

SFPP, L.P.

Operating Partnership

April 26, 2019

California Regional Water Quality Control Board Los Angeles Region 320 W. 4th Street, Suite 200 Los Angeles, California 90013

Re: 2018 Harbor Toxics Total Maximum Daily Load Monitoring Report SFPP, L.P. Norwalk Pump Station 15306 Norwalk Boulevard, Norwalk, California (NPDES No. CA0063509, CI No. 7497)

Attention: Information Technology Unit

In reference to the subject National Pollutant Discharge Elimination System (NPDES) permit, please find enclosed the 2018 Harbor Toxics Total Maximum Daily Load Monitoring Report.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on the  $26^{th}$  day of <u>April 2019</u>. at <u>9:19 a.m.</u>

Atyche Of

\_\_\_\_\_ (signature)

Stephen T. Defibaugh (printed name)

Remediation Project Manager\_\_\_\_ (title)



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Mr. Stephen Defibaugh Kinder Morgan, Inc. 1100 Town and Country Road, Suite 700 Orange, California 92868

April 29, 2019

#### Subject: 2018 Harbor Toxics Total Maximum Daily Load Sampling Event SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California (NPDES No. CA0063509, Cl No. 7497, Order No. R4-2016-0309)

#### Dear Mr. Defibaugh,

This report has been prepared by CH2M HILL Engineers, Inc. (CH2M), now part of Jacobs Engineering Group Inc. (Jacobs), on behalf of Kinder Morgan, Inc. (Kinder Morgan), to present the results of 2018 Toxic Pollutants in the Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters total maximum daily load (TMDL) [Harbor Toxics TMDL] monitoring activities, as required by the National Pollutant Discharge Elimination System (NPDES) permit related to the discharge of treated groundwater from Kinder Morgan's product recovery and groundwater extraction system at the SFPP, L.P. (SFPP) Norwalk Pump Station within the Defense Fuel Support Point Norwalk (DFSP), at 15306 Norwalk Boulevard, Norwalk, California (the site; Figure 1).

As stated under Section VII.C.2.b of the NPDES permit for the site (Order Number [No.] R4-2016-0309), as adopted by the California Regional Water Quality Control Board, Los Angeles Region (Water Board), dischargers into the San Gabriel River Watershed shall conduct ambient surface water and sediment monitoring at the mouth of the San Gabriel River to comply with the Harbor Toxics TMDL requirement (Water Board, 2011). In order to meet this requirement, CH2M submitted the *Final Monitoring Plan and Quality Assurance Project Plan (QAPP)* to the Water Board on March 19, 2018 (CH2M, 2018), along with a response to comments from the Water Board on the Draft Monitoring Plan and QAPP submitted in October 30, 2017 (CH2M, 2017). The Final Monitoring Plan and QAPP was approved by the Water Board on May 7, 2018 (Water Board, 2018a).

This report documents Harbor Toxics TMDL monitoring and sampling activities during the 2018 reporting year (May 2018 through April 2019). The 2018 Harbor Toxics TMDL reporting year was extended from December 31, 2018 to April 30, 2019 in an email correspondence from Ching-Yin To of the Water Board on December 24, 2018 (Water Board, 2018b) due to insufficient rainfall in the fourth quarter of 2018 precluding collection of wet weather samples. A copy of that email is included in Attachment A. As described in this report, 2018 Harbor Toxics TMDL monitoring activities included collection of one dry weather (July 11, 2018) and two wet weather (November 30, 2018 and January 15, 2019) chemistry surface water sampling events.

Mr. Stephen Defibaugh April 29, 2019 Page 2 of 3



# **Field Activities**

#### Dry and Wet Weather Surface Water Chemistry Sampling

The TMDL samples were collected from the west side of the Marina Drive bridge, approximately 190 feet from the north end of the bridge (in Long Beach) at Global Positioning System (GPS) coordinates 33.747027/-118113248 (latitude/longitude). The sampling location is shown on Figure 2. Sampling was performed using a new 5-gallon bucket secured to a nylon rope, lowered from the Marina Drive bridge. The sampling location was selected because it afforded the safest approach to collect representative samples from the middle of the mouth of the San Gabriel River.

As required by the Monitoring Plan and QAPP, the field parameters measured were temperature, dissolved oxygen, pH, and specific conductivity. Additional field parameters measured were salinity, turbidity, height of the water column, and transparency of water using a standard Secchi disk.

The water samples were delivered to Asset Laboratories of Las Vegas, Nevada (Asset), TestAmerica Laboratories of Irvine, California (TestAmerica), and Pace Analytical Services, LLC., of Minneapolis, Minnesota (Pace). Asset, TestAmerica, and Pace are certified by the California Department of Public Health Environmental Laboratory Accreditation Program. The following analyses were performed:

- Asset analyzed the water samples for total suspended solids by Standard Method (SM) 2540; copper, lead, and zinc by U.S. Environmental Protection Agency (EPA) Method 200.8; and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270C.
- TestAmerica analyzed the water samples for the pesticides 2,4- dichlorodiphenyltrichloroethane (DDT) and 4,4-DDT using EPA Method 8081A. Due to a laboratory error, the 2,4-DDT analysis requested on the chain-of-custody forms was not performed on samples collected July 11, 2018, and January 15, 2019. Samples collected during future monitoring events will be analyzed for 2,4-DDT.
- Pace analyzed the water samples for total polychlorinated biphenyls (PCBs) using EPA Method 1668.

Equipment blanks were not collected during the 2018 reporting period; however, field equipment was decontaminated prior to each sampling event to mitigate the risk of cross-contamination and potential effects from biological growth. Equipment blanks will be collected during future sampling events.

#### Sediment Chemistry Sampling

Sediment chemistry samples were not collected during the 2018 reporting period. In accordance with the Monitoring Plan and QAPP (CH2M, 2018), sediment monitoring and sampling is to be conducted at least once every 2 years. The first sediment sampling event will occur during in 2019 during the dry season.

# **Sampling Results**

The San Gabriel River surface water field parameters for the July 11, 2018, November 30, 2018, and January 15, 2019, sampling events are summarized in Table 1. Field data sheets are included in Attachment B. Analytical results for the sampling events are summarized in Table 2.

Laboratory analytical reports and chain-of-custody documents are included in Attachment C. A data quality assurance/quality control evaluation is included in Attachment D.

The 2019 Harbor Toxics TMDL reporting year effectively began immediately after the second 2018 wet weather sample was collected on January 15, 2018. The plan for the 2019 reporting year is to collect two wet weather surface water samples, one dry weather surface water sample and one dry weather sediment sample. The results of 2019 reporting year monitoring and sampling will be included in an attachment in the forthcoming *Fourth Quarter 2019 Effluent Monitoring Report*.

Mr. Stephen Defibaugh April 29, 2019 Page 3 of 3



## References

California Regional Water Quality Control Board, Los Angeles Region (Water Board). 2011. Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and the Greater Los Angeles and Long Beach Harbor Waters. Resolution No. R11-008. May 5.

California Regional Water Quality Control Board, Los Angeles Region (Water Board). 2018a. Approval of the Monitoring Plan and Quality Assurance Project Plan – SFPP, L.P., SFPP Norwalk Pump Station, Norwalk, California (NPDES No. CA0063509, CI NO. 7497). May 7.

California Regional Water Quality Control Board, Los Angeles Region (Water Board). 2018b. Email communication with Ching-Yin To. to Padrick Anderson, Jacobs "RE: Questions Regarding TMDL Sampling Schedule." December 24.

CH2M Engineers, Inc. (CH2M). 2018. Monitoring Plan and Quality Assurance Project Plan (QAPP) to Address Harbor Toxics Total Maximum Daily Load Monitoring Requirements. SFPP Norwalk Pump Station, National Pollutant Discharge Elimination System Permit Number CA0063509 (Order No. R4-2016-0309). October

CH2M Engineers, Inc. (CH2M). 2018. Monitoring Plan and Quality Assurance Project Plan (QAPP) to Address Harbor Toxics Total Maximum Daily Load Monitoring Requirements. SFPP Norwalk Pump Station, National Pollutant Discharge Elimination System Permit Number CA0063509 (Order No. R4-2016-0309). March 19.

Should you require any further information, please contact Vladimir Carino/Jacobs at (949) 244-7584.

Regards,

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Vladimir Carino Project Engineer

Attachments:

Table 1 – Harbor Toxics Field Monitoring Summary Table 2 – Harbor Toxics TMDL Analytical Laboratory Summary Table (Water Samples)

Figure 1 – Site Location Map Figure 2 – San Gabriel River Sampling Location

Attachment A – Water Board Email Regarding TMDL Sampling Schedule

Attachment B – Field Measurements

Attachment C – Laboratory Analytical Reports and Chain-of-Custody Documents

Attachment D – Data Quality Assurance/Quality Control Evaluation

**Tables** 

#### Table 1. Harbor Toxics Field Monitoring Summary

Sampling Date	Sampling Location <sup>a</sup> (Lat/Long)	Wet or Dry Weather <sup>b</sup>	Depth to Water (feet)	Water Column (feet)	Secchi (depth not visible)	River Flow (ft/s)	Wind Speed + Direction	рН	Temp (°C)	Salinity (ppt)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
07/11/18	33.747027/ -118.113248	Dry	14.5	12.2	1.0	0.9	10 mph from WSW	8.08	27.55		50.9	5.27	
11/30/18	33.747027/ -118.113248	Wet	15.5	11	1.5	0.6	5 mph from N	6.59	18.29	11.4	19.3	11.12	29.6
01/15/19	33.747027/ -118.113248	Wet	16.65	10.5	1.5	0.4	10 mph from E	7.15	17.18	5.3	9.54	6.95	27.3

SFPP Norwalk Pump Station, Norwalk, California

Notes:

<sup>a</sup> Sampling and monitoring is conducted from the middle of the river from the Marina Drive bridge for safety concerns

<sup>b</sup> Wet weather condition is defined as Precipitation > 0.25 inches within last 24 hours

-- = not measured or not analyzed

° C = degrees Celsius

µg/L = microgram(s) per liter

ft/s = feet per second

Lat/Long = latitude and longitude coordinates, accuracy +/- 1.59 meters

mg/L = milligram(s) per liter

mph = mile(s) per hour

mS/cm = millisiemen(s) per centimeter

N = north; S = south; E = east; W = west

NTU = nephelometric turbidity unit(s)

ppt = part(s) per trillion

# Table 2. Harbor Toxics TMDL Analytical Laboratory Summary Table (Water Samples)

SFPP Norwalk Pump Station, Norwalk, California

Parameter Name	Analytical Method	Report Units	7/11/2018	11/30/2018	1/15/2019
Total Suspended Solids <sup>a</sup>	A2540D	mg/L	25	38	12
Copper	E200.8	μg/L	<1.3	<0.26	<0.26
Lead	E200.8	μg/L	<0.64	1.3 J	0.98
Zinc	E200.8	μg/L	<1.3	22	20
Total DDT <sup>♭</sup>	SW8081A	μg/L		<0.0253	
2,4'-DDT	SW8081A	μg/L		<0.021	
4,4'-DDT	SW8081A	μg/L	<0.0041	<0.0043	<0.0043
1-Methyl naphthalene	SW8270C SIM	μg/L	<0.041	<0.04	<0.043
2-Methyl naphthalene	SW8270C SIM	μg/L	<0.059	<0.058	<0.062
Acenaphthene	SW8270C SIM	μg/L	<0.05	<0.048	<0.052
Acenaphthylene	SW8270C SIM	μg/L	<0.05	<0.049	<0.053
Anthracene	SW8270C SIM	μg/L	<0.044	<0.043	<0.046
Benzo(a)anthracene	SW8270C SIM	μg/L	<0.037	<0.036	<0.039
Benzo (a) pyrene	SW8270C SIM	μg/L	<0.044	<0.043	<0.046
Benzo (b) fluoranthene	SW8270C SIM	μg/L	<0.044	<0.043	<0.046
Benzo (ghi) perylene	SW8270C SIM	μg/L	<0.067	<0.066	<0.071
Benzo (k) fluoranthene	SW8270C SIM	μg/L	<0.056	<0.055	<0.059
Chrysene	SW8270C SIM	μg/L	<0.044	<0.043	<0.046
Dibenz(a,h)anthracene	SW8270C SIM	μg/L	<0.059	<0.058	<0.062
Fluoranthene	SW8270C SIM	μg/L	<0.035	<0.034	<0.037
Fluorene	SW8270C SIM	μg/L	<0.046	<0.045	<0.048
Indeno (1,2,3-cd) pyrene	SW8270C SIM	μg/L	<0.06	<0.059	<0.063
Naphthalene	SW8270C SIM	μg/L	<0.053	<0.052	<0.056
Phenanthrene	SW8270C SIM	μg/L	<0.05	<0.048	<0.052
Pyrene	SW8270C SIM	μg/L	<0.035	<0.034	<0.037
Total PCBs	EPA 1668A	μg/L	0.000754	ND	0.00216

Notes:

<sup>a</sup> Residue, non-filterable

<sup>b</sup> Sum of 2,4'-DDT and 4,4-'DDT

< = not detected above the listed method detection limit

 $\mu g/L - microgram(s)$  per liter

DDT = dichlorodiphenyltrichloroethane

J = estimated value

mg/L - milligram(s) per liter

ND = not detected

PCB – polychlorinated biphenyl

TMDL = total maximum daily load

**Figures** 





Figure 1. Site Location Map SFPP Norwalk Pump Station Norwalk, California

**JACOBS** 

BASEMAP MODIFIED FROM U.S.G.S. 7.5 MINUTE QUADRANGLE MAP LOS ALAMITOS 1964, CALIFORNIA. PHOTO-REVISED 1981. WHITTIER 1965, CALIFORNIA. PHOTO-REVISED 1981.

EN1014151027SCO Figure1.pdf 10/15





### LEGEND

Approximate Water/Sediment Sampling Location

Basemap Source: ESRI World Streetmap



Figure 2. San Gabriel River Sampling Location SFPP Norwalk Pump Station Los Angeles County, California



\\galt\proj\KinderMorgan\697032\MapFiles\Site\_Location\_170915.mxd

Attachment A Water Board Email Regarding TMDL Sampling Schedule To:Anderson, Padrick/BAOSubject:RE: Questions Regarding TMDL Sampling Schedule

From: To, Ching-Yin@Waterboards <<u>Ching-Yin.To@waterboards.ca.gov</u>>
Sent: Monday, December 24, 2018 8:18
To: Anderson, Padrick/BAO <<u>Padrick.Anderson@jacobs.com</u>>
Cc: Johnson, Jeffrey/DEN <<u>Jeffrey.Johnson1@jacobs.com</u>>
Subject: [EXTERNAL] RE: Questions Regarding TMDL Sampling Schedule

Hello Mr. Anderson,

That will be fine. Based on your email, the monitoring year started in May 2018. So sampling the second wet weather event during Jan-April 2019 will be still within the reporting year.

Happy Holidays,

### Ching Yin To, P.E.

Water Resources Control Engineer Industrial Permitting Unit Los Angeles Regional Water Quality Control Board 320 W. 4th Street, Suite 200 Los Angeles, CA 90013 (213)576-6696 Ching-Yin.To@waterboards.ca.gov



From: Anderson, Padrick/BAO <<u>Padrick.Anderson@jacobs.com</u>> Sent: Friday, December 21, 2018 11:44 AM To: To, Ching-Yin@Waterboards <<u>Ching-Yin.To@waterboards.ca.gov</u>> Cc: Johnson, Jeffrey/DEN <<u>Jeffrey.Johnson1@jacobs.com</u>> Subject: Questions Regarding TMDL Sampling Schedule

Hello Ching-Yin,

I'm writing to follow up on my voicemail from earlier today on some questions regarding the monitoring requirements of the Norwalk HarborToxics TMDL, associated with the SFPP Norwalk Pump Station (CA0063509, order no R4-2016-0309).

The monitoring plan requires sampling the San Gabriel River during one dry weather event and two wet weather events annually. Since the initiation of the TMDL in May 2018, the required dry weather event and one wet weather event have been sampled. However, the second wet weather event is still outstanding, and it looks increasingly uncertain that there will be a qualifying event in the remainder of the 2018 calendar year.

We wanted to verify that sampling the second wet weather event during January-April 2019 would be acceptable for this reporting cycle.

Thank you for your help,

#### Padrick Anderson

Jacobs Environmental Scientist | Global Environmental Solutions 707-631-0959 Padrick.Anderson@jacobs.com

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Attachment B Field Measurements

SWAMP F	ield Data S	heet (Wate	r Chemistr	y & Discret	e Probe) -	EventType	=WQ	Entered in d-	base (initial/date	e)		Pg 1	of 1	Pgs
*StationID:	SFPP NORW	ALK PUMP ST	TATION	*Date (mm/do	l/yyyy):	07 /11 /2018	3	*Group: NA				*Agency: J	acobs Engin	eering
*Funding:				ArrivalTime:	12:05	DepartureTim	ne: 14:25	*SampleTime	e (1st sample): 1	2:22		*Protocol:		
*ProjectCod	e:			*Personnel: N	l. Orliczky / V.	Carino	*Purpose (circle	applicable) W	aterChemWaterT	ox Habitat Field	dMeas	*PurposeF	ailure:	
*Location: E	Bank Thalwey	Midchannel	OpenWater	*GPS/DGPS	Lat (dd	.ddddd)	Long (dd	ld.dddd)	OCCUPATION	METHOD:	Walk-in	Bridge R/	V	Other
GPS Device: G	oogle Earth			Target:	33.7	4821	-118.11207	72	STARTING BA	NK (facing d	ownstrea	am): LB	RB / NA	
Datum: NAD8	3	Accuracy(ft / m	ו ): 1.59m	*Actual:	33.74	47027	-118.11324	18	Poin	t of Sample (	if Integra	ted, then -8	8 in dbase)	
Habitat Ob	bservations	s (Collectio	nMethod =	Habitat_ge	eneric)	WADEABILITY:	BEAUFORT	4	DISTANCE	40	STREA	M WIDTH (r	n): 109	
SITE	ODOR:	None, Sulfides	s,Sewage,Petr	oleum,Smoke	Other	Y N Unk	attachment):	1	FROM BANK (m):	49	WATER	DEPTH (m	i): 3.7	
SKY	CODE		Cloudy Overc	ast Fog Smol	kv Hazv	WIND	N W <b>4</b> De	AerialZipline, O	ther	Bridge, Pipes,	LO	CATION (to s	ample): US / I	ent, DS / WI /
			oloudy, overo		(y, 1102)		s I	PHOTOS (F	RB & LB assigned	when facing	1: (RB /	LB / BB / U	S / DS / ##)	
		Vascular,Non	vascular.OilyS	Boulder Grav	rash.Other	Link Other		dow StationCode	nstream; RENAM	E to niquecode)				
		Clear (see be	ttom Cloudy		(<4") vic)				rizzlo Poin Sn		2: (RB /	LB / BB / U	S / DS / ##)	
		Nono Sulfido			d Other			24 hrs):	$\frac{1}{2}$					
		Colorlood Cr	S, Sewaye, Fe							None	3: (RB /	LB / BB / U	S / DS / ##)	
		ast 24 brs):	none light n	oderate / hea		EVIDENCE		No, Tyear,	<5 years					
		NA Dry Wat	terbody Bed	No Obs Flow	leolated Pr	ol Trickle (<	0.1cfs) 0.1-1	cfs 1-5cfs	5-20cfs 20-50	)cfs 50-200	~ >20			
Field Meas	surements	(SampleTy	pe = Field	Neasure: M	ethod = Fi	eld)	0.1013), 0.1-1	013, 1-0013,	5-20013, 20-50	00-200		100 S		
	DepthCollec (m)	Velocity (fps)	Air Temp (°C)	Water Temp (°C)	рН	DO (mg/L)	DO (%)	Specific Conductivity (uS/cm)	Salinity (ppt)	Turbidity (ntu)				
SUBSURF/MID/ BOTTOM/REP	0.2	0.9	28.3	27.5	8.08	5.27		50.9						
SUBSURF/MID/ BOTTOM/REP														
SUBSURF/MID/ BOTTOM/REP														
Instrument:	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52		Horiba U-52						
Calib. Date:	07/09/18	07/09/18	07/09/18	07/09/18	07/09/18	07/09/18		07/09/18						
Samples 1	Taken (# of	containers	filled) - Me	ethod=Wat	er_Grab	Field Dup YE	<b>S / NO:</b> (Sample	Type = Grab Ir	ntegrated; LABEL_	_ID = FieldQA;	create coll	ection record	upon data ent	.ry
SAMPLE TYP	PE Grab	ntegrated	COL	LECTION DE	/ICE:	Indiv bottle (b	y hand, by pol	e, by bucket;	Teflon tubing; k	Kemmer; Pole	e & Beak	er; Other		
	(m)	Inorganics	Bacteria	Chl a	TSS / SSC	TOC / DOC	Total Hg	Mercurv	Total Metals	Metals	CS	Toxicity	VOA	S
Sub/Surface	0.2	3			2				1		2			
Sub/Surface														
Tide appears	to be coming i	in, surface wat	ter flowing in fr	rom ocean. Se	cchi disc not v	risible at 1.0 fe	et below wate	r level.					Modifie	∋d 02/10/1

SWAMP Field Data Sheet (Water Chemistry & Discrete Probe) - EventType						tType=WQ     Entered in d-base (initial/date)					Pg 1	of 1	Pgs	
*StationID:	SFPP NORW	ALK PUMP ST	ATION	*Date (mm/dd	/уууу):	11/30 /2018		*Group: NA				*Agency: J	acobs Enginee	ring
*Funding:				ArrivalTime: (	J7:50	DepartureTim	ne: 09:32	*SampleTime	(1st sample):	08:05		*Protocol:		
*ProjectCode	e:			*Personnel: N	. Orliczky / E./	Davis	*Purpose (circle	e applicable) Wa	aterChem Water	Tox Habitat Field	dMeas	*PurposeF	ailure:	
*Location: B	Bank Thalwey	Midchannel	) DpenWater	*GPS/DGPS	Lat (dd	.ddddd)	Long (dd	ld.dddd)	OCCUPATIO	N METHOD:	Walk-in	Bridge R/	V	Other
GPS Device: G	oogle Earth			Target:	33.7	4821	-118.11207	72	STARTING B	ANK (facing d	ownstrea	m): LB	RB / NA	
Datum: NAD8	3	Accuracy ( ft / m	ı ): 1.59m	*Actual:	33.74	17027	-118.11324	48	Poir	nt of Sample (	if Integrat	ed, then -8	8 in dbase)	
Habitat Ob	oservations	s (Collectio	nMethod =	Habitat_ge	eneric)	WADEABILITY:	BEAUFORT	1		10	STREAM	/ WIDTH (r	n): 109	
SITE	ODOR:	None, Sulfides	s,Sewage,Petr	oleum,Smoke,	Other	Y Unk	attachment):	I	BANK (m):	43	WATER	DEPTH (m	): 3.4	
SKY (	CODE:	Clear. Partly (	Cloudy, Overc	ast. Fog. Smo!	kv. Hazy	WIND	N W	AerialZipline, O	ther	Bridge, Pipes, v	LO	CATION (to s	ample): US / DS	., ; / WI /
OTHER P	RESENCE:	Vascular.Non	wascular.Oilv§	heen Foan Tr	ash Other	from): N	Š	PHOTOS (F	RB & LB assigned	d when facing	1: (RB /	LB / BB / U	S / DS / ##)	
	SUBSTRATE:	Bedrock, Con	crete. Cobble	Boulder, Grav	vel Sand. Muc	Unk. Other		dowr StationCode	nstream; RENAM e_yyyy_mm_dd_u	1E to uniquecode)				
WATER	CLARITY:	Clear (see bo	ttomic Cloudy	(>4" vis), Murk	(v (<4" vis)	PRECIP	ITATION:	None. Fog, D	rizzle. Rain, Sr	าอพ	2: (RB /	LB / BB / U	S / DS / ##)	
WATER		None. Sulfide	s Sewage, Pr	etroleun Mixe	d Other	PRECIF	PITATION (last	t 24 hrs);	Unknown. <	'>1" None				
WATER	COLOR:	Colorless, Gr	een. Yellov, B	rown		EVIDENCE		No. 1 year, ·	<5 vears	, ,	3: (RB /	LB / BB / U	S / DS / ##)	
OVERLAN	ID RUNOFF (L	_ast 24 hrs):	none, light, n	noderate / hea	v unknown				• ,					
OBSERVI	ED FLOW:	NA, Dry Wat	terbody Bed,	No Obs Flow	, Isolated Pc	ol, Trickle (<	0.1cfs), 0.1-1	cfs, 1-5cfs,	5-20cfs, 20-5	0cfs, 50-200	c <b>i</b> s, >20	0c s		
Field Meas	surements	(SampleTy	pe = Fieldl	Measure; M	ethod = Fi	eld)	· ·							
	DepthCollec (m)	Velocity (fps)	Air Temp (°C)	Water Temp (°C)	рН	DO (mg/L)	DO (%)	Specific Conductivity (uS/cm)	Salinity (ppt)	Turbidity (ntu)				
SUBSURF/MID/ BOTTOM/REP	0.2	0.6	13.3	18.3	6.59	11.12		19.3	11.4	29.6				
SUBSURF/MID/ BOTTOM/REP														
SUBSURF/MID/			,		ı									
BOTTOM/REP			·		'									
Instrument:	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52		Horiba U-52	Horiba U-52	Horiba U-52				
Instrument: Calib. Date:	Horiba U-52 11/28/18	Horiba U-52 11/28/18	Horiba U-52 11/28/18	Horiba U-52 11/28/18	Horiba U-52 11/28/18	Horiba U-52 11/28/18		Horiba U-52 11/28/18	Horiba U-52 11/28/18	Horiba U-52 11/28/18				
Instrument: Calib. Date: Samples 1	Horiba U-52 11/28/18	Horiba U-52 11/28/18 <b>containers</b>	Horiba U-52 11/28/18 <b>filled) - Me</b>	Horiba U-52 11/28/18	Horiba U-52 11/28/18 • <b>r_Grab</b>	Horiba U-52 11/28/18 Field Dup YE	  S / NO: (Sample	Horiba U-52 11/28/18 •Type = Grab In	Horiba U-52 11/28/18 tegrated; LABEL	Horiba U-52 11/28/18 ID = FieldQA;	create coll	ection record	upon data entry	
Instrument: Calib. Date: Samples 1	Horiba U-52 11/28/18 <b>Taken (# of</b> PE Grab Ir	Horiba U-52 11/28/18 <b>containers</b> ntegrated	Horiba U-52 11/28/18 <b>filled) - Me</b> COLI	Horiba U-52 11/28/18 >thod=Wate LECTION DEV	Horiba U-52 11/28/18 • <b>r_Grab</b> 1CE:	Horiba U-52 11/28/18 <b>Field Dup YE</b> Indiv bottle (b	  S / NO: (Sample y hand, by pol	Horiba U-52 11/28/18 ;Type = Grab In e, b bucket;	Horiba U-52 11/28/18 itegrated; LABEL Teflon tubing;	Horiba U-52 11/28/18 ID = FieldQA; Kemmer; Pole	create coll e & Beake	ection record er; Other	upon data entry	
Instrument: Calib. Date: Samples 1	Horiba U-52 11/28/18 <b>Taken (# of</b> PE Grab Ir Dep <del>ine</del> oflec (m)	Horiba U-52 11/28/18 <b>containers</b> ntegrated Inorganics	Horiba U-52 11/28/18 <b>filled) - Me</b> COLI Bacteria	Horiba U-52 11/28/18 •thod=Wate LECTION DEV ChI a	Horiba U-52 11/28/18 <b>&gt;r_Grab</b> /ICE: TSS / SSC	Horiba U-52 11/28/18 Field Dup YE Indiv bottle (b TOC / DOC	  S / NO: (Sample y hand, by pol Total Hg	Horiba U-52 11/28/18 Type = Grab Ir e, b (bucket); Dissorved Mercury	Horiba U-52 11/28/18 ttegrated; LABEL Teflon tubing; Total Metals	Horiba U-52 11/28/18 ID = FieldQA; Kemmer; Pole Dissolved Metals	create coll e & Beake Organi cs	ection record er; Other Toxicity	upon data entry VOAs	
Instrument: Calib. Date: Samples 1 SAMPLE TYP Sub/Surface	Horiba U-52 11/28/18 <b>Taken (# of</b> PE Grab) Ir Dep <del>ine</del> ofilec (m) 0.2	Horiba U-52 11/28/18 <b>containers</b> ntegrated Inorganics 3	Horiba U-52 11/28/18 <b>filled) - M</b> ( COL Bacteria	Horiba U-52 11/28/18 <b>Sthod=Wate</b> LECTION DEV ChI a	Horiba U-52 11/28/18 <b>&gt;r_Grab</b> /ICE: TSS / SSC 2	Horiba U-52 11/28/18 Field Dup YE Indiv bottle (b TOC / DOC	  S / NO: (Sample y hand, by pol Total Hg	Horiba U-52 11/28/18 Type = Grab In e, b(bucket); Dissorved Mercury	Horiba U-52 11/28/18 tegrated; LABEL Teflon tubing; Total Metals 1	Horiba U-52 11/28/18 ID = FieldQA; Kemmer; Pole Dissolved Metals	create coll e & Beake Organi cs 2	ection record er; Other Toxicity	upon data entry VOAs	
Instrument: Calib. Date: Samples 1 SAMPLE TYF Sub/Surface Sub/Surface	Horiba U-52 11/28/18 <b>Taken (# of</b> <b>&gt;E</b> Grab Ir Deptiteorilec (m) 0.2	Horiba U-52 11/28/18 <b>containers</b> ntegrated Inorganics 3	Horiba U-52 11/28/18 filled) - Mo COL Bacteria	Horiba U-52 11/28/18 <b>&gt;thod=Wate</b> LECTION DEV ChI a	Horiba U-52 11/28/18 <b>3r_Grab</b> /ICE: TSS / SSC 2	Horiba U-52 11/28/18 Field Dup YE Indiv bottle (b TOC / DOC	  i\$ / NO: (Sample iy hand, by pol Total Hg	Horiba U-52 11/28/18 Type = Grab In le, b (bucket); Dissorved Mercurv	Horiba U-52 11/28/18 ttegrated; LABEL Teflon tubing; Total Metals 1	Horiba U-52 11/28/18 ID = FieldQA; Kemmer; Pole Dissolved Metals	create coll e & Beake Organi cs 2	ection record er; Other Toxicity	upon data entry VOAs	

SWAMP Field Data Sheet (Water Chemistry & Discrete Probe) - EventType						Entered in d-base (initial/date) Pg 1				of 1 Pgs			
*StationID:	SFPP NORW/	ALK PUMP ST	ATION	*Date (mm/dd	l/yyyy):	1/15	/2019	*Group: NA				*Agency: Ja	acobs Engineering
*Funding:				ArrivalTime:	09:02	DepartureTim	ne: 10:40	*SampleTime	<u>∍ (1st s</u> ample):′	10:17		*Protocol:	
*ProjectCode	e:			*Personnel: N	I. Orliczky / K	Carlson	*Purpose (circle	e applicable)	aterChem Water	Tox Habitat Field	dMeas	*PurposeFa	ailure:
*Location: B	Bank Thalweg	Midchanne	OpenWater	*GPS/DGPS	Lat (dd	.ddddd)	Long (do	dd.ddddd)	OCCUPATIO	N METHOD:	Walk-in	Bridge R/	/Othe
GPS Device: G	oogle Earth			Target:	33.7	/4821	-118.11207	72	STARTING B	ANK (facing d	lownstrea	m): LB	RB NA
Datum: NAD8	.3	Accuracy ( ft / m	ı ): 1.59m	*Actual:	33.74	47027	-118.11324	48	Poir	nt of Sample (	if Integra	ted, then -8	3 in dbase)
Habitat Ob	oservations	(Collectio	nMethod =	Habitat_ge	eneric)	WADEABILITY:	BEAUFORT	1	DISTANCE	40	STREAM	M WIDTH (n	n): 109
SITE	ODOR:	None, Sulfides	s,Sewage,Petr	roleum,Smoke	,Other	Y N Unk	attachment):	1	FROM BANK (m):	49	WATER	DEPTH (m	): 3.2
SKY		Clear Partly (		set Fog Smo	ku Hazy	WIND	N W	AerialZipline, O	ther	, впаде, Pipes, v	LO <sup>r</sup>	nanner, Grad CATION (to s	econtrol, Culvert, ample): US / DS / WI
		Veccular Nor		ast, roy, onion	ty, Hazy	DIRECTION from): E	Š	PHOTOS (F	RB & LB assigne	d when facing	1: (RB /	LB / BB / U	S / DS / ##)
		Vascular, Norr	Vascular, Oliyo	Devider Cre		t Unit Other	<u> </u>	- dow	nstream; RENAN	/E to	-		
	SUBSTRATE.		crete, Coppie,	Boulder, Grav	/el, Sano Wud						2: (RB /	LB / BB / U	S / DS / ##)
WATER		Clear (see boi	tom, Cloudy	(>4" VIS), IVIUI K	.y (<4" vis)	PRECIPI		None Fog, D	rizzie, Kain, Si				-
WATER		None, Suitide	s, Sewage, Pe	stroleun Mixer	d Other				Unknown, <	, >1", None	3: (RB /	LB / BB / U	S / DS / ##)
WATER	COLOR:	Colorless, Gre	en, Yellov, B	rown		EVIDENCE	OF FIRES	No, 1 year,	<5 years				,
OVERLAN		ast 24 hrs):	none, light, m	noderate / heav	vy unknown						<u> </u>		
OBSERVE	ED FLOW:	NA, Dry Wat	erbody Bed,	No Obs Flow,	, Isolated Po	ool, Trickle (<	0.1cfs), 0.1-1	Icfs, 1-5cfs,	5-20cfs, 20-5	0cfs, 50-200	ic <b>is</b> , >20	l0c s	
Field weas	Surements	(Sample i y	Air Tomp		etnoa = Fi	ela)		Specific		Turbidity			
	(m)	Velocity (fps)	Air remp (°C)	(°C)	рН	DO (mg/L)	DO (%)	Conductivity (uS/cm)	Salinity (ppt)	(ntu)			
SUBSURF/MID/ BOTTOM/REP	0.2	0.4	13.9	17.18	7.15	6.95		9.54	5.3	27.3			
SUBSURF/MID/ BOTTOM/REP													
SUBSURF/MID/ BOTTOM/REP							<u> </u>			<u> </u>			
Instrument:	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52	Horiba U-52		Horiba U-52	Horiba U-52	Horiba U-52			
Calib. Date:	01/02/19	01/02/19	01/02/19	01/02/19	01/02/19	01/02/19		01/02/19	01/02/19	01/02/19			
Samples T	Гake <u>n (</u> # of	containers	filled) - Me	ethod=Wate	er_Grab	Field Dup YE	.S / NO: (Sample	eType = Grab Ir	ntegrated; LABEI	_ID = FieldQA;	create coll	ection record	upon data entry
SAMPLE TYP	PE Grab Ir	ntegrated	COL	LECTION DE	/ICE:	Indiv bottle (b	y hand, by po	ole, by bucket);	Teflon tubing;	Kemmer; Pole	e & Beak	er; Other	
	De <del>pthC</del> ollec (m)	Inorganics	Bacteria	Chl a	TSS / SSC	TOC / DOC	Total Hg	Dissolved Mercurv	Total Metals	Dissolved Metals	Organı cs	Toxicity	VOAs
Sub/Surface	0.2	3			2				1		2		
Sub/Surface			 					T		<u> </u>	اا		
COMMENTS	1:	<u> </u>			<u> </u>								
COMMENTS Surface water	ን: r flowing towar	ds ocean. Sec	chi disc not vi	sible at 1.5 fee	t below water	level.							

Attachment C Laboratory Analytical Reports and Chain-of-Custody Documents August 21, 2018

Eric Davis CH2MHill 1000 Wilshire Blvd. Los Angeles, CA 90017 TEL: FAX:

Workorder No.: N031181

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on July 11, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

min -ma

Quennie Manimtim Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.



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 EPA ID CA01638

**ORELAP/NELAP** Cert 4046

CLIENT:CH2MHillProject:SFPP NorwalkLab Order:N031181

# CASE NARRATIVE

### tSAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Subcontracted Analyses:

EPA 8081 was subcontracted to Test America, Irvine, CA.

EPA 1668 was subcontracted to Pace Analytical Services, Inc., Minneapolis, MN.

Analytical Comments for EPA 200.8:

Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) are/is outside recovery criteria for Zinc and Copper possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Dilution was necessary due to sample matrix.

Analytical Comments for EPA 8270C\_SIM:

Laboratory Control Sample (LCS) outside recovery criteria for Benzo(a)anthracene . NELAC standard allows for one analyte in marginal exceedence based on 11-30 analytes.

Surrogate recovery was below the laboratory acceptable limit. Reanalysis confirms low recovery caused by matrix effect.

CLIENT:CH2MHillProject:SFPP NorwalkLab Order:N031181

# **Contract No:**

# Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	<b>Collection Date</b>	Date Received	Date Reported
N031181-001A	HTTMDL-07-11	Wastewater	7/11/2018 12:22:00 PM	7/11/2018	8/21/2018
N031181-001B	HTTMDL-07-11	Wastewater	7/11/2018 12:22:00 PM	7/11/2018	8/21/2018
N031181-001C	HTTMDL-07-11	Wastewater	7/11/2018 12:22:00 PM	7/11/2018	8/21/2018
N031181-001D	HTTMDL-07-11	Wastewater	7/11/2018 12:22:00 PM	7/11/2018	8/21/2018
N031181-001E	HTTMDL-07-11	Wastewater	7/11/2018 12:22:00 PM	7/11/2018	8/21/2018

# **ANALYTICAL RESULTS**

Print Date: 21-Aug-18

CLIENT: Lab Order: Project:	CH2MHill N031181 SFPP Norwalk				Cl	lient Samj Collection M	ole ID: H Date: 7/ Iatrix: W	TTMDL-07-1 /11/2018 12:22 /ASTEWATE	1 2:00 PM R
Lab ID:	N031181-001								
Analyses		Resu	lt Ml	DL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-F	FILTERABLE RESID	UE							
					SM	12540D			
RunID: NV009	922-WC_180713A	QC Batch:	68837			Prepl	Date:	7/13/2018	Analyst: LR
Suspended So Filterable)	olids (Residue, Non-	2	5 <i>´</i>	10	10		mg/L	1	7/13/2018 09:40 AM
SEMIVOLATIL	E ORGANIC COMP	OUNDS BY G	C/MS-S	SIM					
	I	EPA 3510C			EPA 8	B270CSIM			
RunID: NV009	922-MS9 180718C	QC Batch:	68875			Prepl	Date:	7/17/2018	Analyst: JJS
1-Methylnapht	thalene	N		041	0 21	-1	ua/l	1	7/18/2018 02·25 PM
2-Methylnapht	thalene	N	D 0.	059	0.21		ug/L	1	7/18/2018 02:25 PM
Acenaphthene	<u>a</u>	N	0	050	0.21		ug/L	1	7/18/2018 02:25 PM
Acenaphthyle	ne	N	D 0.0	050	0.21		ua/L	1	7/18/2018 02:25 PM
Anthracene		N	D 0.	044	0.21		ug/L	1	7/18/2018 02:25 PM
Benzo(a)anthr	racene	N	D 0.0	037	0.21		ug/L	1	7/18/2018 02:25 PM
Benzo(a)pyrer	ne	N	D 0.0	044	0.21		ug/L	1	7/18/2018 02:25 PM
Benzo(b)fluora	anthene	N	D 0.	044	0.21		ug/L	1	7/18/2018 02:25 PM
Benzo(g,h,i)pe	erylene	N	D 0.0	067	0.21		ug/L	1	7/18/2018 02:25 PM
Benzo(k)fluora	anthene	N	D 0.	056	0.21		ug/L	1	7/18/2018 02:25 PM
Chrysene		N	D 0.0	044	0.21		ug/L	1	7/18/2018 02:25 PM
Dibenz(a,h)an	Ithracene	N	D 0.	059	0.21		ug/L	1	7/18/2018 02:25 PM
Fluoranthene		N	D 0.	035	0.21		ug/L	1	7/18/2018 02:25 PM
Fluorene		N	D 0.	046	0.21		ug/L	1	7/18/2018 02:25 PM
Indeno(1,2,3-0	cd)pyrene	N	D 0.	060	0.21		ug/L	1	7/18/2018 02:25 PM
Naphthalene		N	D 0.	053	0.21		ug/L	1	7/18/2018 02:25 PM
Phenanthrene	•	N	D 0.	050	0.21		ug/L	1	7/18/2018 02:25 PM
Pyrene		N	D 0.	035	0.21		ug/L	1	7/18/2018 02:25 PM
Surr: 1,2-D	ichlorobenzene-d4	29.	0	0	27-100		%REC	1	7/18/2018 02:25 PM
Surr: 2-Fluc	orobiphenyl	33.	0	0	34-135	S	%REC	1	7/18/2018 02:25 PM
Surr: 4-Ter	phenyl-d14	63.	0	0	34-167		%REC	1	7/18/2018 02:25 PM
Surr: Nitrob	benzene-d5	27.	0	0	25-135		%REC	1	7/18/2018 02:25 PM
TOTAL META	LS BY ICPMS								
					EP/	A 200.8			
RunID: NV009	922-ICP7_180716A	QC Batch:	68843			Prepl	Date:	7/13/2018	Analyst: CEI
Copper		N	D 1	.3	2.5		µg/L	5	7/16/2018 04:21 PM
Lead		N	D 0.	.64	2.5		µg/L	5	7/16/2018 04:21 PM
Zinc		N	D 1	.3	5.0		µg/L	5	7/16/2018 04:21 PM

Qualifiers:

Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit Results are wet unless otherwise specified Е Value above quantitation range

J Analyte detected below quantitation limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out



В

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# CLIENT: CH2MHill

Work Order: N031181

Project: SFPP Norwalk

# ANALYTICAL QC SUMMARY REPORT

#### TestCode: 160.2\_2540D\_W

Sample ID: LCS-68837	SampType: LCS	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 7/13/2018	RunNo: 126205
Client ID: LCSW	Batch ID: 68837	TestNo: SM2540D	Analysis Date: 7/13/2018	SeqNo: 3078289
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Suspended Solids (Residue, I	Non-Filter 939.000	10 1000 0	93.9 80 120	
Sample ID: MB-68837	SampType: MBLK	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 7/13/2018	RunNo: 126205
Client ID: PBW	Batch ID: 68837	TestNo: <b>SM2540D</b>	Analysis Date: 7/13/2018	SeqNo: 3078290
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Suspended Solids (Residue, I	Non-Filter ND	10		
Sample ID: N031181-001ADU	JP SampType: DUP	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 7/13/2018	RunNo: 126205
Client ID: ZZZZZZ	Batch ID: 68837	TestNo: <b>SM2540D</b>	Analysis Date: 7/13/2018	SeqNo: 3078292
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Suspended Solids (Residue, I	Non-Filter 26.000	10	25.00	3.92 5

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits

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- S Spike/Surrogate outside of limits due to matrix interference
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

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Work Order:N031181Project:SFPP Norwalk

# ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_SFPP

Sample ID	MB-68843	SampType: MBLK	TestCode: 200.8_W_SFP Units: µg/L			Prep Date:	7/13/2018	RunNo: 12		
Client ID:	PBW	Batch ID: 68843	TestNo: EPA 20	0.8		Analysis Date:	7/16/2018	SeqNo: 30	80137	
Analyte		Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit Hi	ighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Copper		0.454	0.50							J
Lead		ND	0.50							
Zinc		ND	1.0							
Sample ID	LCS-68843	SampType: LCS	TestCode: 200.8_V	/_SFP Units: µg/L		Prep Date:	7/13/2018	RunNo: 12	6255	
Client ID:	LCSW	Batch ID: 68843	TestNo: EPA 20	0.8		Analysis Date:	7/16/2018	SeqNo: 30	80138	
Analyte		Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit Hi	ighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Copper		10.729	0.50 10.0	0 0	107	85	115			
Lead		10.328	0.50 10.0	0 0	103	85	115			
Zinc		87.935	1.0 100.	0 0	87.9	85	115			
Sample ID	N031203-001C-DUP	SampType: <b>DUP</b>	TestCode: 200.8_V	/_SFP Units: µg/L		Prep Date:	7/13/2018	RunNo: 12	6255	
Sample ID Client ID:	N031203-001C-DUP ZZZZZZ	SampType: DUP Batch ID: 68843	TestCode: <b>200.8_V</b> TestNo: <b>EPA 20</b>	I_SFP Units: µg/L D.8		Prep Date: Analysis Date:	7/13/2018 7/16/2018	RunNo: <b>12</b> SeqNo: <b>30</b>	6255 80142	
Sample ID Client ID: Analyte	N031203-001C-DUP ZZZZZZ	SampType: <b>DUP</b> Batch ID: <b>68843</b> Result	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu	/_SFP Units: μg/L 0.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hi	<b>7/13/2018</b> <b>7/16/2018</b> ighLimit RPD Ref Val	RunNo: <b>12</b> SeqNo: <b>30</b> %RPD	6255 80142 RPDLimit	Qual
Sample ID Client ID: Analyte Copper	N031203-001C-DUP ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50	/_SFP Units: µg/L D.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hi	7/13/2018 7/16/2018 ighLimit RPD Ref Val	RunNo: <b>12</b> SeqNo: <b>30</b> %RPD 0	6255 80142 RPDLimit 20	Qual
Sample ID Client ID: Analyte Copper Lead	N031203-001C-DUP ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND ND	TestCode: <b>200.8_V</b> TestNo: <b>EPA 20</b> PQL SPK valu 0.50 0.50	<b>/_SFP</b> Units: µg/L D.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hi	7/13/2018 7/16/2018 ighLimit RPD Ref Val 0 0	RunNo: 12 SeqNo: 30 %RPD 0 0	6255 80142 RPDLimit 20 20	Qual
Sample ID Client ID: Analyte Copper Lead Zinc	* N031203-001C-DUP ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND ND ND	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 0.50 1.0	/_SFP Units: μg/L D.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hi	7/13/2018 7/16/2018 ighLimit RPD Ref Val 0 0 0	RunNo: 12 SeqNo: 30 %RPD 0 0 0	6255 80142 RPDLimit 20 20 20	Qual
Sample ID Client ID: Analyte Copper Lead Zinc Sample ID	N031203-001C-DUP ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND ND ND SampType: MS	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 0.50 1.0 TestCode: 200.8_V	/_SFP Units: µg/L D.8 e SPK Ref Val /_SFP Units: µg/L	%REC	Prep Date: Analysis Date: LowLimit Hi Prep Date:	7/13/2018 7/16/2018 ighLimit RPD Ref Val 0 0 0 7/13/2018	RunNo: 12 SeqNo: 30 %RPD 0 0 0 RunNo: 12	6255 80142 RPDLimit 20 20 20 6255	Qual
Sample ID Client ID: Analyte Copper Lead Zinc Sample ID Client ID:	N031203-001C-DUP ZZZZZZ N031203-001C-MS ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND ND SampType: MS Batch ID: 68843	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 0.50 1.0 TestCode: 200.8_V TestNo: EPA 20	/_SFP Units: µg/L D.8 e SPK Ref Val /_SFP Units: µg/L D.8	%REC	Prep Date: Analysis Date: LowLimit Hi Prep Date: Analysis Date:	7/13/2018 7/16/2018 ighLimit RPD Ref Val 0 0 0 7/13/2018 7/16/2018	RunNo: 12 SeqNo: 30 %RPD 0 0 0 RunNo: 12 SeqNo: 30	6255 80142 RPDLimit 20 20 6255 80144	Qual
Sample ID Client ID: Analyte Copper Lead Zinc Sample ID Client ID: Analyte	N031203-001C-DUP ZZZZZZ N031203-001C-MS ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND ND ND SampType: MS Batch ID: 68843 Result	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 1.0 TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu	/_SFP Units: µg/L D.8 e SPK Ref Val /_SFP Units: µg/L D.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hi Prep Date: Analysis Date: LowLimit Hi	7/13/2018 7/16/2018 ighLimit RPD Ref Val 0 0 0 7/13/2018 7/16/2018 ighLimit RPD Ref Val	RunNo: 12 SeqNo: 30 %RPD 0 0 0 8 0 0 0 0 8 8 8 8 8 8 8 8 8 8 8	6255 80142 RPDLimit 20 20 6255 80144 RPDLimit	Qual
Sample ID Client ID: Analyte Copper Lead Zinc Sample ID Client ID: Analyte Copper	N031203-001C-DUP ZZZZZZ N031203-001C-MS ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND ND SampType: MS Batch ID: 68843 Result 7.644	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 0.50 1.0 TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 10.0	/_SFP Units: μg/L 0.8 e SPK Ref Val /_SFP Units: μg/L 0.8 e SPK Ref Val 0 0	%REC %REC 76.4	Prep Date: Analysis Date: LowLimit Hi Prep Date: Analysis Date: LowLimit Hi 75	7/13/2018 7/16/2018 ighLimit RPD Ref Val 0 0 0 7/13/2018 7/16/2018 ighLimit RPD Ref Val 125	RunNo: 12 SeqNo: 30 %RPD 0 0 0 0 8 0 0 0 0 8 0 8 8 0 8 8 8 8 8	6255 80142 RPDLimit 20 20 20 6255 80144 RPDLimit	Qual
Sample ID Client ID: Analyte Copper Lead Zinc Sample ID Client ID: Analyte Copper Lead	N031203-001C-DUP ZZZZZZ N031203-001C-MS ZZZZZZ	SampType: DUP Batch ID: 68843 Result ND ND SampType: MS Batch ID: 68843 Result 7.644 10.164	TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 1.0 TestCode: 200.8_V TestNo: EPA 20 PQL SPK valu 0.50 10.0 0.50 10.0	/_SFP Units: μg/L 0.8 e SPK Ref Val /_SFP Units: μg/L 0.8 e SPK Ref Val 0 0 0 0	%REC %REC 76.4 102	Prep Date: Analysis Date: LowLimit Hi Prep Date: Analysis Date: LowLimit Hi 75 75	7/13/2018 7/16/2018 ighLimit RPD Ref Val 0 0 0 0 7/13/2018 7/16/2018 ighLimit RPD Ref Val 125 125	RunNo: 12 SeqNo: 30 %RPD 0 0 0 0 0 0 8 0 0 0 0 8 0 8 8 0 8 8 0 8 8 9 8 8 9 8 9	6255 80142 RPDLimit 20 20 20 6255 80144 RPDLimit	Qual

#### Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

calculations are based on r CALIFORNIA P:562.219.7435 F:562.219.7436 NEVADA P:702.30

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EPA ID CA01638

<u>NEVADA</u> [P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

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"Serving Clients with Passion and Professionalism"

ASSET LABORATORIES

Work Order: N031181

**Project:** SFPP Norwalk

# ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_SFPP

Sample ID: N031203-001C-MSD	SampType: <b>MSD</b>	TestCo	de: 200.8_W_	SFP Units: µg/L		Prep Da	te: 7/13/20	18	RunNo: 126	3255	
Client ID: ZZZZZZ	Batch ID: 68843	Test	No: EPA 200.8	;		Analysis Da	te: 7/16/20	18	SeqNo: 308	80145	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.375	0.50	10.00	0	73.8	75	125	7.644	3.58	20	S
Lead	10.109	0.50	10.00	0	101	75	125	10.16	0.549	20	
Zinc	125.214	1.0	100.0	0	125	75	125	127.4	1.74	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits

ASSET LABORATORIES

"Serving Clients with Passion and Professionalism"

- S Spike/Surrogate outside of limits due to matrix interference
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

 CALIFORNIA
 P:562.219.7435
 F:562.219.7436

 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 ELAP Cert 2921

 "EPA ID CA01638
 EPA ID CA01638

 NEVADA
 P:702.307.2659
 F:702.307.2691

 (A 90703)
 3151 W. Post Rd., Las Vegas, NV 89118
 ELAP Cert 2676 | NV Cert NV00922
 ORELAP/NELAP Cert 4046

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Work Order:N031181Project:SFPP Norwalk

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8270\_W\_SIMPGE

Sample ID: LCS-68875	SampType: LCS	TestCo	de: 8270_W_S	SIM Units: ug/L		Prep Da	te: 7/17/20	18	RunNo: 126	370	
Client ID: LCSW	Batch ID: 68875	Test	No: EPA 8270	CSI EPA 3510C		Analysis Da	te: 7/18/20	18	SeqNo: 308	4984	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	0.490	0.20	1.000	0	49.0	36	121				
1-Methylnaphthalene	0.550	0.20	1.000	0	55.0	35	131				
Acenaphthene	0.590	0.20	1.000	0	59.0	39	125				
Acenaphthylene	0.680	0.20	1.000	0	68.0	43	140				
Anthracene	0.640	0.20	1.000	0	64.0	41	132				
Benzo(a)anthracene	0.580	0.20	1.000	0	58.0	58	141				S
Benzo(a)pyrene	0.500	0.20	1.000	0	50.0	31	142				
Benzo(b)fluoranthene	0.500	0.20	1.000	0	50.0	42	156				
Benzo(g,h,i)perylene	0.530	0.20	1.000	0	53.0	12	171				
Benzo(k)fluoranthene	0.580	0.20	1.000	0	58.0	49	165				
Chrysene	0.570	0.20	1.000	0	57.0	51	155				
Dibenz(a,h)anthracene	0.590	0.20	1.000	0	59.0	28	153				
Fluoranthene	0.710	0.20	1.000	0	71.0	47	158				
Fluorene	0.650	0.20	1.000	0	65.0	40	140				
Indeno(1,2,3-cd)pyrene	0.560	0.20	1.000	0	56.0	20	167				
Naphthalene	0.510	0.20	1.000	0	51.0	39	125				
Phenanthrene	0.610	0.20	1.000	0	61.0	46	144				
Pyrene	0.690	0.20	1.000	0	69.0	39	158				
Surr: 1,2-Dichlorobenzene-d4	0.520		1.000		52.0	27	100				
Surr: 2-Fluorobiphenyl	0.560		1.000		56.0	34	135				
Surr: 4-Terphenyl-d14	0.740		1.000		74.0	34	167				
Surr: Nitrobenzene-d5	0.470		1.000		47.0	25	135				
Sample ID: LCSD-68875	SampType: LCSD	TestCo	de: 8270_W_S	SIM Units: ug/L		Prep Da	te: 7/17/20	18	RunNo: 126	370	
Client ID: LCSS02	Batch ID: 68875	Test	No: EPA 8270	CSI EPA 3510C		Analysis Da	te: 7/18/20	18	SeqNo: 308	4985	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	0.510	0.20	1.000	0	51.0	36	121	0.4900	4.00	30	
1-Methylnaphthalene	0.570	0.20	1.000	0	57.0	35	131	0.5500	3.57	30	
Acenaphthene	0.620	0.20	1.000	0	62.0	39	125	0.5900	4.96	30	

#### Qualifiers:

J

B Analyte detected in the associated Method Blank

Analyte detected below quantitation limits

ASSET LABORATORIES

"Serving Clients with Passion and Professionalism"

- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

S Spike/Surlogate outside of minits due to matrix interference

CALIFORNIA P:562.219.7435 F:562.219.7436 1110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

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NEVADA | P:702.307.2659 F:702.307.2691

Work Order: N031181 **Project:** SFPP Norwalk

# ANALYTICAL QC SUMMARY REPORT

### TestCode: 8270\_W\_SIMPGE

Sample ID: LCSD-68875	SampType: LCSD	TestCoo	de: 8270_W_S	SIM Units: ug/L		Prep Da	te: 7/17/20	018	RunNo: 126	6370	
Client ID: LCSS02	Batch ID: 68875	TestN	lo: EPA 8270	CSI EPA 3510C		Analysis Da	te: 7/18/20	)18	SeqNo: 308	34985	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	0.710	0.20	1.000	0	71.0	43	140	0.6800	4.32	30	
Anthracene	0.650	0.20	1.000	0	65.0	41	132	0.6400	1.55	30	
Benzo(a)anthracene	0.600	0.20	1.000	0	60.0	58	141	0.5800	3.39	30	
Benzo(a)pyrene	0.530	0.20	1.000	0	53.0	31	142	0.5000	5.83	30	
Benzo(b)fluoranthene	0.580	0.20	1.000	0	58.0	42	156	0.5000	14.8	30	
Benzo(g,h,i)perylene	0.560	0.20	1.000	0	56.0	12	171	0.5300	5.50	30	
Benzo(k)fluoranthene	0.550	0.20	1.000	0	55.0	49	165	0.5800	5.31	30	
Chrysene	0.600	0.20	1.000	0	60.0	51	155	0.5700	5.13	30	
Dibenz(a,h)anthracene	0.620	0.20	1.000	0	62.0	28	153	0.5900	4.96	30	
Fluoranthene	0.730	0.20	1.000	0	73.0	47	158	0.7100	2.78	30	
Fluorene	0.680	0.20	1.000	0	68.0	40	140	0.6500	4.51	30	
Indeno(1,2,3-cd)pyrene	0.590	0.20	1.000	0	59.0	20	167	0.5600	5.22	30	
Naphthalene	0.530	0.20	1.000	0	53.0	39	125	0.5100	3.85	30	
Phenanthrene	0.650	0.20	1.000	0	65.0	46	144	0.6100	6.35	30	
Pyrene	0.720	0.20	1.000	0	72.0	39	158	0.6900	4.26	30	
Surr: 1,2-Dichlorobenzene-d4	0.550		1.000		55.0	27	100		0		
Surr: 2-Fluorobiphenyl	0.590		1.000		59.0	34	135		0		
Surr: 4-Terphenyl-d14	0.750		1.000		75.0	34	167		0		
Surr: Nitrobenzene-d5	0.510		1.000		51.0	25	135		0		
Sample ID: MB-68875	SampType: MBLK	TestCo	de: 8270_W_S	SIM Units: ug/L		Prep Da	te: 7/17/20	)18	RunNo: 126	6370	
Client ID: PBW	Batch ID: 68875	TestN	lo: EPA 8270	CSI EPA 3510C		Analysis Da	te: 7/18/20	)18	SeqNo: 308	34986	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	0.20									
1-Methylnaphthalene	ND	0.20									
Acenaphthene	ND	0.20									
Acenaphthylene	ND	0.20									
Anthracene	ND	0.20									
Benzo(a)anthracene	ND	0.20									

#### Qualifiers:

- В Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits

ASSET LABORATORIES

"Serving Clients with Passion and Professionalism"

- Е Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference
- Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

- - CALIFORNIA P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

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Work Order:N031181Project:SFPP Norwalk

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8270\_W\_SIMPGE

Sample ID: MB-68875	SampType: MBLK	TestCoo	e: 8270_W_SIM Uni	ts: <b>ug/L</b>	Prep Da	te: 7/17/20	18	RunNo: 126	370	
Client ID: PBW	Batch ID: 68875	TestN	O: EPA 8270CSI EPA	A 3510C	Analysis Da	te: 7/18/20	18	SeqNo: 308	34986	
Analyte	Result	PQL	SPK value SPK Re	of Val %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Chrysene	ND	0.20								
Dibenz(a,h)anthracene	ND	0.20								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Naphthalene	ND	0.20								
Phenanthrene	ND	0.20								
Pyrene	ND	0.20								
Surr: 1,2-Dichlorobenzene-d4	0.440		1.000	44.0	27	100				
Surr: 2-Fluorobiphenyl	0.480		1.000	48.0	34	135				
Surr: 4-Terphenyl-d14	0.760		1.000	76.0	34	167				
Surr: Nitrobenzene-d5	0.420		1.000	42.0	25	135				

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

 constrix interference
 Calculations are based on raw values

 CALIFORNIA | P:562.219.7435
 F:562.219.7436
 NEVADA | P:702.307.2659
 F:702.307.2691

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EPA ID CA01638

- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

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#### Asset Laboratories 3151 W. Post Road Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691 Marlon Cartin (marlon@assetlaboratories.com)

CHAIN OF CUSTODY RECORD

Section A		Section B	Section C S	Section D
Required Cil	ent information;	Required Project Information:	Invoice Information: S	Sampler Information:
Company:	Kinder Morgan Energy Partners	Report To: Eric Davis	Attention: Steve Defibaugh - Ref. AFE# 81195 5	Sampler Varmes Dye / A /
	Attention: Steve Defibuugh		N	
Address:	1100 Town & Country Road	Copy To: Steve Defibaugh	Company Kinder Morgan Energy Partners S	Sempler
	Orange, CA 9286B		Name: S	Signature:
Email To:	steve_defibaugh@kindermorgan.com	Purchase Order No.:	Address: 1100 Town & Country Road S	Sample
	eric.davis@ch2m.com	1	Orange, CA 92868	Date:
Phone: 7	14-560-4902 Fax: 714-560-4801	Project Name: SFPP Norwalk	ATL Project Marion Cartin	
			Manager:	

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	1	Matrix:			Preservatives:			Container Type:			
		W = Water	WW = Wastewater		H = HCI	N = HNÓ3	S = H2SO4	T = Tube	V = VOA	P = Pint	A = Amber
		Q = 0il	P = Product	S = Soli	Z = Zn(AC)2	O = NaOH	T = Na2S2O3	J = Jar	B = Tedlar	G = Glass	
		Others/Specify:			Others/Specify:			M = Metal	P = Plastic	C = Can	



Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	7/12/2018	ł			Workorder:	N031181		
Rep sample Temp (Deg C):	4.2				IR Gun ID:	2		
Temp Blank:	Yes	🗌 No						
Carrier name:	Golden St	ate Overnight						
Last 4 digits of Tracking No.:	2526			Packing	Material Used:	Bubble Wrap		
Cooling process:	✓ Ice	Ice Pack	Dry Ice	Other	None None			
		S	ample Recei	ot Checklist	:			
1. Shipping container/cooler in	good condit	tion?			Yes 🗹	No 🗌	Not Present	
2. Custody seals intact, signed	, dated on s	hippping contain	er/cooler?		Yes	No 🗌	Not Present	$\checkmark$
3. Custody seals intact on sam	ple bottles?				Yes	No 🗌	Not Present	$\checkmark$
4. Chain of custody present?					Yes 🗹	No 🗌		
5. Sampler's name present in C	COC?				Yes 🗹	No 🗌		
6. Chain of custody signed whe	en relinquist	ned and received	?		Yes 🖌	No 🗌		
7. Chain of custody agrees with	n sample lat	oels?			Yes 🖌	No 🗌		
8. Samples in proper container	/bottle?				Yes 🖌	No 🗌		
9. Sample containers intact?					Yes 🖌	No 🗌		
10. Sufficient sample volume for	or indicated	test?			Yes 🗹	No 🗌		
11. All samples received within	holding tim	e?			Yes 🗸	No 🗌		
12. Temperature of rep sample	or Temp B	lank within accep	otable limit?		Yes 🗹	No 🗌	NA	
13. Water - VOA vials have zer	ro headspac	ce?			Yes	No 🗌	NA	$\checkmark$
14. Water - pH acceptable upo Example: pH > 12 for (Cl	n receipt? N,S); pH<2	for Metals			Yes 🗹	No 🗌	NA	
15. Did the bottle labels indicat	e correct pr	eservatives used	?		Yes	No 🗹	NA	
16. Were there Non-Conformate Water Wate	nce issues a as Client no	at login? tified?			Yes 🗌 Yes 🗌	No 🗌 No 🗌	NA NA	<ul><li>✓</li></ul>
Comments:								





# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: RTNE

Subcontractor:			
Test America - Irvine	TEL: 969-261-1022	Field Sampler: V. Carino	
17461 Derian Ave., Ste 100	FAX: 949-260-3297		
Irvine, CA 92614	Acct #:		12-Jul-18

						Requested Tests	
	Sample ID	Matrix	Date Collected	Bottle Type	EPA 8081A		
N031181-001D	/ HTTMDL-07-11	Wastewater	7/11/2018 12:22:00 PM	32OZA	1		

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N31181A Please email Invoices and Account Receivable Statements to <u>elvira@assetlaboratories.com</u>. For questions, call Marlon at (702)-307-2659. Please e-mail results to <u>reports.lv@assetlaboratories.com</u> by: Normal TAT

Please analtyze for 2,4-DDT (RL=0.1 ppb) and 4,4-DDT (RL - 0.05 ppb) by EPA 8081.

GSO# 541309245	
Date/Time	Date/Time
Relinquished by:7/13/2018 @ 1700 Received by:	
Relinquished by:    Received by:	



Subcontractor

# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

QC Level: RTNE

~

Pace Analytical Services, Inc. 1700 Elm Street, Suite 200 Minneapolis, MN 55414	TEL: FAX: Acct#:	(612) 607-1700 (612) 607-6444	Field Sampler: 576NED 12-Jul-18

		·			Requested Tests	
Sample ID	Matrix	Date Collected	Bottle Type	1668c		
N031181-001E / HTTMDL-07-11	Wastewater	7/11/2018 12:22:00 PM	320ZA	1	1	

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N31181B Please email Invoices and Account Receivable Statements to <u>elvira@assetlaboratories.com</u>. For questions, call Marlon at (702)-307-2659. Please e-mail results to <u>reports.lv@assetlaboratories.com</u> by: Normal TAT

Please analyze for Total PCB by 1668 at 250 pg/L.

PED EX: 7726 9755 9070	
	Date/Time
Relinquished by: 7/12/18@1535 Received by:	
Relinquished by: Received by:	

WORK C	<b>ORDER Summary</b>				12-Jul-18					
Client ID:	CH2HI03				WorkOrder: N031181					
Project: Comments:	SFPP Norwalk		QC Level	I: RTNE	Date Received: 7/11/20					
Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld M	S Sub Storage		
N031181-001A	HTTMDL-07-11	7/11/2018 12:22:00 PM	7/18/2018	Wastewater	SM2540D	TOTAL NON-FILTERABLE RESIDUE		] WW		
			7/18/2018			Total Suspended Solids Prep		] WW		
N031181-001B			7/18/2018			AQPREP TOTAL METALS: ICP, FLAA		] WW		
			7/18/2018		EPA 200.8	TOTAL METALS BY ICPMS		] _ WW		
N031181-001C			7/18/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM		] _ WW		
			7/18/2018		EPA 8270CSIM	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS-SIM		] _ ww		
N031181-001D			7/18/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE		] _ ww		
			7/18/2018		EPA 8081A	ORGANOCHLORINE PESTICIDES BY GC/ECD		WW WW		
N031181-001E			7/18/2018		1668c	PCB Congener		WW WW		
N031181-002A	FOLDER	7/18/2018	7/18/2018		Folder	Folder		] 🗌 LAB		
			7/18/2018		Folder	Folder		] _ LAB		



Ship From ASSET LABORATORIES MOLKY BRAR 11110 ARTESIA BLVD. SUITE B CERRITOS, CA 90703

Ship To ASSET LABORATORIES MARLON CARTIN 3151 W. POST RD., LAS VEGAS, NV 89118

COD: \$0.00 Weight: 0 lb(s) Reference:

**Delivery Instructions:** HOLD FOR PICK-UP **Signature Type:** NOT REQUIRED



7180471

Print Date: 7/11/2018 5:49 PM

Package 1 of 2

#### LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode,

Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.

Step 2: Fold this page in half.

Step 3: Securely attach this label to your package and do not cover the barcode.

#### **TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.

4-2ª 1842



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

# TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Tel: (949)261-1022

## TestAmerica Job ID: 440-215803-1 Client Project/Site: N031181-001D

# For:

Asset Laboratories 3151 W. Post Road Las Vegas, Nevada 89118

Attn: Marlon Cartin

aneg Robersos

Authorized for release by: 8/10/2018 9:41:53 AM Danielle Roberts, Senior Project Manager (949)261-1022

danielle.roberts@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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## Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-215803-1	N031181-001D/HTTMDL-07-11	Water	07/11/18 12:22 07	7/14/18 11:05

**Client: Asset Laboratories** Project/Site: N031181-001D TestAmerica Job ID: 440-215803-1

Project/Site: N031181-001D	restamenca Job ID: 440-215803-1				
Client Sample ID: N031181-001D/HTTMDL-07-11	Lab Sample ID: 440-215803-1				
No Detections.		4			
		5			
		8			
		9			
		13			

Page 4 of 15

### Client Sample ID: N031181-001D/HTTMDL-07-11 Date Collected: 07/11/18 12:22 Date Received: 07/14/18 11:05

### Lab Sample ID: 440-215803-1 Matrix: Water

Method: 8081A - Organochlo	rine Pesticid	les (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
4,4'-DDD	ND		0.0052	0.0041	ug/L		07/17/18 11:55	07/18/18 11:21	1	
4,4'-DDE	ND		0.0052	0.0031	ug/L		07/17/18 11:55	07/18/18 11:21	1	
4,4'-DDT	ND		0.010	0.0041	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Aldrin	ND		0.0052	0.0015	ug/L		07/17/18 11:55	07/18/18 11:21	1	
alpha-BHC	ND		0.0052	0.0026	ug/L		07/17/18 11:55	07/18/18 11:21	1	
beta-BHC	ND		0.010	0.0041	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Chlordane (technical)	ND		0.10	0.082	ug/L		07/17/18 11:55	07/18/18 11:21	1	-
delta-BHC	ND		0.0052	0.0036	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Dieldrin	ND		0.0052	0.0021	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Endosulfan I	ND		0.0052	0.0031	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Endosulfan II	ND		0.0052	0.0021	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Endosulfan sulfate	ND		0.010	0.0031	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Endrin	ND		0.0052	0.0021	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Endrin aldehyde	ND		0.010	0.0021	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Endrin ketone	ND		0.010	0.0072	ug/L		07/17/18 11:55	07/18/18 11:21	1	
gamma-BHC (Lindane)	ND		0.010	0.0031	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Heptachlor	ND		0.010	0.0031	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Heptachlor epoxide	ND		0.0052	0.0026	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Methoxychlor	ND		0.0052	0.0036	ug/L		07/17/18 11:55	07/18/18 11:21	1	
Toxaphene	ND		0.52	0.26	ug/L		07/17/18 11:55	07/18/18 11:21	1	
		o					<b>.</b> .			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
DCB Decachlorobiphenyl (Surr)	49		28 - 108				07/17/18 11:55	07/18/18 11:21	1	
Tetrachloro-m-xylene	27		10 - 123				07/17/18 11:55	07/18/18 11:21	1	

### Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water				Prep Type: Total/NA
_			Pei	cent Surrogate Recovery (Acceptance Limits)
		DCB2	TCX2	
Lab Sample ID	Client Sample ID	(28-108)	(10-123)	
440-215803-1	N031181-001D/HTTMDL-07-11	49	27	
LCS 440-487942/2-A	Lab Control Sample	86	57	
LCSD 440-487942/3-A	Lab Control Sample Dup	81	55	
MB 440-487942/1-A	Method Blank	69	45	
Surrogate Legend				

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene

### Client: Asset Laboratories Project/Site: N031181-001D

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV

#### **Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

### Client Sample ID: N031181-001D/HTTMDL-07-11 Date Collected: 07/11/18 12:22

### Lab Sample ID: 440-215803-1 Matrix: Water

Date	Collected: 07/11/18 12:22
Date	Received: 07/14/18 11:05

-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			970 mL	2 mL	487942	07/17/18 11:55	AJP	TAL IRV
Total/NA	Analysis	8081A		1			488121	07/18/18 11:21	D1D	TAL IRV

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

RL

0.0050

0.0050

0.010

0.0050

0.0050

0.010

0.10

0.0050

0.0050

0.0050

0.0050

0.010

0.0050

0.010

0.010

0.010

0.010

0.0050

MDL Unit

0.0040 ug/L

0.0030 ug/L

0.0040 ug/L

0.0015 ug/L

0.0025 ug/L

0.0040 ug/L

0.080 ug/L

0.0035 ug/L

0.0020 ug/L

0.0030 ug/L

0.0020 ug/L

0.0030 ug/L

0.0020 ug/L

0.0020 ug/L

0.0070 ug/L

0.0030 ug/L

0.0030 ug/L

0.0025 ug/L

D

Prepared

Analysis Batch: 488121

Analyte

4,4'-DDD

4,4'-DDE

4,4'-DDT

alpha-BHC

Chlordane (technical)

beta-BHC

delta-BHC

Endosulfan I

Endosulfan II

Endosulfan sulfate

Endrin aldehyde

gamma-BHC (Lindane)

Heptachlor epoxide

Endrin ketone

Heptachlor

Dieldrin

Endrin

Aldrin

**Client Sample ID: Method Blank** 

07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

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07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

07/17/18 11:55 07/18/18 09:53

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

**Prep Batch: 487942** 

Analyzed

Prep Type: Total/NA

**Prep Batch: 487942** 

Dil Fac

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

5
8
9

	1

### 07/17/18 11:55 07/18/18 09:53 07/17/18 11:55 07/18/18 09:53 07/17/18 11:55 07/18/18 09:53 07/17/18 11:55 07/18/18 09:53

Methoxychlor	ND		0.0050	0.0035	ug/L	07/17/18 11:55	07/18/18 09:53	1
Toxaphene	ND		0.50	0.25	ug/L	07/17/18 11:55	07/18/18 09:53	1
	МВ	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	69		28 - 108			07/17/18 11:55	07/18/18 09:53	1
Tetrachloro-m-xylene	45		10 - 123			07/17/18 11:55	07/18/18 09:53	1

### Lab Sample ID: LCS 440-487942/2-A **Matrix: Water** Analysis Batch: 488121

-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
4,4'-DDD	0.200	0.168		ug/L		84	50 - 128	
4,4'-DDE	0.200	0.159		ug/L		79	49 <sub>-</sub> 121	
4,4'-DDT	0.200	0.182		ug/L		91	41 <sub>-</sub> 140	
Aldrin	0.200	0.127		ug/L		64	37 - 115	
alpha-BHC	0.200	0.150		ug/L		75	44 <sub>-</sub> 115	
beta-BHC	0.200	0.158		ug/L		79	46 <sub>-</sub> 121	
delta-BHC	0.200	0.159		ug/L		79	32 - 129	
Dieldrin	0.200	0.167		ug/L		84	39 - 126	
Endosulfan I	0.200	0.168		ug/L		84	47 - 115	
Endosulfan II	0.200	0.178		ug/L		89	47 - 120	
Endosulfan sulfate	0.200	0.169		ug/L		85	48 - 126	
Endrin	0.200	0.180		ug/L		90	43 - 127	
Endrin aldehyde	0.200	0.167		ug/L		84	43 - 120	
Endrin ketone	0.200	0.164		ug/L		82	47 - 123	
gamma-BHC (Lindane)	0.200	0.154		ug/L		77	45 <sub>-</sub> 116	
Heptachlor	0.200	0.140		ug/L		70	37 <sub>-</sub> 115	
Heptachlor epoxide	0.200	0.166		ug/L		83	41 - 129	
Methoxychlor	0.200	0.185		ug/L		93	44 <sub>-</sub> 141	

#### **TestAmerica** Irvine

## Method: 8081A - Organochlorine Pesticides (GC)

MB MB

ND

Result Qualifier

Lab Sample ID:	MB 440-487942/1-A
Matrix: Water	

## **QC Sample Results**

**Client: Asset Laboratories** Project/Site: N031181-001D

DCB Decachlorobiphenyl (Surr)

Tetrachloro-m-xylene

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	86		28 - 108
Tetrachloro-m-xylene	57		10 - 123

81

55

## Lab Sample ID: LCSD 440-487942/3-A Matrix: Water

Matrix: Water									Prep Ty	pe: Tota	al/NA
Analysis Batch: 48812	1		Sniko						Prep Ba	itcn: 48	RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4,4'-DDD			0.200	0.155		ug/L		77	50 - 128	8	26
4,4'-DDE			0.200	0.150		ug/L		75	49 - 121	5	22
4,4'-DDT			0.200	0.165		ug/L		82	41 - 140	10	20
Aldrin			0.200	0.117		ug/L		59	37 - 115	8	24
alpha-BHC			0.200	0.143		ug/L		71	44 - 115	5	26
beta-BHC			0.200	0.150		ug/L		75	46 - 121	5	27
delta-BHC			0.200	0.149		ug/L		75	32 - 129	6	35
Dieldrin			0.200	0.153		ug/L		76	39 - 126	9	35
Endosulfan I			0.200	0.155		ug/L		77	47 - 115	8	27
Endosulfan II			0.200	0.163		ug/L		82	47 - 120	9	29
Endosulfan sulfate			0.200	0.155		ug/L		78	48 - 126	9	26
Endrin			0.200	0.164		ug/L		82	43 - 127	10	35
Endrin aldehyde			0.200	0.154		ug/L		77	43 - 120	8	35
Endrin ketone			0.200	0.148		ug/L		74	47 - 123	11	27
gamma-BHC (Lindane)			0.200	0.144		ug/L		72	45 - 116	7	28
Heptachlor			0.200	0.126		ug/L		63	37 - 115	11	35
Heptachlor epoxide			0.200	0.153		ug/L		77	41 - 129	8	35
Methoxychlor			0.200	0.167		ug/L		83	44 _ 141	10	35
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								

28 - 108

10\_123

TestAmerica Job ID: 440-215803-1	

Client Sample ID: Lab Control Sample Dup

487942

### GC Semi VOA

### Prep Batch: 487942

LCSD 440-487942/3-A

Lab Control Sample Dup

_					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-215803-1	N031181-001D/HTTMDL-07-11	Total/NA	Water	3510C	
MB 440-487942/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-487942/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-487942/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
Analysis Batch: 4881	121				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-215803-1	N031181-001D/HTTMDL-07-11	Total/NA	Water	8081A	487942
MB 440-487942/1-A	Method Blank	Total/NA	Water	8081A	487942
LCS 440-487942/2-A	Lab Control Sample	Total/NA	Water	8081A	487942

Total/NA

Water

8081A

## **Definitions/Glossary**

### **Client: Asset Laboratories** Project/Site: N031181-001D

### Glossary

Project/Site: 1	V031181-001D	
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	5
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	ŏ
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	9
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	11
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin) Client: Asset Laboratories Project/Site: N031181-001D TestAmerica Job ID: 440-215803-1

12 13

### Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

uthority	Program		EPA Region	Identification Numbe	r Expiration Date	
alifornia	LA Cty Sa	anitation Districts	9 10256 06-30-19			
The following analytes	s are included in this repo	ort, but accreditation/c	ertification is not o	offered by the governing au	thority:	
Analysis Method	Prep Method	Matrix	Ana	yte		
8081A	3510C	Water	4,4'-	DDD		
8081A	3510C	Water	4,4'-	DDE		
8081A	3510C	Water	4,4'-	DDT		
8081A	3510C	Water	Aldr	in		
8081A	3510C	Water	alph	a-BHC		
8081A	3510C	Water	beta-BHC			
8081A	3510C	Water	Chlordane (technical)			
8081A	3510C	Water	delta-BHC			
8081A	3510C	Water	Dieldrin			
8081A	3510C	Water	End	osulfan I		
8081A	3510C	Water	End	osulfan II		
8081A	3510C	Water	End	osulfan sulfate		
8081A	3510C	Water	Endrin			
8081A	3510C	Water	End	rin aldehyde		
8081A	3510C	Water	End	rin ketone		
8081A	3510C	Water	gamma-BHC (Lindane)			
8081A	3510C	Water	Heptachlor			
8081A	3510C	Water	Heptachlor epoxide			
8081A	3510C	Water	Methoxychlor			
8081A	3510C	Water	Тоха	aphene		
alifornia	State Pro	gram	9	CA ELAP 2706	06-30-19	
Analysis Method	Prep Method	Matrix	Ana	vte		

ASSET 3151-31531 mww.atlabast TEL: 702307	Laboratories W Post Rd., Las Vegas, N 2000 72659 FAX: 702	V 89118 3072691	6	HAIN-OI	-CUSTO	DY RECORD	Page I of 1
					QC Level:	RTNE	
contractor: Test America - Irvine 17461 Denan Ave , Ste 10 Irvine, CA 92614	00	TEL: 969-261-10 FAX: 949-260-3 Acct #:	222 297		Field Sampler:	V Canno	12-Jul-18
Sample   031181-001D / HTTMDI	L-07-11	<b>Matrix</b> Wastewater	Date Collected 7/11/2018 12:22·00 PM	Bottle Type 320ZA	EPA 8081A	Requested Tests	
					440-215803 Ch	am of Custody	
neral Comments: Plea Plea Mar	ase email sample receipt a sse use PO# N31181A Plk fon at (702)-307-2659. Ple. ase analtyze for 2,4-DDT (f	cknowledgement to t aase email Invoices ase e-mail results to RL=0.1 ppb) and 4,4	he PM. and Account Receivable St r <u>teports.iv@assettaborator</u> DDT (RL - 0.05 ppb) by E	atements to <u>elvira</u> <u>ies.com</u> by: Norm PA 8081.	@assettaboratories al TAT	.com For questions, call	
inquished by:	SCH SUBSC	azus	030) Date/Time 2018 @ 1700 Recei	# 541309245 Ived by: ived by:	Ohnika	DIN E VALA	6.Time 8 110S

### **Client: Asset Laboratories**

### Login Number: 215803 List Number: 1 Creator: Avila, Stephanie 1

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-215803-1

List Source: TestAmerica Irvine



www.pacelabs.com

### **Report Prepared for:**

Marlon Cartin Asset Laboratories 3151 West Post Road Las Vegas NV 89118

## REPORT OF LABORATORY ANALYSIS FOR PCBs

## Report Prepared Date:

August 21, 2018

Pace Analytical Services, Inc. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

### **Report Information:**

Pace Project #: 10439464 Sample Receipt Date: 07/13/2018 Client Project #: N031181-001E/HTTMDL-07-11 Client Sub PO #: N31181B State Cert #: 2929

### Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

Hichardson oanne ) August 21, 2018

Joanne Richardson, (612) 607-6453 (612) 607-6444 (fax)



### **Report of Laboratory Analysis**

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The results relate only to the samples included in this report.



## **DISCUSSION**

This report presents the results from the analyses performed on one sample submitted by a representative of Asset Laboratories. The sample was analyzed for the presence or absence of polychlorinated biphenyl (PCB) congeners using USEPA Method 1668A. Reporting limits were set to the signal to noise based estimated detection limits and were adjusted for the total amount of sample extracted. Results below the calibration range were flagged "J" as estimated concentrations.

The recoveries of the isotopically-labeled PCB internal standards in the sample extract ranged from 66-95%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668A. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained.

Incorrect isotope ratios were obtained for selected PCB congeners. The affected congeners were flagged "I" on the results tables.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected PCB congeners. Any congeners that were present at similar levels in both the method blank and sample extracts were flagged "B" to indicate that they may have, at least partiallty, originated in the laboratory.

Laboratory spike samples were also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds were recovered at 94-113%, with relative percent differences of 0.0-16.3%. These values were within method limits. Matrix spikes were not extracted with this sample batch.

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612- 607-6444

## Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - Pet	1240
Alabama	40770	Mississippi	MN00064
Alaska - DW	MN00064	Montana	CERT0092
Alaska - UST	17-009	Nebraska	NE-OS-18-06
Arizona	AZ0014	Nevada	MN00064
Arkansas - DW	MN00064	New Hampshire	2081
Arkansas - WW	88-0680	New Jersey (NE	MN002
CNMI Saipan	MP0003	New York	11647
California	2929	North Carolina	27700
Colorado	MN00064	North Carolina -	27700
Connecticut	PH-0256	North Carolina -	530
EPA Region 8+	via MN 027-053	North Dakota	R-036
Florida (NELAP	E87605	Ohio - DW	41244
Georgia	959	Ohio - VAP	CL101
Guam	17-001r	Oklahoma	9507
Hawaii	MN00064	Oregon - Primar	MN300001
Idaho	MN00064	Oregon - Secon	MN200001
Illinois	200011	Pennsylvania	68-00563
Indiana	C-MN-01	Puerto Rico	MN00064
lowa	368	South Carolina	74003
Kansas	E-10167	South Dakota	NA
Kentucky - DW	90062	Tennessee	TN02818
Kentucky - WW	90062	Texas	T104704192
Louisiana - DE	03086	Utah (NELAP)	MN00064
Louisiana - DW	MN00064	Virginia	460163
Maine	MN00064	Washington	C486
Maryland	322	West Virginia -	382
Massachusetts	M-MN064	West Virginia -	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming - UST	2926.01
Minnesota - De	via MN 027-053		

## **REPORT OF LABORATORY ANALYSIS**

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Report No.....10439464

# Appendix A

Sample Management

contractor: TEL: (612) 607-4700   T/O0 Elm Street, Suite 200 FAX: (612) 607-6444   Minneapolis, MN 55414 Act # Act # Boit   Minneapolis, MN 55414 Act # Date Collected Boit   Sample ID Matrix Date Collected Boit   Sample ID Matrix Date Collected Boit   Sample ID Matrix Date Collected Boit   Instruction Vasitwater 7/11/2018 12:22:00 PM 33   Instruction Plase email sample receipt acknowledgement to the PM. Plase email sample receipt acknowledgement to the PM.   Plases use PO# N01181B Plases email Invoices and Account Receivable Stateme Marin at (702)-307-2650. Plases e-mail results to reports McGassettabroratories. Plases enail results to reports McGassettabroratories.	
Definition TEL: (612) 607-1700   Pace Analytical Services, Inc. FAX: (612) 607-4740   T100 Elm Street, Suite 200 Act #: (612) 607-6444   Minneapolis, MN 55414 Act #: (612) 607-6444   Minneapolis, MN 55414 Matrix Date Collected Boit   U031131-001E / HTTMDL-07-11 Wastewater 7/11/2018 12.22:00 PM 33   Please use PO#MANDL-07-11 Please mail routing contracter and routig contracter ana	QC Level: RTNE
Sample ID Matrix Date Collected Bott   0031181-001E / HTTMDL-07-11 Wastewater 7/11/2018 12:22:00 PM 33   eneral Comments: Please email sample receipt acknowledgement to the PM. Please email sample receipt acknowledgement to the PM. Please email sample receipt acknowledgement to the PM.   Please use PO#N31181B Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable Stateme Marion at (702)-307-2659. Please email invoices and Account Receivable account Receivable account Please and Please email invoices and Account Receivable account Please and Please email invoices and Account Receivable account Please actount Please account Ple	Field Sampler: <i>S7GN社</i> の 12-Jul-18
1031181-001E / HTTMDL-07-11 Wastewater 7/11/2018 12:22:00 PM 33   1031181-001E / HTTMDL-07-11 Wastewater 7/11/2018 12:22:00 PM 33   1031181-001E / HTTMDL-07-11 Wastewater 7/11/2018 12:22:00 PM 33   11310 Please email sample receipt acknowledgement to the PM. Please email sample receipt acknowledgement to the PM. Please use PO#:N31181B   Please use PO#:N31181B Please email invoices and Account Receivable Stateme Warion at (702):307-2659. Please email Invoices and Account Receivable Stateme Please analyze for Total PCB by 1668 at 250 pg/L. Please analyze for Total PCB by 1668 at 250 pg/L.	Requested Tests
eneral Comments: Please email sample receipt acknowledgement to the PM. Please use PO#N31181B Please email Invoices and Account Receivable Stateme Martion at (702)-307-2659. Please e-mail Invoices and Account Receivable Stateme Martin at (702)-307-2659. Please e-mail Invoices and Account Receivable Stateme Date/Time A	20 PM 320ZA 1 7 74.1
eneral Comments: Please email sample receipt acknowledgement to the PM. Please use PO#:N31181B. Please email Invoices and Account Receivable Stateme Marton at (702)-307-2659. Please e-mail results to reports.lv@assettaboratories.coi Please analyze for Total PCB by 1668 at 250 pg/L.	
eneral Comments: Please email sample receipt acknowledgement to the PM. Please use PO#:N31181B Please email Invoices and Account Receivable Stateme Marion at (702)-307-2659. Please e-mail results to reports.lv@assettaboratories.coi Please analyze for Total PCB by 1668 at 250 pg/L.	
Date/Time	vable Statements to <u>elvira@assetlaboratories.com</u> . For questions, call <u>aboratories.com</u> by: Normal TAT
linquished by: And March 7/12/100/53 Received b linquished by: Received b	PED EX: 7726 9755 9070 Date/Time Received by: Arr5 / Place 7/13/18 / 94

,

2 martine in the second	Do Sample Cond	cument Name: ition Upon Rece	ipt Form	Document Revised: 02May2018 Page 1 of 2
Pace Analytical	D	ocument No.:		Issuing Authority:
	F-M	N-L-213-rev.23		Pace Minnesota Quality Office
Sample Condition Upon Receipt   Client Name: A SSC + La     Courier:   Fed Ex   UPS     Commercial   Pace   SpeeDee	Dusps	Project	#: WC PM: CLIE	)#:10439464 JMR Due Date: 07/30/18 NT: Asset Labs
Tracking Number: 72, 9755	-1010	•	L	
Custody Seal on Cooler/Box Present?	No s	eals Intact?	]Yes	Optional: Proj. Due Date: Proj. Name:
Packing Materiai: Bubble Wrap	ags 🗌 None	Other:		Temp Blank? 🔲 Yes 🖉 No
Thermometer   G87A9170600254     Used:   G87A9155100842     Cooler Temp Read (°C):   1     Temp should be above freezing to 6°C   Cooler Temp     USDA Regulated Soil (   N/A, water sample)     Did samples originate in a quarantine zone within the Unit     NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?     If Yes to either question, fill out a	Type Corrected (°C): Factor: red States: AL, Al Regulated Soil	of Ice: We 3, 4 Dat R, CA, FL, GA, ID, I Yes [ Checklist (F-MN	t 🗍 Blue B e and Initials .A. MS, D No ir - <b>O-338) and i</b>	None Dry Melted
				COMMENTS:
Chain of Custody Present?	Yes	<b>□</b> No	1.	
Chain of Custody Filled Out?	Yes		2.	
Chain of Custody Relinguished?	Yes		3.	
Sampler Name and/or Signature on COC?			4	
Samples Arrived within Hold Time?			5	
Short Hold Time Analysis (~72 br)2				· · · · · · · · · · · · · · · · · · ·
Short Hold Time Analysis ( 2 in ):</td <td></td> <td></td> <td>0. </td> <td></td>			0. 	
Rush Turn Around Time Requested?	Yes		1.	· · · · · · · · · · · · · · · · · · ·
	Ves	No	8.	
Correct Containers Used?	▲ Yes	No	9.	
-Pace Containers Used?	<u> </u>	No		
Containers Intact?		No	10.	
Filtered Volume Received for Dissolved Tests?	🗌 Yes	No AMA	11. Note i	f sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples the COC? Matrix:	s to Pes	□No	12.	
All containers needing acid/base preservation have been checked? All containers needing preservation are found to be in compliance with EPA recommendation?	∏Yes		13. Sample #	□HNO <sub>3</sub> □H <sub>2</sub> SO <sub>4</sub> □NaOH Positive for Res. Chlorine? Y N
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC Oil and Grease,	□Yes		Initial when	Lot # of added
DRU/8015 (water) and Dioxin/PFAS	Yes		completed:_	preservative:
Headspace in VOA Vials ( >6mm)?	Yes		14.	
rip Blank Present?	☐ Yes		15.	
nip Blank Custody Seals Present?	∐Yes			
	<del></del>		L	·
CLIENT NOTIFICATION/RESOLUTION				Field Data Required? Yes No
Person Contacted:			Date/Time	
			· •• ••	
		······		
				767¥

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).



> Tel: 612-607-1700 Fax: 612-607-6444

## **Reporting Flags**

- A = Reporting Limit based on signal to noise
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- I = Interferencepresent
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDEInterference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- \* = SeeDiscussion

## **REPORT OF LABORATORY ANALYSIS**

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# Appendix B

Sample Analysis Summary



> Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668A Pol	ychlorobiphen	yl Sample Anal	ysis Results
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Client - Asset Laboratories

Client's Sample ID Lab Sample ID Filename	N031181-00 1043946400 P180817A_	)1E/HTTMDI )1 _06	07-11			
Injected By Total Amount Extracted	008 ml			Matrix	W/ator	
% Moisture	NA			Dilution	NA	
Dry Weight Extracted	NA			Collected	07/11/2018 12.2	2
	P180817A0	2		Received	07/13/2018 18:0	2
CCal Filename(s)	P180817A	03		Extracted	08/13/2018 13:3	0
Method Blank ID	BLANK-640	)13		Analyzed	08/17/2018 14:0	8
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.791	3.17	2.0	1.59	79
13C-4-MOCB 13C-2 2'-DICB	3 4	12.547	3.15	2.0	1.02	66
13C-4.4'-DiCB	15	19.914	1.60	2.0	1.54	77
13C-2,2',6-TrCB	19	16.619	1.16	2.0	1.43	71
13C-3,4,4'-TrCB	37	27.674	1.07	2.0	1.69	85
13C-2,2',6,6'-TeCB	54	20.212	0.80	2.0	1.50	75
13C-3,4,4,5-16CB	81 77	34.805	0.80	2.0	1.76	88
13C-2.2'.4.6.6'-PeCB	104	26.265	1.63	2.0	1.39	70
13C-2,3,3',4,4'-PeCB	105	38.986	1.58	2.0	1.69	84
13C-2,3,4,4',5-PeCB	114	38.298	1.58	2.0	1.65	82
13C-2,3',4,4',5-PeCB	118	37.745	1.60	2.0	1.67	84
13C-2,3,4,4,5-PeCB 13C-3 3' / /' 5-PeCB	123	37.410	1.58	2.0	1.04	82 95
13C-2.2'.4.4'.6.6'-HxCB	155	32.273	1.22	2.0	1.34	67
13C-HxCB(156/157)	156/157	45.212	1.28	4.0	3.24	81
13C-2,3',4,4',5,5'-HxCB	167	44.005	1.28	2.0	1.55	77
13C-3,3',4,4',5,5'-HxCB	169	48.515	1.28	2.0	1.87	93
13C-2,2,3,4,5,6,6-HpCB	188	38.198	1.05	2.0	1.31	00 81
13C-2,2',3,3',4,4',5,5' 6 6'-OcCB	202	43 686	0.91	2.0	1.02	68
13C-2,3,3',4,4',5,5',6-OcCB	205	53.068	0.89	2.0	1.75	87
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.491	0.78	2.0	1.62	81
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	50.460	0.78	2.0	1.39	69
	209	55.956	0.69	2.0	1.73	87
	20	22.280	1.07	2.0	2.06	102
13C-2,4,4-11CB 13C-2 3 3' 5 5'-PeCB	∠o 111	23.200	1.07	2.0	2.00	91
13C-2,2',3,3',5,5',6-HpCB	178	41.333	1.06	2.0	1.73	86
Recoverv Standards						
13C-2,5-DiCB	9	15.253	1.57	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.259	0.81	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.558	1.59	2.0	NA	NA
13C-2,2,3,4,4,5-mx0D 13C-2,2'3,3'4,4'5,5'-0cCB	194	40.931 52 702	0.90	2.0 2.0	NA NA	NA NA
		02.102	0.00	2.0		

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

ng's = Nanograms

### **REPORT OF LABORATORY ANALYSIS**

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**Client Sample ID** 

Pace Analytical Services, LLC 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

N031181-001E/HTTMDL-07-11

Lab Samı Filename	ple ID	10439464001 P180817A_06				
IUPAC	Co-elutions	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
1		9.803	3.02	3.53 J		1.33
2		12.343	2.60 I	J	2.31	1.20
3		12.571	3.30	2.99 BJ		1.84
4		12.870	1.42	10.6 J		6.66
5				ND		4.19
6				ND		3.61
7		15.481	1.41	4.65 J		3.48
8		16.295	1.34	13.0 BJ		3.31
9				ND		3.79
10				ND		4.13
11	10/10	19.195	1.52	83.3 BJ		3.85
12	12/13			ND		3.81
13	12/13			ND		3.81
14						3.74
15		19.938	1.48	4.42 J	 5 05	4.30
10		19.010	1.211	J 9.12 PI	5.95	2.19
18	18/30	19.279	1.00	0.12 DJ 14.4 BI		2.44
10	10/30	16.619	1.01	3.62		2.02
20	20/28	23 314	1.10	21.6 BI		1 71
21	21/33	23 565	1.10	970 BJ		1 74
22	21/00	24 001	1.10	5.97 B.I		1 74
23				ND		1.65
24				ND		1.76
25		22.626	1.08	2.01 J		1.70
26	26/29	22.358	1.37 I	J	3.13	1.68
27		19.543	1.08	2.27 J		1.82
28	20/28	23.314	1.13	(21.6) BJ		1.71
29	26/29	22.358	1.37 I	J	(3.13)	1.68
30	18/30	18.812	1.01	(14.4) BJ		2.02
31		22.978	1.05	14.5 BJ		1.63
32		20.413	0.90	5.70 BJ		1.66
33	21/33	23.565	1.10	(9.70) BJ		1.74
34				ND		1.80
35				ND		1.72
36						1.66
37		27.707	0.90	4.13 BJ		1.95
38						1.70
39	40/41/71	27 490	0.99			1.01
40	40/41/71	27.409	0.00	(10.7) BI		1.40
42	+0/+1/7	26 919	0.88	6.86 1		1.45
43	43/73	20.919	0.00			1 29
44	44/47/65	26 399	0.84	27.4 B.I		1.33
45	45/51	23 465	0.89	8.48 B.I		1.50
46				ND		1,71
47	44/47/65	26.399	0.84	(27.4) BJ		1.33
48		26.097	0.78	4.11 J		1.42

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention TimeI = Interference

ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612- 607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		N031181-001E/H 10439464001 P180817A_06	TTMDL-07-11			
IUPAC	Co-elutions	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
49	49/69	25 812	0 79	19.7 B.I		1 29
50	50/53	22.643	0.81	6.10 J		1.41
51	45/51	23.465	0.89	(8.48) BJ		1.50
52		25.276	0.79	40.7 BJ		1.49
53	50/53	22.643	0.81	(6.10) J		1.41
54				ŇĎ		1.07
55				ND		1.09
56		31.485	0.77	8.60 BJ		1.11
57				ND		1.07
58				ND		1.07
59	59/62/75	26.751	0.85	1.89 J		1.06
60		31.720	0.79	2.95 J		1.11
61	61/70/74/76	30.429	0.84	29.7 BJ		1.08
62	59/62/75	26.751	0.85	(1.89) J		1.06
63				ND		1.07
64	44/47/05	27.724	0.76	8.56 BJ		1.13
65	44/47/65	26.399	0.84	(27.4) BJ		1.33
60 67		30.781	0.72	21.3 J		1.08
60						0.939
60	10/60	25.812	0.70	(10.7) BI		1.07
70	49/09 61/70/74/76	20.012	0.79	(19.7) BJ		1.29
70	40/41/71	27 /80	0.04	(10.7) BJ		1.00
72	-0/-1//1	27.403	0.00	(10.7) D3 ND		1.45
73	43/73			ND		1.00
74	61/70/74/76	30,429	0.84	(29.7) BJ		1.08
75	59/62/75	26.751	0.85	(1.89) J		1.06
76	61/70/74/76	30,429	0.84	(29.7) BJ		1.08
77		35.392	0.73	`3.17́ BJ		1.19
78				ND		1.05
79				ND		0.900
80				ND		0.950
81				ND		1.14
82		35.007	1.39	2.85 J		1.96
83		33.078	1.70	2.46 J		2.41
84	05/11/0/11/7	30.663	1.50	9.23 J		2.03
85	85/116/11/	34.503	1.48	5.79 J		1.42
86	86/87/97/108/119/12	5 33.715	1.45	20.3 J		1.50
8/ 00	86/87/97/108/119/12	5 33.715	1.45	(20.3) J		1.50
00	00/91	30.412	1.49	5.20 J		1.00
90	90/101/113	32 575	1 55	33.2 1		1.50
91	88/91	30 412	1 49	(5 26)		1.32
92	00/01	31 955	1.45	7 14 .1		1.86
93	93/98/100/102	29 825	1.94 1	1	2.58	1.86
94	20,00,100,102			ND		1.94
95		29.507	1.50	25.3 J		1.75
96				ND		0.658

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise P

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention TimeI = Interference

ng's = Nanograms

### **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		N031181-001E/H 10439464001 P180817A_06	TTMDL-07-11			
IUPAC	Co-elutions	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
97	86/87/97/108/119/12	5 33.715	1.45	(20.3) J		1.50
98	93/98/100/102	29.825	1.94 1	J	(2.58)	1.86
99	02/08/100/102	33.195	1.65	16.0 J	(2 5 0)	1.39
100	93/98/100/102	29.825	1.94 1	(22.2) J	(2.58)	1.80
101	90/101/113	20 825	1.00	(33.2) J	(2.58)	1.02
102	93/90/100/102	29.025	1.341		(2.30)	1.65
104				ND		0.649
105		39.003	1.52	9.41 J		0.985
106				ND		0.876
107	107/124	37.057	1.13 I	J	1.08	0.895
108	86/87/97/108/119/12	5 33.715	1.45	(20.3) J		1.50
109		37.309	1.28 I	J	2.07	0.882
110	110/115	34.654	1.59	33.2 J		1.30
111				ND		1.20
112	00/404/440			ND (00.0)		1.20
113	90/101/113	32.575	1.55	(33.2) J		1.52
114	110/115		1.50			1.02
115	110/113	34.034	1.39	(33.2) J (5.70) J		1.30
117	85/116/117	34.503	1.40	(5.79) J		1.42
118	00/110/11/	37 778	1.70	26.0		0.913
119	86/87/97/108/119/12	5 33 715	1.70	(20.3)		1 50
120				ND		1.17
121				ND		1.30
122				ND		0.950
123				ND		0.988
124	107/124	37.057	1.13 I	J	(1.08)	0.895
125	86/87/97/108/119/12	5 33.715	1.45	(20.3) J		1.50
126				ND		1.02
127	400/400			ND		0.870
128	128/166	42.273	1.10	4.69 J		1.57
129	129/138/183	40.946	1.32	29.9 J		1.03
130						2.17
132		37 862	1.37	7.86		2.00
133				ND		2.05
134	134/143			ND		2.32
135	135/151	35.577	1.30	7.77 J		0.907
136		33.128	1.52 I	J	3.14	0.668
137				ND		1.96
138	129/138/163	40.948	1.32	(29.9) J		1.83
139	139/140			ND		1.83
140	139/140			ND .		1.83
141		39.858	1.45 I	J	2.12	1.85
142	101/110					2.21
143	134/143	26 190	1.20			2.32
144		50.100	1.50	1.1J J		0.073

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention TimeI = Interference

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sa Lab Sam Filename	mple ID ple ID	N031181-001E/H⁻ 10439464001 P180817A_06	FTMDL-07-11			
IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
145				ND		0.661
146		38.969	1.16	4.98 J		1.79
147	147/149	36.571	1.15	19.3 J		1.88
148				ND		0.897
149	147/149	36.571	1.15	(19.3) J		1.88
150				ND		0.645
151	135/151	35.577	1.30	(7.77) J		0.907
152				ND		0.664
153	153/168	39.640	1.29	21.3 J		1.49
154				ND		0.739
155	450/457			ND		0.551
156	156/157	45.195	1.30	3.43 J		1.81
157	150/157	45.195	1.30	(3.43) J		1.81
100		41.364	1.20	2.10 J		1.24
160						1.31
161						1.30
162				ND		1.04
163	129/138/163	40 948	1.32	(29.9)		1.20
164	120/100/100	40.629	1.20	1.49 J		1.34
165				ND		1.48
166	128/166	42.273	1.10	(4.69) J		1.57
167				ND		1.34
168	153/168	39.640	1.29	(21.3) J		1.49
169				ŇĎ		1.44
170		47.895	1.05	3.61 J		2.00
171	171/173			ND		2.08
172				ND		2.02
173	171/173			ND		2.08
174		43.167	0.91	3.32 J		1.86
175				ND		1.18
1/6				ND		0.923
1//		43.653	0.89	3.65 J		2.16
178						1.30
179	100/102	38.600	1.09	2.35 J		0.897
100	160/193	46.570	1.07	9.20 J		1.00
182						1.91
183	183/185	12 932	1.04	3/8		1.14
184	100/100			ND		0.869
185	183/185	42 932	1 04	(3.48)		1 89
186	100/100			ND		0.927
187		42.289	1.04	7.40 J		1.10
188				ND		0.917
189				ND		1.18
190				ND		1.40
191				ND		1.45
192		46.185	2.84 I	J	2.53	1.52

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		N031181-001E/HT 10439464001 P180817A_06	N031181-001E/HTTMDL-07-11 10439464001 P180817A_06					
IUPAC	Co-elutions	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L		
193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208	180/193 197/200 198/199 198/199 197/200	46.570 52.723 50.805  48.532 48.532 48.532   49.404  54.534  	1.07 0.67 I 0.82  1.06 I 1.06 I   0.95  0.87  	(9.20) J J 1.39 J ND ND J J ND ND 2.00 J ND 2.00 J ND 2.79 J ND	2.26  2.74 (2.74)      	1.60 0.997 1.15 1.37 1.01 1.38 1.38 1.01 1.02 1.17 1.23 1.04 0.754 1.36 1.09 1.20		
209				ND		0.900		

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample IDN031181-001E/HTTMDL-07-11Lab Sample ID10439464001FilenameP180817A\_06

Congener Group	Concentration pg/L	
Total Monochloro Biphenyls	6.52	
Total Dichloro Biphenyls	116	
Total Trichloro Biphenyls	92.0	
Total Tetrachloro Biphenyls	200	
Total Pentachloro Biphenyls	196	
Total Hexachloro Biphenyls	104	
Total Heptachloro Biphenyls	33.0	
Total Octachloro Biphenyls	3.39	
Total Nonachloro Biphenyls	2.79	
DecachloroBiphenyls	ND	
Total PCBs	754	

ND = Not Detected

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### Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename Injected By Total Amount Extracted ICAL ID CCal Filename(s)	BLANK-640 P180817A_ CVS 1800 mL P180817A0 P180817A_	013 _05 02 _03		Matrix Extracted Analyzed Dilution	Water 08/13/2018 1 08/17/2018 1 NA	3:30 3:08
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-3,4,4',5-TeCB 13C-3,3',4,4'-TeCB 13C-2,3',4,4'-TeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,2',3,4,4',5,5'-HpCB 13C-2,2',3,3',4,4',5,5',6-OcCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB	$\begin{array}{c} 1\\ 3\\ 4\\ 15\\ 19\\ 37\\ 54\\ 81\\ 77\\ 104\\ 105\\ 114\\ 105\\ 114\\ 123\\ 126\\ 155\\ 156/157\\ 167\\ 169\\ 188\\ 189\\ 202\\ 205\\ 206\\ 208\\ 209\end{array}$	9.743 12.523 12.799 19.914 16.607 27.692 20.195 34.825 35.412 26.266 38.989 38.319 37.749 37.413 42.176 32.276 45.216 44.009 48.520 38.201 51.026 43.690 53.074 54.497 50.466 55.962	3.00 3.17 1.56 1.59 1.12 1.12 0.79 0.81 0.82 1.55 1.58 1.59 1.60 1.60 1.59 1.24 1.26 1.30 1.30 1.03 1.07 0.91 0.90 0.78 0.70	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 1.66\\ 1.69\\ 1.39\\ 1.66\\ 1.45\\ 1.85\\ 1.59\\ 1.91\\ 1.91\\ 1.91\\ 1.85\\ 1.88\\ 1.86\\ 2.14\\ 1.38\\ 3.41\\ 1.66\\ 2.01\\ 1.52\\ 1.93\\ 1.59\\ 1.89\\ 1.84\\ 1.70\\ 2.01 \end{array}$	83 84 69 83 72 92 80 96 96 74 95 93 94 93 107 69 85 83 100 76 96 79 94 92 85 101
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	23.298 35.362 41.354	1.07 1.58 1.04	2.0 2.0 2.0	1.96 1.77 1.64	98 89 82
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	15.241 25.260 32.561 40.935 52.708	1.60 0.79 1.57 1.27 0.91	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits

K = Kecovery outside of method 1000A control minus

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

### **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-64013 P180817A\_05

IUPAC	Co-elutions	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
1		9 755	2 65 1	!!	1 95	0.683
2		12 319	2.001	11	0 740	0.000
3		12.535	2.001	1.56		0.968
4				ND		6.31
5				ND		2.72
6				ND		2.34
7		15.481	1.30 I	IJ	3.18	2.25
8		16.272	1.50	5.29 J		2.14
9				ND		2.45
10				ND		3.82
11		19.195	1.40	44.5 J		2.50
12	12/13			ND		2.47
13	12/13			ND		2.47
14				ND		2.43
15				ND		2.73
16		19.806	1.10	2.40 J		1.51
17		19.279	1.04	2.33 J		1.32
18	18/30	18.812	1.16	4.10 J		1.09
19	aa /aa			ND		1.47
20	20/28	23.315	1.08	5.22 J		0.886
21	21/33	23.549	1.00	3.38 J		0.904
22		24.002	0.94	1.87 J		0.902
23						0.856
24 25						0.955
20	26/20					0.881
20	20/29	22.339	0.96			0.070
21	20/28	22 215	1.09	(5.22) I		0.900
20	20/20	23.313	0.06	(0.22) 0		0.000
29	18/30	18 812	1 16	(1.13) 3		1.00
31	10/30	22 996	0.88	4.53		0.848
32		20.430	0.94	1.55		0.862
33	21/33	23 549	1 00	(3.38)		0.904
34	21/00			ND		0.936
35				ND		0.891
36				ND		0.860
37		27.725	1.03	1.22 J		0.981
38				ND		0.884
39				ND		0.836
40	40/41/71	27.474	0.89	2.27 J		1.02
41	40/41/71	27.474	0.89	(2.27) J		1.02
42				ŇĎ		1.17
43	43/73			ND		0.908
44	44/47/65	26.384	0.74	5.24 J		0.938
45	45/51	23.465	0.84	3.46 J		1.05

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

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### Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-64013 P180817A\_05

IUPAC	Co-elutions	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
46				ND		1.20
47	44/47/65	26.384	0.74	(5.24) J		0.938
48				` NĎ		1.000
49	49/69	25.797	0.83	2.37 J		0.908
50	50/53			ND		0.992
51	45/51	23.465	0.84	(3.46) J		1.05
52		25.310	0.70	4.77 J		1.05
53	50/53			ND		0.992
54				ND		0.770
55				ND		0.898
56		31.504	0.89	1.72 J		0.917
57				ND		0.887
58				ND		0.881
59	59/62/75			ND		0.748
60				ND		0.916
61	61/70/74/76	30.431	0.77	3.65 J		0.888
62	59/62/75			ND		0.748
63				ND		0.880
64		27.708	0.72	1.63 J		0.796
65	44/47/65	26.384	0.74	(5.24) J		0.938
66		30.800	0.75	1.79 J		0.892
67				ND		0.776
68				ND		0.883
69	49/69	25.797	0.83	(2.37) J		0.908
70	61/70/74/76	30.431	0.77	(3.65) J		0.888
71	40/41/71	27.474	0.89	(2.27) J		1.02
72				NĎ		0.868
73	43/73			ND		0.908
74	61/70/74/76	30.431	0.77	(3.65) J		0.888
75	59/62/75			NĎ		0.748
76	61/70/74/76	30.431	0.77	(3.65) J		0.888
77		35.462	0.77	1.06 J		0.950
78				ND		0.870
79				ND		0.743
80				ND		0.785
81				ND		0.946
82				ND		0.769
83				ND		0.945
84				ND		0.798
85	85/116/117			ND		0.559
86	86/87/97/108/119/125	33.752	1.43	2.01 J		0.589
87	86/87/97/108/119/125	33.752	1.43	(2.01) J		0.589
88	88/91			ND		0.730
89				ND		0.778
90	90/101/113	32,595	1.64	2.93 J		0.597

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

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### Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-64013 P180817A\_05

IUPAC	Co-elutions	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
91	88/91			ND		0 730
92	00/01			ND		0.730
93	93/98/100/102			ND		0 732
94	00,00,100,102			ND		0.761
95		29.525	1,49	2.30 J		0.688
96				ND		0.444
97	86/87/97/108/119/125	33.752	1.43	(2.01) J		0.589
98	93/98/100/102			ND		0.732
99		33.198	1.42	1.28 J		0.544
100	93/98/100/102			ND		0.732
101	90/101/113	32.595	1.64	(2.93) J		0.597
102	93/98/100/102			` ΝĎ		0.732
103				ND		0.646
104				ND		0.457
105		38.989	1.22 I	IJ	0.804	0.689
106				ND		0.621
107	107/124			ND		0.634
108	86/87/97/108/119/125	33.752	1.43	(2.01) J		0.589
109				ŇĎ		0.625
110	110/115	34.691	1.48	2.70 J		0.512
111				ND		0.469
112				ND		0.473
113	90/101/113	32.595	1.64	(2.93) J		0.597
114				ND		0.703
115	110/115	34.691	1.48	(2.70) J		0.512
116	85/116/117			ND		0.559
117	85/116/117			ND		0.559
118		37.765	1.36	1.68 J		0.656
119	86/87/97/108/119/125	33.752	1.43	(2.01) J		0.589
120				ND		0.458
121				ND		0.511
122				ND		0.673
123				ND		0.678
124	107/124			ND		0.634
125	86/87/97/108/119/125	33.752	1.43	(2.01) J		0.589
126				ND		0.723
127	100/100			ND		0.617
128	128/166			ND		0.736
129	129/138/163	40.935	0.971	N	1.65	0.854
130				ND		1.02
131				ND		1.12
132				ND		1.00
133	101/110					0.961
134	135/151			ND		0.688

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-64013 P180817A\_05

IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration pg/L	EMPC pg/L	EML pg/L
136		33.098	1.14	0.544 J		0.507
137				ND		0.919
138	129/138/163	40 935	0.971	LJ	(1.65)	0.854
139	139/140			ND		0.857
140	139/140			ND		0.857
141				ND		0.866
142				ND		1.03
143	134/143			ND		1.09
144				ND		0.662
145				ND		0.502
146				ND		0.836
147	147/149	36.541	1.06	1.63 J		0.882
148				ND		0.680
149	147/149	36.541	1.06	(1.63) J		0.882
150				NĎ		0.489
151	135/151			ND		0.688
152				ND		0.504
153	153/168	39.677	1.10	1.13 J		0.698
154				ND		0.561
155				ND		0.422
156	156/157			ND		0.738
157	156/157			ND		0.738
158				ND		0.581
159				ND		0.540
160				ND		0.644
161				ND		0.627
162				ND		0.530
163	129/138/163	40.935	0.97 l	IJ	(1.65)	0.854
164				ND		0.628
165				ND		0.691
166	128/166			ND		0.736
167				ND		0.549
168	153/168	39.677	1.10	(1.13) J		0.698
169				NĎ		0.589
170				ND		0.793
171	171/173			ND		0.822
172				ND		0.801
173	171/173			ND		0.822
174				ND		0.737
175				ND		0.541
176				ND		0.423
177				ND		0.853
178				ND		0.598
179				ND		0.411
180	180/193	46.591	1.13	0.636 J		0.635

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

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\* = See Discussion

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-64013 P180817A\_05

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	pg/L	pg/L	pg/L
181				ND		0.756
182				ND		0.521
183	183/185			ND		0.750
184				ND		0.398
185	183/185			ND		0.750
186				ND		0.425
187				ND		0.506
188				ND		0.428
189				ND		0.543
190				ND		0.554
191				ND		0.575
192				ND		0.601
193	180/193	46.591	1.13	(0.636) J		0.635
194				ŇĎ		0.783
195				ND		0.902
196				ND		0.469
197	197/200			ND		0.346
198	198/199			ND		0.475
199	198/199			ND		0.475
200	197/200			ND		0.346
201				ND		0.350
202				ND		0.389
203				ND		0.423
204				ND		0.357
205				ND		0.612
206				ND		1.03
207				ND		0.787
208				ND		0.834
209				ND		0.571

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits

RT = Retention Time I = Interference

### **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Blank Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

CBLKYP BLANK-64013 P180817A\_05

Cong	ener Group	Concentratio pg/L	on
Total M	Ionochloro Biphenyls	1.56	
TotalD	ichloro Biphenyls	49.8	
Total T	richloro Biphenyls	27.7	
Total T	etrachloro Biphenyls	28.0	
Total P	entachloro Biphenyls	12.9	
Total H	exachloro Biphenyls	3.30	
TotalH	eptachloro Biphenyls	0.636	
Total C	octachloro Biphenyls	ND	
TotalN	onachloroBiphenyls	ND	
Decac	hloroBiphenyls	ND	
Total P	CBs	124	

ND = Not Detected

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612- 607-6444

### Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-64014
Filename	P180817A_13
Total Amount Extracted	1850 mL
ICAL ID	P180817A02
CCal Filename(s)	P180817A_03
Method Blank ID	BLANK-64013

MatrixWaterDilutionNAExtracted08/13/2018 13:30Analyzed08/17/2018 21:05Injected ByCVS

	Native Analytes			Labeled Analytes		
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery
1	1.0	1.04	104	2.0	1.81	91
3	1.0	1.04	104	2.0	1.81	90
4	1.0	1.03	103	2.0	1.47	73
15	1.0	0.974	97	2.0	1.74	87
19	1.0	0.955	96	2.0	1.55	78
37	1.0	0.965	96	2.0	1.93	96
54	1.0	0.940	94	2.0	1.73	87
81	1.0	0.972	97	2.0	1.97	99
77	1.0	0.978	98	2.0	1.96	98
104	1.0	1.02	102	2.0	1.57	79
105	1.0	0.989	99	2.0	1.88	94
114	1.0	0.997	100	2.0	1.85	93
118	1.0	0.981	98	2.0	1.88	94
123	1.0	0.987	99	2.0	1.84	92
126	1.0	0.968	97	2.0	2.08	104
155	1.0	1.01	101	2.0	1.52	76
156/157	2.0	1.96	98	4.0	3.42	85
167	1.0	0.970	97	2.0	1.67	84
169	1.0	0.968	97	2.0	1.96	98
188	1.0	0.986	99	2.0	1.61	81
189	1.0	0.957	96	2.0	2.23	111
202	1.0	0.978	98	2.0	1.61	81
205	1.0	0.967	97	2.0	1.84	92
206	1.0	0.977	98	2.0	1.77	88
208	1.0	0.962	96	2.0	1.63	81
209	1.0	0.948	95	2.0	1.89	95

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion ng = Nanograms

I = Interference

### **REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, LLC 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612- 607-6444

#### Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-64015
Filename	P180817A_14
Total Amount Extracted	1800 mL
ICAL ID	P180817A02
CCal Filename(s)	P180817A_03
Method Blank ID	BLANK-64013

MatrixWaterDilutionNAExtracted08/13/2018 13:30Analyzed08/17/2018 22:04Injected ByCVS

	Ν	Native Analy	tes	Labeled Analytes				
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery		
1	1.0	1.06	106	2.0	1.75	87		
3	1.0	1.07	107	2.0	1.76	88		
4	1.0	1.04	104	2.0	1.42	71		
15	1.0	0.993	99	2.0	1.72	86		
19	1.0	0.942	94	2.0	1.50	75		
37	1.0	0.970	97	2.0	1.92	96		
54	1.0	0.947	95	2.0	1.69	85		
81	1.0	0.999	100	2.0	1.94	97		
77	1.0	0.999	100	2.0	1.95	98		
104	1.0	1.01	101	2.0	1.56	78		
105	1.0	0.985	99	2.0	1.88	94		
114	1.0	0.991	99	2.0	1.83	92		
118	1.0	1.00	100	2.0	1.88	94		
123	1.0	0.999	100	2.0	1.83	92		
126	1.0	0.979	98	2.0	2.07	103		
155	1.0	1.00	100	2.0	1.54	77		
156/157	2.0	1.97	98	4.0	3.49	87		
167	1.0	0.991	99	2.0	1.70	85		
169	1.0	0.971	97	2.0	2.08	104		
188	1.0	0.992	99	2.0	1.56	78		
189	1.0	1.13	113	2.0	1.62	81		
202	1.0	1.00	100	2.0	1.54	77		
205	1.0	0.972	97	2.0	1.89	95		
206	1.0	1.01	101	2.0	1.75	88		
208	1.0	0.987	99	2.0	1.63	82		
209	1.0	0.972	97	2.0	1.89	94		

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

ng = Nanograms

I = Interference

### **REPORT OF LABORATORY ANALYSIS**

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Client

Tel: 612-607-1700 Fax: 612- 607-6444

#### Method 1668A

#### Spike Recovery Relative Percent Difference (RPD) Results

Spike 1 IDLCS-64Spike 1 FilenameP18081	014 7A_13	Spike 2 ID Spike 2 Filename	LCSD-64015 P180817A_14	
Compound	Spik IUPAC %RE	e 1 Spi C %R	ke 2 EC %	RPD
2-MoCB 4-MoCB 2,2'-DiCB 4,4'-DiCB 2,2',6-TrCB 3,4,4'-TrCB 2,2',6,6'-TeCB 3,3',4,4'-TeCB 3,3',4,4'-5-TeCB 2,2',4,6,6'-PeCB 2,3,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,2',4,4',6,6'-HxCB (156/157) 2,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 2,2',3,3',4,4',5,5'-HxCB 2,2',3,3',4,4',5,5',6,6'-OcCB 2,3,3',4,4',5,5',6,6'-NoCB 2,2',3,3',4,4',5,5',6,6'-NoCB 2,2',3,3',4,5,5',6,6'-NoCB 2,2',3,3',4,5,5',6,6'-NoCB	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		06 07 04 09 04 07 05 00 00 00 00 00 00 00 00 00	$ \begin{array}{c} 1.9\\ 2.8\\ 1.0\\ 2.0\\ 2.1\\ 1.0\\ 1.1\\ 2.0\\ 3.0\\ 1.0\\ 0.0\\ 1.0\\ 2.0\\ 1.0\\ 1.0\\ 1.0\\ 1.0\\ 1.0\\ 1.0\\ 1.0\\ 0.0\\ 2.0\\ 0.0\\ 0.0\\ 0.0\\ 3.0\\ 3.1\\ 2.1 \end{array} $

%REC = Percent Recovered

RPD = The difference between the two values divided by the mean value

Asset Laboratories

### **REPORT OF LABORATORY ANALYSIS**

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Eric Davis
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017
TEL:
FAX:

Workorder No.: N033183

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on November 30, 2018 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

man um mm

Quennie Manimtim Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and ASSET Laboratories - Las Vegas.



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 ELAP Cert 2921
 ELAP Cert 2676
 NV Cert NV00922
 EPA ID CA01638

**ORELAP/NELAP** Cert 4046

CLIENT:	CH2MHill
Project:	SFPP Norwalk
Lab Order:	N033183

#### **CASE NARRATIVE**

#### SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Subcontracted Analyses:

Total PCB was subcontracted to Pace Analytical Services, Inc., Minneapolis, MN.

EPA 8081 was subcontracted to Test America, Irvine, CA.

Analytical Comments for EPA 200.8:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Copper possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Lead was reported below PQL with dilution. Dilution was necessary due to associated internal standard not meeting method criteria possibly due to matrix interference.

Analytical Comments for EPA 8270C SIM:

Matrix Spike (MS) is outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for several analytes possibly due to non-homogeneity of sample; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

ASSET LABORATORIES

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CLIENT:CH2MHillProject:SFPP NorwalkLab Order:N033183

#### **Contract No:**

#### Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	<b>Collection Date</b>	Date Received	Date Reported
N033183-001A	HTTMDL-11-30	Wastewater	11/30/2018 8:25:00 AM	11/30/2018	12/10/2018
N033183-001B	HTTMDL-11-30	Wastewater	11/30/2018 8:25:00 AM	11/30/2018	12/10/2018
N033183-001C	HTTMDL-11-30	Wastewater	11/30/2018 8:25:00 AM	11/30/2018	12/10/2018
N033183-001D	HTTMDL-11-30	Wastewater	11/30/2018 8:25:00 AM	11/30/2018	12/10/2018
N033183-001E	HTTMDL-11-30	Wastewater	11/30/2018 8:25:00 AM	11/30/2018	12/10/2018

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#### **ANALYTICAL RESULTS**

Print Date: 10-Dec-18

CLIENT:	CH2MHill	Client Sample ID: HTTMDL-11-30						
Lab Order:	N033183	Collection Date: 11/30/2018 8:25:00 AM						
Project:	SFPP Norwalk	Matrix: WASTEWATER						
Lab ID:	N033183-001							
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-I	FILTERABLE RESII	DUE						
				SM	12540D			
RunID: NV00	922-WC_181204I	QC Batch: 71	595		PrepE	Date:	12/4/2018	Analyst: LR
Suspended Se Filterable)	olids (Residue, Non-	38	10	10		mg/L	1	12/4/2018 08:18 AM
SEMIVOLATI	LE ORGANIC COM	POUNDS BY GC/	MS-SIM					
		EPA 3510C		EPA 8	B270CSIM			
RunID: NV00	922-MS9_181203B	QC Batch: 71	565		PrepE	Date:	11/30/2018	Analyst: RRS
1-Methylnaph	thalene	ND	0.040	0.20		ug/L	1	12/4/2018 05:58 AM
2-Methylnaph	thalene	ND	0.058	0.20		ug/L	1	12/4/2018 05:58 AM
Acenaphthene	е	ND	0.048	0.20		ug/L	1	12/4/2018 05:58 AM
Acenaphthyle	ne	ND	0.049	0.20		ug/L	1	12/4/2018 05:58 AM
Anthracene		ND	0.043	0.20		ug/L	1	12/4/2018 05:58 AM
Benzo(a)anth	racene	ND	0.036	0.20		ug/L	1	12/4/2018 05:58 AM
Benzo(a)pyre	ne	ND	0.043	0.20		ug/L	1	12/4/2018 05:58 AM
Benzo(b)fluor	anthene	ND	0.043	0.20		ug/L	1	12/4/2018 05:58 AM
Benzo(g,h,i)p	erylene	ND	0.066	0.20		ug/L	1	12/4/2018 05:58 AM
Benzo(k)fluor	anthene	ND	0.055	0.20		ug/L	1	12/4/2018 05:58 AM
Chrysene		ND	0.043	0.20		ug/L	1	12/4/2018 05:58 AM
Dibenz(a,h)ar	nthracene	ND	0.058	0.20		ug/L	1	12/4/2018 05:58 AM
Fluoranthene		ND	0.034	0.20		ug/L	1	12/4/2018 05:58 AM
Fluorene		ND	0.045	0.20		ug/L	1	12/4/2018 05:58 AM
Indeno(1,2,3-	ca)pyrene	ND	0.059	0.20		ug/L	1	12/4/2018 05:58 AM
Dependence			0.052	0.20		ug/L	1	12/4/2018 05:58 AM
Prienanumene	;		0.040	0.20		ug/L	1	12/4/2010 05.50 AW
Surr: 1 2-D	lichlorobenzene-d/	51.0	0.034	27-100		%REC	1	12/4/2018 05:58 AM
Surr: 2-Flu		59.0	0	34-135		%REC	1	12/4/2018 05:58 AM
Surr: 4-Ter	nhenvl-d14	80.0	0	34-167		%REC	1	12/4/2018 05:58 AM
Surr: Nitrol	penzene-d5	69.0	0	25-135		%REC	1	12/4/2018 05:58 AM
TOTAL META	LS BY ICPMS							
-				EP	A 200.8			
RunID: NV00	922-ICP7_181204B	QC Batch: 71	594		PrepD	Date:	12/4/2018	Analyst: CEI
Copper		ND	0.26	0.50		µg/L	1	12/4/2018 04:47 PM
Lead		1.3	0.64	2.5	J	µg/L	5	12/7/2018 12:05 PM
Zinc		22	0.27	1.0		ua/L	1	12/4/2018 04:47 PM

Qualifiers:

Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit Results are wet unless otherwise specified Е Value above quantitation range

J Analyte detected below quantitation limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out



В

ASSET LABORATORIES

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"Serving Clients with Passion and Professionalism"

#### **CLIENT:** CH2MHill Work Order:

N033183

Project: SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

#### TestCode: 160.2\_2540D\_W

Sample ID: LCS-71595	SampType: LCS	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 12/4/2018	RunNo: 130328
Client ID: LCSW	Batch ID: 71595	TestNo: SM2540D	Analysis Date: 12/4/2018	SeqNo: 3219462
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Suspended Solids (Residue, N	Non-Filter 944.000	10 1000 0	94.4 80 120	
Sample ID: MB-71595	SampType: MBLK	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 12/4/2018	RunNo: <b>130328</b>
Client ID: PBW	Batch ID: 71595	TestNo: <b>SM2540D</b>	Analysis Date: 12/4/2018	SeqNo: 3219463
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Suspended Solids (Residue, N	Non-Filter ND	10		
Sample ID: N033156-001ADU	IP SampType: DUP	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 12/4/2018	RunNo: <b>130328</b>
Client ID: ZZZZZZ	Batch ID: 71595	TestNo: SM2540D	Analysis Date: 12/4/2018	SeqNo: 3219465
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Suspended Solids (Residue, N	Non-Filter ND	10	0	0 5

Qualifiers:

S

- В Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - CALIFORNIA | P:562.219.7435 F:562.219.7436 NEVADA | P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638
- H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

ASSET LABORATORIES

#### CLIENT: CH2MHill

Work Order:N033183Project:SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_SFPP

Sample ID:	MB-71594	SampType: MBLK	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: 130343
Client ID:	PBW	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/4/2018	SeqNo: 3219832
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		ND	0.50		
Zinc		ND	1.0		
Sample ID:	LCS-71594	SampType: LCS	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: 130343
Client ID:	LCSW	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/4/2018	SeqNo: 3219833
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		10.251	0.50 10.00 0	103 85 115	
Zinc		9.878	1.0 10.00 0	98.8 85 115	
Sample ID:	N033183-001B-DUP	SampType: <b>DUP</b>	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: 130343
Client ID:	ZZZZZZ	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/4/2018	SeqNo: 3219835
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		ND	0.50	0	0 20
Zinc		22.372	1.0	21.60	3.49 20
Sample ID:	N033183-001B-MS	SampType: <b>MS</b>	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: 130343
Client ID:	ZZZZZZ	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/4/2018	SeqNo: 3219838
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		1.196	0.50 10.00 0	12.0 75 125	S
Zinc		31.245	1.0 10.00 21.60	96.4 75 125	
Sample ID:	N033183-001B-MSD	SampType: <b>MSD</b>	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: 130343
Client ID:	ZZZZZZ	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/4/2018	SeqNo: <b>3219839</b>
Analyte		Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Copper		1.253	0.50 10.00 0	12.5 75 125 1.196	4.63 20 S

#### Qualifiers:

J

S

B Analyte detected in the associated Method Blank

- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
CALIFORNIA|P:562.219.7435 F:562.219.7436 NEVADA|P:7

Analyte detected below quantitation limits ND Spike/Surrogate outside of limits due to matrix interference DO

> 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921

EPA ID CA01638

 Diluted Out
 <u>NEVADA</u> [P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

ASSET LABORATORIES

#### **CLIENT:** CH2MHill

Work Order: N033183 **Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_SFPP

Sample ID: N033183-001B-MSD	SampType: <b>MSD</b>	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: 130343
Client ID: ZZZZZZ	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/4/2018	SeqNo: 3219839
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Zinc	29.950	1.0 10.00 21.60	83.5 75 125 31.24	4.23 20
Sample ID: MB-71594	SampType: MBLK	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: <b>130390</b>
Client ID: PBW	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/7/2018	SeqNo: 3222679
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Lead	ND	0.50		
Sample ID: LCS-71594	SampType: LCS	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: 130390
Client ID: LCSW	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/7/2018	SeqNo: 3222680
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Lead	9.646	0.50 10.00 0	96.5 85 115	
Sample ID: N033183-001B-DUP	SampType: <b>DUP</b>	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: <b>130390</b>
Client ID: ZZZZZZ	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/7/2018	SeqNo: 3222689
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Lead	1.352	2.5	1.289	0 20 J
Sample ID: N033183-001B-MS	SampType: <b>MS</b>	TestCode: 200.8_W_SFP Units: µg/L	Prep Date: 12/4/2018	RunNo: <b>130390</b>
Client ID: ZZZZZZ	Batch ID: 71594	TestNo: EPA 200.8	Analysis Date: 12/7/2018	SeqNo: 3222691
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Lead	12.043	2.5 10.00 1.289	108 75 125	

Qualifiers:

J

- В Analyte detected in the associated Method Blank Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - ASSET LABORATORIES
- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

NEVADA | P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

#### **CLIENT:** CH2MHill Work Order: N033183

**Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_SFPP

Sample ID: N033183-001B-MSD	SampType: <b>MSD</b>	TestCod	le: 200.8_W_	SFP Units: µg/L		Prep Da	te: 12/4/20	18	RunNo: 130	390	
Client ID: ZZZZZZ	Batch ID: 71594	TestNo: EPA 200.8		Analysis Date: 12/7/2018			SeqNo: 3222692				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	12.163	2.5	10.00	1.289	109	75	125	12.04	0.991	20	

Qualifiers:

- В Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

E Value above quantitation range ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

8 of 12

#### CLIENT: CH2MHill

Work Order:N033183Project:SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 8270\_W\_SIMPGE

Sample ID: LCS-71565	SampType: LCS	TestCode: 8270_V	<b>W_SIM</b> Units: ug/L		Prep Dat	e: 11/30/2018	RunNo: 130273	
Client ID: LCSW	Batch ID: 71565	TestNo: EPA 8	270CSI EPA 3510C		Analysis Dat	e: <b>12/3/2018</b>	SeqNo: 3217445	
Analyte	Result	PQL SPK va	ue SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
2-Methylnaphthalene	0.660	0.20 1.0	00 0	66.0	36	121		
1-Methylnaphthalene	0.670	0.20 1.0	00 0	67.0	35	131		
Acenaphthene	0.760	0.20 1.0	00 0	76.0	39	125		
Acenaphthylene	0.920	0.20 1.0	00 0	92.0	43	140		
Anthracene	0.920	0.20 1.0	00 0	92.0	41	132		
Benzo(a)anthracene	1.120	0.20 1.0	00 0	112	58	141		
Benzo(a)pyrene	0.870	0.20 1.0	00 0	87.0	31	142		
Benzo(b)fluoranthene	0.830	0.20 1.0	00 0	83.0	42	156		
Benzo(g,h,i)perylene	0.720	0.20 1.0	00 0	72.0	12	171		
Benzo(k)fluoranthene	0.770	0.20 1.0	00 0	77.0	49	165		
Chrysene	0.840	0.20 1.0	00 0	84.0	51	155		
Dibenz(a,h)anthracene	0.780	0.20 1.0	00 0	78.0	28	153		
Fluoranthene	0.980	0.20 1.0	00 0	98.0	47	158		
Fluorene	0.830	0.20 1.0	00 0	83.0	40	140		
Indeno(1,2,3-cd)pyrene	0.820	0.20 1.0	00 0	82.0	20	167		
Naphthalene	0.670	0.20 1.0	00 0	67.0	39	125		
Phenanthrene	0.810	0.20 1.0	00 0	81.0	46	144		
Pyrene	0.960	0.20 1.0	00 0	96.0	39	158		
Surr: 1,2-Dichlorobenzene-d4	0.560	1.0	00	56.0	27	100		
Surr: 2-Fluorobiphenyl	0.670	1.0	00	67.0	34	135		
Surr: 4-Terphenyl-d14	0.820	1.0	00	82.0	34	167		
Surr: Nitrobenzene-d5	0.880	1.0	00	88.0	25	135		
Sample ID: MB-71565	SampType: MBLK	TestCode: 8270_V	W_SIM Units: ug/L		Prep Dat	e: 11/30/2018	RunNo: 130273	
Client ID: PBW	Batch ID: 71565	TestNo: EPA 8	270CSI EPA 3510C		Analysis Dat	ie: 12/3/2018	SeqNo: 3217446	
Analyte	Result	PQL SPK va	ue SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
2-Methylnaphthalene	ND	0.20						
1-Methylnaphthalene	ND	0.20						
Acenaphthene	ND	0.20						

#### Qualifiers:

J

- B Analyte detected in the associated Method Blank
  - Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - ASSET LABORATORIES
- CALIFORNIA | P:562.219.7435 F:562.219.7436 1110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

Diluted Out <u>NEVADA</u>|P:702.307.2659 F:702.307.2691

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#### **CLIENT:** CH2MHill

Work Order: N033183 **Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 8270\_W\_SIMPGE

Sample ID: MB-71565	SampType: MBLK	TestCode: 8270_W_	SIM Units: ug/L		Prep Dat	e: 11/30/20	018	RunNo: 130	273	
Client ID: PBW	Batch ID: 71565	TestNo: EPA 8270	CSI EPA 3510C		Analysis Dat	e: 12/3/201	18	SeqNo: <b>32</b> 1	7446	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	ND	0.20								
Anthracene	ND	0.20								
Benzo(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Chrysene	ND	0.20								
Dibenz(a,h)anthracene	ND	0.20								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Naphthalene	ND	0.20								
Phenanthrene	ND	0.20								
Pyrene	ND	0.20								
Surr: 1,2-Dichlorobenzene-d4	0.580	1.000		58.0	27	100				
Surr: 2-Fluorobiphenyl	0.690	1.000		69.0	34	135				
Surr: 4-Terphenyl-d14	0.820	1.000		82.0	34	167				
Surr: Nitrobenzene-d5	0.840	1.000		84.0	25	135				
Sample ID: N033110-001BMS	SampType: <b>MS</b>	TestCode: 8270_W_	SIM Units: ug/L		Prep Dat	e: 11/30/20	018	RunNo: 130	)273	
Client ID: ZZZZZZ	Batch ID: 71565	TestNo: EPA 8270	CSI EPA 3510C		Analysis Dat	e: 12/4/201	18	SeqNo: <b>32</b> 1	7457	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	1.196	0.21 4.124	0	29.0	36	121				S
1-Methylnaphthalene	1.155	0.21 4.124	0	28.0	35	131				S
Acenaphthene	1.361	0.21 4.124	0	33.0	39	125				S
Acenaphthylene	1.670	0.21 4.124	0	40.5	43	140				S
Anthracene	1.773	0.21 4.124	0	43.0	41	132				
Benzo(a)anthracene	2.330	0.21 4.124	0	56.5	58	141				S

#### Qualifiers:

J

- В Analyte detected in the associated Method Blank
  - Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

CALIFORNIA | P:562.219.7435 F:562.219.7436

ELAP Cert 2921

EPA ID CA01638

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H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

"Serving Clients with Passion and Professionalism"

ASSET LABORATORIES

10 of 12

#### CLIENT: CH2MHill

Work Order:N033183Project:SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

#### TestCode: 8270\_W\_SIMPGE

Sample ID: N033110-001BMS	SampType: <b>MS</b>	TestCode	e: 8270_W_S	GIM Units: ug/L		Prep Date	: 11/30/2	018	RunNo: 130	273	
Client ID: ZZZZZZ	Batch ID: 71565	TestNo	D: EPA 8270	CSI EPA 3510C		Analysis Date	: 12/4/20	18	SeqNo: 321	7457	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	1.825	0.21	4.124	0	44.3	31	142				
Benzo(b)fluoranthene	1.825	0.21	4.124	0	44.3	42	156				
Benzo(g,h,i)perylene	1.464	0.21	4.124	0	35.5	12	171				
Benzo(k)fluoranthene	1.515	0.21	4.124	0	36.8	49	165				S
Chrysene	1.742	0.21	4.124	0	42.3	51	155				S
Dibenz(a,h)anthracene	1.629	0.21	4.124	0	39.5	28	153				
Fluoranthene	1.969	0.21	4.124	0	47.8	47	158				
Fluorene	1.485	0.21	4.124	0	36.0	40	140				S
Indeno(1,2,3-cd)pyrene	1.670	0.21	4.124	0	40.5	20	167				
Naphthalene	1.196	0.21	4.124	0	29.0	39	125				S
Phenanthrene	1.515	0.21	4.124	0	36.8	46	144				S
Pyrene	1.969	0.21	4.124	0	47.8	39	158				
Surr: 1,2-Dichlorobenzene-d4	0.289		1.031		28.0	27	100				
Surr: 2-Fluorobiphenyl	0.320		1.031		31.0	34	135				S
Surr: 4-Terphenyl-d14	0.443		1.031		43.0	34	167				
Surr: Nitrobenzene-d5	0.392		1.031		38.0	25	135				
Sample ID: N033110-001BMSD	SampType: <b>MSD</b>	TestCode	e: 8270_W_S	GIM Units: ug/L		Prep Date	: 11/30/2	018	RunNo: 130	)273	
Client ID: ZZZZZZ	Batch ID: 71565	TestNo	D: EPA 8270	CSI EPA 3510C		Analysis Date	: 12/4/20	18	SeqNo: 321	7458	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	2.714	0.20	4.082	0	66.5	36	121	1.196	77.7	30	R
1-Methylnaphthalene	2.633	0.20	4.082	0	64.5	35	131	1.155	78.1	30	R
Acenaphthene	3.041	0.20	4.082	0	74.5	39	125	1.361	76.3	30	R
Acenaphthylene	3.694	0.20	4.082	0	90.5	43	140	1.670	75.5	30	R

					0,	100	OITTIN	1.002.	217.7-	100 1
ASSE	f labo	<b>PRATOR</b>	ries		11	1110	Artesia	Blvd.,	Ste B	, Cerri
AMPON DP	OPERMONIPOLE	VIDARM. ED	ND.00FE					FLAP	Cert :	2921
			-							

Analyte detected in the associated Method Blank

Analyte detected below quantitation limits

3.684

4.388

3.337

3.153

2.622

Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

 CALIFORNIA
 P:562.219.7435
 F:562.219.7436
 NEVADA
 P:702.307.2659
 F:702.307.2691

 11110
 Artesia
 Bivd., Ste B, Cerritos, CA 90703
 3151
 W. Post Rd., Las Vegas, NV 89118

 ELAP Cert 2921
 EPA ID CA01638
 ELAP Cert 4046
 ORELAP/NELAP Cert 4046

Е

ND

0.20

0.20

0.20

0.20

0.20

4.082

4.082

4.082

4.082

4.082

Value above quantitation range

Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

70.0

61.3

58.6

53.4

56.7

R

R

R

R

R

30

30

30

30

30

R RPD outside accepted recovery limits

1.773

2.330

1.825

1.825

1.464

Calculations are based on raw values

Anthracene

**Qualifiers:** B

Benzo(a)anthracene

Benzo(b)fluoranthene

Benzo(g,h,i)perylene

J

S

Benzo(a)pyrene

11 of 12

0

0

0

0

0

90.3

108

81.8

77.3

64.2

41

58

31

42

12

132

141

142

156

171

#### **CLIENT:** CH2MHill

Work Order: N033183 **Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

#### TestCode: 8270\_W\_SIMPGE

Sample ID: N033110-001BMSD	SampType: <b>MSD</b>	TestCo	de: 8270_W_\$	SIM Units: ug/L		Prep Dat	e: 11/30/2	018	RunNo: 130	273	
Client ID: ZZZZZZ	Batch ID: 71565	Test	No: EPA 8270	CSI EPA 3510C		Analysis Dat	te: 12/4/20	18	SeqNo: <b>32</b> 1	7458	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	2.908	0.20	4.082	0	71.2	49	165	1.515	63.0	30	R
Chrysene	3.286	0.20	4.082	0	80.5	51	155	1.742	61.4	30	R
Dibenz(a,h)anthracene	2.908	0.20	4.082	0	71.2	28	153	1.629	56.4	30	R
Fluoranthene	3.796	0.20	4.082	0	93.0	47	158	1.969	63.4	30	R
Fluorene	3.337	0.20	4.082	0	81.8	40	140	1.485	76.8	30	R
Indeno(1,2,3-cd)pyrene	3.031	0.20	4.082	0	74.3	20	167	1.670	57.9	30	R
Naphthalene	2.633	0.20	4.082	0	64.5	39	125	1.196	75.1	30	R
Phenanthrene	3.112	0.20	4.082	0	76.2	46	144	1.515	69.0	30	R
Pyrene	3.786	0.20	4.082	0	92.8	39	158	1.969	63.1	30	R
Surr: 1,2-Dichlorobenzene-d4	0.633		1.020		62.0	27	100		0		
Surr: 2-Fluorobiphenyl	0.735		1.020		72.0	34	135		0		
Surr: 4-Terphenyl-d14	0.867		1.020		85.0	34	167		0		
Surr: Nitrobenzene-d5	0.898		1.020		88.0	25	135		0		

Qualifiers:

- В Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - ASSET LABORATORIES
- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

E Value above quantitation range

ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

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12 of 12

# Asset Laboratories 3151 W. Post Road Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691 Marlon Cartin (marlon@assetlaboratories.com}

CHAI	N OF CUSTOR	DY RECORD	
DATE: PAGE:	MQV.	30,201	8

Required C	lient Information:		Section B Required Project in	formation:				Sect	on C	the second												Sect	rtian D
Compa	ny: Kinder Morgan	Energy Partners	Report To:	Éric Davi	5			Atte	ention:		Steve	Defi	haugh -	Rof A	CC# 01	105						Samp	pler information:
	Attention: Stev	e Defibaugh						1			and vic	oen	penkii -	nel, A	rc# 01	192						San	mpler Nils Orliczky
Address	s: 1100 Town & C	ountry Road	Copy To:	Steve De	fibaugh			Com	spany		Kinde	r Mo	rgan En	ergy P	artners	i						San	moler A A A A
Email To:		68 kindermorean.com	Durchase Or					Narr	<u>se:</u>													Sign	nature: Model S
	eric.davis@ch2m.c	om	Purchase Ord	er No.:				Add	ress;		1100	Town	& Cou	ntry Ro	ad							San	mple 11-20-10
Phone:	714-560-4802	Fax: 714-560-4801	Project Name	: SFF	P Norwall	k		ATI	Prnier	t .	Marlo	ze. CA	<u>92868</u>									Dat	te: <u>11 50 1 8</u>
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7

Refine the dry (September 2017)		8/1103	Relinquished by (Signatur	and Printed Name):	4.5°C Date/Time	2	11/30/18	Twn Around Time (TA □ A = Same Day □ B = 24 Hours	v <del>r):</del> /		Special Instru	ction:		
Relinquished by (Strathur and Printed Cont.)	Outo/Time 11/30/18 Dute/Time	1725	Relinquist not by (Stiputure FEM Relinquistioned by (Signature	and Printed Name):		/18	9:30	□ C = 48 Hours □ D = 72 Hours □ E = 5 Workday □ E = 10 Workda	/a ays					
	1 1 12	1 1 40	<u>t.</u> \$0	<u></u>	Matrix:			TAT Starts at 8 AM th	ie followiing day 3:00 PM.	if samples received after	Container Typ			
	IL H	1- 0	400	0 100	W = Water	WW = Wastewater		H = HCI	N = HNO3	S = H2SO4	T ≃ Tube	V = VOA	P = Pint	A= Amber
					0 = 0()	P = Product	S = Soil	Z = Zn{AC}2	O = NaOH	T = Na2S2O3	J≠Jar	8 = Tedlar	G = Glass	1
					Others/Specify:			Others/Specify:			M = Metal	P = Plastic	C = Can	1

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	11/30/201	8			Workorder:	N033183		
Rep sample Temp (Deg C):	1.6				IR Gun ID:	2		
Temp Blank:	Yes	🗌 No						
Carrier name:	Golden St	tate Overnight						
Last 4 digits of Tracking No.:	0908			Packing	Material Used:	Bubble Wrap		
Cooling process:	✓ Ice	Ice Pack	Dry Ice	Other	None None			
		Si	ample Receir	ot Checklist				
1. Shipping container/cooler in g	jood conditio	on?			Yes 🔽	No 🗌	Not Present	]
2. Custody seals intact, signed,	dated on sh	ippping container/	cooler?		Yes	No 🗌	Not Present	']
3. Custody seals intact on samp	le bottles?				Yes 🗌	No 🗌	Not Present	]
4. Chain of custody present?					Yes 🗹	No 🗌		
5. Sampler's name present in Co	OC?				Yes 🗹	No 🗌		
6. Chain of custody signed when	n relinquishe	ed and received?			Yes 🗹	No 🗌		
7. Chain of custody agrees with	sample labe	els?			Yes 🗹	No 🗌		
8. Samples in proper container/k	oottle?				Yes 🗹	No 🗌		
9. Sample containers intact?					Yes 🗹	No 🗌		
10. Sufficient sample volume for	r indicated te	est?			Yes 🗹	No 🗌		
11. All samples received within h	nolding time	?			Yes 🗹	No 🗌		
12. Temperature of rep sample of	or Temp Bla	ank within acceptal	ble limit?		Yes 🗹	No 🗌	NA	]
13. Water - VOA vials have zero	headspace	?			Yes 🗌	No 🗌	NA 🔽	]
14. Water - pH acceptable upon Example: pH > 12 for (CN	i receipt? Ⅰ,S); pH<2 fe	or Metals			Yes 🗹	No 🗌	NA	]
15. Did the bottle labels indicate	correct pres	servatives used?			Yes 🗹	No 🗌	NA	]
16. Were there Non-Conforman W	ce issues at as Client no	t login? tified?			Yes  Yes	No 🗌 No 🗌	NA 🗹	•]
Comments:								

12/6/18

Reviewed By:

Comments:



Checklist Completed By:

Subject: Re: N033183 EDD Revised report. From: "Chuck Sueper" <Chuck.Sueper@pacelabs.com> Date: 1/31/2019, 12:41 PM To: <fernando@assetlaboratories.com>, "marlon@assetlaboratories.com" <marlon@assetlaboratories.com>, "JoAnne Richardson" <JoAnne.Richardson@pacelabs.com> CC: "marycel@assetlaboratories.com" <marycel@assetlaboratories.com>

Hello Fernando,

Yes, in cases where the EDL did not support the reporting limit, the EDL was used as the reporting limit. In those cases the result was flagged "A".

Chuck

>>> Fernando Rivera <fernando@assetlaboratories.com> 1/31/2019 1:50 PM >>>

>

Hi!, Joanne

Unfortunately, the EDD did not pass our checker.

The problem still persists, in some of the values the EDL is greater than the RL. Is EML equal to the EDL?

Thanks,

#### Fern Rivera

Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 | F: 702.307.2691 California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436

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On 01/30/19 9:45 AM, JoAnne Richardson wrote:

Good morning Marlon,

My apologies in the late response. The lab has reviewed the data. The report has been revised to correct a discrepancy between the pdf report and the electronic deliverable. If there is anything further that you need please feel free to contact me.

Thank you,

Your business is greatly appreciated

Joanne Richardson Project Manager Pace Analytical Services LLC 1700 Elm St SE, Suite 200 Minneapolis MN 55414 Direct 612 607-6453 | Main 612 607-1700 joanne.richardson@pacelabs.com www.pacelabs.com

>>> "Marlon B. Cartin" <u><marlon@assetlaboratories.com></u> 1/18/2019 10:52 AM >>> Hi Joanne,

I understand there's an issue on the EDD you provided us for the above project and were requesting for a revision. Do you have an update for the status? Thanks,

#### Marlon Cartin

Project Manager California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436 Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

www.assetlaboratories.com

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WORK O	RDER Summary			03-Dec-18						
Client ID:	CH2HI03					WorkOrd	er:	N033	183	
Project:	SFPP Norwalk		QC Level	I: RTNE		Date Receive	ed:	11/30	/2018	
Comments:										
Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub S	Storage
N033183-001A	HTTMDL-11-30	11/30/2018 8:25:00 AM	12/7/2018	Wastewater	SM2540D	TOTAL NON-FILTERABLE RESIDUE			<u>v</u>	VW
			12/7/2018			Total Suspended Solids Prep			<u>v</u>	VW
N033183-001B			12/7/2018			AQPREP TOTAL METALS: ICP, FLAA			<u>v</u>	VW
			12/7/2018		EPA 200.8	TOTAL METALS BY ICPMS			<u>v</u>	VW
N033183-001C			12/7/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE/PCB			<u>v</u>	VW
			12/7/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE			v	VW
			12/7/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM			<u> </u>	VW
			12/7/2018		EPA 8081A	ORGANOCHLORINE PESTICIDES BY GC/ECD			<u> </u>	VW
			12/7/2018		EPA 8082	PCBs BY GC/ECD			<u>v</u>	VW
			12/7/2018		EPA 8270CSIM	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS-SIM			<u> </u>	VW
N033183-002A	FOLDER	12/7/2018	12/7/2018		Folder	Folder				AB
			12/7/2018		Folder	Folder				AB

3151-3153 W Post Rd., Las Vegas, NV 89118 www.atl-labs.com TEL: 7023072659 FAX: 7023072691

## CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: RTNE

Subcontractor:					
Pace Analytical Services, Inc.	TEL:	(612) 607-1700	Field Sampler:	Nils Orliczky	
1700 Elm Street, Suite 200	FAX:	(612) 607-6444			
Minneapolis, MN 55414	Acct #:				04-Dec-18

					Requested Tests
Sample ID	Matrix	Date Collected	Bottle Type	1668c	
N033183-001E / HTTMDL-11-30	Wastewater	11/30/2018 8:25:00 AM	32OZA	1	

EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format.

Please CC Report to Lucille Glosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N33183A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyzed for Total PCBs by 1668 at 250 pg/L. Californ

California sample

				Fedex #: 773879368586	
	4.10		Date/Time		Date/Time
Relinquished by:	YD	12/4/2018	16:00	Received by:	
Relinquished by:				Received by:	

3151-3153 W Post Rd., Las Vegas, NV 89118 www.atl-labs.com TEL: 7023072659 FAX: 7023072691

## CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: RTNE

Subcontractor:		
Test America - Irvine	TEL: (949) 261-1022	Field Sampler: Nils Orliczky
17461 Derian Ave, Ste. 100	FAX: (949) 261-1228	
Irvine, CA 92614	Acct #:	04-Dec-18

					Requested Tests	
Sample ID	Matrix	Date Collected	Bottle Type	EPA 8081A		
N033183-001D / HTTMDL-11-30	Wastewater	11/30/2018 8:25:00 AM	32OZA	1		

EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format.

Please CC Report to Lucille Glosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N33183B Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for 2,4-DDT (RL=0.1 ppb) and 4,4-DDT (RL=0.05 ppb) by EPA 8081.

			Date/Time	GSO #: 542988073	Date/Time
Relinquished by:	YPT	12/4/2018	17:00	Received by:	
Relinquished by:				Received by:	



Ship From ASSET LABORATORIES MOLKY BRAR 11110 ARTESIA BLVD ... SUITE B CERRITOS, CA 90703

Ship To ASSET LABORATORIES MARLON CARTIN 3151 W. POST RD., LAS VEGAS, NV 89118

COD: \$0.00 Weight: 0 lb(s) **Reference:** 

**Delivery Instructions:** HOLD FOR PICK-UP Signature Type: STANDARD



Print Date: 11/30/2018 6:22 PM

Package 4 of 5

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode. Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Step 2: Fold this page in half. Step 3: Securely attach this label to your package and do not cover the barcode.

#### TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.

112 H 2 1.6°C



THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

#### TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Tel: (949)261-1022

#### TestAmerica Job ID: 440-226410-1 Client Project/Site: N033183-001D

### For:

..... Links

Review your project results through

**Total**Access

Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Advanced Technology Laboratories dba Asset Laboratories 3151-3153 W Post Road Las Vegas, Nevada 89118

Attn: Lucille Golosinda

aner Roberso

Authorized for release by: 12/17/2018 2:48:39 PM Danielle Roberts, Senior Project Manager

(949)261-1022 danielle.roberts@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

## **Table of Contents**

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### Sample Summary

Client: Advanced Technology Laboratories Project/Site: N033183-001D

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-226410-1	N033183-001D/HTTMDL-11-30	Water	11/30/18 08:25	12/05/18 11:15

#### Job ID: 440-226410-1

#### Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-226410-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 12/5/2018 11:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.2° C.

#### GC Semi VOA

Method(s) 8081A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-515321 and analytical batch 440-515428. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-515321/2-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **Organic Prep**

Method(s) 3510C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 3510-8015 preparation batch 440-515321.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TestAmerica Job ID: 440-226410-1

Client: Advanced Technology Laboratories Project/Site: N033183-001D TestAmerica Job ID: 440-226410-1

Client Sample ID: N033183-001D/HTTMDL-11-30	Lab Sample ID: 440-226410-1

No Detections.

This Detection Summary does not include radiochemical test results.

#### Client Sample ID: N033183-001D/HTTMDL-11-30 Date Collected: 11/30/18 08:25 Date Received: 12/05/18 11:15

#### Lab Sample ID: 440-226410-1 Matrix: Water

Method: 8081A - Organochio	orine Pesticid	es (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDT	ND		0.11	0.021	ug/L		12/06/18 09:14	12/06/18 16:37	1
4,4'-DDT	ND		0.011	0.0043	ug/L		12/06/18 09:14	12/06/18 16:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	70		28 - 108				12/06/18 09:14	12/06/18 16:37	1
Tetrachloro-m-xylene	54		10 - 123				12/06/18 09:14	12/06/18 16:37	1

### Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water			-	Prep Type: Total/NA
_			Perce	nt Surrogate Recovery (Acceptance Limits)
		DCB2	TCX2	
Lab Sample ID	Client Sample ID	(28-108)	(10-123)	
440-226410-1	N033183-001D/HTTMDL-11-30	70	54	
LCS 440-515321/2-A	Lab Control Sample	73	45	
LCSD 440-515321/3-A	Lab Control Sample Dup	75	47	
MB 440-515321/1-A	Method Blank	79	53	
Surrogate Legend				

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene

#### Client: Advanced Technology Laboratories Project/Site: N033183-001D

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL IRV

#### **Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

#### Client Sample ID: N033183-001D/HTTMDL-11-30 Date Collected: 11/30/18 08:25 Date Received: 12/05/18 11:15

#### Lab Sample ID: 440-226410-1 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			935 mL	2 mL	515321	12/06/18 09:14	L1H	TAL IRV
Total/NA	Analysis	8081A		1			515428	12/06/18 16:37	D1D	TAL IRV

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Sample ID: MB 440-515321/1-A

Method: 8081A - Organochlorine Pesticides (GC)

#### Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 515321

#### Matrix: Water Analysis Batch: 515428

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4'-DDT	ND		0.10	0.020	ug/L		12/06/18 09:14	12/06/18 13:36	1
4,4'-DDT	ND		0.010	0.0040	ug/L		12/06/18 09:14	12/06/18 13:36	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	79		28 - 108				12/06/18 09:14	12/06/18 13:36	1
Tetrachloro-m-xylene	53		10 - 123				12/06/18 09:14	12/06/18 13:36	1

#### Lab Sample ID: LCS 440-515321/2-A Matrix: Water

Analysis Batch: 515428								Prep Bat	ch: 515321
-		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
2,4'-DDT	 	0.250	0.196		ug/L		78	10 - 150	
4,4'-DDT		0.250	0.207		ug/L		83	41 - 140	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	73		28 - 108
Tetrachloro-m-xylene	45		10 - 123

#### Lab Sample ID: LCSD 440-515321/3-A Matrix: Water Analysis Batch: 515428

#### Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Analysis Batch: 515428								Prep Batch: 515321		
-		Spike	LCSD	LCSD				%Rec.		RPD
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2,4'-DDT		0.250	0.201		ug/L		80	10 - 150	3	35
4,4'-DDT		0.250	0.212		ug/L		85	41 - 140	3	20
	LCSD LCSD									

%Recovery Qualifier	Limits
75	28 - 108
47	10 - 123
	%Recovery Qualifier 75 47

Lab Control Sample Dup

### **QC Association Summary**

## 1 2 3 4 5 6 7 8 9 10 11 12 13 14

515321

#### GC Semi VOA

LCSD 440-515321/3-A

Lab Sample ID	Lab Sample ID Client Sample ID		Matrix	Method	Prep Batch
440-226410-1	N033183-001D/HTTMDL-11-30	Total/NA	Water	3510C	
MB 440-515321/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-515321/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-515321/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
Analysis Batch: 5154	428				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-226410-1	N033183-001D/HTTMDL-11-30	Total/NA	Water	8081A	515321
MB 440-515321/1-A	Method Blank	Total/NA	Water	8081A	515321
LCS 440-515321/2-A	Lab Control Sample	Total/NA	Water	8081A	515321

Total/NA

Water

8081A

## **Definitions/Glossary**

#### Glossarv

Project/Site: I	V033183-001D	
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	5
CFL	Contains Free Liquid	J
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	8
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	9
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	12
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

Client: Advanced Technology Laboratories Project/Site: N033183-001D

#### Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Program			Identification Numbe	r Expiration Date
California LA Cty Sanitation		nitation Districts	9		10256	06-30-19
The following analyte the agency does not o	s are included in this report offer certification.	, but the laboratory	is not cert	ified by the	governing authority. T	his list may include analytes for which
Analysis Method	Prep Method	Matrix		Analyte	9	
8081A	3510C	Water		2,4'-DD	DT	
8081A	3510C	Water		4,4'-DD	DT	
California	State Progr	ram	9		CA ELAP 2706	06-30-19
The following analyte the agency does not o	s are included in this report offer certification.	, but the laboratory	is not cert	ified by the	governing authority. T	his list may include analytes for which
	Duan Mathad	Matrice		ملد با م م ۵		

Analysis Method	Prep Method	Matrix	Analyte
8081A	3510C	Water	2,4'-DDT

	81/5/2 S	A 1								2
	04-Dec-18							ate/Time	223	3
RTNE	Nils Orliczky	Requested Tests		6410 Chain of Custody			m For questions, call	AHAN PARA	1-21-12	- 6 7 8 9
QC Level:	Freid Sampler:	EPA 8081A		27-044 22-044	)L format.		assetlaboratories.cc AT		»	
		Bottle Type	320ZA		d down to MD	ies.com	ements to elvira@: .com by: Normal T. 8081.	542988 ived by:	ived by:	13 14
	61-1022 61-1228	Date Collected	11/30/2018 8:25:00 AM		ase report "J" flagge	nda@assetlaborator	te PM. and Account Receivable Sta reports.Iv@assettaboratories DDT (RL=0.05 ppb) by EPA.	Date/Time GS	Rece	
	TEL: (949) ( FAX: (949) Acct #:	Matrix	Wastewater		ec 7 edata. Ple	at lucille.golos	acknowledgement to the Please email Invoices lease email results the lease e-mail results the (RL=0.1 ppb) and 4,4	12/4/2018	-1	<b>`</b>
- YAA701	ontractor: est America - Irvine i 7461 Derian Ave, Ste. 100 rvine, CA 92614	Sample ID	33183-001D / HTTMDL-11-30		EDD Requirement CH2MHILL Labsp	Please CC Report to Lucille Glosinda	neral Comments. Please email sample receipt a Please use PO#:N33183B Marlon at (702)-307-2659 Pl Please analyze for 2,4-DDT (	inquished by:	inquished by:	
	QC Level: RTNE	Muterical Act # 100 Fact # 004-Dec-18	Call       Callevel:       RTNE         Callevel:       RTNE         Callevel:       RTNE         Test America       Invine         Fact       (949) 261-1228         Invine, CA 92614       Acct #:         Acct #:       Bate Collected         Sample ID       Matrix         Date Collected       Bottle Type         Requested Tests       Acotter	Multicontractor:         CC Level:         RTNE           Subcontractor:         Test America - Irvine         TEL:         (949) 261-1022         Field Sampler:         Nils Orliczky           17461 Denian Ave, Ste. 100         FAX:         (949) 261-1228         0.1-022         Prolocation           17461 Denian Ave, Ste. 100         FAX:         (949) 261-1228         0.1-022         0.1-02           17461 Denian Ave, Ste. 100         FAX:         (949) 261-1228         0.1-02         0.1-06           17461 Denian Ave, Ste. 100         Acct #:         949) 261-1228         0.1-06         0.1-06           1010. C 9 2014         Acct #:         0.4-06         0.1         0.1         0.1           0010         Matrix         Date Collected         Bottle Type         EPA 8081A         1         1           0010         / HTTMDL-11-30         Vastewater         11/30/2018 8:25:00 AM         320ZA         1	AC Level: RTNE Test America - Ivine Tast America - Ivine Act # Act	CC Level:       RTNE         Ister America - Invine       Test America - Invine         Test America - Invine       Test America - Invine         Test America - Invine       Test America - Invine         Tast America - Invine       Ext. (949) 261-1228         Act #:       Date Collected       Bontin Type         Act #:       Date Collected       Bontin Type         Sample ID       Matrix       Date Collected       Bontin Type         No33183-001D       / HTTMDL-11-30       Wastewater       11/30/2018 8:5500 AM       320ZA         N033183-001D       / HTTMDL-11-30       Wastewater       11/30/2018 8:5500 AM       320ZA       1         Model       EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format.       40-226410 Chain of Custon)	C Level: RTNE atometer Tet America - Invie Tet A	CLOVEL RTNE Addrementary Test America - Infrie Test America - Inf	CC Levol:       RTNE         Allowers       Text America - Infine       Ext America - Infine         Text America - Infine       Ext America - Infine       Ext America - Infine         Text America - Infine       Ext America - Infine       Ext America - Infine         Text America - Infine       Ext America - Infine       Ext America - Infine       Ext America - Infine         Text America - Infine       Ext America - Infine       Ext (89) 351-123       Ext (89) 351-123       Ext (89) 351-123         America - Infine       Ext (89) 351-123       Ext (89) 351-123       Ext (89) 351-123       Ext (89) 351-123         Ammelica - Infine       Ext (89) 351-123       Ext (89) 351-123       Ext (89) 351-123       Ext (89) 351-123         America - Infine       Ext (80) 101         Amorita - Infine       Infine       Infine       Infine       Infine       Infine         Amorita - Infine       I	CC Lovoi: RTNE Teld Namino - Mine Teld Namino - Mine Mine Teld Namino - Mine Mine Teld Namino - Mine Mi

Page 14 of 15

12/17/2018
#### Login Sample Receipt Checklist

#### Client: Advanced Technology Laboratories

#### Login Number: 226410 List Number: 1 Creator: Skinner, Alma D

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-226410-1

List Source: TestAmerica Irvine



www.pacelabs.com

## **Report Prepared for:**

Marlon Cartin Asset Laboratories 3151 West Post Road Las Vegas NV 89118

# REPORT OF LABORATORY ANALYSIS FOR PCBs

# Report Prepared Date:

January 28, 2019

Pace Analytical Services, LLC. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

#### **Report Information:**

Pace Project #: 10457600 Sample Receipt Date: 12/05/2018 Client Project #: N033183 Client Sub PO #: N/A State Cert #: 2929

#### **Invoicing & Reporting Options:**

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

#### This report has been reviewed by:

Hichardson oanne ) January 30, 2019

Joanne Richardson, (612) 607-6453 (612) 607-6444 (fax)



### **Report of Laboratory Analysis**

This report should not be reproduced, except in full, without the written consent of PaceAnalytical Services, Inc.

The results relate only to the samples included in this report.



# **DISCUSSION**

This report presents the results from the analyses performed on one sample submitted by a representative of Asset Laboratories. The sample was analyzed for the presence or absence of polychlorobiphenyls (PCBs) using a modified version of USEPA Method 1668A. Reporting limits were set to 25-75 ng/kg and adjusted for the amount of sample extracted. This report was revised to correct a discrepancy between the pdf report and the electronic deliverable.

The dilution level noted on the data tables is being adjusted to allow the correct data flags to populate the electronic deliverables as well as the data tables. Samples and MDL extracts were analyzed at elevated volumes. That volume is being treated as a 1x dilution for calculation purposes, with larger dilutions being factored from that volume. The standard reporting limits were not adjusted since the limits remained within the calibration range even after dilutions were applied.

The recoveries of the isotopically-labeled PCB internal standards in the sample extract ranged from 14-86%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668C. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained. Several reporting limits were slightly elevated and were flagged "A" as reported based on signal to noise responses. Incorrect isotope ratios were obtained for selected PCB congeners. The affected congeners were flagged "I" on the results table.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCB congeners at the reporting limits. This indicates that the sample preparation procedures did not significantly contribute to the PCB content of the sample material.

Laboratory spike samples were also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds were recovered at 81-160%, with relative percent differences of 0.0-20.7%. The recoveries for congeners #1 and #4 were somewhat elevated and were flagged "R" on the results tables. The RPD for congener #1 was also above the 20% threshold used by Pace Analytival. This could indicate a high bias or increased variability in the measurement of these congeners. However, these congeners were not detected within the reporting range for the sample. Matrix spikes were not extracted with this sample batch.

# **REPORT OF LABORATORY ANALYSIS**

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Report No.....10457600\_1668\_209\_R1\_DFR



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Pace Analytical Services, LLC 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612- 607-6444

# Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - Pet	1240
Alabama	40770	Mississippi	MN00064
Alaska - DW	MN00064	Missouri - DW	10100
Alaska - UST	17-009	Montana	CERT0092
Arizona	AZ0014	Nebraska	NE-OS-18-06
Arkansas - DW	MN00064	Nevada	MN00064
Arkansas - WW	88-0680	New Hampshire	2081
CNMI Saipan	MP0003	New Jersey (NE	MN002
California	2929	New York	11647
Colorado	MN00064	North Carolina	27700
Connecticut	PH-0256	North Carolina -	27700
EPA Region 8+	via MN 027-053	North Carolina -	530
Florida (NELAP	E87605	North Dakota	R-036
Georgia	959	Ohio - DW	41244
Guam	17-001r	Ohio - VAP	CL101
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon - Primar	MN300001
Illinois	200011	Oregon - Secon	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
lowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky - DW	90062	South Dakota	NA
Kentucky - WW	90062	Tennessee	TN02818
Louisiana - DE	03086	Texas	T104704192
Louisiana - DW	MN00064	Utah (NELAP)	MN00064
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Massachusetts	M-MN064	West Virginia -	382
Michigan	9909	West Virginia -	9952C
Minnesota	027-053-137	Wisconsin	999407970
Minnesota - De	via MN 027-053	Wyoming - UST	2926.01

# **REPORT OF LABORATORY ANALYSIS**

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Report No.....10457600\_1668\_209\_R1\_DFR

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# Appendix A

Sample Management

Colore: RTNE         Colore: RTNE         Statement:       TEL:       (8/2) 507-170       Field Sample: Net Oritiday         7002 Amanthed Samples In:       F.K.       (9/2) 507-444       Manuality       Manuality         7002 Amanthed Samples In:       F.K.       (9/2) 507-444       Manuality       Manuality       Manuality         7002 Amanthed Samples In:       F.K.       (9/2) 507-444       Manuality       Manuality       Manuality       Manuality         7002 Amanthed Sample In:       Manuality	CC Lovei: RTNE CC Lovei: Red Swepe: INE Official CC Red Swepe: INE Official CC Red CC Report CL Locie CL Loci CL Locie CL Locie CL Locie CL Locie CL Locie CL Lo	ASS 3151-5 Wuw at TEL: 7	SET Laborato 3153 W Post Rd., Las V 14abs.com 023072659	r <b>ries</b> (egas, NV 89118 FAX: 7023072691			CHAIN-0	IF-CUSTO	DY RECORD	Page 1 of 1
Station matrix     TEL: 612, 607-170     FLA: 612, 607-444     Other FAX       700 En Statistical District     FAX     612, 607-444     0420-613       700 En Statistical District     Accritical District     Matrix     Date of the Sample: Nis Orlical       700 En Statistical District     Matrix     Date of the District     Matrix     0420-613       700 En Statistical District     Matrix     Date of the District     Matrix     0420-613       700 En Statistic     FAX     11302716 & 22500 AM     2020     MORE       700 En Statistic     FAX     11302716 & 22500 AM     MORE     MORE       700 En Statistic     FAX     1130457 GOO     MORE     MORE       700 En Statistic     FAX     11302716 & 22500 AM     MORE     MORE       700 En Statistic     FAX     700450     MORE     MORE       700 En Statistic     FAX     700450     MORE     MORE       700 En Statistic     FAX     70375050     MORE     MORE       700 En Statistic     FAX     713079050506     MORE     MORE       701 En Statistic     Factor AF     713079050506     More     More       701 AND     Factor AF     Factor AF     More     More	Submittering     Recomment:       Topologin Strated, in Statt, for the first start of the first statt st							QC Level:	RTNE	
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Sample ID       Matrix       Date collected       Bottle Type       Requested Tasks         N033153-001E       / HT/MU. 11-30       Watewater       11/302018 8.250.0 M       Requested Tasks         N033153-001E       / HT/MU. 11-30       Watewater       11/302018 8.250.0 M       Requested Tasks         EDD Requirement CH2MHILL Labspec 7 edata. Please report "u" flagged down to MDL format.       MOR : 1.04571600       MOR : 1.04571600         Please CC Report to Lucille Glosinda at lucille golosinda@assettaboratories.com       ZotA       TO ASSETTABLE       MOR : 1.04571600         Please CC Report to Lucille Glosinda at lucille golosinda@assettaboratories.com       ZotA       TO ASSETTABLE       MOR : 1.04571600         Reneal Comments       Please enal semple receipt actinovedgement to the PM.       Please enal semple receipt actinovedgement to the PM.       Please enal semple receipt actinovedgement to the PM.         Rereal Comments       Please enal receipt actinovedgement to the PM.       California sample       Please enal receipt actinovedgement to the PM.         Rereal Comments       Please enal receipt actinovedgement to the PM.       California sample       Please enal receipt actinoved sample       California sample         Reten up MM F       Foldor #: 7733793088586       MaterNine       MAT       MAT       MAT         Retinquished by:       MaterNine       Reten teloved by:	Sample ID       Sample ID       Matrix       Date Collected       Both Type       Requised Task         N035163-011       / HTTMDL-11-30       Matrix       MOR + 1020/2018.0.260.0 MM       1000 + 1000         N035163-011       / HTTMDL-11-30       MOR + 1020/2018.0.260.0 MM       20/23       0.01         EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format       WOR + 100455600       WOR + 100455600         Please CC Report to Lucille Glosinda at lucille golosinda@assettaboratories.com       MOR + 10000       MOR + 10000         Please enail semple receipt achonoldgement to he FM       Please enail semple receipt achonoldgement to he FM       Please enail semple receipt achonoldgement to he FM         Please enail semple receipt achonoldgement to he FM       Please enail semple receipt achonoldgement to he FM       Please enail semple receipt achonoldgement to he FM         Please enail semple receipt achonoldgement to he FM       Please enail receipt achonoldgement to he FM       Please enail receipt achonoldgement to he FM         Please use PCeRNOS 105A       Please enail receipt achonoldgement to he FM       Please enail receipt achonoldgement to he FM         Please use PCeRNOS 105A       Please enail receipt achonoldgement to he FM       Please enailer receipt achonoldgement to he FM         Please use PCeRNOS 105A       Please enailer receipt achonoldgement to he FM       Pleack # 7738793685696       Datertime	Minneapolis, MN 554	414	Acct #	ť.					04-Dec-18
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EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format. Please CC Report to Lucille Glosinda at lucille.golosinda@assetlaboratories.com General Comments. Please enail sample receipt acknowledgement to the PM. General Comments. Please use PC#N33163A. Please enail Invoices and Account Receivable Statements to ethin@assetlaboratories.com by. Normal TAT. Please use PC#N33163A. Please ernal invoices and Account Receivable Statements to ethin@assetlaboratories.com by. Normal TAT. Please use PC#N33163A. Please ernal invoices and Account Receivable Statements to ethin@assetlaboratories.com by. Normal TAT. Please analyzed for Total PCBs by 1668 at 250 pg/L. CalifOrntia sample Tealex #: 773579366566 Reference and intervals.com by. Received by: CAF #: 77357936566 Reference and intervals.com by. Received by: CAF #: 77357936566 Reference and intervals.com by. Received by: CAF #: 77367936566 Reference and intervals.com by. Received by: CAF #: 77357936566 Reference and intervals.com by. Received by: CAF #: 77367936566 Reference and account Received by: CAF #: 77357936566 Reference and intervals.com by. Received by: CAF #: 77367936566 Reference and account Received by: Reference and Re	EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format.         Please CC Report to Lucille Glosinda at lucille.golosinda@assetlaboratories.com         General Comments       Please enail sample receipt actrowedgement to the PN.         General Comments       Please enail sample receipt actrowedgement to the PN.         Please use PD#N3153A       Please enail Invoices and Account Receivable Statements to ehrie@assetlaboratories.com For questions.cal         Please use PD#N3153A       Please enail Invoices and Account Receivable Statements to ehrie@assetlaboratories.com For questions.cal         Please use PD#N3153A       Please enail Invoices and Account Receivable Statements to ehrie@assetlaboratories.com For questions.cal         Please use PD#N3153A       Please enail recuts to repote M@assetlaboratories.com For questions.cal         Please use PD#N171       Please enail recuts to repote M@assetlaboratories.com For questions.cal         Please use PD#N171       Please enail recuts to repote M@assetlaboratories.com For questions.cal         Please use PD#N171       Please enail recuts to repote M@assetlaboratories.com For questions.cal         Please use PD#N171       Please enail recuts to repote M@assetlaboratories.com For questions.cal         Please use PD#N171       Fedex #: 773879368586         Meltinquisited by:       M112/472018         Retrived by:       Reterived by:								: 1045760 	0
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General Comments: Please email sample receipt acknowledgement to the PM.         Please use PO#:N33183A       Please email Invoices and Account Receivable Statements to elvira@assettaboratories.com. For questions, call Marton at (702)-307-2659. Please e-mail results to reports.lw@assettaboratories.com by: Normal TAT.         Please use PO#:N33183A       Please email Invoices and Account Receivable Statements to elvira@assettaboratories.com. For questions, call Marton at (702)-307-2659. Please e-mail results to reports.lw@assettaboratories.com by: Normal TAT.         Please analyzed for Total PCBs by 1668 at 250 pg/L       California sample         Please analyzed for Total PCBs by 1668 at 250 pg/L       California sample         Retinquished by:       12/4/2018       16:00         Retinquished by:       Mate/Time       Date/Time         Retinquished by:       Mate/Time       Received by:	General Comments: Please email sample receipt acknowledgement to the PM.         Ceneral Comments: Please email sample section for pressure on the production of the PM.         Please use PO#N33183A Please email Invoices and Account Receivable Statements to elvira@assettaboratories.com by: Nomal TAT.         Please use PO#N33183A Please email Invoices and Account Receivable Statements to elvira@assettaboratories.com. For questions, call Marton at 702):307-2659. Please e-mail results to reports.M@assettaboratories.com by: Nomal TAT.         Please analyzed for Total PCBs by 1668 at 250 pg/L.       California sample         Please analyzed for Total PCBs by 1668 at 250 pg/L.       California sample         Retinquished by:       12/4/2018       16:00         Retinquished by:       March       March         Retinquished by:       March       Received by:         Retinquished by:       March       Received by:         Retinquished by:       Received by:       Received by:	Please CC Repor	t to Lucille Glosir	nda at lucille.	golosinc	la@assetlaboratori	ies.com			
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Report No.....10457600\_1668\_209\_R1\_DFR

Pace Analytical       Jainple Conductor Optimity Receipt Form       Proge 101         Document No.:       F-MN-L-213-rev_24       Issuing Authority:         Sample Condition       Optimes Authority:       Pace Minnesota Quality Office         Courier:       Image 101/2014       Image 101/2014       Image 101/2014         Custody Seal on Cooler/Box Present?       Image 101/2014       Image 101/2014       Image 101/2014         Packing Material:       Image 101/2014       Image 101/2014       Image 101/2014       Image 101/2014         Packing Material:       Image 101/2014       Image 101/2014       Image 101/2014       Image 101/2014         Thermometer       Image 101/2014       Image 101/2014       Image 101/2014       Image 101/2014         Used:       Image 101/2014       Image 101/2014       Image 101/2014       Image 101/2014         Used:	
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Sample Condition Upon Receipt       Client Name:       Project #:         Add Market       Add Market       Project #:         Courier:       Add Market       UPS         Courier:       Project #:       MOC# : 1004576600         PM:       JMR       Due Date: 12/1         Commercial       Project #:       MOC# : 1004576600         Project #:       PMR       Due Date: 12/1         Custody Seal on Cooler/Box Present?       Yes       Seals Intact?       Yes         Packing Material:       Bubble Wrap       BdDbble Bags       None       Optional:       Proj. Due Date:       Proj.         Packing Material:       Bubble Wrap       BdDbble Bags       None       Other:	
Sample Condition Upon Receipt       Client Name: AILET GowArdward Courier: Courier: Commercial Commercial Tracking Number: Tracking Number: Tracking Number: Tracking Number: Tracking Number: Tracking Number: Tracking Material: Bubble Wrap Used: Costody Seal on Cooler/Box Present? Custody Seal on Cooler/Box Present? Cooler Temp Read (*C): Cooler Temp Corrected (*C): Cooler Temp Corrected (*C): Cooler Temp Corrected (*C): Cooler Temp Read (*C): Coo	
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Courier:       UPS       UPS       Client         Commercial       Pace       SpeeDee       Other:       CLIENT:       Asset Labs         Tracking Number:       7734       7434       State       Seals Intact?       Yes       No       Optional:       Proj. Due Date:       Pro         Packing Material:       Bubble Wrap       Bubble Bags       None       Other:       Temp Blank?       Yes         Thermometer       GS7A9170600254       Type of Ice:       Wst       Blue       None       Dry       Melted         Used:       Cooler Temp Read (*C):       2       Scoler Temp Corrected (*C):       2       Biological Tissue Frozen?       Yes       No         USDA Regulated Soil (       MAYA, water sample)       Cooler Temp Corrected (*C):       2       Date and Initials of Person Examining Contents:       Cooler Temp Read (*C):       Yes       No       Including Hawaii and Puerto Rico)?       Including Hawaii and Puerto Rico)?       Including Hawaii and Puerto Rico)?       Yes       No         USDA Regulated Soil (       MAYA, water sample)       If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.       COMMENTS:         Chain of Custody Present?       If Yes       If Yes       No       1.         Chain of	
Commercial Pace SpeeDee Other:   Tracking Number: Tracking Number: Tracking Number: Tracking Number:   Custody Seal on Cooler/Box Present? Yes No   Packing Material:   Bubble Wrap Bobble Bags None   Other: Temp Blank?   Thermometer   G87A9170600254 Type of ice:   Used: G87A9170600254   Used: G87A9176   Other comp Read("C): <td< td=""><td>9/18</td></td<>	9/18
Tracking Number:       Tracking Number:       Tracking Number:       Tracking Number:       Tracking Number:       Proj. Due Date:       Proj.         Custody Seal on Cooler/Box Present?       Yes       No       Seals Intact?       Yes       No       Optional:       Proj. Due Date:       Proj.         Packing Material:       Bubble Wrap       Bubble Bags       None       Other:       Temp Blank?       Yes         Thermometer       G87A9170600254       Type of Ice:       Wet       Blue       None       Dry       Melted         Used:       G87A9155100842       Cooler Temp Corrected (*C):       ?       Biological Tissue Frozen?       Yes       N         Temp should be above freezing to 6*C       Correction Factor:       Othe       Date and Initials of Person Examining Contents:       C         USDA Regulated Soil (DATA, water sample)       Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS,       Did samples originate from a foreign source (intro         NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?       Yes       No       Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS,       Did samples originate from a foreign source (intro         NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?       Yes       No       1.         Chain of Custody Presen	
Custody Seal on Cooler/Box Present?       Yes       Seals Intact?       Yes       No       Optional:       Proj. Due Date:       Province         Packing Material:       Bubble Wrap       Bubble Bags       None       Other:       Temp Blank?       Yes         Thermometer       G87A9170600254       Type of Ice:       Wet       Blue       None       Dry       Melted         Used:       G87A9170600254       Type of Ice:       Wet       Blue       None       Dry       Melted         Cooler Temp Read (*C):       Cooler Temp Corrected (*C):       Cooler Temp Read (*C):       Did Samples originate In a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS,       Did samples originate from a foreign source (inth NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?       Yes       No       Including Hawaii and Puerto Rico?       Imple:         Chain of Custody Present?       If Yes       Including Hawaii and Puerto Rico?       Imple:       Commerce       Imple:       Imple: <t< td=""><td></td></t<>	
Packing Material:       Bubble Wrap       Bubble Bags       None       Other:	j. Name:
Thermometer Used:       G87A9170600254 (G87A9155100842       Type of Ice:       Wet       Blue       None       Dry       Melted         Cooler Temp Read (°C):         Biological Tissue Frozen?       Yes       N         Temp should be above freezing to 6°C       Correction Factor:        Date and Initials of Person Examining Contents:          USDA Regulated Soil (I_MATA, water sample)       Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?       Did samples originate from a foreign source (inth including Hawaii and Puerto Rico)?       If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.         Chain of Custody Present?       If Yes       Inc	No
Cooler Temp Read (°C):        Cooler Temp Corrected (°C):        Biological Tissue Frozen?        N         Temp should be above freezing to 6°C       Correction Factor:        Date and Initials of Person Examining Contents:          USDA Regulated Soil (         Date and Initials of Person Examining Contents:          Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?        Did samples originate from a foreign source (intrincible from a foreign source from a foreign source (intrincible from a foreign source from a foreign source from a foreign source from a foreign source (intrincible from a foreign source from a foreig	
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USDA Regulated Soil ( LAYA, water sample)         Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, including Hawaii and Puerto Rico)?       Did samples originate from a foreign source (intrincluding Hawaii and Puerto Rico)?         NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?       Yes       No       including Hawaii and Puerto Rico)?       Including Hawaii	12/5/10
NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?       Yes       No       including Hawaii and Puerto Rico)?       Including Hawaii and Puerto Rico)?         If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.         Chain of Custody Present?       Image: Solid Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.         Chain of Custody Filled Out?       Image: Solid Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.         Chain of Custody Filled Out?       Image: Solid Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.         Chain of Custody Relinquished?       Image: Solid Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.         Sampler Name and/or Signature on COC?       Image: Solid Checklist (F-MN-Q-338) and Image: Solid Checklist (F-MN-Q	ernationally
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.         COMMENTS:         Chain of Custody Present?       Image: Colspan="2">Image: Colspan="2">Colspan="2"Colspan="2"Colspan="2"Colspan=""2"Colspan="2"Colspan=""2"Colspan="2"Colspan="2"Colspan="2"	Yes No
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Chain of Custody Present?       Image: Test in the second se	
Chain of Custody Filied Out?     Image: Second	
Sampler Name and/or Signature on COC?       Yes       No       N/A       4.         Samples Arrived within Hold Time?       Yes       No       5.         Short Hold Time Analysis (<72 hr)?	
Samples Arrived within Hold Time?     Yes     No     5.       Short Hold Time Analysis (<72 hr)?	
Short Hold Time Analysis (<72 hr)?	
Rush Turn Around Time Requested?     Yes     7.       Sufficient Volume?     Image: Sufficient Volume?     8.	
Sufficient Volume?	<b></b>
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Filtered Volume Received for Dissolved Tests?	er
is sufficient information available to reconcile the sage tes to the sage tes INo 12.	
the COC? Matrix: M	anthing for Dec
checked? $\square$ Yes $\square$ No $\square$ MA $\square$ $\square$ HNO <sub>3</sub> $\square$ H <sub>2</sub> SO <sub>4</sub> $\square$ NaOH C	hlorine? Y N
All containers needing preservation are found to be in Sample #	
(HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) $\square$ Yes $\square$ No $\square$ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, Initial when Lot # of added	
Headspace in VOA Vials (>6mm)?	
Trip Blank Present? $\Box$ Yes $\Box$ No $\Box$ $\overline{A}$ 15.	
Trip Blank Custody Seals Present?	
Pace Trip Blank Lot # (if purchased):	
CLIENT NOTIFICATION/RESOLUTION Field Data Required?	No
Person Contacted: Date/Time:	
Comments/Resolution:	
Disidet Manager Deview	
Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification	Office ( i.e out o
hold, incorrect preservative, out of temp, inde/rect containers).	-



> Tel: 612-607-1700 Fax: 612-607-6444

# **Reporting Flags**

- A = Reporting Limit based on signal to noise
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- I = Interferencepresent
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDEInterference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %DExceeds limits
- Y = Calculated using average of daily RFs
- \* = SeeDiscussion

# **REPORT OF LABORATORY ANALYSIS**

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# Appendix B

Sample Analysis Summary



Tel: 612-607-1700 Fax: 612- 607-6444

Method 1668C Poly	ychlorobiphen	yl Sample Anal	ysis Results
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Client - Asset Laboratories

Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	N033183-0 104576000 P181217A_ ZMS 915 mL NA NA P181217A( P181217A_ BLANK-669	01E 01 _13 03 _04 901		Matrix Dilution Collected Received Extracted Analyzed	Water NA 11/30/2018 08:2 12/05/2018 10:1 12/12/2018 14:4 12/17/2018 22:4	5 0 5 1	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery	
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-3,4,4'-TrCB 13C-2,2',6,6'-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HpCB 13C-2,3',3',4,4',5,5'-6-OcCB 13C-2,3',3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-DeCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	9.241 12.056 12.361 19.560 16.256 27.593 19.920 34.978 35.565 26.231 39.314 38.644 37.722 42.617 32.503 45.808 44.601 49.211 38.644 51.890 44.349 54.583 56.415 51.394 58.096	$\begin{array}{c} 2.60\\ 3.03\\ 1.75\\ 1.48\\ 1.32\\ 1.19\\ 0.79\\ 0.77\\ 0.76\\ 1.72\\ 1.67\\ 1.66\\ 1.58\\ 1.49\\ 1.31\\ 1.24\\ 1.24\\ 1.23\\ 1.01\\ 0.98\\ 0.86\\ 0.90\\ 0.78\\ 0.87\\ 0.70\end{array}$	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	0.432 0.511 0.328 0.565 0.359 0.893 0.283 1.17 1.24 0.377 1.09 1.06 1.06 1.04 1.03 0.594 2.11 1.01 1.04 0.860 0.989 0.951 1.27 1.51 0.749 1.72	23 26 16 28 20 45 14 58 62 19 55 53 53 53 53 53 52 52 30 53 51 52 43 49 48 64 76 37 86	1
CleanupStandards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	23.091 35.627 41.879	0.91 1.60 1.13	2.0 2.0 2.0	1.57 1.40 1.56	79 70 78	
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	14.852 25.164 32.735 41.393 54.088	1.52 0.84 1.49 1.30 0.86	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA	

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

# Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

N033183-001E
10457600001
P181217A_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		0 273
2				ND		0.273
2				ND		0.273
4						0.275
5						0.300
6						0.320
7						0.233
8						0.200
a						0.275
10						0.200
11						2.68
12	12/13					0.546
12	12/13					0.546
14	12/13					0.040
14						0.292
16						0.301
17						0.273
10	19/20					0.275
10	10/30					0.040
19	20/29					0.273
20	20/20					1.41
21	21/33					1.47
22						1.04
23						0.273
24						0.273
20	26/20					0.273
20	20/29					0.540
27	20/28					0.273
20	20/20					1.41
29	20/29					0.540
30	16/30					0.540
31						1.42
32	24/22					0.273
33	21/33					1.47
34						0.273
30						0.273
30						0.273
37						0.579
30						0.273
39	40/44/74					0.273
40	40/41/71					1.04
41	40/41/71					1.04
42	40/70					0.546
43	43/13					0.540
44	44/47/00					1.04
40	40/01					1.09
40	44/47/65					0.540
47	44/47/00					1.04
48				ND		0.546

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

# Method 1668C Polychlorobiphenyl **Sample Analysis Results**

Client Sample ID	
Lab Sample ID	
Filename	

N033183-001E
10457600001
P181217A_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		1.09
50	50/53			ND		1.09
51	45/51			ND		1.09
52				ND		1.68
53	50/53			ND		1.09
54				ND		0.546
55				ND		0.546
56				ND		0.546
57				ND		0.546
58				ND		0.546
59	59/62/75			ND		1 64
60	00,02,10			ND		0.546
61	61/70/74/76			ND		2 19
62	59/62/75			ND		1 64
63	88/82/18			ND		0 546
64				ND		0.546
65	44/47/65			ND		1 64
66	++/+//00			ND		0 918
67						0.546
69						0.546
60	49/69					1 00
70	49/09 61/70/74/76					2.10
70	40/41/71					2.19
71	40/41/71					0.546
72	10/70					0.540
73	43/73					2 10
74	61/70/74/76 50/62/75					2.19
75	59/02/75 61/70/74/76					1.04
70	61/70/74/76					2.19
70						0.540
70						0.546
79						0.546
80				ND		0.546
81				ND		0.546
82				ND		0.546
83				ND		0.546
84	05/440/447			ND		0.546
85	85/116/117			ND		1.64
86	86/87/97/108/119/125			ND		3.28
87	86/87/97/108/119/125			ND		3.28
88	88/91			ND		1.09
89	00/404/440			ND		0.546
90	90/101/113			ND		1.64
91	88/91			ND		1.09
92	00/00/400/400			ND		0.546
93	93/98/100/102			ND		2.19
94				ND		0.546
95				ND		1.04
96				ND		0.546

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename N033183-001E 10457600001 P181217A\_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		3.28
98	93/98/100/102			ND		2.19
99				ND		0.546
100	93/98/100/102			ND		2.19
101	90/101/113			ND		1.64
102	93/98/100/102			ND		2 19
103				ND		0.546
104				ND		0.546
105				ND		0.546
106				ND		0.546
107	107/124			ND		1 09
108	86/87/97/108/119/125			ND		3.28
100	00/01/01/100/110/120			ND		0 546
110	110/115			ND		1 09
111	110/110			ND		0.546
112						0.546
112	90/101/113					1 64
11/	30/101/113					0.546
114	110/115					1.00
110	95/116/117					1.09
110	00/110/117					1.04
117	00/110/11/					1.04
110	96/97/07/109/110/105					0.099
119	66/67/97/106/119/125					3.20
120				ND		0.546
121				ND		0.546
122				ND		0.546
123	407/404			ND		0.546
124	107/124			ND		1.09
125	86/87/97/108/119/125			ND		3.28
126				ND		0.546
127				ND		0.546
128	128/166			ND		1.09
129	129/138/163			ND		1.64
130				ND		0.546
131				ND		0.546
132				ND		0.546
133				ND		0.546
134	134/143			ND		1.09
135	135/151			ND		1.09
136				ND		0.546
137				ND		0.546
138	129/138/163			ND		1.64
139	139/140			ND		1.09
140	139/140			ND		1.09
141				ND		0.546
142				ND		0.546
143	134/143			ND		1.09
144				ND		0.546

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612- 607-6444

# Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

N033183-001E
10457600001
P181217A_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.546
146				ND		0.546
147	147/149			ND		1 09
148	111,110			ND		0 546
149	147/149			ND		1 09
150	1477148			ND		0.546
151	135/151			ND		1 09
152	133/131					0.546
152	153/168					1.00
154	155/100					0.546
154						0.540
155	156/157					0.540
150	150/157					1.09
157	150/157			ND		1.09
158				ND		0.546
159				ND		0.546
160				ND		0.546
161				ND		0.546
162				ND		0.546
163	129/138/163			ND		1.64
164				ND		0.546
165				ND		0.546
166	128/166			ND		1.09
167				ND		0.546
168	153/168			ND		1.09
169				ND		0.546
170				ND		0.546
171	171/173			ND		1.09
172				ND		0.546
173	171/173			ND		1 09
174				ND		0.546
175				ND		0.546
176				ND		0.546
177				ND		0.546
178						0.546
170						0.546
190	190/102					1.00
100	160/193					0.546
101						0.540
102	102/105					0.546
183	183/185			ND		1.09
184	100/105			ND		0.546
185	183/185			ND		1.09
186				ND		0.546
187				ND		0.546
188				ND		0.546
189				ND		0.546
190				ND		0.546
191				ND		0.546
192				ND		0.546

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

# Method 1668C Polychlorobiphenyl **Sample Analysis Results**

Client Sample ID	
Lab Sample ID	
Filename	

N033183-001E
10457600001
P181217A 13

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		1.09
194				ND		0.819
195				ND		0.819
196				ND		0.819
197	197/200			ND		1.64
198	198/199			ND		1.64
199	198/199			ND		1.64
200	197/200			ND		1.64
201				ND		0.819
202				ND		0.819
203				ND		0.819
204				ND		0.819
205				ND		0.819
206				ND		0.819
207				ND		0.819
208				ND		0.819
209				ND		0.819

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612- 607-6444

## Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	N033183-001E
Lab Sample ID	10457600001
Filename	P181217A_13

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	ND	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	ND	

ND = Not Detected

**REPORT OF LABORATORY ANALYSIS** 



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Blank Analysis Results

Lab Sample ID	BLANK-66	901				
Filename	P181217A	_11				
Injected By	ZMS			Matrix	Water (Non F	otable)
Total Amount Extracted	1030 mL			Extracted	12/12/2018 1	4:45
ICAL ID	P181217A	03		Analvzed	12/17/2018 2	20:36
CCal Filename(s)	P181217A	_04		Dilution	NA	
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	9.252	2.91	2.0	0.680	34
13C-4-MoCB	3	12.057	2.92	2.0	0.819	41
13C-2,2'-DiCB	4	12.362	1.67	2.0	0.617	31
13C-4,4'-DiCB	15	19.594	1.57	2.0	0.847	42
13C-2,2',6-TrCB	19	16.234	1.35	2.0	0.537	31
13C-3,4,4'-TrCB	37	27.579	0.98	2.0	1.16	58
13C-2,2',6,6'-TeCB	54	19.921	0.76	2.0	0.439	22
13C-3,4,4',5-TeCB	81	34.966	0.78	2.0	1.30	65
13C-3,3',4,4'-TeCB	77	35.554	0.81	2.0	1.40	70
13C-2,2',4,6,6'-PeCB	104	26.233	1.59	2.0	0.447	22
13C-2,3,3',4,4'-PeCB	105	39.318	1.50	2.0	1.40	70
13C-2,3,4,4',5-PeCB	114	38.647	1.61	2.0	1.35	68
13C-2,3',4,4',5-PeCB	118	38.077	1.50	2.0	1.31	66
13C-2,3',4,4',5'-PeCB	123	37.725	1.56	2.0	1.33	67
13C-3,3',4,4',5-PeCB	126	42.604	1.53	2.0	1.41	70
13C-2,2',4,4',6,6'-HxCB	155	32.506	1.28	2.0	0.760	38
13C-HxCB (156/157)	156/157	45.812	1.25	4.0	2.70	68
13C-2,3',4,4',5,5'-HxCB	167	44.588	1.21	2.0	1.32	66
13C-3,3',4,4',5,5'-HxCB	169	49.216	1.21	2.0	1.34	67
13C-2,2,3,4,5,6,6-HpCB	188	38.647	1.03	2.0	1.04	52
13C-2,3,3,4,4,5,5-HpCB	189	51.873	1.00	2.0	1.23	62
13C-2,2,3,3,5,5,6,6-OCCB	202	44.337	0.87	2.0	1.13	50
13C-2,3,3,4,4,5,5,6-OCCB	205	54.588	0.87	2.0	1.43	71
13C-2,2,3,3,4,4,5,5,6-NOCB	206	56.420	0.72	2.0	1.62	81
13C-2,2,3,3,4,5,5,6,6-INOCB	208	51.377	0.81	2.0	1.41	70
13C-Decb	209	58.101	0.67	2.0	1.81	90
Cleanup Standards						
13C-2,4,4'-TrCB	28	23.093	0.93	2.0	1.58	79
13C-2,3,3',5,5'-PeCB	111	35.646	1.62	2.0	1.42	71
13C-2,2',3,3',5,5',6-HpCB	178	41.883	1.03	2.0	1.50	75
Recovery Standards						
13C-2,5-DiCB	9	14.863	1.68	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	25.181	0.85	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	32.722	1.56	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	41.397	1.23	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	54.092	0.90	2.0	NA	NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits

N = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference

ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668C Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-66901 P181217A\_11

			<b>D</b> (1	Concentration	EMPC	EML
IUPAC	Co-elutions	RI	Ratio	ng/L	ng/L	ng/L
1				ND		0.242
2				ND		0.242
3				ND		0.242
4				ND		0.242
5				ND		0.242
6				ND		0.242
7				ND		0.242
8				ND		0.242
9				ND		0.242
10				ND		0.242
11				ND		2.37
12	12/13			ND		0.485
13	12/13			ND		0.485
14				ND		0.242
15				ND		0.320
16				ND		0.242
17				ND		0.242
18	18/30			ND		0.485
19				ND		0.242
20	20/28			ND		1.25
21	21/33			ND		1.31
22				ND		0.921
23				ND		0.242
24				ND		0.242
25	00/00			ND		0.242
26	26/29			ND		0.485
27	00/00			ND		0.242
28	20/28			ND		1.25
29	26/29			ND		0.485
30	18/30			ND		0.485
31				ND		1.20
32	04/00					0.242
33	21/33					1.31
34						0.242
30						0.242
30 27						0.242
31 20						0.014
30 20						0.242
39 40	10/11/71					0.242
40	40/41/71					1.40
41						0 / 25
42 43	43/73					0.405
40	44/47/65					1 45
45	45/51					0 969
τu						0.000

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668C Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-66901 P181217A\_11

	<b>-</b>			Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
46				ND		0.485
47	44/47/65			ND		1.45
48				ND		0.485
49	49/69			ND		0.969
50	50/53			ND		0.969
51	45/51			ND		0.969
52				ND		1.49
53	50/53			ND		0.969
54				ND		0.485
55				ND		0.485
56				ND		0.485
57				ND		0.485
58				ND		0.485
59	59/62/75			ND		1.45
60				ND		0.485
61	61/70/74/76			ND		1.94
62	59/62/75			ND		1.45
63				ND		0.485
64				ND		0.485
65	44/47/65			ND		1.45
66				ND		0.814
67				ND		0.485
68				ND		0.485
69	49/69			ND		0.969
70	61/70/74/76			ND		1.94
71	40/41/71			ND		1.45
72				ND		0.485
73	43/73			ND		0.485
74	61/70/74/76			ND		1.94
75	59/62/75			ND		1.45
76	61/70/74/76			ND		1.94
77				ND		0.485
78				ND		0.485
79				ND		0.485
80				ND		0.485
81				ND		0.485
82				ND		0.485
83				ND		0.485
84				ND		0.485
85	85/116/117			ND		1.45
86	86/87/97/108/119/125			ND		2.91
87	86/87/97/108/119/125			ND		2.91
88	88/91			ND		0.969
89				ND		0.485
90	90/101/113			ND		1.45

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

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# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668C Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-66901 P181217A\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RI	Ratio	ng/L	ng/L	ng/L
91	88/91			ND		0.969
92				ND		0.485
93	93/98/100/102			ND		1.94
94				ND		0.485
95				ND		0.921
96				ND		0.485
97	86/87/97/108/119/125			ND		2.91
98	93/98/100/102			ND		1.94
99				ND		0.485
100	93/98/100/102			ND		1.94
101	90/101/113			ND		1.45
102	93/98/100/102			ND		1.94
103				ND		0.485
104				ND		0.485
105				ND		0.485
106				ND		0.485
107	107/124			ND		0.969
108	86/87/97/108/119/125			ND		2.91
109				ND		0.485
110	110/115			ND		0.969
111				ND		0.485
112				ND		0.485
113	90/101/113			ND		1.45
114				ND		0.485
115	110/115			ND		0.969
116	85/116/117			ND		1.45
117	85/116/117			ND		1.45
118				ND		0.620
119	86/87/97/108/119/125			ND		2.91
120				ND		0.485
121				ND		0.485
122				ND		0.485
123				ND		0.485
124	107/124			ND		0.969
125	86/87/97/108/119/125			ND		2.91
126				ND		0.485
127				ND		0.485
128	128/166			ND		0.969
129	129/138/163			ND		1.45
130				ND		0.485
131				ND		0.485
132				ND		0.485
133				ND		0.485
134	134/143			ND		0.969
135	135/151			ND		0.969

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

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# **REPORT OF LABORATORY ANALYSIS**

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Report No.....10457600\_1668\_209\_R1\_DFR



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668C Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-66901 P181217A\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
136				ND		0 485
137						0.400
138	120/138/163					1 /5
120	129/130/103					0.060
139	139/140					0.909
140	139/140					0.909
141				ND		0.485
142	101/110			ND		0.485
143	134/143			ND		0.969
144				ND		0.485
145				ND		0.485
146				ND		0.485
147	147/149			ND		0.969
148				ND		0.485
149	147/149			ND		0.969
150				ND		0.485
151	135/151			ND		0.969
152				ND		0.485
153	153/168			ND		0.969
154				ND		0.485
155				ND		0.485
156	156/157					0.400
157	156/157					0.000
158	150/157					0.303
150						0.405
109						0.405
100						0.400
161						0.485
162	400/400/400			ND		0.485
163	129/138/163			ND		1.45
164				ND		0.485
165				ND		0.485
166	128/166			ND		0.969
167				ND		0.485
168	153/168			ND		0.969
169				ND		0.485
170				ND		0.485
171	171/173			ND		0.969
172				ND		0.485
173	171/173			ND		0.969
174				ND		0 485
175				ND		0.485
176						0.400
177						0.485
179						0.405
170						0.400
1/9	190/102					0.400
180	180/193			ND		0.969

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

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# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668C Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-66901 P181217A\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
181				ND		0.485
182				ND		0.485
183	183/185			ND		0.969
184				ND		0.485
185	183/185			ND		0.969
186				ND		0.485
187				ND		0.485
188				ND		0.485
189				ND		0.485
190				ND		0.485
191				ND		0.485
192				ND		0.485
193	180/193			ND		0.969
194				ND		0.727
195				ND		0.727
196				ND		0.727
197	197/200			ND		1.45
198	198/199			ND		1.45
199	198/199			ND		1.45
200	197/200			ND		1.45
201				ND		0.727
202				ND		0.727
203				ND		0.727
204				ND		0.727
205				ND		0.727
206				ND		0.727
207				ND		0.727
208				ND		0.727
209				ND		0.727

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time

I = Interference

### **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612- 607-6444

### Method 1668C Polychlorobiphenyl Blank Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

CBLKFR BLANK-66901 P181217A\_11

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	ND	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	ND	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612- 607-6444

#### Method 1668C Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-66902
Filename	P181217A_07
Total Amount Extracted	1040 mL
ICAL ID	P181217A03
CCal Filename(s)	P181217A_04
Method Blank ID	BLANK-66901

MatrixWaterDilutionNAExtracted12/12/2018 14:45Analyzed12/17/2018 16:26Injected ByZMS

	Ν	Native Analy	tes		La	beled Analyte	es
PCB Isomer	Spiked (ng)	Found (ng)	% Recove	ery	Spiked (ng)	Found (ng)	% Recovery
1	1.0	1.60	160	R	2.0	0.752	38
3	1.0	1.17	117		2.0	1.04	52
4	1.0	1.32	132		2.0	0.912	46
15	1.0	0.994	99		2.0	1.34	67
19	1.0	0.886	89		2.0	1.22	67
37	1.0	0.807	81		2.0	1.56	78
54	1.0	0.983	98		2.0	1.11	55
81	1.0	0.866	87		2.0	1.57	78
77	1.0	0.886	89		2.0	1.55	78
104	1.0	0.905	99	I	2.0	1.38	69
105	1.0	0.865	87		2.0	1.52	76
114	1.0	0.833	83		2.0	1.53	76
118	1.0	0.880	88		2.0	1.59	79
123	1.0	0.893	89		2.0	1.58	79
126	1.0	0.840	84		2.0	1.55	77
155	1.0	0.965	97		2.0	1.47	74
156/157	2.0	1.76	88		4.0	2.67	67
167	1.0	0.883	88		2.0	1.35	67
169	1.0	0.912	91		2.0	1.33	66
188	1.0	0.978	98		2.0	1.91	95
189	1.0	0.895	89		2.0	1.51	76
202	1.0	1.01	101		2.0	1.89	94
205	1.0	0.886	89		2.0	1.76	88
206	1.0	0.950	95		2.0	2.00	100
208	1.0	0.906	91		2.0	1.94	97
209	1.0	0.866	87		2.0	2.27	113

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

ng = Nanograms

I = Interference

### **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612- 607-6444

#### Method 1668C Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-66903
Filename	P181217A_08
Total Amount Extracted	1040 mL
ICAL ID	P181217A03
CCal Filename(s)	P181217A_04
Method Blank ID	BLANK-66901

MatrixWaterDilutionNAExtracted12/12/2018 14:45Analyzed12/17/2018 17:28Injected ByZMS

	Ν	Native Analy	tes	La	beled Analyte	es
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery
1	1.0	1.30	130	2.0	0.962	48
3	1.0	1.17	117	2.0	1.13	57
4	1.0	1.19	136 I	2.0	1.05	53
15	1.0	1.03	103	2.0	1.37	69
19	1.0	1.02	102	2.0	1.22	61
37	1.0	0.861	86	2.0	1.70	85
54	1.0	1.03	103	2.0	1.16	58
81	1.0	0.957	96	2.0	1.59	80
77	1.0	0.939	94	2.0	1.64	82
104	1.0	0.979	98	2.0	1.21	67 I
105	1.0	0.986	99	2.0	1.58	79
114	1.0	0.918	92	2.0	1.66	83
118	1.0	0.947	95	2.0	1.61	81
123	1.0	0.994	99	2.0	1.62	81
126	1.0	0.948	95	2.0	1.67	83
155	1.0	1.01	101	2.0	1.33	66
156/157	2.0	2.00	100	4.0	2.85	71
167	1.0	0.983	98	2.0	1.45	73
169	1.0	0.936	94	2.0	1.46	73
188	1.0	1.05	105	2.0	1.34	67
189	1.0	1.02	102	2.0	1.42	71
202	1.0	1.14	114	2.0	1.36	68
205	1.0	0.928	93	2.0	1.71	85
206	1.0	1.01	101	2.0	1.91	96
208	1.0	0.980	98	2.0	1.67	84
209	1.0	1.01	101	2.0	2.04	102

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

ng = Nanograms

I = Interference

### **REPORT OF LABORATORY ANALYSIS**



Client

Tel: 612-607-1700 Fax: 612- 607-6444

#### Method 1668C

#### Spike Recovery Relative Percent Difference (RPD) Results

CompoundIUPACSpike 1 %RECSpike 2 %REC2-MoCB116013020.74-MoCB31171170.02,2'-DiCB41321363.04,4'-DiCB15991034.02,2'-DiCB198910213.63,4,4'-TrCB3781866.02,2',6,6'-TeCB54981035.03,3',4,4'-TeCB7789945.53,4,4',5-TeCB8187969.82,2,4,6,6'-PeCB10499981.02,3,4,4',5-PeCB114839210.32,3',4,4',5-PeCB114839210.32,3',4,4',5-PeCB123899910.63,3',4,4',5-PeCB12684957.72,3',4,4',5-PeCB126849512.32,2',4,6,6'-HxCB155971014.0(156/157)156/1578810012.82,3',4,4',5,5'-HxCB167889810.8	Spike 1 ID Spike 1 Filename	LCS-66902 P181217A_07	Spike 2 ID Spike 2 File	ename	LCSD-66903 P181217A_08	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Compound	IUPAC	Spike 1 %REC	Spike %REC	2 %RPD	
3,3',4,4',5,5'-HxCB       169       91       94       3.2         2,2',3,4',5,6,6'-HpCB       188       98       105       6.9         2,3,3',4,4',5,5'-HpCB       189       89       102       13.6         2,2',3,3',5,5',6,6'-OcCB       202       101       114       12.1         2,3,3',4,4',5,5',6-OcCB       205       89       93       4.4         2,2',3,3',4,4',5,5',6-NoCB       206       95       101       6.1         2,2',3,3',4,5,5',6,6'-NoCB       208       91       98       7.4	2-MoCB 4-MoCB 2,2'-DiCB 4,4'-DiCB 2,2',6-TrCB 3,4,4'-TrCB 2,2',6,6'-TeCB 3,3',4,4'-TeCB 3,3',4,4'-5-TeCB 2,2',4,6,6'-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,2',4,4',6,6'-HxCB (156/157) 2,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 2,2',3,4',5,5',6,6'-OcCB 2,3,3',4,4',5,5',6,6'-NoCI 2,3',3',4,4',5,5',6,6'-NoCI 2,3',3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI 2,2',3,3',4,4',5,5',6,6'-NoCI	$\begin{array}{c} 1\\ 3\\ 4\\ 15\\ 19\\ 37\\ 54\\ 77\\ 81\\ 104\\ 105\\ 114\\ 105\\ 114\\ 123\\ 126\\ 155\\ 156/157\\ 167\\ 169\\ 188\\ 189\\ 202\\ 205\\ 8\\ 206\\ 8\\ 208\\ 208\\ 208\\ 8\\ 209\\ 202\\ 205\\ 8\\ 208\\ 8\\ 209\\ 8\\ 200\\ 8\\ 8\\ 100\\ 100$	160 117 132 99 89 81 98 89 87 99 87 83 88 89 84 97 88 88 89 84 97 88 88 91 98 89 101 89 95 91	130 117 136 103 102 86 103 94 96 98 99 92 95 99 95 99 95 101 100 98 94 105 102 114 93 101 98	$\begin{array}{c} 20.7\\ 0.0\\ 3.0\\ 4.0\\ 13.6\\ 6.0\\ 5.0\\ 5.5\\ 9.8\\ 1.0\\ 12.9\\ 10.3\\ 7.7\\ 10.6\\ 12.3\\ 4.0\\ 12.8\\ 10.8\\ 3.2\\ 6.9\\ 13.6\\ 12.1\\ 4.4\\ 6.1\\ 7.4\\ 14.0\\ 12.8\\ 10.8\\ 3.2\\ 6.9\\ 13.6\\ 12.1\\ 4.4\\ 14.0\\ 12.1\\ 1.2\\ 1.2\\ 1.2\\ 1.2\\ 1.2\\ 1.2\\ 1.$	

%REC = Percent Recovered

RPD = The difference between the two values divided by the mean value

Asset Laboratories

**REPORT OF LABORATORY ANALYSIS** 

January 23, 2019

Eric Davis CH2MHill 1000 Wilshire Blvd. Los Angeles, CA 90017 TEL: FAX:

Workorder No.: N033767

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on January 15, 2019 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

man umm

Quennie Manimtim Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and ASSET Laboratories - Las Vegas.



"Serving Clients with Passion and Professionalism"

 CALIFORNIA
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 Ste B,
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 CA 90703

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 2921
 EPA ID
 CA01638

NEVADA P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

CLIENT:	CH2MHill
Project:	SFPP Norwalk
Lab Order:	N033767

#### CASE NARRATIVE

#### SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Sample was analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Subcontracted Analyses:

Total PCB was subcontracted to Pace Analytical Services, Inc., Minneapolis, MN.

EPA 8081 was subcontracted to Test America, Irvine, CA.

Analytical Comment for EPA 200.8:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Copper possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



CALIFORNIA P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

CLIENT:CH2MHillProject:SFPP NorwalkLab Order:N033767

#### **Contract No:**

#### Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	<b>Collection Date</b>	Date Received	Date Reported
N033767-001A	HTTMDL-01-15	Wastewater	1/15/2019 10:17:00 AM	1/15/2019	1/23/2019
N033767-001B	HTTMDL-01-15	Wastewater	1/15/2019 10:17:00 AM	1/15/2019	1/23/2019
N033767-001C	HTTMDL-01-15	Wastewater	1/15/2019 10:17:00 AM	1/15/2019	1/23/2019
N033767-001D	HTTMDL-01-15	Wastewater	1/15/2019 10:17:00 AM	1/15/2019	1/23/2019
N033767-001E	HTTMDL-01-15	Wastewater	1/15/2019 10:17:00 AM	1/15/2019	1/23/2019

#### **ANALYTICAL RESULTS**

Print Date: 23-Jan-19

CLIENT: Lab Order: Project:	CH2MHill N033767 SFPP Norwalk			CI	ient Sample I Collection Da Matr	ID: H ite: 1/ ix: W	TTMDL-01-1 /15/2019 10:17 /ASTEWATE	5 7:00 AM R
Lab ID:	N033767-001							
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-F	ILTERABLE RESI	DUE						
				SM	2540D			
RunID: CA016	538-WC01_190116A	QC Batch: 721	60		PrepDate	:	1/16/2019	Analyst: GAC
Suspended So Filterable)	olids (Residue, Non-	12	5.0	5.0	m	g/L	1	1/16/2019
SEMIVOLATIL	E ORGANIC COM	POUNDS BY GC/I	NS-SIM					
		EPA 3510C		EPA 8	3270CSIM			
RunID <sup>.</sup> NV009	22-MS9 190121C	OC Batch <sup>·</sup> 72	188		PrepDate		1/21/2019	Analyst: RRS
1-Methylnapht			0.043	0.22		n/l	1	1/21/2019 11:50 PM
2-Methylnapht	inalene		0.043	0.22	uç	y/∟ n/l	1	1/21/2019 11:50 PM
			0.002	0.22	uç	y/⊏ n/l	1	1/21/2019 11:50 PM
Acenaphthyler	, ne		0.052	0.22	uç	y/⊏ n/l	1	1/21/2019 11:50 PM
Anthracene		ND	0.046	0.22	uç UC	a⁄⊏ a/l	1	1/21/2019 11:50 PM
Benzo(a)anthr	acene	ND	0.039	0.22	uç UC	a, ⊏ 1/I	1	1/21/2019 11:50 PM
Benzo(a)pyrer		ND	0.046	0.22	uç uc	a⁄ ⊏ n/l	1	1/21/2019 11:50 PM
Benzo(b)fluora	anthene		0.046	0.22	uç	a⁄⊏ n/l	1	1/21/2019 11:50 PM
Benzo(a h i)pe	ervlene	ND	0.071	0.22	uç UC	a, ⊏ 1/I	1	1/21/2019 11:50 PM
Benzo(k)fluora	anthene		0.059	0.22	uç	y/⊏ n/l	1	1/21/2019 11:50 PM
Chrysene			0.000	0.22	uç	y/⊏ n/l	1	1/21/2019 11:50 PM
Dibenz(a h)an	thracene		0.062	0.22	uç uc	a⁄⊏ n/l	1	1/21/2019 11:50 PM
Fluoranthene			0.037	0.22	uç uc	a⁄⊏ n/l	1	1/21/2019 11:50 PM
Fluorene		ND	0.048	0.22	uç UC	a, ⊏ 1/I	1	1/21/2019 11:50 PM
Indeno(1.2.3-c	cd)pyrene	ND	0.063	0.22	uç UC	a, ⊏ 1/I	1	1/21/2019 11:50 PM
Naphthalene	Jajpyrono	ND	0.056	0.22	uç UC	a, ⊏ 1/I	1	1/21/2019 11:50 PM
Phenanthrene		ND	0.052	0.22	uç UC	a, ⊏ 1/I	1	1/21/2019 11:50 PM
Pyrene		ND	0.037	0.22	uç UC	a, ⊏ 1/I	1	1/21/2019 11:50 PM
Surr: 1 2-Di	ichlorobenzene-d4	45.0	0	27-100	%	RFC	1	1/21/2019 11:50 PM
Surr: 2-Fluc	probiphenyl	42.0	0	34-135	%	RFC	1	1/21/2019 11:50 PM
Surr: 4-Terr	phenyl-d14	65.0	0	34-167	%	RFC	1	1/21/2019 11:50 PM
Surr: Nitrob	penzene-d5	46.0	0	25-135	%	REC	1	1/21/2019 11:50 PM
				EP/	A 200.8			
	22-ICP7 1001184	OC Batch: 73	169		PronData		1/18/2010	Analyst: CEI
	22-10F7_130110A		0.00	0.50	FiepDale	- //	1/10/2019	
Copper		ND	0.26	0.50	μί	J/∟	1	1/18/2019 01:13 PM
Lead		0.98	0.13	0.50	μί	J/∟ ~/I	1	1/18/2019 01:13 PM
∠inc		20	0.27	1.0	μί	g/L	1	1/18/2019 01:13 PM

Qualifiers:

Analyte detected in the associated Method Blank

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit Results are wet unless otherwise specified

E Value above quantitation range

J Analyte detected below quantitation limits

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

DO Surrogate Diluted



В

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**CLIENT:** CH2MHill

Work Order: N033767

**Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

#### TestCode: 160.2\_2540D\_W

Sample ID: LCS-72160	SampType: LCS	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 1/16/2019	RunNo: 131257		
Client ID: LCSW	Batch ID: 72160	TestNo: <b>SM2540D</b>	Analysis Date: 1/16/2019	SeqNo: 3262591		
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual		
Suspended Solids (Residue, I	Non-Filter 973.000	10 1000 0	97.3 80 120			
Sample ID: MB-72160	SampType: MBLK	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 1/16/2019	RunNo: 131257		
Client ID: PBW	Batch ID: 72160	TestNo: SM2540D	Analysis Date: 1/16/2019	SeqNo: 3262592		
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual		
Suspended Solids (Residue, I	Non-Filter ND	10				
Sample ID: N033761-006A-D	UP SampType: DUP	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 1/16/2019	RunNo: 131257		
Client ID: ZZZZZZ	Batch ID: 72160	TestNo: <b>SM2540D</b>	Analysis Date: 1/16/2019	SeqNo: 3262598		
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual		
Suspended Solids (Residue, I	Non-Filter 13.000	10	13.00	0 5		

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - CALIFORNIA P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703

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ND Not Detected at the Reporting Limit

E Value above quantitation range

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Work Order:N033767Project:SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_SFPP

Sample ID:	MB-72168	SampType: <b>MBLK</b>	TestCode: 200.8_W		Prep Date:	1/18/2019	RunNo: 131275				
Client ID:	PBW	Batch ID: 72168	TestNo: EPA 20	0.8		Analysis Date: 1/18/2019			SeqNo: 3263935		
Analyte		Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit Hig	ghLimit RPD Ref Val	%RPD	RPDLimit	Qual	
Copper		ND	0.50								
Lead		ND	0.50								
Zinc		ND	1.0								
Sample ID:	LCS-72168	SampType: LCS	TestCode: 200.8_W		Prep Date:	1/18/2019	RunNo: <b>13</b>	1275			
Client ID:	LCSW	Batch ID: 72168	TestNo: EPA 20	0.8	Analysis Date: 1/18/2019			SeqNo: 3263936			
Analyte		Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit Hig	ghLimit RPD Ref Val	%RPD	RPDLimit	Qual	
Copper		10.170	0.50 10.0	0 0	102	85	115				
Lead		9.971	0.50 10.0	0 0	99.7	85	115				
Zinc		10.069	1.0 10.0	0 0	101	85	115				
Sample ID:	N033809-001D-DUP	SampType: <b>DUP</b>	TestCode: 200.8_W	/_SFP Units: µg/L		Prep Date:	1/18/2019	RunNo: 13	1275		
Sample ID: Client ID:	N033809-001D-DUP	SampType: DUP Batch ID: 72168	TestCode: <b>200.8_W</b> TestNo: <b>EPA 20</b>	/_SFP Units: µg/L ).8		Prep Date: Analysis Date:	1/18/2019 1/18/2019	RunNo: <b>13</b> ′ SeqNo: <b>32</b> (	1275 63939		
Sample ID: Client ID: Analyte	: N033809-001D-DUP ZZZZZZ	SampType: DUP Batch ID: 72168 Result	TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu	/_SFP Units: μg/L ).8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hig	1/18/2019 1/18/2019 ghLimit RPD Ref Val	RunNo: 13 SeqNo: 320 %RPD	1275 63939 RPDLimit	Qual	
Sample ID: Client ID: Analyte Copper	: N033809-001D-DUP ZZZZZZ	SampType: DUP Batch ID: 72168 Result ND	TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu 0.50	/_SFP Units: µg/L ).8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hig	1/18/2019 1/18/2019 ghLimit RPD Ref Val	RunNo: 13 <sup>,</sup> SeqNo: 320 %RPD 0	1275 63939 RPDLimit 20	Qual	
Sample ID: Client ID: Analyte Copper Lead	: N033809-001D-DUP ZZZZZZ	SampType: DUP Batch ID: 72168 Result ND ND	TestCode: <b>200.8_W</b> TestNo: <b>EPA 200</b> PQL SPK valu 0.50 0.50	/_SFP Units: μg/L D.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hig	1/18/2019 1/18/2019 ghLimit RPD Ref Val 0 0	RunNo: 13 SeqNo: 320 %RPD 0 0	1275 63939 RPDLimit 20 20	Qual	
Sample ID: Client ID: Analyte Copper Lead Zinc	: N033809-001D-DUP ZZZZZZ	SampType: DUP Batch ID: 72168 Result ND ND 4.056	TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu 0.50 0.50 1.0	/_SFP Units: μg/L D.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hig	1/18/2019 1/18/2019 ghLimit RPD Ref Val 0 4.252	RunNo: 13 SeqNo: 320 %RPD 0 0 4.71	1275 63939 RPDLimit 20 20 20	Qual	
Sample ID: Client ID: Analyte Copper Lead Zinc Sample ID:	: N033809-001D-DUP ZZZZZZ : N033809-001D-MS	SampType: DUP Batch ID: 72168 Result ND ND 4.056 SampType: MS	TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu 0.50 0.50 1.0 TestCode: 200.8_W	/_SFP Units: µg/L D.8 e SPK Ref Val /_SFP Units: µg/L	%REC	Prep Date: Analysis Date: LowLimit Hig Prep Date:	1/18/2019 1/18/2019 ghLimit RPD Ref Val 0 0 4.252 1/18/2019	RunNo: 13 SeqNo: 320 %RPD 0 0 4.71 RunNo: 13	1275 53939 RPDLimit 20 20 20 1275	Qual	
Sample ID: Client ID: Analyte Copper Lead Zinc Sample ID: Client ID:	: N033809-001D-DUP ZZZZZZ : N033809-001D-MS ZZZZZZ	SampType: DUP Batch ID: 72168 Result ND 4.056 SampType: MS Batch ID: 72168	TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu 0.50 0.50 1.0 TestCode: 200.8_W TestNo: EPA 200	/_SFP Units: µg/L 0.8 e SPK Ref Val /_SFP Units: µg/L 0.8	%REC	Prep Date: Analysis Date: LowLimit Hig Prep Date: Analysis Date:	1/18/2019 1/18/2019 ghLimit RPD Ref Val 0 4.252 1/18/2019 1/18/2019	RunNo: 13 SeqNo: 320 %RPD 0 0 4.71 RunNo: 13 SeqNo: 320	1275 63939 RPDLimit 20 20 20 1275 63941	Qual	
Sample ID: Client ID: Analyte Copper Lead Zinc Sample ID: Client ID: Analyte	: N033809-001D-DUP ZZZZZZ : N033809-001D-MS ZZZZZZ	SampType: DUP Batch ID: 72168 Result ND ND 4.056 SampType: MS Batch ID: 72168 Result	TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu 0.50 1.0 TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu	/_SFP Units: µg/L D.8 e SPK Ref Val /_SFP Units: µg/L D.8 e SPK Ref Val	%REC	Prep Date: Analysis Date: LowLimit Hig Prep Date: Analysis Date: LowLimit Hig	1/18/2019 1/18/2019 ghLimit RPD Ref Val 0 0 4.252 1/18/2019 1/18/2019 ghLimit RPD Ref Val	RunNo: 13 SeqNo: 320 %RPD 0 0 4.71 RunNo: 13 SeqNo: 320 %RPD	1275 53939 RPDLimit 20 20 20 1275 53941 RPDLimit	Qual	
Sample ID: Client ID: Analyte Copper Lead Zinc Sample ID: Client ID: Analyte Copper	: N033809-001D-DUP ZZZZZZ : N033809-001D-MS ZZZZZZ	SampType: DUP Batch ID: 72168 Result ND ND 4.056 SampType: MS Batch ID: 72168 Result 7.222	TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu 0.50 0.50 1.0 TestCode: 200.8_W TestNo: EPA 200 PQL SPK valu 0.50 10.0	/_SFP Units: μg/L ).8 e SPK Ref Val /_SFP Units: μg/L 0.8 e SPK Ref Val 0 0	%REC %REC 72.2	Prep Date: Analysis Date: LowLimit Hig Prep Date: Analysis Date: LowLimit Hig 75	1/18/2019 1/18/2019 ghLimit RPD Ref Val 0 0 4.252 1/18/2019 1/18/2019 ghLimit RPD Ref Val 125	RunNo: 13 SeqNo: 320 %RPD 0 0 4.71 RunNo: 13 SeqNo: 320 %RPD	1275 53939 RPDLimit 20 20 20 1275 53941 RPDLimit	Qual Qual S	
Sample ID: Client ID: Analyte Copper Lead Zinc Sample ID: Client ID: Analyte Copper Lead	: N033809-001D-DUP ZZZZZZ : N033809-001D-MS ZZZZZZ	SampType: DUP Batch ID: 72168 Result ND ND 4.056 SampType: MS Batch ID: 72168 Result 7.222 10.264	TestCode: 200.8_W         TestNo: EPA 200         PQL       SPK valu         0.50         1.0         TestCode: 200.8_W         TestNo: EPA 200         PQL       SPK valu         0.50         1.0         TestCode: 200.8_W         TestNo: EPA 200         PQL       SPK valu         0.50       10.0         0.50       10.0         0.50       10.0	/_SFP Units: μg/L ).8 e SPK Ref Val /_SFP Units: μg/L ).8 e SPK Ref Val 0 0 0 0	%REC %REC 72.2 103	Prep Date: Analysis Date: LowLimit Hig Prep Date: Analysis Date: LowLimit Hig 75 75	1/18/2019 1/18/2019 ghLimit RPD Ref Val 0 0 4.252 1/18/2019 1/18/2019 ghLimit RPD Ref Val 125 125	RunNo: 13 SeqNo: 320 %RPD 0 0 4.71 RunNo: 13 SeqNo: 320 %RPD	1275 63939 RPDLimit 20 20 20 1275 63941 RPDLimit	Qual Qual S	

#### Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703

ELAP Cert 2921

EPA ID CA01638

<u>NEVADA</u> | P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

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ASSET LABORATORIES

Work Order: N033767 **Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8\_W\_SFPP

Sample ID: N033809-001D-MSD	SampType: <b>MSD</b>	TestCode: 200.8_W_SFP Units: µg/L			Prep Date: 1/18/2019				RunNo: 131275		
Client ID: ZZZZZZ	Batch ID: 72168	TestNo: EPA 200.8			Analysis Date: 1/18/2019				SeqNo: 3263942		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.022	0.50	10.00	0	70.2	75	125	7.222	2.80	20	S
Lead	10.203	0.50	10.00	0	102	75	125	10.26	0.595	20	
Zinc	13.113	1.0	10.00	4.252	88.6	75	125	13.50	2.94	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - ASSET LABORATORIES
- CALIFORNIA P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

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- H Holding times for preparation or analysis exceeded
- R RPD outside accepted recovery limits

Calculations are based on raw values

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Work Order: N033767 **Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 8270\_W\_SIMPGE

Sample ID: LCS-72188	SampType: LCS	TestCo	de: 8270_W_S	SIM Units: ug/L	Units: ug/L Prep Date: 1/21/2019			19	RunNo: <b>131319</b>			
Client ID: LCSW	Batch ID: 72188	Test	No: EPA 8270	CSI EPA 3510C	Analysis Date: 1/21/2019			SeqNo: 3266869				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
2-Methylnaphthalene	0.670	0.20	1.000	0	67.0	36	121					
1-Methylnaphthalene	0.650	0.20	1.000	0	65.0	35	131					
Acenaphthene	0.740	0.20	1.000	0	74.0	39	125					
Acenaphthylene	0.730	0.20	1.000	0	73.0	43	140					
Anthracene	0.720	0.20	1.000	0	72.0	41	132					
Benzo(a)anthracene	0.870	0.20	1.000	0	87.0	58	141					
Benzo(a)pyrene	0.670	0.20	1.000	0	67.0	31	142					
Benzo(b)fluoranthene	0.670	0.20	1.000	0	67.0	42	156					
Benzo(g,h,i)perylene	0.620	0.20	1.000	0	62.0	12	171					
Benzo(k)fluoranthene	0.720	0.20	1.000	0	72.0	49	165					
Chrysene	0.840	0.20	1.000	0	84.0	51	155					
Dibenz(a,h)anthracene	0.630	0.20	1.000	0	63.0	28	153					
Fluoranthene	0.850	0.20	1.000	0	85.0	47	158					
Fluorene	0.740	0.20	1.000	0	74.0	40	140					
Indeno(1,2,3-cd)pyrene	0.670	0.20	1.000	0	67.0	20	167					
Naphthalene	0.740	0.20	1.000	0	74.0	39	125					
Phenanthrene	0.750	0.20	1.000	0	75.0	46	144					
Pyrene	0.850	0.20	1.000	0	85.0	39	158					
Surr: 1,2-Dichlorobenzene-d4	0.570		1.000		57.0	27	100					
Surr: 2-Fluorobiphenyl	0.590		1.000		59.0	34	135					
Surr: 4-Terphenyl-d14	0.700		1.000		70.0	34	167					
Surr: Nitrobenzene-d5	0.670		1.000		67.0	25	135					
Sample ID: LCSD-72188	SampType: LCSD	TestCo	de: 8270_W_\$	SIM Units: ug/L		Prep Da	te: 1/21/20	19	RunNo: 131	319		
Client ID: LCSS02	Batch ID: 72188	Test	No: EPA 8270	CSI EPA 3510C		Analysis Da	te: 1/21/20	19	SeqNo: 326	6870		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
2-Methylnaphthalene	0.650	0.20	1.000	0	65.0	36	121	0.6700	3.03	30		
1-Methylnaphthalene	0.630	0.20	1.000	0	63.0	35	131	0.6500	3.13	30		
Acenaphthene	0.720	0.20	1.000	0	72.0	39	125	0.7400	2.74	30		

#### Qualifiers:

- В Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

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H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

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Work Order: N033767 **Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

#### TestCode: 8270\_W\_SIMPGE

Sample ID: LCSD-72188	SampType: LCSD	TestCode: 8270_W_SIM Units: ug/L			Prep Date: 1/21/2019				RunNo: <b>131319</b>		
Client ID: LCSS02	Batch ID: 72188	TestNo: EPA 8270CSI EPA 3510C			Analysis Date: 1/21/2019				SeqNo: 3266870		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	0.700	0.20	1.000	0	70.0	43	140	0.7300	4.20	30	
Anthracene	0.730	0.20	1.000	0	73.0	41	132	0.7200	1.38	30	
Benzo(a)anthracene	0.820	0.20	1.000	0	82.0	58	141	0.8700	5.92	30	
Benzo(a)pyrene	0.640	0.20	1.000	0	64.0	31	142	0.6700	4.58	30	
Benzo(b)fluoranthene	0.650	0.20	1.000	0	65.0	42	156	0.6700	3.03	30	
Benzo(g,h,i)perylene	0.590	0.20	1.000	0	59.0	12	171	0.6200	4.96	30	
Benzo(k)fluoranthene	0.680	0.20	1.000	0	68.0	49	165	0.7200	5.71	30	
Chrysene	0.810	0.20	1.000	0	81.0	51	155	0.8400	3.64	30	
Dibenz(a,h)anthracene	0.620	0.20	1.000	0	62.0	28	153	0.6300	1.60	30	
Fluoranthene	0.840	0.20	1.000	0	84.0	47	158	0.8500	1.18	30	
Fluorene	0.720	0.20	1.000	0	72.0	40	140	0.7400	2.74	30	
Indeno(1,2,3-cd)pyrene	0.640	0.20	1.000	0	64.0	20	167	0.6700	4.58	30	
Naphthalene	0.720	0.20	1.000	0	72.0	39	125	0.7400	2.74	30	
Phenanthrene	0.760	0.20	1.000	0	76.0	46	144	0.7500	1.32	30	
Pyrene	0.830	0.20	1.000	0	83.0	39	158	0.8500	2.38	30	
Surr: 1,2-Dichlorobenzene-d4	0.570		1.000		57.0	27	100		0		
Surr: 2-Fluorobiphenyl	0.560		1.000		56.0	34	135		0		
Surr: 4-Terphenyl-d14	0.690		1.000		69.0	34	167		0		
Surr: Nitrobenzene-d5	0.650		1.000		65.0	25	135		0		
Sample ID: MB-72188	SampType: MBLK	TestCoo	de: 8270_W_S	SIM Units: ug/L		Prep Da	te: 1/21/20	19	RunNo: 131	319	
Client ID: PBW	Batch ID: 72188	TestN	lo: EPA 8270	CSI EPA 3510C	Analysis Date: 1/21/2019				SeqNo: 3266871		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	0.20									
1-Methylnaphthalene	ND	0.20									
Acenaphthene	ND	0.20									
Acenaphthylene	ND	0.20									
Anthracene	ND	0.20									

#### Qualifiers:

- В Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

CALIFORNIA P:562.219.7435 F:562.219.7436

11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921

EPA ID CA01638

NEVADA P:702.307.2659 F:702.307.2691 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

"Serving Clients with Passion and Professionalism"

ASSET LABORATORIES

Work Order: N033767 **Project:** SFPP Norwalk

#### ANALYTICAL QC SUMMARY REPORT

TestCode: 8270\_W\_SIMPGE

Sample ID: MB-72188	SampType: MBLK	TestCode: 8270_W_SIM Units: ug/L			Prep Date: 1/21/2019				RunNo: 131319		
Client ID: PBW	Batch ID: 72188	TestN	o: EPA 8270CSI EF	PA 3510C	Analysis Date: 1/21/2019				SeqNo: 3266871		
Analyte	Result	PQL	SPK value SPK F	Ref Val %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzo(a)pyrene	ND	0.20									
Benzo(b)fluoranthene	ND	0.20									
Benzo(g,h,i)perylene	ND	0.20									
Benzo(k)fluoranthene	ND	0.20									
Chrysene	ND	0.20									
Dibenz(a,h)anthracene	ND	0.20									
Fluoranthene	ND	0.20									
Fluorene	ND	0.20									
Indeno(1,2,3-cd)pyrene	ND	0.20									
Naphthalene	ND	0.20									
Phenanthrene	ND	0.20									
Pyrene	ND	0.20									
Surr: 1,2-Dichlorobenzene-d4	0.580		1.000	58.0	27	100					
Surr: 2-Fluorobiphenyl	0.590		1.000	59.0	34	135					
Surr: 4-Terphenyl-d14	0.680		1.000	68.0	34	167					
Surr: Nitrobenzene-d5	0.670		1.000	67.0	25	135					

Qualifiers:

- В Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
  - CALIFORNIA P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921

EPA ID CA01638

3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

Е

ND

NEVADA | P:702.307.2659 F:702.307.2691

Not Detected at the Reporting Limit

Value above quantitation range

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values



ASSET LABORATORIES
#### Asset Laboratories 3151 W. Post Road Las Vegas, NV 89118 Tel: 702-307-2659 Fax: 702-307-2691 Marlon Cartin (marlon@assetlaboratories.com)

CHAIN OF CUSTODY RECORD									
DATE:	「	-19							
PAGE:	1	of	1						

Section A Required Client In	formation:	Section B Required Project Information:	Section C Invoice Information.		Section D Sampler Information:
Company:	Kinder Morgan Energy Partners Attention: Steve Defibaugh	Report To: Eric Davis	Attention:	Steve Defibaugh - Ref. AFE# 81195	Sampler Nils Orliczky Name
Address:	1100 Town & Country Road Orange, CA 92868	Copy To: Steve Defibaugh	Company Name:	Kinder Morgan Energy Partners	Sampler MCS
Email To:	steve_defibaugh@kindermorgan.com eric.davis@ch2m.com	Purchase Order No.:	Address:	1100 Town & Country Road Orange, CA 92858	Sample 1-15-19
Phone: 714	4-560-4802 Fax: 714-560-4801	Project Name: SFPP Norwalk	ATL Project Manager:	Marlon Cartin	\$

Section E				1	CONTAIN	NER TYPE			Р	P	A	A	A								[			
reacquined 5.	Inspie Inspirmalizon				# OF CO	NTAINERS			1	1	2	2	2	2										
					PRESERV	ΑΤΙνε		1		N			- 1	-		1								
					VOLUME	E (mL)		1	1000	500	1000	100	0 100	00					1					
₩ WELL	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAN	1PLING	OTAL # OF CONTAINERS	Analysis Test	otal Suspended Solids (SM2540D)	Aetals (EPA 200.8 Cu, Pb, Zn)	**************************************	AHs [SW8270A-SIM]	otal PCBs (EPA 16684)											
	HTTMDL-01-15	Mouth of San Gabriel River	WW	/ G	1/15/19	10FT	8		x	x	x	X	x I			+		+	+					N033767-01
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IL#2	250 6	HO 30	20 \		W = Water	WW = Wastewater		H = HCl	N = HNO3	S = H2SO4	7 = Tube	V = VO4	P = Pint	A= Amber
		1 -			O = Oil	P = Product	S = Soit	Z = Zn(AC)Z	O = NaOH	T = Na2S2C3	i≖ Jar	B = Ted!ar	G = Glass	
					Others/Specify:			Others/Specify:			M = Metal	P = Plastic	C = Can	

## **ASSET Laboratories**

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/15/2019	)			Workorder:	N033767		
Rep sample Temp (Deg C):	2.5				IR Gun ID:	2		
Temp Blank:	Yes	🗌 No						
Carrier name:	Golden St	ate Overnight						
Last 4 digits of Tracking No .:	3320			Packing	Material Used:	Bubble Wrap		
Cooling process:	✓ Ice	Ice Pack	Dry Ice	Other	None			
		<u>Sa</u>	ample Recei	ot Checklist		_		_
1. Shipping container/cooler in g	ood conditic	on?			Yes 🖌	No	Not Present	
2. Custody seals intact, signed,	dated on shi	ippping container/	cooler?		Yes	No 🗌	Not Present	$\checkmark$
3. Custody seals intact on samp	le bottles?				Yes 🗌	No 🗌	Not Present	$\checkmark$
4. Chain of custody present?					Yes 🗹	No 🗌		
5. Sampler's name present in Co	OC?				Yes 🗹	No 🗌		
6. Chain of custody signed when	n relinquishe	ed and received?			Yes 🗹	No 🗌		
7. Chain of custody agrees with	sample labe	els?			Yes 🗹	No 🗌		
8. Samples in proper container/b	oottle?				Yes 🗹	No 🗌		
9. Sample containers intact?					Yes 🗹	No 🗌		
10. Sufficient sample volume for	indicated te	est?			Yes 🗹	No 🗌		
11. All samples received within h	nolding time	?			Yes 🗹	No 🗌		
12. Temperature of rep sample of	or Temp Bla	nk within acceptal	ole limit?		Yes 🗹	No 🗌	NA	
13. Water - VOA vials have zero	headspace	?			Yes 🗌	No 🗌	NA	$\checkmark$
14. Water - pH acceptable upon	receipt?	or Motolo			Yes 🗹	No 🗌	NA	
	i,3), p⊓<2 ii							
15. Did the bottle labels indicate	correct pres	servatives used?			Yes 💌	No 🗀	NA	
16. Were there Non-Conforman	ce issues at as Client not	login? tified?			Yes 🗌 Yes 🗍	No 🗌 No 🗍	NA NA	
Comments:								_

For: 0 RM 1/16/2019

### MBC 1/18/2019

## **ASSET Laboratories**

WORK C	RDER Summarv					16-Jan-19					
Client ID: Project: Comments:	CH2HI03 SFPP Norwalk		QC Level	I: RTNE		WorkOrde Date Receive	er: N033767 ed: 1/15/2019				
Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld MS Sub Storage				
N033767-001A	HTTMDL-01-15	1/15/2019 10:17:00 AM	1/22/2019	Wastewater	SM2540D	TOTAL NON-FILTERABLE RESIDUE	WW-CA				
			1/22/2019			Total Suspended Solids Prep	WW-CA				
N033767-001B			1/22/2019			AQPREP TOTAL METALS: ICP, FLAA	WW				
			1/22/2019		EPA 200.8	TOTAL METALS BY ICPMS	WW				
N033767-001C			1/22/2019		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM	ww				
			1/22/2019		EPA 8270CSIM	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS-SIM	ww				
N033767-001D			1/22/2019		EPA 8081A	ORGANOCHLORINE PESTICIDES BY GC/ECD	SUB				
N033767-001E			1/22/2019		1668c	PCB Congener	SUB				
N033767-002A	FOLDER	1/22/2019	1/22/2019		Folder	Folder					
			1/22/2019		Folder	Folder					



SUB: TEST AMERICA

# CHAIN OF CUSTODY RECORD

Contact us: Nevada: 3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.3072691 California: 11110 Artesia Bivd., Ste B, Cerritos, CA 90703 P: 562.219.7455 F: 562.219.7436 www.assetlaboratories.com

Cilent:	ASSET Laborate	ories			Report to: Marlon Cartin					Bill to: Eh	vira Allega	aert						EDD Requirem		Ient	Т	0	Vac	Sampe	Receipt Co	onditic	n		
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Phone:	562,219,7435	Fax			Addres	s: Same				Email to:				PO#		N227	1674	s	pacify:				LEN	/EL IV		4. Seal Pre	ent [	5 (	]
						Cante				<u>elvira@a</u>	ssetlabora	tories.c	<u>om</u>			1337	07A						Reç	Judator	y [	5. IR numb	ər		
Submit	Marlon C	artin								Phone:				Fax				G	lobal (C	);			Spe	cify Si	late:	6. Method ( Cooling	4		
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White = Laboratory Copy

Yellow = Customer's Copy

## **ASSET Laboratories**

3151-3153 W Post Rd., Las Vegas, NV 89118 www.atl-labs.com TEL: 7023072659 FAX: 7023072691

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: RTNE

Subcontractor:					
Pace Analytical Services, Inc.	TEL:	(612) 607-1700	Field Sampler:	Nils Orliczky	
1700 Elm Street, Suite 200	FAX:	(612) 607-6444			
Minneapolis, MN 55414	Acct #:				16-Jan-19

					Requested Tests
Sample ID	Matrix	Date Collected	Bottle Type	1668¢ A	
N033767-001E / HTTMDL-01-15	Wastewater	1/15/2019 10:17:00 AM	32OZA	1	

EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format.

Please CC Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N33767B Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-day TAT.

Please analyze for Total PCBs by EPA 1668A at 250 pg/L. California sample.

Fedex #: 774211607632

			Date/Time		Date/Time
Relinquished by:	YPT	1/16/201	19 16:00	Received by:	
Relinquished by:				Received by:	

Ship From

MOLKY BRAR

Ship To

COD: \$0.00 Weight: 0 lb(s)

**Reference:** 



## 800-322-5555 www.gso.com

CPS Tracking #: 543453320 ASSET LABORATORIES 11110 ARTESIA BLVD, SUITE B CERRITOS, CA 90703 **ASSET LABORATORIES** LVS MARLON CARTIN 3151 W. POST RD,, LAS VEGAS, NV 89118 LAS VEGAS C89102A **Delivery Instructions:** HOLD FOR PICK-UP Signature Type: STANDARD 96755170 Print Date: 1/15/2019 6:08 PM TL#2 2.5°C

#### LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Step 2: Fold this page in half.

Step 3: Securely attach this label to your package and do not cover the barcode.

#### **TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

## TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Tel: (949)261-1022

# TestAmerica Job ID: 440-230387-1

Client Project/Site: SFPP Norwalk

## For:

Advanced Technology Laboratories dba Asset Laboratories 3151-3153 W Post Road Las Vegas, Nevada 89118

## Attn: Marlon Cartin

Authorized for release by: 1/24/2019 9:54:26 PM Janice Hsu, Project Manager I janice.hsu@testamericainc.com

Designee for

..... Links

Review your project results through

**Total**Access

Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Danielle Roberts, Senior Project Manager (949)261-1022 danielle.roberts@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# **Table of Contents**

Cover Page	1
Table of Contents	2
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Detection Summary	5
Client Sample Results	6
Surrogate Summary	7
Method Summary	8
Lab Chronicle	9
QC Sample Results	10
QC Association Summary	12
Definitions/Glossary	13
Certification Summary	14
Chain of Custody	15
Receipt Checklists	16

## Sample Summary

Client: Advanced Technology Laboratories Project/Site: SFPP Norwalk

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-230387-1	HTTMDL-01-15	Water	01/15/19 10:17	01/16/19 09:30

### Job ID: 440-230387-1

### Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-230387-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 1/16/2019 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

#### GC Semi VOA

Method(s) 8081A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 440-523363 and analytical batch 440-523799. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-523363/2-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **Organic Prep**

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 8081A\_LL preparation batch 440-523363. LCS was performed in duplicate to provide precision of data

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Client Sample ID: HTTMDL-01-15

No Detections.

Lab Sample ID: 440-230387-1

This Detection Summary does not include radiochemical test results.

#### Client Sample ID: HTTMDL-01-15

Date Collected: 01/15/19 10:17 Date Received: 01/16/19 09:30

- Mothod: 8081A - Organochloring Posticidos (	20)								
Analyte Resu	lt Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	5
4,4'-DDD N		0.0053	0.0043	ug/L		01/18/19 09:39	01/21/19 14:38	1	
4,4'-DDE N	С	0.0053	0.0032	ug/L		01/18/19 09:39	01/21/19 14:38	1	6
4,4'-DDT N	C	0.011	0.0043	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Aldrin N	5	0.0053	0.0016	ug/L		01/18/19 09:39	01/21/19 14:38	1	
alpha-BHC N	C	0.0053	0.0027	ug/L		01/18/19 09:39	01/21/19 14:38	1	
beta-BHC N	C	0.011	0.0043	ug/L		01/18/19 09:39	01/21/19 14:38	1	8
Chlordane (technical) N	C	0.11	0.086	ug/L		01/18/19 09:39	01/21/19 14:38	1	
delta-BHC N	C	0.0053	0.0037	ug/L		01/18/19 09:39	01/21/19 14:38	1	9
Dieldrin N	C	0.0053	0.0021	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Endosulfan I N	C	0.0053	0.0032	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Endosulfan II N	C	0.0053	0.0021	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Endosulfan sulfate N	C	0.011	0.0032	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Endrin N	C	0.0053	0.0021	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Endrin aldehyde N	C	0.011	0.0021	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Endrin ketone N	C	0.011	0.0075	ug/L		01/18/19 09:39	01/21/19 14:38	1	
gamma-BHC (Lindane) N	C	0.011	0.0032	ug/L		01/18/19 09:39	01/21/19 14:38	1	40
Heptachlor N	C	0.011	0.0032	ug/L		01/18/19 09:39	01/21/19 14:38	1	13
Heptachlor epoxide N	C	0.0053	0.0027	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Methoxychlor N	C	0.0053	0.0037	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Toxaphene N	C	0.53	0.27	ug/L		01/18/19 09:39	01/21/19 14:38	1	
Surrogate %Recover	v Qualifier	Limits				Prepared	Analvzed	Dil Fac	
DCB Decachlorobiphenvl (Surr)	7					01/18/19 09:39	01/21/19 14:38	1	
Tetrachloro-m-xylene 3	5	10 - 123				01/18/19 09:39	01/21/19 14:38	1	

TestAmerica Job ID: 440-230387-1

# Lab Sample ID: 440-230387-1

Matrix: Water

### Method: 8081A - Organochlorine Pesticides (GC)

Μ	at	rix	(;	W	at	er

Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		DCB2	TCX2	
ab Sample ID	Client Sample ID	(28-108)	(10-123)	
0-230387-1	HTTMDL-01-15	67	35	
6 440-523363/2-A	Lab Control Sample	80	68	
SD 440-523363/3-A	Lab Control Sample Dup	83	71	
440-523363/1-A	Method Blank	82	71	

#### Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

#### Client: Advanced Technology Laboratories Project/Site: SFPP Norwalk

Method Description

Organochlorine Pesticides (GC)

Liquid-Liquid Extraction (Separatory Funnel)

Method

8081A

3510C

Protocol References:

Laboratory References:

Laboratory

TAL IRV

TAL IRV

Protocol

SW846

SW846

5
8
9
4 9

Lab Sample ID: 440-230387-1

Matrix: Water

#### Client Sample ID: HTTMDL-01-15 Date Collected: 01/15/19 10:17

## Date Received: 01/16/19 09:30

_										
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			935 mL	2 mL	523363	01/18/19 09:39	HCK	TAL IRV
Total/NA	Analysis	8081A		1			523799	01/21/19 14:38	D1D	TAL IRV

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Sample ID: MB 440-523363/1-A

Matrix: Water

Analysis Batch: 523799

Method: 8081A - Organochlorine Pesticides (GC)

MB MB

82

71

01/18/19 09:39 01/21/19 12:26

01/21/19 12:26

Prep Type: Total/NA

**Client Sample ID: Lab Control Sample** 

01/18/19 09:39

# **Client Sample ID: Method Blank** Prep Type: Total/NA Prep Batch: 523363 -----

5
8
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10

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1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
4,4'-DDD	ND		0.0050	0.0040	ug/L		01/18/19 09:39	01/21/19 12:26	1	
4,4'-DDE	ND		0.0050	0.0030	ug/L		01/18/19 09:39	01/21/19 12:26	1	
4,4'-DDT	ND		0.010	0.0040	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Aldrin	ND		0.0050	0.0015	ug/L		01/18/19 09:39	01/21/19 12:26	1	
alpha-BHC	ND		0.0050	0.0025	ug/L		01/18/19 09:39	01/21/19 12:26	1	
beta-BHC	ND		0.010	0.0040	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Chlordane (technical)	ND		0.10	0.080	ug/L		01/18/19 09:39	01/21/19 12:26	1	
delta-BHC	ND		0.0050	0.0035	ug/L		01/18/19 09:39	01/21/19 12:26	1	_
Dieldrin	ND		0.0050	0.0020	ug/L		01/18/19 09:39	01/21/19 12:26	1	1
Endosulfan I	ND		0.0050	0.0030	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Endosulfan II	ND		0.0050	0.0020	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Endosulfan sulfate	ND		0.010	0.0030	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Endrin	ND		0.0050	0.0020	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Endrin aldehyde	ND		0.010	0.0020	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Endrin ketone	ND		0.010	0.0070	ug/L		01/18/19 09:39	01/21/19 12:26	1	4
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Heptachlor	ND		0.010	0.0030	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Methoxychlor	ND		0.0050	0.0035	ug/L		01/18/19 09:39	01/21/19 12:26	1	
Toxaphene	ND		0.50	0.25	ug/L		01/18/19 09:39	01/21/19 12:26	1	
	МВ	МВ								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	

Lab Sample ID: LCS 440-523363/2-A
Matrix: Water
Analysis Batch: 523799

DCB Decachlorobiphenyl (Surr)

Tetrachloro-m-xylene

Analysis Batch: 523799							Prep Batch: 523363
-	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
4,4'-DDD	0.250	0.194		ug/L		78	50 - 128
4,4'-DDE	0.250	0.195		ug/L		78	49 - 121
4,4'-DDT	0.250	0.197		ug/L		79	41 - 140
Aldrin	0.250	0.155		ug/L		62	37 - 115
alpha-BHC	0.250	0.165		ug/L		66	44 <sub>-</sub> 115
beta-BHC	0.250	0.192		ug/L		77	46 _ 121
delta-BHC	0.250	0.179		ug/L		72	32 - 129
Dieldrin	0.250	0.185		ug/L		74	39 - 126
Endosulfan I	0.250	0.190		ug/L		76	47 - 115
Endosulfan II	0.250	0.197		ug/L		79	47 _ 120
Endosulfan sulfate	0.250	0.178		ug/L		71	48 - 126
Endrin	0.250	0.194		ug/L		78	43 - 127
Endrin aldehyde	0.250	0.181		ug/L		73	43 - 120
Endrin ketone	0.250	0.190		ug/L		76	47 - 123
gamma-BHC (Lindane)	0.250	0.167		ug/L		67	45 _ 116
Heptachlor	0.250	0.171		ug/L		69	37 _ 115
Heptachlor epoxide	0.250	0.184		ug/L		74	41 - 129
Methoxychlor	0.250	0.195		ug/L		78	44 _ 141

28 - 108

10 - 123

#### Client: Advanced Technology Laboratories Project/Site: SFPP Norwalk

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	80		28 - 108
Tetrachloro-m-xylene	68		10 - 123

#### Lab Sample ID: LCSD 440-523363/3-A Matrix: Water

#### A

Matrix: Water							Prep T	ype: Tot	al/NA
Analysis Batch: 523799							Prep I	Batch: 5	23363
-	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4,4'-DDD	0.250	0.217		ug/L		87	50 - 128	11	26
4,4'-DDE	0.250	0.210		ug/L		84	49 _ 121	8	22
4,4'-DDT	0.250	0.209		ug/L		84	41 _ 140	6	20
Aldrin	0.250	0.166		ug/L		66	37 _ 115	7	24
alpha-BHC	0.250	0.178		ug/L		71	44 - 115	8	26
beta-BHC	0.250	0.205		ug/L		82	46 _ 121	6	27
delta-BHC	0.250	0.192		ug/L		77	32 - 129	7	35
Dieldrin	0.250	0.199		ug/L		80	39 - 126	8	35
Endosulfan I	0.250	0.201		ug/L		80	47 _ 115	6	27
Endosulfan II	0.250	0.208		ug/L		83	47 - 120	5	29
Endosulfan sulfate	0.250	0.189		ug/L		76	48 - 126	6	26
Endrin	0.250	0.204		ug/L		82	43 - 127	5	35
Endrin aldehyde	0.250	0.194		ug/L		78	43 - 120	7	35
Endrin ketone	0.250	0.204		ug/L		82	47 - 123	7	27
gamma-BHC (Lindane)	0.250	0.179		ug/L		72	45 - 116	7	28
Heptachlor	0.250	0.183		ug/L		73	37 _ 115	7	35
Heptachlor epoxide	0.250	0.197		ug/L		79	41 - 129	7	35
Methoxychlor	0.250	0.204		ug/L		82	44 <sub>-</sub> 141	5	35
	LCSD LCSD								

	LUSD	L03D			
Surrogate	%Recovery	Qualifier	Limits		
DCB Decachlorobiphenyl (Surr)	83		28 - 108		
Tetrachloro-m-xylene	71		10 - 123		

Client Sample ID: Lab Control Sample Dup

5

10

Lab Control Sample Dup

523363

### GC Semi VOA

#### Prep Batch: 523363

LCSD 440-523363/3-A

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-230387-1	HTTMDL-01-15	Total/NA	Water	3510C	
MB 440-523363/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-523363/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-523363/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
Analysis Batch: 52379	9				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-230387-1	HTTMDL-01-15	Total/NA	Water	8081A	523363
MB 440-523363/1-A	Method Blank	Total/NA	Water	8081A	523363
LCS 440-523363/2-A	Lab Control Sample	Total/NA	Water	8081A	523363

Total/NA

Water

8081A

## **Definitions/Glossary**

#### Client: Advanced Technology Laboratories Project/Site: SFPP Norwalk

### Glossary

Project/Site: S	Project/Site: SFPP Norwalk				
Glossary					
Abbreviation	These commonly used abbreviations may or may not be present in this report.				
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis				
%R	Percent Recovery		5		
CFL	Contains Free Liquid				
CNF	Contains No Free Liquid				
DER	Duplicate Error Ratio (normalized absolute difference)				
Dil Fac	Dilution Factor				
DL	Detection Limit (DoD/DOE)				
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample				
DLC	Decision Level Concentration (Radiochemistry)		<b>X</b>		
EDL	Estimated Detection Limit (Dioxin)				
LOD	Limit of Detection (DoD/DOE)		9		
LOQ	Limit of Quantitation (DoD/DOE)				
MDA	Minimum Detectable Activity (Radiochemistry)				
MDC	Minimum Detectable Concentration (Radiochemistry)				
MDL	Method Detection Limit				
ML	Minimum Level (Dioxin)				
NC	Not Calculated		12		
ND	Not Detected at the reporting limit (or MDL or EDL if shown)				
PQL	Practical Quantitation Limit				
QC	Quality Control				
RER	Relative Error Ratio (Radiochemistry)				
RL	Reporting Limit or Requested Limit (Radiochemistry)				
RPD	Relative Percent Difference, a measure of the relative difference between two points				
TEF	Toxicity Equivalent Factor (Dioxin)				
TEQ	Toxicity Equivalent Quotient (Dioxin)				

## Accreditation/Certification Summary

Client: Advanced Technology Laboratories Project/Site: SFPP Norwalk TestAmerica Job ID: 440-230387-1

**13** 14

#### Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program		EPA Re	gion Identific	ation Number	Expiration Date
California	LA Cty Sa	nitation Districts	9	10256		06-30-19
The following analytes	are included in this report. bu	It the laboratory is not o	certified by the	governing authority.	. This list mav inc	lude analytes for which
the agency does not of	fer certification.	,	· · · · , · ·	5	, .	···· · ,··· · ,
Analysis Method	Prep Method	Matrix		Analyte		
8081A	3510C	Water		4,4'-DDD		
8081A	3510C	Water		4,4'-DDE		
8081A	3510C	Water		4,4'-DDT		
8081A	3510C	Water		Aldrin		
8081A	3510C	Water		alpha-BHC		
8081A	3510C	Water		beta-BHC		
8081A	3510C	Water		Chlordane (techni	ical)	
8081A	3510C	Water		delta-BHC		
8081A	3510C	Water		Dieldrin		
8081A	3510C	Water		Endosulfan I		
8081A	3510C	Water		Endosulfan II		
8081A	3510C	Water		Endosulfan sulfate	e	
8081A	3510C	Water		Endrin		
8081A	3510C	Water		Endrin aldehyde		
8081A	3510C	Water		Endrin ketone		
8081A	3510C	Water		gamma-BHC (Line	dane)	
8081A	3510C	Water		Heptachlor		
8081A	3510C	Water		Heptachlor epoxic	le	
8081A	3510C	Water		Methoxychlor		
8081A	3510C	Water		Toxaphene		
California	State Prog	gram	9	CA ELA	P 2706	06-30-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Matrix

Analysis Method

Prep Method

Analyte





 Contact us:

 Nevada
 3151 W. Post Road, Las Vegas, NV 89118

 P: 702.307.2659
 F. 702.3072691

 California: 11110 Artesia Bivd., Ste B, Cerritos, CA 90703
 P

 P 562 219 7435
 F

 www.assetlaboratories.com

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	newsresh						Page 1	of	<sup>1</sup>										
Client.	ASSET Laboratories		Report to. Marlos	n Cartin			Bill to: El	vira Alleç	jaert				EDD Requi	irement		QAI	/QC	Sampe Receipt	Condition
Addres	s: 11110 Artesia Blvd	Ste B	Company <sup>®</sup> Same				Address:	Same					Excel EDD Geotracker	Excel EDD RTNE		1 Chilled	Y N		
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ubmi	Marlon Cartin						Phone:			F	ax:		Global ID		Spec	afy Sta	ate	6 Method of Cooking	
tie:			Phone <sup>.</sup>	Fax:				Matrix				Analyses Re	uested	_	1			Sample Temp	
gnati	ure.	Date:	Sampled by:				Ground	Sediment		1					-				
			l attest to the validity an	d authenticity of this sam	ple i am aware	that tampering	Potable			81A)					H	Т	Co	uner	
areby	authorize ASSET Labs to perform the	tests indicated below	considered fraud and m	ay be grounds for legal a	iction	or conscion is				W80							7		
	SFPP Norwalk						NPDES [	Solid	]	ES(S					1 Time	ype	OLT Tra	cking No	
ojeci	numper:					r	Surface	]		E					Aroun	f conta	SER		
em Io,	Laboratory Work Order No.	Sam	ple ID/Location		Date	Time	Water	Solid	Others	PES	_				E L	20	Вя	Remarks	
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12 Inqui	shed by (Signature and Printed Name)	· · · · · · · · · · · · · · · · · · ·	Date / Time	Received by (Signature	and Printed Na	me)	L		Døte / Time		1	Turn Around Time (T	AT)	Specia	il Instru	uction	:		
$\langle$	Martes	1/15/19	1720									□ A < 24 Hrs or	Same Day TAT	Plea	ase ai	nalyz	te for a	2,4-DDT (RL=0.)	l ppb)
194	ned by (Sphature and Printed Name)		Date / Time	Received by (Signature	and Printed Na	me)			Dete / Time			B = Next Wor	kday	and	4,4-	DDT	(RL=0	.05ppb) by EPA	8081
												D = 3 Workda	iys	R	eport i	forma	at: MDL	/PQL "J-flagged".	EDD
ingus	shed by (Signature and Printed Name)		Date / Time	Received by Signature	and Printed Na	me)			Date / Time			☑ E ≈ Routine 5	-7 Workdays		Requi	areme	ent: Cr	Lucille Colorind	
				1/4-/-		IA-FI	FV	1 6/1	<u>993</u>	$\mathcal{O}$		TAT Starts at 5 AM thi samples received	e followling day if after 3 00 PM.	li li	ucille.g	golosi	inda@a	ssetlaboratories.	com
ma Hsamp equiar	oles will be disposed in 45 days upon receipt and re TAT is 5.7 bissness days, surcharges will apply for :	cords will be destroyed in 5 years upon submissio	n of final report	5 Tep Steps and Equipmen 6 ASSET Laboratories is not 7 Terms are not 30 Days	it Blanks are billable responsible for samp	sample des collected using it	icorrect methodolo	BY				Preservatives: H = HCI N = HNO	3 S = H2SQ4	C = 4°C	C T	entain = Tub	ner Type ie	V=VOA P=	Pint
Less	than 24 Hrs = 200% Next Day = 100% 2 1 EDD formats will be an additional 3% of the total p	Vorkdays = 50% 3 Workdays = 35% 4 V roject price	Vorkdays = 20%	8 All reports are submitted	n electronic format TAT and Surcharges	Please inform ASSET will varv	Laboratror <del>ies</del> if ha	rd copy of report is	needed			Z = Zn(AC)2 O = NaO Others/Specify	H T = Na2S2O3	1	J	= Jar	tal	B = Tedlar G = P = Plastic C =	Glass Can
.dd 103	surcharge for Level III Data Packades, 15% for Lev	ei IV Data Packages Cuic barge annied on total p	miert prize	White =	Laboratory C	ору						Yellow = Customer's	Сору						
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									ω										

#### Client: Advanced Technology Laboratories

#### Login Number: 230387 List Number: 1

Creator: Bonta, Lucia F

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 440-230387-1

List Source: TestAmerica Irvine



www.pacelabs.com

## **Report Prepared for:**

Marlon Cartin Asset Laboratories 3151 West Post Road Las Vegas NV 89118

# REPORT OF LABORATORY ANALYSIS FOR PCBs

**Report Prepared Date:** January 31, 2019

Pace Analytical Services, LLC. 1700 Elm Street Minneapolis, MN 55414 Phone: 612.607.1700 Fax: 612.607.6444

## **Report Information:**

Pace Project #: 10461723 Sample Receipt Date: 01/17/2019 Client Project #: N033767 Client Sub PO #: N033767 State Cert #: 2929

### **Invoicing & Reporting Options:**

The report provided has been invoiced as a Level 2 PCB Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

February 01, 2019 Kirsten Hogberg, Project Manager (612) 607-6407 (612) 607-6444 (fax) kirsten.hogberg@pacelabs.com



## **Report of Laboratory Analysis**

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The results relate only to the samples included in this report.



## **DISCUSSION**

This report presents the results from the analyses performed on one sample submitted by a representative of Asset Labs. The sample was analyzed for the presence or absence of polychlorobiphenyls (PCBs) using a modified version of USEPA Method 1668A. Reporting limits for the PCB congeners were set to correspond to the statistical MDL concentrations. Reporting limits determined based on the signal to noise ratio were flagged "A" with levels below the calibration range flagged "J" as estimated concentrations.

The dilution level noted on the data tables is being adjusted to allow the correct values to populate the electronic deliverables as well as the data tables. Samples and MDL extracts were analyzed at elevated volumes. That volume is being treated as a 1x dilution for calculation purposes, with larger dilutions being factored from that volume.

The recoveries of the isotopically-labeled PCB internal standards in the sample extract ranged from 28-95%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1668A. Since the quantification of the native congeners was based on isotope dilution and internal standard methodology, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCB congeners at the reporting limits. This indicates that the sample processing procedures did not significantly contribute to the PCB content determined for the sample material.

Laboratory spike samples were also prepared with the sample batch using reference material that had been fortified with native standards. The results show that the spiked native compounds were recovered at 89-126%, with relative percent differences of 0.0-10.3%. These values were within method limits. Matrix spikes were not extracted with this sample batch.

# **REPORT OF LABORATORY ANALYSIS**

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## Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - Pet	1240
Alabama	40770	Mississippi	MN00064
Alaska - DW	MN00064	Missouri - DW	10100
Alaska - UST	17-009	Montana	CERT0092
Arizona	AZ0014	Nebraska	NE-OS-18-06
Arkansas - DW	MN00064	Nevada	MN00064
Arkansas - WW	88-0680	New Hampshire	2081
CNMI Saipan	MP0003	New Jersey (NE	MN002
California	2929	New York	11647
Colorado	MN00064	North Carolina	27700
Connecticut	PH-0256	North Carolina -	27700
EPA Region 8+	via MN 027-053	North Carolina -	530
Florida (NELAP	E87605	North Dakota	R-036
Georgia	959	Ohio - DW	41244
Guam	17-001r	Ohio - VAP	CL101
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon - Primar	MN300001
Illinois	200011	Oregon - Secon	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
lowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky - DW	90062	South Dakota	NA
Kentucky - WW	90062	Tennessee	TN02818
Louisiana - DE	03086	Texas	T104704192
Louisiana - DW	MN00064	Utah (NELAP)	MN00064
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Massachusetts	M-MN064	West Virginia -	382
Michigan	9909	West Virginia -	9952C
Minnesota	027-053-137	Wisconsin	999407970
Minnesota - De	via MN 027-053	Wyoming - UST	2926.01

# **REPORT OF LABORATORY ANALYSIS**

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# Appendix A

Sample Management

	ASSET Labor 3151-3153 W Post Rd.	<b>ratories</b> , Las Vegas, NV 89118		(	CHAIN-O	F-CUSTO	)DY RE	CORD	Page 1 of 1	
	www.atl-labs.com TEL: 7023072659	FAX: 7023072691			· · · · · ·	QC Level:	RTNE		:104617 ////////////////////////////////////	' <b>2</b> 3
Subcontractor: Pace Analytic 1700 Elm Stru Minneapolis	al Services, Inc. eet, Suite 200 MN 55414	TEL: FAX: Acct #	(612) 607-1700 (612) 607-6444	ł		Field Sampler:	Nils Orlicz	ky	3	
	Sample ID	Matri	x Da	ate Collected	Bottle Type	1668 <b>¢</b> A	Reques	ted Tests	16-Jan-19	

320ZA

1

00

1/15/2019 10:17:00 AM

EDD Requirement CH2MHILL Labspec 7 edata. Please report "J" flagged down to MDL format.

Wastewater

Please CC Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

N033767-001E / HTTMDL-01-15

Please use PO#:N337678 Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-day TAT.

Please analyze for Total PCBs by EPA 1668A at 250 pg/L. California sample.

			_ Fedex #: 77	4211607632			
		Date/Time				Date/Time	
Relinquished by:	- YD	1/16/2019 16:00	Received by:	Cur Mand	PALE	1/17/19 840	T=4.9
Relinquished by:			Received by:	<i>v</i>			

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Page 5 of 25

		Do	ocument	Name:		Docum	nent Revised	: 310ct201	8	1
	Mana Anali diant	Sample Con	dition Up	on Recei	pt Form		Page 1 of	2	-	
1	AGB Analytical		ocumen	t No.:		1. D M	ssuing Auth	ority:		
		F-N	/IN-L-213	-rev.24		Pace M	linnesota Qi	ality Offic	e .	J
Sample Condition Upon Receipt	Client Name:	h		Project a	#: <b>[ WO</b>	<u>#:1(</u>	0461	.72	3	
	HANEI LO	porationes	•		PM:	JMR	Due (	)ate: Ø	1/31/	19
Courier:	Fed Ex		□C	ient	CLIEN	NT: Asse	t Labs		/1/ O1/	13
Commercial	Pace Spee	ee Other:_								
Tracking Number:	- 7792 1160	1934								
Custody Seal on C	ooler/Box Present? Yes		Seals Inta	nct?	Yes 🖾 No	Optional	l: Proj. Du	e Date:	Proj. N	ame:
Packing Material:	Bubble Wrap 🕅 Bubbl	e Bags 🗌 Non-	e 🗹	Other:	toom		Temp Bla	ank?	]Yes	No
Thermometer S Used: [	<b>⊈</b> G87A9170600254 ☐ G87A9155100842	Тур	e of Ice:	Wet	Blue	None	Dry	[]Melted		
Cooler Temp Read	(°C): <u>4.9</u> Cooler Te	mp Corrected (°C)	<u> </u>	9	Bio	logical Tissu	e Frozen?	Yes	ΠNο	MN/A
Temp should be abo	ove freezing to 6°C Correcti	on Factor:	twe	Date	e and Initials of	f Person Exa	nining Cont	ents:	CM	<u>417/19</u>
USDA Regulated So Did samples originate	il ( 🔀 N/A, water sample) e in a quarantine zone within the	Inited States: AL		GAIDU		samples origin	ate from a fo		o (intorna	tionally
NC, NM, NY, OK, OR,	SC, TN, TX or VA (check maps)?	ernica states, Aly P	,, PL, []Y	es [	No incl	uding Hawaii a	and Puerto Ric	:o)?	Yes	No
	If Yes to either question, fill o	ut a Regulated Soi	I Checkli	st (F-MN-	Q-338) and inc	lude with SC	:UR/COC pa	perwork.		
							COMMEN	TS:		
Chain of Custody Pre	esent?	Yes	No		1.	· . · ·				
Chain of Custody Fill	ed Out?	Yes	No		2.					
Chain of Custody Rel	linguished?	Yes Yes	No		3.					
Sampler Name and/	or Signature on COC?	Yes	No	□n/a	4.					
Samples Arrived with	hin Hold Time?	Yes	No		5.			·		
Short Hold Time Ana	alysis (<72 hr)?	Yes			6.					
Rush Turn Around T	ime Requested?	Yes	No		7.					
Sufficient Volume?		X Yes	No	-	8.					
Correct Containers L	Jsed?	Yes	□No		9.					
-Pace Containers	Used?	Yes	<b>⊠</b> No							
Containers Intact?		Yes	□No		10.			<u> </u>		
Filtered Volume Reco	eived for Dissolved Tests?	Yes	No	XN/A	11. Note if s	sediment is vi	sible in the d	issolved co	ontainer	
Is sufficient informat the COC?	ion available to reconcile the sam Matrix: <u> </u>	ples to Yes	□No		12.					
All containers needir checked?	ng acid/base preservation have be	en 🗖ver			13.	_HNO3 [	H₂SO₄	NaOH	Positi	ive for Res.
All containers needir	ng preservation are found to be ir			ýzny/M	Sample #				CHIO	
compliance with EPA	recommendation?	vide) 🗂 v-	<b>D</b> ••-							
Exceptions: VOA, Col	liform, TOC/DOC Oil and Grease,		Шио		Initial when		Lot # of	fadded		
DRO/8015 (water) ar	nd Dioxin/PFAS	Yes	No	ĭ⊠n/a	completed:		preserv	ative:		
Headspace in VOA Vi	ials ( >6mm)?	Yes	No	N/A	14.					
Trip Blank Present?		∐Yes 	∏No —		15.					
Enp Blank Custody Se	eais Present?	Yes	L_No	<b>⊠</b> N/A						
Pace Trip Blank Lot #	(ii purchased):									1
CLIENT	NOTIFICATION/RESOLUTION				<b>n</b> , <del>1-</del> :	Fiel	d Data Req	uired?	Yes	]No
Person Contacted:					Date/fime:	·				
comments/Resoluti	on: 								······································	
· · · · · · · · · · · · · · · · · · ·		JD - 1								
Project N	Anager Review:	e Tuchar	door	ony of this	Da s form will be con	te: 1-17-19	J	INR Contific	ation Offi	colio cut -t
hold, incorrect preserv	ative, out of temp, incorrect contai	ners).	ampies, a (	opy of this	s torrir will be sel	nt to the North			auon Offi	Le (ne out of
		ALLERIAL CONTRACTOR STRATES			La	beled by:	V	U)		



> Tel: 612-607-1700 Fax: 612-607-6444

# **Reporting Flags**

- A = Reporting Limit based on signal to noise
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- I = Interferencepresent
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDEInterference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %DExceeds limits
- Y = Calculated using average of daily RFs
- \* = SeeDiscussion

# **REPORT OF LABORATORY ANALYSIS**

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# Appendix B

Sample Analysis Summary



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Method 1668A Poly	chlorobiphenyl	Sample Anal	ysis Results
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Client - Asset Laboratories

Client's Sample ID Lab Sample ID Filename Injected By Total Amount Extracted % Moisture Dry Weight Extracted ICAL ID CCal Filename(s) Method Blank ID	N033767-00 1046172300 P190125A_ CVS 894 mL NA NA P190125A0 P190125A_ BLANK-677	01E 01 12 01 02 744		Matrix Dilution Collected Received Extracted Analyzed	Water NA 01/15/2019 10:1 01/17/2019 08:44 01/21/2019 15:03 01/25/2019 19:53	7 ) 5 9
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2'-OiCB 13C-2,2',6-TrCB 13C-2,2',6,6'-TeCB 13C-2,2',6,6'-TeCB 13C-2,3',4,4'-TeCB 13C-2,3',4,4'-TeCB 13C-2,3',4,4'-TeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5,5'-PeCB 13C-2,3',4,4',5,5'-PeCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3,3',4,4',5,5'-HpCB 13C-2,3,3',4,4',5,5'-HpCB 13C-2,3,3',4,4',5,5'-6,0-0CB 13C-2,3',3',4,4',5,5',6-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB 13C-2,2',3,3',4,5,5',6,6'-NoCB	$\begin{array}{c}1\\3\\4\\15\\19\\37\\54\\81\\77\\104\\105\\114\\118\\123\\126\\155\\156/157\\167\\169\\188\\189\\202\\205\\206\\208\\209\end{array}$	8.792 11.517 11.800 18.920 15.605 26.810 19.230 34.148 34.736 25.433 38.454 37.783 37.230 36.878 41.740 31.642 44.931 43.707 48.335 37.750 50.967 43.422 53.661 55.471 50.450 57.110	2.77 2.67 1.63 1.53 1.15 1.00 0.86 0.78 0.79 1.64 1.52 1.61 1.54 1.54 1.29 1.20 1.28 1.28 1.28 1.28 1.08 0.88 0.97 0.80 0.79 0.79	$\begin{array}{c} 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\$	$\begin{array}{c} 0.553\\ 0.757\\ 0.551\\ 1.12\\ 0.923\\ 1.25\\ 0.738\\ 1.26\\ 1.19\\ 0.761\\ 1.02\\ 1.01\\ 1.08\\ 1.08\\ 1.01\\ 1.08\\ 1.11\\ 0.875\\ 1.95\\ 0.965\\ 1.03\\ 1.01\\ 0.994\\ 1.14\\ 1.28\\ 1.74\\ 1.36\\ 1.91\\ \end{array}$	28 38 26 46 37 63 59 38 50 54 54 54 49 82 51 57 64 87 85
CleanupStandards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	22.339 34.798 40.986	1.04 1.47 1.03	2.0 2.0 2.0	1.57 1.72 1.84	79 86 92
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	14.234 24.381 31.890 40.516 53.165	1.50 0.84 1.70 1.27 0.91	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

X = Outside QC Limits

RT = Retention Time

I = Interference

ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

N033767-001E
10461723001
P190125A_12

IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		8,803	2.131	J	0.0410	0.0235
2				ND		0.0141
3		11.528	2.001	J	0.0257	0.0188
4				ND		0.0443
5				ND		0.0270
õ				ND		0.0416
7				ND		0.0225
8		15.262	0.43	J	0.0592	0.0445
9				ND		0.0255
10				ND		0.0315
11		18,335	1.35	0.428		0.225
12	12/13			ND		0.0569
13	12/13			ND		0.0569
14	,			ND		0.0907
15				ND		0.0261
16				ND		0.0639
17				ND		0.0578
18	18/30			ND		0.0702
19				ND		0.0308
20	20/28	22,354	1.06	0.0714 J		0.0676
21	21/33			ND		0.0704
22	2,,00			ND		0.0815
23				ND		0.0408
24				ND		0.0209
25				ND		0.0183
26	26/29			ND		0.0506
27	_0,_0			ND		0.0302
28	20/28	22,354	1.06	(0.0714) J		0.0676
29	26/29			ND		0.0506
30	18/30			ND		0.0702
31	10,00	22.030	1.14	0.0708 J		0.0460
32				ND		0.0244
33	21/33			ND		0.0704
34	2,,00			ND		0.0268
35				ND		0.0385
36				ND		0.0266
37				ND		0.0894
38				ND		0.0389
39				ND		0.0325
40	40/41/71			ND		0.0629
41	40/41/71			ND		0.0629
42				ND		0.0636
43	43/73			ND		0.0717
44	44/47/65	25,495	0.94 I	J	0.0984	0.0597
45	45/51			ND		0.0708
46				ND		0.0243
47	44/47/65	25 495	0.941		(0.0984)	0.0597
48				ND		0.0262

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention TimeI = Interference

ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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**Client Sample ID** 

Pace Analytical Services, LLC 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

N033767-001E

Lab Sample ID Filename		10461723001 P190125A_12				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69			ND		0.0947
50	50/53			ND		0.0633
51	45/51			ND		0.0708
52		24.396	0.62 I		0.113	0.0559
53	50/53			ND		0.0633
54				ND		0.0531
55				ND		0.0523
56				ND		0.0495
57				ND		0.0235
58	E0/62/7E					0.0408
59	59/62/75					0.0410
61	61/70/74/76	20.678	0.70			0.0040
62	50/62/75	29.070	0.70			0.0994
63	59/02/15					0.0410
64		26 887	0 79	0.0458 .1		0.0334
65	44/47/65	25 495	0.941	1	(0.0984)	0.0597
66	1			ND	(0.0001)	0.0831
67				ND		0.0369
68				ND A		0.0217
69	49/69			ND		0.0947
70	61/70/74/76	29.678	0.70	(0.123) J		0.0994
71	40/41/71			` ΝĎ		0.0629
72				ND		0.0339
73	43/73			ND		0.0717
74	61/70/74/76	29.678	0.70	(0.123) J		0.0994
75	59/62/75			ND		0.0416
76	61/70/74/76	29.678	0.70	(0.123) J		0.0994
77				ND		0.0375
78				ND		0.0390
79				ND		0.0370
80				ND		0.0321
01						0.0214
0Z 92						0.0322
84		20.80/	1 1 8 1		0.0315	0.0400
85	85/116/117	29.094	1.101		0.0315	0.0505
86	86/87/97/108/119/12	5		ND		0.0004
87	86/87/97/108/119/12	5		ND		0.138
88	88/91			ND		0.0540
89	00/01			ND		0.0368
90	90/101/113	31.921	1.69	0.119 J		0.0688
91	88/91			ND		0.0540
92	-			ND		0.0339
93	93/98/100/102			ND		0.122
94				ND		0.0510
95		28.719	1.44	0.103 J		0.0387
96				ND		0.0363

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention TimeI = Interference

ng's = Nanograms

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## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename N033767-001E 10461723001 P190125A\_12

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		0 138
98	93/98/100/102			ND		0 122
99	00,00,100,102			ND		0.0612
100	93/98/100/102			ND		0.0012
100	90/101/113	31 021	1 69	(0.119)		0.122
107	03/08/100/102	51.521	1.03			0.0000
102	33/30/100/102					0.122
103						0.0280
104						0.0473
105						0.0024
106	407/404			ND		0.0374
107	107/124			ND		0.0768
108	86/87/97/108/119/125			ND		0.138
109				ND		0.0545
110	110/115	34.040	1.62	0.203 J		0.0717
111				ND		0.0377
112				ND		0.0391
113	90/101/113	31.921	1.69	(0.119) J		0.0688
114				ND		0.0410
115	110/115	34.040	1.62	(0.203) J		0.0717
116	85/116/117			ND		0.0564
117	85/116/117			ND		0.0564
118		37.230	1.67	0.117		0.0485
119	86/87/97/108/119/125			ND		0.138
120				ND		0.0300
121				ND		0.0187
122				ND		0.0379
123				ND		0.0315
124	107/124			ND		0.0768
125	86/87/97/108/119/125			ND		0 138
126	00/01/01/100/110/120			ND		0.0353
127				ND		0.0305
128	128/166			ND		0.0500
120	120/138/163	10 533	1 20			0.0012
120	129/130/103	40.555	1.20			0.0605
130						0.0005
131		27.244	0.05.1	ND	0.0644	0.0504
132		37.314	0.951	J	0.0644	0.0601
133	404/440			ND		0.0621
134	134/143			ND		0.0412
135	135/151	35.061	0.971	J	0.0507	0.0447
136				ND		0.0273
137	100/100/100					0.0640
138	129/138/163	40.533	1.20	(0.275) J		0.114
139	139/140			ND		0.0512
140	139/140			ND		0.0512
141				ND		0.0662
142				ND		0.0384
143	134/143			ND		0.0412
144				ND		0.0532

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename		N033767-001E 10461723001 P190125A_12				
IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145				ND		0.0531
146				ND		0.0389
147	147/149	36.023	1.30	0.155 J		0.0872
148				ND		0.0383
149	147/149	36.023	1.30	(0.155) J		0.0872
150				ND		0.0291
151	135/151	35.061	0.97 l	J	(0.0507)	0.0447
152				ND		0.0446
153	153/168	39.225	1.14	0.163 J		0.0418
154				ND		0.0350
155				ND		0.0324
156	156/157			ND		0.0712
157	156/157			ND		0.0712
158				ND		0.0498
159				ND		0.0416
160				ND		0.0340
161				ND		0.0196
162	400/400/400					0.0371
163	129/138/163	40.533	1.20	(0.275) J		0.114
164				ND		0.0665
165	100/100			ND		0.0425
166	128/166			ND		0.0512
167	450/400					0.0223
168	153/168	39.225	1.14	(0.163) J		0.0418
169						0.0448
170	474/470	47.714	0.94	0.0986 J		0.0363
171	1/1/1/3					0.0023
172	171/170					0.0200
173	1/1/1/5	42,960	0.951		0.0560	0.0023
174		42.809	0.051	J	0.0509	0.0342
176						0.0314
170		13 338	1 10	0.0458		0.0414
178		43:330		0.0400 0		0.0000
179				ND		0.0217
180	180/193	46 390	0.88	0 143		0.0040
181	100/100					0.0010
182				ND		0.0369
183	183/185			ND		0.0530
184	100/100			ND		0.0211
185	183/185			ND		0.0530
186				ND		0.0283
187		41.958	0.65 I	J	0.0643	0.0261
188				ND		0.0230
189				ND		0.0474
190				ND		0.0435
191				ND		0.0433
192				ND		0.0353

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention TimeI = Interference

ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

N033767-001E
10461723001
P190125A 12

IUPAC	Co-elutions	RT	Ratio	Concentration	EMPC ng/L	EML ng/L
193	180/193	46.390	0.88	(0.143) J		0.0618
194				ŇĎ		0.0504
195				ND		0.0347
196				ND		0.0358
197	197/200			ND		0.0576
198	198/199			ND		0.112
199	198/199			ND		0.112
200	197/200			ND		0.0576
201				ND		0.0500
202				ND		0.0353
203				ND		0.0304
204				ND		0.0274
205				ND		0.0492
206				ND		0.0837
207				ND		0.0376
208				ND		0.0537
209				ND		0.0555

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612- 607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	N033767-001E
Lab Sample ID	10461723001
Filename	P190125A_12

Congener Group	Concentration ng/L	
TetelManashlara Dishaarda		
l otal Monochioro Bipnenyis	ND	
Total Dichloro Biphenyls	0.428	
Total Trichloro Biphenyls	0.142	
Total Tetrachloro Biphenyls	0.169	
Total Pentachloro Biphenyls	0.541	
Total Hexachloro Biphenyls	0.594	
Total Heptachloro Biphenyls	0.287	
Total Octachloro Biphenyls	ND	
TotalNonachloroBiphenyls	ND	
DecachloroBiphenyls	ND	
TotalPCBs	2.16	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename Injected By Total Amount Extracted ICAL ID CCal Filename(s)	BLANK-677 P190126A_ BAL 1030 mL P190126A0 P190126A_	744 _08 03 _02		Matrix Extracted Analyzed Dilution	Water 01/21/2019 1 01/26/2019 1 NA	5:05 9:29
PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes 13C-2-MoCB 13C-4-MoCB 13C-2,2'-DiCB 13C-2,2',6-TrCB 13C-2,2',6-TrCB 13C-3,4,4'-TrCB 13C-3,4,4',5-TeCB 13C-3,3',4,4'-TeCB 13C-2,2',4,6,6'-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5-PeCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5'-HxCB 13C-2,3',3',4,4',5,5',6,6'-DeCB 13C-2,3',3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB 13C-2,2',3,3',4,4',5,5',6,6'-NoCB	$\begin{array}{c} 1\\ 3\\ 4\\ 15\\ 19\\ 37\\ 54\\ 81\\ 77\\ 104\\ 105\\ 114\\ 105\\ 114\\ 123\\ 126\\ 155\\ 156/157\\ 167\\ 169\\ 188\\ 189\\ 202\\ 205\\ 206\\ 208\\ 209\end{array}$	8.781 11.506 11.788 18.898 15.560 26.794 19.198 34.117 34.735 25.401 38.452 37.765 37.195 36.859 41.722 31.642 44.897 43.690 48.318 37.731 50.968 43.404 53.640 55.451 50.407 57.089	3.41 2.89 1.61 1.57 1.11 0.97 0.77 0.74 0.80 1.67 1.62 1.64 1.56 1.53 1.57 1.25 1.28 1.22 1.24 1.08 1.08 0.88 0.94 0.74 0.91 0.67	2.0 2.0	$\begin{array}{c} 1.12\\ 1.31\\ 1.26\\ 1.54\\ 1.70\\ 1.25\\ 1.07\\ 1.25\\ 1.07\\ 1.25\\ 1.18\\ 1.06\\ 1.10\\ 1.05\\ 1.06\\ 1.04\\ 1.14\\ 1.14\\ 2.12\\ 1.02\\ 1.15\\ 1.24\\ 1.10\\ 1.20\\ 1.32\\ 1.61\\ 1.24\\ 1.58\end{array}$	56 63 77 85 62 54 63 59 53 52 53 52 57 57 53 51 57 62 50 66 80 679
Cleanup Standards 13C-2,4,4'-TrCB 13C-2,3,3',5,5'-PeCB 13C-2,2',3,3',5,5',6-HpCB	28 111 178	22.339 34.766 40.968	1.20 1.68 1.13	2.0 2.0 2.0	1.52 1.54 1.81	76 77 91
Recovery Standards 13C-2,5-DiCB 13C-2,2',5,5'-TeCB 13C-2,2',4,5,5'-PeCB 13C-2,2',3,4,4',5'-HxCB 13C-2,2',3,3',4,4',5,5'-OcCB	9 52 101 138 194	14.223 24.381 31.874 40.481 53.145	1.54 0.79 1.67 1.22 0.83	2.0 2.0 2.0 2.0 2.0	NA NA NA NA	NA NA NA NA

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits

R = Recovery outside of method roos control minus

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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## Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-67744 P190126A\_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1						0.0204
2						0.0204
2						0.0122
1						0.0103
- 5						0.0304
6				ND		0.0254
7				ND		0.0195
8				ND		0.0386
9				ND		0.0221
10				ND		0.0273
11				ND		0.195
12	12/13			ND		0.0493
13	12/13			ND		0.0493
14				ND		0.0786
15				ND		0.0226
16				ND		0.0554
17				ND		0.0501
18	18/30			ND		0.0609
19				ND		0.0267
20	20/28			ND		0.0586
21	21/33			ND		0.0610
22				ND		0.0707
23				ND		0.0354
24				ND		0.0181
25	00/00			ND		0.0159
26	26/29			ND		0.0438
27	00/00			ND		0.0262
28	20/28			ND		0.0586
29	26/29			ND		0.0438
30	18/30					0.0609
31 22						0.0390
<b>ఎ∠</b> ఎఎ	01/00					0.0211
24	21/33					0.0010
25						0.0233
30						0.0333
37						0.0231
38						0.0773
30						0.0337
40	40/41/71			ND		0.0202
40 41	40/41/71			ND		0.0545
42				ND		0.0552
43	43/73			ND		0.0621
44	44/47/65			ND		0.0518
45	45/51			ND		0.0614
						0.0011

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

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ng/L = Nanograms per liter

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-67744 P190126A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
46				ND		0 0210
47	44/47/65			ND		0.0518
48				ND		0.0227
49	49/69			ND		0.0821
50	50/53			ND		0.0549
51	45/51			ND		0.0614
52				ND		0.0485
53	50/53			ND		0.0549
54				ND		0.0460
55				ND		0.0454
56				ND		0.0429
57				ND		0.0204
58				ND		0.0354
59	59/62/75			ND		0.0361
60	00,02,10			ND		0.0475
61	61/70/74/76			ND		0.0470
62	59/62/75			ND		0.0361
63	00/02/10			ND		0.0297
64				ND		0.0290
65	44/47/65			ND		0.0200
66	++/+05			ND		0.0010
67						0.0720
68				ND		0.0320
69	10/60			ND		0.0173
70	61/70/74/76					0.0021
70	A0/A1/71					0.0002
72	40/41/71					0.0040
72	13/73					0.0234
73	43/73 61/70/7 <i>1</i> /76					0.0021
74	50/62/75					0.0002
75	59/02/75 61/70/74/76					0.0301
70	01/70/74/70					0.0002
78						0.0323
70						0.0330
80						0.0321
00 Q1						0.0270
01						0.0100
02 02						0.0279
00						0.0347
04 05	95/116/117					0.0200
00	00/110/117 06/07/07/100/110/105					0.0409
00 07	00/07/37/100/113/123					0.119
ŏ/ ٥٥	00/07/97/108/119/125					0.119
88	00/91					0.0468
89	00/101/112					0.0319
90	90/101/113			ND		0.0596

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-67744 P190126A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
01	99/01					0.0469
91	00/91					0.0400
92	02/08/100/102					0.0294
93	93/96/100/102					0.100
94						0.0442
95						0.0335
90	96/97/07/109/110/105					0.0315
97	00/01/97/100/119/120					0.119
98	93/98/100/102					0.106
99	00/00/400/400			ND		0.0530
100	93/98/100/102			ND		0.106
101	90/101/113			ND		0.0596
102	93/98/100/102			ND		0.106
103				ND		0.0248
104				ND		0.0410
105				ND		0.0541
106				ND		0.0324
107	107/124			ND		0.0666
108	86/87/97/108/119/125			ND		0.119
109				ND		0.0472
110	110/115			ND		0.0621
111				ND		0.0327
112				ND		0.0339
113	90/101/113			ND		0.0596
114				ND		0.0356
115	110/115			ND		0.0621
116	85/116/117			ND		0.0489
117	85/116/117			ND		0.0489
118				ND		0.0421
119	86/87/97/108/119/125			ND		0.119
120				ND		0.0260
121				ND		0.0162
122				ND		0.0329
123				ND		0.0273
124	107/124			ND		0.0666
125	86/87/97/108/119/125			ND		0 119
126				ND		0.0306
127				ND		0.0265
128	128/166			ND		0.0200
129	129/138/163			ND		0.0989
130	120, 100, 100			ND		0.0524
131				ND		0.0024
132						0.0400
133						0.0528
13/	13//1/3					0.0357
135	125/151					0.0307
155	100/101					0.0000

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-67744 P190126A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
136				ND		0.0237
137				ND		0.0555
138	129/138/163			ND		0.0000
130	139/140					0.0000
140	130/140					0.0444
140	139/140					0.0444
141						0.0374
142	124/142					0.0355
143	134/143					0.0337
144				ND		0.0401
145				ND		0.0460
146	4 47/4 40			ND		0.0337
147	147/149			ND		0.0756
148				ND		0.0332
149	147/149			ND		0.0756
150				ND		0.0252
151	135/151			ND		0.0388
152				ND		0.0387
153	153/168			ND		0.0363
154				ND		0.0303
155				ND		0.0281
156	156/157			ND		0.0618
157	156/157			ND		0.0618
158				ND		0.0431
159				ND		0.0361
160				ND		0.0295
161				ND		0.0170
162				ND		0.0322
163	129/138/163			ND		0.0989
164	120, 100, 100			ND		0.0577
165						0.0368
166	128/166					0.0000
167	120/100					0.0444
168	153/168					0.0135
160	155/100					0.0303
109						0.0309
170	474/470					0.0515
171	171/173			ND		0.0040
172	474/470			ND		0.0247
173	171/173			ND		0.0540
174				ND		0.0297
175				ND		0.0272
1/6				ND		0.0359
177				ND		0.0336
178				ND		0.0188
179				ND		0.0302
180	180/193			ND		0.0536

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected

NA = Not Applicable

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\* = See Discussion

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# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Blank Analysis Results

Lab Sample ID Filename BLANK-67744 P190126A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
181				ND		0.0411
182				ND		0.0320
183	183/185			ND		0.0460
184				ND		0.0183
185	183/185			ND		0.0460
186				ND		0.0245
187				ND		0.0226
188				ND		0.0200
189				ND		0.0411
190				ND		0.0377
191				ND		0.0375
192				ND		0.0306
193	180/193			ND		0.0536
194				ND		0.0437
195				ND		0.0301
196				ND		0.0310
197	197/200			ND		0.0499
198	198/199			ND		0.0969
199	198/199			ND		0.0969
200	197/200			ND		0.0499
201				ND		0.0433
202				ND		0.0306
203				ND		0.0264
204				ND		0.0238
205				ND		0.0427
206				ND		0.0725
207				ND		0.0326
208				ND		0.0465
209				ND		0.0481

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

ng/L = Nanograms per liter

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits

RT = Retention Time

I = Interference

# **REPORT OF LABORATORY ANALYSIS**

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## Method 1668A Polychlorobiphenyl Blank Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

CBLKPQ BLANK-67744 P190126A\_08

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	ND	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	ND	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**



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## Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCS-67745
Filename	P190125B_05
Total Amount Extracted	1020 mL
ICAL ID	P190125B01
CCal Filename(s)	P190125B_02
Method Blank ID	BLANK-67744

Matrix Water (Non Potable) Dilution NA Extracted 01/21/2019 15:05 01/26/2019 02:05 Analyzed CVS Injected By

	Ν	Native Analy	tes	La	beled Analyte	es
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery
1	1.0	1.03	103	2.0	1.21	60
3	1.0	0.955	95	2.0	1.43	71
4	1.0	1.17	117	2.0	1.29	64
15	1.0	0.948	95	2.0	1.62	81
19	1.0	0.975	97	2.0	1.63	81
37	1.0	0.942	94	2.0	1.40	70
54	1.0	0.973	97	2.0	1.21	60
81	1.0	0.906	91	2.0	1.49	75
77	1.0	0.929	93	2.0	1.46	73
104	1.0	1.03	103	2.0	1.12	56
105	1.0	0.923	92	2.0	1.34	67
114	1.0	0.912	91	2.0	1.30	65
118	1.0	0.922	92	2.0	1.32	66
123	1.0	0.938	94	2.0	1.29	65
126	1.0	0.947	95	2.0	1.40	70
155	1.0	1.02	102	2.0	1.24	62
156/157	2.0	1.87	93	4.0	2.58	64
167	1.0	0.917	92	2.0	1.30	65
169	1.0	0.937	94	2.0	1.39	70
188	1.0	1.03	103	2.0	1.30	65
189	1.0	0.972	97	2.0	1.29	64
202	1.0	0.981	98	2.0	1.43	71
205	1.0	0.950	95	2.0	1.64	82
206	1.0	0.950	95	2.0	2.10	105
208	1.0	0.971	97	2.0	1.59	80
209	1.0	0.939	94	2.0	2.17	109

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

ng = Nanograms

I = Interference

# **REPORT OF LABORATORY ANALYSIS**



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## Method 1668A Polychlorobiphenyls Laboratory Control Spike Analysis Results

Lab Sample ID	LCSD-67746
Filename	P190125B_06
Total Amount Extracted	1020 mL
ICAL ID	P190125B01
CCal Filename(s)	P190125B_02
Method Blank ID	BLANK-67744

Matrix Water (Non Potable) Dilution NA Extracted 01/21/2019 15:05 01/26/2019 03:06 Analyzed CVS Injected By

	Ν	Native Analytes			Labeled Analytes		
PCB Isomer	Spiked (ng)	Found (ng)	% Recovery	Spiked (ng)	Found (ng)	% Recovery	
1	1.0	1.09	109	2.0	1.05	52	
3	1.0	0.936	94	2.0	1.28	64	
4	1.0	1.26	126	2.0	1.06	53	
15	1.0	0.959	96	2.0	1.32	66	
19	1.0	0.953	95	2.0	1.36	68	
37	1.0	0.948	95	2.0	1.14	57	
54	1.0	0.969	97	2.0	1.04	52	
81	1.0	0.955	96	2.0	1.23	62	
77	1.0	0.886	89	2.0	1.22	61	
104	1.0	1.02	102	2.0	0.929	46	
105	1.0	0.934	93	2.0	1.08	54	
114	1.0	0.960	96	2.0	1.03	52	
118	1.0	1.01	101	2.0	1.04	52	
123	1.0	0.969	97	2.0	1.06	53	
126	1.0	0.897	90	2.0	1.17	58	
155	1.0	1.01	101	2.0	0.959	48	
156/157	2.0	1.78	89	4.0	2.11	53	
167	1.0	1.02	102	2.0	0.988	49	
169	1.0	0.894	89	2.0	1.16	58	
188	1.0	0.991	99	2.0	1.01	51	
189	1.0	0.898	90	2.0	1.03	51	
202	1.0	1.03	103	2.0	1.13	57	
205	1.0	0.952	95	2.0	1.33	67	
206	1.0	0.939	94	2.0	1.63	81	
208	1.0	1.02	102	2.0	1.26	63	
209	1.0	0.942	94	2.0	1.77	89	

R = Recovery outside of method 1668A control limits

Nn = Result obtained from alternate analysis

ND = Not Detected

NA = Not Applicable

NC = Not Calculated

\* = See Discussion

ng = Nanograms

I = Interference

## **REPORT OF LABORATORY ANALYSIS**



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## Method 1668A

## Spike Recovery Relative Percent Difference (RPD) Results

Client A

Asset Laboratories

Spike 1 ID Spike 1 Filename	LCS-67745 P190125B_05	Spike Spike	≥ 2 ID ≥ 2 Filename	LCSD-67746 P190125B_06	
Compound	IUPAC	Spike 1 %REC	Spike %REC	2 %RPD	
2-MoCB 4-MoCB 2,2'-DiCB 4,4'-DiCB 2,2',6-TrCB 3,4,4'-TrCB 2,2',6,6'-TeCB 3,3',4,4'-TeCB 3,4,4',5-TeCB 2,2',4,6,6'-PeCB 2,3,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5-PeCB 2,3',4,4',5,5'-HxCB 3,3',4,4',5,5'-HxCB 2,2',3,3',4,4',5,5'-HxCB 2,2',3,3',4,4',5,5'-HxCB 2,2',3,3',4,4',5,5',6,6'-NoC 2,2',3,3',4,4',5,5',6,6'-NoC 2,2',3,3',4,4',5,5',6,6'-NoC 2,2',3,3',4,4',5,5',6,6'-NoC 2,2',3,3',4,5,5',6,6'-NoC 2,2',3,3',4,5,5',6,6'-NoC 2,2',3,3',4,5,5',6,6'-NoC Decachlorobiphenyl	1 3 4 15 19 37 54 77 81 104 105 114 123 126 155 156/157 167 169 188 189 202 205 205 205 208 209	$\begin{array}{c} 103\\ 95\\ 117\\ 95\\ 97\\ 94\\ 97\\ 93\\ 91\\ 103\\ 92\\ 91\\ 103\\ 92\\ 94\\ 95\\ 102\\ 93\\ 92\\ 94\\ 103\\ 97\\ 98\\ 95\\ 95\\ 95\\ 97\\ 94\end{array}$	109 94 126 95 95 97 89 96 102 93 96 101 97 90 101 89 102 89 90 103 95 94	$\begin{array}{c} 5.7\\ 1.1\\ 7.4\\ 1.0\\ 2.1\\ 1.1\\ 0.0\\ 4.4\\ 5.3\\ 1.0\\ 1.1\\ 5.3\\ 9.3\\ 3.1\\ 5.4\\ 1.0\\ 4.4\\ 10.3\\ 5.5\\ 4.0\\ 7.5\\ 5.0\\ 0.0\\ 1.1\\ 5.0\\ 0.0\\ \end{array}$	

%REC = Percent Recovered

RPD = The difference between the two values divided by the mean value

**REPORT OF LABORATORY ANALYSIS** 

Attachment D Data Quality Assurance/ Quality Control Evaluation



# **Data Quality Assurance/Quality Control**

Data quality was evaluated by examining the holding times, laboratory method blanks, surrogate percent recoveries, laboratory control sample/laboratory control sample duplicates (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent differences (RPDs). Data quality review results for each analysis are outlined in the following subsections.

## **Analytical Data**

The data quality evaluation report covers three normal water samples. Samples were collected on July 11, 2018, November 30, 2018 and January 15, 2019. Analyses were performed by Asset Laboratories in Las Vegas, Nevada, Pace Analytical in Minneapolis, Minnesota, and TestAmerica in Irvine, California. The sample results were reported as three sample delivery groups:

Sample Delivery Groups		
N031181		
N033183		
N033767		

Five methods were used to analyze the environmental samples. Samples were collected and submitted directly to the Asset Laboratories for analysis. Asset Laboratories was responsible for shipment of samples to the other laboratories. Samples were analyzed for the following analytes/method:

Parameter	Method	Laboratory
Total suspended solids	SM2540D	Asset
Metals	E200.8	Asset
Polychlorinated Biphenyls (PCB) Congeners	E1668	Pace
Pesticides	SW8081A	TestAmerica
Polynuclear Aromatic Hydrocarbons	SW8270C-SIM	Asset

Data validation flags were assigned using guidance from the EPA Contract Laboratory National Functional Guidelines for Organic Superfund Methods Data Review (EPA, 2017) and EPA Contract Laboratory National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA, 2017). Multiple flags are routinely applied to specific sample method/ matrix/ analyte combinations, but there will be only one final flag. A final flag is applied to the data and is the most conservative of the applied data validation flags. The final flag also includes blank sample impacts.

The data validation flags are as follows:

- J = Analyte was present, but the reported value may not be accurate or precise (estimated). The result was estimated because it was less than the referenced reporting limit, but greater than the method detection limit, or because a QC exceedance occurred.
- R = Data were unusable because of deficiencies in the ability to analyze the sample and meet QC criteria.
- U = Analyte was not detected at the specified detection limit.
- UJ = Analyte was not detected, and the specified detection limit may not be accurate or precise (estimated).



## **Findings**

The overall summaries of the data validation findings are contained in the following subsections.

## **Holding Times**

All holding time criteria were met.

## **Method Blanks**

Method blanks were analyzed at the required frequency and were free of contamination that would affect the sample results with the following exceptions:

Sixty-three PCB congeners were detected in the method blank associated with the July 2018 sample for method E1668. Associated sample results are possibly false positives or biased high in sample HTTMDL-07-11.

## Surrogates

All surrogate recovery criteria were met with one exception.

Surrogate recovery was less than the lower control limit in sample HTTMDL-07-11 for Method SW8270C-SIM, indicating associated sample results are possibly biased low. All associated sample results are not detected and are qualified as estimated and flagged "UJ".

## **Internal Standards**

All internal standard criteria were met.

## Laboratory Control Samples

LCS/LCSDs were analyzed as required. All accuracy and precision criteria were met.

## Matrix Spikes/Matrix Spike Duplicates

The results of MS/MSD analyses provide information about the possible influence of the matrix on either accuracy or precision of the measurements. There were no MS/MSD recovery or RPD exceedances that would affect the sample results.

## Chain-of-Custody

Each sample was documented in a completed COC and received at the laboratory in good condition.

## **Overall Assessment**

An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results are considered usable taking into consideration possible biases as described above.