samples E1801036-004 and E1801036-005 ran at a 5x due to matric interference. These samples had elevated levels of target analytes and required a dilution. The undiluted and diluted results were combined into one Total TEQ summary report for each sample. This reports a 'Total' result that includes the most appropriate concentration found for the associated target analyte.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

Sample E1801036-006 had high EDL's, sample ran three times to confirm matric interference.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'
- The 1:1 and associated dilution have been combined into one TEQ Summary report

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use

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ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Client: ALS Environmental - US **Service Request:**E1801036
Project: HS18110258

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1801036-001	183384-D/F Wipe of Lab Report	11/1/2018	0650
E1801036-002	183391-D/F Wipe of Green Binder Papers	11/1/2018	0705
E1801036-003	183392-D/F Wipe of History Brook	11/1/2018	0717
E1801036-004	183376 Bulk Filter Media	11/1/2018	0000
E1801036-005	183387 Filter Media	11/1/2018	0000
E1801036-006	183388 Hepa Filter	11/1/2018	0000
E1801036-007	183389 Charcoal Filer	11/1/2018	0000

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Service Request Summary

ATTACHMENT 1

Folder #: **E1801036**
Client Name: ALS Environmental - US
Project Name: HS18110258
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: ALOPEZ
Date Received: 11/12/18
Internal Due Date: 11/28/2018
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: N, Y
P.O. Number: HS18110258
EDD: No EDD Specified

8 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
3 1 Gal-Plastic Bag Ziplock - Gallon Unpreserved
Location: EHRMS-WIC 2D, E-Disposed
Pressure Gas:
Rush

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON	
				Dioxins Furans/1613B	Total Solids/ALS SOP
E1801036-001	183384-D/F Wipe of Lab Report	Wipe	11/01/18 0650	II	
E1801036-002	183391-D/F Wipe of Green Binder Papers	Wipe	11/01/18 0705	II	
E1801036-003	183392-D/F Wipe of History Brook	Wipe	11/01/18 0717	II	
E1801036-004	183376 Bulk Filter Media	Soil	11/01/18 0000	II	II
E1801036-005	183387 Filter Media	Soil	11/01/18 0000	II	II
E1801036-006	183388 Hepa Filter	Soil	11/01/18 0000	II	II
E1801036-007	183389 Charcoal Filer	Soil	11/01/18 0000	II	II

Folder Comments:

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1801036**
Client Name:	ALS Environmental - US
Project Name:	HS18110258
Project Number:	
Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	ALOPEZ
Date Received:	11/12/18
Internal Due Date:	11/28/2018
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	N
Report to MDL?:	N, Y
P.O. Number:	HS18110258
EDD:	No EDD Specified

8	4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
3	1 Gal-Plastic Bag Ziplock - Gallon Unpreserved

Location: EHRMS-WIC 2D, E-Disposed

Pressure Gas:

Rush

Print

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ED_004522_00089767-00074

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E180106 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
11/30/18	JC	004DL, 005DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
11/30/18	LKL	004DL, 005DL

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E180103 6 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
11/28/18	LKL	001_ 003

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
11/28/18	LG	001 - 003

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E180036 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
11/30/18	JC	007

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
11/30/18	LKL	007

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E180136 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
11/30/18	JC	006

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
11/30/18	LKL	006

ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

E1801036 5
ALS Group USA, Corp.
HS18110269

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 10181

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS18110258
TSR: Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS18110258-02**	**183384-D/F Wipe of Lab Report**	**Wipe**	**01 Nov 2018 06:50**
	Sub 1613B Dioxin/Furans Full List			13 Nov 2018
2.	**HS18110258-04**	**183391-D/F Wipe of Green Binder Papes**	**Wipe**	**01 Nov 2018 07:05**
	Sub 1613B Dioxin/Furans Full List			13 Nov 2018
3.	**HS18110258-06**	**183392-D/F Wipe of History Brook**	**Wipe**	**01 Nov 2018 07:17**
	Sub 1613B Dioxin/Furans Full List			13 Nov 2018
4.	**HS18110258-07**	**183376 Bulk Filter Media**	**Solid**	**01 Nov 2018 00:00**
	Sub 1613B Dioxin/Furans Full List			13 Nov 2018
5.	**HS18110258-10**	**183387 Filter Media**	**Solid**	**01 Nov 2018 00:00**
	Sub 1613B Dioxin/Furans Full List			13 Nov 2018
6.	**HS18110258-11**	**183388 Hepa Filter**	**Solid**	**01 Nov 2018 00:00**
	Sub 1613B Dioxin/Furans Full List			13 Nov 2018
7.	**HS18110258-12**	**183389 Charcoal Filter**	**Solid**	**01 Nov 2018 00:00**
	Sub 1613B Dioxin/Furans Full List			13 Nov 2018

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

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Subcontract Chain of Custody

COC ID: 10181

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By:	J. [illegible]	Date/Time:	11/12/18 13:00
Received By:	[illegible]	Date/Time:	11/12/18 13:00
Cooler ID(s):		Temperature(s):	

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ALS Environmental

Cooler Receipt Form

ATTACHMENT 1

Project Chemist: KW

Client/Project: ALS - Houston

Thermometer ID: Sw4

Date/Time Received: 11/12/18 1300 Initials: KW

Date/Time Logged in: 11/12/18 1400 Initials: KW

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ○ Courier ☒ Client
2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ○ Yes ☒ No
   Were they intact? ○ Yes ○ No ☒ N/A
   Were they signed and dated? ○ Yes ○ No ☒ N/A
   If yes, how many and where?
4. Packing Material: ○ Inserts ○ Baggies ☒ Bubble Wrap ○ Gel Packs ☒ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ☒ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
N/A	N/A	11/12/18	1300	KW	2.6 °C	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No
10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1801036 5
ALS Group USA, Corp.
HS18110269

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 326300 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/ALOPEZ **Prep Method:** Method **Prep Date/Time:** 11/14/18 11:00 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1801012-021	FW0002	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
2	E1801012-022	FW0003	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
3	E1801020-053	FW0001	.03	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
4	E1801020-054	FB0001	.02	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
5	E1801036-001	183384-D/F Wipe of Lab Report	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
6	E1801036-002	183391-D/F Wipe of Green Binder Papers	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
7	E1801036-003	183392-D/F Wipe of History Brook	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
8	E1801038-023	FW0050	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
9	E1801039-039	FW0005	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
10	E1801039-040	FW0006	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
11	E1801039-041	FW0004	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	white wipe
12	EQ1800467-01	MB		1613B/Dioxins Furans			Wipes	0.5000Sample	
13	EQ1800467-02	LCS		1613B/Dioxins Furans			Wipes	0.5000Sample	
14	EQ1800467-03	DLCS		1613B/Dioxins Furans			Wipes	0.5000Sample	

Spiking Solutions

Name: 1613B Labeled Working Standard Inventory ID 194889 Logbook Ref: 194889 AL 11/13/18 2-4 ng/mL Expires On: 01/31/2019

E1801039-040 1,000.00µL E1801039-041 1,000.00µL

Name: 1613B Labeled Working Standard Inventory ID 194903 Logbook Ref: 194903 JG 11/14/18 2-4ngml Expires On: 01/31/2019

E1801012-021 1,000.00µL E1801012-022 1,000.00µL E1801020-053 1,000.00µL E1801020-054 1,000.00µL E1801036-001 1,000.00µL E1801036-002 1,000.00µL
E1801036-003 1,000.00µL E1801038-023 1,000.00µL E1801039-039 1,000.00µL E1801039-040 1,000.00µL E1801039-041 1,000.00µL EQ1800467-01 1,000.00µL
EQ1800467-02 1,000.00µL EQ1800467-03 1,000.00µL

Name: 1613B Matrix Working Standard Inventory ID 194946 Logbook Ref: 194946 AL 11/14/18 2-20 ng/mL Expires On: 05/13/2019

EQ1800467-02 100.00µL EQ1800467-03 100.00µL

Name: 8290/1613B Cleanup Working Standard Inventory ID 195006 Logbook Ref: tw 11/1/18 8ng/ml 195006 Expires On: 04/27/2019

E1801012-021 100.00µL E1801012-022 100.00µL E1801020-053 100.00µL E1801020-054 100.00µL E1801036-001 100.00µL E1801036-002 100.00µL
E1801036-003 100.00µL E1801038-023 100.00µL E1801039-039 100.00µL E1801039-040 100.00µL E1801039-041 100.00µL EQ1800467-01 100.00µL
EQ1800467-02 100.00µL EQ1800467-03 100.00µL

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Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 326300
Team: Semivoa GCMS/ALOPEZ

Prep WorkFlow: OrgExtS(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 11/14/18 11:00 AM

Preparation Materials

Carbon, High Purity	TW 11/09/18 CARBON (194871)	Ethyl Acetate 99.9% Minimum EtOAc	tw ethyl acet 080218 (192158)	Glass Wool	112018 tw glasswool (195079)
Hexanes 95%	AL 11/16/18 (195004)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL (195005)	Sodium Chloride Reagent Grade NaCl	AL 8/20/18 (192602)
Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 10/12/18 (194060)	Tridecane (n-Tridecane)	AL 10/23/18 (194374)
Silica Gel	AL 10/11/18 (194005)	sulfuric acid	AL 10/11/18 (194007)	Toluene 99.9% Minimum	10/31/18 tw toluene (194571)

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	11/14/18 11:00	Started:	11/20/18 11:00	Started:	11/21/18 13:30	Started:	11/26/18 13:00
Finished:	11/15/18 07:30	Finished:	11/20/18 12:00	Finished:	11/21/18 16:30	Finished:	11/26/18 14:45
By:	ALOPEZ	By:	ALOPEZ	By:	ALOPEZ	By:	ALOPEZ
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

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Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 326544 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/ALOPEZ **Prep Method:** Method **Prep Date/Time:** 11/15/18 02:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1800596-001	SMS 0.25 - LOD - 1668	.02	1668C/Cl Biphen Cong			Soil	10.000g	MDL @250ul
2	E1801021-001	41596	.01	1613B/Dioxins Furans			Soil	10.567g	Brown Dirt + Mud Clumps
3	E1801021-002	41597	.01	1613B/Dioxins Furans			Soil	10.485g	Brown Dried Mud Clumps
4	E1801036-004	183376 Bulk Filter Media	.01	1613B/Dioxins Furans			Soil	10.242g	Car Filter
5	E1801036-005	183387 Filter Media	.01	1613B/Dioxins Furans			Soil	10.280g	Car Filter
6	E1801036-006	183388 Hepa Filter	.01	1613B/Dioxins Furans			Soil	10.252g	White Paper
7	E1801036-007	183389 Charcoal Filer	.01	1613B/Dioxins Furans			Soil	10.182g	Black Pading
8	E1801037-001	EV18110060-01	.01	1613B/Dioxins Furans			Soil	10.737g	Black Dirt + Rocks
9	E1801037-002	EV18110060-02	.01	1613B/Dioxins Furans			Soil	10.822g	Black Dirt + Rocks
10	E1801037-003	EV18110060-03	.01	1613B/Dioxins Furans			Soil	10.508g	Black Dirt + Rocks
11	E1801037-004	EV18110060-04	.01	1613B/Dioxins Furans			Soil	10.717g	Black Dirt + Rocks
12	E1801037-005	EV18110060-05	.01	1613B/Dioxins Furans			Soil	10.578g	Brown Dirt + Rocks
13	EQ1800474-01	MB		1613B/Dioxins Furans			Solid	10.074g	
14	EQ1800474-02	LCS		1613B/Dioxins Furans			Solid	10.323g	
15	EQ1800474-03	DLCS		1613B/Dioxins Furans			Solid	10.201g	

Spiking Solutions

Name: 1613B Matrix Working Standard Inventory ID 194946 Logbook Ref: 194946 AL 11/14/18 2-20 ng/mL Expires On: 05/13/2019

EQ1800474-02 100.00µL EQ1800474-03 100.00µL

Name: 1613B Labeled Working Standard Inventory ID 194977 Logbook Ref: 194977 AL 11/15/18 2-4 ng/mL Expires On: 01/31/2019

E1800596-001 1,000.00µL E1801021-001 1,000.00µL E1801021-002 1,000.00µL E1801036-004 1,000.00µL E1801036-005 1,000.00µL E1801036-006 1,000.00µL
E1801036-007 1,000.00µL E1801037-001 1,000.00µL E1801037-002 1,000.00µL E1801037-003 1,000.00µL E1801037-004 1,000.00µL E1801037-005 1,000.00µL
EQ1800474-01 1,000.00µL EQ1800474-02 1,000.00µL EQ1800474-03 1,000.00µL

Name: 8290/1613B Cleanup Working Standard Inventory ID 195006 Logbook Ref: tw 11/1/18 8ng/ml 195006 Expires On: 04/27/2019

E1800596-001 100.00µL E1801021-001 100.00µL E1801021-002 100.00µL E1801036-004 100.00µL E1801036-005 100.00µL E1801036-006 100.00µL
E1801036-007 100.00µL E1801037-001 100.00µL E1801037-002 100.00µL E1801037-003 100.00µL E1801037-004 100.00µL E1801037-005 100.00µL
EQ1800474-01 100.00µL EQ1800474-02 100.00µL EQ1800474-03 100.00µL

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 326544
Team: Semivoa GCMS/ALOPEZ

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 11/15/18 02:00 PM

Preparation Materials

Carbon, High Purity	TW 11/09/18 CARBON (194871)	Ethyl Acetate 99.9% Minimum EtOAc	tw ethyl acet 080218 (192158)	Glass Wool	112018 tw glasswool (195079)
Hexanes 95%	AL 11/16/18 (195004)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL (195005)	Sodium Chloride Reagent Grade NaCl	AL 8/20/18 (192602)
Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 10/12/18 (194060)	Tridecane (n-Tridecane)	AL 10/23/18 (194374)
Silica Gel	AL 10/11/18 (194005)	sulfuric acid	AL 10/11/18 (194007)	Toluene 99.9% Minimum	10/31/18 tw toluene (194571)

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	11/15/18 14:00	Started:	11/20/18 09:30	Started:	11/21/18 10:20	Started:	11/26/18 10:00
Finished:	11/16/18 08:00	Finished:	11/20/18 10:15	Finished:	11/21/18 13:20	Finished:	11/26/18 12:00
By:	JGUIN	By:	ALOPEZ	By:	ALOPEZ	By:	ALOPEZ
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

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ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 06:50
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183384-D/F Wipe of Lab Report	**Units:**	pg
Lab Code:	E1801036-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 17:37
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615723	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	4.36	10.0			1
1,2,3,7,8-PeCDD	2.79**JK**		1.97	50.0	2.02	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	1.04	50.0			1
1,2,3,6,7,8-HxCDD	1.92**BJ**		1.18	50.0	1.10	1.000	1
1,2,3,7,8,9-HxCDD	ND	U	1.03	50.0			1
1,2,3,4,6,7,8-HpCDD	ND	U	1.07	50.0			1
OCDD	11.8**BJK**		2.94	100	0.56	1.000	1
2,3,7,8-TCDF	ND	U	3.56	10.0			1
1,2,3,7,8-PeCDF	ND	U	2.56	50.0			1
2,3,4,7,8-PeCDF	ND	U	2.60	50.0			1
1,2,3,4,7,8-HxCDF	3.09**J**		1.93	50.0	1.17	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	1.95	50.0			1
1,2,3,7,8,9-HxCDF	ND	U	2.23	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	2.03	50.0			1
1,2,3,4,6,7,8-HpCDF	7.38**JK**		1.95	50.0	1.49	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	2.51	50.0			1
OCDF	82.7**BJ**		2.63	100	0.91	1.006	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 06:50
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183384-D/F Wipe of Lab Report	**Units:**	pg
Lab Code:	E1801036-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 17:37
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615723	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	4.36	10.0			1
Total Penta-Dioxins	ND	U	1.97	50.0			1
Total Hexa-Dioxins	1.92**J**		1.08	50.0	1.10		1
Total Hepta-Dioxins	ND	U	1.07	50.0			1
Total Tetra-Furans	ND	U	3.56	10.0			1
Total Penta-Furans	ND	U	2.58	50.0			1
Total Hexa-Furans	3.09**J**		2.03	50.0	1.17		1
Total Hepta-Furans	ND	U	2.21	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 06:50
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183384-D/F Wipe of Lab Report	**Units:**	Percent
Lab Code:	E1801036-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 17:37
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615723	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	1000	706.705	71		25-164	0.77	1.019
13C-1,2,3,7,8-PeCDD	1000	784.282	78		25-181	1.55	1.168
13C-1,2,3,4,7,8-HxCDD	1000	1111.717	111		32-141	1.27	0.992
13C-1,2,3,6,7,8-HxCDD	1000	1023.566	102		28-130	1.25	0.994
13C-1,2,3,4,6,7,8-HpCDD	1000	1224.123	122		23-140	1.06	1.068
13C-OCDD	2000	1766.726	88		17-157	0.91	1.148
13C-2,3,7,8-TCDF	1000	646.970	65		24-169	0.77	0.994
13C-1,2,3,7,8-PeCDF	1000	745.682	75		24-185	1.59	1.129
13C-2,3,4,7,8-PeCDF	1000	734.226	73		21-178	1.58	1.159
13C-1,2,3,4,7,8-HxCDF	1000	998.579	100		26-152	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	1000	958.118	96		26-123	0.53	0.975
13C-1,2,3,7,8,9-HxCDF	1000	1007.476	101		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	1000	972.865	97		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	1000	927.268	93		28-143	0.46	1.042
13C-1,2,3,4,7,8,9-HpCDF	1000	968.997	97		26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	800	308.280	39		35-197	NA	1.020

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 06:50
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183384-D/F Wipe of Lab Report	**Units:**	pg
Lab Code:	E1801036-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	4.36	10.0	1	1	
1,2,3,7,8-PeCDD	**2.79**	1.97	50.0	1	1	2.79
1,2,3,4,7,8-HxCDD	ND	1.04	50.0	1	0.1	
1,2,3,6,7,8-HxCDD	**1.92**	1.18	50.0	1	0.1	0.192
1,2,3,7,8,9-HxCDD	ND	1.03	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	ND	1.07	50.0	1	0.01	
OCDD	**11.8**	2.94	100	1	0.0003	0.00354
2,3,7,8-TCDF	ND	3.56	10.0	1	0.1	
1,2,3,7,8-PeCDF	ND	2.56	50.0	1	0.03	
2,3,4,7,8-PeCDF	ND	2.60	50.0	1	0.3	
1,2,3,4,7,8-HxCDF	**3.09**	1.93	50.0	1	0.1	0.309
1,2,3,6,7,8-HxCDF	ND	1.95	50.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	2.23	50.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	2.03	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**7.38**	1.95	50.0	1	0.01	0.0738
1,2,3,4,7,8,9-HpCDF	ND	2.51	50.0	1	0.01	
OCDF	**82.7**	2.63	100	1	0.0003	0.0248
		Total TEQ				3.39

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:05
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183391-D/F Wipe of Green Binder Papers	**Units:**	pg
Lab Code:	E1801036-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 18:26
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615724	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	6.40	10.0			1
1,2,3,7,8-PeCDD	ND	U	2.29	50.0			1
1,2,3,4,7,8-HxCDD	ND	U	1.94	50.0			1
1,2,3,6,7,8-HxCDD	ND	U	2.19	50.0			1
1,2,3,7,8,9-HxCDD	ND	U	1.92	50.0			1
1,2,3,4,6,7,8-HpCDD	ND	U	0.900	50.0			1
OCDD	8.38**BJ**		2.83	100	0.80	1.000	1
2,3,7,8-TCDF	ND	U	3.61	10.0			1
1,2,3,7,8-PeCDF	ND	U	2.33	50.0			1
2,3,4,7,8-PeCDF	ND	U	2.38	50.0			1
1,2,3,4,7,8-HxCDF	4.47**JK**		2.55	50.0	1.02	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	2.59	50.0			1
1,2,3,7,8,9-HxCDF	ND	U	3.27	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	3.42	50.0			1
1,2,3,4,6,7,8-HpCDF	9.04**JK**		2.16	50.0	1.31	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	2.85	50.0			1
OCDF	114**B**		4.08	100	0.89	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:05
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183391-D/F Wipe of Green Binder Papers	**Units:**	pg
Lab Code:	E1801036-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 18:26
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615724	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	6.40	10.0			1
Total Penta-Dioxins	ND	U	2.29	50.0			1
Total Hexa-Dioxins	6.85**J**		2.01	50.0	1.31		1
Total Hepta-Dioxins	ND	U	0.900	50.0			1
Total Tetra-Furans	ND	U	3.61	10.0			1
Total Penta-Furans	ND	U	2.35	50.0			1
Total Hexa-Furans	ND	U	2.92	50.0			1
Total Hepta-Furans	ND	U	2.48	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:05
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183391-D/F Wipe of Green Binder Papers	**Units:**	Percent
Lab Code:	E1801036-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 18:26
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615724	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	1000	597.179	60		25-164	0.79	1.019
13C-1,2,3,7,8-PeCDD	1000	715.110	72		25-181	1.56	1.168
13C-1,2,3,4,7,8-HxCDD	1000	913.490	91		32-141	1.26	0.992
13C-1,2,3,6,7,8-HxCDD	1000	882.420	88		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	1000	1005.347	101		23-140	1.07	1.067
13C-OCDD	2000	1376.393	69		17-157	0.91	1.148
13C-2,3,7,8-TCDF	1000	539.381	54		24-169	0.78	0.995
13C-1,2,3,7,8-PeCDF	1000	698.029	70		24-185	1.60	1.129
13C-2,3,4,7,8-PeCDF	1000	691.257	69		21-178	1.58	1.159
13C-1,2,3,4,7,8-HxCDF	1000	882.257	88		26-152	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	1000	843.204	84		26-123	0.53	0.975
13C-1,2,3,7,8,9-HxCDF	1000	818.363	82		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	1000	713.537	71		28-136	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	1000	778.196	78		28-143	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	1000	794.889	79		26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	800	263.270	33	**Y**	35-197	NA	1.020

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:05
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183391-D/F Wipe of Green Binder Papers	**Units:**	pg
Lab Code:	E1801036-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	6.40	10.0	1	1	
1,2,3,7,8-PeCDD	ND	2.29	50.0	1	1	
1,2,3,4,7,8-HxCDD	ND	1.94	50.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	2.19	50.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	1.92	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	ND	0.900	50.0	1	0.01	
OCDD	**8.38**	2.83	100	1	0.0003	0.00251
2,3,7,8-TCDF	ND	3.61	10.0	1	0.1	
1,2,3,7,8-PeCDF	ND	2.33	50.0	1	0.03	
2,3,4,7,8-PeCDF	ND	2.38	50.0	1	0.3	
1,2,3,4,7,8-HxCDF	**4.47**	2.55	50.0	1	0.1	0.447
1,2,3,6,7,8-HxCDF	ND	2.59	50.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	3.27	50.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	3.42	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**9.04**	2.16	50.0	1	0.01	0.0904
1,2,3,4,7,8,9-HpCDF	ND	2.85	50.0	1	0.01	
OCDF	**114**	4.08	100	1	0.0003	0.0342
		Total TEQ				0.574

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:17
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183392-D/F Wipe of History Brook	**Units:**	pg
Lab Code:	E1801036-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 19:15
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615725	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	5.22	10.0			1
1,2,3,7,8-PeCDD	2.58**JK**		1.52	50.0	2.01	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.962	50.0			1
1,2,3,6,7,8-HxCDD	1.55**BJK**		1.09	50.0	0.65	1.000	1
1,2,3,7,8,9-HxCDD	1.81**BJK**		0.950	50.0	0.68	1.006	1
1,2,3,4,6,7,8-HpCDD	1.73**BJK**		0.966	50.0	0.76	1.000	1
OCDD	13.8**BJ**		3.34	100	0.99	1.000	1
2,3,7,8-TCDF	ND	U	3.14	10.0			1
1,2,3,7,8-PeCDF	5.23**JK**		2.00	50.0	1.28	1.001	1
2,3,4,7,8-PeCDF	ND	U	1.99	50.0			1
1,2,3,4,7,8-HxCDF	4.21**JK**		1.84	50.0	1.47	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	1.92	50.0			1
1,2,3,7,8,9-HxCDF	2.86**J**		2.11	50.0	1.29	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	1.94	50.0			1
1,2,3,4,6,7,8-HpCDF	5.84**JK**		1.36	50.0	1.33	1.000	1
1,2,3,4,7,8,9-HpCDF	2.13**JK**		1.79	50.0	1.21	1.001	1
OCDF	80.4**BJ**		3.17	100	0.87	1.006	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:17
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183392-D/F Wipe of History Brook	**Units:**	pg
Lab Code:	E1801036-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 19:15
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615725	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	5.22	10.0			1
Total Penta-Dioxins	ND	U	1.52	50.0			1
Total Hexa-Dioxins	ND	U	0.998	50.0			1
Total Hepta-Dioxins	ND	U	0.966	50.0			1
Total Tetra-Furans	ND	U	3.14	10.0			1
Total Penta-Furans	ND	U	2.00	50.0			1
Total Hexa-Furans	2.86**J**		1.95	50.0	1.29		1
Total Hepta-Furans	ND	U	1.56	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:17
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183392-D/F Wipe of History Brook	**Units:**	Percent
Lab Code:	E1801036-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 19:15
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615725	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	1000	692.832	69		25-164	0.80	1.019
13C-1,2,3,7,8-PeCDD	1000	857.068	86		25-181	1.55	1.168
13C-1,2,3,4,7,8-HxCDD	1000	1077.042	108		32-141	1.27	0.992
13C-1,2,3,6,7,8-HxCDD	1000	980.851	98		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	1000	1178.553	118		23-140	1.04	1.068
13C-OCDD	2000	1668.720	83		17-157	0.91	1.148
13C-2,3,7,8-TCDF	1000	627.808	63		24-169	0.79	0.995
13C-1,2,3,7,8-PeCDF	1000	794.442	79		24-185	1.61	1.129
13C-2,3,4,7,8-PeCDF	1000	784.588	78		21-178	1.60	1.159
13C-1,2,3,4,7,8-HxCDF	1000	987.557	99		26-152	0.53	0.972
13C-1,2,3,6,7,8-HxCDF	1000	914.159	91		26-123	0.53	0.975
13C-1,2,3,7,8,9-HxCDF	1000	971.610	97		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	1000	972.657	97		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	1000	916.841	92		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	1000	931.642	93		26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	800	273.867	34	**Y**	35-197	NA	1.020

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 07:17
Sample Matrix:	Wipe	**Date Received:**	11/12/18 13:00
Sample Name:	183392-D/F Wipe of History Brook	**Units:**	pg
Lab Code:	E1801036-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	5.22	10.0	1	1	
1,2,3,7,8-PeCDD	**2.58**	1.52	50.0	1	1	2.58
1,2,3,4,7,8-HxCDD	ND	0.962	50.0	1	0.1	
1,2,3,6,7,8-HxCDD	**1.55**	1.09	50.0	1	0.1	0.155
1,2,3,7,8,9-HxCDD	**1.81**	0.950	50.0	1	0.1	0.181
1,2,3,4,6,7,8-HpCDD	**1.73**	0.966	50.0	1	0.01	0.0173
OCDD	**13.8**	3.34	100	1	0.0003	0.00414
2,3,7,8-TCDF	ND	3.14	10.0	1	0.1	
1,2,3,7,8-PeCDF	**5.23**	2.00	50.0	1	0.03	0.157
2,3,4,7,8-PeCDF	ND	1.99	50.0	1	0.3	
1,2,3,4,7,8-HxCDF	**4.21**	1.84	50.0	1	0.1	0.421
1,2,3,6,7,8-HxCDF	ND	1.92	50.0	1	0.1	
1,2,3,7,8,9-HxCDF	**2.86**	2.11	50.0	1	0.1	0.286
2,3,4,6,7,8-HxCDF	ND	1.94	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**5.84**	1.36	50.0	1	0.01	0.0584
1,2,3,4,7,8,9-HpCDF	**2.13**	1.79	50.0	1	0.01	0.0213
OCDF	**80.4**	3.17	100	1	0.0003	0.0241
		Total TEQ				3.91

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183376 Bulk Filter Media	**Units:**	ng/Kg
Lab Code:	E1801036-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/29/18 23:49
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.242g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519068	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.20	2.44			5
1,2,3,7,8-PeCDD	0.927**JK**		0.445	12.2	2.48	1.000	5
1,2,3,4,7,8-HxCDD	1.79**JK**		0.431	12.2	0.95	1.000	5
1,2,3,6,7,8-HxCDD	14.2		0.442	12.2	1.28	1.000	5
1,2,3,7,8,9-HxCDD	2.43**JK**		0.426	12.2	0.93	1.007	5
1,2,3,4,6,7,8-HpCDD	66.6		0.412	12.2	1.01	1.000	5
OCDD	87.2		0.558	24.4	0.92	1.000	5
2,3,7,8-TCDF	2.79		0.483	2.44	0.74	1.000	5
1,2,3,7,8-PeCDF	4.79**JK**		1.10	12.2	2.14	1.001	5
2,3,4,7,8-PeCDF	6.62**JK**		0.475	12.2	1.16	1.001	5
1,2,3,4,7,8-HxCDF	12.6		1.41	12.2	1.42	1.000	5
1,2,3,6,7,8-HxCDF	4.22**JK**		4.17	12.2	2.31	1.000	5
1,2,3,7,8,9-HxCDF	0.890**JK**		0.724	12.2	0.87	1.001	5
2,3,4,6,7,8-HxCDF	2.73**J**		0.514	12.2	1.18	1.000	5
1,2,3,4,6,7,8-HpCDF	20.7		0.345	12.2	1.07	1.000	5
1,2,3,4,7,8,9-HpCDF	ND	U	0.453	12.2			5
OCDF	6.04**J**		0.706	24.4	0.97	1.005	5

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183376 Bulk Filter Media	**Units:**	ng/Kg
Lab Code:	E1801036-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/29/18 23:49
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.242g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519068	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.20	2.44			5
Total Penta-Dioxins	6.04**J**		0.445	12.2	1.55		5
Total Hexa-Dioxins	40.8		0.433	12.2	1.25		5
Total Hepta-Dioxins	78.3		0.412	12.2	1.16		5
Total Tetra-Furans	29.2		0.483	2.44	0.67		5
Total Penta-Furans	160		0.692	12.2	1.43		5
Total Hexa-Furans	223		0.928	12.2	1.15		5
Total Hepta-Furans	20.7		0.393	12.2	1.07		5

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183376 Bulk Filter Media	**Units:**	Percent
Lab Code:	E1801036-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/29/18 23:49
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.242g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519068	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1450.866	73		25-164	0.81	1.019
13C-1,2,3,7,8-PeCDD	2000	1947.336	97		25-181	1.64	1.181
13C-1,2,3,4,7,8-HxCDD	2000	1351.945	68		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1345.921	67		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1312.123	66		23-140	1.06	1.068
13C-OCDD	4000	2873.696	72		17-157	0.91	1.145
13C-2,3,7,8-TCDF	2000	1331.002	67		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	863.169	43		24-185	1.60	1.139
13C-2,3,4,7,8-PeCDF	2000	1663.643	83		21-178	1.58	1.171
13C-1,2,3,4,7,8-HxCDF	2000	518.755	26		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	172.131	9	Y	26-123	0.51	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1317.629	66		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1529.164	76		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1640.712	82		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1699.630	85		26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	160	65.128	41		35-197	NA	1.020

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183376 Bulk Filter Media	**Units:**	ng/Kg
Lab Code:	E1801036-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.20	2.44	5	1	
1,2,3,7,8-PeCDD	**0.927**	0.445	12.2	5	1	0.927
1,2,3,4,7,8-HxCDD	**1.79**	0.431	12.2	5	0.1	0.179
1,2,3,6,7,8-HxCDD	**14.2**	0.442	12.2	5	0.1	1.42
1,2,3,7,8,9-HxCDD	**2.43**	0.426	12.2	5	0.1	0.243
1,2,3,4,6,7,8-HpCDD	**66.6**	0.412	12.2	5	0.01	0.666
OCDD	**87.2**	0.558	24.4	5	0.0003	0.0262
2,3,7,8-TCDF	**2.79**	0.483	2.44	5	0.1	0.279
1,2,3,7,8-PeCDF	**4.79**	1.10	12.2	5	0.03	0.144
2,3,4,7,8-PeCDF	**6.62**	0.475	12.2	5	0.3	1.99
1,2,3,4,7,8-HxCDF	**12.6**	1.41	12.2	5	0.1	1.26
1,2,3,6,7,8-HxCDF	**4.22**	4.17	12.2	5	0.1	0.422
1,2,3,7,8,9-HxCDF	**0.890**	0.724	12.2	5	0.1	0.0890
2,3,4,6,7,8-HxCDF	**2.73**	0.514	12.2	5	0.1	0.273
1,2,3,4,6,7,8-HpCDF	**20.7**	0.345	12.2	5	0.01	0.207
1,2,3,4,7,8,9-HpCDF	ND	0.453	12.2	5	0.01	
OCDF	**6.04**	0.706	24.4	5	0.0003	0.00181
		Total TEQ				8.13

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183376 Bulk Filter Media	**Units:**	Percent
Lab Code:	E1801036-004	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	11/26/18 08:30
	2.43g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	96.7		-	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183387 Filter Media	**Units:**	ng/Kg
Lab Code:	E1801036-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 00:37
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.280g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519069	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.03	2.43			5
1,2,3,7,8-PeCDD	1.24**JK**		0.513	12.2	2.07	1.000	5
1,2,3,4,7,8-HxCDD	2.91**JK**		0.685	12.2	1.02	1.000	5
1,2,3,6,7,8-HxCDD	30.2		0.697	12.2	1.21	1.000	5
1,2,3,7,8,9-HxCDD	5.39**J**		0.674	12.2	1.15	1.007	5
1,2,3,4,6,7,8-HpCDD	153		0.774	12.2	1.03	1.000	5
OCDD	228		0.452	24.3	0.90	1.000	5
2,3,7,8-TCDF	6.45		0.579	2.43	0.71	1.000	5
1,2,3,7,8-PeCDF	8.89**J**		2.63	12.2	1.47	1.001	5
2,3,4,7,8-PeCDF	32.5		1.13	12.2	1.47	1.000	5
1,2,3,4,7,8-HxCDF	33.9		2.54	12.2	1.26	1.000	5
1,2,3,6,7,8-HxCDF	12.0**J**		6.99	12.2	1.24	1.000	5
1,2,3,7,8,9-HxCDF	2.57**J**		1.17	12.2	1.30	1.001	5
2,3,4,6,7,8-HxCDF	6.04**J**		0.741	12.2	1.20	1.001	5
1,2,3,4,6,7,8-HpCDF	47.4		0.858	12.2	1.04	1.000	5
1,2,3,4,7,8,9-HpCDF	ND	U	1.01	12.2			5
OCDF	10.3**J**		0.618	24.3	0.79	1.005	5

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183387 Filter Media	**Units:**	ng/Kg
Lab Code:	E1801036-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 00:37
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.280g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519069	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.03	2.43			5
Total Penta-Dioxins	14.8		0.513	12.2	1.32		5
Total Hexa-Dioxins	141		0.685	12.2	1.17		5
Total Hepta-Dioxins	180		0.774	12.2	0.94		5
Total Tetra-Furans	56.8		0.579	2.43	0.71		5
Total Penta-Furans	348		1.57	12.2	1.51		5
Total Hexa-Furans	565		1.47	12.2	1.27		5
Total Hepta-Furans	79.3		0.928	12.2	1.04		5

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183387 Filter Media	**Units:**	Percent
Lab Code:	E1801036-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 00:37
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.280g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519069	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1293.585	65		25-164	0.80	1.019
13C-1,2,3,7,8-PeCDD	2000	1612.197	81		25-181	1.59	1.181
13C-1,2,3,4,7,8-HxCDD	2000	1391.745	70		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1381.206	69		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1294.837	65		23-140	1.06	1.067
13C-OCDD	4000	3018.367	75		17-157	0.91	1.144
13C-2,3,7,8-TCDF	2000	1170.779	59		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	528.198	26		24-185	1.56	1.139
13C-2,3,4,7,8-PeCDF	2000	1286.470	64		21-178	1.57	1.171
13C-1,2,3,4,7,8-HxCDF	2000	410.787	21	Y	26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	155.504	8	Y	26-123	0.54	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1166.309	58		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1490.486	75		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1540.530	77		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1795.634	90		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	160	33.963	21	Y	35-197	NA	1.020

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183387 Filter Media	**Units:**	ng/Kg
Lab Code:	E1801036-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.03	2.43	5	1	
1,2,3,7,8-PeCDD	**1.24**	0.513	12.2	5	1	1.24
1,2,3,4,7,8-HxCDD	**2.91**	0.685	12.2	5	0.1	0.291
1,2,3,6,7,8-HxCDD	**30.2**	0.697	12.2	5	0.1	3.02
1,2,3,7,8,9-HxCDD	**5.39**	0.674	12.2	5	0.1	0.539
1,2,3,4,6,7,8-HpCDD	**153**	0.774	12.2	5	0.01	1.53
OCDD	**228**	0.452	24.3	5	0.0003	0.0684
2,3,7,8-TCDF	**6.45**	0.579	2.43	5	0.1	0.645
1,2,3,7,8-PeCDF	**8.89**	2.63	12.2	5	0.03	0.267
2,3,4,7,8-PeCDF	**32.5**	1.13	12.2	5	0.3	9.75
1,2,3,4,7,8-HxCDF	**33.9**	2.54	12.2	5	0.1	3.39
1,2,3,6,7,8-HxCDF	**12.0**	6.99	12.2	5	0.1	1.20
1,2,3,7,8,9-HxCDF	**2.57**	1.17	12.2	5	0.1	0.257
2,3,4,6,7,8-HxCDF	**6.04**	0.741	12.2	5	0.1	0.604
1,2,3,4,6,7,8-HpCDF	**47.4**	0.858	12.2	5	0.01	0.474
1,2,3,4,7,8,9-HpCDF	ND	1.01	12.2	5	0.01	
OCDF	**10.3**	0.618	24.3	5	0.0003	0.00309
		Total TEQ				23.3

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183387 Filter Media	**Units:**	Percent
Lab Code:	E1801036-005	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	11/26/18 08:30
	2.828g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	95.9		-	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183388 Hepa Filter	**Units:**	ng/Kg
Lab Code:	E1801036-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 09:06
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.252g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519079	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519075

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	5.29	5.29			1
1,2,3,7,8-PeCDD	ND	U	1.68	2.44			1
1,2,3,4,7,8-HxCDD	ND	U	1.74	2.44			1
1,2,3,6,7,8-HxCDD	ND	U	2.09	2.44			1
1,2,3,7,8,9-HxCDD	2.61		1.86	2.44	1.42	1.007	1
1,2,3,4,6,7,8-HpCDD	ND	U	2.13	2.44			1
OCDD	ND	U	3.34	4.88			1
2,3,7,8-TCDF	ND	U	2.92	2.92			1
1,2,3,7,8-PeCDF	ND	U	1.84	2.44			1
2,3,4,7,8-PeCDF	ND	U	2.16	2.44			1
1,2,3,4,7,8-HxCDF	ND	U	1.40	2.44			1
1,2,3,6,7,8-HxCDF	ND	U	1.78	2.44			1
1,2,3,7,8,9-HxCDF	ND	U	1.80	2.44			1
2,3,4,6,7,8-HxCDF	ND	U	2.15	2.44			1
1,2,3,4,6,7,8-HpCDF	ND	U	1.77	2.44			1
1,2,3,4,7,8,9-HpCDF	ND	U	1.86	2.44			1
OCDF	7.40**K**		4.52	4.88	0.54	1.005	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183388 Hepa Filter	**Units:**	ng/Kg
Lab Code:	E1801036-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 09:06
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.252g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519079	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519075

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	5.29	5.29			1
Total Penta-Dioxins	ND	U	1.68	2.44			1
Total Hexa-Dioxins	2.61		1.89	2.44	1.42		1
Total Hepta-Dioxins	ND	U	2.13	2.44			1
Total Tetra-Furans	ND	U	2.92	2.92			1
Total Penta-Furans	ND	U	1.98	2.44			1
Total Hexa-Furans	ND	U	1.75	2.44			1
Total Hepta-Furans	ND	U	1.81	2.44			1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183388 Hepa Filter	**Units:**	Percent
Lab Code:	E1801036-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 09:06
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.252g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519079	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519075

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	501.445	25		25-164	0.87	1.019
13C-1,2,3,7,8-PeCDD	2000	475.461	24	Y	25-181	1.63	1.181
13C-1,2,3,4,7,8-HxCDD	2000	503.051	25	Y	32-141	1.24	0.991
13C-1,2,3,6,7,8-HxCDD	2000	432.512	22	Y	28-130	1.31	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	506.781	25		23-140	1.04	1.067
13C-OCDD	4000	848.165	21		17-157	0.88	1.143
13C-2,3,7,8-TCDF	2000	429.130	21	Y	24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	442.195	22	Y	24-185	1.63	1.139
13C-2,3,4,7,8-PeCDF	2000	368.282	18	Y	21-178	1.54	1.171
13C-1,2,3,4,7,8-HxCDF	2000	446.600	22	Y	26-152	0.47	0.971
13C-1,2,3,6,7,8-HxCDF	2000	339.266	17	Y	26-123	0.49	0.974
13C-1,2,3,7,8,9-HxCDF	2000	411.114	21	Y	29-147	0.56	1.008
13C-2,3,4,6,7,8-HxCDF	2000	299.338	15	Y	28-136	0.58	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	325.082	16	KY	28-143	0.55	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	450.544	23	Y	26-138	0.47	1.080
37Cl-2,3,7,8-TCDD	800	297.711	37		35-197	NA	1.020

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183388 Hepa Filter	**Units:**	ng/Kg
Lab Code:	E1801036-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	5.29	5.29	1	1	
1,2,3,7,8-PeCDD	ND	1.68	2.44	1	1	
1,2,3,4,7,8-HxCDD	ND	1.74	2.44	1	0.1	
1,2,3,6,7,8-HxCDD	ND	2.09	2.44	1	0.1	
1,2,3,7,8,9-HxCDD	**2.61**	1.86	2.44	1	0.1	0.261
1,2,3,4,6,7,8-HpCDD	ND	2.13	2.44	1	0.01	
OCDD	ND	3.34	4.88	1	0.0003	
2,3,7,8-TCDF	ND	2.92	2.92	1	0.1	
1,2,3,7,8-PeCDF	ND	1.84	2.44	1	0.03	
2,3,4,7,8-PeCDF	ND	2.16	2.44	1	0.3	
1,2,3,4,7,8-HxCDF	ND	1.40	2.44	1	0.1	
1,2,3,6,7,8-HxCDF	ND	1.78	2.44	1	0.1	
1,2,3,7,8,9-HxCDF	ND	1.80	2.44	1	0.1	
2,3,4,6,7,8-HxCDF	ND	2.15	2.44	1	0.1	
1,2,3,4,6,7,8-HpCDF	ND	1.77	2.44	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	1.86	2.44	1	0.01	
OCDF	**7.40**	4.52	4.88	1	0.0003	0.00222
	Total TEQ					0.263

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183388 Hepa Filter	**Units:**	Percent
Lab Code:	E1801036-006	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	11/26/18 08:30
	2.804g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	99.6		-	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183389 Charcoal Filer	**Units:**	ng/Kg
Lab Code:	E1801036-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/28/18 11:49
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.182g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519034	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519030

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.324	0.491			1
1,2,3,7,8-PeCDD	0.300**JK**		0.117	2.46	2.22	1.000	1
1,2,3,4,7,8-HxCDD	1.33**JK**		0.204	2.46	1.46	1.000	1
1,2,3,6,7,8-HxCDD	28.0		0.223	2.46	1.26	1.000	1
1,2,3,7,8,9-HxCDD	11.8		0.208	2.46	1.17	1.007	1
1,2,3,4,6,7,8-HpCDD	101		0.418	2.46	1.05	1.000	1
OCDD	196		0.231	4.91	0.89	1.000	1
2,3,7,8-TCDF	2.68		0.452	0.491	0.67	1.001	1
1,2,3,7,8-PeCDF	7.37		0.369	2.46	1.38	1.001	1
2,3,4,7,8-PeCDF	5.89		0.426	2.46	1.57	1.000	1
1,2,3,4,7,8-HxCDF	161		0.602	2.46	1.22	1.000	1
1,2,3,6,7,8-HxCDF	15.6**P**		0.684	2.46	1.19	1.000	1
1,2,3,7,8,9-HxCDF	57.6		0.823	2.46	1.23	1.001	1
2,3,4,6,7,8-HxCDF	13.7		0.732	2.46	1.28	1.001	1
1,2,3,4,6,7,8-HpCDF	45.6		0.563	2.46	0.94	1.000	1
1,2,3,4,7,8,9-HpCDF	222		0.637	2.46	1.01	1.000	1
OCDF	42.9		0.375	4.91	0.87	1.005	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183389 Charcoal Filer	**Units:**	ng/Kg
Lab Code:	E1801036-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/28/18 11:49
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.182g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519034	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519030

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	21.5		0.324	0.491	0.79		1
Total Penta-Dioxins	87.5		0.117	2.46	1.50		1
Total Hexa-Dioxins	983		0.211	2.46	1.25		1
Total Hepta-Dioxins	214		0.418	2.46	1.03		1
Total Tetra-Furans	282		0.452	0.491	0.72		1
Total Penta-Furans	632		0.396	2.46	1.51		1
Total Hexa-Furans	628		0.705	2.46	1.21		1
Total Hepta-Furans	449		0.597	2.46	0.94		1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183389 Charcoal Filer	**Units:**	Percent
Lab Code:	E1801036-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/28/18 11:49
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.182g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519034	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519030

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	824.005	41		25-164	0.79	1.020
13C-1,2,3,7,8-PeCDD	2000	928.383	46		25-181	1.58	1.180
13C-1,2,3,4,7,8-HxCDD	2000	905.974	45		32-141	1.35	0.991
13C-1,2,3,6,7,8-HxCDD	2000	842.524	42		28-130	1.19	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1078.880	54		23-140	1.07	1.067
13C-OCDD	4000	1704.843	43		17-157	0.90	1.143
13C-2,3,7,8-TCDF	2000	709.187	35		24-169	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	927.484	46		24-185	1.59	1.138
13C-2,3,4,7,8-PeCDF	2000	817.942	41		21-178	1.55	1.170
13C-1,2,3,4,7,8-HxCDF	2000	882.178	44		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	793.327	40		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	852.050	43		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	814.527	41		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	800.539	40		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	969.118	48		26-138	0.44	1.079
37Cl-2,3,7,8-TCDD	800	479.777	60		35-197	NA	1.020

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183389 Charcoal Filer	**Units:**	ng/Kg
Lab Code:	E1801036-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.324	0.491	1	1	
1,2,3,7,8-PeCDD	**0.300**	0.117	2.46	1	1	0.300
1,2,3,4,7,8-HxCDD	**1.33**	0.204	2.46	1	0.1	0.133
1,2,3,6,7,8-HxCDD	**28.0**	0.223	2.46	1	0.1	2.80
1,2,3,7,8,9-HxCDD	**11.8**	0.208	2.46	1	0.1	1.18
1,2,3,4,6,7,8-HpCDD	**101**	0.418	2.46	1	0.01	1.01
OCDD	**196**	0.231	4.91	1	0.0003	0.0588
2,3,7,8-TCDF	**2.68**	0.452	0.491	1	0.1	0.268
1,2,3,7,8-PeCDF	**7.37**	0.369	2.46	1	0.03	0.221
2,3,4,7,8-PeCDF	**5.89**	0.426	2.46	1	0.3	1.77
1,2,3,4,7,8-HxCDF	**161**	0.602	2.46	1	0.1	16.1
1,2,3,6,7,8-HxCDF	**15.6**	0.684	2.46	1	0.1	1.56
1,2,3,7,8,9-HxCDF	**57.6**	0.823	2.46	1	0.1	5.76
2,3,4,6,7,8-HxCDF	**13.7**	0.732	2.46	1	0.1	1.37
1,2,3,4,6,7,8-HpCDF	**45.6**	0.563	2.46	1	0.01	0.456
1,2,3,4,7,8,9-HpCDF	**222**	0.637	2.46	1	0.01	2.22
OCDF	**42.9**	0.375	4.91	1	0.0003	0.0129
		Total TEQ				35.2

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	11/01/18 00:00
Sample Matrix:	Soil	**Date Received:**	11/12/18 13:00
Sample Name:	183389 Charcoal Filer	**Units:**	Percent
Lab Code:	E1801036-007	**Basis:**	As Received

Total Solids

Analysis Method:	ALS SOP	**Date Analyzed:**	11/26/18 08:30
	2.048g		NA
			E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	MRL	Dilution Factor
Total Solids	98.5		-	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1800467-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 13:29
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615718	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	4.27	10.0			1
1,2,3,7,8-PeCDD	ND	U	1.85	50.0			1
1,2,3,4,7,8-HxCDD	1.14**JK**		0.810	50.0	0.69	1.000	1
1,2,3,6,7,8-HxCDD	1.59**JK**		0.922	50.0	0.84	1.000	1
1,2,3,7,8,9-HxCDD	1.99**J**		0.804	50.0	1.12	1.006	1
1,2,3,4,6,7,8-HpCDD	2.20**JK**		1.17	50.0	1.44	1.001	1
OCDD	28.8**JK**		2.97	100	1.07	1.000	1
2,3,7,8-TCDF	ND	U	2.60	10.0			1
1,2,3,7,8-PeCDF	ND	U	1.97	50.0			1
2,3,4,7,8-PeCDF	ND	U	2.07	50.0			1
1,2,3,4,7,8-HxCDF	ND	U	3.60	50.0			1
1,2,3,6,7,8-HxCDF	ND	U	3.61	50.0			1
1,2,3,7,8,9-HxCDF	ND	U	4.01	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	3.70	50.0			1
1,2,3,4,6,7,8-HpCDF	ND	U	5.41	50.0			1
1,2,3,4,7,8,9-HpCDF	ND	U	6.02	50.0			1
OCDF	22.7**J**		3.47	100	0.80	1.005	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1800467-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 13:29
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615718	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	4.27	10.0			1
Total Penta-Dioxins	ND	U	1.85	50.0			1
Total Hexa-Dioxins	1.99**J**		0.842	50.0	1.12		1
Total Hepta-Dioxins	ND	U	1.17	50.0			1
Total Tetra-Furans	ND	U	2.60	10.0			1
Total Penta-Furans	ND	U	2.02	50.0			1
Total Hexa-Furans	ND	U	3.72	50.0			1
Total Hepta-Furans	ND	U	5.70	50.0			1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1800467-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 13:29
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615718	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	1000	949.516	95		25-164	0.78	1.019
13C-1,2,3,7,8-PeCDD	1000	958.356	96		25-181	1.56	1.168
13C-1,2,3,4,7,8-HxCDD	1000	1122.846	112		32-141	1.26	0.992
13C-1,2,3,6,7,8-HxCDD	1000	1028.676	103		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	1000	1081.689	108		23-140	1.06	1.067
13C-OCDD	2000	1240.779	62		17-157	0.89	1.148
13C-2,3,7,8-TCDF	1000	867.537	87		24-169	0.78	0.995
13C-1,2,3,7,8-PeCDF	1000	934.266	93		24-185	1.59	1.129
13C-2,3,4,7,8-PeCDF	1000	896.332	90		21-178	1.61	1.159
13C-1,2,3,4,7,8-HxCDF	1000	970.380	97		26-152	0.53	0.972
13C-1,2,3,6,7,8-HxCDF	1000	928.302	93		26-123	0.55	0.975
13C-1,2,3,7,8,9-HxCDF	1000	973.549	97		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	1000	981.780	98		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	1000	789.790	79		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	1000	899.253	90		26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	800	362.236	45		35-197	NA	1.020

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800474-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/28/18 11:01
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.074g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519033	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519030

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.238	0.496			1
1,2,3,7,8-PeCDD	ND	U	0.0817	2.48			1
1,2,3,4,7,8-HxCDD	ND	U	0.0719	2.48			1
1,2,3,6,7,8-HxCDD	ND	U	0.0787	2.48			1
1,2,3,7,8,9-HxCDD	ND	U	0.0734	2.48			1
1,2,3,4,6,7,8-HpCDD	0.208**J**		0.0681	2.48	0.94	1.000	1
OCDD	1.64**J**		0.163	4.96	0.85	1.000	1
2,3,7,8-TCDF	ND	U	0.188	0.496			1
1,2,3,7,8-PeCDF	ND	U	0.169	2.48			1
2,3,4,7,8-PeCDF	ND	U	0.171	2.48			1
1,2,3,4,7,8-HxCDF	ND	U	0.0611	2.48			1
1,2,3,6,7,8-HxCDF	ND	U	0.0578	2.48			1
1,2,3,7,8,9-HxCDF	ND	U	0.0747	2.48			1
2,3,4,6,7,8-HxCDF	0.0849**JK**		0.0643	2.48	1.47	1.000	1
1,2,3,4,6,7,8-HpCDF	0.0610**JK**		0.0598	2.48	0.73	1.001	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0704	2.48			1
OCDF	0.412**J**		0.216	4.96	0.83	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1800474-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/28/18 11:01
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.074g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519033	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519030

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.238	0.496			1
Total Penta-Dioxins	ND	U	0.0817	2.48			1
Total Hexa-Dioxins	ND	U	0.0746	2.48			1
Total Hepta-Dioxins	0.208**J**		0.0681	2.48	0.94		1
Total Tetra-Furans	ND	U	0.188	0.496			1
Total Penta-Furans	ND	U	0.170	2.48			1
Total Hexa-Furans	ND	U	0.0640	2.48			1
Total Hepta-Furans	ND	U	0.0649	2.48			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1800474-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/28/18 11:01
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.074g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519033	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519030

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	908.086	45		25-164	0.79	1.020
13C-1,2,3,7,8-PeCDD	2000	1123.282	56		25-181	1.59	1.180
13C-1,2,3,4,7,8-HxCDD	2000	1099.589	55		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1016.137	51		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1155.556	58		23-140	1.06	1.066
13C-OCDD	4000	1551.016	39		17-157	0.89	1.142
13C-2,3,7,8-TCDF	2000	809.989	40		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1018.672	51		24-185	1.58	1.138
13C-2,3,4,7,8-PeCDF	2000	994.081	50		21-178	1.57	1.170
13C-1,2,3,4,7,8-HxCDF	2000	927.586	46		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	954.946	48		26-123	0.51	0.974
13C-1,2,3,7,8,9-HxCDF	2000	954.948	48		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	959.115	48		28-136	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	832.542	42		28-143	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1025.782	51		26-138	0.45	1.079
37Cl-2,3,7,8-TCDD	800	370.015	46		35-197	NA	1.020

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ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
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Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Analyzed:**	11/27/18
Sample Matrix:	Wipe	**Date Extracted:**	11/14/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	pg
Prep Method:	Method	**Basis:**	As Received
		Analysis Lot:	616654

	Lab Control Sample EQ1800467-02			Duplicate Lab Control Sample EQ1800467-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	1400	2000	70	1450	2000	73	70-140	4	50
1,2,3,4,7,8-HxCDD	1720	2000	86	1740	2000	87	70-164	<1	50
1,2,3,6,7,8-HxCDD	1840	2000	92	1920	2000	96	76-134	4	50
1,2,3,7,8,9-HxCDD	1730	2000	86	1910	2000	95	64-162	10	50
1,2,3,7,8-PeCDD	1860	2000	93	1910	2000	96	70-142	3	50
2,3,7,8-TCDD	374	400	94	359	400	90	67-158	4	50
OCDD	3430	4000	86	3570	4000	89	78-144	4	50
1,2,3,4,6,7,8-HpCDF	1670	2000	84	1750	2000	87	82-122	4	50
1,2,3,4,7,8,9-HpCDF	1660	2000	83	1690	2000	84	78-138	2	50
1,2,3,4,7,8-HxCDF	1630	2000	81	1720	2000	86	72-134	6	50
1,2,3,6,7,8-HxCDF	1690	2000	84	1750	2000	87	84-130	3	50
1,2,3,7,8,9-HxCDF	1640	2000	82	1730	2000	87	78-130	5	50
1,2,3,7,8-PeCDF	1600	2000	80	1660	2000	83	80-134	4	50
2,3,4,6,7,8-HxCDF	1690	2000	84	1740	2000	87	70-156	3	50
2,3,4,7,8-PeCDF	1720	2000	86	1800	2000	90	68-160	4	50
2,3,7,8-TCDF	361	400	90	359	400	90	75-158	<1	50
OCDF	3470	4000	87	3780	4000	94	63-170	9	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1800467-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 20:53
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615727	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	374		4.86	10.0	0.81	1.001	1
1,2,3,7,8-PeCDD	1860		1.72	50.0	1.58	1.000	1
1,2,3,4,7,8-HxCDD	1720		0.840	50.0	1.23	1.000	1
1,2,3,6,7,8-HxCDD	1840		0.946	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	1730		0.830	50.0	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	1400		1.08	50.0	1.06	1.000	1
OCDD	3430		3.05	100	0.90	1.000	1
2,3,7,8-TCDF	361		3.01	10.0	0.76	1.001	1
1,2,3,7,8-PeCDF	1600		2.11	50.0	1.56	1.001	1
2,3,4,7,8-PeCDF	1720		2.09	50.0	1.55	1.000	1
1,2,3,4,7,8-HxCDF	1630		1.78	50.0	1.24	1.000	1
1,2,3,6,7,8-HxCDF	1690		1.82	50.0	1.24	1.000	1
1,2,3,7,8,9-HxCDF	1640		2.05	50.0	1.22	1.000	1
2,3,4,6,7,8-HxCDF	1690		1.82	50.0	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	1670		3.07	50.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	1660		3.96	50.0	1.06	1.000	1
OCDF	3470		3.08	100	0.91	1.006	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1800467-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 20:53
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615727	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	374		4.86	10.0	0.81		1
Total Penta-Dioxins	1870		1.72	50.0	1.58		1
Total Hexa-Dioxins	5290		0.870	50.0	1.23		1
Total Hepta-Dioxins	1400		1.08	50.0	1.06		1
Total Tetra-Furans	370		3.01	10.0	0.80		1
Total Penta-Furans	3360		2.10	50.0	1.59		1
Total Hexa-Furans	6640		1.86	50.0	1.24		1
Total Hepta-Furans	3330		3.49	50.0	1.03		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800467-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 20:53
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615727	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	1000	660.335	66		25-164	0.78	1.019
13C-1,2,3,7,8-PeCDD	1000	920.408	92		25-181	1.56	1.168
13C-1,2,3,4,7,8-HxCDD	1000	1054.347	105		32-141	1.34	0.992
13C-1,2,3,6,7,8-HxCDD	1000	980.692	98		28-130	1.21	0.993
13C-1,2,3,4,6,7,8-HpCDD	1000	1158.013	116		23-140	1.04	1.067
13C-OCDD	2000	1607.740	80		17-157	0.91	1.147
13C-2,3,7,8-TCDF	1000	610.393	61		24-169	0.79	0.994
13C-1,2,3,7,8-PeCDF	1000	835.498	84		24-185	1.60	1.129
13C-2,3,4,7,8-PeCDF	1000	848.533	85		21-178	1.60	1.159
13C-1,2,3,4,7,8-HxCDF	1000	925.804	93		26-152	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	1000	866.870	87		26-123	0.52	0.975
13C-1,2,3,7,8,9-HxCDF	1000	936.187	94		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	1000	916.446	92		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	1000	846.066	85		28-143	0.45	1.041
13C-1,2,3,4,7,8,9-HpCDF	1000	877.956	88		26-138	0.46	1.081
37Cl-2,3,7,8-TCDD	800	259.109	32	**Y**	35-197	NA	1.019

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1800467-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 21:43
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615728	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	359		5.02	10.0	0.75	1.001	1
1,2,3,7,8-PeCDD	1910		3.05	50.0	1.53	1.000	1
1,2,3,4,7,8-HxCDD	1740		1.59	50.0	1.29	1.000	1
1,2,3,6,7,8-HxCDD	1920		1.85	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	1910		1.59	50.0	1.26	1.007	1
1,2,3,4,6,7,8-HpCDD	1450		1.43	50.0	1.04	1.000	1
OCDD	3570		1.97	100	0.89	1.000	1
2,3,7,8-TCDF	359		3.37	10.0	0.79	1.001	1
1,2,3,7,8-PeCDF	1660		3.07	50.0	1.59	1.000	1
2,3,4,7,8-PeCDF	1800		3.27	50.0	1.57	1.000	1
1,2,3,4,7,8-HxCDF	1720		1.16	50.0	1.26	1.000	1
1,2,3,6,7,8-HxCDF	1750		1.18	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDF	1730		1.22	50.0	1.23	1.000	1
2,3,4,6,7,8-HxCDF	1740		1.10	50.0	1.24	1.000	1
1,2,3,4,6,7,8-HpCDF	1750		2.93	50.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	1690		3.55	50.0	1.02	1.000	1
OCDF	3780		2.74	100	0.88	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1800467-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 21:43
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615728	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	359		5.02	10.0	0.75		1
Total Penta-Dioxins	1910		3.05	50.0	1.53		1
Total Hexa-Dioxins	5560		1.67	50.0	1.29		1
Total Hepta-Dioxins	1450		1.43	50.0	1.04		1
Total Tetra-Furans	359		3.37	10.0	0.79		1
Total Penta-Furans	3480		3.17	50.0	1.59		1
Total Hexa-Furans	6950		1.16	50.0	1.17		1
Total Hepta-Furans	3440		3.23	50.0	1.03		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800467-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/27/18 21:43
Prep Method:	Method	**Date Extracted:**	11/14/18
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P615728	**Blank File Name:**	P615718
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P615714

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	1000	548.649	55		25-164	0.80	1.019
13C-1,2,3,7,8-PeCDD	1000	691.869	69		25-181	1.55	1.168
13C-1,2,3,4,7,8-HxCDD	1000	1005.111	101		32-141	1.28	0.992
13C-1,2,3,6,7,8-HxCDD	1000	918.899	92		28-130	1.31	0.994
13C-1,2,3,4,6,7,8-HpCDD	1000	1220.514	122		23-140	1.06	1.068
13C-OCDD	2000	1766.243	88		17-157	0.91	1.148
13C-2,3,7,8-TCDF	1000	497.659	50		24-169	0.80	0.994
13C-1,2,3,7,8-PeCDF	1000	659.461	66		24-185	1.58	1.129
13C-2,3,4,7,8-PeCDF	1000	652.101	65		21-178	1.60	1.159
13C-1,2,3,4,7,8-HxCDF	1000	839.434	84		26-152	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	1000	816.265	82		26-123	0.53	0.975
13C-1,2,3,7,8,9-HxCDF	1000	924.236	92		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	1000	923.073	92		28-136	0.51	0.989
13C-1,2,3,4,6,7,8-HpCDF	1000	889.156	89		28-143	0.45	1.041
13C-1,2,3,4,7,8,9-HpCDF	1000	958.622	96		26-138	0.45	1.081
37Cl-2,3,7,8-TCDD	800	222.895	28	**Y**	35-197	NA	1.019

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Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Analyzed:**	11/30/18
Sample Matrix:	Soil	**Date Extracted:**	11/15/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	617050

	Lab Control Sample EQ1800474-02			Duplicate Lab Control Sample EQ1800474-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	73.9	96.9	76	73.2	98.0	75	70-140	<1	50
1,2,3,4,7,8-HxCDD	86.9	96.9	90	87.7	98.0	89	70-164	<1	50
1,2,3,6,7,8-HxCDD	94.1	96.9	97	95.0	98.0	97	76-134	<1	50
1,2,3,7,8,9-HxCDD	94.5	96.9	98	86.8	98.0	89	64-162	8	50
1,2,3,7,8-PeCDD	92.4	96.9	95	93.8	98.0	96	70-142	1	50
2,3,7,8-TCDD	17.5	19.4	90	18.3	19.6	94	67-158	5	50
OCDD	175	194	91	185	196	94	78-144	5	50
1,2,3,4,6,7,8-HpCDF	95.5	96.9	99	97.1	98.0	99	82-122	2	50
1,2,3,4,7,8,9-HpCDF	95.1	96.9	98	95.2	98.0	97	78-138	<1	50
1,2,3,4,7,8-HxCDF	94.9	96.9	98	94.8	98.0	97	72-134	<1	50
1,2,3,6,7,8-HxCDF	94.8	96.9	98	95.0	98.0	97	84-130	<1	50
1,2,3,7,8,9-HxCDF	91.4	96.9	94	94.1	98.0	96	78-130	3	50
1,2,3,7,8-PeCDF	87.3	96.9	90	88.5	98.0	90	80-134	1	50
2,3,4,6,7,8-HxCDF	93.5	96.9	96	94.6	98.0	96	70-156	1	50
2,3,4,7,8-PeCDF	97.1	96.9	100	98.3	98.0	100	68-160	1	50
2,3,7,8-TCDF	18.2	19.4	94	18.5	19.6	94	75-158	2	50
OCDF	191	194	98	214	196	109	63-170	11	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800474-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 02:15
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.323g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519071	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	17.5		0.120	0.484	0.76	1.001	1
1,2,3,7,8-PeCDD	92.4		0.0779	2.42	1.59	1.000	1
1,2,3,4,7,8-HxCDD	86.9		0.0212	2.42	1.27	1.000	1
1,2,3,6,7,8-HxCDD	94.1		0.0245	2.42	1.24	1.000	1
1,2,3,7,8,9-HxCDD	94.5		0.0222	2.42	1.28	1.006	1
1,2,3,4,6,7,8-HpCDD	73.9		0.0219	2.42	1.04	1.000	1
OCDD	175		0.0381	4.84	0.87	1.000	1
2,3,7,8-TCDF	18.2		0.0795	0.484	0.77	1.001	1
1,2,3,7,8-PeCDF	87.3		0.0588	2.42	1.55	1.001	1
2,3,4,7,8-PeCDF	97.1		0.0639	2.42	1.54	1.000	1
1,2,3,4,7,8-HxCDF	94.9		0.0263	2.42	1.24	1.000	1
1,2,3,6,7,8-HxCDF	94.8		0.0262	2.42	1.22	1.000	1
1,2,3,7,8,9-HxCDF	91.4		0.0296	2.42	1.24	1.000	1
2,3,4,6,7,8-HxCDF	93.5		0.0266	2.42	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	95.5		0.103	2.42	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	95.1		0.133	2.42	1.05	1.000	1
OCDF	191		0.0491	4.84	0.89	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800474-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 02:15
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.323g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519071	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	17.5		0.120	0.484	0.76		1
Total Penta-Dioxins	92.4		0.0779	2.42	1.59		1
Total Hexa-Dioxins	275		0.0225	2.42	1.27		1
Total Hepta-Dioxins	73.9		0.0219	2.42	1.04		1
Total Tetra-Furans	19.0		0.0795	0.484	0.78		1
Total Penta-Furans	188		0.0613	2.42	1.36		1
Total Hexa-Furans	375		0.0271	2.42	1.24		1
Total Hepta-Furans	191		0.117	2.42	1.03		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800474-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 02:15
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.323g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519071	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1011.823	51		25-164	0.79	1.019
13C-1,2,3,7,8-PeCDD	2000	1348.034	67		25-181	1.61	1.181
13C-1,2,3,4,7,8-HxCDD	2000	1182.444	59		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1067.116	53		28-130	1.29	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1406.766	70		23-140	1.06	1.067
13C-OCDD	4000	2332.682	58		17-157	0.91	1.143
13C-2,3,7,8-TCDF	2000	863.917	43		24-169	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1219.017	61		24-185	1.59	1.139
13C-2,3,4,7,8-PeCDF	2000	1160.493	58		21-178	1.60	1.171
13C-1,2,3,4,7,8-HxCDF	2000	976.251	49		26-152	0.53	0.971
13C-1,2,3,6,7,8-HxCDF	2000	957.803	48		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1062.749	53		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1024.910	51		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1013.102	51		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1128.879	56		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	423.012	53		35-197	NA	1.020

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800474-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 03:03
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.201g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519072	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	18.3		0.285	0.490	0.78	1.001	1
1,2,3,7,8-PeCDD	93.8		0.0983	2.45	1.54	1.000	1
1,2,3,4,7,8-HxCDD	87.7		0.0436	2.45	1.24	1.000	1
1,2,3,6,7,8-HxCDD	95.0		0.0484	2.45	1.28	1.000	1
1,2,3,7,8,9-HxCDD	86.8		0.0448	2.45	1.28	1.006	1
1,2,3,4,6,7,8-HpCDD	73.2		0.0289	2.45	1.07	1.000	1
OCDD	185		0.0673	4.90	0.88	1.000	1
2,3,7,8-TCDF	18.5		0.102	0.490	0.82	1.001	1
1,2,3,7,8-PeCDF	88.5		0.0630	2.45	1.56	1.000	1
2,3,4,7,8-PeCDF	98.3		0.0696	2.45	1.55	1.000	1
1,2,3,4,7,8-HxCDF	94.8		0.0496	2.45	1.23	1.000	1
1,2,3,6,7,8-HxCDF	95.0		0.0487	2.45	1.23	1.000	1
1,2,3,7,8,9-HxCDF	94.1		0.0598	2.45	1.25	1.000	1
2,3,4,6,7,8-HxCDF	94.6		0.0550	2.45	1.24	1.000	1
1,2,3,4,6,7,8-HpCDF	97.1		0.196	2.45	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	95.2		0.230	2.45	1.02	1.000	1
OCDF	214		0.0896	4.90	0.89	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1800474-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 03:03
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.201g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519072	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	18.3		0.285	0.490	0.78		1
Total Penta-Dioxins	94.4		0.0983	2.45	1.54		1
Total Hexa-Dioxins	269		0.0455	2.45	1.24		1
Total Hepta-Dioxins	73.2		0.0289	2.45	1.07		1
Total Tetra-Furans	19.6		0.102	0.490	0.70		1
Total Penta-Furans	190		0.0661	2.45	1.36		1
Total Hexa-Furans	378		0.0530	2.45	1.23		1
Total Hepta-Furans	192		0.212	2.45	1.03		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1801036
Project:	HS18110258	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1800474-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	11/30/18 03:03
Prep Method:	Method Soxhlet	**Date Extracted:**	11/15/18
Sample Amount:	10.201g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P519072	**Blank File Name:**	P519033
ICAL Date:	01/24/18	**Cal Ver. File Name:**	P519061

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	749.384	37		25-164	0.78	1.020
13C-1,2,3,7,8-PeCDD	2000	1142.451	57		25-181	1.57	1.182
13C-1,2,3,4,7,8-HxCDD	2000	1060.612	53		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	953.248	48		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1214.226	61		23-140	1.06	1.067
13C-OCDD	4000	1721.865	43		17-157	0.91	1.143
13C-2,3,7,8-TCDF	2000	633.966	32		24-169	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1015.170	51		24-185	1.58	1.140
13C-2,3,4,7,8-PeCDF	2000	950.491	48		21-178	1.61	1.172
13C-1,2,3,4,7,8-HxCDF	2000	850.928	43		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	836.147	42		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	873.732	44		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	810.986	41		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	876.783	44		28-143	0.46	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1023.921	51		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	316.263	40		35-197	NA	1.021

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Chain of Custody Forms (COC ID: 188534, 188533) dated January 14, 2019

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Chain of Custody Form

ATTACHMENT 1

Page 1 of 1

COC ID: 188534

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Fleming Park S.V.E.C.	A	PCB_Wipe_Total (8082 PCBs)
Work Order		Project Number	22437	B	1613B Dioxin/Furans Full List
Company Name	Environmental Health & Engineering	Bill To Company	EHE, Inc	C	1668A WHO12 PCB Congeners
Send Report To	Kevin M. Coghlan	Invoice Attn	Kevin Coghlan	D	PCB Arochlor Analysis - Bulk
Address	180 Wells Avenue, Suite 200,	Address	180 Wells Ave Suite 200	E	
				F	
City/State/Zip	Newton, MA 02459	City/State/Zip	Newton, MA 02459	G	
Phone	(781) 24-743	Phone	1-800-525-5343	H	
Fax		Fax		I	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	Kcoghlan@eheinc.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	187070 Cooper Sample	11/4/19	4:30PM	Bulk	NA	1				✓							
2	187071					1		✓									✓
3	187072					1				✓							
4	187073					1		✓									✓
5	187074					1				✓							
6	187075					1		✓									✓
7	187076					1				✓							
8	187077					1		✓									✓
9	187078					1				✓							
10	187079					1		✓									✓

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
	FedEx-Ground	☒ Other 7 Day ☒ Normal ☐ 5 Wk Days ☐ 1 Wk Days ☐ 24 Hour	Friday, Dec 11, 2019

Relinquished by:	Date:	Time:	Received by:
Kevin Coghlan	11/4/2019		FedEx
Relinquished by:	Date:	Time:	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & PUF Analysis

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
		☒ Level II Std QC ☐ TRRP Checklist ☐ Level III Std QC/Raw Data ☐ TRRP Level IV ☐ Level IV SW846/CLP ☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

ATTACHMENT

Page 2 of 2

COC ID: 188533

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Fenway Park Lab Det.	A	PCB_Wipe_Total (8082 PCBs)
Work Order		Project Number	22137	B	1613B DioxinFurans Full List
Company Name	Environmental Health & Engineerin	Bill To Company		C	1668A WHO12 PCB Congeners
Send Report To	Kevin M. Coglan	Invoice Attn		D	PCB Analysis - Air/Air - Bulk
Address	180 Wells Avenue, Suite 200,	Address		E	
				F	
City/State/Zip	Newton, MA 02459	City/State/Zip		G	
Phone	(781) 24-7.43	Phone		H	
Fax		Fax		I	
e-Mail Address	kcoglan@ehsinc.com	e-Mail Address	KPaylan@ehsinc.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	187080 CARPET SAMPLE	1/14/19	4:30pm	BULK	N.A.	1		✓		✓							
2	187081					1		✓		✓							X
3	187082					1		✓		✓							
4	187083					1		✓		✓							X
5	187084					1		✓		✓							
6	187087					1		✓									X
7	187086 MOLD BLANK					1		✓		✓							X
8																	
9																	
10																	

Sampler(s) Please Print & Sign | Shipment Method: Fedex-Ground | Required Turnaround Time: (Check Box) ☐ Other ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 1 Wk Days ☐ 24 Hour | Results Due Date: Friday, Jan 11, 2019

Relinquished by:	Date:	Time:	Received by:
[signature]	1/14/19		[signature]
Relinquished by:	Date:	Time:	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & PUF Analysis

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS Laboratory Report (Work Order HS19010635) dated February 13, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

February 13, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19010635**

Laboratory Results for: **Friedman Rubin S.V.E.C.**

Dear Kevin,

ALS Environmental received 17 sample(s) on Jan 15, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Corey Grandits
Project Manager

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Work Order: HS19010635

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19010635-01	187070 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-02	187071 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-03	187072 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-04	187073 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-05	187074 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-06	187075 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-07	187076 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-08	187077 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-09	187078 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-10	187079 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-11	187080 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-12	187081 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-13	187082 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-14	187083 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-15	187084 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19010635-16	187085 Carpet Sample	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☑
HS19010635-17	187086 Media Blank	Bulk		14-Jan-2019 16:30	15-Jan-2019 08:50	☐

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Work Order: HS19010635

CASE NARRATIVE

Work Order Comments

- The analyses for Dioxins/Furans and PCB Congeners were subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

ECD Organics by Method SW8082

Batch ID: 136700

Sample ID: 187070 Carpet Sample (HS19010635-01)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187072 Carpet Sample (HS19010635-03)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187074 Carpet Sample (HS19010635-05)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187076 Carpet Sample (HS19010635-07)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187078 Carpet Sample (HS19010635-09)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187080 Carpet Sample (HS19010635-11)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187082 Carpet Sample (HS19010635-13)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187084 Carpet Sample (HS19010635-15)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: HS19010685-02MS

- MS and MSD are for an unrelated sample

Batch ID: 137511

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Sample ID: 187070 Carpet Sample
Collection Date: 14-Jan-2019 16:30

ANALYTICAL REPORT
WorkOrder:HS19010635
Lab ID:HS19010635-01
Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		2500000	10000000	ug/Kg	100000	17-Jan-2019 16:27
Aroclor 1221	U		3400000	10000000	ug/Kg	100000	17-Jan-2019 16:27
Aroclor 1232	U		2700000	10000000	ug/Kg	100000	17-Jan-2019 16:27
Aroclor 1242	**140,000,000**		**3500000**	**10000000**	**ug/Kg**	100000	17-Jan-2019 16:27
Aroclor 1248	U		3500000	10000000	ug/Kg	100000	17-Jan-2019 16:27
Aroclor 1254	U		2800000	10000000	ug/Kg	100000	17-Jan-2019 16:27
Aroclor 1260	U		2400000	10000000	ug/Kg	100000	17-Jan-2019 16:27
PCBs (Total)	**140,000,000**		**2400000**	**10000000**	**ug/Kg**	100000	17-Jan-2019 16:27
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*100000*	*17-Jan-2019 16:27*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*100000*	*17-Jan-2019 16:27*
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	13-Feb-2019 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Sample ID: 187072 Carpet Sample
Collection Date: 14-Jan-2019 16:30

ANALYTICAL REPORT
WorkOrder:HS19010635
Lab ID:HS19010635-03
Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		2400	9300	ug/Kg	100	17-Jan-2019 19:54
Aroclor 1221	U		3100	9300	ug/Kg	100	17-Jan-2019 19:54
Aroclor 1232	U		2500	9300	ug/Kg	100	17-Jan-2019 19:54
Aroclor 1242	**45,000**		**3300**	**9300**	**ug/Kg**	100	17-Jan-2019 19:54
Aroclor 1248	U		3300	9300	ug/Kg	100	17-Jan-2019 19:54
Aroclor 1254	U		2600	9300	ug/Kg	100	17-Jan-2019 19:54
Aroclor 1260	U		2200	9300	ug/Kg	100	17-Jan-2019 19:54
PCBs (Total)	**45,000**		**2200**	**9300**	**ug/Kg**	100	17-Jan-2019 19:54
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*100*	*17-Jan-2019 19:54*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*100*	*17-Jan-2019 19:54*
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	13-Feb-2019 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Sample ID: 187074 Carpet Sample
Collection Date: 14-Jan-2019 16:30

ANALYTICAL REPORT
WorkOrder:HS19010635
Lab ID:HS19010635-05
Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		210000	850000	ug/Kg	10000	18-Jan-2019 10:15
Aroclor 1221	U		280000	850000	ug/Kg	10000	18-Jan-2019 10:15
Aroclor 1232	U		230000	850000	ug/Kg	10000	18-Jan-2019 10:15
Aroclor 1242	**1,900,000**		**300000**	**850000**	**ug/Kg**	10000	18-Jan-2019 10:15
Aroclor 1248	U		300000	850000	ug/Kg	10000	18-Jan-2019 10:15
Aroclor 1254	U		240000	850000	ug/Kg	10000	18-Jan-2019 10:15
Aroclor 1260	U		200000	850000	ug/Kg	10000	18-Jan-2019 10:15
PCBs (Total)	**1,900,000**		**200000**	**850000**	**ug/Kg**	10000	18-Jan-2019 10:15
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*10000*	*18-Jan-2019 10:15*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*10000*	*18-Jan-2019 10:15*
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	13-Feb-2019 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Sample ID: 187076 Carpet Sample
Collection Date: 14-Jan-2019 16:30

ANALYTICAL REPORT
WorkOrder:HS19010635
Lab ID:HS19010635-07
Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		2500	9800	ug/Kg	100	17-Jan-2019 20:26
Aroclor 1221	U		3300	9800	ug/Kg	100	17-Jan-2019 20:26
Aroclor 1232	U		2600	9800	ug/Kg	100	17-Jan-2019 20:26
Aroclor 1242	**57,000**		**3500**	**9800**	**ug/Kg**	100	17-Jan-2019 20:26
Aroclor 1248	U		3500	9800	ug/Kg	100	17-Jan-2019 20:26
Aroclor 1254	U		2800	9800	ug/Kg	100	17-Jan-2019 20:26
Aroclor 1260	U		2300	9800	ug/Kg	100	17-Jan-2019 20:26
PCBs (Total)	**57,000**		**2300**	**9800**	**ug/Kg**	100	17-Jan-2019 20:26
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*100*	*17-Jan-2019 20:26*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*100*	*17-Jan-2019 20:26*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Sample ID: 187078 Carpet Sample
Collection Date: 14-Jan-2019 16:30

ANALYTICAL REPORT
WorkOrder:HS19010635
Lab ID:HS19010635-09
Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		24000	96000	ug/Kg	1000	18-Jan-2019 09:57
Aroclor 1221	U		32000	96000	ug/Kg	1000	18-Jan-2019 09:57
Aroclor 1232	U		26000	96000	ug/Kg	1000	18-Jan-2019 09:57
Aroclor 1242	**320,000**		**34000**	**96000**	**ug/Kg**	1000	18-Jan-2019 09:57
Aroclor 1248	U		34000	96000	ug/Kg	1000	18-Jan-2019 09:57
Aroclor 1254	U		27000	96000	ug/Kg	1000	18-Jan-2019 09:57
Aroclor 1260	U		23000	96000	ug/Kg	1000	18-Jan-2019 09:57
PCBs (Total)	**320,000**		**23000**	**96000**	**ug/Kg**	1000	18-Jan-2019 09:57
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*1000*	*18-Jan-2019 09:57*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*1000*	*18-Jan-2019 09:57*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**	
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19010635	
Sample ID:	187080 Carpet Sample	Lab ID:HS19010635-11	
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk	

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		2500	9800	ug/Kg	100	17-Jan-2019 20:57
Aroclor 1221	U		3300	9800	ug/Kg	100	17-Jan-2019 20:57
Aroclor 1232	U		2600	9800	ug/Kg	100	17-Jan-2019 20:57
Aroclor 1242	**32,000**		**3500**	**9800**	**ug/Kg**	100	17-Jan-2019 20:57
Aroclor 1248	U		3500	9800	ug/Kg	100	17-Jan-2019 20:57
Aroclor 1254	U		2800	9800	ug/Kg	100	17-Jan-2019 20:57
Aroclor 1260	U		2300	9800	ug/Kg	100	17-Jan-2019 20:57
PCBs (Total)	**32,000**		**2300**	**9800**	**ug/Kg**	100	17-Jan-2019 20:57
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*100*	*17-Jan-2019 20:57*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*100*	*17-Jan-2019 20:57*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**	
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19010635	
Sample ID:	187082 Carpet Sample	Lab ID:HS19010635-13	
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk	

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		2300	9200	ug/Kg	100	17-Jan-2019 21:13
Aroclor 1221	U		3100	9200	ug/Kg	100	17-Jan-2019 21:13
Aroclor 1232	U		2500	9200	ug/Kg	100	17-Jan-2019 21:13
Aroclor 1242	**53,000**		**3300**	**9200**	**ug/Kg**	100	17-Jan-2019 21:13
Aroclor 1248	U		3300	9200	ug/Kg	100	17-Jan-2019 21:13
Aroclor 1254	U		2600	9200	ug/Kg	100	17-Jan-2019 21:13
Aroclor 1260	U		2200	9200	ug/Kg	100	17-Jan-2019 21:13
PCBs (Total)	**53,000**		**2200**	**9200**	**ug/Kg**	100	17-Jan-2019 21:13
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*100*	*17-Jan-2019 21:13*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*100*	*17-Jan-2019 21:13*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19010635
Sample ID:	187084 Carpet Sample	Lab ID:HS19010635-15
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 16-Jan-2019		Analyst: JLJ
Aroclor 1016	U		2200	8700	ug/Kg	100	17-Jan-2019 21:29
Aroclor 1221	U		2900	8700	ug/Kg	100	17-Jan-2019 21:29
Aroclor 1232	U		2400	8700	ug/Kg	100	17-Jan-2019 21:29
Aroclor 1242	**45,000**		**3100**	**8700**	**ug/Kg**	100	17-Jan-2019 21:29
Aroclor 1248	U		3100	8700	ug/Kg	100	17-Jan-2019 21:29
Aroclor 1254	U		2500	8700	ug/Kg	100	17-Jan-2019 21:29
Aroclor 1260	U		2100	8700	ug/Kg	100	17-Jan-2019 21:29
PCBs (Total)	**45,000**		**2100**	**8700**	**ug/Kg**	100	17-Jan-2019 21:29
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*100*	*17-Jan-2019 21:29*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*100*	*17-Jan-2019 21:29*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19010635
Sample ID:	187086 Media Blank	Lab ID:HS19010635-17
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 07-Feb-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	07-Feb-2019 23:39
Aroclor 1221		U	500	500	ng, Total	1	07-Feb-2019 23:39
Aroclor 1232		U	500	500	ng, Total	1	07-Feb-2019 23:39
Aroclor 1242		U	500	500	ng, Total	1	07-Feb-2019 23:39
Aroclor 1248		U	500	500	ng, Total	1	07-Feb-2019 23:39
Aroclor 1254		U	500	500	ng, Total	1	07-Feb-2019 23:39
Aroclor 1260		U	500	500	ng, Total	1	07-Feb-2019 23:39
PCBs (Total)		U	500	500	ng, Total	1	07-Feb-2019 23:39
Surr: Decachlorobiphenyl	*81.6*			*30-150*	*%REC*	*1*	*07-Feb-2019 23:39*
Surr: Tetrachloro-m-xylene	*94.0*			*30-150*	*%REC*	*1*	*07-Feb-2019 23:39*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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WEIGHT LOG

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: HS19010635

Batch ID: 136700 **Method:** PCBS BY SW8082A **Prep:** PCBPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19010635-01	1	5.01	10 (mL)	1.996
HS19010635-03	1	5.36	10 (mL)	1.866
HS19010635-05	1	5.92	10 (mL)	1.689
HS19010635-07	1	5.12	10 (mL)	1.953
HS19010635-09	1	5.23	10 (mL)	1.912
HS19010635-11	1	5.11	10 (mL)	1.957
HS19010635-13	1	5.42	10 (mL)	1.845
HS19010635-15	1	5.74	10 (mL)	1.742

Batch ID: 137511 **Method:** PCBS BY SW8082A **Prep:** PCBWIPEPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19010635-17	1	1	10 (mL)	10

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: HS19010635

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 136700	**Test Name :** PCBS BY SW8082A			**Matrix:** Bulk		
HS19010635-01	187070 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	17 Jan 2019 16:27	100000
HS19010635-03	187072 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	17 Jan 2019 19:54	100
HS19010635-05	187074 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	18 Jan 2019 10:15	10000
HS19010635-07	187076 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	17 Jan 2019 20:26	100
HS19010635-09	187078 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	18 Jan 2019 09:57	1000
HS19010635-11	187080 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	17 Jan 2019 20:57	100
HS19010635-13	187082 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	17 Jan 2019 21:13	100
HS19010635-15	187084 Carpet Sample	14 Jan 2019 16:30		16 Jan 2019 15:48	17 Jan 2019 21:29	100
Batch ID 137511	**Test Name :** PCBS BY SW8082A			**Matrix:** Bulk		
HS19010635-17	187086 Media Blank	14 Jan 2019 16:30		07 Feb 2019 12:28	07 Feb 2019 23:39	1
Batch ID R332801	**Test Name :** SUBCONTRACT ANALYSIS - PCB CONGENERS			**Matrix:** Bulk		
HS19010635-01	187070 Carpet Sample	14 Jan 2019 16:30			13 Feb 2019 15:02	1
HS19010635-03	187072 Carpet Sample	14 Jan 2019 16:30			13 Feb 2019 15:02	1
HS19010635-05	187074 Carpet Sample	14 Jan 2019 16:30			13 Feb 2019 15:02	1

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: HS19010635

QC BATCH REPORT

Batch ID: 136700 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-136700** Units: **ug/Kg** Analysis Date: **17-Jan-2019 09:58**
Client ID: Run ID: **ECD_7_331201** SeqNo: **4912182** PrepDate: **16-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	17								
Aroclor 1221	U	17								
Aroclor 1232	U	17								
Aroclor 1242	U	17								
Aroclor 1248	U	17								
Aroclor 1254	U	17								
Aroclor 1260	U	17								
PCBs (Total)	U	17								
Surr: Decachlorobiphenyl	*5.652*	*1.6*	*6.667*	*0*	*84.8*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*5.579*	*1.6*	*6.667*	*0*	*83.7*	*50 - 140*				

LCS Sample ID: **LCS-136700** Units: **ug/Kg** Analysis Date: **17-Jan-2019 10:13**
Client ID: Run ID: **ECD_7_331201** SeqNo: **4912183** PrepDate: **16-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	132	17	166.7	0	79.2	53 - 135				
Aroclor 1260	127	17	166.7	0	76.2	54 - 137				
Surr: Decachlorobiphenyl	*5.741*	*1.6*	*6.667*	*0*	*86.1*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*5.52*	*1.6*	*6.667*	*0*	*82.8*	*50 - 140*				

MS Sample ID: **HS19010685-02MS** Units: **ug/Kg** Analysis Date: **17-Jan-2019 12:05**
Client ID: Run ID: **ECD_7_331201** SeqNo: **4912186** PrepDate: **16-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	144.7	17	166.6	0	86.8	53 - 135				
Aroclor 1260	2672	17	166.6	3980	-785	54 - 137				SEO
Surr: Decachlorobiphenyl	*5.925*	*1.6*	*6.665*	*0*	*88.9*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*5.782*	*1.6*	*6.665*	*0*	*86.8*	*50 - 140*				

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: HS19010635

QC BATCH REPORT

Batch ID: 136700 **Instrument: ECD_7** **Method: SW8082**

MSD Sample ID: **HS19010685-02MSD** Units: **ug/Kg** Analysis Date: **17-Jan-2019 12:21**
Client ID: Run ID: **ECD_7_331201** SeqNo: **4912187** PrepDate: **16-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	159.2	17	166.4	0	95.7	53 - 135	144.7	9.57	30	
Aroclor 1260	3007	17	166.4	3980	-585	54 - 137	2672	11.8	30	SEO
Surr: Decachlorobiphenyl	*6.94*	*1.6*	*6.656*	*0*	*104*	*54 - 143*	*5.925*	*15.8*	*30*	
Surr: Tetrachloro-m-xylene	*6.011*	*1.6*	*6.656*	*0*	*90.3*	*50 - 140*	*5.782*	*3.87*	*30*	

The following samples were analyzed in this batch: HS19010635-01 HS19010635-03 HS19010635-05 HS19010635-07 HS19010635-09 HS19010635-11 HS19010635-13 HS19010635-15

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: HS19010635

QC BATCH REPORT

Batch ID: 137511 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-137511** Units: **ng, Total** Analysis Date: **07-Feb-2019 21:24**
Client ID: Run ID: **ECD_7_332552** SeqNo: **4943020** PrepDate: **07-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	500								
Aroclor 1221	U	500								
Aroclor 1232	U	500								
Aroclor 1242	U	500								
Aroclor 1248	U	500								
Aroclor 1254	U	500								
Aroclor 1260	U	500								
PCBs (Total)	U	500								
Surr: Decachlorobiphenyl	*136.4*	*0*	*200*	*0*	*68.2*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*125.9*	*0*	*200*	*0*	*62.9*	*30 - 150*				

LCS Sample ID: **LCS-137511** Units: **ng, Total** Analysis Date: **07-Feb-2019 21:41**
Client ID: Run ID: **ECD_7_332552** SeqNo: **4943021** PrepDate: **07-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3191	500	5000	0	63.8	50 - 130				
Aroclor 1260	2685	500	5000	0	53.7	50 - 130				
Surr: Decachlorobiphenyl	*112.8*	*0*	*200*	*0*	*56.4*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*142.6*	*0*	*200*	*0*	*71.3*	*30 - 150*				

LCSD Sample ID: **LCSD-137511** Units: **ng, Total** Analysis Date: **07-Feb-2019 21:58**
Client ID: Run ID: **ECD_7_332552** SeqNo: **4943022** PrepDate: **07-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3593	500	5000	0	71.9	50 - 130	3191	11.9	30	
Aroclor 1260	3219	500	5000	0	64.4	50 - 130	2685	18.1	30	
Surr: Decachlorobiphenyl	*127.9*	*0*	*200*	*0*	*64.0*	*30 - 150*	*112.8*	*12.5*	*30*	
Surr: Tetrachloro-m-xylene	*178.3*	*0*	*200*	*0*	*89.2*	*30 - 150*	*142.6*	*22.2*	*30*	

The following samples were analyzed in this batch: HS19010635-17

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ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: **HS19010635**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-0356	27-Mar-2019
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019

ALS Houston, US Date: 13-Feb-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Date/Time Received: **15-Jan-2019 08:50**
Work Order: HS19010635
Received by: **JRM**

Checklist completed by: *Pablo Marinez* (eSignature) 15-Jan-2019 (Date)
Reviewed by: *Corey Grandits* (eSignature) 15-Jan-2019 (Date)

Matrices: **SOLID**
Carrier name: **FedEx Priority Overnight**

	Yes	No	
Shipping container/cooler in good condition?	☑	☐	Not Present ☐
Custody seals intact on shipping container/cooler?	☑	☐	Not Present ☐
Custody seals intact on sample bottles?	☐	☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	Not Present ☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:188534
Samplers name present on COC?	☐	☑	
Chain of custody agrees with sample labels?	☐	☑	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s): 3.9C/4.3C UC/C | IR # 11
Cooler(s)/Kit(s): RED
Date/Time sample(s) sent to storage: 1/15/19 15:00

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes: Sample Labels missing Collection Date/Time, logged per CoC

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 188534

HS19010635 ATTACHMENT 1

Environmental Health & Engineering
Friedman Rubin S.V.E.C.

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Friedman Rubin S.V.E.C.	A	PCB_Wipe_Total (8082 PCBs)
Work Order		Project Number	22437	B	1613B Dioxin/Furans Full List
Company Name	Environmental Health & Engineerin	Bill To Company	EHE, Inc	C	1668A WHO12 PCB Congeners
Send Report To	Kevin M. Coglan	Invoice Attn	Kevin Coghlan	D	PCB Article Analysis – Bulk
Address	180 Wells Avenue, Suite 200,	Address	180 Wells Ave Suite 200	E	
				F	
City/State/Zip	Newton, MA 02459	City/State/Zip	Newton, MA 02459	G	
Phone	(781) 24-7.43	Phone	1-800-825-5343	H	
Fax		Fax		I	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	Kcoghlan@eheinc.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	187070 CARPET SAMPLE	1/14/19	4:30pm	Bulk	N.A.	1				✓							
2	187071					1		✓									✓
3	187072					1				✓							
4	187073					1		✓									✓
5	187074					1				✓							
6	187075					1		✓									✓
7	187076					1				✓							
8	187077					1		✓									✓
9	187078					1				✓							
10	187079					1		✓									✓

Sampler(s) Please Print & Sign

Shipment Method: FedEx-Cooler

Required Turnaround Time: (Check Box) ☒ Other 4 days ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date: FRIDAY, JAN 18, 2019

Relinquished by: Kevin Coghlan Date: 1/14/2019 Time:

Received by: FEDEX

Relinquished by: Date: 1/15/19 Time: 08:50

Received by (Laboratory):

Logged by (Laboratory): Date: Time:

Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & PUF Analysis

Cooler ID	Cooler Temp.
Red	3.9
	1.21
	CP 0.4

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 2 of 2

COC ID: 188533

HS19010635 ATTACHMENT 1

Environmental Health & Engineering
Friedman Rubin S.V.E.C.

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Friedman Rubin S.V.E.C.	A	PCB_Wipe_Total (8082 PCBs)
Work Order		Project Number	22437	B	1613B Dioxin/Furans Full List
Company Name	Environmental Health & Engineerin	Bill To Company		C	1668A WHO12 PCB Congeners
Send Report To	Kevin M. Coglan	Invoice Attn		D	PCB Analysis - Aroclor - Bulk
Address	180 Wells Avenue, Suite 200,	Address		E	
				F	
City/State/Zip	Newton, MA 02459	City/State/Zip		G	
Phone	(781) 24-7.43	Phone		H	
Fax		Fax		I	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	Kcoghlan@eheinc.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	187080 CARPET SAMPLE	1/14/19	4:30 PM	BULK	N.A.	1				✓							
2	187081					1		✓									X
3	187082					1				✓							
4	187083					1		✓									X
5	187084					1				✓							
6	187085					1		✓									X
7	187086 Media BLANK			GLASS JAR		1		✓		✓							X
8																	
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method: FEDEX - COOLER

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date: FRIDAY, JAN 18, 2019

Relinquished by:	Date:	Time:	Received by:
Kevin Coghlan	1/14/19		FEDEX
Relinquished by:	Date: 1/15/19	Time: 08:50	Received by (Laboratory): J. MARKAN
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & PUF Analysis

Cooler ID	Cooler Temp.
Red	3.9
	1R11
	CF0.4

QC Package: (Check One Box Below)
[X] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846/CLP
[ ] Other
[ ] TRPP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Red

CUSTODY SEAL

Date: 1/14/18 Time: 4:45 pm
Name: Kevin Sullivan
Company: EHEE, Inc.

Seal Broken By: M
Date: 01/15/19

Red JAN 15 2019

FedEx
TRK# 0215 8079 4000 3200

TUE - 15 JAN AA
STANDARD OVERNIGHT

NH SGRA

Red

77099
TX-US
IAH

FID 187013 14JAN19 DMDA 653C2/074C/8C8A

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February 11, 2019

Service Request No:E1900047

ALS Environmental - US
10450 Stancliff Road
Suite 210
Houston, TX 77099

Laboratory Results for: HS19010635

Enclosed are the results of the sample(s) submitted to our laboratory January 22, 2019
For your reference, these analyses have been assigned our service request number **E1900047.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E1900047
Project:	HS19010635	**Date Received:**	01/22/19
Sample Matrix:	Misc Solid		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eleven samples were received for analysis at ALS Environmental in Houston on 01/22/19.

The samples were received at 3.1°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Extraction - Due to sample matrix and significant matrix interference, sample E1900047-001 was not compatible with the extraction procedure. Sample extract unable to blow down to a final volume for instruement injection.

Dilutions

The samples had elevated levels of target analytes, many samples required large dilutions. The undiluted and diluted results were combined into one Total TEQ summary report for each sample. This reports a 'Total' result that includes the most appropriate concentration found for the associated target analyte.

Precision and Accuracy:

EQ1900027: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within control limits.

EQ1900030: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. Various recoveries above QC limits due to high concentrated samples in the batch.

B flags – Method Blanks

The Method Blank EQ1900027-01 contained low levels of target dioxin/furan compounds above the EDL however below the Method Reporting Limit (MRL).

The Method Blank EQ1900027-01 contained high levels of PCBs that are traced back to the samples in batch.

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

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Y flags – Labeled Standards

Select labeled standards recovered low. Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages.

E flags

When OCDD exceeds the upper method calibration limit (MCL), we use an 'E' flag on the Sample Analytical Report results page when the detector is not saturated. Samples E1900047-007, E1900047-008, E1900047-010, and E1900047-011 are reported with an 'E' flag to denote that they had concentration greater than the highest calibration point. The process of dilution is counter to the isotopic dilution technique that the laboratory uses to determine recovery and produces variability in the final value. The laboratory only dilutes when detector saturation occurs.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'
- The 1:1 and associated dilution have been combined into one TEQ Summary report

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use

ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E1900047

Project: HS19010635

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900047-002	HS19010635-02	1/14/2019	1630
E1900047-003	HS19010635-03	1/14/2019	1630
E1900047-004	HS19010635-04	1/14/2019	1630
E1900047-005	HS19010635-05	1/14/2019	1630
E1900047-006	HS19010635-06	1/14/2019	1630
E1900047-007	HS19010635-08	1/14/2019	1630
E1900047-008	HS19010635-10	1/14/2019	1630
E1900047-009	HS19010635-12	1/14/2019	1630
E1900047-010	HS19010635-14	1/14/2019	1630
E1900047-011	HS19010635-16	1/14/2019	1630

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Service Request Summary

ATTACHMENT 1

Folder #: **E1900047**
Client Name: ALS Environmental - US
Project Name: HS19010635
Project Number:

Report To: Corey Grandits
ALS Environmental - US
10450 Stancliff Road
Houston, TX 77099
USA
Phone Number: 281-575-2146
Cell Number:
Fax Number:
E-mail: corey.grandits@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: TWOODS
Date Received: 01/22/19
Internal Due Date: 1/31/2019
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: HS19010635
EDD: No EDD Specified

11 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 7A
Pressure Gas:
Rush

				HOUSTON	
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**	Cl Biphen Cong/1668A	Dioxins Furans/1613B
E1900047-001	HS19010635-01	Solid	01/14/19 1630	II	
E1900047-002	HS19010635-02	Solid	01/14/19 1630		II
E1900047-003	HS19010635-03	Solid	01/14/19 1630	II	
E1900047-004	HS19010635-04	Solid	01/14/19 1630		II
E1900047-005	HS19010635-05	Solid	01/14/19 1630	II	
E1900047-006	HS19010635-06	Solid	01/14/19 1630		II
E1900047-007	HS19010635-08	Solid	01/14/19 1630		II
E1900047-008	HS19010635-10	Solid	01/14/19 1630		II
E1900047-009	HS19010635-12	Solid	01/14/19 1630		II
E1900047-010	HS19010635-14	Solid	01/14/19 1630		II
E1900047-011	HS19010635-16	Solid	01/14/19 1630		II

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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900047**
Client Name:	ALS Environmental - US
Project Name:	HS19010635
Project Number:	
Report To:	Corey Grandits ALS Environmental - US 10450 Stancliff Road Houston, TX 77099 USA
Phone Number:	281-575-2146
Cell Number:	
Fax Number:	
E-mail:	corey.grandits@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	TWOODS
Date Received:	01/22/19
Internal Due Date:	1/31/2019
QAP:	LAB QAP
Qualifier Set:	HRMS Qualifier Set
Formset:	Lab Standard
Merged?:	N
Report to MDL?:	Y
P.O. Number:	HS19010635
EDD:	No EDD Specified

11 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 7A

Pressure Gas:

Rush

Print

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ED_004522_00089767-00179

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E190004 7

DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/01/19	LKL	002DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
2/1/19	LG	002DL

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E19 00047 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/04/19	JC	004, 006-009

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
2/4/19	LG	004, 006-009

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1900047 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/01/19	LKL	010, 011

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
2/1/19	LG	010, 011

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E190004-7 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/06/19	JC	-003DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
02/08/19	[illegible]	003DL

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E 19 000 47 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/07/19	JC	-005DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
02/11/19	LKL	005DL

ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

E1900047 5
ALS Environmental - US
HS19010635

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Houston, TX 77099
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Subcontract Chain of Custody

COC ID: 10630

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: Corey Grandits
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: Corey.Grandits@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS19010635
TSR: Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19010635-01**	**187070 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			31 Jan 2019
2.	**HS19010635-02**	**187071 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019
3.	**HS19010635-03**	**187072 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			31 Jan 2019
4.	**HS19010635-04**	**187073 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019
5.	**HS19010635-05**	**187074 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			31 Jan 2019
6.	**HS19010635-06**	**187075 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019
7.	**HS19010635-08**	**187077 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019
8.	**HS19010635-10**	**187079 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019
9.	**HS19010635-12**	**187081 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**

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E1900047 5
ALS Environmental - US
HS19010635

Subcontract Chain of Custody

COC ID: 10630

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019
10.	**HS19010635-14**	**187083 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019
11.	**HS19010635-16**	**187085 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1613B Dioxin/Furans Full List			31 Jan 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By: J. [illegible] Date/Time: 01/22/19 09:45

Received By: [illegible] Date/Time: 01/22/19 9:40

Cooler ID(s): Temperature(s):

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ATTACHMENT 1

ALS Environmental

Cooler Receipt Form

Project Chemist: CH

Client/Project: ALS

Thermometer ID: SM04

Date/Time Received: 1/22/19 Initials: CH Date/Time Logged in: 1/22/19 Initials: CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☑ Courier (ALS) ○ Client

2. Samples received in: ☑ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☑ No

Were they intact? ○ Yes ○ No ☑ N/A

Were they signed and dated? ○ Yes ○ No ☑ N/A

If yes, how many and where? —

4. Packing Material: ○ Inserts ☑ Baggies ○ Bubble Wrap ○ Gel Packs ☑ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ☑ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
—		1/22/19	0950	SM	2.7/3.1	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☑ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☑ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☑ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ☑ Yes ○ No

10. Did sample labels and tags agree with custody documents? ☑ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900047 5

ALS Environmental - US
HS19010636

Effec

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SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
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www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 330252 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 1/24/19 11:59 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900022-001	LOT C6-2018	.01	1613B/Dioxins Furans			Misc. Solid	1.176g	red paste
2	E1900022-002	LOT O1-2018	.01	1613B/Dioxins Furans			Misc. Solid	1.245g	red paste
3	E1900023-001	OB-SFF 010319	.01	1613B/Dioxins Furans			Soil	10.404g	black wood chips
4	E1900043-001	Biosolids Hooksett Dewater Sludge	.01	1613B/Dioxins Furans			Sludge, Solid	10.472g	dried dark mud
5	E1900044-001	Sludge	.01	1613B/Dioxins Furans			Sludge, Solid	10.387g	brown mud balls with odor
6	E1900047-002	HS19010635-02	.01	1613B/Dioxins Furans			Solid	10.630g	red and tan rug
7	E1900047-004	HS19010635-04	.01	1613B/Dioxins Furans			Solid	10.326g	brown carpet
8	E1900047-006	HS19010635-06	.01	1613B/Dioxins Furans			Solid	10.096g	brown carpet
9	E1900047-007	HS19010635-08	.01	1613B/Dioxins Furans			Solid	10.326g	brown carpet
10	E1900047-008	HS19010635-10	.01	1613B/Dioxins Furans			Solid	10.503g	brown carpet
11	E1900047-009	HS19010635-12	.01	1613B/Dioxins Furans			Solid	10.409g	brown carpet
12	E1900047-010	HS19010635-14	.01	1613B/Dioxins Furans			Solid	10.339g	brown carpet
13	E1900047-011	HS19010635-16	.01	1613B/Dioxins Furans			Solid	10.488g	brown carpet
14	EQ1900027-01	MB		1613B/Dioxins Furans			Solid	10.072g	
15	EQ1900027-02	LCS		1613B/Dioxins Furans			Solid	10.101g	
16	EQ1900027-03	DLCS		1613B/Dioxins Furans			Solid	10.004g	
17	K1811915-008RE	Composite	.01	1613B/Dioxins Furans			Paperboard	10.149g	Brown Paper Shred
18	K1812189-001RE	New Age Marketed Pulp	.01	1613B/Dioxins Furans			Paperboard	10.150g	White Paper Shred
19	K1900121-008	Composite	.01	1613B/Dioxins Furans			Paperboard	10.144g	brown paper
20	K1900300-001	PC619A092 71 DLA = 49.9%	.01	1613B/Dioxins Furans			Paperboard	10.219g	brown paper

Spiking Solutions

Name: 1613B Matrix Working Standard Inventory ID 196331 Logbook Ref: 196331 JG 1/16/19 2-20ng/ml Expires On: 07/15/2019

EQ1900027-02	100.00µL	EQ1900027-03	100.00µL

Name: 8290/1613B Cleanup Working Standard Inventory ID 196382 Logbook Ref: JG 1/18/19 196382 8ng/ml Expires On: 04/27/2019

E1900022-001	100.00µL	E1900022-002	100.00µL	E1900023-001	100.00µL	E1900043-001	100.00µL	E1900044-001	100.00µL	E1900047-002	100.00µL
E1900047-004	100.00µL	E1900047-006	100.00µL	E1900047-007	100.00µL	E1900047-008	100.00µL	E1900047-009	100.00µL	E1900047-010	100.00µL
E1900047-011	100.00µL	EQ1900027-01	100.00µL	EQ1900027-02	100.00µL	EQ1900027-03	100.00µL	K1811915-008	100.00µL	K1812189-001	100.00µL
K1900121-008	100.00µL	K1900300-001	100.00µL								

Name: 1613B Labeled Working Standard Inventory ID 196525 Logbook Ref: 196525 1/24/19 tw 2-4 ng/ml Expires On: 01/31/2019

E1900022-001	1,000.00µL	E1900022-002	1,000.00µL	E1900023-001	1,000.00µL	E1900043-001	1,000.00µL	E1900044-001	1,000.00µL	E1900047-002	1,000.00µL
E1900047-004	1,000.00µL	E1900047-006	1,000.00µL	E1900047-007	1,000.00µL	E1900047-008	1,000.00µL	E1900047-009	1,000.00µL	E1900047-010	1,000.00µL

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 330252 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped

Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 1/24/19 11:59 AM

E1900047-011	1,000.00µL	EQ1900027-01	1,000.00µL	EQ1900027-02	1,000.00µL	EQ1900027-03	1,000.00µL	K1811915-008	1,000.00µL	K1812189-001	1,000.00µL
K1900121-008	1,000.00µL	K1900300-001	1,000.00µL								

Preparation Materials

Carbon, High Purity	JG 12/17/18 (195653)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	tw 011119 glass wool (196223)
Hexanes 95%	tw 011119 hexane (196222)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL (195005)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Tridecane (n-Tridecane)	AL 12/12/18 (195585)	Silica Gel	tw 12/31/18 (195984)
sulfuric acid	AL 10/11/18 (194007)	Toluene 99.9% Minimum	tw 011119 toluene (196224)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	1/24/19 11:59	Started:	1/28/19 14:00	Started:	1/29/19 12:00	Started:	1/30/19 09:00
Finished:	1/25/19 08:00	Finished:	1/28/19 15:00	Finished:	1/29/19 15:00	Finished:	1/30/19 12:00
By:	TWOODS	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 330476 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/TWOODS **Prep Method:** Method Soxhlet **Prep Date/Time:** 1/28/19 03:26 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900022-001	LOT C6-2018	.01	1668A/Cl Biphen Cong			Misc. Solid	1.050g	red paste
2	E1900022-002	LOT O1-2018	.01	1668A/Cl Biphen Cong			Misc. Solid	1.016g	red paste
3	E1900047-003	HS19010635-03	.01	1668A/Cl Biphen Cong			Solid	5.189g	red carpet
4	E1900047-005	HS19010635-05	.01	1668A/Cl Biphen Cong			Solid	5.543g	red carpet
5	E1900066-001	SMS 0.25 - LOD - 1668	.02	1668C/Cl Biphen Cong			Soil	5.046g	MDL @250ul
6	E1900066-002	SMS 1.0 - LOQ - 1668	.02	1668C/Cl Biphen Cong			Soil	5.131g	MDL @1000ul
7	EQ1900030-01	MB		1668C/Cl Biphen Cong			Solid	5.011g	
8	EQ1900030-02	LCS		1668C/Cl Biphen Cong			Solid	5.006g	
9	EQ1900030-03	DLCS		1668C/Cl Biphen Cong			Solid	5.131g	
10	EQ1900030-04	SMS 1.0 - LOQ - 1668 DUP	.02	1668C/Cl Biphen Cong			Solid	5.110g	

Spiking Solutions

Name: 1668 A/C PCB Congener (209) Working Matrix Inventory ID 193807 Logbook Ref: 193807 AL 10/8/18 10-30ng/mL Expires On: 04/06/2019

EQ1900030-02 100.00µL EQ1900030-02 100.00µL EQ1900030-03 100.00µL EQ1900030-03 100.00µL

Name: 1668A Clean Up Working Standard Inventory ID 195559 Logbook Ref: 195559 tw 12/11/18 20ng/ml Expires On: 06/09/2019

E1900022-001 100.00µL E1900022-002 100.00µL E1900047-003 100.00µL E1900047-005 100.00µL E1900066-001 100.00µL E1900066-002 100.00µL
EQ1900030-01 100.00µL EQ1900030-01 100.00µL EQ1900030-02 100.00µL EQ1900030-02 100.00µL EQ1900030-03 100.00µL EQ1900030-03 100.00µL
EQ1900030-04 100.00µL

Name: 1668A Labeled Working Standard Inventory ID 196242 Logbook Ref: 196242 tw 011419 2-4ng/ml Expires On: 03/09/2019

E1900022-001 1,000.00µL E1900022-002 1,000.00µL E1900047-003 1,000.00µL E1900047-005 1,000.00µL E1900066-001 1,000.00µL E1900066-002 1,000.00µL
EQ1900030-01 1,000.00µL EQ1900030-01 1,000.00µL EQ1900030-02 1,000.00µL EQ1900030-02 1,000.00µL EQ1900030-03 1,000.00µL EQ1900030-03 1,000.00µL
EQ1900030-04 1,000.00µL

Name: 1668A MDL Working Matrix Standard Inventory ID 196584 Logbook Ref: 196584 tw 1/28/19 1-3ng/ml Expires On: 04/06/2019

E1900066-001 250.00µL E1900066-002 1,000.00µL EQ1900030-04 1,000.00µL

Preparation Materials

Glass Wool	tw 011119 glass wool (196223)	Hexanes 95%	tw 011119 hexane (196222)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Toluene 99.9% Minimum	tw 011119 toluene (196224)	sulfuric acid	AL 10/11/18 (194007)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)
Silica Gel	tw 12/31/18 (195984)				

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Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 330476
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 1/28/19 03:26 PM

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	1/28/19 15:26	Started:	1/29/19 10:00	Started:	1/29/19 13:00	Started:	1/30/19 13:00
Finished:	1/29/19 08:00	Finished:	1/29/19 11:00	Finished:	1/29/19 15:00	Finished:	1/30/19 15:00
By:	TWOODS	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: LKL Date: 2/11/19

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-02	**Units:**	ng/Kg
Lab Code:	E1900047-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/30/19 16:26
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.630g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616698	**Blank File Name:**	P520185
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616693

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	3.59	4.70			10
1,2,3,7,8-PeCDD	ND	U	4.52	23.5			10
1,2,3,4,7,8-HxCDD	ND	U	1.54	23.5			10
1,2,3,6,7,8-HxCDD	ND	U	1.77	23.5			10
1,2,3,7,8,9-HxCDD	ND	U	1.53	23.5			10
1,2,3,4,6,7,8-HpCDD	9.59**J**		1.04	23.5	0.94	1.000	10
OCDD	46.9**J**		1.95	47.0	0.97	1.001	10
2,3,7,8-TCDF	1440		1.63	4.70	0.80	1.001	10
1,2,3,7,8-PeCDF	476		4.01	23.5	1.55	1.001	10
2,3,4,7,8-PeCDF	1690		4.39	23.5	1.55	1.001	10
1,2,3,4,7,8-HxCDF	124		1.03	23.5	1.17	1.000	10
1,2,3,6,7,8-HxCDF	41.4		1.06	23.5	1.13	1.000	10
1,2,3,7,8,9-HxCDF	70.9		1.22	23.5	1.14	1.001	10
2,3,4,6,7,8-HxCDF	41.8		1.10	23.5	1.30	1.001	10
1,2,3,4,6,7,8-HpCDF	20.1**J**		1.60	23.5	1.11	1.000	10
1,2,3,4,7,8,9-HpCDF	6.29**JK**		2.18	23.5	1.21	1.000	10
OCDF	20.3**J**		1.65	47.0	0.85	1.005	10

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-02	**Units:**	ng/Kg
Lab Code:	E1900047-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/30/19 16:26
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.630g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616698	**Blank File Name:**	P520185
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616693

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	3.59	4.70			10
Total Penta-Dioxins	ND	U	4.52	23.5			10
Total Hexa-Dioxins	ND	U	1.61	23.5			10
Total Hepta-Dioxins	16.7**J**		1.04	23.5	0.91		10
Total Tetra-Furans	16500		1.63	4.70	0.75		10
Total Penta-Furans	6060		4.19	23.5	1.53		10
Total Hexa-Furans	399		1.10	23.5	1.14		10
Total Hepta-Furans	28.3		1.86	23.5	1.11		10

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-02	**Units:**	Percent
Lab Code:	E1900047-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/30/19 16:26
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.630g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616698	**Blank File Name:**	P520185
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616693

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1278.214	64		25-164	0.76	1.021
13C-1,2,3,7,8-PeCDD	2000	1605.114	80		25-181	1.58	1.195
13C-1,2,3,4,7,8-HxCDD	2000	1882.090	94		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1733.010	87		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	2152.543	108		23-140	1.08	1.067
13C-OCDD	4000	2767.038	69		17-157	0.92	1.139
13C-2,3,7,8-TCDF	2000	1765.927	88		24-169	0.78	0.990
13C-1,2,3,7,8-PeCDF	2000	1830.171	92		24-185	1.59	1.150
13C-2,3,4,7,8-PeCDF	2000	1684.541	84		21-178	1.60	1.184
13C-1,2,3,4,7,8-HxCDF	2000	1694.102	85		26-152	0.53	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1629.356	81		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1624.530	81		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1669.238	83		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1544.359	77		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1447.167	72		26-138	0.46	1.079
37Cl-2,3,7,8-TCDD	80.0	31.988	40		35-197	NA	1.022

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-02	**Units:**	ng/Kg
Lab Code:	E1900047-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	3.59	4.70	10	1	
1,2,3,7,8-PeCDD	ND	4.52	23.5	10	1	
1,2,3,4,7,8-HxCDD	ND	1.54	23.5	10	0.1	
1,2,3,6,7,8-HxCDD	ND	1.77	23.5	10	0.1	
1,2,3,7,8,9-HxCDD	ND	1.53	23.5	10	0.1	
1,2,3,4,6,7,8-HpCDD	**9.59**	1.04	23.5	10	0.01	0.0959
OCDD	**46.9**	1.95	47.0	10	0.0003	0.0141
2,3,7,8-TCDF	**1440**	1.63	4.70	10	0.1	144
1,2,3,7,8-PeCDF	**476**	4.01	23.5	10	0.03	14.3
2,3,4,7,8-PeCDF	**1690**	4.39	23.5	10	0.3	507
1,2,3,4,7,8-HxCDF	**124**	1.03	23.5	10	0.1	12.4
1,2,3,6,7,8-HxCDF	**41.4**	1.06	23.5	10	0.1	4.14
1,2,3,7,8,9-HxCDF	**70.9**	1.22	23.5	10	0.1	7.09
2,3,4,6,7,8-HxCDF	**41.8**	1.10	23.5	10	0.1	4.18
1,2,3,4,6,7,8-HpCDF	**20.1**	1.60	23.5	10	0.01	0.201
1,2,3,4,7,8,9-HpCDF	**6.29**	2.18	23.5	10	0.01	0.0629
OCDF	**20.3**	1.65	47.0	10	0.0003	0.00609
		Total TEQ				693

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	ng/Kg
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/05/19 15:07
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.189g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307335	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307333

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	1410000		3630	7710	2.96	1.001	2000
PCB 2	115000		4830	7710	2.96	0.989	2000
PCB 3	732000		5140	7710	2.97	1.001	2000
PCB 4	8730000		3480	7710	-	1.001	2000
PCB 10	458000		2570	19300	-	1.010	2000
PCB 9	1240000		6030	7710	-	1.122	2000
PCB 7	651000		5170	7710	-	1.132	2000
PCB 6	3530000		5700	7710	-	1.150	2000
PCB 5	313000		6120	7710	-	1.170	2000
PCB 8	16400000		5170	19300	-	1.176	2000
PCB 14	ND	U	6050	7710			2000
PCB 11	125000		6630	38500	-	0.975	2000
PCBs 12 + 13	458000		6280	19300	-	0.986	2000
PCB 15	3190000		7190	7710	-	1.001	2000
PCB 19	1690000		1930	7710	1.07	1.001	2000
PCBs 18 + 30	12000000		1760	19300	1.08	1.095	2000
PCB 17	5540000		2170	7710	1.08	1.116	2000
PCB 27	763000		1570	7710	1.07	1.128	2000
PCB 24	150000		1540	7710	1.07	1.133	2000
PCB 16	4970000		2390	7710	1.08	1.142	2000
PCB 32	2810000		1450	7710	1.08	1.166	2000
PCB 34	ND	U	26200	26200			2000
PCB 23	ND	U	22100	22100			2000
PCBs 26 + 29	1410000		24200	24200	1.03	1.251	2000
PCB 25	455000		17500	17500	0.99	0.844	2000
PCB 31	7300000		23900	23900	1.02	0.855	2000
PCBs 20 + 28	7390000		24800	24800	1.02	0.865	2000
PCBs 21 + 33	3940000		20100	20100	1.00	0.874	2000
PCB 22	2460000		24800	24800	0.98	0.888	2000
PCB 36	ND	U	26800	26800			2000
PCB 39	ND	U	23200	23200			2000
PCB 38	ND	U	29200	29200			2000
PCB 35	ND	U	29200	29200			2000
PCB 37	688000		33700	33700	0.96	1.001	2000

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	ng/Kg
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/05/19 15:07
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.189g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307335	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307333

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 54	20400		1020	7710	0.85	1.001	2000
PCBs 50 + 53	748000		5250	38500	0.78	1.092	2000
PCBs 45 + 51	973000		5460	19300	0.77	1.122	2000
PCB 46	330000		6490	7710	0.78	1.137	2000
PCB 52	2540000		5720	19300	0.78	1.194	2000
PCBs 43 + 73	109000		4800	19300	0.80	1.203	2000
PCBs 49 + 69	1230000		4170	38500	0.78	1.214	2000
PCB 48	623000		5080	19300	0.77	1.225	2000
PCBs 44 + 47 + 65	1980000		4650	38500	0.77	1.238	2000
PCBs 59 + 62 + 75	223000		4220	38500	0.79	1.251	2000
PCB 42	480000		4530	38500	0.78	1.260	2000
PCBs 41 + 71 + 40	1250000		5620	38500	0.76	1.282	2000
PCB 64	635000		3190	19300	0.77	1.290	2000
PCB 72	ND	U	4160	19300			2000
PCB 68	ND	U	3970	19300			2000
PCB 57	6340**J**		4810	19300	0.85	1.353	2000
PCB 58	6300**JK**		4300	19300	0.62	1.361	2000
PCB 67	38000		4250	19300	0.78	1.370	2000
PCB 63	45800		4690	19300	0.78	1.382	2000
PCBs 70 + 61 + 74 + 76	1540000		4190	77100	0.77	1.397	2000
PCB 66	974000		4970	19300	0.78	1.411	2000
PCB 55	34600		4700	19300	0.80	1.419	2000
PCB 56	443000		7940	19300	0.75	1.442	2000
PCB 60	271000		7190	19300	0.75	1.451	2000
PCB 80	ND	U	6760	19300			2000
PCB 79	ND	U	7410	19300			2000
PCB 78	ND	U	8210	19300			2000
PCB 81	ND	U	8680	8680			2000
PCB 77	42700		9490	9490	0.73	1.000	2000
PCB 104	ND	U	2580	7710			2000
PCB 96	16200**J**		2760	19300	1.49	1.018	2000
PCB 103	ND	U	3250	19300			2000
PCB 94	4290**J**		3600	19300	1.59	1.089	2000
PCBs 95 + 93 + 100	296000		3500	77100	1.56	1.106	2000

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	ng/Kg
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/05/19 15:07
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.189g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307335	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307333

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCBs 98 + 102	23300**J**		3020	77100	1.58	1.116	2000
PCBs 88 + 91	71800		3500	19300	1.56	1.134	2000
PCB 84	130000		4100	7710	1.58	1.144	2000
PCB 89	13800**J**		3960	19300	1.63	1.160	2000
PCB 121	ND	U	2620	19300			2000
PCB 92	42700		3640	19300	1.53	1.183	2000
PCBs 90 + 101 + 113	216000		3040	77100	1.67	1.203	2000
PCBs 83 + 99	148000		3440	38500	1.64	1.222	2000
PCB 112	ND	U	2590	19300			2000
PCBs 86 + 87 + 97 + 109 + 119 + 125	186000		2930	77100	1.61	1.246	2000
PCBs 85 + 116 + 117	60000		2920	38500	1.72	1.268	2000
PCBs 110 + 115	183000		2250	38500	1.62	1.273	2000
PCB 82	55500		4440	19300	1.73	1.286	2000
PCB 111	ND	U	2520	19300			2000
PCB 120	ND	U	2630	19300			2000
PCBs 108 + 124	5900**J**		2340	38500	1.54	1.350	2000
PCB 107	10700**J**		2220	19300	1.77	1.358	2000
PCB 123	4320**J**		2320	7710	1.43	1.000	2000
PCB 106	ND	U	2420	19300			2000
PCB 118	122000		2260	7710	1.62	1.001	2000
PCB 122	ND	U	2550	19300			2000
PCB 114	5760**JK**		2380	7710	2.03	1.000	2000
PCB 105	80300		2560	7710	1.61	1.000	2000
PCB 127	ND	U	2670	19300			2000
PCB 126	ND	U	3200	7710			2000
PCB 155	ND	U	1220	7710			2000
PCB 152	ND	U	1430	19300			2000
PCB 150	ND	U	1330	19300			2000
PCB 136	9470**J**		1490	19300	1.17	1.029	2000
PCB 145	ND	U	1380	19300			2000
PCB 148	ND	U	1930	19300			2000
PCBs 135 + 151 + 154	15000**J**		1790	38500	1.15	1.094	2000
PCB 144	2070**JK**		1930	19300	1.58	1.111	2000
PCBs 147 + 149	30800**J**		1660	38500	1.21	1.121	2000
PCB 134	1820**JK**		1540	38500	1.67	1.128	2000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	ng/Kg
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/05/19 15:07
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.189g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307335	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307333

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 143	ND	U	2010	38500			2000
PCBs 139 + 140	ND	U	1670	38500			2000
PCB 131	ND	U	1510	19300			2000
PCB 142	ND	U	2090	19300			2000
PCB 132	13900**J**		1860	19300	1.18	1.160	2000
PCB 133	ND	U	1950	19300			2000
PCB 165	ND	U	1400	19300			2000
PCB 146	4530**JK**		1610	19300	1.59	1.188	2000
PCB 161	ND	U	1460	19300			2000
PCBs 153 + 168	27000**J**		1460	38500	1.24	1.205	2000
PCB 141	6410**J**		1840	19300	1.33	1.213	2000
PCB 130	ND	U	2170	19300			2000
PCB 137	ND	U	1750	19300			2000
PCB 164	ND	U	1460	19300			2000
PCBs 129 + 138 + 163	38100**J**		1960	77100	1.27	1.243	2000
PCB 160	ND	U	906	77100			2000
PCB 158	3570**JK**		1330	19300	1.51	1.254	2000
PCBs 128 + 166	4690**JK**		1600	38500	1.04	1.282	2000
PCB 159	ND	U	1710	19300			2000
PCB 162	ND	U	1530	19300			2000
PCB 167	ND	U	1340	7710			2000
PCBs 156 + 157	4200**J**		2580	15400	1.40	0.999	2000
PCB 169	ND	U	1850	7710			2000
PCB 188	ND	U	1050	7710			2000
PCB 179	3110**J**		948	19300	0.94	1.011	2000
PCB 184	ND	U	834	19300			2000
PCB 176	ND	U	973	19300			2000
PCB 186	ND	U	906	19300			2000
PCB 178	ND	U	1330	19300			2000
PCB 175	ND	U	1260	19300			2000
PCB 187	7790**J**		1090	19300	1.00	1.098	2000
PCB 182	ND	U	1220	19300			2000
PCBs 183 + 185	4370**J**		1400	38500	1.19	1.113	2000
PCB 174	3950**J**		1510	19300	0.89	1.121	2000
PCB 177	2510**J**		1610	19300	0.98	1.132	2000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	ng/Kg
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/05/19 15:07
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.189g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307335	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307333

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 181	ND	U	1380	19300			2000
PCBs 171 + 173	ND	U	1640	38500			2000
PCB 172	ND	U	1660	19300			2000
PCB 192	ND	U	1190	19300			2000
PCBs 180 + 193	7320**J**		1170	38500	1.10	0.918	2000
PCB 191	ND	U	1240	19300			2000
PCB 170	3130**J**		1720	19300	1.15	0.944	2000
PCB 190	ND	U	1190	19300			2000
PCB 189	ND	U	1280	7710			2000
PCB 202	3250**J**		1260	7710	0.81	1.000	2000
PCB 201	ND	U	1220	19300			2000
PCB 204	ND	U	1210	19300			2000
PCB 197	ND	U	1100	38500			2000
PCB 200	ND	U	1230	38500			2000
PCBs 198 + 199	7550**J**		1620	38500	0.89	1.103	2000
PCB 196	ND	U	1680	19300			2000
PCB 203	4940**J**		1410	19300	0.99	0.926	2000
PCB 195	ND	U	1810	19300			2000
PCB 194	3160**J**		1800	19300	0.80	0.992	2000
PCB 205	ND	U	1570	7710			2000
PCB 208	4520**JK**		1250	7710	0.63	1.001	2000
PCB 207	ND	U	1530	19300			2000
PCB 206	10100		1930	7710	0.68	1.001	2000
PCB 209	2690**J**		1390	7710	1.22	1.001	2000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	ng/Kg
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/05/19 15:07
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.189g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307335	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307333

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	2260000		3630	19300			2000
Total DiCB	35100000		2570	38500			2000
Total TriCB	51600000		1450	19300			2000
Total TetraCB	14500000		1020	77100			2000
Total PentaCB	1680000		2220	77100			2000
Total HexaCB	161000		906	77100			2000
Total HeptaCB	27800	**J**	834	38500			2000
Total OctaCB	18900	**J**	1100	38500			2000
Total NonaCB	14600	**J**	1250	19300			2000
Total PCBs	105000000		834	77100			2000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	Percent
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/05/19 15:07
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.189g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307335	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307333

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	1171.842	59		15-150	3.18	0.752
PCB 3L	2000	1033.188	52		15-150	3.21	0.879
PCB 4L	2000	1200.707	60		25-150	1.54	0.892
PCB 15L	2000	1206.538	60		25-150	1.57	1.220
PCB 19L	2000	1450.846	73		25-150	1.03	1.066
PCB 37L	2000	938.660	47		25-150	0.91	1.081
PCB 54L	2000	1193.805	60		25-150	0.83	0.838
PCB 81L	2000	1090.353	55		25-150	0.77	1.319
PCB 77L	2000	1047.210	52		25-150	0.79	1.340
PCB 104L	2000	1099.570	55		25-150	1.63	0.832
PCB 123L	2000	1102.036	55		25-150	1.57	1.132
PCB 118L	2000	1084.783	54		25-150	1.57	1.142
PCB 114L	2000	1074.804	54		25-150	1.57	1.157
PCB 105L	2000	1073.074	54		25-150	1.57	1.178
PCB 126L	2000	1012.370	51		25-150	1.56	1.265
PCB 155L	2000	1191.092	60		25-150	1.29	0.805
PCB 167L	2000	1092.251	55		25-150	1.23	1.068
PCBs 156L + 157L	4000	2141.441	54		25-150	1.26	1.097
PCB 169L	2000	993.209	50		25-150	1.26	1.171
PCB 188L	2000	1162.094	58		25-150	1.06	0.736
PCB 189L	2000	1149.246	57		25-150	1.05	0.963
PCB 202L	2000	1270.733	64		25-150	0.89	0.833
PCB 205L	2000	1206.756	60		25-150	0.89	1.009
PCB 208L	2000	1309.258	65		25-150	0.82	0.952
PCB 206L	2000	1155.199	58		25-150	0.79	1.043
PCB 209L	2000	1349.887	67		25-150	1.19	1.079
PCB 28L	1.00	0	0	Y	30-135		
PCB 111L	1.00	0	0	Y	30-135		
PCB 178L	1.00	0	0	Y	30-135		

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-03	**Units:**	ng/Kg
Lab Code:	E1900047-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method: 1668A
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
PCB 81	ND	8680	8680	2000	0.0003	
PCB 77	**42700**	9490	9490	2000	0.0001	4.27
PCB 123	**4320**	2320	7710	2000	0.00003	0.130
PCB 118	**122000**	2260	7710	2000	0.00003	3.66
PCB 114	**5760**	2380	7710	2000	0.00003	0.173
PCB 105	**80300**	2560	7710	2000	0.00003	2.41
PCB 126	ND	3200	7710	2000	0.1	
PCB 167	ND	1340	7710	2000	0.00003	
PCBs 156 + 157	**4200**	2580	15400	2000	0.00003	0.126
PCB 169	ND	1850	7710	2000	0.03	
PCB 189	ND	1280	7710	2000	0.00003	
	Total TEQ					10.8

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-04	**Units:**	ng/Kg
Lab Code:	E1900047-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 15:12
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.326g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520226	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.556		0.213	0.484	0.65	1.001	1
1,2,3,7,8-PeCDD	2.29**J**		0.0810	2.42	1.59	1.001	1
1,2,3,4,7,8-HxCDD	2.87**K**		0.151	2.42	1.50	1.000	1
1,2,3,6,7,8-HxCDD	21.6		0.166	2.42	1.28	1.000	1
1,2,3,7,8,9-HxCDD	8.11		0.151	2.42	1.22	1.007	1
1,2,3,4,6,7,8-HpCDD	298		0.850	2.42	1.05	1.000	1
OCDD	3290		0.285	4.84	0.88	1.000	1
2,3,7,8-TCDF	5.67		0.0706	0.484	0.71	1.001	1
1,2,3,7,8-PeCDF	7.16		0.166	2.42	1.52	1.001	1
2,3,4,7,8-PeCDF	13.4		0.179	2.42	1.51	1.001	1
1,2,3,4,7,8-HxCDF	10.7		0.200	2.42	1.26	1.000	1
1,2,3,6,7,8-HxCDF	6.26**P**		0.194	2.42	1.11	1.000	1
1,2,3,7,8,9-HxCDF	1.51**BJ**		0.206	2.42	1.14	1.001	1
2,3,4,6,7,8-HxCDF	4.95		0.188	2.42	1.29	1.001	1
1,2,3,4,6,7,8-HpCDF	58.0		0.308	2.42	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	3.25		0.411	2.42	0.99	1.000	1
OCDF	105		0.212	4.84	0.90	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-04	**Units:**	ng/Kg
Lab Code:	E1900047-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 15:12
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.326g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520226	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	11.7		0.213	0.484	0.73		1
Total Penta-Dioxins	39.7		0.0810	2.42	1.59		1
Total Hexa-Dioxins	165		0.156	2.42	1.24		1
Total Hepta-Dioxins	344		0.850	2.42	1.02		1
Total Tetra-Furans	96.4		0.0706	0.484	0.70		1
Total Penta-Furans	213		0.172	2.42	1.53		1
Total Hexa-Furans	207		0.196	2.42	1.17		1
Total Hepta-Furans	151		0.354	2.42	1.04		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-04	**Units:**	Percent
Lab Code:	E1900047-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 15:12
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.326g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520226	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	541.273	27		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	798.294	40		25-181	1.63	1.192
13C-1,2,3,4,7,8-HxCDD	2000	826.184	41		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	794.385	40		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	736.699	37		23-140	1.06	1.068
13C-OCDD	4000	611.964	15	Y	17-157	0.92	1.143
13C-2,3,7,8-TCDF	2000	766.575	38		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	726.848	36		24-185	1.60	1.148
13C-2,3,4,7,8-PeCDF	2000	709.049	35		21-178	1.60	1.181
13C-1,2,3,4,7,8-HxCDF	2000	608.179	30		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	665.729	33		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	757.630	38		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	724.325	36		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	611.213	31		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	574.147	29		26-138	0.44	1.080
37Cl-2,3,7,8-TCDD	800	344.759	43		35-197	NA	1.022

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-04	**Units:**	ng/Kg
Lab Code:	E1900047-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.556**	0.213	0.484	1	1	0.556
1,2,3,7,8-PeCDD	**2.29**	0.0810	2.42	1	1	2.29
1,2,3,4,7,8-HxCDD	**2.87**	0.151	2.42	1	0.1	0.287
1,2,3,6,7,8-HxCDD	**21.6**	0.166	2.42	1	0.1	2.16
1,2,3,7,8,9-HxCDD	**8.11**	0.151	2.42	1	0.1	0.811
1,2,3,4,6,7,8-HpCDD	**298**	0.850	2.42	1	0.01	2.98
OCDD	**3290**	0.285	4.84	1	0.0003	0.987
2,3,7,8-TCDF	**5.67**	0.0706	0.484	1	0.1	0.567
1,2,3,7,8-PeCDF	**7.16**	0.166	2.42	1	0.03	0.215
2,3,4,7,8-PeCDF	**13.4**	0.179	2.42	1	0.3	4.02
1,2,3,4,7,8-HxCDF	**10.7**	0.200	2.42	1	0.1	1.07
1,2,3,6,7,8-HxCDF	**6.26**	0.194	2.42	1	0.1	0.626
1,2,3,7,8,9-HxCDF	**1.51**	0.206	2.42	1	0.1	0.151
2,3,4,6,7,8-HxCDF	**4.95**	0.188	2.42	1	0.1	0.495
1,2,3,4,6,7,8-HpCDF	**58.0**	0.308	2.42	1	0.01	0.580
1,2,3,4,7,8,9-HpCDF	**3.25**	0.411	2.42	1	0.01	0.0325
OCDF	**105**	0.212	4.84	1	0.0003	0.0315
		Total TEQ				17.9

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	ng/Kg
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/06/19 14:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.543g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307342	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307340

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	2580000		2790	14400	2.92	1.001	4000
PCB 2	232000		3750	14400	2.82	0.989	4000
PCB 3	1510000		3820	14400	2.91	1.001	4000
PCB 4	19000000		2970	14400	-	1.001	4000
PCB 10	964000		2080	36100	-	1.010	4000
PCB 9	3020000		9710	14400	-	1.122	4000
PCB 7	1600000		8680	14400	-	1.132	4000
PCB 6	9700000		9450	14400	-	1.150	4000
PCB 5	938000		10100	14400	-	1.169	4000
PCB 8	48600000		8810	36100	-	1.176	4000
PCB 14	ND	U	9940	14400			4000
PCB 11	508000		10900	72200	-	0.975	4000
PCBs 12 + 13	2050000		10600	36100	-	0.985	4000
PCB 15	14800000		11400	14400	-	1.001	4000
PCB 19	4690000		1420	14400	1.06	1.001	4000
PCBs 18 + 30	39300000		1350	36100	1.06	1.095	4000
PCB 17	18200000		1650	14400	1.06	1.116	4000
PCB 27	2610000		1210	14400	1.06	1.127	4000
PCB 24	595000		1140	14400	1.05	1.133	4000
PCB 16	18800000		1860	14400	1.06	1.141	4000
PCB 32	10800000		1110	14400	1.07	1.165	4000
PCB 34	111000		16600	16600	1.04	1.226	4000
PCB 23	40100		13900	14400	0.98	1.232	4000
PCBs 26 + 29	6980000		15200	36100	1.02	1.250	4000
PCB 25	2270000		10900	14400	1.02	0.844	4000
PCB 31	38600000		15100	36100	1.03	0.855	4000
PCBs 20 + 28	38900000		15200	36100	1.03	0.864	4000
PCBs 21 + 33	23400000		13700	36100	1.03	0.874	4000
PCB 22	14400000		15100	15100	1.03	0.888	4000
PCB 36	ND	U	15600	15600			4000
PCB 39	69900		15100	15100	0.97	0.950	4000
PCB 38	ND	U	17900	17900			4000
PCB 35	240000		19000	19000	1.05	0.987	4000
PCB 37	5470000		21200	21200	1.03	1.001	4000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	ng/Kg
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/06/19 14:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.543g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307342	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307340

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 54	79700		995	14400	0.79	1.001	4000
PCBs 50 + 53	3650000		5010	72200	0.77	1.092	4000
PCBs 45 + 51	4990000		5230	36100	0.78	1.122	4000
PCB 46	1790000		6290	14400	0.78	1.137	4000
PCB 52	15400000		5660	36100	0.77	1.194	4000
PCBs 43 + 73	934000		7010	36100	0.77	1.202	4000
PCBs 49 + 69	12500000		6760	72200	0.77	1.213	4000
PCB 48	3770000		4970	36100	0.77	1.225	4000
PCBs 44 + 47 + 65	12600000		4500	72200	0.77	1.238	4000
PCBs 59 + 62 + 75	1360000		4020	72200	0.78	1.251	4000
PCB 42	3200000		4490	72200	0.77	1.260	4000
PCBs 41 + 71 + 40	8270000		5420	72200	0.77	1.282	4000
PCB 64	4360000		3110	36100	0.77	1.289	4000
PCB 72	18200**JK**		4090	36100	1.09	1.322	4000
PCB 68	ND	U	3870	36100			4000
PCB 57	33800**JK**		4630	36100	0.92	1.353	4000
PCB 58	42100		4130	36100	0.79	1.361	4000
PCB 67	259000		4110	36100	0.78	1.370	4000
PCB 63	302000		4630	36100	0.78	1.382	4000
PCBs 70 + 61 + 74 + 76	10300000		4040	144000	0.77	1.397	4000
PCB 66	6780000		4880	36100	0.77	1.411	4000
PCB 55	256000		4650	36100	0.77	1.419	4000
PCB 56	3050000		48700	48700	0.75	1.442	4000
PCB 60	1920000		45500	45500	0.75	1.451	4000
PCB 80	ND	U	42500	42500			4000
PCB 79	ND	U	46300	46300			4000
PCB 78	ND	U	51800	51800			4000
PCB 81	ND	U	54700	54700			4000
PCB 77	199000		61200	61200	0.73	1.000	4000
PCB 104	ND	U	2050	14400			4000
PCB 96	91500		2220	36100	1.54	1.018	4000
PCB 103	16700**J**		2650	36100	1.69	1.079	4000
PCB 94	28000**J**		2920	36100	1.62	1.089	4000
PCBs 95 + 93 + 100	1500000		2840	144000	1.55	1.105	4000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	ng/Kg
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/06/19 14:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.543g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307342	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307340

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCBs 98 + 102	146000		2490	144000	1.56	1.116	4000
PCBs 88 + 91	429000		2860	36100	1.57	1.134	4000
PCB 84	743000		3380	14400	1.55	1.144	4000
PCB 89	85800		3200	36100	1.55	1.160	4000
PCB 121	ND	U	3220	36100			4000
PCB 92	174000		4570	36100	1.60	1.183	4000
PCBs 90 + 101 + 113	878000		3880	144000	1.59	1.203	4000
PCBs 83 + 99	679000		4490	72200	1.63	1.222	4000
PCB 112	ND	U	3290	36100			4000
PCBs 86 + 87 + 97 + 109 + 119 + 125	841000		3770	144000	1.61	1.246	4000
PCBs 85 + 116 + 117	273000		3740	72200	1.55	1.267	4000
PCBs 110 + 115	754000		2920	72200	1.60	1.273	4000
PCB 82	254000		5750	36100	1.61	1.286	4000
PCB 111	ND	U	3210	36100			4000
PCB 120	ND	U	3320	36100			4000
PCBs 108 + 124	20500**J**		2600	72200	1.47	1.350	4000
PCB 107	42600		2750	36100	1.69	1.358	4000
PCB 123	15300		2550	14400	1.44	1.000	4000
PCB 106	ND	U	2780	36100			4000
PCB 118	400000		2520	14400	1.55	1.000	4000
PCB 122	13300**J**		2970	36100	1.40	1.387	4000
PCB 114	23700		2560	14400	1.49	1.001	4000
PCB 105	272000		2800	14400	1.54	1.000	4000
PCB 127	ND	U	3020	36100			4000
PCB 126	ND	U	3800	14400			4000
PCB 155	ND	U	923	14400			4000
PCB 152	ND	U	925	36100			4000
PCB 150	ND	U	872	36100			4000
PCB 136	19900**J**		983	36100	1.27	1.029	4000
PCB 145	ND	U	907	36100			4000
PCB 148	ND	U	1300	36100			4000
PCBs 135 + 151 + 154	29100**J**		1210	72200	1.28	1.094	4000
PCB 144	5560**J**		1300	36100	1.12	1.110	4000
PCBs 147 + 149	62000**J**		1420	72200	1.22	1.121	4000
PCB 134	5300**J**		1300	72200	1.10	1.128	4000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	ng/Kg
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/06/19 14:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.543g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307342	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307340

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 143	ND	U	1770	72200			4000
PCBs 139 + 140	2590**J**		1430	72200	1.20	1.136	4000
PCB 131	2000**JK**		1380	36100	0.95	1.145	4000
PCB 142	ND	U	1690	36100			4000
PCB 132	30500**J**		1640	36100	1.12	1.159	4000
PCB 133	ND	U	1690	36100			4000
PCB 165	ND	U	1200	36100			4000
PCB 146	9500**J**		1500	36100	1.35	1.188	4000
PCB 161	ND	U	1160	36100			4000
PCBs 153 + 168	47600**J**		1210	72200	1.25	1.205	4000
PCB 141	13000**J**		1550	36100	1.23	1.213	4000
PCB 130	3860**JK**		1850	36100	1.45	1.224	4000
PCB 137	3650**JK**		1490	36100	1.55	1.230	4000
PCB 164	3500**J**		1230	36100	1.39	1.235	4000
PCBs 129 + 138 + 163	68600**J**		1650	144000	1.23	1.243	4000
PCB 160	ND	U	792	144000			4000
PCB 158	6260**J**		1140	36100	1.37	1.254	4000
PCBs 128 + 166	8200**JK**		1400	72200	1.03	1.282	4000
PCB 159	ND	U	1550	36100			4000
PCB 162	ND	U	1420	36100			4000
PCB 167	1950**JK**		1420	14400	0.95	1.000	4000
PCBs 156 + 157	7870**J**		2670	28900	1.24	0.999	4000
PCB 169	ND	U	2190	14400			4000
PCB 188	ND	U	947	14400			4000
PCB 179	7910**J**		895	36100	0.96	1.012	4000
PCB 184	ND	U	773	36100			4000
PCB 176	2030**J**		908	36100	1.15	1.033	4000
PCB 186	ND	U	847	36100			4000
PCB 178	3520**J**		1250	36100	1.19	1.077	4000
PCB 175	ND	U	1190	36100			4000
PCB 187	21100**J**		1030	36100	0.97	1.098	4000
PCB 182	ND	U	1170	36100			4000
PCBs 183 + 185	9100**J**		2170	72200	0.96	1.113	4000
PCB 174	9510**JK**		2230	36100	0.88	1.121	4000
PCB 177	7110**J**		2450	36100	1.15	1.132	4000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	ng/Kg
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/06/19 14:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.543g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307342	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307340

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 181	ND	U	2100	36100			4000
PCBs 171 + 173	3510**J**		2510	72200	1.18	1.147	4000
PCB 172	ND	U	2570	36100			4000
PCB 192	ND	U	1790	36100			4000
PCBs 180 + 193	16400**J**		1820	72200	1.07	0.918	4000
PCB 191	ND	U	1920	36100			4000
PCB 170	6040**J**		2710	36100	1.03	0.943	4000
PCB 190	ND	U	1780	36100			4000
PCB 189	ND	U	2030	14400			4000
PCB 202	7910**J**		1270	14400	0.86	1.000	4000
PCB 201	2500**JK**		1280	36100	0.75	1.020	4000
PCB 204	ND	U	1290	36100			4000
PCB 197	ND	U	1150	72200			4000
PCB 200	1640**JK**		1300	72200	1.21	1.043	4000
PCBs 198 + 199	17200**J**		1710	72200	0.93	1.103	4000
PCB 196	3160**JK**		1790	36100	1.15	0.922	4000
PCB 203	11400**J**		1550	36100	0.82	0.926	4000
PCB 195	ND	U	1950	36100			4000
PCB 194	4660**J**		1970	36100	0.80	0.992	4000
PCB 205	ND	U	1840	14400			4000
PCB 208	10400**J**		1120	14400	0.86	1.000	4000
PCB 207	2660**JK**		1450	36100	0.90	1.018	4000
PCB 206	20100		3120	14400	0.76	1.000	4000
PCB 209	5600**J**		1370	14400	1.24	1.000	4000

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	ng/Kg
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/06/19 14:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.543g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307342	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307340

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	4320000		2790	36100			4000
Total DiCB	101000000		2080	72200			4000
Total TriCB	226000000		1110	36100			4000
Total TetraCB	96100000		995	144000			4000
Total PentaCB	7680000		2050	144000			4000
Total HexaCB	331000		792	144000			4000
Total HeptaCB	77100		773	72200			4000
Total OctaCB	48400	**J**	1150	72200			4000
Total NonaCB	33100	**J**	1120	36100			4000
Total PCBs	435000000		773	144000			4000

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	Percent
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	02/06/19 14:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.543g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307342	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307340

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	1439.357	72		15-150	3.17	0.752
PCB 3L	2000	1266.416	63		15-150	3.25	0.879
PCB 4L	2000	1546.918	77		25-150	1.54	0.892
PCB 15L	2000	1429.787	71		25-150	1.56	1.220
PCB 19L	2000	1856.420	93		25-150	1.02	1.066
PCB 37L	2000	1104.049	55		25-150	0.97	1.082
PCB 54L	2000	1495.995	75		25-150	0.82	0.839
PCB 81L	2000	1186.972	59		25-150	0.77	1.320
PCB 77L	2000	1123.353	56		25-150	0.79	1.341
PCB 104L	2000	1357.300	68		25-150	1.60	0.832
PCB 123L	2000	1192.586	60		25-150	1.56	1.133
PCB 118L	2000	1154.611	58		25-150	1.57	1.142
PCB 114L	2000	1169.814	58		25-150	1.56	1.157
PCB 105L	2000	1156.948	58		25-150	1.56	1.178
PCB 126L	2000	1023.573	51		25-150	1.56	1.266
PCB 155L	2000	1525.037	76		25-150	1.26	0.805
PCB 167L	2000	1208.331	60		25-150	1.25	1.068
PCBs 156L + 157L	4000	2362.910	59		25-150	1.26	1.097
PCB 169L	2000	998.715	50		25-150	1.27	1.171
PCB 188L	2000	1499.469	75		25-150	1.05	0.736
PCB 189L	2000	1320.549	66		25-150	1.05	0.963
PCB 202L	2000	1636.031	82		25-150	0.90	0.833
PCB 205L	2000	1412.750	71		25-150	0.89	1.008
PCB 208L	2000	1686.566	84		25-150	0.82	0.952
PCB 206L	2000	1340.466	67		25-150	0.79	1.043
PCB 209L	2000	1603.225	80		25-150	1.21	1.078
PCB 28L	0.500	0	0	Y	30-135		
PCB 111L	0.500	0	0	Y	30-135		
PCB 178L	0.500	0	0	Y	30-135		

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-05	**Units:**	ng/Kg
Lab Code:	E1900047-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method: 1668A
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
PCB 81	ND	54700	54700	4000	0.0003	
PCB 77	**199000**	61200	61200	4000	0.0001	19.9
PCB 123	**15300**	2550	14400	4000	0.00003	0.459
PCB 118	**400000**	2520	14400	4000	0.00003	12.0
PCB 114	**23700**	2560	14400	4000	0.00003	0.711
PCB 105	**272000**	2800	14400	4000	0.00003	8.16
PCB 126	ND	3800	14400	4000	0.1	
PCB 167	**1950**	1420	14400	4000	0.00003	0.0585
PCBs 156 + 157	**7870**	2670	28900	4000	0.00003	0.236
PCB 169	ND	2190	14400	4000	0.03	
PCB 189	ND	2030	14400	4000	0.00003	
		Total TEQ				41.5

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-06	**Units:**	ng/Kg
Lab Code:	E1900047-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 16:03
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.096g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520227	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.440	**JK**	0.223	0.495	0.42	1.001	1
1,2,3,7,8-PeCDD	2.28	**J**	0.123	2.48	1.47	1.000	1
1,2,3,4,7,8-HxCDD	2.29	**JK**	0.198	2.48	1.44	1.000	1
1,2,3,6,7,8-HxCDD	21.5		0.224	2.48	1.15	1.000	1
1,2,3,7,8,9-HxCDD	5.43		0.200	2.48	1.12	1.006	1
1,2,3,4,6,7,8-HpCDD	198		0.132	2.48	1.06	1.000	1
OCDD	1730		0.613	4.95	0.90	1.000	1
2,3,7,8-TCDF	14.7		0.155	0.495	0.78	1.001	1
1,2,3,7,8-PeCDF	12.9		0.329	2.48	1.47	1.001	1
2,3,4,7,8-PeCDF	21.3		0.362	2.48	1.48	1.001	1
1,2,3,4,7,8-HxCDF	14.4		0.428	2.48	1.18	1.000	1
1,2,3,6,7,8-HxCDF	7.19		0.409	2.48	1.30	1.000	1
1,2,3,7,8,9-HxCDF	1.03	**BJ**	0.487	2.48	1.13	1.001	1
2,3,4,6,7,8-HxCDF	4.53		0.452	2.48	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	38.8		0.396	2.48	0.97	1.000	1
1,2,3,4,7,8,9-HpCDF	1.37	**JK**	0.538	2.48	1.45	1.000	1
OCDF	72.9		0.292	4.95	0.86	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-06	**Units:**	ng/Kg
Lab Code:	E1900047-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 16:03
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.096g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520227	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	52.1		0.223	0.495	0.79		1
Total Penta-Dioxins	113		0.123	2.48	1.58		1
Total Hexa-Dioxins	264		0.207	2.48	1.25		1
Total Hepta-Dioxins	446		0.132	2.48	1.06		1
Total Tetra-Furans	349		0.155	0.495	0.79		1
Total Penta-Furans	423		0.344	2.48	1.54		1
Total Hexa-Furans	274		0.442	2.48	1.27		1
Total Hepta-Furans	121		0.458	2.48	0.97		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-06	**Units:**	Percent
Lab Code:	E1900047-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 16:03
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.096g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520227	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	681.978	34		25-164	0.81	1.021
13C-1,2,3,7,8-PeCDD	2000	952.799	48		25-181	1.62	1.192
13C-1,2,3,4,7,8-HxCDD	2000	1014.431	51		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	957.691	48		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	734.753	37		23-140	1.07	1.068
13C-OCDD	4000	597.988	15	Y	17-157	0.93	1.143
13C-2,3,7,8-TCDF	2000	977.814	49		24-169	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	938.662	47		24-185	1.57	1.148
13C-2,3,4,7,8-PeCDF	2000	869.745	43		21-178	1.60	1.181
13C-1,2,3,4,7,8-HxCDF	2000	904.259	45		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	918.676	46		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	919.067	46		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	889.480	44		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	636.862	32		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	586.176	29		26-138	0.44	1.080
37Cl-2,3,7,8-TCDD	800	431.477	54		35-197	NA	1.022

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-06	**Units:**	ng/Kg
Lab Code:	E1900047-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.440**	0.223	0.495	1	1	0.440
1,2,3,7,8-PeCDD	**2.28**	0.123	2.48	1	1	2.28
1,2,3,4,7,8-HxCDD	**2.29**	0.198	2.48	1	0.1	0.229
1,2,3,6,7,8-HxCDD	**21.5**	0.224	2.48	1	0.1	2.15
1,2,3,7,8,9-HxCDD	**5.43**	0.200	2.48	1	0.1	0.543
1,2,3,4,6,7,8-HpCDD	**198**	0.132	2.48	1	0.01	1.98
OCDD	**1730**	0.613	4.95	1	0.0003	0.519
2,3,7,8-TCDF	**14.7**	0.155	0.495	1	0.1	1.47
1,2,3,7,8-PeCDF	**12.9**	0.329	2.48	1	0.03	0.387
2,3,4,7,8-PeCDF	**21.3**	0.362	2.48	1	0.3	6.39
1,2,3,4,7,8-HxCDF	**14.4**	0.428	2.48	1	0.1	1.44
1,2,3,6,7,8-HxCDF	**7.19**	0.409	2.48	1	0.1	0.719
1,2,3,7,8,9-HxCDF	**1.03**	0.487	2.48	1	0.1	0.103
2,3,4,6,7,8-HxCDF	**4.53**	0.452	2.48	1	0.1	0.453
1,2,3,4,6,7,8-HpCDF	**38.8**	0.396	2.48	1	0.01	0.388
1,2,3,4,7,8,9-HpCDF	**1.37**	0.538	2.48	1	0.01	0.0137
OCDF	**72.9**	0.292	4.95	1	0.0003	0.0219
		Total TEQ				19.5

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-08	**Units:**	ng/Kg
Lab Code:	E1900047-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 17:03
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.326g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520228	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.394	**JK**	0.292	0.484	0.94	1.000	1
1,2,3,7,8-PeCDD	2.61		0.0777	2.42	1.41	1.001	1
1,2,3,4,7,8-HxCDD	3.19		0.0614	2.42	1.24	1.000	1
1,2,3,6,7,8-HxCDD	36.7		0.0660	2.42	1.20	1.000	1
1,2,3,7,8,9-HxCDD	11.9		0.0608	2.42	1.20	1.006	1
1,2,3,4,6,7,8-HpCDD	758		2.03	2.42	1.02	1.000	1
OCDD	9230	**E**	0.790	4.84	0.90	1.000	1
2,3,7,8-TCDF	124		0.345	0.484	0.80	1.001	1
1,2,3,7,8-PeCDF	17.1		0.335	2.42	1.49	1.001	1
2,3,4,7,8-PeCDF	40.3		0.371	2.42	1.46	1.001	1
1,2,3,4,7,8-HxCDF	26.0		0.810	2.42	1.30	1.000	1
1,2,3,6,7,8-HxCDF	9.96		0.616	2.42	1.05	1.000	1
1,2,3,7,8,9-HxCDF	3.58		0.831	2.42	1.24	1.001	1
2,3,4,6,7,8-HxCDF	8.79		0.678	2.42	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	110		0.662	2.42	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	7.39		1.05	2.42	1.12	1.000	1
OCDF	358		0.536	4.84	0.87	1.005	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-08	**Units:**	ng/Kg
Lab Code:	E1900047-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 17:03
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.326g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520228	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	12.7		0.292	0.484	0.86		1
Total Penta-Dioxins	72.0		0.0777	2.42	1.58		1
Total Hexa-Dioxins	318		0.0628	2.42	1.27		1
Total Hepta-Dioxins	1340		2.03	2.42	1.04		1
Total Tetra-Furans	2180		0.345	0.484	0.73		1
Total Penta-Furans	461		0.352	2.42	1.69		1
Total Hexa-Furans	409		0.716	2.42	1.20		1
Total Hepta-Furans	433		0.820	2.42	1.03		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-08	**Units:**	Percent
Lab Code:	E1900047-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 17:03
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.326g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520228	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	708.313	35		25-164	0.81	1.022
13C-1,2,3,7,8-PeCDD	2000	879.669	44		25-181	1.57	1.191
13C-1,2,3,4,7,8-HxCDD	2000	954.018	48		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1120.173	56		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	764.694	38		23-140	1.05	1.068
13C-OCDD	4000	648.633	16	Y	17-157	0.91	1.143
13C-2,3,7,8-TCDF	2000	1025.111	51		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	901.272	45		24-185	1.59	1.148
13C-2,3,4,7,8-PeCDF	2000	818.109	41		21-178	1.60	1.181
13C-1,2,3,4,7,8-HxCDF	2000	738.275	37		26-152	0.54	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1094.264	55		26-123	0.50	0.973
13C-1,2,3,7,8,9-HxCDF	2000	915.283	46		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	962.289	48		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	666.914	33		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	541.497	27		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	417.311	52		35-197	NA	1.022

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-08	**Units:**	ng/Kg
Lab Code:	E1900047-007	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.394**	0.292	0.484	1	1	0.394
1,2,3,7,8-PeCDD	**2.61**	0.0777	2.42	1	1	2.61
1,2,3,4,7,8-HxCDD	**3.19**	0.0614	2.42	1	0.1	0.319
1,2,3,6,7,8-HxCDD	**36.7**	0.0660	2.42	1	0.1	3.67
1,2,3,7,8,9-HxCDD	**11.9**	0.0608	2.42	1	0.1	1.19
1,2,3,4,6,7,8-HpCDD	**758**	2.03	2.42	1	0.01	7.58
OCDD	**9230**	0.790	4.84	1	0.0003	2.77
2,3,7,8-TCDF	**124**	0.345	0.484	1	0.1	12.4
1,2,3,7,8-PeCDF	**17.1**	0.335	2.42	1	0.03	0.513
2,3,4,7,8-PeCDF	**40.3**	0.371	2.42	1	0.3	12.1
1,2,3,4,7,8-HxCDF	**26.0**	0.810	2.42	1	0.1	2.60
1,2,3,6,7,8-HxCDF	**9.96**	0.616	2.42	1	0.1	0.996
1,2,3,7,8,9-HxCDF	**3.58**	0.831	2.42	1	0.1	0.358
2,3,4,6,7,8-HxCDF	**8.79**	0.678	2.42	1	0.1	0.879
1,2,3,4,6,7,8-HpCDF	**110**	0.662	2.42	1	0.01	1.10
1,2,3,4,7,8,9-HpCDF	**7.39**	1.05	2.42	1	0.01	0.0739
OCDF	**358**	0.536	4.84	1	0.0003	0.107
		Total TEQ				49.7

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-10	**Units:**	ng/Kg
Lab Code:	E1900047-008	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 17:51
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.503g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520229	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.741		0.176	0.476	0.65	1.001	1
1,2,3,7,8-PeCDD	2.23	**JK**	0.119	2.38	1.22	1.001	1
1,2,3,4,7,8-HxCDD	3.16		0.150	2.38	1.39	1.000	1
1,2,3,6,7,8-HxCDD	27.0		0.157	2.38	1.38	1.000	1
1,2,3,7,8,9-HxCDD	10.2		0.146	2.38	1.28	1.007	1
1,2,3,4,6,7,8-HpCDD	487		2.58	2.58	1.05	1.000	1
OCDD	5770	**E**	0.440	4.76	0.90	1.000	1
2,3,7,8-TCDF	6.63		0.0855	0.476	0.76	1.001	1
1,2,3,7,8-PeCDF	7.10		0.191	2.38	1.45	1.001	1
2,3,4,7,8-PeCDF	13.8		0.215	2.38	1.53	1.001	1
1,2,3,4,7,8-HxCDF	13.4		0.412	2.38	1.27	1.000	1
1,2,3,6,7,8-HxCDF	7.50		0.293	2.38	1.27	1.000	1
1,2,3,7,8,9-HxCDF	2.22	**J**	0.363	2.38	1.37	1.001	1
2,3,4,6,7,8-HxCDF	5.87		0.295	2.38	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	90.3		0.580	2.38	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	6.45		0.864	2.38	1.20	1.000	1
OCDF	314		0.472	4.76	0.85	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-10	**Units:**	ng/Kg
Lab Code:	E1900047-008	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 17:51
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.503g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520229	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	13.9		0.176	0.476	0.88		1
Total Penta-Dioxins	33.6		0.119	2.38	1.52		1
Total Hexa-Dioxins	203		0.151	2.38	1.27		1
Total Hepta-Dioxins	586		2.58	2.58	1.03		1
Total Tetra-Furans	109		0.0855	0.476	0.77		1
Total Penta-Furans	228		0.202	2.38	1.52		1
Total Hexa-Furans	283		0.329	2.38	1.21		1
Total Hepta-Furans	332		0.698	2.38	1.03		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-10	**Units:**	Percent
Lab Code:	E1900047-008	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 17:51
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.503g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520229	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	617.283	31		25-164	0.82	1.021
13C-1,2,3,7,8-PeCDD	2000	766.265	38		25-181	1.64	1.191
13C-1,2,3,4,7,8-HxCDD	2000	907.027	45		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	957.195	48		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	667.194	33		23-140	1.06	1.068
13C-OCDD	4000	565.425	14	Y	17-157	0.92	1.144
13C-2,3,7,8-TCDF	2000	909.870	45		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	786.607	39		24-185	1.58	1.148
13C-2,3,4,7,8-PeCDF	2000	712.716	36		21-178	1.63	1.181
13C-1,2,3,4,7,8-HxCDF	2000	527.671	26		26-152	0.53	0.970
13C-1,2,3,6,7,8-HxCDF	2000	870.599	44		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	811.406	41		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	872.729	44		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	605.237	30		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	499.669	25	Y	26-138	0.44	1.080
37Cl-2,3,7,8-TCDD	800	376.678	47		35-197	NA	1.022

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-10	**Units:**	ng/Kg
Lab Code:	E1900047-008	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.741**	0.176	0.476	1	1	0.741
1,2,3,7,8-PeCDD	**2.23**	0.119	2.38	1	1	2.23
1,2,3,4,7,8-HxCDD	**3.16**	0.150	2.38	1	0.1	0.316
1,2,3,6,7,8-HxCDD	**27.0**	0.157	2.38	1	0.1	2.70
1,2,3,7,8,9-HxCDD	**10.2**	0.146	2.38	1	0.1	1.02
1,2,3,4,6,7,8-HpCDD	**487**	2.58	2.58	1	0.01	4.87
OCDD	**5770**	0.440	4.76	1	0.0003	1.73
2,3,7,8-TCDF	**6.63**	0.0855	0.476	1	0.1	0.663
1,2,3,7,8-PeCDF	**7.10**	0.191	2.38	1	0.03	0.213
2,3,4,7,8-PeCDF	**13.8**	0.215	2.38	1	0.3	4.14
1,2,3,4,7,8-HxCDF	**13.4**	0.412	2.38	1	0.1	1.34
1,2,3,6,7,8-HxCDF	**7.50**	0.293	2.38	1	0.1	0.750
1,2,3,7,8,9-HxCDF	**2.22**	0.363	2.38	1	0.1	0.222
2,3,4,6,7,8-HxCDF	**5.87**	0.295	2.38	1	0.1	0.587
1,2,3,4,6,7,8-HpCDF	**90.3**	0.580	2.38	1	0.01	0.903
1,2,3,4,7,8,9-HpCDF	**6.45**	0.864	2.38	1	0.01	0.0645
OCDF	**314**	0.472	4.76	1	0.0003	0.0942
		Total TEQ				22.6

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-12	**Units:**	ng/Kg
Lab Code:	E1900047-009	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 18:39
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.409g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520230	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.348	0.480			1
1,2,3,7,8-PeCDD	2.14	**BJK**	0.189	2.40	1.29	1.000	1
1,2,3,4,7,8-HxCDD	2.78		0.187	2.40	1.23	1.000	1
1,2,3,6,7,8-HxCDD	24.4		0.202	2.40	1.28	1.000	1
1,2,3,7,8,9-HxCDD	7.76		0.185	2.40	1.19	1.007	1
1,2,3,4,6,7,8-HpCDD	303		0.330	2.40	1.04	1.000	1
OCDD	2980		0.841	4.80	0.89	1.000	1
2,3,7,8-TCDF	7.70		0.273	0.480	0.74	1.000	1
1,2,3,7,8-PeCDF	8.84		0.296	2.40	1.49	1.001	1
2,3,4,7,8-PeCDF	17.3		0.319	2.40	1.53	1.001	1
1,2,3,4,7,8-HxCDF	13.9		0.564	2.40	1.42	1.000	1
1,2,3,6,7,8-HxCDF	6.96		0.395	2.40	1.19	1.000	1
1,2,3,7,8,9-HxCDF	1.43	**BJK**	0.494	2.40	0.93	1.001	1
2,3,4,6,7,8-HxCDF	5.41		0.433	2.40	1.31	1.001	1
1,2,3,4,6,7,8-HpCDF	63.2		0.336	2.40	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	3.14		0.470	2.40	1.01	1.000	1
OCDF	162		0.750	4.80	0.90	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-12	**Units:**	ng/Kg
Lab Code:	E1900047-009	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 18:39
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.409g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520230	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	18.8		0.348	0.480	0.84		1
Total Penta-Dioxins	42.2		0.189	2.40	1.59		1
Total Hexa-Dioxins	191		0.191	2.40	1.25		1
Total Hepta-Dioxins	498		0.330	2.40	1.06		1
Total Tetra-Furans	121		0.273	0.480	0.86		1
Total Penta-Furans	301		0.307	2.40	1.42		1
Total Hexa-Furans	269		0.458	2.40	1.19		1
Total Hepta-Furans	218		0.394	2.40	1.03		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-12	**Units:**	Percent
Lab Code:	E1900047-009	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/01/19 18:39
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.409g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520230	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520222

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	726.109	36		25-164	0.79	1.021
13C-1,2,3,7,8-PeCDD	2000	869.444	43		25-181	1.61	1.191
13C-1,2,3,4,7,8-HxCDD	2000	1019.350	51		32-141	1.38	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1108.053	55		28-130	1.19	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	777.998	39		23-140	1.10	1.068
13C-OCDD	4000	685.592	17		17-157	0.91	1.143
13C-2,3,7,8-TCDF	2000	1058.090	53		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	878.548	44		24-185	1.60	1.147
13C-2,3,4,7,8-PeCDF	2000	794.733	40		21-178	1.59	1.180
13C-1,2,3,4,7,8-HxCDF	2000	671.039	34		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1046.941	52		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	965.577	48		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	972.050	49		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	684.135	34		28-143	0.46	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	615.816	31		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	452.489	57		35-197	NA	1.022

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-12	**Units:**	ng/Kg
Lab Code:	E1900047-009	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.348	0.480	1	1	
1,2,3,7,8-PeCDD	**2.14**	0.189	2.40	1	1	2.14
1,2,3,4,7,8-HxCDD	**2.78**	0.187	2.40	1	0.1	0.278
1,2,3,6,7,8-HxCDD	**24.4**	0.202	2.40	1	0.1	2.44
1,2,3,7,8,9-HxCDD	**7.76**	0.185	2.40	1	0.1	0.776
1,2,3,4,6,7,8-HpCDD	**303**	0.330	2.40	1	0.01	3.03
OCDD	**2980**	0.841	4.80	1	0.0003	0.894
2,3,7,8-TCDF	**7.70**	0.273	0.480	1	0.1	0.770
1,2,3,7,8-PeCDF	**8.84**	0.296	2.40	1	0.03	0.265
2,3,4,7,8-PeCDF	**17.3**	0.319	2.40	1	0.3	5.19
1,2,3,4,7,8-HxCDF	**13.9**	0.564	2.40	1	0.1	1.39
1,2,3,6,7,8-HxCDF	**6.96**	0.395	2.40	1	0.1	0.696
1,2,3,7,8,9-HxCDF	**1.43**	0.494	2.40	1	0.1	0.143
2,3,4,6,7,8-HxCDF	**5.41**	0.433	2.40	1	0.1	0.541
1,2,3,4,6,7,8-HpCDF	**63.2**	0.336	2.40	1	0.01	0.632
1,2,3,4,7,8,9-HpCDF	**3.14**	0.470	2.40	1	0.01	0.0314
OCDF	**162**	0.750	4.80	1	0.0003	0.0486
		Total TEQ				19.3

2005 WHO TEFs, ND = 0

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-14	**Units:**	ng/Kg
Lab Code:	E1900047-010	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 19:39
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.339g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520217	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520205

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.484	**JK**	0.205	0.484	0.63	1.001	1
1,2,3,7,8-PeCDD	2.71		0.0662	2.42	1.39	1.001	1
1,2,3,4,7,8-HxCDD	3.82		0.0757	2.42	1.29	1.000	1
1,2,3,6,7,8-HxCDD	34.6		0.0862	2.42	1.25	1.000	1
1,2,3,7,8,9-HxCDD	10.7		0.0767	2.42	1.39	1.007	1
1,2,3,4,6,7,8-HpCDD	485		0.521	2.42	1.04	1.000	1
OCDD	5150	**E**	0.328	4.84	0.89	1.000	1
2,3,7,8-TCDF	6.64		0.0650	0.484	0.81	1.001	1
1,2,3,7,8-PeCDF	7.19		0.185	2.42	1.51	1.000	1
2,3,4,7,8-PeCDF	16.9		0.201	2.42	1.57	1.001	1
1,2,3,4,7,8-HxCDF	15.8		0.460	2.42	1.24	1.000	1
1,2,3,6,7,8-HxCDF	8.18		0.370	2.42	1.35	1.000	1
1,2,3,7,8,9-HxCDF	2.85		0.417	2.42	1.16	1.001	1
2,3,4,6,7,8-HxCDF	7.54		0.392	2.42	1.13	1.000	1
1,2,3,4,6,7,8-HpCDF	87.1		0.587	2.42	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	6.05		0.802	2.42	1.15	1.000	1
OCDF	212		0.351	4.84	0.86	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-14	**Units:**	ng/Kg
Lab Code:	E1900047-010	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 19:39
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.339g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520217	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520205

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	21.6		0.205	0.484	0.73		1
Total Penta-Dioxins	46.3		0.0662	2.42	1.64		1
Total Hexa-Dioxins	231		0.0793	2.42	1.27		1
Total Hepta-Dioxins	802		0.521	2.42	1.03		1
Total Tetra-Furans	92.9		0.0650	0.484	0.82		1
Total Penta-Furans	206		0.193	2.42	1.48		1
Total Hexa-Furans	287		0.405	2.42	1.22		1
Total Hepta-Furans	302		0.683	2.42	1.02		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-14	**Units:**	Percent
Lab Code:	E1900047-010	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 19:39
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.339g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520217	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520205

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	669.384	33		25-164	0.79	1.021
13C-1,2,3,7,8-PeCDD	2000	1002.733	50		25-181	1.59	1.190
13C-1,2,3,4,7,8-HxCDD	2000	996.798	50		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	879.527	44		28-130	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	797.039	40		23-140	1.09	1.068
13C-OCDD	4000	609.224	15	Y	17-157	0.89	1.143
13C-2,3,7,8-TCDF	2000	948.015	47		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	986.341	49		24-185	1.61	1.147
13C-2,3,4,7,8-PeCDF	2000	904.578	45		21-178	1.60	1.179
13C-1,2,3,4,7,8-HxCDF	2000	667.825	33		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	872.574	44		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	906.665	45		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	832.744	42		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	645.509	32		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	617.866	31		26-138	0.44	1.080
37Cl-2,3,7,8-TCDD	800	418.286	52		35-197	NA	1.021

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-14	**Units:**	ng/Kg
Lab Code:	E1900047-010	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.484**	0.205	0.484	1	1	0.484
1,2,3,7,8-PeCDD	**2.71**	0.0662	2.42	1	1	2.71
1,2,3,4,7,8-HxCDD	**3.82**	0.0757	2.42	1	0.1	0.382
1,2,3,6,7,8-HxCDD	**34.6**	0.0862	2.42	1	0.1	3.46
1,2,3,7,8,9-HxCDD	**10.7**	0.0767	2.42	1	0.1	1.07
1,2,3,4,6,7,8-HpCDD	**485**	0.521	2.42	1	0.01	4.85
OCDD	**5150**	0.328	4.84	1	0.0003	1.55
2,3,7,8-TCDF	**6.64**	0.0650	0.484	1	0.1	0.664
1,2,3,7,8-PeCDF	**7.19**	0.185	2.42	1	0.03	0.216
2,3,4,7,8-PeCDF	**16.9**	0.201	2.42	1	0.3	5.07
1,2,3,4,7,8-HxCDF	**15.8**	0.460	2.42	1	0.1	1.58
1,2,3,6,7,8-HxCDF	**8.18**	0.370	2.42	1	0.1	0.818
1,2,3,7,8,9-HxCDF	**2.85**	0.417	2.42	1	0.1	0.285
2,3,4,6,7,8-HxCDF	**7.54**	0.392	2.42	1	0.1	0.754
1,2,3,4,6,7,8-HpCDF	**87.1**	0.587	2.42	1	0.01	0.871
1,2,3,4,7,8,9-HpCDF	**6.05**	0.802	2.42	1	0.01	0.0605
OCDF	**212**	0.351	4.84	1	0.0003	0.0636
		Total TEQ				24.9

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-16	**Units:**	ng/Kg
Lab Code:	E1900047-011	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 20:28
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.488g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520218	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520205

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	0.265	**JK**	0.0922	0.477	0.90	1.001	1
1,2,3,7,8-PeCDD	1.67	**BJ**	0.0925	2.38	1.49	1.001	1
1,2,3,4,7,8-HxCDD	2.69		0.0509	2.38	1.34	1.000	1
1,2,3,6,7,8-HxCDD	19.4		0.0590	2.38	1.25	1.000	1
1,2,3,7,8,9-HxCDD	6.53		0.0520	2.38	1.32	1.007	1
1,2,3,4,6,7,8-HpCDD	304		0.390	2.38	1.05	1.000	1
OCDD	3930	**E**	0.292	4.77	0.89	1.000	1
2,3,7,8-TCDF	3.56		0.0668	0.477	0.81	1.001	1
1,2,3,7,8-PeCDF	4.19		0.164	2.38	1.62	1.000	1
2,3,4,7,8-PeCDF	8.59		0.172	2.38	1.49	1.001	1
1,2,3,4,7,8-HxCDF	9.55		0.164	2.38	1.17	1.000	1
1,2,3,6,7,8-HxCDF	4.44		0.0676	2.38	1.30	1.001	1
1,2,3,7,8,9-HxCDF	1.03	**BJ**	0.0757	2.38	1.07	1.001	1
2,3,4,6,7,8-HxCDF	3.99		0.0703	2.38	1.28	1.000	1
1,2,3,4,6,7,8-HpCDF	54.2		0.460	2.38	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	2.94		0.595	2.38	1.03	1.000	1
OCDF	144		0.400	4.77	0.89	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-16	**Units:**	ng/Kg
Lab Code:	E1900047-011	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 20:28
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.488g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520218	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520205

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	8.84		0.0922	0.477	0.79		1
Total Penta-Dioxins	33.5		0.0925	2.38	1.65		1
Total Hexa-Dioxins	158		0.0537	2.38	1.27		1
Total Hepta-Dioxins	394		0.390	2.38	1.03		1
Total Tetra-Furans	47.2		0.0668	0.477	0.67		1
Total Penta-Furans	135		0.168	2.38	1.46		1
Total Hexa-Furans	193		0.0822	2.38	1.19		1
Total Hepta-Furans	180		0.521	2.38	1.03		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-16	**Units:**	Percent
Lab Code:	E1900047-011	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 20:28
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.488g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520218	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520205

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1015.406	51		25-164	0.79	1.021
13C-1,2,3,7,8-PeCDD	2000	1238.440	62		25-181	1.57	1.189
13C-1,2,3,4,7,8-HxCDD	2000	1434.319	72		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1291.925	65		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	923.508	46		23-140	1.10	1.066
13C-OCDD	4000	761.527	19		17-157	0.92	1.143
13C-2,3,7,8-TCDF	2000	1345.155	67		24-169	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1174.816	59		24-185	1.58	1.146
13C-2,3,4,7,8-PeCDF	2000	1076.928	54		21-178	1.60	1.180
13C-1,2,3,4,7,8-HxCDF	2000	540.931	27		26-152	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1277.507	64		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1222.640	61		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1236.504	62		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	792.715	40		28-143	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	754.952	38		26-138	0.45	1.079
37Cl-2,3,7,8-TCDD	800	469.998	59		35-197	NA	1.021

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	01/14/19 16:30
Sample Matrix:	Solid	**Date Received:**	01/22/19 09:47
Sample Name:	HS19010635-16	**Units:**	ng/Kg
Lab Code:	E1900047-011	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**0.265**	0.0922	0.477	1	1	0.265
1,2,3,7,8-PeCDD	**1.67**	0.0925	2.38	1	1	1.67
1,2,3,4,7,8-HxCDD	**2.69**	0.0509	2.38	1	0.1	0.269
1,2,3,6,7,8-HxCDD	**19.4**	0.0590	2.38	1	0.1	1.94
1,2,3,7,8,9-HxCDD	**6.53**	0.0520	2.38	1	0.1	0.653
1,2,3,4,6,7,8-HpCDD	**304**	0.390	2.38	1	0.01	3.04
OCDD	**3930**	0.292	4.77	1	0.0003	1.18
2,3,7,8-TCDF	**3.56**	0.0668	0.477	1	0.1	0.356
1,2,3,7,8-PeCDF	**4.19**	0.164	2.38	1	0.03	0.126
2,3,4,7,8-PeCDF	**8.59**	0.172	2.38	1	0.3	2.58
1,2,3,4,7,8-HxCDF	**9.55**	0.164	2.38	1	0.1	0.955
1,2,3,6,7,8-HxCDF	**4.44**	0.0676	2.38	1	0.1	0.444
1,2,3,7,8,9-HxCDF	**1.03**	0.0757	2.38	1	0.1	0.103
2,3,4,6,7,8-HxCDF	**3.99**	0.0703	2.38	1	0.1	0.399
1,2,3,4,6,7,8-HpCDF	**54.2**	0.460	2.38	1	0.01	0.542
1,2,3,4,7,8,9-HpCDF	**2.94**	0.595	2.38	1	0.01	0.0294
OCDF	**144**	0.400	4.77	1	0.0003	0.0432
		Total TEQ				14.6

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900027-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/30/19 12:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.072g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520185	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520181

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.259	0.496			1
1,2,3,7,8-PeCDD	0.215**J**		0.0547	2.48	1.46	1.001	1
1,2,3,4,7,8-HxCDD	0.0842**JK**		0.0259	2.48	1.58	1.000	1
1,2,3,6,7,8-HxCDD	ND	U	0.0299	2.48			1
1,2,3,7,8,9-HxCDD	0.113**JK**		0.0265	2.48	1.01	1.007	1
1,2,3,4,6,7,8-HpCDD	0.116**JK**		0.0472	2.48	0.86	1.000	1
OCDD	1.51**JK**		0.210	4.96	0.74	1.000	1
2,3,7,8-TCDF	ND	U	0.0772	0.496			1
1,2,3,7,8-PeCDF	0.237**J**		0.0581	2.48	1.41	1.001	1
2,3,4,7,8-PeCDF	0.213**JK**		0.0595	2.48	1.06	1.000	1
1,2,3,4,7,8-HxCDF	0.161**J**		0.0452	2.48	1.32	1.000	1
1,2,3,6,7,8-HxCDF	0.151**J**		0.0447	2.48	1.31	1.000	1
1,2,3,7,8,9-HxCDF	0.199**J**		0.0684	2.48	1.12	1.000	1
2,3,4,6,7,8-HxCDF	0.132**J**		0.0610	2.48	1.07	1.000	1
1,2,3,4,6,7,8-HpCDF	0.174**JK**		0.0831	2.48	0.62	1.000	1
1,2,3,4,7,8,9-HpCDF	0.133**JK**		0.0888	2.48	0.83	1.000	1
OCDF	0.835**J**		0.410	4.96	0.87	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900027-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/30/19 12:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.072g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520185	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520181

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.259	0.496			1
Total Penta-Dioxins	0.215**J**		0.0547	2.48	1.46		1
Total Hexa-Dioxins	ND	U	0.0274	2.48			1
Total Hepta-Dioxins	ND	U	0.0472	2.48			1
Total Tetra-Furans	ND	U	0.0772	0.496			1
Total Penta-Furans	0.237**J**		0.0588	2.48	1.41		1
Total Hexa-Furans	0.643**J**		0.0532	2.48	1.32		1
Total Hepta-Furans	ND	U	0.0858	2.48			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900027-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/30/19 12:47
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.072g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520185	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520181

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	649.796	32		25-164	0.79	1.020
13C-1,2,3,7,8-PeCDD	2000	1047.595	52		25-181	1.62	1.190
13C-1,2,3,4,7,8-HxCDD	2000	1043.632	52		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	976.760	49		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	693.762	35		23-140	1.08	1.068
13C-OCDD	4000	492.815	12	Y	17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	963.111	48		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	972.722	49		24-185	1.59	1.146
13C-2,3,4,7,8-PeCDF	2000	941.586	47		21-178	1.61	1.179
13C-1,2,3,4,7,8-HxCDF	2000	882.978	44		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	886.412	44		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	709.946	35		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	686.143	34		28-136	0.54	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	507.743	25	Y	28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	636.763	32		26-138	0.43	1.080
37Cl-2,3,7,8-TCDD	800	399.190	50		35-197	NA	1.021

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900030-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 07:15
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.011g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307278	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	54.1		3.13	3.99	2.93	1.001	1
PCB 2	12.0		2.96	3.99	3.37	0.989	1
PCB 3	52.0		2.10	3.99	3.01	1.000	1
PCB 4	1110		4.95	4.95	-	1.001	1
PCB 10	ND	U	1.81	9.98			1
PCB 9	166		1.17	3.99	-	1.133	1
PCB 7	81.2		0.975	3.99	-	1.140	1
PCB 6	482		1.10	3.99	-	1.154	1
PCB 5	58.1		1.25	3.99	-	1.171	1
PCB 8	1830		0.931	9.98	-	1.179	1
PCB 14	ND	U	1.17	3.99			1
PCB 11	ND	U	1.32	20.0			1
PCBs 12 + 13	94.9		1.25	9.98	-	0.986	1
PCB 15	550		0.692	3.99	-	1.001	1
PCB 19	298		2.02	3.99	1.08	1.001	1
PCBs 18 + 30	2200		2.00	9.98	1.08	1.090	1
PCB 17	1030		2.50	3.99	1.10	1.111	1
PCB 27	152		1.86	3.99	1.11	1.122	1
PCB 24	30.8		1.69	3.99	1.11	1.128	1
PCB 16	931		2.66	3.99	1.10	1.136	1
PCB 32	538		1.66	3.99	1.08	1.160	1
PCB 34	ND	U	8.38	8.38			1
PCB 23	ND	U	7.24	7.24			1
PCBs 26 + 29	233		7.95	9.98	1.03	1.244	1
PCB 25	69.6		5.65	5.65	1.02	0.845	1
PCB 31	1110		7.81	9.98	1.02	0.856	1
PCBs 20 + 28	1160		8.23	9.98	1.02	0.866	1
PCBs 21 + 33	634		6.67	9.98	1.01	0.875	1
PCB 22	376		7.73	7.73	1.02	0.889	1
PCB 36	ND	U	7.75	7.75			1
PCB 39	ND	U	7.54	7.54			1
PCB 38	ND	U	8.26	8.26			1
PCB 35	ND	U	8.74	8.74			1
PCB 37	209		12.3	12.3	1.01	1.001	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900030-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 07:15
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.011g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307278	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 54	9.91		0.780	3.99	0.83	1.001	1
PCBs 50 + 53	97.9		0.559	20.0	0.78	1.091	1
PCBs 45 + 51	133		0.585	9.98	0.76	1.120	1
PCB 46	46.6		0.687	3.99	0.80	1.135	1
PCB 52	358		0.600	9.98	0.77	1.191	1
PCBs 43 + 73	17.1		0.515	9.98	0.77	1.201	1
PCBs 49 + 69	179		0.441	20.0	0.78	1.211	1
PCB 48	95.1		0.547	9.98	0.78	1.223	1
PCBs 44 + 47 + 65	301		0.497	20.0	0.77	1.235	1
PCBs 59 + 62 + 75	44.4		0.442	20.0	0.77	1.249	1
PCB 42	75.6		0.491	20.0	0.78	1.257	1
PCBs 41 + 71 + 40	212		0.588	20.0	0.77	1.278	1
PCB 64	103		0.339	9.98	0.77	1.287	1
PCB 72	4.21**JK**		0.448	9.98	1.00	1.319	1
PCB 68	ND	U	0.410	9.98			1
PCB 57	5.50**J**		0.494	9.98	0.73	1.349	1
PCB 58	5.12**J**		0.437	9.98	0.70	1.360	1
PCB 67	13.2		0.445	9.98	0.88	1.366	1
PCB 63	13.1		0.477	9.98	0.81	1.378	1
PCBs 70 + 61 + 74 + 76	349		0.422	39.9	0.77	1.394	1
PCB 66	225		0.482	9.98	0.78	1.407	1
PCB 55	13.1		0.476	9.98	0.74	1.415	1
PCB 56	198		0.937	9.98	0.75	1.438	1
PCB 60	116		0.851	9.98	0.78	1.446	1
PCB 80	7.79**J**		0.802	9.98	0.82	1.458	1
PCB 79	9.70**J**		0.882	9.98	0.75	1.526	1
PCB 78	8.60**J**		0.996	9.98	0.67	1.549	1
PCB 81	9.99		1.24	3.99	0.79	1.000	1
PCB 77	40.1		0.849	3.99	0.74	1.001	1
PCB 104	6.90		0.663	3.99	1.44	1.001	1
PCB 96	6.38**J**		0.480	9.98	1.50	1.017	1
PCB 103	4.78**J**		0.568	9.98	1.53	1.078	1
PCB 94	5.83**J**		0.626	9.98	1.70	1.088	1
PCBs 95 + 93 + 100	59.8		0.605	39.9	1.57	1.104	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900030-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 07:15
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.011g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307278	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCBs 98 + 102	12.6	**J**	0.527	39.9	1.71	1.115	1
PCBs 88 + 91	18.2		0.596	9.98	1.57	1.133	1
PCB 84	29.9		0.702	3.99	1.55	1.143	1
PCB 89	7.21	**JK**	0.694	9.98	1.31	1.159	1
PCB 121	7.52	**J**	1.22	9.98	1.62	1.167	1
PCB 92	20.7		1.27	9.98	1.54	1.182	1
PCBs 90 + 101 + 113	85.0		1.05	39.9	1.63	1.202	1
PCBs 83 + 99	72.2		1.22	20.0	1.56	1.221	1
PCB 112	6.72	**JK**	0.893	9.98	1.86	1.226	1
PCBs 86 + 87 + 97 + 109 + 119 + 125	116		1.02	39.9	1.62	1.245	1
PCBs 85 + 116 + 117	45.9		0.992	20.0	1.51	1.265	1
PCBs 110 + 115	83.8		0.760	20.0	1.58	1.272	1
PCB 82	33.4		1.57	9.98	1.66	1.284	1
PCB 111	8.99	**J**	0.876	9.98	1.37	1.291	1
PCB 120	7.74	**J**	0.901	9.98	1.61	1.307	1
PCBs 108 + 124	18.5	**J**	1.01	20.0	1.69	1.348	1
PCB 107	15.6		1.06	9.98	1.57	1.356	1
PCB 123	8.05	**K**	0.912	3.99	1.83	1.001	1
PCB 106	7.75	**J**	1.12	9.98	1.68	1.364	1
PCB 118	66.4		0.822	3.99	1.58	1.000	1
PCB 122	10.8		1.17	9.98	1.50	1.385	1
PCB 114	12.8		0.847	3.99	1.60	1.000	1
PCB 105	54.8		0.943	3.99	1.57	1.000	1
PCB 127	9.66	**J**	1.28	9.98	1.64	1.461	1
PCB 126	11.8		1.02	3.99	1.66	1.001	1
PCB 155	6.82		0.564	3.99	1.29	1.001	1
PCB 152	5.09	**J**	0.558	9.98	1.20	1.011	1
PCB 150	5.92	**J**	0.456	9.98	1.06	1.015	1
PCB 136	7.19	**J**	0.560	9.98	1.26	1.028	1
PCB 145	5.76	**J**	0.506	9.98	1.33	1.035	1
PCB 148	4.44	**J**	0.724	9.98	1.31	1.075	1
PCBs 135 + 151 + 154	19.1	**J**	0.680	20.0	1.17	1.098	1
PCB 144	6.04	**J**	0.723	9.98	1.28	1.110	1
PCBs 147 + 149	18.1	**J**	0.611	20.0	1.28	1.121	1
PCB 134	3.06	**JK**	0.571	20.0	0.95	1.128	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900030-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 07:15
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.011g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307278	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 143	6.81	J	0.707	20.0	1.30	1.129	1
PCBs 139 + 140	12.6	J	0.604	20.0	1.15	1.136	1
PCB 131	4.06	J	0.543	9.98	1.22	1.144	1
PCB 142	5.58	J	0.755	9.98	1.19	1.148	1
PCB 132	10.6		0.692	9.98	1.27	1.159	1
PCB 133	6.08	J	0.707	9.98	1.32	1.169	1
PCB 165	6.14	J	0.510	9.98	1.31	1.180	1
PCB 146	7.86	J	0.637	9.98	1.20	1.188	1
PCB 161	5.88	J	0.497	9.98	1.25	1.191	1
PCBs 153 + 168	20.6		0.538	20.0	1.21	1.205	1
PCB 141	8.70	J	0.692	9.98	1.19	1.212	1
PCB 130	7.39	J	0.817	9.98	1.23	1.224	1
PCB 137	7.02	J	0.641	9.98	1.06	1.230	1
PCB 164	7.28	J	0.541	9.98	1.18	1.234	1
PCBs 129 + 138 + 163	25.5	J	0.707	39.9	1.21	1.242	1
PCB 160	7.90	J	0.343	39.9	1.15	1.246	1
PCB 158	8.48	J	0.496	9.98	1.13	1.253	1
PCBs 128 + 166	15.1	J	0.594	20.0	1.24	1.277	1
PCB 159	6.70	J	1.42	9.98	1.31	1.305	1
PCB 162	8.08	J	1.26	9.98	1.20	1.313	1
PCB 167	9.45		1.09	3.99	1.13	1.001	1
PCBs 156 + 157	20.8		1.94	7.98	1.19	1.000	1
PCB 169	10.8		1.37	3.99	1.31	1.000	1
PCB 188	8.34		0.580	3.99	1.11	1.001	1
PCB 179	5.85	J	0.463	9.98	1.03	1.012	1
PCB 184	6.07	J	0.419	9.98	1.03	1.021	1
PCB 176	5.97	J	0.488	9.98	1.11	1.033	1
PCB 186	6.44	J	0.456	9.98	1.04	1.044	1
PCB 178	6.62	JK	0.677	9.98	1.22	1.076	1
PCB 175	6.90	J	0.640	9.98	1.00	1.092	1
PCB 187	8.98	J	0.556	9.98	1.05	1.098	1
PCB 182	6.56	J	0.625	9.98	1.01	1.102	1
PCBs 183 + 185	13.6	J	1.33	20.0	1.03	1.113	1
PCB 174	7.22	J	1.36	9.98	1.19	1.121	1
PCB 177	6.24	JK	1.48	9.98	0.84	1.131	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900030-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 07:15
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.011g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307278	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 181	6.29	**JK**	1.29	9.98	0.86	1.140	1
PCBs 171 + 173	14.6	**J**	1.53	20.0	1.05	1.146	1
PCB 172	7.35	**J**	1.57	9.98	0.98	0.907	1
PCB 192	7.78	**J**	1.13	9.98	1.05	0.911	1
PCBs 180 + 193	16.5	**J**	1.13	20.0	1.09	0.918	1
PCB 191	7.65	**J**	1.18	9.98	1.15	0.925	1
PCB 170	8.97	**J**	1.65	9.98	1.03	0.943	1
PCB 190	8.18	**J**	1.10	9.98	0.97	0.952	1
PCB 189	9.45		1.08	3.99	1.19	1.000	1
PCB 202	13.1		0.909	3.99	0.94	1.001	1
PCB 201	10.9		0.827	9.98	0.99	1.020	1
PCB 204	9.50	**J**	0.835	9.98	0.87	1.034	1
PCB 197	10.1	**J**	0.751	20.0	0.92	1.039	1
PCB 200	9.99	**J**	0.843	20.0	0.95	1.043	1
PCBs 198 + 199	25.0		1.13	20.0	0.99	1.102	1
PCB 196	11.2		1.14	9.98	0.99	0.922	1
PCB 203	13.5		0.997	9.98	0.90	0.926	1
PCB 195	10.1		1.27	9.98	0.89	0.950	1
PCB 194	11.8		1.26	9.98	0.98	0.992	1
PCB 205	13.6		1.06	3.99	0.86	1.001	1
PCB 208	14.8		1.61	3.99	0.73	1.001	1
PCB 207	9.30	**JK**	1.88	9.98	1.00	1.018	1
PCB 206	17.7		2.81	3.99	0.79	1.000	1
PCB 209	12.7		1.18	3.99	1.16	1.001	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900030-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 07:15
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.011g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307278	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	118		2.10	9.98			1
Total DiCB	4380		0.692	20.0			1
Total TriCB	8970		1.66	9.98			1
Total TetraCB	2690		0.339	39.9			1
Total PentaCB	856		0.480	39.9			1
Total HexaCB	311		0.343	39.9			1
Total HeptaCB	162		0.419	20.0			1
Total OctaCB	139		0.751	20.0			1
Total NonaCB	41.8		1.61	9.98			1
Total PCBs	17700		0.339	39.9			1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900030-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 07:15
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.011g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307278	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	941.677	47		15-150	2.75	0.740
PCB 3L	2000	875.833	44		15-150	3.14	0.869
PCB 4L	2000	796.504	40		25-150	1.57	0.882
PCB 15L	2000	978.025	49		25-150	1.56	1.201
PCB 19L	2000	1003.572	50		25-150	1.04	1.055
PCB 37L	2000	942.255	47		25-150	1.03	1.081
PCB 54L	2000	784.503	39		25-150	0.81	0.840
PCB 81L	2000	821.030	41		25-150	0.77	1.318
PCB 77L	2000	1059.349	53		25-150	0.80	1.339
PCB 104L	2000	799.525	40		25-150	1.64	0.833
PCB 123L	2000	958.647	48		25-150	1.56	1.132
PCB 118L	2000	953.768	48		25-150	1.56	1.142
PCB 114L	2000	963.465	48		25-150	1.57	1.157
PCB 105L	2000	987.211	49		25-150	1.57	1.178
PCB 126L	2000	1017.228	51		25-150	1.55	1.264
PCB 155L	2000	873.423	44		25-150	1.30	0.805
PCB 167L	2000	1008.319	50		25-150	1.26	1.068
PCBs 156L + 157L	4000	2024.917	51		25-150	1.24	1.096
PCB 169L	2000	1022.174	51		25-150	1.24	1.170
PCB 188L	2000	835.785	42		25-150	1.09	0.736
PCB 189L	2000	1088.911	54		25-150	1.04	0.963
PCB 202L	2000	930.365	47		25-150	0.91	0.833
PCB 205L	2000	1013.547	51		25-150	0.91	1.009
PCB 208L	2000	926.862	46		25-150	0.84	0.951
PCB 206L	2000	1021.442	51		25-150	0.79	1.044
PCB 209L	2000	1102.091	55		25-150	1.20	1.079
PCB 28L	2000	1109.661	55		30-135	1.00	0.935
PCB 111L	2000	1067.968	53		30-135	1.60	1.075
PCB 178L	2000	1085.744	54		30-135	1.06	1.008

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Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Analyzed:**	01/31/19
Sample Matrix:	Solid	**Date Extracted:**	01/24/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	623870

	Lab Control Sample EQ1900027-02			Duplicate Lab Control Sample EQ1900027-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	82.2	99.0	83	82.5	100	82	70-140	<1	50
1,2,3,4,7,8-HxCDD	102	99.0	103	103	100	103	70-164	2	50
1,2,3,6,7,8-HxCDD	110	99.0	111	114	100	114	76-134	4	50
1,2,3,7,8,9-HxCDD	103	99.0	104	107	100	107	64-162	4	50
1,2,3,7,8-PeCDD	107	99.0	108	108	100	108	70-142	1	50
2,3,7,8-TCDD	30.6	19.8	155	31.5	20.0	158	67-158	3	50
OCDD	224	198	113	224	200	112	78-144	<1	50
1,2,3,4,6,7,8-HpCDF	114	99.0	115	113	100	113	82-122	<1	50
1,2,3,4,7,8,9-HpCDF	109	99.0	110	108	100	108	78-138	<1	50
1,2,3,4,7,8-HxCDF	104	99.0	105	108	100	108	72-134	4	50
1,2,3,6,7,8-HxCDF	107	99.0	108	109	100	109	84-130	2	50
1,2,3,7,8,9-HxCDF	105	99.0	106	108	100	108	78-130	3	50
1,2,3,7,8-PeCDF	102	99.0	103	104	100	104	80-134	2	50
2,3,4,6,7,8-HxCDF	111	99.0	112	111	100	111	70-156	<1	50
2,3,4,7,8-PeCDF	113	99.0	114	113	100	113	68-160	<1	50
2,3,7,8-TCDF	20.7	19.8	104	21.4	20.0	107	75-158	4	50
OCDF	228	198	115	237	200	119	63-170	4	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900027-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 03:48
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.101g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520203	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520197

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	30.6		0.222	0.495	0.81	1.001	1
1,2,3,7,8-PeCDD	107		0.0466	2.48	1.59	1.000	1
1,2,3,4,7,8-HxCDD	102		0.0219	2.48	1.28	1.000	1
1,2,3,6,7,8-HxCDD	110		0.0238	2.48	1.29	1.000	1
1,2,3,7,8,9-HxCDD	103		0.0217	2.48	1.27	1.007	1
1,2,3,4,6,7,8-HpCDD	82.2		0.0230	2.48	1.06	1.000	1
OCDD	224		0.0671	4.95	0.89	1.000	1
2,3,7,8-TCDF	20.7		0.0637	0.495	0.77	1.001	1
1,2,3,7,8-PeCDF	102		0.0489	2.48	1.56	1.001	1
2,3,4,7,8-PeCDF	113		0.0504	2.48	1.55	1.001	1
1,2,3,4,7,8-HxCDF	104		0.0294	2.48	1.19	1.000	1
1,2,3,6,7,8-HxCDF	107		0.0284	2.48	1.21	1.000	1
1,2,3,7,8,9-HxCDF	105		0.0334	2.48	1.22	1.000	1
2,3,4,6,7,8-HxCDF	111		0.0298	2.48	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	114		0.102	2.48	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	109		0.133	2.48	1.00	1.000	1
OCDF	228		0.0857	4.95	0.89	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900027-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 03:48
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.101g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520203	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520197

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	30.6		0.222	0.495	0.81		1
Total Penta-Dioxins	107		0.0466	2.48	1.59		1
Total Hexa-Dioxins	314		0.0225	2.48	1.28		1
Total Hepta-Dioxins	82.2		0.0230	2.48	1.06		1
Total Tetra-Furans	20.8		0.0637	0.495	0.83		1
Total Penta-Furans	217		0.0496	2.48	1.74		1
Total Hexa-Furans	426		0.0300	2.48	1.19		1
Total Hepta-Furans	223		0.116	2.48	1.02		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900027-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 03:48
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.101g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520203	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520197

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	586.900	29		25-164	0.80	1.020
13C-1,2,3,7,8-PeCDD	2000	1041.298	52		25-181	1.61	1.190
13C-1,2,3,4,7,8-HxCDD	2000	1089.251	54		32-141	1.31	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1053.107	53		28-130	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1200.944	60		23-140	1.06	1.068
13C-OCDD	4000	1410.868	35		17-157	0.91	1.142
13C-2,3,7,8-TCDF	2000	842.919	42		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	972.822	49		24-185	1.62	1.146
13C-2,3,4,7,8-PeCDF	2000	939.145	47		21-178	1.60	1.179
13C-1,2,3,4,7,8-HxCDF	2000	928.316	46		26-152	0.52	0.971
13C-1,2,3,6,7,8-HxCDF	2000	933.749	47		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	958.319	48		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	964.804	48		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	867.188	43		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	880.016	44		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	373.955	47		35-197	NA	1.021

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900027-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 04:37
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.004g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520204	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520197

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	31.5		0.608	0.608	0.76	1.001	1
1,2,3,7,8-PeCDD	108		0.0963	2.50	1.60	1.000	1
1,2,3,4,7,8-HxCDD	103		0.0231	2.50	1.28	1.000	1
1,2,3,6,7,8-HxCDD	114		0.0252	2.50	1.30	1.000	1
1,2,3,7,8,9-HxCDD	107		0.0229	2.50	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	82.5		0.0333	2.50	1.08	1.000	1
OCDD	224		0.0738	5.00	0.87	1.000	1
2,3,7,8-TCDF	21.4		0.203	0.500	0.74	1.001	1
1,2,3,7,8-PeCDF	104		0.104	2.50	1.56	1.001	1
2,3,4,7,8-PeCDF	113		0.102	2.50	1.56	1.001	1
1,2,3,4,7,8-HxCDF	108		0.0364	2.50	1.18	1.000	1
1,2,3,6,7,8-HxCDF	109		0.0349	2.50	1.25	1.000	1
1,2,3,7,8,9-HxCDF	108		0.0398	2.50	1.26	1.000	1
2,3,4,6,7,8-HxCDF	111		0.0377	2.50	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	113		0.0846	2.50	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	108		0.103	2.50	0.99	1.000	1
OCDF	237		0.0599	5.00	0.89	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900027-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 04:37
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.004g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520204	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520197

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	31.5		0.608	0.608	0.76		1
Total Penta-Dioxins	108		0.0963	2.50	1.60		1
Total Hexa-Dioxins	324		0.0237	2.50	1.28		1
Total Hepta-Dioxins	82.5		0.0333	2.50	1.08		1
Total Tetra-Furans	22.6		0.203	0.500	0.88		1
Total Penta-Furans	219		0.103	2.50	1.56		1
Total Hexa-Furans	436		0.0371	2.50	1.08		1
Total Hepta-Furans	221		0.0933	2.50	1.01		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900027-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	01/31/19 04:37
Prep Method:	Method Soxhlet	**Date Extracted:**	1/24/19
Sample Amount:	10.004g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520204	**Blank File Name:**	P520185
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520197

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	675.076	34		25-164	0.79	1.020
13C-1,2,3,7,8-PeCDD	2000	1735.784	87		25-181	1.62	1.190
13C-1,2,3,4,7,8-HxCDD	2000	1307.528	65		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1261.774	63		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1843.875	92		23-140	1.06	1.068
13C-OCDD	4000	2551.141	64		17-157	0.89	1.142
13C-2,3,7,8-TCDF	2000	925.739	46		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	1495.508	75		24-185	1.59	1.146
13C-2,3,4,7,8-PeCDF	2000	1534.024	77		21-178	1.61	1.179
13C-1,2,3,4,7,8-HxCDF	2000	1079.230	54		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1098.180	55		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1163.407	58		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1095.214	55		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1294.222	65		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1415.675	71		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	410.407	51		35-197	NA	1.021

RIGHT SOLUTIONS | RIGHT PARTNER

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Analyzed:**	01/31/19
Sample Matrix:	Solid	**Date Extracted:**	01/28/19

Duplicate Lab Control Sample Summary
Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	624743

	Lab Control Sample EQ1900030-02			Duplicate Lab Control Sample EQ1900030-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
PCB 1	332	200	166 *	427	195	219 *	50-150	25	50
PCB 2	314	200	157 *	296	195	152 *	50-150	6	50
PCB 3	458	200	229 *	350	195	179 *	50-150	27	50
PCB 10	729	200	365 *	1060	195	545 *	50-150	37	50
PCB 11	301	200	151 *	344	195	176 *	50-150	13	50
PCB 14	145	200	73	214	195	110	50-150	38	50
PCB 15	6050	200	3027 *	2120	195	1089 *	50-150	96 *	50
PCB 4	2050	200	1025 *	1380	195	709 *	50-150	39	50
PCB 5	528	200	264 *	362	195	186 *	50-150	37	50
PCB 6	2940	200	1473 *	1400	195	716 *	50-150	71 *	50
PCB 7	647	200	324 *	384	195	197 *	50-150	51 *	50
PCB 8	12100	200	6033 *	3730	195	1913 *	50-150	105 *	50
PCB 9	1050	200	526 *	651	195	334 *	50-150	47	50
PCBs 12 + 13	1450	400	362 *	810	390	208 *	50-150	56 *	50
PCB 16	7920	200	3965 *	4370	195	2244 *	50-150	58 *	50
PCB 17	8980	200	4495 *	4420	195	2270 *	50-150	68 *	50
PCB 19	1860	200	930 *	1220	195	626 *	50-150	42	50
PCB 22	3310	200	1657 *	2890	195	1480 *	50-150	14	50
PCB 23	218	200	109	196	195	101	50-150	11	50
PCB 24	541	200	271 *	418	195	214 *	50-150	26	50
PCB 25	771	200	386 *	556	195	286 *	50-150	32	50
PCB 27	1530	200	766 *	898	195	461 *	50-150	52 *	50
PCB 31	9980	200	4997 *	7570	195	3883 *	50-150	28	50
PCB 32	3190	200	1598 *	2820	195	1446 *	50-150	12	50
PCB 34	251	200	126	205	195	105	50-150	20	50
PCB 35	244	200	122	258	195	132	50-150	5	50
PCB 36	197	200	98	166	195	85	50-150	17	50
PCB 37	1050	200	524 *	2310	195	1187 *	50-150	75 *	50
PCB 38	195	200	98	170	195	87	50-150	14	50
PCB 39	241	200	121	226	195	116	50-150	7	50
PCBs 18 + 30	18100	400	4534 *	9440	390	2423 *	50-150	63 *	50
PCBs 20 + 28	11000	400	2743 *	7950	390	2040 *	50-150	32	50
PCBs 21 + 33	5500	400	1376 *	4560	390	1169 *	50-150	19	50
PCBs 26 + 29	2400	400	601 *	1780	390	455 *	50-150	30	50
PCB 42	621	400	155 *	1060	390	273 *	50-150	53 *	50
PCB 46	655	400	164 *	666	390	171 *	50-150	2	50
PCB 48	915	400	229 *	1310	390	336 *	50-150	36	50
PCB 52	2730	400	682 *	4200	390	1079 *	50-150	43	50

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Analyzed:**	01/31/19
Sample Matrix:	Solid	**Date Extracted:**	01/28/19

Duplicate Lab Control Sample Summary
Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	624743

	Lab Control Sample EQ1900030-02			Duplicate Lab Control Sample EQ1900030-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
PCB 54	539	400	135	564	390	145	50-150	5	50
PCB 55	386	400	97	422	390	108	50-150	9	50
PCB 56	1180	400	294 *	3290	390	843 *	50-150	95 *	50
PCB 57	337	400	84	305	390	78	50-150	10	50
PCB 58	341	400	85	317	390	81	50-150	7	50
PCB 60	906	400	227 *	2100	390	539 *	50-150	79 *	50
PCB 63	357	400	89	409	390	105	50-150	13	50
PCB 64	726	400	182 *	1510	390	388 *	50-150	70 *	50
PCB 66	1030	400	258 *	3550	390	911 *	50-150	110 *	50
PCB 67	387	400	97	423	390	108	50-150	9	50
PCB 68	349	400	87	301	390	77	50-150	15	50
PCB 72	332	400	83	301	390	77	50-150	10	50
PCB 77	530	400	133	829	390	213 *	50-150	44	50
PCB 78	587	400	147	521	390	134	50-150	12	50
PCB 79	589	400	147	537	390	138	50-150	9	50
PCB 80	580	400	145	522	390	134	50-150	11	50
PCB 81	443	400	111	445	390	114	50-150	<1	50
PCBs 41 + 71 + 40	2000	1200	167 *	3420	1170	293 *	50-150	52 *	50
PCBs 43 + 73	706	799	88	697	780	89	50-150	1	50
PCBs 44 + 47 + 65	2590	1200	216 *	4220	1170	361 *	50-150	48	50
PCBs 45 + 51	1690	799	211 *	1620	780	208 *	50-150	4	50
PCBs 49 + 69	1650	799	206 *	2420	780	310 *	50-150	38	50
PCBs 50 + 53	1420	799	178 *	1280	780	164 *	50-150	11	50
PCBs 59 + 62 + 75	1170	1200	98	1270	1170	109	50-150	8	50
PCBs 70 + 61 + 74 + 76	2320	1600	145	6320	1560	405 *	50-150	93 *	50
PCB 103	345	400	86	332	390	85	50-150	4	50
PCB 104	543	400	136	529	390	136	50-150	3	50
PCB 105	629	400	157 *	1160	390	299 *	50-150	60 *	50
PCB 106	585	400	146	573	390	147	50-150	2	50
PCB 107	659	400	165 *	731	390	187 *	50-150	10	50
PCB 111	590	400	148	560	390	144	50-150	5	50
PCB 112	560	400	140	505	390	130	50-150	10	50
PCB 114	548	400	137	561	390	144	50-150	2	50
PCB 118	689	400	173 *	1470	390	377 *	50-150	72 *	50
PCB 120	556	400	139	534	390	137	50-150	4	50
PCB 121	580	400	145	504	390	129	50-150	14	50
PCB 122	605	400	151 *	581	390	149	50-150	4	50
PCB 123	422	400	106	407	390	104	50-150	4	50
PCB 126	473	400	118	478	390	123	50-150	1	50
PCB 127	655	400	164 *	630	390	162 *	50-150	4	50

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Analyzed:**	01/31/19
Sample Matrix:	Solid	**Date Extracted:**	01/28/19

Duplicate Lab Control Sample Summary
Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	624743

	Lab Control Sample EQ1900030-02			Duplicate Lab Control Sample EQ1900030-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
PCB 82	636	400	159 *	963	390	247 *	50-150	41	50
PCB 84	446	400	112	763	390	196 *	50-150	52 *	50
PCB 89	365	400	91	389	390	100	50-150	6	50
PCB 92	601	400	151 *	747	390	192 *	50-150	22	50
PCB 94	363	400	91	355	390	91	50-150	2	50
PCB 96	352	400	88	355	390	91	50-150	<1	50
PCBs 108 + 124	1210	799	152 *	1150	780	148	50-150	5	50
PCBs 110 + 115	1150	799	144	2150	780	275 *	50-150	60 *	50
PCBs 83 + 99	1320	799	165 *	2120	780	272 *	50-150	46	50
PCBs 85 + 116 + 117	1720	1200	144	1990	1170	170 *	50-150	14	50
PCBs 86 + 87 + 97 + 109 + 119 + 125	3380	2400	141	4240	2340	181 *	50-150	23	50
PCBs 88 + 91	747	799	93	915	780	117	50-150	20	50
PCBs 90 + 101 + 113	1840	1200	154 *	2710	1170	232 *	50-150	38	50
PCBs 95 + 93 + 100	1270	1200	106	1770	1170	152 *	50-150	33	50
PCBs 98 + 102	579	799	72	613	780	79	50-150	6	50
PCB 130	442	400	111	479	390	123	50-150	8	50
PCB 131	218	400	55	291	390	75	50-150	28	50
PCB 132	459	400	115	523	390	134	50-150	13	50
PCB 133	416	400	104	438	390	112	50-150	5	50
PCB 134	225	400	56	217	390	56	50-150	4	50
PCB 136	400	400	100	437	390	112	50-150	9	50
PCB 137	457	400	114	486	390	125	50-150	6	50
PCB 141	443	400	111	503	390	129	50-150	13	50
PCB 142	419	400	105	426	390	109	50-150	2	50
PCB 143	462	400	116	521	390	134	50-150	12	50
PCB 144	382	400	96	447	390	115	50-150	16	50
PCB 145	414	400	104	444	390	114	50-150	7	50
PCB 146	454	400	114	495	390	127	50-150	9	50
PCB 148	317	400	79	359	390	92	50-150	12	50
PCB 150	408	400	102	428	390	110	50-150	5	50
PCB 152	384	400	96	408	390	105	50-150	6	50
PCB 155	507	400	127	489	390	126	50-150	4	50
PCB 158	467	400	117	498	390	128	50-150	6	50
PCB 159	481	400	120	494	390	127	50-150	3	50
PCB 160	466	400	117	481	390	123	50-150	3	50
PCB 161	395	400	99	431	390	111	50-150	9	50
PCB 162	496	400	124	505	390	130	50-150	2	50
PCB 164	454	400	114	477	390	122	50-150	5	50
PCB 165	440	400	110	472	390	121	50-150	7	50
PCB 167	468	400	117	452	390	116	50-150	4	50

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Analyzed:**	01/31/19
Sample Matrix:	Solid	**Date Extracted:**	01/28/19

Duplicate Lab Control Sample Summary
Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	624743

	Lab Control Sample EQ1900030-02			Duplicate Lab Control Sample EQ1900030-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
PCB 169	474	400	119	464	390	119	50-150	2	50
PCBs 128 + 166	901	799	113	954	780	122	50-150	6	50
PCBs 129 + 138 + 163	1010	1200	84	1240	1170	106	50-150	21	50
PCBs 135 + 151 + 154	1190	1200	99	1370	1170	117	50-150	14	50
PCBs 139 + 140	864	799	108	936	780	120	50-150	8	50
PCBs 147 + 149	726	799	91	977	780	125	50-150	29	50
PCBs 153 + 168	876	799	110	1020	780	131	50-150	15	50
PCBs 156 + 157	968	799	121	952	780	122	50-150	2	50
PCB 170	491	400	123	491	390	126	50-150	<1	50
PCB 172	470	400	118	492	390	126	50-150	4	50
PCB 174	448	400	112	492	390	126	50-150	9	50
PCB 175	455	400	114	452	390	116	50-150	<1	50
PCB 176	420	400	105	464	390	119	50-150	10	50
PCB 177	464	400	116	456	390	117	50-150	2	50
PCB 178	460	400	115	463	390	119	50-150	<1	50
PCB 179	392	400	98	402	390	103	50-150	2	50
PCB 181	503	400	126	478	390	123	50-150	5	50
PCB 182	438	400	110	485	390	125	50-150	10	50
PCB 184	465	400	116	474	390	122	50-150	2	50
PCB 186	474	400	119	482	390	124	50-150	2	50
PCB 187	503	400	126	515	390	132	50-150	2	50
PCB 188	560	400	140	533	390	137	50-150	5	50
PCB 189	489	400	123	473	390	121	50-150	3	50
PCB 190	504	400	126	477	390	122	50-150	5	50
PCB 191	467	400	117	473	390	121	50-150	1	50
PCB 192	521	400	130	517	390	133	50-150	<1	50
PCBs 171 + 173	956	799	120	955	780	123	50-150	<1	50
PCBs 180 + 193	862	799	108	845	780	108	50-150	2	50
PCBs 183 + 185	979	799	123	986	780	126	50-150	<1	50
PCB 194	763	599	127	721	585	123	50-150	6	50
PCB 195	726	599	121	707	585	121	50-150	3	50
PCB 196	695	599	116	698	585	119	50-150	<1	50
PCB 197	682	599	114	726	585	124	50-150	6	50
PCB 200	653	599	109	695	585	119	50-150	6	50
PCB 201	665	599	111	698	585	119	50-150	5	50
PCB 202	803	599	134	796	585	136	50-150	<1	50
PCB 203	773	599	129	782	585	134	50-150	1	50
PCB 204	684	599	114	687	585	118	50-150	<1	50
PCB 205	800	599	134	759	585	130	50-150	5	50

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Analyzed:**	01/31/19
Sample Matrix:	Solid	**Date Extracted:**	01/28/19

Duplicate Lab Control Sample Summary
Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	624743

	Lab Control Sample EQ1900030-02			Duplicate Lab Control Sample EQ1900030-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
PCBs 198 + 199	1450	1200	121	1490	1170	128	50-150	3	50
PCB 206	823	599	137	866	585	148	50-150	5	50
PCB 207	730	599	122	723	585	124	50-150	<1	50
PCB 208	808	599	135	833	585	143	50-150	3	50
PCB 209	732	599	122	718	585	123	50-150	2	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 08:19
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.006g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307279	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	332		5.29	5.29	2.92	1.001	1
PCB 2	314		3.57	4.00	2.99	0.990	1
PCB 3	458		1.01	4.00	2.98	1.001	1
PCB 4	2050		2.24	4.00	-	1.001	1
PCB 10	729		0.893	9.99	-	1.008	1
PCB 9	1050		1.06	4.00	-	1.132	1
PCB 7	647		0.876	4.00	-	1.139	1
PCB 6	2940		0.989	4.00	-	1.153	1
PCB 5	528		1.12	4.00	-	1.169	1
PCB 8	12100		0.837	9.99	-	1.176	1
PCB 14	145		1.05	4.00	-	0.932	1
PCB 11	301		1.19	20.0	-	0.974	1
PCBs 12 + 13	1450		1.13	9.99	-	0.986	1
PCB 15	6050		0.778	4.00	-	1.001	1
PCB 19	1860		2.06	4.00	1.10	1.001	1
PCBs 18 + 30	18100		1.81	9.99	1.08	1.093	1
PCB 17	8980		2.25	4.00	1.09	1.112	1
PCB 27	1530		1.68	4.00	1.09	1.123	1
PCB 24	541		1.52	4.00	1.10	1.129	1
PCB 16	7920		2.40	4.00	1.08	1.137	1
PCB 32	3190		1.50	4.00	1.09	1.162	1
PCB 34	251		46.9	46.9	1.02	1.221	1
PCB 23	218		40.6	40.6	1.02	1.228	1
PCBs 26 + 29	2400		44.5	44.5	1.02	1.245	1
PCB 25	771		31.7	31.7	1.03	0.847	1
PCB 31	9980		43.7	43.7	1.02	0.858	1
PCBs 20 + 28	11000		46.1	46.1	1.03	0.867	1
PCBs 21 + 33	5500		37.4	37.4	1.03	0.876	1
PCB 22	3310		43.3	43.3	1.03	0.889	1
PCB 36	197		43.4	43.4	1.03	0.939	1
PCB 39	241		42.2	42.2	1.01	0.952	1
PCB 38	195		46.2	46.2	1.04	0.970	1
PCB 35	244		49.0	49.0	1.03	0.988	1
PCB 37	1050		63.8	63.8	1.02	1.001	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 08:19
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.006g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307279	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 54	539		1.20	4.00	0.81	1.001	1
PCBs 50 + 53	1420		0.491	20.0	0.77	1.091	1
PCBs 45 + 51	1690		0.514	9.99	0.78	1.121	1
PCB 46	655		0.604	4.00	0.78	1.134	1
PCB 52	2730		0.528	9.99	0.78	1.190	1
PCBs 43 + 73	706		0.453	9.99	0.78	1.194	1
PCBs 49 + 69	1650		0.388	20.0	0.78	1.210	1
PCB 48	915		0.481	9.99	0.78	1.222	1
PCBs 44 + 47 + 65	2590		0.437	20.0	0.78	1.233	1
PCBs 59 + 62 + 75	1170		0.388	20.0	0.77	1.246	1
PCB 42	621		0.432	20.0	0.77	1.255	1
PCBs 41 + 71 + 40	2000		0.516	20.0	0.77	1.276	1
PCB 64	726		0.298	9.99	0.77	1.284	1
PCB 72	332		0.393	9.99	0.77	1.316	1
PCB 68	349		0.360	9.99	0.78	1.328	1
PCB 57	337		0.434	9.99	0.78	1.347	1
PCB 58	341		0.384	9.99	0.78	1.358	1
PCB 67	387		0.391	9.99	0.78	1.363	1
PCB 63	357		0.419	9.99	0.80	1.375	1
PCBs 70 + 61 + 74 + 76	2320		0.371	40.0	0.77	1.391	1
PCB 66	1030		0.424	9.99	0.78	1.403	1
PCB 55	386		0.419	9.99	0.78	1.412	1
PCB 56	1180		10.6	10.6	0.76	1.435	1
PCB 60	906		9.60	9.99	0.76	1.442	1
PCB 80	580		9.05	9.99	0.76	1.455	1
PCB 79	589		9.94	9.99	0.75	1.523	1
PCB 78	587		11.3	11.3	0.76	1.546	1
PCB 81	443		11.0	11.0	0.77	1.000	1
PCB 77	530		8.15	8.15	0.75	1.000	1
PCB 104	543		0.455	4.00	1.56	1.001	1
PCB 96	352		0.357	9.99	1.58	1.017	1
PCB 103	345		0.423	9.99	1.55	1.077	1
PCB 94	363		0.466	9.99	1.56	1.087	1
PCBs 95 + 93 + 100	1270		0.451	40.0	1.56	1.104	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 08:19
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.006g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307279	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCBs 98 + 102	579		0.392	40.0	1.59	1.115	1
PCBs 88 + 91	747		0.444	9.99	1.58	1.132	1
PCB 84	446		0.523	4.00	1.57	1.142	1
PCB 89	365		0.517	9.99	1.56	1.157	1
PCB 121	580		5.11	9.99	1.64	1.165	1
PCB 92	601		5.32	9.99	1.61	1.181	1
PCBs 90 + 101 + 113	1840		4.36	40.0	1.60	1.200	1
PCBs 83 + 99	1320		5.10	20.0	1.60	1.220	1
PCB 112	560		3.74	9.99	1.61	1.225	1
PCBs 86 + 87 + 97 + 109 + 119 + 125	3380		4.24	40.0	1.62	1.236	1
PCBs 85 + 116 + 117	1720		4.16	20.0	1.62	1.260	1
PCBs 110 + 115	1150		3.19	20.0	1.60	1.271	1
PCB 82	636		6.55	9.99	1.59	1.283	1
PCB 111	590		3.67	9.99	1.63	1.291	1
PCB 120	556		3.78	9.99	1.57	1.306	1
PCBs 108 + 124	1210		64.7	64.7	1.51	1.348	1
PCB 107	659		67.8	67.8	1.48	1.355	1
PCB 123	422		73.9	73.9	1.48	1.000	1
PCB 106	585		72.0	72.0	1.50	1.363	1
PCB 118	689		49.2	49.2	1.50	1.000	1
PCB 122	605		74.8	74.8	1.52	1.384	1
PCB 114	548		50.5	50.5	1.52	1.001	1
PCB 105	629		56.2	56.2	1.56	1.000	1
PCB 127	655		82.2	82.2	1.53	1.461	1
PCB 126	473		55.5	55.5	1.57	1.000	1
PCB 155	507		0.675	4.00	1.27	1.001	1
PCB 152	384		0.635	9.99	1.24	1.011	1
PCB 150	408		0.518	9.99	1.26	1.015	1
PCB 136	400		0.637	9.99	1.24	1.028	1
PCB 145	414		0.576	9.99	1.26	1.035	1
PCB 148	317		0.824	9.99	1.26	1.075	1
PCBs 135 + 151 + 154	1190		0.773	20.0	1.25	1.098	1
PCB 144	382		0.822	9.99	1.25	1.110	1
PCBs 147 + 149	726		14.4	20.0	1.21	1.121	1
PCB 134	225		13.4	20.0	1.18	1.128	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 08:19
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.006g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307279	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 143	462		16.6	20.0	1.21	1.130	1
PCBs 139 + 140	864		14.2	20.0	1.22	1.137	1
PCB 131	218		12.8	12.8	1.19	1.144	1
PCB 142	419		17.8	17.8	1.24	1.148	1
PCB 132	459		16.3	16.3	1.22	1.159	1
PCB 133	416		16.6	16.6	1.20	1.169	1
PCB 165	440		12.0	12.0	1.20	1.180	1
PCB 146	454		15.0	15.0	1.22	1.188	1
PCB 161	395		11.7	11.7	1.25	1.191	1
PCBs 153 + 168	876		12.7	20.0	1.21	1.205	1
PCB 141	443		16.3	16.3	1.21	1.212	1
PCB 130	442		19.2	19.2	1.19	1.224	1
PCB 137	457		15.1	15.1	1.21	1.230	1
PCB 164	454		12.7	12.7	1.23	1.234	1
PCBs 129 + 138 + 163	1010		16.6	40.0	1.34	1.243	1
PCB 160	466		8.05	40.0	1.11	1.246	1
PCB 158	467		11.7	11.7	1.22	1.253	1
PCBs 128 + 166	901		14.0	20.0	1.22	1.277	1
PCB 159	481		5.51	9.99	1.25	1.304	1
PCB 162	496		4.89	9.99	1.25	1.313	1
PCB 167	468		4.21	4.21	1.23	1.001	1
PCBs 156 + 157	968		7.51	7.99	1.25	1.001	1
PCB 169	474		4.99	4.99	1.27	1.000	1
PCB 188	560		0.481	4.00	1.03	1.000	1
PCB 179	392		0.377	9.99	1.03	1.011	1
PCB 184	465		0.341	9.99	1.06	1.021	1
PCB 176	420		0.396	9.99	1.05	1.032	1
PCB 186	474		0.370	9.99	1.05	1.044	1
PCB 178	460		0.550	9.99	1.03	1.076	1
PCB 175	455		0.520	9.99	1.04	1.091	1
PCB 187	503		0.452	9.99	1.05	1.098	1
PCB 182	438		0.508	9.99	1.04	1.102	1
PCBs 183 + 185	979		1.63	20.0	1.04	1.116	1
PCB 174	448		1.66	9.99	1.04	1.120	1
PCB 177	464		1.80	9.99	1.04	1.131	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 08:19
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.006g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307279	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 181	503		1.57	9.99	1.04	1.139	1
PCBs 171 + 173	956		1.86	20.0	1.04	1.146	1
PCB 172	470		1.92	9.99	1.06	0.906	1
PCB 192	521		1.38	9.99	1.03	0.911	1
PCBs 180 + 193	862		1.37	20.0	1.04	0.917	1
PCB 191	467		1.43	9.99	1.03	0.925	1
PCB 170	491		2.01	9.99	1.03	0.943	1
PCB 190	504		1.34	9.99	1.02	0.953	1
PCB 189	489		1.29	4.00	1.04	1.000	1
PCB 202	803		1.01	4.00	0.91	1.000	1
PCB 201	665		0.912	9.99	0.90	1.020	1
PCB 204	684		0.921	9.99	0.89	1.034	1
PCB 197	682		0.828	20.0	0.89	1.039	1
PCB 200	653		0.929	20.0	0.91	1.044	1
PCBs 198 + 199	1450		1.24	20.0	0.90	1.102	1
PCB 196	695		1.26	9.99	0.90	0.922	1
PCB 203	773		1.10	9.99	0.89	0.926	1
PCB 195	726		1.40	9.99	0.91	0.950	1
PCB 194	763		1.38	9.99	0.90	0.992	1
PCB 205	800		1.15	4.00	0.90	1.001	1
PCB 208	808		1.17	4.00	0.79	1.000	1
PCB 207	730		1.36	9.99	0.78	1.018	1
PCB 206	823		2.67	4.00	0.79	1.000	1
PCB 209	732		0.867	4.00	1.17	1.001	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 08:19
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.006g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307279	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	1100		1.01	9.99			1
Total DiCB	27900		0.778	20.0			1
Total TriCB	77500		1.50	9.99			1
Total TetraCB	28100		0.298	40.0			1
Total PentaCB	24400		0.357	40.0			1
Total HexaCB	17500		0.518	40.0			1
Total HeptaCB	10300		0.341	20.0			1
Total OctaCB	8700		0.828	20.0			1
Total NonaCB	2360		1.17	9.99			1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900030-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 08:19
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.006g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307279	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	813.213	41		15-150	2.99	0.739
PCB 3L	2000	782.336	39		15-150	3.09	0.871
PCB 4L	2000	717.703	36		25-150	1.60	0.884
PCB 15L	2000	941.843	47		25-150	1.57	1.201
PCB 19L	2000	808.858	40		25-150	1.05	1.055
PCB 37L	2000	890.272	45		25-150	1.00	1.079
PCB 54L	2000	477.983	24	Y	25-150	0.84	0.841
PCB 81L	2000	812.041	41		25-150	0.78	1.316
PCB 77L	2000	998.572	50		25-150	0.79	1.337
PCB 104L	2000	729.940	36		25-150	1.64	0.833
PCB 123L	2000	734.897	37		25-150	1.58	1.133
PCB 118L	2000	878.936	44		25-150	1.57	1.142
PCB 114L	2000	889.235	44		25-150	1.54	1.157
PCB 105L	2000	915.608	46		25-150	1.57	1.178
PCB 126L	2000	1004.139	50		25-150	1.59	1.264
PCB 155L	2000	903.639	45		25-150	1.32	0.805
PCB 167L	2000	1109.589	55		25-150	1.24	1.068
PCBs 156L + 157L	4000	2238.199	56		25-150	1.25	1.095
PCB 169L	2000	1183.281	59		25-150	1.26	1.170
PCB 188L	2000	771.569	39		25-150	1.06	0.737
PCB 189L	2000	1032.638	52		25-150	1.04	0.963
PCB 202L	2000	870.325	44		25-150	0.91	0.833
PCB 205L	2000	965.049	48		25-150	0.91	1.009
PCB 208L	2000	831.503	42		25-150	0.84	0.952
PCB 206L	2000	936.746	47		25-150	0.79	1.044
PCB 209L	2000	1006.367	50		25-150	1.19	1.079
PCB 28L	2000	1040.425	52		30-135	1.02	0.936
PCB 111L	2000	984.711	49		30-135	1.61	1.075
PCB 178L	2000	1129.181	56		30-135	1.08	1.008

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-03	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 09:23
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.131g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307280	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 1	427		0.897	3.90	2.97	1.001	1
PCB 2	296		0.858	3.90	2.97	0.990	1
PCB 3	350		0.620	3.90	3.00	1.002	1
PCB 4	1380		2.04	3.90	-	1.003	1
PCB 10	1060		0.711	9.74	-	1.009	1
PCB 9	651		0.829	3.90	-	1.138	1
PCB 7	384		0.692	3.90	-	1.144	1
PCB 6	1400		0.780	3.90	-	1.159	1
PCB 5	362		0.881	3.90	-	1.174	1
PCB 8	3730		0.660	9.74	-	1.183	1
PCB 14	214		0.824	3.90	-	0.933	1
PCB 11	344		0.936	19.5	-	0.972	1
PCBs 12 + 13	810		0.885	9.74	-	0.986	1
PCB 15	2120		0.447	3.90	-	1.001	1
PCB 19	1220		0.941	3.90	1.09	1.001	1
PCBs 18 + 30	9440		0.937	9.74	1.08	1.089	1
PCB 17	4420		1.17	3.90	1.08	1.109	1
PCB 27	898		0.870	3.90	1.08	1.121	1
PCB 24	418		0.788	3.90	1.09	1.126	1
PCB 16	4370		1.25	3.90	1.08	1.135	1
PCB 32	2820		0.776	3.90	1.08	1.158	1
PCB 34	205		69.4	69.4	1.03	1.217	1
PCB 23	196		60.0	60.0	1.01	1.224	1
PCBs 26 + 29	1780		65.9	65.9	1.02	1.241	1
PCB 25	556		46.8	46.8	1.02	0.846	1
PCB 31	7570		64.7	64.7	1.02	0.857	1
PCBs 20 + 28	7950		68.2	68.2	1.02	0.866	1
PCBs 21 + 33	4560		55.3	55.3	1.03	0.875	1
PCB 22	2890		64.0	64.0	1.03	0.889	1
PCB 36	166		64.2	64.2	1.02	0.938	1
PCB 39	226		62.5	62.5	1.01	0.951	1
PCB 38	170		68.4	68.4	1.00	0.970	1
PCB 35	258		72.4	72.4	1.02	0.988	1
PCB 37	2310		102	102	1.02	1.001	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-03	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 09:23
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.131g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307280	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 54	564		0.406	3.90	0.82	1.001	1
PCBs 50 + 53	1280		0.439	19.5	0.78	1.090	1
PCBs 45 + 51	1620		0.460	9.74	0.78	1.120	1
PCB 46	666		0.540	3.90	0.77	1.135	1
PCB 52	4200		0.471	9.74	0.78	1.191	1
PCBs 43 + 73	697		0.405	9.74	0.76	1.196	1
PCBs 49 + 69	2420		0.346	19.5	0.78	1.211	1
PCB 48	1310		0.429	9.74	0.78	1.223	1
PCBs 44 + 47 + 65	4220		0.390	19.5	0.78	1.235	1
PCBs 59 + 62 + 75	1270		0.347	19.5	0.78	1.248	1
PCB 42	1060		0.386	19.5	0.77	1.257	1
PCBs 41 + 71 + 40	3420		0.461	19.5	0.78	1.278	1
PCB 64	1510		0.266	9.74	0.77	1.287	1
PCB 72	301		0.352	9.74	0.77	1.318	1
PCB 68	301		0.322	9.74	0.78	1.330	1
PCB 57	305		0.388	9.74	0.78	1.349	1
PCB 58	317		0.343	9.74	0.79	1.361	1
PCB 67	423		0.349	9.74	0.78	1.366	1
PCB 63	409		0.375	9.74	0.79	1.378	1
PCBs 70 + 61 + 74 + 76	6320		0.331	39.0	0.77	1.394	1
PCB 66	3550		0.379	9.74	0.77	1.406	1
PCB 55	422		0.374	9.74	0.77	1.415	1
PCB 56	3290		9.65	9.74	0.76	1.438	1
PCB 60	2100		8.76	9.74	0.75	1.446	1
PCB 80	522		8.26	9.74	0.75	1.458	1
PCB 79	537		9.07	9.74	0.76	1.526	1
PCB 78	521		10.3	10.3	0.75	1.550	1
PCB 81	445		11.5	11.5	0.76	1.001	1
PCB 77	829		9.41	9.41	0.75	1.001	1
PCB 104	529		0.584	3.90	1.59	1.001	1
PCB 96	355		0.432	9.74	1.56	1.018	1
PCB 103	332		0.511	9.74	1.56	1.078	1
PCB 94	355		0.563	9.74	1.58	1.088	1
PCBs 95 + 93 + 100	1770		0.544	39.0	1.57	1.105	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-03	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 09:23
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.131g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307280	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCBs 98 + 102	613		0.474	39.0	1.58	1.116	1
PCBs 88 + 91	915		0.536	9.74	1.58	1.134	1
PCB 84	763		0.631	3.90	1.60	1.144	1
PCB 89	389		0.624	9.74	1.64	1.159	1
PCB 121	504		11.6	11.6	1.64	1.167	1
PCB 92	747		12.1	12.1	1.61	1.183	1
PCBs 90 + 101 + 113	2710		9.89	39.0	1.61	1.202	1
PCBs 83 + 99	2120		11.6	19.5	1.61	1.222	1
PCB 112	505		8.48	9.74	1.63	1.226	1
PCBs 86 + 87 + 97 + 109 + 119 + 125	4240		9.62	39.0	1.61	1.240	1
PCBs 85 + 116 + 117	1990		9.42	19.5	1.61	1.266	1
PCBs 110 + 115	2150		7.23	19.5	1.62	1.272	1
PCB 82	963		14.9	14.9	1.63	1.285	1
PCB 111	560		8.32	9.74	1.62	1.292	1
PCB 120	534		8.56	9.74	1.66	1.307	1
PCBs 108 + 124	1150		29.7	29.7	1.56	1.349	1
PCB 107	731		31.1	31.1	1.71	1.357	1
PCB 123	407		25.4	25.4	1.37	1.000	1
PCB 106	573		33.1	33.1	1.57	1.365	1
PCB 118	1470		25.7	25.7	1.56	1.001	1
PCB 122	581		34.3	34.3	1.57	1.386	1
PCB 114	561		25.7	25.7	1.54	1.000	1
PCB 105	1160		29.2	29.2	1.55	1.001	1
PCB 127	630		37.8	37.8	1.55	1.462	1
PCB 126	478		31.7	31.7	1.69	1.000	1
PCB 155	489		0.797	3.90	1.27	1.000	1
PCB 152	408		0.836	9.74	1.25	1.011	1
PCB 150	428		0.683	9.74	1.26	1.014	1
PCB 136	437		0.840	9.74	1.26	1.028	1
PCB 145	444		0.758	9.74	1.26	1.034	1
PCB 148	359		1.09	9.74	1.25	1.075	1
PCBs 135 + 151 + 154	1370		1.02	19.5	1.26	1.098	1
PCB 144	447		1.09	9.74	1.25	1.109	1
PCBs 147 + 149	977		35.8	35.8	1.24	1.120	1
PCB 134	217		33.4	33.4	1.23	1.127	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-03	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 09:23
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.131g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307280	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 143	521		41.4	41.4	1.25	1.129	1
PCBs 139 + 140	936		35.3	35.3	1.22	1.136	1
PCB 131	291		31.7	31.7	1.22	1.144	1
PCB 142	426		44.2	44.2	1.24	1.148	1
PCB 132	523		40.5	40.5	1.21	1.158	1
PCB 133	438		41.4	41.4	1.24	1.169	1
PCB 165	472		29.9	29.9	1.22	1.179	1
PCB 146	495		37.3	37.3	1.21	1.187	1
PCB 161	431		29.1	29.1	1.23	1.190	1
PCBs 153 + 168	1020		31.5	31.5	1.21	1.205	1
PCB 141	503		40.5	40.5	1.18	1.211	1
PCB 130	479		47.8	47.8	1.21	1.224	1
PCB 137	486		37.5	37.5	1.22	1.229	1
PCB 164	477		31.6	31.6	1.23	1.233	1
PCBs 129 + 138 + 163	1240		41.3	41.3	1.23	1.242	1
PCB 160	481		20.1	39.0	1.23	1.245	1
PCB 158	498		29.0	29.0	1.22	1.252	1
PCBs 128 + 166	954		34.8	34.8	1.22	1.276	1
PCB 159	494		6.94	9.74	1.24	1.304	1
PCB 162	505		6.16	9.74	1.24	1.312	1
PCB 167	452		5.50	5.50	1.22	1.000	1
PCBs 156 + 157	952		9.61	9.61	1.22	1.001	1
PCB 169	464		7.00	7.00	1.28	1.000	1
PCB 188	533		0.230	3.90	1.04	1.001	1
PCB 179	402		0.196	9.74	1.04	1.012	1
PCB 184	474		0.177	9.74	1.04	1.022	1
PCB 176	464		0.206	9.74	1.06	1.033	1
PCB 186	482		0.192	9.74	1.04	1.044	1
PCB 178	463		0.285	9.74	1.06	1.076	1
PCB 175	452		0.270	9.74	1.06	1.091	1
PCB 187	515		0.235	9.74	1.05	1.098	1
PCB 182	485		0.264	9.74	1.03	1.102	1
PCBs 183 + 185	986		1.54	19.5	1.03	1.117	1
PCB 174	492		1.57	9.74	1.02	1.121	1
PCB 177	456		1.71	9.74	1.02	1.132	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-03	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 09:23
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.131g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307280	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 181	478		1.49	9.74	1.03	1.140	1
PCBs 171 + 173	955		1.76	19.5	1.03	1.147	1
PCB 172	492		1.82	9.74	1.03	0.906	1
PCB 192	517		1.31	9.74	1.03	0.911	1
PCBs 180 + 193	845		1.30	19.5	1.02	0.917	1
PCB 191	473		1.36	9.74	1.04	0.925	1
PCB 170	491		1.91	9.74	1.02	0.943	1
PCB 190	477		1.27	9.74	1.03	0.952	1
PCB 189	473		1.35	3.90	1.04	1.000	1
PCB 202	796		0.567	3.90	0.91	1.000	1
PCB 201	698		0.526	9.74	0.89	1.020	1
PCB 204	687		0.531	9.74	0.91	1.034	1
PCB 197	726		0.477	19.5	0.90	1.039	1
PCB 200	695		0.536	19.5	0.91	1.043	1
PCBs 198 + 199	1490		0.714	19.5	0.90	1.102	1
PCB 196	698		0.724	9.74	0.90	0.922	1
PCB 203	782		0.633	9.74	0.91	0.926	1
PCB 195	707		0.804	9.74	0.91	0.950	1
PCB 194	721		0.795	9.74	0.91	0.992	1
PCB 205	759		0.686	3.90	0.92	1.000	1
PCB 208	833		0.825	3.90	0.78	1.001	1
PCB 207	723		0.994	9.74	0.79	1.018	1
PCB 206	866		2.70	3.90	0.77	1.000	1
PCB 209	718		0.639	3.90	1.18	1.001	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900030-03	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 09:23
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.131g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307280	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total MonoCB	1070		0.620	9.74			1
Total DiCB	12500		0.447	19.5			1
Total TriCB	52400		0.776	9.74			1
Total TetraCB	44800		0.266	39.0			1
Total PentaCB	30800		0.432	39.0			1
Total HexaCB	19100		0.683	39.0			1
Total HeptaCB	10400		0.177	19.5			1
Total OctaCB	8760		0.477	19.5			1
Total NonaCB	2420		0.825	9.74			1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900047
Project:	HS19010635	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900030-03	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	01/31/19 09:23
Prep Method:	Method Soxhlet	**Date Extracted:**	1/28/19
Sample Amount:	5.131g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307280	**Blank File Name:**	P307278
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307277

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 1L	2000	917.297	46		15-150	3.12	0.739
PCB 3L	2000	877.434	44		15-150	3.22	0.867
PCB 4L	2000	796.697	40		25-150	1.59	0.880
PCB 15L	2000	998.191	50		25-150	1.55	1.200
PCB 19L	2000	994.209	50		25-150	1.08	1.056
PCB 37L	2000	931.304	47		25-150	1.03	1.081
PCB 54L	2000	765.337	38		25-150	0.82	0.840
PCB 81L	2000	875.238	44		25-150	0.79	1.318
PCB 77L	2000	992.524	50		25-150	0.79	1.339
PCB 104L	2000	802.275	40		25-150	1.62	0.832
PCB 123L	2000	956.165	48		25-150	1.55	1.132
PCB 118L	2000	905.797	45		25-150	1.56	1.141
PCB 114L	2000	932.601	47		25-150	1.58	1.157
PCB 105L	2000	944.705	47		25-150	1.56	1.177
PCB 126L	2000	939.218	47		25-150	1.55	1.264
PCB 155L	2000	870.386	44		25-150	1.29	0.806
PCB 167L	2000	950.086	48		25-150	1.25	1.068
PCBs 156L + 157L	4000	1904.938	48		25-150	1.25	1.096
PCB 169L	2000	923.449	46		25-150	1.22	1.170
PCB 188L	2000	923.958	46		25-150	1.07	0.736
PCB 189L	2000	1096.041	55		25-150	1.06	0.963
PCB 202L	2000	1009.316	50		25-150	0.91	0.833
PCB 205L	2000	1025.787	51		25-150	0.91	1.009
PCB 208L	2000	964.905	48		25-150	0.82	0.952
PCB 206L	2000	1001.139	50		25-150	0.78	1.044
PCB 209L	2000	1095.967	55		25-150	1.20	1.079
PCB 28L	2000	976.411	49		30-135	1.01	0.935
PCB 111L	2000	935.598	47		30-135	1.57	1.075
PCB 178L	2000	956.979	48		30-135	1.09	1.008

Chain of Custody Forms dated January 21, 2019

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1

DATE: 1/21/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437 (Friedman/Rubin S.V.E.C.)

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
184838	WIPE-Hexane	PCB Aroclor - 8082	Due: 1/25/19
184839	WIPE-Hexane	Dioxin/Furan - 1613B	HOLD
184831	WIPE-Hexane	PCB Aroclor - 8082	Due: 1/25/19
184840	WIPE-Hexane	PCB Aroclor - 8082	Due: 1/25/19
184841	WIPE-Hexane	Dioxin/Furan - 1613B	HOLD
187061	BULK-CARPET	Dioxin/Furan - 1613B	HOLD
187062	BULK-CARPET	PCB Aroclor - 8082	Due: 1/25/19
187066	BULK-CARPET	PCB Aroclor - 8082	Due: 1/25/19
187067	BULK-CARPET	Dioxin/Furan - 1613B	HOLD
187064	BULK-CARPET	PCB Aroclor - 8082	Due: 1/25/19
184824	BULK-DUST	PCB Aroclor - 8082	Due: 1/25/19
184827	BULK-DUST	PCB Aroclor - 8082	Due: 1/25/19
184829	BULK-DUST	PCB Aroclor - 8082	Due: 1/25/19
187056	BULK-DUST	PCB Aroclor - 8082	Due: 1/25/19
187057	BULK-DUST	KMC ~~PCB Aroclor - 8082~~ 1613B(D/F)	HOLD
187058	BULK-DUST	PCB Aroclor - 8082	Due: 1/25/19

Special instructions:

☐ Standard turn around time ☑ Rush by 1/25/19 OR As Indicated date/time ☐ Other

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☐ Additional report recipient kcoghlan@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 1/21/19

Received by: Carrier of (company name) FEDEX Date: 1/21/19

Relinquished by: ____ of (company name) ____ Date: ____

Received by: ____ of (company name) ____ Date: ____

Relinquished by: ____ of (company name) ____ Date: ____

Received by: ____ of (company name) ____ Date: ____

Lab Data
Received by: ____ of Environmental Health & Engineering, Inc. Date: ____

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1

DATE: 1/21/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437 (Feigeman/Rubin S.V. EC)

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187059	BULK-DUST	DIOXIN/FURAN - 1613B	HOLD
184852	BULK-TAR	PCB Aroclor - 8082	Due: 1/25/19
187069	BULK-TAR	DIOXIN/FURAN - 1613B	HOLD
187087	BLANK	PCB (8082) & DIOXIN/FURAN (1613B	HOLD
187088	BLANK	PCB (8082) & DIOXIN/FURAN (1613B)	HOLD

Special instructions:

☐ Standard turn around time ☑ Rush by 1/25/19 OR AS indicated date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☑ Additional report recipient Kcoghlan@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 1/21/2019

Received by: _____ of (company name) FEDEX Date: 1/21/2019

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 2 of 2

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

ALS Laboratory Report (Work Order HS1901156) dated February 13, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

February 13, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19011056**

Laboratory Results for: **22437 Friedman/Rubin S.V.E.C.**

Dear Kevin,

ALS Environmental received 21 sample(s) on Jan 23, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Corey Grandits
Project Manager

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Work Order: HS19011056

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19011056-01	184838	Wipe		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-02	184839	Wipe		21-Jan-2019 00:00	23-Jan-2019 09:55	☑
HS19011056-03	184831	Wipe		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-04	184840	Wipe		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-05	184841	Wipe		21-Jan-2019 00:00	23-Jan-2019 09:55	☑
HS19011056-06	187061	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-07	187062	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-08	187066	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-09	187067	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-10	187064	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-11	184824	Dust		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-12	184827	Dust		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-13	184829	Dust		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-14	187056	Dust		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-15	187057	Dust		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-16	187058	Dust		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-17	187059	Dust		21-Jan-2019 00:00	23-Jan-2019 09:55	☑
HS19011056-18	184852	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-19	187069	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-20	187087 Blank	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐
HS19011056-21	187088 Blank	Solid		21-Jan-2019 00:00	23-Jan-2019 09:55	☐

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering **CASE NARRATIVE**
Project: 22437 Friedman/Rubin S.V.E.C.
Work Order: HS19011056

Work Order Comments

- The analyses for Dioxins/Furans and PCB Congeners were subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

ECD Organics by Method SW8082

Batch ID: 136949

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Batch ID: 136985,137511

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 184838
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-01
Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 23-Jan-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	25-Jan-2019 12:19
Aroclor 1221		U	500	500	ng, Total	1	25-Jan-2019 12:19
Aroclor 1232		U	500	500	ng, Total	1	25-Jan-2019 12:19
Aroclor 1242		U	500	500	ng, Total	1	25-Jan-2019 12:19
Aroclor 1248		U	500	500	ng, Total	1	25-Jan-2019 12:19
Aroclor 1254		U	500	500	ng, Total	1	25-Jan-2019 12:19
Aroclor 1260		U	500	500	ng, Total	1	25-Jan-2019 12:19
PCBs (Total)		U	500	500	ng, Total	1	25-Jan-2019 12:19
Surr: Decachlorobiphenyl	*106*			*30-150*	*%REC*	*1*	*25-Jan-2019 12:19*
Surr: Tetrachloro-m-xylene	*102*			*30-150*	*%REC*	*1*	*25-Jan-2019 12:19*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 184831
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-03
Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 23-Jan-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	25-Jan-2019 12:36
Aroclor 1221		U	500	500	ng, Total	1	25-Jan-2019 12:36
Aroclor 1232		U	500	500	ng, Total	1	25-Jan-2019 12:36
Aroclor 1242		U	500	500	ng, Total	1	25-Jan-2019 12:36
Aroclor 1248		U	500	500	ng, Total	1	25-Jan-2019 12:36
Aroclor 1254		U	500	500	ng, Total	1	25-Jan-2019 12:36
Aroclor 1260		U	500	500	ng, Total	1	25-Jan-2019 12:36
PCBs (Total)		U	500	500	ng, Total	1	25-Jan-2019 12:36
Surr: Decachlorobiphenyl	*102*			*30-150*	*%REC*	*1*	*25-Jan-2019 12:36*
Surr: Tetrachloro-m-xylene	*95.1*			*30-150*	*%REC*	*1*	*25-Jan-2019 12:36*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 184840
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-04
Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 23-Jan-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	25-Jan-2019 12:53
Aroclor 1221		U	500	500	ng, Total	1	25-Jan-2019 12:53
Aroclor 1232		U	500	500	ng, Total	1	25-Jan-2019 12:53
Aroclor 1242		U	500	500	ng, Total	1	25-Jan-2019 12:53
Aroclor 1248		U	500	500	ng, Total	1	25-Jan-2019 12:53
Aroclor 1254		U	500	500	ng, Total	1	25-Jan-2019 12:53
Aroclor 1260		U	500	500	ng, Total	1	25-Jan-2019 12:53
PCBs (Total)		U	500	500	ng, Total	1	25-Jan-2019 12:53
Surr: Decachlorobiphenyl	*114*			*30-150*	*%REC*	*1*	*25-Jan-2019 12:53*
Surr: Tetrachloro-m-xylene	*97.1*			*30-150*	*%REC*	*1*	*25-Jan-2019 12:53*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:	HS19011056
Sample ID:	187061	Lab ID:	HS19011056-06
Collection Date:	21-Jan-2019 00:00	Matrix:	Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	13-Feb-2019 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 187062
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-07
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016	U		470	1900	ug/Kg	10	24-Jan-2019 16:08
Aroclor 1221	U		630	1900	ug/Kg	10	24-Jan-2019 16:08
Aroclor 1232	U		510	1900	ug/Kg	10	24-Jan-2019 16:08
Aroclor 1242	U		670	1900	ug/Kg	10	24-Jan-2019 16:08
Aroclor 1248	**6,800**	P	**670**	**1900**	**ug/Kg**	10	24-Jan-2019 16:08
Aroclor 1254	**5,500**		**530**	**1900**	**ug/Kg**	10	24-Jan-2019 16:08
Aroclor 1260	U		450	1900	ug/Kg	10	24-Jan-2019 16:08
PCBs (Total)	**12,000**		**450**	**1900**	**ug/Kg**	10	24-Jan-2019 16:08
Surr: Decachlorobiphenyl	*142*	*J*		*54-143*	*%REC*	*10*	*24-Jan-2019 16:08*
Surr: Tetrachloro-m-xylene	*98.3*	*J*		*50-140*	*%REC*	*10*	*24-Jan-2019 16:08*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 Friedman/Rubin S.V.E.C. WorkOrder:HS19011056
Sample ID: 187066 Lab ID:HS19011056-08
Collection Date: 21-Jan-2019 00:00 Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016	U		270	1100	ug/Kg	10	24-Jan-2019 16:24
Aroclor 1221	U		360	1100	ug/Kg	10	24-Jan-2019 16:24
Aroclor 1232	U		290	1100	ug/Kg	10	24-Jan-2019 16:24
Aroclor 1242	U		380	1100	ug/Kg	10	24-Jan-2019 16:24
Aroclor 1248	**2,400**	P	**380**	**1100**	**ug/Kg**	10	24-Jan-2019 16:24
Aroclor 1254	**2,500**		**300**	**1100**	**ug/Kg**	10	24-Jan-2019 16:24
Aroclor 1260	U		260	1100	ug/Kg	10	24-Jan-2019 16:24
PCBs (Total)	**4,900**		**260**	**1100**	**ug/Kg**	10	24-Jan-2019 16:24
Surr: Decachlorobiphenyl	*140*	*J*		*54-143*	*%REC*	*10*	*24-Jan-2019 16:24*
Surr: Tetrachloro-m-xylene	*89.0*	*J*		*50-140*	*%REC*	*10*	*24-Jan-2019 16:24*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:	HS19011056
Sample ID:	187067	Lab ID:	HS19011056-09
Collection Date:	21-Jan-2019 00:00	Matrix:	Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	13-Feb-2019 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 187064
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-10
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016	U		300	1200	ug/Kg	1	25-Jan-2019 10:43
Aroclor 1221	U		400	1200	ug/Kg	1	25-Jan-2019 10:43
Aroclor 1232	U		320	1200	ug/Kg	1	25-Jan-2019 10:43
Aroclor 1242	U		420	1200	ug/Kg	1	25-Jan-2019 10:43
Aroclor 1248	U		420	1200	ug/Kg	1	25-Jan-2019 10:43
Aroclor 1254	**3,000**		**340**	**1200**	**ug/Kg**	1	25-Jan-2019 10:43
Aroclor 1260	**1,200**	J	**290**	**1200**	**ug/Kg**	1	25-Jan-2019 10:43
PCBs (Total)	**4,200**		**290**	**1200**	**ug/Kg**	1	25-Jan-2019 10:43
Surr: Decachlorobiphenyl	*105*			*54-143*	*%REC*	*1*	*25-Jan-2019 10:43*
Surr: Tetrachloro-m-xylene	*117*			*50-140*	*%REC*	*1*	*25-Jan-2019 10:43*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 184824
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-11
Matrix:Dust

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016		U	2500	10000	ug/Kg	1	25-Jan-2019 10:59
Aroclor 1221		U	3400	10000	ug/Kg	1	25-Jan-2019 10:59
Aroclor 1232		U	2700	10000	ug/Kg	1	25-Jan-2019 10:59
Aroclor 1242		U	3500	10000	ug/Kg	1	25-Jan-2019 10:59
Aroclor 1248		U	3500	10000	ug/Kg	1	25-Jan-2019 10:59
Aroclor 1254		U	2800	10000	ug/Kg	1	25-Jan-2019 10:59
Aroclor 1260		U	2400	10000	ug/Kg	1	25-Jan-2019 10:59
PCBs (Total)		U	2400	10000	ug/Kg	1	25-Jan-2019 10:59
Surr: Decachlorobiphenyl	*109*			*54-143*	*%REC*	*1*	*25-Jan-2019 10:59*
Surr: Tetrachloro-m-xylene	*91.5*			*50-140*	*%REC*	*1*	*25-Jan-2019 10:59*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 Friedman/Rubin S.V.E.C. WorkOrder:HS19011056
Sample ID: 184827 Lab ID:HS19011056-12
Collection Date: 21-Jan-2019 00:00 Matrix:Dust

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016		U	3200	13000	ug/Kg	1	25-Jan-2019 11:15
Aroclor 1221		U	4200	13000	ug/Kg	1	25-Jan-2019 11:15
Aroclor 1232		U	3400	13000	ug/Kg	1	25-Jan-2019 11:15
Aroclor 1242		U	4400	13000	ug/Kg	1	25-Jan-2019 11:15
Aroclor 1248		U	4400	13000	ug/Kg	1	25-Jan-2019 11:15
Aroclor 1254		U	3500	13000	ug/Kg	1	25-Jan-2019 11:15
Aroclor 1260		U	3000	13000	ug/Kg	1	25-Jan-2019 11:15
PCBs (Total)		U	3000	13000	ug/Kg	1	25-Jan-2019 11:15
Surr: Decachlorobiphenyl	*92.7*			*54-143*	*%REC*	*1*	*25-Jan-2019 11:15*
Surr: Tetrachloro-m-xylene	*76.0*			*50-140*	*%REC*	*1*	*25-Jan-2019 11:15*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 Friedman/Rubin S.V.E.C. WorkOrder:HS19011056
Sample ID: 184829 Lab ID:HS19011056-13
Collection Date: 21-Jan-2019 00:00 Matrix:Dust

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016	U		970	3900	ug/Kg	1	25-Jan-2019 11:31
Aroclor 1221	U		1300	3900	ug/Kg	1	25-Jan-2019 11:31
Aroclor 1232	U		1000	3900	ug/Kg	1	25-Jan-2019 11:31
Aroclor 1242	U		1400	3900	ug/Kg	1	25-Jan-2019 11:31
Aroclor 1248	U		1400	3900	ug/Kg	1	25-Jan-2019 11:31
Aroclor 1254	**1,900**	J	**1100**	**3900**	**ug/Kg**	1	25-Jan-2019 11:31
Aroclor 1260	U		920	3900	ug/Kg	1	25-Jan-2019 11:31
PCBs (Total)	**1,900**	J	**920**	**3900**	**ug/Kg**	1	25-Jan-2019 11:31
Surr: Decachlorobiphenyl	*108*			*54-143*	*%REC*	*1*	*25-Jan-2019 11:31*
Surr: Tetrachloro-m-xylene	*83.7*			*50-140*	*%REC*	*1*	*25-Jan-2019 11:31*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**	
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:HS19011056	
Sample ID:	187056	Lab ID:HS19011056-14	
Collection Date:	21-Jan-2019 00:00	Matrix:Dust	

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016	U		570	2300	ug/Kg	1	25-Jan-2019 11:47
Aroclor 1221	U		760	2300	ug/Kg	1	25-Jan-2019 11:47
Aroclor 1232	U		610	2300	ug/Kg	1	25-Jan-2019 11:47
Aroclor 1242	**17,000**		**800**	**2300**	**ug/Kg**	1	25-Jan-2019 11:47
Aroclor 1248	U		800	2300	ug/Kg	1	25-Jan-2019 11:47
Aroclor 1254	**6,800**		**640**	**2300**	**ug/Kg**	1	25-Jan-2019 11:47
Aroclor 1260	U		550	2300	ug/Kg	1	25-Jan-2019 11:47
PCBs (Total)	**24,000**		**550**	**2300**	**ug/Kg**	1	25-Jan-2019 11:47
Surr: Decachlorobiphenyl	*94.6*			*54-143*	*%REC*	*1*	*25-Jan-2019 11:47*
Surr: Tetrachloro-m-xylene	*87.9*			*50-140*	*%REC*	*1*	*25-Jan-2019 11:47*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:HS19011056
Sample ID:	187057	Lab ID:HS19011056-15
Collection Date:	21-Jan-2019 00:00	Matrix:Dust

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	13-Feb-2019 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 Friedman/Rubin S.V.E.C. WorkOrder:HS19011056
Sample ID: 187058 Lab ID:HS19011056-16
Collection Date: 21-Jan-2019 00:00 Matrix:Dust

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016	U		1300	5000	ug/Kg	1	25-Jan-2019 12:03
Aroclor 1221	U		1700	5000	ug/Kg	1	25-Jan-2019 12:03
Aroclor 1232	U		1400	5000	ug/Kg	1	25-Jan-2019 12:03
Aroclor 1242	U		1800	5000	ug/Kg	1	25-Jan-2019 12:03
Aroclor 1248	U		1800	5000	ug/Kg	1	25-Jan-2019 12:03
Aroclor 1254	U		1400	5000	ug/Kg	1	25-Jan-2019 12:03
Aroclor 1260	**3,700**	J	**1200**	**5000**	**ug/Kg**	1	25-Jan-2019 12:03
PCBs (Total)	**3,700**	J	**1200**	**5000**	**ug/Kg**	1	25-Jan-2019 12:03
Surr: Decachlorobiphenyl	*105*			*54-143*	*%REC*	*1*	*25-Jan-2019 12:03*
Surr: Tetrachloro-m-xylene	*94.6*			*50-140*	*%REC*	*1*	*25-Jan-2019 12:03*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 Friedman/Rubin S.V.E.C. WorkOrder:HS19011056
Sample ID: 184852 Lab ID:HS19011056-18
Collection Date: 21-Jan-2019 00:00 Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 23-Jan-2019		Analyst: JLJ
Aroclor 1016	U		2700	11000	ug/Kg	10	24-Jan-2019 18:15
Aroclor 1221	U		3700	11000	ug/Kg	10	24-Jan-2019 18:15
Aroclor 1232	U		2900	11000	ug/Kg	10	24-Jan-2019 18:15
Aroclor 1242	**130,000**		**3800**	**11000**	**ug/Kg**	10	24-Jan-2019 18:15
Aroclor 1248	**49,000**	P	**3800**	**11000**	**ug/Kg**	10	24-Jan-2019 18:15
Aroclor 1254	U		3100	11000	ug/Kg	10	24-Jan-2019 18:15
Aroclor 1260	U		2600	11000	ug/Kg	10	24-Jan-2019 18:15
PCBs (Total)	**180,000**		**2600**	**11000**	**ug/Kg**	10	24-Jan-2019 18:15
Surr: Decachlorobiphenyl	*109*	*J*		*54-143*	*%REC*	*10*	*24-Jan-2019 18:15*
Surr: Tetrachloro-m-xylene	*100*	*J*		*50-140*	*%REC*	*10*	*24-Jan-2019 18:15*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:	HS19011056
Sample ID:	187069	Lab ID:	HS19011056-19
Collection Date:	21-Jan-2019 00:00	Matrix:	Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	13-Feb-2019 15:02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 187087 Blank
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-20
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 07-Feb-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	07-Feb-2019 23:56
Aroclor 1221		U	500	500	ng, Total	1	07-Feb-2019 23:56
Aroclor 1232		U	500	500	ng, Total	1	07-Feb-2019 23:56
Aroclor 1242		U	500	500	ng, Total	1	07-Feb-2019 23:56
Aroclor 1248		U	500	500	ng, Total	1	07-Feb-2019 23:56
Aroclor 1254		U	500	500	ng, Total	1	07-Feb-2019 23:56
Aroclor 1260		U	500	500	ng, Total	1	07-Feb-2019 23:56
PCBs (Total)		U	500	500	ng, Total	1	07-Feb-2019 23:56
Surr: Decachlorobiphenyl	*85.6*			*30-150*	*%REC*	*1*	*07-Feb-2019 23:56*
Surr: Tetrachloro-m-xylene	*89.2*			*30-150*	*%REC*	*1*	*07-Feb-2019 23:56*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Sample ID: 187088 Blank
Collection Date: 21-Jan-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19011056
Lab ID:HS19011056-21
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 07-Feb-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	08-Feb-2019 00:13
Aroclor 1221		U	500	500	ng, Total	1	08-Feb-2019 00:13
Aroclor 1232		U	500	500	ng, Total	1	08-Feb-2019 00:13
Aroclor 1242		U	500	500	ng, Total	1	08-Feb-2019 00:13
Aroclor 1248		U	500	500	ng, Total	1	08-Feb-2019 00:13
Aroclor 1254		U	500	500	ng, Total	1	08-Feb-2019 00:13
Aroclor 1260		U	500	500	ng, Total	1	08-Feb-2019 00:13
PCBs (Total)		U	500	500	ng, Total	1	08-Feb-2019 00:13
Surr: Decachlorobiphenyl	*72.1*			*30-150*	*%REC*	*1*	*08-Feb-2019 00:13*
Surr: Tetrachloro-m-xylene	*79.9*			*30-150*	*%REC*	*1*	*08-Feb-2019 00:13*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

WEIGHT LOG

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19011056

Batch ID: 136949 **Method:** PCBS BY SW8082A **Prep:** PCBPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19011056-07	1	2.66	10 (mL)	3.759
HS19011056-08	1	4.68	10 (mL)	2.137
HS19011056-10	1	0.42	10 (mL)	23.81
HS19011056-11	1	0.05	10 (mL)	200
HS19011056-12	1	0.04	10 (mL)	250
HS19011056-13	1	0.13	10 (mL)	76.92
HS19011056-14	1	0.22	10 (mL)	45.45
HS19011056-16	1	0.1	10 (mL)	100
HS19011056-18	1	0.46	10 (mL)	21.74

Batch ID: 136985 **Method:** PCBS BY SW8082A **Prep:** PCBWIPEPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19011056-01	1	1	10 (mL)	10
HS19011056-03	1	1	10 (mL)	10
HS19011056-04	1	1	10 (mL)	10

Batch ID: 137511 **Method:** PCBS BY SW8082A **Prep:** PCBWIPEPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19011056-20	1	1	10 (mL)	10
HS19011056-21	1	1	10 (mL)	10

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19011056

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 136949	**Test Name :** PCBS BY SW8082A			**Matrix:** Dust		
HS19011056-11	184824	21 Jan 2019 00:00		23 Jan 2019 11:43	25 Jan 2019 10:59	1
HS19011056-12	184827	21 Jan 2019 00:00		23 Jan 2019 11:43	25 Jan 2019 11:15	1
HS19011056-13	184829	21 Jan 2019 00:00		23 Jan 2019 11:43	25 Jan 2019 11:31	1
HS19011056-14	187056	21 Jan 2019 00:00		23 Jan 2019 11:43	25 Jan 2019 11:47	1
HS19011056-16	187058	21 Jan 2019 00:00		23 Jan 2019 11:43	25 Jan 2019 12:03	1
Batch ID 136949	**Test Name :** PCBS BY SW8082A			**Matrix:** Solid		
HS19011056-07	187062	21 Jan 2019 00:00		23 Jan 2019 11:43	24 Jan 2019 16:08	10
HS19011056-08	187066	21 Jan 2019 00:00		23 Jan 2019 11:43	24 Jan 2019 16:24	10
HS19011056-10	187064	21 Jan 2019 00:00		23 Jan 2019 11:43	25 Jan 2019 10:43	1
HS19011056-18	184852	21 Jan 2019 00:00		23 Jan 2019 11:43	24 Jan 2019 18:15	10
Batch ID 136985	**Test Name :** PCBS BY SW8082A			**Matrix:** Wipe		
HS19011056-01	184838	21 Jan 2019 00:00		23 Jan 2019 16:30	25 Jan 2019 12:19	1
HS19011056-03	184831	21 Jan 2019 00:00		23 Jan 2019 16:30	25 Jan 2019 12:36	1
HS19011056-04	184840	21 Jan 2019 00:00		23 Jan 2019 16:30	25 Jan 2019 12:53	1
Batch ID 137511	**Test Name :** PCBS BY SW8082A			**Matrix:** Solid		
HS19011056-20	187087 Blank	21 Jan 2019 00:00		07 Feb 2019 12:28	07 Feb 2019 23:56	1
HS19011056-21	187088 Blank	21 Jan 2019 00:00		07 Feb 2019 12:28	08 Feb 2019 00:13	1
Batch ID R332801	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Dust		
HS19011056-15	187057	21 Jan 2019 00:00			13 Feb 2019 15:02	1
Batch ID R332801	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Solid		
HS19011056-06	187061	21 Jan 2019 00:00			13 Feb 2019 15:02	1
HS19011056-09	187067	21 Jan 2019 00:00			13 Feb 2019 15:02	1
HS19011056-19	187069	21 Jan 2019 00:00			13 Feb 2019 15:02	1

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19011056

QC BATCH REPORT

Batch ID: 136949 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-136949** Units: **ug/Kg** Analysis Date: **24-Jan-2019 08:24**
Client ID: Run ID: **ECD_7_331650** SeqNo: **4924836** PrepDate: **23-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	17								
Aroclor 1221	U	17								
Aroclor 1232	U	17								
Aroclor 1242	U	17								
Aroclor 1248	U	17								
Aroclor 1254	U	17								
Aroclor 1260	U	17								
PCBs (Total)	U	17								
Surr: Decachlorobiphenyl	*5.921*	*1.6*	*6.667*	*0*	*88.8*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.129*	*1.6*	*6.667*	*0*	*91.9*	*50 - 140*				

LCS Sample ID: **LCS-136949** Units: **ug/Kg** Analysis Date: **24-Jan-2019 08:40**
Client ID: Run ID: **ECD_7_331650** SeqNo: **4924837** PrepDate: **23-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	158.9	17	166.7	0	95.3	53 - 135				
Aroclor 1260	157.3	17	166.7	0	94.3	54 - 137				
Surr: Decachlorobiphenyl	*6.335*	*1.6*	*6.667*	*0*	*95.0*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.452*	*1.6*	*6.667*	*0*	*96.8*	*50 - 140*				

MS Sample ID: **HS19011054-02MS** Units: **ug/Kg** Analysis Date: **24-Jan-2019 09:28**
Client ID: Run ID: **ECD_7_331650** SeqNo: **4924839** PrepDate: **23-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	160.6	17	166.3	0	96.6	53 - 135				
Aroclor 1260	187.2	17	166.3	27.16	96.2	54 - 137				
Surr: Decachlorobiphenyl	*6.88*	*1.6*	*6.651*	*0*	*103*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.621*	*1.6*	*6.651*	*0*	*99.5*	*50 - 140*				

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19011056

QC BATCH REPORT

Batch ID: 136949 **Instrument: ECD_7** **Method: SW8082**

MSD Sample ID: **HS19011054-02MSD** Units: **ug/Kg** Analysis Date: **24-Jan-2019 09:43**
Client ID: Run ID: **ECD_7_331650** SeqNo: **4924840** PrepDate: **23-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	149.7	17	166.5	0	89.9	53 - 135	160.6	7.02	30	
Aroclor 1260	187.8	17	166.5	27.16	96.5	54 - 137	187.2	0.338	30	
Surr: Decachlorobiphenyl	*6.448*	*1.6*	*6.66*	*0*	*96.8*	*54 - 143*	*6.88*	*6.49*	*30*	
Surr: Tetrachloro-m-xylene	*6.124*	*1.6*	*6.66*	*0*	*91.9*	*50 - 140*	*6.621*	*7.81*	*30*	

The following samples were analyzed in this batch: HS19011056-07 HS19011056-08 HS19011056-10 HS19011056-11 HS19011056-12 HS19011056-13 HS19011056-14 HS19011056-16 HS19011056-18

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19011056

QC BATCH REPORT

Batch ID: 136985 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-136985** Units: **ng, Total** Analysis Date: **24-Jan-2019 20:22**
Client ID: Run ID: **ECD_7_331725** SeqNo: **4925168** PrepDate: **23-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	500								
Aroclor 1221	U	500								
Aroclor 1232	U	500								
Aroclor 1242	U	500								
Aroclor 1248	U	500								
Aroclor 1254	U	500								
Aroclor 1260	U	500								
PCBs (Total)	U	500								
Surr: Decachlorobiphenyl	*189.1*	*0*	*200*	*0*	*94.5*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*180.3*	*0*	*200*	*0*	*90.2*	*30 - 150*				

LCS Sample ID: **LCS-136985** Units: **ng, Total** Analysis Date: **24-Jan-2019 20:38**
Client ID: Run ID: **ECD_7_331725** SeqNo: **4925169** PrepDate: **23-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4793	500	5000	0	95.9	50 - 130				
Aroclor 1260	5156	500	5000	0	103	50 - 130				
Surr: Decachlorobiphenyl	*201.9*	*0*	*200*	*0*	*101*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*193.6*	*0*	*200*	*0*	*96.8*	*30 - 150*				

LCSD Sample ID: **LCSD-136985** Units: **ng, Total** Analysis Date: **24-Jan-2019 20:54**
Client ID: Run ID: **ECD_7_331725** SeqNo: **4925170** PrepDate: **23-Jan-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4960	500	5000	0	99.2	50 - 130	4793	3.42	30	
Aroclor 1260	5318	500	5000	0	106	50 - 130	5156	3.08	30	
Surr: Decachlorobiphenyl	*205.4*	*0*	*200*	*0*	*103*	*30 - 150*	*201.9*	*1.73*	*30*	
Surr: Tetrachloro-m-xylene	*198.9*	*0*	*200*	*0*	*99.5*	*30 - 150*	*193.6*	*2.73*	*30*	

The following samples were analyzed in this batch: HS19011056-01 HS19011056-03 HS19011056-04

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19011056

QC BATCH REPORT

Batch ID: 137511 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-137511** Units: **ng, Total** Analysis Date: **07-Feb-2019 21:24**
Client ID: Run ID: **ECD_7_332552** SeqNo: **4943020** PrepDate: **07-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	500								
Aroclor 1221	U	500								
Aroclor 1232	U	500								
Aroclor 1242	U	500								
Aroclor 1248	U	500								
Aroclor 1254	U	500								
Aroclor 1260	U	500								
PCBs (Total)	U	500								
Surr: Decachlorobiphenyl	*136.4*	*0*	*200*	*0*	*68.2*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*125.9*	*0*	*200*	*0*	*62.9*	*30 - 150*				

LCS Sample ID: **LCS-137511** Units: **ng, Total** Analysis Date: **07-Feb-2019 21:41**
Client ID: Run ID: **ECD_7_332552** SeqNo: **4943021** PrepDate: **07-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3191	500	5000	0	63.8	50 - 130				
Aroclor 1260	2685	500	5000	0	53.7	50 - 130				
Surr: Decachlorobiphenyl	*112.8*	*0*	*200*	*0*	*56.4*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*142.6*	*0*	*200*	*0*	*71.3*	*30 - 150*				

LCSD Sample ID: **LCSD-137511** Units: **ng, Total** Analysis Date: **07-Feb-2019 21:58**
Client ID: Run ID: **ECD_7_332552** SeqNo: **4943022** PrepDate: **07-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	3593	500	5000	0	71.9	50 - 130	3191	11.9	30	
Aroclor 1260	3219	500	5000	0	64.4	50 - 130	2685	18.1	30	
Surr: Decachlorobiphenyl	*127.9*	*0*	*200*	*0*	*64.0*	*30 - 150*	*112.8*	*12.5*	*30*	
Surr: Tetrachloro-m-xylene	*178.3*	*0*	*200*	*0*	*89.2*	*30 - 150*	*142.6*	*22.2*	*30*	

The following samples were analyzed in this batch: HS19011056-20 HS19011056-21

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 13-Feb-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: **HS19011056**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-0356	27-Mar-2019
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019

ALS Houston, US Date: 13-Feb-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Work Order: HS19011056
Date/Time Received: **23-Jan-2019 09:55**
Received by: **PJM**

Checklist completed by: *Paresh M. Giga* (eSignature) 23-Jan-2019 (Date)
Reviewed by: *RJ Modashia* (eSignature) 23-Jan-2019 (Date)

Matrices: **Dust/Solid/Wipe**
Carrier name: **FedEx**

	Yes	No	
Shipping container/cooler in good condition?	☑	☐	Not Present ☐
Custody seals intact on shipping container/cooler?	☑	☐	Not Present ☐
Custody seals intact on sample bottles?	☐	☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	Not Present ☑
Chain of custody present?	☑	☐	2 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:None
Samplers name present on COC?	☐	☑	
Chain of custody agrees with sample labels?	☐	☑	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s):	1.8c/2.1c U/C	IR25
Cooler(s)/Kit(s):	44451	
Date/Time sample(s) sent to storage:	1/23/19 11:35	

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

RIGHT SOLUTIONS | RIGHT PARTNER

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 1/21/2019

ATTACHMENT 1

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: AIS Environmental
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437 (Friedman/Rubin S.V.E.C.)

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
184838	Wipe-Hexane	PCB Aroclor - 8082	Due: 1/25/19
184839	Wipe-Hexane	Dioxin/Furan - 1613B	Hold
184831	Wipe-Hexane	PCB Aroclor - 8082	Due: 1/25/19
184840	Wipe-Hexane	PCB Aroclor - 8082	Due: 1/25/19
184841	Wipe-Hexane	Dioxin/Furan - 1613B	Hold
187061	Bulk-Carpet	Dioxin/Furan - 1613B	Hold
187062	Bulk-Carpet	PCB Aroclor - 8082	Due: 1/25/19
187066	Bulk-Carpet	PCB Aroclor - 8082	Due: 1/25/19
187067	Bulk-Carpet	Dioxin/Furan - 1613B	Hold
187064	Bulk-Carpet	PCB Aroclor - 8082	Due: 1/25/19
184824	Bulk-Dust	PCB Aroclor - 8082	Due: 1/25/19
184827	Bulk-Dust	PCB Aroclor - 8082	Due 1/25/19
184829	Bulk-Dust	PCB Aroclor - 8082	Due: 1/25/19
187056	Bulk-Dust	PCB Aroclor - 8082	Due 1/25/19
187057	Bulk-Dust	(PCB) ~~PCB Aroclor - 8082~~ 1613B (Hold)	Hold
187058	Bulk-Dust	PCB Aroclor - 8082	Due 1/25/19

HS19011056
Environmental Health & Engineering
22437 Friedman/Rubin S.V.E.C.

☑ Rush by 1/25/19 on AIS Indicated date/time ☐ Other _____

☑ Electronic transfer - datacoordinator@eheinc.com
pgillan@eheinc.com

is form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 1/21/19
Received by: [signature] of (company name) FEDEX Date: 1/21/19
Relinquished by: _____ of (company name) _____ Date: _____
Received by: P.M. [signature] of (company name) AIS Date: 1/23/19 09:55
Relinquished by: _____ of (company name) _____ Date: _____
Received by: _____ of (company name) _____ Date: _____
Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

44451 WIC 1.8" #25 OFF 0.3"

Page 1 of 2

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

RIGHT SOLUTIONS | RIGHT PARTNER

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 11/21/2019

ATTACHMENT 1

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: NES Environmental
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437 Friedman/Rubin

The cost of this analysis will be covered by EH&E Purchase Order # N.A. S.V.E.C.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187059	Blank-Dust	Dioxin/Furan - 1613B	Hold
184852	Blank-Soil	PCB Aroclor - 8082	Due 12/2/19
187061	Blank-Soil	Dioxin/Furan - 1613B	Hold
187062	Blank	PCB (8082) + Dioxin/Furan 1613B	Hold
187068	Blank	PCB (8082) + Dioxin/Furan 1613B	Hold

HS19011056
Environmental Health & Engineering
22437 Friedman/Rubin S.V.E.C.

Special instructions:

☐ Standard turn around time ☑ Rush by 12/5 @ 10:00 AM date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☑ Additional report recipient KRughan@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 11/21/2019

Received by: [signature] of (company name) FEDEX Date: 11/21/2019

Relinquished by: _____ of (company name) _____ Date: _____

Received by: [signature] of (company name) NES Date: 11/23/19 09:55

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 2 of 2

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

RIGHT SOLUTIONS | RIGHT PARTNER

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 1/21/09 Time: 4:55 PM
Name: E. COGHLAN
Company: EHTE, INC.

Seal Broken By:
Date:

FedEx
TRK# 0215 8137 0760 7599

TUE - 22 JAN AA
STANDARD OVERNIGHT
DSR
77099
TX-US
IAH

NH SGRA

TID 187013 21JAN19 DxDA 553C2/D74C/8C8A

FedEx Express Package US Airbill

FedEx Tracking Number 8137 0760 7599

Form ID No. 0215

1 From
Date
Sender's Name Phone
Company
Address
Dept./Floor/Suite/Room
City State ZIP

2 Your Internal Billing Reference

3 To
Recipient's Name Phone
Company
Address
We cannot deliver to P.O. boxes or P.O. ZIP codes.
Dept./Floor/Suite/Room
Address
Use this line for the HOLD location address or for additional space for your shipping address.
City State ZIP

Hold Weekday
FedEx location address
REQUIRED. NOT available for FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8137 0760 7599

4 Express Package Service
Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day
- FedEx First Overnight
- FedEx Priority Overnight
- FedEx Standard Overnight

2 or 3 Business Days
- FedEx 2Day A.M.
- FedEx 2Day
- FedEx Express Saver

5 Packaging
FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options
Saturday Delivery
No Signature Required
Direct Signature
Indirect Signature
Does this shipment contain dangerous goods?
No Yes Yes Dry Ice
Cargo Aircraft Only

7 Payment Bill to:
Enter FedEx Acct. No. or Credit Card No. below.
Sender Recipient Third Party Credit Card Cash/Check
Total Packages Total Weight Grand Total

611

RIGHT SOLUTIONS | RIGHT PARTNER

February 07, 2019

Service Request No:E1900077

ALS Environmental - US
10450 Stancliff Road
Suite 210
Houston, TX 77099

Laboratory Results for: HS19011056

Enclosed are the results of the sample(s) submitted to our laboratory January 29, 2019
For your reference, these analyses have been assigned our service request number **E1900077.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Houston	**Service Request No.:**	E1900077
Project:	HS19011056	**Date Received:**	01/29/19
Sample Matrix:	Misc Solid		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Four samples were received for analysis at ALS Environmental in Houston on 01/29/19.

The samples were received at 0.9°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Method Blank

The Method Blank EQ1900034-01 contained low levels of target Dioxin/Furan compounds above the EDL however below the Method Reporting Limit (MRL). The associated compounds in the samples are not flagged with a 'B' flag as the sample results are greater than ten times the level detected in the method blank.

Precision and Accuracy:

EQ1900034: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within control limits.

E flags

When OCDD exceeds the upper method calibration limit (MCL), we use an 'E' flag on the Sample Analytical Report results page when the detector is not saturated. Sample E1900077-004 is reported with an 'E' flag to denote that the sample had concentration greater than the highest calibration point. The process of dilution is counter to the isotopic dilution technique that the laboratory uses to determine recovery and produces variability in the final value. The laboratory only dilutes when detector saturation occurs.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

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Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds reported as ND = ½ * Detection Limit
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US **Service Request:**E1900077

Project: HS19011056

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900077-001	187061	1/21/2019	0000
E1900077-002	187067	1/21/2019	0000
E1900077-003	187057	1/21/2019	0000
E1900077-004	187069	1/21/2019	0000

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Service Request Summary

ATTACHMENT 1

Folder #: **E1900077**
Client Name: ALS Environmental - US
Project Name: HS19011056
Project Number:

Report To: Corey Grandits
ALS Environmental - US
10450 Stancliff Road
Houston, TX 77099
USA
Phone Number: 281-575-2146
Cell Number:
Fax Number:
E-mail: corey.grandits@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: TWOODS
Date Received: 01/29/19
Internal Due Date: 2/13/2019
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS19011056
EDD: No EDD Specified

2 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
2 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 6D
Pressure Gas:
Rush

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON Dioxins Furans/1613B
E1900077-001	187061	Solid	01/21/19 0000	II
E1900077-002	187067	Solid	01/21/19 0000	II
E1900077-003	187057	Solid	01/21/19 0000	II
E1900077-004	187069	Solid	01/21/19 0000	II

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900077**
Client Name:	ALS Environmental - US
Project Name:	HS19011056
Project Number:	
Report To:	Corey Grandits ALS Environmental - US 10450 Stancliff Road Houston, TX 77099 USA
Phone Number:	281-575-2146
Cell Number:	
Fax Number:	
E-mail:	corey.grandits@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	TWOODS
Date Received:	01/29/19
Internal Due Date:	2/13/2019
QAP:	LAB QAP
Qualifier Set:	HRMS Qualifier Set
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS19011056
EDD:	No EDD Specified

2 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
2 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 6D

Pressure Gas:

Rush

Print

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ED_004522_00089767-00326

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E1900077 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date: 02/06/19	Analyst: JC	Samples: 001-004

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
2/6/19	LG	001-004

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

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ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 10670

E1900077 5
ALS Environmental - US
HS19011056

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Corey Grandits
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Corey.Grandits@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS19011056
TSR:	Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19011056-06**	**187061**	**Solid**	**21 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			11 Feb 2019
2.	**HS19011056-09**	**187067**	**Solid**	**21 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			11 Feb 2019
3.	**HS19011056-15**	**187057**	**Dust**	**21 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			11 Feb 2019
4.	**HS19011056-19**	**187069**	**Solid**	**21 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			11 Feb 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By:	J. Maurer	Date/Time:	1/29/19 15:30
Received By:	[illegible]	Date/Time:	1/29/19 15:30
Cooler ID(s):		Temperature(s):	

0.5°C

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Cooler Receipt Form

ATTACHMENT 1

Project Chemist CG

Client/Project ALS - Houston.

Thermometer ID Smo4

Date/Time Received: 04/29/19 1530 Initials: KW Date/Time Logged in: 04/30/19 1400 Initials KW

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ○ Courier ☒ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☒ No

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

If yes, how many and where?

4. Packing Material: ○ Inserts ☒ Baggies ☒ Bubble Wrap ○ Gel Packs ☒ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ☒ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
N/A		04/29/19	1531	JG	0.5/0.9	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No

10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900077 5

ALS Environmental - US
HS19011056

Effec

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10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental - Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 330769 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/TWOODS **Prep Method:** Method Soxhlet **Prep Date/Time:** 2/1/19 01:44 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900050-001	Breeder Feed Dioxins Test	.01	1613B/Dioxins Furans			Misc. Solid	10.094g	brown pellets/pet food
2	E1900061-001	Sludge Full-January 2019	.01	1613B/Dioxins Furans			Soil	10.192g	tan powder
3	E1900077-001	187061	.01	1613B/Dioxins Furans			Solid	2.954g	brown carpet
4	E1900077-002	187067	.01	1613B/Dioxins Furans			Solid	4.145g	brown carpet
5	E1900077-003	187057	.01	1613B/Dioxins Furans			Solid	0.188g	dark fuzz
6	E1900077-004	187069	.01	1613B/Dioxins Furans			Solid	0.609g	black hard substance
7	EQ1900034-01	MB		1613B/Dioxins Furans			Solid	10.072g	
8	EQ1900034-02	LCS		1613B/Dioxins Furans			Solid	10.031g	
9	EQ1900034-03	DLCS		1613B/Dioxins Furans			Solid	10.001g	

Spiking Solutions

Name: 1613B Matrix Working Standard Inventory ID 196331 Logbook Ref: 196331 JG 1/16/19 2-20ng/ml Expires On: 07/15/2019

E1900050-001	100.00µL	E1900061-001	100.00µL	E1900077-001	100.00µL	E1900077-002	100.00µL	E1900077-003	100.00µL	E1900077-004	100.00µL
EQ1900034-01	100.00µL	EQ1900034-02	100.00µL	EQ1900034-03	100.00µL						

Name: 8290/1613B Cleanup Working Standard Inventory ID 196382 Logbook Ref: JG 1/18/19 196382 8ng/ml Expires On: 04/27/2019

E1900050-001	100.00µL	E1900061-001	100.00µL	E1900077-001	100.00µL	E1900077-002	100.00µL	E1900077-003	100.00µL	E1900077-004	100.00µL
EQ1900034-01	100.00µL	EQ1900034-02	100.00µL	EQ1900034-03	100.00µL						

Name: 1613B Labeled Working Standard Inventory ID 196739 Logbook Ref: 196739 tw 020119 2/4ng/ml Expires On: 07/31/2019

E1900050-001	1,000.00µL	E1900061-001	1,000.00µL	E1900077-001	1,000.00µL	E1900077-002	1,000.00µL	E1900077-003	1,000.00µL	E1900077-004	1,000.00µL
EQ1900034-01	1,000.00µL	EQ1900034-02	1,000.00µL	EQ1900034-03	1,000.00µL						

Preparation Materials

Carbon, High Purity	tw 012819 carbon (196585)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	tw 011119 glass wool (196223)
Hexanes 95%	tw 011119 hexane (196222)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL (195005)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Tridecane (n-Tridecane)	AL 12/12/18 (195585)	Silica Gel	tw 12/31/18 (195984)
sulfuric acid	tw 1/28/19 sulfuric (196582)	Toluene 99.9% Minimum	tw 011119 toluene (196224)		

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 330769
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 2/1/19 01:44 PM

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	2/1/19 13:44	Started:	2/4/19 10:00	Started:	2/4/19 14:00	Started:	2/5/19 09:00
Finished:	2/2/19 08:00	Finished:	2/4/19 11:00	Finished:	2/4/19 17:00	Finished:	2/5/19 12:00
By:	JGUIN	By:	JGUIN	By:	JGUIN	By:	JGUIN
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

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ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187061	**Units:**	ng/Kg
Lab Code:	E1900077-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 17:05
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	2.954g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616742	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.48	1.69			1
1,2,3,7,8-PeCDD	7.97**J**		0.923	8.46	1.77	1.001	1
1,2,3,4,7,8-HxCDD	9.49**K**		0.994	8.46	1.60	1.000	1
1,2,3,6,7,8-HxCDD	91.8		1.07	8.46	1.22	1.000	1
1,2,3,7,8,9-HxCDD	16.3**K**		0.956	8.46	1.47	1.007	1
1,2,3,4,6,7,8-HpCDD	521		3.01	8.46	1.05	1.000	1
OCDD	2130		4.21	16.9	0.88	1.000	1
2,3,7,8-TCDF	28.1		1.69	1.69	0.69	1.001	1
1,2,3,7,8-PeCDF	42.4		2.41	8.46	1.68	1.001	1
2,3,4,7,8-PeCDF	76.7		2.27	8.46	1.60	1.001	1
1,2,3,4,7,8-HxCDF	70.5		1.30	8.46	1.19	1.000	1
1,2,3,6,7,8-HxCDF	32.1		1.28	8.46	1.21	1.000	1
1,2,3,7,8,9-HxCDF	5.37**JK**		1.60	8.46	1.56	1.001	1
2,3,4,6,7,8-HxCDF	20.4		1.43	8.46	1.13	1.001	1
1,2,3,4,6,7,8-HpCDF	136		1.19	8.46	1.10	1.000	1
1,2,3,4,7,8,9-HpCDF	3.67**JK**		1.54	8.46	1.30	1.000	1
OCDF	61.6		5.21	16.9	0.89	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187061	**Units:**	ng/Kg
Lab Code:	E1900077-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 17:05
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	2.954g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616742	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	10.4		1.48	1.69	0.84		1
Total Penta-Dioxins	153		0.923	8.46	1.52		1
Total Hexa-Dioxins	579		1.01	8.46	1.26		1
Total Hepta-Dioxins	1130		3.01	8.46	1.02		1
Total Tetra-Furans	435		1.69	1.69	0.68		1
Total Penta-Furans	1310		2.34	8.46	1.66		1
Total Hexa-Furans	949		1.39	8.46	1.26		1
Total Hepta-Furans	241		1.35	8.46	1.10		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187061	**Units:**	Percent
Lab Code:	E1900077-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 17:05
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	2.954g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616742	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1021.343	51		25-164	0.81	1.022
13C-1,2,3,7,8-PeCDD	2000	868.564	43		25-181	1.55	1.197
13C-1,2,3,4,7,8-HxCDD	2000	1123.550	56		32-141	1.32	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1093.183	55		28-130	1.25	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	735.033	37		23-140	1.04	1.067
13C-OCDD	4000	818.694	20		17-157	0.94	1.139
13C-2,3,7,8-TCDF	2000	1015.450	51		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	839.425	42		24-185	1.58	1.153
13C-2,3,4,7,8-PeCDF	2000	885.838	44		21-178	1.56	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1182.683	59		26-152	0.55	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1163.529	58		26-123	0.54	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1050.012	53		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1068.767	53		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	712.129	36		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	678.910	34		26-138	0.45	1.079
37Cl-2,3,7,8-TCDD	800	440.914	55		35-197	NA	1.022

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187061	**Units:**	ng/Kg
Lab Code:	E1900077-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.48	1.69	1	1	
1,2,3,7,8-PeCDD	**7.97**	0.923	8.46	1	1	7.97
1,2,3,4,7,8-HxCDD	**9.49**	0.994	8.46	1	0.1	0.949
1,2,3,6,7,8-HxCDD	**91.8**	1.07	8.46	1	0.1	9.18
1,2,3,7,8,9-HxCDD	**16.3**	0.956	8.46	1	0.1	1.63
1,2,3,4,6,7,8-HpCDD	**521**	3.01	8.46	1	0.01	5.21
OCDD	**2130**	4.21	16.9	1	0.0003	0.639
2,3,7,8-TCDF	**28.1**	1.69	1.69	1	0.1	2.81
1,2,3,7,8-PeCDF	**42.4**	2.41	8.46	1	0.03	1.27
2,3,4,7,8-PeCDF	**76.7**	2.27	8.46	1	0.3	23.0
1,2,3,4,7,8-HxCDF	**70.5**	1.30	8.46	1	0.1	7.05
1,2,3,6,7,8-HxCDF	**32.1**	1.28	8.46	1	0.1	3.21
1,2,3,7,8,9-HxCDF	**5.37**	1.60	8.46	1	0.1	0.537
2,3,4,6,7,8-HxCDF	**20.4**	1.43	8.46	1	0.1	2.04
1,2,3,4,6,7,8-HpCDF	**136**	1.19	8.46	1	0.01	1.36
1,2,3,4,7,8,9-HpCDF	**3.67**	1.54	8.46	1	0.01	0.0367
OCDF	**61.6**	5.21	16.9	1	0.0003	0.0185
		Total TEQ				66.9

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187067	**Units:**	ng/Kg
Lab Code:	E1900077-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 17:53
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	4.145g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616743	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.05	1.21			1
1,2,3,7,8-PeCDD	9.51		0.692	6.03	1.74	1.001	1
1,2,3,4,7,8-HxCDD	13.5		1.48	6.03	1.23	1.000	1
1,2,3,6,7,8-HxCDD	155		1.57	6.03	1.30	1.000	1
1,2,3,7,8,9-HxCDD	27.6		1.42	6.03	1.30	1.007	1
1,2,3,4,6,7,8-HpCDD	925		2.22	6.03	1.09	1.000	1
OCDD	3260		2.43	12.1	0.88	1.000	1
2,3,7,8-TCDF	48.3		0.880	1.21	0.80	1.001	1
1,2,3,7,8-PeCDF	74.1		3.23	6.03	1.58	1.001	1
2,3,4,7,8-PeCDF	172		3.37	6.03	1.51	1.001	1
1,2,3,4,7,8-HxCDF	162		2.15	6.03	1.24	1.000	1
1,2,3,6,7,8-HxCDF	63.9		1.88	6.03	1.37	1.001	1
1,2,3,7,8,9-HxCDF	14.3		2.60	6.03	1.29	1.001	1
2,3,4,6,7,8-HxCDF	32.5		2.17	6.03	1.32	1.000	1
1,2,3,4,6,7,8-HpCDF	254		1.12	6.03	1.07	1.000	1
1,2,3,4,7,8,9-HpCDF	7.15		1.52	6.03	1.00	1.000	1
OCDF	104		3.58	12.1	0.87	1.004	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187067	**Units:**	ng/Kg
Lab Code:	E1900077-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 17:53
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	4.145g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616743	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	12.4		1.05	1.21	0.78		1
Total Penta-Dioxins	133		0.692	6.03	1.64		1
Total Hexa-Dioxins	957		1.49	6.03	1.24		1
Total Hepta-Dioxins	1870		2.22	6.03	1.07		1
Total Tetra-Furans	587		0.880	1.21	0.83		1
Total Penta-Furans	2010		3.30	6.03	1.45		1
Total Hexa-Furans	2070		2.17	6.03	1.27		1
Total Hepta-Furans	501		1.30	6.03	1.07		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187067	**Units:**	Percent
Lab Code:	E1900077-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 17:53
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	4.145g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616743	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1095.918	55		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	907.207	45		25-181	1.50	1.197
13C-1,2,3,4,7,8-HxCDD	2000	1120.473	56		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1118.469	56		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	735.964	37		23-140	1.13	1.067
13C-OCDD	4000	799.643	20		17-157	0.86	1.139
13C-2,3,7,8-TCDF	2000	1062.687	53		24-169	0.77	0.991
13C-1,2,3,7,8-PeCDF	2000	992.819	50		24-185	1.60	1.153
13C-2,3,4,7,8-PeCDF	2000	944.653	47		21-178	1.54	1.186
13C-1,2,3,4,7,8-HxCDF	2000	1202.302	60		26-152	0.56	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1317.554	66		26-123	0.55	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1087.574	54		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1175.114	59		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	743.019	37		28-143	0.49	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	683.995	34		26-138	0.43	1.079
37Cl-2,3,7,8-TCDD	800	467.570	58		35-197	NA	1.023

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187067	**Units:**	ng/Kg
Lab Code:	E1900077-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.05	1.21	1	1	
1,2,3,7,8-PeCDD	**9.51**	0.692	6.03	1	1	9.51
1,2,3,4,7,8-HxCDD	**13.5**	1.48	6.03	1	0.1	1.35
1,2,3,6,7,8-HxCDD	**155**	1.57	6.03	1	0.1	15.5
1,2,3,7,8,9-HxCDD	**27.6**	1.42	6.03	1	0.1	2.76
1,2,3,4,6,7,8-HpCDD	**925**	2.22	6.03	1	0.01	9.25
OCDD	**3260**	2.43	12.1	1	0.0003	0.978
2,3,7,8-TCDF	**48.3**	0.880	1.21	1	0.1	4.83
1,2,3,7,8-PeCDF	**74.1**	3.23	6.03	1	0.03	2.22
2,3,4,7,8-PeCDF	**172**	3.37	6.03	1	0.3	51.6
1,2,3,4,7,8-HxCDF	**162**	2.15	6.03	1	0.1	16.2
1,2,3,6,7,8-HxCDF	**63.9**	1.88	6.03	1	0.1	6.39
1,2,3,7,8,9-HxCDF	**14.3**	2.60	6.03	1	0.1	1.43
2,3,4,6,7,8-HxCDF	**32.5**	2.17	6.03	1	0.1	3.25
1,2,3,4,6,7,8-HpCDF	**254**	1.12	6.03	1	0.01	2.54
1,2,3,4,7,8,9-HpCDF	**7.15**	1.52	6.03	1	0.01	0.0715
OCDF	**104**	3.58	12.1	1	0.0003	0.0312
		Total TEQ				128

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187057	**Units:**	ng/Kg
Lab Code:	E1900077-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 18:42
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	0.188g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616744	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	150		23.9	26.6	0.71	1.001	1
1,2,3,7,8-PeCDD	41.4	**J**	15.3	133	1.39	1.000	1
1,2,3,4,7,8-HxCDD	53.6	**JK**	7.95	133	1.80	1.000	1
1,2,3,6,7,8-HxCDD	546		7.85	133	1.08	1.000	1
1,2,3,7,8,9-HxCDD	116	**J**	7.35	133	1.11	1.006	1
1,2,3,4,6,7,8-HpCDD	6440		28.4	133	1.02	1.000	1
OCDD	32400		36.4	266	0.88	1.000	1
2,3,7,8-TCDF	363		16.9	26.6	0.68	1.001	1
1,2,3,7,8-PeCDF	58.5	**JK**	9.05	133	1.85	1.001	1
2,3,4,7,8-PeCDF	186		9.82	133	1.46	1.000	1
1,2,3,4,7,8-HxCDF	234	**K**	20.7	133	1.48	1.000	1
1,2,3,6,7,8-HxCDF	158		19.9	133	1.35	1.000	1
1,2,3,7,8,9-HxCDF	38.4	**J**	25.6	133	1.22	1.001	1
2,3,4,6,7,8-HxCDF	160	**K**	21.6	133	1.01	1.000	1
1,2,3,4,6,7,8-HpCDF	3010		21.6	133	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	107	**JK**	28.2	133	1.44	1.000	1
OCDF	4580		31.5	266	0.87	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187057	**Units:**	ng/Kg
Lab Code:	E1900077-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 18:42
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	0.188g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616744	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	150		23.9	26.6	0.71		1
Total Penta-Dioxins	70.3**J**		15.3	133	1.65		1
Total Hexa-Dioxins	2460		7.71	133	1.12		1
Total Hepta-Dioxins	13100		28.4	133	1.06		1
Total Tetra-Furans	1060		16.9	26.6	0.74		1
Total Penta-Furans	1220		9.42	133	1.65		1
Total Hexa-Furans	5350		21.8	133	1.34		1
Total Hepta-Furans	8900		24.5	133	1.06		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187057	**Units:**	Percent
Lab Code:	E1900077-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 18:42
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	0.188g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616744	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1017.140	51		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	911.472	46		25-181	1.54	1.198
13C-1,2,3,4,7,8-HxCDD	2000	1153.872	58		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1196.094	60		28-130	1.20	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	851.647	43		23-140	1.06	1.067
13C-OCDD	4000	1065.113	27		17-157	0.91	1.139
13C-2,3,7,8-TCDF	2000	1019.018	51		24-169	0.78	0.991
13C-1,2,3,7,8-PeCDF	2000	1014.641	51		24-185	1.60	1.153
13C-2,3,4,7,8-PeCDF	2000	940.006	47		21-178	1.60	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1145.217	57		26-152	0.53	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1175.176	59		26-123	0.54	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1075.140	54		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1153.447	58		28-136	0.56	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	818.948	41		28-143	0.46	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	758.042	38		26-138	0.46	1.079
37Cl-2,3,7,8-TCDD	800	422.577	53		35-197	NA	1.023

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187057	**Units:**	ng/Kg
Lab Code:	E1900077-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**150**	23.9	26.6	1	1	150
1,2,3,7,8-PeCDD	**41.4**	15.3	133	1	1	41.4
1,2,3,4,7,8-HxCDD	**53.6**	7.95	133	1	0.1	5.36
1,2,3,6,7,8-HxCDD	**546**	7.85	133	1	0.1	54.6
1,2,3,7,8,9-HxCDD	**116**	7.35	133	1	0.1	11.6
1,2,3,4,6,7,8-HpCDD	**6440**	28.4	133	1	0.01	64.4
OCDD	**32400**	36.4	266	1	0.0003	9.72
2,3,7,8-TCDF	**363**	16.9	26.6	1	0.1	36.3
1,2,3,7,8-PeCDF	**58.5**	9.05	133	1	0.03	1.76
2,3,4,7,8-PeCDF	**186**	9.82	133	1	0.3	55.8
1,2,3,4,7,8-HxCDF	**234**	20.7	133	1	0.1	23.4
1,2,3,6,7,8-HxCDF	**158**	19.9	133	1	0.1	15.8
1,2,3,7,8,9-HxCDF	**38.4**	25.6	133	1	0.1	3.84
2,3,4,6,7,8-HxCDF	**160**	21.6	133	1	0.1	16.0
1,2,3,4,6,7,8-HpCDF	**3010**	21.6	133	1	0.01	30.1
1,2,3,4,7,8,9-HpCDF	**107**	28.2	133	1	0.01	1.07
OCDF	**4580**	31.5	266	1	0.0003	1.37
		Total TEQ				523

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187069	**Units:**	ng/Kg
Lab Code:	E1900077-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 16:16
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	0.609g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616741	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	12.8	12.8			1
1,2,3,7,8-PeCDD	14.7**JK**		10.5	41.1	3.11	1.001	1
1,2,3,4,7,8-HxCDD	13.2**J**		6.74	41.1	1.09	1.001	1
1,2,3,6,7,8-HxCDD	164		7.35	41.1	1.10	1.000	1
1,2,3,7,8,9-HxCDD	86.9		6.55	41.1	1.34	1.007	1
1,2,3,4,6,7,8-HpCDD	8090		21.0	41.1	1.07	1.000	1
OCDD	65700**E**		11.0	82.1	0.88	1.000	1
2,3,7,8-TCDF	35.2**K**		11.7	11.7	0.94	1.001	1
1,2,3,7,8-PeCDF	ND	U	6.77	41.1			1
2,3,4,7,8-PeCDF	38.0**JK**		10.3	41.1	1.28	1.000	1
1,2,3,4,7,8-HxCDF	37.3**J**		6.75	41.1	1.25	1.000	1
1,2,3,6,7,8-HxCDF	11.4**J**		7.52	41.1	1.14	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	8.45	41.1			1
2,3,4,6,7,8-HxCDF	ND	U	7.64	41.1			1
1,2,3,4,6,7,8-HpCDF	67.5**K**		3.38	41.1	0.87	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	4.65	41.1			1
OCDF	227		15.4	82.1	0.96	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187069	**Units:**	ng/Kg
Lab Code:	E1900077-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 16:16
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	0.609g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616741	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	12.8	12.8			1
Total Penta-Dioxins	ND	U	10.5	41.1			1
Total Hexa-Dioxins	1390		6.87	41.1	1.32		1
Total Hepta-Dioxins	15200		21.0	41.1	1.02		1
Total Tetra-Furans	ND	U	11.7	11.7			1
Total Penta-Furans	223		8.11	41.1	1.63		1
Total Hexa-Furans	128		7.59	41.1	1.26		1
Total Hepta-Furans	247		3.92	41.1	1.05		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187069	**Units:**	Percent
Lab Code:	E1900077-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 16:16
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	0.609g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616741	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1187.134	59		25-164	0.74	1.022
13C-1,2,3,7,8-PeCDD	2000	909.885	45		25-181	1.46	1.198
13C-1,2,3,4,7,8-HxCDD	2000	1333.954	67		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1308.224	65		28-130	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1030.788	52		23-140	1.11	1.067
13C-OCDD	4000	1437.471	36		17-157	0.88	1.140
13C-2,3,7,8-TCDF	2000	855.089	43		24-169	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	881.637	44		24-185	1.60	1.153
13C-2,3,4,7,8-PeCDF	2000	561.446	28		21-178	1.53	1.188
13C-1,2,3,4,7,8-HxCDF	2000	1210.525	61		26-152	0.54	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1060.572	53		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1232.965	62		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1132.628	57		28-136	0.55	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	875.371	44		28-143	0.46	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	757.225	38		26-138	0.42	1.079
37Cl-2,3,7,8-TCDD	800	473.841	59		35-197	NA	1.023

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	01/21/19 00:00
Sample Matrix:	Solid	**Date Received:**	01/29/19 15:30
Sample Name:	187069	**Units:**	ng/Kg
Lab Code:	E1900077-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	12.8	12.8	1	1	
1,2,3,7,8-PeCDD	**14.7**	10.5	41.1	1	1	14.7
1,2,3,4,7,8-HxCDD	**13.2**	6.74	41.1	1	0.1	1.32
1,2,3,6,7,8-HxCDD	**164**	7.35	41.1	1	0.1	16.4
1,2,3,7,8,9-HxCDD	**86.9**	6.55	41.1	1	0.1	8.69
1,2,3,4,6,7,8-HpCDD	**8090**	21.0	41.1	1	0.01	80.9
OCDD	**65700**	11.0	82.1	1	0.0003	19.7
2,3,7,8-TCDF	**35.2**	11.7	11.7	1	0.1	3.52
1,2,3,7,8-PeCDF	ND	6.77	41.1	1	0.03	
2,3,4,7,8-PeCDF	**38.0**	10.3	41.1	1	0.3	11.4
1,2,3,4,7,8-HxCDF	**37.3**	6.75	41.1	1	0.1	3.73
1,2,3,6,7,8-HxCDF	**11.4**	7.52	41.1	1	0.1	1.14
1,2,3,7,8,9-HxCDF	ND	8.45	41.1	1	0.1	
2,3,4,6,7,8-HxCDF	ND	7.64	41.1	1	0.1	
1,2,3,4,6,7,8-HpCDF	**67.5**	3.38	41.1	1	0.01	0.675
1,2,3,4,7,8,9-HpCDF	ND	4.65	41.1	1	0.01	
OCDF	**227**	15.4	82.1	1	0.0003	0.0681
		Total TEQ				162

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900034-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 12:55
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.072g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616737	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.391	0.496			1
1,2,3,7,8-PeCDD	ND	U	0.101	2.48			1
1,2,3,4,7,8-HxCDD	ND	U	0.0852	2.48			1
1,2,3,6,7,8-HxCDD	ND	U	0.0915	2.48			1
1,2,3,7,8,9-HxCDD	ND	U	0.0823	2.48			1
1,2,3,4,6,7,8-HpCDD	0.130**JK**		0.0652	2.48	1.76	1.000	1
OCDD	0.882**JK**		0.118	4.96	1.10	1.000	1
2,3,7,8-TCDF	ND	U	0.234	0.496			1
1,2,3,7,8-PeCDF	ND	U	0.0745	2.48			1
2,3,4,7,8-PeCDF	ND	U	0.0797	2.48			1
1,2,3,4,7,8-HxCDF	0.112**J**		0.0603	2.48	1.35	1.001	1
1,2,3,6,7,8-HxCDF	0.0967**JK**		0.0551	2.48	1.66	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0707	2.48			1
2,3,4,6,7,8-HxCDF	0.0781**JK**		0.0589	2.48	0.75	1.000	1
1,2,3,4,6,7,8-HpCDF	0.0691**JK**		0.0665	2.48	0.80	1.000	1
1,2,3,4,7,8,9-HpCDF	0.0763**JK**		0.0577	2.48	1.41	1.000	1
OCDF	0.359**JK**		0.174	4.96	0.57	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900034-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 12:55
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.072g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616737	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.391	0.496			1
Total Penta-Dioxins	ND	U	0.101	2.48			1
Total Hexa-Dioxins	ND	U	0.0862	2.48			1
Total Hepta-Dioxins	ND	U	0.0652	2.48			1
Total Tetra-Furans	ND	U	0.234	0.496			1
Total Penta-Furans	ND	U	0.0770	2.48			1
Total Hexa-Furans	0.112**J**		0.0607	2.48	1.35		1
Total Hepta-Furans	ND	U	0.0615	2.48			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900034-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/05/19 12:55
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.072g	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P616737	**Blank File Name:**	P616737
ICAL Date:	09/25/18	**Cal Ver. File Name:**	P616735

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	972.024	49		25-164	0.79	1.022
13C-1,2,3,7,8-PeCDD	2000	1063.411	53		25-181	1.53	1.198
13C-1,2,3,4,7,8-HxCDD	2000	1082.679	54		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1144.040	57		28-130	1.32	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1187.124	59		23-140	1.07	1.067
13C-OCDD	4000	1989.798	50		17-157	0.94	1.139
13C-2,3,7,8-TCDF	2000	930.720	47		24-169	0.78	0.991
13C-1,2,3,7,8-PeCDF	2000	1114.926	56		24-185	1.60	1.154
13C-2,3,4,7,8-PeCDF	2000	1045.550	52		21-178	1.56	1.188
13C-1,2,3,4,7,8-HxCDF	2000	1039.469	52		26-152	0.53	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1150.796	58		26-123	0.54	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1053.278	53		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1070.744	54		28-136	0.54	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	721.709	36		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1035.649	52		26-138	0.47	1.080
37Cl-2,3,7,8-TCDD	800	409.072	51		35-197	NA	1.023

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Accuracy & Precision

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
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Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Analyzed:**	02/06/19
Sample Matrix:	Solid	**Date Extracted:**	02/01/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	624485

	Lab Control Sample EQ1900034-02			Duplicate Lab Control Sample EQ1900034-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	99.9	99.7	100	102	100	102	70-140	2	50
1,2,3,4,7,8-HxCDD	110	99.7	110	114	100	114	70-164	4	50
1,2,3,6,7,8-HxCDD	108	99.7	109	112	100	112	76-134	3	50
1,2,3,7,8,9-HxCDD	106	99.7	106	113	100	113	64-162	6	50
1,2,3,7,8-PeCDD	107	99.7	107	109	100	109	70-142	1	50
2,3,7,8-TCDD	22.2	19.9	111	22.6	20.0	113	67-158	2	50
OCDD	203	199	102	211	200	106	78-144	4	50
1,2,3,4,6,7,8-HpCDF	113	99.7	114	116	100	116	82-122	2	50
1,2,3,4,7,8,9-HpCDF	102	99.7	102	103	100	103	78-138	1	50
1,2,3,4,7,8-HxCDF	104	99.7	104	105	100	105	72-134	2	50
1,2,3,6,7,8-HxCDF	101	99.7	101	105	100	105	84-130	3	50
1,2,3,7,8,9-HxCDF	101	99.7	101	105	100	105	78-130	4	50
1,2,3,7,8-PeCDF	99.3	99.7	100	102	100	102	80-134	3	50
2,3,4,6,7,8-HxCDF	105	99.7	105	108	100	108	70-156	3	50
2,3,4,7,8-PeCDF	104	99.7	104	107	100	107	68-160	4	50
2,3,7,8-TCDF	21.4	19.9	107	22.0	20.0	110	75-158	3	50
OCDF	220	199	110	225	200	113	63-170	3	50

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900034-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/06/19 16:24
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.031g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520272	**Blank File Name:**	P616737
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520262

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	22.2		0.354	0.498	0.82	1.001	1
1,2,3,7,8-PeCDD	107		0.0670	2.49	1.53	1.001	1
1,2,3,4,7,8-HxCDD	110		0.0406	2.49	1.24	1.000	1
1,2,3,6,7,8-HxCDD	108		0.0401	2.49	1.29	1.000	1
1,2,3,7,8,9-HxCDD	106		0.0384	2.49	1.27	1.007	1
1,2,3,4,6,7,8-HpCDD	99.9		0.0732	2.49	1.04	1.000	1
OCDD	203		0.220	4.98	0.92	1.000	1
2,3,7,8-TCDF	21.4		0.280	0.498	0.88	1.001	1
1,2,3,7,8-PeCDF	99.3		0.0821	2.49	1.56	1.000	1
2,3,4,7,8-PeCDF	104		0.0819	2.49	1.46	1.001	1
1,2,3,4,7,8-HxCDF	104		0.0642	2.49	1.23	1.000	1
1,2,3,6,7,8-HxCDF	101		0.0578	2.49	1.19	1.000	1
1,2,3,7,8,9-HxCDF	101		0.0745	2.49	1.21	1.000	1
2,3,4,6,7,8-HxCDF	105		0.0636	2.49	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	113		0.263	2.49	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	102		0.297	2.49	1.01	1.000	1
OCDF	220		0.230	4.98	0.84	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900034-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/06/19 16:24
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.031g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520272	**Blank File Name:**	P616737
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520262

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	22.2		0.354	0.498	0.82		1
Total Penta-Dioxins	107		0.0670	2.49	1.53		1
Total Hexa-Dioxins	324		0.0397	2.49	1.24		1
Total Hepta-Dioxins	99.9		0.0732	2.49	1.04		1
Total Tetra-Furans	22.1		0.280	0.498	0.69		1
Total Penta-Furans	203		0.0820	2.49	1.56		1
Total Hexa-Furans	411		0.0645	2.49	1.23		1
Total Hepta-Furans	216		0.279	2.49	1.03		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900034-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/06/19 16:24
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.031g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520272	**Blank File Name:**	P616737
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520262

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	799.673	40		25-164	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	1129.364	56		25-181	1.62	1.204
13C-1,2,3,4,7,8-HxCDD	2000	949.240	47		32-141	1.33	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1039.910	52		28-130	1.33	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	944.894	47		23-140	1.08	1.068
13C-OCDD	4000	1391.208	35		17-157	0.91	1.141
13C-2,3,7,8-TCDF	2000	813.943	41		24-169	0.79	0.990
13C-1,2,3,7,8-PeCDF	2000	1112.409	56		24-185	1.65	1.158
13C-2,3,4,7,8-PeCDF	2000	1086.881	54		21-178	1.61	1.193
13C-1,2,3,4,7,8-HxCDF	2000	918.983	46		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	996.100	50		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	925.367	46		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	920.006	46		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	857.647	43		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	963.451	48		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	326.188	41		35-197	NA	1.023

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900034-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/06/19 17:12
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.001g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520273	**Blank File Name:**	P616737
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520262

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	22.6		0.309	0.500	0.86	1.001	1
1,2,3,7,8-PeCDD	109		0.0781	2.50	1.56	1.001	1
1,2,3,4,7,8-HxCDD	114		0.0704	2.50	1.28	1.000	1
1,2,3,6,7,8-HxCDD	112		0.0726	2.50	1.28	1.000	1
1,2,3,7,8,9-HxCDD	113		0.0681	2.50	1.23	1.007	1
1,2,3,4,6,7,8-HpCDD	102		0.0530	2.50	1.11	1.000	1
OCDD	211		0.104	5.00	0.91	1.000	1
2,3,7,8-TCDF	22.0		0.206	0.500	0.78	1.001	1
1,2,3,7,8-PeCDF	102		0.131	2.50	1.50	1.000	1
2,3,4,7,8-PeCDF	107		0.134	2.50	1.56	1.001	1
1,2,3,4,7,8-HxCDF	105		0.0452	2.50	1.21	1.000	1
1,2,3,6,7,8-HxCDF	105		0.0422	2.50	1.21	1.000	1
1,2,3,7,8,9-HxCDF	105		0.0528	2.50	1.23	1.000	1
2,3,4,6,7,8-HxCDF	108		0.0469	2.50	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	116		0.295	2.50	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	103		0.335	2.50	1.02	1.000	1
OCDF	225		0.153	5.00	0.88	1.005	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900034-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/06/19 17:12
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.001g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520273	**Blank File Name:**	P616737
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520262

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	22.8		0.309	0.500	0.86		1
Total Penta-Dioxins	109		0.0781	2.50	1.56		1
Total Hexa-Dioxins	338		0.0703	2.50	1.28		1
Total Hepta-Dioxins	103		0.0530	2.50	1.16		1
Total Tetra-Furans	23.1		0.206	0.500	0.83		1
Total Penta-Furans	214		0.133	2.50	1.42		1
Total Hexa-Furans	424		0.0465	2.50	1.21		1
Total Hepta-Furans	220		0.314	2.50	1.00		1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900077
Project:	HS19011056	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900034-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/06/19 17:12
Prep Method:	Method Soxhlet	**Date Extracted:**	2/1/19
Sample Amount:	10.001g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520273	**Blank File Name:**	P616737
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520262

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	858.821	43		25-164	0.83	1.023
13C-1,2,3,7,8-PeCDD	2000	1241.105	62		25-181	1.64	1.205
13C-1,2,3,4,7,8-HxCDD	2000	1127.525	56		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1192.594	60		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1144.914	57		23-140	1.07	1.068
13C-OCDD	4000	1765.658	44		17-157	0.88	1.141
13C-2,3,7,8-TCDF	2000	866.820	43		24-169	0.81	0.991
13C-1,2,3,7,8-PeCDF	2000	1217.880	61		24-185	1.59	1.159
13C-2,3,4,7,8-PeCDF	2000	1173.117	59		21-178	1.58	1.193
13C-1,2,3,4,7,8-HxCDF	2000	1050.150	53		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1147.800	57		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1109.913	55		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1086.211	54		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1016.055	51		28-143	0.43	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1185.537	59		26-138	0.44	1.081
37Cl-2,3,7,8-TCDD	800	380.065	48		35-197	NA	1.024

RIGHT SOLUTIONS | RIGHT PARTNER

Chain of Custody Form dated January 31, 2019

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1

DATE: 1/31/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Labs
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22137

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187065	BULK-DUST	DIOXIN/FURAN 1613B	2 WK. TAT
187089	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187090	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187091	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187092	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187093	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187095	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187096	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187097	WIPE	DIOXIN/FURAN 1613B	2 WK T.A.T.
187098	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187099	WIPE	DIOXIN/FURAN - 1613B	2 WK. T.A.T.
187100	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187101	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187102	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187103	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187104	WIPE	PCBs Aroclor - 8082	Due: 2/7/19

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other 2/7/19 unless noted otherwise

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient KMCLAUGHLAN@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 1/31/2019

Received by: Courier of (company name) FEDEX Date: 1/31/2019

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

ALS Laboratory Report (Work Order HS19020127) dated February 25, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

February 25, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19020127**

Laboratory Results for: **22437**

Dear Kevin,

ALS Environmental received 16 sample(s) on Feb 01, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Corey Grandits
Project Manager

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering
Project: 22437
Work Order: HS19020127

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19020127-01	187065	Solid		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-02	187089	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-03	187090	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-04	187091	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-05	187092	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-06	187093	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-07	187095	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-08	187096	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-09	187097	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-10	187098	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-11	187099	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-12	1870100	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-13	1870101	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-14	1870102	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-15	1870103	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐
HS19020127-16	1870104	Wipe		31-Jan-2019 00:00	01-Feb-2019 10:05	☐

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **CASE NARRATIVE**
Project: 22437
Work Order: HS19020127

Work Order Comments

- The analysis for Dioxins/Furans was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

ECD Organics by Method SW8082

Batch ID: 137390

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437	WorkOrder:HS19020127
Sample ID:	187065	Lab ID:HS19020127-01
Collection Date:	31-Jan-2019 00:00	Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	22-Feb-2019 17:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187089 Lab ID:HS19020127-02
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**1,300**		**500**	**500**	**ng, Total**	1	06-Feb-2019 04:33
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 04:33
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 04:33
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 04:33
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 04:33
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 04:33
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 04:33
PCBs (Total)	**1,300**		**500**	**500**	**ng, Total**	1	06-Feb-2019 04:33
Surr: Decachlorobiphenyl	*99.0*			*30-150*	*%REC*	*1*	*06-Feb-2019 04:33*
Surr: Tetrachloro-m-xylene	*90.3*			*30-150*	*%REC*	*1*	*06-Feb-2019 04:33*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187090 Lab ID:HS19020127-03
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**2,200**		**500**	**500**	**ng, Total**	1	06-Feb-2019 04:50
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 04:50
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 04:50
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 04:50
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 04:50
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 04:50
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 04:50
PCBs (Total)	**2,200**		**500**	**500**	**ng, Total**	1	06-Feb-2019 04:50
Surr: Decachlorobiphenyl	*99.4*			*30-150*	*%REC*	*1*	*06-Feb-2019 04:50*
Surr: Tetrachloro-m-xylene	*91.6*			*30-150*	*%REC*	*1*	*06-Feb-2019 04:50*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187091 Lab ID:HS19020127-04
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**910**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:05
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 05:05
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 05:05
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 05:05
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 05:05
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 05:05
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 05:05
PCBs (Total)	**910**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:05
Surr: Decachlorobiphenyl	*94.3*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:05*
Surr: Tetrachloro-m-xylene	*90.8*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:05*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187092 Lab ID:HS19020127-05
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**1,500**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:23
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 05:23
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 05:23
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 05:23
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 05:23
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 05:23
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 05:23
PCBs (Total)	**1,500**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:23
Surr: Decachlorobiphenyl	*89.7*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:23*
Surr: Tetrachloro-m-xylene	*87.2*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:23*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187093 Lab ID:HS19020127-06
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**740**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:38
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 05:38
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 05:38
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 05:38
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 05:38
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 05:38
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 05:38
PCBs (Total)	**740**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:38
Surr: Decachlorobiphenyl	*101*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:38*
Surr: Tetrachloro-m-xylene	*89.7*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:38*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187095 Lab ID:HS19020127-07
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**950**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:55
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 05:55
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 05:55
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 05:55
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 05:55
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 05:55
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 05:55
PCBs (Total)	**950**		**500**	**500**	**ng, Total**	1	06-Feb-2019 05:55
Surr: Decachlorobiphenyl	*96.4*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:55*
Surr: Tetrachloro-m-xylene	*93.0*			*30-150*	*%REC*	*1*	*06-Feb-2019 05:55*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187096 Lab ID:HS19020127-08
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**2,300**		**500**	**500**	**ng, Total**	1	06-Feb-2019 07:50
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 07:50
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 07:50
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 07:50
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 07:50
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 07:50
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 07:50
PCBs (Total)	**2,300**		**500**	**500**	**ng, Total**	1	06-Feb-2019 07:50
Surr: Decachlorobiphenyl	*97.0*			*30-150*	*%REC*	*1*	*06-Feb-2019 07:50*
Surr: Tetrachloro-m-xylene	*97.5*			*30-150*	*%REC*	*1*	*06-Feb-2019 07:50*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437	WorkOrder:HS19020127
Sample ID:	187097	Lab ID:HS19020127-09
Collection Date:	31-Jan-2019 00:00	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	22-Feb-2019 17:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 187098 Lab ID:HS19020127-10
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**520**		**500**	**500**	**ng, Total**	1	06-Feb-2019 08:07
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 08:07
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 08:07
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 08:07
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 08:07
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 08:07
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 08:07
PCBs (Total)	**520**		**500**	**500**	**ng, Total**	1	06-Feb-2019 08:07
Surr: Decachlorobiphenyl	*96.6*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:07*
Surr: Tetrachloro-m-xylene	*84.1*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:07*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19020127
Sample ID:	187099	Lab ID:	HS19020127-11
Collection Date:	31-Jan-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	22-Feb-2019 17:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 1870100 Lab ID:HS19020127-12
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**1,100**		**500**	**500**	**ng, Total**	1	06-Feb-2019 08:24
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 08:24
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 08:24
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 08:24
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 08:24
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 08:24
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 08:24
PCBs (Total)	**1,100**		**500**	**500**	**ng, Total**	1	06-Feb-2019 08:24
Surr: Decachlorobiphenyl	*98.5*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:24*
Surr: Tetrachloro-m-xylene	*85.5*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:24*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 1870101 Lab ID:HS19020127-13
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	06-Feb-2019 08:39
Aroclor 1221		U	500	500	ng, Total	1	06-Feb-2019 08:39
Aroclor 1232		U	500	500	ng, Total	1	06-Feb-2019 08:39
Aroclor 1242		U	500	500	ng, Total	1	06-Feb-2019 08:39
Aroclor 1248		U	500	500	ng, Total	1	06-Feb-2019 08:39
Aroclor 1254		U	500	500	ng, Total	1	06-Feb-2019 08:39
Aroclor 1260		U	500	500	ng, Total	1	06-Feb-2019 08:39
PCBs (Total)		U	500	500	ng, Total	1	06-Feb-2019 08:39
Surr: Decachlorobiphenyl	*96.6*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:39*
Surr: Tetrachloro-m-xylene	*93.8*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:39*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 1870102 Lab ID:HS19020127-14
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**6,600**		**500**	**500**	**ng, Total**	1	06-Feb-2019 08:56
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 08:56
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 08:56
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 08:56
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 08:56
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 08:56
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 08:56
PCBs (Total)	**6,600**		**500**	**500**	**ng, Total**	1	06-Feb-2019 08:56
Surr: Decachlorobiphenyl	*97.2*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:56*
Surr: Tetrachloro-m-xylene	*79.4*			*30-150*	*%REC*	*1*	*06-Feb-2019 08:56*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 1870103 Lab ID:HS19020127-15
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016	**3,700**		**500**	**500**	**ng, Total**	1	06-Feb-2019 09:13
Aroclor 1221	U		500	500	ng, Total	1	06-Feb-2019 09:13
Aroclor 1232	U		500	500	ng, Total	1	06-Feb-2019 09:13
Aroclor 1242	U		500	500	ng, Total	1	06-Feb-2019 09:13
Aroclor 1248	U		500	500	ng, Total	1	06-Feb-2019 09:13
Aroclor 1254	U		500	500	ng, Total	1	06-Feb-2019 09:13
Aroclor 1260	U		500	500	ng, Total	1	06-Feb-2019 09:13
PCBs (Total)	**3,700**		**500**	**500**	**ng, Total**	1	06-Feb-2019 09:13
Surr: Decachlorobiphenyl	*97.9*			*30-150*	*%REC*	*1*	*06-Feb-2019 09:13*
Surr: Tetrachloro-m-xylene	*88.0*			*30-150*	*%REC*	*1*	*06-Feb-2019 09:13*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 WorkOrder:HS19020127
Sample ID: 1870104 Lab ID:HS19020127-16
Collection Date: 31-Jan-2019 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 05-Feb-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	06-Feb-2019 09:30
Aroclor 1221		U	500	500	ng, Total	1	06-Feb-2019 09:30
Aroclor 1232		U	500	500	ng, Total	1	06-Feb-2019 09:30
Aroclor 1242		U	500	500	ng, Total	1	06-Feb-2019 09:30
Aroclor 1248		U	500	500	ng, Total	1	06-Feb-2019 09:30
Aroclor 1254		U	500	500	ng, Total	1	06-Feb-2019 09:30
Aroclor 1260		U	500	500	ng, Total	1	06-Feb-2019 09:30
PCBs (Total)		U	500	500	ng, Total	1	06-Feb-2019 09:30
Surr: Decachlorobiphenyl	*98.3*			*30-150*	*%REC*	*1*	*06-Feb-2019 09:30*
Surr: Tetrachloro-m-xylene	*75.8*			*30-150*	*%REC*	*1*	*06-Feb-2019 09:30*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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WEIGHT LOG

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: HS19020127

Batch ID: 137390 **Method:** PCBS BY SW8082A **Prep:** PCBWIPEPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19020127-02	1	1	10 (mL)	10
HS19020127-03	1	1	10 (mL)	10
HS19020127-04	1	1	10 (mL)	10
HS19020127-05	1	1	10 (mL)	10
HS19020127-06	1	1	10 (mL)	10
HS19020127-07	1	1	10 (mL)	10
HS19020127-08	1	1	10 (mL)	10
HS19020127-10	1	1	10 (mL)	10
HS19020127-12	1	1	10 (mL)	10
HS19020127-13	1	1	10 (mL)	10
HS19020127-14	1	1	10 (mL)	10
HS19020127-15	1	1	10 (mL)	10
HS19020127-16	1	1	10 (mL)	10

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: HS19020127

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 137390	**Test Name :** PCBS BY SW8082A			**Matrix:** Wipe		
HS19020127-02	187089	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 04:33	1
HS19020127-03	187090	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 04:50	1
HS19020127-04	187091	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 05:05	1
HS19020127-05	187092	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 05:23	1
HS19020127-06	187093	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 05:38	1
HS19020127-07	187095	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 05:55	1
HS19020127-08	187096	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 07:50	1
HS19020127-10	187098	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 08:07	1
HS19020127-12	1870100	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 08:24	1
HS19020127-13	1870101	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 08:39	1
HS19020127-14	1870102	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 08:56	1
HS19020127-15	1870103	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 09:13	1
HS19020127-16	1870104	31 Jan 2019 00:00		05 Feb 2019 08:24	06 Feb 2019 09:30	1
Batch ID R333361	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Wipe		
HS19020127-09	187097	31 Jan 2019 00:00			22 Feb 2019 17:28	1
HS19020127-11	187099	31 Jan 2019 00:00			22 Feb 2019 17:28	1
Batch ID R333361	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Solid		
HS19020127-01	187065	31 Jan 2019 00:00			22 Feb 2019 17:28	1

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ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: HS19020127

QC BATCH REPORT

Batch ID: 137390 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-137390** Units: **ng, Total** Analysis Date: **06-Feb-2019 03:43**
Client ID: Run ID: **ECD_7_332396** SeqNo: **4939950** PrepDate: **05-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	500								
Aroclor 1221	U	500								
Aroclor 1232	U	500								
Aroclor 1242	U	500								
Aroclor 1248	U	500								
Aroclor 1254	U	500								
Aroclor 1260	U	500								
PCBs (Total)	U	500								
Surr: Decachlorobiphenyl	*175.8*	*0*	*200*	*0*	*87.9*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*173.3*	*0*	*200*	*0*	*86.6*	*30 - 150*				

LCS Sample ID: **LCS-137390** Units: **ng, Total** Analysis Date: **06-Feb-2019 03:59**
Client ID: Run ID: **ECD_7_332396** SeqNo: **4939951** PrepDate: **05-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4343	500	5000	0	86.9	50 - 130				
Aroclor 1260	3984	500	5000	0	79.7	50 - 130				
Surr: Decachlorobiphenyl	*170.8*	*0*	*200*	*0*	*85.4*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*167.3*	*0*	*200*	*0*	*83.6*	*30 - 150*				

LCSD Sample ID: **LCSD-137390** Units: **ng, Total** Analysis Date: **06-Feb-2019 04:16**
Client ID: Run ID: **ECD_7_332396** SeqNo: **4939952** PrepDate: **05-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	5065	500	5000	0	101	50 - 130	4343	15.3	30	
Aroclor 1260	4842	500	5000	0	96.8	50 - 130	3984	19.4	30	
Surr: Decachlorobiphenyl	*208.8*	*0*	*200*	*0*	*104*	*30 - 150*	*170.8*	*20*	*30*	
Surr: Tetrachloro-m-xylene	*193.8*	*0*	*200*	*0*	*96.9*	*30 - 150*	*167.3*	*14.7*	*30*	

The following samples were analyzed in this batch:

HS19020127-02	HS19020127-03	HS19020127-04	HS19020127-05
HS19020127-06	HS19020127-07	HS19020127-08	HS19020127-10
HS19020127-12	HS19020127-13	HS19020127-14	HS19020127-15
HS19020127-16			

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ALS Houston, US Date: 25-Feb-19

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: **HS19020127**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-0356	27-Mar-2019
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
California	2919, 2018-2019	30-Apr-2019
Maryland	343, 2018-2019	30-Jun-2019

ALS Houston, US Date: 25-Feb-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Work Order: HS19020127
Date/Time Received: **01-Feb-2019 10:05**
Received by: **JRM**

Checklist completed by: *Nilesh D. Ranchod* (eSignature) 4-Feb-2019 (Date)
Reviewed by: *RJ Modashia* (eSignature) 5-Feb-2019 (Date)

Matrices: **Wipes/Solid**
Carrier name: **FedEx Priority Overnight**

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☑	☐	☐
Custody seals intact on sample bottles?	☐	☐	☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	
Samplers name present on COC?	☐	☑	
Chain of custody agrees with sample labels?	☐	☑	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s): 4.3C / 4.7C UC/C | IR # 11
Cooler(s)/Kit(s): 44449
Date/Time sample(s) sent to storage: 02/01/2019 18:00

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes: No date/time on COC or sample labels.

Client Contacted: Date Contacted: Person Contacted:
Contacted By: Regarding:

Comments:

Corrective Action:

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Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 1/31/2019

ATTACHMENT 1

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Lab
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187065	BULK - DUST	DI VIRIFRAN 1613B	2 WK TAT
187089	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187090	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187091	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187092	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187093	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187095	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187096	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187097	WIPE	Dioxin/Furan 1613B	2 wk TAT
187098	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187099	WIPE	Dioxin/Furan - 1613B	2 wk TAT
187100	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187101	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187102	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187103	WIPE	PCBs Aroclor - 8082	Due: 2/7/19
187104	WIPE	PCBs Aroclor - 8082	Due: 2/7/19

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other 2/7/19 [illegible]

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient K. [illegible]@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 1/31/2019

Received by: [signature] of (company name) FedEx Date: 1/31/2019

Relinquished by: _____ of (company name) Fedex Date: 2/1/19 10:25

Received by: _____ of (company name) _____ Date: _____

npany name) _____ Date: _____

npany name) _____ Date: _____

ronmental Health & Engineering, Inc. Date: _____

HS19020127

Environmental Health & Engineering
22437

Temp 4.3
IR # 11 cf 4.4

Page 1 of 1

WHITE-ENGINEER FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

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ALS
10450 Stancliff Rd., Suite
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

210

CUSTODY SEAL	Seal Broken By:
Date: 1/31/2019 Time: 5:15 PM	Date:
Name: K. Coghlan	
Company: Elite, Inc.	

FedEx
TRK# 0215 8079 4000 3210
FRI - 01 FEB AA
STANDARD OVERNIGHT
NH SGRA
DSR
77099
TX-US
IAH

FIO 6136162 31JAN19 OWDA 55302/0F20/8C8A

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February 22, 2019

Service Request No:E1900099

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS19020127

Dear RJ,

Enclosed are the results of the sample(s) submitted to our laboratory February 04, 2019
For your reference, these analyses have been assigned our service request number **E1900099.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS-Houston	**Service Request No.:**	E1900099
Project:	HS19020127	**Date Received:**	02/04/19
Sample Matrix:	Solid/Wipe		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Nineteen soil samples were received for analysis at ALS Environmental in Houston on 02/04/19.

The samples were received at 3.1°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1900047/EQ1900048: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. 1,2,3,4,6,7,8-HpCDD recovery marginally below QC limits; associated compound in the samples should be considered bias low.

B flags – Method Blanks

The Method Blanks EQ1900047-01 and EQ1900048-01 contained low levels of target dioxin and furan compounds above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Y flags – Cleanup Standard

The recoveries for the cleanup standard, 37Cl-2,3,7,8-TCDD are below control limits in sample E1900099-003 and the LCS EQ1900048-02. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

Y flags – Labeled Standards

13C-2,3,7,8-TCDD labeled standard recovery below control limits in sample E1900099-003. (Recovery > 20%)

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

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K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US **Service Request:**E1900099

Project: HS19020127

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900099-001	187065	1/31/2019	0000
E1900099-002	187097	1/31/2019	0000
E1900099-003	187099	1/31/2019	0000

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Service Request Summary

ATTACHMENT 1

Folder #: **E1900099**
Client Name: ALS Environmental - US
Project Name: HS19020127
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 02/04/19
Internal Due Date: 2/18/2019
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: HS19020127
EDD: No EDD Specified

3 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 8E
Pressure Gas:
Rush

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON Dioxins Furans/1613B
E1900099-001	187065	Soil	01/31/19 0000	II
E1900099-002	187097	Wipe	01/31/19 0000	II
E1900099-003	187099	Wipe	01/31/19 0000	II

Folder Comments:

May add air to project

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900099**
Client Name:	ALS Environmental - US
Project Name:	HS19020127
Project Number:	
Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	02/04/19
Internal Due Date:	2/18/2019
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	N
Report to MDL?:	Y
P.O. Number:	HS19020127
EDD:	No EDD Specified

3 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 8E

Pressure Gas:

Rush

Print

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ED_004522_00089767-00401

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E19 00099 (DB-5MSU) SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/20/19	JC	-001

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
02/20/19	LKL	001

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E190000991 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/21/19	JC	002

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
02/21/19	LKL	002

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1900099 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
02/22/19	LKL	003

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
2/22/19	LG	003

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

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ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
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www.alsglobal.com

Subcontract Chain of Custody

COC ID: 10691

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS19020127
TSR: Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19020127-01**	**187065**	**Solid**	**31 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			07 Feb 2019
2.	**HS19020127-09**	**187097**	~~Solid~~ Wipe	**31 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			07 Feb 2019
3.	**HS19020127-11**	**187099**	~~Solid~~ Wipe	**31 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			07 Feb 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By: JA Date/Time: 2-4-19 2:10pm

Received By: Date/Time:

Cooler ID(s): Temperature(s):

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ATTACHMENT 1

ALS Environmental

Cooler Receipt Form

Project Chemist CH

Client/Project ALS

Thermometer ID SM04

Date/Time Received: 2/4/14 Initials: CH Date/Time Logged in: 2/5/14 Initials CH

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No

Were they intact? ○ Yes ○ No ✓ N/A

Were they signed and dated? ○ Yes ○ No ✓ N/A

If yes, how many and where? —

4. Packing Material: ○ Inserts ○ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
—		2-4-14	1415	CH	2.7/3.1	☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900099 5

ALS Laboratory Group
HS19020127

Effec

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ED_004522_00089767-00409

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331358 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/TWOODS **Prep Method:** Method Soxhlet **Prep Date/Time:** 2/13/19 03:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900067-001	SMS 1.5-LOD1 - 1613	.02	1613B/Dioxins Furans			Soil	10.381g	@ 75 ul MDL
2	E1900067-002	SMS 3.0-LOD2 - 1613	.02	1613B/Dioxins Furans			Soil	10.109g	@ 150 ul MDL
3	E1900067-003	SMS 5-LOQ - 1613	.01	1613B/Dioxins Furans			Soil	10.096g	@ 250 ul MDL
4	E1900078-001	EV19010149-01	.01	1613B/Dioxins Furans			Soil	10.175g	Black Sand w/ Rocks
5	E1900078-002	EV19010149-02	.01	1613B/Dioxins Furans			Soil	10.833g	Black Sand w/ Rocks
6	E1900078-003	EV19010149-03	.02	1613B/Dioxins Furans			Soil	10.562g	Black Sand w/ Rocks
7	E1900099-001	187065	.01	1613B/Dioxins Furans			Soil	0.700g	Cushion Fuzz
8	E1900101-001	19003B01BA	.01	1613B/Dioxins Furans			Misc. Solid	5.602g	White Powder
9	E1900111-001	Sludge	.01	1613B/Dioxins Furans			Soil	10.728g	Brown Light Mud
10	EQ1900047-01	MB		1613B/Dioxins Furans			Solid	10.612g	
11	EQ1900047-02	LCS		1613B/Dioxins Furans			Solid	10.987g	
12	EQ1900047-03	DLCS		1613B/Dioxins Furans			Solid	10.681g	
13	EQ1900047-04	SMS 5-LOQ - 1613 DUP	.01	1613B/Dioxins Furans			Solid	10.607g	
14	K1900780-001	NDL39A17006 19-0109-001	.01	1613B/Dioxins Furans			Pulp Sheet	10.113g	LAGUILAR K-Balance-55 / White Paper Shred
15	K1900864-001	01-01-019 19-0021-001	.01	1613B/Dioxins Furans			Paper	10.331g	White Paperboard Chips

Spiking Solutions

Name: 1613B Matrix Working Standard Inventory ID 196789 Logbook Ref: 196789 JG 2/5/2019 2-20ng/ml Expires On: 08/04/2019

EQ1900047-02	100.00µL	EQ1900047-03	100.00µL

Name: 1613B Labeled Working Standard Inventory ID 196863 Logbook Ref: 196863 JG 2/11/2019 2-4ngml Expires On: 07/31/2019

E1900067-001	1,000.00µL	E1900067-002	1,000.00µL	E1900067-003	1,000.00µL	E1900078-001	1,000.00µL	E1900078-002	1,000.00µL	E1900078-003	1,000.00µL
E1900099-001	1,000.00µL	E1900101-001	1,000.00µL	E1900111-001	1,000.00µL	EQ1900047-01	1,000.00µL	EQ1900047-02	1,000.00µL	EQ1900047-03	1,000.00µL
EQ1900047-04	1,000.00µL	K1900780-001	1,000.00µL	K1900864-001	1,000.00µL						

Name: 8290/1613B Cleanup Working Standard Inventory ID 196894 Logbook Ref: tw 196894 021219 8ng/ml Expires On: 04/27/2019

E1900067-001	100.00µL	E1900067-002	100.00µL	E1900067-003	100.00µL	E1900078-001	100.00µL	E1900078-002	100.00µL	E1900078-003	100.00µL
E1900099-001	100.00µL	E1900101-001	100.00µL	E1900111-001	100.00µL	EQ1900047-01	100.00µL	EQ1900047-02	100.00µL	EQ1900047-03	100.00µL
EQ1900047-04	100.00µL	K1900780-001	100.00µL	K1900864-001	100.00µL						

Name: 1613B/23/TO-9A MDL Native Solution Inventory ID 196946 Logbook Ref: 196946 JG 2/13/19 .02-.2 Expires On: 08/04/2019

E1900067-001	75.00µL	E1900067-002	75.00µL	E1900067-003	75.00µL	E1900078-001	75.00µL	E1900078-002	75.00µL	E1900078-003	75.00µL
E1900099-001	75.00µL	E1900101-001	75.00µL	E1900111-001	75.00µL	EQ1900047-01	75.00µL	EQ1900047-02	75.00µL	EQ1900047-03	75.00µL

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331358
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 2/13/19 03:00 PM

EQ1900047-04	75.00µL	K1900780-001	75.00µL	K1900864-001	75.00µL

Preparation Materials

Carbon, High Purity	tw 012819 carbon (196585)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	tw 011119 glass wool (196223)
Hexanes 95%	tw 011119 hexane (196222)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	196891 2/12/2019 (196891)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Tridecane (n-Tridecane)	JG 2/7/19 196835 (196835)	Silica Gel	tw 12/31/18 (195984)
sulfuric acid	tw 1/28/19 sulfuric (196582)	Toluene 99.9% Minimum	tw 011119 toluene (196224)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	2/13/19 15:00	Started:	2/18/19 09:00	Started:	2/18/19 13:00	Started:	2/19/19 09:00
Finished:	2/14/19 08:00	Finished:	2/18/19 10:00	Finished:	2/18/19 16:00	Finished:	2/19/19 12:00
By:	JGUIN	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: GC Date: 02/20/2019

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

RIGHT SOLUTIONS | RIGHT PARTNER

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331384 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method **Prep Date/Time:** 2/13/19 03:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900099-002	187097	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	White Wipe
2	E1900099-003	187099	.01	1613B/Dioxins Furans			Wipe	0.5000Sample	White Wipe
3	EQ1900048-01	MB		1613B/Dioxins Furans			Wipes	0.5000Sample	
4	EQ1900048-02	LCS		1613B/Dioxins Furans			Wipes	0.5000Sample	
5	EQ1900048-03	DLCS		1613B/Dioxins Furans			Wipes	0.5000Sample	

Spiking Solutions

Name: 1613B Matrix Working Standard Inventory ID 196789 Logbook Ref: 196789 JG 2/5/2019 2-20ng/ml Expires On: 08/04/2019

EQ1900048-02 200.00µL EQ1900048-03 200.00µL

Name: 1613B Labeled Working Standard Inventory ID 196863 Logbook Ref: 196863 JG 2/11/2019 2-4ngml Expires On: 07/31/2019

E1900099-002 2,000.00µL E1900099-003 2,000.00µL EQ1900048-01 2,000.00µL EQ1900048-02 2,000.00µL EQ1900048-03 2,000.00µL

Name: 8290/1613B Cleanup Working Standard Inventory ID 196894 Logbook Ref: tw 196894 021219 8ng/ml Expires On: 04/27/2019

E1900099-002 100.00µL E1900099-003 100.00µL EQ1900048-01 100.00µL EQ1900048-02 100.00µL EQ1900048-03 100.00µL

Preparation Materials

Carbon, High Purity	tw 012819 carbon (196585)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	196891 2/12/2019 (196891)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Silica Gel	tw 12/31/18 (195984)	sulfuric acid	tw 1/28/19 sulfuric (196582)
Toluene 99.9% Minimum	JG 1/29/2019 (196609)	Glass Wool	tw 011119 glass wool (196223)	Hexanes 95%	tw 011119 hexane (196222)
Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)	Tridecane (n-Tridecane)	JG 2/7/19 196835 (196835)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	2/13/19 15:00	Started:	2/18/19 14:00	Started:	2/19/19 09:00	Started:	2/19/19 12:00
Finished:	2/14/19 08:00	Finished:	2/18/19 15:00	Finished:	2/19/19 12:00	Finished:	2/19/19 15:00
By:	JGUIN	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: GC Date: 02/20/2019

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Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331384
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtS(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 2/13/19 03:00 PM

Chain of Custody

Relinquished By:		Date:	Extracts Examined
Received By:		Date:	Yes No

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ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Soil	**Date Received:**	02/04/19 14:10
Sample Name:	187065	**Units:**	ng/Kg
Lab Code:	E1900099-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 17:08
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	0.700g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520515	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	4.94	7.14			1
1,2,3,7,8-PeCDD	10.4**J**		0.815	35.7	1.59	1.001	1
1,2,3,4,7,8-HxCDD	23.6**J**		1.09	35.7	1.20	1.000	1
1,2,3,6,7,8-HxCDD	331		1.09	35.7	1.33	1.000	1
1,2,3,7,8,9-HxCDD	60.0		1.04	35.7	1.11	1.007	1
1,2,3,4,6,7,8-HpCDD	1820		0.892	35.7	1.03	1.000	1
OCDD	3560		1.40	71.4	0.89	1.000	1
2,3,7,8-TCDF	11.8**K**		2.17	7.14	0.63	1.001	1
1,2,3,7,8-PeCDF	40.4		3.04	35.7	1.40	1.001	1
2,3,4,7,8-PeCDF	197		3.02	35.7	1.41	1.001	1
1,2,3,4,7,8-HxCDF	327		4.76	35.7	1.20	1.000	1
1,2,3,6,7,8-HxCDF	131		4.41	35.7	1.15	1.000	1
1,2,3,7,8,9-HxCDF	39.5**K**		5.25	35.7	0.96	1.001	1
2,3,4,6,7,8-HxCDF	87.3		4.48	35.7	1.19	1.000	1
1,2,3,4,6,7,8-HpCDF	894		1.97	35.7	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	18.7**J**		2.18	35.7	0.97	1.000	1
OCDF	147		2.00	71.4	0.84	1.004	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Soil	**Date Received:**	02/04/19 14:10
Sample Name:	187065	**Units:**	ng/Kg
Lab Code:	E1900099-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 17:08
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	0.700g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520515	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	4.94	7.14			1
Total Penta-Dioxins	84.1		0.815	35.7	1.70		1
Total Hexa-Dioxins	1580		1.07	35.7	1.25		1
Total Hepta-Dioxins	3600		0.892	35.7	1.04		1
Total Tetra-Furans	37.3		2.17	7.14	0.77		1
Total Penta-Furans	689		3.04	35.7	1.45		1
Total Hexa-Furans	3040		4.70	35.7	1.21		1
Total Hepta-Furans	1700		2.07	35.7	1.00		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Soil	**Date Received:**	02/04/19 14:10
Sample Name:	187065	**Units:**	Percent
Lab Code:	E1900099-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 17:08
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	0.700g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520515	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	808.109	40		25-164	0.82	1.024
13C-1,2,3,7,8-PeCDD	2000	1410.101	71		25-181	1.59	1.214
13C-1,2,3,4,7,8-HxCDD	2000	1358.284	68		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1474.899	74		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1765.043	88		23-140	1.08	1.070
13C-OCDD	4000	2074.195	52		17-157	0.93	1.142
13C-2,3,7,8-TCDF	2000	1151.478	58		24-169	0.81	0.990
13C-1,2,3,7,8-PeCDF	2000	1312.951	66		24-185	1.57	1.166
13C-2,3,4,7,8-PeCDF	2000	1273.818	64		21-178	1.59	1.202
13C-1,2,3,4,7,8-HxCDF	2000	1200.041	60		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1257.023	63		26-123	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1259.880	63		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1256.874	63		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1145.499	57		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1238.612	62		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	453.178	57		35-197	NA	1.025

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Soil	**Date Received:**	02/04/19 14:10
Sample Name:	187065	**Units:**	ng/Kg
Lab Code:	E1900099-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	4.94	7.14	1	1	
1,2,3,7,8-PeCDD	**10.4**	0.815	35.7	1	1	10.4
1,2,3,4,7,8-HxCDD	**23.6**	1.09	35.7	1	0.1	2.36
1,2,3,6,7,8-HxCDD	**331**	1.09	35.7	1	0.1	33.1
1,2,3,7,8,9-HxCDD	**60.0**	1.04	35.7	1	0.1	6.00
1,2,3,4,6,7,8-HpCDD	**1820**	0.892	35.7	1	0.01	18.2
OCDD	**3560**	1.40	71.4	1	0.0003	1.07
2,3,7,8-TCDF	**11.8**	2.17	7.14	1	0.1	1.18
1,2,3,7,8-PeCDF	**40.4**	3.04	35.7	1	0.03	1.21
2,3,4,7,8-PeCDF	**197**	3.02	35.7	1	0.3	59.1
1,2,3,4,7,8-HxCDF	**327**	4.76	35.7	1	0.1	32.7
1,2,3,6,7,8-HxCDF	**131**	4.41	35.7	1	0.1	13.1
1,2,3,7,8,9-HxCDF	**39.5**	5.25	35.7	1	0.1	3.95
2,3,4,6,7,8-HxCDF	**87.3**	4.48	35.7	1	0.1	8.73
1,2,3,4,6,7,8-HpCDF	**894**	1.97	35.7	1	0.01	8.94
1,2,3,4,7,8,9-HpCDF	**18.7**	2.18	35.7	1	0.01	0.187
OCDF	**147**	2.00	71.4	1	0.0003	0.0441
		Total TEQ				200

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187097	**Units:**	pg
Lab Code:	E1900099-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 21:14
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520549	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	19.2	19.2			1
1,2,3,7,8-PeCDD	ND	U	2.16	50.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.884	50.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.872	50.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.836	50.0			1
1,2,3,4,6,7,8-HpCDD	2.95**BJK**		0.950	50.0	0.77	1.000	1
OCDD	24.8**BJ**		2.02	100	0.96	1.000	1
2,3,7,8-TCDF	ND	U	7.53	10.0			1
1,2,3,7,8-PeCDF	ND	U	2.68	50.0			1
2,3,4,7,8-PeCDF	ND	U	2.55	50.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.804	50.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.780	50.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.926	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.758	50.0			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.828	50.0			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.930	50.0			1
OCDF	ND	U	2.58	100			1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187097	**Units:**	pg
Lab Code:	E1900099-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 21:14
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520549	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	19.2	19.2			1
Total Penta-Dioxins	ND	U	2.16	50.0			1
Total Hexa-Dioxins	ND	U	0.864	50.0			1
Total Hepta-Dioxins	ND	U	0.950	50.0			1
Total Tetra-Furans	ND	U	7.53	10.0			1
Total Penta-Furans	ND	U	2.61	50.0			1
Total Hexa-Furans	ND	U	0.812	50.0			1
Total Hepta-Furans	ND	U	0.876	50.0			1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187097	**Units:**	Percent
Lab Code:	E1900099-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 21:14
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520549	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	704.449	35		25-164	0.76	1.024
13C-1,2,3,7,8-PeCDD	2000	1685.159	84		25-181	1.62	1.215
13C-1,2,3,4,7,8-HxCDD	2000	1464.385	73		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1615.299	81		28-130	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	2099.905	105		23-140	1.08	1.069
13C-OCDD	4000	2628.135	66		17-157	0.91	1.142
13C-2,3,7,8-TCDF	2000	1081.204	54		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	1523.853	76		24-185	1.61	1.166
13C-2,3,4,7,8-PeCDF	2000	1599.427	80		21-178	1.57	1.203
13C-1,2,3,4,7,8-HxCDF	2000	1287.109	64		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1299.906	65		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1327.386	66		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1348.781	67		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1354.694	68		28-143	0.44	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1533.324	77		26-138	0.44	1.081
37Cl-2,3,7,8-TCDD	800	300.751	38		35-197	NA	1.025

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187097	**Units:**	pg
Lab Code:	E1900099-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	19.2	19.2	1	1	
1,2,3,7,8-PeCDD	ND	2.16	50.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.884	50.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.872	50.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.836	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**2.95**	0.950	50.0	1	0.01	0.0295
OCDD	**24.8**	2.02	100	1	0.0003	0.00744
2,3,7,8-TCDF	ND	7.53	10.0	1	0.1	
1,2,3,7,8-PeCDF	ND	2.68	50.0	1	0.03	
2,3,4,7,8-PeCDF	ND	2.55	50.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.804	50.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.780	50.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.926	50.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.758	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	ND	0.828	50.0	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	0.930	50.0	1	0.01	
OCDF	ND	2.58	100	1	0.0003	
		Total TEQ				0.0369

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187099	**Units:**	pg
Lab Code:	E1900099-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/22/19 00:22
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520581	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520570

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	6.94	10.0			1
1,2,3,7,8-PeCDD	ND	U	1.29	50.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.740	50.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.800	50.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.734	50.0			1
1,2,3,4,6,7,8-HpCDD	1.11**BJ**		0.642	50.0	1.14	1.000	1
OCDD	5.19**BJK**		1.64	100	1.59	1.000	1
2,3,7,8-TCDF	ND	U	2.33	10.0			1
1,2,3,7,8-PeCDF	ND	U	1.13	50.0			1
2,3,4,7,8-PeCDF	ND	U	1.14	50.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.606	50.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.568	50.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.738	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.624	50.0			1
1,2,3,4,6,7,8-HpCDF	0.702**BJK**		0.584	50.0	0.85	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.752	50.0			1
OCDF	ND	U	1.76	100			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187099	**Units:**	pg
Lab Code:	E1900099-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/22/19 00:22
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520581	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520570

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	6.94	10.0			1
Total Penta-Dioxins	ND	U	1.29	50.0			1
Total Hexa-Dioxins	ND	U	0.758	50.0			1
Total Hepta-Dioxins	1.11**J**		0.642	50.0	1.14		1
Total Tetra-Furans	ND	U	2.33	10.0			1
Total Penta-Furans	ND	U	1.13	50.0			1
Total Hexa-Furans	ND	U	0.628	50.0			1
Total Hepta-Furans	ND	U	0.660	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187099	**Units:**	Percent
Lab Code:	E1900099-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/22/19 00:22
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520581	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520570

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	449.703	22	Y	25-164	0.80	1.024
13C-1,2,3,7,8-PeCDD	2000	888.361	44		25-181	1.59	1.219
13C-1,2,3,4,7,8-HxCDD	2000	997.517	50		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1025.081	51		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1282.802	64		23-140	1.08	1.070
13C-OCDD	4000	1606.546	40		17-157	0.89	1.143
13C-2,3,7,8-TCDF	2000	628.242	31		24-169	0.79	0.990
13C-1,2,3,7,8-PeCDF	2000	793.465	40		24-185	1.60	1.170
13C-2,3,4,7,8-PeCDF	2000	787.218	39		21-178	1.58	1.207
13C-1,2,3,4,7,8-HxCDF	2000	850.166	43		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	870.658	44		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	823.147	41		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	856.456	43		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	890.573	45		28-143	0.44	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	902.500	45		26-138	0.43	1.081
37Cl-2,3,7,8-TCDD	800	197.510	25	Y	35-197	NA	1.026

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	01/31/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/04/19 14:10
Sample Name:	187099	**Units:**	pg
Lab Code:	E1900099-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	6.94	10.0	1	1	
1,2,3,7,8-PeCDD	ND	1.29	50.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.740	50.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.800	50.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.734	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**1.11**	0.642	50.0	1	0.01	0.0111
OCDD	**5.19**	1.64	100	1	0.0003	0.00156
2,3,7,8-TCDF	ND	2.33	10.0	1	0.1	
1,2,3,7,8-PeCDF	ND	1.13	50.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.14	50.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.606	50.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.568	50.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.738	50.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.624	50.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**0.702**	0.584	50.0	1	0.01	0.00702
1,2,3,4,7,8,9-HpCDF	ND	0.752	50.0	1	0.01	
OCDF	ND	1.76	100	1	0.0003	
		Total TEQ				0.0197

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900047-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 13:54
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.612g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520511	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.463	0.471			1
1,2,3,7,8-PeCDD	0.0639**JK**		0.0436	2.36	2.92	1.001	1
1,2,3,4,7,8-HxCDD	0.0564**JK**		0.0355	2.36	0.89	1.000	1
1,2,3,6,7,8-HxCDD	ND	U	0.0360	2.36			1
1,2,3,7,8,9-HxCDD	ND	U	0.0341	2.36			1
1,2,3,4,6,7,8-HpCDD	0.105**JK**		0.0376	2.36	1.46	1.000	1
OCDD	1.62**J**		0.124	4.71	0.77	1.000	1
2,3,7,8-TCDF	ND	U	0.124	0.471			1
1,2,3,7,8-PeCDF	ND	U	0.0665	2.36			1
2,3,4,7,8-PeCDF	ND	U	0.0652	2.36			1
1,2,3,4,7,8-HxCDF	0.0369**JK**		0.0259	2.36	1.83	1.000	1
1,2,3,6,7,8-HxCDF	0.0298**JK**		0.0244	2.36	1.57	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.0301	2.36			1
2,3,4,6,7,8-HxCDF	0.0316**JK**		0.0251	2.36	1.61	1.000	1
1,2,3,4,6,7,8-HpCDF	0.0616**JK**		0.0370	2.36	0.86	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0442	2.36			1
OCDF	ND	U	0.0753	4.71			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900047-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 13:54
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.612g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520511	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.463	0.471			1
Total Penta-Dioxins	ND	U	0.0436	2.36			1
Total Hexa-Dioxins	0.0874**J**		0.0352	2.36	1.31		1
Total Hepta-Dioxins	0.161**J**		0.0376	2.36	0.94		1
Total Tetra-Furans	ND	U	0.124	0.471			1
Total Penta-Furans	ND	U	0.0658	2.36			1
Total Hexa-Furans	ND	U	0.0262	2.36			1
Total Hepta-Furans	ND	U	0.0404	2.36			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900047-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 13:54
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.612g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520511	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	512.543	26		25-164	0.79	1.024
13C-1,2,3,7,8-PeCDD	2000	1066.671	53		25-181	1.60	1.214
13C-1,2,3,4,7,8-HxCDD	2000	1221.198	61		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1294.708	65		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1665.334	83		23-140	1.07	1.069
13C-OCDD	4000	2078.600	52		17-157	0.91	1.141
13C-2,3,7,8-TCDF	2000	742.547	37		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	992.757	50		24-185	1.58	1.166
13C-2,3,4,7,8-PeCDF	2000	999.664	50		21-178	1.59	1.203
13C-1,2,3,4,7,8-HxCDF	2000	1018.876	51		26-152	0.51	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1090.588	55		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1068.004	53		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1121.666	56		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1094.177	55		28-143	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1202.170	60		26-138	0.44	1.081
37Cl-2,3,7,8-TCDD	800	284.569	36		35-197	NA	1.025

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900048-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 16:22
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520543	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	12.1	12.1			1
1,2,3,7,8-PeCDD	ND	U	2.72	50.0			1
1,2,3,4,7,8-HxCDD	ND	U	1.22	50.0			1
1,2,3,6,7,8-HxCDD	1.95**JK**		1.27	50.0	1.47	1.000	1
1,2,3,7,8,9-HxCDD	ND	U	1.18	50.0			1
1,2,3,4,6,7,8-HpCDD	3.44**JK**		0.654	50.0	0.86	1.000	1
OCDD	24.0**JK**		1.37	100	1.09	1.000	1
2,3,7,8-TCDF	ND	U	6.66	10.0			1
1,2,3,7,8-PeCDF	ND	U	2.79	50.0			1
2,3,4,7,8-PeCDF	ND	U	2.71	50.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.674	50.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.664	50.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.752	50.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.660	50.0			1
1,2,3,4,6,7,8-HpCDF	1.11**JK**		0.792	50.0	1.88	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.982	50.0			1
OCDF	5.03**JK**		2.99	100	0.61	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900048-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 16:22
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520543	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	12.1	12.1			1
Total Penta-Dioxins	ND	U	2.72	50.0			1
Total Hexa-Dioxins	ND	U	1.22	50.0			1
Total Hepta-Dioxins	ND	U	0.654	50.0			1
Total Tetra-Furans	ND	U	6.66	10.0			1
Total Penta-Furans	ND	U	2.75	50.0			1
Total Hexa-Furans	ND	U	0.684	50.0			1
Total Hepta-Furans	ND	U	0.882	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900048-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 16:22
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520543	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	686.381	34		25-164	0.79	1.024
13C-1,2,3,7,8-PeCDD	2000	1421.558	71		25-181	1.62	1.214
13C-1,2,3,4,7,8-HxCDD	2000	1385.551	69		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1424.916	71		28-130	1.30	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1918.846	96		23-140	1.08	1.069
13C-OCDD	4000	2351.915	59		17-157	0.92	1.141
13C-2,3,7,8-TCDF	2000	987.464	49		24-169	0.81	0.989
13C-1,2,3,7,8-PeCDF	2000	1302.358	65		24-185	1.61	1.166
13C-2,3,4,7,8-PeCDF	2000	1308.555	65		21-178	1.61	1.203
13C-1,2,3,4,7,8-HxCDF	2000	1182.579	59		26-152	0.51	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1195.707	60		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1229.215	61		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1267.919	63		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1269.070	63		28-143	0.44	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1340.720	67		26-138	0.43	1.081
37Cl-2,3,7,8-TCDD	800	414.338	52		35-197	NA	1.025

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ALS Environmental

Accuracy & Precision

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
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Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Analyzed:**	02/19/19
Sample Matrix:	Soil	**Date Extracted:**	02/13/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	625794

	Lab Control Sample EQ1900047-02			**Duplicate Lab Control Sample EQ1900047-03**					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	59.8	91.7	65 *	64.1	94.3	68 *	70-140	7	50
1,2,3,4,7,8-HxCDD	82.0	91.7	89	85.6	94.3	91	70-164	4	50
1,2,3,6,7,8-HxCDD	81.8	91.7	89	84.6	94.3	90	76-134	3	50
1,2,3,7,8,9-HxCDD	79.6	91.7	87	84.2	94.3	89	64-162	6	50
1,2,3,7,8-PeCDD	87.3	91.7	95	92.2	94.3	98	70-142	5	50
2,3,7,8-TCDD	24.8	18.3	135	26.1	18.9	138	67-158	5	50
OCDD	168	183	92	182	189	96	78-144	8	50
1,2,3,4,6,7,8-HpCDF	86.1	91.7	94	91.0	94.3	96	82-122	6	50
1,2,3,4,7,8,9-HpCDF	84.8	91.7	93	90.1	94.3	96	78-138	6	50
1,2,3,4,7,8-HxCDF	85.4	91.7	93	90.3	94.3	96	72-134	6	50
1,2,3,6,7,8-HxCDF	86.4	91.7	94	92.0	94.3	98	84-130	6	50
1,2,3,7,8,9-HxCDF	86.1	91.7	94	88.8	94.3	94	78-130	3	50
1,2,3,7,8-PeCDF	83.0	91.7	90	85.4	94.3	91	80-134	3	50
2,3,4,6,7,8-HxCDF	85.4	91.7	93	89.3	94.3	95	70-156	5	50
2,3,4,7,8-PeCDF	90.1	91.7	98	93.0	94.3	99	68-160	3	50
2,3,7,8-TCDF	15.8	18.3	86	17.0	18.9	90	75-158	7	50
OCDF	182	183	99	182	189	97	63-170	<1	50

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900047-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 21:12
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.987g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520520	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	24.8		0.229	0.455	0.82	1.001	1
1,2,3,7,8-PeCDD	87.3		0.0429	2.28	1.59	1.001	1
1,2,3,4,7,8-HxCDD	82.0		0.0339	2.28	1.30	1.000	1
1,2,3,6,7,8-HxCDD	81.8		0.0345	2.28	1.27	1.000	1
1,2,3,7,8,9-HxCDD	79.6		0.0325	2.28	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	59.8		0.0189	2.28	1.05	1.000	1
OCDD	168		0.0420	4.55	0.90	1.000	1
2,3,7,8-TCDF	15.8		0.0702	0.455	0.72	1.001	1
1,2,3,7,8-PeCDF	83.0		0.0467	2.28	1.51	1.001	1
2,3,4,7,8-PeCDF	90.1		0.0477	2.28	1.55	1.001	1
1,2,3,4,7,8-HxCDF	85.4		0.0146	2.28	1.24	1.000	1
1,2,3,6,7,8-HxCDF	86.4		0.0142	2.28	1.21	1.000	1
1,2,3,7,8,9-HxCDF	86.1		0.0169	2.28	1.19	1.000	1
2,3,4,6,7,8-HxCDF	85.4		0.0140	2.28	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	86.1		0.192	2.28	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	84.8		0.222	2.28	0.97	1.000	1
OCDF	182		0.0618	4.55	0.87	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900047-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 21:12
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.987g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520520	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	24.8		0.229	0.455	0.82		1
Total Penta-Dioxins	87.3		0.0429	2.28	1.59		1
Total Hexa-Dioxins	243		0.0336	2.28	1.30		1
Total Hepta-Dioxins	59.8		0.0189	2.28	1.05		1
Total Tetra-Furans	15.9		0.0702	0.455	0.74		1
Total Penta-Furans	174		0.0472	2.28	1.68		1
Total Hexa-Furans	343		0.0148	2.28	1.24		1
Total Hepta-Furans	171		0.206	2.28	1.01		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900047-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 21:12
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.987g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520520	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	920.897	46		25-164	0.79	1.024
13C-1,2,3,7,8-PeCDD	2000	1487.149	74		25-181	1.60	1.214
13C-1,2,3,4,7,8-HxCDD	2000	1593.479	80		32-141	1.31	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1694.633	85		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1919.918	96		23-140	1.08	1.070
13C-OCDD	4000	2208.828	55		17-157	0.91	1.142
13C-2,3,7,8-TCDF	2000	1313.446	66		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1429.831	71		24-185	1.59	1.166
13C-2,3,4,7,8-PeCDF	2000	1371.347	69		21-178	1.59	1.202
13C-1,2,3,4,7,8-HxCDF	2000	1401.048	70		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1420.440	71		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1411.097	71		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1440.660	72		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1279.515	64		28-143	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1378.025	69		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	514.178	64		35-197	NA	1.025

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900047-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 22:01
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.681g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520521	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	26.1		0.280	0.468	0.77	1.001	1
1,2,3,7,8-PeCDD	92.2		0.0509	2.34	1.54	1.001	1
1,2,3,4,7,8-HxCDD	85.6		0.0368	2.34	1.25	1.000	1
1,2,3,6,7,8-HxCDD	84.6		0.0384	2.34	1.27	1.000	1
1,2,3,7,8,9-HxCDD	84.2		0.0359	2.34	1.27	1.007	1
1,2,3,4,6,7,8-HpCDD	64.1		0.0341	2.34	1.06	1.000	1
OCDD	182		0.0500	4.68	0.90	1.000	1
2,3,7,8-TCDF	17.0		0.0882	0.468	0.73	1.001	1
1,2,3,7,8-PeCDF	85.4		0.0532	2.34	1.53	1.001	1
2,3,4,7,8-PeCDF	93.0		0.0534	2.34	1.56	1.001	1
1,2,3,4,7,8-HxCDF	90.3		0.0281	2.34	1.19	1.000	1
1,2,3,6,7,8-HxCDF	92.0		0.0270	2.34	1.23	1.000	1
1,2,3,7,8,9-HxCDF	88.8		0.0324	2.34	1.20	1.000	1
2,3,4,6,7,8-HxCDF	89.3		0.0272	2.34	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	91.0		0.111	2.34	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	90.1		0.127	2.34	0.97	1.000	1
OCDF	182		0.0469	4.68	0.87	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900047-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 22:01
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.681g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520521	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	26.1		0.280	0.468	0.77		1
Total Penta-Dioxins	92.2		0.0509	2.34	1.54		1
Total Hexa-Dioxins	254		0.0370	2.34	1.25		1
Total Hepta-Dioxins	64.1		0.0341	2.34	1.06		1
Total Tetra-Furans	17.3		0.0882	0.468	0.80		1
Total Penta-Furans	180		0.0533	2.34	1.44		1
Total Hexa-Furans	361		0.0285	2.34	1.19		1
Total Hepta-Furans	181		0.118	2.34	1.00		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900047-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/19/19 22:01
Prep Method:	Method Soxhlet	**Date Extracted:**	2/13/19
Sample Amount:	10.681g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520521	**Blank File Name:**	P520511
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520507

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	697.524	35		25-164	0.80	1.024
13C-1,2,3,7,8-PeCDD	2000	1210.207	61		25-181	1.61	1.214
13C-1,2,3,4,7,8-HxCDD	2000	1278.400	64		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1371.271	69		28-130	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1611.183	81		23-140	1.06	1.069
13C-OCDD	4000	1932.239	48		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	991.019	50		24-169	0.81	0.989
13C-1,2,3,7,8-PeCDF	2000	1160.965	58		24-185	1.58	1.166
13C-2,3,4,7,8-PeCDF	2000	1120.634	56		21-178	1.63	1.202
13C-1,2,3,4,7,8-HxCDF	2000	1134.672	57		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1139.200	57		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1151.430	58		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1161.757	58		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1069.420	53		28-143	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1169.920	58		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	389.446	49		35-197	NA	1.025

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Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Analyzed:**	02/20/19 - 02/21/19
Sample Matrix:	Wipe	**Date Extracted:**	02/13/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	pg
Prep Method:	Method	**Basis:**	As Received
		Analysis Lot:	625988

	Lab Control Sample EQ1900048-02			Duplicate Lab Control Sample EQ1900048-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	1330	2000	67 *	1370	2000	68 *	70-140	2	50
1,2,3,4,7,8-HxCDD	1820	2000	91	1820	2000	91	70-164	<1	50
1,2,3,6,7,8-HxCDD	1800	2000	90	1810	2000	90	76-134	<1	50
1,2,3,7,8,9-HxCDD	1740	2000	87	1780	2000	89	64-162	2	50
1,2,3,7,8-PeCDD	1980	2000	99	1960	2000	98	70-142	<1	50
2,3,7,8-TCDD	543	400	136	552	400	138	67-158	2	50
OCDD	3880	4000	97	4120	4000	103	78-144	6	50
1,2,3,4,6,7,8-HpCDF	1940	2000	97	1910	2000	96	82-122	2	50
1,2,3,4,7,8,9-HpCDF	1980	2000	99	1940	2000	97	78-138	2	50
1,2,3,4,7,8-HxCDF	1910	2000	95	1870	2000	93	72-134	2	50
1,2,3,6,7,8-HxCDF	1950	2000	97	1890	2000	95	84-130	3	50
1,2,3,7,8,9-HxCDF	1920	2000	96	1850	2000	92	78-130	4	50
1,2,3,7,8-PeCDF	1870	2000	93	1850	2000	93	80-134	<1	50
2,3,4,6,7,8-HxCDF	1960	2000	98	1890	2000	95	70-156	3	50
2,3,4,7,8-PeCDF	2060	2000	103	2000	2000	100	68-160	3	50
2,3,7,8-TCDF	403	400	101	356	400	89	75-158	12	50
OCDF	3990	4000	100	4080	4000	102	63-170	2	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900048-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 23:40
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520552	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	543		11.5	11.5	0.78	1.001	1
1,2,3,7,8-PeCDD	1980		0.810	50.0	1.57	1.001	1
1,2,3,4,7,8-HxCDD	1820		0.800	50.0	1.27	1.000	1
1,2,3,6,7,8-HxCDD	1800		0.806	50.0	1.27	1.000	1
1,2,3,7,8,9-HxCDD	1740		0.764	50.0	1.17	1.007	1
1,2,3,4,6,7,8-HpCDD	1330		0.568	50.0	1.07	1.000	1
OCDD	3880		1.17	100	0.90	1.000	1
2,3,7,8-TCDF	403		2.66	10.0	0.77	1.001	1
1,2,3,7,8-PeCDF	1870		1.28	50.0	1.56	1.001	1
2,3,4,7,8-PeCDF	2060		1.17	50.0	1.51	1.000	1
1,2,3,4,7,8-HxCDF	1910		0.610	50.0	1.18	1.000	1
1,2,3,6,7,8-HxCDF	1950		0.592	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDF	1920		0.730	50.0	1.24	1.000	1
2,3,4,6,7,8-HxCDF	1960		0.618	50.0	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	1940		2.53	50.0	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	1980		3.19	50.0	1.03	1.000	1
OCDF	3990		2.30	100	0.89	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900048-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 23:40
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520552	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	543		11.5	11.5	0.78		1
Total Penta-Dioxins	1980		0.810	50.0	1.57		1
Total Hexa-Dioxins	5370		0.790	50.0	1.27		1
Total Hepta-Dioxins	1330		0.568	50.0	1.07		1
Total Tetra-Furans	403		2.66	10.0	0.81		1
Total Penta-Furans	3930		1.22	50.0	1.56		1
Total Hexa-Furans	7730		0.634	50.0	1.18		1
Total Hepta-Furans	3920		2.84	50.0	1.01		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900048-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/20/19 23:40
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520552	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	544.490	27		25-164	0.82	1.024
13C-1,2,3,7,8-PeCDD	2000	1296.077	65		25-181	1.62	1.215
13C-1,2,3,4,7,8-HxCDD	2000	1501.873	75		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1587.684	79		28-130	1.29	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1928.426	96		23-140	1.06	1.069
13C-OCDD	4000	2274.540	57		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	802.479	40		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1171.958	59		24-185	1.58	1.166
13C-2,3,4,7,8-PeCDF	2000	1255.207	63		21-178	1.60	1.204
13C-1,2,3,4,7,8-HxCDF	2000	1284.151	64		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1323.744	66		26-123	0.54	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1305.842	65		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1364.390	68		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1278.948	64		28-143	0.45	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1369.648	68		26-138	0.44	1.081
37Cl-2,3,7,8-TCDD	800	230.450	29	**Y**	35-197	NA	1.025

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900048-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/21/19 00:29
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520553	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	552		11.4	11.4	0.81	1.001	1
1,2,3,7,8-PeCDD	1960		2.49	50.0	1.57	1.001	1
1,2,3,4,7,8-HxCDD	1820		0.908	50.0	1.29	1.000	1
1,2,3,6,7,8-HxCDD	1810		0.932	50.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	1780		0.876	50.0	1.29	1.007	1
1,2,3,4,6,7,8-HpCDD	1370		0.794	50.0	1.09	1.000	1
OCDD	4120		1.25	100	0.91	1.000	1
2,3,7,8-TCDF	356		4.28	10.0	0.73	1.001	1
1,2,3,7,8-PeCDF	1850		2.68	50.0	1.52	1.001	1
2,3,4,7,8-PeCDF	2000		2.56	50.0	1.54	1.000	1
1,2,3,4,7,8-HxCDF	1870		0.728	50.0	1.22	1.000	1
1,2,3,6,7,8-HxCDF	1890		0.684	50.0	1.19	1.000	1
1,2,3,7,8,9-HxCDF	1850		0.824	50.0	1.18	1.000	1
2,3,4,6,7,8-HxCDF	1890		0.688	50.0	1.18	1.000	1
1,2,3,4,6,7,8-HpCDF	1910		4.41	50.0	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	1940		4.96	50.0	0.98	1.000	1
OCDF	4080		1.99	100	0.90	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900048-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/21/19 00:29
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520553	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	552		11.4	11.4	0.81		1
Total Penta-Dioxins	1960		2.49	50.0	1.57		1
Total Hexa-Dioxins	5410		0.906	50.0	1.29		1
Total Hepta-Dioxins	1390		0.794	50.0	1.17		1
Total Tetra-Furans	364		4.28	10.0	0.70		1
Total Penta-Furans	3860		2.62	50.0	1.52		1
Total Hexa-Furans	7500		0.726	50.0	1.22		1
Total Hepta-Furans	3880		4.67	50.0	1.00		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900099
Project:	HS19020127	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900048-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/21/19 00:29
Prep Method:	Method	**Date Extracted:**	2/13/19
Sample Amount:	0.5000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520553	**Blank File Name:**	P520543
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520539

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	962.586	48		25-164	0.77	1.024
13C-1,2,3,7,8-PeCDD	2000	2047.752	102		25-181	1.59	1.215
13C-1,2,3,4,7,8-HxCDD	2000	1814.373	91		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1931.010	97		28-130	1.30	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	2672.356	134		23-140	1.05	1.069
13C-OCDD	4000	3395.362	85		17-157	0.91	1.142
13C-2,3,7,8-TCDF	2000	1413.917	71		24-169	0.79	0.990
13C-1,2,3,7,8-PeCDF	2000	1925.178	96		24-185	1.61	1.167
13C-2,3,4,7,8-PeCDF	2000	1953.350	98		21-178	1.62	1.204
13C-1,2,3,4,7,8-HxCDF	2000	1550.226	78		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1678.716	84		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1705.038	85		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1725.593	86		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1760.934	88		28-143	0.44	1.044
13C-1,2,3,4,7,8,9-HpCDF	2000	1985.114	99		26-138	0.46	1.081
37Cl-2,3,7,8-TCDD	800	385.123	48		35-197	NA	1.026

RIGHT SOLUTIONS | RIGHT PARTNER

Chain of Custody Form dated February 13, 2019

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1

DATE: 2/13/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Labs
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N/A

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187105	WIPE	1613 DIOXIN/FURAN ANALYSIS	2/13/19
187106	↓	↓	↓
187107			
187108		SAMPLE 187105 contains high levels	
187109		of AROCLOR 1242 and CARPET from	
		which wipe was collected had	
		nearly 700 ng/kg TEQ OF D/F	

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other RESULTS DUE: 2/25/19

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient KCOGHLAN@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 2/13/19

Received by: FEDEX of (company name) FEDEX Date: 2/13/19

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

ALS Laboratory Report (Work Order HS19020856) dated March 6, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

March 06, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19020856**

Laboratory Results for: **22437 Friedman/Rubin S.V.E.C.**

Dear Kevin,

ALS Environmental received 7 sample(s) on Feb 14, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Corey Grandits
Project Manager

ALS Houston, US Date: 06-Mar-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
Work Order: HS19020856

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19020856-01	187105	Wipe		13-Feb-2019 00:00	14-Feb-2019 09:00	☐
HS19020856-02	187106	Wipe		13-Feb-2019 00:00	14-Feb-2019 09:00	☐
HS19020856-03	187107	Wipe		13-Feb-2019 00:00	14-Feb-2019 09:00	☐
HS19020856-04	187108	Wipe		13-Feb-2019 00:00	14-Feb-2019 09:00	☐
HS19020856-05	187109	Wipe		13-Feb-2019 00:00	14-Feb-2019 09:00	☐
HS19020856-06	187059	Solid		25-Jan-2019 00:00	14-Feb-2019 09:00	☐
HS19020856-07	183394 (Field/Trip Blank)	Wipe		01-Nov-2018 00:00	14-Feb-2019 09:00	☐

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client: Environmental Health & Engineering **CASE NARRATIVE**
Project: 22437 Friedman/Rubin S.V.E.C.
Work Order: HS19020856

Work Order Comments

- The analysis for Dioxins/Furans was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

ECD Organics by Method SW8082

Batch ID: 138092

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:HS19020856
Sample ID:	187105	Lab ID:HS19020856-01
Collection Date:	13-Feb-2019 00:00	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	06-Mar-2019 11:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:HS19020856
Sample ID:	187106	Lab ID:HS19020856-02
Collection Date:	13-Feb-2019 00:00	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	06-Mar-2019 11:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:HS19020856
Sample ID:	187107	Lab ID:HS19020856-03
Collection Date:	13-Feb-2019 00:00	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	06-Mar-2019 11:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:HS19020856
Sample ID:	187108	Lab ID:HS19020856-04
Collection Date:	13-Feb-2019 00:00	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	06-Mar-2019 11:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:HS19020856
Sample ID:	187109	Lab ID:HS19020856-05
Collection Date:	13-Feb-2019 00:00	Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	06-Mar-2019 11:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C.	WorkOrder:	HS19020856
Sample ID:	187059	Lab ID:	HS19020856-06
Collection Date:	25-Jan-2019 00:00	Matrix:	Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	06-Mar-2019 11:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client: Environmental Health & Engineering **ANALYTICAL REPORT**
Project: 22437 Friedman/Rubin S.V.E.C. WorkOrder:HS19020856
Sample ID: 183394 (Field/Trip Blank) Lab ID:HS19020856-07
Collection Date: 01-Nov-2018 00:00 Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 25-Feb-2019		Analyst: NPI
Aroclor 1016		U	500	500	ng, Total	1	26-Feb-2019 01:57
Aroclor 1221		U	500	500	ng, Total	1	26-Feb-2019 01:57
Aroclor 1232		U	500	500	ng, Total	1	26-Feb-2019 01:57
Aroclor 1242		U	500	500	ng, Total	1	26-Feb-2019 01:57
Aroclor 1248		U	500	500	ng, Total	1	26-Feb-2019 01:57
Aroclor 1254		U	500	500	ng, Total	1	26-Feb-2019 01:57
Aroclor 1260		U	500	500	ng, Total	1	26-Feb-2019 01:57
PCBs (Total)		U	500	500	ng, Total	1	26-Feb-2019 01:57
Surr: Decachlorobiphenyl	*81.5*			*30-150*	*%REC*	*1*	*26-Feb-2019 01:57*
Surr: Tetrachloro-m-xylene	*92.4*			*30-150*	*%REC*	*1*	*26-Feb-2019 01:57*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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WEIGHT LOG

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19020856

Batch ID: 138092 **Method:** PCBS BY SW8082A **Prep:** PCBWIPEPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19020856-07	1	1	10 (mL)	10

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ALS Houston, US Date: 06-Mar-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19020856

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 138092	**Test Name :** PCBS BY SW8082A			**Matrix:** Wipe		
HS19020856-07	183394 (Field/Trip Blank)	01 Nov 2018 00:00		25 Feb 2019 12:00	26 Feb 2019 01:57	1
Batch ID R334053	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Solid		
HS19020856-06	187059	25 Jan 2019 00:00			06 Mar 2019 11:22	1
Batch ID R334053	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Wipe		
HS19020856-01	187105	13 Feb 2019 00:00			06 Mar 2019 11:22	1
HS19020856-02	187106	13 Feb 2019 00:00			06 Mar 2019 11:22	1
HS19020856-03	187107	13 Feb 2019 00:00			06 Mar 2019 11:22	1
HS19020856-04	187108	13 Feb 2019 00:00			06 Mar 2019 11:22	1
HS19020856-05	187109	13 Feb 2019 00:00			06 Mar 2019 11:22	1

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ALS Houston, US Date: 06-Mar-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: HS19020856

QC BATCH REPORT

Batch ID: 138092 **Instrument: ECD_7** **Method: SW8082**

MBLK Sample ID: **MBLK-138092** Units: **ng, Total** Analysis Date: **26-Feb-2019 02:12**
Client ID: Run ID: **ECD_7_333579** SeqNo: **4966329** PrepDate: **25-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	500								
Aroclor 1221	U	500								
Aroclor 1232	U	500								
Aroclor 1242	U	500								
Aroclor 1248	U	500								
Aroclor 1254	U	500								
Aroclor 1260	U	500								
PCBs (Total)	U	500								
Surr: Decachlorobiphenyl	*148.6*	*0*	*200*	*0*	*74.3*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*178.2*	*0*	*200*	*0*	*89.1*	*30 - 150*				

LCS Sample ID: **LCS-138092** Units: **ng, Total** Analysis Date: **26-Feb-2019 02:29**
Client ID: Run ID: **ECD_7_333579** SeqNo: **4966330** PrepDate: **25-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	5388	500	5000	0	108	50 - 130				
Aroclor 1260	5123	500	5000	0	102	50 - 130				
Surr: Decachlorobiphenyl	*174.8*	*0*	*200*	*0*	*87.4*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*212.3*	*0*	*200*	*0*	*106*	*30 - 150*				

LCSD Sample ID: **LCSD-138092** Units: **ng, Total** Analysis Date: **26-Feb-2019 02:45**
Client ID: Run ID: **ECD_7_333579** SeqNo: **4966331** PrepDate: **25-Feb-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4684	500	5000	0	93.7	50 - 130	5388	14	30	
Aroclor 1260	4544	500	5000	0	90.9	50 - 130	5123	12	30	
Surr: Decachlorobiphenyl	*152.7*	*0*	*200*	*0*	*76.4*	*30 - 150*	*174.8*	*13.4*	*30*	
Surr: Tetrachloro-m-xylene	*183.2*	*0*	*200*	*0*	*91.6*	*30 - 150*	*212.3*	*14.7*	*30*	

The following samples were analyzed in this batch: HS19020856-07

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 06-Mar-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C.
WorkOrder: **HS19020856**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-0356	27-Mar-2019
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
California	2919, 2018-2019	30-Apr-2019
Maryland	343, 2018-2019	30-Jun-2019

ALS Houston, US Date: 06-Mar-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Work Order: HS19020856
Date/Time Received: **14-Feb-2019 09:00**
Received by: **PMG**

Checklist completed by: *Jared R. Makan* (eSignature) 15-Feb-2019 (Date)
Reviewed by: *Corey Grandits* (eSignature) 19-Feb-2019 (Date)

Matrices: **Wipe, Solid**
Carrier name: **FedEx Priority Overnight**

	Yes	No	
Shipping container/cooler in good condition?	☑	☐	Not Present ☐
Custody seals intact on shipping container/cooler?	☐	☐	Not Present ☑
Custody seals intact on sample bottles?	☐	☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	Not Present ☑
Chain of custody present?	☑	☐	2 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:N/A
Samplers name present on COC?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s): 21.5c/21.9c UC/C | IR11
Cooler(s)/Kit(s): Blue
Date/Time sample(s) sent to storage: 02/15/2019 18:15

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 2/13/2019

ATTACHMENT 1

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Labs
Houston, Tx

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N/A

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187105	WIPE	1613 Dioxin/Furan Analysis	2/13/19
187106			
187107			
187108		samples 187108 contained visible liquids	
187109		of PCBs 1242 and Aroclor [illegible]	
		which were not received had	
		nearly 7 to 8 times [illegible]	

HS19020856
Environmental Health & Engineering
22437 Friedman/Rubin S.V.E.C.

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other Results due: 2/24/19

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient KRAGMAN@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 2/13/19

Received by: [signature] of (company name) FedEx Date: 2/13/19

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

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ATTACHMENT 1

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 1/21/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437 (Friedman/Rubin S.V.E.C.)

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187059	Bulk-dust	Dioxin/Furan - 1613B	Hold
184852	Bulk-tar	PCB Aroclor - 8082	Due 1/25/19
187069	Bulk-tar	Dioxin/Furan - 1613B	Hold
187087	Blank	PCB (8082) & Dioxin/Furan (1613B	Hold
187088	Blank	PCB (8082) & Dioxin/Furan (1613B)	Hold

HS19020856
Environmental Health & Engineering
22437 Friedman/Rubin S.V.E.C.

Special instructions:

☐ Standard turn around time ☑ Rush by 1/25/19 [illegible] date/time ☐ Other _____

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☑ Additional report recipient Kroghlan@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 1/21/2019

Received by: [signature] of (company name) FEDEX Date: 1/21/2019

Relinquished by: _____ of (company name) _____ Date: _____

Received by: [signature] of (company name) ALS Date: 1/23/19 09:55

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 2 of 2

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

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ALS
10450 Stancliff Rd., Suite 21
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5687

FEB 1 4 2019

Seal Broken By:
Date: 02/14/19

FedEx
TRK# 0215 8137 0760 7588

THU - 14 FEB 10:30A
PRIORITY OVERNIGHT

XH SGRA

77099
TX-US
IAH

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March 04, 2019

Service Request No:E1900145

ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS19020856

Enclosed are the results of the sample(s) submitted to our laboratory February 18, 2019
For your reference, these analyses have been assigned our service request number **E1900145.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS	**Service Request No.:**	E1900145
Project:	HS19020856	**Date Received:**	02/18/19
Sample Matrix:	Solid/Wipe		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Six samples were received for analysis at ALS Environmental in Houston.

The dioxin samples were received at 1.0°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1900067/EQ1900068: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. 1,2,3,4,6,7,8-HpCDD was recovered marginally below control limits in the LCS and/or DLCS. The result for 1,2,3,4,6,7,8-HpCDD should be considered potentially bias low.

B flags – Method Blanks

The Method Blank EQ1900068-01 and EQ1900067 contained low levels of target compounds above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Y flag – Cleanup Standard

The recovery for the cleanup standard, 37Cl-2,3,7,8-TCDD is marginally below control limits in DLCS EQ1900068-03. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

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Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US **Service Request:**E1900145

Project: HS19020856

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900145-001	187105	2/13/2019	0000
E1900145-002	187106	2/13/2019	0000
E1900145-003	187107	2/13/2019	0000
E1900145-004	187108	2/13/2019	0000
E1900145-005	187109	2/13/2019	0000
E1900145-006	187059	1/25/2019	0000

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Service Request Summary

ATTACHMENT 1

Folder #: **E1900145**
Client Name: ALS Environmental - US
Project Name: HS19020856
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 02/18/19
Internal Due Date: 3/6/2019
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: HS19020856
EDD: No EDD Specified

6 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 10B
Pressure Gas:
Rush

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON Dioxins Furans/1613B
E1900145-001	187105	Wipe	02/13/19 0000	II
E1900145-002	187106	Wipe	02/13/19 0000	II
E1900145-003	187107	Wipe	02/13/19 0000	II
E1900145-004	187108	Wipe	02/13/19 0000	II
E1900145-005	187109	Wipe	02/13/19 0000	II
E1900145-006	187059	Solid	01/25/19 0000	II

Folder Comments:

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900145**
Client Name:	ALS Environmental - US
Project Name:	HS19020856
Project Number:	
Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	02/18/19
Internal Due Date:	3/6/2019
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	N
Report to MDL?:	Y
P.O. Number:	HS19020856
EDD:	No EDD Specified

6 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 10B

Pressure Gas:

Rush

Print

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ED_004522_00089767-00478

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: 61900145 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
03/04/19	LKL	001_006

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
3/4/19	LG	001-006

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

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ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

E1900145 5
ALS Laboratory Group
HS19020856

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 10760

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: Corey Grandits
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: Corey.Grandits@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS19020856
TSR: Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19020856-01**	**187105**	**Wipe**	**13 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			28 Feb 2019
2.	**HS19020856-02**	**187106**	**Wipe**	**13 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			28 Feb 2019
3.	**HS19020856-03**	**187107**	**Wipe**	**13 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			28 Feb 2019
4.	**HS19020856-04**	**187108**	**Wipe**	**13 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			28 Feb 2019
5.	**HS19020856-05**	**187109**	**Wipe**	**13 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			28 Feb 2019
6.	**HS19020856-06**	**187059**	**Solid**	**25 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			28 Feb 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

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ALS Environmental

Cooler Receipt Form

ATTACHMENT 1

Project Chemist: CG

Client/Project: ALS - Houston

Thermometer ID: Smart

Date/Time Received: 2/18/19 1130 Initials: KW

Date/Time Logged in: _____ Initials _____

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ○ Courier ☒ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other _____

3. Were custody seals on coolers? ○ Yes ☒ No

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

If yes, how many and where?

4. Packing Material: ○ Inserts ☒ Baggies ☒ Bubble Wrap ○ Gel Packs ○ Wet Ice ○ Sleeves ○ Other _____

5. Foreign or Regulated Soil? ○ Yes ☒ No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
N/A	N/A	2/18/19	1130	KW	0.0/1.0	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No

10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900145 5

ALS Laboratory Group HS19020656

Effec

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10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331878
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 2/22/19 05:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900145-001	187105	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
2	E1900145-002	187106	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
3	E1900145-003	187107	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
4	E1900145-004	187108	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
5	E1900145-005	187109	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
6	EQ1900067-01	MB		1613B/Dioxins Furans			Wipes	1Sample	
7	EQ1900067-02	LCS		1613B/Dioxins Furans			Wipes	1Sample	
8	EQ1900067-03	DLCS		1613B/Dioxins Furans			Wipes	1Sample	

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard | Inventory ID 196894 | Logbook Ref: tw 196894 021219 8ng/ml | Expires On: 04/27/2019

E1900145-001	100.00µL	E1900145-002	100.00µL	E1900145-003	100.00µL	E1900145-004	100.00µL	E1900145-005	100.00µL	EQ1900067-01	100.00µL
EQ1900067-02	100.00µL	EQ1900067-03	100.00µL								

Name: 1613B Matrix Working Standard | Inventory ID 197048 | Logbook Ref: 197048 JG 2-20ng/ml 2/18/19 | Expires On: 08/17/2019

EQ1900067-02	100.00µL	EQ1900067-03	100.00µL

Name: 1613B Labeled Working Standard | Inventory ID 197177 | Logbook Ref: 197177 JG 2/20/19 2-4ngml | Expires On: 07/31/2019

E1900145-001	1,000.00µL	E1900145-002	1,000.00µL	E1900145-003	1,000.00µL	E1900145-004	1,000.00µL	E1900145-005	1,000.00µL	EQ1900067-01	1,000.00µL
EQ1900067-02	1,000.00µL	EQ1900067-03	1,000.00µL								

Preparation Materials

Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Tridecane (n-Tridecane)	197183 JG 2/20/19 (197183)	Toluene 99.9% Minimum	JG 1/29/2019 (196609)

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	2/22/19 17:00	Started:	2/26/19 16:40	Started:	2/26/19 16:44	Started:	2/27/19 16:46
Finished:	2/23/19 10:00	Finished:	2/26/19 16:40	Finished:	2/27/19 16:44	Finished:	2/27/19 16:46
By:	JGUIN	By:	JGUIN	By:	JGUIN	By:	JGUIN
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: LG Date: 03/04/19

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331878
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtS(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 2/22/19 05:00 PM

Chain of Custody

Relinquished By:		Date:	Extracts Examined
Received By:		Date:	Yes No

RIGHT SOLUTIONS | RIGHT PARTNER

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331882 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 2/22/19 05:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900136-001	Sludge 1195	.01	1613B/Dioxins Furans			Sludge, Solid	10.575g	Black Sludge
2	E1900139-001	WWTP Sludge 021219+1D	.01	1613B/Dioxins Furans			Solid	10.833g	Brown Mud Pebbles
3	E1900143-001	Leite em Po Integral/01538 - 4027/2019-1	.01	1613B/Dioxins Furans			Misc. Solid	10.730g	Yellowish Powder
4	E1900143-002	Leite em Po Desnatado/01535 - 4028/201	.01	1613B/Dioxins Furans			Misc. Solid	10.137g	Yellowish Powder
5	E1900145-006	187059	.01	1613B/Dioxins Furans			Solid	0.097g	Brown Dirt
6	EQ1900068-01	MB		1613B/Dioxins Furans			Solid	10.618g	
7	EQ1900068-02	LCS		1613B/Dioxins Furans			Solid	10.821g	
8	EQ1900068-03	DLCS		1613B/Dioxins Furans			Solid	10.316g	

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard Inventory ID 196894 Logbook Ref: tw 196894 021219 8ng/ml Expires On: 04/27/2019

E1900136-001 100.00µL E1900139-001 100.00µL E1900143-001 100.00µL E1900143-002 100.00µL E1900145-006 100.00µL EQ1900068-01 100.00µL
EQ1900068-02 100.00µL EQ1900068-03 100.00µL

Name: 1613B Matrix Working Standard Inventory ID 197048 Logbook Ref: 197048 JG 2-20ng/ml 2/18/19 Expires On: 08/17/2019

EQ1900068-02 100.00µL EQ1900068-03 100.00µL

Name: 1613B Labeled Working Standard Inventory ID 197177 Logbook Ref: 197177 JG 2/20/19 2-4ngml Expires On: 07/31/2019

E1900136-001 1,000.00µL E1900139-001 1,000.00µL E1900143-001 1,000.00µL E1900143-002 1,000.00µL E1900145-006 1,000.00µL EQ1900068-01 1,000.00µL
EQ1900068-02 1,000.00µL EQ1900068-03 1,000.00µL

Preparation Materials

Sodium Sulfate Anhydrous Reagent Grade Na2SO4 JG 01/07/19 (196116) Tridecane (n-Tridecane) 197183 JG 2/20/19 (197183) Toluene 99.9% Minimum JG 1/29/2019 (196609)

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	2/22/19 17:00	Started:	2/26/19 11:00	Started:	2/26/19 12:00	Started:	2/27/19 16:39
Finished:	2/23/19 10:00	Finished:	2/26/19 12:00	Finished:	2/26/19 15:00	Finished:	2/27/19 16:39
By:	JGUIN	By:	JGUIN	By:	JGUIN	By:	JGUIN
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: LG Date: 03/01/19

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 331882
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 2/22/19 05:00 PM

Chain of Custody

Relinquished By:		Date:	Extracts Examined
Received By:		Date:	Yes No

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187105	**Units:**	pg
Lab Code:	E1900145-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 11:43
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520691	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	4.51	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.482	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.303	25.0			1
1,2,3,6,7,8-HxCDD	0.511**BJK**		0.306	25.0	1.90	1.000	1
1,2,3,7,8,9-HxCDD	ND	U	0.290	25.0			1
1,2,3,4,6,7,8-HpCDD	2.27**BJK**		0.227	25.0	0.65	1.000	1
OCDD	50.3**B**		0.998	50.0	0.83	1.000	1
2,3,7,8-TCDF	ND	U	1.13	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.552	25.0			1
2,3,4,7,8-PeCDF	ND	U	0.542	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.302	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.284	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.377	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.308	25.0			1
1,2,3,4,6,7,8-HpCDF	0.860**BJ**		0.300	25.0	1.05	1.000	1
1,2,3,4,7,8,9-HpCDF	0.347**BJK**		0.340	25.0	1.41	1.000	1
OCDF	1.40**BJK**		0.597	50.0	0.29	1.004	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187105	**Units:**	pg
Lab Code:	E1900145-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 11:43
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520691	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	4.51	5.00			1
Total Penta-Dioxins	ND	U	0.482	25.0			1
Total Hexa-Dioxins	ND	U	0.300	25.0			1
Total Hepta-Dioxins	3.47**J**		0.227	25.0	0.97		1
Total Tetra-Furans	ND	U	1.13	5.00			1
Total Penta-Furans	ND	U	0.547	25.0			1
Total Hexa-Furans	ND	U	0.315	25.0			1
Total Hepta-Furans	0.860**J**		0.319	25.0	1.05		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187105	**Units:**	Percent
Lab Code:	E1900145-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 11:43
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520691	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	660.462	33		25-164	0.81	1.025
13C-1,2,3,7,8-PeCDD	2000	1176.453	59		25-181	1.63	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1321.416	66		32-141	1.34	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1433.101	72		28-130	1.22	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1670.625	84		23-140	1.07	1.070
13C-OCDD	4000	1922.531	48		17-157	0.90	1.143
13C-2,3,7,8-TCDF	2000	866.933	43		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1005.412	50		24-185	1.60	1.173
13C-2,3,4,7,8-PeCDF	2000	1008.351	50		21-178	1.60	1.211
13C-1,2,3,4,7,8-HxCDF	2000	1015.005	51		26-152	0.50	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1071.408	54		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1055.059	53		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1080.784	54		28-136	0.50	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1038.677	52		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1217.277	61		26-138	0.44	1.082
37Cl-2,3,7,8-TCDD	800	351.745	44		35-197	NA	1.026

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187105	**Units:**	pg
Lab Code:	E1900145-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	4.51	5.00	1	1	
1,2,3,7,8-PeCDD	ND	0.482	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.303	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	**0.511**	0.306	25.0	1	0.1	0.0511
1,2,3,7,8,9-HxCDD	ND	0.290	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**2.27**	0.227	25.0	1	0.01	0.0227
OCDD	**50.3**	0.998	50.0	1	0.0003	0.0151
2,3,7,8-TCDF	ND	1.13	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	0.552	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	0.542	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.302	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.284	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.377	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.308	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**0.860**	0.300	25.0	1	0.01	0.00860
1,2,3,4,7,8,9-HpCDF	**0.347**	0.340	25.0	1	0.01	0.00347
OCDF	**1.40**	0.597	50.0	1	0.0003	0.000420
		Total TEQ				0.101

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187106	**Units:**	pg
Lab Code:	E1900145-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 12:32
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520692	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	5.33	5.33			1
1,2,3,7,8-PeCDD	ND	U	1.36	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.931	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.937	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.889	25.0			1
1,2,3,4,6,7,8-HpCDD	7.83**BJ**		0.698	25.0	1.13	1.000	1
OCDD	123**B**		1.55	50.0	0.80	1.000	1
2,3,7,8-TCDF	ND	U	2.57	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.37	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.22	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.704	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.719	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.850	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.762	25.0			1
1,2,3,4,6,7,8-HpCDF	1.05**BJK**		0.586	25.0	0.62	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.640	25.0			1
OCDF	10.5**BJK**		1.97	50.0	1.25	1.004	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187106	**Units:**	pg
Lab Code:	E1900145-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 12:32
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520692	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	5.33	5.33			1
Total Penta-Dioxins	ND	U	1.36	25.0			1
Total Hexa-Dioxins	ND	U	0.919	25.0			1
Total Hepta-Dioxins	7.83**J**		0.698	25.0	1.13		1
Total Tetra-Furans	ND	U	2.57	5.00			1
Total Penta-Furans	ND	U	1.30	25.0			1
Total Hexa-Furans	ND	U	0.756	25.0			1
Total Hepta-Furans	2.54**J**		0.612	25.0	0.97		1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187106	**Units:**	Percent
Lab Code:	E1900145-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 12:32
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520692	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	734.419	37		25-164	0.73	1.025
13C-1,2,3,7,8-PeCDD	2000	1381.406	69		25-181	1.63	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1202.002	60		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1337.822	67		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1622.944	81		23-140	1.10	1.071
13C-OCDD	4000	1849.381	46		17-157	0.92	1.143
13C-2,3,7,8-TCDF	2000	1007.534	50		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1228.901	61		24-185	1.66	1.173
13C-2,3,4,7,8-PeCDF	2000	1265.809	63		21-178	1.60	1.211
13C-1,2,3,4,7,8-HxCDF	2000	999.590	50		26-152	0.51	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1014.071	51		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1053.439	53		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	990.761	50		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1003.471	50		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1214.232	61		26-138	0.43	1.082
37Cl-2,3,7,8-TCDD	800	397.465	50		35-197	NA	1.027

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187106	**Units:**	pg
Lab Code:	E1900145-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	5.33	5.33	1	1	
1,2,3,7,8-PeCDD	ND	1.36	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.931	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.937	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.889	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**7.83**	0.698	25.0	1	0.01	0.0783
OCDD	**123**	1.55	50.0	1	0.0003	0.0369
2,3,7,8-TCDF	ND	2.57	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.37	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.22	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.704	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.719	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.850	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.762	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**1.05**	0.586	25.0	1	0.01	0.0105
1,2,3,4,7,8,9-HpCDF	ND	0.640	25.0	1	0.01	
OCDF	**10.5**	1.97	50.0	1	0.0003	0.00315
		Total TEQ				0.129

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187107	**Units:**	pg
Lab Code:	E1900145-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 13:27
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520693	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	9.57	9.57			1
1,2,3,7,8-PeCDD	ND	U	0.555	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.727	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.733	25.0			1
1,2,3,7,8,9-HxCDD	0.983**BJ**		0.695	25.0	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	2.99**BJ**		0.607	25.0	1.18	1.000	1
OCDD	55.6**BK**		1.90	50.0	1.06	1.000	1
2,3,7,8-TCDF	ND	U	2.35	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.34	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.29	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.740	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.749	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.787	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.758	25.0			1
1,2,3,4,6,7,8-HpCDF	1.36**BJK**		0.567	25.0	0.45	1.001	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.612	25.0			1
OCDF	4.51**BJ**		2.17	50.0	0.94	1.004	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187107	**Units:**	pg
Lab Code:	E1900145-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 13:27
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520693	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	9.57	9.57			1
Total Penta-Dioxins	ND	U	0.555	25.0			1
Total Hexa-Dioxins	0.983**J**		0.718	25.0	1.25		1
Total Hepta-Dioxins	7.12**J**		0.607	25.0	1.03		1
Total Tetra-Furans	ND	U	2.35	5.00			1
Total Penta-Furans	ND	U	1.31	25.0			1
Total Hexa-Furans	ND	U	0.758	25.0			1
Total Hepta-Furans	1.97**J**		0.589	25.0	1.10		1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187107	**Units:**	Percent
Lab Code:	E1900145-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 13:27
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520693	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	555.550	28		25-164	0.82	1.025
13C-1,2,3,7,8-PeCDD	2000	1242.876	62		25-181	1.65	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1017.266	51		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1121.864	56		28-130	1.25	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1402.780	70		23-140	1.02	1.070
13C-OCDD	4000	1640.751	41		17-157	0.90	1.143
13C-2,3,7,8-TCDF	2000	665.393	33		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1007.906	50		24-185	1.57	1.173
13C-2,3,4,7,8-PeCDF	2000	1019.092	51		21-178	1.58	1.211
13C-1,2,3,4,7,8-HxCDF	2000	794.565	40		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	796.532	40		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	929.711	46		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	827.226	41		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	843.229	42		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1027.913	51		26-138	0.43	1.082
37Cl-2,3,7,8-TCDD	800	315.256	39		35-197	NA	1.027

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187107	**Units:**	pg
Lab Code:	E1900145-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	9.57	9.57	1	1	
1,2,3,7,8-PeCDD	ND	0.555	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.727	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.733	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	**0.983**	0.695	25.0	1	0.1	0.0983
1,2,3,4,6,7,8-HpCDD	**2.99**	0.607	25.0	1	0.01	0.0299
OCDD	**55.6**	1.90	50.0	1	0.0003	0.0167
2,3,7,8-TCDF	ND	2.35	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.34	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.29	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.740	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.749	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.787	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.758	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**1.36**	0.567	25.0	1	0.01	0.0136
1,2,3,4,7,8,9-HpCDF	ND	0.612	25.0	1	0.01	
OCDF	**4.51**	2.17	50.0	1	0.0003	0.00135
		Total TEQ				0.160

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187108	**Units:**	pg
Lab Code:	E1900145-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 14:15
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520694	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	4.57	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.543	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.443	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.457	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.429	25.0			1
1,2,3,4,6,7,8-HpCDD	4.73**BJ**		0.360	25.0	0.94	1.000	1
OCDD	49.0**BJ**		2.51	50.0	0.89	1.000	1
2,3,7,8-TCDF	18.0		0.887	5.00	0.79	1.001	1
1,2,3,7,8-PeCDF	5.89**J**		1.04	25.0	1.47	1.001	1
2,3,4,7,8-PeCDF	24.9**J**		0.987	25.0	1.47	1.001	1
1,2,3,4,7,8-HxCDF	1.70**BJK**		0.415	25.0	0.91	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	0.409	25.0			1
1,2,3,7,8,9-HxCDF	1.52**BJK**		0.490	25.0	1.57	1.001	1
2,3,4,6,7,8-HxCDF	0.761**BJK**		0.387	25.0	2.61	1.000	1
1,2,3,4,6,7,8-HpCDF	1.51**BJ**		0.345	25.0	1.10	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.373	25.0			1
OCDF	1.90**BJ**		1.52	50.0	0.86	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187108	**Units:**	pg
Lab Code:	E1900145-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 14:15
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520694	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	4.57	5.00			1
Total Penta-Dioxins	ND	U	0.543	25.0			1
Total Hexa-Dioxins	ND	U	0.443	25.0			1
Total Hepta-Dioxins	4.73**J**		0.360	25.0	0.94		1
Total Tetra-Furans	41.2		0.887	5.00	0.81		1
Total Penta-Furans	52.0		1.02	25.0	1.60		1
Total Hexa-Furans	ND	U	0.423	25.0			1
Total Hepta-Furans	1.51**J**		0.359	25.0	1.10		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187108	**Units:**	Percent
Lab Code:	E1900145-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 14:15
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520694	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	532.283	27		25-164	0.81	1.025
13C-1,2,3,7,8-PeCDD	2000	1124.810	56		25-181	1.59	1.222
13C-1,2,3,4,7,8-HxCDD	2000	1196.616	60		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1246.480	62		28-130	1.32	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1387.761	69		23-140	1.07	1.071
13C-OCDD	4000	1460.940	37		17-157	0.92	1.142
13C-2,3,7,8-TCDF	2000	719.498	36		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	918.793	46		24-185	1.63	1.173
13C-2,3,4,7,8-PeCDF	2000	979.224	49		21-178	1.60	1.211
13C-1,2,3,4,7,8-HxCDF	2000	915.649	46		26-152	0.51	0.969
13C-1,2,3,6,7,8-HxCDF	2000	932.343	47		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	973.329	49		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	987.070	49		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	865.321	43		28-143	0.43	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1029.744	51		26-138	0.41	1.082
37Cl-2,3,7,8-TCDD	800	292.370	37		35-197	NA	1.026

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187108	**Units:**	pg
Lab Code:	E1900145-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	4.57	5.00	1	1	
1,2,3,7,8-PeCDD	ND	0.543	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.443	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.457	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.429	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**4.73**	0.360	25.0	1	0.01	0.0473
OCDD	**49.0**	2.51	50.0	1	0.0003	0.0147
2,3,7,8-TCDF	**18.0**	0.887	5.00	1	0.1	1.80
1,2,3,7,8-PeCDF	**5.89**	1.04	25.0	1	0.03	0.177
2,3,4,7,8-PeCDF	**24.9**	0.987	25.0	1	0.3	7.47
1,2,3,4,7,8-HxCDF	**1.70**	0.415	25.0	1	0.1	0.170
1,2,3,6,7,8-HxCDF	ND	0.409	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	**1.52**	0.490	25.0	1	0.1	0.152
2,3,4,6,7,8-HxCDF	**0.761**	0.387	25.0	1	0.1	0.0761
1,2,3,4,6,7,8-HpCDF	**1.51**	0.345	25.0	1	0.01	0.0151
1,2,3,4,7,8,9-HpCDF	ND	0.373	25.0	1	0.01	
OCDF	**1.90**	1.52	50.0	1	0.0003	0.000570
		Total TEQ				9.92

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187109	**Units:**	pg
Lab Code:	E1900145-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 15:03
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520695	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	7.65	7.65			1
1,2,3,7,8-PeCDD	ND	U	1.17	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.899	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.884	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.848	25.0			1
1,2,3,4,6,7,8-HpCDD	ND	U	0.666	25.0			1
OCDD	10.8**BJ**		1.54	50.0	1.01	1.000	1
2,3,7,8-TCDF	ND	U	2.48	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.35	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.23	25.0			1
1,2,3,4,7,8-HxCDF	0.974**BJ**		0.765	25.0	1.15	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	0.777	25.0			1
1,2,3,7,8,9-HxCDF	1.93**BJ**		0.927	25.0	1.08	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	0.777	25.0			1
1,2,3,4,6,7,8-HpCDF	1.31**BJK**		0.784	25.0	1.26	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.799	25.0			1
OCDF	3.49**BJK**		2.72	50.0	0.29	1.004	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187109	**Units:**	pg
Lab Code:	E1900145-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 15:03
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520695	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	7.65	7.65			1
Total Penta-Dioxins	ND	U	1.17	25.0			1
Total Hexa-Dioxins	ND	U	0.877	25.0			1
Total Hepta-Dioxins	ND	U	0.666	25.0			1
Total Tetra-Furans	ND	U	2.48	5.00			1
Total Penta-Furans	ND	U	1.29	25.0			1
Total Hexa-Furans	2.90**J**		0.808	25.0	1.15		1
Total Hepta-Furans	ND	U	0.790	25.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187109	**Units:**	Percent
Lab Code:	E1900145-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 15:03
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520695	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	541.641	27		25-164	0.80	1.025
13C-1,2,3,7,8-PeCDD	2000	1143.160	57		25-181	1.56	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1040.064	52		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1103.406	55		28-130	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1250.581	63		23-140	1.03	1.071
13C-OCDD	4000	1313.638	33		17-157	0.93	1.143
13C-2,3,7,8-TCDF	2000	680.011	34		24-169	0.81	0.989
13C-1,2,3,7,8-PeCDF	2000	950.421	48		24-185	1.58	1.173
13C-2,3,4,7,8-PeCDF	2000	994.371	50		21-178	1.61	1.210
13C-1,2,3,4,7,8-HxCDF	2000	800.683	40		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	831.191	42		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	853.849	43		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	844.513	42		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	763.429	38		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	932.562	47		26-138	0.45	1.083
37Cl-2,3,7,8-TCDD	800	327.486	41		35-197	NA	1.026

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	02/13/19 00:00
Sample Matrix:	Wipe	**Date Received:**	02/18/19 11:30
Sample Name:	187109	**Units:**	pg
Lab Code:	E1900145-005	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	7.65	7.65	1	1	
1,2,3,7,8-PeCDD	ND	1.17	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.899	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.884	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.848	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	ND	0.666	25.0	1	0.01	
OCDD	**10.8**	1.54	50.0	1	0.0003	0.00324
2,3,7,8-TCDF	ND	2.48	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.35	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.23	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	**0.974**	0.765	25.0	1	0.1	0.0974
1,2,3,6,7,8-HxCDF	ND	0.777	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	**1.93**	0.927	25.0	1	0.1	0.193
2,3,4,6,7,8-HxCDF	ND	0.777	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**1.31**	0.784	25.0	1	0.01	0.0131
1,2,3,4,7,8,9-HpCDF	ND	0.799	25.0	1	0.01	
OCDF	**3.49**	2.72	50.0	1	0.0003	0.00105
		Total TEQ				0.308

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	01/25/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/18/19 11:30
Sample Name:	187059	**Units:**	ng/Kg
Lab Code:	E1900145-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 15:52
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	0.097g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520696	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	42.0**JK**		40.8	51.5	1.13	1.001	1
1,2,3,7,8-PeCDD	117**JK**		7.84	258	1.26	1.001	1
1,2,3,4,7,8-HxCDD	114**JK**		3.56	258	1.47	1.000	1
1,2,3,6,7,8-HxCDD	780		3.60	258	1.32	1.000	1
1,2,3,7,8,9-HxCDD	275		3.41	258	1.10	1.007	1
1,2,3,4,6,7,8-HpCDD	11500		22.0	258	1.05	1.000	1
OCDD	161000		11.5	515	0.89	1.000	1
2,3,7,8-TCDF	21.5**JK**		8.04	51.5	0.59	1.000	1
1,2,3,7,8-PeCDF	29.2**J**		8.25	258	1.46	1.000	1
2,3,4,7,8-PeCDF	95.0**J**		8.27	258	1.47	1.001	1
1,2,3,4,7,8-HxCDF	118**J**		23.5	258	1.18	1.001	1
1,2,3,6,7,8-HxCDF	122**J**		23.9	258	1.14	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	27.4	258			1
2,3,4,6,7,8-HxCDF	134**J**		24.6	258	1.29	1.000	1
1,2,3,4,6,7,8-HpCDF	3050		43.2	258	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	105**JK**		46.5	258	1.31	1.000	1
OCDF	6850		13.0	515	0.87	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	01/25/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/18/19 11:30
Sample Name:	187059	**Units:**	ng/Kg
Lab Code:	E1900145-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 15:52
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	0.097g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520696	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	40.8	51.5			1
Total Penta-Dioxins	598		7.84	258	1.66		1
Total Hexa-Dioxins	4620		3.52	258	1.37		1
Total Hepta-Dioxins	25000		22.0	258	1.07		1
Total Tetra-Furans	56.9		8.04	51.5	0.71		1
Total Penta-Furans	266		8.26	258	1.45		1
Total Hexa-Furans	5890		24.8	258	1.11		1
Total Hepta-Furans	12800		44.8	258	1.01		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	01/25/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/18/19 11:30
Sample Name:	187059	**Units:**	Percent
Lab Code:	E1900145-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 15:52
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	0.097g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520696	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	588.566	29		25-164	0.79	1.025
13C-1,2,3,7,8-PeCDD	2000	1089.965	54		25-181	1.62	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1141.119	57		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1247.999	62		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1327.290	66		23-140	1.09	1.070
13C-OCDD	4000	1386.707	35		17-157	0.87	1.143
13C-2,3,7,8-TCDF	2000	760.054	38		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	981.297	49		24-185	1.57	1.173
13C-2,3,4,7,8-PeCDF	2000	944.389	47		21-178	1.60	1.211
13C-1,2,3,4,7,8-HxCDF	2000	929.760	46		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	965.506	48		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1019.515	51		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	962.609	48		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	838.653	42		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1001.288	50		26-138	0.44	1.083
37Cl-2,3,7,8-TCDD	800	306.003	38		35-197	NA	1.026

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	01/25/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/18/19 11:30
Sample Name:	187059	**Units:**	ng/Kg
Lab Code:	E1900145-006	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**42.0**	40.8	51.5	1	1	42.0
1,2,3,7,8-PeCDD	**117**	7.84	258	1	1	117
1,2,3,4,7,8-HxCDD	**114**	3.56	258	1	0.1	11.4
1,2,3,6,7,8-HxCDD	**780**	3.60	258	1	0.1	78.0
1,2,3,7,8,9-HxCDD	**275**	3.41	258	1	0.1	27.5
1,2,3,4,6,7,8-HpCDD	**11500**	22.0	258	1	0.01	115
OCDD	**161000**	11.5	515	1	0.0003	48.3
2,3,7,8-TCDF	**21.5**	8.04	51.5	1	0.1	2.15
1,2,3,7,8-PeCDF	**29.2**	8.25	258	1	0.03	0.876
2,3,4,7,8-PeCDF	**95.0**	8.27	258	1	0.3	28.5
1,2,3,4,7,8-HxCDF	**118**	23.5	258	1	0.1	11.8
1,2,3,6,7,8-HxCDF	**122**	23.9	258	1	0.1	12.2
1,2,3,7,8,9-HxCDF	ND	27.4	258	1	0.1	
2,3,4,6,7,8-HxCDF	**134**	24.6	258	1	0.1	13.4
1,2,3,4,6,7,8-HpCDF	**3050**	43.2	258	1	0.01	30.5
1,2,3,4,7,8,9-HpCDF	**105**	46.5	258	1	0.01	1.05
OCDF	**6850**	13.0	515	1	0.0003	2.06
		Total TEQ				542

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900067-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 10:06
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520689	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	5.56	5.56			1
1,2,3,7,8-PeCDD	ND	U	0.671	25.0			1
1,2,3,4,7,8-HxCDD	0.976**JK**		0.309	25.0	0.95	1.000	1
1,2,3,6,7,8-HxCDD	0.508**JK**		0.312	25.0	0.66	1.000	1
1,2,3,7,8,9-HxCDD	0.902**JK**		0.295	25.0	1.58	1.007	1
1,2,3,4,6,7,8-HpCDD	2.86**J**		0.362	25.0	1.00	1.000	1
OCDD	21.2**J**		0.728	50.0	0.79	1.000	1
2,3,7,8-TCDF	ND	U	0.924	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.688	25.0			1
2,3,4,7,8-PeCDF	ND	U	0.682	25.0			1
1,2,3,4,7,8-HxCDF	0.783**J**		0.345	25.0	1.10	1.000	1
1,2,3,6,7,8-HxCDF	0.871**J**		0.367	25.0	1.22	1.000	1
1,2,3,7,8,9-HxCDF	0.859**JK**		0.432	25.0	0.66	1.000	1
2,3,4,6,7,8-HxCDF	0.948**JK**		0.363	25.0	1.66	1.000	1
1,2,3,4,6,7,8-HpCDF	1.44**JK**		0.427	25.0	0.86	1.001	1
1,2,3,4,7,8,9-HpCDF	0.649**JK**		0.423	25.0	1.65	1.000	1
OCDF	2.99**JK**		1.34	50.0	0.55	1.005	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900067-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 10:06
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520689	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	5.56	5.56			1
Total Penta-Dioxins	ND	U	0.671	25.0			1
Total Hexa-Dioxins	ND	U	0.305	25.0			1
Total Hepta-Dioxins	2.86**J**		0.362	25.0	1.00		1
Total Tetra-Furans	ND	U	0.924	5.00			1
Total Penta-Furans	ND	U	0.685	25.0			1
Total Hexa-Furans	1.65**J**		0.375	25.0	1.10		1
Total Hepta-Furans	ND	U	0.425	25.0			1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900067-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 10:06
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520689	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	782.562	39		25-164	0.80	1.025
13C-1,2,3,7,8-PeCDD	2000	1283.887	64		25-181	1.63	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1427.221	71		32-141	1.32	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1508.702	75		28-130	1.30	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1739.172	87		23-140	1.06	1.071
13C-OCDD	4000	1855.541	46		17-157	0.90	1.143
13C-2,3,7,8-TCDF	2000	1078.413	54		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1160.719	58		24-185	1.62	1.173
13C-2,3,4,7,8-PeCDF	2000	1114.873	56		21-178	1.58	1.210
13C-1,2,3,4,7,8-HxCDF	2000	1141.785	57		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1137.656	57		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1168.698	58		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1145.334	57		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1054.291	53		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1274.996	64		26-138	0.43	1.082
37Cl-2,3,7,8-TCDD	800	423.871	53		35-197	NA	1.026

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900068-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 10:55
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.618g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520690	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.340	0.471			1
1,2,3,7,8-PeCDD	ND	U	0.0470	2.35			1
1,2,3,4,7,8-HxCDD	ND	U	0.0469	2.35			1
1,2,3,6,7,8-HxCDD	ND	U	0.0486	2.35			1
1,2,3,7,8,9-HxCDD	ND	U	0.0454	2.35			1
1,2,3,4,6,7,8-HpCDD	0.104**JK**		0.0220	2.35	0.86	1.001	1
OCDD	0.930**JK**		0.0859	4.71	0.65	1.000	1
2,3,7,8-TCDF	ND	U	0.110	0.471			1
1,2,3,7,8-PeCDF	ND	U	0.0695	2.35			1
2,3,4,7,8-PeCDF	ND	U	0.0624	2.35			1
1,2,3,4,7,8-HxCDF	ND	U	0.0408	2.35			1
1,2,3,6,7,8-HxCDF	ND	U	0.0401	2.35			1
1,2,3,7,8,9-HxCDF	ND	U	0.0489	2.35			1
2,3,4,6,7,8-HxCDF	ND	U	0.0426	2.35			1
1,2,3,4,6,7,8-HpCDF	0.0731**JK**		0.0270	2.35	0.83	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0306	2.35			1
OCDF	ND	U	0.140	4.71			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900068-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 10:55
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.618g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520690	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.340	0.471			1
Total Penta-Dioxins	ND	U	0.0470	2.35			1
Total Hexa-Dioxins	ND	U	0.0470	2.35			1
Total Hepta-Dioxins	ND	U	0.0220	2.35			1
Total Tetra-Furans	ND	U	0.110	0.471			1
Total Penta-Furans	ND	U	0.0660	2.35			1
Total Hexa-Furans	ND	U	0.0428	2.35			1
Total Hepta-Furans	ND	U	0.0287	2.35			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900068-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 10:55
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.618g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520690	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	579.641	29		25-164	0.80	1.025
13C-1,2,3,7,8-PeCDD	2000	1029.919	51		25-181	1.61	1.222
13C-1,2,3,4,7,8-HxCDD	2000	1165.213	58		32-141	1.27	0.990
13C-1,2,3,6,7,8-HxCDD	2000	1287.575	64		28-130	1.32	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1364.418	68		23-140	1.07	1.070
13C-OCDD	4000	1490.694	37		17-157	0.89	1.143
13C-2,3,7,8-TCDF	2000	756.818	38		24-169	0.78	0.989
13C-1,2,3,7,8-PeCDF	2000	891.358	45		24-185	1.64	1.172
13C-2,3,4,7,8-PeCDF	2000	900.944	45		21-178	1.59	1.210
13C-1,2,3,4,7,8-HxCDF	2000	917.081	46		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	939.932	47		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	921.388	46		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	946.288	47		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	836.012	42		28-143	0.43	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1027.029	51		26-138	0.44	1.082
37Cl-2,3,7,8-TCDD	800	311.831	39		35-197	NA	1.026

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Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Analyzed:**	02/27/19
Sample Matrix:	Wipe	**Date Extracted:**	02/22/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	pg
Prep Method:	Method	**Basis:**	As Received
		Analysis Lot:	627102

	Lab Control Sample EQ1900067-02			Duplicate Lab Control Sample EQ1900067-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	679	1000	68 *	689	1000	69 *	70-140	2	50
1,2,3,4,7,8-HxCDD	880	1000	88	886	1000	89	70-164	<1	50
1,2,3,6,7,8-HxCDD	907	1000	91	900	1000	90	76-134	<1	50
1,2,3,7,8,9-HxCDD	891	1000	89	884	1000	88	64-162	<1	50
1,2,3,7,8-PeCDD	992	1000	99	981	1000	98	70-142	1	50
2,3,7,8-TCDD	268	200	134	272	200	136	67-158	1	50
OCDD	1980	2000	99	2150	2000	107	78-144	8	50
1,2,3,4,6,7,8-HpCDF	954	1000	95	939	1000	94	82-122	2	50
1,2,3,4,7,8,9-HpCDF	1000	1000	100	958	1000	96	78-138	4	50
1,2,3,4,7,8-HxCDF	974	1000	97	978	1000	98	72-134	<1	50
1,2,3,6,7,8-HxCDF	968	1000	97	961	1000	96	84-130	<1	50
1,2,3,7,8,9-HxCDF	934	1000	93	951	1000	95	78-130	2	50
1,2,3,7,8-PeCDF	907	1000	91	908	1000	91	80-134	<1	50
2,3,4,6,7,8-HxCDF	953	1000	95	935	1000	94	70-156	2	50
2,3,4,7,8-PeCDF	1000	1000	100	933	1000	93	68-160	7	50
2,3,7,8-TCDF	176	200	88	174	200	87	75-158	1	50
OCDF	2050	2000	103	2120	2000	106	63-170	3	50

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ED_004522_00089767-00523

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900067-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 18:19
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520699	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	268		5.32	5.32	0.79	1.001	1
1,2,3,7,8-PeCDD	992		0.379	25.0	1.62	1.001	1
1,2,3,4,7,8-HxCDD	880		0.301	25.0	1.20	1.000	1
1,2,3,6,7,8-HxCDD	907		0.303	25.0	1.23	1.000	1
1,2,3,7,8,9-HxCDD	891		0.288	25.0	1.28	1.007	1
1,2,3,4,6,7,8-HpCDD	679		0.585	25.0	1.03	1.000	1
OCDD	1980		1.67	50.0	0.92	1.000	1
2,3,7,8-TCDF	176		1.65	5.00	0.69	1.000	1
1,2,3,7,8-PeCDF	907		0.552	25.0	1.47	1.001	1
2,3,4,7,8-PeCDF	1000		0.513	25.0	1.49	1.001	1
1,2,3,4,7,8-HxCDF	974		0.502	25.0	1.15	1.000	1
1,2,3,6,7,8-HxCDF	968		0.506	25.0	1.21	1.000	1
1,2,3,7,8,9-HxCDF	934		0.569	25.0	1.20	1.000	1
2,3,4,6,7,8-HxCDF	953		0.463	25.0	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	954		1.45	25.0	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	1000		1.73	25.0	1.01	1.000	1
OCDF	2050		0.887	50.0	0.86	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900067-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 18:19
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520699	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	268		5.32	5.32	0.79		1
Total Penta-Dioxins	992		0.379	25.0	1.62		1
Total Hexa-Dioxins	2680		0.297	25.0	1.20		1
Total Hepta-Dioxins	679		0.585	25.0	1.03		1
Total Tetra-Furans	176		1.65	5.00	0.69		1
Total Penta-Furans	1910		0.532	25.0	1.47		1
Total Hexa-Furans	3830		0.508	25.0	1.15		1
Total Hepta-Furans	1950		1.58	25.0	1.01		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900067-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 18:19
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520699	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	654.180	33		25-164	0.81	1.025
13C-1,2,3,7,8-PeCDD	2000	1233.119	62		25-181	1.62	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1398.156	70		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1481.078	74		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1745.011	87		23-140	1.05	1.070
13C-OCDD	4000	1837.642	46		17-157	0.92	1.143
13C-2,3,7,8-TCDF	2000	848.804	42		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1019.397	51		24-185	1.61	1.173
13C-2,3,4,7,8-PeCDF	2000	1054.850	53		21-178	1.61	1.211
13C-1,2,3,4,7,8-HxCDF	2000	1070.825	54		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1077.034	54		26-123	0.50	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1162.104	58		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1188.176	59		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1084.329	54		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1238.370	62		26-138	0.45	1.083
37Cl-2,3,7,8-TCDD	800	357.492	45		35-197	NA	1.026

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900067-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 19:08
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520700	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	272		5.91	5.91	0.81	1.001	1
1,2,3,7,8-PeCDD	981		1.12	25.0	1.59	1.000	1
1,2,3,4,7,8-HxCDD	886		0.504	25.0	1.26	1.000	1
1,2,3,6,7,8-HxCDD	900		0.498	25.0	1.23	1.000	1
1,2,3,7,8,9-HxCDD	884		0.476	25.0	1.26	1.007	1
1,2,3,4,6,7,8-HpCDD	689		0.478	25.0	1.04	1.000	1
OCDD	2150		0.557	50.0	0.86	1.000	1
2,3,7,8-TCDF	174		1.25	5.00	0.71	1.001	1
1,2,3,7,8-PeCDF	908		0.864	25.0	1.49	1.001	1
2,3,4,7,8-PeCDF	933		0.829	25.0	1.43	1.001	1
1,2,3,4,7,8-HxCDF	978		0.322	25.0	1.19	1.000	1
1,2,3,6,7,8-HxCDF	961		0.313	25.0	1.20	1.000	1
1,2,3,7,8,9-HxCDF	951		0.346	25.0	1.18	1.000	1
2,3,4,6,7,8-HxCDF	935		0.311	25.0	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	939		1.96	25.0	0.98	1.000	1
1,2,3,4,7,8,9-HpCDF	958		2.08	25.0	0.96	1.000	1
OCDF	2120		1.64	50.0	0.90	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900067-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 19:08
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520700	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	272		5.91	5.91	0.81		1
Total Penta-Dioxins	981		1.12	25.0	1.59		1
Total Hexa-Dioxins	2670		0.492	25.0	1.26		1
Total Hepta-Dioxins	689		0.478	25.0	1.04		1
Total Tetra-Furans	174		1.25	5.00	0.71		1
Total Penta-Furans	1840		0.847	25.0	1.35		1
Total Hexa-Furans	3830		0.322	25.0	1.19		1
Total Hepta-Furans	1900		2.02	25.0	0.98		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900067-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/27/19 19:08
Prep Method:	Method	**Date Extracted:**	2/22/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520700	**Blank File Name:**	P520689
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520686

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	527.427	26		25-164	0.78	1.025
13C-1,2,3,7,8-PeCDD	2000	1080.781	54		25-181	1.57	1.223
13C-1,2,3,4,7,8-HxCDD	2000	1213.725	61		32-141	1.31	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1350.365	68		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1575.675	79		23-140	1.05	1.070
13C-OCDD	4000	1658.104	41		17-157	0.88	1.143
13C-2,3,7,8-TCDF	2000	710.617	36		24-169	0.77	0.989
13C-1,2,3,7,8-PeCDF	2000	906.883	45		24-185	1.58	1.173
13C-2,3,4,7,8-PeCDF	2000	925.896	46		21-178	1.60	1.210
13C-1,2,3,4,7,8-HxCDF	2000	958.025	48		26-152	0.53	0.968
13C-1,2,3,6,7,8-HxCDF	2000	996.259	50		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1059.470	53		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1030.068	52		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1002.886	50		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1185.887	59		26-138	0.44	1.083
37Cl-2,3,7,8-TCDD	800	289.366	36		35-197	NA	1.026

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Analyzed:**	02/28/19
Sample Matrix:	Solid	**Date Extracted:**	02/22/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	626930

	Lab Control Sample EQ1900068-02			Duplicate Lab Control Sample EQ1900068-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	61.9	92.4	67 *	69.0	96.9	71	70-140	11	50
1,2,3,4,7,8-HxCDD	84.2	92.4	91	84.2	96.9	87	70-164	<1	50
1,2,3,6,7,8-HxCDD	82.0	92.4	89	91.9	96.9	95	76-134	11	50
1,2,3,7,8,9-HxCDD	76.6	92.4	83	81.8	96.9	84	64-162	6	50
1,2,3,7,8-PeCDD	91.1	92.4	99	97.5	96.9	101	70-142	7	50
2,3,7,8-TCDD	24.9	18.5	135	27.6	19.4	142	67-158	10	50
OCDD	176	185	95	184	194	95	78-144	5	50
1,2,3,4,6,7,8-HpCDF	88.6	92.4	96	92.8	96.9	96	82-122	5	50
1,2,3,4,7,8,9-HpCDF	89.1	92.4	96	97.2	96.9	100	78-138	9	50
1,2,3,4,7,8-HxCDF	89.4	92.4	97	96.7	96.9	100	72-134	8	50
1,2,3,6,7,8-HxCDF	92.0	92.4	100	96.3	96.9	99	84-130	5	50
1,2,3,7,8,9-HxCDF	88.5	92.4	96	96.0	96.9	99	78-130	8	50
1,2,3,7,8-PeCDF	82.7	92.4	89	89.8	96.9	93	80-134	8	50
2,3,4,6,7,8-HxCDF	88.9	92.4	96	94.0	96.9	97	70-156	6	50
2,3,4,7,8-PeCDF	91.2	92.4	99	96.0	96.9	99	68-160	5	50
2,3,7,8-TCDF	16.7	18.5	90	19.1	19.4	98	75-158	13	50
OCDF	198	185	107	214	194	111	63-170	8	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900068-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/28/19 22:52
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.821g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520731	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520719

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	24.9		0.309	0.462	0.81	1.001	1
1,2,3,7,8-PeCDD	91.1		0.0329	2.31	1.59	1.001	1
1,2,3,4,7,8-HxCDD	84.2		0.0287	2.31	1.29	1.000	1
1,2,3,6,7,8-HxCDD	82.0		0.0290	2.31	1.24	1.000	1
1,2,3,7,8,9-HxCDD	76.6		0.0275	2.31	1.28	1.007	1
1,2,3,4,6,7,8-HpCDD	61.9		0.0373	2.31	1.07	1.000	1
OCDD	176		0.156	4.62	0.89	1.000	1
2,3,7,8-TCDF	16.7		0.0854	0.462	0.72	1.001	1
1,2,3,7,8-PeCDF	82.7		0.0573	2.31	1.49	1.001	1
2,3,4,7,8-PeCDF	91.2		0.0587	2.31	1.54	1.001	1
1,2,3,4,7,8-HxCDF	89.4		0.0390	2.31	1.20	1.000	1
1,2,3,6,7,8-HxCDF	92.0		0.0369	2.31	1.20	1.000	1
1,2,3,7,8,9-HxCDF	88.5		0.0515	2.31	1.17	1.000	1
2,3,4,6,7,8-HxCDF	88.9		0.0427	2.31	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	88.6		0.265	2.31	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	89.1		0.289	2.31	1.03	1.000	1
OCDF	198		0.121	4.62	0.87	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900068-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/28/19 22:52
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.821g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520731	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520719

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	24.9		0.309	0.462	0.81		1
Total Penta-Dioxins	91.1		0.0329	2.31	1.59		1
Total Hexa-Dioxins	243		0.0283	2.31	1.29		1
Total Hepta-Dioxins	62.1		0.0373	2.31	0.90		1
Total Tetra-Furans	16.7		0.0854	0.462	0.72		1
Total Penta-Furans	175		0.0580	2.31	1.49		1
Total Hexa-Furans	359		0.0420	2.31	1.20		1
Total Hepta-Furans	178		0.276	2.31	1.01		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900068-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/28/19 22:52
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.821g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520731	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520719

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	716.509	36		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	1276.434	64		25-181	1.59	1.227
13C-1,2,3,4,7,8-HxCDD	2000	1359.143	68		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1497.680	75		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1440.640	72		23-140	1.08	1.070
13C-OCDD	4000	1377.943	34		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	1052.675	53		24-169	0.81	0.989
13C-1,2,3,7,8-PeCDF	2000	1184.699	59		24-185	1.58	1.177
13C-2,3,4,7,8-PeCDF	2000	1144.979	57		21-178	1.63	1.215
13C-1,2,3,4,7,8-HxCDF	2000	1164.327	58		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1208.614	60		26-123	0.53	0.971
13C-1,2,3,7,8,9-HxCDF	2000	1087.894	54		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1105.176	55		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	985.775	49		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1094.822	55		26-138	0.42	1.082
37Cl-2,3,7,8-TCDD	800	394.455	49		35-197	NA	1.027

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900068-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/28/19 23:41
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.316g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520732	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520719

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	27.6		1.18	1.18	0.85	1.001	1
1,2,3,7,8-PeCDD	97.5		0.161	2.42	1.57	1.001	1
1,2,3,4,7,8-HxCDD	84.2		0.0696	2.42	1.23	1.000	1
1,2,3,6,7,8-HxCDD	91.9		0.0745	2.42	1.28	1.001	1
1,2,3,7,8,9-HxCDD	81.8		0.0686	2.42	1.22	1.008	1
1,2,3,4,6,7,8-HpCDD	69.0		0.0886	2.42	1.01	1.000	1
OCDD	184		0.242	4.85	0.90	1.000	1
2,3,7,8-TCDF	19.1		0.500	0.500	0.78	1.001	1
1,2,3,7,8-PeCDF	89.8		0.184	2.42	1.52	1.000	1
2,3,4,7,8-PeCDF	96.0		0.173	2.42	1.54	1.000	1
1,2,3,4,7,8-HxCDF	96.7		0.0869	2.42	1.16	1.000	1
1,2,3,6,7,8-HxCDF	96.3		0.0835	2.42	1.21	1.000	1
1,2,3,7,8,9-HxCDF	96.0		0.111	2.42	1.19	1.000	1
2,3,4,6,7,8-HxCDF	94.0		0.0910	2.42	1.22	1.000	1
1,2,3,4,6,7,8-HpCDF	92.8		0.462	2.42	0.95	1.000	1
1,2,3,4,7,8,9-HpCDF	97.2		0.454	2.42	1.00	1.000	1
OCDF	214		0.284	4.85	0.87	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900068-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/28/19 23:41
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.316g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520732	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520719

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	27.6		1.18	1.18	0.85		1
Total Penta-Dioxins	97.5		0.161	2.42	1.57		1
Total Hexa-Dioxins	258		0.0709	2.42	1.23		1
Total Hepta-Dioxins	69.0		0.0886	2.42	1.01		1
Total Tetra-Furans	19.3		0.500	0.500	0.78		1
Total Penta-Furans	187		0.178	2.42	1.52		1
Total Hexa-Furans	383		0.0920	2.42	1.16		1
Total Hepta-Furans	190		0.457	2.42	0.95		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900145
Project:	HS19020856	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900068-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	02/28/19 23:41
Prep Method:	Method Soxhlet	**Date Extracted:**	2/22/19
Sample Amount:	10.316g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P520732	**Blank File Name:**	P520690
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P520719

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	503.486	25		25-164	0.76	1.026
13C-1,2,3,7,8-PeCDD	2000	1213.920	61		25-181	1.61	1.226
13C-1,2,3,4,7,8-HxCDD	2000	1245.374	62		32-141	1.34	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1298.550	65		28-130	1.21	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1435.370	72		23-140	1.09	1.071
13C-OCDD	4000	1440.218	36		17-157	0.92	1.143
13C-2,3,7,8-TCDF	2000	651.671	33		24-169	0.83	0.989
13C-1,2,3,7,8-PeCDF	2000	1039.316	52		24-185	1.63	1.177
13C-2,3,4,7,8-PeCDF	2000	1091.317	55		21-178	1.62	1.215
13C-1,2,3,4,7,8-HxCDF	2000	1004.184	50		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1027.337	51		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	988.162	49		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	983.248	49		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	939.313	47		28-143	0.43	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1134.145	57		26-138	0.44	1.083
37Cl-2,3,7,8-TCDD	800	275.044	34	**Y**	35-197	NA	1.027

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ALS Laboratory Report (Work Order HS19021189) dated April 1, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 01, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19021189**

Laboratory Results for: **Friedman Rubin S.V.E.C.**

Dear Kevin,

ALS Environmental received 5 sample(s) on Jan 15, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Corey Grandits
Project Manager

ALS Houston, US Date: 01-Apr-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Work Order: HS19021189

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19021189-01	187076 Carpet Sample	Bulk	HS19010635-07	14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19021189-02	187078 Carpet Sample	Bulk	HS19010635-09	14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19021189-03	187080 Carpet Sample	Bulk	HS19010635-11	14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19021189-04	187082 Carpet Sample	Bulk	HS19010635-13	14-Jan-2019 16:30	15-Jan-2019 08:50	☐
HS19021189-05	187084 Carpet Sample	Bulk	HS19010635-15	14-Jan-2019 16:30	15-Jan-2019 08:50	☐

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ALS Houston, US Date: 01-Apr-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Work Order: HS19021189

CASE NARRATIVE

Work Order Comments

- The analysis for PCB congeners was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

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ALS Houston, US Date: 01-Apr-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19021189
Sample ID:	187076 Carpet Sample	Lab ID:HS19021189-01
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	01-Apr-2019 08:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 01-Apr-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19021189
Sample ID:	187078 Carpet Sample	Lab ID:HS19021189-02
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	01-Apr-2019 08:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 01-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	Friedman Rubin S.V.E.C.	WorkOrder:	HS19021189
Sample ID:	187080 Carpet Sample	Lab ID:	HS19021189-03
Collection Date:	14-Jan-2019 16:30	Matrix:	Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	01-Apr-2019 08:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 01-Apr-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19021189
Sample ID:	187082 Carpet Sample	Lab ID:HS19021189-04
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	01-Apr-2019 08:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 01-Apr-19

Client:	Environmental Health & Engineering	**ANALYTICAL REPORT**
Project:	Friedman Rubin S.V.E.C.	WorkOrder:HS19021189
Sample ID:	187084 Carpet Sample	Lab ID:HS19021189-05
Collection Date:	14-Jan-2019 16:30	Matrix:Bulk

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	01-Apr-2019 08:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 01-Apr-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: HS19021189

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R335673	**Test Name :** SUBCONTRACT ANALYSIS - PCB CONGENERS			**Matrix:** Bulk		
HS19021189-01	187076 Carpet Sample	14 Jan 2019 16:30			01 Apr 2019 08:53	1
HS19021189-02	187078 Carpet Sample	14 Jan 2019 16:30			01 Apr 2019 08:53	1
HS19021189-03	187080 Carpet Sample	14 Jan 2019 16:30			01 Apr 2019 08:53	1
HS19021189-04	187082 Carpet Sample	14 Jan 2019 16:30			01 Apr 2019 08:53	1
HS19021189-05	187084 Carpet Sample	14 Jan 2019 16:30			01 Apr 2019 08:53	1

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ALS Houston, US Date: 01-Apr-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
WorkOrder: **HS19021189**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
California	2919, 2018-2019	30-Apr-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020

ALS Houston, US Date: 01-Apr-19

Client: Environmental Health & Engineering
Project: Friedman Rubin S.V.E.C.
Work Order: HS19021189

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19021189-01	187076 Carpet Sample	Login	2/22/2019 3:24:02 PM	CGG	SPA137
HS19021189-02	187078 Carpet Sample	Login	2/22/2019 3:24:02 PM	CGG	SPA137
HS19021189-03	187080 Carpet Sample	Login	2/22/2019 3:24:02 PM	CGG	SPA137
HS19021189-04	187082 Carpet Sample	Login	2/22/2019 3:24:02 PM	CGG	SPA137
HS19021189-05	187084 Carpet Sample	Login	2/22/2019 3:24:02 PM	CGG	SPA137

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ALS Houston, US Date: 01-Apr-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Date/Time Received: **15-Jan-2019 08:50**
Work Order: HS19021189
Received by: **JRM**

Checklist completed by: *Pablo Marinez* (eSignature) 15-Jan-2019 (Date)
Reviewed by: *Corey Grandits* (eSignature) 22-Feb-2019 (Date)

Matrices: **SOLID**
Carrier name: **FedEx Priority Overnight**

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☑	☐	☐
Custody seals intact on sample bottles?	☐	☐	☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:188534
Samplers name present on COC?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s): 3.9C/4.3C UC/C | IR # 11
Cooler(s)/Kit(s): RED
Date/Time sample(s) sent to storage: 1/15/19 15:00

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes: Re-log SRC

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 188534

HS19021189 ATTACHMENT 1

Environmental Health & Engineering
Friedman Rubin S.V.E.C.

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Friedman Rubin S.V.E.C.	A	PCB_Wipe_Total (8082 PCBs)
Work Order		Project Number	22437	B	1613B_Dioxin/Furans Full List
Company Name	Environmental Health & Engineerin	Bill To Company	EHE, Inc	C	1668A WHO12 PCB Congeners
Send Report To	Kevin M. Coglan	Invoice Attn	Kevin Coghlan	D	PCB Aroclor Analysis - Bulk
Address	180 Wells Avenue, Suite 200,	Address	180 Wells Ave Suite 200	E	
City/State/Zip	Newton, MA 02459	City/State/Zip	Newton, MA 02459	F	
Phone	(781) 24-7.43	Phone	1-800-525-5343	G	
Fax		Fax		H	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	Kcoghlan@eheinc.com	I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	187070 CARPET SAMPLE	1/14/19	4:30pm	BULK	N.A.	1				✓							
2	187071					1		✓									✓
3	187072					1				✓							
4	187073					1		✓									✓
5	187074					1				✓							
6	187075					1		✓									✓
7	187076					1				✓							
8	187077					1		✓									✓
9	187078					1				✓							
10	187079					1		✓									✓

Sampler(s) Please Print & Sign

Shipment Method: FEDEX-Ground

Required Turnaround Time: (Check Box) ☒ Other 4 days ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 3 Wk Days ☐ 24 Hour

Results Due Date: FRIDAY, JAN 18, 2019

Relinquished by: Kevin Coghlan Date: 1/14/2019 Time:

Received by: FEDEX

Relinquished by: Date: 1/15/19 Time: 08:50

Received by (Laboratory): J. [illegible]

Logged by (Laboratory): Date: Time:

Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & PUF Analysis

Cooler ID	Cooler Temp.
Red	3.9
	1R.11
	CF 0.4

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SVOA/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 2 of 2

COC ID: 188533

HS19021189 ATTACHMENT 1

Environmental Health & Engineering
Friedman Rubin S.V.E.C.

ALS Project Manager:

Customer Information		Project Information	
Purchase Order		Project Name	Friedman Rubin S.V.E.C.
Work Order		Project Number	22437
Company Name	Environmental Health & Engineerin	Bill To Company	
Send Report To	Kevin M. Coglan	Invoice Attn	
Address	180 Wells Avenue, Suite 200,	Address	
City/State/Zip	Newton, MA 02459	City/State/Zip	
Phone	(781) 24-7.43	Phone	
Fax		Fax	
e-Mail Address	kcoghlan@eheinc.com	e-Mail Address	Kcoghlan@eheinc.com

A	PCB_Wipe_Total (8082 PCBs)
B	1613B Dioxin/Furans Full List
C	1668A WHO12 PCB Congeners
D	PCB Analysis - Aroclor - Bulk
E	
F	
G	
H	
I	
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	187080 CARPET SAMPLE	1/14/19	4:30 PM	Bulk	N.A.	1				✓							
2	187081					1		✓									X
3	187082					1				✓							
4	187083					1		✓									X
5	187084					1				✓							
6	187085					1		✓									X
7	187086 Media BLANK			GLASS JAR		1		✓		✓							X
8																	
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method: FEDEX - COOLER

Required Turnaround Time: (Check Box) [X] STD 10 Wk Days [ ] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour [ ] Other

Results Due Date: Friday, Jan 18, 2019

Relinquished by:	Date:	Time:	Received by:
Kevin Coghlan	1/14/19		FEDEX
Relinquished by:	Date: 1/15/19	Time: 08:50	Received by (Laboratory): J. Mannan
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: PCB & Dioxin Wipe & PUF Analysis

Cooler ID	Cooler Temp.
Red	0C
	3.9
	1R11
	CF0.4

QC Package: (Check One Box Below)
[X] Level II Std QC
[ ] Level III Std QC/Raw Data
[ ] Level IV SW846-CLP
[ ] Other
[ ] TRPP Checklist
[ ] TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Red

CUSTODY SEAL
Date: 1/14/18 Time: 4:30 pm
Name: Kevin Coleman
Company: EHSE, Inc.

Seal Broken By: TM
Date: 01/15/19

Red JAN 15 2019

FedEx.
TRK# 0215 8079 4000 3200

TUE - 15 JAN AA
STANDARD OVERNIGHT

NH SGRA

Red

77099
TX-US
IAH

FID 18/013 14JAN19 0WDA 553C2/D74C/8CBA

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March 31, 2019

Service Request No:E1900165

ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS19021189

Enclosed are the results of the sample(s) submitted to our laboratory.
For your reference, these analyses have been assigned our service request number **E1900165.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS	**Service Request No.:**	E1900165
Project:	HS19021189	**Date Received:**	02/22/19
Sample Matrix:	Solid		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Five samples were received for analysis at ALS Environmental in Houston on 02/22/19.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The sample were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Method Blank

The Method Blank EQ1300737-01 contained low levels of target compounds; the associated compounds in the samples are not flagged with a 'B' flag as the sample results are greater than ten times the level detected in the method blank.

Precision and Accuracy:

EQ1900077: A Laboratory Control Spike (LCS) sample was analyzed and reported in addition to a MS/MSD for this extraction batch. The batch precision (MS/DMS) measurements were determined on another order in the extraction batch. The MS/DMS results are not included in this report. PCB 118 and PCB 123 reocviered outside QC limits.

Y flags – Labeled Standards

Select labeled standards recovered below control limits. Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

Dilutions

The samples had elevated levels of target analytes and required a dilution. The undiluted and diluted results were combined into one Total TEQ summary report for each sample. This reports a 'Total' result that includes the most appropriate concentration found for the associated target analyte.

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K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

Detection Limits

Detection limits are calculated for each congener in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'
- The 1:1 and associated dilution have been combined into one TEQ Summary report

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US **Service Request:**E1900165

Project: HS19021189

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900165-001	187076	1/14/2019	0000
E1900165-002	187078	1/14/2019	0000
E1900165-003	187080	1/14/2019	0000
E1900165-004	187082	1/14/2019	0000
E1900165-005	187084	1/14/2019	0000

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Service Request Summary

ATTACHMENT 1

Folder #: **E1900165**
Client Name: ALS Environmental - US
Project Name: HS19021189
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: JGUIN
Date Received: 02/22/19
Internal Due Date: 3/19/2019
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS19021189
EDD: No EDD Specified

5 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 7B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON Cl Biphen Cong/1668A
E1900165-001	187076	Solid	01/14/19 0000	II
E1900165-002	187078	Solid	01/14/19 0000	II
E1900165-003	187080	Solid	01/14/19 0000	II
E1900165-004	187082	Solid	01/14/19 0000	II
E1900165-005	187084	Solid	01/14/19 0000	II

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900165**
Client Name:	ALS Environmental - US
Project Name:	HS19021189
Project Number:	
Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	JGUIN
Date Received:	02/22/19
Internal Due Date:	3/19/2019
QAP:	LAB QAP
Qualifier Set:	HRMS Qualifier Set
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS19021189
EDD:	No EDD Specified

5 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 7B

Pressure Gas:

Print

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ED_004522_00089767-00560

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E190011105 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
03/20/19	JC	002, 003

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
3/25/19	LG	002, 003

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E190016 5 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
03/19/19	JC	-004DL, -005DL

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
03/19/19	LKL	004DL, 005DL

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID: E190016F

DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
03/26/19	JC	-001DL, -002DL, -003DL, 001DL (1000)

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
03/26/19	LKL	001DL, 002DL, 003DL, 001DL (1000)

ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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F: +1 281 530 5887
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E1900165 5
ALS Laboratory Group
HS19021189

Subcontract Chain of Custody

COC ID: 10817

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: Corey Grandits
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: Corey.Grandits@alsglobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS19021189
TSR: Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19021189-01**	**187076 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			18 Mar 2019
2.	**HS19021189-02**	**187078 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			18 Mar 2019
3.	**HS19021189-03**	**187080 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			18 Mar 2019
4.	**HS19021189-04**	**187082 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			18 Mar 2019
5.	**HS19021189-05**	**187084 Carpet Sample**	**Bulk**	**14 Jan 2019 16:30**
	Sub 1668A WHO 12 PCB Congeners + Homologs			18 Mar 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

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ATTACHMENT 1

ALS Environmental

Cooler Receipt Form

Project Chemist CG

Client/Project ALS-H

Thermometer ID SM04

Date/Time Received: 2-22-19 Initials: CG Date/Time Logged in: 2-22-19 Initials CG

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ ALS Courier ○ Client

2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ✓ No

Were they intact? ○ Yes ○ No ✓ N/A

Were they signed and dated? ○ Yes ○ No ✓ N/A

If yes, how many and where? —

4. Packing Material: ○ Inserts ○ Baggies ○ Bubble Wrap ○ Gel Packs ✓ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ✓ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
—		2-22-19	1616	CG	3.5/3.9	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900165 5

ALS Laboratory Group
HS19021189

Effe

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10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 332209 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 3/1/19 03:00 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900112-002	FAP-SE-01-6	.01	1668A/Cl Biphen Cong			Soil	5.507g	Brown mud w/ rocks
2	E1900112-003	FAP-SS-04-0	.01	1668A/Cl Biphen Cong			Soil	5.400g	Brown mud
3	E1900112-004	FAP-SE-01-24	.01	1668A/Cl Biphen Cong			Soil	5.886g	Brown mud w/ rocks
4	E1900112-005	FAP-SS-99	.01	1668A/Cl Biphen Cong			Soil	5.262g	Thick Mud
5	E1900112-007	FAP-SEB-02-6	.01	1668A/Cl Biphen Cong			Soil	5.856g	Thick Mud
6	E1900112-008	FAP-SEB-02-24	.01	1668A/Cl Biphen Cong			Soil	5.708g	Thick Mud
7	E1900113-005	FAP-SSB-05-0	.01	1668A/Cl Biphen Cong			Soil	5.554g	Brown Dirt
8	E1900113-007	FAP-SS-06-0	.01	1668A/Cl Biphen Cong			Soil	5.732g	Brown Mud
9	E1900119-001	3015439-001	.02	1668A/Cl Biphen Cong			Sediment	5.600g	Brown/black soupy mud
10	E1900165-001	187076	.01	1668A/Cl Biphen Cong			Solid	5.094g	Brown Carpet
11	E1900165-002	187078	.02	1668A/Cl Biphen Cong			Solid	5.999g	Brown Carpet
12	E1900165-003	187080	.02	1668A/Cl Biphen Cong			Solid	5.446g	Brown Carpet
13	E1900165-004	187082	.02	1668A/Cl Biphen Cong			Solid	5.411g	Brown Carpet
14	E1900165-005	187084	.02	1668A/Cl Biphen Cong			Solid	5.503g	Brown Carpet
15	E1900167-001	14-19-SS-01-021919-ES01	.01	1668A/Cl Biphen Cong			Soil	5.467g	Brown/black Mud
16	EQ1900077-01	MB		1668A/Cl Biphen Cong			Solid	5.224g	
17	EQ1900077-02	LCS		1668A/Cl Biphen Cong			Solid	5.618g	
18	EQ1900077-03	FAP-SS-04-0 MS	.01	1668A/Cl Biphen Cong			Solid	5.993g	
19	EQ1900077-04	FAP-SS-04-0 DMS	.01	1668A/Cl Biphen Cong			Solid	5.517g	
20	K1900722-001	DMMU #1 DM	.03	1668A/Cl Biphen Cong			Soil	6.272g	Brown Mud
21	K1900722-002	DMMU #1 PDS	.02	1668A/Cl Biphen Cong			Soil	5.685g	Brown Mud
22	K1900722-003	DMMU #2 DM	.05	1668A/Cl Biphen Cong			Soil	5.632g	Brown Mud
23	K1900722-004	DMMU #2 PDS	.04	1668A/Cl Biphen Cong			Soil	5.574g	Brown Mud

Spiking Solutions

Name: 1668 A/C PCB Congener (209) Working Matrix Inventory ID 193807 Logbook Ref: 193807 AL 10/8/18 10-30ng/mL Expires On: 04/06/2019

EQ1900077-02	100.00µL	EQ1900077-03	100.00µL	EQ1900077-04	100.00µL

Name: 1668A Clean Up Working Standard Inventory ID 197291 Logbook Ref: 197291 TW 022619 20NG/ML Expires On: 08/25/2019

E1900112-002	100.00µL	E1900112-003	100.00µL	E1900112-004	100.00µL	E1900112-005	100.00µL	E1900112-007	100.00µL	E1900112-008	100.00µL
E1900113-005	100.00µL	E1900113-007	100.00µL	E1900119-001	100.00µL	E1900165-001	100.00µL	E1900165-002	100.00µL	E1900165-003	100.00µL
E1900165-004	100.00µL	E1900165-005	100.00µL	E1900167-001	100.00µL	EQ1900077-01	100.00µL	EQ1900077-02	100.00µL	EQ1900077-03	100.00µL
EQ1900077-04	100.00µL	K1900722-001	100.00µL	K1900722-002	100.00µL	K1900722-003	100.00µL	K1900722-004	100.00µL		

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 332209 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 3/1/19 03:00 PM

Name:	1668A Labeled Working Standard	Inventory ID	197385	Logbook Ref:	197385 JG 3/1/19 2-4ngml	Expires On:	08/24/2019

E1900112-002	1,000.00µL	E1900112-003	1,000.00µL	E1900112-004	1,000.00µL	E1900112-005	1,000.00µL	E1900112-007	1,000.00µL	E1900112-008	1,000.00µL
E1900113-005	1,000.00µL	E1900113-007	1,000.00µL	E1900119-001	1,000.00µL	E1900165-001	1,000.00µL	E1900165-002	1,000.00µL	E1900165-003	1,000.00µL
E1900165-004	1,000.00µL	E1900165-005	1,000.00µL	E1900167-001	1,000.00µL	EQ1900077-01	1,000.00µL	EQ1900077-02	1,000.00µL	EQ1900077-03	1,000.00µL
EQ1900077-04	1,000.00µL	K1900722-001	1,000.00µL	K1900722-002	1,000.00µL	K1900722-003	1,000.00µL	K1900722-004	1,000.00µL		

Preparation Materials

Glass Wool	tw 011119 glass wool (196223)	Hexanes 95%	193945 2/20/2019 (193945)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Silica Gel	tw 021419 silica gel (197192)	sulfuric acid	tw 1/28/19 sulfuric (196582)
Toluene 99.9% Minimum	JG 1/29/2019 (196609)				

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	3/1/19 15:00	Started:	3/5/19 10:00	Started:	3/5/19 13:00	Started:	3/6/19 09:00
Finished:	3/2/19 09:00	Finished:	3/5/19 11:00	Finished:	3/5/19 15:00	Finished:	3/6/19 11:00
By:	JGUIN	By:	JGUIN	By:	JGUIN	By:	JGUIN
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: LKL Date: 03/20/19

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187076	**Units:**	ng/Kg
Lab Code:	E1900165-001	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/21/19 10:43
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.094g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	p307753	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307744

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 81	42300		750	750	0.76	1.000	10
PCB 77	829000		4750	4750	0.76	1.000	1000
PCB 123	33500		408	408	1.59	1.000	10
PCB 118	1060000		1650	3930	1.54	1.000	1000
PCB 114	51300		416	416	1.55	1.000	10
PCB 105	639000		1760	3930	1.54	1.000	1000
PCB 126	ND	U	454	454			10
PCB 167	967		26.8	39.3	1.25	1.001	10
PCBs 156 + 157	3080		30.9	78.5	1.23	1.000	10
PCB 169	ND	U	27.5	39.3			10
PCB 189	39.6		24.9	39.3	1.14	1.000	10

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187076	**Units:**	Percent
Lab Code:	E1900165-001	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/21/19 10:43
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.094g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	p307753	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307744

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 81L	2000	1173.239	59		25-150	0.81	1.278
PCB 77L	2000	1208.067	60		25-150	0.82	1.295
PCB 123L	2000	1001.863	50		25-150	1.55	1.118
PCB 118L	2000	1052.169	53		25-150	1.57	1.127
PCB 114L	2000	979.646	49		25-150	1.58	1.141
PCB 105L	2000	1050.384	53		25-150	1.57	1.158
PCB 126L	2000	1060.151	53		25-150	1.59	1.236
PCB 167L	2000	1321.170	66		25-150	1.24	1.063
PCBs 156L + 157L	4000	2992.273	75		25-150	1.24	1.088
PCB 169L	2000	1563.925	78		25-150	1.30	1.156
PCB 189L	2000	1437.684	72		25-150	1.05	0.959
PCB 111L	200	31.448	16	Y	30-135	1.38	1.068
PCB 178L	200	37.261	19	Y	30-135	1.13	1.008

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187076	**Units:**	ng/Kg
Lab Code:	E1900165-001	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method: 1668A
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
PCB 81	**42300**	750	750	10	0.0003	12.7
PCB 77	**829000**	4750	4750	1000	0.0001	82.9
PCB 123	**33500**	408	408	10	0.00003	1.01
PCB 118	**1060000**	1650	3930	1000	0.00003	31.8
PCB 114	**51300**	416	416	10	0.00003	1.54
PCB 105	**639000**	1760	3930	1000	0.00003	19.2
PCB 126	ND	454	454	10	0.1	
PCB 167	**967**	26.8	39.3	10	0.00003	0.0290
PCBs 156 + 157	**3080**	30.9	78.5	10	0.00003	0.0924
PCB 169	ND	27.5	39.3	10	0.03	
PCB 189	**39.6**	24.9	39.3	10	0.00003	0.00119
		Total TEQ				149

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187078	**Units:**	ng/Kg
Lab Code:	E1900165-002	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/08/19 04:51
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.999g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307582	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307573

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 81	3270		160	160	0.75	1.000	1
PCB 77	92100		4680	4680	0.81	1.000	1000
PCB 123	4670		53.1	53.1	1.55	1.000	1
PCB 118	160000		3020	3330	1.63	1.000	1000
PCB 114	6490		56.0	56.0	1.54	1.000	1
PCB 105	80500		3170	3330	1.62	1.000	1000
PCB 126	624		68.0	68.0	1.60	1.001	1
PCB 167	1810		43.5	43.5	1.26	1.000	1
PCBs 156 + 157	5920		66.3	66.3	1.25	1.000	1
PCB 169	ND	U	58.6	58.6			1
PCB 189	256		29.8	29.8	0.98	1.001	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187078	**Units:**	Percent
Lab Code:	E1900165-002	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/08/19 04:51
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.999g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307582	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307573

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 81L	2000	624.594	31		25-150	0.73	1.287
PCB 77L	2000	641.681	32		25-150	0.78	1.306
PCB 123L	2000	791.167	40		25-150	1.62	1.121
PCB 118L	2000	769.520	38		25-150	1.50	1.129
PCB 114L	2000	724.225	36		25-150	1.60	1.143
PCB 105L	2000	802.083	40		25-150	1.58	1.161
PCB 126L	2000	753.004	38		25-150	1.64	1.241
PCB 167L	2000	809.904	40		25-150	1.28	1.064
PCBs 156L + 157L	4000	1620.625	41		25-150	1.27	1.089
PCB 169L	2000	780.336	39		25-150	1.28	1.158
PCB 189L	2000	885.738	44		25-150	1.10	0.960
PCB 111L	2000	694.423	35		30-135	1.65	1.069
PCB 178L	2000	784.733	39		30-135	1.03	1.008

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187078	**Units:**	ng/Kg
Lab Code:	E1900165-002	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method: 1668A
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
PCB 81	**3270**	160	160	1	0.0003	0.981
PCB 77	**92100**	4680	4680	1000	0.0001	9.21
PCB 123	**4670**	53.1	53.1	1	0.00003	0.140
PCB 118	**160000**	3020	3330	1000	0.00003	4.80
PCB 114	**6490**	56.0	56.0	1	0.00003	0.195
PCB 105	**80500**	3170	3330	1000	0.00003	2.42
PCB 126	**624**	68.0	68.0	1	0.1	62.4
PCB 167	**1810**	43.5	43.5	1	0.00003	0.0543
PCBs 156 + 157	**5920**	66.3	66.3	1	0.00003	0.178
PCB 169	ND	58.6	58.6	1	0.03	
PCB 189	**256**	29.8	29.8	1	0.00003	0.00768
		Total TEQ				80.4

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187080	**Units:**	ng/Kg
Lab Code:	E1900165-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/08/19 06:05
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.446g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307583	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307573

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 81	2050		146	146	0.77	1.000	1
PCB 77	53900		2410	3670	0.80	1.001	1000
PCB 123	3640		31.5	31.5	1.55	1.000	1
PCB 118	225000		1820	3670	1.53	1.000	1000
PCB 114	4950		31.3	31.3	1.57	1.000	1
PCB 105	93400		1860	3670	1.55	1.000	1000
PCB 126	ND	U	35.7	35.7			1
PCB 167	1390		22.0	22.0	1.23	1.001	1
PCBs 156 + 157	4000		34.0	34.0	1.24	1.000	1
PCB 169	ND	U	26.4	26.4			1
PCB 189	141		23.6	23.6	1.16	1.000	1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187080	**Units:**	Percent
Lab Code:	E1900165-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/08/19 06:05
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.446g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307583	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307573

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 81L	2000	921.884	46		25-150	0.80	1.288
PCB 77L	2000	1040.382	52		25-150	0.76	1.307
PCB 123L	2000	817.055	41		25-150	1.53	1.120
PCB 118L	2000	871.688	44		25-150	1.63	1.129
PCB 114L	2000	830.737	42		25-150	1.59	1.143
PCB 105L	2000	932.847	47		25-150	1.52	1.161
PCB 126L	2000	884.035	44		25-150	1.60	1.240
PCB 167L	2000	805.662	40		25-150	1.34	1.063
PCBs 156L + 157L	4000	1685.497	42		25-150	1.23	1.089
PCB 169L	2000	847.564	42		25-150	1.22	1.157
PCB 189L	2000	1061.325	53		25-150	1.07	0.960
PCB 111L	2000	643.507	32		30-135	1.55	1.069
PCB 178L	2000	692.592	35		30-135	1.01	1.007

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187080	**Units:**	ng/Kg
Lab Code:	E1900165-003	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method: 1668A
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
PCB 81	**2050**	146	146	1	0.0003	0.615
PCB 77	**53900**	2410	3670	1000	0.0001	5.39
PCB 123	**3640**	31.5	31.5	1	0.00003	0.109
PCB 118	**225000**	1820	3670	1000	0.00003	6.75
PCB 114	**4950**	31.3	31.3	1	0.00003	0.149
PCB 105	**93400**	1860	3670	1000	0.00003	2.80
PCB 126	ND	35.7	35.7	1	0.1	
PCB 167	**1390**	22.0	22.0	1	0.00003	0.0417
PCBs 156 + 157	**4000**	34.0	34.0	1	0.00003	0.120
PCB 169	ND	26.4	26.4	1	0.03	
PCB 189	**141**	23.6	23.6	1	0.00003	0.00423
		Total TEQ				16.0

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187082	**Units:**	ng/Kg
Lab Code:	E1900165-004	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/13/19 09:09
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.411g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307663	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307655

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 81	610		210	210	0.75	1.000	10
PCB 77	10800		210	210	0.76	1.001	10
PCB 123	1230		70.6	70.6	1.55	1.000	10
PCB 118	44700		68.6	68.6	1.55	1.000	10
PCB 114	1870		72.1	72.1	1.55	1.000	10
PCB 105	22000		73.5	73.5	1.54	1.001	10
PCB 126	211		86.1	86.1	1.40	1.001	10
PCB 167	631		8.85	37.0	1.20	1.001	10
PCBs 156 + 157	1990		13.8	73.9	1.22	1.000	10
PCB 169	ND	U	10.8	37.0			10
PCB 189	114		6.15	37.0	1.07	1.000	10

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187082	**Units:**	Percent
Lab Code:	E1900165-004	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/13/19 09:09
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.411g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307663	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307655

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 81L	2000	1165.393	58		25-150	0.78	1.287
PCB 77L	2000	1177.035	59		25-150	0.78	1.305
PCB 123L	2000	1033.827	52		25-150	1.56	1.120
PCB 118L	2000	999.955	50		25-150	1.57	1.129
PCB 114L	2000	997.601	50		25-150	1.57	1.143
PCB 105L	2000	1028.053	51		25-150	1.56	1.161
PCB 126L	2000	1033.558	52		25-150	1.58	1.240
PCB 167L	2000	1150.097	58		25-150	1.26	1.063
PCBs 156L + 157L	4000	2288.344	57		25-150	1.24	1.089
PCB 169L	2000	1156.191	58		25-150	1.24	1.157
PCB 189L	2000	1158.324	58		25-150	1.05	0.961
PCB 111L	200	43.770	22	Y	30-135	1.53	1.068
PCB 178L	200	57.540	29	Y	30-135	1.12	1.008

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187082	**Units:**	ng/Kg
Lab Code:	E1900165-004	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method: 1668A
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
PCB 81	**610**	210	210	10	0.0003	0.183
PCB 77	**10800**	210	210	10	0.0001	1.08
PCB 123	**1230**	70.6	70.6	10	0.00003	0.0369
PCB 118	**44700**	68.6	68.6	10	0.00003	1.34
PCB 114	**1870**	72.1	72.1	10	0.00003	0.0561
PCB 105	**22000**	73.5	73.5	10	0.00003	0.660
PCB 126	**211**	86.1	86.1	10	0.1	21.1
PCB 167	**631**	8.85	37.0	10	0.00003	0.0189
PCBs 156 + 157	**1990**	13.8	73.9	10	0.00003	0.0597
PCB 169	ND	10.8	37.0	10	0.03	
PCB 189	**114**	6.15	37.0	10	0.00003	0.00342
		Total TEQ				24.5

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187084	**Units:**	ng/Kg
Lab Code:	E1900165-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/13/19 10:10
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.503g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307664	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307655

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 81	201		91.6	91.6	0.73	1.000	10
PCB 77	4090		93.2	93.2	0.76	1.000	10
PCB 123	465		27.9	36.3	1.54	1.000	10
PCB 118	23800		27.2	36.3	1.53	1.000	10
PCB 114	760		29.1	36.3	1.56	1.000	10
PCB 105	9010		30.4	36.3	1.54	1.001	10
PCB 126	ND	U	35.4	36.3			10
PCB 167	496		13.8	36.3	1.26	1.001	10
PCBs 156 + 157	1520		20.1	72.7	1.23	1.000	10
PCB 169	ND	U	16.8	36.3			10
PCB 189	74.0		13.9	36.3	1.05	1.000	10

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187084	**Units:**	Percent
Lab Code:	E1900165-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/13/19 10:10
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.503g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307664	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307655

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 81L	2000	1112.495	56		25-150	0.77	1.288
PCB 77L	2000	1150.832	58		25-150	0.79	1.307
PCB 123L	2000	1002.478	50		25-150	1.56	1.120
PCB 118L	2000	970.399	49		25-150	1.57	1.129
PCB 114L	2000	957.992	48		25-150	1.56	1.143
PCB 105L	2000	988.281	49		25-150	1.56	1.161
PCB 126L	2000	991.654	50		25-150	1.58	1.240
PCB 167L	2000	1063.638	53		25-150	1.26	1.064
PCBs 156L + 157L	4000	2116.015	53		25-150	1.25	1.089
PCB 169L	2000	1032.192	52		25-150	1.25	1.158
PCB 189L	2000	1038.866	52		25-150	1.06	0.960
PCB 111L	200	50.527	25	Y	30-135	1.62	1.068
PCB 178L	200	63.402	32		30-135	0.98	1.008

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	01/14/19 00:00
Sample Matrix:	Solid	**Date Received:**	02/22/19 16:16
Sample Name:	187084	**Units:**	ng/Kg
Lab Code:	E1900165-005	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method: 1668A
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
PCB 81	**201**	91.6	91.6	10	0.0003	0.0603
PCB 77	**4090**	93.2	93.2	10	0.0001	0.409
PCB 123	**465**	27.9	36.3	10	0.00003	0.0140
PCB 118	**23800**	27.2	36.3	10	0.00003	0.714
PCB 114	**760**	29.1	36.3	10	0.00003	0.0228
PCB 105	**9010**	30.4	36.3	10	0.00003	0.270
PCB 126	ND	35.4	36.3	10	0.1	
PCB 167	**496**	13.8	36.3	10	0.00003	0.0149
PCBs 156 + 157	**1520**	20.1	72.7	10	0.00003	0.0456
PCB 169	ND	16.8	36.3	10	0.03	
PCB 189	**74.0**	13.9	36.3	10	0.00003	0.00222
		Total TEQ				1.55

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900077-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/08/19 10:16
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.224g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307587	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307586

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 81	ND	U	4.13	4.13			1
PCB 77	10.1**K**		2.36	3.83	0.63	1.001	1
PCB 123	ND	U	1.93	3.83			1
PCB 118	19.5		1.07	3.83	1.57	1.000	1
PCB 114	2.57**JK**		1.10	3.83	1.28	1.000	1
PCB 105	12.3		1.27	3.83	1.34	1.000	1
PCB 126	2.63**J**		1.47	3.83	1.37	1.001	1
PCB 167	2.18**J**		0.864	3.83	1.19	1.000	1
PCBs 156 + 157	5.15**J**		1.41	7.66	1.22	1.000	1
PCB 169	1.50**JK**		1.06	3.83	1.87	1.000	1
PCB 189	1.39**JK**		1.21	3.83	0.67	1.000	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900077-01	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/08/19 10:16
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.224g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307587	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307586

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 81L	2000	673.566	34		25-150	0.79	1.286
PCB 77L	2000	967.126	48		25-150	0.76	1.307
PCB 123L	2000	738.503	37		25-150	1.58	1.122
PCB 118L	2000	929.513	46		25-150	1.57	1.131
PCB 114L	2000	905.545	45		25-150	1.56	1.144
PCB 105L	2000	926.957	46		25-150	1.57	1.163
PCB 126L	2000	895.276	45		25-150	1.58	1.242
PCB 167L	2000	892.897	45		25-150	1.26	1.063
PCBs 156L + 157L	4000	1685.502	42		25-150	1.21	1.089
PCB 169L	2000	931.279	47		25-150	1.20	1.156
PCB 189L	2000	981.380	49		25-150	1.05	0.960
PCB 111L	2000	931.655	47		30-135	1.60	1.070
PCB 178L	2000	1061.874	53		30-135	1.08	1.008

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ALS Environmental

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Analyzed:**	03/22/19
Sample Matrix:	Solid	**Date Extracted:**	03/01/19

Lab Control Sample Summary
Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	629508

Lab Control Sample
EQ1900077-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
PCB 77	462	356	130	50-150
PCB 81	362	356	102	50-150
PCB 105	514	356	144	50-150
PCB 114	478	356	134	50-150
PCB 118	84.7	356	24 *	50-150
PCB 123	823	356	231 *	50-150
PCB 126	450	356	126	50-150
PCB 167	410	356	115	50-150
PCB 169	432	356	121	50-150
PCBs 156 + 157	870	712	122	50-150
PCB 189	428	356	120	50-150

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900077-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/22/19 19:22
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.618g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307774	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307768

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
PCB 81	362		25.4	25.4	0.70	1.001	1
PCB 77	462		24.6	24.6	0.73	1.000	1
PCB 123	823		32.3	32.3	1.51	0.998	1
PCB 118	84.7		18.8	18.8	1.53	0.997	1
PCB 114	478		16.0	16.0	1.54	1.000	1
PCB 105	514		30.8	30.8	1.50	1.000	1
PCB 126	450		16.6	16.6	1.50	1.000	1
PCB 167	410		10.5	10.5	1.21	1.000	1
PCBs 156 + 157	870		13.7	13.7	1.20	1.001	1
PCB 169	432		11.9	11.9	1.24	1.000	1
PCB 189	428		8.03	8.03	1.03	1.000	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900165
Project:	HS19021189	**Date Collected:**	NA
Sample Matrix:	Solid	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900077-02	**Basis:**	As Received

Chlorinated Biphenyl Congeners by HRGC/HRMS

Analysis Method:	1668A	**Date Analyzed:**	03/22/19 19:22
Prep Method:	Method Soxhlet	**Date Extracted:**	3/1/19
Sample Amount:	5.618g	**Instrument Name:**	E-HRMS-05
		GC Column:	SPB-OCTYL
Data File Name:	P307774	**Blank File Name:**	P307587
ICAL Date:	05/11/18	**Cal Ver. File Name:**	P307768

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
PCB 81L	2000	156.882	8	**Y**	25-150	0.84	1.286
PCB 77L	2000	230.519	12	**KY**	25-150	0.97	1.307
PCB 123L	2000	412.344	21	**Y**	25-150	1.57	1.123
PCB 118L	2000	655.745	33		25-150	1.56	1.133
PCB 114L	2000	683.437	34		25-150	1.56	1.146
PCB 105L	2000	469.029	23	**Y**	25-150	1.57	1.164
PCB 126L	2000	756.466	38		25-150	1.60	1.242
PCB 167L	2000	2005.767	100		25-150	1.25	1.062
PCBs 156L + 157L	4000	4152.760	104		25-150	1.27	1.086
PCB 169L	2000	2130.160	107		25-150	1.29	1.152
PCB 189L	2000	712.093	36		25-150	1.04	0.960
PCB 111L	2000	186.248	9	**Y**	30-135	1.48	1.075
PCB 178L	2000	2302.401	115		30-135	1.06	1.009

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Chain of Custody Form dated February 27, 2019

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1
DATE: 2-27-2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Labs
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # NA

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187110	MB - PCB	Aroclor Analysis - 8082	Blank - Container
187111	MB - D/F	1613B Dioxin / Furan	
187112	MB - PCB	Aroclor Analysis - 8082	
187113	MB - D/F	1613B Dioxin / Furan	
187114	MB - PCB	Aroclor Analysis - 8082	Blank - Forceps
187115	MB - D/F	1613B Dioxin/Furan	
187116	Bulk	Aroclor Analysis - 8082	2-27-2019 KMC
187117	Bulk	Aroclor Analysis - 8082	
187118	Bulk	Aroclor Analysis - 8082	
187119	Bulk - Carpet	Aroclor Analysis - 8082	
187120	Bulk - Carpet	Aroclor Analysis - 8082	
187121	Bulk - Carpet	Aroclor Analysis - 8082	
187122	Bulk Carpet	Aroclor Analysis - 8082	
187123	Bulk - Carpet	PCB Congeners, 1668-12	

* SAMPLE 187123 is contaminated w/ PCBs > 100,000 ppm *

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other Aroclor - By 3/8/2019
D/F - 2 wk TAT
PCB Congeners - 2 wk TAT

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient KCoghlan@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 2/27/2019

Received by: [signature] of (company name) FED EX Date: 2/27/2019

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

ALS Laboratory Report (Work Order HS19030767) dated April 11, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 11, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19030767**

Laboratory Results for: **22437 Friedman/Rubin S.V.E.C**

Dear Kevin,

ALS Environmental received 14 sample(s) on Feb 28, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Corey Grandits
Project Manager

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Work Order: HS19030767

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19030767-01	187110	Wipe		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-02	187111	Wipe		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-03	187112	Wipe		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-04	187113	Wipe		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-05	187114	Wipe		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-06	187115	Wipe		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-07	187116	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-08	187117	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-09	187118	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-10	187119	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-11	187120	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-12	187121	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-13	187122	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐
HS19030767-14	187123	Solid		27-Feb-2019 00:00	28-Feb-2019 09:00	☐

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Work Order: HS19030767

CASE NARRATIVE

Work Order Comments

- The analyses for Dioxins/Furans and PCB Congeners were subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

ECD Organics by Method SW8082

Batch ID: 138769

Sample ID: 187117 (HS19030767-08)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187119 (HS19030767-10)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187120 (HS19030767-11)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187121 (HS19030767-12)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: 187122 (HS19030767-13)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Batch ID: 138770

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187110
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-01
Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	20-Mar-2019 04:41
Aroclor 1221		U	500	500	ng, Total	1	20-Mar-2019 04:41
Aroclor 1232		U	500	500	ng, Total	1	20-Mar-2019 04:41
Aroclor 1242		U	500	500	ng, Total	1	20-Mar-2019 04:41
Aroclor 1248		U	500	500	ng, Total	1	20-Mar-2019 04:41
Aroclor 1254		U	500	500	ng, Total	1	20-Mar-2019 04:41
Aroclor 1260		U	500	500	ng, Total	1	20-Mar-2019 04:41
PCBs (Total)		U	500	500	ng, Total	1	20-Mar-2019 04:41
Surr: Decachlorobiphenyl	*93.9*			*30-150*	*%REC*	*1*	*20-Mar-2019 04:41*
Surr: Tetrachloro-m-xylene	*88.9*			*30-150*	*%REC*	*1*	*20-Mar-2019 04:41*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C	WorkOrder:	HS19030767
Sample ID:	187111	Lab ID:	HS19030767-02
Collection Date:	27-Feb-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187112
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-03
Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	20-Mar-2019 04:57
Aroclor 1221		U	500	500	ng, Total	1	20-Mar-2019 04:57
Aroclor 1232		U	500	500	ng, Total	1	20-Mar-2019 04:57
Aroclor 1242		U	500	500	ng, Total	1	20-Mar-2019 04:57
Aroclor 1248		U	500	500	ng, Total	1	20-Mar-2019 04:57
Aroclor 1254		U	500	500	ng, Total	1	20-Mar-2019 04:57
Aroclor 1260		U	500	500	ng, Total	1	20-Mar-2019 04:57
PCBs (Total)		U	500	500	ng, Total	1	20-Mar-2019 04:57
Surr: Decachlorobiphenyl	*97.6*			*30-150*	*%REC*	*1*	*20-Mar-2019 04:57*
Surr: Tetrachloro-m-xylene	*88.5*			*30-150*	*%REC*	*1*	*20-Mar-2019 04:57*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C	WorkOrder:	HS19030767
Sample ID:	187113	Lab ID:	HS19030767-04
Collection Date:	27-Feb-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187114
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-05
Matrix:Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541C/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016		U	500	500	ng, Total	1	20-Mar-2019 05:13
Aroclor 1221		U	500	500	ng, Total	1	20-Mar-2019 05:13
Aroclor 1232		U	500	500	ng, Total	1	20-Mar-2019 05:13
Aroclor 1242		U	500	500	ng, Total	1	20-Mar-2019 05:13
Aroclor 1248		U	500	500	ng, Total	1	20-Mar-2019 05:13
Aroclor 1254		U	500	500	ng, Total	1	20-Mar-2019 05:13
Aroclor 1260		U	500	500	ng, Total	1	20-Mar-2019 05:13
PCBs (Total)		U	500	500	ng, Total	1	20-Mar-2019 05:13
Surr: Decachlorobiphenyl	*98.0*			*30-150*	*%REC*	*1*	*20-Mar-2019 05:13*
Surr: Tetrachloro-m-xylene	*91.1*			*30-150*	*%REC*	*1*	*20-Mar-2019 05:13*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C	WorkOrder:	HS19030767
Sample ID:	187115	Lab ID:	HS19030767-06
Collection Date:	27-Feb-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187116
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-07
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016	**660,000**		**25000**	**100000**	**ug/Kg**	100	20-Mar-2019 11:01
Aroclor 1221	U		34000	100000	ug/Kg	100	20-Mar-2019 11:01
Aroclor 1232	U		27000	100000	ug/Kg	100	20-Mar-2019 11:01
Aroclor 1242	U		35000	100000	ug/Kg	100	20-Mar-2019 11:01
Aroclor 1248	U		35000	100000	ug/Kg	100	20-Mar-2019 11:01
Aroclor 1254	U		28000	100000	ug/Kg	100	20-Mar-2019 11:01
Aroclor 1260	U		24000	100000	ug/Kg	100	20-Mar-2019 11:01
PCBs (Total)	**660,000**		**24000**	**100000**	**ug/Kg**	100	20-Mar-2019 11:01
Surr: Decachlorobiphenyl	*77.0*	*J*		*54-143*	*%REC*	*100*	*20-Mar-2019 11:01*
Surr: Tetrachloro-m-xylene	*80.5*	*J*		*50-140*	*%REC*	*100*	*20-Mar-2019 11:01*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187117
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-08
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016	**860,000**		**57000**	**230000**	**ug/Kg**	500	20-Mar-2019 11:17
Aroclor 1221	U		76000	230000	ug/Kg	500	20-Mar-2019 11:17
Aroclor 1232	U		61000	230000	ug/Kg	500	20-Mar-2019 11:17
Aroclor 1242	U		80000	230000	ug/Kg	500	20-Mar-2019 11:17
Aroclor 1248	U		80000	230000	ug/Kg	500	20-Mar-2019 11:17
Aroclor 1254	U		64000	230000	ug/Kg	500	20-Mar-2019 11:17
Aroclor 1260	U		55000	230000	ug/Kg	500	20-Mar-2019 11:17
PCBs (Total)	**860,000**		**55000**	**230000**	**ug/Kg**	500	20-Mar-2019 11:17
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*500*	*20-Mar-2019 11:17*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*500*	*20-Mar-2019 11:17*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187118
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-09
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016	**190,000**		**11000**	**42000**	**ug/Kg**	100	20-Mar-2019 13:07
Aroclor 1221	U		14000	42000	ug/Kg	100	20-Mar-2019 13:07
Aroclor 1232	U		11000	42000	ug/Kg	100	20-Mar-2019 13:07
Aroclor 1242	U		15000	42000	ug/Kg	100	20-Mar-2019 13:07
Aroclor 1248	U		15000	42000	ug/Kg	100	20-Mar-2019 13:07
Aroclor 1254	U		12000	42000	ug/Kg	100	20-Mar-2019 13:07
Aroclor 1260	U		10000	42000	ug/Kg	100	20-Mar-2019 13:07
PCBs (Total)	**190,000**		**10000**	**42000**	**ug/Kg**	100	20-Mar-2019 13:07
Surr: Decachlorobiphenyl	*74.5*	*J*		*54-143*	*%REC*	*100*	*20-Mar-2019 13:07*
Surr: Tetrachloro-m-xylene	*99.0*	*J*		*50-140*	*%REC*	*100*	*20-Mar-2019 13:07*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187119
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-10
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016	**170,000**		**6800**	**27000**	**ug/Kg**	500	20-Mar-2019 11:48
Aroclor 1221	U		9000	27000	ug/Kg	500	20-Mar-2019 11:48
Aroclor 1232	U		7200	27000	ug/Kg	500	20-Mar-2019 11:48
Aroclor 1242	U		9500	27000	ug/Kg	500	20-Mar-2019 11:48
Aroclor 1248	U		9500	27000	ug/Kg	500	20-Mar-2019 11:48
Aroclor 1254	U		7600	27000	ug/Kg	500	20-Mar-2019 11:48
Aroclor 1260	U		6400	27000	ug/Kg	500	20-Mar-2019 11:48
PCBs (Total)	**170,000**		**6400**	**27000**	**ug/Kg**	500	20-Mar-2019 11:48
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*500*	*20-Mar-2019 11:48*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*500*	*20-Mar-2019 11:48*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187120
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-11
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016	**180,000**		**5600**	**22000**	**ug/Kg**	200	20-Mar-2019 12:04
Aroclor 1221	U		7500	22000	ug/Kg	200	20-Mar-2019 12:04
Aroclor 1232	U		6000	22000	ug/Kg	200	20-Mar-2019 12:04
Aroclor 1242	U		7900	22000	ug/Kg	200	20-Mar-2019 12:04
Aroclor 1248	U		7900	22000	ug/Kg	200	20-Mar-2019 12:04
Aroclor 1254	U		6300	22000	ug/Kg	200	20-Mar-2019 12:04
Aroclor 1260	U		5300	22000	ug/Kg	200	20-Mar-2019 12:04
PCBs (Total)	**180,000**		**5300**	**22000**	**ug/Kg**	200	20-Mar-2019 12:04
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*200*	*20-Mar-2019 12:04*
Surr: Tetrachloro-m-xylene	*104*	*J*		*50-140*	*%REC*	*200*	*20-Mar-2019 12:04*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187121
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-12
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016	U		2300	9000	ug/Kg	200	20-Mar-2019 14:42
Aroclor 1221	U		3000	9000	ug/Kg	200	20-Mar-2019 14:42
Aroclor 1232	**90,000**		**2400**	**9000**	**ug/Kg**	200	20-Mar-2019 14:42
Aroclor 1242	U		3200	9000	ug/Kg	200	20-Mar-2019 14:42
Aroclor 1248	U		3200	9000	ug/Kg	200	20-Mar-2019 14:42
Aroclor 1254	U		2500	9000	ug/Kg	200	20-Mar-2019 14:42
Aroclor 1260	U		2200	9000	ug/Kg	200	20-Mar-2019 14:42
PCBs (Total)	**90,000**		**2200**	**9000**	**ug/Kg**	200	20-Mar-2019 14:42
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*200*	*20-Mar-2019 14:42*
Surr: Tetrachloro-m-xylene	*130*	*J*		*50-140*	*%REC*	*200*	*20-Mar-2019 14:42*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Sample ID: 187122
Collection Date: 27-Feb-2019 00:00

ANALYTICAL REPORT
WorkOrder:HS19030767
Lab ID:HS19030767-13
Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
PCBS BY SW8082A		**Method:SW8082**			Prep:SW3541/3665A / 18-Mar-2019		Analyst: JBA
Aroclor 1016	U		14000	58000	ug/Kg	500	20-Mar-2019 14:58
Aroclor 1221	U		19000	58000	ug/Kg	500	20-Mar-2019 14:58
Aroclor 1232	**750,000**		**16000**	**58000**	**ug/Kg**	500	20-Mar-2019 14:58
Aroclor 1242	U		20000	58000	ug/Kg	500	20-Mar-2019 14:58
Aroclor 1248	U		20000	58000	ug/Kg	500	20-Mar-2019 14:58
Aroclor 1254	U		16000	58000	ug/Kg	500	20-Mar-2019 14:58
Aroclor 1260	U		14000	58000	ug/Kg	500	20-Mar-2019 14:58
PCBs (Total)	**750,000**		**14000**	**58000**	**ug/Kg**	500	20-Mar-2019 14:58
Surr: Decachlorobiphenyl	*0*	*JS*		*54-143*	*%REC*	*500*	*20-Mar-2019 14:58*
Surr: Tetrachloro-m-xylene	*0*	*JS*		*50-140*	*%REC*	*500*	*20-Mar-2019 14:58*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437 Friedman/Rubin S.V.E.C		WorkOrder:HS19030767
Sample ID:	187123		Lab ID:HS19030767-14
Collection Date:	27-Feb-2019 00:00		Matrix:Solid

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - PCB CONGENERS		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0		NA	1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

RIGHT SOLUTIONS | RIGHT PARTNER

WEIGHT LOG

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
WorkOrder: HS19030767

Batch ID: 138769 **Method:** PCBS BY SW8082A **Prep:** PCBPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19030767-07	1	0.5	10 (mL)	20
HS19030767-08	1	1.1	10 (mL)	9.091
HS19030767-09	1	1.18	10 (mL)	8.475
HS19030767-10	1	9.32	10 (mL)	1.073
HS19030767-11	1	4.5	10 (mL)	2.222
HS19030767-12	1	11.11	10 (mL)	0.9001
HS19030767-13	1	4.35	10 (mL)	2.299

Batch ID: 138770 **Method:** PCBS BY SW8082A **Prep:** PCBWIPEPR_SOX

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS19030767-01	1	1	10 (mL)	10
HS19030767-03	1	1	10 (mL)	10
HS19030767-05	1	1	10 (mL)	10

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
WorkOrder: HS19030767

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 138769	**Test Name :** PCBS BY SW8082A			**Matrix:** Solid		
HS19030767-07	187116	27 Feb 2019 00:00		18 Mar 2019 08:00	20 Mar 2019 11:01	100
HS19030767-08	187117	27 Feb 2019 00:00		18 Mar 2019 08:00	20 Mar 2019 11:17	500
HS19030767-09	187118	27 Feb 2019 00:00		18 Mar 2019 08:00	20 Mar 2019 13:07	100
HS19030767-10	187119	27 Feb 2019 00:00		18 Mar 2019 08:00	20 Mar 2019 11:48	500
HS19030767-11	187120	27 Feb 2019 00:00		18 Mar 2019 08:00	20 Mar 2019 12:04	200
HS19030767-12	187121	27 Feb 2019 00:00		18 Mar 2019 08:00	20 Mar 2019 14:42	200
HS19030767-13	187122	27 Feb 2019 00:00		18 Mar 2019 08:00	20 Mar 2019 14:58	500
Batch ID 138770	**Test Name :** PCBS BY SW8082A			**Matrix:** Wipe		
HS19030767-01	187110	27 Feb 2019 00:00		18 Mar 2019 08:28	20 Mar 2019 04:41	1
HS19030767-03	187112	27 Feb 2019 00:00		18 Mar 2019 08:28	20 Mar 2019 04:57	1
HS19030767-05	187114	27 Feb 2019 00:00		18 Mar 2019 08:28	20 Mar 2019 05:13	1
Batch ID R336393	**Test Name :** SUBCONTRACT ANALYSIS - PCB CONGENERS			**Matrix:** Solid		
HS19030767-14	187123	27 Feb 2019 00:00			11 Apr 2019 12:36	1
Batch ID R336393	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Wipe		
HS19030767-02	187111	27 Feb 2019 00:00			11 Apr 2019 12:36	1
HS19030767-04	187113	27 Feb 2019 00:00			11 Apr 2019 12:36	1
HS19030767-06	187115	27 Feb 2019 00:00			11 Apr 2019 12:36	1

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
WorkOrder: HS19030767

QC BATCH REPORT NEW

Batch ID: 138769 (0) **Instrument: ECD_7** **Method: PCBS BY SW8082A**

MBLK Sample ID: **MBLK-138769** Units: **ug/Kg** Analysis Date: **20-Mar-2019 06:00**
Client ID: Run ID: **ECD_7_334911** SeqNo: **4998363** PrepDate: **18-Mar-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	17								
Aroclor 1221	U	17								
Aroclor 1232	U	17								
Aroclor 1242	U	17								
Aroclor 1248	U	17								
Aroclor 1254	U	17								
Aroclor 1260	U	17								
PCBs (Total)	U	17								
Surr: Decachlorobiphenyl	*5.483*	*1.6*	*6.667*	*0*	*82.2*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.007*	*1.6*	*6.667*	*0*	*90.1*	*50 - 140*				

LCS Sample ID: **LCS-138769** Units: **ug/Kg** Analysis Date: **20-Mar-2019 06:16**
Client ID: Run ID: **ECD_7_334911** SeqNo: **4998364** PrepDate: **18-Mar-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	143.7	17	166.7	0	86.2	53 - 135				
Aroclor 1260	147.4	17	166.7	0	88.4	54 - 137				
Surr: Decachlorobiphenyl	*6.4*	*1.6*	*6.667*	*0*	*96.0*	*54 - 143*				
Surr: Tetrachloro-m-xylene	*6.316*	*1.6*	*6.667*	*0*	*94.7*	*50 - 140*				

LCSD Sample ID: **LCSD-138769** Units: **ug/Kg** Analysis Date: **20-Mar-2019 06:31**
Client ID: Run ID: **ECD_7_334911** SeqNo: **4998365** PrepDate: **18-Mar-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	159.5	17	166.7	0	95.7	53 - 135	143.7	10.4	30	
Aroclor 1260	146.3	17	166.7	0	87.8	54 - 137	147.4	0.772	30	
Surr: Decachlorobiphenyl	*6.282*	*1.6*	*6.667*	*0*	*94.2*	*54 - 143*	*6.4*	*1.87*	*30*	
Surr: Tetrachloro-m-xylene	*6.272*	*1.6*	*6.667*	*0*	*94.1*	*55 - 137*	*6.316*	*0.699*	*30*	

The following samples were analyzed in this batch: HS19030767-07 HS19030767-08 HS19030767-09 HS19030767-10 HS19030767-11 HS19030767-12 HS19030767-13

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
WorkOrder: HS19030767

QC BATCH REPORT NEW

Batch ID: 138770 (0) **Instrument: ECD_7** **Method: PCBS BY SW8082A**

MBLK Sample ID: **MBLK-138770** Units: **ng, Total** Analysis Date: **20-Mar-2019 03:22**
Client ID: Run ID: **ECD_7_334878** SeqNo: **4997845** PrepDate: **18-Mar-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	500								
Aroclor 1221	U	500								
Aroclor 1232	U	500								
Aroclor 1242	U	500								
Aroclor 1248	U	500								
Aroclor 1254	U	500								
Aroclor 1260	U	500								
PCBs (Total)	U	500								
Surr: Decachlorobiphenyl	*194.4*	*0*	*200*	*0*	*97.2*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*195.3*	*0*	*200*	*0*	*97.6*	*30 - 150*				

LCS Sample ID: **LCS-138770** Units: **ng, Total** Analysis Date: **20-Mar-2019 04:09**
Client ID: Run ID: **ECD_7_334878** SeqNo: **4997846** PrepDate: **18-Mar-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4921	500	5000	0	98.4	50 - 130				
Aroclor 1260	4339	500	5000	0	86.8	50 - 130				
Surr: Decachlorobiphenyl	*195.8*	*0*	*200*	*0*	*97.9*	*30 - 150*				
Surr: Tetrachloro-m-xylene	*194.2*	*0*	*200*	*0*	*97.1*	*30 - 150*				

LCSD Sample ID: **LCSD-138770** Units: **ng, Total** Analysis Date: **20-Mar-2019 04:25**
Client ID: Run ID: **ECD_7_334878** SeqNo: **4997847** PrepDate: **18-Mar-2019** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	4861	500	5000	0	97.2	50 - 130	4921	1.22	30	
Aroclor 1260	4450	500	5000	0	89.0	50 - 130	4339	2.52	30	
Surr: Decachlorobiphenyl	*191.6*	*0*	*200*	*0*	*95.8*	*30 - 150*	*195.8*	*2.2*	*30*	
Surr: Tetrachloro-m-xylene	*187.4*	*0*	*200*	*0*	*93.7*	*30 - 150*	*194.2*	*3.57*	*30*	

The following samples were analyzed in this batch: HS19030767-01 HS19030767-03 HS19030767-05

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ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
WorkOrder: **HS19030767**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
California	2919, 2018-2019	30-Apr-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437 Friedman/Rubin S.V.E.C
Work Order: HS19030767

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS19030767-01	187110	Login	3/15/2019 11:38:45 AM	JML	SPA208
HS19030767-02	187111	Login	3/15/2019 11:38:46 AM	JML	Sub
HS19030767-03	187112	Login	3/15/2019 11:38:46 AM	JML	SPA208
HS19030767-04	187113	Login	3/15/2019 11:38:47 AM	JML	Sub
HS19030767-05	187114	Login	3/15/2019 11:38:48 AM	JML	SPA208
HS19030767-06	187115	Login	3/15/2019 11:38:48 AM	JML	Sub
HS19030767-07	187116	Login	3/15/2019 11:38:49 AM	JML	SPA208
HS19030767-08	187117	Login	3/15/2019 11:38:49 AM	JML	SPA208
HS19030767-09	187118	Login	3/15/2019 11:38:50 AM	JML	SPA208
HS19030767-10	187119	Login	3/15/2019 11:38:50 AM	JML	SPA208
HS19030767-11	187120	Login	3/15/2019 11:38:51 AM	JML	SPA208
HS19030767-12	187121	Login	3/15/2019 11:38:51 AM	JML	SPA208
HS19030767-13	187122	Login	3/15/2019 11:38:52 AM	JML	SPA208
HS19030767-14	187123	Login	3/15/2019 11:38:53 AM	JML	Sub

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ALS Houston, US Date: 11-Apr-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Work Order: HS19030767
Date/Time Received: **28-Feb-2019 09:00**
Received by: **CGG**

Checklist completed by: *Nilesh D. Ranchod* eSignature 28-Feb-2019 Date
Reviewed by: *Corey Grandits* eSignature 1-Mar-2019 Date

Matrices: **Soild**
Carrier name: **FedEx Priority Overnight**

	Yes	No	
Shipping container/cooler in good condition?	☑	☐	Not Present ☐
Custody seals intact on shipping container/cooler?	☐	☐	Not Present ☑
Custody seals intact on sample bottles?	☐	☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	Not Present ☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	
Samplers name present on COC?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s):	19.6C/19.6C UC/C	IR # 25
Cooler(s)/Kit(s):	Blue	
Date/Time sample(s) sent to storage:	02/28/2019 18:00	

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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Environmental Health & Engineering, Inc.

CHAIN OF CUS

HS19030767

Environmental Health & Engineering
22437 Friedman/Rubin S.V.E.C

ATTACHMENT 1

FF

TO: ALS Environmental Labs
Houston, TX

Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # NA

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187110	MB - PCB	Aroclor Analysis - 8082	Blank - [illegible]
187111	MB - DIF	1613B Dioxin/Furan	↓
187112	MB - PCB	Aroclor Analysis - 8082	↓
187113	MB - DIF	1613B Dioxin/Furan	↓
187114	MB - PCB	Aroclor Analysis - 8082	Blank - Forced
187115	MB - DIF	1613B Dioxin/Furan	↓
187116	Bulk	Aroclor Analysis - 8082	2-27-2019 KRC
187117	Bulk	Aroclor Analysis - 8082	↓
187118	Bulk	Aroclor Analysis - 8082	↓
187119	Bulk - Carpet	Aroclor Analysis - 8082	↓
187120	Bulk - Carpet	Aroclor Analysis - 8082	↓
187121	Bulk - Carpet	Aroclor Analysis - 8082	↓
187122	Bulk Carpet	Aroclor Analysis - 8082	↓
187123	Bulk - Carpet	PCB Congeners Lw Ho - 12	↓
X Sample 187123 is contaminated w/ PCBs > [illegible] X			

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other Aroclor - By 3/8/2019; DIF - 2 wk TAT; PCB Congeners - 2 wk TAT

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☒ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient Kcoghlan@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 2/27/2019

Received by: [signature] of (company name) FedEx Date: 2/27/2019

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) Corey G - ALS Date: 2/28/2019 0400

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

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April 10, 2019

Service Request No:E1900221

ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS19030767

Enclosed are the results of the sample(s) submitted to our laboratory March 04, 2019
For your reference, these analyses have been assigned our service request number **E1900221.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS - HOU	**Service Request No.:**	E1900221
Project:	HS19030767	**Date Received:**	03/04/19
Sample Matrix:	Wipe		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Four samples were received for analysis at ALS Environmental High-Res in Houston on 03/04/19.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Sample 187123 was received, lab perform soxhlet extraction and consumed the entire sample aliquot. Unknown interferences caused the extraction laboratory problems during the blow down. The extract became a vicious substance and then proceeded to be solidified. No additional volume available to perform a waste dilution (hexane shake).

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1900117: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. OCDD recovery in the LCS was recovered above QC limits; DLCS recovery with QC limits. Suspected double or improper spike for OCDD in the LCS; the associated compound should be potentially bias high in the samples; all samples have OCDD > 3.51 pg.

B flags – Method Blank

The Method Blank EQ1900117-01 contained low levels of 1,2,3,4,6,7,8-HpCDD, OCDD, 1,2,3,4,6,7,8-HpCDF and OCDF above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Y flag – Cleanup Standard

The recovery for the cleanup standard, 37Cl-2,3,7,8-TCDD is below control limits in sample E1900221-002. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

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K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US
Project: HS19030767

Service Request:E1900221

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900221-001	187111	2/27/2019	0000
E1900221-002	187113	2/27/2019	0000
E1900221-003	187115	2/27/2019	0000

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Service Request Summary

ATTACHMENT 1

Folder #: **E1900221**
Client Name: ALS Environmental - US
Project Name: HS19030767
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 03/04/19
Internal Due Date: 4/1/2019
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: HS19030767
EDD: No EDD Specified

4 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 6D
Pressure Gas:
Rush

				HOUSTON	
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**	Cl Biphen Cong/1668A	Dioxins Furans/1613B
E1900221-001	187111	Wipe	02/27/19 0000		II
E1900221-002	187113	Wipe	02/27/19 0000		II
E1900221-003	187115	Wipe	02/27/19 0000		II
E1900221-004	187123	Solid	02/27/19 0000	II	

Folder Comments:

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900221**	Project Chemist:	Corey Grandits
Client Name:	ALS Environmental - US	Originating Lab:	HOUSTON
Project Name:	HS19030767	Logged By:	CGRANDITS
Project Number:		Date Received:	03/04/19
		Internal Due Date:	4/1/2019
Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA	QAP:	LAB QAP
		Qualifier Set:	Lab Standard
		Formset:	Lab Standard
		Merged?:	N
Phone Number:	281-530-5656	Report to MDL?:	Y
Cell Number:		P.O. Number:	HS19030767
Fax Number:	281-530-5887	EDD:	No EDD Specified
E-mail:	rj.modashia@alsglobal.com		

4 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 6D

Pressure Gas:

Rush

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	Cl Biphen Cong/1668A	1	Hot sample

Print

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ED_004522_00089767-00630

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E190021 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
04/03/19	JC	001-003

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
4/4/19	LG	001-003

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

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Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 10921

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

E1900221 5
ALS Laboratory Group
HS19030767

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Corey Grandits
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Corey.Grandits@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS19030767
TSR:	Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19030767-02**	**187111**	**Wipe**	**27 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			19 Mar 2019
2.	**HS19030767-04**	**187113**	**Wipe**	**27 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			19 Mar 2019
3.	**HS19030767-06**	**187115**	**Wipe**	**27 Feb 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			19 Mar 2019
4.	**HS19030767-14**	**187123**	**Solid**	**27 Feb 2019 00:00**
	Sub 1668A WHO 12 PCB Congeners + Homologs			19 Mar 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By: Allison Dobson Date/Time: 03/05/19 15:30
Received By: [illegible] Date/Time: 3/05/19 15:32
Cooler ID(s): Temperature(s):

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ALS Environmental

Cooler Receipt Form

ATTACHMENT 1

Project Chemist: CG

Client/Project: ALS

Thermometer ID: SMOH

Date/Time Received: 3-9-19 Initials: CG Date/Time Logged in: 3-9-19 Initials: CG

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☑ ALS Courier ○ Client
2. Samples received in: ☑ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ○ Yes ☑ No
   Were they intact? ○ Yes ○ No ☑ N/A
   Were they signed and dated? ○ Yes ○ No ☑ N/A
   If yes, how many and where? —
4. Packing Material: ○ Inserts ☑ Baggies ○ Bubble Wrap ○ Gel Packs ☑ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ☑ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
—		3-9-19		CG	1.1/1.5	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☑ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☑ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☑ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ☑ Yes ○ No
10. Did sample labels and tags agree with custody documents? ☑ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900221 5

ALS Laboratory Group
HS19030767

Effec

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10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
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www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 333603 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/TWOODS **Prep Method:** Method Soxhlet **Prep Date/Time:** 3/26/19 15:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900221-001	187111	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
2	E1900221-002	187113	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
3	E1900221-003	187115	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
4	EQ1900117-01	MB		1613B/Dioxins Furans			Wipes	1Sample	
5	EQ1900117-02	LCS		1613B/Dioxins Furans			Wipes	1Sample	
6	EQ1900117-03	DLCS		1613B/Dioxins Furans			Wipes	1Sample	

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard Inventory ID 197847 Logbook Ref: 197847 tw 03/19/19 8ng/ml Expires On: 09/15/2019

E1900221-001 100.00µL E1900221-002 100.00µL E1900221-003 100.00µL EQ1900117-01 100.00µL EQ1900117-02 100.00µL EQ1900117-03 100.00µL

Name: 197968 JG 3/25/19 2-20ng/ml Inventory ID 197968 Logbook Ref: 197968 Expires On: 09/21/2019

EQ1900117-02 100.00µL EQ1900117-03 100.00µL

Name: 1613B Labeled Working Standard Inventory ID 198033 Logbook Ref: 198033 JG 3/26/19 2-4ngml Expires On: 09/22/2019

E1900221-001 1,000.00µL E1900221-002 1,000.00µL E1900221-003 1,000.00µL EQ1900117-01 1,000.00µL EQ1900117-02 1,000.00µL EQ1900117-03 1,000.00µL

Preparation Materials

Carbon, High Purity	JG 3/22/19 (197951)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	197792 JG 3/18/19 (197792)
Hexanes 95%	tw 03/4/19 hexane (197529)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	196891 2/12/2019 (196891)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Silica Gel	tw 021419 silica gel (197192)	sulfuric acid	tw 1/28/19 sulfuric (196582)
Toluene 99.9% Minimum	JG 3/22/19 (197957)				

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	3/26/19 15:00	Started:	3/27/19 09:00	Started:	3/27/19 10:00	Started:	3/27/19 16:00
Finished:	3/27/19 08:00	Finished:	3/27/19 10:00	Finished:	3/27/19 13:00	Finished:	3/27/19 17:01
By:	JGUIN	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments:

Reviewed By: LG Date: 04/04/19

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 333603
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/26/19 15:00

Chain of Custody

Relinquished By:		Date:	Extracts Examined
Received By:		Date:	Yes No

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Analytical Results

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187111	**Units:**	pg
Lab Code:	E1900221-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 21:30
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521212	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.41	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.655	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.774	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.676	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.683	25.0			1
1,2,3,4,6,7,8-HpCDD	ND	U	1.18	25.0			1
OCDD	3.49**BJ**		1.25	50.0	0.83	1.000	1
2,3,7,8-TCDF	ND	U	1.71	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.19	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.23	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.425	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.419	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.657	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.441	25.0			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.413	25.0			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.595	25.0			1
OCDF	ND	U	1.24	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187111	**Units:**	pg
Lab Code:	E1900221-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 21:30
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521212	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.41	5.00			1
Total Penta-Dioxins	ND	U	0.655	25.0			1
Total Hexa-Dioxins	1.10**J**		0.706	25.0	1.35		1
Total Hepta-Dioxins	ND	U	1.18	25.0			1
Total Tetra-Furans	ND	U	1.71	5.00			1
Total Penta-Furans	ND	U	1.21	25.0			1
Total Hexa-Furans	ND	U	0.474	25.0			1
Total Hepta-Furans	ND	U	0.495	25.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187111	**Units:**	Percent
Lab Code:	E1900221-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 21:30
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521212	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1161.582	58		25-164	0.79	1.019
13C-1,2,3,7,8-PeCDD	2000	1373.794	69		25-181	1.61	1.180
13C-1,2,3,4,7,8-HxCDD	2000	1161.634	58		32-141	1.31	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1635.069	82		28-130	1.31	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1205.432	60		23-140	1.09	1.067
13C-OCDD	4000	1687.795	42		17-157	0.90	1.141
13C-2,3,7,8-TCDF	2000	1195.082	60		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	1266.108	63		24-185	1.58	1.139
13C-2,3,4,7,8-PeCDF	2000	1245.064	62		21-178	1.59	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1180.915	59		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1302.000	65		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1092.016	55		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1251.752	63		28-136	0.54	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1154.421	58		28-143	0.45	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	1118.609	56		26-138	0.45	1.079
37Cl-2,3,7,8-TCDD	800	483.292	60		35-197	NA	1.020

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187111	**Units:**	pg
Lab Code:	E1900221-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	2.41	5.00	1	1	
1,2,3,7,8-PeCDD	ND	0.655	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.774	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.676	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.683	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	ND	1.18	25.0	1	0.01	
OCDD	**3.49**	1.25	50.0	1	0.0003	0.00105
2,3,7,8-TCDF	ND	1.71	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.19	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.23	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.425	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.419	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.657	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.441	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	ND	0.413	25.0	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	0.595	25.0	1	0.01	
OCDF	ND	1.24	50.0	1	0.0003	
		Total TEQ				0.00105

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187113	**Units:**	pg
Lab Code:	E1900221-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 22:19
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521213	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	6.21	6.21			1
1,2,3,7,8-PeCDD	ND	U	1.10	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	1.02	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.887	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.896	25.0			1
1,2,3,4,6,7,8-HpCDD	ND	U	0.824	25.0			1
OCDD	3.51**BJK**		1.40	50.0	0.55	1.000	1
2,3,7,8-TCDF	ND	U	3.31	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.52	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.41	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.423	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.425	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.679	25.0			1
2,3,4,6,7,8-HxCDF	0.619**JK**		0.422	25.0	1.54	1.000	1
1,2,3,4,6,7,8-HpCDF	ND	U	0.583	25.0			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.816	25.0			1
OCDF	ND	U	1.67	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187113	**Units:**	pg
Lab Code:	E1900221-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 22:19
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521213	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	6.21	6.21			1
Total Penta-Dioxins	ND	U	1.10	25.0			1
Total Hexa-Dioxins	ND	U	0.926	25.0			1
Total Hepta-Dioxins	ND	U	0.824	25.0			1
Total Tetra-Furans	ND	U	3.31	5.00			1
Total Penta-Furans	ND	U	1.46	25.0			1
Total Hexa-Furans	ND	U	0.473	25.0			1
Total Hepta-Furans	ND	U	0.687	25.0			1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187113	**Units:**	Percent
Lab Code:	E1900221-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 22:19
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521213	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	546.091	27		25-164	0.78	1.020
13C-1,2,3,7,8-PeCDD	2000	882.324	44		25-181	1.58	1.181
13C-1,2,3,4,7,8-HxCDD	2000	854.442	43		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1143.275	57		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	872.937	44		23-140	1.05	1.066
13C-OCDD	4000	1264.143	32		17-157	0.89	1.142
13C-2,3,7,8-TCDF	2000	561.866	28		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	753.590	38		24-185	1.65	1.139
13C-2,3,4,7,8-PeCDF	2000	814.501	41		21-178	1.60	1.171
13C-1,2,3,4,7,8-HxCDF	2000	830.618	42		26-152	0.53	0.971
13C-1,2,3,6,7,8-HxCDF	2000	898.458	45		26-123	0.51	0.974
13C-1,2,3,7,8,9-HxCDF	2000	734.226	37		29-147	0.55	1.008
13C-2,3,4,6,7,8-HxCDF	2000	907.200	45		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	823.733	41		28-143	0.43	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	791.232	40		26-138	0.43	1.079
37Cl-2,3,7,8-TCDD	800	218.653	27	Y	35-197	NA	1.020

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187113	**Units:**	pg
Lab Code:	E1900221-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	6.21	6.21	1	1	
1,2,3,7,8-PeCDD	ND	1.10	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	1.02	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.887	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.896	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	ND	0.824	25.0	1	0.01	
OCDD	**3.51**	1.40	50.0	1	0.0003	0.00105
2,3,7,8-TCDF	ND	3.31	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.52	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.41	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.423	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.425	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.679	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	**0.619**	0.422	25.0	1	0.1	0.0619
1,2,3,4,6,7,8-HpCDF	ND	0.583	25.0	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	0.816	25.0	1	0.01	
OCDF	ND	1.67	50.0	1	0.0003	
		Total TEQ				0.0630

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187115	**Units:**	pg
Lab Code:	E1900221-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 23:07
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521214	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.94	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.479	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.630	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.534	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.548	25.0			1
1,2,3,4,6,7,8-HpCDD	ND	U	0.485	25.0			1
OCDD	1.96	**BJK**	1.09	50.0	0.34	1.001	1
2,3,7,8-TCDF	ND	U	1.43	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.983	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.07	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.267	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.281	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.430	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.280	25.0			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.300	25.0			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.450	25.0			1
OCDF	ND	U	1.97	50.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187115	**Units:**	pg
Lab Code:	E1900221-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 23:07
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521214	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.94	5.00			1
Total Penta-Dioxins	ND	U	0.479	25.0			1
Total Hexa-Dioxins	ND	U	0.566	25.0			1
Total Hepta-Dioxins	ND	U	0.485	25.0			1
Total Tetra-Furans	ND	U	1.43	5.00			1
Total Penta-Furans	ND	U	1.03	25.0			1
Total Hexa-Furans	ND	U	0.306	25.0			1
Total Hepta-Furans	ND	U	0.368	25.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187115	**Units:**	Percent
Lab Code:	E1900221-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 23:07
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521214	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1118.701	56		25-164	0.80	1.019
13C-1,2,3,7,8-PeCDD	2000	1367.693	68		25-181	1.62	1.180
13C-1,2,3,4,7,8-HxCDD	2000	1198.569	60		32-141	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1606.458	80		28-130	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1225.335	61		23-140	1.07	1.067
13C-OCDD	4000	1843.091	46		17-157	0.92	1.142
13C-2,3,7,8-TCDF	2000	1129.869	56		24-169	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1324.099	66		24-185	1.61	1.139
13C-2,3,4,7,8-PeCDF	2000	1242.916	62		21-178	1.60	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1291.773	65		26-152	0.51	0.972
13C-1,2,3,6,7,8-HxCDF	2000	1338.368	67		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1089.037	54		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1317.806	66		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1185.645	59		28-143	0.44	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	1157.673	58		26-138	0.42	1.079
37Cl-2,3,7,8-TCDD	800	449.001	56		35-197	NA	1.020

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	02/27/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/04/19 15:32
Sample Name:	187115	**Units:**	pg
Lab Code:	E1900221-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	2.94	5.00	1	1	
1,2,3,7,8-PeCDD	ND	0.479	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	0.630	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.534	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.548	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	ND	0.485	25.0	1	0.01	
OCDD	**1.96**	1.09	50.0	1	0.0003	0.000588
2,3,7,8-TCDF	ND	1.43	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	0.983	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.07	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.267	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.281	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.430	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.280	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	ND	0.300	25.0	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	0.450	25.0	1	0.01	
OCDF	ND	1.97	50.0	1	0.0003	
		Total TEQ				0.000588

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900117-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 19:53
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521210	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	3.28	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.837	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	0.679	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.605	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.607	25.0			1
1,2,3,4,6,7,8-HpCDD	2.22**J**		1.01	25.0	0.93	1.000	1
OCDD	14.3**JK**		1.59	50.0	1.06	1.000	1
2,3,7,8-TCDF	ND	U	1.53	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.997	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.02	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.442	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.436	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.631	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.452	25.0			1
1,2,3,4,6,7,8-HpCDF	0.786**JK**		0.633	25.0	1.24	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.976	25.0			1
OCDF	5.86**J**		1.16	50.0	1.02	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900117-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 19:53
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521210	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	3.28	5.00			1
Total Penta-Dioxins	ND	U	0.837	25.0			1
Total Hexa-Dioxins	ND	U	0.627	25.0			1
Total Hepta-Dioxins	2.22**J**		1.01	25.0	0.93		1
Total Tetra-Furans	ND	U	1.53	5.00			1
Total Penta-Furans	ND	U	1.01	25.0			1
Total Hexa-Furans	ND	U	0.481	25.0			1
Total Hepta-Furans	ND	U	0.786	25.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900117-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/28/19 19:53
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521210	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	918.922	46		25-164	0.79	1.019
13C-1,2,3,7,8-PeCDD	2000	1072.216	54		25-181	1.64	1.180
13C-1,2,3,4,7,8-HxCDD	2000	981.056	49		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1289.049	64		28-130	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	954.253	48		23-140	1.08	1.067
13C-OCDD	4000	1372.005	34		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	933.660	47		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	1010.436	51		24-185	1.59	1.139
13C-2,3,4,7,8-PeCDF	2000	997.877	50		21-178	1.60	1.170
13C-1,2,3,4,7,8-HxCDF	2000	966.254	48		26-152	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	2000	1032.701	52		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	902.060	45		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1026.578	51		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	941.326	47		28-143	0.44	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	895.317	45		26-138	0.43	1.080
37Cl-2,3,7,8-TCDD	800	374.973	47		35-197	NA	1.020

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ALS Environmental

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Analyzed:**	03/29/19
Sample Matrix:	Wipe	**Date Extracted:**	03/26/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	pg
Prep Method:	Method	**Basis:**	As Received
		Analysis Lot:	630734

	Lab Control Sample EQ1900117-02			Duplicate Lab Control Sample EQ1900117-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	1400	1000	140	899	1000	90	70-140	43	50
1,2,3,4,7,8-HxCDD	928	1000	93	1000	1000	100	70-164	8	50
1,2,3,6,7,8-HxCDD	866	1000	87	865	1000	86	76-134	<1	50
1,2,3,7,8,9-HxCDD	923	1000	92	924	1000	92	64-162	<1	50
1,2,3,7,8-PeCDD	899	1000	90	931	1000	93	70-142	4	50
2,3,7,8-TCDD	195	200	98	182	200	91	67-158	7	50
OCDD	9410	2000	470 *	1900	2000	95	78-144	133 *	50
1,2,3,4,6,7,8-HpCDF	955	1000	95	933	1000	93	82-122	2	50
1,2,3,4,7,8,9-HpCDF	921	1000	92	958	1000	96	78-138	4	50
1,2,3,4,7,8-HxCDF	893	1000	89	907	1000	91	72-134	2	50
1,2,3,6,7,8-HxCDF	918	1000	92	954	1000	95	84-130	4	50
1,2,3,7,8,9-HxCDF	886	1000	89	913	1000	91	78-130	3	50
1,2,3,7,8-PeCDF	877	1000	88	894	1000	89	80-134	2	50
2,3,4,6,7,8-HxCDF	883	1000	88	941	1000	94	70-156	6	50
2,3,4,7,8-PeCDF	931	1000	93	973	1000	97	68-160	4	50
2,3,7,8-TCDF	212	200	106	168	200	84	75-158	24	50
OCDF	2210	2000	111	1940	2000	97	63-170	13	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900117-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/29/19 00:45
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521216	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	195		2.37	5.00	0.78	1.001	1
1,2,3,7,8-PeCDD	899		0.584	25.0	1.57	1.000	1
1,2,3,4,7,8-HxCDD	928		0.887	25.0	1.26	1.000	1
1,2,3,6,7,8-HxCDD	866		0.815	25.0	1.28	1.000	1
1,2,3,7,8,9-HxCDD	923		0.806	25.0	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	1400		3.08	25.0	1.04	1.000	1
OCDD	9410		1.38	50.0	0.89	1.000	1
2,3,7,8-TCDF	212		1.20	5.00	0.73	1.001	1
1,2,3,7,8-PeCDF	877		0.631	25.0	1.51	1.001	1
2,3,4,7,8-PeCDF	931		0.646	25.0	1.53	1.000	1
1,2,3,4,7,8-HxCDF	893		0.467	25.0	1.20	1.000	1
1,2,3,6,7,8-HxCDF	918		0.478	25.0	1.21	1.000	1
1,2,3,7,8,9-HxCDF	886		0.595	25.0	1.19	1.000	1
2,3,4,6,7,8-HxCDF	883		0.485	25.0	1.23	1.000	1
1,2,3,4,6,7,8-HpCDF	955		1.82	25.0	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	921		2.17	25.0	1.02	1.000	1
OCDF	2210		2.38	50.0	0.88	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900117-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/29/19 00:45
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521216	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	197		2.37	5.00	0.78		1
Total Penta-Dioxins	901		0.584	25.0	1.57		1
Total Hexa-Dioxins	2750		0.833	25.0	1.29		1
Total Hepta-Dioxins	2140		3.08	25.0	1.08		1
Total Tetra-Furans	234		1.20	5.00	0.73		1
Total Penta-Furans	1840		0.638	25.0	1.72		1
Total Hexa-Furans	3650		0.504	25.0	1.16		1
Total Hepta-Furans	2130		1.99	25.0	1.04		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900117-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/29/19 00:45
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521216	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1137.439	57		25-164	0.80	1.019
13C-1,2,3,7,8-PeCDD	2000	1487.206	74		25-181	1.60	1.180
13C-1,2,3,4,7,8-HxCDD	2000	1168.123	58		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1477.308	74		28-130	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1065.833	53		23-140	1.08	1.067
13C-OCDD	4000	1427.773	36		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	1104.840	55		24-169	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1367.588	68		24-185	1.61	1.139
13C-2,3,4,7,8-PeCDF	2000	1322.059	66		21-178	1.61	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1148.170	57		26-152	0.51	0.972
13C-1,2,3,6,7,8-HxCDF	2000	1178.507	59		26-123	0.54	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1196.503	60		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1207.256	60		28-136	0.50	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1037.398	52		28-143	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1127.444	56		26-138	0.44	1.079
37Cl-2,3,7,8-TCDD	800	452.967	57		35-197	NA	1.020

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900117-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/29/19 01:34
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521217	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	182		3.15	5.00	0.80	1.001	1
1,2,3,7,8-PeCDD	931		0.678	25.0	1.56	1.000	1
1,2,3,4,7,8-HxCDD	1000		0.631	25.0	1.18	1.000	1
1,2,3,6,7,8-HxCDD	865		0.564	25.0	1.35	1.000	1
1,2,3,7,8,9-HxCDD	924		0.565	25.0	1.26	1.007	1
1,2,3,4,6,7,8-HpCDD	899		0.397	25.0	1.00	1.000	1
OCDD	1900		0.778	50.0	0.86	1.000	1
2,3,7,8-TCDF	168		1.27	5.00	0.76	1.001	1
1,2,3,7,8-PeCDF	894		0.844	25.0	1.53	1.000	1
2,3,4,7,8-PeCDF	973		0.873	25.0	1.57	1.000	1
1,2,3,4,7,8-HxCDF	907		0.431	25.0	1.22	1.000	1
1,2,3,6,7,8-HxCDF	954		0.445	25.0	1.26	1.000	1
1,2,3,7,8,9-HxCDF	913		0.608	25.0	1.22	1.000	1
2,3,4,6,7,8-HxCDF	941		0.452	25.0	1.25	1.000	1
1,2,3,4,6,7,8-HpCDF	933		2.94	25.0	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	958		3.59	25.0	1.03	1.000	1
OCDF	1940		1.11	50.0	0.88	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900117-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/29/19 01:34
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521217	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	182		3.15	5.00	0.80		1
Total Penta-Dioxins	935		0.678	25.0	1.56		1
Total Hexa-Dioxins	2790		0.584	25.0	1.18		1
Total Hepta-Dioxins	899		0.397	25.0	1.00		1
Total Tetra-Furans	171		1.27	5.00	0.76		1
Total Penta-Furans	1870		0.858	25.0	1.53		1
Total Hexa-Furans	3720		0.479	25.0	1.22		1
Total Hepta-Furans	1890		3.25	25.0	1.03		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900221
Project:	HS19030767	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900117-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	03/29/19 01:34
Prep Method:	Method	**Date Extracted:**	3/26/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521217	**Blank File Name:**	P521210
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521206

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1011.813	51		25-164	0.82	1.019
13C-1,2,3,7,8-PeCDD	2000	1225.708	61		25-181	1.58	1.179
13C-1,2,3,4,7,8-HxCDD	2000	1086.789	54		32-141	1.32	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1461.258	73		28-130	1.30	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1137.031	57		23-140	1.07	1.066
13C-OCDD	4000	1641.316	41		17-157	0.88	1.141
13C-2,3,7,8-TCDF	2000	1043.920	52		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	1147.693	57		24-185	1.59	1.138
13C-2,3,4,7,8-PeCDF	2000	1123.147	56		21-178	1.62	1.170
13C-1,2,3,4,7,8-HxCDF	2000	1134.811	57		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1180.412	59		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1125.249	56		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1164.810	58		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1080.227	54		28-143	0.44	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	1214.548	61		26-138	0.44	1.079
37Cl-2,3,7,8-TCDD	800	448.832	56		35-197	NA	1.020

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Chain of Custody Form dated March 19, 2019

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

ATTACHMENT 1

DATE: 3/29/2019

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Labs
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N.A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
184834	WIPE	DIOXINS / FURANS	Collected 1/4/2019
184848	WIPE	EPA Method 1613B	Collected: 1/4/2019
187060	BULK-DUST	↓	Collected. 1/4/2019
187063	BULK-DUST	↓	Collected. 1/4/2019

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other 2 wk TAT

☐ Fax results 781-247-4305

☐ **RETURN SAMPLES** ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient Keghian@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 3/29/2019

Received by: FEDEX of (company name) FEDEX Date: 3/29/2019

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Relinquished by: _____ of (company name) _____ Date: _____

Received by: _____ of (company name) _____ Date: _____

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date: _____

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

ALS Laboratory Report (Work Order HS19031050) dated April 11, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 11, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19031050**

Laboratory Results for: **22437**

Dear Kevin,

ALS Environmental received 4 sample(s) on Mar 20, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Corey Grandits
Project Manager

ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437
Work Order: HS19031050

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19031050-01	184834	Wipe		04-Jan-2019 00:00	20-Mar-2019 09:30	☐
HS19031050-02	184848	Wipe		04-Jan-2019 00:00	20-Mar-2019 09:30	☐
HS19031050-03	187060	Dust		04-Jan-2019 00:00	20-Mar-2019 09:30	☐
HS19031050-04	187063	Dust		04-Jan-2019 00:00	20-Mar-2019 09:30	☐

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ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering **CASE NARRATIVE**
Project: 22437
Work Order: HS19031050

Work Order Comments

- The analysis for Dioxins/Furans was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

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ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19031050
Sample ID:	184834	Lab ID:	HS19031050-01
Collection Date:	04-Jan-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19031050
Sample ID:	184848	Lab ID:	HS19031050-02
Collection Date:	04-Jan-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19031050
Sample ID:	187060	Lab ID:	HS19031050-03
Collection Date:	04-Jan-2019 00:00	Matrix:	Dust

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 11-Apr-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19031050
Sample ID:	187063	Lab ID:	HS19031050-04
Collection Date:	04-Jan-2019 00:00	Matrix:	Dust

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	11-Apr-2019 12:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: HS19031050

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R336393	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Dust		
HS19031050-03	187060	04 Jan 2019 00:00			11 Apr 2019 12:36	1
HS19031050-04	187063	04 Jan 2019 00:00			11 Apr 2019 12:36	1
Batch ID R336393	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Wipe		
HS19031050-01	184834	04 Jan 2019 00:00			11 Apr 2019 12:36	1
HS19031050-02	184848	04 Jan 2019 00:00			11 Apr 2019 12:36	1

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ALS Houston, US Date: 11-Apr-19

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: **HS19031050**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
California	2919, 2018-2019	30-Apr-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020

ALS Houston, US Date: 11-Apr-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Work Order: HS19031050
Date/Time Received: **20-Mar-2019 09:30**
Received by: **NDR**

Checklist completed by: *Nilesh D. Ranchod* eSignature | 21-Mar-2019 Date
Reviewed by: *Corey Grandits* eSignature | 22-Mar-2019 Date

Matrices: **Soil**
Carrier name: **FedEx Priority Overnight**

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☐	☐	☑
Custody seals intact on sample bottles?	☐	☐	☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	
Samplers name present on COC?	☑	☐	
Chain of custody agrees with sample labels?	☐	☑	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☐	☑	

Temperature(s)/Thermometer(s): 14.2C /14.2C UC/C | IR # 25
Cooler(s)/Kit(s): BOX
Date/Time sample(s) sent to storage: 03/20/2019 18:00

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes: No collection date /time on sample containers and COC, Sample label no dates.

Client Contacted: Date Contacted: Person Contacted:
Contacted By: Regarding:

Comments:

Corrective Action:

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April 10, 2019

Service Request No:E1900237

ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS19031050

Enclosed are the results of the sample(s) submitted to our laboratory March 21, 2019
For your reference, these analyses have been assigned our service request number **E1900237.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS - H	**Service Request No.:**	E1900237
Project:	HS19031050	**Date Received:**	03/21/19
Sample Matrix:	Wipe/Solid		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Four samples were received for analysis at ALS Environmental in Houston on 03/21/19.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1900126 & EQ1900128: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within QC limits.

B flags – Method Blanks

The Method Blank EQ1900126-01 and EQ1900128-01 contained low levels of dioxin/furan compounds above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Y flag – Cleanup Standard

The recovery for the cleanup standard, 37Cl-2,3,7,8-TCDD is below control limits in sample 184848 (E1900237-002). The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

Y flags – Labeled Standards

13C-OCDD labeled standard outside acceptance criteria in sample 187063 (E1900237-004).

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

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K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US
Project: HS19031050

Service Request:E1900237

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900237-001	184834	1/4/2019	0000
E1900237-002	184848	1/4/2019	0000
E1900237-003	187060	1/4/2019	0000
E1900237-004	187063	1/4/2019	0000

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Service Request Summary

ATTACHMENT 1

Folder #: **E1900237**
Client Name: ALS Environmental - US
Project Name: HS19031050
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: TWOODS
Date Received: 03/21/19
Internal Due Date: 4/15/2019
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: HS19031050
EDD: No EDD Specified

4 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 9D
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON Dioxins Furans/1613B
E1900237-001	184834	Wipe	01/04/19 0000	II
E1900237-002	184848	Wipe	01/04/19 0000	II
E1900237-003	187060	Soil	01/04/19 0000	II
E1900237-004	187063	Soil	01/04/19 0000	II

Folder Comments:

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900237**
Client Name:	ALS Environmental - US
Project Name:	HS19031050
Project Number:	
Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	TWOODS
Date Received:	03/21/19
Internal Due Date:	4/15/2019
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	N
Report to MDL?:	Y
P.O. Number:	HS19031050
EDD:	No EDD Specified

4 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 9D

Pressure Gas:

Print

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ED_004522_00089767-00685

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ED_004522_00089767-00687

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2019
Arizona Department of Health Services	AZ0793	5/27/2019
Arkansas Department of Environmental Quality	19-028-0	3/27/2020
California Department of Health Services	2452	4/30/2019
Florida Department of Health	E87611	7/31/2019
Hawaii Department of Health	TX02694	4/30/2019
Illinois Environmental Protection Agency	004438	5/29/2019
Kansas Department of Health and Environment	E-10352	7/31/2019
Louisiana Department of Environmental Quality	03087	6/30/2019
Louisiana Department of Health and Hospitals	LA028	12/31/2019
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2019
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2019
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2019
New Jersey Department of Environmental Protection	NLC180001	6/30/2019
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2018-156	8/31/2019
Pennsylvania Department of Environmental Protection	68-03441-012	6/30/2019
Tennessee Department of Environment and Concervation	04016	6/30/2019
Texas Commision on Environmental Quality	TX104704231-18-22	4/30/2019
United States Department of Agriculture	P330-18-00368	12/14/2019
Utah Department of Health Environmental Laboratory Certification	TX026932018-8	7/3/2019
Washington Department of Health	C819	11/14/2019
West Virginia Department of Environmental Protection	347	6/30/2019

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E19002371 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
04/08/19	JC	001, 002

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
4/9/19	LG	001, 002

HS-HRMSREVIEW R1.0

PEER REVIEW PAGE2015

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ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E19 00237 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
04/18/19	YC	003, 004

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
4/9/19	LG	003, 004

ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 10951

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS19031050
TSR:	Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19031050-01**	**184834**	**Wipe**	**04 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			10 Apr 2019
2.	**HS19031050-02**	**184848**	**Wipe**	**04 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			10 Apr 2019
3.	**HS19031050-03**	**187060**	**Dust**	**04 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			10 Apr 2019
4.	**HS19031050-04**	**187063**	**Dust**	**04 Jan 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			10 Apr 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By:	J. Mauma	Date/Time:	3/21/19 14:30
Received By:	[illegible]	Date/Time:	3/21/19 1430
Cooler ID(s):		Temperature(s):	

E1900237 5
ALS Laboratory Group
Wipes Analysis LA

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ALS Environmental

Cooler Receipt Form

Project Chemist _____

Client/Project: ALS

Thermometer ID: SMO 04

Date/Time Received: 3-21-19 1430 Initials: CJ

Date/Time Logged in: 3-25-19 Initials: JW

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ✓ Courier ○ Client

2. Samples received in: ○ Cooler ✓ Box ○ Envelope ○ Other _____

3. Were custody seals on coolers? ○ Yes ✓ No

Were they intact? ○ Yes ○ No ○ N/A

Were they signed and dated? ○ Yes ○ No ○ N/A

If yes, how many and where? NO seal

4. Packing Material: ○ Inserts ○ Baggies ○ Bubble Wrap ○ Gel Packs ○ Wet Ice ○ Sleeves ○ Other _____

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
N/A						☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No

10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900237 5
ALS Laboratory Group
Wipes Analysis LA

Effective 10/04/2013

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Houston, TX 77099
T: +1 713 266 1599
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www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 334126
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 4/3/19 15:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900237-001	184834	.01	1613B/Dioxins Furans			Wipe	1Sample	White wipe
2	E1900237-002	184848	.01	1613B/Dioxins Furans			Wipe	1Sample	White wipe
3	EQ1900128-01	MB		1613B/Dioxins Furans			Wipes	1.000Sample	
4	EQ1900128-02	LCS		1613B/Dioxins Furans			Wipes	1.000Sample	
5	EQ1900128-03	DLCS		1613B/Dioxins Furans			Wipes	1.000Sample	

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard | Inventory ID 197847 | Logbook Ref: 197847 tw 03/19/19 8ng/ml | Expires On: 09/15/2019

E1900237-001 100.00µL E1900237-002 100.00µL EQ1900128-01 100.00µL EQ1900128-02 100.00µL EQ1900128-03 100.00µL

Name: 197968 JG 3/25/19 2-20ng/ml | Inventory ID 197968 | Logbook Ref: 197968 | Expires On: 09/21/2019

EQ1900128-02 100.00µL EQ1900128-03 100.00µL

Name: 1613B Labeled Working Standard | Inventory ID 198249 | Logbook Ref: 198249 JG 4/3/19 2-4ngml | Expires On: 07/31/2019

E1900237-001 1,000.00µL E1900237-002 1,000.00µL EQ1900128-01 1,000.00µL EQ1900128-02 1,000.00µL EQ1900128-03 1,000.00µL

Preparation Materials

Carbon, High Purity	JG 3/22/19 (197951)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	197792 JG 3/18/19 (197792)
Hexanes 95%	JG 3/22/19 (197958)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	196891 2/12/2019 (196891)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Tridecane (n-Tridecane)	JG 197877 3/20/19 (197877)	Silica Gel	tw 021419 silica gel (197192)
sulfuric acid	tw 1/28/19 sulfuric (196582)	Toluene 99.9% Minimum	JG 3/22/19 (197957)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	4/3/19 15:00	Started:	4/4/19 15:00	Started:	4/5/19 09:00	Started:	4/5/19 12:00
Finished:	4/4/19 08:00	Finished:	4/4/19 16:00	Finished:	4/5/19 12:00	Finished:	4/5/19 14:51
By:	JGUIN	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: LG Date: 04/09/19

Printe RIGHT SOLUTIONS | RIGHT PARTNER ıge 1

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 334126
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtS(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 4/3/19 15:00

Chain of Custody

Relinquished By:		Date:	
Received By:		Date:	

Extracts Examined
Yes No

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Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 334109 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/JGUIN **Prep Method:** Method Soxhlet **Prep Date/Time:** 4/3/19 15:00

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900233-001	SLUDGE	.01	1613B/Dioxins Furans			Soil	10.308g	Black sludge w odor
2	E1900236-001	19072B01BA	.01	1613B/Dioxins Furans			Soil	10.908g	White powder
3	E1900237-003	187060	.01	1613B/Dioxins Furans			Soil	0.018g	Black fuzz
4	E1900237-004	187063	.01	1613B/Dioxins Furans			Soil	0.028g	Black fuzz
5	EQ1900126-01	MB		1613B/Dioxins Furans			Solid	10.112g	
6	EQ1900126-02	LCS		1613B/Dioxins Furans			Solid	10.698g	
7	EQ1900126-03	DLCS		1613B/Dioxins Furans			Solid	10.333g	
8	J1901628-001	H6547	.01	1613B/Dioxins Furans			Pulp Sheet	10.001g	White paperboard
9	J1901628-002	H6664	.01	1613B/Dioxins Furans			Pulp Sheet	10.064g	White paperboard
10	J1901628-003	H6647	.01	1613B/Dioxins Furans			Pulp Sheet	10.767g	White paperboard
11	J1901628-004	H6666	.01	1613B/Dioxins Furans			Pulp Sheet	10.131g	White paperboard
12	J1901628-005	H6617	.01	1613B/Dioxins Furans			Pulp Sheet	10.892g	White paperboard
13	J1901628-006	Y4660	.01	1613B/Dioxins Furans			Pulp Sheet	10.598g	White paperboard
14	K1901605-002	1218-SAV Towel	.01	1613B/Dioxins Furans			Paper	10.365g	Light brown paper shred
15	K1902116-008	Composite	.01	1613B/Dioxins Furans			Paperboard	10.666g	White/brown paper shred

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard Inventory ID 197847 Logbook Ref: 197847 tw 03/19/19 8ng/ml Expires On: 09/15/2019

E1900233-001	100.00µL	E1900236-001	100.00µL	E1900237-003	100.00µL	E1900237-004	100.00µL	EQ1900126-01	100.00µL	EQ1900126-02	100.00µL
EQ1900126-03	100.00µL	J1901628-001	100.00µL	J1901628-002	100.00µL	J1901628-003	100.00µL	J1901628-004	100.00µL	J1901628-005	100.00µL
J1901628-006	100.00µL	K1901605-002	100.00µL	K1902116-008	100.00µL						

Name: 197968 JG 3/25/19 2-20ng/ml Inventory ID 197968 Logbook Ref: 197968 Expires On: 09/21/2019

EQ1900126-02	100.00µL	EQ1900126-03	100.00µL

Name: 1613B Labeled Working Standard Inventory ID 198249 Logbook Ref: 198249 JG 4/3/19 2-4ngml Expires On: 07/31/2019

E1900233-001	1,000.00µL	E1900236-001	1,000.00µL	E1900237-003	1,000.00µL	E1900237-004	1,000.00µL	EQ1900126-01	1,000.00µL	EQ1900126-02	1,000.00µL
EQ1900126-03	1,000.00µL	J1901628-001	1,000.00µL	J1901628-002	1,000.00µL	J1901628-003	1,000.00µL	J1901628-004	1,000.00µL	J1901628-005	1,000.00µL
J1901628-006	1,000.00µL	K1901605-002	1,000.00µL	K1902116-008	1,000.00µL						

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 334109
Team: Semivoa GCMS/JGUIN

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 4/3/19 15:00

Preparation Materials

Carbon, High Purity	JG 3/22/19 (197951)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	197792 JG 3/18/19 (197792)
Hexanes 95%	JG 3/22/19 (197958)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	196891 2/12/2019 (196891)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 01/07/19 (196116)	Tridecane (n-Tridecane)	JG 197877 3/20/19 (197877)	Silica Gel	tw 021419 silica gel (197192)
sulfuric acid	tw 1/28/19 sulfuric (196582)	Toluene 99.9% Minimum	JG 3/22/19 (197957)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	4/3/19 15:00	Started:	4/4/19 15:00	Started:	4/5/19 09:00	Started:	4/5/19 12:00
Finished:	4/4/19 08:00	Finished:	4/4/19 16:00	Finished:	4/5/19 12:00	Finished:	4/5/19 14:39
By:	JGUIN	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: LG Date: 04/09/19

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

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ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184834	**Units:**	pg
Lab Code:	E1900237-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 11:49
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521377	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	2.25**J**		0.741	5.00	0.65	1.000	1
1,2,3,7,8-PeCDD	ND	U	0.357	25.0			1
1,2,3,4,7,8-HxCDD	0.746**BJK**		0.202	25.0	2.19	1.000	1
1,2,3,6,7,8-HxCDD	2.47**J**		0.188	25.0	1.15	1.000	1
1,2,3,7,8,9-HxCDD	1.11**JK**		0.185	25.0	0.79	1.008	1
1,2,3,4,6,7,8-HpCDD	51.7		0.372	25.0	0.99	1.001	1
OCDD	969		0.582	50.0	0.90	1.000	1
2,3,7,8-TCDF	3.97**JK**		0.311	5.00	0.63	1.001	1
1,2,3,7,8-PeCDF	1.83**J**		0.833	25.0	1.40	1.001	1
2,3,4,7,8-PeCDF	ND	U	0.829	25.0			1
1,2,3,4,7,8-HxCDF	3.43**BJ**		0.121	25.0	1.35	1.001	1
1,2,3,6,7,8-HxCDF	1.30**JK**		0.121	25.0	1.49	1.000	1
1,2,3,7,8,9-HxCDF	0.817**BJK**		0.149	25.0	1.89	1.000	1
2,3,4,6,7,8-HxCDF	1.19**BJK**		0.131	25.0	0.83	1.000	1
1,2,3,4,6,7,8-HpCDF	10.1**JK**		0.175	25.0	1.24	1.000	1
1,2,3,4,7,8,9-HpCDF	1.22**J**		0.232	25.0	1.07	1.000	1
OCDF	19.7**JK**		0.428	50.0	0.70	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184834	**Units:**	pg
Lab Code:	E1900237-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 11:49
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521377	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.741	5.00			1
Total Penta-Dioxins	ND	U	0.357	25.0			1
Total Hexa-Dioxins	2.47**J**		0.191	25.0	1.15		1
Total Hepta-Dioxins	115		0.372	25.0	1.04		1
Total Tetra-Furans	11.0		0.311	5.00	0.83		1
Total Penta-Furans	9.36**J**		0.831	25.0	1.41		1
Total Hexa-Furans	16.4**J**		0.130	25.0	1.08		1
Total Hepta-Furans	1.22**J**		0.201	25.0	1.07		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184834	**Units:**	Percent
Lab Code:	E1900237-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 11:49
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521377	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	2193.548	110		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	1780.153	89		25-181	1.64	1.197
13C-1,2,3,4,7,8-HxCDD	2000	2028.771	101		32-141	1.35	0.991
13C-1,2,3,6,7,8-HxCDD	2000	2557.789	128		28-130	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1892.940	95		23-140	1.07	1.067
13C-OCDD	4000	3078.392	77		17-157	0.89	1.141
13C-2,3,7,8-TCDF	2000	2014.124	101		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1625.005	81		24-185	1.54	1.153
13C-2,3,4,7,8-PeCDF	2000	1574.006	79		21-178	1.56	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1928.358	96		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	2020.267	101		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1994.620	100		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1936.717	97		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1816.474	91		28-143	0.44	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1842.852	92		26-138	0.43	1.080
37Cl-2,3,7,8-TCDD	800	424.059	53		35-197	NA	1.023

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184834	**Units:**	pg
Lab Code:	E1900237-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	**2.25**	0.741	5.00	1	1	2.25
1,2,3,7,8-PeCDD	ND	0.357	25.0	1	1	
1,2,3,4,7,8-HxCDD	**0.746**	0.202	25.0	1	0.1	0.0746
1,2,3,6,7,8-HxCDD	**2.47**	0.188	25.0	1	0.1	0.247
1,2,3,7,8,9-HxCDD	**1.11**	0.185	25.0	1	0.1	0.111
1,2,3,4,6,7,8-HpCDD	**51.7**	0.372	25.0	1	0.01	0.517
OCDD	**969**	0.582	50.0	1	0.0003	0.291
2,3,7,8-TCDF	**3.97**	0.311	5.00	1	0.1	0.397
1,2,3,7,8-PeCDF	**1.83**	0.833	25.0	1	0.03	0.0549
2,3,4,7,8-PeCDF	ND	0.829	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	**3.43**	0.121	25.0	1	0.1	0.343
1,2,3,6,7,8-HxCDF	**1.30**	0.121	25.0	1	0.1	0.130
1,2,3,7,8,9-HxCDF	**0.817**	0.149	25.0	1	0.1	0.0817
2,3,4,6,7,8-HxCDF	**1.19**	0.131	25.0	1	0.1	0.119
1,2,3,4,6,7,8-HpCDF	**10.1**	0.175	25.0	1	0.01	0.101
1,2,3,4,7,8,9-HpCDF	**1.22**	0.232	25.0	1	0.01	0.0122
OCDF	**19.7**	0.428	50.0	1	0.0003	0.00591
		Total TEQ				4.74

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184848	**Units:**	pg
Lab Code:	E1900237-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 12:37
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521378	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.60	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.867	25.0			1
1,2,3,4,7,8-HxCDD	0.824**BJ**		0.448	25.0	1.07	1.000	1
1,2,3,6,7,8-HxCDD	1.31**JK**		0.398	25.0	1.83	1.000	1
1,2,3,7,8,9-HxCDD	0.609**JK**		0.399	25.0	0.97	1.006	1
1,2,3,4,6,7,8-HpCDD	20.0**J**		0.572	25.0	1.07	1.000	1
OCDD	162		0.631	50.0	0.79	1.000	1
2,3,7,8-TCDF	ND	U	0.671	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.334	25.0			1
2,3,4,7,8-PeCDF	ND	U	0.392	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	0.330	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.318	25.0			1
1,2,3,7,8,9-HxCDF	0.543**BJ**		0.405	25.0	1.23	1.000	1
2,3,4,6,7,8-HxCDF	0.473**BJK**		0.339	25.0	0.90	1.000	1
1,2,3,4,6,7,8-HpCDF	7.73**JK**		0.269	25.0	1.29	1.000	1
1,2,3,4,7,8,9-HpCDF	0.430**JK**		0.371	25.0	0.43	1.000	1
OCDF	6.70**BJK**		1.01	50.0	0.66	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184848	**Units:**	pg
Lab Code:	E1900237-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 12:37
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521378	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.60	5.00			1
Total Penta-Dioxins	ND	U	0.867	25.0			1
Total Hexa-Dioxins	6.80**J**		0.413	25.0	1.28		1
Total Hepta-Dioxins	42.9		0.572	25.0	0.90		1
Total Tetra-Furans	5.35		0.671	5.00	0.66		1
Total Penta-Furans	ND	U	0.360	25.0			1
Total Hexa-Furans	0.543**J**		0.346	25.0	1.23		1
Total Hepta-Furans	ND	U	0.316	25.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184848	**Units:**	Percent
Lab Code:	E1900237-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 12:37
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521378	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1242.524	62		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	1314.829	66		25-181	1.62	1.198
13C-1,2,3,4,7,8-HxCDD	2000	1290.681	65		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1706.265	85		28-130	1.29	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1339.871	67		23-140	1.02	1.067
13C-OCDD	4000	2177.198	54		17-157	0.89	1.141
13C-2,3,7,8-TCDF	2000	1121.318	56		24-169	0.81	0.992
13C-1,2,3,7,8-PeCDF	2000	1319.988	66		24-185	1.59	1.153
13C-2,3,4,7,8-PeCDF	2000	1102.536	55		21-178	1.56	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1262.023	63		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1330.021	67		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1281.802	64		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1269.098	63		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1247.160	62		28-143	0.45	1.042
13C-1,2,3,4,7,8,9-HpCDF	2000	1273.786	64		26-138	0.43	1.080
37Cl-2,3,7,8-TCDD	800	254.445	32	**Y**	35-197	NA	1.023

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Wipe	**Date Received:**	03/21/19 14:30
Sample Name:	184848	**Units:**	pg
Lab Code:	E1900237-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	1.60	5.00	1	1	
1,2,3,7,8-PeCDD	ND	0.867	25.0	1	1	
1,2,3,4,7,8-HxCDD	**0.824**	0.448	25.0	1	0.1	0.0824
1,2,3,6,7,8-HxCDD	**1.31**	0.398	25.0	1	0.1	0.131
1,2,3,7,8,9-HxCDD	**0.609**	0.399	25.0	1	0.1	0.0609
1,2,3,4,6,7,8-HpCDD	**20.0**	0.572	25.0	1	0.01	0.200
OCDD	**162**	0.631	50.0	1	0.0003	0.0486
2,3,7,8-TCDF	ND	0.671	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	0.334	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	0.392	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	0.330	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	0.318	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	**0.543**	0.405	25.0	1	0.1	0.0543
2,3,4,6,7,8-HxCDF	**0.473**	0.339	25.0	1	0.1	0.0473
1,2,3,4,6,7,8-HpCDF	**7.73**	0.269	25.0	1	0.01	0.0773
1,2,3,4,7,8,9-HpCDF	**0.430**	0.371	25.0	1	0.01	0.00430
OCDF	**6.70**	1.01	50.0	1	0.0003	0.00201
		Total TEQ				0.708

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187060	**Units:**	ng/Kg
Lab Code:	E1900237-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 17:29
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	0.018g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521355	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521345

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	181	278			1
1,2,3,7,8-PeCDD	500**J**		69.2	1390	1.58	1.001	1
1,2,3,4,7,8-HxCDD	439**JK**		31.5	1390	0.95	1.000	1
1,2,3,6,7,8-HxCDD	1030**J**		30.2	1390	1.42	1.000	1
1,2,3,7,8,9-HxCDD	757**J**		29.3	1390	1.32	1.007	1
1,2,3,4,6,7,8-HpCDD	6340		27.7	1390	1.12	1.000	1
OCDD	14100		103	2780	0.88	1.000	1
2,3,7,8-TCDF	ND	U	103	278			1
1,2,3,7,8-PeCDF	159**JK**		65.6	1390	1.86	1.000	1
2,3,4,7,8-PeCDF	963**J**		63.0	1390	1.64	1.001	1
1,2,3,4,7,8-HxCDF	842**JK**		37.9	1390	0.96	1.000	1
1,2,3,6,7,8-HxCDF	441**J**		37.2	1390	1.23	1.000	1
1,2,3,7,8,9-HxCDF	394**JK**		46.9	1390	1.88	1.000	1
2,3,4,6,7,8-HxCDF	543**J**		39.7	1390	1.07	1.000	1
1,2,3,4,6,7,8-HpCDF	2600		73.6	1390	1.11	1.000	1
1,2,3,4,7,8,9-HpCDF	202**J**		93.3	1390	1.01	1.000	1
OCDF	1660**JK**		58.7	2780	1.10	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187060	**Units:**	ng/Kg
Lab Code:	E1900237-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 17:29
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	0.018g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521355	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521345

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	232**J**		181	278	0.85		1
Total Penta-Dioxins	500**J**		69.2	1390	1.58		1
Total Hexa-Dioxins	5590		30.3	1390	1.10		1
Total Hepta-Dioxins	13100		27.7	1390	1.08		1
Total Tetra-Furans	6290		103	278	0.74		1
Total Penta-Furans	3160		64.4	1390	1.70		1
Total Hexa-Furans	7770		40.2	1390	1.33		1
Total Hepta-Furans	4990		83.0	1390	1.11		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187060	**Units:**	Percent
Lab Code:	E1900237-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 17:29
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	0.018g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521355	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521345

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1040.435	52		25-164	0.78	1.022
13C-1,2,3,7,8-PeCDD	2000	1193.001	60		25-181	1.60	1.197
13C-1,2,3,4,7,8-HxCDD	2000	1111.460	56		32-141	1.24	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1320.407	66		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1057.640	53		23-140	1.03	1.068
13C-OCDD	4000	1687.091	42		17-157	0.93	1.141
13C-2,3,7,8-TCDF	2000	953.056	48		24-169	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1054.876	53		24-185	1.63	1.153
13C-2,3,4,7,8-PeCDF	2000	1037.356	52		21-178	1.60	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1029.009	51		26-152	0.51	0.971
13C-1,2,3,6,7,8-HxCDF	2000	1035.672	52		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1032.707	52		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1053.769	53		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	942.547	47		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1044.362	52		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	413.223	52		35-197	NA	1.023

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187060	**Units:**	ng/Kg
Lab Code:	E1900237-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	181	278	1	1	
1,2,3,7,8-PeCDD	**500**	69.2	1390	1	1	500
1,2,3,4,7,8-HxCDD	**439**	31.5	1390	1	0.1	43.9
1,2,3,6,7,8-HxCDD	**1030**	30.2	1390	1	0.1	103
1,2,3,7,8,9-HxCDD	**757**	29.3	1390	1	0.1	75.7
1,2,3,4,6,7,8-HpCDD	**6340**	27.7	1390	1	0.01	63.4
OCDD	**14100**	103	2780	1	0.0003	4.23
2,3,7,8-TCDF	ND	103	278	1	0.1	
1,2,3,7,8-PeCDF	**159**	65.6	1390	1	0.03	4.77
2,3,4,7,8-PeCDF	**963**	63.0	1390	1	0.3	289
1,2,3,4,7,8-HxCDF	**842**	37.9	1390	1	0.1	84.2
1,2,3,6,7,8-HxCDF	**441**	37.2	1390	1	0.1	44.1
1,2,3,7,8,9-HxCDF	**394**	46.9	1390	1	0.1	39.4
2,3,4,6,7,8-HxCDF	**543**	39.7	1390	1	0.1	54.3
1,2,3,4,6,7,8-HpCDF	**2600**	73.6	1390	1	0.01	26.0
1,2,3,4,7,8,9-HpCDF	**202**	93.3	1390	1	0.01	2.02
OCDF	**1660**	58.7	2780	1	0.0003	0.498
		Total TEQ				1330

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187063	**Units:**	ng/Kg
Lab Code:	E1900237-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 18:18
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	0.028g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521356	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521345

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	96.5	179			1
1,2,3,7,8-PeCDD	82.4**JK**		44.9	893	0.83	1.001	1
1,2,3,4,7,8-HxCDD	286**JK**		32.4	893	0.99	1.001	1
1,2,3,6,7,8-HxCDD	2060		29.1	893	1.24	1.000	1
1,2,3,7,8,9-HxCDD	538**JK**		29.1	893	1.04	1.006	1
1,2,3,4,6,7,8-HpCDD	22900		86.6	893	1.06	1.000	1
OCDD	37700		180	1790	0.97	1.000	1
2,3,7,8-TCDF	ND	U	72.6	179			1
1,2,3,7,8-PeCDF	145**JK**		44.5	893	0.96	1.001	1
2,3,4,7,8-PeCDF	1080		46.0	893	1.37	1.001	1
1,2,3,4,7,8-HxCDF	1770		150	893	1.22	1.000	1
1,2,3,6,7,8-HxCDF	575**JK**		150	893	1.81	1.000	1
1,2,3,7,8,9-HxCDF	237**JK**		229	893	0.90	1.001	1
2,3,4,6,7,8-HxCDF	681**J**		189	893	1.13	1.000	1
1,2,3,4,6,7,8-HpCDF	6150		45.6	893	0.93	1.000	1
1,2,3,4,7,8,9-HpCDF	152**JK**		58.6	893	1.32	1.000	1
OCDF	1910		157	1790	0.86	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187063	**Units:**	ng/Kg
Lab Code:	E1900237-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 18:18
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	0.028g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521356	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521345

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	96.5	179			1
Total Penta-Dioxins	132**J**		44.9	893	1.74		1
Total Hexa-Dioxins	10900		30.1	893	1.37		1
Total Hepta-Dioxins	47800		86.6	893	1.11		1
Total Tetra-Furans	ND	U	72.6	179			1
Total Penta-Furans	3920		45.2	893	1.48		1
Total Hexa-Furans	16200		174	893	1.22		1
Total Hepta-Furans	12600		51.5	893	0.93		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187063	**Units:**	Percent
Lab Code:	E1900237-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 18:18
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	0.028g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521356	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521345

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	945.216	47		25-164	0.81	1.022
13C-1,2,3,7,8-PeCDD	2000	1006.413	50		25-181	1.63	1.197
13C-1,2,3,4,7,8-HxCDD	2000	1022.796	51		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1312.157	66		28-130	1.29	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	661.296	33		23-140	1.10	1.067
13C-OCDD	4000	541.220	14	Y	17-157	0.87	1.141
13C-2,3,7,8-TCDF	2000	905.301	45		24-169	0.81	0.991
13C-1,2,3,7,8-PeCDF	2000	877.554	44		24-185	1.59	1.152
13C-2,3,4,7,8-PeCDF	2000	852.387	43		21-178	1.62	1.186
13C-1,2,3,4,7,8-HxCDF	2000	1008.614	50		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1033.121	52		26-123	0.52	0.974
13C-1,2,3,7,8,9-HxCDF	2000	806.749	40		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	854.192	43		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	665.471	33		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	665.143	33		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	355.648	44		35-197	NA	1.022

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	01/04/19 00:00
Sample Matrix:	Soil	**Date Received:**	03/21/19 14:30
Sample Name:	187063	**Units:**	ng/Kg
Lab Code:	E1900237-004	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	96.5	179	1	1	
1,2,3,7,8-PeCDD	**82.4**	44.9	893	1	1	82.4
1,2,3,4,7,8-HxCDD	**286**	32.4	893	1	0.1	28.6
1,2,3,6,7,8-HxCDD	**2060**	29.1	893	1	0.1	206
1,2,3,7,8,9-HxCDD	**538**	29.1	893	1	0.1	53.8
1,2,3,4,6,7,8-HpCDD	**22900**	86.6	893	1	0.01	229
OCDD	**37700**	180	1790	1	0.0003	11.3
2,3,7,8-TCDF	ND	72.6	179	1	0.1	
1,2,3,7,8-PeCDF	**145**	44.5	893	1	0.03	4.35
2,3,4,7,8-PeCDF	**1080**	46.0	893	1	0.3	324
1,2,3,4,7,8-HxCDF	**1770**	150	893	1	0.1	177
1,2,3,6,7,8-HxCDF	**575**	150	893	1	0.1	57.5
1,2,3,7,8,9-HxCDF	**237**	229	893	1	0.1	23.7
2,3,4,6,7,8-HxCDF	**681**	189	893	1	0.1	68.1
1,2,3,4,6,7,8-HpCDF	**6150**	45.6	893	1	0.01	61.5
1,2,3,4,7,8,9-HpCDF	**152**	58.6	893	1	0.01	1.52
OCDF	**1910**	157	1790	1	0.0003	0.573
		Total TEQ				1330

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900126-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 22:35
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.112g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521361	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.240	0.494			1
1,2,3,7,8-PeCDD	ND	U	0.0425	2.47			1
1,2,3,4,7,8-HxCDD	ND	U	0.0530	2.47			1
1,2,3,6,7,8-HxCDD	ND	U	0.0499	2.47			1
1,2,3,7,8,9-HxCDD	0.0527**JK**		0.0487	2.47	1.74	1.008	1
1,2,3,4,6,7,8-HpCDD	0.158**JK**		0.0600	2.47	1.56	1.001	1
OCDD	0.194**JK**		0.168	4.94	1.22	1.000	1
2,3,7,8-TCDF	ND	U	0.0586	0.494			1
1,2,3,7,8-PeCDF	0.0788**JK**		0.0373	2.47	0.95	1.001	1
2,3,4,7,8-PeCDF	ND	U	0.0381	2.47			1
1,2,3,4,7,8-HxCDF	ND	U	0.0506	2.47			1
1,2,3,6,7,8-HxCDF	ND	U	0.0476	2.47			1
1,2,3,7,8,9-HxCDF	ND	U	0.0624	2.47			1
2,3,4,6,7,8-HxCDF	ND	U	0.0528	2.47			1
1,2,3,4,6,7,8-HpCDF	ND	U	0.0303	2.47			1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0406	2.47			1
OCDF	ND	U	0.107	4.94			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/Kg
Lab Code:	EQ1900126-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 22:35
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.112g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521361	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.240	0.494			1
Total Penta-Dioxins	ND	U	0.0425	2.47			1
Total Hexa-Dioxins	ND	U	0.0504	2.47			1
Total Hepta-Dioxins	ND	U	0.0600	2.47			1
Total Tetra-Furans	ND	U	0.0586	0.494			1
Total Penta-Furans	ND	U	0.0377	2.47			1
Total Hexa-Furans	ND	U	0.0529	2.47			1
Total Hepta-Furans	ND	U	0.0351	2.47			1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900126-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/05/19 22:35
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.112g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521361	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1140.601	57		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	1251.916	63		25-181	1.60	1.197
13C-1,2,3,4,7,8-HxCDD	2000	1088.430	54		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1429.348	71		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1091.589	55		23-140	1.08	1.067
13C-OCDD	4000	1768.188	44		17-157	0.94	1.141
13C-2,3,7,8-TCDF	2000	1043.065	52		24-169	0.82	0.992
13C-1,2,3,7,8-PeCDF	2000	1127.778	56		24-185	1.61	1.153
13C-2,3,4,7,8-PeCDF	2000	1091.583	55		21-178	1.62	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1036.082	52		26-152	0.50	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1126.644	56		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1070.510	54		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1101.221	55		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1038.108	52		28-143	0.46	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1077.996	54		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	435.964	54		35-197	NA	1.023

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900128-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 11:00
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521376	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	1.41	5.00			1
1,2,3,7,8-PeCDD	ND	U	0.428	25.0			1
1,2,3,4,7,8-HxCDD	0.542**J**		0.304	25.0	1.27	1.001	1
1,2,3,6,7,8-HxCDD	ND	U	0.270	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.271	25.0			1
1,2,3,4,6,7,8-HpCDD	0.993**JK**		0.383	25.0	1.33	1.000	1
OCDD	2.53**JK**		1.02	50.0	1.69	1.000	1
2,3,7,8-TCDF	ND	U	0.572	5.00			1
1,2,3,7,8-PeCDF	ND	U	0.259	25.0			1
2,3,4,7,8-PeCDF	ND	U	0.302	25.0			1
1,2,3,4,7,8-HxCDF	0.501**J**		0.208	25.0	1.33	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	0.214	25.0			1
1,2,3,7,8,9-HxCDF	0.611**JK**		0.279	25.0	2.04	1.000	1
2,3,4,6,7,8-HxCDF	0.473**J**		0.224	25.0	1.25	1.001	1
1,2,3,4,6,7,8-HpCDF	0.401**JK**		0.288	25.0	0.65	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.374	25.0			1
OCDF	1.60**JK**		0.740	50.0	1.36	1.006	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900128-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 11:00
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521376	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	1.41	5.00			1
Total Penta-Dioxins	ND	U	0.428	25.0			1
Total Hexa-Dioxins	0.542**J**		0.280	25.0	1.27		1
Total Hepta-Dioxins	ND	U	0.383	25.0			1
Total Tetra-Furans	ND	U	0.572	5.00			1
Total Penta-Furans	ND	U	0.279	25.0			1
Total Hexa-Furans	0.974**J**		0.229	25.0	1.33		1
Total Hepta-Furans	ND	U	0.328	25.0			1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900128-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 11:00
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521376	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1630.662	82		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	1649.749	82		25-181	1.63	1.198
13C-1,2,3,4,7,8-HxCDD	2000	1750.464	88		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	2284.701	114		28-130	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1722.037	86		23-140	1.10	1.068
13C-OCDD	4000	2607.319	65		17-157	0.91	1.141
13C-2,3,7,8-TCDF	2000	1473.779	74		24-169	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1536.000	77		24-185	1.57	1.153
13C-2,3,4,7,8-PeCDF	2000	1369.621	68		21-178	1.53	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1714.081	86		26-152	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1783.797	89		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1653.664	83		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1737.870	87		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1651.592	83		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1687.930	84		26-138	0.44	1.080
37Cl-2,3,7,8-TCDD	800	300.678	38		35-197	NA	1.023

ALS Environmental

Accuracy & Precision

ALS Environmental - Houston HRMS
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Phone (713)266-1599 Fax (713)266-0130
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Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Analyzed:**	04/06/19
Sample Matrix:	Soil	**Date Extracted:**	04/03/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	ng/Kg
Prep Method:	Method Soxhlet	**Basis:**	As Received
		Analysis Lot:	631410

	Lab Control Sample EQ1900126-02			Duplicate Lab Control Sample EQ1900126-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	84.3	93.5	90	85.6	96.8	88	70-140	1	50
1,2,3,4,7,8-HxCDD	88.0	93.5	94	89.1	96.8	92	70-164	1	50
1,2,3,6,7,8-HxCDD	81.2	93.5	87	83.2	96.8	86	76-134	2	50
1,2,3,7,8,9-HxCDD	85.9	93.5	92	84.1	96.8	87	64-162	2	50
1,2,3,7,8-PeCDD	87.6	93.5	94	88.7	96.8	92	70-142	1	50
2,3,7,8-TCDD	16.8	18.7	90	17.4	19.4	90	67-158	4	50
OCDD	170	187	91	175	194	90	78-144	3	50
1,2,3,4,6,7,8-HpCDF	84.0	93.5	90	89.3	96.8	92	82-122	6	50
1,2,3,4,7,8,9-HpCDF	86.1	93.5	92	87.7	96.8	91	78-138	2	50
1,2,3,4,7,8-HxCDF	85.1	93.5	91	90.0	96.8	93	72-134	6	50
1,2,3,6,7,8-HxCDF	85.9	93.5	92	89.9	96.8	93	84-130	5	50
1,2,3,7,8,9-HxCDF	84.2	93.5	90	87.7	96.8	91	78-130	4	50
1,2,3,7,8-PeCDF	87.3	93.5	93	98.1	96.8	101	80-134	12	50
2,3,4,6,7,8-HxCDF	85.9	93.5	92	85.3	96.8	88	70-156	<1	50
2,3,4,7,8-PeCDF	98.3	93.5	105	98.7	96.8	102	68-160	<1	50
2,3,7,8-TCDF	15.8	18.7	85	16.3	19.4	84	75-158	3	50
OCDF	170	187	91	174	194	90	63-170	2	50

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900126-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 05:53
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.698g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521370	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	16.8		0.260	0.467	0.80	1.001	1
1,2,3,7,8-PeCDD	87.6		0.0475	2.34	1.60	1.001	1
1,2,3,4,7,8-HxCDD	88.0		0.0385	2.34	1.25	1.000	1
1,2,3,6,7,8-HxCDD	81.2		0.0368	2.34	1.24	1.000	1
1,2,3,7,8,9-HxCDD	85.9		0.0358	2.34	1.27	1.007	1
1,2,3,4,6,7,8-HpCDD	84.3		0.0445	2.34	1.01	1.000	1
OCDD	170		0.0875	4.67	0.89	1.000	1
2,3,7,8-TCDF	15.8		0.0900	0.467	0.80	1.001	1
1,2,3,7,8-PeCDF	87.3		0.0488	2.34	1.59	1.001	1
2,3,4,7,8-PeCDF	98.3		0.0516	2.34	1.61	1.001	1
1,2,3,4,7,8-HxCDF	85.1		0.0359	2.34	1.20	1.000	1
1,2,3,6,7,8-HxCDF	85.9		0.0359	2.34	1.18	1.000	1
1,2,3,7,8,9-HxCDF	84.2		0.0456	2.34	1.18	1.000	1
2,3,4,6,7,8-HxCDF	85.9		0.0376	2.34	1.18	1.000	1
1,2,3,4,6,7,8-HpCDF	84.0		0.130	2.34	1.03	1.000	1
1,2,3,4,7,8,9-HpCDF	86.1		0.173	2.34	0.92	1.000	1
OCDF	170		0.170	4.67	0.87	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900126-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 05:53
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.698g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521370	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	16.8		0.260	0.467	0.80		1
Total Penta-Dioxins	87.6		0.0475	2.34	1.60		1
Total Hexa-Dioxins	255		0.0370	2.34	1.25		1
Total Hepta-Dioxins	84.3		0.0445	2.34	1.01		1
Total Tetra-Furans	15.9		0.0900	0.467	0.84		1
Total Penta-Furans	187		0.0502	2.34	1.57		1
Total Hexa-Furans	341		0.0385	2.34	1.20		1
Total Hepta-Furans	170		0.149	2.34	1.03		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900126-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 05:53
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.698g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521370	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1051.661	53		25-164	0.77	1.022
13C-1,2,3,7,8-PeCDD	2000	1153.006	58		25-181	1.62	1.197
13C-1,2,3,4,7,8-HxCDD	2000	1180.848	59		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1417.900	71		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1175.316	59		23-140	1.06	1.067
13C-OCDD	4000	1859.385	46		17-157	0.88	1.141
13C-2,3,7,8-TCDF	2000	934.004	47		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1009.926	50		24-185	1.57	1.153
13C-2,3,4,7,8-PeCDF	2000	950.457	48		21-178	1.59	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1078.696	54		26-152	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1134.922	57		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1109.084	55		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1120.782	56		28-136	0.50	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1092.228	55		28-143	0.43	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1116.521	56		26-138	0.44	1.080
37Cl-2,3,7,8-TCDD	800	412.697	52		35-197	NA	1.023

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900126-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 06:42
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.333g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521371	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	17.4		0.190	0.484	0.74	1.001	1
1,2,3,7,8-PeCDD	88.7		0.0738	2.42	1.60	1.001	1
1,2,3,4,7,8-HxCDD	89.1		0.0539	2.42	1.24	1.000	1
1,2,3,6,7,8-HxCDD	83.2		0.0494	2.42	1.31	1.000	1
1,2,3,7,8,9-HxCDD	84.1		0.0489	2.42	1.30	1.007	1
1,2,3,4,6,7,8-HpCDD	85.6		0.0616	2.42	1.07	1.000	1
OCDD	175		0.134	4.84	0.87	1.000	1
2,3,7,8-TCDF	16.3		0.127	0.484	0.72	1.001	1
1,2,3,7,8-PeCDF	98.1		0.0776	2.42	1.67	1.001	1
2,3,4,7,8-PeCDF	98.7		0.0725	2.42	1.62	1.000	1
1,2,3,4,7,8-HxCDF	90.0		0.0389	2.42	1.20	1.000	1
1,2,3,6,7,8-HxCDF	89.9		0.0394	2.42	1.19	1.000	1
1,2,3,7,8,9-HxCDF	87.7		0.0526	2.42	1.20	1.000	1
2,3,4,6,7,8-HxCDF	85.3		0.0391	2.42	1.26	1.000	1
1,2,3,4,6,7,8-HpCDF	89.3		0.0991	2.42	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	87.7		0.122	2.42	1.04	1.000	1
OCDF	174		0.118	4.84	0.89	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	ng/Kg
Lab Code:	EQ1900126-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 06:42
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.333g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521371	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	17.5		0.190	0.484	0.74		1
Total Penta-Dioxins	88.9		0.0738	2.42	1.60		1
Total Hexa-Dioxins	256		0.0506	2.42	1.24		1
Total Hepta-Dioxins	85.6		0.0616	2.42	1.07		1
Total Tetra-Furans	16.6		0.127	0.484	0.79		1
Total Penta-Furans	197		0.0750	2.42	1.67		1
Total Hexa-Furans	353		0.0420	2.42	1.20		1
Total Hepta-Furans	177		0.110	2.42	1.01		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900126-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 06:42
Prep Method:	Method Soxhlet	**Date Extracted:**	4/3/19
Sample Amount:	10.333g	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521371	**Blank File Name:**	P521361
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521358

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1039.346	52		25-164	0.79	1.022
13C-1,2,3,7,8-PeCDD	2000	1017.369	51		25-181	1.60	1.197
13C-1,2,3,4,7,8-HxCDD	2000	1027.509	51		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1326.998	66		28-130	1.29	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	965.919	48		23-140	1.03	1.068
13C-OCDD	4000	1485.494	37		17-157	0.94	1.141
13C-2,3,7,8-TCDF	2000	970.904	49		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	813.134	41		24-185	1.54	1.152
13C-2,3,4,7,8-PeCDF	2000	886.128	44		21-178	1.59	1.187
13C-1,2,3,4,7,8-HxCDF	2000	957.415	48		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1011.317	51		26-123	0.51	0.974
13C-1,2,3,7,8,9-HxCDF	2000	930.872	47		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1016.107	51		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	899.229	45		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	945.133	47		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	420.676	53		35-197	NA	1.023

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Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Analyzed:**	04/06/19
Sample Matrix:	Wipe	**Date Extracted:**	04/03/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	pg
Prep Method:	Method	**Basis:**	As Received
		Analysis Lot:	631305

	Lab Control Sample EQ1900128-02			Duplicate Lab Control Sample EQ1900128-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	909	1000	91	893	1000	89	70-140	2	50
1,2,3,4,7,8-HxCDD	956	1000	96	992	1000	99	70-164	4	50
1,2,3,6,7,8-HxCDD	859	1000	86	862	1000	86	76-134	<1	50
1,2,3,7,8,9-HxCDD	917	1000	92	894	1000	89	64-162	3	50
1,2,3,7,8-PeCDD	933	1000	93	937	1000	94	70-142	<1	50
2,3,7,8-TCDD	177	200	89	178	200	89	67-158	<1	50
OCDD	1810	2000	91	1830	2000	92	78-144	1	50
1,2,3,4,6,7,8-HpCDF	900	1000	90	916	1000	92	82-122	2	50
1,2,3,4,7,8,9-HpCDF	912	1000	91	915	1000	91	78-138	<1	50
1,2,3,4,7,8-HxCDF	896	1000	90	922	1000	92	72-134	3	50
1,2,3,6,7,8-HxCDF	923	1000	92	948	1000	95	84-130	3	50
1,2,3,7,8,9-HxCDF	882	1000	88	905	1000	90	78-130	3	50
1,2,3,7,8-PeCDF	929	1000	93	980	1000	98	80-134	5	50
2,3,4,6,7,8-HxCDF	895	1000	90	913	1000	91	70-156	2	50
2,3,4,7,8-PeCDF	986	1000	99	997	1000	100	68-160	1	50
2,3,7,8-TCDF	167	200	83	172	200	86	75-158	3	50
OCDF	1790	2000	90	1890	2000	94	63-170	5	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900128-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 15:03
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521381	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	177		0.615	5.00	0.79	1.001	1
1,2,3,7,8-PeCDD	933		0.256	25.0	1.59	1.001	1
1,2,3,4,7,8-HxCDD	956		0.201	25.0	1.28	1.000	1
1,2,3,6,7,8-HxCDD	859		0.185	25.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	917		0.183	25.0	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	909		0.178	25.0	1.03	1.000	1
OCDD	1810		0.621	50.0	0.88	1.000	1
2,3,7,8-TCDF	167		0.231	5.00	0.76	1.001	1
1,2,3,7,8-PeCDF	929		0.206	25.0	1.61	1.001	1
2,3,4,7,8-PeCDF	986		0.206	25.0	1.57	1.001	1
1,2,3,4,7,8-HxCDF	896		0.306	25.0	1.20	1.000	1
1,2,3,6,7,8-HxCDF	923		0.303	25.0	1.23	1.000	1
1,2,3,7,8,9-HxCDF	882		0.398	25.0	1.19	1.000	1
2,3,4,6,7,8-HxCDF	895		0.313	25.0	1.19	1.000	1
1,2,3,4,6,7,8-HpCDF	900		1.54	25.0	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	912		2.03	25.0	0.97	1.000	1
OCDF	1790		0.666	50.0	0.91	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900128-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 15:03
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521381	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	177		0.615	5.00	0.79		1
Total Penta-Dioxins	933		0.256	25.0	1.59		1
Total Hexa-Dioxins	2730		0.190	25.0	1.28		1
Total Hepta-Dioxins	909		0.178	25.0	1.03		1
Total Tetra-Furans	173		0.231	5.00	0.79		1
Total Penta-Furans	1910		0.206	25.0	1.61		1
Total Hexa-Furans	3600		0.327	25.0	1.20		1
Total Hepta-Furans	1810		1.77	25.0	1.02		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900128-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 15:03
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521381	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	2189.387	109		25-164	0.81	1.022
13C-1,2,3,7,8-PeCDD	2000	2222.732	111		25-181	1.62	1.198
13C-1,2,3,4,7,8-HxCDD	2000	2061.635	103		32-141	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	2502.929	125		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1927.055	96		23-140	1.07	1.068
13C-OCDD	4000	2861.098	72		17-157	0.91	1.141
13C-2,3,7,8-TCDF	2000	1984.538	99		24-169	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	2021.163	101		24-185	1.56	1.153
13C-2,3,4,7,8-PeCDF	2000	2000.283	100		21-178	1.58	1.187
13C-1,2,3,4,7,8-HxCDF	2000	1911.711	96		26-152	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	2017.115	101		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1901.216	95		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1967.350	98		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1848.963	92		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1871.713	94		26-138	0.45	1.080
37Cl-2,3,7,8-TCDD	800	446.666	56		35-197	NA	1.023

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900128-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 16:00
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521382	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	178		1.34	5.00	0.81	1.001	1
1,2,3,7,8-PeCDD	937		0.303	25.0	1.62	1.001	1
1,2,3,4,7,8-HxCDD	992		0.260	25.0	1.27	1.000	1
1,2,3,6,7,8-HxCDD	862		0.232	25.0	1.24	1.000	1
1,2,3,7,8,9-HxCDD	894		0.233	25.0	1.24	1.007	1
1,2,3,4,6,7,8-HpCDD	893		0.293	25.0	1.03	1.000	1
OCDD	1830		0.830	50.0	0.90	1.000	1
2,3,7,8-TCDF	172		0.453	5.00	0.72	1.001	1
1,2,3,7,8-PeCDF	980		0.451	25.0	1.58	1.001	1
2,3,4,7,8-PeCDF	997		0.420	25.0	1.54	1.000	1
1,2,3,4,7,8-HxCDF	922		0.229	25.0	1.19	1.000	1
1,2,3,6,7,8-HxCDF	948		0.223	25.0	1.21	1.000	1
1,2,3,7,8,9-HxCDF	905		0.293	25.0	1.24	1.000	1
2,3,4,6,7,8-HxCDF	913		0.242	25.0	1.17	1.000	1
1,2,3,4,6,7,8-HpCDF	916		0.805	25.0	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	915		1.05	25.0	1.00	1.000	1
OCDF	1890		0.873	50.0	0.86	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900128-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 16:00
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521382	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	180		1.34	5.00	0.81		1
Total Penta-Dioxins	937		0.303	25.0	1.62		1
Total Hexa-Dioxins	2750		0.241	25.0	1.27		1
Total Hepta-Dioxins	893		0.293	25.0	1.03		1
Total Tetra-Furans	178		0.453	5.00	0.73		1
Total Penta-Furans	1990		0.435	25.0	1.56		1
Total Hexa-Furans	3690		0.245	25.0	1.19		1
Total Hepta-Furans	1830		0.916	25.0	1.02		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900237
Project:	HS19031050	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900128-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	04/06/19 16:00
Prep Method:	Method	**Date Extracted:**	4/3/19
Sample Amount:	1.000Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521382	**Blank File Name:**	P521376
ICAL Date:	01/29/19	**Cal Ver. File Name:**	P521373

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1638.619	82		25-164	0.80	1.022
13C-1,2,3,7,8-PeCDD	2000	1736.079	87		25-181	1.64	1.198
13C-1,2,3,4,7,8-HxCDD	2000	1787.120	89		32-141	1.36	0.991
13C-1,2,3,6,7,8-HxCDD	2000	2215.502	111		28-130	1.20	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1629.691	81		23-140	1.08	1.068
13C-OCDD	4000	2282.405	57		17-157	0.88	1.141
13C-2,3,7,8-TCDF	2000	1502.802	75		24-169	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1543.978	77		24-185	1.59	1.153
13C-2,3,4,7,8-PeCDF	2000	1654.026	83		21-178	1.58	1.188
13C-1,2,3,4,7,8-HxCDF	2000	1651.630	83		26-152	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1719.231	86		26-123	0.53	0.974
13C-1,2,3,7,8,9-HxCDF	2000	1653.087	83		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1653.204	83		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1539.498	77		28-143	0.45	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1586.918	79		26-138	0.44	1.080
37Cl-2,3,7,8-TCDD	800	314.499	39		35-197	NA	1.023

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Chain of Custody Form dated April 16, 2019

Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 4/16/19

ATTACHMENT 1

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Houston LAB
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N/A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187/24	WIPE	Dioxin/Furan Analysis	4/16/19
187/25	WIPE	Methods 613	↓
187/26	WIPE		↓

HS19041103
Environmental Health & Engineering
22437

Fedex Box 24.2"
#25
c/f=0.0"

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other 2 wk TAT

☐ Fax results 781-247-4305

☐ RETURN SAMPLES ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient Kcochran@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 4/16/19

Received by: FEDEX of (company name) FEDEX Date: 4/16/19

Relinquished by: [signature] of (company name) — Date:

Received by: [signature] of (company name) ALS ENV Date: 4/17/19 09:05

Relinquished by: _____ of (company name) _____ Date:

Received by: _____ of (company name) _____ Date:

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date:

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

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ALS Laboratory Report (Work Order HS19041103) dated May 9, 2019

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

May 09, 2019

Kevin M. Coglan
Environmental Health & Engineering
180 Wells Avenue, Suite 200,
Newton, MA 02459

Work Order: **HS19041103**

Laboratory Results for: **22437**

Dear Kevin,

ALS Environmental received 3 sample(s) on Apr 17, 2019 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Corey Grandits
Project Manager

ALS Houston, US Date: 09-May-19

Client: Environmental Health & Engineering
Project: 22437
Work Order: HS19041103

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS19041103-01	187124	Wipe		16-Apr-2019 00:00	17-Apr-2019 09:05	☐
HS19041103-02	187125	Wipe		16-Apr-2019 00:00	17-Apr-2019 09:05	☐
HS19041103-03	187126	Wipe		16-Apr-2019 00:00	17-Apr-2019 09:05	☐

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ALS Houston, US Date: 09-May-19

Client: Environmental Health & Engineering **CASE NARRATIVE**
Project: 22437
Work Order: HS19041103

Work Order Comments

- The analysis for Dioxins/Furans was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

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ALS Houston, US Date: 09-May-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19041103
Sample ID:	187124	Lab ID:	HS19041103-01
Collection Date:	16-Apr-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	09-May-2019 13:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 09-May-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19041103
Sample ID:	187125	Lab ID:	HS19041103-02
Collection Date:	16-Apr-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	09-May-2019 13:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 09-May-19

Client:	Environmental Health & Engineering		**ANALYTICAL REPORT**
Project:	22437	WorkOrder:	HS19041103
Sample ID:	187126	Lab ID:	HS19041103-03
Collection Date:	16-Apr-2019 00:00	Matrix:	Wipe

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A		**Method:NA**					Analyst: SUB
Subcontract Analysis	See Attached		0			1	09-May-2019 13:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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ALS Houston, US Date: 09-May-19

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: HS19041103

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R338134	**Test Name :** SUBCONTRACT ANALYSIS - DIOXINS/FURANS 8290A			**Matrix:** Wipe		
HS19041103-01	187124	16 Apr 2019 00:00			09 May 2019 13:55	1
HS19041103-02	187125	16 Apr 2019 00:00			09 May 2019 13:55	1
HS19041103-03	187126	16 Apr 2019 00:00			09 May 2019 13:55	1

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ALS Houston, US Date: 09-May-19

Client: Environmental Health & Engineering
Project: 22437
WorkOrder: **HS19041103**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	ANAB L2231	20-Dec-2021
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019
North Carolina	624-2019	31-Dec-2019
Maryland	343, 2018-2019	30-Jun-2019
Arkansas	19-028-0	27-Mar-2020
Texas	TX104704231-19-23	30-Apr-2020

ALS Houston, US Date: 09-May-19

Sample Receipt Checklist

Client Name: Environmental Health & Engineering
Work Order: HS19041103
Date/Time Received: **17-Apr-2019 09:05**
Received by: **PMG**

Checklist completed by: *Paresh M. Giga* eSignature | 18-Apr-2019 Date
Reviewed by: *RJ Modashia* eSignature | 19-Apr-2019 Date

Matrices: **Wipes**
Carrier name: **FedEx**

	Yes	No	
Shipping container/cooler in good condition?	☑	☐	Not Present ☐
Custody seals intact on shipping container/cooler?	☐	☐	Not Present ☑
Custody seals intact on sample bottles?	☐	☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	Not Present ☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:None
Samplers name present on COC?	☐	☑	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s):	24.2c U/c	IR25
Cooler(s)/Kit(s):	fedex Box	
Date/Time sample(s) sent to storage:	4/17/19 19:00	

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☐	☐	N/A ☑
pH adjusted?	☐	☐	N/A ☑

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

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Environmental Health & Engineering, Inc.

CHAIN OF CUSTODY FORM

DATE: 4/16/19

ATTACHMENT 1

FROM: Environmental Health and Engineering, Inc.
180 Wells Avenue, Suite 200
Newton, MA 02459-3328

TO: ALS Environmental Houston LAB
Houston, TX

Please send invoices to ATTN: Accounts Payable
Please send reports to ATTN: Data Coordinator

In all correspondence regarding this matter, please refer to EH&E Project # 22437

The cost of this analysis will be covered by EH&E Purchase Order # N/A.

For EH & E Data Coordinator - URGENT DATA ☐

SAMPLE ID	SAMPLE TYPE	ANALYTICAL METHOD/NUMBER	OTHER:Time/Date/Vol.
187/24	WIPE	Dioxin/Furan Analysis	4/16/19
187/25	WIPE	Methods 613	↓
187/26	WIPE		↓

HS19041103
Environmental Health & Engineering
22437

Fedex Box 24.2"
#25
c/f=0.0"

Special instructions:

☐ Standard turn around time ☐ Rush by _____ date/time ☒ Other 2 wk TAT

☐ Fax results 781-247-4305

☐ RETURN SAMPLES ☐ Electronic transfer - datacoordinator@eheinc.com

☒ Additional report recipient Kcochran@eheinc.com

Each signatory please return one copy of this form to the above address

Relinquished by: [signature] of Environmental Health & Engineering, Inc. Date: 4/16/19

Received by: FEDEX of (company name) FEDEX Date: 4/16/19

Relinquished by: [signature] of (company name) — Date:

Received by: [signature] of (company name) ALS. ENV Date: 4/17/19 09:05

Relinquished by: _____ of (company name) _____ Date:

Received by: _____ of (company name) _____ Date:

Lab Data
Received by: _____ of Environmental Health & Engineering, Inc. Date:

Page 1 of 1

WHITE-EH&E FILE COPY YELLOW-LAB COPY PINK-PROJECT MANAGER COPY GOLD-DATA COORDINATOR COPY

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FedEx.
TRK# 0215 8139 3928 6144

WED - 17 APR AA
STANDARD OVERNIGHT
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77099
TX-US
IAH

NH SGRA

FID 3763519 16APR19 OWDA 563C1/D7E5/9CBA

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May 08, 2019

Service Request No:E1900323

ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS19041103

Enclosed are the results of the sample(s) submitted to our laboratory April 19, 2019
For your reference, these analyses have been assigned our service request number **E1900323.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

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ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS	**Service Request No.:**	E1900323
Project:	HS19041103	**Date Received:**	04/19/19
Sample Matrix:	Wipe		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Three samples were received for analysis at ALS Environmental in Houston on 04/19/19.

The samples were received in good condition and are consistent with the accompanying chain of custody form. Dioxin/furan compounds are stable at room temperature. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ1900156: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. Recoveries are within QC limits.

B flags – Method Blank

The Method Blank EQ1900156-01 contained low levels of target dioxin/furan compounds above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank

Y flags – Cleanup Standard

The recoveries for the cleanup standard, 37Cl-2,3,7,8-TCDD are below control limits in samples E1900323-001 and E1900323-003. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected, and is not used in quantitation of target analytes.

Y flags – Labeled Standards

13C-2,3,7,8-TCDF recovered below acceptance criteria (recovery > 20%). Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

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K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

P flag

Chlorodiphenyl ether interference was present at the retention time of the target analyte 1,2,3,4,6,7,8-HpCDF in sample E1900323-001. Reported result should be considered an estimate.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

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Client: ALS Environmental - US
Project: HS19041103

Service Request:E1900323

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E1900323-001	187124	4/16/2019	0000
E1900323-002	187125	4/16/2019	0000
E1900323-003	187126	4/16/2019	0000

Printe RIGHT SOLUTIONS | RIGHT PARTNER nary

Service Request Summary

ATTACHMENT 1

Folder #: **E1900323**
Client Name: ALS Environmental - US
Project Name: HS19041103
Project Number:

Report To: RJ Modashia
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: rj.modashia@alsglobal.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 04/19/19
Internal Due Date: 5/8/2019
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: N
Report to MDL?: Y
P.O. Number: HS19041103
EDD: No EDD Specified

3 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved
Location: E-Disposed
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON Dioxins Furans/1613B
E1900323-001	187124	Wipe	04/16/19 0000	II
E1900323-002	187125	Wipe	04/16/19 0000	II
E1900323-003	187126	Wipe	04/16/19 0000	II

Folder Comments:

Print
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Service Request Summary

ATTACHMENT 1

Folder #:	**E1900323**
Client Name:	ALS Environmental - US
Project Name:	HS19041103
Project Number:	
Report To:	RJ Modashia ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	rj.modashia@alsglobal.com

Project Chemist:	Corey Grandits
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	04/19/19
Internal Due Date:	5/8/2019
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	N
Report to MDL?:	Y
P.O. Number:	HS19041103
EDD:	No EDD Specified

3 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: E-Disposed

Pressure Gas:

Print

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ED_004522_00089767-00759

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
E Estimated value. The reported concentration is above the calibration range of the instrument.
H Sample extracted and/or analyzed out of suggested holding time.
J Estimated value. The reported concentration is below the MRL.
K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.
P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
S Signal saturated detector. Result reported from dilution.
U Compound was analyzed for, but was not detected (ND).
X See Case Narrative.
Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.
i The MDL/MRL have been elevated due to a matrix interference.

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Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

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ED_004522_00089767-00761

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2019
Arizona Department of Health Services	AZ0793	5/27/2019
Arkansas Department of Environmental Quality	19-028-0	3/27/2020
Department of Defense	A2LA 2897.01	11/30/2019
Florida Department of Health	E87611	7/31/2019
Illinois Environmental Protection Agency	004438	5/29/2019
Kansas Department of Health and Environment	E-10352	7/31/2019
Louisiana Department of Environmental Quality	03087	6/30/2019
Louisiana Department of Health and Hospitals	LA028	12/31/2019
Maine Center for Disease Control and Prevention	201815	6/5/2020
Maryland Department of the Environment	343	6/30/2019
Nevada Department of Concervation and Natural Resources	TX026932019-1	7/31/2019
New Hampshire Environmental Laboratory Accreditation Program	209419	4/24/2020
New Jersey Department of Environmental Protection	NLC180001	6/30/2019
New York Department of Health	11707	3/31/2020
Oklahoma Department of Environmental Quality	2018-156	8/31/2019
Pennsylvania Department of Environmental Protection	68-03441-012	6/30/2019
Tennessee Department of Environment and Concervation	04016	6/30/2019
Texas Commision on Environmental Quality	TX104704231-19-23	4/30/2020
United States Department of Agriculture	P330-18-00368	12/14/2019
Utah Department of Health Environmental Laboratory Certification	TX026932018-8	7/3/2019
Washington Department of Health	C819	11/14/2019
West Virginia Department of Environmental Protection	347	6/30/2019

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E1900323 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
05/07/19	TC	-001, -002, -003

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
05/08/19	LKL	001_003

ALS Environmental

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Massachusetts** **COC ID:** **11168**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084 **Phone:** +1 281 530 5656

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS19041103
TSR: Jennifer Bell

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS19041103-01**	**187124**	**Wipe**	**16 Apr 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			08 May 2019
2.	**HS19041103-02**	**187125**	**Wipe**	**16 Apr 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			08 May 2019
3.	**HS19041103-03**	**187126**	**Wipe**	**16 Apr 2019 00:00**
	Sub 1613B Dioxin/Furans Full List			08 May 2019

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By: _____ Date/Time: 4/19/19 11:12

Received By: _____ Date/Time: 4/19/19 1:12

Cooler ID(s): _____ Temperature(s): _____

E1900323 5
ALS Laboratory Group
HS1904

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ED_004522_00089767-00765

ATTACHMENT 1

ALS Environmental

Cooler Receipt Form

Project Chemist _____

Client/Project: ALS

Thermometer ID: SMO 04

Date/Time Received: 4-19-19 11:12 Initials: JW

Date/Time Logged in: 4-19-19 Initials: JW

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ○ Courier ○ ~~Client~~
2. Samples received in: ○ Cooler ○ Box ○ Envelope ○ Other _____
3. Were custody seals on coolers? ○ Yes ○ ~~No~~
   Were they intact? ○ Yes ○ No ○ N/A
   Were they signed and dated? ○ Yes ○ No ○ N/A
   If yes, how many and where? No Seal
4. Packing Material: ○ Inserts ○ Baggies ○ Bubble Wrap ○ Gel Packs ○ Wet Ice ○ Sleeves ○ Other _____
5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
						☐
						☐
N/A						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ○ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ○ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ○ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ○ Yes ○ No
10. Did sample labels and tags agree with custody documents? ○ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: E1900323 5
ALS Laboratory Group
HS1904

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

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ALS Environmental

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 335585 **Prep WorkFlow:** OrgExtS(365) **Status:** Prepped
Team: Semivoa GCMS/TWOODS **Prep Method:** Method **Prep Date/Time:** 4/29/19 13:52

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1900323-001	187124	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
2	E1900323-002	187125	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
3	E1900323-003	187126	.01	1613B/Dioxins Furans			Wipe	1Sample	White Wipe
4	EQ1900156-01	MB		1613B/Dioxins Furans			Wipes	1Sample	
5	EQ1900156-02	LCS		1613B/Dioxins Furans			Wipes	1Sample	
6	EQ1900156-03	DLCS		1613B/Dioxins Furans			Wipes	1Sample	

Spiking Solutions

Name: 8290/1613B Cleanup Working Standard Inventory ID 197847 Logbook Ref: 197847 tw 03/19/19 8ng/ml Expires On: 09/15/2019

E1900323-001 100.00µL E1900323-002 100.00µL E1900323-003 100.00µL EQ1900156-01 100.00µL EQ1900156-02 100.00µL EQ1900156-03 100.00µL

Name: 1613B Matrix Working Standard Inventory ID 198514 Logbook Ref: 198514 JG 4/11/19 2-20ng/ml Expires On: 10/08/2019

E1900323-001 100.00µL E1900323-002 100.00µL E1900323-003 100.00µL EQ1900156-01 100.00µL EQ1900156-02 100.00µL EQ1900156-03 100.00µL

Name: 1613B Labeled Working Standard Inventory ID 198952 Logbook Ref: 198952 JG 4/29/2019 2-4ng-ml Expires On: 07/31/2019

E1900323-001 1,000.00µL E1900323-002 1,000.00µL E1900323-003 1,000.00µL EQ1900156-01 1,000.00µL EQ1900156-02 1,000.00µL EQ1900156-03 1,000.00µL

Preparation Materials

Carbon, High Purity	JG 4/11/19 (198507)	Ethyl Acetate 99.9% Minimum EtOAc	AL 12/31/18 (195971)	Glass Wool	197792 JG 3/18/19 (197792)
Hexanes 95%	JG 3/22/19 (197958)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	JG 4/18/19 (198701)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	JG 4/4/19 (198305)	Tridecane (n-Tridecane)	JG 197877 3/20/19 (197877)	Silica Gel	JG 4/11/19 (198508)
Toluene 99.9% Minimum	JG 3/22/19 (197957)	sulfuric acid	tw 1/28/19 sulfuric (196582)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	4/29/19 13:52	Started:	4/30/19 09:00	Started:	4/30/19 10:00	Started:	4/30/19 13:00
Finished:	4/30/19 08:00	Finished:	4/30/19 10:00	Finished:	4/30/19 13:00	Finished:	4/30/19 16:00
By:	TWOODS	By:	TWOODS	By:	TWOODS	By:	TWOODS
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: JG Date: 05/3/2019

Preparation Information Benchsheet

ATTACHMENT 1

Prep Run#: 335585
Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtS(365)
Prep Method: Method

Status: Prepped
Prep Date/Time: 4/29/19 13:52

Chain of Custody

Relinquished By:		Date:		Extracts Examined
Received By:		Date:		Yes No

ALS Environmental

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187124	**Units:**	pg
Lab Code:	E1900323-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 22:02
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617538	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.89	5.00			1
1,2,3,7,8-PeCDD	ND	U	1.78	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	2.33	25.0			1
1,2,3,6,7,8-HxCDD	8.44**J**		2.13	25.0	1.09	1.000	1
1,2,3,7,8,9-HxCDD	5.95**JK**		2.08	25.0	1.02	1.007	1
1,2,3,4,6,7,8-HpCDD	71.6		3.04	25.0	1.16	1.000	1
OCDD	199		3.46	50.0	0.98	1.000	1
2,3,7,8-TCDF	ND	U	2.37	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.75	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.69	25.0			1
1,2,3,4,7,8-HxCDF	4.37**JK**		2.98	25.0	1.03	1.000	1
1,2,3,6,7,8-HxCDF	5.93**J**		3.03	25.0	1.11	0.999	1
1,2,3,7,8,9-HxCDF	ND	U	4.11	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	3.41	25.0			1
1,2,3,4,6,7,8-HpCDF	11.2**JP**		1.93	25.0	1.06	0.999	1
1,2,3,4,7,8,9-HpCDF	ND	U	2.43	25.0			1
OCDF	35.6**J**		3.45	50.0	1.00	1.005	1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187124	**Units:**	pg
Lab Code:	E1900323-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 22:02
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617538	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.89	5.00			1
Total Penta-Dioxins	ND	U	1.78	25.0			1
Total Hexa-Dioxins	36.2		2.17	25.0	1.08		1
Total Hepta-Dioxins	105		3.04	25.0	1.01		1
Total Tetra-Furans	ND	U	2.37	5.00			1
Total Penta-Furans	ND	U	1.72	25.0			1
Total Hexa-Furans	9.26**J**		3.34	25.0	1.20		1
Total Hepta-Furans	27.2		2.17	25.0	1.06		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187124	**Units:**	Percent
Lab Code:	E1900323-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 22:02
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617538	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	740.794	37		25-164	0.79	1.018
13C-1,2,3,7,8-PeCDD	2000	718.843	36		25-181	1.54	1.173
13C-1,2,3,4,7,8-HxCDD	2000	725.974	36		32-141	1.23	0.992
13C-1,2,3,6,7,8-HxCDD	2000	915.411	46		28-130	1.25	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	609.197	30		23-140	1.07	1.066
13C-OCDD	4000	887.185	22		17-157	0.90	1.142
13C-2,3,7,8-TCDF	2000	650.338	33		24-169	0.79	0.993
13C-1,2,3,7,8-PeCDF	2000	660.948	33		24-185	1.55	1.134
13C-2,3,4,7,8-PeCDF	2000	645.334	32		21-178	1.58	1.164
13C-1,2,3,4,7,8-HxCDF	2000	735.164	37		26-152	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	2000	818.469	41		26-123	0.53	0.975
13C-1,2,3,7,8,9-HxCDF	2000	688.196	34		29-147	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	727.316	36		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	629.151	31		28-143	0.46	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	607.454	30		26-138	0.45	1.079
37Cl-2,3,7,8-TCDD	800	260.864	33	Y	35-197	NA	1.019

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187124	**Units:**	pg
Lab Code:	E1900323-001	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	2.89	5.00	1	1	
1,2,3,7,8-PeCDD	ND	1.78	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	2.33	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	**8.44**	2.13	25.0	1	0.1	0.844
1,2,3,7,8,9-HxCDD	**5.95**	2.08	25.0	1	0.1	0.595
1,2,3,4,6,7,8-HpCDD	**71.6**	3.04	25.0	1	0.01	0.716
OCDD	**199**	3.46	50.0	1	0.0003	0.0597
2,3,7,8-TCDF	ND	2.37	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.75	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.69	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	**4.37**	2.98	25.0	1	0.1	0.437
1,2,3,6,7,8-HxCDF	**5.93**	3.03	25.0	1	0.1	0.593
1,2,3,7,8,9-HxCDF	ND	4.11	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	3.41	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**11.2**	1.93	25.0	1	0.01	0.112
1,2,3,4,7,8,9-HpCDF	ND	2.43	25.0	1	0.01	
OCDF	**35.6**	3.45	50.0	1	0.0003	0.0107
		Total TEQ				3.37

2005 WHO TEFs, ND = 0

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187125	**Units:**	pg
Lab Code:	E1900323-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 22:52
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617539	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.82	5.00			1
1,2,3,7,8-PeCDD	ND	U	1.10	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	2.13	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	1.96	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	1.91	25.0			1
1,2,3,4,6,7,8-HpCDD	6.75**BJ**		1.82	25.0	0.95	1.000	1
OCDD	56.2		3.51	50.0	0.99	1.000	1
2,3,7,8-TCDF	ND	U	2.62	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.03	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.09	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	1.87	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	1.88	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	2.66	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	2.17	25.0			1
1,2,3,4,6,7,8-HpCDF	2.22**BJ**		1.29	25.0	1.08	1.001	1
1,2,3,4,7,8,9-HpCDF	ND	U	1.50	25.0			1
OCDF	10.4**JK**		4.29	50.0	1.13	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187125	**Units:**	pg
Lab Code:	E1900323-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 22:52
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617539	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.82	5.00			1
Total Penta-Dioxins	ND	U	1.10	25.0			1
Total Hexa-Dioxins	ND	U	1.99	25.0			1
Total Hepta-Dioxins	6.75**J**		1.82	25.0	0.95		1
Total Tetra-Furans	ND	U	2.62	5.00			1
Total Penta-Furans	ND	U	1.06	25.0			1
Total Hexa-Furans	ND	U	2.11	25.0			1
Total Hepta-Furans	2.22**J**		1.39	25.0	1.08		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187125	**Units:**	Percent
Lab Code:	E1900323-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 22:52
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617539	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	829.626	41		25-164	0.79	1.018
13C-1,2,3,7,8-PeCDD	2000	863.546	43		25-181	1.55	1.173
13C-1,2,3,4,7,8-HxCDD	2000	860.662	43		32-141	1.35	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1103.832	55		28-130	1.20	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	618.296	31		23-140	1.07	1.066
13C-OCDD	4000	740.919	19		17-157	0.89	1.141
13C-2,3,7,8-TCDF	2000	721.521	36		24-169	0.79	0.993
13C-1,2,3,7,8-PeCDF	2000	806.739	40		24-185	1.56	1.133
13C-2,3,4,7,8-PeCDF	2000	763.354	38		21-178	1.57	1.163
13C-1,2,3,4,7,8-HxCDF	2000	870.618	44		26-152	0.53	0.972
13C-1,2,3,6,7,8-HxCDF	2000	942.155	47		26-123	0.52	0.975
13C-1,2,3,7,8,9-HxCDF	2000	778.362	39		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	817.859	41		28-136	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	638.722	32		28-143	0.46	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	681.006	34		26-138	0.44	1.079
37Cl-2,3,7,8-TCDD	800	292.064	37		35-197	NA	1.019

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187125	**Units:**	pg
Lab Code:	E1900323-002	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	2.82	5.00	1	1	
1,2,3,7,8-PeCDD	ND	1.10	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	2.13	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	1.96	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	1.91	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**6.75**	1.82	25.0	1	0.01	0.0675
OCDD	**56.2**	3.51	50.0	1	0.0003	0.0169
2,3,7,8-TCDF	ND	2.62	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.03	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.09	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	1.87	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	1.88	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	2.66	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	2.17	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	**2.22**	1.29	25.0	1	0.01	0.0222
1,2,3,4,7,8,9-HpCDF	ND	1.50	25.0	1	0.01	
OCDF	**10.4**	4.29	50.0	1	0.0003	0.00312
		Total TEQ				0.110

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187126	**Units:**	pg
Lab Code:	E1900323-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 23:41
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617540	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	4.97	5.00			1
1,2,3,7,8-PeCDD	ND	U	1.50	25.0			1
1,2,3,4,7,8-HxCDD	ND	U	2.87	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	2.49	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	2.49	25.0			1
1,2,3,4,6,7,8-HpCDD	9.20**BJ**		1.93	25.0	0.95	1.000	1
OCDD	59.6		4.70	50.0	0.81	1.000	1
2,3,7,8-TCDF	ND	U	3.54	5.00			1
1,2,3,7,8-PeCDF	ND	U	1.80	25.0			1
2,3,4,7,8-PeCDF	ND	U	1.74	25.0			1
1,2,3,4,7,8-HxCDF	ND	U	2.27	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	2.26	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	3.05	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	2.62	25.0			1
1,2,3,4,6,7,8-HpCDF	ND	U	1.92	25.0			1
1,2,3,4,7,8,9-HpCDF	ND	U	2.37	25.0			1
OCDF	12.7**J**		4.22	50.0	1.01	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187126	**Units:**	pg
Lab Code:	E1900323-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 23:41
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617540	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	4.97	5.00			1
Total Penta-Dioxins	ND	U	1.50	25.0			1
Total Hexa-Dioxins	ND	U	2.59	25.0			1
Total Hepta-Dioxins	9.20**J**		1.93	25.0	0.95		1
Total Tetra-Furans	ND	U	3.54	5.00			1
Total Penta-Furans	ND	U	1.77	25.0			1
Total Hexa-Furans	ND	U	2.52	25.0			1
Total Hepta-Furans	ND	U	2.13	25.0			1

RIGHT SOLUTIONS | RIGHT PARTNER

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187126	**Units:**	Percent
Lab Code:	E1900323-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 23:41
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-08
		GC Column:	DB-5MSUI
Data File Name:	P617540	**Blank File Name:**	P521699
ICAL Date:	03/12/19	**Cal Ver. File Name:**	P617537

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	547.075	27		25-164	0.79	1.018
13C-1,2,3,7,8-PeCDD	2000	646.647	32		25-181	1.55	1.173
13C-1,2,3,4,7,8-HxCDD	2000	727.896	36		32-141	1.26	0.992
13C-1,2,3,6,7,8-HxCDD	2000	962.063	48		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	588.458	29		23-140	1.05	1.066
13C-OCDD	4000	751.179	19		17-157	0.89	1.142
13C-2,3,7,8-TCDF	2000	447.916	22	Y	24-169	0.80	0.993
13C-1,2,3,7,8-PeCDF	2000	568.222	28		24-185	1.59	1.134
13C-2,3,4,7,8-PeCDF	2000	563.891	28		21-178	1.58	1.164
13C-1,2,3,4,7,8-HxCDF	2000	712.452	36		26-152	0.52	0.972
13C-1,2,3,6,7,8-HxCDF	2000	801.028	40		26-123	0.53	0.975
13C-1,2,3,7,8,9-HxCDF	2000	676.195	34		29-147	0.54	1.008
13C-2,3,4,6,7,8-HxCDF	2000	688.258	34		28-136	0.53	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	606.570	30		28-143	0.45	1.041
13C-1,2,3,4,7,8,9-HpCDF	2000	614.747	31		26-138	0.46	1.079
37Cl-2,3,7,8-TCDD	800	185.429	23	Y	35-197	NA	1.019

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	04/16/19 00:00
Sample Matrix:	Wipe	**Date Received:**	04/19/19 11:12
Sample Name:	187126	**Units:**	pg
Lab Code:	E1900323-003	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	4.97	5.00	1	1	
1,2,3,7,8-PeCDD	ND	1.50	25.0	1	1	
1,2,3,4,7,8-HxCDD	ND	2.87	25.0	1	0.1	
1,2,3,6,7,8-HxCDD	ND	2.49	25.0	1	0.1	
1,2,3,7,8,9-HxCDD	ND	2.49	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDD	**9.20**	1.93	25.0	1	0.01	0.0920
OCDD	**59.6**	4.70	50.0	1	0.0003	0.0179
2,3,7,8-TCDF	ND	3.54	5.00	1	0.1	
1,2,3,7,8-PeCDF	ND	1.80	25.0	1	0.03	
2,3,4,7,8-PeCDF	ND	1.74	25.0	1	0.3	
1,2,3,4,7,8-HxCDF	ND	2.27	25.0	1	0.1	
1,2,3,6,7,8-HxCDF	ND	2.26	25.0	1	0.1	
1,2,3,7,8,9-HxCDF	ND	3.05	25.0	1	0.1	
2,3,4,6,7,8-HxCDF	ND	2.62	25.0	1	0.1	
1,2,3,4,6,7,8-HpCDF	ND	1.92	25.0	1	0.01	
1,2,3,4,7,8,9-HpCDF	ND	2.37	25.0	1	0.01	
OCDF	**12.7**	4.22	50.0	1	0.0003	0.00381
		Total TEQ				0.114

2005 WHO TEFs, ND = 0

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900156-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 23:02
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521699	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.08	5.00			1
1,2,3,7,8-PeCDD	0.816**JK**		0.301	25.0	2.48	1.001	1
1,2,3,4,7,8-HxCDD	ND	U	0.437	25.0			1
1,2,3,6,7,8-HxCDD	ND	U	0.393	25.0			1
1,2,3,7,8,9-HxCDD	ND	U	0.403	25.0			1
1,2,3,4,6,7,8-HpCDD	2.18**JK**		0.284	25.0	0.85	1.000	1
OCDD	3.99**JK**		0.790	50.0	1.27	1.001	1
2,3,7,8-TCDF	ND	U	0.874	5.00			1
1,2,3,7,8-PeCDF	0.466**JK**		0.369	25.0	0.70	1.000	1
2,3,4,7,8-PeCDF	0.770**J**		0.402	25.0	1.34	1.001	1
1,2,3,4,7,8-HxCDF	ND	U	0.429	25.0			1
1,2,3,6,7,8-HxCDF	ND	U	0.431	25.0			1
1,2,3,7,8,9-HxCDF	ND	U	0.526	25.0			1
2,3,4,6,7,8-HxCDF	ND	U	0.457	25.0			1
1,2,3,4,6,7,8-HpCDF	0.924**J**		0.261	25.0	0.94	1.000	1
1,2,3,4,7,8,9-HpCDF	0.759**JK**		0.363	25.0	1.27	1.000	1
OCDF	ND	U	0.681	50.0			1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg
Lab Code:	EQ1900156-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 23:02
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521699	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	2.08	5.00			1
Total Penta-Dioxins	ND	U	0.301	25.0			1
Total Hexa-Dioxins	0.854**J**		0.409	25.0	1.37		1
Total Hepta-Dioxins	ND	U	0.284	25.0			1
Total Tetra-Furans	ND	U	0.874	5.00			1
Total Penta-Furans	0.770**J**		0.385	25.0	1.34		1
Total Hexa-Furans	ND	U	0.458	25.0			1
Total Hepta-Furans	0.924**J**		0.305	25.0	0.94		1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1900156-01	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/02/19 23:02
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521699	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1546.957	77		25-164	0.79	1.023
13C-1,2,3,7,8-PeCDD	2000	1654.965	83		25-181	1.57	1.200
13C-1,2,3,4,7,8-HxCDD	2000	1633.081	82		32-141	1.34	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1987.454	99		28-130	1.19	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1752.515	88		23-140	1.04	1.066
13C-OCDD	4000	3571.255	89		17-157	0.90	1.138
13C-2,3,7,8-TCDF	2000	1292.137	65		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	1632.875	82		24-185	1.59	1.155
13C-2,3,4,7,8-PeCDF	2000	1538.866	77		21-178	1.57	1.189
13C-1,2,3,4,7,8-HxCDF	2000	1627.129	81		26-152	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1677.801	84		26-123	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1682.908	84		29-147	0.49	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1627.659	81		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1725.858	86		28-143	0.43	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1805.107	90		26-138	0.43	1.079
37Cl-2,3,7,8-TCDD	800	596.132	75		35-197	NA	1.023

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10450 Stancliff Rd., Suite 210, Houston TX 77099
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Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Analyzed:**	05/03/19
Sample Matrix:	Wipe	**Date Extracted:**	04/29/19

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	pg
Prep Method:	Method	**Basis:**	As Received
		Analysis Lot:	634293

	Lab Control Sample EQ1900156-02			Duplicate Lab Control Sample EQ1900156-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,3,4,6,7,8-HpCDD	1090	1000	109	1110	1000	111	70-140	1	50
1,2,3,4,7,8-HxCDD	1120	1000	112	1140	1000	114	70-164	2	50
1,2,3,6,7,8-HxCDD	988	1000	99	1000	1000	100	76-134	2	50
1,2,3,7,8,9-HxCDD	1090	1000	109	1070	1000	107	64-162	2	50
1,2,3,7,8-PeCDD	1090	1000	109	1080	1000	108	70-142	<1	50
2,3,7,8-TCDD	197	200	98	201	200	100	67-158	2	50
OCDD	2250	2000	112	2250	2000	113	78-144	<1	50
1,2,3,4,6,7,8-HpCDF	1110	1000	111	1090	1000	109	82-122	2	50
1,2,3,4,7,8,9-HpCDF	1180	1000	118	1150	1000	115	78-138	2	50
1,2,3,4,7,8-HxCDF	1080	1000	108	1120	1000	112	72-134	3	50
1,2,3,6,7,8-HxCDF	1120	1000	112	1090	1000	109	84-130	3	50
1,2,3,7,8,9-HxCDF	1070	1000	107	1060	1000	106	78-130	1	50
1,2,3,7,8-PeCDF	1030	1000	103	1020	1000	102	80-134	<1	50
2,3,4,6,7,8-HxCDF	1170	1000	117	1140	1000	114	70-156	2	50
2,3,4,7,8-PeCDF	1120	1000	112	1110	1000	111	68-160	<1	50
2,3,7,8-TCDF	211	200	106	207	200	104	75-158	2	50
OCDF	2200	2000	110	2250	2000	113	63-170	2	50

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900156-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/03/19 04:43
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521706	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	197		1.53	5.00	0.73	1.001	1
1,2,3,7,8-PeCDD	1090		0.568	25.0	1.54	1.001	1
1,2,3,4,7,8-HxCDD	1120		0.765	25.0	1.21	1.000	1
1,2,3,6,7,8-HxCDD	988		0.680	25.0	1.26	1.000	1
1,2,3,7,8,9-HxCDD	1090		0.702	25.0	1.24	1.006	1
1,2,3,4,6,7,8-HpCDD	1090		0.480	25.0	1.05	1.000	1
OCDD	2250		0.518	50.0	0.87	1.000	1
2,3,7,8-TCDF	211		0.705	5.00	0.73	1.001	1
1,2,3,7,8-PeCDF	1030		0.567	25.0	1.44	1.001	1
2,3,4,7,8-PeCDF	1120		0.620	25.0	1.50	1.000	1
1,2,3,4,7,8-HxCDF	1080		0.387	25.0	1.14	1.000	1
1,2,3,6,7,8-HxCDF	1120		0.393	25.0	1.18	1.000	1
1,2,3,7,8,9-HxCDF	1070		0.438	25.0	1.18	1.000	1
2,3,4,6,7,8-HxCDF	1170		0.399	25.0	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	1110		0.726	25.0	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	1180		0.977	25.0	1.01	1.000	1
OCDF	2200		1.01	50.0	0.88	1.005	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900156-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/03/19 04:43
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521706	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	197		1.53	5.00	0.73		1
Total Penta-Dioxins	1090		0.568	25.0	1.54		1
Total Hexa-Dioxins	3190		0.713	25.0	1.21		1
Total Hepta-Dioxins	1090		0.480	25.0	1.05		1
Total Tetra-Furans	212		0.705	5.00	0.73		1
Total Penta-Furans	2150		0.592	25.0	1.44		1
Total Hexa-Furans	4430		0.403	25.0	1.14		1
Total Hepta-Furans	2290		0.837	25.0	0.99		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900156-02	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/03/19 04:43
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521706	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1385.437	69		25-164	0.78	1.023
13C-1,2,3,7,8-PeCDD	2000	1482.165	74		25-181	1.56	1.200
13C-1,2,3,4,7,8-HxCDD	2000	1384.035	69		32-141	1.28	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1694.878	85		28-130	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1532.919	77		23-140	1.07	1.067
13C-OCDD	4000	3175.967	79		17-157	0.90	1.138
13C-2,3,7,8-TCDF	2000	1190.420	60		24-169	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	1465.786	73		24-185	1.57	1.155
13C-2,3,4,7,8-PeCDF	2000	1381.569	69		21-178	1.56	1.189
13C-1,2,3,4,7,8-HxCDF	2000	1379.519	69		26-152	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1351.462	68		26-123	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1477.316	74		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1415.278	71		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1476.272	74		28-143	0.43	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1558.395	78		26-138	0.43	1.079
37Cl-2,3,7,8-TCDD	800	584.612	73		35-197	NA	1.023

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900156-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/03/19 05:32
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521707	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	201		1.64	5.00	0.77	1.000	1
1,2,3,7,8-PeCDD	1080		0.658	25.0	1.54	1.000	1
1,2,3,4,7,8-HxCDD	1140		0.371	25.0	1.26	1.000	1
1,2,3,6,7,8-HxCDD	1000		0.320	25.0	1.25	1.000	1
1,2,3,7,8,9-HxCDD	1070		0.335	25.0	1.22	1.007	1
1,2,3,4,6,7,8-HpCDD	1110		0.449	25.0	1.04	1.000	1
OCDD	2250		1.04	50.0	0.87	1.000	1
2,3,7,8-TCDF	207		0.909	5.00	0.74	1.001	1
1,2,3,7,8-PeCDF	1020		2.28	25.0	1.50	1.001	1
2,3,4,7,8-PeCDF	1110		2.38	25.0	1.49	1.000	1
1,2,3,4,7,8-HxCDF	1120		0.482	25.0	1.20	1.000	1
1,2,3,6,7,8-HxCDF	1090		0.474	25.0	1.17	1.000	1
1,2,3,7,8,9-HxCDF	1060		0.558	25.0	1.16	1.000	1
2,3,4,6,7,8-HxCDF	1140		0.495	25.0	1.17	1.000	1
1,2,3,4,6,7,8-HpCDF	1090		1.67	25.0	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	1150		2.39	25.0	0.99	1.000	1
OCDF	2250		1.15	50.0	0.87	1.004	1

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ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg
Lab Code:	EQ1900156-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/03/19 05:32
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521707	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	201		1.64	5.00	0.77		1
Total Penta-Dioxins	1080		0.658	25.0	1.54		1
Total Hexa-Dioxins	3210		0.340	25.0	1.26		1
Total Hepta-Dioxins	1110		0.449	25.0	1.04		1
Total Tetra-Furans	207		0.909	5.00	0.74		1
Total Penta-Furans	2140		2.33	25.0	1.37		1
Total Hexa-Furans	4410		0.500	25.0	1.20		1
Total Hepta-Furans	2240		1.99	25.0	0.99		1

ATTACHMENT 1

Client:	ALS Environmental - US	**Service Request:**	E1900323
Project:	HS19041103	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1900156-03	**Basis:**	As Received

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	05/03/19 05:32
Prep Method:	Method	**Date Extracted:**	4/29/19
Sample Amount:	1Sample	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P521707	**Blank File Name:**	P521699
ICAL Date:	04/25/19	**Cal Ver. File Name:**	P521696

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1386.833	69		25-164	0.77	1.023
13C-1,2,3,7,8-PeCDD	2000	1585.473	79		25-181	1.57	1.200
13C-1,2,3,4,7,8-HxCDD	2000	1358.887	68		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1728.501	86		28-130	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1514.022	76		23-140	1.04	1.067
13C-OCDD	4000	2992.016	75		17-157	0.90	1.139
13C-2,3,7,8-TCDF	2000	1175.201	59		24-169	0.81	0.991
13C-1,2,3,7,8-PeCDF	2000	1519.221	76		24-185	1.56	1.155
13C-2,3,4,7,8-PeCDF	2000	1467.450	73		21-178	1.59	1.189
13C-1,2,3,4,7,8-HxCDF	2000	1325.564	66		26-152	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1386.427	69		26-123	0.53	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1451.356	73		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1411.083	71		28-136	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1450.176	73		28-143	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1523.419	76		26-138	0.44	1.079
37Cl-2,3,7,8-TCDD	800	589.326	74		35-197	NA	1.023

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