KINDER MORGAN
ENERGY PARTNERS, L.P.

SFPP, L.P.
Operating Partnership

November 9, 2015

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

Re: Effluent Monitoring Report
July through September 2015
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 Third Quarter 2015 Effluent Monitoring Report for the subject discharge.

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 9th day of November 2015.
at 1:23 p.m.

_____ (signature)

Stephen T. Defibaugh (printed name)

Remediation Project Manager (title)

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Mr. Stephen Defibaugh
Kinder Morgan Energy Partners, L.P.
1100 Town and Country Road
Orange, California 92868

November 13, 2015

Subject: Effluent Monitoring Report, July 1 to September 30, 2015 (Third Quarter 2015)
SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California
(NPDES No. CA0063509, CI No. 7497)

Dear Mr. Defibaugh,

This report has been prepared by CH2M HILL Engineers, Inc. (CH2M), on behalf of SFPP, L.P. (SFPP), an operating partnership of Kinder Morgan Energy Partners, L.P. (Kinder Morgan), to summarize National Pollutant Discharge Elimination System (NPDES) monitoring related to the discharge of treated groundwater from SFPP's product recovery and groundwater extraction (GWE) system. This system is installed at the SFPP Norwalk Pump Station located within the Defense Fuel Support Point Norwalk, at 15306 Norwalk Boulevard, Norwalk, California (the site).

SFPP performed certain operations, maintenance, and monitoring tasks on the product recovery and GWE systems. SFPP retained CH2M to prepare this report based on the NPDES monitoring performed by SFPP. This report describes NPDES monitoring activities during the period of July 1 to September 30, 2015.

Remediation System

SFPP currently operates remediation systems consisting of soil vapor extraction (SVE), total fluids extraction (TFE) of free product, GWE for hydraulic control, and treatment of extracted soil vapors and groundwater to address two specific areas at and near the site: the south-central area and the southeastern area. Operation of the West Side Barrier (WSB) GWE system (WSB system) for remediation of the western offsite area was discontinued in August 2008 based on the reduced lateral extent and low concentrations of volatile organic compounds (VOCs) west of the site.

SVE is performed using a blower to remove soil vapors at a rate of up to 3,000 standard cubic feet per minute (scfm) from up to 33 SVE wells. The extracted vapors are conveyed to a knock-out tank that separates entrained moisture from the soil vapors. Accumulated moisture in the knock-out tank is treated by the main groundwater treatment system (GWTS) described below. The soil vapors are then treated in a thermal oxidizer where VOCs are converted to carbon dioxide and water prior to being discharged to the atmosphere. Operation of the GWTS and SVE is conducted in accordance with Permits to Construct (Application Nos. 569588 and 567723, respectively; ID 110835) issued by the South Coast Air Quality Management District (SCAQMD).

The main GWTS handles free product and groundwater from up to 20 extraction wells located in the south-central area and up to 5 extraction wells located in the southeastern area of the site. During the third quarter 2015, the GWTS extracted from 18 wells equipped with pneumatically operated top-loading total fluids pumps, including 14 wells in the south-central area (GMW-9, GMW-24, GMW-25, GMW-O-11, GMW-O-20, GMW-O-21, GMW-O-23, MW-SF-2, MW-SF-3, MW-SF-6, MW-SF-11, MW-SF-12, MW-SF-14, and MW-SF-16) and 4 wells in the southeastern area (GMW-36, GMW-O-15, GMW-O-18, and GMW-SF-9). Free product and groundwater recovered by pneumatically operated top-loading total fluids pumps are piped to an oil-water separator (OWS). Free product from the OWS is collected in a storage tank and recycled at an offsite location. Water from the OWS is treated using liquid-phase granular activated carbon (LGAC). Treated water is routed through an onsite 3,000-gallon equalization tank. Two fluidized bed bioreactors (FBBRs) installed downstream of the equalization tank treat fuel oxygenates such as tertiary butyl alcohol (TBA) and methyl tertiary butyl ether (MTBE) that are not treated in the LGAC. The treated groundwater then passes through polishing LGAC units prior to discharge in accordance with the NPDES permit (No. CA0063509, CI No. 7497).

Summary of Quarterly Operations

Approximately 1,397,963 gallons of groundwater were extracted from the south-central and southeastern areas during the third quarter 2015. No groundwater was extracted from the WSB area during this period. Table 1 summarizes the average daily flow rate during the reporting period. The GWTS operated throughout the quarter, with the following exceptions:

- The GWTS was turned off on July 2, August 3, August 27, and September 18, 2015, to replace a vapor-phase granular activated carbon (VGAC) drum that is used for treating product tank vent vapors. The system was restarted on the same day.
- The GWTS was off on arrival on July 6, 2015, due to a transfer tank alarm. The alarm was reset and the system was restarted on the same day.
- The GWTS was turned off on July 16, August 25, and September 24, 2015, to clean out the OWS, OWS transfer tank, equalization tank, product recovery tank, and treatment pad sump. The system was restarted on the same day.
- The GWTS was turned off on July 17, 2015, for resequencing of the LGAC vessels. The system was restarted on the same day.
- The GWTS was turned off on August 27, 2015, for changeout of the lag polishing LGAC vessel. The system was restarted on the same day.

The amount of free product that accumulated in the product holding tank of the GWTS was estimated to be 682 gallons during the third quarter 2015. In addition, 98 gallons of product were manually bailed from a select group of wells that did not have TFE pumps (GMW-22, GMW-O-12, GMW-O-21, GWR-3, and MW-SF-9) during the third quarter 2015. Recovered free product was hauled away and disposed of at Kinder Morgan-approved disposal facilities as described in the Waste Hauling section of this report.

Routine Effluent Monitoring

Effluent water samples were collected pursuant to the Waste Discharge Requirements (WDRs) under Order No. R4-2011-0095. Samples were collected at the Order-designated monitoring point EFF-001 (Remediation System Effluent) and RSW-001 (50 feet upstream of the discharge in Coyote Creek). Samples collected during this monitoring period include monthly, quarterly, and annual samples (including acute and chronic toxicity).

Toxicity samples were shipped to CH2M's Applied Sciences Laboratory (ASL) in Corvallis, Oregon, for analysis; all remaining compliance samples were shipped to Advanced Technology Laboratories (ATL) in Las Vegas, Nevada, for analysis. ASL and ATL are certified by the National Environmental Laboratory Accreditation Program and the California Department of Public Health Environmental Laboratory Accreditation Program. The samples were analyzed in accordance with current U.S. Environmental Protection Agency (EPA) guidelines or as specified in the WDRs for the site.

Atherinops affinis (topsmelt) was used in lieu of the previously used toxicity test species under this permit due to the slightly brackish (saline) water conditions of the effluent and receiving water. The rationale for the change in test species was documented in the report titled, *Cause of Apparent Chronic Toxicity and Planned Corrective Action Plan*, prepared by CH2M and submitted to the Regional Water Quality Control Board (RWQCB) on December 11, 2013.

Summary of Compliance Results

Analytical results for the monthly, quarterly, and annual effluent monitoring are summarized in Table 2. Analytical results for remaining priority pollutants at the effluent are summarized in Table 3. Analytical results for receiving water (50 feet upstream of the discharge in Coyote Creek) are summarized in Table 4. Table 5 summarizes the results of the tetrachlorodibenzodioxin (TCDD) equivalents for both the effluent and receiving water. As shown in the tables, all discharge limits for the treatment system effluent were met during the reporting period. There are no receiving water discharge limitations under the WDRs.

Table 6 provides the results of the annual acute and chronic toxicity samples (24-hour composites) that were collected from the remediation system effluent between September 13 and 18, 2015. Results from the previous two annual toxicity sampling events are also presented. These data were used to calculate the "3-Test Average," which is used for determining acute toxicity compliance.

The acute and chronic toxicity triggers, as provided in the WDRs, are defined as follows:

- **Acute Toxicity:** The trigger for acute toxicity is the finding of less than 70 percent survival for any single 96-hour bioassay, or an average survival of less than 90 percent for any three consecutive 96-hour bioassays or a continuous-flow bioassay.

- **Chronic Toxicity:** For chronic toxicity, the WDRs define the initial screening trigger as an exceedance of greater than 1.0 toxicity unit (TUc) in a critical life stage test for 100 percent effluent (where TUc = 100/no observed effect concentration [NOEC]).

As shown in Table 6, the acute toxicity in the effluent after 96 hours was 68 percent. This result was statistically different from controls that had 100 percent survival and exceeded the permit trigger for accelerated testing (less than 70 percent survival). In addition, the average for the last three consecutive tests (January 3, 2014, December 19, 2014, and September 22, 2015) was 89 percent, which exceeds the permit trigger for three consecutive tests (less than 90 percent survival). The chronic toxicity (7-day composite) result of 0.965 milligram (mg) growth (biomass) in the effluent was significantly lower than in the laboratory and receiving water controls (1.44 and 1.48 mg, respectively) and resulted in a NOEC of less than 100 percent, or TUc greater than 1, which exceeds the permit trigger for accelerated testing.

Verbal notification of the toxicity results was provided verbally to Mr. Mazhar Ali of the RWQCB Los Angeles Region on October 2, 2015. Written notification was provided in an email to Mr. Ali on October 12, 2015. In accordance with the requirements of the Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan, prepared by CH2M, dated September 30, 2011, up to six accelerated effluent composite samples will be collected over a 12-week period at approximately 2-week intervals

and analyzed for acute and chronic toxicity. Results of these analyses will be reported in the fourth quarter 2015 discharge monitoring report.

The laboratory reports and chain-of-custody documents for the effluent and receiving water samples collected during the third quarter 2015 are included in Appendix A.

Waste Hauling

Provided below is a summary of liquid and solid waste removed from the site during the third quarter 2015.

Liquids

Approximately 5,800 gallons of flammable liquid waste was removed from the site during the third quarter 2015 by Patriot Environmental Services of 508 East E Street, Wilmington, California 90744. The waste included a mixture of recovered fuel product and water generated from cleaning out the OWS transfer tank, equalization tank, and sump. The waste was transported to Demenno/Kerdoon at 2000 North Alameda Street, Compton, California 90222. Provided below is a summary of quantities removed during each event:

- July 1, 2015 – 1,300 gallons
- July 16, 2015 – 1,500 gallons
- August 25, 2015 – 1,400 gallons
- September 24, 2015 – 1,600 gallons

Solids

Approximately 300 pounds of non-Resource Conservation and Recovery Act (RCRA) hazardous waste solids (bag filters) were removed from the site on July 1, 2015, by Environmental Logistics, Inc., of 140 West Monte Avenue, Bloomington, California 92316. The waste was transported to Filter Recycling Services, Inc., at 180 West Monte Avenue, Bloomington, California 92316.

Approximately 400 pounds of nonhazardous spent VGAC (carbon) was removed from the site on July 7, 2015, by Prominent Systems, Inc., of 13095 E. Temple Avenue, City of Industry, California 91746. The waste was transported to California Carbon Co. at 2825 E. Grant Street, Wilmington, California 90744.

Approximately 4,000 pounds of nonhazardous spent LGAC (carbon) was removed from the site on July 17, 2015, by Prominent Systems, Inc. The waste was transported to California Carbon Co.

Copies of the waste manifests are included in Appendix B.

Should you require any further information, please contact me at (714) 435-6255.

Regards,
CH2M HILL Engineers, Inc.

V. Cortes

Vidal Cortes
Project Engineer

Attachments:

Table 1 – Effluent Flow Rate Measurements, Third Quarter 2015
Table 2 – NPDES Effluent Monitoring, Third Quarter 2015
Table 3 – NPDES Effluent Monitoring, Remaining Priority Pollutants, Third Quarter 2015
Table 4 – NPDES Receiving Water Monitoring, Third Quarter 2015
Table 5 – NPDES TCDD Equivalent Calculation, Third Quarter 2015
Table 6 – NPDES Effluent Chronic and Acute Toxicity Monitoring, Third Quarter 2015
Appendix A – Laboratory Analytical Reports and Chain-of-Custody Documents
Appendix B – Waste Manifests

Tables

Table 1. Effluent Flow Rate Measurements, Third Quarter 2015
SFPP Norwalk Pump Station, Norwalk, California

Date	Average Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd[a])
07/01/15	21,875
07/02/15	25,155
07/03/15	22,810
07/04/15	17,139
07/05/15	15,601
07/06/15	22,666
07/07/15	10,014
07/08/15	19,020
07/09/15	20,882
07/10/15	12,839
07/11/15	19,069
07/12/15	18,746
07/13/15	18,640
07/14/15	18,720
07/15/15	17,568
07/16/15	17,406
07/17/15	10,334
07/18/15	15,169
07/19/15	18,090
07/20/15	17,842
07/21/15	14,655
07/22/15	14,165
07/23/15	15,312
07/24/15	14,925
07/25/15	15,163
07/26/15	15,041
07/27/15	15,104
07/28/15	14,692
07/29/15	14,933
07/30/15	13,706
07/31/15	16,218
08/01/15	16,271
08/02/15	16,163
08/03/15	16,124
08/04/15	15,128
08/05/15	17,618
08/06/15	17,366
08/07/15	18,983
08/08/15	20,418
08/09/15	20,345

Table 1. Effluent Flow Rate Measurements, Third Quarter 2015
SFPP Norwalk Pump Station, Norwalk, California

Date	Average Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd[a])
08/10/15	20,161
08/11/15	20,227
08/12/15	18,460
08/13/15	19,785
08/14/15	17,634
08/15/15	9,496
08/16/15	9,594
08/17/15	9,525
08/18/15	10,270
08/19/15	8,956
08/20/15	9,094
08/21/15	9,062
08/22/15	8,985
08/23/15	9,577
08/24/15	9,740
08/25/15	9,534
08/26/15	8,079
08/27/15	9,572
08/28/15	6,291
08/29/15	6,437
08/30/15	6,065
08/31/15	6,156
09/01/15	6,459
09/02/15	10,758
09/03/15	8,930
09/04/15	11,272
09/05/15	18,061
09/06/15	18,675
09/07/15	14,904
09/08/15	14,179
09/09/15	14,216
09/10/15	22,237
09/11/15	21,576
09/12/15	26,622
09/13/15	26,221
09/14/15	26,062
09/15/15	26,076
09/16/15	21,647
09/17/15	20,867
09/18/15	13,102

Table 1. Effluent Flow Rate Measurements, Third Quarter 2015
SFPP Norwalk Pump Station, Norwalk, California

Date	Average Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd[a])
09/19/15	5,169
09/20/15	5,309
09/21/15	5,301
09/22/15	5,271
09/23/15	8,666
09/24/15	11,365
09/25/15	9,701
09/26/15	15,166
09/27/15	20,318
09/28/15	21,698
09/29/15	21,631
09/30/15	21,889

Notes:
[a] California Regional Water Quality Control Board Waste Discharge Requirements
gpd = gallons per day

Table 2. NPDES Effluent Monitoring, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Sampling Frequency	Analytical Method	Units	MDL[c]	RL[c]	ML[a]	7/30/2015	8/6/2015	9/10/2015	9/14/2015	Discharge Limits[b] Monthly Average	Discharge Limits[b] Daily Maximum
Temperature	Monthly	--	°F	--	--	NE	76.8	83	85	--	**--**	**86**
Oil and Grease	Monthly	EPA 1664A	mg/L	0.77	4.4	NE	<0.77	<0.74	<0.79	--	**10**	**15**
TPH as gas (C4-C12)	Monthly	EPA 8015B	µg/L	16	50	NE	30 J	28 J	30 J	--	**--**	**--**
TPH as Diesel (C13-C22)	Monthly	EPA 8015B	µg/L	16	26	NE	18 J	<15	<15	--	**--**	**--**
TPH as Oil (C23+)	Monthly	EPA 8015B	µg/L	14	26	NE	<14	<14	<14	--	**--**	**--**
Total TPH	Monthly	EPA 8015B	µg/L	16	50	NE	48 J	28 J	30 J	--	**NE**	**100**
Settleable Solids	Monthly	SM 2540F	mL/L/hr	0.09	0.09	NE	<0.089	<0.087	--	<0.09	**0.1**	**0.3**
Total Suspended Solids	Monthly	SM 2540D	mg/L	10	10	NE	<10	<10	<10	--	**50**	**75**
Phenolics	Monthly	EPA 420.1	µg/L	150	300	50	<150	<150	<150	--	**300**	**NE**
Benzene	Monthly	EPA 8260B	µg/L	0.048	1	2.0	<0.048	<0.036	<0.036	--	**1**	**NE**
1,1-Dichloroethane	Monthly	EPA 8260B	µg/L	0.054	0.5	1.0	<0.054	<0.022	<0.022	--	**5**	**NE**
1,2-Dichloroethane	Monthly	EPA 8260B	µg/L	0.06	0.5	2.0	<0.044	<0.064	<0.064	--	**0.5**	**NE**
Ethylbenzene	Monthly	EPA 8260B	µg/L	0.036	1	2.0	<0.036	<0.036	<0.036	--	**10**	**NE**
Toluene	Monthly	EPA 8260B	µg/L	0.042	2	2.0	<0.025	<0.042	<0.042	--	**10**	**NE**
Methyl tertiary-butyl ether	Monthly	EPA 8260B	µg/L	0.098	1	NE	<0.098	<0.062	<0.062	--	**NE**	**5.0**
Tertiary butyl alcohol	Monthly	EPA 8260B	µg/L	0.4	5	NE	<0.4	<0.3	0.85 J	--	**NE**	**12**
Total Xylenes	Monthly	EPA 8260B	µg/L	1.5	2	NE	<1.5	<1.5	<1.5	--	**10**	**NE**
Copper (total recoverable) (dry weather)	Monthly	EPA 200.8	µg/L	0.26	0.5	0.5	<0.04	<0.26	<0.26	--	**16**	**33**
Copper (total recoverable) (wet weather)	Monthly	EPA 200.8	µg/L	0.26	0.5	0.5	<0.04	<0.26	<0.26	--	**13**	**27**
Lead (total recoverable) (dry weather)	Monthly	EPA 200.8	µg/L	0.053	0.5	0.5	<0.011	<0.053	<0.053	--	**8.2**	**15**
Lead (total recoverable) (wet weather)	Monthly	EPA 200.8	µg/L	0.053	0.5	0.5	<0.011	<0.053	<0.053	--	**34**	**106**
Mercury (total recoverable)	Monthly	EPA 245.1	µg/L	0.018	0.05	0.2	0.034 J	0.023 J	<0.018	--	**0.051**	**0.14**
Selenium (total recoverable)	Monthly	EPA 200.8	µg/L	0.07	0.5	2.0	<0.069	<0.07	<0.07	--	**3.4**	**9.2**
Thallium (total recoverable)	Monthly	EPA 200.8	µg/L	0.034	0.5	1.0	<0.008	0.1 J	0.094 J	--	**6.3**	**13**
Zinc (total recoverable) (wet weather)[d]	Monthly	EPA 200.8	µg/L	0.23	10	1.0	0.72 J	<0.039	0.63 J	--	**79**	**158**
Chromium VI	Monthly	EPA 7199	µg/L	0.015	0.2	0.5	<0.015	<0.015	--	0.061 J	**8.1**	**16**
pH	Quarterly	--	s.u.	--	--	NE	6.9	--	7.5	--	**--**	**6.5/8.5**
Ammonia Nitrogen (as N)	Quarterly	SM 4500 NH3C	mg/L	0.05	0.1	NE	<0.05	--	--	--	**NE**	**NE**
Di-isopropyl Ether	Quarterly	EPA 8260B	µg/L	0.034	1	NE	<0.034	--	--	--	**NE**	**NE**
Methylene Blue Active Substances	Quarterly	SM 5540C	mg/L	0.05	0.05	NE	<0.05	--	--	--	**NE**	**NE**
Tert-amyl-methyl Ether	Quarterly	EPA 8260B	µg/L	0.054	1	NE	<0.054	--	--	--	**NE**	**NE**
Turbidity	Quarterly	SM 2130B	NTU	0.1	0.1	NE	0.24	--	--	0.21	**50**	**75**

Table 2. NPDES Effluent Monitoring, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Sampling Frequency	Analytical Method	Units	MDL[c]	RL[c]	ML[a]	7/30/2015	8/6/2015	9/10/2015	9/14/2015	Discharge Limits[b]	
											Monthly Average	Daily Maximum
Methyl ethyl ketone	Quarterly	EPA 8260B	µg/L	0.7	10	NE	<0.7	--	<0.48	--	**50**	**NE**
Other Priority Pollutants (see Table 3)	Quarterly[e]	--	--	--	--	--	--	--	--	--	**NE**	**NE**
BOD	Annually	SM 5210B	mg/L	5	5	NE	--	--	12	--	**20**	**30**
Nitrate + Nitrite as N	Annually	EPA 300.0	mg/L	0.057	0.5	NE	--	--	--	1.2	**NE**	**NE**
Sulfides	Annually	SM 4500 S2-D	mg/L	0.01	0.05	NE	--	--	<0.01	--	**NE**	**NE**
TCDD Equivalents (see Table 5)	Annually	EPA 8290	pg/L	--	--	NE	--	--	--	--	**NE**	**NE**

Notes:

[a] ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. It is also the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed.

[b] California Regional Water Quality Control Board Waste Discharge Requirements

[c] The highest MDL and RL during this reporting period are shown.

[d] There are no dry weather limitations for zinc.

[e] Effluent monitoring shall occur quarterly for the first 2 years after the Order is adopted. After the first 2 years, effluent shall be monitored once per year.

-- = not measured or not analyzed.
< = not detected above the MDL
° F = degrees Fahrenheit
µg/L = micrograms per liter
J = detected at a concentration below the RL and above the MDL. Reported value is estimated.
MDL = laboratory method detection limit
mg/L = milligrams per liter
ML = minimum level. See note a.
mL/L/hr = milliliters per liter per hour
NE = not established
NTU = nephelometric turbidity units
RL = reporting limit
s.u. = standard units
TCDD = tetrachlorodibenzodioxin
TPH = total petroleum hydrocarbons

Table 3. NPDES Effluent Monitoring, Remaining Priority Pollutants, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	7/30/2015	9/10/2015	9/30/2015	ML[a]
Antimony	EPA 200.8	µg/L	0.18	0.5	<0.18	0.15 J	--	0.50
Arsenic	EPA 200.8	µg/L	0.027	0.1	15	23	--	2
Beryllium	EPA 200.8	µg/L	0.01	0.5	<0.01	<0.026	--	0.50
Cadmium	EPA 200.8	µg/L	0.013	0.25	<0.013	<0.0098	--	0.25
Nickel	EPA 200.8	µg/L	0.032	1	<0.032	0.47 J	--	1
Silver	EPA 200.8	µg/L	0.094	0.5	0.099 J	<0.023	--	0.25
Total Chromium	EPA 200.8	µg/L	0.03	0.5	<0.03	0.15 J	--	0.50
Chromium (III) (Total Cr - Cr VI)	Calculated	µg/L	--	--	<0.03	--	--	NA
Aroclor-1016	EPA 8082	µg/L	0.055	0.25	--	<0.055	--	0.5
Aroclor-1221	EPA 8082	µg/L	0.092	0.5	--	<0.092	--	0.5
Aroclor-1232	EPA 8082	µg/L	0.036	0.25	--	<0.036	--	0.5
Aroclor-1242	EPA 8082	µg/L	0.032	0.25	--	<0.032	--	0.5
Aroclor-1248	EPA 8082	µg/L	0.04	0.25	--	<0.04	--	0.5
Aroclor-1254	EPA 8082	µg/L	0.076	0.25	--	<0.076	--	0.5
Aroclor-1260	EPA 8082	µg/L	0.048	0.25	--	<0.048	--	0.5
4,4'-DDD	EPA 8081A	µg/L	0.0072	0.05	--	<0.0072	--	0.05
4,4'-DDE	EPA 8081A	µg/L	0.0061	0.05	--	<0.0061	--	0.05
4,4'-DDT	EPA 8081A	µg/L	0.0088	0.05	--	<0.0088	--	0.01
Aldrin	EPA 8081A	µg/L	0.0067	0.025	--	<0.0067	--	0.005
Alpha Endosulfan	EPA 8081A	µg/L	0.0036	0.025	--	<0.0036	--	0.02
Alpha-BHC	EPA 8081A	µg/L	0.0032	0.025	--	<0.0032	--	0.01
Beta Endosulfan	EPA 8081A	µg/L	0.0062	0.05	--	<0.0062	--	0.01
Beta-BHC	EPA 8081A	µg/L	0.0038	0.025	--	<0.0038	--	0.005
Chlordane	EPA 8081A	µg/L	0.03	0.25	--	<0.03	--	0.1
Delta-BHC	EPA 8081A	µg/L	0.0028	0.025	--	<0.0028	--	0.005
Dieldrin	EPA 8081A	µg/L	0.0064	0.05	--	<0.0064	--	0.01
Endosulfan Sulfate	EPA 8081A	µg/L	0.0055	0.05	--	<0.0055	--	0.05
Endrin	EPA 8081A	µg/L	0.0079	0.05	--	<0.0079	--	0.01
Endrin Aldehyde	EPA 8081A	µg/L	0.0053	0.05	--	<0.0053	--	0.01
Gamma-BHC	EPA 8081A	µg/L	0.0036	0.025	--	<0.0036	--	0.02
Heptachlor	EPA 8081A	µg/L	0.0075	0.025	--	<0.0075	--	0.01
Heptachlor Epoxide	EPA 8081A	µg/L	0.0041	0.025	--	<0.0041	--	0.01
Toxaphene	EPA 8081A	µg/L	0.16	2.5	--	<0.16	--	0.5
1,1,1-Trichloroethane	EPA 8260B	µg/L	0.072	1	<0.072	<0.068	--	2
1,1,2,2-Tetrachloroethane	EPA 8260B	µg/L	0.1	1	<0.1	<0.031	--	1
1,1,2-Trichloroethane	EPA 8260B	µg/L	0.042	1	<0.042	<0.062	--	2
1,1-Dichloroethene	EPA 8260B	µg/L	0.16	1	<0.16	<0.087	--	2
1,2,4-Trichlorobenzene	EPA 8260B	µg/L	0.1	1	<0.1	0.15 J	--	5
1,2-Dichlorobenzene	EPA 8260B	µg/L	0.048	1	<0.048	0.06 J	--	2
1,2-Dichloropropane	EPA 8260B	µg/L	0.094	1	<0.094	<0.062	--	1
1,3-Dichlorobenzene	EPA 8260B	µg/L	0.061	1	<0.061	<0.057	--	1
1,4-Dichlorobenzene	EPA 8260B	µg/L	0.078	1	<0.078	<0.03	--	1
2-Chloroethyl Vinyl Ether	EPA 8260B	µg/L	0.14	0.5	--	--	<0.14	1
Acrolein	EPA 8260B	µg/L	0.56	20	--	<0.56	--	5
Acrylonitrile	EPA 8260B	µg/L	0.3	20	--	<0.3	--	2

Table 3. NPDES Effluent Monitoring, Remaining Priority Pollutants, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	7/30/2015	9/10/2015	9/30/2015	ML[a]
Bromodichloromethane	EPA 8260B	µg/L	0.048	1	<0.048	<0.031	--	2
Bromoform	EPA 8260B	µg/L	0.061	1	<0.061	<0.32	--	2
Bromomethane	EPA 8260B	µg/L	0.073	1	0.13 J	<0.32	--	2
cis-1,3-Dichloropropene	EPA 8260B	µg/L	0.043	1	<0.043	<0.044	--	2
Carbon Tetrachloride	EPA 8260B	µg/L	0.057	0.5	<0.057	<0.057	--	2
Chlorobenzene	EPA 8260B	µg/L	0.028	1	<0.028	<0.036	--	2
Chloroethane	EPA 8260B	µg/L	0.099	1	<0.099	<0.099	--	2
Chloroform	EPA 8260B	µg/L	0.048	1	<0.048	<0.036	--	2
Chloromethane	EPA 8260B	µg/L	0.043	1	0.35 J	<0.12	--	2
Dibromochloromethane	EPA 8260B	µg/L	0.057	1	<0.057	<0.072	--	2
Hexachlorobutadiene	EPA 8260B	µg/L	2.8	20	<0.07	<2.8	--	1
Methylene Chloride	EPA 8260B	µg/L	0.28	2	0.47 J	<0.28	--	2
Naphthalene	EPA 8260B	µg/L	0.062	1	<0.062	0.19 J	--	1
trans-1,2-Dichloroethene	EPA 8260B	µg/L	0.074	1	<0.074	<0.07	--	1
trans-1,3-Dichloropropene	EPA 8260B	µg/L	0.051	1	<0.051	<0.039	--	2
Tetrachloroethene	EPA 8260B	µg/L	0.12	1	<0.12	<0.16	--	2
Trichloroethene	EPA 8260B	µg/L	0.074	1	<0.074	<0.12	--	2
Vinyl Chloride	EPA 8260B	µg/L	0.044	0.5	<0.044	<0.095	--	2
1,2-Diphenylhydrazine	EPA 8270C	µg/L	2.5	10	--	<2.5	--	1
2,4,6-Trichlorophenol	EPA 8270C	µg/L	2.7	10	--	<2.7	--	10
2,4-Dichlorophenol	EPA 8270C	µg/L	2.8	10	--	<2.8	--	5
2,4-Dimethylphenol	EPA 8270C	µg/L	2.6	10	--	<2.6	--	2
2,4-Dinitrophenol	EPA 8270C	µg/L	2.4	50	--	<2.4	--	5
2,4-Dinitrotoluene	EPA 8270C	µg/L	1.7	10	--	<1.7	--	5
2,6-Dinitrotoluene	EPA 8270C	µg/L	2.4	10	--	<2.4	--	5
2-Chloronaphthalene	EPA 8270C	µg/L	2.5	10	--	<2.5	--	10
2-Chlorophenol	EPA 8270C	µg/L	2.7	10	--	<2.7	--	5
2-Nitrophenol	EPA 8270C	µg/L	3	10	--	<3	--	10
3,3'-Dichlorobenzidine	EPA 8270C	µg/L	1.4	20	--	<1.4	--	5
4,6-Dinitro-2-Methylphenol	EPA 8270C	µg/L	1.6	50	--	<1.6	--	5
4-Bromophenyl-Phenyl Ether	EPA 8270C	µg/L	2.5	10	--	<2.5	--	5
4-Chloro-3-Methylphenol	EPA 8270C	µg/L	2.6	50	--	<2.6	--	1
4-Chlorophenyl-Phenyl Ether	EPA 8270C	µg/L	2.5	10	--	<2.5	--	5
4-Nitrophenol	EPA 8270C	µg/L	1.3	50	--	<1.3	--	10
Acenaphthene	EPA 8270C	µg/L	2.9	10	--	<2.9	--	1
Acenaphthylene	EPA 8270C	µg/L	3	10	--	<3	--	10
Anthracene	EPA 8270C	µg/L	2	10	--	<2	--	10
Benzidine	EPA 8270C	µg/L	1.2	50	--	<1.2	--	5
Benzo (a) Anthracene	EPA 8270C	µg/L	2	10	--	<2	--	5
Benzo (a) Pyrene	EPA 8270C	µg/L	1.9	10	--	<1.9	--	10
Benzo (b) Fluoranthene	EPA 8270C	µg/L	1.6	10	--	<1.6	--	10
Benzo (g,h,i) Perylene	EPA 8270C	µg/L	2.1	10	--	<2.1	--	5
Benzo (k) Fluoranthene	EPA 8270C	µg/L	2.9	10	--	<2.9	--	10
Bis(2-Chloroethoxy) Methane	EPA 8270C	µg/L	3.1	10	--	<3.1	--	5
Bis(2-Chloroethyl) Ether	EPA 8270C	µg/L	3.2	10	--	<3.2	--	1

Table 3. NPDES Effluent Monitoring, Remaining Priority Pollutants, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	7/30/2015	9/10/2015	9/30/2015	ML[a]
Bis(2-Chloroisopropyl) Ether	EPA 8270C	µg/L	3.1	10	--	<3.1	--	2
Bis(2-Ethylhexyl) Phthalate	EPA 8270C	µg/L	2.2	10	--	<2.2	--	5
Butyl Benzyl Phthalate	EPA 8270C	µg/L	2.1	10	--	<2.1	--	10
Chrysene	EPA 8270C	µg/L	2	10	--	<2	--	10
Dibenz (a,h) Anthracene	EPA 8270C	µg/L	2.1	10	--	<2.1	--	10
Diethyl Phthalate	EPA 8270C	µg/L	2.2	10	--	<2.2	--	2
Dimethyl Phthalate	EPA 8270C	µg/L	2.4	10	--	<2.4	--	2
Di-n-Butyl Phthalate	EPA 8270C	µg/L	1.9	10	--	<1.9	--	10
Di-n-Octyl Phthalate	EPA 8270C	µg/L	2.2	10	--	<2.2	--	10
Fluoranthene	EPA 8270C	µg/L	1.9	10	--	<1.9	--	1
Fluorene	EPA 8270C	µg/L	2.7	10	--	<2.7	--	10
Hexachlorobenzene	EPA 8270C	µg/L	2.2	10	--	<2.2	--	1
Hexachlorocyclopentadiene	EPA 8270C	µg/L	2.3	10	--	<2.3	--	5
Hexachloroethane	EPA 8270C	µg/L	2.6	10	--	<2.6	--	1
Indeno (1,2,3-c,d) Pyrene	EPA 8270C	µg/L	2.1	10	--	<2.1	--	10
Isophorone	EPA 8270C	µg/L	3	10	--	<3	--	1
Nitrobenzene	EPA 8270C	µg/L	2.7	10	--	<2.7	--	1
N-Nitrosodimethylamine	EPA 8270C	µg/L	2.7	50	--	<2.7	--	5
N-Nitroso-di-n-propylamine	EPA 8270C	µg/L	2.9	10	--	<2.9	--	5
N-Nitrosodiphenylamine	EPA 8270C	µg/L	2.3	10	--	<2.3	--	1
Pentachlorophenol	EPA 8270C	µg/L	1	50	--	<1	--	5
Phenanthrene	EPA 8270C	µg/L	2.3	10	--	<2.3	--	5
Phenol	EPA 8270C	µg/L	1.9	10	--	<1.9	--	1
Pyrene	EPA 8270C	µg/L	1.7	10	--	<1.7	--	10
2,3,7,8-TCDD	EPA 8290	pg/L	1.2	50	--	<1.2	--	NE
Asbestos	EPA 600 94 134, 100.1	MFL	0.2	0.2	--	<0.2	--	NE
Cyanide (Total)	SM 4500 CN-E	mg/L	0.01	0.05	--	<0.01	--	NE

Notes:

[a] ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. It is also the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed.

< = not detected above the MDL
µg/L = micrograms per liter
J = detected at a concentration below the RL and above the MDL. Reported value is estimated.
MDL = laboratory method detection limit
ML = minimum level. See note a.
NE = not established
RL = laboratory reporting limit
TCDD = tetrachlorodibenzodioxin

Table 4. NPDES Receiving Water Monitoring, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	9/10/2015	9/14/2015	ML[a]
pH	--	s.u.	--	--	9.2	--	NE
Temperature	--	°F	--	--	94	--	NE
Hardness (as CaCO3)	SM 2340B	mg/L	1	1	210	--	NE
2,3,7,8-TCDD	EPA 8290	pg/L	1.1	50	<1.1	--	NE
Arsenic	EPA 200.8	µg/L	0.016	0.1	6.2	--	2
Lead	EPA 200.8	µg/L	0.053	0.5	0.5 J	--	0.5
Aroclor-1016	EPA 8082	µg/L	0.055	0.25	<0.055	--	0.5
Aroclor-1221	EPA 8082	µg/L	0.092	0.5	<0.092	--	0.5
Aroclor-1232	EPA 8082	µg/L	0.036	0.25	<0.036	--	0.5
Aroclor-1242	EPA 8082	µg/L	0.032	0.25	<0.032	--	0.5
Aroclor-1248	EPA 8082	µg/L	0.04	0.25	<0.04	--	0.5
Aroclor-1254	EPA 8082	µg/L	0.076	0.25	<0.076	--	0.5
Aroclor-1260	EPA 8082	µg/L	0.048	0.25	<0.048	--	0.5
Cadmium	EPA 200.8	µg/L	0.0098	0.25	0.057 J	--	0.25
Mercury	EPA 245.1	µg/L	0.018	0.05	<0.018	--	0.2
Antimony	EPA 200.8	µg/L	0.026	0.5	0.76	--	0.50
Beryllium	EPA 200.8	µg/L	0.026	0.5	<0.026	--	0.50
Total Chromium	EPA 200.8	µg/L	0.086	0.5	0.48 J	--	0.50
Chromium (III) (Total Cr - Cr VI)	CALCCR3	µg/L	--	--	--	--	NA
Copper	EPA 200.8	µg/L	0.26	0.5	3.6	--	0.5
Nickel	EPA 200.8	µg/L	0.038	1	2.3	--	1
Selenium	EPA 200.8	µg/L	0.07	0.5	2.5	--	2.0
Silver	EPA 200.8	µg/L	0.023	0.25	<0.023	--	0.25
Thallium	EPA 200.8	µg/L	0.034	0.500	0.13 J	--	1.0
Zinc	EPA 200.8	µg/L	0.039	10	18	--	1.0
Chromium (VI)	EPA 7199	µg/L	0.015	0.2	--	0.12 J	0.5
4,4'-DDD	EPA 8081A	µg/L	0.007	0.05	<0.0072	--	0.05
4,4'-DDE	EPA 8081A	µg/L	0.006	0.050	<0.0061	--	0.05
4,4'-DDT	EPA 8081A	µg/L	0.009	0.050	<0.0088	--	0.01
Aldrin	EPA 8081A	µg/L	0.0067	0.025	<0.0067	--	0.005
Alpha Endosulfan	EPA 8081A	µg/L	0.0036	0.025	<0.0036	--	0.02
Alpha-BHC	EPA 8081A	µg/L	0.0032	0.0250	<0.0032	--	0.01
Beta Endosulfan	EPA 8081A	µg/L	0.0062	0.05	<0.0062	--	0.01
Beta-BHC	EPA 8081A	µg/L	0.0038	0.025	<0.0038	--	0.005
Chlordane	EPA 8081A	µg/L	0.03	0.25	<0.03	--	0.1
Delta-BHC	EPA 8081A	µg/L	0.0028	0.025	<0.0028	--	0.005
Dieldrin	EPA 8081A	µg/L	0.0064	0.05	<0.0064	--	0.01
Endosulfan Sulfate	EPA 8081A	µg/L	0.0055	0.05	<0.0055	--	0.05
Endrin	EPA 8081A	µg/L	0.0079	0.05	<0.0079	--	0.01
Endrin Aldehyde	EPA 8081A	µg/L	0.0053	0.05	<0.0053	--	0.01
Gamma-BHC	EPA 8081A	µg/L	0.0036	0.025	<0.0036	--	0.02
Heptachlor	EPA 8081A	µg/L	0.0075	0.025	<0.0075	--	0.01
Heptachlor Epoxide	EPA 8081A	µg/L	0.0041	0.025	<0.0041	--	0.01
Toxaphene	EPA 8081A	µg/L	0.16	2.5	<0.16	--	0.5
1,1,1-Trichloroethane	EPA 8260B	µg/L	0.068	1.0	<0.068	--	2
1,1,2,2-Tetrachloroethane	EPA 8260B	µg/L	0.031	1.0	<0.031	--	1
1,1,2-Trichloroethane	EPA 8260B	µg/L	0.062	1.0	<0.062	--	2

Table 4. NPDES Receiving Water Monitoring, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	9/10/2015	9/14/2015	ML[a]
1,1-Dichloroethane	EPA 8260B	µg/L	0.022	0.50	<0.022	--	1.0
1,1-Dichloroethene	EPA 8260B	µg/L	0.087	1.00	<0.087	--	2
1,2,4-Trichlorobenzene	EPA 8260B	µg/L	0.060	1.0	0.1 J	--	5
1,2-Dichlorobenzene	EPA 8260B	µg/L	0.040	1.0	0.05 J	--	2
1,2-Dichloroethane	EPA 8260B	µg/L	0.064	0.50	<0.064	--	2.0
1,2-Dichloropropane	EPA 8260B	µg/L	0.062	1.0	<0.062	--	1
1,3-Dichlorobenzene	EPA 8260B	µg/L	0.057	1.0	<0.057	--	1
1,4-Dichlorobenzene	EPA 8260B	µg/L	0.03	1.0	<0.03	--	1
2-Chloroethyl Vinyl Ether	EPA 8260B	µg/L	0.14	1.0	<0.14	--	1
Acrolein	EPA 8260B	µg/L	0.56	20	<0.56	--	5
Acrylonitrile	EPA 8260B	µg/L	0.30	20	<0.3	--	2
Benzene	EPA 8260B	µg/L	0.036	1.0	<0.036	--	2.0
Bromodichloromethane	EPA 8260B	µg/L	0.031	1.0	<0.031	--	2
Bromoform	EPA 8260B	µg/L	0.32	1.0	<0.32	--	2
Bromomethane	EPA 8260B	µg/L	0.32	1	<0.32	--	2
cis-1,3-Dichloropropene	EPA 8260B	µg/L	0.04	1.0	<0.044	--	2
Carbon Tetrachloride	EPA 8260B	µg/L	0.06	0.5	<0.057	--	2
Chlorobenzene	EPA 8260B	µg/L	0.036	1.0	<0.036	--	2
Chloroethane	EPA 8260B	µg/L	0.099	1.0	<0.099	--	2
Chloroform	EPA 8260B	µg/L	0.036	1.0	0.05 J	--	2
Chloromethane	EPA 8260B	µg/L	0.12	1.0	<0.12	--	2
Dibromochloromethane	EPA 8260B	µg/L	0.072	1.0	<0.072	--	2
Ethylbenzene	EPA 8260B	µg/L	0.0	1	<0.036	--	2.0
Hexachlorobutadiene	EPA 8260B	µg/L	0.1	1	<0.11	--	1
Hexachlorobenzene	EPA 8270C	µg/L	2.2	10	<2.2	--	1
Hexachloroethane	EPA 8270C	µg/L	2.6	10	<2.6	--	1
Methylene Chloride	EPA 8260B	µg/L	0.28	2.0	<0.28	--	2
Naphthalene	EPA 8260B	µg/L	0.048	1	0.17 J	--	1
trans-1,2-Dichloroethene	EPA 8260B	µg/L	0.070	1.0	<0.07	--	1
trans-1,3-Dichloropropene	EPA 8260B	µg/L	0.04	1.0	<0.039	--	2
Tetrachloroethene	EPA 8260B	µg/L	0.16	1.0	<0.16	--	2
Toluene	EPA 8260B	µg/L	0.042	2.0	0.07 J	--	2.0
Trichloroethene	EPA 8260B	µg/L	0.120	1.0	<0.12	--	2
Vinyl Chloride	EPA 8260B	µg/L	0.095	0.5	<0.095	--	2
1,2-Diphenylhydrazine	EPA 8270C	µg/L	2.5	10	<2.5	--	1
2,4,6-Trichlorophenol	EPA 8270C	µg/L	2.7	10	<2.7	--	10
2,4-Dichlorophenol	EPA 8270C	µg/L	2.8	10	<2.8	--	5
2,4-Dimethylphenol	EPA 8270C	µg/L	2.6	10	<2.6	--	2
2,4-Dinitrophenol	EPA 8270C	µg/L	2.4	50	<2.4	--	5
2,4-Dinitrotoluene	EPA 8270C	µg/L	1.7	10	<1.7	--	5
2,6-Dinitrotoluene	EPA 8270C	µg/L	2.4	10	<2.4	--	5
2-Chloronaphthalene	EPA 8270C	µg/L	2.5	10	<2.5	--	10
2-Chlorophenol	EPA 8270C	µg/L	2.7	10	<2.7	--	5
2-Nitrophenol	EPA 8270C	µg/L	3	10	<3	--	10
3,3'-Dichlorobenzidine	EPA 8270C	µg/L	1.4	20	<1.4	--	5
4,6-Dinitro-2-Methylphenol	EPA 8270C	µg/L	1.6	50	<1.6	--	5
4-Bromophenyl-Phenyl Ether	EPA 8270C	µg/L	2.5	10	<2.5	--	5

Table 4. NPDES Receiving Water Monitoring, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	9/10/2015	9/14/2015	ML[a]
4-Chloro-3-Methylphenol	EPA 8270C	µg/L	2.6	50	<2.6	--	1
4-Chlorophenyl-Phenyl Ether	EPA 8270C	µg/L	2.5	10	<2.5	--	5
4-Nitrophenol	EPA 8270C	µg/L	1.3	50	<1.3	--	10
Acenaphthene	EPA 8270C	µg/L	2.9	10	<2.9	--	1
Acenaphthylene	EPA 8270C	µg/L	3	10	<3	--	10
Anthracene	EPA 8270C	µg/L	2	10	<2	--	10
Benzidine	EPA 8270C	µg/L	1.2	50	<1.2	--	5
Benzo (a) Anthracene	EPA 8270C	µg/L	2	10	<2	--	5
Benzo (a) Pyrene	EPA 8270C	µg/L	1.9	10	<1.9	--	10
Benzo (b) Fluoranthene	EPA 8270C	µg/L	1.6	10	<1.6	--	10
Benzo (g,h,i) Perylene	EPA 8270C	µg/L	2.1	10	<2.1	--	5
Benzo (k) Fluoranthene	EPA 8270C	µg/L	2.9	10	<2.9	--	10
Bis(2-Chloroethoxy) Methane	EPA 8270C	µg/L	3.1	10	<3.1	--	5
Bis(2-Chloroethyl) Ether	EPA 8270C	µg/L	3.2	10	<3.2	--	1
Bis(2-Chloroisopropyl) Ether	EPA 8270C	µg/L	3.1	10	<3.1	--	2
Bis(2-Ethylhexyl) Phthalate	EPA 8270C	µg/L	2.2	10	<2.2	--	5
Butyl Benzyl Phthalate	EPA 8270C	µg/L	2.1	10	<2.1	--	10
Chrysene	EPA 8270C	µg/L	2	10	<2	--	10
Dibenz (a,h) Anthracene	EPA 8270C	µg/L	2.1	10	<2.1	--	10
Diethyl Phthalate	EPA 8270C	µg/L	2.2	10	<2.2	--	2
Dimethyl Phthalate	EPA 8270C	µg/L	2.4	10	<2.4	--	2
Di-n-Butyl Phthalate	EPA 8270C	µg/L	1.9	10	<1.9	--	10
Di-n-Octyl Phthalate	EPA 8270C	µg/L	2.2	10	<2.2	--	10
Fluoranthene	EPA 8270C	µg/L	1.9	10	<1.9	--	1
Fluorene	EPA 8270C	µg/L	2.7	10	<2.7	--	10
Hexachlorocyclopentadiene	EPA 8270C	µg/L	2.3	10	<2.3	--	5
Indeno (1,2,3-c,d) Pyrene	EPA 8270C	µg/L	2.1	10	<2.1	--	10
Isophorone	EPA 8270C	µg/L	3	10	<3	--	1
Nitrobenzene	EPA 8270C	µg/L	2.7	10	<2.7	--	1
N-Nitrosodimethylamine	EPA 8270C	µg/L	2.7	50	<2.7	--	5
N-Nitroso-di-n-propylamine	EPA 8270C	µg/L	2.9	10	<2.9	--	5
N-Nitrosodiphenylamine	EPA 8270C	µg/L	2.3	10	<2.3	--	1
Pentachlorophenol	EPA 8270C	µg/L	1.0	50	<1	--	5
Phenanthrene	EPA 8270C	µg/L	2.3	10	<2.3	--	5
Phenol	EPA 8270C	µg/L	1.9	10	<1.9	--	1
Pyrene	EPA 8270C	µg/L	1.7	10	<1.7	--	10
Cyanide (Total)	SM 4500 CN-E	mg/L	0.0100	0.050	<0.01	--	NE
Asbestos	EPA 600 94 134, 100.1	MFL	0.90	0.9	<0.9	--	NE

Notes:

[a] State Water Resources Control Board Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California

µg/L = micrograms per liter
CaCO3 = calcium carbonate
MDL = laboratory method detection limit
MFL = millions of fibers per liter
mg/L = milligrams per liter
ML = minimum level
ND = not detected above the MDL listed
NE = not established
pg/L = picograms per liter
RL = laboratory reporting limit
TCDD = tetrachlorodibenzodioxin

Table 5. NPDES TCDD Equivalent Calculation, Third Quarter 2015
SFPP Norwalk Pump Station, Norwalk, California

Dioxin or Furan Congener [a]	Analysis Method	Units	Effluent Concentration (9/10/15)[b]	Receiving Water Concentration (9/10/15)[b]	TEF	BEF	Effluent Concentration x TEF x BEF[c]	Receiving Water Concentration x TEF x BEF[c]
1,2,3,4,6,7,8-Hepta CDD	EPA 8290	pg/L	< 3.7	< 1.9	0.01	0.05	9.25E-04	4.75E-04
1,2,3,4,6,7,8-Hepta CDF	EPA 8290	pg/L	< 1.7	< 1.7	0.01	0.01	8.50E-05	8.50E-05
1,2,3,4,7,8,9-Hepta CDF	EPA 8290	pg/L	< 2	< 2	0.01	0.4	4.00E-03	4.00E-03
1,2,3,4,7,8-Hexa CDD	EPA 8290	pg/L	< 2.3	< 2.2	0.1	0.3	3.45E-02	3.30E-02
1,2,3,4,7,8-Hexa CDF	EPA 8290	pg/L	< 2	< 1.7	0.1	0.08	8.00E-03	6.80E-03
1,2,3,6,7,8-Hexa CDD	EPA 8290	pg/L	< 2.3	< 2.2	0.1	0.1	1.15E-02	1.10E-02
1,2,3,6,7,8-Hexa CDF	EPA 8290	pg/L	< 1.9	< 1.6	0.1	0.2	1.90E-02	1.60E-02
1,2,3,7,8,9-Hexa CDD	EPA 8290	pg/L	< 2.2	< 2.2	0.1	0.1	1.10E-02	1.10E-02
1,2,3,7,8,9-Hexa CDF	EPA 8290	pg/L	< 2.3	< 2	0.1	0.6	6.90E-02	6.00E-02
1,2,3,7,8-Penta CDD	EPA 8290	pg/L	< 3.6	< 2.5	1	0.9	1.62E+00	1.13E+00
1,2,3,7,8-Penta CDF	EPA 8290	pg/L	< 0.95	< 0.89	0.05	0.2	4.75E-03	4.45E-03
2,3,4,6,7,8-Hexa CDF	EPA 8290	pg/L	< 2.1	< 1.8	0.1	0.7	7.35E-02	6.30E-02
2,3,4,7,8-Penta CDF	EPA 8290	pg/L	< 1	< 1.7	0.5	1.6	4.00E-01	6.80E-01
2,3,7,8-Tetra CDD	EPA 8290	pg/L	< 1.2	< 1.1	1	1	6.00E-01	5.50E-01
2,3,7,8-Tetra CDF	EPA 8290	pg/L	< 2.2	< 1.8	0.1	0.8	8.80E-02	7.20E-02
Octa CDD	EPA 8290	pg/L	< 1.6	< 22	0.0001	0.01	8.00E-07	1.10E-05
Octa CDF	EPA 8290	pg/L	< 2.1	< 1.9	0.0001	0.02	2.10E-06	1.90E-06
Tetra CDD-Equivalent							2.9	2.6

Notes:

[a] Congeners per California Regional Water Quality Control Board Waste Discharge Requirements

[b] If the result is not detected, the data are shown as less than (<) the method detection limit

[c] If the result is not detected, half the method detection limit for the respective congener is used to calculate TCDD-Equivalen

BEF = bioaccumulation equivalency factor
CDD = chlorodibenzodioxin
CDF = chlordibenzofuran
pg/L = picograms per liter
TCDD = tetrachlorodibenzodioxin
TEF = toxicity equivalency factor

Table 6. NPDES Effluent Chronic and Acute Toxicity Monitoring, Third Quarter 2015

SFPP Norwalk Pump Station, Norwalk, California

Analyte[a]	Accelerated Trigger[b]	Units	January 3, 2014 M-001 (Effluent)	December 19, 2014 M-001 (Effluent)	September 22, 2015 M-001 (Effluent)	3 Test Average M-001 (Effluent)
Acute - *A. affinis* (top smelt) – Survival	<90% / <70%	% survival	100%	100%	68%	89%
Chronic - *A. affinis* (top smelt) – Growth	>1.0	TUc	1.0	1.0	>1.0	N/A

Notes:

[a] Acute and Chronic Toxicity analysis was conducted using EPA Method 600-R-95-136.

[b] Accelerated testing shall be implemented if either the acute toxicity result is less than 90% survival as the average in any three consecutive tests, or less than 70% survival in any single test, or if the chronic toxicity result is more than 1 TUc.

N/A = not applicable
NOEC = no observable effect concentration
TRE = toxicity reduction evaluation
TUc = chronic toxicity unit, where TUc = 100/NOEC

Appendix A
Laboratory Analytical Reports and Chain-of-Custody Documents

August 10, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N016470

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on July 31, 2015 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,

Glen Gesmundo
QA Manager

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016470

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

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 Test:

MBAS, Phenol and Ammonia were subcontracted to AETL - Burbank, CA .

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET Laboratories

Date: *10-Aug-15*

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016470
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016470-001A	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001B	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001C	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001D	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001E	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001F	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001G	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001H	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001I	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001J	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015
N016470-001K	EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	7/31/2015	8/10/2015

ASSET LABORATORIES
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

CLIENT: CH2MHill
Lab Order: N016470
Project: SFPP - Norwalk Site
Lab ID: N016470-001

Client Sample ID: EFF-07-30
Collection Date: 7/30/2015 9:30:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150731B** QC Batch: **51095**				PrepDate:		**7/31/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	7/31/2015 11:22 AM
SETTLEABLE MATTER							
			SM2540F				
RunID: **WETCHEM_150731C** QC Batch: **51088**				PrepDate:		**7/31/2015**	Analyst: **QBM**
Settleable Matter	ND	0.089	0.089		ml/L	1	7/31/2015
TURBIDITY							
			SM 2130B				
RunID: **WETCHEM_150731A** QC Batch: **R101513**				PrepDate:			Analyst: **LR**
Turbidity	0.24	0.10	0.10		NTU	1	7/31/2015 11:00 AM
HEXANE EXTRACTABLE MATERIAL (HEM)							
			EPA 1664 _HEM				
RunID: **WETCHEM_150805A** QC Batch: **51125**				PrepDate:		**8/5/2015**	Analyst: **LR**
Oil & Grease	ND	0.77	4.4		mg/L	1	8/5/2015 08:45 AM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **MS5_150731A** QC Batch: **P15VW127**				PrepDate:			Analyst: **QBM**
1,1,1-Trichloroethane	ND	0.072	1.0		ug/L	1	7/31/2015 12:31 PM
1,1,2,2-Tetrachloroethane	ND	0.10	1.0		ug/L	1	7/31/2015 12:31 PM
1,1,2-Trichloroethane	ND	0.042	1.0		ug/L	1	7/31/2015 12:31 PM
1,1-Dichloroethane	ND	0.054	0.50		ug/L	1	7/31/2015 12:31 PM
1,1-Dichloroethene	ND	0.16	1.0		ug/L	1	7/31/2015 12:31 PM
1,2,4-Trichlorobenzene	ND	0.10	1.0		ug/L	1	7/31/2015 12:31 PM
1,2-Dichlorobenzene	ND	0.048	1.0		ug/L	1	7/31/2015 12:31 PM
1,2-Dichloroethane	ND	0.044	0.50		ug/L	1	7/31/2015 12:31 PM
1,2-Dichloropropane	ND	0.094	1.0		ug/L	1	7/31/2015 12:31 PM
1,3-Dichlorobenzene	ND	0.061	1.0		ug/L	1	7/31/2015 12:31 PM
1,4-Dichlorobenzene	ND	0.078	1.0		ug/L	1	7/31/2015 12:31 PM
2-Butanone	ND	0.70	10		ug/L	1	7/31/2015 12:31 PM
Benzene	ND	0.048	1.0		ug/L	1	7/31/2015 12:31 PM
Bromodichloromethane	ND	0.048	1.0		ug/L	1	7/31/2015 12:31 PM
Bromoform	ND	0.061	1.0		ug/L	1	7/31/2015 12:31 PM
Bromomethane	0.13	0.073	1.0	J	ug/L	1	7/31/2015 12:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Lab Order: N016470
Project: SFPP - Norwalk Site
Lab ID: N016470-001

Client Sample ID: EFF-07-30
Collection Date: 7/30/2015 9:30:00 AM
Matrix: WASTEWATER

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: **MS5_150731A** QC Batch: **P15VW127** PrepDate: Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Carbon tetrachloride	ND	0.057	0.50		ug/L	1	7/31/2015 12:31 PM
Chlorobenzene	ND	0.028	1.0		ug/L	1	7/31/2015 12:31 PM
Chloroethane	ND	0.099	1.0		ug/L	1	7/31/2015 12:31 PM
Chloroform	ND	0.048	1.0		ug/L	1	7/31/2015 12:31 PM
Chloromethane	0.35	0.043	1.0	J	ug/L	1	7/31/2015 12:31 PM
cis-1,3-Dichloropropene	ND	0.043	1.0		ug/L	1	7/31/2015 12:31 PM
Di-isopropyl ether	ND	0.034	1.0		ug/L	1	7/31/2015 12:31 PM
Dibromochloromethane	ND	0.057	1.0		ug/L	1	7/31/2015 12:31 PM
Ethylbenzene	ND	0.036	1.0		ug/L	1	7/31/2015 12:31 PM
Hexachlorobutadiene	ND	0.070	1.0		ug/L	1	7/31/2015 12:31 PM
m,p-Xylene	ND	0.14	1.0		ug/L	1	7/31/2015 12:31 PM
Methylene chloride	0.47	0.28	2.0	J	ug/L	1	7/31/2015 12:31 PM
MTBE	ND	0.098	1.0		ug/L	1	7/31/2015 12:31 PM
Naphthalene	ND	0.062	1.0		ug/L	1	7/31/2015 12:31 PM
o-Xylene	ND	0.042	1.0		ug/L	1	7/31/2015 12:31 PM
Tert-amyl methyl ether	ND	0.054	1.0		ug/L	1	7/31/2015 12:31 PM
Tert-Butanol	ND	0.40	5.0		ug/L	1	7/31/2015 12:31 PM
Tetrachloroethene	ND	0.12	1.0		ug/L	1	7/31/2015 12:31 PM
Toluene	ND	0.025	2.0		ug/L	1	7/31/2015 12:31 PM
trans-1,2-Dichloroethene	ND	0.074	1.0		ug/L	1	7/31/2015 12:31 PM
trans-1,3-Dichloropropene	ND	0.051	1.0		ug/L	1	7/31/2015 12:31 PM
Trichloroethene	ND	0.074	1.0		ug/L	1	7/31/2015 12:31 PM
Vinyl chloride	ND	0.044	0.50		ug/L	1	7/31/2015 12:31 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	7/31/2015 12:31 PM
Surr: 1,2-Dichloroethane-d4	100	0	72-119		%REC	1	7/31/2015 12:31 PM
Surr: 4-Bromofluorobenzene	95.8	0	76-119		%REC	1	7/31/2015 12:31 PM
Surr: Dibromofluoromethane	110	0	85-115		%REC	1	7/31/2015 12:31 PM
Surr: Toluene-d8	98.8	0	81-120		%REC	1	7/31/2015 12:31 PM

TPH EXTRACTABLE BY GC/FID

EPA 3510C **EPA 8015B**

RunID: **GC3_150803A** QC Batch: **51105** PrepDate: **8/3/2015** Analyst: **JAA**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TPH-Diesel (C13-C22)	18	16	26	J	ug/L	1	8/3/2015 11:40 PM
TPH-Oil (C23-C36)	ND	14	26		ug/L	1	8/3/2015 11:40 PM
Surr: Octacosane	91.0	0	26-152		%REC	1	8/3/2015 11:40 PM
Surr: p-Terphenyl	106	0	57-132		%REC	1	8/3/2015 11:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Lab Order: N016470
Project: SFPP - Norwalk Site
Lab ID: N016470-001

Client Sample ID: EFF-07-30
Collection Date: 7/30/2015 9:30:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID							
			EPA 8015B				
RunID: **GC4_150731A**	QC Batch: **E15VW049**			PrepDate:			Analyst: **QBM**
TPH-Gasoline (C4-C12)	30	16	50	J	ug/L	1	7/31/2015 02:03 PM
Surr: Chlorobenzene - d5	110	0	74-138		%REC	1	7/31/2015 02:03 PM
HEXAVALENT CHROMIUM BY IC							
			EPA 7199				
RunID: **IC7_150731A**	QC Batch: **R101534**			PrepDate:			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	7/31/2015 09:12 AM
MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_150804A**	QC Batch: **51089**			PrepDate:	**7/31/2015**		Analyst: **CEI**
Mercury	0.034	0.018	0.050	J	µg/L	1	8/4/2015 02:04 PM
TOTAL METALS BY COLLISION/REACTION CELL ICPMS							
			EPA 200.8				
RunID: **ICP7_150803A**	QC Batch: **51090**			PrepDate:	**7/31/2015**		Analyst: **CEI**
Selenium	ND	0.069	0.50		µg/L	1	8/3/2015 05:17 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **ICP7_150803A**	QC Batch: **51090**			PrepDate:	**7/31/2015**		Analyst: **CEI**
Antimony	ND	0.18	0.50		µg/L	1	8/3/2015 05:17 PM
Arsenic	15	0.027	0.10		µg/L	1	8/3/2015 05:17 PM
Beryllium	ND	0.010	0.50		µg/L	1	8/3/2015 05:17 PM
Cadmium	ND	0.013	0.25		µg/L	1	8/3/2015 05:17 PM
Chromium	ND	0.030	0.50		µg/L	1	8/3/2015 05:17 PM
Copper	ND	0.040	0.50		µg/L	1	8/3/2015 05:17 PM
Lead	ND	0.011	0.50		µg/L	1	8/3/2015 05:17 PM
Nickel	ND	0.032	1.0		µg/L	1	8/3/2015 05:17 PM
Silver	0.099	0.094	0.50	J	µg/L	1	8/4/2015 03:18 PM
Thallium	ND	0.0080	0.50		µg/L	1	8/3/2015 05:17 PM
Zinc	0.72	0.23	10	J	µg/L	1	8/3/2015 05:17 PM
TOTAL TPH							
		EPA 3510C	**EPA 8015B**				
RunID: **GC3_150803A**	QC Batch: **51105**			PrepDate:	**8/3/2015**		Analyst: **JAA**

Qualifiers:

B	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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-Aug-15*

CLIENT: CH2MHill
Lab Order: N016470
Project: SFPP - Norwalk Site
Lab ID: N016470-001

Client Sample ID: EFF-07-30
Collection Date: 7/30/2015 9:30:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL TPH							
	EPA 3510C			**EPA 8015B**			
RunID: **GC3_150803A**	QC Batch: **51105**			PrepDate:		**8/3/2015**	Analyst: **JAA**
Total TPH	48	16	50	J	ug/L	1	8/3/2015 11:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID: **MB-51095**	SampType: **MBLK**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **7/31/2015**	RunNo: **101514**
Client ID: **PBW**	Batch ID: **51095**	TestNo: **SM2540D**		Analysis Date: **7/31/2015**	SeqNo: **2055241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID: **LCS-51095**	SampType: **LCS**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **7/31/2015**	RunNo: **101514**
Client ID: **LCSW**	Batch ID: **51095**	TestNo: **SM2540D**		Analysis Date: **7/31/2015**	SeqNo: **2055242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	974.000	10	1000	0	97.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID: **MB-51088** SampType: **MBLK** TestCode: **160.5_2540F_** Units: **ml/L** Prep Date: **7/31/2015** RunNo: **101618**
Client ID: **PBW** Batch ID: **51088** TestNo: **SM2540F** Analysis Date: **7/31/2015** SeqNo: **2059196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Settleable Matter	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID: **MB-51125**	SampType: **MBLK**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/5/2015**	RunNo: **101569**
Client ID: **PBW**	Batch ID: **51125**	TestNo: **EPA 1664 _H**		Analysis Date: **8/5/2015**	SeqNo: **2057464**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	ND	4.0									

Sample ID: **LCS-51125**	SampType: **LCS**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/5/2015**	RunNo: **101569**
Client ID: **LCSW**	Batch ID: **51125**	TestNo: **EPA 1664 _H**		Analysis Date: **8/5/2015**	SeqNo: **2057465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	32.000	4.0	40.00	0	80.0	78	114				

Sample ID: **N016470-001GMS**	SampType: **MS**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/5/2015**	RunNo: **101569**
Client ID: **ZZZZZZ**	Batch ID: **51125**	TestNo: **EPA 1664 _H**		Analysis Date: **8/5/2015**	SeqNo: **2057467**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	37.283	4.3	43.48	0	85.8	78	114				

Sample ID: **N016470-001GMSD**	SampType: **MSD**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/5/2015**	RunNo: **101569**
Client ID: **ZZZZZZ**	Batch ID: **51125**	TestNo: **EPA 1664 _H**		Analysis Date: **8/5/2015**	SeqNo: **2057468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	37.143	4.4	43.96	0	84.5	78	114	37.28	0.376	18	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID: **MB-51090**	SampType: **MBLK**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101544**
Client ID: **PBW**	Batch ID: **51090**	TestNo: **EPA 200.8**		Analysis Date: **8/3/2015**	SeqNo: **2056418**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: **LCS-51090**	SampType: **LCS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101544**
Client ID: **LCSW**	Batch ID: **51090**	TestNo: **EPA 200.8**		Analysis Date: **8/3/2015**	SeqNo: **2056419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.502	0.50	10.00	0	105	85	115				

Sample ID: **N016470-001E-MS**	SampType: **MS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101544**
Client ID: **ZZZZZZ**	Batch ID: **51090**	TestNo: **EPA 200.8**		Analysis Date: **8/3/2015**	SeqNo: **2056423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.952	0.50	10.00	0	110	75	125				

Sample ID: **N016470-001E-MSD**	SampType: **MSD**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101544**
Client ID: **ZZZZZZ**	Batch ID: **51090**	TestNo: **EPA 200.8**		Analysis Date: **8/3/2015**	SeqNo: **2056424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.867	0.50	10.00	0	109	75	125	10.95	0.778	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **MB-51090**	SampType: **MBLK**	TestCode: **200.8_W_SFP**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101544**
Client ID: **PBW**	Batch ID: **51090**	TestNo: **EPA 200.8**		Analysis Date: **8/3/2015**	SeqNo: **2056472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Beryllium	ND	0.50									
Cadmium	ND	0.25									
Chromium	ND	0.50									
Copper	ND	0.50									
Lead	ND	0.50									
Nickel	ND	1.0									
Thallium	ND	0.50									
Zinc	ND	10									

Sample ID: **LCS-51090**	SampType: **LCS**	TestCode: **200.8_W_SFP**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101544**
Client ID: **LCSW**	Batch ID: **51090**	TestNo: **EPA 200.8**		Analysis Date: **8/3/2015**	SeqNo: **2056473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.505	0.50	10.00	0	115	85	115				S
Arsenic	11.258	0.10	10.00	0	113	85	115				
Beryllium	10.936	0.50	10.00	0	109	85	115				
Cadmium	11.049	0.25	10.00	0	110	85	115				
Chromium	11.163	0.50	10.00	0	112	85	115				
Copper	10.502	0.50	10.00	0	105	85	115				
Lead	11.780	0.50	10.00	0	118	85	115				S
Nickel	11.317	1.0	10.00	0	113	85	115				
Thallium	11.462	0.50	10.00	0	115	85	115				
Zinc	117.570	10	100.0	0	118	85	115				S

Sample ID: **N016470-001E-MS**	SampType: **MS**	TestCode: **200.8_W_SFP**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101544**
Client ID: **ZZZZZZ**	Batch ID: **51090**	TestNo: **EPA 200.8**		Analysis Date: **8/3/2015**	SeqNo: **2056477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **N016470-001E-MS** SampType: **MS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **7/31/2015** RunNo: **101544**
Client ID: **ZZZZZZ** Batch ID: **51090** TestNo: **EPA 200.8** Analysis Date: **8/3/2015** SeqNo: **2056477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.841	0.50	10.00	0	118	75	125				
Arsenic	27.058	0.10	10.00	15.21	118	75	125				
Beryllium	11.664	0.50	10.00	0	117	75	125				
Cadmium	9.447	0.25	10.00	0	94.5	75	125				
Chromium	10.886	0.50	10.00	0	109	75	125				
Copper	8.278	0.50	10.00	0	82.8	75	125				
Lead	11.517	0.50	10.00	0	115	75	125				
Nickel	10.042	1.0	10.00	0	100	75	125				
Thallium	10.909	0.50	10.00	0	109	75	125				
Zinc	104.053	10	100.0	0.7201	103	75	125				

Sample ID: **N016470-001E-MSD** SampType: **MSD** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **7/31/2015** RunNo: **101544**
Client ID: **ZZZZZZ** Batch ID: **51090** TestNo: **EPA 200.8** Analysis Date: **8/3/2015** SeqNo: **2056478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.985	0.50	10.00	0	120	75	125	11.84	1.21	20	
Arsenic	26.660	0.10	10.00	15.21	114	75	125	27.06	1.48	20	
Beryllium	11.634	0.50	10.00	0	116	75	125	11.66	0.255	20	
Cadmium	9.478	0.25	10.00	0	94.8	75	125	9.447	0.321	20	
Chromium	10.974	0.50	10.00	0	110	75	125	10.89	0.802	20	
Copper	8.316	0.50	10.00	0	83.2	75	125	8.278	0.456	20	
Lead	11.570	0.50	10.00	0	116	75	125	11.52	0.463	20	
Nickel	10.058	1.0	10.00	0	101	75	125	10.04	0.151	20	
Thallium	10.987	0.50	10.00	0	110	75	125	10.91	0.716	20	
Zinc	103.478	10	100.0	0.7201	103	75	125	104.1	0.555	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **MB-51115**	SampType: **MBLK**	TestCode: **200.8_W_SFP**	Units: **µg/L**	Prep Date: **8/4/2015**	RunNo: **101552**
Client ID: **PBW**	Batch ID: **51115**	TestNo: **EPA 200.8**		Analysis Date: **8/4/2015**	SeqNo: **2056855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.387	0.50									J

Sample ID: **LCS-51115**	SampType: **LCS**	TestCode: **200.8_W_SFP**	Units: **µg/L**	Prep Date: **8/4/2015**	RunNo: **101552**
Client ID: **LCSW**	Batch ID: **51115**	TestNo: **EPA 200.8**		Analysis Date: **8/4/2015**	SeqNo: **2056856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	10.704	0.50	10.00	0	107	85	115				

Sample ID: **N016470-001E-MS**	SampType: **MS**	TestCode: **200.8_W_SFP**	Units: **µg/L**	Prep Date: **8/4/2015**	RunNo: **101552**
Client ID: **ZZZZZZ**	Batch ID: **51115**	TestNo: **EPA 200.8**		Analysis Date: **8/4/2015**	SeqNo: **2056860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.801	0.50	10.00	0.09879	97.0	75	125				

Sample ID: **N016470-001E-MSD**	SampType: **MSD**	TestCode: **200.8_W_SFP**	Units: **µg/L**	Prep Date: **8/4/2015**	RunNo: **101552**
Client ID: **ZZZZZZ**	Batch ID: **51115**	TestNo: **EPA 200.8**		Analysis Date: **8/4/2015**	SeqNo: **2056861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	9.794	0.50	10.00	0.09879	97.0	75	125	9.801	0.0642	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID: **MB-R101513**	SampType: **MBLK**	TestCode: **2130_W**	Units: **NTU**	Prep Date:					RunNo: **101513**		
Client ID: **PBW**	Batch ID: **R101513**	TestNo: **SM 2130B**		Analysis Date: **7/31/2015**					SeqNo: **2055240**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID: **MB-51089**	SampType: **MBLK**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101553**
Client ID: **PBW**	Batch ID: **51089**	TestNo: **EPA 245.1**		Analysis Date: **8/4/2015**	SeqNo: **2056864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.033	0.050									J

Sample ID: **LCS-51089**	SampType: **LCS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101553**
Client ID: **LCSW**	Batch ID: **51089**	TestNo: **EPA 245.1**		Analysis Date: **8/4/2015**	SeqNo: **2056865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.378	0.050	2.500	0	95.1	85	115				

Sample ID: **N016470-001E-MS**	SampType: **MS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101553**
Client ID: **ZZZZZZ**	Batch ID: **51089**	TestNo: **EPA 245.1**		Analysis Date: **8/4/2015**	SeqNo: **2056866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.611	0.050	2.500	0.03389	103	75	125				

Sample ID: **N016470-001E-MSD**	SampType: **MSD**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **7/31/2015**	RunNo: **101553**
Client ID: **ZZZZZZ**	Batch ID: **51089**	TestNo: **EPA 245.1**		Analysis Date: **8/4/2015**	SeqNo: **2056867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.627	0.050	2.500	0.03389	104	75	125	2.611	0.612	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID: **MB-R101534** SampType: **MBLK** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **101534**
Client ID: **PBW** Batch ID: **R101534** TestNo: **EPA 7199** Analysis Date: **7/31/2015** SeqNo: **2055969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-R101534** SampType: **LCS** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **101534**
Client ID: **LCSW** Batch ID: **R101534** TestNo: **EPA 7199** Analysis Date: **7/31/2015** SeqNo: **2055970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.988	0.20	5.000	0	99.8	90	110				

Sample ID: **N016470-001FMS** SampType: **MS** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **101534**
Client ID: **ZZZZZZ** Batch ID: **R101534** TestNo: **EPA 7199** Analysis Date: **7/31/2015** SeqNo: **2055973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	85	115				

Sample ID: **N016470-001FMSD** SampType: **MSD** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **101534**
Client ID: **ZZZZZZ** Batch ID: **R101534** TestNo: **EPA 7199** Analysis Date: **7/31/2015** SeqNo: **2055974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.988	0.20	1.000	0	98.8	85	115	0.9915	0.384	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: **MB-51105** SampType: **MBLK** TestCode: **8015_W_FP_** Units: **ug/L** Prep Date: **8/3/2015** RunNo: **101542**
Client ID: **PBW** Batch ID: **51105** TestNo: **EPA 8015B** **EPA 3510C** Analysis Date: **8/3/2015** SeqNo: **2056172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	ND	25									
Surr: Octacosane	67.913		80.00		84.9	26	152				
Surr: p-Terphenyl	79.517		80.00		99.4	57	132				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: **MB-51105**	SampType: **MBLK**	TestCode: **8015_W_SFP**	Units: **ug/L**		Prep Date: **8/3/2015**			RunNo: **101542**			
Client ID: **PBW**	Batch ID: **51105**	TestNo: **EPA 8015B**	**EPA 3510C**		Analysis Date: **8/3/2015**			SeqNo: **2056195**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: **E150731LCS** SampType: **LCS** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101525**
Client ID: **LCSW** Batch ID: **E15VW049** TestNo: **EPA 8015B** Analysis Date: **7/31/2015** SeqNo: **2055704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	865.000	50	1000	0	86.5	67	136				
Surr: Chlorobenzene - d5	47101.000		50000		94.2	74	138				

Sample ID: **E150731MB2** SampType: **MBLK** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101525**
Client ID: **PBW** Batch ID: **E15VW049** TestNo: **EPA 8015B** Analysis Date: **7/31/2015** SeqNo: **2055706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	29.000	50									J
Surr: Chlorobenzene - d5	45432.000		50000		90.9	74	138				

Sample ID: **N016470-001JMS** SampType: **MS** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101525**
Client ID: **ZZZZZZ** Batch ID: **E15VW049** TestNo: **EPA 8015B** Analysis Date: **7/31/2015** SeqNo: **2055709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	848.000	50	1000	30.00	81.8	67	136				
Surr: Chlorobenzene - d5	47301.000		50000		94.6	74	138				

Sample ID: **N016470-001JMSD** SampType: **MSD** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101525**
Client ID: **ZZZZZZ** Batch ID: **E15VW049** TestNo: **EPA 8015B** Analysis Date: **7/31/2015** SeqNo: **2055710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	843.000	50	1000	30.00	81.3	67	136	848.0	0.591	30	
Surr: Chlorobenzene - d5	48416.000		50000		96.8	74	138		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **P150731LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **LCSW** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	21.490	1.0	20.00	0	107	67	132				
1,1,2,2-Tetrachloroethane	20.150	1.0	20.00	0	101	63	128				
1,1,2-Trichloroethane	21.580	1.0	20.00	0	108	75	125				
1,1-Dichloroethane	18.650	0.50	20.00	0	93.3	69	133				
1,1-Dichloroethene	20.560	1.0	20.00	0	103	68	130				
1,2,4-Trichlorobenzene	20.630	1.0	20.00	0	103	66	134				
1,2-Dichlorobenzene	20.790	1.0	20.00	0	104	71	122				
1,2-Dichloroethane	20.670	0.50	20.00	0	103	69	132				
1,2-Dichloropropane	20.070	1.0	20.00	0	100	75	125				
1,3-Dichlorobenzene	20.970	1.0	20.00	0	105	75	124				
1,4-Dichlorobenzene	20.790	1.0	20.00	0	104	74	123				
2-Butanone	198.540	10	200.0	0	99.3	49	136				
Benzene	20.910	1.0	20.00	0	105	81	122				
Bromodichloromethane	23.000	1.0	20.00	0	115	76	121				
Bromoform	22.560	1.0	20.00	0	113	69	128				
Bromomethane	16.430	1.0	20.00	0	82.2	53	141				
Carbon tetrachloride	20.690	0.50	20.00	0	103	66	138				
Chlorobenzene	20.670	1.0	20.00	0	103	81	122				
Chloroethane	24.390	1.0	20.00	0	122	58	133				
Chloroform	21.150	1.0	20.00	0	106	69	128				
Chloromethane	17.420	1.0	20.00	0	87.1	56	131				
cis-1,3-Dichloropropene	21.030	1.0	20.00	0	105	69	131				
Di-isopropyl ether	19.490	1.0	20.00	0	97.5	70	130				
Dibromochloromethane	20.640	1.0	20.00	0	103	66	133				
Ethylbenzene	20.020	1.0	20.00	0	100	73	127				
Hexachlorobutadiene	21.060	1.0	20.00	0	105	67	131				
m,p-Xylene	40.400	1.0	40.00	0	101	76	128				
Methylene chloride	21.250	2.0	20.00	0	106	63	137				
MTBE	19.950	1.0	20.00	0	99.8	65	123				
Naphthalene	19.920	1.0	20.00	0	99.6	54	138				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **P150731LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **LCSW** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	19.880	1.0	20.00	0	99.4	80	121				
Tert-amyl methyl ether	19.890	1.0	20.00	0	99.4	70	130				
Tert-Butanol	98.460	5.0	100.0	0	98.5	70	130				
Tetrachloroethene	21.330	1.0	20.00	0	107	66	128				
Toluene	21.490	2.0	20.00	0	107	77	122				
trans-1,2-Dichloroethene	22.130	1.0	20.00	0	111	63	137				
trans-1,3-Dichloropropene	21.490	1.0	20.00	0	107	59	135				
Trichloroethene	21.780	1.0	20.00	0	109	70	127				
Vinyl chloride	17.830	0.50	20.00	0	89.2	50	134				
Xylenes, Total	60.280	2.0	60.00	0	100	75	125				
Surr: 1,2-Dichloroethane-d4	24.860		25.00		99.4	72	119				
Surr: 4-Bromofluorobenzene	25.030		25.00		100	76	119				
Surr: Dibromofluoromethane	26.850		25.00		107	85	115				
Surr: Toluene-d8	24.970		25.00		99.9	81	120				

Sample ID: **N016470-001BMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **ZZZZZZ** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	21.470	1.0	20.00	0	107	67	132				
1,1,2,2-Tetrachloroethane	19.230	1.0	20.00	0	96.2	63	128				
1,1,2-Trichloroethane	21.340	1.0	20.00	0	107	75	125				
1,1-Dichloroethane	17.900	0.50	20.00	0	89.5	69	133				
1,1-Dichloroethene	19.810	1.0	20.00	0	99.0	68	130				
1,2,4-Trichlorobenzene	19.400	1.0	20.00	0	97.0	66	134				
1,2-Dichlorobenzene	20.540	1.0	20.00	0	103	71	122				
1,2-Dichloroethane	20.470	0.50	20.00	0	102	69	132				
1,2-Dichloropropane	19.610	1.0	20.00	0	98.0	75	125				
1,3-Dichlorobenzene	20.370	1.0	20.00	0	102	75	124				
1,4-Dichlorobenzene	20.490	1.0	20.00	0	102	74	123				

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **N016470-001BMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **ZZZZZZ** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Butanone	188.230	10	200.0	0	94.1	49	136				
Benzene	20.310	1.0	20.00	0	102	81	122				
Bromodichloromethane	22.600	1.0	20.00	0	113	76	121				
Bromoform	22.040	1.0	20.00	0	110	69	128				
Bromomethane	16.220	1.0	20.00	0.1300	80.4	53	141				
Carbon tetrachloride	21.060	0.50	20.00	0	105	66	138				
Chlorobenzene	20.440	1.0	20.00	0	102	81	122				
Chloroethane	23.460	1.0	20.00	0	117	58	133				
Chloroform	20.610	1.0	20.00	0	103	69	128				
Chloromethane	18.170	1.0	20.00	0.3500	89.1	56	131				
cis-1,3-Dichloropropene	20.090	1.0	20.00	0	100	69	131				
Di-isopropyl ether	19.040	1.0	20.00	0	95.2	70	130				
Dibromochloromethane	20.280	1.0	20.00	0	101	66	133				
Ethylbenzene	19.670	1.0	20.00	0	98.4	73	127				
Hexachlorobutadiene	18.340	1.0	20.00	0	91.7	67	131				
m,p-Xylene	40.000	1.0	40.00	0	100	76	128				
Methylene chloride	20.120	2.0	20.00	0.4700	98.3	63	137				
MTBE	19.550	1.0	20.00	0	97.8	65	123				
Naphthalene	19.230	1.0	20.00	0	96.2	54	138				
o-Xylene	19.940	1.0	20.00	0	99.7	80	121				
Tert-amyl methyl ether	19.520	1.0	20.00	0	97.6	70	130				
Tert-Butanol	89.900	5.0	100.0	0	89.9	70	130				
Tetrachloroethene	20.790	1.0	20.00	0	104	66	128				
Toluene	21.060	2.0	20.00	0	105	77	122				
trans-1,2-Dichloroethene	21.420	1.0	20.00	0	107	63	137				
trans-1,3-Dichloropropene	21.250	1.0	20.00	0	106	59	135				
Trichloroethene	21.250	1.0	20.00	0	106	70	127				
Vinyl chloride	17.350	0.50	20.00	0	86.8	50	134				
Xylenes, Total	59.940	2.0	60.00	0	99.9	75	125				
Surr: 1,2-Dichloroethane-d4	24.890		25.00		99.6	72	119				

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **N016470-001BMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **ZZZZZZ** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	25.280		25.00		101	76	119				
Surr: Dibromofluoromethane	26.080		25.00		104	85	115				
Surr: Toluene-d8	25.140		25.00		101	81	120				

Sample ID: **N016470-001BMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **ZZZZZZ** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	21.280	1.0	20.00	0	106	67	132	21.47	0.889	20	
1,1,2,2-Tetrachloroethane	19.280	1.0	20.00	0	96.4	63	128	19.23	0.260	20	
1,1,2-Trichloroethane	21.440	1.0	20.00	0	107	75	125	21.34	0.468	20	
1,1-Dichloroethane	18.190	0.50	20.00	0	91.0	69	133	17.90	1.61	20	
1,1-Dichloroethene	19.610	1.0	20.00	0	98.0	68	130	19.81	1.01	20	
1,2,4-Trichlorobenzene	19.880	1.0	20.00	0	99.4	66	134	19.40	2.44	20	
1,2-Dichlorobenzene	20.010	1.0	20.00	0	100	71	122	20.54	2.61	20	
1,2-Dichloroethane	20.260	0.50	20.00	0	101	69	132	20.47	1.03	20	
1,2-Dichloropropane	19.390	1.0	20.00	0	97.0	75	125	19.61	1.13	20	
1,3-Dichlorobenzene	20.270	1.0	20.00	0	101	75	124	20.37	0.492	20	
1,4-Dichlorobenzene	20.100	1.0	20.00	0	101	74	123	20.49	1.92	20	
2-Butanone	189.730	10	200.0	0	94.9	49	136	188.2	0.794	20	
Benzene	20.420	1.0	20.00	0	102	81	122	20.31	0.540	20	
Bromodichloromethane	22.530	1.0	20.00	0	113	76	121	22.60	0.310	20	
Bromoform	21.880	1.0	20.00	0	109	69	128	22.04	0.729	20	
Bromomethane	17.100	1.0	20.00	0.1300	84.9	53	141	16.22	5.28	20	
Carbon tetrachloride	20.880	0.50	20.00	0	104	66	138	21.06	0.858	20	
Chlorobenzene	20.350	1.0	20.00	0	102	81	122	20.44	0.441	20	
Chloroethane	26.220	1.0	20.00	0	131	58	133	23.46	11.1	20	
Chloroform	20.860	1.0	20.00	0	104	69	128	20.61	1.21	20	
Chloromethane	18.690	1.0	20.00	0.3500	91.7	56	131	18.17	2.82	20	
cis-1,3-Dichloropropene	20.360	1.0	20.00	0	102	69	131	20.09	1.33	20	

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **N016470-001BMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **ZZZZZZ** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-isopropyl ether	18.930	1.0	20.00	0	94.6	70	130	19.04	0.579	20	
Dibromochloromethane	20.420	1.0	20.00	0	102	66	133	20.28	0.688	20	
Ethylbenzene	19.650	1.0	20.00	0	98.2	73	127	19.67	0.102	20	
Hexachlorobutadiene	19.700	1.0	20.00	0	98.5	67	131	18.34	7.15	20	
m,p-Xylene	40.310	1.0	40.00	0	101	76	128	40.00	0.772	20	
Methylene chloride	20.300	2.0	20.00	0.4700	99.2	63	137	20.12	0.891	20	
MTBE	19.940	1.0	20.00	0	99.7	65	123	19.55	1.98	20	
Naphthalene	19.190	1.0	20.00	0	96.0	54	138	19.23	0.208	20	
o-Xylene	19.660	1.0	20.00	0	98.3	80	121	19.94	1.41	20	
Tert-amyl methyl ether	19.360	1.0	20.00	0	96.8	70	130	19.52	0.823	20	
Tert-Butanol	96.180	5.0	100.0	0	96.2	70	130	89.90	6.75	20	
Tetrachloroethene	20.740	1.0	20.00	0	104	66	128	20.79	0.241	20	
Toluene	20.880	2.0	20.00	0	104	77	122	21.06	0.858	20	
trans-1,2-Dichloroethene	21.110	1.0	20.00	0	106	63	137	21.42	1.46	20	
trans-1,3-Dichloropropene	21.380	1.0	20.00	0	107	59	135	21.25	0.610	20	
Trichloroethene	21.780	1.0	20.00	0	109	70	127	21.25	2.46	20	
Vinyl chloride	17.080	0.50	20.00	0	85.4	50	134	17.35	1.57	20	
Xylenes, Total	59.970	2.0	60.00	0	100	75	125	59.94	0.0500	20	
Surr: 1,2-Dichloroethane-d4	25.120		25.00		100	72	119		0		
Surr: 4-Bromofluorobenzene	25.270		25.00		101	76	119		0		
Surr: Dibromofluoromethane	26.100		25.00		104	85	115		0		
Surr: Toluene-d8	24.580		25.00		98.3	81	120		0		

Sample ID: **P150731MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **PBW** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **P150731MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **PBW** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	1.0									
1,2,4-Trichlorobenzene	0.140	1.0									J
1,2-Dichlorobenzene	0.040	1.0									J
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2-Butanone	ND	10									
Benzene	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
Di-isopropyl ether	ND	1.0									
Dibromochloromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Hexachlorobutadiene	ND	1.0									
m,p-Xylene	0.030	1.0									J
Methylene chloride	1.860	2.0									J
MTBE	ND	1.0									
Naphthalene	0.170	1.0									J
o-Xylene	ND	1.0									
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016470
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **P150731MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101518**
Client ID: **PBW** Batch ID: **P15VW127** TestNo: **EPA 8260B** Analysis Date: **7/31/2015** SeqNo: **2055425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tetrachloroethene	ND	1.0									
Toluene	ND	2.0									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Vinyl chloride	ND	0.50									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	25.410		25.00		102	72	119				
Surr: 4-Bromofluorobenzene	24.190		25.00		96.8	76	119				
Surr: Dibromofluoromethane	27.530		25.00		110	85	115				
Surr: Toluene-d8	24.830		25.00		99.3	81	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

Advanced Technology Laboratories
3151 W. Post Road
Las Vegas, NV 89118
Tel: 702-307-2659 Fax: 702-307-2691
Marlon Cartin (marlon@atl-labs.com)

7/30/15

4.3°C IR #2

LABORATORY CLIENT: **Kinder Morgan Energy Partners, Attn: Steve Defibaugh**
ADDRESS: **1100 Town & Country Road**
CITY: **Orange, CA 92868**
TEL: **714-560-4802** FAX: **714-560-4601** E-MAIL: james_dye@kindermorgan.com

CLIENT PROJECT NAME / NUMBER: **SFPP - Norwalk Site**
PROJECT CONTACT: **James Dye**
SAMPLER(S): (SIGNATURE)
P.O. NO.:
QUOTE NO.:
LAB USE ONLY

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ■ 48HR ☐ 72 HR ■ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Report to D. Jablonski/CH2M HILL, cc: KMEP
Direct Bill KMEP/SFPP - Steve Defibaugh-ref. AFE# 81195
"J" flags required/Use lowest possible detection limit - all methods.

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MAT-RIX	NO. OF CONT.	Ammonia Nitrogen (as N) (SM-4500 NH3C)	DIPE, TAME, and MEK (8260B)	MBAs (SM 5540C)	Turbidity (SM2130B)	Cu, Pb, Tl, Zn, & Priority Pollutants (200.8)	Se (200.8); Hg (245.1)	Cr VI (7199)	BTEX, 1,1-DCA, 1,2-DCA, & Priority Pollutans (8260B)	MTBE and TBA, (8260B) 48HR TAT	Oil & Grease (1664)	TPH-g, TPH-d, and TPH-oil (8015B)	Settleable Solids (SM2540F)	Total Suspended Solids (SM2540D)	Phenol (420.1)	Comments
	EFF-07-30	Effluent	7/30/2015	0930	WW	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	NO16470-01

Relinquished by: (Signature) Y. Cartin	Received by: (Signature)	Date: 7/30/15	Time: 1015
Relinquished by: (Signature) 7-30-15 11:27 AM	Received by: (Signature) Andy Hatton	Date: 7/31/15	Time: 0810
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Revised: 08/23/12

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: 7/31/2015 Workorder: N016470

Rep sample Temp (Deg C): 4.3 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: Golden State Overnight

Last 4 digits of Tracking No.: 3749 Packing Material Used: Bubble Wrap

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☑	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for Metals is at pH4 upon receipt.

Checklist Completed B JPG 07/31/15

Reviewed By: 07/31/15

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

31-Jul-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 420.1	SM 5540 C	SM4500-NH3C
N016470-001A / EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	16OZP			1
N016470-001C / EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	32OZP		1	
N016470-001I / EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	32OZA	1		

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

Please use PO#: N16470A Please email Invoices and Account Receivable Statements to AssetAP@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 Ammonia, ~~BOD,~~ and MBAS.

Phenols jpg 07/31/15

	Date/Time		Date/Time
Relinquished by: jpg 07/30/15		**Received by:**	
Relinquished by:		**Received by:**	

AETL

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Asset Laboratories	**Report to:**	**Bill to:**	**EDD Requirement**
Address:	**Company:**	**Address:**	Excel EDD ☐
Address:	**Email:**		Geotracker ☐
Phone: / **Fax:**	**Address:**	**Email to:** / **PO#**	Labspec ☐
Submitted By: Molky Brar		**Phone:** / **Fax:**	Others ☐
Title:	**Phone:** / **Fax:**		Specify:
Signature: / **Date:**	**Sampled By:**		Global ID:

I hereby authorize ASSET Labs to perform the tests indicated below:

Project Name: SFPP-Norwalk site

Project Number:

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Signature: / *Date*

Matrix

Ground ☐	Sediment ☐		
Potable ☐	Soil ☐		
NPDES ☐	Other Solid ☐		
Surface ☐			

QA/QC

RTNE	☐
RWQCB	☐
CalTrans	☐
Level III	☐
LEVEL IV	☐
Regulatory	☐

Specify State:

Sampe Receipt Condition

	Y	N
1. Chilled	☐	☐
2. Headspace	☐	☐
3. Container Intact	☐	☐
4. Seal Present	☐	☐
5. IR number		
6. Method of Cooling		

Sample Temp:

Courier:

Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Ammonia MBAs (SM 5540C) Phenol (420.1)	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1		EFF-07-30	7/30/15	0930	WW			XXX		3			2 Plastic + 1 Glass
2													
3													
4													
5													
6													
7													
8													
9													
10													

Relinquished by (Signature and Printed Name): Date / Time — Received by (Signature and Printed Name): Date / Time

Relinquished by (Signature and Printed Name): Date / Time — Received by (Signature and Printed Name): Date / Time

Relinquished by (Signature and Printed Name): Date / Time — Received by (Signature and Printed Name): Date / Time

Turn Around Time (TAT)

- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

TAT Starts at 8 AM the followiling day if samples received after 3:00 PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = Zn(AC)2	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

T = Tube	V = VOA	P = Plint
J = Jar	B = Tedlar	G = Glass
M = Metal	P = Plastic	C = Can

White = Laboratory Copy

Yellow = Customer's Copy

ASSET Laboratories

WORK ORDER Summary

31-Jul-15

WorkOrder: N016470

Client ID: CH2HI03

Project: SFPP - Norwalk Site **QC Level:** RTNE **Date Received:** 7/31/2015

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP. Direct Bill KMEP/SFPP-Steve Defibaugh-ref.AFE# 81195. "J" Flags required / Use lowest possible detection l

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N016470-001A	EFF-07-30	7/30/2015 9:30:00 AM	8/7/2015	Wastewater	SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
N016470-001B			8/4/2015		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	WV
N016470-001C			8/7/2015		SM 5540 C	SURFACTANTS	☐	☐	☑	SUB
N016470-001D			8/7/2015		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			8/7/2015			Total Suspended Solids Prep	☐	☐	☐	WW
			8/7/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
N016470-001E			8/4/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			8/4/2015		EPA 200.8	TOTAL METALS BY COLLISION/REACTION CELL ICPMS	☐	☐	☐	WW
			8/4/2015		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			8/4/2015		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			8/4/2015			MERCURY PREP	☐	☐	☐	WW
N016470-001F			8/7/2015		EPA 7199	Hexavalent Chromium by IC	☐	☐	☐	WW
N016470-001G			8/7/2015			Oil and Grease Sample Prep	☐	☐	☐	WW
			8/7/2015		EPA 1664 _HEM	Hexane Extractable Material (HEM)	☐	☐	☐	WW
N016470-001H			8/7/2015		SM2540F	SETTLEABLE MATTER	☐	☐	☐	WW
			8/7/2015			Setteable Matter	☐	☐	☐	WW
N016470-001I			8/7/2015		EPA 420.1	PHENOLICS	☐	☐	☑	SUB
N016470-001J			8/7/2015		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☐	☐	☐	WV
N016470-001K			8/7/2015		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☐	☐	☐	WW
			8/7/2015		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

31-Jul-15

WorkOrder: N016470

Client ID: CH2HI03

Project: SFPP - Norwalk Site **QC Level:** RTNE **Date Received:** 7/31/2015

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP. Direct Bill KMEP/SFPP-Steve Defibaugh-ref.AFE# 81195. "J" Flags required / Use lowest possible detection l

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N016470-001K	EFF-07-30	7/30/2015 9:30:00 AM	8/7/2015	Wastewater	EPA 8015B	Total TPH	☐	☐	☐	WW
N016470-002A	FOLDER		8/4/2015		Folder	Folder	☐	☐	☐	LAB

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Ship To
ATL INC
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: REQUIRED

Tracking #: 528773749 **CPS**

LVS **A**

LAS VEGAS

C89102A

40686954

Print Date: 7/30/2015 3:58 PM

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attention: Marlon Cartin

Number of Pages	**4**
Date Received	**07/30/2015**
Date Reported	**08/10/2015**

Job Number	Order Date	Client
77781	07/30/2015	ASSET

Project ID: N016470
Project Name: N16470A
Site: SFPP-Norwalk Site

Enclosed please find results of analyses of 1 waste water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

31-Jul-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 420.1	SM 5540 C	SM4500-NH3C
N016470-001A / EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	16OZP			1
N016470-001C / EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	32OZP		1	
N016470-001I / EFF-07-30	Wastewater	7/30/2015 9:30:00 AM	32OZA	1		

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

Please use PO#: N16470A Please email Invoices and Account Receivable Statements to AssetAP@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 Ammonia, BOD, and MBAS.

	Date/Time		Date/Time
Relinquished by: jog 07/30/15		**Received by:**	
Relinquished by:		**Received by:**	

AETL
ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

77781

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Asset Laboratories	**Report to:**	**Bill to:**	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address:	**Company:**	**Address:**	Excel EDD ☐	RTNE ☐	Y N
Address:	**Email:**		Geotracker ☐	RWQCB ☐	1. Chilled ☐ ☐
Phone: / **Fax:**	**Address:**	**Email to:** / **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By: Molky Brar		**Phone:** / **Fax:**	Others ☐	Level III ☐	3. Container Intact ☐ ☐
Title:	**Phone:** / **Fax:**		Specify:	LEVEL IV ☐	4. Seal Present ☐ ☐
Signature: / **Date:**	**Sampled By:**		Global ID:	Regulatory ☐	5. IR number
I hereby authorize ASSET Labs to perform the tests indicated below:				Specify State:	6. Method of Cooling
Project Name: SFPP-Norwalk site	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*				Sample Temp:
Project Number:	*Signature:* / *Date*				Courier: / Tracking No.

Matrix: Ground ☐ Sediment ☐ Potable ☐ Soil ☐ NPDES ☐ Other Solid ☐ Surface ☐

Analyses Requested: Ammonia (SM 5540C) / MBAS (SM 5540C) / Phenol (420.1)

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	77781.01	EFF-07-30	7/30/15	0930	WW				3			2 Plastic + 1 Glass
2												
3												
4												
5												
6												
7												
8												
9												
10												

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
	7-30-15 12:50	Astin	07/30/15 1250
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT)
- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☑ E = Routine 5-7 Workdays

TAT Starts at 8 AM the followiing day if samples received after 3:00 PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:		
T = Tube	V = VOA	P = Pint
J = Jar	B = Tedlar	G = Glass
M = Metal	P = Plastic	C = Can

White = Laboratory Copy

Yellow = Customer's Copy

American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attention: Marlon Cartin

Project ID: N016470
Date Received 07/30/2015
Date Reported 08/10/2015

Job Number	Order Date	Client
77781	07/30/2015	ASSET

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 07/30/2015.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
77781.01	N016470-001/ EFF-0730	07/30/2015	Aqueous	3

Method ^ Submethod	*Req Date*	*Priority*	*TAT*	*Units*
420.1	08/06/2015	2	Normal	mg/L
SM-4500-NH3-C	08/06/2015	2	Normal	mg/L
SM-5540C	08/06/2015	2	Normal	mg/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin

Site

SFPP-Norwalk Site

Page: **2**

Project ID: N016470
Project Name: N16470A

AETL Job Number	Submitted	Client
77781	07/30/2015	ASSET

Method: 420.1, Phenolics, Total Recoverable, Spectrophotometric, Manual

QC Batch No: 080515-1

Our Lab I.D.			Method Blank	77781.01			
Client Sample I.D.				N016470-001 / EFF-0730			
Date Sampled				07/30/2015			
Date Prepared			08/05/2015	08/05/2015			
Preparation Method			420.1	420.1			
Date Analyzed			08/05/2015	08/05/2015			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Phenolic compounds as phenol	0.15	0.30	ND	ND			

QUALITY CONTROL REPORT

QC Batch No: 080515-1; Dup or Spiked Sample: 77781.01; LCS: Clean Water; QC Prepared: 08/05/2015; QC Analyzed: 08/05/2015; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Phenol	0.00	0.500	0.437	87.4	0.500	0.427	85.4	2.3	80-120	<15

QC Batch No: 080515-1; Dup or Spiked Sample: 77781.01; LCS: Clean Water; QC Prepared: 08/05/2015; QC Analyzed: 08/05/2015; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Phenol	0.500	0.404	80.8	0.500	0.427	85.4	5.5	80-120	<20	

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin

Site

SFPP-Norwalk Site

Page: **3**

Project ID: N016470
Project Name: N16470A

AETL Job Number	Submitted	Client
77781	07/30/2015	ASSET

Method: SM-4500-NH3-C, Ammonia by Nesslerization Method

QC Batch No: 073115-1

Our Lab I.D.			Method Blank	**77781.01**			
Client Sample I.D.				N016470-001 / EFF-0730			
Date Sampled				**07/30/2015**			
Date Prepared			**07/31/2015**	**07/31/2015**			
Preparation Method			**SM4500NH3C**	**SM4500NH3C**			
Date Analyzed			**07/31/2015**	**07/31/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Ammonia as Nitrogen	**0.05**	**0.10**	**ND**	**ND**			

QUALITY CONTROL REPORT

QC Batch No: 073115-1; Dup or Spiked Sample: 77781.01; LCS: Clean Water; QC Prepared: 07/31/2015; QC Analyzed: 07/31/2015; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Ammonia as Nitrogen	**0.00**	**0.500**	**0.482**	**96.4**	**0.500**	**0.485**	**97.0**	**<1**	**80-120**	**<15**

QC Batch No: 073115-1; Dup or Spiked Sample: 77781.01; LCS: Clean Water; QC Prepared: 07/31/2015; QC Analyzed: 07/31/2015; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Ammonia as Nitrogen	**0.500**	**0.492**	**98.4**	**0.500**	**0.485**	**97.0**	**1.4**	**80-120**	**<15**	

American Environmental Testing Laboratory Inc.

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ANALYTICAL RESULTS

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin

Site

SFPP-Norwalk Site

Project ID: N016470
Project Name: N16470A

AETL Job Number	Submitted	Client
77781	07/30/2015	ASSET

Method: SM-5540C, Methylene Blue Active Substances (MBAS)

QC Batch No: 073115-1

Our Lab I.D.			Method Blank	**77781.01**			
Client Sample I.D.				N016470-001 / EFF-0730			
Date Sampled				**07/30/2015**			
Date Prepared			**07/31/2015**	**07/31/2015**			
Preparation Method			**SM5540C**	**SM5540C**			
Date Analyzed			**07/31/2015**	**07/31/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Surfactants (MBAS)	**0.05**	**0.05**	**ND**	**ND**			

QUALITY CONTROL REPORT

QC Batch No: 073115-1; Dup or Spiked Sample: 77781.01; LCS: Clean Water; QC Prepared: 07/31/2015; QC Analyzed: 07/31/2015; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Surfactants (MBAS)	**0.00**	**0.500**	**0.467**	**93.4**	**0.500**	**0.470**	**94.0**	**<1**	**80-120**	**<15**

QC Batch No: 073115-1; Dup or Spiked Sample: 77781.01; LCS: Clean Water; QC Prepared: 07/31/2015; QC Analyzed: 07/31/2015; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Surfactants (MBAS)	**0.500**	**0.448**	**89.6**	**0.500**	**0.458**	**91.6**	**2.2**	**80-120**	**<15**	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

August 17, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N016535

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on August 07, 2015 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,

Glen Gesmundo
QA Manager

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016535

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

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 Test:

Phenol was subcontracted to AETL - Burbank, CA .

Analytical Comments for EPA 200.8:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Copper on QC samples N016535-001H-MS and N016535-001H-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 8260B:

Some surrogate recoveries were outside in-house laboratory criteria but within method criteria of 70-130% for sample and QC samples. Sample results were non-detect (ND) for analytes of interest therefore reanalysis of the sample was not necessary.

ASSET Laboratories

Date: *17-Aug-15*

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016535
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016535-001A	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001B	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001C	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001D	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001E	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001F	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001G	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001H	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015
N016535-001I	EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	8/7/2015	8/17/2015

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Aug-15*

CLIENT: CH2MHill
Lab Order: N016535
Project: SFPP - Norwalk Site
Lab ID: N016535-001

Client Sample ID: EFF-08-06
Collection Date: 8/6/2015 1:40:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150810B**	QC Batch: **51159**			PrepDate:		**8/10/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	8/10/2015 09:20 AM
SETTLEABLE MATTER							
			SM2540F				
RunID: **WETCHEM_150807C**	QC Batch: **51146**			PrepDate:		**8/7/2015**	Analyst: **QBM**
Settleable Matter	ND	0.087	0.087		ml/L	1	8/7/2015
HEXANE EXTRACTABLE MATERIAL (HEM)							
			EPA 1664 _HEM REV B				
RunID: **WETCHEM_150812A**	QC Batch: **51175**			PrepDate:		**8/12/2015**	Analyst: **LR**
Oil & Grease	ND	0.74	4.3		mg/L	1	8/12/2015 08:38 AM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **MS5_150807A**	QC Batch: **P15VW130**			PrepDate:			Analyst: **QBM**
1,1-Dichloroethane	ND	0.022	0.50		ug/L	1	8/7/2015 01:50 PM
1,2-Dichloroethane	ND	0.064	0.50		ug/L	1	8/7/2015 01:50 PM
Benzene	ND	0.036	1.0		ug/L	1	8/7/2015 01:50 PM
Ethylbenzene	ND	0.036	1.0		ug/L	1	8/7/2015 01:50 PM
m,p-Xylene	ND	0.024	1.0		ug/L	1	8/7/2015 01:50 PM
MTBE	ND	0.062	1.0		ug/L	1	8/7/2015 01:50 PM
o-Xylene	ND	0.042	1.0		ug/L	1	8/7/2015 01:50 PM
Tert-Butanol	ND	0.30	5.0		ug/L	1	8/7/2015 01:50 PM
Toluene	ND	0.042	2.0		ug/L	1	8/7/2015 01:50 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	8/7/2015 01:50 PM
Surr: 1,2-Dichloroethane-d4	122	0	72-119	S	%REC	1	8/7/2015 01:50 PM
Surr: 4-Bromofluorobenzene	99.8	0	76-119		%REC	1	8/7/2015 01:50 PM
Surr: Dibromofluoromethane	120	0	85-115	S	%REC	1	8/7/2015 01:50 PM
Surr: Toluene-d8	105	0	81-120		%REC	1	8/7/2015 01:50 PM
TPH EXTRACTABLE BY GC/FID							
		EPA 3510C	**EPA 8015B**				
RunID: **GC3_150813A**	QC Batch: **51165**			PrepDate:		**8/13/2015**	Analyst: **JAA**
TPH-Diesel (C13-C22)	ND	15	25		ug/L	1	8/13/2015 08:16 PM
TPH-Oil (C23-C36)	ND	14	25		ug/L	1	8/13/2015 08:16 PM
Surr: Octacosane	91.5	0	26-152		%REC	1	8/13/2015 08:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Lab Order: N016535
Project: SFPP - Norwalk Site
Lab ID: N016535-001

Client Sample ID: EFF-08-06
Collection Date: 8/6/2015 1:40:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC/FID							
	EPA 3510C			**EPA 8015B**			
RunID: **GC3_150813A**	QC Batch: **51165**			PrepDate:		**8/13/2015**	Analyst: **JAA**
Surr: p-Terphenyl	102	0	57-132		%REC	1	8/13/2015 08:16 PM
GASOLINE RANGE ORGANICS BY GC/FID							
			EPA 8015B				
RunID: **GC4_150807A**	QC Batch: **E15VW050**			PrepDate:			Analyst: **QBM**
TPH-Gasoline (C4-C12)	28	16	50	J	ug/L	1	8/7/2015 12:06 PM
Surr: Chlorobenzene - d5	99.4	0	74-138		%REC	1	8/7/2015 12:06 PM
HEXAVALENT CHROMIUM BY IC							
			EPA 7199				
RunID: **IC7_150807A**	QC Batch: **R101594**			PrepDate:			Analyst: **RB**
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	8/7/2015 11:04 AM
MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **AA1_150811A**	QC Batch: **51157**			PrepDate:		**8/10/2015**	Analyst: **CEI**
Mercury	0.023	0.018	0.050	J	µg/L	1	8/11/2015 11:04 AM
TOTAL METALS BY COLLISION/REACTION CELL ICPMS							
			EPA 200.8				
RunID: **ICP7_150810A**	QC Batch: **51156**			PrepDate:		**8/10/2015**	Analyst: **CEI**
Selenium	ND	0.070	0.50		µg/L	1	8/10/2015 07:49 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **ICP7_150810A**	QC Batch: **51156**			PrepDate:		**8/10/2015**	Analyst: **CEI**
Copper	ND	0.26	0.50		µg/L	1	8/10/2015 07:49 PM
Lead	ND	0.053	0.50		µg/L	1	8/10/2015 07:49 PM
Thallium	0.10	0.034	0.50	J	µg/L	1	8/10/2015 07:49 PM
Zinc	ND	0.039	10		µg/L	1	8/10/2015 07:49 PM
TOTAL TPH							
	EPA 3510C			**EPA 8015B**			
RunID: **GC3_150813A**	QC Batch: **51165**			PrepDate:		**8/13/2015**	Analyst: **JAA**
Total TPH	28	16	50	J	ug/L	1	8/13/2015 08:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID: **MB-51159**	SampType: **MBLK**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **8/10/2015**	RunNo: **101622**
Client ID: **PBW**	Batch ID: **51159**	TestNo: **SM2540D**		Analysis Date: **8/10/2015**	SeqNo: **2059263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID: **LCS-51159**	SampType: **LCS**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **8/10/2015**	RunNo: **101622**
Client ID: **LCSW**	Batch ID: **51159**	TestNo: **SM2540D**		Analysis Date: **8/10/2015**	SeqNo: **2059264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	962.000	10	1000	0	96.2	80	120				

Sample ID: **N016535-001IDUP**	SampType: **DUP**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **8/10/2015**	RunNo: **101622**
Client ID: **ZZZZZZ**	Batch ID: **51159**	TestNo: **SM2540D**		Analysis Date: **8/10/2015**	SeqNo: **2059266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID: **MB-51146** SampType: **MBLK** TestCode: **160.5_2540F_** Units: **ml/L** Prep Date: **8/7/2015** RunNo: **101729**
Client ID: **PBW** Batch ID: **51146** TestNo: **SM2540F** Analysis Date: **8/7/2015** SeqNo: **2063803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Settleable Matter	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID: **MB-51175**	SampType: **MBLK**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/12/2015**	RunNo: **101667**
Client ID: **PBW**	Batch ID: **51175**	TestNo: **EPA 1664 _H**		Analysis Date: **8/12/2015**	SeqNo: **2061182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	ND	4.0									

Sample ID: **LCS-51175**	SampType: **LCS**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/12/2015**	RunNo: **101667**
Client ID: **LCSW**	Batch ID: **51175**	TestNo: **EPA 1664 _H**		Analysis Date: **8/12/2015**	SeqNo: **2061183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	31.900	4.0	40.00	0	79.8	78	114				

Sample ID: **N016535-001A-MS**	SampType: **MS**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/12/2015**	RunNo: **101667**
Client ID: **ZZZZZZ**	Batch ID: **51175**	TestNo: **EPA 1664 _H**		Analysis Date: **8/12/2015**	SeqNo: **2061185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	35.957	4.3	42.55	0	84.5	78	114				

Sample ID: **N016535-001A-MSD**	SampType: **MSD**	TestCode: **1664_HEM_W**	Units: **mg/L**	Prep Date: **8/12/2015**	RunNo: **101667**
Client ID: **ZZZZZZ**	Batch ID: **51175**	TestNo: **EPA 1664 _H**		Analysis Date: **8/12/2015**	SeqNo: **2061186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	36.489	4.3	42.55	0	85.8	78	114	35.96	1.47	18	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID: **MB-51156**	SampType: **MBLK**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101637**
Client ID: **PBW**	Batch ID: **51156**	TestNo: **EPA 200.8**		Analysis Date: **8/10/2015**	SeqNo: **2059845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: **LCS-51156**	SampType: **LCS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101637**
Client ID: **LCSW**	Batch ID: **51156**	TestNo: **EPA 200.8**		Analysis Date: **8/10/2015**	SeqNo: **2059846**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.300	0.50	10.00	0	93.0	85	115				

Sample ID: **N016535-001H-MS**	SampType: **MS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101637**
Client ID: **ZZZZZZ**	Batch ID: **51156**	TestNo: **EPA 200.8**		Analysis Date: **8/10/2015**	SeqNo: **2059852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.421	0.50	10.00	0	94.2	75	125				

Sample ID: **N016535-001H-MSD**	SampType: **MSD**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101637**
Client ID: **ZZZZZZ**	Batch ID: **51156**	TestNo: **EPA 200.8**		Analysis Date: **8/10/2015**	SeqNo: **2059853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.213	0.50	10.00	0	92.1	75	125	9.421	2.23	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **MB-51156** SampType: **MBLK** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **8/10/2015** RunNo: **101637**
Client ID: **PBW** Batch ID: **51156** TestNo: **EPA 200.8** Analysis Date: **8/10/2015** SeqNo: **2059889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.50									
Lead	ND	0.50									
Thallium	0.210	0.50									J
Zinc	ND	10									

Sample ID: **LCS-51156** SampType: **LCS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **8/10/2015** RunNo: **101637**
Client ID: **LCSW** Batch ID: **51156** TestNo: **EPA 200.8** Analysis Date: **8/10/2015** SeqNo: **2059890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.182	0.50	10.00	0	91.8	85	115				
Lead	10.774	0.50	10.00	0	108	85	115				
Thallium	10.747	0.50	10.00	0	107	85	115				
Zinc	97.136	10	100.0	0	97.1	85	115				

Sample ID: **N016535-001H-MS** SampType: **MS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **8/10/2015** RunNo: **101637**
Client ID: **ZZZZZZ** Batch ID: **51156** TestNo: **EPA 200.8** Analysis Date: **8/10/2015** SeqNo: **2059896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.476	0.50	10.00	0	74.8	75	125				S
Lead	10.437	0.50	10.00	0	104	75	125				
Thallium	9.860	0.50	10.00	0.1016	97.6	75	125				
Zinc	90.799	10	100.0	0	90.8	75	125				

Sample ID: **N016535-001H-MSD** SampType: **MSD** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **8/10/2015** RunNo: **101637**
Client ID: **ZZZZZZ** Batch ID: **51156** TestNo: **EPA 200.8** Analysis Date: **8/10/2015** SeqNo: **2059897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.338	0.50	10.00	0	73.4	75	125	7.476	1.86	20	S
Lead	10.304	0.50	10.00	0	103	75	125	10.44	1.28	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **N016535-001H-MSD** SampType: **MSD** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **8/10/2015** RunNo: **101637**
Client ID: **ZZZZZZ** Batch ID: **51156** TestNo: **EPA 200.8** Analysis Date: **8/10/2015** SeqNo: **2059897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	9.877	0.50	10.00	0.1016	97.8	75	125	9.860	0.174	20	
Zinc	89.130	10	100.0	0	89.1	75	125	90.80	1.85	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID: **MB-51157**	SampType: **MBLK**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101642**
Client ID: **PBW**	Batch ID: **51157**	TestNo: **EPA 245.1**		Analysis Date: **8/11/2015**	SeqNo: **2059933**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050									

Sample ID: **LCS-51157**	SampType: **LCS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101642**
Client ID: **LCSW**	Batch ID: **51157**	TestNo: **EPA 245.1**		Analysis Date: **8/11/2015**	SeqNo: **2059934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.783	0.050	2.500	0	111	85	115				

Sample ID: **N016535-001H-MS**	SampType: **MS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101642**
Client ID: **ZZZZZZ**	Batch ID: **51157**	TestNo: **EPA 245.1**		Analysis Date: **8/11/2015**	SeqNo: **2059935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.673	0.050	2.500	0.02326	106	75	125				

Sample ID: **N016535-001H-MSD**	SampType: **MSD**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **8/10/2015**	RunNo: **101642**
Client ID: **ZZZZZZ**	Batch ID: **51157**	TestNo: **EPA 245.1**		Analysis Date: **8/11/2015**	SeqNo: **2059936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.659	0.050	2.500	0.02326	105	75	125	2.673	0.514	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID: **MB-R101594**	SampType: **MBLK**	TestCode: **7199_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **101594**
Client ID: **PBW**	Batch ID: **R101594**	TestNo: **EPA 7199**		Analysis Date: **8/7/2015**	SeqNo: **2060530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-R101594**	SampType: **LCS**	TestCode: **7199_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **101594**
Client ID: **LCSW**	Batch ID: **R101594**	TestNo: **EPA 7199**		Analysis Date: **8/7/2015**	SeqNo: **2060531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.877	0.20	5.000	0	97.5	90	110				

Sample ID: **N016535-001EDUP**	SampType: **DUP**	TestCode: **7199_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **101594**
Client ID: **ZZZZZZ**	Batch ID: **R101594**	TestNo: **EPA 7199**		Analysis Date: **8/7/2015**	SeqNo: **2060533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID: **N016521-013AMS**	SampType: **MS**	TestCode: **7199_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **101594**
Client ID: **ZZZZZZ**	Batch ID: **R101594**	TestNo: **EPA 7199**		Analysis Date: **8/7/2015**	SeqNo: **2060535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	43.714	1.0	25.00	19.65	96.2	85	115				

Sample ID: **N016521-013AMSD**	SampType: **MSD**	TestCode: **7199_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **101594**
Client ID: **ZZZZZZ**	Batch ID: **R101594**	TestNo: **EPA 7199**		Analysis Date: **8/7/2015**	SeqNo: **2060536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	44.152	1.0	25.00	19.65	98.0	85	115	43.71	0.996	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: **MB-51165** SampType: **MBLK** TestCode: **8015_W_FP_** Units: **ug/L** Prep Date: **8/13/2015** RunNo: **101698**
Client ID: **PBW** Batch ID: **51165** TestNo: **EPA 8015B** **EPA 3510C** Analysis Date: **8/13/2015** SeqNo: **2062271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	ND	25									
Surr: Octacosane	71.435		80.00		89.3	26	152				
Surr: p-Terphenyl	79.018		80.00		98.8	57	132				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: **MB-51165**	SampType: **MBLK**	TestCode: **8015_W_SFP**	Units: **ug/L**		Prep Date: **8/13/2015**			RunNo: **101698**			
Client ID: **PBW**	Batch ID: **51165**	TestNo: **EPA 8015B**	**EPA 3510C**		Analysis Date: **8/13/2015**			SeqNo: **2062277**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: **E150807LCS** SampType: **LCS** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101608**
Client ID: **LCSW** Batch ID: **E15VW050** TestNo: **EPA 8015B** Analysis Date: **8/7/2015** SeqNo: **2058722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	872.000	50	1000	0	87.2	67	136				
Surr: Chlorobenzene - d5	50434.000		50000		101	74	138				

Sample ID: **E150807MB2** SampType: **MBLK** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101608**
Client ID: **PBW** Batch ID: **E15VW050** TestNo: **EPA 8015B** Analysis Date: **8/7/2015** SeqNo: **2058724**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	29.000	50									J
Surr: Chlorobenzene - d5	45255.000		50000		90.5	74	138				

Sample ID: **N016535-001BMS** SampType: **MS** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101608**
Client ID: **ZZZZZZ** Batch ID: **E15VW050** TestNo: **EPA 8015B** Analysis Date: **8/7/2015** SeqNo: **2058727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	847.000	50	1000	28.00	81.9	67	136				
Surr: Chlorobenzene - d5	51300.000		50000		103	74	138				

Sample ID: **N016535-001BMSD** SampType: **MSD** TestCode: **8015GAS_WS** Units: **ug/L** Prep Date: RunNo: **101608**
Client ID: **ZZZZZZ** Batch ID: **E15VW050** TestNo: **EPA 8015B** Analysis Date: **8/7/2015** SeqNo: **2058728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	805.000	50	1000	28.00	77.7	67	136	847.0	5.08	30	
Surr: Chlorobenzene - d5	44671.000		50000		89.3	74	138		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **P150807LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101604**
Client ID: **LCSW** Batch ID: **P15VW130** TestNo: **EPA 8260B** Analysis Date: **8/7/2015** SeqNo: **2058523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	20.960	0.50	20.00	0	105	69	133				
1,2-Dichloroethane	23.560	0.50	20.00	0	118	69	132				
Benzene	21.110	1.0	20.00	0	106	81	122				
Ethylbenzene	19.330	1.0	20.00	0	96.7	73	127				
m,p-Xylene	39.470	1.0	40.00	0	98.7	76	128				
MTBE	21.430	1.0	20.00	0	107	65	123				
o-Xylene	19.430	1.0	20.00	0	97.2	80	121				
Tert-Butanol	106.930	5.0	100.0	0	107	70	130				
Toluene	22.030	2.0	20.00	0	110	77	122				
Xylenes, Total	58.900	2.0	60.00	0	98.2	75	125				
Surr: 1,2-Dichloroethane-d4	29.230		25.00		117	72	119				
Surr: 4-Bromofluorobenzene	26.290		25.00		105	76	119				
Surr: Dibromofluoromethane	28.840		25.00		115	85	115				S
Surr: Toluene-d8	26.360		25.00		105	81	120				

Sample ID: **N016535-001GMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101604**
Client ID: **ZZZZZZ** Batch ID: **P15VW130** TestNo: **EPA 8260B** Analysis Date: **8/7/2015** SeqNo: **2058524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	20.860	0.50	20.00	0	104	69	133				
1,2-Dichloroethane	23.690	0.50	20.00	0	118	69	132				
Benzene	21.010	1.0	20.00	0	105	81	122				
Ethylbenzene	19.550	1.0	20.00	0	97.8	73	127				
m,p-Xylene	39.830	1.0	40.00	0	99.6	76	128				
MTBE	21.420	1.0	20.00	0	107	65	123				
o-Xylene	19.340	1.0	20.00	0	96.7	80	121				
Tert-Butanol	97.420	5.0	100.0	0	97.4	70	130				
Toluene	21.660	2.0	20.00	0	108	77	122				
Xylenes, Total	59.170	2.0	60.00	0	98.6	75	125				
Surr: 1,2-Dichloroethane-d4	29.780		25.00		119	72	119				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **N016535-001GMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101604**
Client ID: **ZZZZZZ** Batch ID: **P15VW130** TestNo: **EPA 8260B** Analysis Date: **8/7/2015** SeqNo: **2058524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	26.310		25.00		105	76	119				
Surr: Dibromofluoromethane	29.210		25.00		117	85	115				S
Surr: Toluene-d8	26.370		25.00		105	81	120				

Sample ID: **N016535-001GMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101604**
Client ID: **ZZZZZZ** Batch ID: **P15VW130** TestNo: **EPA 8260B** Analysis Date: **8/7/2015** SeqNo: **2058525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	20.760	0.50	20.00	0	104	69	133	20.86	0.481	20	
1,2-Dichloroethane	22.660	0.50	20.00	0	113	69	132	23.69	4.44	20	
Benzene	20.310	1.0	20.00	0	102	81	122	21.01	3.39	20	
Ethylbenzene	18.980	1.0	20.00	0	94.9	73	127	19.55	2.96	20	
m,p-Xylene	38.690	1.0	40.00	0	96.7	76	128	39.83	2.90	20	
MTBE	21.160	1.0	20.00	0	106	65	123	21.42	1.22	20	
o-Xylene	18.950	1.0	20.00	0	94.8	80	121	19.34	2.04	20	
Tert-Butanol	100.420	5.0	100.0	0	100	70	130	97.42	3.03	20	
Toluene	21.040	2.0	20.00	0	105	77	122	21.66	2.90	20	
Xylenes, Total	57.640	2.0	60.00	0	96.1	75	125	59.17	2.62	20	
Surr: 1,2-Dichloroethane-d4	30.050		25.00		120	72	119		0		S
Surr: 4-Bromofluorobenzene	26.160		25.00		105	76	119		0		
Surr: Dibromofluoromethane	28.930		25.00		116	85	115		0		S
Surr: Toluene-d8	26.140		25.00		105	81	120		0		

Sample ID: **P150807MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101604**
Client ID: **PBW** Batch ID: **P15VW130** TestNo: **EPA 8260B** Analysis Date: **8/7/2015** SeqNo: **2058527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Benzene	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016535
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **P150807MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **101604**
Client ID: **PBW** Batch ID: **P15VW130** TestNo: **EPA 8260B** Analysis Date: **8/7/2015** SeqNo: **2058527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
MTBE	ND	1.0									
o-Xylene	ND	1.0									
Tert-Butanol	ND	5.0									
Toluene	ND	2.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	29.660		25.00		119	72	119				
Surr: 4-Bromofluorobenzene	25.140		25.00		101	76	119				
Surr: Dibromofluoromethane	29.160		25.00		117	85	115				S
Surr: Toluene-d8	25.650		25.00		103	81	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attention: Marlon Cartin

Number of Pages 1
Date Received 08/07/2015
Date Reported 08/12/2015

Job Number	Order Date	Client
77857	08/07/2015	ASSET

Project ID: N016535
Project Name: PO# N16535A

Enclosed please find results of analyses of 1 waste water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

AETL

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

77857

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Asset Laboratories	**Report to:**	**Bill to:**	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address:	**Company:**	**Address:**	Excel EDD ☐	RTNE ☐	Y N
Address:	**Email:**		Geotracker ☐	RWQCB ☐	1. Chilled ☐ ☐
Phone: **Fax:**	**Address:**	**Email to:** **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By: Molly Brar		**Phone:** **Fax:**	Others ☐	Level III ☐	3. Container Intact ☐ ☐
Title:	**Phone:** **Fax:**		Specify:	LEVEL IV ☐	4. Seal Present ☐ ☐
Signature: **Date:**	**Sampled By:**		Global ID:	Regulatory ☐	5. IR number
I hereby authorize ASSET Labs to perform the tests indicated below:				Specify State:	6. Method of Cooling
Project Name:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*				Sample Temp:
Project Number:	*Signature:* *Date*				

Matrix: Ground ☐, Sediment ☐, Potable ☐, Soil ☐, NPDES ☐, Other Solid ☐, Surface ☐

Analyses Requested: Phenol (420.1)

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Phenol (420.1)	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	77857.01	EFF-08-06	8/6/15	1340	WW			X		1	G		
2													
3													
4													
5													
6													
7													
8													
9													
10													

Courier:

Tracking No.

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
[signature]	8/7/15 1200	[signature]	8/7/15 1200
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
[signature]	8/7/15 1500	[signature]	08/07/15 1500

Turn Around Time (TAT)
- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratrories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:				**Container Type:**		
H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C	T = Tube	V = VOA	P = Pint
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$		J = Jar	B = Tedlar	G = Glass
Others/Specify:				M = Metal	P = Plastic	C = Can

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

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

07-Aug-15

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**EPA 420.1**		
N016535-001F / EFF-08-06	Wastewater	8/6/2015 1:40:00 PM	32OZA	1		

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

Please use PO#: N16535A Please email Invoices and Account Receivable Statements to AssetAP@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 Phenols.

		Date/Time		Date/Time
Relinquished by:	JPG 08/07/15		**Received by:**	
Relinquished by:			**Received by:**	

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Ordered By

ASSET Laboratories **3151-3153 W Post Road** **Las Vegas, NV 89118-**	**Project ID: N016535** **Date Received 08/07/2015** **Date Reported 08/12/2015**
Telephone: (702)307-2659 **Attention: Marlon Cartin**	

Job Number	Order Date	Client
77857	08/07/2015	ASSET

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 08/07/2015.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
77857.01	N06535-001F/ EFF-08-06	08/06/2015	Aqueous	1

Method ^ Submethod	*Req Date*	*Priority*	*TAT*	*Units*
420.1	08/14/2015	2	Normal	mg/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin
Page: **2**

Project ID: N016535
Project Name: PO# N16535A

AETL Job Number	Submitted	Client
77857	08/07/2015	ASSET

Method: 420.1, Phenolics, Total Recoverable, Spectrophotometric, Manual

QC Batch No: 081015-1

Our Lab I.D.			Method Blank	**77857.01**			
Client Sample I.D.				N06535-001F / EFF-08-06			
Date Sampled				**08/06/2015**			
Date Prepared			**08/10/2015**	**08/10/2015**			
Preparation Method			**420.1**	**420.1**			
Date Analyzed			**08/10/2015**	**08/10/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Phenolic compounds as phenol	**0.15**	**0.30**	**ND**	**ND**			

QUALITY CONTROL REPORT

QC Batch No: 081015-1; Dup or Spiked Sample: 77852.01; LCS: Clean Water; QC Prepared: 08/10/2015; QC Analyzed: 08/10/2015; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Phenol	**0.00**	**0.500**	**0.458**	**91.6**	**0.500**	**0.447**	**89.4**	**2.4**	**80-120**	**<15**

QC Batch No: 081015-1; Dup or Spiked Sample: 77852.01; LCS: Clean Water; QC Prepared: 08/10/2015; QC Analyzed: 08/10/2015; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Phenol	**0.500**	**0.445**	**89.0**	**0.500**	**0.452**	**90.4**	**1.6**	**80-120**	**<20**	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

September 22, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N016884

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on September 12, 2015 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,

Nancy Ribucas for

Glen Gesmundo
QA Manager

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

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 Test:

BOD,Sulfide and Cyanide were subcontracted to AETL - Burbank, CA .

Asbestos was subcontracted to EMSL Laboratories- Pasadena,CA.

Dioxin and Furan was subcontracted to APPL,Inc.- Clovis,CA.

Analytical Comments for EPA 8081A & EPA 8082:

Matrix Spike(MS) and Matrix Spike Duplicate(MSD) were not performed due to limited sample. LCS/LCSD was used instead to measure precision.

Analytical Comments for EPA 8270C:

Laboratory Control Sample Duplicate (LCSD) recovery biased low for Hexachlorocyclopentadiene. NELAC standard allows for three analytes in marginal exceedence based on 51-70 analytes on Laboratory Conrol Sample (LCS).

ASSET Laboratories

Date: *22-Sep-15*

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016884
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016884-001A	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001B	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001C	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001D	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001E	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001F	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001G	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001H	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016884-001I	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

CLIENT: CH2MHill
Lab Order: N016884
Project: SFPP - Norwalk Site
Lab ID: N016884-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C **EPA 8270C**

RunID: **MS3_150916A** QC Batch: **51434** PrepDate **9/16/2015** Analyst: **MDM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
1,2-Diphenylhydrazine	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
2,4,6-Trichlorophenol	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
2,4-Dichlorophenol	ND	2.8	10		µg/L	1	9/16/2015 06:04 PM
2,4-Dimethylphenol	ND	2.6	10		µg/L	1	9/16/2015 06:04 PM
2,4-Dinitrophenol	ND	2.4	50		µg/L	1	9/16/2015 06:04 PM
2,4-Dinitrotoluene	ND	1.7	10		µg/L	1	9/16/2015 06:04 PM
2,6-Dinitrotoluene	ND	2.4	10		µg/L	1	9/16/2015 06:04 PM
2-Chloronaphthalene	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
2-Chlorophenol	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
2-Nitrophenol	ND	3.0	10		µg/L	1	9/16/2015 06:04 PM
3,3´-Dichlorobenzidine	ND	1.4	20		µg/L	1	9/16/2015 06:04 PM
4,6-Dinitro-2-methylphenol	ND	1.6	50		µg/L	1	9/16/2015 06:04 PM
4-Bromophenyl-phenylether	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
4-Chloro-3-methylphenol	ND	2.6	50		µg/L	1	9/16/2015 06:04 PM
4-Chloroaniline	ND	2.5	20		µg/L	1	9/16/2015 06:04 PM
4-Chlorophenyl-phenylether	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
4-Nitrophenol	ND	1.3	50		µg/L	1	9/16/2015 06:04 PM
Acenaphthene	ND	2.9	10		µg/L	1	9/16/2015 06:04 PM
Acenaphthylene	ND	3.0	10		µg/L	1	9/16/2015 06:04 PM
Anthracene	ND	2.0	10		µg/L	1	9/16/2015 06:04 PM
Benzidine (M)	ND	1.2	50		µg/L	1	9/16/2015 06:04 PM
Benzo(a)anthracene	ND	2.0	10		µg/L	1	9/16/2015 06:04 PM
Benzo(a)pyrene	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Benzo(b)fluoranthene	ND	1.6	10		µg/L	1	9/16/2015 06:04 PM
Benzo(g,h,i)perylene	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Benzo(k)fluoranthene	ND	2.9	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-chloroethoxy)methane	ND	3.1	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-chloroethyl)ether	ND	3.2	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-chloroisopropyl)ether	ND	3.1	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-ethylhexyl)phthalate	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM
Butylbenzylphthalate	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Chrysene	ND	2.0	10		µg/L	1	9/16/2015 06:04 PM
Di-n-butylphthalate	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Di-n-octylphthalate	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM
Dibenz(a,h)anthracene	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Diethylphthalate	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM

Qualifiers:

B	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

CLIENT: CH2MHill
Lab Order: N016884
Project: SFPP - Norwalk Site
Lab ID: N016884-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS							
	EPA 3510C				**EPA 8270C**		
RunID: **MS3_150916A**	QC Batch: **51434**				PrepDate	**9/16/2015**	Analyst: **MDM**
Dimethylphthalate	ND	2.4	10		µg/L	1	9/16/2015 06:04 PM
Fluoranthene	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Fluorene	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
Hexachlorobenzene	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	9/16/2015 06:04 PM
Hexachloroethane	ND	2.6	10		µg/L	1	9/16/2015 06:04 PM
Indeno(1,2,3-cd)pyrene	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Isophorone	ND	3.0	10		µg/L	1	9/16/2015 06:04 PM
N-Nitrosodi-n-propylamine	ND	2.9	10		µg/L	1	9/16/2015 06:04 PM
N-Nitrosodimethylamine	ND	2.7	50		µg/L	1	9/16/2015 06:04 PM
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	9/16/2015 06:04 PM
Nitrobenzene	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
Pentachlorophenol	ND	1.0	50		µg/L	1	9/16/2015 06:04 PM
Phenanthrene	ND	2.3	10		µg/L	1	9/16/2015 06:04 PM
Phenol	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Pyrene	ND	1.7	10		µg/L	1	9/16/2015 06:04 PM
Surr: 1,2-Dichlorobenzene-d4	79.2	0	27-100		%REC	1	9/16/2015 06:04 PM
Surr: 2,4,6-Tribromophenol	100	0	42-124		%REC	1	9/16/2015 06:04 PM
Surr: 2-Chlorophenol-d4	81.6	0	34-98		%REC	1	9/16/2015 06:04 PM
Surr: 2-Fluorobiphenyl	86.2	0	48-120		%REC	1	9/16/2015 06:04 PM
Surr: 2-Fluorophenol	61.6	0	20-120		%REC	1	9/16/2015 06:04 PM
Surr: 4-Terphenyl-d14	97.2	0	51-135		%REC	1	9/16/2015 06:04 PM
Surr: Nitrobenzene-d5	87.7	0	41-120		%REC	1	9/16/2015 06:04 PM
Surr: Phenol-d5	50.1	0	20-120		%REC	1	9/16/2015 06:04 PM
ORGANOCHLORINE PESTICIDES BY GC/ECD							
	EPA 3510C				**EPA 8081A**		
RunID: **GC7_150916C**	QC Batch: **51435**				PrepDate	**9/16/2015**	Analyst: **MDM**
4,4´-DDD	ND	0.0072	0.050		µg/L	1	9/16/2015 09:37 PM
4,4´-DDE	ND	0.0061	0.050		µg/L	1	9/16/2015 09:37 PM
4,4´-DDT	ND	0.0088	0.050		µg/L	1	9/16/2015 09:37 PM
Aldrin	ND	0.0067	0.025		µg/L	1	9/16/2015 09:37 PM
alpha-BHC	ND	0.0032	0.025		µg/L	1	9/16/2015 09:37 PM
alpha-Chlordane	ND	0.0040	0.025		µg/L	1	9/16/2015 09:37 PM
beta-BHC	ND	0.0038	0.025		µg/L	1	9/16/2015 09:37 PM
Chlordane	ND	0.030	0.25		µg/L	1	9/16/2015 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Lab Order: N016884
Project: SFPP - Norwalk Site
Lab ID: N016884-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES BY GC/ECD							
	EPA 3510C			**EPA 8081A**			
RunID: **GC7_150916C**	QC Batch: **51435**				PrepDate	**9/16/2015**	Analyst: **MDM**
delta-BHC	ND	0.0028	0.025		µg/L	1	9/16/2015 09:37 PM
Dieldrin	ND	0.0064	0.050		µg/L	1	9/16/2015 09:37 PM
Endosulfan I	ND	0.0036	0.025		µg/L	1	9/16/2015 09:37 PM
Endosulfan II	ND	0.0062	0.050		µg/L	1	9/16/2015 09:37 PM
Endosulfan sulfate	ND	0.0055	0.050		µg/L	1	9/16/2015 09:37 PM
Endrin	ND	0.0079	0.050		µg/L	1	9/16/2015 09:37 PM
Endrin aldehyde	ND	0.0053	0.050		µg/L	1	9/16/2015 09:37 PM
gamma-BHC	ND	0.0036	0.025		µg/L	1	9/16/2015 09:37 PM
gamma-Chlordane	ND	0.0046	0.025		µg/L	1	9/16/2015 09:37 PM
Heptachlor	ND	0.0075	0.025		µg/L	1	9/16/2015 09:37 PM
Heptachlor epoxide	ND	0.0041	0.025		µg/L	1	9/16/2015 09:37 PM
Methoxychlor	ND	0.053	0.25		µg/L	1	9/16/2015 09:37 PM
Toxaphene	ND	0.16	2.5		µg/L	1	9/16/2015 09:37 PM
Surr: Tetrachloro-m-xylene	77.3	0	33-138		%REC	1	9/16/2015 09:37 PM
Surr: Decachlorobiphenyl	78.0	0	29-135		%REC	1	9/16/2015 09:37 PM
PCBS BY GC/ECD							
	EPA 3510C			**EPA 8082**			
RunID: **GC7_150916B**	QC Batch: **51435**				PrepDate	**9/16/2015**	Analyst: **MDM**
Aroclor 1016	ND	0.055	0.25		µg/L	1	9/16/2015 09:37 PM
Aroclor 1221	ND	0.092	0.50		µg/L	1	9/16/2015 09:37 PM
Aroclor 1232	ND	0.036	0.25		µg/L	1	9/16/2015 09:37 PM
Aroclor 1242	ND	0.032	0.25		µg/L	1	9/16/2015 09:37 PM
Aroclor 1248	ND	0.040	0.25		µg/L	1	9/16/2015 09:37 PM
Aroclor 1254	ND	0.076	0.25		µg/L	1	9/16/2015 09:37 PM
Aroclor 1260	ND	0.048	0.25		µg/L	1	9/16/2015 09:37 PM
Surr: Decachlorobiphenyl	95.5	0	29-133		%REC	1	9/16/2015 09:37 PM
Surr: Tetrachloro-m-xylene	80.7	0	50-120		%REC	1	9/16/2015 09:37 PM

Qualifiers:

B	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

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID **LCS-51435_OCP**	SampType: **LCS**	TestCode: **8081_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102171**
Client ID: **LCSW**	Batch ID: **51435**	TestNo: **EPA 8081A** **EPA 3510C**		Analysis Date: **9/16/2015**	SeqNo: **2085292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	0.256	0.050	0.2500	0	102	50	139				
4,4´-DDE	0.242	0.050	0.2500	0	96.7	48	137				
4,4´-DDT	0.233	0.050	0.2500	0	93.1	47	138				
Aldrin	0.209	0.025	0.2500	0	83.6	42	138				
alpha-BHC	0.244	0.025	0.2500	0	97.6	60	128				
alpha-Chlordane	0.234	0.025	0.2500	0	93.5	63	123				
beta-BHC	0.250	0.025	0.2500	0	100	66	126				
delta-BHC	0.257	0.025	0.2500	0	103	46	136				
Dieldrin	0.253	0.050	0.2500	0	101	62	129				
Endosulfan I	0.243	0.025	0.2500	0	97.1	49	120				
Endosulfan II	0.250	0.050	0.2500	0	100	42	130				
Endosulfan sulfate	0.252	0.050	0.2500	0	101	54	137				
Endrin	0.254	0.050	0.2500	0	102	56	134				
Endrin aldehyde	0.261	0.050	0.2500	0	104	56	137				
gamma-BHC	0.237	0.025	0.2500	0	94.9	30	146				
gamma-Chlordane	0.254	0.025	0.2500	0	102	67	120				
Heptachlor	0.213	0.025	0.2500	0	85.4	51	128				
Heptachlor epoxide	0.240	0.025	0.2500	0	95.9	62	131				
Methoxychlor	0.244	0.25	0.2500	0	97.5	56	150				J
Surr: Tetrachloro-m-xylene	0.176		0.2500		70.3	33	138				
Surr: Decachlorobiphenyl	0.202		0.2500		80.8	29	135				

Sample ID **LCSD-51435_OCP**	SampType: **LCSD**	TestCode: **8081_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102171**
Client ID: **LCSS02**	Batch ID: **51435**	TestNo: **EPA 8081A** **EPA 3510C**		Analysis Date: **9/16/2015**	SeqNo: **2085293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	0.259	0.050	0.2500	0	103	50	139	0.2561	0.937	30	
4,4´-DDE	0.236	0.050	0.2500	0	94.5	48	137	0.2418	2.37	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID **LCSD-51435_OCP** SampType: **LCSD** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102171**
Client ID: **LCSS02** Batch ID: **51435** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2085293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.236	0.050	0.2500	0	94.4	47	138	0.2326	1.43	30	
Aldrin	0.201	0.025	0.2500	0	80.3	42	138	0.2090	4.09	30	
alpha-BHC	0.247	0.025	0.2500	0	98.7	60	128	0.2439	1.15	30	
alpha-Chlordane	0.232	0.025	0.2500	0	92.7	63	123	0.2337	0.854	30	
beta-BHC	0.244	0.025	0.2500	0	97.5	66	126	0.2500	2.59	30	
delta-BHC	0.254	0.025	0.2500	0	102	46	136	0.2570	1.23	30	
Dieldrin	0.258	0.050	0.2500	0	103	62	129	0.2529	1.79	30	
Endosulfan I	0.243	0.025	0.2500	0	97.3	49	120	0.2428	0.171	30	
Endosulfan II	0.256	0.050	0.2500	0	103	42	130	0.2503	2.38	30	
Endosulfan sulfate	0.260	0.050	0.2500	0	104	54	137	0.2522	2.95	30	
Endrin	0.257	0.050	0.2500	0	103	56	134	0.2544	1.14	30	
Endrin aldehyde	0.267	0.050	0.2500	0	107	56	137	0.2605	2.61	30	
gamma-BHC	0.238	0.025	0.2500	0	95.1	30	146	0.2373	0.186	30	
gamma-Chlordane	0.247	0.025	0.2500	0	98.7	67	120	0.2544	3.05	30	
Heptachlor	0.209	0.025	0.2500	0	83.4	51	128	0.2134	2.32	30	
Heptachlor epoxide	0.239	0.025	0.2500	0	95.8	62	131	0.2396	0.111	30	
Methoxychlor	0.251	0.25	0.2500	0	100	56	150	0.2437	2.98	30	
Surr: Tetrachloro-m-xylene	0.172		0.2500		68.9	33	138		0	30	
Surr: Decachlorobiphenyl	0.205		0.2500		81.9	29	135		0	30	

Sample ID **MB-51435** SampType: **MBLK** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102171**
Client ID: **PBW** Batch ID: **51435** TestNo: **EPA 8081A** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2085294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.050									
4,4´-DDE	ND	0.050									
4,4´-DDT	ND	0.050									
Aldrin	ND	0.025									
alpha-BHC	ND	0.025									
alpha-Chlordane	ND	0.025									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8081_W_PGE

Sample ID **MB-51435** SampType: **MBLK** TestCode: **8081_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102171**
Client ID: **PBW** Batch ID: **51435** TestNo: **EPA 8081A EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2085294**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
beta-BHC	ND	0.025									
Chlordane	ND	0.25									
delta-BHC	ND	0.025									
Dieldrin	ND	0.050									
Endosulfan I	ND	0.025									
Endosulfan II	ND	0.050									
Endosulfan sulfate	ND	0.050									
Endrin	ND	0.050									
Endrin aldehyde	ND	0.050									
gamma-BHC	ND	0.025									
gamma-Chlordane	ND	0.025									
Heptachlor	ND	0.025									
Heptachlor epoxide	ND	0.025									
Methoxychlor	ND	0.25									
Toxaphene	ND	2.5									
Surr: Tetrachloro-m-xylene	0.197		0.2500		79.0	33	138				
Surr: Decachlorobiphenyl	0.239		0.2500		95.5	29	135				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082_W_PGE

Sample ID **LCS-51435_PCB** SampType: **LCS** TestCode: **8082_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102162**
Client ID: **LCSW** Batch ID: **51435** TestNo: **EPA 8082** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2085012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	2.089	0.25	5.000	0	41.8	40	144				
Aroclor 1260	2.293	0.25	5.000	0	45.9	45	145				
Surr: Decachlorobiphenyl	0.226		0.2500		90.6	29	133				
Surr: Tetrachloro-m-xylene	0.169		0.2500		67.7	50	120				

Sample ID **LCSD-51435_PCB** SampType: **LCSD** TestCode: **8082_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102162**
Client ID: **LCSS02** Batch ID: **51435** TestNo: **EPA 8082** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2085013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	2.471	0.25	5.000	0	49.4	40	144	2.089	16.8	30	
Aroclor 1260	2.457	0.25	5.000	0	49.1	45	145	2.293	6.92	30	
Surr: Decachlorobiphenyl	0.251		0.2500		101	29	133		0		
Surr: Tetrachloro-m-xylene	0.184		0.2500		73.4	50	120		0		

Sample ID **MB-51435** SampType: **MBLK** TestCode: **8082_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102162**
Client ID: **PBW** Batch ID: **51435** TestNo: **EPA 8082** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2085014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.25									
Aroclor 1221	ND	0.50									
Aroclor 1232	ND	0.25									
Aroclor 1242	ND	0.25									
Aroclor 1248	ND	0.25									
Aroclor 1254	ND	0.25									
Aroclor 1260	ND	0.25									
Surr: Decachlorobiphenyl	0.278		0.2500		111	29	133				
Surr: Tetrachloro-m-xylene	0.196		0.2500		78.4	50	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCS-51434** SampType: **LCS** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **LCSW** Batch ID: **51434** TestNo: **EPA 8270C EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Diphenylhydrazine	87.230	10	100.0	0	87.2	60	117				
2,4,6-Trichlorophenol	78.150	10	100.0	0	78.2	49	126				
2,4-Dichlorophenol	76.180	10	100.0	0	76.2	48	120				
2,4-Dimethylphenol	79.100	10	100.0	0	79.1	28	120				
2,4-Dinitrophenol	69.740	50	100.0	0	69.7	25	130				
2,4-Dinitrotoluene	76.820	10	100.0	0	76.8	51	120				
2,6-Dinitrotoluene	76.250	10	100.0	0	76.2	49	120				
2-Chloronaphthalene	73.960	10	100.0	0	74.0	49	120				
2-Chlorophenol	68.410	10	100.0	0	68.4	37	120				
2-Nitrophenol	74.020	10	100.0	0	74.0	39	123				
3,3´-Dichlorobenzidine	142.920	20	200.0	0	71.5	20	120				
4,6-Dinitro-2-methylphenol	70.410	50	100.0	0	70.4	40	130				
4-Bromophenyl-phenylether	84.520	10	100.0	0	84.5	52	120				
4-Chloro-3-methylphenol	85.140	50	100.0	0	85.1	47	120				
4-Chloroaniline	59.750	20	100.0	0	59.8	20	120				
4-Chlorophenyl-phenylether	86.850	10	100.0	0	86.8	50	120				
4-Nitrophenol	76.800	50	100.0	0	76.8	20	120				
Acenaphthene	85.420	10	100.0	0	85.4	47	120				
Acenaphthylene	79.690	10	100.0	0	79.7	50	120				
Anthracene	82.660	10	100.0	0	82.7	54	120				
Benzidine (M)	184.100	50	200.0	0	92.0	10	162				
Benzo(a)anthracene	78.070	10	100.0	0	78.1	56	100				
Benzo(a)pyrene	77.910	10	100.0	0	77.9	53	120				
Benzo(b)fluoranthene	83.170	10	100.0	0	83.2	45	124				
Benzo(g,h,i)perylene	77.310	10	100.0	0	77.3	38	123				
Benzo(k)fluoranthene	81.970	10	100.0	0	82.0	45	124				
Bis(2-chloroethoxy)methane	77.990	10	100.0	0	78.0	46	120				
Bis(2-chloroethyl)ether	77.790	10	100.0	0	77.8	37	120				
Bis(2-chloroisopropyl)ether	75.260	10	100.0	0	75.3	26	131				
Bis(2-ethylhexyl)phthalate	83.160	10	100.0	0	83.2	42	126				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCS-51434**	SampType: **LCS**	TestCode: **8270_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102176**		
Client ID: **LCSW**	Batch ID: **51434**	TestNo: **EPA 8270C**	**EPA 3510C**	Analysis Date: **9/16/2015**	SeqNo: **2086232**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Butylbenzylphthalate	81.610	10	100.0	0	81.6	46	120				
Chrysene	83.490	10	100.0	0	83.5	55	120				
Di-n-butylphthalate	90.360	10	100.0	0	90.4	54	120				
Di-n-octylphthalate	84.170	10	100.0	0	84.2	37	137				
Dibenz(a,h)anthracene	86.190	10	100.0	0	86.2	42	127				
Diethylphthalate	93.970	10	100.0	0	94.0	41	120				
Dimethylphthalate	87.220	10	100.0	0	87.2	25	127				
Fluoranthene	87.450	10	100.0	0	87.4	54	120				
Fluorene	86.290	10	100.0	0	86.3	50	120				
Hexachlorobenzene	81.430	10	100.0	0	81.4	52	120				
Hexachlorocyclopentadiene	58.550	10	100.0	0	58.6	51	108				
Hexachloroethane	53.000	10	100.0	0	53.0	28	120				
Indeno(1,2,3-cd)pyrene	77.420	10	100.0	0	77.4	43	125				
Isophorone	72.000	10	100.0	0	72.0	50	120				
N-Nitrosodi-n-propylamine	82.320	10	100.0	0	82.3	34	128				
N-Nitrosodimethylamine	61.700	50	100.0	0	61.7	35	98				
N-Nitrosodiphenylamine	81.180	10	100.0	0	81.2	48	120				
Nitrobenzene	76.190	10	100.0	0	76.2	44	120				
Pentachlorophenol	72.140	50	100.0	0	72.1	38	120				
Phenanthrene	84.110	10	100.0	0	84.1	51	120				
Phenol	52.860	10	100.0	0	52.9	20	120				
Pyrene	87.290	10	100.0	0	87.3	49	128				
Surr: 1,2-Dichlorobenzene-d4	64.940		100.0		64.9	27	100				
Surr: 2,4,6-Tribromophenol	92.010		100.0		92.0	42	124				
Surr: 2-Chlorophenol-d4	71.610		100.0		71.6	34	98				
Surr: 2-Fluorobiphenyl	78.570		100.0		78.6	48	120				
Surr: 2-Fluorophenol	59.280		100.0		59.3	20	120				
Surr: 4-Terphenyl-d14	74.870		100.0		74.9	51	135				
Surr: Nitrobenzene-d5	78.470		100.0		78.5	41	120				
Surr: Phenol-d5	55.510		100.0		55.5	20	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCSD-51434**	SampType: **LCSD**	TestCode: **8270_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102176**		
Client ID: **LCSS02**	Batch ID: **51434**	TestNo: **EPA 8270C**	**EPA 3510C**	Analysis Date: **9/16/2015**	SeqNo: **2086233**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Diphenylhydrazine	88.180	10	100.0	0	88.2	60	117	87.23	1.08	20	
2,4,6-Trichlorophenol	76.110	10	100.0	0	76.1	49	126	78.15	2.64	20	
2,4-Dichlorophenol	67.930	10	100.0	0	67.9	48	120	76.18	11.4	20	
2,4-Dimethylphenol	70.210	10	100.0	0	70.2	28	120	79.10	11.9	20	
2,4-Dinitrophenol	72.470	50	100.0	0	72.5	25	130	69.74	3.84	20	
2,4-Dinitrotoluene	81.160	10	100.0	0	81.2	51	120	76.82	5.49	20	
2,6-Dinitrotoluene	79.130	10	100.0	0	79.1	49	120	76.25	3.71	20	
2-Chloronaphthalene	72.760	10	100.0	0	72.8	49	120	73.96	1.64	20	
2-Chlorophenol	57.990	10	100.0	0	58.0	37	120	68.41	16.5	20	
2-Nitrophenol	65.070	10	100.0	0	65.1	39	123	74.02	12.9	20	
3,3´-Dichlorobenzidine	150.920	20	200.0	0	75.5	20	120	142.9	5.45	20	
4,6-Dinitro-2-methylphenol	70.940	50	100.0	0	70.9	40	130	70.41	0.750	20	
4-Bromophenyl-phenylether	87.350	10	100.0	0	87.4	52	120	84.52	3.29	20	
4-Chloro-3-methylphenol	80.750	50	100.0	0	80.8	47	120	85.14	5.29	20	
4-Chloroaniline	57.050	20	100.0	0	57.0	20	120	59.75	4.62	20	
4-Chlorophenyl-phenylether	89.070	10	100.0	0	89.1	50	120	86.85	2.52	20	
4-Nitrophenol	79.070	50	100.0	0	79.1	20	120	76.80	2.91	20	
Acenaphthene	84.360	10	100.0	0	84.4	47	120	85.42	1.25	20	
Acenaphthylene	78.590	10	100.0	0	78.6	50	120	79.69	1.39	20	
Anthracene	85.190	10	100.0	0	85.2	54	120	82.66	3.01	20	
Benzidine (M)	197.880	50	200.0	0	98.9	10	162	184.1	7.22	20	
Benzo(a)anthracene	81.150	10	100.0	0	81.2	56	100	78.07	3.87	20	
Benzo(a)pyrene	80.720	10	100.0	0	80.7	53	120	77.91	3.54	20	
Benzo(b)fluoranthene	85.570	10	100.0	0	85.6	45	124	83.17	2.84	20	
Benzo(g,h,i)perylene	78.600	10	100.0	0	78.6	38	123	77.31	1.65	20	
Benzo(k)fluoranthene	77.780	10	100.0	0	77.8	45	124	81.97	5.25	20	
Bis(2-chloroethoxy)methane	70.490	10	100.0	0	70.5	46	120	77.99	10.1	20	
Bis(2-chloroethyl)ether	65.580	10	100.0	0	65.6	37	120	77.79	17.0	20	
Bis(2-chloroisopropyl)ether	66.100	10	100.0	0	66.1	26	131	75.26	13.0	20	
Bis(2-ethylhexyl)phthalate	86.110	10	100.0	0	86.1	42	126	83.16	3.49	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCSD-51434** SampType: **LCSD** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **LCSS02** Batch ID: **51434** TestNo: **EPA 8270C EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Butylbenzylphthalate	84.390	10	100.0	0	84.4	46	120	81.61	3.35	20	
Chrysene	86.130	10	100.0	0	86.1	55	120	83.49	3.11	20	
Di-n-butylphthalate	94.570	10	100.0	0	94.6	54	120	90.36	4.55	20	
Di-n-octylphthalate	88.470	10	100.0	0	88.5	37	137	84.17	4.98	20	
Dibenz(a,h)anthracene	88.830	10	100.0	0	88.8	42	127	86.19	3.02	20	
Diethylphthalate	97.140	10	100.0	0	97.1	41	120	93.97	3.32	20	
Dimethylphthalate	89.690	10	100.0	0	89.7	25	127	87.22	2.79	20	
Fluoranthene	91.670	10	100.0	0	91.7	54	120	87.45	4.71	20	
Fluorene	88.200	10	100.0	0	88.2	50	120	86.29	2.19	20	
Hexachlorobenzene	86.410	10	100.0	0	86.4	52	120	81.43	5.93	20	
Hexachlorocyclopentadiene	50.930	10	100.0	0	50.9	51	108	58.55	13.9	20	S
Hexachloroethane	49.790	10	100.0	0	49.8	28	120	53.00	6.25	20	
Indeno(1,2,3-cd)pyrene	80.370	10	100.0	0	80.4	43	125	77.42	3.74	20	
Isophorone	68.030	10	100.0	0	68.0	50	120	72.00	5.67	20	
N-Nitrosodi-n-propylamine	75.140	10	100.0	0	75.1	34	128	82.32	9.12	20	
N-Nitrosodimethylamine	53.980	50	100.0	0	54.0	35	98	61.70	13.3	20	
N-Nitrosodiphenylamine	83.170	10	100.0	0	83.2	48	120	81.18	2.42	20	
Nitrobenzene	68.140	10	100.0	0	68.1	44	120	76.19	11.2	20	
Pentachlorophenol	74.780	50	100.0	0	74.8	38	120	72.14	3.59	20	
Phenanthrene	87.400	10	100.0	0	87.4	51	120	84.11	3.84	20	
Phenol	46.190	10	100.0	0	46.2	20	120	52.86	13.5	20	
Pyrene	91.440	10	100.0	0	91.4	49	128	87.29	4.64	20	
Surr: 1,2-Dichlorobenzene-d4	57.340		100.0		57.3	27	100		0		
Surr: 2,4,6-Tribromophenol	98.490		100.0		98.5	42	124		0		
Surr: 2-Chlorophenol-d4	61.870		100.0		61.9	34	98		0		
Surr: 2-Fluorobiphenyl	75.440		100.0		75.4	48	120		0		
Surr: 2-Fluorophenol	51.590		100.0		51.6	20	120		0		
Surr: 4-Terphenyl-d14	77.350		100.0		77.4	51	135		0		
Surr: Nitrobenzene-d5	69.650		100.0		69.6	41	120		0		
Surr: Phenol-d5	49.400		100.0		49.4	20	120		0		

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **MB-51434** SampType: **MBLK** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **PBW** Batch ID: **51434** TestNo: **EPA 8270C EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Diphenylhydrazine	ND	10									
2,4,6-Trichlorophenol	ND	10									
2,4-Dichlorophenol	ND	10									
2,4-Dimethylphenol	ND	10									
2,4-Dinitrophenol	ND	50									
2,4-Dinitrotoluene	ND	10									
2,6-Dinitrotoluene	ND	10									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
2-Nitrophenol	ND	10									
3,3´-Dichlorobenzidine	ND	20									
4,6-Dinitro-2-methylphenol	ND	50									
4-Bromophenyl-phenylether	ND	10									
4-Chloro-3-methylphenol	ND	50									
4-Chloroaniline	ND	20									
4-Chlorophenyl-phenylether	ND	10									
4-Nitrophenol	ND	50									
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Anthracene	ND	10									
Benzidine (M)	ND	50									
Benzo(a)anthracene	ND	10									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **MB-51434**	SampType: **MBLK**	TestCode: **8270_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102176**
Client ID: **PBW**	Batch ID: **51434**	TestNo: **EPA 8270C**	**EPA 3510C**	Analysis Date: **9/16/2015**	SeqNo: **2086234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Butylbenzylphthalate	ND	10									
Chrysene	ND	10									
Di-n-butylphthalate	ND	10									
Di-n-octylphthalate	ND	10									
Dibenz(a,h)anthracene	ND	10									
Diethylphthalate	ND	10									
Dimethylphthalate	ND	10									
Fluoranthene	ND	10									
Fluorene	ND	10									
Hexachlorobenzene	ND	10									
Hexachlorocyclopentadiene	ND	10									
Hexachloroethane	ND	10									
Indeno(1,2,3-cd)pyrene	ND	10									
Isophorone	ND	10									
N-Nitrosodi-n-propylamine	ND	10									
N-Nitrosodimethylamine	ND	50									
N-Nitrosodiphenylamine	ND	10									
Nitrobenzene	ND	10									
Pentachlorophenol	ND	50									
Phenanthrene	ND	10									
Phenol	ND	10									
Pyrene	ND	10									
Surr: 1,2-Dichlorobenzene-d4	46.020		100.0		46.0	27	100				
Surr: 2,4,6-Tribromophenol	73.730		100.0		73.7	42	124				
Surr: 2-Chlorophenol-d4	51.860		100.0		51.9	34	98				
Surr: 2-Fluorobiphenyl	53.430		100.0		53.4	48	120				
Surr: 2-Fluorophenol	42.670		100.0		42.7	20	120				
Surr: 4-Terphenyl-d14	83.630		100.0		83.6	51	135				
Surr: Nitrobenzene-d5	57.130		100.0		57.1	41	120				
Surr: Phenol-d5	36.520		100.0		36.5	20	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CHAIN OF CUSTODY RECORD

DATE: 9/10/15

PAGE: 2 OF 2

LABORATORY CLIENT: Kinder Morgan Energy Partners, Attn: Steve Defibaugh	CLIENT PROJECT NAME / NUMBER: SFPP - Norwalk Site	P.O. NO.:
ADDRESS: 1100 Town & Country Road	PROJECT CONTACT: James Dye	QUOTE NO.:
CITY: Orange, CA 92868	SAMPLER(S): (SIGNATURE)	LAB USE ONLY
TEL: 714-560-4802 / FAX: 714-560-4601 / E-MAIL: james_dye@kindermorgan.com		

TURNAROUND TIME

☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ■ Normal

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Report to D. Jablonski/CH2M HILL, cc: KMEP
Direct Bill KMEP/SFPP - Steve Defibaugh-ref. AFE# 81195
"J" flags required/Use lowest possible detection limit - all methods.

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MAT-RIX	NO. OF CONT.	BOD (5-days @ 20 deg. C) - SM5210B	Nitrate + Nitrite (as N) EPA 300.0	Sulfides (SM 4500 S2-D)	TCDD Equivalents (8290)	Priority Pollutants PCBs (8082) (see attached list)	Priority Pollutants Pest. (8081A) (see attached list)	Priority Pollutants SVOCs (8270C) (see attached list)	Cyanide (SM 4500 CN-E, EPA 9014)	Asbestos (EPA/600/R-93/116(PCM))				Comments
	EFF-09-10	EFFLUENT	9/10/15	0815	WW	24	X	X	X	X	X	X	X	X	X				KU16884-1

Relinquished by: (Signature)	Received by: (Signature)	Date: 9-11-15	Time: 10:24 AM
Relinquished by: (Signature) 9-11-15 3:44 PM	Received by: (Signature)	Date: 9/12/15	Time: 0745
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Revised: 12/03/12

3.3, 3.1°C IRR ICE

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:	9/12/2015	Workorder:	N016884
Rep sample Temp (Deg C):	3.3/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	Golden State Overnight		
Last 4 digits of Tracking No.:	6322/6323	Packing Material Used:	Bubble Wrap
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☐	NA ☑
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: NO3/NO2 was re-sampled by client due to holding time issue.

Checklist Completed By: MBC MBC 9/14/2015

Reviewed By: 09/15/15

ASSET LV Sample Control

From: Marlon B. Cartin <marlon@assetlaboratories.com>
Sent: Tuesday, September 15, 2015 9:38 AM
To: 'ASSET LV Sample Control'
Subject: FW: Re-sampling for expired samples

Forwarding.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Monday, September 14, 2015 9:14 AM
To: 'Vidal.Cortes@ch2m.com'
Cc: 'Molky Brar'
Subject: Re-sampling for expired samples

Hi Vidal,

Below are the tests that we need to re-sample;

Coyote Creek;
Cr+6 – Need 8 or 16 Oz Unpreserved Poly

Effluent;
Nitrate/Nitrite, Cr+6, Turbidity, Settleable Solid- Need 2 x 32 Oz Poly unpreserve and 1 x 8 Oz Poly.

Molky – Please schedule a sample pick-up today anytime after 2:00 PM.

Thanks,

Marlon Cartin
Project Manager
California: 11060 Artesia Blvd., Ste. C, 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 ORDER Summary

14-Sep-15

WorkOrder: N016884

Client ID: CH2HI03

Project: SFPP - Norwalk Site **QC Level:** RTNE **Date Received:** 9/12/2015

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N016884-001A	EFF-09-10	9/10/2015 8:15:00 AM	9/21/2015	Wastewater	SM 5210 B	BIOCHEMICAL OXYGEN DEMAND	☐	☐	☑	SUB
N016884-001B			9/21/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			9/21/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N016884-001C			9/21/2015		SM4500-S-2D	SULFIDE, TOTAL	☐	☐	☑	SUB
N016884-001D			9/21/2015		EPA 8290	Dioxins and Dibenzofurans	☐	☐	☑	SUB
N016884-001E			9/21/2015		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE/PCB	☐	☐	☐	WW
			9/21/2015		EPA 8082	PCBs BY GC/ECD	☐	☐	☐	WW
N016884-001F			9/21/2015		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE	☐	☐	☐	WW
			9/21/2015		EPA 8081A	ORGANOCHLORINE PESTICIDES BY GC/ECD	☐	☐	☐	WW
N016884-001G			9/21/2015		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C	☐	☐	☐	WW
			9/21/2015		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	WW
N016884-001H			9/21/2015		SM4500-CN E	CYANIDE, TOTAL	☐	☐	☑	SUB
N016884-001I			9/21/2015		TEM	Asbestos TEM	☐	☐	☑	SUB
N016884-002A	FOLDER		9/21/2015		Folder	Folder	☐	☐	☐	LAB

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

14-Sep-15

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**SM 5210 B**	**SM4500-CN E**	**SM4500-S-2D**
N016884-001A / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	32OZP	1		
N016884-001C / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP			1
N016884-001H / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP		1	

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

Please use PO#:N16884A Please email Invoices and Account Receivable Statements to AssetAP@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 BOD by 5210, Sulfide by SM4500S-2D and CN by SM 4500CN-E.

		Date/Time			Date/Time
Relinquished by:		9/14/15 @ 1700	**Received by:**		
Relinquished by:			**Received by:**		

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

EMS Laboratories
117 W. Bellevue Dr.
Pasadena, CA 91105

TEL: (626) 568-4065
FAX:
Acct #:

Field Sampler: James Dye

14-Sep-15

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**TEM**		
N016884-001I / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP	1		

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

Please use PO#: N16884B Please email Invoices and Account Receivable Statements to AssetAP@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 Asbestos by EPA 600/R-93/116(PCM).

		Date/Time		**Date/Time**
Relinquished by:		9/14/15 @ 17:00	**Received by:**	
Relinquished by:			**Received by:**	

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

APPL, Inc.
908 N. Temperance Ave.
Clovis, CA 93611

TEL: (559) 275-2175
FAX: (209) 275-4422
Acct #:

Field Sampler: Jems Dye

14-Sep-15

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**EPA 8290**		
N016884-001D / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	32OZP	1		

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

Please use PO#: ~~N16884B~~ N16884C Please email Invoices and Account Receivable Statements to AssetAP@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 Dioxin and Furan by EPA 82190 Full list with TEQ.

		Date/Time			Date/Time
Relinquished by:		9/15/15 @ 17:00	**Received by:**	GSO TRK# 529276571	
Relinquished by:			**Received by:**		

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

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CERRITOS, CA 90703

Ship To
ATL INC
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: REQUIRED

Tracking #: 529246323

SDS

LVS

A

LAS VEGAS

C89102A

42320327

Print Date: 9/11/2015 4:29 PM

Package 2 of 2

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

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GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Ship To
ATL INC
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: REQUIRED

Tracking #: 529246322

SDS

LVS

A

LAS VEGAS

C89102A

42320326

Print Date: 9/11/2015 4:29 PM

Package 1 of 2

LABEL INSTRUCTIONS:

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2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attention: Marlon Cartin

Number of Pages	**5**
Date Received	**09/11/2015**
Date Reported	**09/21/2015**

Job Number	Order Date	Client
78234	09/11/2015	ASSET

Project ID: N016884
Project Name: PO# N16884A

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

AETL
ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

78234

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Asset Laboratories	**Report to:**	**Bill to:**	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address:	**Company:**	**Address:**	Excel EDD ☐	RTNE ☐	Y N
Address:	**Email:**		Geotracker ☐	RWQCB ☐	1. Chilled ☐ ☐
Phone: **Fax:**	**Address:**	**Email to:** **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By: Molky Brar		**Phone:** **Fax:**	Others ☐	Level III ☐	3. Container Intact ☐ ☐
Title:	**Phone:** **Fax:**		Specify:	LEVEL IV ☐	4. Seal Present ☐ ☐
Signature: **Date:**	**Sampled By:**		Global ID:	Regulatory ☐	5. IR number
I hereby authorize ASSET Labs to perform the tests indicated below:				Specify State:	6. Method of Cooling
Project Name:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*				Sample Temp:
Project Number:	*Signature:* *Date*				

Matrix			
Ground ☐	Sediment ☐		
Potable ☐	Soil ☐		
NPDES ☐	Other Solid ☐		
Surface ☐			

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Phenols	total sulfide	Cyanide	BOD	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	78234.01	EFF-09-10	9/10/15	0815	ww			X	X	X	X		ES		%	
2																
3																
4																
5																
6																
7																
8																
9																
10																

Courier:

Tracking No.

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
	09/11/15 1410		09/11/15 1410
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT)

- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:				**Container Type:**		
H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C	T = Tube	V = VOA	P = Pint
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$		J = Jar	B = Tedlar	G = Glass
Others/Specify:				M = Metal	P = Plastic	C = Can

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

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

14-Sep-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM 5210 B	SM4500-CN E	SM4500-S-2D
N016884-001A / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	32OZP	1		
N016884-001C / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP			1
N016884-001H / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP		1	

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

Please use PO#:N16884A Please email Invoices and Account Receivable Statements to AssetAP@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 BOD by 5210, Sulfide by SM4500S-2D and CN by SM 4500CN-E.

		Date/Time		Date/Time
Relinquished by:		9/14/15 @ 1700	**Received by:**	
Relinquished by:			**Received by:**	

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

14-Sep-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 420.1		
N016885-001F / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	32OZA	1		

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

Please use PO#: N16885A Please email Invoices and Account Receivable Statements to AssetAP@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 Phenols by EPA 420.1.

		Date/Time		Date/Time
Relinquished by:		9/14/15 @ 17:00	**Received by:**	
Relinquished by:			**Received by:**	

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Ordered By

ASSET Laboratories **3151-3153 W Post Road** **Las Vegas, NV 89118-**	**Project ID: N016884** **Date Received 09/11/2015** **Date Reported 09/21/2015**

Telephone: (702)307-2659
Attention: Marlon Cartin

Job Number	Order Date	Client
78234	09/11/2015	ASSET

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 09/11/2015.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
78234.01	N016884-001/EFF-09-10	09/10/2015	Aqueous	3

Method ^ Submethod	*Req Date*	*Priority*	*TAT*	*Units*
420.1	09/18/2015	2	Normal	mg/L
SM-4500-CN-E	09/18/2015	2	Normal	mg/L
SM-4500-S=D ^ TOTAL S	09/18/2015	2	Normal	mg/L
SM5210B	09/18/2015	2	Normal	mg/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin
Page: **2**

Project ID: N016884
Project Name: PO# N16884A

AETL Job Number	Submitted	Client
78234	09/11/2015	ASSET

Method: 420.1, Phenolics, Total Recoverable, Spectrophotometric, Manual

QC Batch No: 091115

Our Lab I.D.			Method Blank	**78234.01**			
Client Sample I.D.				N016884-001 /EFF-09-10			
Date Sampled				**09/10/2015**			
Date Prepared			**09/11/2015**	**09/11/2015**			
Preparation Method			**420.1**	**420.1**			
Date Analyzed			**09/11/2015**	**09/11/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Phenolic compounds as phenol	**0.15**	**0.30**	**ND**	**ND**			

QUALITY CONTROL REPORT

QC Batch No: 091115; Dup or Spiked Sample: 78234.01; LCS: Clean Water; QC Prepared: 09/11/2015; QC Analyzed: 09/11/2015; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Phenol	**0.00**	**0.500**	**0.500**	**100**	**0.500**	**0.496**	**99.2**	**<1**	**80-120**	**<15**

QC Batch No: 091115; Dup or Spiked Sample: 78234.01; LCS: Clean Water; QC Prepared: 09/11/2015; QC Analyzed: 09/11/2015; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Phenol	**0.500**	**0.427**	**85.4**	**0.500**	**0.438**	**87.6**	**2.5**	**80-120**	**<20**	

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ANALYTICAL RESULTS

Ordered By

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Telephone: (702)307-2659
Attn: Marlon Cartin
Page: **3**

Project ID: N016884
Project Name: PO# N16884A

AETL Job Number	Submitted	Client
78234	09/11/2015	ASSET

Method: SM-4500-CN-E, Cyanide, Total, Titrimetric

QC Batch No: 091415-1

Our Lab I.D.			Method Blank	**78234.01**			
Client Sample I.D.				N016884-001 /EFF-09-10			
Date Sampled				**09/10/2015**			
Date Prepared			**09/14/2015**	**09/14/2015**			
Preparation Method			**SM4500CNE**	**SM4500CNE**			
Date Analyzed			**09/14/2015**	**09/14/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Cyanide (Total)	**0.01**	**0.05**	**ND**	**ND**			

QUALITY CONTROL REPORT

QC Batch No: 091415-1; Dup or Spiked Sample: 78207.01; LCS: Clean Water; LCS Prepared: 09/14/2015; LCS Analyzed: 09/14/2015; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Cyanide (Total)	**0.200**	**0.169**	**84.5**	**0.200**	**0.182**	**91.0**	**7.4**	**80-120**	**<15**	

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ANALYTICAL RESULTS

Ordered By

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Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin
Page: **4**

Project ID: N016884
Project Name: PO# N16884A

AETL Job Number	Submitted	Client
78234	09/11/2015	ASSET

Method: SM-4500-S=D, Total Sulfide, Colorimetric

QC Batch No: 091115-1

Our Lab I.D.			Method Blank	**78234.01**			
Client Sample I.D.				N016884-001 /EFF-09-10			
Date Sampled				**09/10/2015**			
Date Prepared			**09/11/2015**	**09/11/2015**			
Preparation Method			**SM4500SD**	**SM4500SD**			
Date Analyzed			**09/11/2015**	**09/11/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Sulfide, total	**0.01**	**0.05**	**ND**	**ND**			

QUALITY CONTROL REPORT

QC Batch No: 091115-1; Dup or Spiked Sample: 78234.01; LCS: Clean Water; LCS Prepared: 09/11/2015; LCS Analyzed: 09/11/2015; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Sulfide, total	**ND**	**ND**	**<1**	**<20**	**0.200**	**0.177**	**88.5**	**80-120**		

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ANALYTICAL RESULTS

Ordered By

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Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin
Page: **5**

Project ID: N016884
Project Name: PO# N16884A

AETL Job Number	Submitted	Client
78234	09/11/2015	ASSET

Method: SM5210B, Biochemical Oxygen Demand 5 days, @ 20C (Standard Methods)

QC Batch No: 091115-1

Our Lab I.D.			Method Blank	**78234.01**			
Client Sample I.D.				N016884-001 /EFF-09-10			
Date Sampled				**09/10/2015**			
Date Prepared			**09/11/2015**	**09/11/2015**			
Preparation Method			**SM5210B**	**SM5210B**			
Date Analyzed			**09/16/2015**	**09/16/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Biochemical Oxygen Demand (BOD)	**5.0**	**5.0**	**ND**	**12.2**			

QUALITY CONTROL REPORT

QC Batch No: 091115-1; Dup or Spiked Sample: 78234.01; LCS: Clean Water; LCS Prepared: 09/11/2015; LCS Analyzed: 09/16/2015; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Biochemical Oxygen Demand (BOD)	**12.2**	**12.2**	**<1**	**<15**	**198**	**206**	**104**	**80-120**		

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

October 05, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017
TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N016884

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on September 12, 2015 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 addendum report. Please incorporate with documentation previously submitted.

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,

Nancy Liburdi for

Glen Gesmundo
QA Manager

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016884

CASE NARRATIVE

Analytical Comments for EPA 8270C:

Laboratory Control Sample Duplicate (LCSD) recovery biased low for Hexachlorocyclopentadiene. NELAC standard allows for three analytes in marginal exceedence based on 51-70 analytes on Laboratory Conrol Sample (LCS).

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
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3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Oct-15*

CLIENT: CH2MHill
Lab Order: N016884
Project: SFPP - Norwalk Site
Lab ID: N016884-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 3510C **EPA 8270C**

RunID: **MS3_150916A** QC Batch: **51434** PrepDate **9/16/2015** Analyst: **MDM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
1,2-Diphenylhydrazine	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
2,4,6-Trichlorophenol	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
2,4-Dichlorophenol	ND	2.8	10		µg/L	1	9/16/2015 06:04 PM
2,4-Dimethylphenol	ND	2.6	10		µg/L	1	9/16/2015 06:04 PM
2,4-Dinitrophenol	ND	2.4	50		µg/L	1	9/16/2015 06:04 PM
2,4-Dinitrotoluene	ND	1.7	10		µg/L	1	9/16/2015 06:04 PM
2,6-Dinitrotoluene	ND	2.4	10		µg/L	1	9/16/2015 06:04 PM
2-Chloronaphthalene	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
2-Chlorophenol	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
2-Nitrophenol	ND	3.0	10		µg/L	1	9/16/2015 06:04 PM
3,3´-Dichlorobenzidine	ND	1.4	20		µg/L	1	9/16/2015 06:04 PM
4,6-Dinitro-2-methylphenol	ND	1.6	50		µg/L	1	9/16/2015 06:04 PM
4-Bromophenyl-phenylether	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
4-Chloro-3-methylphenol	ND	2.6	50		µg/L	1	9/16/2015 06:04 PM
4-Chloroaniline	ND	2.5	20		µg/L	1	9/16/2015 06:04 PM
4-Chlorophenyl-phenylether	ND	2.5	10		µg/L	1	9/16/2015 06:04 PM
4-Nitrophenol	ND	1.3	50		µg/L	1	9/16/2015 06:04 PM
Acenaphthene	ND	2.9	10		µg/L	1	9/16/2015 06:04 PM
Acenaphthylene	ND	3.0	10		µg/L	1	9/16/2015 06:04 PM
Anthracene	ND	2.0	10		µg/L	1	9/16/2015 06:04 PM
Benzidine (M)	ND	1.2	50		µg/L	1	9/16/2015 06:04 PM
Benzo(a)anthracene	ND	2.0	10		µg/L	1	9/16/2015 06:04 PM
Benzo(a)pyrene	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Benzo(b)fluoranthene	ND	1.6	10		µg/L	1	9/16/2015 06:04 PM
Benzo(g,h,i)perylene	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Benzo(k)fluoranthene	ND	2.9	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-chloroethoxy)methane	ND	3.1	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-chloroethyl)ether	ND	3.2	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-chloroisopropyl)ether	ND	3.1	10		µg/L	1	9/16/2015 06:04 PM
Bis(2-ethylhexyl)phthalate	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM
Butylbenzylphthalate	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Chrysene	ND	2.0	10		µg/L	1	9/16/2015 06:04 PM
Di-n-butylphthalate	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Di-n-octylphthalate	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM
Dibenz(a,h)anthracene	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Diethylphthalate	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM

Qualifiers:

B	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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *05-Oct-15*

CLIENT: CH2MHill
Lab Order: N016884
Project: SFPP - Norwalk Site
Lab ID: N016884-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 3510C			**EPA 8270C**				
RunID: **MS3_150916A**	QC Batch: **51434**				PrepDate	**9/16/2015**	Analyst: **MDM**
Dimethylphthalate	ND	2.4	10		µg/L	1	9/16/2015 06:04 PM
Fluoranthene	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Fluorene	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
Hexachlorobenzene	ND	2.2	10		µg/L	1	9/16/2015 06:04 PM
Hexachlorobutadiene	ND	2.8	20		µg/L	1	9/16/2015 06:04 PM
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	9/16/2015 06:04 PM
Hexachloroethane	ND	2.6	10		µg/L	1	9/16/2015 06:04 PM
Indeno(1,2,3-cd)pyrene	ND	2.1	10		µg/L	1	9/16/2015 06:04 PM
Isophorone	ND	3.0	10		µg/L	1	9/16/2015 06:04 PM
N-Nitrosodi-n-propylamine	ND	2.9	10		µg/L	1	9/16/2015 06:04 PM
N-Nitrosodimethylamine	ND	2.7	50		µg/L	1	9/16/2015 06:04 PM
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	9/16/2015 06:04 PM
Nitrobenzene	ND	2.7	10		µg/L	1	9/16/2015 06:04 PM
Pentachlorophenol	ND	1.0	50		µg/L	1	9/16/2015 06:04 PM
Phenanthrene	ND	2.3	10		µg/L	1	9/16/2015 06:04 PM
Phenol	ND	1.9	10		µg/L	1	9/16/2015 06:04 PM
Pyrene	ND	1.7	10		µg/L	1	9/16/2015 06:04 PM
Surr: 1,2-Dichlorobenzene-d4	79.2	0	27-100		%REC	1	9/16/2015 06:04 PM
Surr: 2,4,6-Tribromophenol	100	0	42-124		%REC	1	9/16/2015 06:04 PM
Surr: 2-Chlorophenol-d4	81.6	0	34-98		%REC	1	9/16/2015 06:04 PM
Surr: 2-Fluorobiphenyl	86.2	0	48-120		%REC	1	9/16/2015 06:04 PM
Surr: 2-Fluorophenol	61.6	0	20-120		%REC	1	9/16/2015 06:04 PM
Surr: 4-Terphenyl-d14	97.2	0	51-135		%REC	1	9/16/2015 06:04 PM
Surr: Nitrobenzene-d5	87.7	0	41-120		%REC	1	9/16/2015 06:04 PM
Surr: Phenol-d5	50.1	0	20-120		%REC	1	9/16/2015 06:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

ASSET Laboratories

Date: *05-Oct-15*

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCS-51434** SampType: **LCS** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **LCSW** Batch ID: **51434** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Diphenylhydrazine	87.230	10	100.0	0	87.2	60	117				
2,4,6-Trichlorophenol	78.150	10	100.0	0	78.2	49	126				
2,4-Dichlorophenol	76.180	10	100.0	0	76.2	48	120				
2,4-Dimethylphenol	79.100	10	100.0	0	79.1	28	120				
2,4-Dinitrophenol	69.740	50	100.0	0	69.7	25	130				
2,4-Dinitrotoluene	76.820	10	100.0	0	76.8	51	120				
2,6-Dinitrotoluene	76.250	10	100.0	0	76.2	49	120				
2-Chloronaphthalene	73.960	10	100.0	0	74.0	49	120				
2-Chlorophenol	68.410	10	100.0	0	68.4	37	120				
2-Nitrophenol	74.020	10	100.0	0	74.0	39	123				
3,3´-Dichlorobenzidine	142.920	20	200.0	0	71.5	20	120				
4,6-Dinitro-2-methylphenol	70.410	50	100.0	0	70.4	40	130				
4-Bromophenyl-phenylether	84.520	10	100.0	0	84.5	52	120				
4-Chloro-3-methylphenol	85.140	50	100.0	0	85.1	47	120				
4-Chloroaniline	59.750	20	100.0	0	59.8	20	120				
4-Chlorophenyl-phenylether	86.850	10	100.0	0	86.8	50	120				
4-Nitrophenol	76.800	50	100.0	0	76.8	20	120				
Acenaphthene	85.420	10	100.0	0	85.4	47	120				
Acenaphthylene	79.690	10	100.0	0	79.7	50	120				
Anthracene	82.660	10	100.0	0	82.7	54	120				
Benzidine (M)	184.100	50	200.0	0	92.0	10	162				
Benzo(a)anthracene	78.070	10	100.0	0	78.1	56	100				
Benzo(a)pyrene	77.910	10	100.0	0	77.9	53	120				
Benzo(b)fluoranthene	83.170	10	100.0	0	83.2	45	124				
Benzo(g,h,i)perylene	77.310	10	100.0	0	77.3	38	123				
Benzo(k)fluoranthene	81.970	10	100.0	0	82.0	45	124				
Bis(2-chloroethoxy)methane	77.990	10	100.0	0	78.0	46	120				
Bis(2-chloroethyl)ether	77.790	10	100.0	0	77.8	37	120				
Bis(2-chloroisopropyl)ether	75.260	10	100.0	0	75.3	26	131				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCS-51434**	SampType: **LCS**	TestCode: **8270_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102176**		
Client ID: **LCSW**	Batch ID: **51434**	TestNo: **EPA 8270C**	**EPA 3510C**	Analysis Date: **9/16/2015**	SeqNo: **2086232**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bis(2-ethylhexyl)phthalate	83.160	10	100.0	0	83.2	42	126				
Butylbenzylphthalate	81.610	10	100.0	0	81.6	46	120				
Chrysene	83.490	10	100.0	0	83.5	55	120				
Di-n-butylphthalate	90.360	10	100.0	0	90.4	54	120				
Di-n-octylphthalate	84.170	10	100.0	0	84.2	37	137				
Dibenz(a,h)anthracene	86.190	10	100.0	0	86.2	42	127				
Diethylphthalate	93.970	10	100.0	0	94.0	41	120				
Dimethylphthalate	87.220	10	100.0	0	87.2	25	127				
Fluoranthene	87.450	10	100.0	0	87.4	54	120				
Fluorene	86.290	10	100.0	0	86.3	50	120				
Hexachlorobenzene	81.430	10	100.0	0	81.4	52	120				
Hexachlorobutadiene	71.850	20	100.0	0	71.8	27	120				
Hexachlorocyclopentadiene	58.550	10	100.0	0	58.6	51	108				
Hexachloroethane	53.000	10	100.0	0	53.0	28	120				
Indeno(1,2,3-cd)pyrene	77.420	10	100.0	0	77.4	43	125				
Isophorone	72.000	10	100.0	0	72.0	50	120				
N-Nitrosodi-n-propylamine	82.320	10	100.0	0	82.3	34	128				
N-Nitrosodimethylamine	61.700	50	100.0	0	61.7	35	98				
N-Nitrosodiphenylamine	81.180	10	100.0	0	81.2	48	120				
Nitrobenzene	76.190	10	100.0	0	76.2	44	120				
Pentachlorophenol	72.140	50	100.0	0	72.1	38	120				
Phenanthrene	84.110	10	100.0	0	84.1	51	120				
Phenol	52.860	10	100.0	0	52.9	20	120				
Pyrene	87.290	10	100.0	0	87.3	49	128				
Surr: 1,2-Dichlorobenzene-d4	64.940		100.0		64.9	27	100				
Surr: 2,4,6-Tribromophenol	92.010		100.0		92.0	42	124				
Surr: 2-Chlorophenol-d4	71.610		100.0		71.6	34	98				
Surr: 2-Fluorobiphenyl	78.570		100.0		78.6	48	120				
Surr: 2-Fluorophenol	59.280		100.0		59.3	20	120				
Surr: 4-Terphenyl-d14	74.870		100.0		74.9	51	135				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCS-51434**	SampType: **LCS**	TestCode: **8270_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102176**
Client ID: **LCSW**	Batch ID: **51434**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **9/16/2015**	SeqNo: **2086232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	78.470		100.0		78.5	41	120				
Surr: Phenol-d5	55.510		100.0		55.5	20	120				

Sample ID **LCSD-51434**	SampType: **LCSD**	TestCode: **8270_W_PGE**	Units: **µg/L**	Prep Date: **9/16/2015**	RunNo: **102176**
Client ID: **LCSS02**	Batch ID: **51434**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **9/16/2015**	SeqNo: **2086233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Diphenylhydrazine	88.180	10	100.0	0	88.2	60	117	87.23	1.08	20	
2,4,6-Trichlorophenol	76.110	10	100.0	0	76.1	49	126	78.15	2.64	20	
2,4-Dichlorophenol	67.930	10	100.0	0	67.9	48	120	76.18	11.4	20	
2,4-Dimethylphenol	70.210	10	100.0	0	70.2	28	120	79.10	11.9	20	
2,4-Dinitrophenol	72.470	50	100.0	0	72.5	25	130	69.74	3.84	20	
2,4-Dinitrotoluene	81.160	10	100.0	0	81.2	51	120	76.82	5.49	20	
2,6-Dinitrotoluene	79.130	10	100.0	0	79.1	49	120	76.25	3.71	20	
2-Chloronaphthalene	72.760	10	100.0	0	72.8	49	120	73.96	1.64	20	
2-Chlorophenol	57.990	10	100.0	0	58.0	37	120	68.41	16.5	20	
2-Nitrophenol	65.070	10	100.0	0	65.1	39	123	74.02	12.9	20	
3,3´-Dichlorobenzidine	150.920	20	200.0	0	75.5	20	120	142.9	5.45	20	
4,6-Dinitro-2-methylphenol	70.940	50	100.0	0	70.9	40	130	70.41	0.750	20	
4-Bromophenyl-phenylether	87.350	10	100.0	0	87.4	52	120	84.52	3.29	20	
4-Chloro-3-methylphenol	80.750	50	100.0	0	80.8	47	120	85.14	5.29	20	
4-Chloroaniline	57.050	20	100.0	0	57.0	20	120	59.75	4.62	20	
4-Chlorophenyl-phenylether	89.070	10	100.0	0	89.1	50	120	86.85	2.52	20	
4-Nitrophenol	79.070	50	100.0	0	79.1	20	120	76.80	2.91	20	
Acenaphthene	84.360	10	100.0	0	84.4	47	120	85.42	1.25	20	
Acenaphthylene	78.590	10	100.0	0	78.6	50	120	79.69	1.39	20	
Anthracene	85.190	10	100.0	0	85.2	54	120	82.66	3.01	20	
Benzidine (M)	197.880	50	200.0	0	98.9	10	162	184.1	7.22	20	
Benzo(a)anthracene	81.150	10	100.0	0	81.2	56	100	78.07	3.87	20	
Benzo(a)pyrene	80.720	10	100.0	0	80.7	53	120	77.91	3.54	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCSD-51434** SampType: **LCSD** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **LCSS02** Batch ID: **51434** TestNo: **EPA 8270C EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	85.570	10	100.0	0	85.6	45	124	83.17	2.84	20	
Benzo(g,h,i)perylene	78.600	10	100.0	0	78.6	38	123	77.31	1.65	20	
Benzo(k)fluoranthene	77.780	10	100.0	0	77.8	45	124	81.97	5.25	20	
Bis(2-chloroethoxy)methane	70.490	10	100.0	0	70.5	46	120	77.99	10.1	20	
Bis(2-chloroethyl)ether	65.580	10	100.0	0	65.6	37	120	77.79	17.0	20	
Bis(2-chloroisopropyl)ether	66.100	10	100.0	0	66.1	26	131	75.26	13.0	20	
Bis(2-ethylhexyl)phthalate	86.110	10	100.0	0	86.1	42	126	83.16	3.49	20	
Butylbenzylphthalate	84.390	10	100.0	0	84.4	46	120	81.61	3.35	20	
Chrysene	86.130	10	100.0	0	86.1	55	120	83.49	3.11	20	
Di-n-butylphthalate	94.570	10	100.0	0	94.6	54	120	90.36	4.55	20	
Di-n-octylphthalate	88.470	10	100.0	0	88.5	37	137	84.17	4.98	20	
Dibenz(a,h)anthracene	88.830	10	100.0	0	88.8	42	127	86.19	3.02	20	
Diethylphthalate	97.140	10	100.0	0	97.1	41	120	93.97	3.32	20	
Dimethylphthalate	89.690	10	100.0	0	89.7	25	127	87.22	2.79	20	
Fluoranthene	91.670	10	100.0	0	91.7	54	120	87.45	4.71	20	
Fluorene	88.200	10	100.0	0	88.2	50	120	86.29	2.19	20	
Hexachlorobenzene	86.410	10	100.0	0	86.4	52	120	81.43	5.93	20	
Hexachlorobutadiene	66.650	20	100.0	0	66.6	27	120	71.85	7.51	20	
Hexachlorocyclopentadiene	50.930	10	100.0	0	50.9	51	108	58.55	13.9	20	S
Hexachloroethane	49.790	10	100.0	0	49.8	28	120	53.00	6.25	20	
Indeno(1,2,3-cd)pyrene	80.370	10	100.0	0	80.4	43	125	77.42	3.74	20	
Isophorone	68.030	10	100.0	0	68.0	50	120	72.00	5.67	20	
N-Nitrosodi-n-propylamine	75.140	10	100.0	0	75.1	34	128	82.32	9.12	20	
N-Nitrosodimethylamine	53.980	50	100.0	0	54.0	35	98	61.70	13.3	20	
N-Nitrosodiphenylamine	83.170	10	100.0	0	83.2	48	120	81.18	2.42	20	
Nitrobenzene	68.140	10	100.0	0	68.1	44	120	76.19	11.2	20	
Pentachlorophenol	74.780	50	100.0	0	74.8	38	120	72.14	3.59	20	
Phenanthrene	87.400	10	100.0	0	87.4	51	120	84.11	3.84	20	
Phenol	46.190	10	100.0	0	46.2	20	120	52.86	13.5	20	
Pyrene	91.440	10	100.0	0	91.4	49	128	87.29	4.64	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **LCSD-51434** SampType: **LCSD** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **LCSS02** Batch ID: **51434** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,2-Dichlorobenzene-d4	57.340		100.0		57.3	27	100		0		
Surr: 2,4,6-Tribromophenol	98.490		100.0		98.5	42	124		0		
Surr: 2-Chlorophenol-d4	61.870		100.0		61.9	34	98		0		
Surr: 2-Fluorobiphenyl	75.440		100.0		75.4	48	120		0		
Surr: 2-Fluorophenol	51.590		100.0		51.6	20	120		0		
Surr: 4-Terphenyl-d14	77.350		100.0		77.4	51	135		0		
Surr: Nitrobenzene-d5	69.650		100.0		69.6	41	120		0		
Surr: Phenol-d5	49.400		100.0		49.4	20	120		0		

Sample ID **MB-51434** SampType: **MBLK** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **PBW** Batch ID: **51434** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Diphenylhydrazine	ND	10									
2,4,6-Trichlorophenol	ND	10									
2,4-Dichlorophenol	ND	10									
2,4-Dimethylphenol	ND	10									
2,4-Dinitrophenol	ND	50									
2,4-Dinitrotoluene	ND	10									
2,6-Dinitrotoluene	ND	10									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
2-Nitrophenol	ND	10									
3,3´-Dichlorobenzidine	ND	20									
4,6-Dinitro-2-methylphenol	ND	50									
4-Bromophenyl-phenylether	ND	10									
4-Chloro-3-methylphenol	ND	50									
4-Chloroaniline	ND	20									
4-Chlorophenyl-phenylether	ND	10									
4-Nitrophenol	ND	50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **MB-51434** SampType: **MBLK** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**

Client ID: **PBW** Batch ID: **51434** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Anthracene	ND	10									
Benzidine (M)	ND	50									
Benzo(a)anthracene	ND	10									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									
Butylbenzylphthalate	ND	10									
Chrysene	ND	10									
Di-n-butylphthalate	ND	10									
Di-n-octylphthalate	ND	10									
Dibenz(a,h)anthracene	ND	10									
Diethylphthalate	ND	10									
Dimethylphthalate	ND	10									
Fluoranthene	ND	10									
Fluorene	ND	10									
Hexachlorobenzene	ND	10									
Hexachlorobutadiene	ND	20									
Hexachlorocyclopentadiene	ND	10									
Hexachloroethane	ND	10									
Indeno(1,2,3-cd)pyrene	ND	10									
Isophorone	ND	10									
N-Nitrosodi-n-propylamine	ND	10									
N-Nitrosodimethylamine	ND	50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016884
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_PGE

Sample ID **MB-51434** SampType: **MBLK** TestCode: **8270_W_PGE** Units: **µg/L** Prep Date: **9/16/2015** RunNo: **102176**
Client ID: **PBW** Batch ID: **51434** TestNo: **EPA 8270C EPA 3510C** Analysis Date: **9/16/2015** SeqNo: **2086234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiphenylamine	ND	10									
Nitrobenzene	ND	10									
Pentachlorophenol	ND	50									
Phenanthrene	ND	10									
Phenol	ND	10									
Pyrene	ND	10									
Surr: 1,2-Dichlorobenzene-d4	46.020		100.0		46.0	27	100				
Surr: 2,4,6-Tribromophenol	73.730		100.0		73.7	42	124				
Surr: 2-Chlorophenol-d4	51.860		100.0		51.9	34	98				
Surr: 2-Fluorobiphenyl	53.430		100.0		53.4	48	120				
Surr: 2-Fluorophenol	42.670		100.0		42.7	20	120				
Surr: 4-Terphenyl-d14	83.630		100.0		83.6	51	135				
Surr: Nitrobenzene-d5	57.130		100.0		57.1	41	120				
Surr: Phenol-d5	36.520		100.0		36.5	20	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

nancy@assetlaboratories.com

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Thursday, October 01, 2015 11:21 AM
To: Vidal.Cortes@ch2m.com
Cc: nancy@assetlaboratories.com
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Hi Vidal,

Per conversation with you, we will just report the additional analytes of Metals and VOC from the original sample. We will run 2-CEVE from the sample that your provide us yesterday. This is for the annual sampling at KMEP.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Vidal.Cortes@ch2m.com [mailto:Vidal.Cortes@ch2m.com]
Sent: Wednesday, September 30, 2015 3:13 PM
To: marlon@assetlaboratories.com
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Please run the samples for metals. I'm going to the site now to collect those samples, we are still within the month. How many VOAs are needed for the analysis?

-Vidal

From: Cortes, Vidal/SCO
Sent: Wednesday, September 30, 2015 12:40 PM
To: 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Marlon,

Per table 5, I have not seen results for several priority pollutants. I just want to make sure I will be receiving them soon.

Thanks,

Vidal

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Wednesday, September 30, 2015 11:55 AM
To: Cortes, Vidal/SCO <Vidal.Cortes@ch2m.com>
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Hi Vidal,

We're just waiting for the sub. I'll send another follow-up today.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Vidal.Cortes@ch2m.com [mailto:Vidal.Cortes@ch2m.com]
Sent: Wednesday, September 30, 2015 11:37 AM
To: marlon@assetlaboratories.com
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Any more results for annual sampling, Marlon?

-vidal

From: ASSET LV Sample Control [mailto:samplecontrol.lv@assetlaboratories.com]
Sent: Monday, September 14, 2015 12:29 PM
To: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>; Cortes, Vidal/SCO <Vidal.Cortes@ch2m.com>
Subject: COC and Work Order Summary for Samples Received 9/12/2015

Enclosed are COC and WO Summary for samples received 9/12/2015. If you have any questions, please contact your Project Manager listed below.

Marlon Cartin
3151 W. Post Road
Las Vegas, Nevada
89118
Tel. No.: (702)-307-2659 Ext. 410
Cel. No.: (702)-439-0421
Email: marlon@assetlaboratories.com

Thank you for using ASSET Laboratories.

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

California: 11060 Artesia Blvd., Ste. C, Cerritos, CA 90703 | P: 562.219.7435 | F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 | P: 702.307.2659 | F: 702.307.2691
www.assetlaboratories.com

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

CHAIN-OF-CUSTODY RECORD

1U7281

QC Level: RTNE

Subcontractor:

EMS Laboratories
117 W. Bellevue Dr.
Pasadena, CA 91105

TEL: (626) 568-4065
FAX:
Acct #:

Field Sampler: James Dye

14-Sep-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				TEM		
N016884-001I / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP	1		

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

Please use PO#: N16884B Please email Invoices and Account Receivable Statements to AssetAP@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 Asbestos by EPA 600/R-93/116(PCM).

		Date/Time		Date/Time
Relinquished by:		9/11/15 @ 1342 ~~9/14/15 @ 17:00~~	**Received by:**	9/11/15 @ 1342
Relinquished by:			**Received by:**	

DATE: October 7, 2015

CUSTOMER: ASSET Laboratories
3151-3153 W Post Rd
Las Vegas, NV 89118

ATTENTION: Marlon Cartin

REPORT NO: 167281

REFERENCE: PO# N16884B

DATE RECEIVED: September 11, 2015 at 1342

DATE ANALYZED: October 2, 2015

SUBJECT: ANALYSIS OF WATER SAMPLES FOR ASBESTOS BY TEM

ACCREDITATION: CDPH-ELAP 1119

The sample was prepared and analyzed according to EPA 600 94 134, 100.1.

The date and times of collection, UV-Ozone treatment and filtration are as follows:

Sample	Date/Time of Collection	UV-Ozone Treatment	Date/Time of Filtration
EFF-09-10	September 10, 2015 at 0815	September 18, 2015 0830 - 1130	September 18, 2015 at 1155

The results of the analysis and the detection limit(s) are summarized on the following page(s), accompanied by the chain of custody.

Respectfully submitted,
EMS Laboratories, Inc.

B.M. Kolk
Laboratory Director
BMK/am

Note: The results of the analysis are based upon the sample submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples. All the analytical quality control data meet the requirement of the procedure unless otherwise indicated. Any deviation or exclusion from the test method is noted in this cover letter. Unless otherwise noted in this cover letter the samples were received properly packaged, clearly identified and intact.

ANALYSIS OF WATER BY TEM (EPA-600/4-83-043) EPA 100.1

LAB.NO. 167281
CLIENT: ASSET Environmental
DATE ANALYZED: 10/2/2015

Laboratory I.D.	Client I.D.	FILTER MEDIA DATA			No. of G.O.	Analyzed Area, mm^2	Sample Volume (ml)
		Type	Diameter mm	Effective Area mm^2			
167281-01	EFF-09-10	PC	47	1017	20	0.216	25

INDIVIDUAL ANALYTICAL RESULTS

Laboratory I.D.	Client I.D.	No of Asbestos Fib			Detection Limit (MFL)	CONCENTRATION (MFL)		
		All sizes	Fib >5µm	Fib >10µm		Fib	Fib >5µm	Fib >10µm
167281-01	EFF-09-10	ND	ND	ND	0.2	< 0.2	< 0.2	< 0.2

The analysis was carried out to the approved TEM method. This laboratory is in compliance with the quality specified by the method.

Authorized Signature

NA Not Applicable
ND None Detected
PC Polycarbonate Filter
GO Grid Openings
MFL Million Fibers per Liter
Fib Fibers

TEM-6A (2011 Rev)

Laboratory Report

ASSET Laboratories

Project #: N/A

APPL SDG: 77340

APPL, Inc.

Number of pages in report: _____

EPA METHOD 8290
Dioxins/Furans

APPL, INC.

Data Validation Package
for

EPA METHOD 8290
Dioxins/Furans by HR-MS

TABLE OF CONTENTS

LABORATORY NAME: *APPL, Inc.*

APPL, INC.

EPA METHOD 8290
Dioxins/Furans

Case Narrative

APPL, INC.

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

EPA Method 8290
Dioxins / Furans

Case Narrative

ARF: 77340

Project: N/A

State Certification Number: CA1312 (DW, WW & HW)

NELAP Certification number: CA00046 (HW)

Results in this report apply to the sample analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Sample Receipt Information:

The water sample was received on September 16, 2015, at 3.0°C. The sample was assigned Analytical Request Form (ARF) number 77340. The sample number and requested analysis were compared to the chain of custody. No exception was encountered.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
N016884-001D /EFF-09-10	AZ21644	WATER	09/10/15	09/16/15

Sample Preparation:

The sample was extracted and cleaned up according to the EPA 8290 method.

Analysis Information:

The sample was analyzed according to the EPA 8290A, using a Waters Inc. Autospec Premier High Resolution Mass Spectrometer. The results are reported in accordance with EPA 8290 guidelines, as follows:

1. For analytes that had no chromatographic response in the sample, the EDL (Estimated Detection Limit) was reported in the EDL / EMPC column on the Form 1.
2. For analytes that exhibited chromatographic peaks in the sample (but did not meet the method requirements for positive identification), the EMPC (Estimated Maximum Potential Concentration) was reported in the EDL / EMPC column.

3. For the positively identified analytes the concentration was reported in the "Results" column, and EMPC was reported in the EDL / EMPC column. The EMPC is equal to the detected concentration.

The TEQ was calculated using the TEF values provided by the World Health Organization "Toxicity Equivalency Factor Table 2005".

In accordance with the client's instructions, a sample exhibiting J-value responses below the PQL was re-injected for confirmation purposes. The higher of the two results was reported on the Form 1. For J-value responses in which the confirmation result was "not detected", the analyte was reported as not detected with an EMPC from the J-value detection, according to the client's instructions.

Quality Control/Assurance

Calibrations:

Calibrations and Resolution Checks were performed according to the method. All calibration acceptance criteria were met.

Blanks:

The method blank contained no analyte above one-half the PQL.

Spikes:

A Laboratory Control Spike (LCS) was used for quality control. The LCS recoveries met acceptance criteria.

No sample was designated by the client for MS/MSD analysis.

Surrogate Recoveries (C13 Internal Standards):

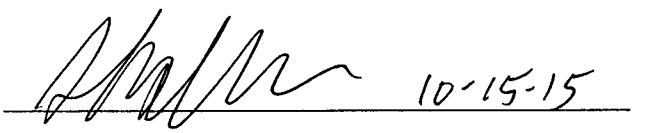
C13 Internal Standards were added to the extracts in accordance with the method and reported on the Form 1s as surrogate recoveries. All recoveries met acceptance criteria.

Summary:

All data were acceptable. No analytical exception is noted.

CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.



Sharon Dehmlow, Laboratory Director / Date

EPA METHOD 8290
Dioxins/Furans

Chain of Custody and ARF

APPL, INC.

APPL - Analysis Request Form 77340

Client: **ASSET Laboratories**
Address: **3151-3153 W. Post Rd.**
Las Vegas, NV 89118
Attn: **Marlon Cartin**
Phone: **702-307-2659** Fax: **702-307-2691**
Job: **NA**
PO #: **N16884C**
Chain of Custody (Y/N): **Y** # **091515**
RAD Screen (Y/N): **Y** pH (Y/N): **N**
Turn Around Type: **STD**

Received by: **YL**
Date Received: **09/16/15** Time: **13:15**
Delivered by: **GSO**
Shuttle Custody Seals (Y/N): **N** Time Zone: **-7**
Chest Temp(s): **3.0°C**
Color: **E-Brn**
Samples Chilled until Placed in Refrig/Freezer: **Y**
Project Manager: **Cynthia Clark**
QC Report Type: **DVP4/NV**
Due Date: **10/07/15**

Comments:
std TAT is 2 weeks, no later than 3 weeks
H8290 Report 'PC' or 'DL' on Form 1
Calculate TEQ from TEF & BEF values provided 2/10/12 via email
email report to marlon@, reports.lv@assetlaboratories.com;
EDD: Excel to marlon@, reports.lv@assetlaboratories.com;

Sample Distribution:
Extractions: 1- SEP8290
Other: 1-$8290W

Charges:

Invoice To:
ATL/ASSET

	Client ID	APPL ID	Sampled	Analyses Requested
1.	N016884-001D /EFF-09-10	AZ21644W	09/10/15 08:15	$8290W

Note: All times, excluding sample collection times, are Pacific Time Zone unless noted otherwise. Collection times are in: -7 UTC

APPL Sample Receipt Form

ARF# **77340**

Sample	Container Type	Count	pH	Sample	Container Type	Count	pH
AZ21644	17 Amber Liter	1	na				

77340 30

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:
APPL, Inc.
908 N. Temperance Ave.
Clovis, CA 93611

TEL: (559) 275-2175
FAX: (209) 275-4422
Acct #:

Field Sampler: Jems Dye

14-Sep-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 8290		
N016884-001D / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM.
Please use PO#: ~~N16884B~~ N16884C Please email Invoices and Account Receivable Statements to AssetAP@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 Dioxin and Furan by EPA 82190 Full list with TEQ.

		Date/Time			Date/Time
Relinquished by:	[signature]	9/15/15 @ 17:00	**Received by:**	Yang Zou	9/16/15 13:15
Relinquished by:			**Received by:**		

COOLER RECEIPT FORM **ARF: 77340**

1) Project: NA Date Received: 09/16/15

2) Coolers: Number of Coolers: 1

3) No Were custody seals present and intact?
How many? 0 Name/Date on seal? _____

4) YES Was there a shipping slip? Carrier name: GSO

5) Type of packing in cooler: X bubble wrap __ popcorn __ foam __ plastic bags
X wet ice __ dry ice __ no ice __ other

6) YES Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use j5297

8) Cooler temp(s): In °C
1: 3.0 2: _____ 3: _____ 4: _____ 5: _____ 6: _____
7: _____ 8: _____ 9: _____ 10: _____ 11: _____ 12: _____

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea: _____
Smaller than a pea: _____

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) NA Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) NA Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of sodium hydroxide preserved samples for Cyanide > 12 and Sulfide >9?

22) NO Were unpreserved VOA Vials received?

23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number: _____
Lab notified if pH was not adequate: _____

Notes/Deficiencies:

Personnel receiving samples: tx Second reviewer: YL
Personnel labeling samples: _____
Project manager notified: _____ Date/Time of notification _____
Name of client notified: _____ Date/Time of notification _____

EPA METHOD 8290
Dioxins/Furans

QC Summary

APPL, INC.

Method Blank

EPA 8290 - Dioxins and Furans

Blank Name/QCG: **150924W-21644 - 201331**
Batch ID: $8290W-150924A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	PQL	EDL/EMPC	Units	Ext Date	Analysis Date
BLANK	1,2,3,4,6,7,8-HPCDD	Not detected	125.0	8.5PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,6,7,8-HPCDF	Not detected	125.0	0.56PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,7,8,9-HPCDF	Not detected	125.0	1.9DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,7,8-HXCDD	Not detected	125.0	3.1DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,7,8-HXCDF	Not detected	125.0	1.8DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,6,7,8-HXCDD	Not detected	125.0	3.1DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,6,7,8-HXCDF	Not detected	125.0	1.1PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8,9-HXCDD	Not detected	125.0	3.0DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8,9-HXCDF	Not detected	125.0	2.0DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8-PECDD	Not detected	125.0	3.7PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8-PECDF	Not detected	125.0	1.4DL	pg/L	09/24/15	10/14/15
BLANK	2,3,4,6,7,8-HXCDF	Not detected	125.0	1.8DL	pg/L	09/24/15	10/14/15
BLANK	2,3,4,7,8-PECDF	Not detected	125.0	1.5DL	pg/L	09/24/15	10/14/15
BLANK	2,3,7,8-TCDD	Not detected	50.0	1.4DL	pg/L	09/24/15	10/14/15
BLANK	2,3,7,8-TCDF	Not detected	50.0	1.3DL	pg/L	09/24/15	10/14/15
BLANK	OCDD	Not detected	250.0	5.6PC	pg/L	09/24/15	10/14/15
BLANK	OCDF	Not detected	250.0	2.1DL	pg/L	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S)	94.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S)	85.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)	76.9	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)	76.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,7,8-PECDD (S)	86.2	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,7,8-PECDF (S)	86.8	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-2,3,7,8-TCDD (S)	77.2	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-2,3,7,8-TCDF (S)	79.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-OCDD (S)	86.6	40-135		%	09/24/15	10/14/15

Quant Method: 151012_8290
Run #: 151012_HR_34
Instrument: Magneto
Sequence: 151012
Initials: RP

Printed: 10/15/15 7:07:18 AM

Laboratory Control Spike Recovery
EPA 8290 - Dioxins and Furans

APPL ID: **150924W-21644 LCS - 201331**
Batch ID: #8290W-150924A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level pg/L	SPK Result pg/L	SPK % Recovery	Recovery Limits
1,2,3,4,6,7,8-HPCDD	1250	1070	85.6	70-130
1,2,3,4,6,7,8-HPCDF	1250	1030	82.4	70-130
1,2,3,4,7,8,9-HPCDF	1250	1040	83.2	70-130
1,2,3,4,7,8-HXCDD	1250	1160	92.8	70-130
1,2,3,4,7,8-HXCDF	1250	1090	87.2	70-130
1,2,3,6,7,8-HXCDD	1250	1170	93.6	70-130
1,2,3,6,7,8-HXCDF	1250	1080	86.4	70-130
1,2,3,7,8,9-HXCDD	1250	1230	98.4	70-130
1,2,3,7,8,9-HXCDF	1250	1100	88.0	70-130
1,2,3,7,8-PECDD	1250	1210	96.8	70-130
1,2,3,7,8-PECDF	1250	1140	91.2	70-130
2,3,4,6,7,8-HXCDF	1250	1140	91.2	70-130
2,3,4,7,8-PECDF	1250	1170	93.6	70-130
2,3,7,8-TCDD	500	471	94.2	70-130
2,3,7,8-TCDF	500	454	90.8	70-130
OCDD	2500	2170	86.8	70-130
OCDF	2500	2190	87.6	70-130
SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD	5000	4670	93.4	40-135
SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF	5000	4540	90.8	40-135
SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S	5000	4090	81.8	40-135
SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S	5000	4040	80.8	40-135
SURROGATE: 13C-1,2,3,7,8-PECDD (S)	2000	1670	83.5	40-135
SURROGATE: 13C-1,2,3,7,8-PECDF (S)	2000	1630	81.5	40-135
SURROGATE: 13C-2,3,7,8-TCDD (S)	2000	1490	74.5	40-135
SURROGATE: 13C-2,3,7,8-TCDF (S)	2000	1510	75.5	40-135
SURROGATE: 13C-OCDD (S)	10000	8840	88.4	40-135

Comments: _____

Primary	SPK
Quant Method :	151012_8290
Extraction Date :	09/24/15
Analysis Date :	10/14/15
Instrument :	Magneto
Run :	151012_HR_33
Initials :	RP

Printed: 10/15/15 7:07:07 AM
APPL Standard LCS

EPA 8290

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 77340

Case No: 77340 Date Analyzed: 10/14/15

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S)			SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150924A-LCS	Lab Control Spike	40-135	93.4		40-135	90.8	
150924A-BLK	Blank	40-135	94.4		40-135	85.4	
AZ21644	N016884-001D /EFF-09-10	40-135	80.6		40-135	76.0	

Comments: Batch: #8290W-150924A

EPA 8290

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 77340

Case No: 77340 Date Analyzed: 10/14/15

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)			SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150924A-LCS	Lab Control Spike	40-135	81.8		40-135	80.8	
150924A-BLK	Blank	40-135	76.9		40-135	76.4	
AZ21644	N016884-001D /EFF-09-10	40-135	68.6		40-135	67.7	

Comments: Batch: #8290W-150924A

EPA 8290

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 77340

Case No: 77340 Date Analyzed: 10/14/15

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-1,2,3,7,8-PECDD (S)			SURROGATE: 13C-1,2,3,7,8-PECDF (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150924A-LCS	Lab Control Spike	40-135	83.5		40-135	81.5	
150924A-BLK	Blank	40-135	86.2		40-135	86.8	
AZ21644	N016884-001D /EFF-09-10	40-135	67.4		40-135	71.6	

Comments: Batch: #8290W-150924A

EPA 8290

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 77340

Case No: 77340 Date Analyzed: 10/14/15

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-2,3,7,8-TCDD (S)			SURROGATE: 13C-2,3,7,8-TCDF (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
150924A-LCS	Lab Control Spike	40-135	74.5		40-135	75.5	
150924A-BLK	Blank	40-135	77.2		40-135	79.4	
AZ21644	N016884-001D /EFF-09-10	40-135	66.9		40-135	61.6	

Comments: Batch: #8290W-150924A

EPA 8290

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 77340

Case No: 77340 Date Analyzed: 10/14/15

Matrix: WATER Instrument: Magneto

APPL ID.	Client Sample No.	SURROGATE: 13C-OCDD (S)					
		Limits	Result	Qualifier	Limits	Result	Qualifier
150924A-LCS	Lab Control Spike	40-135	88.4				
150924A-BLK	Blank	40-135	86.6				
AZ21644	N016884-001D /EFF-09-10	40-135	76.1				

Comments: Batch: #8290W-150924A

EPA 8290

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 77340

Case No: 77340 Date Analyzed: 10/14/15

Matrix: WATER Instrument: Magneto

Blank ID: 150924A-BLK Time Analyzed: 0309

APPL ID.	Client Sample No.	File ID.	Date Analyzed
150924A-LCS	Lab Control Spike	151012_HR_33	10/14/15 0200
150924A-BLK	Blank	151012_HR_34	10/14/15 0309
AZ21644	N016884-001D /EFF-09-10	151012_HR_35	10/14/15 0418

Comments: Batch: #8290W-150924A

EPA METHOD 8290
Dioxins/Furans

Sample Data

APPL, INC.

EPA 8290 - Dioxins and Furans

ASSET Laboratories
3151-3153 W. Post Rd.
Las Vegas, NV 89118

Attn: Marlon Cartin

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 77340

Sample ID: N016884-001D /EFF-09-10
Sample Collection Date: 09/10/15

APPL ID: AZ21644
QCG: #8290W-150924A-201331

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8290	1,2,3,4,6,7,8-HPCDD	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,4,6,7,8-HPCDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,4,7,8,9-HPCDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,4,7,8-HXCDD	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,4,7,8-HXCDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,6,7,8-HXCDD	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,6,7,8-HXCDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,7,8,9-HXCDD	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,7,8,9-HXCDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,7,8-PECDD	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	1,2,3,7,8-PECDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	2,3,4,6,7,8-HXCDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	2,3,4,7,8-PECDF	Not detected	125.0	pg/L	09/24/15	10/14/15
EPA 8290	2,3,7,8-TCDD	Not detected	50.0	pg/L	09/24/15	10/14/15
EPA 8290	2,3,7,8-TCDF	Not detected	50.0	pg/L	09/24/15	10/14/15
EPA 8290	OCDD	Not detected	250.0	pg/L	09/24/15	10/14/15
EPA 8290	OCDF	Not detected	250.0	pg/L	09/24/15	10/14/15
EPA 8290	TEQ	Not detected	NA	pg/L	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S	80.6	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S	76.0	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)	68.6	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)	67.7	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-1,2,3,7,8-PECDD (S)	67.4	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-1,2,3,7,8-PECDF (S)	71.6	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-2,3,7,8-TCDD (S)	66.9	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-2,3,7,8-TCDF (S)	61.6	40-135	%	09/24/15	10/14/15
EPA 8290	SURROGATE: 13C-OCDD (S)	76.1	40-135	%	09/24/15	10/14/15

Quant Method: 151012_8290
Run #: 151012_HR_35
Instrument: Magneto
Sequence: 151012
Dilution Factor: 1
Initials: RP

Printed: 10/15/15 7:07:24 AM
Form 1 - APPL Standard GC - No MC

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

Name	Peak Area	1° Area	RT	Ion Ab	Ion Fail?	S/N1	S/N2	Conc.	%Rec	LOD	EMPC	Multiplier
2,3,7,8-TCDD										1.234		51.020
1,2,3,7,8-PeCDD	2.435500e1	2.966600e1	41.84	0.82	YES	YES	YES	~~2.294~~		3.562	~~1.702~~	51.020
1,2,3,4,7,8-HxCDD	6.333900e1	4.040600e1	48.84	1.57	YES	YES	NO	~~4.214~~		2.277	~~3.676~~	51.020
1,2,3,6,7,8-HxCDD	4.251000e1	1.439600e1	49.08	2.95	YES	YES	NO	~~2.307~~		2.273	~~4.307~~	51.020
1,2,3,7,8,9-HxCDD	3.947800e1	1.411400e1	49.62	2.80	YES	YES	YES	~~2.131~~		2.229	~~1.257~~	51.020
1,2,3,4,6,7,8-HpCDD	7.442600e1	4.673900e1	55.46	1.59	YES	NO	NO	~~4.049~~		~~1.092~~	3.659	51.020
OCDD										1.585		51.020
2,3,7,8-TCDF	3.701300e1	7.027600e1	31.56	0.53	YES	YES	NO	~~2.659~~		2.177	~~2.109~~	51.020
1,2,3,7,8-PeCDF										0.945		51.020
2,3,4,7,8-PeCDF										1.024		51.020
1,2,3,4,7,8-HxCDF	6.778000e0	7.917000e0	47.32	0.86	YES	YES	YES	~~0.453~~		2.022	~~0.378~~	51.020
1,2,3,6,7,8-HxCDF										1.911		51.020
2,3,4,6,7,8-HxCDF										2.069		51.020
1,2,3,7,8,9-HxCDF										2.267		51.020
1,2,3,4,6,7,8-HpCDF										1.740		51.020
1,2,3,4,7,8,9-HpCDF										2.035		51.020
OCDF	4.453000e0	8.315000e0	62.39	0.54	YES	YES	YES	~~0.487~~		2.103	~~0.360~~	51.020
13C-2,3,7,8-TCDD	2.935312e4	3.859271e4	32.58	0.76	NO	NO	NO	1365.741	66.9	2.585		51.020
13C-1,2,3,7,8-PeCDD	3.144591e4	1.975974e4	41.56	1.59	NO	NO	NO	1375.365	67.4	15.025		51.020
13C-1,2,3,6,7,8-HxCDD	6.775296e4	5.295611e4	49.07	1.28	NO	NO	NO	3455.065	67.7	3.981		51.020
13C-1,2,3,4,6,7,8-HpCDD	6.812498e4	6.353384e4	55.45	1.07	NO	NO	NO	4111.110	80.6	2.585		51.020
13C-OCDD	1.047343e5	1.191318e5	62.05	0.88	NO	NO	NO	7768.938	76.1	6.642		51.020
13C-2,3,7,8-TCDF	3.884047e4	5.053974e4	31.60	0.77	NO	NO	NO	1256.316	61.6	1.756		51.020
13C-1,2,3,7,8-PeCDF	4.725873e4	2.988556e4	38.85	1.58	NO	NO	NO	1461.918	71.6	1.306		51.020
13C-1,2,3,4,7,8-HxCDF	4.721131e4	9.272913e4	47.03	0.51	NO	NO	NO	3500.186	68.6	2.681		51.020
13C-1,2,3,4,6,7,8-HpCDF	3.716217e4	8.570498e4	53.27	0.43	NO	NO	NO	3876.427	76.0	3.326		51.020
13C-1,2,3,4-TCDD	4.660273e4	5.886928e4	31.83	0.79	NO	NO	NO	2040.800	100.0	2.489		51.020
13C-1,2,3,7,8,9-HxCDD	4.297761e4	3.334454e4	49.60	1.29	NO	NO	NO	2040.800	100.0	3.719		51.020
Total Tetra-Dioxins	3.342940e2							15.658		1.234	11.363	51.020
Total Penta-Dioxins	1.207690e2							9.810		3.562	6.708	51.020
Total Hexa-Dioxins	8.668480e2							67.436		2.259	43.264	51.020
Total Hepta-Dioxins	6.338680e2							44.198		1.992	30.753	51.020
Total Tetra-Furans	2.432782e3							101.468		2.177	63.591	51.020
Total Penta-Furans	4.294060e2							28.056		0.983	13.959	51.020
Total Hexa-Furans	1.859320e2							11.090		2.059	6.717	51.020
Total Hepa-Furans	9.875720e2							36.708		1.876	10.959	51.020
PFK1	0.000000e0											1.000
PFK2	0.000000e0											1.000
PFK3	0.000000e0											1.000
PFK4	0.000000e0											1.000
PFK5	0.000000e0											1.000
HxCDPE	0.000000e0											1.000
HpCDPE	0.000000e0											1.000
OCDPE	0.000000e0											1.000
NCDPE	0.000000e0											1.000
DCDPE	0.000000e0											1.000

10/14/15 RP

RETENTION TIME CHECK

AZ21644_W01 51.020 DF 09/24/15 — **EPA Method 8290**

INSTRUMENT: Magneto
COLUMN: Restek DB5 - 60m
MATRIX:

ANALYSIS DATE/TIME:
EXTRACTION DATE:
SEQUENCE:
RUN FILE: 151012_HR_35

Analyte	RT of congener in sample 151012_HR_35	RT of ^{13}C congener in sample 151012_HR_35	RRT of congener in sample 151012_HR_35	RRT of congener in CCV 151012_HR_30	LCL[a]	UCL[b]	Qualifiers
2,3,7,8-TCDD		32.5810	0.0000	1.0008	32.5643	32.6310	Fail
1,2,3,7,8-PeCDD	41.8362	41.5625	1.0066	1.0007	41.5458	41.6125	Fail
1,2,3,4,7,8-HxCDD	48.8383	49.0720	0.9952	0.9961	0.9911	1.0011	Pass
1,2,3,6,7,8-HxCDD	49.0827	49.0720	1.0002	1.0004	49.0553	49.1220	Pass
1,2,3,7,8,9-HxCDD	49.6245	49.6033	1.0004	1.0002	49.5866	49.6533	Pass
1,2,3,4,6,7,8-HpCDD	55.4600	55.4498	1.0002	1.0005	55.4331	55.4998	Pass
OCDD		62.0457	0.0000	1.0003	62.0290	62.0957	Fail
2,3,7,8-TCDF	31.5603	31.6012	0.9987	1.0009	31.5845	31.6512	Fail
1,2,3,7,8-PeCDF		38.8460	0.0000	1.0010	38.8293	38.8960	Fail
2,3,4,7,8-PeCDF		38.8460	0.0000	1.0536	1.0483	1.0589	Fail
1,2,3,4,7,8-HxCDF	47.3192	47.0323	1.0061	1.0005	47.0156	47.0823	Fail
1,2,3,6,7,8-HxCDF		47.0323	0.0000	1.0059	1.0009	1.0109	Fail
2,3,4,6,7,8-HxCDF		47.0323	0.0000	1.0319	1.0267	1.0371	Fail
1,2,3,7,8,9-HxCDF		47.0323	0.0000	1.0687	1.0634	1.0740	Fail
1,2,3,4,6,7,8-HpCDF		53.2707	0.0000	1.0004	53.2540	53.3207	Fail
1,2,3,4,7,8,9-HpCDF		53.2707	0.0000	1.0600	1.0547	1.0653	Fail
OCDF	62.3902	62.0457	1.0056	1.0069	1.0019	1.0119	Pass
$^{13}C_{12}$-2,3,7,8-TCDD	32.5810	31.8325	1.0235	1.0231	1.0180	1.0282	Pass
$^{13}C_{12}$-1,2,3,7,8-PeCDD	41.5625	31.8325	1.3057	1.3042	1.2977	1.3107	Pass
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	49.0720	49.6033	0.9893	0.9895	0.9846	0.9944	Pass
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	55.4498	49.6033	1.1179	1.1176	1.1120	1.1232	Pass
$^{13}C_{12}$-OCDD	62.0457	49.6033	1.2508	1.2504	1.2441	1.2567	Pass
$^{13}C_{12}$-2,3,7,8-TCDF	31.6012	31.8325	0.9927	0.9923	0.9873	0.9973	Pass
$^{13}C_{12}$-1,2,3,7,8-PeCDF	38.8460	31.8325	1.2203	1.2193	1.2132	1.2254	Pass
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	47.0323	49.6033	0.9482	0.9481	0.9434	0.9528	Pass
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	53.2707	49.6033	1.0739	1.0739	1.0685	1.0793	Pass
$^{13}C_{12}$-1,2,3,4-TCDD	31.8325	31.8325	1.0000	1.0000	0.9950	1.0050	Pass
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	49.6033	49.6033	1.0000	1.0000	0.9950	1.0050	Pass

a. Lower control limit
b. Upper control limit

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

#	Name	RT	RRT
1	2,3,7,8-TCDD		
2	1,2,3,7,8-PeCDD	41.836201	1.006585
3	1,2,3,4,7,8-HxCDD	48.838299	0.995238
4	1,2,3,6,7,8-HxCDD	49.082699	1.000218
5	1,2,3,7,8,9-HxCDD	49.624500	1.000427
6	1,2,3,4,6,7,8-HpCDD	55.459999	1.000184
7	OCDD		
8	2,3,7,8-TCDF	31.560301	0.998706
9	1,2,3,7,8-PeCDF		
10	2,3,4,7,8-PeCDF		
11	1,2,3,4,7,8-HxCDF	47.319199	1.006100
12	1,2,3,6,7,8-HxCDF		
13	2,3,4,6,7,8-HxCDF		
14	1,2,3,7,8,9-HxCDF		
15	1,2,3,4,6,7,8-HpCDF		
16	1,2,3,4,7,8,9-HpCDF		
17	OCDF	62.390202	1.005552
18	13C-2,3,7,8-TCDD	32.581001	1.023514
19	13C-1,2,3,7,8-PeCDD	41.562500	1.305662
20	13C-1,2,3,6,7,8-HxCDD	49.071999	0.989289
21	13C-1,2,3,4,6,7,8-HpCDD	55.449799	1.117865
22	13C-OCDD	62.045700	1.250838
23	13C-2,3,7,8-TCDF	31.601200	0.992734
24	13C-1,2,3,7,8-PeCDF	38.846001	1.220325
25	13C-1,2,3,4,7,8-HxCDF	47.032299	0.948169
26	13C-1,2,3,4,6,7,8-HpCDF	53.270699	1.073935
27	13C-1,2,3,4-TCDD	31.832500	1.000000
28	13C-1,2,3,7,8,9-HxCDD	49.603298	1.000000

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

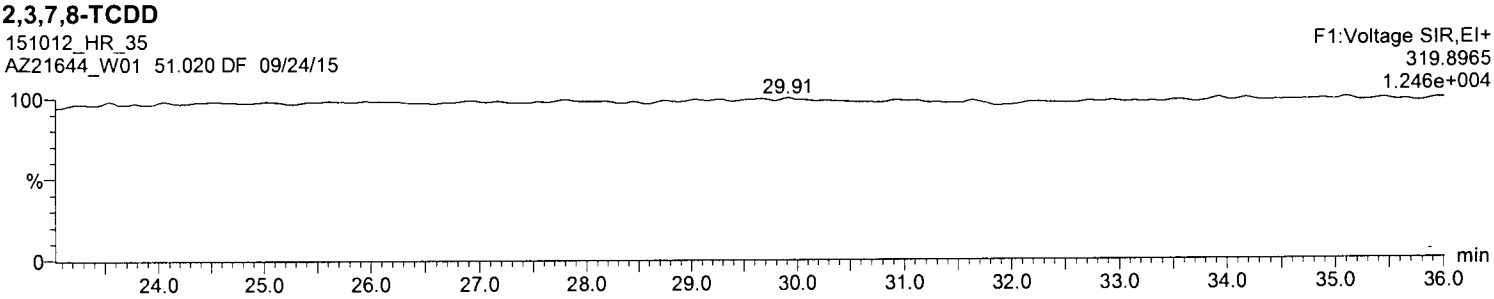
Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N...	Signal 2	Noise 2	S/N 2	Flag S/N...
1	2,3,7,8-TCDD		8.5956940e1				6.6156326e1		
2	1,2,3,7,8-PeCDD	2.5300000e2	1.2076591e2	0.89	YES	2.6800000e2	1.5691931e2	1.71	YES
3	1,2,3,4,7,8-HxCDD	2.6000000e2	9.9291183e1	0.99	YES	2.6600000e2	8.2398178e1	3.23	NO
4	1,2,3,6,7,8-HxCDD	3.8400000e2	9.9291183e1	2.09	YES	2.2200000e2	8.2398178e1	2.69	NO
5	1,2,3,7,8,9-HxCDD	4.4000000e2	9.9291183e1	2.32	YES	1.4900000e2	8.2398178e1	1.81	YES
6	1,2,3,4,6,7,8-HpCDD	4.2400000e2	9.0085709e1	3.61	NO	4.1900000e2	9.6498016e1	4.34	NO
7	OCDD		6.0160961e1				6.3164600e1		
8	2,3,7,8-TCDF	2.8900000e2	1.5116573e2	0.23	YES	3.6100000e2	1.1745222e2	3.07	NO
9	1,2,3,7,8-PeCDF		4.6937607e1				7.3878731e1		
10	2,3,4,7,8-PeCDF		4.6937607e1				7.3878731e1		
11	1,2,3,4,7,8-HxCDF	1.0400000e2	1.1218091e2	0.48	YES	9.9000000e1	1.1759782e2	0.84	YES
12	1,2,3,6,7,8-HxCDF		1.1218091e2				1.1759782e2		
13	2,3,4,6,7,8-HxCDF		1.1218091e2				1.1759782e2		
14	1,2,3,7,8,9-HxCDF		1.1218091e2				1.1759782e2		
15	1,2,3,4,6,7,8-HpCDF		1.1042915e2				1.0344436e2		
16	1,2,3,4,7,8,9-HpCDF		1.1042915e2				1.0344436e2		
17	OCDF	8.6000000e1	7.1492233e1	-2.35	YES	8.9000000e1	1.0415398e2	0.85	YES
18	13C-2,3,7,8-TCDD	2.3874000e5	2.2133853e2	1080.56	NO	3.1188000e5	1.9850890e2	1571.11	NO
19	13C-1,2,3,7,8-PeCDD	2.6028100e5	1.6996357e3	151.58	NO	1.5880400e5	1.2633589e2	1257.00	NO
20	13C-1,2,3,6,7,8-HxCDD	5.4893600e5	2.1016209e2	2611.55	NO	4.3490200e5	2.9529208e2	1472.79	NO
21	13C-1,2,3,4,6,7,8-HpCDD	6.1225100e5	1.6127264e2	3796.05	NO	5.7727300e5	1.3953552e2	4137.10	NO
22	13C-OCDD	8.3348900e5	4.6742404e2	1781.78	NO	9.3515400e5	2.2810826e2	4099.61	NO
23	13C-2,3,7,8-TCDF	2.9701200e5	1.9895483e2	1491.59	NO	3.8872500e5	2.0891130e2	1860.72	NO
24	13C-1,2,3,7,8-PeCDF	4.1974000e5	1.2633878e2	3322.53	NO	2.6093000e5	9.8589111e1	2646.64	NO
25	13C-1,2,3,4,7,8-HxCDF	4.1384700e5	1.8135942e2	2280.10	NO	8.2476100e5	2.0810538e2	3963.19	NO
26	13C-1,2,3,4,6,7,8-HpCDF	3.3581600e5	2.1232254e2	1580.72	NO	7.7370300e5	1.7082584e2	4529.19	NO
27	13C-1,2,3,4-TCDD	3.8029800e5	2.2133853e2	1717.09	NO	4.8084200e5	1.9850890e2	2422.27	NO
28	13C-1,2,3,7,8,9-HxCDD	3.9044500e5	2.1016209e2	1859.19	NO	3.0098500e5	2.9529208e2	1019.28	NO

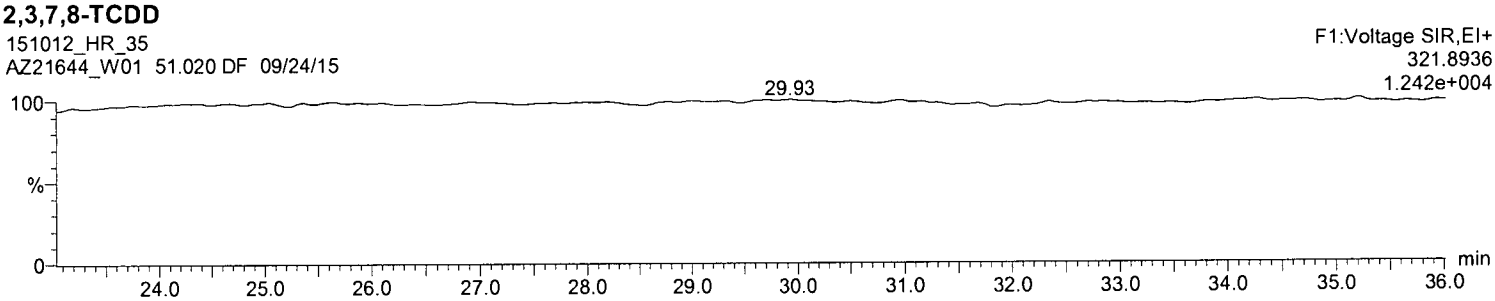
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

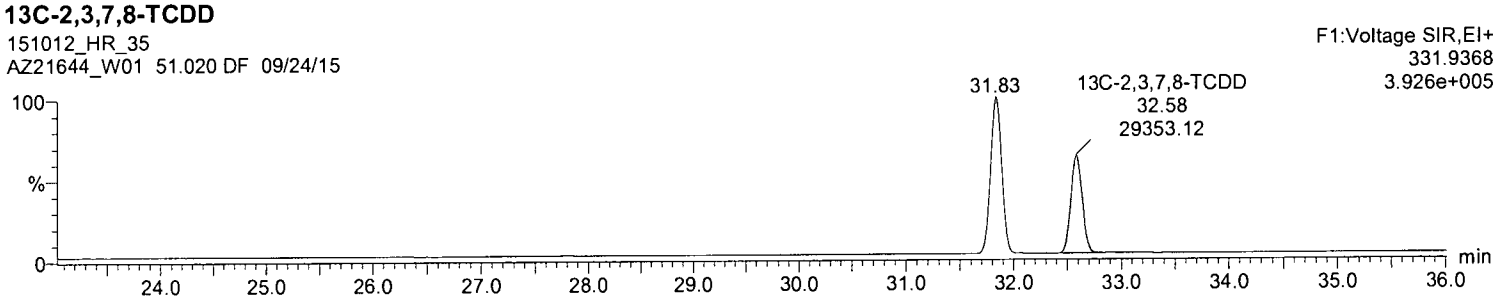
2,3,7,8-TCDD



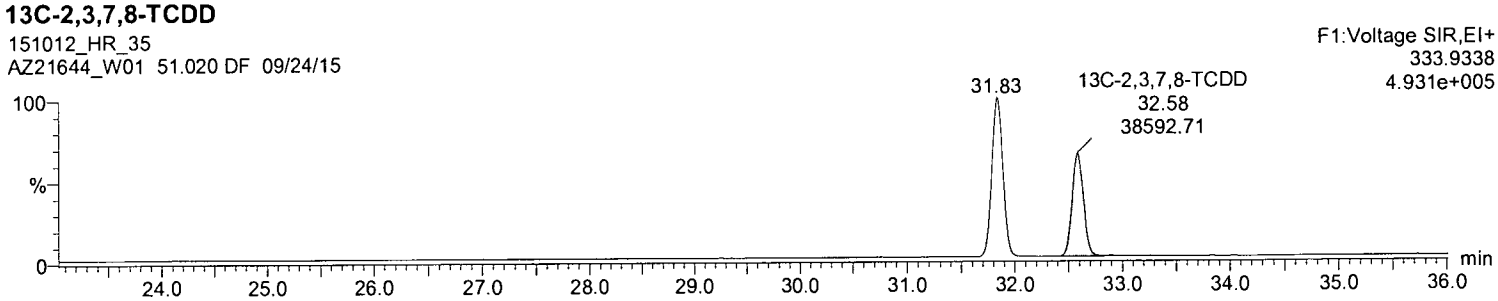
2,3,7,8-TCDD



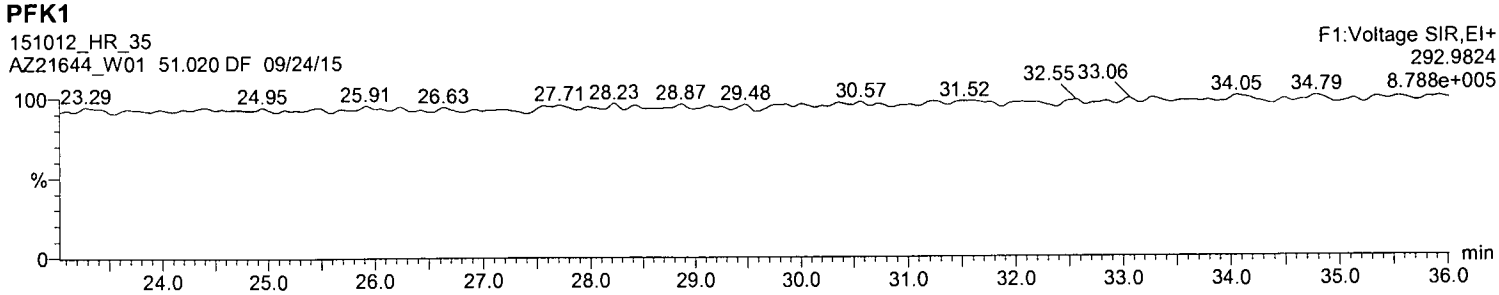
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

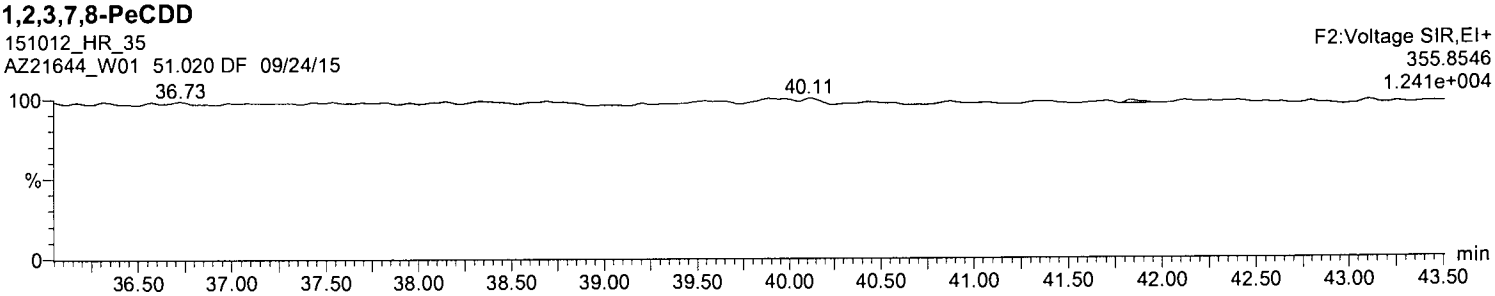


PFK1

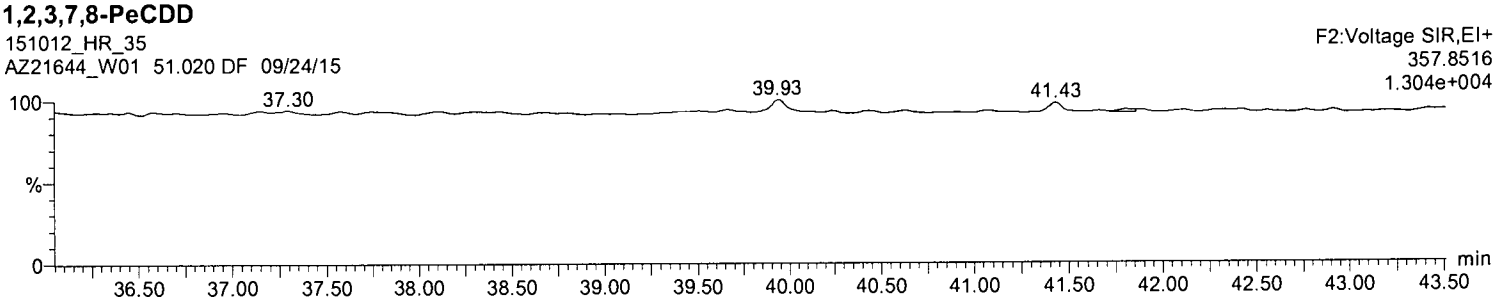


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

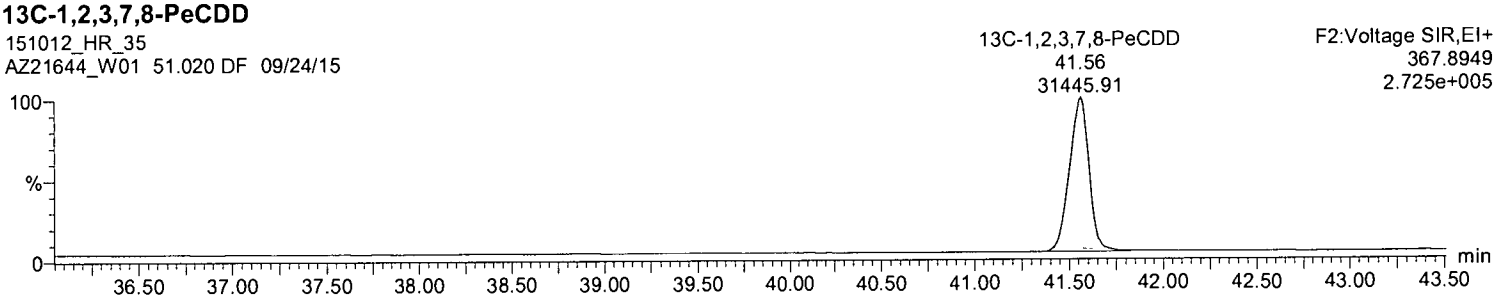
1,2,3,7,8-PeCDD



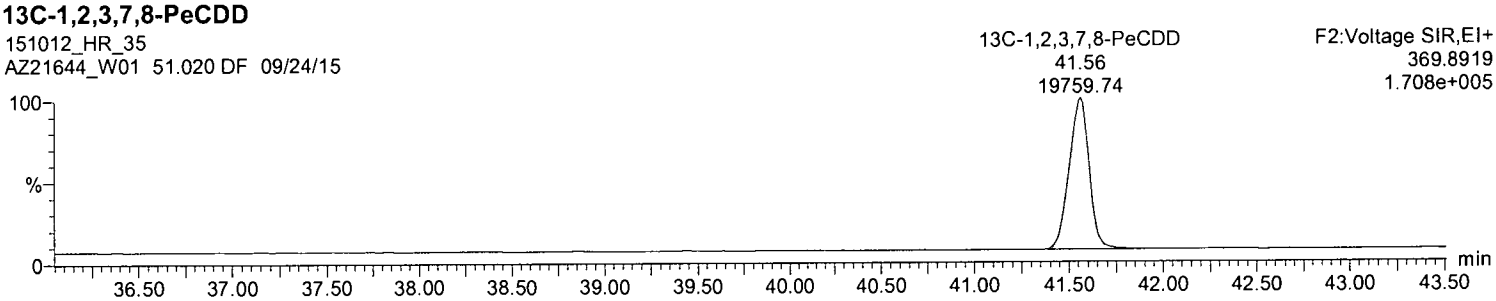
1,2,3,7,8-PeCDD



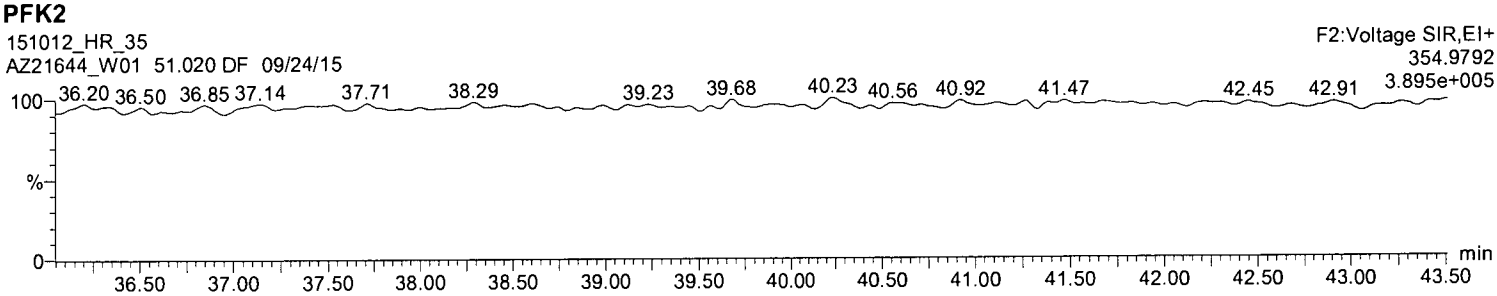
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

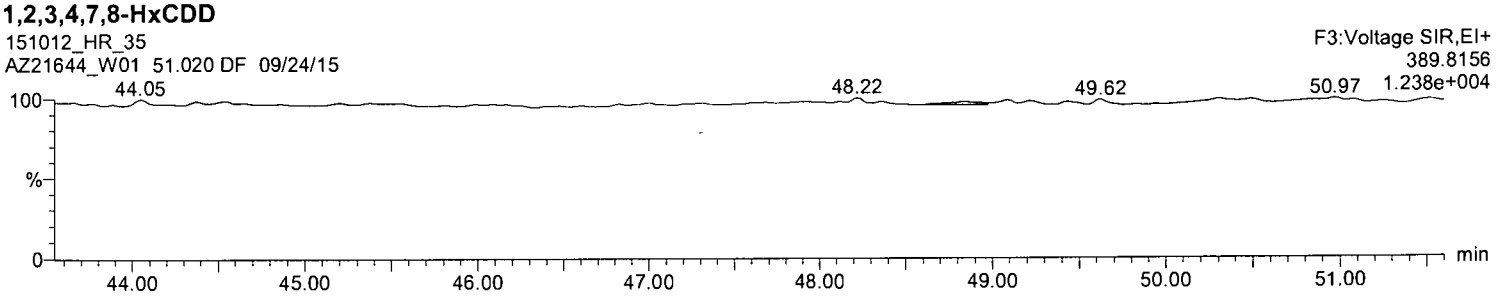


PFK2

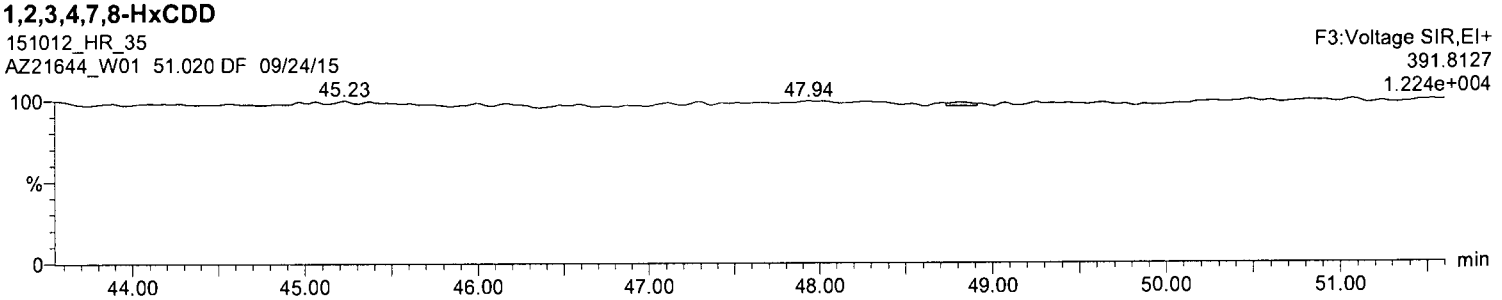


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

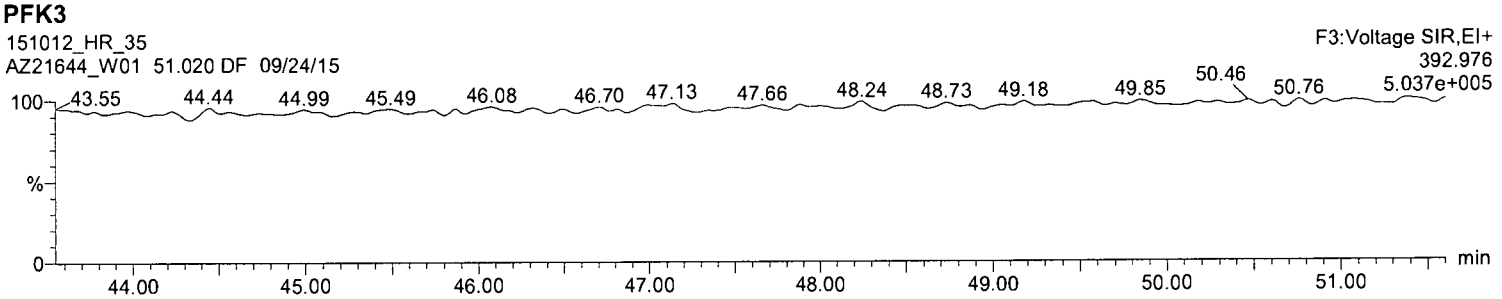
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD

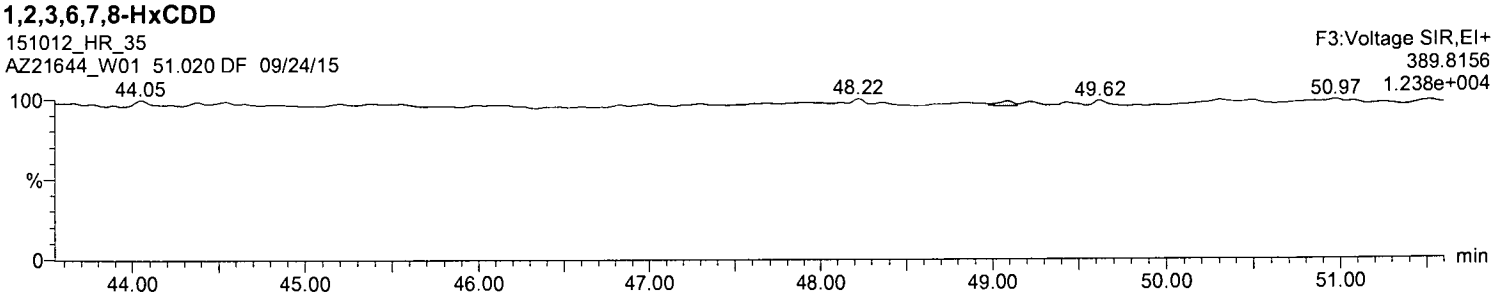


PFK3

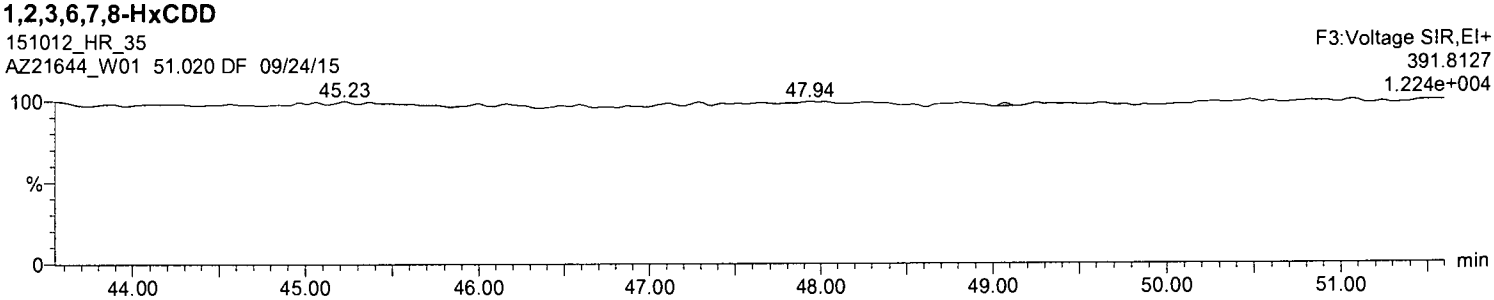


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

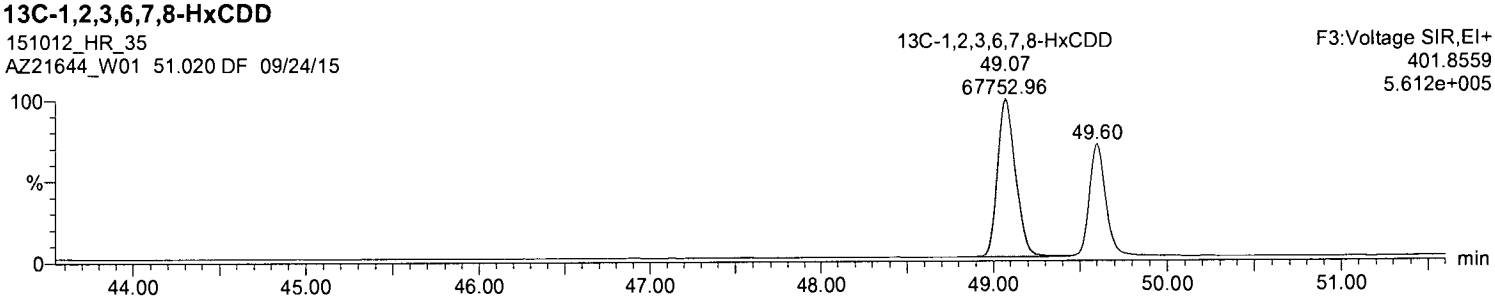
1,2,3,6,7,8-HxCDD



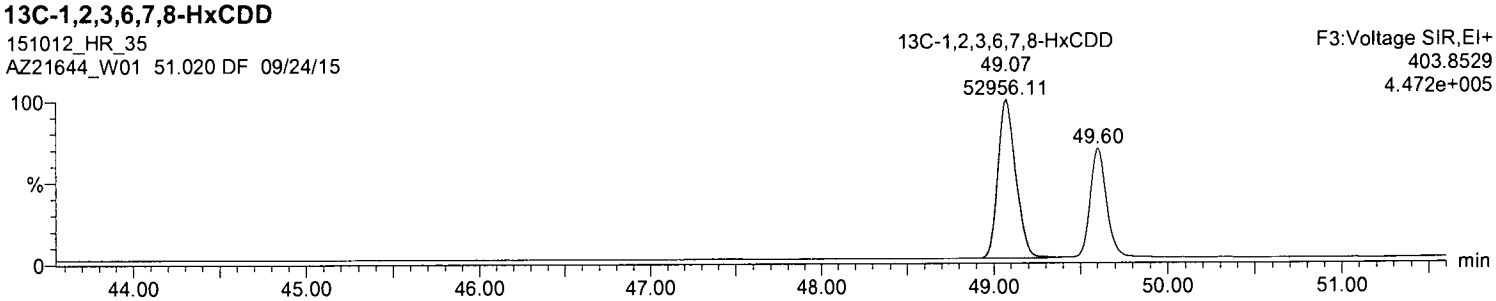
1,2,3,6,7,8-HxCDD



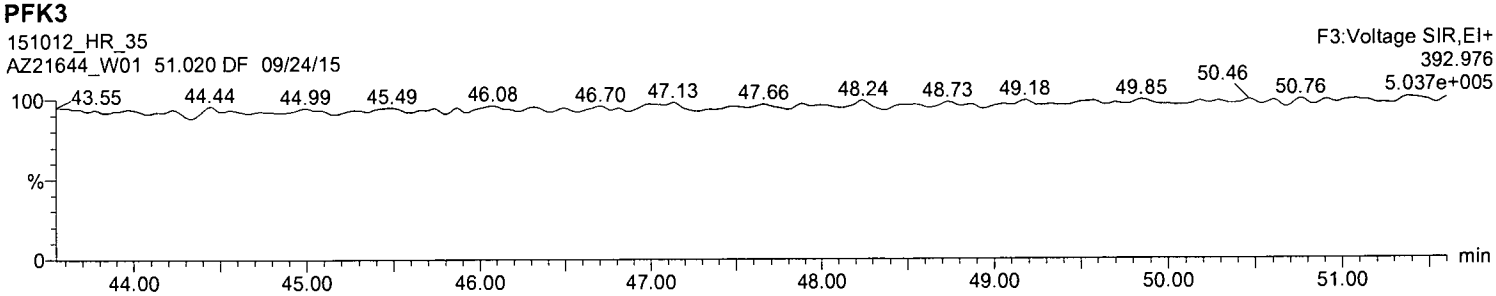
13C-1,2,3,6,7,8-HxCDD



13C-1,2,3,6,7,8-HxCDD

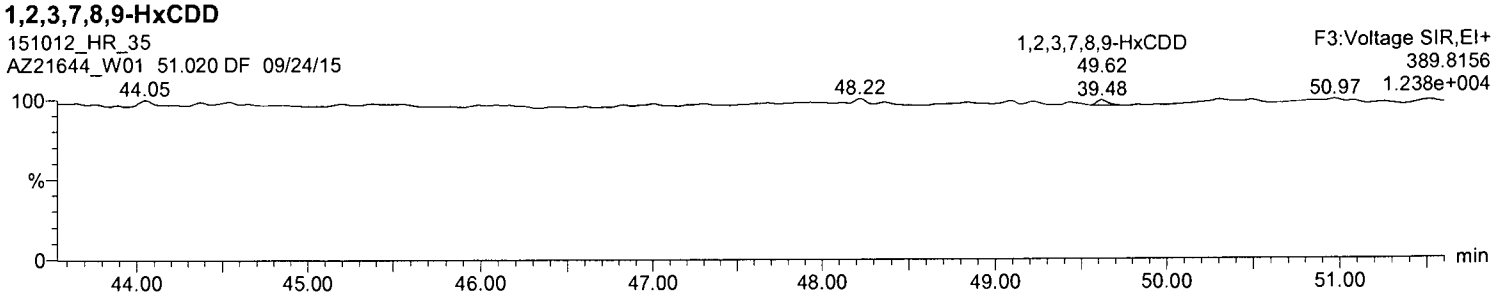


PFK3

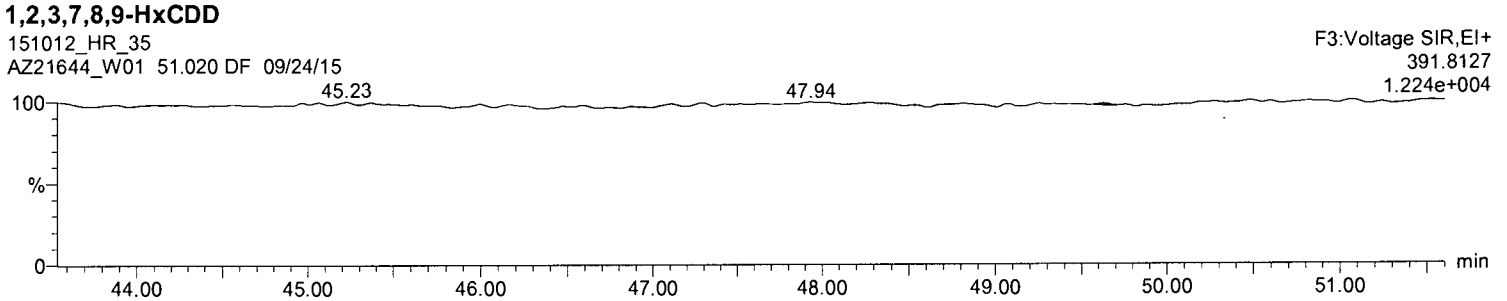


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

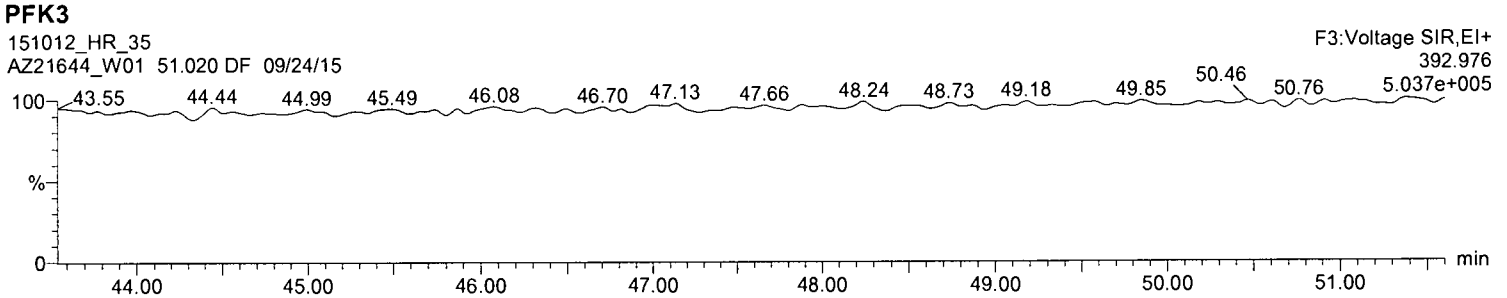
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD

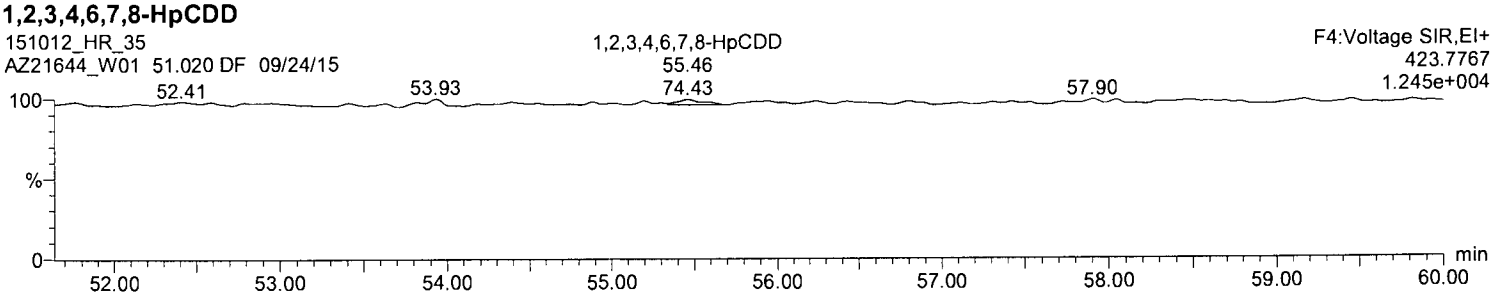


PFK3

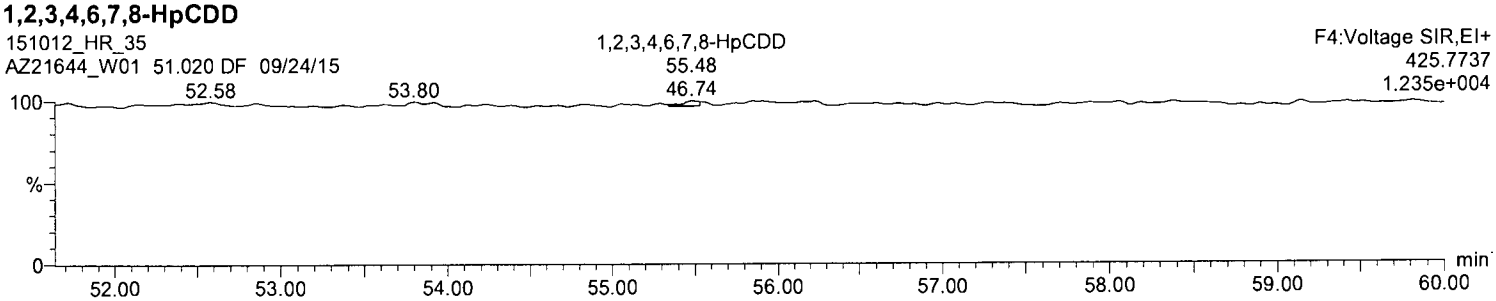


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

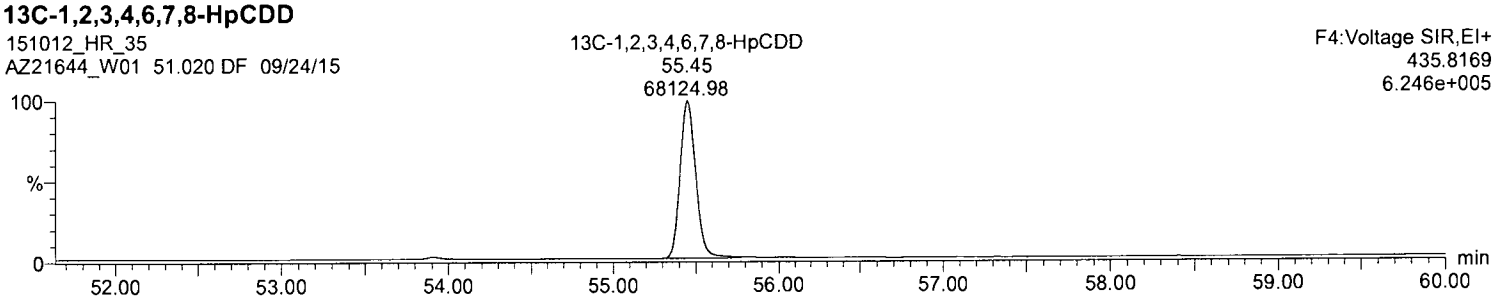
1,2,3,4,6,7,8-HpCDD



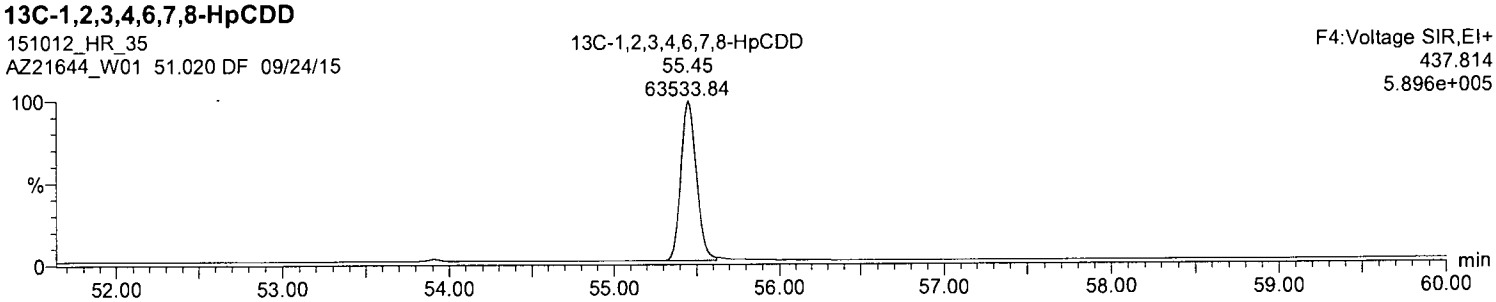
1,2,3,4,6,7,8-HpCDD



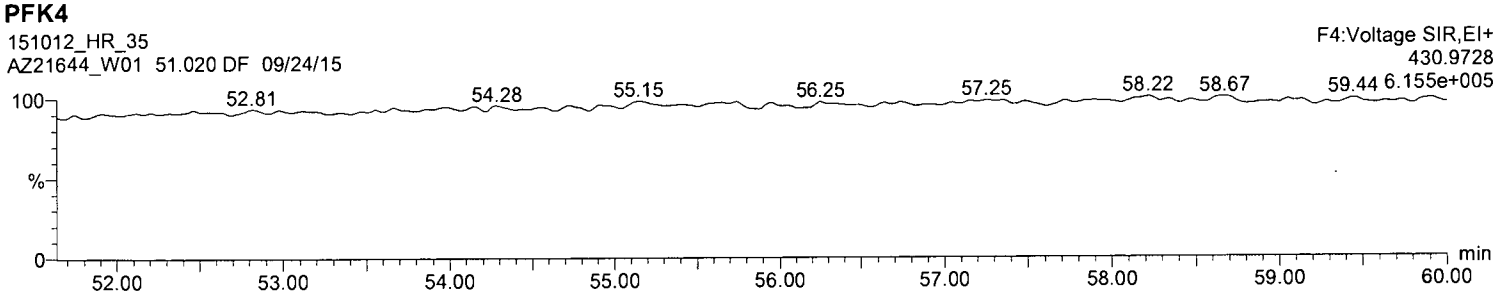
13C-1,2,3,4,6,7,8-HpCDD



13C-1,2,3,4,6,7,8-HpCDD

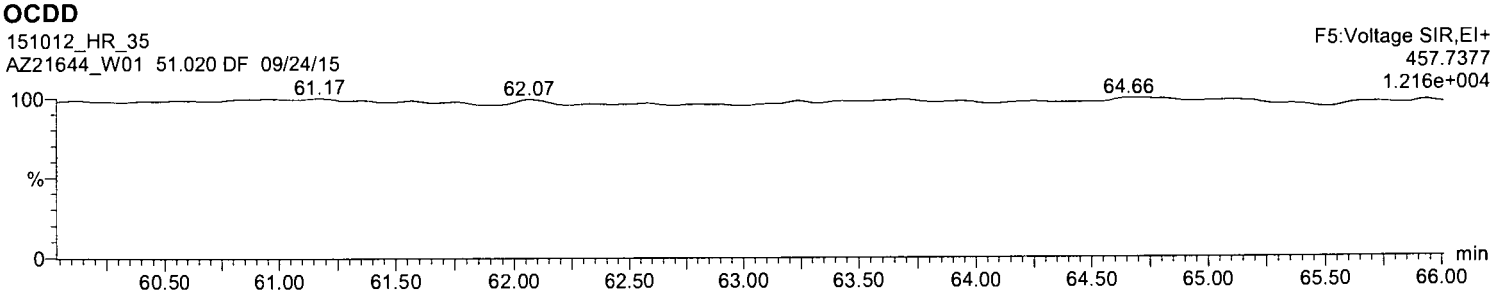


PFK4

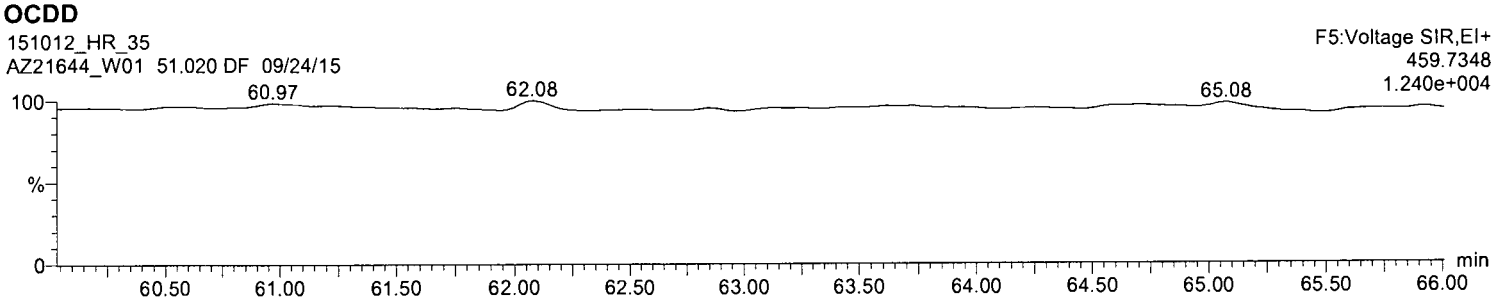


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

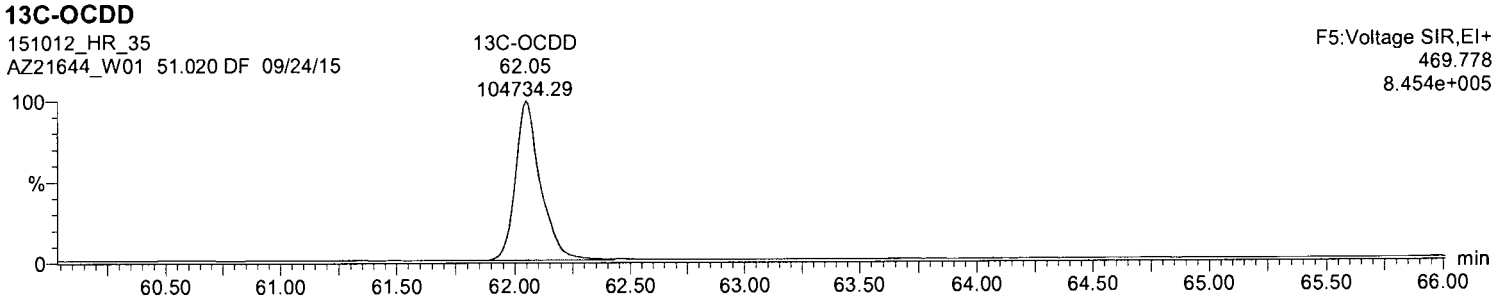
OCDD



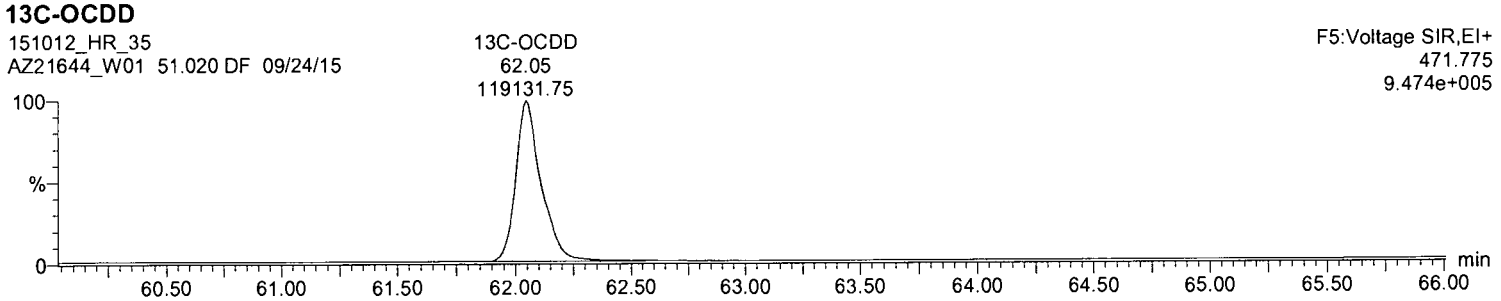
OCDD



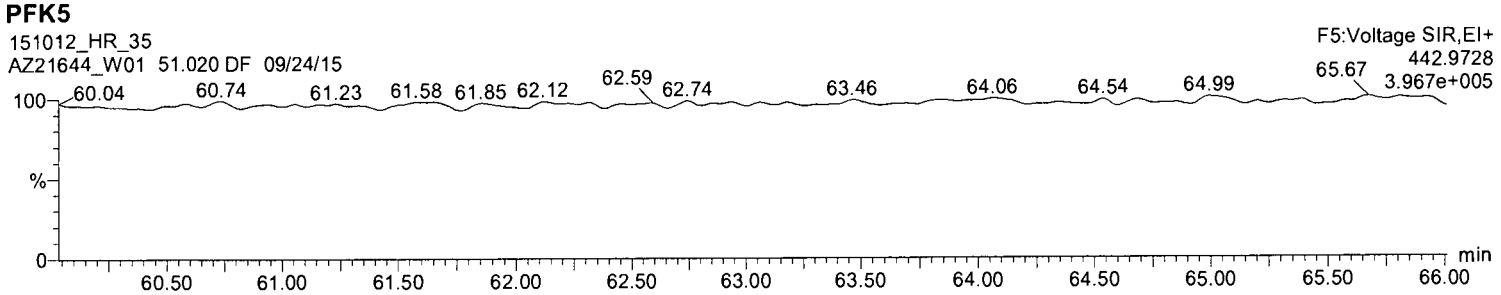
13C-OCDD



13C-OCDD

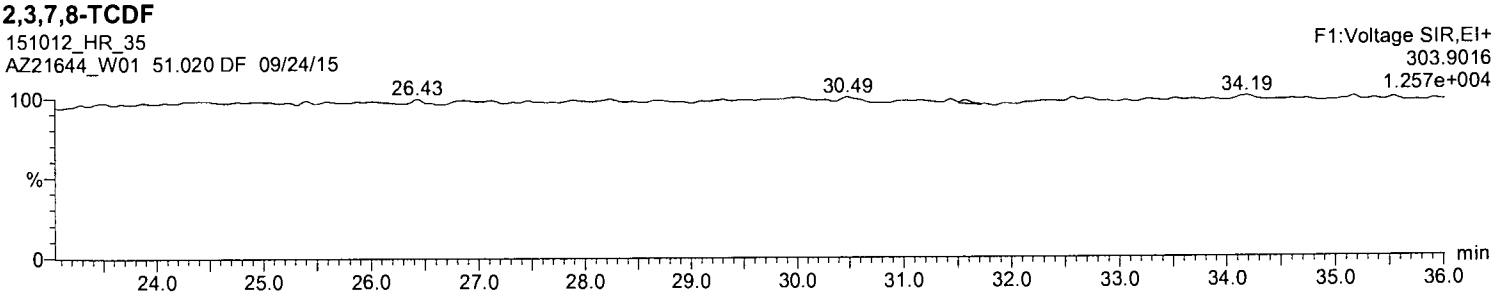


PFK5

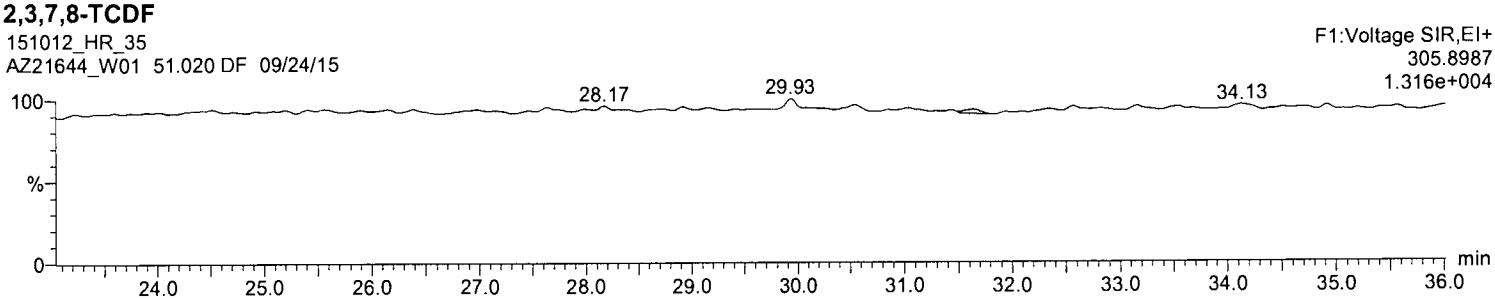


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

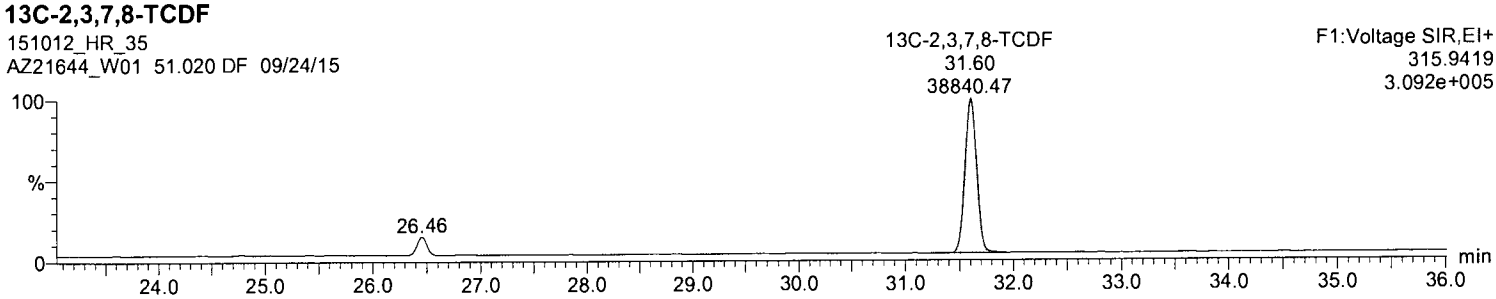
2,3,7,8-TCDF



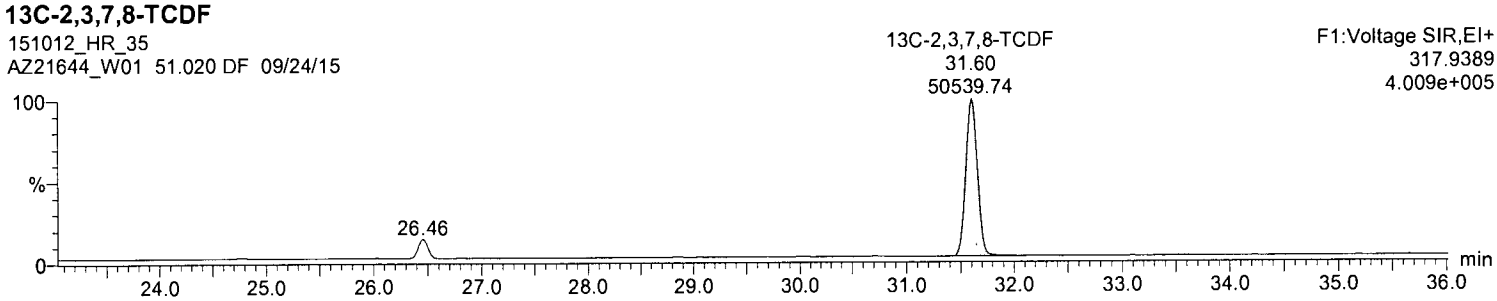
2,3,7,8-TCDF



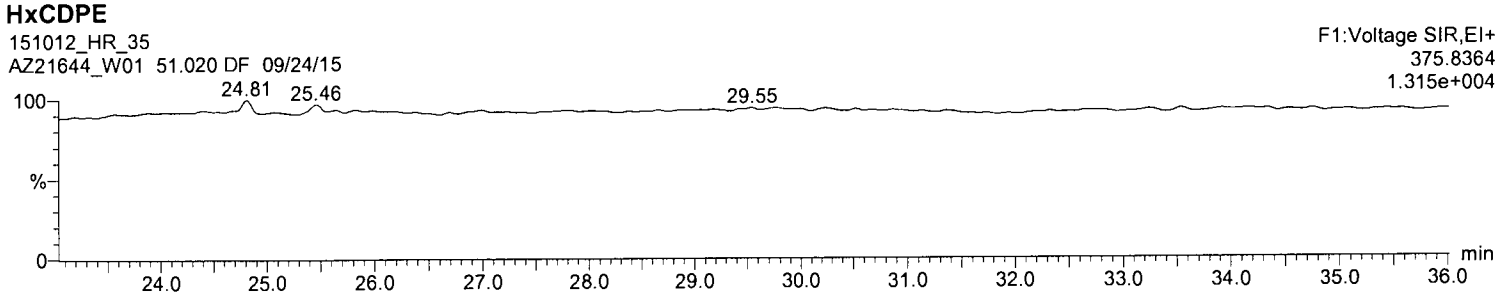
13C-2,3,7,8-TCDF



13C-2,3,7,8-TCDF

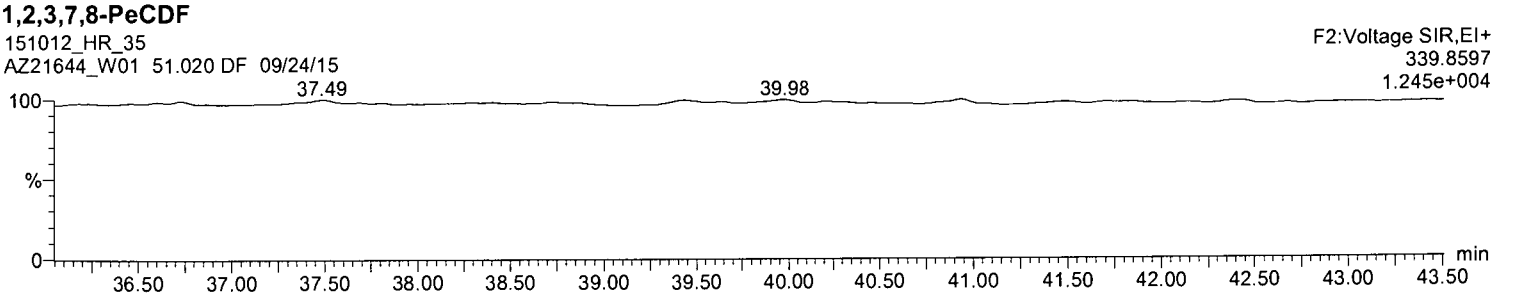


HxCDPE

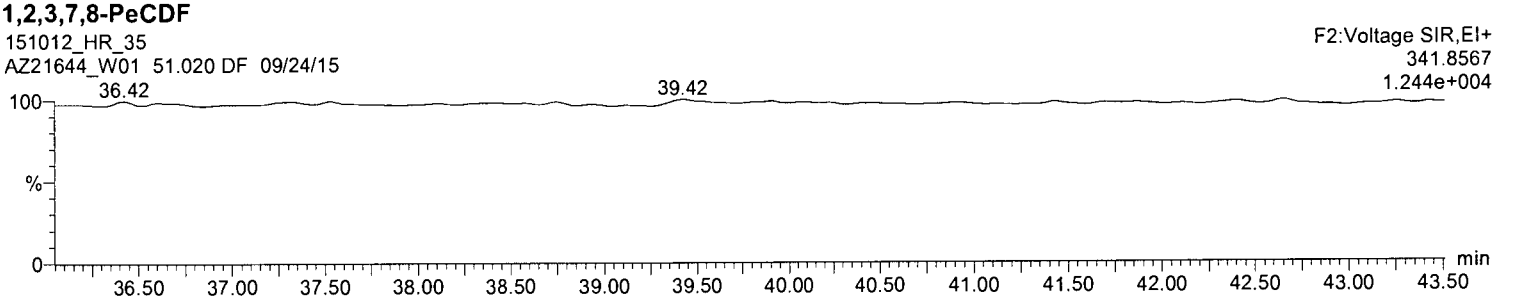


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

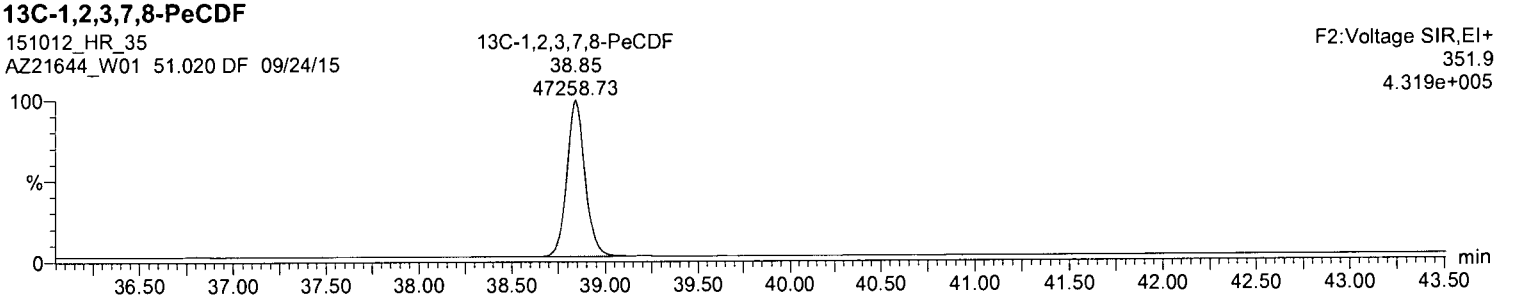
1,2,3,7,8-PeCDF



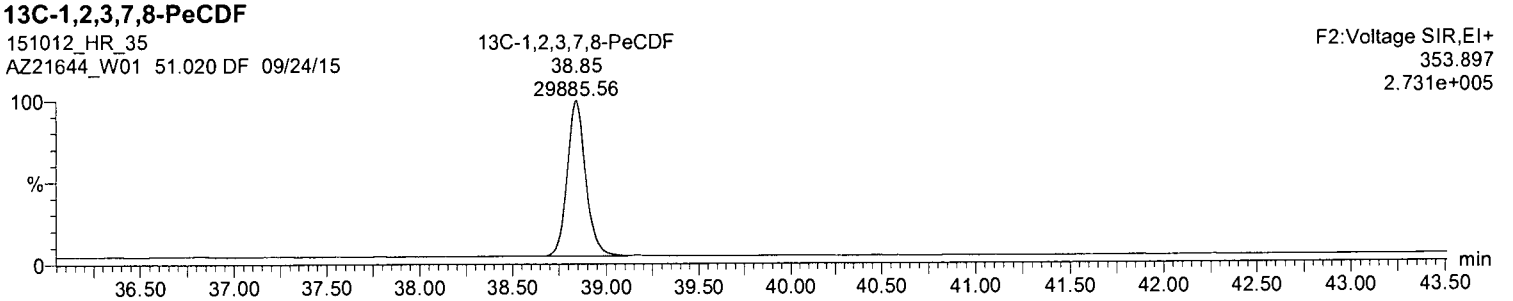
1,2,3,7,8-PeCDF



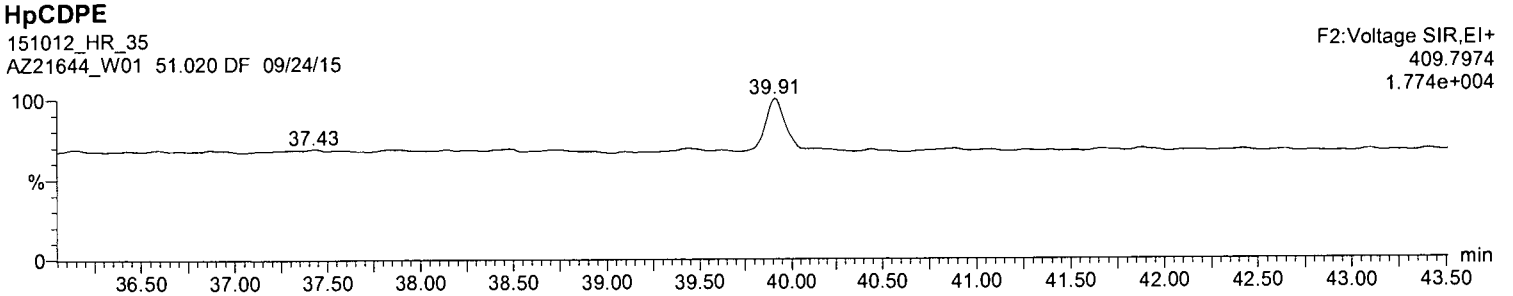
13C-1,2,3,7,8-PeCDF



13C-1,2,3,7,8-PeCDF

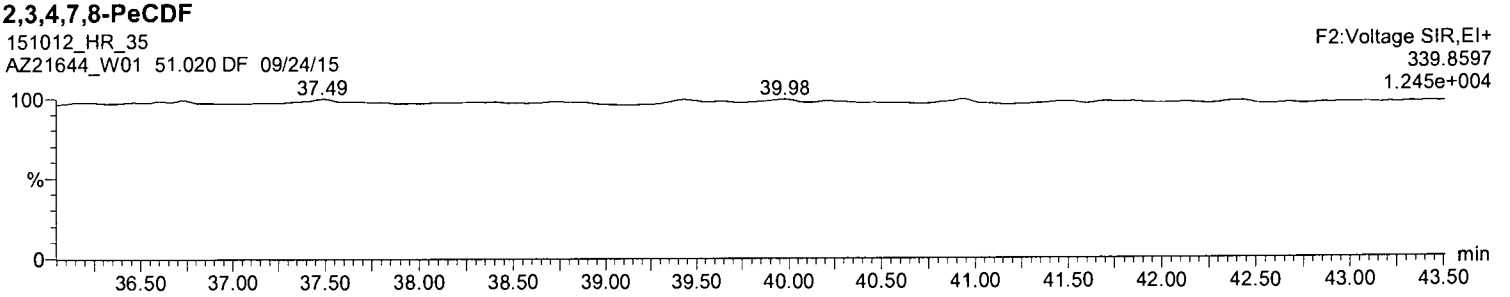


HpCDPE

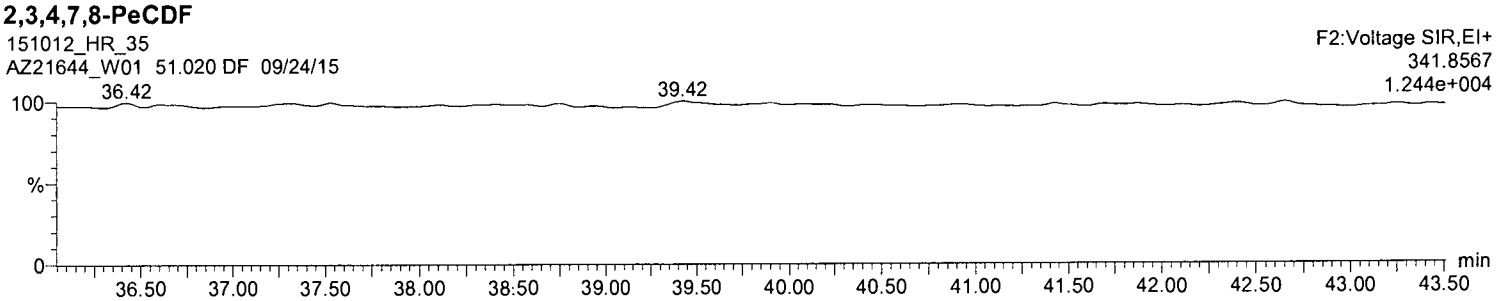


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

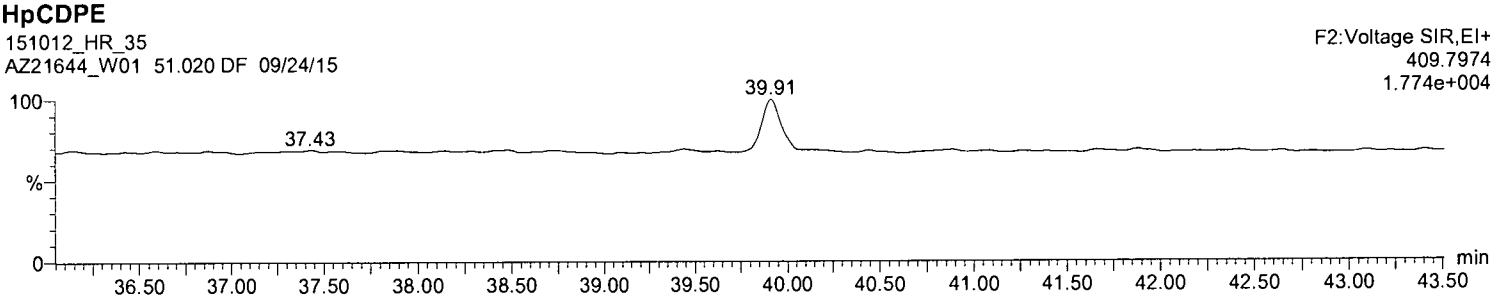
2,3,4,7,8-PeCDF



2,3,4,7,8-PeCDF

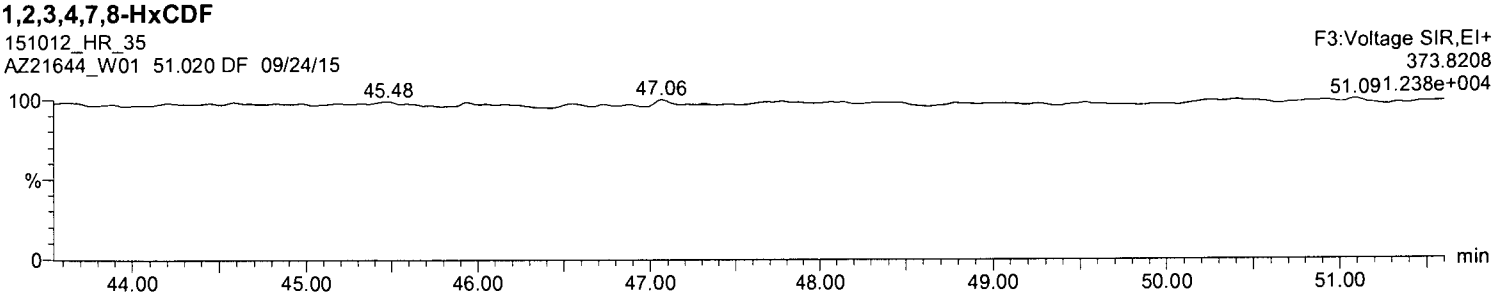


HpCDPE

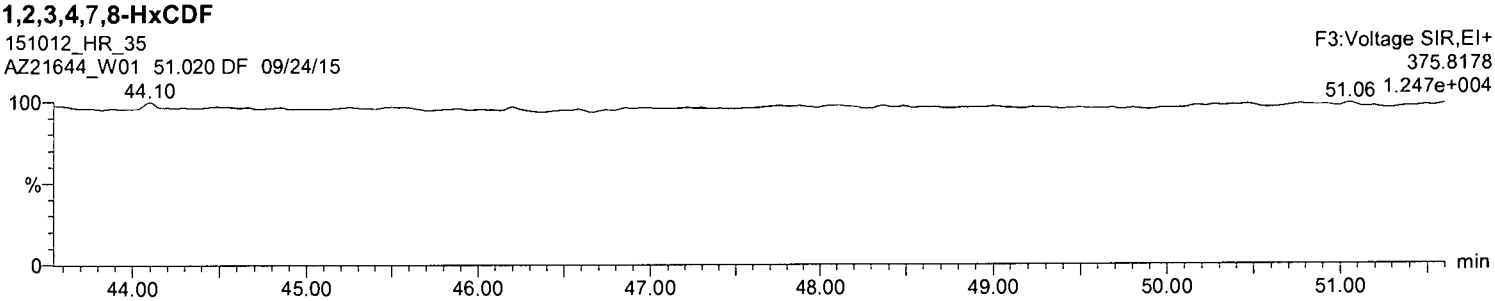


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

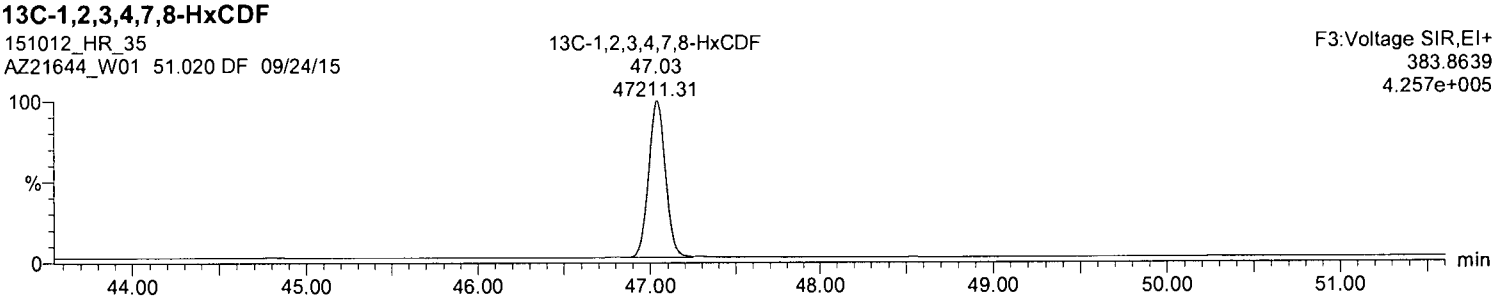
1,2,3,4,7,8-HxCDF



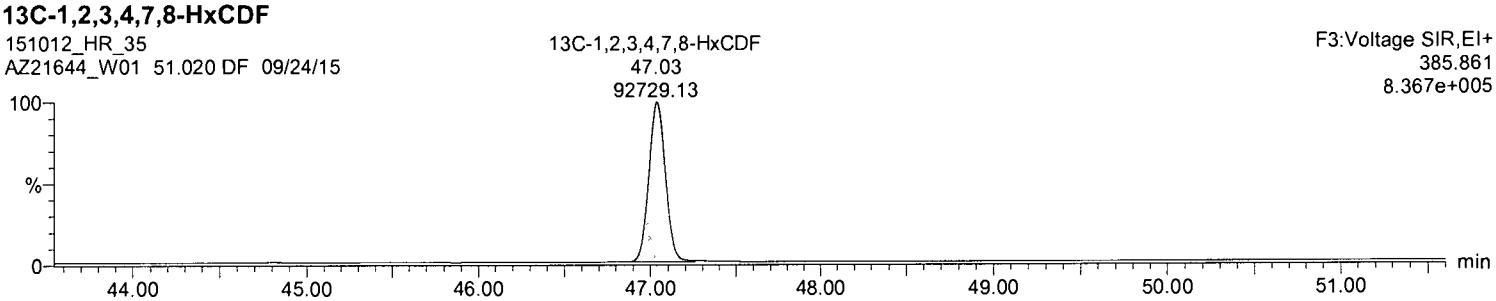
1,2,3,4,7,8-HxCDF



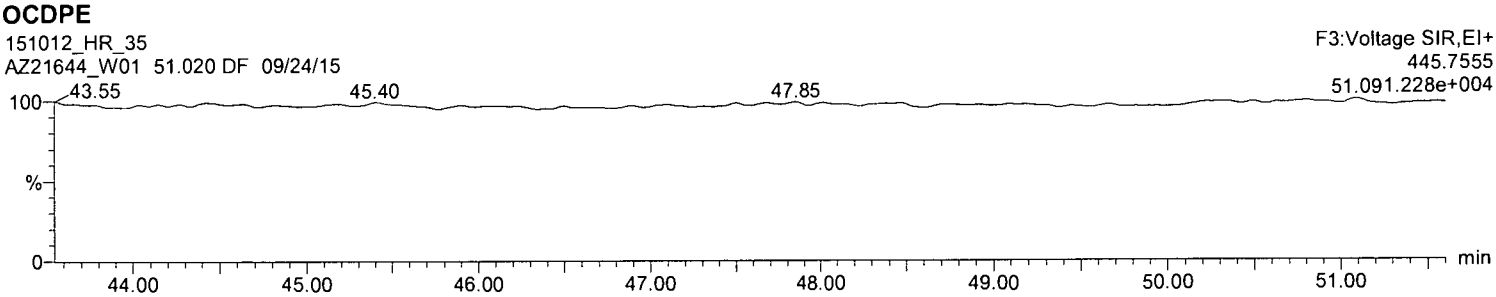
13C-1,2,3,4,7,8-HxCDF



13C-1,2,3,4,7,8-HxCDF

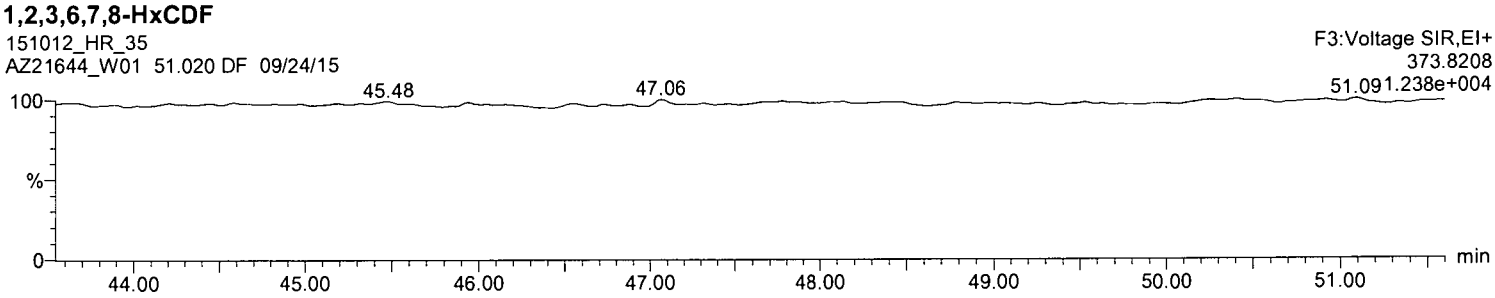


OCDPE

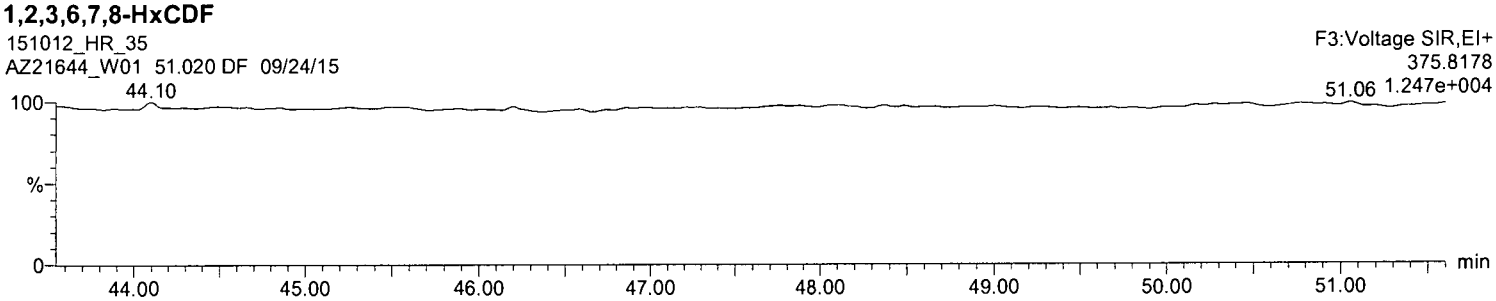


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

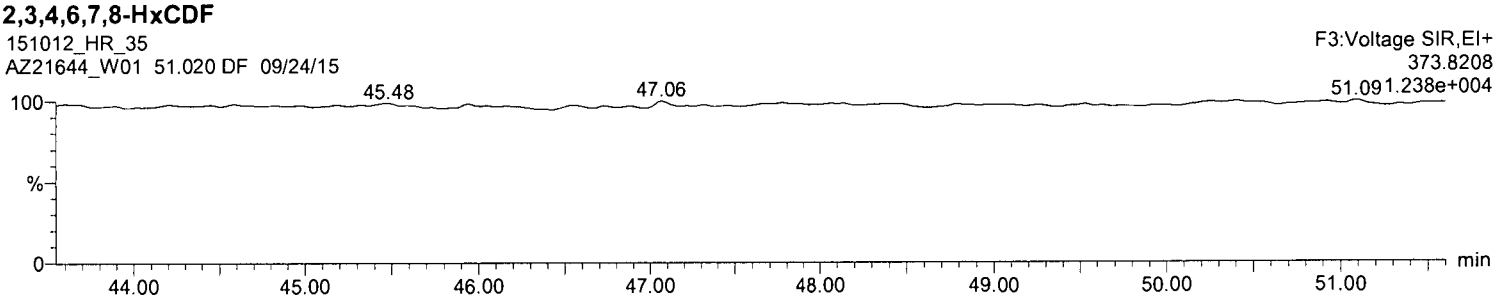
1,2,3,6,7,8-HxCDF



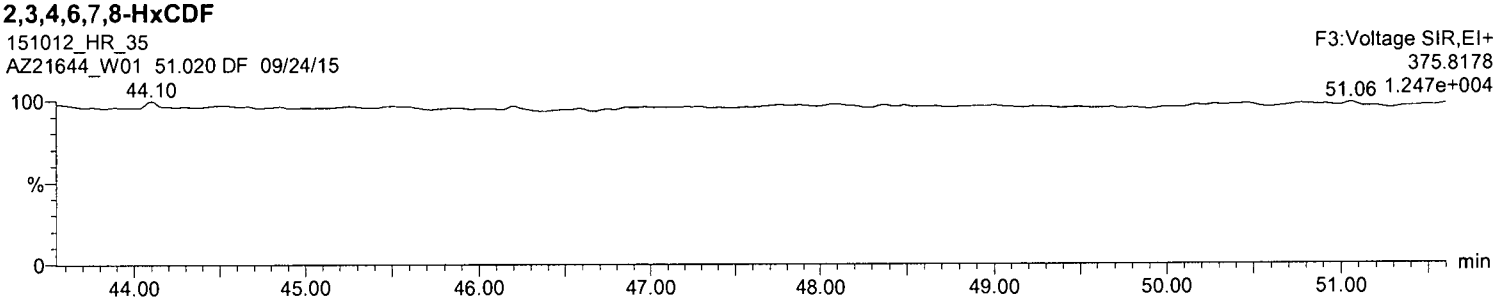
1,2,3,6,7,8-HxCDF



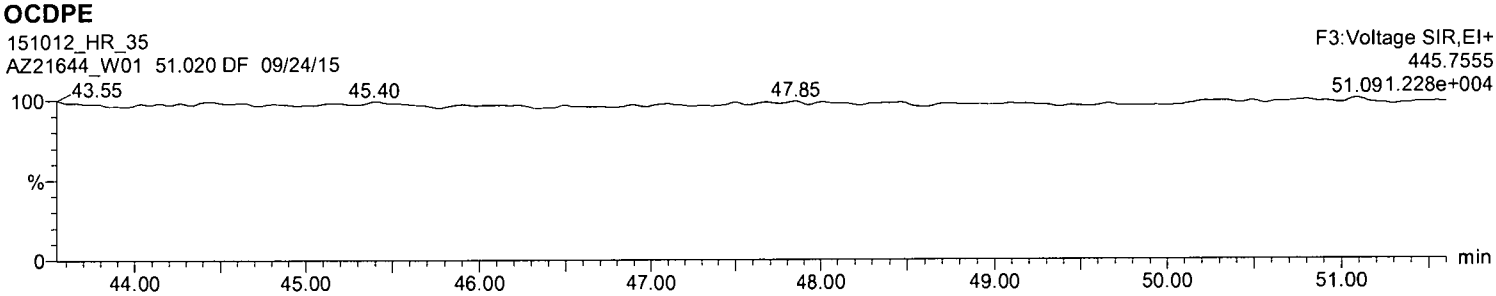
2,3,4,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF

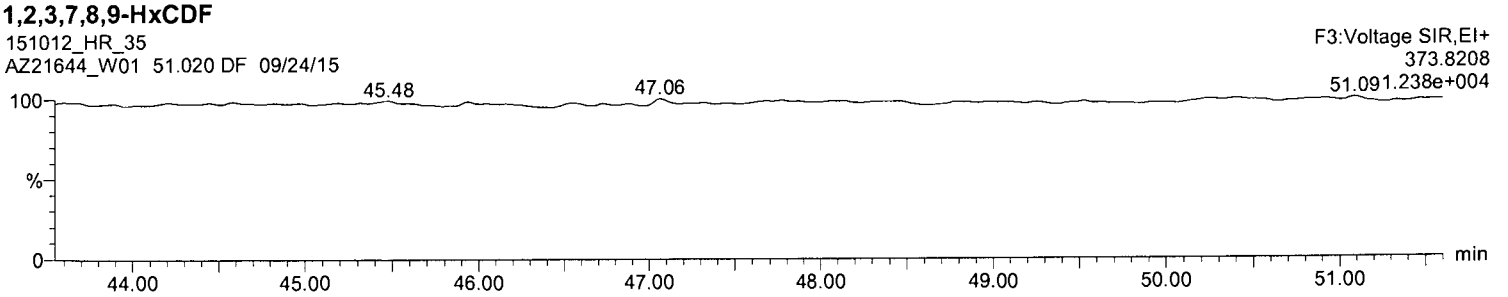


OCDPE

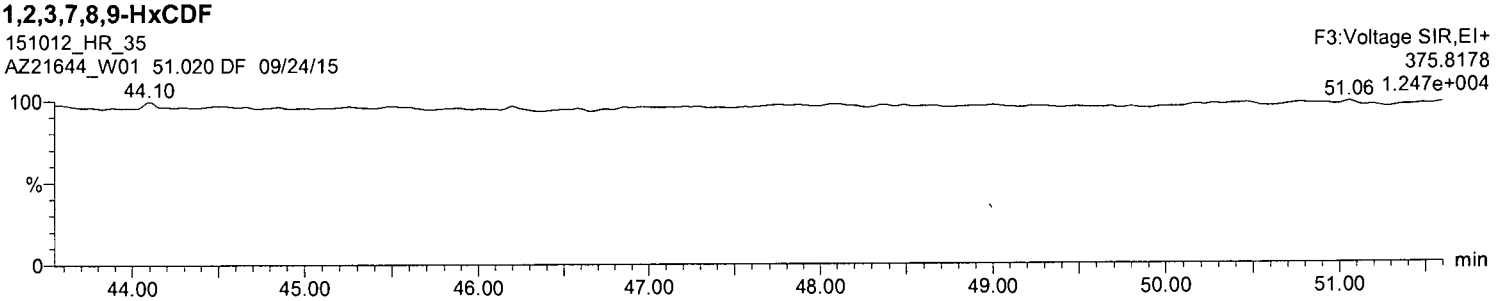


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

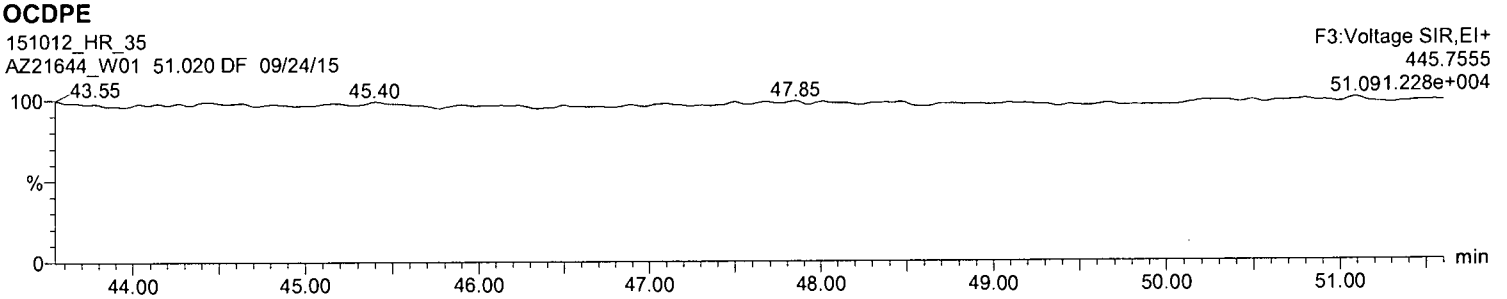
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF



OCDPE



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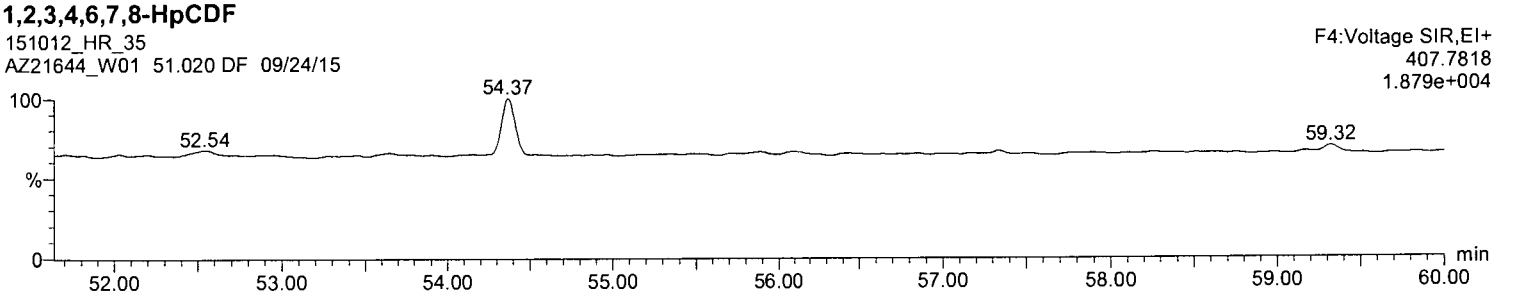
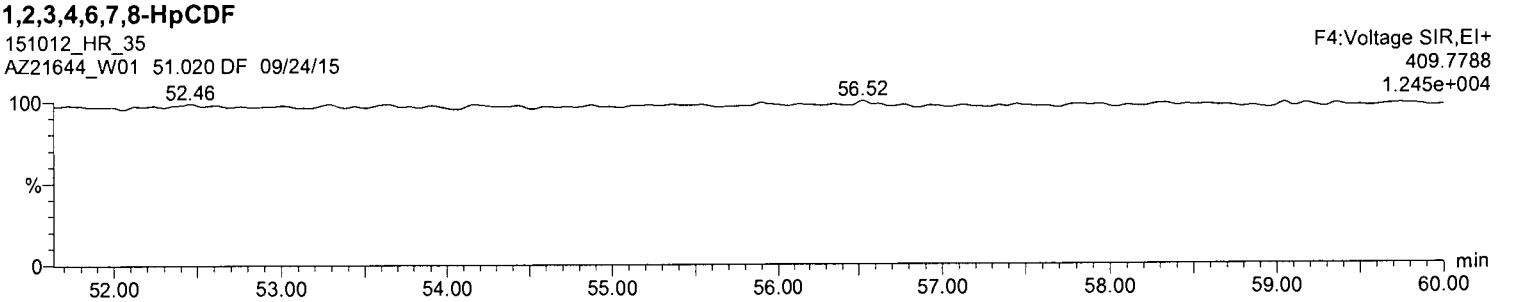
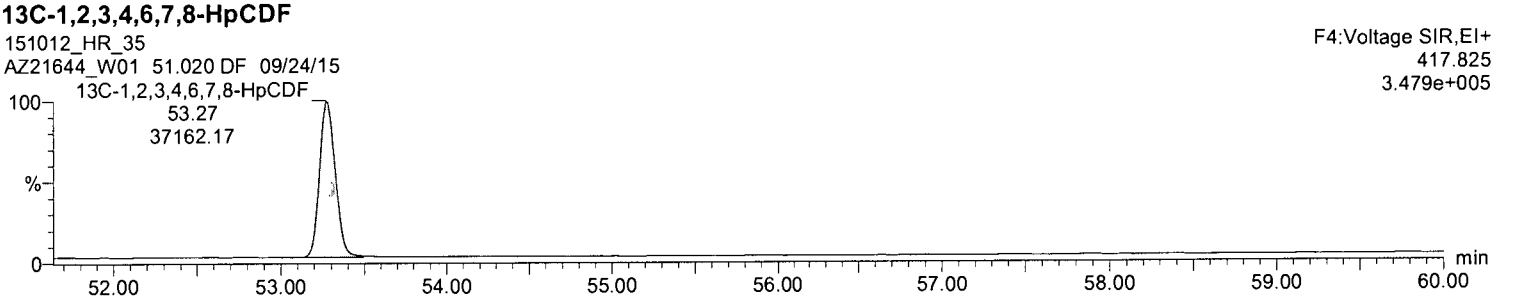
1,2,3,4,6,7,8-HpCDF



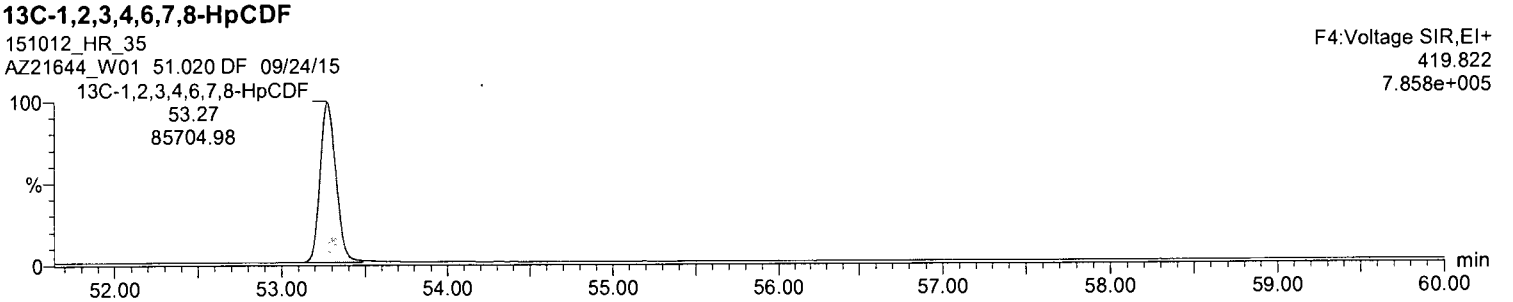
1,2,3,4,6,7,8-HpCDF



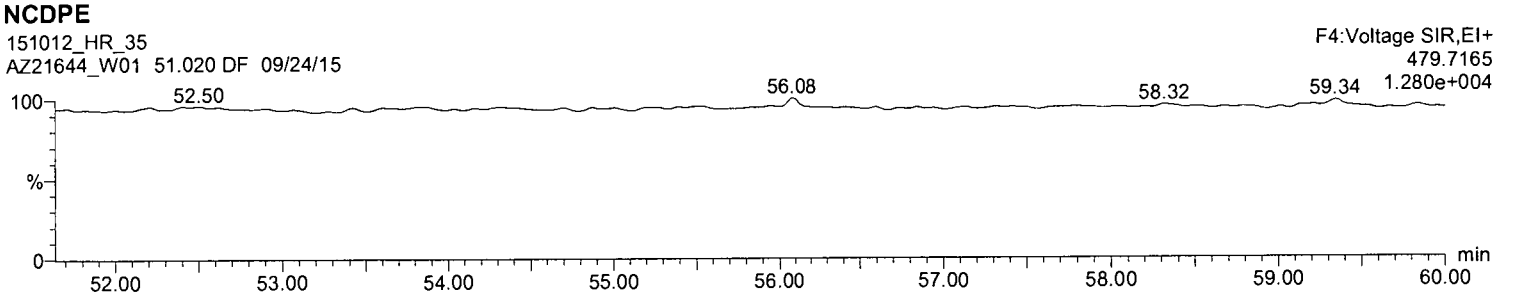
13C-1,2,3,4,6,7,8-HpCDF



13C-1,2,3,4,6,7,8-HpCDF

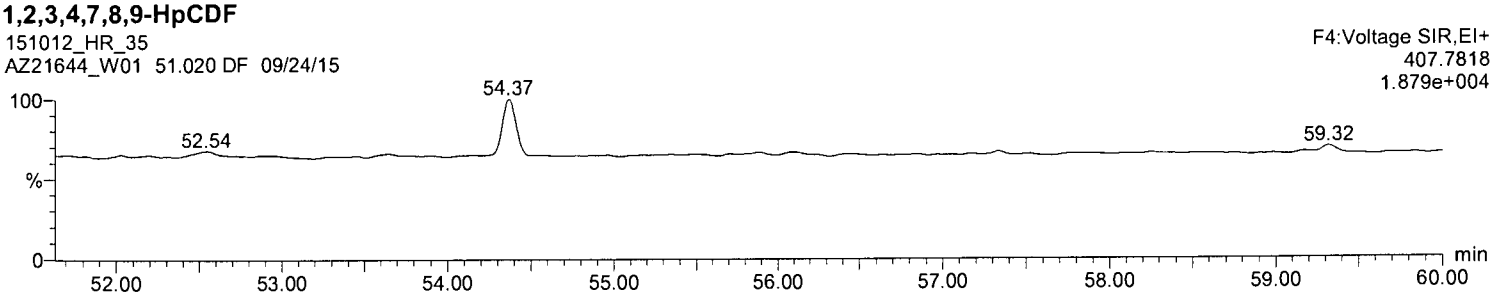


NCDPE

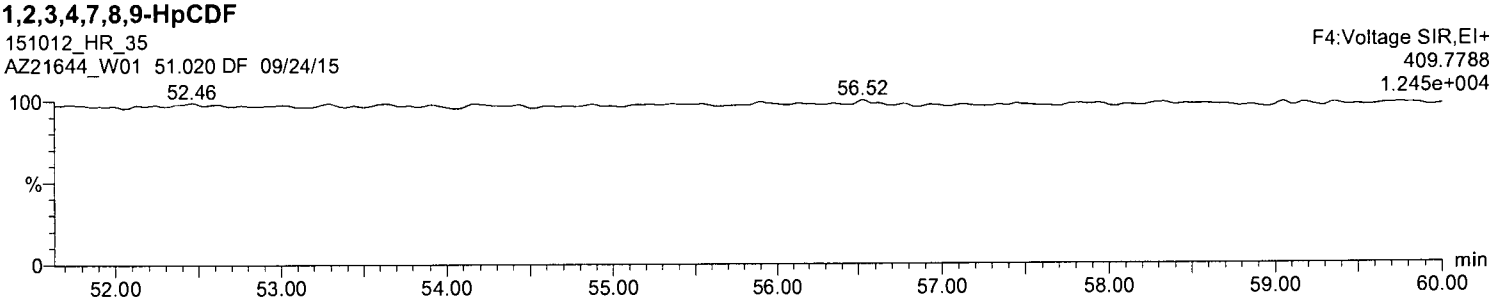


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

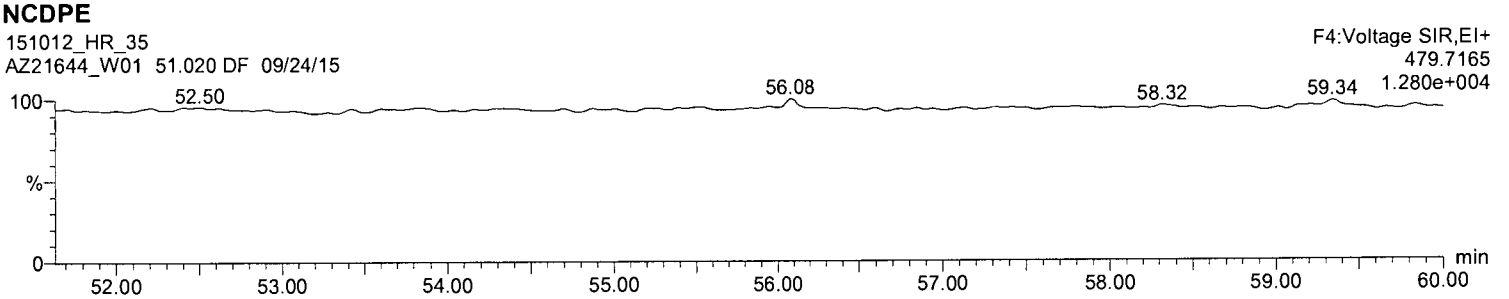
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF

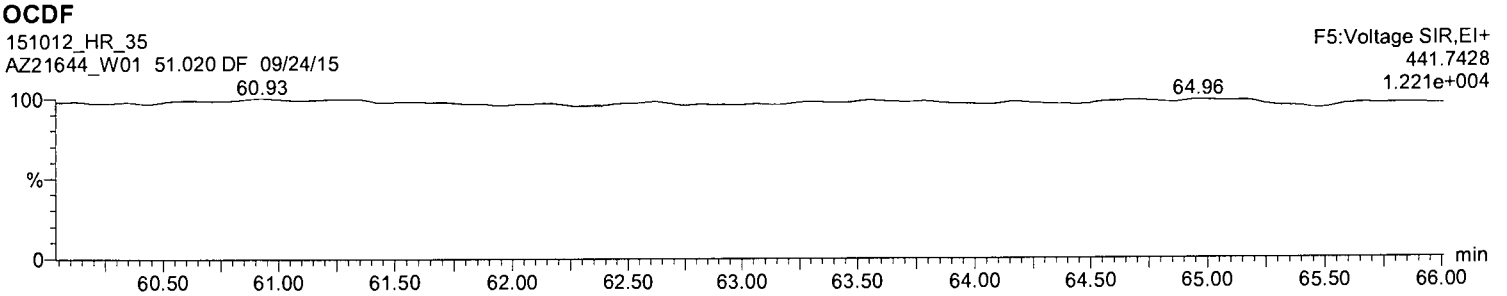


NCDPE

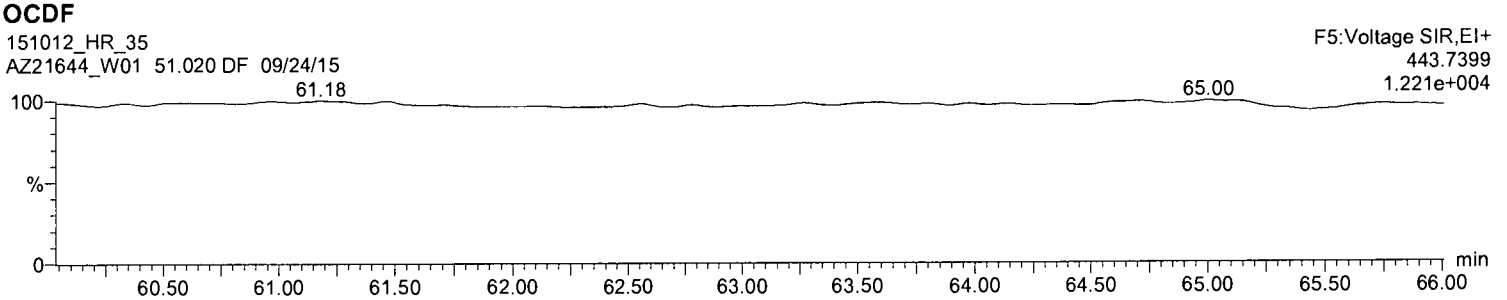


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

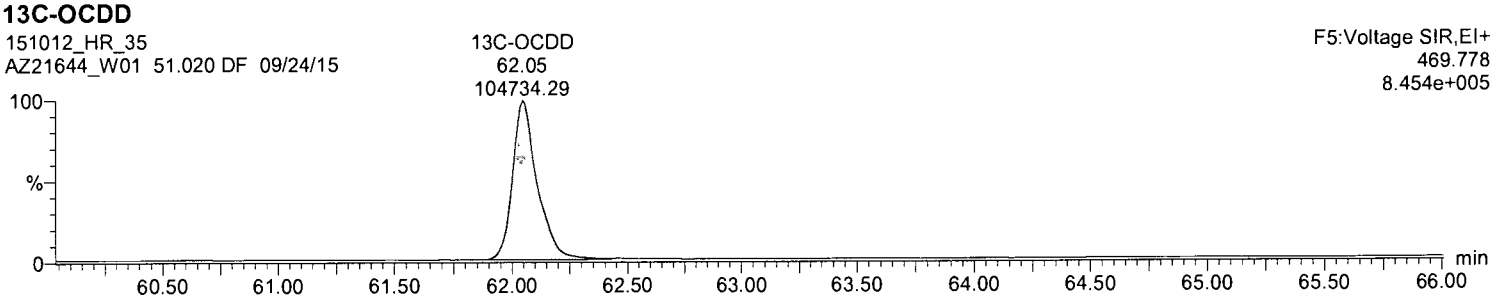
OCDF



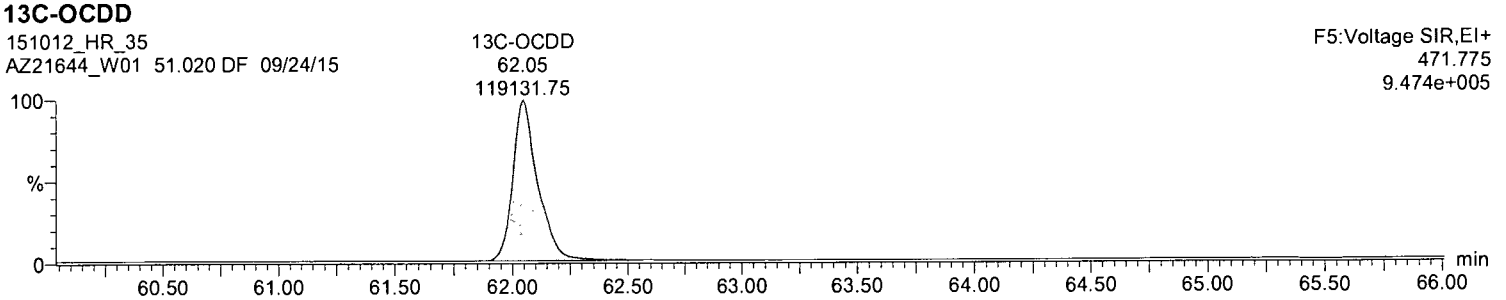
OCDF



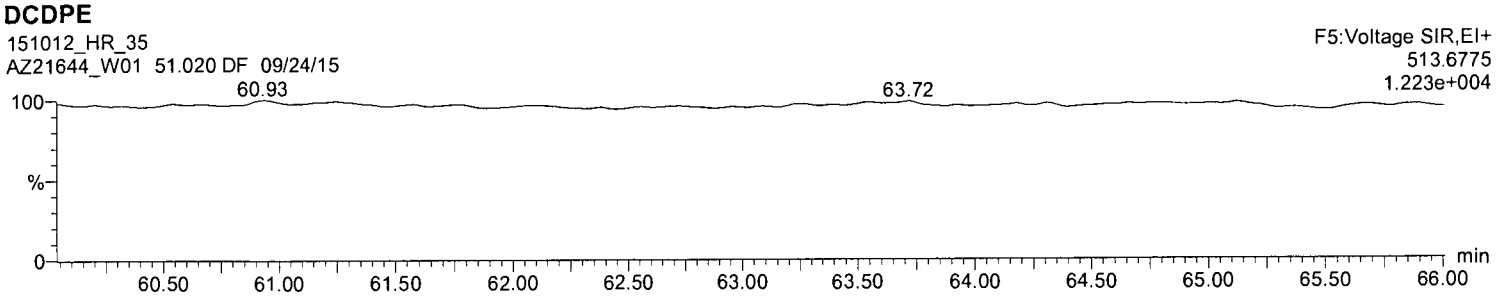
13C-OCDD



13C-OCDD

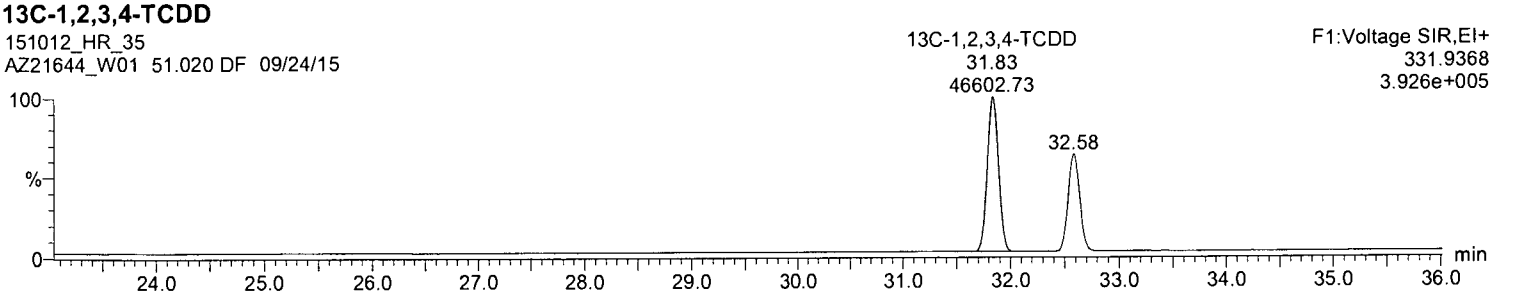


DCDPE

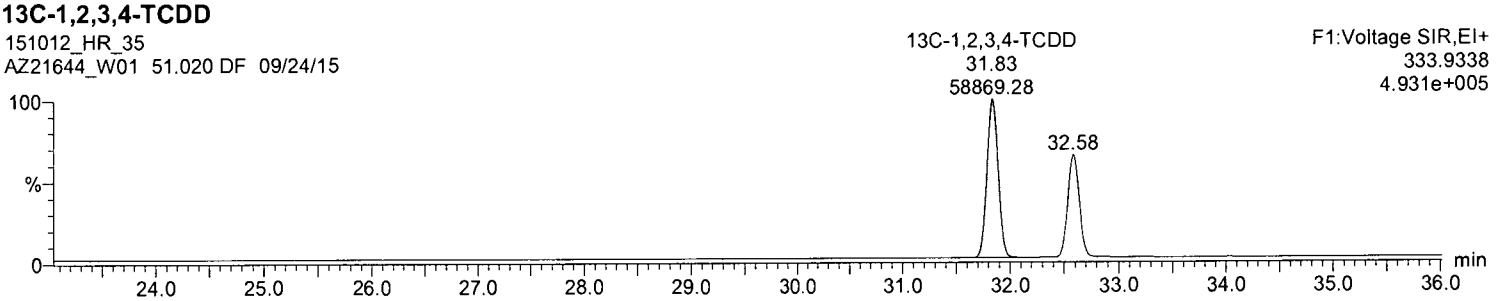


Name: 151012_HR_35, Date: 14-Oct-2015, Time: 04:18:00, ID: , Description: AZ21644_W01 51.020 DF 09/24/15, User:

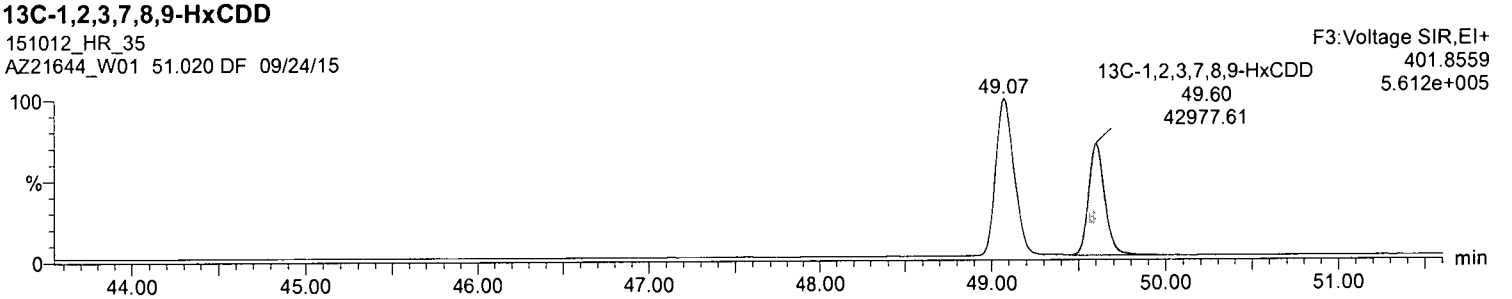
13C-1,2,3,4-TCDD



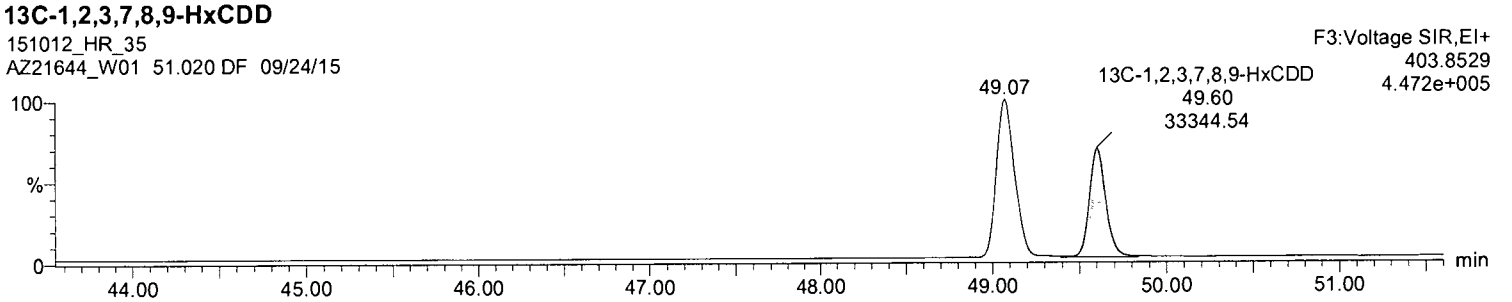
13C-1,2,3,4-TCDD



13C-1,2,3,7,8,9-HxCDD



13C-1,2,3,7,8,9-HxCDD



EPA METHOD 8290
Dioxins/Furans

Calibration Data

APPL, INC.

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

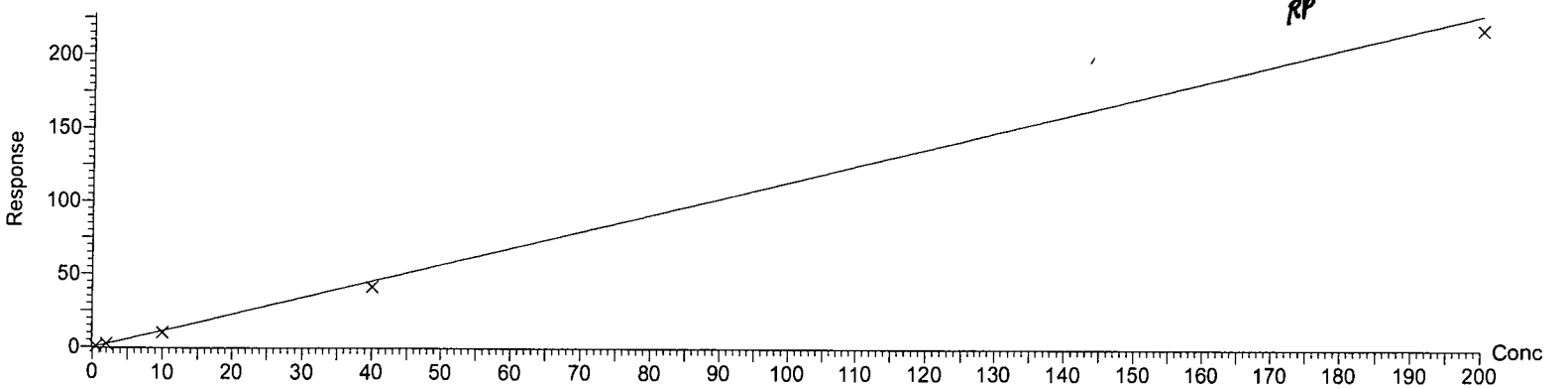
Compound name: 2,3,7,8-TCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1º Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	0.50	0.72	NO	32.62	1.274604e3	1.759523e3	1.39406
2	151012_HR_04	EDF-9999 CS-2 01/02/15	2.00	0.77	NO	32.68	3.862034e3	5.023465e3	1.15561
3	151012_HR_05	EDF-9999 CS-3 07/16/15	10.00	0.75	NO	32.65	1.249544e4	1.657097e4	1.01237
4	151012_HR_06	EDF-9999 CS-4 01/02/15	40.00	0.75	NO	32.62	1.555416e5	2.062139e5	1.03867
5	151012_HR_07	EDF-9999 CS-5 01/02/15	200.00	0.78	NO	32.57	5.020072e5	6.445848e5	1.08958

Compound name: 2,3,7,8-TCDD
Response Factor: 1.13806
RRF SD: 0.153192, % Relative SD: 13.4608
Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
Curve type: RF

= 5.69029/5
= 1.13806

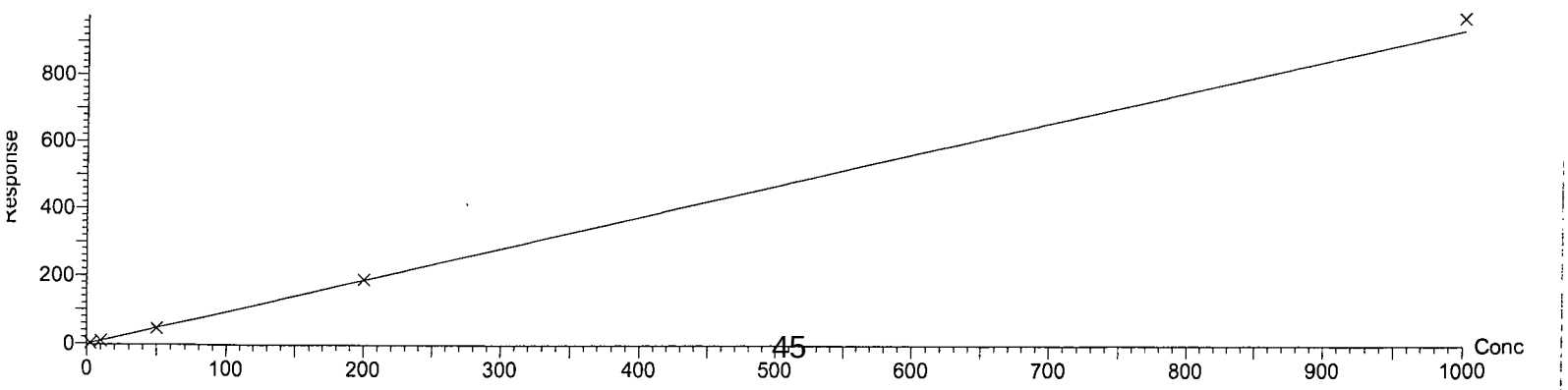
10/13/15
RP



Compound name: 1,2,3,7,8-PeCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1º Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.54	NO	41.55	4.449306e3	2.885194e3	0.93271
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.58	NO	41.63	1.627461e4	1.032550e4	0.93467
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.56	NO	41.60	5.805838e4	3.731551e4	0.90072
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.56	NO	41.59	7.643999e5	4.885393e5	0.94753
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.56	NO	41.51	2.439347e6	1.568141e6	0.97667

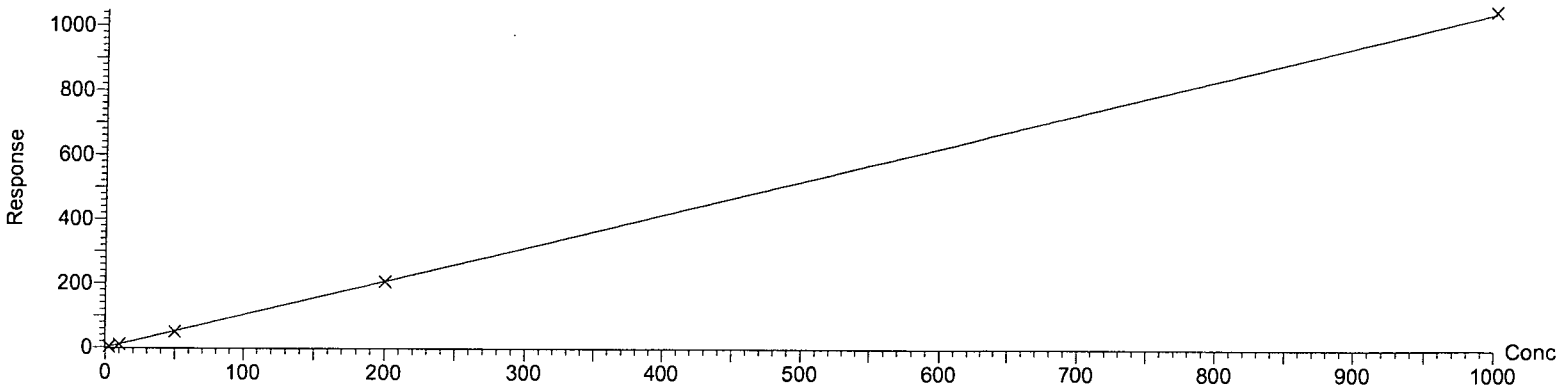
Compound name: 1,2,3,7,8-PeCDD
Response Factor: 0.938461
RRF SD: 0.0274511, % Relative SD: 2.92512
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,4,7,8-HxCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.27	NO	48.89	4.478228e3	3.515635e3	1.08613
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.26	NO	48.97	1.470418e4	1.166424e4	1.02758
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.24	NO	48.92	5.296853e4	4.256983e4	1.00484
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.24	NO	48.89	6.938194e5	5.578179e5	1.03705
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.23	NO	48.84	2.124261e6	1.731119e6	1.04772

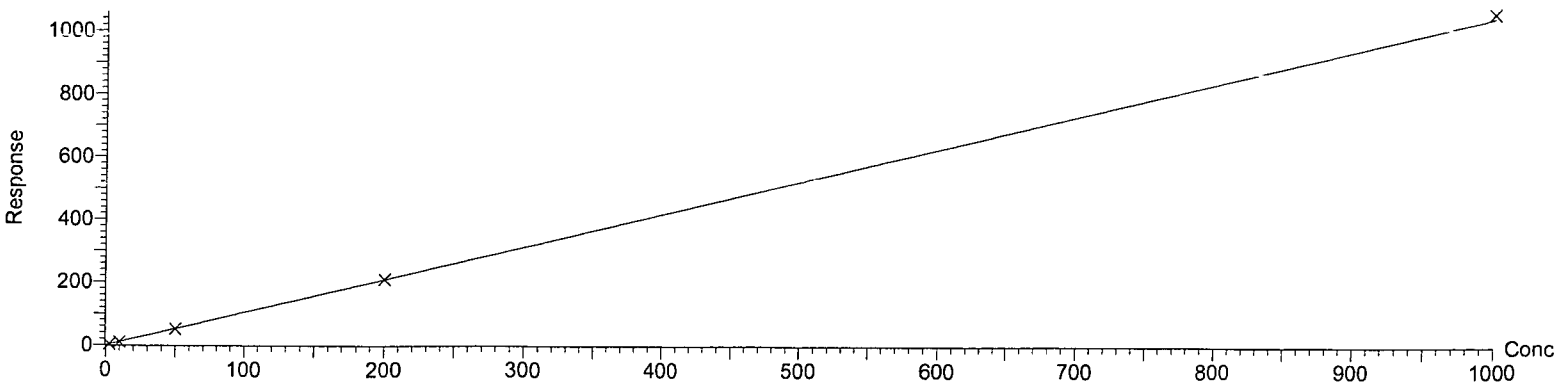
Compound name: 1,2,3,4,7,8-HxCDD
Response Factor: 1.04066
RRF SD: 0.0299358, % Relative SD: 2.87661
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,6,7,8-HxCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.32	NO	49.10	4.556240e3	3.450270e3	1.08785
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.23	NO	49.17	1.410002e4	1.149542e4	0.99745
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.22	NO	49.14	5.342952e4	4.374744e4	1.02207
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.22	NO	49.11	6.954734e5	5.693447e5	1.04797
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.24	NO	49.04	2.158564e6	1.734744e6	1.05803

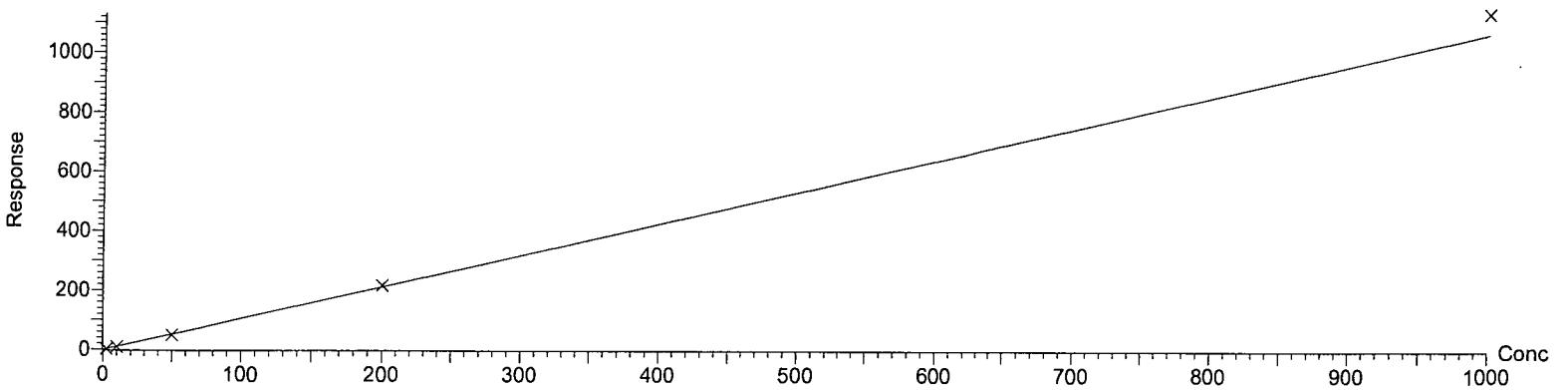
Compound name: 1,2,3,6,7,8-HxCDD
Response Factor: 1.04267
RRF SD: 0.0345458, % Relative SD: 3.31319
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,7,8,9-HxCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.14	NO	49.63	4.214290e3	3.693201e3	1.07439
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.20	NO	49.70	1.417728e4	1.185549e4	1.01450
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.22	NO	49.67	5.262731e4	4.303011e4	1.00609
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.25	NO	49.65	7.296501e5	5.847346e5	1.08904
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.24	NO	49.58	2.304357e6	1.855348e6	1.13043

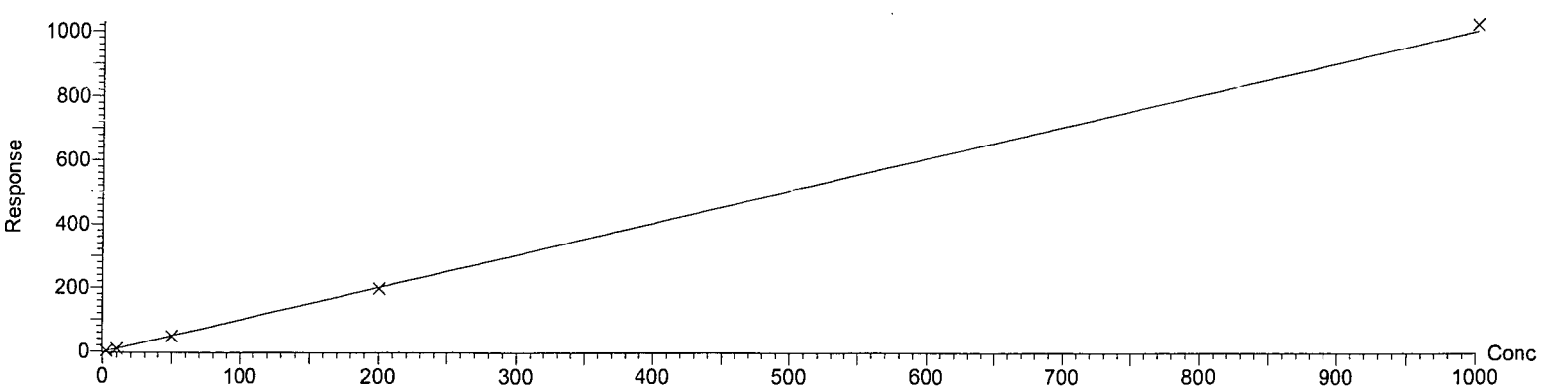
Compound name: 1,2,3,7,8,9-HxCDD
Response Factor: 1.06289
RRF SD: 0.0523096, % Relative SD: 4.92146
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,4,6,7,8-HpCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.03	NO	55.47	3.404399e3	3.291562e3	1.03764
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.06	NO	55.54	1.238939e4	1.168452e4	1.01989
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.04	NO	55.49	4.218059e4	4.040466e4	0.97446
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.04	NO	55.46	5.602707e5	5.384824e5	0.98712
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.04	NO	55.42	1.881251e6	1.812491e6	1.03033

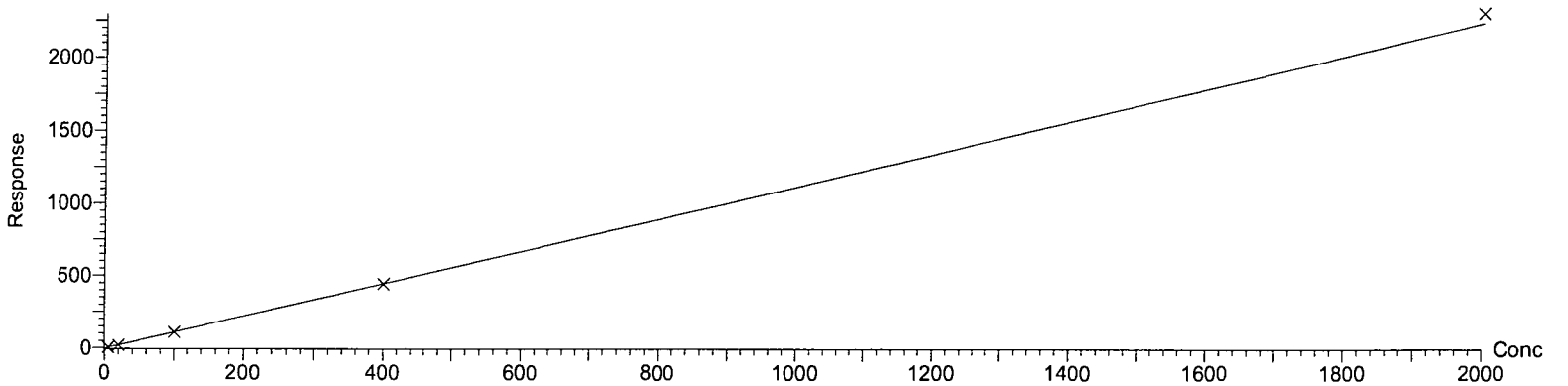
Compound name: 1,2,3,4,6,7,8-HpCDD
Response Factor: 1.00989
RRF SD: 0.0276644, % Relative SD: 2.73936
Response type: Internal Std (Ref 21), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: OCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	5.00	0.85	NO	62.06	6.438351e3	7.585397e3	1.12812
2	151012_HR_04	EDF-9999 CS-2 01/02/15	20.00	0.90	NO	62.16	2.147611e4	2.384671e4	1.08381
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	0.87	NO	62.10	7.652016e4	8.756021e4	1.10394
4	151012_HR_06	EDF-9999 CS-4 01/02/15	400.00	0.89	NO	62.07	1.034016e6	1.164133e6	1.10712
5	151012_HR_07	EDF-9999 CS-5 01/02/15	2000.00	0.89	NO	62.01	3.418366e6	3.840356e6	1.14837

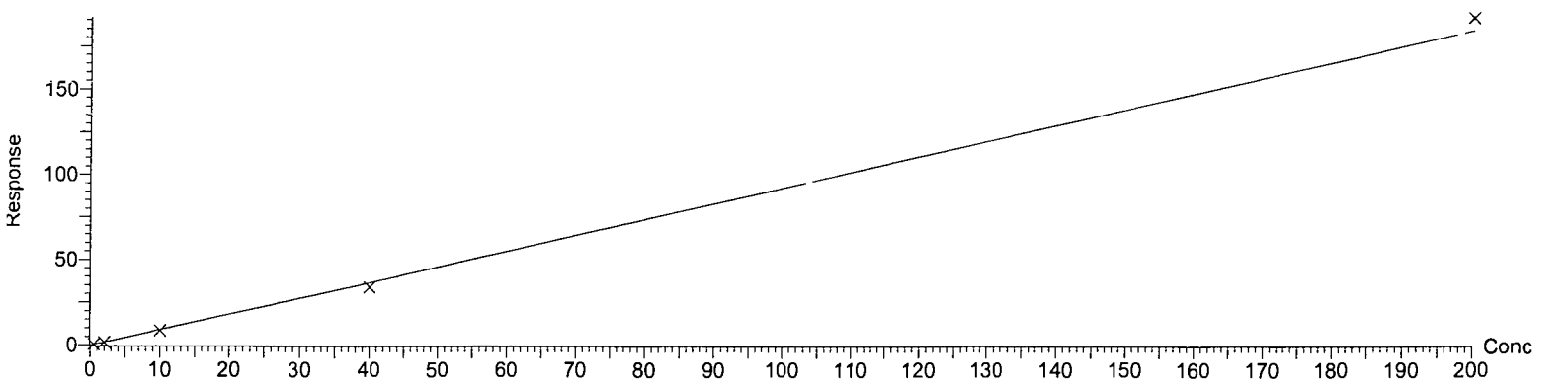
Compound name: OCDD
Response Factor: 1.11427
RRF SD: 0.0247006, % Relative SD: 2.21674
Response type: Internal Std (Ref 22), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 2,3,7,8-TCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	0.50	0.73	NO	31.63	1.383376e3	1.891027e3	1.02131
2	151012_HR_04	EDF-9999 CS-2 01/02/15	2.00	0.69	NO	31.68	4.196690e3	6.100103e3	0.89740
3	151012_HR_05	EDF-9999 CS-3 07/16/15	10.00	0.75	NO	31.66	1.506840e4	2.015675e4	0.87394
4	151012_HR_06	EDF-9999 CS-4 01/02/15	40.00	0.76	NO	31.63	1.862252e5	2.453662e5	0.85524
5	151012_HR_07	EDF-9999 CS-5 01/02/15	200.00	0.78	NO	31.57	5.910852e5	7.561358e5	0.95839

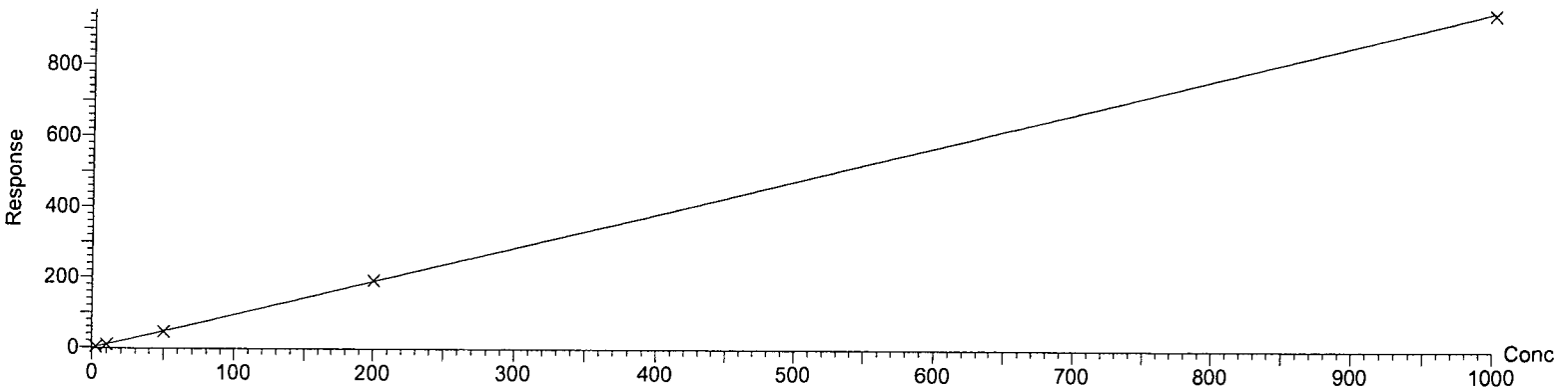
Compound name: 2,3,7,8-TCDF
Response Factor: 0.921258
RRF SD: 0.0681094, % Relative SD: 7.39309
Response type: Internal Std (Ref 23), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,7,8-PeCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.53	NO	38.87	6.729317e3	4.386646e3	1.01961
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.58	NO	38.94	2.258327e4	1.429314e4	0.90354
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.53	NO	38.91	8.203223e4	5.365764e4	0.92843
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.54	NO	38.89	1.065045e6	6.897741e5	0.96363
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.52	NO	38.81	3.520501e6	2.313567e6	0.94540

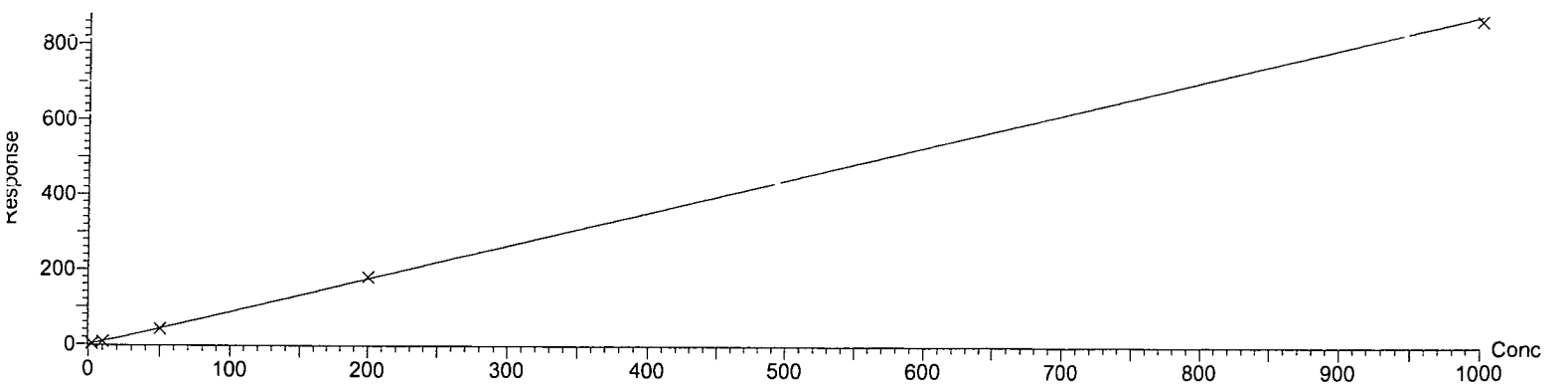
Compound name: 1,2,3,7,8-PeCDF
Response Factor: 0.95212
RRF SD: 0.0437416, % Relative SD: 4.59413
Response type: Internal Std (Ref 24), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 2,3,4,7,8-PeCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.44	NO	40.91	5.897923e3	4.091378e3	0.91627
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.49	NO	40.98	2.071964e4	1.390422e4	0.84835
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.51	NO	40.95	7.549075e4	5.000534e4	0.85868
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.54	NO	40.92	9.985361e5	6.472094e5	0.90373
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.53	NO	40.85	3.233605e6	2.119095e6	0.86739

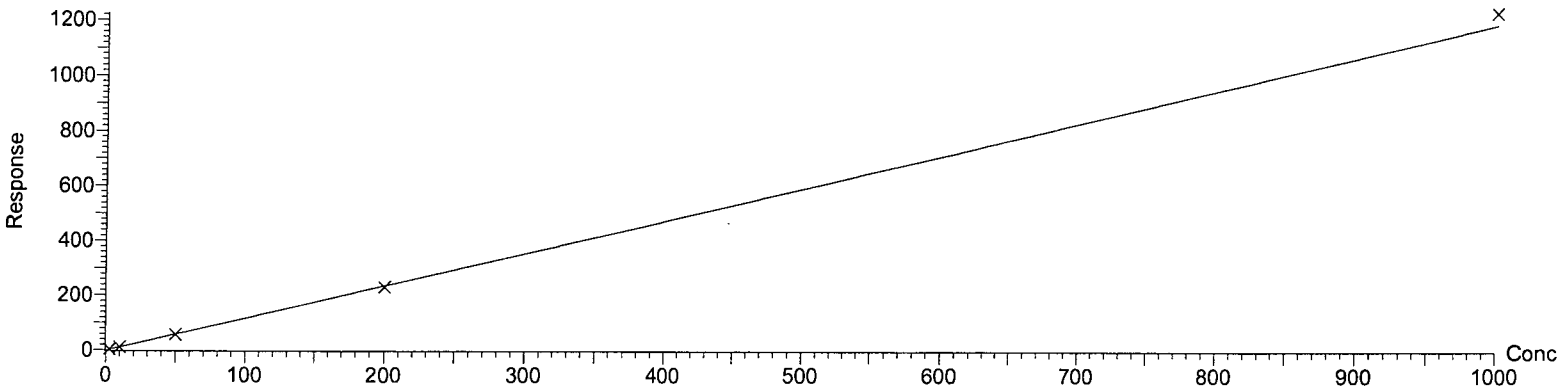
Compound name: 2,3,4,7,8-PeCDF
Response Factor: 0.878883
RRF SD: 0.0295265, % Relative SD: 3.35954
Response type: Internal Std (Ref 24), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,4,7,8-HxCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.22	NO	47.04	5.187236e3	4.255102e3	1.17377
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.28	NO	47.13	2.022402e4	1.577202e4	1.18271
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.23	NO	47.10	6.964924e4	5.660938e4	1.16669
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.23	NO	47.06	8.920498e5	7.249527e5	1.15837
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.24	NO	47.01	2.872354e6	2.321824e6	1.22595

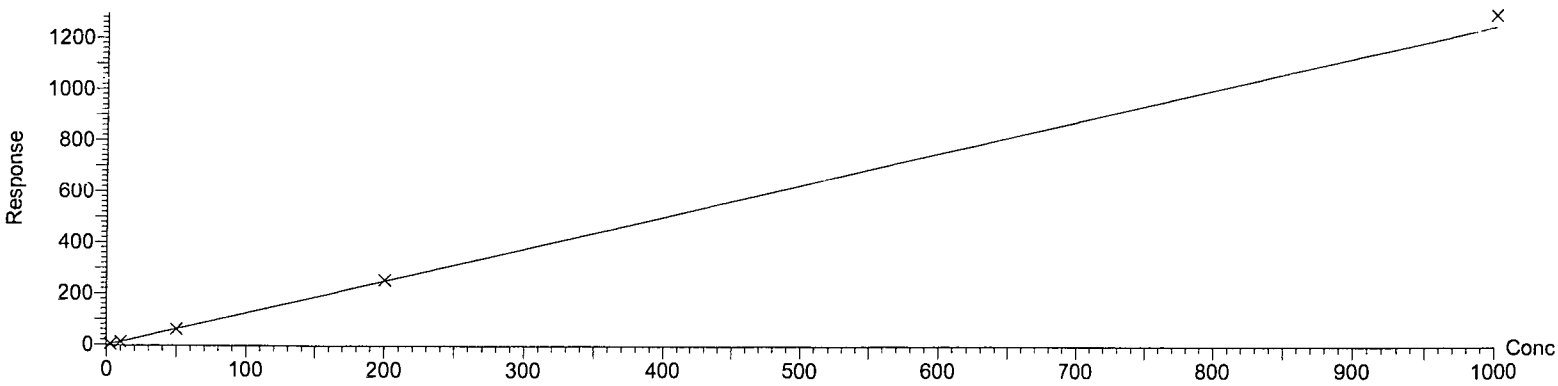
Compound name: 1,2,3,4,7,8-HxCDF
Response Factor: 1.1815
RRF SD: 0.0264186, % Relative SD: 2.23602
Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,6,7,8-HxCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.19	NO	47.32	5.433427e3	4.572021e3	1.24377
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.26	NO	47.38	2.068849e4	1.644757e4	1.22016
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.22	NO	47.36	7.278852e4	5.969408e4	1.22420
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.24	NO	47.33	9.792388e5	7.882837e5	1.26620
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.22	NO	47.27	3.020023e6	2.469037e6	1.29555

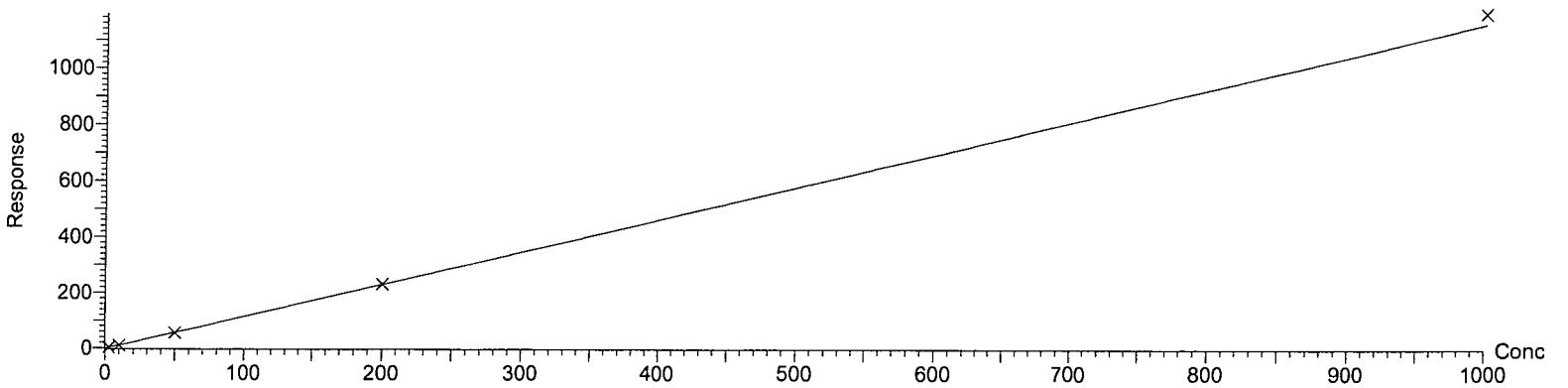
Compound name: 1,2,3,6,7,8-HxCDF
Response Factor: 1.24998
RRF SD: 0.0313534, % Relative SD: 2.50832
Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 2,3,4,6,7,8-HxCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.24	NO	48.54	5.286985e3	4.272027e3	1.18827
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.24	NO	48.60	1.865888e4	1.505528e4	1.10773
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.20	NO	48.56	6.625153e4	5.535574e4	1.12371
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.24	NO	48.54	8.982124e5	7.249215e5	1.16276
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.26	NO	48.49	2.815743e6	2.237027e6	1.19258

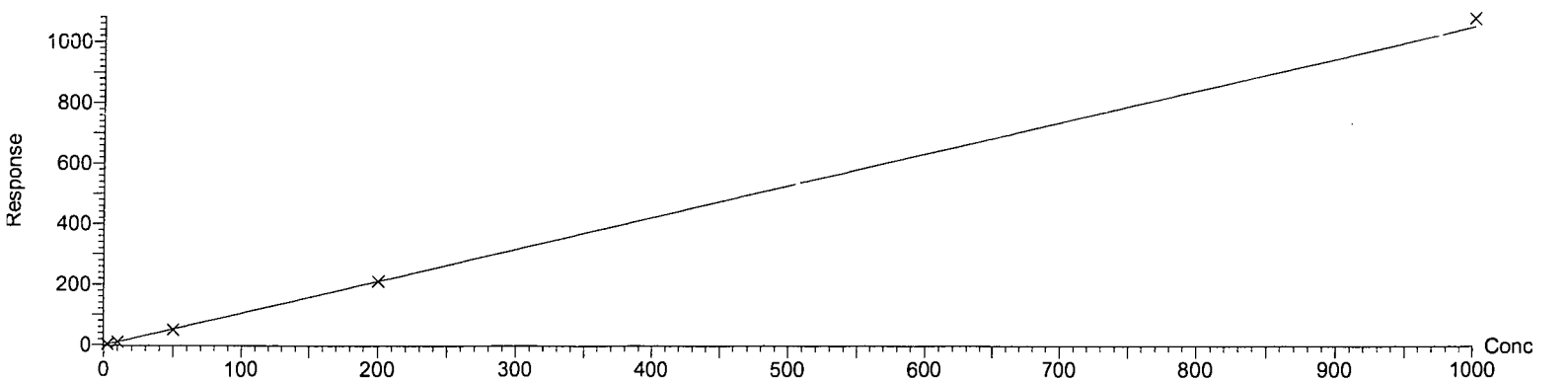
Compound name: 2,3,4,6,7,8-HxCDF
Response Factor: 1.15501
RRF SD: 0.0380557, % Relative SD: 3.29484
Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,7,8,9-HxCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.29	NO	50.26	4.923159e3	3.812456e3	1.08592
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.26	NO	50.34	1.758214e4	1.395664e4	1.03626
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.26	NO	50.29	6.117867e4	4.854511e4	1.01390
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.24	NO	50.27	8.129430e5	6.562716e5	1.05250
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.25	NO	50.21	2.542725e6	2.041916e6	1.08209

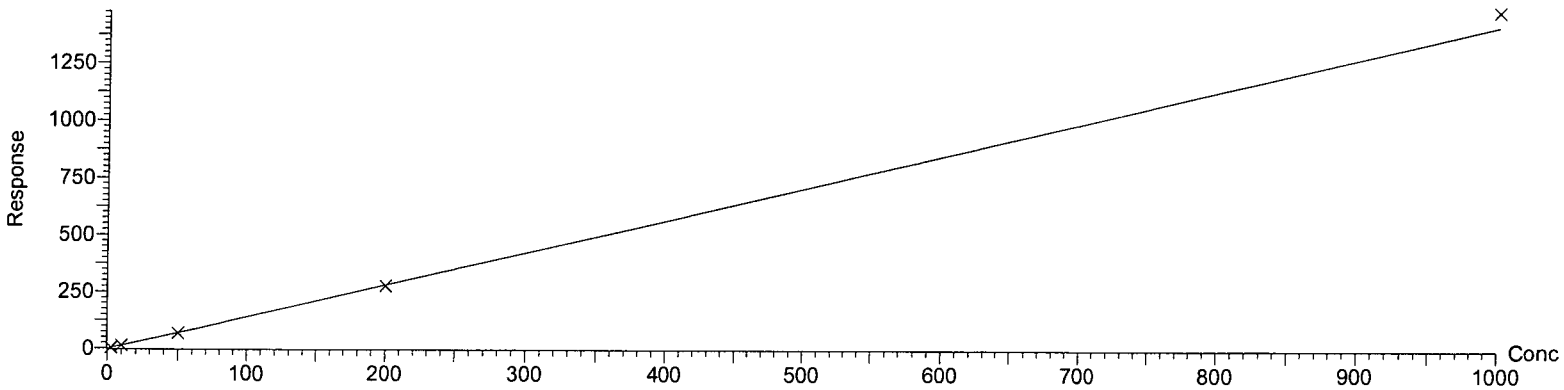
Compound name: 1,2,3,7,8,9-HxCDF
Response Factor: 1.05413
RRF SD: 0.0305482, % Relative SD: 2.89794
Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,4,6,7,8-HpCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.00	NO	53.29	4.720896e3	4.717521e3	1.42146
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.05	NO	53.35	1.669321e4	1.594484e4	1.38809
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.03	NO	53.32	5.902761e4	5.749995e4	1.38342
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.02	NO	53.29	7.637738e5	7.477826e5	1.38939
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.05	NO	53.24	2.594285e6	2.460415e6	1.47631

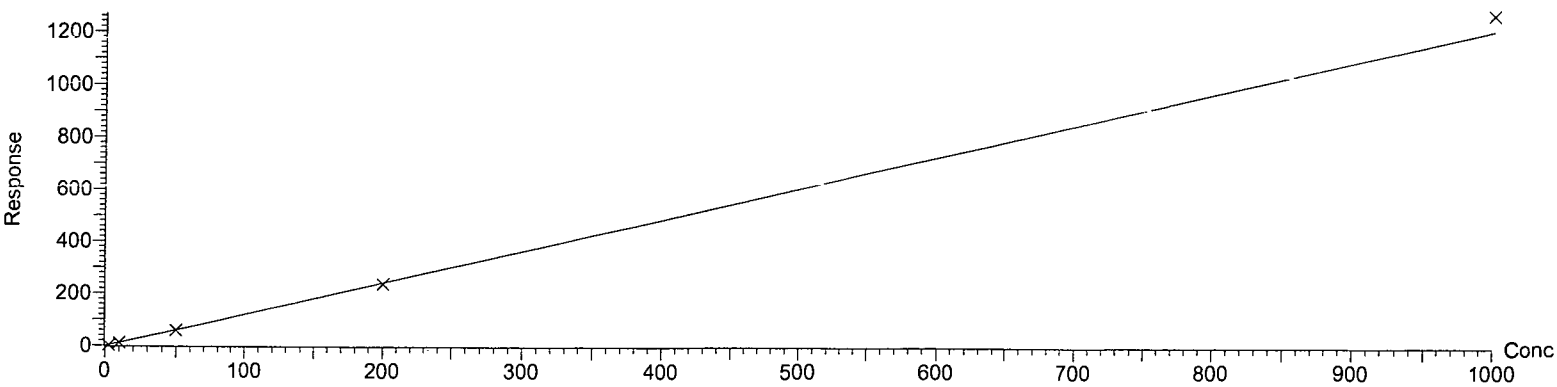
Compound name: 1,2,3,4,6,7,8-HpCDF
Response Factor: 1.41173
RRF SD: 0.0391303, % Relative SD: 2.77179
Response type: Internal Std (Ref 26), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 1,2,3,4,7,8,9-HpCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	2.50	1.00	NO	56.46	3.959307e3	3.970189e3	1.19421
2	151012_HR_04	EDF-9999 CS-2 01/02/15	10.00	1.03	NO	56.53	1.454740e4	1.406214e4	1.21676
3	151012_HR_05	EDF-9999 CS-3 07/16/15	50.00	1.03	NO	56.49	5.025752e4	4.866789e4	1.17444
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	1.06	NO	56.46	6.620355e5	6.246283e5	1.18267
5	151012_HR_07	EDF-9999 CS-5 01/02/15	1000.00	1.04	NO	56.40	2.215120e6	2.131419e6	1.26948

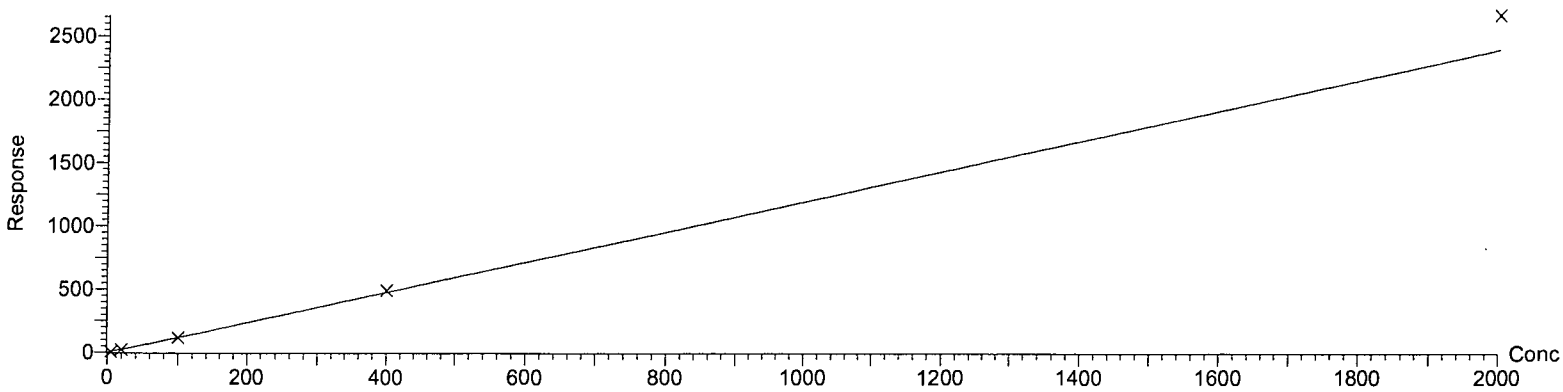
Compound name: 1,2,3,4,7,8,9-HpCDF
Response Factor: 1.20751
RRF SD: 0.0381205, % Relative SD: 3.15694
Response type: Internal Std (Ref 26), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: OCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	5.00	0.88	NO	62.46	6.218959e3	7.077705e3	1.06963
2	151012_HR_04	EDF-9999 CS-2 01/02/15	20.00	0.91	NO	62.56	2.315374e4	2.545717e4	1.16244
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	0.89	NO	62.51	8.257175e4	9.259065e4	1.17850
4	151012_HR_06	EDF-9999 CS-4 01/02/15	400.00	0.89	NO	62.47	1.160281e6	1.296579e6	1.23743
5	151012_HR_07	EDF-9999 CS-5 01/02/15	2000.00	0.89	NO	62.39	3.957035e6	4.461818e6	1.33191

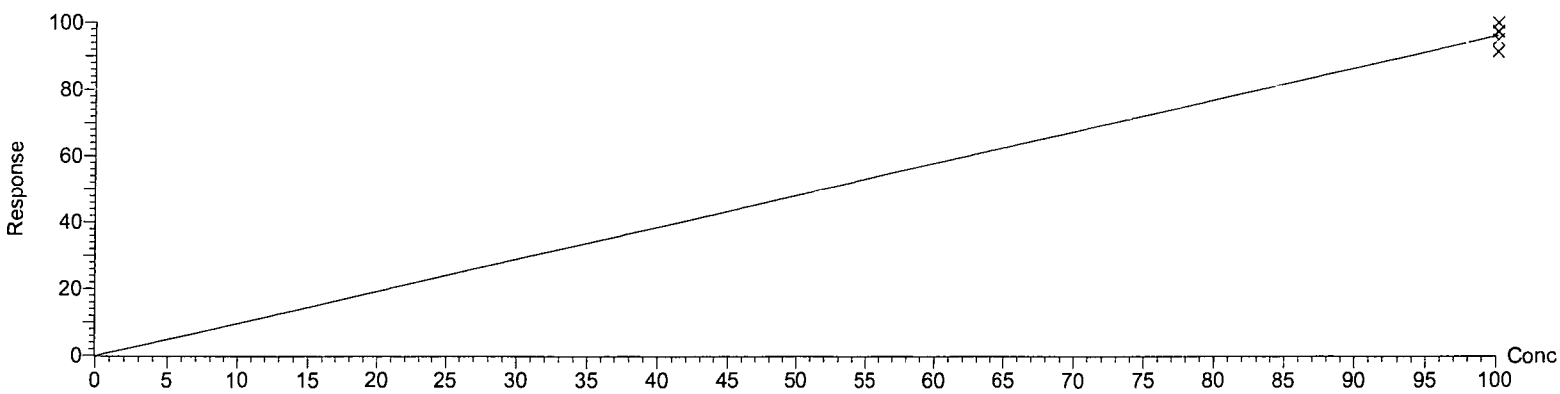
Compound name: OCDF
Response Factor: 1.19598
RRF SD: 0.0969396, % Relative SD: 8.10543
Response type: Internal Std (Ref 22), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-2,3,7,8-TCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	0.78	NO	32.60	1.908033e5	2.444895e5	0.91392
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	0.80	NO	32.65	1.707245e5	2.137271e5	0.95055
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	0.80	NO	32.62	1.272433e5	1.598683e5	0.97288
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	0.81	NO	32.61	3.887280e5	4.819890e5	1.00068
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	0.79	NO	32.54	2.314789e5	2.946841e5	0.97510

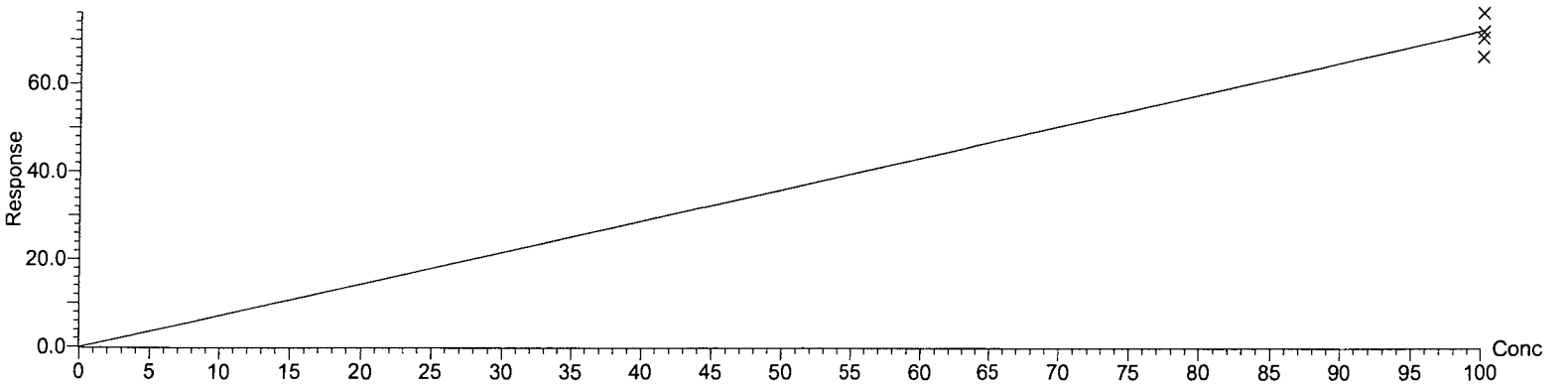
Compound name: 13C-2,3,7,8-TCDD
Response Factor: 0.962626
RRF SD: 0.032507, % Relative SD: 3.37691
Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,7,8-PeCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	1.61	NO	41.52	1.938634e5	1.206811e5	0.66040
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	1.56	NO	41.60	1.734578e5	1.111360e5	0.70365
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	1.59	NO	41.56	1.301235e5	8.164894e4	0.71759
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	1.58	NO	41.55	4.044752e5	2.566869e5	0.75985
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	1.61	NO	41.48	2.530821e5	1.572375e5	0.76041

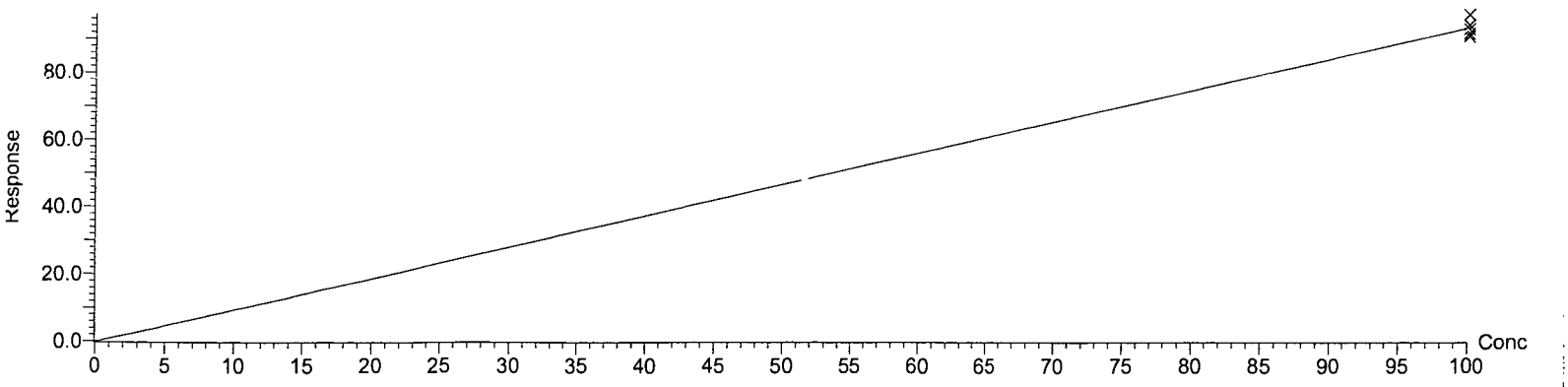
Compound name: 13C-1,2,3,7,8-PeCDD
Response Factor: 0.720382
RRF SD: 0.0419675, % Relative SD: 5.82573
Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,6,7,8-HxCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	1.26	NO	49.07	1.642963e5	1.301025e5	0.97253
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	1.26	NO	49.15	1.430555e5	1.135523e5	0.90836
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	1.25	NO	49.11	1.054529e5	8.470388e4	0.93031
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	1.26	NO	49.09	3.362644e5	2.671984e5	0.91751
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	1.26	NO	49.02	2.048022e5	1.631745e5	0.94222

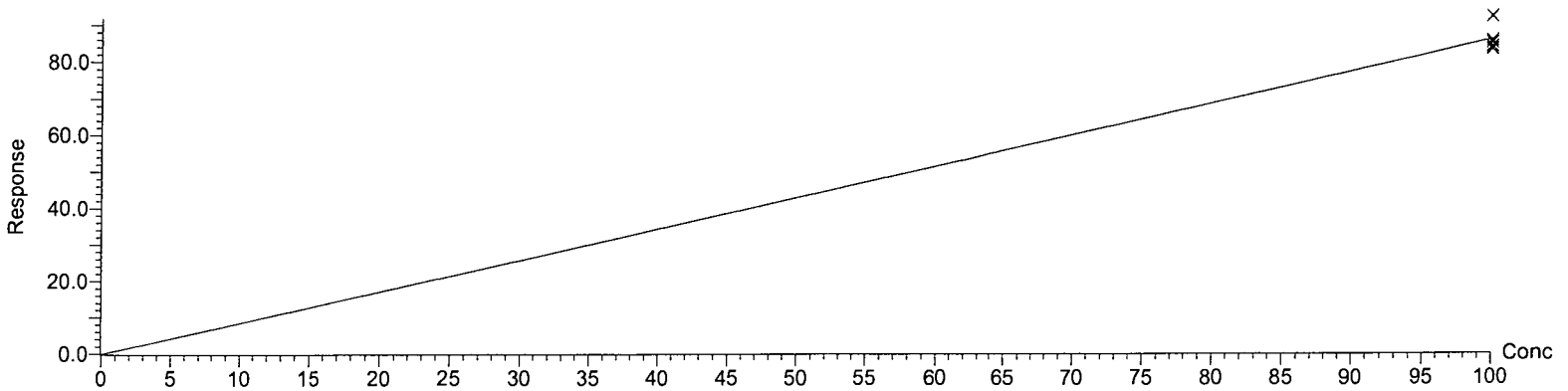
Compound name: 13C-1,2,3,6,7,8-HxCDD
Response Factor: 0.934186
RRF SD: 0.0249751, % Relative SD: 2.67346
Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,4,6,7,8-HpCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	1.07	NO	55.45	1.336763e5	1.244466e5	0.85270
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	1.03	NO	55.52	1.196254e5	1.164198e5	0.83557
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	1.04	NO	55.48	8.646509e4	8.303366e4	0.82925
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	1.07	NO	55.43	2.880460e5	2.685003e5	0.84618
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	1.07	NO	55.40	1.851626e5	1.733381e5	0.91795

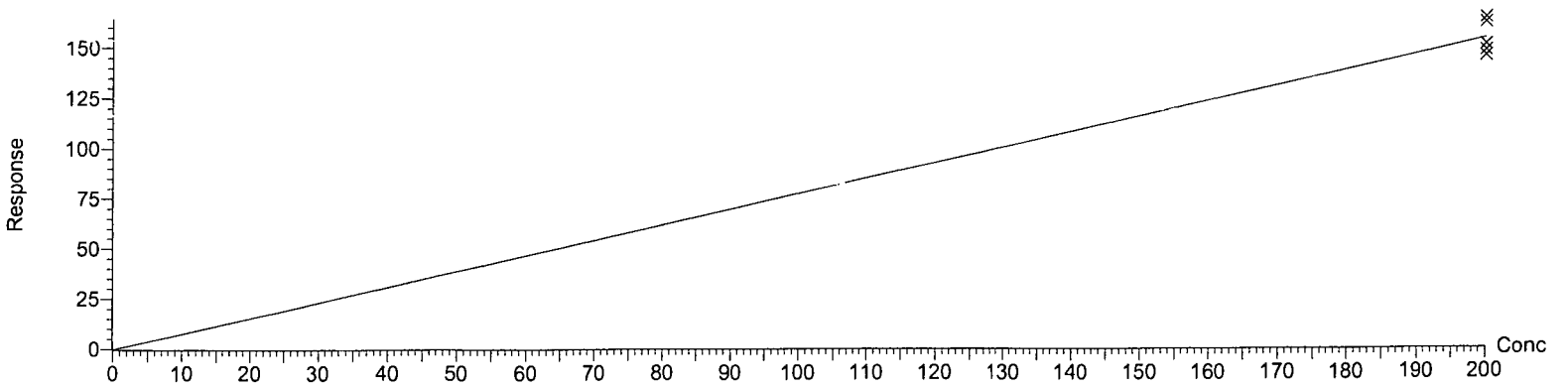
Compound name: 13C-1,2,3,4,6,7,8-HpCDD
Response Factor: 0.856329
RRF SD: 0.0356309, % Relative SD: 4.16089
Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-OCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	200.00	0.88	NO	62.04	2.334295e5	2.638118e5	0.82131
2	151012_HR_04	EDF-9999 CS-2 01/02/15	200.00	0.90	NO	62.14	1.982400e5	2.199400e5	0.74015
3	151012_HR_05	EDF-9999 CS-3 07/16/15	200.00	0.90	NO	62.08	1.405424e5	1.567201e5	0.72716
4	151012_HR_06	EDF-9999 CS-4 01/02/15	200.00	0.88	NO	62.04	4.655180e5	5.272126e5	0.75468
5	151012_HR_07	EDF-9999 CS-5 01/02/15	200.00	0.89	NO	61.99	2.983219e5	3.337652e5	0.80924

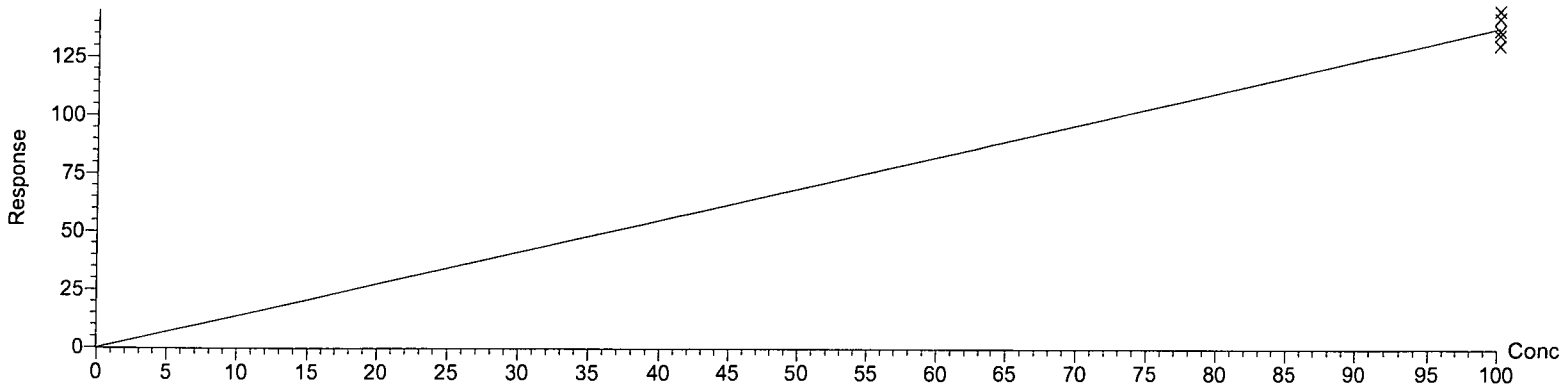
Compound name: 13C-OCDD
Response Factor: 0.770507
RRF SD: 0.0422257, % Relative SD: 5.48026
Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-2,3,7,8-TCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	0.79	NO	31.60	2.823896e5	3.588259e5	1.34627
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	0.80	NO	31.66	2.542487e5	3.194523e5	1.41846
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	0.78	NO	31.63	1.762948e5	2.267653e5	1.36577
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	0.79	NO	31.61	5.553104e5	7.062949e5	1.44991
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	0.80	NO	31.56	3.133500e5	3.895045e5	1.30255

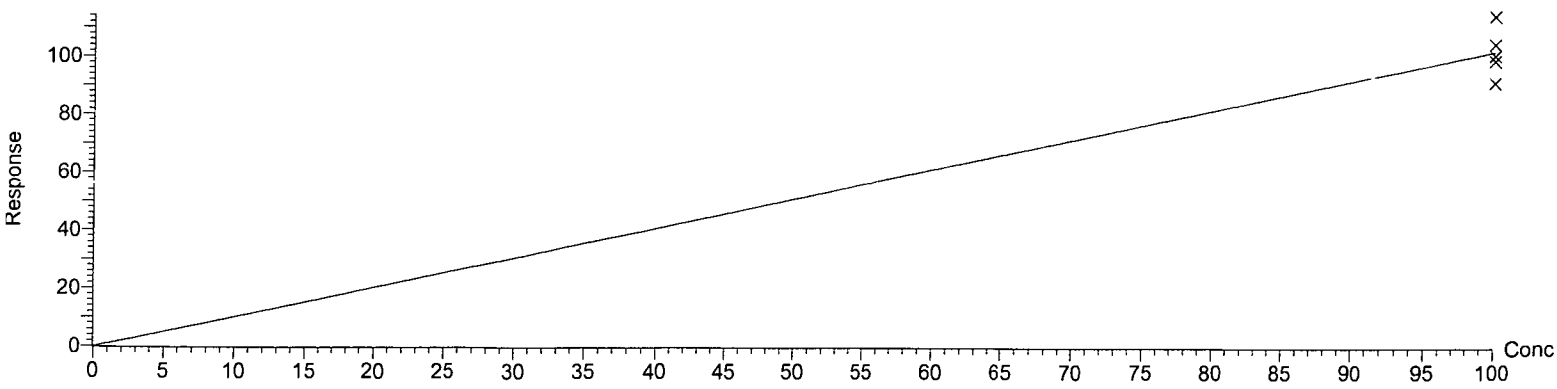
Compound name: 13C-2,3,7,8-TCDF
Response Factor: 1.37659
RRF SD: 0.0584132, % Relative SD: 4.24332
Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,7,8-PeCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	1.56	NO	38.84	2.658918e5	1.701958e5	0.91559
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	1.58	NO	38.92	2.497081e5	1.584240e5	1.00910
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	1.58	NO	38.87	1.787883e5	1.135110e5	0.99046
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	1.55	NO	38.85	5.537164e5	3.568134e5	1.04644
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	1.54	NO	38.80	3.745261e5	2.425773e5	1.14363

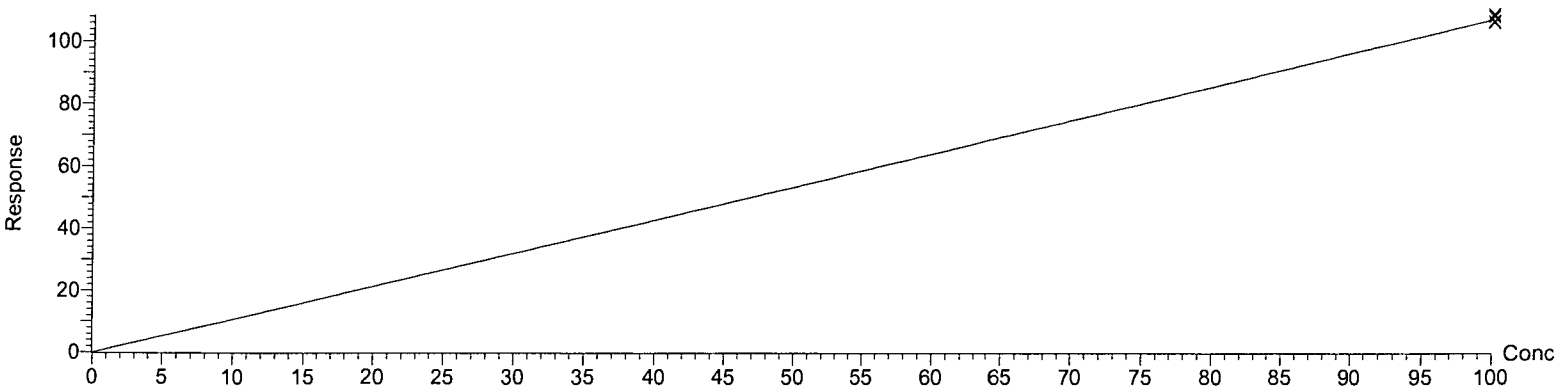
Compound name: 13C-1,2,3,7,8-PeCDF
Response Factor: 1.02104
RRF SD: 0.0834726, % Relative SD: 8.17522
Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,4,7,8-HxCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	0.51	NO	47.02	1.080758e5	2.137027e5	1.06298
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	0.50	NO	47.11	1.018358e5	2.025172e5	1.07737
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	0.51	NO	47.06	7.334993e4	1.430894e5	1.05890
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	0.50	NO	47.04	2.339857e5	4.639788e5	1.06119
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	0.52	NO	46.98	1.442597e5	2.794248e5	1.08486

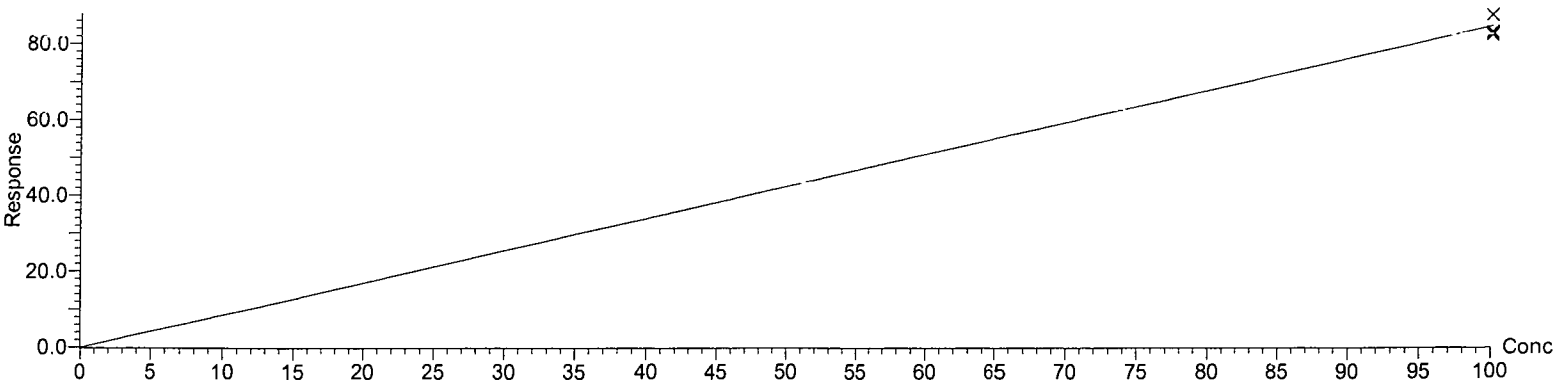
Compound name: 13C-1,2,3,4,7,8-HxCDF
Response Factor: 1.06906
RRF SD: 0.0114098, % Relative SD: 1.06728
Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,4,6,7,8-HpCDF

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	0.42	NO	53.26	7.864098e4	1.869560e5	0.87739
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	0.44	NO	53.34	7.174874e4	1.633803e5	0.83232
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	0.44	NO	53.30	5.117745e4	1.172860e5	0.82418
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	0.43	NO	53.27	1.633032e5	3.806613e5	0.82705
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	0.44	NO	53.22	1.039347e5	2.384531e5	0.87670

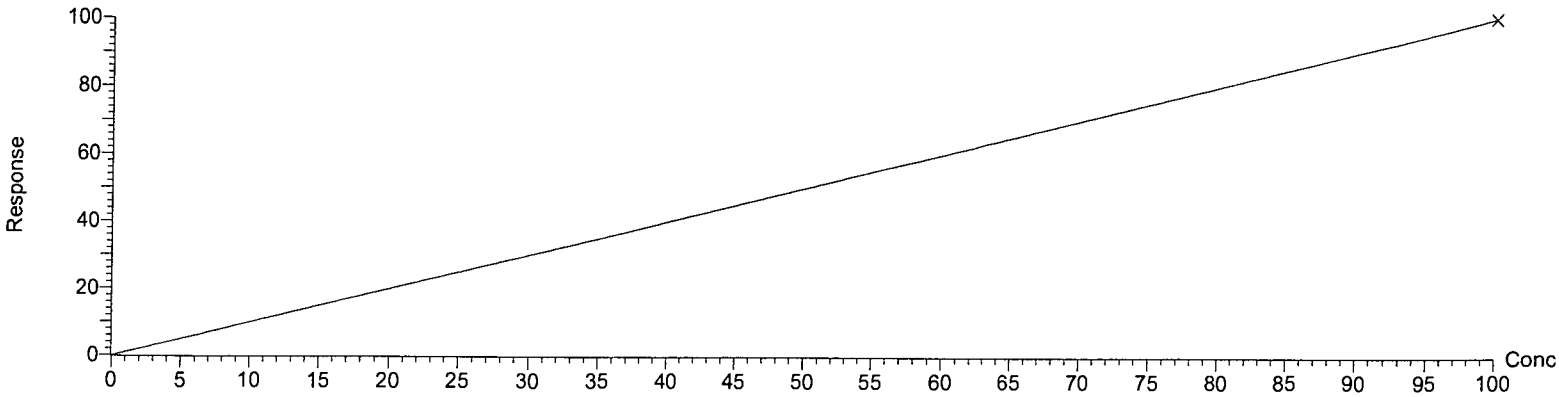
Compound name: 13C-1,2,3,4,6,7,8-HpCDF
Response Factor: 0.847528
RRF SD: 0.0271003, % Relative SD: 3.19757
Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,4-TCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	0.80	NO	31.85	2.121530e5	2.641377e5	1.00000
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	0.78	NO	31.90	1.767911e5	2.276616e5	1.00000
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	0.82	NO	31.86	1.326338e5	1.624809e5	1.00000
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	0.81	NO	31.85	3.891649e5	4.809596e5	1.00000
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	0.80	NO	31.79	2.390006e5	3.005996e5	1.00000

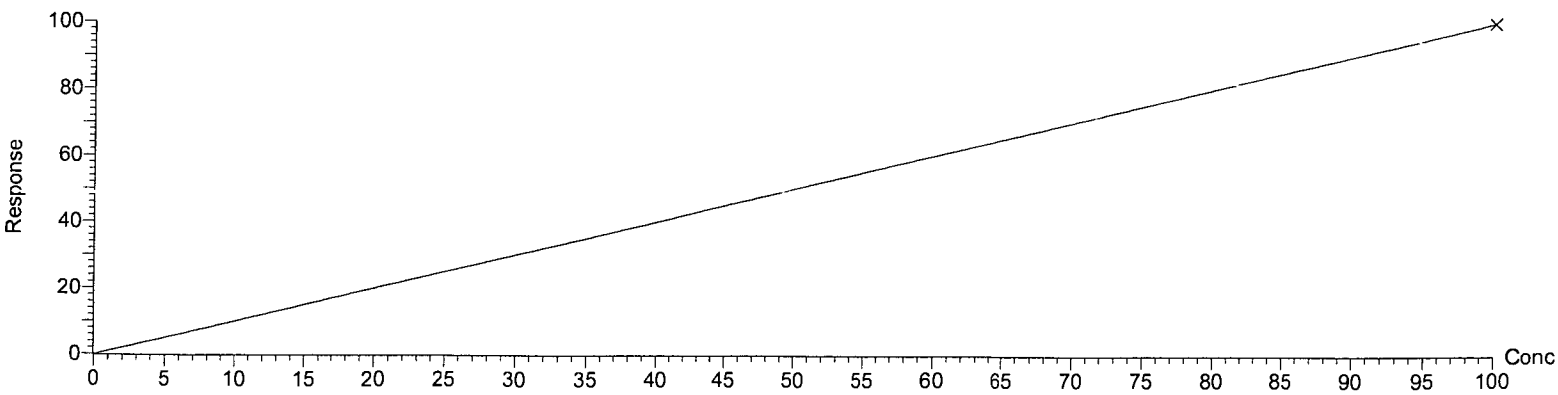
Compound name: 13C-1,2,3,4-TCDD
Response Factor: 1
RRF SD: 0, % Relative SD: 0
Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: 13C-1,2,3,7,8,9-HxCDD

#	Name	Sample Text	Std. Conc	Ion Ratio	IR Fail?	RT	Area	1° Area	RRF
1	151012_HR_03	EDF-9999 CS-1 01/02/15	100.00	1.26	NO	49.60	1.687743e5	1.339397e5	1.00000
2	151012_HR_04	EDF-9999 CS-2 01/02/15	100.00	1.26	NO	49.67	1.576416e5	1.248554e5	1.00000
3	151012_HR_05	EDF-9999 CS-3 07/16/15	100.00	1.21	NO	49.65	1.119798e5	9.242074e4	1.00000
4	151012_HR_06	EDF-9999 CS-4 01/02/15	100.00	1.24	NO	49.62	3.647096e5	2.930059e5	1.00000
5	151012_HR_07	EDF-9999 CS-5 01/02/15	100.00	1.25	NO	49.56	2.167936e5	1.737496e5	1.00000

Compound name: 13C-1,2,3,7,8,9-HxCDD
Response Factor: 1
RRF SD: 0, % Relative SD: 0
Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)
Curve type: RF



Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

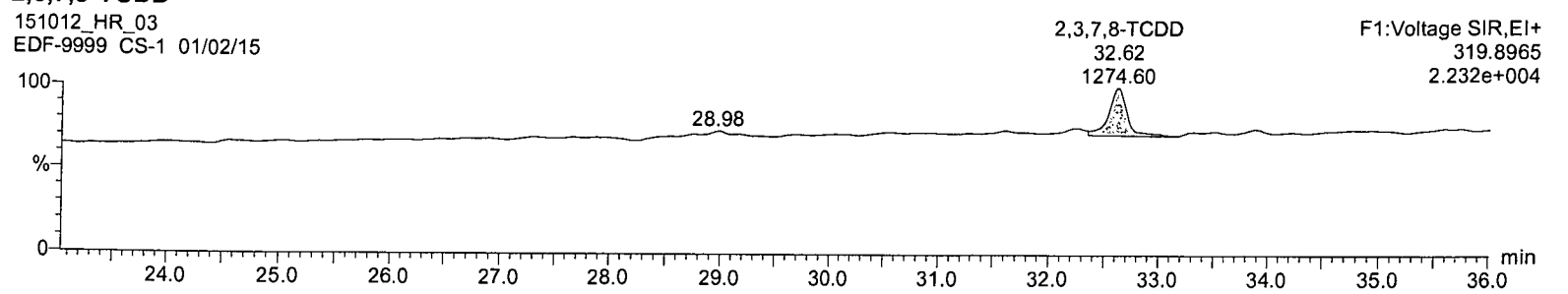
Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, ID: , Description: EDF-9999 CS-1 01/02/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N	Signal 2	Noise 2	S/N 2	Flag S/N
1	2,3,7,8-TCDD	6.4320000e3	1.1022800e2	60.63	NO	9.5030000e3	1.0550471e2	90.07	NO
2	1,2,3,7,8-PeCDD	3.0943000e4	1.2417373e2	239.02	NO	2.0358000e4	2.0302191e2	100.27	NO
3	1,2,3,4,7,8-HxCDD	3.9632000e4	1.5408075e2	256.12	NO	3.0465000e4	3.6588763e2	83.26	NO
4	1,2,3,6,7,8-HxCDD	3.7250000e4	1.5408075e2	240.92	NO	2.7036000e4	3.6588763e2	73.89	NO
5	1,2,3,7,8,9-HxCDD	3.1703000e4	1.5408075e2	205.56	NO	2.6183000e4	3.6588763e2	71.56	NO
6	1,2,3,4,6,7,8-HpCDD	2.8781000e4	5.3802850e2	53.29	NO	2.7431000e4	2.5665176e2	106.88	NO
7	OCDD	4.2884000e4	5.3997391e1	792.68	NO	4.8541000e4	9.6849884e1	501.20	NO
8	2,3,7,8-TCDF	1.0263000e4	1.1159624e2	95.50	NO	1.4742000e4	1.3721187e2	107.44	NO
9	1,2,3,7,8-PeCDF	4.4580000e4	1.6200836e2	277.08	NO	2.8641000e4	1.1353768e2	252.26	NO
10	2,3,4,7,8-PeCDF	4.1521000e4	1.6200836e2	251.12	NO	2.7601000e4	1.1353768e2	243.10	NO
11	1,2,3,4,7,8-HxCDF	4.3652000e4	1.3936113e2	311.98	NO	3.6167000e4	1.0078146e2	358.87	NO
12	1,2,3,6,7,8-HxCDF	4.4198000e4	1.3936113e2	317.06	NO	3.5232000e4	1.0078146e2	349.59	NO
13	2,3,4,6,7,8-HxCDF	4.7732000e4	1.3936113e2	343.88	NO	3.9493000e4	1.0078146e2	391.87	NO
14	1,2,3,7,8,9-HxCDF	4.2784000e4	1.3936113e2	310.35	NO	3.2964000e4	1.0078146e2	327.08	NO
15	1,2,3,4,6,7,8-HpCDF	4.3938000e4	1.3183871e2	330.51	NO	4.2390000e4	1.4842953e2	285.59	NO
16	1,2,3,4,7,8,9-HpCDF	3.2669000e4	1.3183871e2	250.71	NO	3.3542000e4	1.4842953e2	225.98	NO
17	OCDF	3.8085000e4	1.3074321e2	289.92	NO	4.3819000e4	6.4791428e1	676.31	NO
18	13C-2,3,7,8-TCDD	1.4758060e6	2.6648669e2	5542.63	NO	1.8988070e6	2.2367575e2	8489.11	NO
19	13C-1,2,3,7,8-PeCDD	1.5106810e6	3.7017032e2	4077.54	NO	9.3521500e5	2.5874805e2	3614.38	NO
20	13C-1,2,3,6,7,8-HxCDD	1.3685750e6	5.7495532e3	235.34	NO	1.0917250e6	4.2191084e3	258.76	NO
21	13C-1,2,3,4,6,7,8-HpCDD	1.0968890e6	2.1602673e2	5076.66	NO	1.0253050e6	2.6047733e2	3936.25	NO
22	13C-OCDD	1.8238070e6	2.5886099e2	7042.89	NO	2.0595220e6	3.0533685e2	6745.08	NO
23	13C-2,3,7,8-TCDF	2.2018000e6	1.2958670e4	168.54	NO	2.7586110e6	1.5483207e4	178.17	NO
24	13C-1,2,3,7,8-PeCDF	1.9621290e6	3.7633737e2	5211.78	NO	1.2627830e6	1.0102101e4	125.00	NO
25	13C-1,2,3,4,7,8-HxCDF	9.0322700e5	2.8372089e2	3180.36	NO	1.8203910e6	8.8237659e2	2063.05	NO
26	13C-1,2,3,4,6,7,8-HpCDF	7.2488200e5	2.8847849e2	2508.91	NO	1.7093020e6	3.0853455e2	5540.07	NO
27	13C-1,2,3,4-TCDD	1.8163440e6	2.6648669e2	6817.98	NO	2.2596710e6	2.2367575e2	10102.44	NO
28	13C-1,2,3,7,8,9-HxCDD	1.3291360e6	5.7495532e3	228.68	NO	1.0521410e6	4.2191084e3	249.38	NO

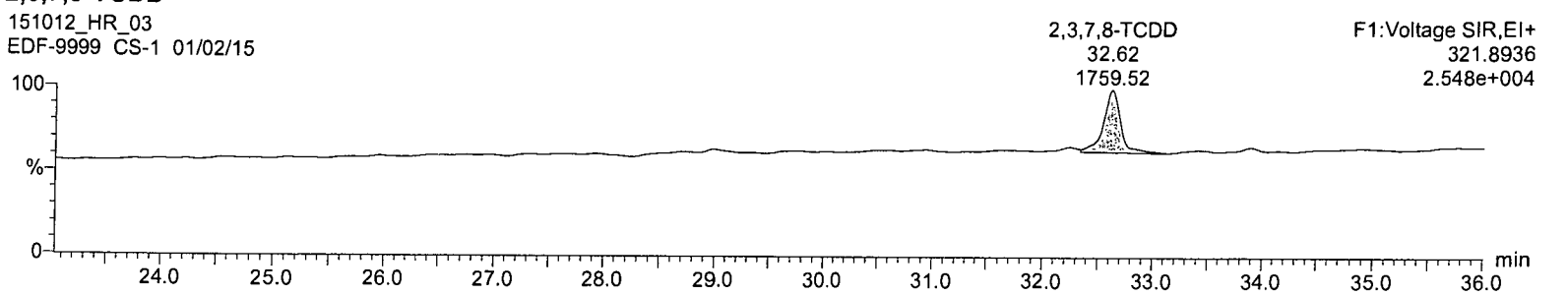
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

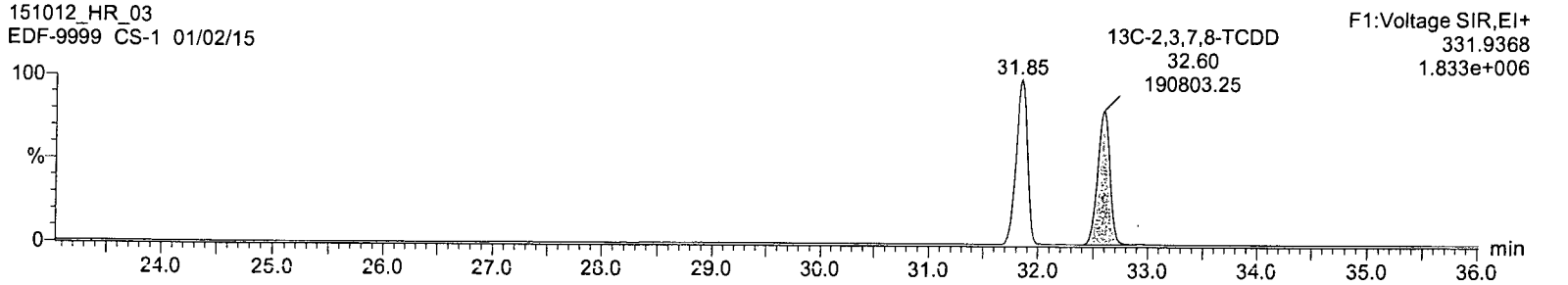
2,3,7,8-TCDD



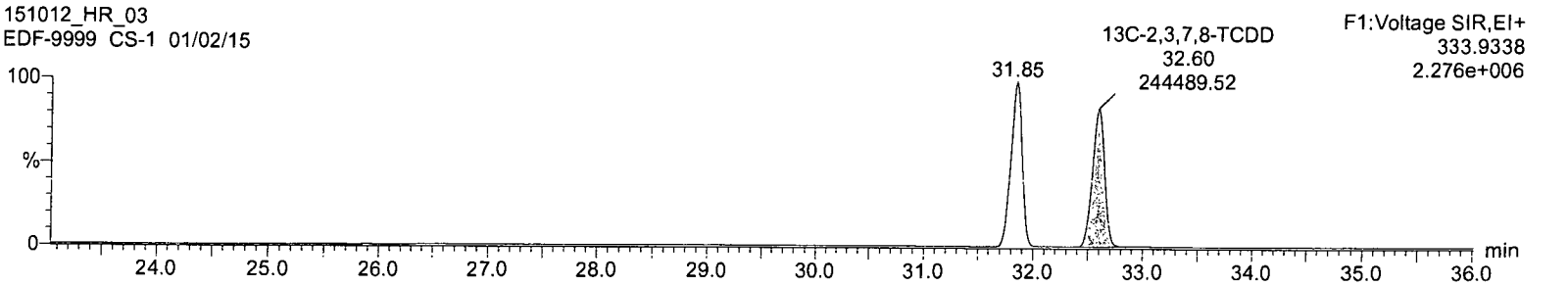
2,3,7,8-TCDD



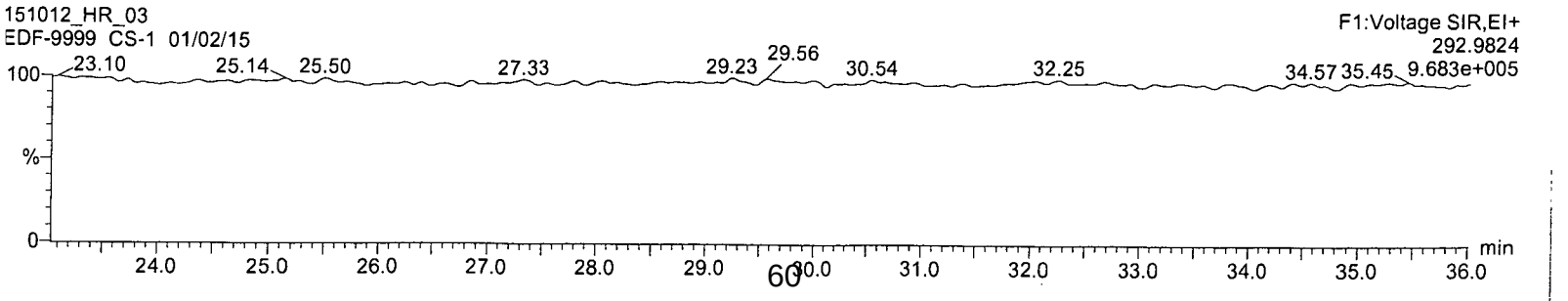
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

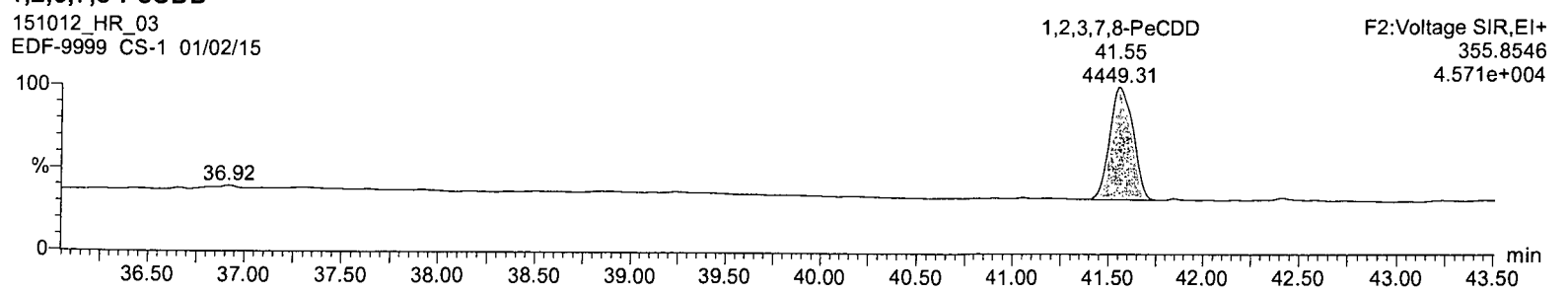


PFK1

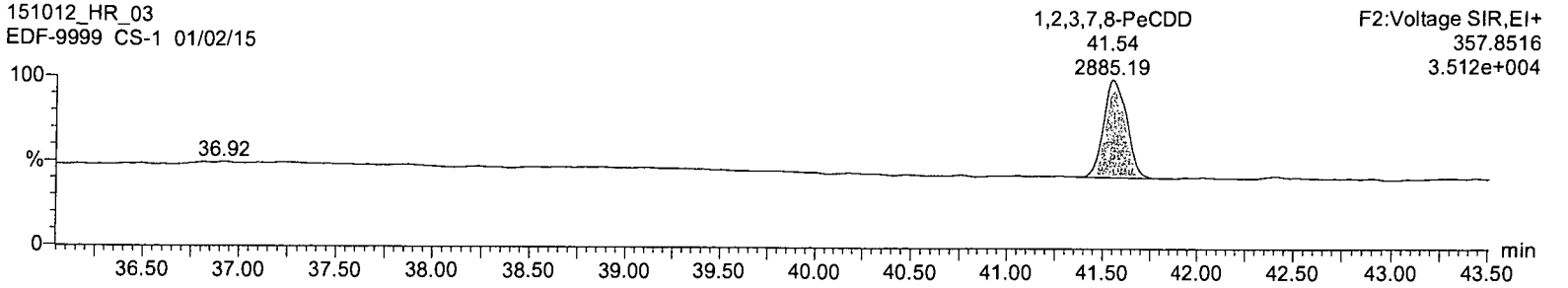


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

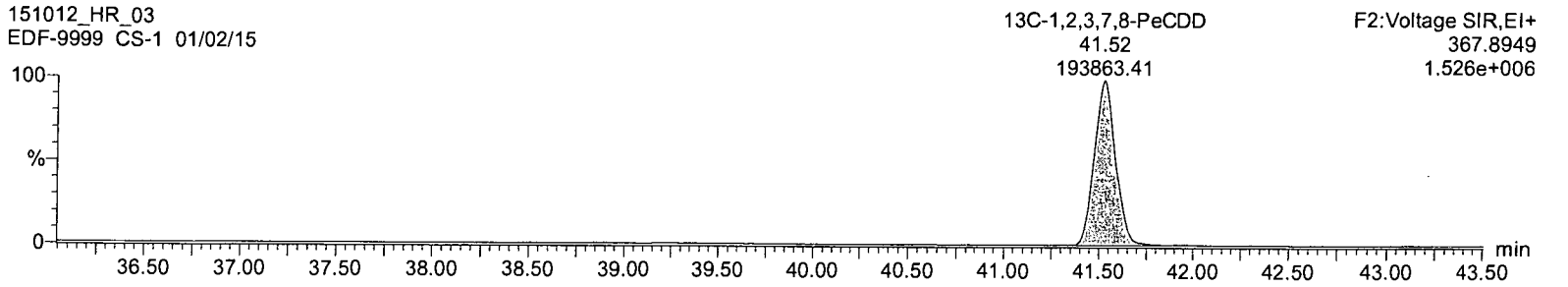
1,2,3,7,8-PeCDD



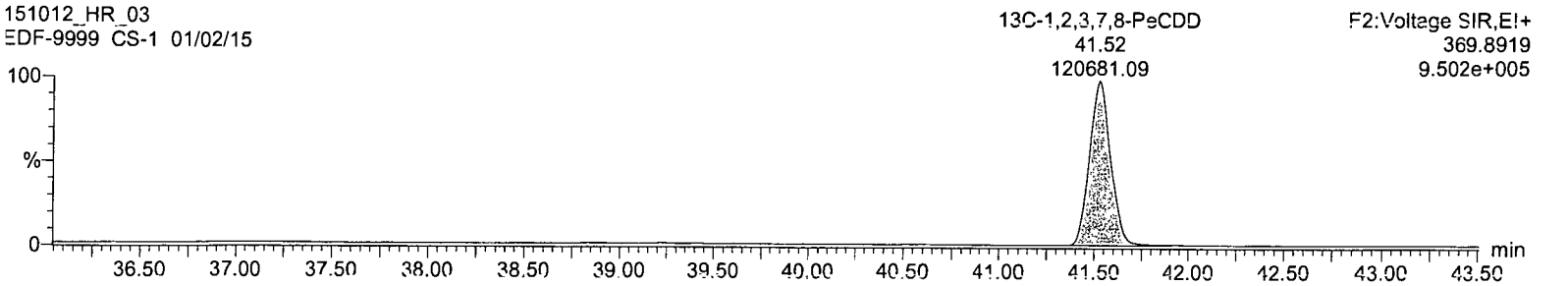
1,2,3,7,8-PeCDD



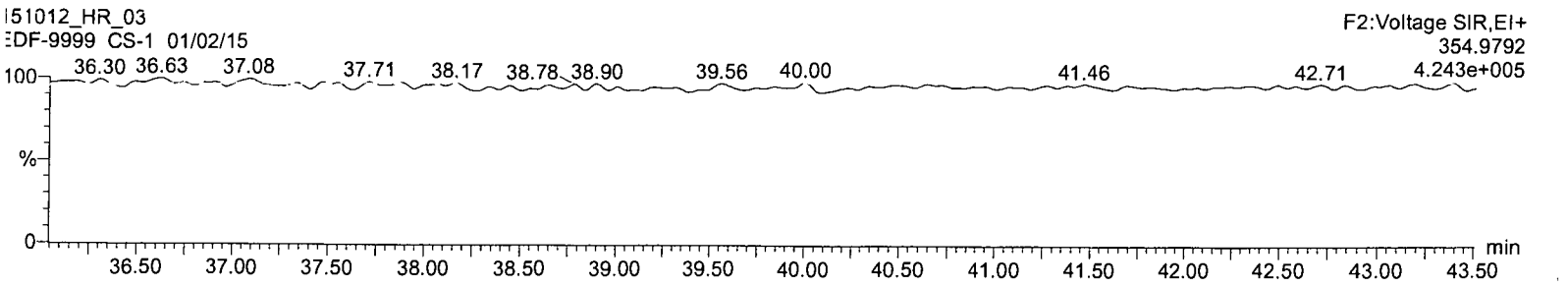
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

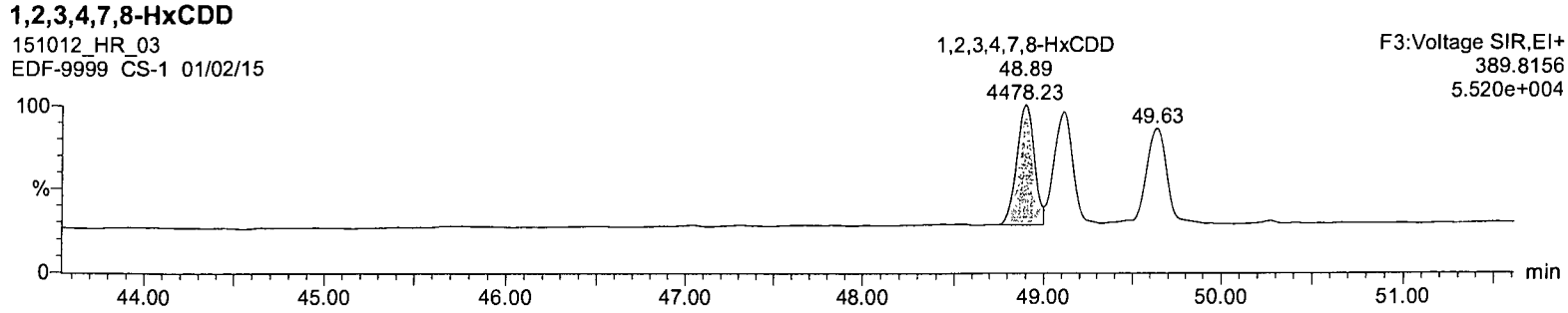


PFK2

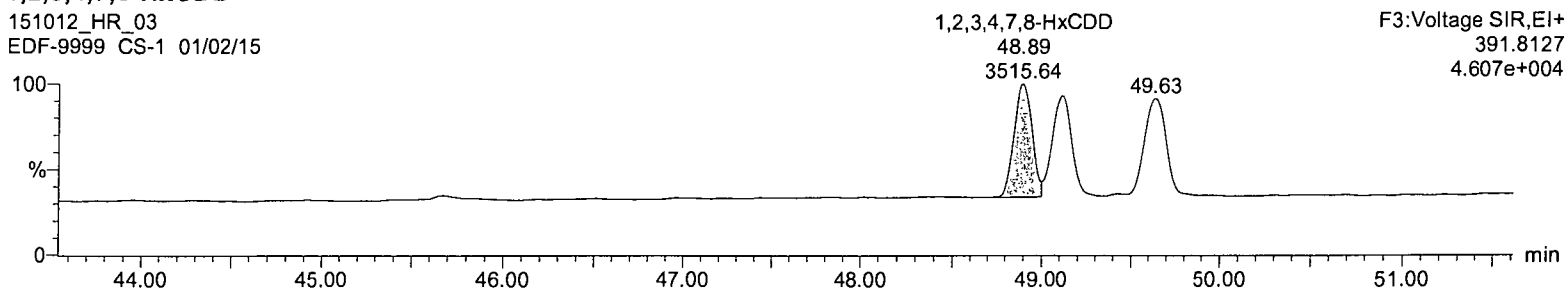


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

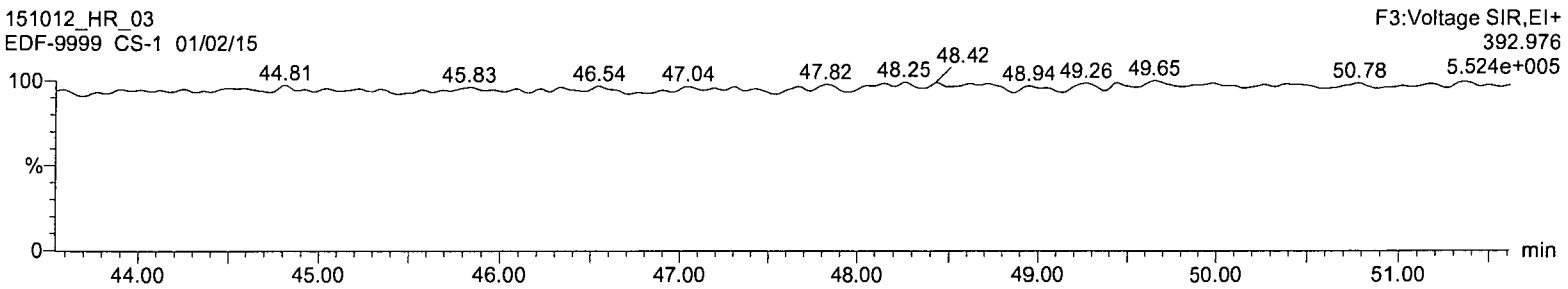
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD



PFK3



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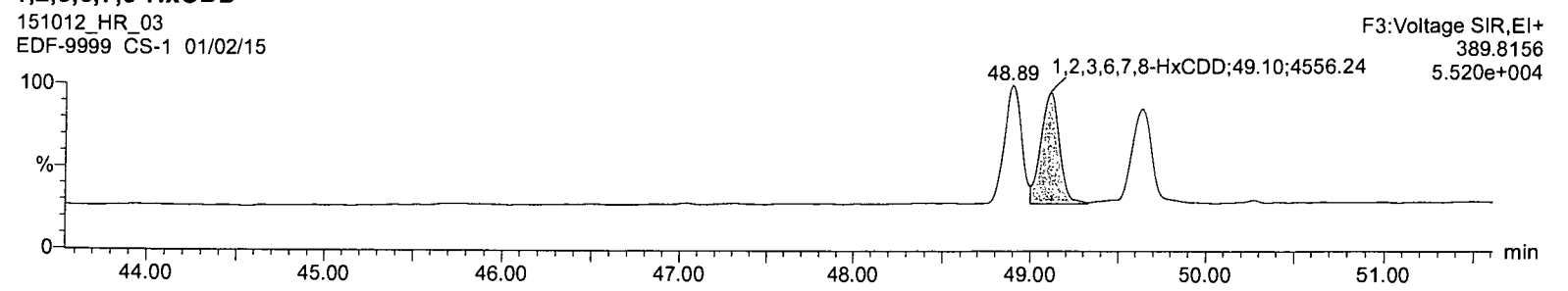
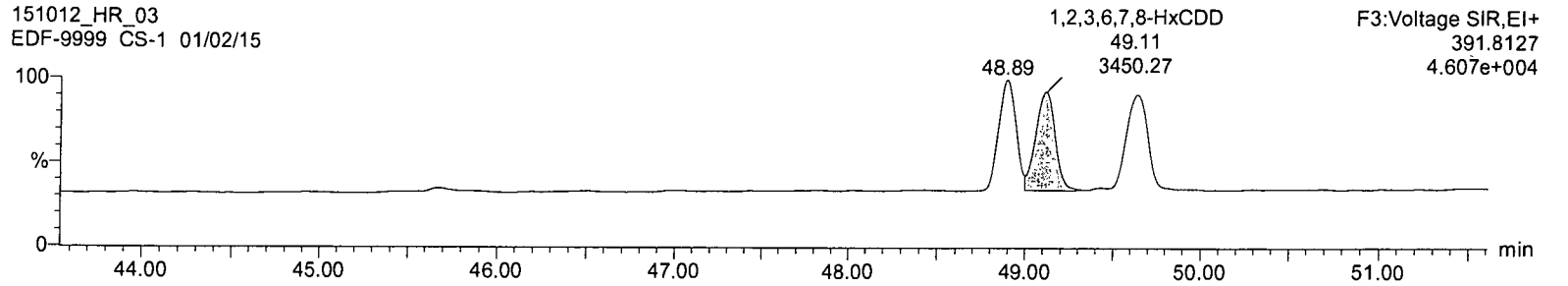
1,2,3,6,7,8-HxCDD



1,2,3,6,7,8-HxCDD



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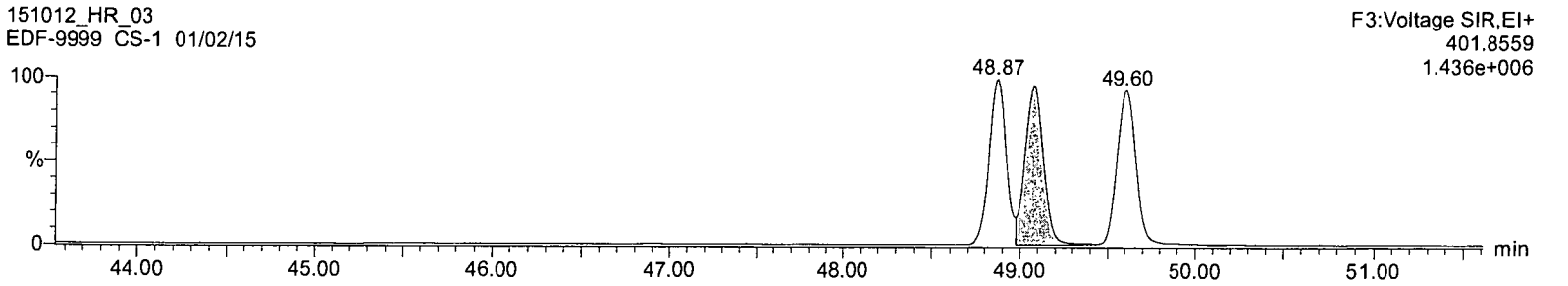

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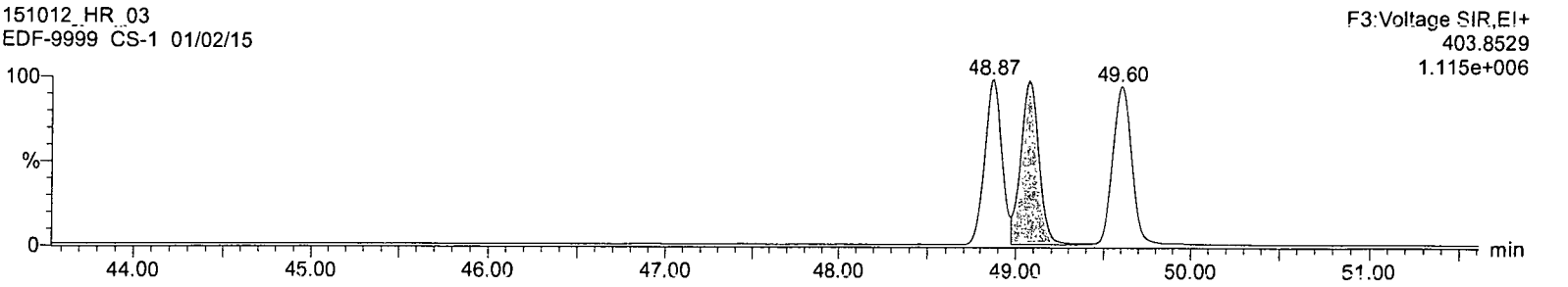

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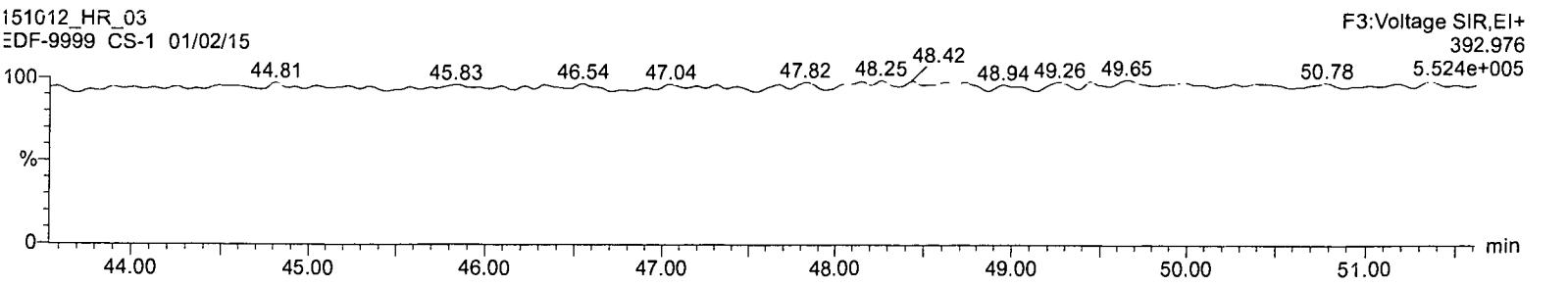

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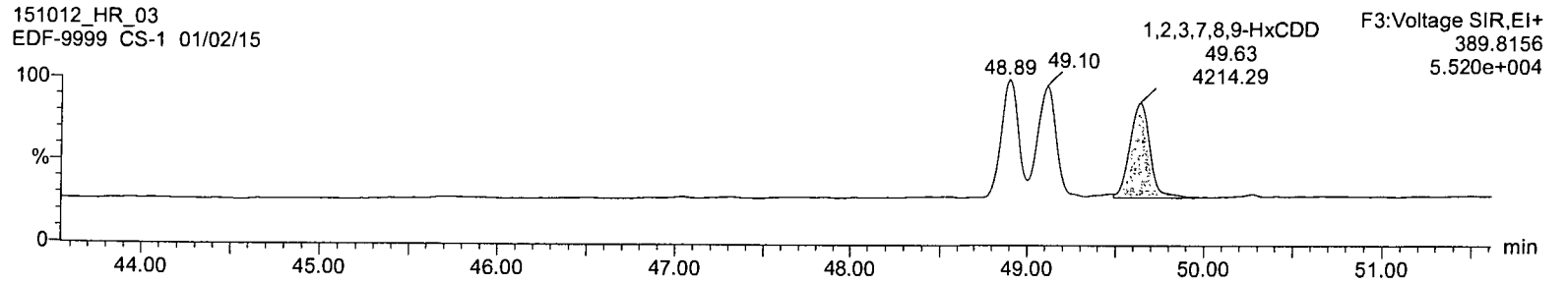
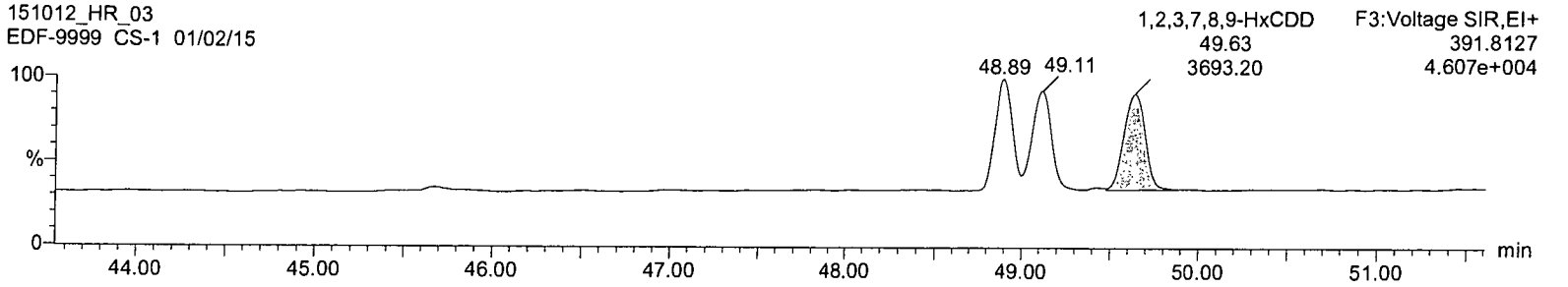
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD



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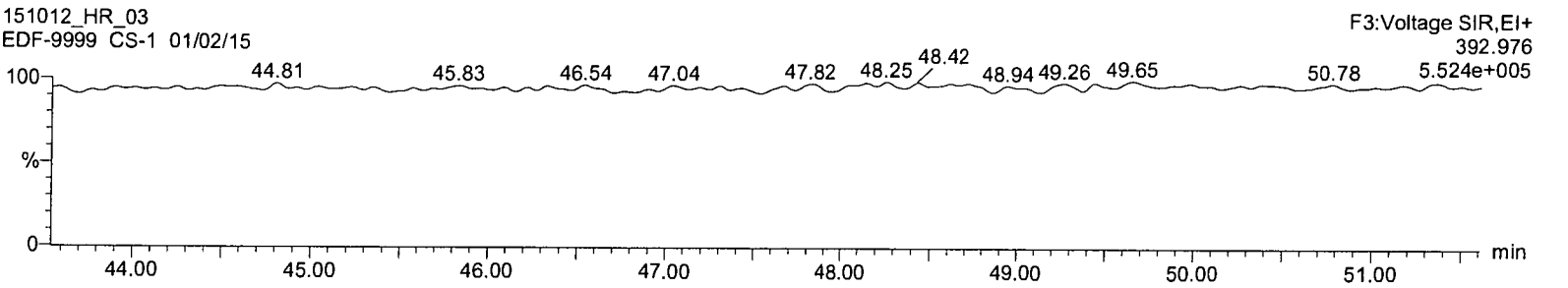

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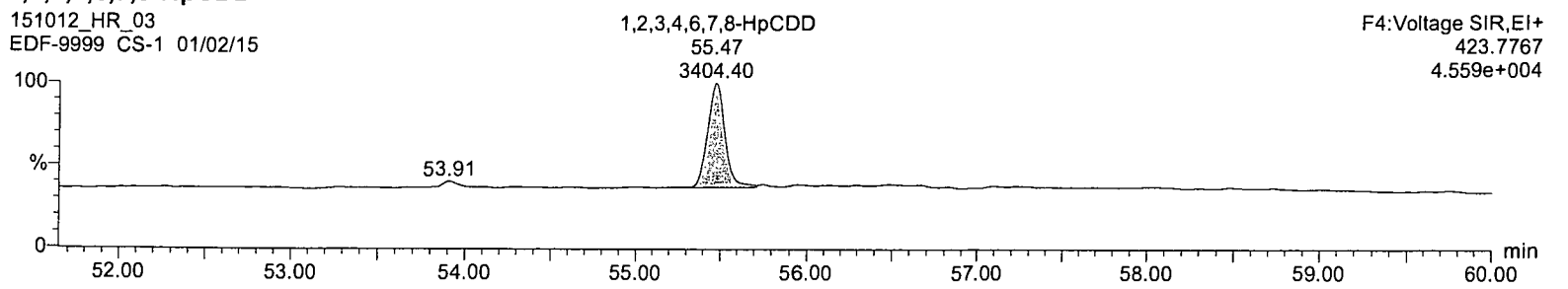
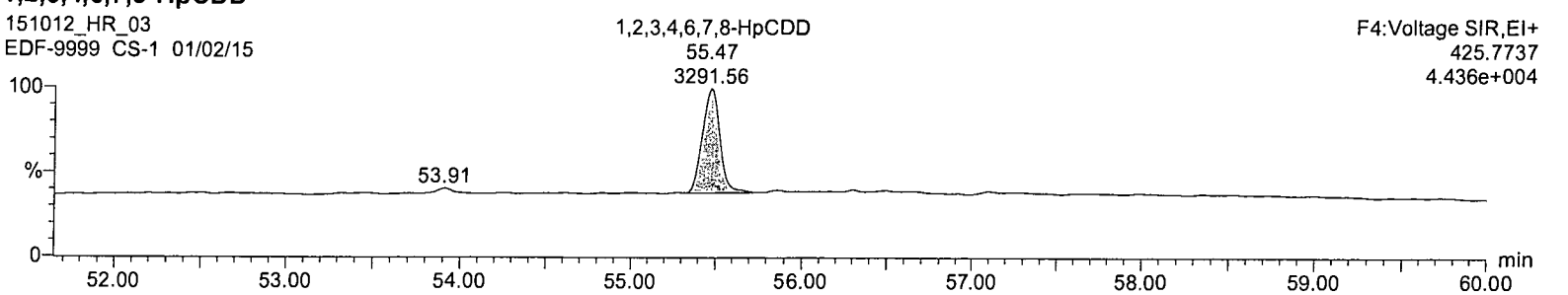
1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



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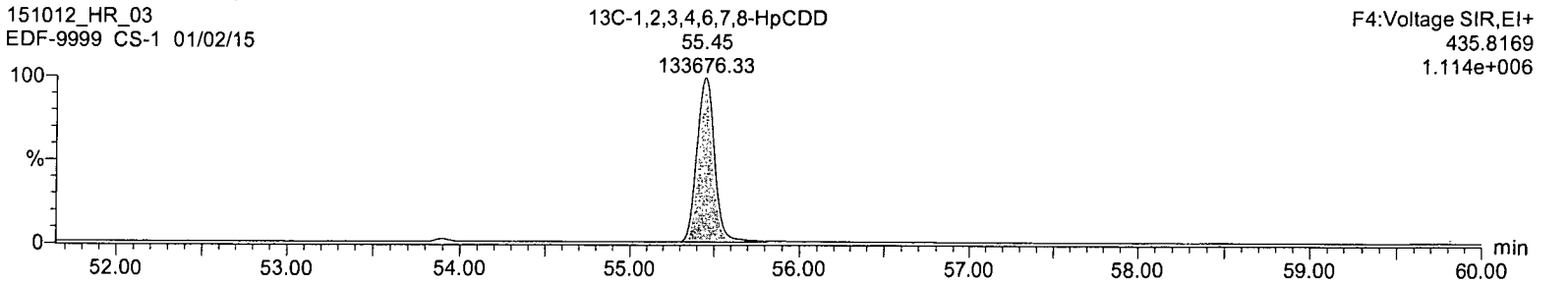

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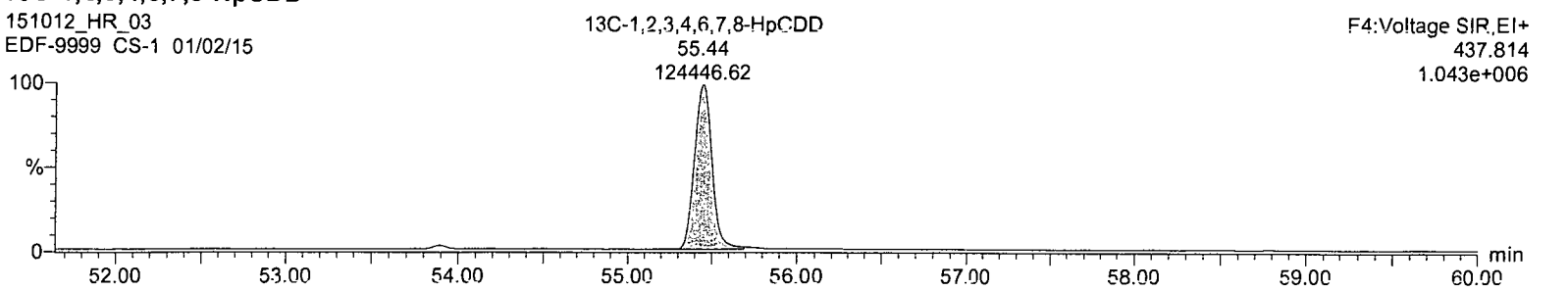
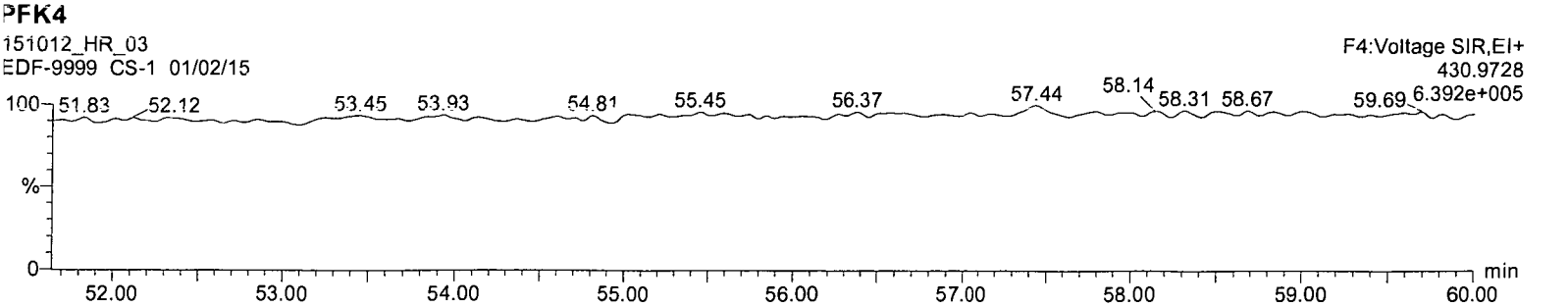
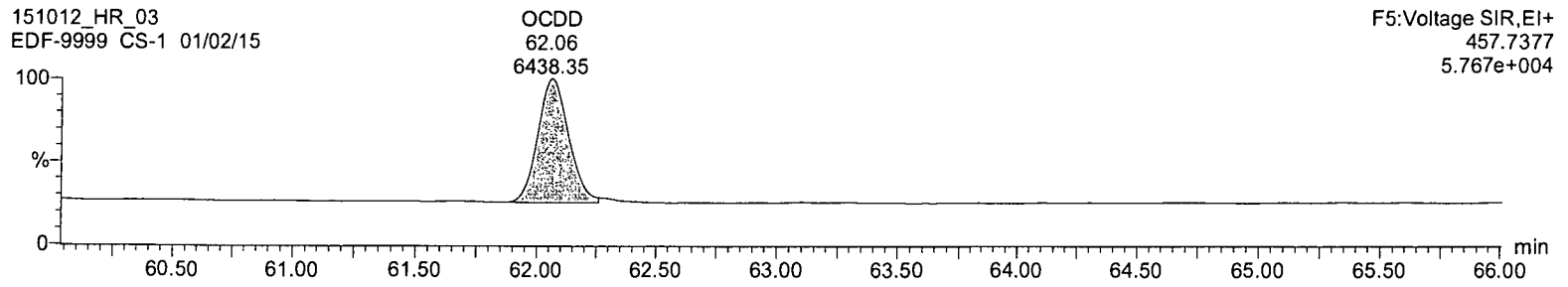


PFK4

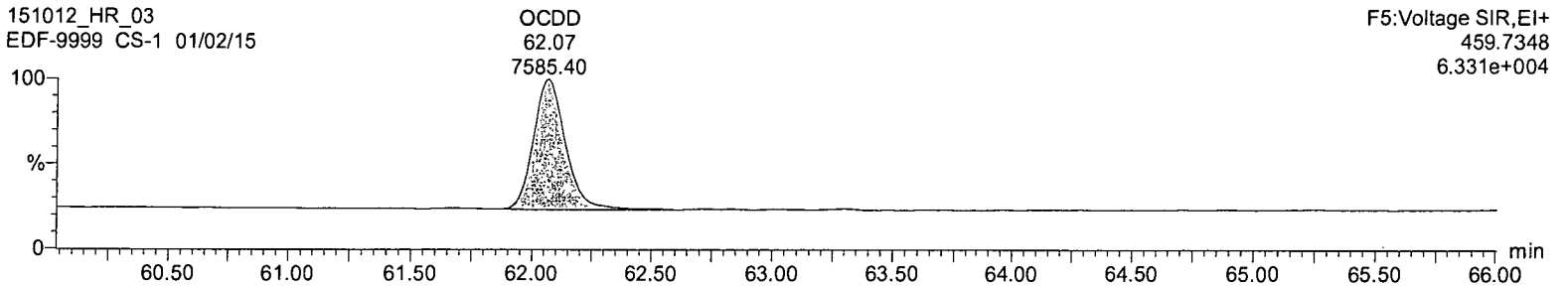


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

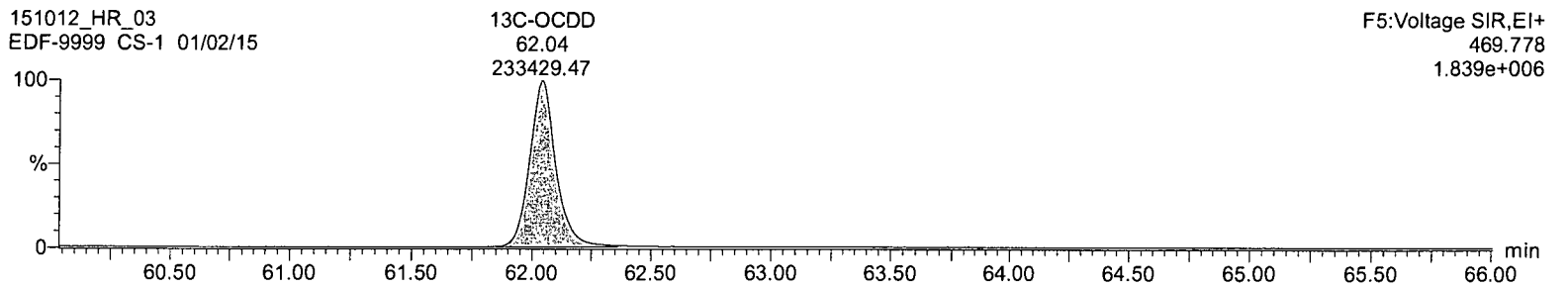
OCDD



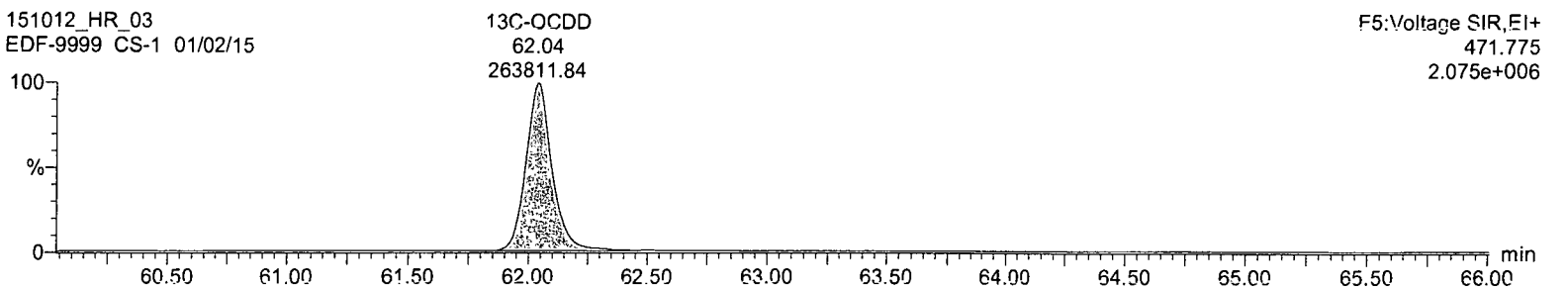
OCDD



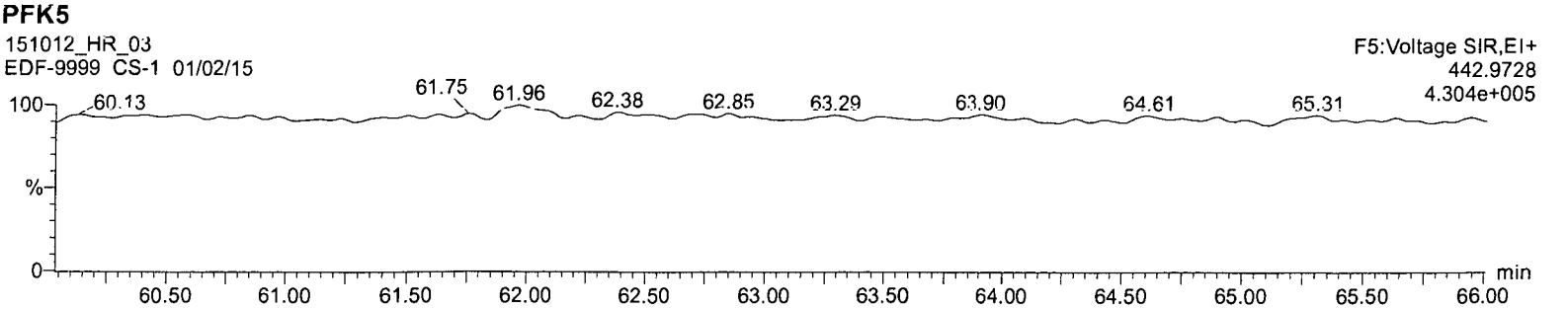
13C-OCDD



13C-OCDD

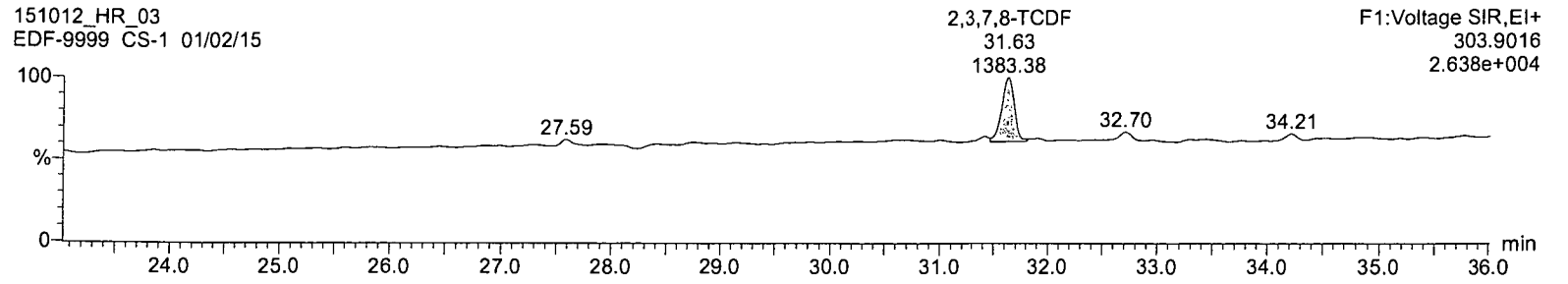


PFK5

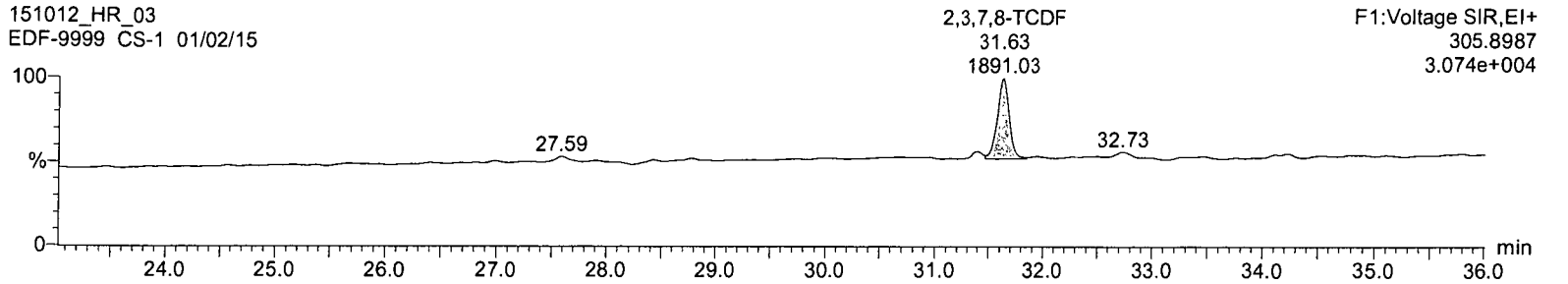


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

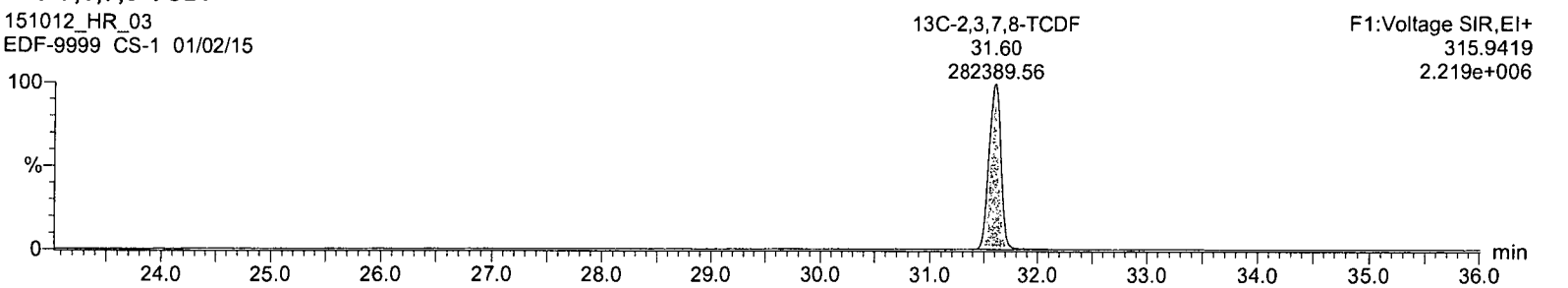
2,3,7,8-TCDF



2,3,7,8-TCDF



13C-2,3,7,8-TCDF



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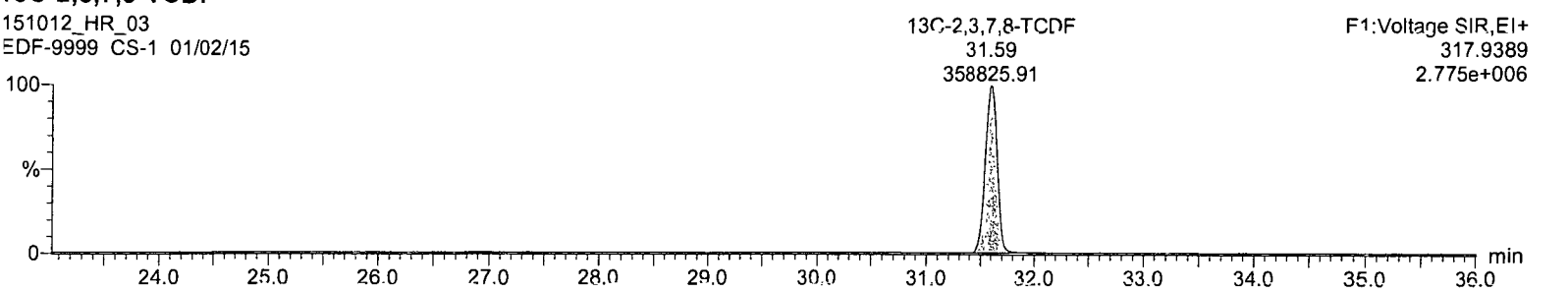

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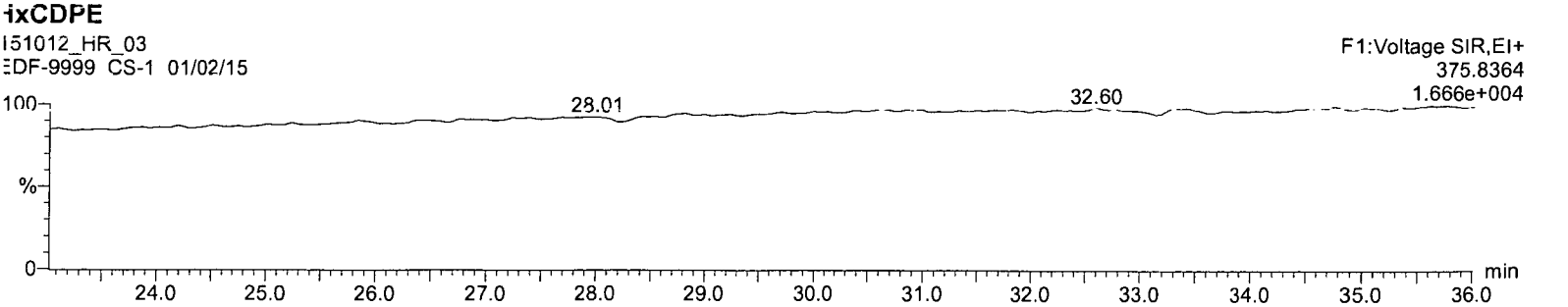

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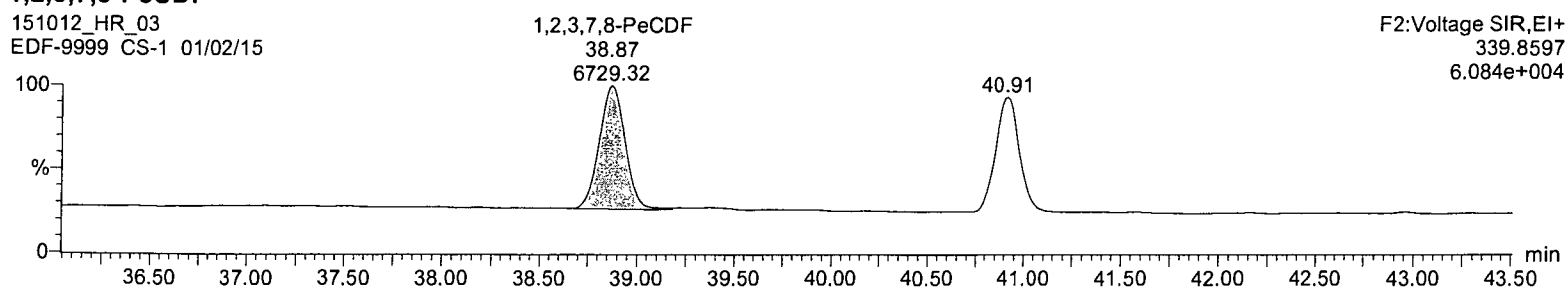
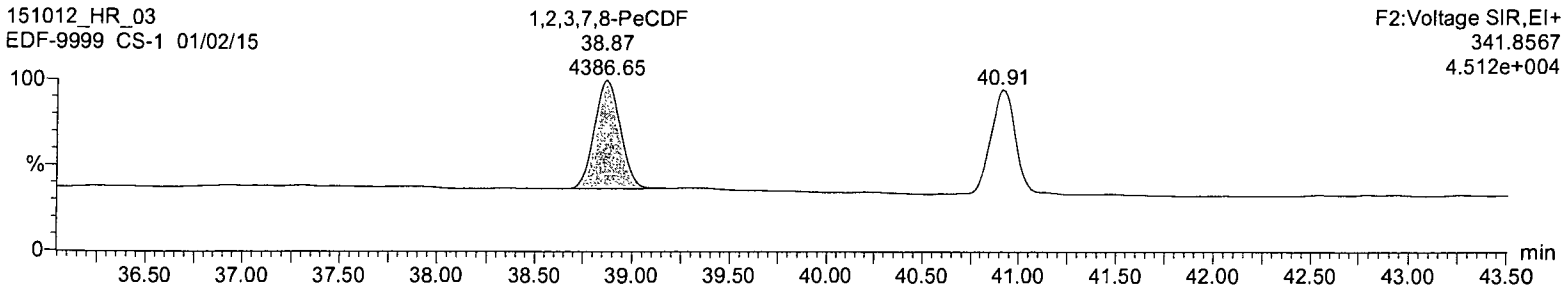
1,2,3,7,8-PeCDF



1,2,3,7,8-PeCDF



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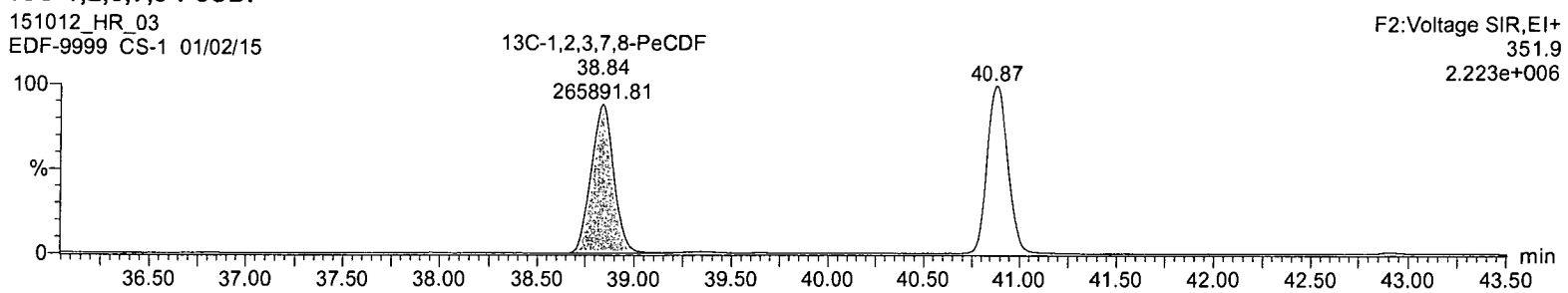
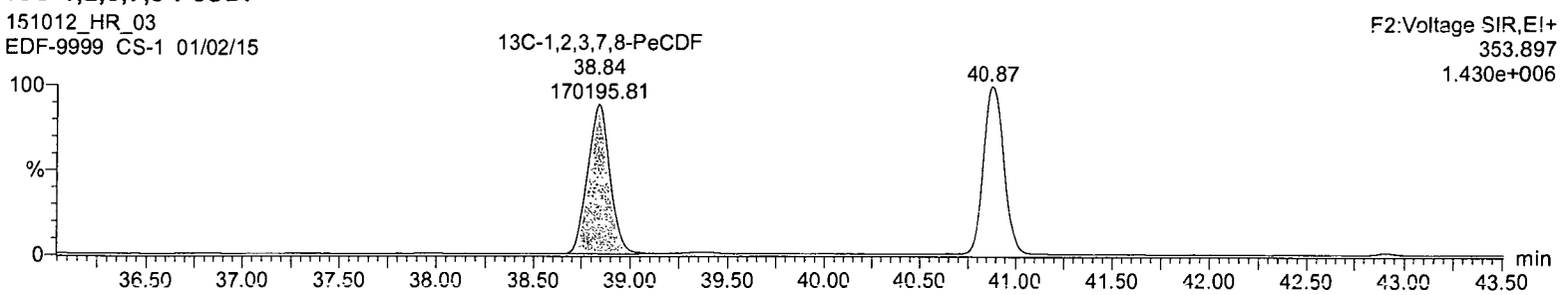
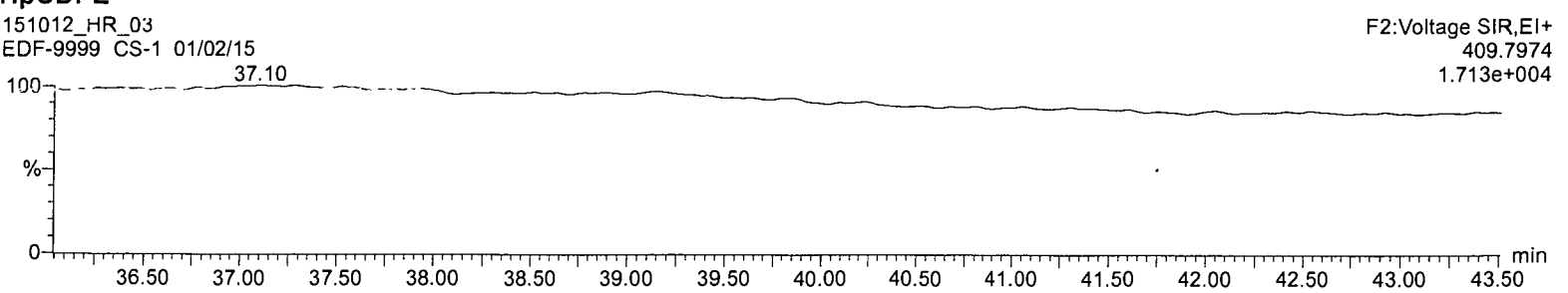


13C-1,2,3,7,8-PeCDF



HpCDPE



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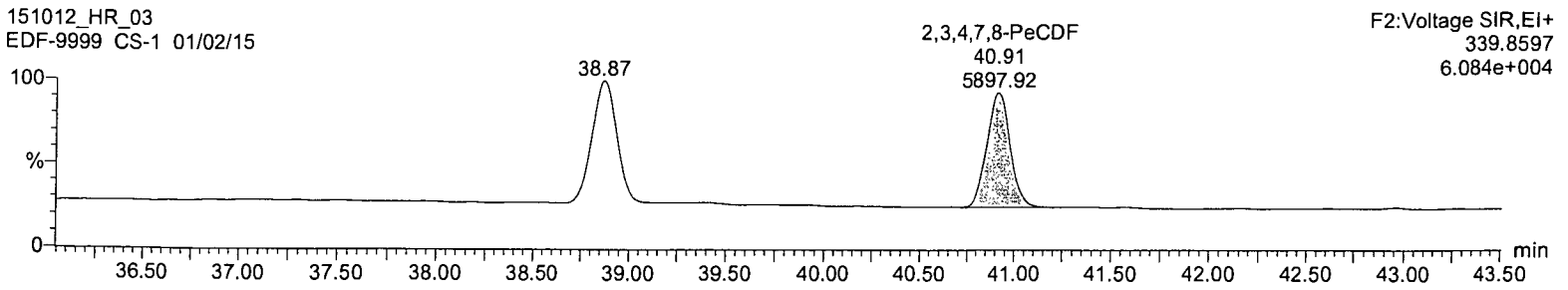
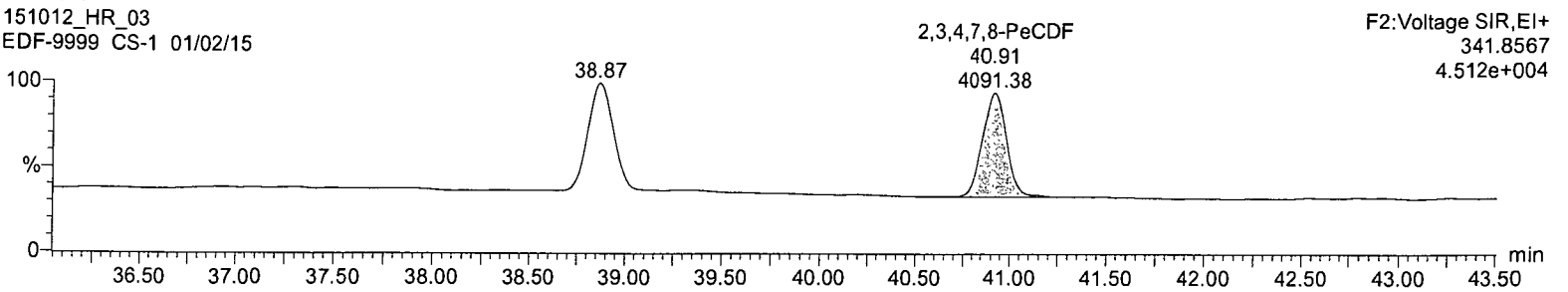
2,3,4,7,8-PeCDF



2,3,4,7,8-PeCDF



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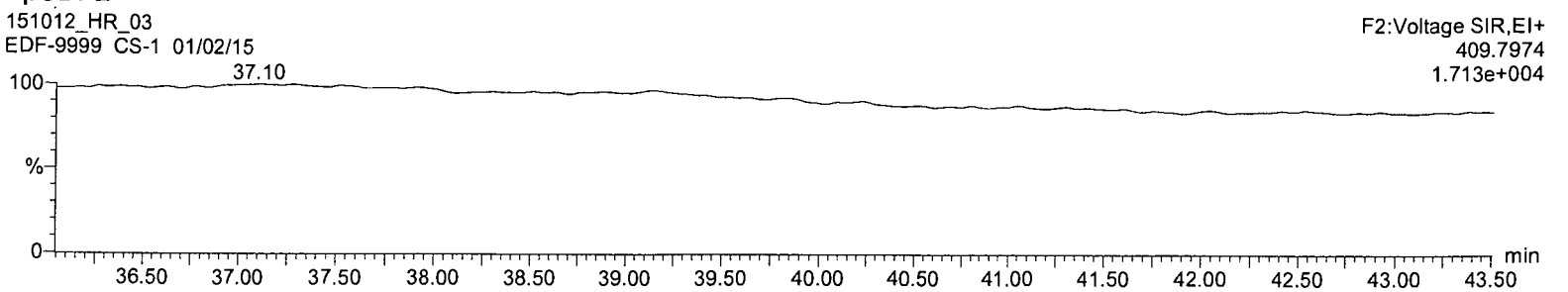

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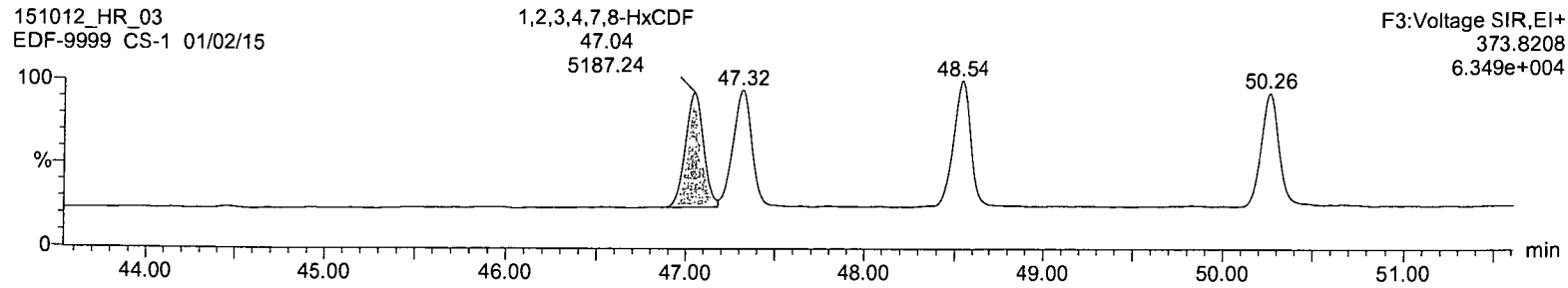
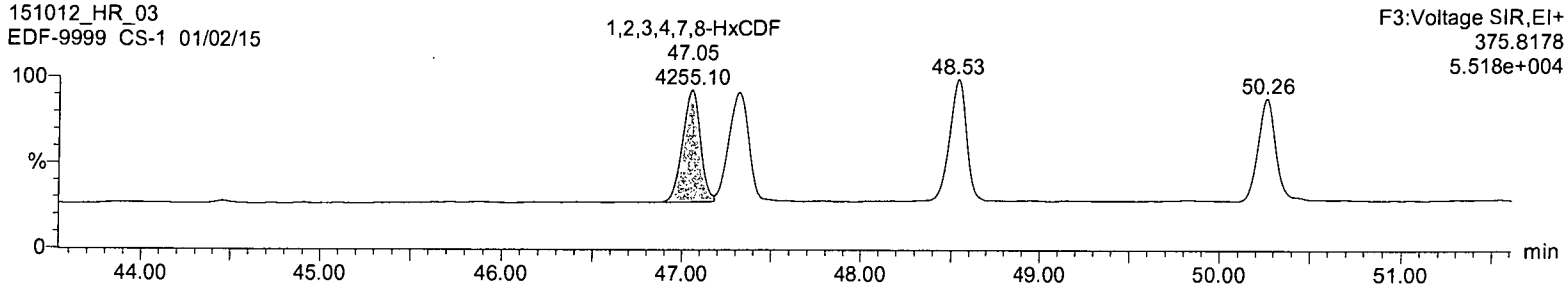
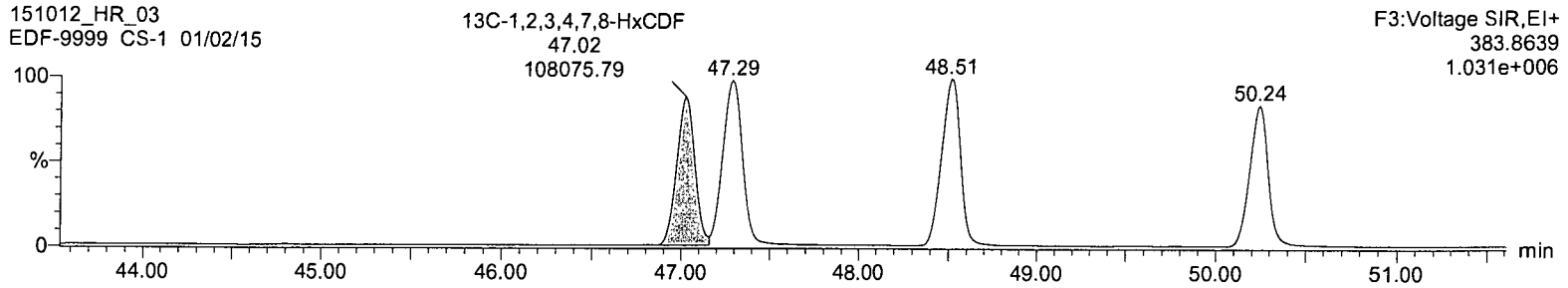
1,2,3,4,7,8-HxCDF



1,2,3,4,7,8-HxCDF



13C-1,2,3,4,7,8-HxCDF



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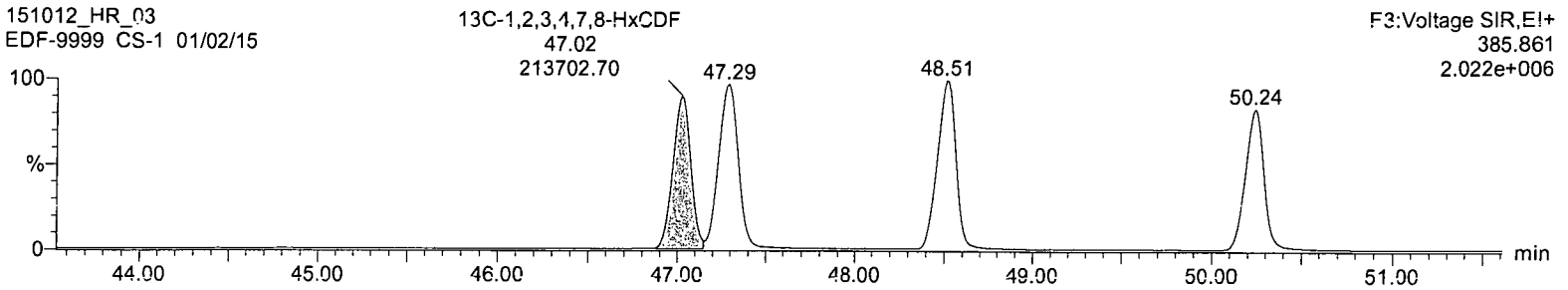
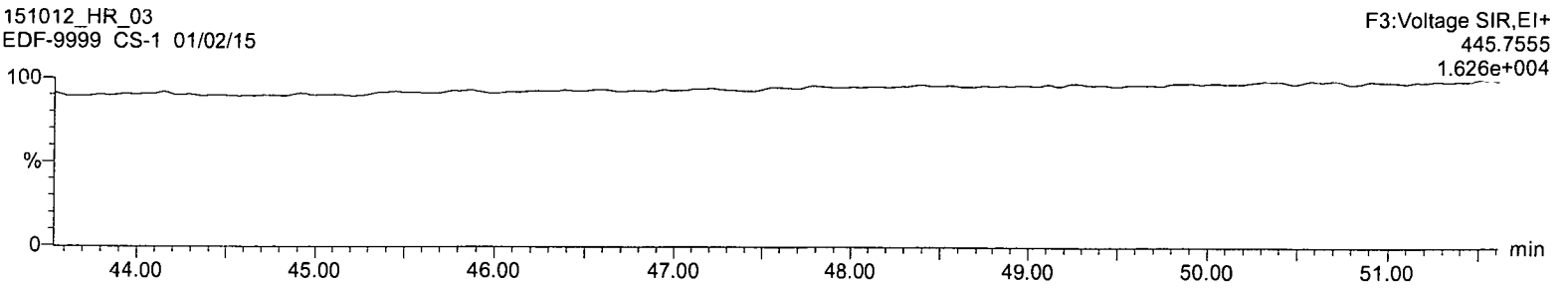


OCDPE



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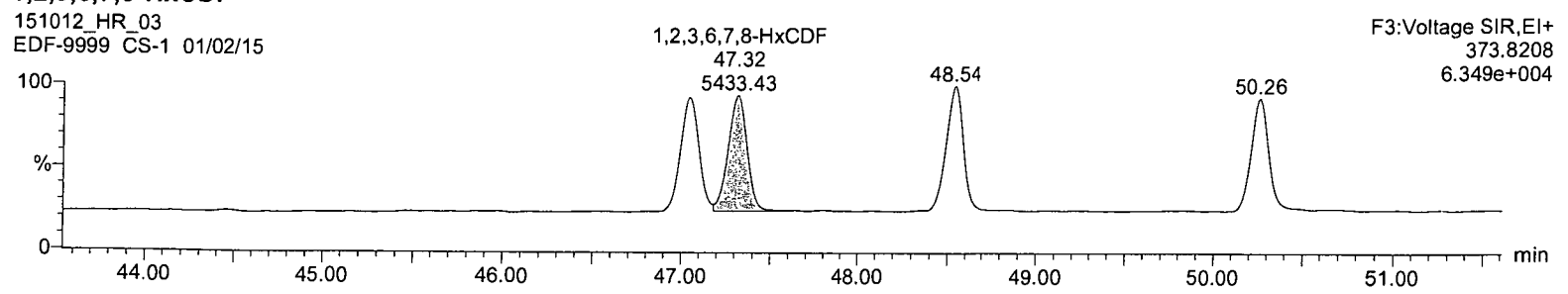
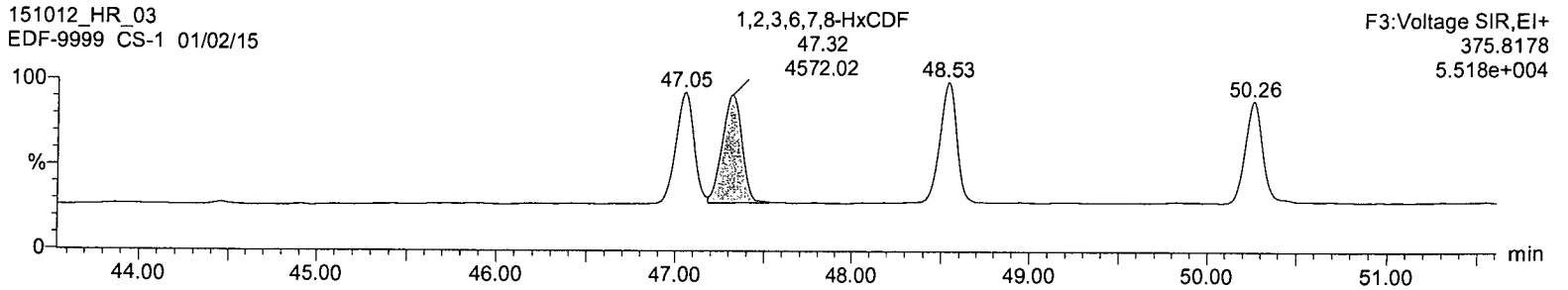
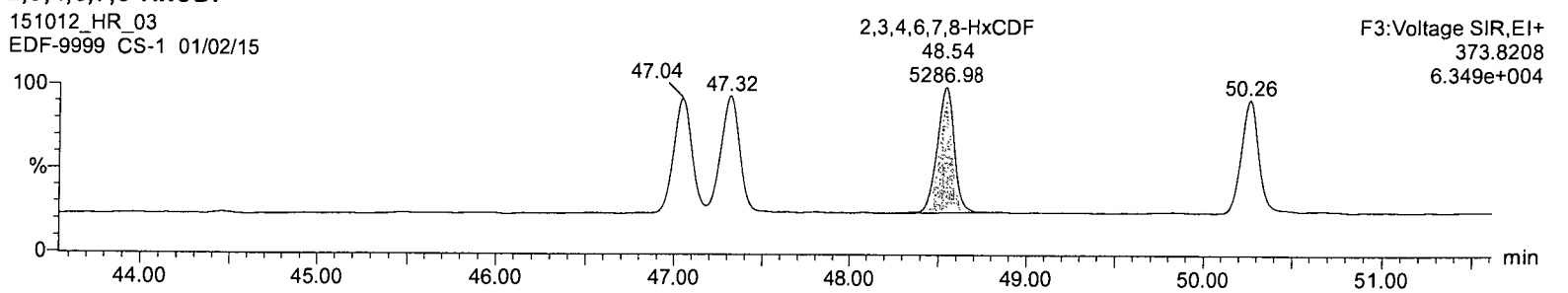
1,2,3,6,7,8-HxCDF



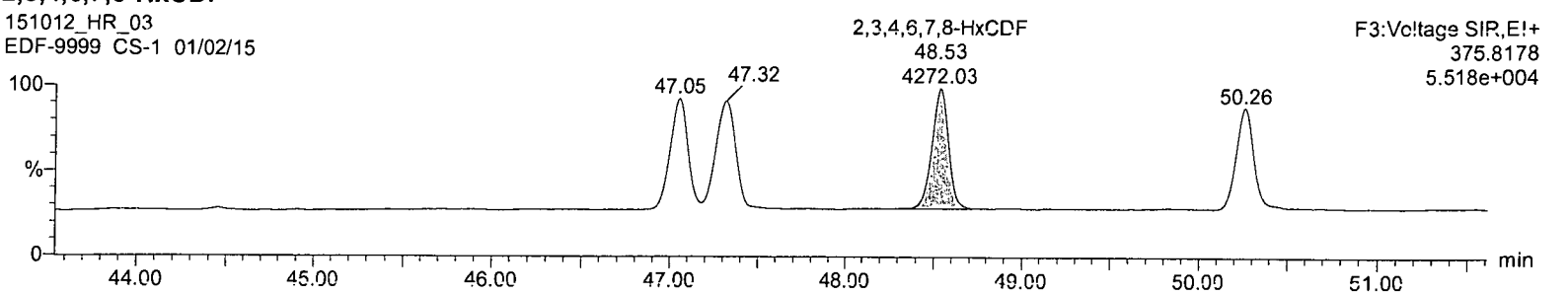
1,2,3,6,7,8-HxCDF



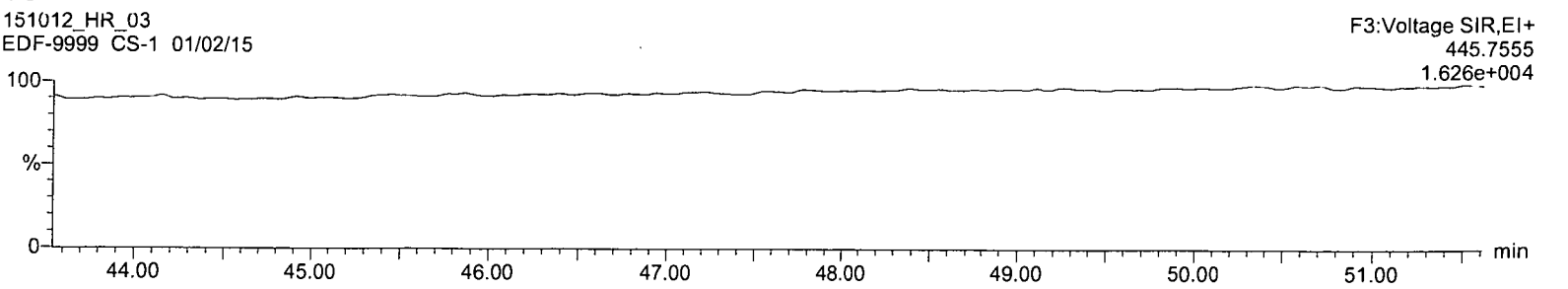
2,3,4,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF



OCDPE



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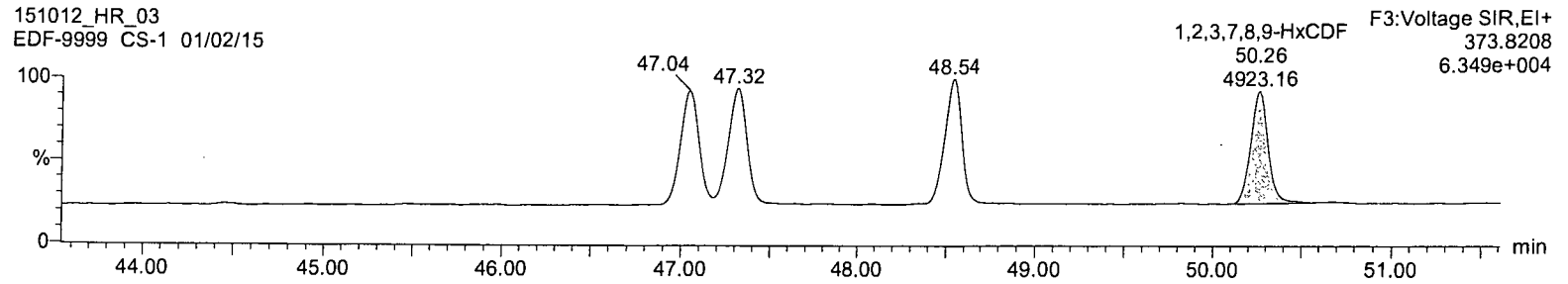
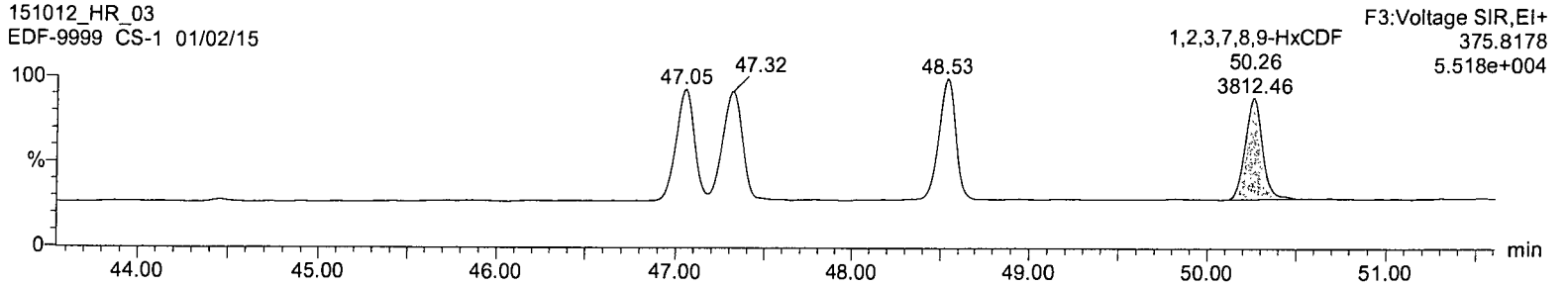
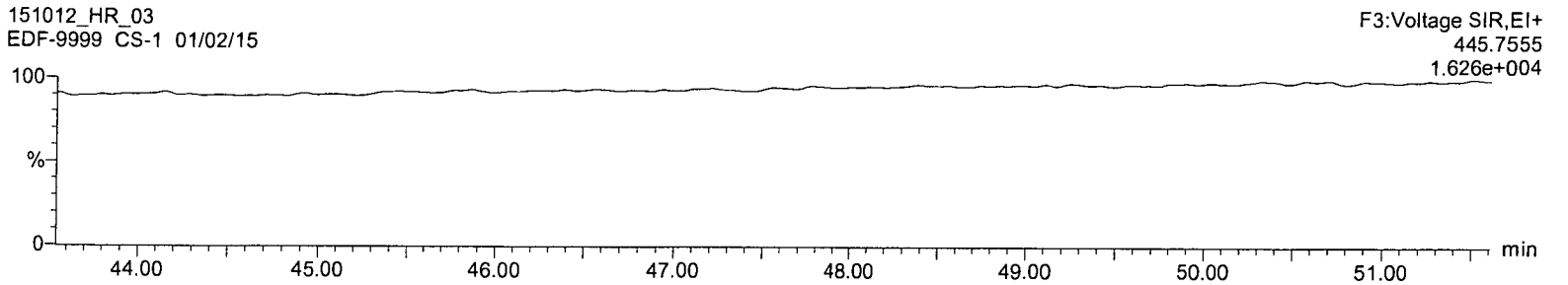
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF

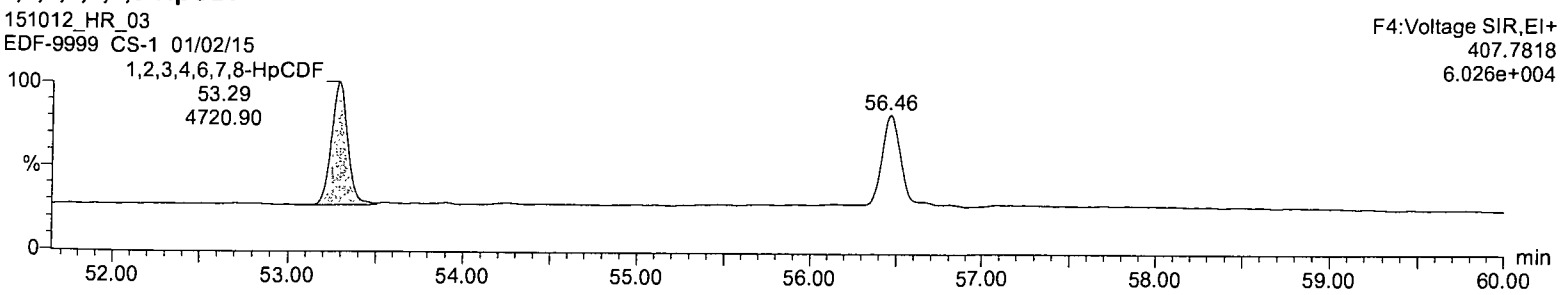


OCDPE

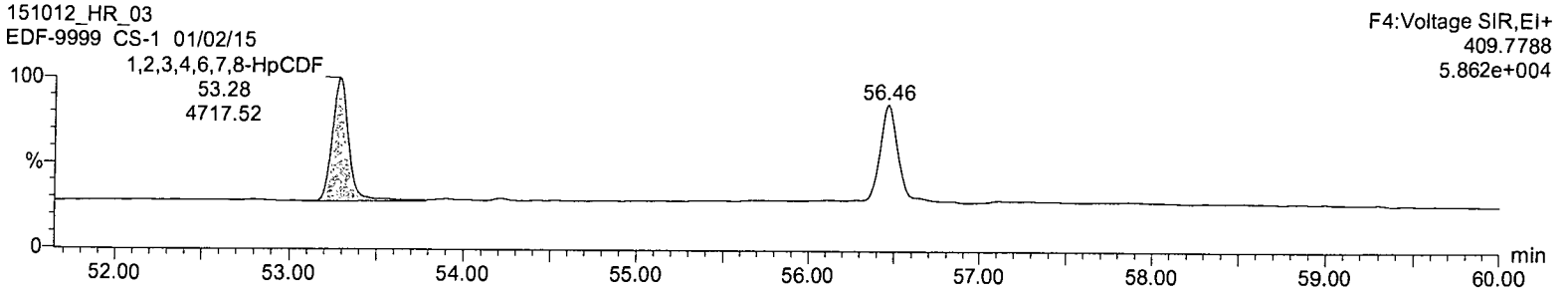


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

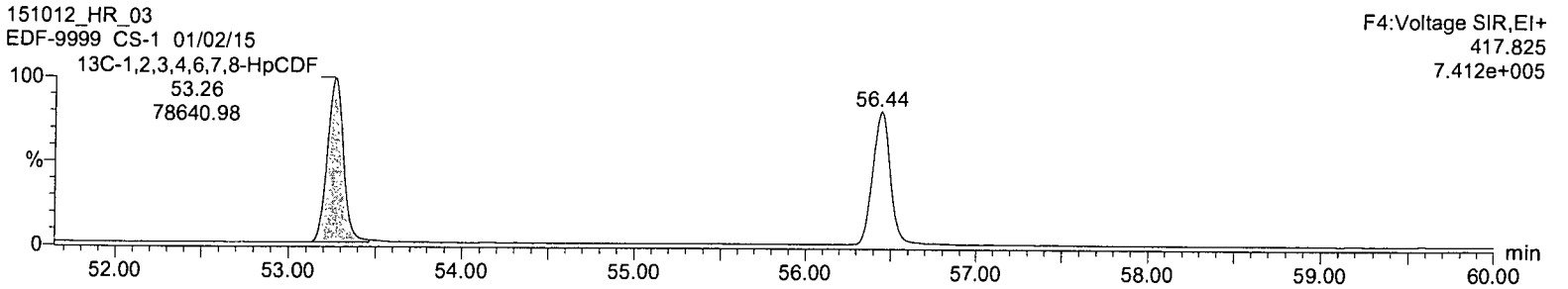
1,2,3,4,6,7,8-HpCDF



1,2,3,4,6,7,8-HpCDF



13C-1,2,3,4,6,7,8-HpCDF



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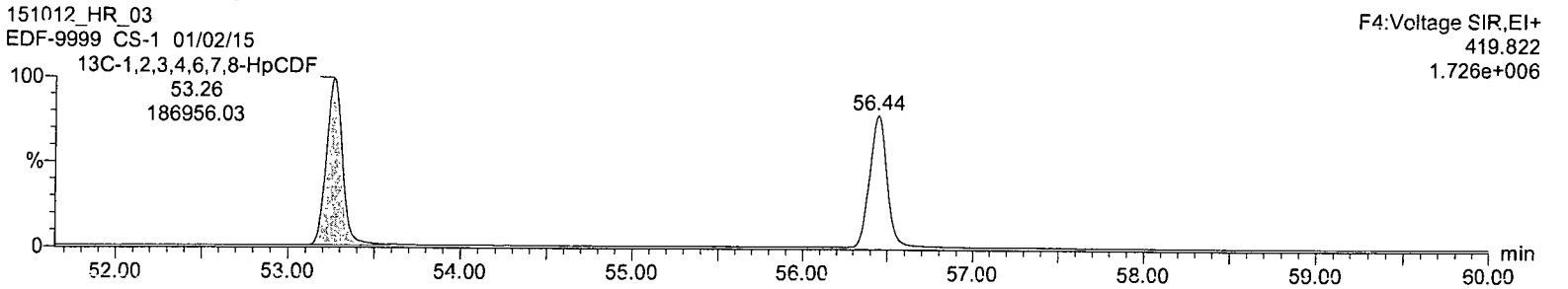
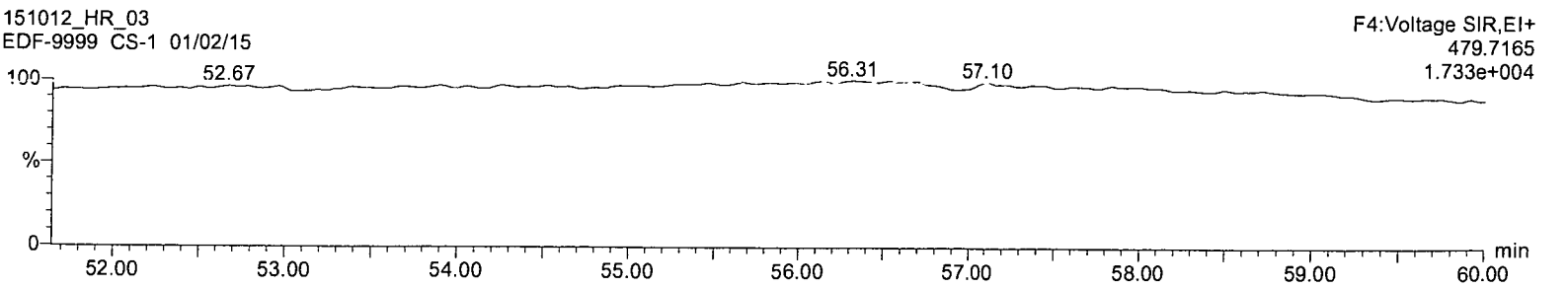
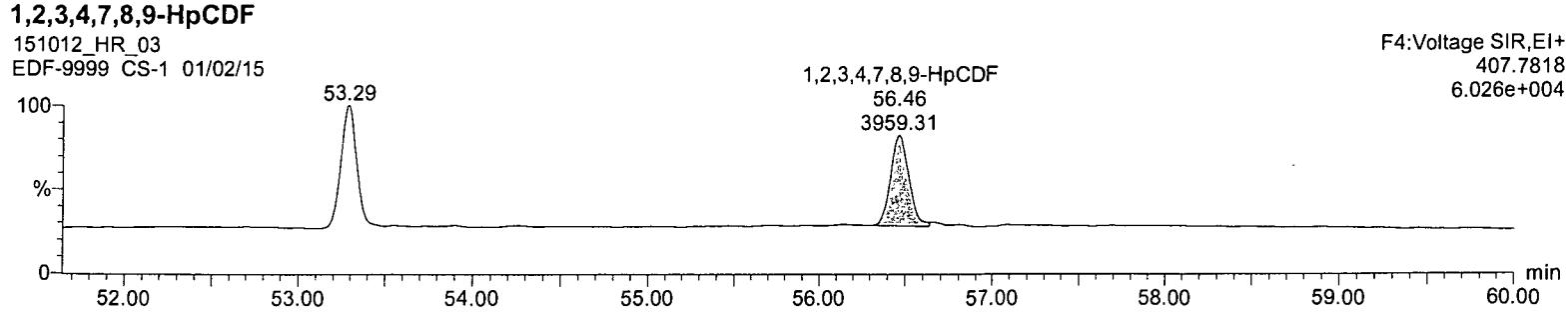


NCDPE

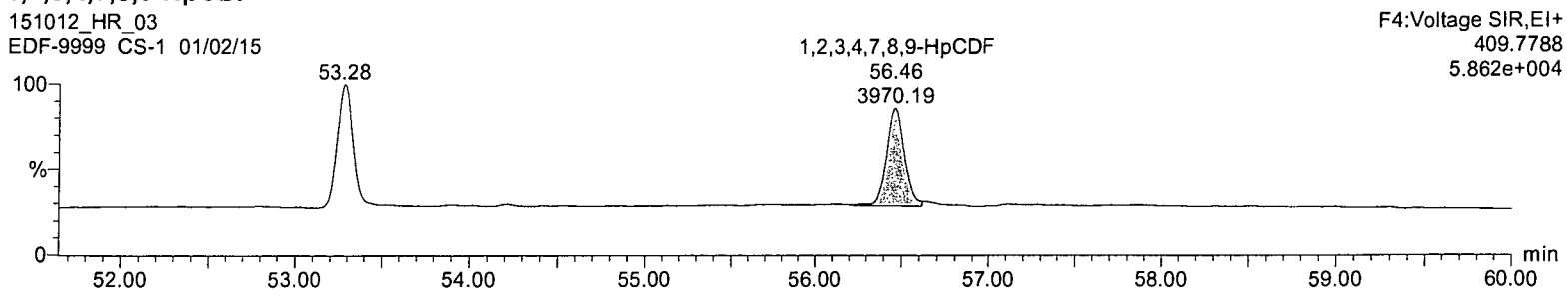


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

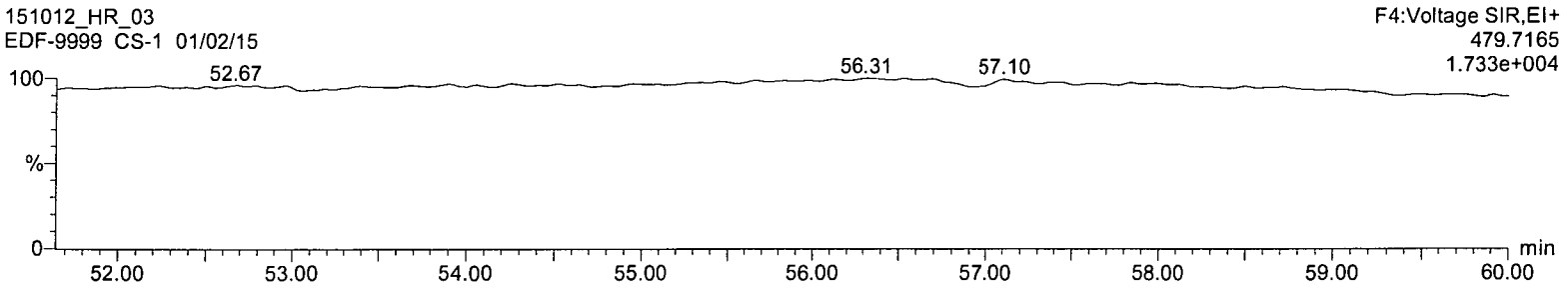
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF

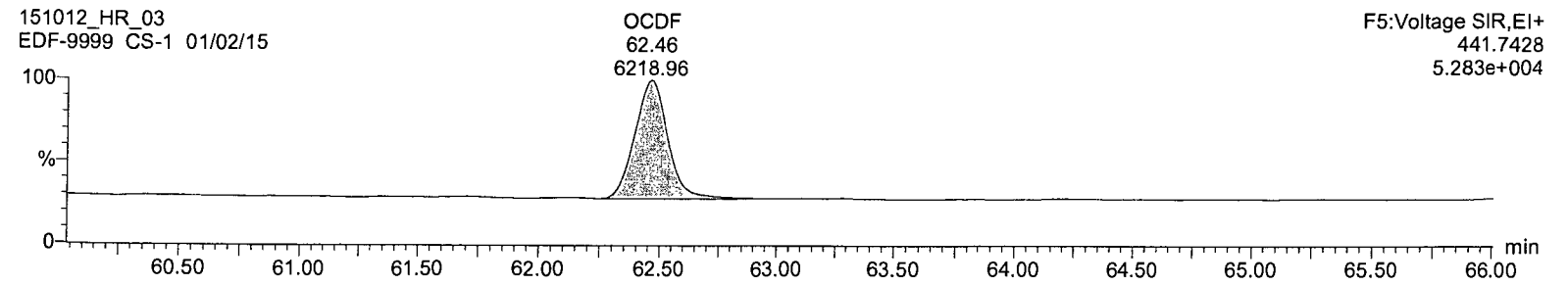


NCDPE

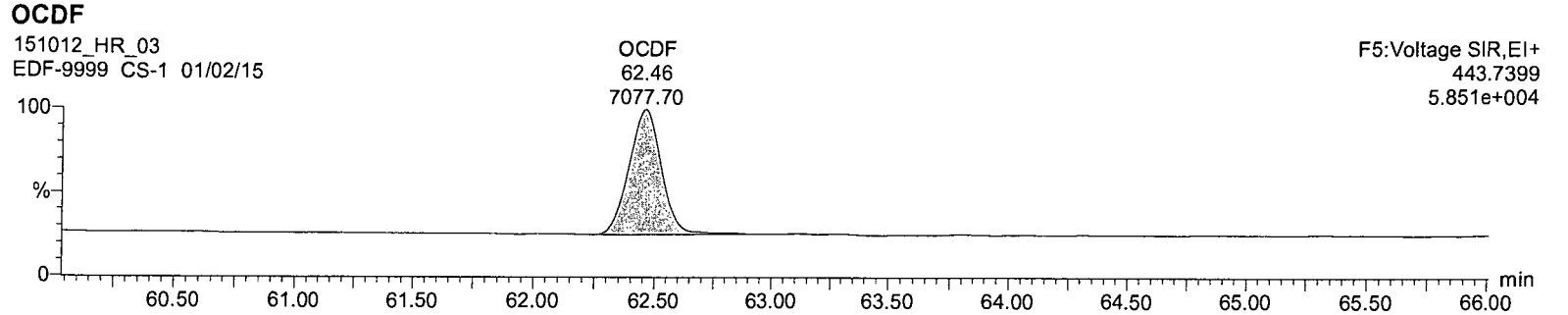


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

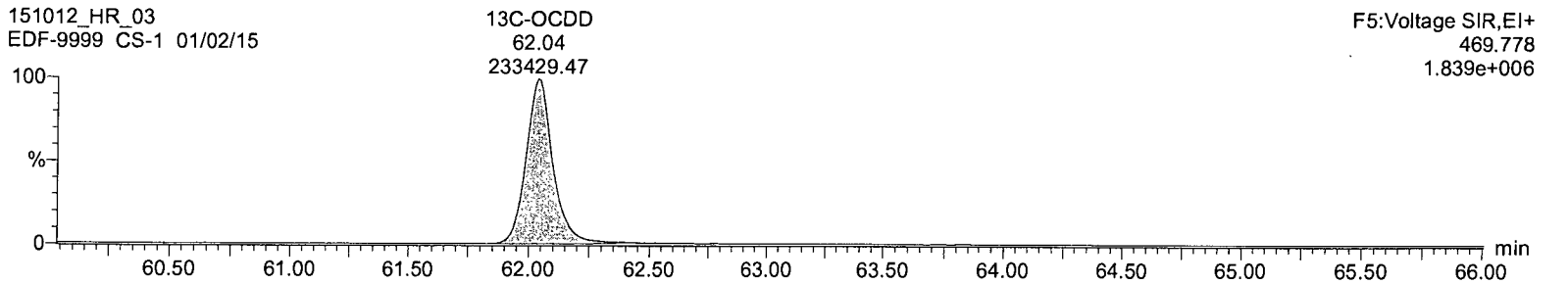
OCDF



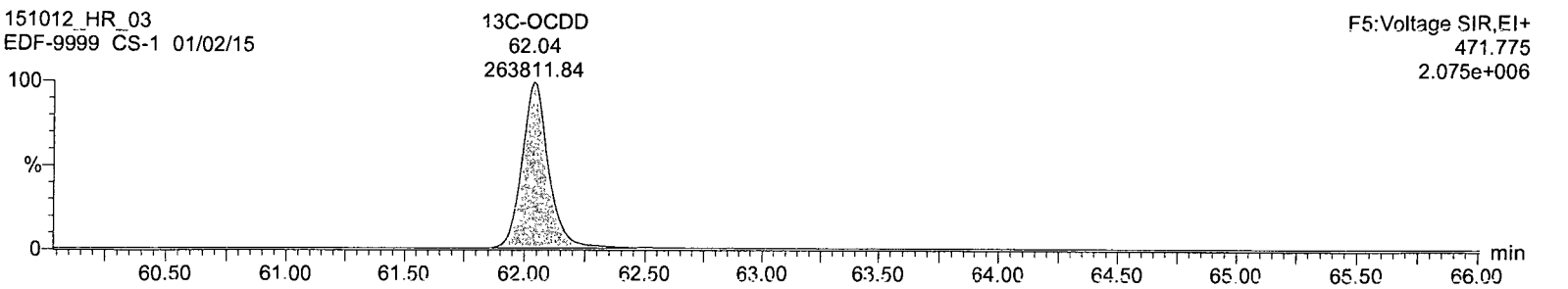
OCDF



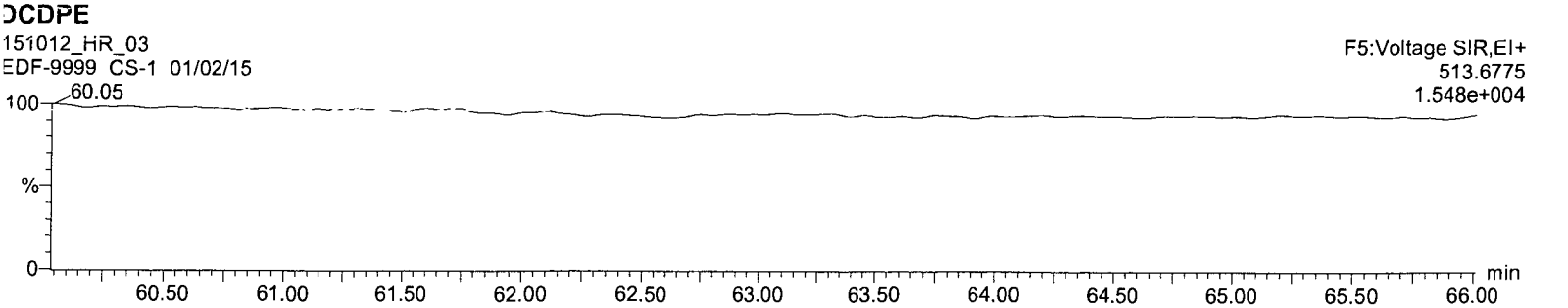
13C-OCDD



13C-OCDD

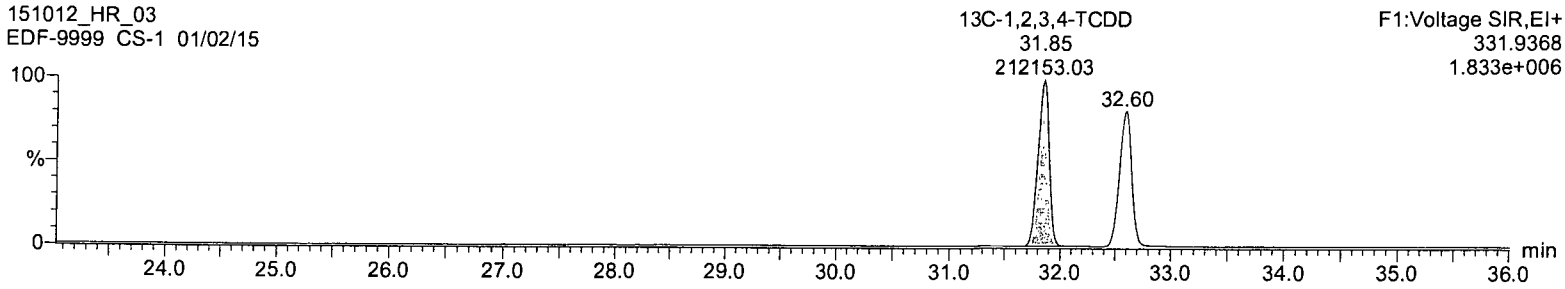


OCDPE

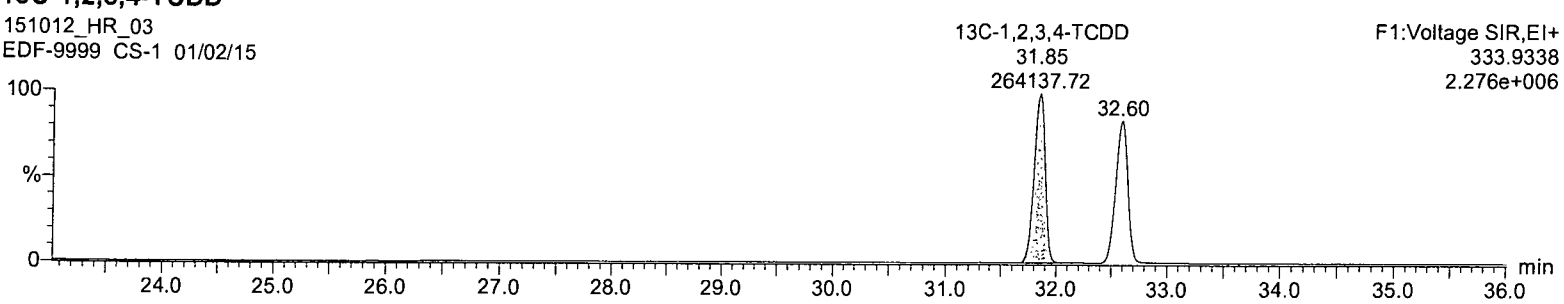


Name: 151012_HR_03, Date: 12-Oct-2015, Time: 14:49:09, Description: EDF-9999 CS-1 01/02/15, User:

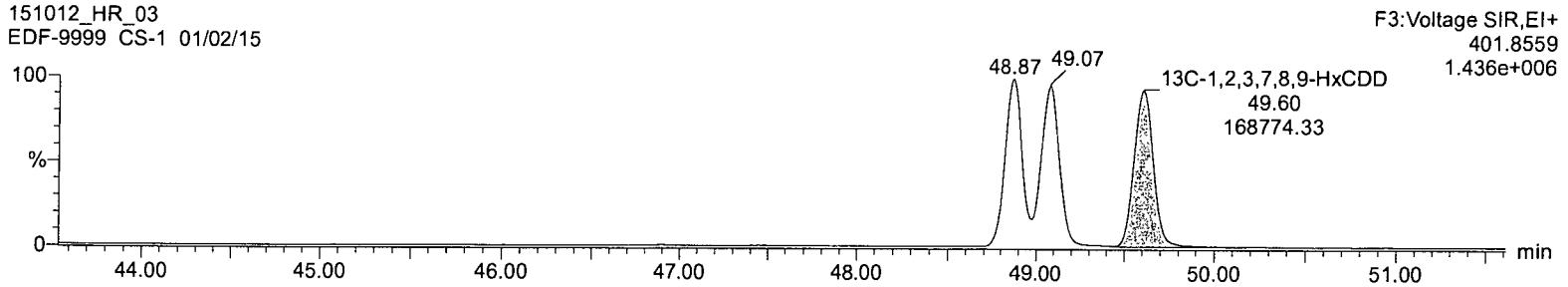
13C-1,2,3,4-TCDD



13C-1,2,3,4-TCDD



13C-1,2,3,7,8,9-HxCDD



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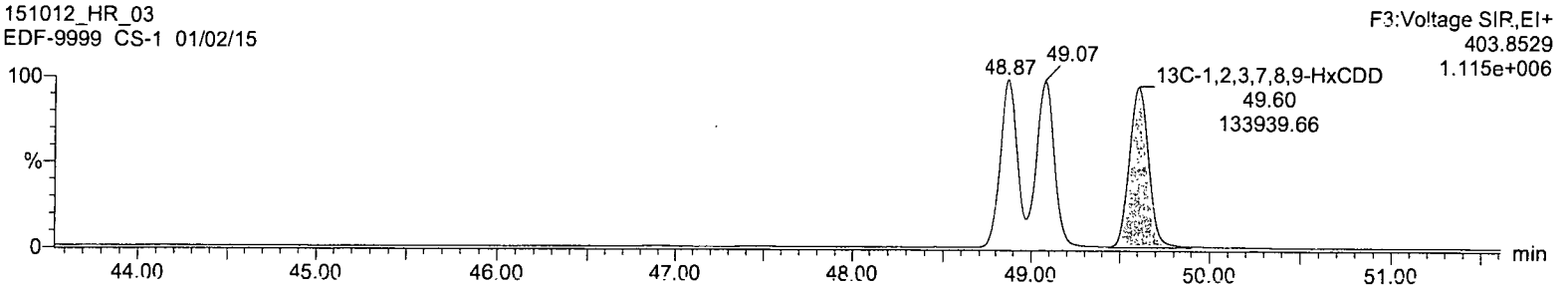


Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

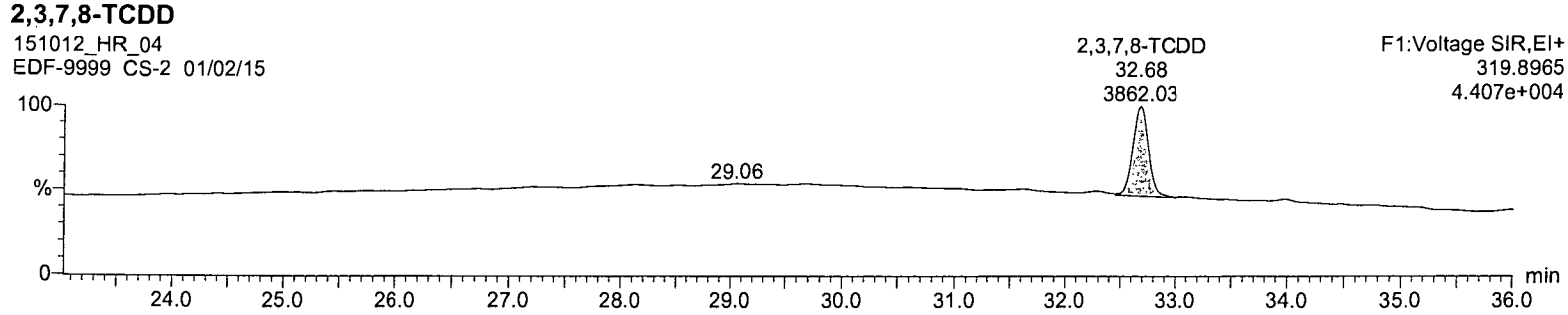
Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, ID: , Description: EDF-9999 CS-2 01/02/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N...	Signal 2	Noise 2	S/N 2	Flag S/N...
1	2,3,7,8-TCDD	2.3481000e4	8.1134171e1	276.79	NO	3.0395000e4	8.9478409e1	339.69	NO
2	1,2,3,7,8-PeCDD	1.2916400e5	1.9835785e2	653.17	NO	7.9125000e4	1.7056471e2	463.90	NO
3	1,2,3,4,7,8-HxCDD	1.3982200e5	1.3279320e2	1058.32	NO	1.1020700e5	1.6119713e2	683.68	NO
4	1,2,3,6,7,8-HxCDD	1.2037500e5	1.3279320e2	913.76	NO	9.6805000e4	1.6119713e2	600.54	NO
5	1,2,3,7,8,9-HxCDD	1.2268700e5	1.3279320e2	936.12	NO	1.0191200e5	1.6119713e2	632.22	NO
6	1,2,3,4,6,7,8-HpCDD	1.0703800e5	9.5813452e2	110.08	NO	1.0147100e5	1.4468333e2	701.33	NO
7	OCDD	1.4627800e5	1.4205087e2	1025.60	NO	1.5947200e5	1.4000076e2	1139.08	NO
8	2,3,7,8-TCDF	3.3052000e4	1.2813148e2	260.86	NO	4.7953000e4	1.4761104e2	324.86	NO
9	1,2,3,7,8-PeCDF	1.5850900e5	1.8481544e2	854.37	NO	1.0115400e5	1.0574173e2	956.61	NO
10	2,3,4,7,8-PeCDF	1.4146400e5	1.8481544e2	765.91	NO	9.4852000e4	1.0574173e2	897.02	NO
11	1,2,3,4,7,8-HxCDF	1.8834400e5	2.3897566e2	786.49	NO	1.4999400e5	1.9853186e2	755.52	NO
12	1,2,3,6,7,8-HxCDF	1.8231800e5	2.3897566e2	762.14	NO	1.4357400e5	1.9853186e2	723.18	NO
13	2,3,4,6,7,8-HxCDF	1.6351800e5	2.3897566e2	687.23	NO	1.3069500e5	1.9853186e2	658.31	NO
14	1,2,3,7,8,9-HxCDF	1.4307400e5	2.3897566e2	604.67	NO	1.1293100e5	1.9853186e2	568.83	NO
15	1,2,3,4,6,7,8-HpCDF	1.6832600e5	1.7083362e2	998.21	NO	1.6010800e5	1.5462257e2	1035.48	NO
16	1,2,3,4,7,8,9-HpCDF	1.3162800e5	1.7083362e2	762.53	NO	1.2513400e5	1.5462257e2	809.29	NO
17	OCDF	1.5138800e5	1.8090242e3	82.04	NO	1.6719800e5	6.1907284e1	2700.78	NO
18	13C-2,3,7,8-TCDD	1.3120820e6	3.5593610e2	3684.44	NO	1.6532980e6	2.7788239e2	5949.63	NO
19	13C-1,2,3,7,8-PeCDD	1.4101600e6	3.2266632e2	4371.12	NO	9.1227900e5	2.9705148e2	3071.11	NO
20	13C-1,2,3,6,7,8-HxCDD	1.1870050e6	3.6300830e2	3276.14	NO	9.6400200e5	2.0296933e2	4749.50	NO
21	13C-1,2,3,4,6,7,8-HpCDD	1.0327670e6	1.4943112e2	6904.36	NO	9.9669100e5	2.3016353e2	4330.36	NO
22	13C-OCDD	1.6136060e6	1.7795537e2	9063.86	NO	1.8032110e6	3.7669986e2	4786.86	NO
23	13C-2,3,7,8-TCDF	2.0952680e6	2.4338687e2	8610.89	NO	2.6233860e6	3.1313049e2	8377.93	NO
24	13C-1,2,3,7,8-PeCDF	1.9607110e6	1.0488865e3	1867.33	NO	1.2424000e6	4.4740567e2	2776.90	NO
25	13C-1,2,3,4,7,8-HxCDF	9.3132400e5	4.3763848e3	210.32	NO	1.8430170e6	8.6382559e3	213.36	NO
26	13C-1,2,3,4,6,7,8-HpCDF	7.4779000e5	3.5007004e2	2141.87	NO	1.7119290e6	4.1885220e2	4087.19	NO
27	13C-1,2,3,4-TCDD	1.4629220e6	3.5593610e2	4110.67	NO	1.8647790e6	2.7788239e2	6710.68	NO
28	13C-1,2,3,7,8,9-HxCDD	1.3074260e6	3.6300830e2	3606.18	NO	1.0419260e6	2.0296933e2	5133.42	NO

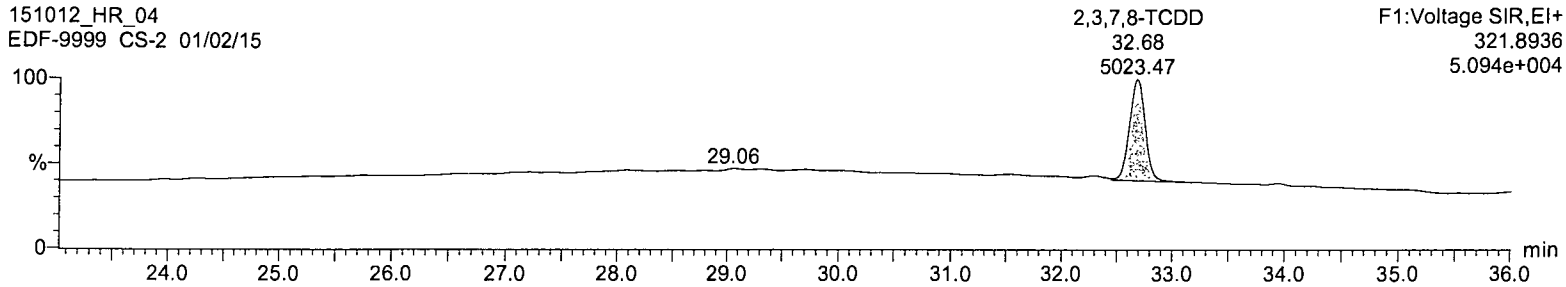
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

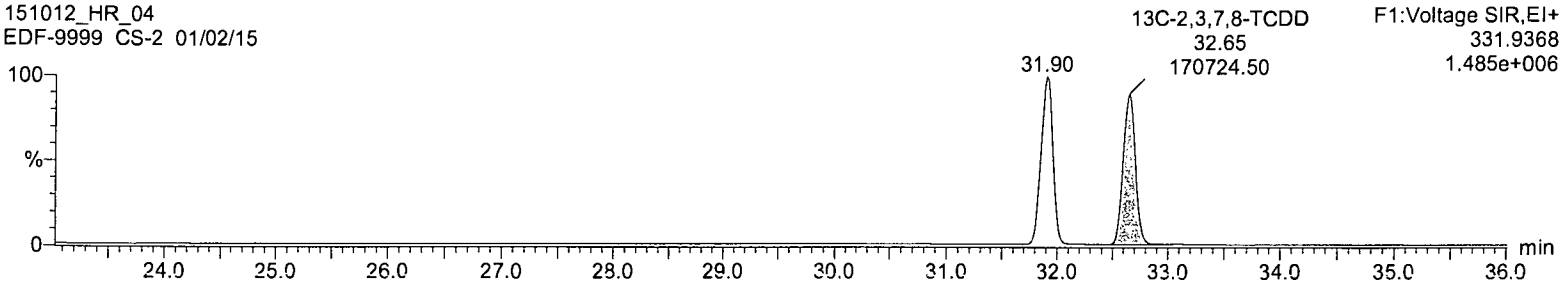
2,3,7,8-TCDD



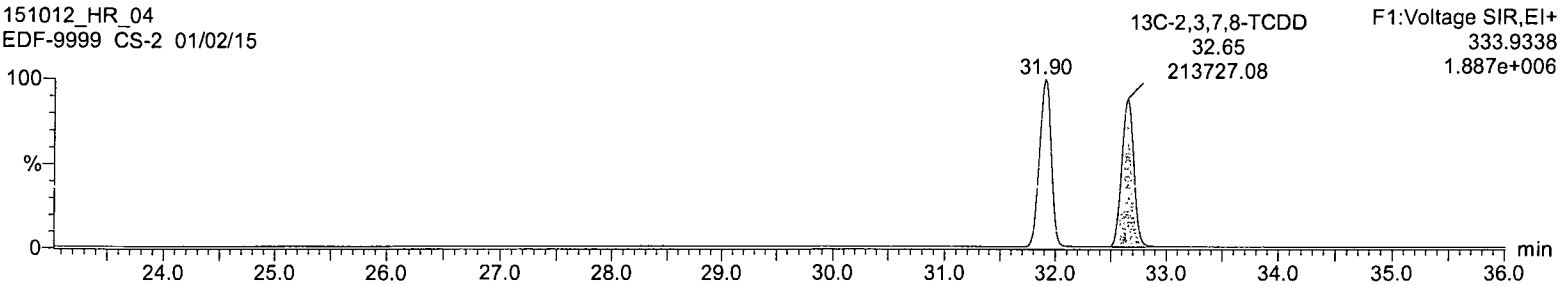
2,3,7,8-TCDD



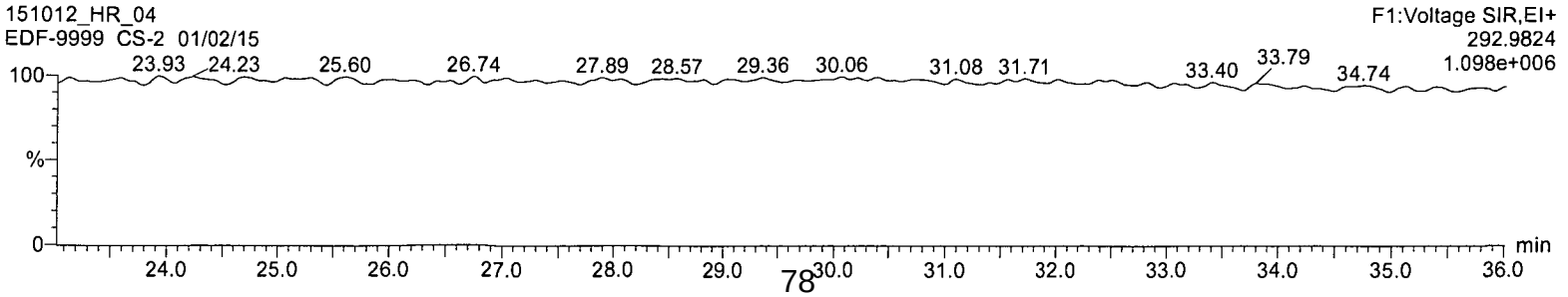
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

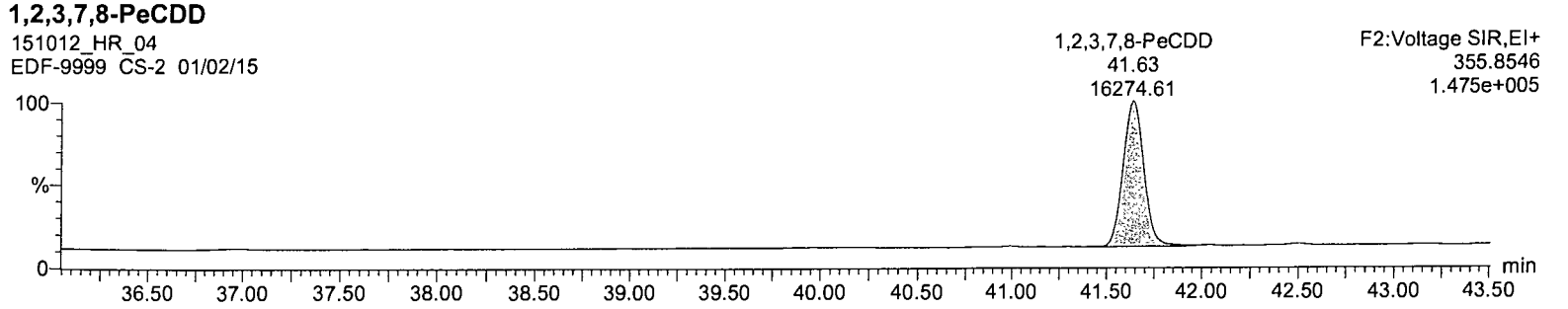


PFK1

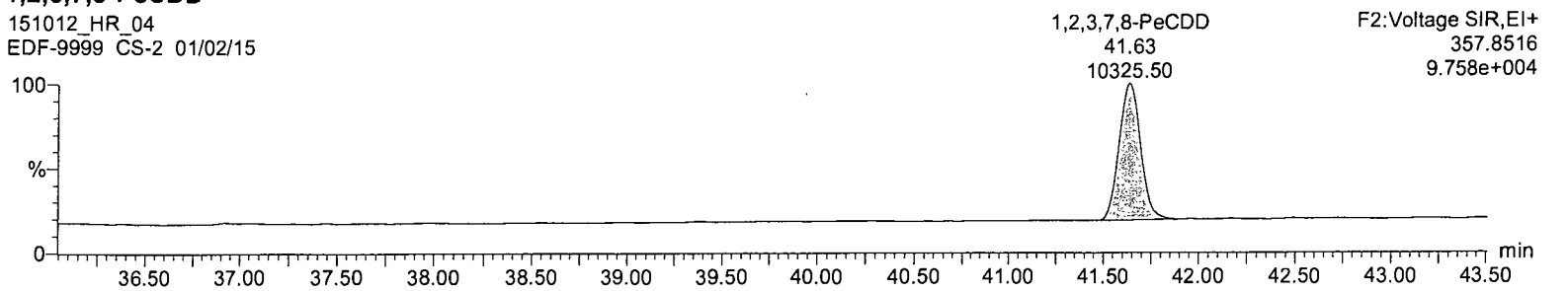


Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

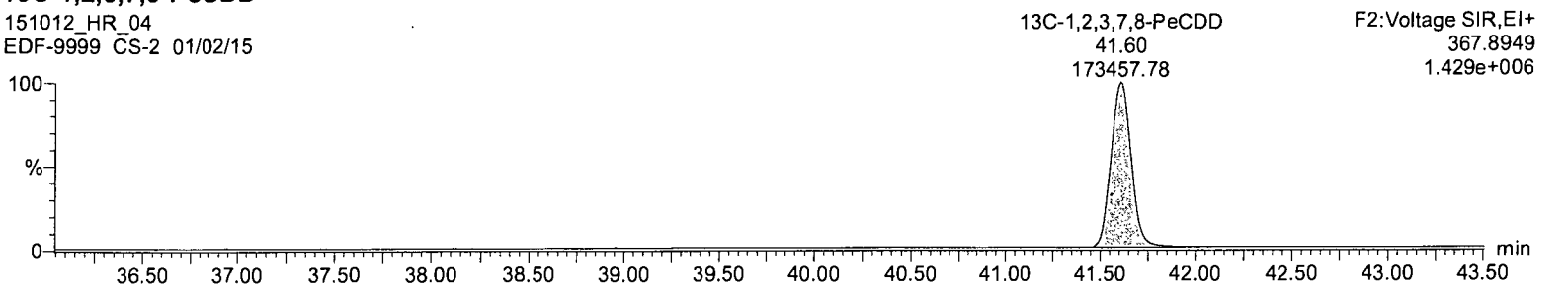
1,2,3,7,8-PeCDD



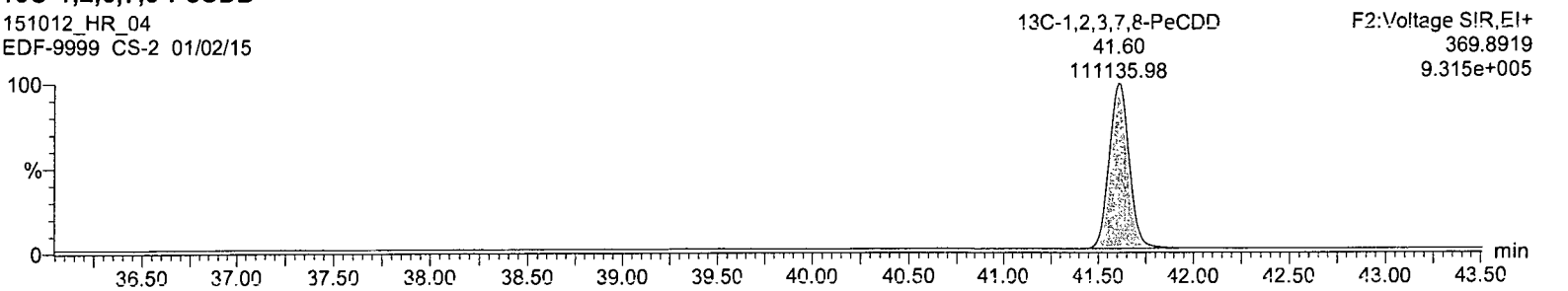
1,2,3,7,8-PeCDD



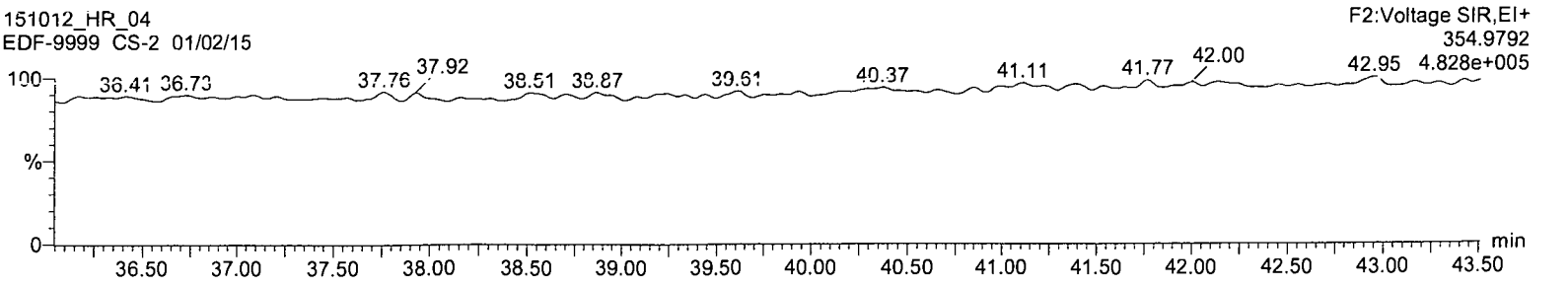
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

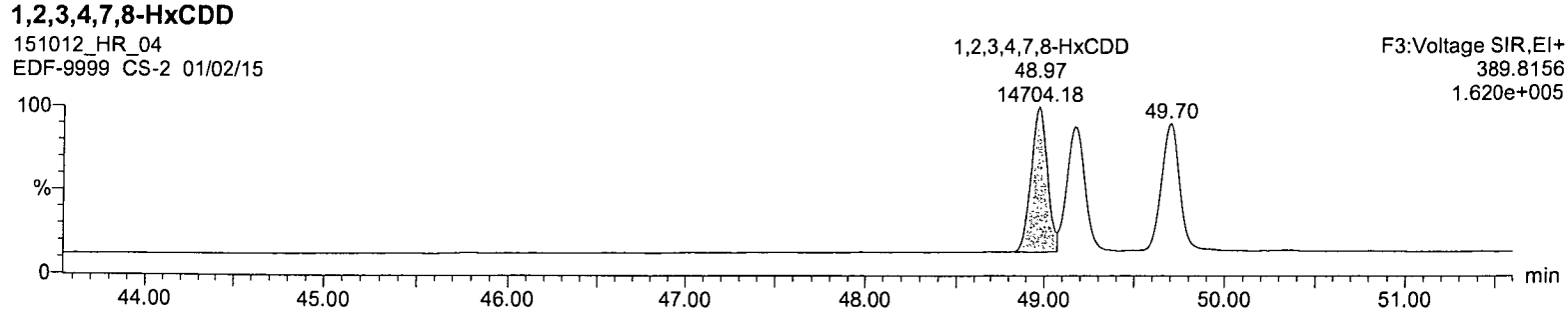


PFK2

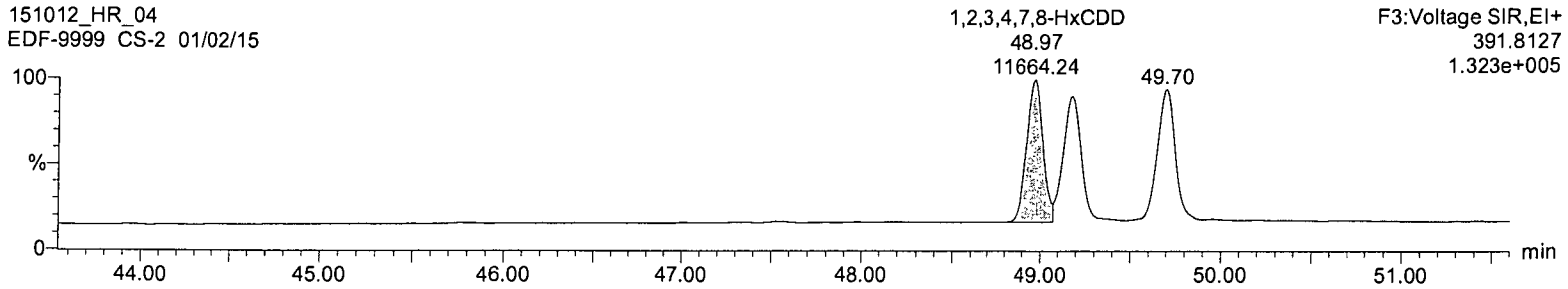


Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

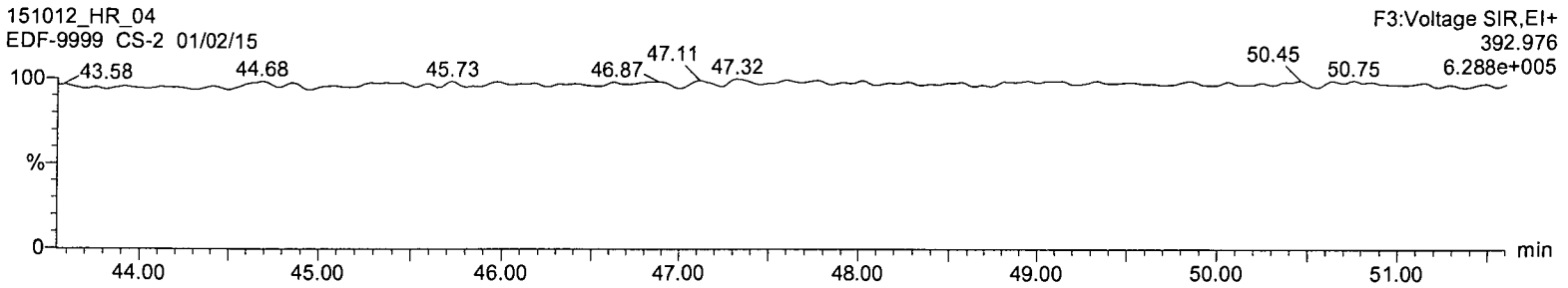
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD

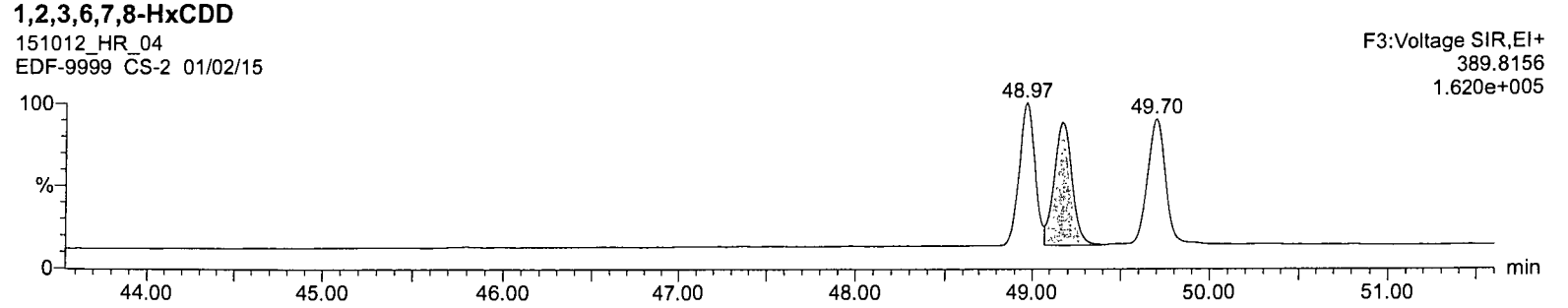


PFK3

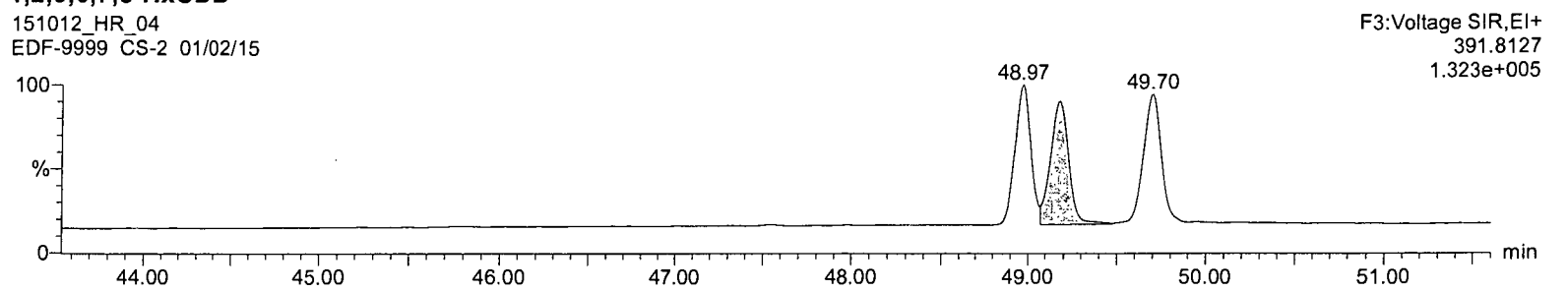


Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

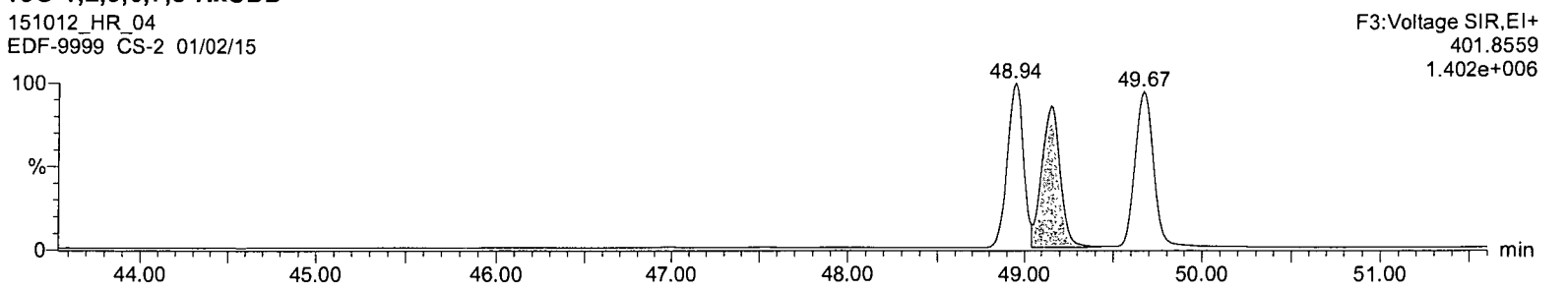
1,2,3,6,7,8-HxCDD



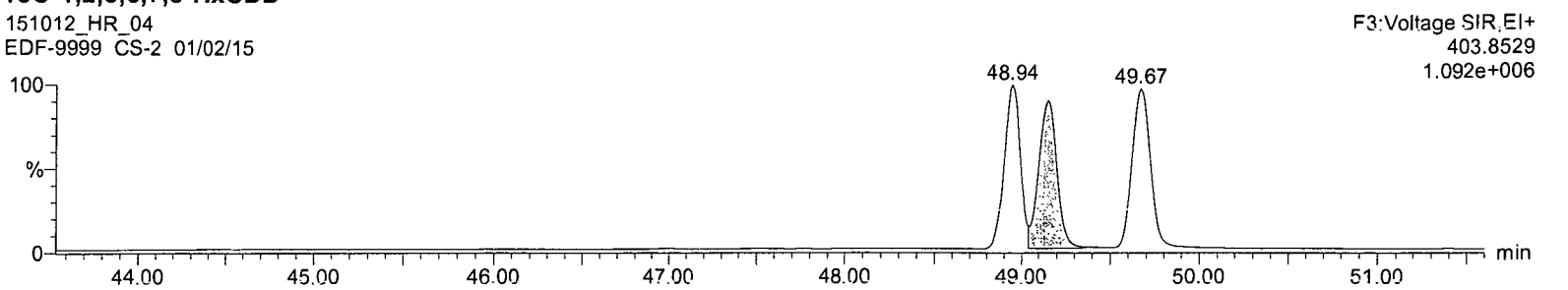
1,2,3,6,7,8-HxCDD



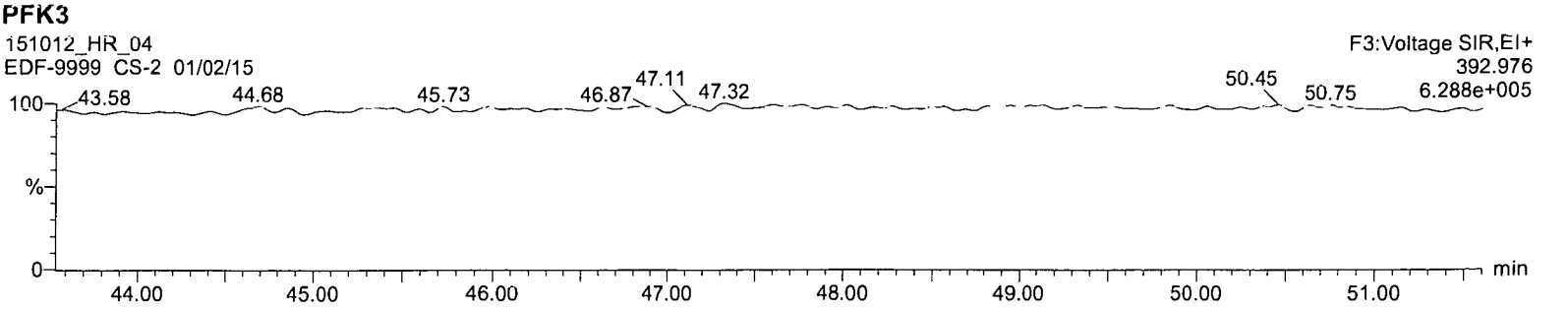
13C-1,2,3,6,7,8-HxCDD



13C-1,2,3,6,7,8-HxCDD

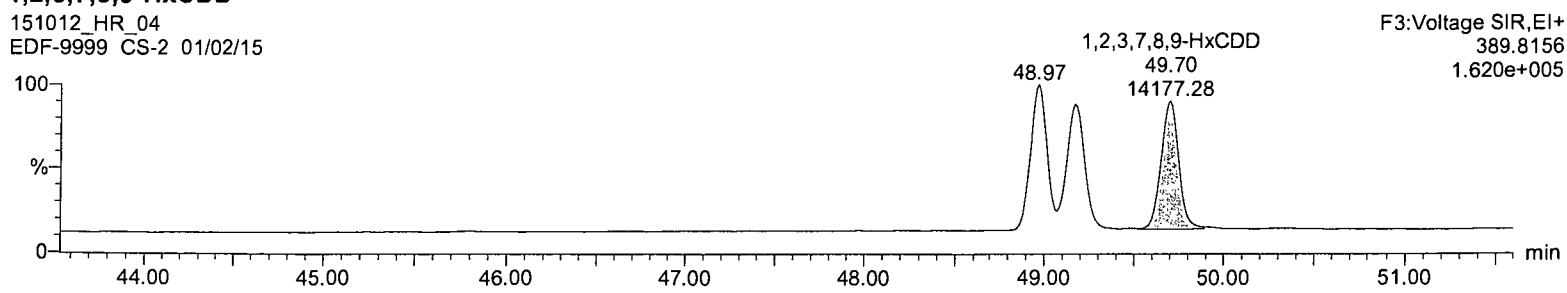


PFK3

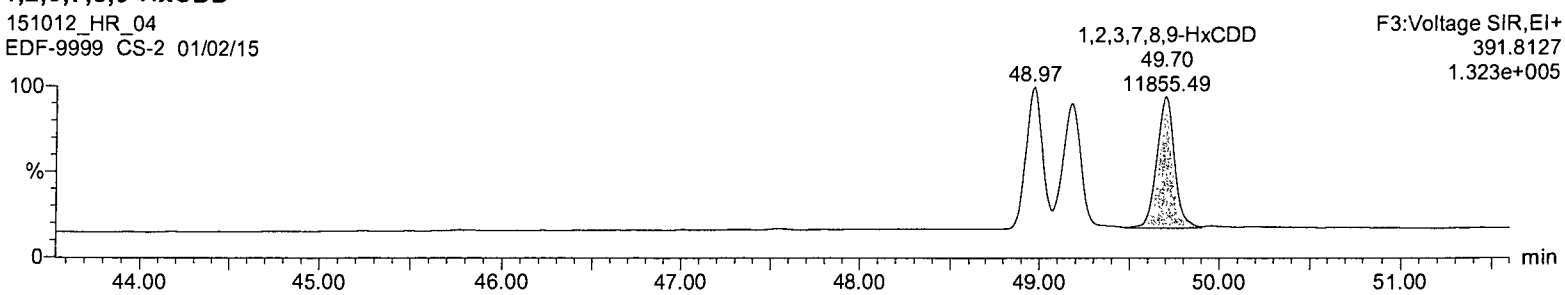


Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

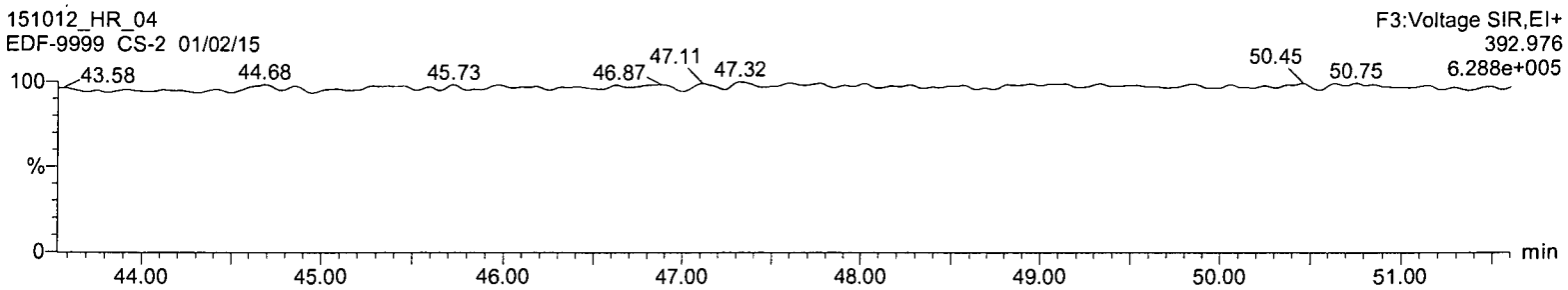
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD

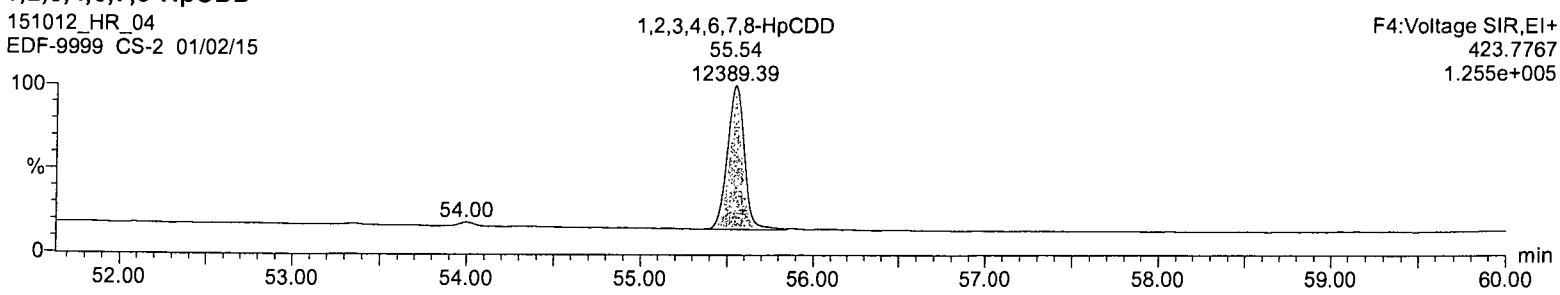


PFK3

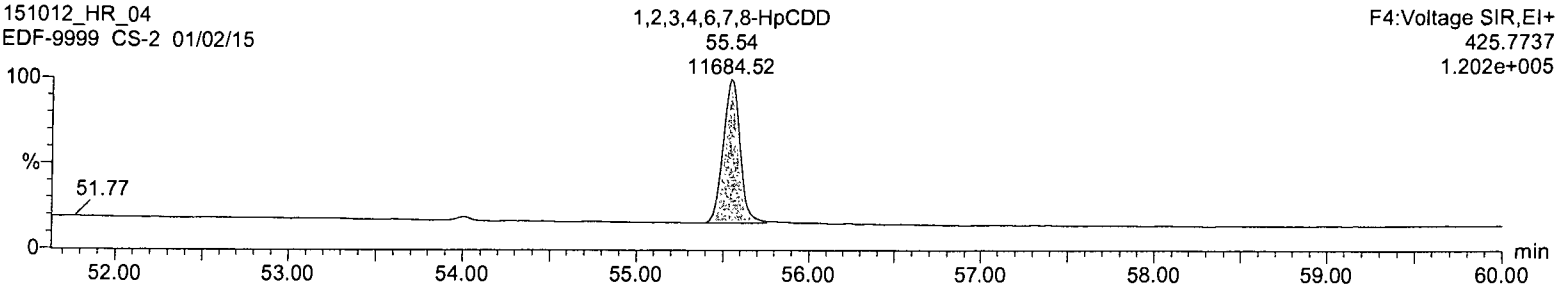


Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

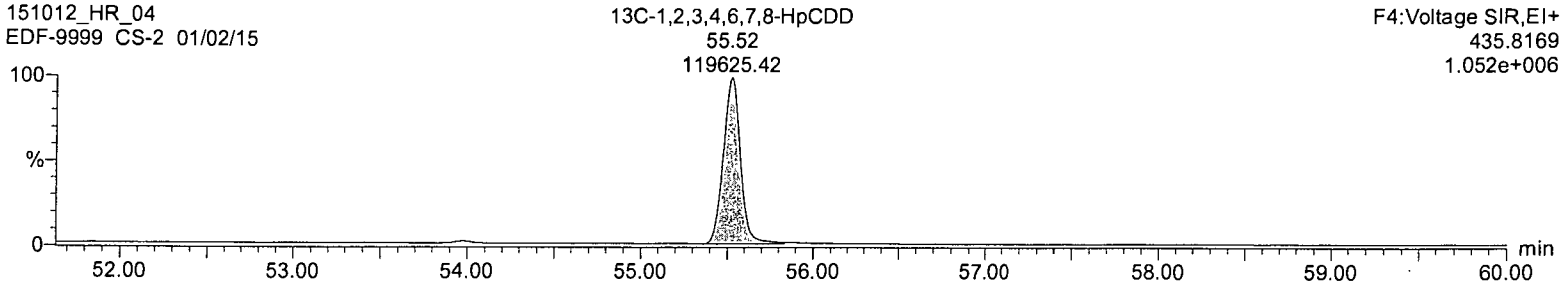
1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



13C-1,2,3,4,6,7,8-HpCDD



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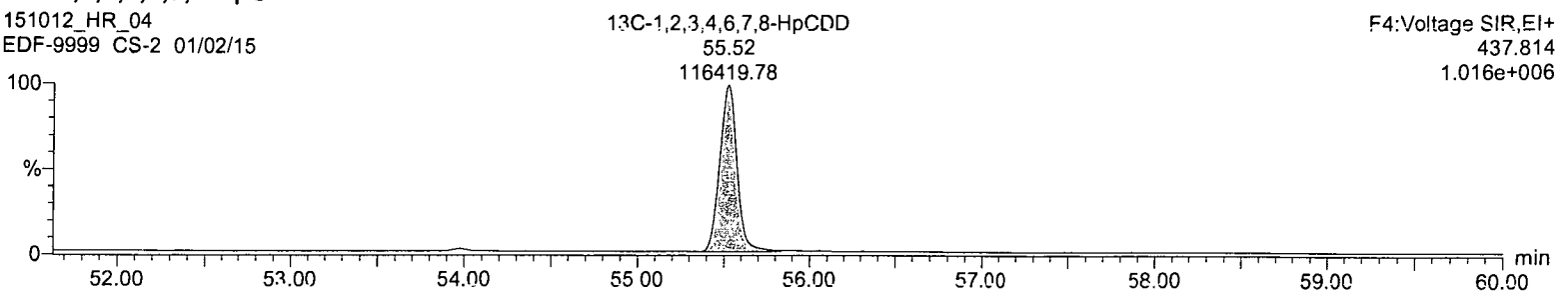
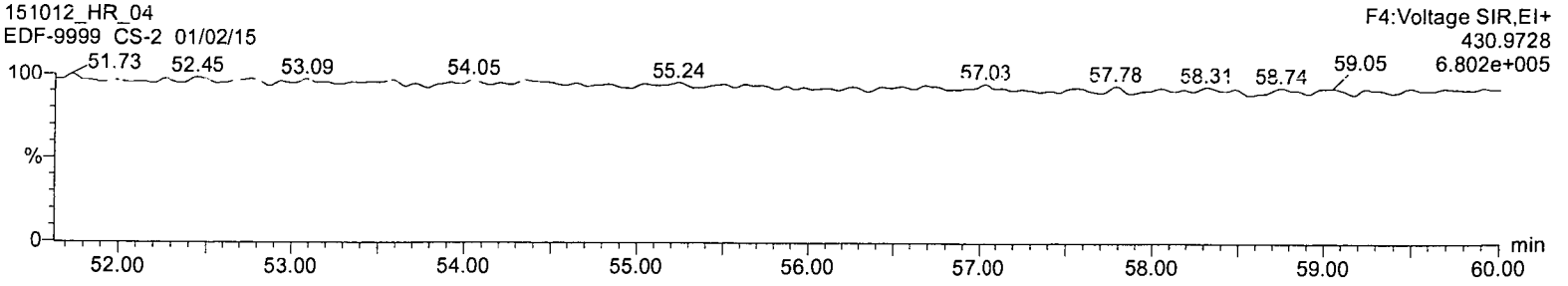
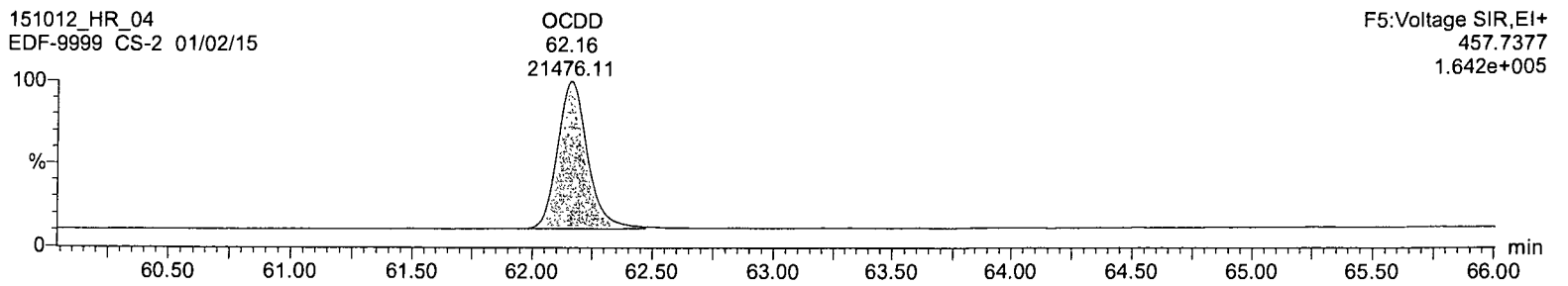


PFK4



Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

OCDD



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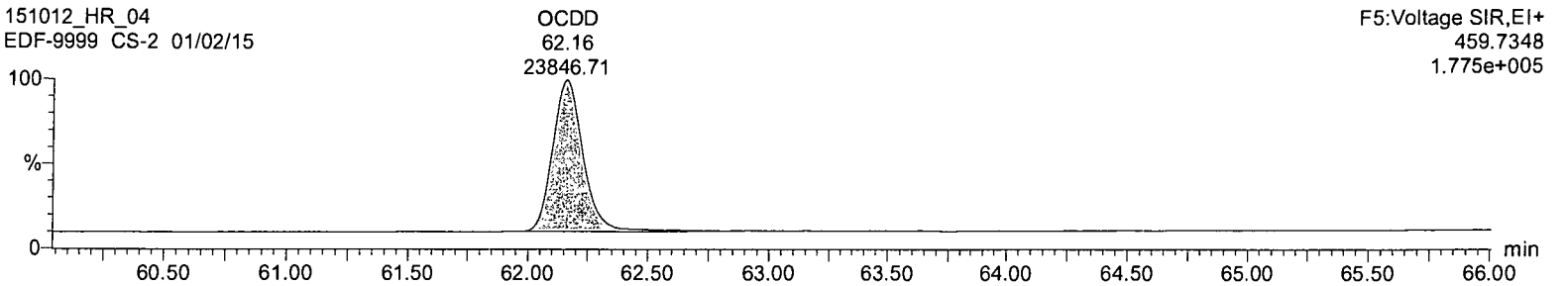
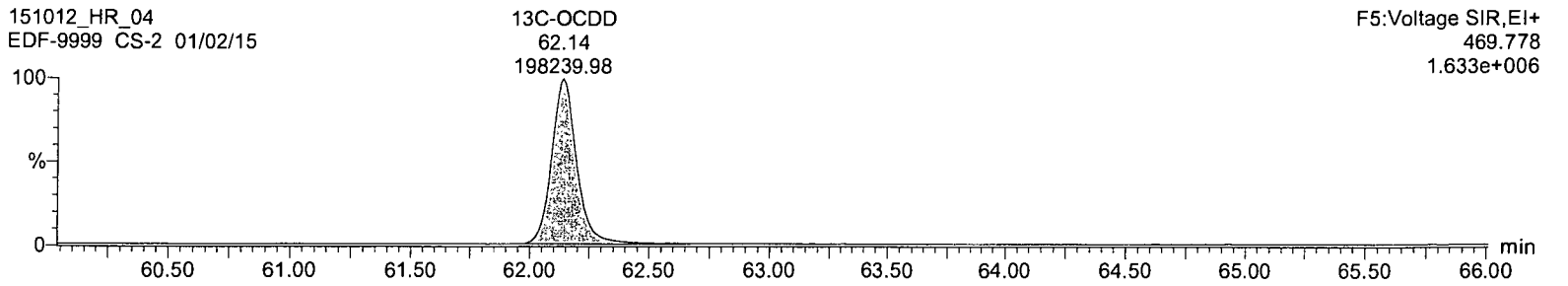


13C-OCDD



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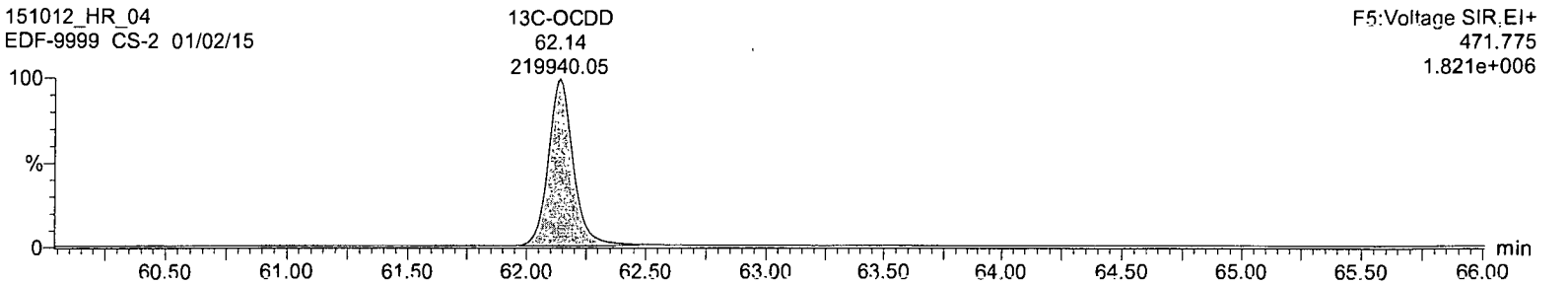

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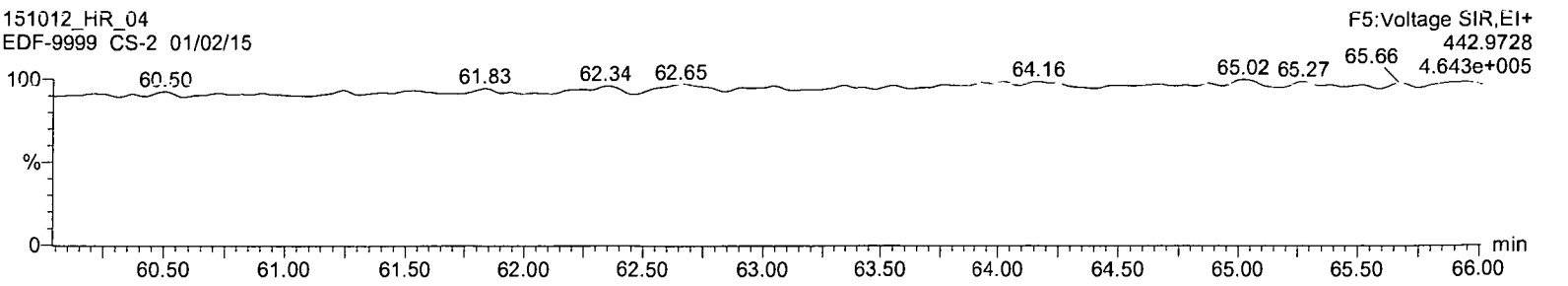
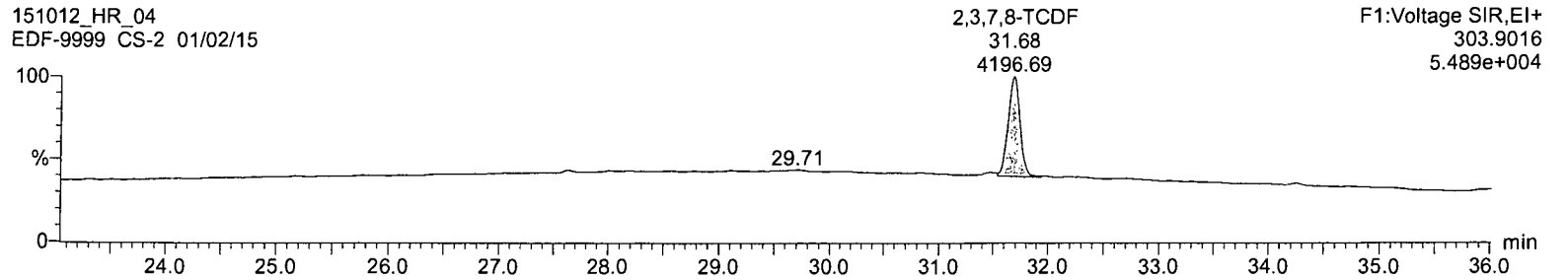
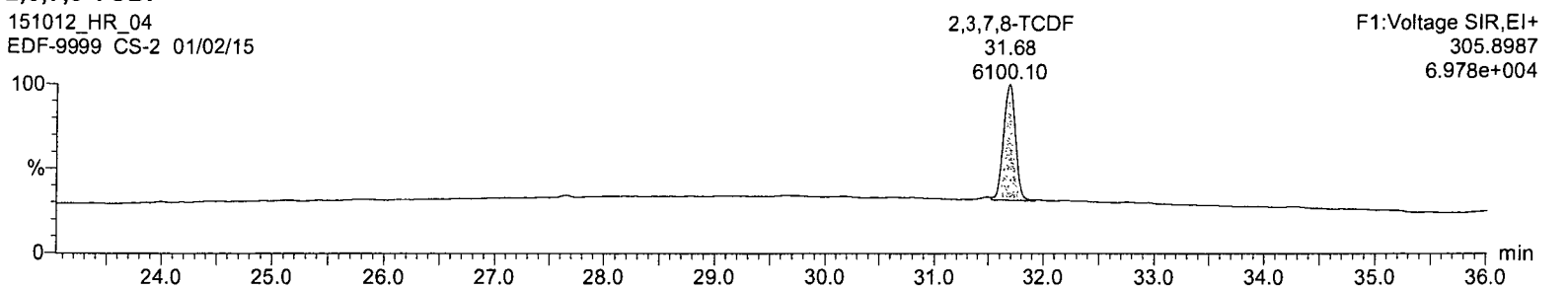


Name: 151012_HR_04, Date: 12-Oct-2015, Time: 16:03:55, Description: EDF-9999 CS-2 01/02/15, User:

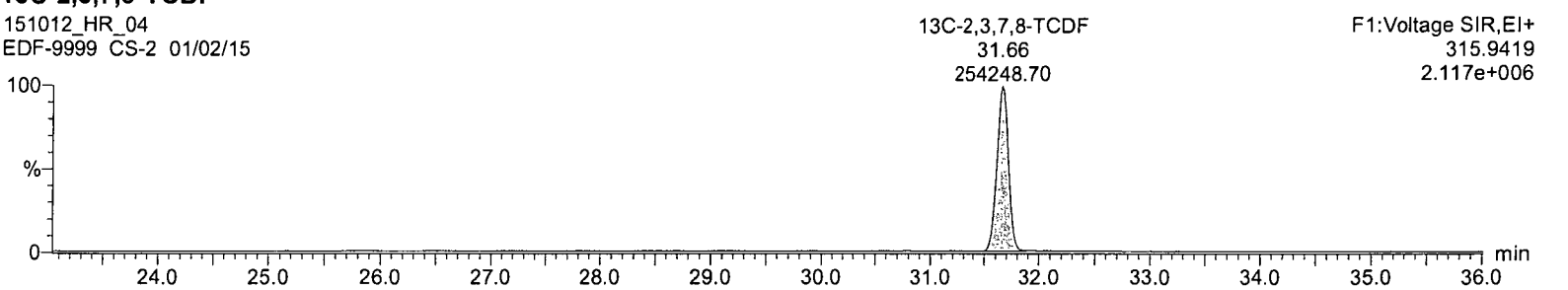
2,3,7,8-TCDF



2,3,7,8-TCDF



13C-2,3,7,8-TCDF



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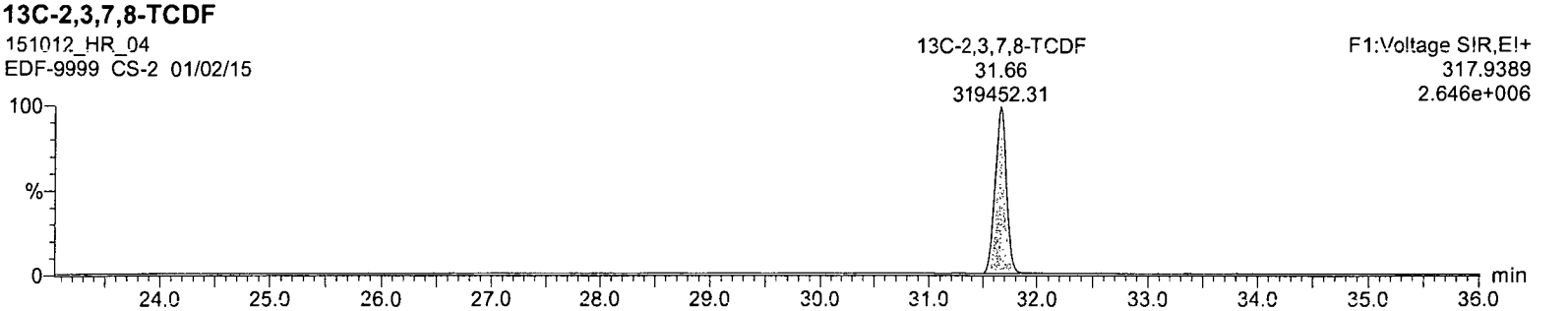
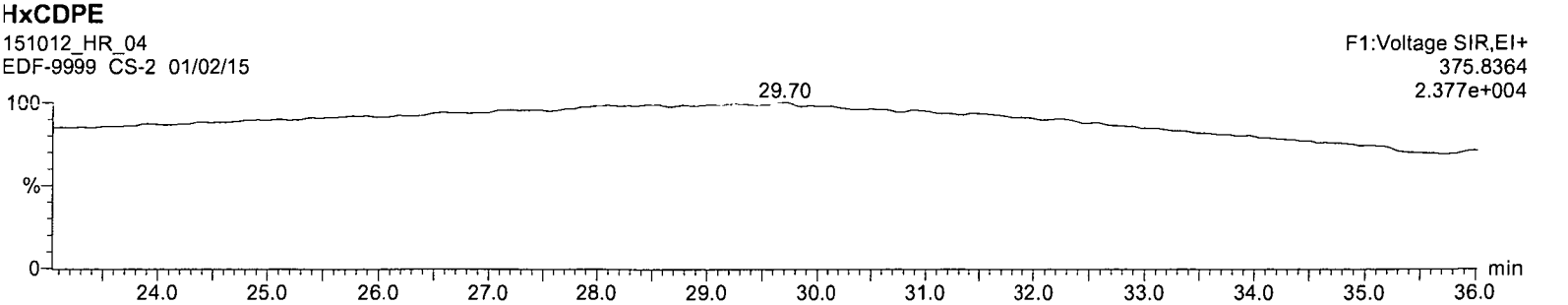


HxCDPE



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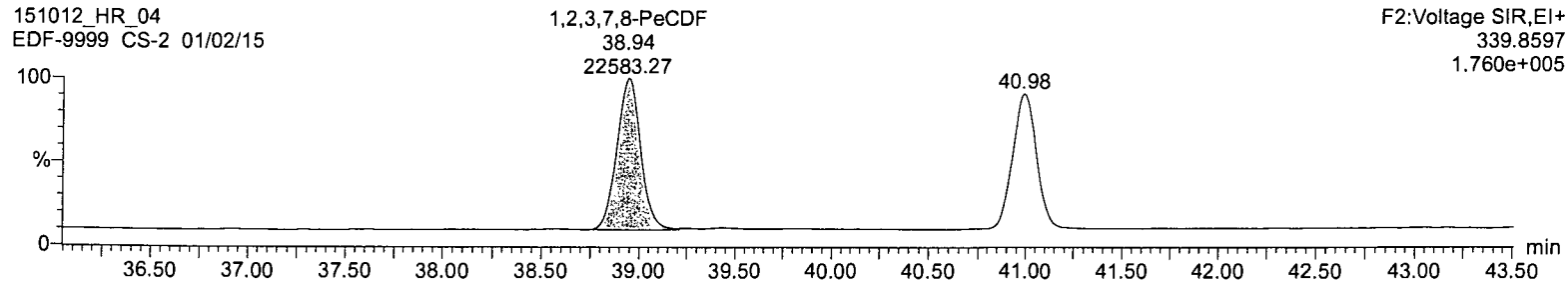
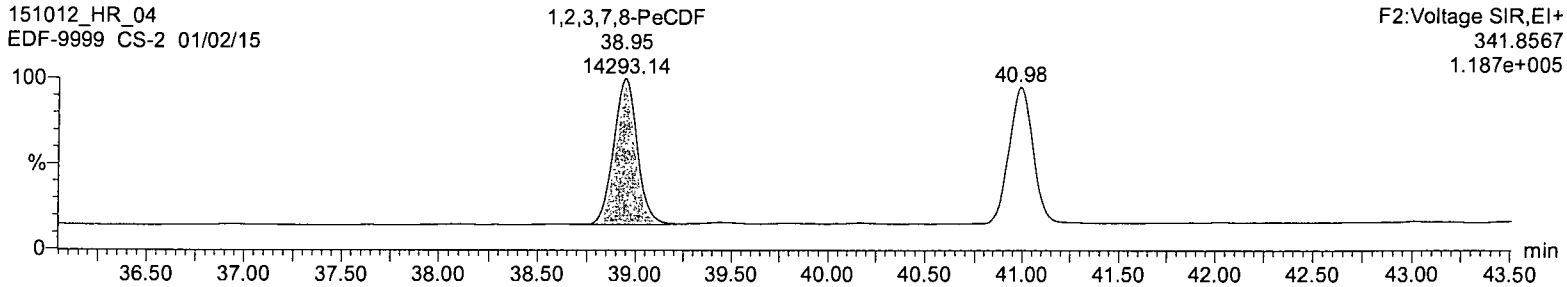
1,2,3,7,8-PeCDF



1,2,3,7,8-PeCDF



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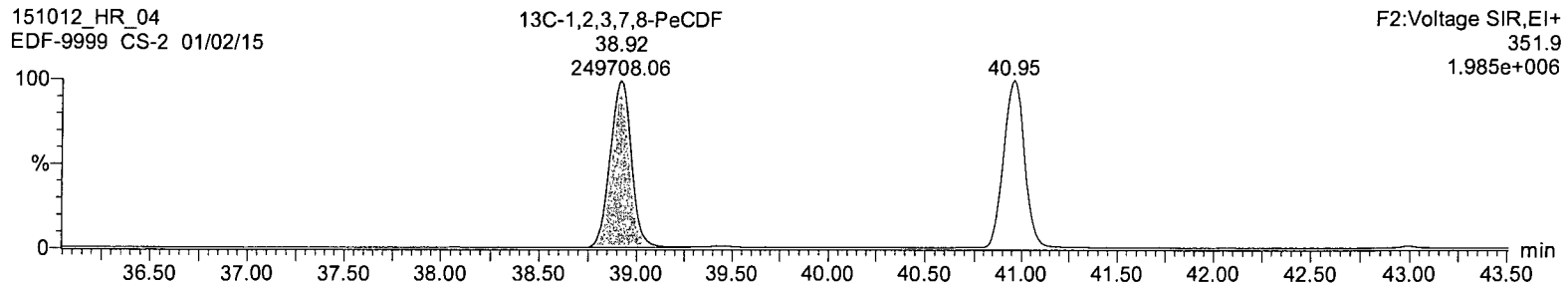

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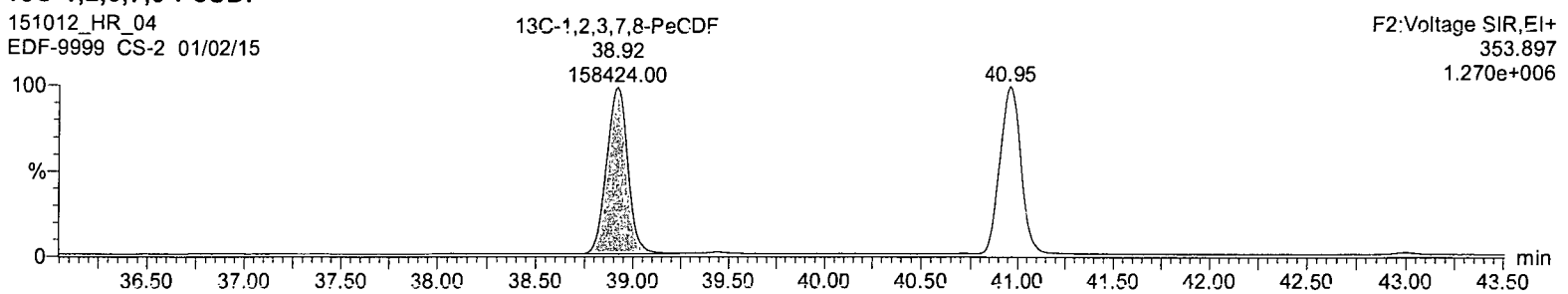

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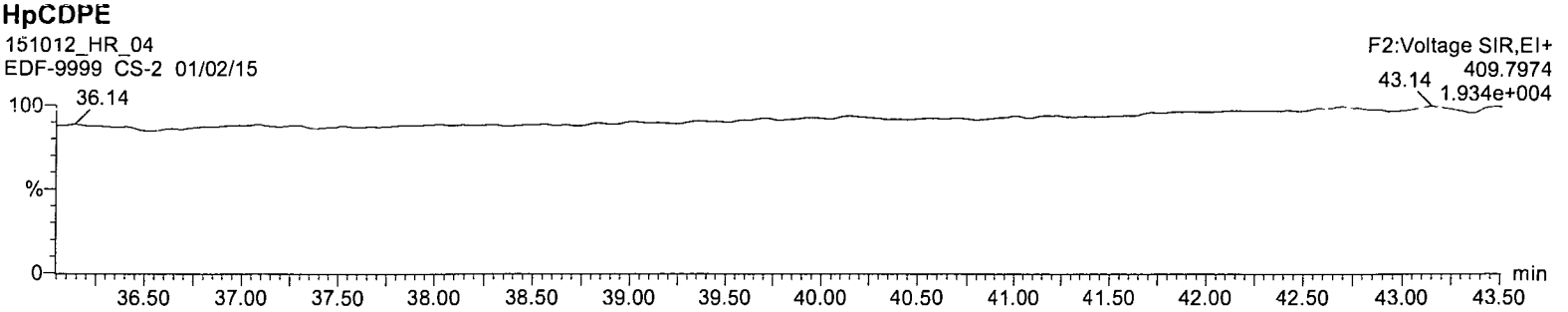

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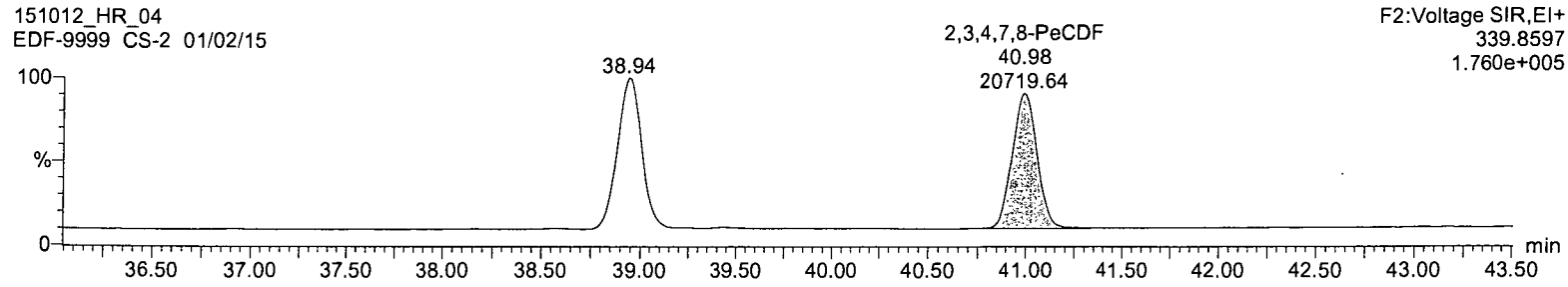
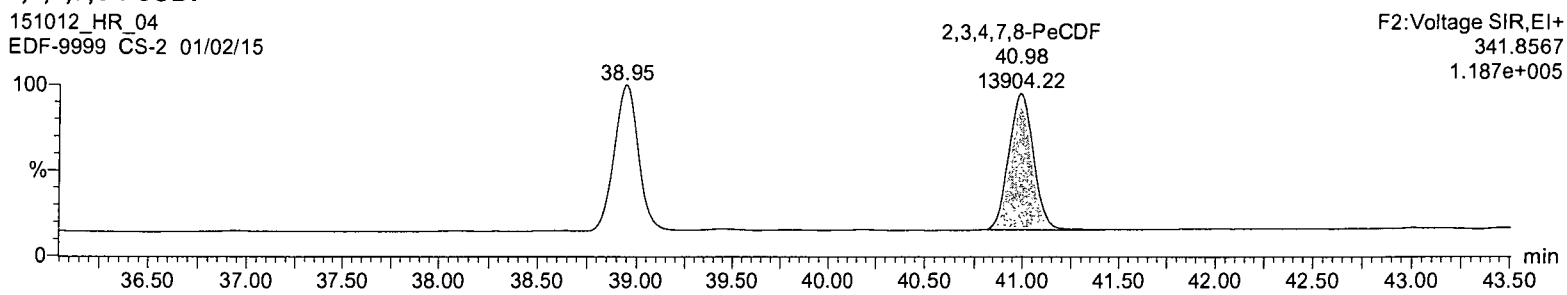
2,3,4,7,8-PeCDF



2,3,4,7,8-PeCDF



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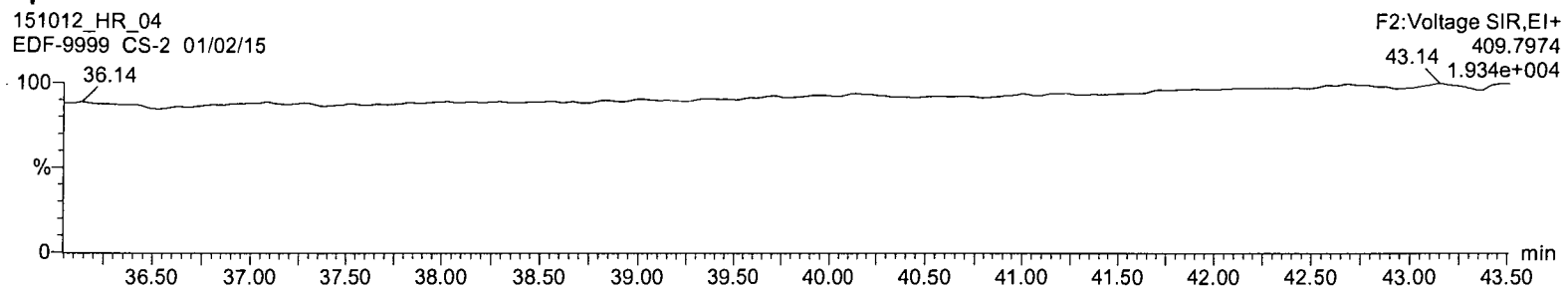

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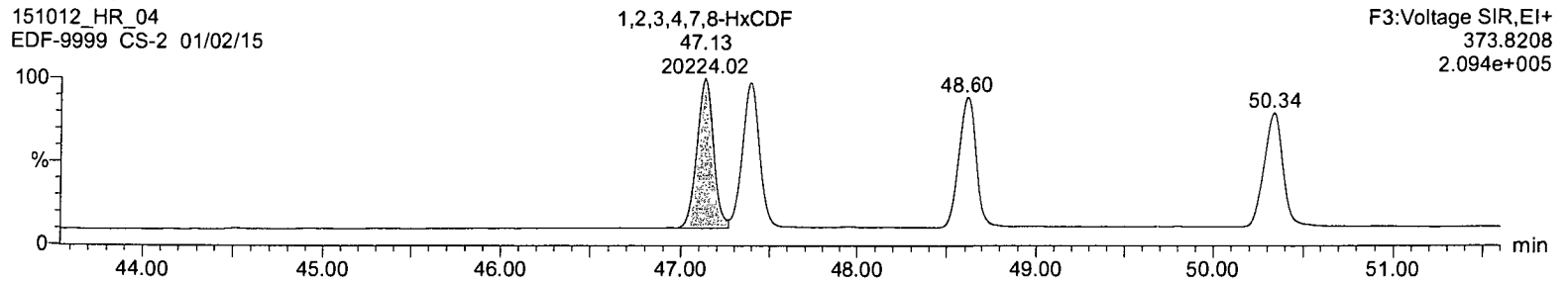
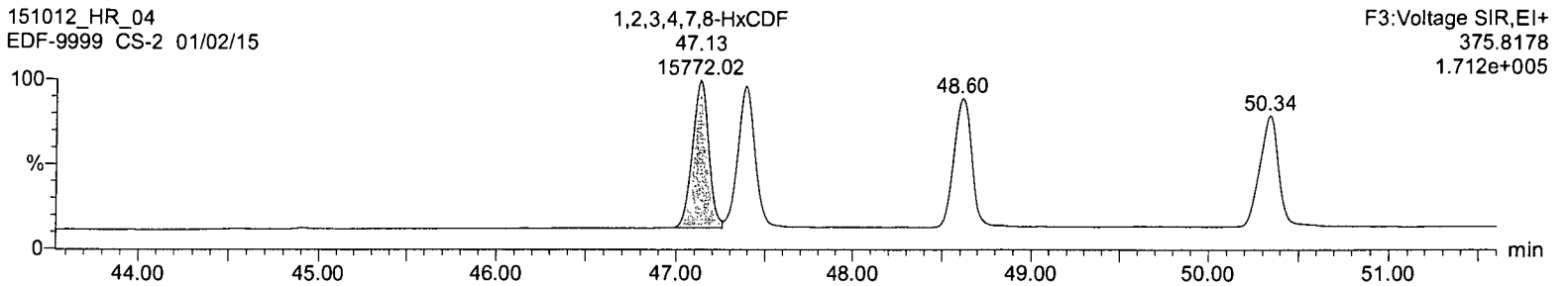
1,2,3,4,7,8-HxCDF



1,2,3,4,7,8-HxCDF



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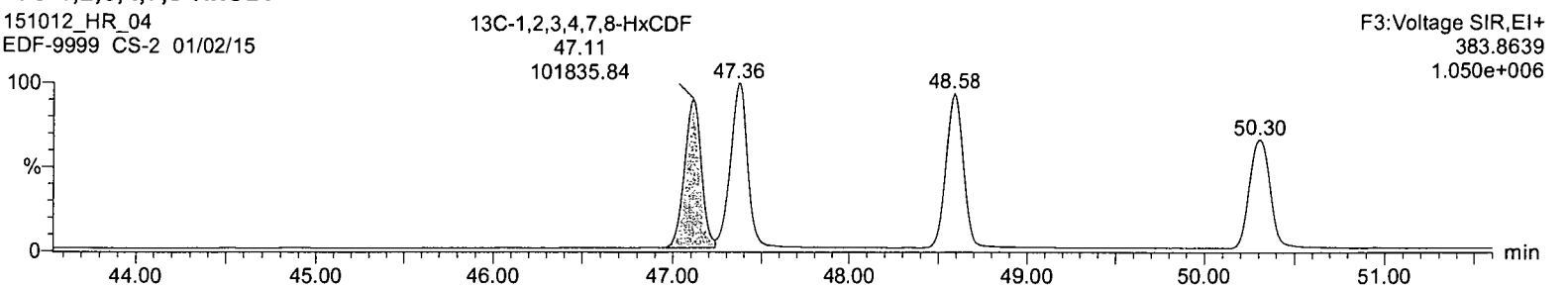

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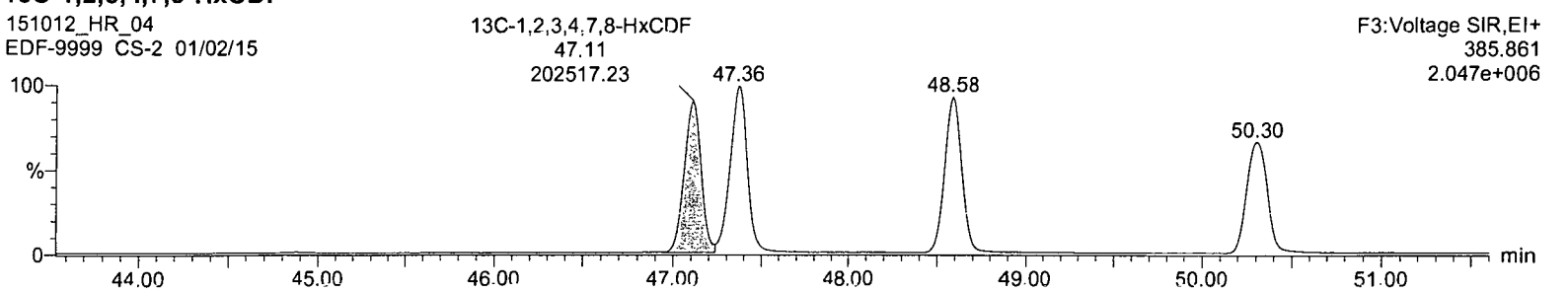

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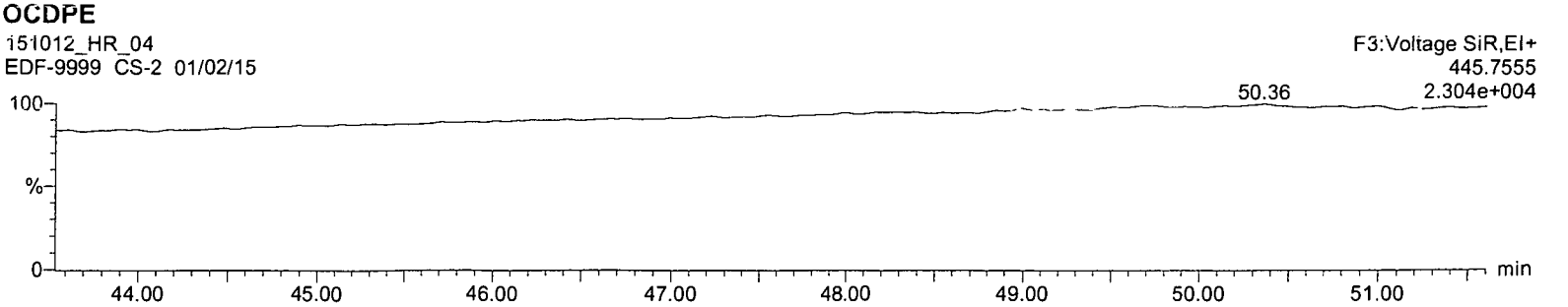

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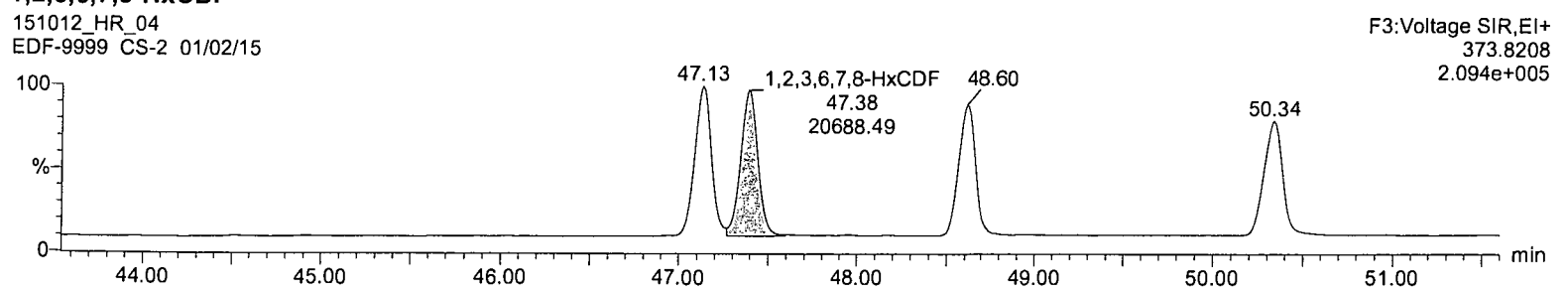
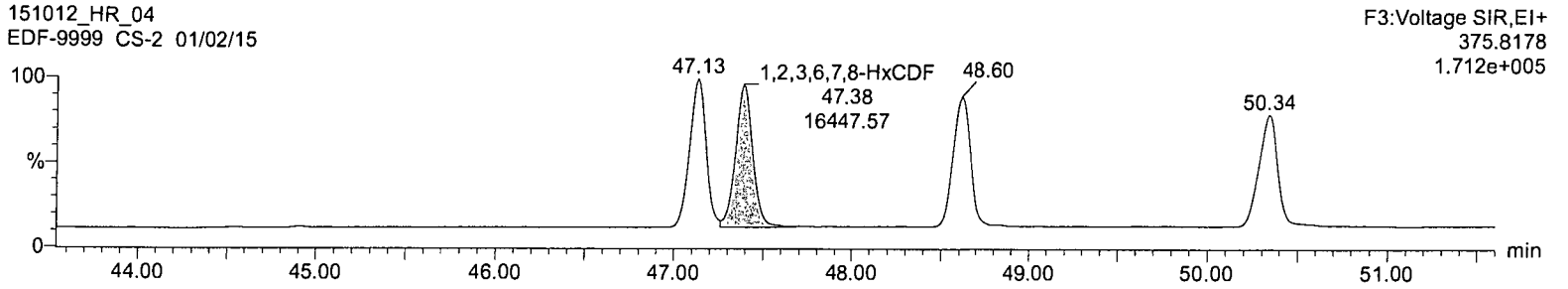
1,2,3,6,7,8-HxCDF



1,2,3,6,7,8-HxCDF



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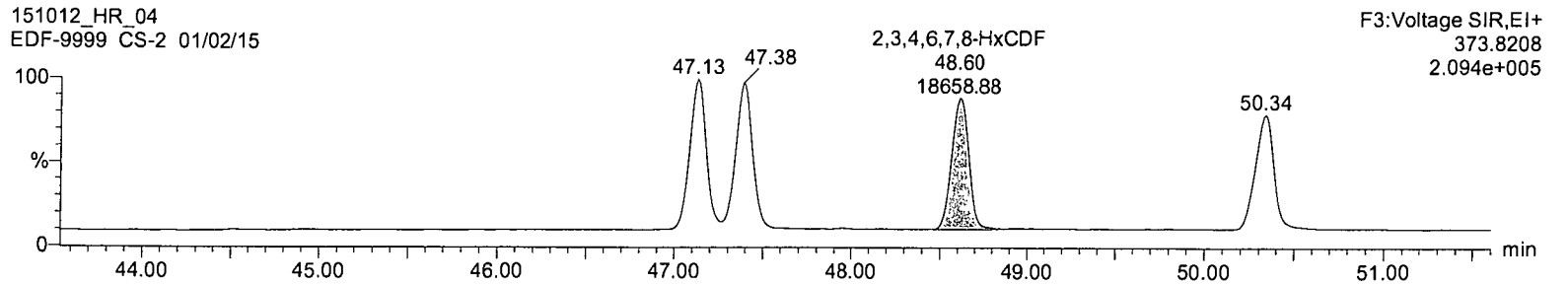

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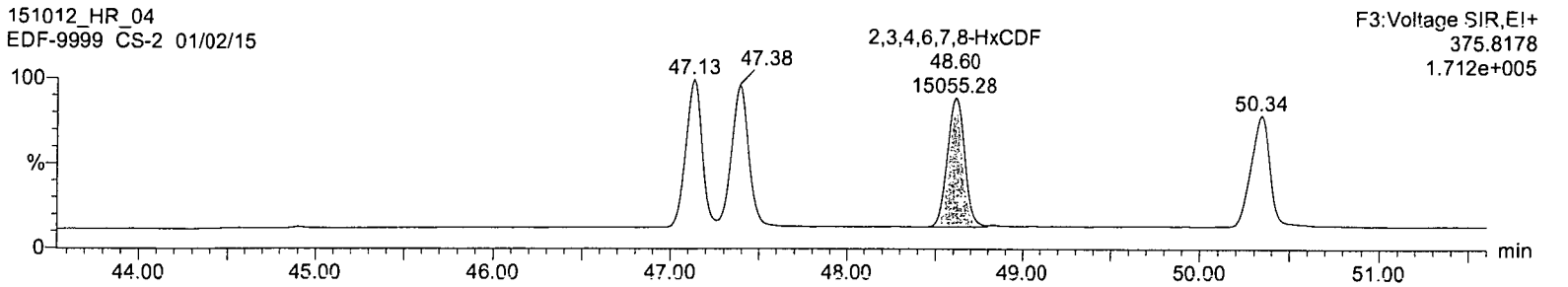

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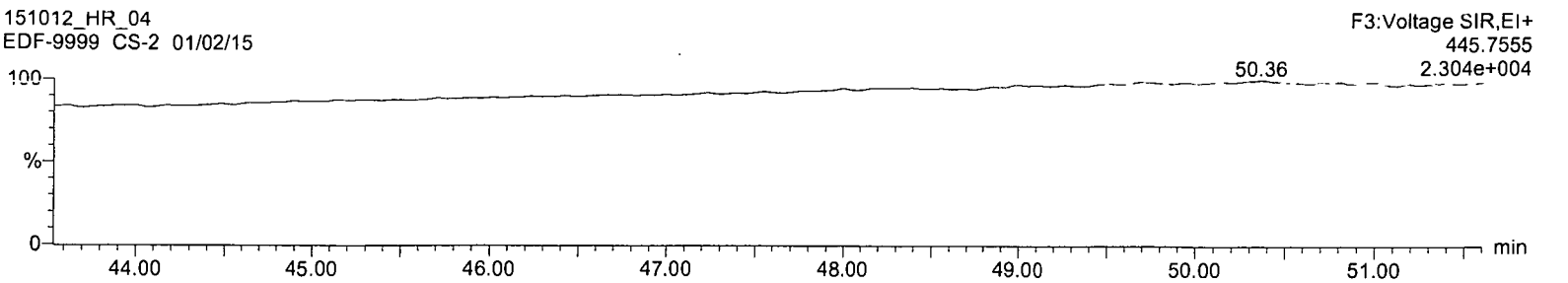

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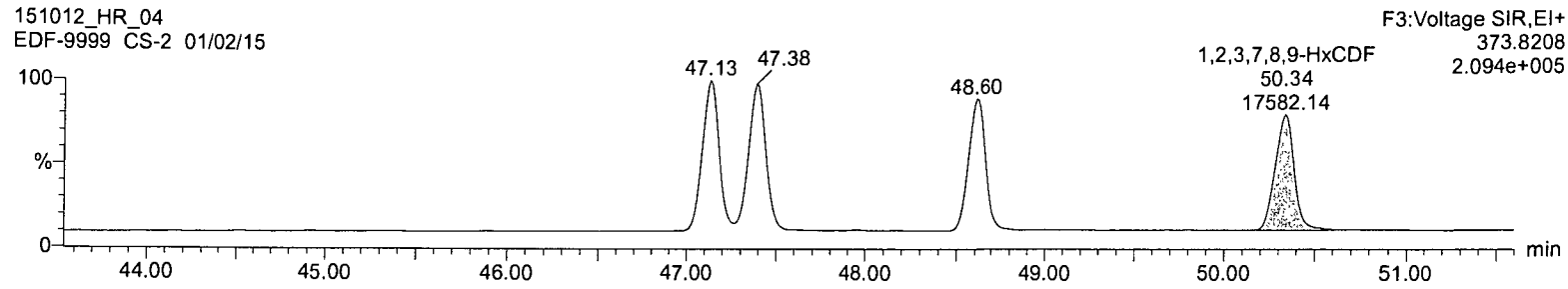
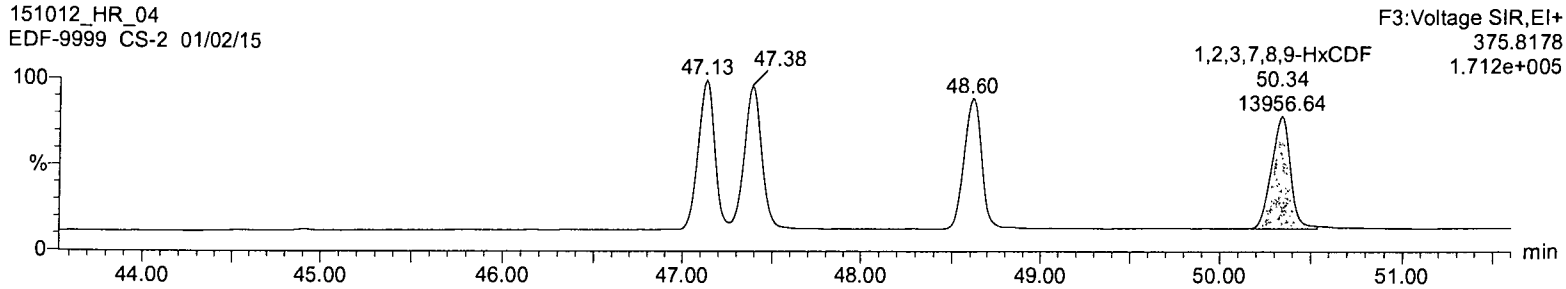
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF



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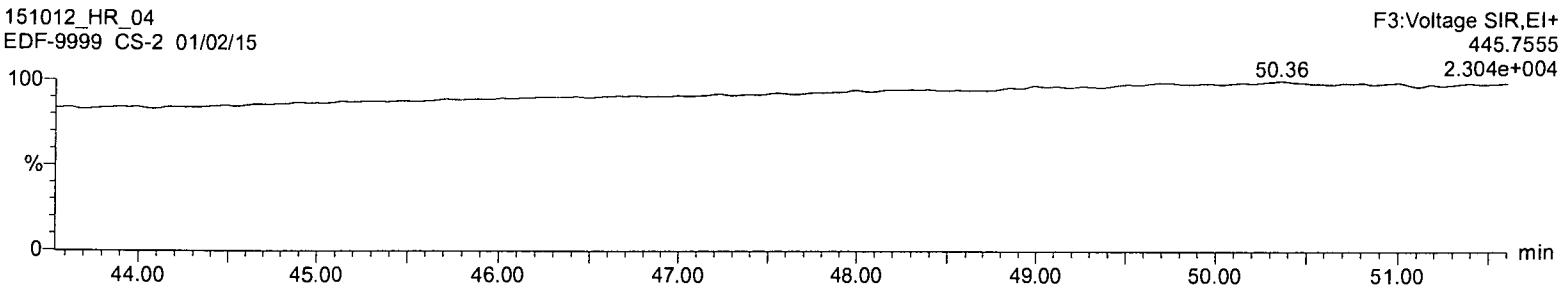

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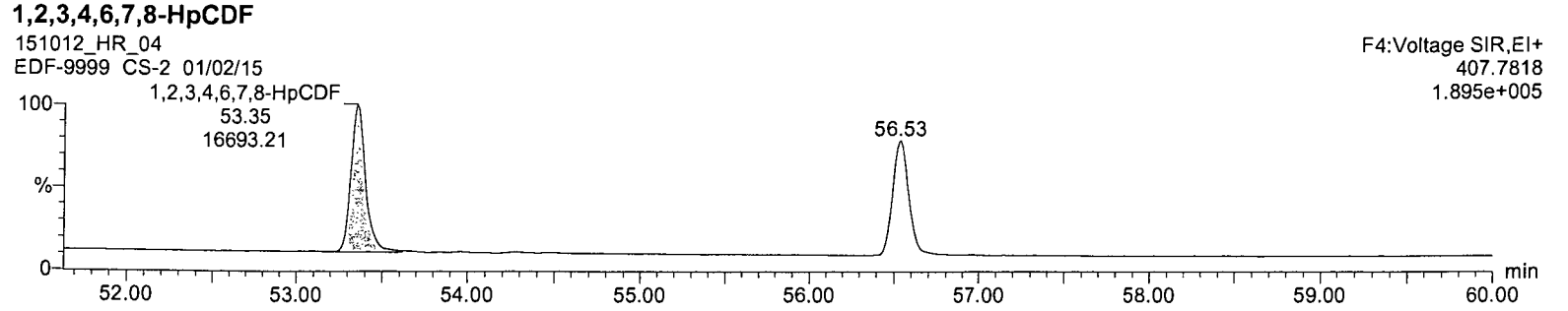
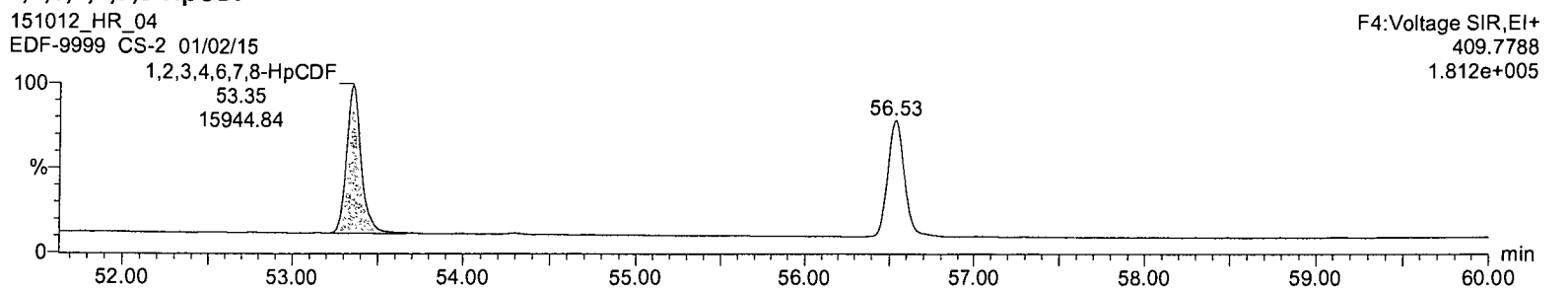
1,2,3,4,6,7,8-HpCDF



1,2,3,4,6,7,8-HpCDF



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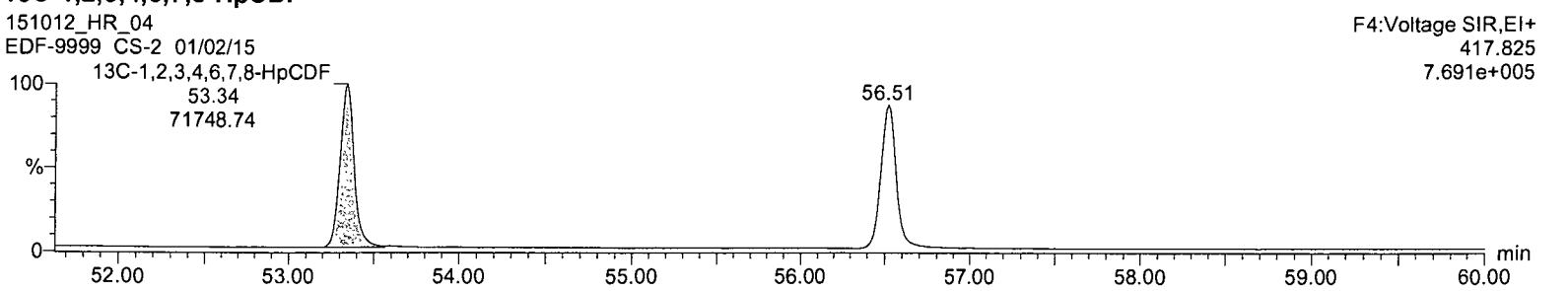

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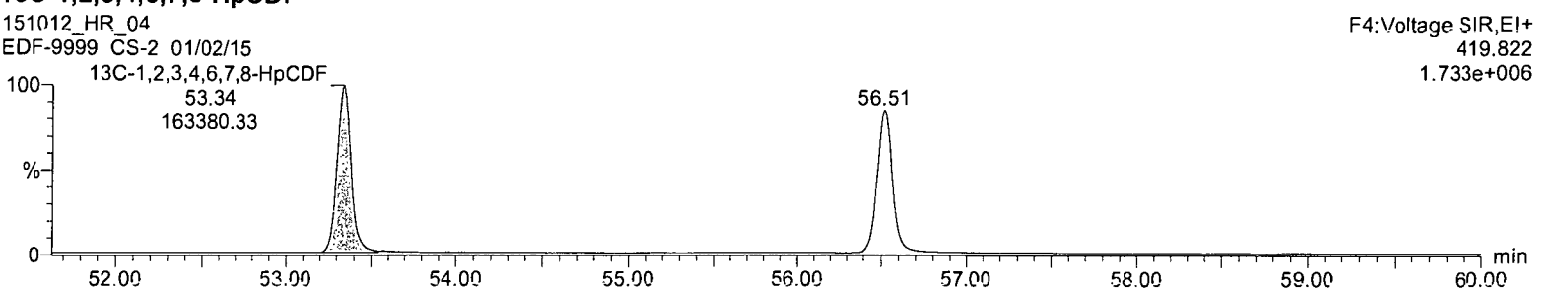

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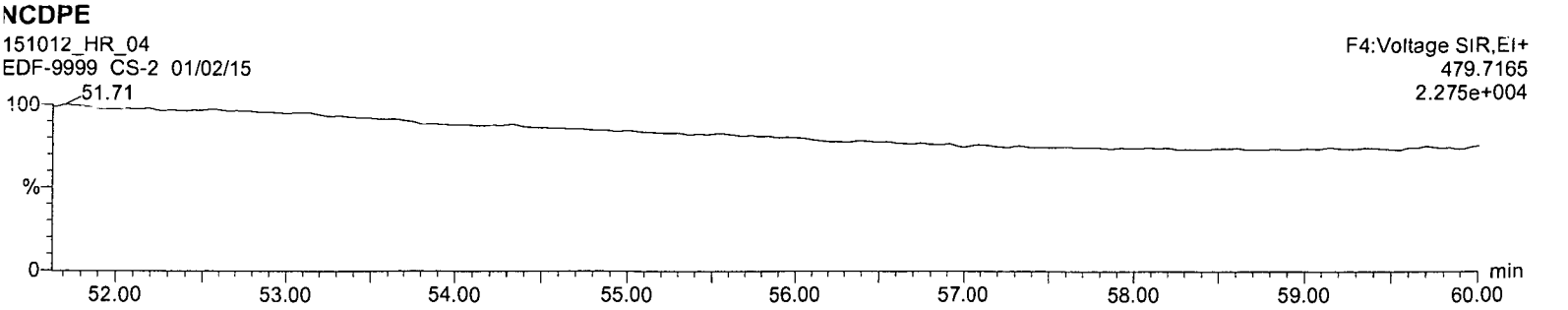

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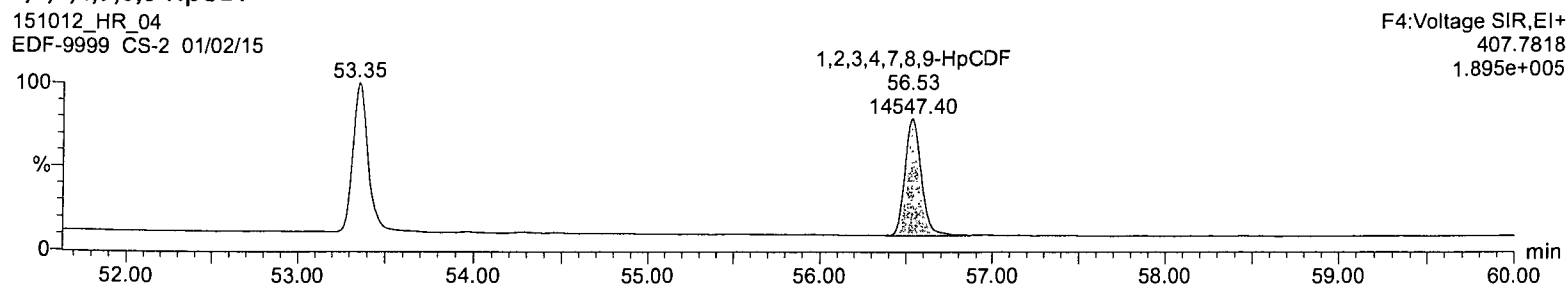
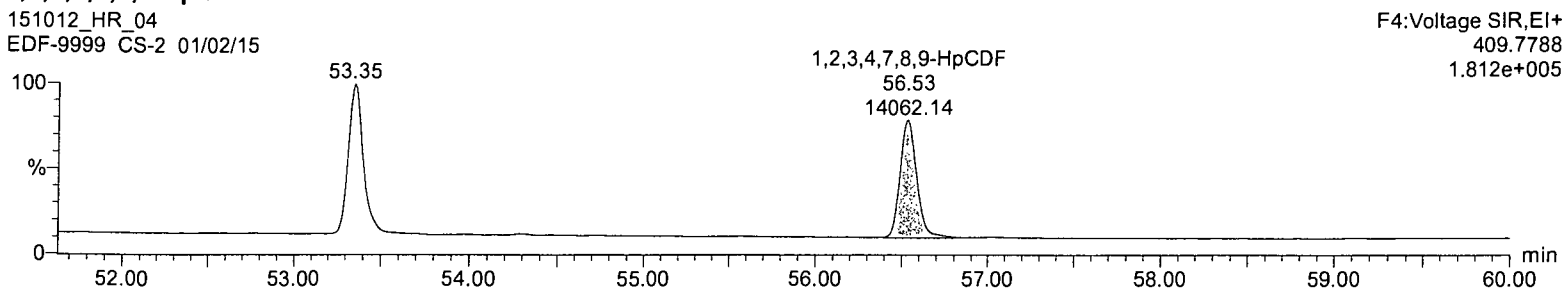
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF



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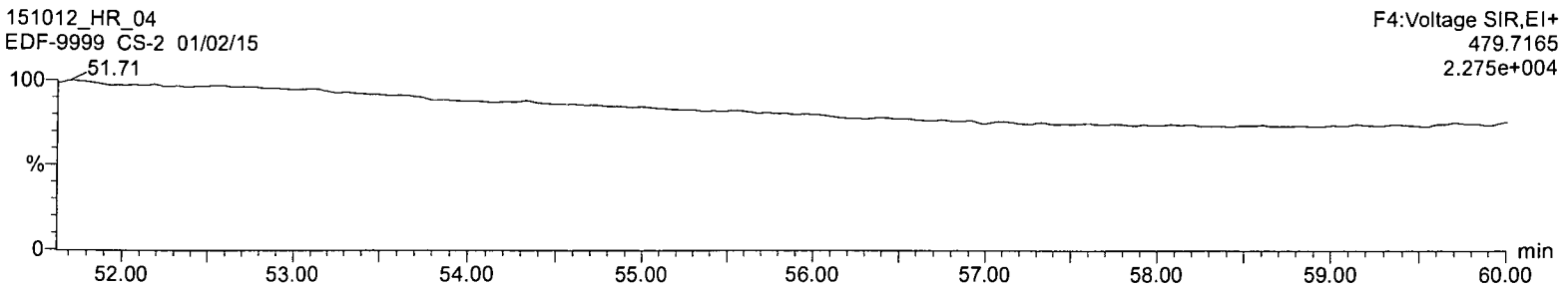

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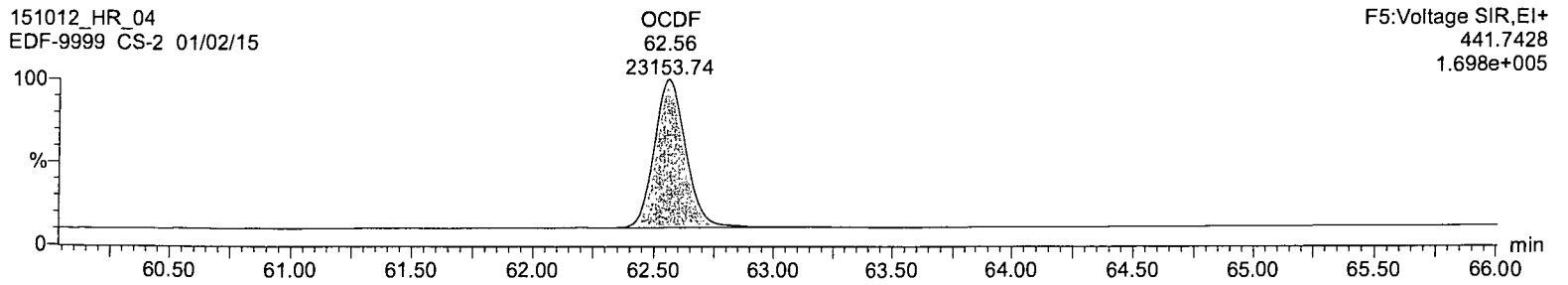
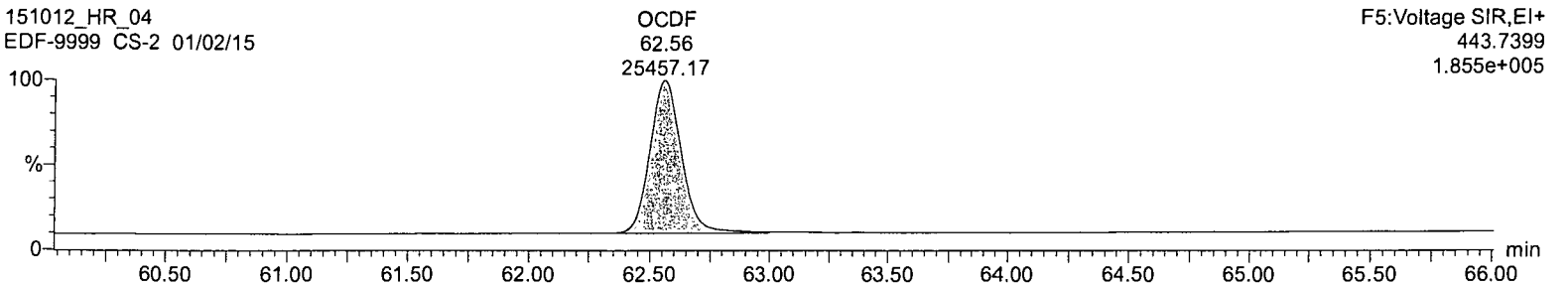
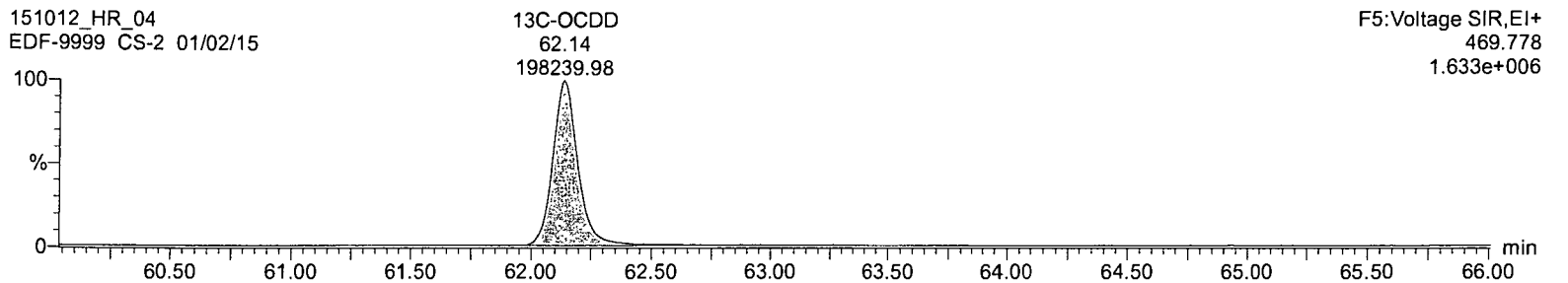
OCDF



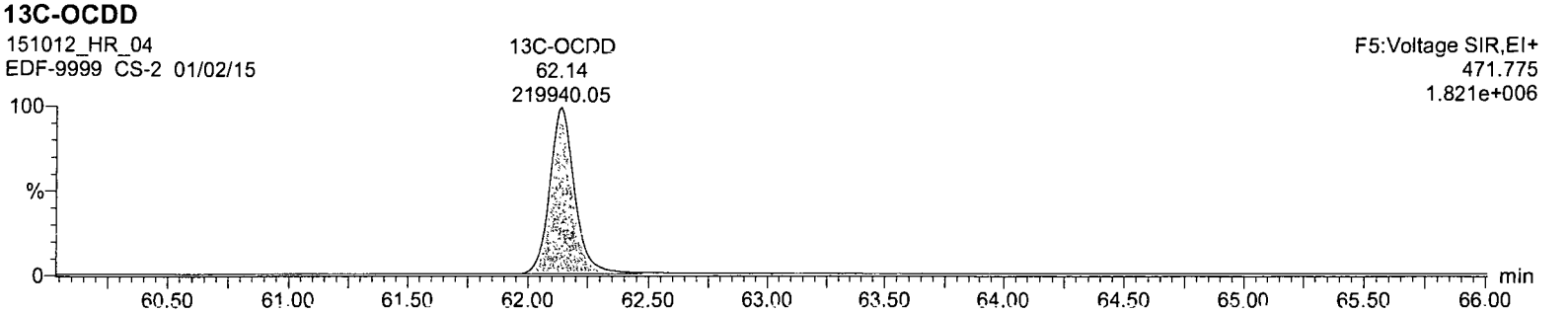
OCDF



13C-OCDD



13C-OCDD



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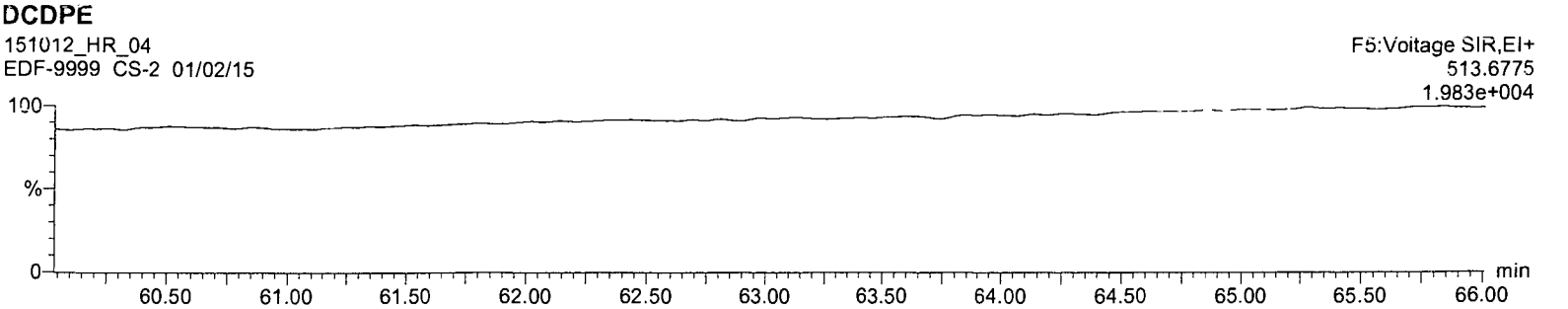

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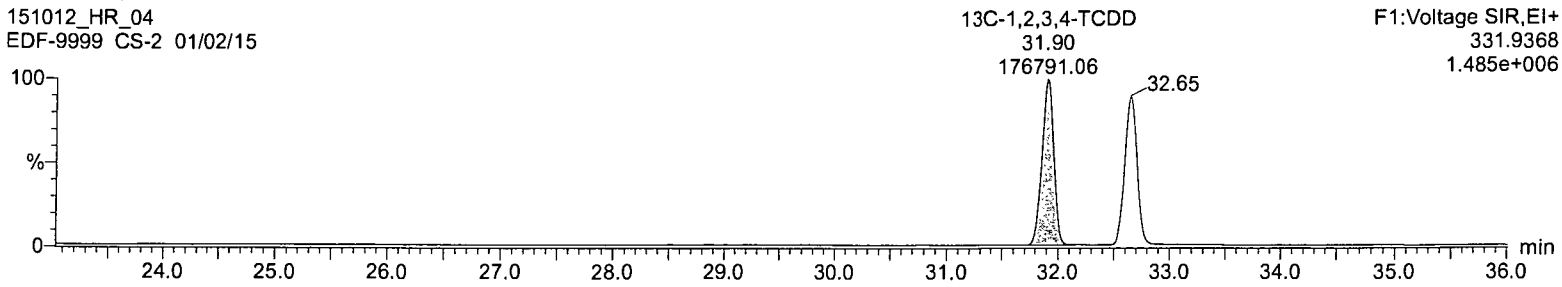
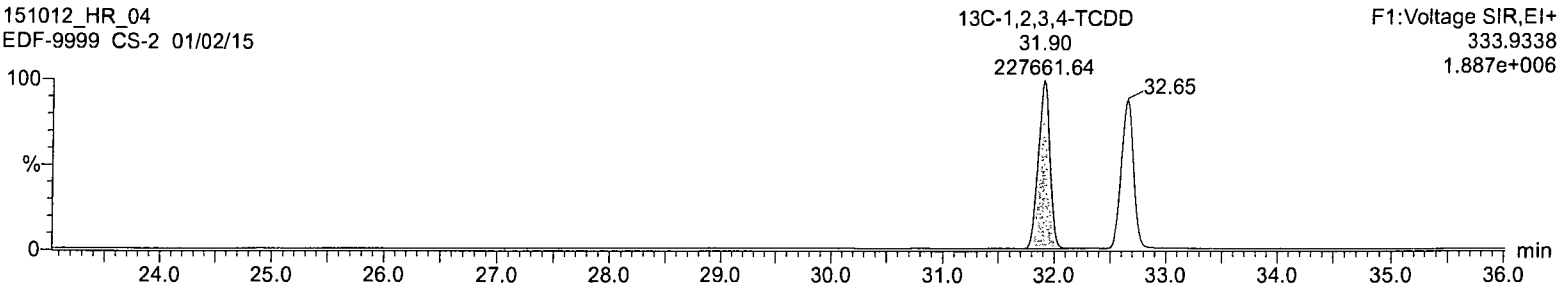
13C-1,2,3,4-TCDD



13C-1,2,3,4-TCDD



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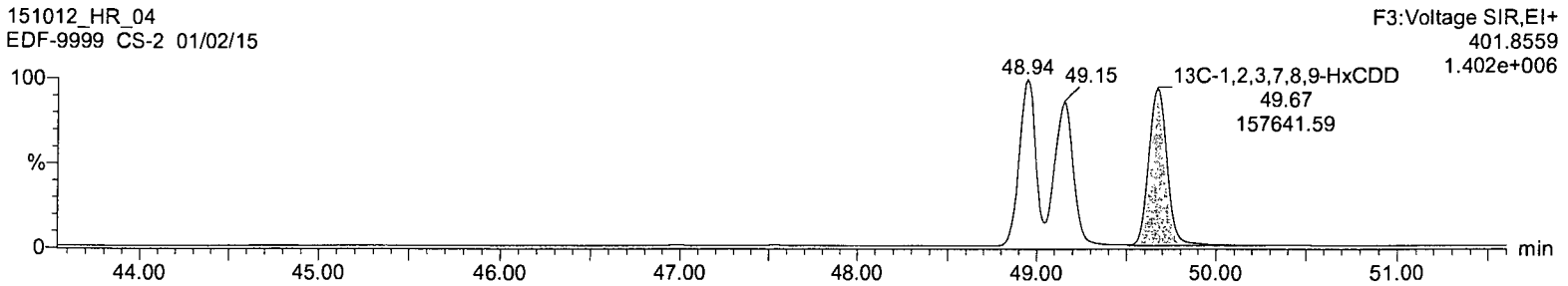

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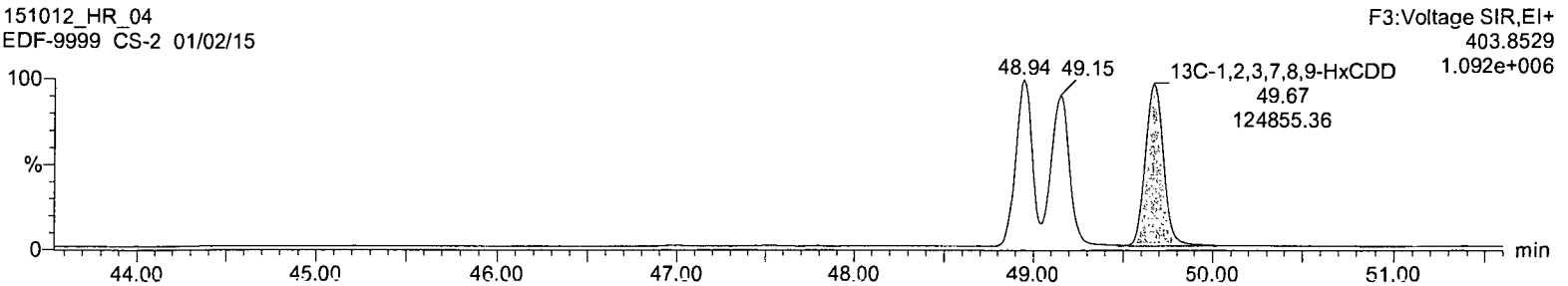

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Calibration: 13 Oct 2015 08:23:54

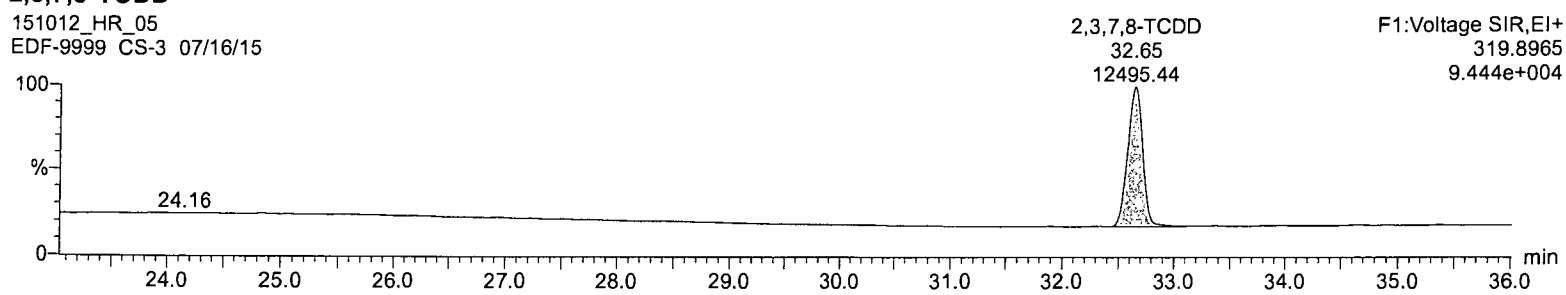
Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, ID: , Description: EDF-9999 CS-3 07/16/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N...	Signal 2	Noise 2	S/N 2	Flag S/N...
1	2,3,7,8-TCDD	7.7954000e4	1.3991451e2	535.88	NO	1.0400000e5	9.2957947e1	1118.79	NO
2	1,2,3,7,8-PeCDD	4.6129200e5	1.2644299e2	3655.51	NO	2.8887700e5	1.5337309e2	1883.49	NO
3	1,2,3,4,7,8-HxCDD	4.7816900e5	5.9373267e2	803.19	NO	3.9133000e5	2.7028738e2	1447.83	NO
4	1,2,3,6,7,8-HxCDD	4.9933300e5	5.9373267e2	838.60	NO	3.9387600e5	2.7028738e2	1457.25	NO
5	1,2,3,7,8,9-HxCDD	4.4500300e5	5.9373267e2	746.49	NO	3.6043900e5	2.7028738e2	1333.54	NO
6	1,2,3,4,6,7,8-HpCDD	4.0237900e5	1.9141769e2	2098.44	NO	3.8345700e5	1.6256033e2	2358.86	NO
7	OCDD	4.8058800e5	2.1831677e2	2197.58	NO	5.5145100e5	1.2855556e2	4289.59	NO
8	2,3,7,8-TCDF	1.2661700e5	1.8564658e2	667.58	NO	1.6793000e5	1.3923318e2	1206.11	NO
9	1,2,3,7,8-PeCDF	5.3485500e5	4.3239633e2	1234.76	NO	3.4934700e5	2.0943082e2	1668.08	NO
10	2,3,4,7,8-PeCDF	5.1469300e5	4.3239633e2	1191.47	NO	3.4042900e5	2.0943082e2	1625.50	NO
11	1,2,3,4,7,8-HxCDF	5.6364300e5	2.6824225e2	2105.56	NO	4.5856000e5	2.5137564e2	1824.20	NO
12	1,2,3,6,7,8-HxCDF	5.8060800e5	2.6824225e2	2169.04	NO	4.8039300e5	2.5137564e2	1911.06	NO
13	2,3,4,6,7,8-HxCDF	5.5458100e5	2.6824225e2	2066.45	NO	4.6565700e5	2.5137564e2	1852.43	NO
14	1,2,3,7,8,9-HxCDF	5.0708400e5	2.6824225e2	1881.04	NO	4.1126400e5	2.5137564e2	1636.05	NO
15	1,2,3,4,6,7,8-HpCDF	5.6750700e5	2.0555438e2	2754.73	NO	5.5197500e5	2.6352231e2	2094.60	NO
16	1,2,3,4,7,8,9-HpCDF	4.5398800e5	2.0555438e2	2205.54	NO	4.4697700e5	2.6352231e2	1696.16	NO
17	OCDF	4.5818700e5	1.4716603e2	3109.79	NO	5.2557300e5	1.2542937e2	4190.19	NO
18	13C-2,3,7,8-TCDD	9.7813500e5	2.3499879e2	4151.35	NO	1.2138790e6	2.2446519e2	5407.87	NO
19	13C-1,2,3,7,8-PeCDD	9.7529600e5	2.8893082e2	3378.66	NO	6.3090800e5	2.5061513e2	2517.44	NO
20	13C-1,2,3,6,7,8-HxCDD	9.4505900e5	4.3742862e2	2158.37	NO	7.6626500e5	2.6580621e2	2882.80	NO
21	13C-1,2,3,4,6,7,8-HpCDD	8.2444400e5	1.7872928e2	4606.96	NO	7.8467700e5	2.4150618e2	3249.10	NO
22	13C-OCDD	1.1046210e6	2.2533054e3	489.43	NO	1.2410120e6	2.6364758e2	4707.09	NO
23	13C-2,3,7,8-TCDF	1.3759420e6	2.0352434e2	6746.72	NO	1.7753010e6	1.9802081e2	8965.22	NO
24	13C-1,2,3,7,8-PeCDF	1.3076550e6	8.1225623e2	1607.53	NO	8.2705400e5	4.8718665e2	1697.61	NO
25	13C-1,2,3,4,7,8-HxCDF	6.0804200e5	3.2978813e3	182.44	NO	1.1788820e6	4.1406455e3	284.71	NO
26	13C-1,2,3,4,6,7,8-HpCDF	4.4185300e5	3.3831543e2	1302.52	NO	1.0083500e6	3.3005252e2	3055.12	NO
27	13C-1,2,3,4-TCDD	1.0810250e6	2.3499879e2	4588.15	NO	1.3237590e6	2.2446519e2	5897.39	NO
28	13C-1,2,3,7,8,9-HxCDD	9.1746300e5	4.3742862e2	2095.73	NO	7.6400400e5	2.6580621e2	2874.29	NO

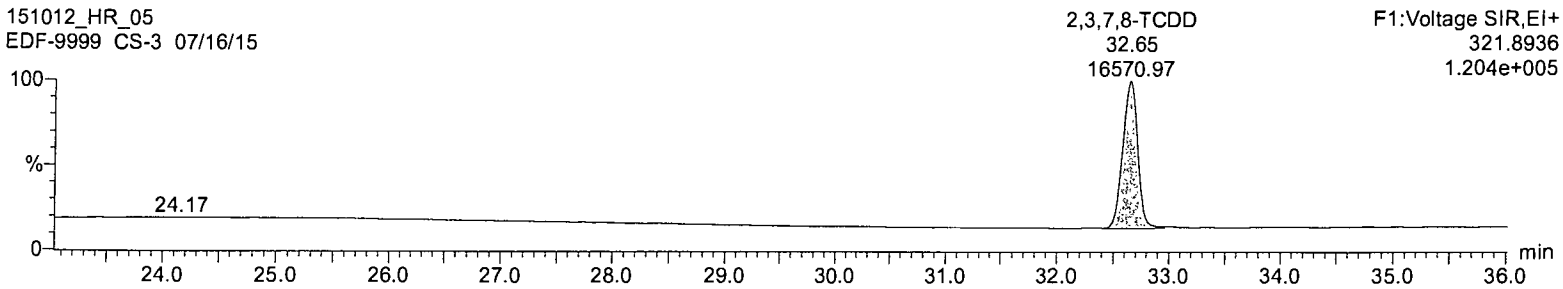
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

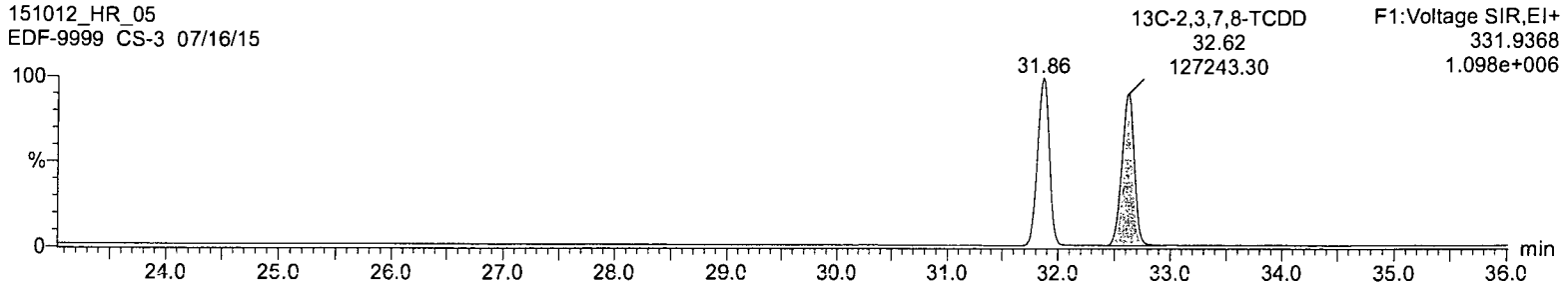
2,3,7,8-TCDD



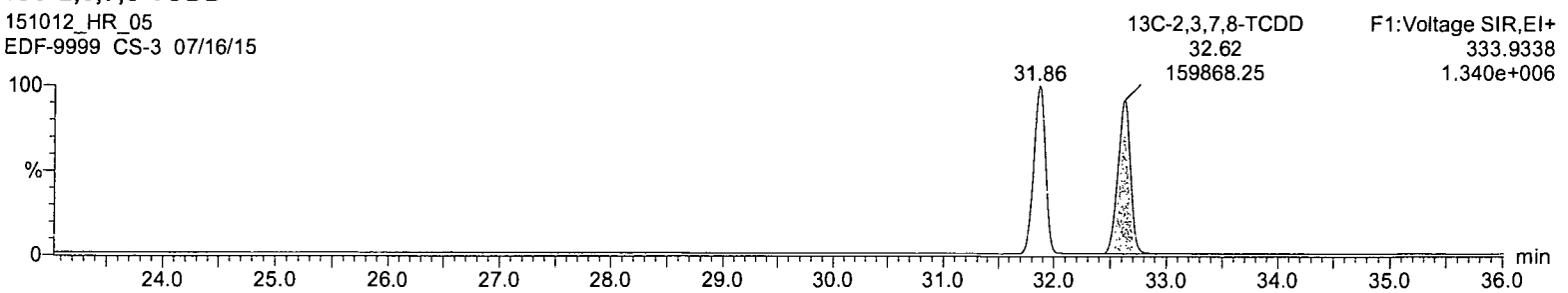
2,3,7,8-TCDD



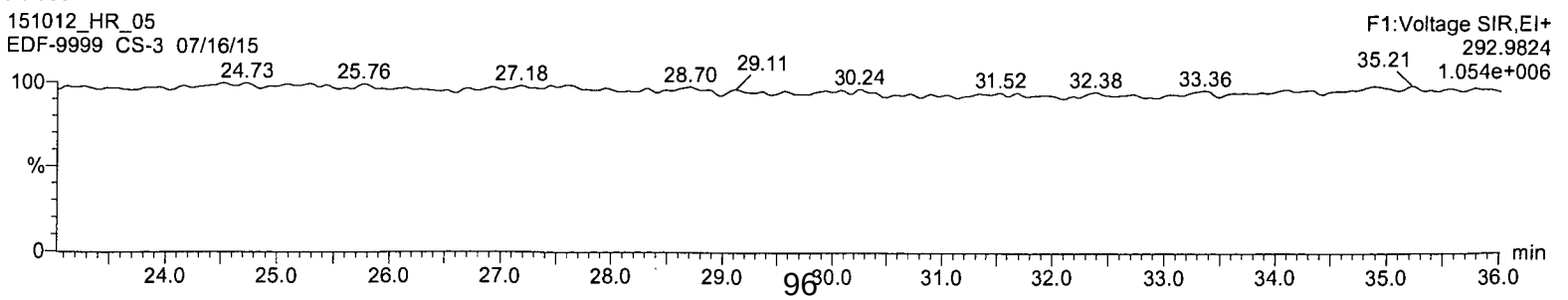
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

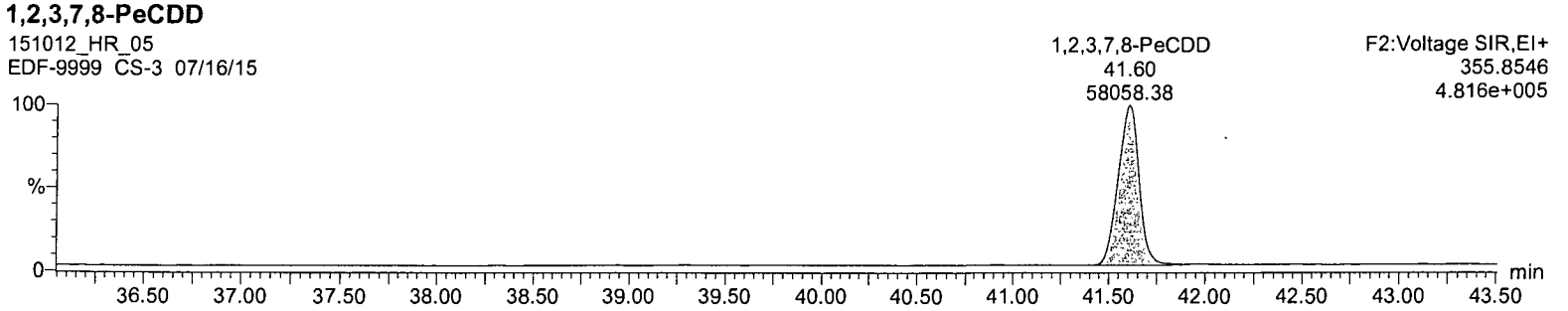


PFK1

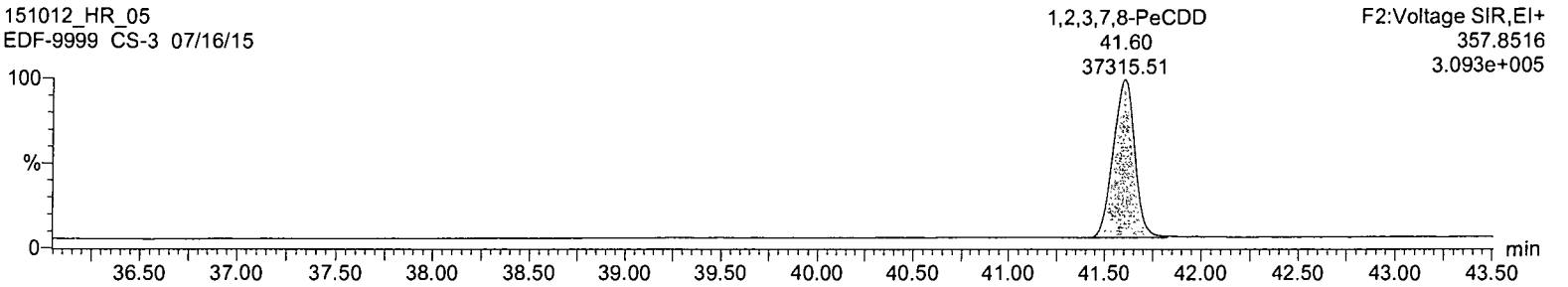


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

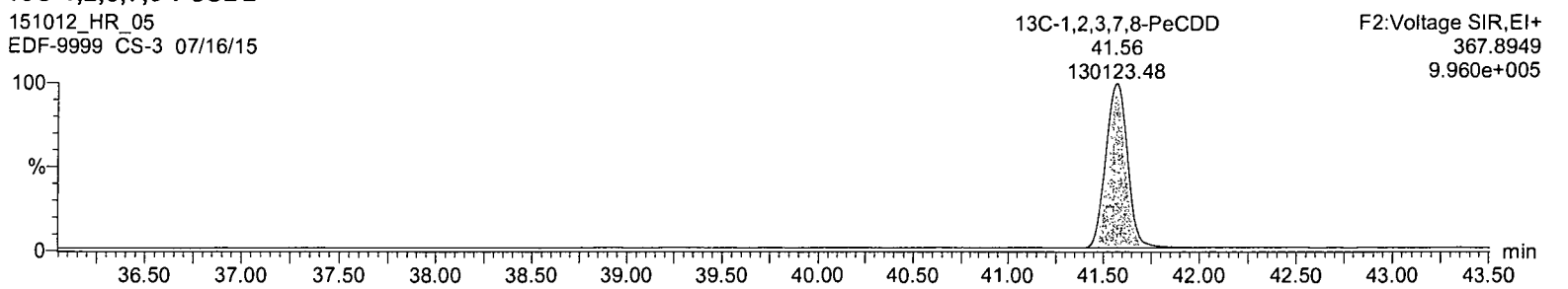
1,2,3,7,8-PeCDD



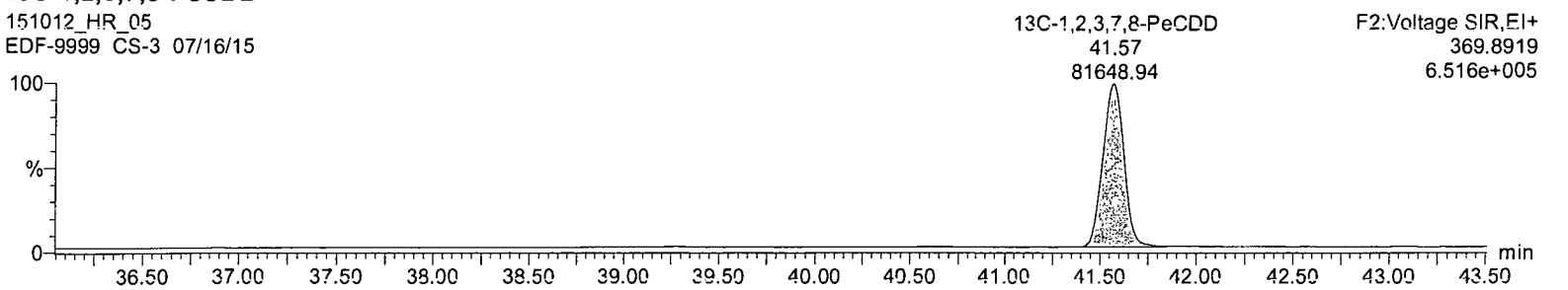
1,2,3,7,8-PeCDD



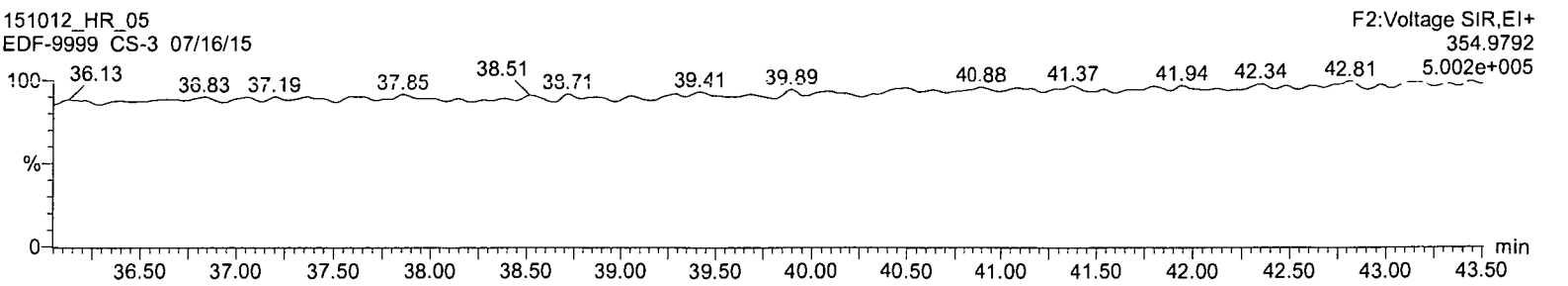
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

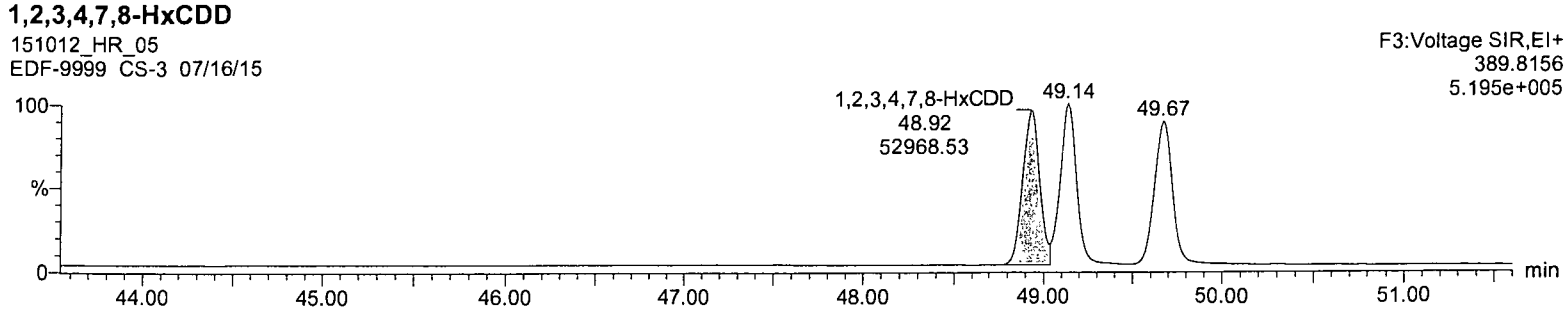


PFK2

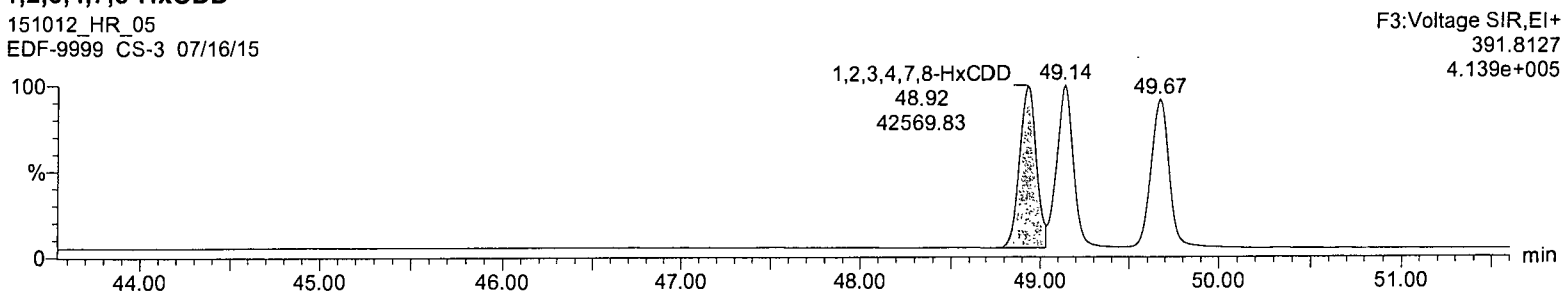


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

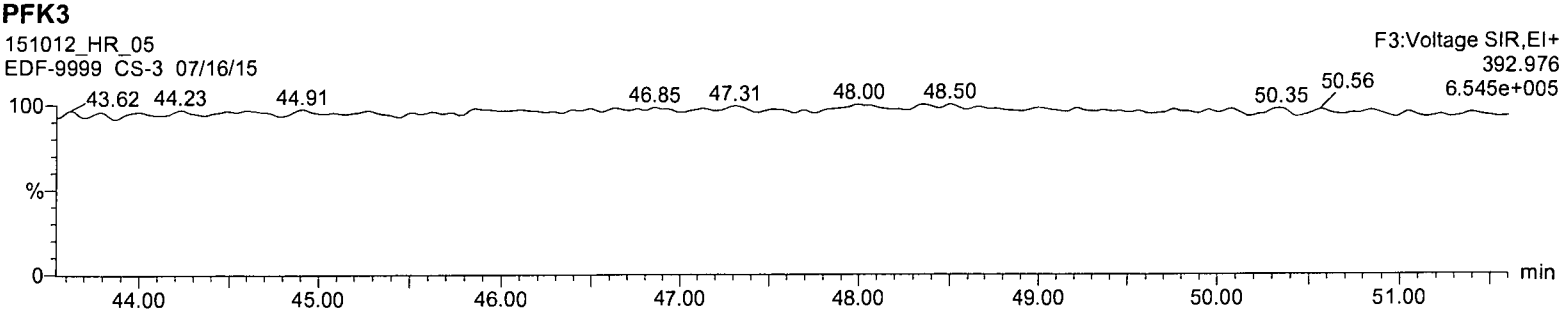
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD

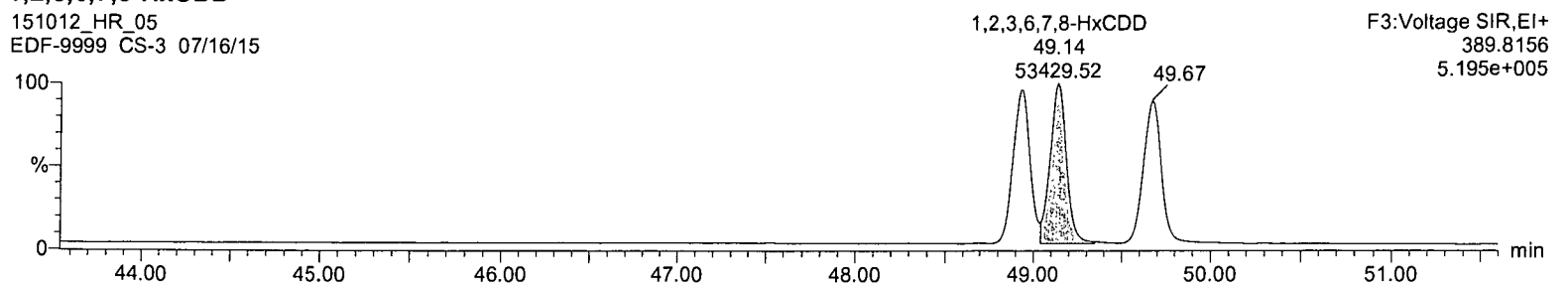


PFK3

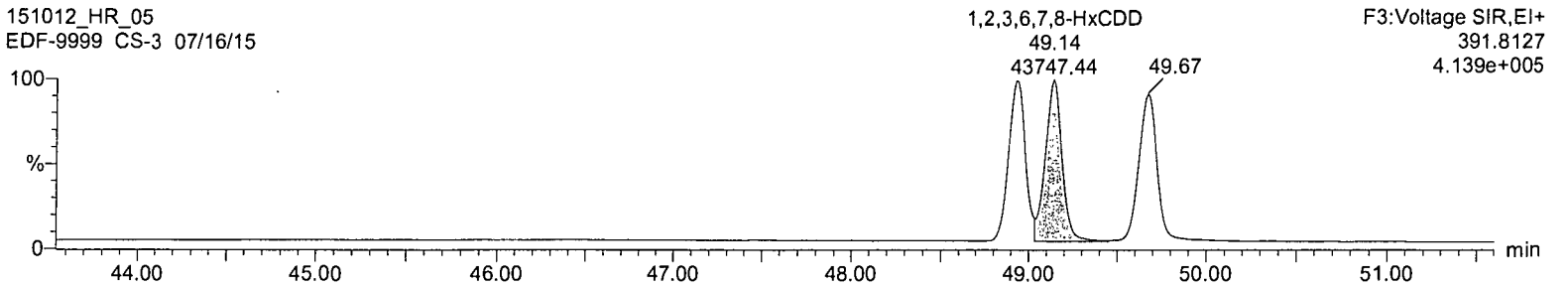


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

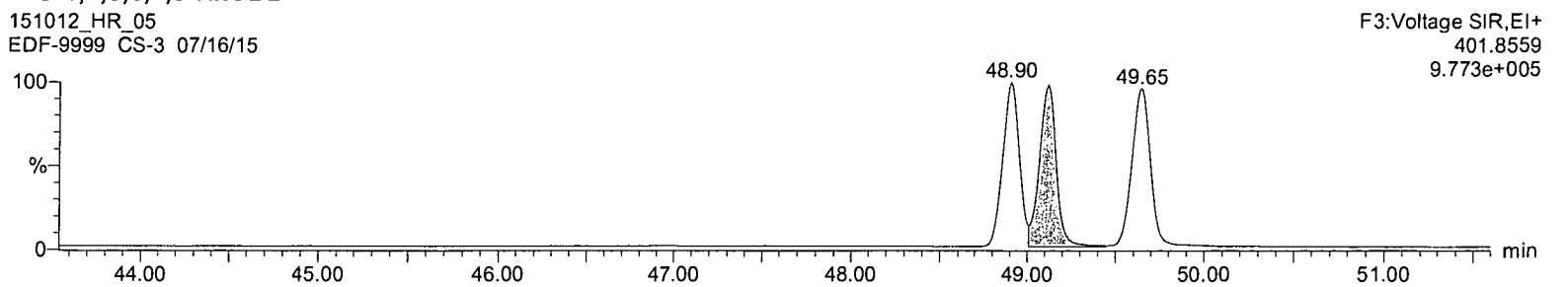
1,2,3,6,7,8-HxCDD



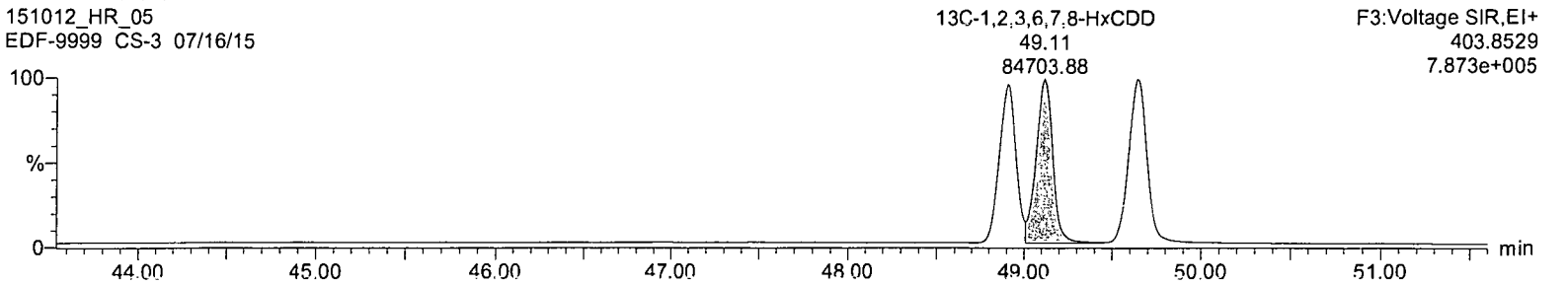
1,2,3,6,7,8-HxCDD



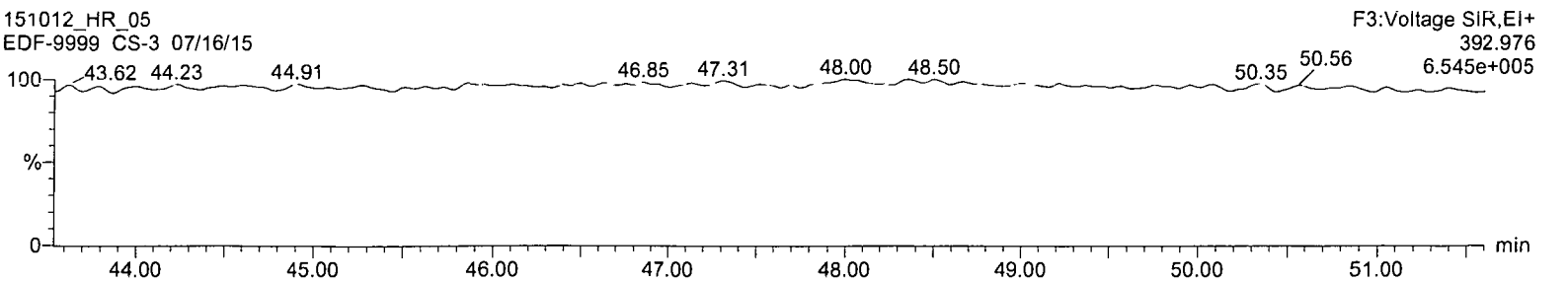
13C-1,2,3,6,7,8-HxCDD



13C-1,2,3,6,7,8-HxCDD

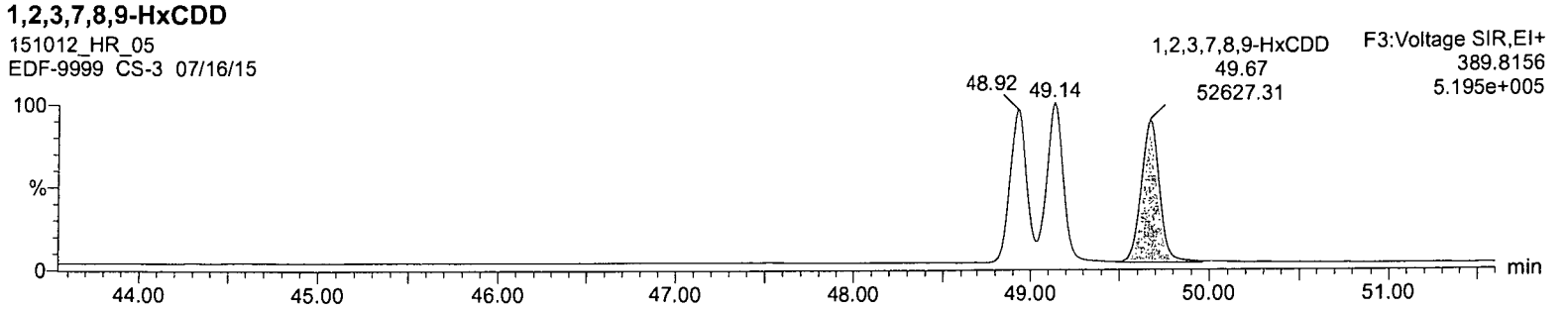


PFK3

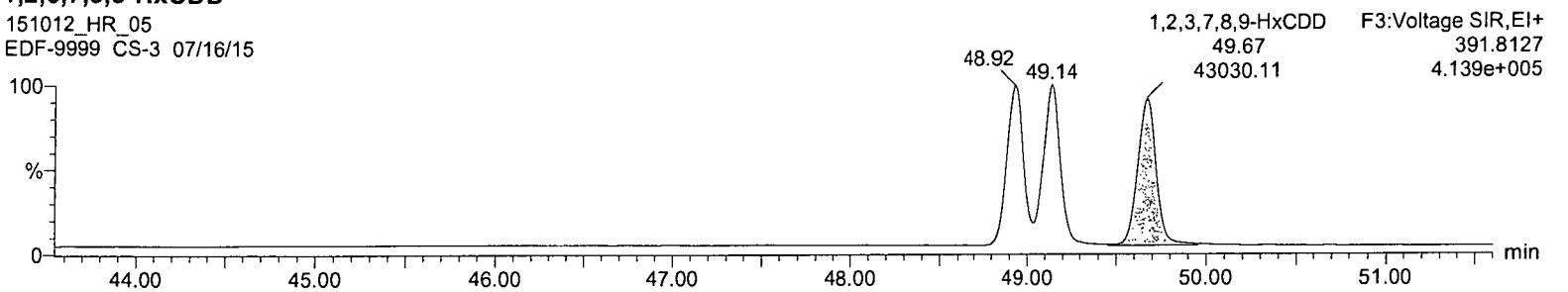


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

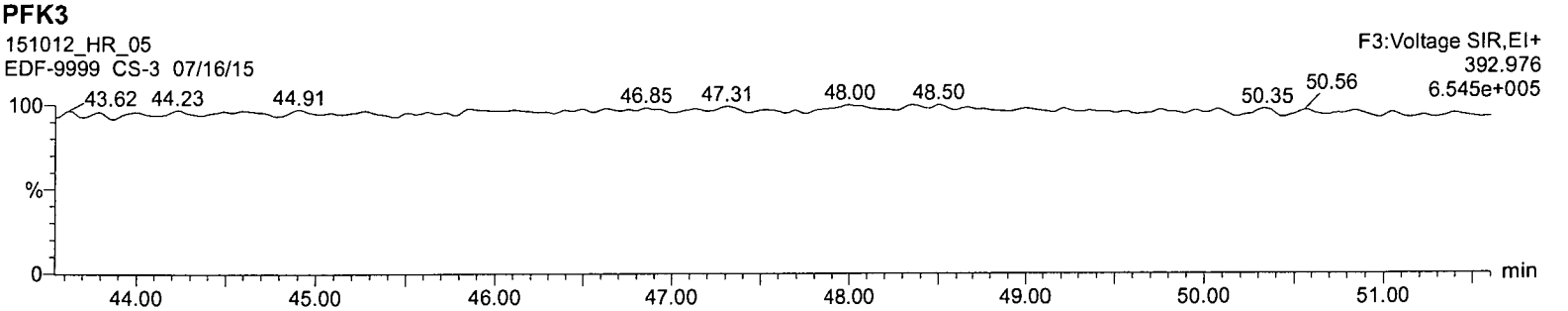
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD

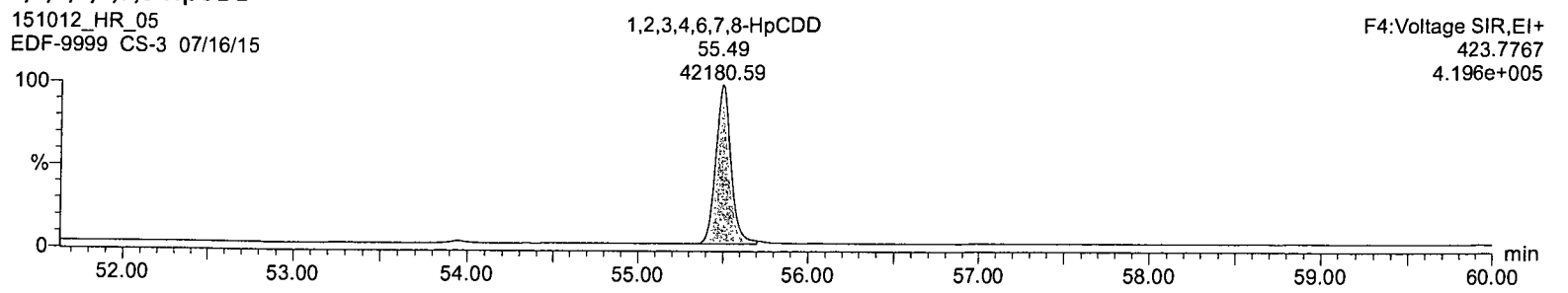


PFK3

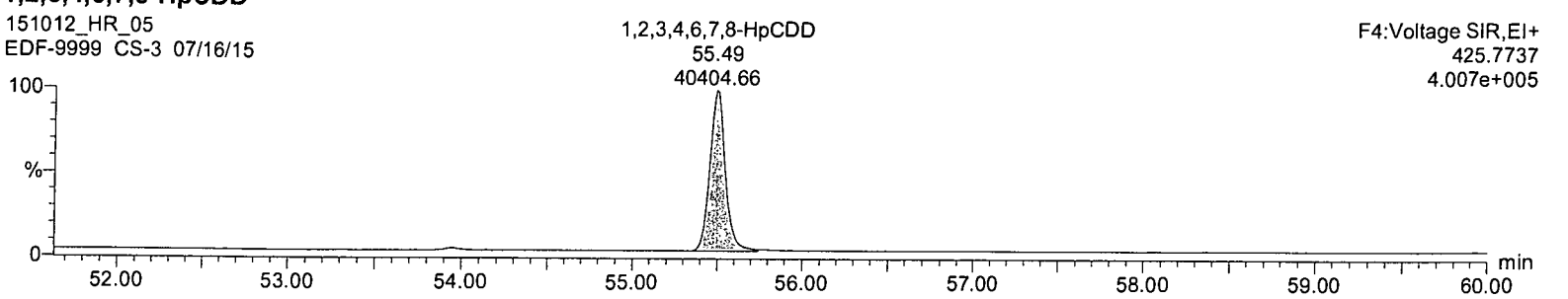


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

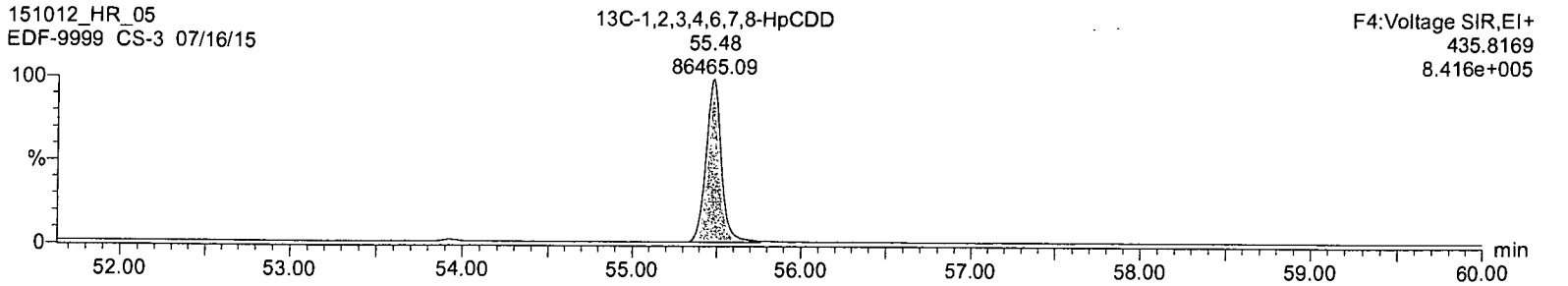
1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



13C-1,2,3,4,6,7,8-HpCDD



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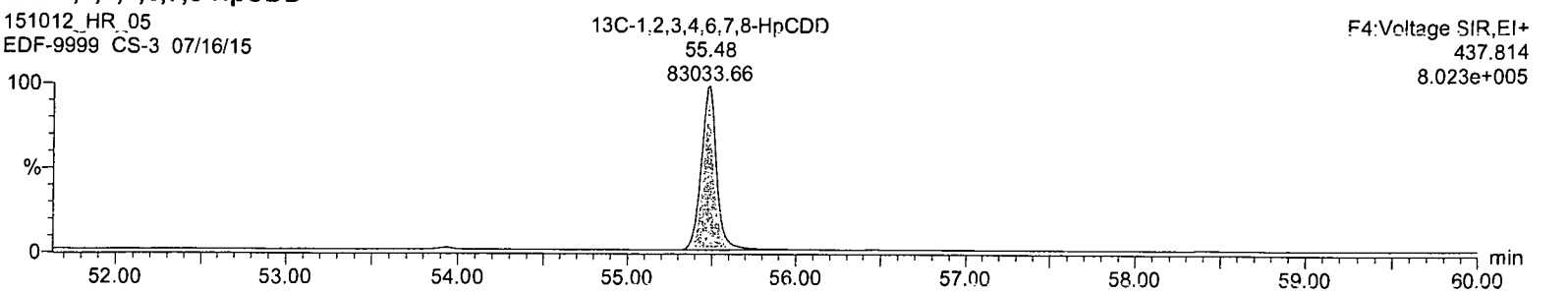
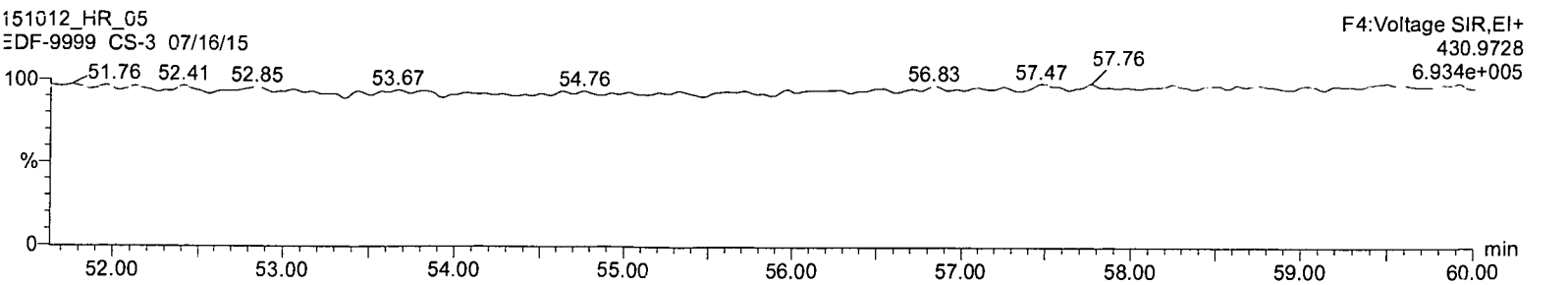
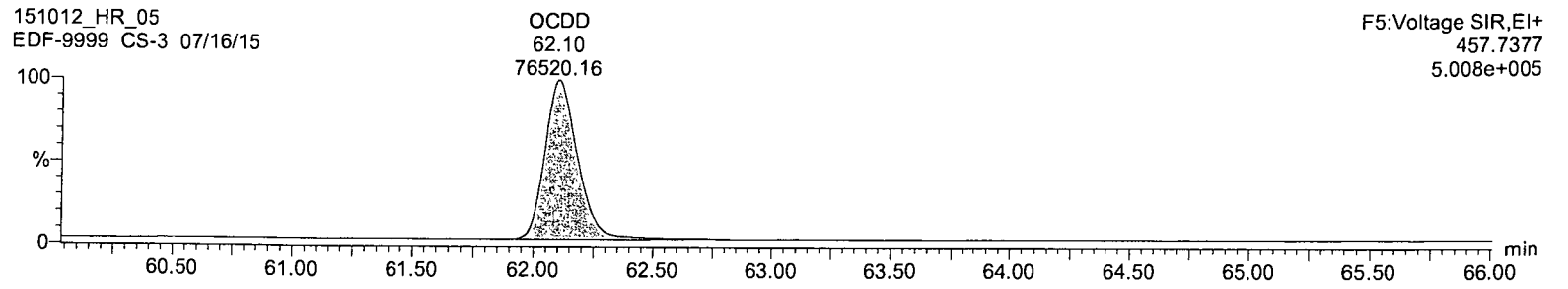


?FK4

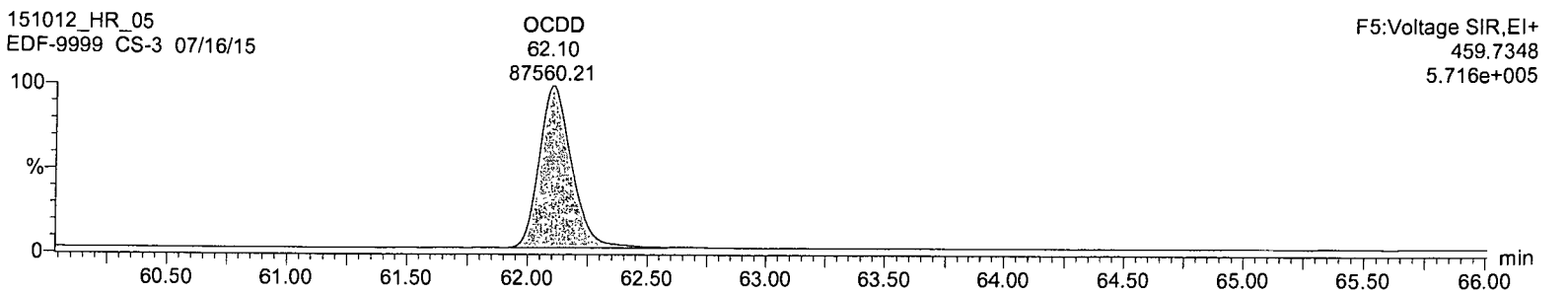


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

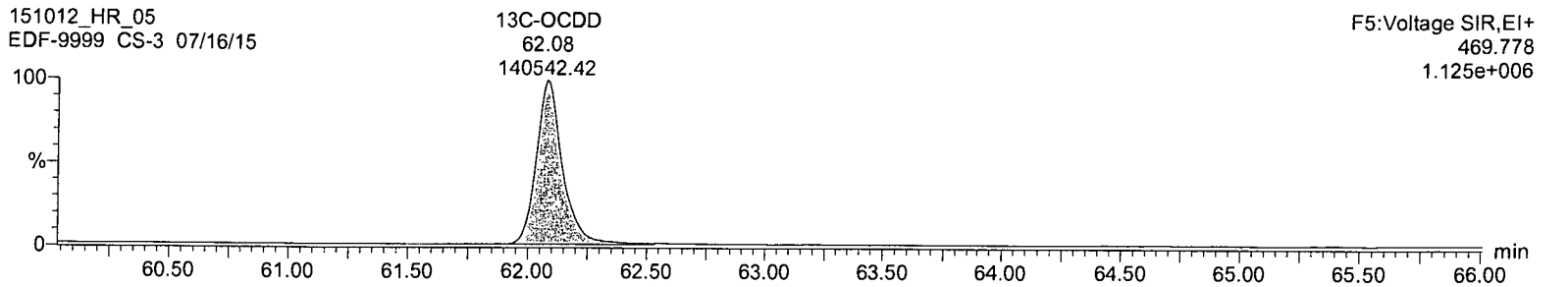
OCDD



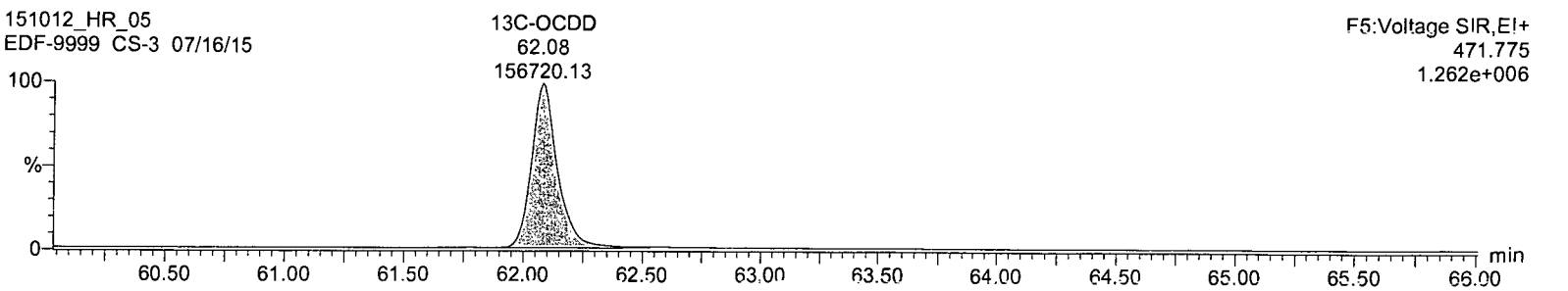
OCDD



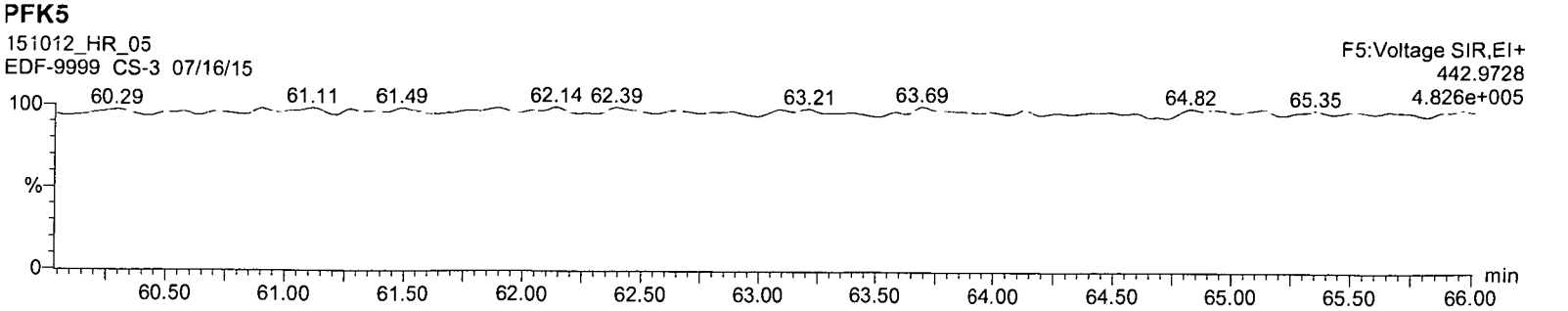
13C-OCDD



13C-OCDD

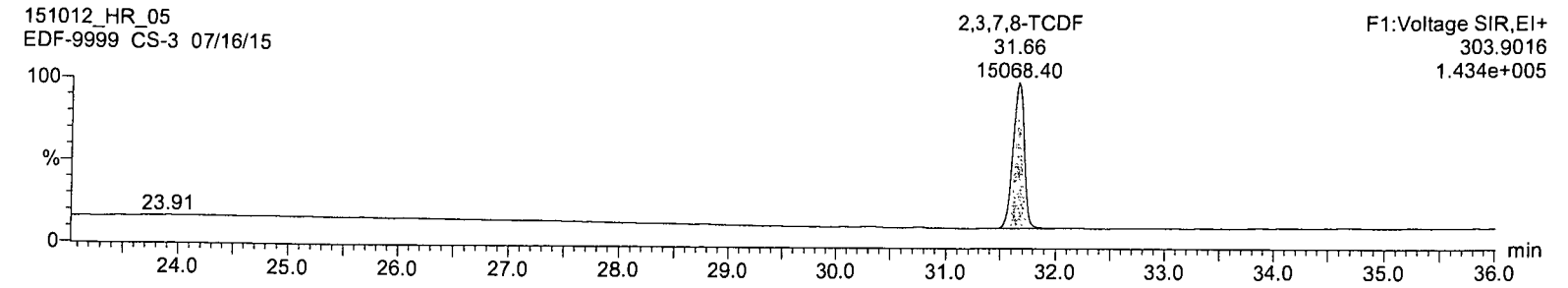


PFK5

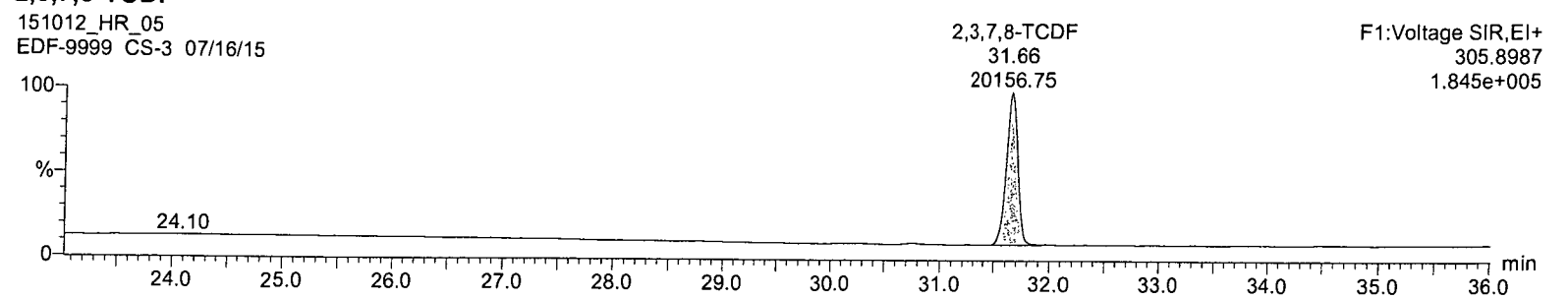


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

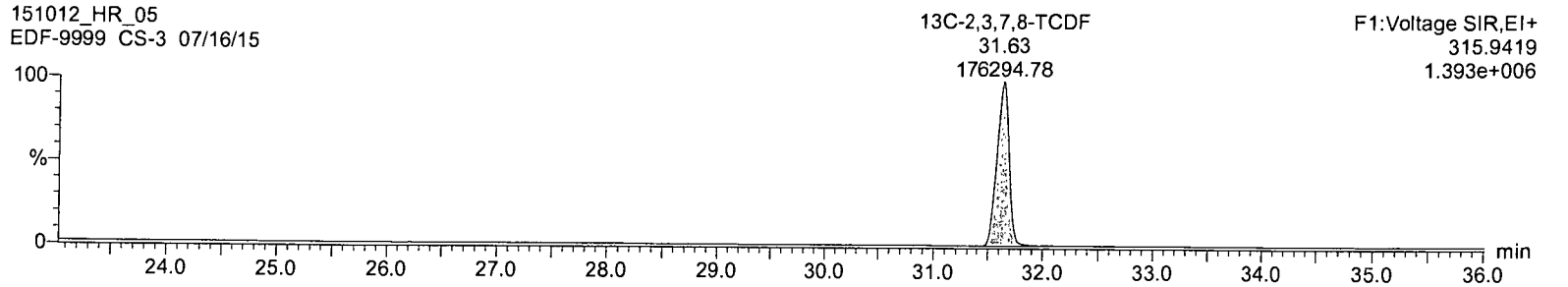
2,3,7,8-TCDF



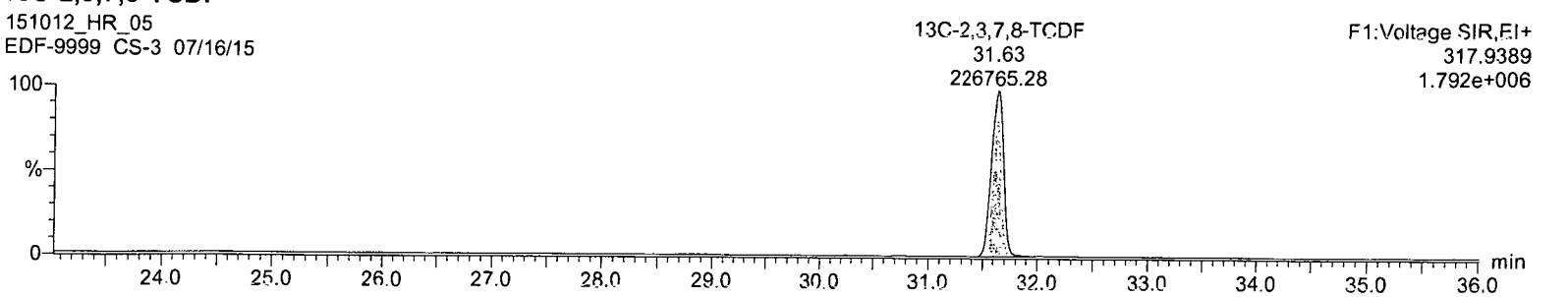
2,3,7,8-TCDF



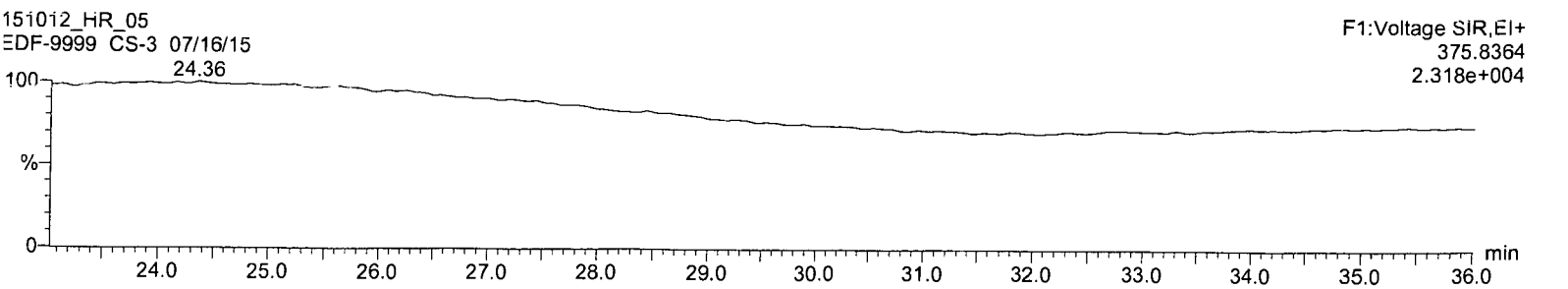
13C-2,3,7,8-TCDF



13C-2,3,7,8-TCDF

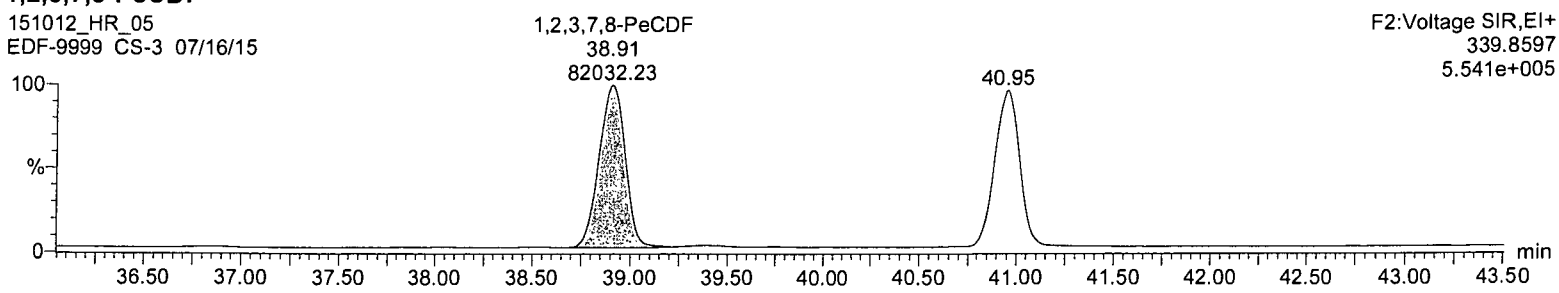


HxCDPE

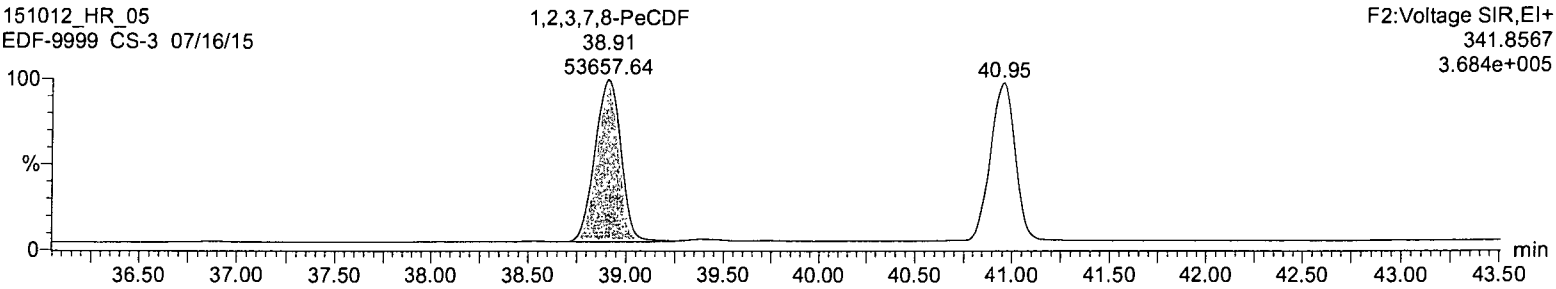


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

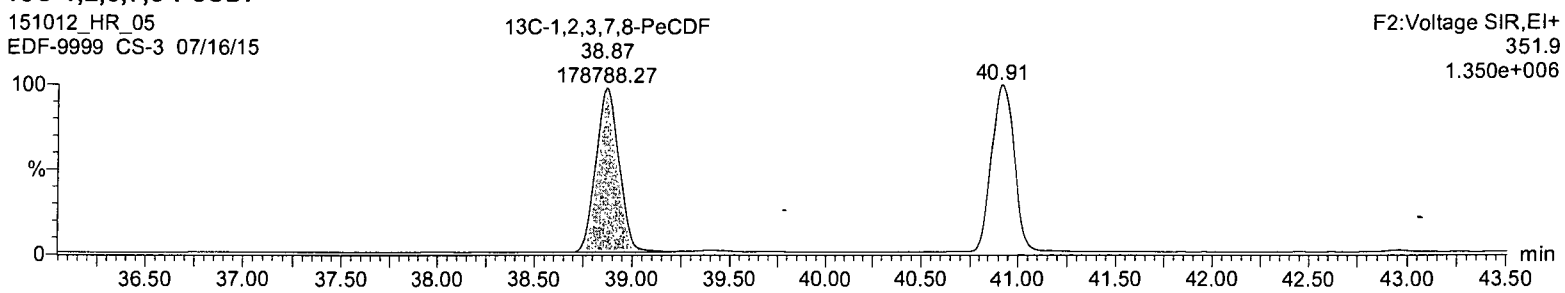
1,2,3,7,8-PeCDF



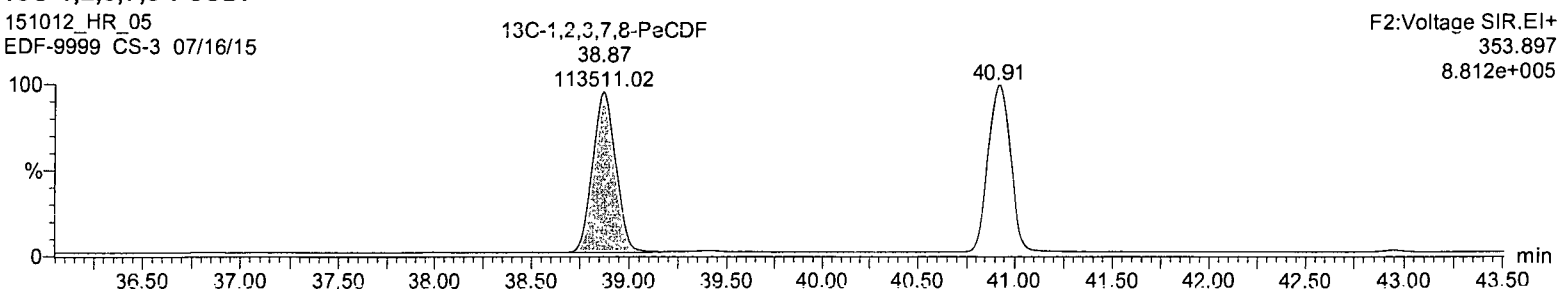
1,2,3,7,8-PeCDF



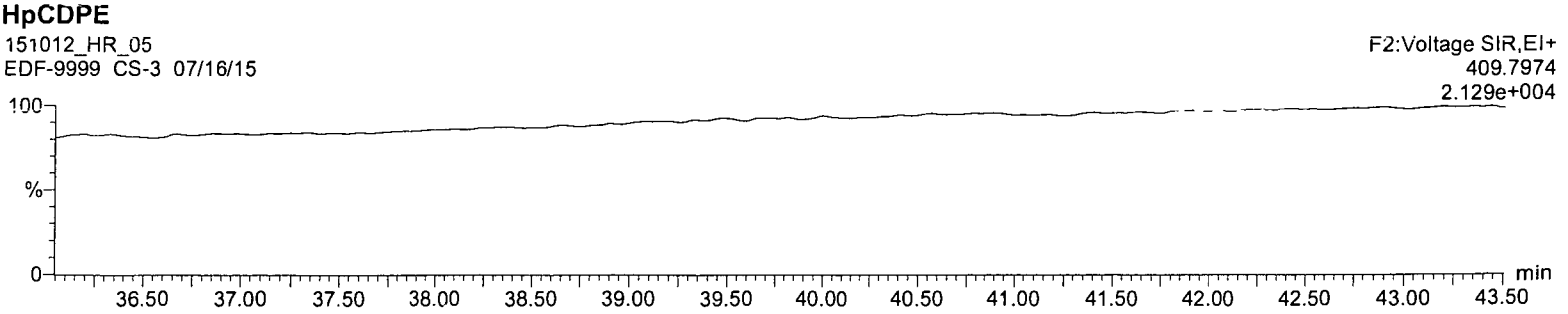
13C-1,2,3,7,8-PeCDF



13C-1,2,3,7,8-PeCDF

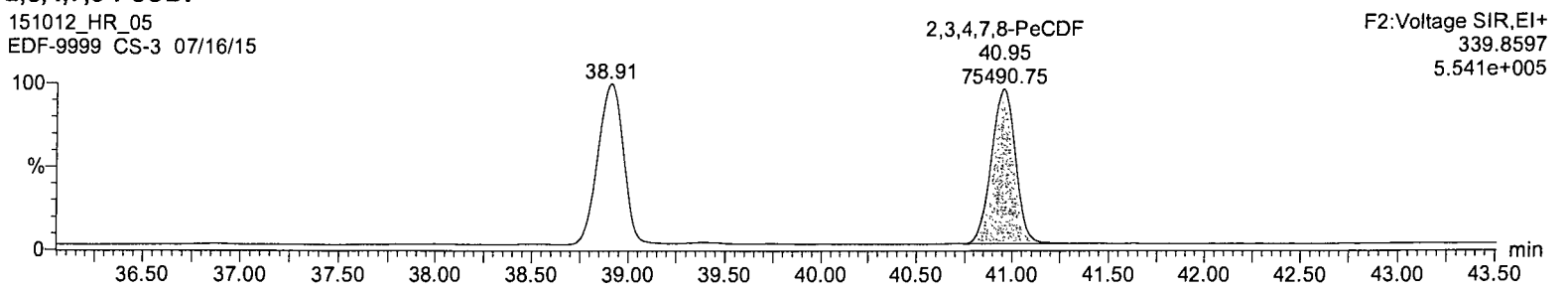


HpCDPE

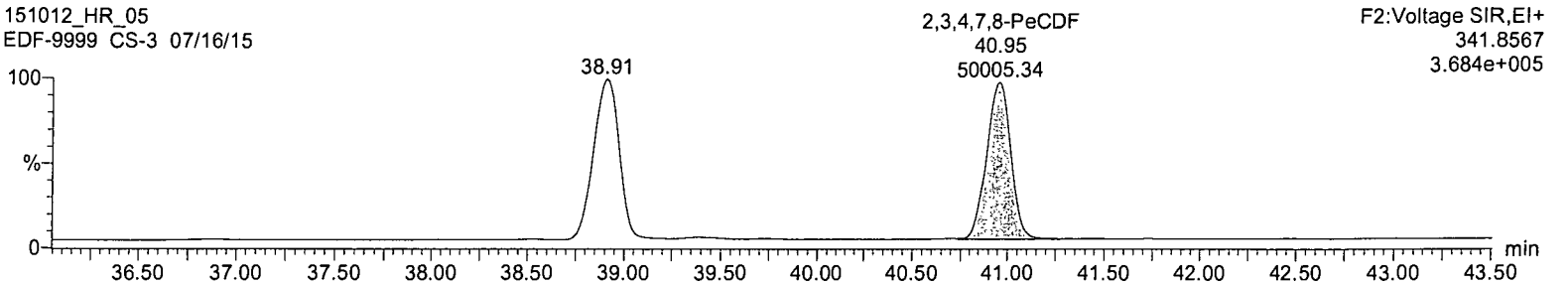


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

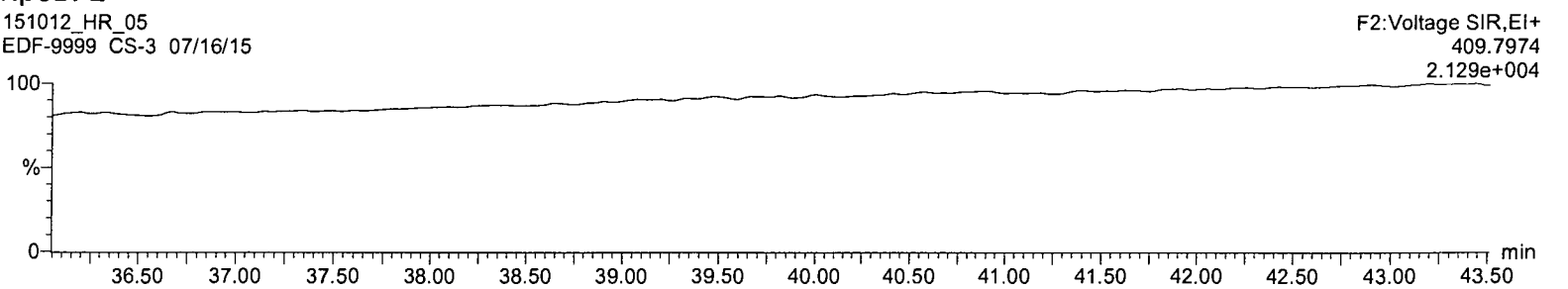
2,3,4,7,8-PeCDF



2,3,4,7,8-PeCDF

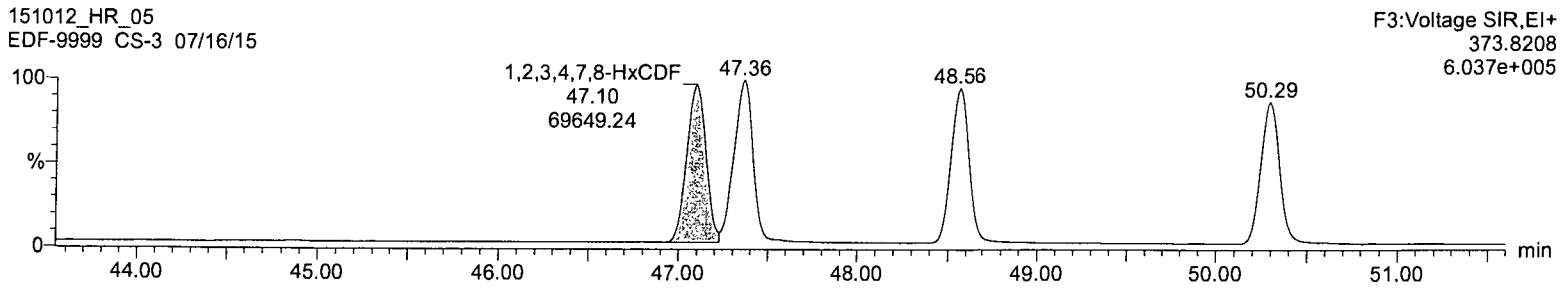


HpCDPE

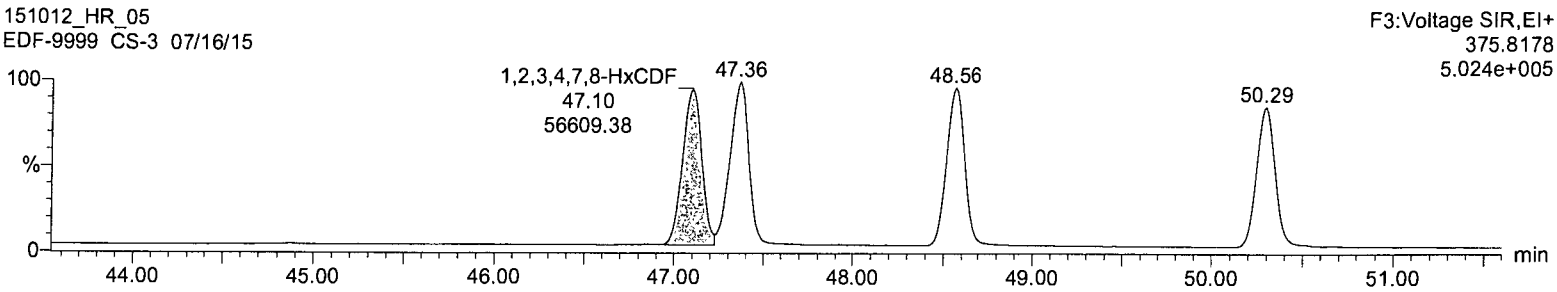


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

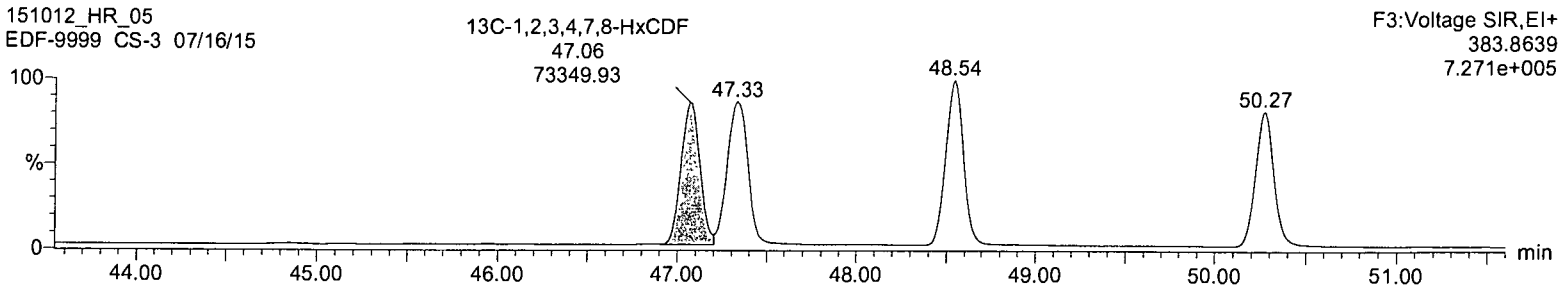
1,2,3,4,7,8-HxCDF



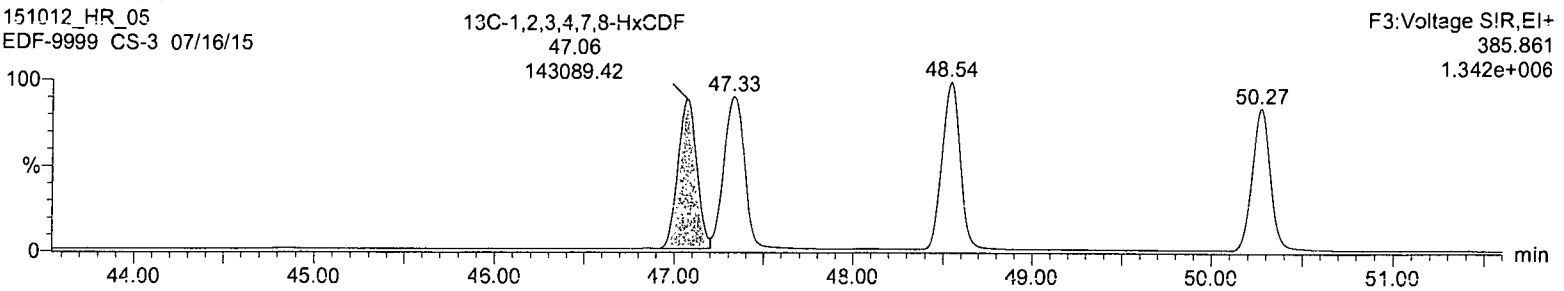
1,2,3,4,7,8-HxCDF



13C-1,2,3,4,7,8-HxCDF



13C-1,2,3,4,7,8-HxCDF



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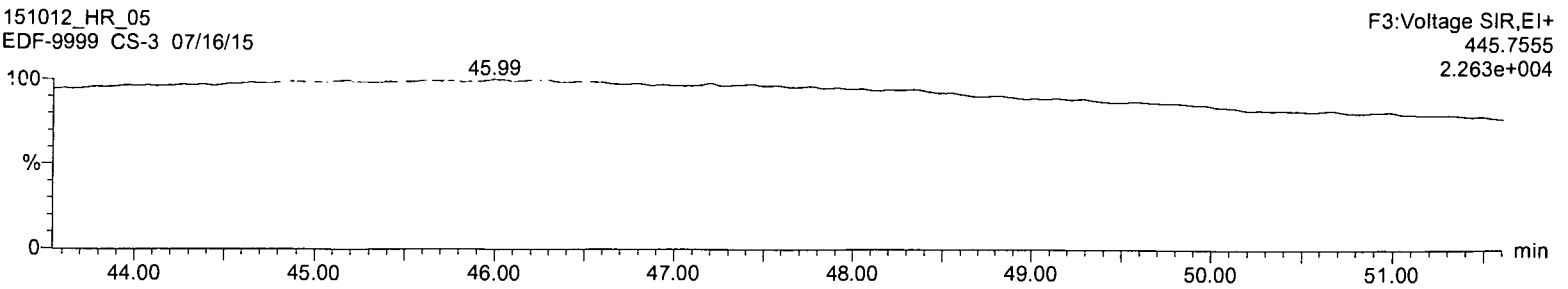
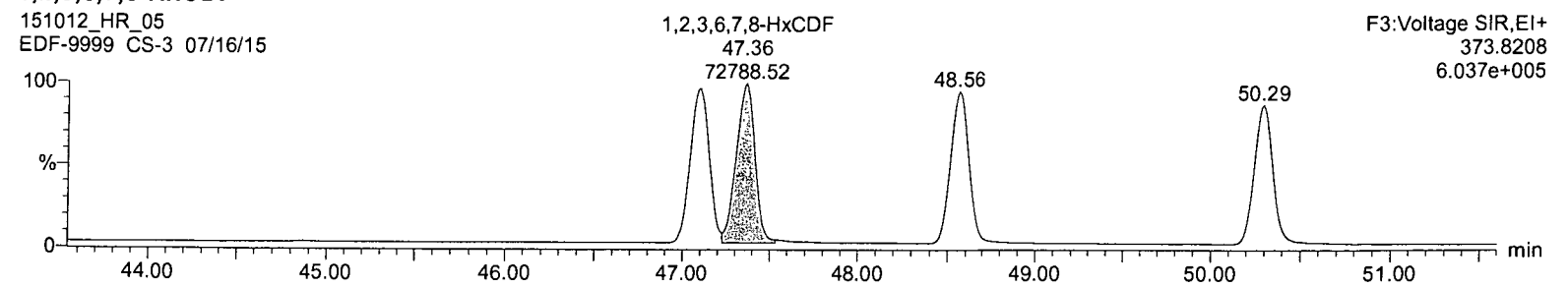
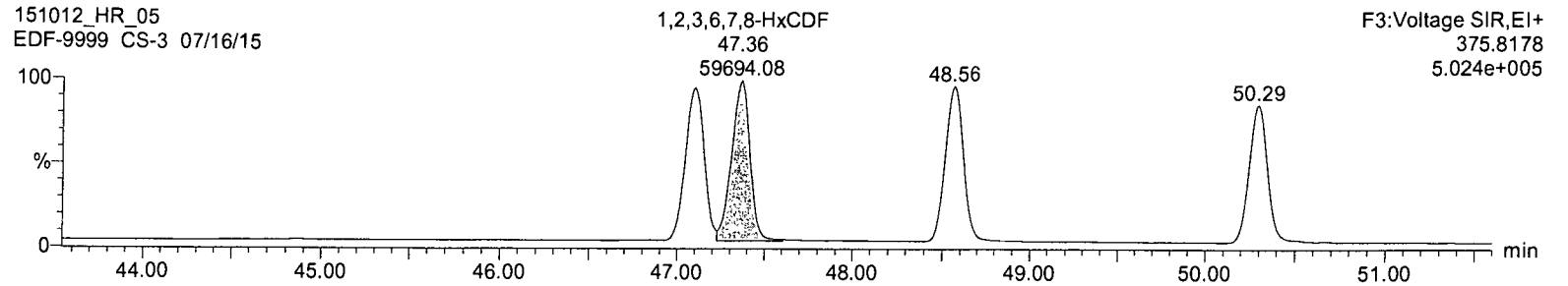


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

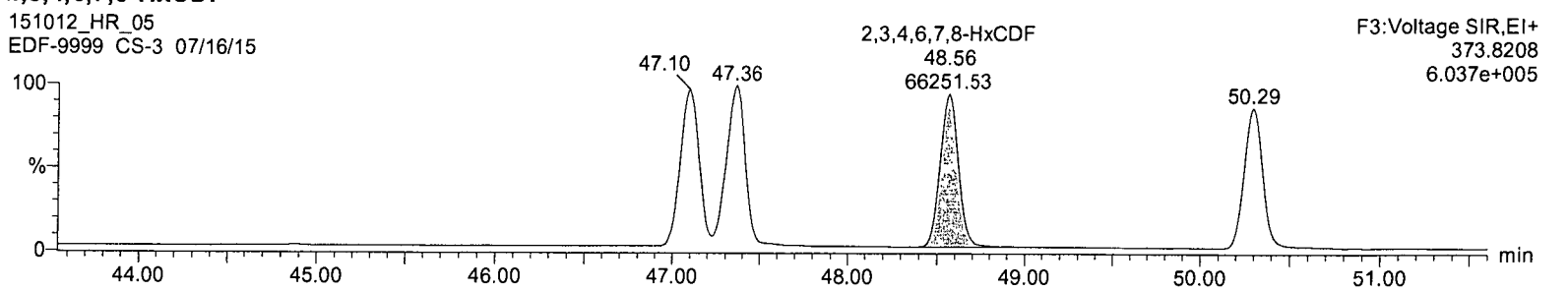
1,2,3,6,7,8-HxCDF



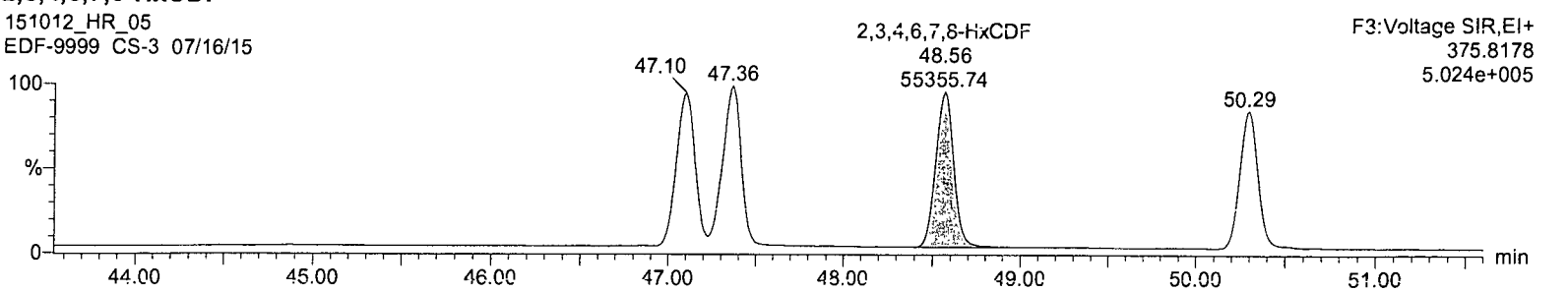
1,2,3,6,7,8-HxCDF



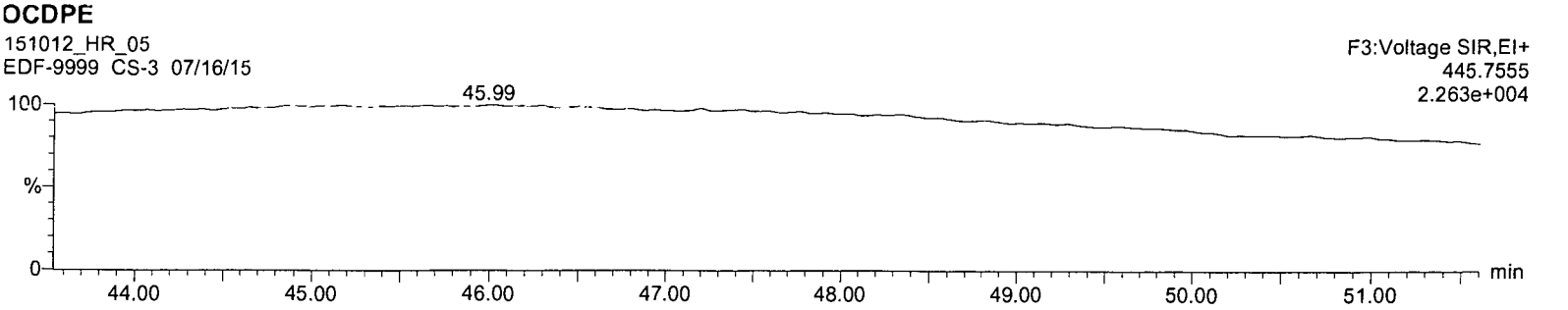
2,3,4,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF

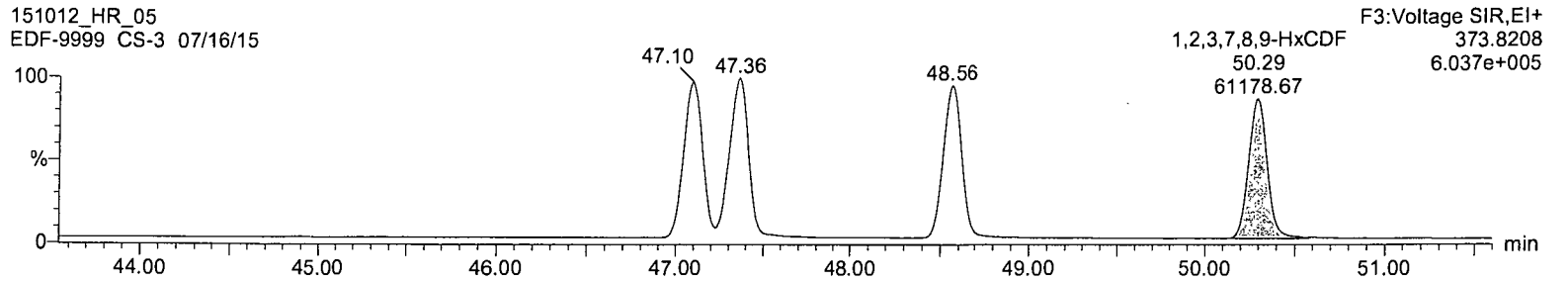


OCDPE

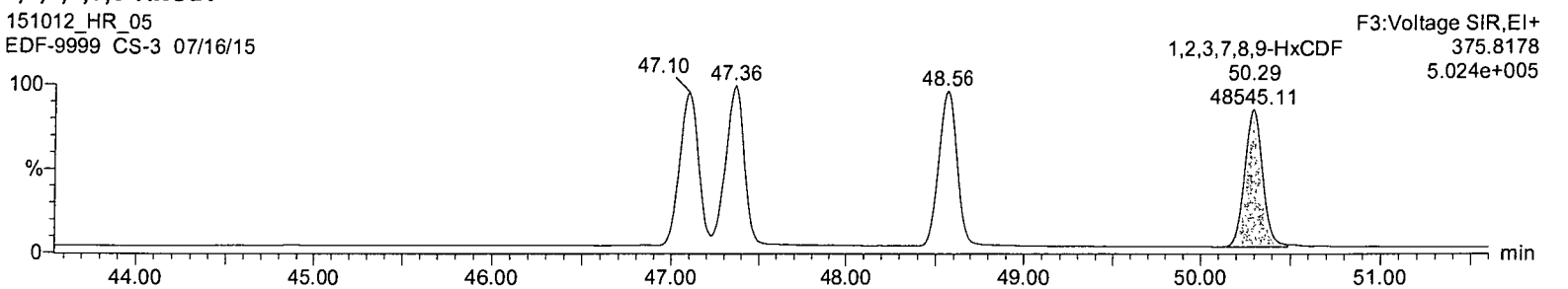


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

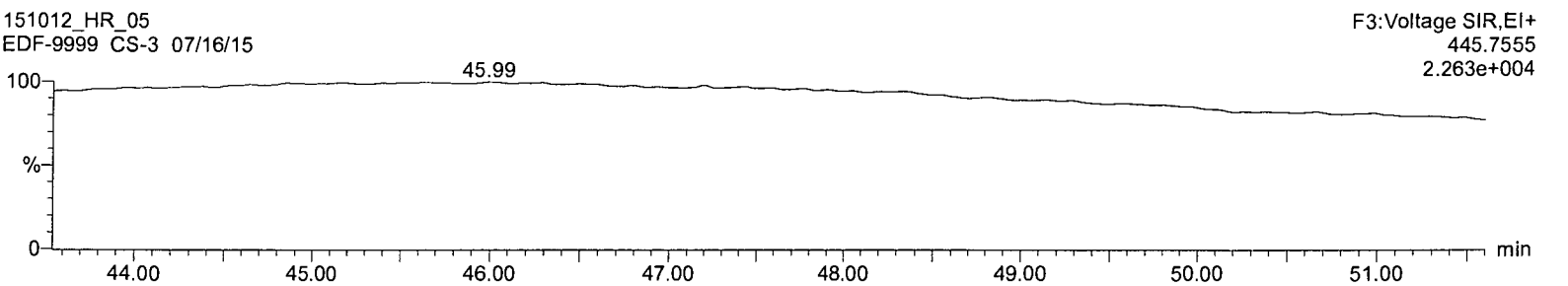
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF

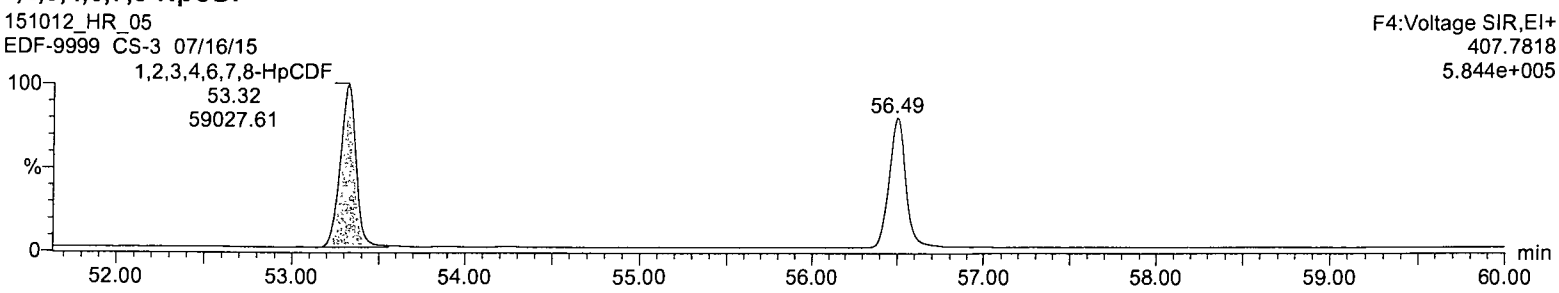


OCDPE

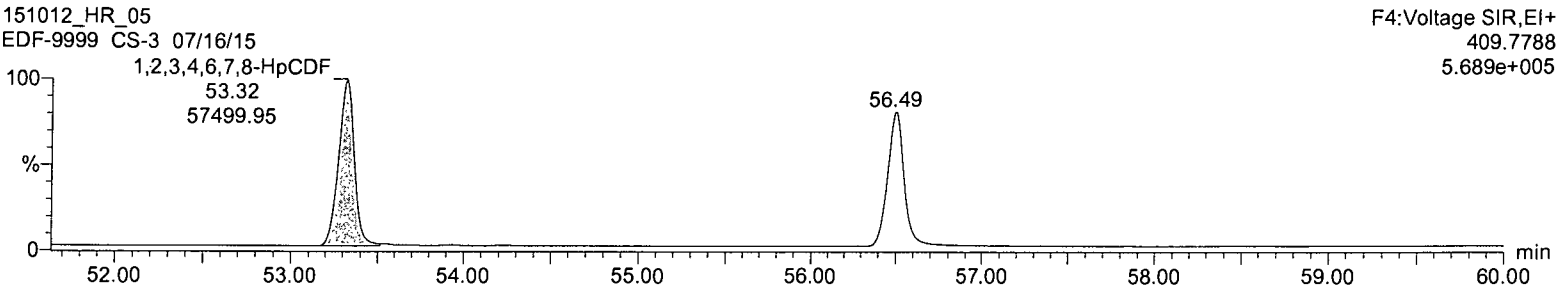


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

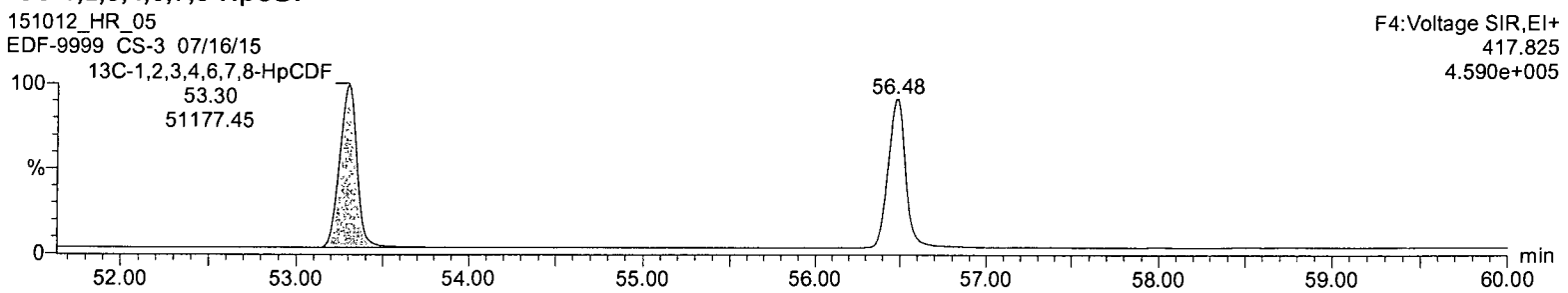
1,2,3,4,6,7,8-HpCDF



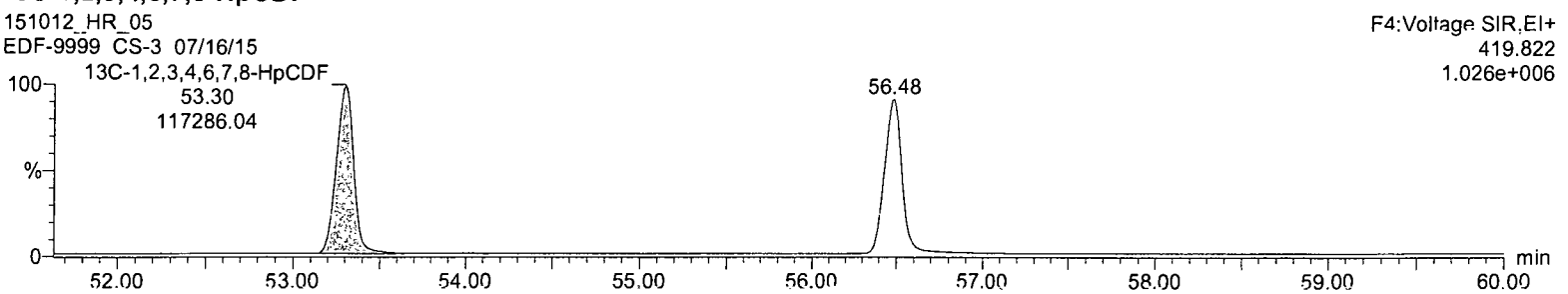
1,2,3,4,6,7,8-HpCDF



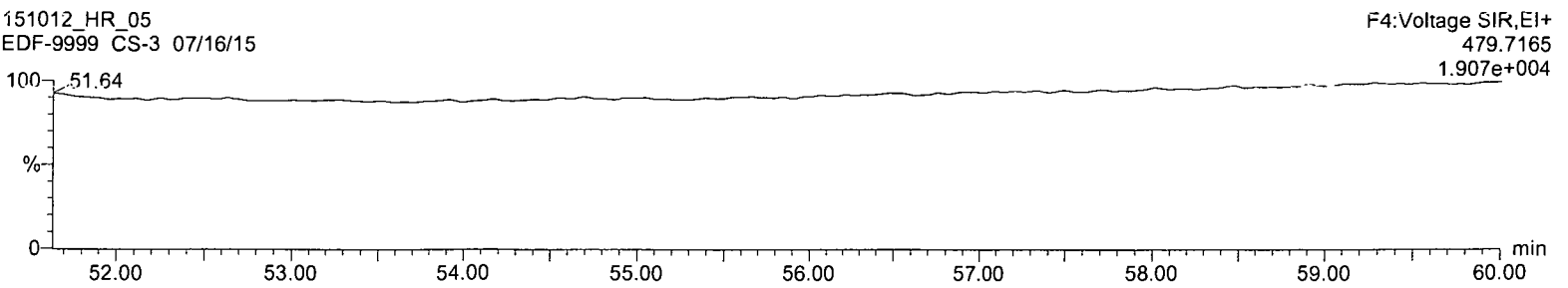
13C-1,2,3,4,6,7,8-HpCDF



13C-1,2,3,4,6,7,8-HpCDF

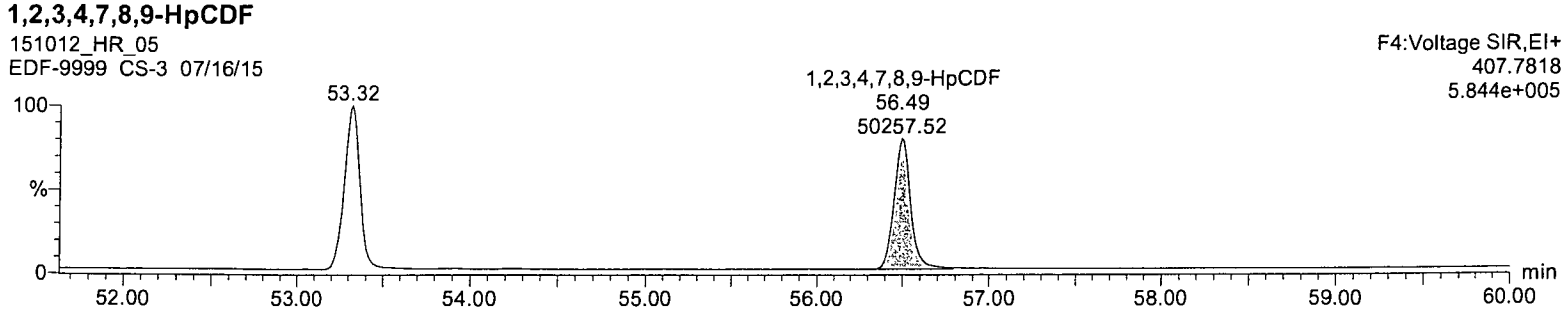


NCDPE

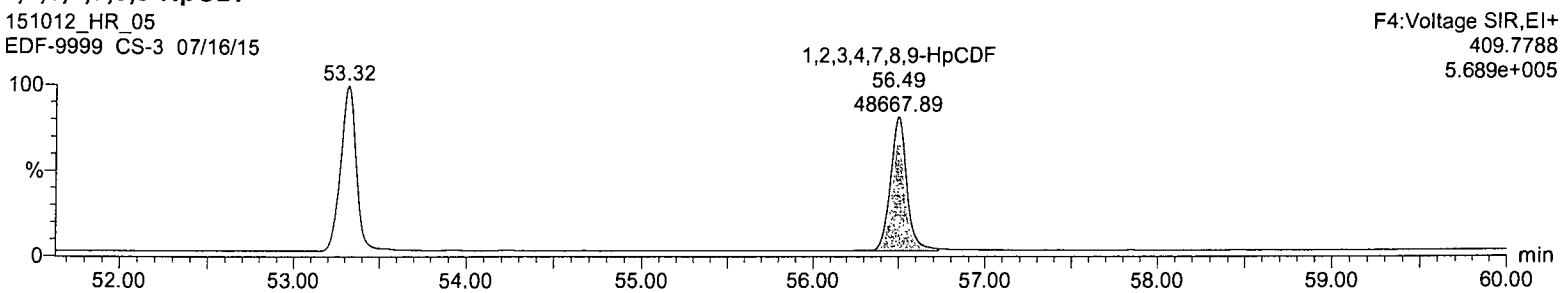


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

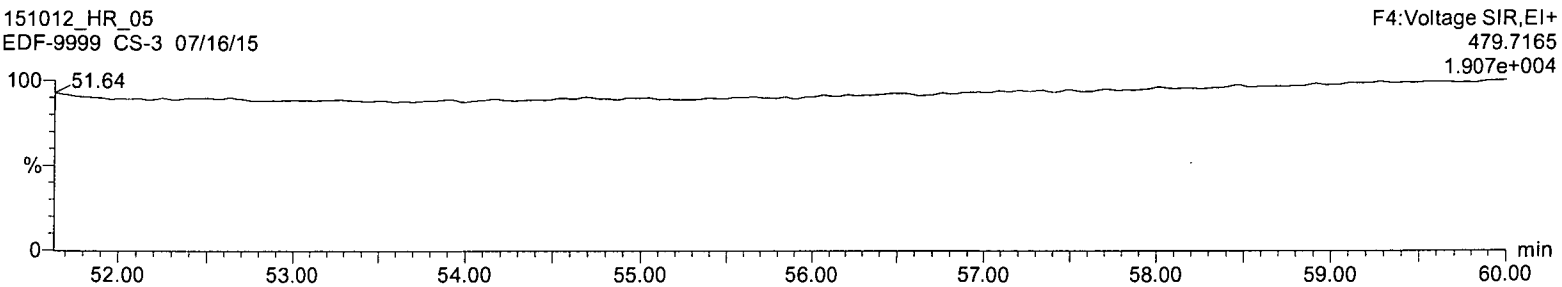
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF

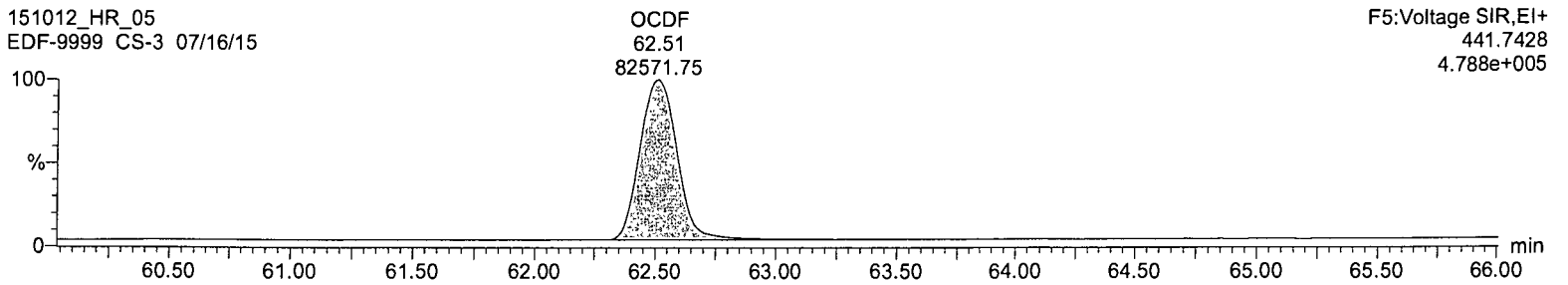


NCDPE

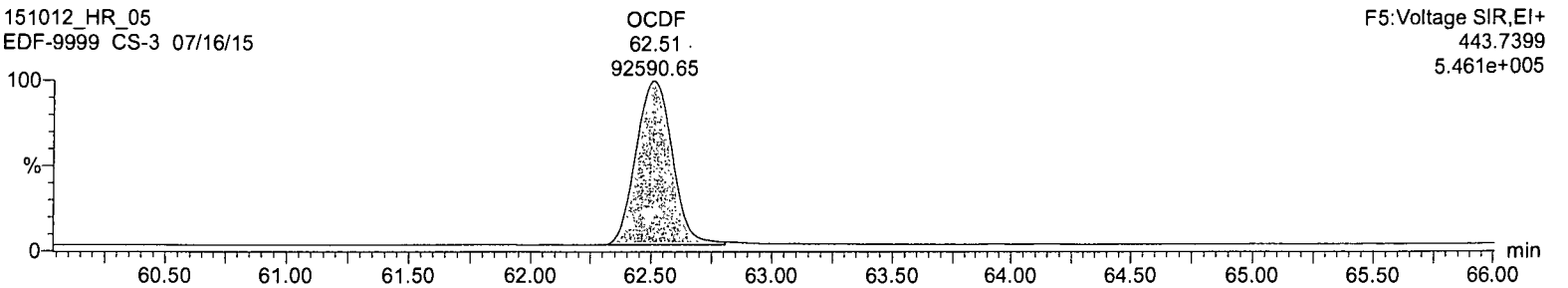


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

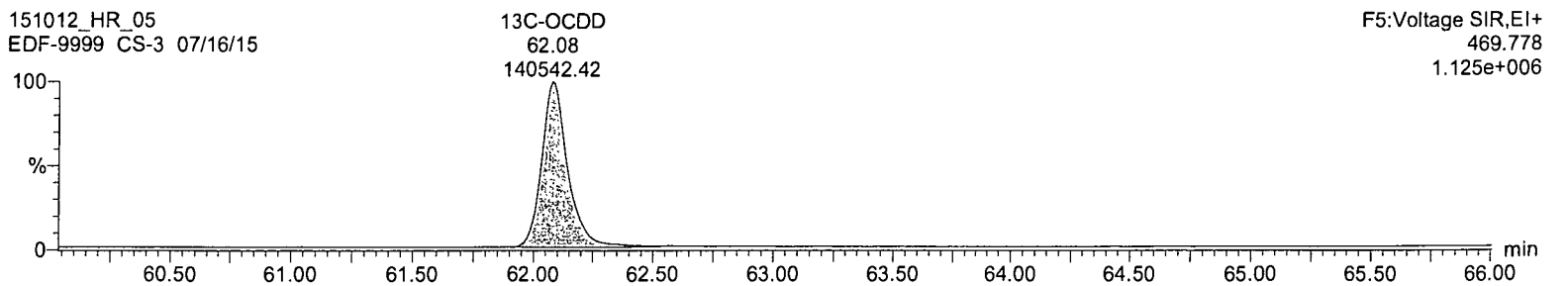
OCDF



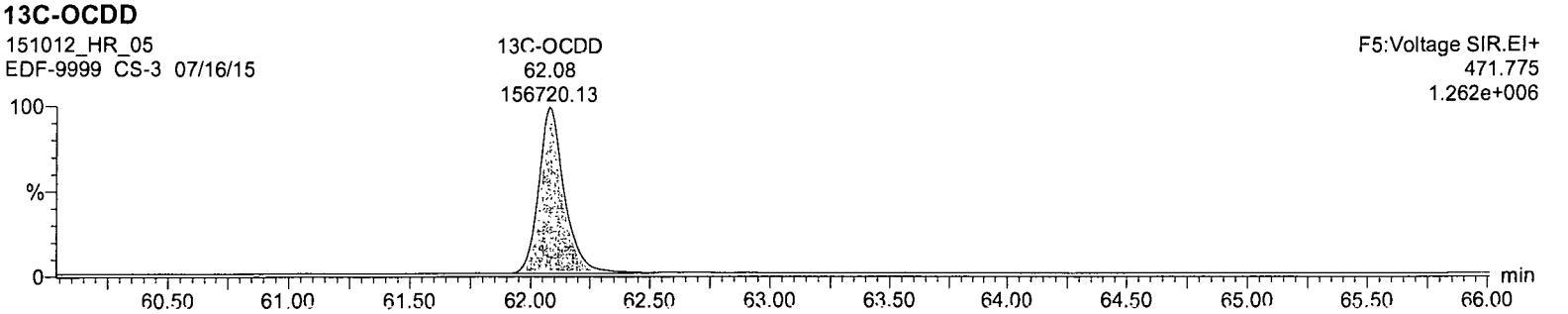
OCDF



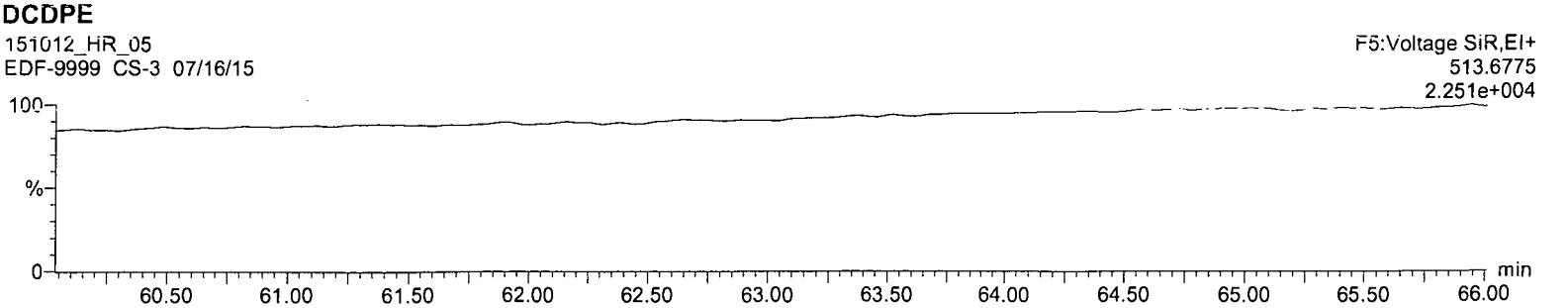
13C-OCDD



13C-OCDD

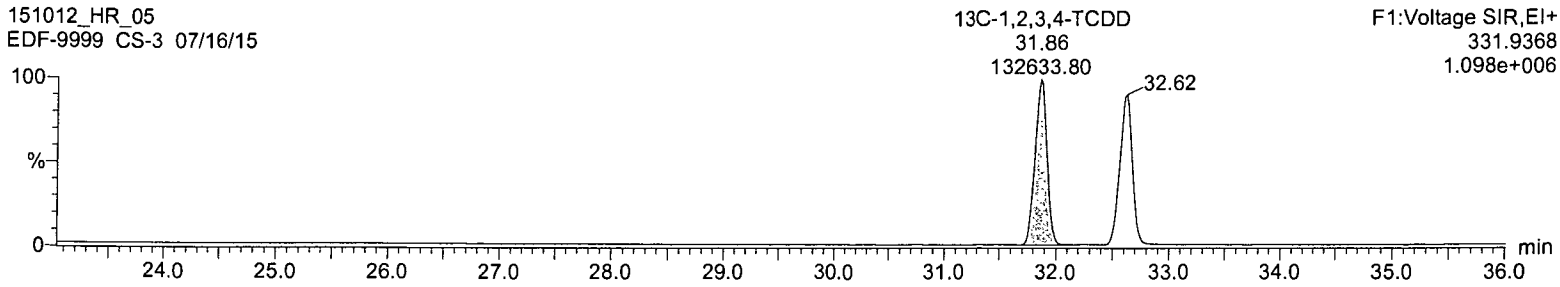


DCDPE

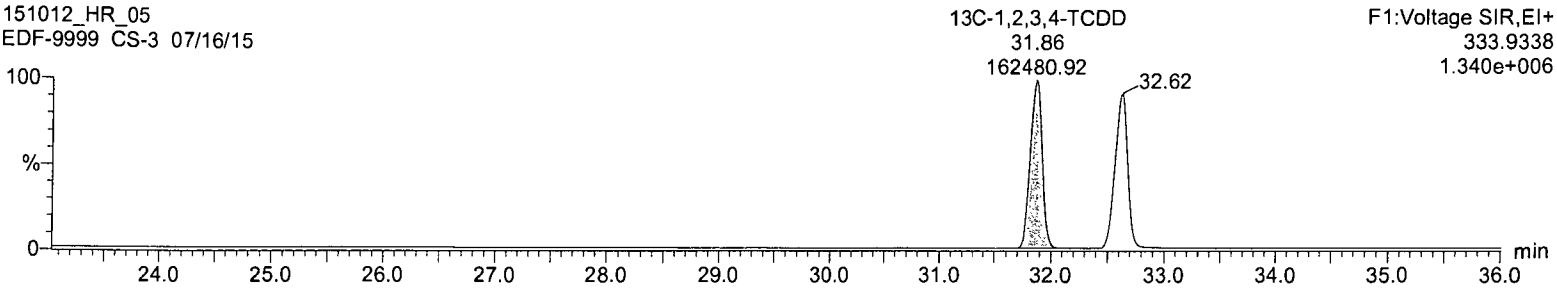


Name: 151012_HR_05, Date: 12-Oct-2015, Time: 17:11:53, Description: EDF-9999 CS-3 07/16/15, User:

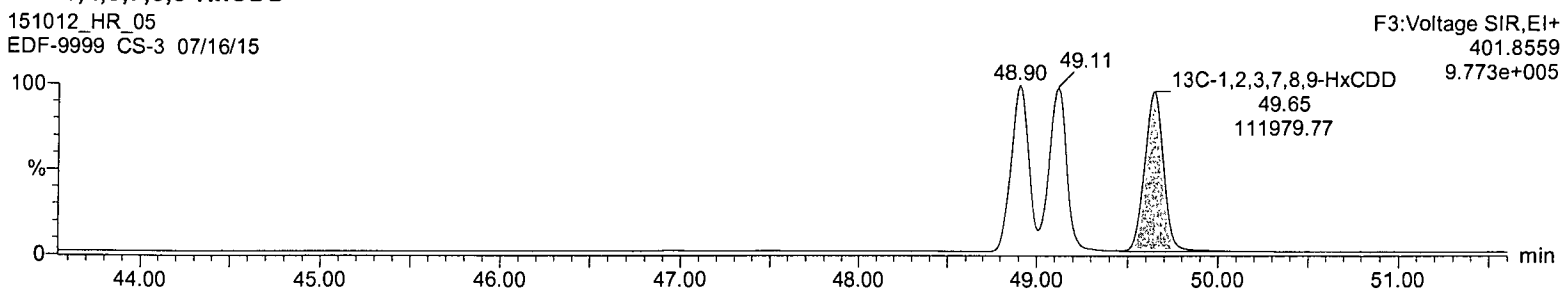
13C-1,2,3,4-TCDD



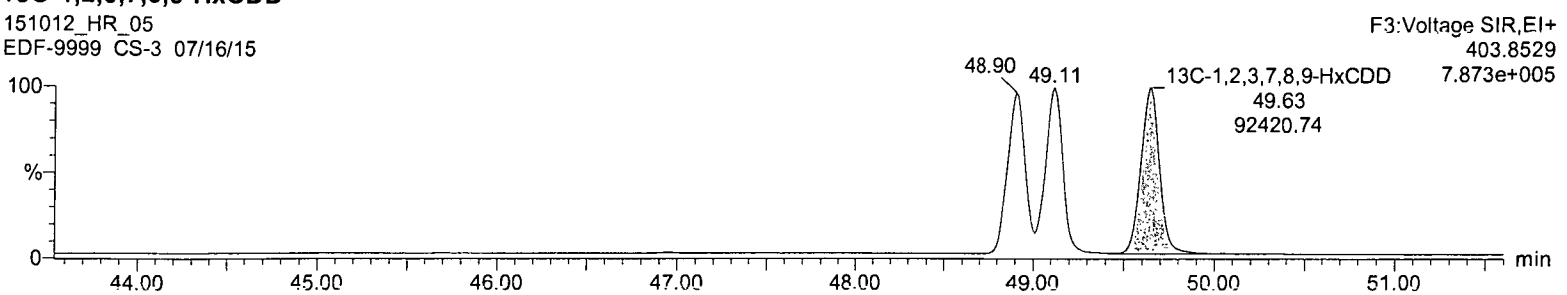
13C-1,2,3,4-TCDD



13C-1,2,3,7,8,9-HxCDD



13C-1,2,3,7,8,9-HxCDD



Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

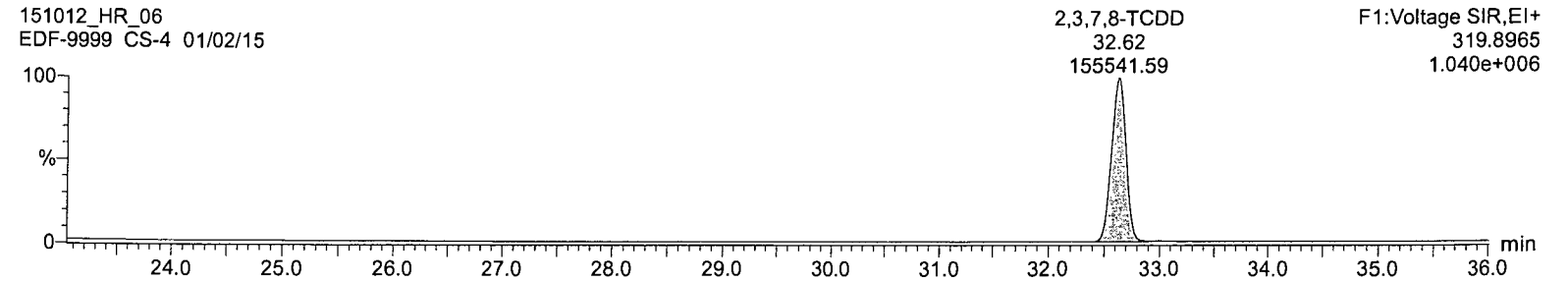
Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, ID: , Description: EDF-9999 CS-4 01/02/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N..	Signal 2	Noise 2	S/N 2	Flag S/N..
1	2,3,7,8-TCDD	1.0216780e6	2.6294250e2	3883.33	NO	1.3575870e6	1.6126434e2	8418.40	NO
2	1,2,3,7,8-PeCDD	5.6174830e6	3.8825568e2	14468.56	NO	3.6071930e6	2.5348128e2	14230.61	NO
3	1,2,3,4,7,8-HxCDD	5.8973810e6	5.5269379e2	10666.45	NO	4.7232550e6	5.8750146e2	8039.56	NO
4	1,2,3,6,7,8-HxCDD	5.6998030e6	5.5269379e2	10308.70	NO	4.7002390e6	5.8750146e2	8000.39	NO
5	1,2,3,7,8,9-HxCDD	6.2580980e6	5.5269379e2	11318.20	NO	5.0500740e6	5.8750146e2	8595.85	NO
6	1,2,3,4,6,7,8-HpCDD	4.4303120e6	4.2638388e2	10386.45	NO	4.3113370e6	3.1904391e2	13513.30	NO
7	OCDD	6.2401970e6	3.0324066e2	20572.54	NO	7.0085950e6	6.5300055e2	10732.91	NO
8	2,3,7,8-TCDF	1.5605780e6	2.3599567e2	6608.06	NO	2.0490100e6	5.0866321e2	4028.23	NO
9	1,2,3,7,8-PeCDF	6.9515150e6	5.0760709e2	13687.76	NO	4.4917190e6	7.5934711e2	5915.24	NO
10	2,3,4,7,8-PeCDF	7.2320000e6	5.0760709e2	14242.68	NO	4.6901730e6	7.5934711e2	6176.59	NO
11	1,2,3,4,7,8-HxCDF	7.5300920e6	9.9639709e2	7554.07	NO	6.1461770e6	8.5605066e2	7179.69	NO
12	1,2,3,6,7,8-HxCDF	8.1264750e6	9.9639709e2	8152.61	NO	6.5335110e6	8.5605066e2	7632.15	NO
13	2,3,4,6,7,8-HxCDF	7.7103650e6	9.9639709e2	7734.99	NO	6.2566910e6	8.5605066e2	7308.79	NO
14	1,2,3,7,8,9-HxCDF	6.6561760e6	9.9639709e2	6677.06	NO	5.3378870e6	8.5605066e2	6235.48	NO
15	1,2,3,4,6,7,8-HpCDF	6.9775460e6	4.3747003e2	15948.97	NO	6.8111410e6	4.3191547e2	15769.62	NO
16	1,2,3,4,7,8,9-HpCDF	5.7212860e6	4.3747003e2	13070.94	NO	5.3855920e6	4.3191547e2	12469.09	NO
17	OCDF	7.7405690e6	3.5289429e2	21932.28	NO	8.6574660e6	6.5993286e2	13118.71	NO
18	13C-2,3,7,8-TCDD	3.1616970e6	2.8422620e2	11127.46	NO	3.8817640e6	2.1988124e2	17653.91	NO
19	13C-1,2,3,7,8-PeCDD	3.1748870e6	1.0829860e3	2931.23	NO	2.0087370e6	1.4871135e2	13507.62	NO
20	13C-1,2,3,6,7,8-HxCDD	2.8115660e6	4.9820938e2	5644.68	NO	2.2163980e6	2.6497073e2	8364.69	NO
21	13C-1,2,3,4,6,7,8-HpCDD	2.4797630e6	3.9194507e2	6323.31	NO	2.3234710e6	2.7738394e2	8376.37	NO
22	13C-OCDD	3.2876700e6	3.1824051e2	10327.14	NO	3.7042770e6	4.7010742e2	7879.64	NO
23	13C-2,3,7,8-TCDF	4.6589900e6	4.0559299e2	11484.19	NO	5.9425660e6	2.9248230e2	20317.69	NO
24	13C-1,2,3,7,8-PeCDF	3.7836320e6	5.1823248e2	7297.78	NO	2.4635180e6	9.7679858e2	2522.03	NO
25	13C-1,2,3,4,7,8-HxCDF	1.9929640e6	4.5262836e2	4402.51	NO	3.9566880e6	4.9477249e2	7996.98	NO
26	13C-1,2,3,4,6,7,8-HpCDF	1.4435660e6	1.7950934e2	8049.14	NO	3.3299680e6	3.9089691e2	8518.79	NO
27	13C-1,2,3,4-TCDD	3.1395080e6	2.8422620e2	11043.90	NO	3.8432900e6	2.1988124e2	17478.94	NO
28	13C-1,2,3,7,8,9-HxCDD	2.9657790e6	4.9820938e2	5958.54	NO	2.3952700e6	2.6497073e2	9039.75	NO

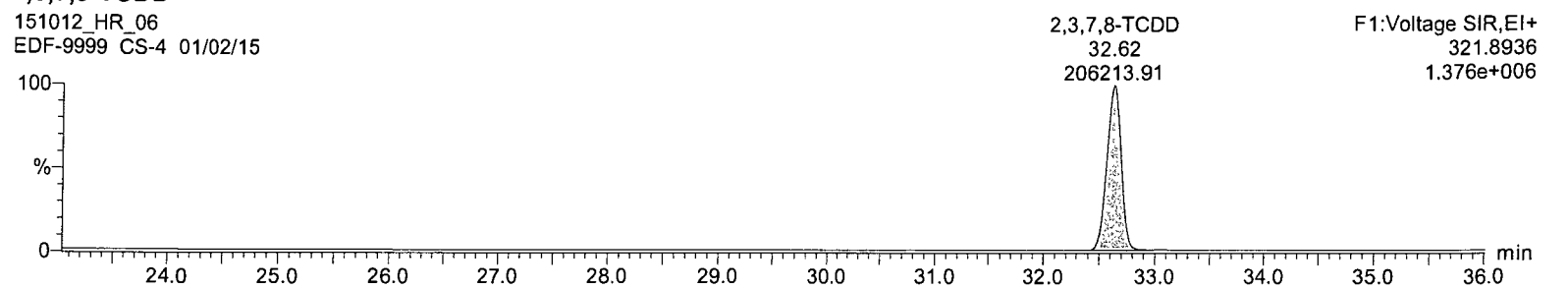
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

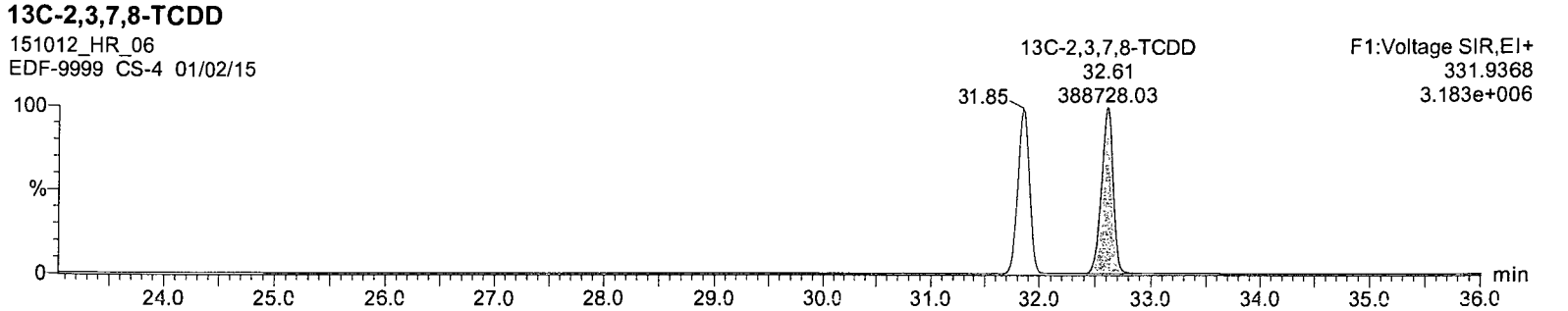
2,3,7,8-TCDD



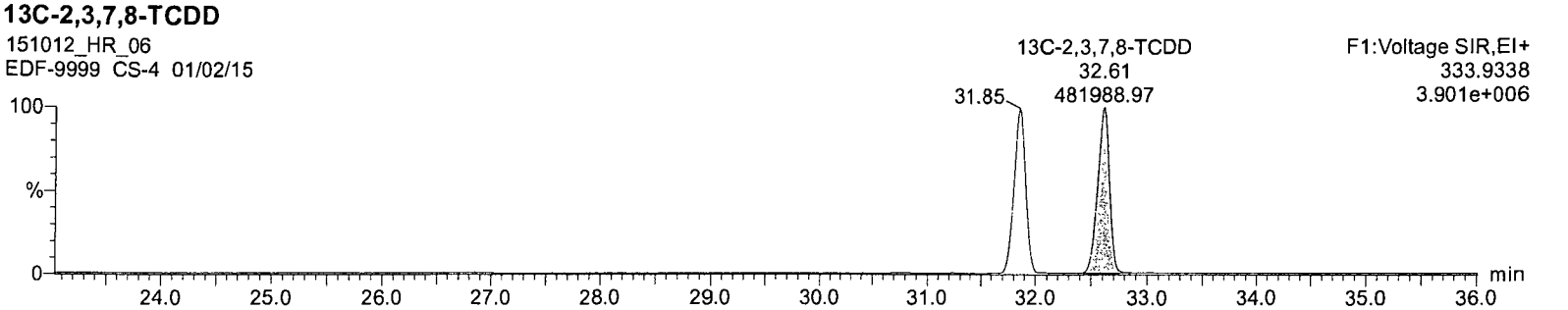
2,3,7,8-TCDD



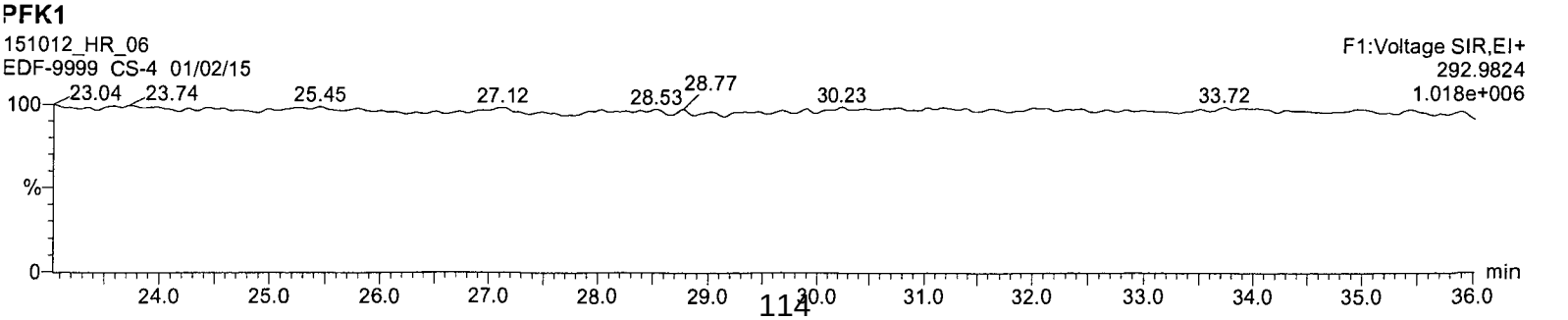
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

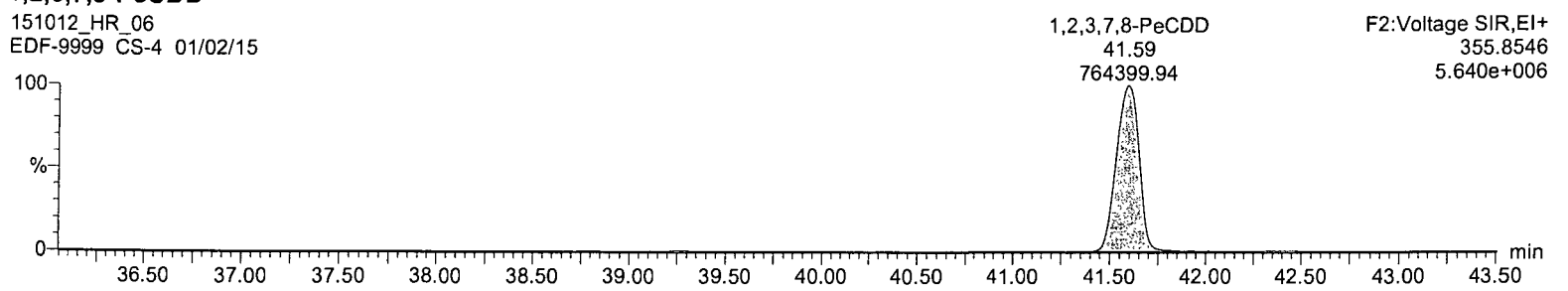


PFK1

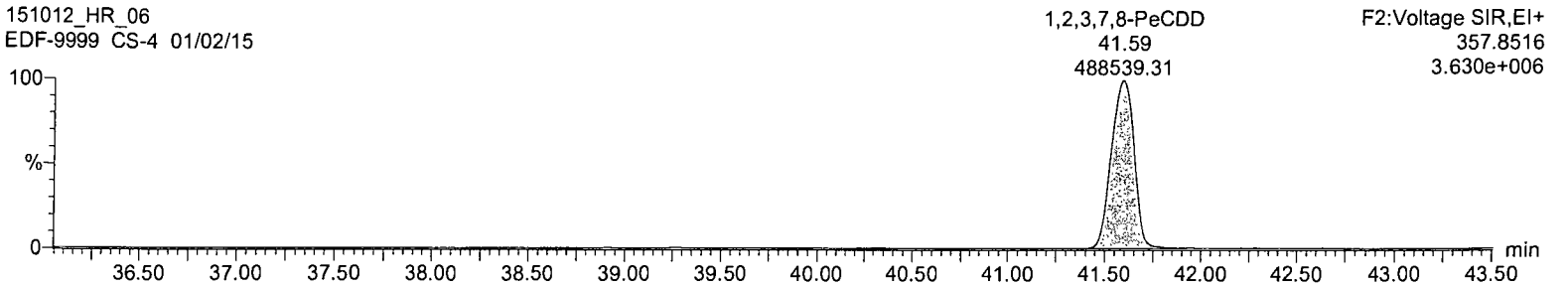


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

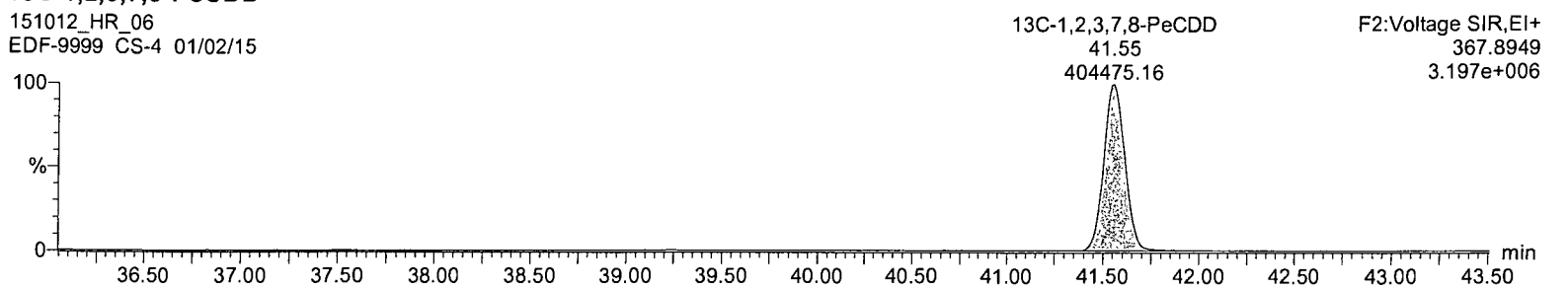
1,2,3,7,8-PeCDD



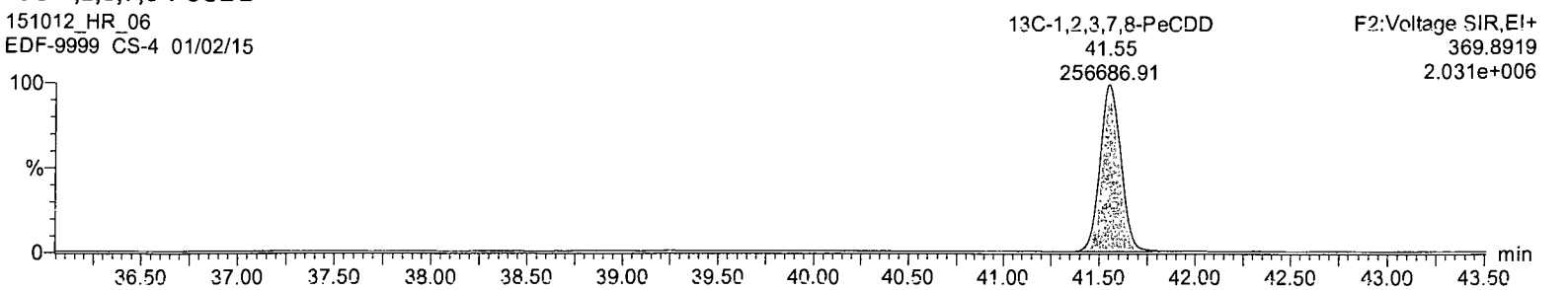
1,2,3,7,8-PeCDD



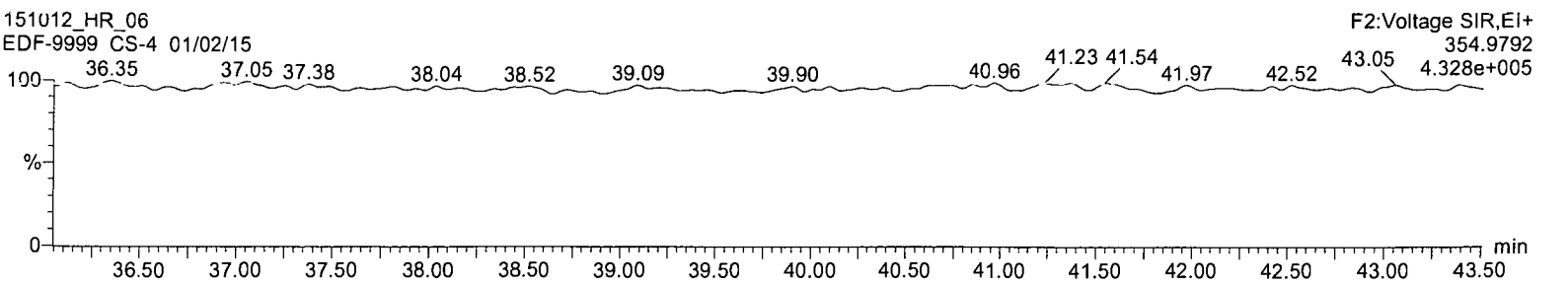
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

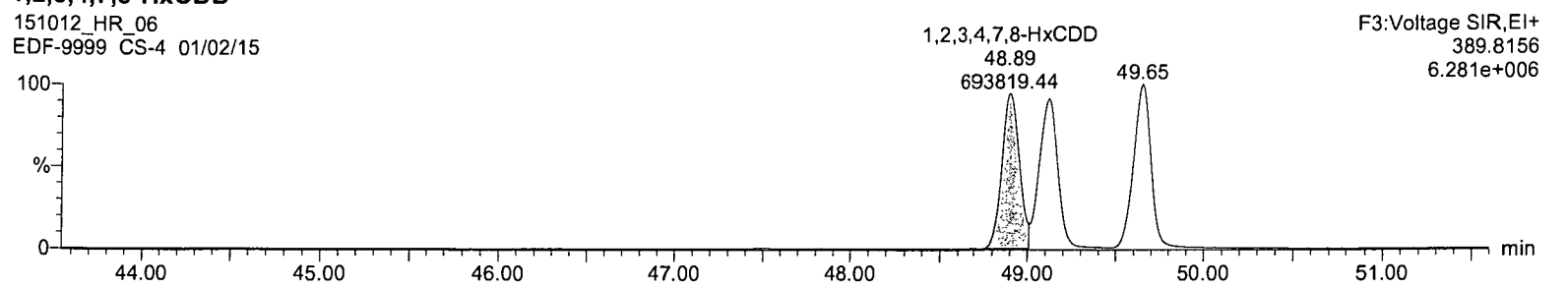


PFK2

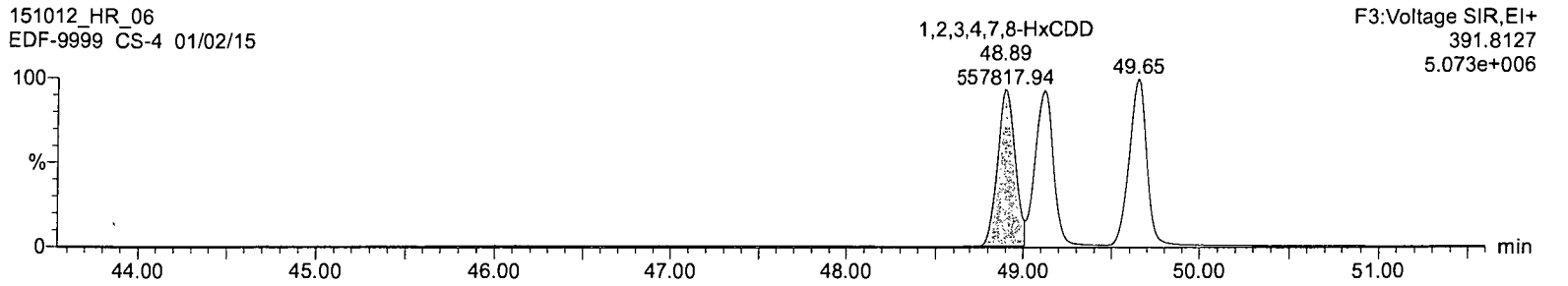


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

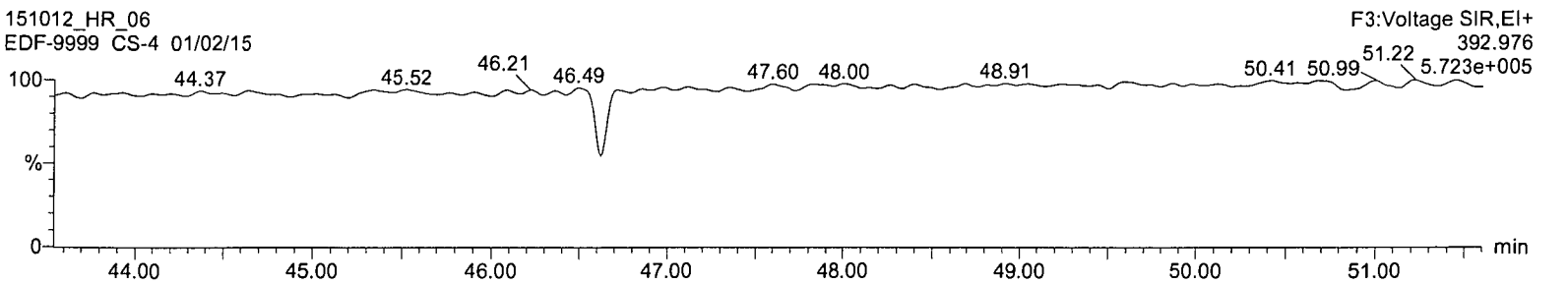
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD



PFK3

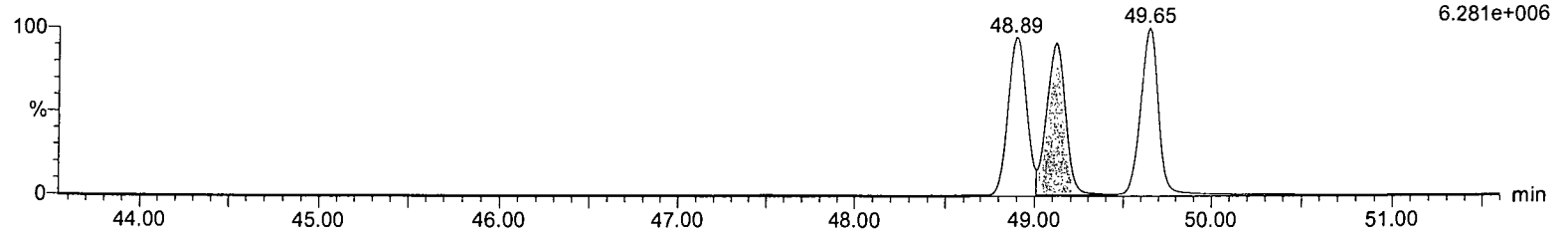


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

1,2,3,6,7,8-HxCDD

151012_HR_06
EDF-9999 CS-4 01/02/15

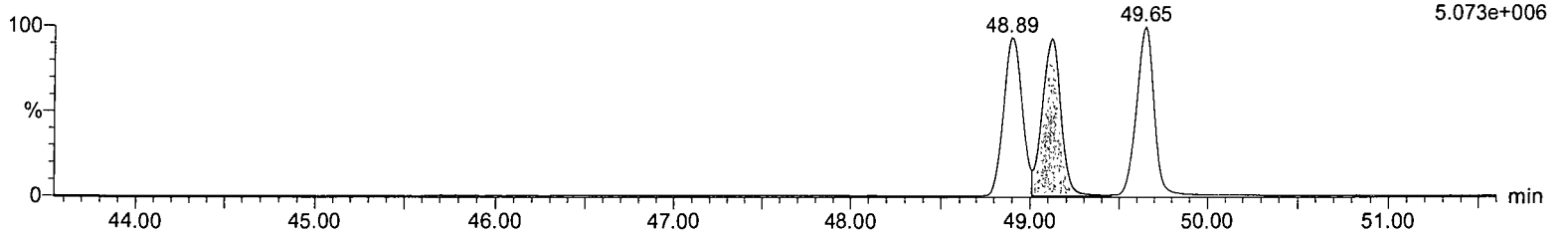
F3:Voltage SIR,EI+
389.8156
6.281e+006



1,2,3,6,7,8-HxCDD

151012_HR_06
EDF-9999 CS-4 01/02/15

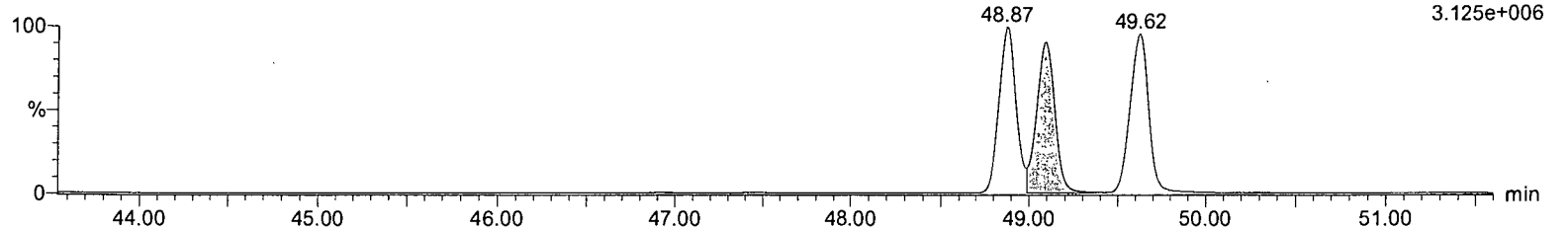
F3:Voltage SIR,EI+
391.8127
5.073e+006



13C-1,2,3,6,7,8-HxCDD

151012_HR_06
EDF-9999 CS-4 01/02/15

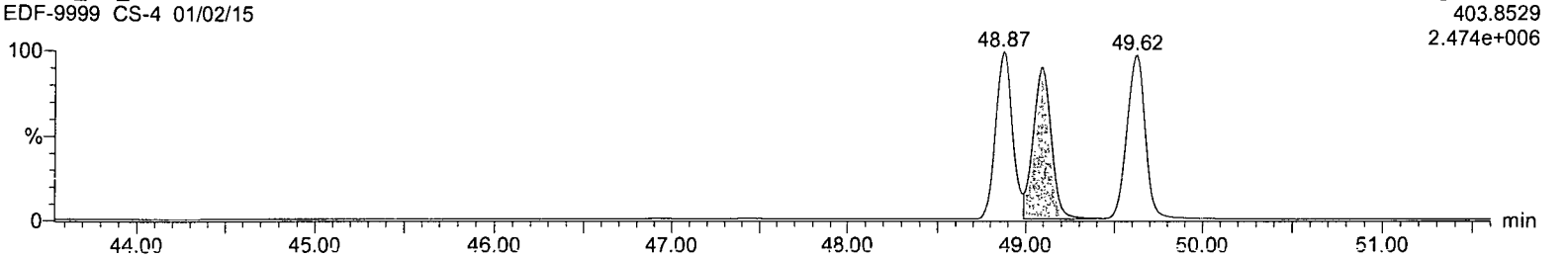
F3:Voltage SIR,EI+
401.8559
3.125e+006



13C-1,2,3,6,7,8-HxCDD

151012_HR_06
EDF-9999 CS-4 01/02/15

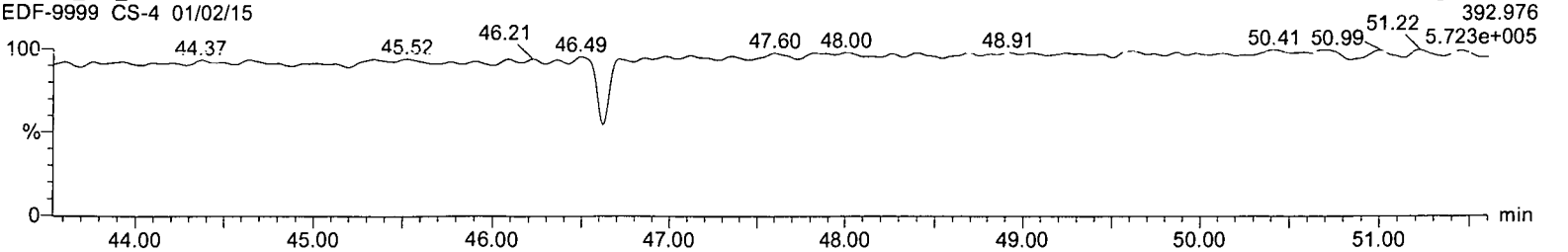
F3:Voltage SIR,EI+
403.8529
2.474e+006



PFK3

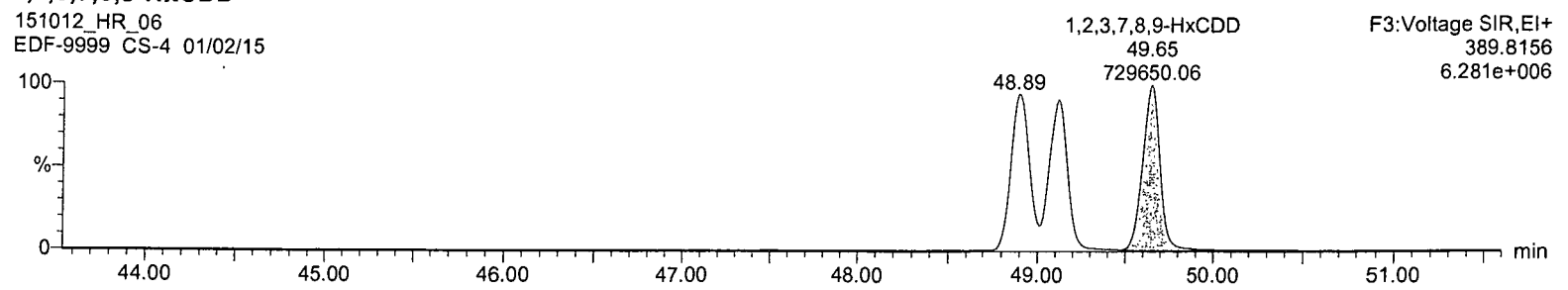
151012_HR_06
EDF-9999 CS-4 01/02/15

F3:Voltage SIR,EI+
392.976
5.723e+005

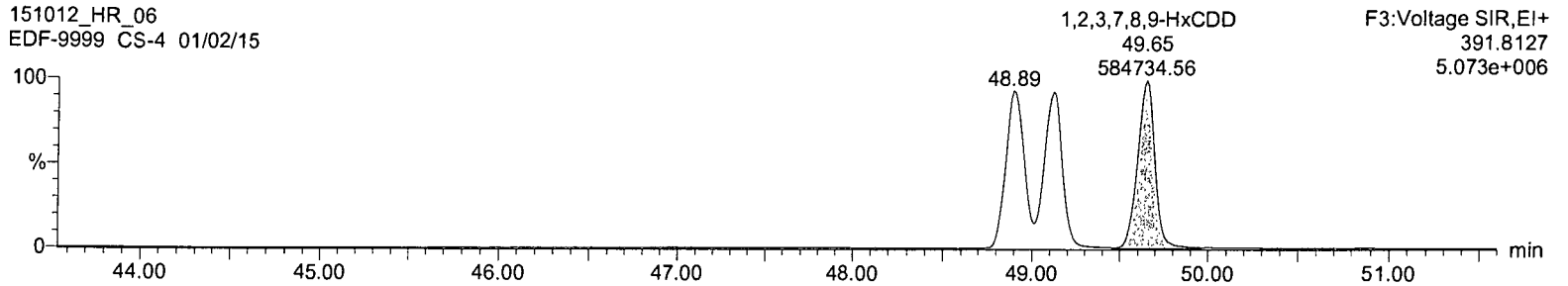


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

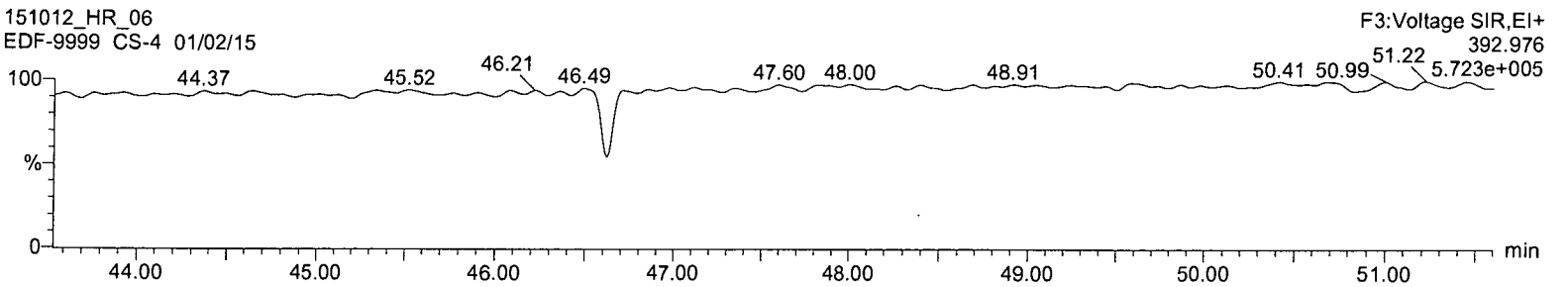
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD

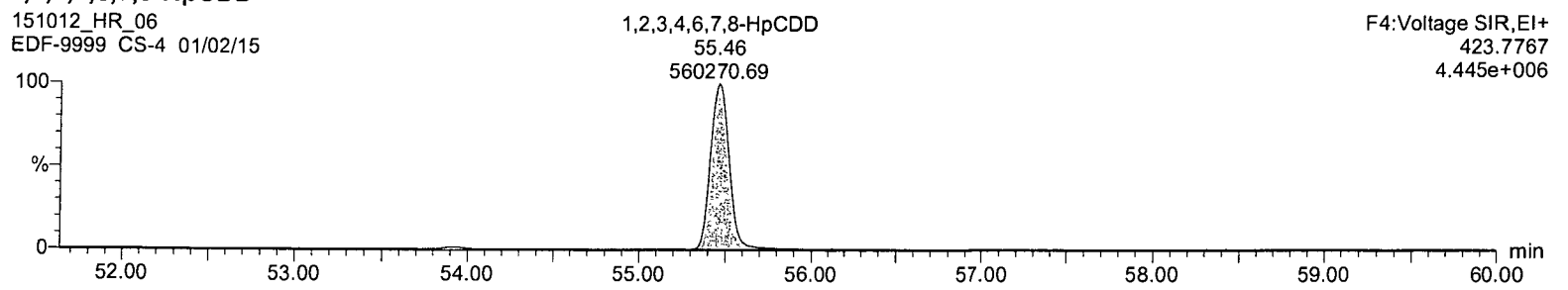


PFK3

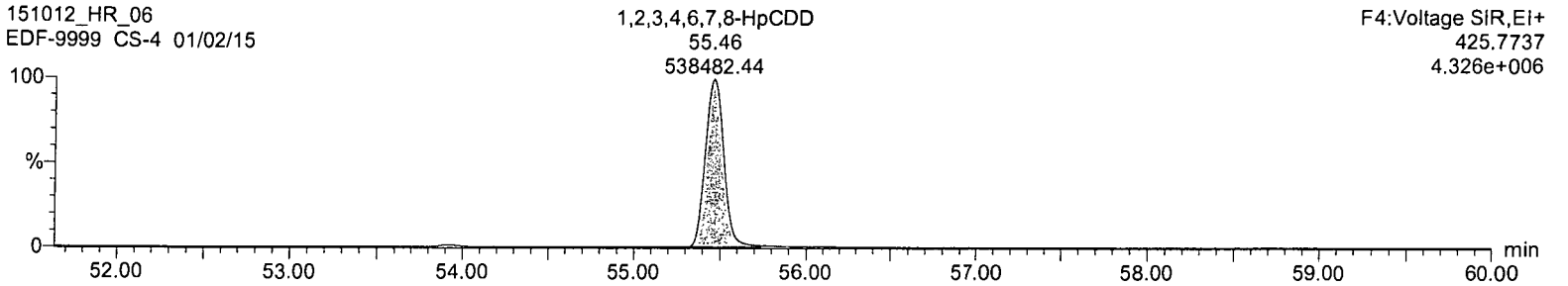


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

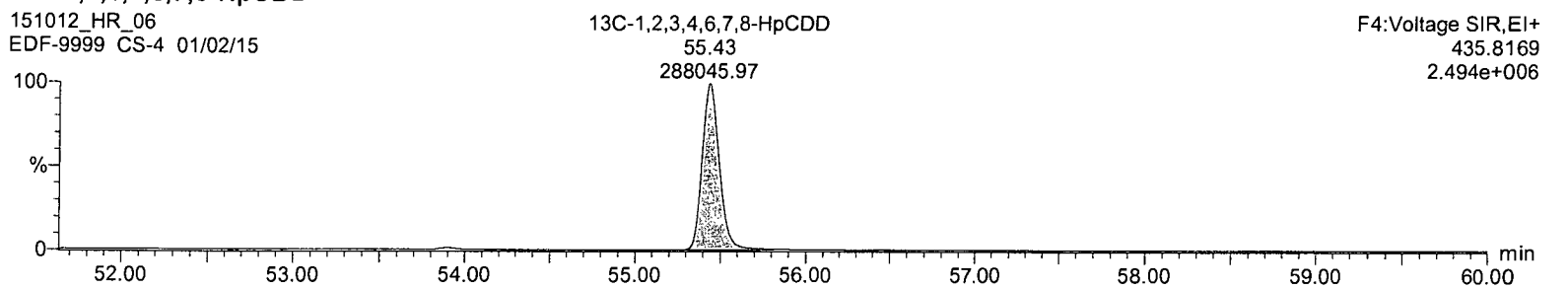
1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



13C-1,2,3,4,6,7,8-HpCDD



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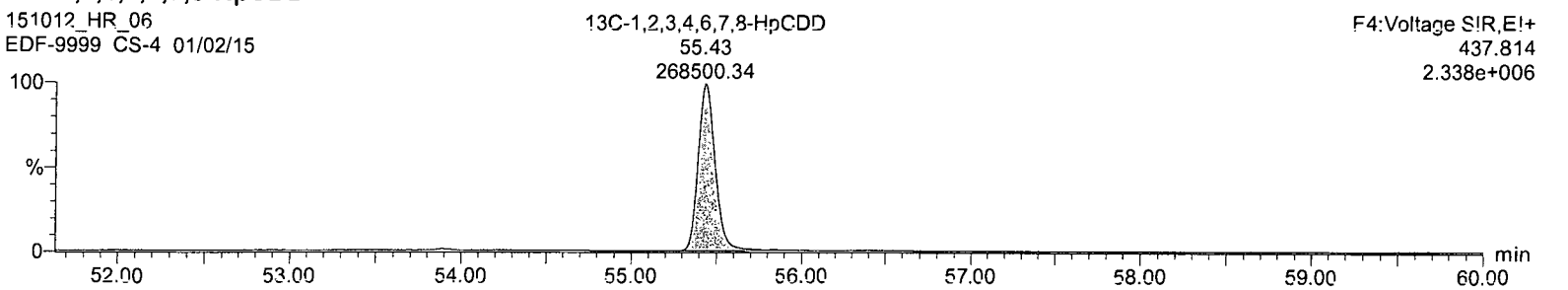
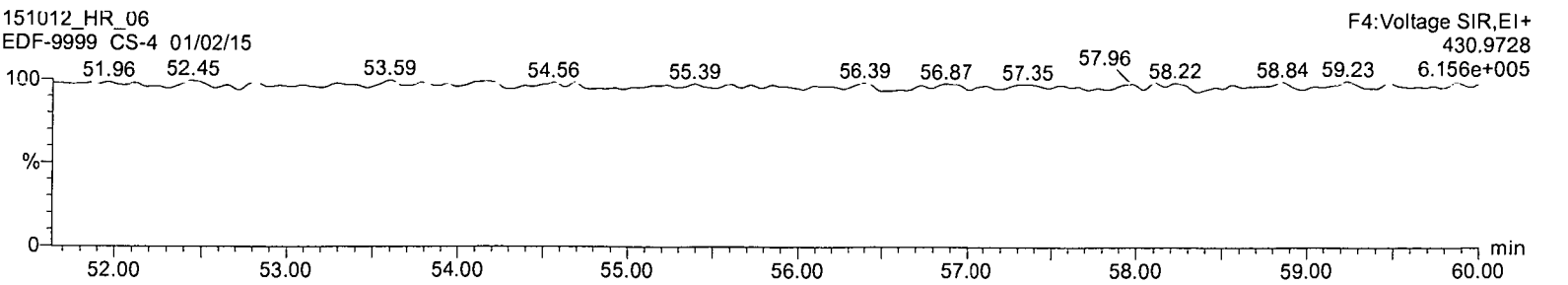
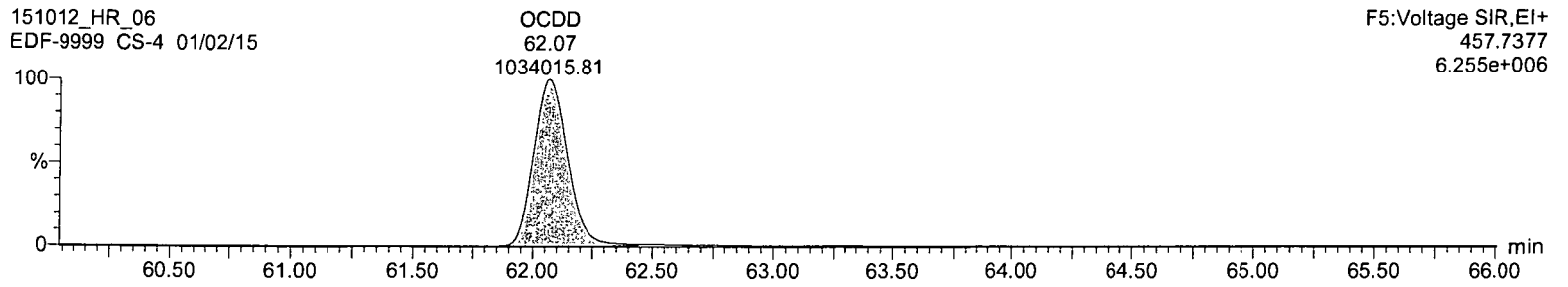


PFK4

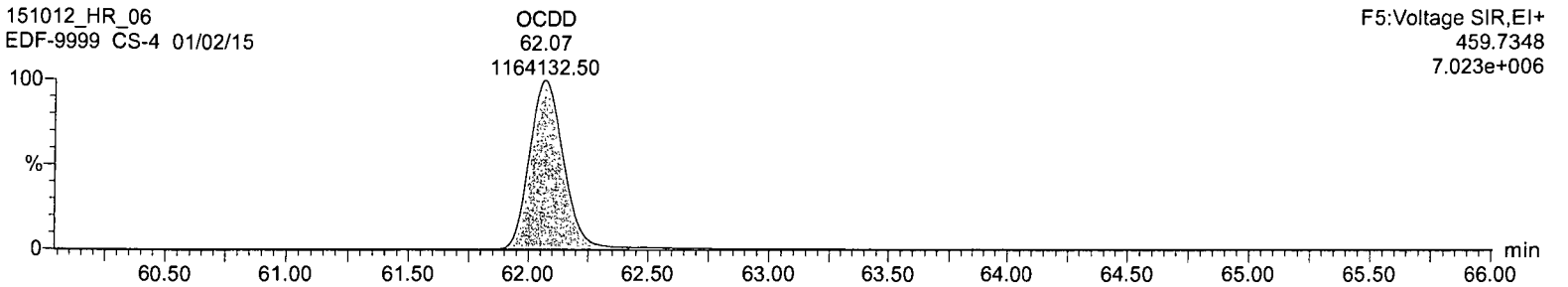


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

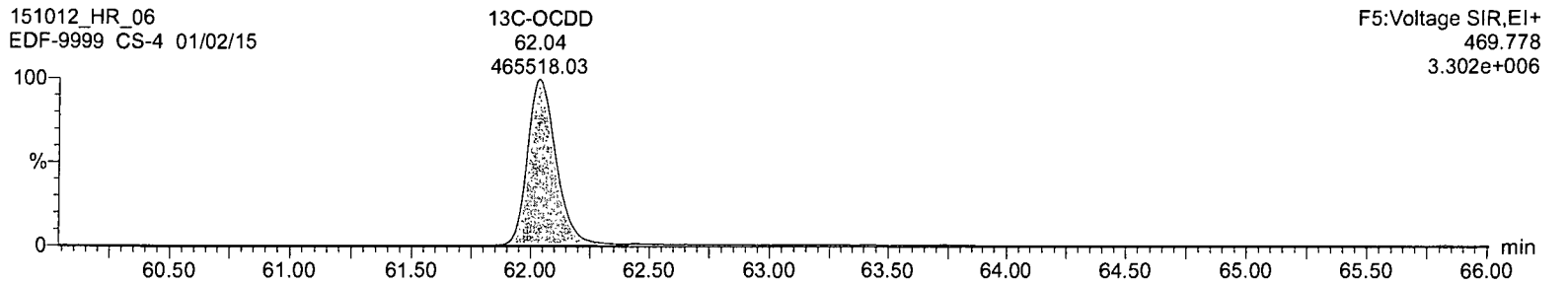
OCDD



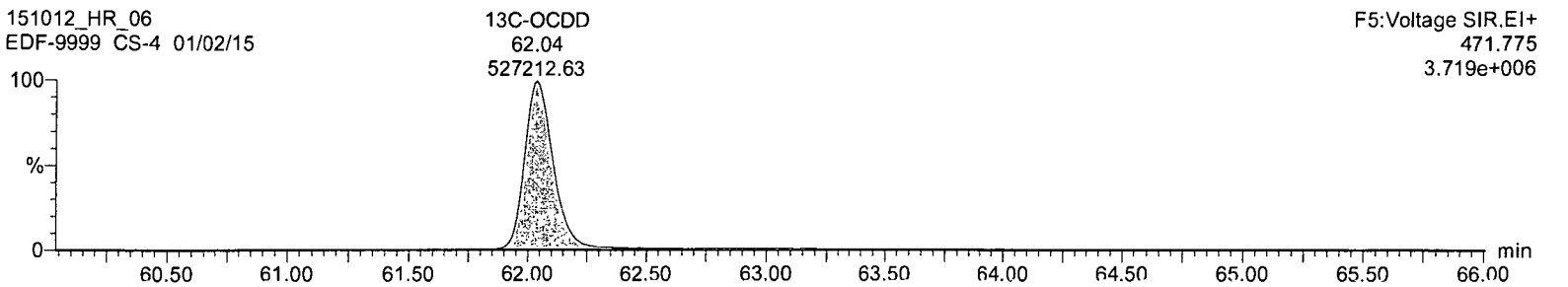
OCDD



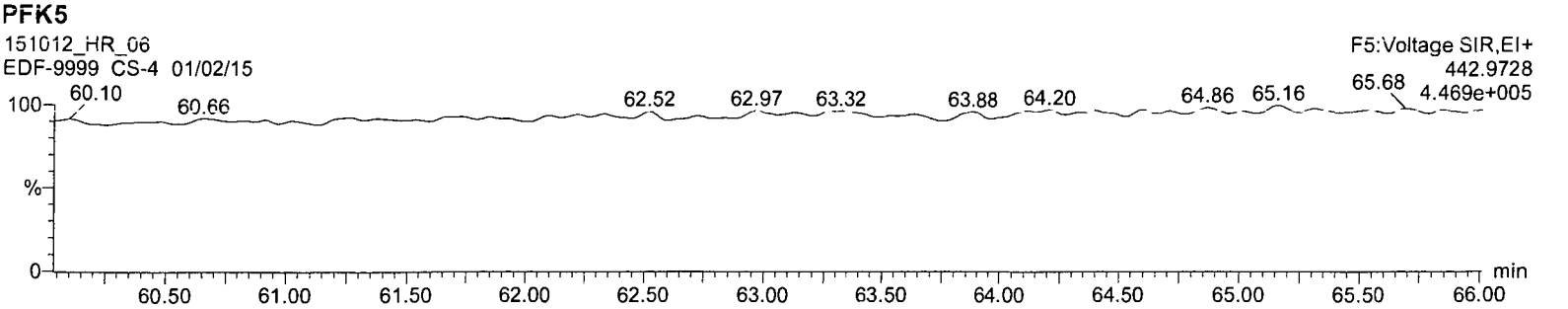
13C-OCDD



13C-OCDD

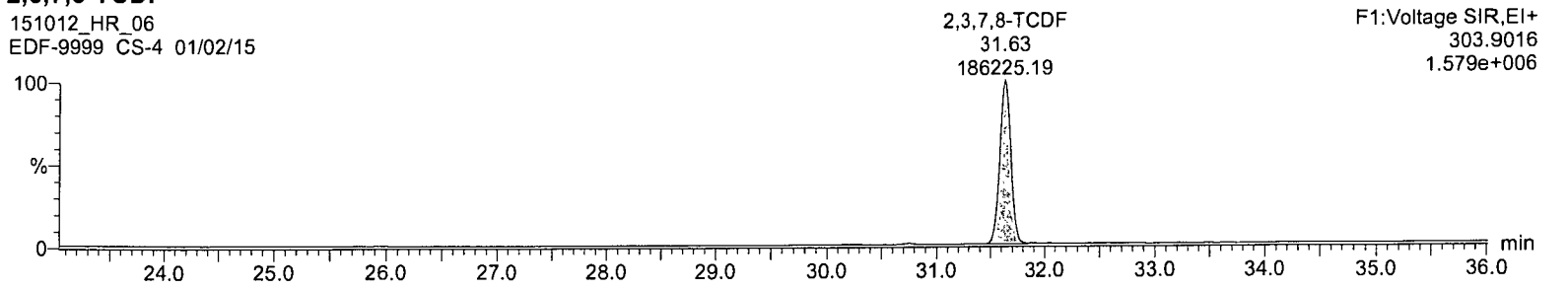


PFK5

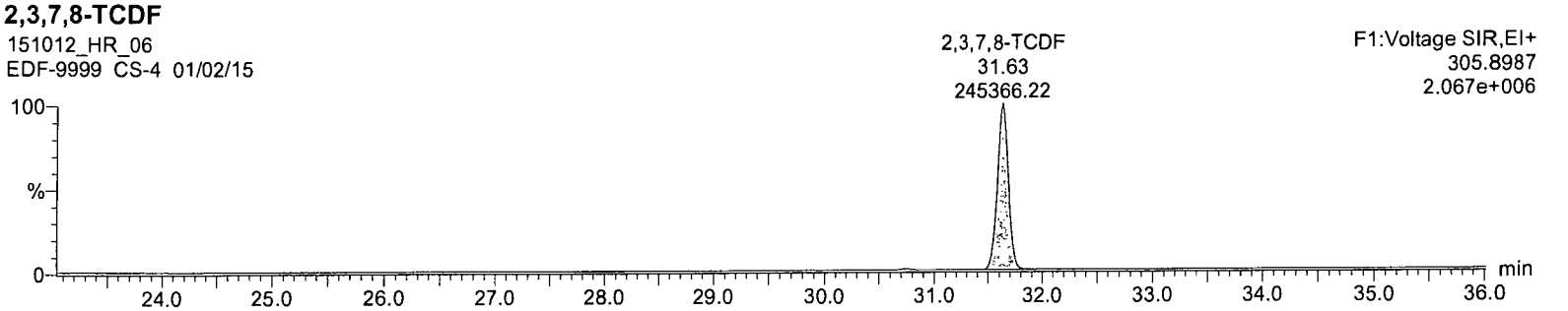


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

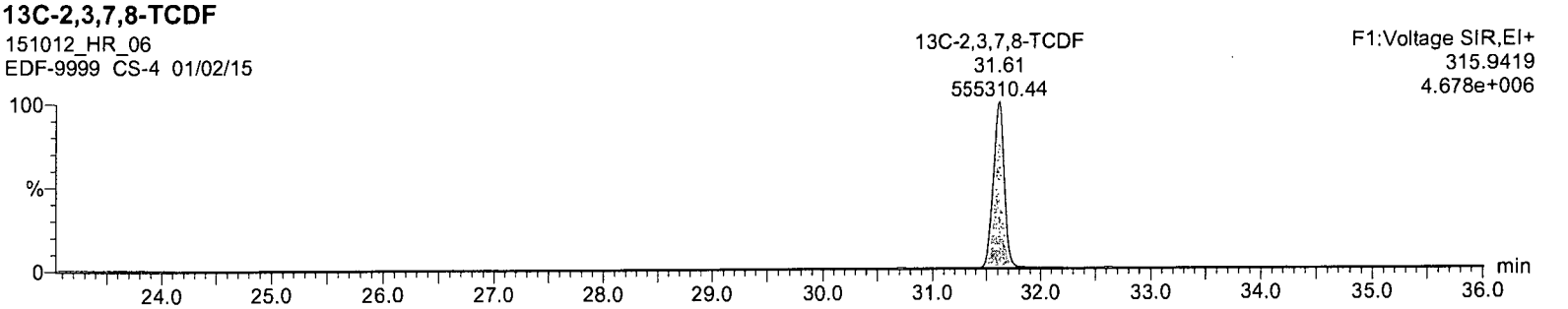
2,3,7,8-TCDF



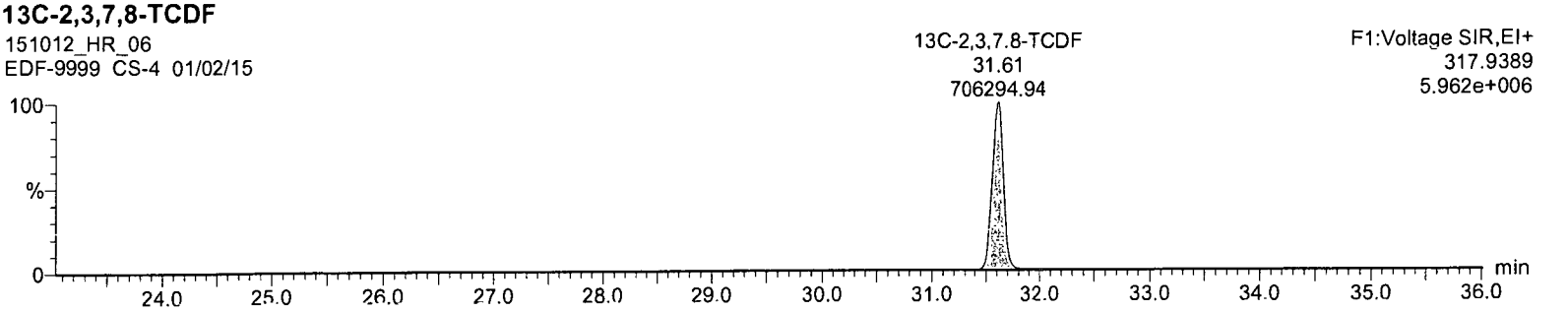
2,3,7,8-TCDF



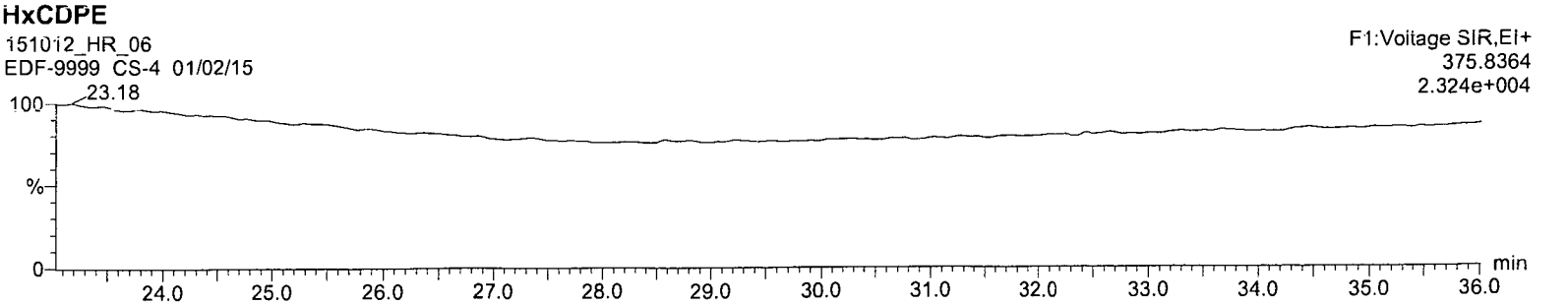
13C-2,3,7,8-TCDF



13C-2,3,7,8-TCDF



HxCDPE



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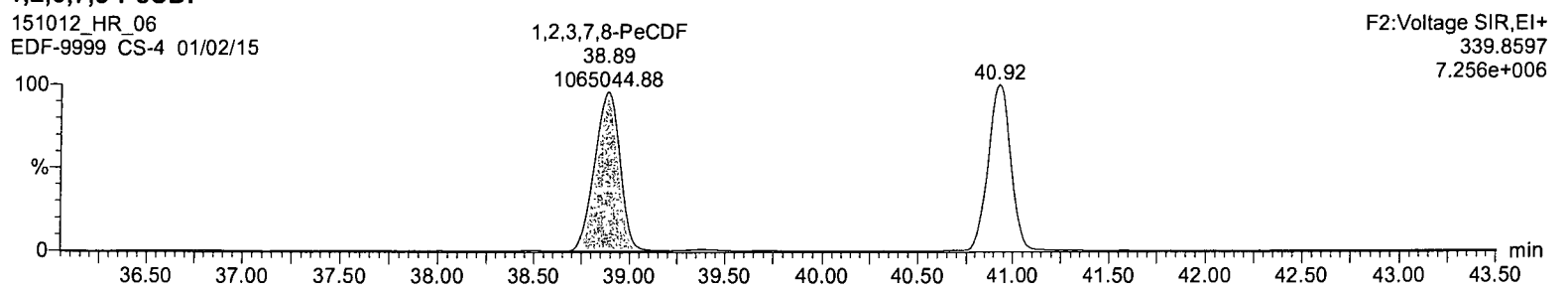
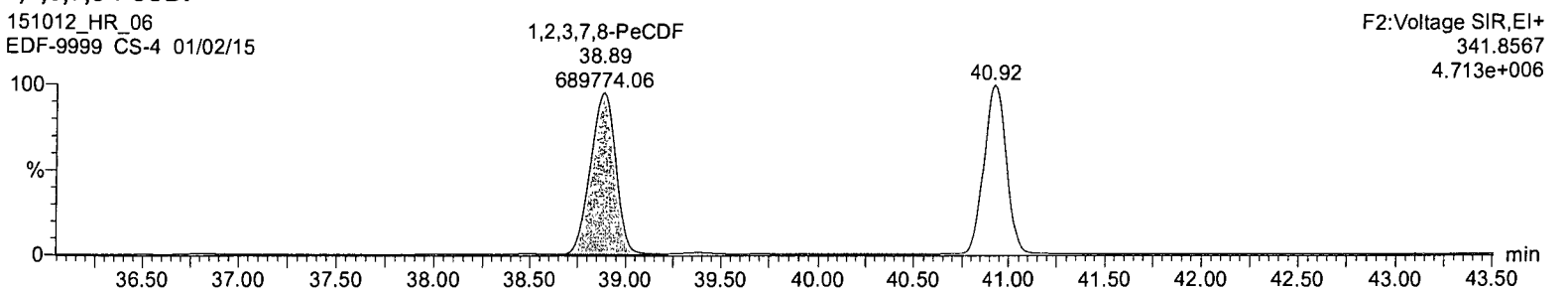
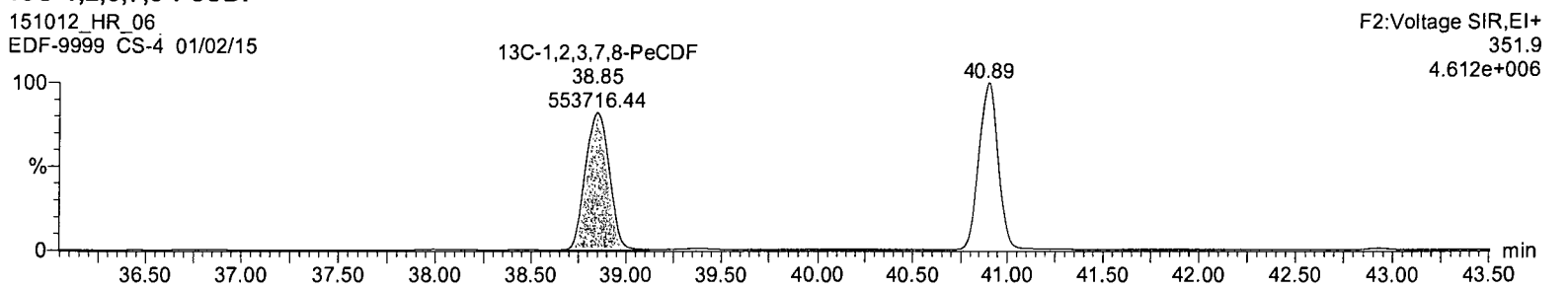
1,2,3,7,8-PeCDF



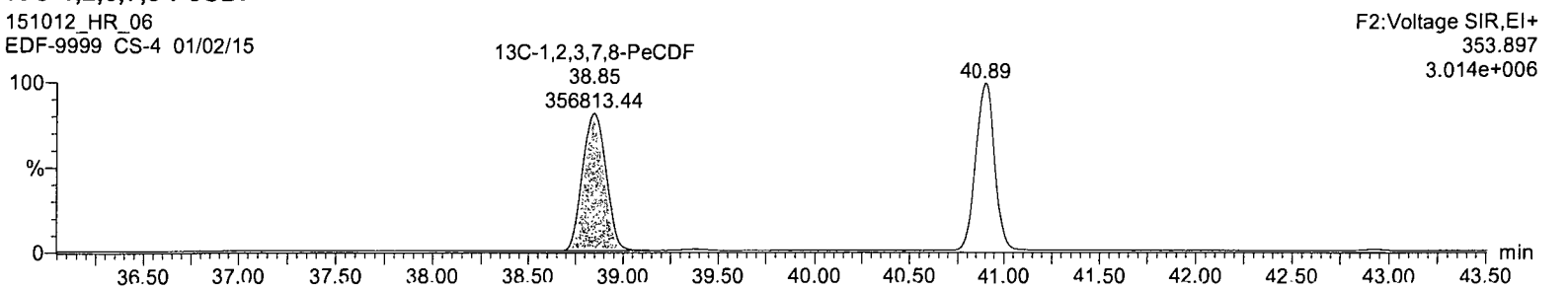
1,2,3,7,8-PeCDF



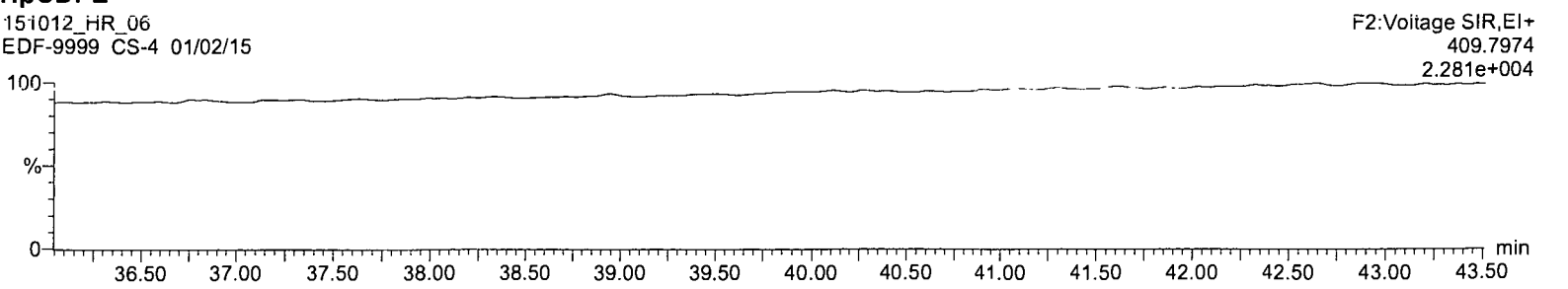
13C-1,2,3,7,8-PeCDF



13C-1,2,3,7,8-PeCDF

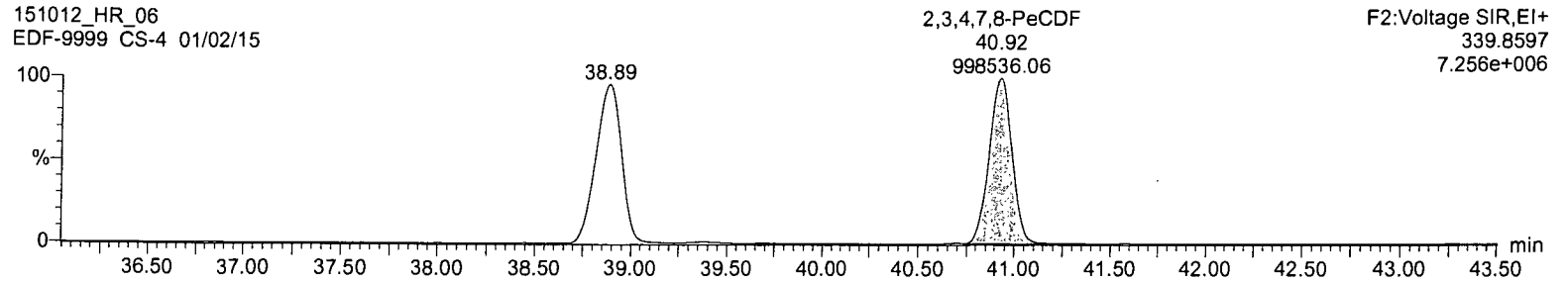


HpCDPE

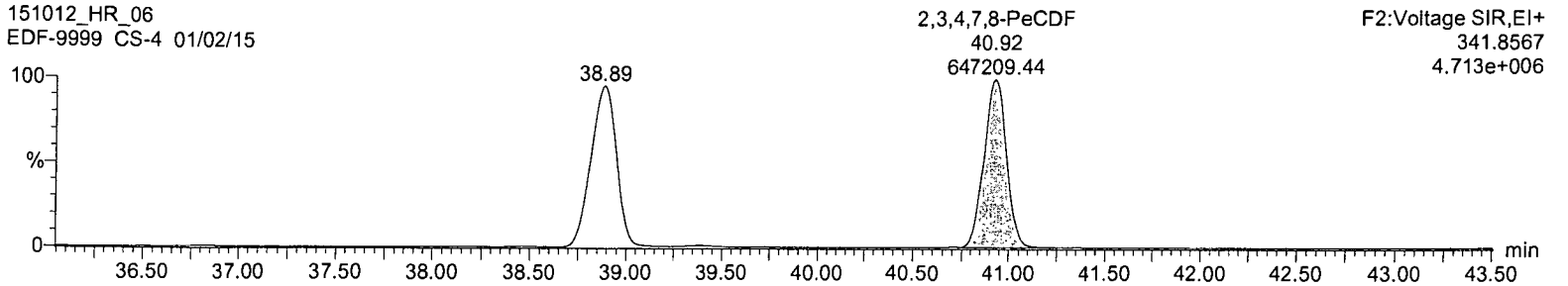


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

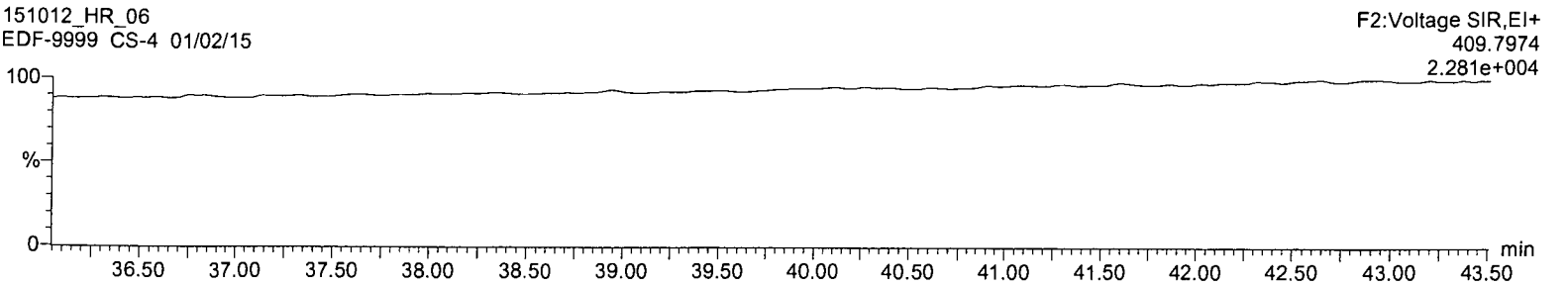
2,3,4,7,8-PeCDF



2,3,4,7,8-PeCDF



HpCDPE



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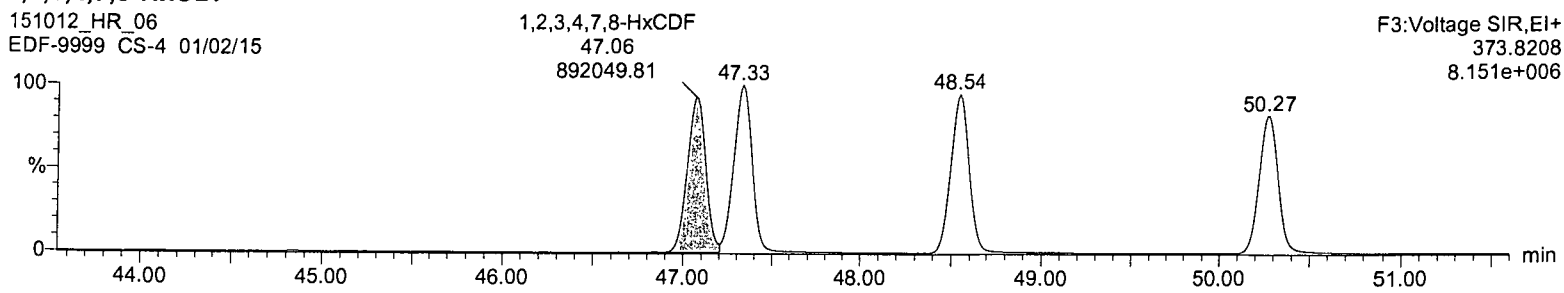
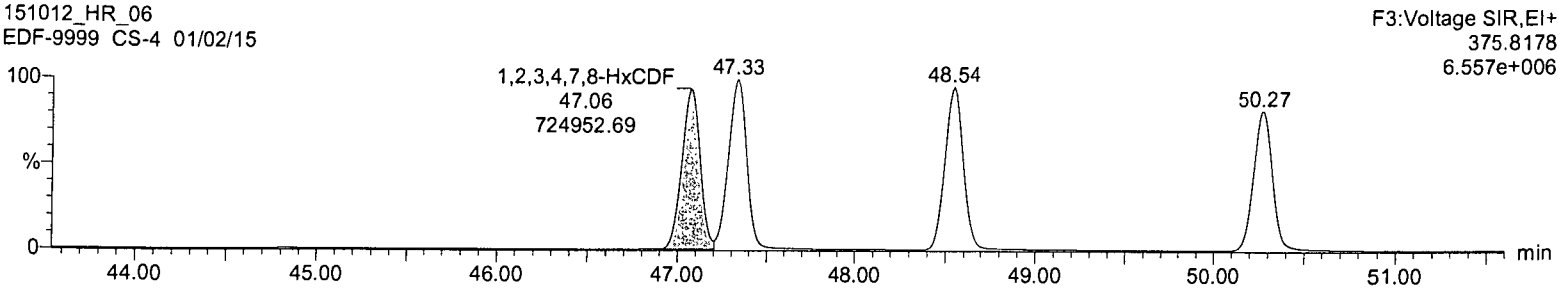
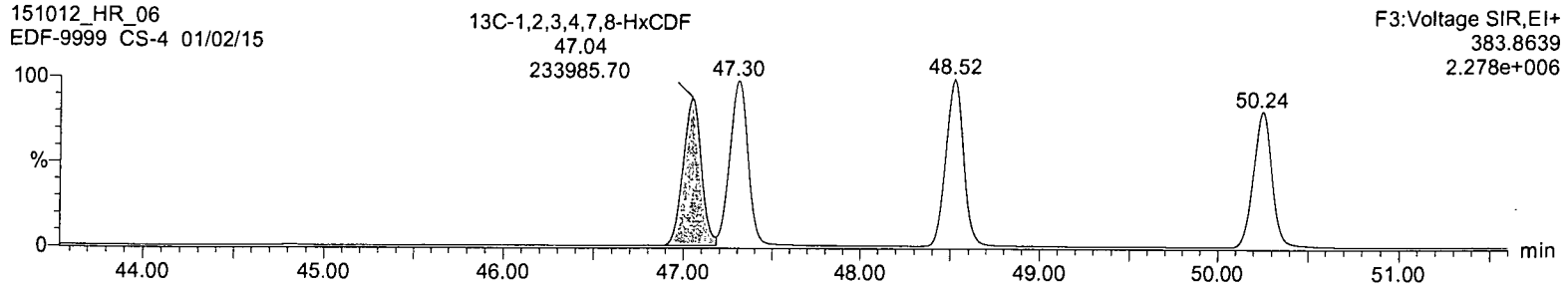
1,2,3,4,7,8-HxCDF



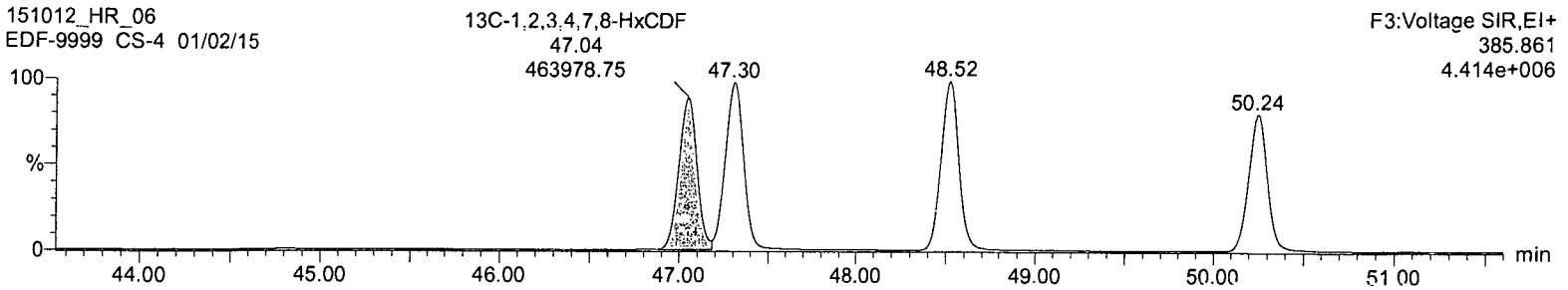
1,2,3,4,7,8-HxCDF



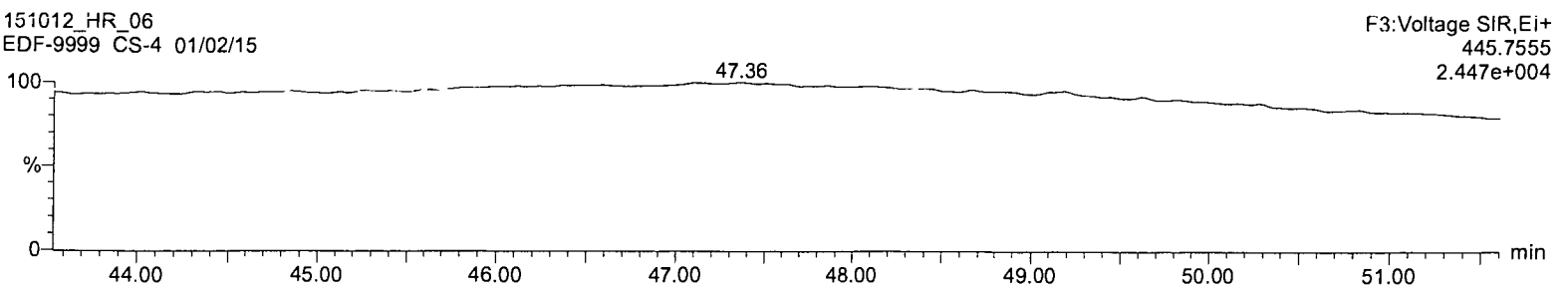
13C-1,2,3,4,7,8-HxCDF



13C-1,2,3,4,7,8-HxCDF

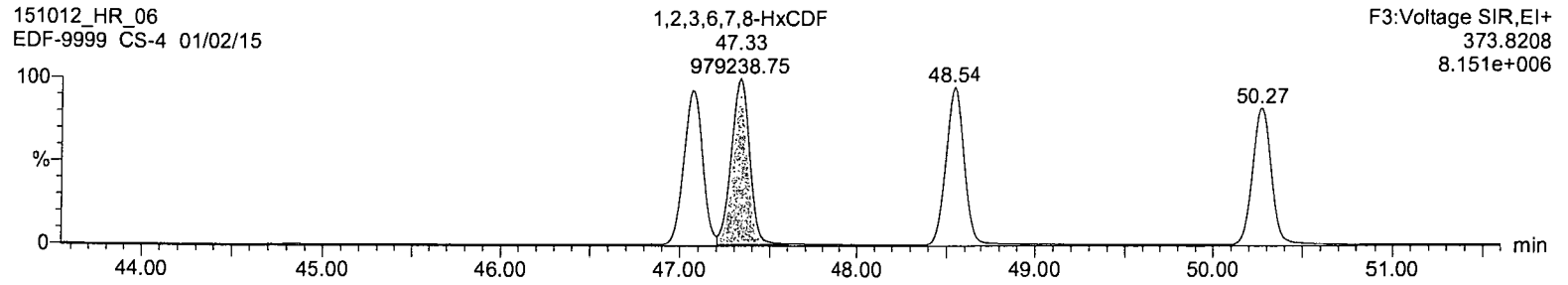


OCDPE

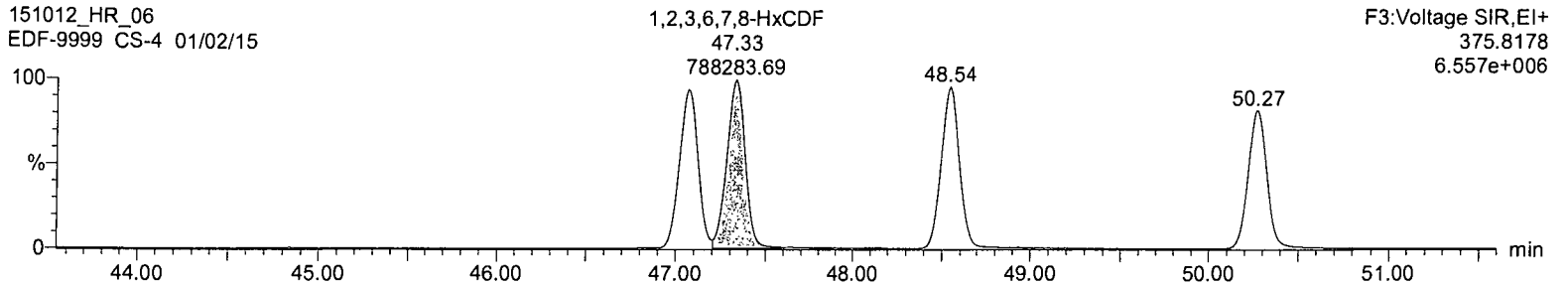


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

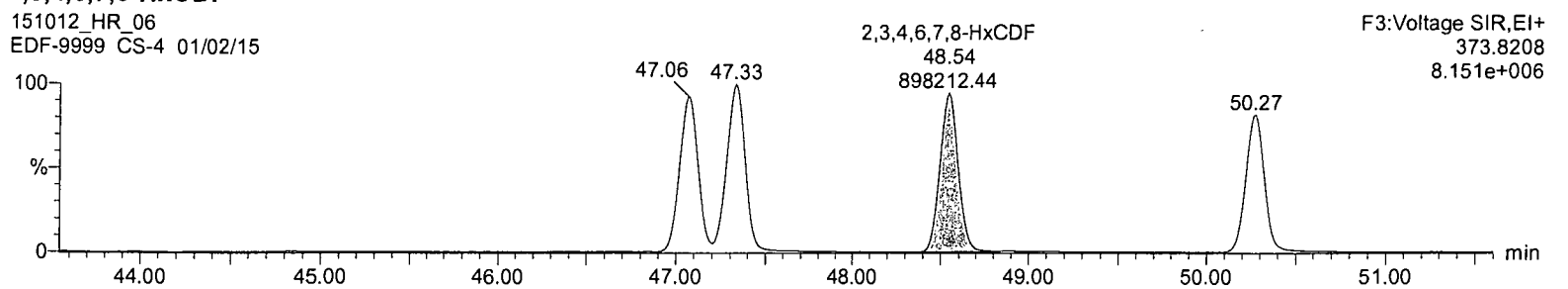
1,2,3,6,7,8-HxCDF



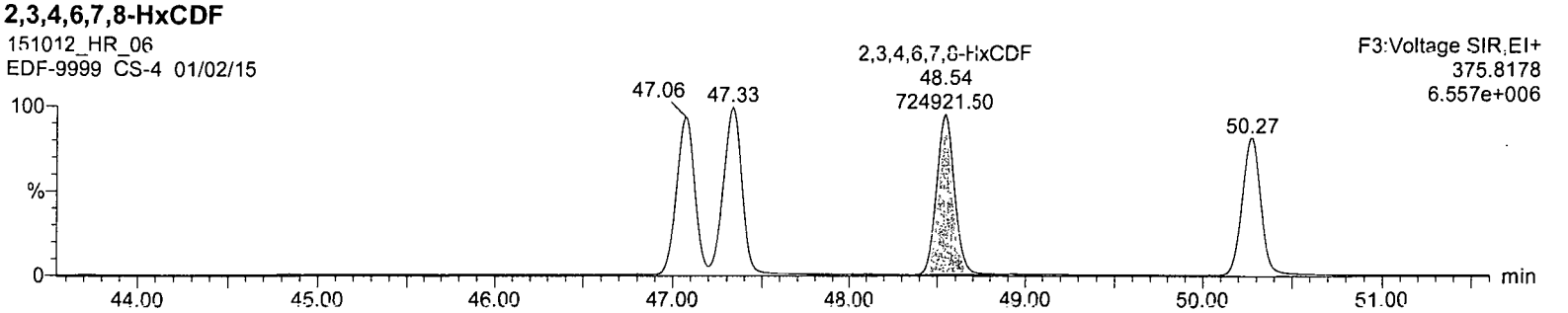
1,2,3,6,7,8-HxCDF



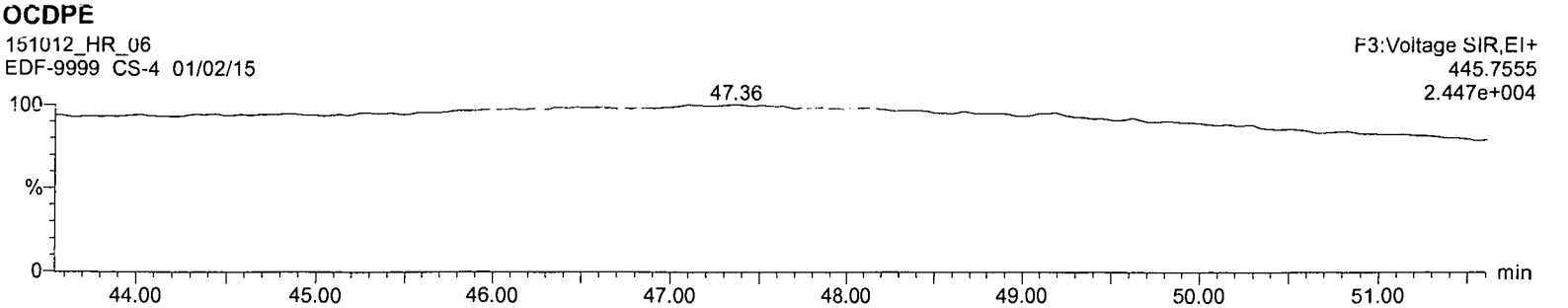
2,3,4,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF

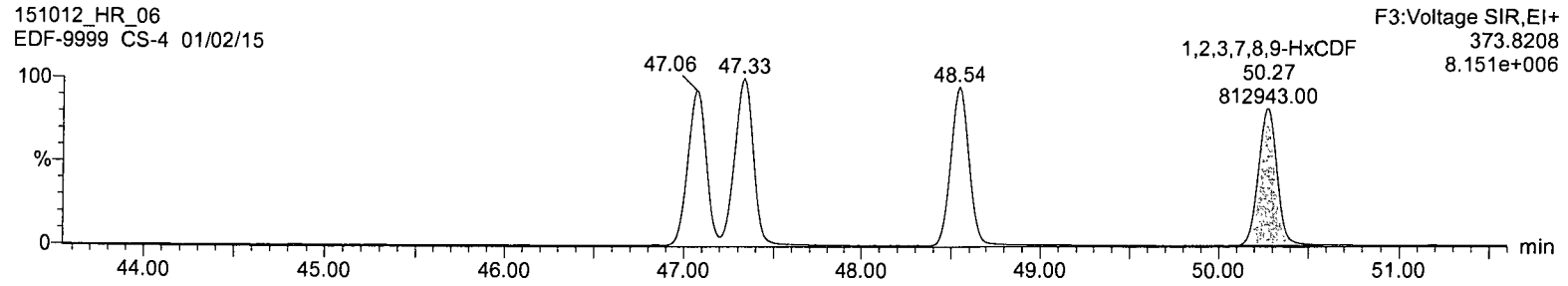


OCDPE

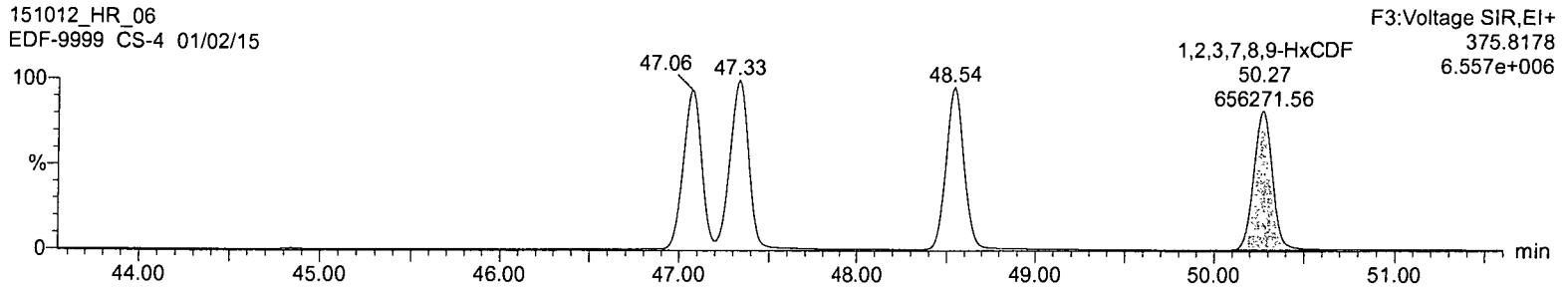


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

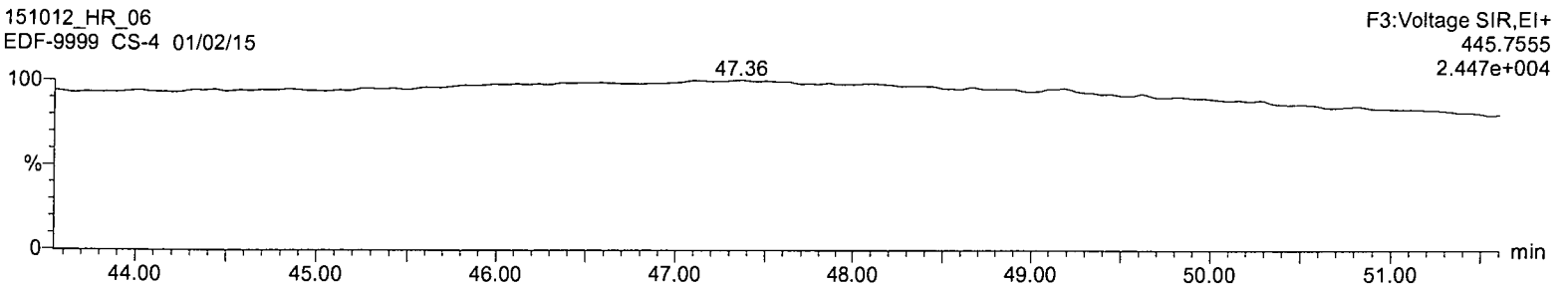
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF

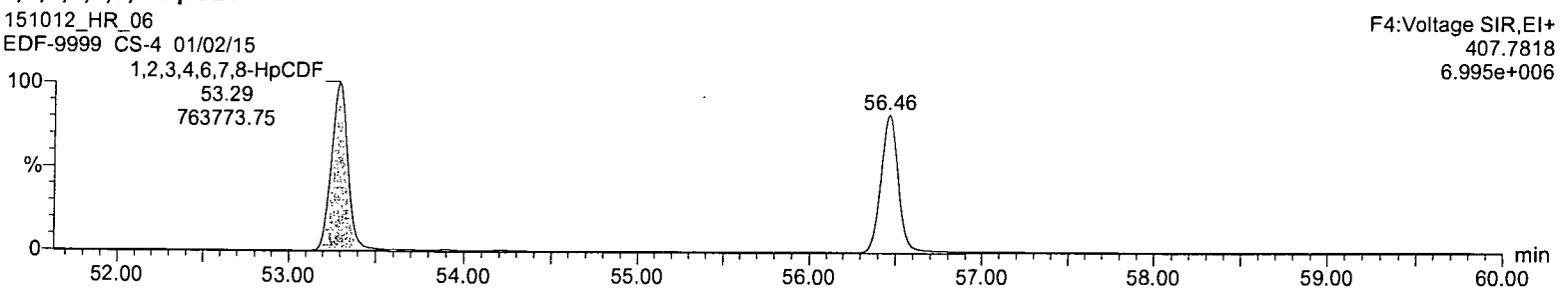


OCDPE

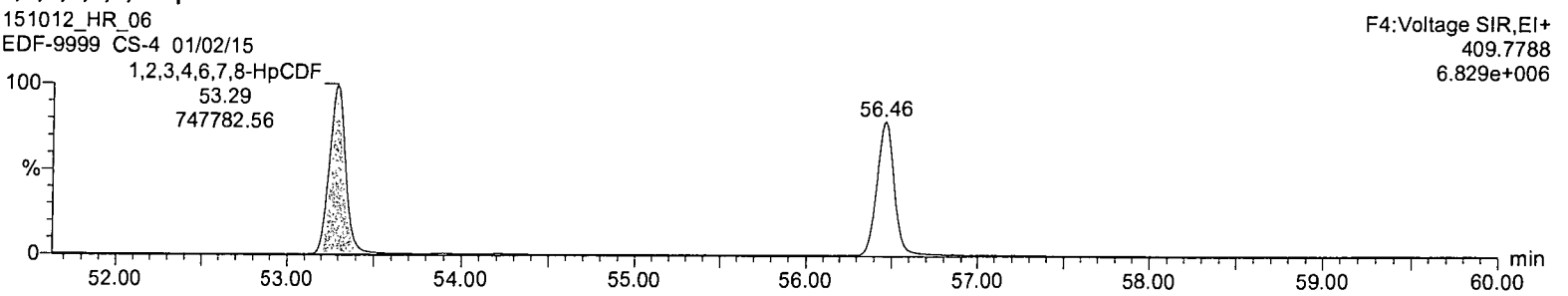


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

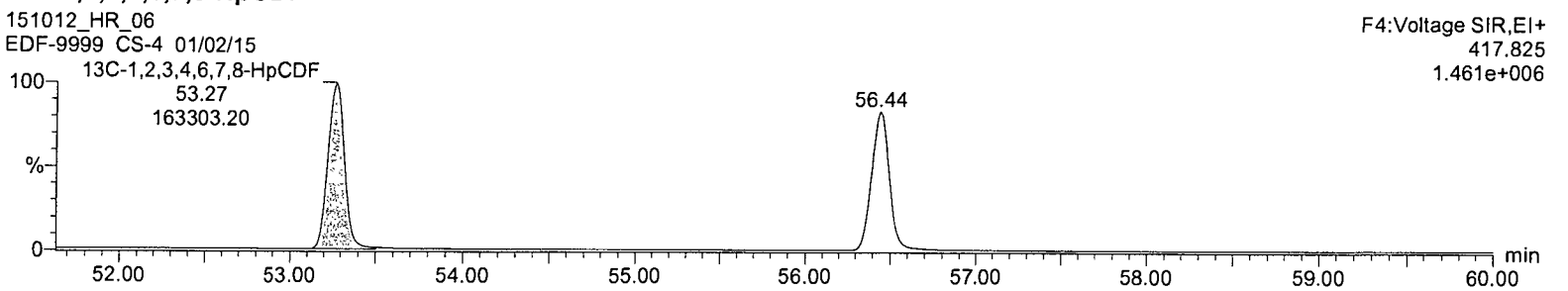
1,2,3,4,6,7,8-HpCDF



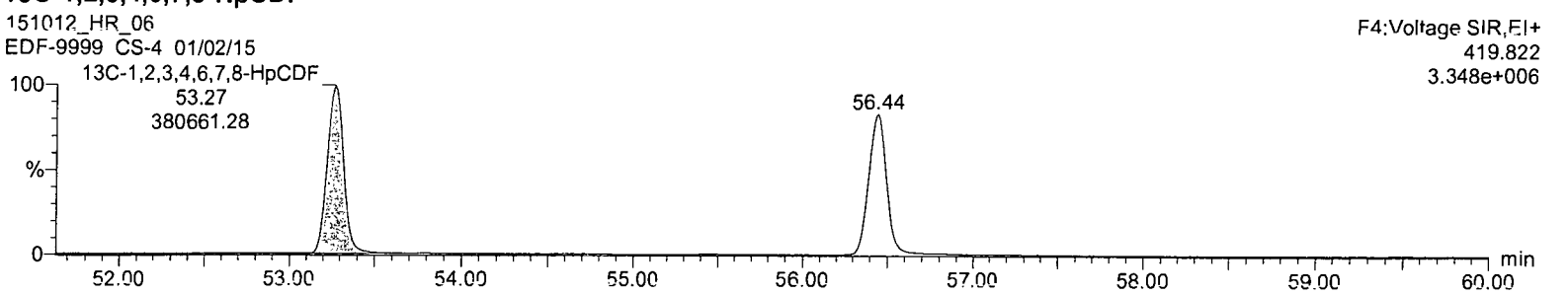
1,2,3,4,6,7,8-HpCDF



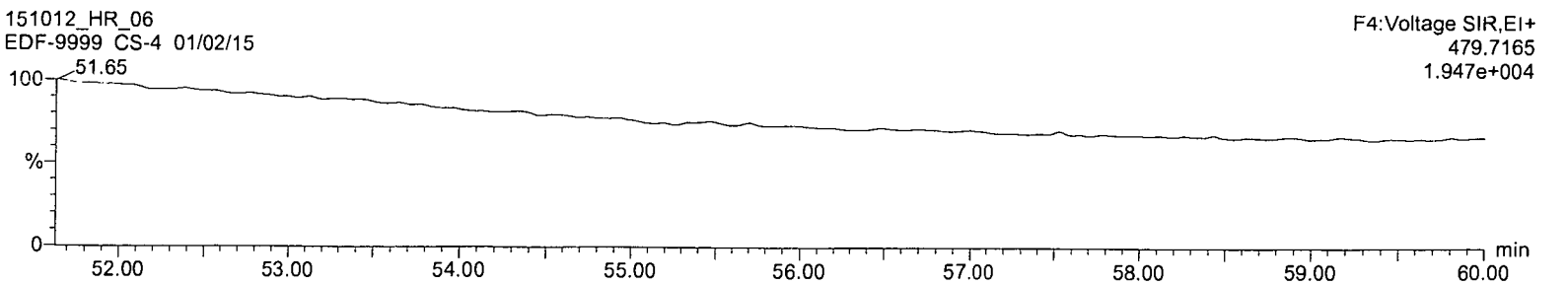
13C-1,2,3,4,6,7,8-HpCDF



13C-1,2,3,4,6,7,8-HpCDF

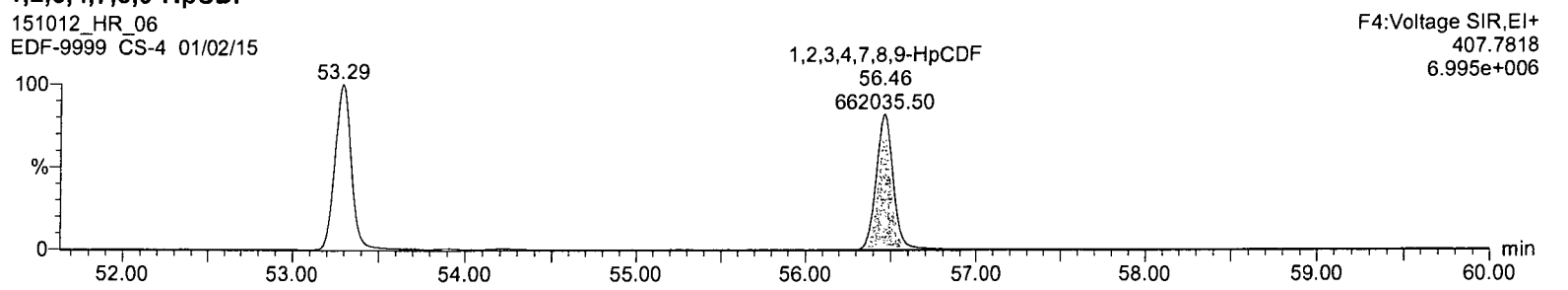


NCDPE

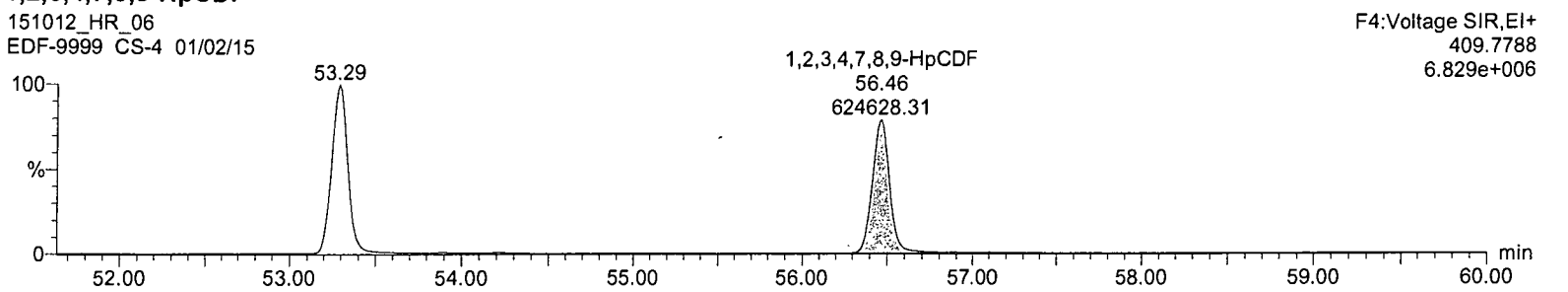


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

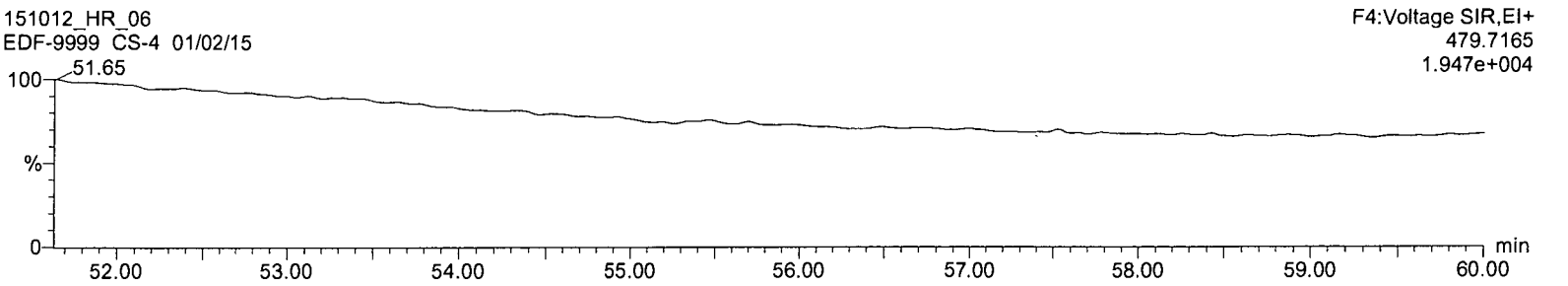
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF

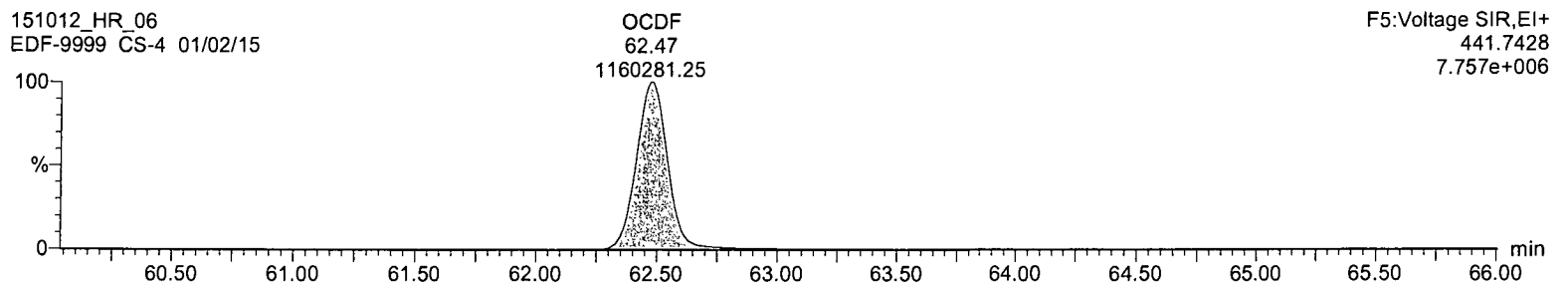


NCDPE

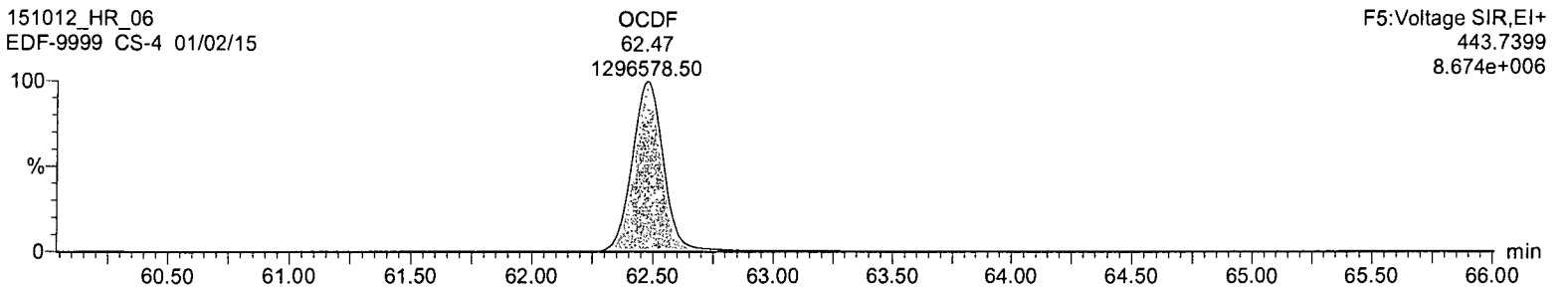


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

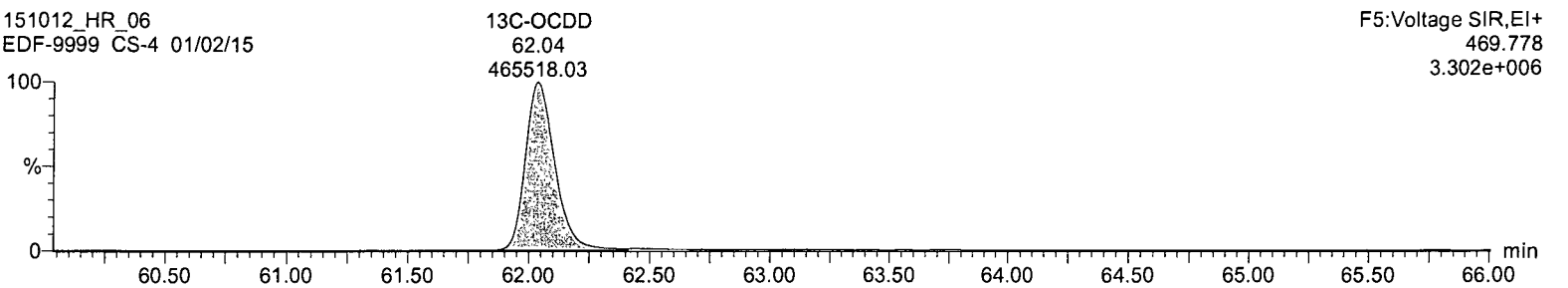
OCDF



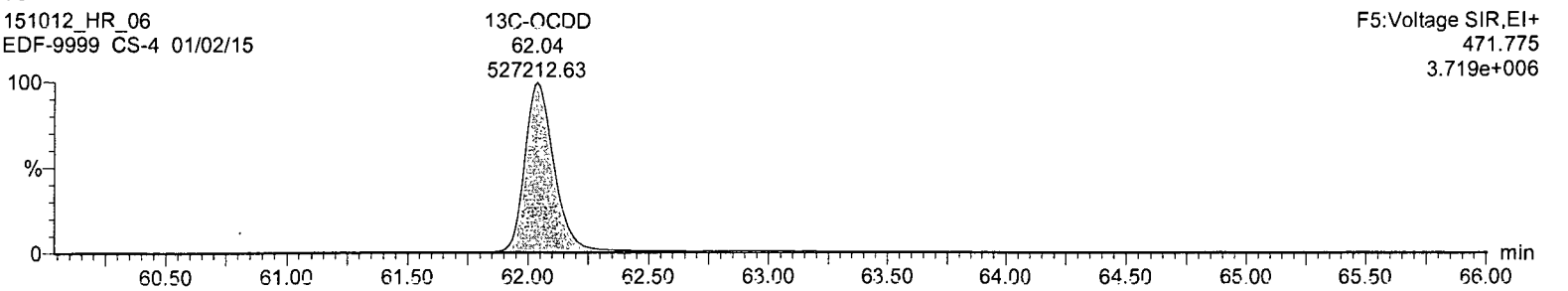
OCDF



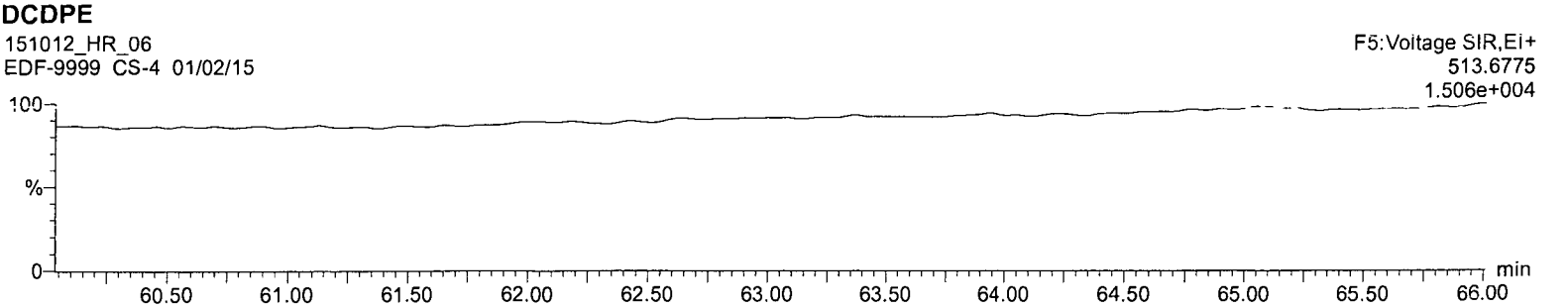
13C-OCDD



13C-OCDD

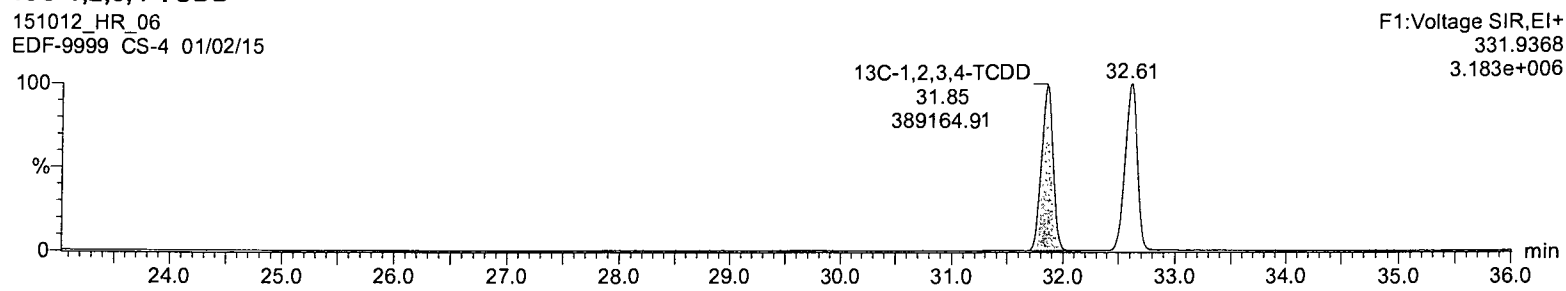


DCDPE

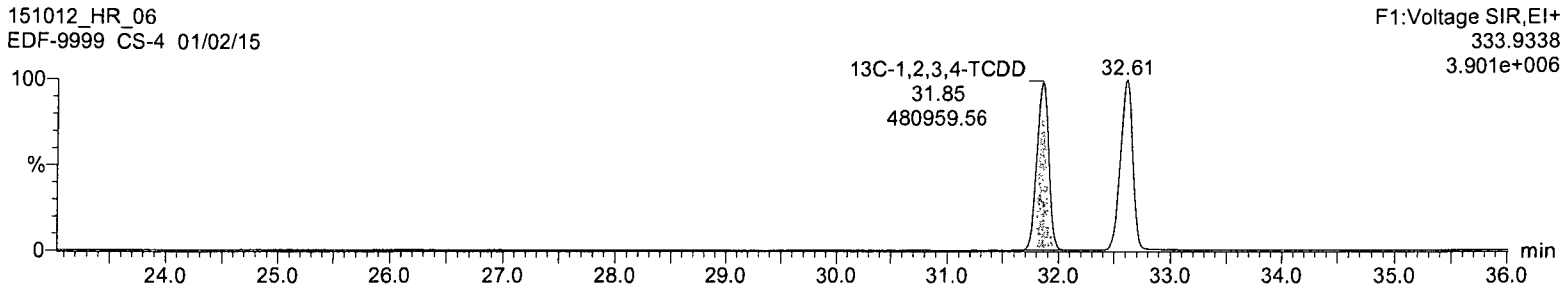


Name: 151012_HR_06, Date: 12-Oct-2015, Time: 18:28:56, Description: EDF-9999 CS-4 01/02/15, User:

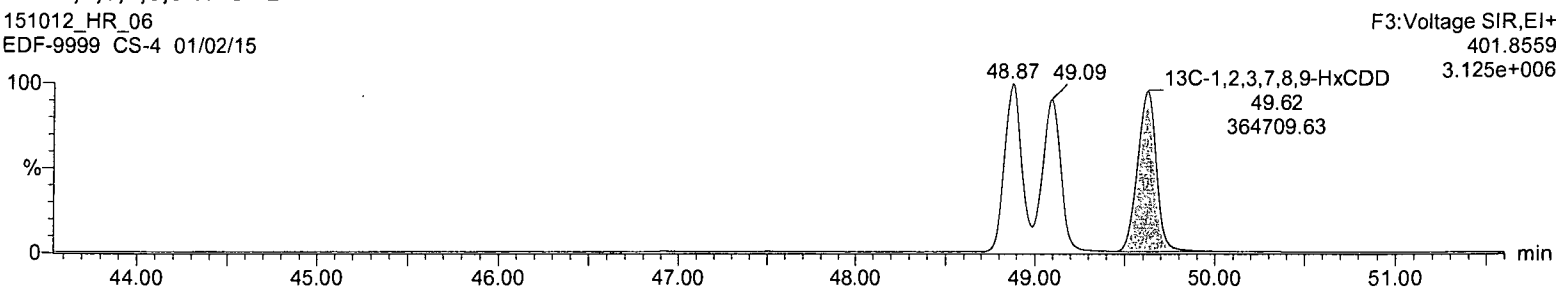
13C-1,2,3,4-TCDD



13C-1,2,3,4-TCDD



13C-1,2,3,7,8,9-HxCDD



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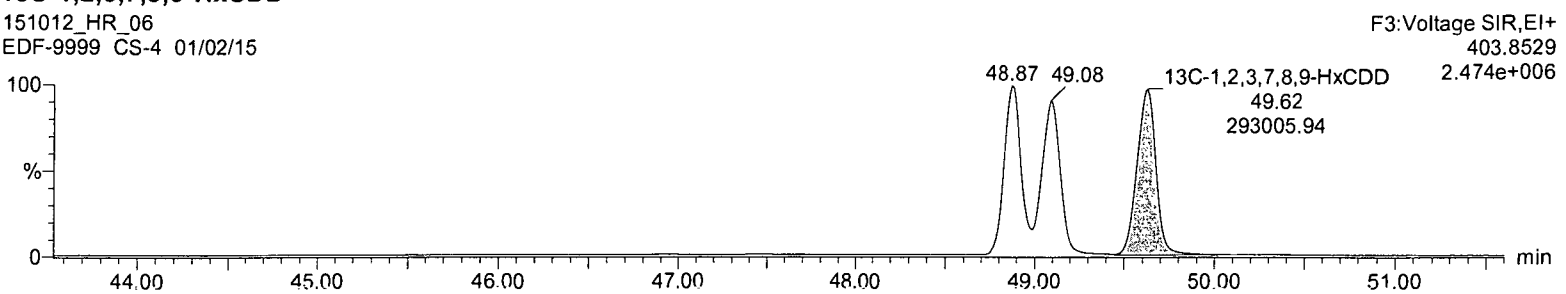


Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

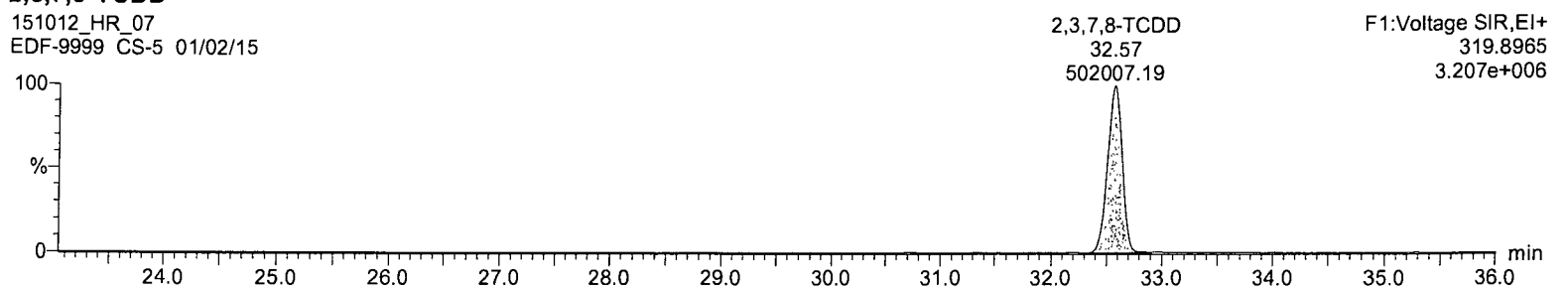
Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, ID: , Description: EDF-9999 CS-5 01/02/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N	Signal 2	Noise 2	S/N 2	Flag S/N
1	2,3,7,8-TCDD	3.1937040e6	3.1460672e2	10154.46	NO	4.0923170e6	2.3313367e2	17553.52	NO
2	1,2,3,7,8-PeCDD	2.0666020e7	5.8008679e2	35617.72	NO	1.3283261e7	6.7861896e2	19573.96	NO
3	1,2,3,4,7,8-HxCDD	1.9465450e7	5.8285742e2	33389.23	NO	1.5871989e7	6.5133832e2	24368.27	NO
4	1,2,3,6,7,8-HxCDD	1.8787156e7	5.8285742e2	32226.16	NO	1.5064599e7	6.5133832e2	23128.69	NO
5	1,2,3,7,8,9-HxCDD	2.0023062e7	5.8285742e2	34348.35	NO	1.6209457e7	6.5133832e2	24886.39	NO
6	1,2,3,4,6,7,8-HpCDD	1.6780778e7	6.4690137e2	25935.44	NO	1.6047877e7	3.5570107e3	4511.62	NO
7	OCDD	2.2841242e7	5.4004773e2	42289.53	NO	2.5746116e7	6.3225562e2	40721.06	NO
8	2,3,7,8-TCDF	4.7948620e6	2.5880496e2	18525.03	NO	6.1127670e6	4.6723950e2	13082.73	NO
9	1,2,3,7,8-PeCDF	2.4942724e7	5.9196788e5	40.65	NO	1.6534208e7	2.8976806e5	57.06	NO
10	2,3,4,7,8-PeCDF	2.3133182e7	5.9196788e5	37.60	NO	1.5188817e7	2.8976806e5	52.42	NO
11	1,2,3,4,7,8-HxCDF	2.4732470e7	5.5872498e2	44251.83	NO	2.0124434e7	8.2945544e2	24262.22	NO
12	1,2,3,6,7,8-HxCDF	2.5270178e7	5.5872498e2	45215.22	NO	2.0677846e7	8.2945544e2	24929.42	NO
13	2,3,4,6,7,8-HxCDF	2.3870750e7	5.5872498e2	42715.35	NO	1.8918396e7	8.2945544e2	22808.21	NO
14	1,2,3,7,8,9-HxCDF	2.3063646e7	5.5872498e2	41277.90	NO	1.8663002e7	8.2945544e2	22500.31	NO
15	1,2,3,4,6,7,8-HpCDF	2.3194784e7	6.1284607e2	37842.30	NO	2.1845948e7	7.2327228e2	30204.32	NO
16	1,2,3,4,7,8,9-HpCDF	1.9134004e7	6.1284607e2	31220.37	NO	1.8464196e7	7.2327228e2	25528.69	NO
17	OCDF	2.6586816e7	4.6947522e2	56631.01	NO	2.9865908e7	3.1921185e2	93561.40	NO
18	13C-2,3,7,8-TCDD	1.7372450e6	2.6218256e2	6633.41	NO	2.2271840e6	1.7889429e2	12449.72	NO
19	13C-1,2,3,7,8-PeCDD	2.0079030e6	3.9904349e2	5028.58	NO	1.2571460e6	1.9013565e2	6611.84	NO
20	13C-1,2,3,6,7,8-HxCDD	1.8315640e6	2.6699612e2	6863.45	NO	1.4678130e6	3.4744907e2	4224.54	NO
21	13C-1,2,3,4,6,7,8-HpCDD	1.6595370e6	5.1206848e2	3241.47	NO	1.5438500e6	2.5636334e2	6022.12	NO
22	13C-OCDD	2.2801660e6	3.2702625e2	6968.48	NO	2.5306960e6	4.3302979e2	5844.16	NO
23	13C-2,3,7,8-TCDF	2.3820730e6	2.3098026e2	10316.04	NO	2.9652110e6	2.1358673e2	13882.94	NO
24	13C-1,2,3,7,8-PeCDF	2.7937710e6	1.6011806e4	172.22	NO	1.8464770e6	4.3870837e2	4208.89	NO
25	13C-1,2,3,4,7,8-HxCDF	1.1728630e6	2.9132394e2	4022.57	NO	2.2892760e6	2.4129158e4	94.88	NO
26	13C-1,2,3,4,6,7,8-HpCDF	9.1516100e5	2.1199390e2	4319.34	NO	2.0781940e6	2.1668019e2	9591.07	NO
27	13C-1,2,3,4-TCDD	1.9300420e6	2.6218256e2	7365.48	NO	2.4168970e6	1.7889429e2	13510.20	NO
28	13C-1,2,3,7,8,9-HxCDD	1.8549370e6	2.6699612e2	6957.54	NO	1.4809260e6	3.4744907e2	4262.28	NO

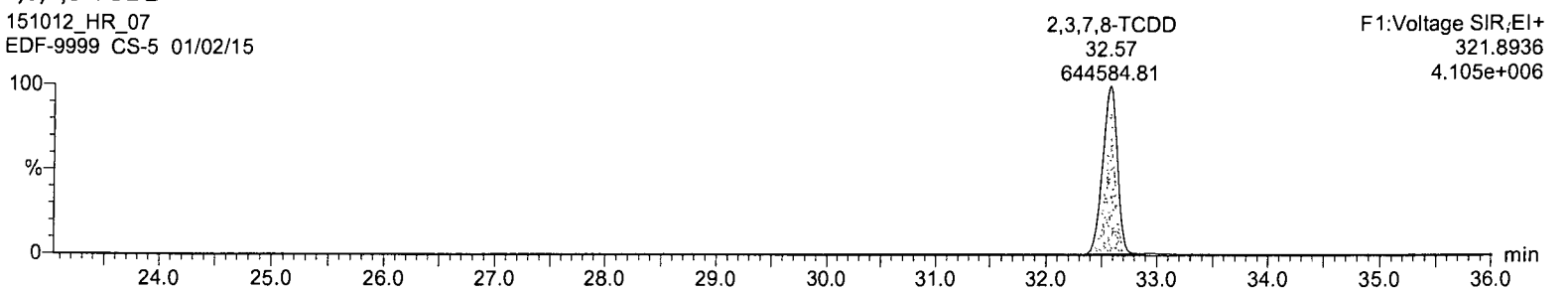
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: 13 Oct 2015 08:23:54

Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

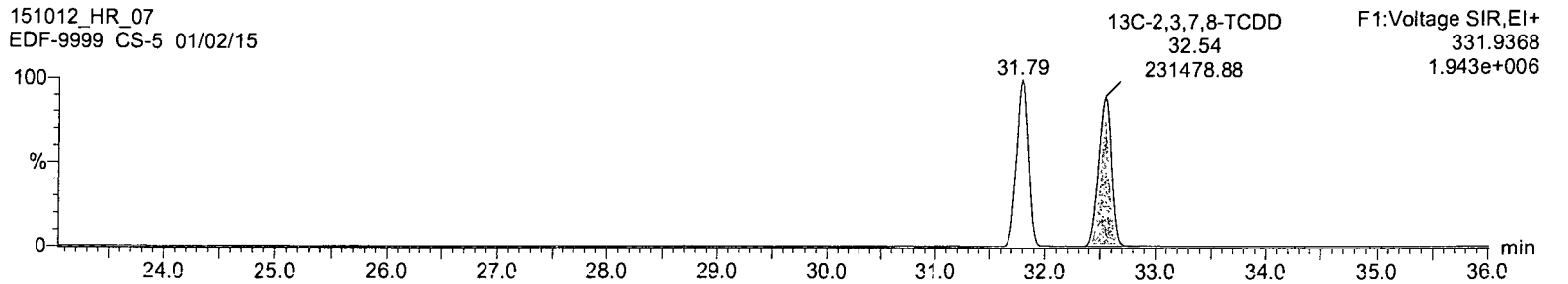
2,3,7,8-TCDD



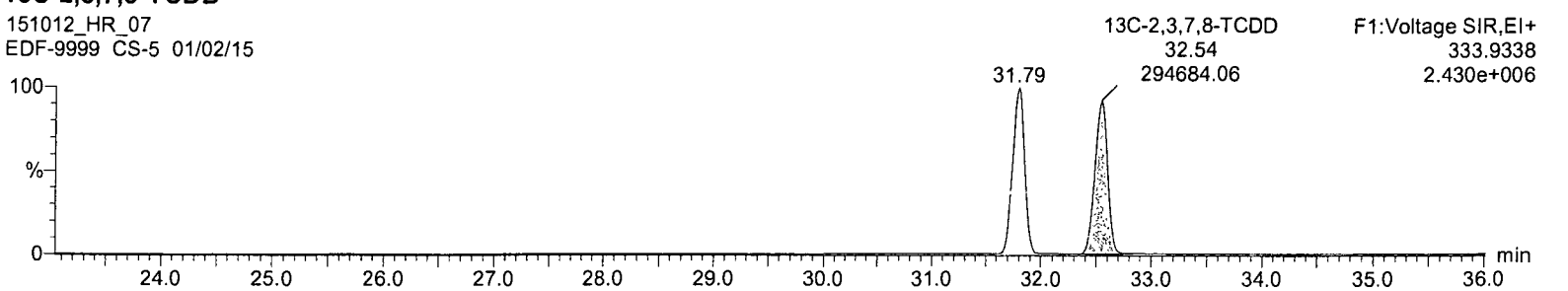
2,3,7,8-TCDD



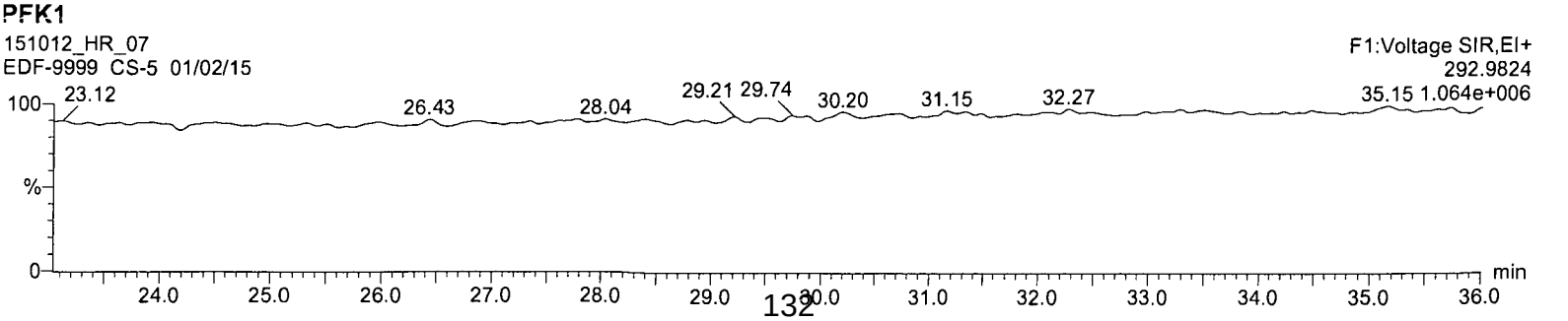
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

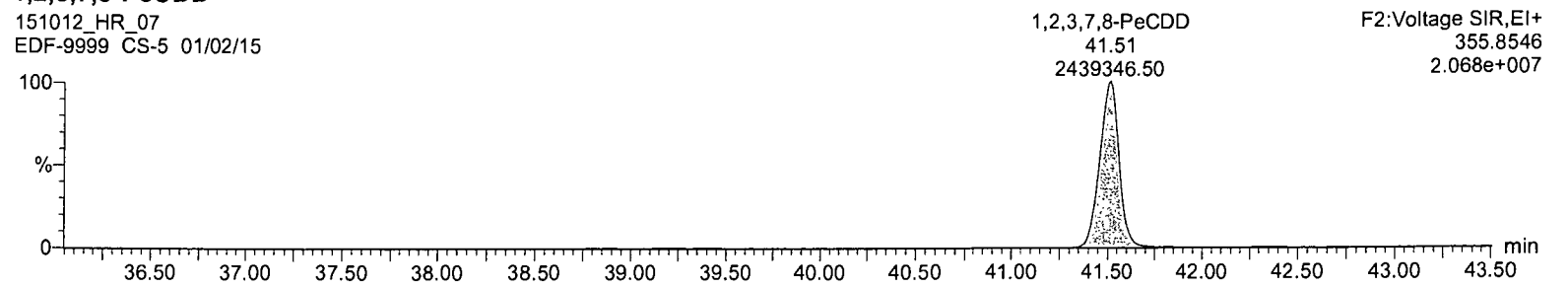


PFK1

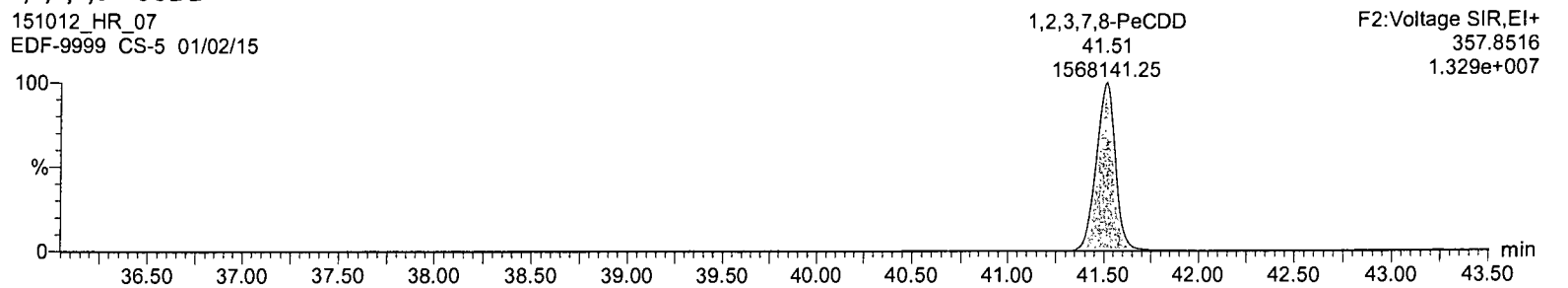


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

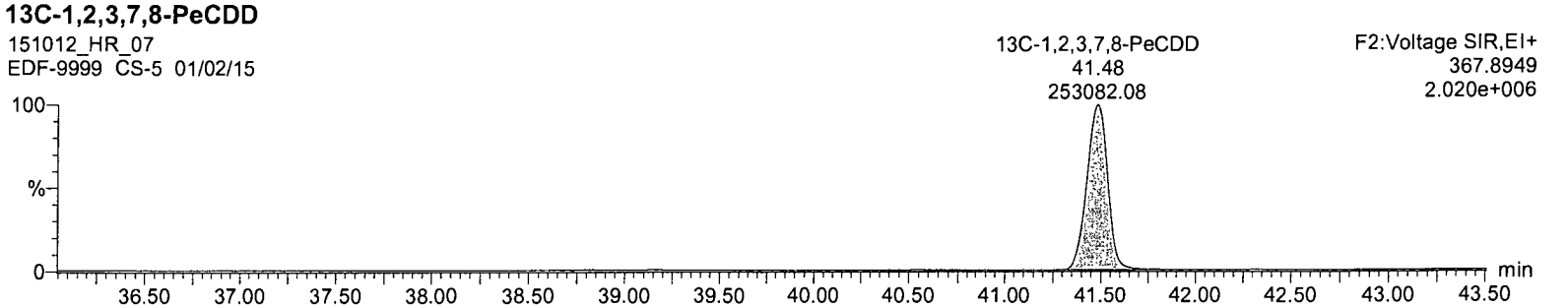
1,2,3,7,8-PeCDD



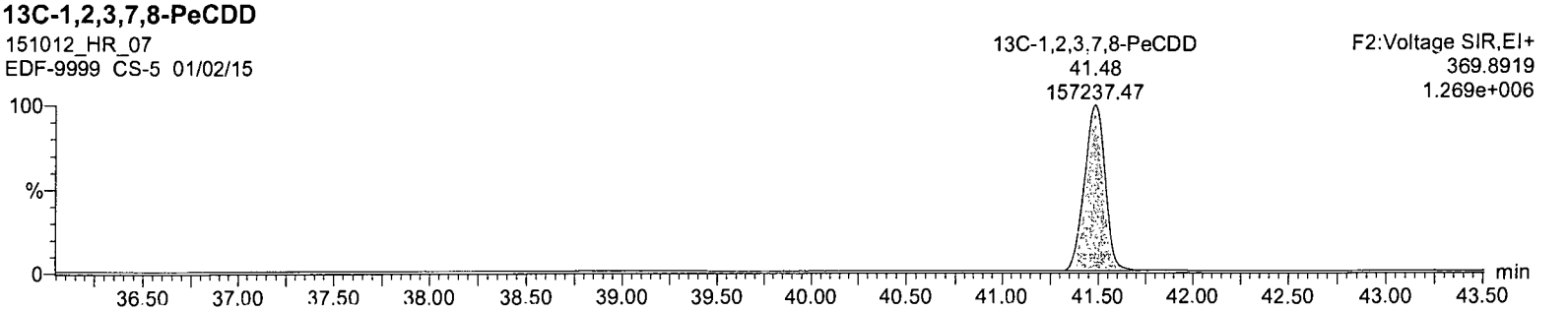
1,2,3,7,8-PeCDD



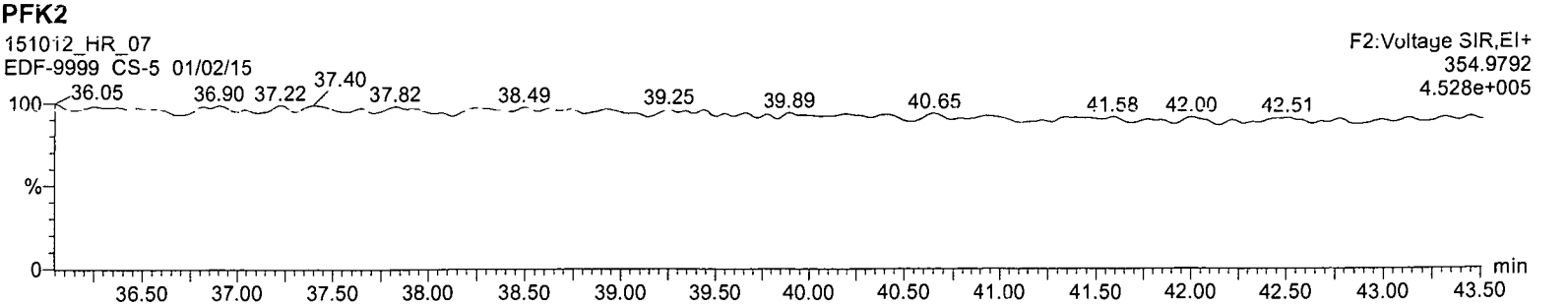
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

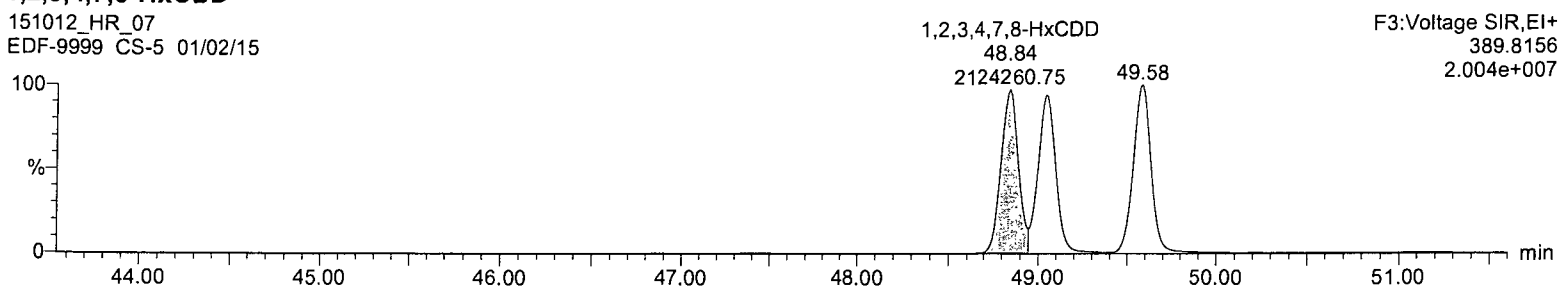


PFK2

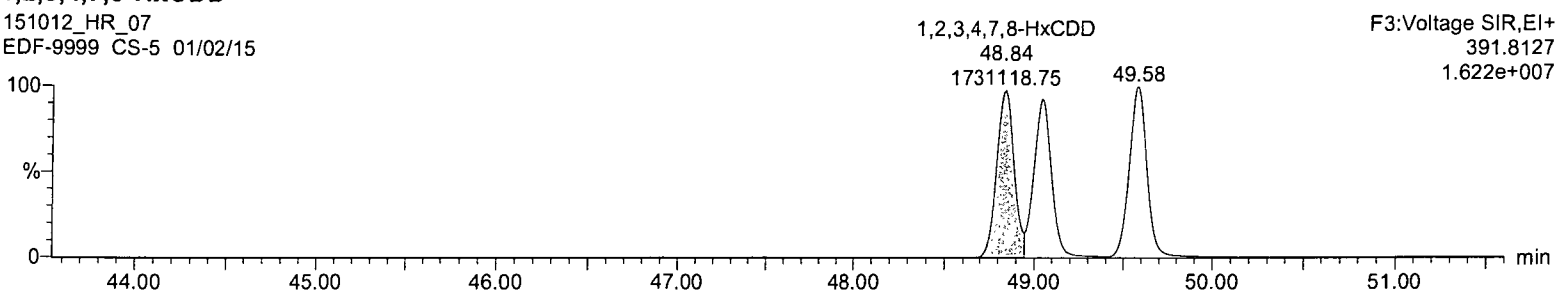


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

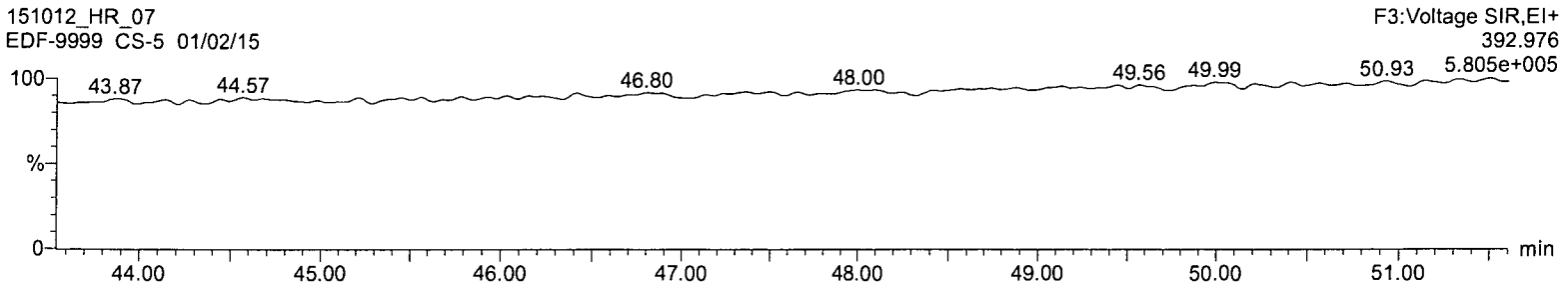
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD

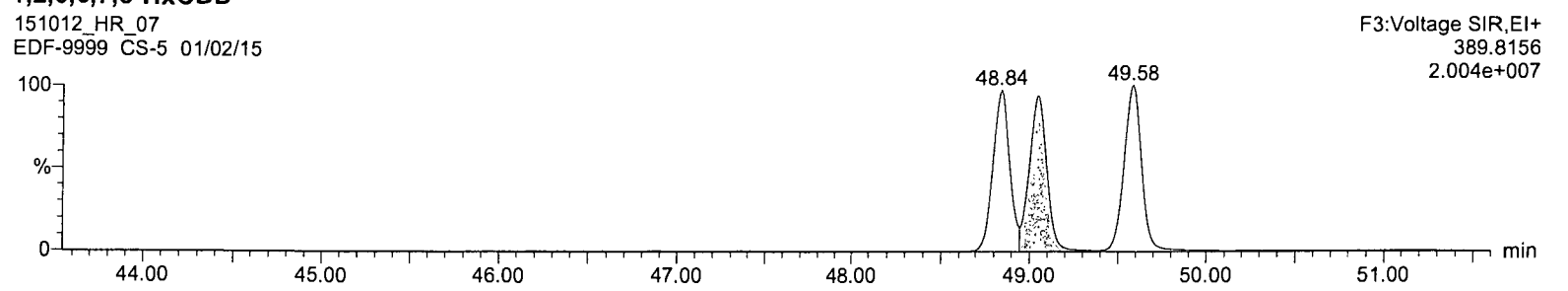


PFK3

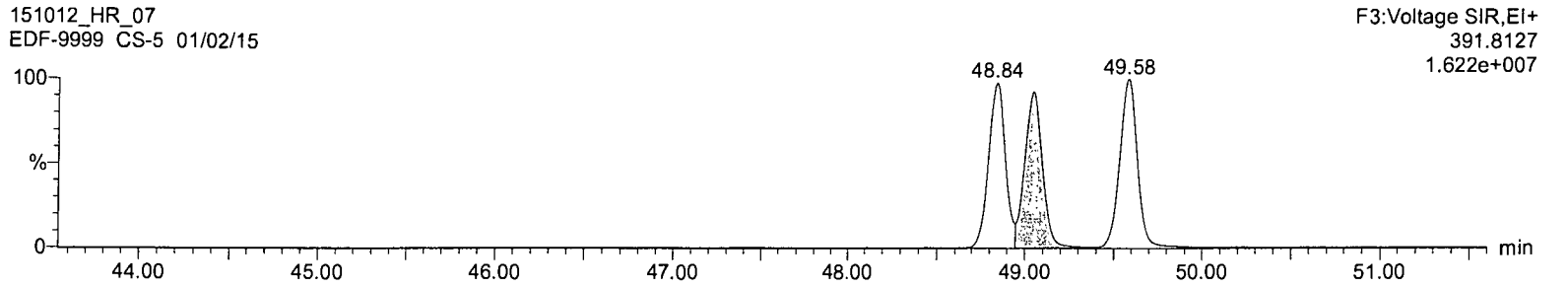


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

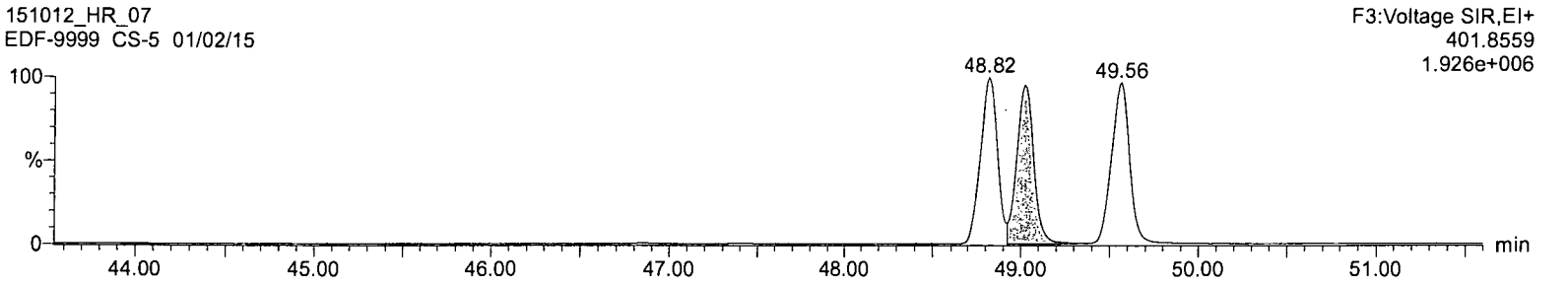
1,2,3,6,7,8-HxCDD



1,2,3,6,7,8-HxCDD



13C-1,2,3,6,7,8-HxCDD



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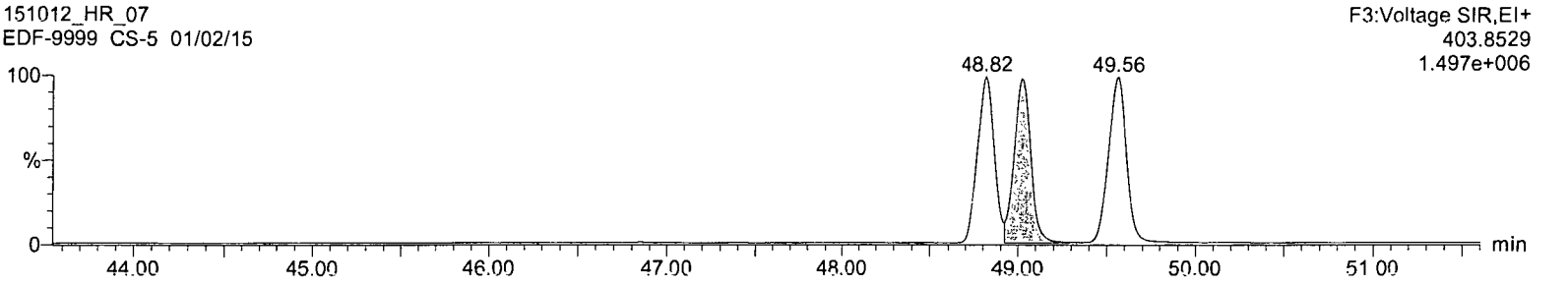
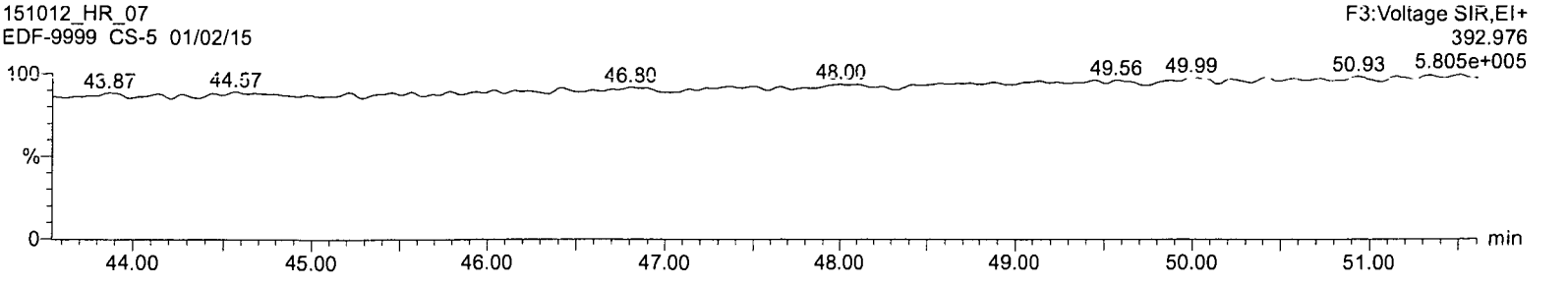
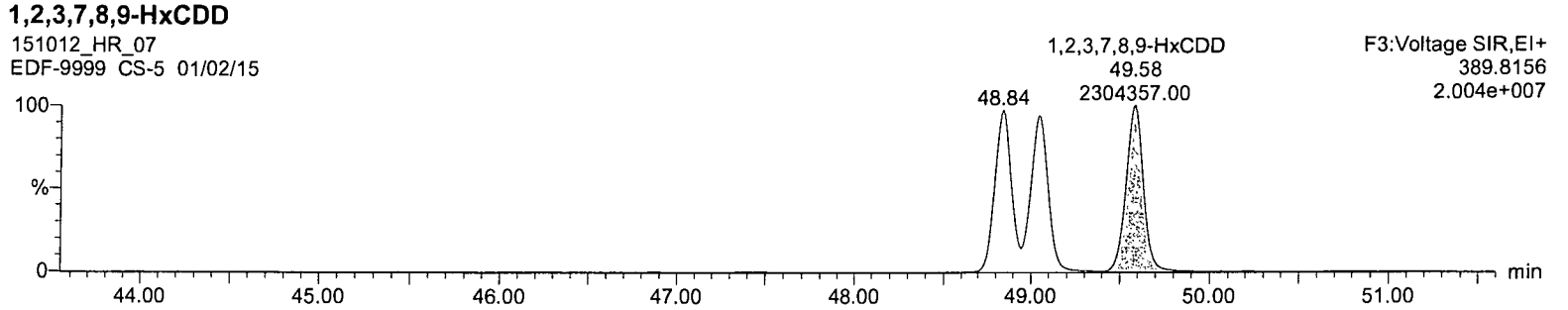


PFK3

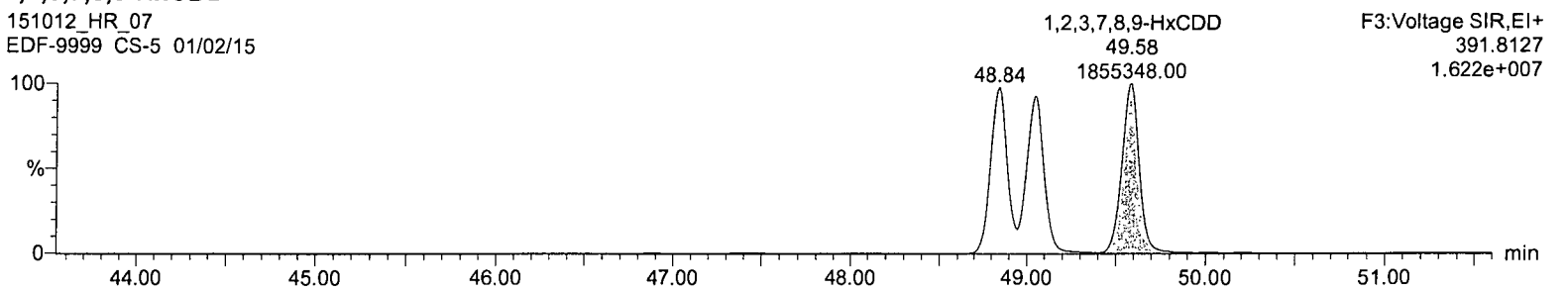


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

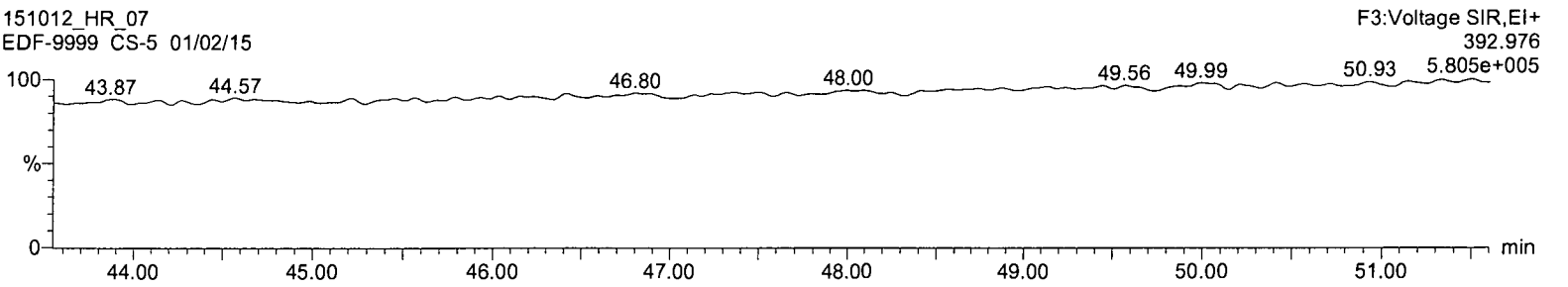
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD

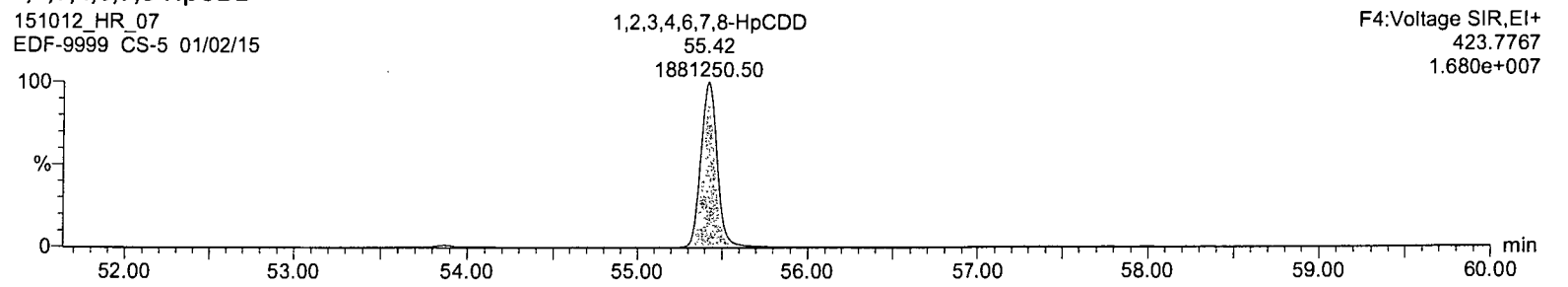


PFK3

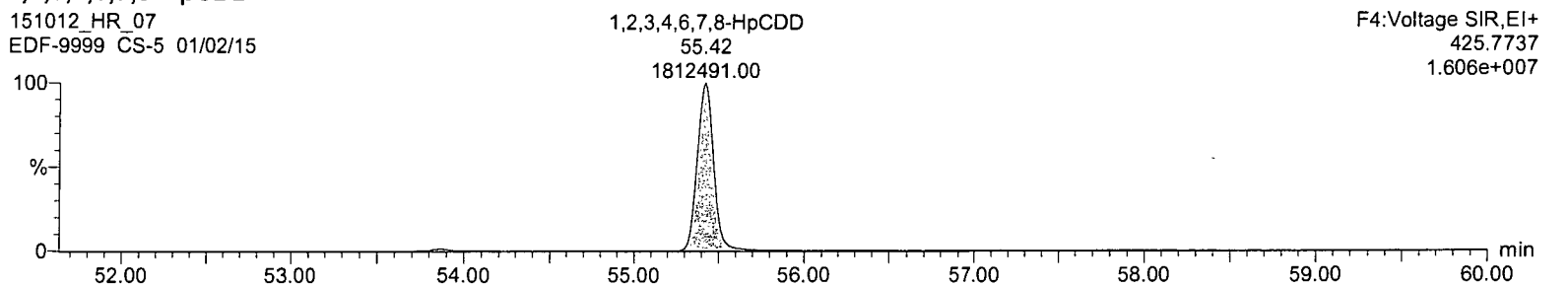


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



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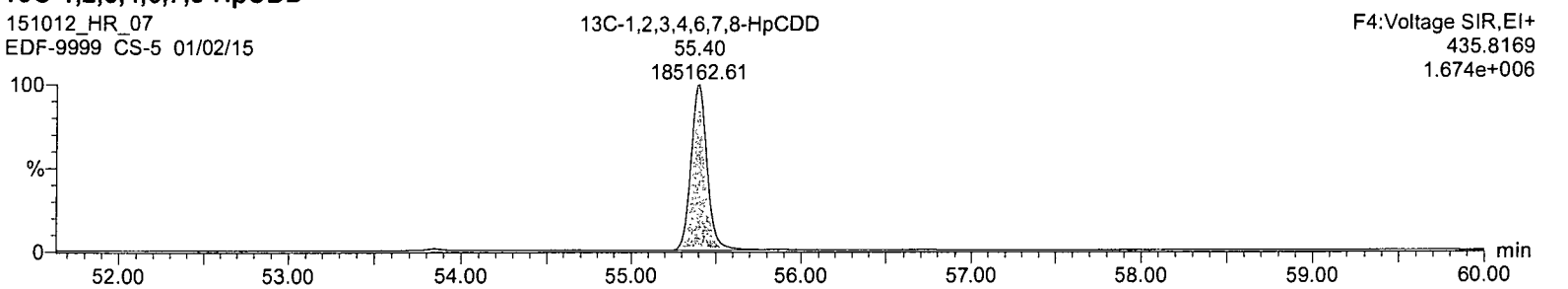

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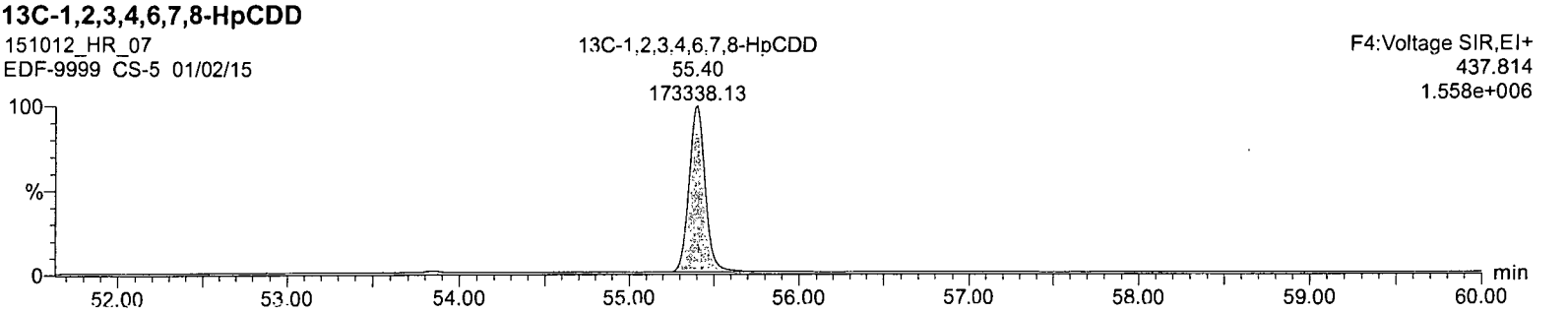

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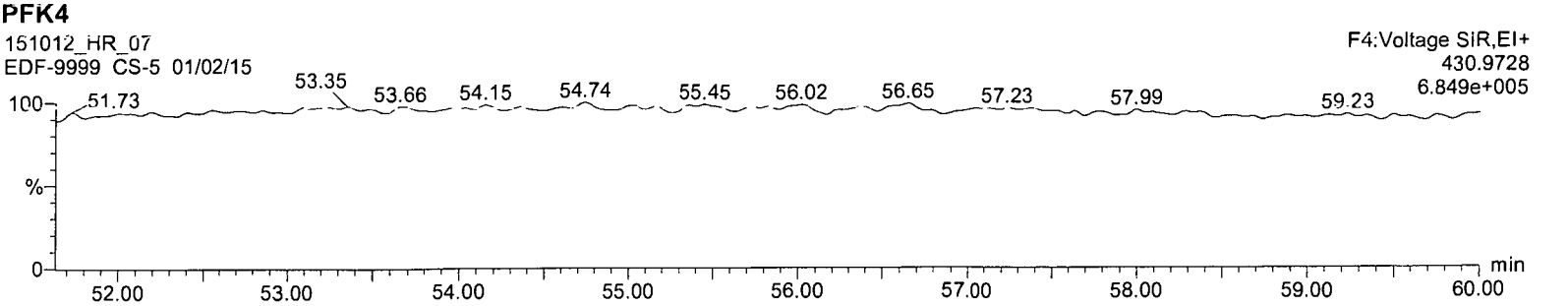
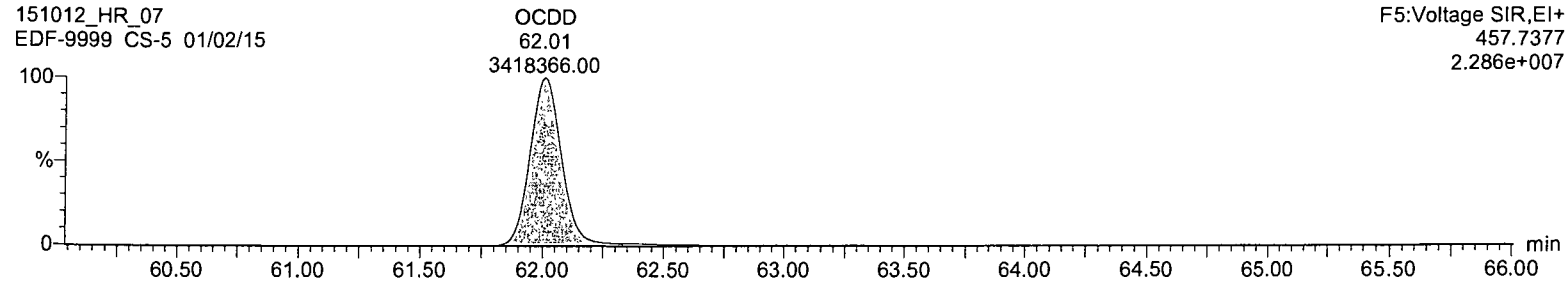


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

OCDD



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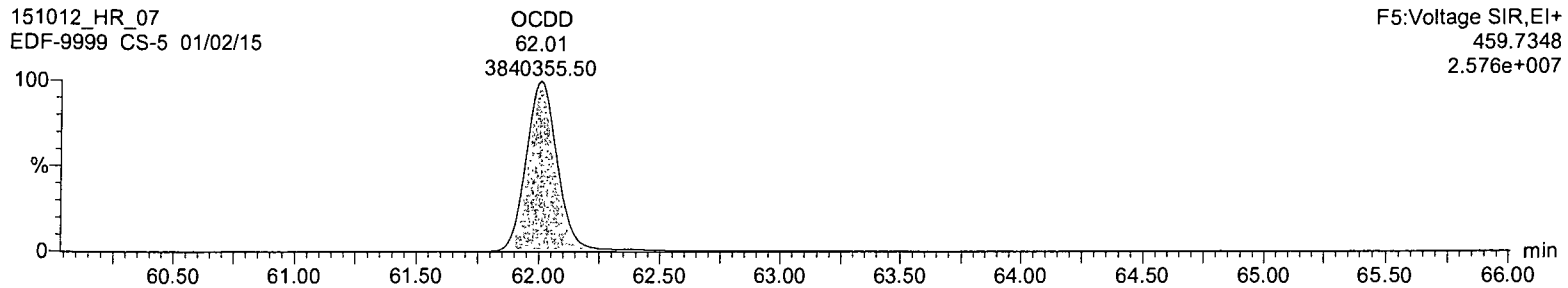

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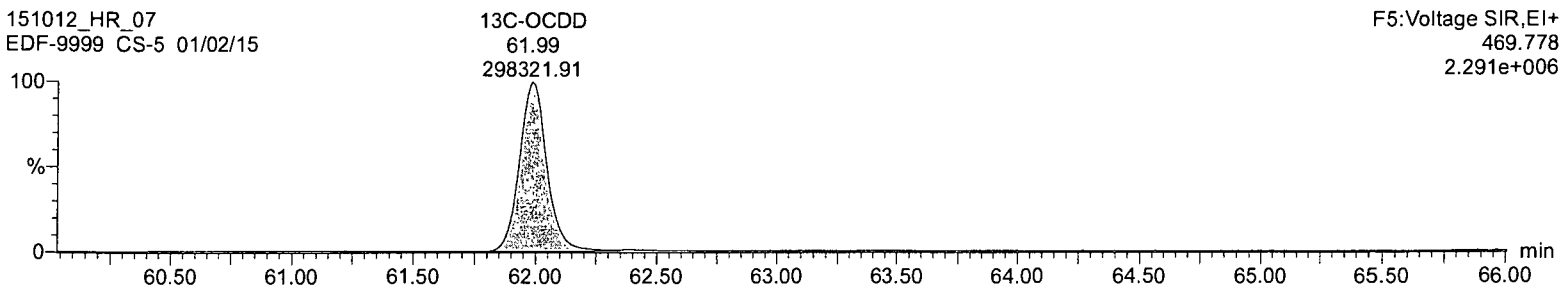

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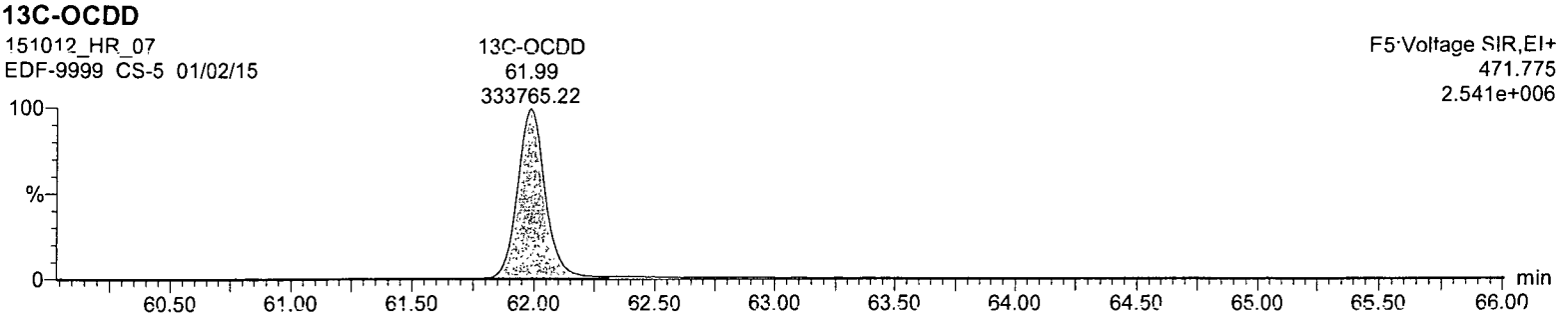

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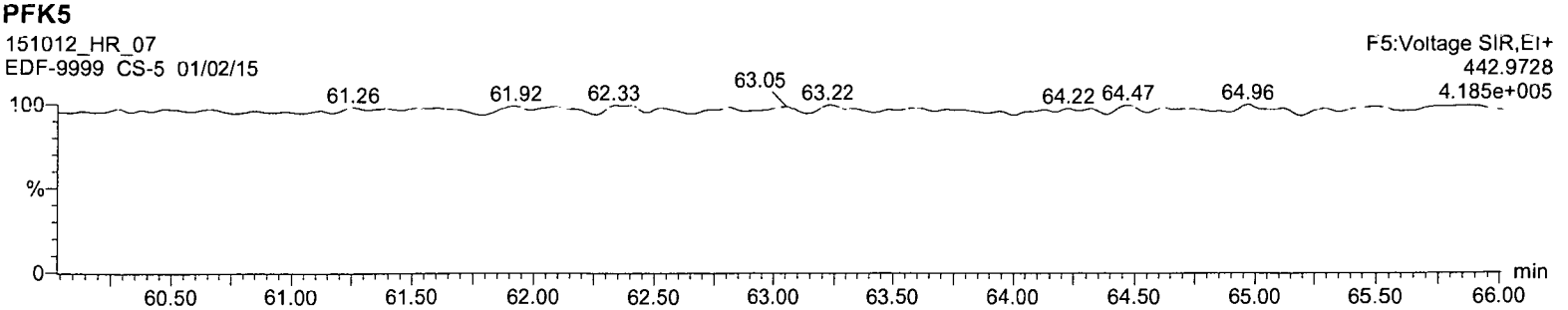
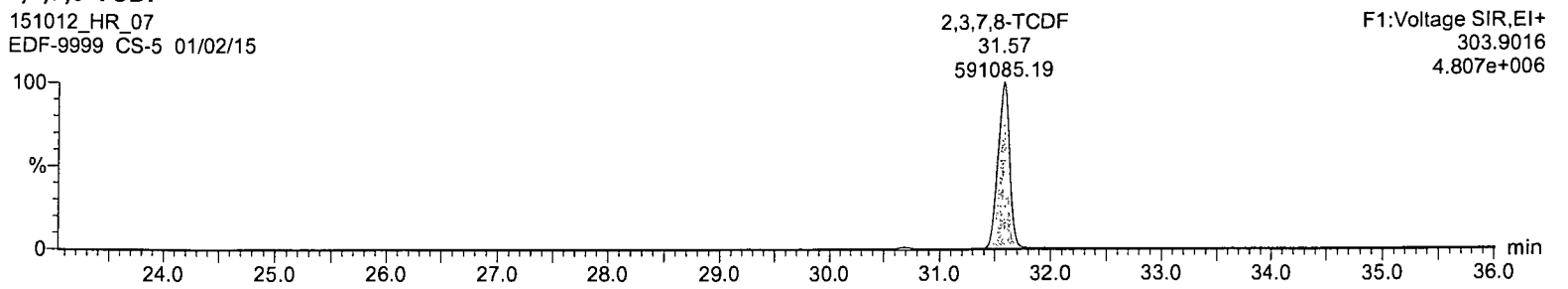
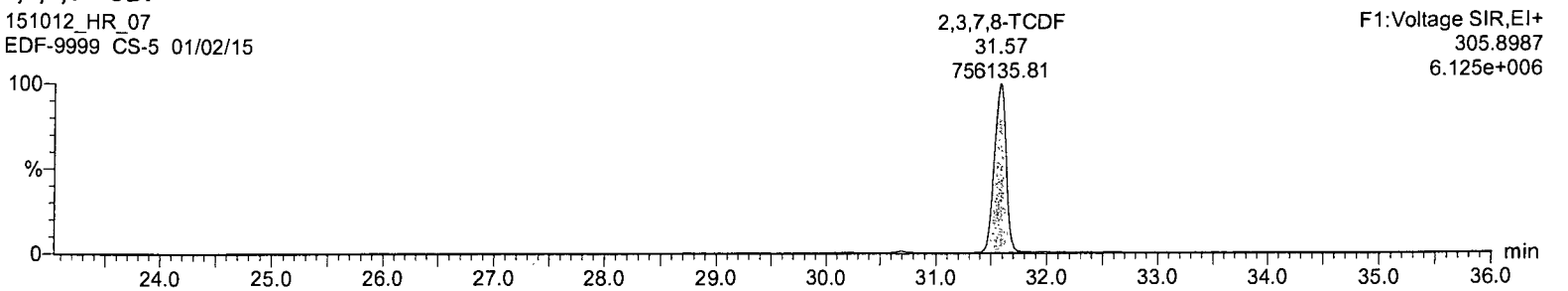


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

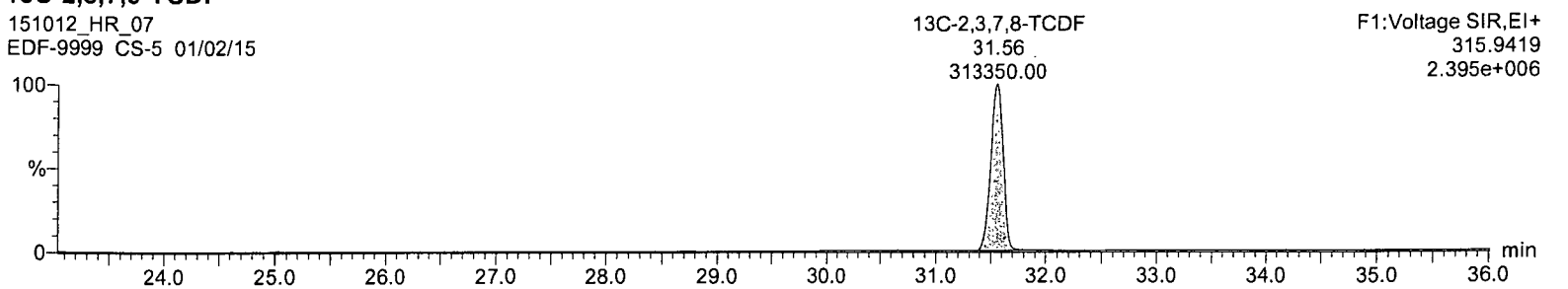
2,3,7,8-TCDF



2,3,7,8-TCDF



13C-2,3,7,8-TCDF



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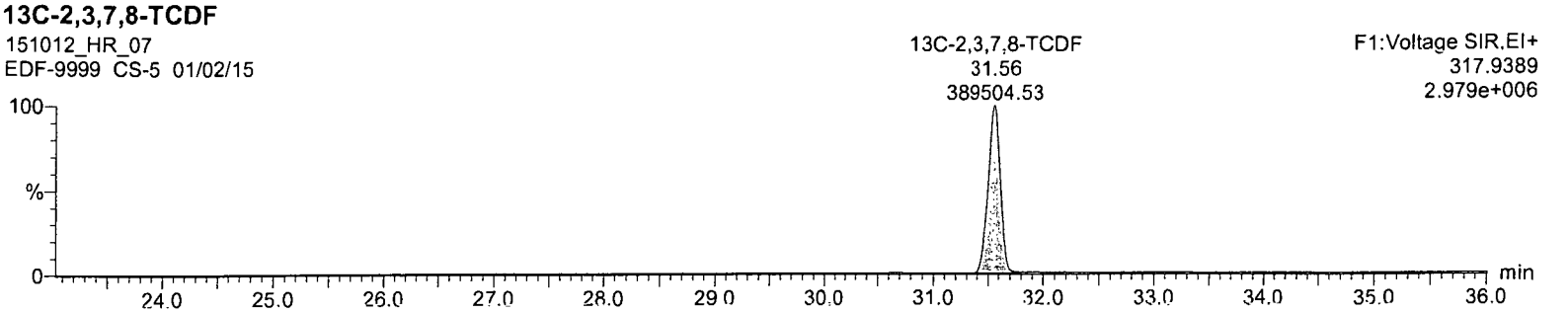

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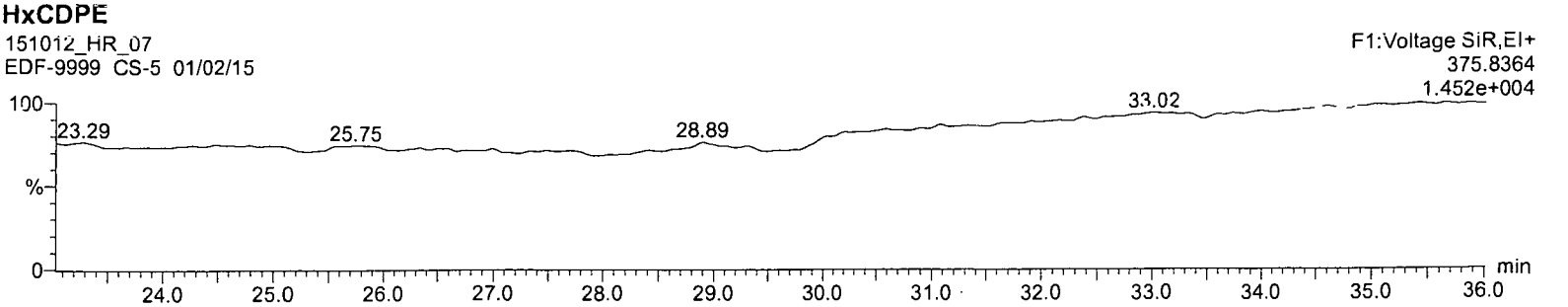

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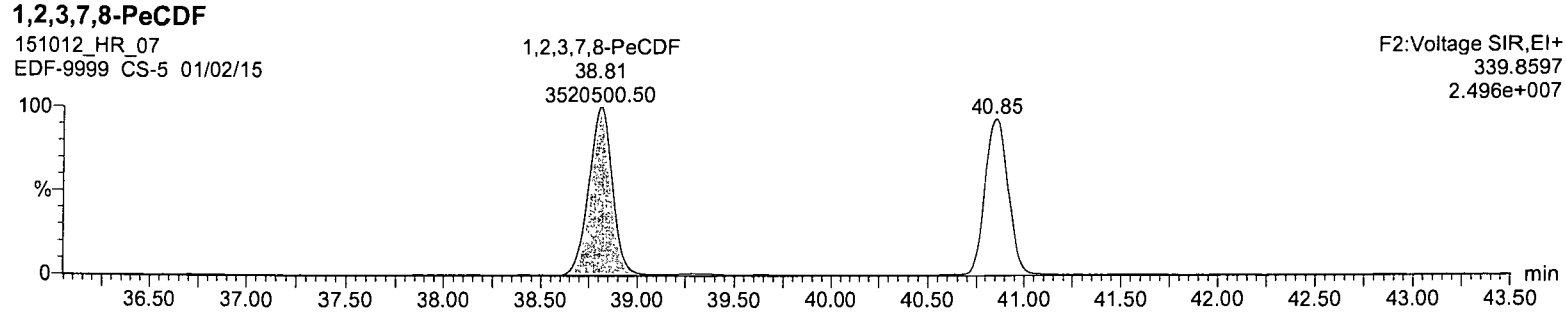
1,2,3,7,8-PeCDF



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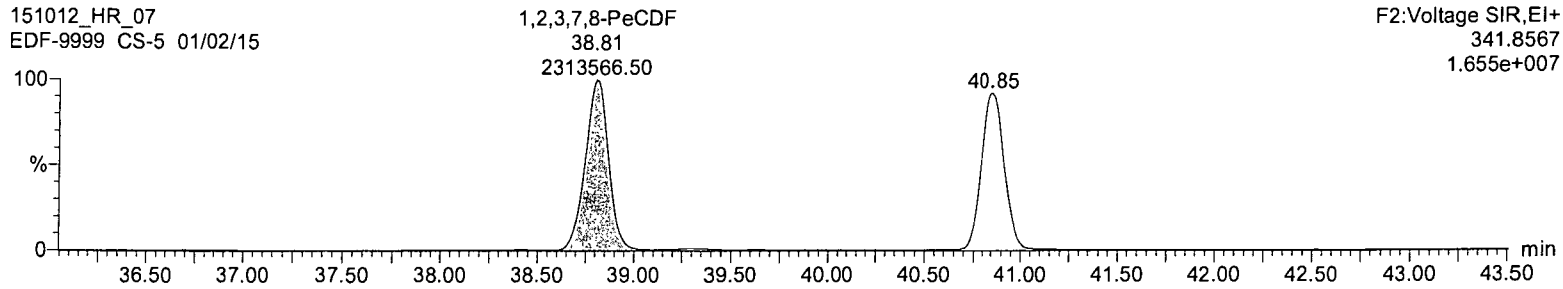

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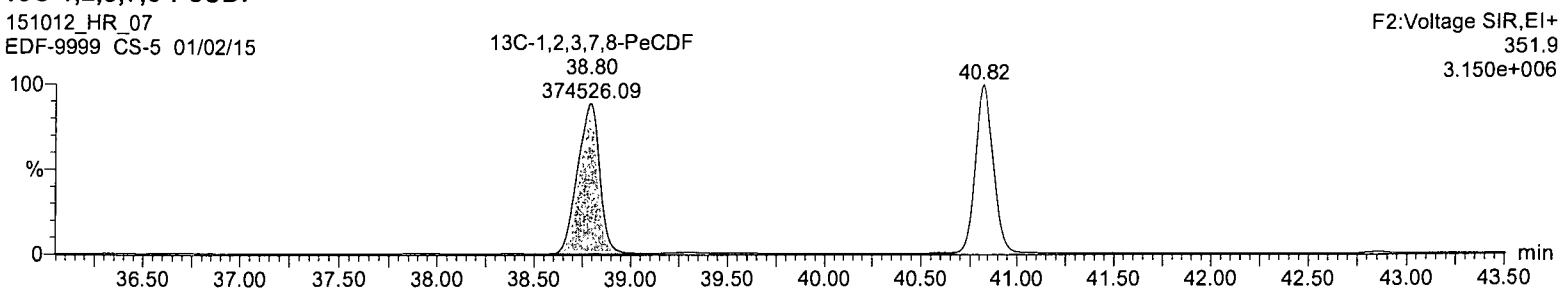

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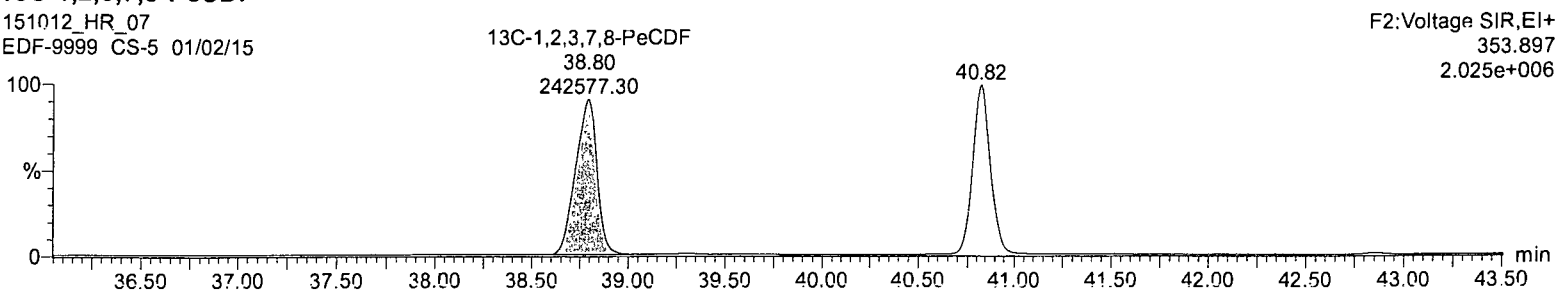

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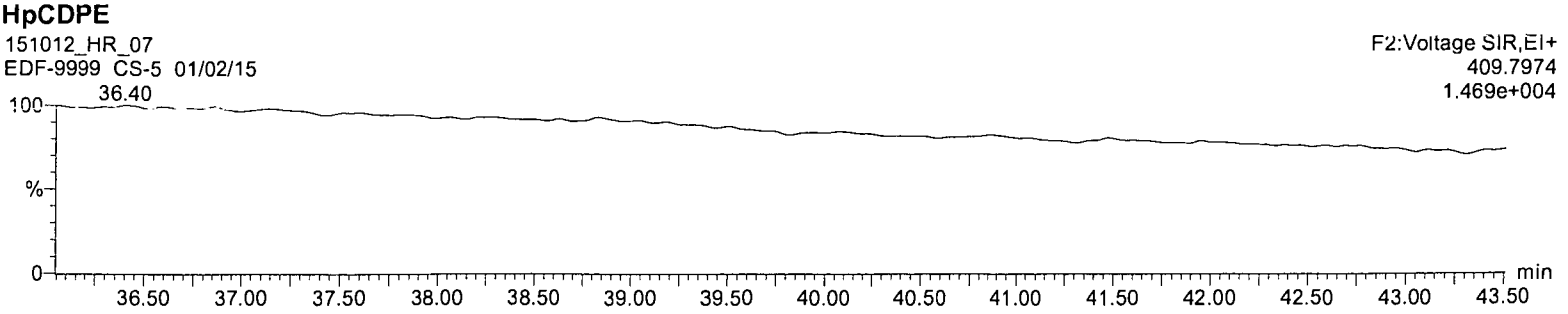

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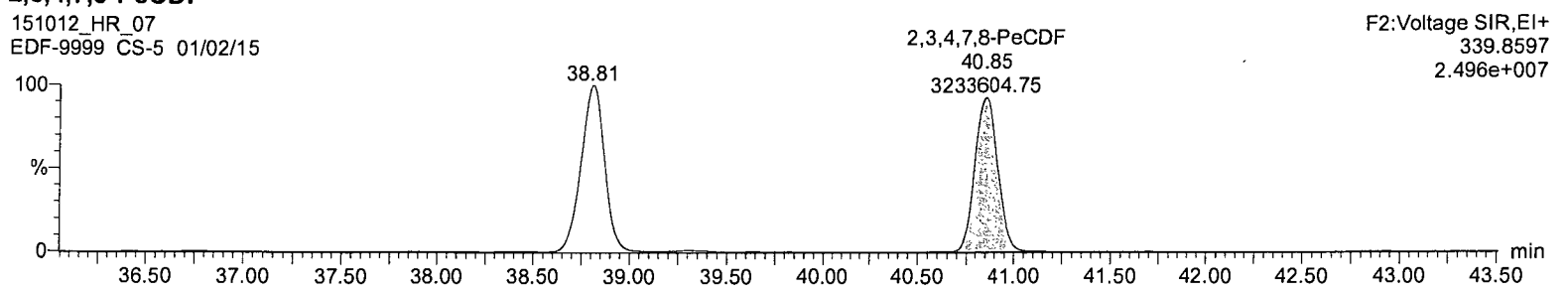
2,3,4,7,8-PeCDF



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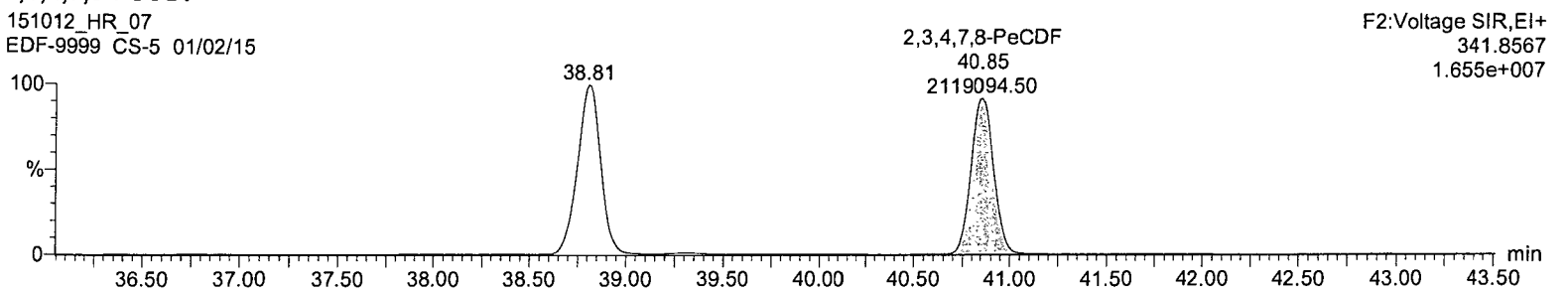

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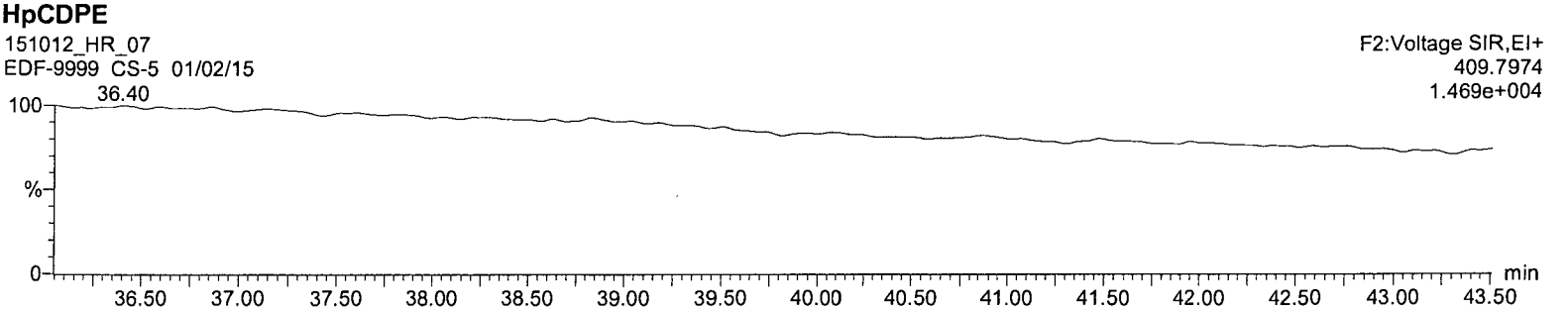

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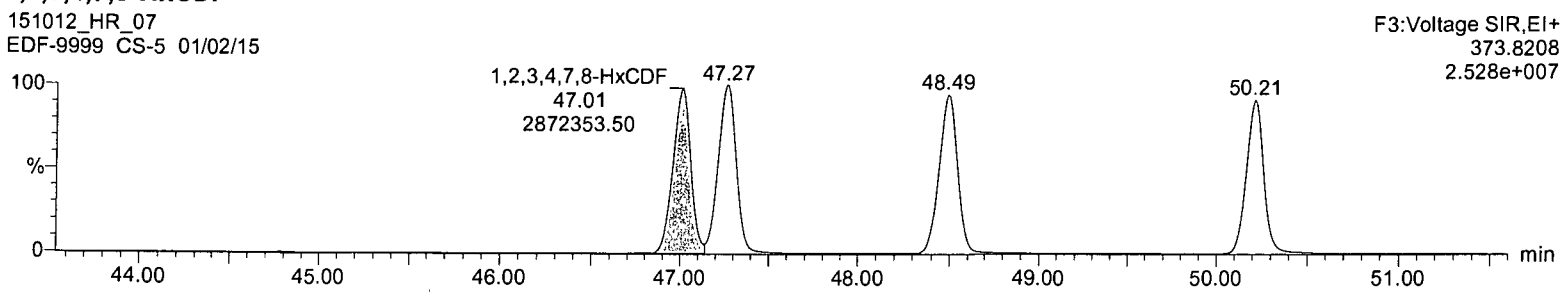
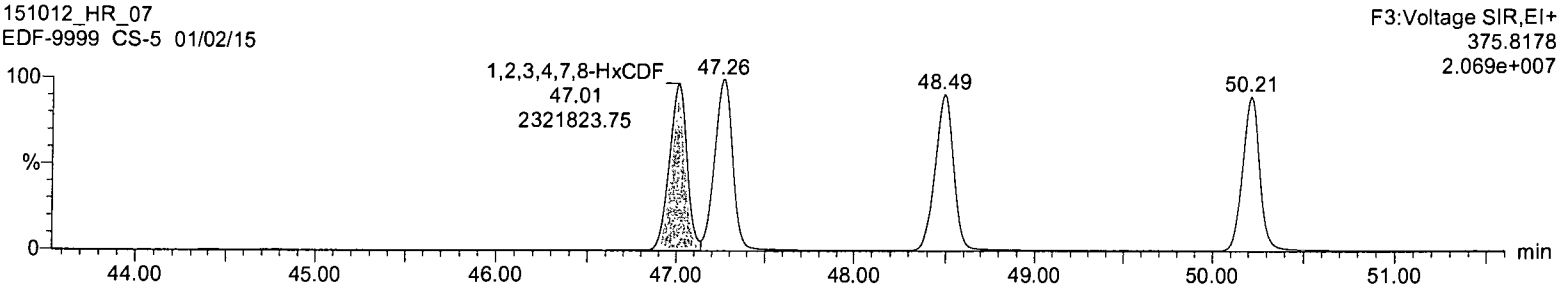
1,2,3,4,7,8-HxCDF



1,2,3,4,7,8-HxCDF



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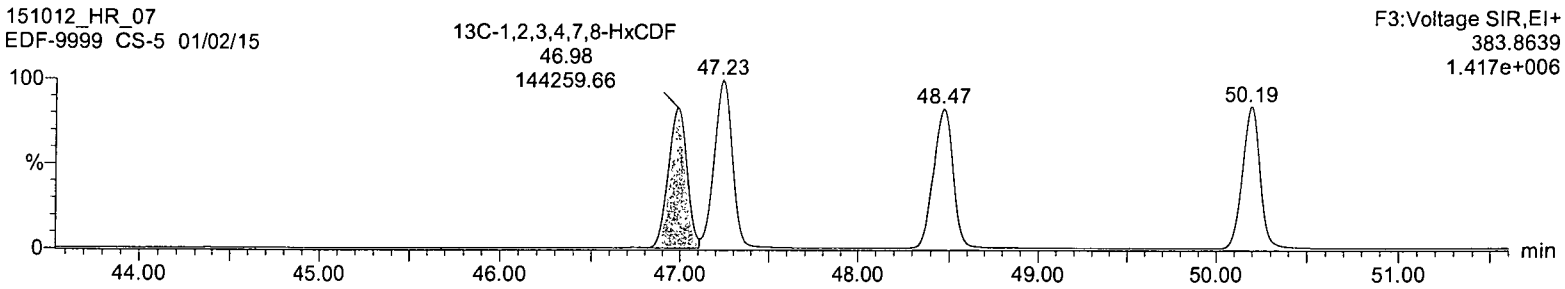

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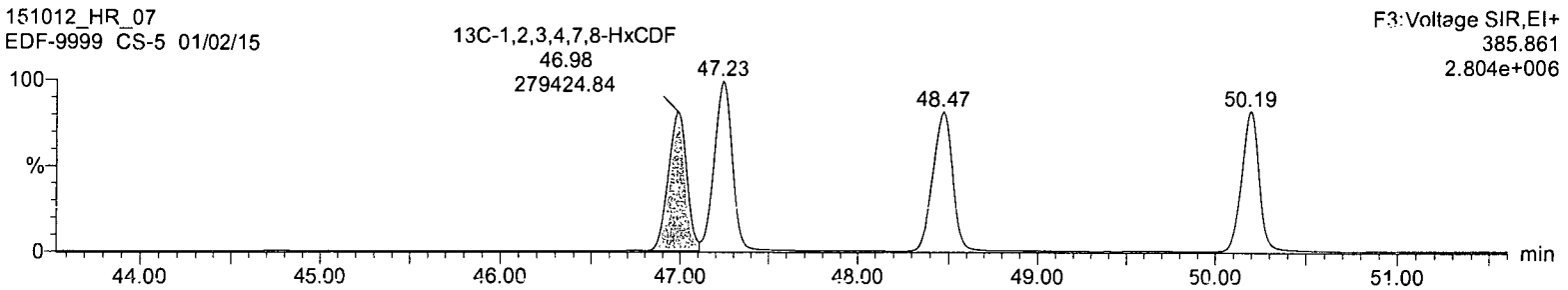

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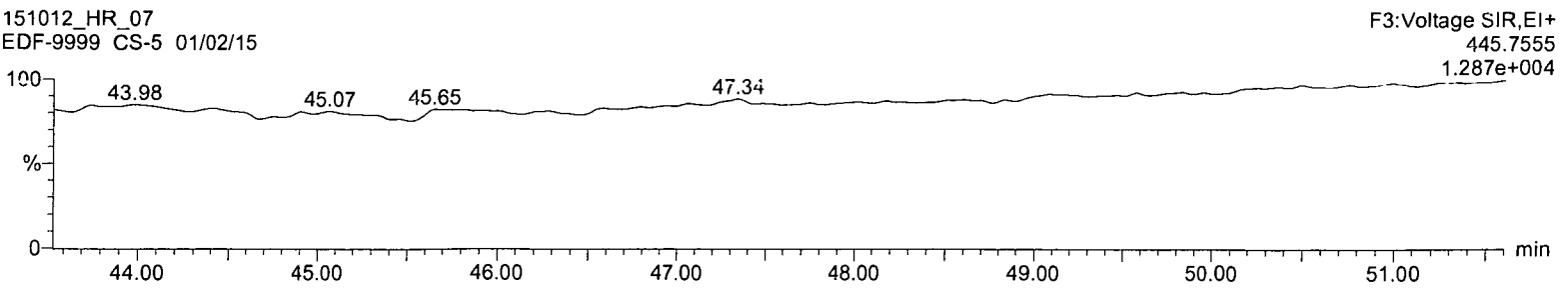

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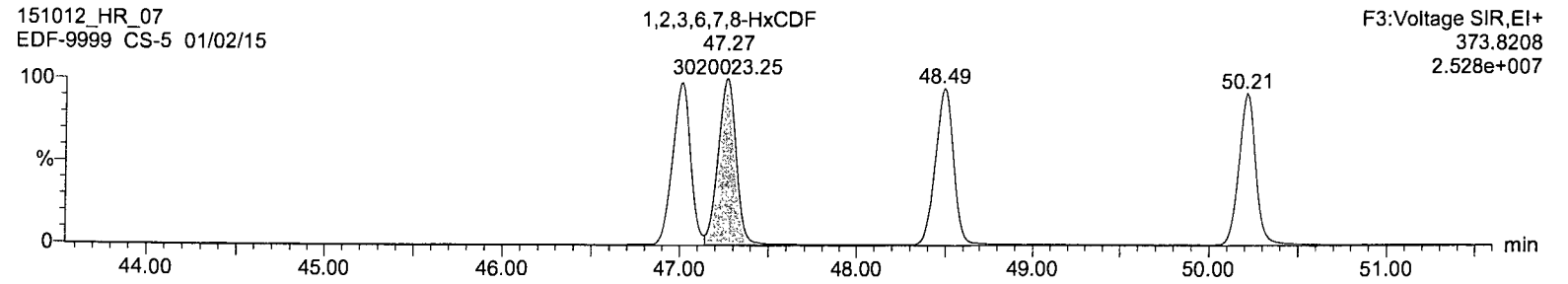
1,2,3,6,7,8-HxCDF



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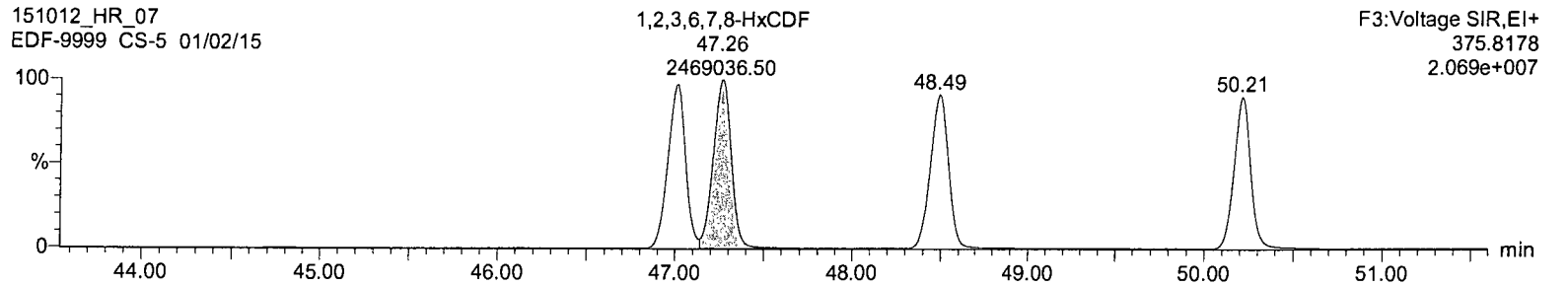

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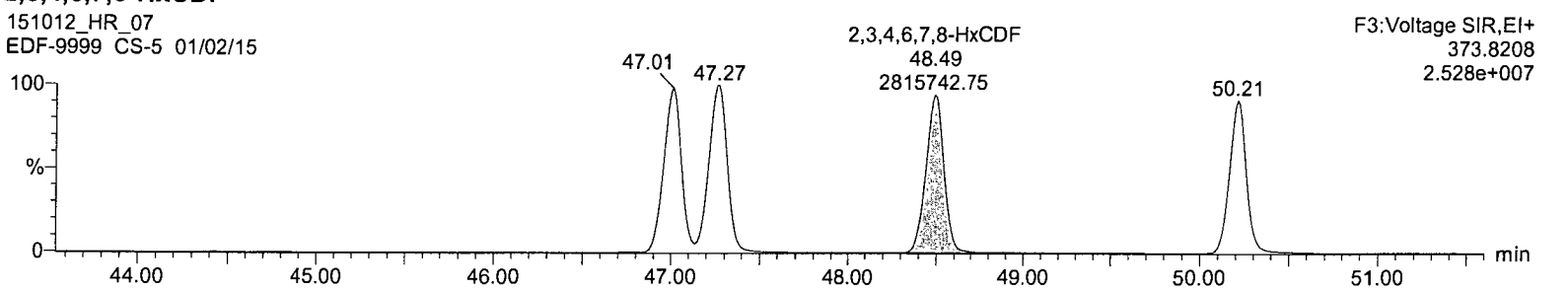

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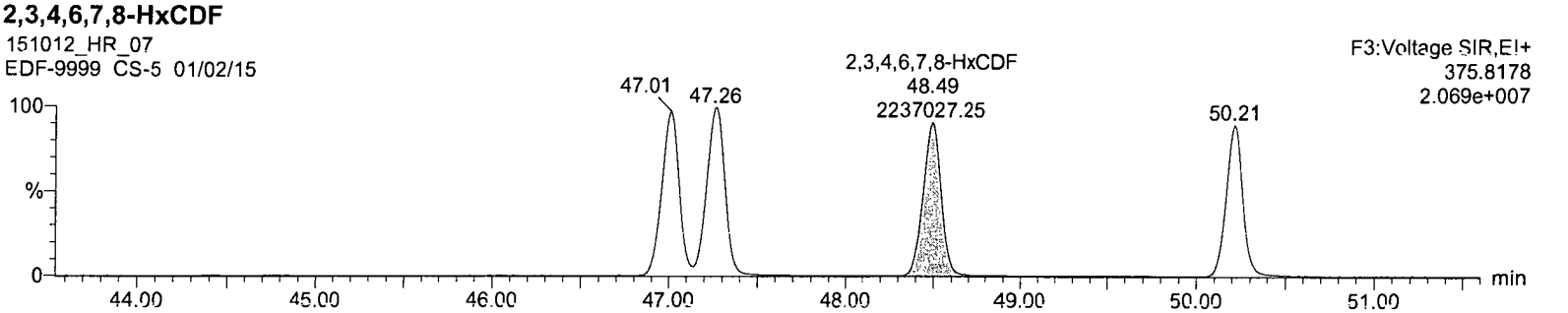

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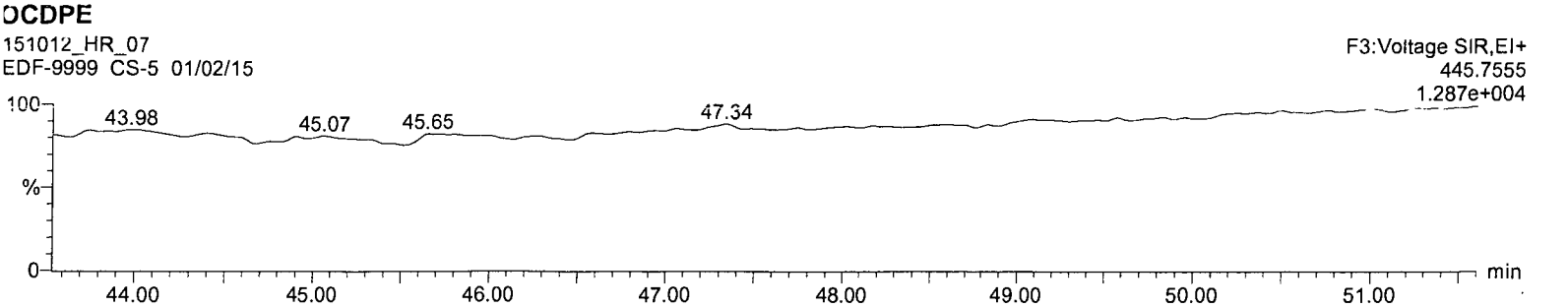

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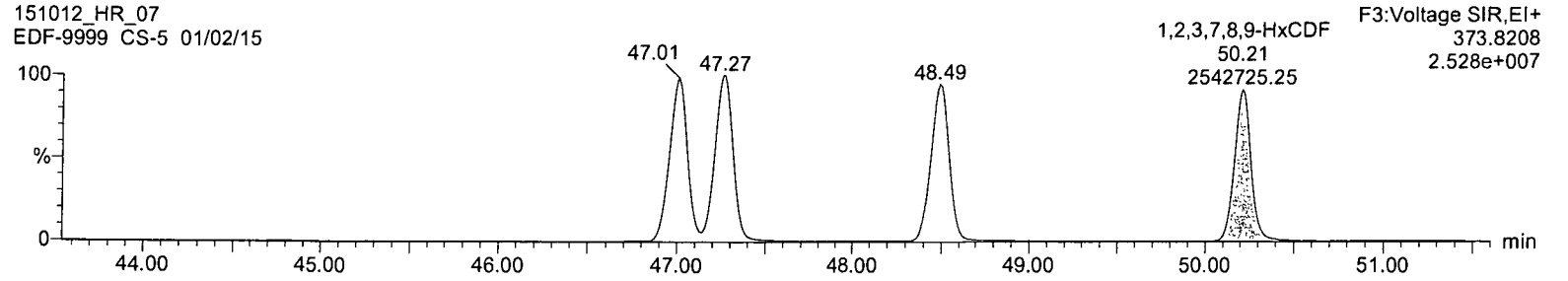

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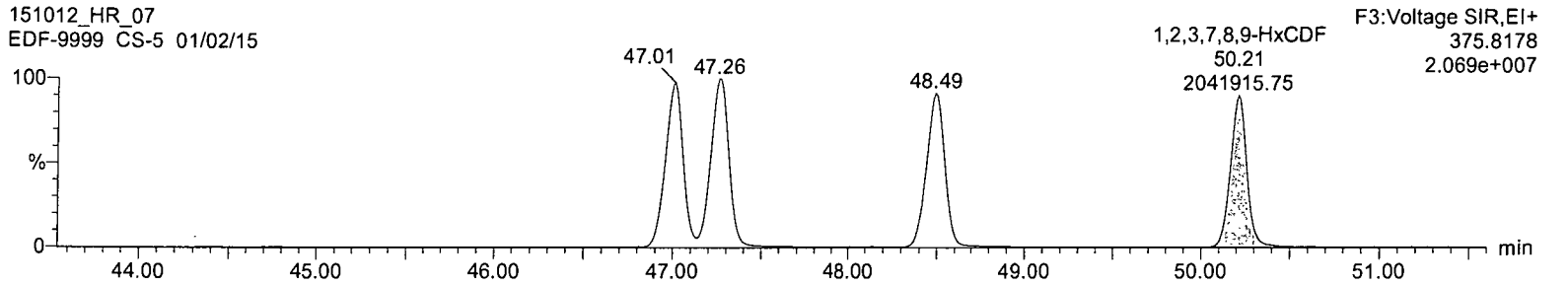

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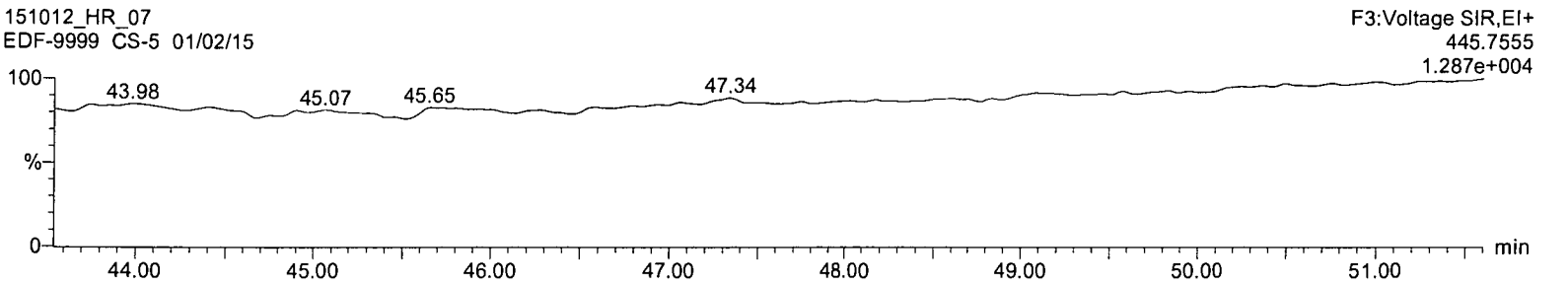

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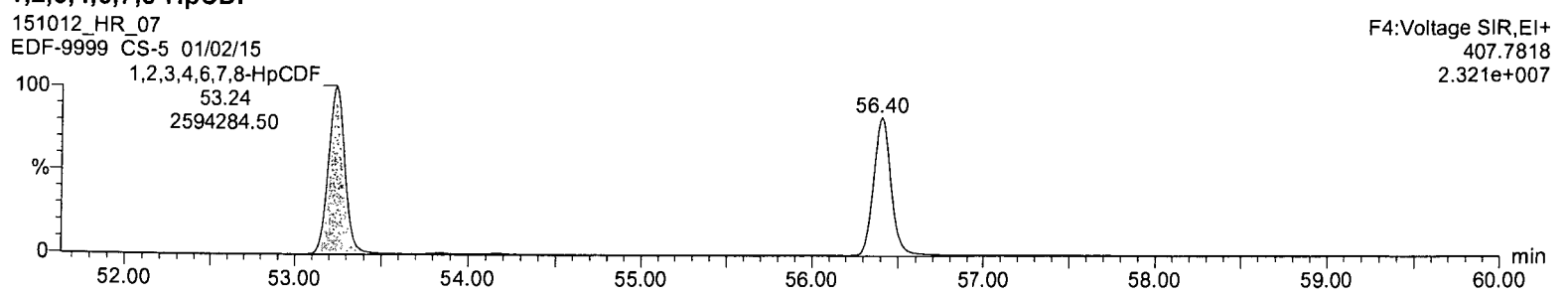

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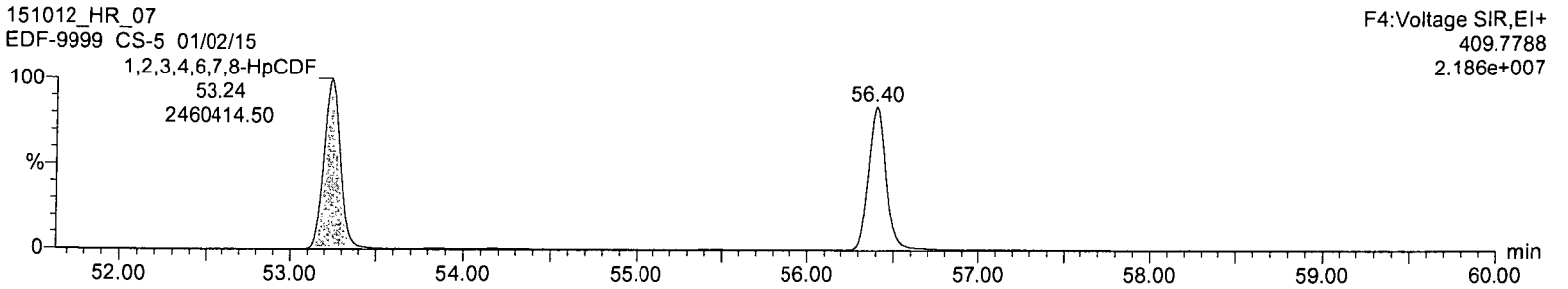

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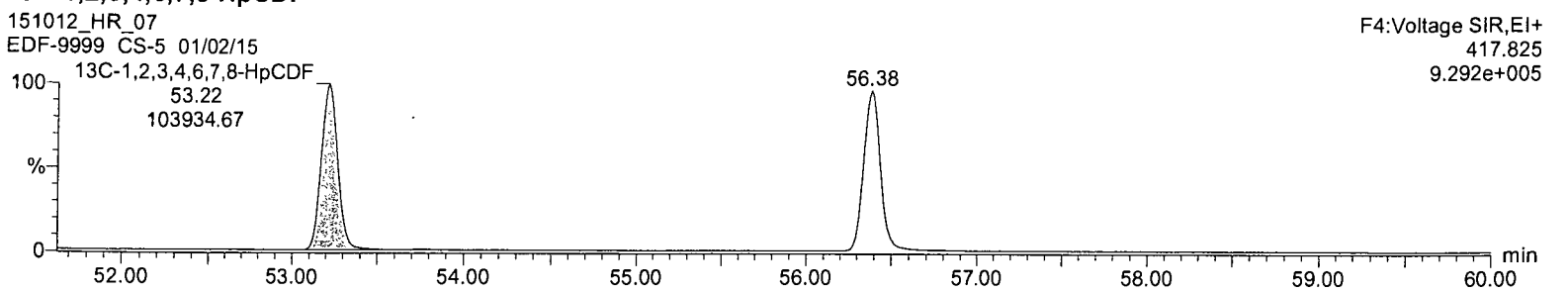

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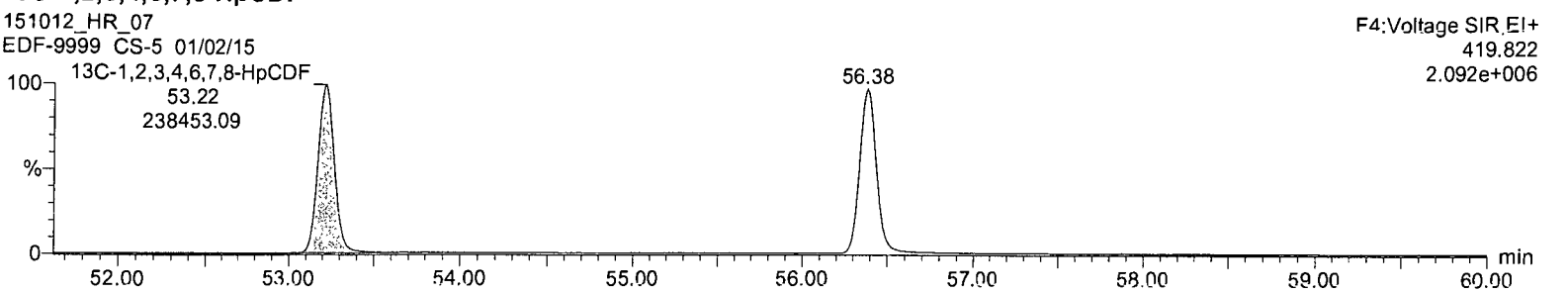

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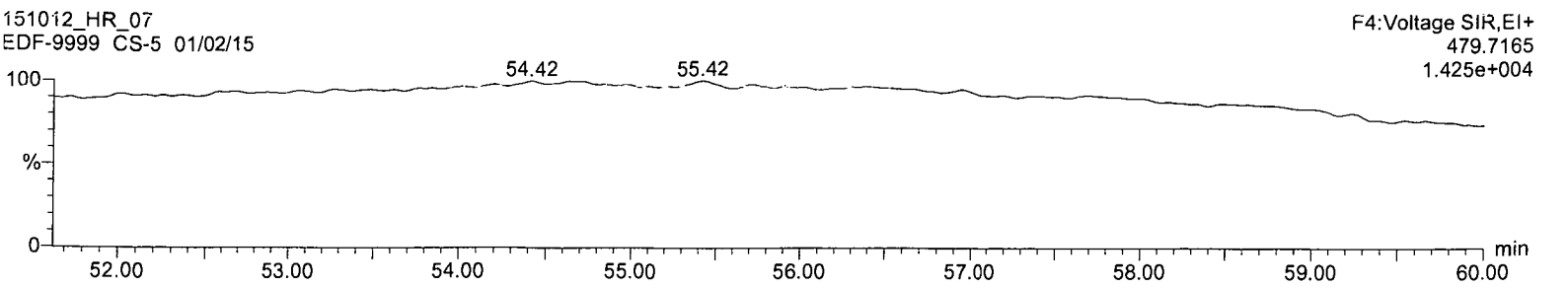

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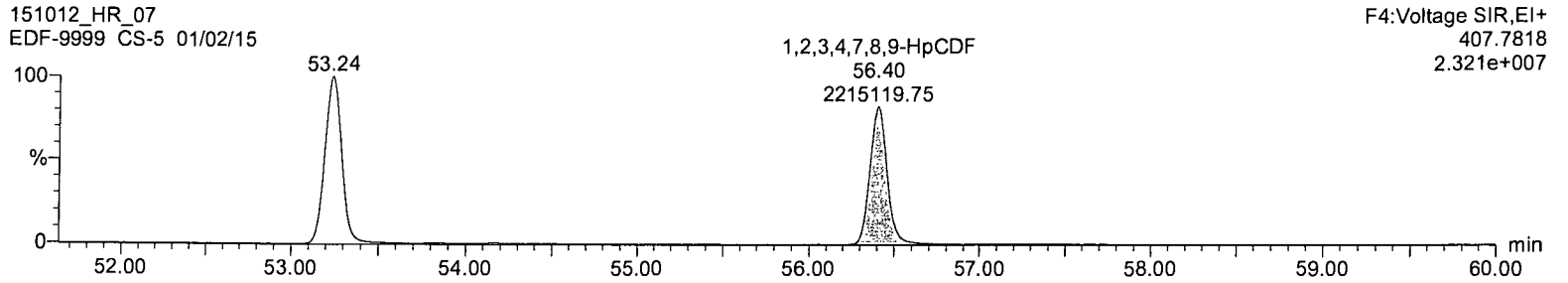
1,2,3,4,7,8,9-HpCDF



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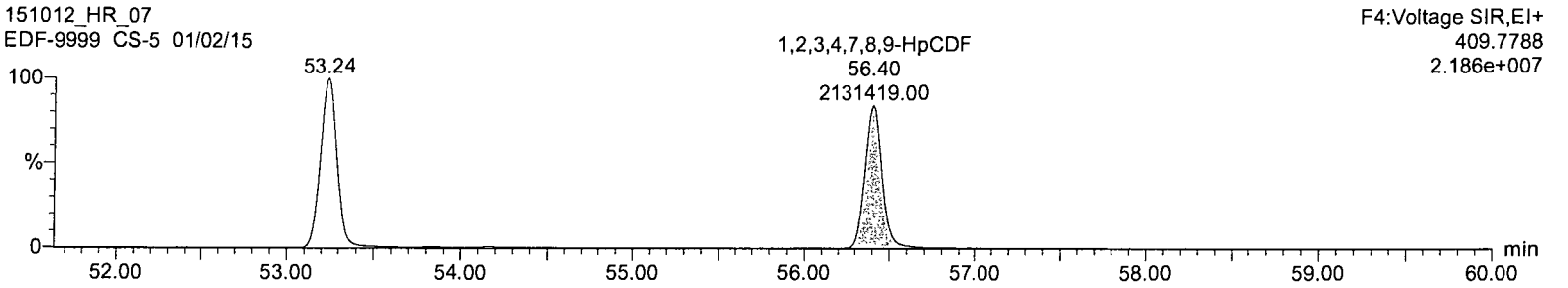

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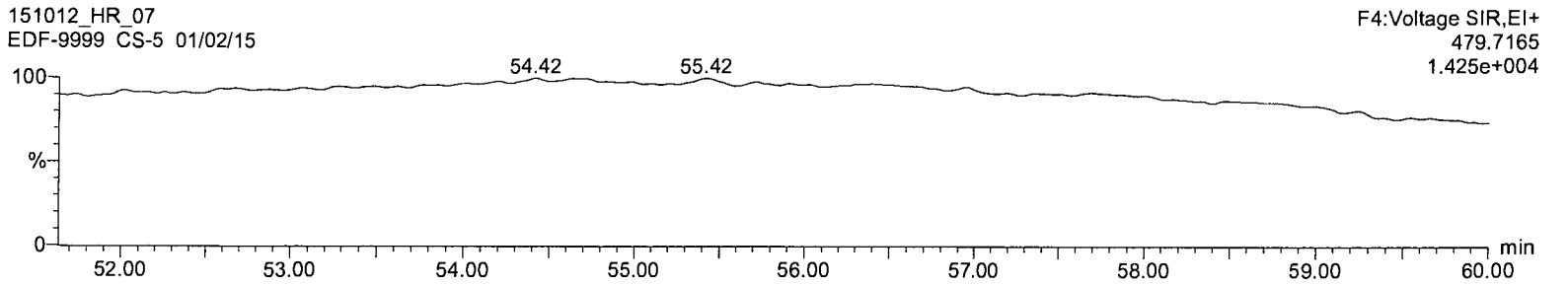
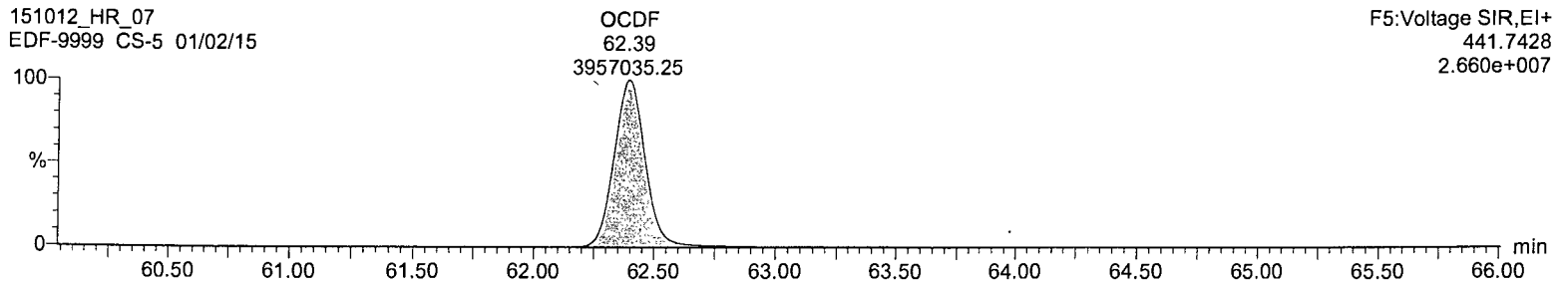


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

OCDF



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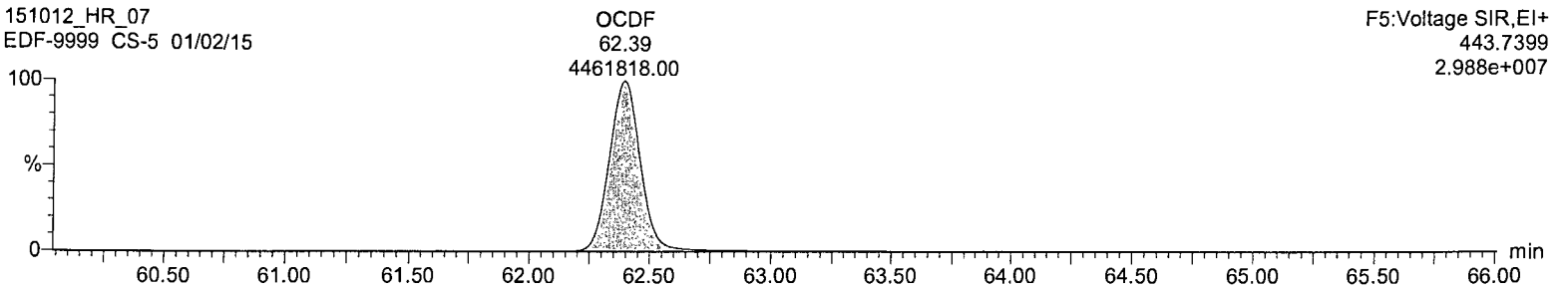
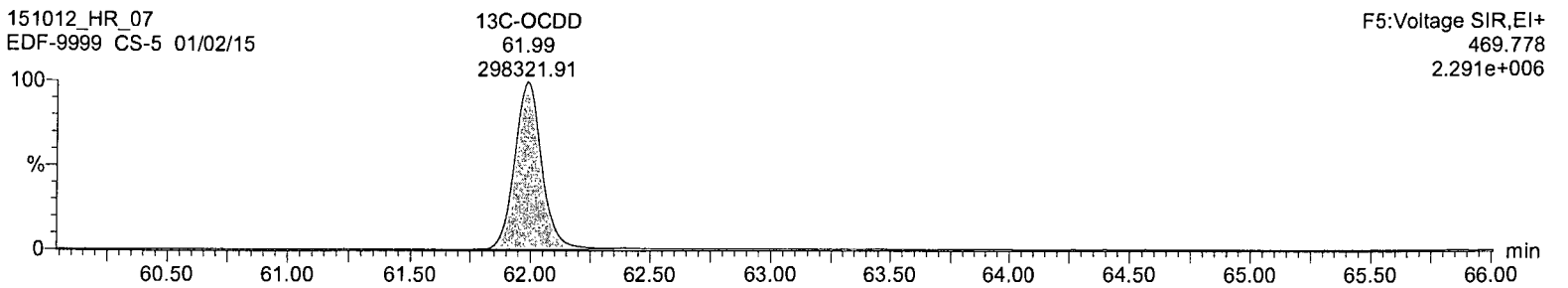
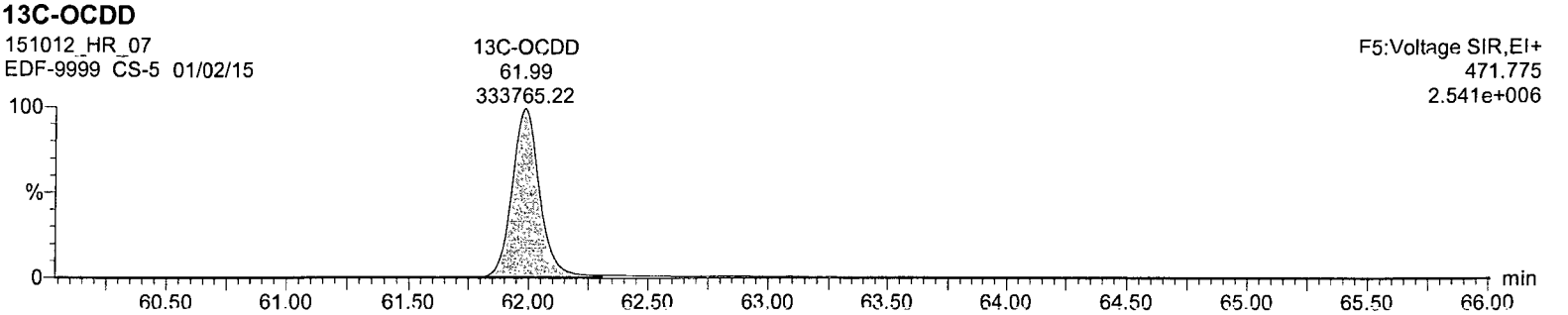


13C-OCDD



13C-OCDD



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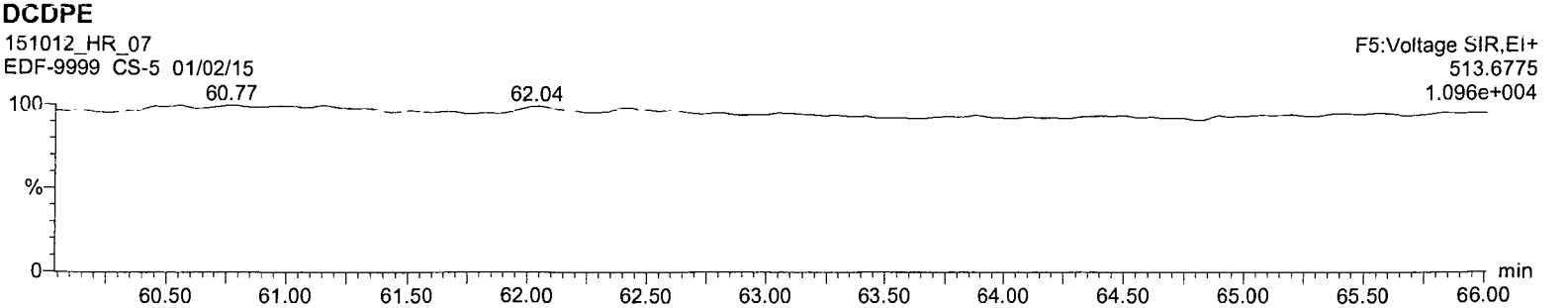
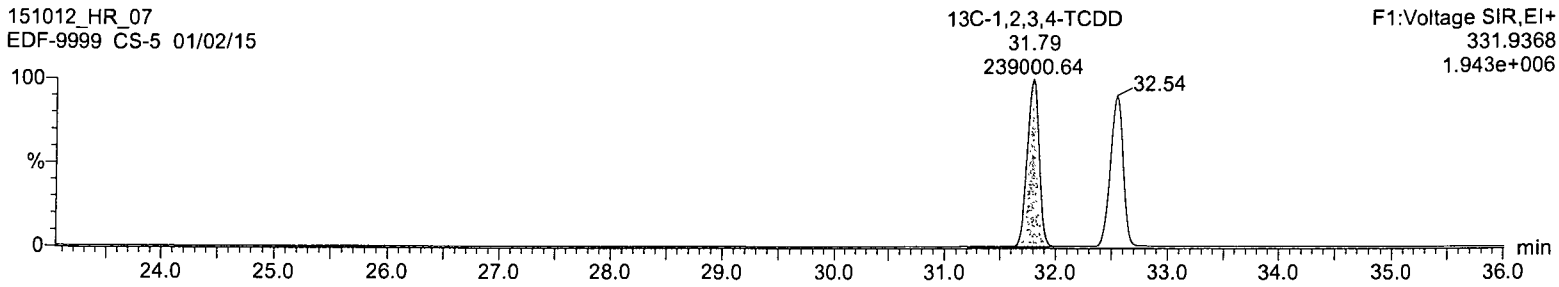
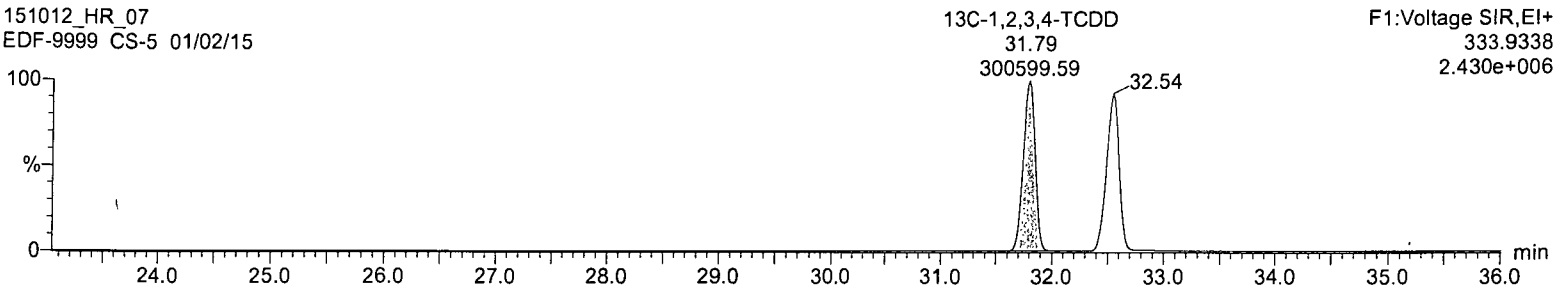


Name: 151012_HR_07, Date: 12-Oct-2015, Time: 19:36:38, Description: EDF-9999 CS-5 01/02/15, User:

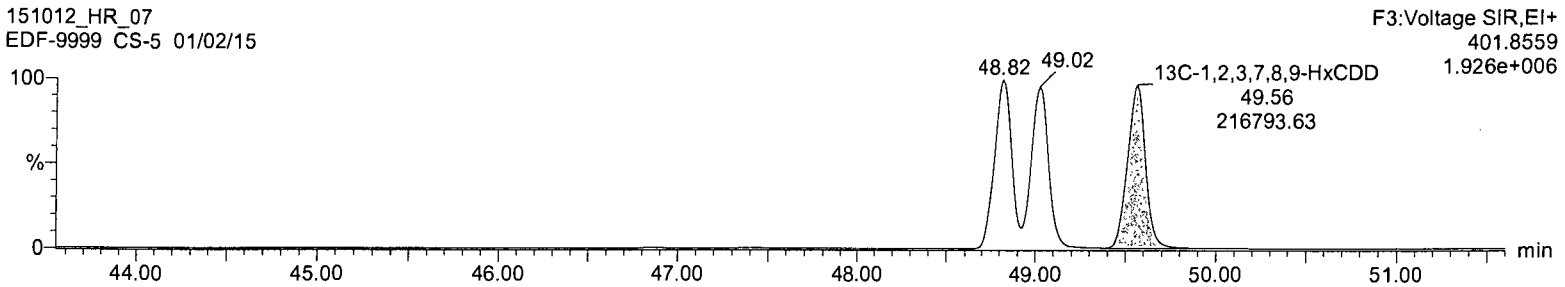
13C-1,2,3,4-TCDD



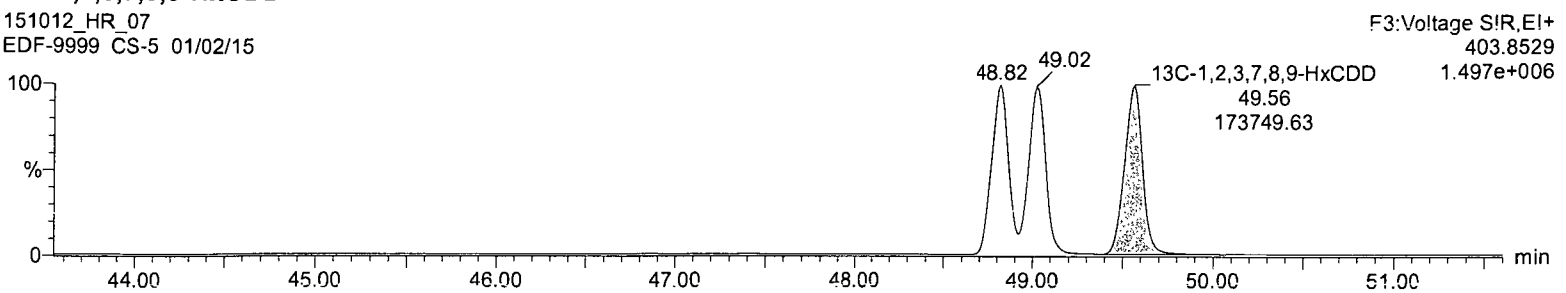
13C-1,2,3,4-TCDD



13C-1,2,3,7,8,9-HxCDD



13C-1,2,3,7,8,9-HxCDD



Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15

#	Name	Peak Area	1² Area	RT	Ion Ab	Ion Fail?	S/N1	S/N2	Conc.	%Rec	RRF	%Dev
1	2,3,7,8-TCDD	1.433644e4	1.894745e4	32.55	0.7566	NO	NO	NO	9.058	90.58	1.031	-9.4
2	1,2,3,7,8-PeCDD	6.700068e4	4.337768e4	41.49	1.5446	NO	NO	NO	48.266	96.53	0.906	-3.5
3	1,2,3,4,7,8-HxCDD	6.701841e4	5.498025e4	48.84	1.2190	NO	NO	NO	47.912	95.82	0.997	-4.2
4	1,2,3,6,7,8-HxCDD	6.611452e4	5.272356e4	49.05	1.2540	NO	NO	NO	46.581	93.16	0.971	-6.8
5	1,2,3,7,8,9-HxCDD	7.144267e4	5.888409e4	49.56	1.2133	NO	NO	NO	50.113	100.23	1.065	0.2
6	1,2,3,4,6,7,8-HpCDD	6.000221e4	5.929786e4	55.41	1.0119	NO	NO	NO	48.260	96.52	0.975	-3.5
7	OCDD	1.079525e5	1.241393e5	61.97	0.8696	NO	NO	NO	97.219	97.22	1.083	-2.8
8	2,3,7,8-TCDF	1.712689e4	2.169417e4	31.57	0.7895	NO	NO	NO	9.166	91.66	0.844	-8.3
9	1,2,3,7,8-PeCDF	9.246077e4	5.882455e4	38.81	1.5718	NO	NO	NO	47.914	95.83	0.912	-4.2
10	2,3,4,7,8-PeCDF	8.820128e4	5.784407e4	40.84	1.5248	NO	NO	NO	50.108	100.22	0.881	0.2
11	1,2,3,4,7,8-HxCDF	8.731771e4	6.883793e4	47.00	1.2685	NO	NO	NO	50.726	101.45	1.199	1.5
12	1,2,3,6,7,8-HxCDF	9.031870e4	6.975663e4	47.26	1.2948	NO	NO	NO	49.150	98.30	1.229	-1.7
13	2,3,4,6,7,8-HxCDF	8.820920e4	7.128161e4	48.48	1.2375	NO	NO	NO	52.997	105.99	1.224	6.0
14	1,2,3,7,8,9-HxCDF	8.141416e4	6.544699e4	50.21	1.2440	NO	NO	NO	53.471	106.94	1.127	6.9
15	1,2,3,4,6,7,8-HpCDF	7.999142e4	7.751257e4	53.23	1.0320	NO	NO	NO	48.273	96.55	1.363	-3.5
16	1,2,3,4,7,8,9-HpCDF	6.912223e4	6.596394e4	56.40	1.0479	NO	NO	NO	48.405	96.81	1.169	-3.2
17	OCDF	1.205476e5	1.348373e5	62.38	0.8940	NO	NO	NO	99.667	99.67	1.192	-0.3
18	13C-2,3,7,8-TCDD	1.429321e5	1.799465e5	32.53	0.7943	NO	NO	NO	101.932	101.93	0.981	1.9
19	13C-1,2,3,7,8-PeCDD	1.483561e5	9.532834e4	41.46	1.5563	NO	NO	NO	102.800	102.80	0.741	2.8
20	13C-1,2,3,6,7,8-HxCDD	1.361222e5	1.085577e5	49.03	1.2539	NO	NO	NO	98.820	98.82	0.923	-1.2
21	13C-1,2,3,4,6,7,8-HpCDD	1.267070e5	1.180779e5	55.38	1.0731	NO	NO	NO	107.851	107.85	0.924	7.9
22	13C-OCDD	2.030545e5	2.254426e5	61.95	0.9007	NO	NO	NO	209.822	104.91	0.808	4.9
23	13C-2,3,7,8-TCDF	2.002639e5	2.594653e5	31.55	0.7718	NO	NO	NO	101.491	101.49	1.397	1.5
24	13C-1,2,3,7,8-PeCDF	2.023019e5	1.293224e5	38.76	1.5643	NO	NO	NO	98.703	98.70	1.008	-1.3
25	13C-1,2,3,4,7,8-HxCDF	8.767505e4	1.728785e5	46.98	0.5071	NO	NO	NO	91.955	91.95	0.983	-8.0
26	13C-1,2,3,4,6,7,8-HpCDF	6.972738e4	1.613897e5	53.21	0.4320	NO	NO	NO	102.886	102.89	0.872	2.9
27	13C-1,2,3,4-TCDD	1.454023e5	1.836543e5	31.79	0.7917	NO	NO	NO	100.000	100.00	1.000	0.0
28	13C-1,2,3,7,8,9-HxCDD	1.466351e5	1.184100e5	49.55	1.2384	NO	NO	NO	100.000	100.00	1.000	0.0

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

#	Name	RT	RRT
1	2,3,7,8-TCDD	32.553799	1.000839
2	1,2,3,7,8-PeCDD	41.491501	1.000731
3	1,2,3,4,7,8-HxCDD	48.838001	0.996098
4	1,2,3,6,7,8-HxCDD	49.050499	1.000432
5	1,2,3,7,8,9-HxCDD	49.560501	1.000216
6	1,2,3,4,6,7,8-HpCDD	55.409000	1.000547
7	OCDD	61.974800	1.000324
8	2,3,7,8-TCDF	31.573999	1.000862
9	1,2,3,7,8-PeCDF	38.805500	1.001045
10	2,3,4,7,8-PeCDF	40.842800	1.053600
11	1,2,3,4,7,8-HxCDF	47.000000	1.000451
12	1,2,3,6,7,8-HxCDF	47.255001	1.005879
13	2,3,4,6,7,8-HxCDF	48.476799	1.031887
14	1,2,3,7,8,9-HxCDF	50.208500	1.068748
15	1,2,3,4,6,7,8-HpCDF	53.229801	1.000378
16	1,2,3,4,7,8,9-HpCDF	56.402302	1.060000
17	OCDF	62.380299	1.006870
18	13C-2,3,7,8-TCDD	32.526501	1.023113
19	13C-1,2,3,7,8-PeCDD	41.461201	1.304152
20	13C-1,2,3,6,7,8-HxCDD	49.029301	0.989495
21	13C-1,2,3,4,6,7,8-HpCDD	55.378700	1.117637
22	13C-OCDD	61.954700	1.250352
23	13C-2,3,7,8-TCDF	31.546801	0.992297
24	13C-1,2,3,7,8-PeCDF	38.764999	1.219343
25	13C-1,2,3,4,7,8-HxCDF	46.978802	0.948113
26	13C-1,2,3,4,6,7,8-HpCDF	53.209702	1.073863
27	13C-1,2,3,4-TCDD	31.791700	1.000000
28	13C-1,2,3,7,8,9-HxCDD	49.549801	1.000000

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

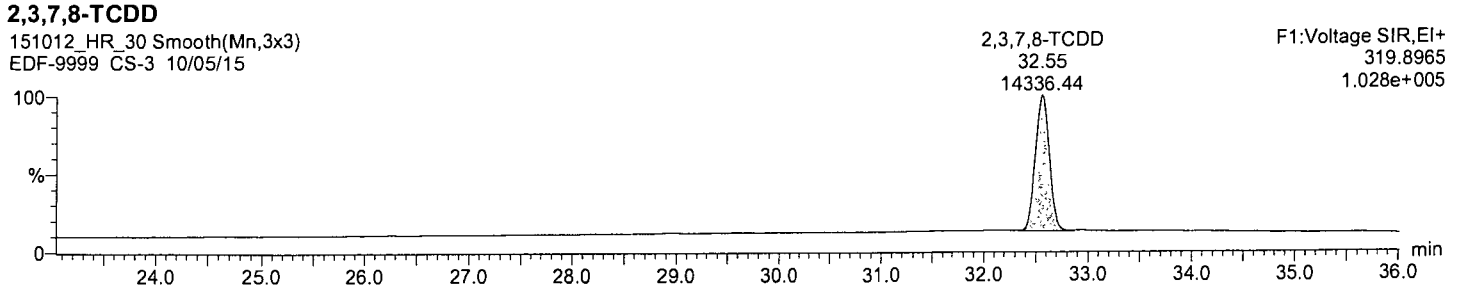
Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N...	Signal 2	Noise 2	S/N 2	Flag S/N...
1	2,3,7,8-TCDD	8.9637000e4	7.8459763e1	1155.71	NO	1.1446200e5	8.3555710e1	1369.89	NO
2	1,2,3,7,8-PeCDD	5.3340700e5	1.3373688e2	3985.45	NO	3.4397800e5	1.6438364e2	2092.53	NO
3	1,2,3,4,7,8-HxCDD	5.8082500e5	2.0001260e2	2904.42	NO	4.8187500e5	3.8641196e2	1247.05	NO
4	1,2,3,6,7,8-HxCDD	5.8644500e5	2.0001260e2	2933.00	NO	4.6703100e5	3.8641196e2	1208.63	NO
5	1,2,3,7,8,9-HxCDD	6.6505000e5	2.0001260e2	3327.15	NO	5.5460900e5	3.8641196e2	1435.28	NO
6	1,2,3,4,6,7,8-HpCDD	4.9499100e5	1.6582275e3	296.08	NO	4.9956000e5	1.8165942e2	2749.98	NO
7	OCDD	6.7149500e5	2.6656281e2	2515.44	NO	7.6323000e5	1.3328961e2	5726.10	NO
8	2,3,7,8-TCDF	1.3954800e5	1.5103357e2	931.71	NO	1.7288700e5	1.6715623e2	1034.28	NO
9	1,2,3,7,8-PeCDF	6.3475100e5	2.2813168e2	2779.37	NO	3.9580100e5	2.9586386e2	1337.78	NO
10	2,3,4,7,8-PeCDF	6.4410600e5	2.2813168e2	2822.88	NO	4.2064900e5	2.9586386e2	1421.77	NO
11	1,2,3,4,7,8-HxCDF	7.6687100e5	3.8310913e2	1999.62	NO	5.9922600e5	1.8082803e2	3313.79	NO
12	1,2,3,6,7,8-HxCDF	7.7951400e5	3.8310913e2	2033.31	NO	6.0454300e5	1.8082803e2	3343.19	NO
13	2,3,4,6,7,8-HxCDF	7.9810800e5	3.8310913e2	2083.62	NO	6.3356900e5	1.8082803e2	3503.71	NO
14	1,2,3,7,8,9-HxCDF	7.1809400e5	3.8310913e2	1876.15	NO	5.7691100e5	1.8082803e2	3190.38	NO
15	1,2,3,4,6,7,8-HpCDF	8.0687700e5	7.2875845e3	109.89	NO	7.8035100e5	5.3012891e3	147.20	NO
16	1,2,3,4,7,8,9-HpCDF	6.0899800e5	7.2875845e3	82.50	NO	5.8187200e5	5.3012891e3	109.76	NO
17	OCDF	7.3220000e5	1.3117599e2	5577.82	NO	8.1408300e5	2.8916125e2	2815.33	NO
18	13C-2,3,7,8-TCDD	1.1201580e6	2.9752957e2	3769.37	NO	1.4010980e6	1.9203577e2	7296.03	NO
19	13C-1,2,3,7,8-PeCDD	1.3382280e6	2.0015112e2	6684.43	NO	8.5529300e5	1.0442740e3	819.03	NO
20	13C-1,2,3,6,7,8-HxCDD	1.1259530e6	3.3618396e2	3351.26	NO	8.9804300e5	1.7891315e2	5019.44	NO
21	13C-1,2,3,4,6,7,8-HpCDD	1.1264030e6	2.4664319e2	4566.39	NO	1.0465140e6	2.9392157e2	3560.52	NO
22	13C-OCDD	1.5547330e6	3.0368790e2	5115.48	NO	1.7462940e6	2.6379001e2	6620.02	NO
23	13C-2,3,7,8-TCDF	1.6662080e6	2.1781973e2	7656.13	NO	2.1619280e6	1.9971759e2	10824.93	NO
24	13C-1,2,3,7,8-PeCDF	1.4859030e6	4.3665327e3	336.38	NO	9.6730000e5	2.6102615e2	3705.76	NO
25	13C-1,2,3,4,7,8-HxCDF	7.1542400e5	2.2066479e2	3240.86	NO	1.3985240e6	4.8075903e2	2908.99	NO
26	13C-1,2,3,4,6,7,8-HpCDF	7.1551100e5	1.8623260e2	3848.44	NO	1.6531560e6	3.3186810e2	4981.36	NO
27	13C-1,2,3,4-TCDD	1.1786890e6	2.9752957e2	3964.74	NO	1.4856530e6	1.9203577e2	7736.33	NO
28	13C-1,2,3,7,8,9-HxCDD	1.4115610e6	3.3618396e2	4204.52	NO	1.1412030e6	1.7891315e2	6378.53	NO

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

2,3,7,8-TCDD



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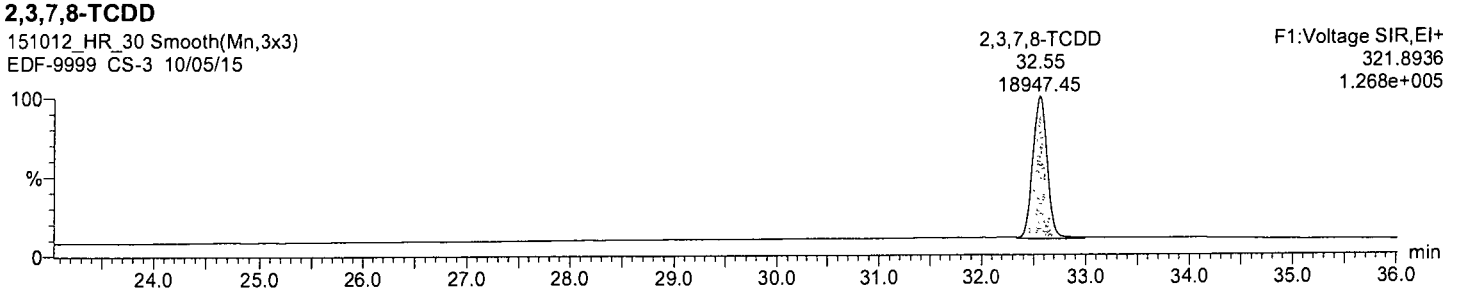

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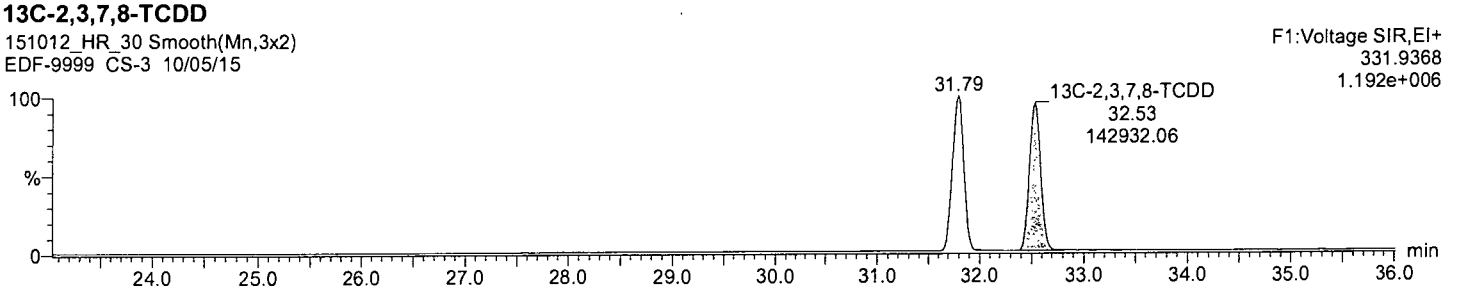

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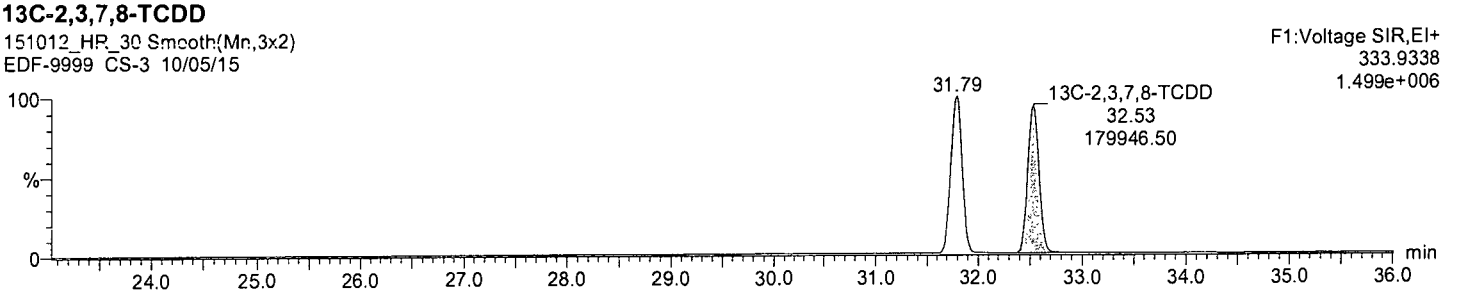
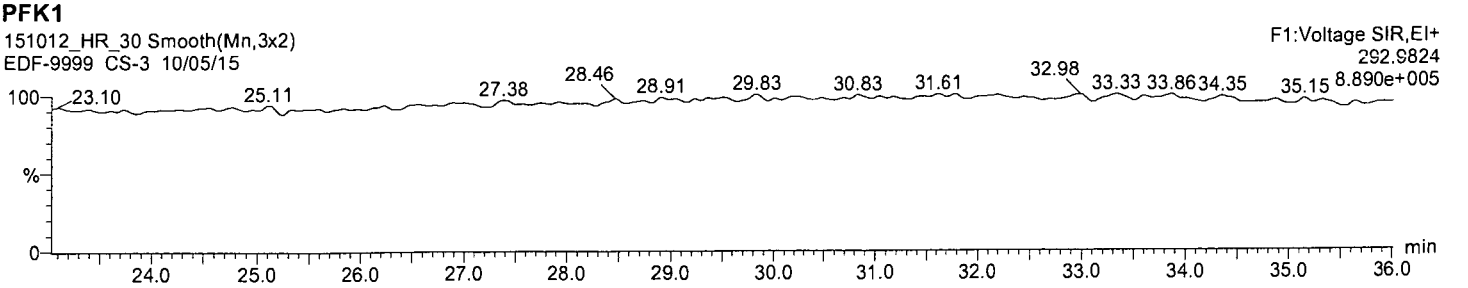
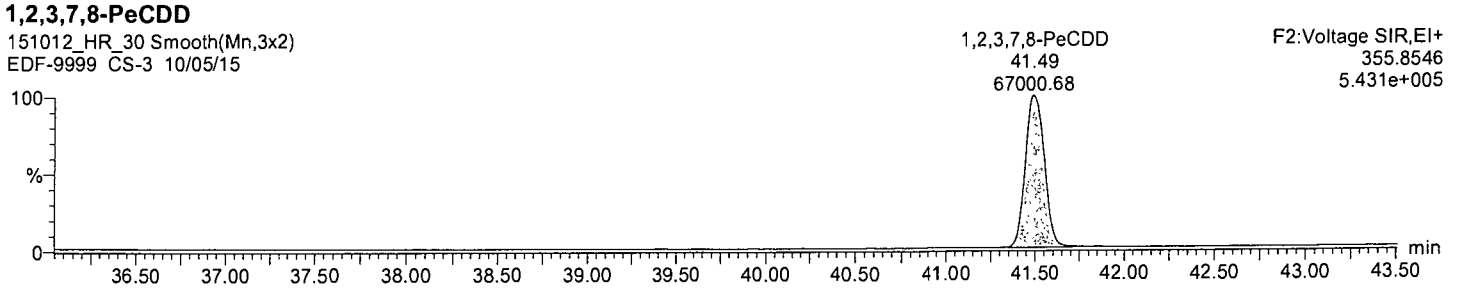


PFK1

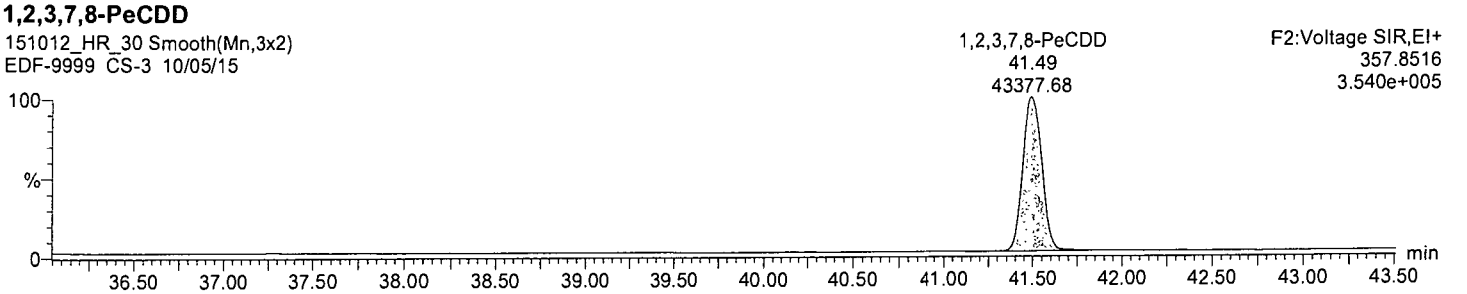


Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

1,2,3,7,8-PeCDD



1,2,3,7,8-PeCDD



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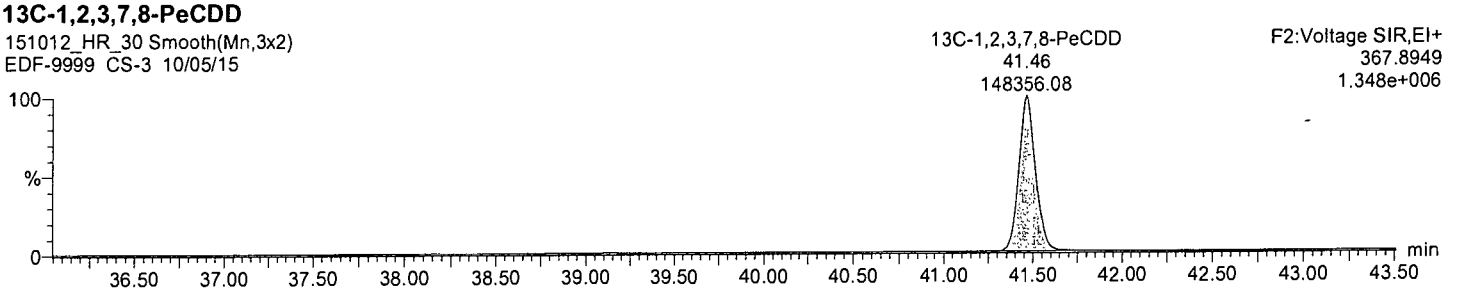

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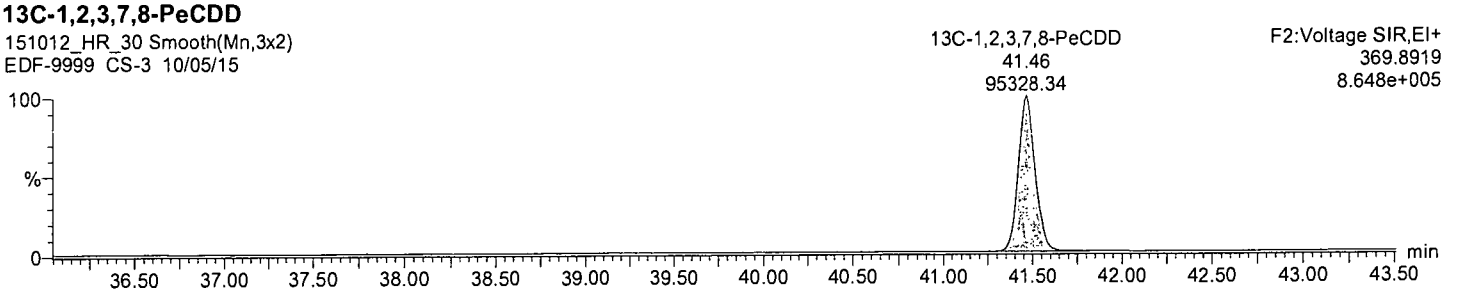
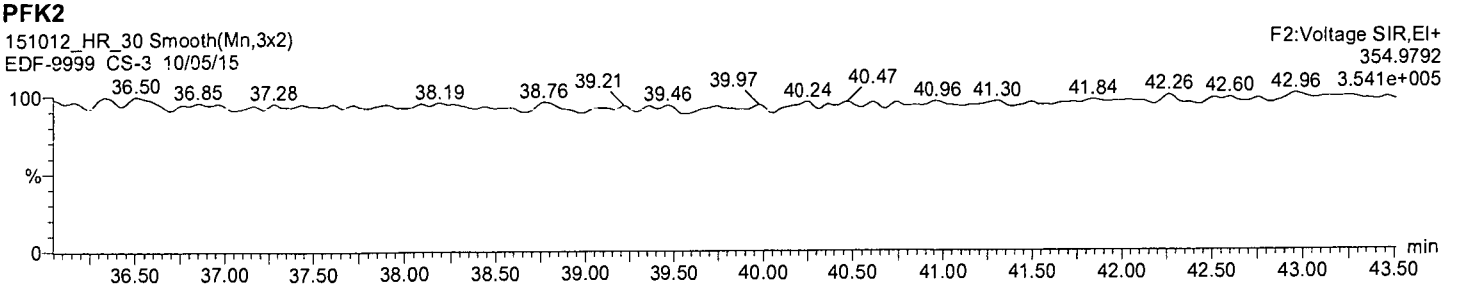
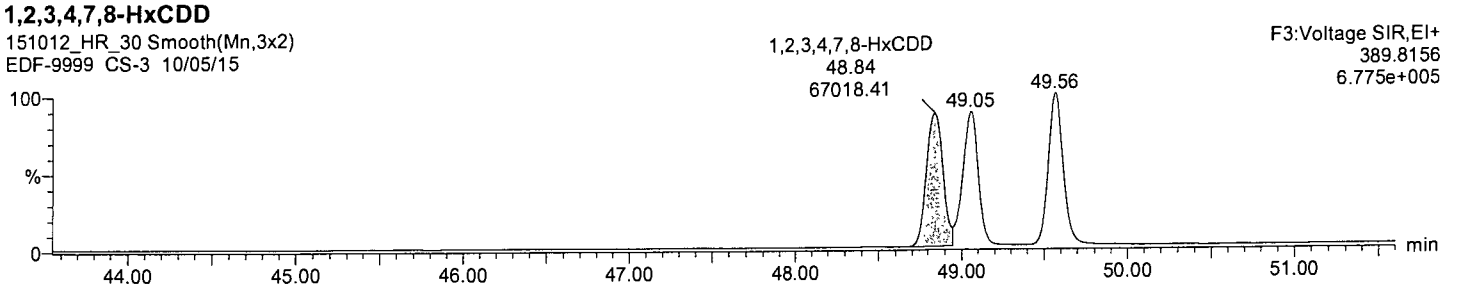


PFK2

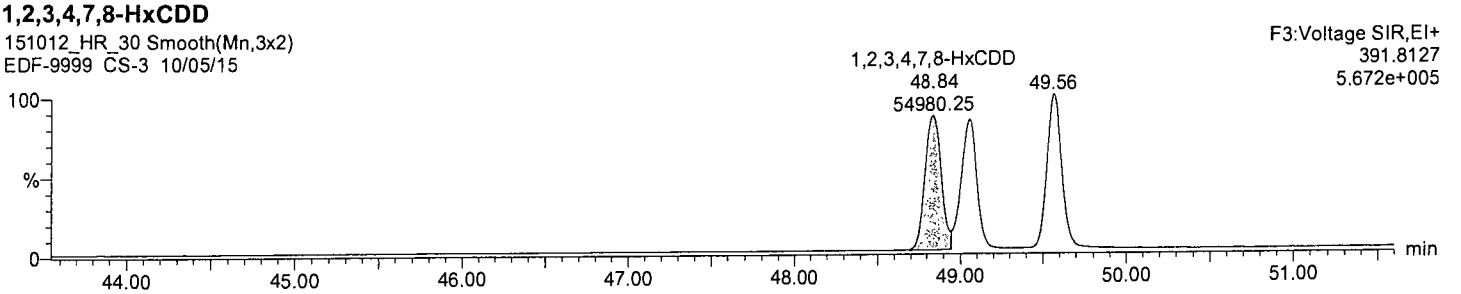


Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

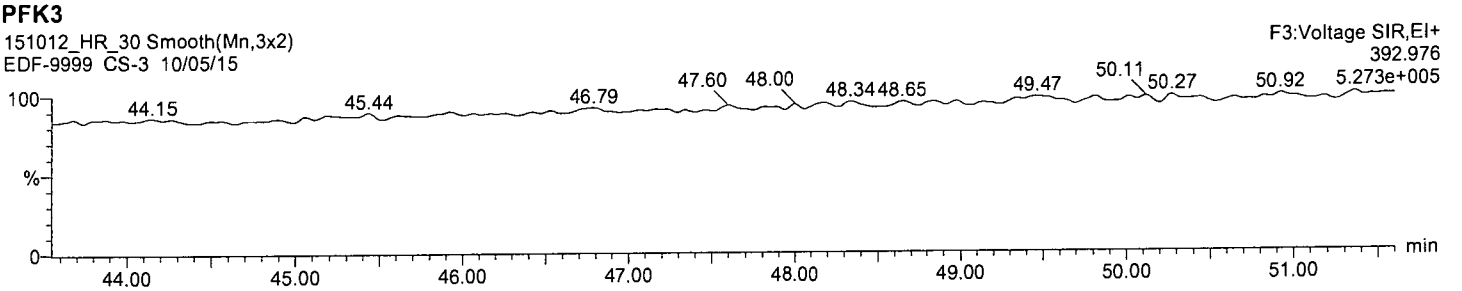
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD

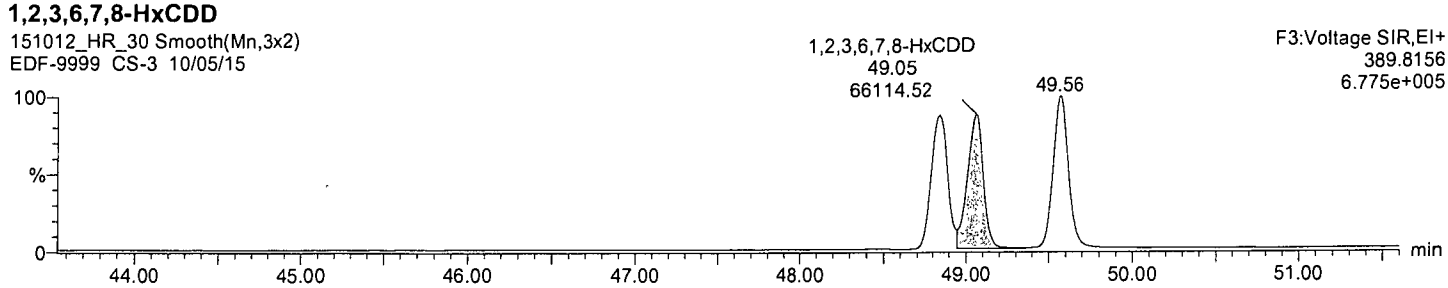


PFK3

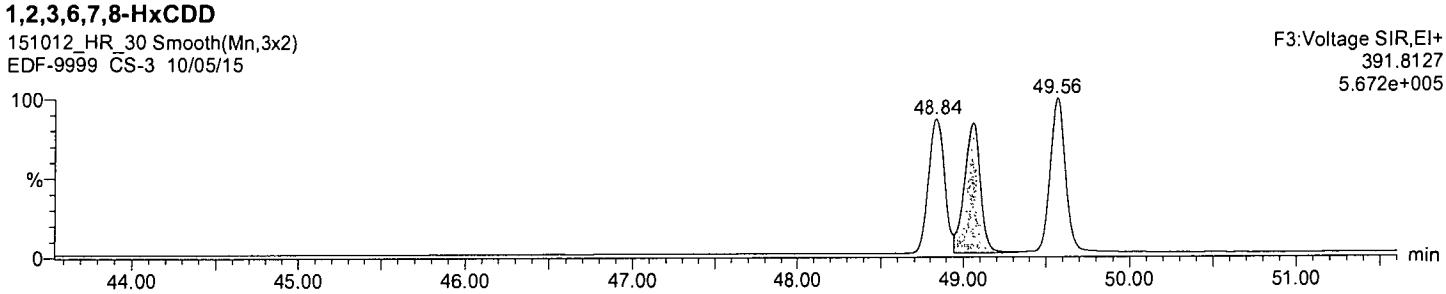


Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

1,2,3,6,7,8-HxCDD



1,2,3,6,7,8-HxCDD



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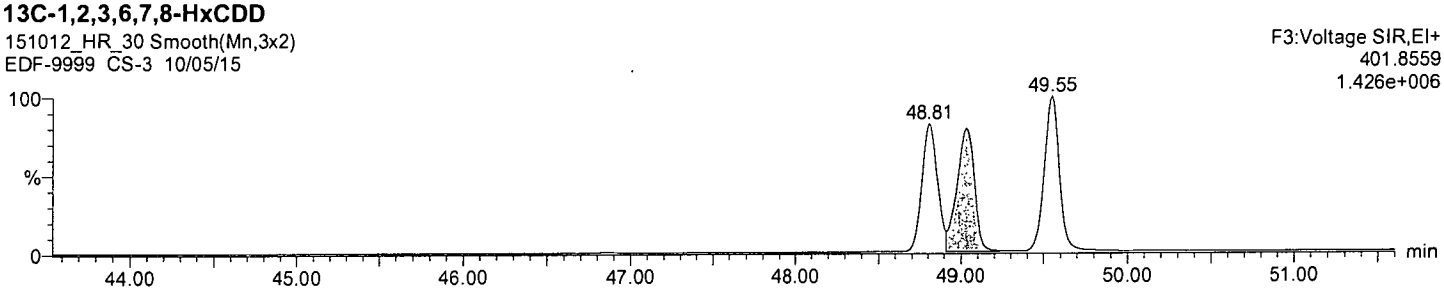
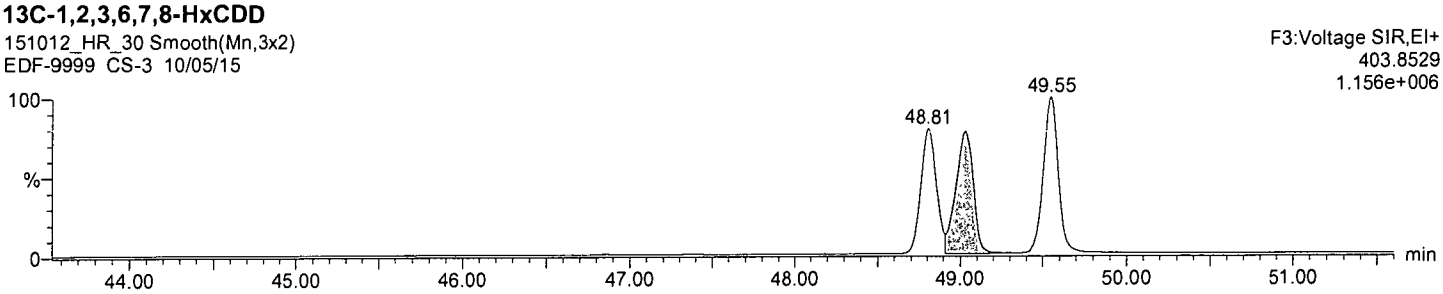
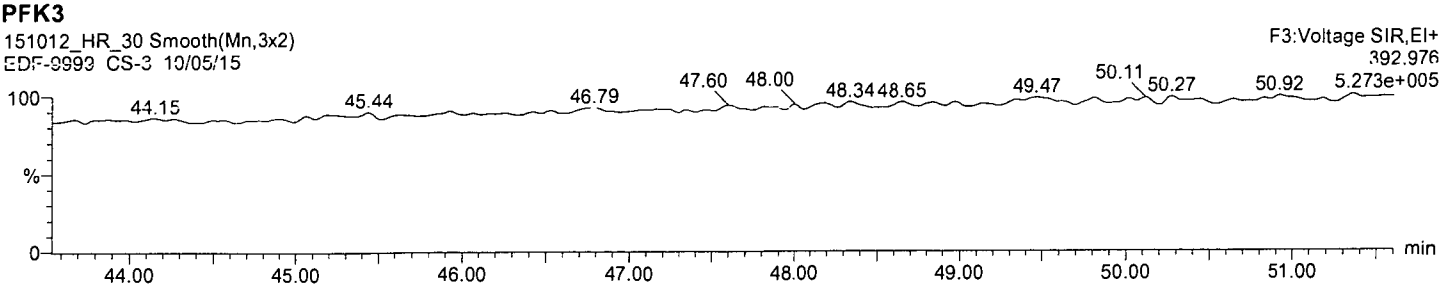


13C-1,2,3,6,7,8-HxCDD

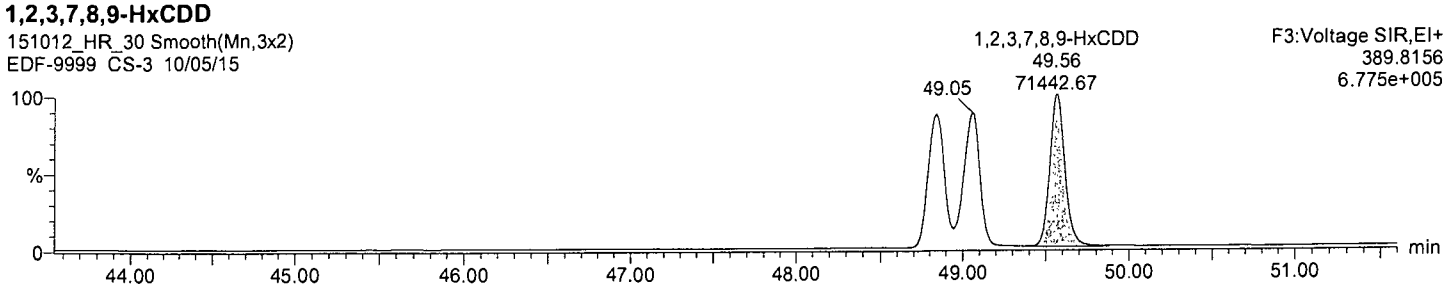


PFK3



Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

1,2,3,7,8,9-HxCDD



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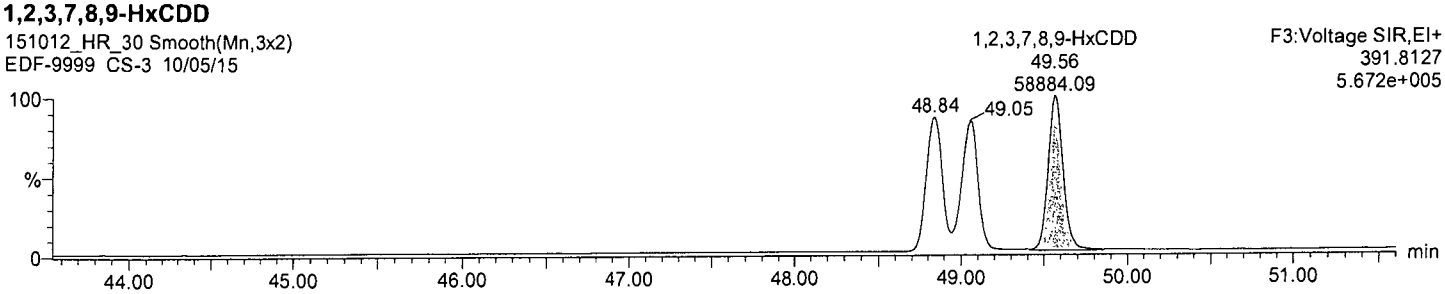

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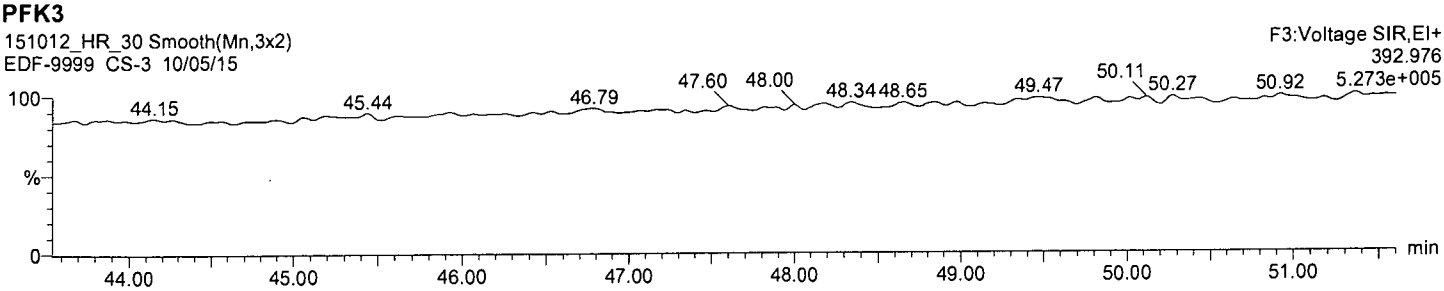

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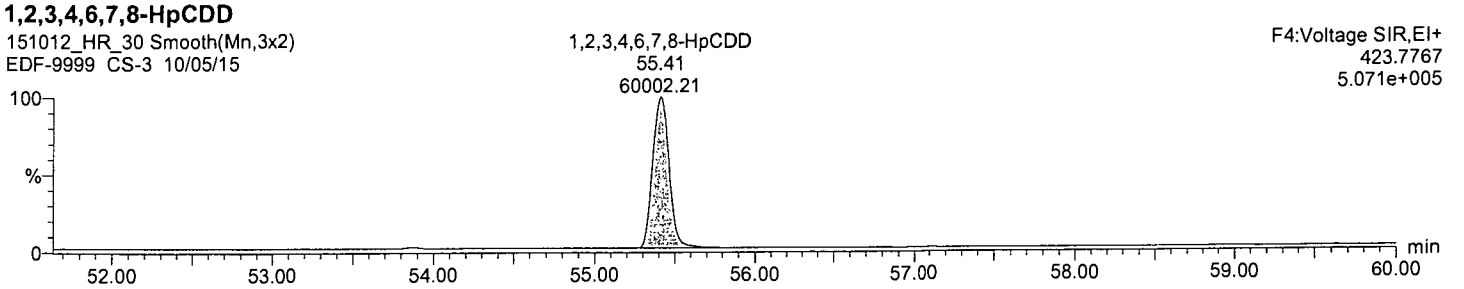
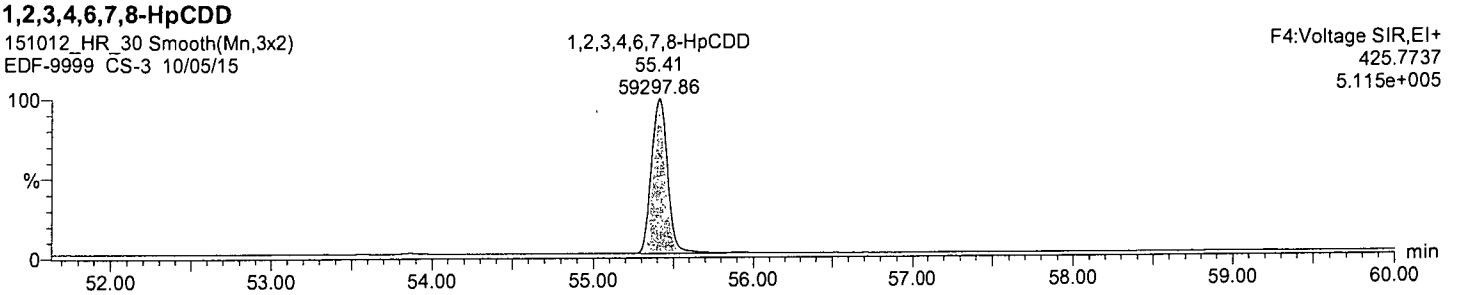
1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



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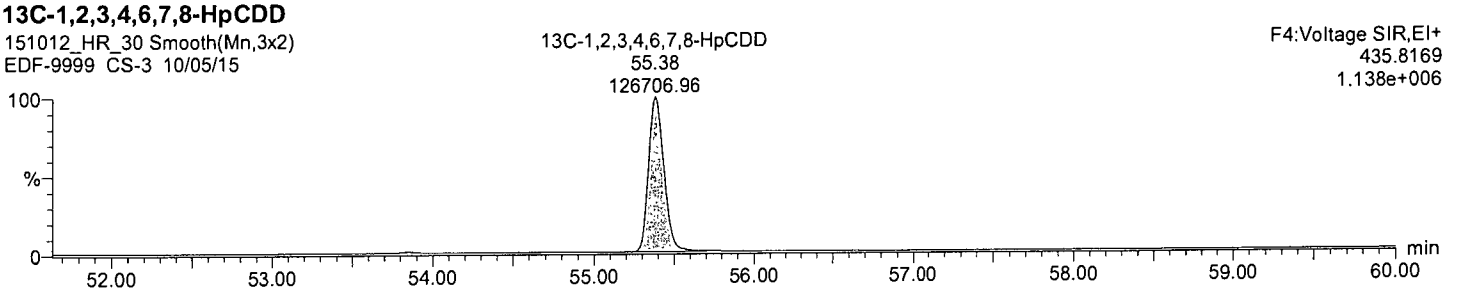

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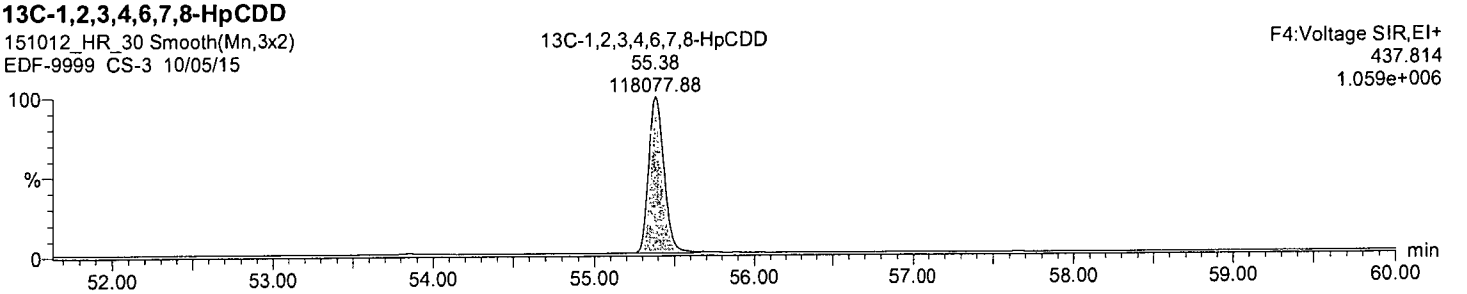
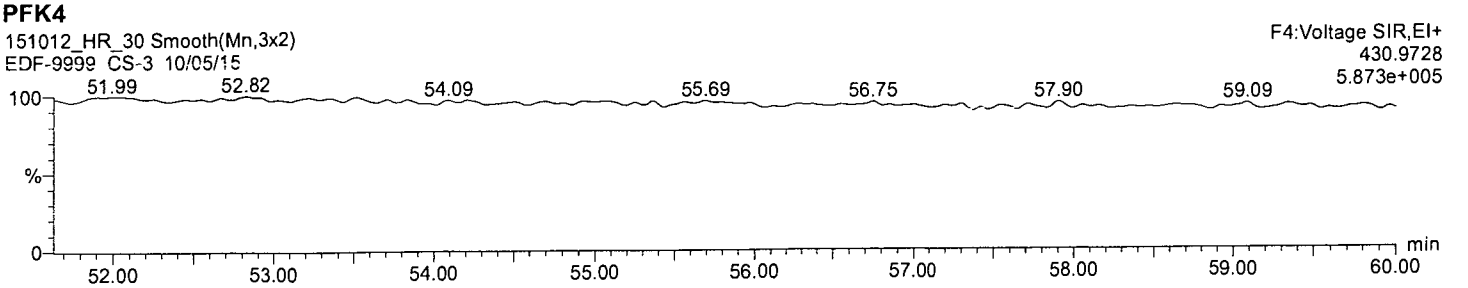


PFK4



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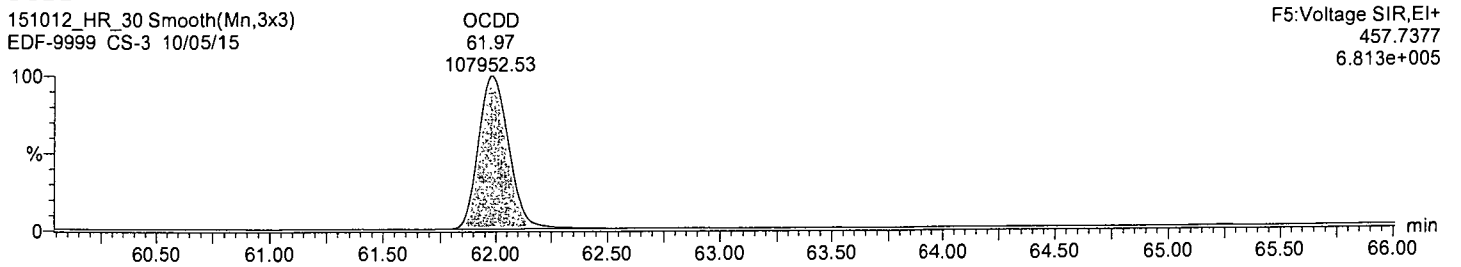
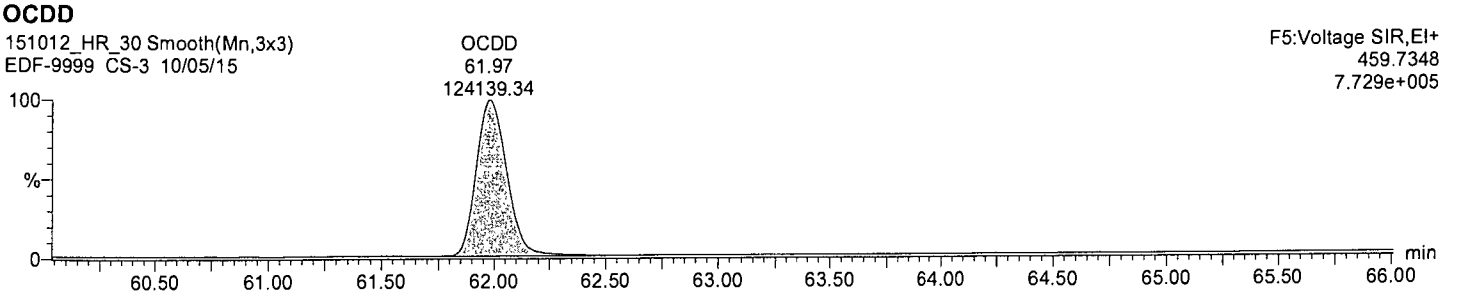
OCDD



OCDD



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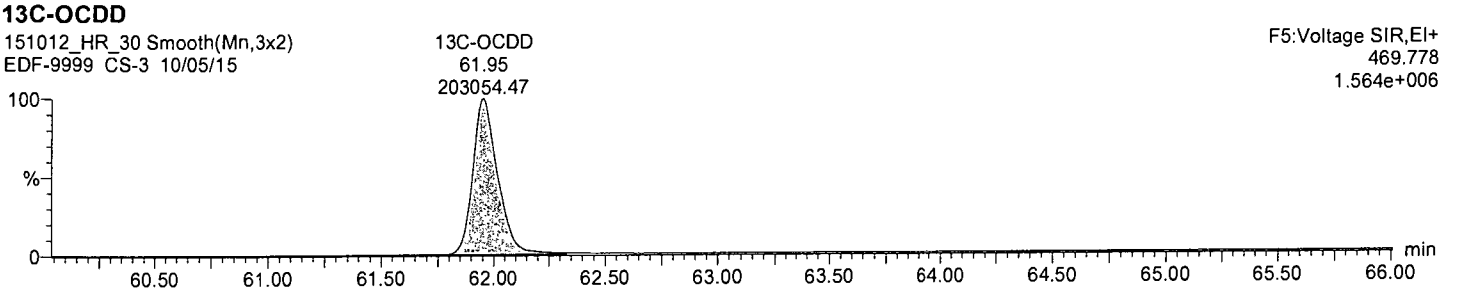
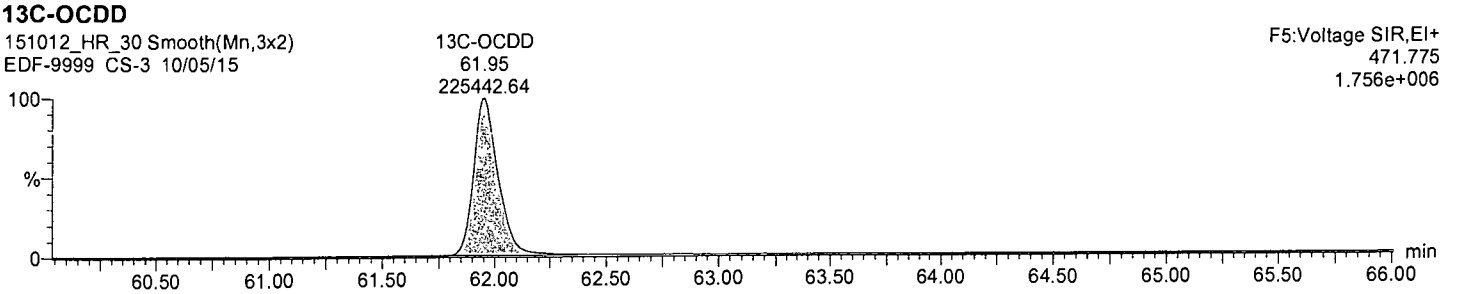
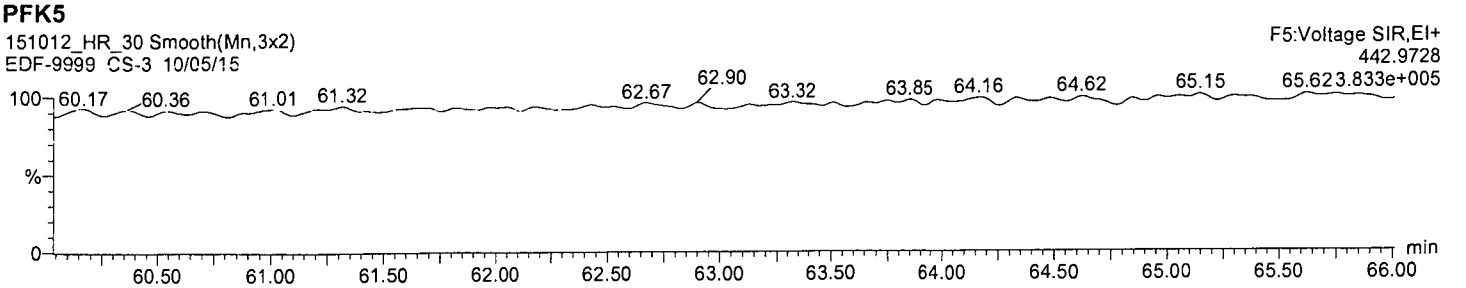


13C-OCDD



PFK5



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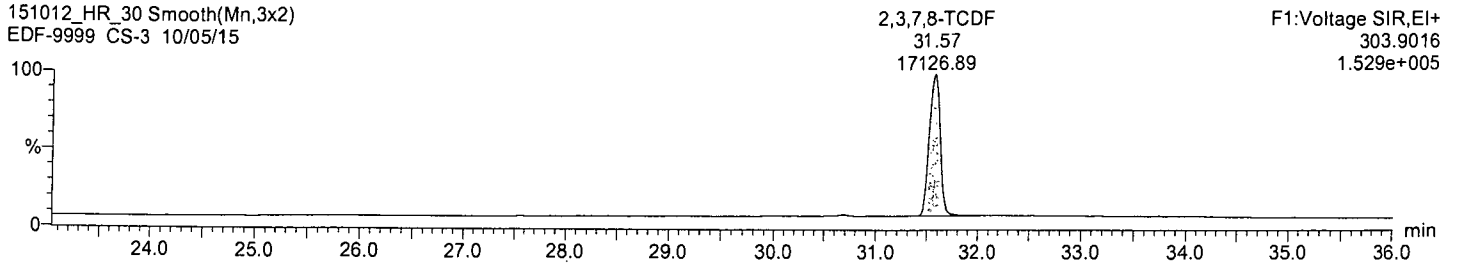
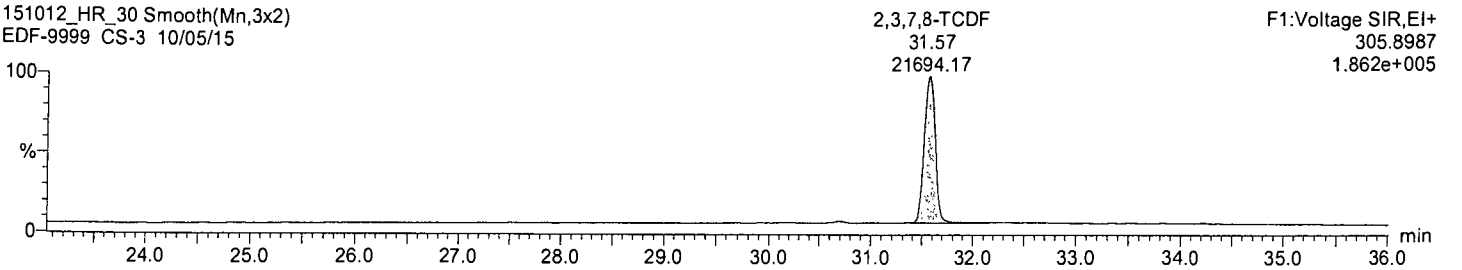
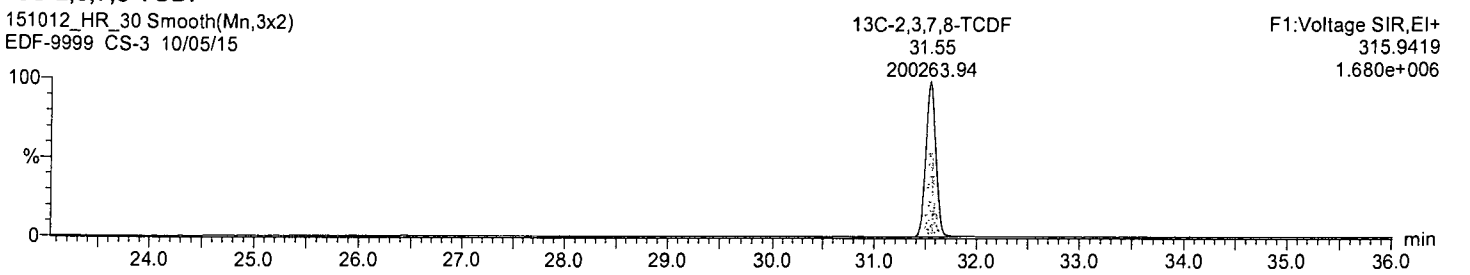
2,3,7,8-TCDF



2,3,7,8-TCDF



13C-2,3,7,8-TCDF



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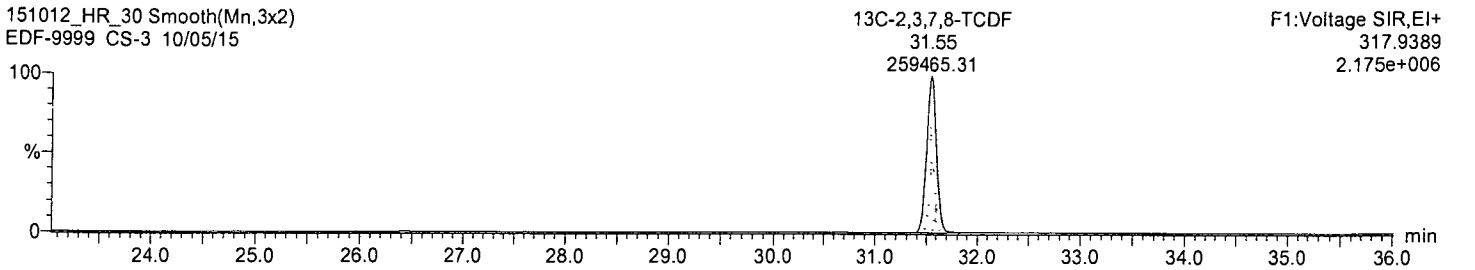

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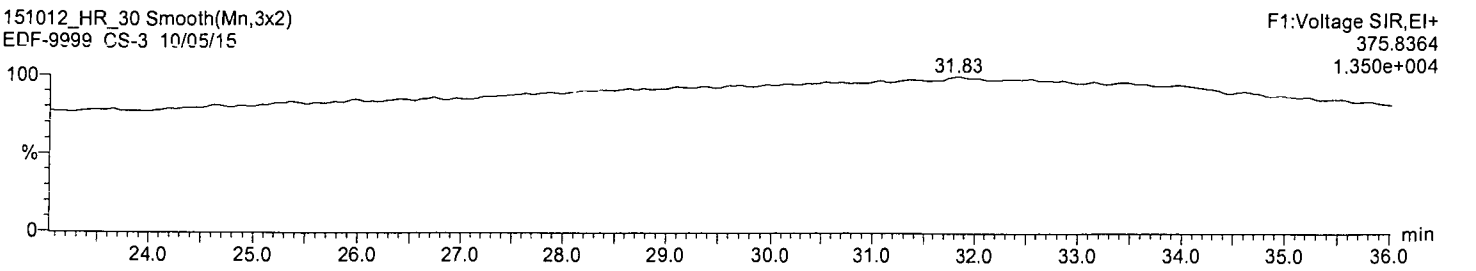

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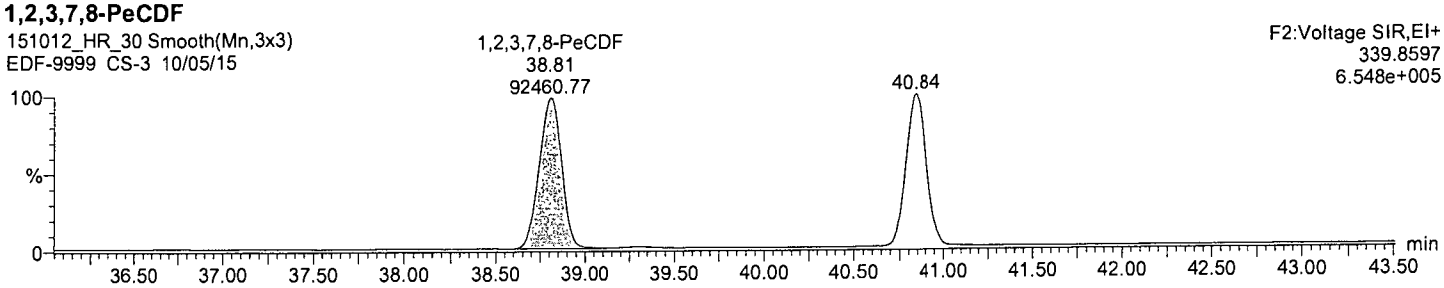
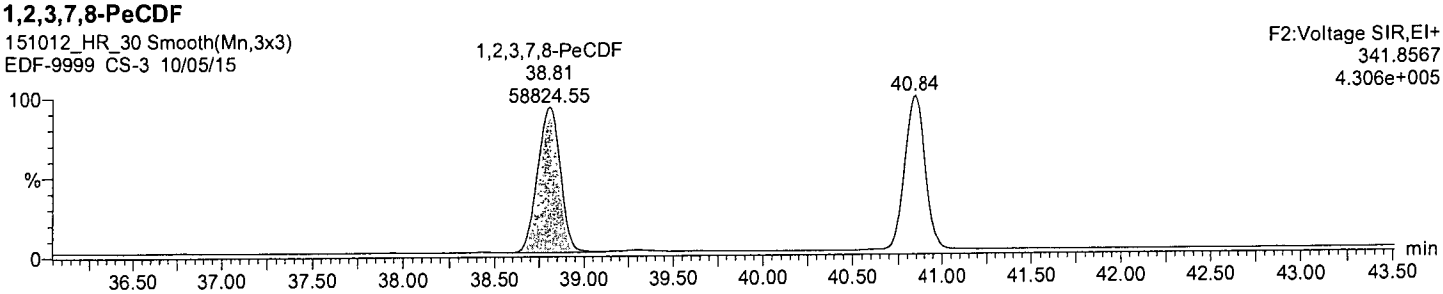
1,2,3,7,8-PeCDF



1,2,3,7,8-PeCDF



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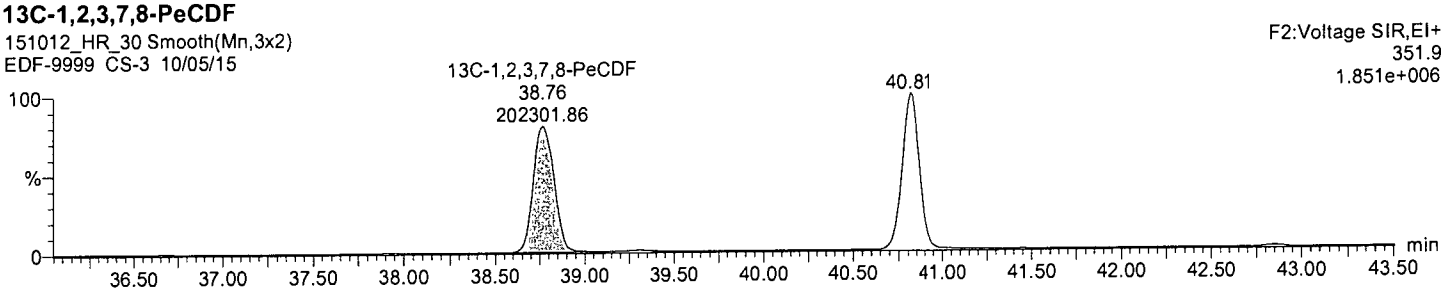

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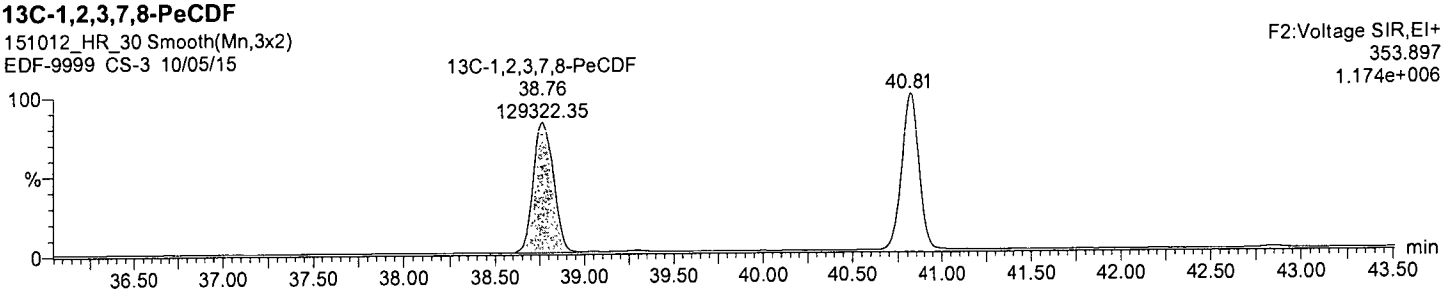
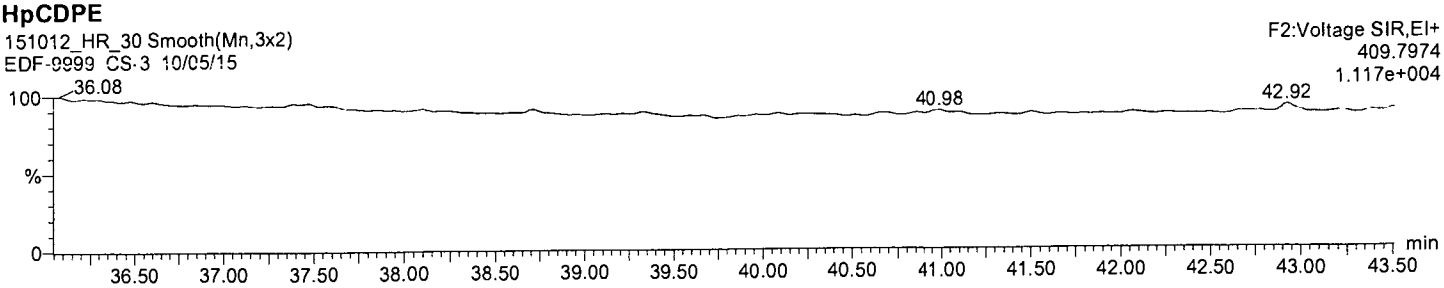


HpCDPE



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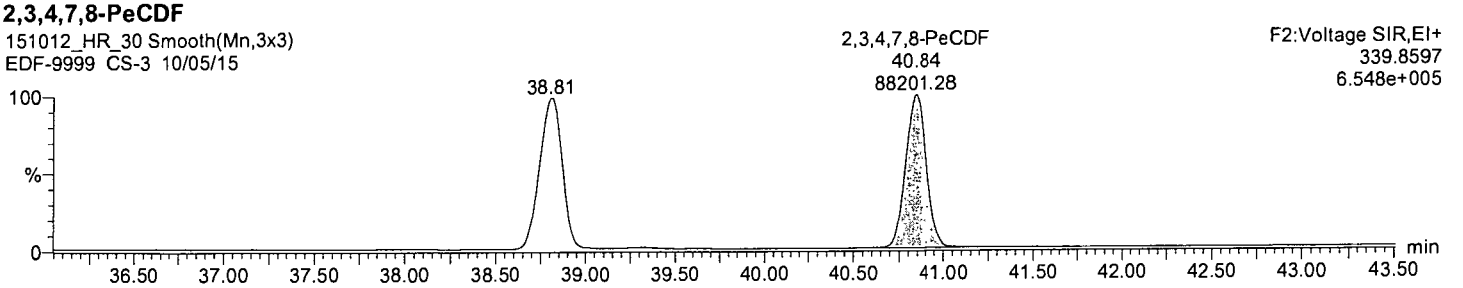
2,3,4,7,8-PeCDF



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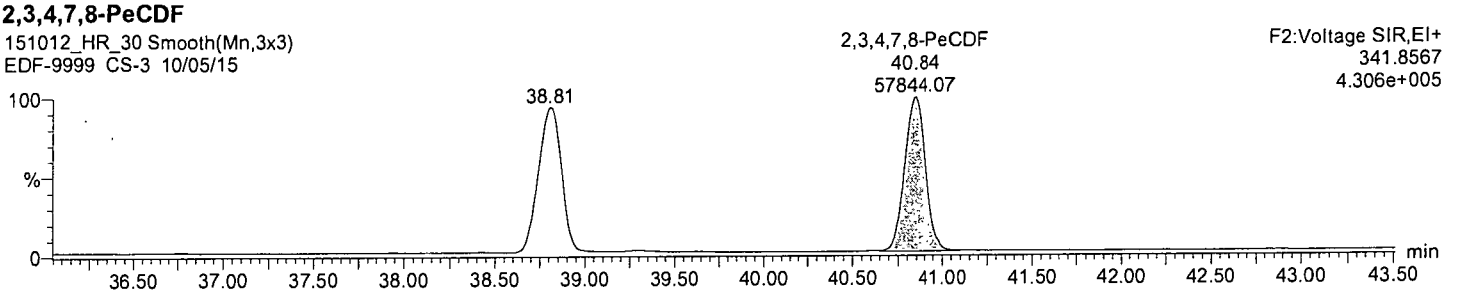

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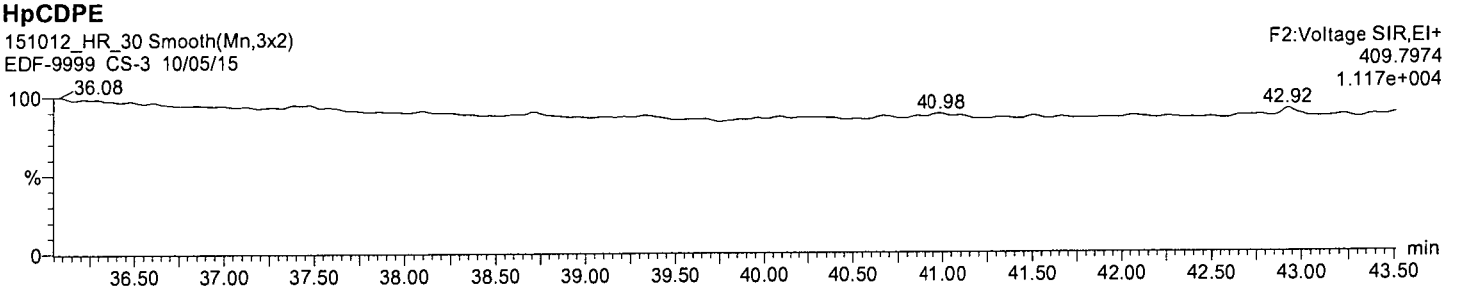

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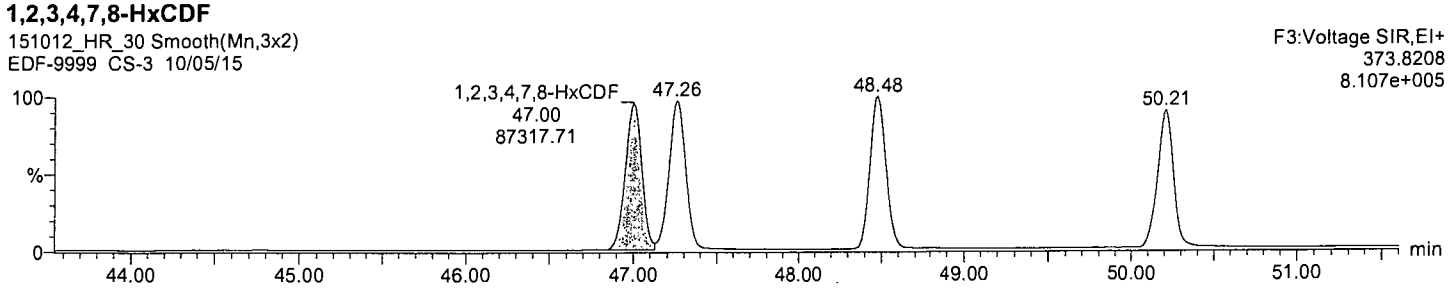
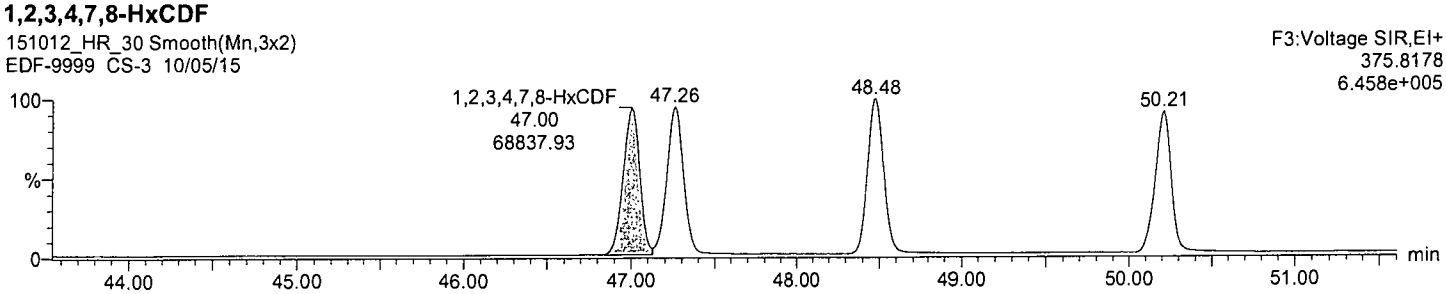
1,2,3,4,7,8-HxCDF



1,2,3,4,7,8-HxCDF



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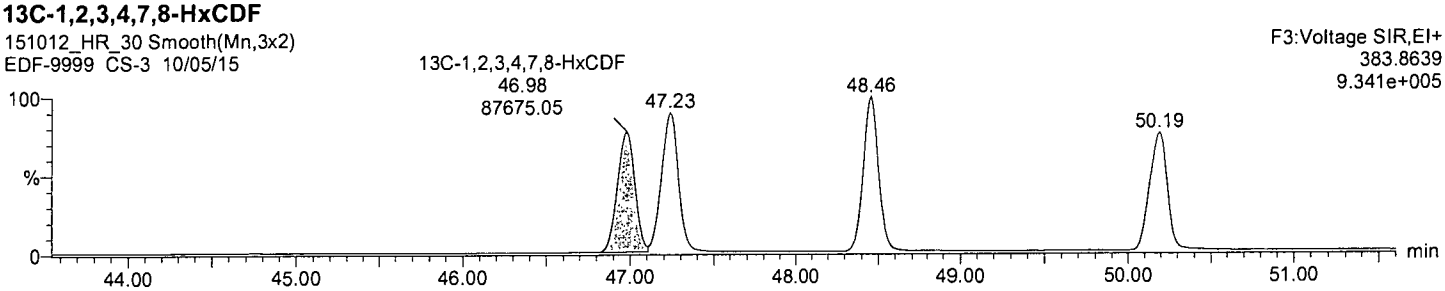

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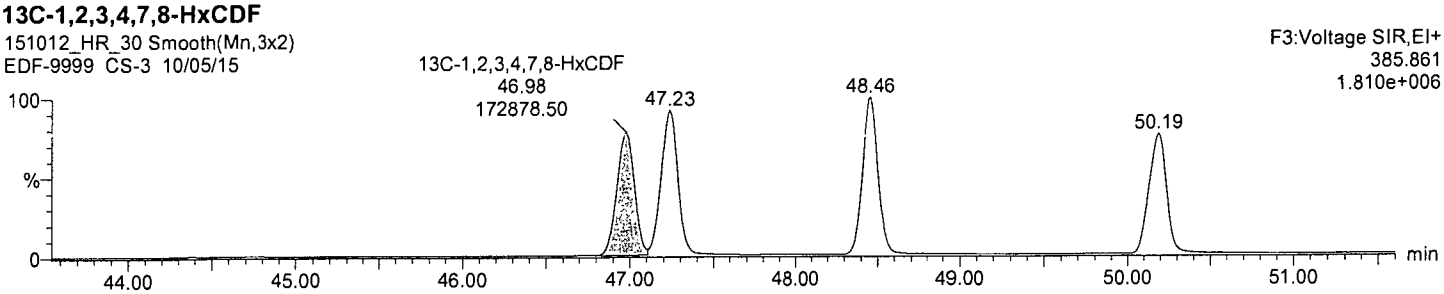
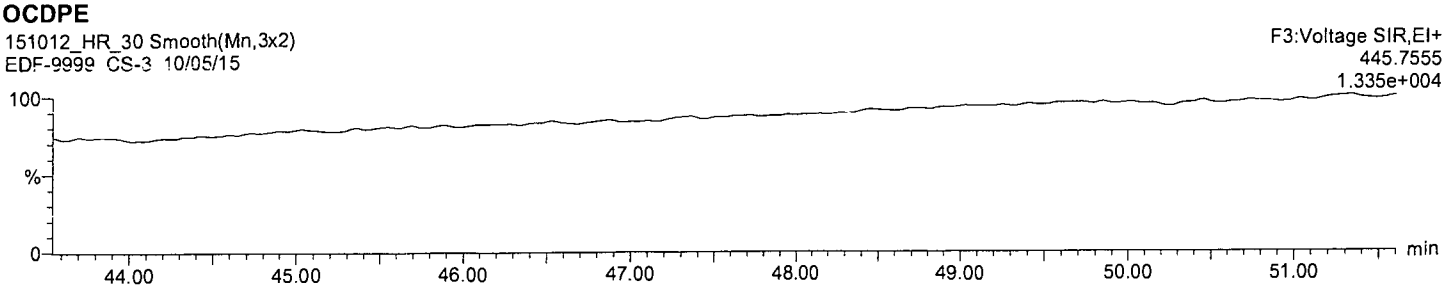


OCDPE



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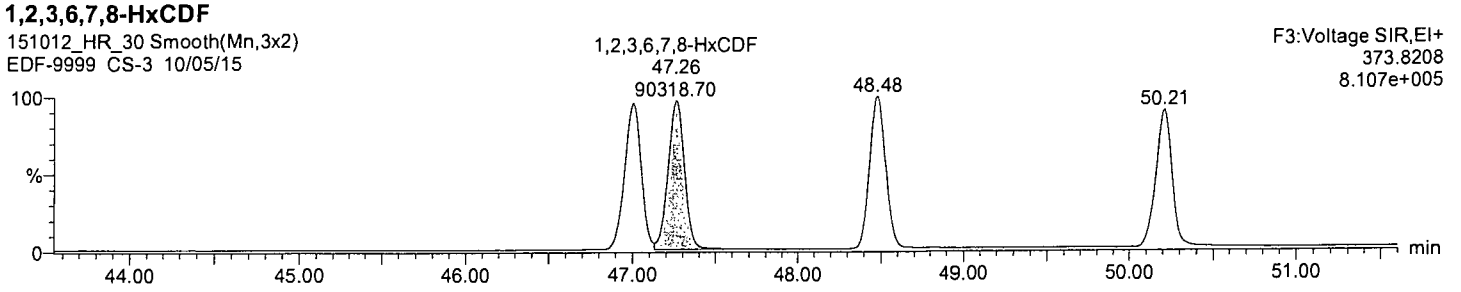
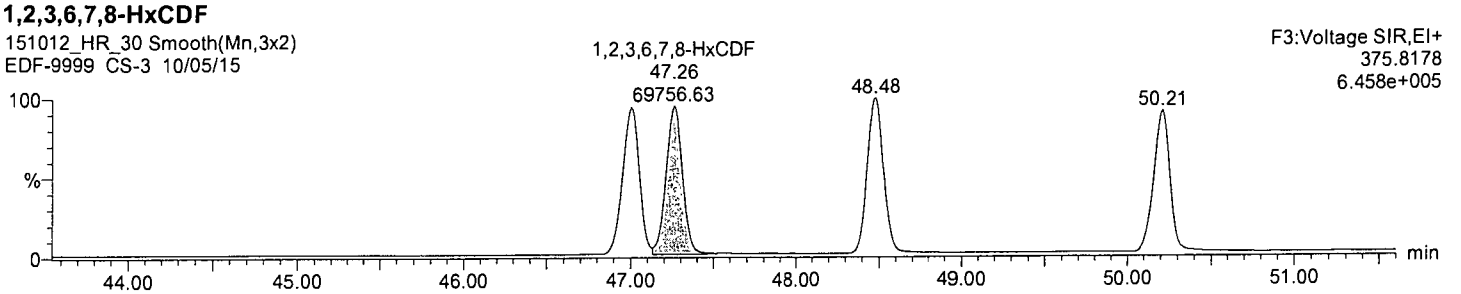
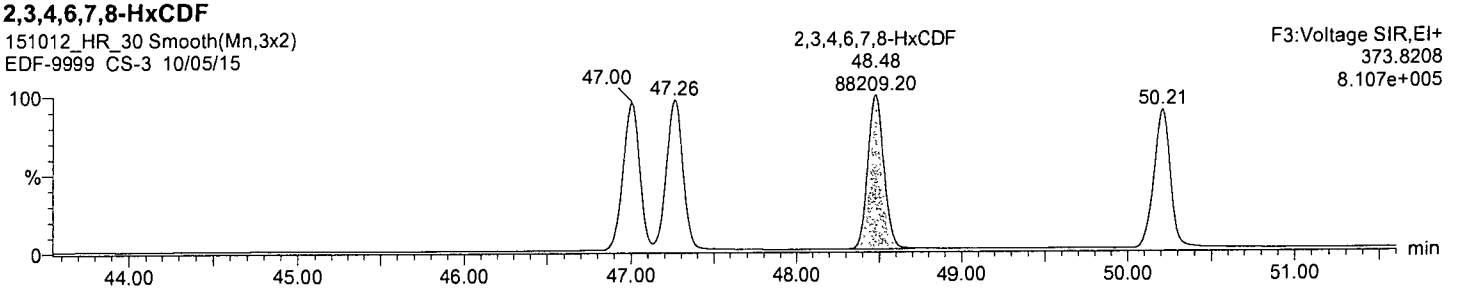
1,2,3,6,7,8-HxCDF



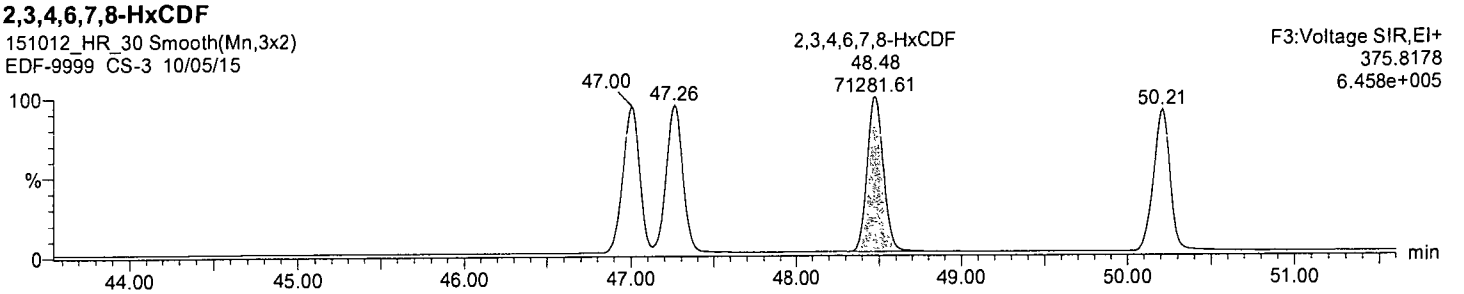
1,2,3,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF



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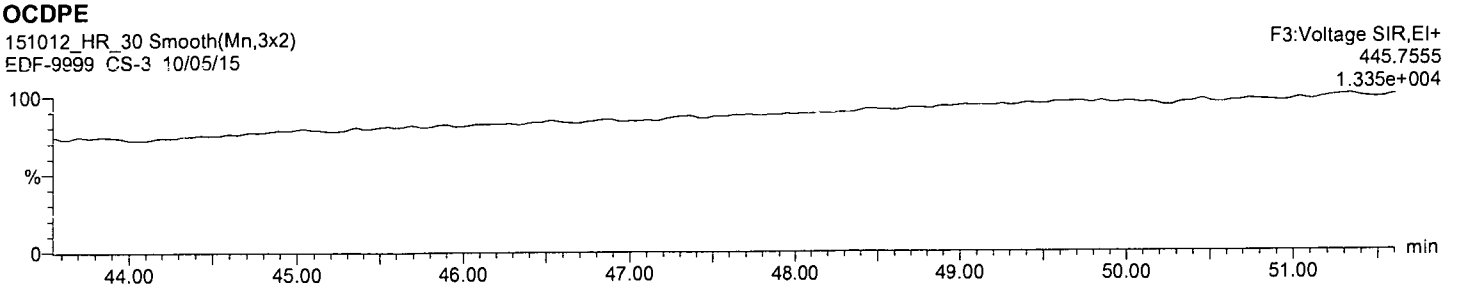

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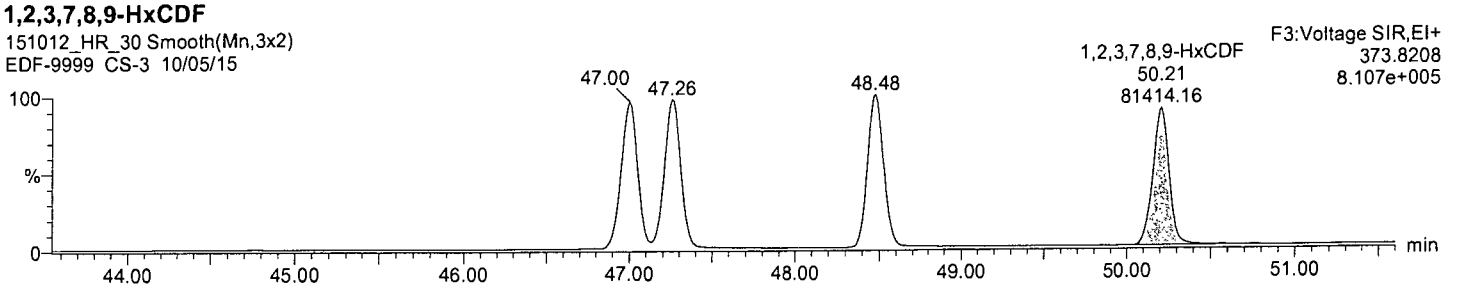
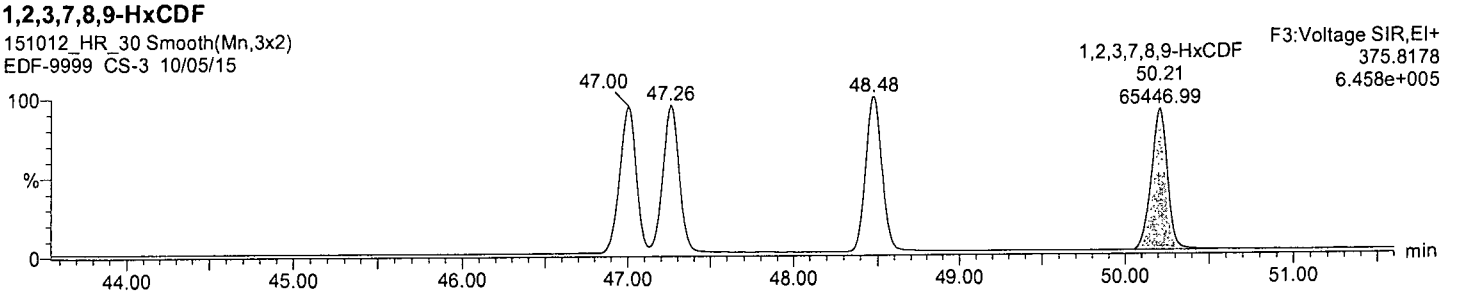
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF



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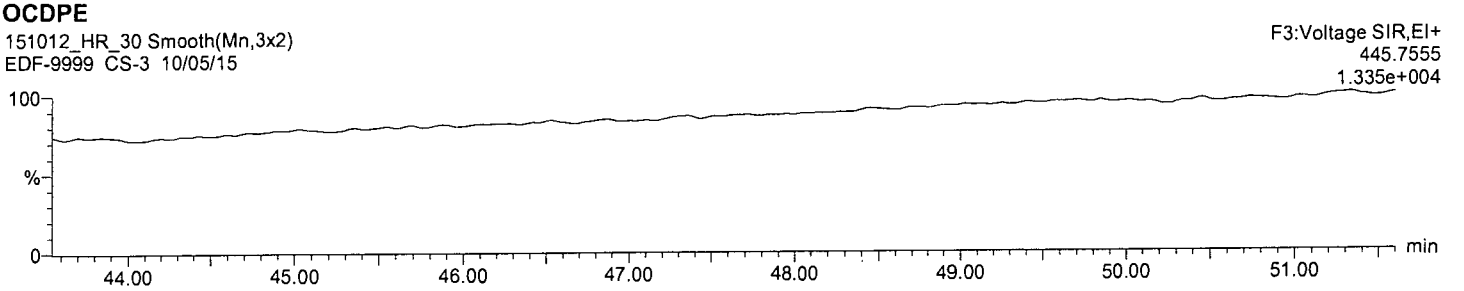

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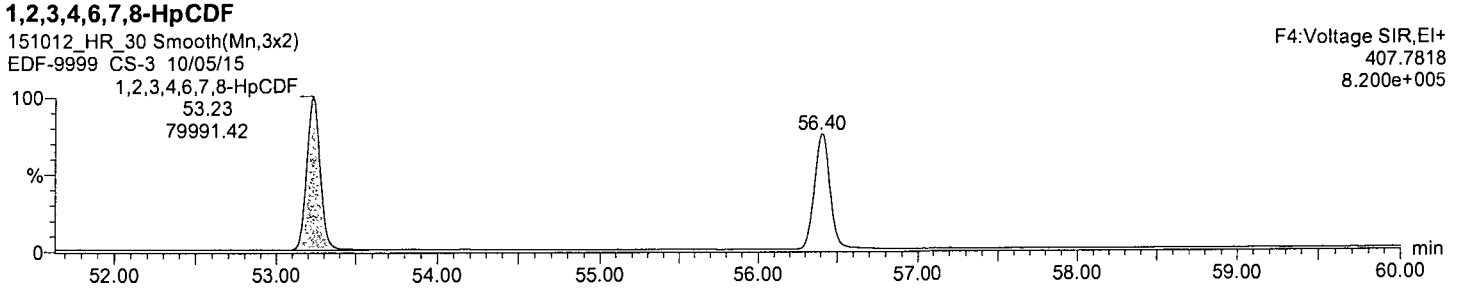
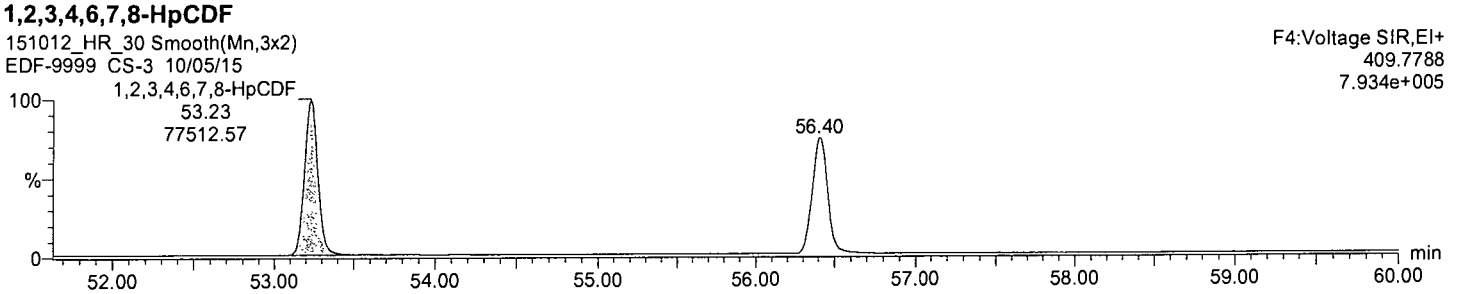
1,2,3,4,6,7,8-HpCDF



1,2,3,4,6,7,8-HpCDF



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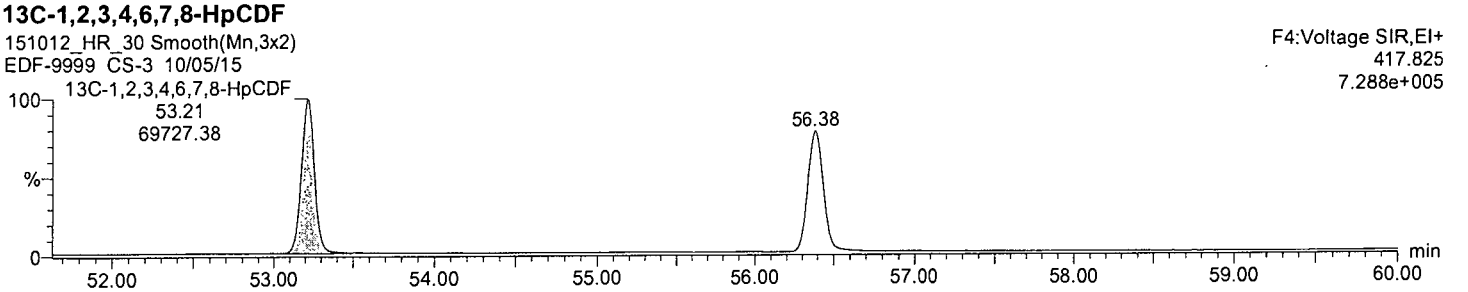

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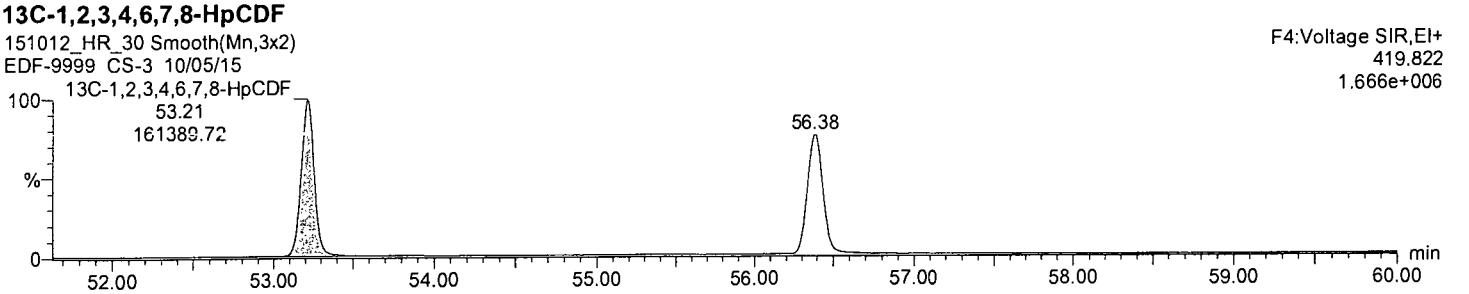

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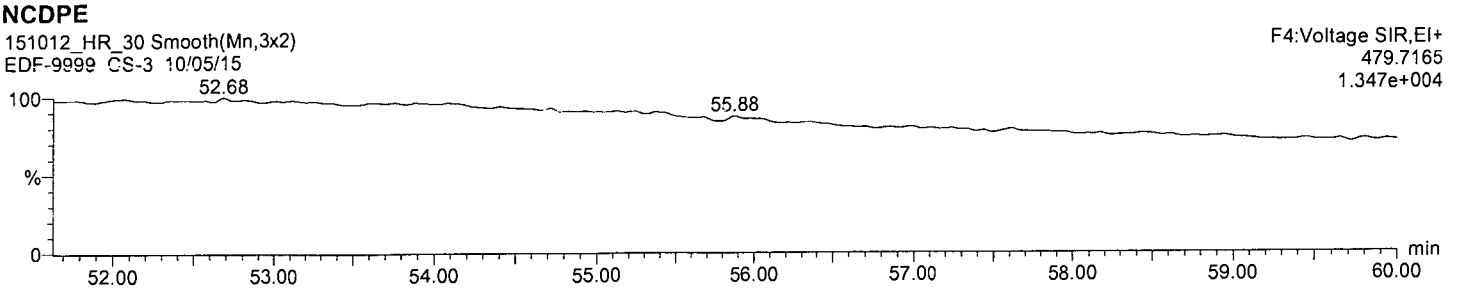

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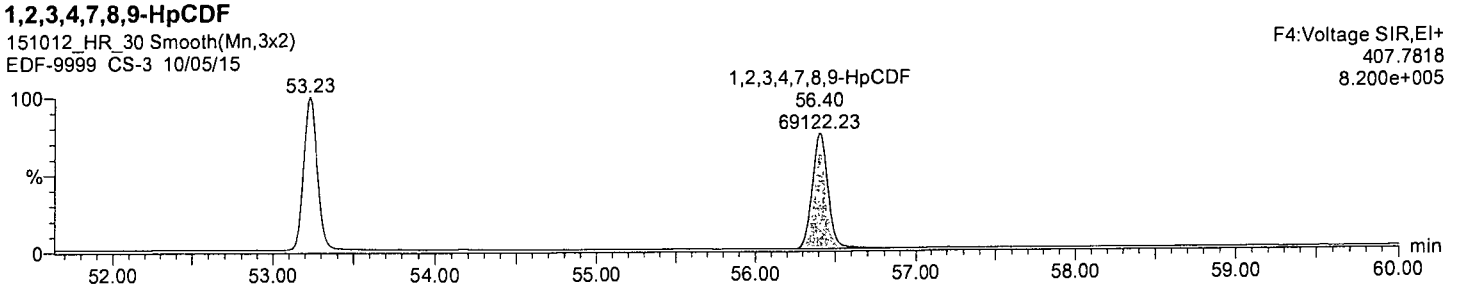
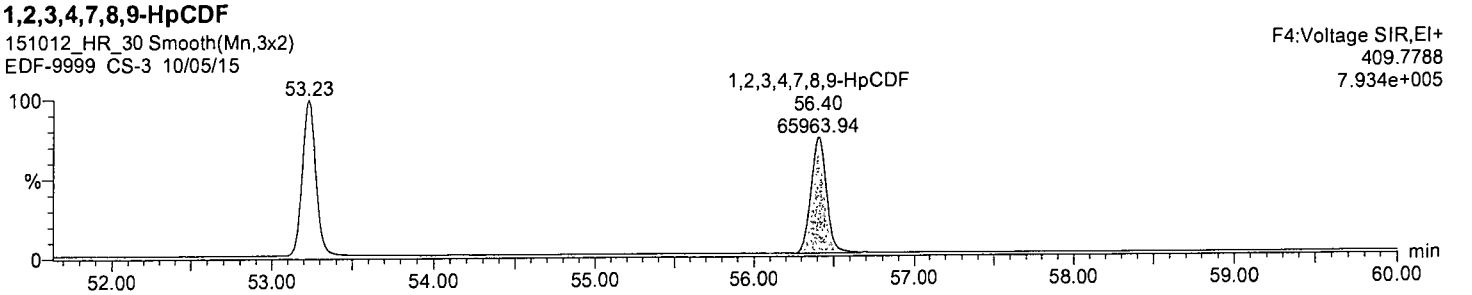
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF



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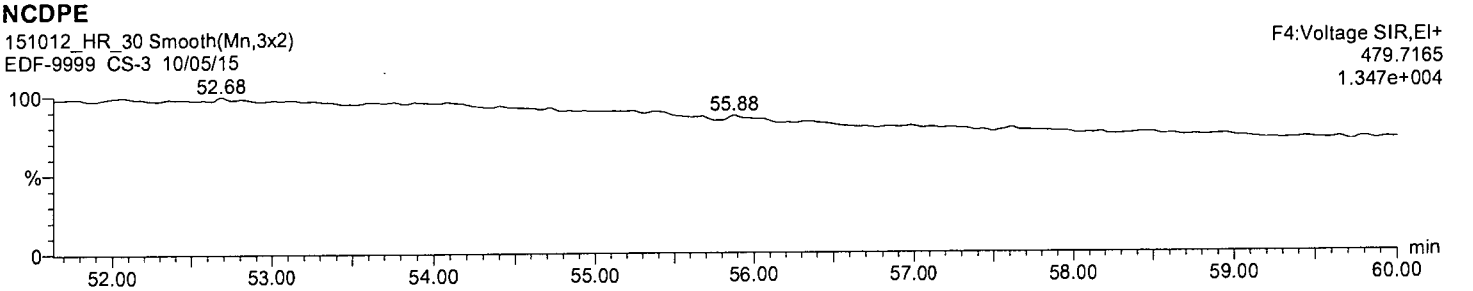

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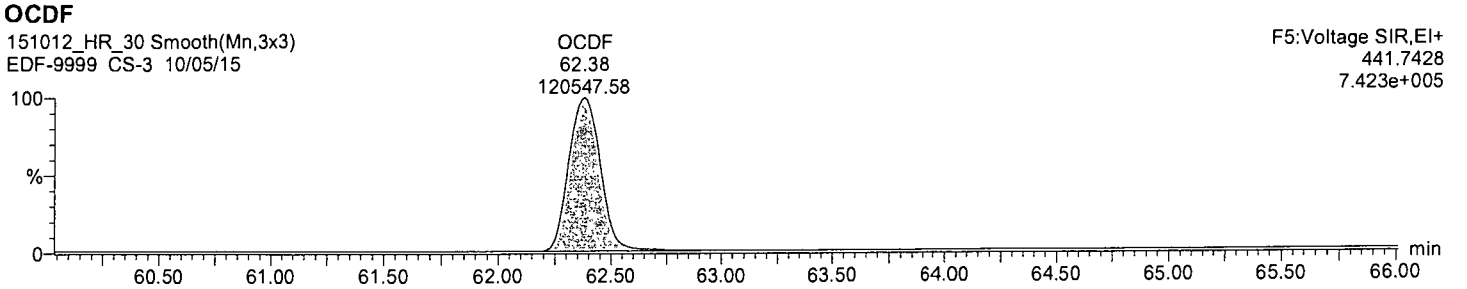
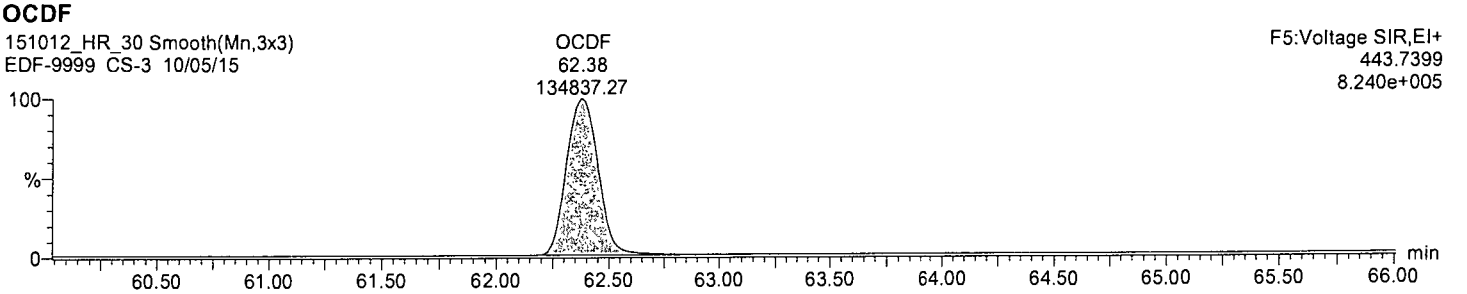
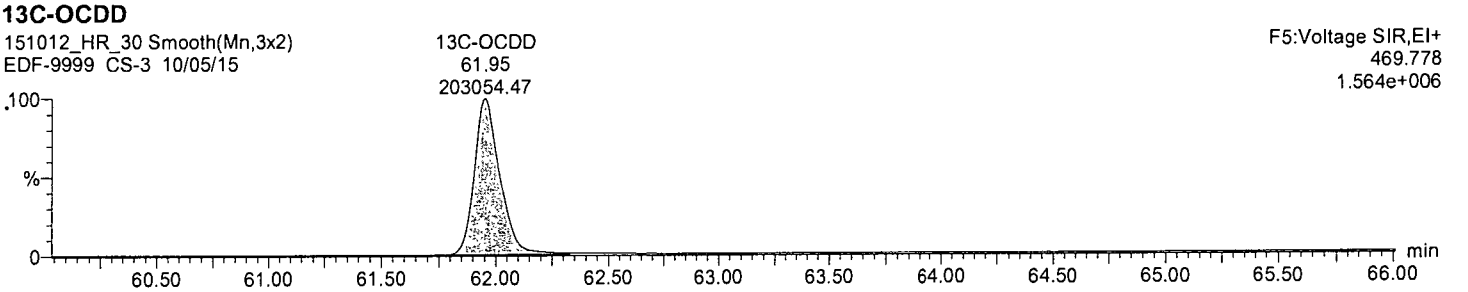
OCDF



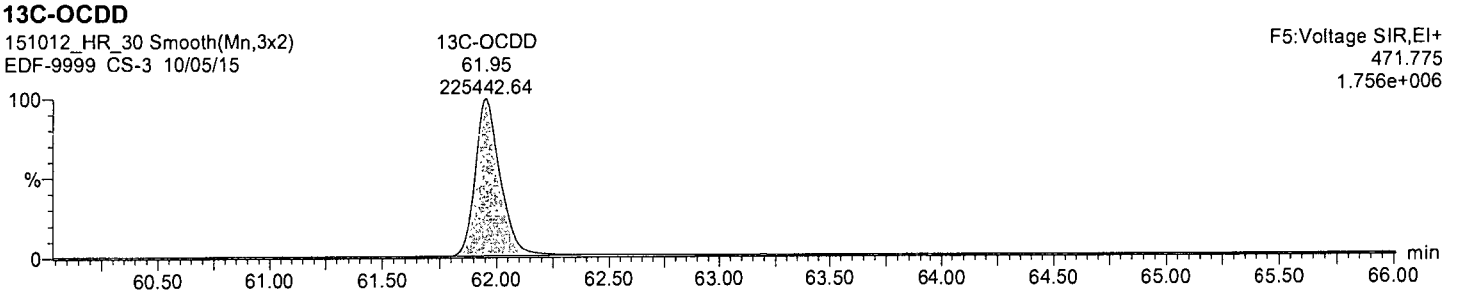
OCDF



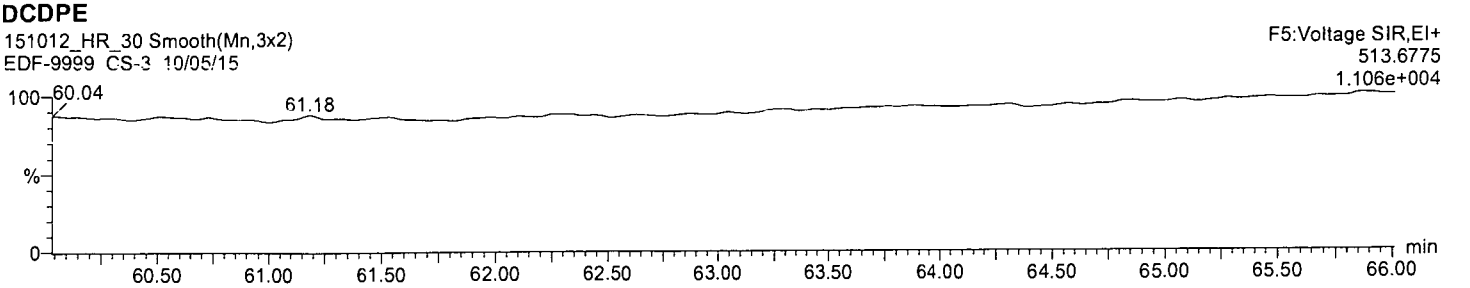
13C-OCDD



13C-OCDD

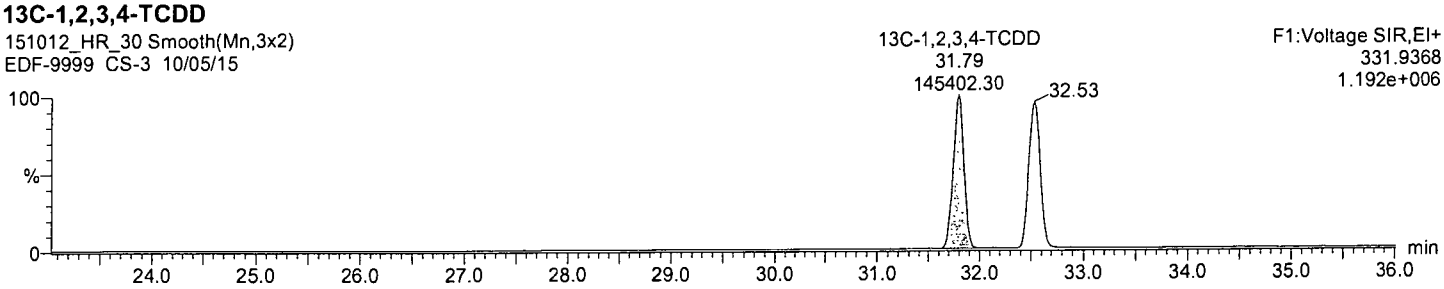


DCDPE

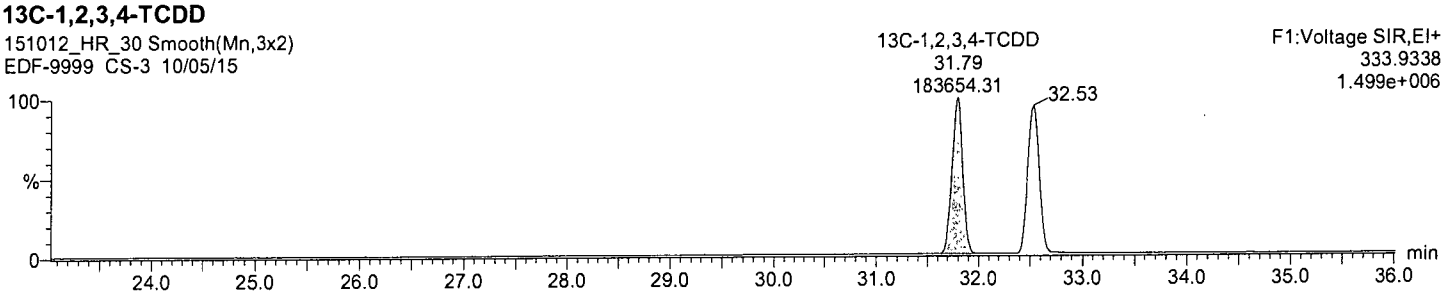


Name: 151012_HR_30, Date: 13-Oct-2015, Time: 22:27:11, ID: , Description: EDF-9999 CS-3 10/05/15, User:

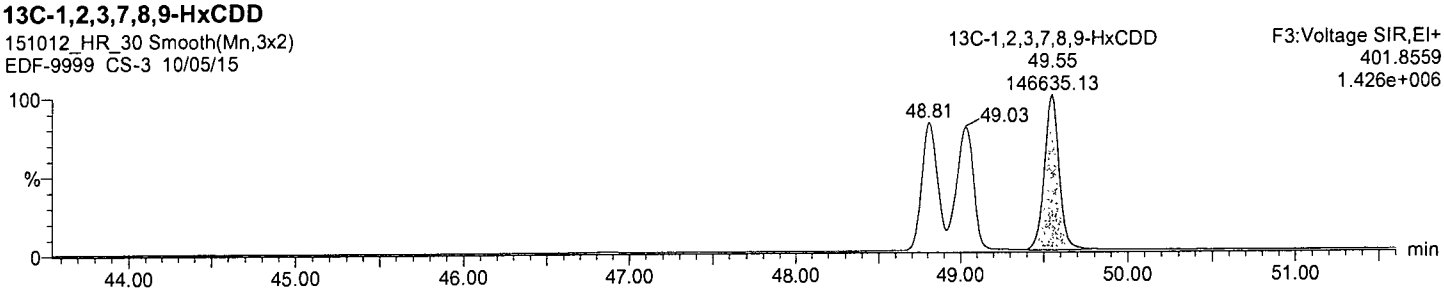
13C-1,2,3,4-TCDD



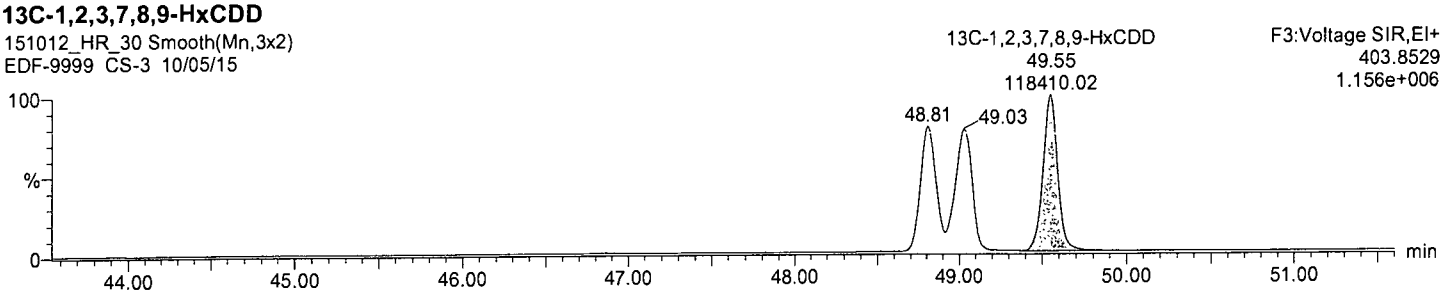
13C-1,2,3,4-TCDD



13C-1,2,3,7,8,9-HxCDD



13C-1,2,3,7,8,9-HxCDD



Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15

#	Name	Peak Area	1° Area	RT	Ion Ab	Ion Fail?	S/N1	S/N2	Conc.	%Rec	RRF	%Dev
1	2,3,7,8-TCDD	1.423757e4	1.897873e4	32.64	0.7502	NO	NO	NO	8.817	88.17	1.003	-11.8
2	1,2,3,7,8-PeCDD	7.409532e4	4.597005e4	41.59	1.6118	NO	NO	NO	51.013	102.03	0.957	2.0
3	1,2,3,4,7,8-HxCDD	6.566512e4	5.444764e4	48.92	1.2060	NO	NO	NO	48.583	97.17	1.011	-2.8
4	1,2,3,6,7,8-HxCDD	6.609609e4	5.476267e4	49.14	1.2070	NO	NO	NO	48.790	97.58	1.017	-2.4
5	1,2,3,7,8,9-HxCDD	7.228212e4	5.733047e4	49.66	1.2608	NO	NO	NO	51.329	102.66	1.091	2.7
6	1,2,3,4,6,7,8-HpCDD	6.266969e4	6.026295e4	55.50	1.0399	NO	NO	NO	48.766	97.53	0.985	-2.5
7	OCDD	1.133521e5	1.316467e5	62.13	0.8610	NO	NO	NO	99.831	99.83	1.112	-0.2
8	2,3,7,8-TCDF	1.716288e4	2.220847e4	31.64	0.7728	NO	NO	NO	9.494	94.94	0.875	-5.1
9	1,2,3,7,8-PeCDF	9.999011e4	6.461699e4	38.90	1.5474	NO	NO	NO	48.540	97.08	0.924	-2.9
10	2,3,4,7,8-PeCDF	9.587234e4	6.147428e4	40.94	1.5596	NO	NO	NO	50.265	100.53	0.884	0.5
11	1,2,3,4,7,8-HxCDF	9.089303e4	7.352558e4	47.09	1.2362	NO	NO	NO	48.055	96.11	1.136	-3.9
12	1,2,3,6,7,8-HxCDF	9.482173e4	7.678651e4	47.34	1.2349	NO	NO	NO	47.409	94.82	1.185	-5.2
13	2,3,4,6,7,8-HxCDF	9.138516e4	7.136405e4	48.56	1.2805	NO	NO	NO	48.658	97.32	1.124	-2.7
14	1,2,3,7,8,9-HxCDF	8.056415e4	6.609566e4	50.28	1.2189	NO	NO	NO	48.044	96.09	1.013	-3.9
15	1,2,3,4,6,7,8-HpCDF	8.459249e4	8.116411e4	53.31	1.0422	NO	NO	NO	48.966	97.93	1.383	-2.1
16	1,2,3,4,7,8,9-HpCDF	7.366501e4	7.009725e4	56.49	1.0509	NO	NO	NO	49.651	99.30	1.199	-0.7
17	OCDF	1.244796e5	1.398206e5	62.53	0.8903	NO	NO	NO	100.338	100.34	1.200	0.3
18	13C-2,3,7,8-TCDD	1.439533e5	1.870645e5	32.61	0.7695	NO	NO	NO	97.403	97.40	0.938	-2.6
19	13C-1,2,3,7,8-PeCDD	1.525459e5	9.824894e4	41.57	1.5526	NO	NO	NO	98.613	98.61	0.710	-1.4
20	13C-1,2,3,6,7,8-HxCDD	1.331830e5	1.043899e5	49.10	1.2758	NO	NO	NO	94.006	94.01	0.878	-6.0
21	13C-1,2,3,4,6,7,8-HpCDD	1.287879e5	1.208315e5	55.48	1.0658	NO	NO	NO	107.754	107.75	0.923	7.8
22	13C-OCDD	2.107340e5	2.297579e5	62.10	0.9172	NO	NO	NO	211.328	105.66	0.814	5.7
23	13C-2,3,7,8-TCDF	1.956518e5	2.545130e5	31.61	0.7687	NO	NO	NO	92.629	92.63	1.275	-7.4
24	13C-1,2,3,7,8-PeCDF	2.172169e5	1.389527e5	38.87	1.5632	NO	NO	NO	98.808	98.81	1.009	-1.2
25	13C-1,2,3,4,7,8-HxCDF	9.862005e4	1.909660e5	47.05	0.5164	NO	NO	NO	100.131	100.13	1.070	0.1
26	13C-1,2,3,4,6,7,8-HpCDF	7.361742e4	1.661693e5	53.29	0.4430	NO	NO	NO	104.584	104.58	0.886	4.6
27	13C-1,2,3,4-TCDD	1.558946e5	1.971422e5	31.86	0.7908	NO	NO	NO	100.000	100.00	1.000	0.0
28	13C-1,2,3,7,8,9-HxCDD	1.489359e5	1.215878e5	49.62	1.2249	NO	NO	NO	100.000	100.00	1.000	0.0

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

#	Name	RT	RRT
1	2,3,7,8-TCDD	32.635502	1.000834
2	1,2,3,7,8-PeCDD	41.592999	1.000486
3	1,2,3,4,7,8-HxCDD	48.923500	0.996320
4	1,2,3,6,7,8-HxCDD	49.136002	1.000648
5	1,2,3,7,8,9-HxCDD	49.656700	1.000645
6	1,2,3,4,6,7,8-HpCDD	55.501301	1.000366
7	OCDD	62.127701	1.000491
8	2,3,7,8-TCDF	31.642200	1.000860
9	1,2,3,7,8-PeCDF	38.896999	1.000785
10	2,3,4,7,8-PeCDF	40.944302	1.053460
11	1,2,3,4,7,8-HxCDF	47.085701	1.000680
12	1,2,3,6,7,8-HxCDF	47.340500	1.006095
13	2,3,4,6,7,8-HxCDF	48.562302	1.032061
14	1,2,3,7,8,9-HxCDF	50.283501	1.068641
15	1,2,3,4,6,7,8-HpCDF	53.312000	1.000381
16	1,2,3,4,7,8,9-HpCDF	56.494499	1.060099
17	OCDF	62.533001	1.007018
18	13C-2,3,7,8-TCDD	32.608299	1.023487
19	13C-1,2,3,7,8-PeCDD	41.572800	1.304859
20	13C-1,2,3,6,7,8-HxCDD	49.104198	0.989511
21	13C-1,2,3,4,6,7,8-HpCDD	55.480999	1.118012
22	13C-OCDD	62.097198	1.251337
23	13C-2,3,7,8-TCDF	31.615000	0.992310
24	13C-1,2,3,7,8-PeCDF	38.866501	1.219915
25	13C-1,2,3,4,7,8-HxCDF	47.053699	0.948191
26	13C-1,2,3,4,6,7,8-HpCDF	53.291698	1.073895
27	13C-1,2,3,4-TCDD	31.860001	1.000000
28	13C-1,2,3,7,8,9-HxCDD	49.624699	1.000000

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

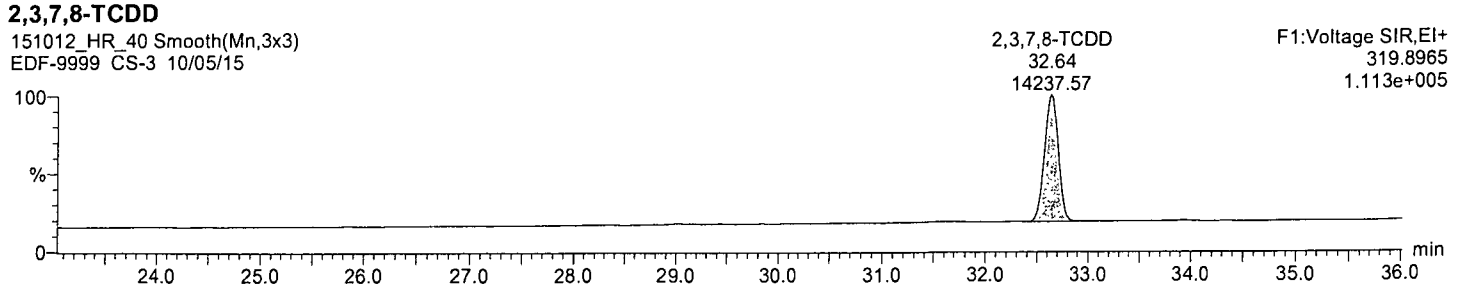
Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N...	Signal 2	Noise 2	S/N 2	Flag S/N...
1	2,3,7,8-TCDD	9.0476000e4	9.9623566e1	919.21	NO	1.2139700e5	1.0594476e2	1145.85	NO
2	1,2,3,7,8-PeCDD	6.5790100e5	1.1369295e2	5787.97	NO	4.0669400e5	1.7136157e2	2373.31	NO
3	1,2,3,4,7,8-HxCDD	5.6521400e5	2.6835571e2	2105.67	NO	4.6611400e5	3.6315607e2	1283.51	NO
4	1,2,3,6,7,8-HxCDD	5.6181500e5	2.6835571e2	2093.15	NO	4.6637400e5	3.6315607e2	1284.22	NO
5	1,2,3,7,8,9-HxCDD	6.1354700e5	2.6835571e2	2286.27	NO	4.8036900e5	3.6315607e2	1322.76	NO
6	1,2,3,4,6,7,8-HpCDD	5.3177200e5	1.9669839e2	2702.34	NO	5.1526900e5	1.9464922e2	2647.17	NO
7	OCDD	7.5262100e5	1.5865735e2	4740.62	NO	8.6440500e5	3.9880688e2	2167.48	NO
8	2,3,7,8-TCDF	1.3924700e5	1.3430937e2	1044.17	NO	1.7987300e5	1.2100461e2	1486.50	NO
9	1,2,3,7,8-PeCDF	6.8504500e5	1.8200722e2	3760.00	NO	4.4196400e5	2.6698508e2	1655.39	NO
10	2,3,4,7,8-PeCDF	6.9191600e5	1.8200722e2	3800.13	NO	4.4109600e5	2.6698508e2	1652.14	NO
11	1,2,3,4,7,8-HxCDF	7.8771200e5	3.0640973e2	2568.81	NO	6.3384400e5	2.1947467e2	2888.01	NO
12	1,2,3,6,7,8-HxCDF	8.3508300e5	3.0640973e2	2724.27	NO	6.7210800e5	2.1947467e2	3062.35	NO
13	2,3,4,6,7,8-HxCDF	8.4013300e5	3.0640973e2	2741.29	NO	6.5431100e5	2.1947467e2	2981.26	NO
14	1,2,3,7,8,9-HxCDF	6.9952400e5	3.0640973e2	2283.37	NO	5.7308400e5	2.1947467e2	2611.16	NO
15	1,2,3,4,6,7,8-HpCDF	7.2482300e5	2.0968292e2	3455.99	NO	7.0103800e5	3.9259833e2	1785.64	NO
16	1,2,3,4,7,8,9-HpCDF	6.3863300e5	2.0968292e2	3045.52	NO	6.1114700e5	3.9259833e2	1556.67	NO
17	OCDF	7.5922000e5	2.2008917e2	3448.78	NO	8.4529600e5	3.9616399e3	213.37	NO
18	13C-2,3,7,8-TCDD	1.0876090e6	2.7043137e2	4027.69	NO	1.4125300e6	4.7891296e2	2949.45	NO
19	13C-1,2,3,7,8-PeCDD	1.2864560e6	1.8183220e2	7075.25	NO	8.3508600e5	1.5145975e2	5513.58	NO
20	13C-1,2,3,6,7,8-HxCDD	1.1140830e6	5.7653555e3	191.17	NO	8.7059900e5	5.2780859e3	164.95	NO
21	13C-1,2,3,4,6,7,8-HpCDD	1.1195020e6	1.7051093e2	6563.61	NO	1.0771370e6	2.1970682e2	4902.61	NO
22	13C-OCDD	1.6013800e6	3.5224030e2	4542.53	NO	1.7647500e6	3.3554602e2	5259.34	NO
23	13C-2,3,7,8-TCDF	1.5494770e6	2.8312833e2	5477.26	NO	2.0278680e6	2.3115604e2	8772.72	NO
24	13C-1,2,3,7,8-PeCDF	1.7133070e6	9.6787341e2	1768.45	NO	1.0938390e6	4.0909082e2	2673.83	NO
25	13C-1,2,3,4,7,8-HxCDF	8.5917800e5	4.0104993e2	2140.80	NO	1.6734880e6	7.9417035e2	2107.22	NO
26	13C-1,2,3,4,6,7,8-HpCDF	6.6949400e5	2.7883689e3	237.76	NO	1.5099500e6	3.2626050e2	4628.05	NO
27	13C-1,2,3,4-TCDD	1.3075970e6	2.7043137e2	4839.50	NO	1.6472270e6	4.7891296e2	3439.51	NO
28	13C-1,2,3,7,8,9-HxCDD	1.2351170e6	5.7653555e3	212.04	NO	1.0262480e6	5.2780859e3	194.44	NO

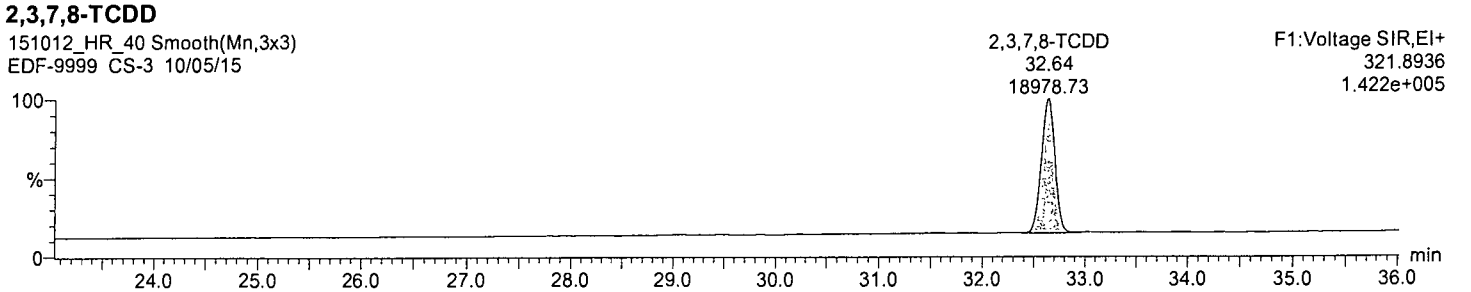
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

2,3,7,8-TCDD



2,3,7,8-TCDD



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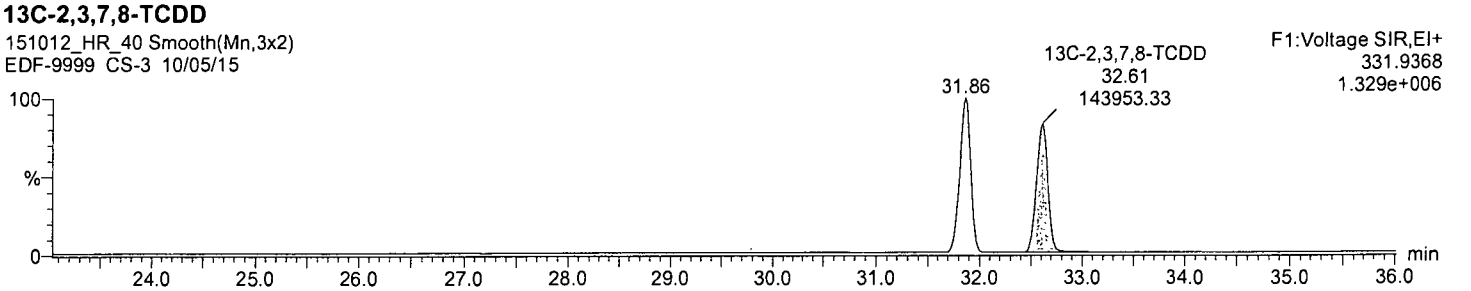

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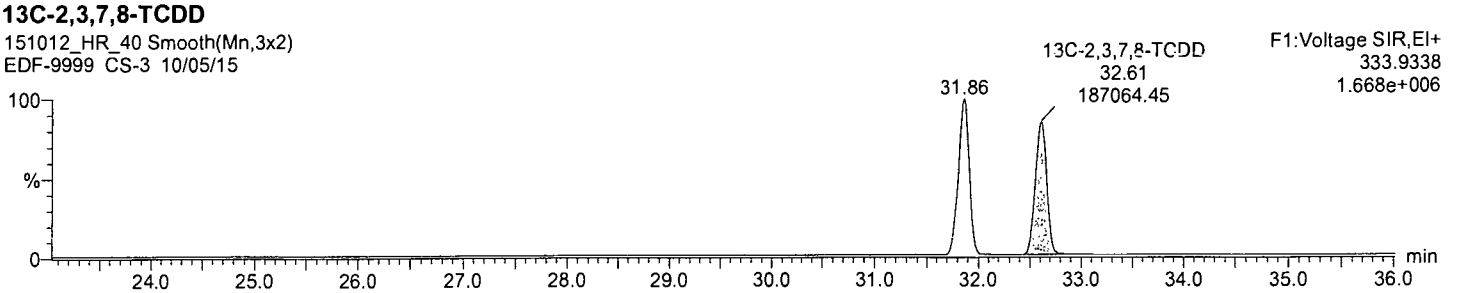
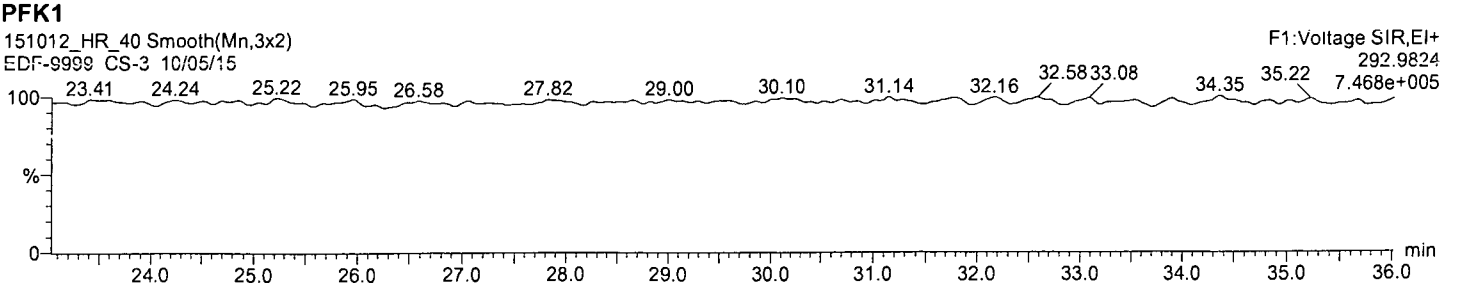
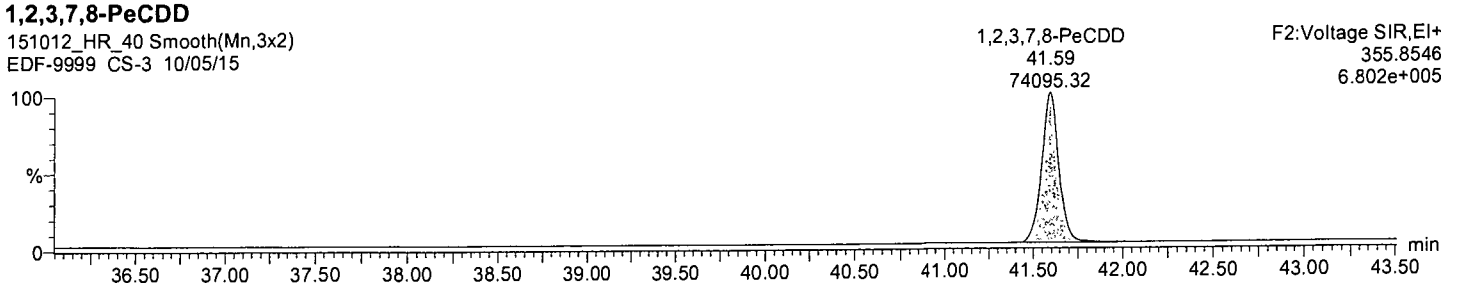


PFK1

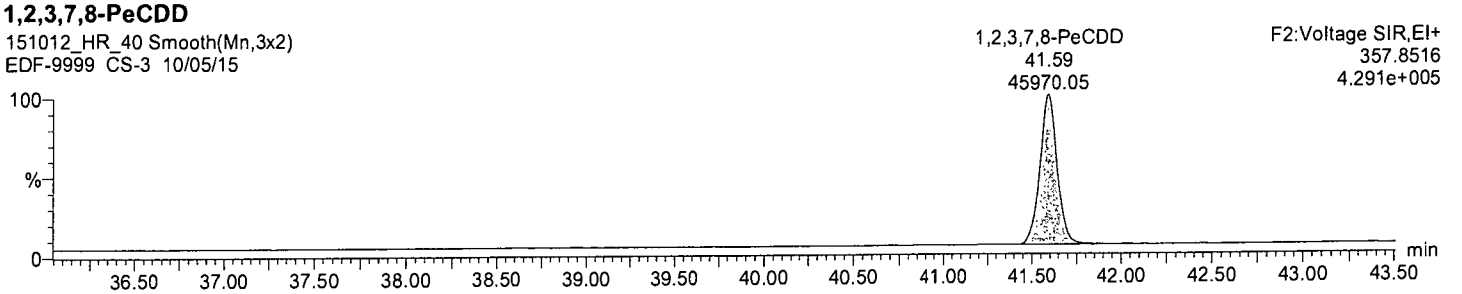


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

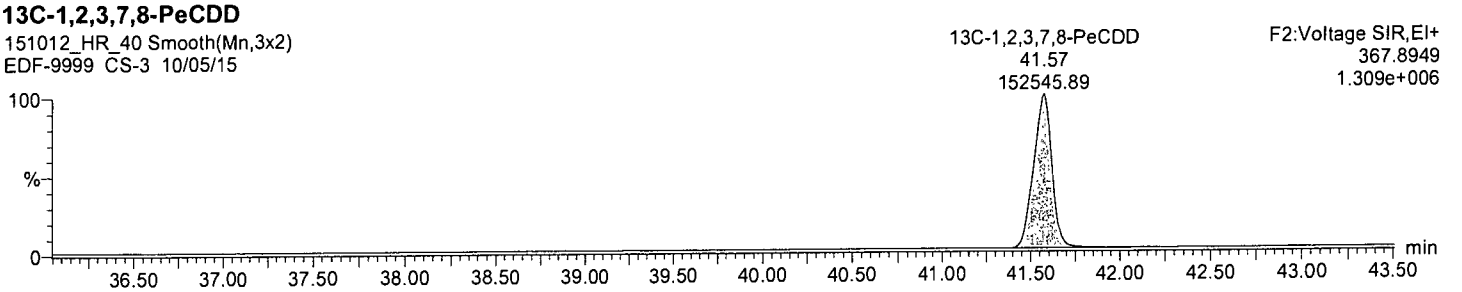
1,2,3,7,8-PeCDD



1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD



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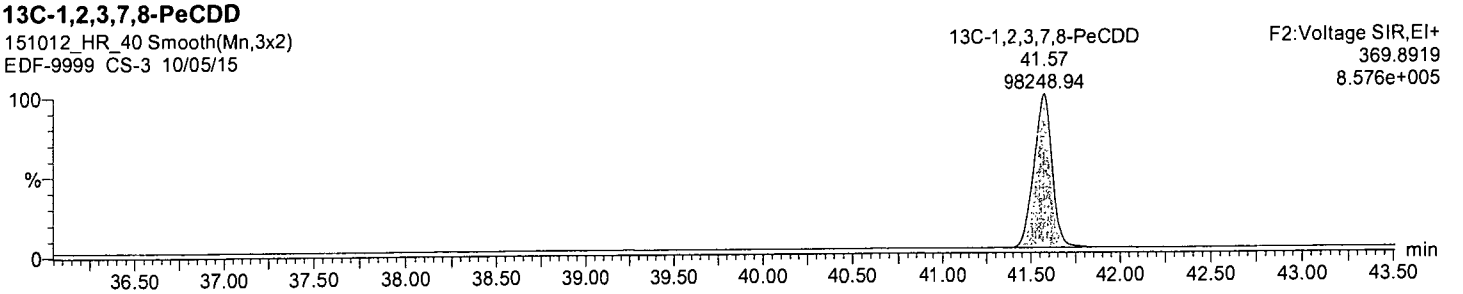
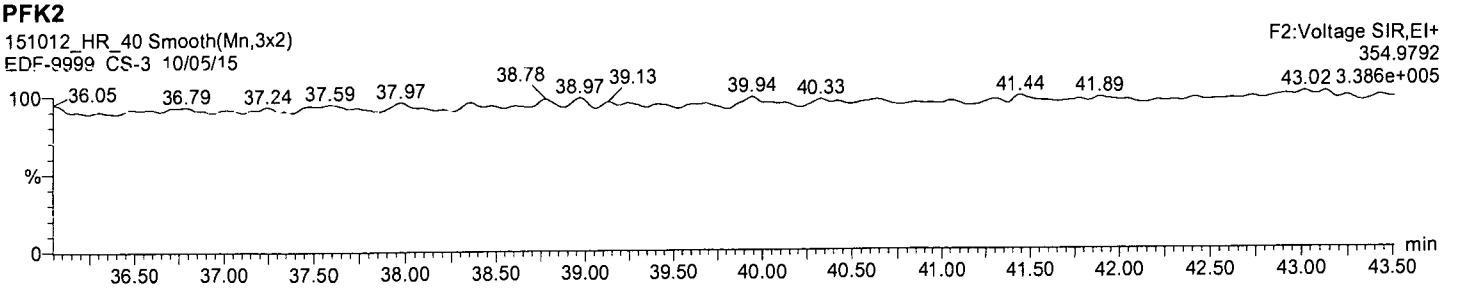
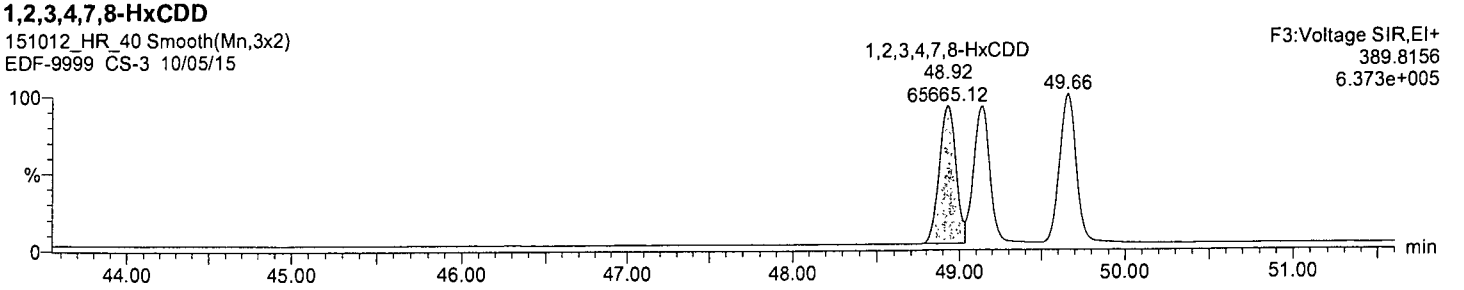


PFK2

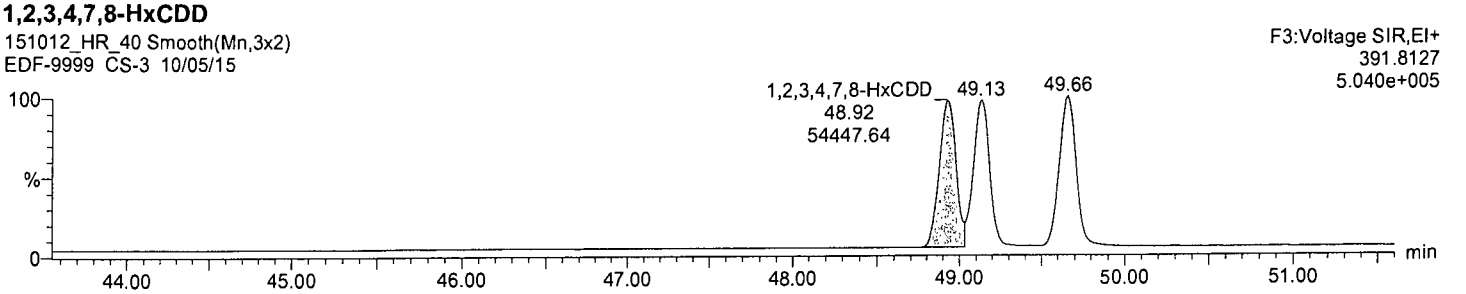


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

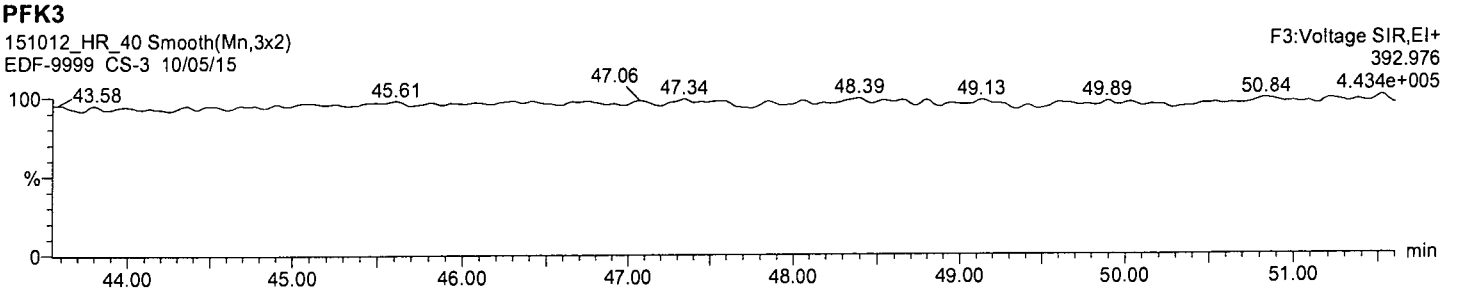
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD

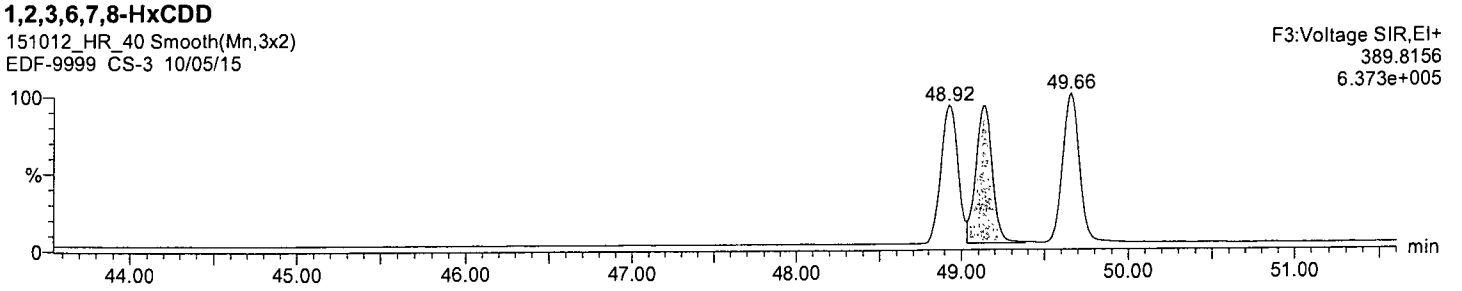


PFK3

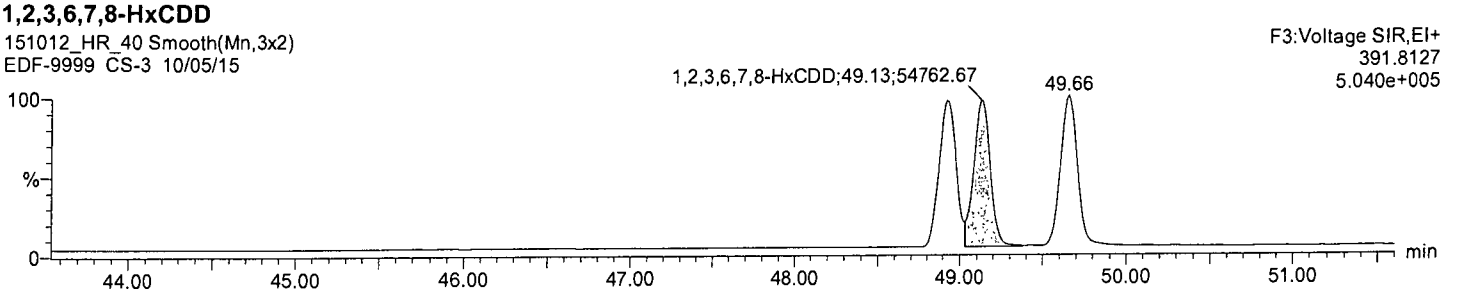


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

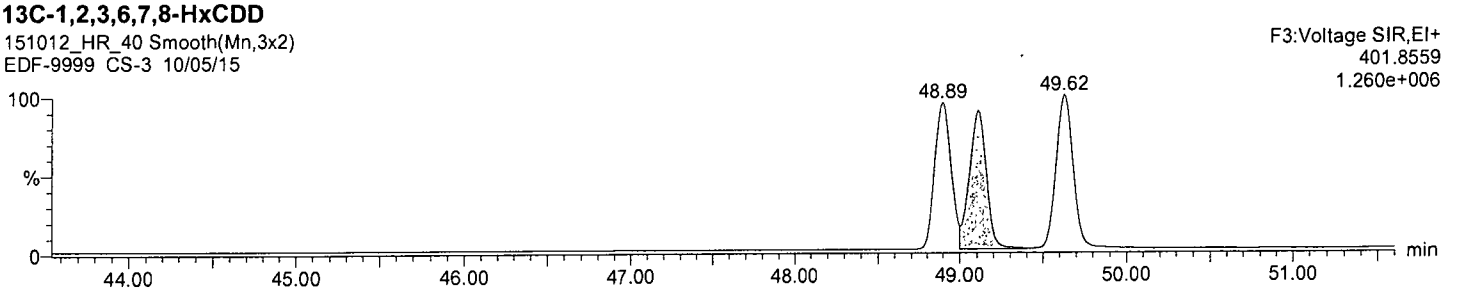
1,2,3,6,7,8-HxCDD



1,2,3,6,7,8-HxCDD



13C-1,2,3,6,7,8-HxCDD



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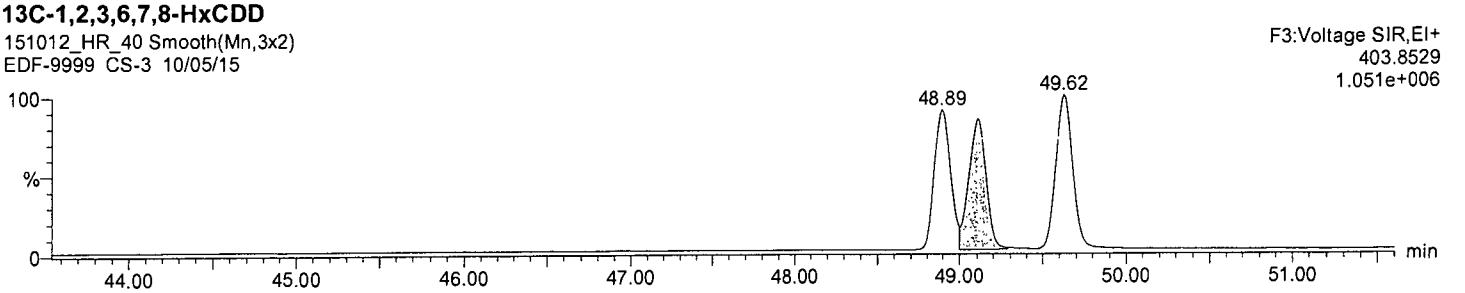

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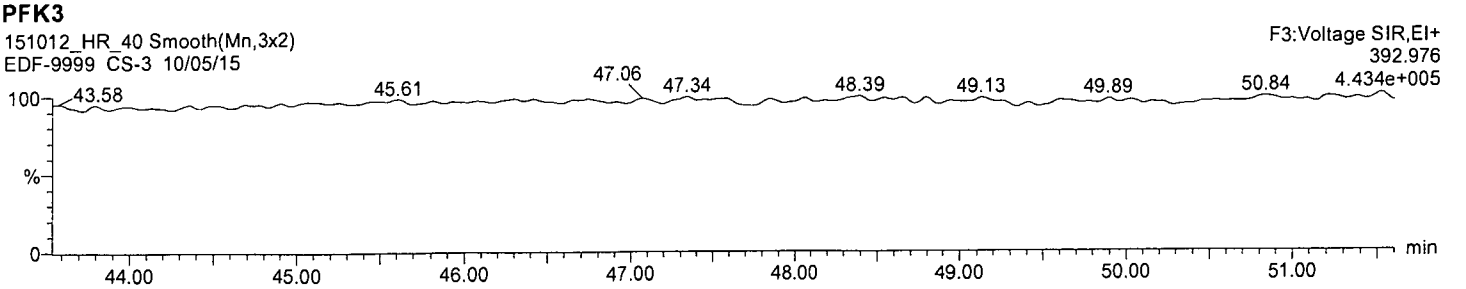

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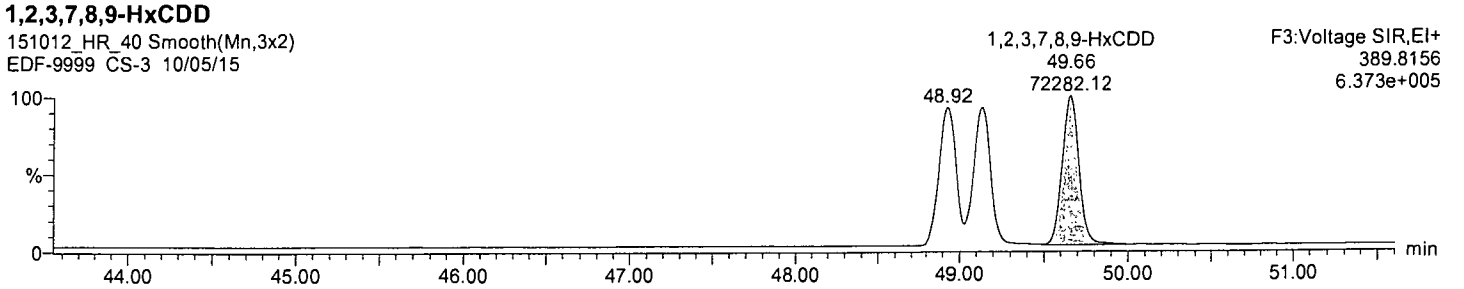
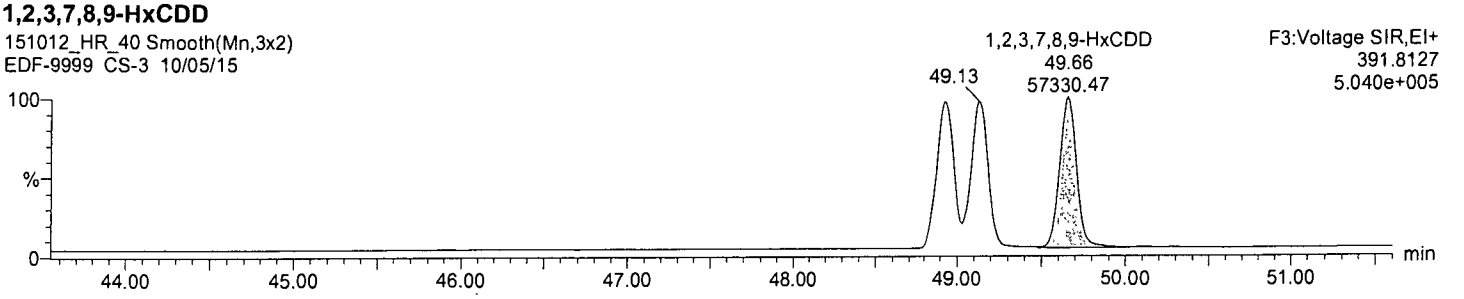
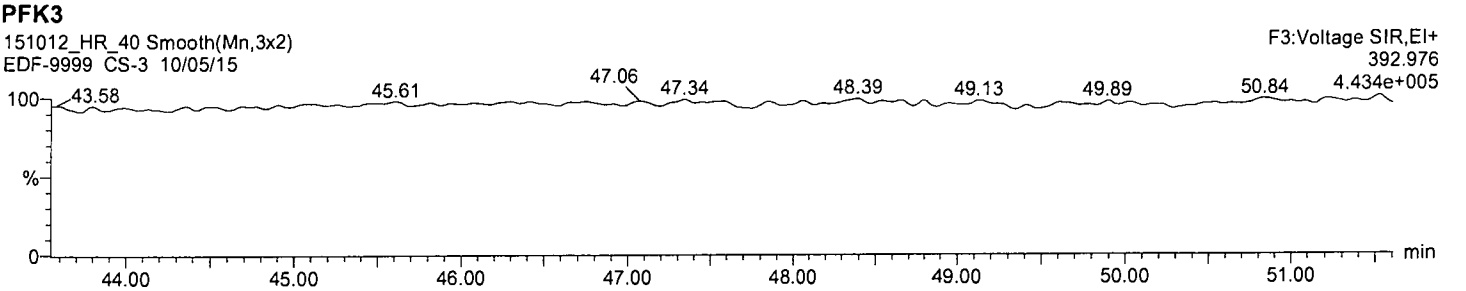
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD



PFK3



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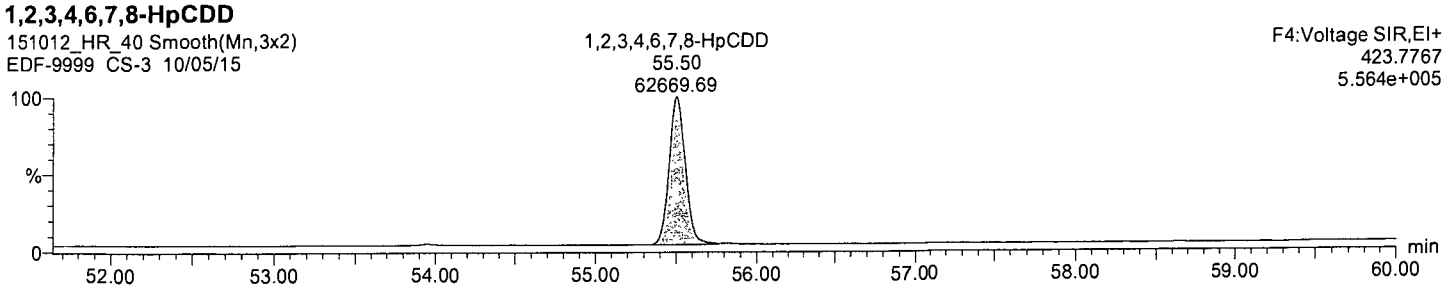
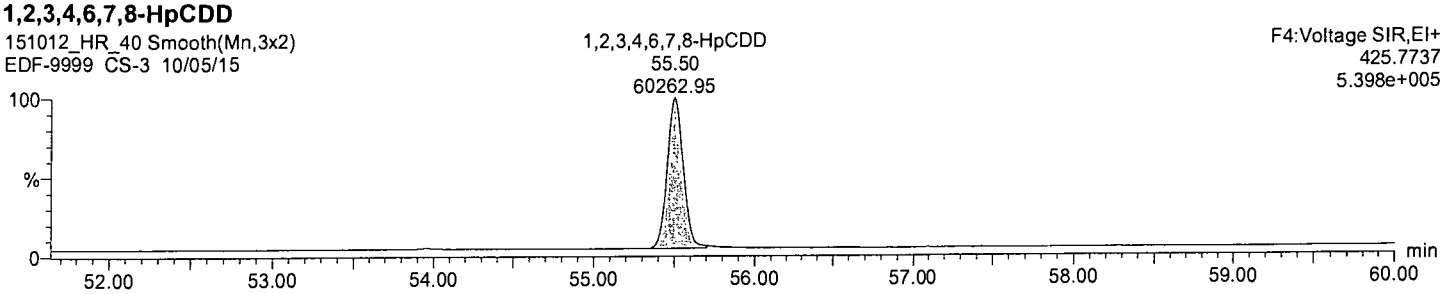
1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



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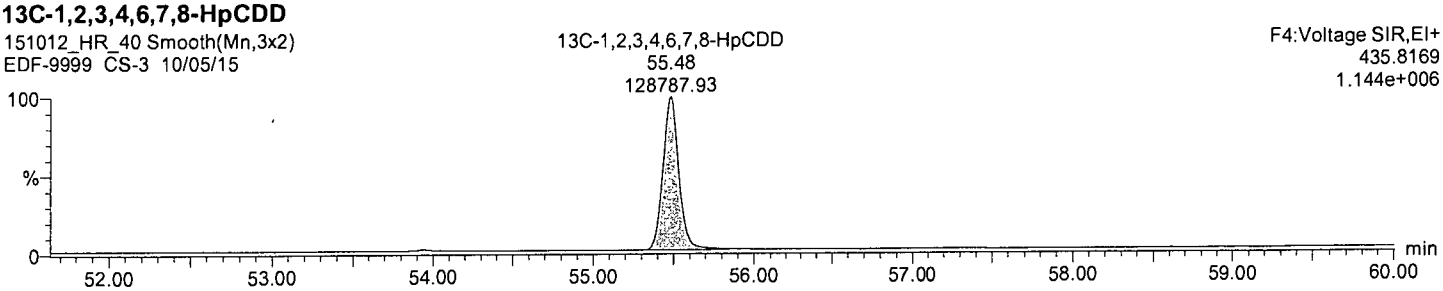

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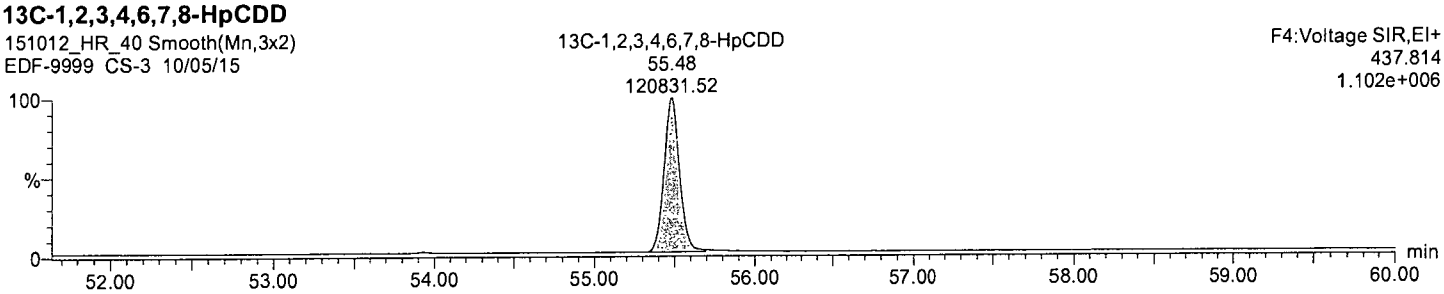
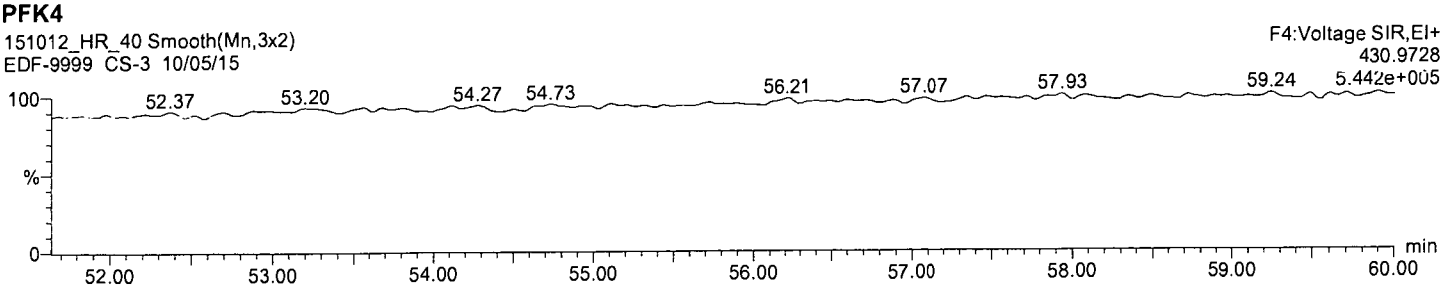
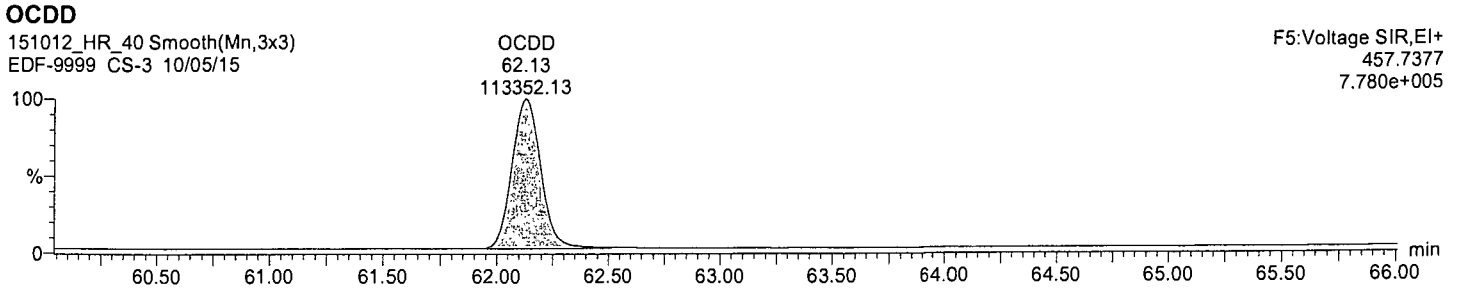


PFK4

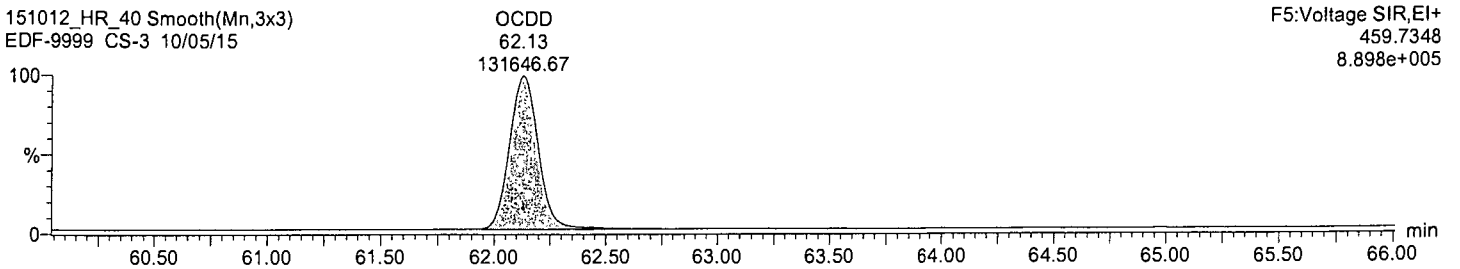


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

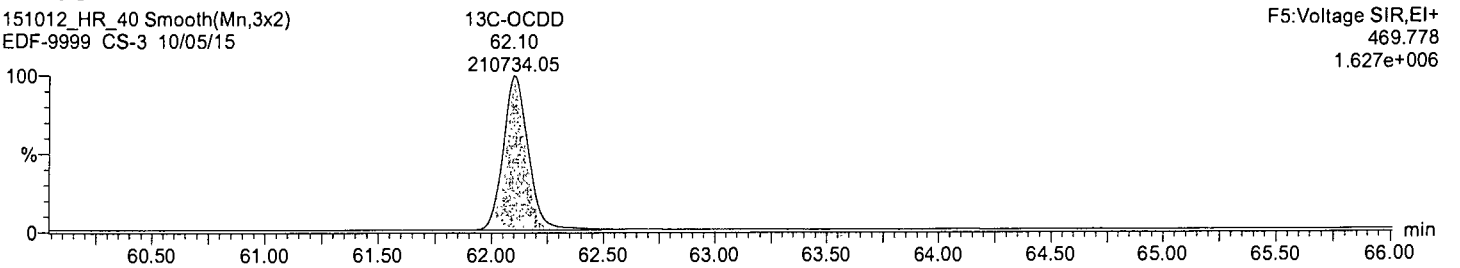
OCDD



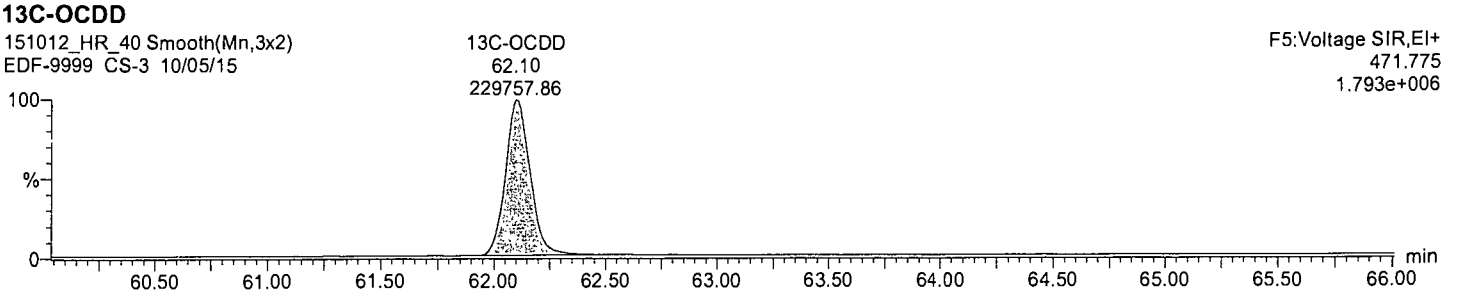
OCDD



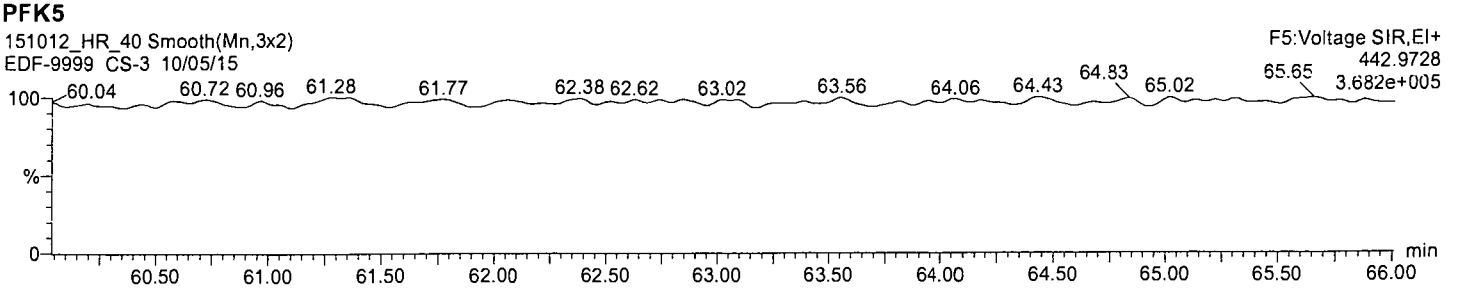
13C-OCDD



13C-OCDD

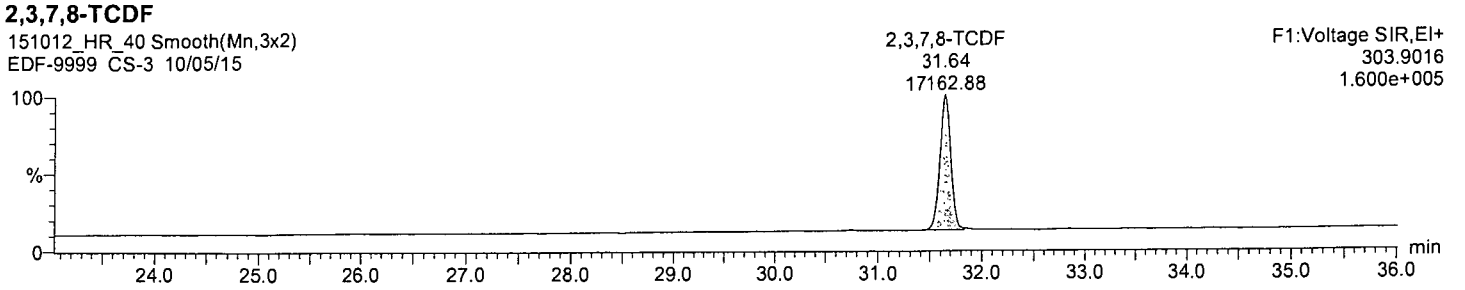


PFK5

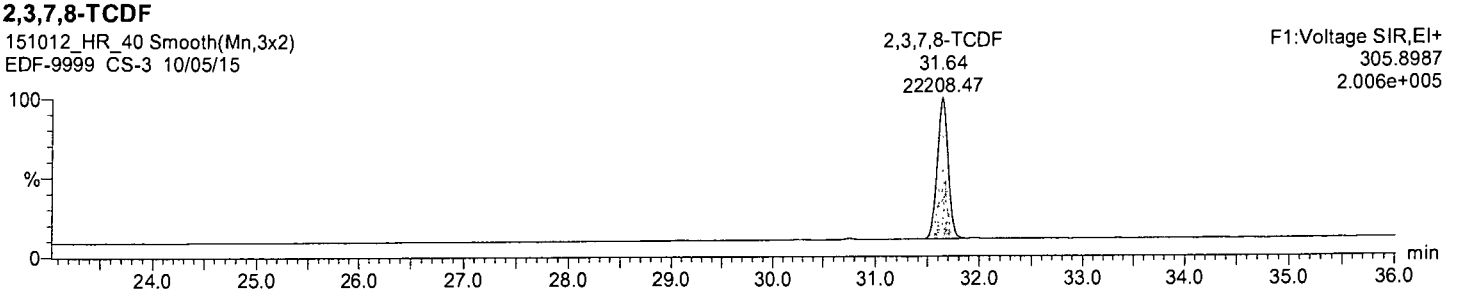


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

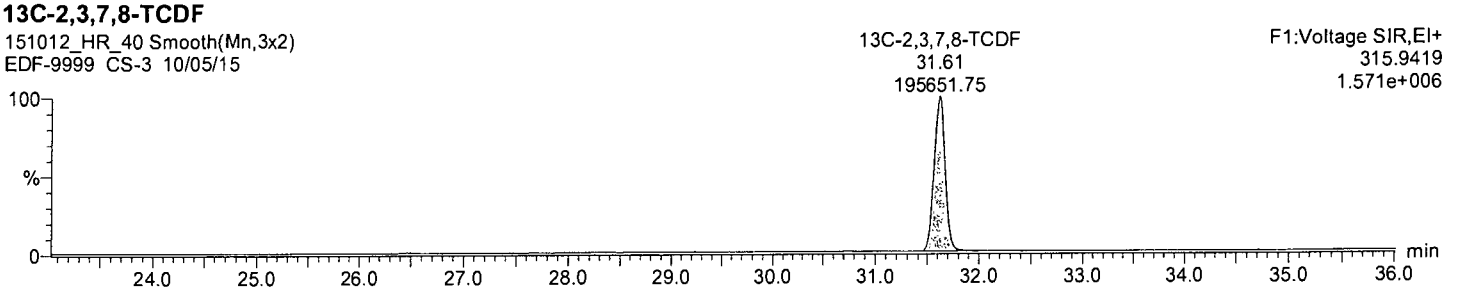
2,3,7,8-TCDF



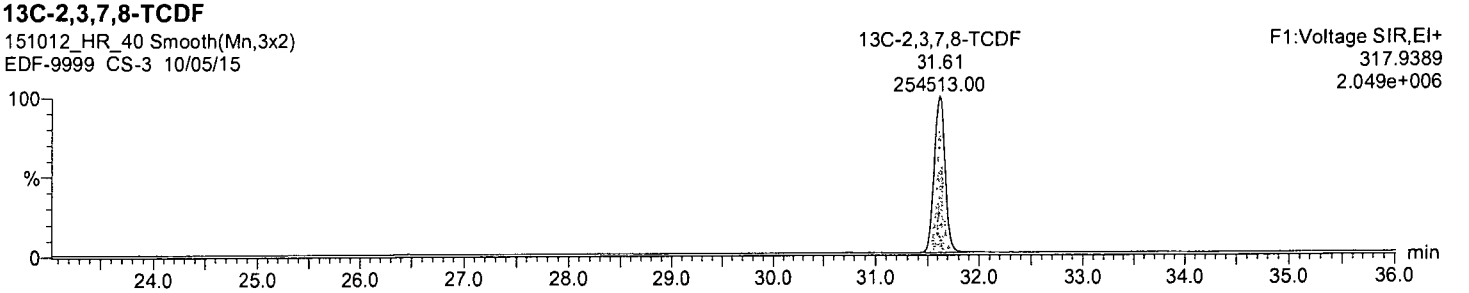
2,3,7,8-TCDF



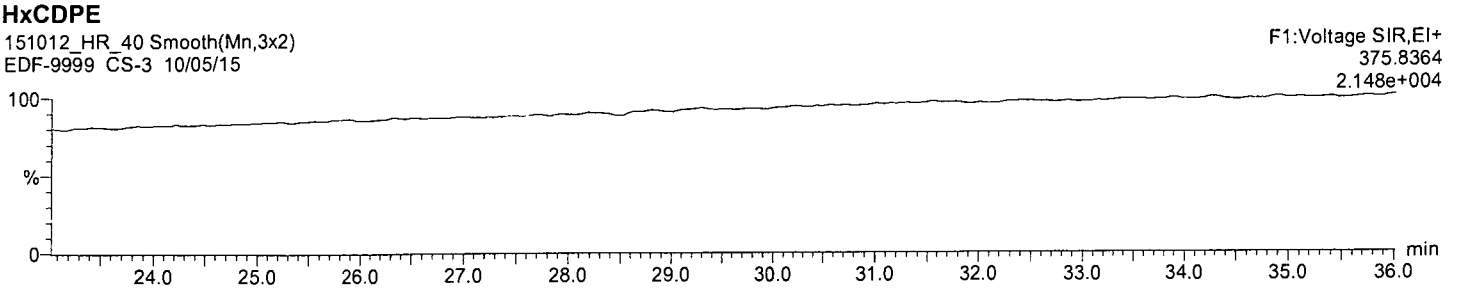
13C-2,3,7,8-TCDF



13C-2,3,7,8-TCDF

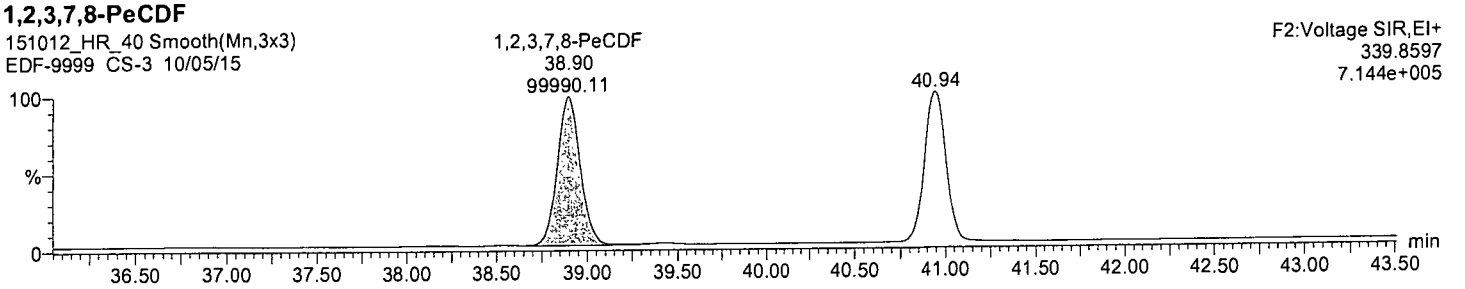


HxCDPE

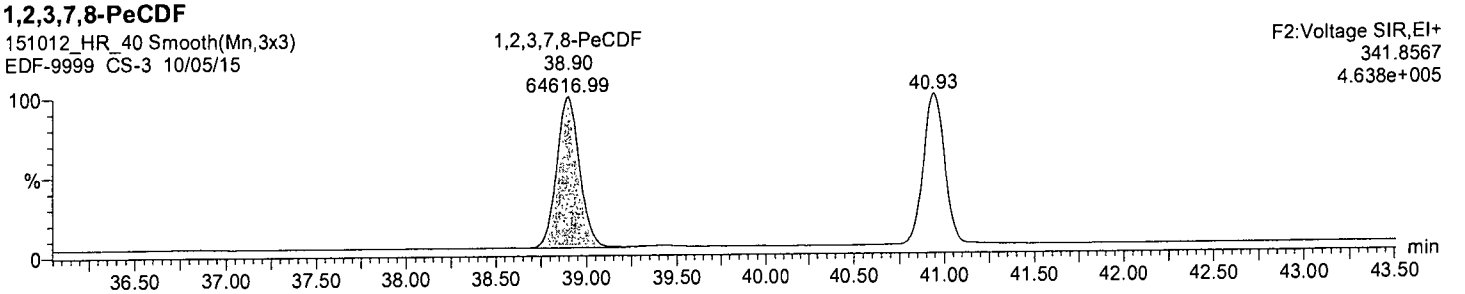


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

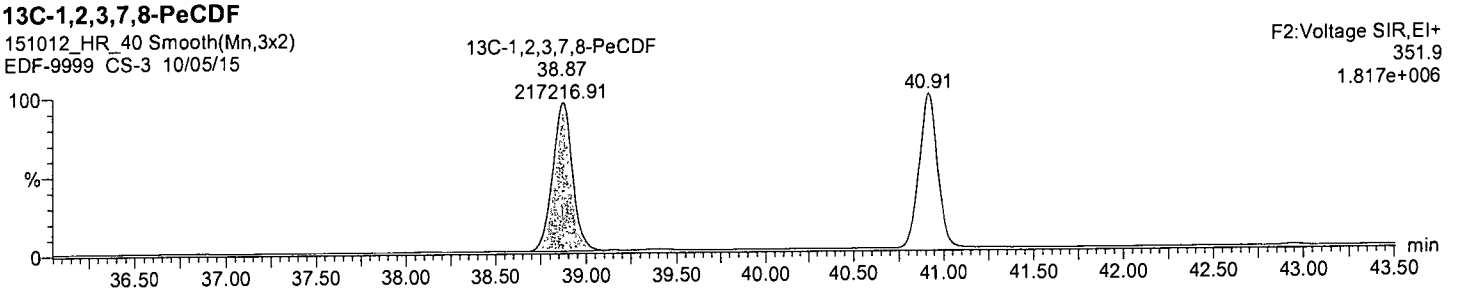
1,2,3,7,8-PeCDF



1,2,3,7,8-PeCDF



13C-1,2,3,7,8-PeCDF



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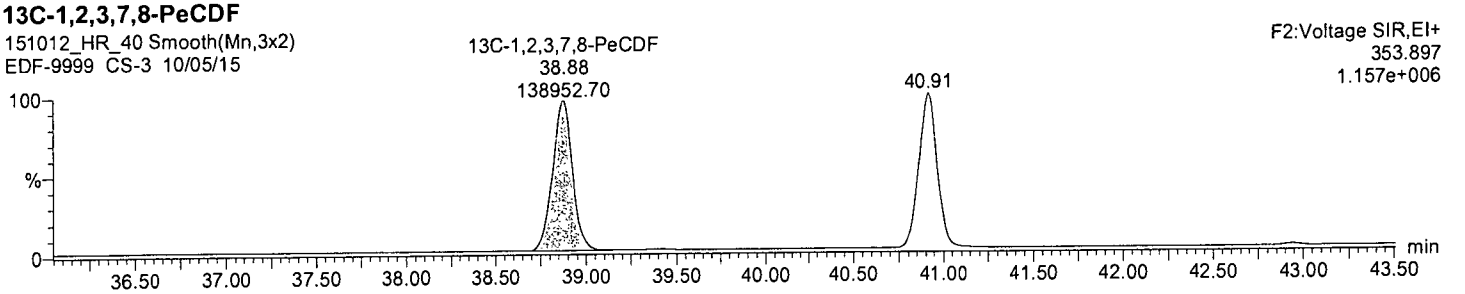
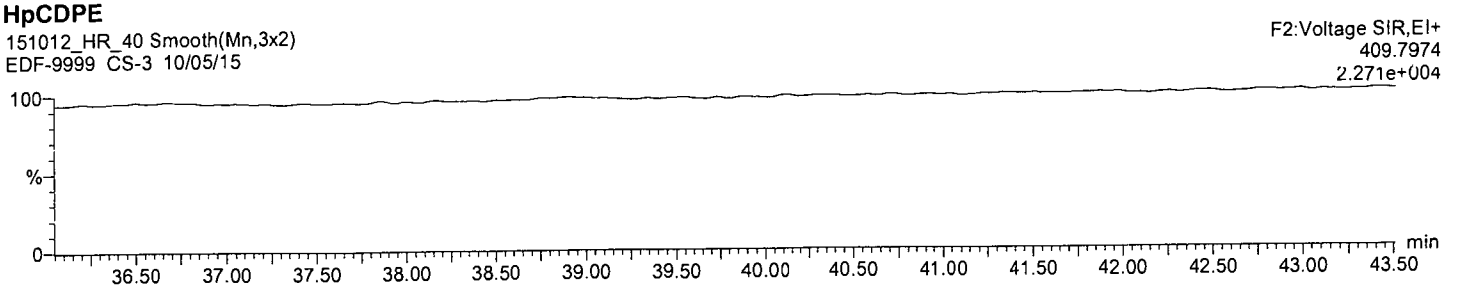


HpCDPE



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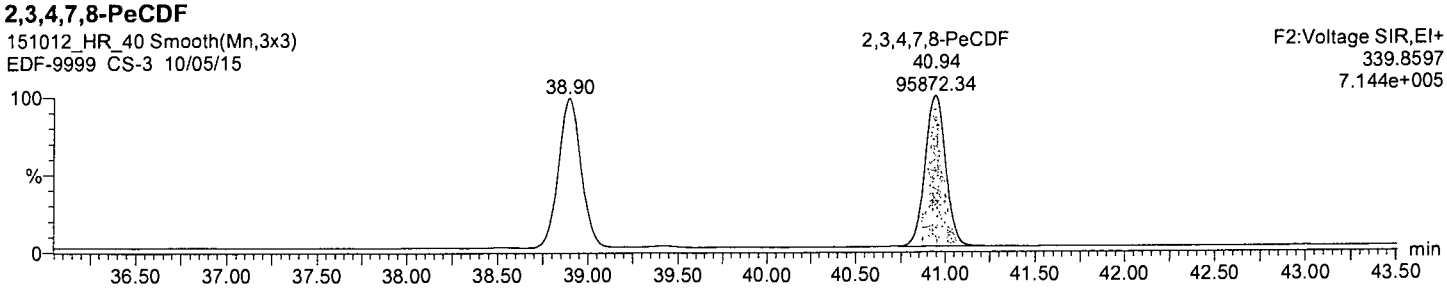
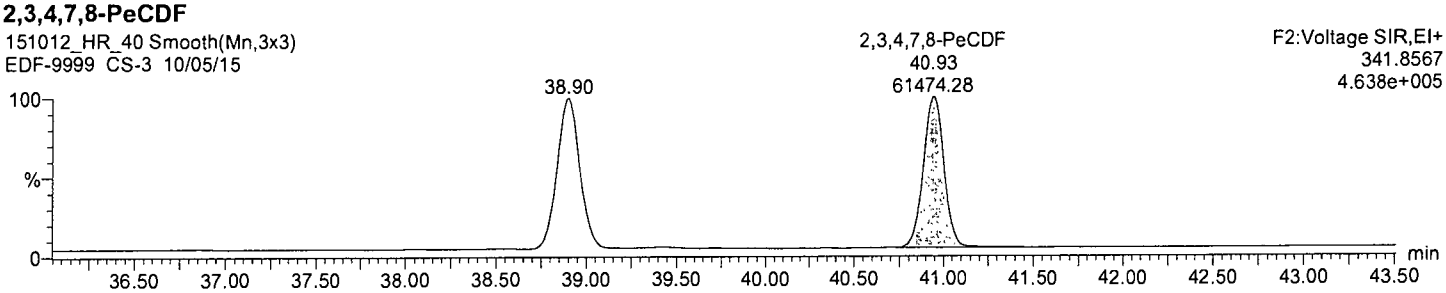
2,3,4,7,8-PeCDF



2,3,4,7,8-PeCDF



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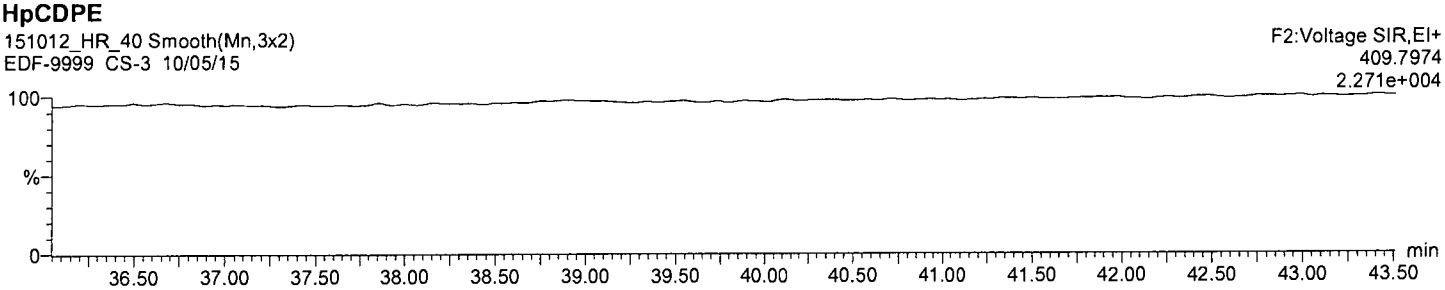

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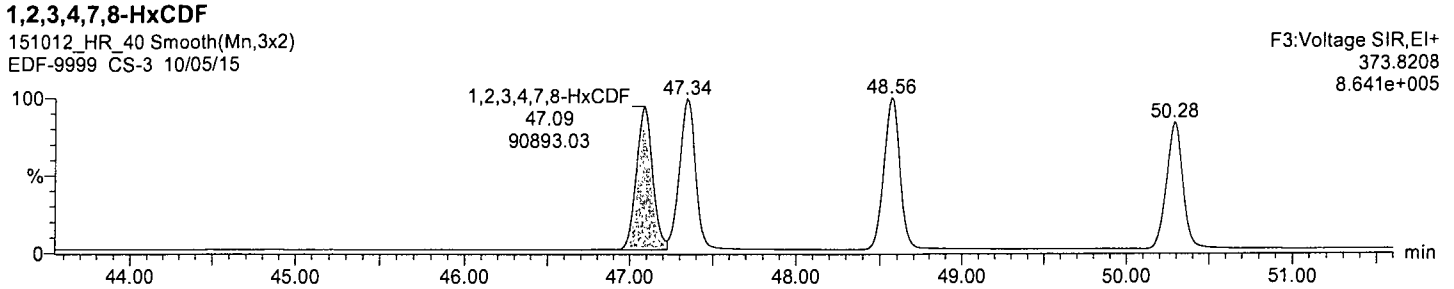
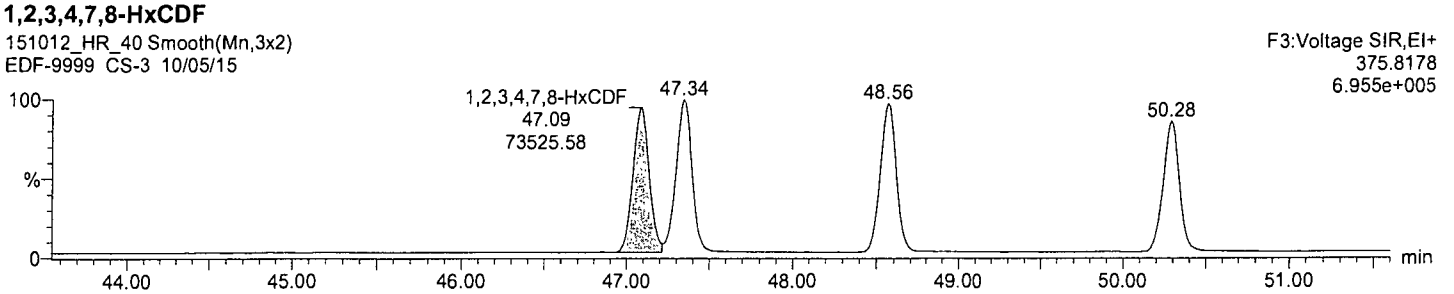
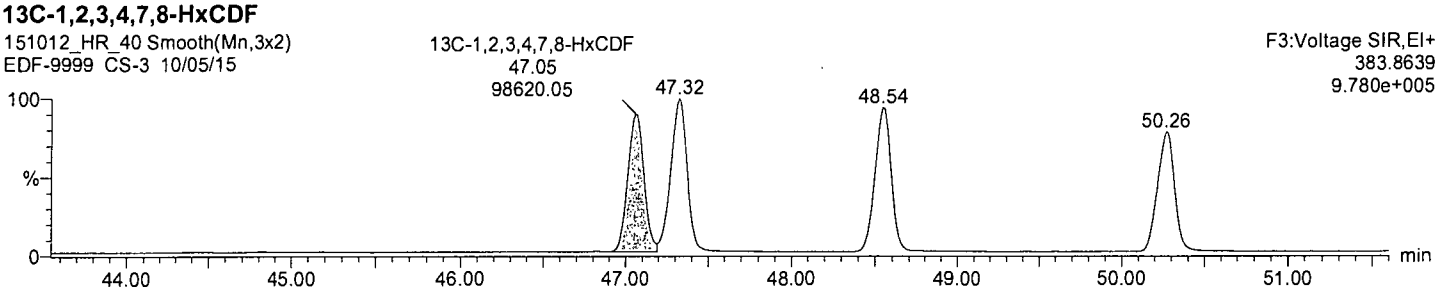
1,2,3,4,7,8-HxCDF



1,2,3,4,7,8-HxCDF



13C-1,2,3,4,7,8-HxCDF



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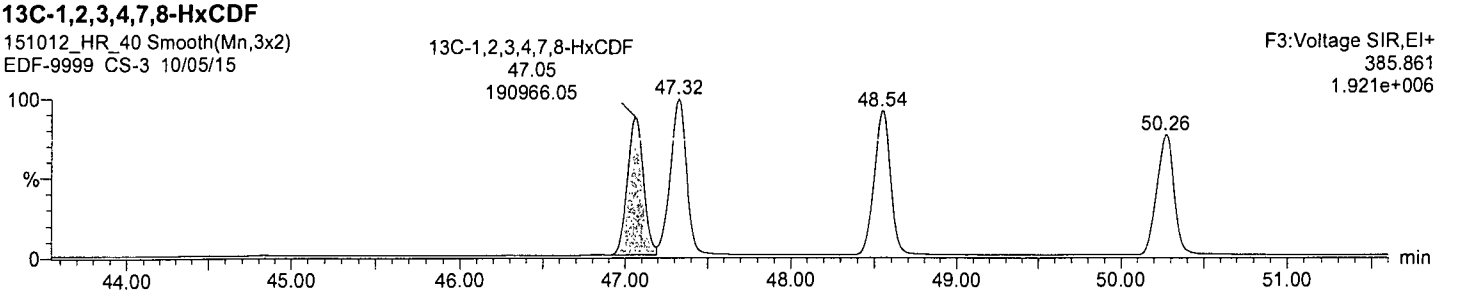
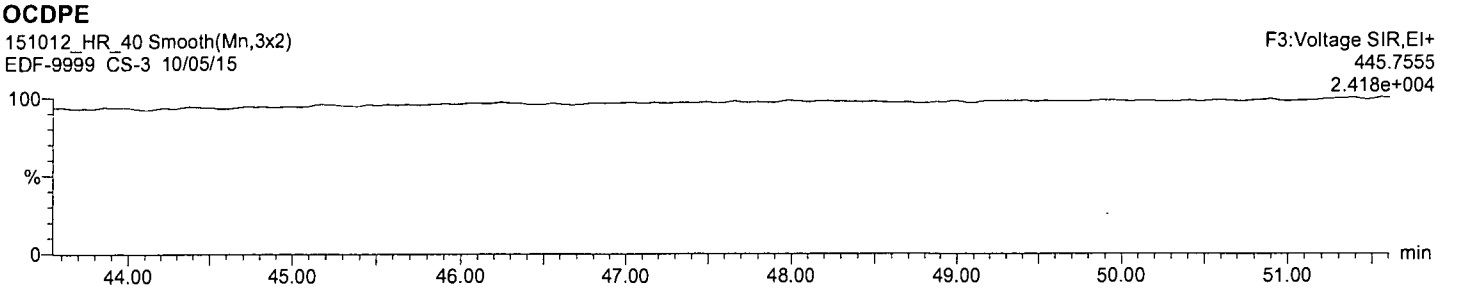


OCDPE



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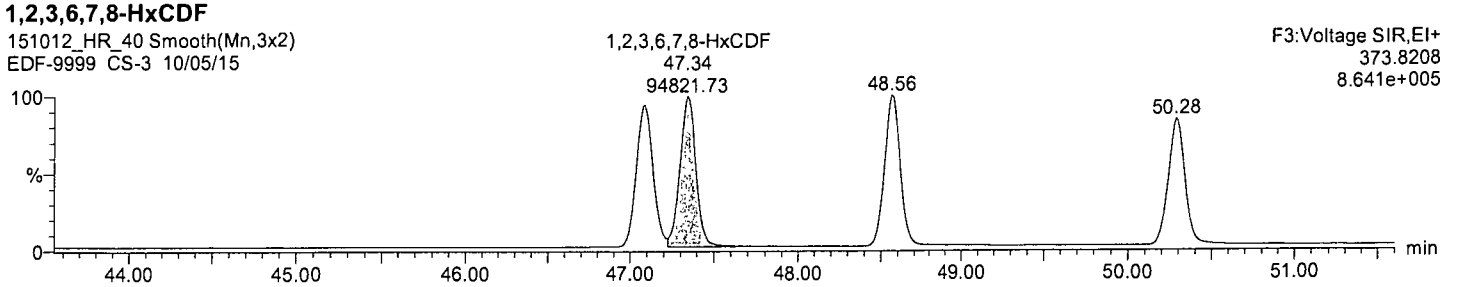
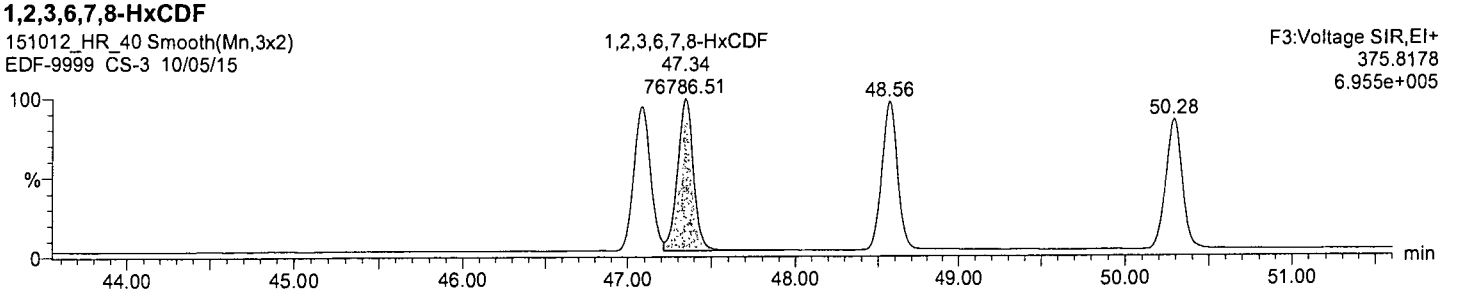
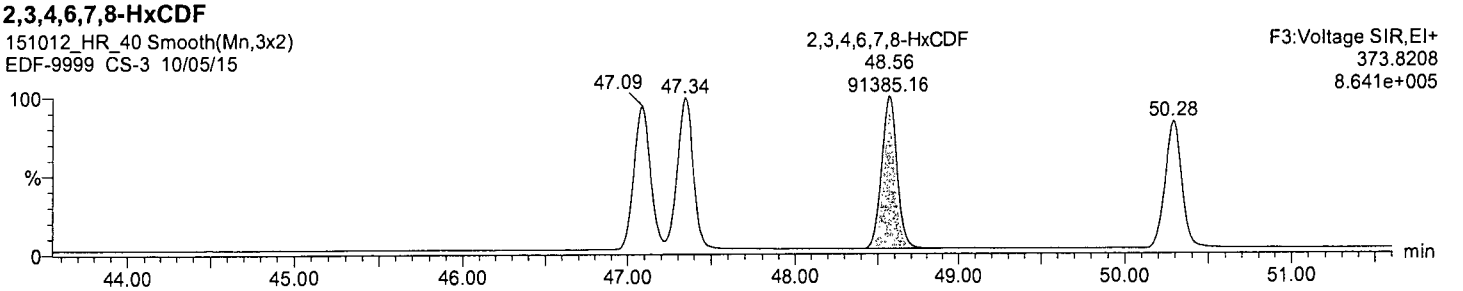
1,2,3,6,7,8-HxCDF



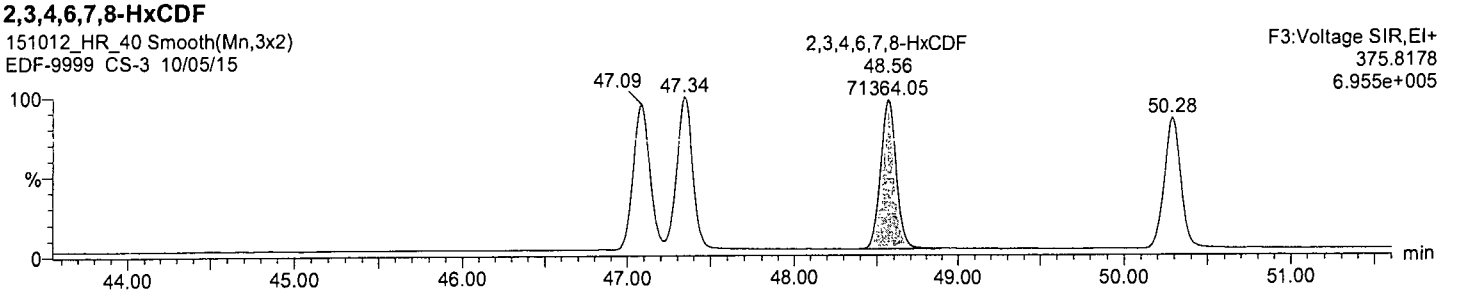
1,2,3,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF



2,3,4,6,7,8-HxCDF



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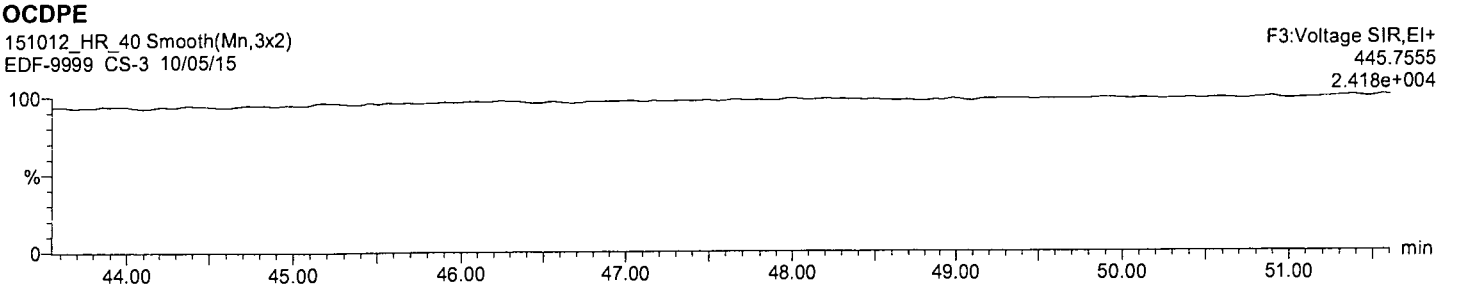
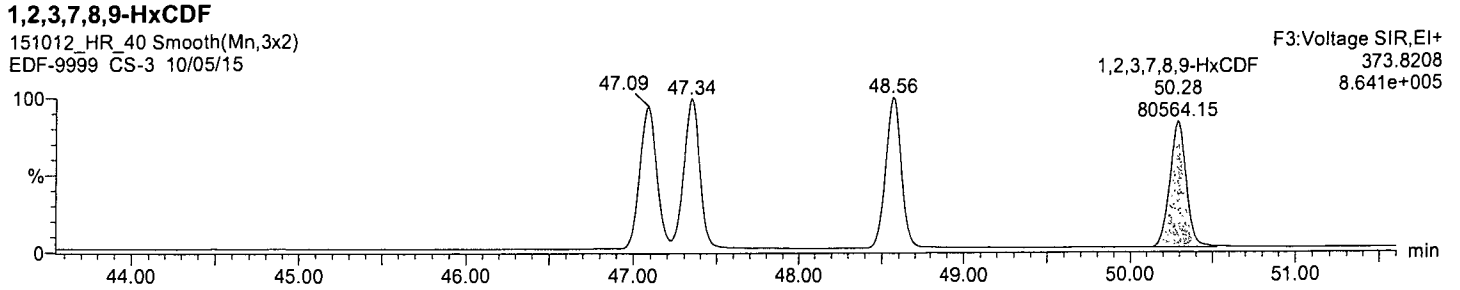
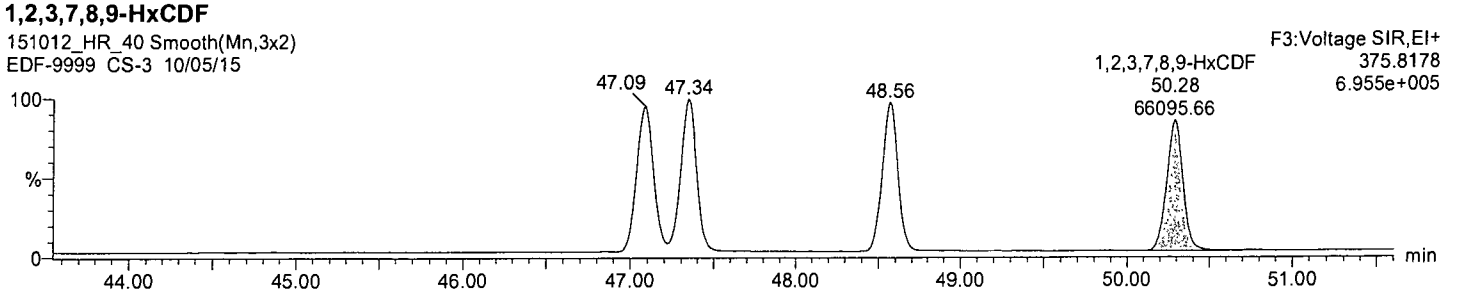


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

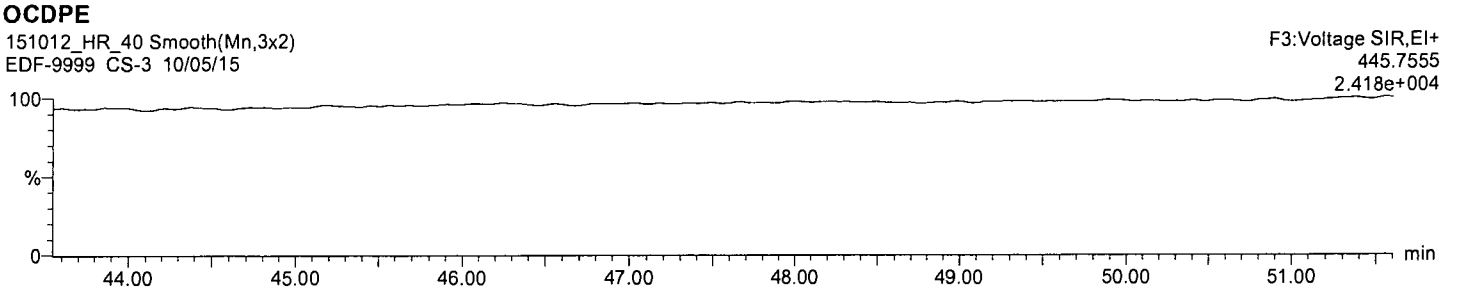
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF



OCDPE



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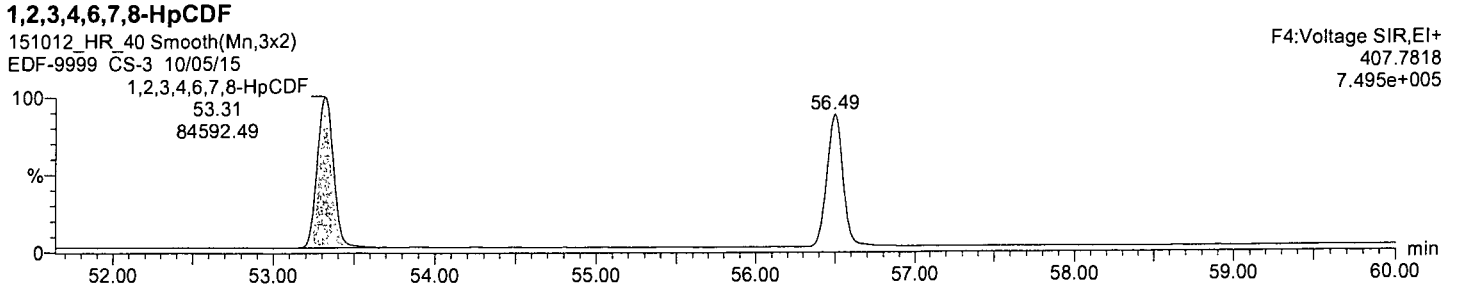
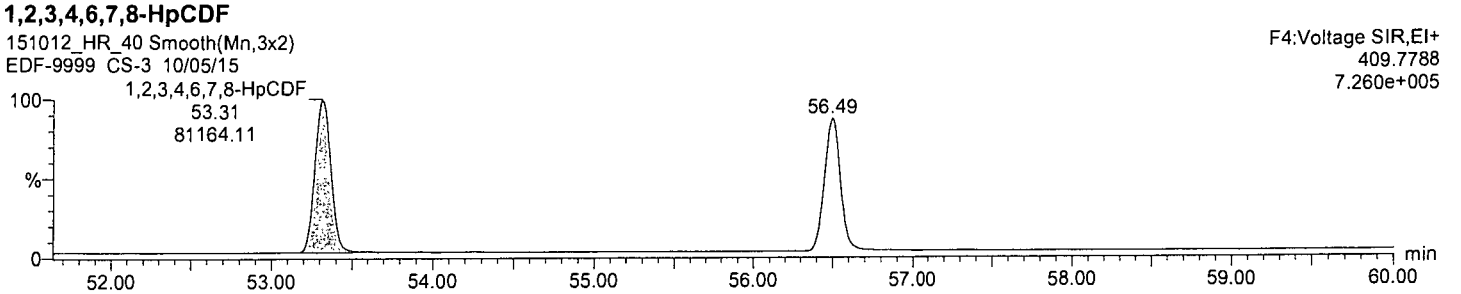
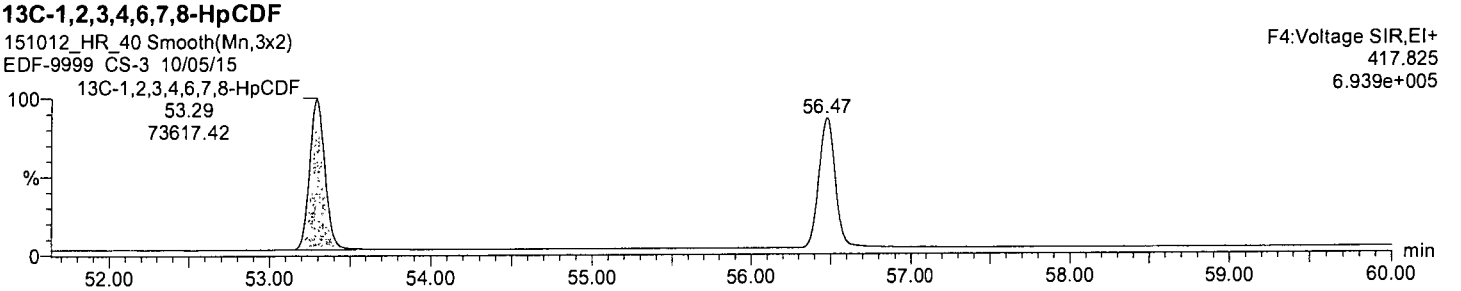
1,2,3,4,6,7,8-HpCDF



1,2,3,4,6,7,8-HpCDF



13C-1,2,3,4,6,7,8-HpCDF



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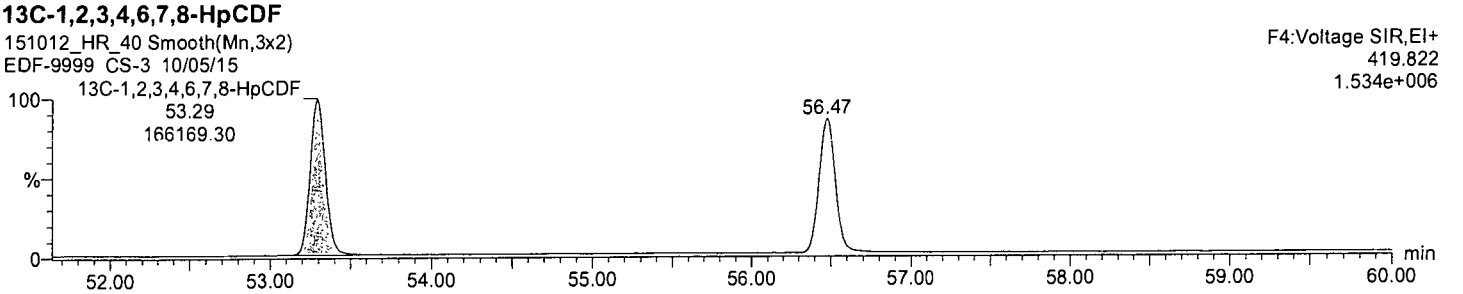
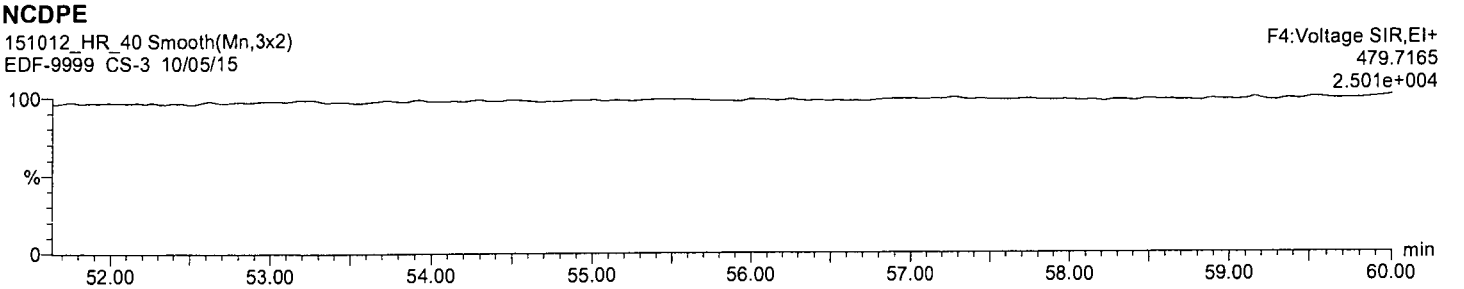
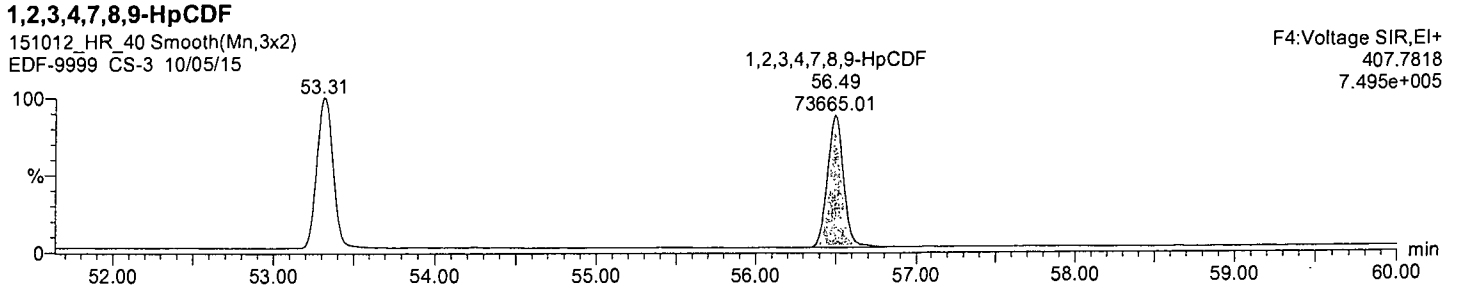


NCDPE

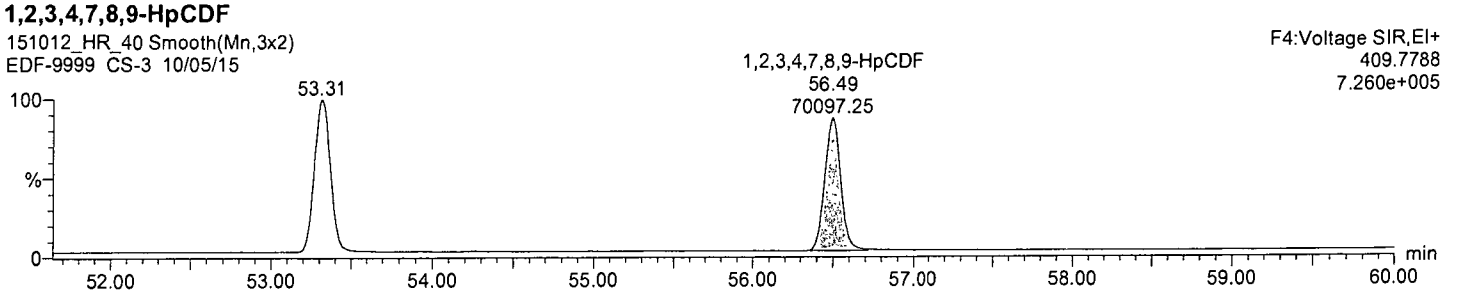


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

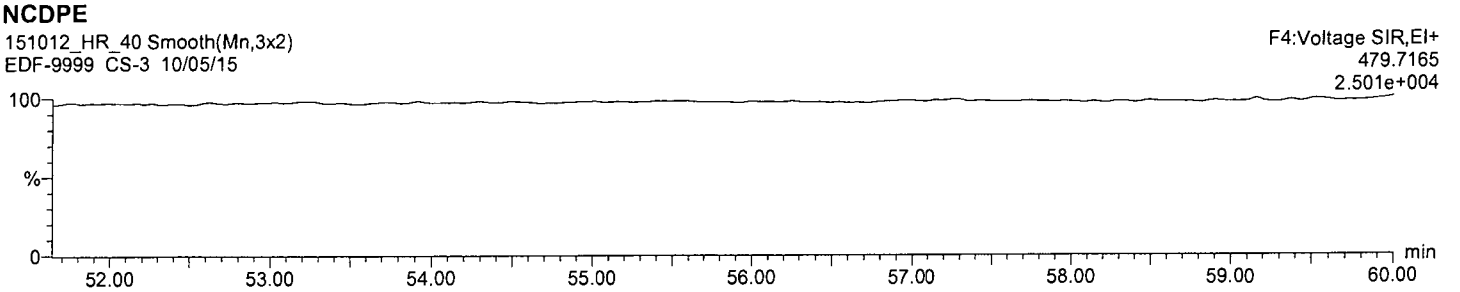
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF

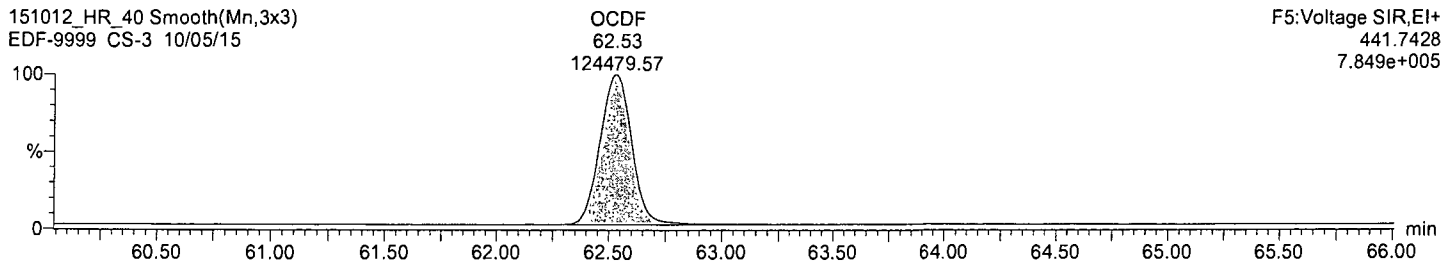


NCDPE

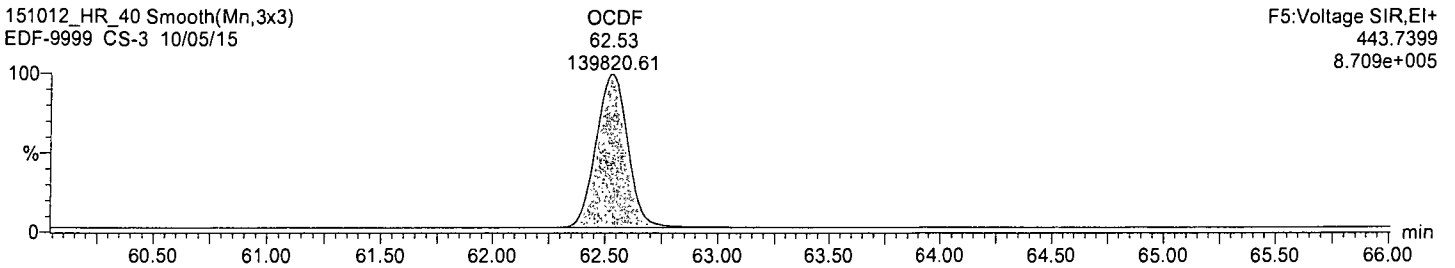


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

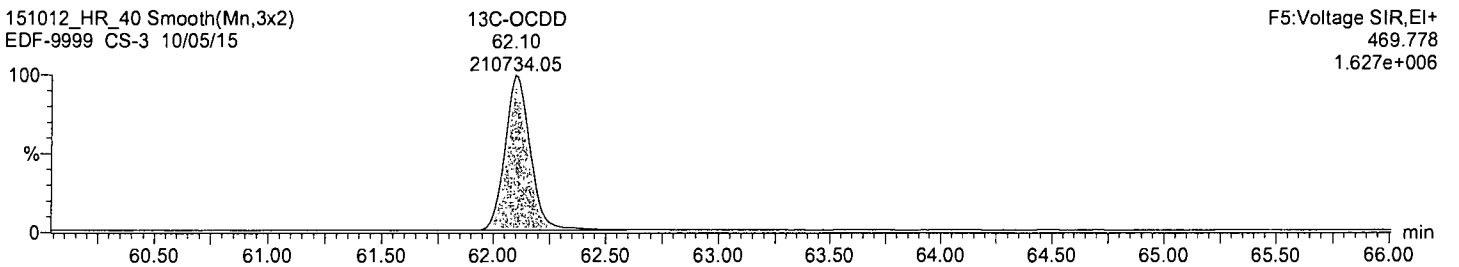
OCDF



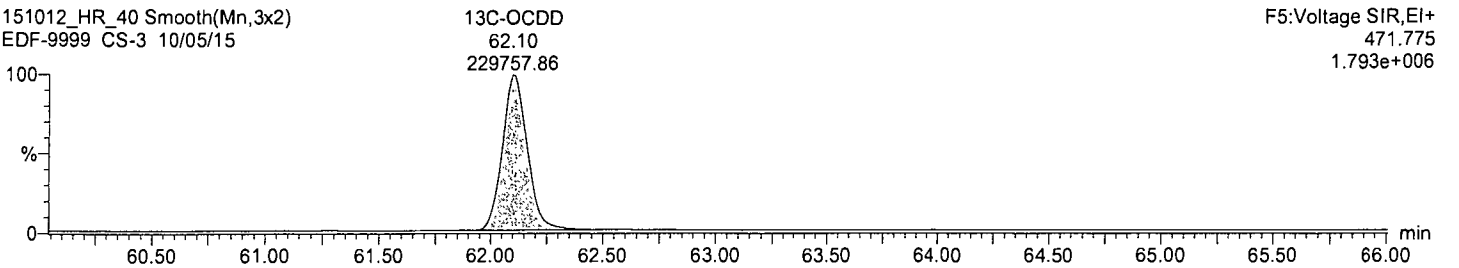
OCDF



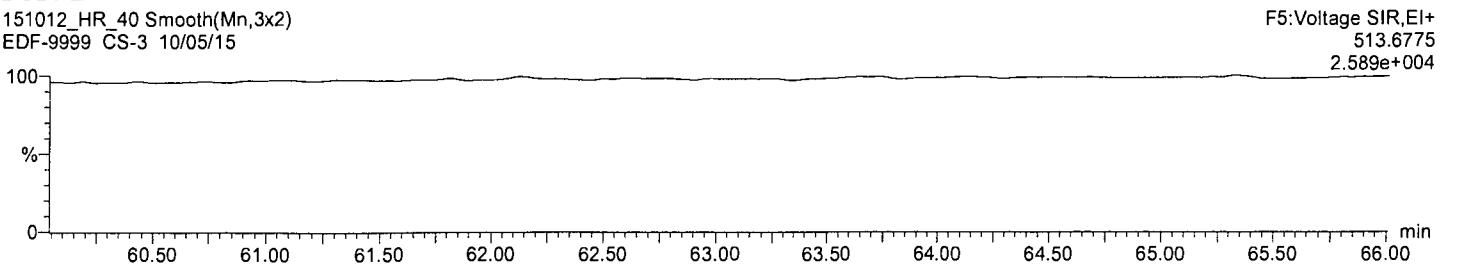
13C-OCDD



13C-OCDD

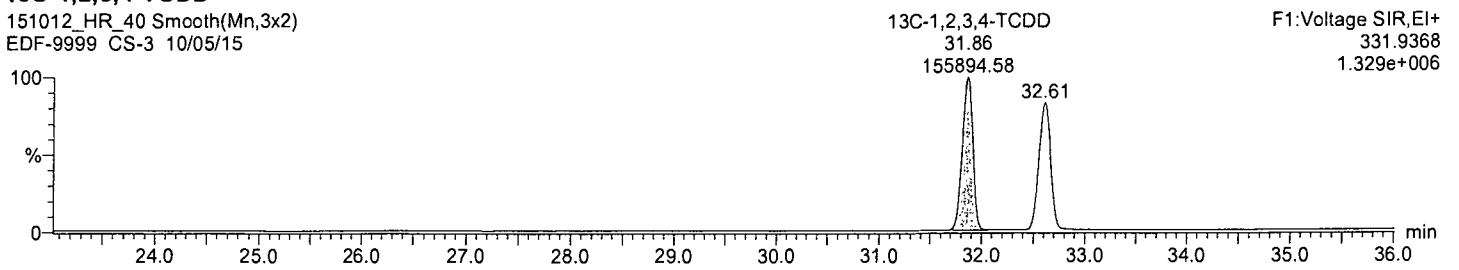


DCDPE

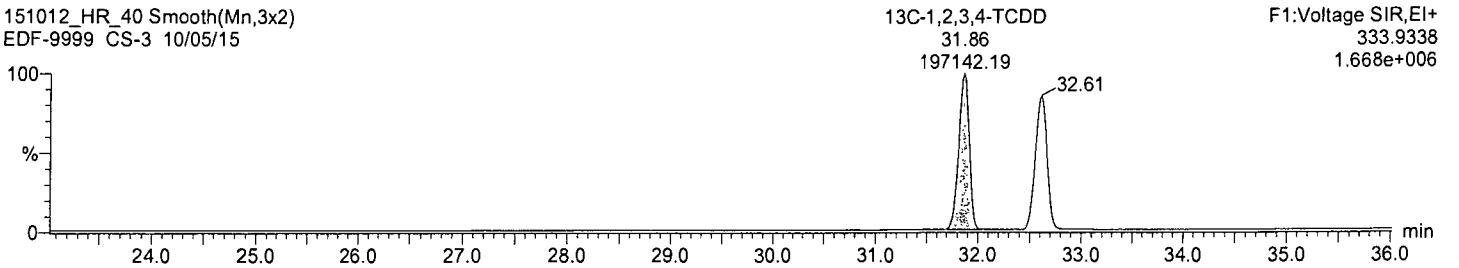


Name: 151012_HR_40, Date: 14-Oct-2015, Time: 10:09:09, ID: , Description: EDF-9999 CS-3 10/05/15, User:

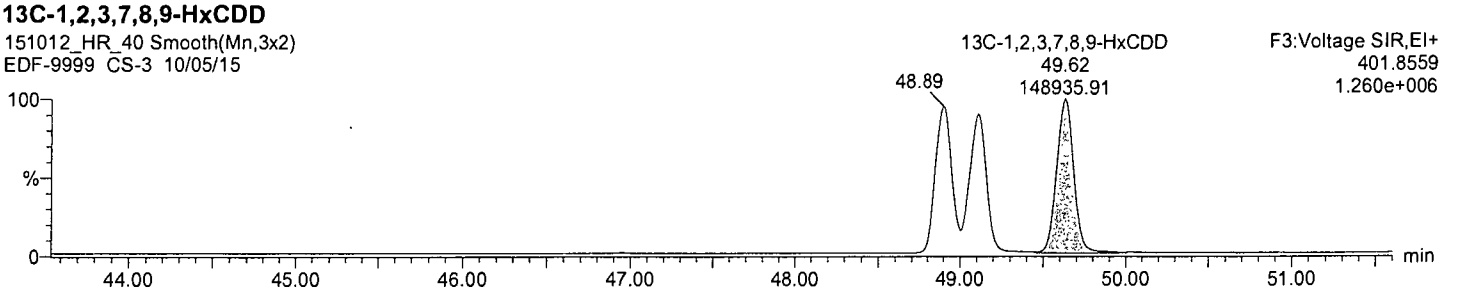
13C-1,2,3,4-TCDD



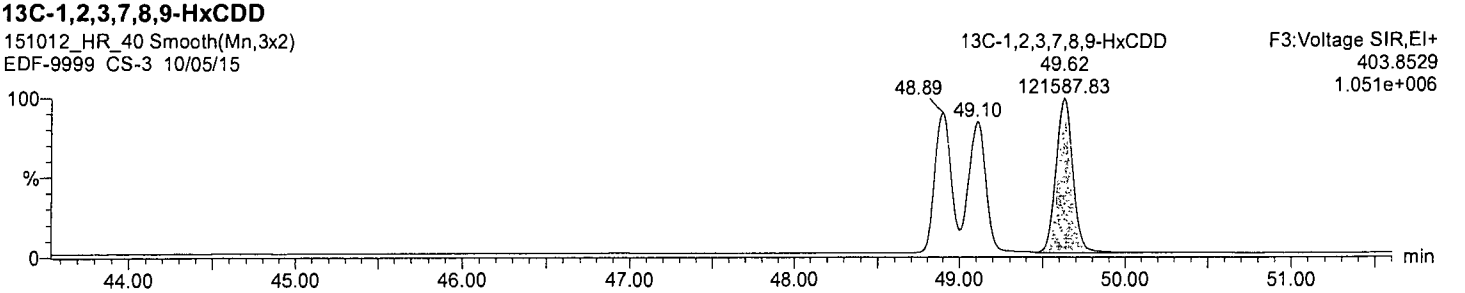
13C-1,2,3,4-TCDD



13C-1,2,3,7,8,9-HxCDD



13C-1,2,3,7,8,9-HxCDD



EPA METHOD 8290
Dioxins/Furans

Raw Data

APPL, INC.

Method Blank
EPA 8290 - Dioxins and Furans

Blank Name/QCG: **150924W-21644 - 201331**
Batch ID: $8290W-150924A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	PQL	EDL/EMPC	Units	Ext Date	Analysis Date
BLANK	1,2,3,4,6,7,8-HPCDD	Not detected	125.0	8.5PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,6,7,8-HPCDF	Not detected	125.0	0.56PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,7,8,9-HPCDF	Not detected	125.0	1.9DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,7,8-HXCDD	Not detected	125.0	3.1DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,4,7,8-HXCDF	Not detected	125.0	1.8DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,6,7,8-HXCDD	Not detected	125.0	3.1DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,6,7,8-HXCDF	Not detected	125.0	1.1PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8,9-HXCDD	Not detected	125.0	3.0DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8,9-HXCDF	Not detected	125.0	2.0DL	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8-PECDD	Not detected	125.0	3.7PC	pg/L	09/24/15	10/14/15
BLANK	1,2,3,7,8-PECDF	Not detected	125.0	1.4DL	pg/L	09/24/15	10/14/15
BLANK	2,3,4,6,7,8-HXCDF	Not detected	125.0	1.8DL	pg/L	09/24/15	10/14/15
BLANK	2,3,4,7,8-PECDF	Not detected	125.0	1.5DL	pg/L	09/24/15	10/14/15
BLANK	2,3,7,8-TCDD	Not detected	50.0	1.4DL	pg/L	09/24/15	10/14/15
BLANK	2,3,7,8-TCDF	Not detected	50.0	1.3DL	pg/L	09/24/15	10/14/15
BLANK	OCDD	Not detected	250.0	5.6PC	pg/L	09/24/15	10/14/15
BLANK	OCDF	Not detected	250.0	2.1DL	pg/L	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD (S)	94.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF (S)	85.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S)	76.9	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S)	76.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,7,8-PECDD (S)	86.2	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-1,2,3,7,8-PECDF (S)	86.8	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-2,3,7,8-TCDD (S)	77.2	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-2,3,7,8-TCDF (S)	79.4	40-135		%	09/24/15	10/14/15
BLANK	SURROGATE: 13C-OCDD (S)	86.6	40-135		%	09/24/15	10/14/15

Quant Method: 151012_8290
Run #: 151012_HR_34
Instrument: Magneto
Sequence: 151012
Initials: RP

Printed: 10/15/15 7:07:19 AM

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

Name	Peak Area	1° Area	RT	Ion Ab	Ion Fail?	S/N1	S/N2	Conc.	%Rec	LOD	EMPC	Multiplier
2,3,7,8-TCDD	5.868400e1	8.463600e1	32.62	0.69	NO	NO	NO	~~3.702~~		1.369	~~3.702~~	50.000
1,2,3,7,8-PeCDD	6.017700e1	4.798800e1	41.47	1.25	YES	NO	NO	~~4.055~~		~~2.502~~	3.712	50.000
1,2,3,4,7,8-HxCDD	1.431800e1	9.508000e0	48.86	1.51	YES	YES	YES	~~0.932~~		3.058	~~0.834~~	50.000
1,2,3,6,7,8-HxCDD	2.589000e0	7.329000e0	49.27	0.35	YES	YES	YES	~~0.387~~		3.052	~~0.183~~	50.000
1,2,3,7,8,9-HxCDD	8.478000e0	1.102800e1	49.55	0.77	YES	YES	NO	~~0.747~~		2.994	~~0.587~~	50.000
1,2,3,4,6,7,8-HpCDD	1.220540e2	1.897160e2	55.42	0.64	YES	NO	NO	~~14.100~~		~~2.326~~	8.524 ✓	50.000
OCDD	1.091710e2	7.647300e1	61.99	1.43	YES	NO	NO	~~7.253~~		~~1.863~~	5.647	50.000
2,3,7,8-TCDF	3.198400e1	4.282900e1	31.53	0.75	NO	YES	YES	~~1.623~~		1.311 ✓	~~1.623~~	50.000
1,2,3,7,8-PeCDF	7.686600e1	5.970600e1	38.85	1.29	YES	NO	NO	~~3.536~~		1.402	~~3.275~~	50.000
2,3,4,7,8-PeCDF										1.519		50.000
1,2,3,4,7,8-HxCDF	3.932800e1	9.158000e0	47.03	4.29	YES	YES	YES	~~1.451~~		1.780	~~0.614~~	50.000
1,2,3,6,7,8-HxCDF	5.667700e1	1.731600e1	47.28	3.27	YES	NO	NO	~~2.093~~		~~1.683~~	1.097	50.000
2,3,4,6,7,8-HxCDF	3.089100e1	4.742800e1	48.48	0.65	YES	YES	NO	~~2.397~~		1.821	~~1.708~~	50.000
1,2,3,7,8,9-HxCDF	3.489600e1	2.774700e1	50.21	1.26	NO	YES	NO	~~2.101~~		1.995	~~2.101~~	50.000
1,2,3,4,6,7,8-HpCDF	5.357600e1	9.677000e0	53.20	5.54	YES	NO	NO	~~1.799~~		~~1.622~~	0.561	50.000
1,2,3,4,7,8,9-HpCDF	1.569300e1	2.738900e1	56.56	0.57	YES	YES	NO	~~1.432~~		1.896	~~1.023~~	50.000
OCDF	3.294000e1	6.045000e0	62.76	5.45	YES	YES	YES	~~1.419~~		2.128	~~0.416~~	50.000
13C-2,3,7,8-TCDD	3.019092e4	3.784996e4	32.54	0.80	NO	NO	NO	1544.361	77.2	2.879		50.000
13C-1,2,3,7,8-PeCDD	3.473214e4	2.210879e4	41.45	1.57	NO	NO	NO	1723.990	86.2	3.119		50.000
13C-1,2,3,6,7,8-HxCDD	6.840696e4	5.435539e4	49.02	1.26	NO	NO	NO	3819.244	76.4	3.776		50.000
13C-1,2,3,4,6,7,8-HpCDD	7.043547e4	6.863202e4	55.38	1.03	NO	NO	NO	4719.877	94.4	4.694		50.000
13C-OCDD	1.063528e5	1.233555e5	61.97	0.86	NO	NO	NO	8664.552	86.6	5.282		50.000
13C-2,3,7,8-TCDF	4.364887e4	5.639159e4	31.55	0.77	NO	NO	NO	1587.839	79.4	1.820		50.000
13C-1,2,3,7,8-PeCDF	4.941759e4	3.170296e4	38.78	1.56	NO	NO	NO	1735.894	86.8	2.597		50.000
13C-1,2,3,4,7,8-HxCDF	4.661115e4	9.482158e4	46.97	0.49	NO	NO	NO	3844.977	76.9	4.317		50.000
13C-1,2,3,4,6,7,8-HpCDF	3.785389e4	8.670688e4	53.21	0.44	NO	NO	NO	4271.426	85.4	294.962		50.000
13C-1,2,3,4-TCDD	4.090691e4	5.062945e4	31.79	0.81	NO	NO	NO	2000.000	100.0	2.772		50.000
13C-1,2,3,7,8,9-HxCDD	3.825544e4	3.055973e4	49.55	1.25	NO	NO	NO	2000.000	100.0	3.528		50.000
Total Tetra-Dioxins	9.780600e2							53.591		1.369	33.720	50.000
Total Penta-Dioxins	1.588804e3							97.422		2.502	62.612	50.000
Total Hexa-Dioxins	8.456900e2							86.628		3.034	52.124	50.000
Total Hepta-Dioxins	5.508730e2							43.571		2.326	29.112	50.000
Total Tetra-Furans	8.082790e2							38.970		1.311	24.551	50.000
Total Penta-Furans	3.603500e2							20.973		1.458	14.089	50.000
Total Hexa-Furans	6.791670e2							43.158		1.813	26.990	50.000
Total Hepa-Furans	6.721840e2							23.521		1.748	5.273	50.000
PFK1	0.000000e0											1.000
PFK2	0.000000e0											1.000
PFK3	0.000000e0											1.000
PFK4	0.000000e0											1.000
PFK5	0.000000e0											1.000
HxCDPE	0.000000e0											1.000
HpCDPE	0.000000e0											1.000
OCDPE	0.000000e0											1.000
NCDPE	0.000000e0											1.000
DCDPE	0.000000e0											1.000

10/14/15 PF

EDL TCDF EMPC / 1234678 HpCDD = $\frac{(98.21821 + 99.78021)(2000)(2.5)}{(357659 + 468861)(0.921258)(1)} = 1.30$

EMPC / 1234678 HpCDD = $\frac{(122.054 + 117.360)(5000)}{(70435.47 + 68632.02)(1.00989)(1)} = 8.524$

10/14/15 PF

RETENTION TIME CHECK

150925WBLKA 50.000 DF 09/24/15 — EPA Method 8290

INSTRUMENT: Magneto
COLUMN: Restek DB5 - 60m
MATRIX:

ANALYSIS DATE/TIME:
EXTRACTION DATE:
SEQUENCE:
RUN FILE: 151012_HR_34

Analyte	RT of congener in sample 151012_HR_34	RT of ^{13}C congener in sample 151012_HR_34	RRT of congener in sample 151012_HR_34	RRT of congener in CCV 151012_HR_30	LCL[a]	UCL[b]	Qualifiers
2,3,7,8-TCDD	32.6218	32.5402	1.0025	1.0008	32.5235	32.5902	Fail
1,2,3,7,8-PeCDD	41.4713	41.4510	1.0005	1.0007	41.4343	41.5010	Pass
1,2,3,4,7,8-HxCDD	48.8595	49.0188	0.9968	0.9961	0.9911	1.0011	Pass
1,2,3,6,7,8-HxCDD	49.2738	49.0188	1.0052	1.0004	49.0021	49.0688	Fail
1,2,3,7,8,9-HxCDD	49.5500	49.5500	1.0000	1.0002	49.5333	49.6000	Pass
1,2,3,4,6,7,8-HpCDD	55.4192	55.3787	1.0007	1.0005	55.3620	55.4287	Pass
OCDD	61.9948	61.9745	1.0003	1.0003	61.9578	62.0245	Pass
2,3,7,8-TCDF	31.5332	31.5467	0.9996	1.0009	31.5300	31.5967	Pass
1,2,3,7,8-PeCDF	38.8462	38.7752	1.0018	1.0010	38.7585	38.8252	Fail
2,3,4,7,8-PeCDF		38.7752	0.0000	1.0536	1.0483	1.0589	Fail
1,2,3,4,7,8-HxCDF	47.0323	46.9685	1.0014	1.0005	46.9518	47.0185	Fail
1,2,3,6,7,8-HxCDF	47.2767	46.9685	1.0066	1.0059	1.0009	1.0109	Pass
2,3,4,6,7,8-HxCDF	48.4770	46.9685	1.0321	1.0319	1.0267	1.0371	Pass
1,2,3,7,8,9-HxCDF	50.2087	46.9685	1.0690	1.0687	1.0634	1.0740	Pass
1,2,3,4,6,7,8-HpCDF	53.1995	53.2097	0.9998	1.0004	53.1930	53.2597	Pass
1,2,3,4,7,8,9-HpCDF	56.5645	53.2097	1.0630	1.0600	1.0547	1.0653	Pass
OCDF	62.7550	61.9745	1.0126	1.0069	1.0019	1.0119	Fail
$^{13}C_{12}$-2,3,7,8-TCDD	32.5402	31.7917	1.0235	1.0231	1.0180	1.0282	Pass
$^{13}C_{12}$-1,2,3,7,8-PeCDD	41.4510	31.7917	1.3038	1.3042	1.2977	1.3107	Pass
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	49.0188	49.5500	0.9893	0.9895	0.9846	0.9944	Pass
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	55.3787	49.5500	1.1176	1.1176	1.1120	1.1232	Pass
$^{13}C_{12}$-OCDD	61.9745	49.5500	1.2507	1.2504	1.2441	1.2567	Pass
$^{13}C_{12}$-2,3,7,8-TCDF	31.5467	31.7917	0.9923	0.9923	0.9873	0.9973	Pass
$^{13}C_{12}$-1,2,3,7,8-PeCDF	38.7752	31.7917	1.2197	1.2193	1.2132	1.2254	Pass
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	46.9685	49.5500	0.9479	0.9481	0.9434	0.9528	Pass
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	53.2097	49.5500	1.0739	1.0739	1.0685	1.0793	Pass
$^{13}C_{12}$-1,2,3,4-TCDD	31.7917	31.7917	1.0000	1.0000	0.9950	1.0050	Pass
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	49.5500	49.5500	1.0000	1.0000	0.9950	1.0050	Pass

a. Lower control limit
b. Upper control limit

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

#	Name	RT	RRT
1	2,3,7,8-TCDD	32.621799	1.002508
2	1,2,3,7,8-PeCDD	41.471298	1.000490
3	1,2,3,4,7,8-HxCDD	48.859501	0.996750
4	1,2,3,6,7,8-HxCDD	49.273800	1.005202
5	1,2,3,7,8,9-HxCDD	49.549999	1.000000
6	1,2,3,4,6,7,8-HpCDD	55.419201	1.000731
7	OCDD	61.994801	1.000328
8	2,3,7,8-TCDF	31.533199	0.999572
9	1,2,3,7,8-PeCDF	38.846199	1.001831
10	2,3,4,7,8-PeCDF		
11	1,2,3,4,7,8-HxCDF	47.032299	1.001358
12	1,2,3,6,7,8-HxCDF	47.276699	1.006562
13	2,3,4,6,7,8-HxCDF	48.477001	1.032117
14	1,2,3,7,8,9-HxCDF	50.208698	1.068987
15	1,2,3,4,6,7,8-HpCDF	53.199501	0.999808
16	1,2,3,4,7,8,9-HpCDF	56.564499	1.063049
17	OCDF	62.755001	1.012594
18	13C-2,3,7,8-TCDD	32.540199	1.023544
19	13C-1,2,3,7,8-PeCDD	41.451000	1.303831
20	13C-1,2,3,6,7,8-HxCDD	49.018799	0.989280
21	13C-1,2,3,4,6,7,8-HpCDD	55.378700	1.117633
22	13C-OCDD	61.974499	1.250747
23	13C-2,3,7,8-TCDF	31.546700	0.992294
24	13C-1,2,3,7,8-PeCDF	38.775200	1.219664
25	13C-1,2,3,4,7,8-HxCDF	46.968498	0.947901
26	13C-1,2,3,4,6,7,8-HpCDF	53.209702	1.073859
27	13C-1,2,3,4-TCDD	31.791700	1.000000
28	13C-1,2,3,7,8,9-HxCDD	49.549999	1.000000

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

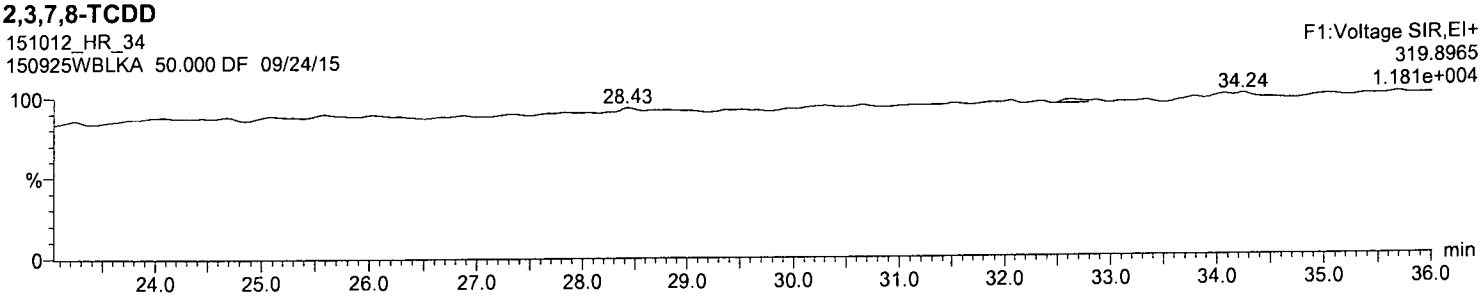
Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N...	Signal 2	Noise 2	S/N 2	Flag S/N...
1	2,3,7,8-TCDD	2.7000000e2	9.5180862e1	5.31	NO	4.1000000e2	7.3280479e1	5.59	NO
2	1,2,3,7,8-PeCDD	4.9600000e2	1.0848221e2	2.94	NO	4.0100000e2	1.0898760e2	3.68	NO
3	1,2,3,4,7,8-HxCDD	2.0400000e2	1.3184735e2	0.70	YES	1.3200000e2	1.2709860e2	1.04	YES
4	1,2,3,6,7,8-HxCDD	5.2000000e1	1.3184735e2	-1.88	YES	1.1300000e2	1.2709860e2	0.89	YES
5	1,2,3,7,8,9-HxCDD	1.8400000e2	1.3184735e2	0.41	YES	3.5000000e2	1.2709860e2	2.75	NO
6	1,2,3,4,6,7,8-HpCDD	5.1100000e2	1.1292137e2	3.00	NO	1.0600000e3	1.2244961e2	8.66	NO
7	OCDD	6.0600000e2	9.0127716e1	5.93	NO	5.7800000e2	7.0672348e1	8.18	NO
8	2,3,7,8-TCDF	3.5600000e2	9.8218208e1	6.64	YES	2.4000000e2	9.9790207e1	2.41	YES
9	1,2,3,7,8-PeCDF	3.4100000e2	7.0018463e1	3.75	NO	4.4400000e2	9.5460739e1	4.65	NO
10	2,3,4,7,8-PeCDF		7.0018463e1				9.5460739e1		
11	1,2,3,4,7,8-HxCDF	3.6700000e2	1.1823376e2	1.71	YES	1.2500000e2	8.2580078e1	1.51	YES
12	1,2,3,6,7,8-HxCDF	6.5400000e2	1.1823376e2	3.96	NO	3.7000000e2	8.2580078e1	4.48	NO
13	2,3,4,6,7,8-HxCDF	2.6500000e2	1.1823376e2	0.81	YES	4.5700000e2	8.2580078e1	5.53	NO
14	1,2,3,7,8,9-HxCDF	2.7200000e2	1.1823376e2	1.95	YES	3.0700000e2	8.2580078e1	3.72	NO
15	1,2,3,4,6,7,8-HpCDF	3.8300000e2	9.6957733e1	3.85	NO	2.6000000e2	9.3045738e1	2.79	NO
16	1,2,3,4,7,8,9-HpCDF	2.4300000e2	9.6957733e1	1.94	YES	3.1400000e2	9.3045738e1	3.37	NO
17	OCDF	1.6000000e2	1.0634171e2	1.31	YES	8.4000000e1	9.0744751e1	0.93	YES
18	13C-2,3,7,8-TCDD	2.3985300e5	1.9519531e2	1231.21	NO	3.0372100e5	2.0136424e2	1508.32	NO
19	13C-1,2,3,7,8-PeCDD	2.8299800e5	1.6939261e2	1671.18	NO	1.7714700e5	1.5209140e2	1164.74	NO
20	13C-1,2,3,6,7,8-HxCDD	5.6683100e5	1.5188463e2	3738.19	NO	4.6363200e5	2.4041577e2	1928.46	NO
21	13C-1,2,3,4,6,7,8-HpCDD	6.3442900e5	2.5557703e2	2481.81	NO	6.1042700e5	1.9140262e2	3189.23	NO
22	13C-OCDD	8.9642900e5	2.2429865e2	3997.97	NO	1.0130500e6	2.2826657e2	4438.01	NO
23	13C-2,3,7,8-TCDF	3.5765900e5	2.1227551e2	1685.48	NO	4.6886100e5	1.4620178e2	3206.94	NO
24	13C-1,2,3,7,8-PeCDF	3.7757100e5	2.2259866e2	1695.74	NO	2.3645000e5	1.5678674e2	1508.10	NO
25	13C-1,2,3,4,7,8-HxCDF	3.9333400e5	2.3462746e2	1674.65	NO	8.0657800e5	2.7859674e2	2895.15	NO
26	13C-1,2,3,4,6,7,8-HpCDF	3.1528600e5	2.7998042e3	111.33	NO	7.4063900e5	2.4998455e4	29.63	NO
27	13C-1,2,3,4-TCDD	3.1969100e5	1.9519531e2	1639.54	NO	3.9799000e5	2.0136424e2	1976.47	NO
28	13C-1,2,3,7,8,9-HxCDD	3.0908400e5	1.5188463e2	2045.51	NO	2.4711600e5	2.4041577e2	1027.87	NO

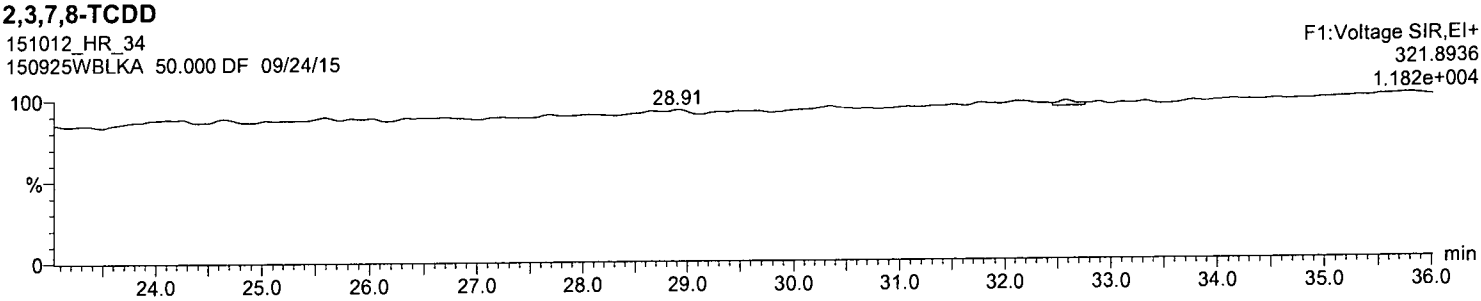
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

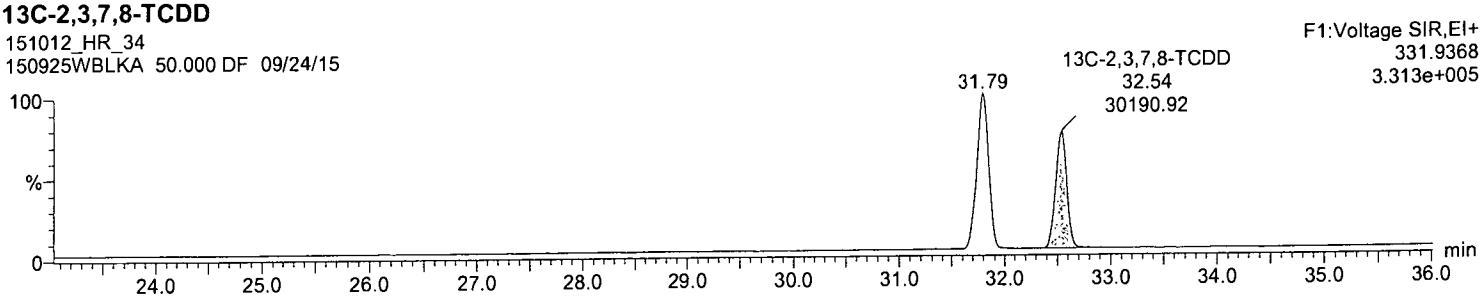
2,3,7,8-TCDD



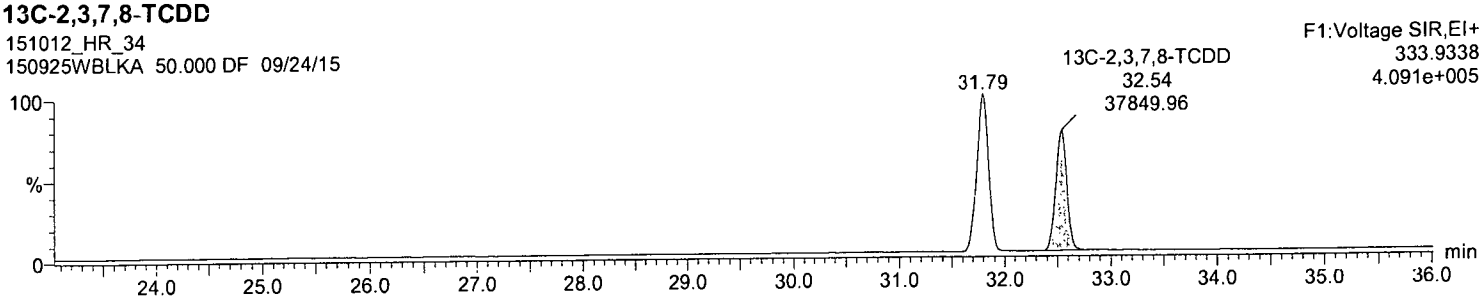
2,3,7,8-TCDD



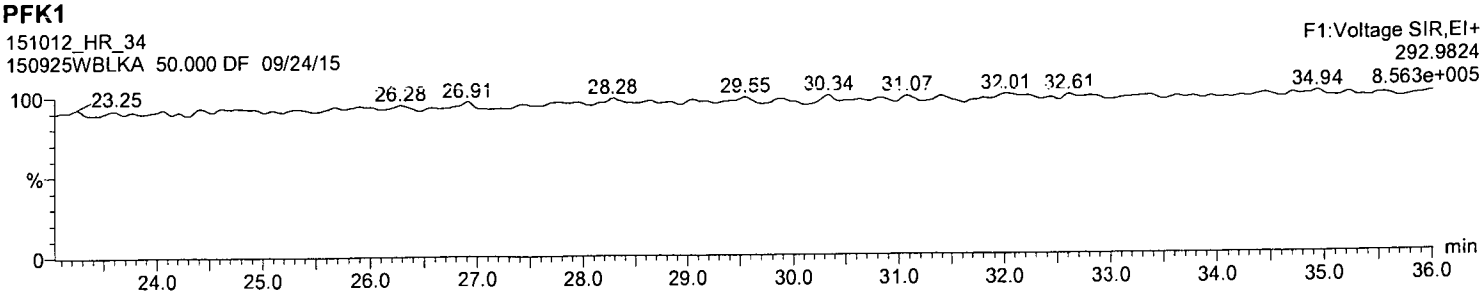
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

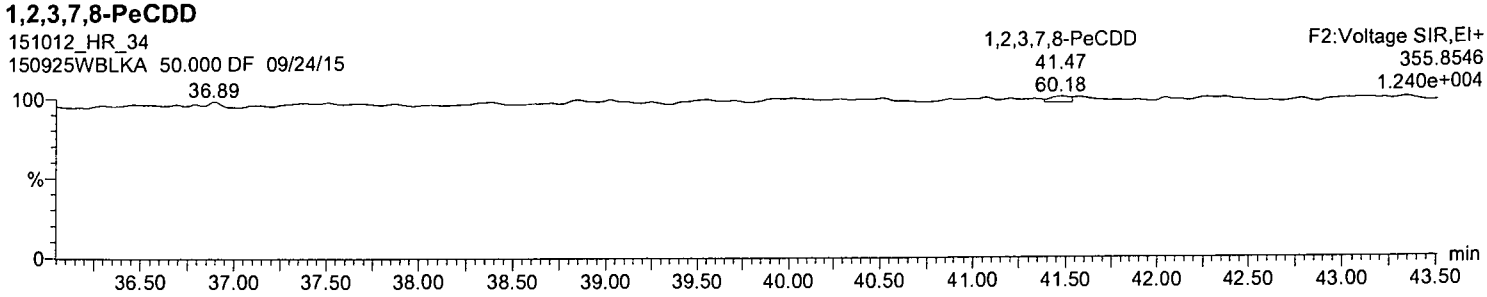


PFK1

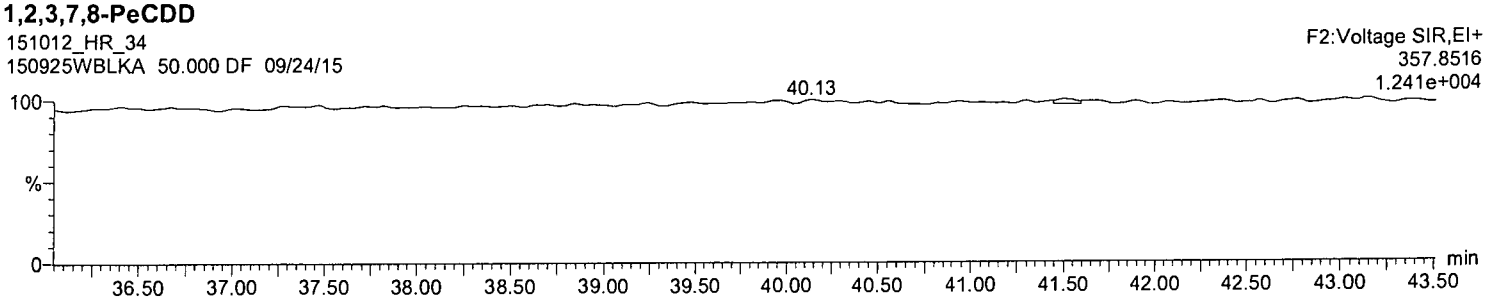


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

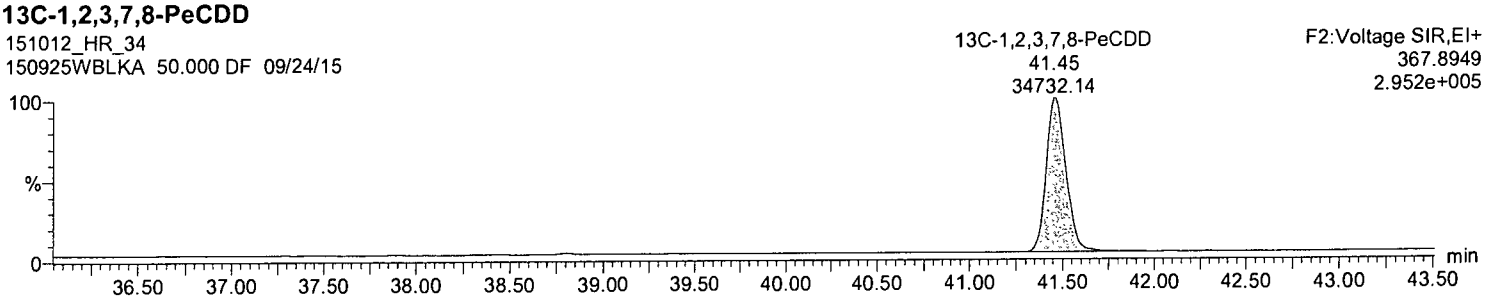
1,2,3,7,8-PeCDD



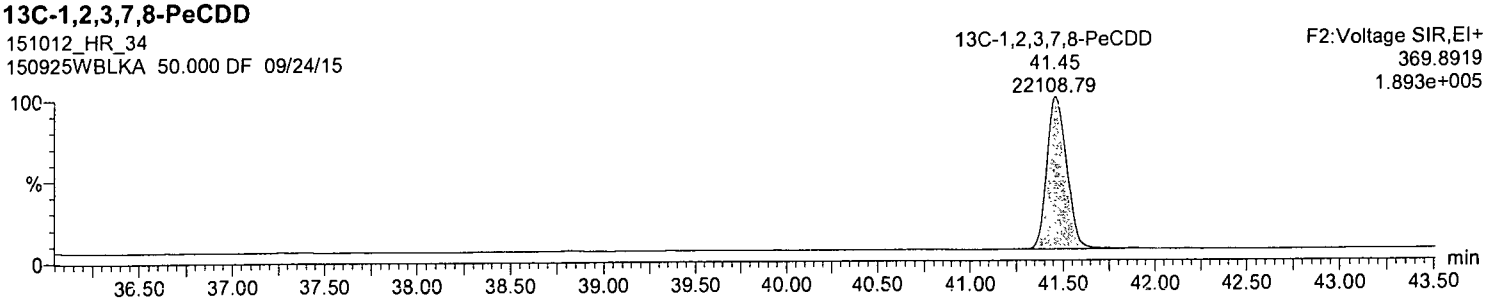
1,2,3,7,8-PeCDD



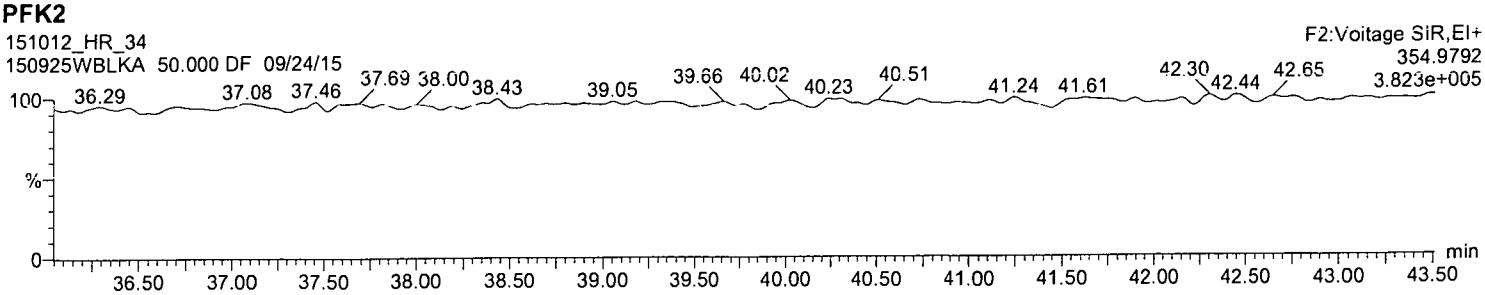
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

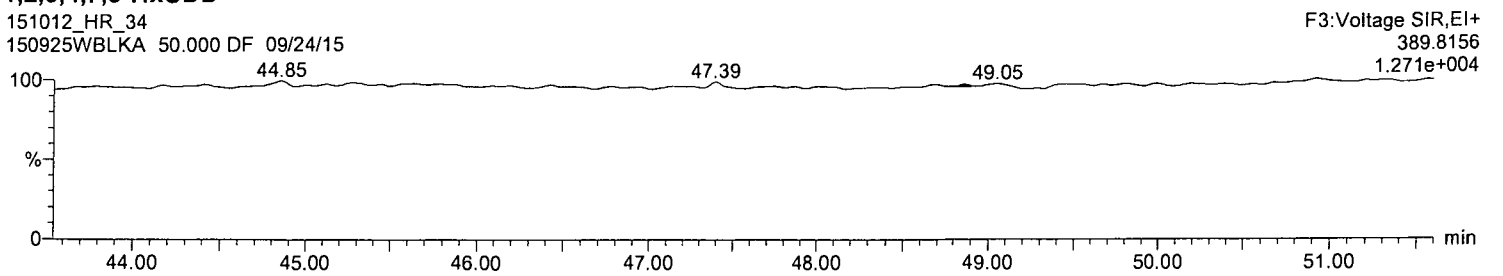


PFK2

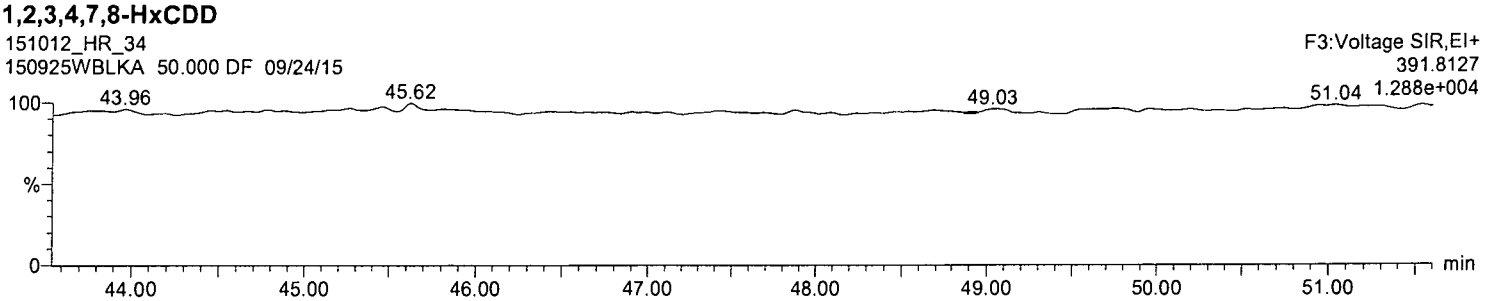


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

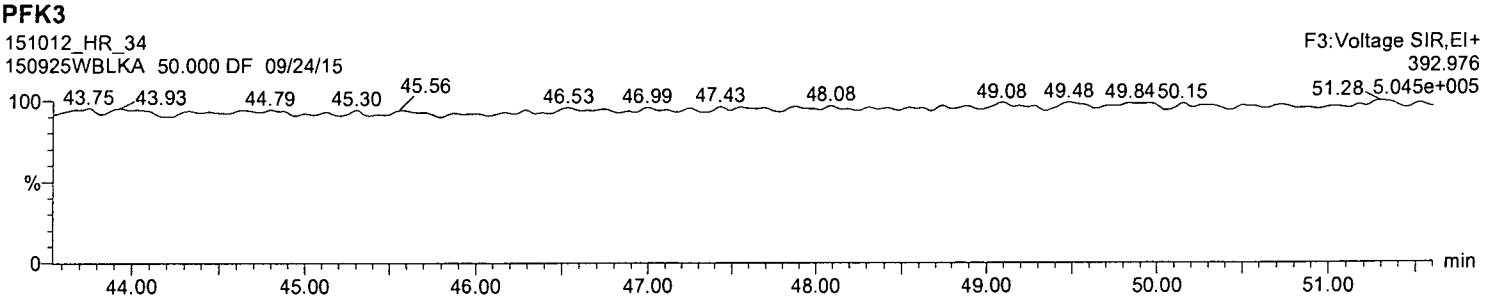
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD

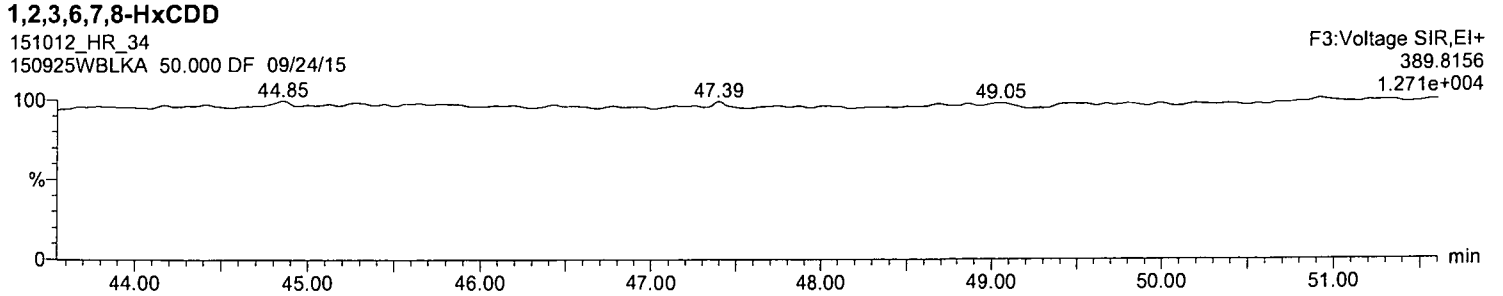


PFK3

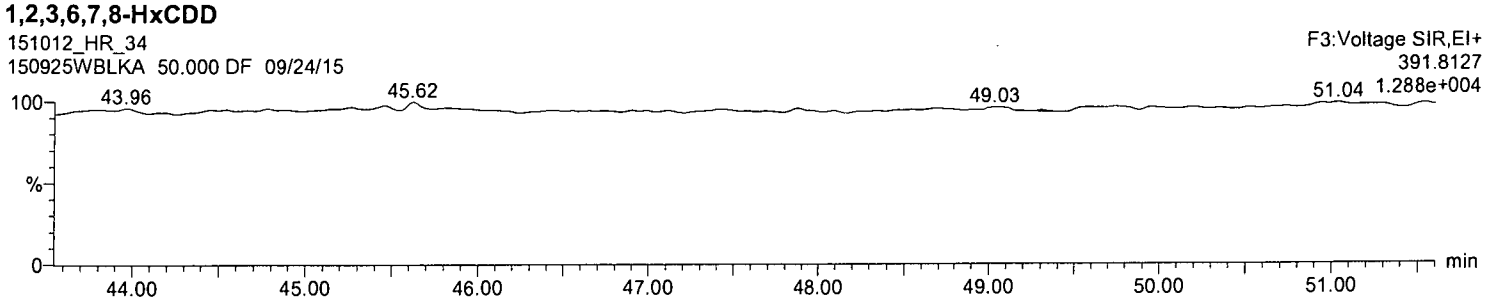


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

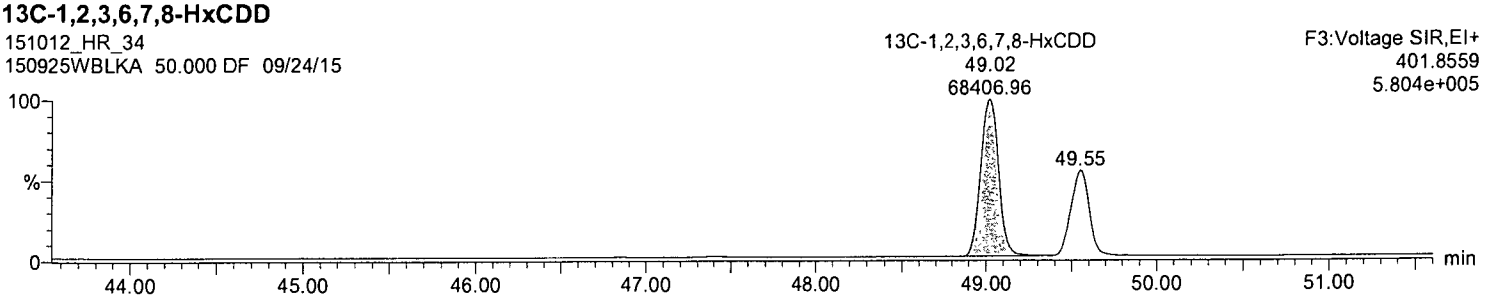
1,2,3,6,7,8-HxCDD



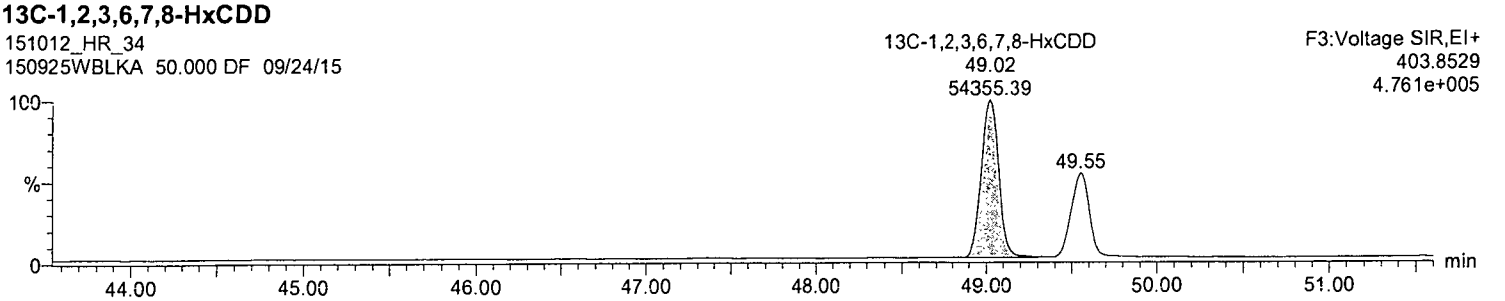
1,2,3,6,7,8-HxCDD



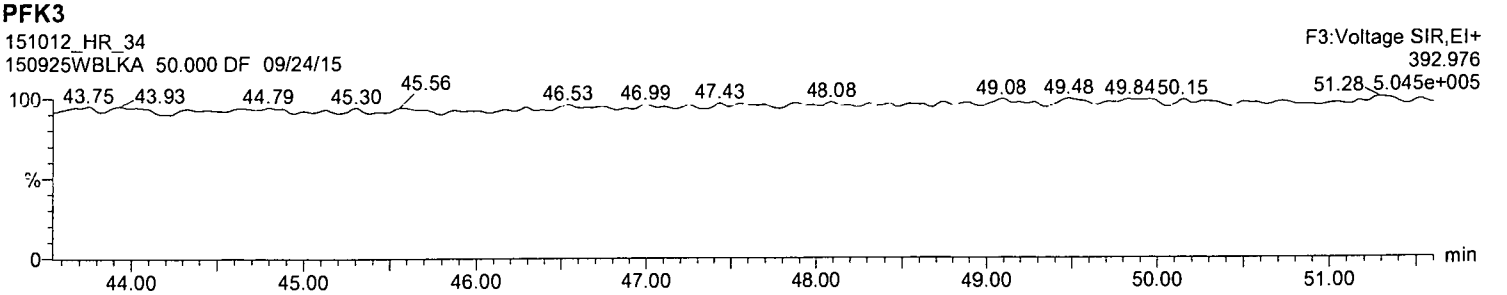
13C-1,2,3,6,7,8-HxCDD



13C-1,2,3,6,7,8-HxCDD

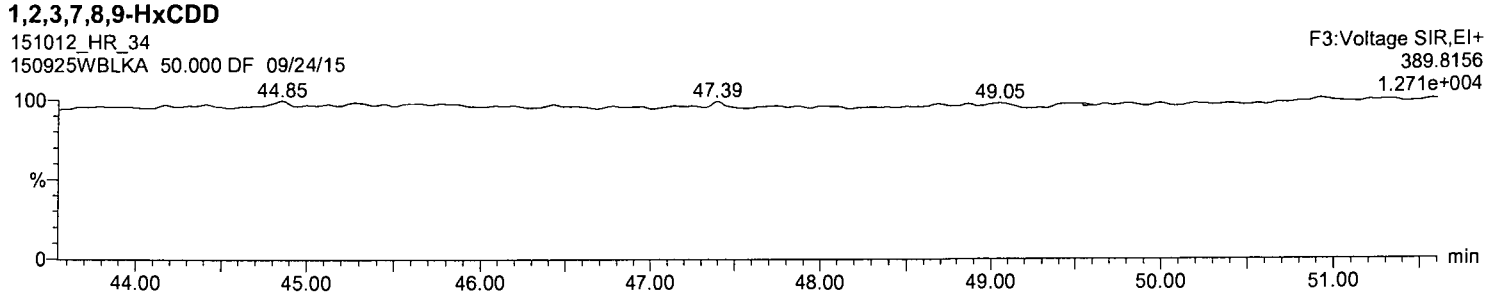


PFK3

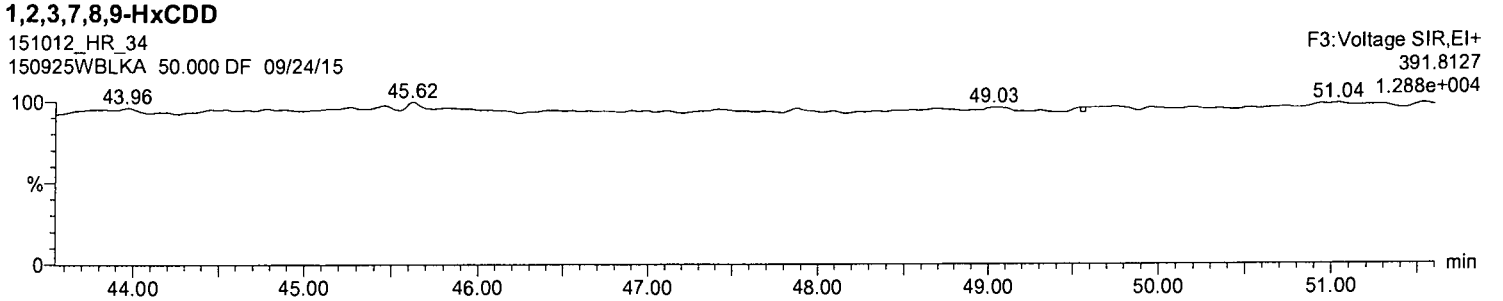


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

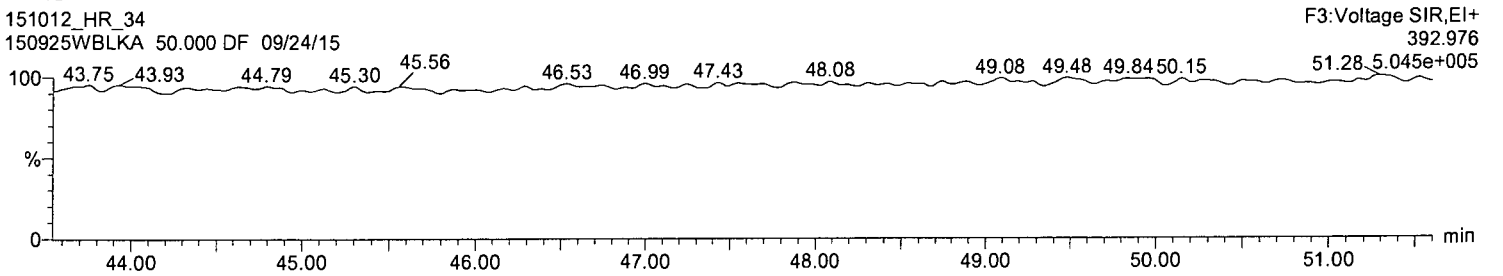
1,2,3,7,8,9-HxCDD



1,2,3,7,8,9-HxCDD

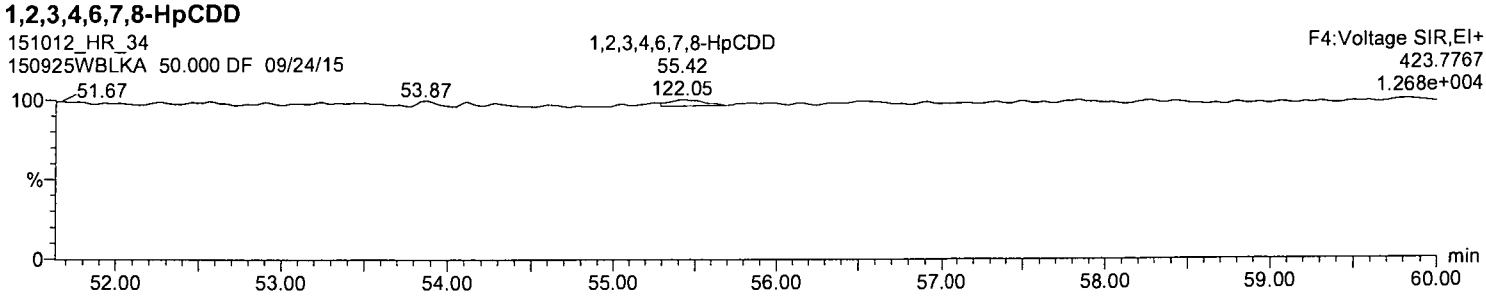


PFK3

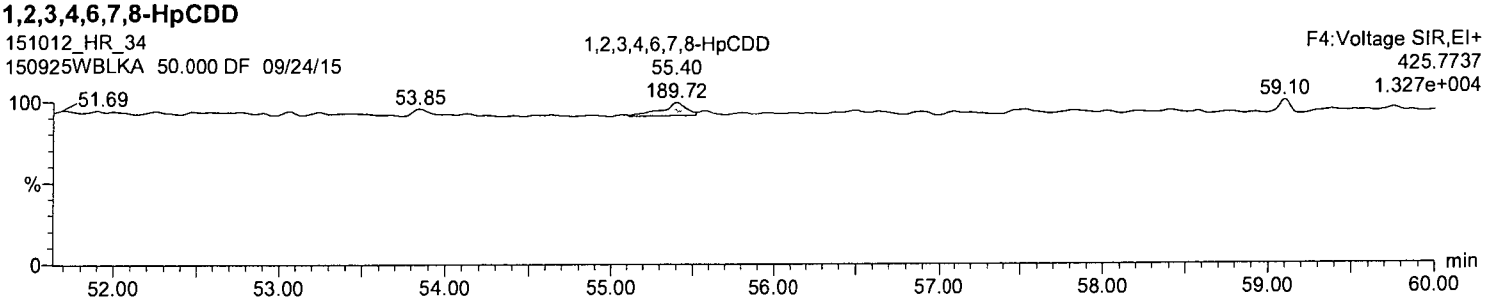


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

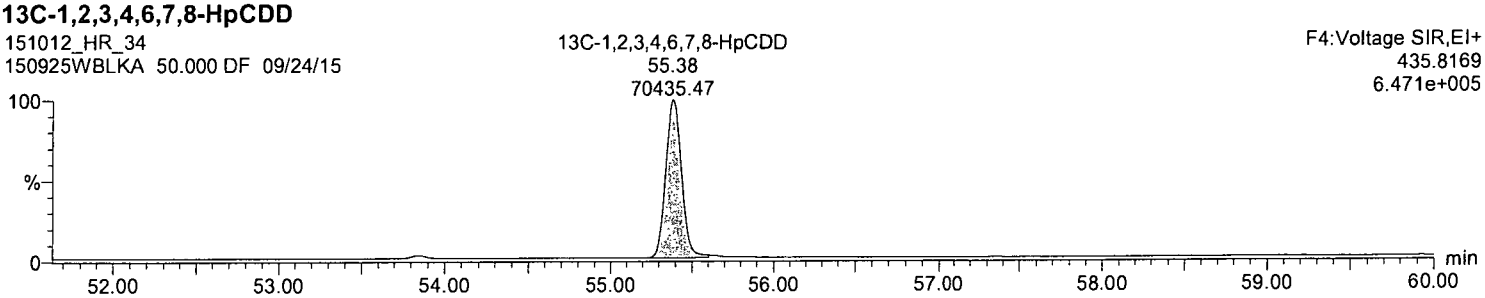
1,2,3,4,6,7,8-HpCDD



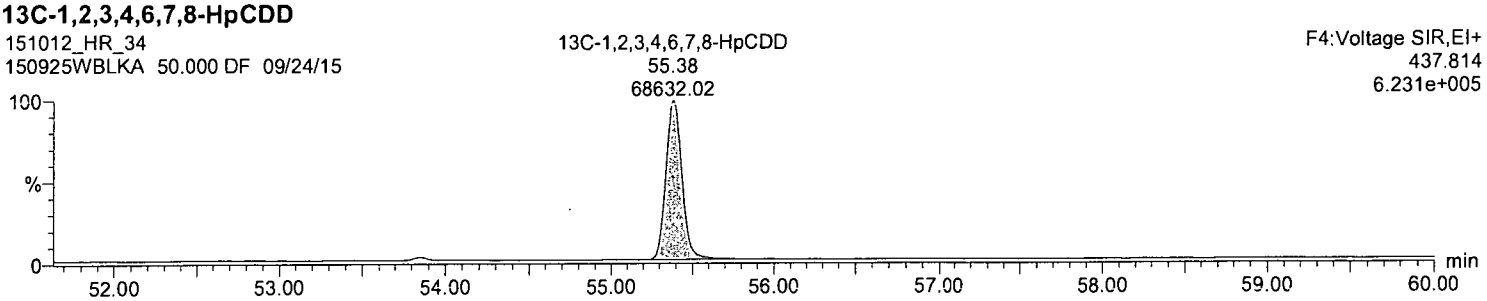
1,2,3,4,6,7,8-HpCDD



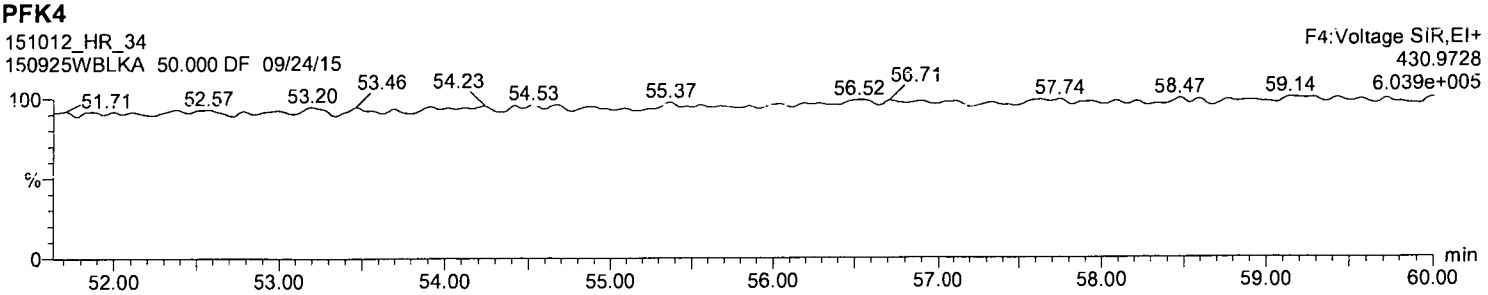
13C-1,2,3,4,6,7,8-HpCDD



13C-1,2,3,4,6,7,8-HpCDD

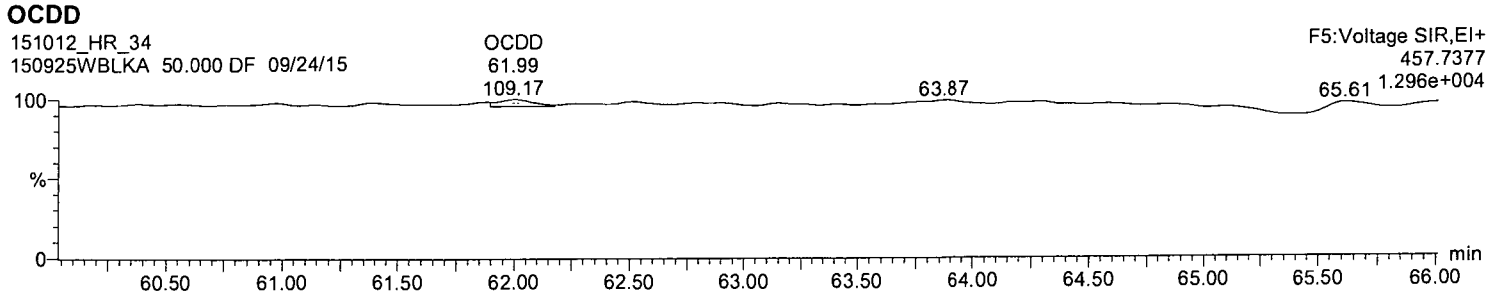


PFK4

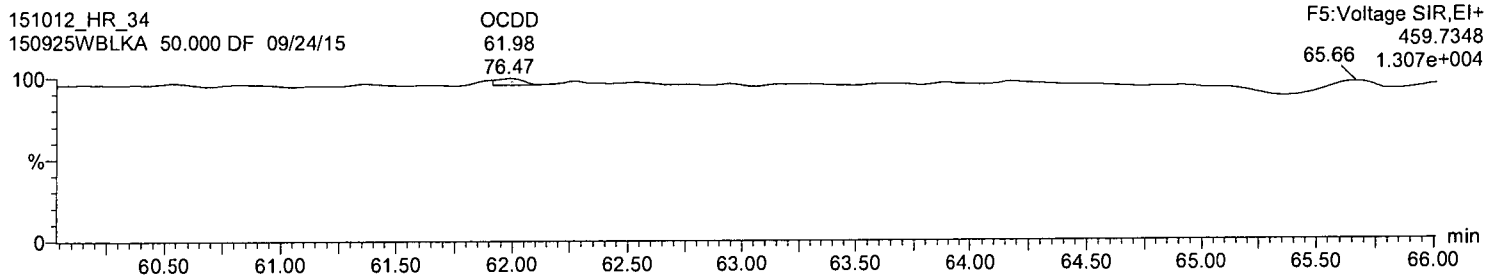


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

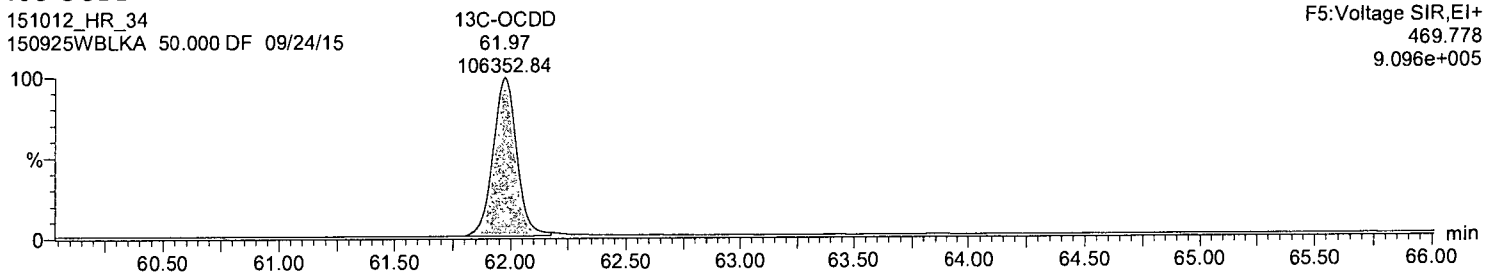
OCDD



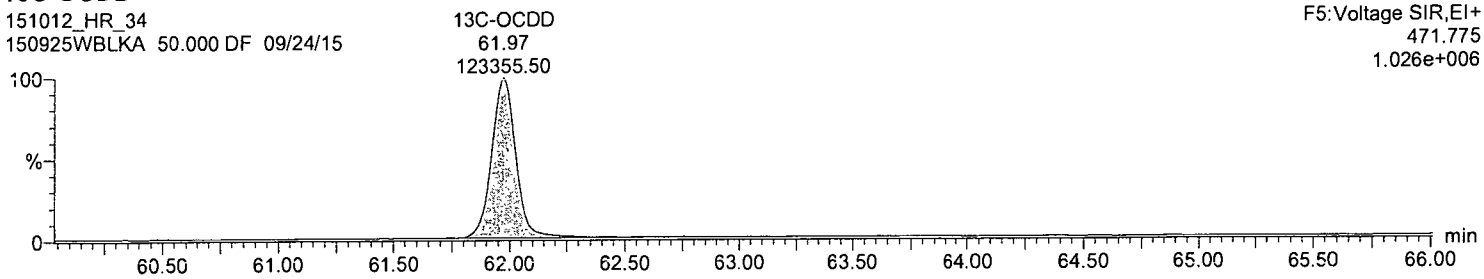
OCDD



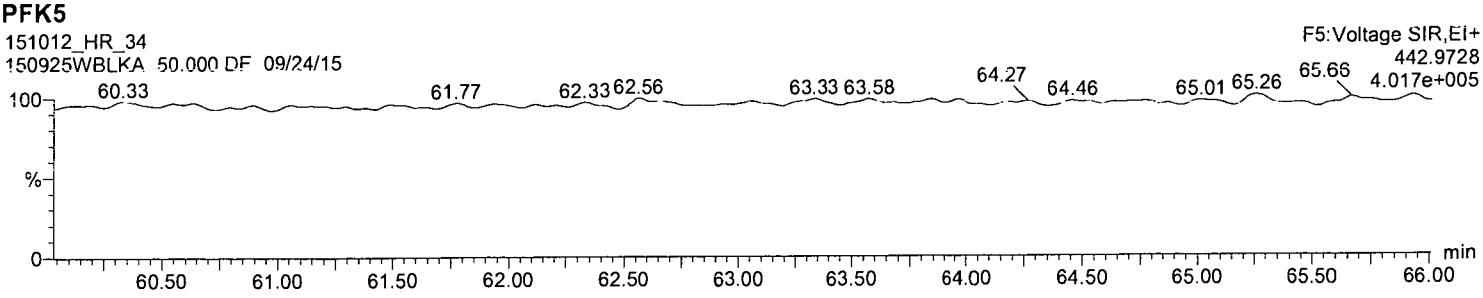
13C-OCDD



13C-OCDD

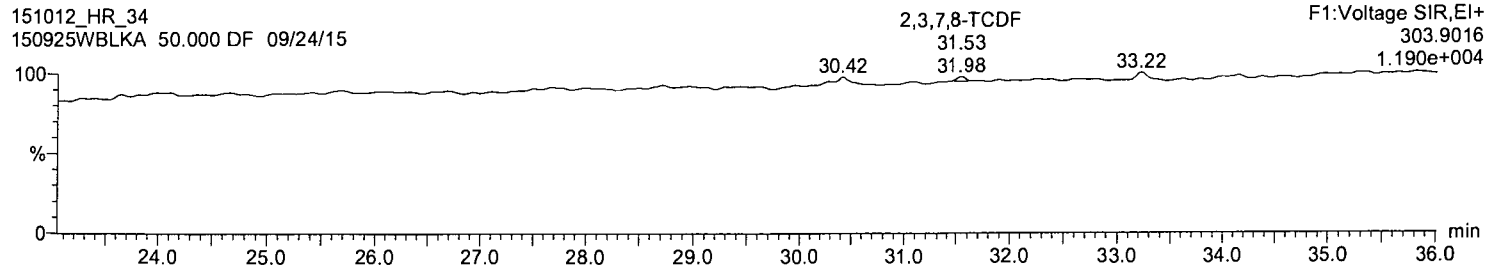


PFK5

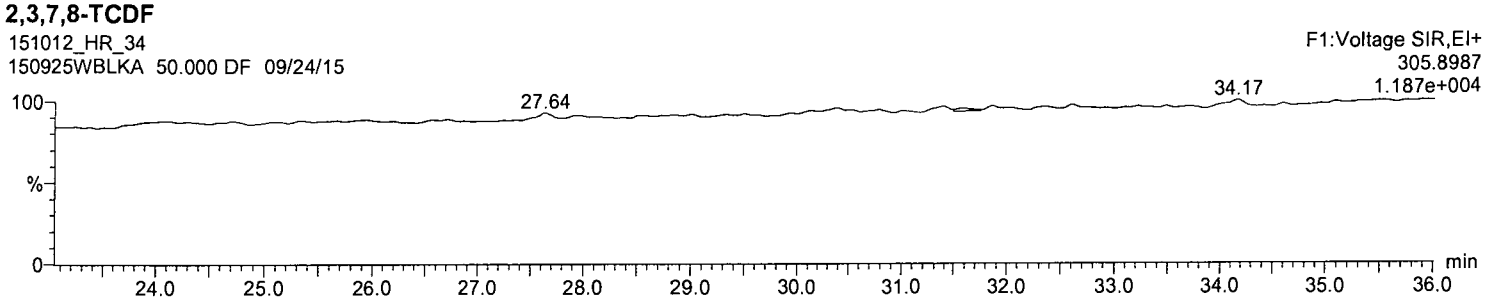


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

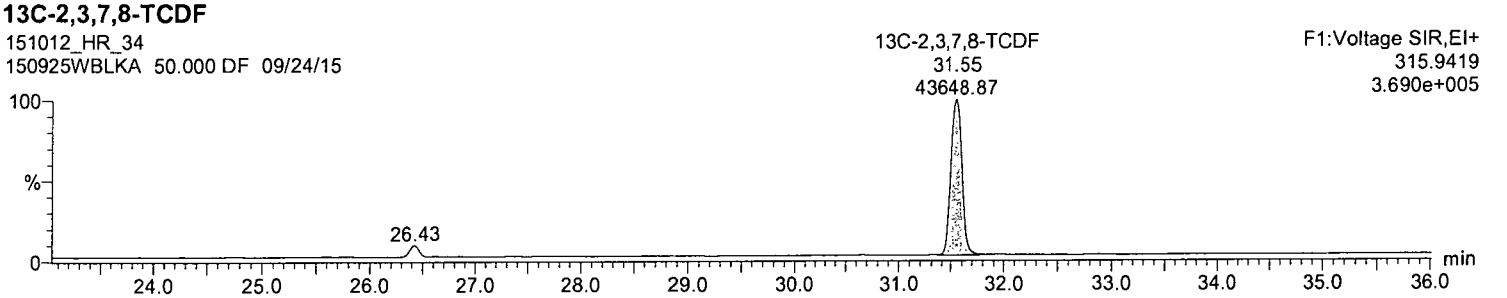
2,3,7,8-TCDF



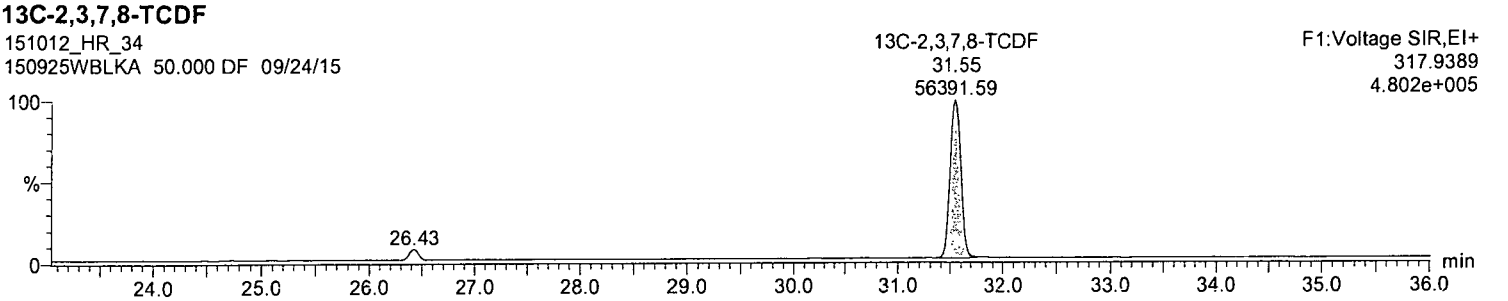
2,3,7,8-TCDF



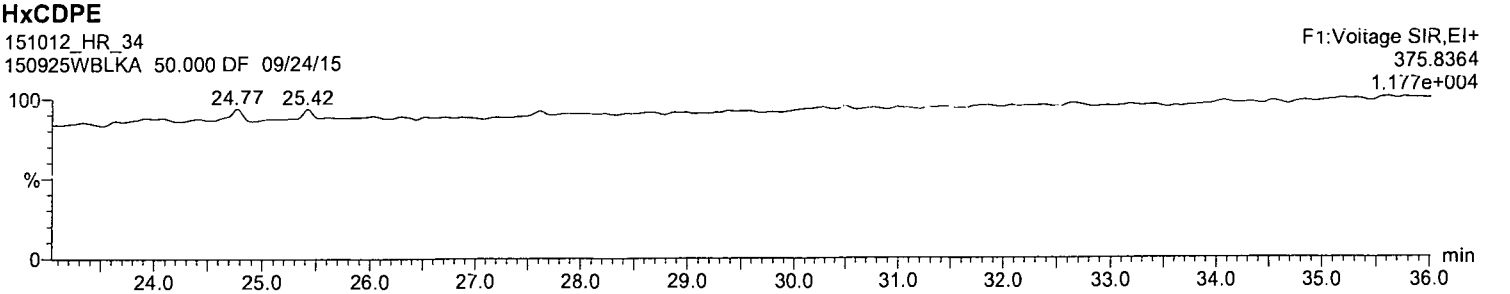
13C-2,3,7,8-TCDF



13C-2,3,7,8-TCDF

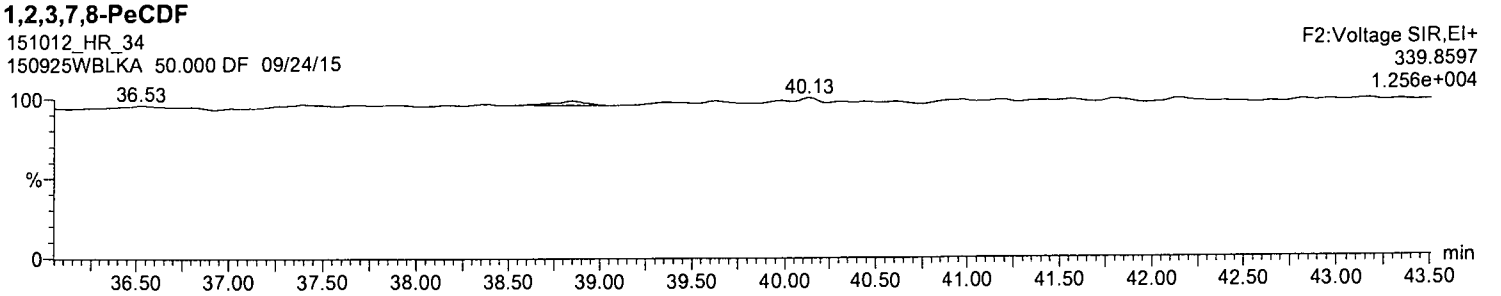


HxCDPE

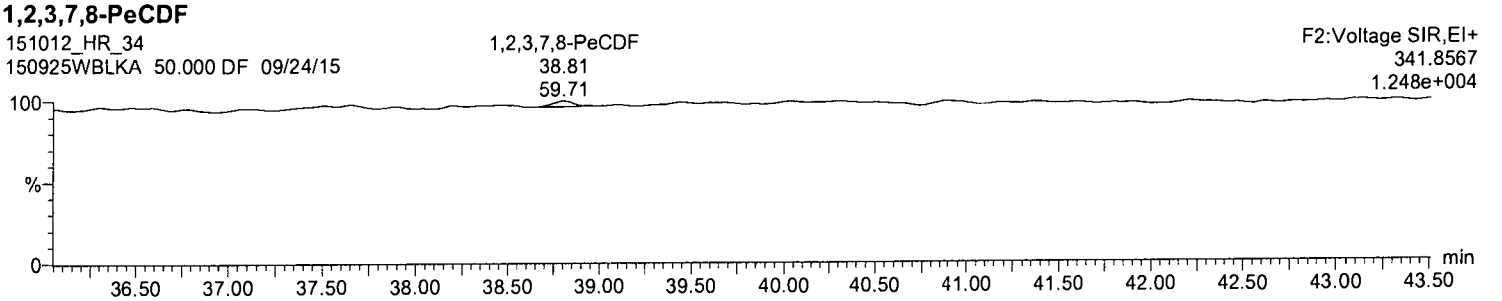


Name: 151012_HR_34, Date: 14-Oct-2015, Time: 03:09:17, ID: , Description: 150925WBLKA 50.000 DF 09/24/15, User:

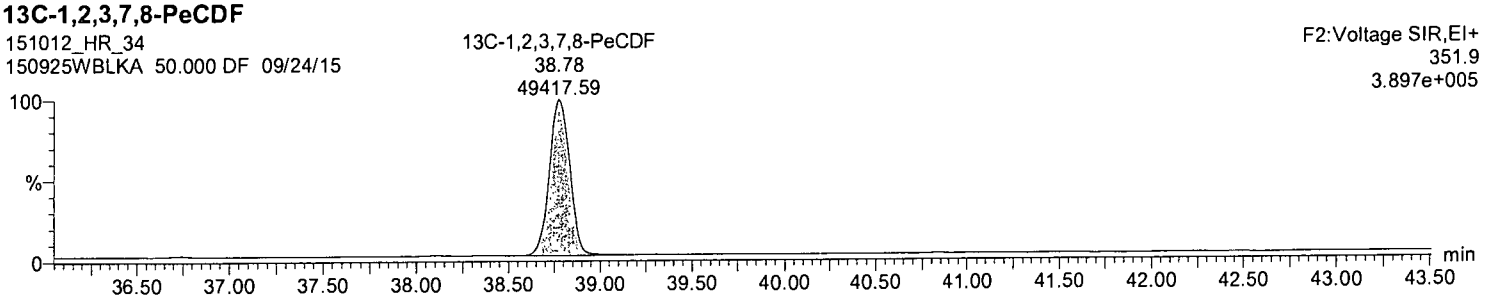
1,2,3,7,8-PeCDF



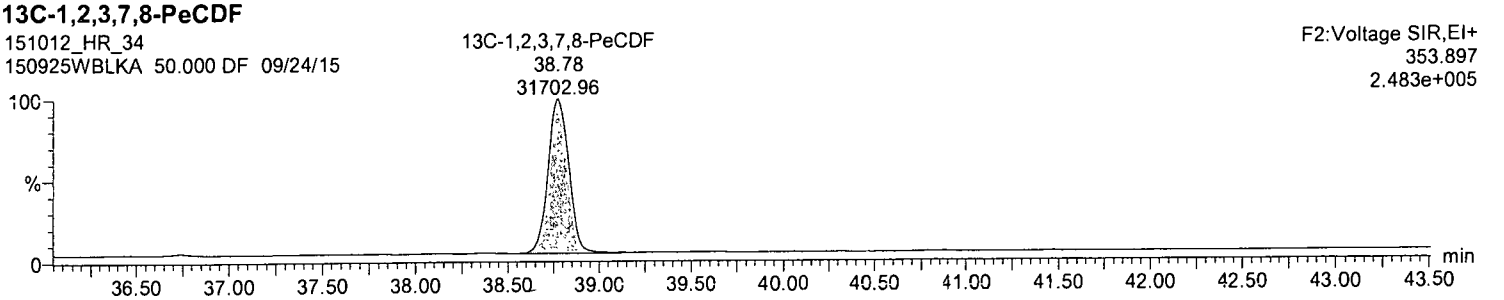
1,2,3,7,8-PeCDF



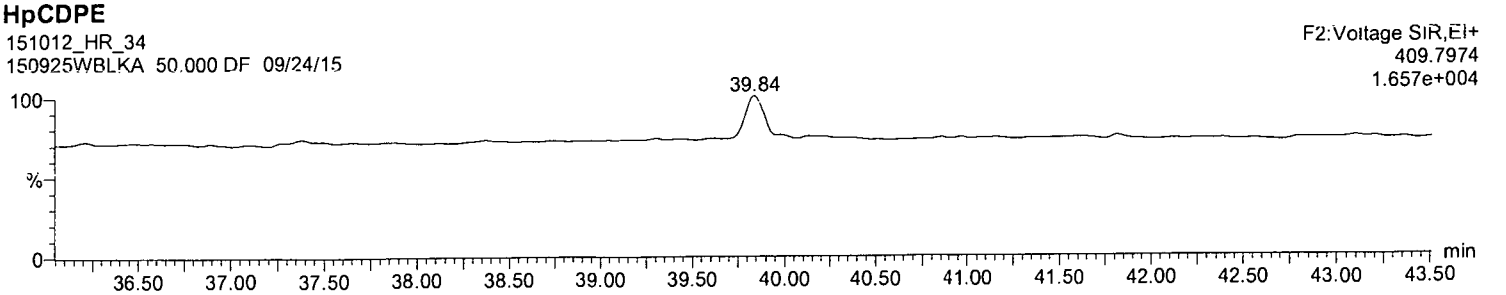
13C-1,2,3,7,8-PeCDF



13C-1,2,3,7,8-PeCDF



HpCDPE



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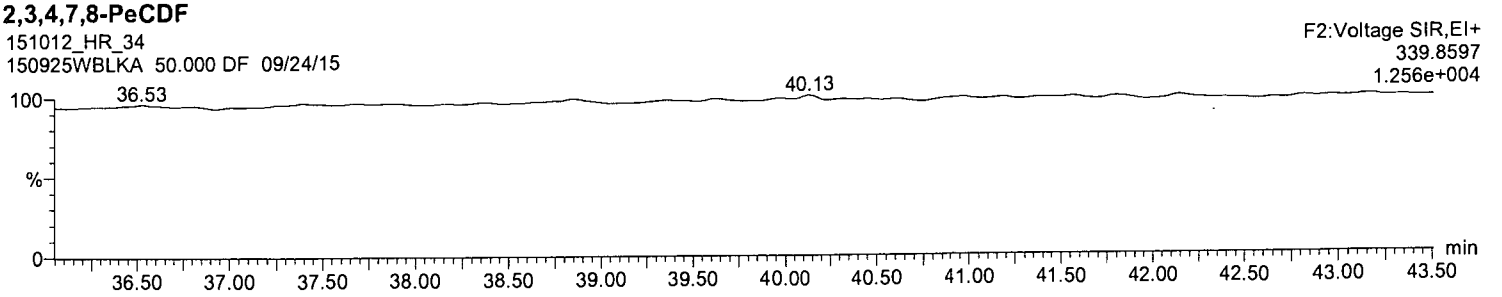
2,3,4,7,8-PeCDF

151012_HR_34
150925WBLKA 50.000 DF 09/24/15



2,3,4,7,8-PeCDF

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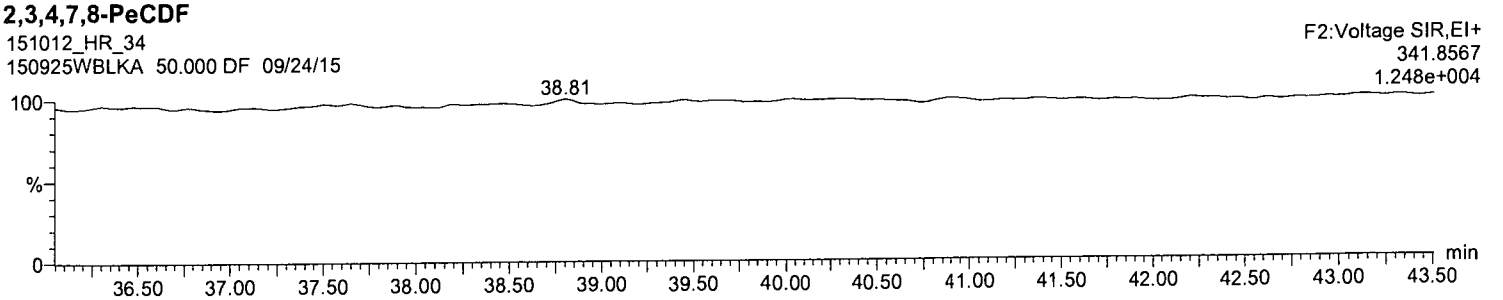

HpCDPE

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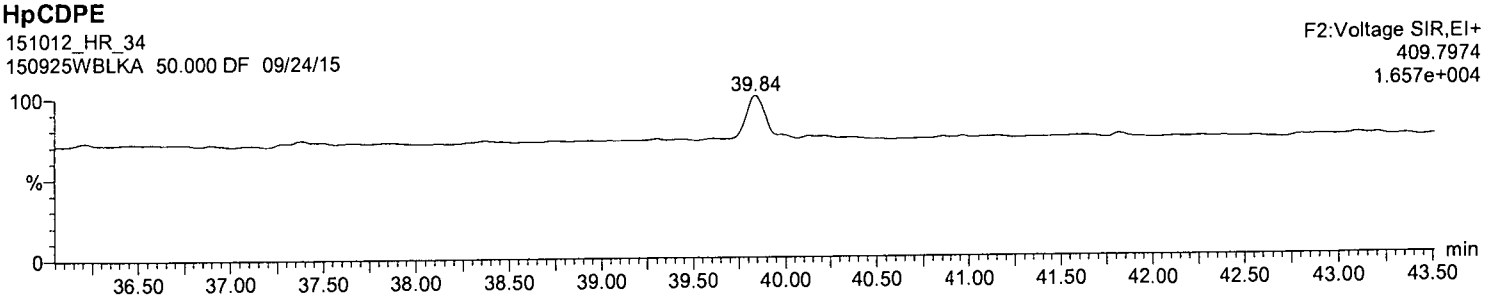

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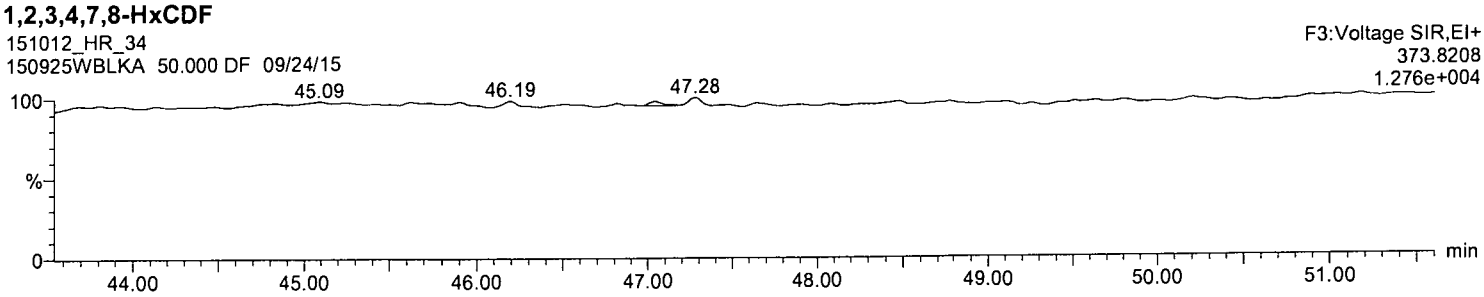
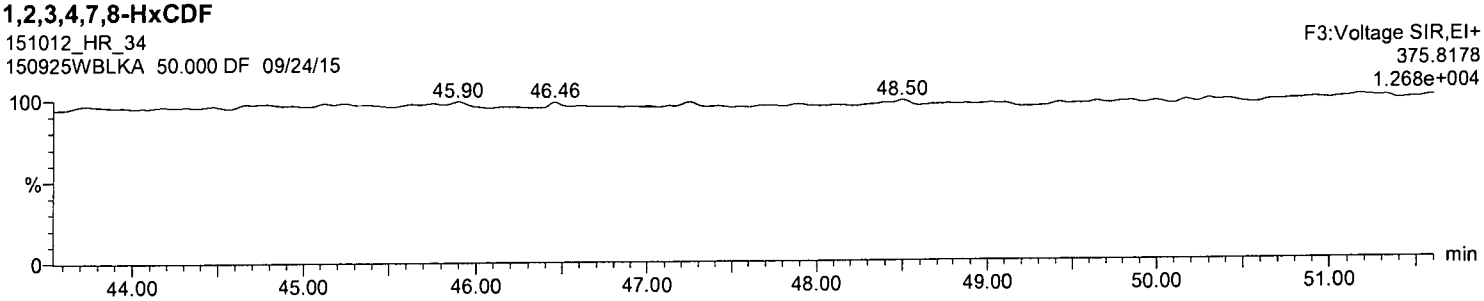
1,2,3,4,7,8-HxCDF



1,2,3,4,7,8-HxCDF



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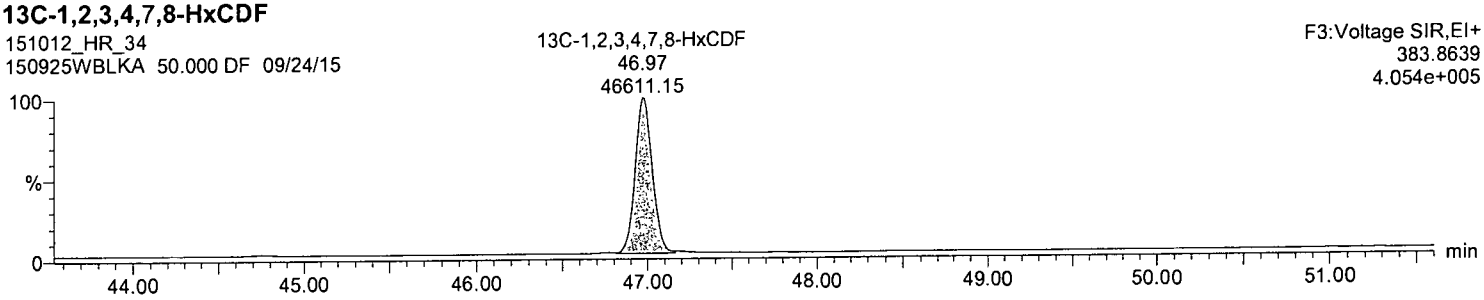
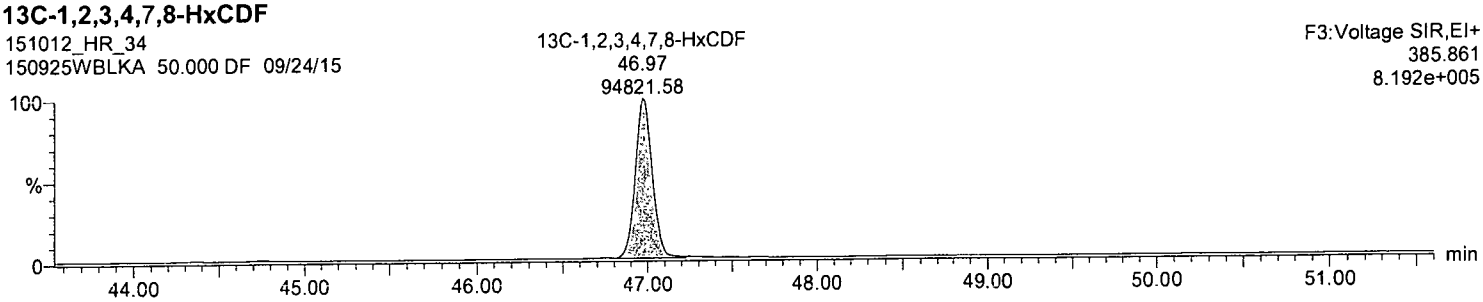
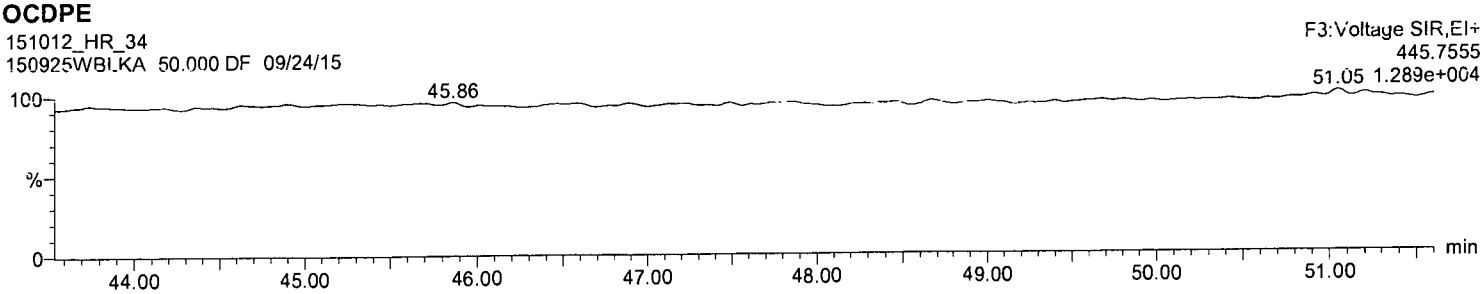


13C-1,2,3,4,7,8-HxCDF



OCDPE



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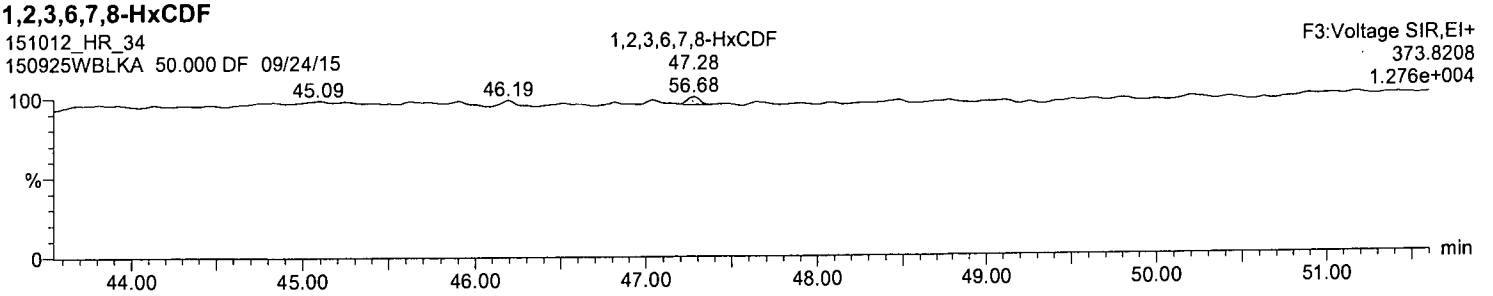
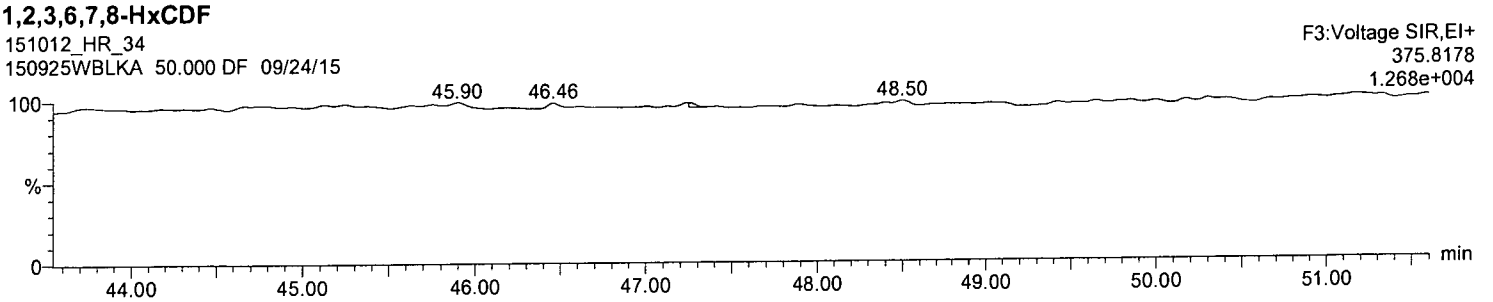
1,2,3,6,7,8-HxCDF



1,2,3,6,7,8-HxCDF



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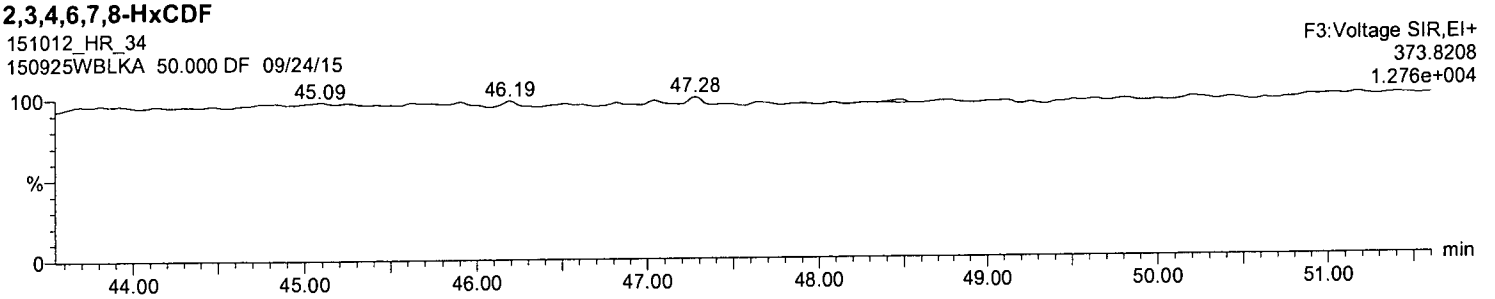
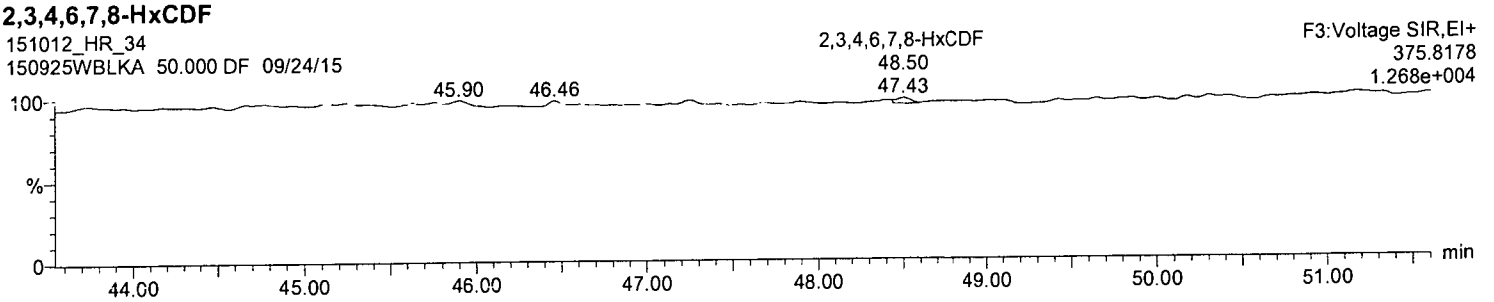
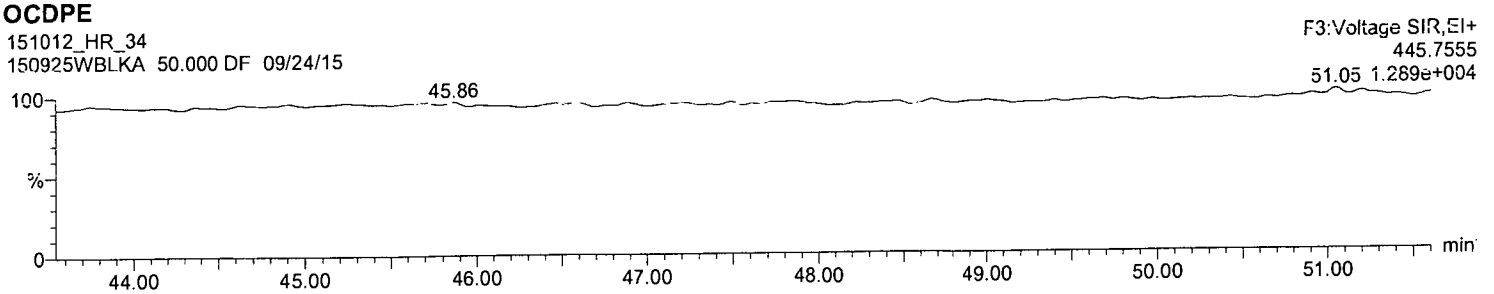


2,3,4,6,7,8-HxCDF



OCDPE



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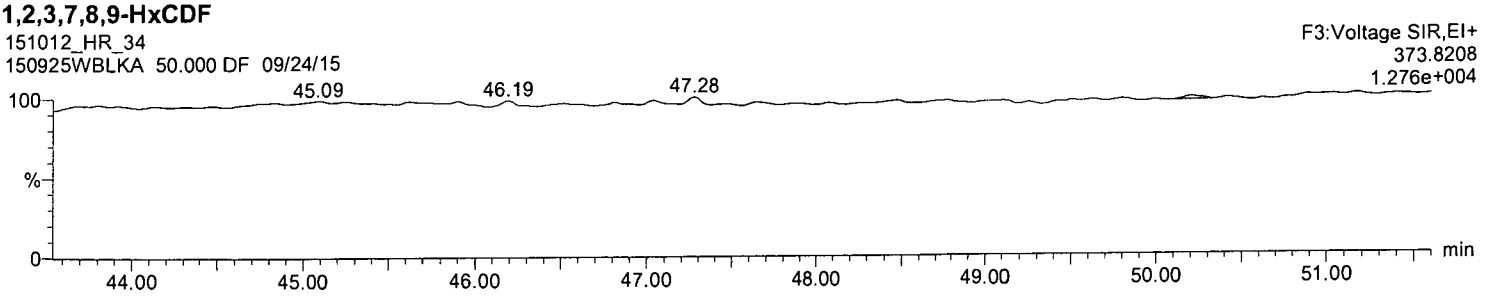
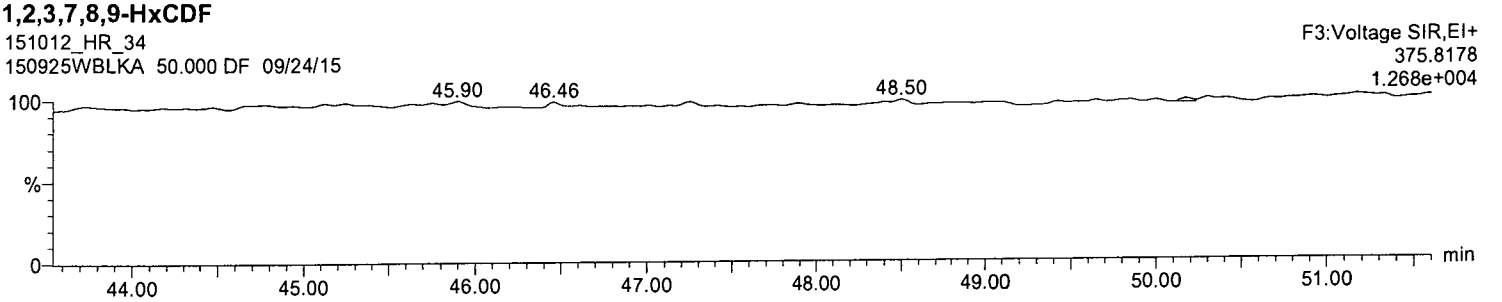
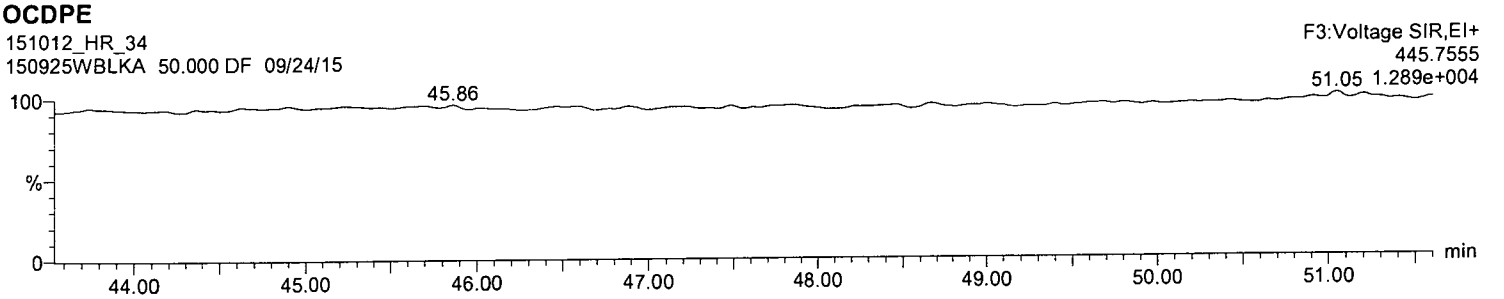
1,2,3,7,8,9-HxCDF



1,2,3,7,8,9-HxCDF



OCDPE



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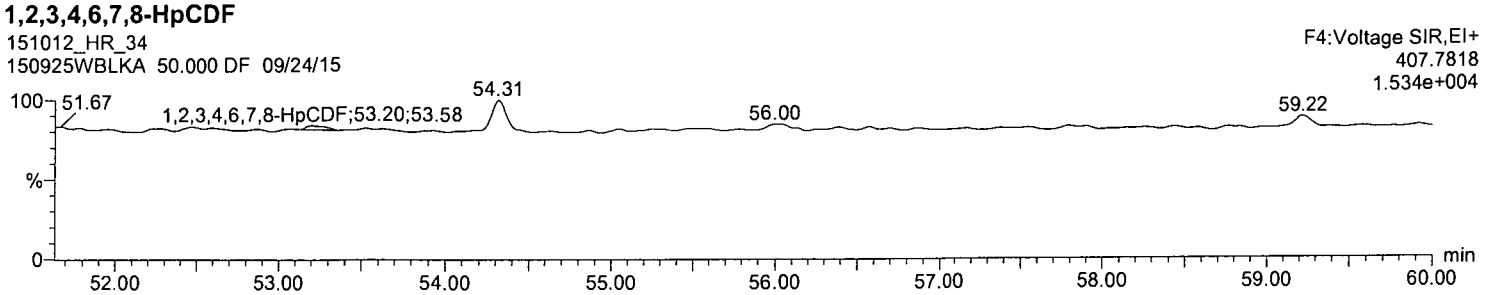
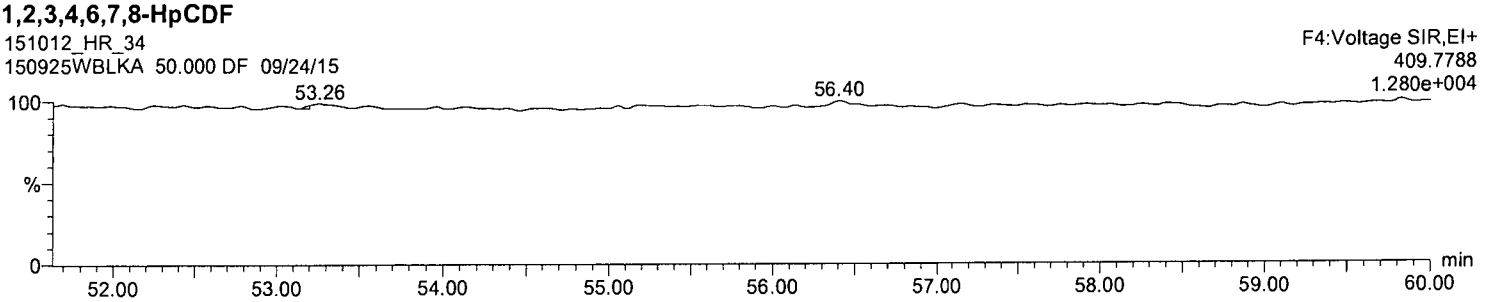
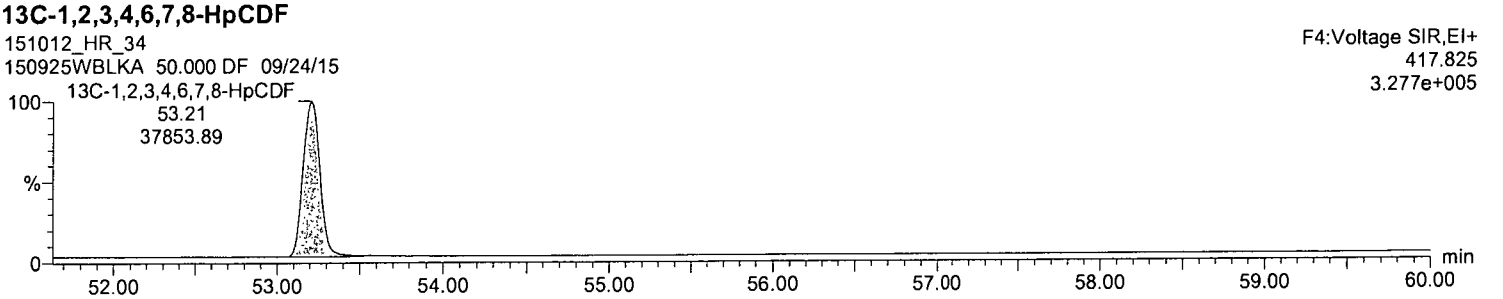
1,2,3,4,6,7,8-HpCDF



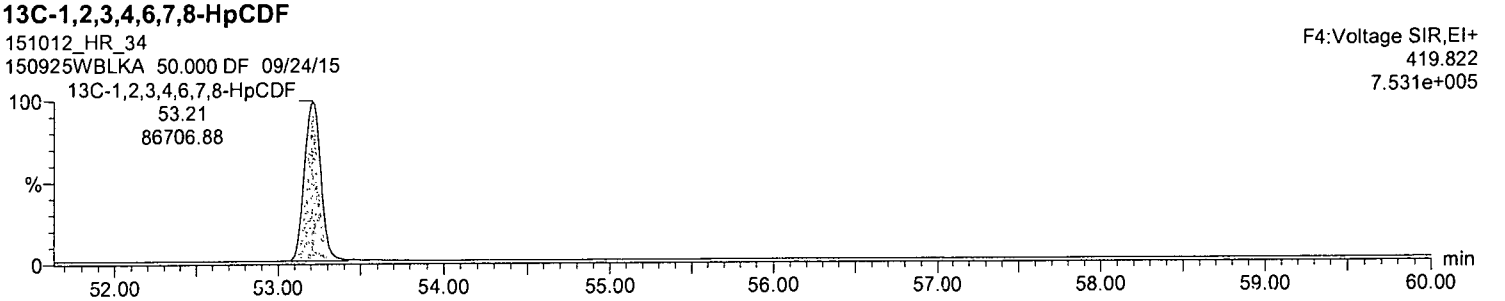
1,2,3,4,6,7,8-HpCDF



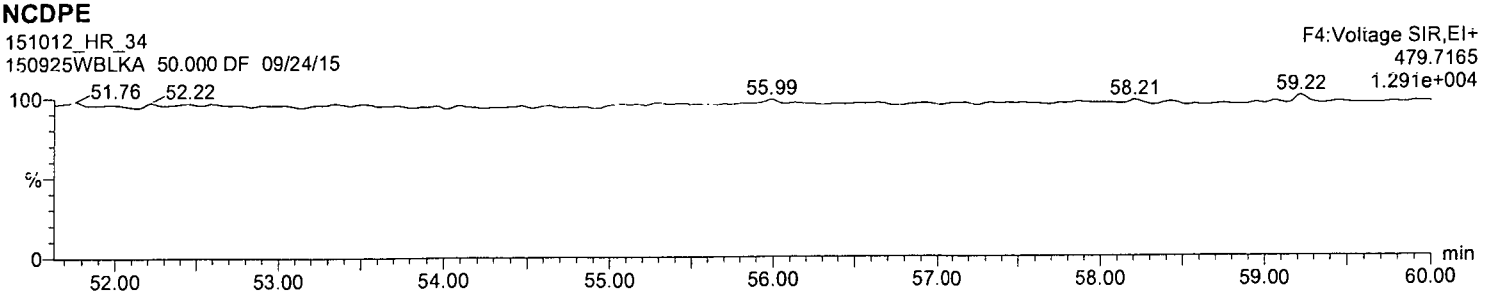
13C-1,2,3,4,6,7,8-HpCDF



13C-1,2,3,4,6,7,8-HpCDF



NCDPE



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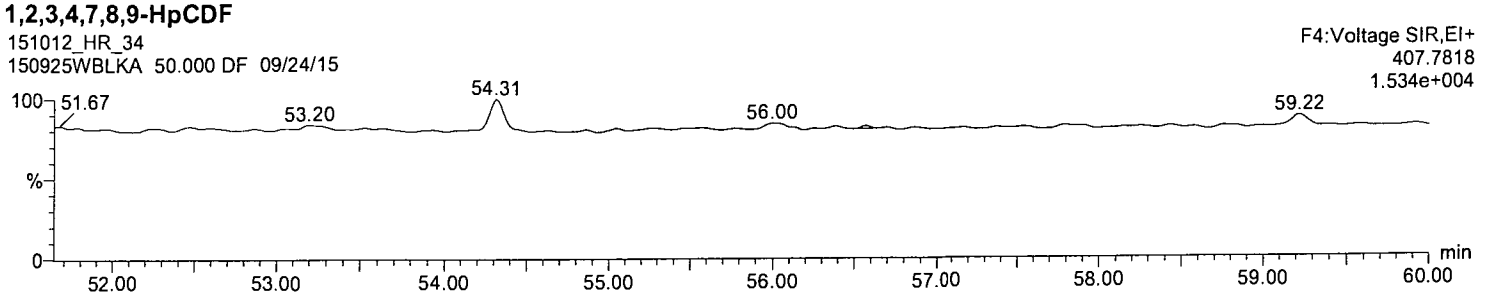
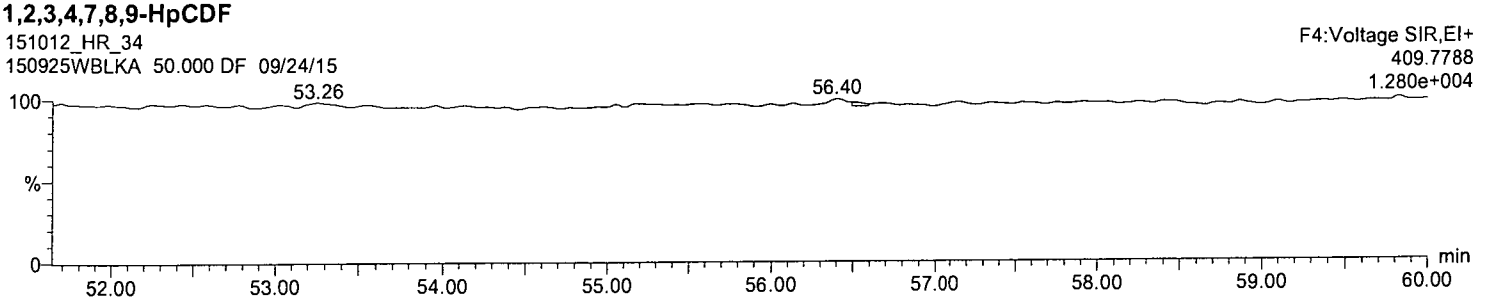
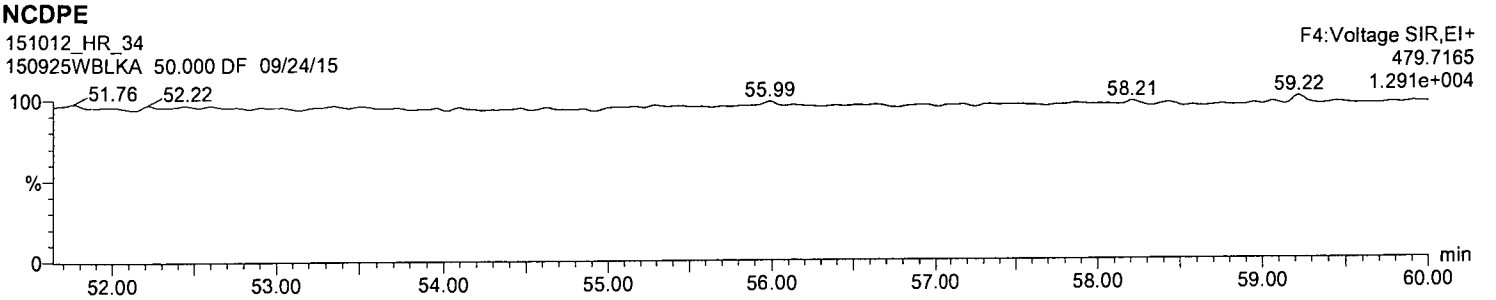
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF



NCDPE



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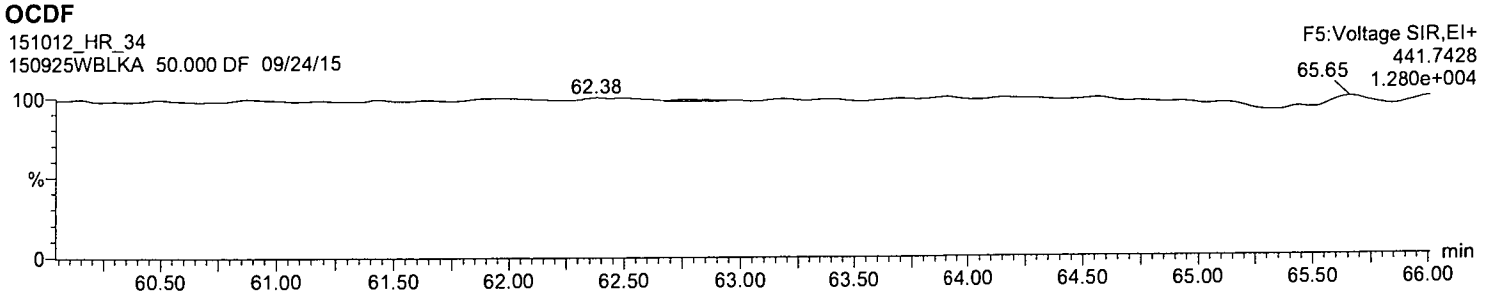
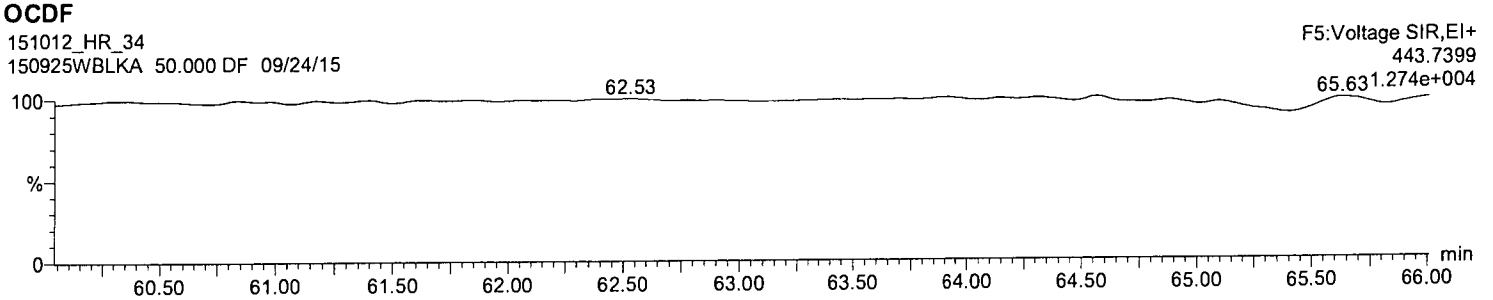
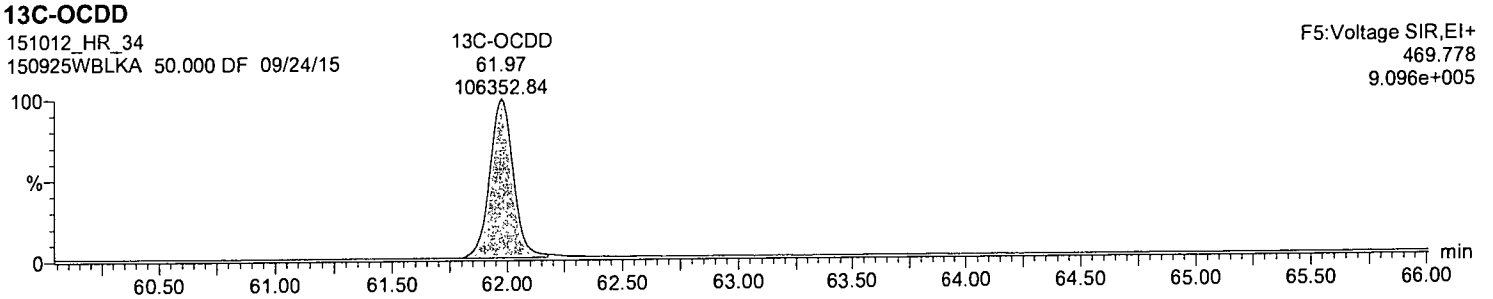
OCDF



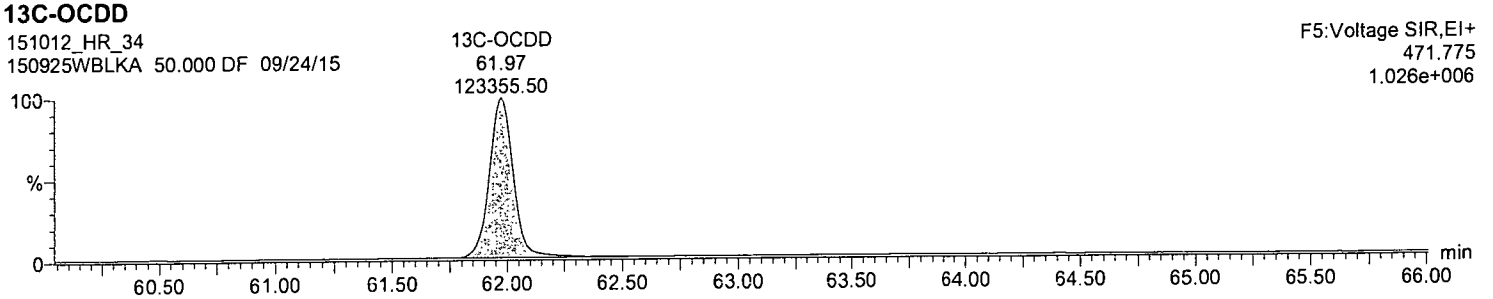
OCDF



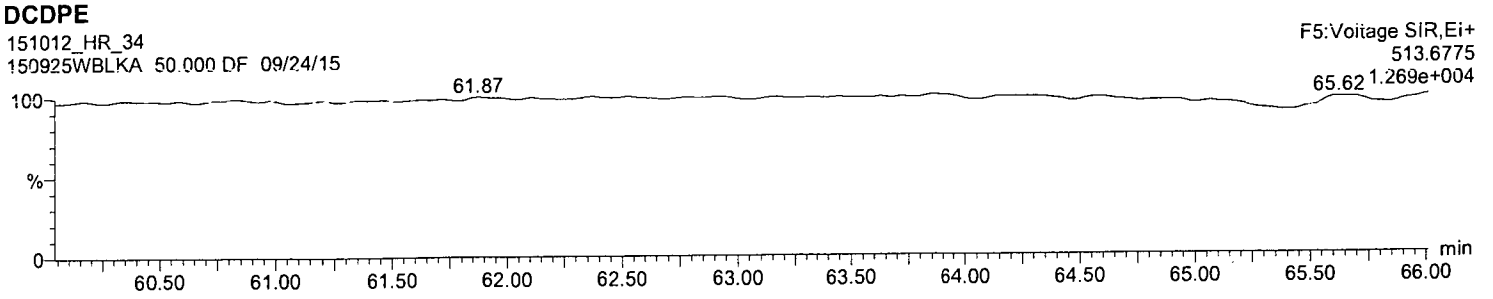
13C-OCDD



13C-OCDD



DCDPE



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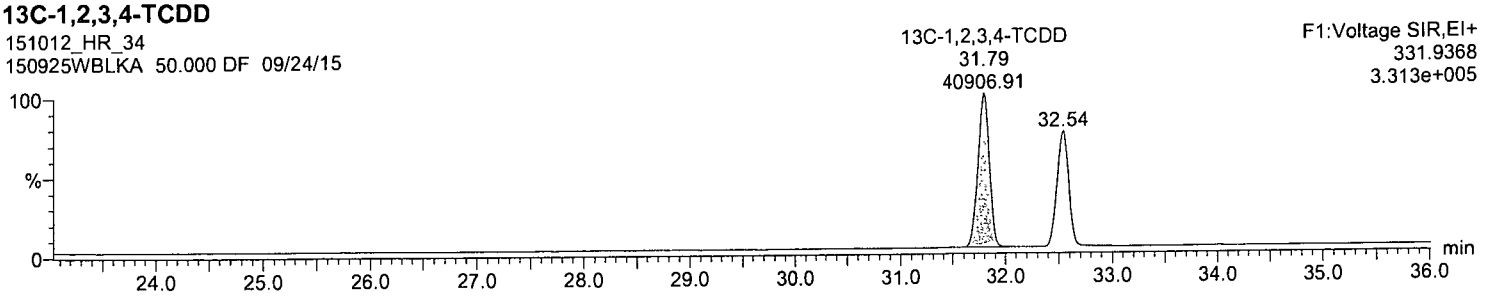
13C-1,2,3,4-TCDD

151012_HR_34
150925WBLKA 50.000 DF 09/24/15



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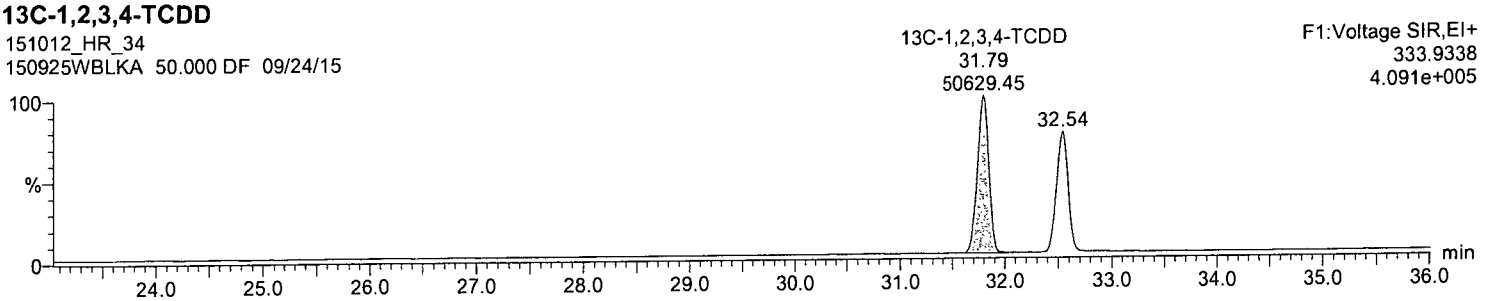
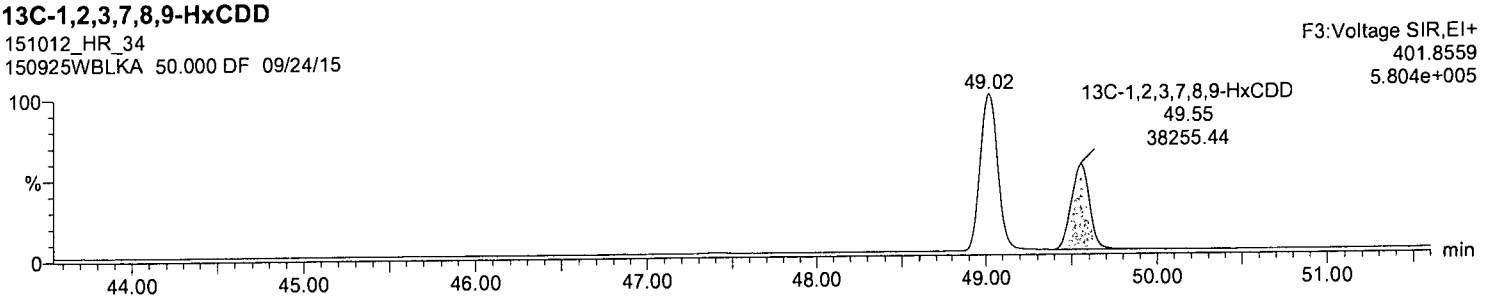
151012_HR_34
150925WBLKA 50.000 DF 09/24/15



13C-1,2,3,7,8,9-HxCDD

151012_HR_34
150925WBLKA 50.000 DF 09/24/15



13C-1,2,3,7,8,9-HxCDD

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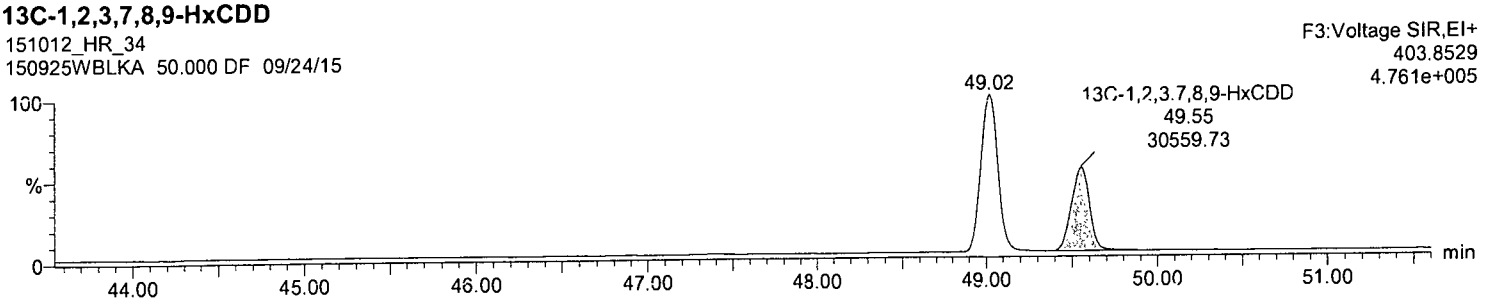
150925WBLKA 50.000 DF 09/24/15



Laboratory Control Spike Recovery
EPA 8290 - Dioxins and Furans

APPL ID: **150924W-21644 LCS - 201331**
Batch ID: #8290W-150924A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level pg/L	SPK Result pg/L	SPK % Recovery	Recovery Limits
1,2,3,4,6,7,8-HPCDD	1250	1070	85.6	70-130
1,2,3,4,6,7,8-HPCDF	1250	1030	82.4	70-130
1,2,3,4,7,8,9-HPCDF	1250	1040	83.2	70-130
1,2,3,4,7,8-HXCDD	1250	1160	92.8	70-130
1,2,3,4,7,8-HXCDF	1250	1090	87.2	70-130
1,2,3,6,7,8-HXCDD	1250	1170	93.6	70-130
1,2,3,6,7,8-HXCDF	1250	1080	86.4	70-130
1,2,3,7,8,9-HXCDD	1250	1230	98.4	70-130
1,2,3,7,8,9-HXCDF	1250	1100	88.0	70-130
1,2,3,7,8-PECDD	1250	1210	96.8	70-130
1,2,3,7,8-PECDF	1250	1140	91.2	70-130
2,3,4,6,7,8-HXCDF	1250	1140	91.2	70-130
2,3,4,7,8-PECDF	1250	1170	93.6	70-130
2,3,7,8-TCDD	500	471	94.2	70-130
2,3,7,8-TCDF	500	454	90.8	70-130
OCDD	2500	2170	86.8	70-130
OCDF	2500	2190	87.6	70-130
SURROGATE: 13C-1,2,3,4,6,7,8-HPCDD	5000	4670	93.4	40-135
SURROGATE: 13C-1,2,3,4,6,7,8-HPCDF	5000	4540	90.8	40-135
SURROGATE: 13C-1,2,3,4,7,8-HXCDF (S	5000	4090	81.8	40-135
SURROGATE: 13C-1,2,3,6,7,8-HXCDD (S	5000	4040	80.8	40-135
SURROGATE: 13C-1,2,3,7,8-PECDD (S)	2000	1670	83.5	40-135
SURROGATE: 13C-1,2,3,7,8-PECDF (S)	2000	1630	81.5	40-135
SURROGATE: 13C-2,3,7,8-TCDD (S)	2000	1490	74.5	40-135
SURROGATE: 13C-2,3,7,8-TCDF (S)	2000	1510	75.5	40-135
SURROGATE: 13C-OCDD (S)	10000	8840	88.4	40-135

Comments: _____

Primary	SPK
Quant Method :	151012_8290
Extraction Date :	09/24/15
Analysis Date :	10/14/15
Instrument :	Magneto
Run :	151012_HR_33
Initials :	RP

Printed: 10/15/15 7:07:08 AM
APPL Standard LCS

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

Name	Peak Area	1° Area	RT	Ion Ab	Ion Fail?	S/N1	S/N2	Conc.	%Rec	LOD	EMPC	Multiplier
2,3,7,8-TCDD	1.634207e4	2.161651e4	32.59	0.76	NO	NO	NO	471.140	94.2	0.610	471.140	50.000
1,2,3,7,8-PeCDD	4.096959e4	2.694933e4	41.53	1.52	NO	NO	NO	1214.534	97.2	2.117	1214.534	50.000
1,2,3,4,7,8-HxCDD	3.809123e4	3.080412e4	48.87	1.24	NO	NO	NO	1161.342	92.9	4.700	1161.342	50.000
1,2,3,6,7,8-HxCDD	3.821369e4	3.114949e4	49.07	1.23	NO	NO	NO	1166.972	93.4	4.690	1166.972	50.000
1,2,3,7,8,9-HxCDD	4.092535e4	3.335656e4	49.60	1.23	NO	NO	NO	1225.958	98.1	4.601	1225.958	50.000
1,2,3,4,6,7,8-HpCDD	3.317662e4	3.233890e4	55.43	1.03	NO	NO	NO	1072.341	85.8	1.264	1072.341	50.000
OCDD	5.839623e4	6.587485e4	62.03	0.89	NO	NO	NO	2166.271	86.7	2.158	2166.271	50.000
2,3,7,8-TCDF	1.837072e4	2.452342e4	31.60	0.75	NO	NO	NO	454.288	90.9	0.729	454.288	50.000
1,2,3,7,8-PeCDF	5.486373e4	3.455489e4	38.85	1.59	NO	NO	NO	1141.503	91.3	2.916	1141.503	50.000
2,3,4,7,8-PeCDF	5.141290e4	3.287263e4	40.88	1.56	NO	NO	NO	1165.635	93.3	3.159	1165.635	50.000
1,2,3,4,7,8-HxCDF	4.645979e4	3.878354e4	47.03	1.20	NO	NO	NO	1092.938	87.4	1.713	1092.938	50.000
1,2,3,6,7,8-HxCDF	4.916848e4	4.002976e4	47.30	1.23	NO	NO	NO	1080.991	86.5	1.619	1080.991	50.000
2,3,4,6,7,8-HxCDF	4.923904e4	3.764407e4	48.51	1.31	NO	NO	NO	1139.508	91.2	1.752	1139.508	50.000
1,2,3,7,8,9-HxCDF	4.182399e4	3.438521e4	50.23	1.22	NO	NO	NO	1095.167	87.6	1.920	1095.167	50.000
1,2,3,4,6,7,8-HpCDF	4.359036e4	4.130641e4	53.26	1.06	NO	NO	NO	1034.118	82.7	1.734	1034.118	50.000
1,2,3,4,7,8,9-HpCDF	3.762234e4	3.557738e4	56.44	1.06	NO	NO	NO	1042.436	83.4	2.027	1042.436	50.000
OCDF	6.447939e4	7.042457e4	62.43	0.92	NO	NO	NO	2190.961	87.6	1.430	2190.961	50.000
13C-2,3,7,8-TCDD	6.235275e4	7.923493e4	32.57	0.79	NO	NO	NO	1488.061	74.4	1.227		50.000
13C-1,2,3,7,8-PeCDD	7.395157e4	4.522606e4	41.51	1.64	NO	NO	NO	1673.727	83.7	1.615		50.000
13C-1,2,3,6,7,8-HxCDD	1.599660e5	1.250635e5	49.05	1.28	NO	NO	NO	4037.691	80.8	2.963		50.000
13C-1,2,3,4,6,7,8-HpCDD	1.546886e5	1.477995e5	55.41	1.05	NO	NO	NO	4674.599	93.5	2.647		50.000
13C-OCDD	2.416465e5	2.731849e5	62.00	0.88	NO	NO	NO	8842.301	88.4	3.230		50.000
13C-2,3,7,8-TCDF	8.907591e4	1.159060e5	31.57	0.77	NO	NO	NO	1506.478	75.3	0.900		50.000
13C-1,2,3,7,8-PeCDF	1.002936e5	6.425310e4	38.82	1.56	NO	NO	NO	1630.415	81.5	1.005		50.000
13C-1,2,3,4,7,8-HxCDF	1.125025e5	2.175645e5	47.00	0.52	NO	NO	NO	4085.799	81.7	1.779		50.000
13C-1,2,3,4,6,7,8-HpCDF	8.703082e4	2.037315e5	53.24	0.43	NO	NO	NO	4540.051	90.8	2.487		50.000
13C-1,2,3,4-TCDD	8.671274e4	1.109738e5	31.81	0.78	NO	NO	NO	2000.000	100.0	1.182		50.000
13C-1,2,3,7,8,9-HxCDD	8.389545e4	6.723543e4	49.58	1.25	NO	NO	NO	2000.000	100.0	2.768		50.000

$$TCDD = \frac{(16342.07 + 21616.51)(2000)}{(62352.75 + 79234.93)(1.13806)(1L)} = 471.139$$

10/14/15
PP

RETENTION TIME CHECK

150924WA_LCS-1 50.000 DF 09/24/15 — **EPA Method 8290**

INSTRUMENT: Magneto
COLUMN: Restek DB5 - 60m
MATRIX:

ANALYSIS DATE/TIME:
EXTRACTION DATE:
SEQUENCE:
RUN FILE: 151012_HR_33

Analyte	RT of congener in sample 151012_HR_33	RT of ^{13}C congener in sample 151012_HR_33	RRT of congener in sample 151012_HR_33	RRT of congener in CCV 151012_HR_30	LCL[a]	UCL[b]	Qualifiers
2,3,7,8-TCDD	32.5945	32.5673	1.0008	1.0008	32.5506	32.6173	Pass
1,2,3,7,8-PeCDD	41.5318	41.5115	1.0005	1.0007	41.4948	41.5615	Pass
1,2,3,4,7,8-HxCDD	48.8697	49.0502	0.9963	0.9961	0.9911	1.0011	Pass
1,2,3,6,7,8-HxCDD	49.0713	49.0502	1.0004	1.0004	49.0335	49.1002	Pass
1,2,3,7,8,9-HxCDD	49.6027	49.5813	1.0004	1.0002	49.5646	49.6313	Pass
1,2,3,4,6,7,8-HpCDD	55.4290	55.4088	1.0004	1.0005	55.3921	55.4588	Pass
OCDD	62.0350	62.0045	1.0005	1.0003	61.9878	62.0545	Pass
2,3,7,8-TCDF	31.6012	31.5740	1.0009	1.0009	31.5573	31.6240	Pass
1,2,3,7,8-PeCDF	38.8458	38.8155	1.0008	1.0010	38.7988	38.8655	Pass
2,3,4,7,8-PeCDF	40.8832	38.8155	1.0533	1.0536	1.0483	1.0589	Pass
1,2,3,4,7,8-HxCDF	47.0318	47.0000	1.0007	1.0005	46.9833	47.0500	Pass
1,2,3,6,7,8-HxCDF	47.2975	47.0000	1.0063	1.0059	1.0009	1.0109	Pass
2,3,4,6,7,8-HxCDF	48.5085	47.0000	1.0321	1.0319	1.0267	1.0371	Pass
1,2,3,7,8,9-HxCDF	50.2293	47.0000	1.0687	1.0687	1.0634	1.0740	Pass
1,2,3,4,6,7,8-HpCDF	53.2600	53.2398	1.0004	1.0004	53.2231	53.2898	Pass
1,2,3,4,7,8,9-HpCDF	56.4425	53.2398	1.0602	1.0600	1.0547	1.0653	Pass
OCDF	62.4302	62.0045	1.0069	1.0069	1.0019	1.0119	Pass
$^{13}C_{12}$-2,3,7,8-TCDD	32.5673	31.8053	1.0240	1.0231	1.0180	1.0282	Pass
$^{13}C_{12}$-1,2,3,7,8-PeCDD	41.5115	31.8053	1.3052	1.3042	1.2977	1.3107	Pass
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	49.0502	49.5813	0.9893	0.9895	0.9846	0.9944	Pass
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	55.4088	49.5813	1.1175	1.1176	1.1120	1.1232	Pass
$^{13}C_{12}$-OCDD	62.0045	49.5813	1.2506	1.2504	1.2441	1.2567	Pass
$^{13}C_{12}$-2,3,7,8-TCDF	31.5740	31.8053	0.9927	0.9923	0.9873	0.9973	Pass
$^{13}C_{12}$-1,2,3,7,8-PeCDF	38.8155	31.8053	1.2204	1.2193	1.2132	1.2254	Pass
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	47.0000	49.5813	0.9479	0.9481	0.9434	0.9528	Pass
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	53.2398	49.5813	1.0738	1.0739	1.0685	1.0793	Pass
$^{13}C_{12}$-1,2,3,4-TCDD	31.8053	31.8053	1.0000	1.0000	0.9950	1.0050	Pass
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	49.5813	49.5813	1.0000	1.0000	0.9950	1.0050	Pass

a. Lower control limit
b. Upper control limit

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

#	Name	RT	RRT
1	2,3,7,8-TCDD	32.594501	1.000835
2	1,2,3,7,8-PeCDD	41.531799	1.000489
3	1,2,3,4,7,8-HxCDD	48.869701	0.996320
4	1,2,3,6,7,8-HxCDD	49.071301	1.000430
5	1,2,3,7,8,9-HxCDD	49.602699	1.000432
6	1,2,3,4,6,7,8-HpCDD	55.429001	1.000365
7	OCDD	62.035000	1.000492
8	2,3,7,8-TCDF	31.601200	1.000862
9	1,2,3,7,8-PeCDF	38.845798	1.000781
10	2,3,4,7,8-PeCDF	40.883202	1.053270
11	1,2,3,4,7,8-HxCDF	47.031799	1.000677
12	1,2,3,6,7,8-HxCDF	47.297501	1.006330
13	2,3,4,6,7,8-HxCDF	48.508499	1.032096
14	1,2,3,7,8,9-HxCDF	50.229301	1.068709
15	1,2,3,4,6,7,8-HpCDF	53.259998	1.000379
16	1,2,3,4,7,8,9-HpCDF	56.442501	1.060156
17	OCDF	62.430199	1.006866
18	13C-2,3,7,8-TCDD	32.567299	1.023958
19	13C-1,2,3,7,8-PeCDD	41.511501	1.305176
20	13C-1,2,3,6,7,8-HxCDD	49.050201	0.989288
21	13C-1,2,3,4,6,7,8-HpCDD	55.408798	1.117534
22	13C-OCDD	62.004501	1.250562
23	13C-2,3,7,8-TCDF	31.573999	0.992728
24	13C-1,2,3,7,8-PeCDF	38.815498	1.220410
25	13C-1,2,3,4,7,8-HxCDF	47.000000	0.947938
26	13C-1,2,3,4,6,7,8-HpCDF	53.239799	1.073788
27	13C-1,2,3,4-TCDD	31.805300	1.000000
28	13C-1,2,3,7,8,9-HxCDD	49.581299	1.000000

Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

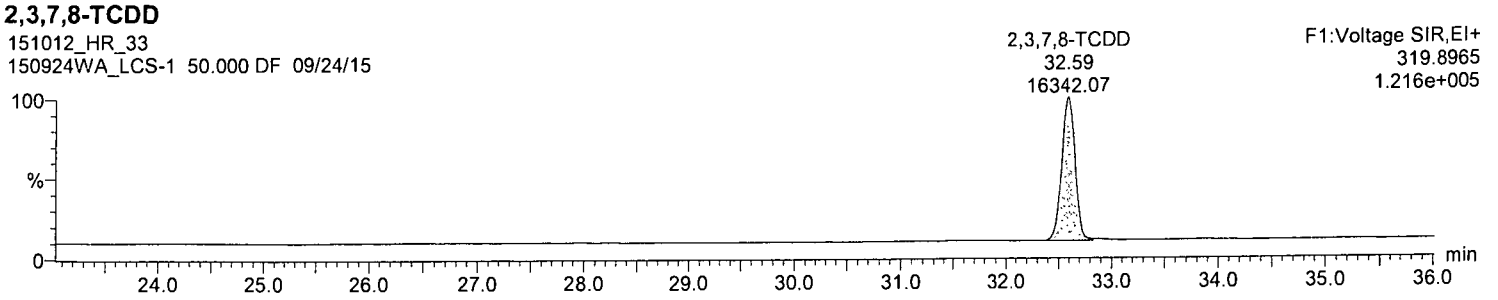
Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

#	Name	Signal	Noise 1	S/N 1	Flag S/N...	Signal 2	Noise 2	S/N 2	Flag S/N...
1	2,3,7,8-TCDD	1.0894900e5	6.8574913e1	1586.70	NO	1.4414200e5	8.8289787e1	1632.60	NO
2	1,2,3,7,8-PeCDD	3.3347600e5	1.9404318e2	1718.49	NO	2.1754000e5	1.7479381e2	1244.55	NO
3	1,2,3,4,7,8-HxCDD	3.4892000e5	7.6987006e2	452.64	NO	2.8055800e5	2.3277750e2	1205.26	NO
4	1,2,3,6,7,8-HxCDD	3.2761700e5	7.6987006e2	424.96	NO	2.6399400e5	2.3277750e2	1134.10	NO
5	1,2,3,7,8,9-HxCDD	3.8460600e5	7.6987006e2	498.96	NO	3.1492500e5	2.3277750e2	1352.90	NO
6	1,2,3,4,6,7,8-HpCDD	2.8568300e5	1.4884521e2	1918.69	NO	2.8077900e5	1.3478024e2	2083.24	NO
7	OCDD	3.6335900e5	2.4508827e2	1480.55	NO	4.1240800e5	1.0150564e2	4062.91	NO
8	2,3,7,8-TCDF	1.5229100e5	1.0464246e2	1454.18	NO	2.0244400e5	1.2603136e2	1606.30	NO
9	1,2,3,7,8-PeCDF	3.9836900e5	1.6442734e2	2418.97	NO	2.5128000e5	5.6346155e2	445.96	NO
10	2,3,4,7,8-PeCDF	3.6538000e5	1.6442734e2	2219.68	NO	2.3148700e5	5.6346155e2	410.83	NO
11	1,2,3,4,7,8-HxCDF	3.9881900e5	2.0831282e2	1913.13	NO	3.3238200e5	2.3636432e2	1406.23	NO
12	1,2,3,6,7,8-HxCDF	4.2097300e5	2.0831282e2	2019.85	NO	3.3708700e5	2.3636432e2	1426.13	NO
13	2,3,4,6,7,8-HxCDF	4.2775600e5	2.0831282e2	2052.88	NO	3.3455600e5	2.3636432e2	1415.43	NO
14	1,2,3,7,8,9-HxCDF	3.6181600e5	2.0831282e2	1736.10	NO	2.9462900e5	2.3636432e2	1246.50	NO
15	1,2,3,4,6,7,8-HpCDF	3.8049400e5	2.7858551e2	1364.16	NO	3.7155700e5	2.5430305e2	1461.08	NO
16	1,2,3,4,7,8,9-HpCDF	3.4842100e5	2.7858551e2	1249.49	NO	3.2386100e5	2.5430305e2	1273.52	NO
17	OCDF	4.0297700e5	1.5103270e2	2668.21	NO	4.3794800e5	9.5542381e1	4583.81	NO
18	13C-2,3,7,8-TCDD	4.9764700e5	2.2164079e2	2249.27	NO	6.2526800e5	1.6645425e2	3756.40	NO
19	13C-1,2,3,7,8-PeCDD	5.7601700e5	2.1735062e2	2649.46	NO	3.5129900e5	1.6485373e2	2130.97	NO
20	13C-1,2,3,6,7,8-HxCDD	1.4382320e6	4.3088150e2	3337.81	NO	1.1269420e6	3.1991083e2	3522.68	NO
21	13C-1,2,3,4,6,7,8-HpCDD	1.4203580e6	3.5200104e2	4034.14	NO	1.3616660e6	2.6291824e2	5179.05	NO
22	13C-OCDD	1.6917120e6	3.3644867e2	5027.26	NO	1.9048610e6	3.3869727e2	5624.08	NO
23	13C-2,3,7,8-TCDF	7.4584700e5	2.5025946e2	2979.78	NO	9.7147800e5	1.5648303e2	6208.20	NO
24	13C-1,2,3,7,8-PeCDF	7.9892500e5	1.5705246e2	5087.78	NO	5.1412700e5	1.7998827e2	2856.45	NO
25	13C-1,2,3,4,7,8-HxCDF	9.3610800e5	1.4394788e2	6502.92	NO	1.8067600e6	3.7187451e2	4858.52	NO
26	13C-1,2,3,4,6,7,8-HpCDF	8.1453800e5	2.6059381e2	3127.43	NO	1.8937670e6	3.1127292e2	6083.94	NO
27	13C-1,2,3,4-TCDD	7.2038900e5	2.2164079e2	3249.04	NO	9.3288000e5	1.6645425e2	5604.42	NO
28	13C-1,2,3,7,8,9-HxCDD	7.5293300e5	4.3088150e2	1756.82	NO	5.9321200e5	3.1991083e2	1854.30	NO

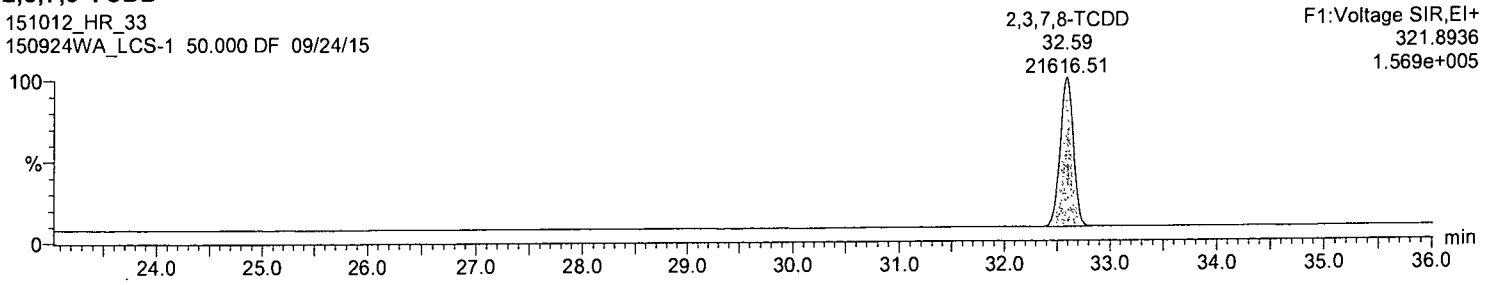
Method: C:\MassLynx\Default.pro\Methdb\151012_8290.mdb 13 Oct 2015 08:22:04
Calibration: C:\MassLynx\Default.pro\Curvedb\151012_8290.cdb 13 Oct 2015 08:23:54

Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

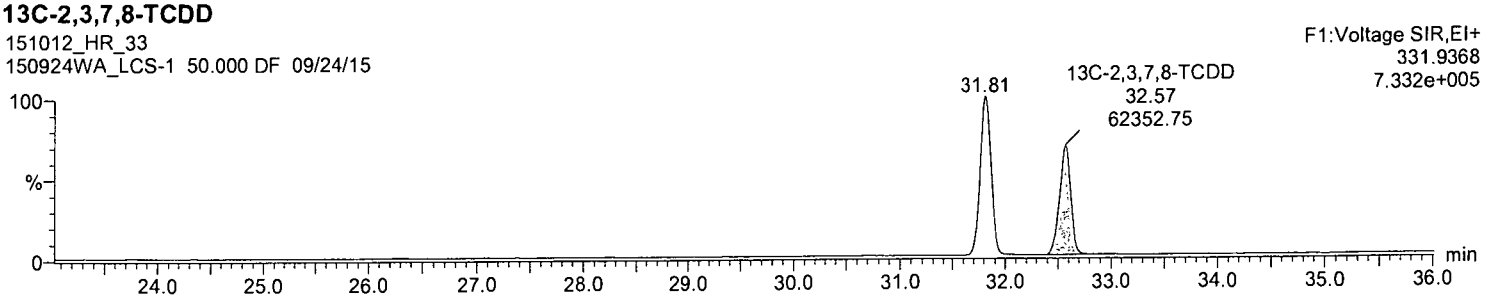
2,3,7,8-TCDD



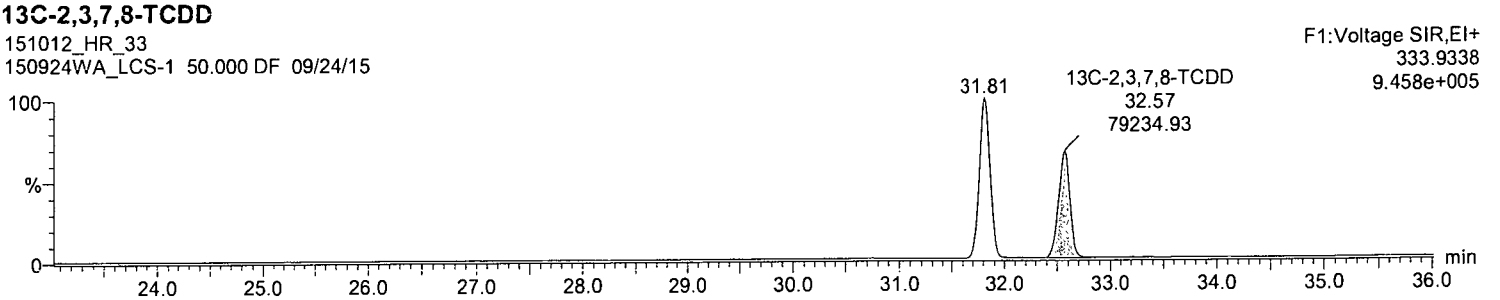
2,3,7,8-TCDD



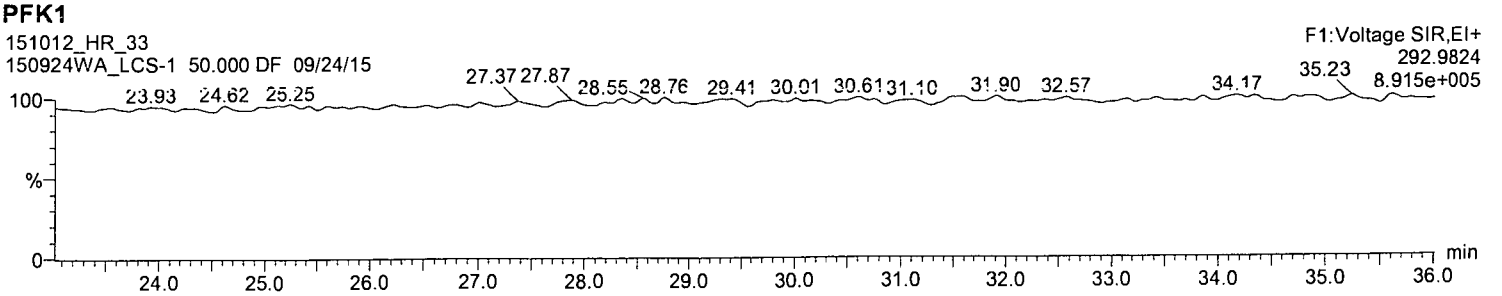
13C-2,3,7,8-TCDD



13C-2,3,7,8-TCDD

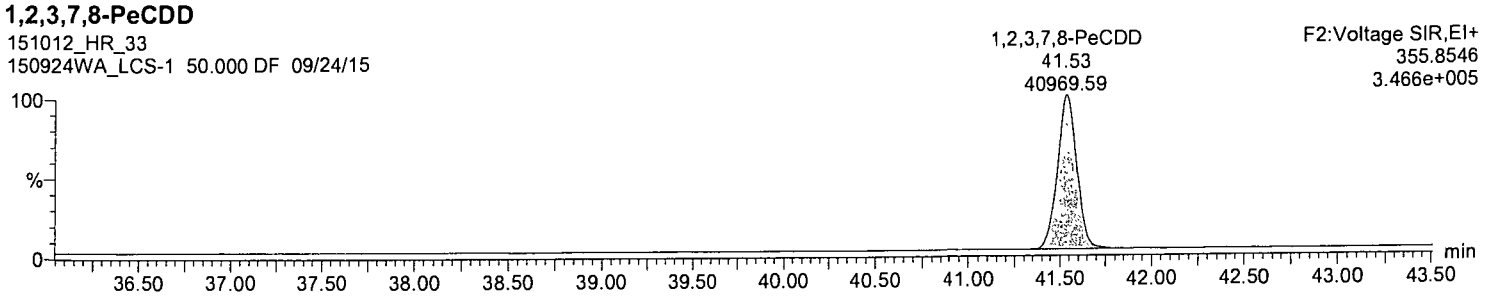


PFK1

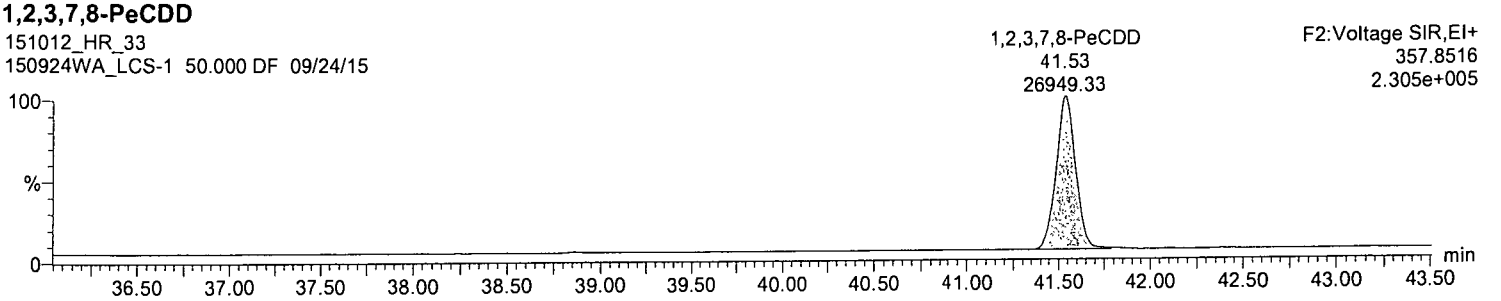


Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

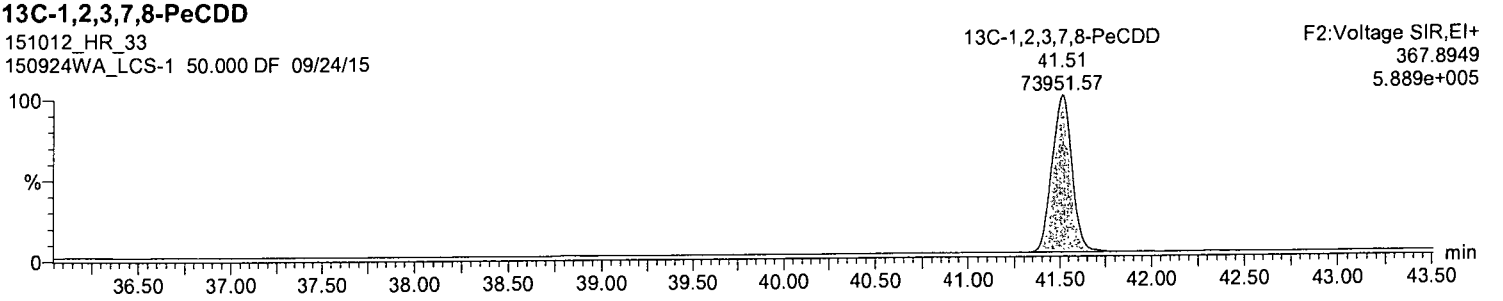
1,2,3,7,8-PeCDD



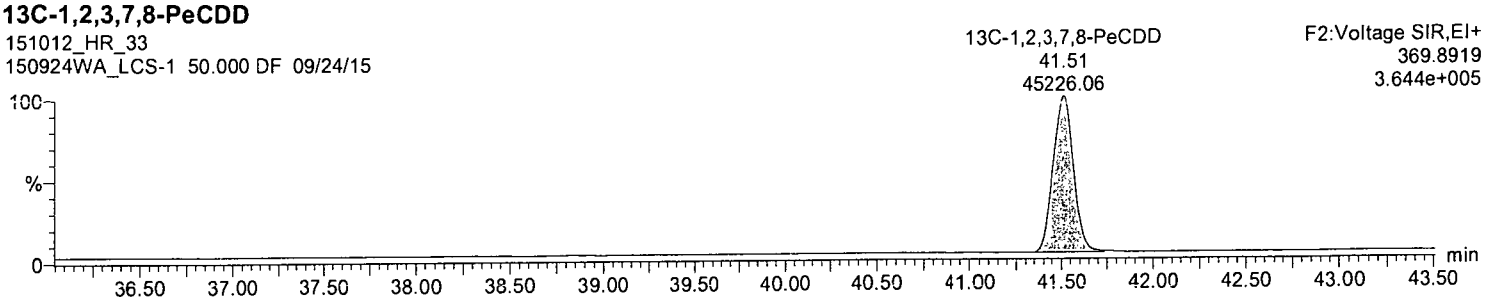
1,2,3,7,8-PeCDD



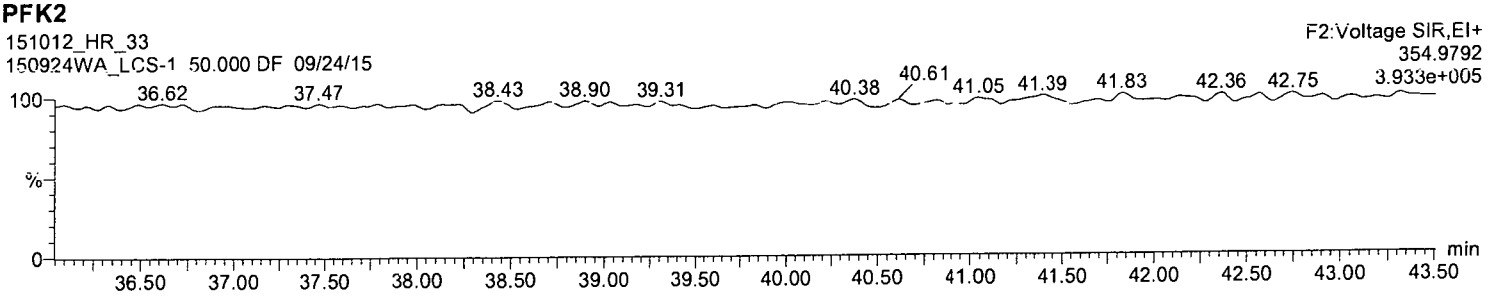
13C-1,2,3,7,8-PeCDD



13C-1,2,3,7,8-PeCDD

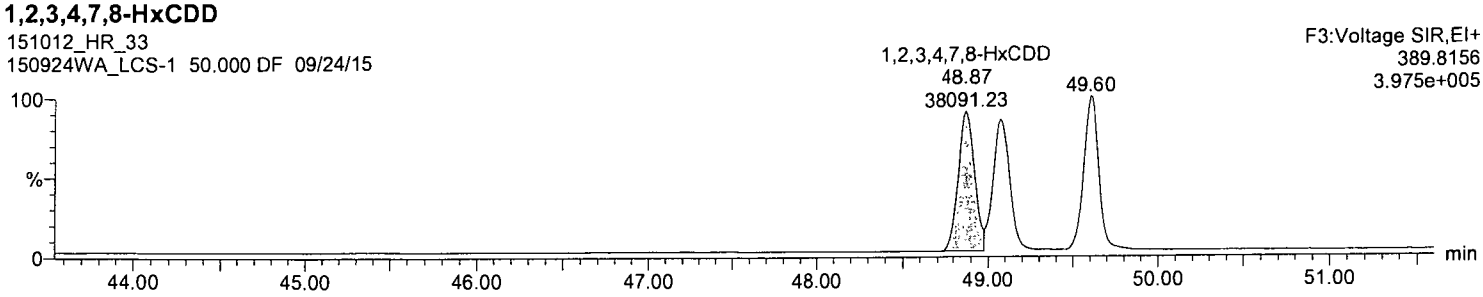


PFK2

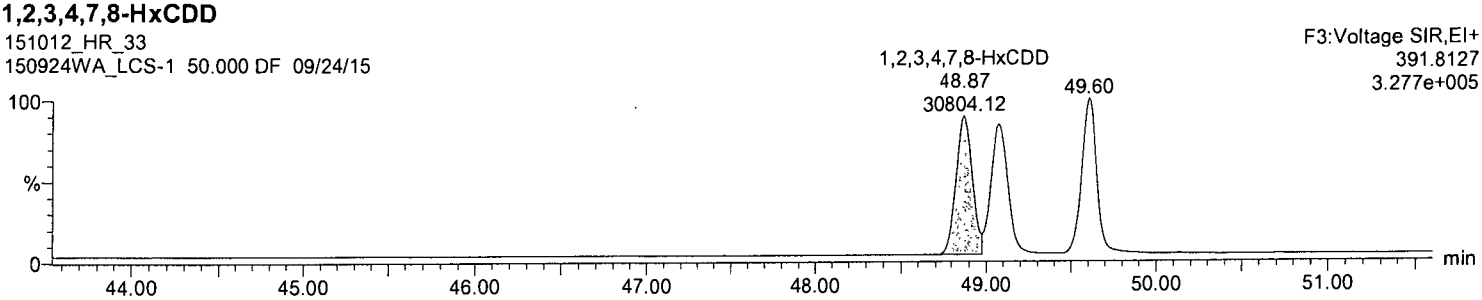


Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

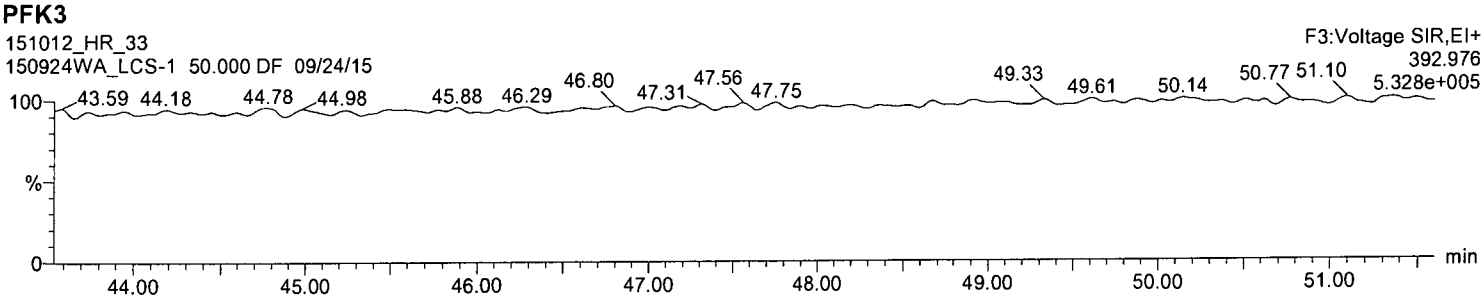
1,2,3,4,7,8-HxCDD



1,2,3,4,7,8-HxCDD



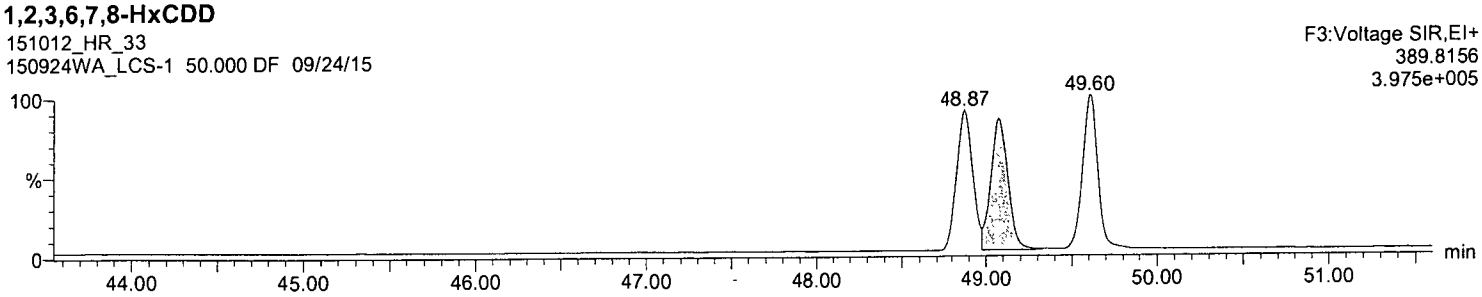
PFK3



Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

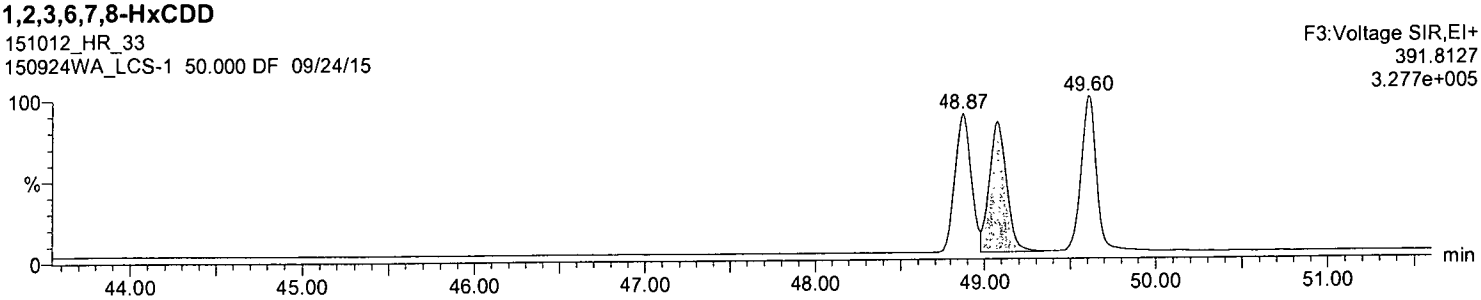
1,2,3,6,7,8-HxCDD

151012_HR_33
150924WA_LCS-1 50.000 DF 09/24/15



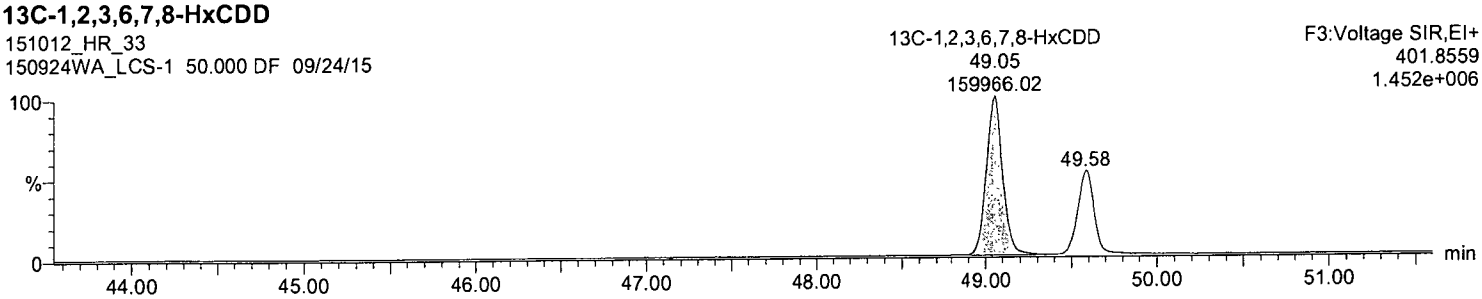
1,2,3,6,7,8-HxCDD

151012_HR_33
150924WA_LCS-1 50.000 DF 09/24/15



13C-1,2,3,6,7,8-HxCDD

151012_HR_33
150924WA_LCS-1 50.000 DF 09/24/15



13C-1,2,3,6,7,8-HxCDD

151012_HR_33
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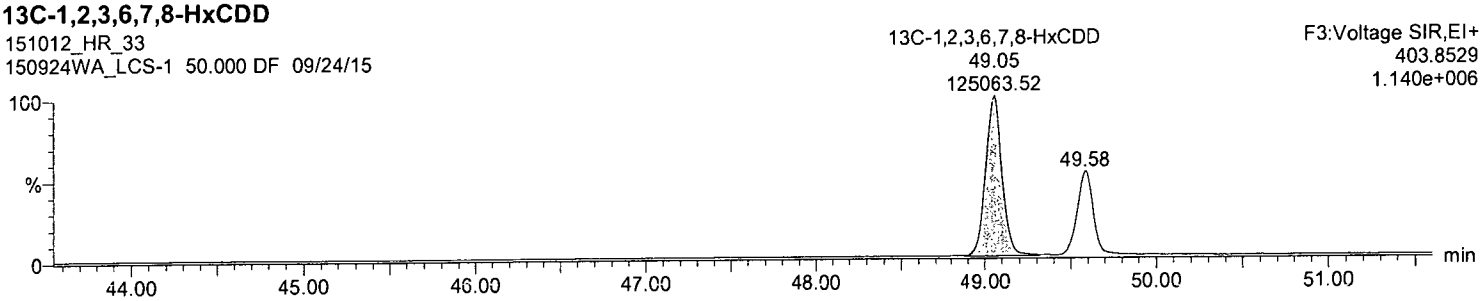
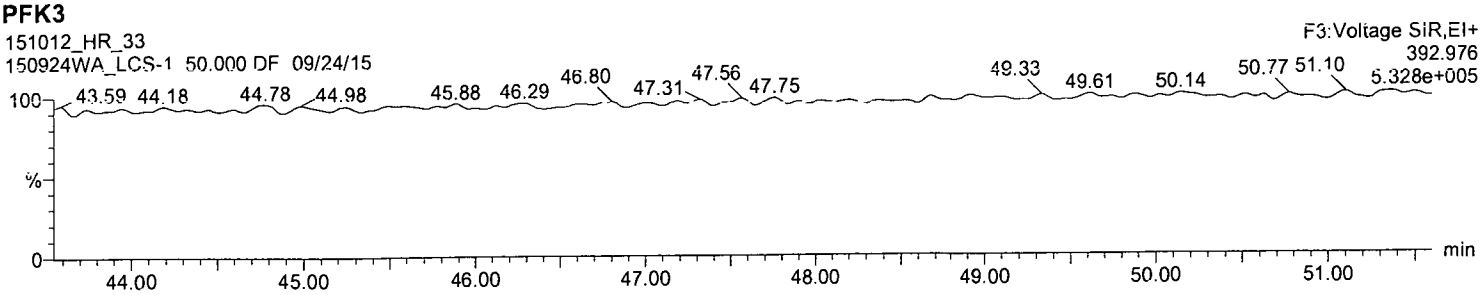


PFK3

151012_HR_33
150924WA_LCS-1 50.000 DF 09/24/15



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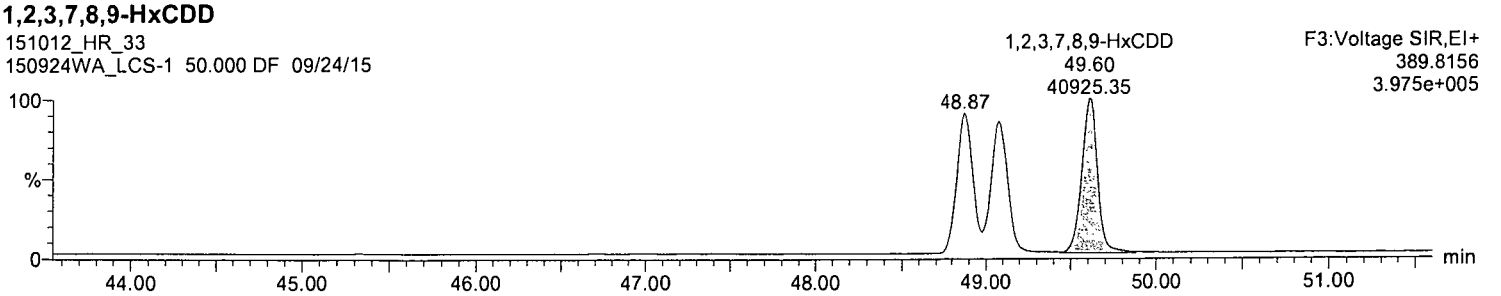

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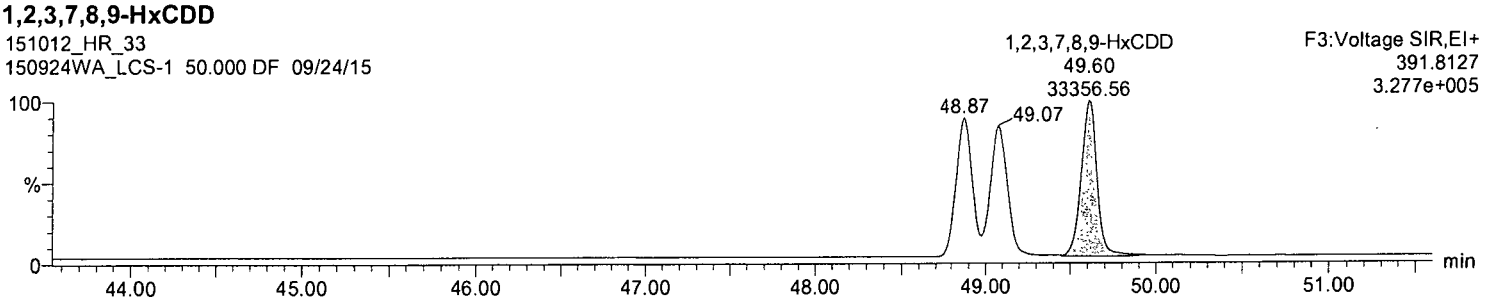

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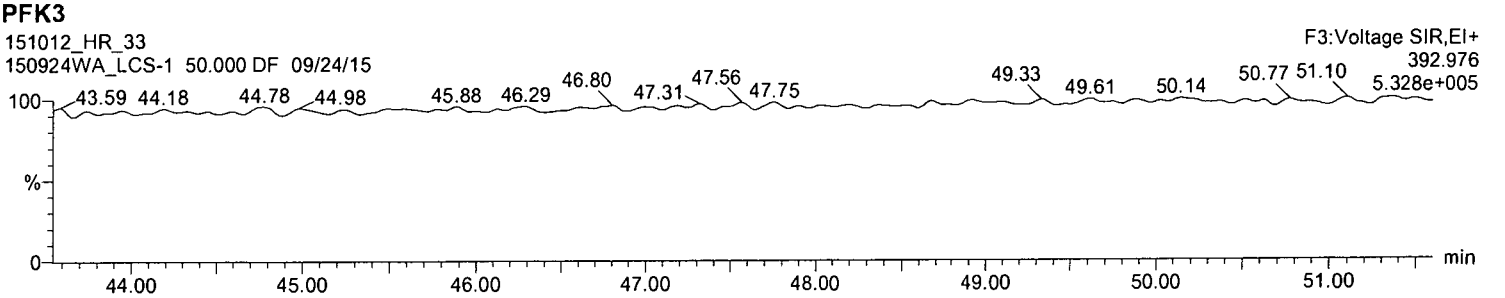

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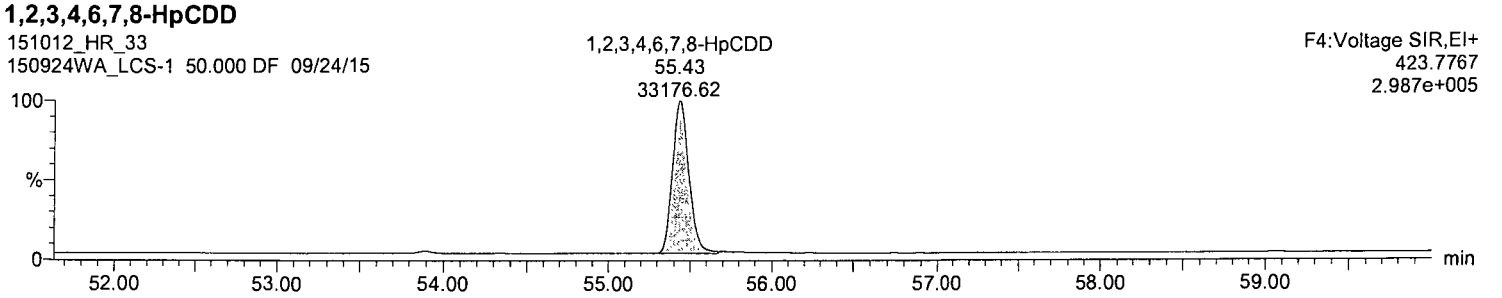
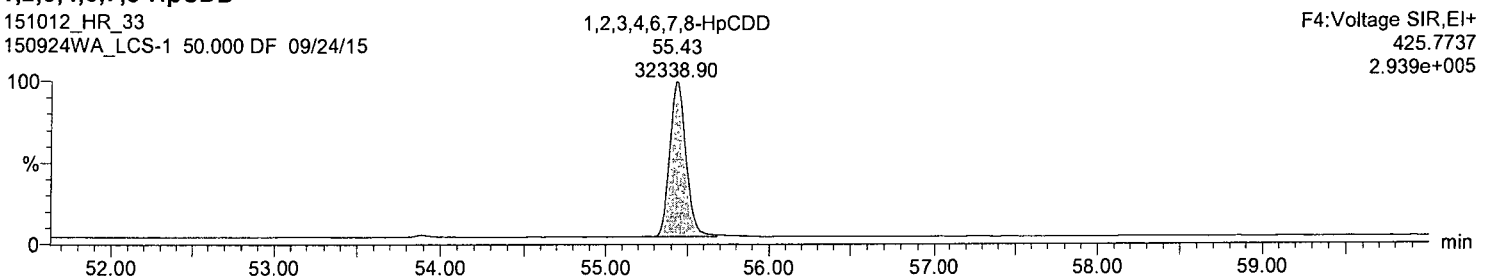
1,2,3,4,6,7,8-HpCDD



1,2,3,4,6,7,8-HpCDD



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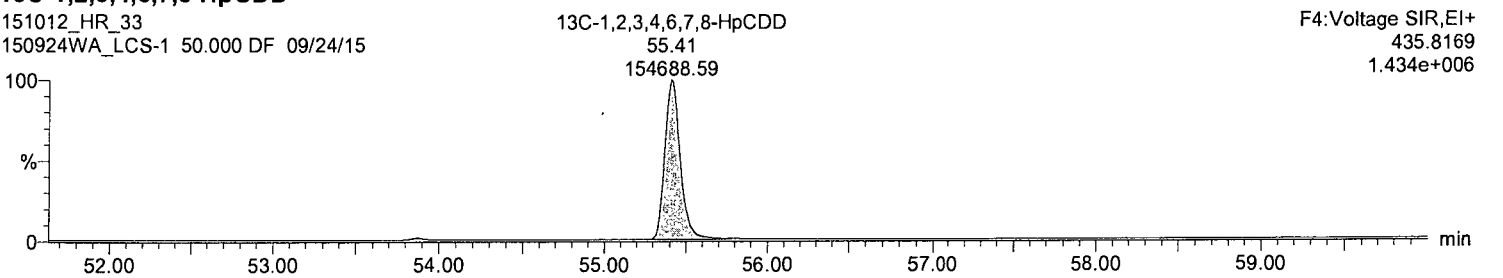

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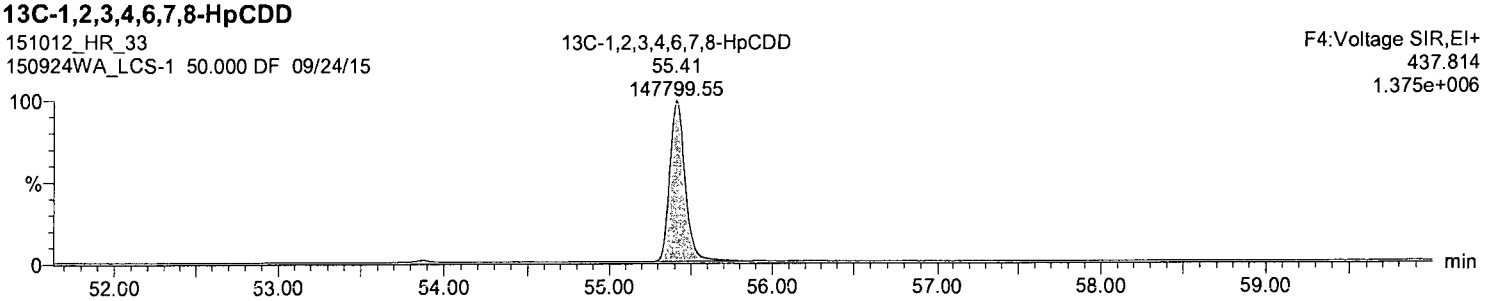
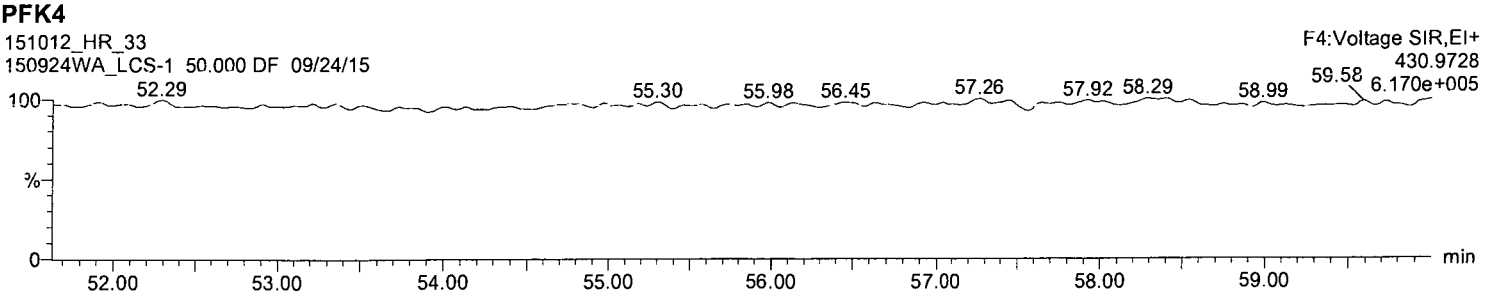


PFK4



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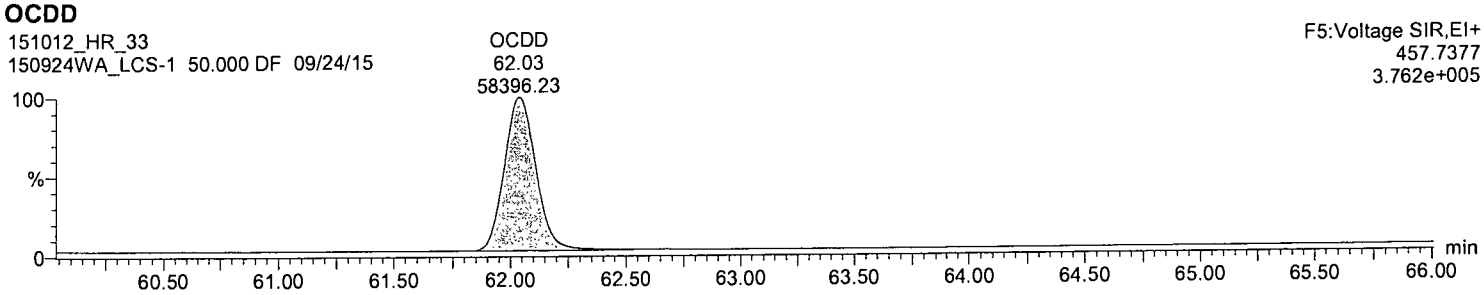
OCDD



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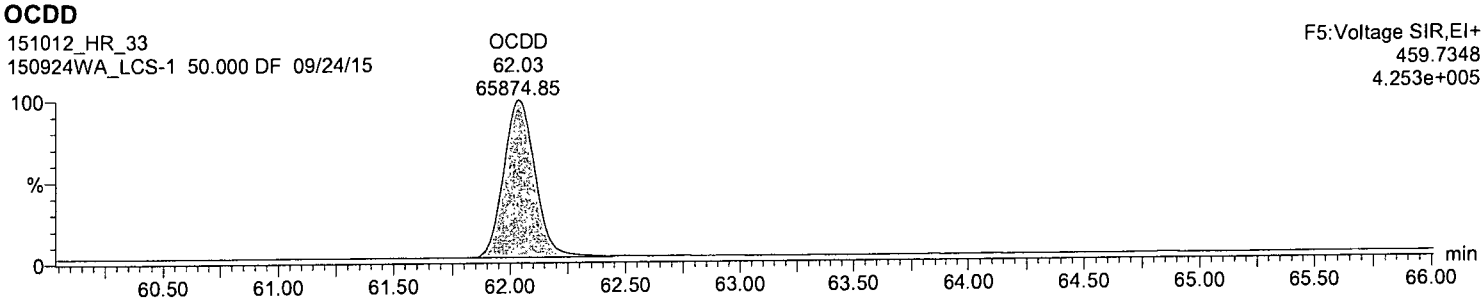

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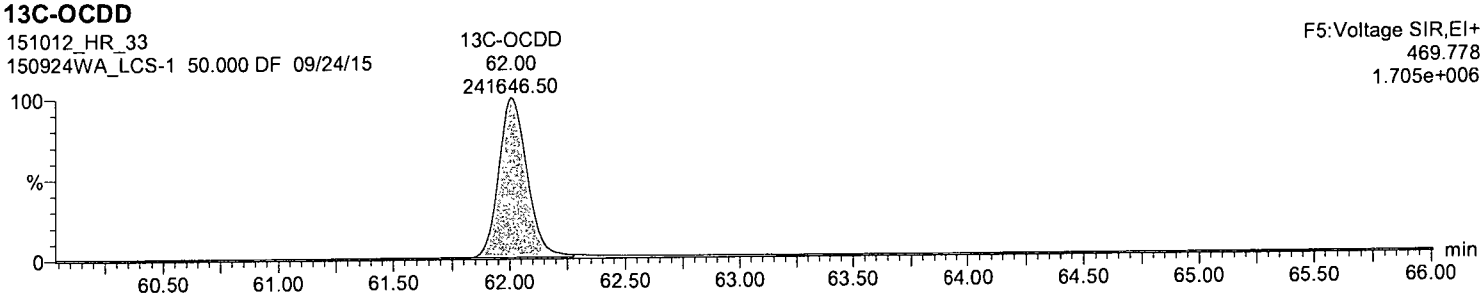

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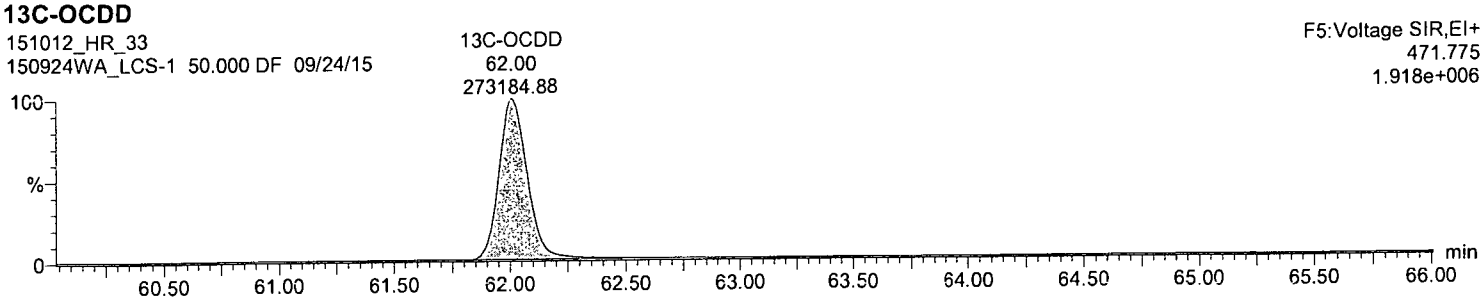
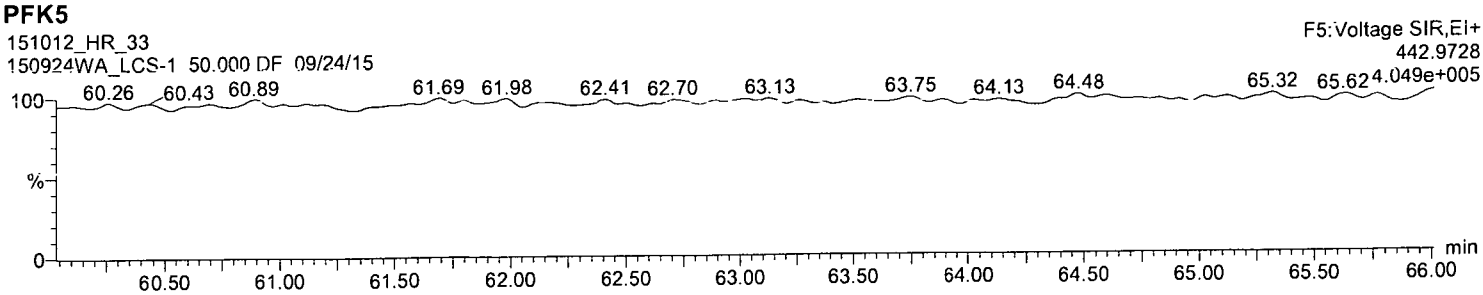


PFK5



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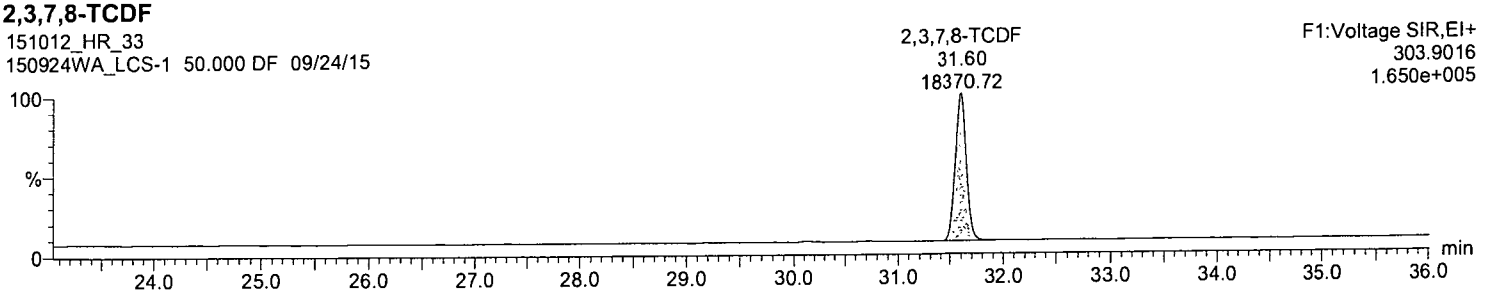
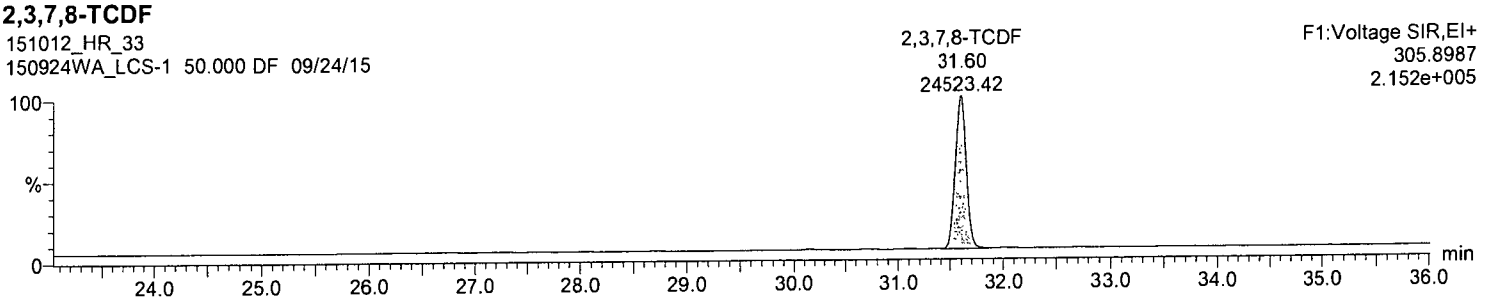
2,3,7,8-TCDF



2,3,7,8-TCDF



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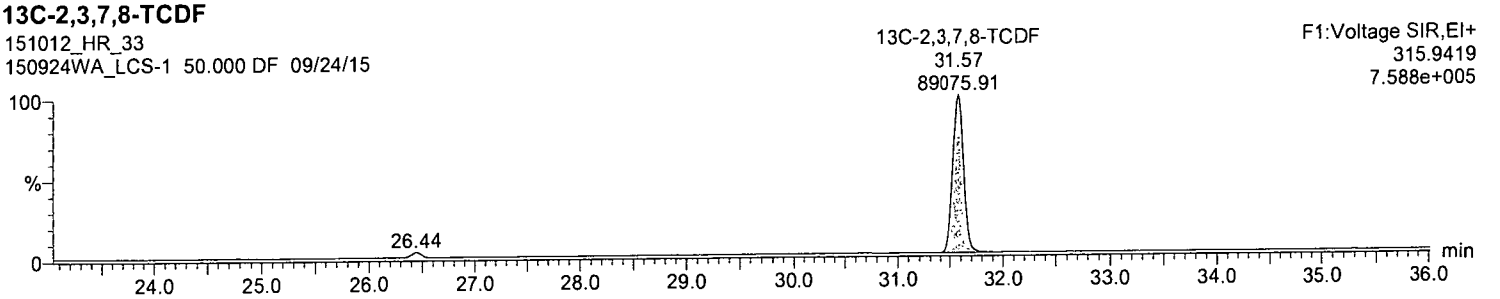

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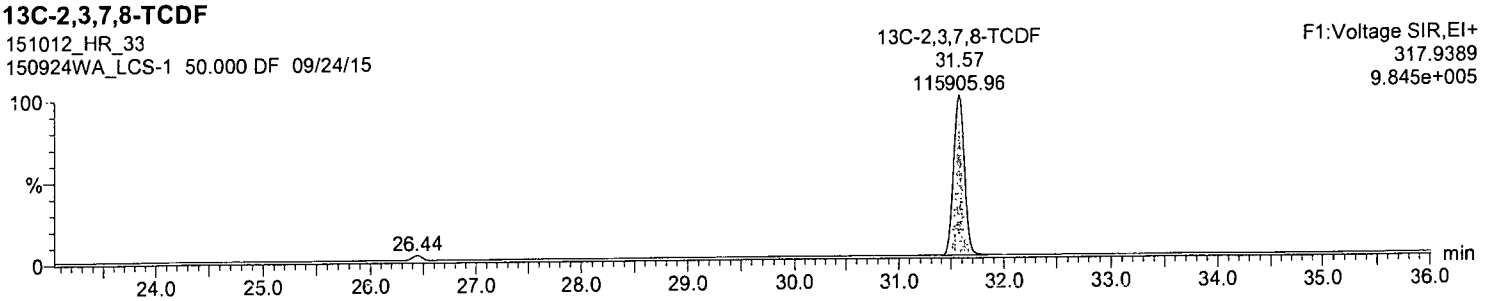

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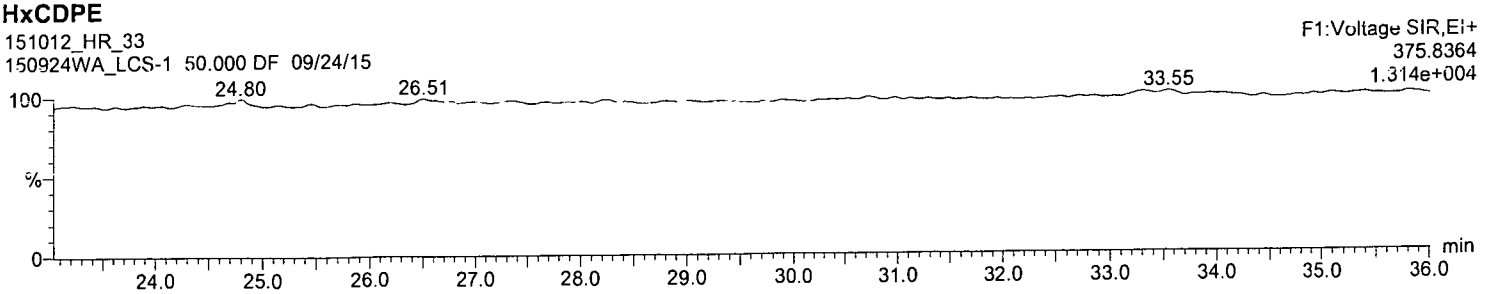

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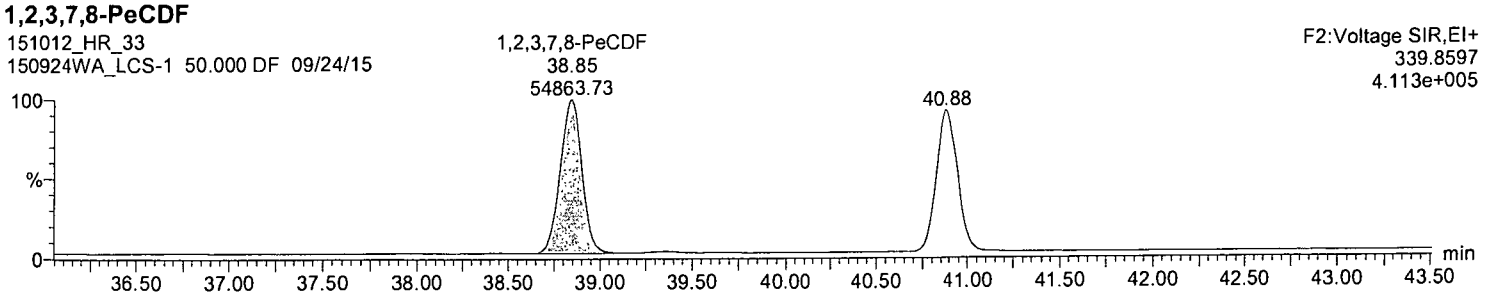
1,2,3,7,8-PeCDF



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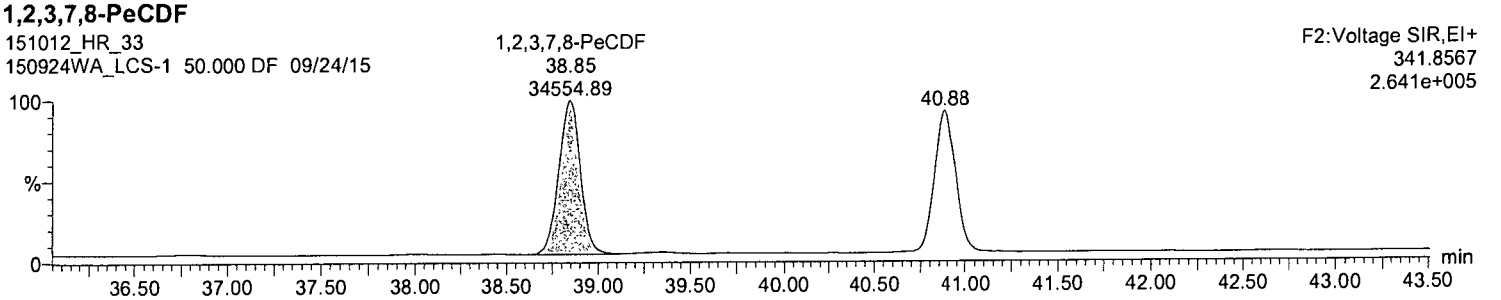

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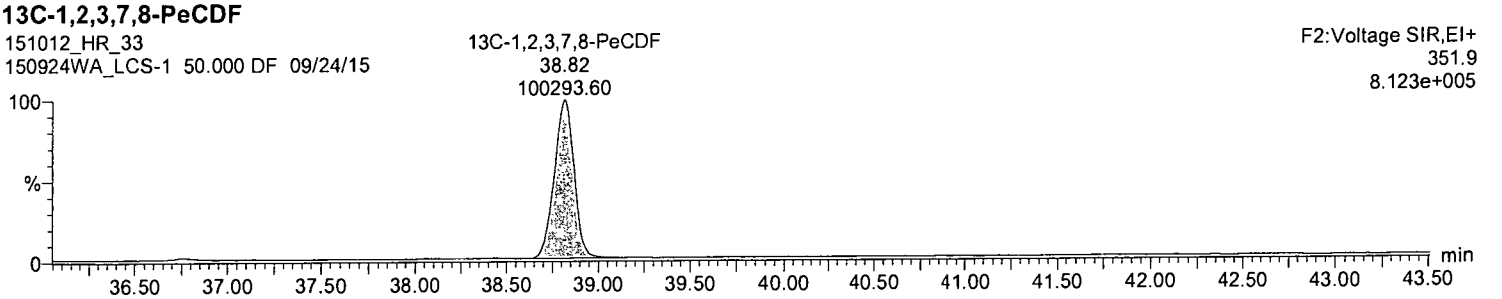

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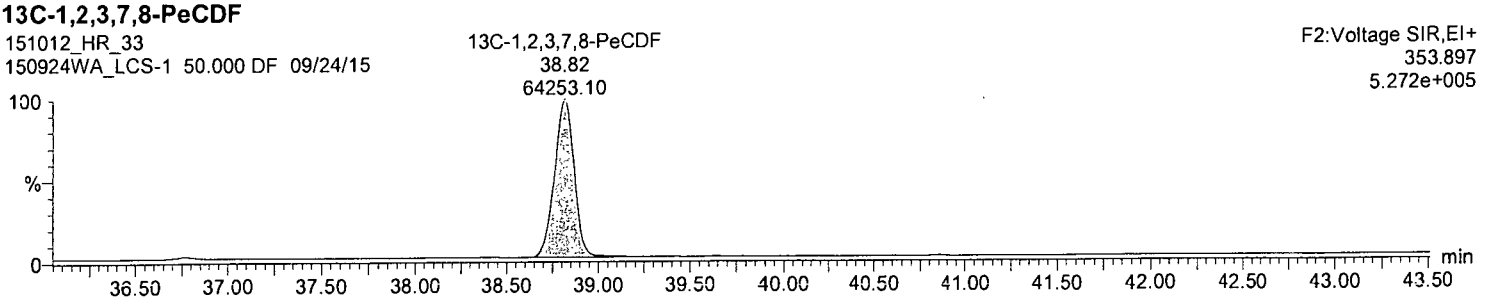

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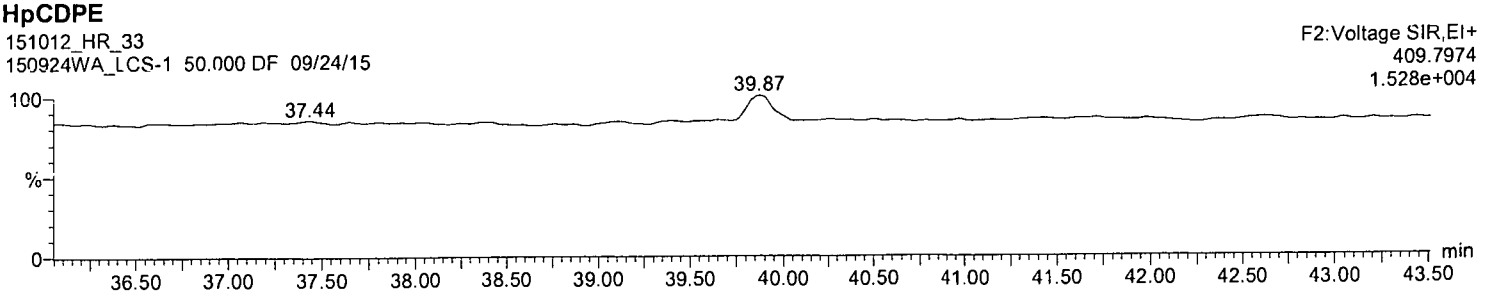

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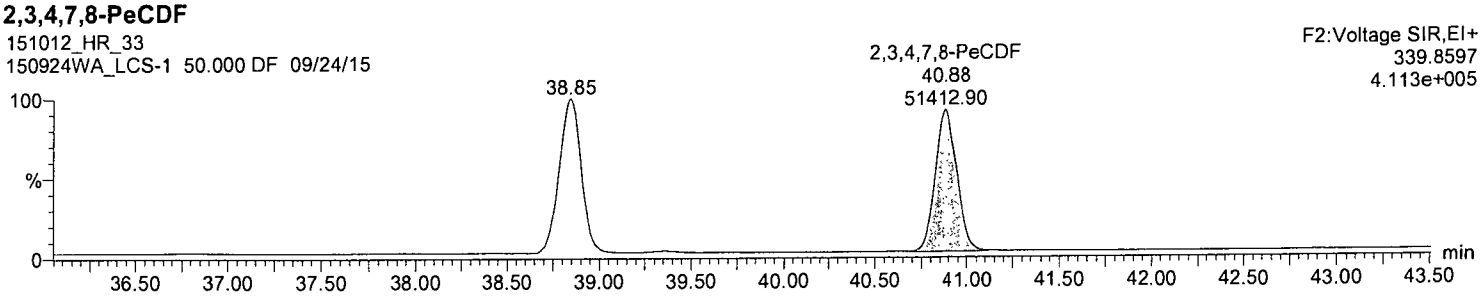
2,3,4,7,8-PeCDF



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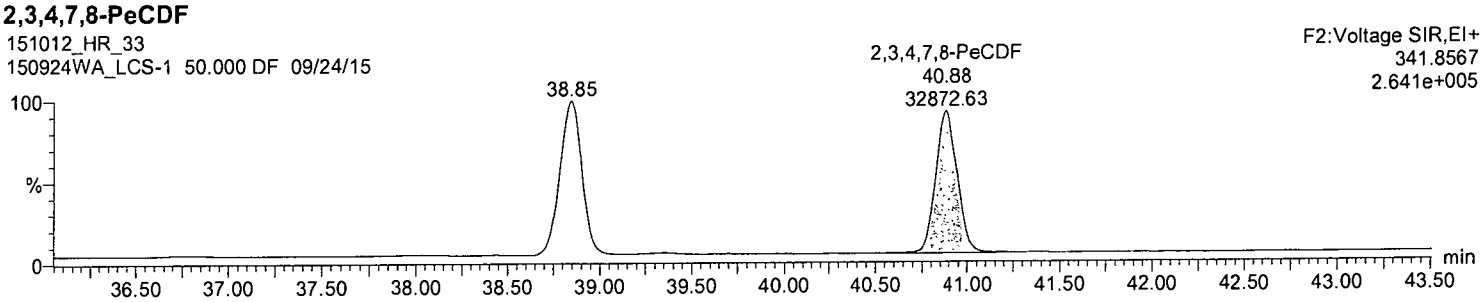

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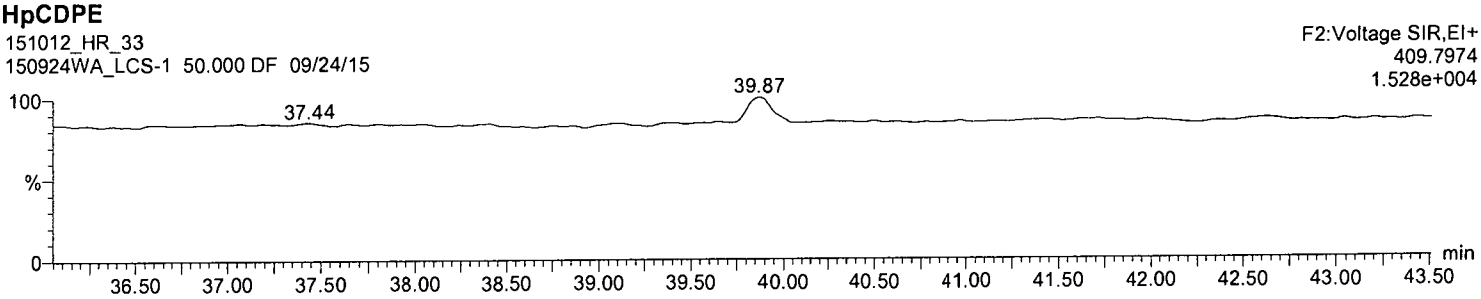

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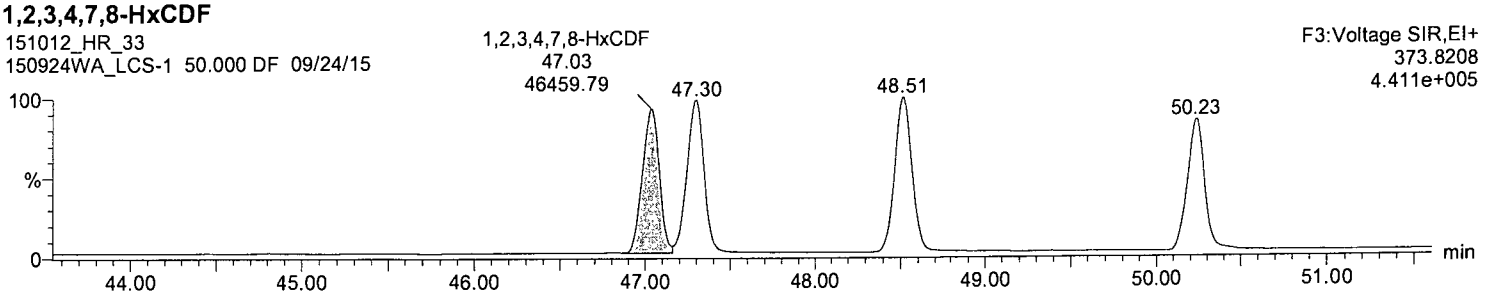
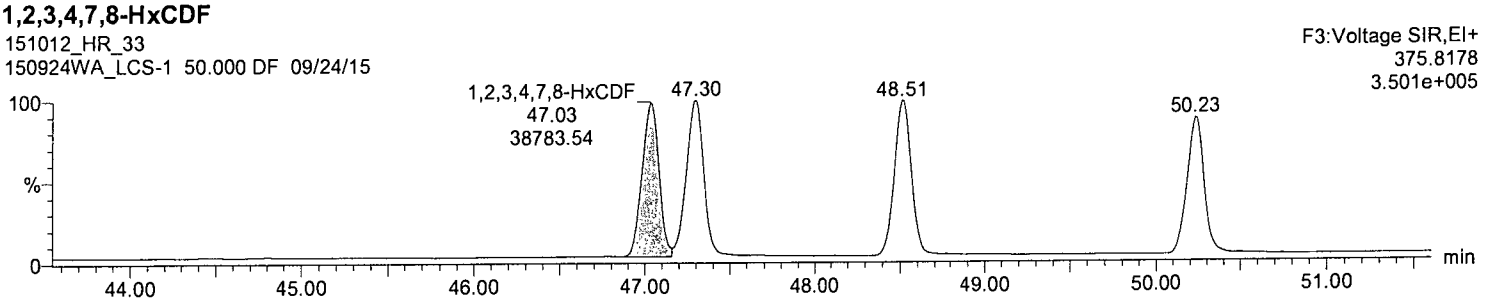
1,2,3,4,7,8-HxCDF



1,2,3,4,7,8-HxCDF



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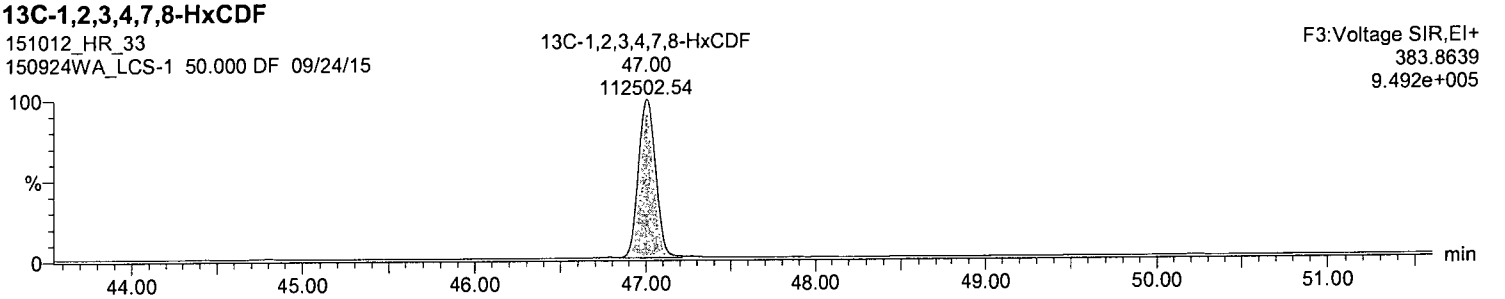

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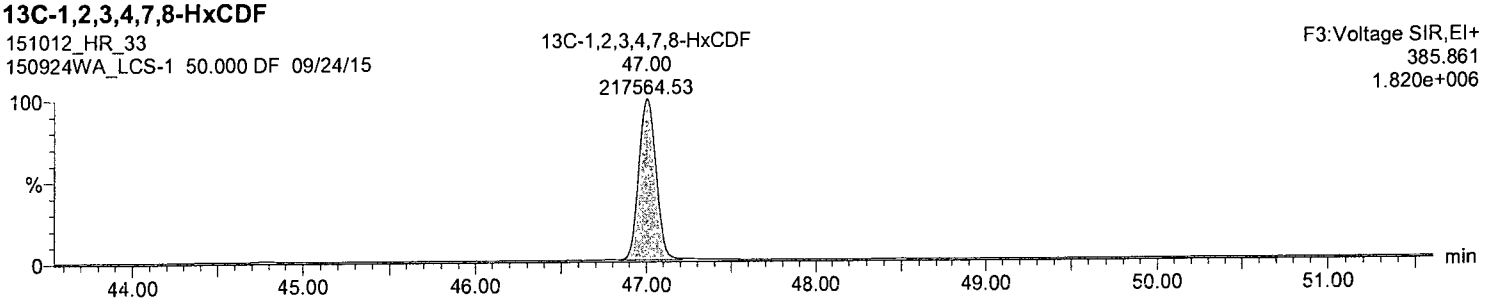

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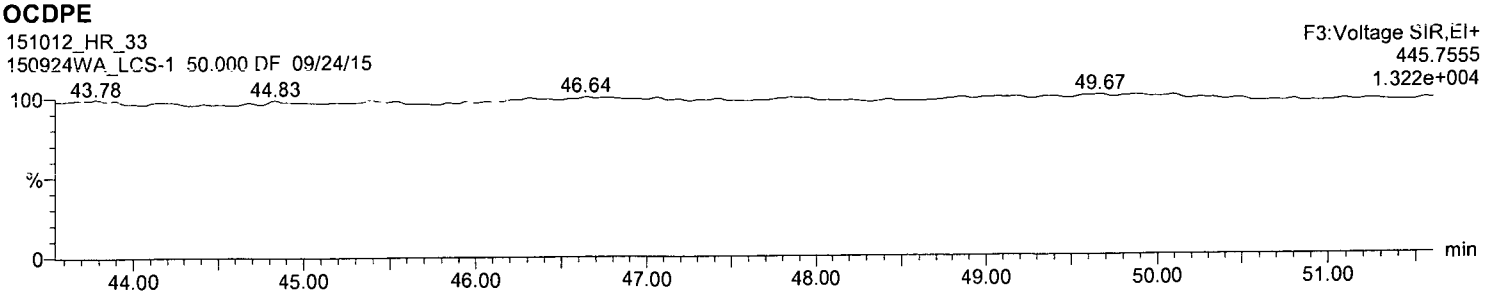

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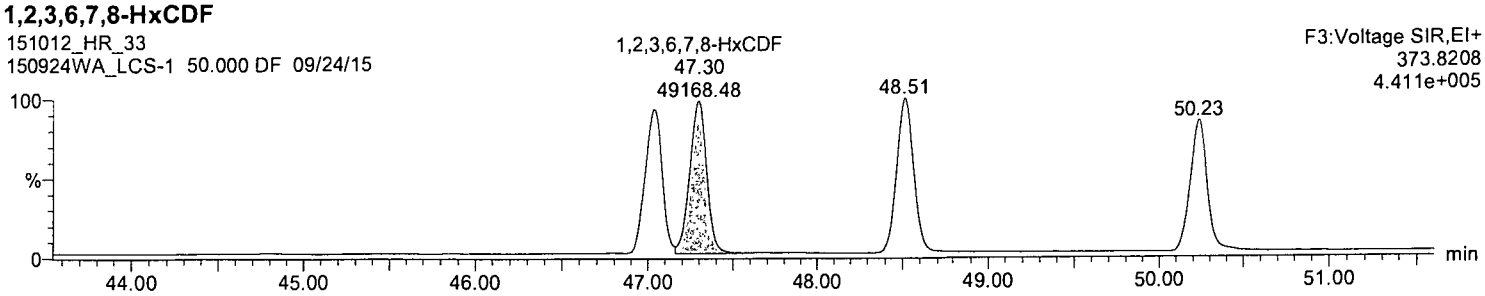
1,2,3,6,7,8-HxCDF



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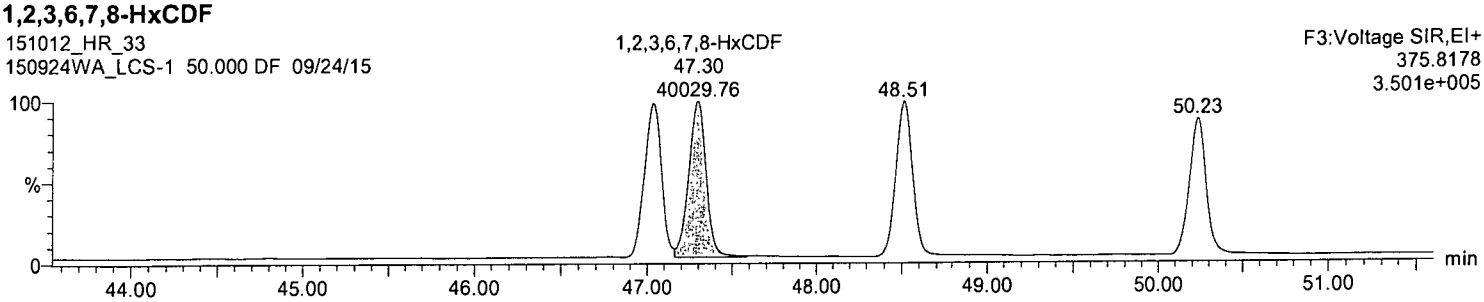

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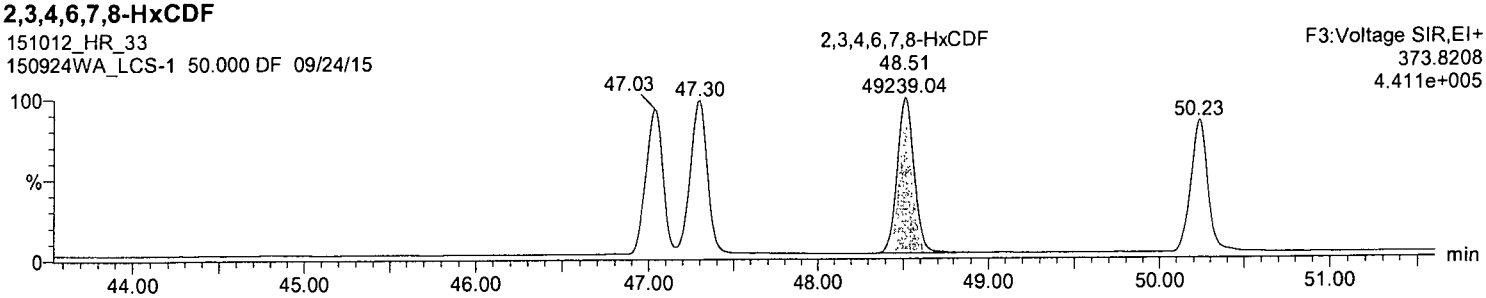
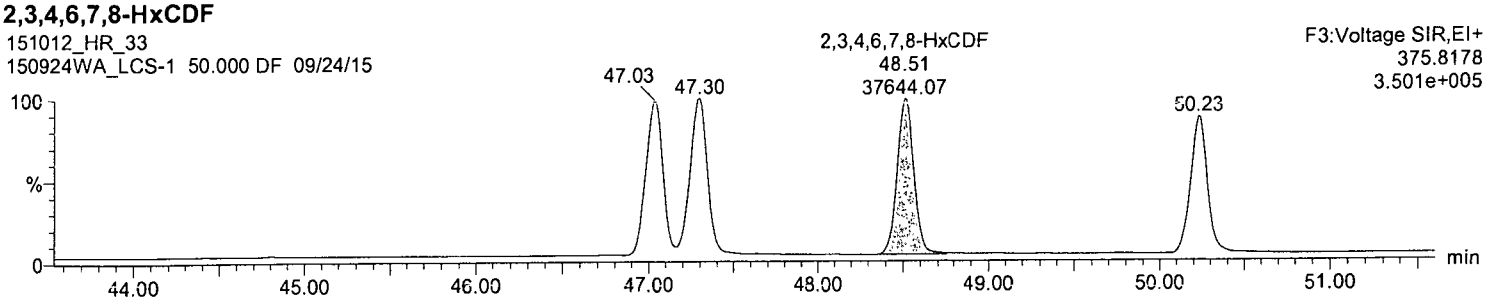


2,3,4,6,7,8-HxCDF



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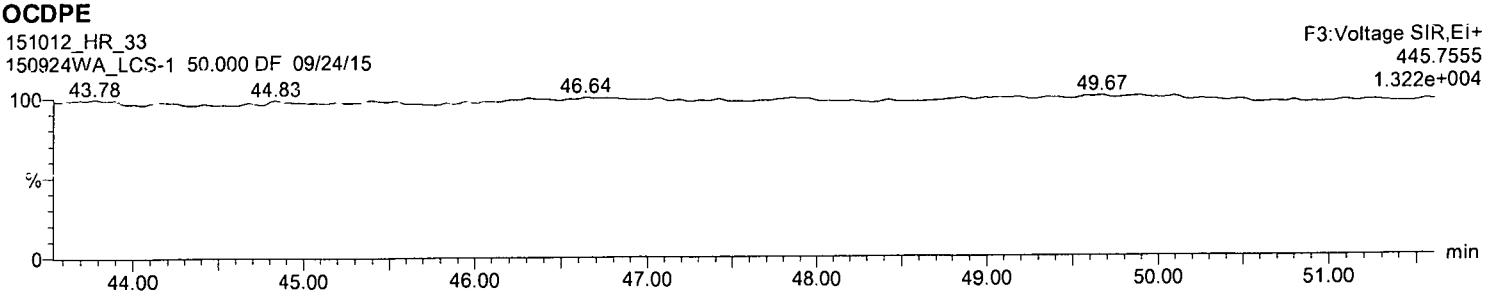

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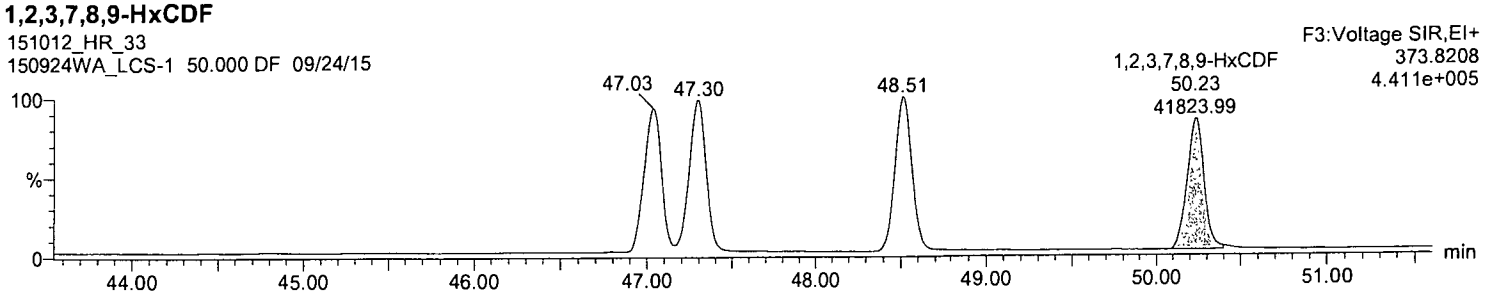
1,2,3,7,8,9-HxCDF



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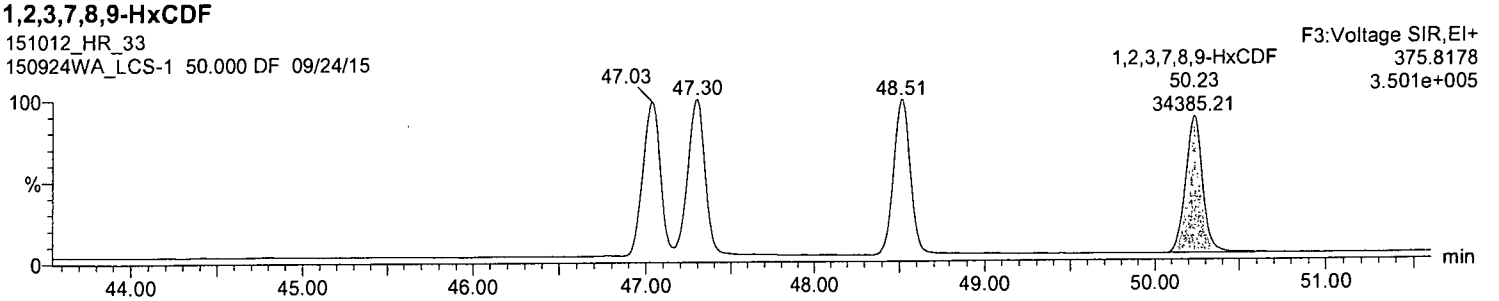

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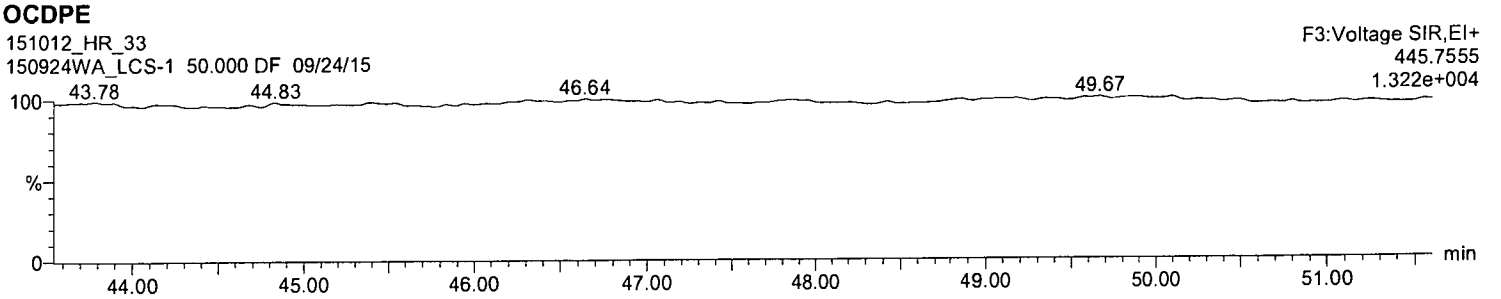

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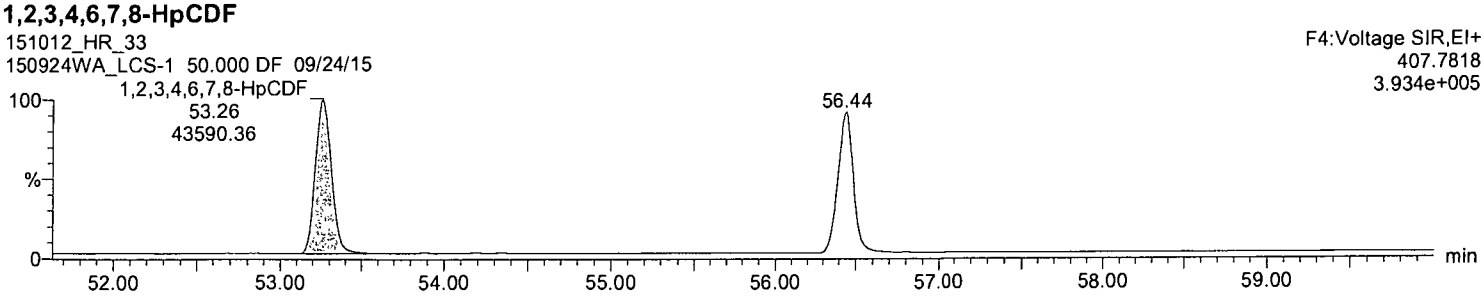
1,2,3,4,6,7,8-HpCDF



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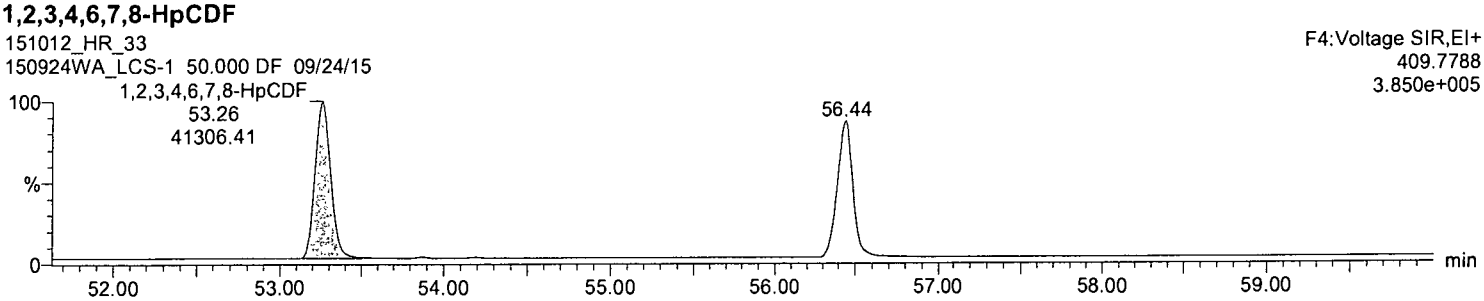

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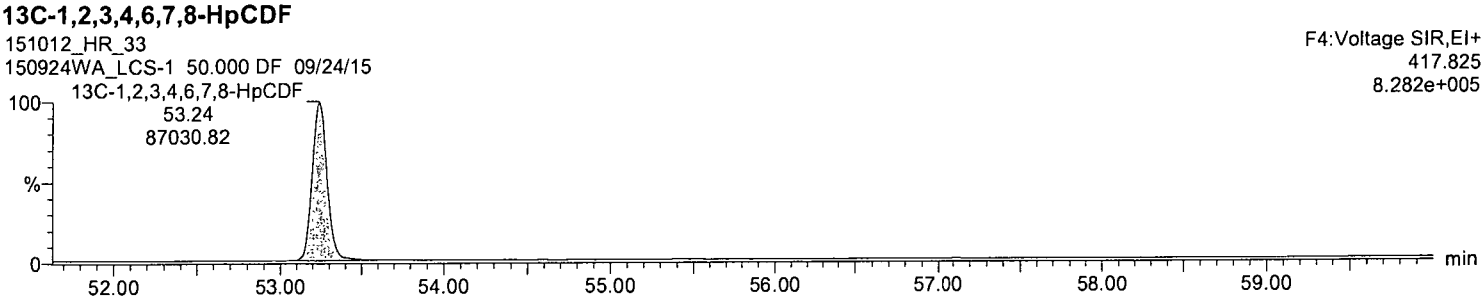

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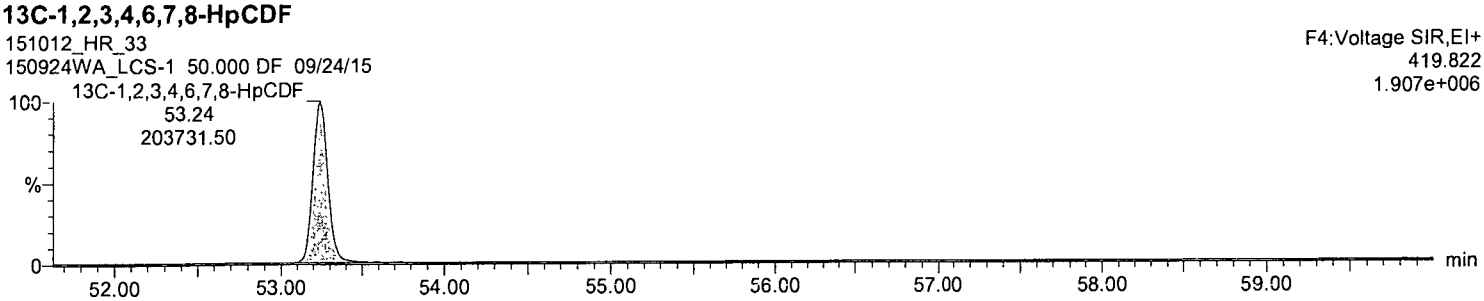

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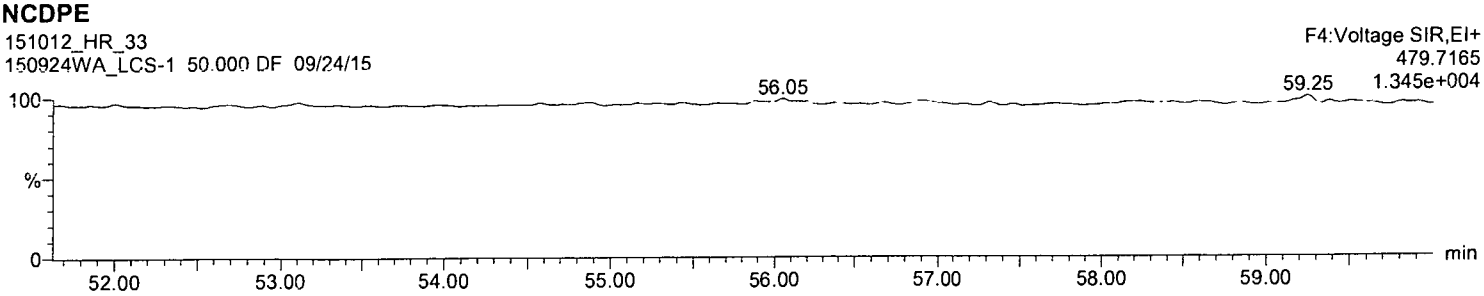

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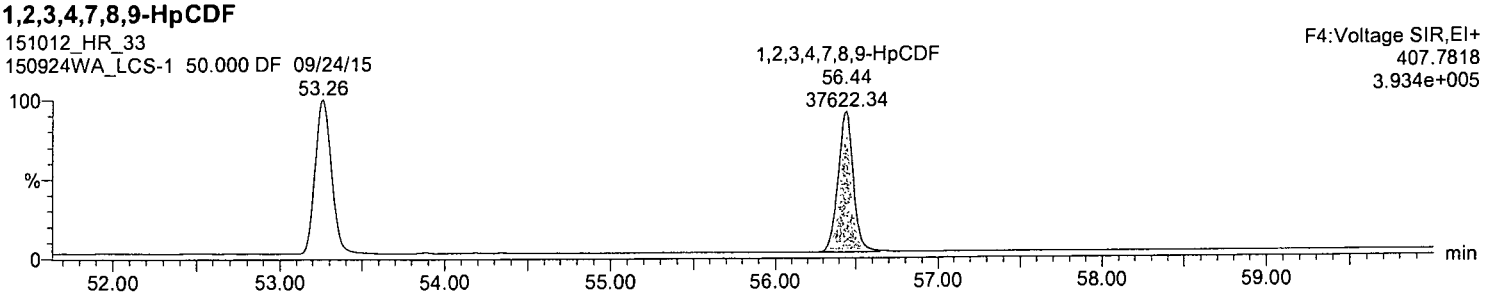
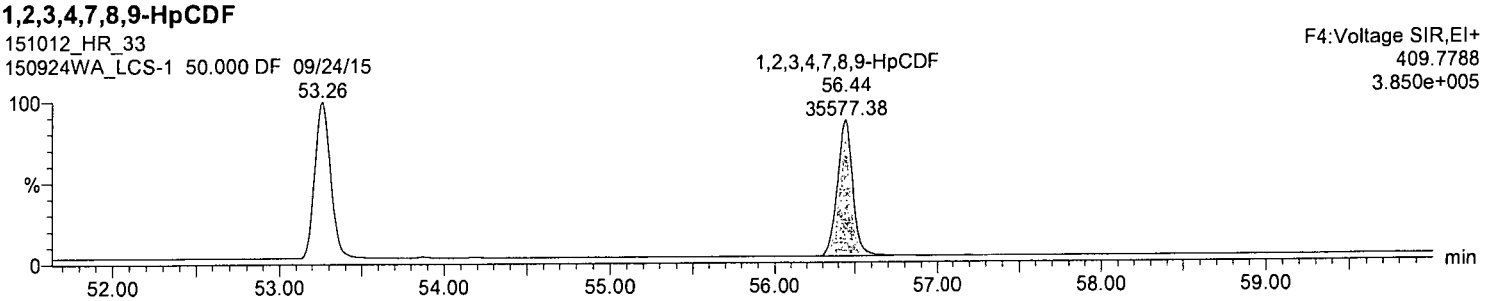
1,2,3,4,7,8,9-HpCDF



1,2,3,4,7,8,9-HpCDF



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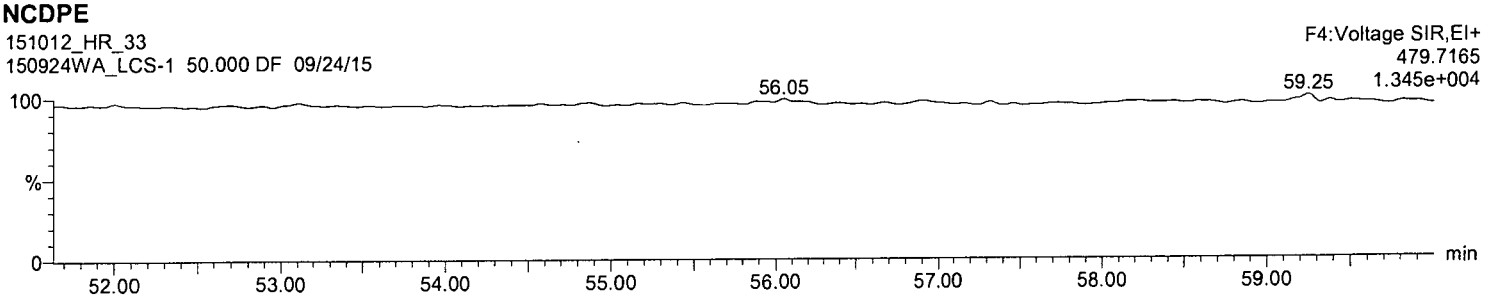

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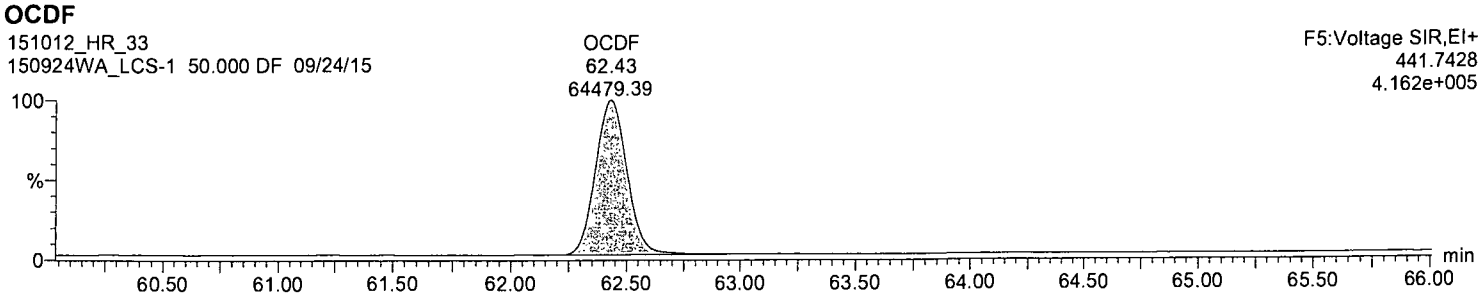
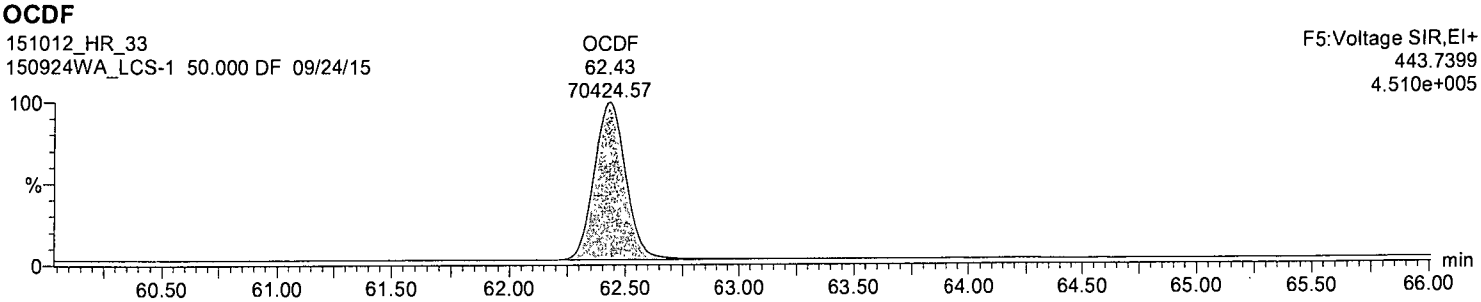
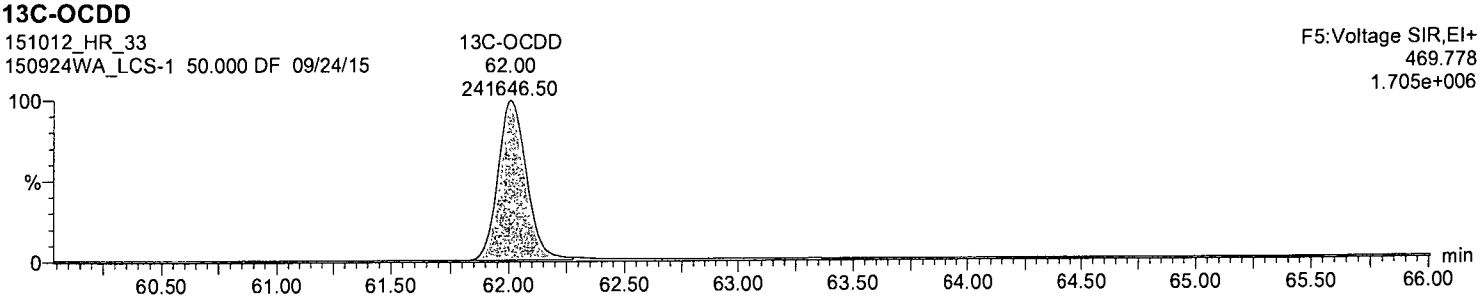
OCDF



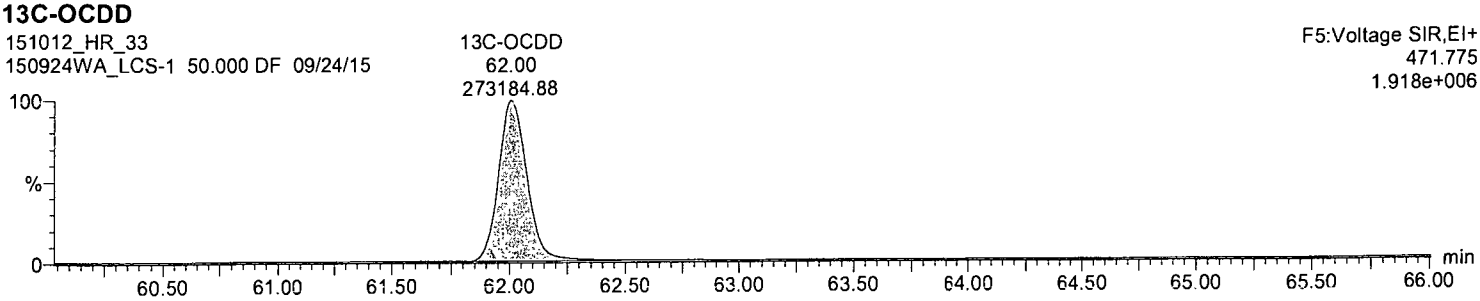
OCDF



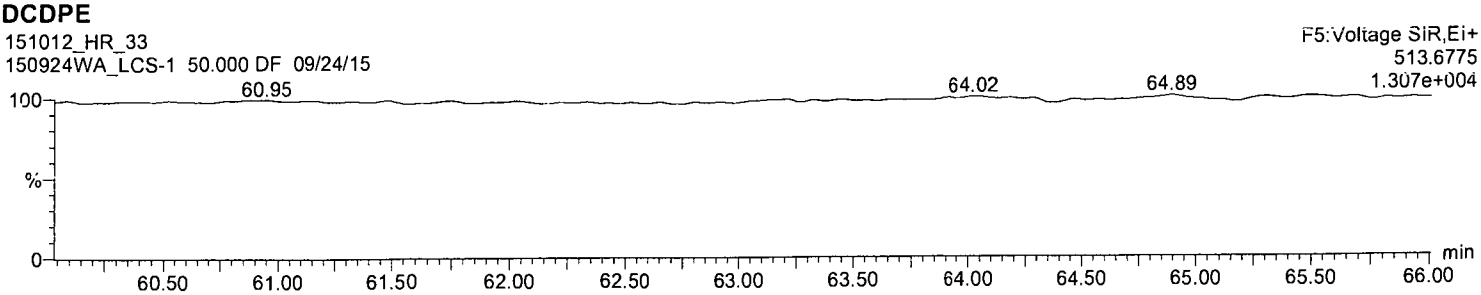
13C-OCDD



13C-OCDD

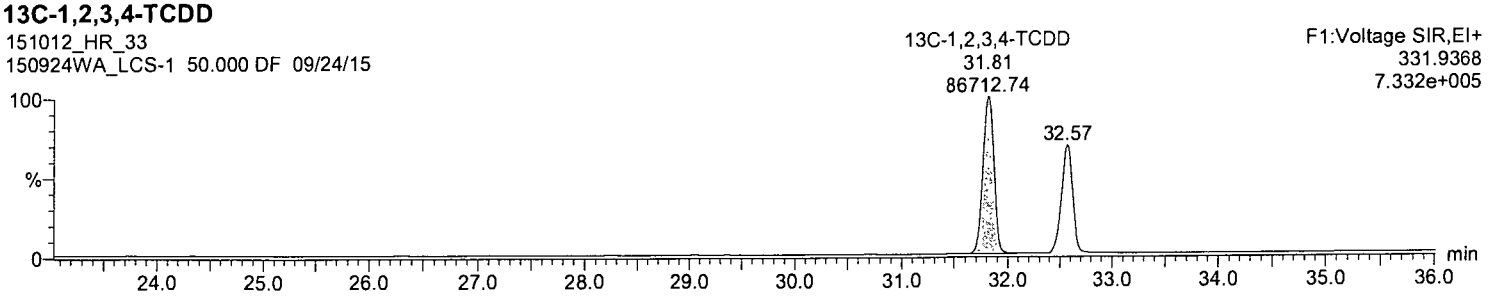


DCDPE

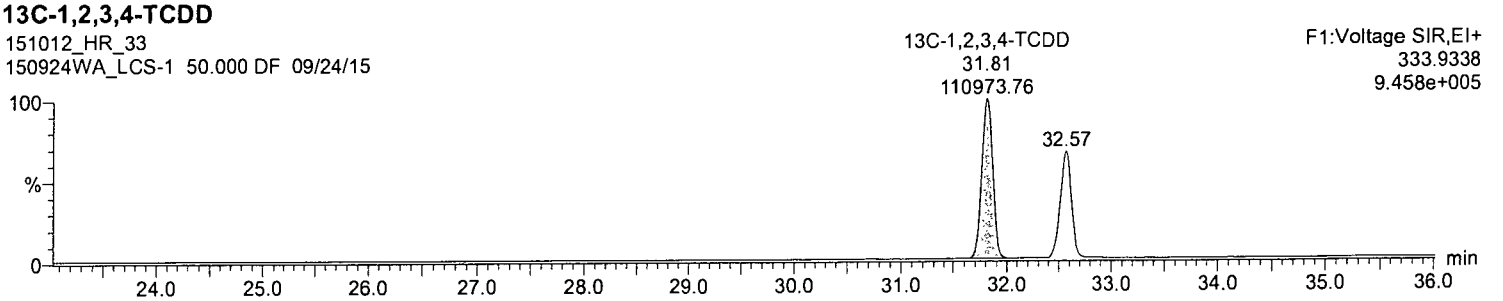


Name: 151012_HR_33, Date: 14-Oct-2015, Time: 02:00:31, ID: , Description: 150924WA_LCS-1 50.000 DF 09/24/15, User:

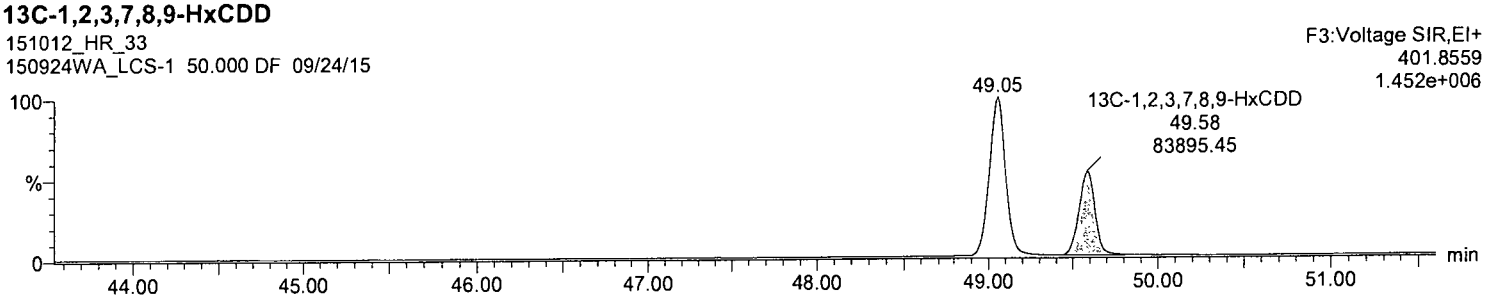
13C-1,2,3,4-TCDD



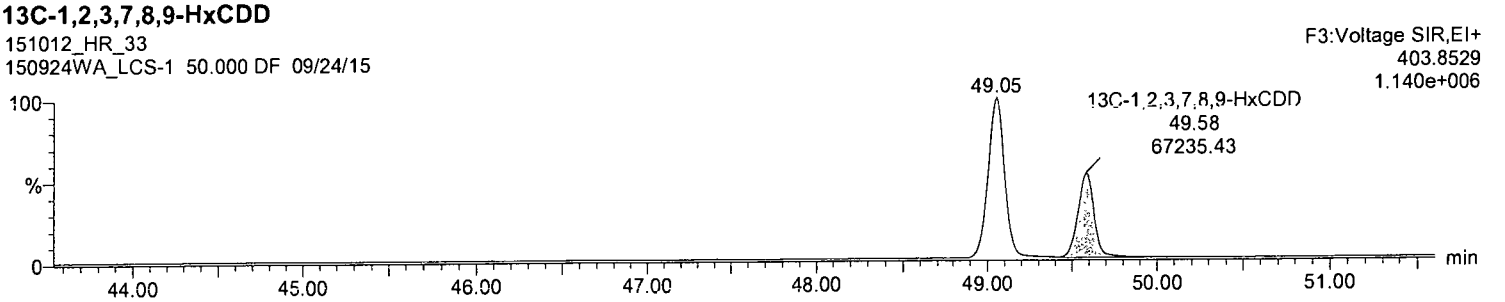
13C-1,2,3,4-TCDD

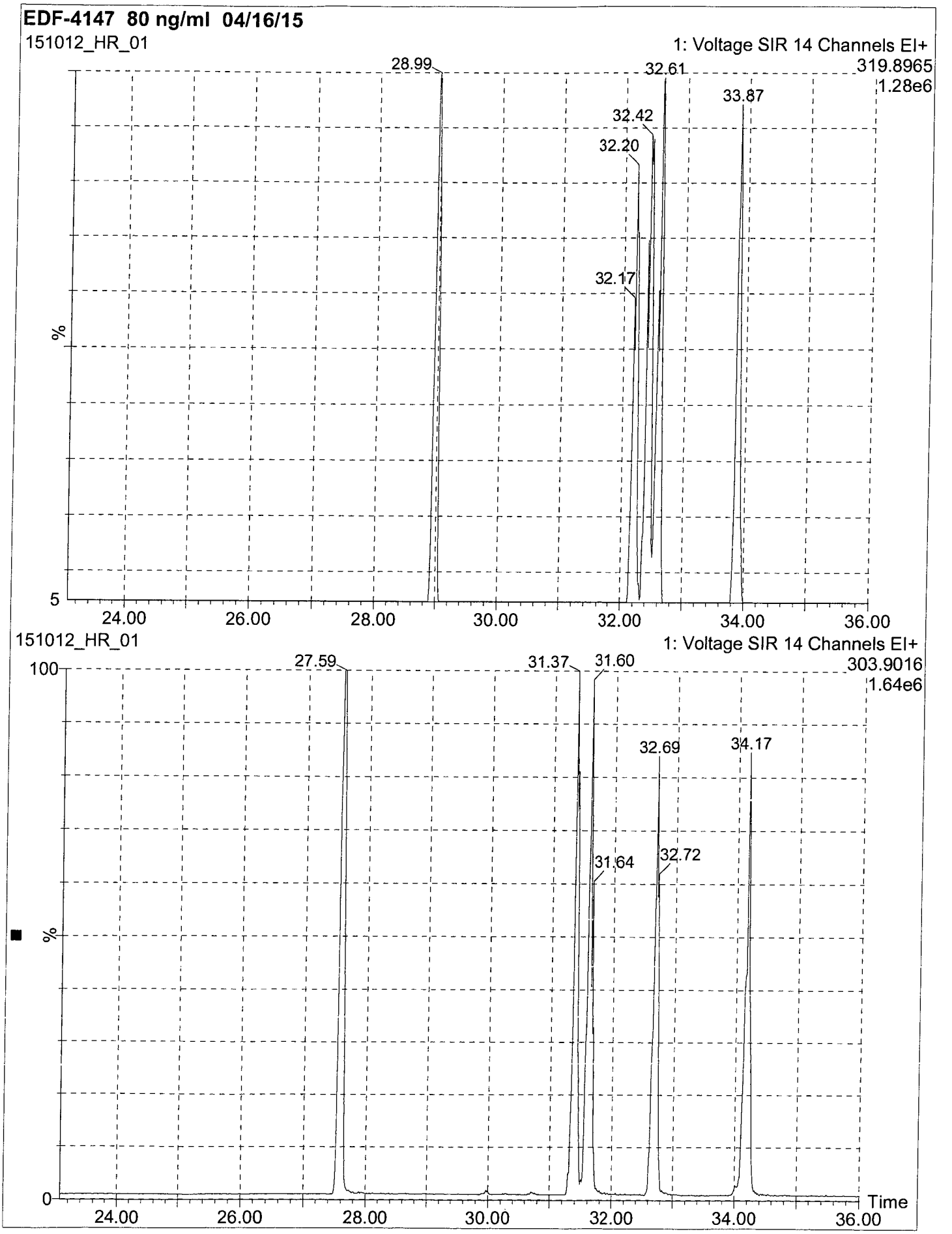


13C-1,2,3,7,8,9-HxCDD



13C-1,2,3,7,8,9-HxCDD




EDF-4147 80 ng/ml 04/16/15
151012_HR_01
1: Voltage SIR 14 Channels EI+
319.8965
1.28e6
28.99
32.61
33.87
32.42
32.20
32.17
%
5
24.00
26.00
28.00
30.00
32.00
34.00
36.00
151012_HR_01
1: Voltage SIR 14 Channels EI+
303.9016
1.64e6
27.59
31.37
31.60
32.69
34.17
31.64
32.72
100
%
0
Time
24.00
26.00
28.00
30.00
32.00
34.00
36.00

Method: C:\MassLynx\Default.pro\Methdb\151012_8290_CP.mdb 13 Oct 2015 14:47:31
Calibration: 13 Oct 2015 14:47:44

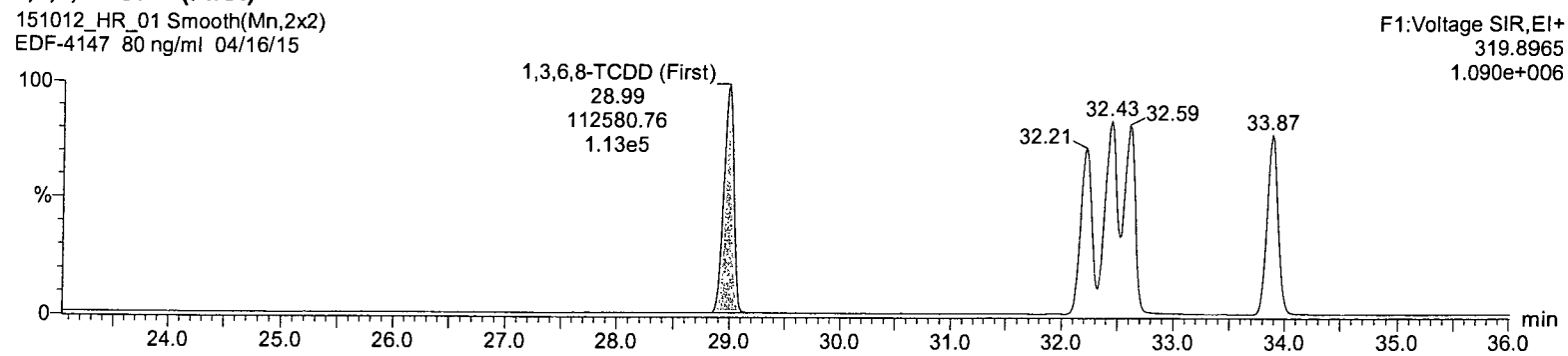
Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15, User:

#	Name	RT
1	1,3,6,8-TCDD (First)	28.99
2	1,2,3,7/1,2,3,8-TCDD	32.21
3	1,2,3,9-TCDD	32.43
4	2,3,7,8-TCDD	32.59
5	1,2,8,9-TCDD (Last)	33.87
6	13C-2,3,7,8-TCDD	32.57
7	1,2,4,6,8/1,2,4,7,9-PeCDD (First)	36.85
8	1,2,3,8,9-PeCDD (Last)	42.36
9	1,2,4,6,7,9/1,2,4,6,8,9-HxCDD (First)	45.67
10	1,2,3,4,6,7-HxCDD (Last)	49.43
11	1,2,3,4,6,7,9-HpCDD (First)	53.91
12	1,2,3,4,6,7,8-HpCDD (Last)	55.45
13	1,3,6,8-TCDF (First)	27.59
14	2,3,4,7-TCDF	31.38
15	2,3,7,8-TCDF	31.60
16	1,2,3,9-TCDF	32.69
17	1,2,8,9-TCDF (Last)	34.17
18	13C-2,3,7,8-TCDF	31.57
19	1,3,4,6,8-PeCDF (First)	34.02
20	1,2,3,8,9-PeCDF (Last)	42.91
21	1,2,3,4,6,8-HxCDF (First)	44.44
22	1,2,3,4,8,9-HxCDF (Last)	50.33
23	1,2,3,4,6,7,8-HpCDF (First)	53.27
24	1,2,3,4,7,8,9-HpCDF (Last)	56.44

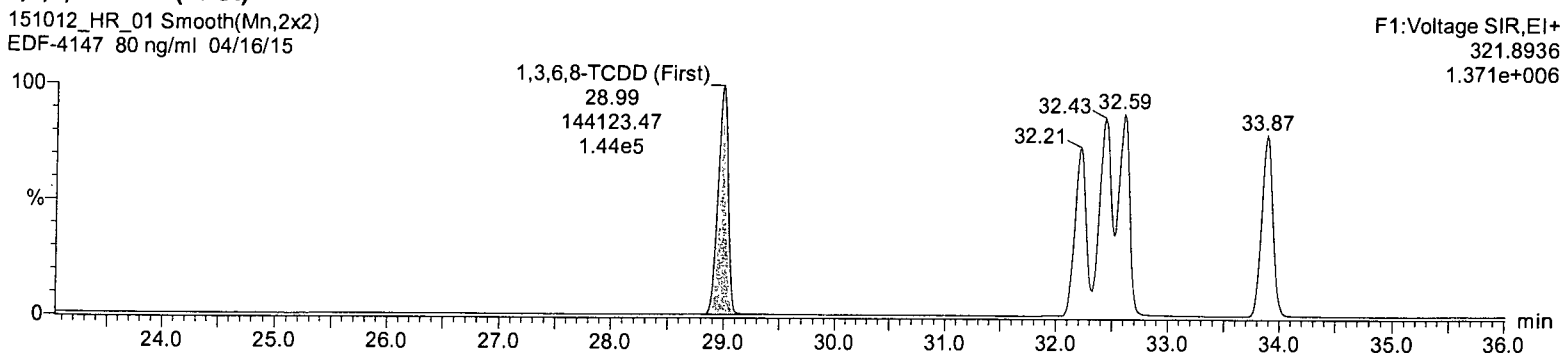
Method: C:\MassLynx\Default.pro\Methdb\151012_8290_CP.mdb 13 Oct 2015 14:47:31
Calibration: 13 Oct 2015 14:47:44

Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

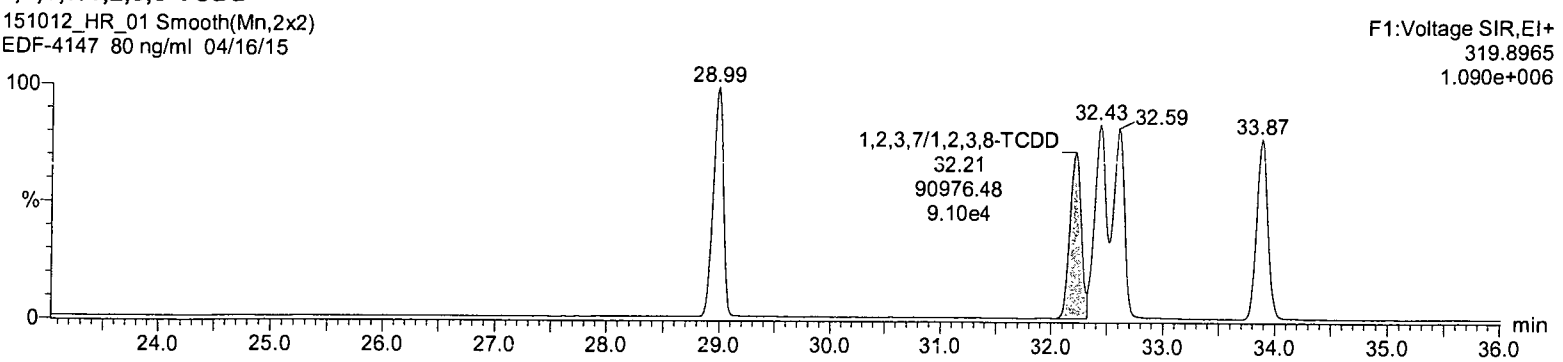
1,3,6,8-TCDD (First)



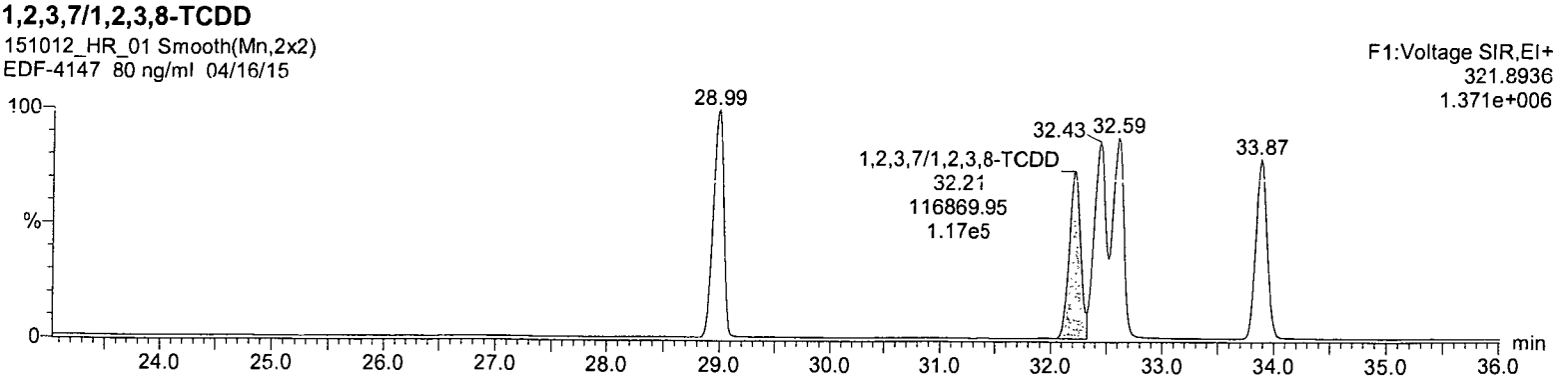
1,3,6,8-TCDD (First)



1,2,3,7/1,2,3,8-TCDD

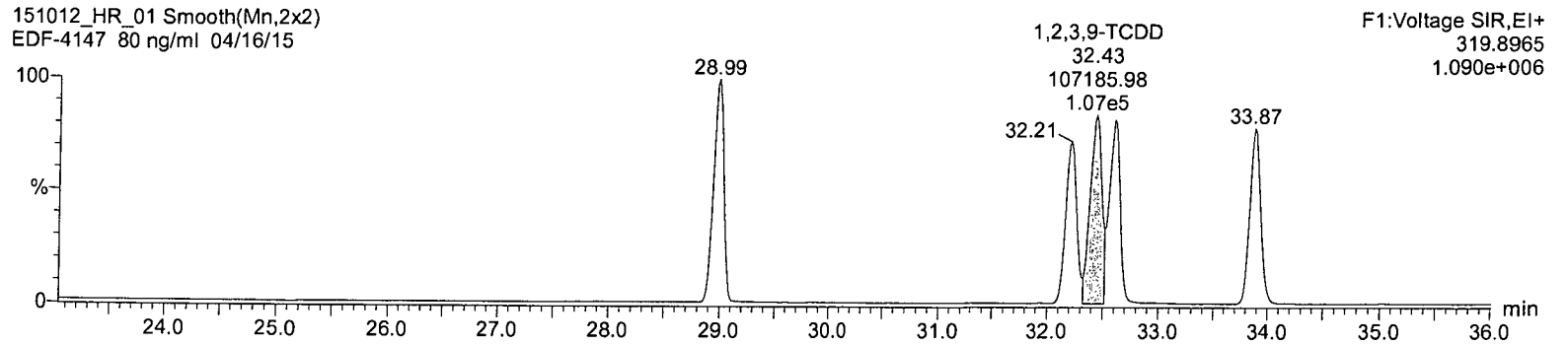


1,2,3,7/1,2,3,8-TCDD

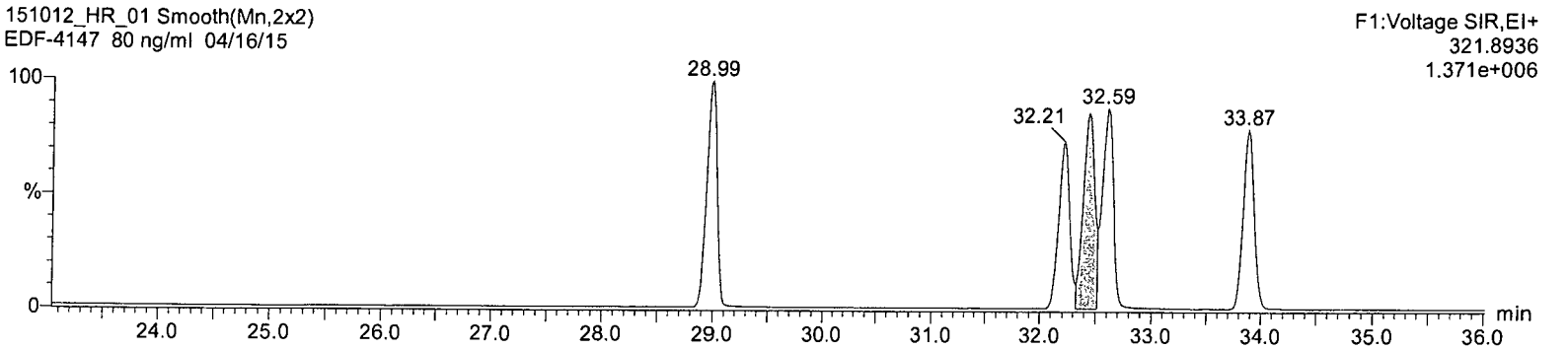


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

1,2,3,9-TCDD

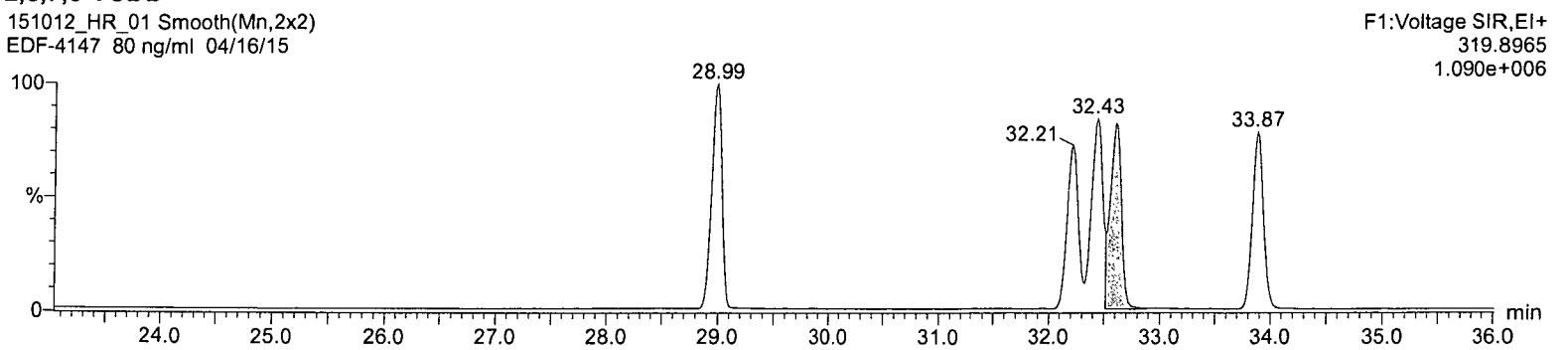


1,2,3,9-TCDD

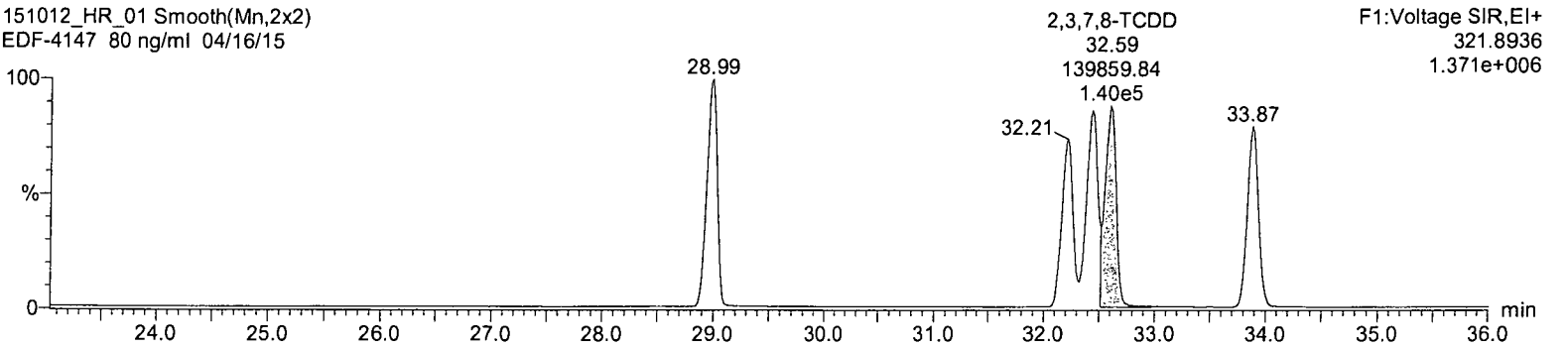


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

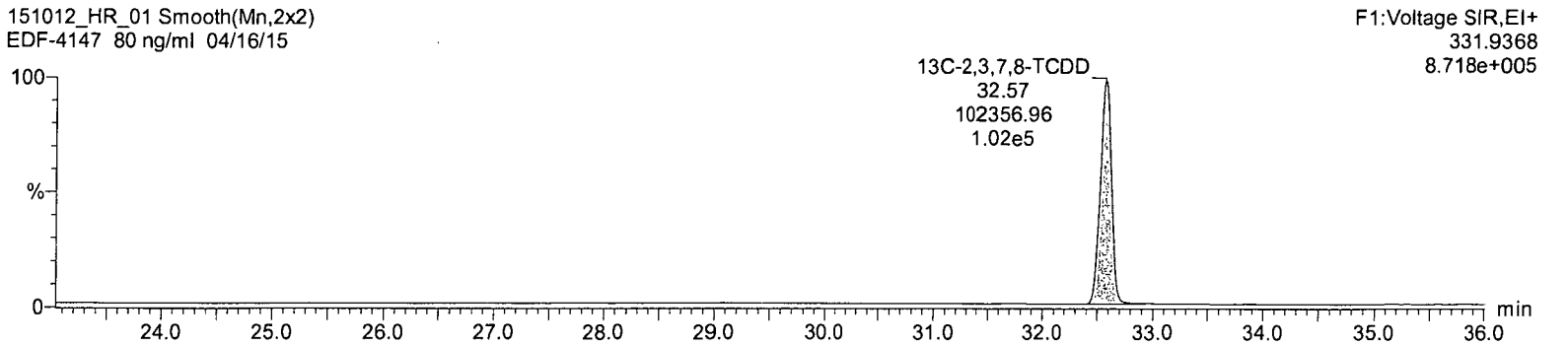
2,3,7,8-TCDD



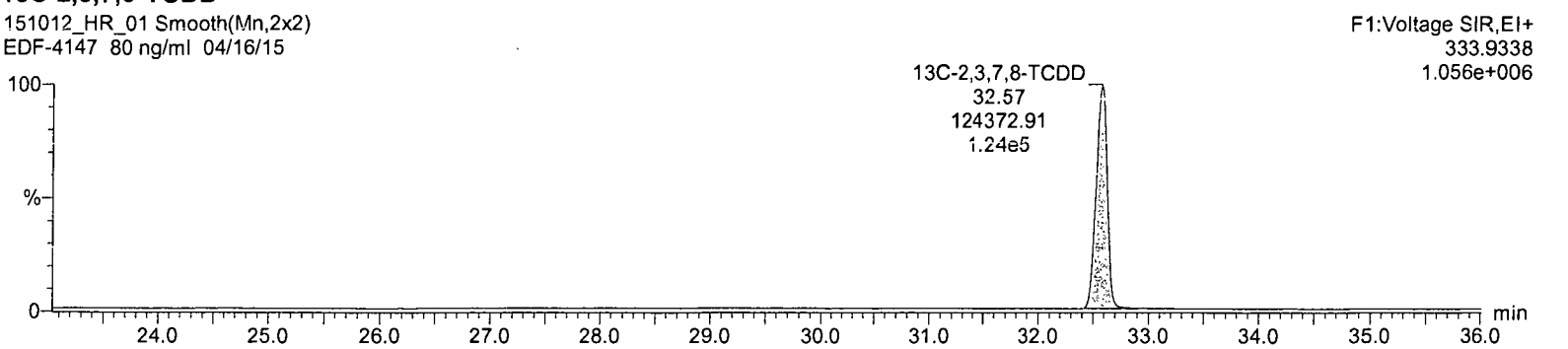
2,3,7,8-TCDD



13C-2,3,7,8-TCDD

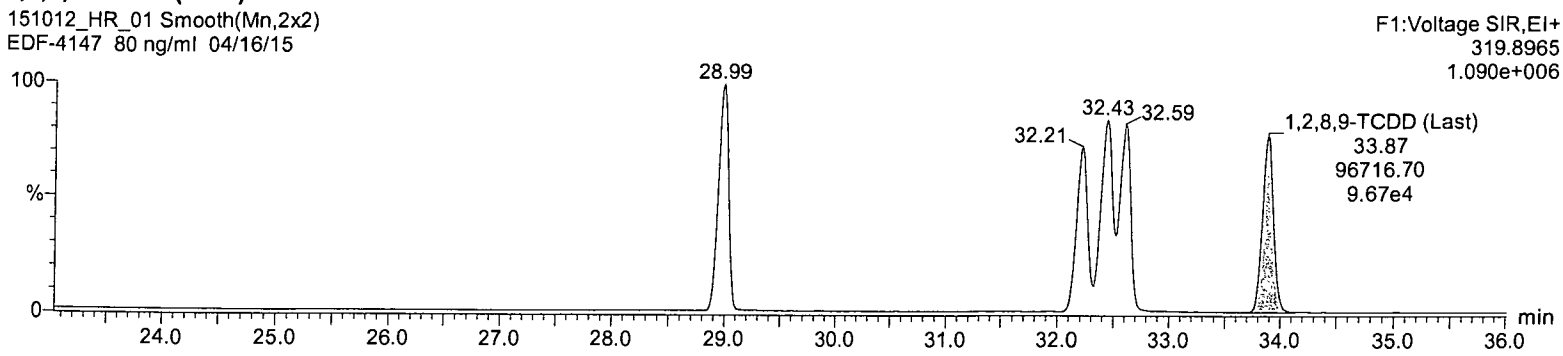


13C-2,3,7,8-TCDD

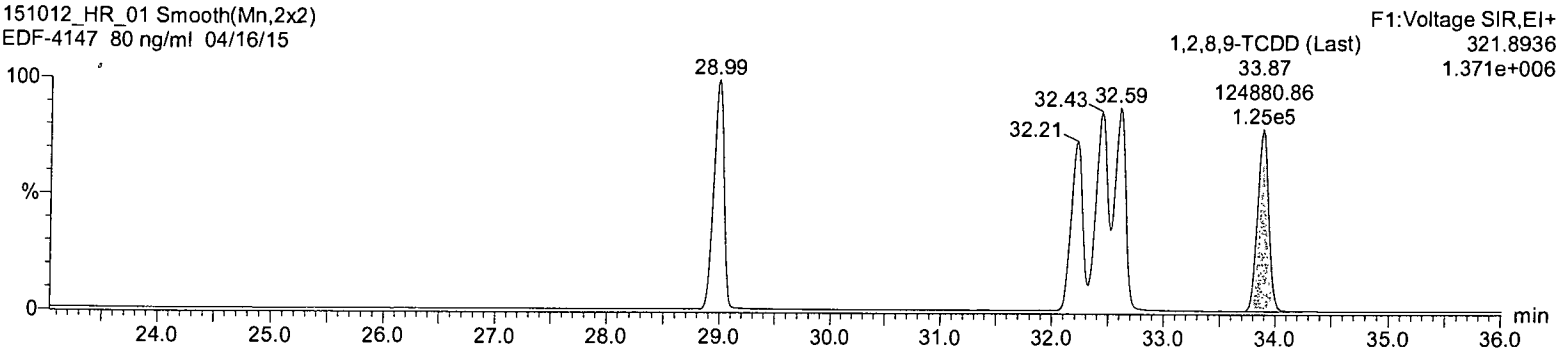


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

1,2,8,9-TCDD (Last)

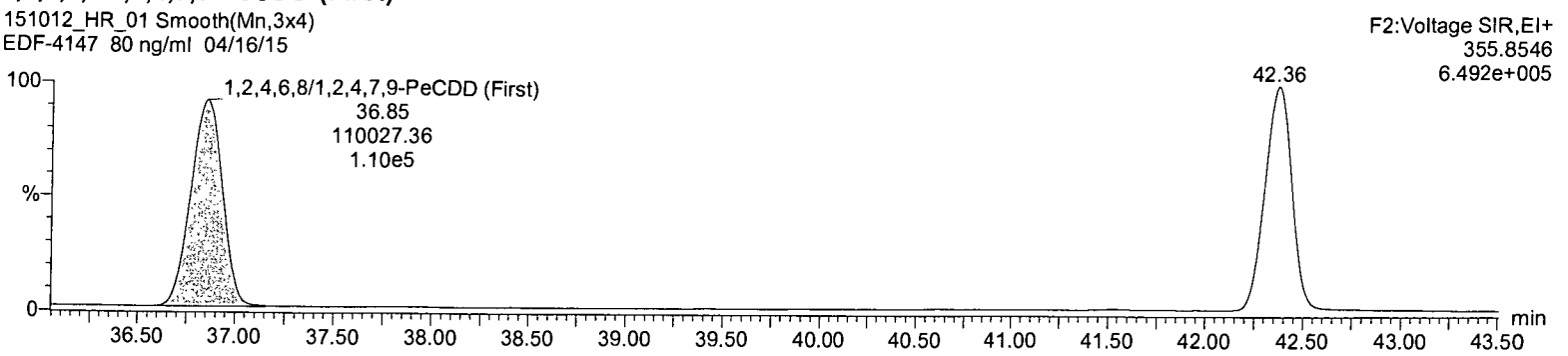


1,2,8,9-TCDD (Last)

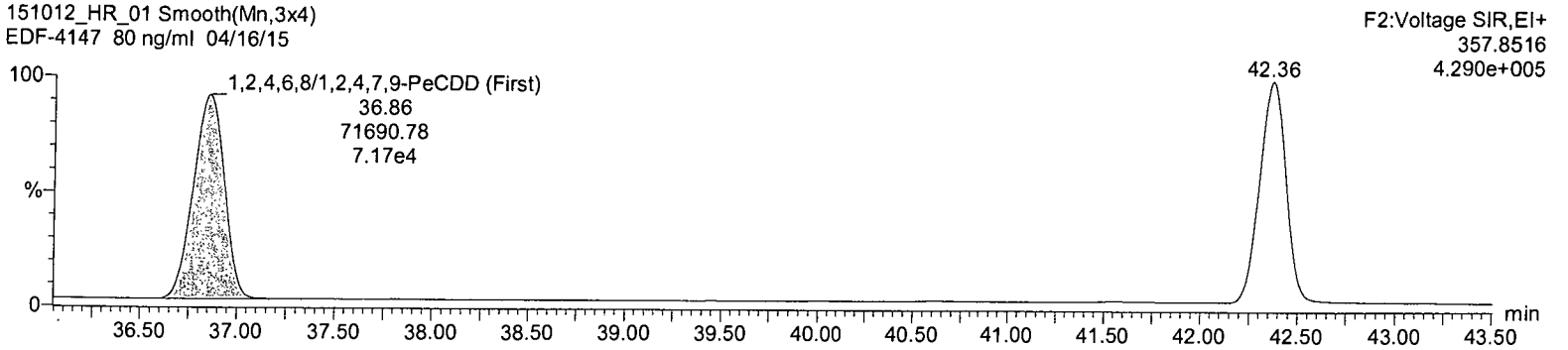


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

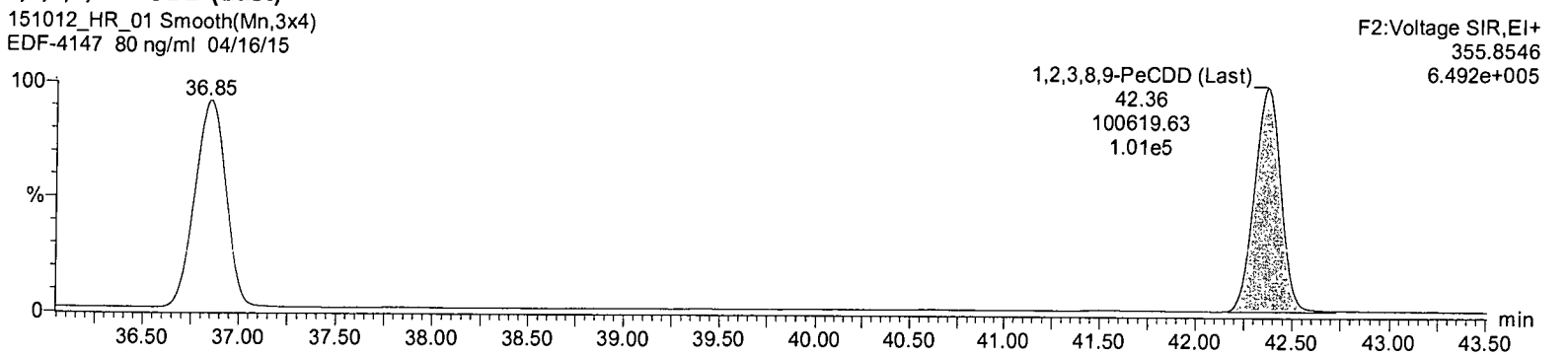
1,2,4,6,8/1,2,4,7,9-PeCDD (First)



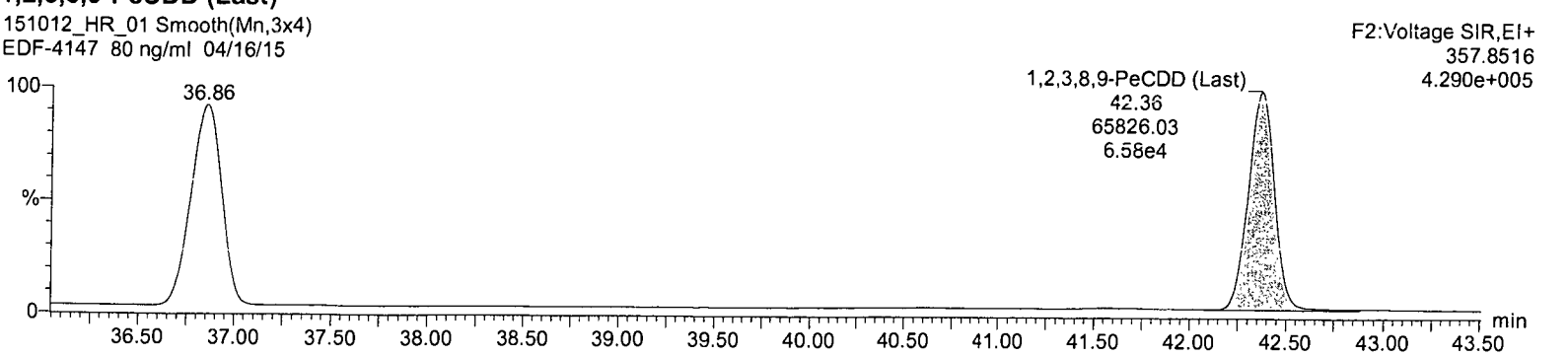
1,2,4,6,8/1,2,4,7,9-PeCDD (First)



1,2,3,8,9-PeCDD (Last)

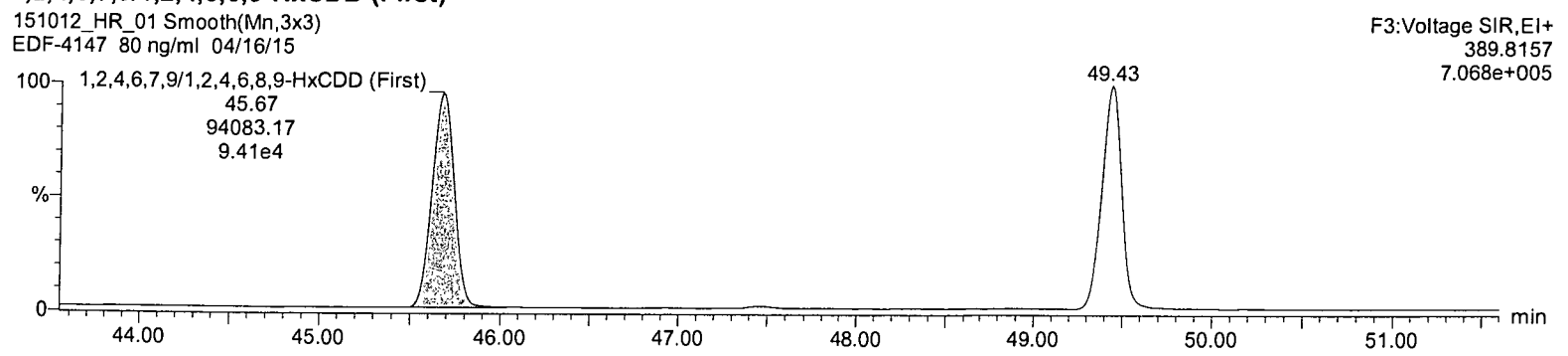


1,2,3,8,9-PeCDD (Last)

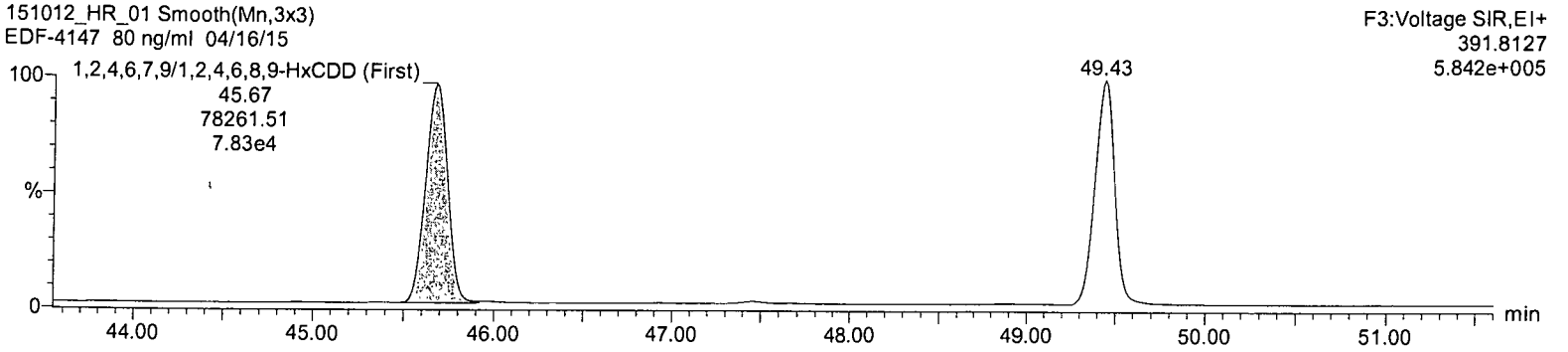


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

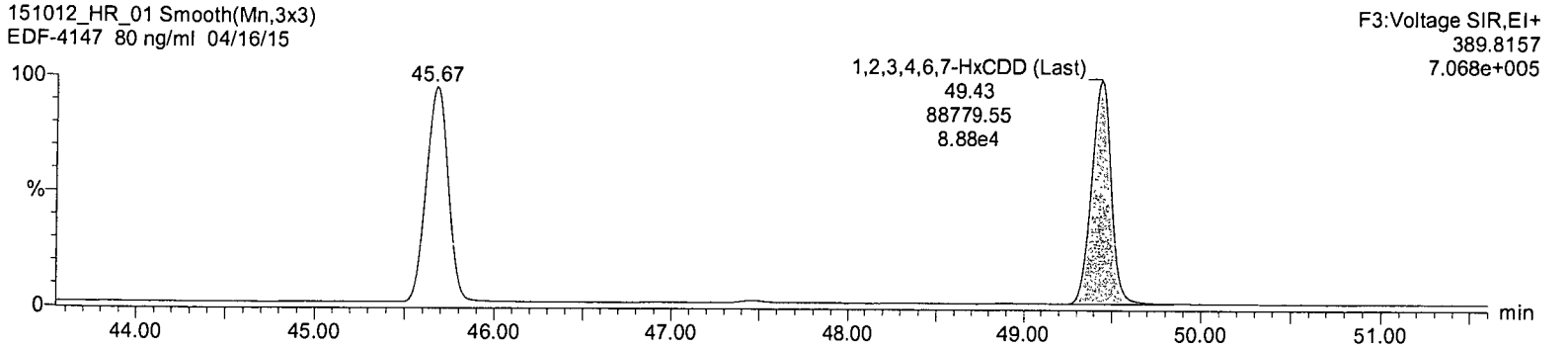
1,2,4,6,7,9/1,2,4,6,8,9-HxCDD (First)



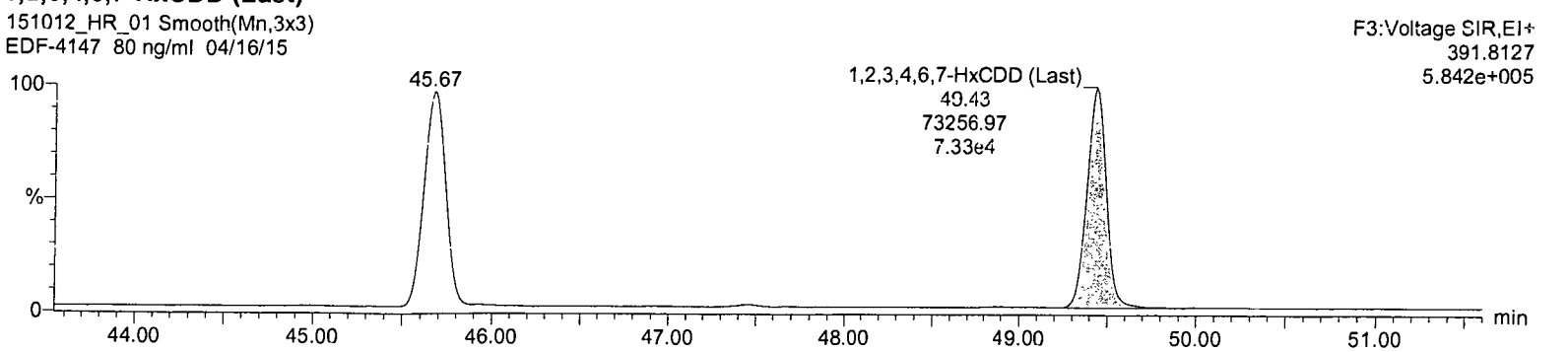
1,2,4,6,7,9/1,2,4,6,8,9-HxCDD (First)



1,2,3,4,6,7-HxCDD (Last)

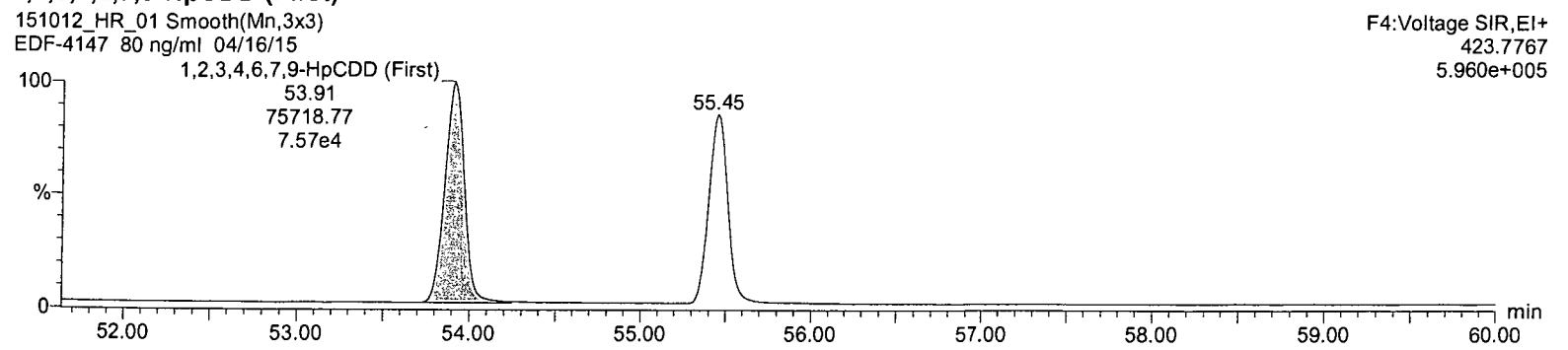


1,2,3,4,6,7-HxCDD (Last)

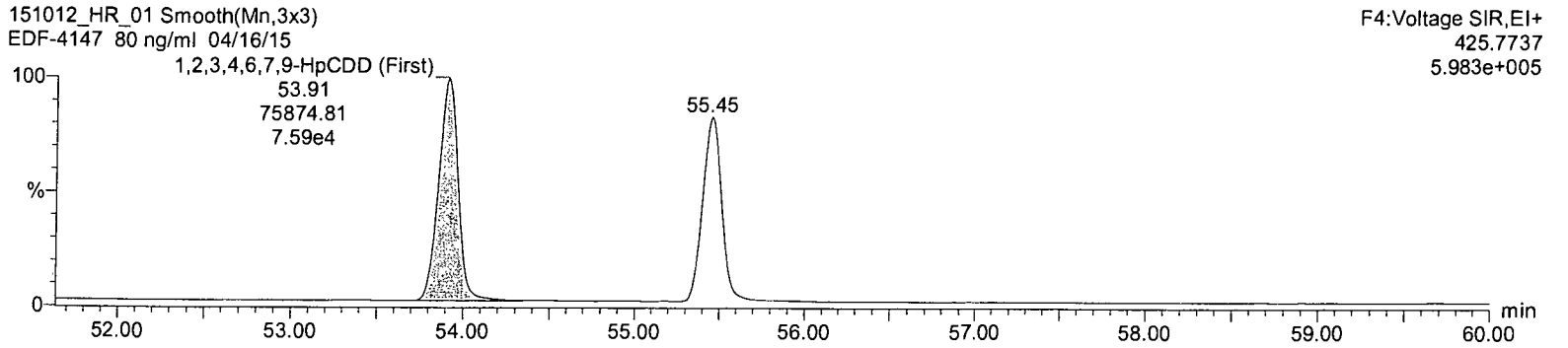


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

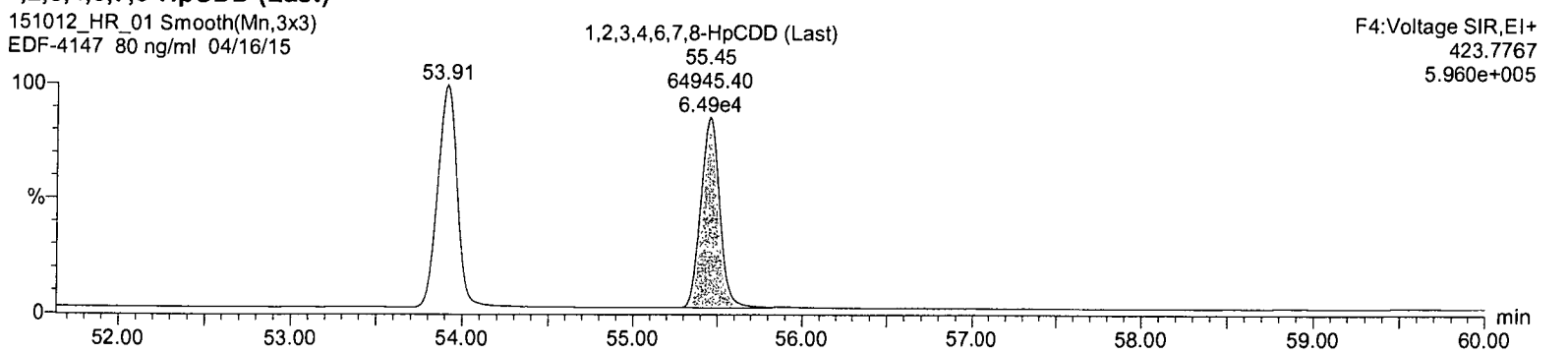
1,2,3,4,6,7,9-HpCDD (First)



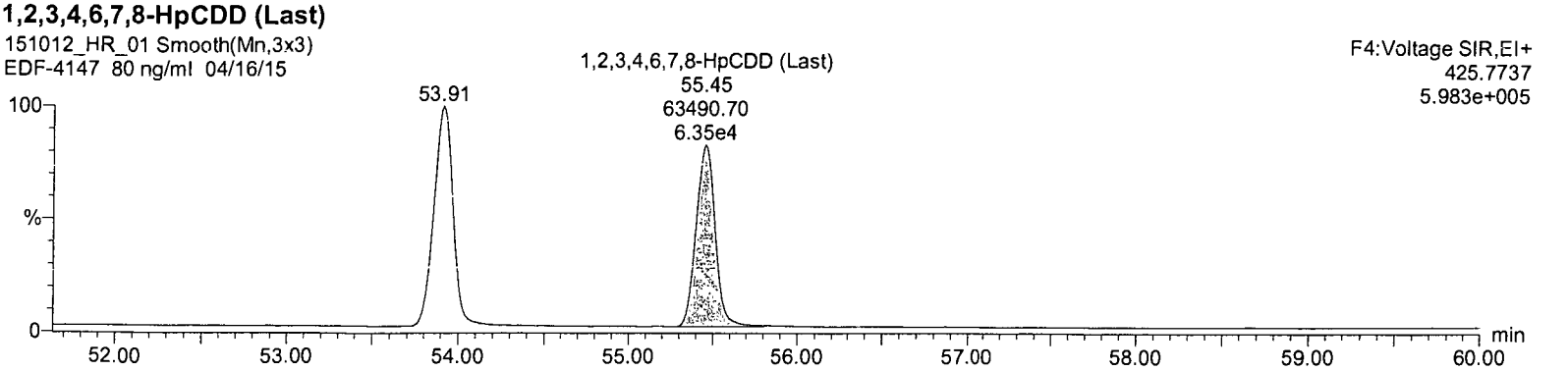
1,2,3,4,6,7,9-HpCDD (First)



1,2,3,4,6,7,8-HpCDD (Last)

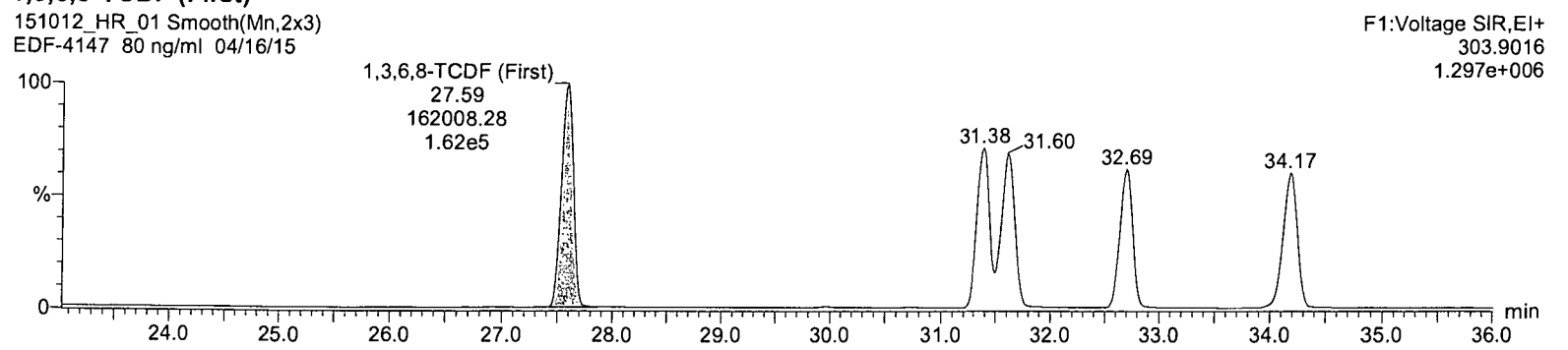


1,2,3,4,6,7,8-HpCDD (Last)

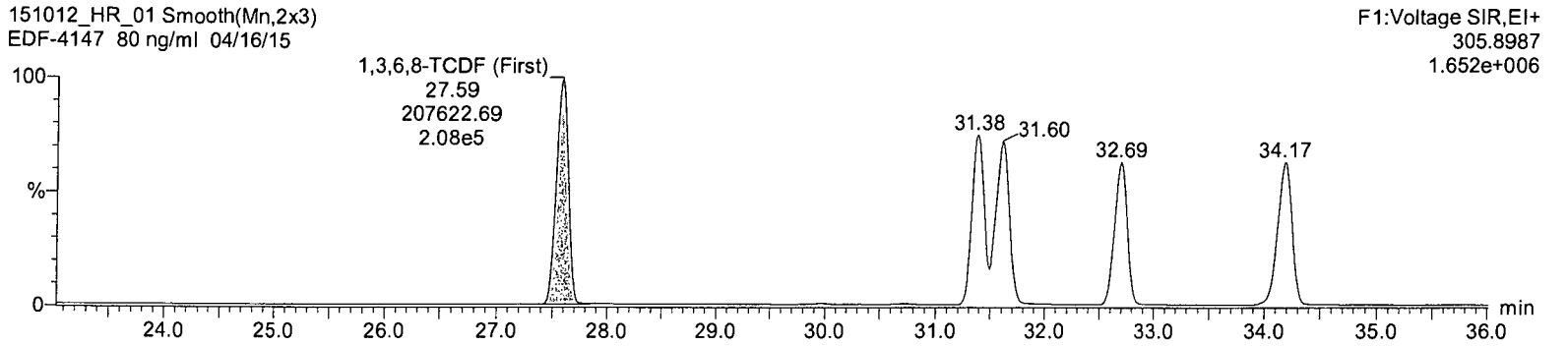


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

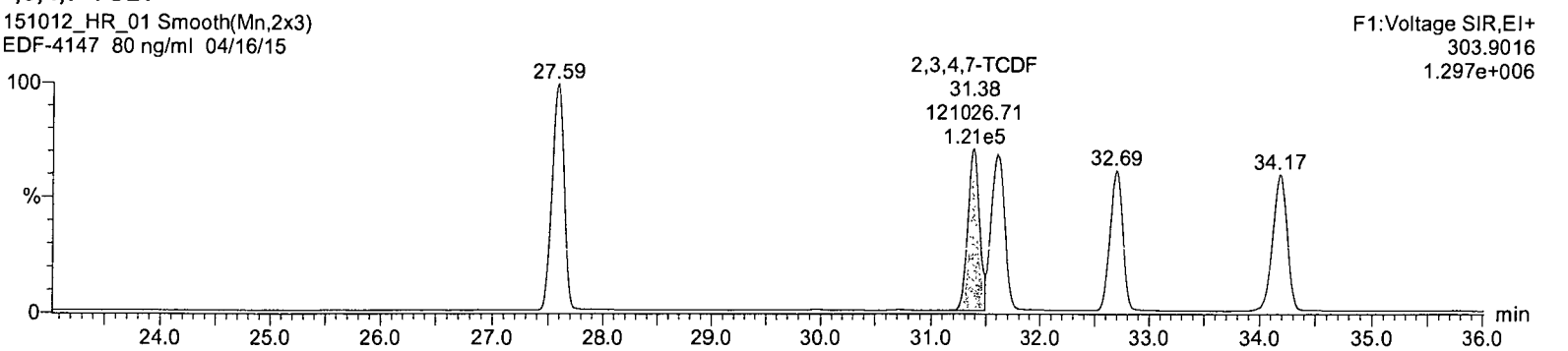
1,3,6,8-TCDF (First)



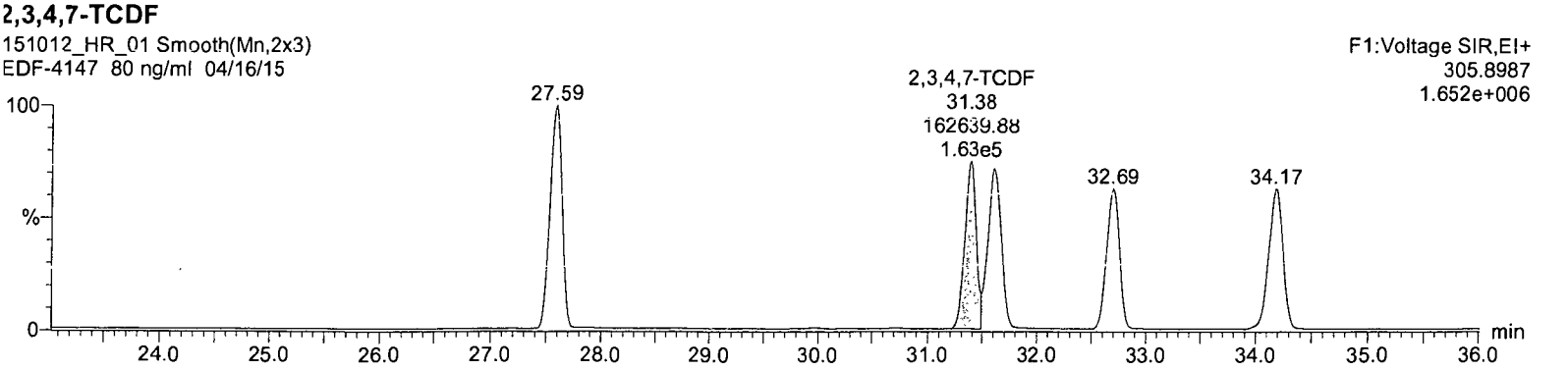
1,3,6,8-TCDF (First)



2,3,4,7-TCDF

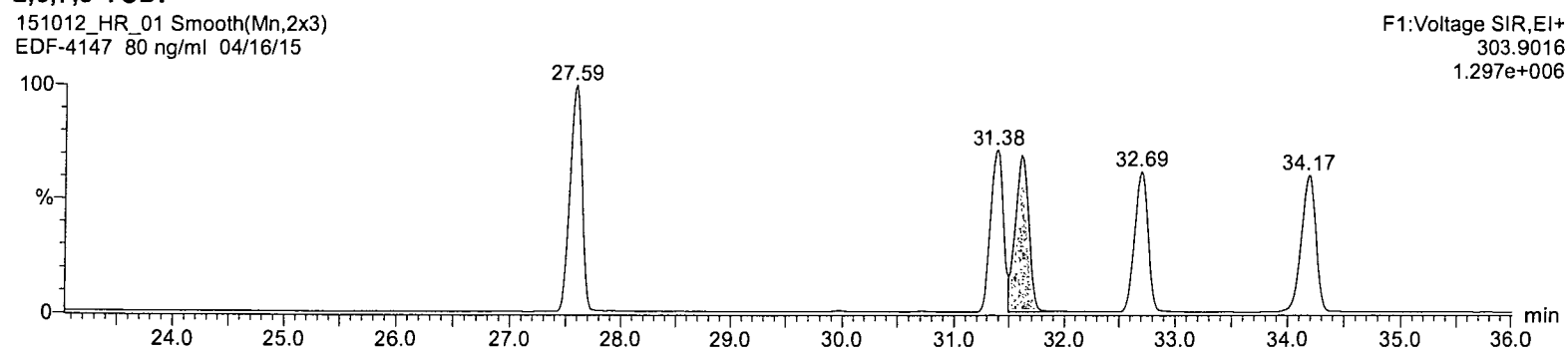


2,3,4,7-TCDF

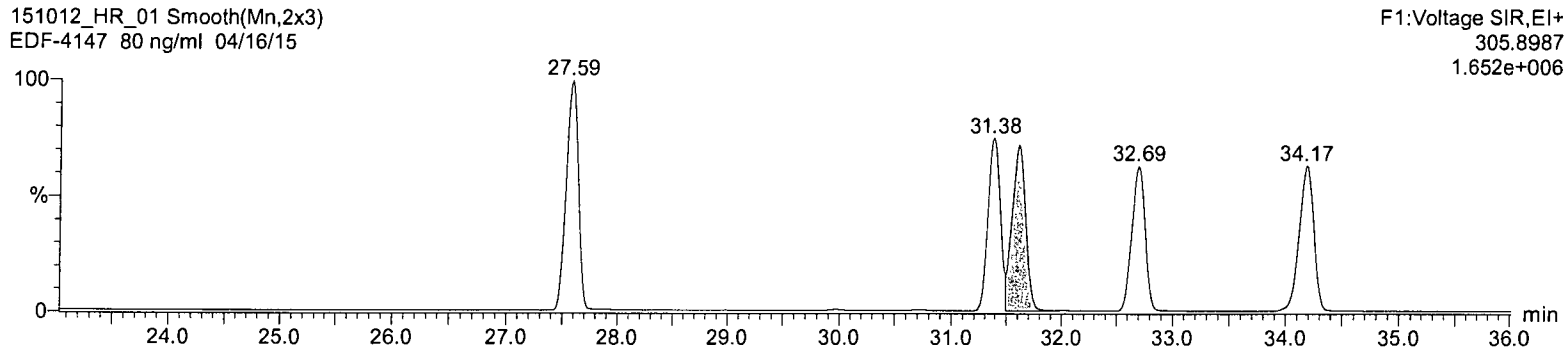


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

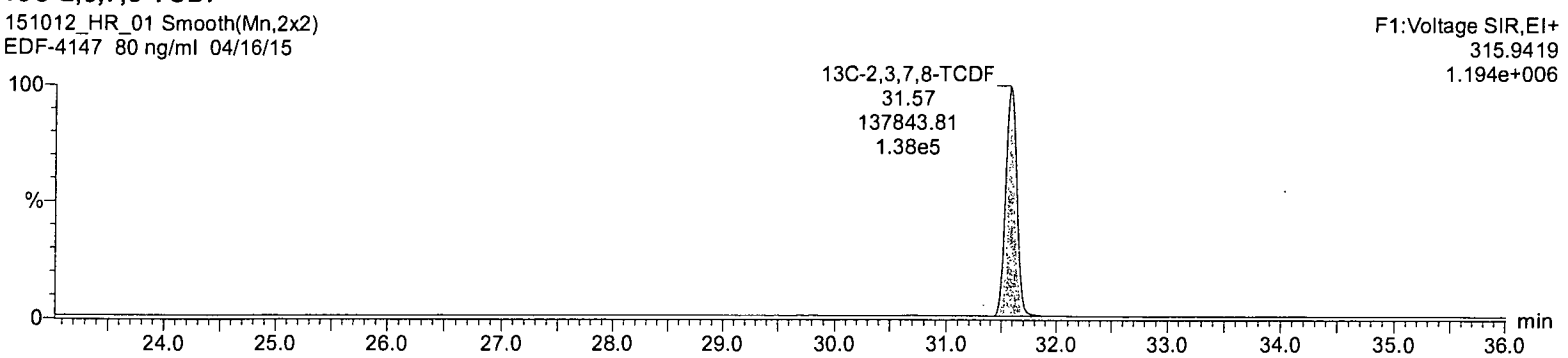
2,3,7,8-TCDF



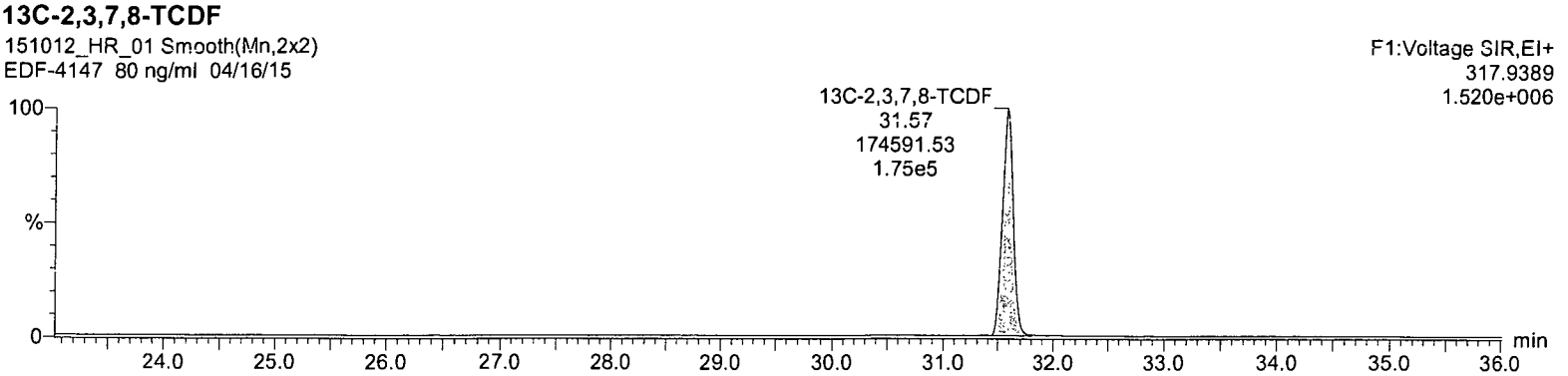
2,3,7,8-TCDF



13C-2,3,7,8-TCDF

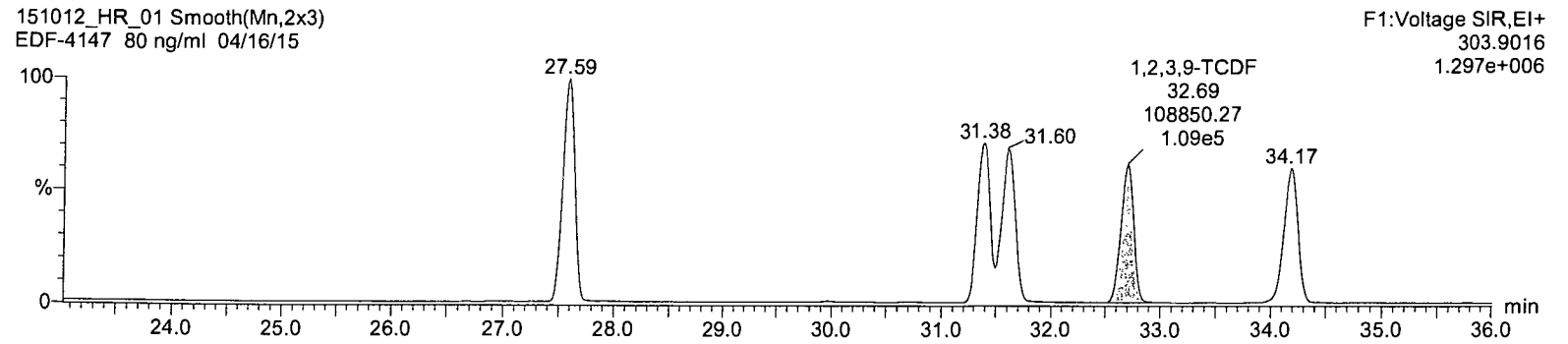


13C-2,3,7,8-TCDF

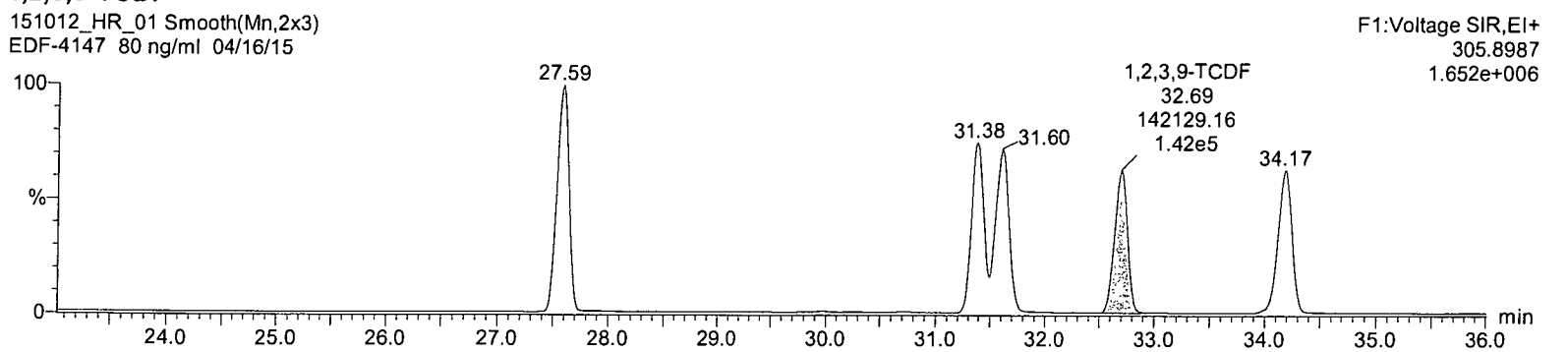


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

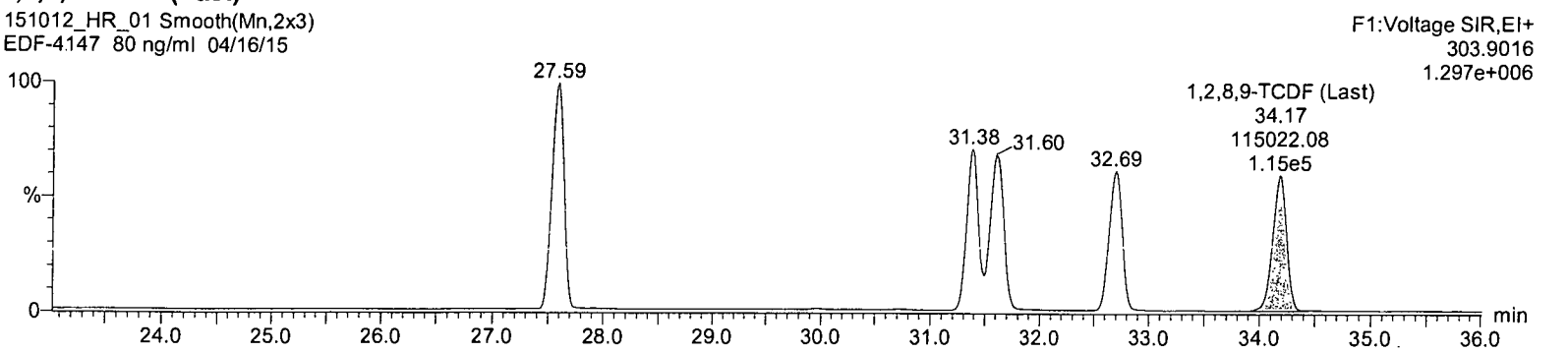
1,2,3,9-TCDF



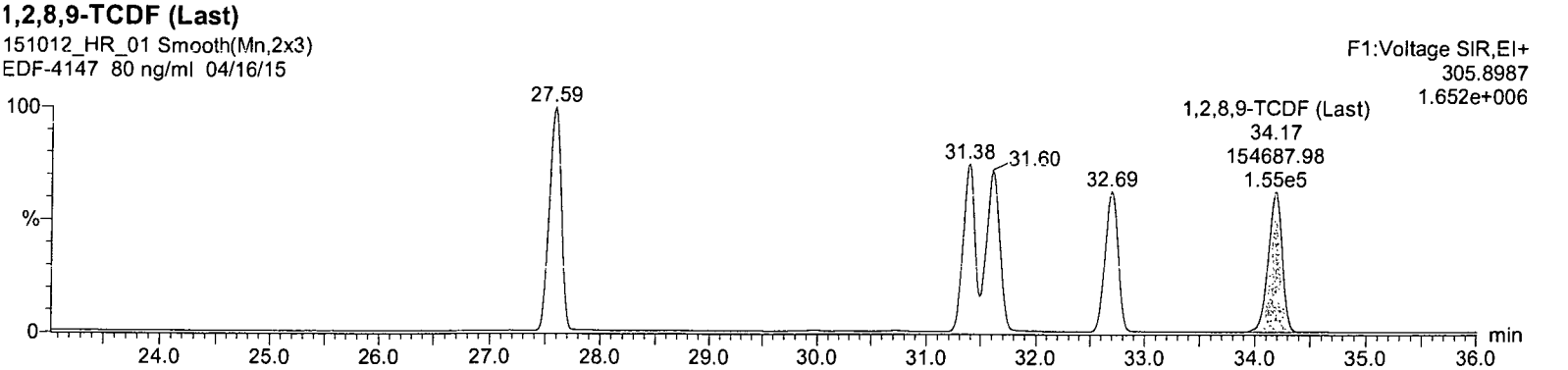
1,2,3,9-TCDF



1,2,8,9-TCDF (Last)

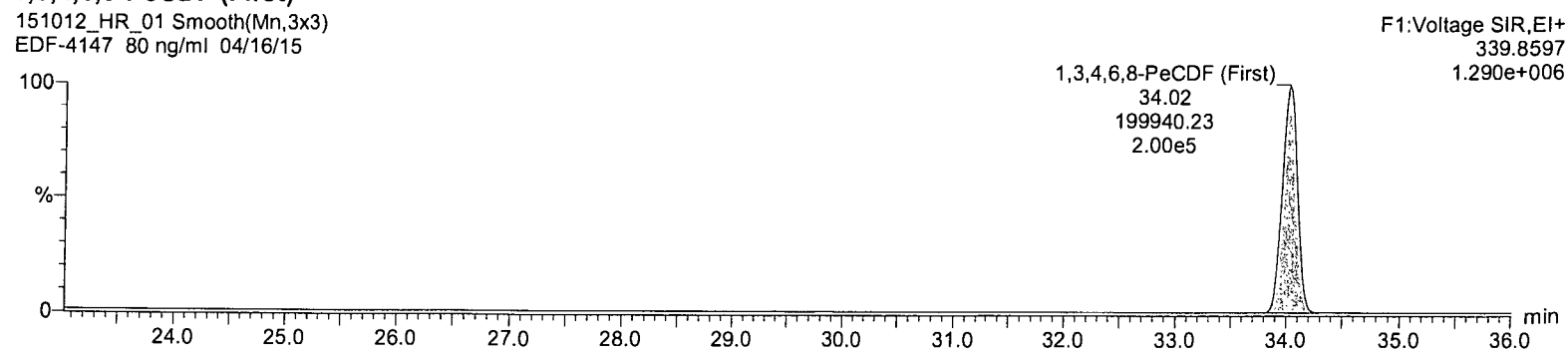


1,2,8,9-TCDF (Last)

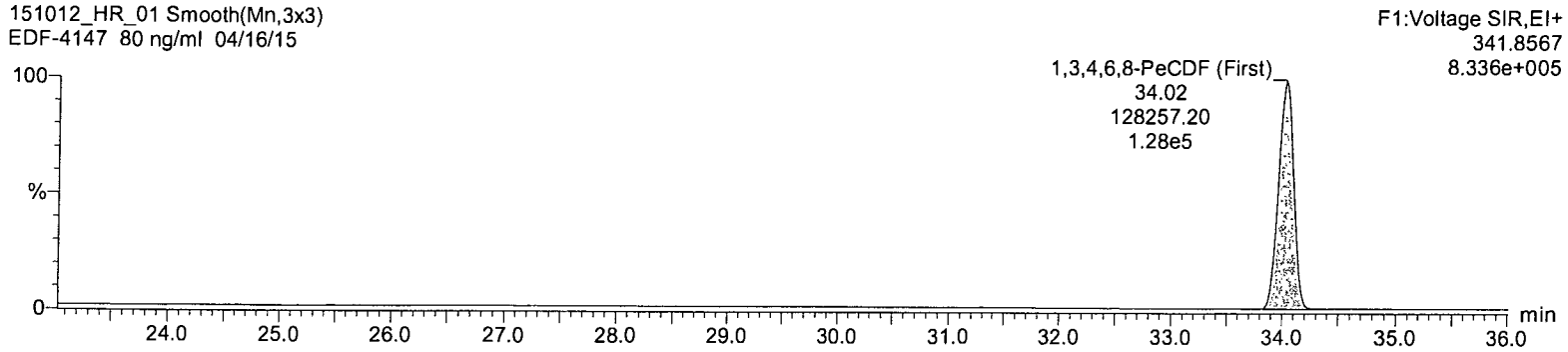


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

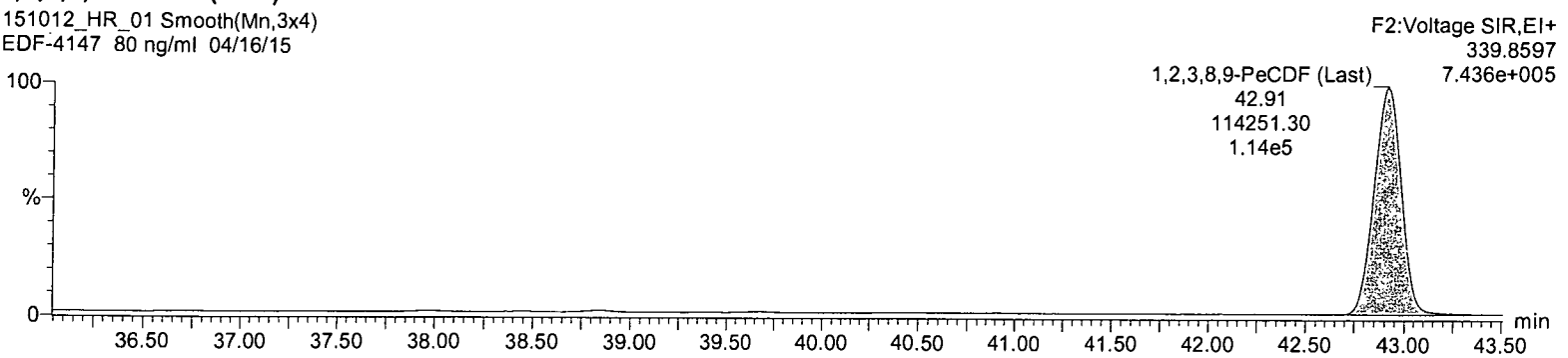
1,3,4,6,8-PeCDF (First)



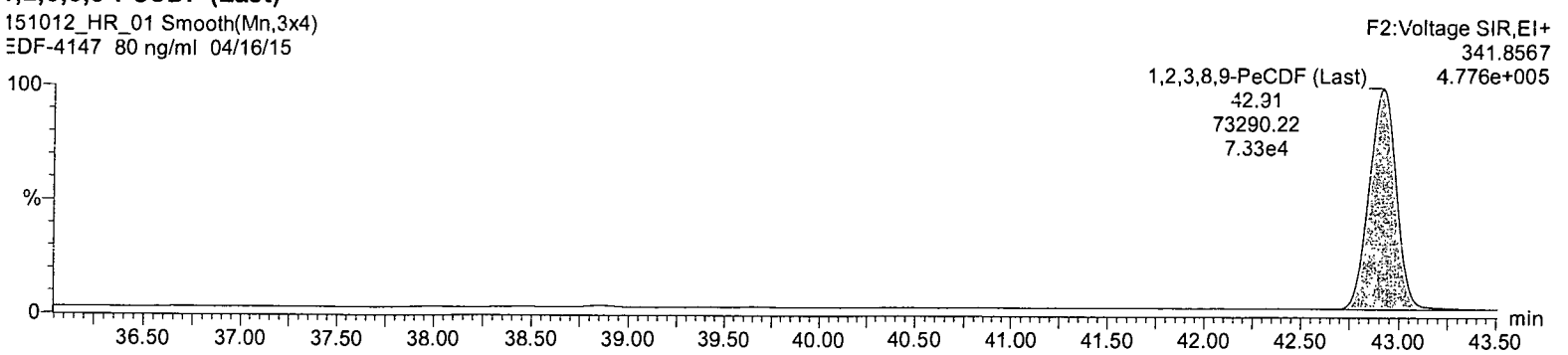
1,3,4,6,8-PeCDF (First)



1,2,3,8,9-PeCDF (Last)

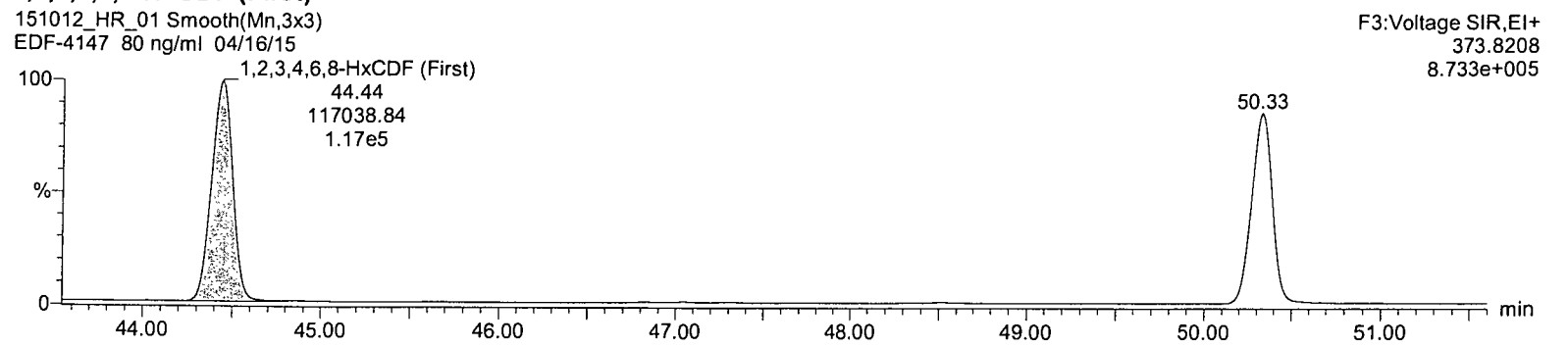


l,2,3,8,9-PeCDF (Last)

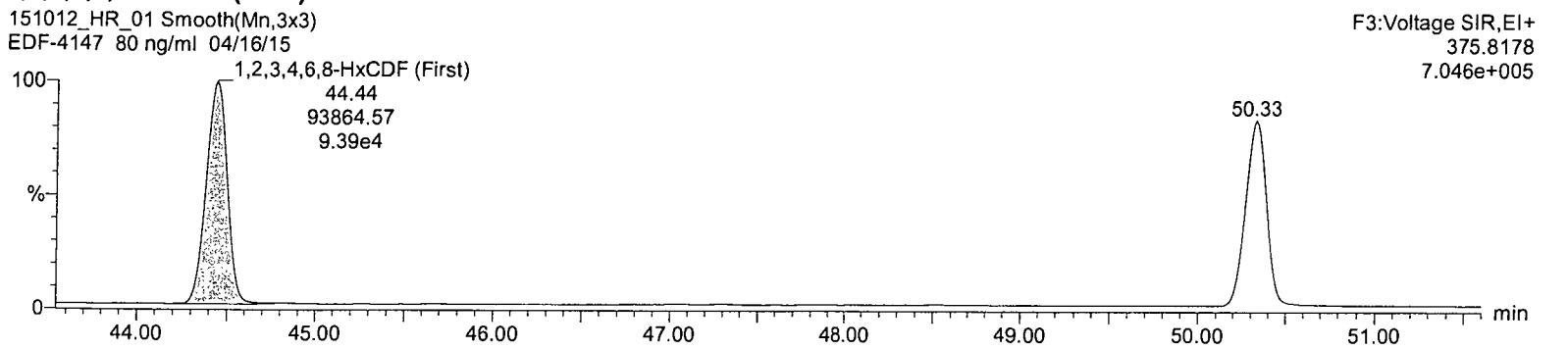


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

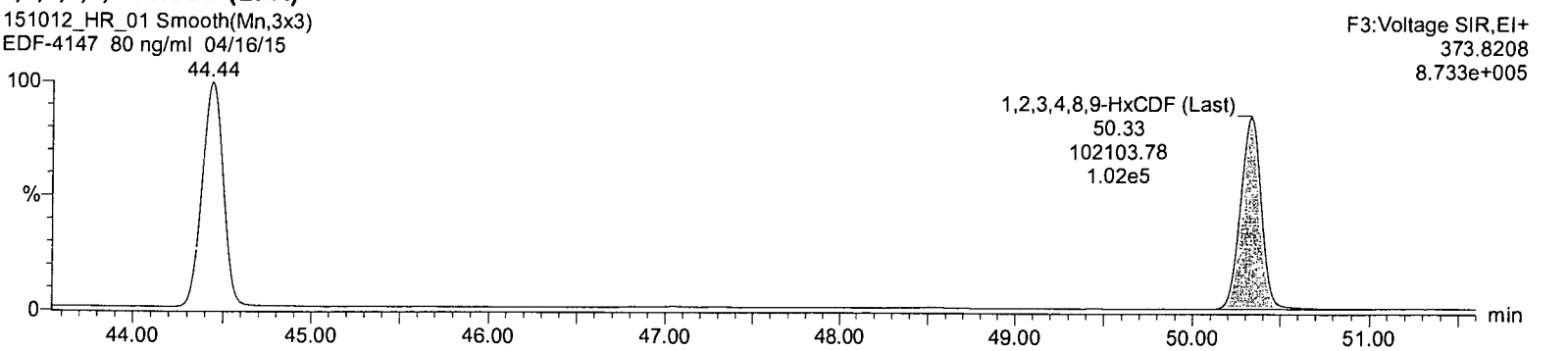
1,2,3,4,6,8-HxCDF (First)



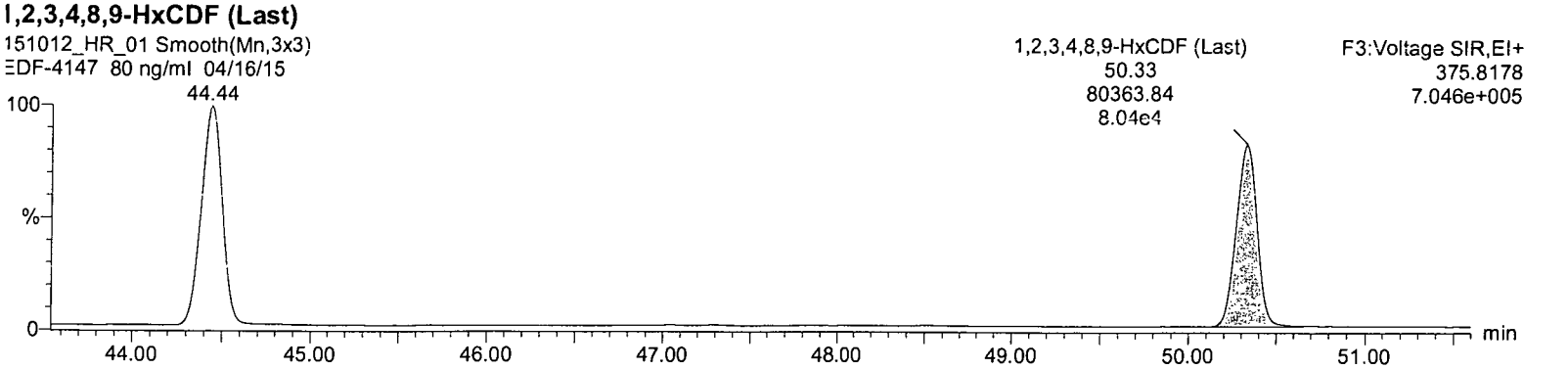
1,2,3,4,6,8-HxCDF (First)



1,2,3,4,8,9-HxCDF (Last)

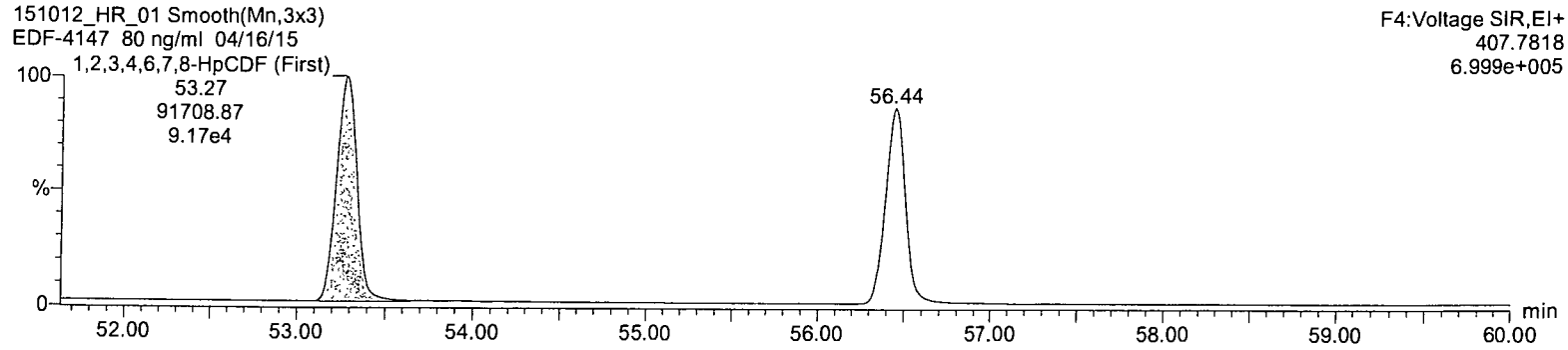


1,2,3,4,8,9-HxCDF (Last)

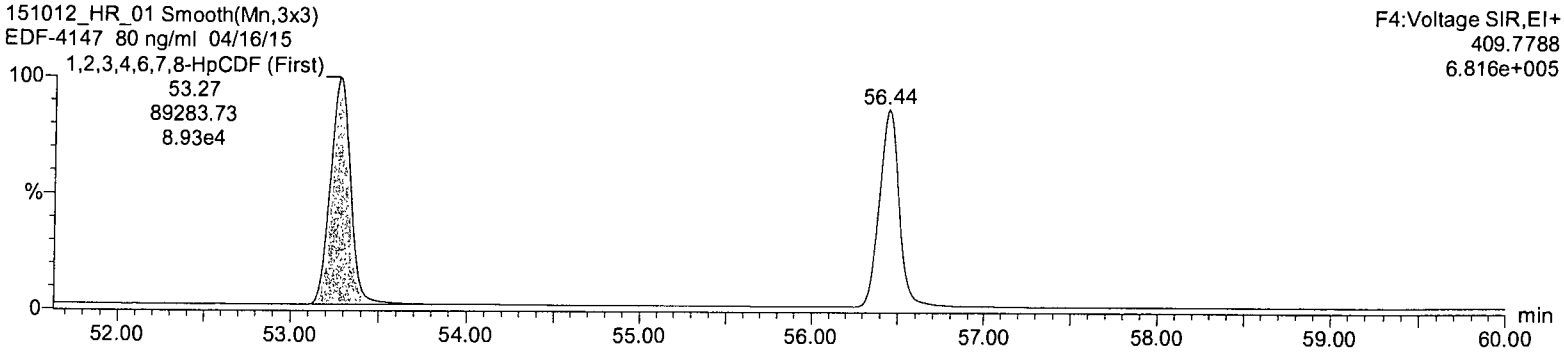


Name: 151012_HR_01, Date: 12-Oct-2015, Time: 12:25:22, ID: , Description: EDF-4147 80 ng/ml 04/16/15

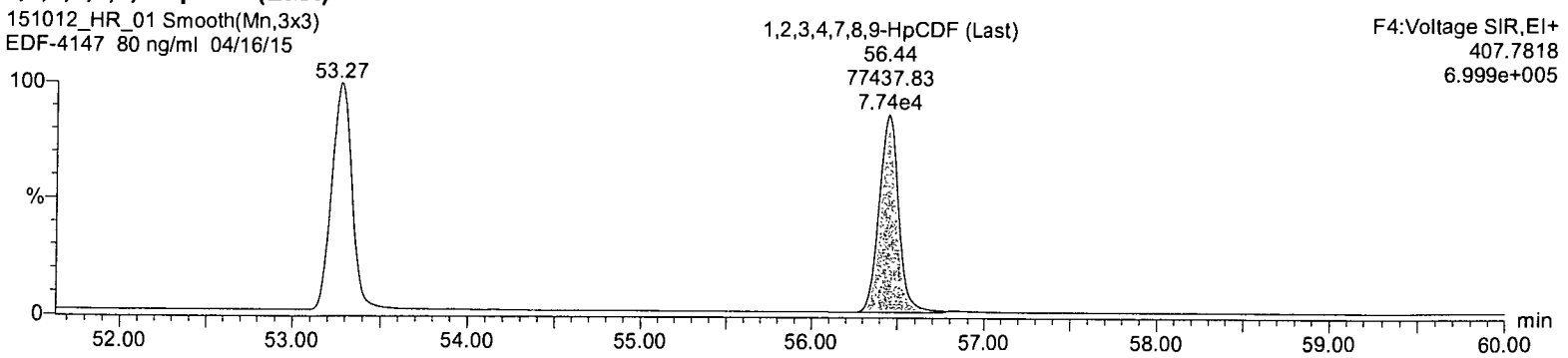
1,2,3,4,6,7,8-HpCDF (First)



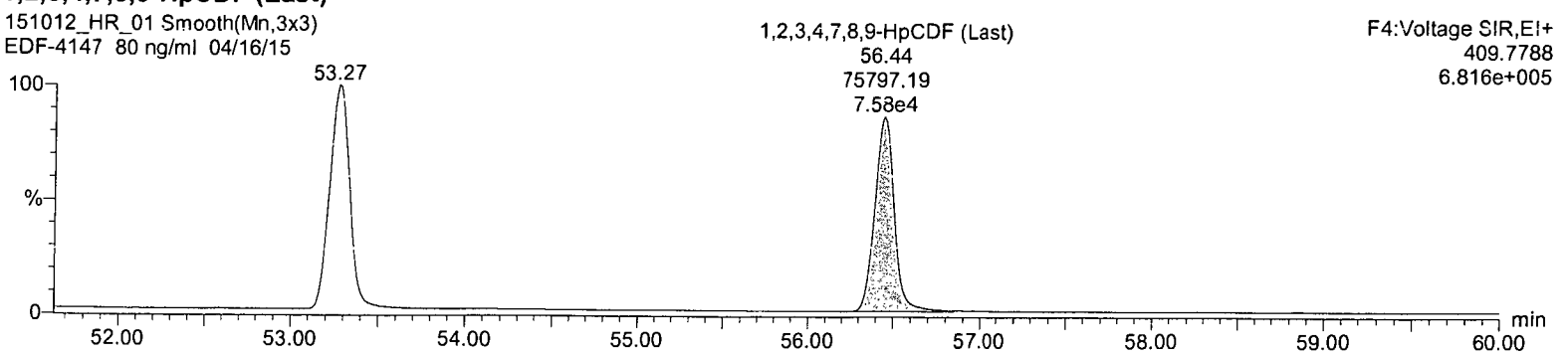
1,2,3,4,6,7,8-HpCDF (First)

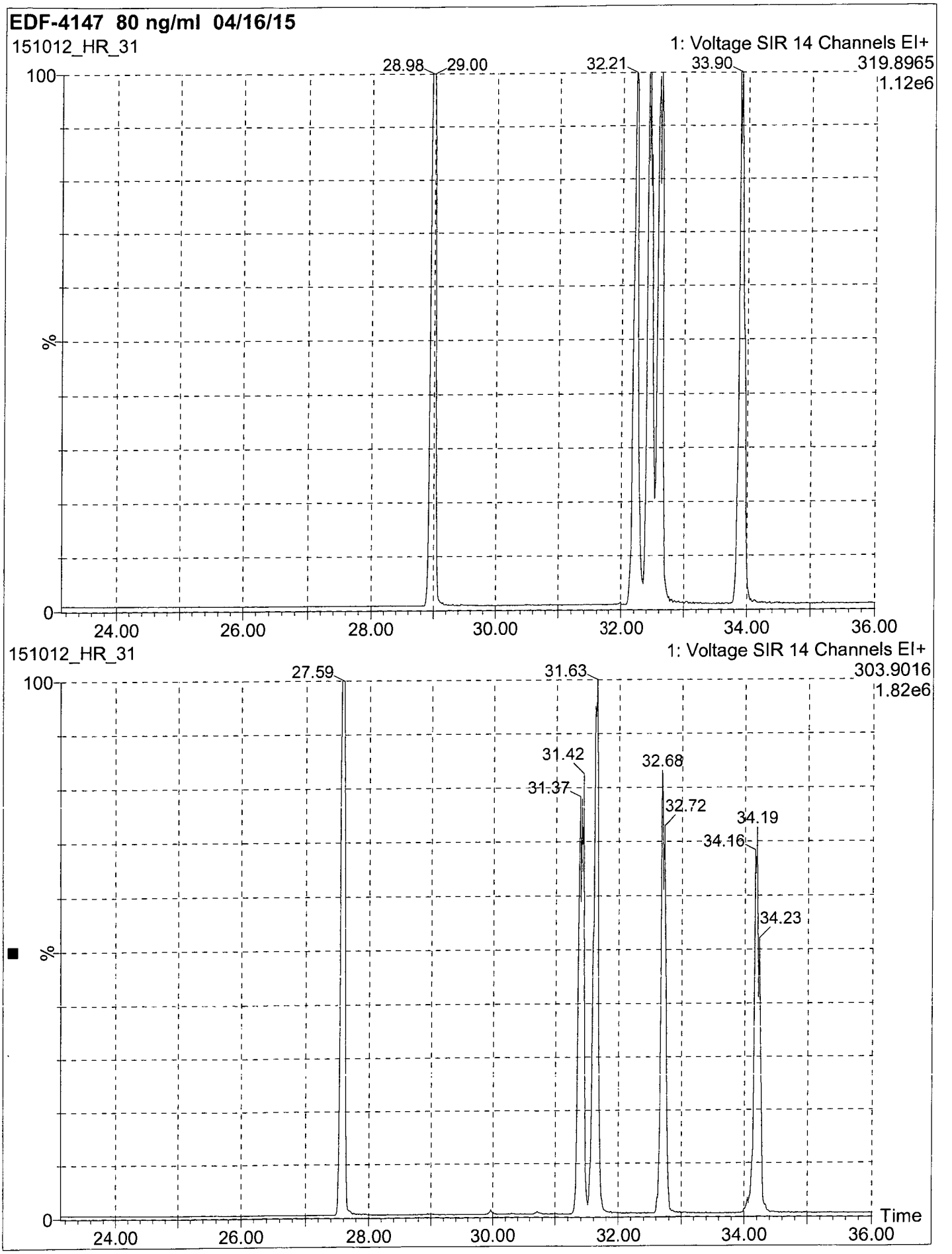


1,2,3,4,7,8,9-HpCDF (Last)



1,2,3,4,7,8,9-HpCDF (Last)




EDF-4147 80 ng/ml 04/16/15
151012_HR_31
1: Voltage SIR 14 Channels EI+
319.8965
1.12e6
28.98
29.00
32.21
33.90
100
%
0
24.00
26.00
28.00
30.00
32.00
34.00
36.00
151012_HR_31
1: Voltage SIR 14 Channels EI+
303.9016
1.82e6
27.59
31.63
31.42
31.37
32.68
32.72
34.19
34.16
34.23
100
%
0
Time
24.00
26.00
28.00
30.00
32.00
34.00
36.00

Method: C:\MassLynx\Default.pro\Methdb\151012_8290_CP.mdb 13 Oct 2015 14:47:31
Calibration: 14 Oct 2015 09:57:22

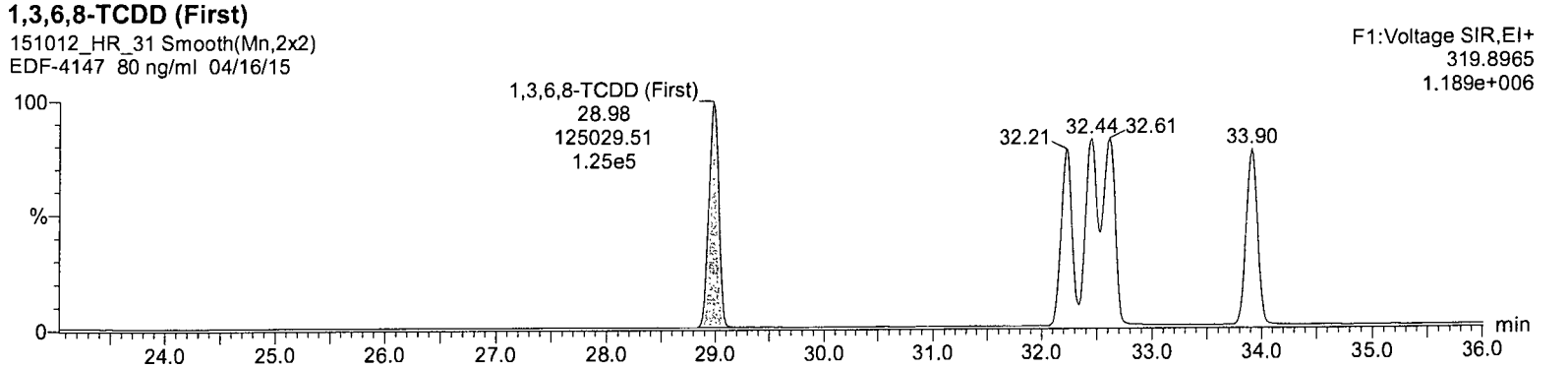
Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15, User:

#	Name	RT
1	1,3,6,8-TCDD (First)	28.98
2	1,2,3,7/1,2,3,8-TCDD	32.21
3	1,2,3,9-TCDD	32.44
4	2,3,7,8-TCDD	32.61
5	1,2,8,9-TCDD (Last)	33.90
6	13C-2,3,7,8-TCDD	32.57
7	1,2,4,6,8/1,2,4,7,9-PeCDD (First)	36.89
8	1,2,3,8,9-PeCDD (Last)	42.40
9	1,2,4,6,7,9/1,2,4,6,8,9-HxCDD (First)	45.70
10	1,2,3,4,6,7-HxCDD (Last)	49.44
11	1,2,3,4,6,7,9-HpCDD (First)	53.92
12	1,2,3,4,6,7,8-HpCDD (Last)	55.47
13	1,3,6,8-TCDF (First)	27.59
14	2,3,4,7-TCDF	31.40
15	2,3,7,8-TCDF	31.61
16	1,2,3,9-TCDF	32.70
17	1,2,8,9-TCDF (Last)	34.19
18	13C-2,3,7,8-TCDF	31.60
19	1,3,4,6,8-PeCDF (First)	34.04
20	1,2,3,8,9-PeCDF (Last)	42.95
21	1,2,3,4,6,8-HxCDF (First)	44.47
22	1,2,3,4,8,9-HxCDF (Last)	50.35
23	1,2,3,4,6,7,8-HpCDF (First)	53.28
24	1,2,3,4,7,8,9-HpCDF (Last)	56.46

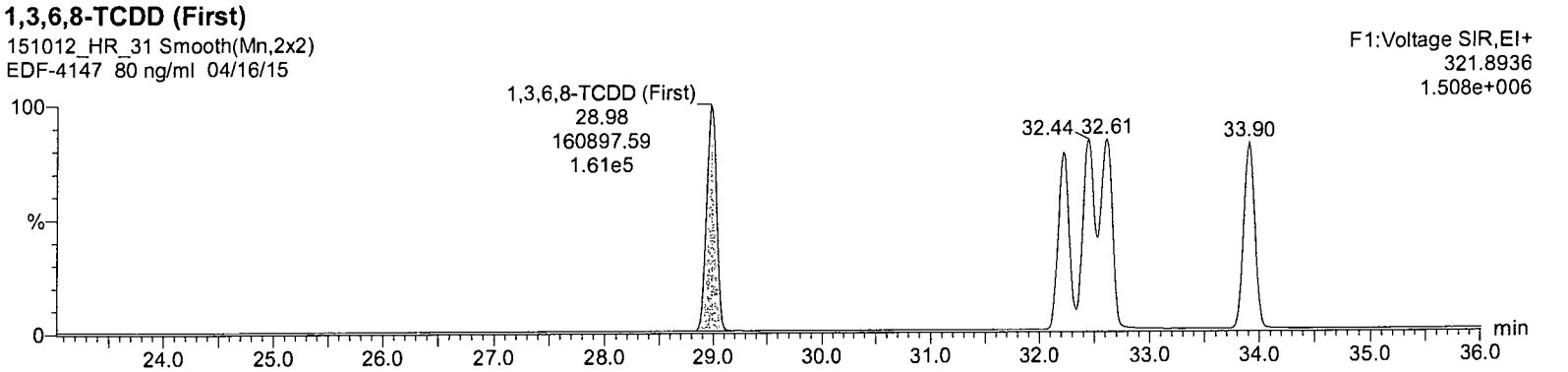
Method: C:\MassLynx\Default.pro\Methdb\151012_8290_CP.mdb 13 Oct 2015 14:47:31
Calibration: 14 Oct 2015 09:57:22

Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

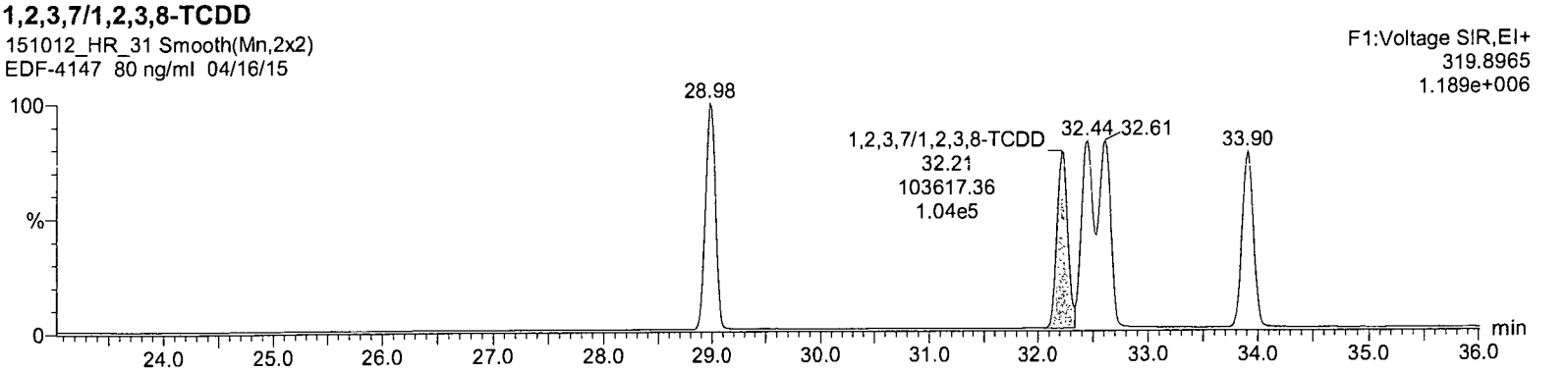
1,3,6,8-TCDD (First)



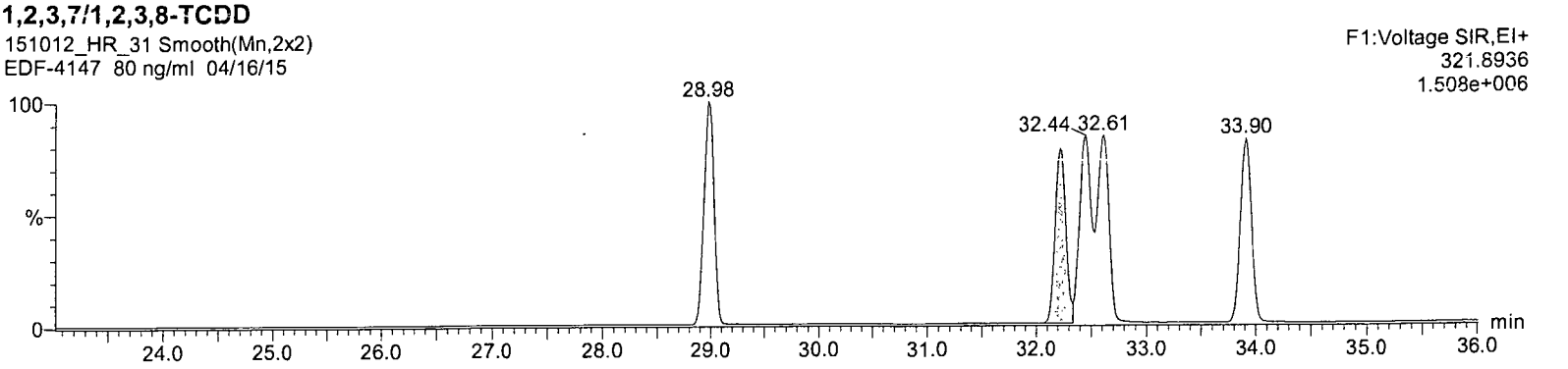
1,3,6,8-TCDD (First)



1,2,3,7/1,2,3,8-TCDD

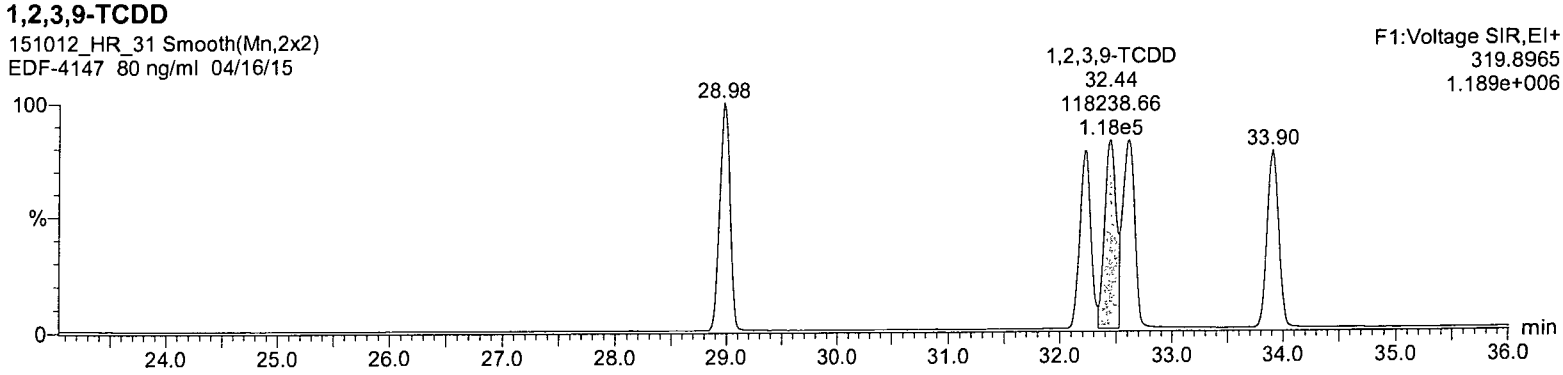


1,2,3,7/1,2,3,8-TCDD

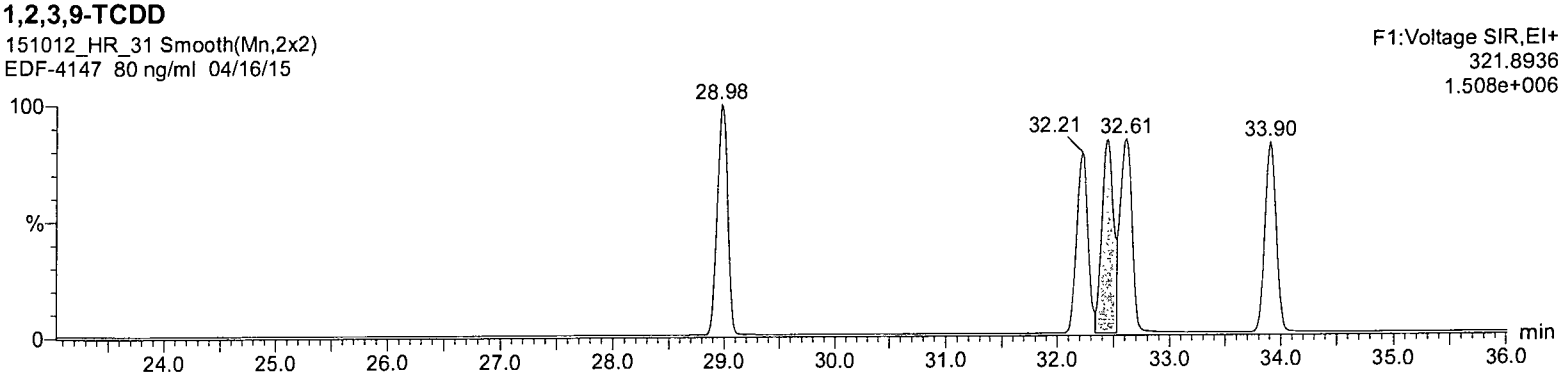


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

1,2,3,9-TCDD

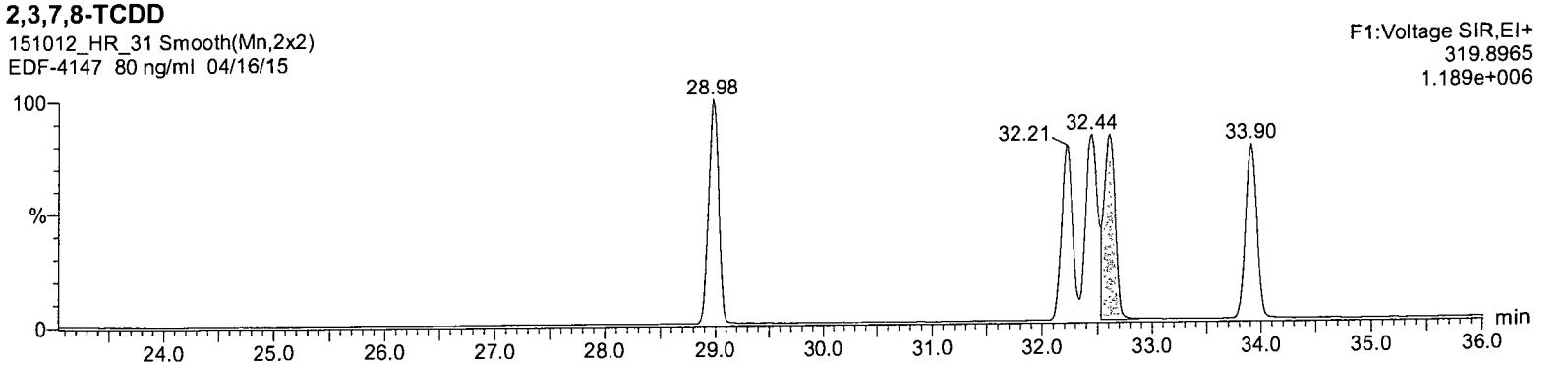


1,2,3,9-TCDD

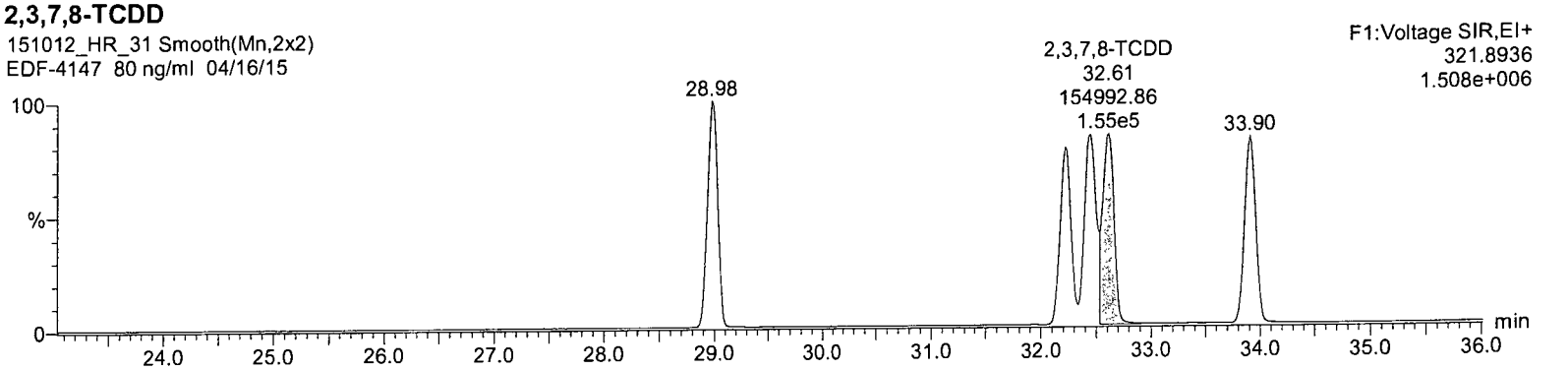


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

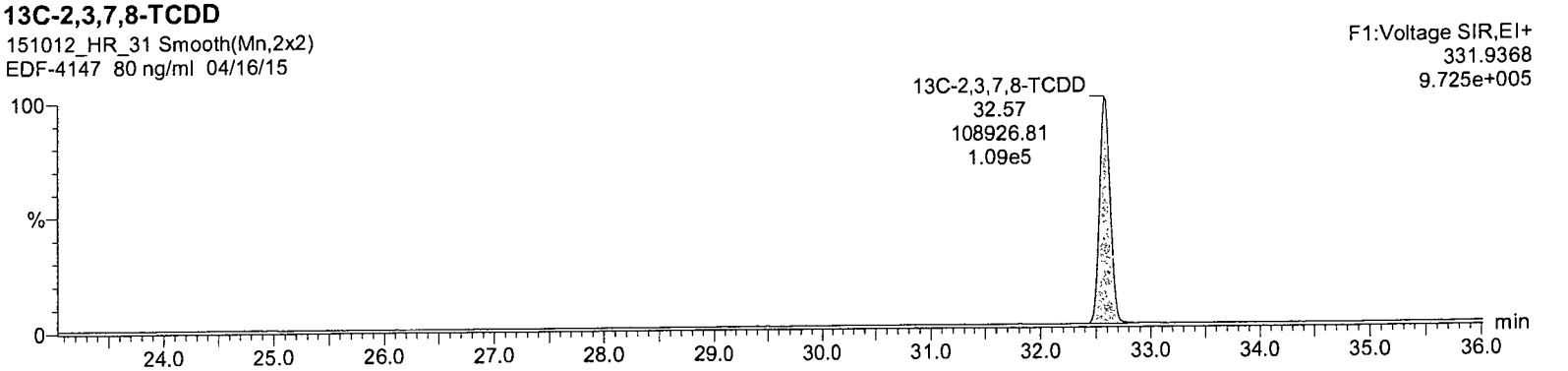
2,3,7,8-TCDD



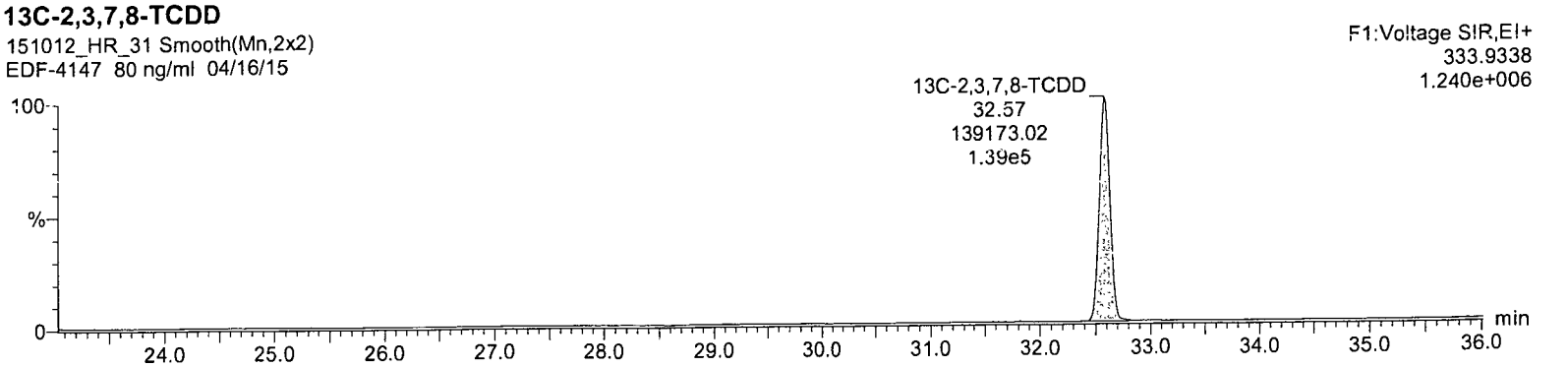
2,3,7,8-TCDD



13C-2,3,7,8-TCDD

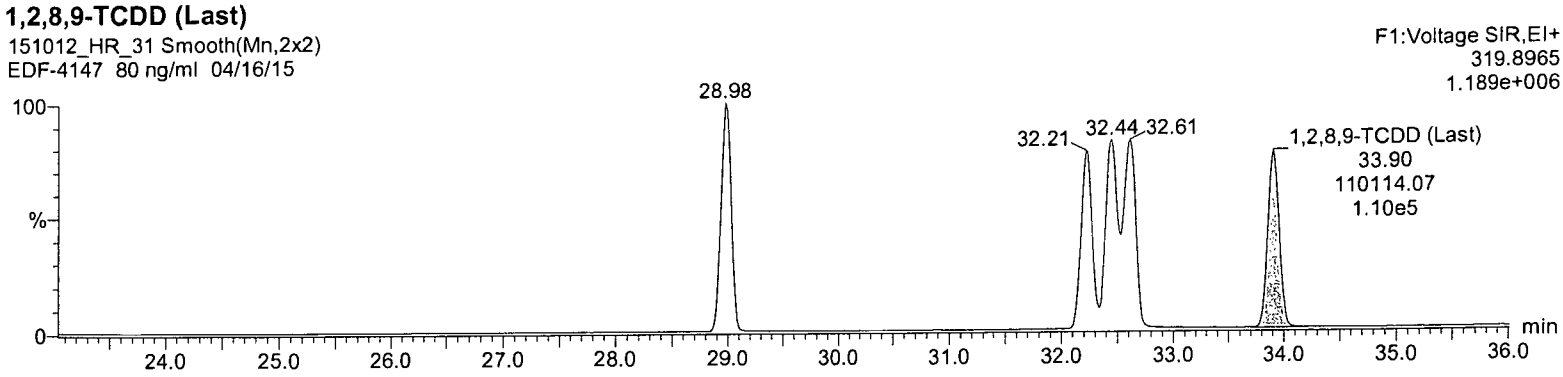


13C-2,3,7,8-TCDD

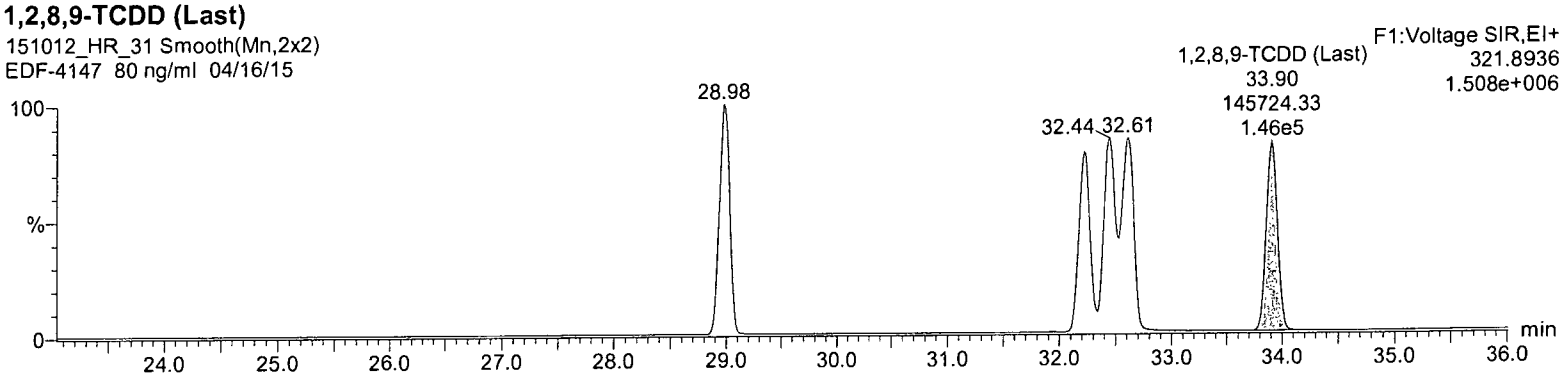


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

1,2,8,9-TCDD (Last)

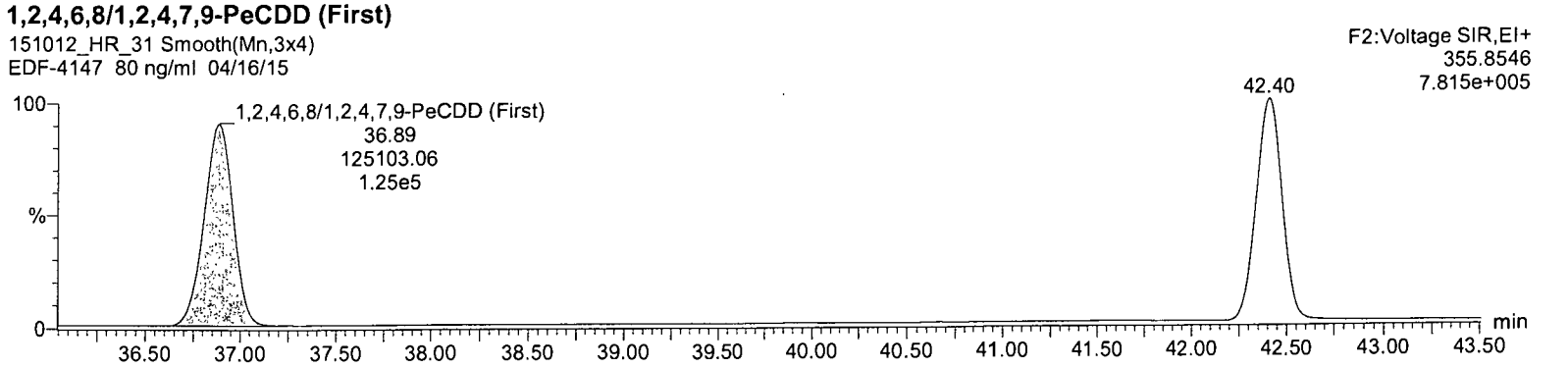


1,2,8,9-TCDD (Last)

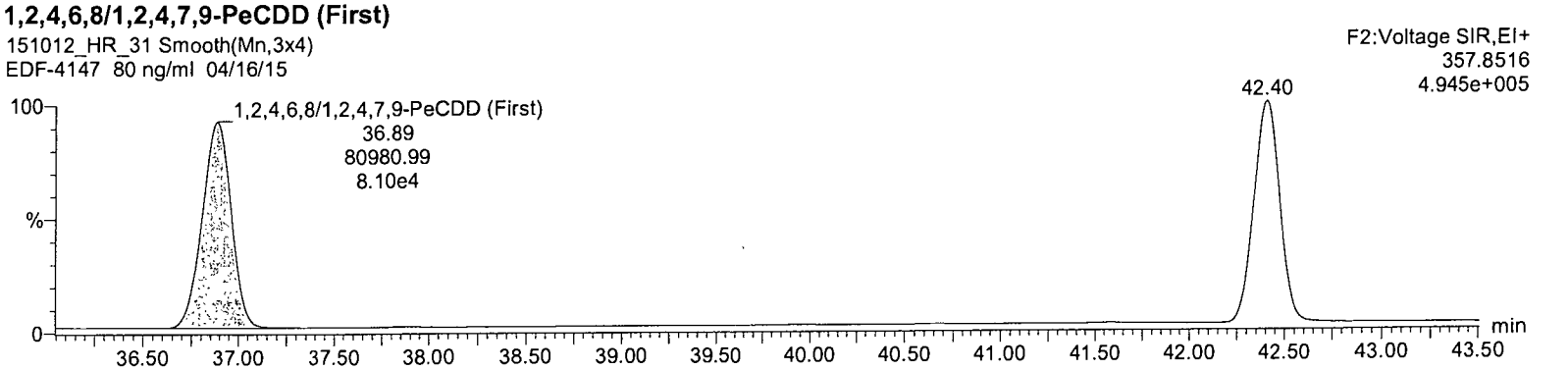


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

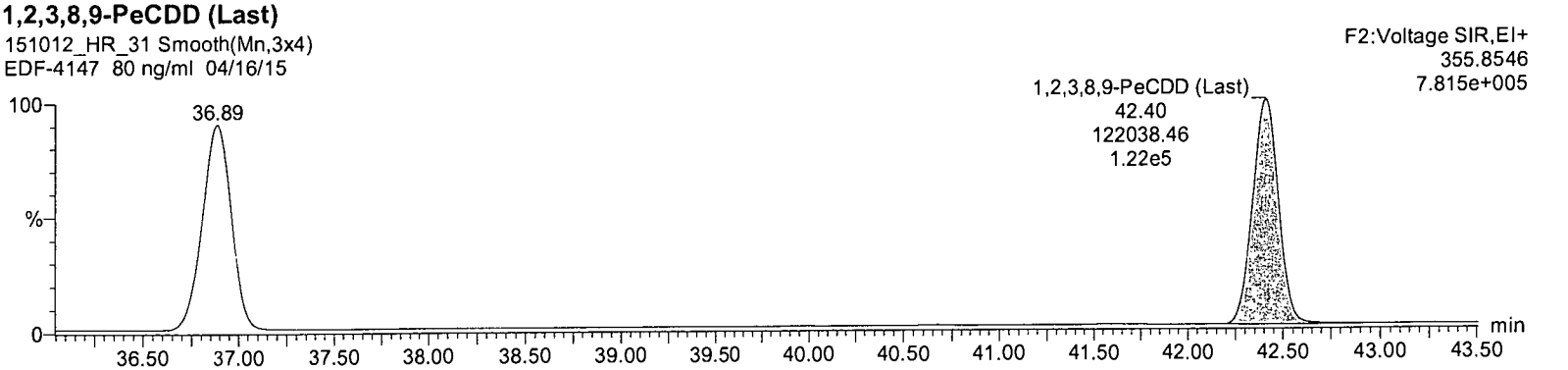
1,2,4,6,8/1,2,4,7,9-PeCDD (First)



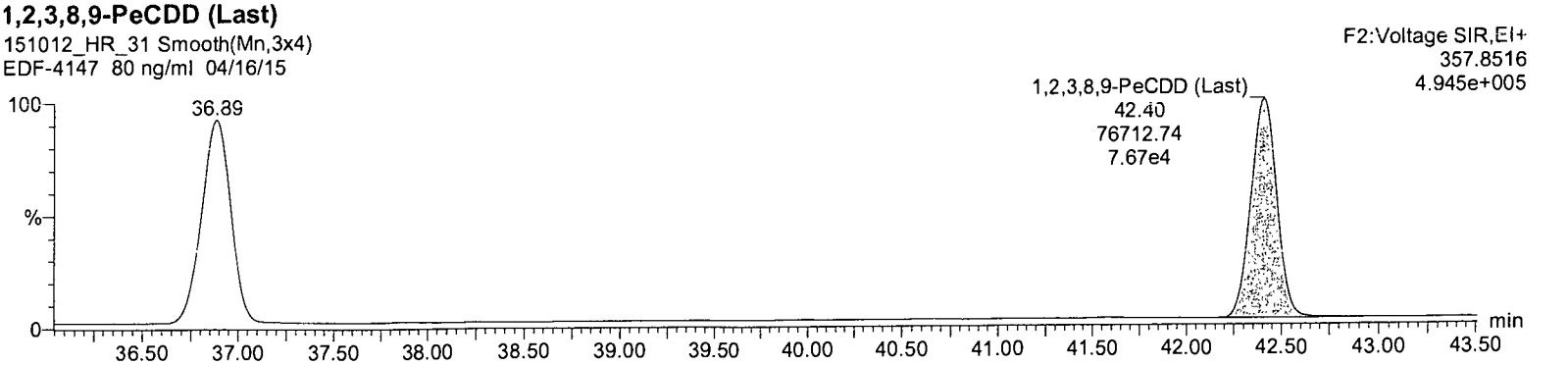
1,2,4,6,8/1,2,4,7,9-PeCDD (First)



1,2,3,8,9-PeCDD (Last)

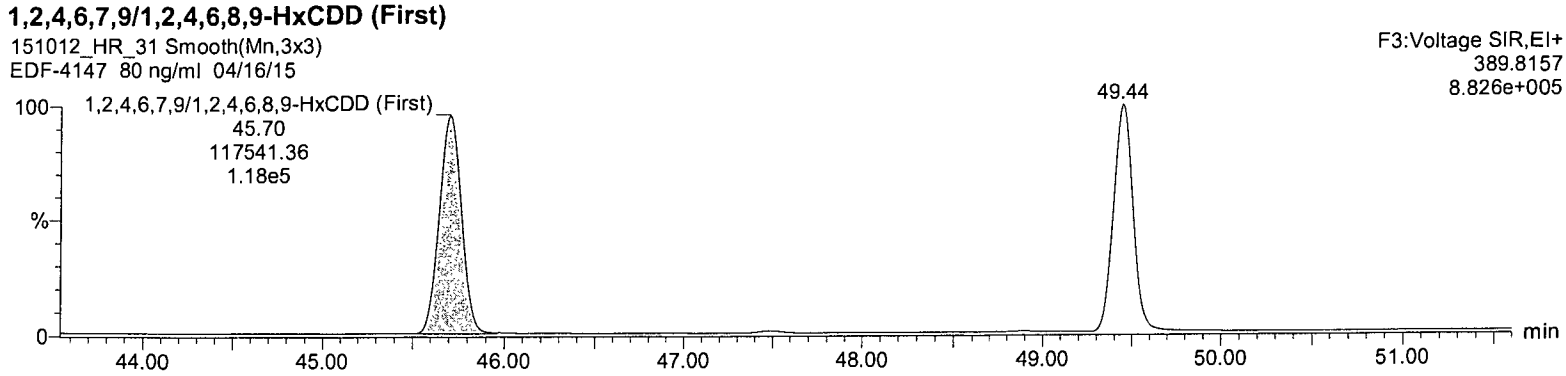


1,2,3,8,9-PeCDD (Last)

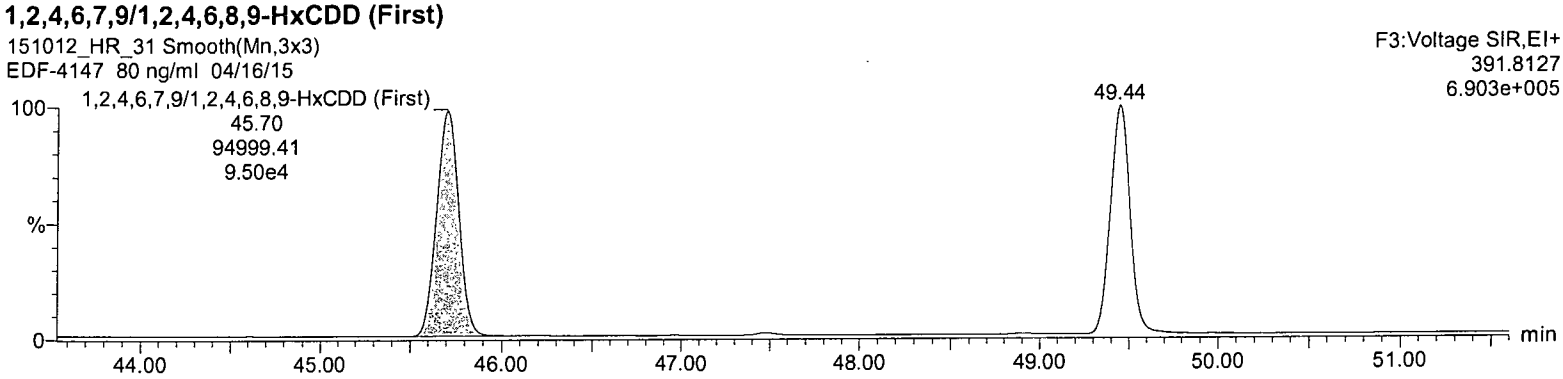


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

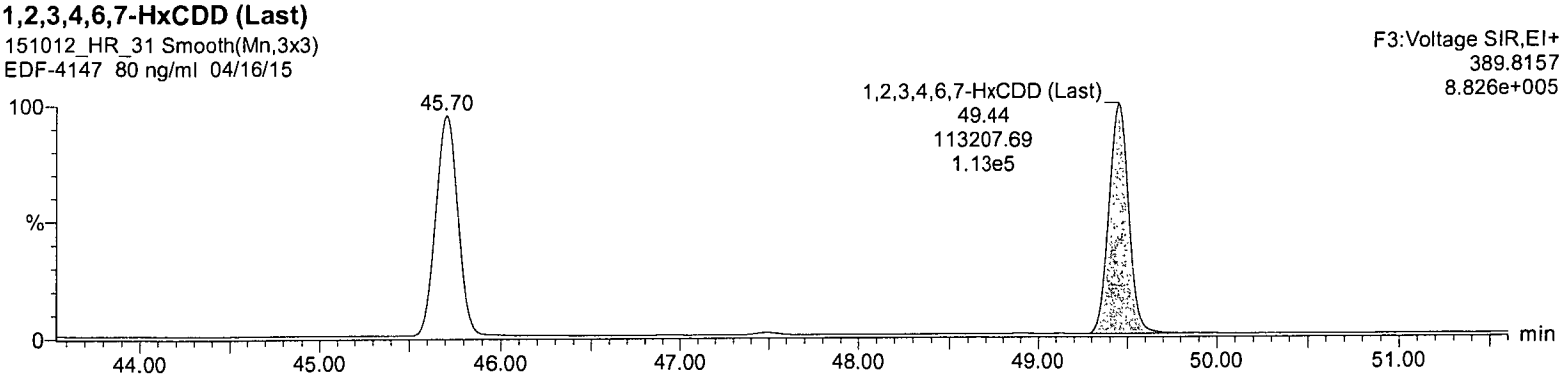
1,2,4,6,7,9/1,2,4,6,8,9-HxCDD (First)



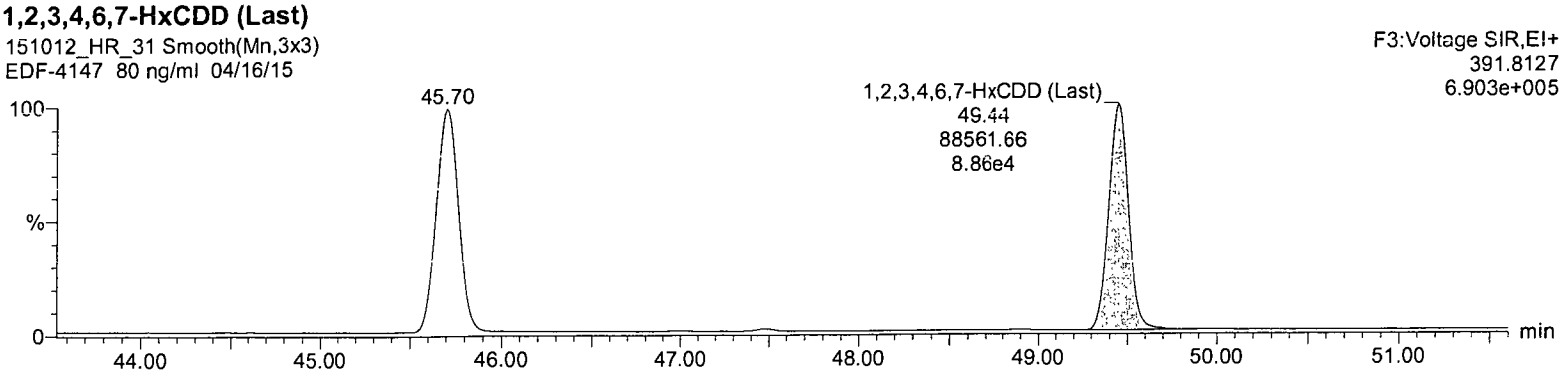
1,2,4,6,7,9/1,2,4,6,8,9-HxCDD (First)



1,2,3,4,6,7-HxCDD (Last)

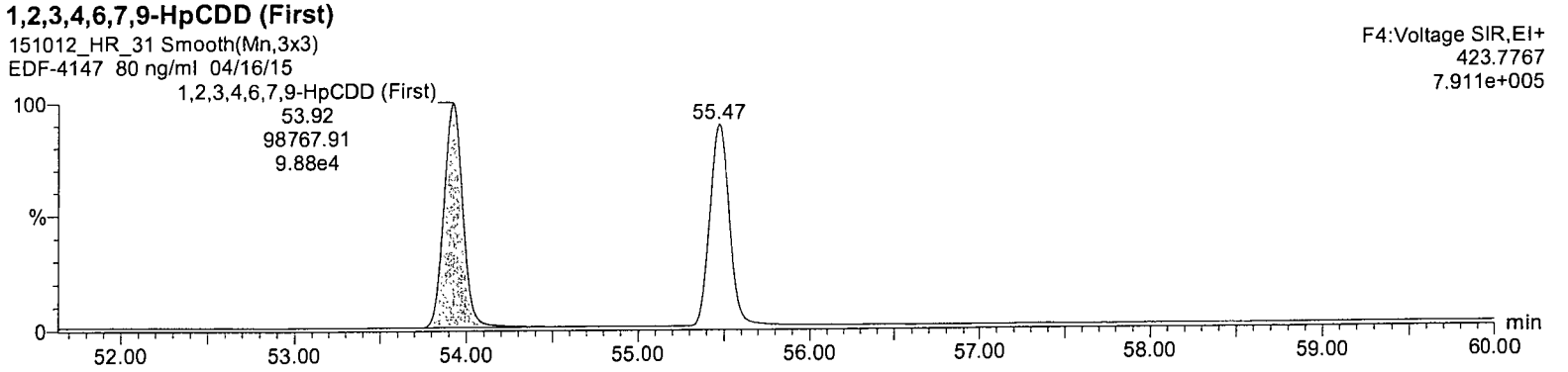


1,2,3,4,6,7-HxCDD (Last)

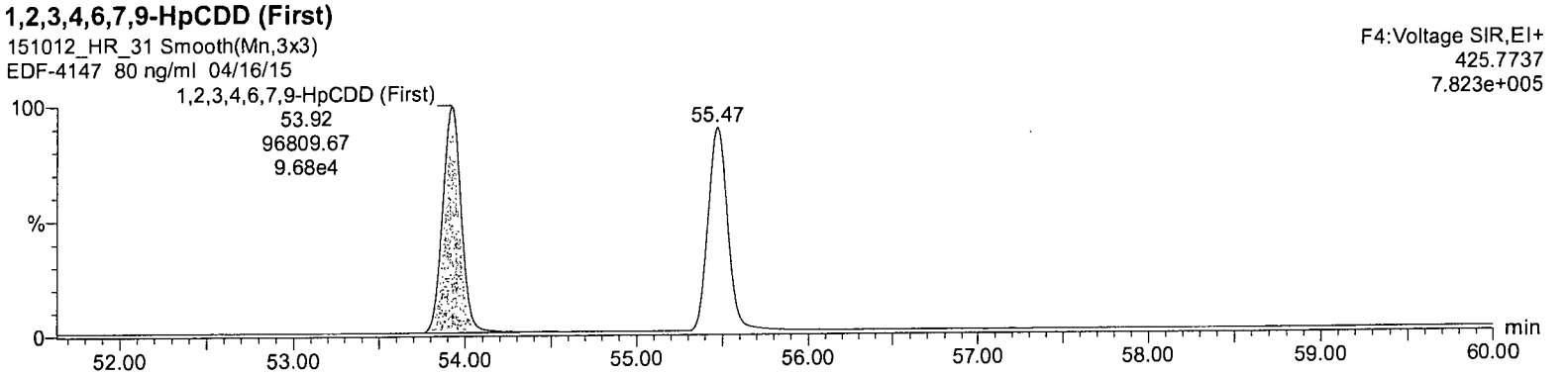


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

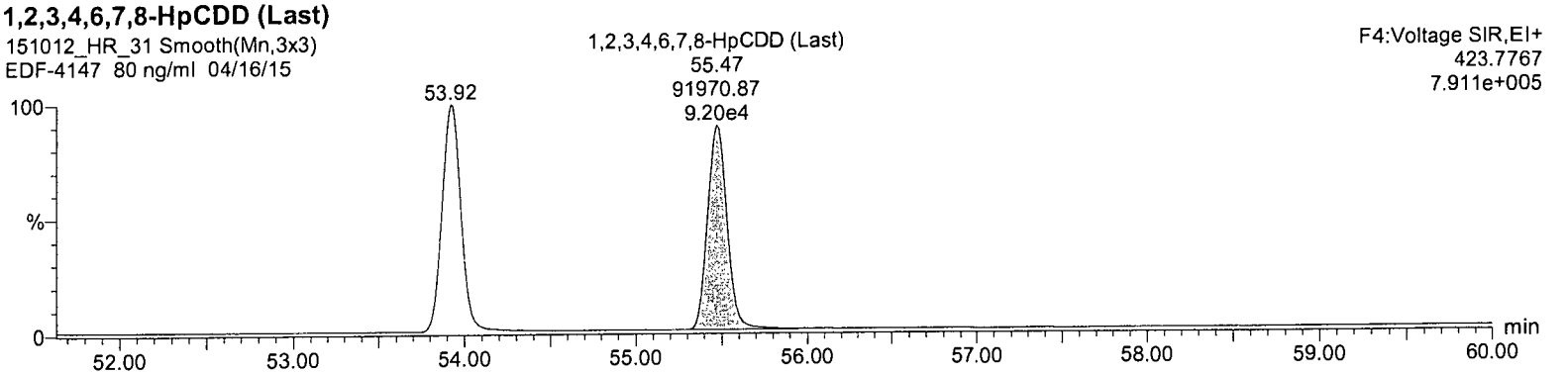
1,2,3,4,6,7,9-HpCDD (First)



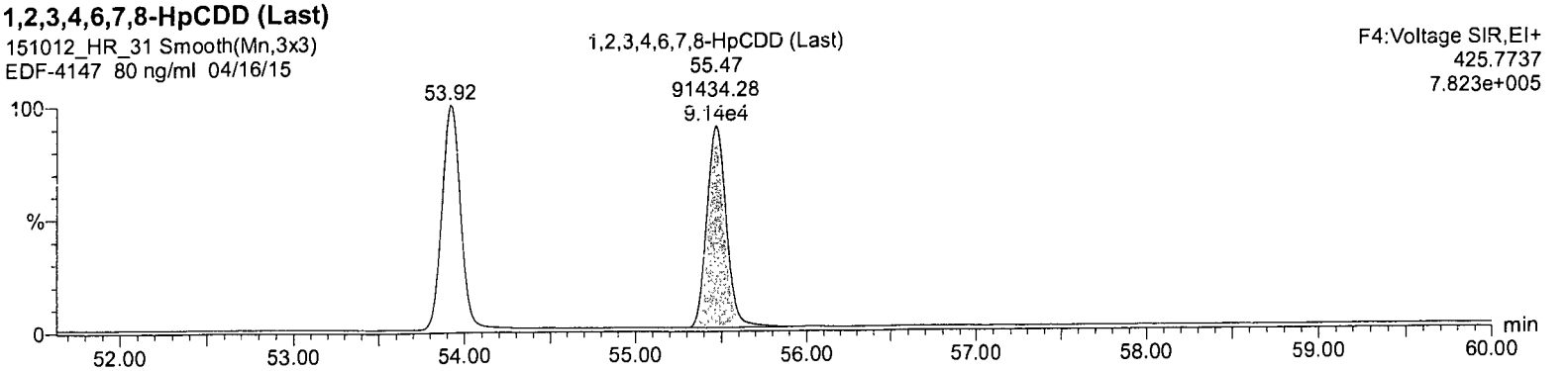
1,2,3,4,6,7,9-HpCDD (First)



1,2,3,4,6,7,8-HpCDD (Last)

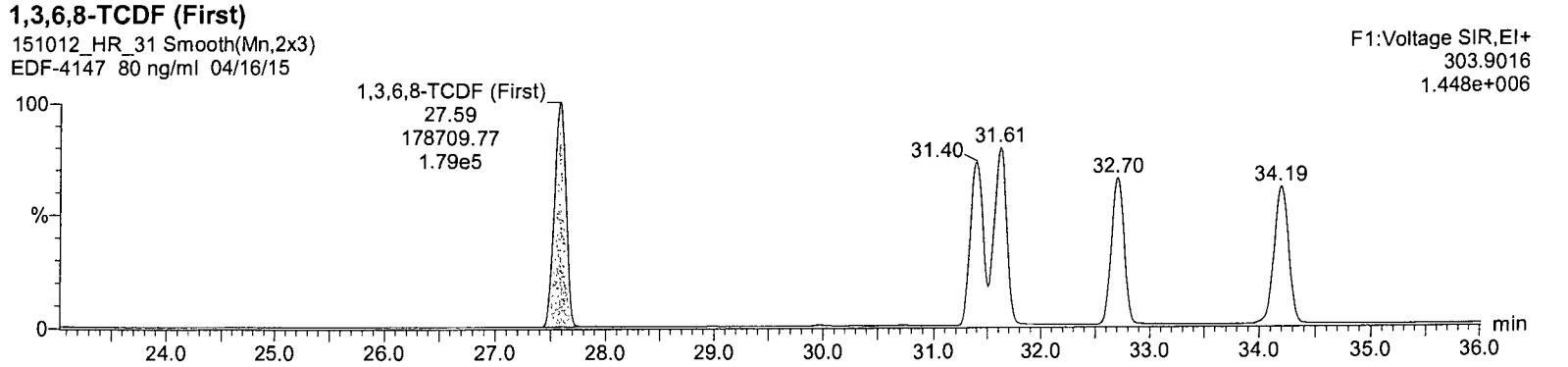


1,2,3,4,6,7,8-HpCDD (Last)

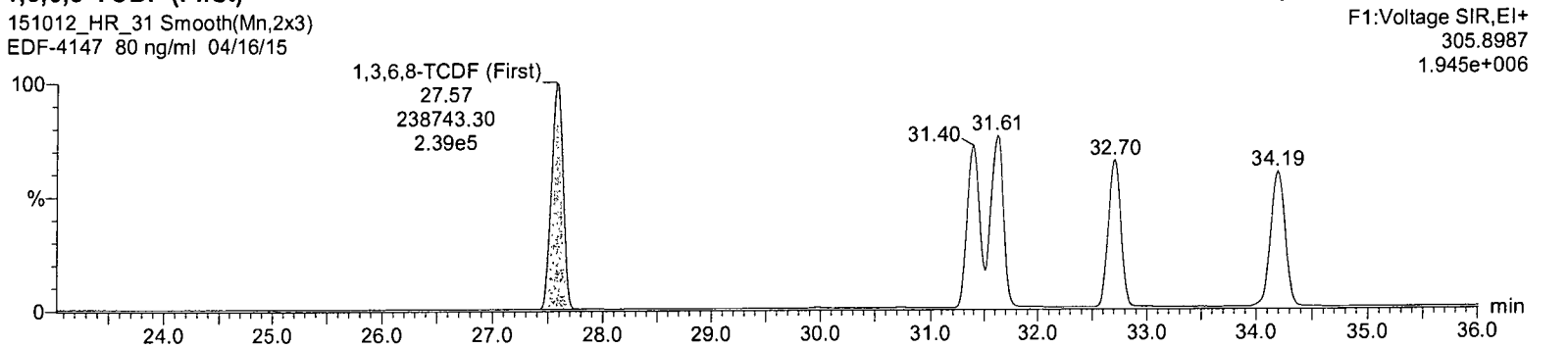


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

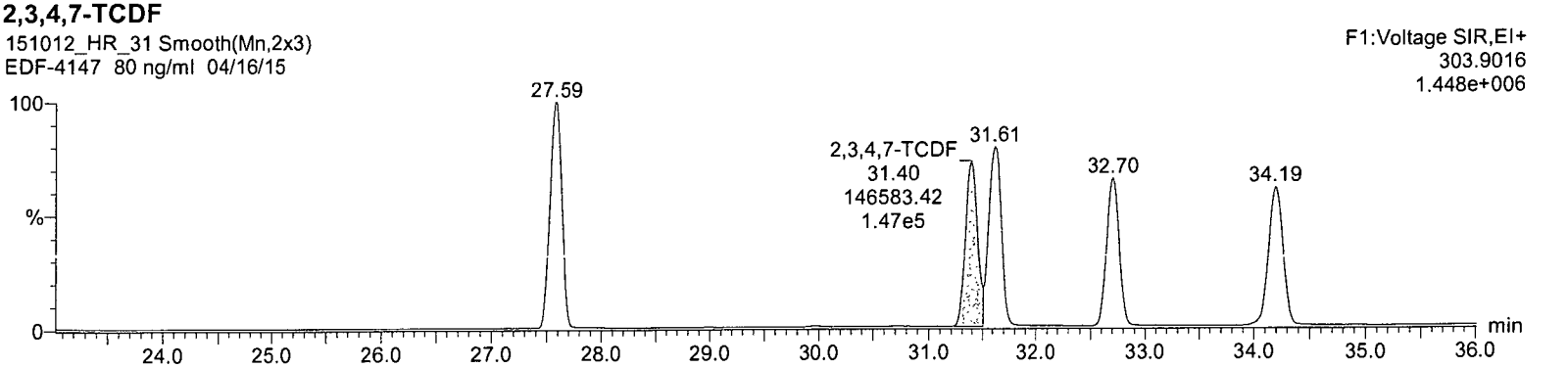
1,3,6,8-TCDF (First)



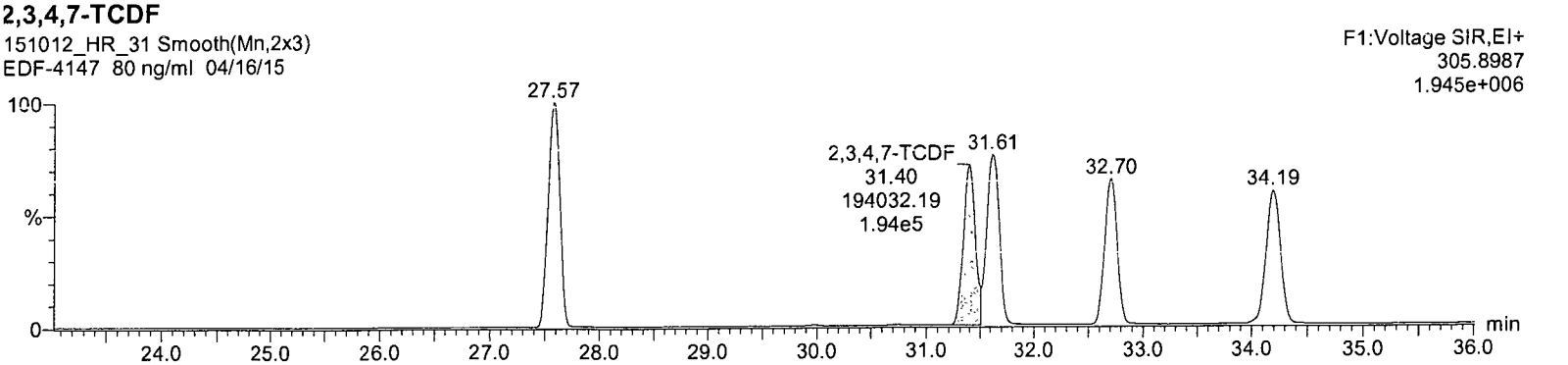
1,3,6,8-TCDF (First)



2,3,4,7-TCDF

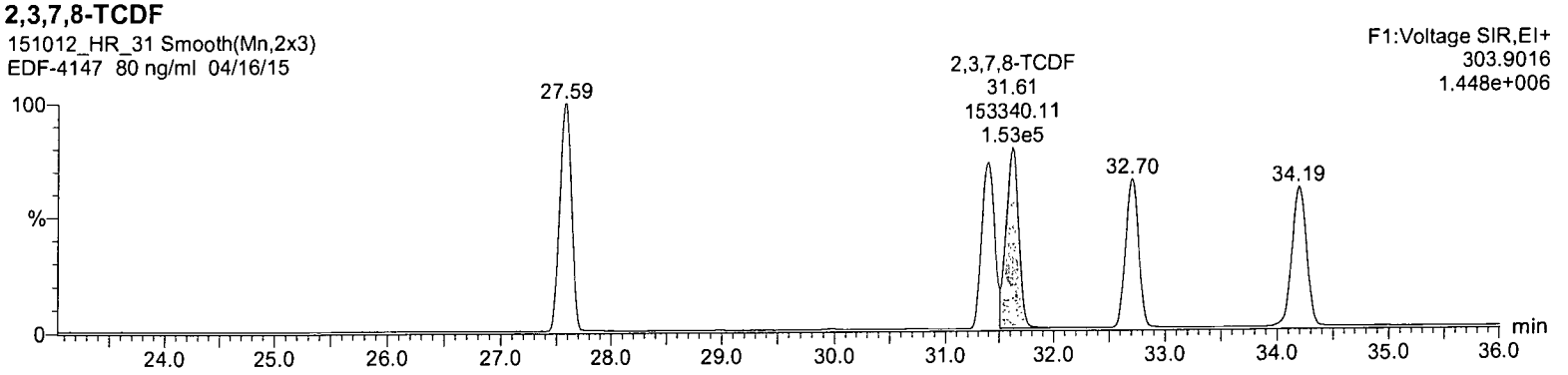


2,3,4,7-TCDF

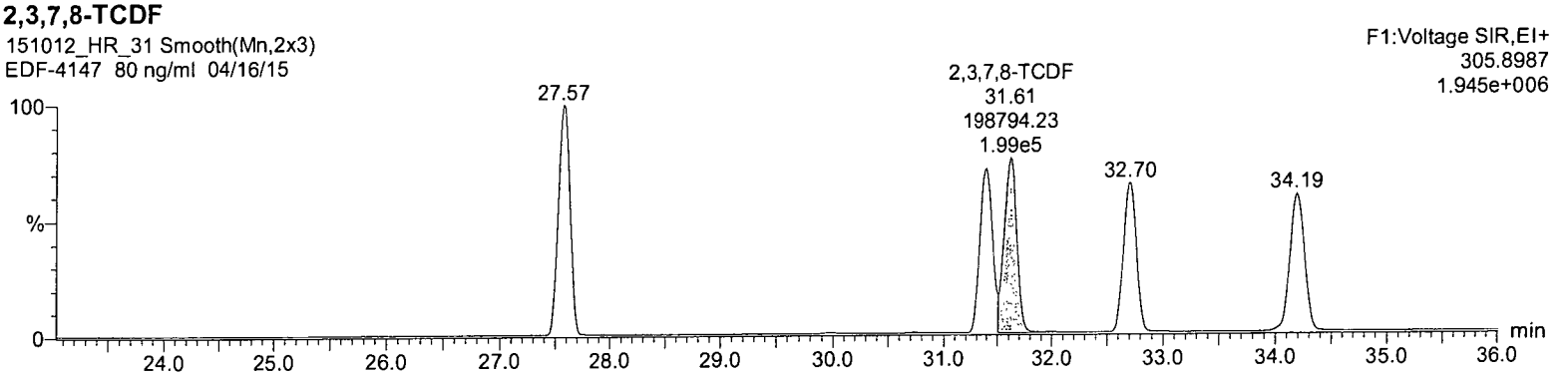


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

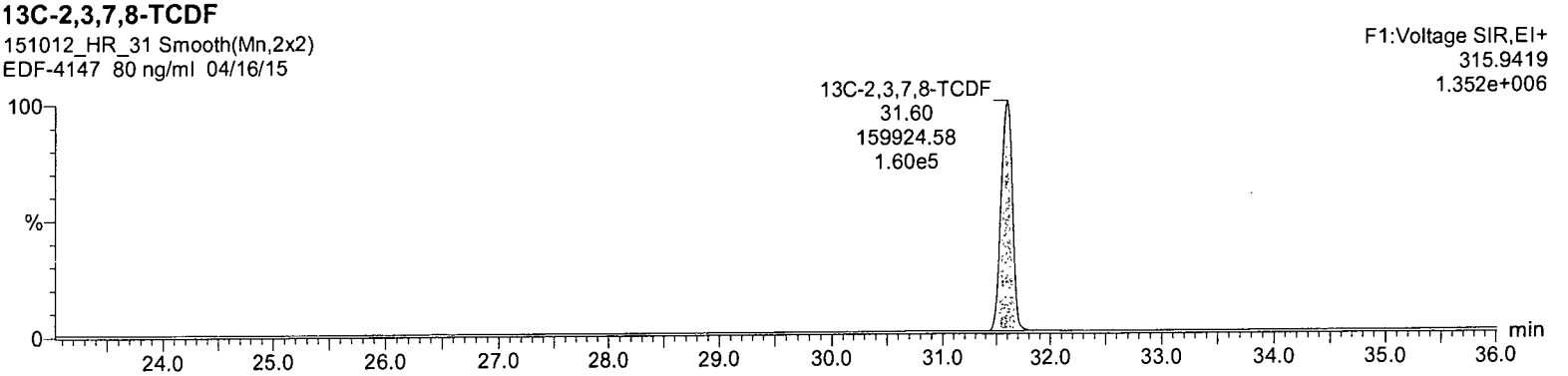
2,3,7,8-TCDF



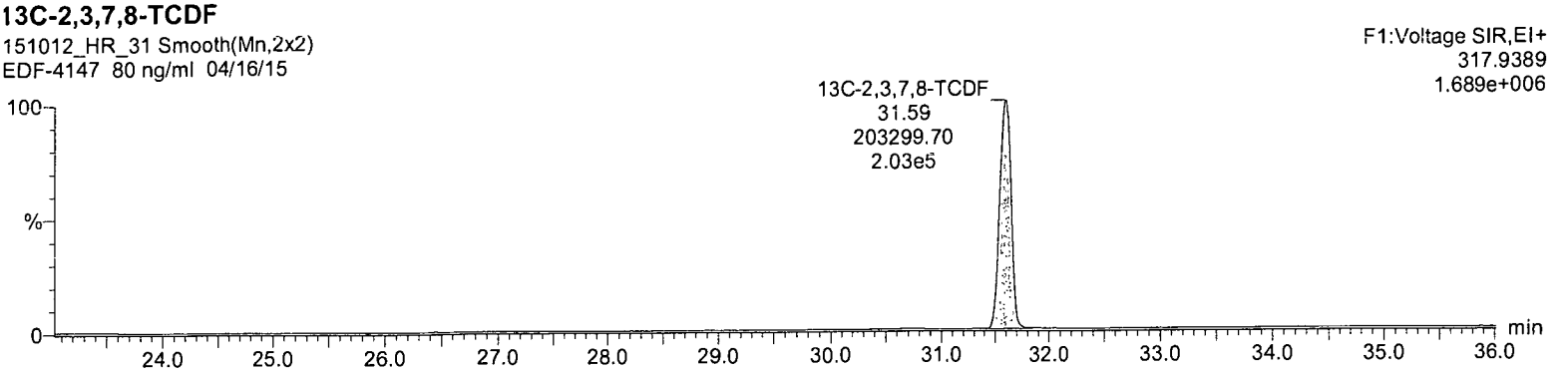
2,3,7,8-TCDF



13C-2,3,7,8-TCDF

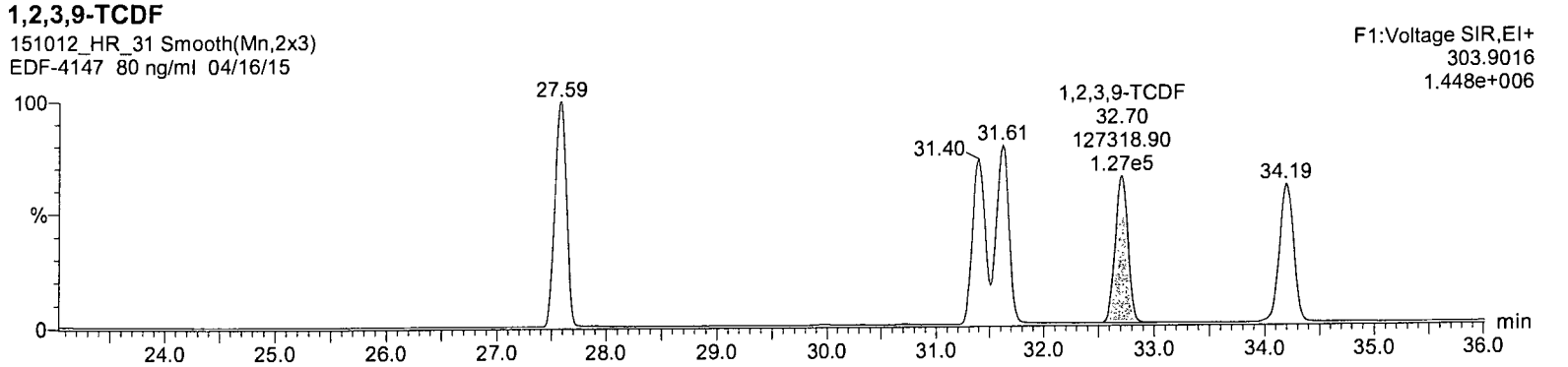


13C-2,3,7,8-TCDF

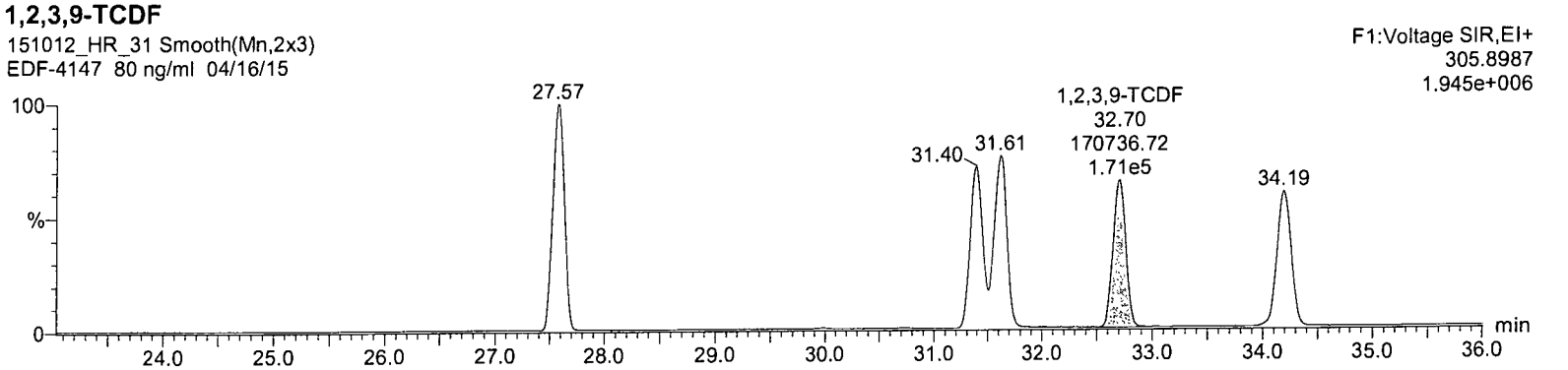


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

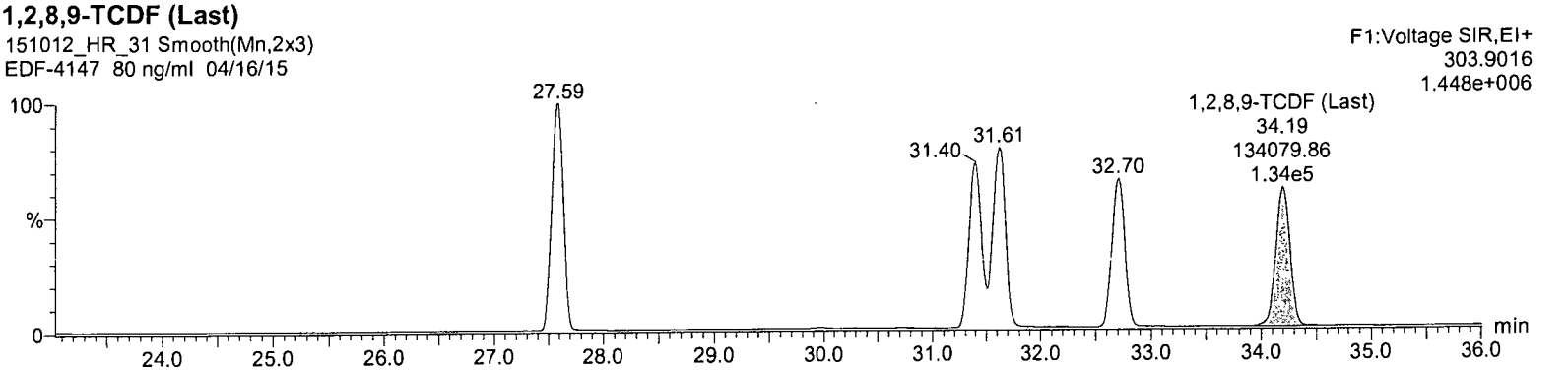
1,2,3,9-TCDF



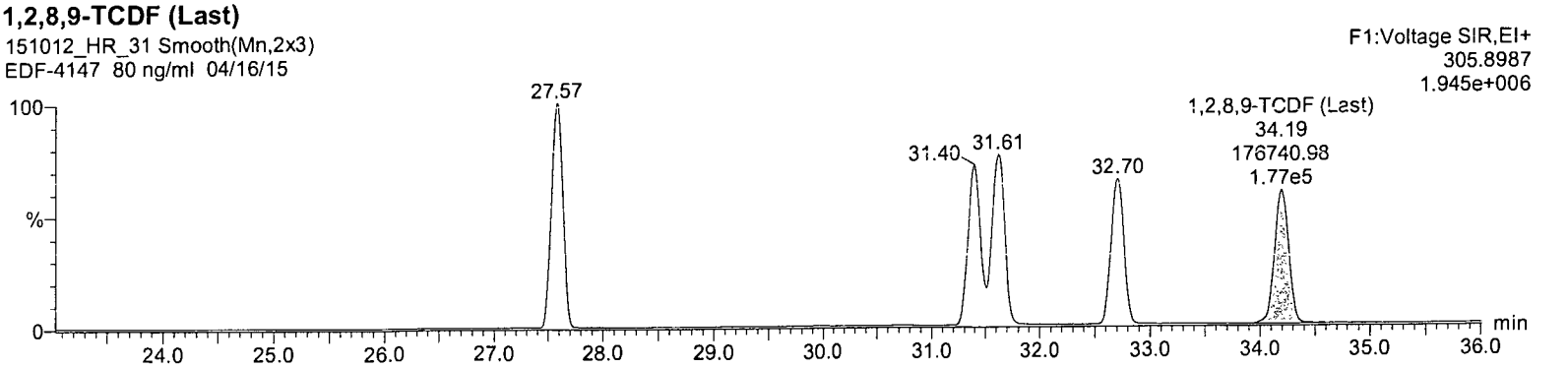
1,2,3,9-TCDF



1,2,8,9-TCDF (Last)

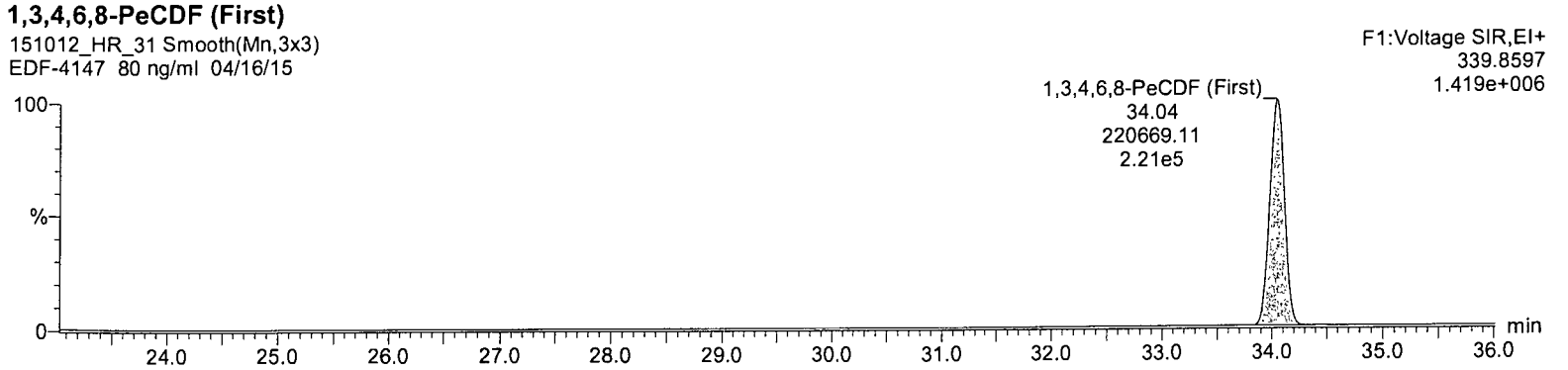


1,2,8,9-TCDF (Last)

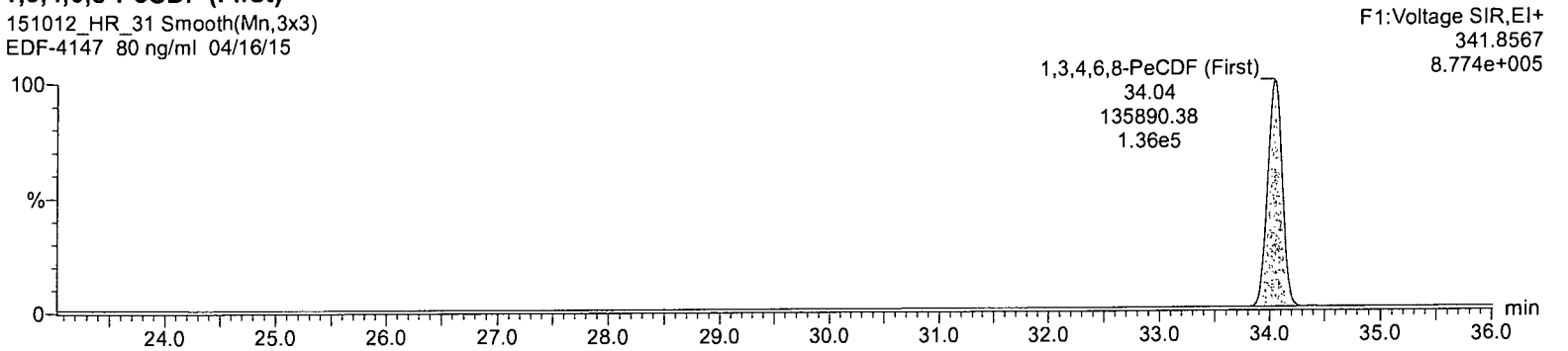


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

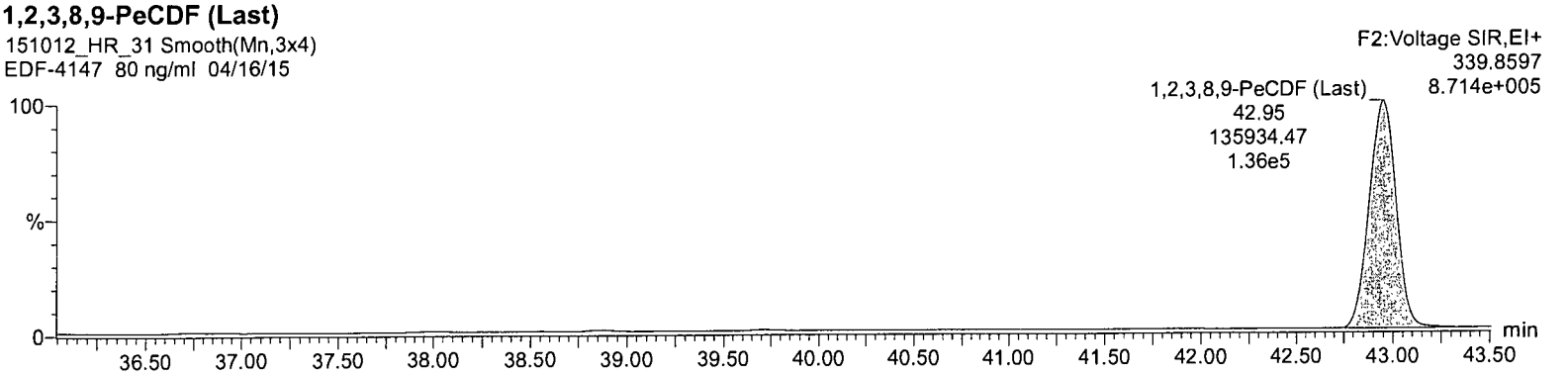
1,3,4,6,8-PeCDF (First)



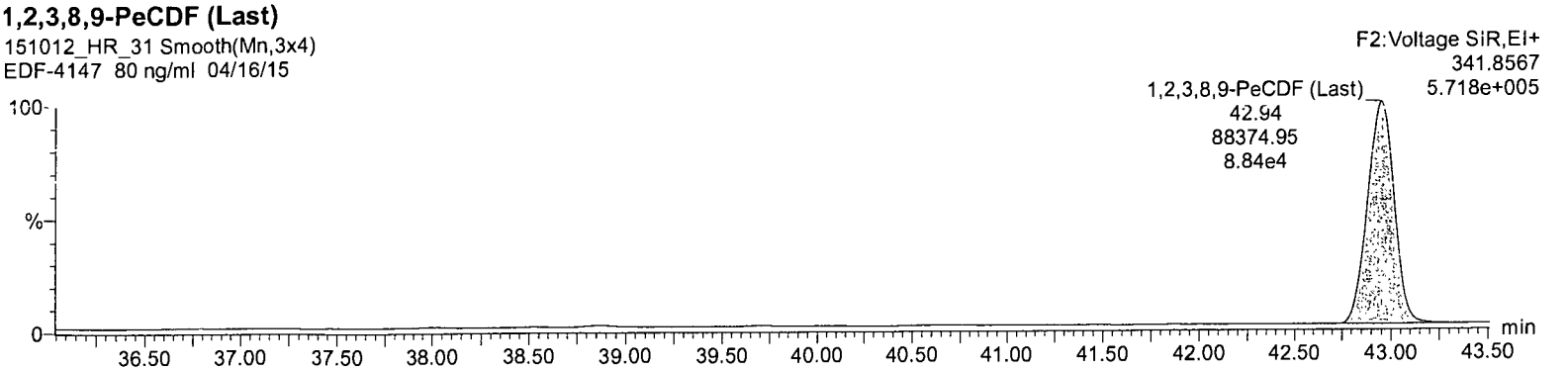
1,3,4,6,8-PeCDF (First)



1,2,3,8,9-PeCDF (Last)

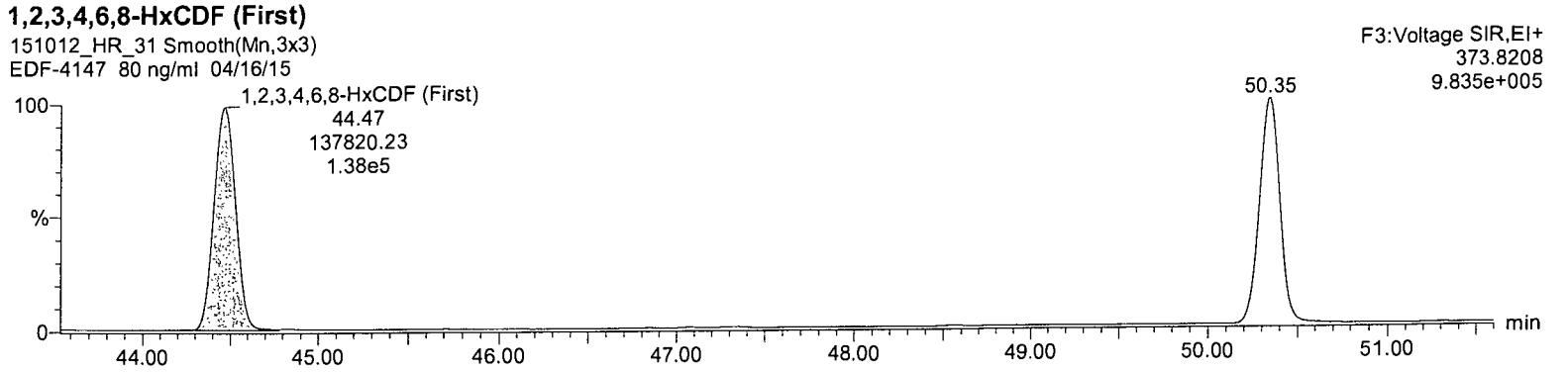


1,2,3,8,9-PeCDF (Last)

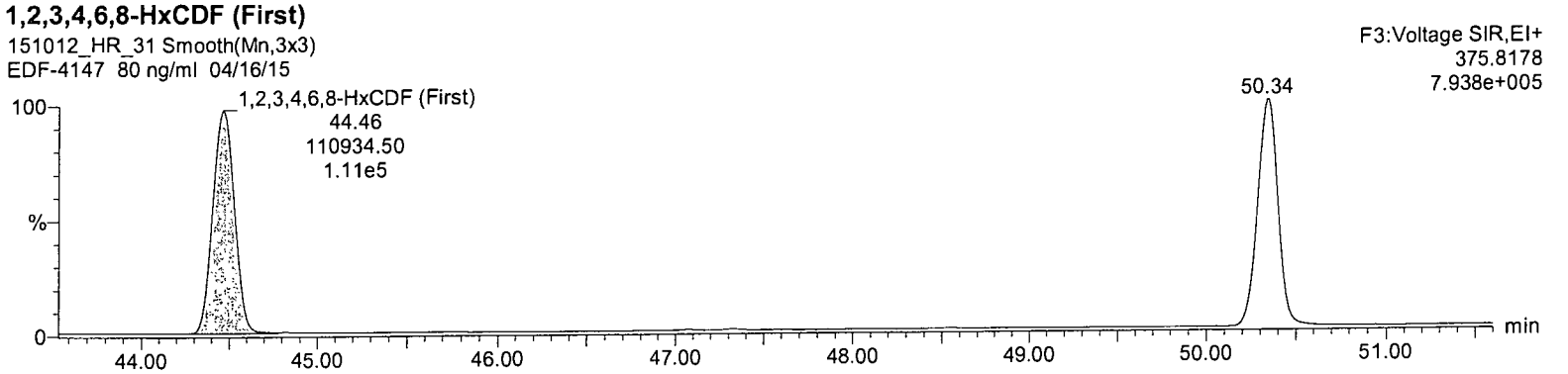


Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

1,2,3,4,6,8-HxCDF (First)



1,2,3,4,6,8-HxCDF (First)



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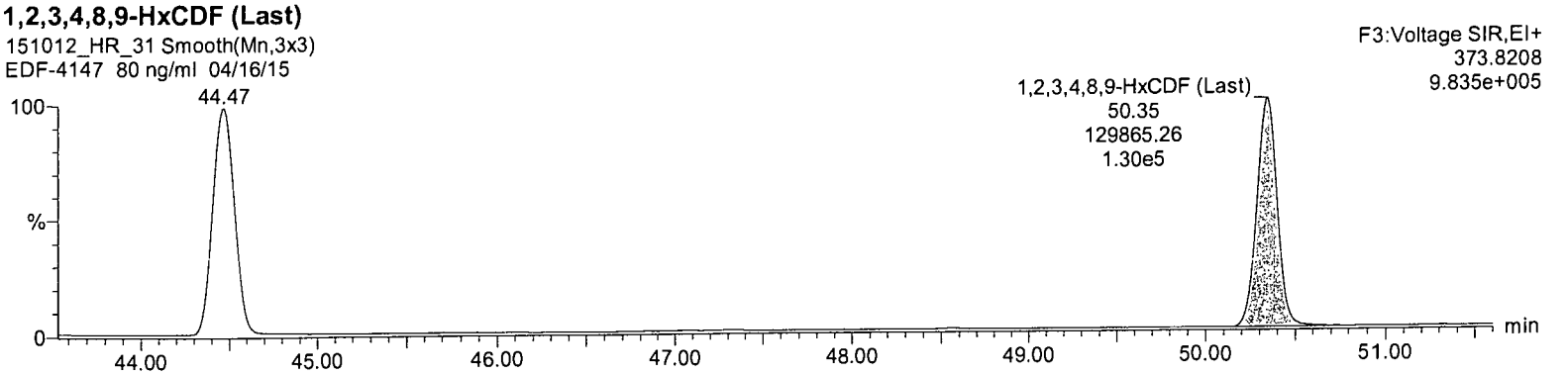
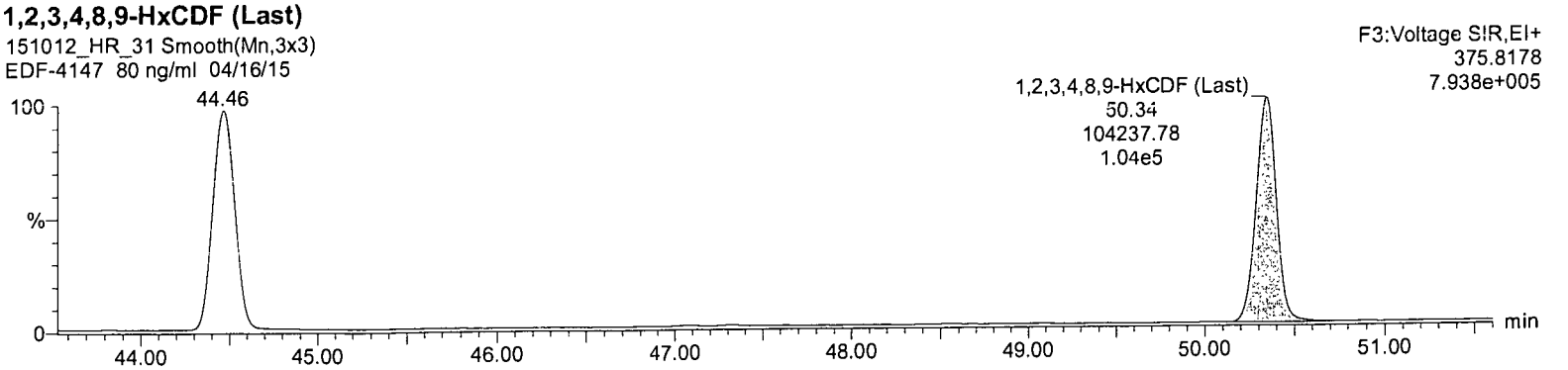
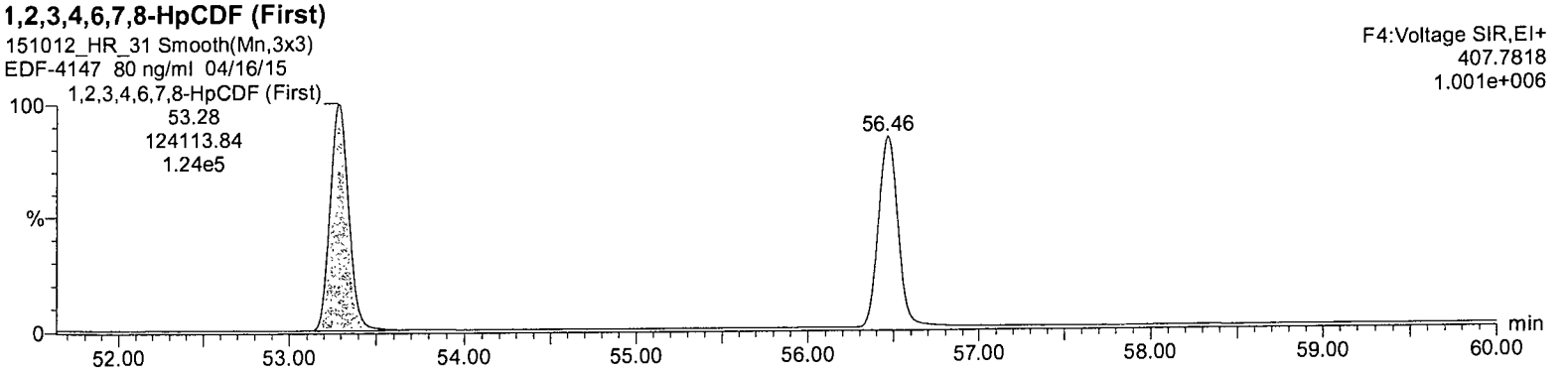


1,2,3,4,8,9-HxCDF (Last)



Name: 151012_HR_31, Date: 13-Oct-2015, Time: 23:44:04, ID: , Description: EDF-4147 80 ng/ml 04/16/15

1,2,3,4,6,7,8-HpCDF (First)



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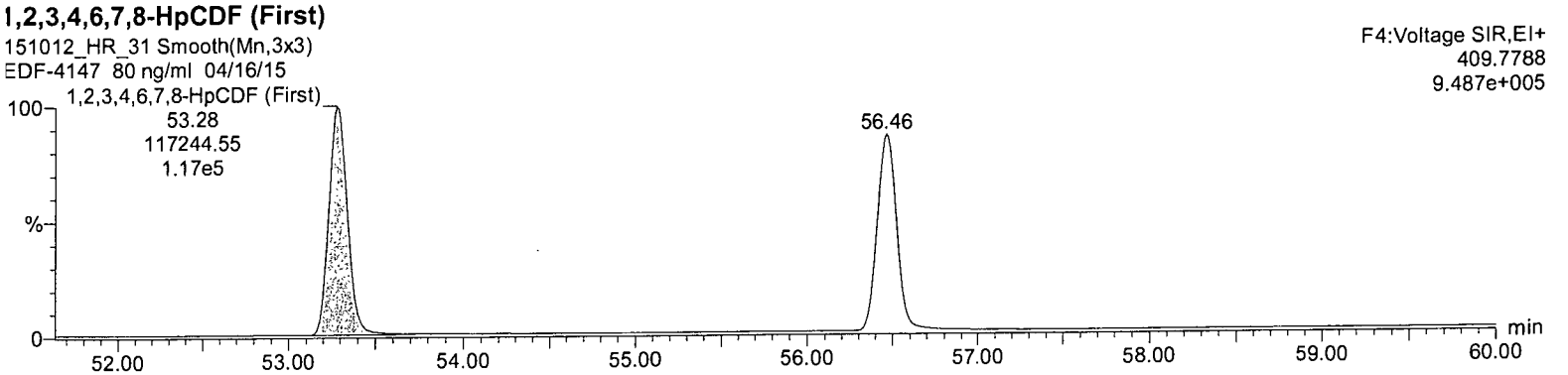
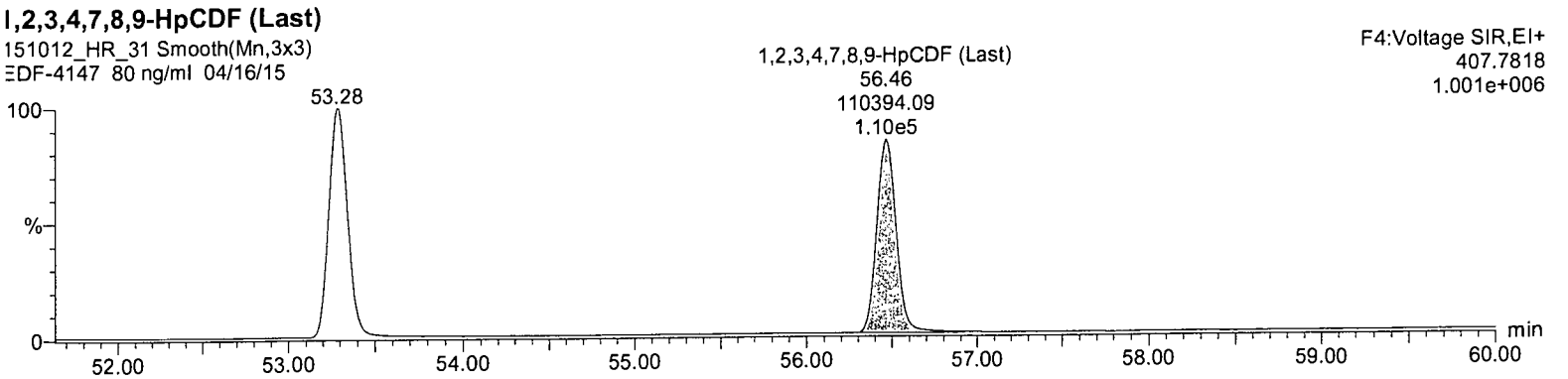
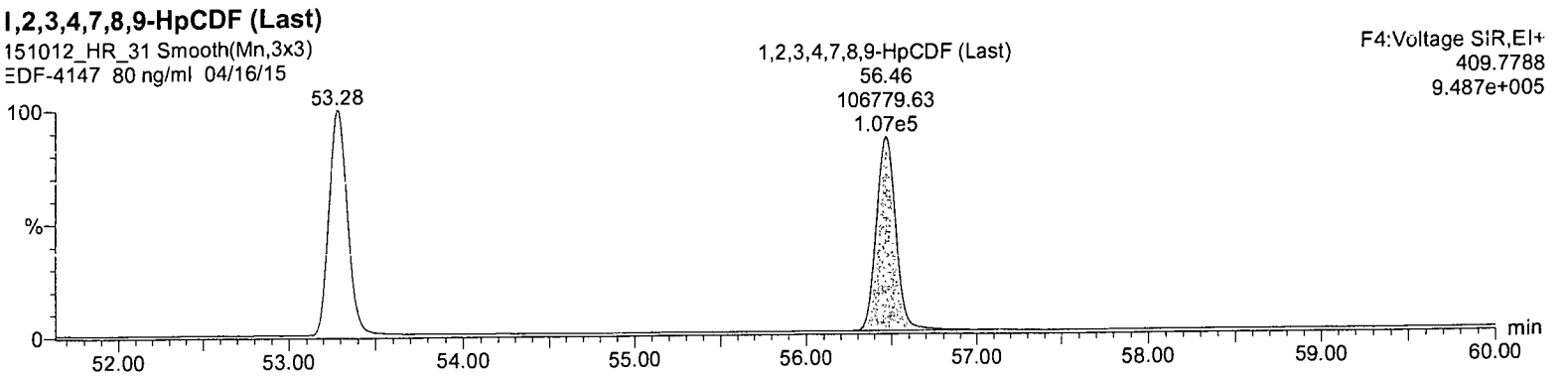


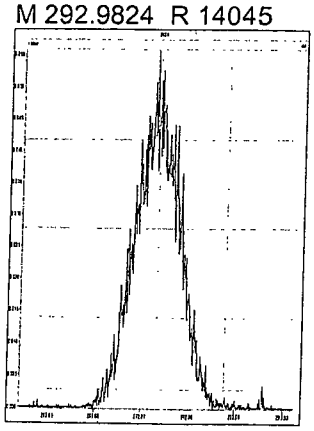
1,2,3,4,7,8,9-HpCDF (Last)



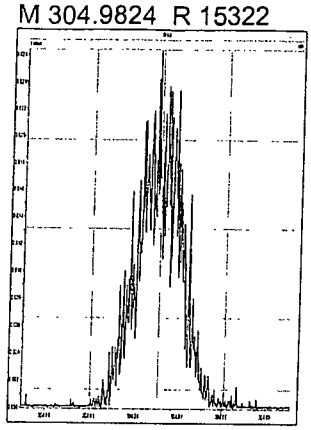
1,2,3,4,7,8,9-HpCDF (Last)



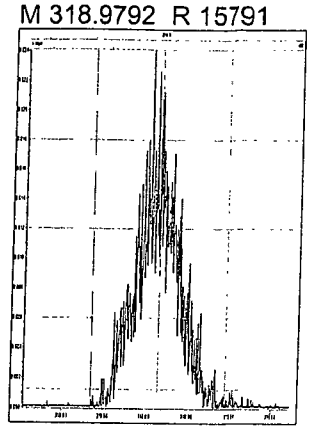
M 292.9824 R 14045



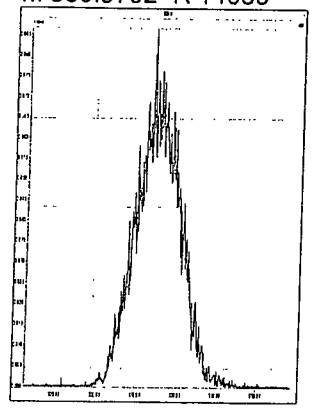
M 304.9824 R 15322



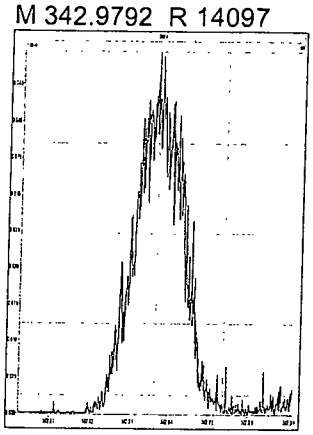
M 318.9792 R 15791



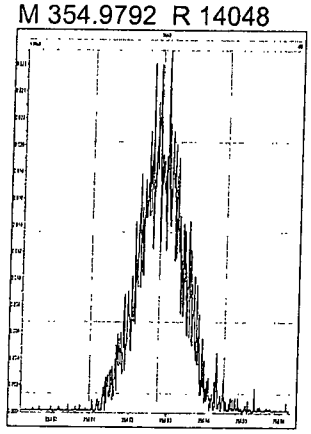
M 330.9792 R 14089



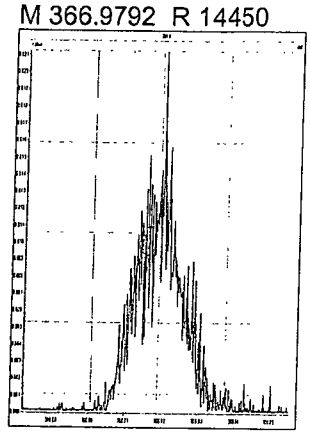
M 342.9792 R 14097



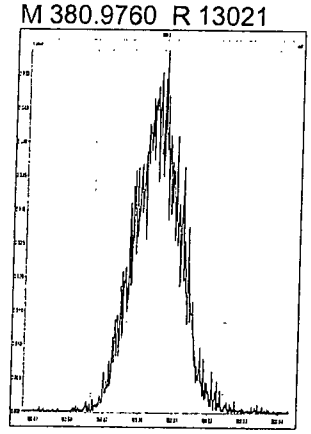
M 354.9792 R 14048



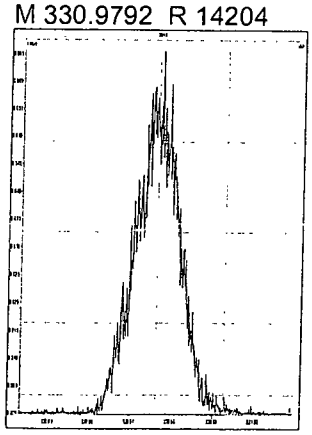
M 366.9792 R 14450



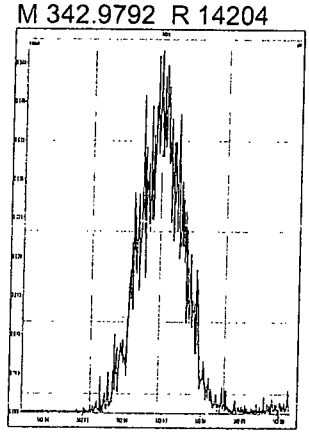
M 380.9760 R 13021



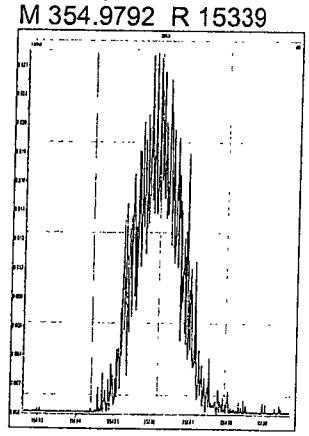
M 330.9792 R 14204



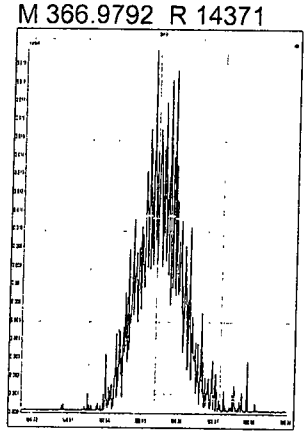
M 342.9792 R 14204



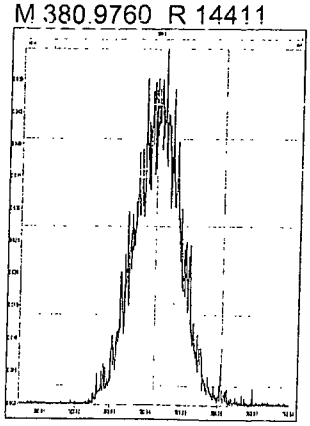
M 354.9792 R 15339



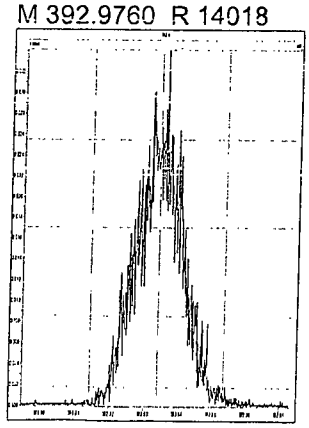
M 366.9792 R 14371



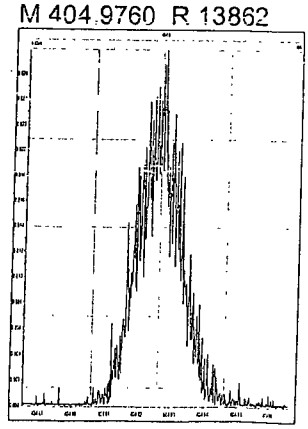
M 380.9760 R 14411



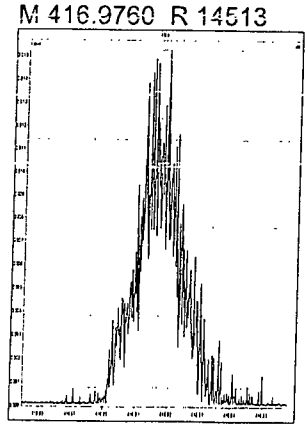
M 392.9760 R 14018



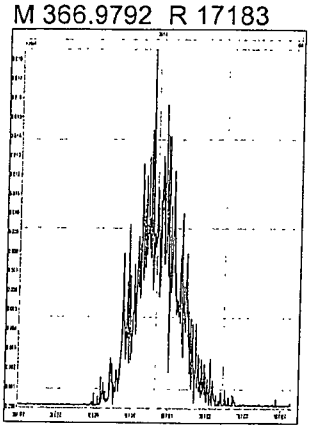
M 404.9760 R 13862



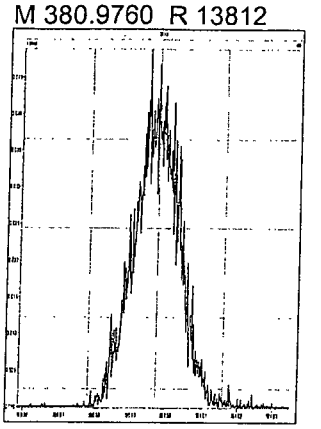
M 416.9760 R 14513



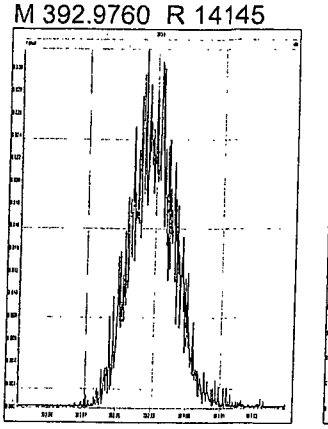
M 366.9792 R 17183



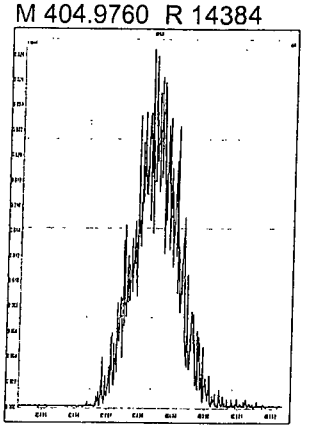
M 380.9760 R 13812



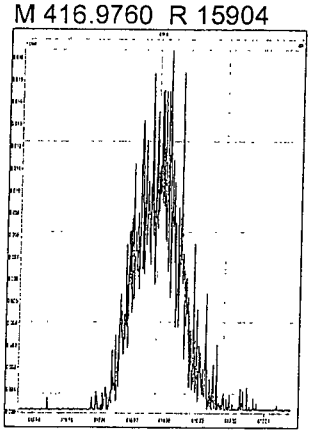
M 392.9760 R 14145



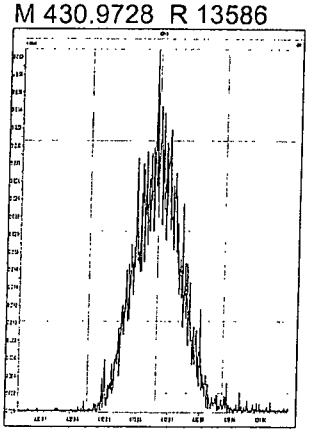
M 404.9760 R 14384



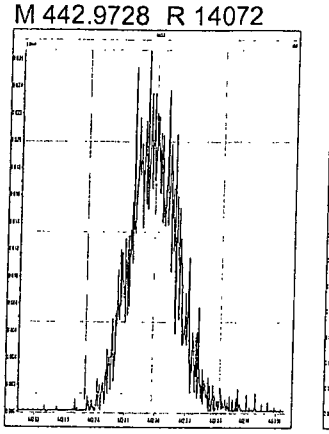
M 416.9760 R 15904



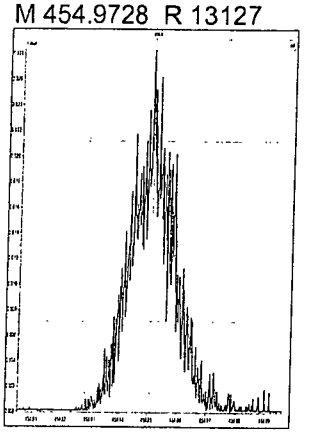
M 430.9728 R 13586



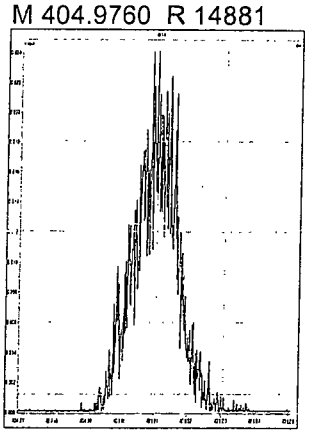
M 442.9728 R 14072



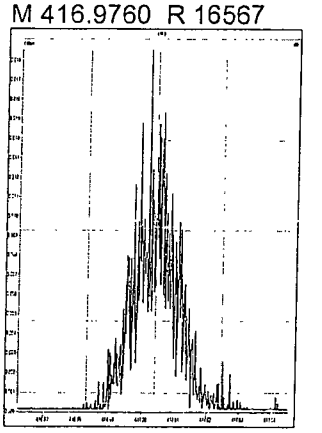
M 454.9728 R 13127



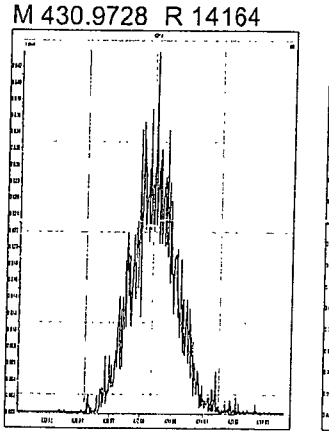
M 404.9760 R 14881



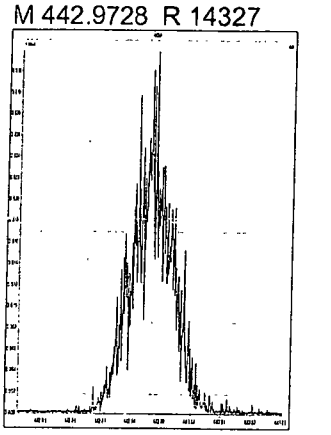
M 416.9760 R 16567



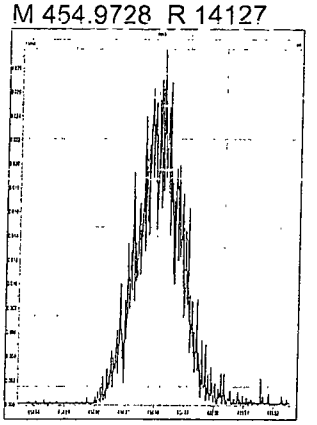
M 430.9728 R 14164



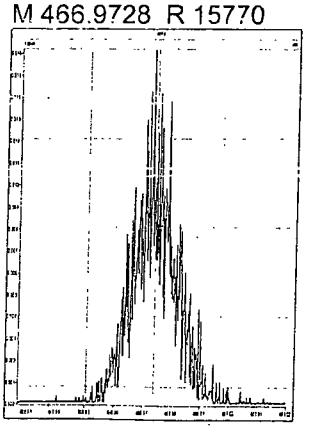
M 442.9728 R 14327



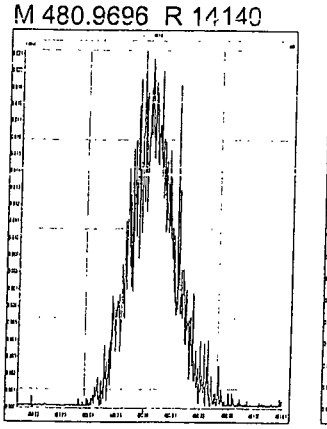
M 454.9728 R 14127



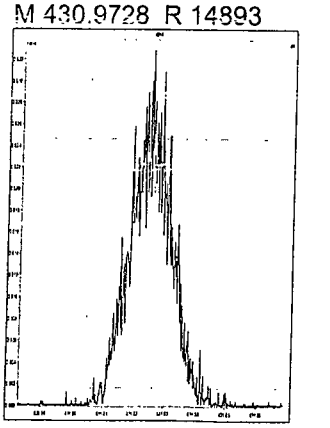
M 466.9728 R 15770



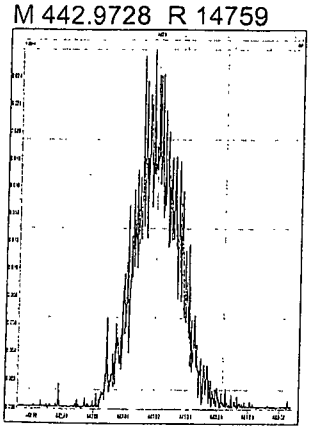
M 480.9696 R 14140



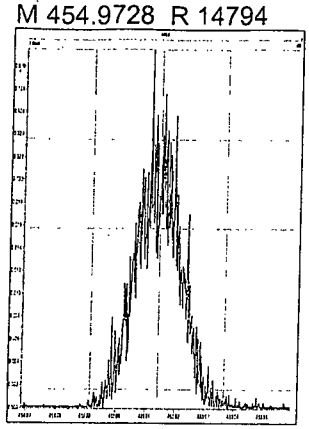
M 430.9728 R 14893



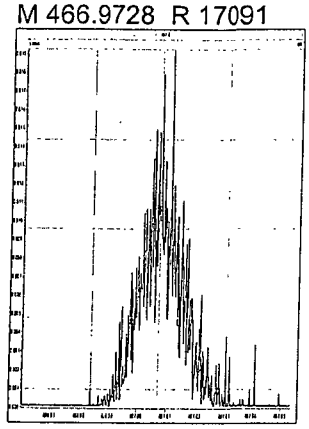
M 442.9728 R 14759



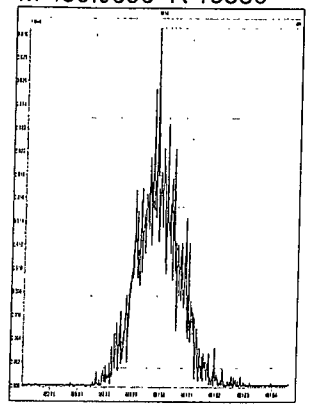
M 454.9728 R 14794



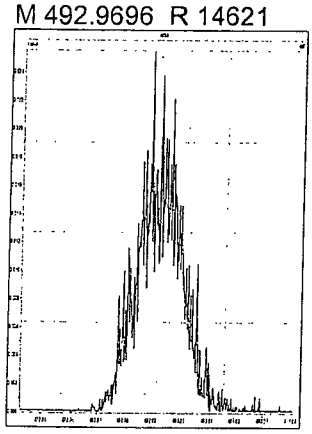
M 466.9728 R 17091



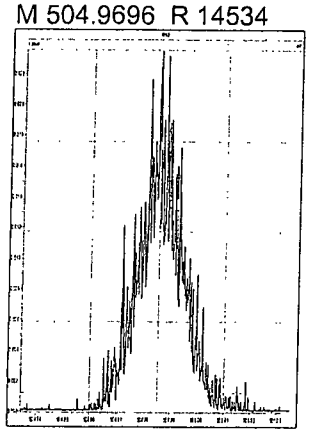
M 480.9696 R 15880



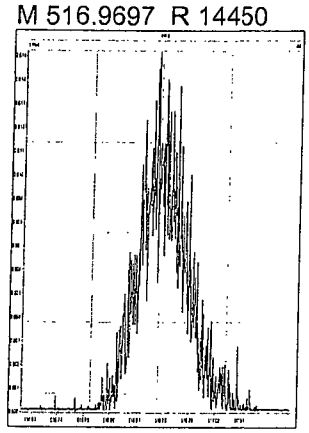
M 492.9696 R 14621



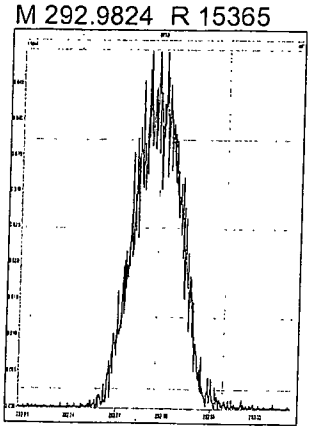
M 504.9696 R 14534



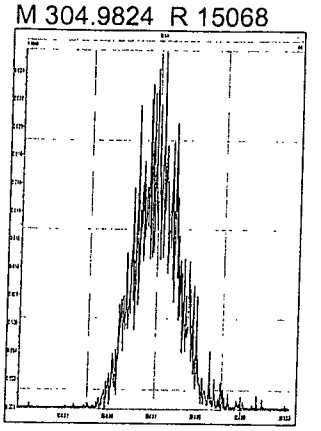
M 516.9697 R 14450



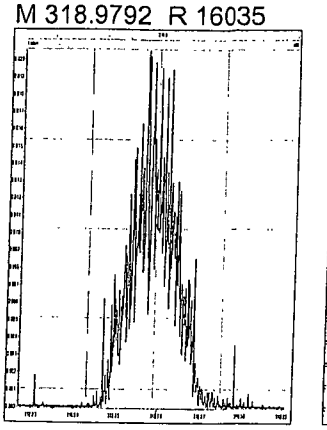
M 292.9824 R 15365



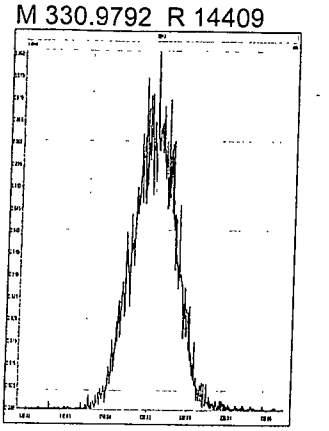
M 304.9824 R 15068



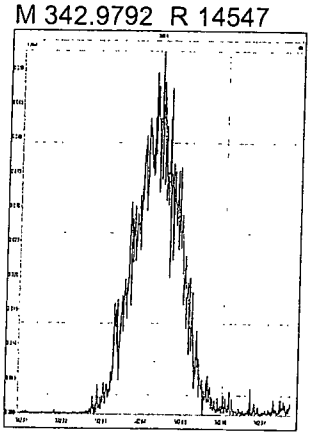
M 318.9792 R 16035



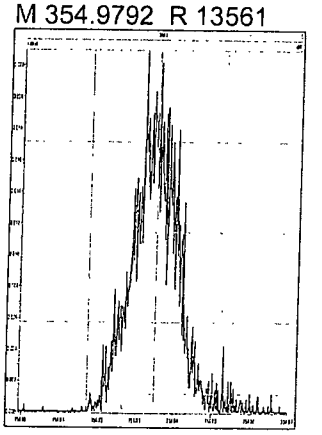
M 330.9792 R 14409



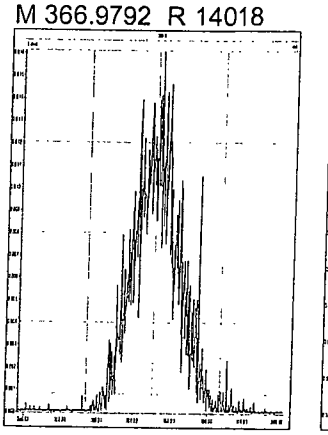
M 342.9792 R 14547



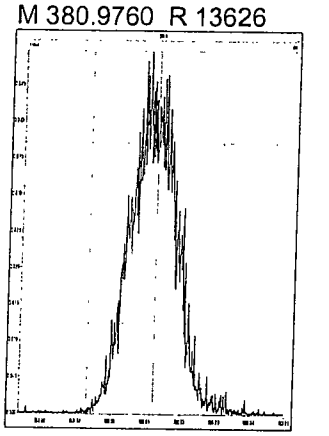
M 354.9792 R 13561



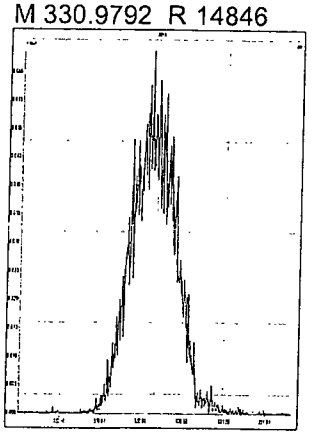
M 366.9792 R 14018



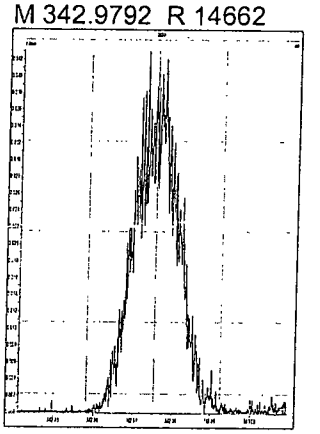
M 380.9760 R 13626



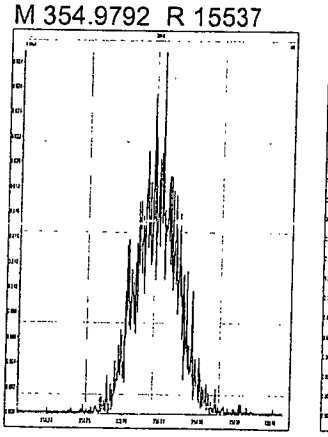
M 330.9792 R 14846



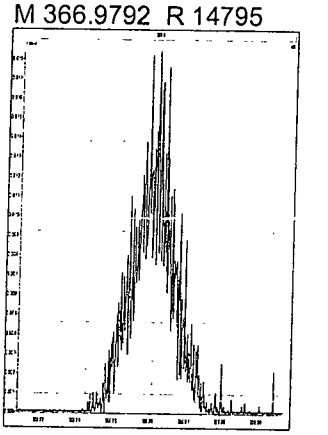
M 342.9792 R 14662



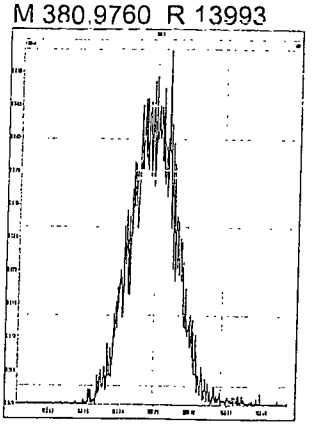
M 354.9792 R 15537



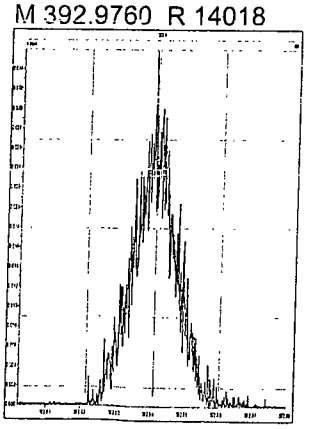
M 366.9792 R 14795



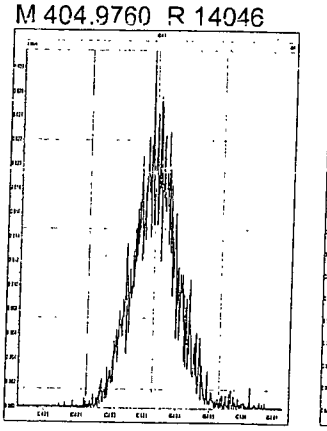
M 380.9760 R 13993



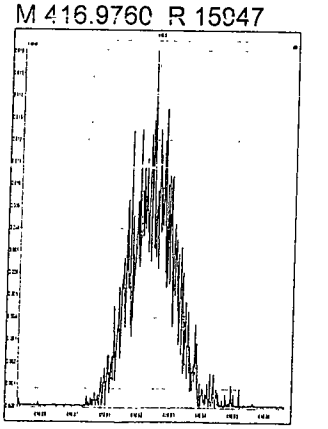
M 392.9760 R 14018



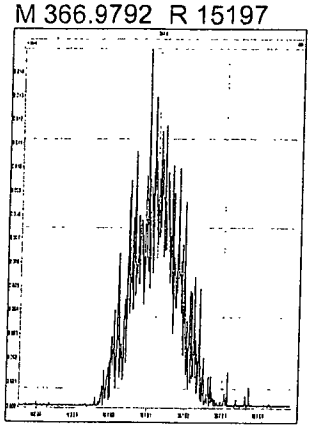
M 404.9760 R 14046



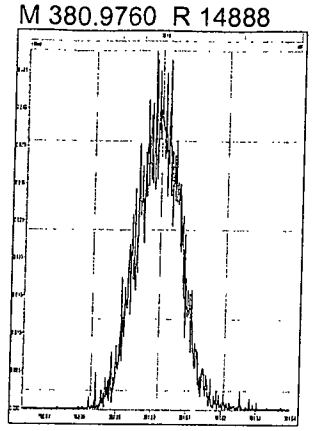
M 416.9760 R 15047



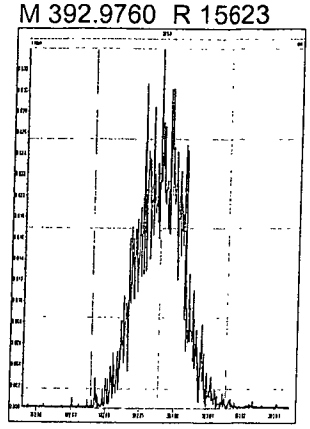
M 366.9792 R 15197



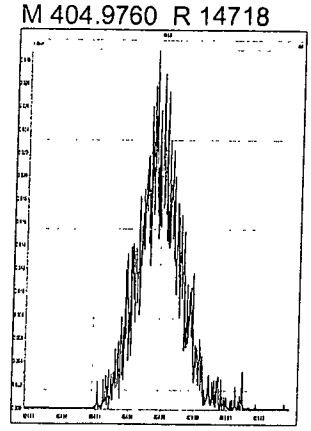
M 380.9760 R 14888



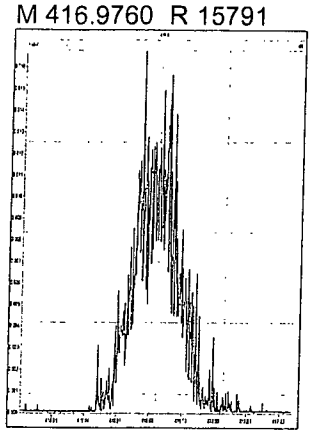
M 392.9760 R 15623



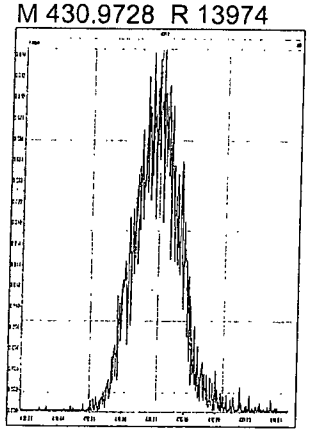
M 404.9760 R 14718



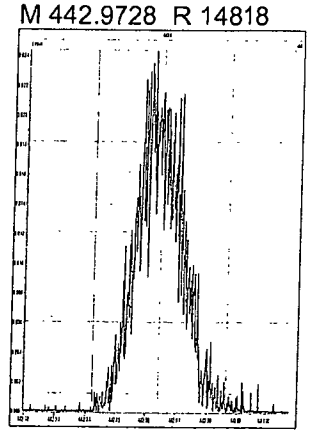
M 416.9760 R 15791



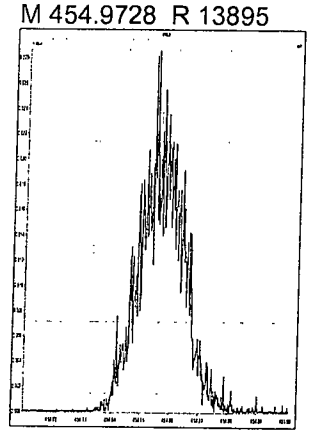
M 430.9728 R 13974



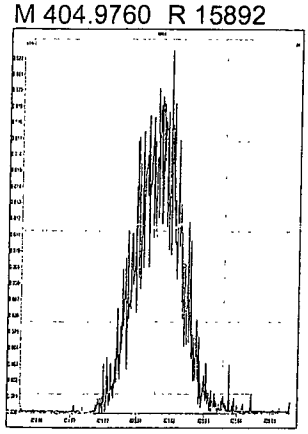
M 442.9728 R 14818



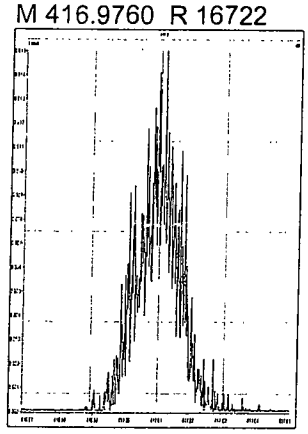
M 454.9728 R 13895



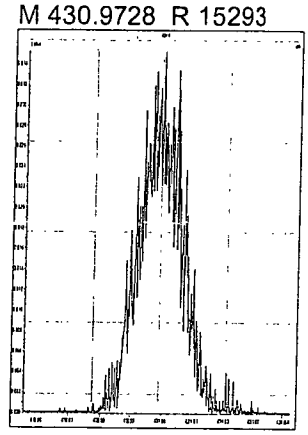
M 404.9760 R 15892



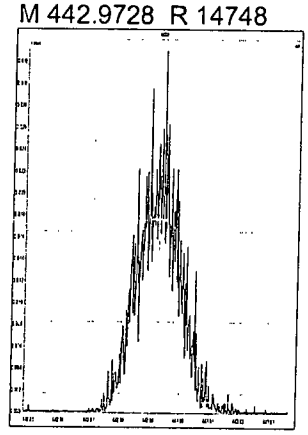
M 416.9760 R 16722



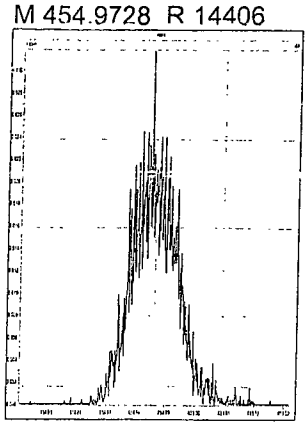
M 430.9728 R 15293



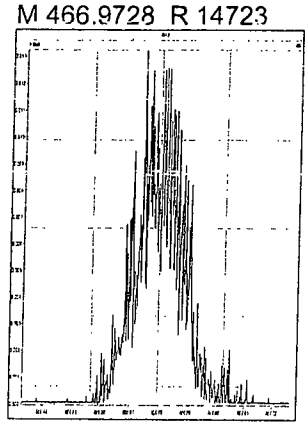
M 442.9728 R 14748



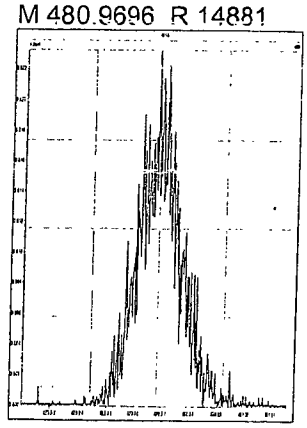
M 454.9728 R 14406



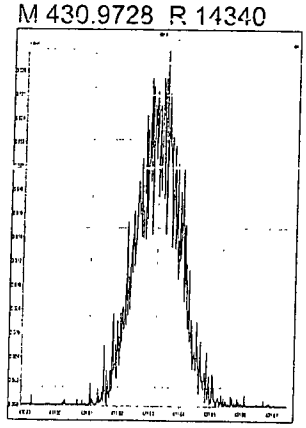
M 466.9728 R 14723



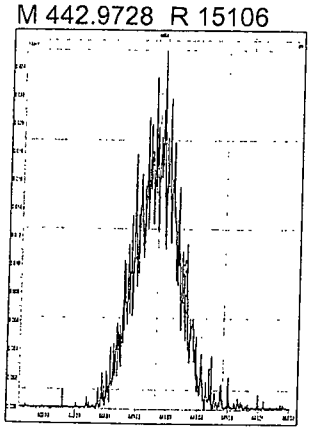
M 480.9696 R 14881



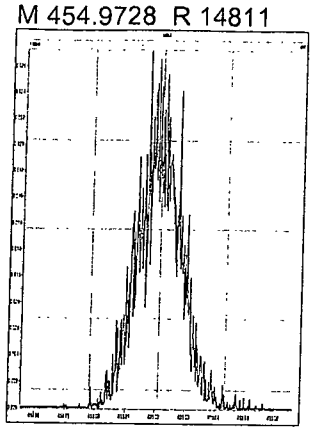
M 430.9728 R 14340



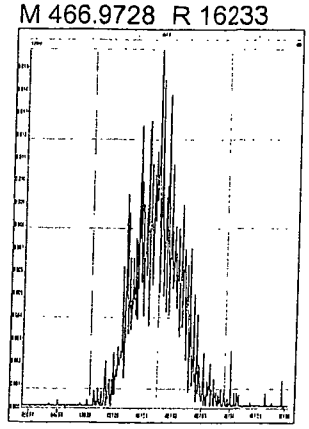
M 442.9728 R 15106



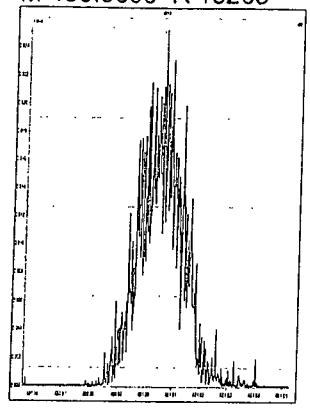
M 454.9728 R 14811



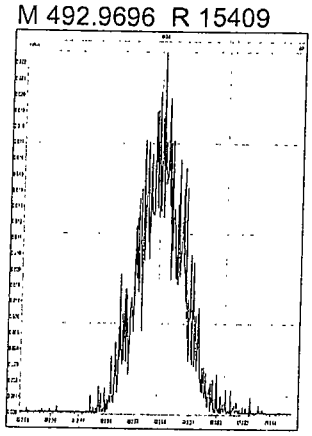
M 466.9728 R 16233



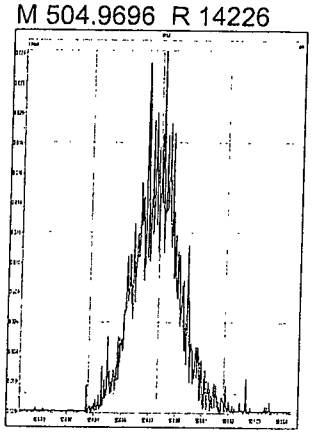
M 480.9696 R 15263



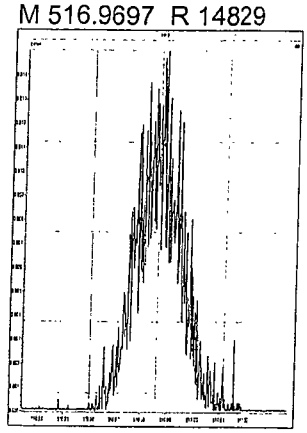
M 492.9696 R 15409



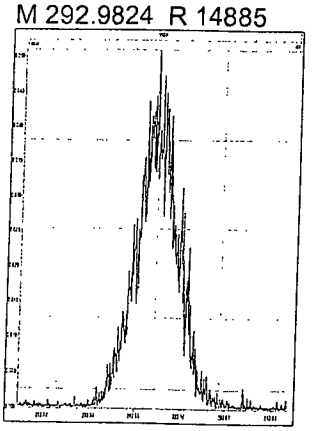
M 504.9696 R 14226



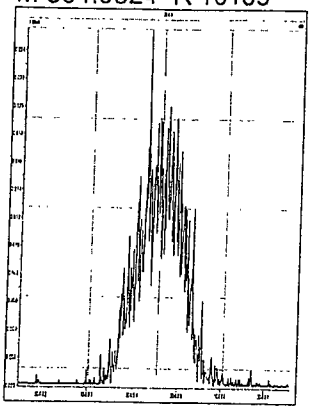
M 516.9697 R 14829



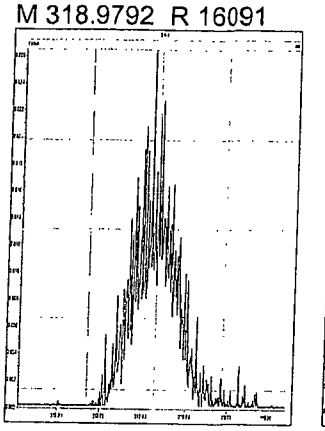
M 292.9824 R 14885



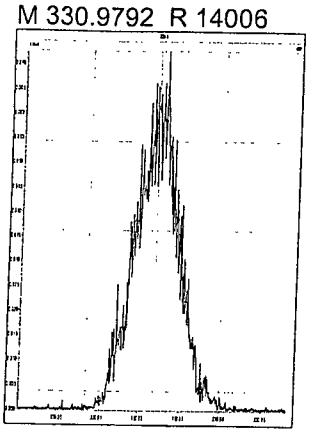
M 304.9824 R 16139



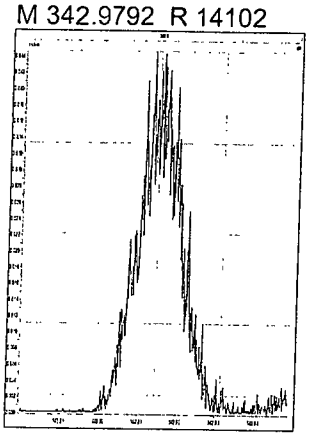
M 318.9792 R 16091



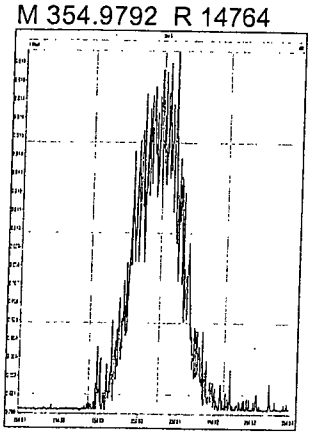
M 330.9792 R 14006



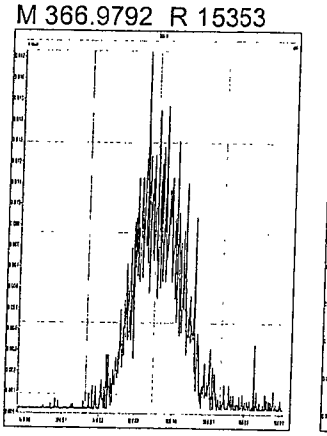
M 342.9792 R 14102



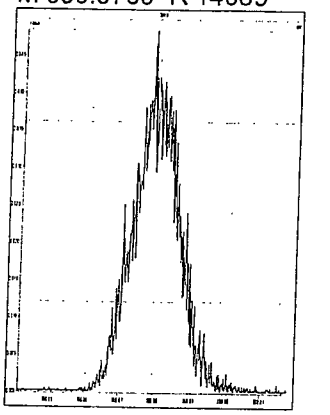
M 354.9792 R 14764



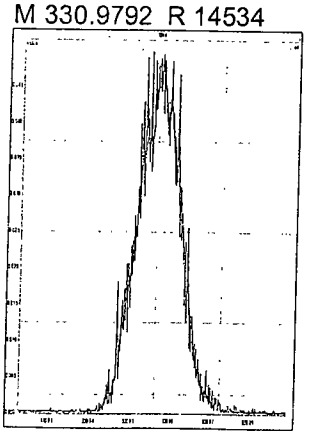
M 366.9792 R 15353



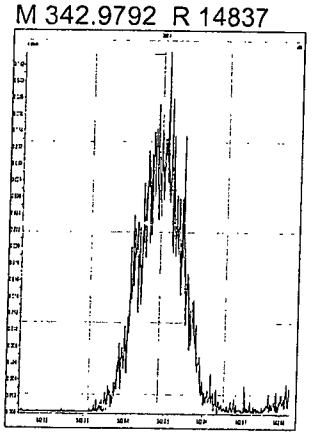
M 380.9760 R 14089



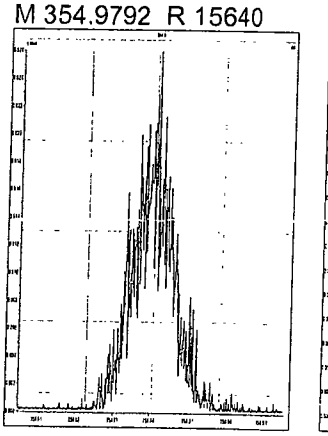
M 330.9792 R 14534



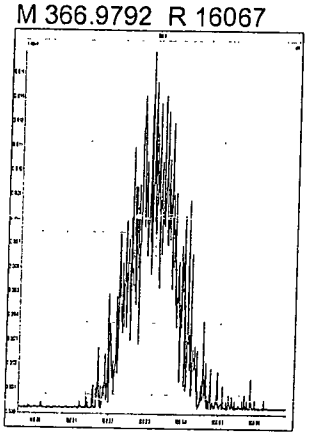
M 342.9792 R 14837



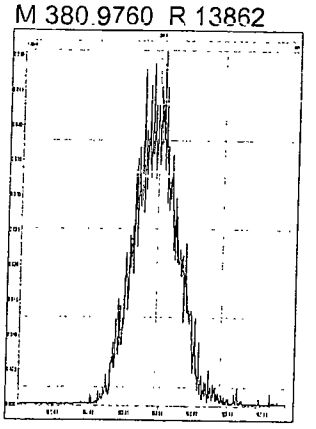
M 354.9792 R 15640



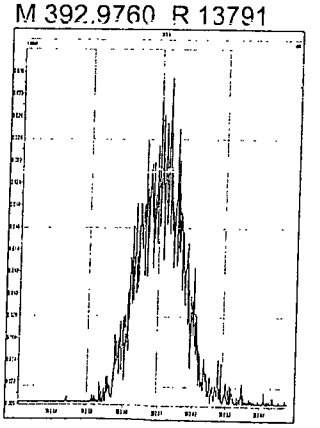
M 366.9792 R 16067



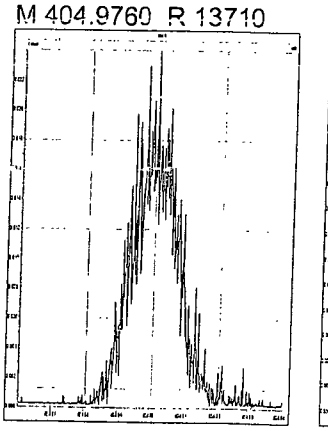
M 380.9760 R 13862



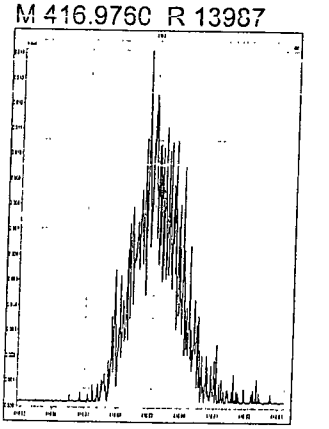
M 392.9760 R 13791



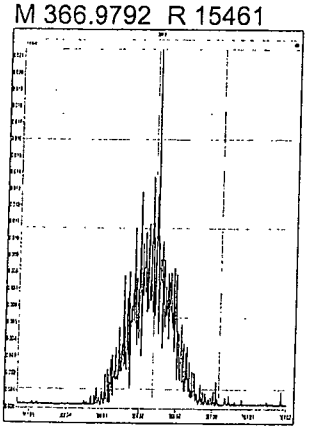
M 404.9760 R 13710



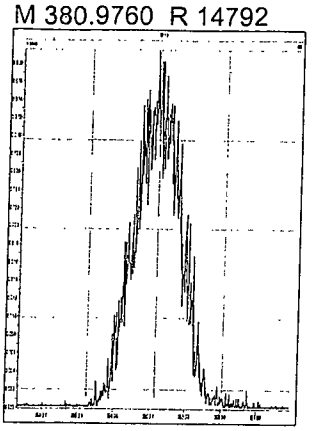
M 416.9760 R 13987



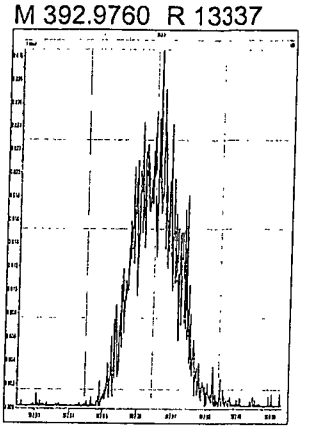
M 366.9792 R 15461



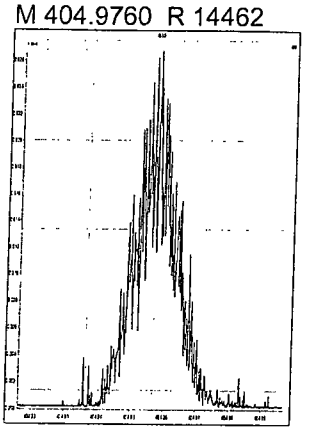
M 380.9760 R 14792



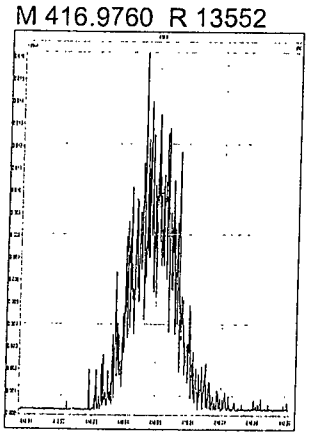
M 392.9760 R 13337



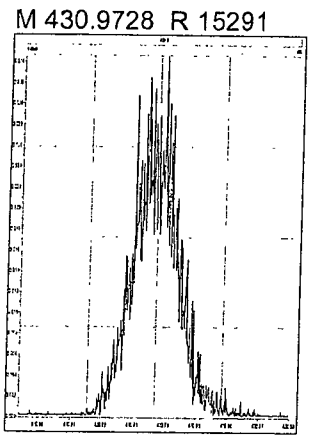
M 404.9760 R 14462



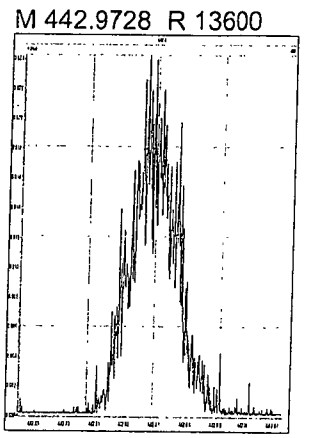
M 416.9760 R 13552



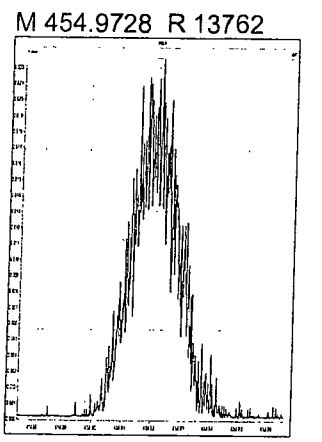
M 430.9728 R 15291



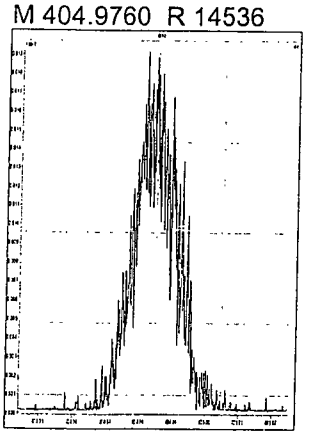
M 442.9728 R 13600



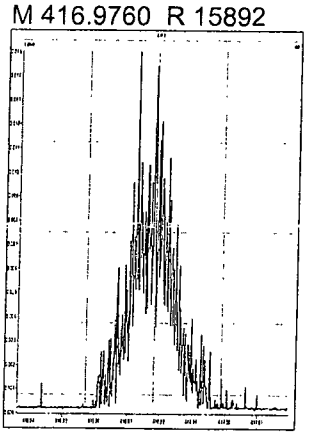
M 454.9728 R 13762



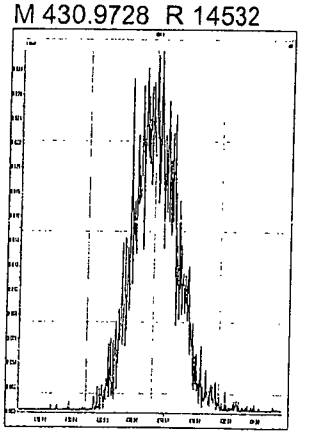
M 404.9760 R 14536



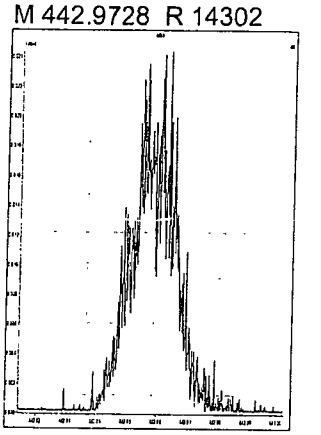
M 416.9760 R 15892



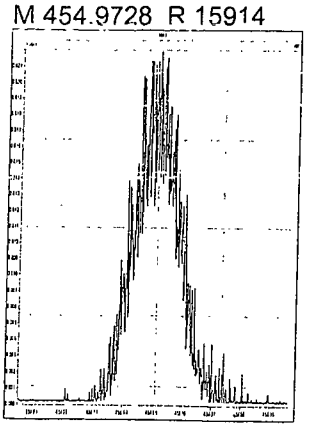
M 430.9728 R 14532



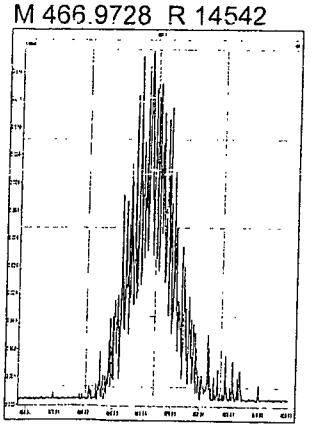
M 442.9728 R 14302



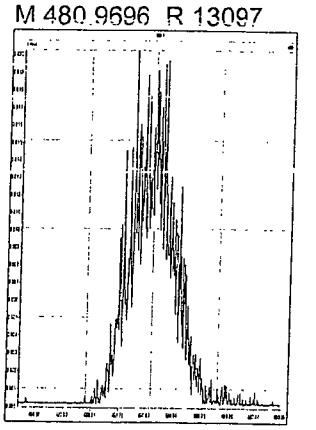
M 454.9728 R 15914



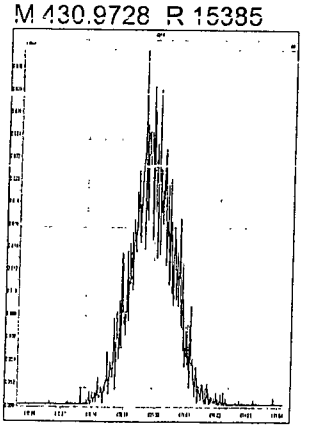
M 466.9728 R 14542



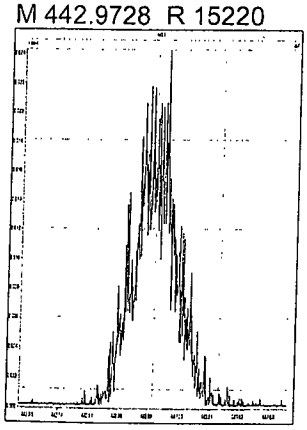
M 480.9696 R 13097



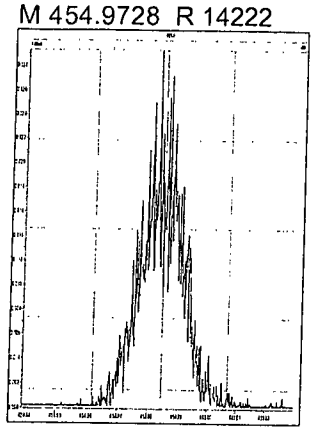
M 430.9728 R 15385



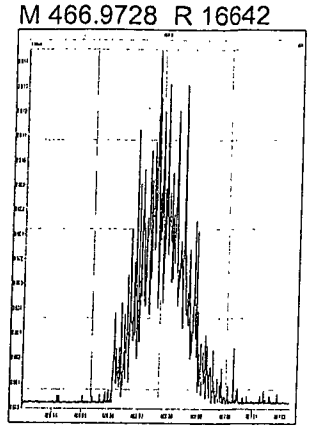
M 442.9728 R 15220



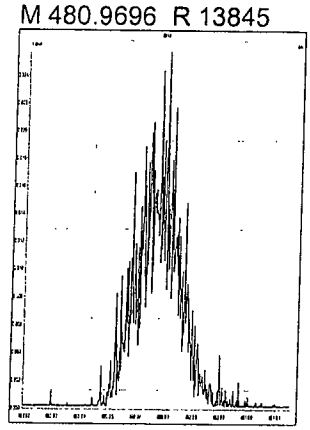
M 454.9728 R 14222



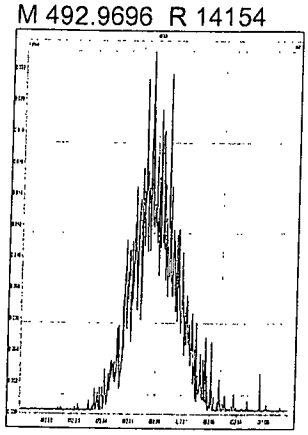
M 466.9728 R 16642



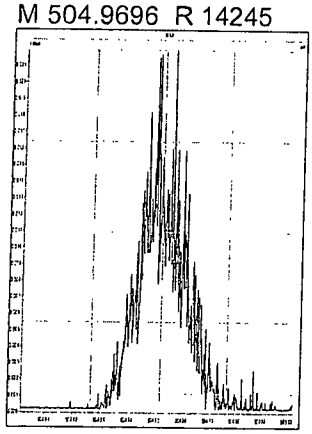
M 480.9696 R 13845



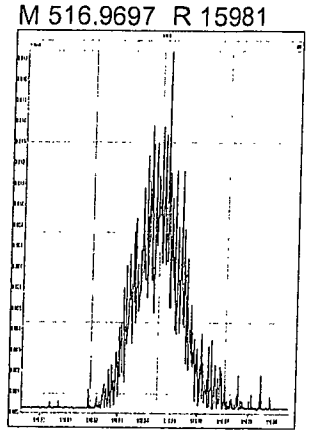
M 492.9696 R 14154



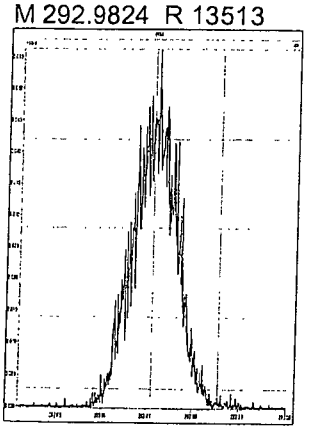
M 504.9696 R 14245



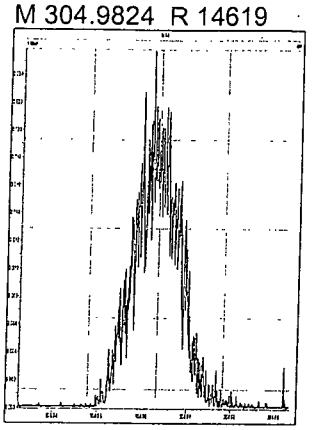
M 516.9697 R 15981



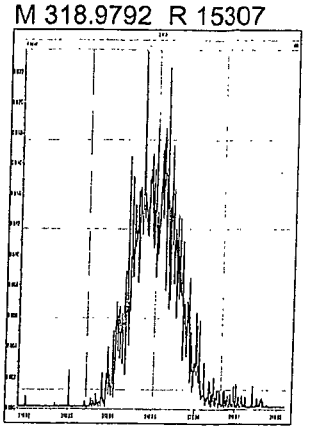
M 292.9824 R 13513



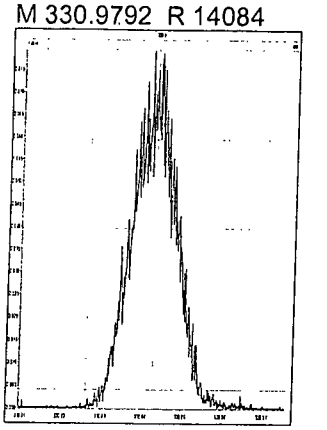
M 304.9824 R 14619



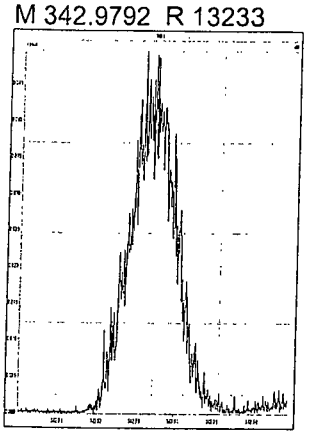
M 318.9792 R 15307



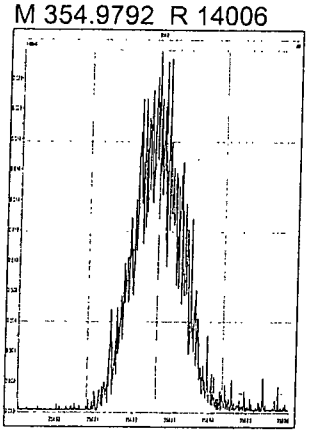
M 330.9792 R 14084



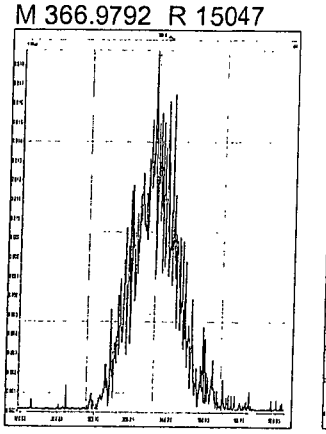
M 342.9792 R 13233



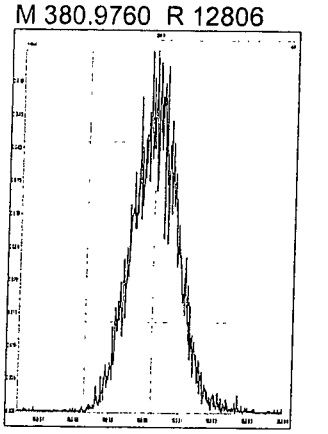
M 354.9792 R 14006



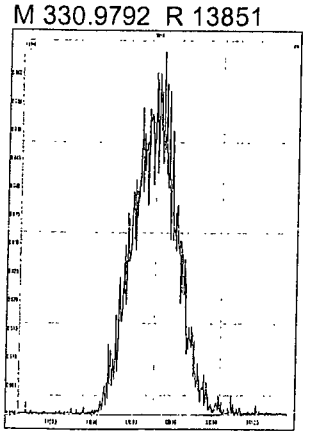
M 366.9792 R 15047



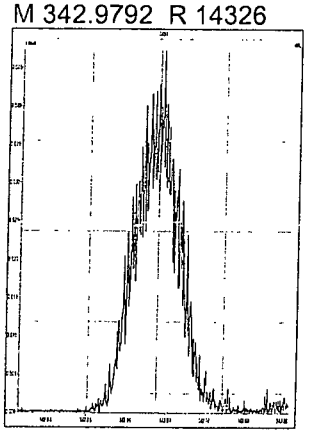
M 380.9760 R 12806



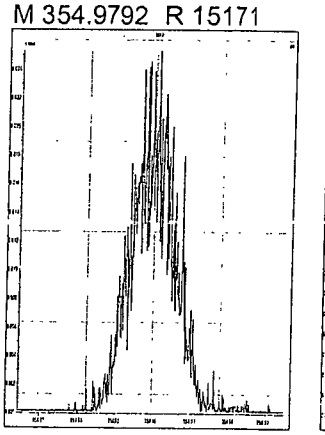
M 330.9792 R 13851



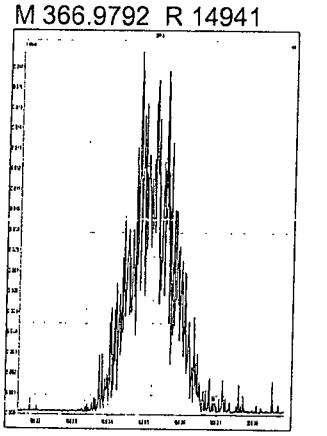
M 342.9792 R 14326



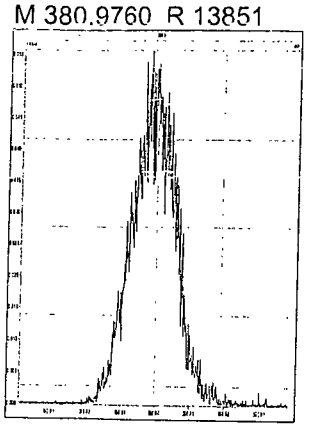
M 354.9792 R 15171



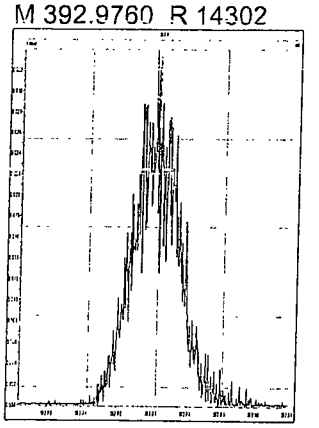
M 366.9792 R 14941



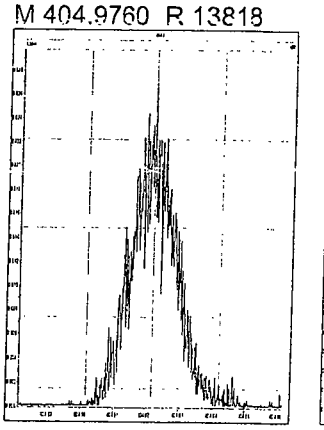
M 380.9760 R 13851



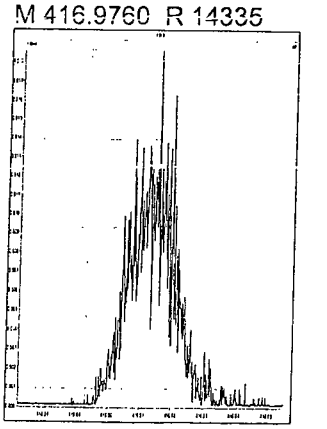
M 392.9760 R 14302



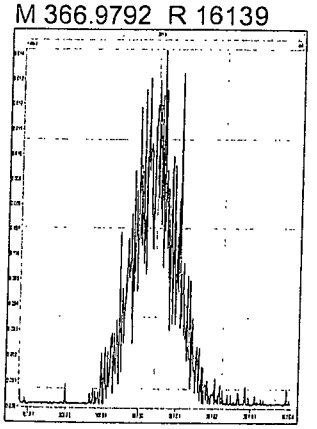
M 404.9760 R 13818



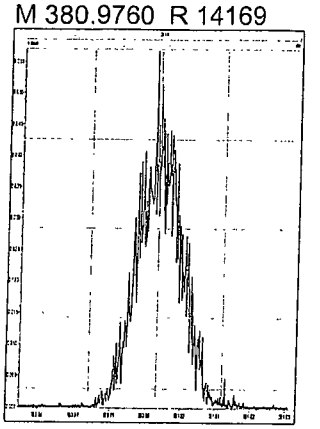
M 416.9760 R 14335



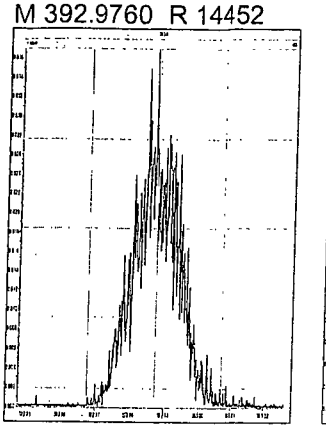
M 366.9792 R 16139



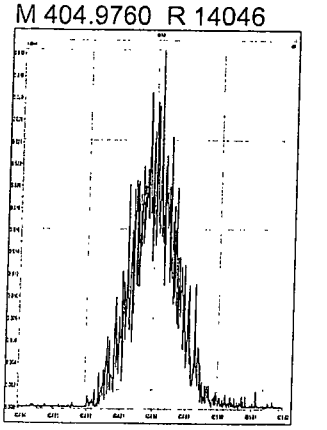
M 380.9760 R 14169



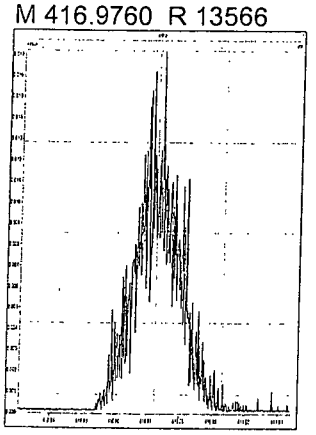
M 392.9760 R 14452



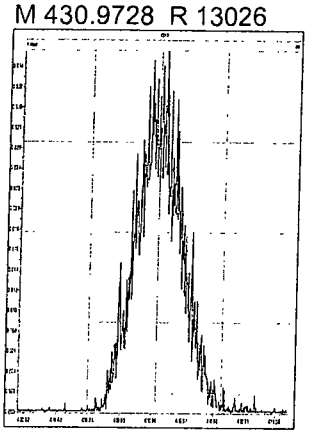
M 404.9760 R 14046



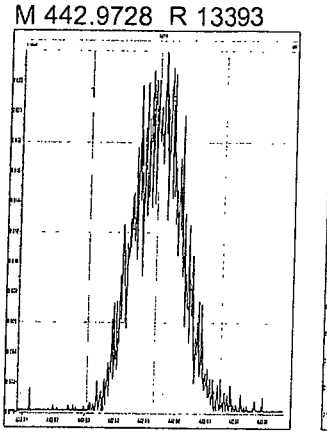
M 416.9760 R 13566



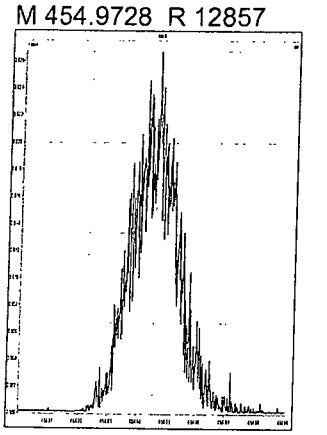
M 430.9728 R 13026



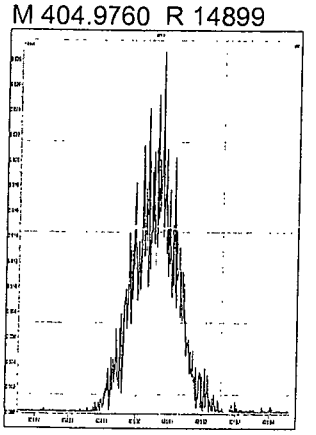
M 442.9728 R 13393



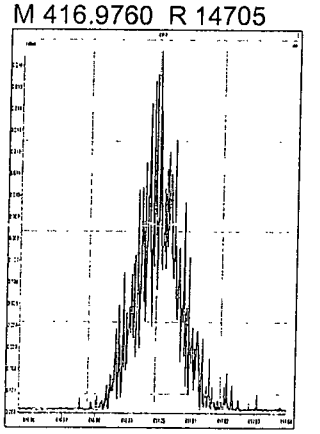
M 454.9728 R 12857



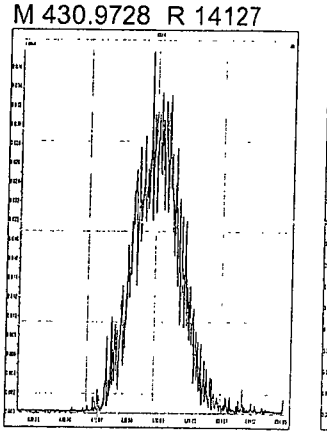
M 404.9760 R 14899



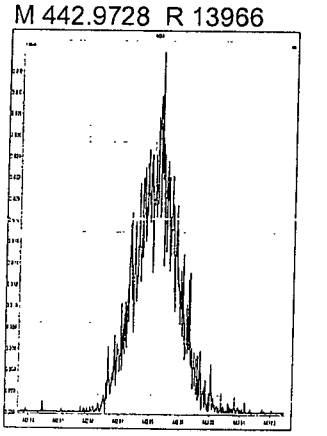
M 416.9760 R 14705



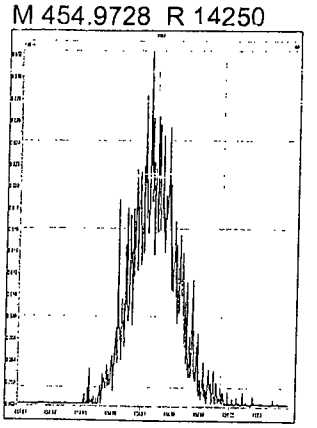
M 430.9728 R 14127



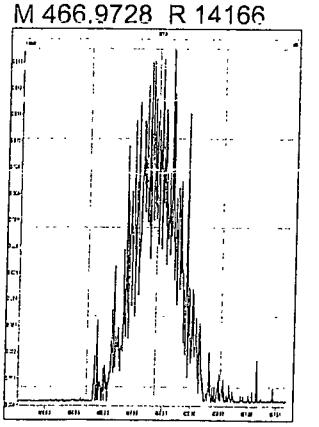
M 442.9728 R 13966



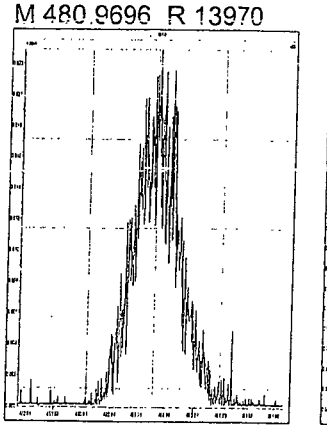
M 454.9728 R 14250



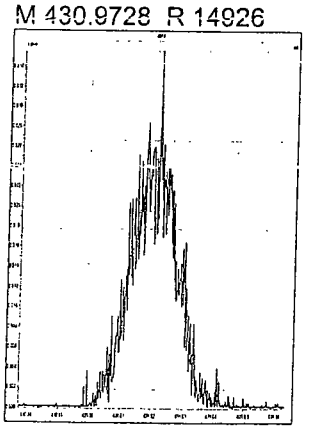
M 466.9728 R 14166



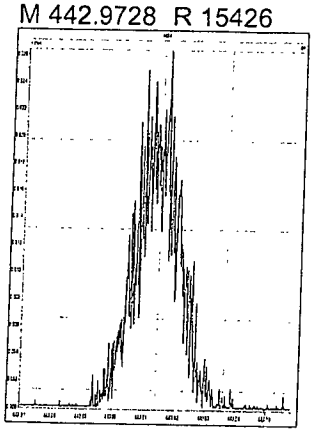
M 480.9696 R 13970



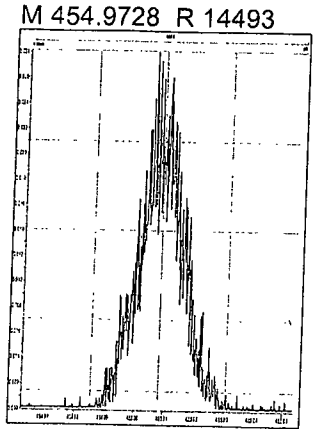
M 430.9728 R 14926



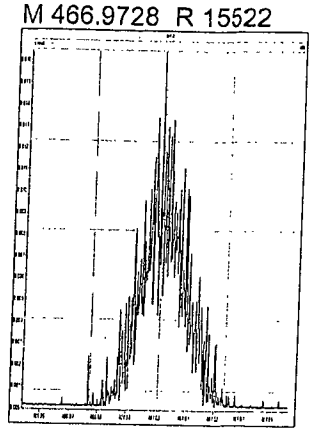
M 442.9728 R 15426



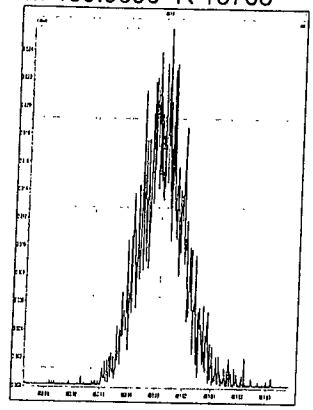
M 454.9728 R 14493



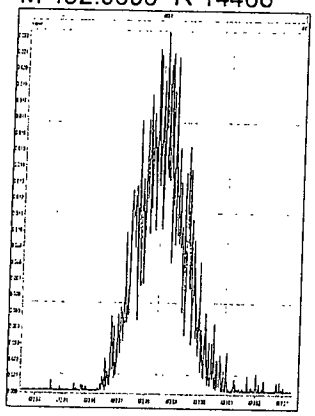
M 466.9728 R 15522



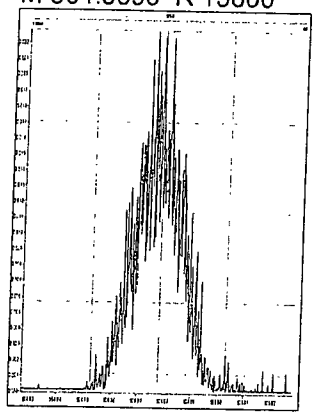
M 480.9696 R 15738



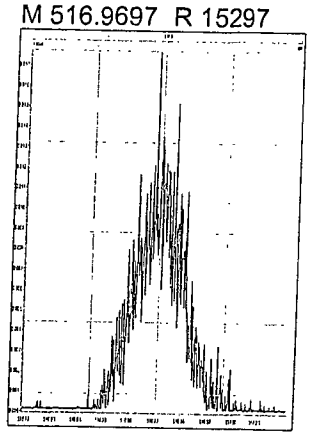
M 492.9696 R 14468



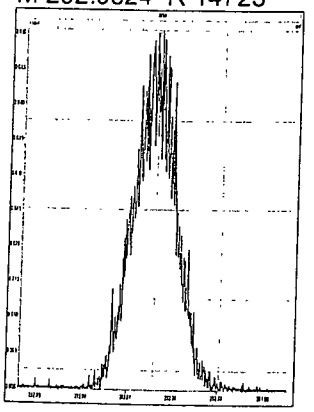
M 504.9696 R 13600



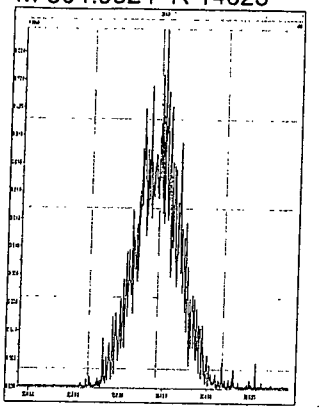
M 516.9697 R 15297



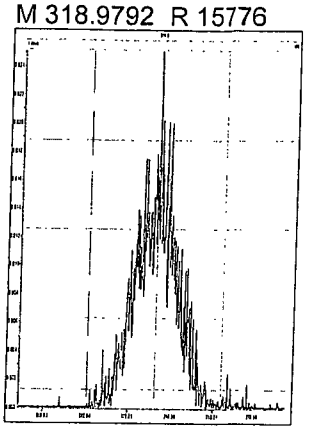
M 292.9824 R 14723



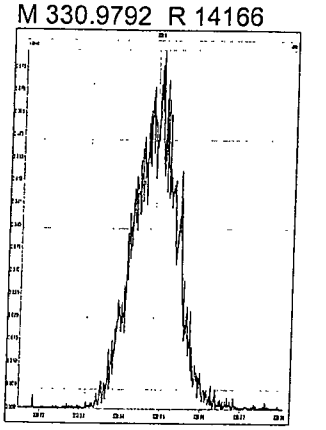
M 304.9824 R 14623



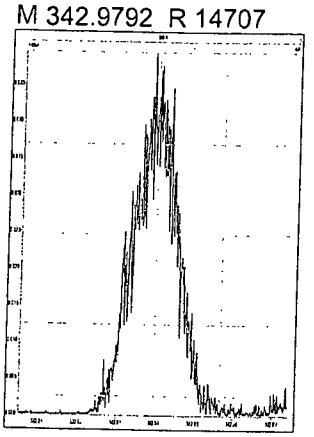
M 318.9792 R 15776



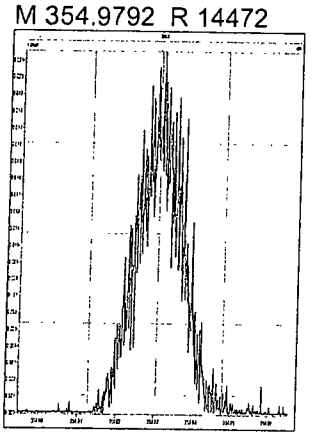
M 330.9792 R 14166



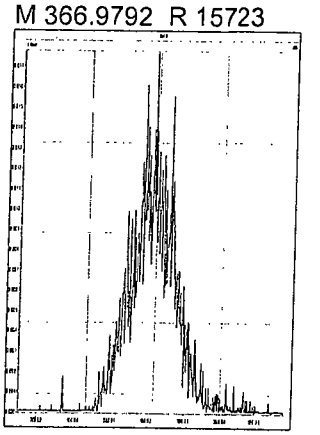
M 342.9792 R 14707



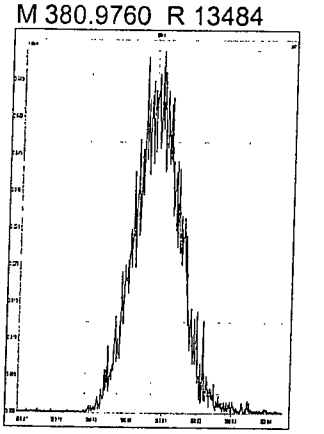
M 354.9792 R 14472



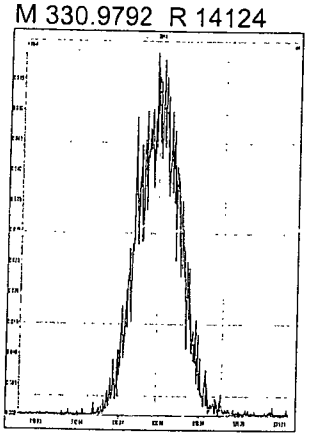
M 366.9792 R 15723



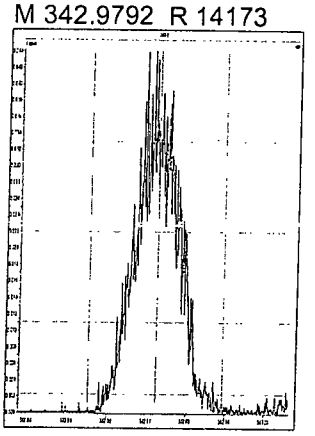
M 380.9760 R 13484



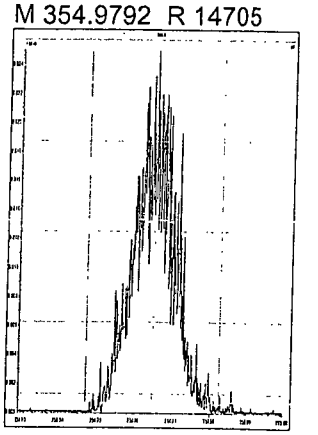
M 330.9792 R 14124



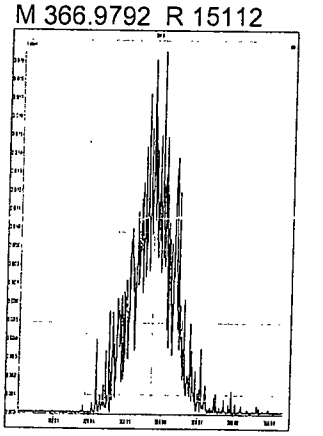
M 342.9792 R 14173



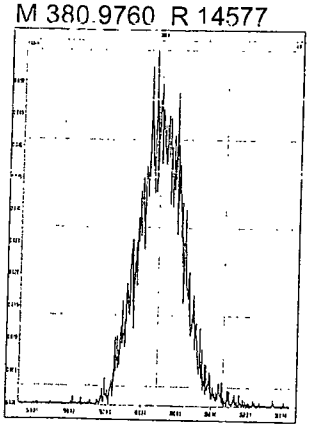
M 354.9792 R 14705



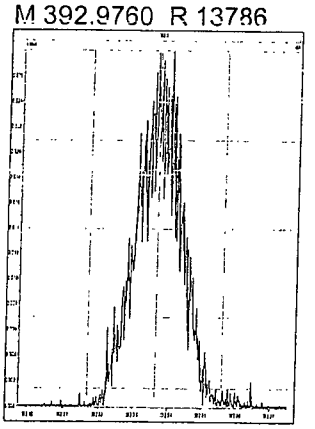
M 366.9792 R 15112



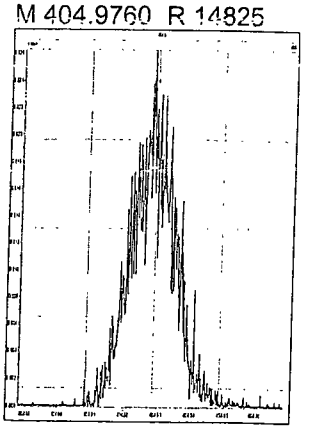
M 380.9760 R 14577



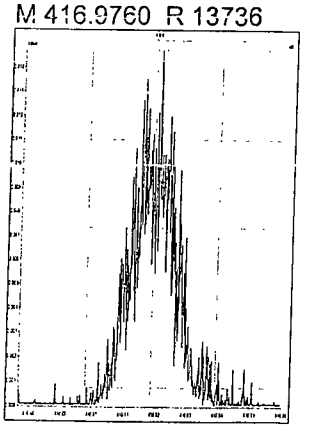
M 392.9760 R 13786



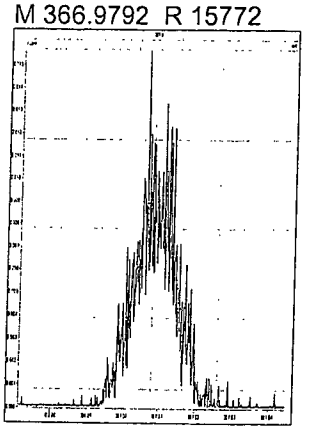
M 404.9760 R 14825



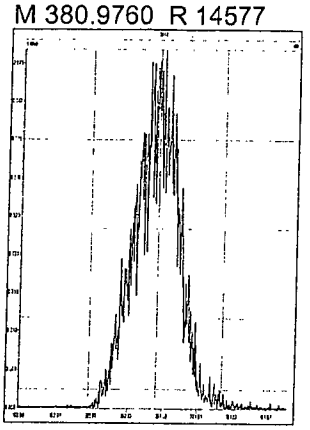
M 416.9760 R 13736



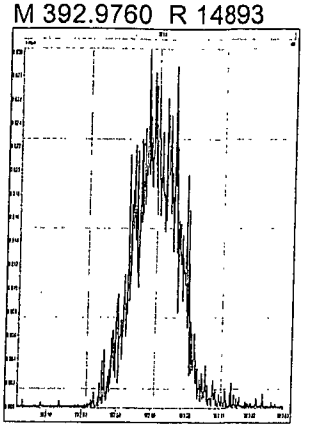
M 366.9792 R 15772



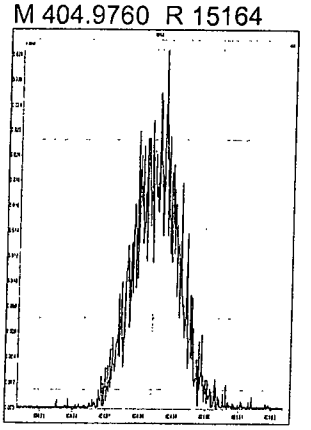
M 380.9760 R 14577



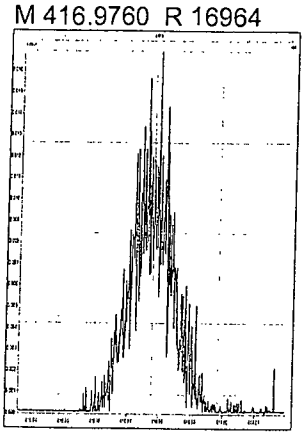
M 392.9760 R 14893



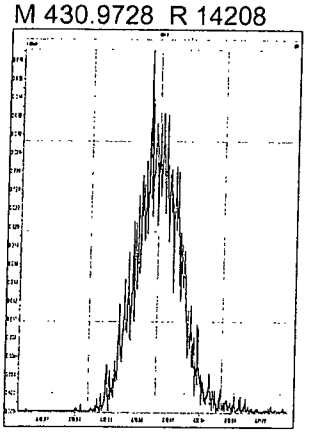
M 404.9760 R 15164



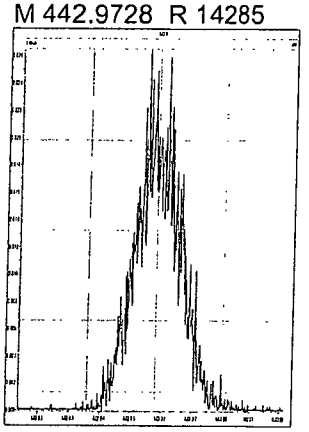
M 416.9760 R 16964



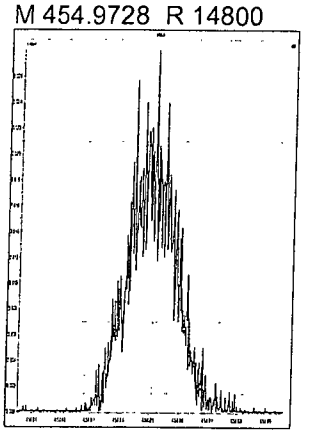
M 430.9728 R 14208



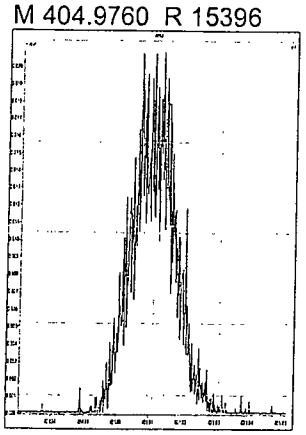
M 442.9728 R 14285



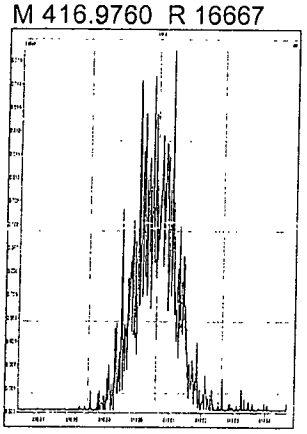
M 454.9728 R 14800



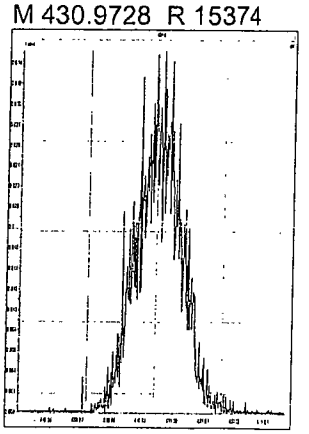
M 404.9760 R 15396



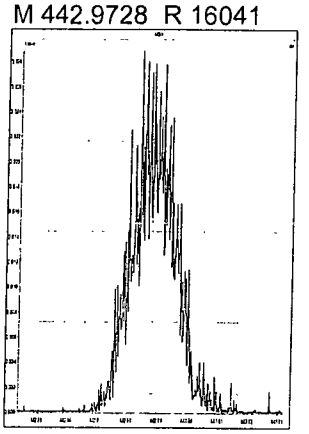
M 416.9760 R 16667



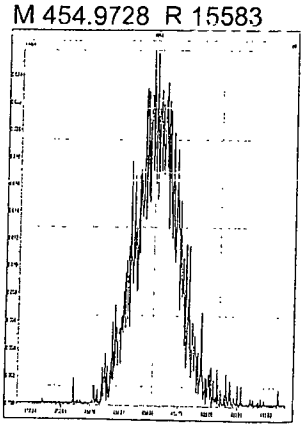
M 430.9728 R 15374



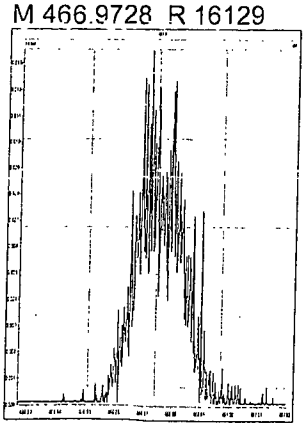
M 442.9728 R 16041



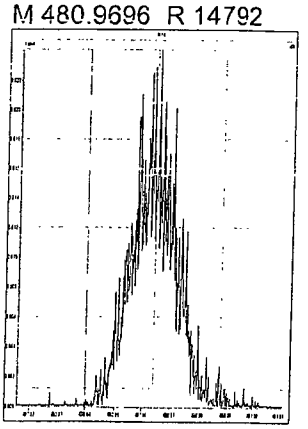
M 454.9728 R 15583



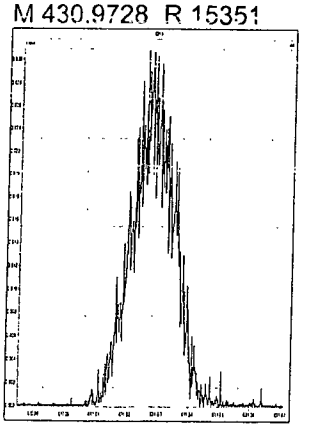
M 466.9728 R 16129



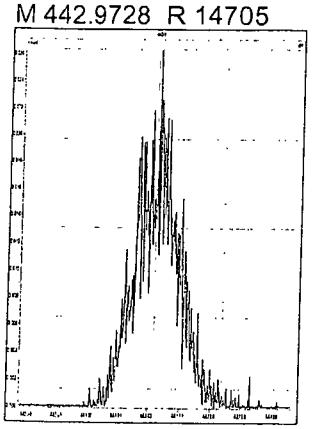
M 480.9696 R 14792



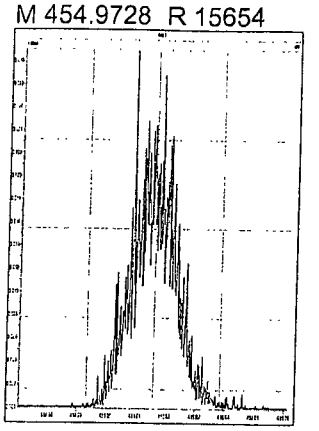
M 430.9728 R 15351



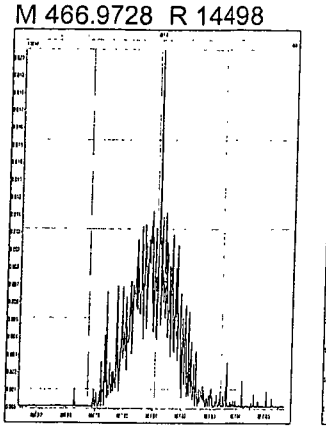
M 442.9728 R 14705



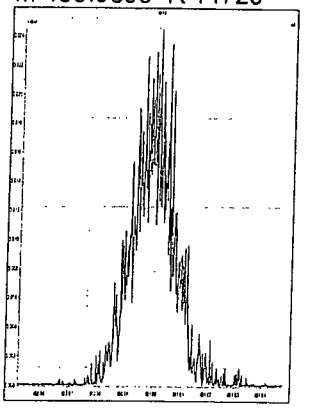
M 454.9728 R 15654



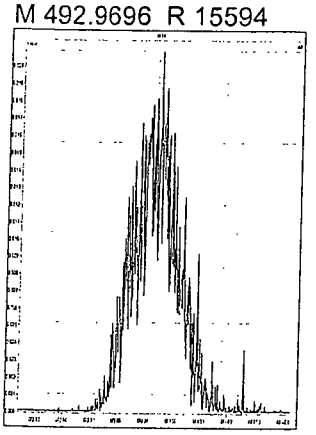
M 466.9728 R 14498



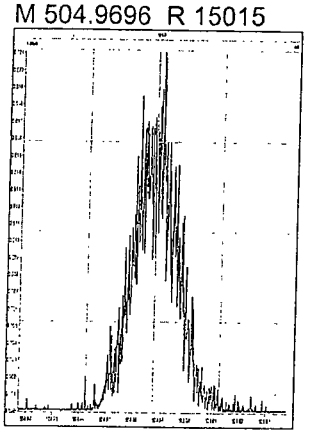
M 480.9696 R 14729



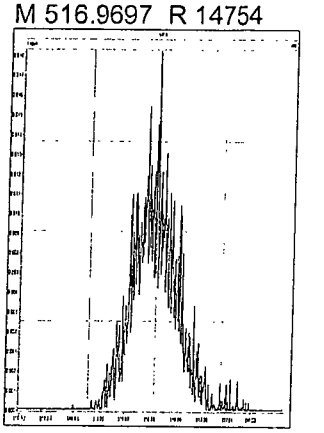
M 492.9696 R 15594



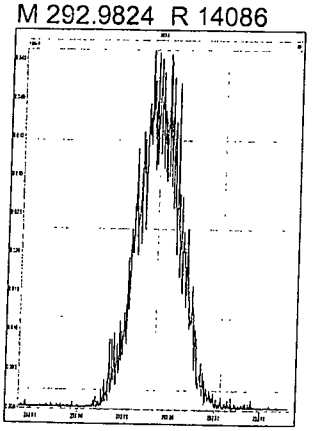
M 504.9696 R 15015



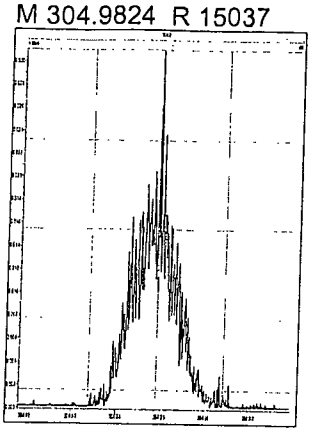
M 516.9697 R 14754



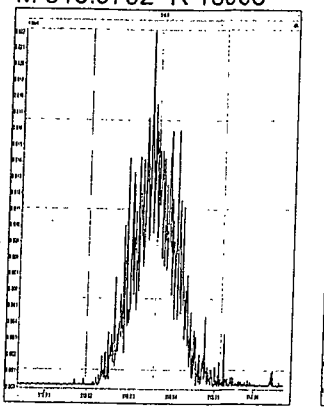
M 292.9824 R 14086



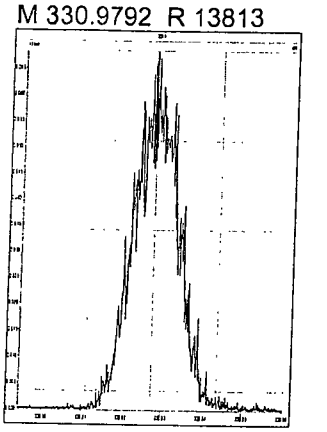
M 304.9824 R 15037



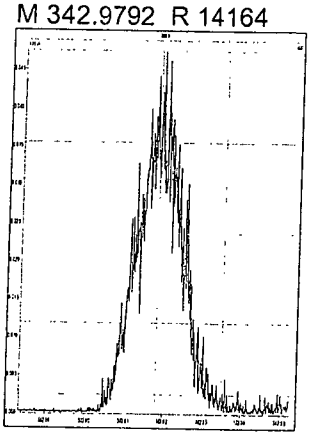
M 318.9792 R 15808



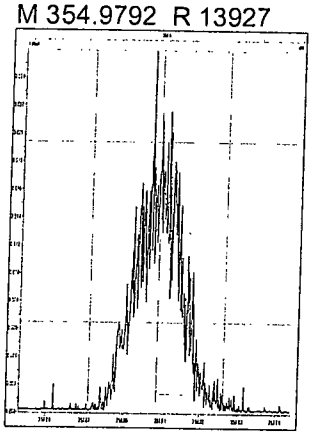
M 330.9792 R 13813



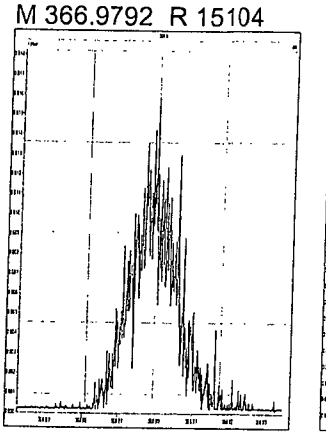
M 342.9792 R 14164



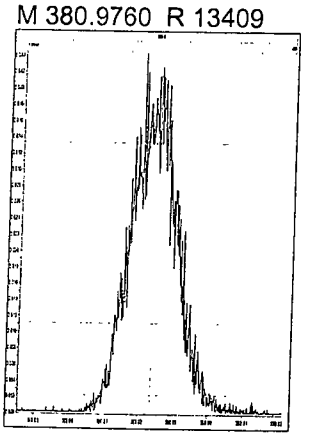
M 354.9792 R 13927



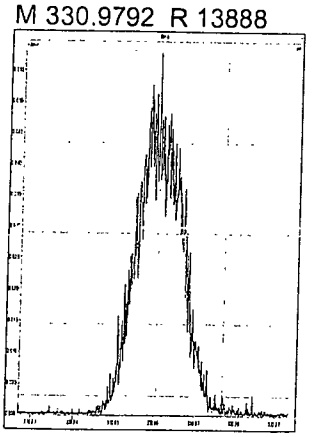
M 366.9792 R 15104



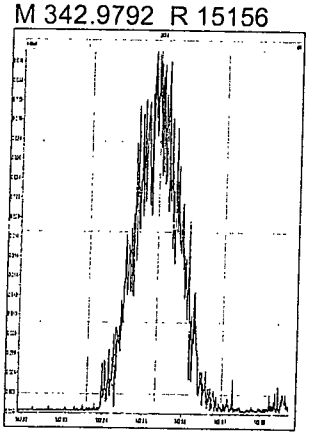
M 380.9760 R 13409



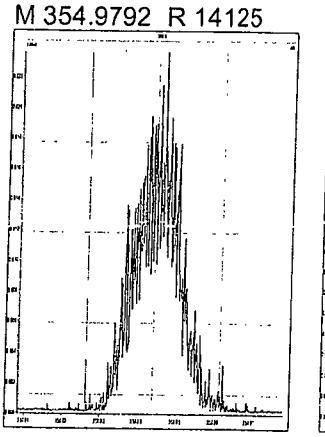
M 330.9792 R 13888



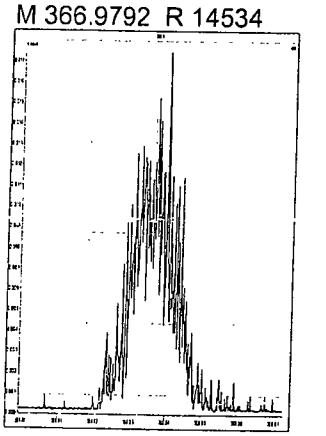
M 342.9792 R 15156



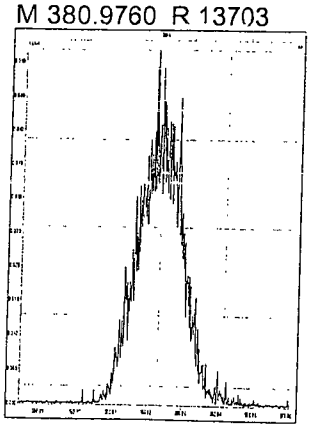
M 354.9792 R 14125



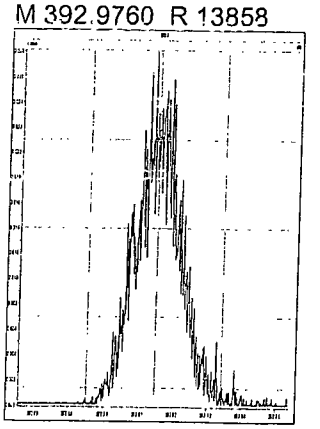
M 366.9792 R 14534



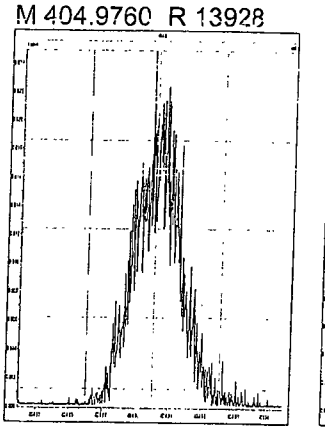
M 380.9760 R 13703



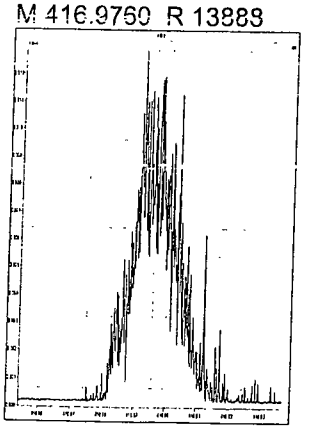
M 392.9760 R 13858



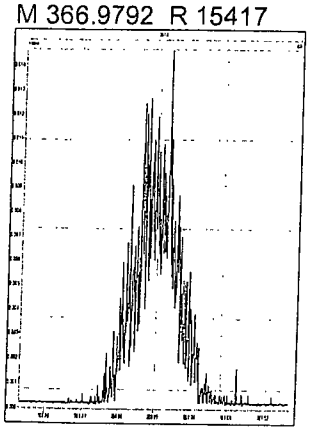
M 404.9760 R 13928



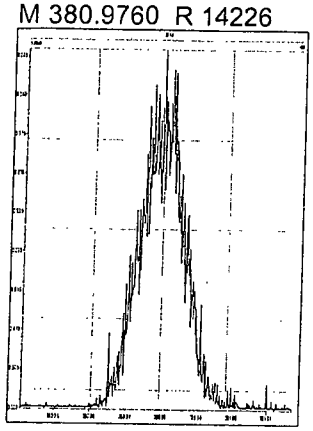
M 416.9760 R 13883



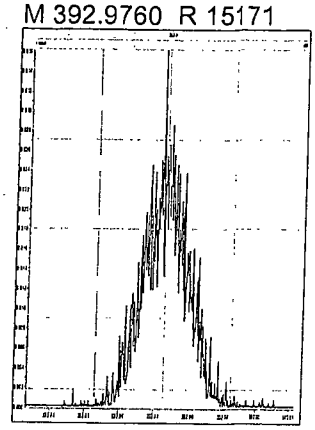
M 366.9792 R 15417



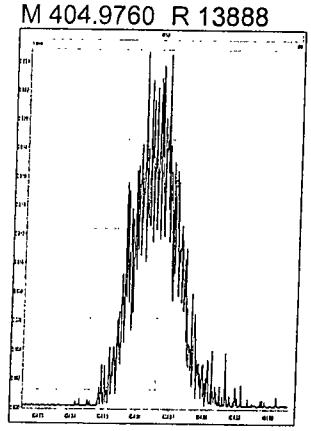
M 380.9760 R 14226



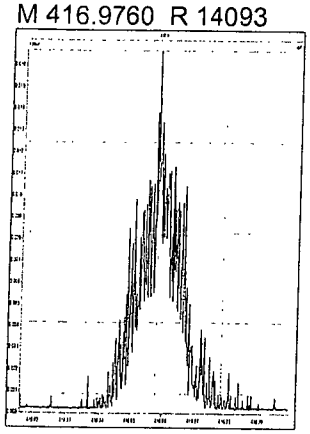
M 392.9760 R 15171



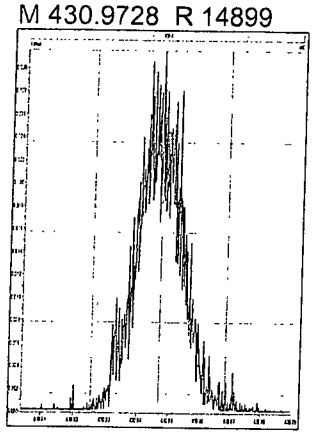
M 404.9760 R 13888



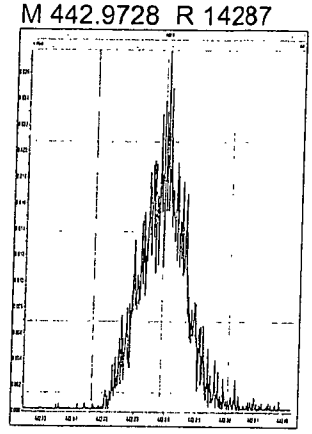
M 416.9760 R 14093



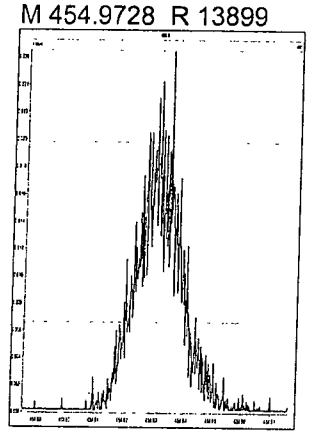
M 430.9728 R 14899



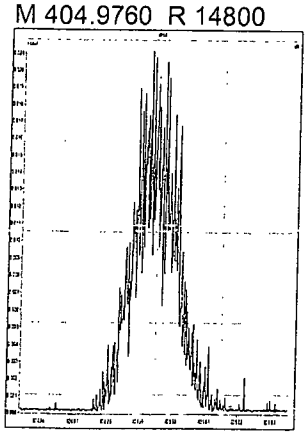
M 442.9728 R 14287



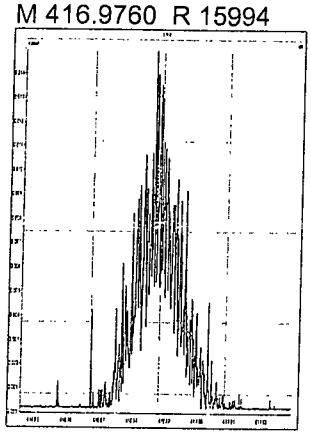
M 454.9728 R 13899



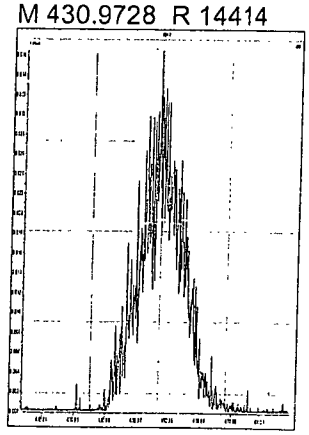
M 404.9760 R 14800



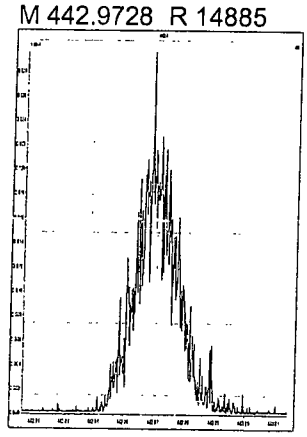
M 416.9760 R 15994



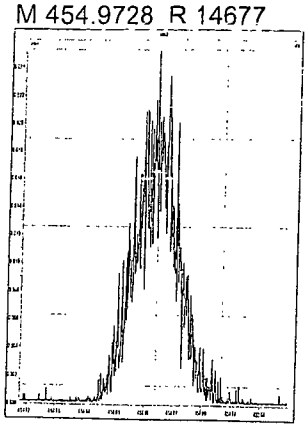
M 430.9728 R 14414



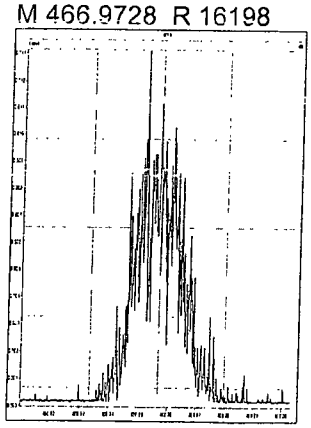
M 442.9728 R 14885



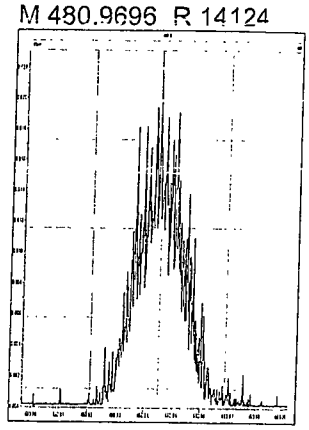
M 454.9728 R 14677



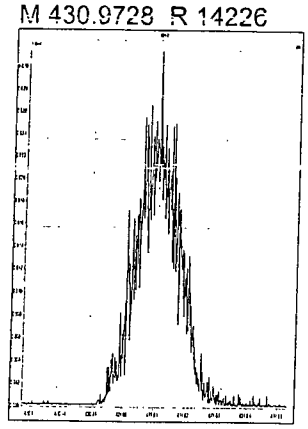
M 466.9728 R 16198



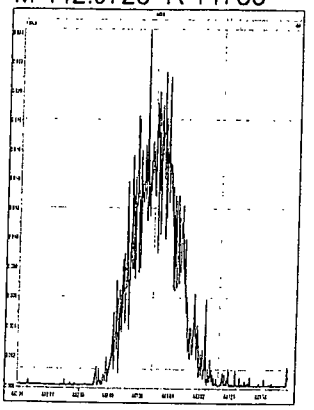
M 480.9696 R 14124



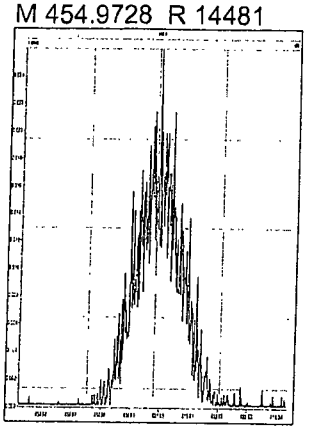
M 430.9728 R 14226



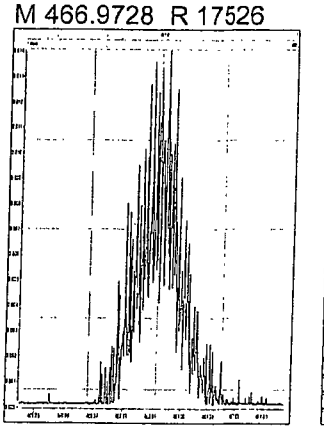
M 442.9728 R 14755



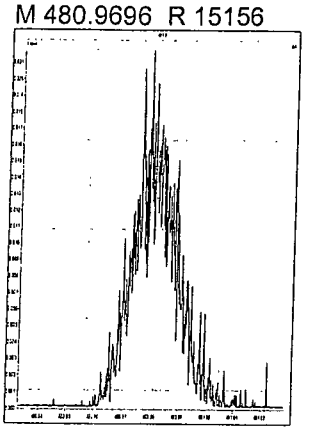
M 454.9728 R 14481



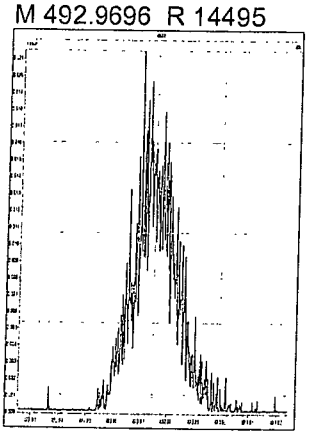
M 466.9728 R 17526



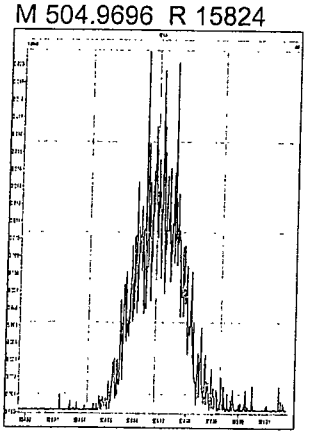
M 480.9696 R 15156



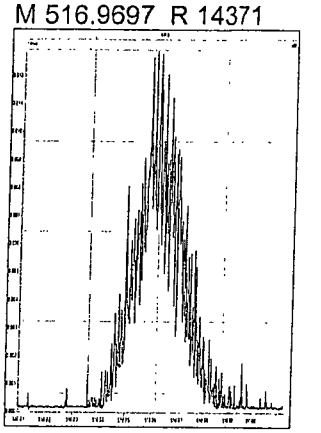
M 492.9696 R 14495



M 504.9696 R 15824



M 516.9697 R 14371



118

Dioxin/Furan Standard Prep Log #2

4/10/15 B
BP

DIOXINS IN WATER - WP

Sample Item Number **PE1295-2ML**

Description

This concentrate contains up to 16 dioxins and furans in toluene.

Sample Preparation

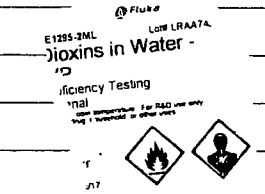
Pour 1000-mL of reagent grade DI water into a extraction vessel.
Open ampule and transfer 1 mL of concentrate to the extraction vessel using Class A glassware.
Analyze as required by your normal procedures.
Assume a 1-Liter sample volume for calculation purposes.

AZ13554W01

75952
AZ13554 W01
26 A_Frig

Dioxins in Water LRAA7491

YC



JB
04-15-15

EDF-4147 200 mg/mL 04-15-15:

Cerilliant® CIL, Inc.
811 Paloma Dr., Ste. A
Round Rock, TX 78665
800.848.7837

PCDD/PCDF Window Defining and Isomer Specificity Mix (DB-5) (each analyte)
200 mg/mL in 1.2 mL n-Nonane
EDF-4147
Lot: ER03111502
Expires: Mar. 2025
Room Temp. (Do Not Store Cold)
DANGER
FOR LABORATORY USE ONLY

PCDD/PCDF WD & IS Mix (DB-5)
Lot #: ER03111502 - 34947
Rec: 3/26/15 MFR exp. 3/28/25

Dioxin/Furan Standard Prep Log #2

EDF-4147 80ng/mL 04-15-15:
EDF-4147 200 ng/mL 04-15-15
took 0.400 mL and added to
0.600 mL Sigma Aldrich Nonane
lot SHBD9765V

04-15-15C
Washed and Baked Silica Gel

Supplier	ID #	ID	Lot #
Sorbent Technologies	52700-5	Silica Gel 60A	021115L

Soxhlet extract with methylene chloride for 24 hours — start time: 4/15/15 08:00 — end time: 4/16/15 0800

Baked at 180C for 24 hours — start time: 4/16/15 1400 — end time: 4/17/15 1400

04-15-15D
Washed and Baked Sodium Sulfate

Supplier	ID #	ID	Lot #
EMD	SX0760E-20	Sodium Sulfate	VB15C

Soxhlet extract with methylene chloride for 24 hours — start time: 4/15/15 0800 — end time: 4/16/15 0800

Baked at 400C for 4 hours. — start time: 4/16/15 1400 — end time: 4/17/15 1400

04-15-15E
Washed Glass Wool

Supplier	ID #	ID	Lot #
Supelco	2-0410	Glass Wool	11786

Soxhlet extract with methylene chloride for 24 hours — start time: 4/15/15 08:00 — end time: 4/16/15 0800

04-20-15A
40% H2SO4 coated Silica Gel
Added 480g of concentrated sulfuric acid to 720g of baked silica gel 04-15-14C
Mixed with a glass rod until free of lumps.
Stored in a glass bottle seal with a Teflon lined screw cap

04-20-15B
Basic Silica Gel
Added 200g of 1M NaOH to 400g of baked silica gel 04-20-14B
Mixed with a glass rod until free of lumps.
Stored in a glass bottle seal with a Teflon lined screw cap

Dioxin/Furan Standard Prep Log #3

003

AP

06-08-15A
Washed and Baked Silica Gel

Supplier	ID #	ID	Lot #
Sorbent Technologies	52700-5	Silica Gel 60A	021115L

6/8/15 AP

Soxhlet extract with methylene chloride for 24 hours — start time: 6/8/15 @ 800 — end time: 6/9/15 @ 800

Baked at 180C for 24 hours — start time: 6/9/15 @ 1200 — end time: 6/10/15 @ 1200

06-08-15B
Washed and Baked Sodium Sulfate

Supplier	ID #	ID	Lot #
EMD	SX0760E-20	Sodium Sulfate	VB15C

Soxhlet extract with methylene chloride for 24 hours — start time: 6/8/15 @ 800 — end time: 6/9/15 @ 800

Baked at 400C for 4 hours. — start time: 6/9/15 @ 1200 — end time: 6/10/15 @ 1200

06-08-15C
Washed Glass Wool

Supplier	ID #	ID	Lot #
Supelco	2-0410	Glass Wool	11786

Soxhlet extract with methylene chloride for 24 hours — start time: 6/8/15 @ 800 — end time: 6/9/15 @ 800

AP

06-10-15A
40% H2SO4 coated Silica Gel
Added 480g of concentrated sulfuric acid to 720g of baked silica gel 06-08-15A
Mixed with a glass rod until free of lumps.
Stored in a glass bottle seal with a Teflon lined screw cap

6/10/15 AP

06-10-15B
Basic Silica Gel
Added 200g of 1M NaOH to 400g of baked silica gel 06-08-15A
Mixed with a glass rod until free of lumps.
Stored in a glass bottle seal with a Teflon lined screw cap

6/11/15 AP

Dioxin/Furan Standard Prep Log #3

005

6/22/15A
BP

Veritiant
CIL, Inc.
811 Paloma Dr., Suite A
Round Rock, TX 78665
800.848.7837

Recovery Standard Stock Solution
500 ng/mL (each analyte)
Solvent: 1.2 mL n-Nonane
EDF-4055
Lot: ER092311-01
Expires: 09/2021
Room Temp (Do not store cold)
FLAMMABLE

FOR LABORATORY USE ONLY

Recovery Standard Stock
Lot #. ER092311-01 - 35260
Rec: 6/12/15 MFR exp. 9/30/21

6/22/15 B
BP

06-22-15B							
100 ng/ml EDF-4055							
Exp:	07/22/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EDF-4055	Recovery Standard Stock Solution	500ng/mL	ER092311-01 - 35260	06-22-15A	09-30-21	100 uL
Nonane		Sigma Aldrich SHBC8566V					400 uL

6/25/15
BP

06-25-15A							
2.5 ng/ml PCB_1310116-01 (Spike)							
Exp:	06/25/15						
Supplier	ID #	ID	Conc	Date Code	Exp. Date	Volume	
O2SI	1310116-01	PCB Congener Solution	1000ng/mL	05-04-15A	05/04/16	25 uL	
BDH Acetone		BDH1101-4LG		Lot #051314C		~~9975 uL~~ 9925 uL	
06-25-15B							
5.0 ng/ml EC-4977 (Surrogate)							
Exp:	06/25/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EC-4977	Method 1668A Toxics/LOC/Window	1000ng/mL	PR-23564-34195	10-30-14A	07-27-22	100 uL
		Surrogate Spike Mix					
BDH Acetone		BDH1101-4LG		Lot #121813D			19900 uL
06-25-15C							
5.0 ng/ml EC-4978 (CleanUp)							
Exp:	06/25/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	ED-4978	Method 1668A Cleanup Standard	1000ng/mL	PR-22186-34196	10-31-14A	10-27-20	100 uL
BDH Acetone		BDH1101-4LG		Lot #121813D			19900 uL

6/24/15A
BP

06-26-15A							
200 ng/ml EC-4979 (IS)							
Exp:	12/26/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EC-4979	Method 1668A Labeled Injection	5000ng/ml	PR-4979-22147	03-18-14B	11-18-20	50 ul
		Internal Standard Solution		Nonane	Sigma Aldrich SHBC8566V		1200 ul

Dioxin/Furan Standard Prep Log #3

006

6/29/15 A
PP

Cerilliant® CIL, Inc. 811 Paloma Dr., Ste A Round Rock, TX 78665 800.848.7837

Sample Fortification Solution
100 - 500 ng/mL
Solvent: 1.2 mL n-Nonane
EDF-5005
Lot: ER103112-02
Expires: 11/2022
Room Temp. (Do Not Store Cold)
FLAMMABLE

FOR LABORATORY USE ONLY

Sample Fortification Solution
Lot #: ER103112-02 - 35171
Rec: 5/4/15 MFR exp. 11/30/22

6/29/15 B
PP

Cerilliant® CIL, Inc. 811 Paloma Dr., Ste A Round Rock, TX 78665 800.848.7837

Method 8290 Matrix Spiking Solution
100 - 500 ng/mL
Solvent: 1.2 mL n-Nonane
EDF-5008
Lot: ER12101302
Expires: Dec. 2023
Room Temp. (Do Not Store Cold)
FLAMMABLE

FOR LABORATORY USE ONLY

Method 8290 Matrix Spiking Solution
Lot #: ER12101302 - 34891
Rec: 2/24/15 MFR exp. 12/31/23

7/1/15 A
PP

07-01-15A

100 ng/ml EDF-4055

Exp: 08/01/15

Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EDF-4055	Recovery Standard Stock Solution	500ng/mL	ER092311-01 - 35260	06-22-15A	09-30-21	100 uL
Nonane		Sigma Aldrich SHBC8566V					400 uL

7/1/15 B
PP

07-01-15B

Potassium Silicate

Dissolve 56g of potassium hydroxide flakes in 300mL of methanol and add 100g of baked silica gel 06-08-15A

Mixed at 60 C for 2 hours and then spread out to dry

Baked at 180C for 24 hours

PP

7/2/15
PP

07-02-15A

Washed and Baked Silica Gel

Supplier: Sorbent Technologies

ID #: 52700-5

ID: Silica Gel 60A

Lot #: 303200

Soxhlet extract with methylene chloride for 24 hours

start time: 7/2/15 800 end time: 7/3/15 800

Baked at 180C for 24 hours

start time: 7/8/15 800 800 end time: 7/9/15 800

Oven: Ernie PP 7/14/15

✓ PP 7/14/15

Dioxin/Furan Standard Prep Log #3

007

07-15-15A

Cerilliant® CIL, Inc. 811 Paloma Dr., Ste. A Round Rock, TX 78665 800.848.7837

Sample Fortification Solution
100 - 500 ng/mL
Solvent: 1.2 mL n-Nonane
EDF-5005
Lot: ER103112-02
Expires: 11/2022
Room Temp. (Do Not Store Cold)
FLAMMABLE

FOR LABORATORY USE ONLY

Sample Fortification Solution
Lot #: ER103112-02 - 35172
Rec: 5/4/15 MFR exp. 11/30/22

7/15/15 B

07/15/15 B								
100 ng/ml EDF-4055								
Exp:	08/15/15							
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume	
CIL	EDF-4055	Recovery Standard Stock Solution	500ng/mL	ER092311-01 - 35260	06-22-15A	09-30-21	100 uL	
Nonane		Sigma Aldrich SHBC8566V					400 uL	

7/22/15 A

07/22/15 A								
100 ng/ml EDF-4055								
Exp.	08/22/15							
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume	
CIL	EDF-4055	Recovery Standard Stock Solution	500ng/mL	ER092311-01 - 35260	06-22-15A	09-30-21	200 uL	
Nonane		Sigma Aldrich SHBC8566V					800 uL	

8/4/15 A

08-04-15A

Basic Silica Gel

Added 200g of 1M NaOH to 400g of baked silica gel 07-02-15A
Mixed with a glass rod until free of lumps.
Stored in a glass bottle seal with a Teflon lined screw cap

8/5/15

08-05-15A							
100 ng/ml EDF-4055							
Exp:	09/08/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EDF-4055	Recovery Standard Stock Solution	500ng/mL	ER092311-01 - 35260	06-22-15A	09-30-21	100 uL
Nonane		Sigma Aldrich SHBC8566V					400 uL

008

Dioxin/Furan Standard Prep Log #3

8/17/15 AP

08-17-15A

Washed and Baked Silica Gel

Supplier: Sorbent Technologies

ID #: 52700-5

ID: Silica Gel 60A

Lot #: 303200

Soxhlet extract with methylene chloride for 24 hours

start time: 8/17/15 800 end time: 8/18/15 800

Baked at 180C for 24 hours

start time: 8/19/15 1500 end time: 8/19/15 1500

Oven: Ernie

start temp: 180°C end temp: 180°C

AP

8/20/15 AP

08-20-15A

40% H2SO4 coated Silica Gel

Added 480g of concentrated sulfuric acid to 720g of baked silica gel 08-17-15A

Mixed with a glass rod until free of lumps.

Stored in a glass bottle seal with a Teflon lined screw cap

AP

8/28/15 AP

08-28-15A							
0.50 ng/ml Dioxin/Furan Spikes							
Exp:	08/28/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EDF-5008	Matrix Spiking Solution	100-500 ng/mL	ER12101302 - 34891	06-29-15B	12/31/23	50 uL
BDH Acetone		BDH1101-4LG		051915C		11/20/16	9950 uL
08-28-15B							
100 ng/ml EDF-4055							
Exp:	09/28/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EDF-4055	Recovery Standard Stock Solution	500ng/mL	ER092311-01 - 35260	06-22-15A	09-30-21	100 uL
Nonane		Sigma Aldrich SHBC8566V					400 uL
08-28-15C							
1000 ng/ml PCB_1310116-01							
Exp:	08/25/16						
Supplier	ID #	ID	Conc	Lot #	Date Opened	Exp. Date	Volume
O2SI	1310116-01	PCB Congener Solution	100mg/L	189207-33914	10/03/14	4-25-18	20 ul
Nonane		Sigma Aldrich SHBC8566V					1980 ul
08-28-15D							
2.5 ng/ml PCB_1310116-01 (Spike)							
Exp:	08/28/15						
Supplier	ID #	ID	Conc	Date Code	Exp. Date	Volume	
O2Si	1310116-01	PCB Congener Solution	1000ng/mL	08-28-15C	08/25/16	25 uL	
BDH Acetone		BDH1101-4LG		051915C		9975 uL	
08-28-15E							
5.0 ng/ml EC-4977 (Surrogate)							
Exp:	08/28/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp. Date	Volume
CIL	EC-4977	Method 1668A Toxics/LOC/Window	1000ng/mL	PR-23564-34195	10-30-14A	07-27-22	50 uL
		Surrogate Spike Mix					
BDH Acetone		BDH1101-4LG		051915C			9950 uL

Dioxin/Furan Standard Prep Log #3

010

9/18/15A
PP

09-18-15A							
100 ng/ml EDF-4055							
Exp:	10/28/15						
Supplier	ID #	ID	Conc	Lot #	Date Code	Exp Date	Volume
CIL	EDF-4055	Recovery Standard Stock Solution	500ng/mL	ER092311-01 - 35260	06-22-15A	09-30-21	100 uL
Nonane		Sigma Aldrich SHBC8566V					400 uL

09-14-15A
Washed and Baked Silica Gel
Supplier
Sorbent Technologies

ID # 52700-5

ID Silica Gel 60A

Lot # 303200

Soxhlet extract with methylene chloride for 24 hours

start time: 9/14/15 08:00 end time: 9/15/15 09:00

Baked at 180C for 24 hours

start time: 9/15/15 1500 end time: 9/16/15 1500

Oven: Ernie

start temp: 180°C end temp: 180°C

9/14/15
PP

09-22-15A
Washed and Baked Sodium Sulfate
Supplier
EMD

ID # SX0760E-20

ID Sodium Sulfate

Lot # XE21G

Soxhlet extract with methylene chloride for 24 hours

start time: 9/22/15 0900 end time: 9/23/15 0900

Baked at 400C for 4 hours. Neycraft Furnace 2:3 @ 400°C

start time: 9/23/15 1200 400°C end time: 9/23/15 1600 400°C

09-22-15B
Washed Glass Wool
Supplier
Supelco

ID # 2-0410

ID Glass Wool

Lot # 11786

Soxhlet extract with methylene chloride for 24 hours

start time: 9/22/15 0900 end time: 09/23/15 0900

9/22/15
PP

09-23-15C
40% H2SO4 coated Silica Gel
Added 480g of concentrated sulfuric acid to 720g of baked silica gel 09-14-15A
Mixed with a glass rod until free of lumps.
Stored in a glass bottle seal with a Teflon lined screw cap

09-23-15D
Basic Silica Gel
Added 200g of 1M NaOH to 400g of baked silica gel 09-14-15A
Mixed with a glass rod until free of lumps.
Stored in a glass bottle seal with a Teflon lined screw cap

9/23/15
PP

Dioxin/Furan Standard Prep Log #3

013

10-05-15
JH

Cerilliant® CIL, Inc. 811 Paloma Dr., Ste. 3 Round Rock, TX 78665 800.848.7801

Method 1613 Calibration Solution-3
10-200 ng/mL
Solvent: 0.2 mL n-Nonane
EDF-9999-3
Lot: ER031611-01C
Expires: 03/2021
Room Temp. (Do not store cold)
FLAMMABLE

FOR LABORATORY USE ONLY

Method 1613 Cal CS3
Lot #: ER031611-01C - 35052
Rec: 4/23/15 MFR exp. 3/28/21

10-08-15A

Washed and Baked Sodium Sulfate

10/8/15
MP

Supplier	ID #	ID	Lot #		
EMD	SX0760E-20	Sodium Sulfate	XE21G		
Soxhlet extract with methylene chloride for 24 hours			start time: 10/8/15 @ 8:00	end time:	10/9/15 @ 800
Baked at 400C for 4 hours.	batch 1		start time: 10/9/15 @ 1200 400°C	end time:	10/9/15 @ 1600 400°C
Neycraft Furance 2 & 3	batch 2		start time: 10/12/15 @ 800 400°C	end time:	10/12/15 @ 1200 400°C
	batch 3		start time: 10/12/15 @ 1205 400°C	end time:	10/12/15 @ 1605 400°C

_SEP8290

Organic Extraction Worksheet

Method	8290 Separatory Funnel Extraction	Extraction Set	150924A	Extraction Method	SEP8290	Units	mL

Spiked ID 1	EDF-5008 100-500ng/mL 06-29-15B		Surrogate ID 1	EDF-5005 100-500ng/mL 09-24-15A	
Spiked ID 2	EDF-4055 100ng/mL 09-18-15A (spk after micro-conc)		Surrogate ID 2		
Spiked ID 3			Surrogate ID 3		
Spiked ID 4			Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	NA	
Spiked ID 7			Ext. Start Time:	09/24/15 13:00	
Spiked ID 8			Ext. End Time:	09/24/15 14:00	
			GC Requires Extract By:	**09/28/15 17:00**	

pH1	NA		Water Bath Temp Criteria 35/60 °C
pH2	NA		
pH3	NA		

Spiked By: RP **Date** 09/24/15 12:55:00 PM **Witnessed By:** CFM **Date** 09/24/15 12:55:00 PM

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	150924A Blk		0.020mL	2	0.020mL	1	1000mL	0.050mL	NA	09/24/15 13:00	Method Blank
						equip	Rotovap-04 E-WB4				
2	150924A LCS-1		0.005, 0.020mL	1,2	0.020mL	1	1000mL	0.050mL	NA	09/24/15 13:00	Lab Control Spike
						equip	Rotovap-01 E-WB1				
3	AZ21644	AZ21644W01	0.020mL	2	0.020mL	1	980mL	0.050mL	NA	09/24/15 13:00	Asset 77340
						equip	Rotovap-04 E-WB4				
4	AZ21645	AZ21645W01	0.020mL	2	0.020mL	1	980mL	0.050mL	NA	09/24/15 13:00	Asset 77341
						equip	Rotovap-04 E-WB4				

9/25/15 RP

Solvent and Lot#	
Washed/Baked Silica Gel	09-14-15A
Washed/Baked Sodium Sulf	09-22-15A
Washed Glass Wool	09-22-15B
Acidic Silica Gel	09-23-15C
Basic Silica Gel	09-23-15D

Extraction COC Transfer	
Extraction lab employee Initials	RP
GC analyst's initials	BA
Date	09/25/15
Time	1400
Refrigerator	

	Technician's Initials
Scanned By	RP
Sample Preparation	RP
Extraction	RP
Concentration	RP

Modified	09/25/15 1:01:14 PM

Reviewed By: RP **Date** 9/28/15

Injection Log

APPL, Inc.
Instrument: Magneto
EPA Method: 8290

151012.seq

	File Name	File Text	DF	Acq Date	Acq Time
1	151012_HR_01	EDF-4147 80 ng/ml 04/16/15	1.000	10/12/15	12:25
2	151012_HR_03	EDF-9999 CS-1 01/02/15	1.000	10/12/15	14:49
3	151012_HR_04	EDF-9999 CS-2 01/02/15	1.000	10/12/15	16:03
4	151012_HR_05	EDF-9999 CS-3 07/16/15	1.000	10/12/15	17:11
5	151012_HR_06	EDF-9999 CS-4 01/02/15	1.000	10/12/15	18:28
6	151012_HR_07	EDF-9999 CS-5 01/02/15	1.000	10/12/15	19:36
7	151012_HR_30	EDF-9999 CS-3 10/05/15	1.000	10/13/15	22:27
8	151012_HR_31	EDF-4147 80 ng/ml 04/16/15	1.000	10/13/15	23:44
9	151012_HR_33	150924WA_LCS-1 50.000 DF 09/24/15	50.000	10/14/15	2:00
10	151012_HR_34	150925WBLKA 50.000 DF 09/24/15	50.000	10/14/15	3:09
11	151012_HR_35	AZ21644_W01 51.020 DF 09/24/15	51.020	10/14/15	4:18
12	151012_HR_40	EDF-9999 CS-3 10/05/15	1.000	10/14/15	10:09

September 22, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N016885

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on September 12, 2015 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,

Nancy Ribucas for

Glen Gesmundo
QA Manager

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016885

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

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 Test:

Phenol was subcontracted to AETL - Burbank, CA .

ASSET Laboratories

Date: *22-Sep-15*

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016885
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016885-001A	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001B	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001C	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001D	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001E	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001F	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001G	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001H	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015
N016885-001I	EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	9/12/2015	9/22/2015

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

CLIENT: CH2MHill
Lab Order: N016885
Project: SFPP - Norwalk Site
Lab ID: N016885-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **WETCHEM_150914A** QC Batch: **51422**				PrepDate		**9/14/2015**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	9/14/2015 09:30 AM
HEXANE EXTRACTABLE MATERIAL (HEM)							
			EPA 1664 _HEM REV B				
RunID: **WETCHEM_150916B** QC Batch: **51440**				PrepDate		**9/16/2015**	Analyst: **LR**
Oil & Grease	ND	0.79	4.5		mg/L	1	9/16/2015 09:07 AM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **MS5_150914A** QC Batch: **P15VW158**				PrepDate			Analyst: **QBM**
1,1-Dichloroethane	ND	0.022	0.50		ug/L	1	9/14/2015 11:40 AM
1,2-Dichloroethane	ND	0.064	0.50		ug/L	1	9/14/2015 11:40 AM
Benzene	ND	0.036	1.0		ug/L	1	9/14/2015 11:40 AM
Ethylbenzene	ND	0.036	1.0		ug/L	1	9/14/2015 11:40 AM
m,p-Xylene	0.060	0.024	1.0	J	ug/L	1	9/14/2015 11:40 AM
MTBE	ND	0.062	1.0		ug/L	1	9/14/2015 11:40 AM
o-Xylene	ND	0.042	1.0		ug/L	1	9/14/2015 11:40 AM
Tert-Butanol	0.85	0.30	5.0	J	ug/L	1	9/14/2015 11:40 AM
Toluene	ND	0.042	2.0		ug/L	1	9/14/2015 11:40 AM
Xylenes, Total	ND	1.5	2.0		ug/L	1	9/14/2015 11:40 AM
Surr: 1,2-Dichloroethane-d4	101	0	72-119		%REC	1	9/14/2015 11:40 AM
Surr: 4-Bromofluorobenzene	99.7	0	76-119		%REC	1	9/14/2015 11:40 AM
Surr: Dibromofluoromethane	101	0	85-115		%REC	1	9/14/2015 11:40 AM
Surr: Toluene-d8	100	0	81-120		%REC	1	9/14/2015 11:40 AM
TPH EXTRACTABLE BY GC/FID							
		EPA 3510C	**EPA 8015B**				
RunID: **GC3_150917B** QC Batch: **51449**				PrepDate		**9/17/2015**	Analyst: **MDM**
TPH-Diesel (C13-C22)	ND	15	25		ug/L	1	9/17/2015 10:00 PM
TPH-Oil (C23-C36)	ND	14	25		ug/L	1	9/17/2015 10:00 PM
Surr: Octacosane	78.4	0	26-152		%REC	1	9/17/2015 10:00 PM
Surr: p-Terphenyl	86.1	0	57-132		%REC	1	9/17/2015 10:00 PM
GASOLINE RANGE ORGANICS BY GC/FID							
			EPA 8015B				
RunID: **GC4_150916A** QC Batch: **E15VW056**				PrepDate			Analyst: **QBM**

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Lab Order: N016885
Project: SFPP - Norwalk Site
Lab ID: N016885-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS BY GC/FID							
EPA 8015B							
RunID: **GC4_150916A** QC Batch: **E15VW056**				PrepDate			Analyst: **QBM**
TPH-Gasoline (C4-C12)	30	16	50	J	ug/L	1	9/16/2015 05:21 PM
Surr: Chlorobenzene - d5	104	0	74-138		%REC	1	9/16/2015 05:21 PM
MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **AA1_150914B** QC Batch: **51417**				PrepDate	**9/14/2015**		Analyst: **CEI**
Mercury	ND	0.018	0.050		µg/L	1	9/14/2015 12:24 PM
TOTAL METALS BY COLLISION/REACTION CELL ICPMS							
EPA 200.8							
RunID: **ICP7_150914B** QC Batch: **51415**				PrepDate	**9/14/2015**		Analyst: **CEI**
Selenium	ND	0.070	0.50		µg/L	1	9/14/2015 06:34 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: **ICP7_150915A** QC Batch: **51415**				PrepDate	**9/14/2015**		Analyst: **CEI**
Copper	ND	0.26	1.0		µg/L	1	9/15/2015 05:52 PM
Lead	ND	0.053	0.50		µg/L	1	9/14/2015 06:34 PM
Thallium	0.094	0.034	0.50	J	µg/L	1	9/14/2015 06:34 PM
Zinc	0.63	0.039	10	J	µg/L	1	9/14/2015 06:34 PM
TOTAL TPH							
EPA 8015B							
RunID: **GC3_150917B** QC Batch: **R102181**				PrepDate			Analyst: **MDM**
Total TPH	30	16	50	J	ug/L	1	9/17/2015

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **MB-51422**	SampType: **MBLK**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **9/14/2015**	RunNo: **102113**
Client ID: **PBW**	Batch ID: **51422**	TestNo: **SM2540D**		Analysis Date: **9/14/2015**	SeqNo: **2083329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **LCS-51422**	SampType: **LCS**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **9/14/2015**	RunNo: **102113**
Client ID: **LCSW**	Batch ID: **51422**	TestNo: **SM2540D**		Analysis Date: **9/14/2015**	SeqNo: **2083330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	906.000	10	1000	0	90.6	80	120				

Sample ID **N016866-001ADUP**	SampType: **DUP**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **9/14/2015**	RunNo: **102113**
Client ID: **ZZZZZZ**	Batch ID: **51422**	TestNo: **SM2540D**		Analysis Date: **9/14/2015**	SeqNo: **2083332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	125.000	10						125.0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID	MB-51440	SampType:	MBLK	TestCode:	1664_HEM_	Units:	mg/L	Prep Date:	9/16/2015	RunNo:	102149
Client ID:	PBW	Batch ID:	51440	TestNo:	EPA 1664 _H			Analysis Date:	9/16/2015	SeqNo:	2084640

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	ND	4.0									

Sample ID	LCS-51440	SampType:	LCS	TestCode:	1664_HEM_	Units:	mg/L	Prep Date:	9/16/2015	RunNo:	102149
Client ID:	LCSW	Batch ID:	51440	TestNo:	EPA 1664 _H			Analysis Date:	9/16/2015	SeqNo:	2084641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	32.000	4.0	40.00	0	80.0	78	114				

Sample ID	N016885-001AMS	SampType:	MS	TestCode:	1664_HEM_	Units:	mg/L	Prep Date:	9/16/2015	RunNo:	102149
Client ID:	ZZZZZZ	Batch ID:	51440	TestNo:	EPA 1664 _H			Analysis Date:	9/16/2015	SeqNo:	2084644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	36.552	4.6	45.98	0	79.5	78	114				

Sample ID	N016885-001AMSD	SampType:	MSD	TestCode:	1664_HEM_	Units:	mg/L	Prep Date:	9/16/2015	RunNo:	102149
Client ID:	ZZZZZZ	Batch ID:	51440	TestNo:	EPA 1664 _H			Analysis Date:	9/16/2015	SeqNo:	2084645

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	36.404	4.5	44.94	0	81.0	78	114	36.55	0.404	18	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID	MB-51415	SampType:	MBLK	TestCode:	200.8_W_DR	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	PBW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083950

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID	LCS-51415	SampType:	LCS	TestCode:	200.8_W_DR	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	LCSW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083951

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.218	0.50	10.00	0	92.2	85	115				

Sample ID	N016883-001A-MS	SampType:	MS	TestCode:	200.8_W_DR	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083955

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.889	0.50	10.00	2.548	93.4	75	125				

Sample ID	N016883-001A-MSD	SampType:	MSD	TestCode:	200.8_W_DR	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083956

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	12.076	0.50	10.00	2.548	95.3	75	125	11.89	1.56	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	MB-51415	SampType:	MBLK	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	PBW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083905

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.50									
Thallium	ND	0.50									
Zinc	0.727	10									J

Sample ID	LCS-51415	SampType:	LCS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	LCSW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083906

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	9.595	0.50	10.00	0	95.9	85	115				
Thallium	9.139	0.50	10.00	0	91.4	85	115				
Zinc	94.248	10	100.0	0	94.2	85	115				

Sample ID	N016883-001A-MS	SampType:	MS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.921	0.50	10.00	0.4958	104	75	125				
Thallium	10.813	0.50	10.00	0.1258	107	75	125				
Zinc	108.878	10	100.0	17.57	91.3	75	125				

Sample ID	N016883-001A-MSD	SampType:	MSD	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083911

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.899	0.50	10.00	0.4958	104	75	125	10.92	0.199	20	
Thallium	10.840	0.50	10.00	0.1258	107	75	125	10.81	0.252	20	
Zinc	109.973	10	100.0	17.57	92.4	75	125	108.9	1.00	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	MB-51415	SampType:	MBLK	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	PBW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084627

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.517	1.0									J

Sample ID	LCS-51415	SampType:	LCS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	LCSW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084628

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.682	1.0	10.00	0	96.8	85	115				

Sample ID	N016883-001A-MS	SampType:	MS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12.518	1.0	10.00	3.496	90.2	75	125				

Sample ID	N016883-001A-MSD	SampType:	MSD	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084633

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12.651	1.0	10.00	3.496	91.5	75	125	12.52	1.05	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID	MB-51417	SampType:	MBLK	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102109
Client ID:	PBW	Batch ID:	51417	TestNo:	EPA 245.1			Analysis Date:	9/14/2015	SeqNo:	2083320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050									

Sample ID	LCS-51417	SampType:	LCS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102109
Client ID:	LCSW	Batch ID:	51417	TestNo:	EPA 245.1			Analysis Date:	9/14/2015	SeqNo:	2083321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.595	0.050	2.500	0	104	85	115				

Sample ID	N016885-001H-MS	SampType:	MS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102109
Client ID:	ZZZZZZ	Batch ID:	51417	TestNo:	EPA 245.1			Analysis Date:	9/14/2015	SeqNo:	2083322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.503	0.050	2.500	0	100	75	125				

Sample ID	N016885-001H-MSD	SampType:	MSD	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102109
Client ID:	ZZZZZZ	Batch ID:	51417	TestNo:	EPA 245.1			Analysis Date:	9/14/2015	SeqNo:	2083323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.497	0.050	2.500	0	99.9	75	125	2.503	0.262	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID **MB-51449**	SampType: **MBLK**	TestCode: **8015_W_FP_**	Units: **ug/L**	Prep Date: **9/17/2015**	RunNo: **102181**
Client ID: **PBW**	Batch ID: **51449**	TestNo: **EPA 8015B** **EPA 3510C**		Analysis Date: **9/17/2015**	SeqNo: **2085915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	ND	25									
Surr: Octacosane	71.988		80.00		90.0	26	152				
Surr: p-Terphenyl	79.160		80.00		99.0	57	132				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID **MB-R102181** SampType: **MBLK** TestCode: **8015_W_SFP** Units: **ug/L** Prep Date: RunNo: **102181**
Client ID: **PBW** Batch ID: **R102181** TestNo: **EPA 8015B** Analysis Date: **9/17/2015** SeqNo: **2085927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID **E150916LCS**	SampType: **LCS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **102155**
Client ID: **LCSW**	Batch ID: **E15VW056**	TestNo: **EPA 8015B**		Analysis Date: **9/16/2015**	SeqNo: **2084847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	801.000	50	1000	0	80.1	67	136				
Surr: Chlorobenzene - d5	45253.000		50000		90.5	74	138				

Sample ID **E150916MB2**	SampType: **MBLK**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **102155**
Client ID: **PBW**	Batch ID: **E15VW056**	TestNo: **EPA 8015B**		Analysis Date: **9/16/2015**	SeqNo: **2084849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	29.000	50									J
Surr: Chlorobenzene - d5	50547.000		50000		101	74	138				

Sample ID **N016928-003AMS**	SampType: **MS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **102155**
Client ID: **ZZZZZZ**	Batch ID: **E15VW056**	TestNo: **EPA 8015B**		Analysis Date: **9/16/2015**	SeqNo: **2084854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	890.000	50	1000	30.00	86.0	67	136				
Surr: Chlorobenzene - d5	48320.000		50000		96.6	74	138				

Sample ID **N016928-003AMSD**	SampType: **MSD**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **102155**
Client ID: **ZZZZZZ**	Batch ID: **E15VW056**	TestNo: **EPA 8015B**		Analysis Date: **9/16/2015**	SeqNo: **2084855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	886.000	50	1000	30.00	85.6	67	136	890.0	0.450	30	
Surr: Chlorobenzene - d5	47905.000		50000		95.8	74	138		0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P150914LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **LCSW** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.690	0.50	20.00	0	98.4	69	133				
1,2-Dichloroethane	20.330	0.50	20.00	0	102	69	132				
Benzene	19.840	1.0	20.00	0	99.2	81	122				
Ethylbenzene	20.210	1.0	20.00	0	101	73	127				
m,p-Xylene	41.240	1.0	40.00	0	103	76	128				
MTBE	18.930	1.0	20.00	0	94.6	65	123				
o-Xylene	20.170	1.0	20.00	0	101	80	121				
Tert-Butanol	91.290	5.0	100.0	0	91.3	70	130				
Toluene	20.290	2.0	20.00	0	101	77	122				
Xylenes, Total	61.410	2.0	60.00	0	102	75	125				
Surr: 1,2-Dichloroethane-d4	25.240		25.00		101	72	119				
Surr: 4-Bromofluorobenzene	25.320		25.00		101	76	119				
Surr: Dibromofluoromethane	24.740		25.00		99.0	85	115				
Surr: Toluene-d8	25.270		25.00		101	81	120				

Sample ID **P150914LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **LCSS02** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.100	0.50	20.00	0	95.5	69	133	19.69	3.04	20	
1,2-Dichloroethane	19.380	0.50	20.00	0	96.9	69	132	20.33	4.78	20	
Benzene	19.160	1.0	20.00	0	95.8	81	122	19.84	3.49	20	
Ethylbenzene	19.620	1.0	20.00	0	98.1	73	127	20.21	2.96	20	
m,p-Xylene	39.930	1.0	40.00	0	99.8	76	128	41.24	3.23	20	
MTBE	16.120	1.0	20.00	0	80.6	65	123	18.93	16.0	20	
o-Xylene	19.940	1.0	20.00	0	99.7	80	121	20.17	1.15	20	
Tert-Butanol	93.210	5.0	100.0	0	93.2	70	130	91.29	2.08	20	
Toluene	19.560	2.0	20.00	0	97.8	77	122	20.29	3.66	20	
Xylenes, Total	59.870	2.0	60.00	0	99.8	75	125	61.41	2.54	20	
Surr: 1,2-Dichloroethane-d4	24.820		25.00		99.3	72	119		0		

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P150914LCSD**	SampType: **LCSD**	TestCode: **8260_WP_SF**	Units: **ug/L**	Prep Date:	RunNo: **102122**
Client ID: **LCSS02**	Batch ID: **P15VW158**	TestNo: **EPA 8260B**		Analysis Date: **9/14/2015**	SeqNo: **2083700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	25.270		25.00		101	76	119		0		
Surr: Dibromofluoromethane	24.970		25.00		99.9	85	115		0		
Surr: Toluene-d8	24.890		25.00		99.6	81	120		0		

Sample ID **P150914MB3**	SampType: **MBLK**	TestCode: **8260_WP_SF**	Units: **ug/L**	Prep Date:	RunNo: **102122**
Client ID: **PBW**	Batch ID: **P15VW158**	TestNo: **EPA 8260B**		Analysis Date: **9/14/2015**	SeqNo: **2083701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Benzene	ND	1.0									
Ethylbenzene	ND	1.0									
m,p-Xylene	0.080	1.0									J
MTBE	ND	1.0									
o-Xylene	ND	1.0									
Tert-Butanol	ND	5.0									
Toluene	ND	2.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	25.340		25.00		101	72	119				
Surr: 4-Bromofluorobenzene	24.730		25.00		98.9	76	119				
Surr: Dibromofluoromethane	25.130		25.00		101	85	115				
Surr: Toluene-d8	24.990		25.00		100	81	120				

Sample ID **N016839-023AMS**	SampType: **MS**	TestCode: **8260_WP_SF**	Units: **ug/L**	Prep Date:	RunNo: **102122**
Client ID: **ZZZZZZ**	Batch ID: **P15VW158**	TestNo: **EPA 8260B**		Analysis Date: **9/14/2015**	SeqNo: **2083707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.890	0.50	20.00	0	99.4	69	133				
1,2-Dichloroethane	76.700	0.50	20.00	57.79	94.6	69	132				
Benzene	19.510	1.0	20.00	0	97.6	81	122				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **N016839-023AMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **ZZZZZZ** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	19.490	1.0	20.00	0	97.5	73	127				
m,p-Xylene	39.750	1.0	40.00	0.04000	99.3	76	128				
MTBE	18.900	1.0	20.00	0	94.5	65	123				
o-Xylene	19.490	1.0	20.00	0	97.5	80	121				
Tert-Butanol	92.270	5.0	100.0	0	92.3	70	130				
Toluene	19.740	2.0	20.00	0	98.7	77	122				
Xylenes, Total	59.240	2.0	60.00	0	98.7	75	125				
Surr: 1,2-Dichloroethane-d4	24.920		25.00		99.7	72	119				
Surr: 4-Bromofluorobenzene	25.100		25.00		100	76	119				
Surr: Dibromofluoromethane	24.600		25.00		98.4	85	115				
Surr: Toluene-d8	25.130		25.00		101	81	120				

Sample ID **N016839-023AMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **ZZZZZZ** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.880	0.50	20.00	0	99.4	69	133	19.89	0.0503	20	
1,2-Dichloroethane	77.040	0.50	20.00	57.79	96.3	69	132	76.70	0.442	20	
Benzene	19.610	1.0	20.00	0	98.0	81	122	19.51	0.511	20	
Ethylbenzene	19.700	1.0	20.00	0	98.5	73	127	19.49	1.07	20	
m,p-Xylene	40.080	1.0	40.00	0.04000	100	76	128	39.75	0.827	20	
MTBE	19.030	1.0	20.00	0	95.2	65	123	18.90	0.685	20	
o-Xylene	19.740	1.0	20.00	0	98.7	80	121	19.49	1.27	20	
Tert-Butanol	95.940	5.0	100.0	0	95.9	70	130	92.27	3.90	20	
Toluene	19.950	2.0	20.00	0	99.8	77	122	19.74	1.06	20	
Xylenes, Total	59.820	2.0	60.00	0	99.7	75	125	59.24	0.974	20	
Surr: 1,2-Dichloroethane-d4	25.310		25.00		101	72	119		0		
Surr: 4-Bromofluorobenzene	25.490		25.00		102	76	119		0		
Surr: Dibromofluoromethane	25.190		25.00		101	85	115		0		
Surr: Toluene-d8	25.410		25.00		102	81	120		0		

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
Calculations are based on raw values

Advanced Technology Laboratories
3151 W. Post Road
Las Vegas, NV 89118
Tel: 702-307-2659 Fax: 702-307-2691
Marlon Cartin (marlon@atl-labs.com)

CHAIN OF CUSTODY RECORD

DATE: 9/10/15

PAGE: 1 OF 1

LABORATORY CLIENT: **Kinder Morgan Energy Partners, Attn: Steve Defibaugh**
ADDRESS: **1100 Town & Country Road**
CITY: **Orange, CA 92868**
TEL: **714-560-4802** FAX: **714-560-4601** E-MAIL: **james_dye@kindermorgan.com**

CLIENT PROJECT NAME / NUMBER: **SFPP - Norwalk Site**
PROJECT CONTACT: **James Dye**
SAMPLER(S): (SIGNATURE)

P.O. NO.:
QUOTE NO.:
LAB USE ONLY

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ■ 48HR ☐ 72 HR ■ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Report to D. Jablonski/CH2M HILL, cc: KMEP
Direct Bill KMEP/SFPP - Steve Defibaugh-ref. AFE# 81195
"J" flags required/Use lowest possible detection limit - all methods.

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MAT-RIX	NO. OF CONT.	Oil & Grease (1664)	TPH-g, TPH-d & TPH-oil (8015B)	Settleable Solids (SM2540F)	Total Suspended Solids (SM2540D)	Phenol (420.1)	BTEX, 1,1-DCA, 1,2-DCA (8260B)	MTBE & TBA (8260B); 48 Hr TAT	Cu, Pb, Tl, & Zn (200.8)	Se (200.8) & Hg (245.1); 48 Hr TAT	Cr VI (7199)			Comments
	EFF- 09-10	Effluent	9/10/15	0815	WW	24	X	X	X	X	X	X	X	X	X	X			NO16985-1

Relinquished by: (Signature)		Received by: (Signature)	Date: 9-11-15 Time: 10:20AM
Relinquished by: (Signature)	9-11-15 3:44PM	Received by: (Signature)	Date: 9/12/15 Time: 0745
Relinquished by: (Signature)		Received by: (Signature)	Date: Time:

Revised: 08/23/2012

3.3, 3.1 °C IR#2 ICE

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:	9/12/2015	Workorder:	N016885
Rep sample Temp (Deg C):	3.3/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	Golden State Overnight		
Last 4 digits of Tracking No.:	6322/6323	Packing Material Used:	Bubble Wrap
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for Cr6+ was past holding time upon receipt.

Checklist Completed By: MBC For: RLM 9/14/2015

Reviewed By: 09/15/15

ASSET LV Sample Control

From: Marlon B. Cartin <marlon@assetlaboratories.com>
Sent: Tuesday, September 15, 2015 9:38 AM
To: 'ASSET LV Sample Control'
Subject: FW: Re-sampling for expired samples

Forwarding.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Monday, September 14, 2015 9:14 AM
To: 'Vidal.Cortes@ch2m.com'
Cc: 'Molky Brar'
Subject: Re-sampling for expired samples

Hi Vidal,

Below are the tests that we need to re-sample;

Coyote Creek;
Cr+6 – Need 8 or 16 Oz Unpreserved Poly

Effluent;
Nitrate/Nitrite, Cr+6, Turbidity, Settleable Solid- Need 2 x 32 Oz Poly unpreserve and 1 x 8 Oz Poly.

Molky – Please schedule a sample pick-up today anytime after 2:00 PM.

Thanks,

Marlon Cartin
Project Manager
California: 11060 Artesia Blvd., Ste. C, 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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

ASSET LABORATORIES - Serving Clients with Passion and Professionalism

ASSET Laboratories

WORK ORDER Summary

14-Sep-15

WorkOrder: N016885

Client ID: CH2HI03

Project: SFPP - Norwalk Site **QC Level:** RTNE **Date Received:** 9/12/2015

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N016885-001A	EFF-09-10	9/10/2015 8:15:00 AM	9/21/2015	Wastewater		Oil and Grease Sample Prep	☐	☐	☐	WW
			9/21/2015		EPA 1664 _HEM Rev B	Hexane Extractable Material (HEM)	☐	☐	☐	WW
N016885-001B			9/21/2015		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☐	☐	☐	VW
N016885-001C			9/21/2015		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☐	☐	☐	WW
			9/21/2015		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☐	☐	☐	WW
			9/21/2015		EPA 8015B	Total TPH	☐	☐	☐	WW
N016885-001D			9/21/2015		SM2540F	SETTLEABLE MATTER	☐	☐	☐	WW
			9/21/2015			Setteable Matter	☐	☐	☐	WW
N016885-001E			9/21/2015		EPA 7199	Hexavalent Chromium by IC	☑	☐	☐	WW
N016885-001F			9/21/2015		EPA 420.1	PHENOLICS	☐	☐	☑	SUB
N016885-001G			9/16/2015		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
N016885-001H			9/16/2015			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			9/16/2015		EPA 200.8	TOTAL METALS BY COLLISION/REACTION CELL ICPMS	☐	☐	☐	WW
			9/16/2015		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			9/16/2015		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			9/16/2015			MERCURY PREP	☐	☐	☐	WW
N016885-001I			9/21/2015		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			9/21/2015			Total Suspended Solids Prep	☐	☐	☐	WW
			9/21/2015		EPA 180.1	TURBIDITY	☐	☐	☐	WW
N016885-002A	FOLDER		9/16/2015		Folder	Folder	☐	☐	☐	LAB

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Ship To
ATL INC
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: REQUIRED

Tracking #: 529246323

SDS

LVS

A

LAS VEGAS

C89102A

42320327

Print Date: 9/11/2015 4:29 PM

Package 2 of 2

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

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HOLD FOR PICK UP
Signature Type: REQUIRED

Tracking #: 529246322

SDS

LVS

A

LAS VEGAS

C89102A

42320326

Print Date: 9/11/2015 4:29 PM

Package 1 of 2

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

October 01, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017
TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N016885

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on September 12, 2015 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 addendum report. Please incorporate with documentation previously submitted.

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,

Glen Gesmundo
QA Manager

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016885

CASE NARRATIVE

Analytical Comments for EPA 8260B_Addendum:

RPD for Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) is outside criteria for Methylene chloride and Vinyl chloride . Analyte recovery on both met acceptance criteria.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes on QC samples N016839-023A-MS and N016839-023A-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: CH2MHill
Lab Order: N016885
Project: SFPP - Norwalk Site
Lab ID: N016885-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: **MS5_150914A** QC Batch: **P15VW158** PrepDate Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
1,1,1-Trichloroethane	ND	0.068	1.0		ug/L	1	9/14/2015 11:40 AM
1,1,2,2-Tetrachloroethane	ND	0.031	1.0		ug/L	1	9/14/2015 11:40 AM
1,1,2-Trichloroethane	ND	0.062	1.0		ug/L	1	9/14/2015 11:40 AM
1,1-Dichloroethane	ND	0.022	0.50		ug/L	1	9/14/2015 11:40 AM
1,1-Dichloroethene	ND	0.087	1.0		ug/L	1	9/14/2015 11:40 AM
1,2,4-Trichlorobenzene	0.15	0.060	1.0	J	ug/L	1	9/14/2015 11:40 AM
1,2-Dichlorobenzene	0.060	0.040	1.0	J	ug/L	1	9/14/2015 11:40 AM
1,2-Dichloroethane	ND	0.064	0.50		ug/L	1	9/14/2015 11:40 AM
1,2-Dichloropropane	ND	0.062	1.0		ug/L	1	9/14/2015 11:40 AM
1,3-Dichlorobenzene	ND	0.057	1.0		ug/L	1	9/14/2015 11:40 AM
1,4-Dichlorobenzene	ND	0.030	1.0		ug/L	1	9/14/2015 11:40 AM
Acrolein	ND	0.56	20		ug/L	1	9/14/2015 11:40 AM
Acrylonitrile	ND	0.30	20		ug/L	1	9/14/2015 11:40 AM
Benzene	ND	0.036	1.0		ug/L	1	9/14/2015 11:40 AM
Bromodichloromethane	ND	0.031	1.0		ug/L	1	9/14/2015 11:40 AM
Bromoform	ND	0.32	1.0		ug/L	1	9/14/2015 11:40 AM
Bromomethane	ND	0.32	1.0		ug/L	1	9/14/2015 11:40 AM
Carbon tetrachloride	ND	0.057	0.50		ug/L	1	9/14/2015 11:40 AM
Chlorobenzene	ND	0.036	1.0		ug/L	1	9/14/2015 11:40 AM
Chloroethane	ND	0.099	1.0		ug/L	1	9/14/2015 11:40 AM
Chloroform	ND	0.036	1.0		ug/L	1	9/14/2015 11:40 AM
Chloromethane	ND	0.12	1.0		ug/L	1	9/14/2015 11:40 AM
cis-1,3-Dichloropropene	ND	0.044	1.0		ug/L	1	9/14/2015 11:40 AM
Dibromochloromethane	ND	0.072	1.0		ug/L	1	9/14/2015 11:40 AM
Ethylbenzene	ND	0.036	1.0		ug/L	1	9/14/2015 11:40 AM
Hexachlorobutadiene	ND	0.11	1.0		ug/L	1	9/14/2015 11:40 AM
Methylene chloride	ND	0.28	2.0		ug/L	1	9/14/2015 11:40 AM
Naphthalene	0.19	0.048	1.0	J	ug/L	1	9/14/2015 11:40 AM
Tetrachloroethene	ND	0.16	1.0		ug/L	1	9/14/2015 11:40 AM
Toluene	ND	0.042	2.0		ug/L	1	9/14/2015 11:40 AM
trans-1,2-Dichloroethene	ND	0.070	1.0		ug/L	1	9/14/2015 11:40 AM
trans-1,3-Dichloropropene	ND	0.039	1.0		ug/L	1	9/14/2015 11:40 AM
Trichloroethene	ND	0.12	1.0		ug/L	1	9/14/2015 11:40 AM
Vinyl chloride	ND	0.095	0.50		ug/L	1	9/14/2015 11:40 AM
Surr: 1,2-Dichloroethane-d4	101	0	72-119		%REC	1	9/14/2015 11:40 AM
Surr: 4-Bromofluorobenzene	99.7	0	76-119		%REC	1	9/14/2015 11:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Lab Order: N016885
Project: SFPP - Norwalk Site
Lab ID: N016885-001

Client Sample ID: EFF-09-10
Collection Date: 9/10/2015 8:15:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **MS5_150914A**	QC Batch: **P15VW158**			PrepDate			Analyst: **QBM**
Surr: Dibromofluoromethane	101	0	85-115		%REC	1	9/14/2015 11:40 AM
Surr: Toluene-d8	100	0	81-120		%REC	1	9/14/2015 11:40 AM
TOTAL METALS BY COLLISION/REACTION CELL ICPMS							
			EPA 200.8				
RunID: **ICP7_150914B**	QC Batch: **51415**			PrepDate	**9/14/2015**		Analyst: **CEI**
Selenium	ND	0.070	0.50		µg/L	1	9/14/2015 06:34 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **ICP7_150914B**	QC Batch: **51415**			PrepDate	**9/14/2015**		Analyst: **CEI**
Antimony	0.15	0.026	0.50	J	µg/L	1	9/14/2015 06:34 PM
Arsenic	23	0.016	0.10		µg/L	1	9/14/2015 06:34 PM
Beryllium	ND	0.026	0.50		µg/L	1	9/14/2015 06:34 PM
Cadmium	ND	0.0098	0.25		µg/L	1	9/14/2015 06:34 PM
Chromium	0.15	0.086	0.50	J	µg/L	1	9/14/2015 06:34 PM
Copper	ND	0.26	1.0		µg/L	1	9/15/2015 05:52 PM
Lead	ND	0.053	0.50		µg/L	1	9/14/2015 06:34 PM
Nickel	0.47	0.038	1.0	J	µg/L	1	9/14/2015 06:34 PM
Silver	ND	0.023	0.25		µg/L	1	9/14/2015 06:34 PM
Thallium	0.094	0.034	0.50	J	µg/L	1	9/14/2015 06:34 PM
Zinc	0.63	0.039	10	J	µg/L	1	9/14/2015 06:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID **MB-51415**	SampType: **MBLK**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **9/14/2015**	RunNo: **102131**
Client ID: **PBW**	Batch ID: **51415**	TestNo: **EPA 200.8**		Analysis Date: **9/14/2015**	SeqNo: **2083950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **LCS-51415**	SampType: **LCS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **9/14/2015**	RunNo: **102131**
Client ID: **LCSW**	Batch ID: **51415**	TestNo: **EPA 200.8**		Analysis Date: **9/14/2015**	SeqNo: **2083951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.218	0.50	10.00	0	92.2	85	115				

Sample ID **N016883-001A-MS**	SampType: **MS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **9/14/2015**	RunNo: **102131**
Client ID: **ZZZZZZ**	Batch ID: **51415**	TestNo: **EPA 200.8**		Analysis Date: **9/14/2015**	SeqNo: **2083955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.889	0.50	10.00	2.548	93.4	75	125				

Sample ID **N016883-001A-MSD**	SampType: **MSD**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **9/14/2015**	RunNo: **102131**
Client ID: **ZZZZZZ**	Batch ID: **51415**	TestNo: **EPA 200.8**		Analysis Date: **9/14/2015**	SeqNo: **2083956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	12.076	0.50	10.00	2.548	95.3	75	125	11.89	1.56	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	MB-51415	SampType:	MBLK	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	PBW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083905

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Cadmium	0.043	0.25									J
Chromium	ND	0.50									
Lead	ND	0.50									
Nickel	0.224	1.0									J
Thallium	ND	0.50									
Zinc	0.727	10									J

Sample ID	LCS-51415	SampType:	LCS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	LCSW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083906

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.814	0.50	10.00	0	98.1	85	115				
Arsenic	9.301	0.10	10.00	0	93.0	85	115				
Cadmium	9.908	0.25	10.00	0	99.1	85	115				
Chromium	9.516	0.50	10.00	0	95.2	85	115				
Lead	9.595	0.50	10.00	0	95.9	85	115				
Nickel	9.670	1.0	10.00	0	96.7	85	115				
Thallium	9.139	0.50	10.00	0	91.4	85	115				
Zinc	94.248	10	100.0	0	94.2	85	115				

Sample ID	N016883-001A-MS	SampType:	MS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.548	0.50	10.00	0.7628	108	75	125				
Arsenic	15.861	0.10	10.00	6.217	96.4	75	125				
Cadmium	10.449	0.25	10.00	0.05654	104	75	125				
Chromium	10.413	0.50	10.00	0.4801	99.3	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N016883-001A-MS	SampType:	MS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	10.921	0.50	10.00	0.4958	104	75	125				
Nickel	11.365	1.0	10.00	2.292	90.7	75	125				
Thallium	10.813	0.50	10.00	0.1258	107	75	125				
Zinc	108.878	10	100.0	17.57	91.3	75	125				

Sample ID	N016883-001A-MSD	SampType:	MSD	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102131
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/14/2015	SeqNo:	2083911

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	11.515	0.50	10.00	0.7628	108	75	125	11.55	0.287	20	
Arsenic	16.178	0.10	10.00	6.217	99.6	75	125	15.86	1.97	20	
Cadmium	10.350	0.25	10.00	0.05654	103	75	125	10.45	0.949	20	
Chromium	10.325	0.50	10.00	0.4801	98.4	75	125	10.41	0.854	20	
Lead	10.899	0.50	10.00	0.4958	104	75	125	10.92	0.199	20	
Nickel	11.537	1.0	10.00	2.292	92.4	75	125	11.36	1.50	20	
Thallium	10.840	0.50	10.00	0.1258	107	75	125	10.81	0.252	20	
Zinc	109.973	10	100.0	17.57	92.4	75	125	108.9	1.00	20	

Sample ID	MB-51415	SampType:	MBLK	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	PBW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084627

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.517	1.0									J

Sample ID	LCS-51415	SampType:	LCS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	LCSW	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084628

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.682	1.0	10.00	0	96.8	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N016883-001A-MS	SampType:	MS	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084632

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12.518	1.0	10.00	3.496	90.2	75	125				

Sample ID	N016883-001A-MSD	SampType:	MSD	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	9/14/2015	RunNo:	102147
Client ID:	ZZZZZZ	Batch ID:	51415	TestNo:	EPA 200.8			Analysis Date:	9/15/2015	SeqNo:	2084633

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	12.651	1.0	10.00	3.496	91.5	75	125	12.52	1.05	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P150914LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **LCSW** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	19.390	1.0	20.00	0	97.0	67	132				
1,1,2,2-Tetrachloroethane	19.650	1.0	20.00	0	98.2	63	128				
1,1,2-Trichloroethane	19.310	1.0	20.00	0	96.6	75	125				
1,1-Dichloroethane	19.690	0.50	20.00	0	98.4	69	133				
1,1-Dichloroethene	20.060	1.0	20.00	0	100	68	130				
1,2,4-Trichlorobenzene	19.660	1.0	20.00	0	98.3	66	134				
1,2-Dichlorobenzene	20.180	1.0	20.00	0	101	71	122				
1,2-Dichloroethane	20.330	0.50	20.00	0	102	69	132				
1,2-Dichloropropane	19.830	1.0	20.00	0	99.2	75	125				
1,3-Dichlorobenzene	19.830	1.0	20.00	0	99.2	75	124				
1,4-Dichlorobenzene	19.940	1.0	20.00	0	99.7	74	123				
Acrolein	200.410	20	200.0	0	100	75	125				
Acrylonitrile	187.820	20	200.0	0	93.9	75	125				
Benzene	19.840	1.0	20.00	0	99.2	81	122				
Bromodichloromethane	20.020	1.0	20.00	0	100	76	121				
Bromoform	20.330	1.0	20.00	0	102	69	128				
Bromomethane	23.360	1.0	20.00	0	117	53	141				
Carbon tetrachloride	20.080	0.50	20.00	0	100	66	138				
Chlorobenzene	20.570	1.0	20.00	0	103	81	122				
Chloroethane	15.130	1.0	20.00	0	75.6	58	133				
Chloroform	18.620	1.0	20.00	0	93.1	69	128				
Chloromethane	17.120	1.0	20.00	0	85.6	56	131				
cis-1,3-Dichloropropene	20.500	1.0	20.00	0	103	69	131				
Dibromochloromethane	20.480	1.0	20.00	0	102	66	133				
Ethylbenzene	20.210	1.0	20.00	0	101	73	127				
Hexachlorobutadiene	19.720	1.0	20.00	0	98.6	67	131				
Methylene chloride	20.020	2.0	20.00	0	100	63	137				
Naphthalene	19.030	1.0	20.00	0	95.2	54	138				
Tetrachloroethene	20.910	1.0	20.00	0	105	66	128				
Toluene	20.290	2.0	20.00	0	101	77	122				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P150914LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **LCSW** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,2-Dichloroethene	19.410	1.0	20.00	0	97.0	63	137				
trans-1,3-Dichloropropene	20.250	1.0	20.00	0	101	59	135				
Trichloroethene	20.170	1.0	20.00	0	101	70	127				
Vinyl chloride	21.140	0.50	20.00	0	106	50	134				
Surr: 1,2-Dichloroethane-d4	25.240		25.00		101	72	119				
Surr: 4-Bromofluorobenzene	25.320		25.00		101	76	119				
Surr: Dibromofluoromethane	24.740		25.00		99.0	85	115				
Surr: Toluene-d8	25.270		25.00		101	81	120				

Sample ID **P150914LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **LCSS02** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	18.920	1.0	20.00	0	94.6	67	132	19.39	2.45	20	
1,1,2,2-Tetrachloroethane	19.250	1.0	20.00	0	96.2	63	128	19.65	2.06	20	
1,1,2-Trichloroethane	18.900	1.0	20.00	0	94.5	75	125	19.31	2.15	20	
1,1-Dichloroethane	19.100	0.50	20.00	0	95.5	69	133	19.69	3.04	20	
1,1-Dichloroethene	16.860	1.0	20.00	0	84.3	68	130	20.06	17.3	20	
1,2,4-Trichlorobenzene	19.260	1.0	20.00	0	96.3	66	134	19.66	2.06	20	
1,2-Dichlorobenzene	19.560	1.0	20.00	0	97.8	71	122	20.18	3.12	20	
1,2-Dichloroethane	19.380	0.50	20.00	0	96.9	69	132	20.33	4.78	20	
1,2-Dichloropropane	19.240	1.0	20.00	0	96.2	75	125	19.83	3.02	20	
1,3-Dichlorobenzene	19.400	1.0	20.00	0	97.0	75	124	19.83	2.19	20	
1,4-Dichlorobenzene	19.520	1.0	20.00	0	97.6	74	123	19.94	2.13	20	
Acrolein	165.080	20	200.0	0	82.5	75	125	200.4	19.3	20	
Acrylonitrile	185.740	20	200.0	0	92.9	75	125	187.8	1.11	20	
Benzene	19.160	1.0	20.00	0	95.8	81	122	19.84	3.49	20	
Bromodichloromethane	19.410	1.0	20.00	0	97.0	76	121	20.02	3.09	20	
Bromoform	19.890	1.0	20.00	0	99.4	69	128	20.33	2.19	20	
Bromomethane	21.900	1.0	20.00	0	110	53	141	23.36	6.45	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P150914LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **LCSS02** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	19.110	0.50	20.00	0	95.6	66	138	20.08	4.95	20	
Chlorobenzene	20.170	1.0	20.00	0	101	81	122	20.57	1.96	20	
Chloroethane	13.630	1.0	20.00	0	68.2	58	133	15.13	10.4	20	
Chloroform	18.390	1.0	20.00	0	92.0	69	128	18.62	1.24	20	
Chloromethane	16.680	1.0	20.00	0	83.4	56	131	17.12	2.60	20	
cis-1,3-Dichloropropene	19.570	1.0	20.00	0	97.9	69	131	20.50	4.64	20	
Dibromochloromethane	20.350	1.0	20.00	0	102	66	133	20.48	0.637	20	
Ethylbenzene	19.620	1.0	20.00	0	98.1	73	127	20.21	2.96	20	
Hexachlorobutadiene	19.540	1.0	20.00	0	97.7	67	131	19.72	0.917	20	
Methylene chloride	15.490	2.0	20.00	0	77.4	63	137	20.02	25.5	20	R
Naphthalene	19.040	1.0	20.00	0	95.2	54	138	19.03	0.0525	20	
Tetrachloroethene	20.300	1.0	20.00	0	102	66	128	20.91	2.96	20	
Toluene	19.560	2.0	20.00	0	97.8	77	122	20.29	3.66	20	
trans-1,2-Dichloroethene	16.400	1.0	20.00	0	82.0	63	137	19.41	16.8	20	
trans-1,3-Dichloropropene	19.580	1.0	20.00	0	97.9	59	135	20.25	3.36	20	
Trichloroethene	19.400	1.0	20.00	0	97.0	70	127	20.17	3.89	20	
Vinyl chloride	16.800	0.50	20.00	0	84.0	50	134	21.14	22.9	20	R
Surr: 1,2-Dichloroethane-d4	24.820		25.00		99.3	72	119		0		
Surr: 4-Bromofluorobenzene	25.270		25.00		101	76	119		0		
Surr: Dibromofluoromethane	24.970		25.00		99.9	85	115		0		
Surr: Toluene-d8	24.890		25.00		99.6	81	120		0		

Sample ID **P150914MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **PBW** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P150914MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **PBW** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	ND	1.0									
1,2,4-Trichlorobenzene	0.210	1.0									J
1,2-Dichlorobenzene	0.060	1.0									J
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									
1,3-Dichlorobenzene	0.060	1.0									J
1,4-Dichlorobenzene	ND	1.0									
Acrolein	ND	20									
Acrylonitrile	ND	20									
Benzene	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	0.080	1.0									J
Chloromethane	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
Dibromochloromethane	ND	1.0									
Ethylbenzene	ND	1.0									
Hexachlorobutadiene	0.170	1.0									J
Methylene chloride	0.510	2.0									J
Naphthalene	0.250	1.0									J
Tetrachloroethene	ND	1.0									
Toluene	ND	2.0									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Vinyl chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P150914MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **PBW** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	25.340		25.00		101	72	119				
Surr: 4-Bromofluorobenzene	24.730		25.00		98.9	76	119				
Surr: Dibromofluoromethane	25.130		25.00		101	85	115				
Surr: Toluene-d8	24.990		25.00		100	81	120				

Sample ID **N016839-023AMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **ZZZZZZ** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	18.820	1.0	20.00	0	94.1	67	132				
1,1,2,2-Tetrachloroethane	19.480	1.0	20.00	0	97.4	63	128				
1,1,2-Trichloroethane	19.120	1.0	20.00	0	95.6	75	125				
1,1-Dichloroethane	19.890	0.50	20.00	0	99.4	69	133				
1,1-Dichloroethene	20.020	1.0	20.00	0.2200	99.0	68	130				
1,2,4-Trichlorobenzene	18.500	1.0	20.00	0.08000	92.1	66	134				
1,2-Dichlorobenzene	19.610	1.0	20.00	0.05000	97.8	71	122				
1,2-Dichloroethane	76.700	0.50	20.00	57.79	94.6	69	132				
1,2-Dichloropropane	51.660	1.0	20.00	31.92	98.7	75	125				
1,3-Dichlorobenzene	19.420	1.0	20.00	0	97.1	75	124				
1,4-Dichlorobenzene	19.360	1.0	20.00	0	96.8	74	123				
Acrolein	184.020	20	200.0	0	92.0	75	125				
Acrylonitrile	185.820	20	200.0	0	92.9	75	125				
Benzene	19.510	1.0	20.00	0	97.6	81	122				
Bromodichloromethane	18.810	1.0	20.00	0	94.1	76	121				
Bromoform	17.800	1.0	20.00	0	89.0	69	128				
Bromomethane	5.960	1.0	20.00	0	29.8	53	141				S
Carbon tetrachloride	18.650	0.50	20.00	0	93.3	66	138				
Chlorobenzene	19.810	1.0	20.00	0	99.0	81	122				
Chloroethane	15.290	1.0	20.00	0	76.5	58	133				
Chloroform	18.280	1.0	20.00	0.08000	91.0	69	128				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **N016839-023AMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **ZZZZZZ** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	9.600	1.0	20.00	0	48.0	56	131				S
cis-1,3-Dichloropropene	19.760	1.0	20.00	0	98.8	69	131				
Dibromochloromethane	18.690	1.0	20.00	0	93.5	66	133				
Ethylbenzene	19.490	1.0	20.00	0	97.5	73	127				
Hexachlorobutadiene	17.980	1.0	20.00	0	89.9	67	131				
Methylene chloride	18.390	2.0	20.00	0	92.0	63	137				
Naphthalene	18.980	1.0	20.00	0.1200	94.3	54	138				
Tetrachloroethene	19.810	1.0	20.00	0	99.0	66	128				
Toluene	19.740	2.0	20.00	0	98.7	77	122				
trans-1,2-Dichloroethene	18.900	1.0	20.00	0	94.5	63	137				
trans-1,3-Dichloropropene	19.280	1.0	20.00	0	96.4	59	135				
Trichloroethene	19.630	1.0	20.00	0	98.2	70	127				
Vinyl chloride	19.560	0.50	20.00	0	97.8	50	134				
Surr: 1,2-Dichloroethane-d4	24.920		25.00		99.7	72	119				
Surr: 4-Bromofluorobenzene	25.100		25.00		100	76	119				
Surr: Dibromofluoromethane	24.600		25.00		98.4	85	115				
Surr: Toluene-d8	25.130		25.00		101	81	120				

Sample ID **N016839-023AMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **ZZZZZZ** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	18.880	1.0	20.00	0	94.4	67	132	18.82	0.318	20	
1,1,2,2-Tetrachloroethane	19.830	1.0	20.00	0	99.2	63	128	19.48	1.78	20	
1,1,2-Trichloroethane	19.430	1.0	20.00	0	97.2	75	125	19.12	1.61	20	
1,1-Dichloroethane	19.880	0.50	20.00	0	99.4	69	133	19.89	0.0503	20	
1,1-Dichloroethene	19.870	1.0	20.00	0.2200	98.3	68	130	20.02	0.752	20	
1,2,4-Trichlorobenzene	19.050	1.0	20.00	0.08000	94.9	66	134	18.50	2.93	20	
1,2-Dichlorobenzene	19.720	1.0	20.00	0.05000	98.4	71	122	19.61	0.559	20	
1,2-Dichloroethane	77.040	0.50	20.00	57.79	96.3	69	132	76.70	0.442	20	

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016885
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **N016839-023AMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **102122**
Client ID: **ZZZZZZ** Batch ID: **P15VW158** TestNo: **EPA 8260B** Analysis Date: **9/14/2015** SeqNo: **2083708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	52.000	1.0	20.00	31.92	100	75	125	51.66	0.656	20	
1,3-Dichlorobenzene	19.510	1.0	20.00	0	97.6	75	124	19.42	0.462	20	
1,4-Dichlorobenzene	19.540	1.0	20.00	0	97.7	74	123	19.36	0.925	20	
Acrolein	183.940	20	200.0	0	92.0	75	125	184.0	0.0435	20	
Acrylonitrile	184.680	20	200.0	0	92.3	75	125	185.8	0.615	20	
Benzene	19.610	1.0	20.00	0	98.0	81	122	19.51	0.511	20	
Bromodichloromethane	19.270	1.0	20.00	0	96.4	76	121	18.81	2.42	20	
Bromoform	18.440	1.0	20.00	0	92.2	69	128	17.80	3.53	20	
Bromomethane	6.740	1.0	20.00	0	33.7	53	141	5.960	12.3	20	S
Carbon tetrachloride	19.040	0.50	20.00	0	95.2	66	138	18.65	2.07	20	
Chlorobenzene	20.110	1.0	20.00	0	101	81	122	19.81	1.50	20	
Chloroethane	15.570	1.0	20.00	0	77.8	58	133	15.29	1.81	20	
Chloroform	18.460	1.0	20.00	0.08000	91.9	69	128	18.28	0.980	20	
Chloromethane	10.010	1.0	20.00	0	50.0	56	131	9.600	4.18	20	S
cis-1,3-Dichloropropene	19.540	1.0	20.00	0	97.7	69	131	19.76	1.12	20	
Dibromochloromethane	18.980	1.0	20.00	0	94.9	66	133	18.69	1.54	20	
Ethylbenzene	19.700	1.0	20.00	0	98.5	73	127	19.49	1.07	20	
Hexachlorobutadiene	18.880	1.0	20.00	0	94.4	67	131	17.98	4.88	20	
Methylene chloride	18.500	2.0	20.00	0	92.5	63	137	18.39	0.596	20	
Naphthalene	19.820	1.0	20.00	0.1200	98.5	54	138	18.98	4.33	20	
Tetrachloroethene	20.070	1.0	20.00	0	100	66	128	19.81	1.30	20	
Toluene	19.950	2.0	20.00	0	99.8	77	122	19.74	1.06	20	
trans-1,2-Dichloroethene	19.020	1.0	20.00	0	95.1	63	137	18.90	0.633	20	
trans-1,3-Dichloropropene	19.450	1.0	20.00	0	97.3	59	135	19.28	0.878	20	
Trichloroethene	19.790	1.0	20.00	0	99.0	70	127	19.63	0.812	20	
Vinyl chloride	19.510	0.50	20.00	0	97.6	50	134	19.56	0.256	20	
Surr: 1,2-Dichloroethane-d4	25.310		25.00		101	72	119		0		
Surr: 4-Bromofluorobenzene	25.490		25.00		102	76	119		0		
Surr: Dibromofluoromethane	25.190		25.00		101	85	115		0		
Surr: Toluene-d8	25.410		25.00		102	81	120		0		

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

nancy@assetlaboratories.com

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Thursday, October 01, 2015 11:21 AM
To: Vidal.Cortes@ch2m.com
Cc: nancy@assetlaboratories.com
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Hi Vidal,

Per conversation with you, we will just report the additional analytes of Metals and VOC from the original sample. We will run 2-CEVE from the sample that your provide us yesterday. This is for the annual sampling at KMEP.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Vidal.Cortes@ch2m.com [mailto:Vidal.Cortes@ch2m.com]
Sent: Wednesday, September 30, 2015 3:13 PM
To: marlon@assetlaboratories.com
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Please run the samples for metals. I'm going to the site now to collect those samples, we are still within the month. How many VOAs are needed for the analysis?

-Vidal

From: Cortes, Vidal/SCO
Sent: Wednesday, September 30, 2015 12:40 PM
To: 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Marlon,

Per table 5, I have not seen results for several priority pollutants. I just want to make sure I will be receiving them soon.

Thanks,

Vidal

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Wednesday, September 30, 2015 11:55 AM
To: Cortes, Vidal/SCO <Vidal.Cortes@ch2m.com>
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Hi Vidal,

We're just waiting for the sub. I'll send another follow-up today.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 | F: 702.307.2691 | M: 702.439.0421

From: Vidal.Cortes@ch2m.com [mailto:Vidal.Cortes@ch2m.com]
Sent: Wednesday, September 30, 2015 11:37 AM
To: marlon@assetlaboratories.com
Subject: RE: COC and Work Order Summary for Samples Received 9/12/2015

Any more results for annual sampling, Marlon?

-vidal

From: ASSET LV Sample Control [mailto:samplecontrol.lv@assetlaboratories.com]
Sent: Monday, September 14, 2015 12:29 PM
To: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>; Cortes, Vidal/SCO <Vidal.Cortes@ch2m.com>
Subject: COC and Work Order Summary for Samples Received 9/12/2015

Enclosed are COC and WO Summary for samples received 9/12/2015. If you have any questions, please contact your Project Manager listed below.

Marlon Cartin
3151 W. Post Road
Las Vegas, Nevada
89118
Tel. No.: (702)-307-2659 Ext. 410
Cel. No.: (702)-439-0421
Email: marlon@assetlaboratories.com

Thank you for using ASSET Laboratories.

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www.assetlaboratories.com

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Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attention: Marlon Cartin

Number of Pages	**5**
Date Received	**09/11/2015**
Date Reported	**09/21/2015**

Job Number	Order Date	Client
78234	09/11/2015	ASSET

Project ID: N016884
Project Name: PO# N16884A

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

AETL
ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

78234

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Asset Laboratories	**Report to:**	**Bill to:**	**EDD Requirement**	**QA/QC**	**Sampe Receipt Condition**
Address:	**Company:**	**Address:**	Excel EDD ☐	RTNE ☐	Y N
Address:	**Email:**		Geotracker ☐	RWQCB ☐	1. Chilled ☐ ☐
Phone: **Fax:**	**Address:**	**Email to:** **PO#**	Labspec ☐	CalTrans ☐	2. Headspace ☐ ☐
Submitted By: Molky Brar		**Phone:** **Fax:**	Others ☐	Level III ☐	3. Container Intact ☐ ☐
Title:	**Phone:** **Fax:**		Specify:	LEVEL IV ☐	4. Seal Present ☐ ☐
Signature: **Date:**	**Sampled By:**		Global ID:	Regulatory ☐	5. IR number
I hereby authorize ASSET Labs to perform the tests indicated below:				Specify State:	6. Method of Cooling
Project Name:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*				Sample Temp:
Project Number:	*Signature:* *Date*				

Matrix			
Ground ☐	Sediment ☐		
Potable ☐	Soil ☐		
NPDES ☐	Other Solid ☐		
Surface ☐			

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Phenols	total sulfide	Cyanide	BOD	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	78234.01	EFF-09-10	9/10/15	0815	ww			X	X	X	X		ES		%	
2																
3																
4																
5																
6																
7																
8																
9																
10																

Courier:

Tracking No.

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
	09/11/15 1410		09/11/15 1410
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT)

- ☐ A < 24 Hrs or Same Day TAT
- ☐ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☐ E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

Terms

1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis. TAT and Surcharges will vary.

Preservatives:				**Container Type:**		
H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C	T = Tube	V = VOA	P = Pint
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$		J = Jar	B = Tedlar	G = Glass
Others/Specify:				M = Metal	P = Plastic	C = Can

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

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

14-Sep-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM 5210 B	SM4500-CN E	SM4500-S-2D
N016884-001A / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	32OZP	1		
N016884-001C / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP			1
N016884-001H / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	16OZP		1	

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

Please use PO#:N16884A Please email Invoices and Account Receivable Statements to AssetAP@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 BOD by 5210, Sulfide by SM4500S-2D and CN by SM 4500CN-E.

		Date/Time		Date/Time
Relinquished by:		9/14/15 @ 1700	**Received by:**	
Relinquished by:			**Received by:**	

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

AETL
2834 North Naomi Street
Burbank, CA 91504

TEL: (818) 845-8200
FAX: (818) 845-8840
Acct #:

Field Sampler: James Dye

14-Sep-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 420.1		
N016885-001F / EFF-09-10	Wastewater	9/10/2015 8:15:00 AM	32OZA	1		

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

Please use PO#: N16885A Please email Invoices and Account Receivable Statements to AssetAP@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 Phenols by EPA 420.1.

		Date/Time		Date/Time
Relinquished by:		9/14/15 @ 17:00	**Received by:**	
Relinquished by:			**Received by:**	

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Ordered By

ASSET Laboratories **3151-3153 W Post Road** **Las Vegas, NV 89118-**	**Project ID: N016884** **Date Received 09/11/2015** **Date Reported 09/21/2015**

Telephone: (702)307-2659
Attention: Marlon Cartin

Job Number	Order Date	Client
78234	09/11/2015	ASSET

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 09/11/2015.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
78234.01	N016884-001/EFF-09-10	09/10/2015	Aqueous	3

Method ^ Submethod	*Req Date*	*Priority*	*TAT*	*Units*
420.1	09/18/2015	2	Normal	mg/L
SM-4500-CN-E	09/18/2015	2	Normal	mg/L
SM-4500-S=D ^ TOTAL S	09/18/2015	2	Normal	mg/L
SM5210B	09/18/2015	2	Normal	mg/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

Ordered By

ASSET Laboratories
3151-3153 W Post Road
Las Vegas, NV 89118-

Telephone: (702)307-2659
Attn: Marlon Cartin
Page: **2**

Project ID: N016884
Project Name: PO# N16884A

AETL Job Number	Submitted	Client
78234	09/11/2015	ASSET

Method: 420.1, Phenolics, Total Recoverable, Spectrophotometric, Manual

QC Batch No: 091115

Our Lab I.D.			Method Blank	**78234.01**			
Client Sample I.D.				N016884-001 /EFF-09-10			
Date Sampled				**09/10/2015**			
Date Prepared			**09/11/2015**	**09/11/2015**			
Preparation Method			**420.1**	**420.1**			
Date Analyzed			**09/11/2015**	**09/11/2015**			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Phenolic compounds as phenol	**0.15**	**0.30**	**ND**	**ND**			

QUALITY CONTROL REPORT

QC Batch No: 091115; Dup or Spiked Sample: 78234.01; LCS: Clean Water; QC Prepared: 09/11/2015; QC Analyzed: 09/11/2015; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Phenol	**0.00**	**0.500**	**0.500**	**100**	**0.500**	**0.496**	**99.2**	**<1**	**80-120**	**<15**

QC Batch No: 091115; Dup or Spiked Sample: 78234.01; LCS: Clean Water; QC Prepared: 09/11/2015; QC Analyzed: 09/11/2015; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Phenol	**0.500**	**0.427**	**85.4**	**0.500**	**0.438**	**87.6**	**2.5**	**80-120**	**<20**	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

October 28, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N016908

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on September 15, 2015 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,

Glen Gesmundo
QA Manager

CASE NARRATIVE

AMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

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.

Analytical Comments for EPA 300.0:

Dilution was necessary due to precipitation of sample upon the addition of eluent.

ASSET Laboratories

Date: *28-Oct-15*

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N016908
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N016908-001A	EFF-09-14	Wastewater	9/14/2015 10:00:00 AM	9/15/2015	10/28/2015
N016908-001B	EFF-09-14	Wastewater	9/14/2015 10:00:00 AM	9/15/2015	10/28/2015
N016908-001C	EFF-09-14	Wastewater	9/14/2015 10:00:00 AM	9/15/2015	10/28/2015
N016908-001D	EFF-09-14	Wastewater	9/14/2015 10:00:00 AM	9/15/2015	10/28/2015

CLIENT: CH2MHill
Lab Order: N016908
Project: SFPP - Norwalk Site
Lab ID: N016908-001

Client Sample ID: EFF-09-14
Collection Date: 9/14/2015 10:00:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SETTLEABLE MATTER							
SM2540F							
RunID: **WETCHEM_150915D** QC Batch: **51430** PrepDate: **9/15/2015** Analyst: **QBM**							
Settleable Matter	ND	0.090	0.090		ml/L	1	9/15/2015
TURBIDITY							
SM 2130B							
RunID: **WETCHEM_150915A** QC Batch: **R102127** PrepDate: Analyst: **LR**							
Turbidity	0.21	0.10	0.10		NTU	1	9/15/2015 09:00 AM
HEXAVALENT CHROMIUM BY IC							
EPA 7199							
RunID: **IC7_150915A** QC Batch: **R102142** PrepDate: Analyst: **RB**							
Hexavalent Chromium	0.061	0.015	0.20	J	µg/L	1	9/15/2015 09:36 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **IC2_150915A** QC Batch: **R102139** PrepDate: Analyst: **QBM**							
Nitrate/Nitrite as N	1.2	0.057	0.50		mg/L	5	9/15/2015 11:53 AM

Qualifiers:

B	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

CLIENT: CH2MHill
Work Order: N016908
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID: **MB-51430**	SampType: **MBLK**	TestCode: **160.5_2540F_**	Units: **ml/L**	Prep Date: **9/15/2015**	RunNo: **102133**						
Client ID: **PBW**	Batch ID: **51430**	TestNo: **SM2540F**		Analysis Date: **9/15/2015**	SeqNo: **2084008**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Settleable Matter	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016908
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID: **MB-R102127**	SampType: **MBLK**	TestCode: **2130_W**	Units: **NTU**	Prep Date:	RunNo: **102127**
Client ID: **PBW**	Batch ID: **R102127**	TestNo: **SM 2130B**		Analysis Date: **9/15/2015**	SeqNo: **2083855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID: **N016908-001CDUP**	SampType: **DUP**	TestCode: **2130_W**	Units: **NTU**	Prep Date:	RunNo: **102127**
Client ID: **ZZZZZZ**	Batch ID: **R102127**	TestNo: **SM 2130B**		Analysis Date: **9/15/2015**	SeqNo: **2083857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.200	0.10						0.2100	4.88	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016908
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO3/NO2

Sample ID: **MB-R102139**	SampType: **MBLK**	TestCode: **300_W_NO3/**	Units: **mg/L**	Prep Date:	RunNo: **102139**
Client ID: **PBW**	Batch ID: **R102139**	TestNo: **EPA 300.0**		Analysis Date: **9/15/2015**	SeqNo: **2118899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.10									

Sample ID: **LCS-R102139**	SampType: **LCS**	TestCode: **300_W_NO3/**	Units: **mg/L**	Prep Date:	RunNo: **102139**
Client ID: **LCSW**	Batch ID: **R102139**	TestNo: **EPA 300.0**		Analysis Date: **9/15/2015**	SeqNo: **2118900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.862	0.10	5.000	0	97.2	90	110				

Sample ID: **N016908-001ADUP**	SampType: **DUP**	TestCode: **300_W_NO3/**	Units: **mg/L**	Prep Date:	RunNo: **102139**
Client ID: **ZZZZZZ**	Batch ID: **R102139**	TestNo: **EPA 300.0**		Analysis Date: **9/15/2015**	SeqNo: **2118902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.115	0.50						1.205	7.76	20	

Sample ID: **N016908-001AMS**	SampType: **MS**	TestCode: **300_W_NO3/**	Units: **mg/L**	Prep Date:	RunNo: **102139**
Client ID: **ZZZZZZ**	Batch ID: **R102139**	TestNo: **EPA 300.0**		Analysis Date: **9/15/2015**	SeqNo: **2118903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.760	0.50	25.00	1.205	98.2	80	120				

Sample ID: **N016908-001AMSD**	SampType: **MSD**	TestCode: **300_W_NO3/**	Units: **mg/L**	Prep Date:	RunNo: **102139**
Client ID: **ZZZZZZ**	Batch ID: **R102139**	TestNo: **EPA 300.0**		Analysis Date: **9/15/2015**	SeqNo: **2118906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	25.410	0.50	25.00	1.205	96.8	80	120	25.76	1.37	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016908
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID: **MB-R102142** SampType: **MBLK** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **102142**
Client ID: **PBW** Batch ID: **R102142** TestNo: **EPA 7199** Analysis Date: **9/15/2015** SeqNo: **2084465**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.034	0.20									J

Sample ID: **LCS-R102142** SampType: **LCS** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **102142**
Client ID: **LCSW** Batch ID: **R102142** TestNo: **EPA 7199** Analysis Date: **9/15/2015** SeqNo: **2084466**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.788	0.20	5.000	0	95.8	90	110				

Sample ID: **N016908-001BDUP** SampType: **DUP** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **102142**
Client ID: **ZZZZZZ** Batch ID: **R102142** TestNo: **EPA 7199** Analysis Date: **9/15/2015** SeqNo: **2084468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.036	0.20						0.06110	0	20	J

Sample ID: **N016908-001BMS** SampType: **MS** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **102142**
Client ID: **ZZZZZZ** Batch ID: **R102142** TestNo: **EPA 7199** Analysis Date: **9/15/2015** SeqNo: **2084469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.002	0.20	1.000	0.06110	94.1	85	115				

Sample ID: **N016908-001BMSD** SampType: **MSD** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **102142**
Client ID: **ZZZZZZ** Batch ID: **R102142** TestNo: **EPA 7199** Analysis Date: **9/15/2015** SeqNo: **2084470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.989	0.20	1.000	0.06110	92.8	85	115	1.002	1.33	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N016908
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID: **N016907-001AREP** SampType: **DUP** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **102142**
Client ID: **ZZZZZZ** Batch ID: **R102142** TestNo: **EPA 7199** Analysis Date: **9/15/2015** SeqNo: **2084472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.111	0.20						0.1162	0	20	J

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

Advanced Technology Laboratories
3151 W. Post Road
Las Vegas, NV 89118
Tel: 702-307-2659 Fax: 702-307-2691
Marlon Cartin (marlon@atl-labs.com)

9/14/15

1 OF 1

LABORATORY CLIENT: **Kinder Morgan Energy Partners, Attn: Steve Defibaugh**
ADDRESS: **1100 Town & Country Road**
CITY: **Orange, CA 92868**
TEL: **714-560-4802** FAX: **714-560-4601** E-MAIL: james_dye@kindermorgan.com

CLIENT PROJECT NAME / NUMBER: **SFPP - Norwalk Site**
PROJECT CONTACT: **James Dye**
SAMPLER(S): (SIGNATURE)

P.O. NO.:
QUOTE NO.:
LAB USE ONLY:

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ■ 48HR ☐ 72 HR ■ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Report to D. Jablonski/CH2M HILL, cc: KMEP
Direct Bill KMEP/SFPP - Steve Defibaugh-ref. AFE# 81195
"J" flags required/Use lowest possible detection limit - all methods.

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MAT-RIX	NO. OF CONT.	Turbidity (SM2130B)	Cr VI (7199)	Nitrate + Nitrite (as N) EPA 300.0	Settleable Solids (SM2540F)	Comments
	EFF-09-14	Effluent	9/14/2015	10:00	WW	5	X	X	X	X	N016909B-1

Relinquished by: (Signature)		Received by: (Signature)	Date: 9/14/15 Time: 1300
Relinquished by: (Signature) 9-14-15 4:24 PM		Received by: (Signature)	Date: 9/15/15 Time: 0754
Relinquished by: (Signature)		Received by: (Signature)	Date: Time:

Revised: 08/23/12

2-60
1 of 2

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:	9/15/2015	Workorder:	N016907
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: Golden State Overnight

Last 4 digits of Tracking No.: 3598 Packing Material Used: Bubble Wrap

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☐	NA ☑
15. Did the bottle labels indicate correct preservatives used?	Yes ☐	No ☐	NA ☑
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: MBC For: RLM 09/15/15

Reviewed By: gog 09/17/15

ASSET Laboratories

WORK ORDER Summary

15-Sep-15

WorkOrder: N016908

Client ID: CH2HI03

Project: SFPP - Norwalk Site **QC Level:** RTNE **Date Received:** 9/15/2015

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N016908-001A	EFF-09-14	9/14/2015 10:00:00 AM	9/22/2015	Wastewater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			9/22/2015		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N016908-001B			9/22/2015		EPA 7199	Hexavalent Chromium by IC	☐	☐	☐	WW
N016908-001C			9/22/2015		SM 2130B	TURBIDITY	☐	☐	☐	WW
N016908-001D			9/22/2015		SM2540F	SETTLEABLE MATTER	☐	☐	☐	WW
N016908-002A	FOLDER		9/22/2015		Folder	Folder	☐	☐	☐	LAB

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Ship To
ATL INC
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: REQUIRED

Tracking #: 529263598

CPS

LVS **A**

LAS VEGAS

C89102A

42379575

Print Date: 9/14/2015 4:47 PM

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

October 08, 2015

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N017082

RE: SFPP-Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on October 01, 2015 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.

The attached report is the final hard copy pertaining to the subcontracted tests for the above project.

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,

Nancy Litucas for

Glen Gesmundo
QA Manager

This cover letter is an integral part of this analytical report.

ASSET Laboratories

Date: *08-Oct-15*

CLIENT: CH2MHill
Project: SFPP-Norwalk Site
Lab Order: N017082
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N017082-001A	EFF-09-30	Wastewater	9/30/2015 4:00:00 PM	10/1/2015	

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Advanced Technology Laboratories
3151 W. Post Road
Las Vegas, NV 89118
Tel: 702-307-2659 Fax: 702-307-2691
Marlon Cartin (marlon@atl-labs.com)

CHAIN OF CUSTODY RECORD

DATE: 09/30/15

PAGE: 1 OF 2

LABORATORY CLIENT: **Kinder Morgan Energy Partners, Attn: Steve Defibaugh**
ADDRESS: **1100 Town & Country Road**
CITY: **Orange, CA 92868**
TEL: **714-560-4802** FAX: **714-560-4601** E-MAIL: james_dye@kindermorgan.com

CLIENT PROJECT NAME / NUMBER: **SFPP - Norwalk Site**
PROJECT CONTACT: **James Dye**
SAMPLER(S) (SIGNATURE)

P.O. NO.:
QUOTE NO.:
LAB USE ONLY

TURNAROUND TIME
☐ SAME DAY ☑ 24 HR ■ 48HR ☐ 72 HR ■ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Report to D. Jablonski/CH2M HILL, cc: KMEP
Direct Bill KMEP/SFPP - Steve Defibaugh-ref. AFE# 81195
"J" flags required/Use lowest possible detection limit - all methods.

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MAT-RIX	NO. OF CONT.	Oil & Grease (1664)	TPH-g, TPH-d, and TPH-oil (8015B)	Total TPH (as TPH-g, TPH-d, and TPH-oil) (8015B)	Settleable Solids (SM2540F)	Total Suspended Solids (SM2540D)	Phenol (420.1)	~~BTEX, Total Xylenes, 1,1-DCA, 1,2-DCA, MTBE, TBA~~ & Remaining Priority Pollutant VOCs (see attached list)	~~Cu, Pb, Tl, Zn, Se (200.8); Hg (245.1)~~ and Remaining Priority Pollutants Metals (see attached list)	Cr VI (7199)				Comments
	EFF- 09-30	Effluent	9/30/15	1600	WW	3							X	X					24 HR TAT for ~~Metals~~ and VOCs

NO17082-1

Relinquished by: (Signature) 9-30-15 4:30PM	Received by: (Signature)	Date: 9-30-15	Time: 4:30PM
Relinquished by: (Signature) 9-30-15 4:50PM	Received by: (Signature)	Date: 10/1/15	Time: 0742
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Revised: 08/23/2012

8-4°C
IR#2

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:	10/1/2015	Workorder:	N017082
Rep sample Temp (Deg C):	3.4	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: Golden State Overnight

Last 4 digits of Tracking No.: 4960 Packing Material Used: Bubble Wrap

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☐	NA ☑
15. Did the bottle labels indicate correct preservatives used?	Yes ☐	No ☐	NA ☑
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: MBC for: RLM 10-01-2015

Reviewed By: 10/2/15

ASSET Laboratories

WORK ORDER Summary

01-Oct-15

WorkOrder: N017082

Client ID: CH2HI03

Project: SFPP-Norwalk Site **QC Level:** RTNE **Date Received:** 10/1/2015

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N017082-001A	EFF-09-30	9/30/2015 4:00:00 PM	10/2/2015	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
			10/2/2015		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
N017082-002A	FOLDER		10/2/2015		Folder	Folder	☐	☐	☐	LAB

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

Ship From
ADVANCED TECHNOLOGY LABORATORIES, INC.
MARLON CARTIN
3151 W. POST RD.
LAS VEGAS, NV 89118

Ship To
ENTHALPY ANALYTICAL
SAMPLE RECEIVING
806 N. BATAVIA
ORANGE, CA 92868

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

Delivery Instructions:

Signature Type: REQUIRED

Tracking #: 529464848 **CPS**

ORC **D**

ORANGE

D92865A

43096753

Print Date: 10/1/2015 2:01 PM

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

Enthalpy Analytical
806 N. Batavia
Orange, CA 92868

TEL: (714) 771-6900
FAX: (714) 538-1209
Acct #:

Field Sampler: James Dye

01-Oct-15

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 8260B		
N017082-001A / EFF-09-30	Wastewater	9/30/2015 4:00:00 PM	VOA	1		

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

Please use PO#: N17082A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 1-DAY TAT.

Please analyze 2-CEVE by EPA 8260. Report down to MDL.

		Date/Time		Date/Time
Relinquished by:		10/1/15 14:00	**Received by:**	
Relinquished by:			**Received by:**	

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Ship To
ATL INC
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: REQUIRED

Tracking #: 529454960 **CPS**

LVS **A**

LAS VEGAS

C89102A

43054073

Print Date: 9/30/2015 4:46 PM

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

Enthalpy Analytical, Inc.
Formerly Associated Labs
806 N. Batavia - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.associatedlabs.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client:	Asset Laboratories
Address:	3151-3153 W. Post Road Las Vegas, NV 89118
Attn:	Marlon Cartin
Comments:	P.O. #: N17082A

Lab Request:	360929
Report Date:	10/05/2015
Date Received:	10/02/2015
Client ID:	12257

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
360929-001	N017082-001A / EFF-09-30

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Report Review performed by: Jennifer Wu, QA/QC Scientist

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 45 days from date reported.

Matrix:	Water	**Client:**	Asset Laboratories	**Collector:**	Client
Sampled:	09/30/2015 16:00	**Site:**			
Sample #:	**360929-001**	**Client Sample #:**	N017082-001A / EFF-09-30	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8260B *NELAC*	Prep Method: EPA 5030B						QCBatchID: QC1158503		
2-Chloroethyl Vinyl Ether	ND	1	0.23	5	ug/L	10/03/15	10/03/15	ZZ	

Surrogate	*% Recovery*	*Limits*	*Notes*
1,2-Dichloroethane-d4 (SUR)	*103*	*70-145*	
4-Bromofluorobenzene (SUR)	*91*	*70-145*	
Dibromodifluoromethane (SUR)	*102*	*70-145*	
Toluene-d8 (SUR)	*89*	*70-145*	

QCBatchID: QC1158503 **Analyst:** bbuilt **Method:** EPA 8260B

Matrix: Water **Analyzed:** 10/03/2015 **Instrument:** VOA-MS (group)

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1158503MB1					
1,1-Dichloroethene	ND	ug/L	0.13	0.5	
2-Chloroethyl Vinyl Ether	ND	ug/L	0.23	5	
Benzene	ND	ug/L	0.071	0.5	
Chlorobenzene	ND	ug/L	0.075	0.5	
Methyl-t-butyl Ether (MTBE)	ND	ug/L	0.068	0.5	
Toluene	ND	ug/L	0.078	0.5	
Trichloroethene	ND	ug/L	0.078	0.5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1158503LCS1											
1,1-Dichloroethene	25		24		ug/L	96			59-172		
Benzene	25		25		ug/L	100			62-137		
Chlorobenzene	25		24		ug/L	96			60-133		
Methyl-t-butyl Ether (MTBE)	25		22		ug/L	88			62-137		
Toluene	25		24		ug/L	96			59-139		
Trichloroethene	25		24		ug/L	96			66-142		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1158503MS1, QC1158503MSD1												**Source: 360929-001**
1,1-Dichloroethene	ND	25	25	24	22	ug/L	96	88	8.7	59-172	22	
Benzene	ND	25	25	24	24	ug/L	96	96	0.0	62-137	24	
Chlorobenzene	ND	25	25	24	24	ug/L	96	96	0.0	60-133	24	
Methyl-t-butyl Ether (MTBE)	ND	25	25	23	22	ug/L	92	88	4.4	62-137	21	
Toluene	ND	25	25	24	24	ug/L	96	96	0.0	59-139	21	
Trichloroethene	ND	25	25	24	23	ug/L	96	92	4.3	66-142	21	

Data Qualifiers and Definitions

Qualifiers

B	Analyte was present in an associated method blank. Associated sample data is qualified.
B1	Analyte was present in an sample and associated method blank greater than MDL but less than DRL. Associated sample data was reported with qualifier.
BQ1	No valid test replicates. Result may be greater. Best result was reported with qualifier. Sample toxicity possible.
BQ2	No valid test replicates.
BQ3	Minimum DO is less than 1.0 mg/L. Result may be greater and reported with qualifier.
C	Laboratory contamination.
D	RPD was not within control limits, the sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied
DW	Sample result is calculated on a dry weigh basis
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of refrigerator was out of acceptance limit due to technical difficulty.
Q1	Analyte Calibration Verification exceeds criteria and the result was estimated and reported with qualifier.
Q2	Analyte calibration was not verified and the result was estimated and reported with qualifier.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated and reported with qualifier.
Q4	Analyte result out of calibration range. Result was estimated and reported with qualifier
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request
T4	Sample was analyzed out of hold time per client's request
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

360929

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

Enthalpy Analytical
806 N. Batavia
Orange, CA 92868

TEL: (714) 771-6900
FAX: (714) 538-1209
Acct #:

Field Sampler: James Dye

01-Oct-15

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**EPA 8260B**		
N017082-001A / EFF-09-30	Wastewater	9/30/2015 4:00:00 PM	VOA	1		

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

Please use PO#: N17082A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 1-DAY TAT.

Please analyze 2-CEVE by EPA 8260. Report down to MDL.

		Date/Time			Date/Time
Relinquished by:		10/1/15 14:00	**Received by:**		10/2/15 11:00AM
Relinquished by:			**Received by:**		

ENTHALPY analytical inc

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: ASSET LABS — Project: _____

Date Received: 10/2/15 — Sampler's Signature Present: (Yes) No

Sample temperature: _____

Sample(s) received in cooler: (Yes) No (Skip Section 2)

Shipping Information: GSO.

Section 2

Was the cooler packed with: ✓ Ice ___ Ice Packs ✓ Bubble Wrap ✓ Styrofoam ___ Paper ___ None ___ Other _____

Cooler 1 Temperature: 0°C Cooler 2 Temperature: _____ Cooler 3 Temperature: _____

(Acceptance range is 0 to 6 Deg. C. or arrival on ice; For Microbiology sample ≤ 10 Deg. C or arrival on ice)

Section 3	YES	NO	N/A
Was a COC received?	✓		
Were IDs present?	✓		
Were sampling dates & times present?	✓		
Was a signature present?	✓		
Were tests clearly indicated?	✓		
Were custody seals present?		✓	
If Yes – were they intact?			✓
Were all samples sealed in plastic bags?	✓		
Did all samples arrive intact? If no, indicate below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were correct containers used for the tests required?	✓		
Was a sufficient amount of sample sent for tests indicated?	✓		
Was there headspace in VOA vials?		✓	
Were the containers labeled with correct preservatives?			✓
Was total residual chlorine measured (Fish Bioassay samples only)? * *If the answer is no, please inform Fish Bioassay Dept. immediately.*			✓

Section 4

Explanations/Comments

Section 5

Was the Project Manager notified via email of discrepancies: Y / N (N/A)

Project Manager's response: _____

Completed By: _____ Date: 10/2/15

SFPP NORWALK PUMP STATION

BIOASSAY REPORT
CHRONIC AND ACUTE
BIOASSAYS CONDUCTED
September15 through 22, 2015

Prepared for

KINDER MORGAN, INC.

ORANGE, CALIFORNIA

Prepared by

CH2MHILL
Applied Sciences Laboratory (ASL)
1100 NE Circle Boulevard, Suite 300
Corvallis, Oregon 97330
541-768-3160

State of Washington Department of Ecology (WDOE), Lab ID C1233
NELAC #OR100022

Report Date: October 7, 2015
Lab I.D. No. B3392, B3393

CONTENTS

Page

Section

INTRODUCTION

CH2M HILL Applied Sciences Laboratory (ASL) conducted acute dual end point and chronic bioassays from September 15 through 22, 2015, on effluent samples collected from Kinder Morgan's groundwater treatment system located at the SFPP Norwalk Pump Station, Norwalk, California.

Testing was performed with Receiving Water to provide the basis of comparison for the Effluent. A laboratory control was performed to provide an additional assessment of test acceptability criteria. The chronic tests were conducted using the topsmelt (*Atherinops affinis*).

SUMMARY OF TEST RESULTS

Exhibits 1 and 2 provide a summary of the final test results.

EXHIBIT 1

Summary of Acute (96-hr) Dual-Endpoint Test Results (Effluent compared to Receiving Water).

Sample ID	Species	NOEC (%)	LOEC (%)
Effluent - Salinity Adjusted to 30 ppt	*A. affinis*	< 100	100

Note: acronyms are as defined below Exhibit 2.

EXHIBIT 2

Summary of Chronic (7-day) Test Results (Effluent compared to Receiving Water).

Sample ID	Species	NOEC (%)	LOEC (%)
Effluent - Salinity Adjusted to 30 ppt	*A. affinis*	< 100	100

More detailed information is provided in the Results and Data Interpretation sections.

ACRONYM DEFINITIONS (from EPA guidance):

NOEC = No Observed Effect Concentration: The highest test concentration that causes no observable adverse effects on the test organisms (i.e. no statistically significant reduction from the control).
LOEC = Low Observed Effect Concentration: The lowest test concentration that does cause an observable adverse effect on the test organisms (i.e. is statistically significant reduction from the control).

METHODS AND MATERIALS

TEST METHODS

The *A. affinis* chronic test methods were performed according to: *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine Organisms*, First Edition, (EPA 1995), EPA/600/R-95-136.

Additional guidance on EPA method 1006.0 was provided by:

- *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition (2002); EPA 821-R-02-014.

DEVIATIONS FROM PROTOCOLS

Deviations from required procedures in the test methods:

- None noted.

Deviations from recommended procedures in the test methods:

- None noted.

TEST ORGANISMS

The *A. affinis* larvae used in the chronic toxicity tests were obtained from Aquatic Biosystems, Fort Collins, Colorado, and were 13 days old and within a 24-hour span at test initiation. All organisms tested were fed and maintained during culturing, acclimation, and testing as prescribed by the EPA (2002). The test organisms appeared vigorous and in good condition prior to testing.

DILUTION WATER

The laboratory control water used for the *A. affinis* testing was artificial sea water (Tropic Marin® sea salts and ultra pure water) with a salinity of 30 parts per thousand (ppt) plus or minus 2 ppt.

TEST CONCENTRATIONS

The concentrations for the chronic test and acute dual end point test were 100 percent Effluent sample with Receiving water for the control. For the *A. affinis* chronic test, five organisms per chamber, with five chambers per concentration for a total of 25 organisms per concentration were used.

SAMPLE COLLECTION

The "Receiving Water" (collected 50 feet upstream of the discharge) sample was collected by CH2M personnel on September 14, 2015. The "Effluent" samples were collected by CH2M personnel on September 14, 16, and 18, 2015. All samples were accepted as scheduled by CH2M's Applied Sciences Laboratory within the EPA recommended 0 to 6 °C range.

All samples were initially used for test initiation or test solution renewal within the EPA recommended maximum holding time of 36 hours from the time of sample collection.

For the Effluent, all subsequent uses of samples occurred within the EPA recommended maximum holding time of 72 hours past the time of initial use of that sample.

For the Receiving Water, as per sampling design, only one aliquot was collected and used for the entirety of the test. This necessitated the use of this sample beyond the EPA recommended maximum holding time of 72 hours past the time of initial use of that sample for the renewals on Days 4, 5, and 6 (on Sept. 19, 20, and 21).

The samples were stored in the dark at 0 to 6°C until daily test solutions were prepared for all other testing. Chain of custody forms documenting sample collection and handling are provided in Appendix C.

SAMPLE PREPARATION

Samples used during these tests were not filtered upon arrival and temperature was adjusted prior to test initiation and each daily renewal.

The Receiving Water and Effluent samples were salinity adjusted to 30 ppt by the addition of Tropic Marin® sea salts prior to use.

MONITORING OF BIOASSAYS

All samples arriving at ASL were monitored on arrival for salinity, hardness, alkalinity, total residual chlorine, ammonia, DO, pH, conductivity, and temperature. Following salinity adjustment to 30 ppt for the *A. affinis* chronic tests these samples were monitored again for salinity, DO, pH, and conductivity.

For the *A. affinis* chronic tests, pre- and post-renewal test solutions were monitored daily for DO, salinity, and pH. Organism mortality was recorded daily, and organism growth was determined by dry weight analysis at test termination. Test temperatures were monitored in pre-renewal test solutions daily and in the incubator or waterbath continuously throughout the testing period.

DATA ANALYSIS

The effects measured during the *A. affinis* dual-endpoint acute test included survival data taken from the chronic test over the initial 96 hour exposure period. The statistical analyses performed were those outlined in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water (2002), EPA-821-R-02-012, using CETIS (v1.8.1.2). The acute NOEC and LOEC values were established by hypothesis testing as follows: Equal Variance T-test, Unequal Variance T-test, or Fisher's Exact Test was used to compare the survival data and Equal Variance T-test, Unequal Variance T-test, or Wilcoxon Two-sample t-test was used to compare the reproduction or growth data between the control and each sample treatment. When the assumptions of normality necessary for a T-test could not be met, Mann-Whitney U-test was used to analyze the data.

The effects measured during the *A. affinis* chronic test included survival and biomass during the 7-day exposure period. The statistical analyses performed were those outlined in EPA-821-R-02-013, and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition (2002); EPA 821-R-02-014, using CETIS. The chronic NOEC and LOEC values were established by hypothesis testing as follows: Equal Variance T-test, Unequal Variance T-test, or Fisher's Exact Test was used to compare the survival data and Equal Variance T-test, Unequal Variance T-test, or Wilcoxon Two-sample t-test was used to compare the reproduction or growth data between the control and each sample treatment. When the assumptions of normality necessary for a T-test could not be met, Mann-Whitney U-test was used to analyze the data.

RESULTS AND DISCUSSION

The raw data sheets are presented in Appendix A.

ACUTE BIOASSAYS

Table 1 summarizes the survival data for the *A. affinis* acute dual-endpoint tests that were salinity adjusted with Tropic Marin® sea salts to a salinity of 30 ppt. These toxicity endpoints were measured after 4-day exposures.

Table 1
Summary of Acute Results
Percent Survival

Concentration (%)	0 hr	24 hr	48 hr	72 hr	96 hr
A. affinis					
Laboratory Control	100	100	100	100	100
Receiving Water 100%	100	100	100	100	100
Effluent 100%	100	100	96	84	68 [a]

[a] Indicates a statistically significant reduction from the control at p equal to 0.05.

The *A. affinis* acute dual-endpoint test indicated a statistically significant reduction in survival at the 100 percent Effluent concentration when compared to the Receiving Water. By EPA definition, the NOEC and the LOEC were less than 100 and 100 percent Effluent, respectively.

Dissolved oxygen concentrations remained at 4.0 mg/L or greater throughout the test period. Test temperatures remained in the range of 20±1°C.

Both the Receiving Water and Laboratory controls met Test Acceptability Criteria (TAC) of a minimum 90 percent control survival. Unless referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. The testing is considered "valid".

CHRONIC BIOASSAYS

Table 2 summarizes the survival and biomass data for the *A. affinis* chronic tests that were salinity adjusted with Tropic Marin® sea salts to a salinity of 30 ppt. These toxicity endpoints were measured after 7-day exposures.

Table 2
Summary of Chronic Results
A. affinis

Sample Concentration	Percent Survival	Growth (i.e. Biomass) (mg)
Laboratory Control	96	1.443
Receiving Water 100%	96	1.484
Effluent 100%	60 [a]	0.965 [a]

[a] Indicates a statistically significant reduction from the control at p equal to 0.05.

The *A. affinis* test results indicated a statistically significant reduction in survival and growth (biomass) at the 100 percent Effluent concentration when compared to the Receiving Water. By EPA definition, the NOEC and the LOEC were less than 100 and 100 percent Effluent, respectively.

The dissolved oxygen levels in the chronic tests remained above 4.0 mg/L. The test temperatures remained at 20±1°C.

The *A. affinis* tests meet Test Acceptability Criteria (TAC) for a minimum 80 percent control survival and a minimum weight of 0.85 mg per surviving control organism.

(please note the weight data presented above is based on the weight per organism added at test initiation (biomass) which agrees with the latest version of EPA method 1006.0, EPA 821-R-02-014. For TAC evaluation, the laboratory control showed a mean weight of 1.51 per surviving organism).

Unless referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. The testing should be considered "valid".

REFERENCE TOXICANT TEST

Reference toxicant (reftox) testing is performed to document both initial and ongoing laboratory performance of the test method(s). While the health of the test organisms is primarily evaluated by the performance of the laboratory control, reftox test results also may be used to assess the health and sensitivity of the test organisms. Reftox test results within their respective cumulative summary (Cusum) chart limits are indicative of consistent laboratory performance and normal test organism sensitivity.

The results of the reftox tests indicate that the test organisms were within their respective cusum chart limits based on EPA guidelines. This demonstrates ongoing laboratory proficiency of the test methods and suggests normal test organism sensitivity in the associated client testing.

The *A. affinis* reftox test was conducted using copper (as copper chloride). The data sheets for the reference toxicant tests are provided in Appendix B.

Table 3 summarizes the reference toxicant test results and Cusum chart limits.

Table 3
Chronic Reference Toxicant Test
Cu (as $CuCl_2$) ug/L

Species (test)	IC_{25}	Control Chart
A. affinis (survival)	69	27 to 153
A. affinis (growth)	69	37 to 130

APPENDIX A

RAW DATA SHEETS

CH2M HILL **FRESHWATER TOXICITY TEST: SAMPLE AND DILUTION WATER DATA**

Client: Kinder Morgan EP - Norwalk
Contact: Mike Stanaway / Cam Irvine
SDG # B3393 / 3392
Test Initiation: Date 9-15-15
Test Termination: Date 9-22-15

Sample ID Number	Field ID	Collected Date (mm/dd/yy)	Collected Time (Pacific Zone)	Date Received / Treated	Temp (°C) as Rc'vd	Total Residual Chlorine (mg/l) ☐ Dechlorination allowed as Rc'vd / after Dechlor.	Ammonia NH_3-N mg/l as Rc'vd	Hardness mg/l as $CaCO_3$ as Rc'vd	Alkalinity mg/l as $CaCO_3$ as Rc'vd	DO (mg/L) as Rc'vd	pH as Rc'vd	Cond. (uS) as Rc'vd	60 um filtered? (organisms noted)
B3393-01	- Receiving Water	9/14/15	12:50	9/15/15	1.9	0.07 / -	<0.10	336	704	15.2	9.1	1863	☐
-02	- Receiving Water, Adj to 30 ppt	Salinity adjusted on ->		9/15/15	-	- / -	-	-	-	-	-	-	☐
-03	- Receiving Water	/ /	:	/ /		/ -							☐
-04	- Receiving Water, Adj to 30 ppt	Salinity adjusted on ->		/ /	-	- / -	-	-	-	-	-	-	☐
-05	- Receiving Water	/ /	:	/ /		/ -							☐
-06	- Receiving Water, Adj to 30 ppt	Salinity adjusted on ->		/ /	-	- / -	-	-	-	-	-	-	☐
B3392-07	- Effluent	9/14/15	13:00	9/15/15	2.5	0.10 / -	<0.10	612	252	12.8	7.2	2220	☐
-08	- Effluent, Adj to 30 ppt	Salinity adjusted on ->		9/15/15	-	- / -	-	-	-	-	-	-	☐
-09	- Effluent	9/16/15	09:00	9/17/15	1.0	0.05 / -	0.59	527	174	11.5	6.9	4316	☐
-10	- Effluent, Adj to 30 ppt	Salinity adjusted on ->		9/17/15	-	- / -	-	-	-	-	-	-	☐
-11	- Effluent	9/18/15	09:00	9/19/15	0.3	<0.02 / -	<0.10	561	434	11.6	7.0	1960	☐
-12	- Effluent, Adj to 30 ppt	Salinity adjusted on ->		9/19/15	-	- / -	-	-	-	-	-	-	☐
Rob MC 9-15-15			Reporting Limits:		na	0.02 mg/L	0.10 mg/L	4 mg/L	4 mg/L	na	na	na	na

Note: "-" Indicates data collection or dechlorination not needed. Any other adjustments to samples prior to use are documented in Comments below or on Dilutions page.

Dilution Water	ID#	Hardness mg/l as $CaCO_3$	Alkalinity mg/l as $CaCO_3$	Salinity (ppt)
Art. Sea (30 ppt)	4268	-	146	30

Comments: ☑ Indicates the action was taken, (☐= action not taken): " - " = sample not dechlorinated, or analyte not collected/needed.

Note: likely only 1 sample of Receiving water to be collected.

B3393-01 salinity 4 ppt

B3392-01 Salinity 5 ppt, -03 Salinity 5 ppt

B3392-05 Salinity (as rcvd.) = 3 ppt / Adjusted to 30! DW

Water Quality Meters Used/ID#: Dissolved Oxygen # 3 pH # 11 Conductivity # 7

CH2M HILL **FRESHWATER TOXICITY TEST: TEST ORGANISM INFORMATION**

Client Kinder Morgan EP - Norwalk Sample Designation (SDG): B 33913 | 33912

Test Species Information	AA # 061 *Atherinops affinis* Chronic				
Organism Age at Initiation	13 days				
Test Container Size	400 ml				
Test Volume	200 ml				
Feeding: Type and Amount	*Artemia*, 2 x Daily				
Aeration: In Test Chambers via Slow Bubble :	☒ None ☐ Prior to use ☐ @ _____ hrs				
Acclimation Period	< 1 Days				
Organism Source	ABS				
Size	-				
Loading Rate	-				

Dissolved Oxygen aeration justifications (in test chambers):

Test(s): ☐ All ☐ _____

Date:

Comments:

Note: ☐ Indicates task r Note: ☐ Indicates task not done, ☑ Indicates task was done. T

Client: Kinder Morgan EP - Norwalk

Ditto marks ('') indic Ditto marks ('') indicate that the same SDG, batch of dilutior

Atherinops affinis - Chronic

Test Concentration (%)	Sample Volume (mls)	Final Volume (mls)
All screens - no dilutions needed. Use 1000 ml of each of the listed waters.		

Sample ID:	**30 ppt**	**30 ppt**	**30 ppt**				
Test Day	Lab Control - 30 ppt Water ID Used	"Effluent" Sample ID Used	"receiving water" Sample ID Used	Date	Time	Initials
0 (Initiation)	ID # 4268	B 3392-02	B 3393-02	9/15/2015	12:20	MC
1	ID # 4268	B -02	B -02	9/16/15	08:05	DW
2	ID # 4268	B -04	B -02	9/17/15	11:10	MC
3	ID # 4268	B -04	B -02	9/18/15	07:40	DW
4	ID # 4268	B -06	B -02	9/19/15	11:00	DW
5	ID # 4268	B -06	B -02	9/20/15	09:00	DW
6	ID # 4268	B -06	B -02	9/21/15	09:15	MC

CH2M HILL

ATHERINOPS AFFINIS 7-DAY SURVIVAL AND WATER QUALITY DATA

Random Template Used: See randomization sheet | Waterbath/incubator Used: # 3 | Date Initiated 9/15/2015 Time 14:00

Initial sample ID B3393 -02 / B3392 -02 | Date Terminated 9/23/2015 Time 10:35

Client | Sample Description

Tech: Day 0 [illegible] Day 1 [illegible] Day 2 DW Day 3 [illegible]/MC Day 4 [illegible] Day 5 DW Day 6 MC Day 7 KT/Jm

Time: Day 0 1400 Day 1 1300 Day 2 1415 Day 3 0905 Day 4 1150 Day 5 1215 Day 6 1255 Day 7 1035

Conc. or Percent	Day	Number of Live Organisms					Dissolved O_2 (mg/l)		pH		Salinity		Temp. (°C)	Therm. ID #
		A	B	C	D	E	Pre	Post	Pre	Post	Pre	Post	Pre	
Lab Control - 30 ppt	0	5	5	5	5	5		7.4		8.1		29	Post: 19.9	159
	1	5	5	5	5	5	6.4	6.8	8.0	8.2	30	30	20.2	177
	2	5	5	5	5	5	6.3	7.2	7.9	8.2	30	30	19.6	211
	3	5	5	5	5	5	6.3	7.0	7.9	8.1	30	30	19.9	214
	4	5	5	5	5	5	6.5	7.3	7.8	8.0	30	30	19.9	214
	5	5	5	5	4	5	6.6	7.2	7.8	8.2	30	30	20.0	215
	6	5	5	5✓	4	5	5.8	6.8	7.6	8.0	30	30	20.1	215
	7	5	5	5	4	5	6.6		7.9		30		20.4	215
Receiving Water - 30 ppt	0	5	5	5	5	5		8.0		8.3		29	Post: 19.9	
	1	5	5	5	5	5	6.3	7.7	8.3	8.3	30	30	20.3	
	2	5	5	5	5	5	6.4	7.9	8.3	8.3	30	30	19.5	
	3	5	5	5	5	5	6.5	7.7	8.3	8.3	30	30	21.0	
	4	5	5	5	5	5	6.2	8.2	8.2	8.3	30	30	20.0	
	5	5	5	5	5	5	6.5	7.8	8.2	8.3	30	30	19.9	
	6	5	5	4	5	5	5.7	7.8	8.2	8.2	29	30	20.4	
	7	5	5	4	5	5	6.4		8.4		30		20.2	
Effluent - 30 ppt	0	5	5	5	5	5		8.2		7.7		29	Post: 19.9	
	1	5	5	5	5	5	6.3	7.9	8.1	7.8	30	30	20.3	
	2	4	5	5	5	5	6.2	7.9	7.9	7.6	30	30	19.6	
	3	4	5	5	5	3	6.2	8.2	7.8	7.6	30	30	20.0	
	4	2	5	3	4	3	6.0	8.3	7.7	7.6	30	30	20.1	
	5	2	5	2	4	3	6.2	7.9	7.8	7.7	30	30	19.9	
	6	1	5	2	4	3	5.8	8.1	7.9	7.6	30	30	20.3	
	7	1	5	2	4	3	6.6		8.1		31		20.2	
													Post:	
													Post:	
													Post:	

✓ Indicates one organism inadvertently poured off during solution renewal, replaced into container.

"M" = organism missing, start count reduced. "Inj" = organism injured, remove from stats.

"F" = fungus noted on dead organisms.

☐ Aeration in test chambers begun @ _____ (Note observations on Test Organism Info sheet)

Pre =Pre-renewal solutions. Post =Post-renewal solutions.

Day 0 Temperatures = Post-renewals

Therm ID# = Thermometer ID used for all measurements that day.

(23.8) = Temp. out of recommended range

ATHERINOPS AFFINIS 7-DAY GROWTH DATA

Client: Kinder Morgan EP - Norwalk | Tins Labeled As: KINDER (9/15)

B3392 and B3393 | Start Date: 9/15/2015

Sample Description:

Technician:	KJ	KJ
Date:	9/23/2015	9/15/2015
Balance Serial #:	B328543647	B328543647

Percent	Replicate	Total Weight (mg)	Tare Weight (mg)	No. of Fish
Lab Control 30 ppt	A	1166.71	1159.76	5
	B	1158.21	1150.14	5
	C	1141.54	1134.37	5
	D	1178.78	1172.25	4
	E	1126.79	1119.44	5
100% Receiving Water 30 ppt	A	1166.50	1158.44	5
	B	1178.07	1169.32	5
	C	1160.84	1154.68	4
	D	1153.43	1147.02	5
	E	1168.36	1160.63	5
100% Effluent 30 ppt	A	1137.82	1135.84	1
	B	1150.91	1143.55	5
	C	1158.82	1155.29	2
	D	1170.03	1163.08	4
	E	1138.59	1134.28	3

weigh to 0.01 mg

As per EPA-600-R-95-136, Section 11.12.1 Acceptability of Test Results: "The mean weight per larvae must exceed 0.85 mg … in the control"

For this test, the average dry weight per surviving control larvae = 1.51 mg.

ATHERINOPS AFFINIS 7-DAY GROWTH DATA

Client: Kinder Morgan EP - Norwalk | Tins Labeled As: KINDER (9/15)

Start Date: 9/15/2015

Sample Description:

Technician:		KJ
Date:		9/15/2015
Balance Serial #:	B328543647	B328543647

Percent	Replicate	Total Weight (mg)	Tare Weight (mg)	No. of Fish
Lab Control 30 ppt	A		1159.76	5
	B		1150.14	5
	C		1134.37	5
	D		1172.25	4
	E		1119.44	5
100% Receiving Water 30 ppt	A		1158.44	5
	B		1169.32	5
	C		1154.68	4
	D		1147.02	5
	E		1160.63	5
100% Effluent 30 ppt	A		1135.84	1
	B		1143.55	5
	C		1155.29	2
	D		1163.08	4
	E		1134.28	3

weigh to 0.01 mg

As per EPA-600-R-95-136, Section 11.12.1 Acceptability of Test Results: "The mean weight per larvae must exceed 0.85 mg … in the control"

For this test, the average dry weight per surviving control larvae = #DIV/0! mg.

Client: Kinder Morgan EP - Norwalk Topsmelt Chronic SDG: B3392 & B3393 WaterBath # 3

A REPLICATE :	3	2	1	
B REPLICATE :	1	3	2	
C REPLICATE :	3	2	1	
D REPLICATE :	1	3	2	
E REPLICATE :	1	3	2	

Number = Test Concentration (1= control, 2= Lowest conc., etc.)

CETIS Summary Report

Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	14-8864-4046	**Code:**	B3392-02	**Client:**	
Sample Date:	14 Sep-15 13:00	**Material:**	Industrial Effluent	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h	**Station:**	Effluent		

Test Note: Comparisons made "Effluent" to "Receiving Water"
Sample Note: Salinity adjusted to 30 ppt.

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
11-8332-5337	4d Survival Rate	<100	100	NA	17.8%	>1	Equal Variance t Two-Sample Test
14-5858-6100	7d Survival Rate	<100	100	NA	26.5%	>1	Equal Variance t Two-Sample Test
15-2571-7508	Mean Dry Biomass-mg	<100	100	NA	28.5%	>1	Equal Variance t Two-Sample Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
14-5858-6100	7d Survival Rate	Control Resp	0.96	0.8 - NL	Yes	Passes Acceptability Criteria
15-2571-7508	Mean Dry Biomass-mg	Control Resp	1.484	0.85 - NL	Yes	Passes Acceptability Criteria

4d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	0	0	0.0%	0.0%
0	Receiving Water	5	1	1	1	1	1	0	0	0.0%	0.0%
100		5	0.68	0.3969	0.9631	0.4	1	0.102	0.228	33.53%	32.0%

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	0.96	0.8489	1	0.8	1	0.04	0.08944	9.32%	0.0%
0	Receiving Water	5	0.96	0.8489	1	0.8	1	0.04	0.08944	9.32%	0.0%
100		5	0.6	0.2074	0.9926	0.2	1	0.1414	0.3162	52.7%	37.5%

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1.443	1.302	1.584	1.306	1.614	0.05081	0.1136	7.87%	0.0%
0	Receiving Water	5	1.484	1.21	1.759	1.232	1.75	0.09882	0.221	14.89%	-2.88%
100		5	0.9652	0.3965	1.534	0.396	1.472	0.2048	0.458	47.45%	33.1%

Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

4d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
0	Receiving Water	1	1	1	1	1
100		0.4	1	0.6	0.8	0.6

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	0.8	1
0	Receiving Water	1	1	0.8	1	1
100		0.2	1	0.4	0.8	0.6

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.39	1.614	1.434	1.306	1.47
0	Receiving Water	1.612	1.75	1.232	1.282	1.546
100		0.396	1.472	0.706	1.39	0.862

4d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
0	Receiving Water	5/5	5/5	5/5	5/5	5/5
100		2/5	5/5	3/5	4/5	3/5

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	4/5	5/5
0	Receiving Water	5/5	5/5	4/5	5/5	5/5
100		1/5	5/5	2/5	4/5	3/5

CETIS Analytical Report

Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	11-8332-5337	**Endpoint:**	4d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:43	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	14-8864-4046	**Code:**	B3392-02	**Client:**	
Sample Date:	14 Sep-15 13:00	**Material:**	Industrial Effluent	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h	**Station:**	Effluent		

Test Note: Comparisons made "Effluent" to "Receiving Water"
Sample Note: Salinity adjusted to 30 ppt.

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	17.8%	Fails 4d survival rate

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water		100*	3.222	1.86	0.21	8	0.0061	CDF	Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			1.0000	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.3301887	0.3301887	1	10.38	0.0122	Significant Effect
Error	0.2544149	0.03180186	8			
Total	0.5846035		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	5.501	13.75	0.0574	Equal Variances
Variances	Levene Equality of Variance	12.07	11.26	0.0084	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8765	0.7411	0.1190	Normal Distribution

4d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	1	1	1	1	1	1	0	0.0%	0.0%
100		5	0.68	0.3969	0.9631	0.6	0.4	1	0.102	33.53%	32.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Wate	5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		5	0.9819	0.6687	1.295	0.8861	0.6847	1.345	0.1128	25.69%	27.01%

4d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	1	1	1	1	1
100		0.4	1	0.6	0.8	0.6

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	1.345	1.345	1.345	1.345	1.345
100		0.6847	1.345	0.8861	1.107	0.8861

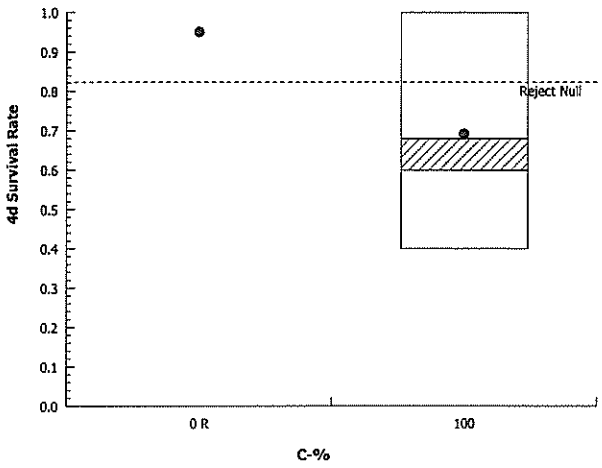
Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

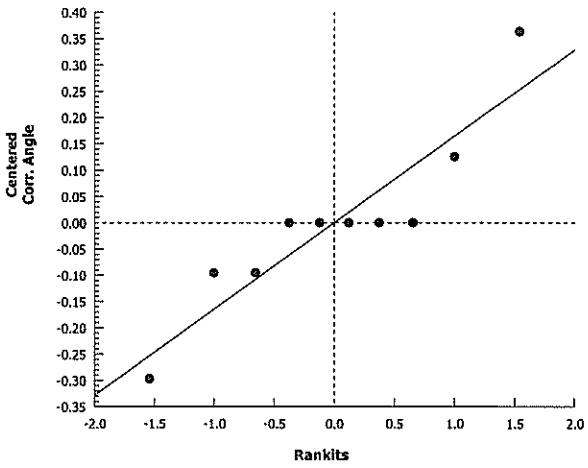
Analysis ID:	11-8332-5337	**Endpoint:**	4d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:43	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

4d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
0	Receiving Water	5/5	5/5	5/5	5/5	5/5
100		2/5	5/5	3/5	4/5	3/5

Graphics





Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	14-5858-6100	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:43	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	14-8864-4046	**Code:**	B3392-02	**Client:**	
Sample Date:	14 Sep-15 13:00	**Material:**	Industrial Effluent	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h	**Station:**	Effluent		

Test Note: Comparisons made "Effluent" to "Receiving Water"
Sample Note: Salinity-adjusted to 30 ppt

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	26.5%	Fails 7d survival rate

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water		100*	2.474	1.86	0.301	8	0.0192	CDF	Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			0.5966	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.4005621	0.4005621	1	6.122	0.0385	Significant Effect
Error	0.5234624	0.0654328	8			
Total	0.9240246		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	10.54	23.15	0.0425	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9443	0.7411	0.6013	Normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	0.96	0.8489	1	1	0.8	1	0.04	9.32%	0.0%
100		5	0.6	0.2074	0.9926	0.6	0.2	1	0.1414	52.7%	37.5%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Wate	5	1.298	1.165	1.43	1.345	1.107	1.345	0.04763	8.21%	0.0%
100		5	0.8974	0.4681	1.327	0.8861	0.4636	1.345	0.1546	38.53%	30.85%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	1	1	0.8	1	1
100		0.2	1	0.4	0.8	0.6

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	1.345	1.345	1.107	1.345	1.345
100		0.4636	1.345	0.6847	1.107	0.8861

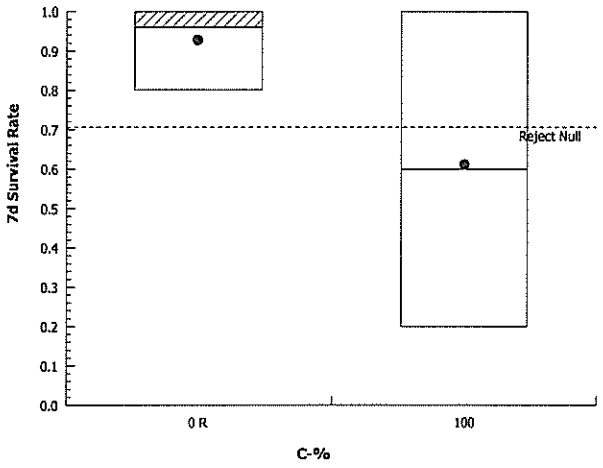
Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

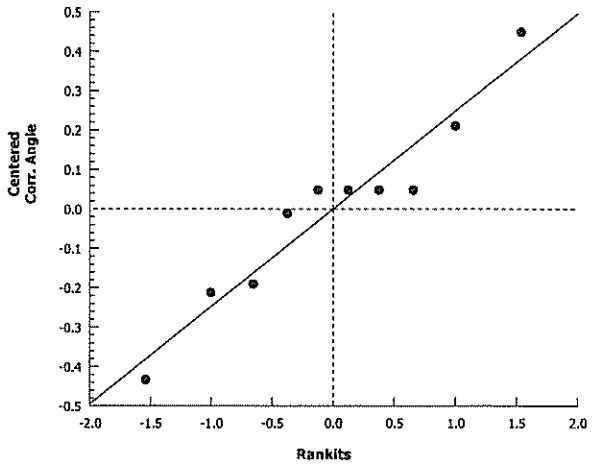
Analysis ID:	14-5858-6100	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:43	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	4/5	5/5
0	Receiving Water	5/5	5/5	4/5	5/5	5/5
100		1/5	5/5	2/5	4/5	3/5

Graphics





Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	15-2571-7508	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:43	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	14-8864-4046	**Code:**	B3392-02	**Client:**	
Sample Date:	14 Sep-15 13:00	**Material:**	Industrial Effluent	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h	**Station:**	Effluent		

Test Note: Comparisons made "Effluent" to "Receiving Water"
Sample Note: Salinity adjusted to 30 ppt.

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	28.5%	Fails mean dry biomass-mg

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Receiving Water		100*	2.283	1.86	0.423	8	0.0259	CDF	Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			0.8151	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.6739323	0.6739323	1	5.212	0.0518	Non-Significant Effect
Error	1.034451	0.1293063	8			
Total	1.708383		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	4.297	23.15	0.1869	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9677	0.7411	0.8685	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Receiving Water	5	1.484	1.21	1.759	1.546	1.232	1.75	0.09882	14.89%	0.0%
100		5	0.9652	0.3965	1.534	0.862	0.396	1.472	0.2048	47.45%	34.98%

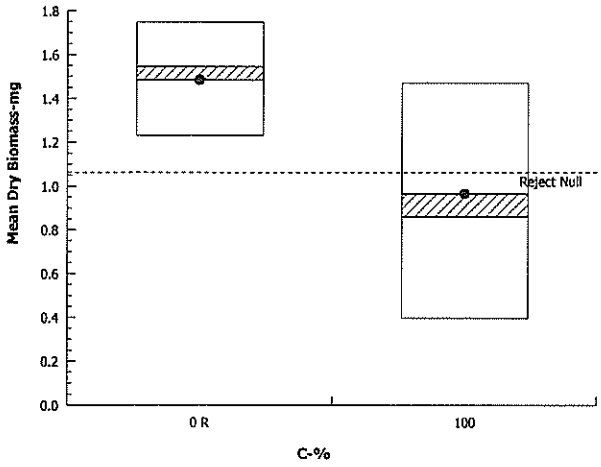
Mean Dry Biomass-mg Detail

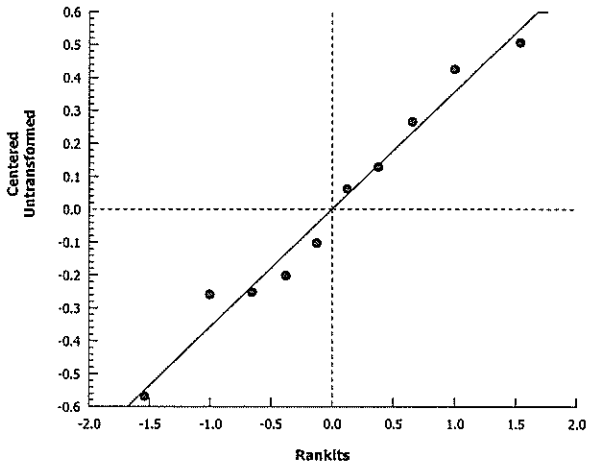
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Receiving Water	1.612	1.75	1.232	1.282	1.546
100		0.396	1.472	0.706	1.39	0.862

Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	15-2571-7508	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:43	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	

Sample ID:	09-8347-6712	**Code:**	B3393-02	**Client:**	
Sample Date:	14 Sep-15 12:50	**Material:**	Upstream Ambient Sample	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h (1.9 °C)	**Station:**	Receiving Water		

Sample Note: Salinity adjusted B3393-01 to 30 ppt

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
13-3200-4473	4d Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test
17-6068-3571	7d Survival Rate	100	>100	NA	11.5%	1	Wilcoxon Rank Sum Two-Sample Test
01-7681-4390	Mean Dry Biomass-mg	100	>100	NA	14.3%	1	Equal Variance t Two-Sample Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
17-6068-3571	7d Survival Rate	Control Resp	0.96	0.8 - NL	Yes	Passes Acceptability Criteria ✓
01-7681-4390	Mean Dry Biomass-mg	Control Resp	1.443	0.85 - NL	Yes	Passes Acceptability Criteria ✓

4d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	0	0	0.0%	0.0%
100		5	1	1	1	1	1	0	0	0.0%	0.0%

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	0.96	0.8489	1	0.8	1	0.04	0.08944	9.32%	0.0%
100		5	0.96	0.8489	1	0.8	1	0.04	0.08944	9.32%	0.0%

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1.443	1.302	1.584	1.306	1.614	0.05081	0.1136	7.87%	0.0%
100		5	1.484	1.21	1.759	1.232	1.75	0.09882	0.221	14.89%	-2.88%

4d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	1	1

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	0.8	1
100		1	1	0.8	1	1

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.39	1.614	1.434	1.306	1.47
100		1.612	1.75	1.232	1.282	1.546

Pacific Topsmelt 7-d Survival and Growth Test **CH2M HILL - ASL**

4d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	4/5	5/5
100		5/5	5/5	4/5	5/5	5/5

CETIS Analytical Report

Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	13-3200-4473	**Endpoint:**	4d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:26	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	09-8347-6712	**Code:**	B3393-02	**Client:**	
Sample Date:	14 Sep-15 12:50	**Material:**	Upstream Ambient Sample	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h (1.9 °C)	**Station:**	Receiving Water		

Sample Note: Salinity adjusted B3393-01 to 30 ppt

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 4d survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100	27.5	NA	1	8	1.0000	Exact	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			1.0000	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	8			
Total	0		9			

4d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	1	0	0.0%	0.0%
100		5	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%

4d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.345	1.345	1.345	1.345	1.345
100		1.345	1.345	1.345	1.345	1.345

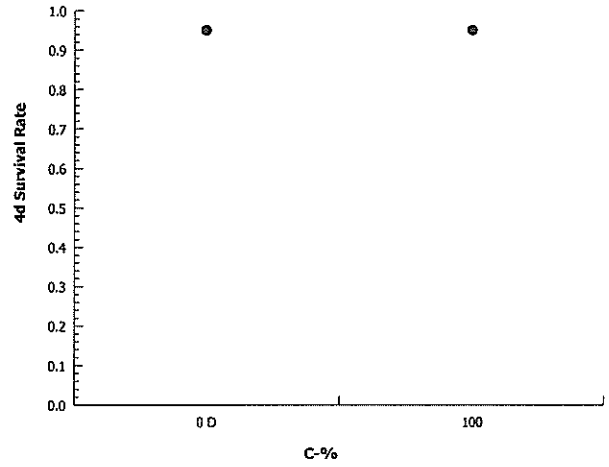
4d Survival Rate Binomials

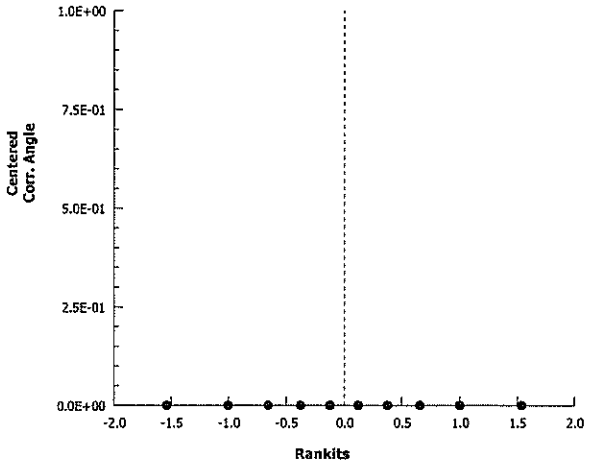
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	13-3200-4473	**Endpoint:**	4d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:26	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Graphics





Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	17-6068-3571	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:26	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes
Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	09-8347-6712	**Code:**	B3393-02	**Client:**	
Sample Date:	14 Sep-15 12:50	**Material:**	Upstream Ambient Sample	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h (1.9 °C)	**Station:**	Receiving Water		

Sample Note: Salinity adjusted B3393-01 to 30 ppt

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	11.5%	Passes 7d survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100	27.5	NA	2	8	0.7778	Exact	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			0.3950	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	0	1.0000	Non-Significant Effect
Error	0.09073264	0.01134158	8			
Total	0.09073264		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1	23.15	1.0000	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.5093	0.7411	<0.0001	Non-normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	0.96	0.8489	1	1	0.8	1	0.04	9.32%	0.0%
100		5	0.96	0.8489	1	1	0.8	1	0.04	9.32%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.298	1.165	1.43	1.345	1.107	1.345	0.04763	8.21%	0.0%
100		5	1.298	1.165	1.43	1.345	1.107	1.345	0.04763	8.21%	0.0%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	0.8	1
100		1	1	0.8	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.345	1.345	1.345	1.107	1.345
100		1.345	1.345	1.107	1.345	1.345

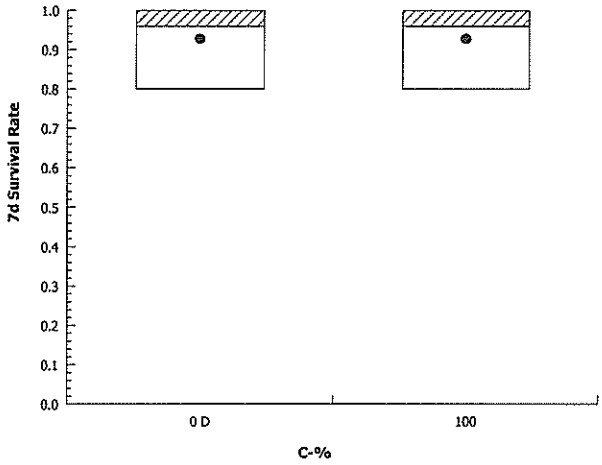
Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

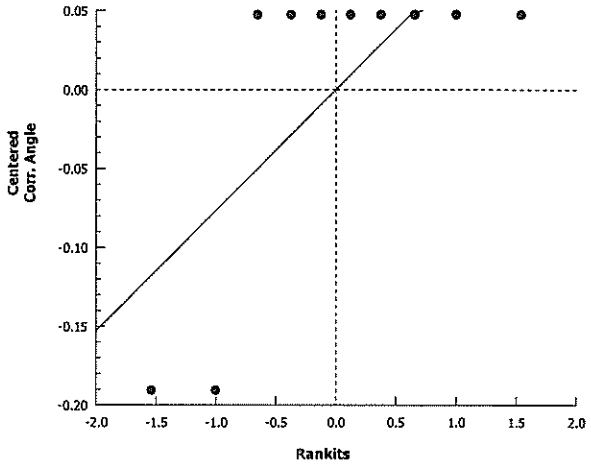
Analysis ID:	17-6068-3571	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:26	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	4/5	5/5
100		5/5	5/5	4/5	5/5	5/5

Graphics





Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	01-7681-4390	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:26	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes
Batch ID:	08-6290-5745	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Brett Muckey
Start Date:	15 Sep-15 11:00	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Laboratory Seawater
Ending Date:	22 Sep-15 10:25	**Species:**	Atherinops affinis	**Brine:**	
Duration:	6d 23h	**Source:**	Aquatic Biosystems, CO	**Age:**	
Sample ID:	09-8347-6712	**Code:**	B3393-02	**Client:**	
Sample Date:	14 Sep-15 12:50	**Material:**	Upstream Ambient Sample	**Project:**	
Receive Date:	15 Sep-15	**Source:**	Kinder Morgan - Norwalk		
Sample Age:	22h (1.9 °C)	**Station:**	Receiving Water		

Sample Note: Salinity adjusted B3393-01 to 30 ppt

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	14.3%	Passes mean dry biomass-mg

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100	-0.3744	1.86	0.207	8	0.6411	CDF	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			1.0000	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004325708	0.004325708	1	0.1401	0.7179	Non-Significant Effect
Error	0.2469252	0.03086565	8			
Total	0.251251		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3.783	23.15	0.2257	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9813	0.7411	0.9719	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.443	1.302	1.584	1.434	1.306	1.614	0.05081	7.87%	0.0%
100		5	1.484	1.21	1.759	1.546	1.232	1.75	0.09882	14.89%	-2.88%

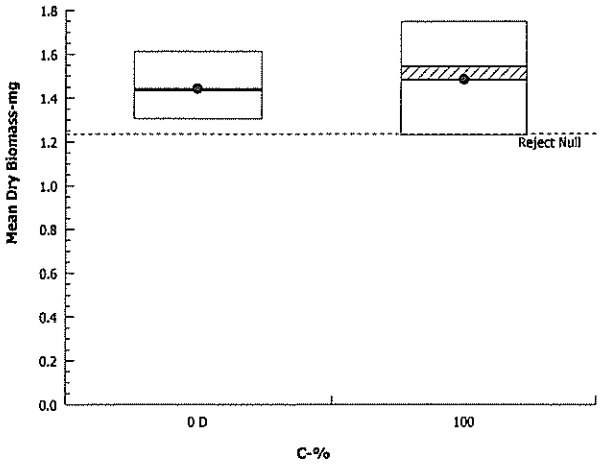
Mean Dry Biomass-mg Detail

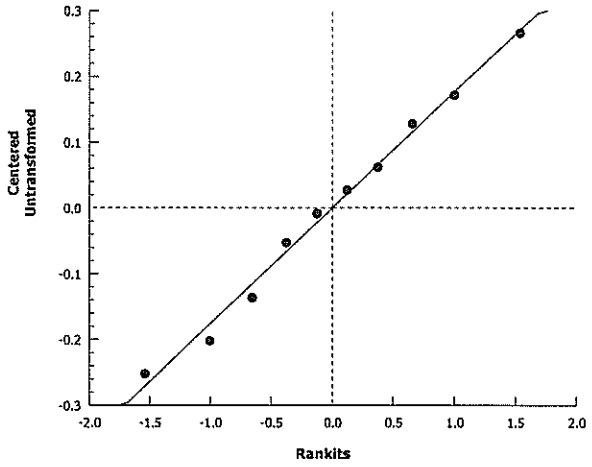
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.39	1.614	1.434	1.306	1.47
100		1.612	1.75	1.232	1.282	1.546

Pacific Topsmelt 7-d Survival and Growth Test — **CH2M HILL - ASL**

Analysis ID:	01-7681-4390	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.8.8
Analyzed:	29 Sep-15 12:26	**Analysis:**	Parametric-Two Sample	**Official Results:**	Yes

Graphics





APPENDIX B

REFERENCE TOXICANT DATA SHEETS

CH2M HILL

ATHERINOPS AFFINIS 7-DAY SURVIVAL AND WATER QUALITY DATA

Random Template Used: See randomization sheet | Waterbath/incubator Used: # 3 | Date Initiated 9/15/2015 Time 11:00

Stock Sol. ID 2B054-05- | Date Terminated 9/22/2015 Time 10:25

Organism ID: AA061 | Test Container Size: 400 ml | Solution Volume / rep: 200 ml

Client QA / QC | Sample Description Cu (as CuCl2)

Tech: Day 0 [illegible] Day 1 [illegible] Day 2 [illegible] Day 3 [illegible] Day 4 [illegible] Day 5 DW Day 6 MC Day 7 KS/BN

Time: Day 0 1100 Day 1 1230 Day 2 0910 Day 3 0858 Day 4 1125 Day 5 1240 Day 6 1245 Day 7 1025

Conc. or Percent	Day	Number of Live Organisms A	B	C	D	E	Dissolved O (mg/l) Pre	Post	pH Pre	Post	Salinity Pre	Post	Temp. (°C) Pre	Therm. ID #
Control	0	5	5	5	5	5		6.9		8.1		30	Post: 20.0	217
	1	5	5	5	5	5	6.3	6.8	7.9	8.2	29	29	20.1	177
	2	5	5	5	5	5	6.6	7.1	7.9	8.2	30	30	19.6	211
	3	5	5	5	5	5	6.7	7.3	7.9	8.2	30	30	20.1	211
	4	5	5	5	5	5	5.8	6.4	7.8	8.1	29	30	20.0	214
	5	5	5	5	5	5	6.1	6.8	7.9	8.2	30	30	19.9	215
	6	5	5	5	4	4	6.8	6.8	7.9	8.1	30	30	20.1	215
	7	5	5	5	4	4	6.8		7.9		29		20.3	215
32	0	5	5	5	5	5		7.1					Post: 19.9	
	1	5	5	5	5	5	6.4	6.9	8.0		29		20.0	
	2	5	5	5	5	5	6.7	7.3	7.9		30		19.7	
	3	5	5	5	5	5	6.9	7.5	8.0		30		19.9	
	4	5	5	5	5	5	5.9	6.5	7.8		29		19.9	
	5	5	5	5	5	5	6.1	6.7	7.9		30		19.8	
	6	5	5	5	5	5	6.8	7.0	7.8		30		20.2	
	7	5	5	5	5	5	6.9		7.9		30		20.3	
56	0	5	5	5	5	5		7.2					Post: 19.8	
	1	5	5	5	5	5	6.4	6.9	8.0		29		19.9	
	2	5	5	5	5	5	6.8	7.3	7.9		30		19.7	
	3	5	5	5	5	5	6.9	7.5	8.0		30		19.9	
	4	5	5	5	5	4	5.9	6.6	7.8		29		19.9	
	5	5	5	5	5	4	6.0	6.7	7.8		30		19.9	
	6	5	5	5	5	4	6.7	7.0	7.8		30		20.2	
	7	4	5	5	5	4	6.9		7.9		30		20.1	
100	0	5	5	5	5	5		7.3					Post: 19.7	
	1	5	5	4	5	5	6.4	7.0	8.0		29		19.9	
	2	3	5	3	4	4	6.9	7.4	7.9		30		19.6	
	3	2	2	2	4	3	7.0	7.5	8.0		30		19.9	
	4	2	1	2	4	2	6.0	6.6	7.9		30	30	19.9	
	5	2	1	2	4	2	6.0	6.7	7.8	8.2	30	30	19.9	
	6	1	1	1	4	2	6.7	7.1	7.8	8.1	30	30	20.2	
	7	1	1	1	4	2	6.9		8.0		30		20.1	
180	0	5	5	5	5	5		7.3					Post: 19.7	
	1	3	4	4	5	3	6.4	7.0	8.0		29		19.9	
	2	2	1	3	4	3	6.9	7.4	8.0		30		19.6	
	3	0	0	1	1	1	7.0	7.6	8.0		30		19.7	
	4	(	(	0	0	0	6.0	6.6	8.0		29		19.9	
	5	(	(	(	(	(	(	(	(		(		(	
	6	(	(	(	(	(	(	(	(		(		(	
	7	(	(	(	(	(	(		(		(		(	
320	0	5	5	5	5	5		7.3		8.2		29	Post: 19.7	
	1	1	1	1	3	3	6.5	7.0	8.0	8.2	29	29	19.9	
	2	0	0	1	2	1	7.0	7.4	8.0	8.2	29	29	19.6	
	3	(	(	1	1	1	7.1	7.6	8.1	8.2	29	29	19.7	
	4	(	(	0	0	0	6.1	6.6	8.0	8.1	29	29	19.9	
	5	(	(	(	(	(	(	(	(	(	(	(	(	
	6	(	(	(	(	(	(	(	(	(	(	(	(	
	7	(	(	(	(	(	(		(		(		(	

✓ Indicates one organism inadvertently poured off during solution renewal, replaced into container.

"M" = organism missing, start count reduced. "Inj" = organism injured, remove from stats.

"F" = fungus noted on dead organisms.

☐ Aeration in test chambers begun @ _____ (Note observations on Test Organism Info sheet)

Pre = Pre-renewal solutions. Post = Post-renewal solutions.

Day 0 Temperatures = Post-renewals

Therm ID# = Thermometer ID used for all measurements that day.

(23.8) = Temp. out of recommended range

Endpoint	IC25	Cusum Chart Limits
Survival	69	27 to 153
Growth	69	37 to 130

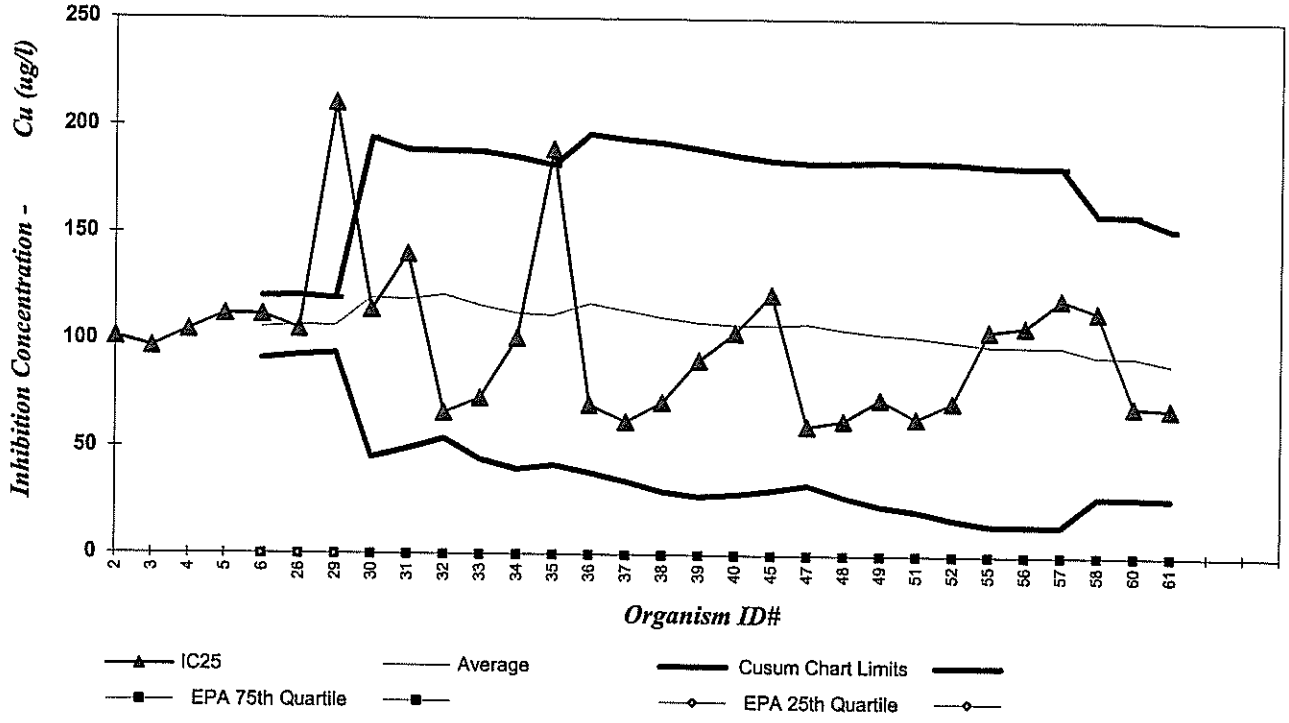
Task Manager [signature]

Project Manager [signature]

QA Officer [signature]

* Note: Weight (dry wt. / # of surviving organisms) endpoint is required by the EPA method, but often generates ">" values for IC25. Biomass (dry wt. / # of organisms at test initiation) is used for Reflox growth charting.

REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM) CHART
Atherinops affinis Chronic Survival - IC25 Values



***Atherinops affinis* - Chronic (EPA Test Method 1006.0)**

COPPER (ug/L) (as CuCl2)

Endpoint: Chronic Survival

Stats Method: Linear Interpolation

Test Conditions: 30 ppt Artificial Sea water, 20 oC

From EPA 833-R-00-003:

10th Quartile CV (*control limit*) = na

25th Quartile CV (*warning limit*) = na

75th Quartile CV (*warning limit*) = na

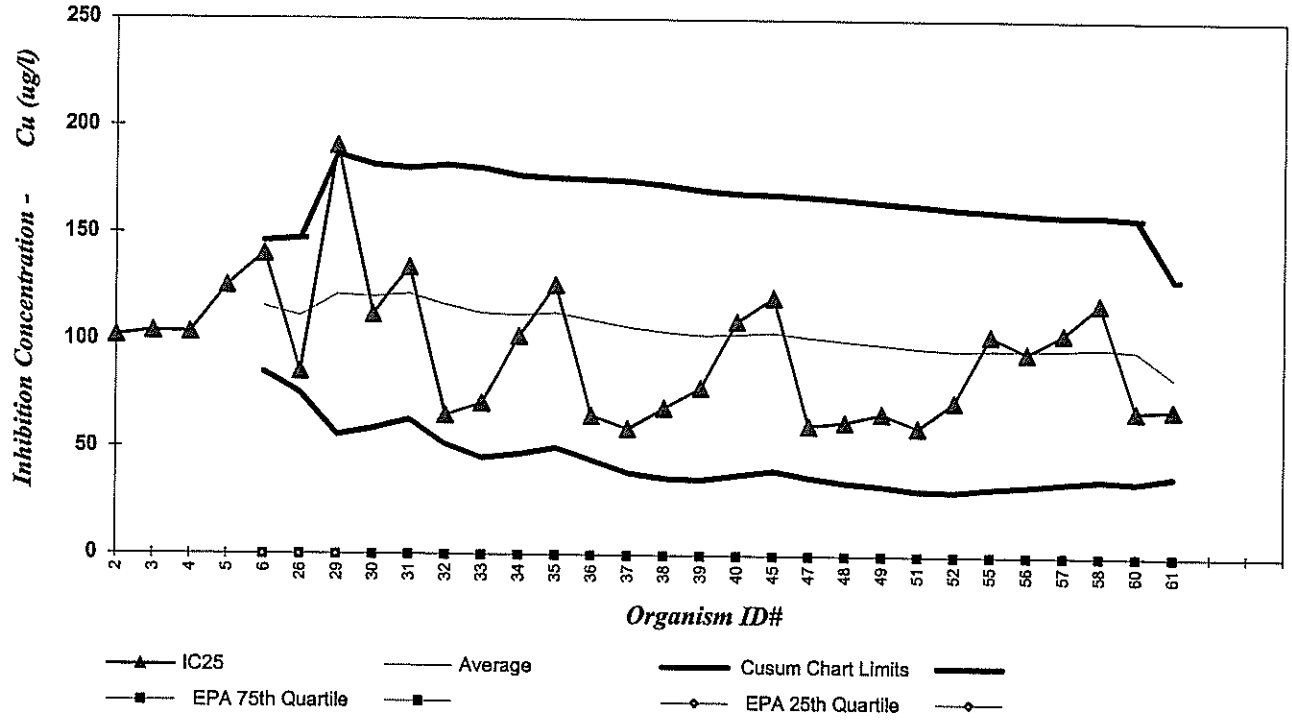
90th Quartile CV (*control limit*) = na

As per EPA 833-R-00-003, section B.2.1, the quartiles listed above are from just a few labs (0) and therefore not to be considered typical or representative. Cusum limits are based on ASL data only.

Event #	AA ID #	Test Start Date	IC25	Running Average	Running SD	Cusum Chart Limits AVG-2SD	Cusum Chart Limits AVG+2SD	Intralab CV
21	47	12/31/2013	60	108	38	**33**	**183**	0.35
22	48	1/14/2014	63	105	39	**27**	**183**	0.36
23	49	4/8/2014	73	103	40	**23**	**184**	0.37
24	51	7/22/2014	64	102	41	**21**	**183**	0.37
25	52	8/13/2014	72	100	42	**17**	**183**	0.38
26	55	12/16/2014	105	98	42	**14**	**182**	0.38
27	56	1/20/2015	107	98	42	**14**	**181**	0.37
28	57	3/17/2015	120	98	42	**14**	**182**	0.36
29	58	5/5/2015	114	93	33	**27**	**159**	0.35
30	60	7/28/2015	70	93	33	**27**	**159**	0.35
31	61	9/15/2015	69	90	31	**27**	**153**	0.35
32								
33								

REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM) CHART

Atherinops affinis Chronic Biomass - IC25 Values



***Atherinops affinis* - Chronic (EPA Test Method 1006.0)**

COPPER (ug/L) (as CuCl2)

Endpoint: **Chronic Biomass**

Stats Method: Linear Interpolation

Test Conditions: 30 ppt Artificial Sea water, 20 oC

(*Weight should be used, but often uncalculable for RT data)

From EPA 833-R-00-003:

10th Quartile CV (*control limit*) = na

25th Quartile CV (*warning limit*) = na

75th Quartile CV (*warning limit*) = na

90th Quartile CV (*control limit*) = na

As per EPA 833-R-00-003, section B.2.1, the quartiles listed above are from just a few labs (0) and therefore not to be considered typical or representative. Cusum limits are based on ASL data only.

Event #	AA ID #	Test Start Date	IC25	Running Average	Running SD	Cusum Chart Limits AVG-2SD	Cusum Chart Limits AVG+2SD	Intralab CV
21	47	12/31/2013	61	102	33	**36**	**167**	0.31
22	48	1/14/2014	63	100	33	**34**	**166**	0.32
23	49	4/8/2014	67	99	33	**33**	**165**	0.33
24	51	7/22/2014	60	97	33	**31**	**164**	0.33
25	52	8/13/2014	72	96	33	**30**	**162**	0.34
26	55	12/16/2014	103	96	32	**32**	**161**	0.34
27	56	1/20/2015	95	96	32	**33**	**160**	0.34
28	57	3/17/2015	104	97	31	**34**	**159**	0.33
29	58	5/5/2015	118	97	31	**36**	**159**	0.32
30	60	7/28/2015	68	96	31	**35**	**158**	0.32
31	61	9/15/2015	69	84	23	**37**	**130**	0.27
32								
33								

APPENDIX C

CHAIN OF CUSTODY

CH2MHILL **CHAIN OF CUSTODY RECORD FOR NPDES COMPLIANCE BIOMONITORING**

Client ~~Kinder Morgan Energy Partners~~ V.C. NPDES# ______
Address ~~1100 Town & Country Rd. #700~~
~~Orange, CA~~ CH2M / SCO
DAN JABLONSKI
Contact Person: ~~Steve Deffbaugh~~
Phone: ~~714-560-4802~~ 213-225-8271
E-mail: DAN JABLONSKI / CH2M: djablon1@ch2m.com

CH2M HILL Project # / Purchase Order # 660221.PM.01

Composite Sample Information:
Initiated: Date 9/13/15 Time 1300
Ended: Date 9/14/15 Time 1300
Chilled During Collection ? Yes ✓ No ___
Dechlorinated prior to shipping ? Yes ___ No ✓

Ship Samples to:
CH2M HILL - Applied Sciences Laboratory
Attention: Bioasssay Lab
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330
Lab Phone: (541) 768-3160
Customer Service: (541) 768-3120

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Containers	Lab ID#	~~Fathead Acute~~ V.C.	~~Fathead Chronic~~ V.C.	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	~~Sediment Chronic~~ V.C.	TOPSMELT CHRONIC	TOPSMELT ACUTE	Concentration and/or Comments
EFF-09-13 COMP	9/13/15	1300	✓		1		~~X~~	~~X~~ V.C.												~~X~~	X	X	

Sampled By & Title (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
VIDAL CORTES / V. Cortez	9/13/15 1300	V. Cortez	9/14/15 1400
Received By (Please sign and print name)	**Date/Time**	**Relinquished By** (Please sign and print name)	**Date/Time**
Received By (Please sign and print name)	**Date/Time**	**Relinquished By** (Please sign and print name)	**Date/Time**
[signature]	09/15/15 1105		
Received By (Please sign and print name)	**Date/Time**	**Shipped Via** UPS ___ Bus ___ Fed-Ex ✓ Hand ___ Other ___	**Shipping #**
Work Authorized By (Please sign and print name)	**Remarks** B 3392A ice 2.5°C		

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: B3392A
Client/Project: Kinder Morgan

Date Received: 09/15/15
Received By: JVP

Were custody seals intact and on the outside of the cooler?		☒ Yes	☐ No	☐ N/A
Packing Material:	☐ Hand Delivered	☒ Ice	☐ Blue Ice	☐ Box
Temp OK? (<6C) Therm ID: TH173 Exp. 10/15	2.5 °C	☒ Yes	☐ No	☐ N/A
Was a Chain of Custody (CoC) Provided?		☒ Yes	☐ No	☐ N/A
Was the CoC correctly filled out (If No, document below)		☒ Yes	☐ No	☐ N/A
Were the sample containers in good condition (broken or leaking)?		☒ Yes	☐ No	☐ N/A
Was enough sample volume provided for analysis? (If No, document below)		☒ Yes	☐ No	☐ N/A
Are all samples within 36 hours of collection?		☒ Yes	☐ No	☐ N/A

Sample Exception Report (The following exceptions were noted)

Client was notified on: Client contact:

Resolution to Exception:

FedEx Express **NEW** Package US Airbill

FedEx Tracking Number 8081 8426 5906

Form ID No. 0200

Recipient's Copy

1 From

Date 9/14/15

Sender's Name Vidal Cortes Phone 949 401-0603

Company CH2M

Address 6 Hutton Centre Dr # 700 Dept./Floor/Suite/Room

City Santa Ana State CA ZIP 92707

2 Your Internal Billing Reference 660221.PM.01

3 To

Recipient's Name Phone

Company CH2M Hill - ASL

Address 1100 NE Circle Blvd #300 Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Corvallis State OR ZIP 97330

HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8081 8426 5906

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.
For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

- [x] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

Signature options:

- [x] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. [ ]

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages 1 Total Weight 4.2 lbs. Credit Card Auth.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

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CH2MHILL Applied Sciences Laboratory
CHAIN OF CUSTODY RECORD
AND AGREEMENT TO PERFORM SERVICES

Chain of Custody Record

1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330
(541) 768-3120

Client Contact V.C.

Project Name: SEPP NORWALK
Project # or PO #: 660221.PM.01
Company Name: ~~[illegible]~~ CH2M/SCO
Address: ~~[illegible]~~
City/State/Zip: ~~[illegible]~~
Project Manager: ~~STEVE DEFIBAUGH~~
Phone #: ~~[illegible] 4802~~ 213-225-8271
Report to email: DJABLON1@CH2M.COM

Analysis Turnaround Time

TAT is Calander days
TAT if different from below ______
☑ 21 days (STD)
☐ 14 days * ☐ 3 day *
☐ 7 days * ☐ 2 days *
☐ 5 days * ☐ 1 day *
* (Surcharges will apply)

Preservation Used

Analysis Requested

For Lab Use Only:
SDG: B3393
Custody Seals intact? ☒ Yes ☐ No
Hand delivered? ☐ Yes ☒ No
Cooler Temp: 1.9 °C
Therm ID No. 173 Therm Exp. 9/15
Packing Material: Circle Below
(Ice) Blue Ice Box Bubble Wrap
Radiological Screen? ☐ Yes ☒ No

Sample Identification (Limit of 20 characters)	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Water, Soil, Air)	Total # of Cont.	~~SELENASTRUM~~ CHRONIC V.C.	TOP SMELT CHRONIC	TOP SMELT ACUTE							Sample Specific Notes:	Lab ID:
RSW-001-09-14	9/14/15	1250	GRAB	W	1	X	X	X								

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Possible Hazard Identification:
Are samples hazardous? ☐ Yes ☑ No
If yes, select hazard(s): ☐ Listed ☐ Ignitable ☐ Corrosive ☐ Reactive ☐ Toxic
If YES or NO is not checked above, samples will be assumed hazardous and hazardous disposal fees will be applied.

Sample Disposal (A fee may be added if samples are retained longer than 30 day per client request, samples are returned to client, or classified as hazardous.)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ months

Sampled By: JAMES DUE Date/Time: 9/14/15
Relinquished by: Vicon Cak/Vqtz Date/Time: 9/14/15 1400
Received by: Date/Time:
Relinquished by: Date/Time:
Received in Laboratory by: [signature] Date/Time: 9/15/15 1105
Shipped Via: ☐ UPS ☑ Fed-Ex ☐ USPS ☐ Other Tracking #:

Special Instructions/QC Requirements
B3393A Ice: 1.9°C

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: B3393A

Client/Project: Sepp Morgan

Date Received: 09/15/15 @ 1105

Received By: JVP

Were custody seals intact and on the outside of the cooler?			☒ Yes	☐ No ☐ N/A
Packing Material:	☐ Hand Delivered	☒ Ice	☐ Blue Ice	☐ Box
Temp OK? (<6C) Therm ID: TH173 Exp. 10/15	1.9 °C		☒ Yes	☐ No ☐ N/A
Was a Chain of Custody (CoC) Provided?			☒ Yes	☐ No ☐ N/A
Was the CoC correctly filled out (If No, document below)			☒ Yes	☐ No ☐ N/A
Were the sample containers in good condition (broken or leaking)?			☒ Yes	☐ No ☐ N/A
Was enough sample volume provided for analysis? (If No, document below)			☒ Yes	☐ No ☐ N/A
Are all samples within 36 hours of collection?			☒ Yes	☐ No ☐ N/A

Sample Exception Report (The following exceptions were noted)

Client was notified on: Client contact:

Resolution to Exception:

CH2MHILL **CHAIN OF CUSTODY RECORD FOR NPDES COMPLIANCE BIOMONITORING**

Client CH2M
Address 6 HUTTON CENTRE DR #700

Contact Person: DAN JABLONSKI
Phone: 213-228-8271
E-mail: DJABLON1@CH2M.COM

NPDES# _____

Composite Sample Information:
Initiated: Date 9/15/15 Time 0900
Ended: Date 9/16/16 Time 0900
Chilled During Collection ? Yes ✓ No ___
Dechlorinated prior to shipping ? Yes ___ No ✓

Ship Samples to:
CH2M HILL - Applied Sciences Laboratory
Attention: Bioasssay Lab
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330
Lab Phone: (541) 768-3160
Customer Service: (541) 768-3120

CH2M HILL Project # / Purchase Order # 660221.PM.01

Analysis Required / Comments

Sample ID	Date	Time	Sample Type Comp.	Sample Type Grab	# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	Topsmelt Acute	Topsmelt Chronic		Concentration and/or Comments
EFF-09-15 COMP	9/15/15	0900	✓		1															X	X		

Sampled By & Title (Please sign and print name) VIDAL CORTES (CH2M)	Date/Time 9/15/15 0900	Relinquished By (Please sign and print name)	Date/Time 9/16/15 1100
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time 09/17/15 1000	Shipped Via UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping #
Work Authorized By (Please sign and print name)	Remarks ICE 1.0°C B3392B		

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: B3392B
Client/Project: Kinder Morgan

Date Received: 09/17/15 @ 1000
Received By: JNP

Were custody seals intact and on the outside of the cooler?			☒ Yes	☐ No ☐ N/A
Packing Material:	☐ Hand Delivered	☒ Ice	☐ Blue Ice	☐ Box
Temp OK? (<6C) Therm ID: TH173 Exp. 10/15	1.0 °C		☒ Yes	☐ No ☐ N/A
Was a Chain of Custody (CoC) Provided?			☒ Yes	☐ No ☐ N/A
Was the CoC correctly filled out (If No, document below)			☒ Yes	☐ No ☐ N/A
Were the sample containers in good condition (broken or leaking)?			☒ Yes	☐ No ☐ N/A
Was enough sample volume provided for analysis? (If No, document below)			☒ Yes	☐ No ☐ N/A
Are all samples within 36 hours of collection?			☒ Yes	☐ No ☐ N/A

FedEx 7813 4238 1550

Sample Exception Report (The following exceptions were noted)

Client was notified on: Client contact:
Resolution to Exception:

CH2MHILL — CHAIN OF CUSTODY RECORD FOR NPDES COMPLIANCE BIOMONITORING

Client: CH2M
Address: 6 HUTTON CENTRE DR #700
Contact Person: DAN JABLONSKI
Phone: 213-228-8271
E-mail: D.JABLON1@CH2M.COM
CH2M HILL Project # / Purchase Order #: 660221-PM.01

NPDES#:

Composite Sample Information:
Initiated: Date 9/17/15 Time 0900
Ended: Date 09/18/15 Time 0900
Chilled During Collection ? Yes ✓ No
Dechlorinated prior to shipping ? Yes No ✓

Ship Samples to:
CH2M HILL - Applied Sciences Laboratory
Attention: Bioasssay Lab
1100 NE Circle Blvd. Suite 300
Corvallis, OR 97330
Lab Phone: (541) 768-3160
Customer Service: (541) 768-3120

Analysis Required / Comments

Sample ID	Date	Time	Sample Type: Comp.	Sample Type: Grab	# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	Topsmelt Acute	Topsmelt Chronic		Concentration and/or Comments
EFF-09-17 COMP	9/17/15	0900	✓			~~B3393-02~~														X	X		B3392-05

Sampled By & Title / (Please sign and print name): VIDAL CORTES/CH2M	Date/Time: 9/17/15 0900	Relinquished By / (Please sign and print name):	Date/Time: 9/18/15 1000
Received By / (Please sign and print name):	Date/Time: 09-19-15 1040	Relinquished By / (Please sign and print name):	Date/Time:
Received By / (Please sign and print name):	Date/Time:	Relinquished By / (Please sign and print name):	Date/Time:
Received By / (Please sign and print name):	Date/Time:	Shipped Via: UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping #:
Work Authorized By / (Please sign and print name):	Remarks: B3392-05 → as recvd. B3392-06 → as salted		

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: ~~B3393-02~~ B3392-05 Date Received: 9-19-15

Client/Project: SFPP Norwalk Received By:

Were custody seals intact and on the outside of the cooler?			☒ Yes	☐ No ☐ N/A
Packing Material:	☐ Hand Delivered	☒ Ice	☐ Blue Ice	☐ Box
Temp OK? (<6C) Therm ID: TH173 Exp. 10-31-15	0.3 °C		☒ Yes	☐ No ☐ N/A
Was a Chain of Custody (CoC) Provided?			☒ Yes	☐ No ☐ N/A
Was the CoC correctly filled out (If No, document below)			☒ Yes	☐ No ☐ N/A
Were the sample containers in good condition (broken or leaking)?			☒ Yes	☐ No ☐ N/A
Was enough sample volume provided for analysis? (If No, document below)			☒ Yes	☐ No ☐ N/A
Are all samples within 36 hours of collection?			☒ Yes	☐ No ☐ N/A

Sample Exception Report (The following exceptions were noted)

Client was notified on: Client contact:

Resolution to Exception:

B3392-06 → as salted

SAMPLE ID
EFF-09-17 COMP

SAMPLED BY CH2M / J.C.	DATE 9/17/15
	TIME 0900
LOCATION SFPP Norwalk	PRESERVATIVE —
ANALYSIS	CLIENT CH2M

ESS (800) 233-8425 www.essvial.com

LOT#

ORIGIN ID:TWHA (949) 400-0608
VIDAL CORTES
CH2M
6 HUTTON CENTRE DR STE 700

SANTA ANA, CA 92707
UNITED STATES US

SHIP DATE: 18SEP15
ACTWGT: 43.80 LB
CAD: 6990308/SSF01621
DIMS: 27x14x14 IN

BILL THIRD PARTY

Part # 156297-435 RIT2 04/15

TO

CH2M HILL– ASL
1100 NE CIRCLE BLVD STE 300

CORVALLIS OR 97330

(949) 400–0608 REF:
INV: DEPT:
PO:

FedEx Express

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7813 5636 7631

AHS
97330
OR–US PDX

WO CVOA

FedEx Express

SDR

FedEx® Saturday Delivery

151966 10/04 MWI

B3392-05/06

Appendix B
Waste Manifests

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) C

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	CAT080033962	1	800-624-9136	010792339 JJK

GENERATOR

5. Generator's Name and Mailing Address
SFPP, LP (NORWALK STATION)
1100 TOWN AND COUNTRY RD. ATTN: Karina H.
ORANGE CA 92868
Generator's Phone: 714-560-4887

Generator's Site Address (if different than mailing address)
15306 NORWALK BLVD.
NORWALK, CA 90651

6. Transporter 1 Company Name: PATRIOT ENVIRONMENTAL SERVICES — U.S. EPA ID Number: CAD053866794

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON CA 90222
Facility's Phone: 310-537-7100

U.S. EPA ID Number: CAT080013352

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. UN1993, WASTE FLAMMABLE LIQUID, NOS, 3, PG II (GASOLINE) GASOLINE & WATER	001	TT	1300	G	D001	D018	
	2. THIS WASTE STREAM HAS BEEN QUALIFIED FOR RECYCLING/TREATMENTS AT THE DeMENNO / KERDOON FACILITY IN COMPTON, CALIFORNIA. THIS FACILITY HAS THE NECESSARY PERMITS TO RECEIVE YOUR WASTE STREAM AS QUALIFIED. OUR EPA NUMBER IS CAT080013352					134		
	3.							
	4.							

14. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PPE WHEN HANDLING
9b1.) PROFILE NUMBER: 384347 (REMEDIATION SYSTEM RINSATE)
PATRIOT JOB NUMBER: LB
BILL TO SFPPLP
ATTN: STEVE OFFIBALISH

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: JAMES DYE — Signature — Month 6 Day 16 Year 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: KENDALL FLORES — Signature — Month 6 Day 16 Year 15

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Reconciled quantity 965 with Mark Manifest Reference Number: Patriot on 6-23-15

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H039			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Alejandro Rangel — Signature: Alejandro Rangel — Month 06 Day 16 Year 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Certificate of Treatment/Recycling

ISSUED TO

SFPP - NORWALK STATION

FOR

MANIFEST NUMBER 010792339JJK DATE RECEIVED 6/16/2015

The aqueous waste received on the above manifest will be treated to standards mandated by the FEDERAL CLEAN WATER ACT and to effluent requirements established by the Sanitation Districts of Los Angeles County. Waste treatment and recycling is performed under permits granted to DeMENNO/KERDOON, a California Corporation, by the California Department of Toxic Control (DTSC), in coordination with the Environmental Protection Agency, in accordance with the provisions of the Resource Conservation and Recovery Act (RCRA) of 1976, together with applicable federal and state regulations including but not limited to waste discharge requirements established by the Sanitation Districts of Los Angeles County.

When the above described waste material is accepted by DeMENNO/KERDOON and treated/recycled and the aqueous phase discharged for further treatment by the Sanitation Districts, the certificate holder's responsibility for the waste material is eliminated under both RCRA and Proposition 65. Upon request, DeMENNO/KERDOON will issue this certificate that all waste material has been handled in accordance with applicable permits and the certificate holder's liability has been terminated.

DeMENNO/KERDOON
"Compliance Through Recycling"

By: _____ *Date:* 7/7/2015

Cyrus Pourmassanian
Laboratory Manager

2000 North Alameda Street ❑ Compton ❑ California ❑ 90222
Telephone (310) 537-7100 ❑ Facsimile (310) 639-2946

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) c

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CAT080033962
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: **014581143 JJK**

5. Generator's Name and Mailing Address: SFPP, LP, 1100 Town & Country Rd, Orange CA 92868 — Att: Karina Hankins

Generator's Site Address (if different than mailing address): SFPP, L.P. Norwalk Station, 15306 Norwalk Blvd, Norwalk CA 90651

Generator's Phone: 714 560-4873

6. Transporter 1 Company Name: Environmental Logistics, Inc. — U.S. EPA ID Number: CAR000172460

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Filter Recycling Services, Inc., 180 W. Monte Avenue, Bloomington CA 92316 — U.S. EPA ID Number: CAD982444481

Facility's Phone: 909 421-2012

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. Non-RCRA Hazardous Waste Solid (Filters)	2	DM	300	P	352
	2. FILTER RECYCLING SERVICES' RIALTO FACILITY, EPA #CAD982444481 HAS THE APPROPRIATE PERMIT(S) FOR					
	3. AND WILL ACCEPT THIS WASTE AS SHIPPED					
	4.					

14. Special Handling Instructions and Additional Information: 1)Groundwater Treatment System upstream Bag Filters - 12031523 Invoice #181795

2X55

One or more of the material listed on this manifest may be recycled as alternative daily cover (ADC), or other method which uses the material in or on the land

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: [signature] — Signature: PATRICK LOYA — Month 7 Day 1 Year 15

16. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: ____ Transporter signature (for exports only): ____ Date leaving U.S.: ____

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Steven Mumbrull 132 — Signature: [signature] — Month 7 Day 1 Year 15

Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. H141 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Sarah Amick — Signature: Sarah Amick — Month 7 Day 2 Year 15

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	001		NHZ-070715KMNW

GENERATOR

5. Generator's Name and Mailing Address

SFPP-LP ...
1100 TOWN & COUNTRY RD
ORANGE, CA 92868

Generator's Phone: 714-560-4400

Generator's Site Address (if different than mailing address)

NORWALK TANK FARM
15308 NORWALK BLVD
NORWALK, CA 90650

6. Transporter 1 Company Name: PROMINENT SYSTEMS, INC — U.S. EPA ID Number:

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

CALIFORNIA CARBON CO.
2825 E. GRANT STREET
WILMINGTON, CA 90744

U.S. EPA ID Number:

Facility's Phone: 562-436-1982

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS SPENT CARBON	1	BA	~~800~~ 400	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

Acceptance # 15-175190-A

VAP.

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: JAMES DYK — Signature — Month 7 Day 7 Year 15

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Febrajon Aldi — Signature — Month 9 Day 7 Year 15

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month Day Year

169-BLS-C 5 11979 (Rev. 9/09)

GENERATOR'S/SHIPPER'S INITIAL COPY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
CAT080033962	1	800-624-9136	010792338 JJK

GENERATOR

5. Generator's Name and Mailing Address
SFPP, LP (NORWALK STATION)
1100 TOWN AND COUNTRY RD. ATTN: Karina H.
ORANGE CA 92868
Generator's Phone: 714-560-4887

Generator's Site Address (if different than mailing address)
15306 NORWALK BLVD.
NORWALK, CA 90651

6. Transporter 1 Company Name: PATRIOT ENVIRONMENTAL SERVICES
U.S. EPA ID Number: CAD053866794

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON CA 90222
Facility's Phone: 310-537-7100
U.S. EPA ID Number: CAT080013352

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN1993, WASTE FLAMMABLE LIQUID, NOS, 3, PG II (GASOLINE)	001	TT	1,500	G	D001 D018 134
	2. THIS WASTE STREAM HAS BEEN QUALIFIED FOR RECYCLING/TREATMENTS AT THE DeMENNO / KERDOON FACILITY IN COMPTON, CALIFORNIA. THIS FACILITY HAS THE NECESSARY PERMITS TO RECEIVE YOUR WASTE STREAM AS QUALIFIED. OUR EPA NUMBER IS CAT080013352					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PPE WHEN HANDLING
9b1.) PROFILE NUMBER: 384347 (REMEDIATION SYSTEM RINSATE)
PATRIOT JOB NUMBER: LB
BILL TO SFPPLP
ATTN: STEVE DEFIBAUGH

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: X JAMES DYER
Signature: X
Month: 7 Day: 16 Year: 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: X Jose Velasquez
Signature: X
Month: 7 Day: 16 Year: 15

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H039			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Alejandro Reyes
Signature: Alejandro Reyes
Month: 07 Day: 16 Year: 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Certificate of Treatment/Recycling

ISSUED TO

SFPP - NORWALK STATION

FOR

MANIFEST NUMBER 010792338JJK DATE RECEIVED 7/16/2015

The aqueous waste received on the above manifest will be treated to standards mandated by the FEDERAL CLEAN WATER ACT and to effluent requirements established by the Sanitation Districts of Los Angeles County. Waste treatment and recycling is performed under permits granted to DeMENNO/KERDOON, a California Corporation, by the California Department of Toxic Control (DTSC), in coordination with the Environmental Protection Agency, in accordance with the provisions of the Resource Conservation and Recovery Act (RCRA) of 1976, together with applicable federal and state regulations including but not limited to waste discharge requirements established by the Sanitation Districts of Los Angeles County.

When the above described waste material is accepted by DeMENNO/KERDOON and treated/recycled and the aqueous phase discharged for further treatment by the Sanitation Districts, the certificate holder's responsibility for the waste material is eliminated under both RCRA and Proposition 65. Upon request, DeMENNO/KERDOON will issue this certificate that all waste material has been handled in accordance with applicable permits and the certificate holder's liability has been terminated.

DeMENNO/KERDOON

"Compliance Through Recycling"

By: _____ *Date:* 8/3/2015

Cyrus Pourhassanian

Laboratory Manager

2000 North Alameda Street ❑ Compton ❑ California ❑ 90222

Telephone (310) 537-7100 ❑ Facsimile (310) 639-2946

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	001		NHZ-021716KM01W

GENERATOR

5. Generator's Name and Mailing Address

SFPP-LP
1100 TOWN & COUNTRY RD
ORANGE, CA 92868

Generator's Phone: 714-560-4400

Generator's Site Address (if different than mailing address)

NORWALK TANK FARM
15305 NORWALK BLVD
NORWALK, CA 90650

6. Transporter 1 Company Name: PROMINENT SYSTEMS, INC — U.S. EPA ID Number:

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

CALIFORNIA CARBON CO.
2325 E. GRANT STREET
WILMINGTON, CA 90744

Facility's Phone: 562-436-1982

U.S. EPA ID Number:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS SPENT CARBON	4	BA	4000	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

APP# 10-097-268-B

LIQ

MARKING WALK

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
PATRICK LUNA		07	17	15

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
TROY BUNCH		07	17	15
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number:

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)	Month	Day	Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name	Signature	Month	Day	Year

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CAT080033962
2. Page 1 of: 1
3. Emergency Response Phone: 800-624-9136
4. Manifest Tracking Number: 010792358 JJK

GENERATOR

5. Generator's Name and Mailing Address
SFPP, LP (NORWALK STATION)
1100 TOWN AND COUNTRY RD. ATTN: Karina H.
ORANGE CA 92868
Generator's Phone: 714-560-4887

Generator's Site Address (if different than mailing address)
15306 NORWALK BLVD.
NORWALK, CA 90651

6. Transporter 1 Company Name: PATRIOT ENVIRONMENTAL SERVICES
U.S. EPA ID Number: CAD053866794

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON CA 90222
Facility's Phone: 310-537-7100
U.S. EPA ID Number: CAT080013352

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN1993, WASTE FLAMMABLE LIQUID, NOS, 3, PG II (GASOLINE)	001	TT	1400	G	D001 D018 134
	2. THIS WASTE STREAM HAS BEEN QUALIFIED FOR RECYCLING/TREATMENTS AT THE DeMENNO / KERDOON FACILITY IN COMPTON, CALIFORNIA. THIS FACILITY HAS THE NECESSARY PERMITS TO RECEIVE YOUR WASTE STREAM AS QUALIFIED. OUR EPA NUMBER IS CAT080013352					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PPE WHEN HANDLING
9b1.) PROFILE NUMBER: 384347 (REMEDIATION SYSTEM RINSATE)
PATRIOT JOB NUMBER: LB
BILL TO SFPPLP
ATTN: STEVE DEIBAUGH

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: JAMES DYER
Signature:
Month Day Year: 08 25 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: BRETT YOUNG
Signature:
Month Day Year: 08 25 15
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
U.S. EPA ID Number:
18b. Alternate Facility (or Generator)
Facility's Phone:
Month Day Year:
18c. Signature of Alternate Facility (or Generator)

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H039 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: SOMHAL P. SWAY
Signature:
Month Day Year: 08 25 15

DESIGNATED FACILITY TO GENERATOR

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Certificate of Treatment/Recycling

ISSUED TO

SFPP - NORWALK STATION

FOR

MANIFEST NUMBER 010792358JJK DATE RECEIVED 8/25/2015

The aqueous waste received on the above manifest will be treated to standards mandated by the FEDERAL CLEAN WATER ACT and to effluent requirements established by the Sanitation Districts of Los Angeles County. Waste treatment and recycling is performed under permits granted to DeMENNO/KERDOON, a California Corporation, by the California Department of Toxic Control (DTSC), in coordination with the Environmental Protection Agency, in accordance with the provisions of the Resource Conservation and Recovery Act (RCRA) of 1976, together with applicable federal and state regulations including but not limited to waste discharge requirements established by the Sanitation Districts of Los Angeles County.

When the above described waste material is accepted by DeMENNO/KERDOON and treated/recycled and the aqueous phase discharged for further treatment by the Sanitation Districts, the certificate holder's responsibility for the waste material is eliminated under both RCRA and Proposition 65. Upon request, DeMENNO/KERDOON will issue this certificate that all waste material has been handled in accordance with applicable permits and the certificate holder's liability has been terminated.

DeMENNO/KERDOON

"Compliance Through Recycling"

By: _____ *Date:* 9/18/2015

Cyrus Pourhassanian
Laboratory Manager

2000 North Alameda Street ❑ Compton ❑ California ❑ 90222
Telephone (310) 537-7100 ❑ Facsimile (310) 639-2946

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
CAT080033962	1	800-624-9136	010792475 JJK

GENERATOR

5. Generator's Name and Mailing Address
SFPP LP (NORWALK STATION)
1100 TOWN AND COUNTRY RD ATTN: Karina H.
ORANGE CA 92868
Generator's Phone: 714-560-4887

Generator's Site Address (if different than mailing address)
15306 NORWALK BLVD
NORWALK, CA 90651

6. Transporter 1 Company Name: PATRIOT ENVIRONMENTAL SERVICES — U.S. EPA ID Number: CAD053866794

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST
COMPTON CA 90222
Facility's Phone: 310-537-7100

U.S. EPA ID Number: CAT080013352

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. UN1993, WASTE FLAMMABLE LIQUID, NOS, 3, PG II (GASOLINE)	001	TT	1600	G	D001	D018	
						L34		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PPE WHEN HANDLING
9b1.) PROFILE NUMBER: 393088 (REMEDIATION SYSTEM RINSATE)
PATRIOT JOB NUMBER: LR
BILL TO SFPPLP
ATTN: STEVE DEITBALK#1

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: JAMES DYE — Signature — Month: 9 Day: 24 Year: 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Amado Lopez — Signature — Month: 9 Day: 24 Year: 15

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month — Day — Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month — Day — Year