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Electronic Comprehensive Validation Package (eCVP)

100020640

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COMPREHENSIVE VALIDATION PACKAGE

Modified TO-15 SIM

INVENTORY SHEET

Work Order #: 2001756

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Comments:

Completed by:

Vera Belitsky	Vera Belitsky / Document Control	2/19/20
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 2001756

Work Order Summary

CLIENT:	Ms. Pamela Moss EA Engineering 7995 E. Prentice Ave Suite 206E Greenwood Village, CO 80111	**BILL TO:**	Accounts Payable - Lewisville EA Engineering 405 S. Highway 121 Suite C-100 Lewisville, TX 75067
PHONE:	303-590-9143	**P.O. #**	15790
FAX:		**PROJECT #**	14342129B6 Jones Rd. Groundwater Plume
DATE RECEIVED:	01/31/2020	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	02/07/2020		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	ASS-101-01292020	Modified TO-15 SIM	4.5 "Hg	3 psi
02A	ASS-101-DUP-01292020	Modified TO-15 SIM	4.0 "Hg	3 psi
03A	ASS-102-01292020	Modified TO-15 SIM	4.0 "Hg	3 psi
03B	ASS-102-01292020	Modified TO-15 SIM	4.0 "Hg	3 psi
04A	ASI-101-01292020	Modified TO-15 SIM	5.0 "Hg	3 psi
05A	ASI-101-DUP-01292020	Modified TO-15 SIM	4.5 "Hg	3 psi
06A	ASI-102-01292020	Modified TO-15 SIM	4.0 "Hg	3 psi
07A	ASS-103-01292020	Modified TO-15 SIM	4.5 "Hg	3 psi
08A	ASS-104-01292020	Modified TO-15 SIM	2.0 "Hg	3 psi
09A	ASI-105-01292020	Modified TO-15 SIM	5.0 "Hg	3 psi
10A	ASS-106-01292020	Modified TO-15 SIM	5.5 "Hg	3 psi
11A	ASS-105-01292020	Modified TO-15 SIM	4.0 "Hg	3 psi
12A	ASI-106-01292020	Modified TO-15 SIM	4.0 "Hg	3 psi
13A	ASBKG-2-01292020	Modified TO-15 SIM	4.5 "Hg	3 psi
14A	ASBKG-4-01292020	Modified TO-15 SIM	3.5 "Hg	3 psi
15A	ASI-104-01292020	Modified TO-15 SIM	5.0 "Hg	3 psi
16A	ASI-103-01292020	Modified TO-15 SIM	2.0 "Hg	3 psi
17A	Lab Blank	Modified TO-15 SIM	NA	NA
17B	Lab Blank	Modified TO-15 SIM	NA	NA
18A	CCV	Modified TO-15 SIM	NA	NA
18B	CCV	Modified TO-15 SIM	NA	NA
19A	LCS	Modified TO-15 SIM	NA	NA
19AA	LCSD	Modified TO-15 SIM	NA	NA

Continued on next page

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WORK ORDER #: 2001756

Work Order Summary

CLIENT:	Ms. Pamela Moss EA Engineering 7995 E. Prentice Ave Suite 206E Greenwood Village, CO 80111	**BILL TO:**	Accounts Payable - Lewisville EA Engineering 405 S. Highway 121 Suite C-100 Lewisville, TX 75067
PHONE:	303-590-9143	**P.O. #**	15790
FAX:		**PROJECT #**	14342129B6 Jones Rd. Groundwater Plume
DATE RECEIVED:	01/31/2020	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	02/07/2020		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
19B	LCS	Modified TO-15 SIM	NA	NA
19BB	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Hayes

Technical Director

DATE: 02/07/20

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
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LABORATORY NARRATIVE
Modified TO-15 SIM
EA Engineering
Workorder# 2001756

Sixteen 6 Liter Summa Canister (SIM Certified) samples were received on January 31, 2020. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) information for sample ASS-101-DUP-01292020 did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

Analytical Notes

Dilution was performed on samples ASS-101-01292020, ASS-101-DUP-01292020, ASS-102-01292020 and ASS-104-01292020 due to the presence of high level target species.

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified may be false positives.

The results for sample ASS-102-01292020 in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
ASS-101-01292020	2001756-01A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASS-101-DUP-01292020	2001756-02A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASS-102-01292020	2001756-03A	1/29/2020	1/31/2020	NA	9	2/ 7/2020	NA	Good
ASS-102-01292020	2001756-03B	1/29/2020	1/31/2020	NA	9	2/ 7/2020	NA	Good
ASI-101-01292020	2001756-04A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASI-101-DUP-01292020	2001756-05A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASI-102-01292020	2001756-06A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASS-103-01292020	2001756-07A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASS-104-01292020	2001756-08A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASI-105-01292020	2001756-09A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASS-106-01292020	2001756-10A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASS-105-01292020	2001756-11A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASI-106-01292020	2001756-12A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASBKG-2-01292020	2001756-13A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASBKG-4-01292020	2001756-14A	1/29/2020	1/31/2020	NA	8	2/ 6/2020	NA	Good
ASI-104-01292020	2001756-15A	1/29/2020	1/31/2020	NA	9	2/ 7/2020	NA	Good
ASI-103-01292020	2001756-16A	1/29/2020	1/31/2020	NA	9	2/ 7/2020	NA	Good
Lab Blank	2001756-17A	NA	NA	NA	NA	2/ 6/2020	NA	Good
Lab Blank	2001756-17B	NA	NA	NA	NA	2/ 6/2020	NA	Good
CCV	2001756-18A	NA	NA	NA	NA	2/ 6/2020	NA	Good
CCV	2001756-18B	NA	NA	NA	NA	2/ 6/2020	NA	Good
LCS	2001756-19A	NA	NA	NA	NA	2/ 6/2020	NA	Good
LCSD	2001756-19AA	NA	NA	NA	NA	2/ 6/2020	NA	Good
LCS	2001756-19B	NA	NA	NA	NA	2/ 6/2020	NA	Good
LCSD	2001756-19BB	NA	NA	NA	NA	2/ 6/2020	NA	Good

Sample Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

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Client ID:	ASS-101-01292020		
Lab ID:	2001756-01A	**Date/Time Analyzed:**	2/6/20 02:57 PM
Date/Time Collected:	1/29/20 05:25 PM	**Dilution Factor:**	14.2
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020608sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.28	0.28	0.56	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.17	0.56	1.1	19
Tetrachloroethene	127-18-4	0.18	0.96	1.9	1600
trans-1,2-Dichloroethene	156-60-5	0.32	0.56	5.6	1.9 J
Trichloroethene	79-01-6	0.18	0.76	1.5	70
Vinyl Chloride	75-01-4	0.13	0.18	0.36	0.78

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	89
Toluene-d8	2037-26-5	70-130	100

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020608sim.d
Lab Smp Id: 2001756-01A
Inj Date : 06-FEB-2020 14:57
Operator : mb Inst ID: msd20.i
Smp Info : 25mL #5738
Misc Info : 4.5"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 14.20000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	148285	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	114121			46.79- 106.79	76.96
17.284	17.316 (1.000)	49	133867			67.00- 127.00	90.28
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.840	18.839 (1.000)	114	372934	5.00000		80.00- 120.00	100.00
18.840	18.839 (1.000)	88	51860			0.00- 44.17	13.91
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	426885	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	196491			16.60- 76.60	46.03
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	176403	5.05364	5.054	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	89312			26.62- 86.62	50.63
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	331611	5.02882	5.029	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	38899			0.00- 40.95	11.73

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	208107			34.26- 94.26	62.76
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	292668	4.44193	4.442	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	243730			54.28- 114.28	83.28
25.927	25.927 (1.066)	176	284559			67.48- 127.48	97.23
4 Vinyl Chloride					CAS #: 75-01-4		
8.245	8.278 (0.476)	62	597	0.02139	0.3037	80.00- 120.00	100.00
8.245	8.278 (0.476)	64	185			2.23- 62.23	31.01
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	711	0.03430	0.4871	80.00- 120.00	100.00(a)
15.059	15.061 (0.870)	61	1299			161.94- 221.94	182.63
15.059	15.075 (0.870)	96	1013			125.44- 185.44	142.36
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	7797	0.33729	4.790	80.00- 120.00	100.00
16.917	16.916 (0.977)	61	13433			144.59- 204.59	172.29
16.917	16.916 (0.977)	96	11999			124.96- 184.96	153.90
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	44403	0.91808	13.037	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	38145			56.54- 116.54	85.91
19.241	19.245 (1.021)	97	24952			26.43- 86.43	56.19
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	1511590	16.9632	240.88	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	973847			34.72- 94.72	64.43
22.851	22.851 (0.940)	131	947392			33.00- 93.00	62.68

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 07-Feb-2020 12:14

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020608sim.d
Lab Smp Id: 2001756-01A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	148285	-19.14
20 1,4-Difluorobenze	549605	329763	769447	372934	-32.15
28 Chlorobenzene-d5	517348	310409	724287	426885	-17.49

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-01A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.054	101.07
$ 22 Toluene-d8	5.000	5.029	100.58
$ 33 4-Bromofluorobenzene	5.000	4.442	88.84

Data File: /chem/msd20.i/06feb20.b/20020608sim.d

Date : 06-FEB-2020 14:57

Client ID:

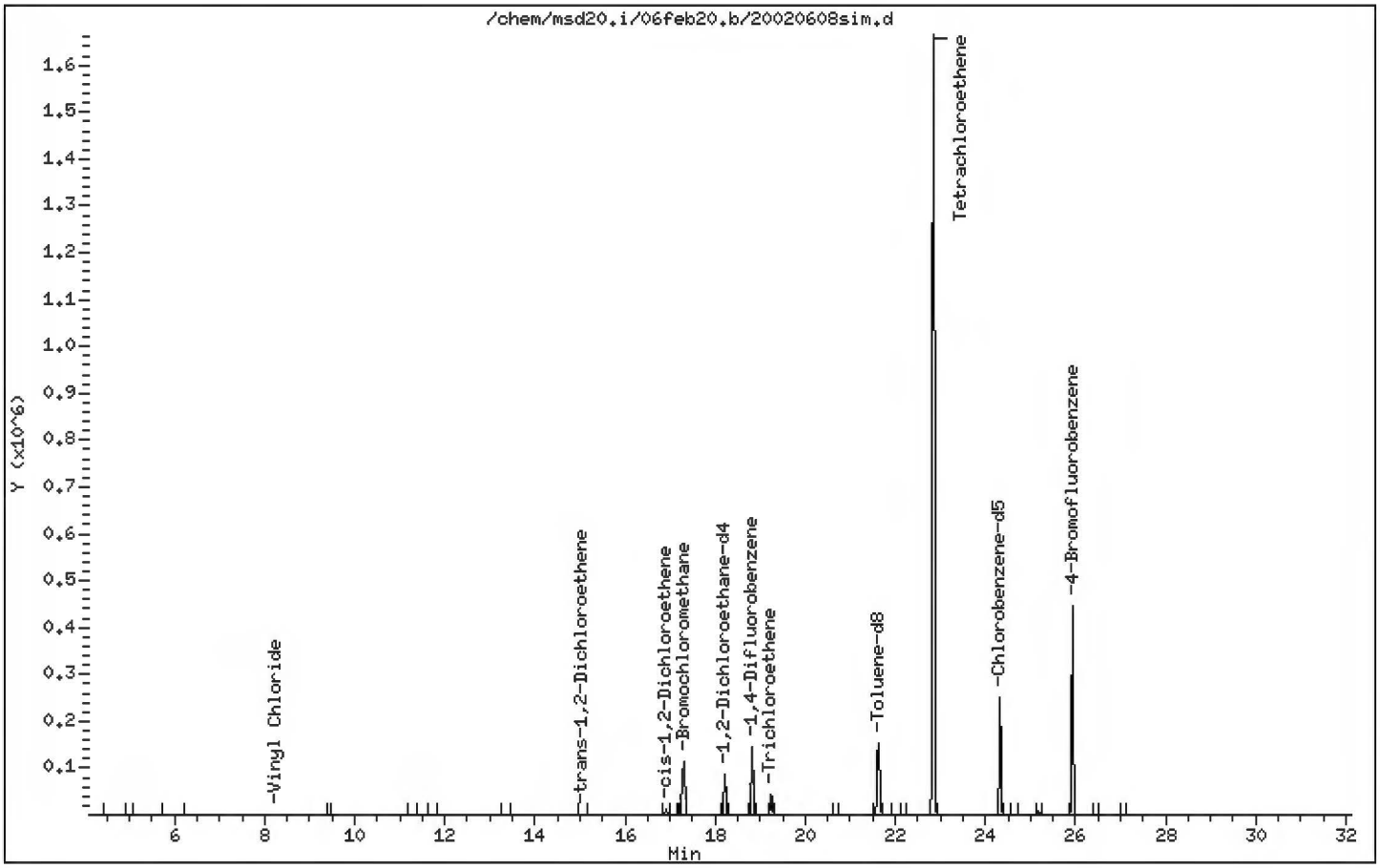
Instrument: msd20.i

Sample Info: 25mL #5738

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020608sim.d

Date : 06-FEB-2020 14:57

Client ID:

Instrument: msd20.i

Sample Info: 25mL #5738

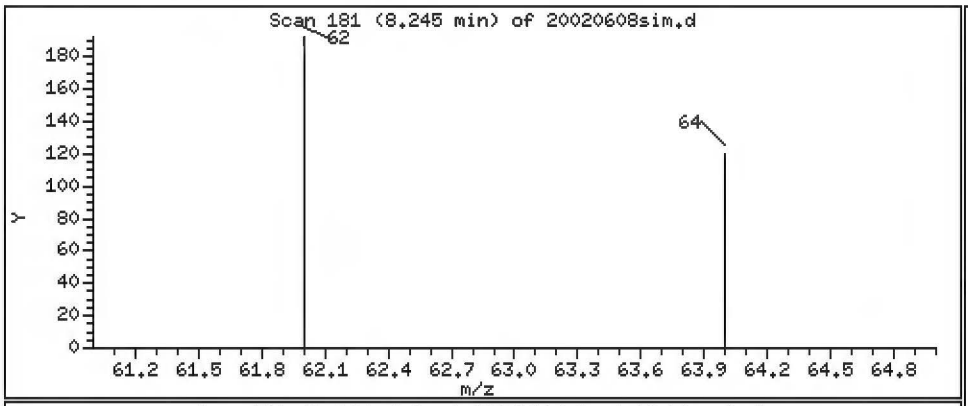
Operator: mb

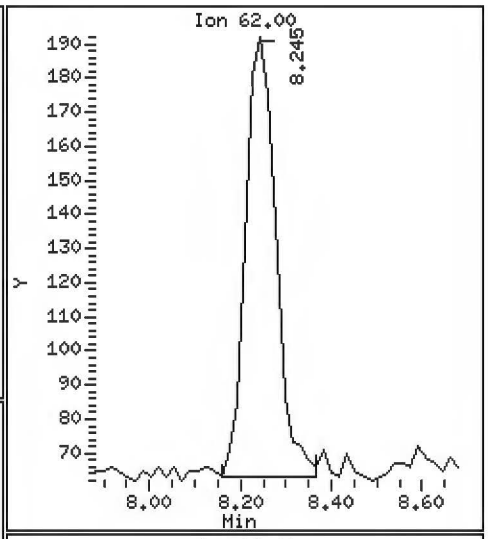
Column phase: RTX-624

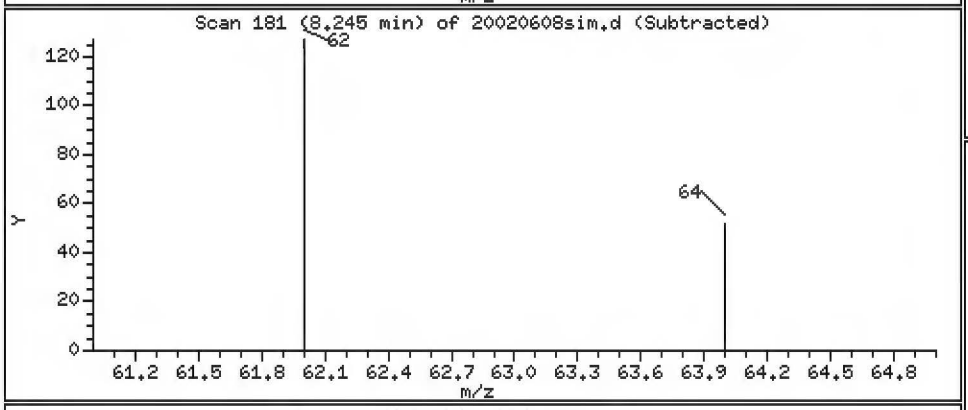
Column diameter: 0.32

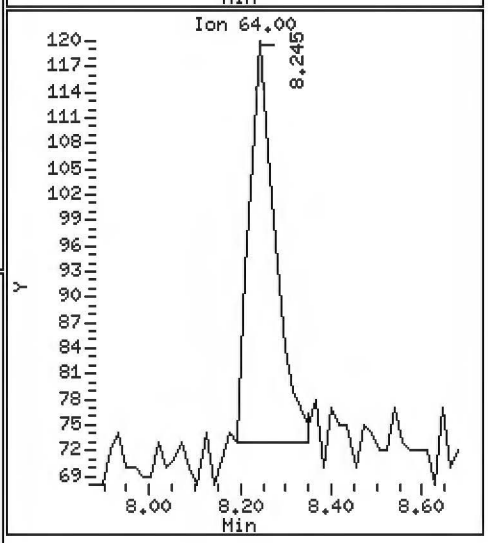
4 Vinyl Chloride

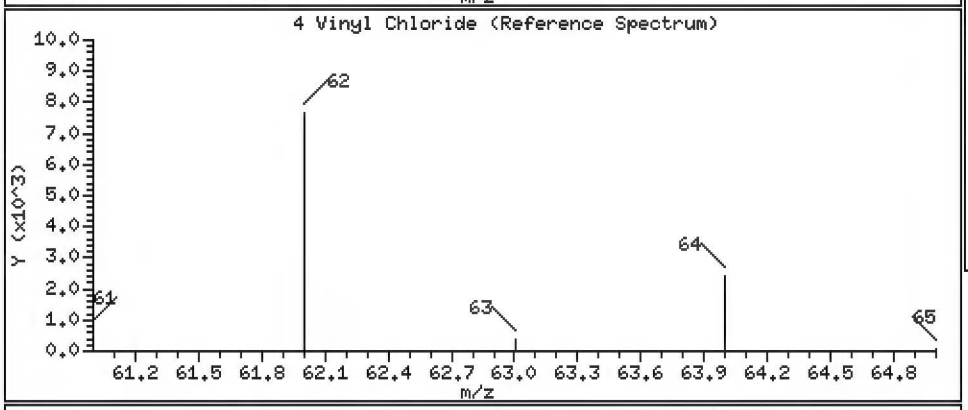
Concentration: 0.3037 PPBV

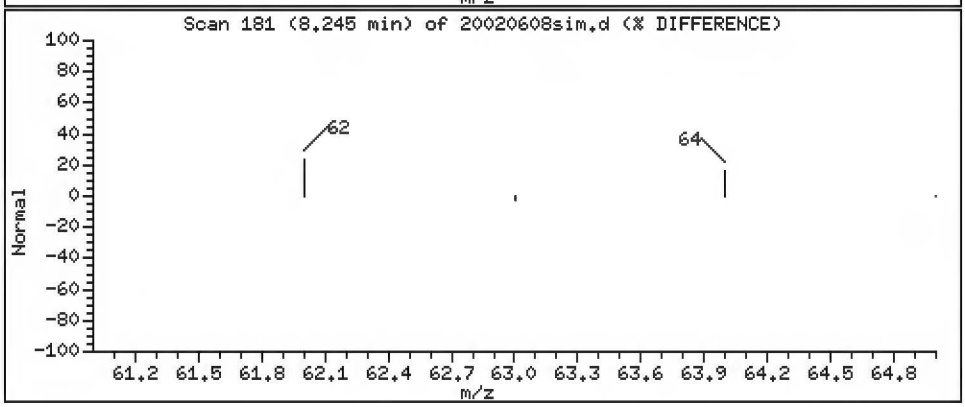












Data File: /chem/msd20.i/06feb20.b/20020608sim.d

Date : 06-FEB-2020 14:57

Client ID:

Instrument: msd20.i

Sample Info: 25mL #5738

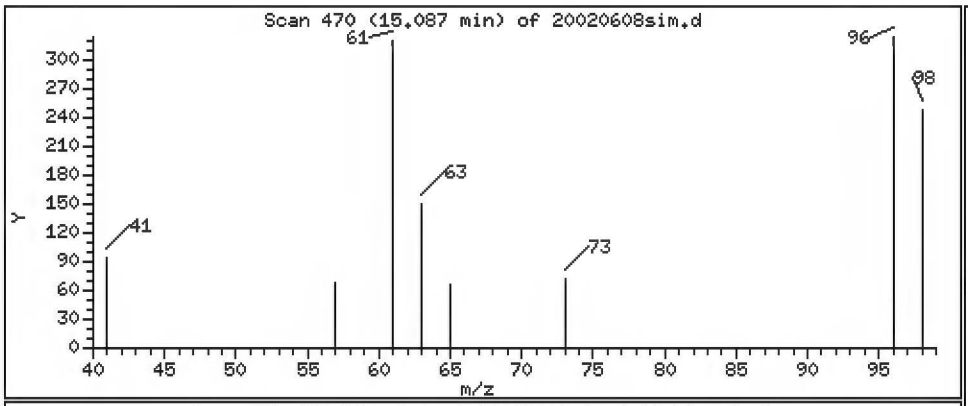
Operator: mb

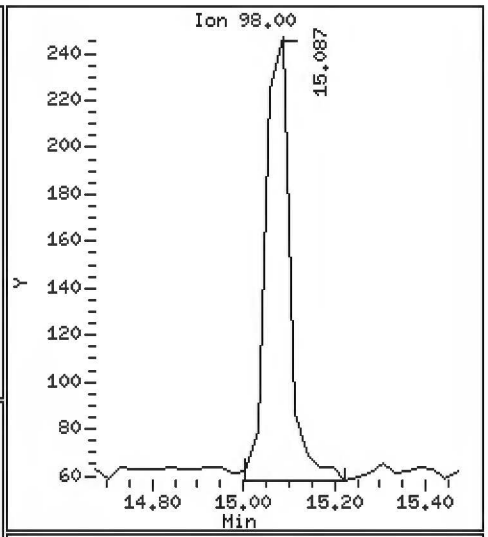
Column phase: RTX-624

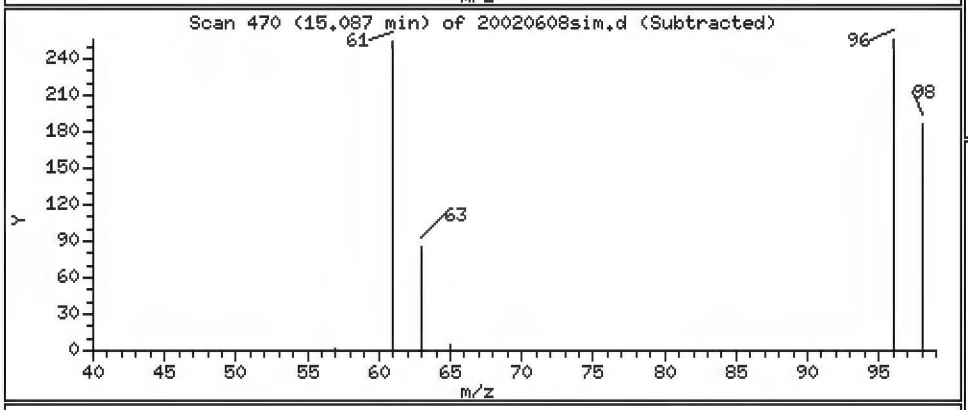
Column diameter: 0.32

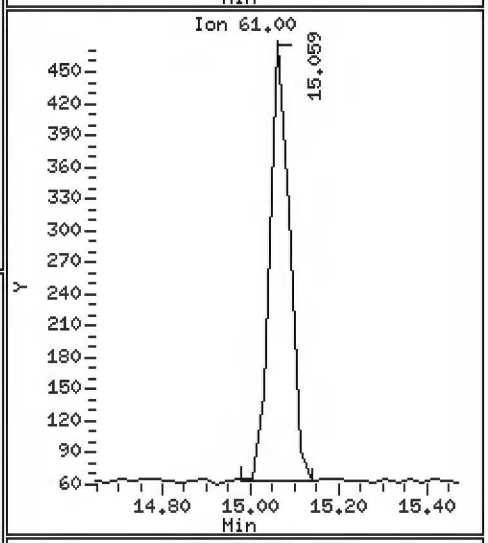
10 trans-1,2-Dichloroethene

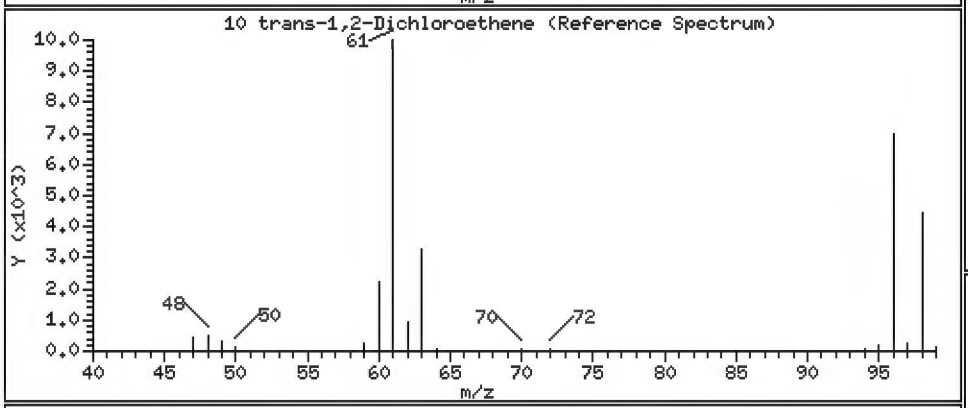
Concentration: 0.4871 PPBV

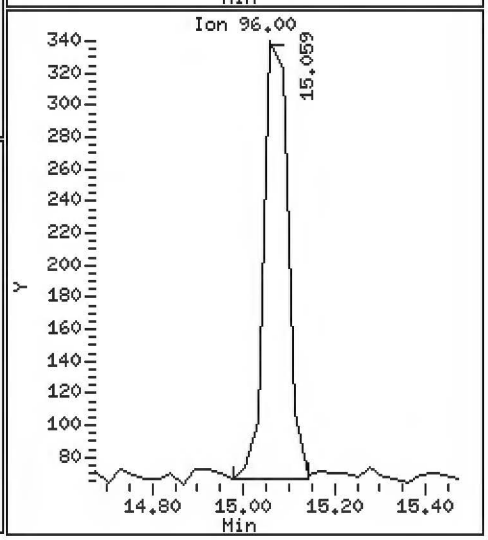


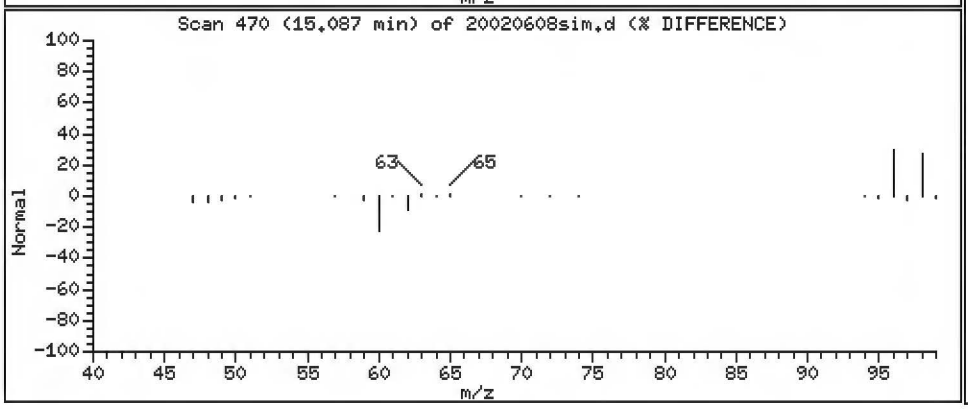












Data File: /chem/msd20.i/06feb20.b/20020608sim.d

Date : 06-FEB-2020 14:57

Client ID:

Instrument: msd20.i

Sample Info: 25mL #5738

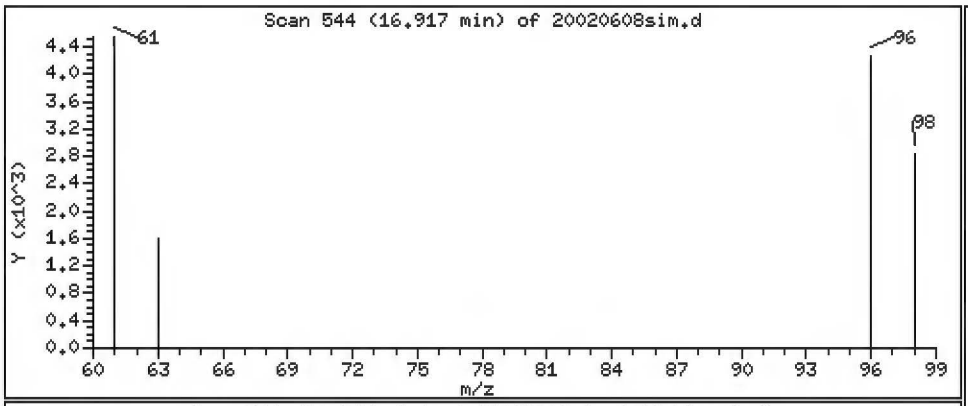
Operator: mb

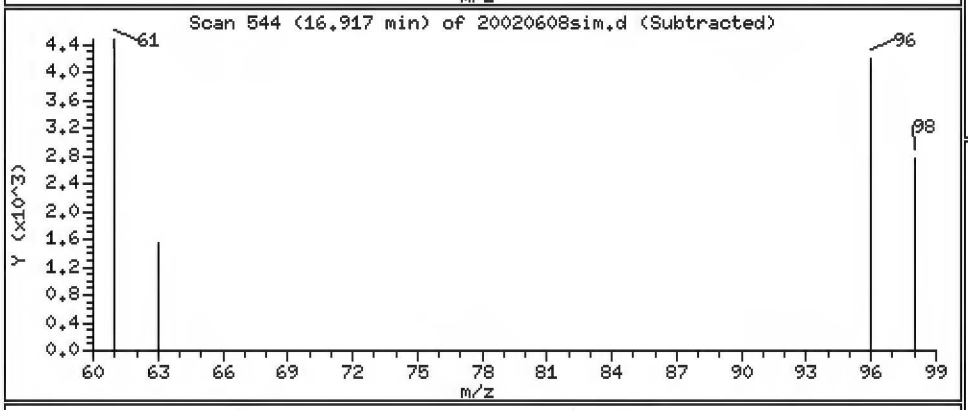
Column phase: RTX-624

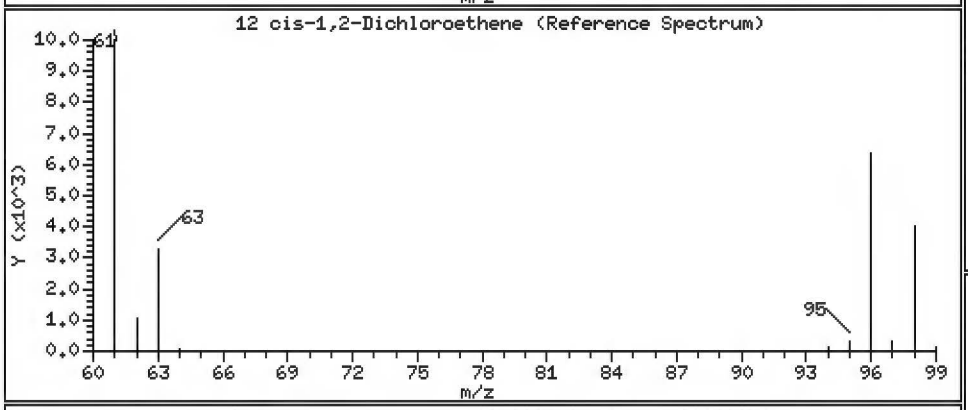
Column diameter: 0.32

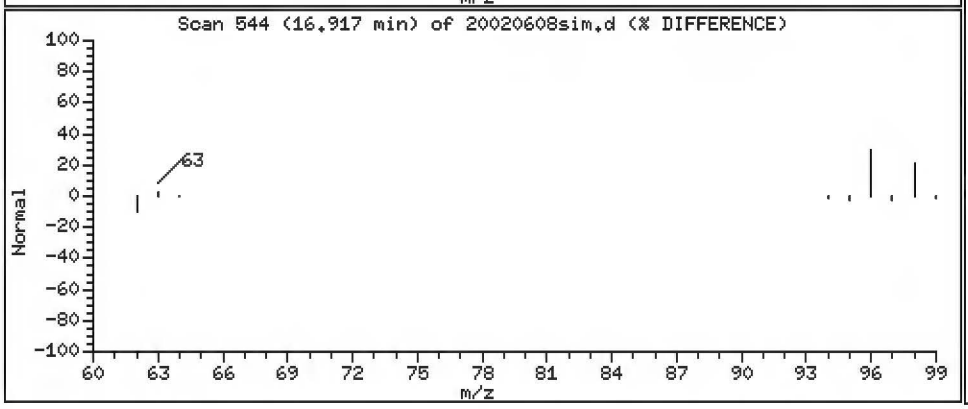
12 cis-1,2-Dichloroethene

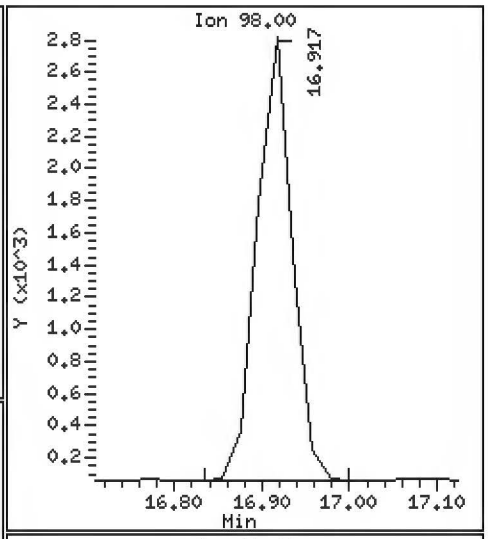
Concentration: 4.790 PPBV

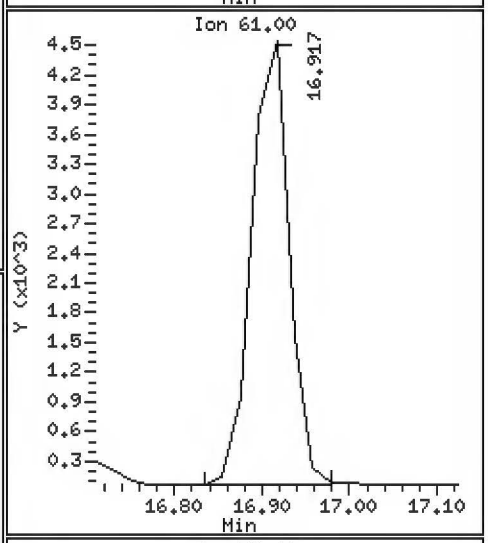


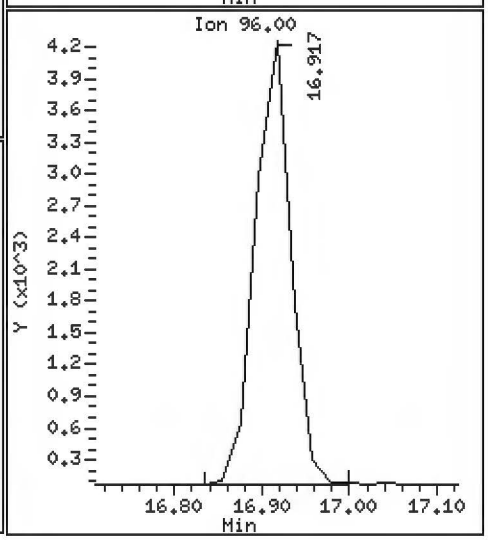












Data File: /chem/msd20.i/06feb20.b/20020608sim.d

Date : 06-FEB-2020 14:57

Client ID:

Instrument: msd20.i

Sample Info: 25mL #5738

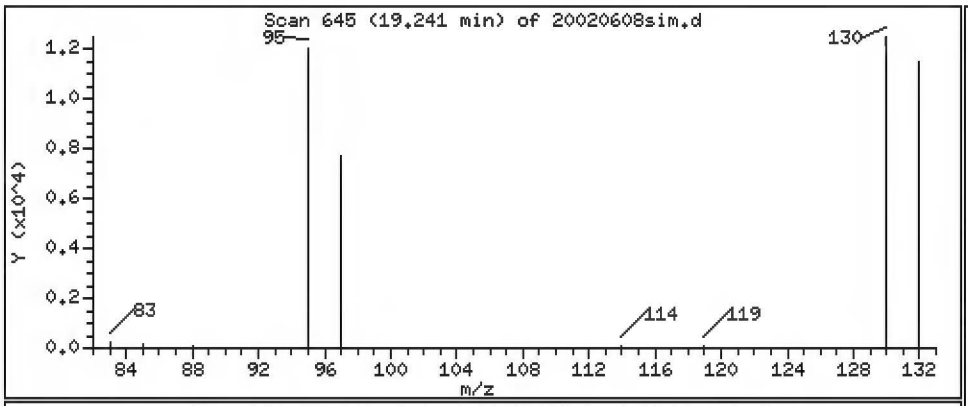
Operator: mb

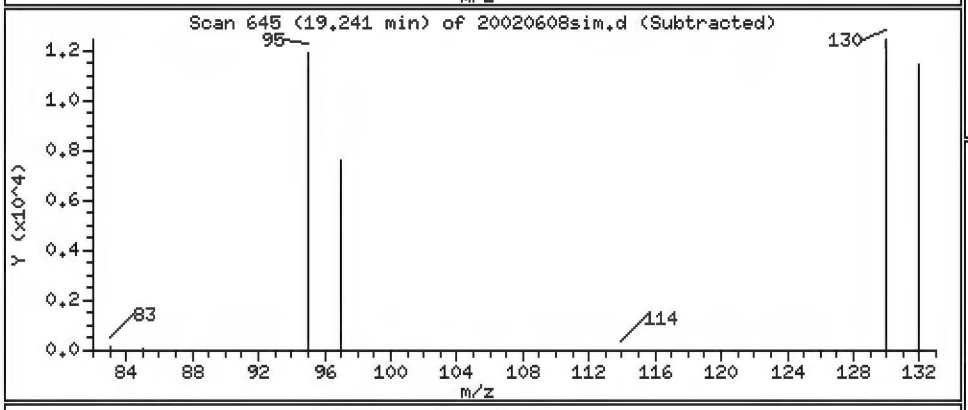
Column phase: RTX-624

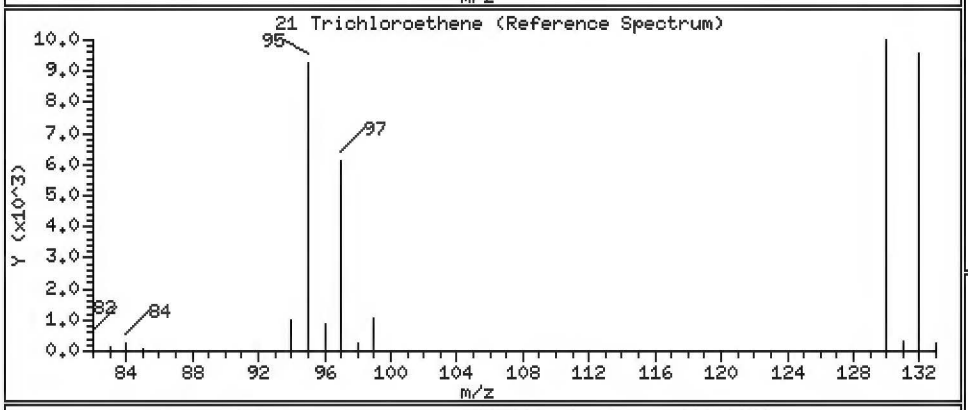
Column diameter: 0.32

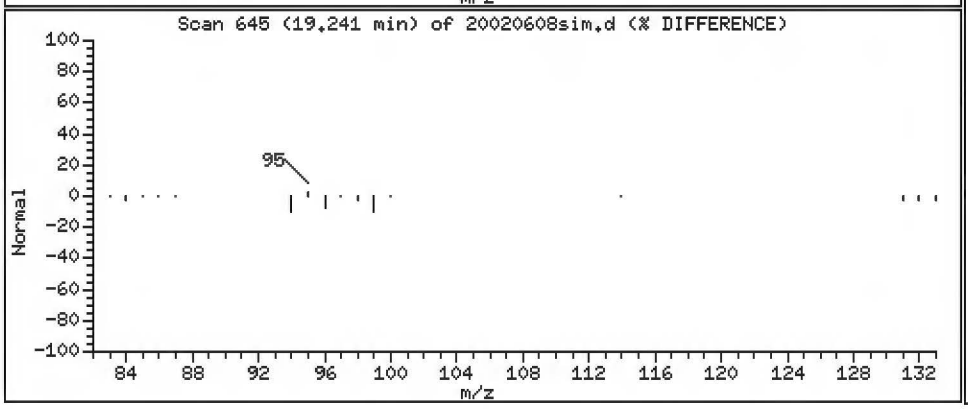
21 Trichloroethene

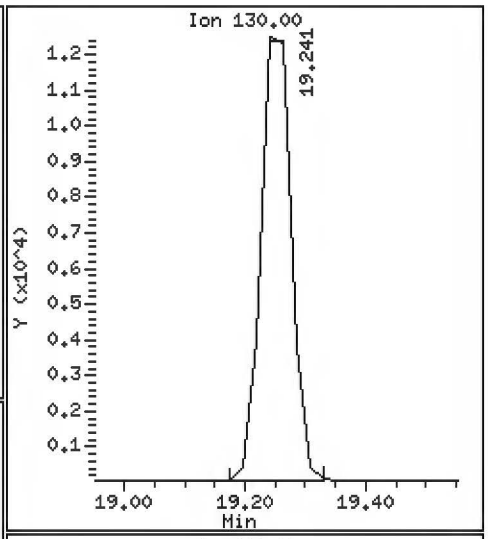
Concentration: 13.037 PPBV

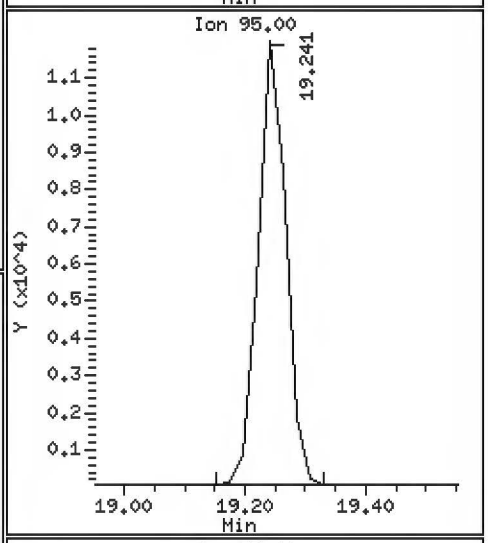


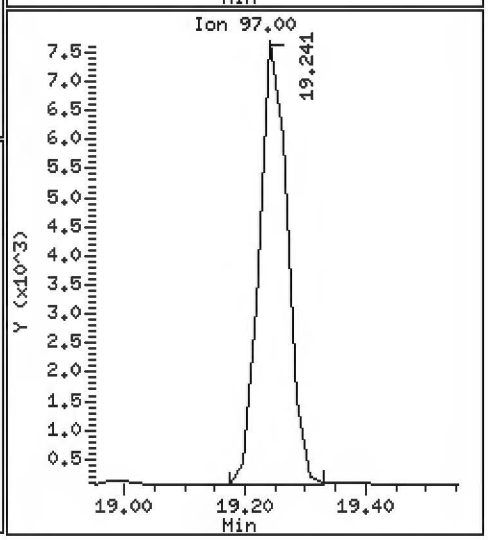












Data File: /chem/msd20.i/06feb20.b/20020608sim.d

Date : 06-FEB-2020 14:57

Client ID:

Instrument: msd20.i

Sample Info: 25mL #5738

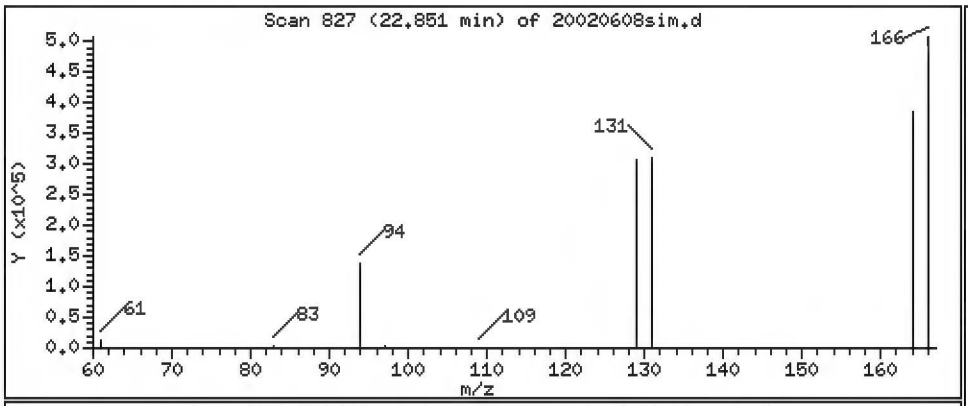
Operator: mb

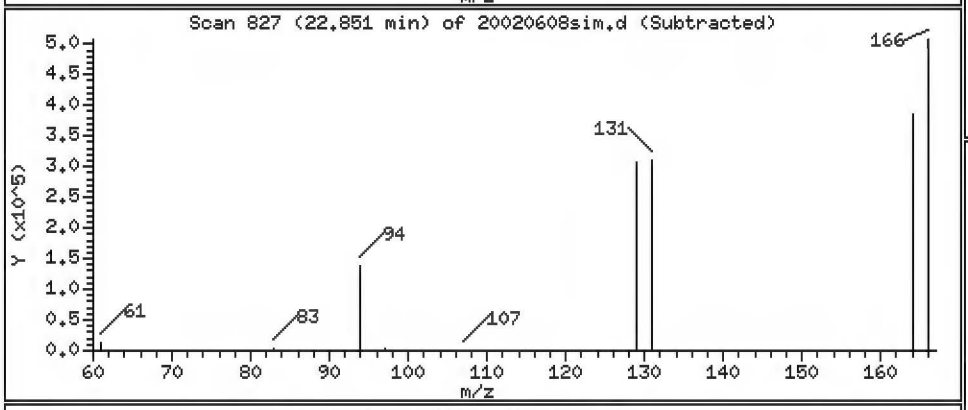
Column phase: RTX-624

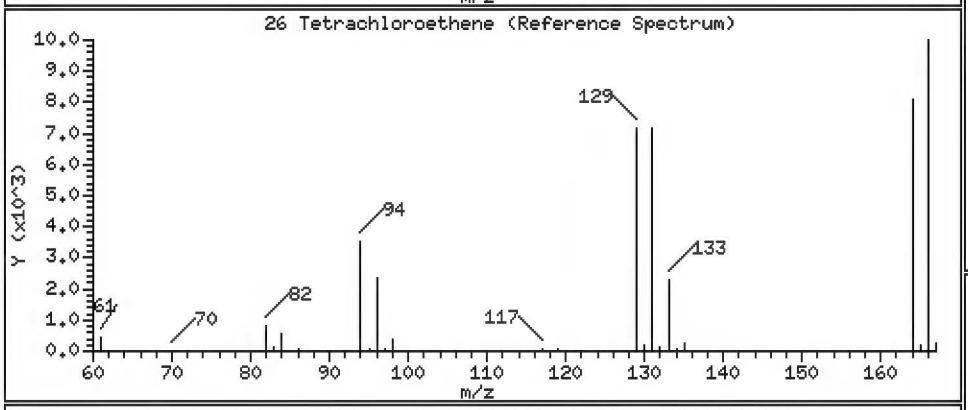
Column diameter: 0.32

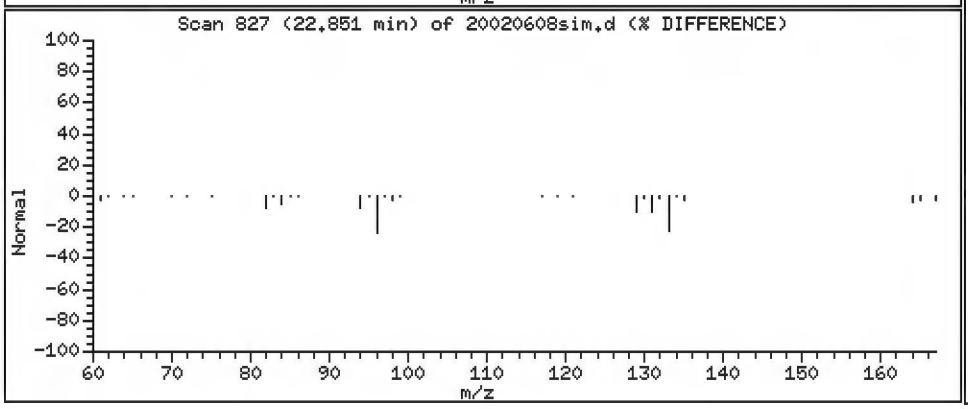
26 Tetrachloroethene

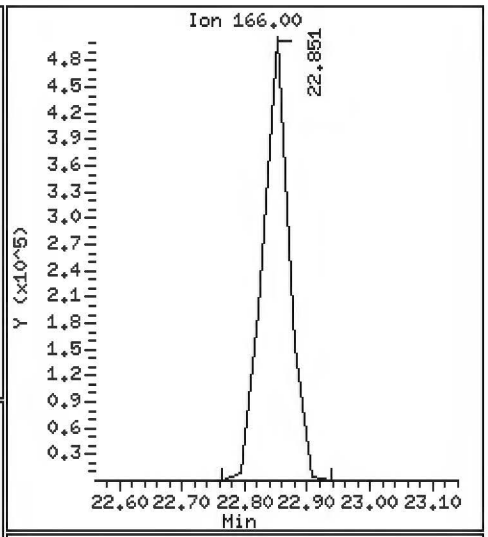
Concentration: 240.88 PPBV

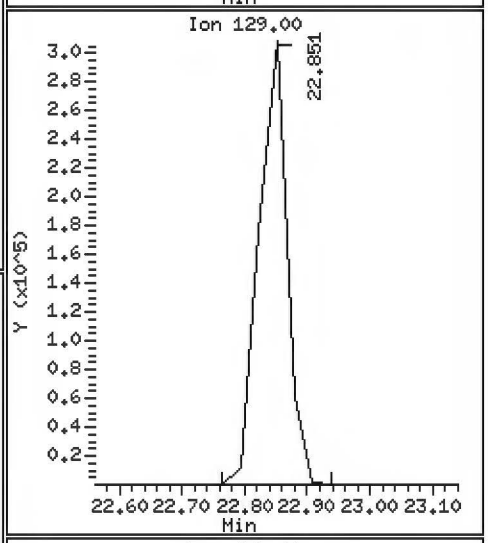


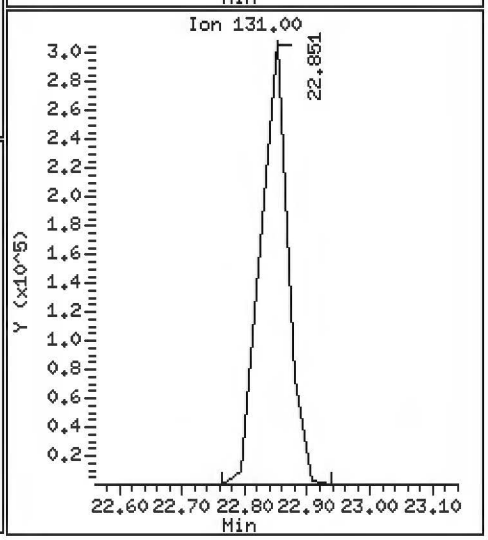












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

eurofins | Air Toxics

Client ID:	ASS-101-DUP-01292020		
Lab ID:	2001756-02A	**Date/Time Analyzed:**	2/6/20 07:37 PM
Date/Time Collected:	1/29/20 05:25 PM	**Dilution Factor:**	13.9
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020615sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.27	0.28	0.55	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.17	0.55	1.1	17
Tetrachloroethene	127-18-4	0.17	0.94	1.9	1400
trans-1,2-Dichloroethene	156-60-5	0.32	0.55	5.5	1.7 J
Trichloroethene	79-01-6	0.18	0.75	1.5	61
Vinyl Chloride	75-01-4	0.13	0.18	0.36	0.74

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	99
4-Bromofluorobenzene	460-00-4	70-130	91
Toluene-d8	2037-26-5	70-130	99

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020615sim.d
Lab Smp Id: 2001756-02A
Inj Date : 06-FEB-2020 19:37
Operator : mb Inst ID: msd20.i
Smp Info : 25mL #6L0602
Misc Info : 4.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 13.90000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	157923	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	121210			46.79- 106.79	76.75
17.283	17.316 (1.000)	49	141151			67.00- 127.00	89.38
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	398472	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	55711			0.00- 44.17	13.98
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	455465	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	209946			16.60- 76.60	46.09
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	184779	4.97055	4.970	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	93682			26.62- 86.62	50.70
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	350374	4.97281	4.973	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	41409			0.00- 40.95	11.82

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	218978			34.26- 94.26	62.50
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	320167	4.55437	4.554	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	267848			54.28- 114.28	83.66
25.927	25.927 (1.066)	176	311722			67.48- 127.48	97.36
4 Vinyl Chloride					CAS #: 75-01-4		
8.245	8.278 (0.476)	62	622	0.02093	0.2909	80.00- 120.00	100.00
8.262	8.278 (0.477)	64	241			2.23- 62.23	38.80
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.086	15.080 (0.871)	98	680	0.03079	0.4280	80.00- 120.00	100.00(a)
15.059	15.061 (0.870)	61	1199			161.94- 221.94	176.28
15.086	15.075 (0.871)	96	1019			125.44- 185.44	149.89
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.916	16.916 (0.977)	98	7484	0.30401	4.226	80.00- 120.00	100.00
16.916	16.916 (0.977)	61	12856			144.59- 204.59	171.78
16.916	16.916 (0.977)	96	11807			124.96- 184.96	157.77
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	42289	0.81832	11.375	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	36470			56.54- 116.54	86.24
19.241	19.245 (1.021)	97	23599			26.43- 86.43	55.80
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	1425086	14.9889	208.34	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	914328			34.72- 94.72	64.16
22.851	22.851 (0.940)	131	888826			33.00- 93.00	62.37

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020615sim.d
Lab Smp Id: 2001756-02A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	157923	-13.88
20 1,4-Difluorobenze	549605	329763	769447	398472	-27.50
28 Chlorobenzene-d5	517348	310409	724287	455465	-11.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-02A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	4.970	99.41
$ 22 Toluene-d8	5.000	4.973	99.46
$ 33 4-Bromofluorobenzene	5.000	4.554	91.09

Data File: /chem/msd20.i/06feb20.b/20020615sim.d

Date : 06-FEB-2020 19:37

Client ID:

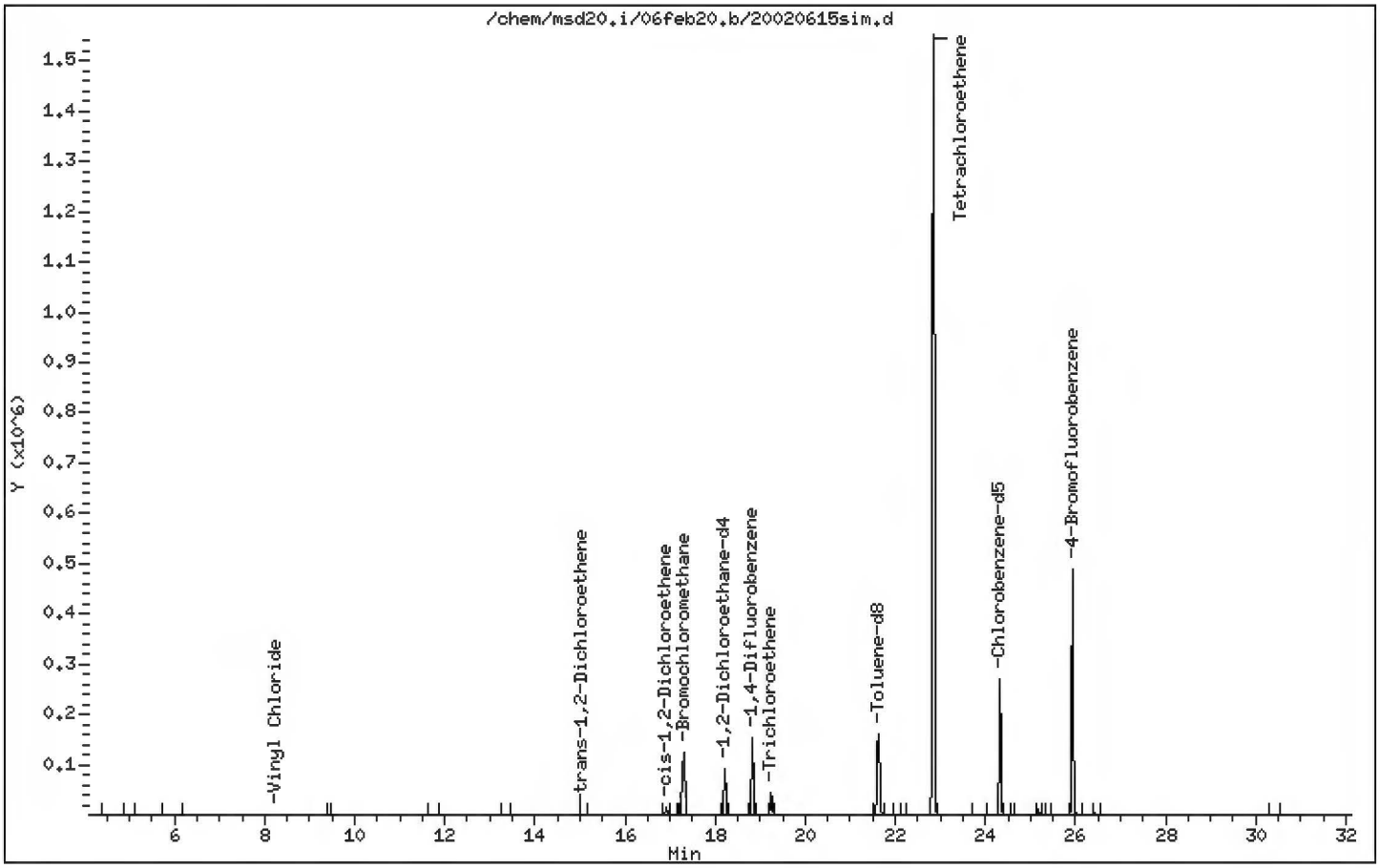
Instrument: msd20.i

Sample Info: 25mL #6L0602

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020615sim.d

Date : 06-FEB-2020 19:37

Client ID:

Instrument: msd20.i

Sample Info: 25mL #6L0602

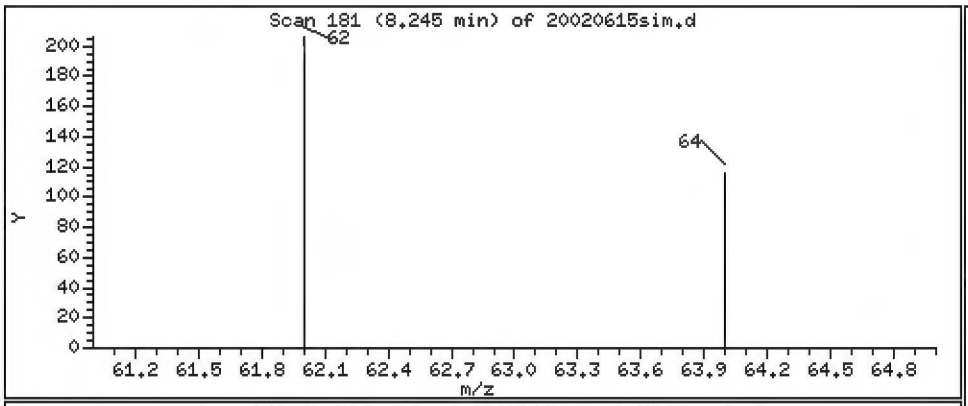
Operator: mb

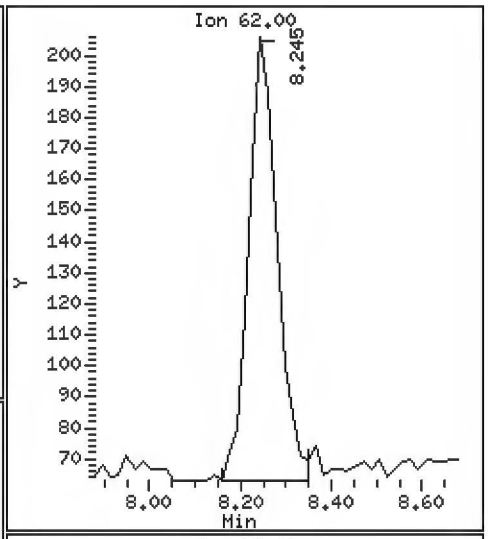
Column phase: RTX-624

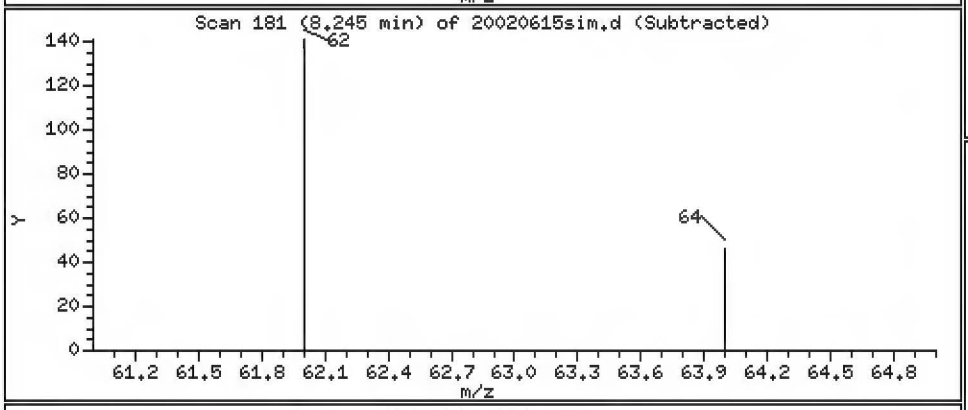
Column diameter: 0.32

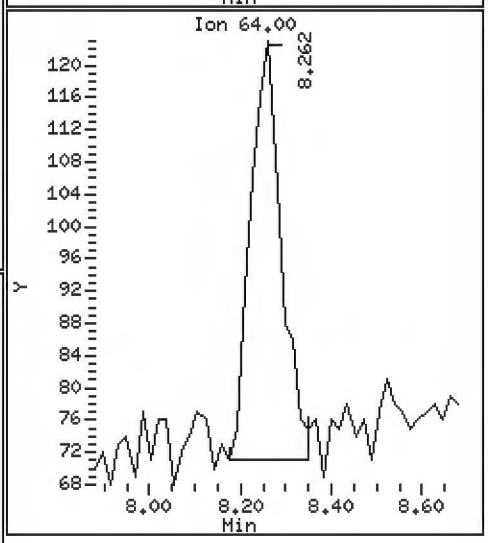
4 Vinyl Chloride

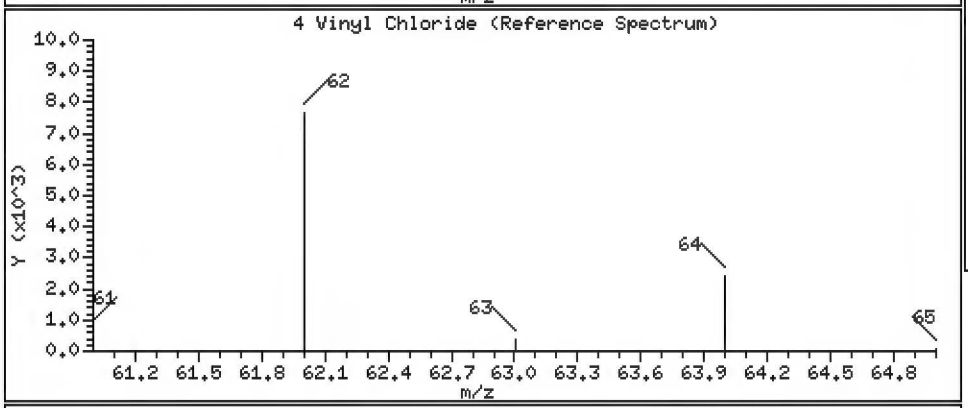
Concentration: 0.2909 PPBV

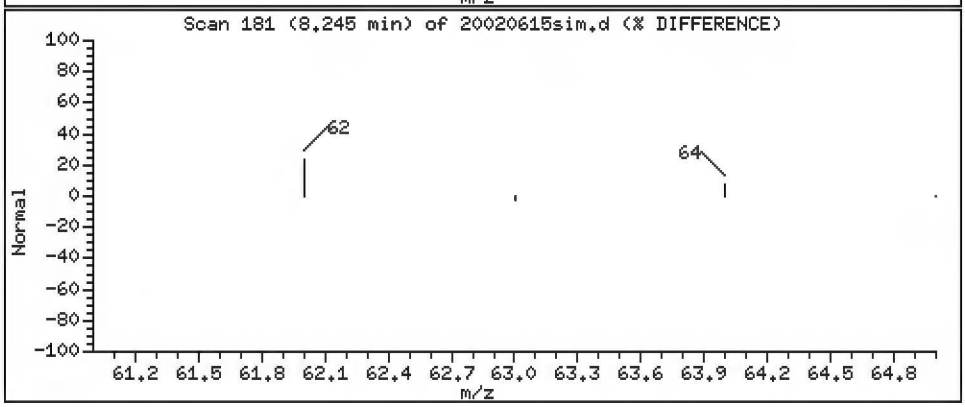












Data File: /chem/msd20.i/06feb20.b/20020615sim.d

Date : 06-FEB-2020 19:37

Client ID:

Instrument: msd20.i

Sample Info: 25mL #6L0602

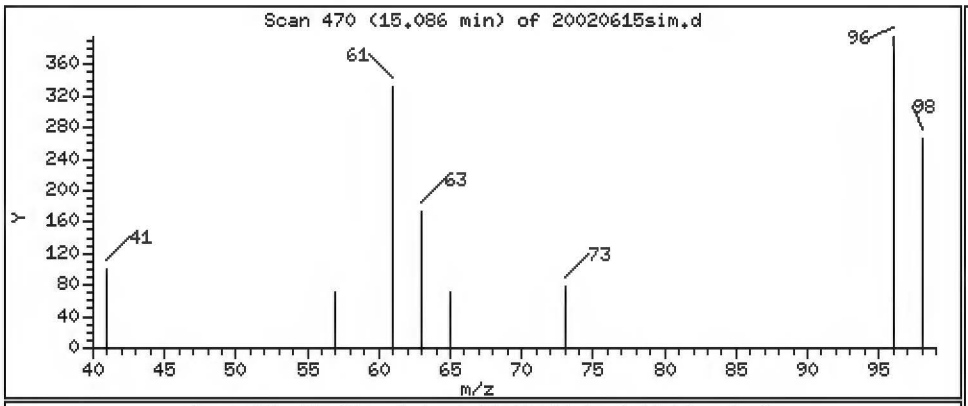
Operator: mb

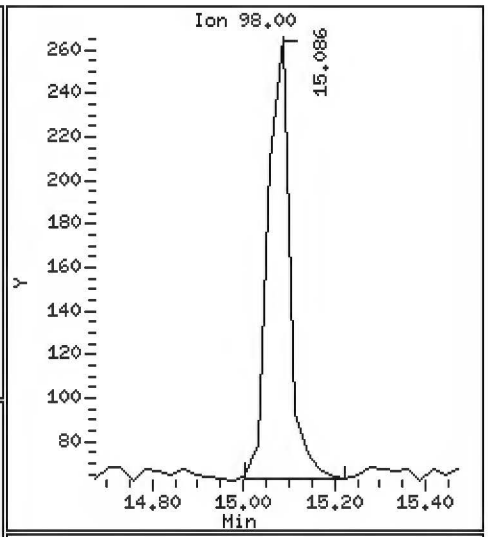
Column phase: RTX-624

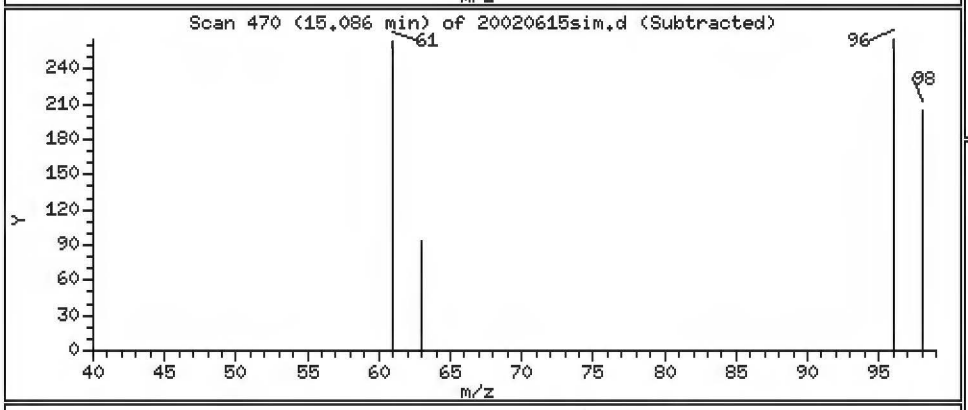
Column diameter: 0.32

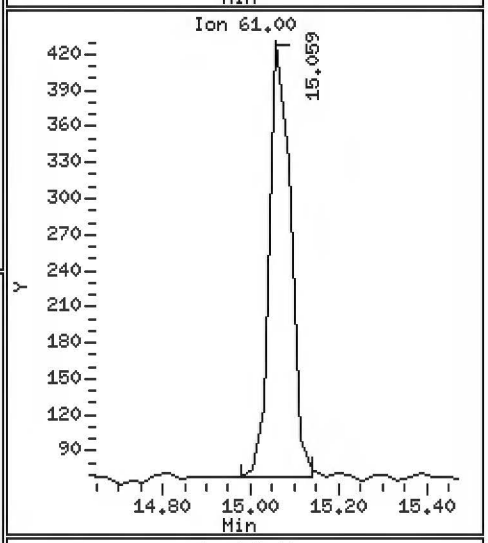
10 trans-1,2-Dichloroethene

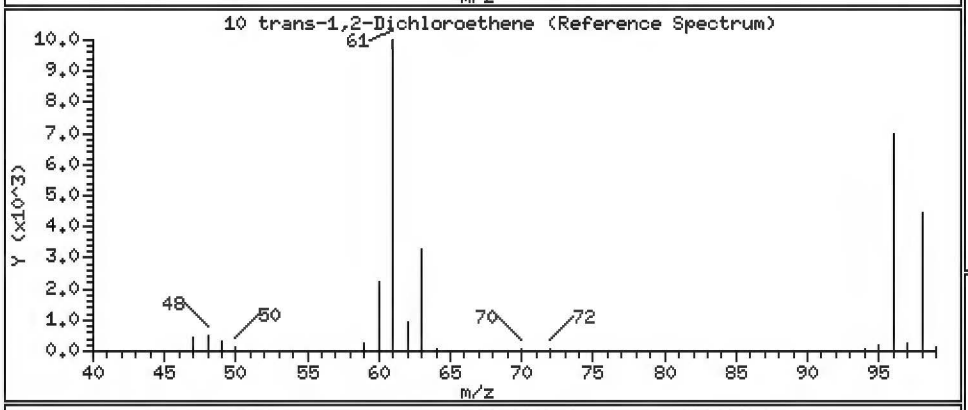
Concentration: 0.4280 PPBV

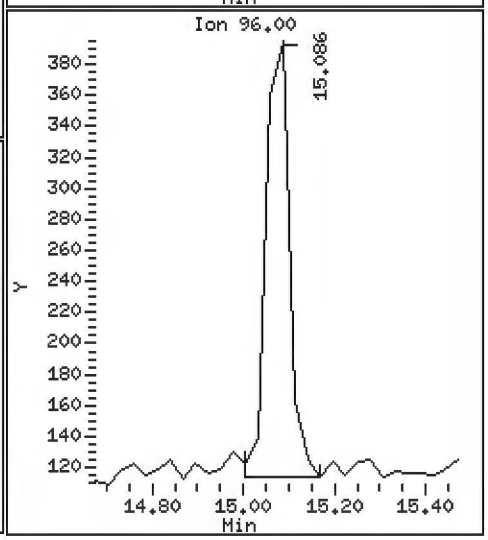


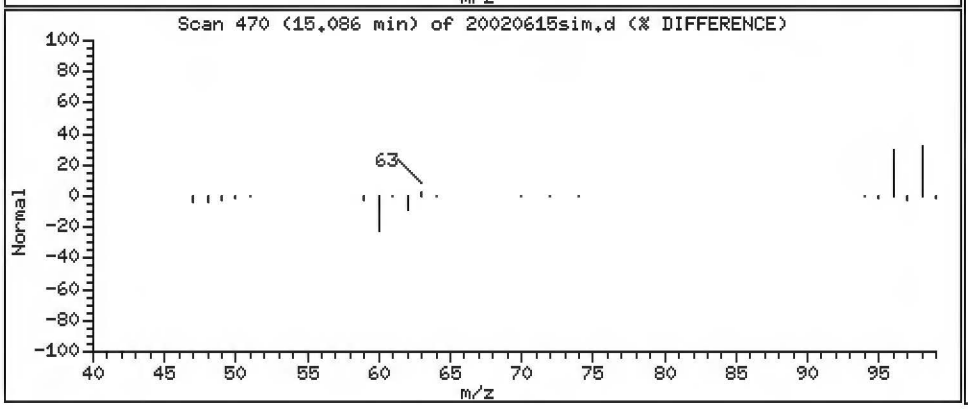












Data File: /chem/msd20.i/06feb20.b/20020615sim.d

Date : 06-FEB-2020 19:37

Client ID:

Instrument: msd20.i

Sample Info: 25mL #6L0602

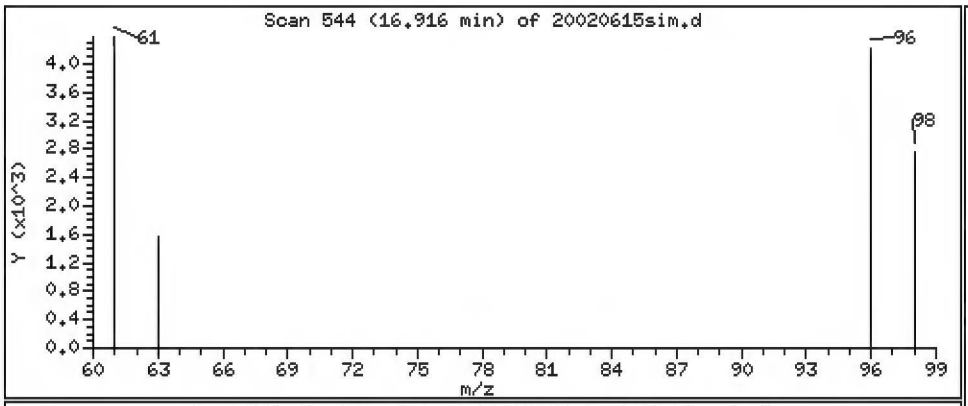
Operator: mb

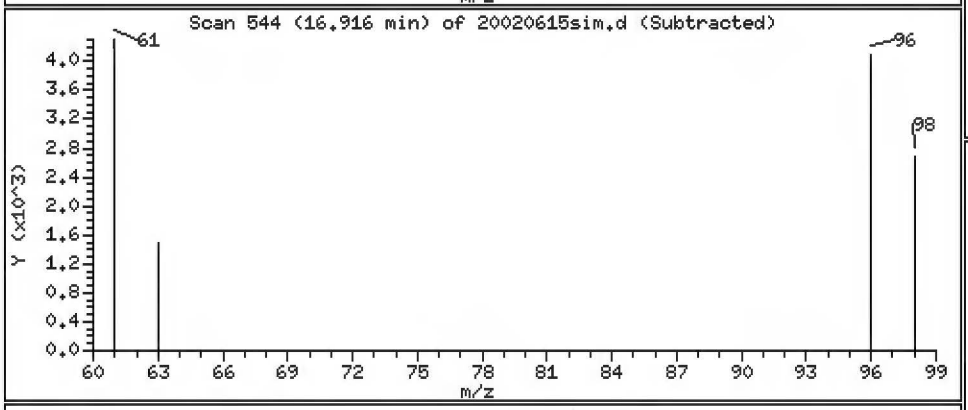
Column phase: RTX-624

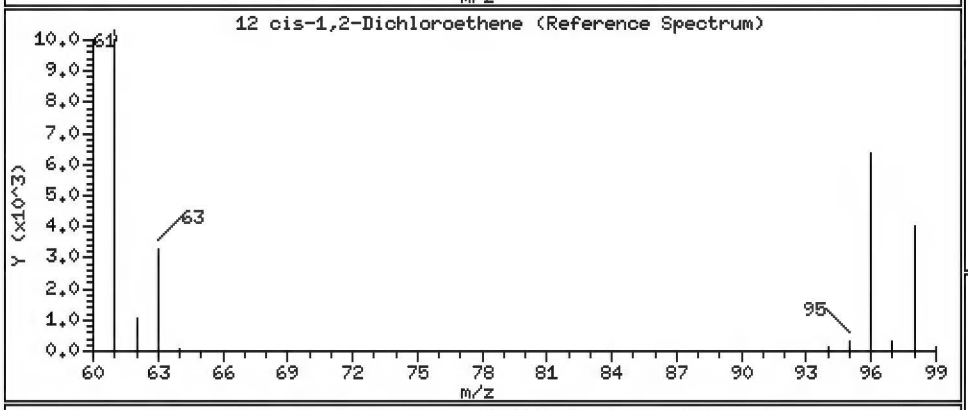
Column diameter: 0.32

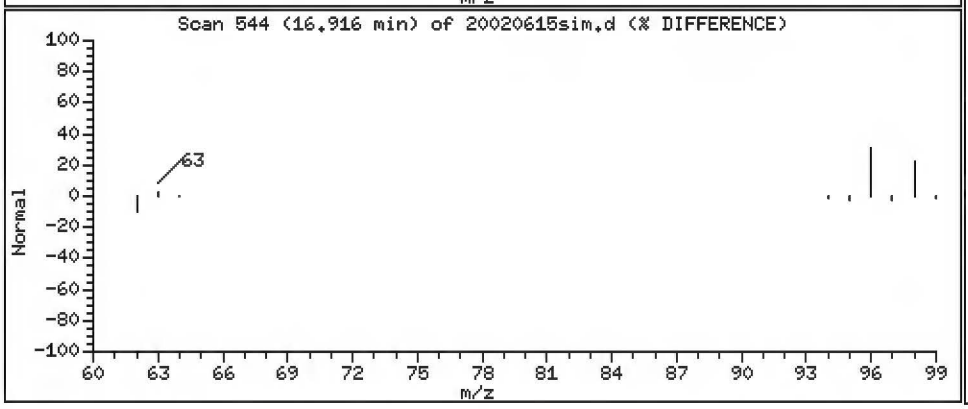
12 cis-1,2-Dichloroethene

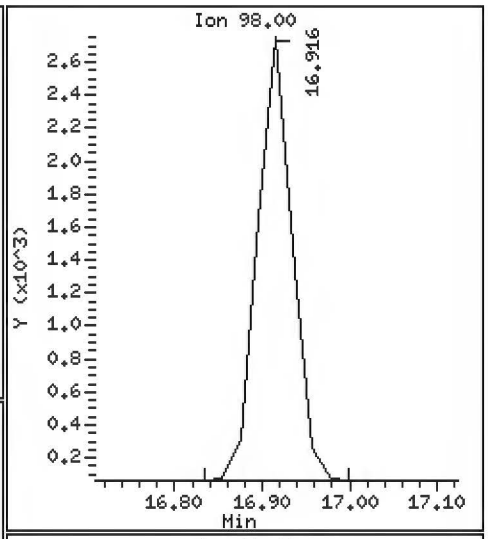
Concentration: 4.226 PPBV

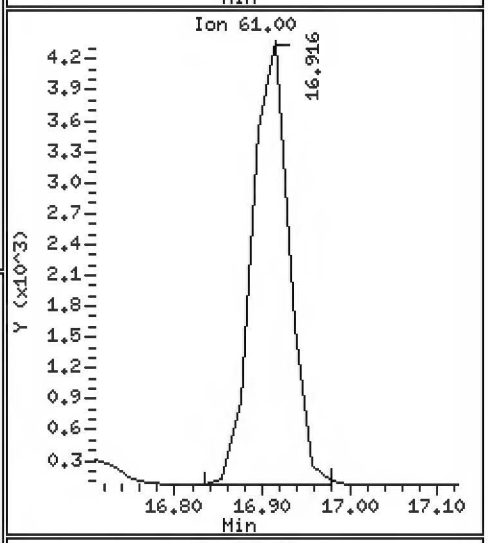


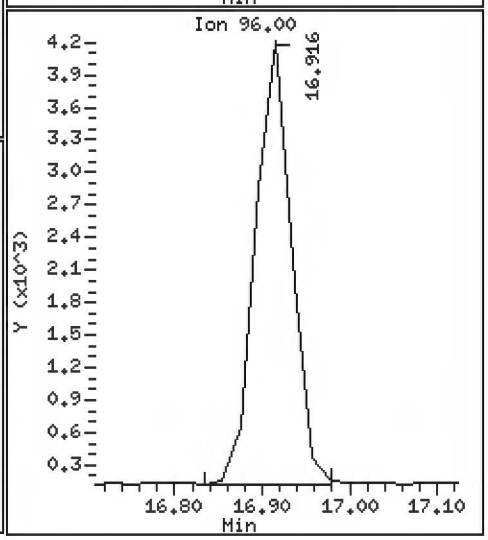












Data File: /chem/msd20.i/06feb20.b/20020615sim.d

Date : 06-FEB-2020 19:37

Client ID:

Instrument: msd20.i

Sample Info: 25mL #6L0602

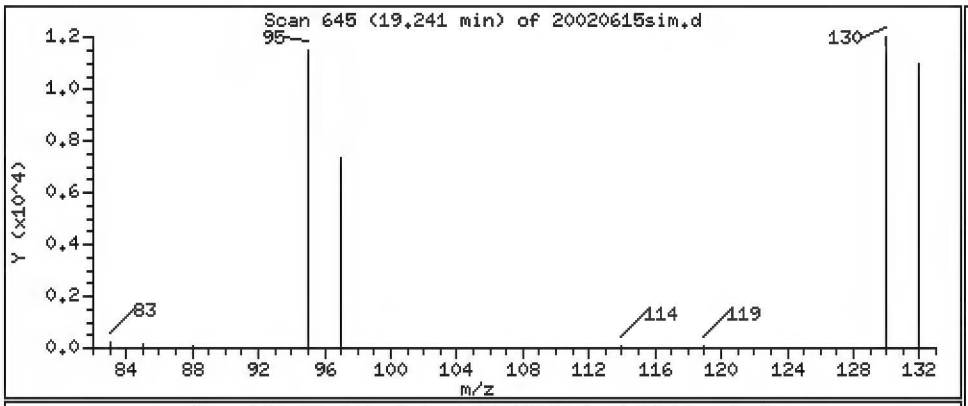
Operator: mb

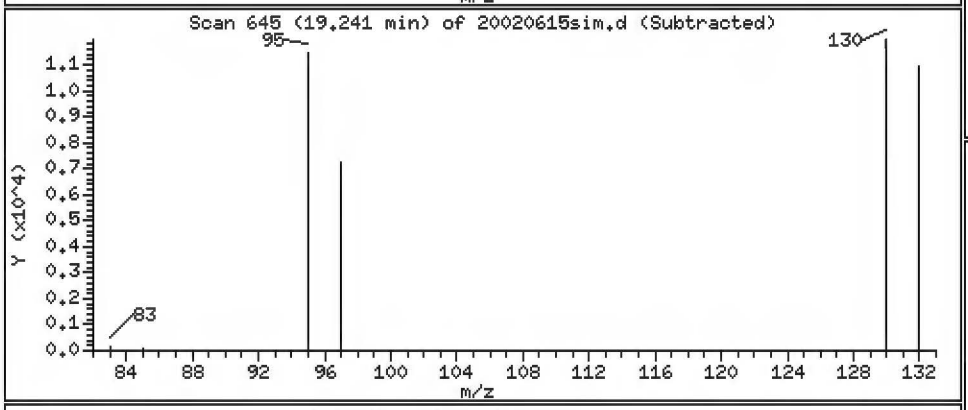
Column phase: RTX-624

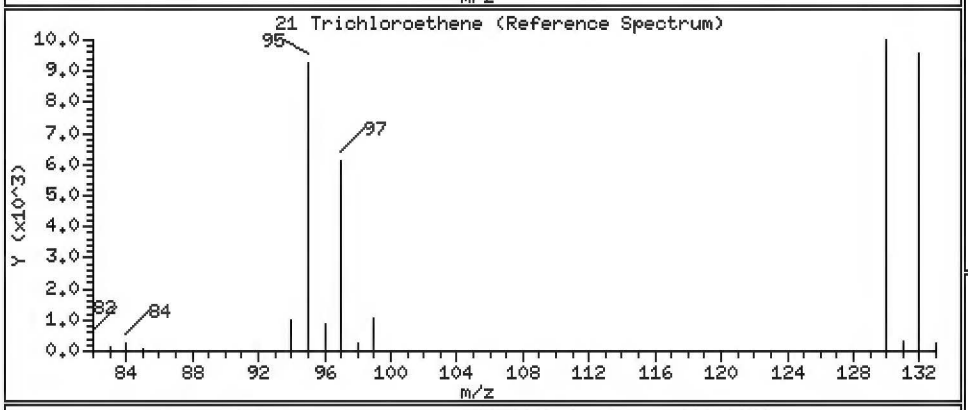
Column diameter: 0.32

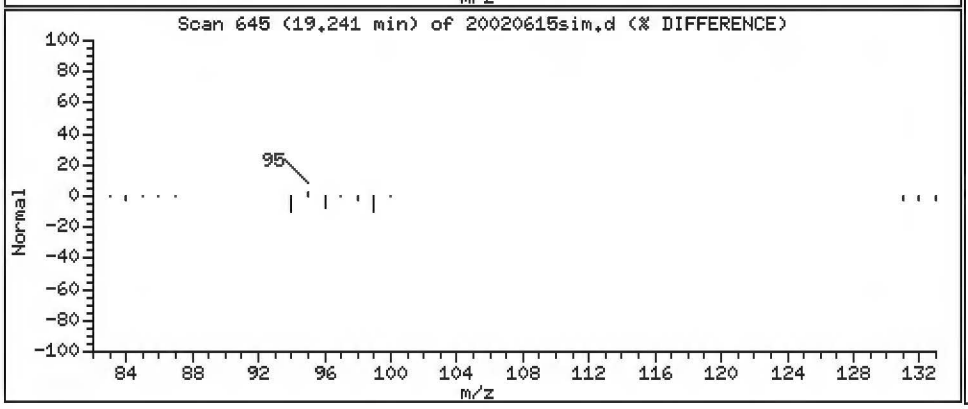
21 Trichloroethene

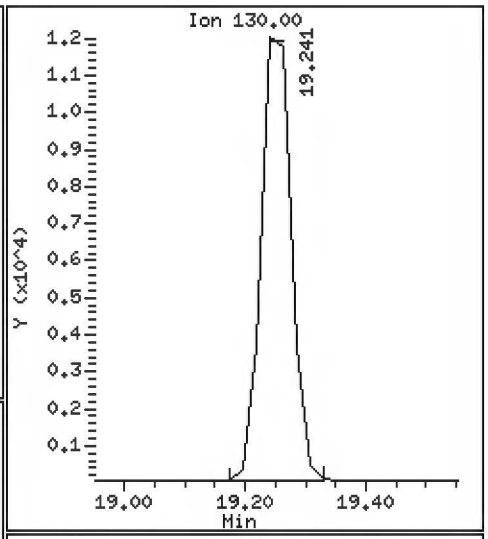
Concentration: 11.375 PPBV

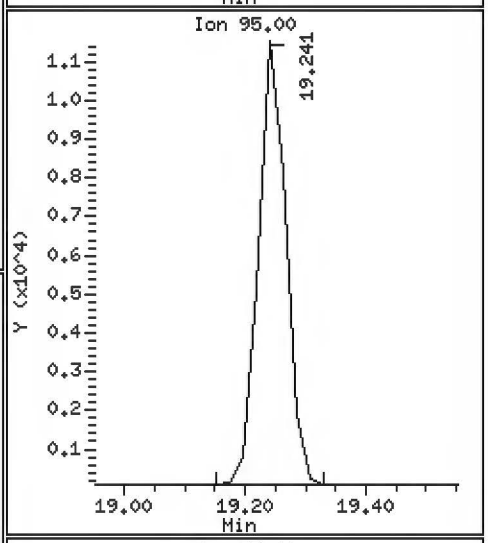


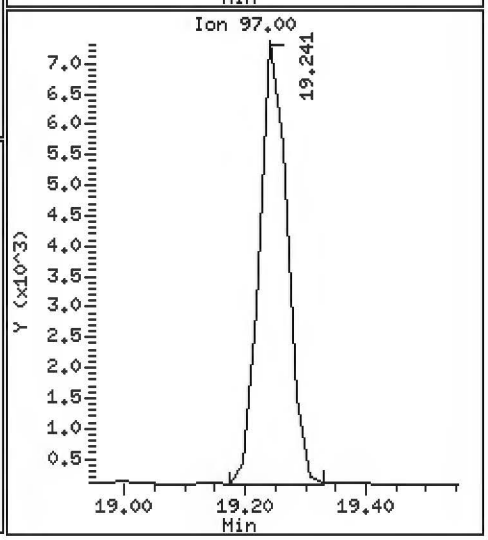












Data File: /chem/msd20.i/06feb20.b/20020615sim.d

Date : 06-FEB-2020 19:37

Client ID:

Instrument: msd20.i

Sample Info: 25mL #6L0602

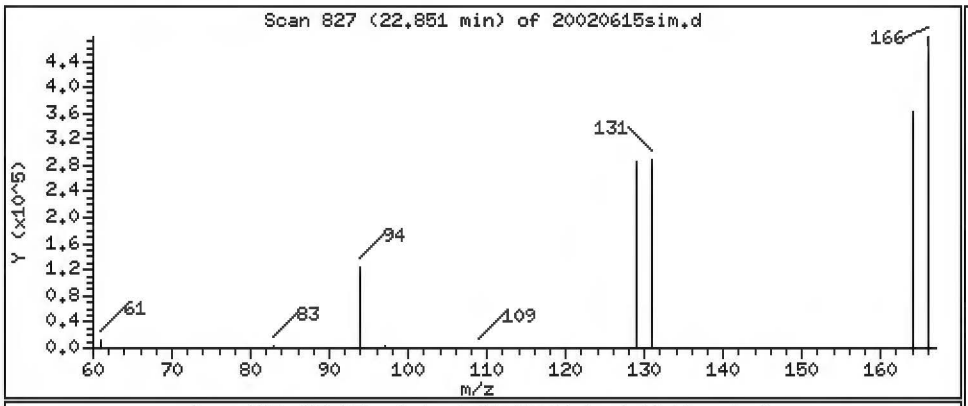
Operator: mb

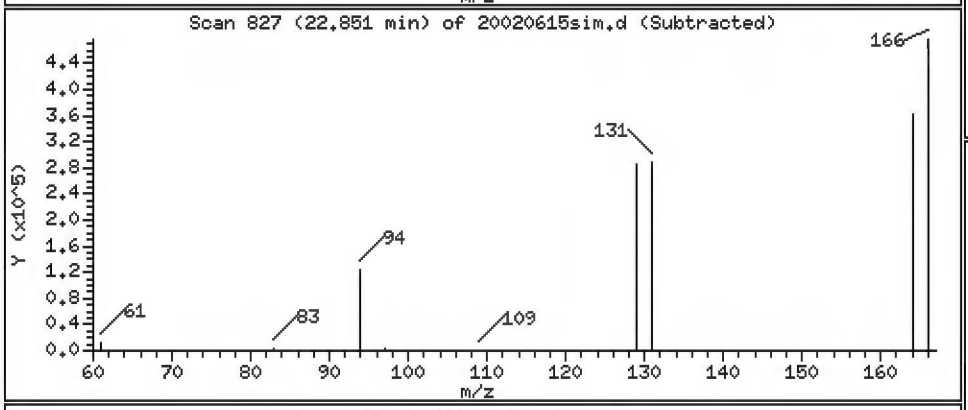
Column phase: RTX-624

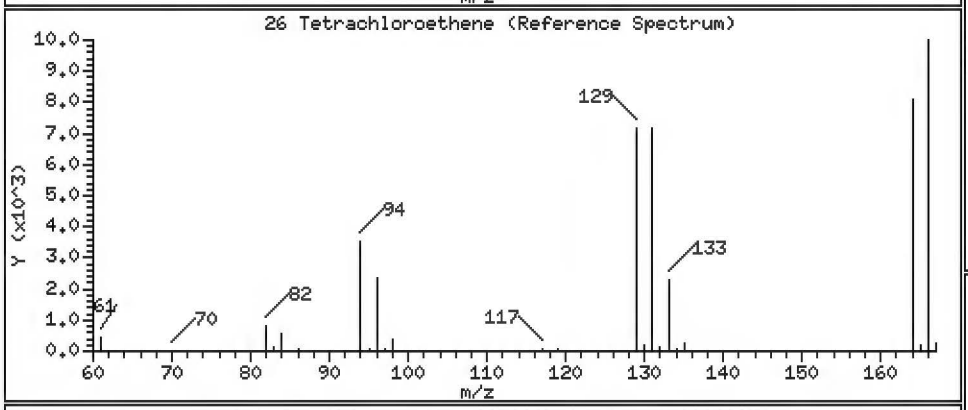
Column diameter: 0.32

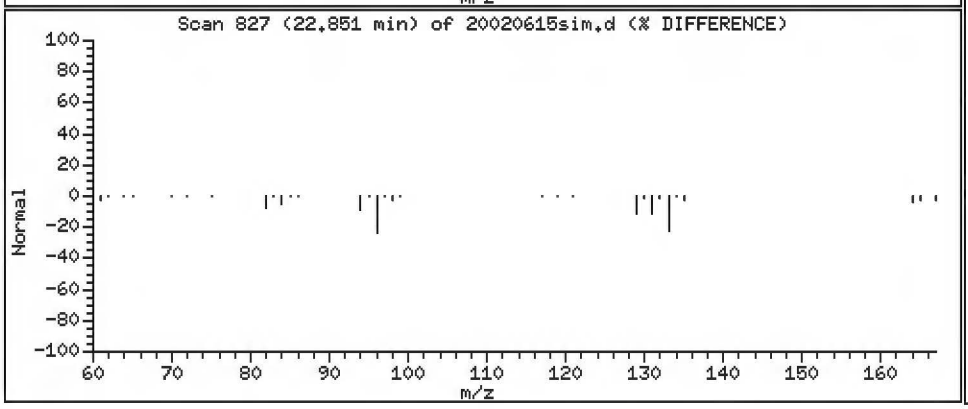
26 Tetrachloroethene

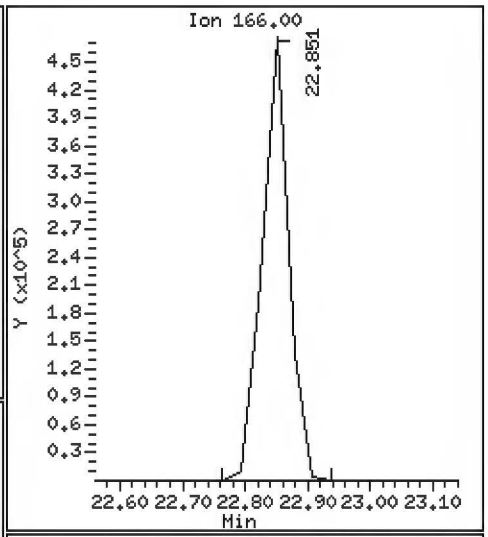
Concentration: 208.34 PPBV

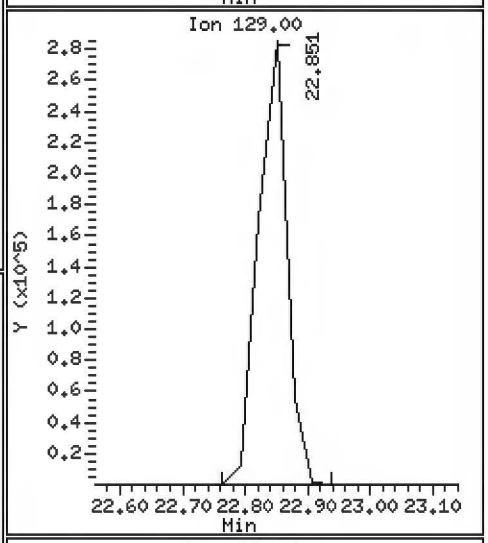


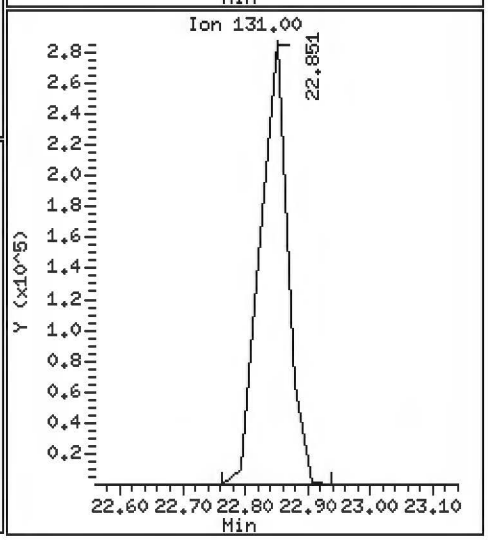












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASS-102-01292020		
Lab ID:	2001756-03A	**Date/Time Analyzed:**	2/7/20 06:13 AM
Date/Time Collected:	1/29/20 05:32 PM	**Dilution Factor:**	13.9
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020624sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.27	0.28	0.55	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.17	0.55	1.1	12
trans-1,2-Dichloroethene	156-60-5	0.32	0.55	5.5	5.8
Trichloroethene	79-01-6	0.18	0.75	1.5	120
Vinyl Chloride	75-01-4	0.13	0.18	0.36	4.0

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	100

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020624sim.d
Lab Smp Id: 2001756-03A
Inj Date : 07-FEB-2020 06:13
Operator : act Inst ID: msd20.i
Smp Info : 25mL #N0651
Misc Info : 4.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 13.90000
Integrator: HP RTE Compound Sublist: EAE21618-PCE.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	149244	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	114517			46.79- 106.79	76.73
17.284	17.316 (1.000)	49	134477			67.00- 127.00	90.11
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	381791	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	53346			0.00- 44.17	13.97
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	438050	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	200838			16.60- 76.60	45.85
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	177900	5.06375	5.064	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	90623			26.62- 86.62	50.94
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	335880	4.97538	4.975	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	39491			0.00- 40.95	11.76

```
                                        CONCENTRATIONS
                                        ON-COL    FINAL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

$  22 Toluene-d8 (continued)
 21.624  21.624 (1.148)   100    211378                    34.26-  94.26    62.93
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    309834 4.58260    4.582  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    257681                   54.28- 114.28    83.17
 25.927  25.927 (1.066)   176    301561                   67.48- 127.48    97.33
-------------------------------------------------------------------------------
    4 Vinyl Chloride                                CAS #: 75-01-4
  8.245   8.278 (0.476)    62      3189 0.11342    1.576  80.00- 120.00   100.00
  8.245   8.278 (0.476)    64      1163                    2.23-  62.23    36.47
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                      CAS #: 156-60-5
 15.087  15.080 (0.871)    98      2182 0.10453    1.453  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61      4044                  161.94- 221.94   185.28
 15.087  15.075 (0.871)    96      3377                  125.44- 185.44   154.72
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                        CAS #: 156-59-2
 16.917  16.916 (0.977)    98      5258 0.22602    3.142  80.00- 120.00   100.00
 16.917  16.916 (0.977)    61      9060                  144.59- 204.59   172.30
 16.917  16.916 (0.977)    96      8063                  124.96- 184.96   153.33
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130     79952 1.61473   22.445  80.00- 120.00   100.00
 19.241  19.245 (1.021)    95     68248                   56.54- 116.54    85.36
 19.241  19.245 (1.021)    97     44748                   26.43-  86.43    55.97
-------------------------------------------------------------------------------
```

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020624sim.d
Lab Smp Id: 2001756-03A
Analysis Type: VOA
Quant Type: ISTD
Operator: act
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	149244	-18.61
20 1,4-Difluorobenze	549605	329763	769447	381791	-30.53
28 Chlorobenzene-d5	517348	310409	724287	438050	-15.33

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-03A
Level: LOW Operator: act
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618-PCE.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.064	101.28
$ 22 Toluene-d8	5.000	4.975	99.51
$ 33 4-Bromofluorobenzene	5.000	4.582	91.65

Data File: /chem/msd20.i/06feb20.b/20020624sim.d

Date : 07-FEB-2020 06:13

Client ID:

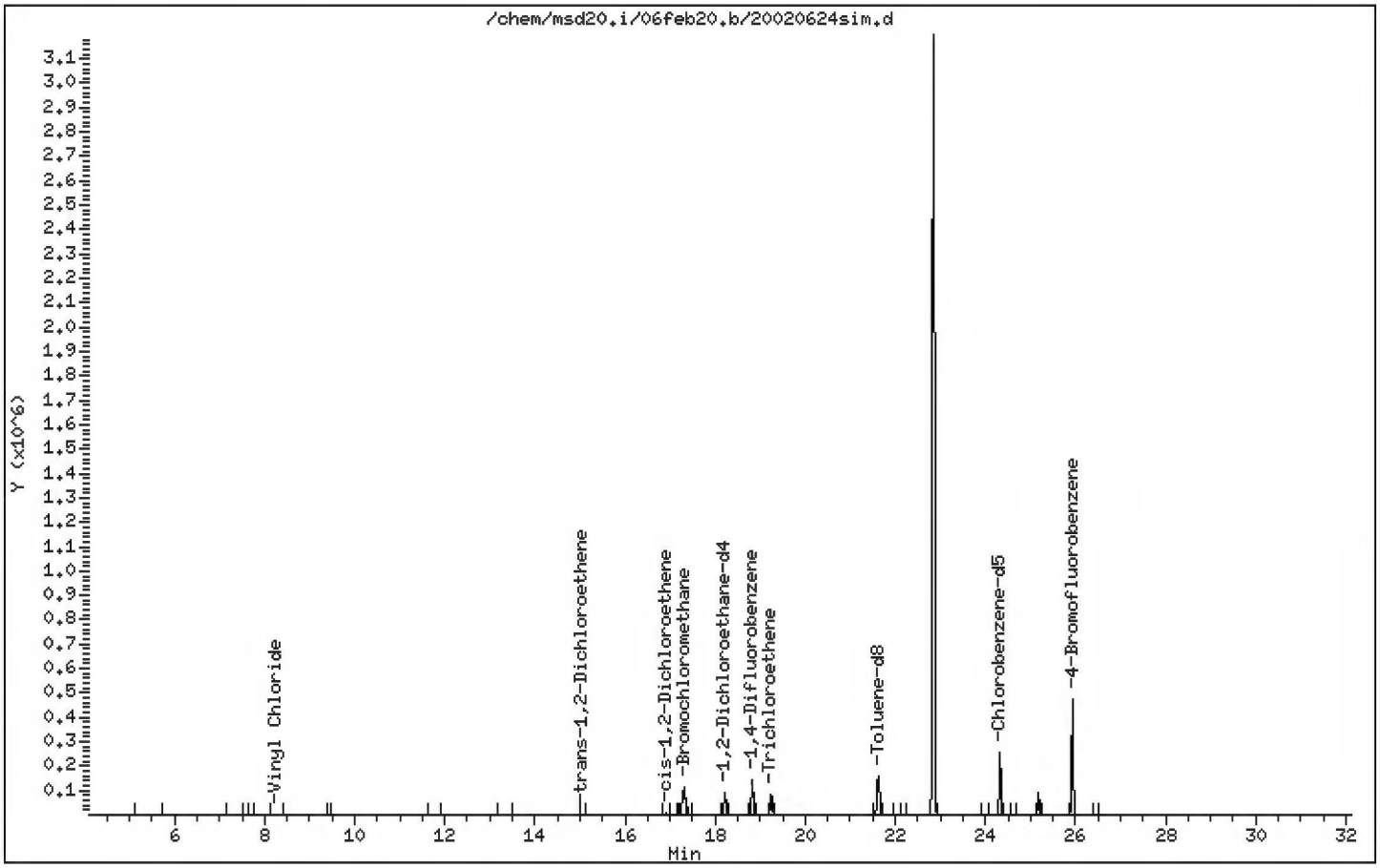
Instrument: msd20.i

Sample Info: 25mL #N0651

Operator: act

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020624sim.d

Date : 07-FEB-2020 06:13

Client ID:

Instrument: msd20.i

Sample Info: 25mL #N0651

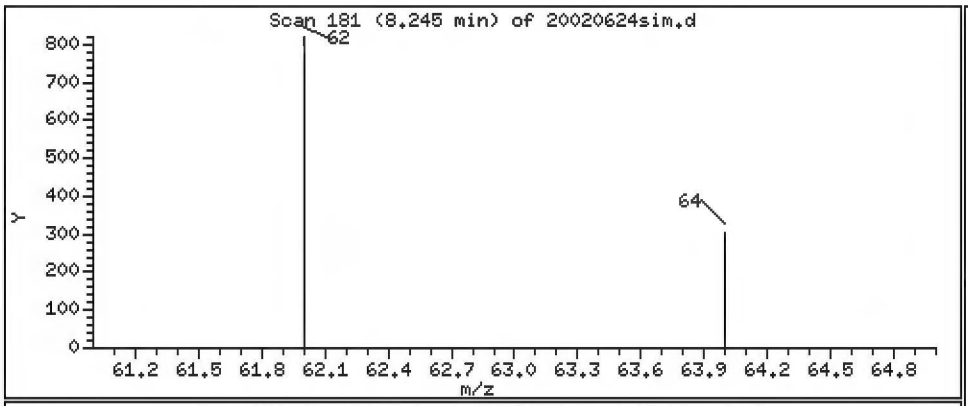
Operator: act

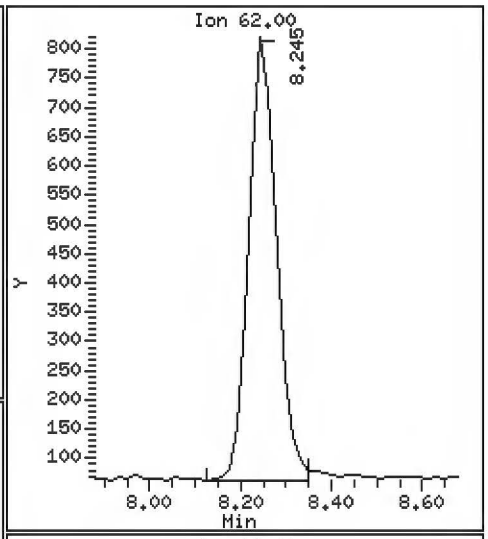
Column phase: RTX-624

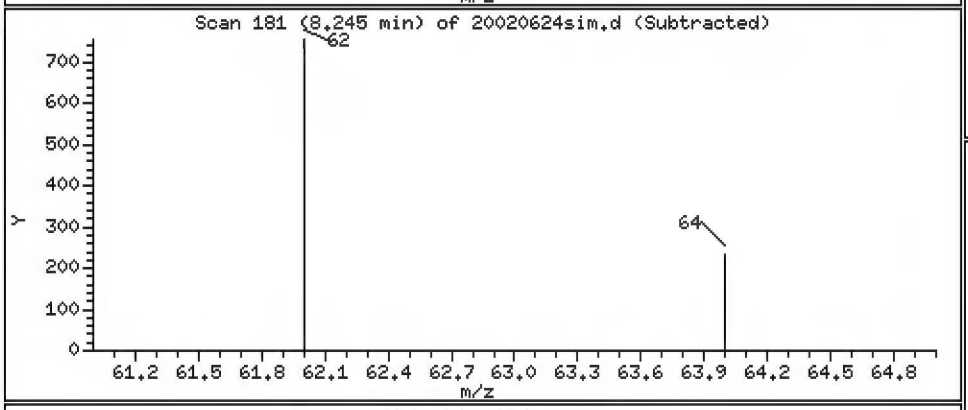
Column diameter: 0.32

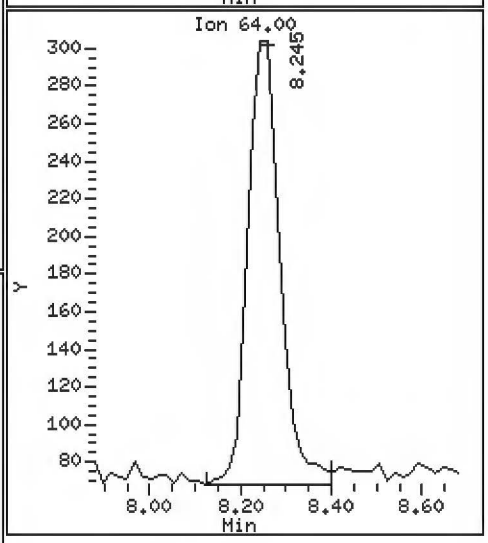
4 Vinyl Chloride

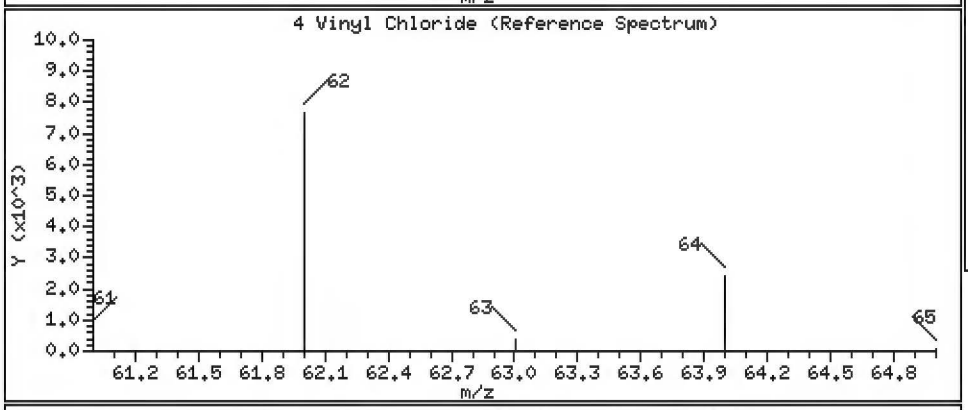
Concentration: 1.576 PPBV

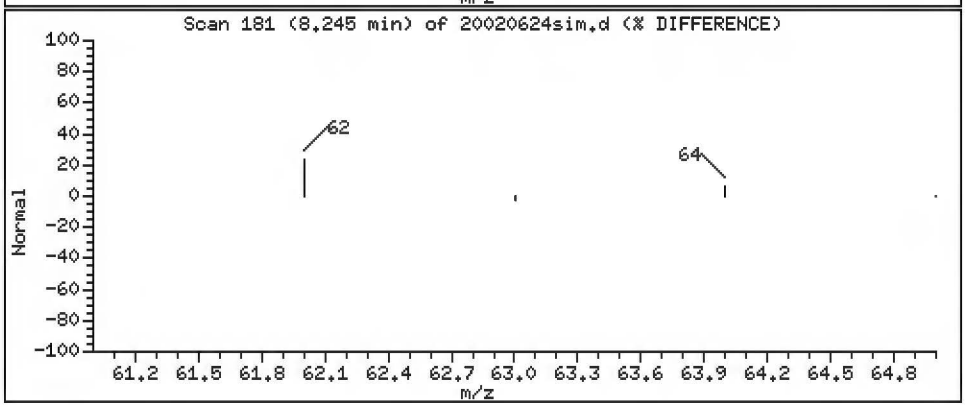












Data File: /chem/msd20.i/06feb20.b/20020624sim.d

Date : 07-FEB-2020 06:13

Client ID:

Instrument: msd20.i

Sample Info: 25mL #N0651

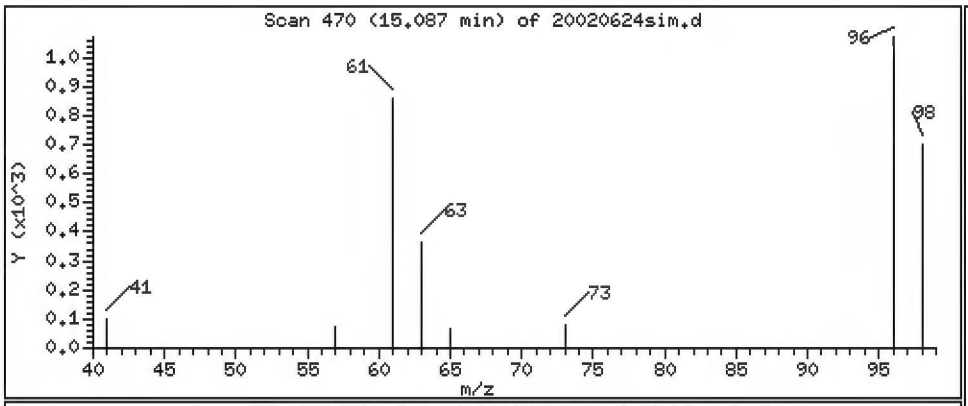
Operator: act

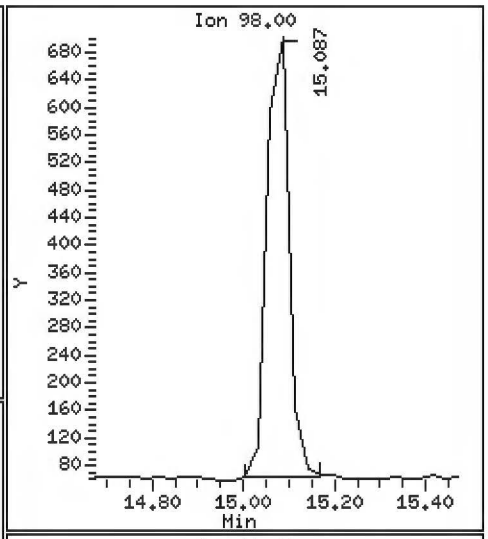
Column phase: RTX-624

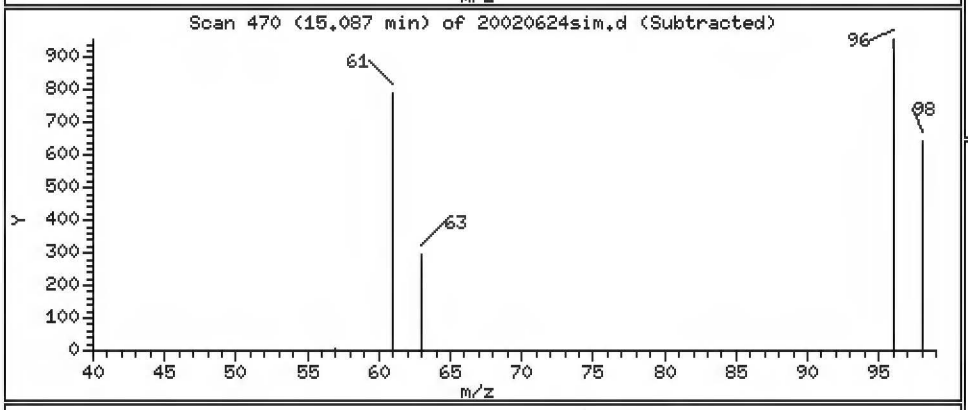
Column diameter: 0.32

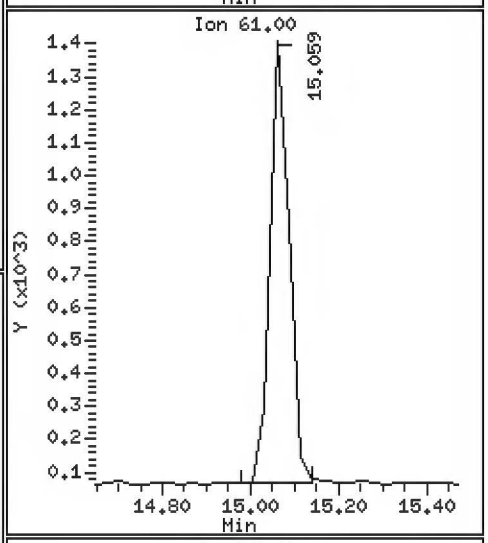
10 trans-1,2-Dichloroethene

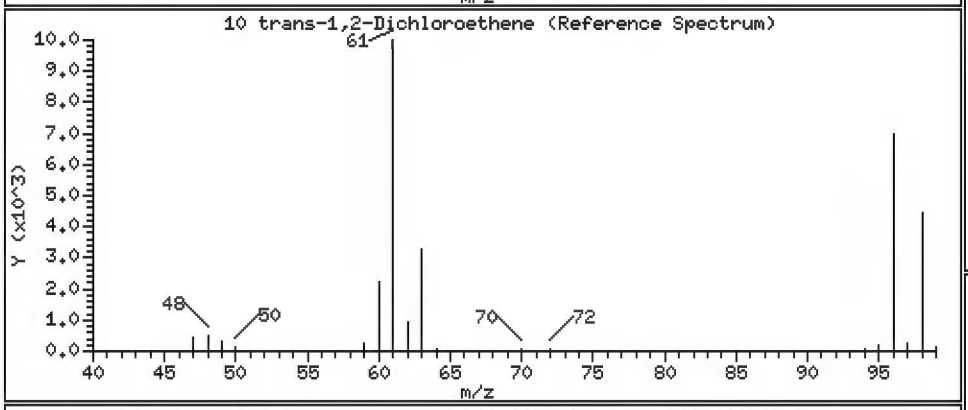
Concentration: 1.453 PPBV

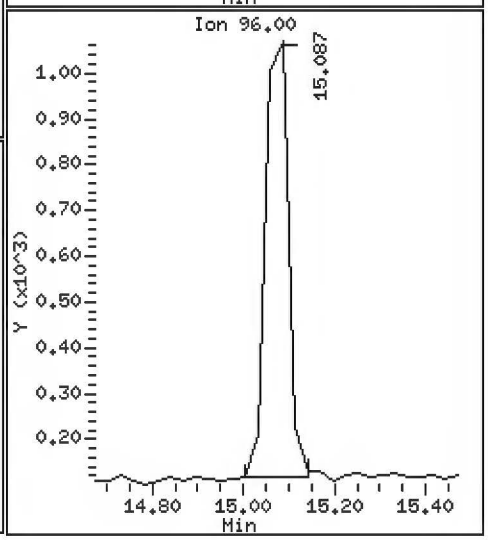


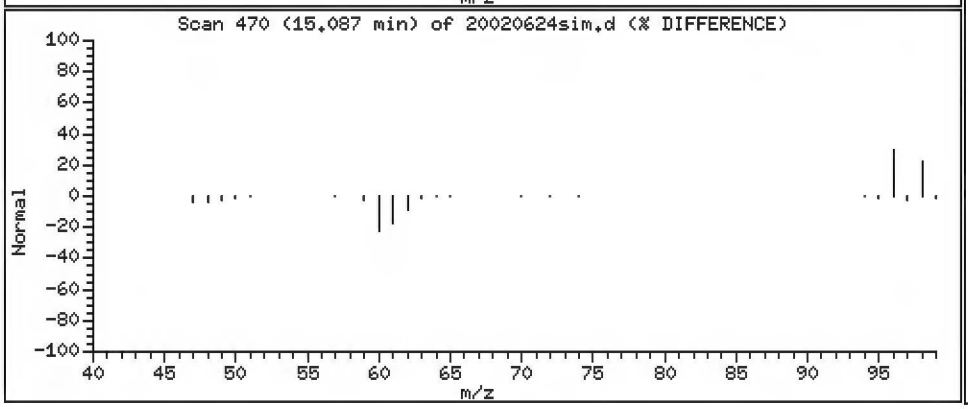












Data File: /chem/msd20.i/06feb20.b/20020624sim.d

Date : 07-FEB-2020 06:13

Client ID:

Instrument: msd20.i

Sample Info: 25mL #N0651

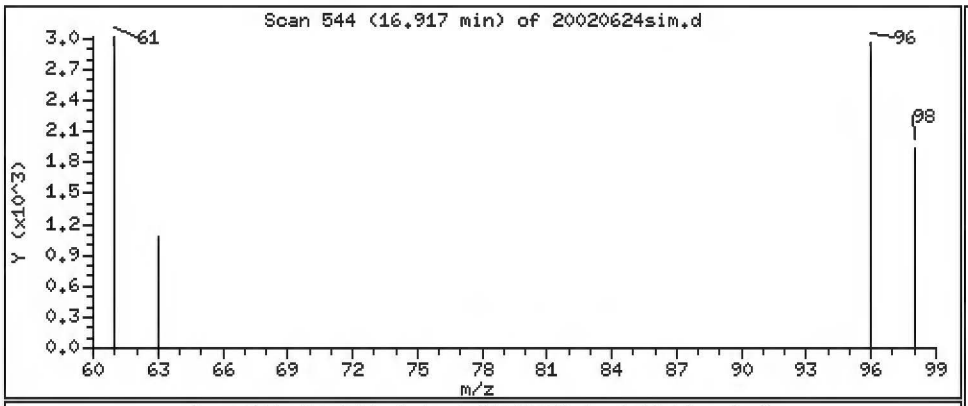
Operator: act

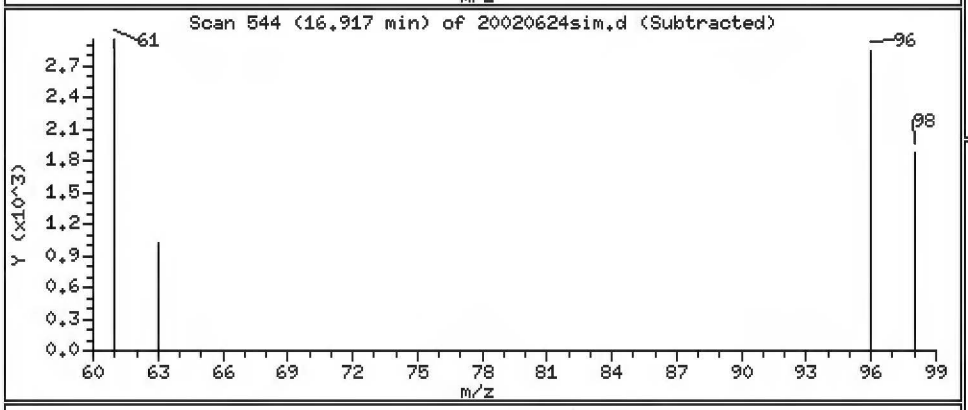
Column phase: RTX-624

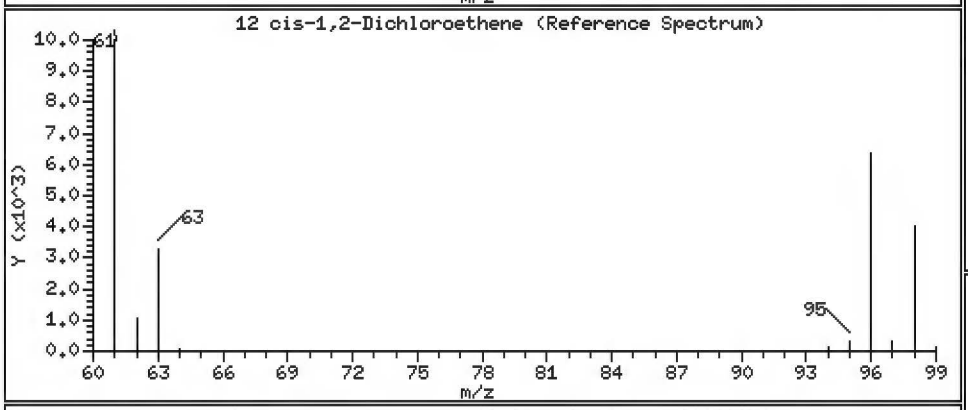
Column diameter: 0.32

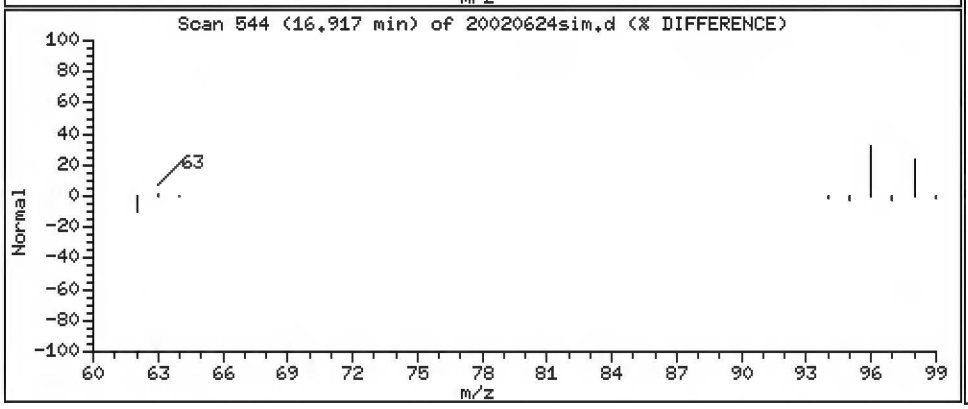
12 cis-1,2-Dichloroethene

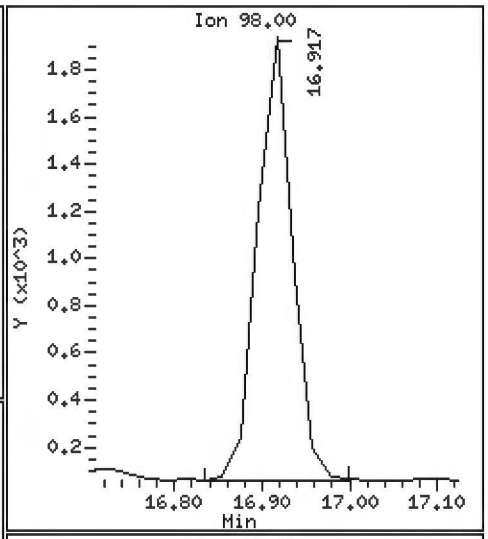
Concentration: 3.142 PPBV

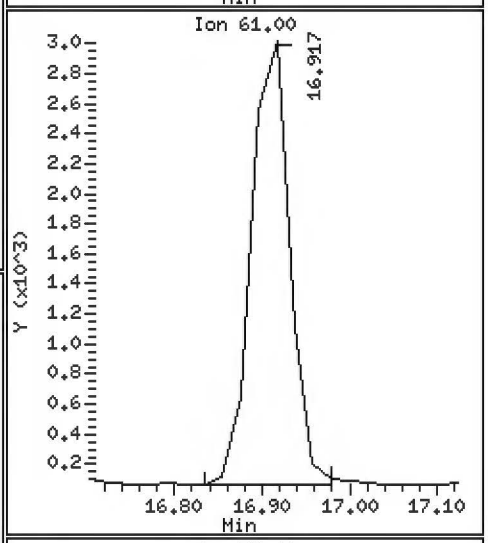


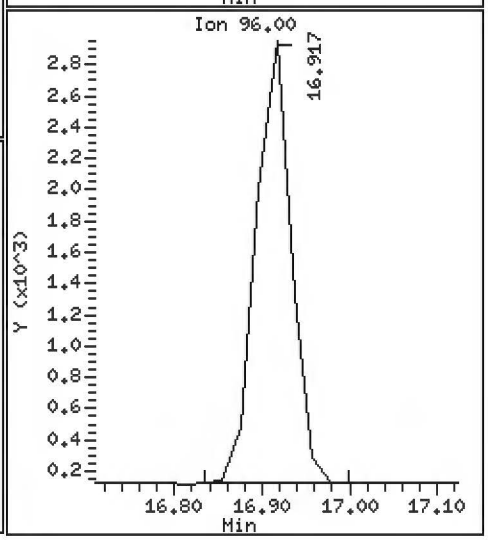












Data File: /chem/msd20.i/06feb20.b/20020624sim.d

Date : 07-FEB-2020 06:13

Client ID:

Instrument: msd20.i

Sample Info: 25mL #N0651

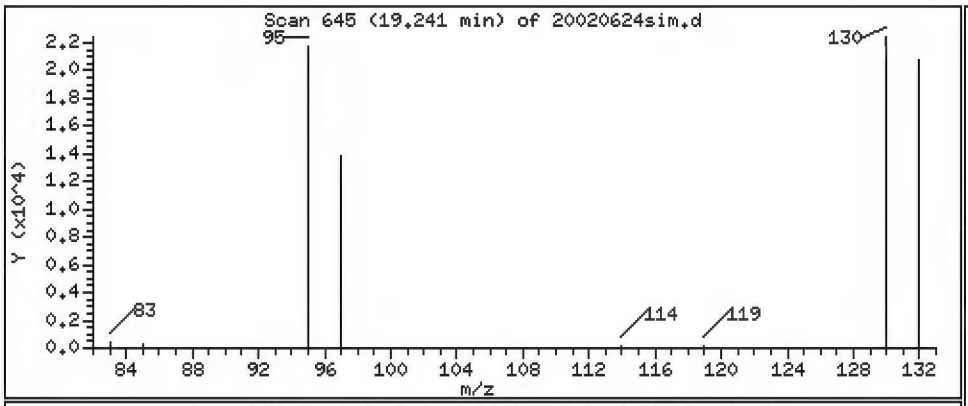
Operator: act

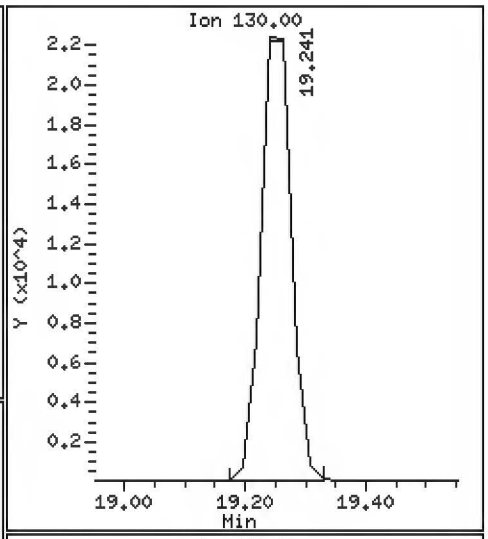
Column phase: RTX-624

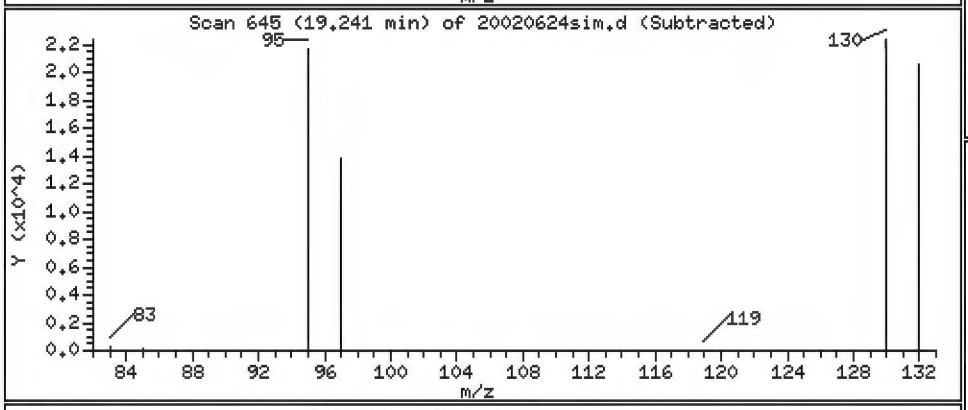
Column diameter: 0.32

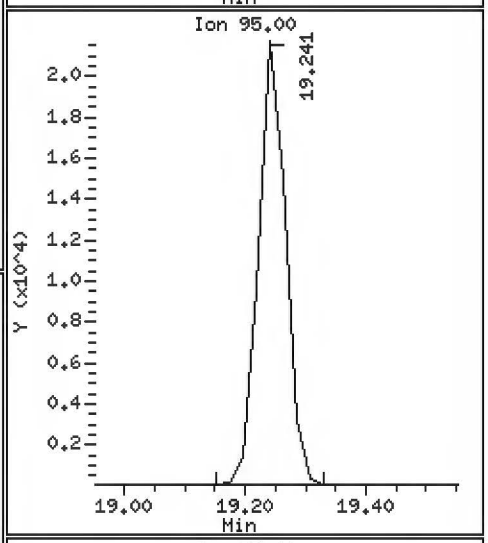
21 Trichloroethene

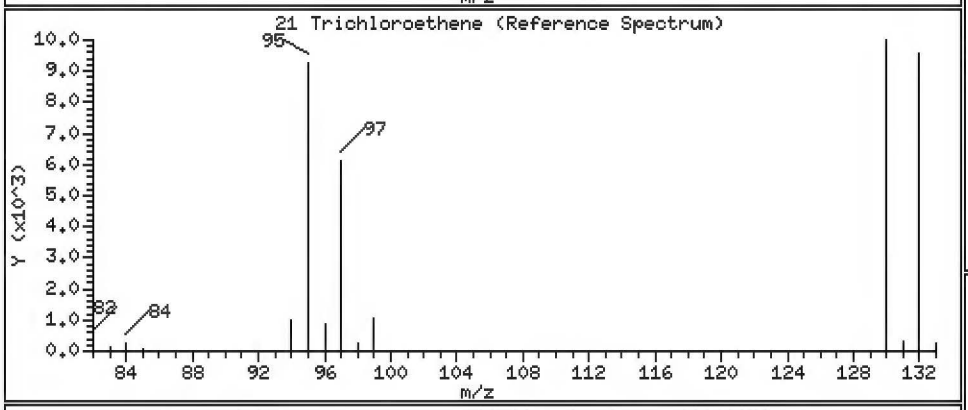
Concentration: 22.445 PPBV

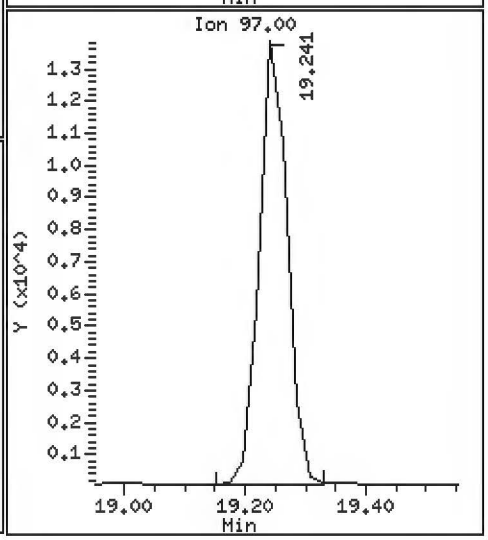


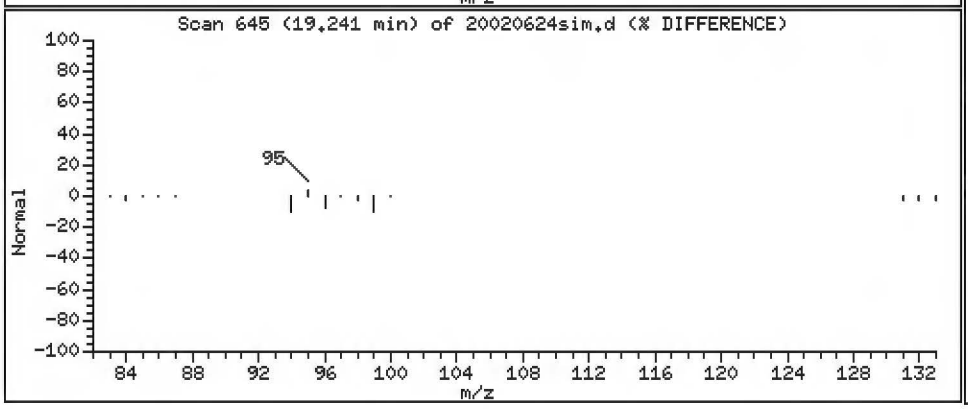












MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Jones Rd. Groundwater Plume

Client ID:	ASS-102-01292020		
Lab ID:	2001756-03B	**Date/Time Analyzed:**	2/7/20 06:13 AM
Date/Time Collected:	1/29/20 05:32 PM	**Dilution Factor:**	13.9
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020624

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	127-18-4	5.9	8.5	9.4	3100

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	105
4-Bromofluorobenzene	460-00-4	70-130	91
Toluene-d8	2037-26-5	70-130	100

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020624.d
Lab Smp Id: 2001756-03B
Inj Date : 07-FEB-2020 06:13
Operator : act Inst ID: msd20.i
Smp Info : 25mL #N0651
Misc Info : 4.0"Hg->3psi
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m
Meth Date : 07-Feb-2020 10:42 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 09:42 Cal File: 20020513.d
Als bottle: 1
Dil Factor: 13.90000
Integrator: HP RTE Compound Sublist: PCE.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	148631	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	113170			46.61- 106.61	76.14
17.302	17.302 (1.000)	49	126879			58.08- 118.08	85.37
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.833	18.833 (1.000)	114	354618	5.00000		80.00- 120.00	100.00
18.833	18.833 (1.000)	88	50718			0.00- 44.22	14.30
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	421523	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	194310			18.72- 78.72	46.10
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	168087	5.25068	5.251	80.00- 120.00	100.00(a)
18.224	18.224 (1.053)	67	82313			30.76- 90.76	48.97
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	343894	5.01233	5.012	80.00- 120.00	100.00(a)
21.617	21.617 (1.148)	70	38694			0.00- 41.39	11.25

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)								
21.617	21.617	(1.148)	100	214895			35.17- 95.17	62.49
$ 177 4-Bromofluorobenzene						CAS #: 460-00-4		
25.920	25.920	(1.066)	174	293056	4.54538	4.545	80.00- 120.00	100.00(a)
25.920	25.920	(1.066)	95	246840			59.22- 119.22	84.23
25.920	25.920	(1.066)	176	274294			69.23- 129.23	93.60
156 Tetrachloroethene						CAS #: 127-18-4		
22.844	22.844	(0.940)	166	2964593	32.5660	452.67	80.00- 120.00	100.00
22.844	22.844	(0.940)	129	1867314			34.89- 94.89	62.99
22.844	22.844	(0.940)	131	1821849			32.11- 92.11	61.45

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020624.d
Lab Smp Id: 2001756-03B
Analysis Type: VOA
Quant Type: ISTD
Operator: act
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: 4.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	180905	108543	253267	148631	-17.84
123 1,4-Difluorobenze	536645	321987	751303	354618	-33.92
163 Chlorobenzene-d5	492844	295706	689982	421523	-14.47

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	-0.00
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 11:01

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-03B
Level: LOW Operator: act
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: PCE.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: 4.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	5.000	5.251	105.01
$ 146 Toluene-d8	5.000	5.012	100.25
$ 177 4-Bromofluorobenzene	5.000	4.545	90.91

Data File: /chem/msd20.i/06feb20.b/20020624.d

Date : 07-FEB-2020 06:13

Client ID:

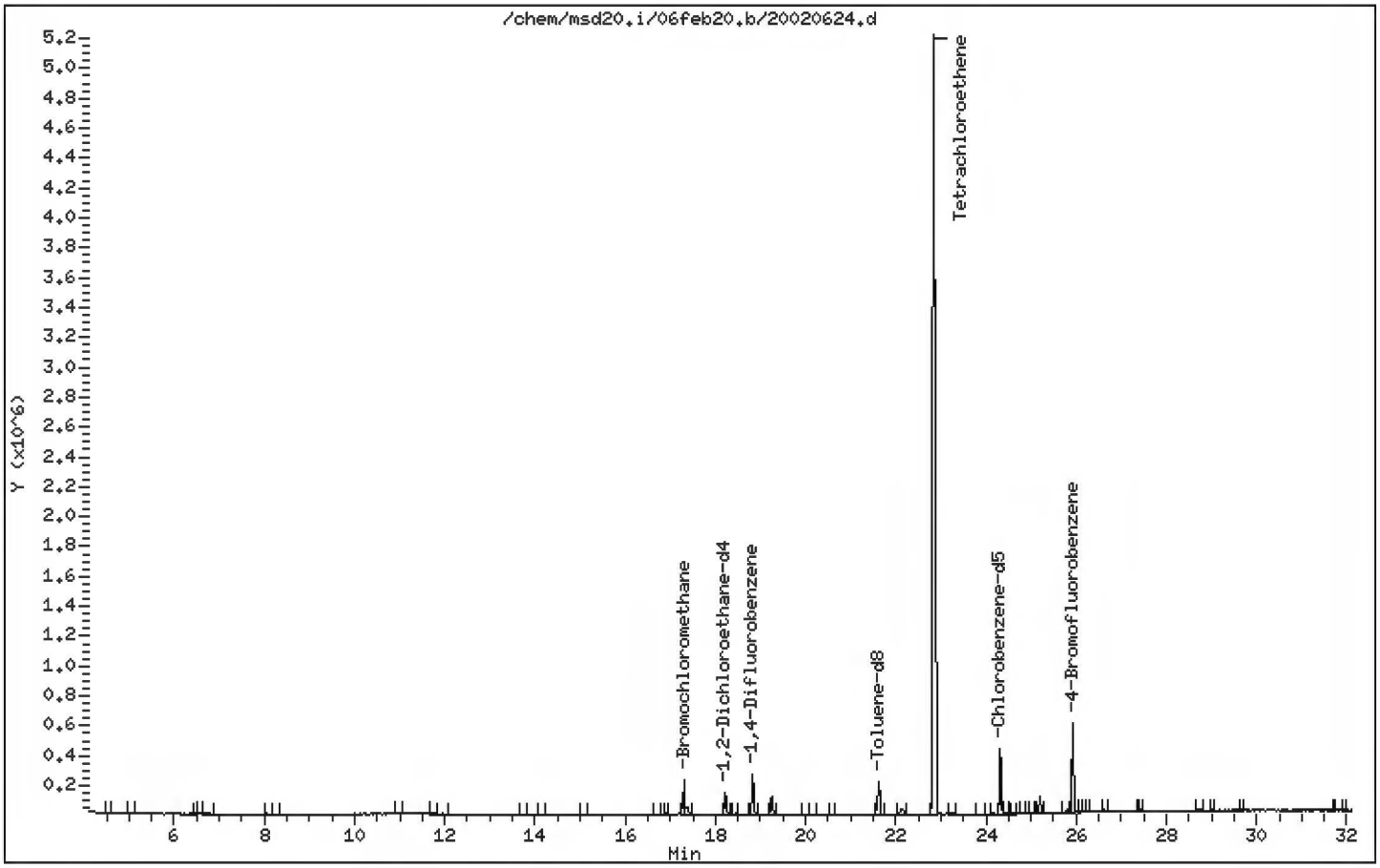
Instrument: msd20.i

Sample Info: 25mL #N0651

Operator: act

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020624.d

Date : 07-FEB-2020 06:13

Client ID:

Instrument: msd20.i

Sample Info: 25mL #N0651

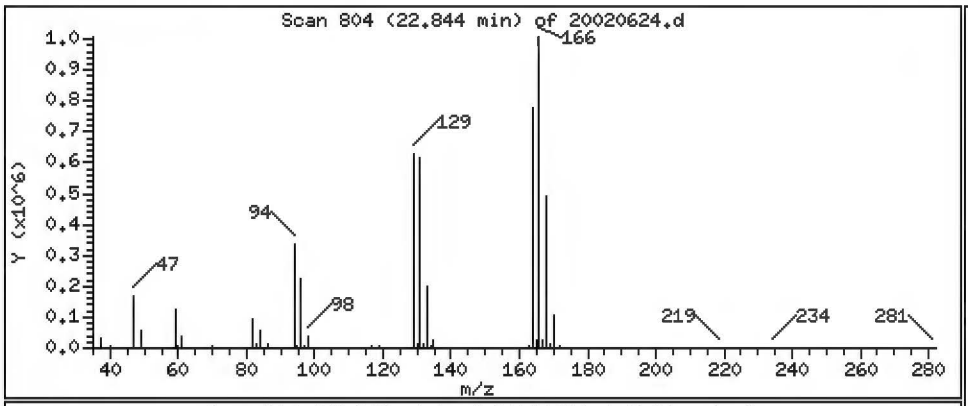
Operator: act

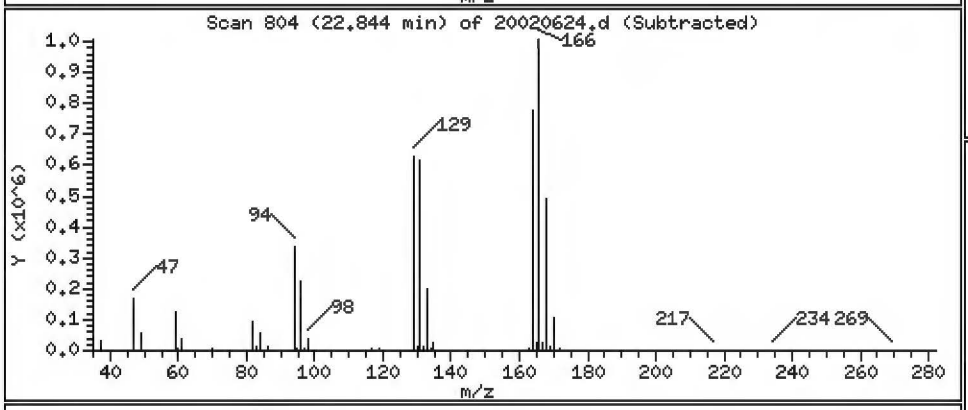
Column phase: RTX-624

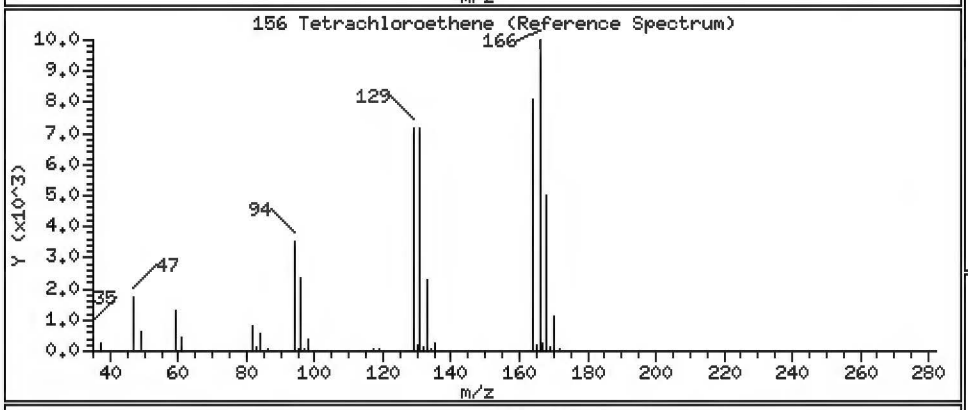
Column diameter: 0.32

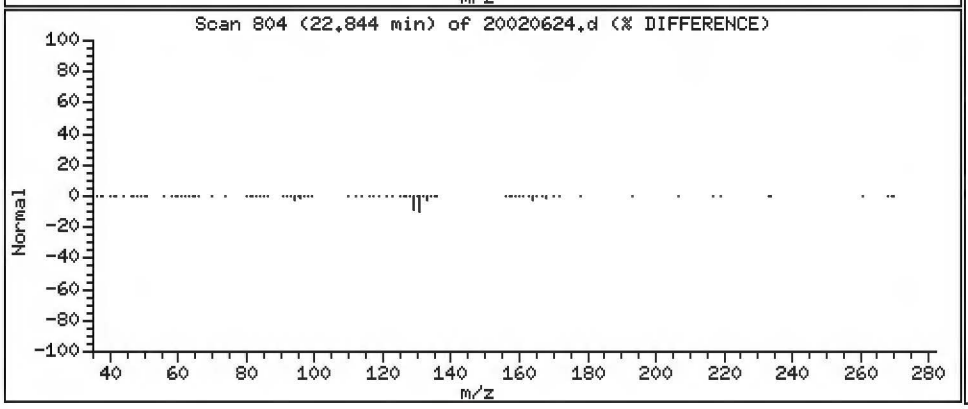
156 Tetrachloroethene

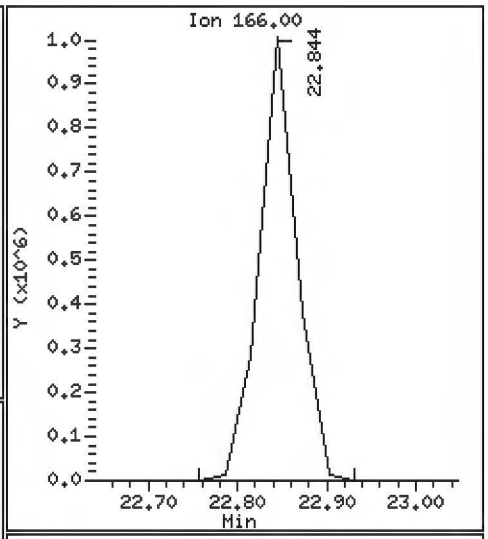
Concentration: 452.67 PPBV

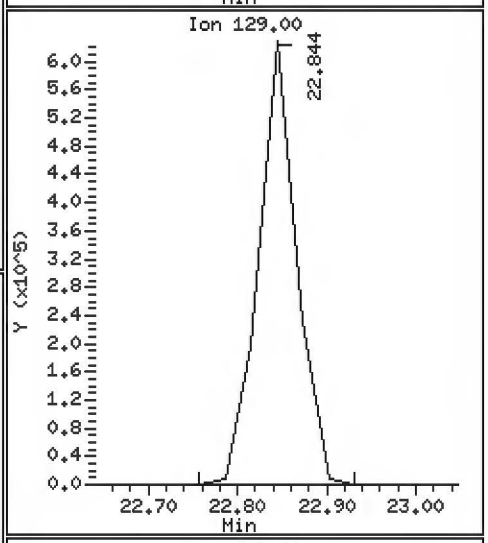


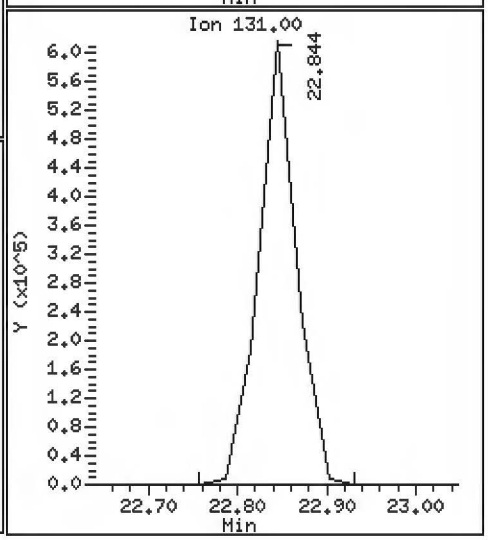












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

eurofins | Air Toxics

Client ID:	ASI-101-01292020		
Lab ID:	2001756-04A	**Date/Time Analyzed:**	2/6/20 08:16 PM
Date/Time Collected:	1/29/20 05:23 PM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020616sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.028	0.028	0.057	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.017	0.057	0.11	0.067 J
Tetrachloroethene	127-18-4	0.018	0.098	0.20	1.3
trans-1,2-Dichloroethene	156-60-5	0.033	0.057	0.57	Not Detected
Trichloroethene	79-01-6	0.018	0.077	0.15	0.066 J
Vinyl Chloride	75-01-4	0.013	0.018	0.037	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	99

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020616sim.d
Lab Smp Id: 2001756-04A
Inj Date : 06-FEB-2020 20:16
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #O0190
Misc Info : 5.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.44000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	149917	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	115145			46.79- 106.79	76.81
17.283	17.316 (1.000)	49	134612			67.00- 127.00	89.79
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	411848	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	57483			0.00- 44.17	13.96
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	416260	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	192033			16.60- 76.60	46.13
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	182333	5.16665	5.167	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	92255			26.62- 86.62	50.60
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	359326	4.93422	4.934	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	42239			0.00- 40.95	11.76

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	225429			34.26- 94.26	62.74
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	326010	5.07427	5.074	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	272567			54.28- 114.28	83.61
25.927	25.927 (1.066)	176	317552			67.48- 127.48	97.41
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.916	16.916 (0.977)	98	273	0.01171	0.01686	80.00- 120.00	100.00(a)
16.937	16.916 (0.978)	61	1660			144.59- 204.59	606.77
16.916	16.916 (0.977)	96	445			124.96- 184.96	162.72
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	455	0.00852	0.01227	80.00- 120.00	100.00(a)
19.241	19.245 (1.021)	95	358			56.54- 116.54	78.83
19.241	19.245 (1.021)	97	254			26.43- 86.43	55.89
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	11325	0.13034	0.1877	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	7460			34.72- 94.72	65.87
22.851	22.851 (0.940)	131	7083			33.00- 93.00	62.55

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020616sim.d
Lab Smp Id: 2001756-04A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	149917	-18.25
20 1,4-Difluorobenze	549605	329763	769447	411848	-25.06
28 Chlorobenzene-d5	517348	310409	724287	416260	-19.54

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-04A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.167	103.33
$ 22 Toluene-d8	5.000	4.934	98.68
$ 33 4-Bromofluorobenzene	5.000	5.074	101.49

Data File: /chem/msd20.i/06feb20.b/20020616sim.d

Date : 06-FEB-2020 20:16

Client ID:

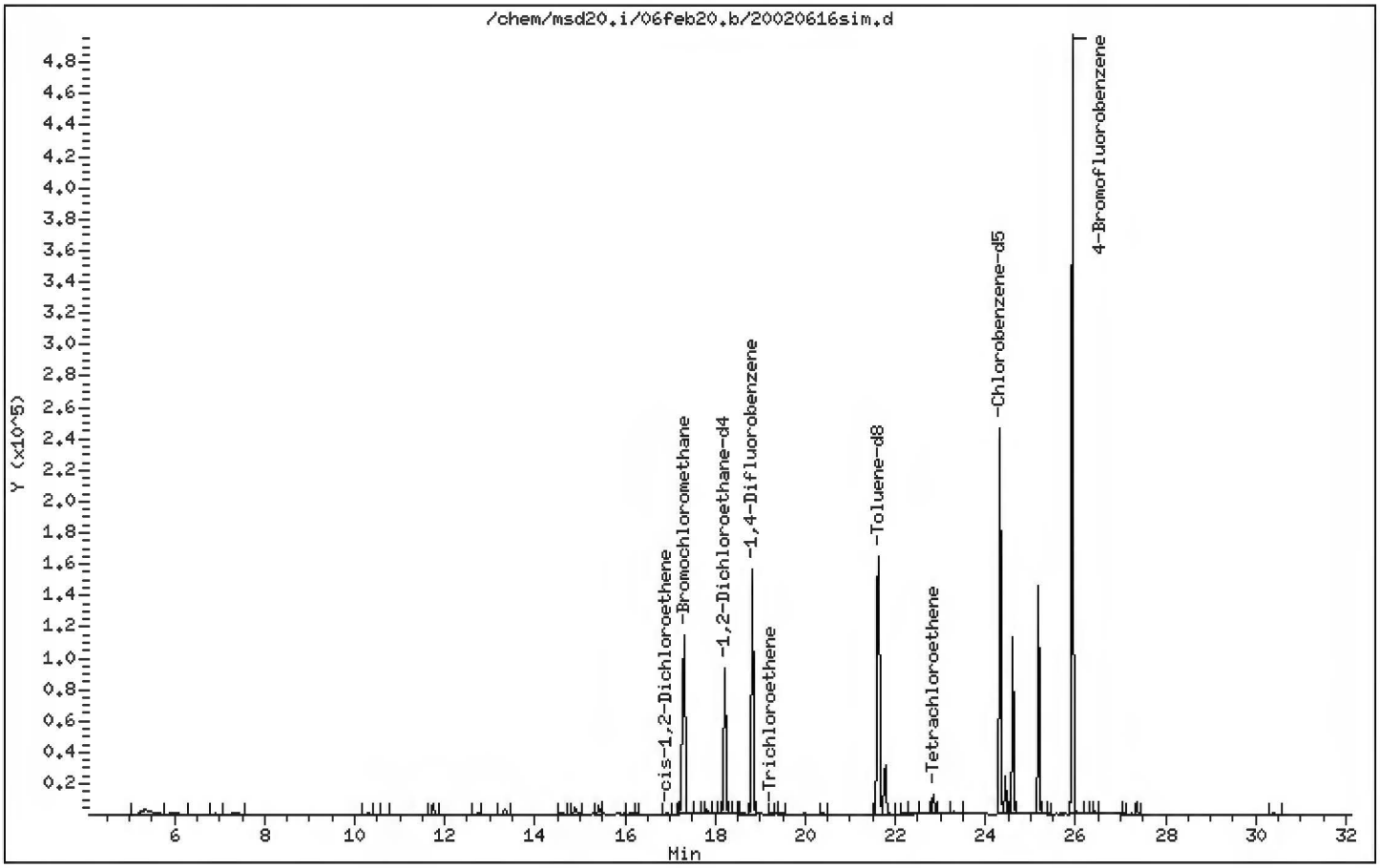
Instrument: msd20.i

Sample Info: 250mL #00190

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020616sim.d

Date : 06-FEB-2020 20:16

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00190

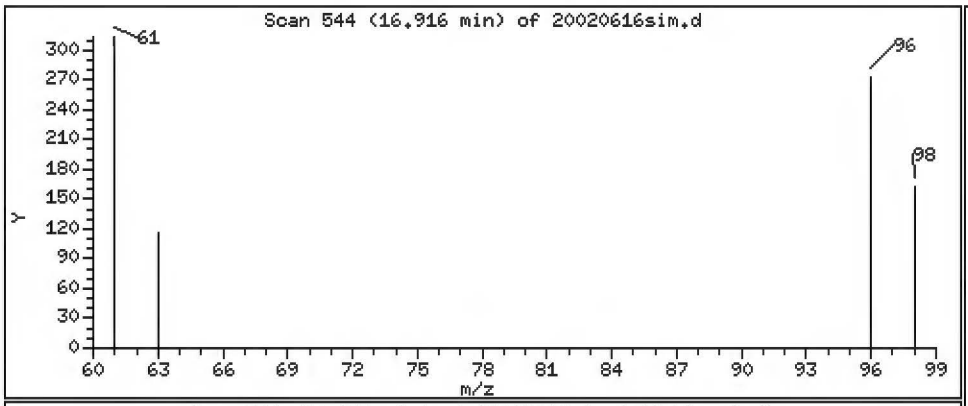
Operator: mb

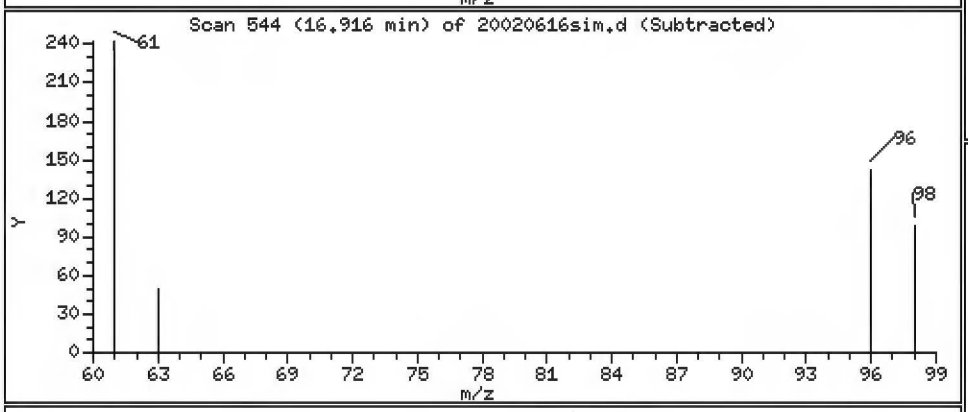
Column phase: RTX-624

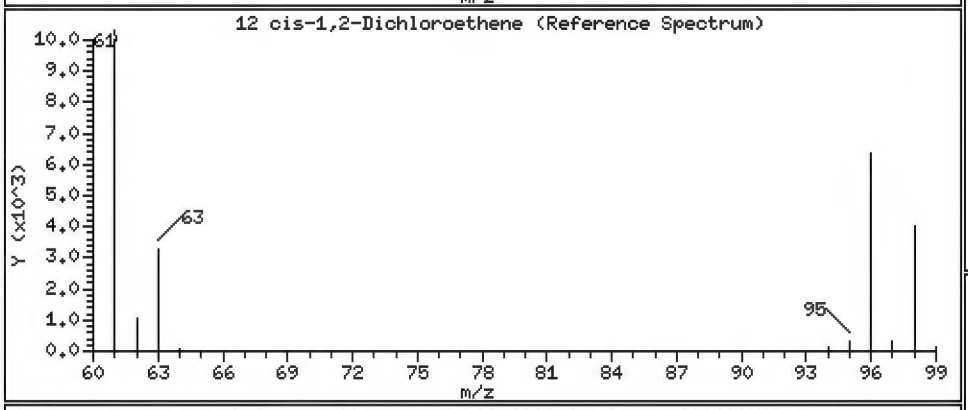
Column diameter: 0.32

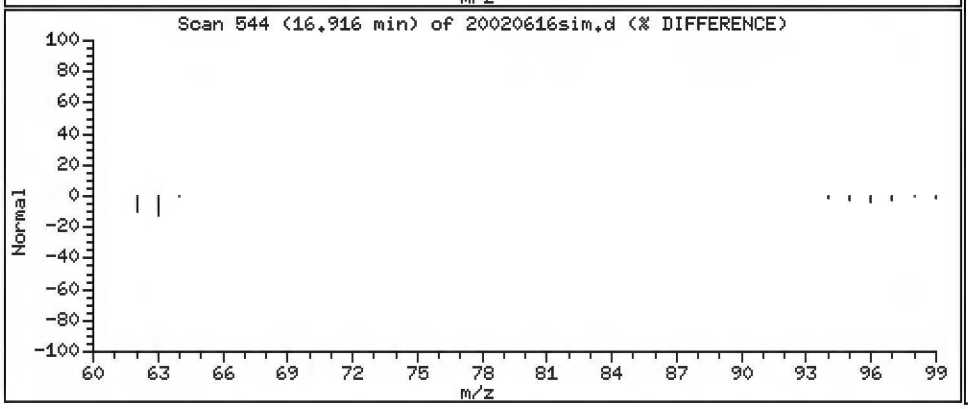
12 cis-1,2-Dichloroethene

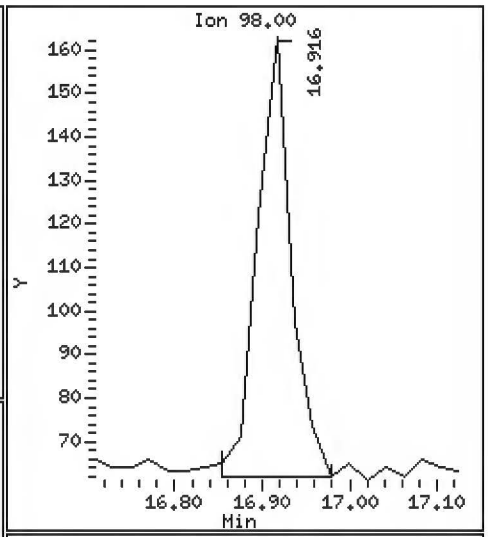
Concentration: 0.01686 PPBV

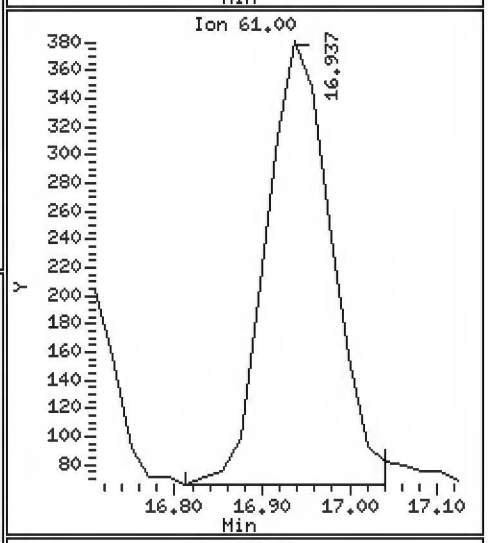


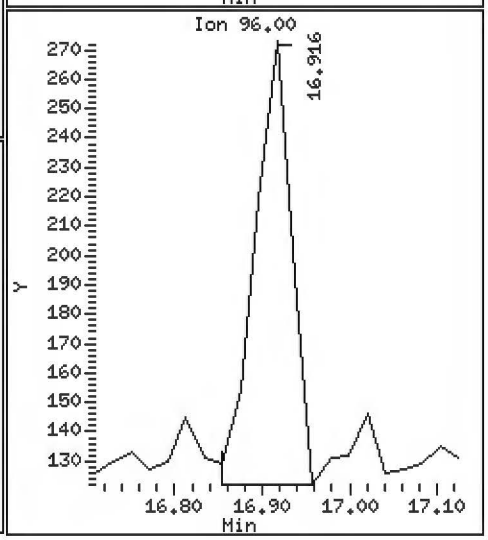












Data File: /chem/msd20.i/06feb20.b/20020616sim.d

Date : 06-FEB-2020 20:16

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00190

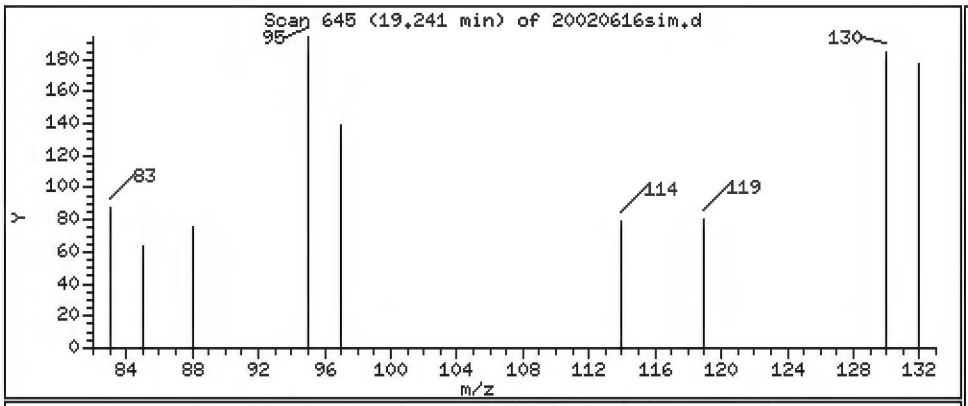
Operator: mb

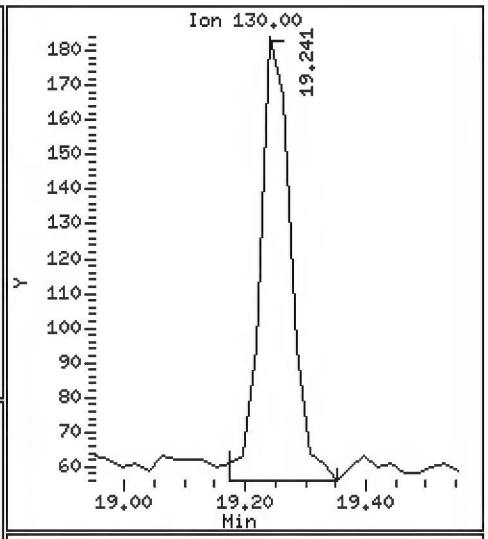
Column phase: RTX-624

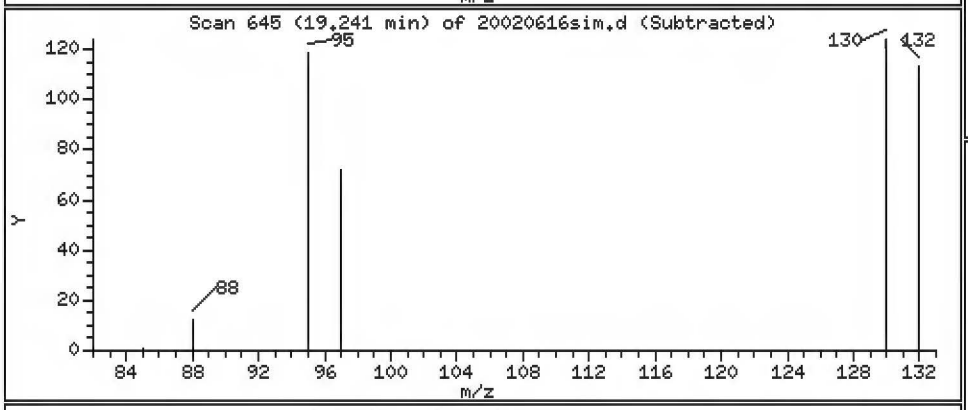
Column diameter: 0.32

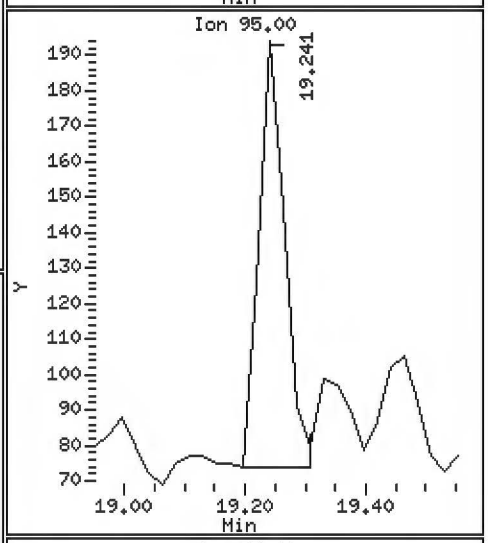
21 Trichloroethene

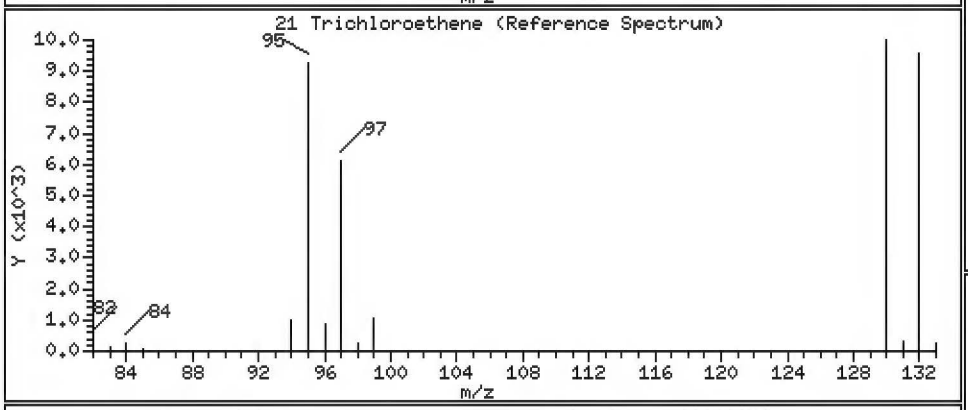
Concentration: 0.01227 PPBV

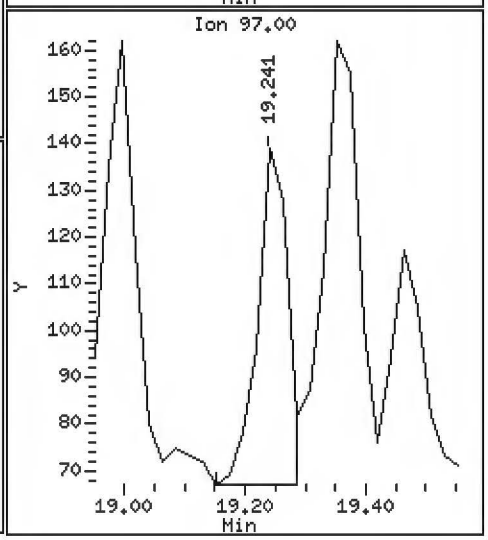


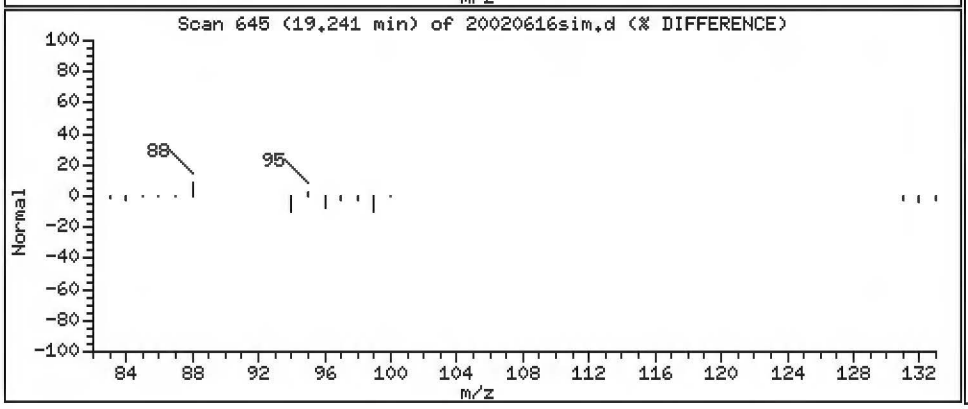












Data File: /chem/msd20.i/06feb20.b/20020616sim.d

Date : 06-FEB-2020 20:16

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00190

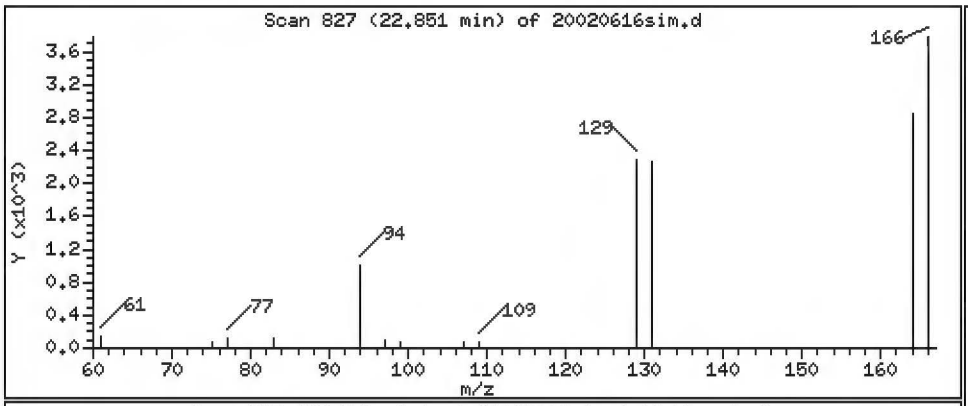
Operator: mb

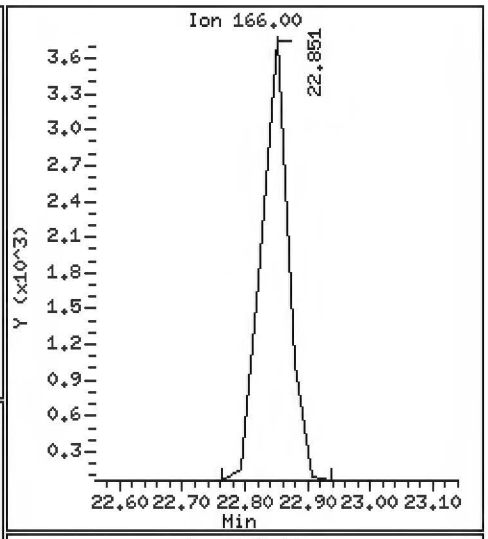
Column phase: RTX-624

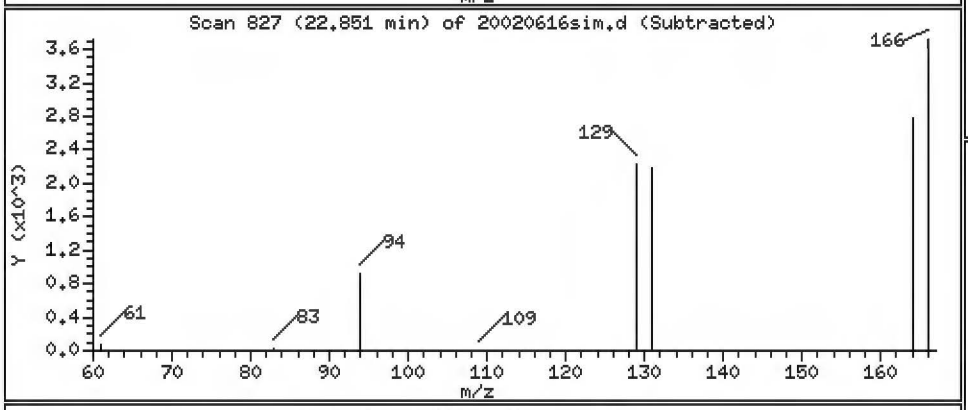
Column diameter: 0.32

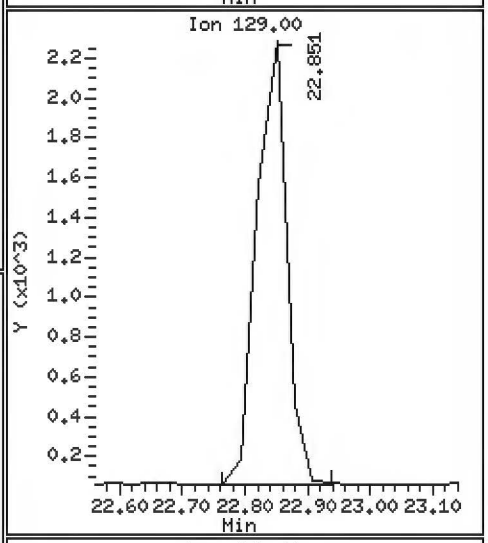
26 Tetrachloroethene

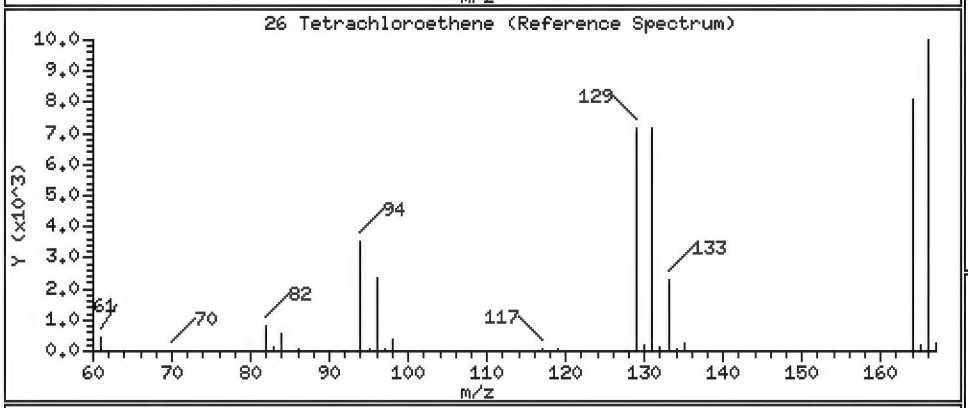
Concentration: 0.1877 PPBV

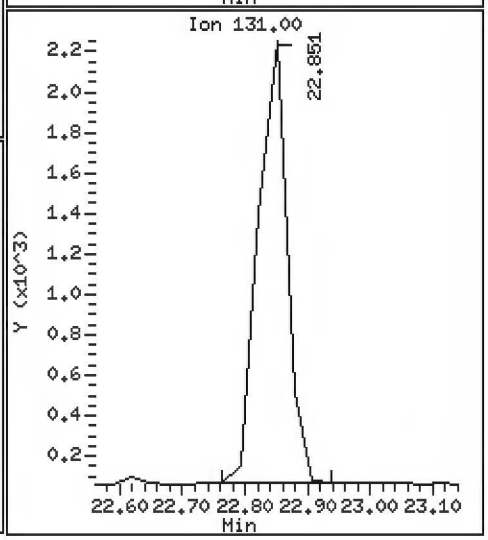


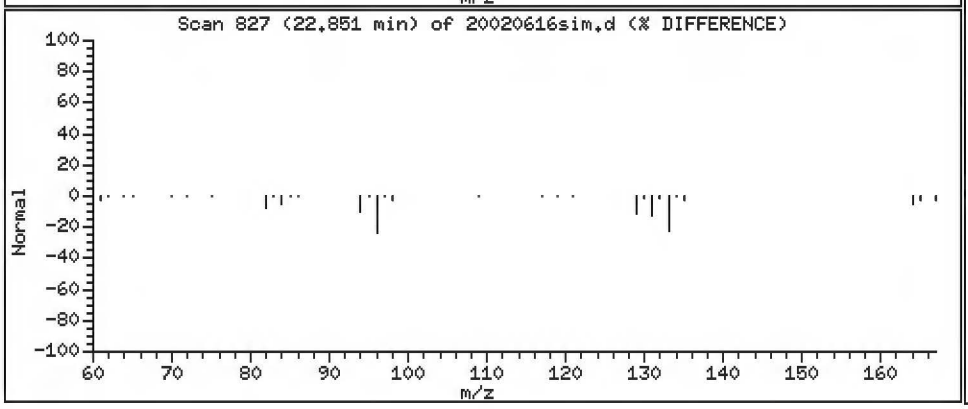












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

eurofins | Air Toxics

Client ID:	ASI-101-DUP-01292020		
Lab ID:	2001756-05A	**Date/Time Analyzed:**	2/6/20 03:36 PM
Date/Time Collected:	1/29/20 05:23 PM	**Dilution Factor:**	1.42
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020609sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.028	0.028	0.056	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.017	0.056	0.11	0.22
Tetrachloroethene	127-18-4	0.018	0.096	0.19	1.3
trans-1,2-Dichloroethene	156-60-5	0.032	0.056	0.56	Not Detected
Trichloroethene	79-01-6	0.018	0.076	0.15	0.067 J
Vinyl Chloride	75-01-4	0.013	0.018	0.036	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020609sim.d
Lab Smp Id: 2001756-05A
Inj Date : 06-FEB-2020 15:36
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #N3499
Misc Info : 4.5"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.42000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	149092	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	115089			46.79- 106.79	77.19
17.284	17.316 (1.000)	49	134216			67.00- 127.00	90.02
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	407939	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	57064			0.00- 44.17	13.99
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	415609	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	191723			16.60- 76.60	46.13
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	179628	5.11816	5.118	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	91623			26.62- 86.62	51.01
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	355528	4.92887	4.929	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	41836			0.00- 40.95	11.77

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	223214			34.26- 94.26	62.78
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	334949	5.22156	5.222	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	281548			54.28- 114.28	84.06
25.927	25.927 (1.066)	176	324936			67.48- 127.48	97.01
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	926	0.03986	0.05661	80.00- 120.00	100.00
16.917	16.916 (0.977)	61	2766			144.59- 204.59	298.56
16.917	16.916 (0.977)	96	1438			124.96- 184.96	155.31
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	465	0.00881	0.01250	80.00- 120.00	100.00(a)
19.241	19.245 (1.021)	95	376			56.54- 116.54	80.74
19.241	19.245 (1.021)	97	313			26.43- 86.43	67.24
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	11454	0.13203	0.1875	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	7501			34.72- 94.72	65.49
22.851	22.851 (0.940)	131	7341			33.00- 93.00	64.10

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020609sim.d
Lab Smp Id: 2001756-05A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	149092	-18.70
20 1,4-Difluorobenze	549605	329763	769447	407939	-25.78
28 Chlorobenzene-d5	517348	310409	724287	415609	-19.67

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-05A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.118	102.36
$ 22 Toluene-d8	5.000	4.929	98.58
$ 33 4-Bromofluorobenzene	5.000	5.222	104.43

Data File: /chem/msd20.i/06feb20.b/20020609sim.d

Date : 06-FEB-2020 15:36

Client ID:

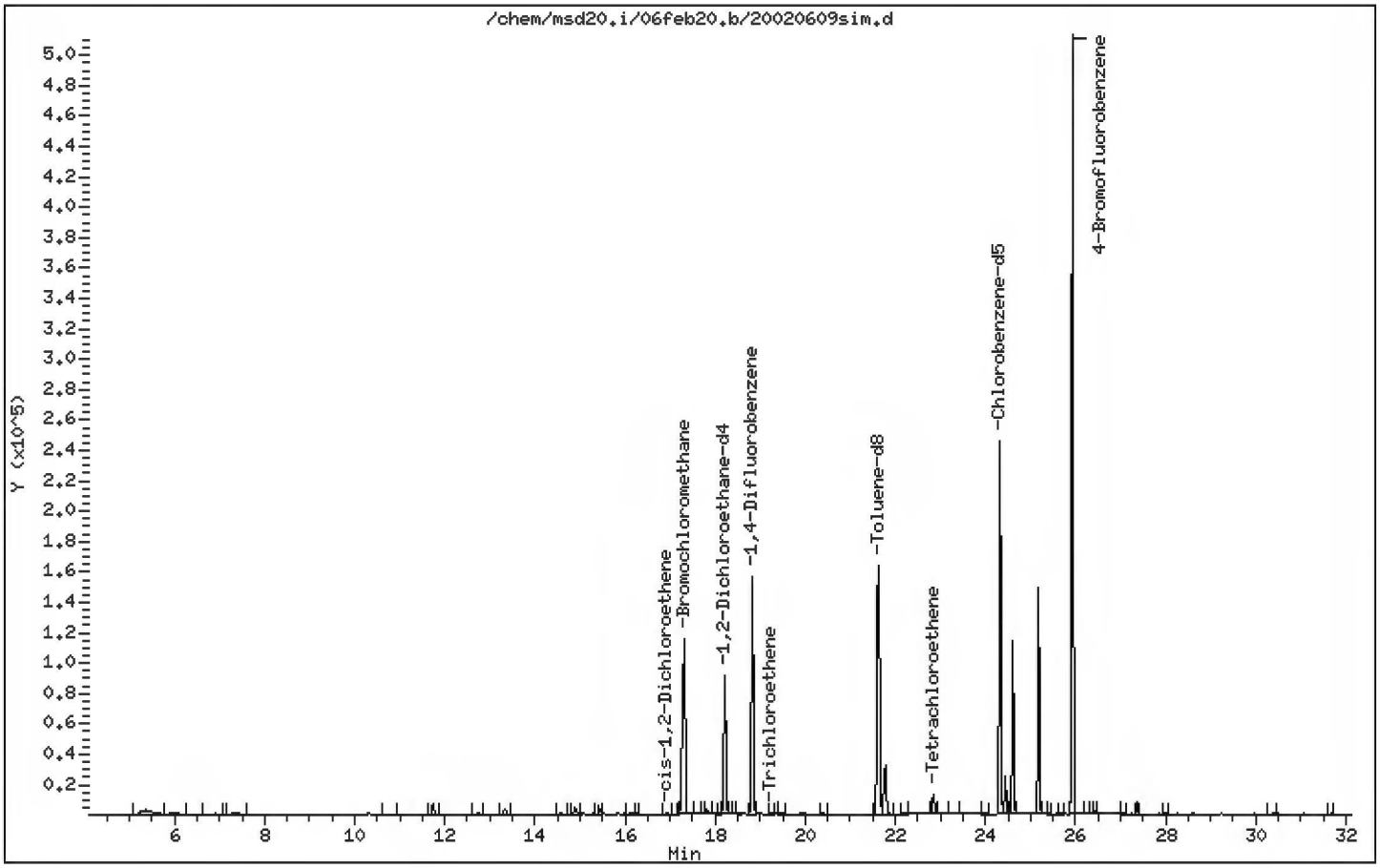
Instrument: msd20.i

Sample Info: 250mL #N3499

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020609sim.d

Date : 06-FEB-2020 15:36

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3499

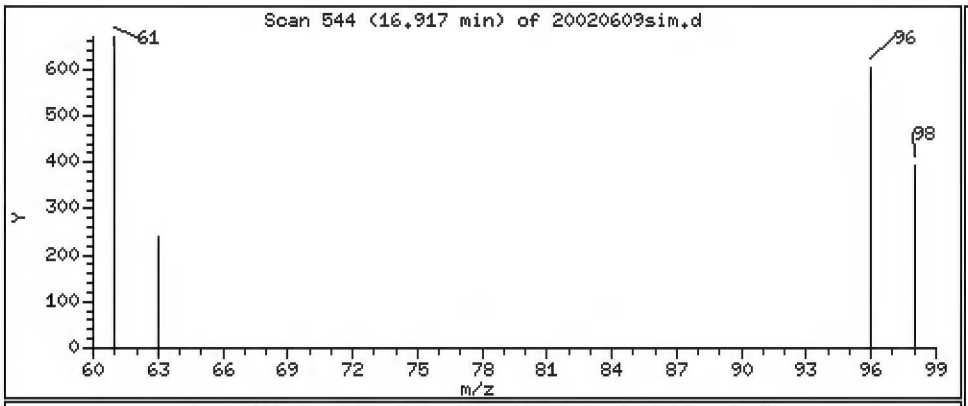
Operator: mb

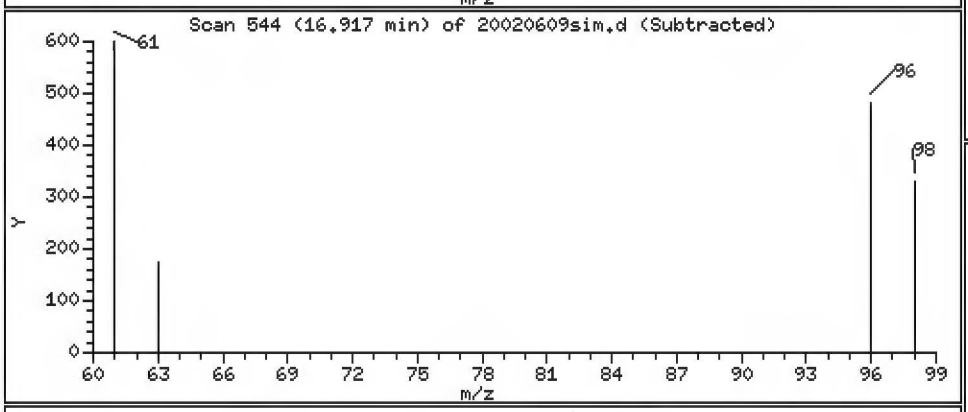
Column phase: RTX-624

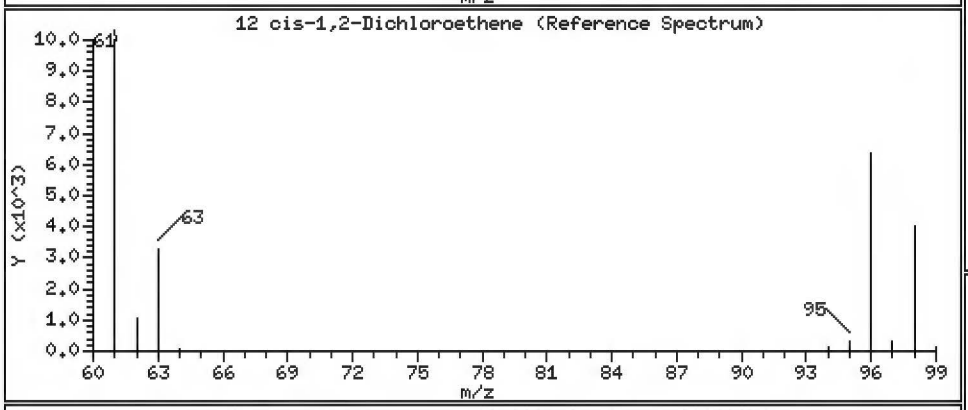
Column diameter: 0.32

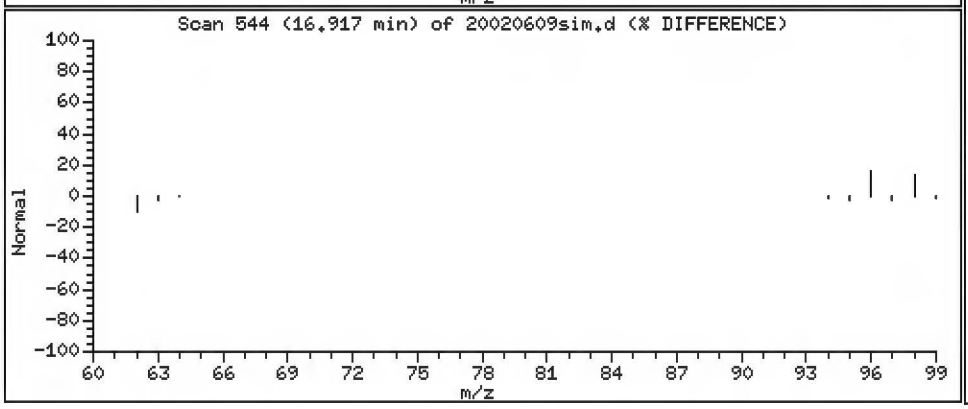
12 cis-1,2-Dichloroethene

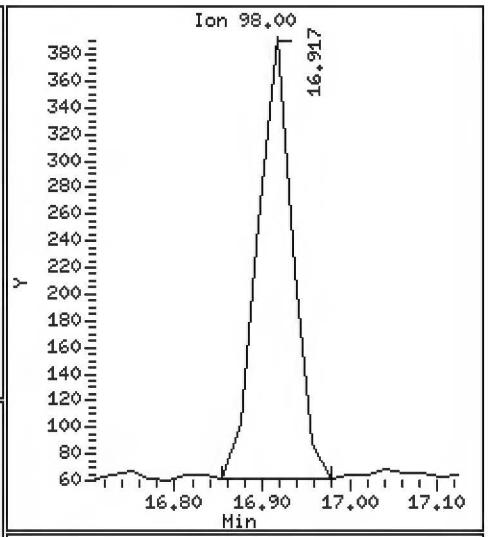
Concentration: 0.05661 PPBV

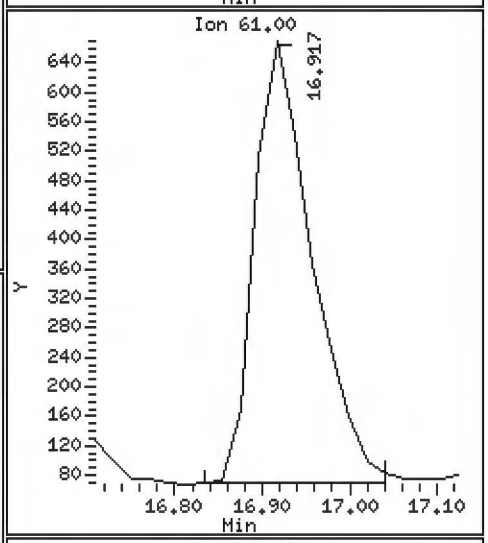


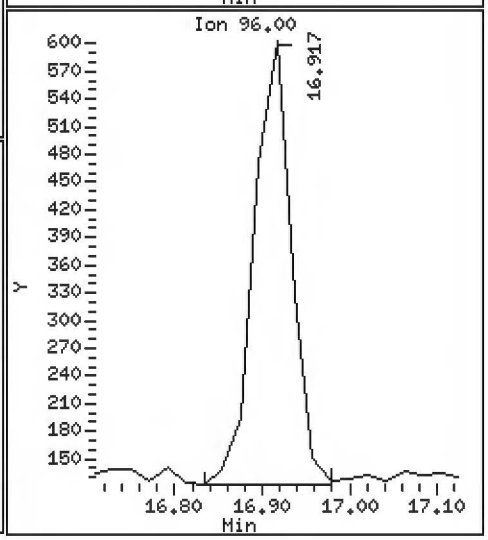












Data File: /chem/msd20.i/06feb20.b/20020609sim.d

Date : 06-FEB-2020 15:36

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3499

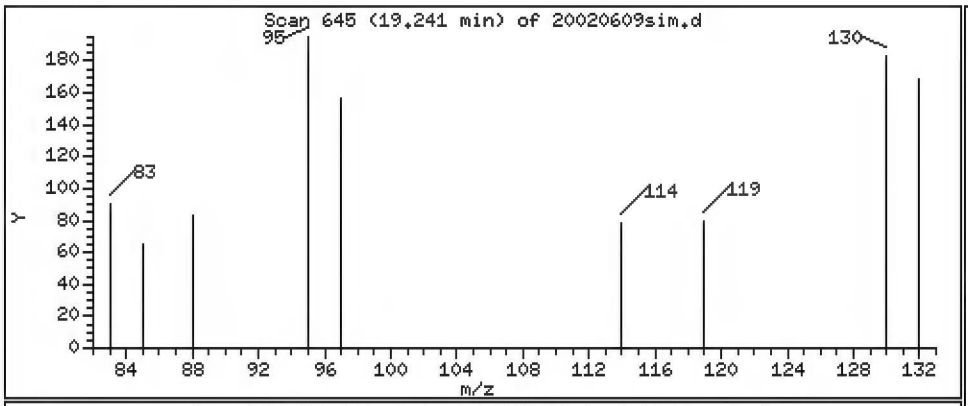
Operator: mb

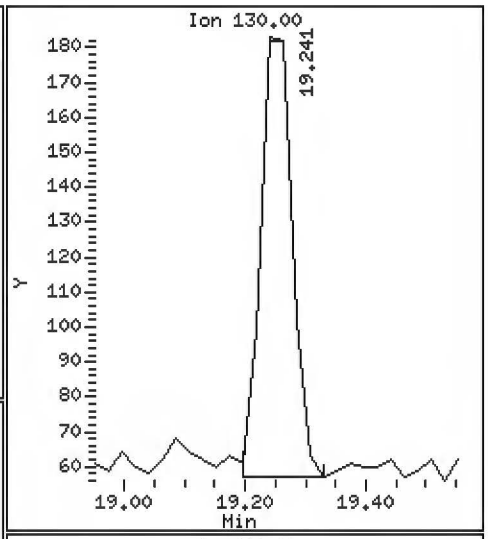
Column phase: RTX-624

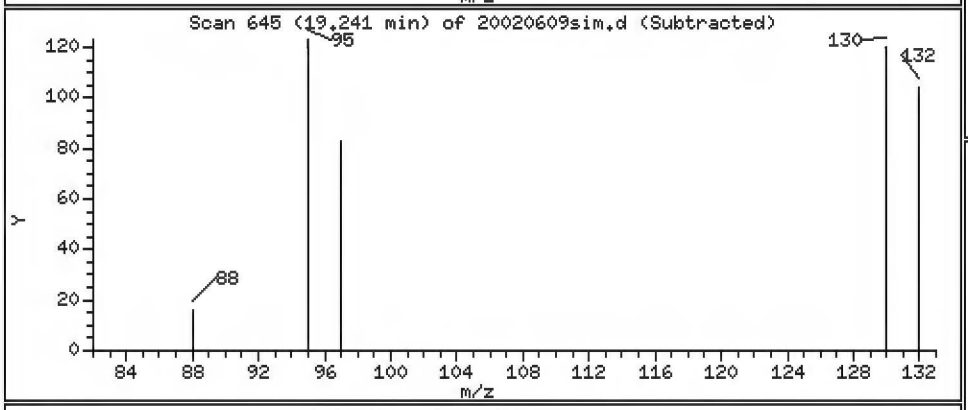
Column diameter: 0.32

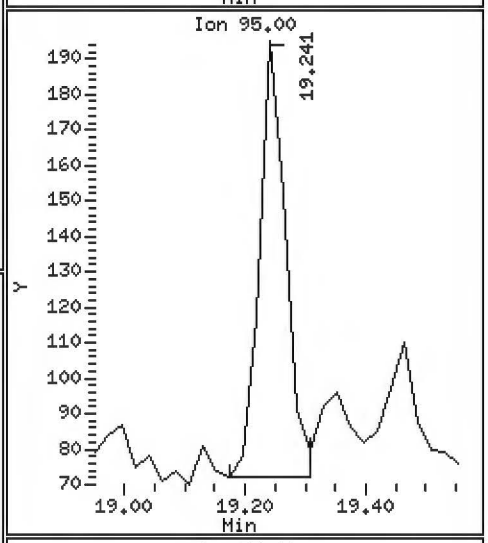
21 Trichloroethene

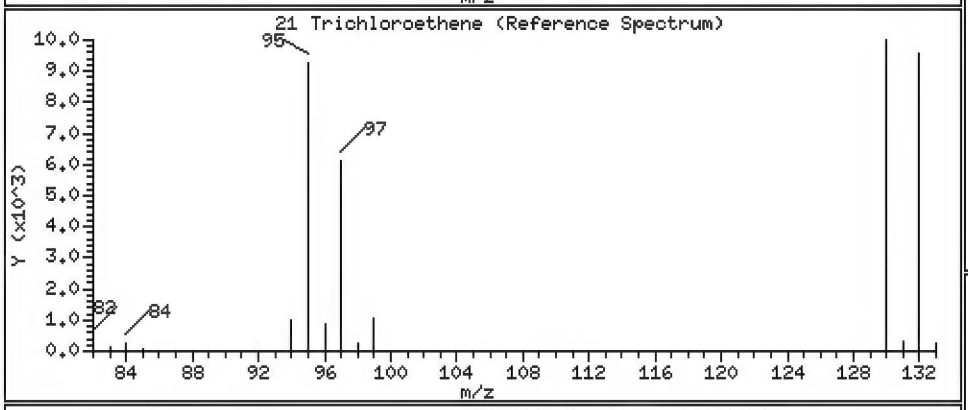
Concentration: 0.01250 PPBV

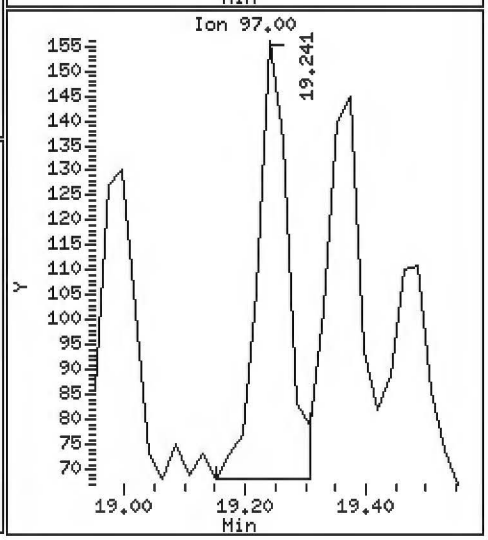


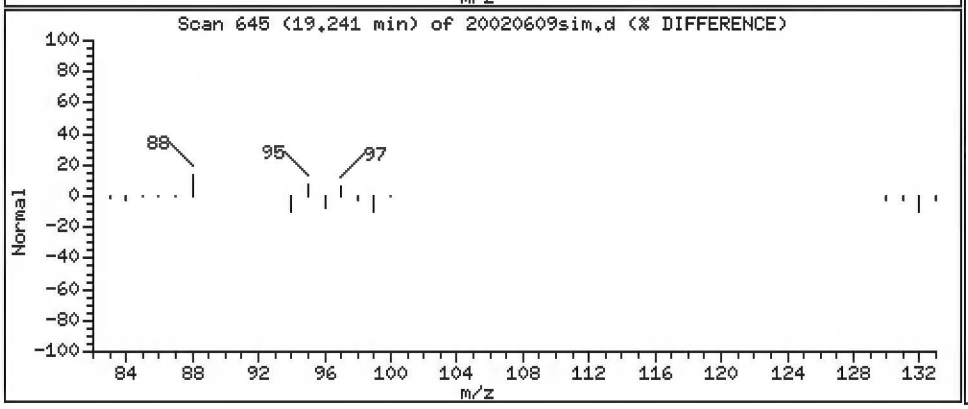












Data File: /chem/msd20.i/06feb20.b/20020609sim.d

Date : 06-FEB-2020 15:36

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3499

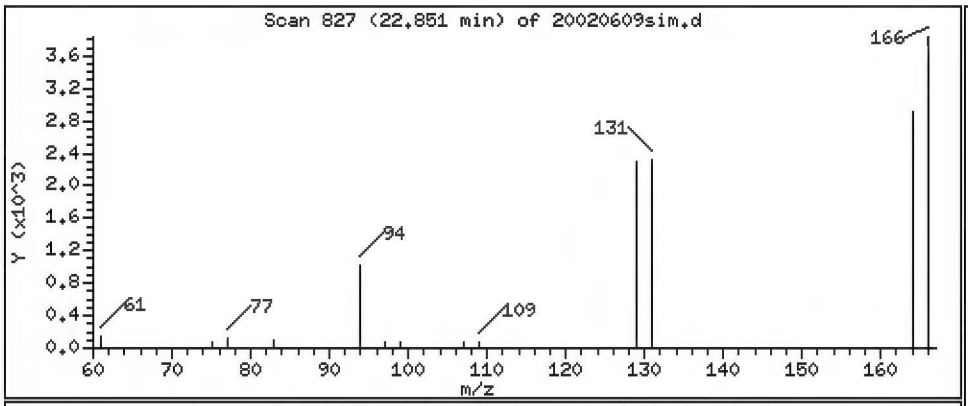
Operator: mb

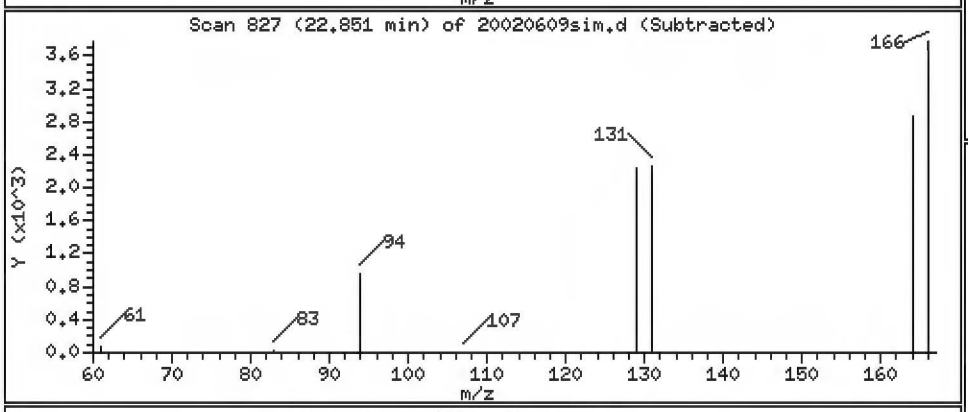
Column phase: RTX-624

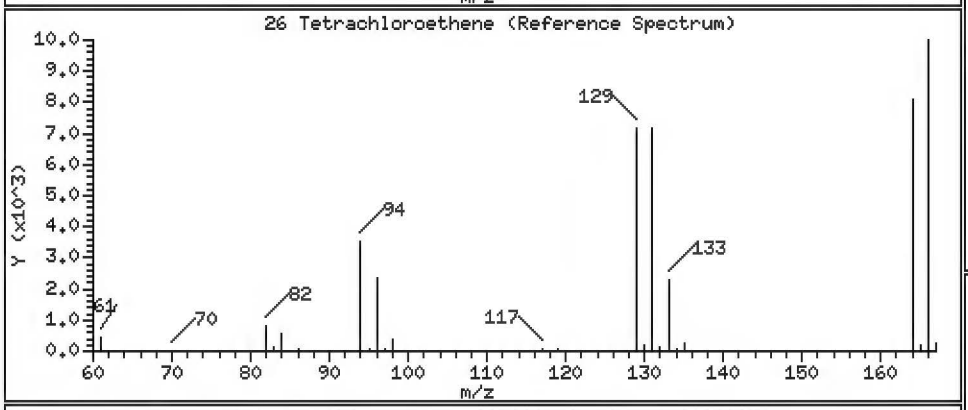
Column diameter: 0.32

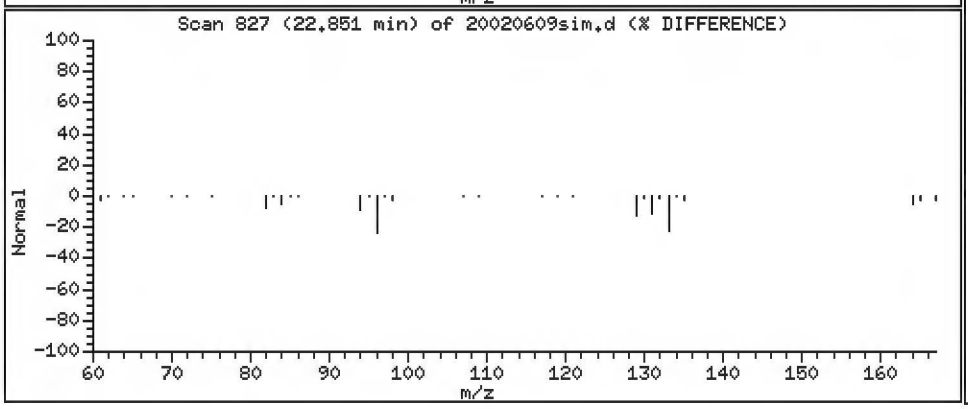
26 Tetrachloroethene

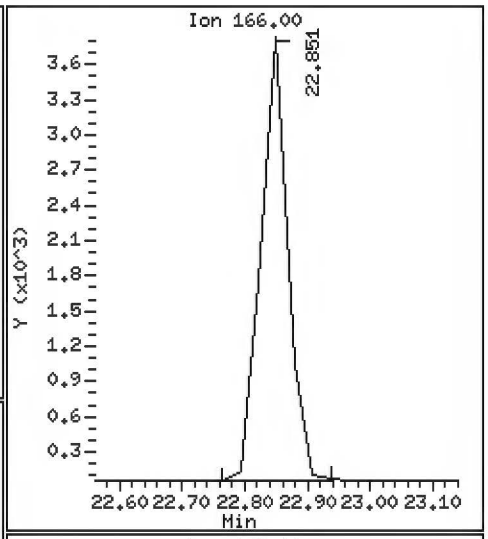
Concentration: 0.1875 PPBV

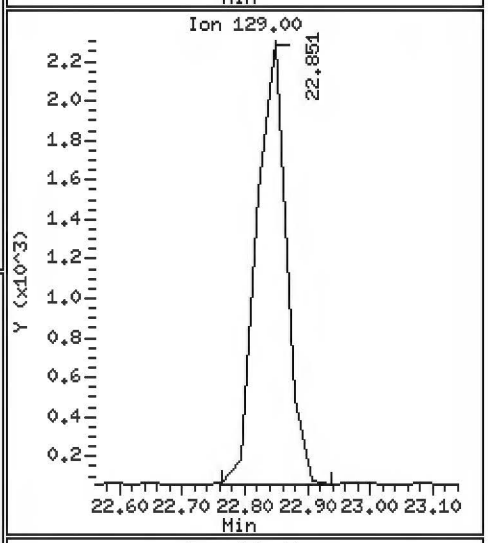


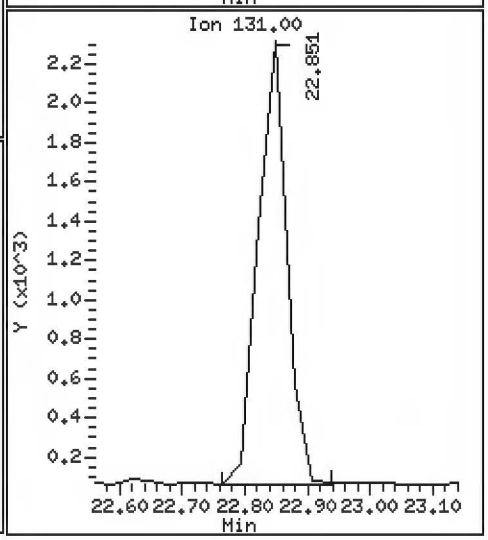












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASI-102-01292020		
Lab ID:	2001756-06A	**Date/Time Analyzed:**	2/6/20 04:15 PM
Date/Time Collected:	1/29/20 05:31 PM	**Dilution Factor:**	1.39
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020610sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.027	0.028	0.055	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.017	0.055	0.11	0.080 J
Tetrachloroethene	127-18-4	0.017	0.094	0.19	1.4
trans-1,2-Dichloroethene	156-60-5	0.032	0.055	0.55	Not Detected
Trichloroethene	79-01-6	0.018	0.075	0.15	0.086 J
Vinyl Chloride	75-01-4	0.013	0.018	0.036	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020610sim.d
Lab Smp Id: 2001756-06A
Inj Date : 06-FEB-2020 16:15
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #O0601
Misc Info : 4.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.39000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	151477	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	116103			46.79- 106.79	76.65
17.284	17.316 (1.000)	49	136831			67.00- 127.00	90.33
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	417156	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	58796			0.00- 44.17	14.09
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	420160	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	194197			16.60- 76.60	46.22
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	183286	5.14016	5.140	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	93173			26.62- 86.62	50.84
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	360826	4.89178	4.892	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	42501			0.00- 40.95	11.78

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	227541			34.26- 94.26	63.06
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	331702	5.11494	5.115	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	277015			54.28- 114.28	83.51
25.927	25.927 (1.066)	176	322687			67.48- 127.48	97.28
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	343	0.01454	0.02020	80.00- 120.00	100.00(a)
16.937	16.916 (0.978)	61	2104			144.59- 204.59	613.06
16.917	16.916 (0.977)	96	615			124.96- 184.96	179.35
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	619	0.01146	0.01592	80.00- 120.00	100.00(a)
19.241	19.245 (1.021)	95	467			56.54- 116.54	75.37
19.241	19.245 (1.021)	97	331			26.43- 86.43	53.45
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	13085	0.14920	0.2074	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	8505			34.72- 94.72	65.00
22.851	22.851 (0.940)	131	8364			33.00- 93.00	63.92

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020610sim.d
Lab Smp Id: 2001756-06A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	151477	-17.40
20 1,4-Difluorobenze	549605	329763	769447	417156	-24.10
28 Chlorobenzene-d5	517348	310409	724287	420160	-18.79

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	-0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	-0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-06A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.140	102.80
$ 22 Toluene-d8	5.000	4.892	97.84
$ 33 4-Bromofluorobenzene	5.000	5.115	102.30

Data File: /chem/msd20.i/06feb20.b/20020610sim.d

Date : 06-FEB-2020 16:15

Client ID:

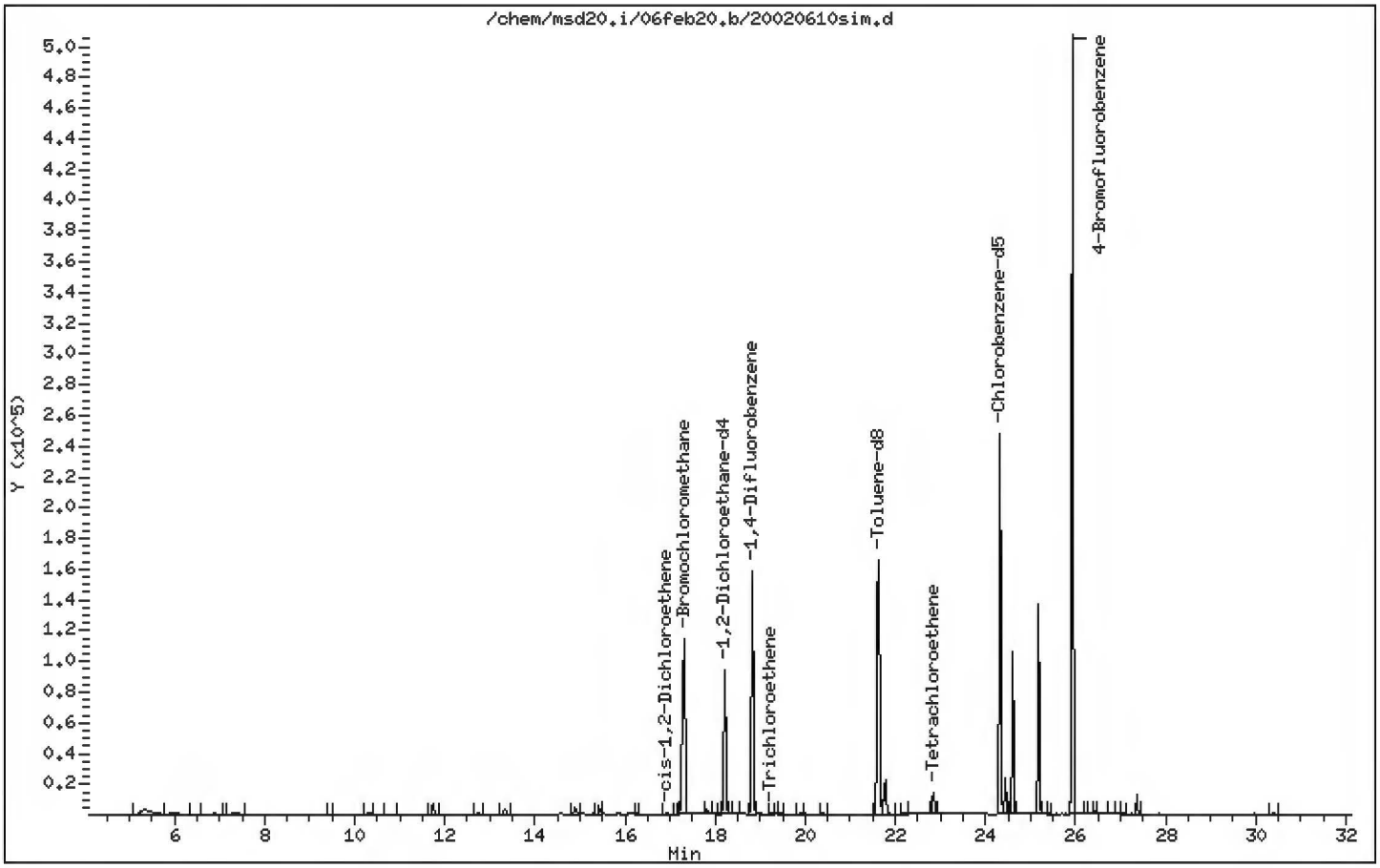
Instrument: msd20.i

Sample Info: 250mL #00601

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020610sim.d

Date : 06-FEB-2020 16:15

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00601

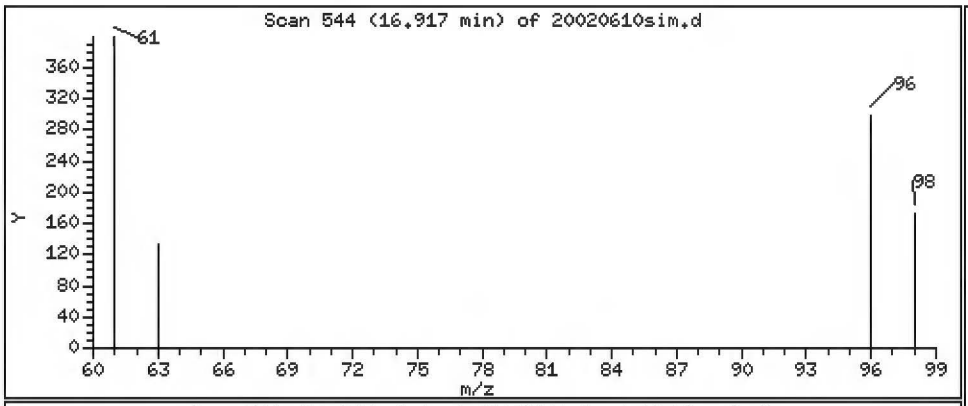
Operator: mb

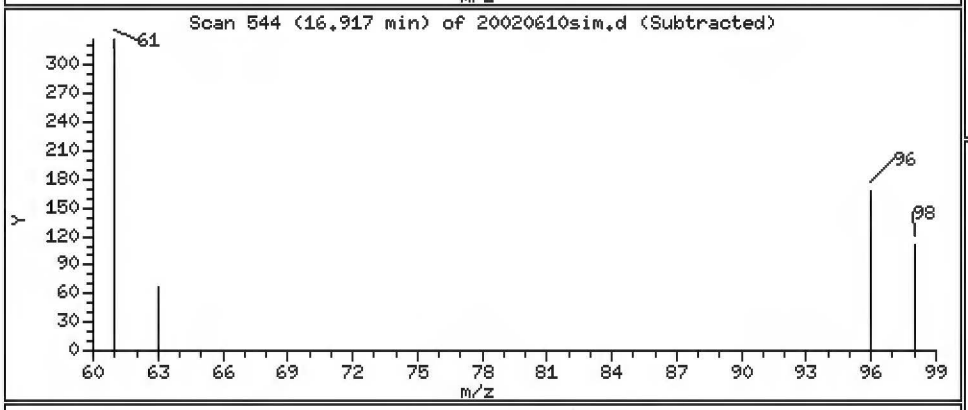
Column phase: RTX-624

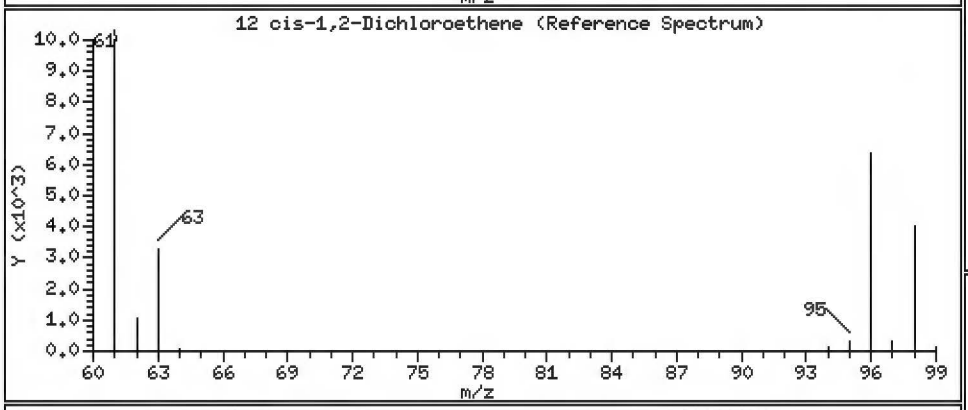
Column diameter: 0.32

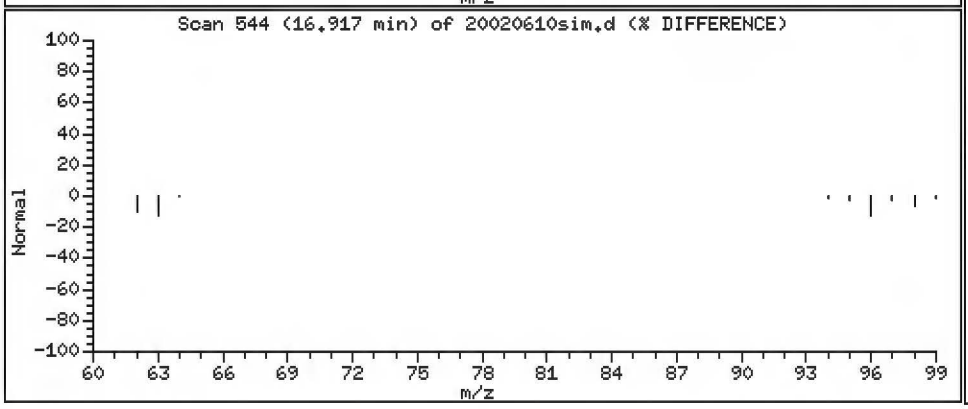
12 cis-1,2-Dichloroethene

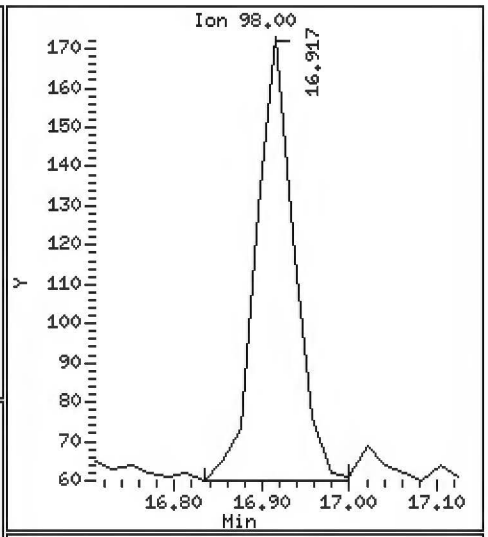
Concentration: 0.02020 PPBV

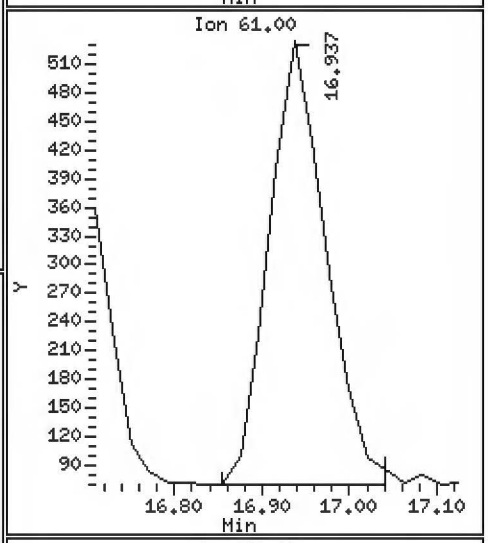


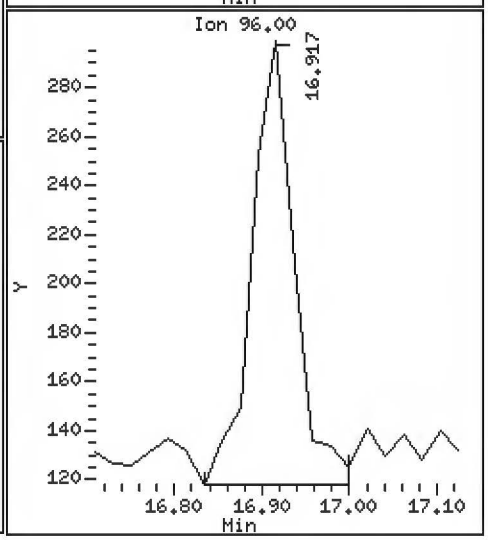












Data File: /chem/msd20.i/06feb20.b/20020610sim.d

Date : 06-FEB-2020 16:15

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00601

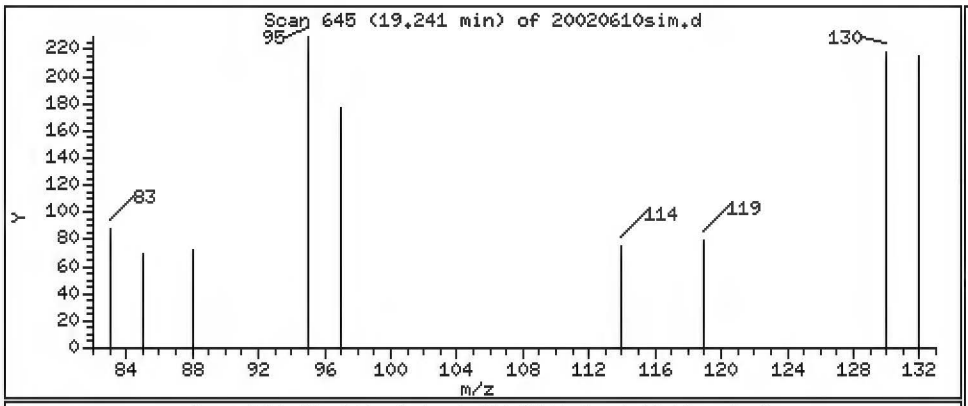
Operator: mb

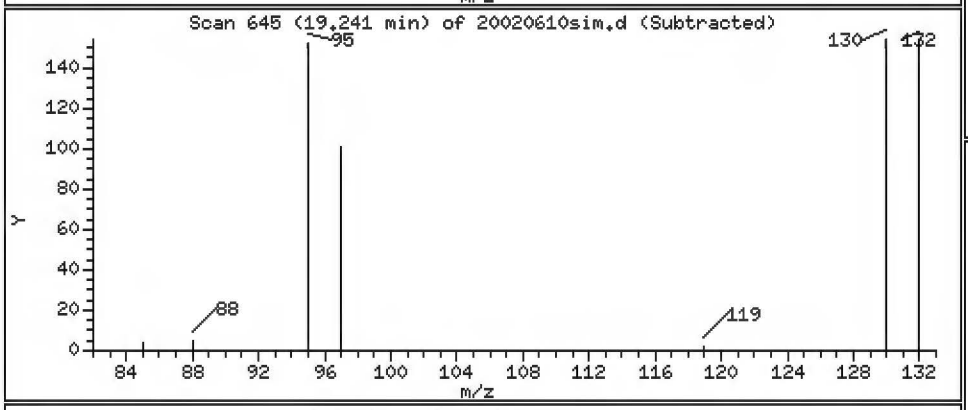
Column phase: RTX-624

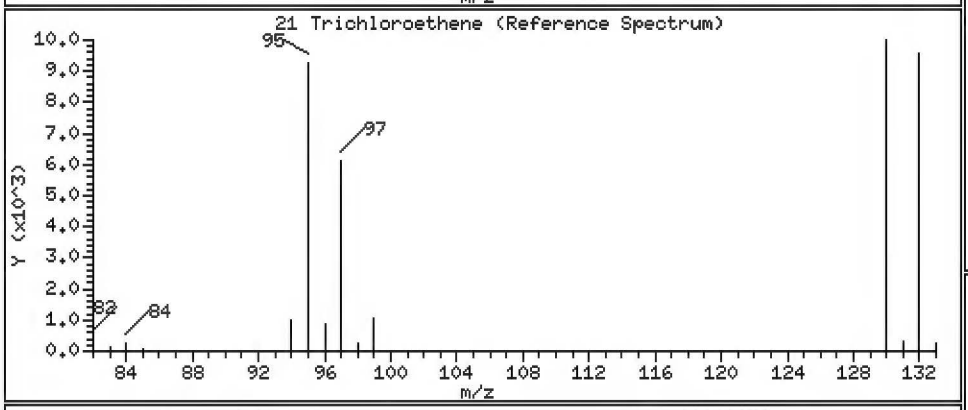
Column diameter: 0.32

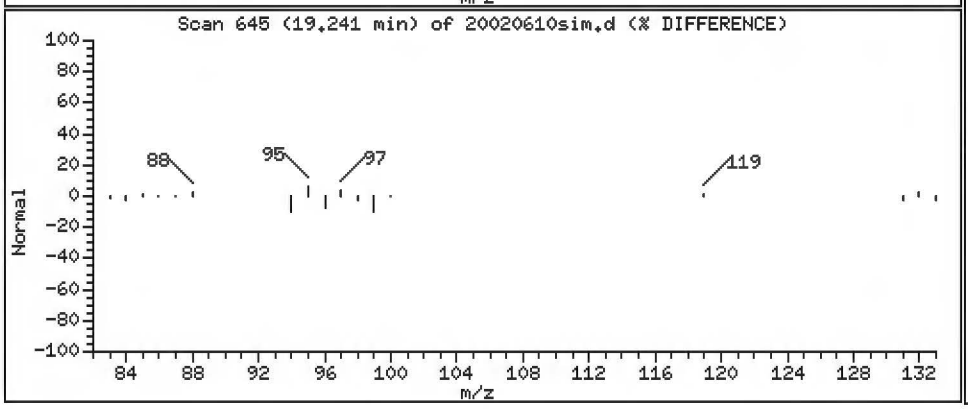
21 Trichloroethene

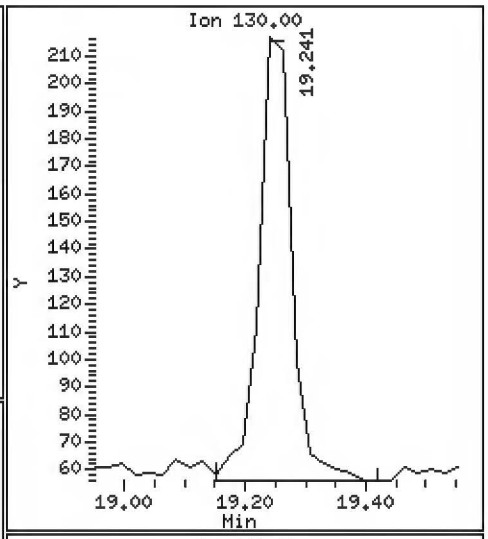
Concentration: 0.01592 PPBV

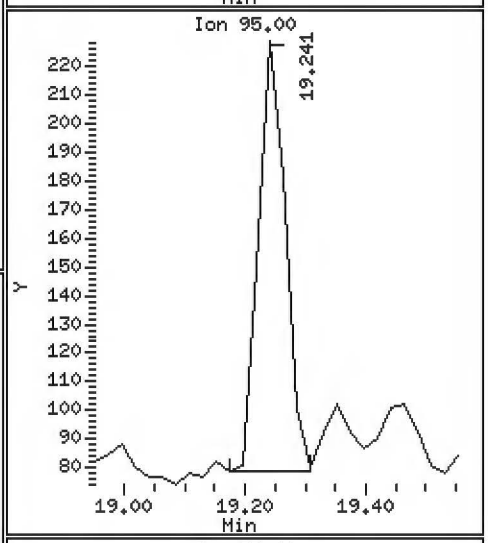


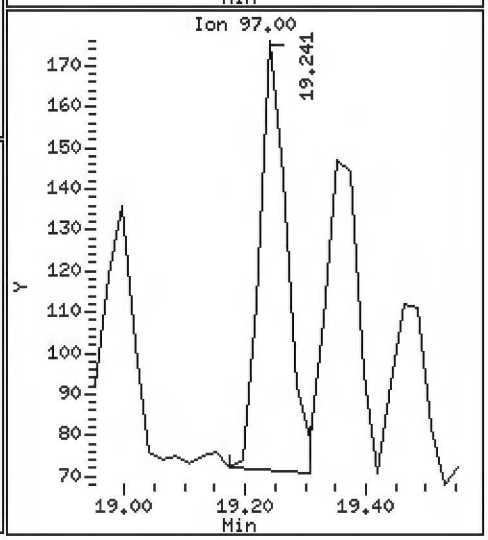












Data File: /chem/msd20.i/06feb20.b/20020610sim.d

Date : 06-FEB-2020 16:15

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00601

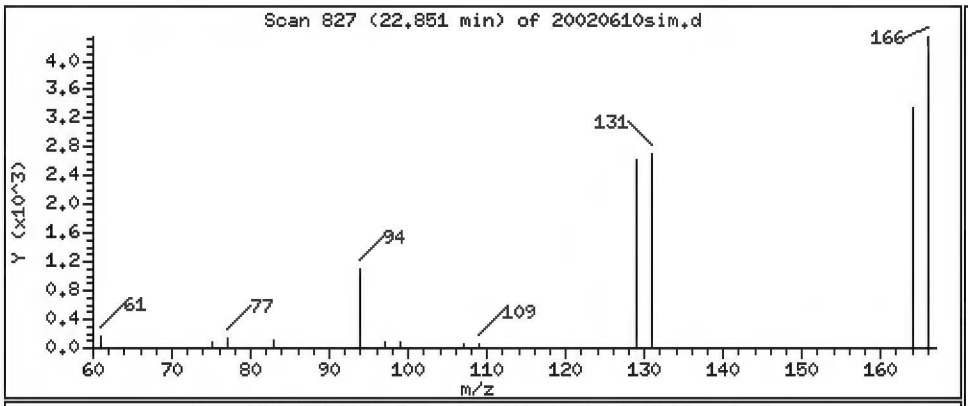
Operator: mb

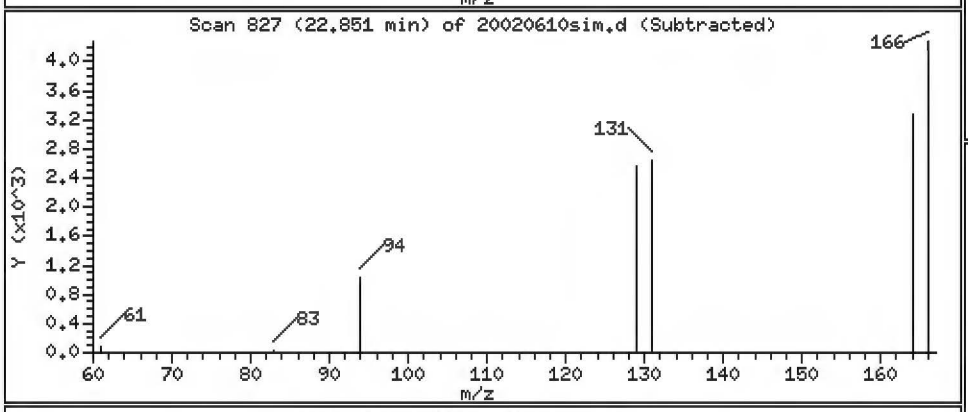
Column phase: RTX-624

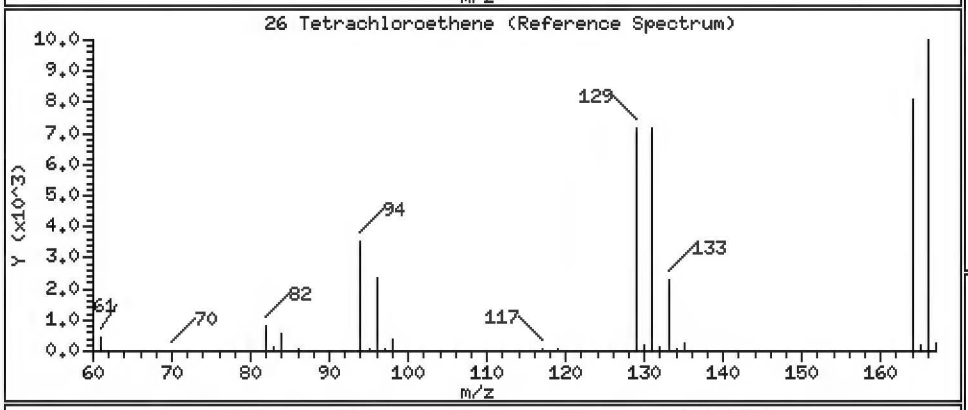
Column diameter: 0.32

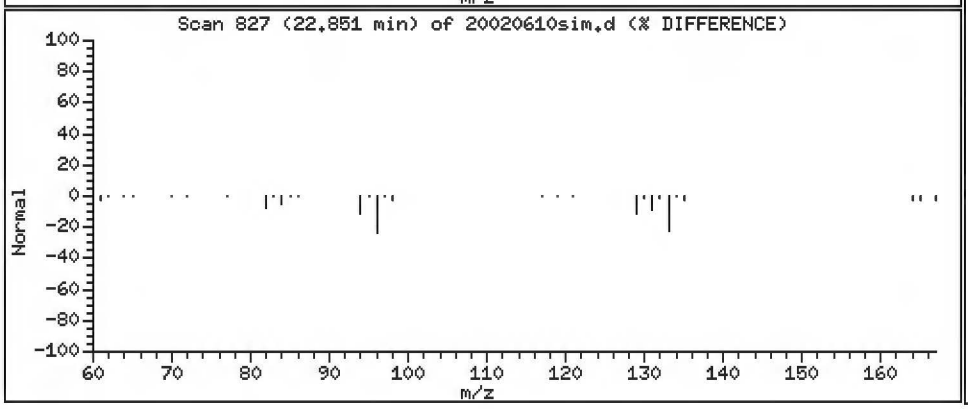
26 Tetrachloroethene

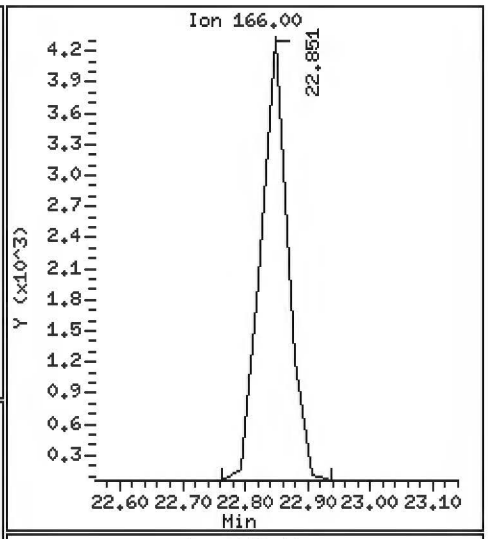
Concentration: 0.2074 PPBV

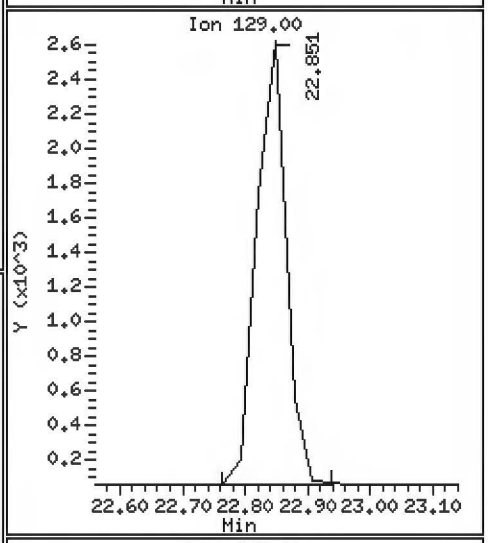


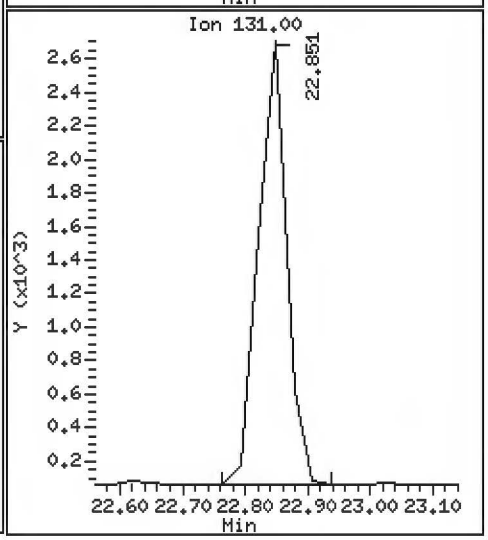












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASS-103-01292020		
Lab ID:	2001756-07A	**Date/Time Analyzed:**	2/6/20 04:54 PM
Date/Time Collected:	1/29/20 06:07 PM	**Dilution Factor:**	1.42
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020611sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.028	0.028	0.056	0.16
cis-1,2-Dichloroethene	156-59-2	0.017	0.056	0.11	48
Tetrachloroethene	127-18-4	0.018	0.096	0.19	44
trans-1,2-Dichloroethene	156-60-5	0.032	0.056	0.56	1.4
Trichloroethene	79-01-6	0.018	0.076	0.15	8.6
Vinyl Chloride	75-01-4	0.013	0.018	0.036	0.26

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	95

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020611sim.d
Lab Smp Id: 2001756-07A
Inj Date : 06-FEB-2020 16:54
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #N0439
Misc Info : 4.5"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.42000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	150225	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	115155			46.79- 106.79	76.66
17.283	17.316 (1.000)	49	137649			67.00- 127.00	91.63
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	433428	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	61139			0.00- 44.17	14.11
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	441631	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	201683			16.60- 76.60	45.67
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	191910	5.42690	5.427	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	97732			26.62- 86.62	50.93
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	362858	4.73466	4.735	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	42731			0.00- 40.95	11.78

```
                                        CONCENTRATIONS
                                        ON-COL    FINAL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

$  22 Toluene-d8 (continued)
 21.624  21.624 (1.148)   100    227887                    34.26-  94.26    62.80
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    347740 5.10154    5.102  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    289819                   54.28- 114.28    83.34
 25.927  25.927 (1.066)   176    336364                   67.48- 127.48    96.73
-------------------------------------------------------------------------------
    4 Vinyl Chloride                                CAS #: 75-01-4
  8.297   8.278 (0.479)    62      2063 0.07288   0.1035  80.00- 120.00   100.00
  8.297   8.278 (0.479)    64       741                    2.23-  62.23    35.94
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                            CAS #: 75-35-4
 13.329  13.331 (0.770)    98       576 0.02847  0.04042  80.00- 120.00   100.00
 13.329  13.328 (0.770)    61       618                  194.63- 254.63   107.14
 13.329  13.328 (0.770)    96       489                  125.91- 185.91    84.86
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                      CAS #: 156-60-5
 15.087  15.080 (0.871)    98      5289 0.25167   0.3574  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61     10211                  161.94- 221.94   193.06
 15.087  15.075 (0.871)    96      8373                  125.44- 185.44   158.30
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                        CAS #: 156-59-2
 16.916  16.916 (0.977)    98    198563 8.47865   12.040  80.00- 120.00   100.00
 16.916  16.916 (0.977)    61    344668                  144.59- 204.59   173.58
 16.916  16.916 (0.977)    96    306928                  124.96- 184.96   154.57
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.263  19.245 (1.022)   130     63056 1.12176    1.593  80.00- 120.00   100.00
 19.241  19.245 (1.021)    95     54178                   56.54- 116.54    85.92
 19.241  19.245 (1.021)    97     35446                   26.43-  86.43    56.21
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166    420038 4.55630    6.470  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129    270517                   34.72-  94.72    64.40
 22.851  22.851 (0.940)   131    263315                   33.00-  93.00    62.69
-------------------------------------------------------------------------------
```

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020611sim.d
Lab Smp Id: 2001756-07A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	150225	-18.08
20 1,4-Difluorobenze	549605	329763	769447	433428	-21.14
28 Chlorobenzene-d5	517348	310409	724287	441631	-14.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-07A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.427	108.54
$ 22 Toluene-d8	5.000	4.735	94.69
$ 33 4-Bromofluorobenzene	5.000	5.102	102.03

Data File: /chem/msd20.i/06feb20.b/20020611sim.d

Date : 06-FEB-2020 16:54

Client ID:

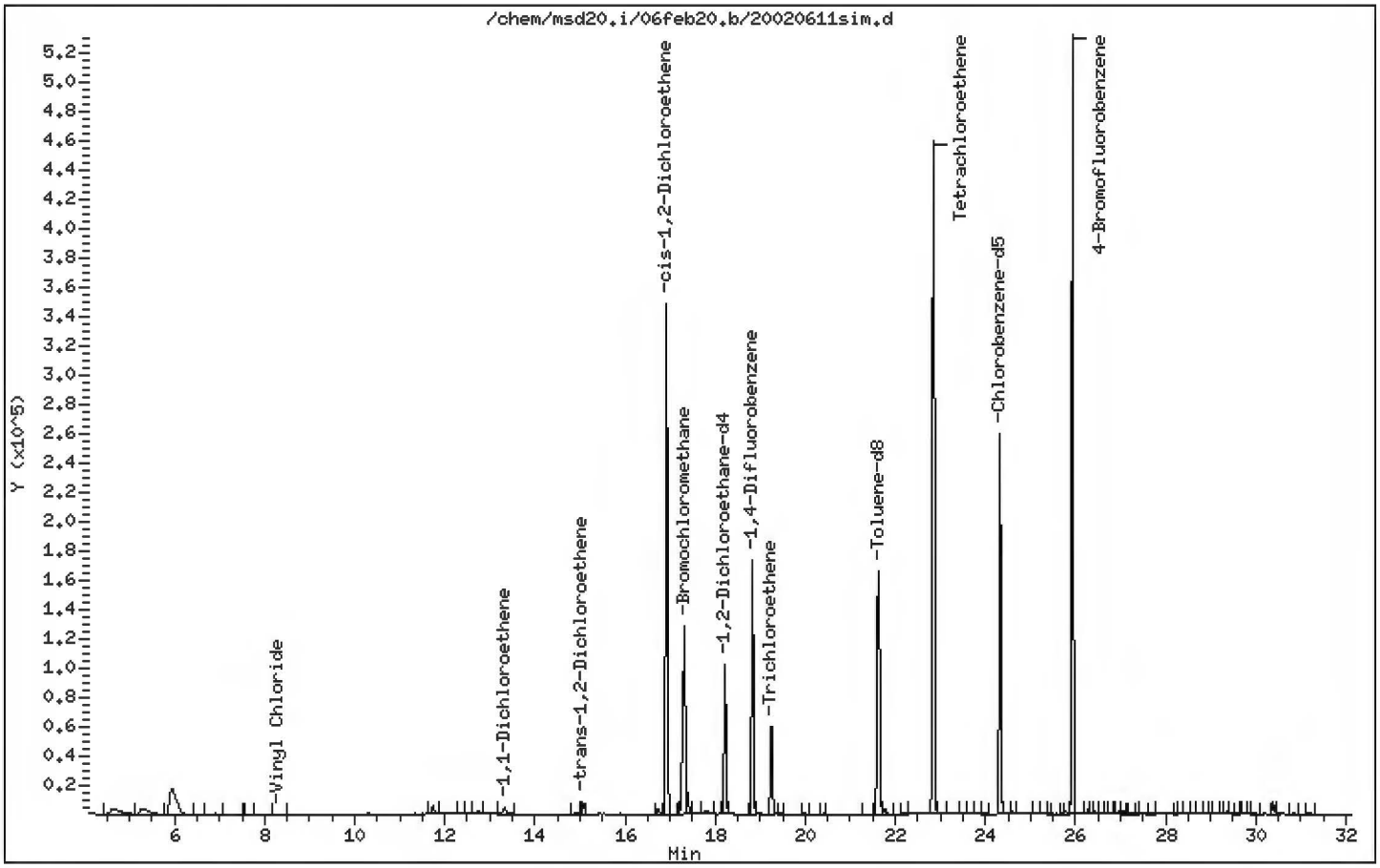
Instrument: msd20.i

Sample Info: 250mL #N0439

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020611sim.d

Date : 06-FEB-2020 16:54

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N0439

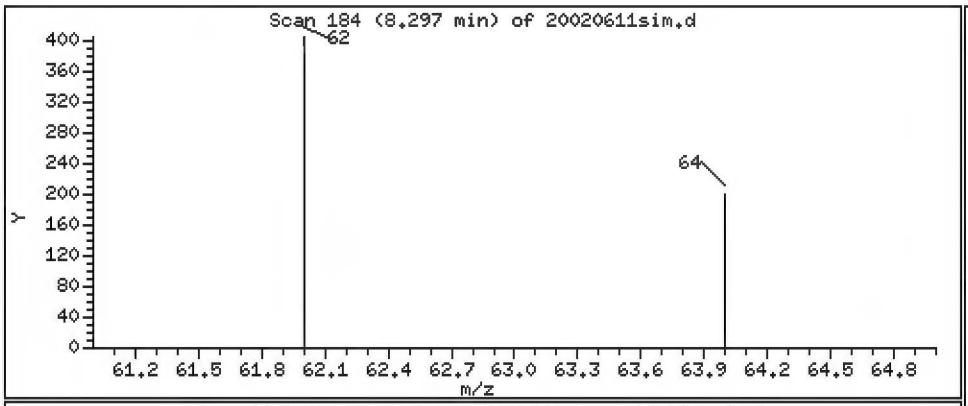
Operator: mb

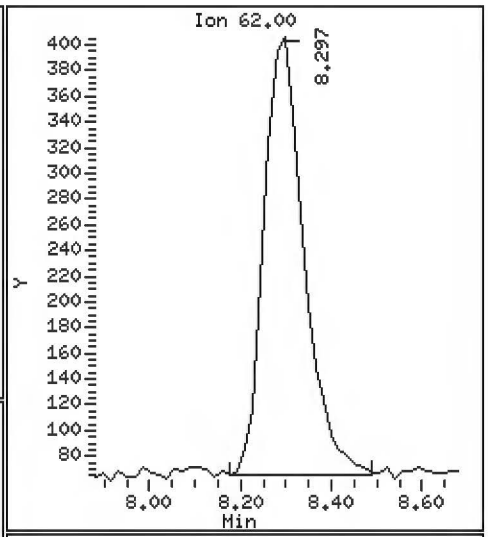
Column phase: RTX-624

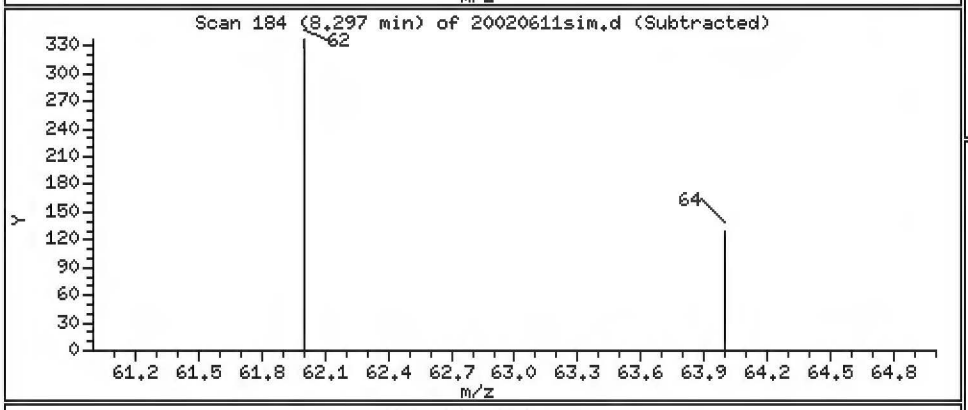
Column diameter: 0.32

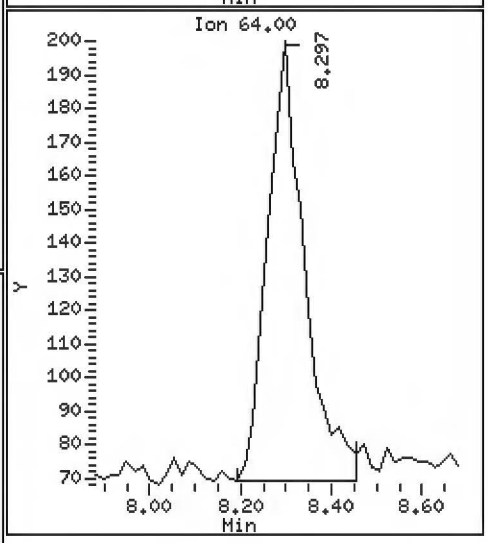
4 Vinyl Chloride

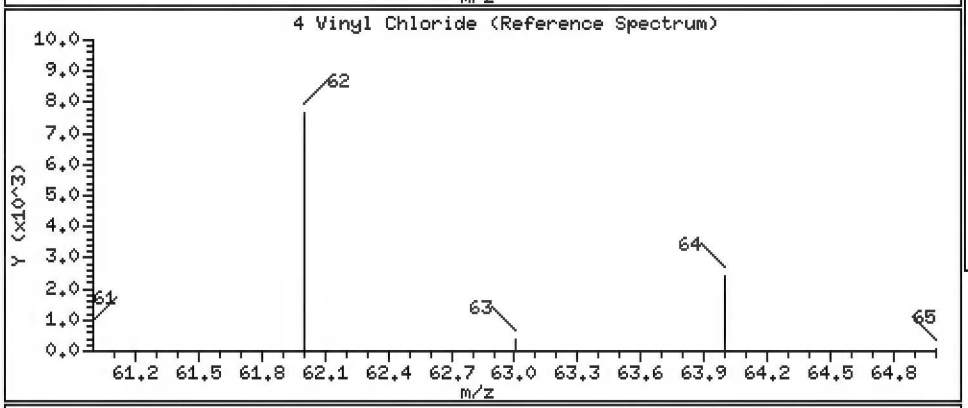
Concentration: 0.1035 PPBV

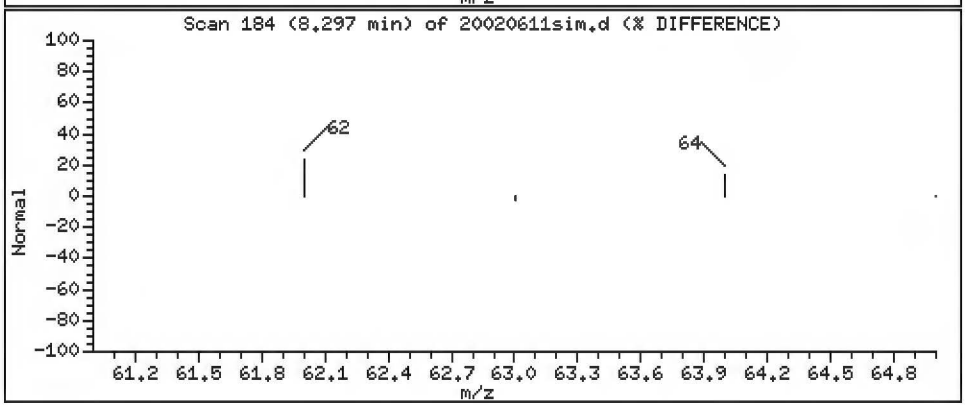












Data File: /chem/msd20.i/06feb20.b/20020611sim.d

Date : 06-FEB-2020 16:54

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N0439

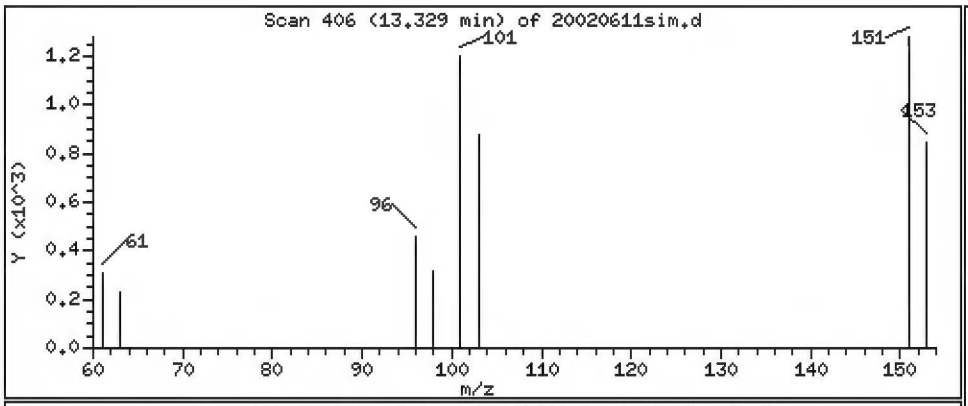
Operator: mb

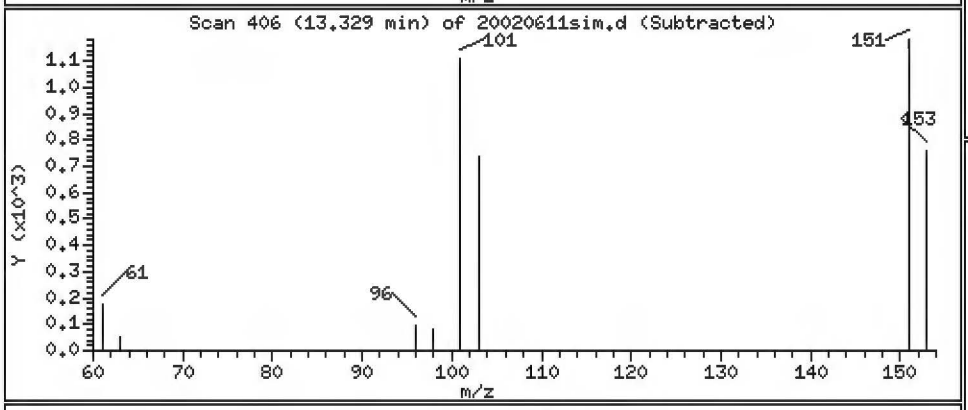
Column phase: RTX-624

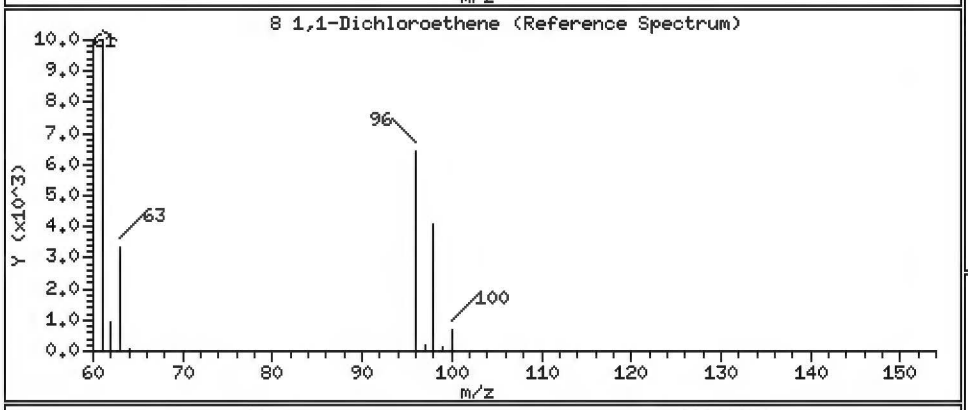
Column diameter: 0.32

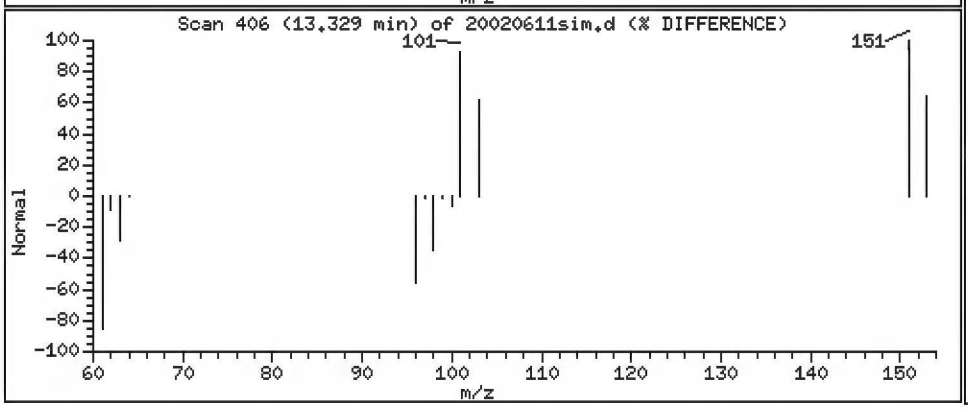
8 1,1-Dichloroethene

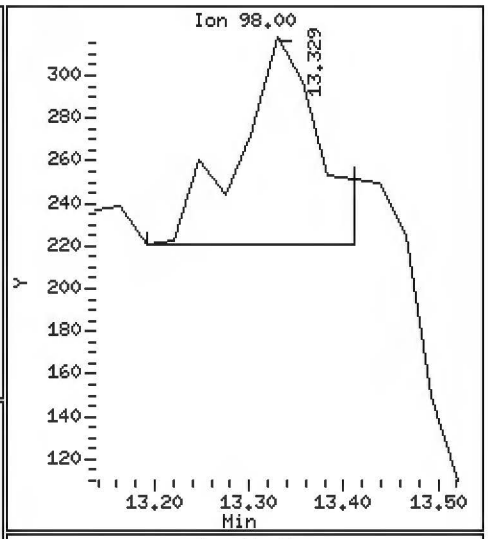
Concentration: 0.04042 PPBV

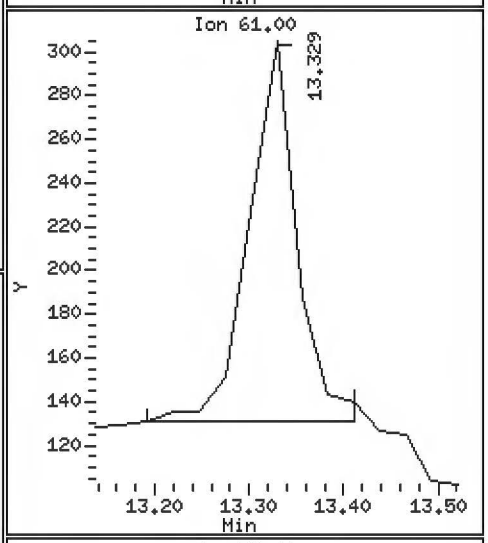


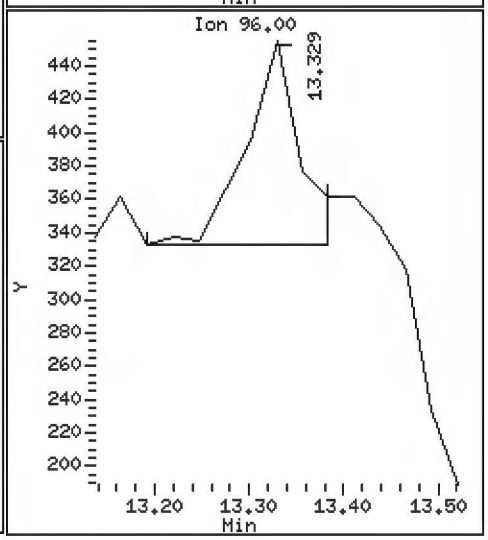












Data File: /chem/msd20.i/06feb20.b/20020611sim.d

Date : 06-FEB-2020 16:54

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N0439

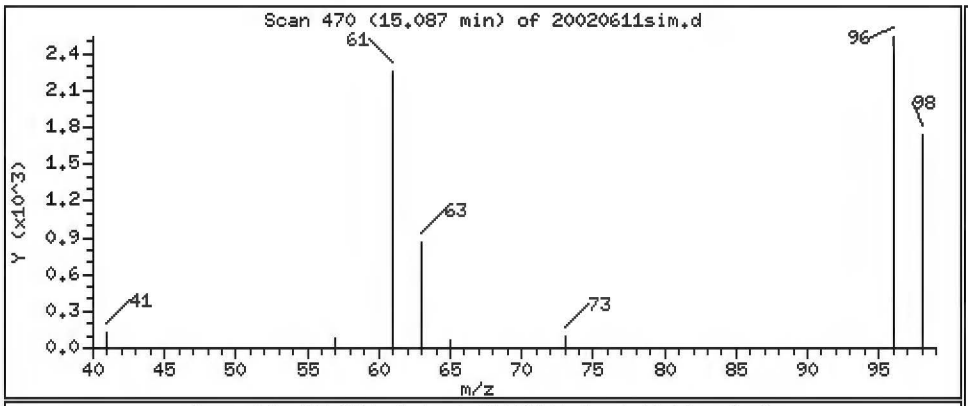
Operator: mb

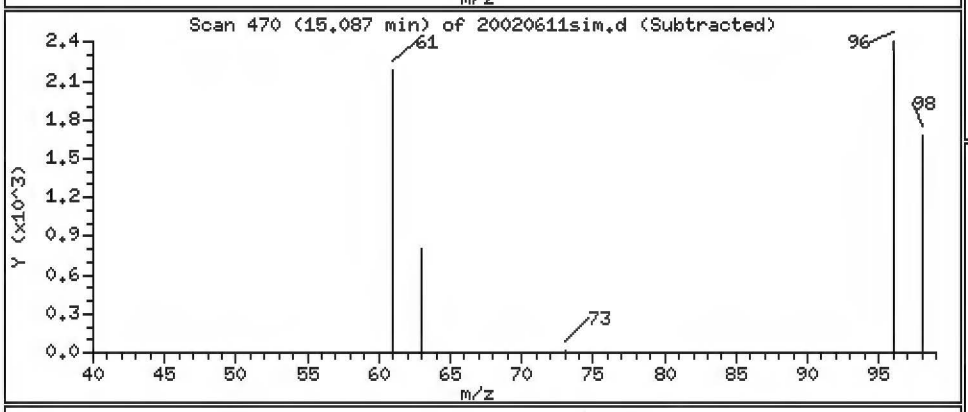
Column phase: RTX-624

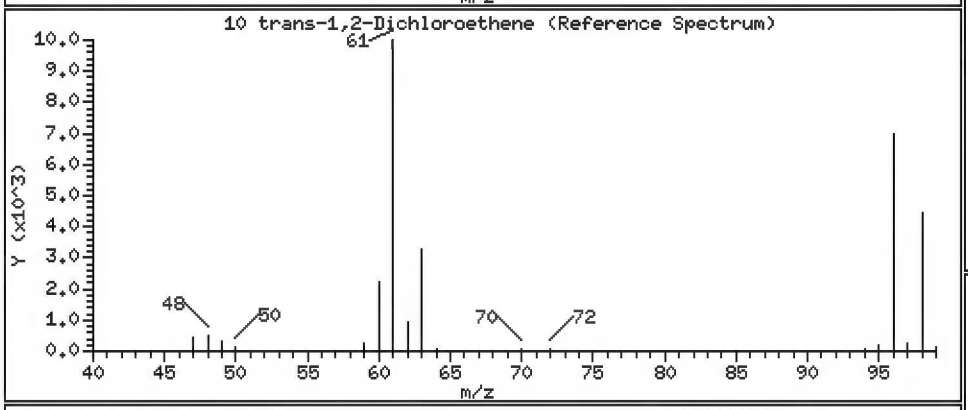
Column diameter: 0.32

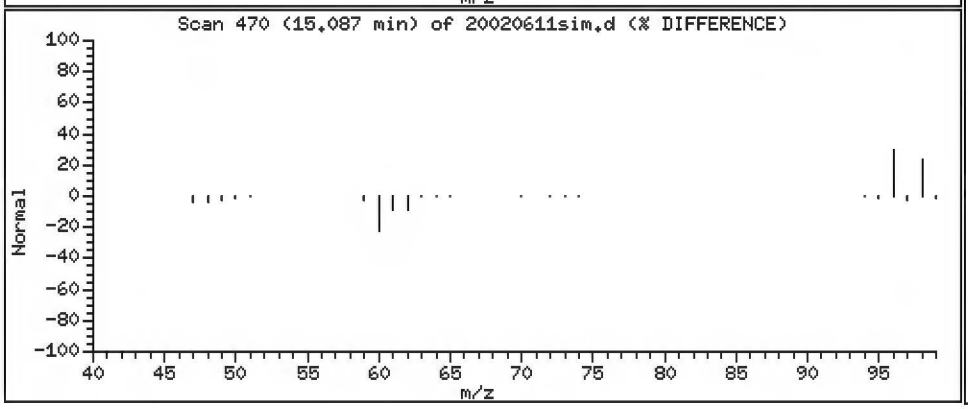
10 trans-1,2-Dichloroethene

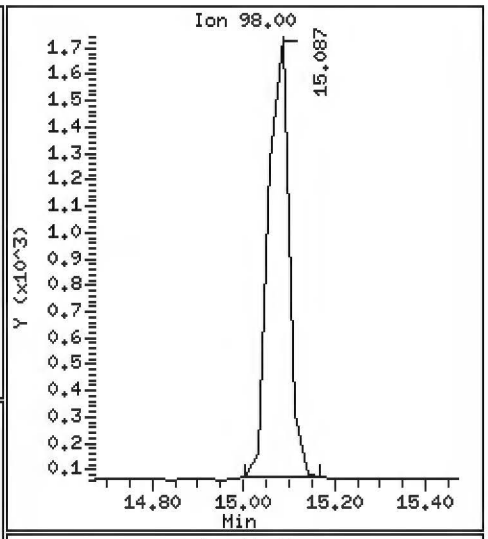
Concentration: 0.3574 PPBV

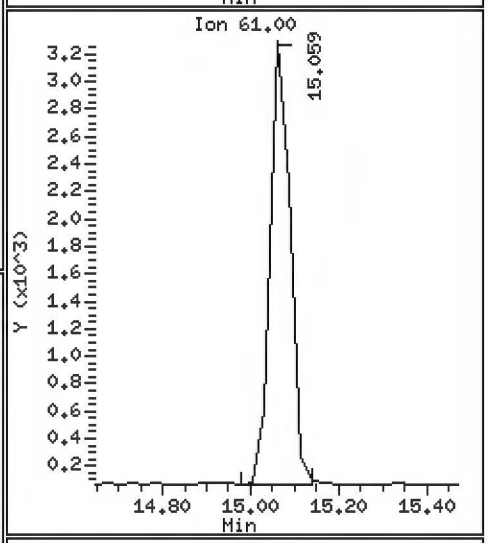


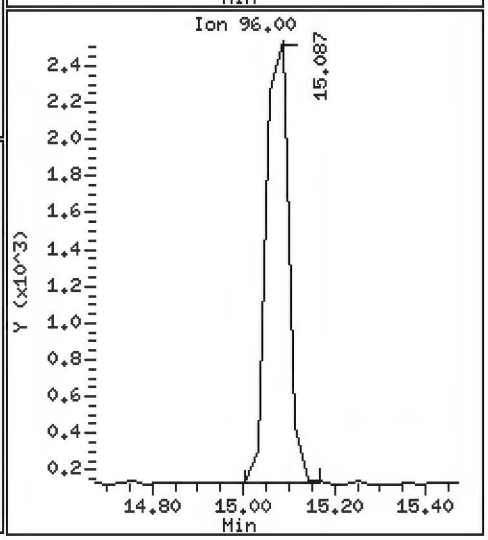












Data File: /chem/msd20.i/06feb20.b/20020611sim.d

Date : 06-FEB-2020 16:54

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N0439

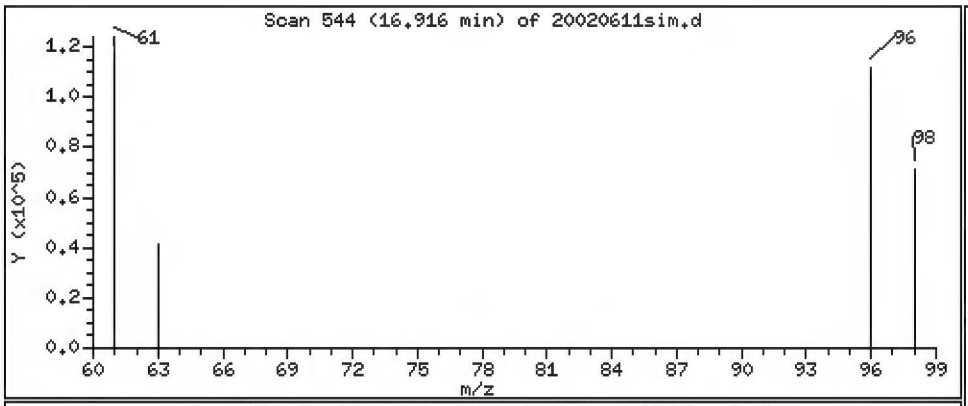
Operator: mb

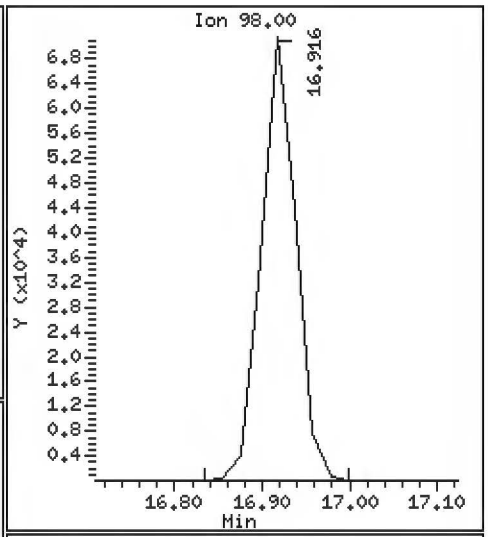
Column phase: RTX-624

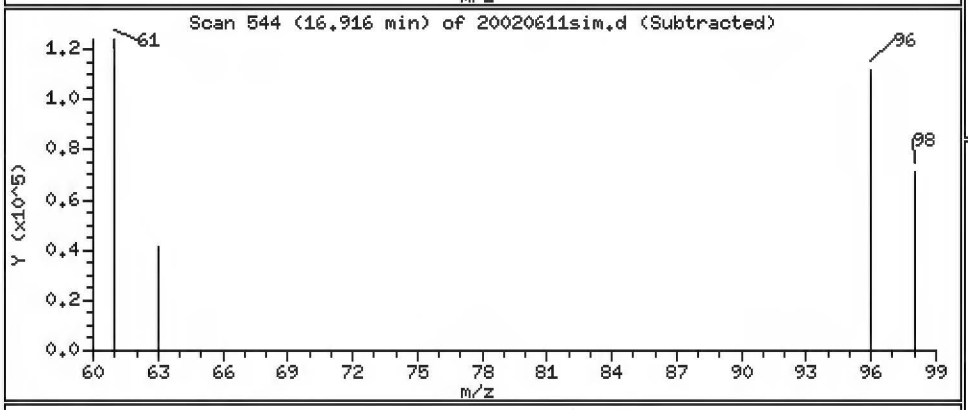
Column diameter: 0.32

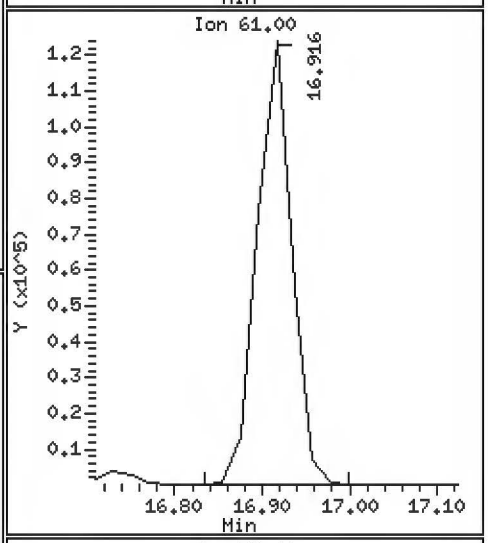
12 cis-1,2-Dichloroethene

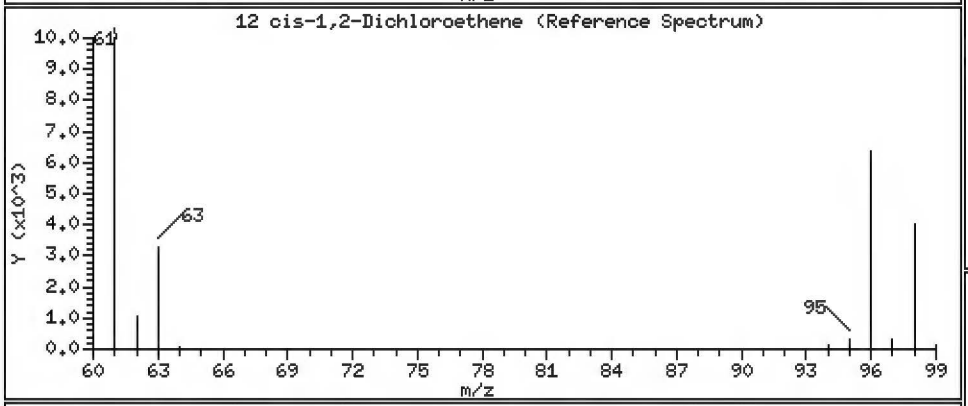
Concentration: 12.040 PPBV

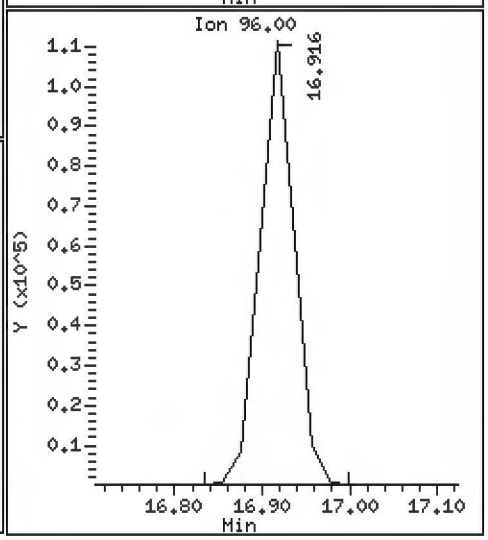


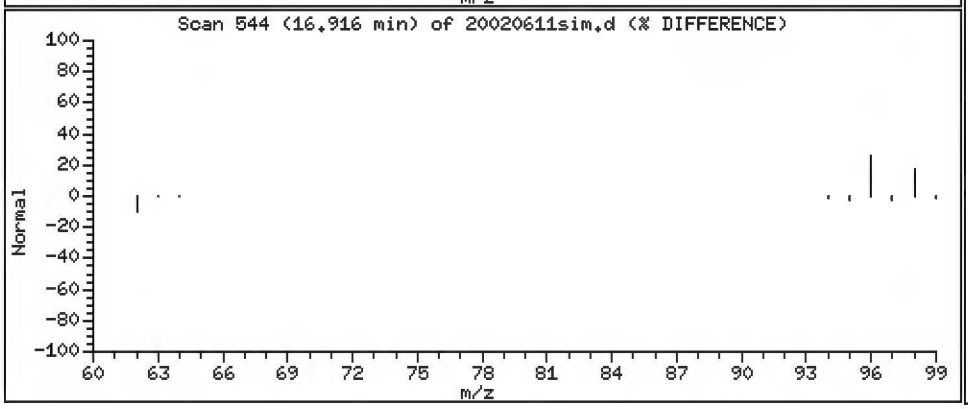












Data File: /chem/msd20.i/06feb20.b/20020611sim.d

Date : 06-FEB-2020 16:54

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N0439

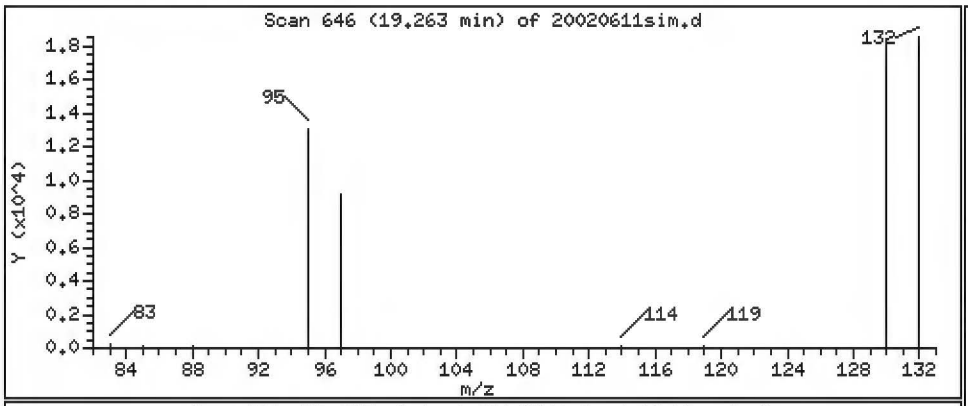
Operator: mb

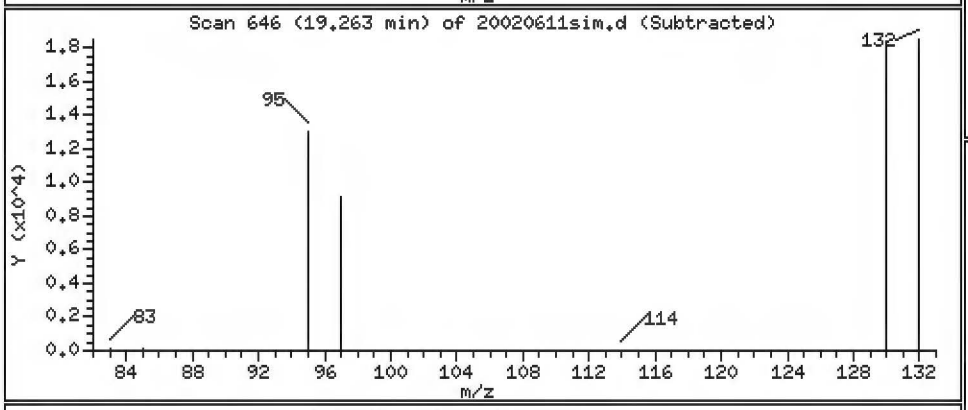
Column phase: RTX-624

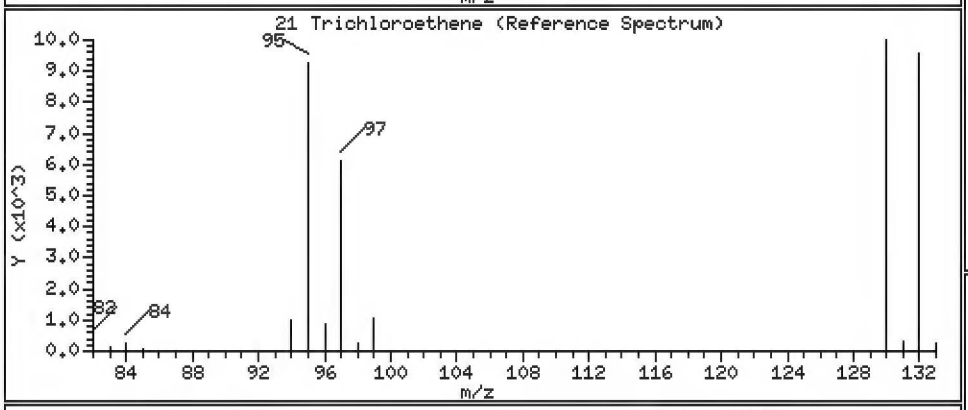
Column diameter: 0.32

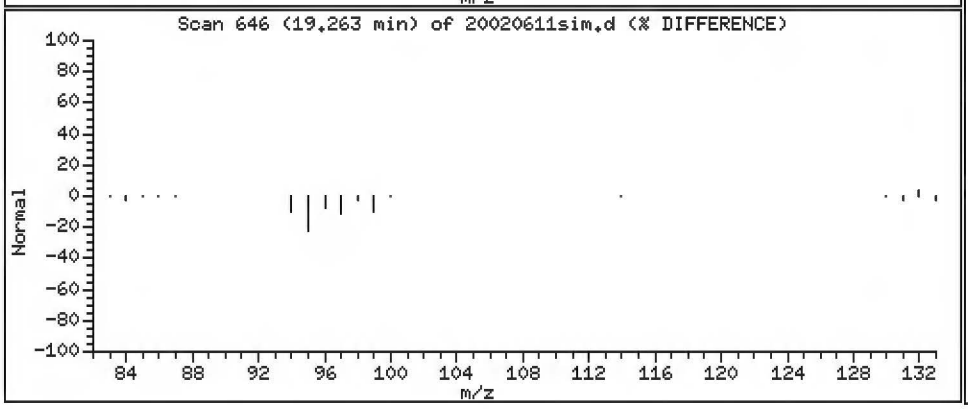
21 Trichloroethene

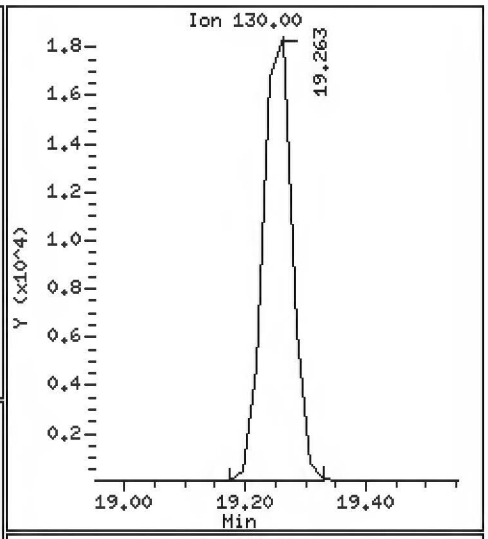
Concentration: 1.593 PPBV

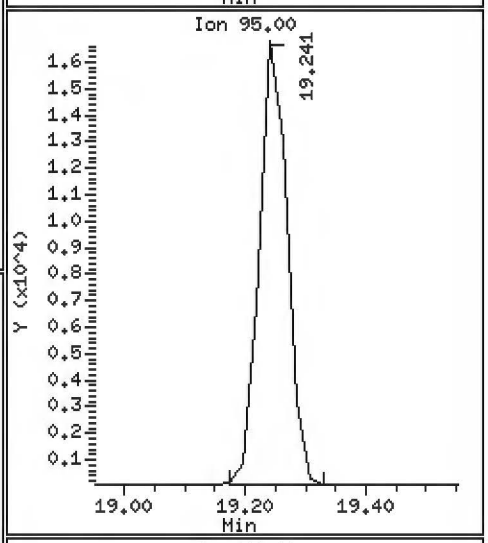


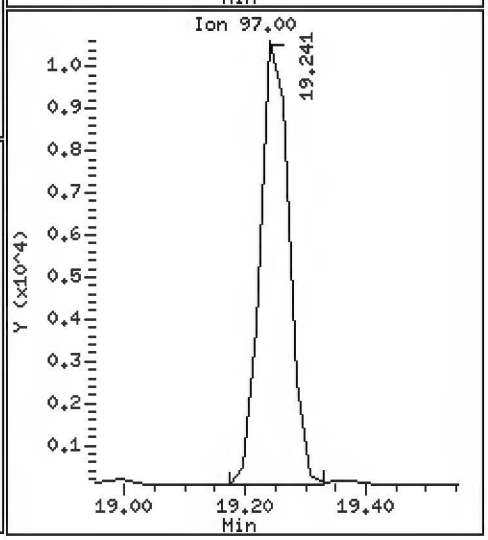












Data File: /chem/msd20.i/06feb20.b/20020611sim.d

Date : 06-FEB-2020 16:54

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N0439

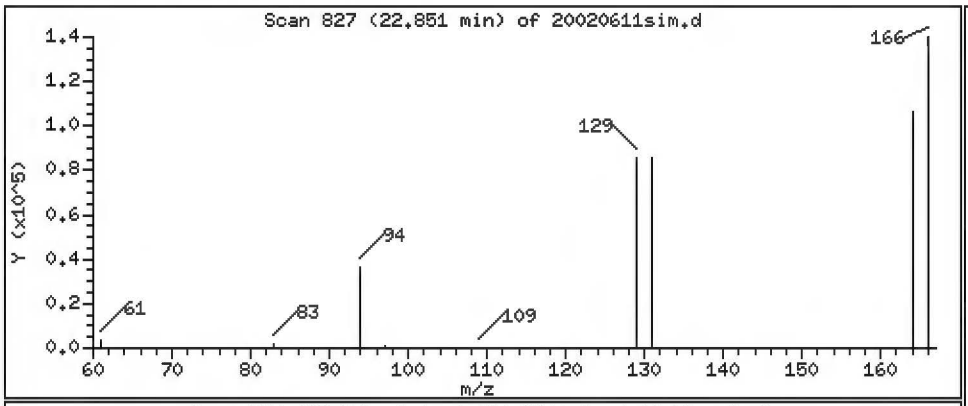
Operator: mb

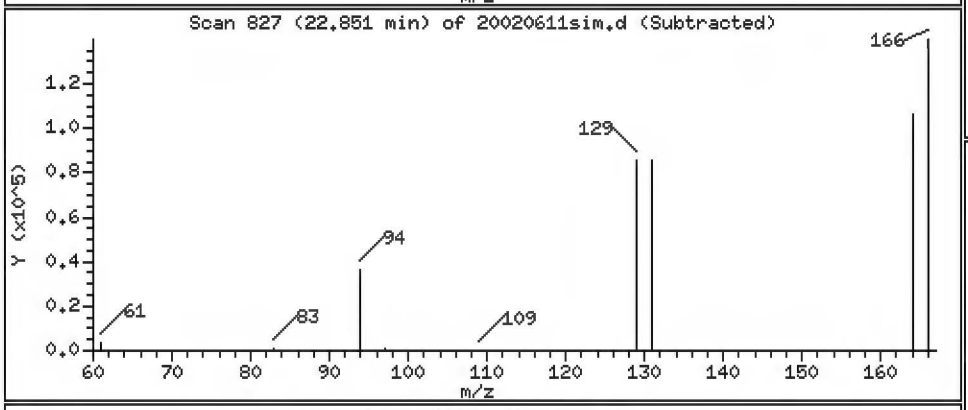
Column phase: RTX-624

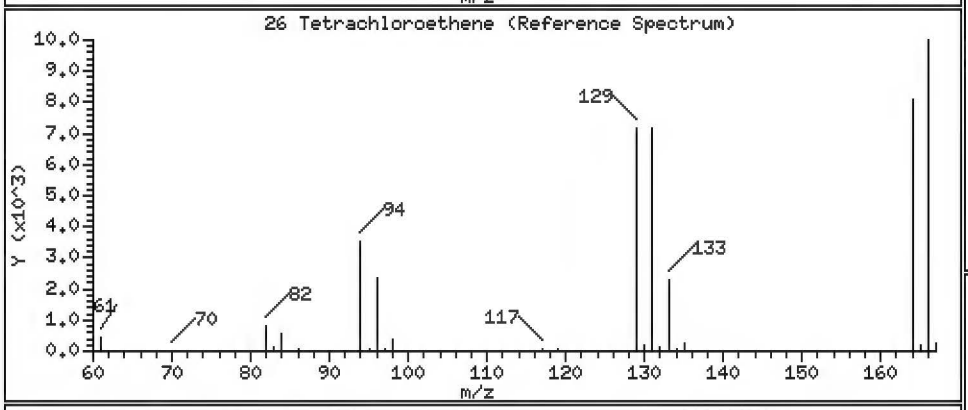
Column diameter: 0.32

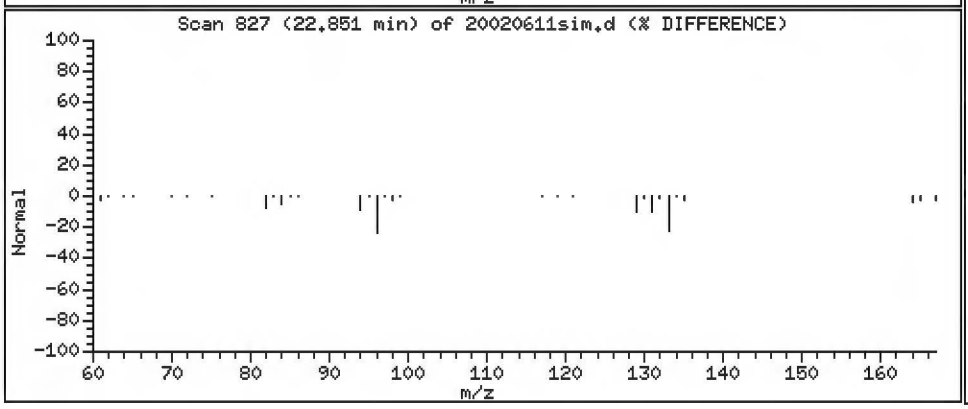
26 Tetrachloroethene

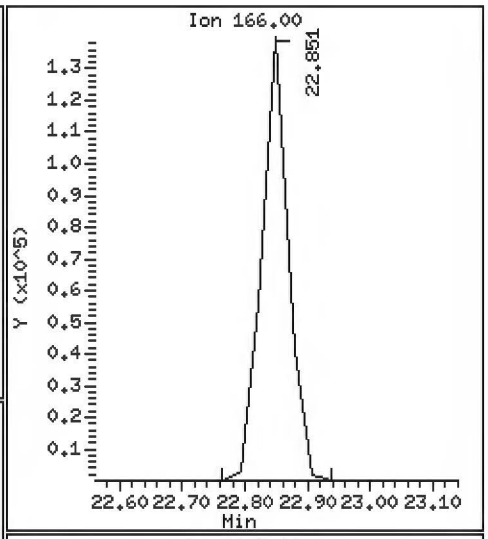
Concentration: 6.470 PPBV

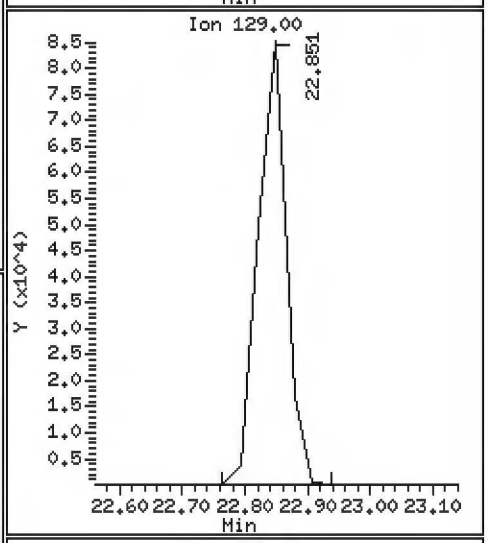


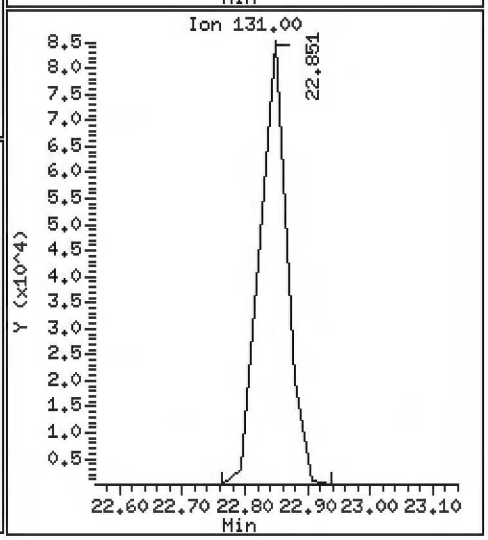












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

eurofins | Air Toxics

Client ID:	ASS-104-01292020		
Lab ID:	2001756-08A	**Date/Time Analyzed:**	2/6/20 08:55 PM
Date/Time Collected:	1/29/20 06:03 PM	**Dilution Factor:**	2.58
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020617sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.050	0.051	0.10	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.031	0.10	0.20	0.73
Tetrachloroethene	127-18-4	0.032	0.18	0.35	220
trans-1,2-Dichloroethene	156-60-5	0.059	0.10	1.0	0.44 J
Trichloroethene	79-01-6	0.033	0.14	0.28	8.6
Vinyl Chloride	75-01-4	0.024	0.033	0.066	0.071

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	107
4-Bromofluorobenzene	460-00-4	70-130	114
Toluene-d8	2037-26-5	70-130	100

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020617sim.d
Lab Smp Id: 2001756-08A
Inj Date : 06-FEB-2020 20:55
Operator : mb Inst ID: msd20.i
Smp Info : 125mL #6L1586
Misc Info : 2.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 2.58000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	147155	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	113491			46.79- 106.79	77.12
17.284	17.316 (1.000)	49	132046			67.00- 127.00	89.73
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.840	18.839 (1.000)	114	402060	5.00000		80.00- 120.00	100.00
18.840	18.839 (1.000)	88	56455			0.00- 44.17	14.04
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	463903	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	213739			16.60- 76.60	46.07
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	184771	5.33402	5.334	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	94277			26.62- 86.62	51.02
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	353663	4.97470	4.975	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	41729			0.00- 40.95	11.80

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	221379			34.26- 94.26	62.60
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	410157	5.72835	5.728	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	354666			54.28- 114.28	86.47
25.927	25.927 (1.066)	176	400272			67.48- 127.48	97.59
4 Vinyl Chloride					CAS #: 75-01-4		
8.297	8.278 (0.479)	62	298	0.01075	0.02772	80.00- 120.00	100.00
0.000	8.278 (0.000)	64	0			2.23- 62.23	0.00
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	881	0.04279	0.1104	80.00- 120.00	100.00(a)
15.059	15.061 (0.870)	61	1721			161.94- 221.94	195.32
15.087	15.075 (0.871)	96	1368			125.44- 185.44	155.32
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	1629	0.07101	0.1832	80.00- 120.00	100.00
16.917	16.916 (0.977)	61	2791			144.59- 204.59	171.30
16.917	16.916 (0.977)	96	2365			124.96- 184.96	145.18
21 Trichloroethene					CAS #: 79-01-6		
19.263	19.245 (1.022)	130	32151	0.61659	1.591	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	27636			56.54- 116.54	85.96
19.241	19.245 (1.021)	97	18164			26.43- 86.43	56.50
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	1232227	12.7247	32.830	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	792319			34.72- 94.72	64.30
22.851	22.851 (0.940)	131	771340			33.00- 93.00	62.60

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 07-Feb-2020 12:16

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020617sim.d
Lab Smp Id: 2001756-08A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 2.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	147155	-19.75
20 1,4-Difluorobenze	549605	329763	769447	402060	-26.85
28 Chlorobenzene-d5	517348	310409	724287	463903	-10.33

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:16

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-08A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 2.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.334	106.68
$ 22 Toluene-d8	5.000	4.975	99.49
$ 33 4-Bromofluorobenzene	5.000	5.728	114.57

Data File: /chem/msd20.i/06feb20.b/20020617sim.d

Date : 06-FEB-2020 20:55

Client ID:

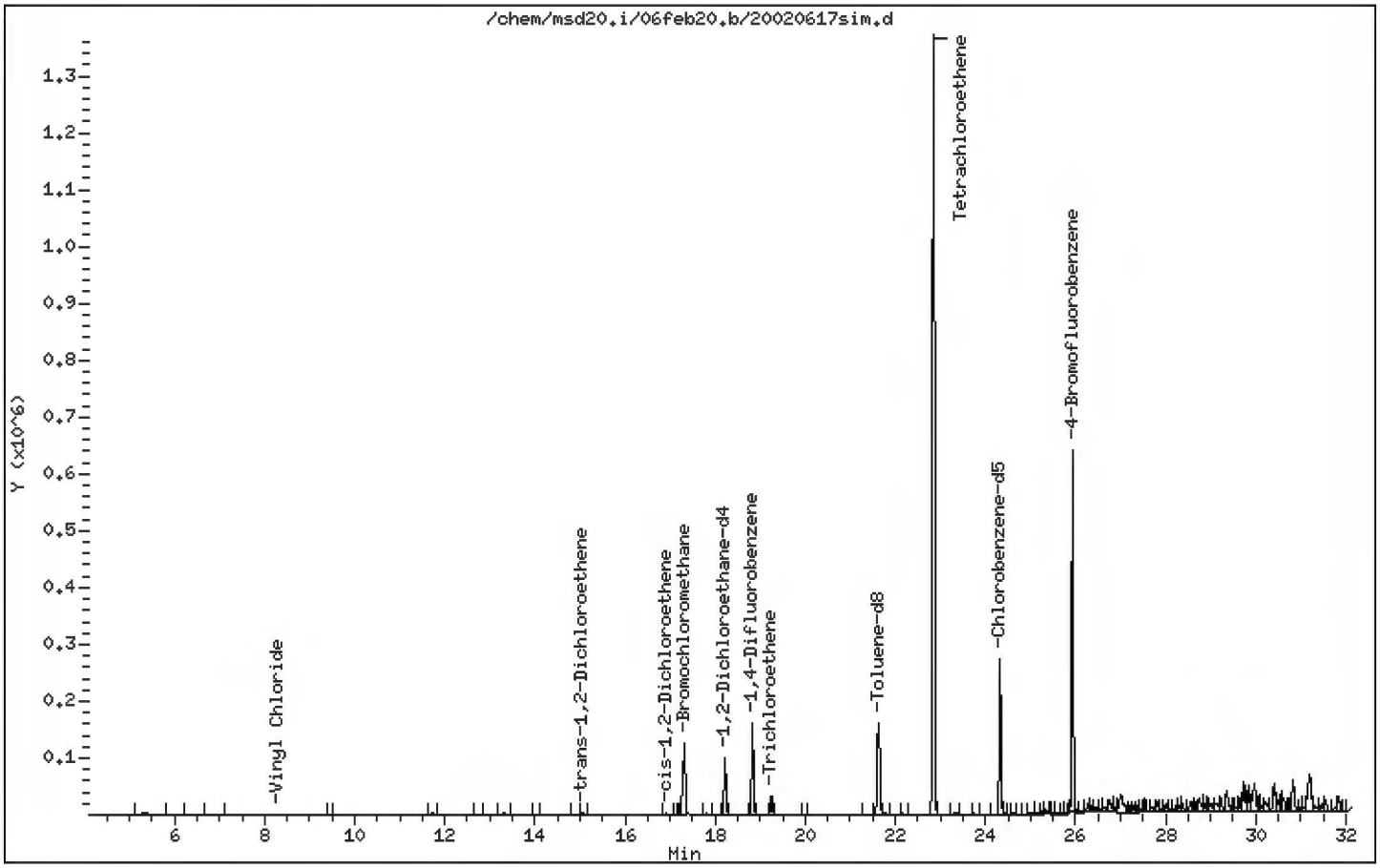
Instrument: msd20.i

Sample Info: 125mL #6L1586

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020617sim.d

Date : 06-FEB-2020 20:55

Client ID:

Instrument: msd20.i

Sample Info: 125mL #6L1586

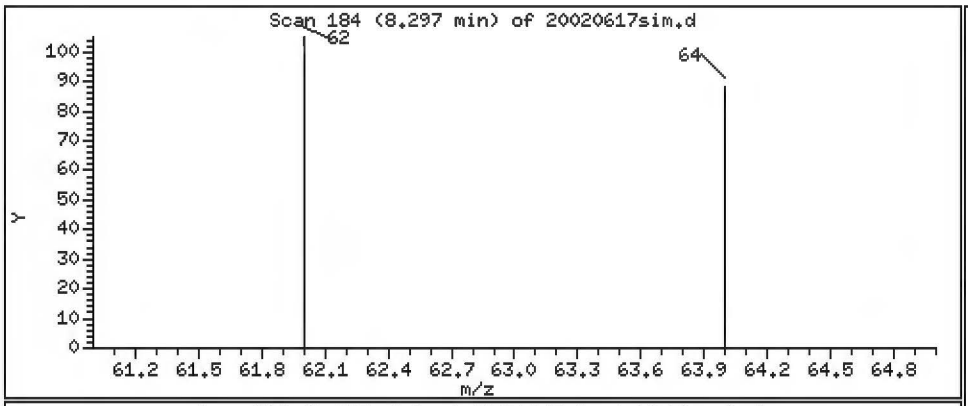
Operator: mb

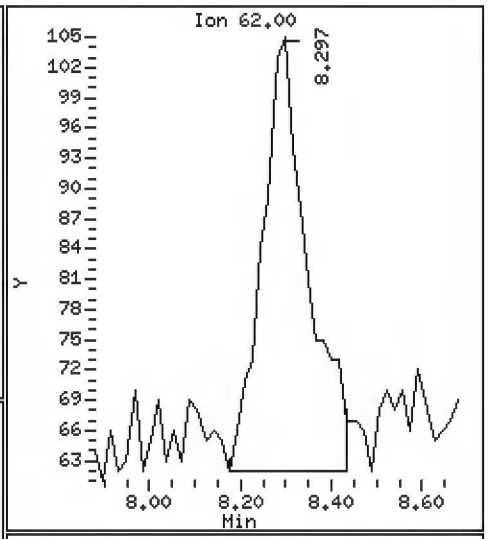
Column phase: RTX-624

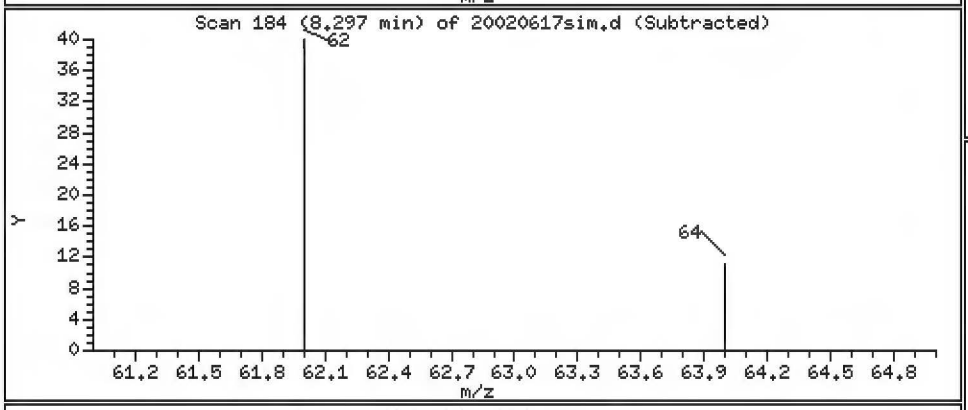
Column diameter: 0.32

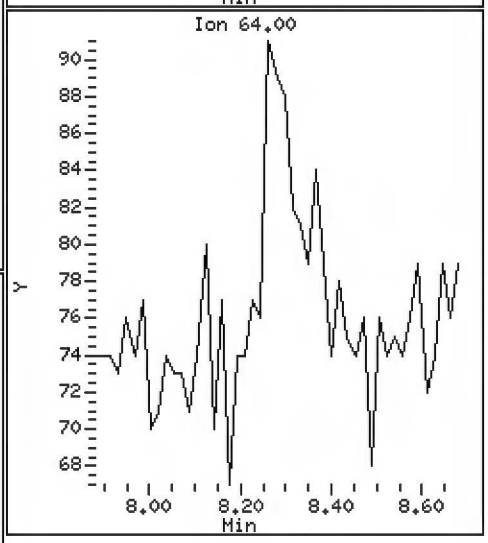
4 Vinyl Chloride

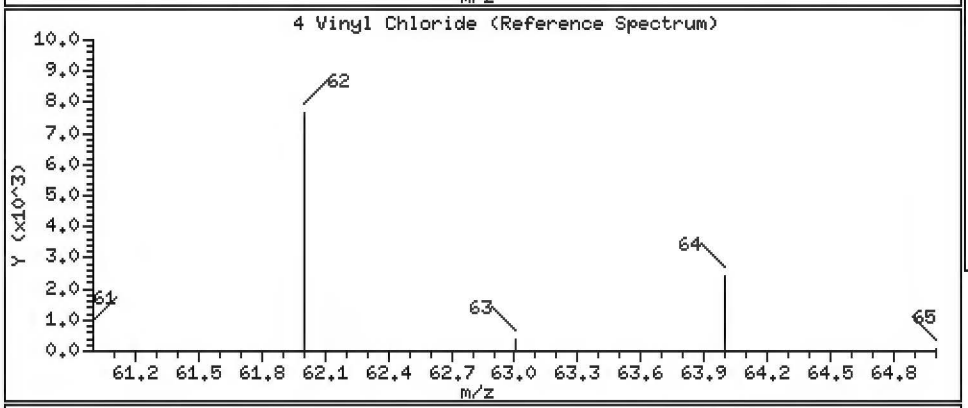
Concentration: 0.02772 PPBV

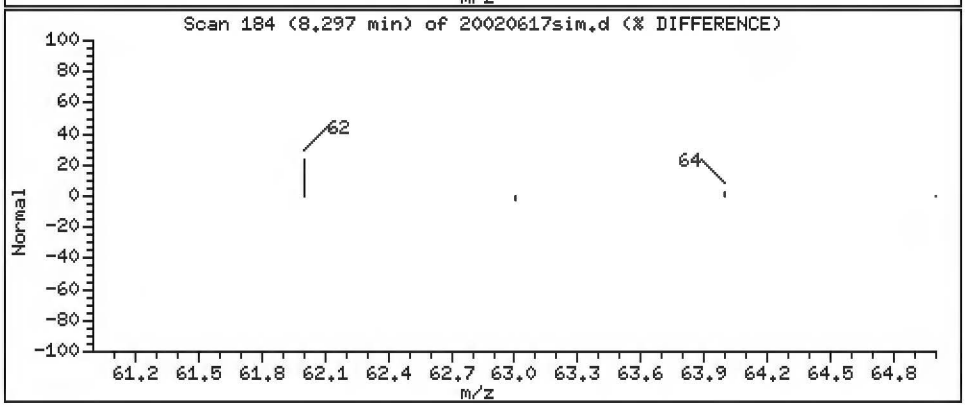












Data File: /chem/msd20.i/06feb20.b/20020617sim.d

Date : 06-FEB-2020 20:55

Client ID:

Instrument: msd20.i

Sample Info: 125mL #6L1586

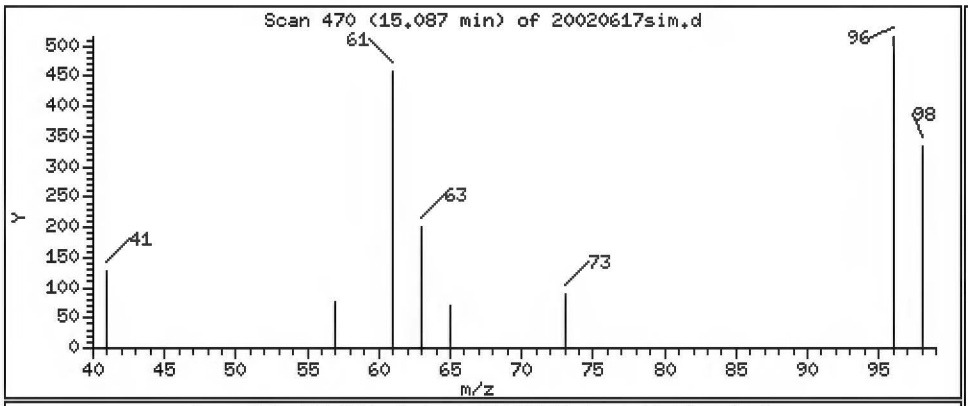
Operator: mb

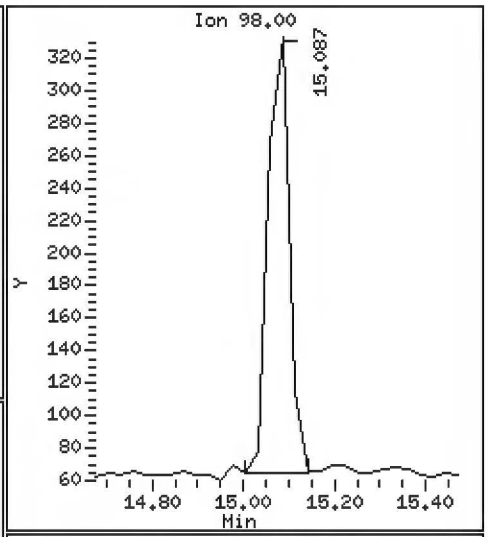
Column phase: RTX-624

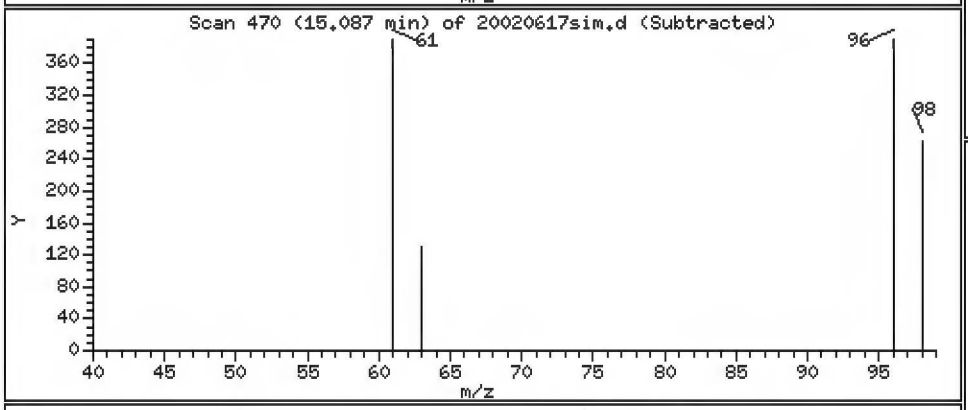
Column diameter: 0.32

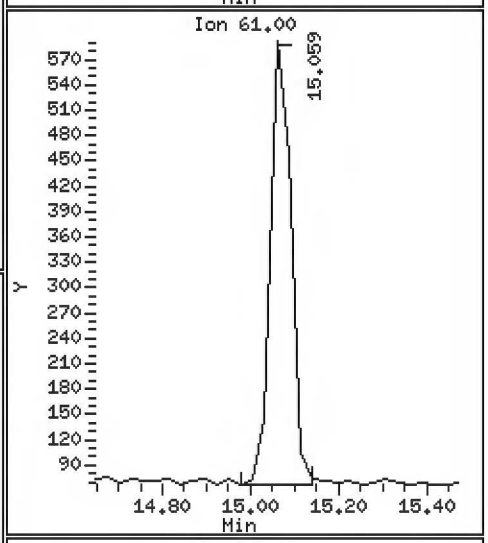
10 trans-1,2-Dichloroethene

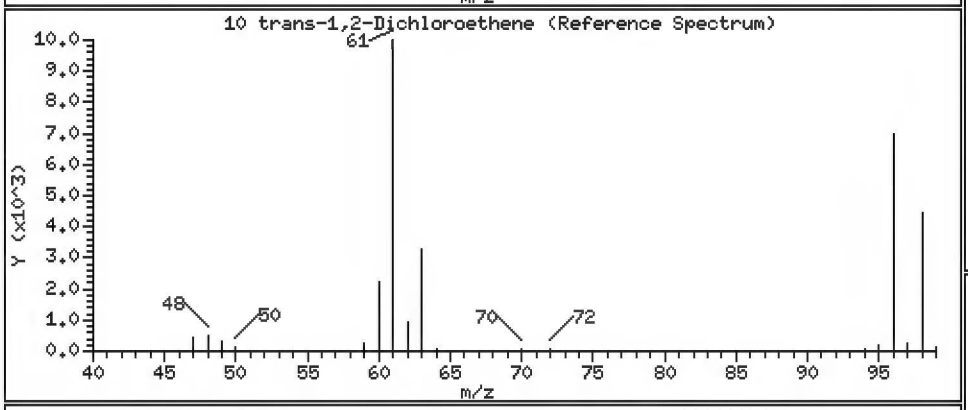
Concentration: 0.1104 PPBV

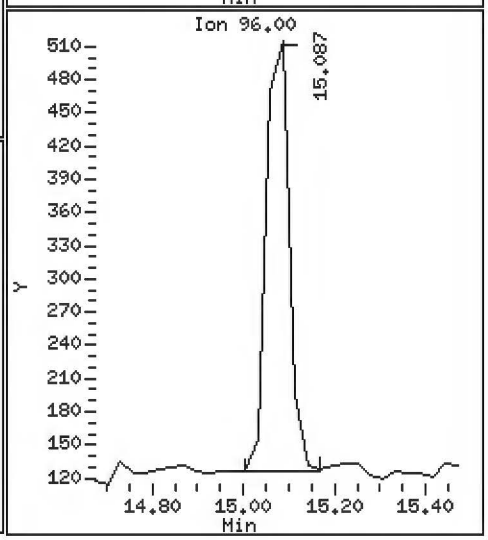


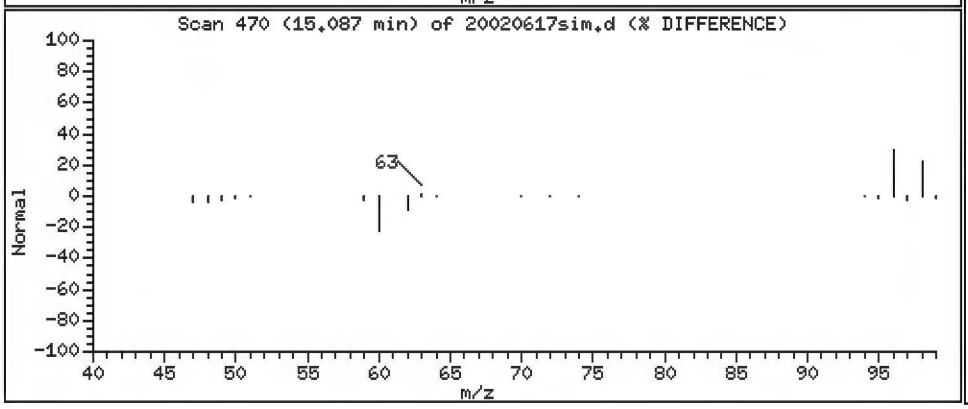












Data File: /chem/msd20.i/06feb20.b/20020617sim.d

Date : 06-FEB-2020 20:55

Client ID:

Instrument: msd20.i

Sample Info: 125mL #6L1586

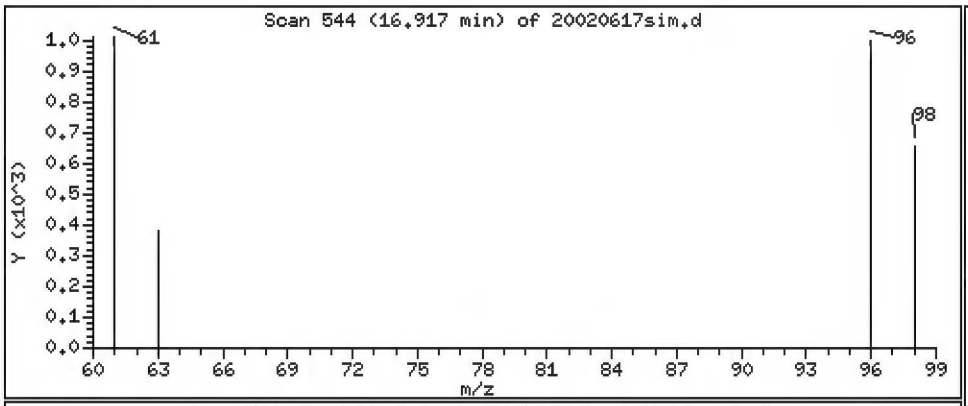
Operator: mb

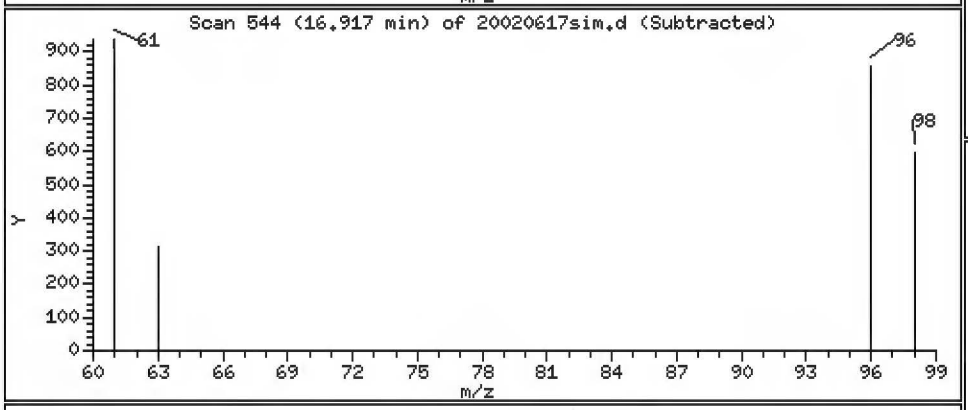
Column phase: RTX-624

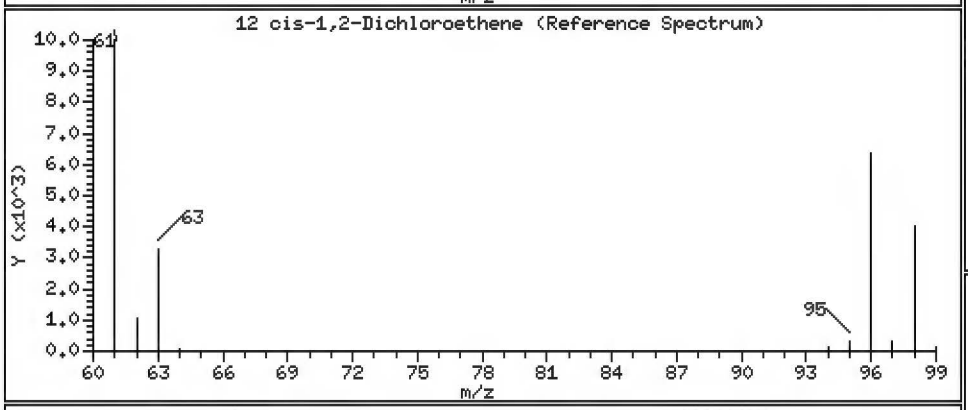
Column diameter: 0.32

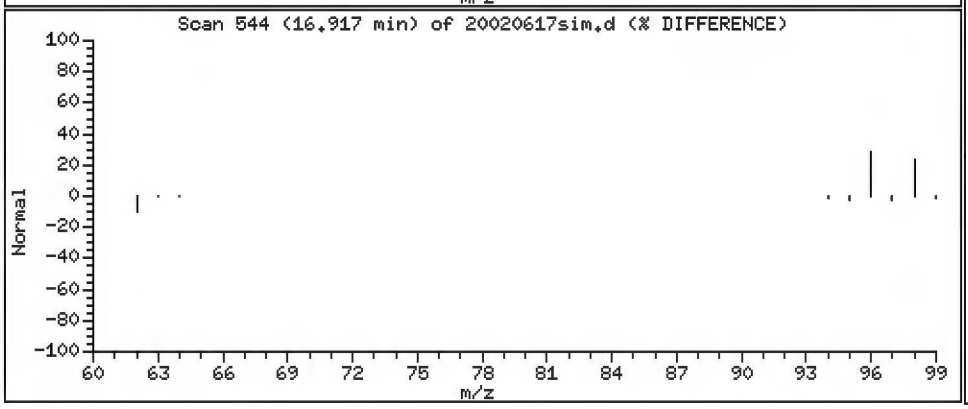
12 cis-1,2-Dichloroethene

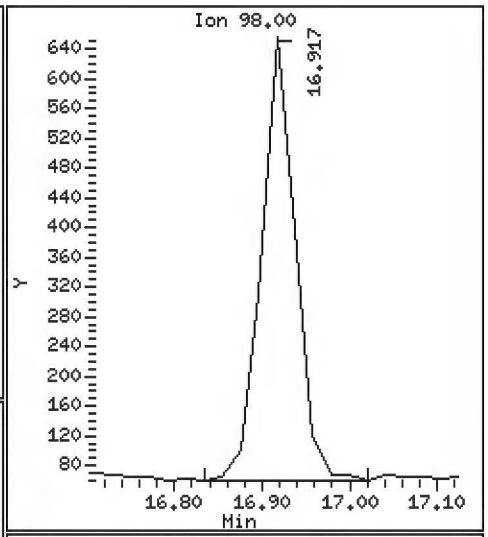
Concentration: 0.1832 PPBV

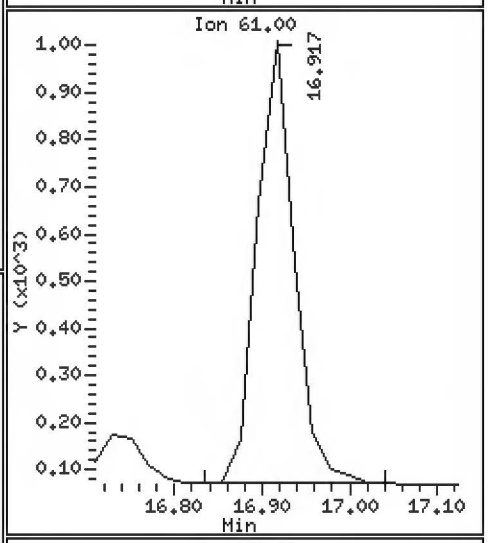


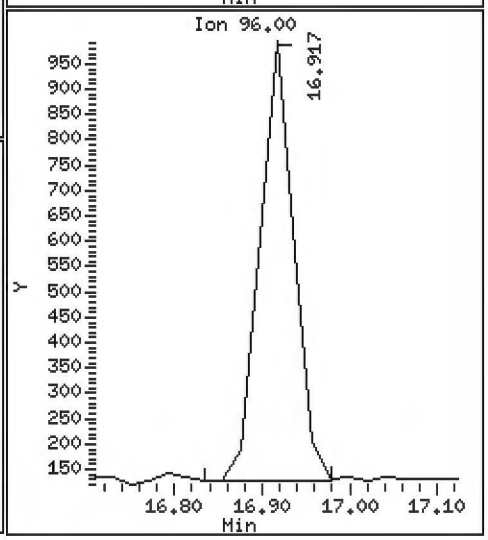












Data File: /chem/msd20.i/06feb20.b/20020617sim.d

Date : 06-FEB-2020 20:55

Client ID:

Instrument: msd20.i

Sample Info: 125mL #6L1586

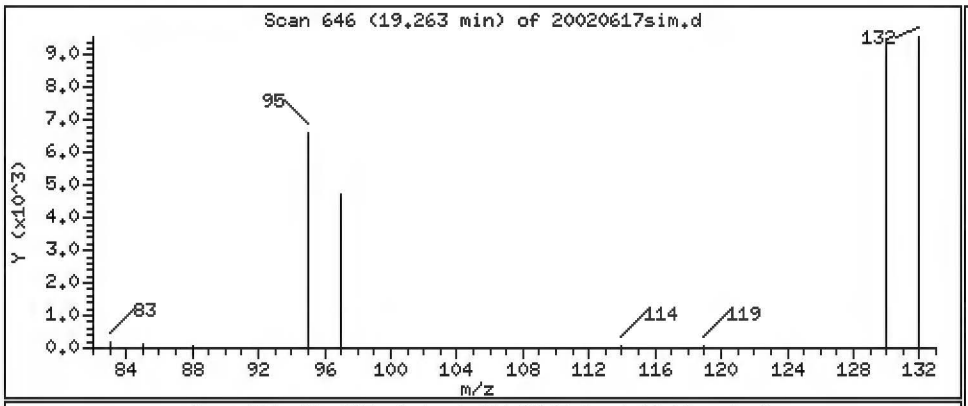
Operator: mb

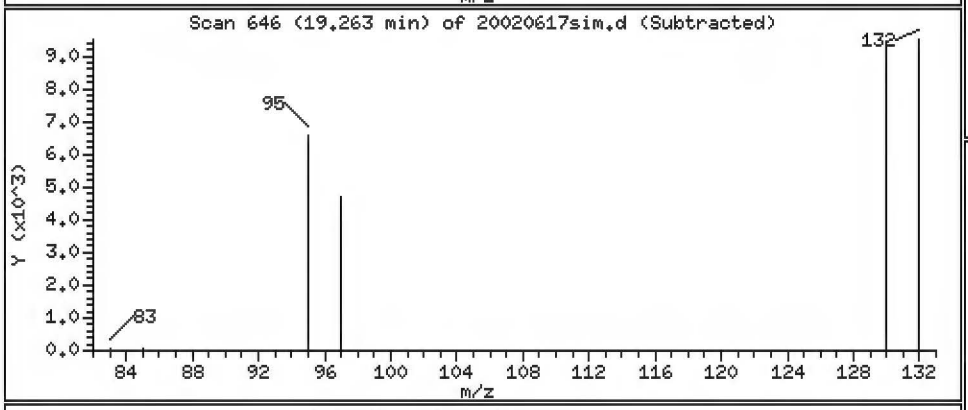
Column phase: RTX-624

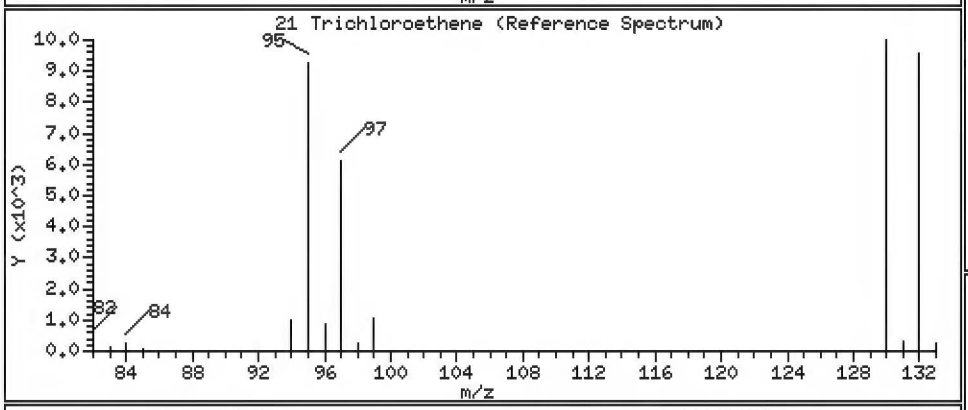
Column diameter: 0.32

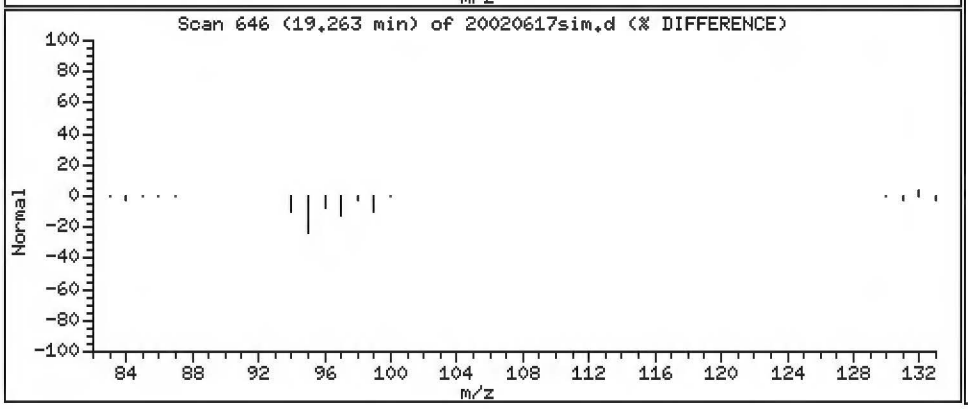
21 Trichloroethene

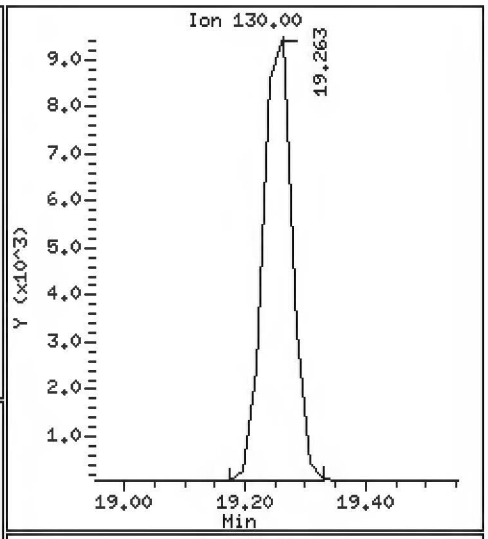
Concentration: 1.591 PPBV

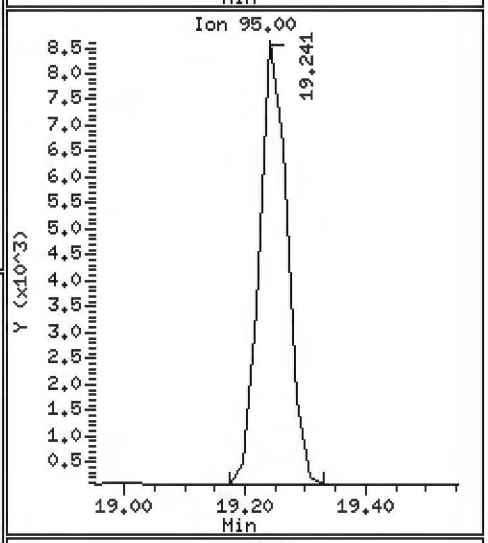


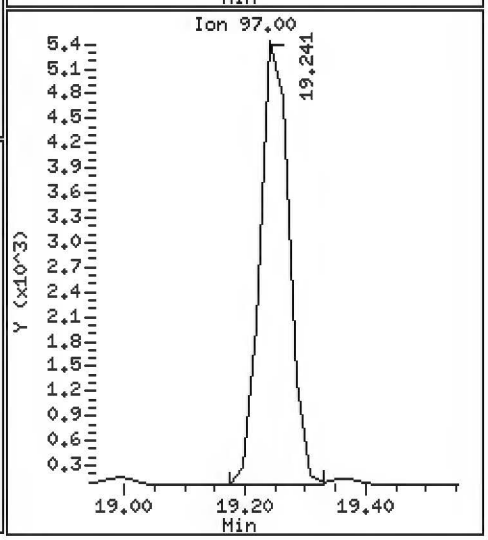












Data File: /chem/msd20.i/06feb20.b/20020617sim.d

Date : 06-FEB-2020 20:55

Client ID:

Instrument: msd20.i

Sample Info: 125mL #6L1586

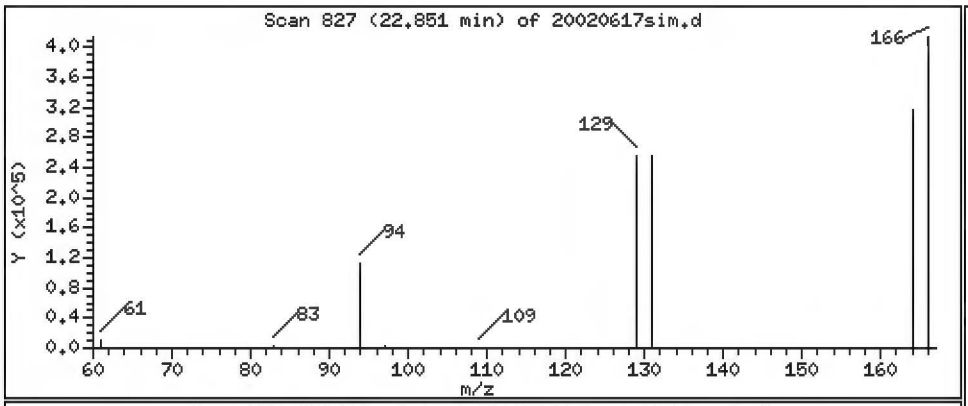
Operator: mb

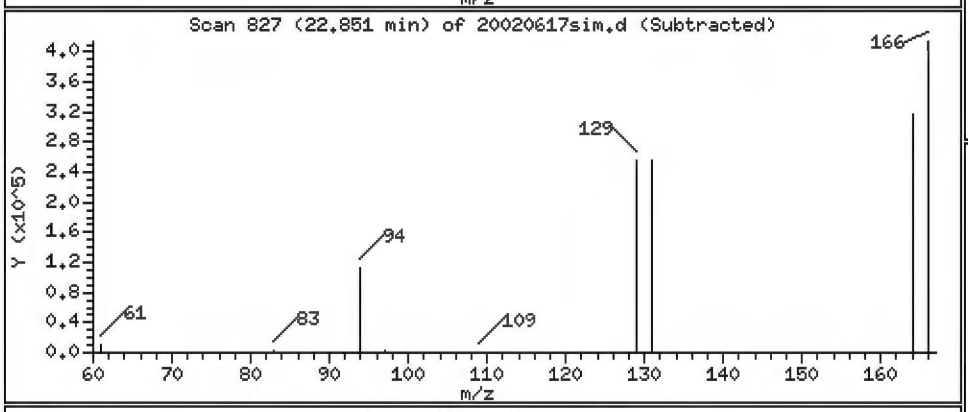
Column phase: RTX-624

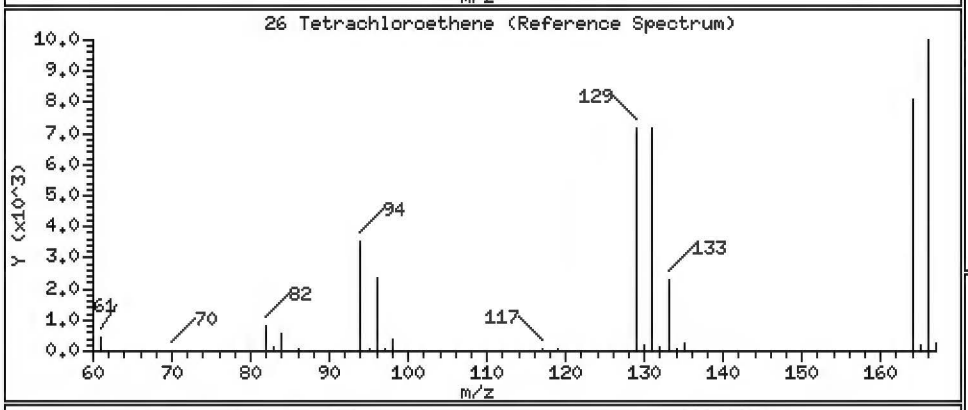
Column diameter: 0.32

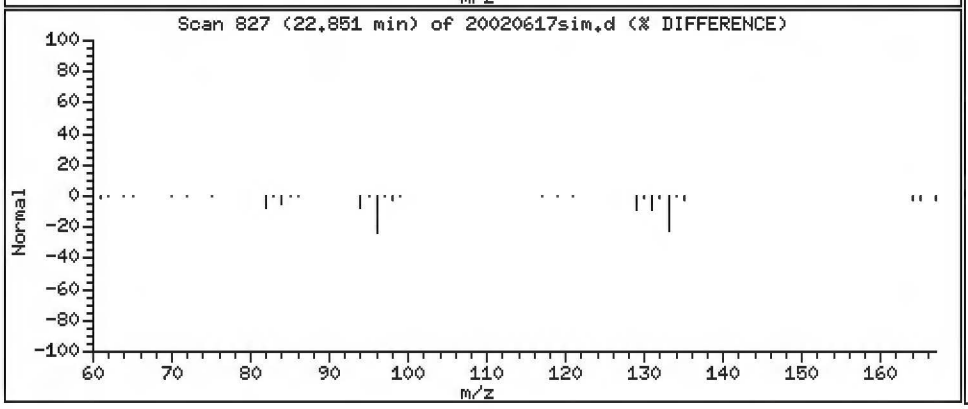
26 Tetrachloroethene

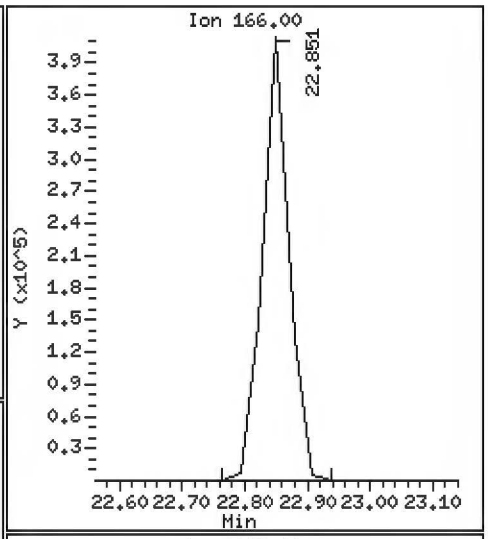
Concentration: 32.830 PPBV

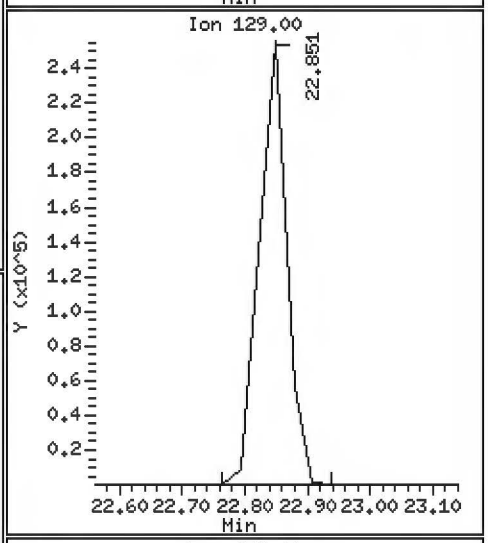


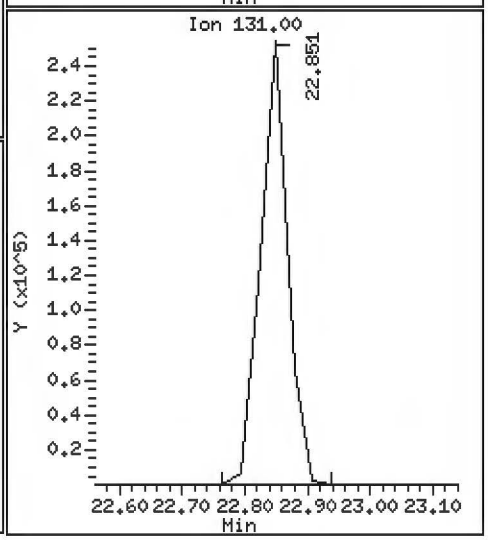












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASI-105-01292020		
Lab ID:	2001756-09A	**Date/Time Analyzed:**	2/6/20 06:17 PM
Date/Time Collected:	1/29/20 04:38 PM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020613sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.028	0.028	0.057	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.017	0.057	0.11	0.038 J
Tetrachloroethene	127-18-4	0.018	0.098	0.20	3.6
trans-1,2-Dichloroethene	156-60-5	0.033	0.057	0.57	Not Detected
Trichloroethene	79-01-6	0.018	0.077	0.15	0.030 J
Vinyl Chloride	75-01-4	0.013	0.018	0.037	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	99

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020613sim.d
Lab Smp Id: 2001756-09A
Inj Date : 06-FEB-2020 18:17
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #9226
Misc Info : 5.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.44000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	149229	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	114845			46.79- 106.79	76.96
17.284	17.316 (1.000)	49	134651			67.00- 127.00	90.23
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.840	18.839 (1.000)	114	410687	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	57570			0.00- 44.17	14.02
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	429112	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	195116			16.60- 76.60	45.47
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	180617	5.14163	5.142	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	91841			26.62- 86.62	50.85
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	359567	4.95151	4.952	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	43085			0.00- 40.95	11.98

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	226048			34.26- 94.26	62.87
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	323037	4.87739	4.877	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	270144			54.28- 114.28	83.63
25.927	25.927 (1.066)	176	313038			67.48- 127.48	96.90
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	155	0.00668	0.009624	80.00- 120.00	100.00(a)
16.958	16.916 (0.979)	61	1671			144.59- 204.59	1075.15
16.917	16.916 (0.977)	96	263			124.96- 184.96	169.59
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	207	0.00390	0.005610	80.00- 120.00	100.00(a)
19.241	19.245 (1.021)	95	204			56.54- 116.54	98.70
19.241	19.245 (1.021)	97	111			26.43- 86.43	53.55
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	33401	0.37289	0.5370	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	21511			34.72- 94.72	64.40
22.851	22.851 (0.940)	131	21143			33.00- 93.00	63.30

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020613sim.d
Lab Smp Id: 2001756-09A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	149229	-18.62
20 1,4-Difluorobenze	549605	329763	769447	410687	-25.28
28 Chlorobenzene-d5	517348	310409	724287	429112	-17.06

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-09A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.142	102.83
$ 22 Toluene-d8	5.000	4.952	99.03
$ 33 4-Bromofluorobenzene	5.000	4.877	97.55

Data File: /chem/msd20.i/06feb20.b/20020613sim.d

Date : 06-FEB-2020 18:17

Client ID:

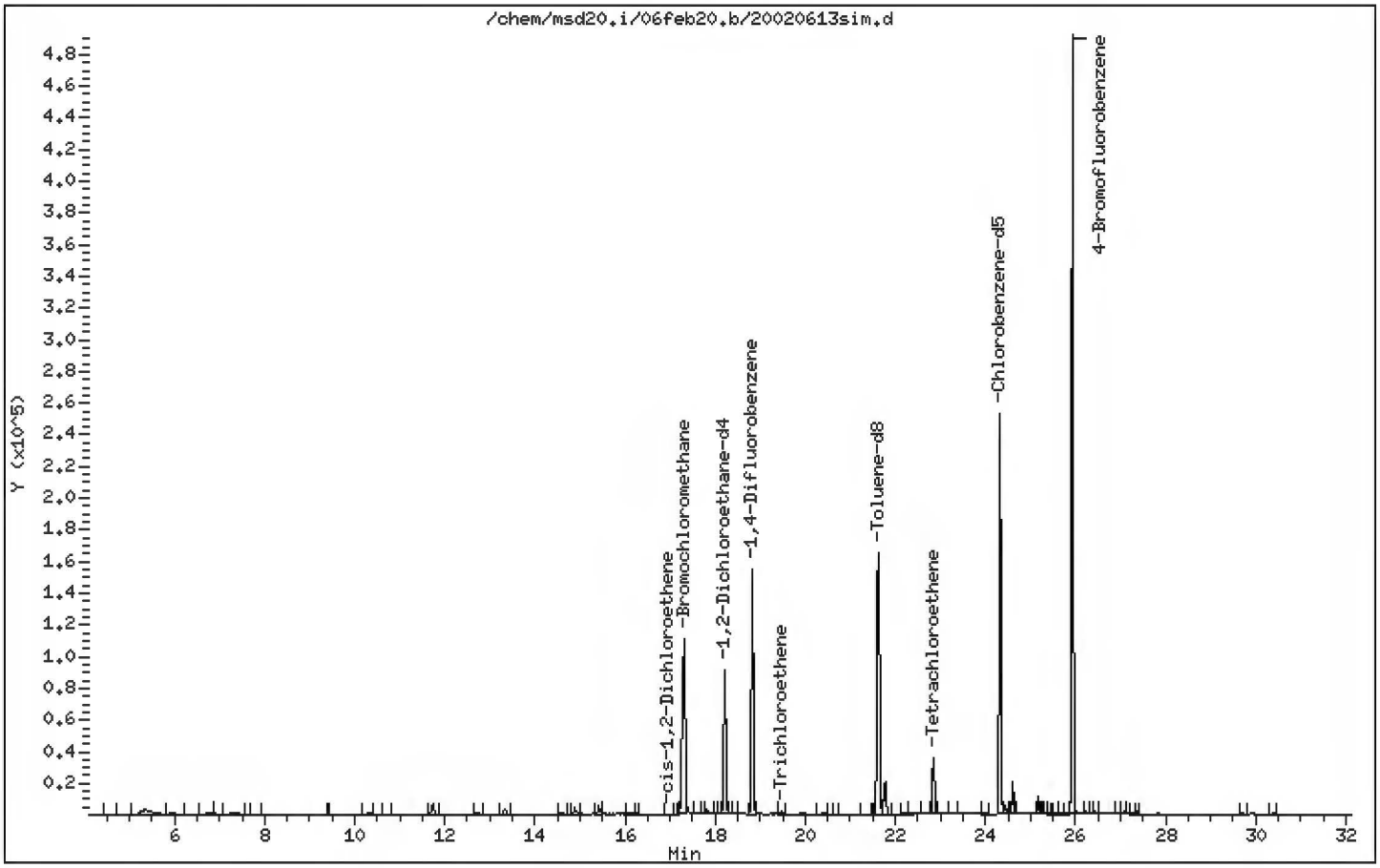
Instrument: msd20.i

Sample Info: 250mL #9226

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020613sim.d

Date : 06-FEB-2020 18:17

Client ID:

Instrument: msd20.i

Sample Info: 250mL #9226

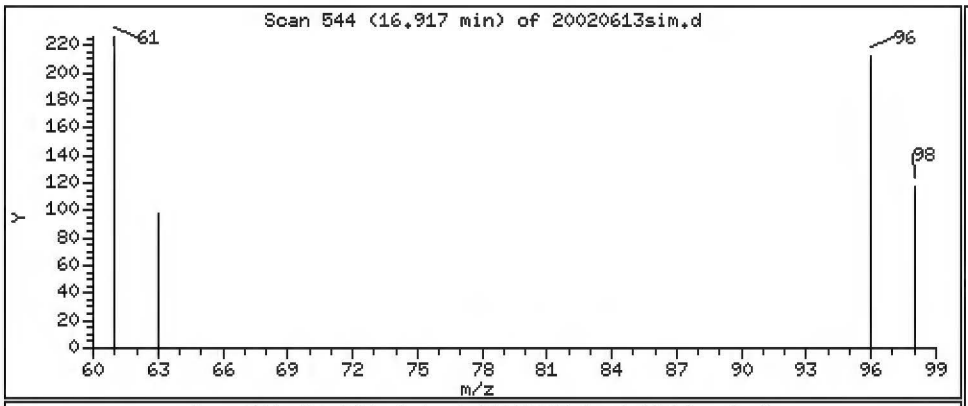
Operator: mb

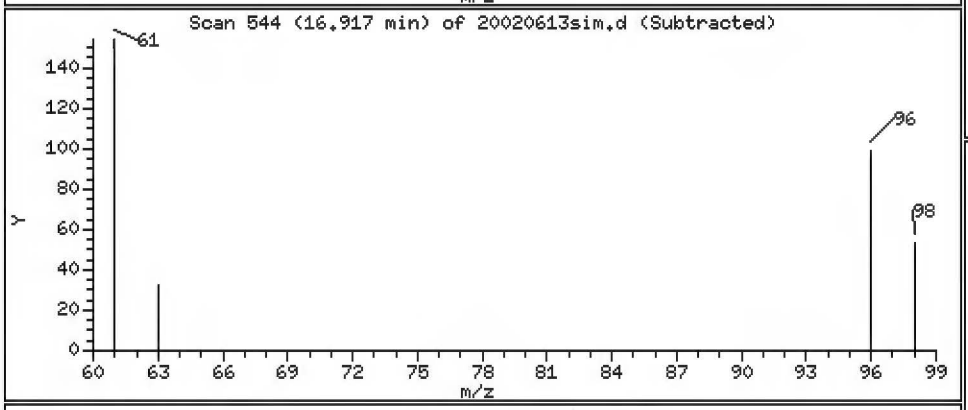
Column phase: RTX-624

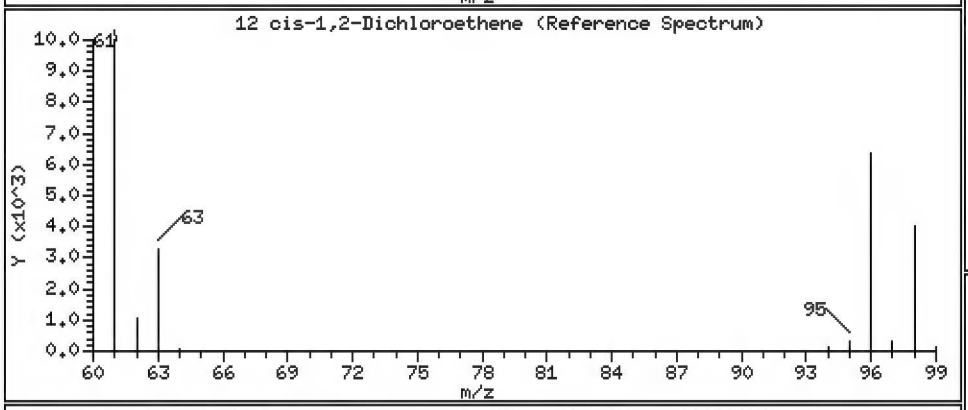
Column diameter: 0.32

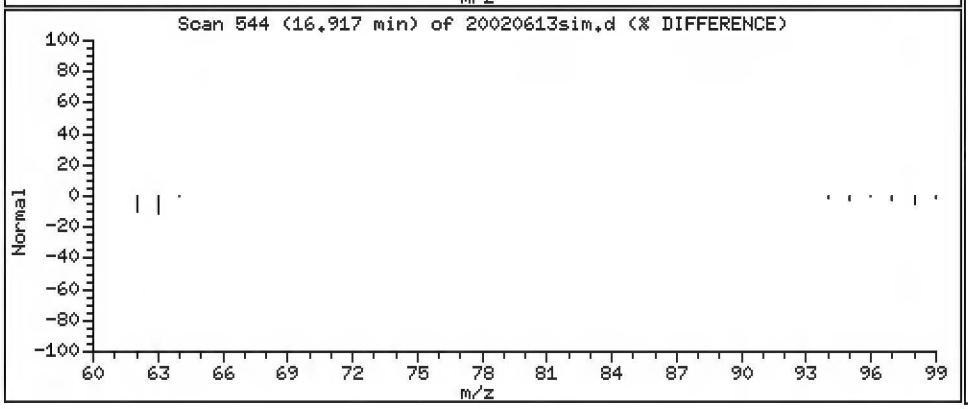
12 cis-1,2-Dichloroethene

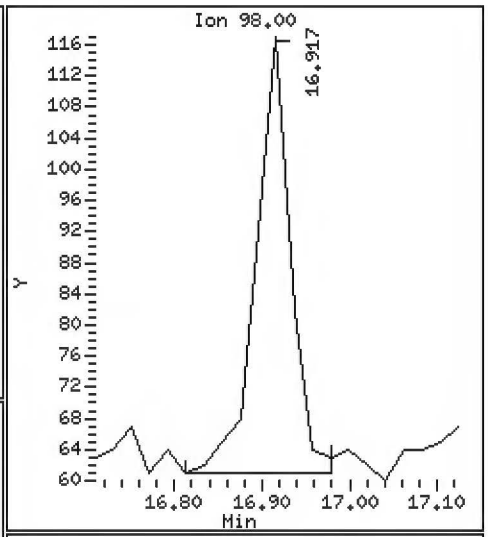
Concentration: 0.009624 PPBV

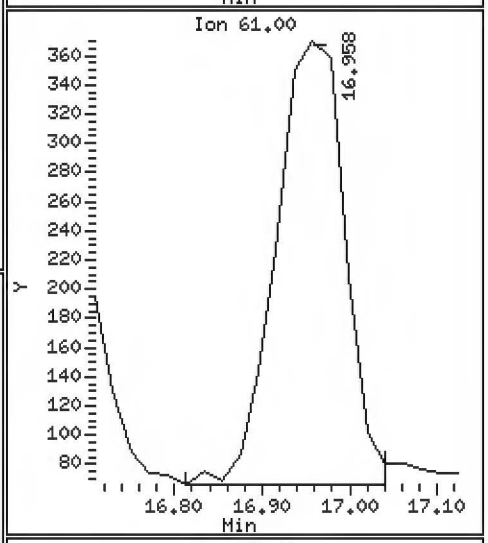


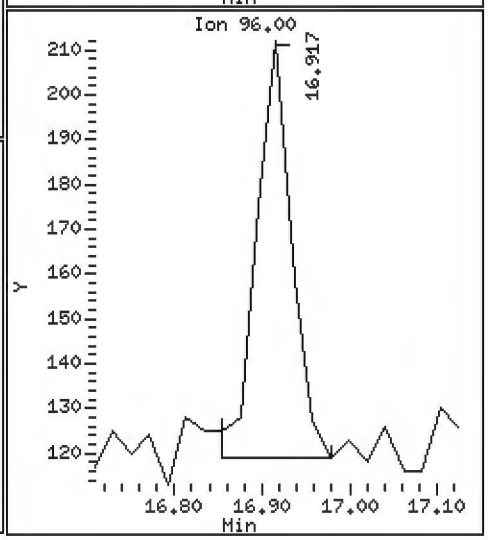












Data File: /chem/msd20.i/06feb20.b/20020613sim.d

Date : 06-FEB-2020 18:17

Client ID:

Instrument: msd20.i

Sample Info: 250mL #9226

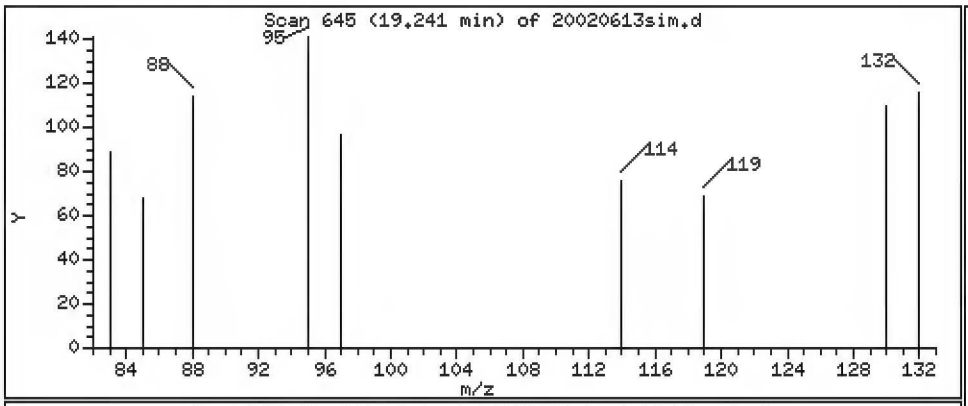
Operator: mb

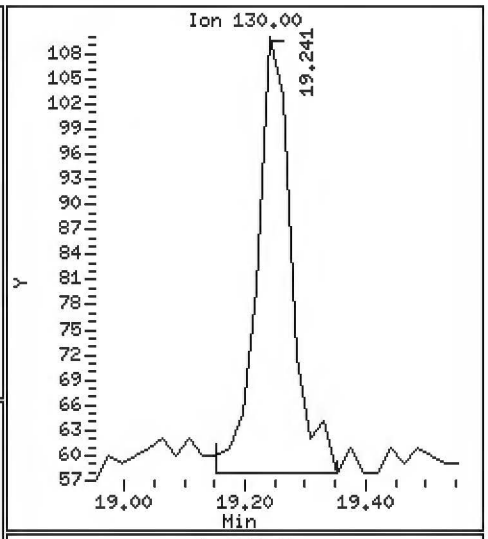
Column phase: RTX-624

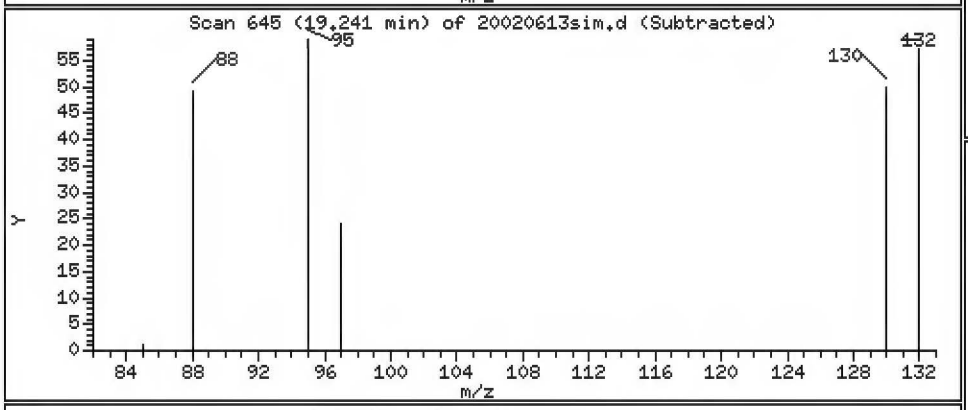
Column diameter: 0.32

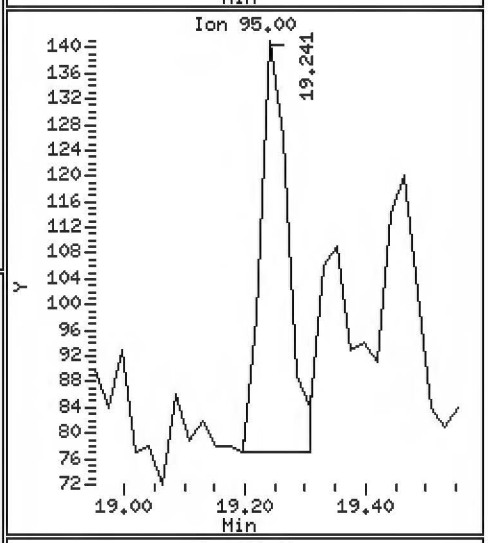
21 Trichloroethene

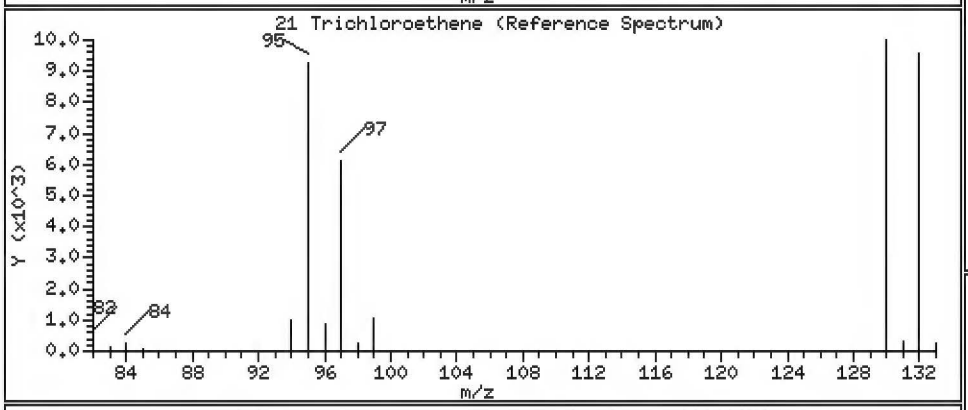
Concentration: 0.005610 PPBV

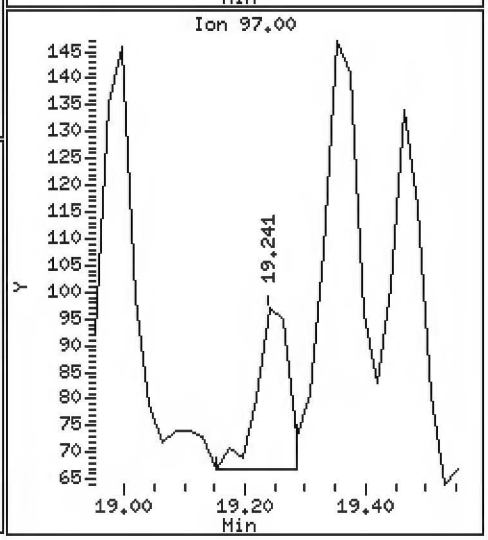


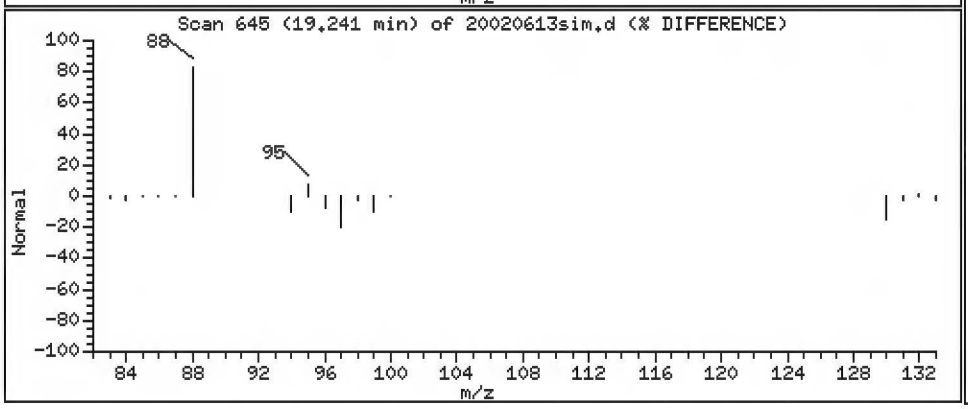












Data File: /chem/msd20.i/06feb20.b/20020613sim.d

Date : 06-FEB-2020 18:17

Client ID:

Instrument: msd20.i

Sample Info: 250mL #9226

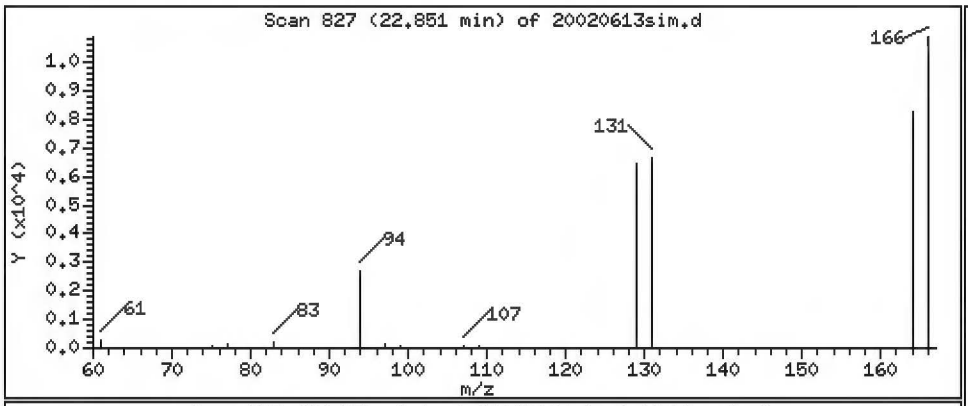
Operator: mb

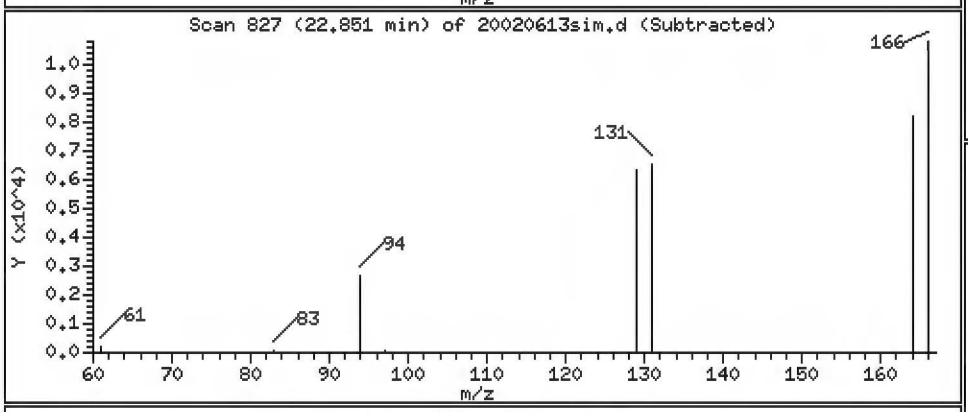
Column phase: RTX-624

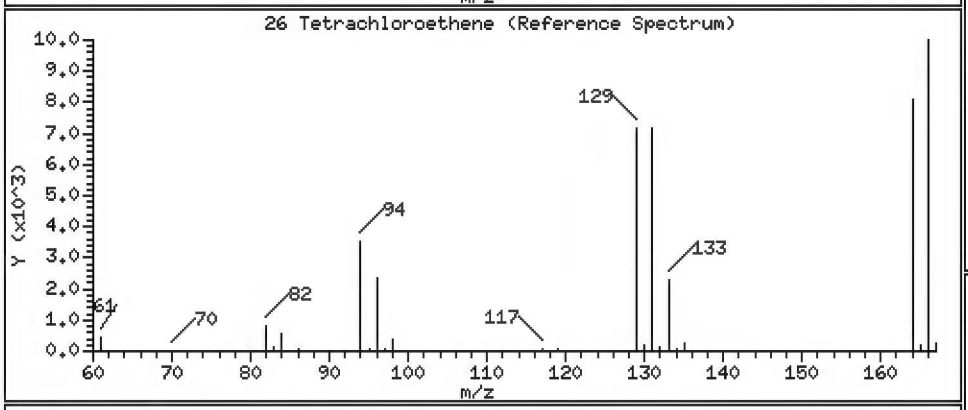
Column diameter: 0.32

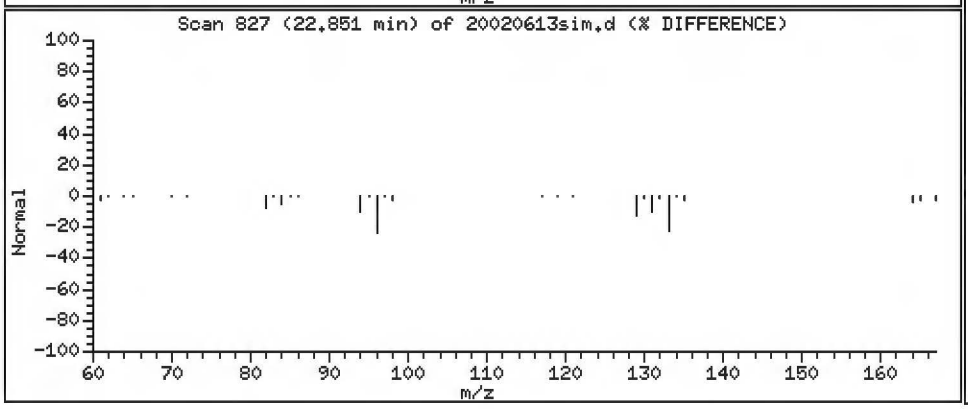
26 Tetrachloroethene

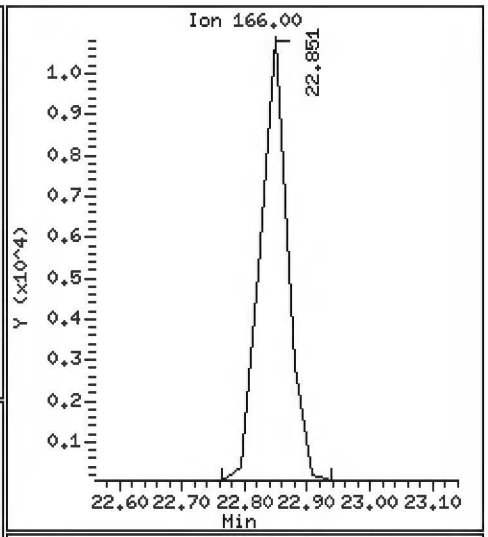
Concentration: 0.5370 PPBV

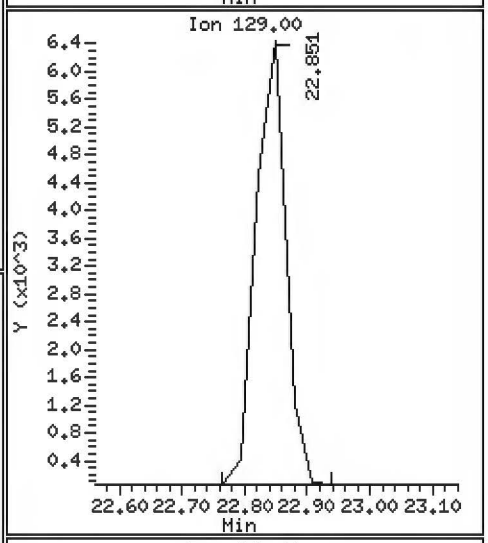


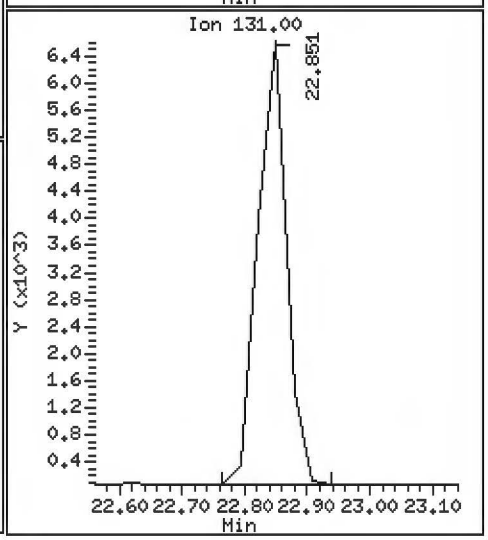












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASS-106-01292020		
Lab ID:	2001756-10A	**Date/Time Analyzed:**	2/6/20 06:58 PM
Date/Time Collected:	1/29/20 04:31 PM	**Dilution Factor:**	1.47
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020614sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.029	0.029	0.058	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.018	0.058	0.12	0.040 J
Tetrachloroethene	127-18-4	0.018	0.10	0.20	88
trans-1,2-Dichloroethene	156-60-5	0.033	0.058	0.58	0.052 J
Trichloroethene	79-01-6	0.019	0.079	0.16	2.2
Vinyl Chloride	75-01-4	0.014	0.019	0.038	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020614sim.d
Lab Smp Id: 2001756-10A
Inj Date : 06-FEB-2020 18:58
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #9192
Misc Info : 5.5"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.47000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	140130	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	107311			46.79- 106.79	76.58
17.283	17.316 (1.000)	49	124184			67.00- 127.00	88.62
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	395733	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	55885			0.00- 44.17	14.12
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	438385	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	201329			16.60- 76.60	45.93
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	181506	5.50244	5.502	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	92252			26.62- 86.62	50.83
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	343276	4.90580	4.906	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	40757			0.00- 40.95	11.87

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	215113			34.26- 94.26	62.66
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	349711	5.16845	5.168	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	295599			54.28- 114.28	84.53
25.927	25.927 (1.066)	176	340386			67.48- 127.48	97.33
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	174	0.00891	0.01309	80.00- 120.00	100.00(a)
15.059	15.061 (0.870)	61	205			161.94- 221.94	117.94
15.087	15.075 (0.871)	96	286			125.44- 185.44	164.15
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.916	16.916 (0.977)	98	149	0.00683	0.01004	80.00- 120.00	100.00(a)
16.916	16.916 (0.977)	61	307			144.59- 204.59	205.83
16.916	16.916 (0.977)	96	328			124.96- 184.96	220.00
21 Trichloroethene					CAS #: 79-01-6		
19.263	19.245 (1.022)	130	14245	0.27756	0.4080	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	12041			56.54- 116.54	84.53
19.241	19.245 (1.021)	97	8022			26.43- 86.43	56.31
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	810255	8.85420	13.016	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	522555			34.72- 94.72	64.49
22.851	22.851 (0.940)	131	507316			33.00- 93.00	62.61

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020614sim.d
Lab Smp Id: 2001756-10A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.5"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	140130	-23.58
20 1,4-Difluorobenze	549605	329763	769447	395733	-28.00
28 Chlorobenzene-d5	517348	310409	724287	438385	-15.26

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-10A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.5"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.502	110.05
$ 22 Toluene-d8	5.000	4.906	98.12
$ 33 4-Bromofluorobenzene	5.000	5.168	103.37

Data File: /chem/msd20.i/06feb20.b/20020614sim.d

Date : 06-FEB-2020 18:58

Client ID:

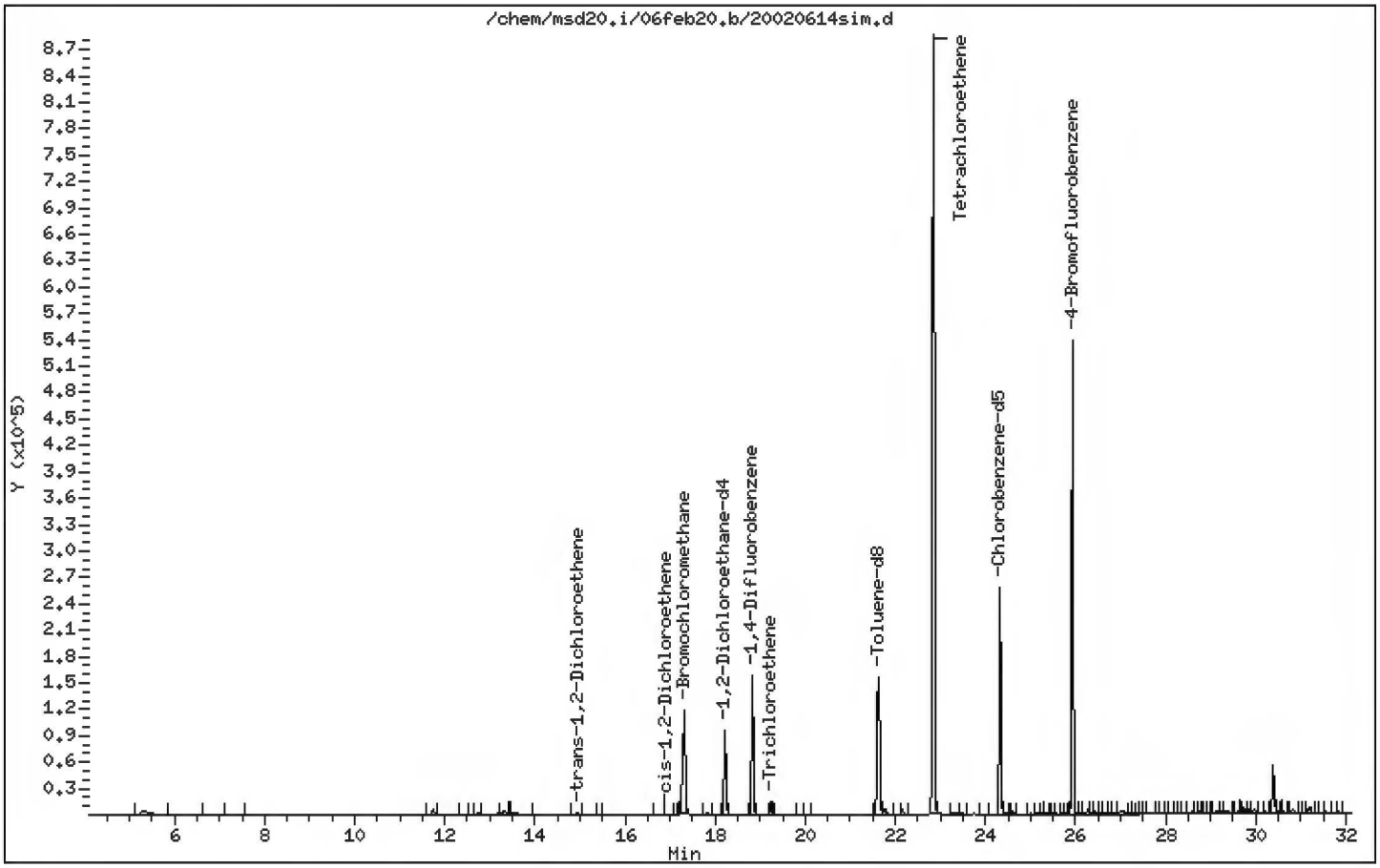
Instrument: msd20.i

Sample Info: 250mL #9192

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020614sim.d

Date : 06-FEB-2020 18:58

Client ID:

Instrument: msd20.i

Sample Info: 250mL #9192

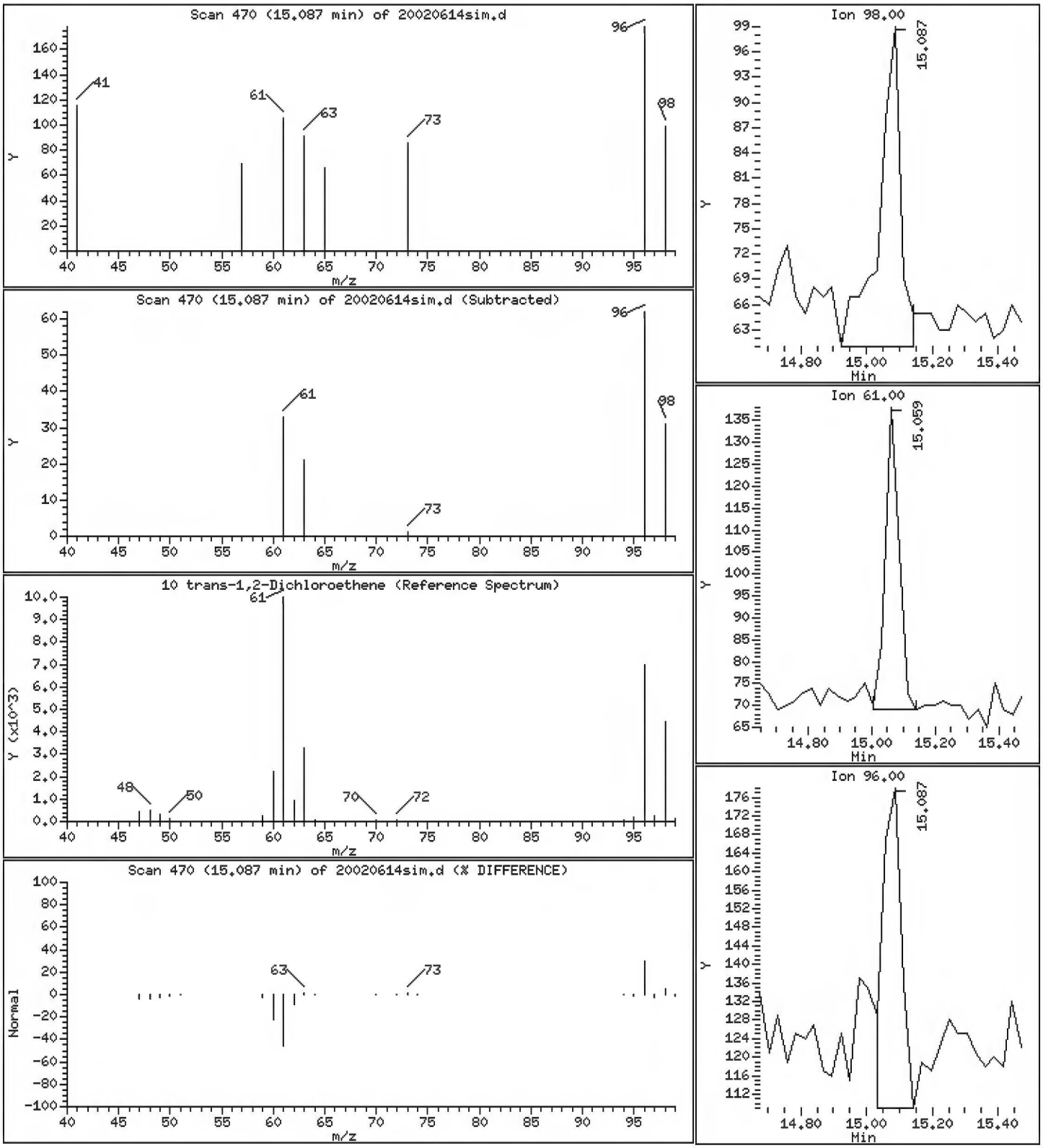
Operator: mb

Column phase: RTX-624

Column diameter: 0.32

10 trans-1,2-Dichloroethene

Concentration: 0.01309 PPBV



Data File: /chem/msd20.i/06feb20.b/20020614sim.d

Date : 06-FEB-2020 18:58

Client ID:

Instrument: msd20.i

Sample Info: 250mL #9192

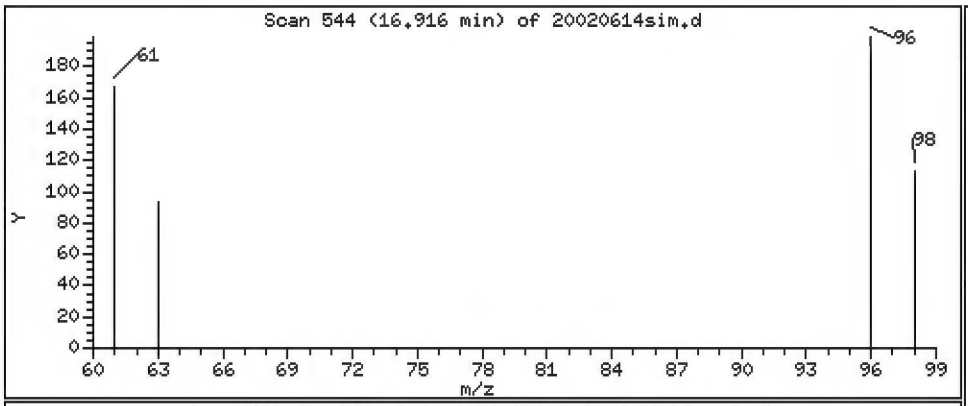
Operator: mb

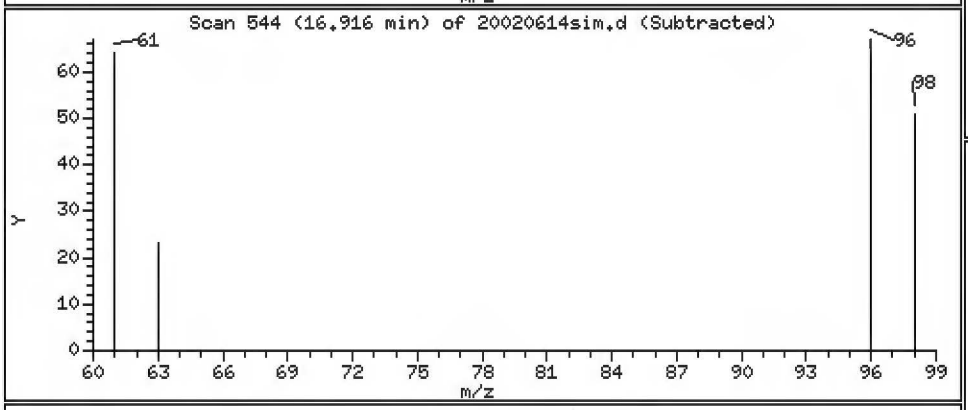
Column phase: RTX-624

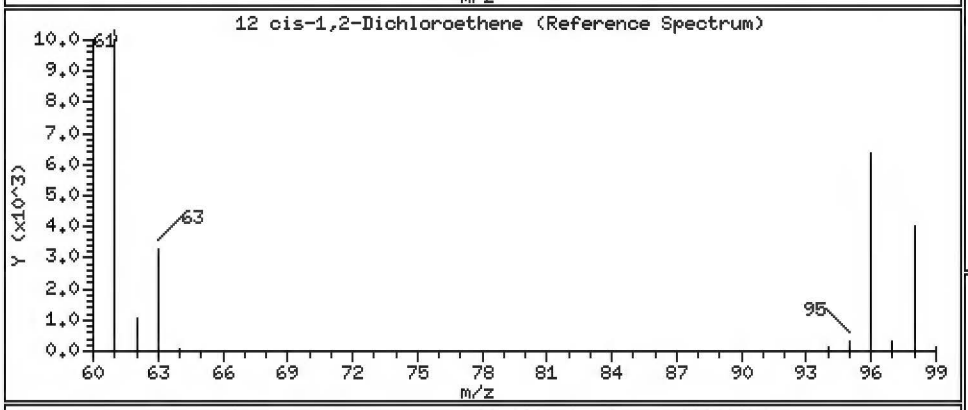
Column diameter: 0.32

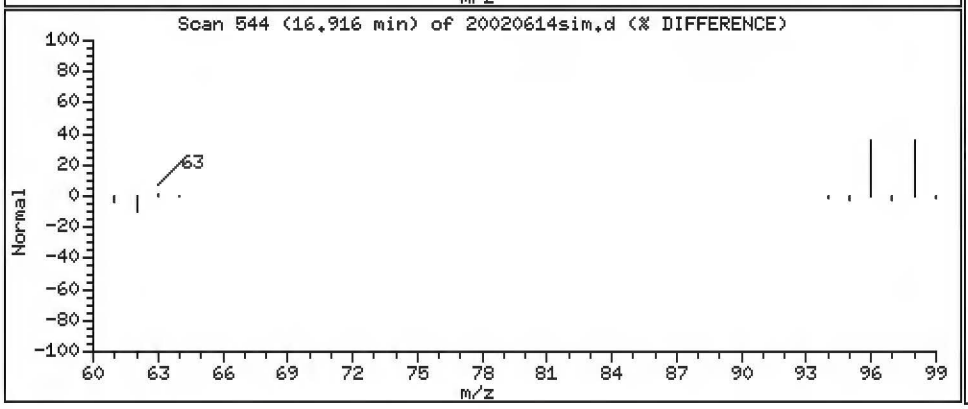
12 cis-1,2-Dichloroethene

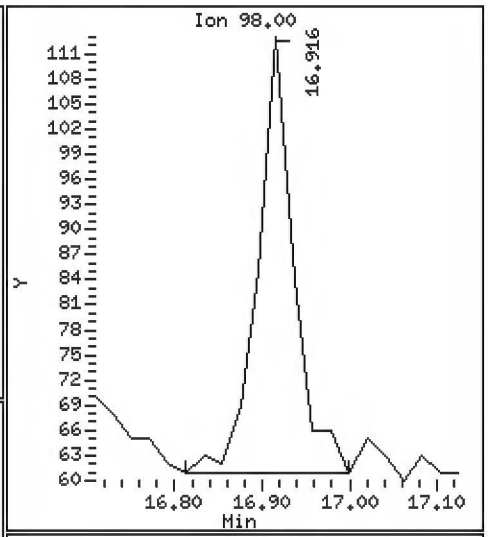
Concentration: 0.01004 PPBV

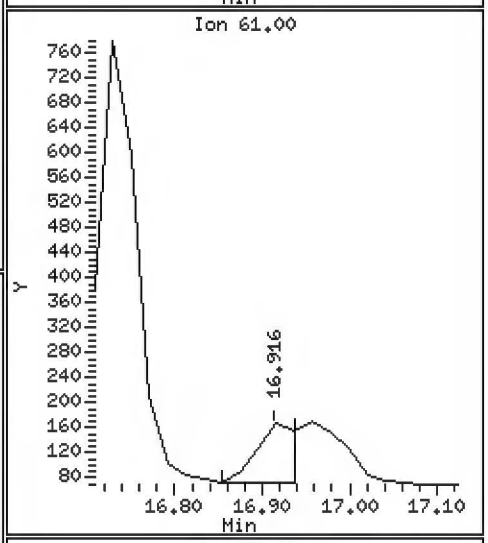


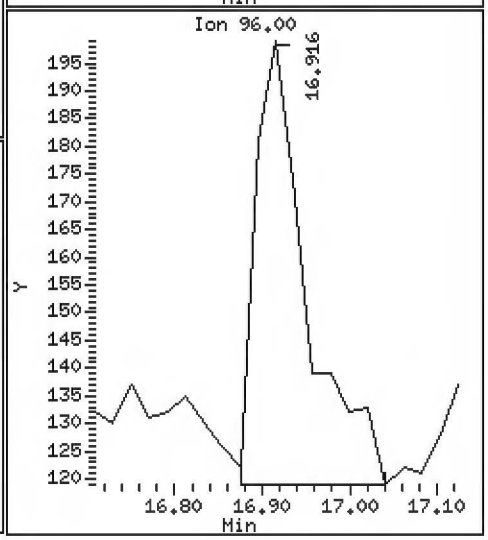












Data File: /chem/msd20.i/06feb20.b/20020614sim.d

Date : 06-FEB-2020 18:58

Client ID:

Instrument: msd20.i

Sample Info: 250mL #9192

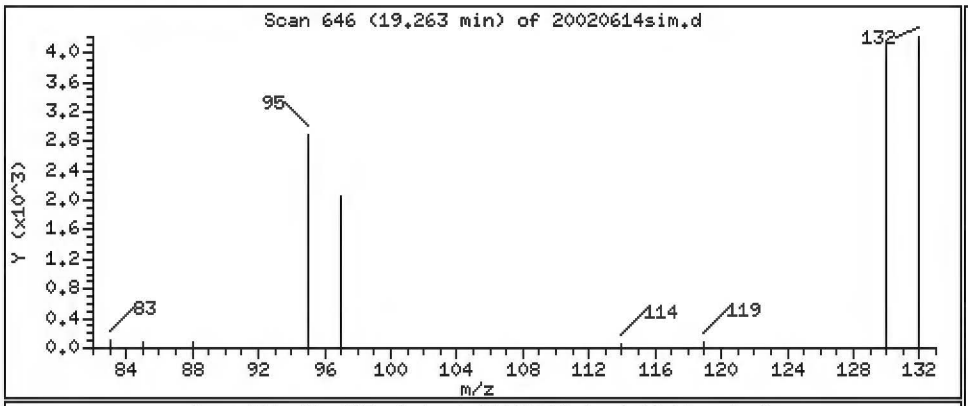
Operator: mb

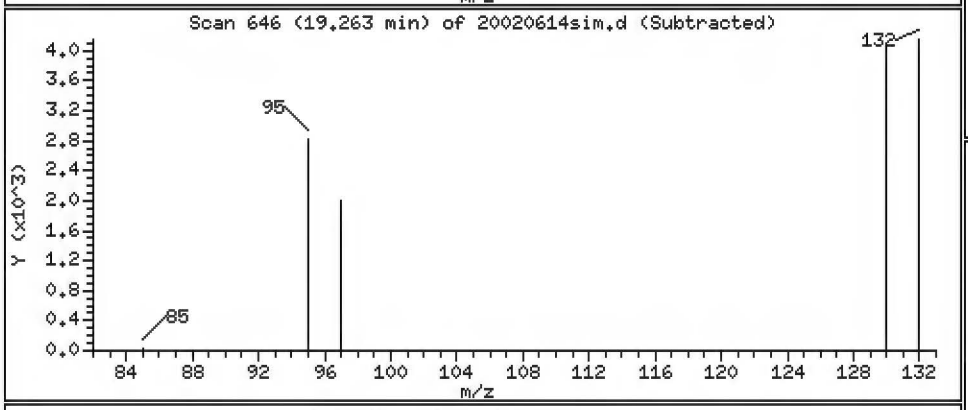
Column phase: RTX-624

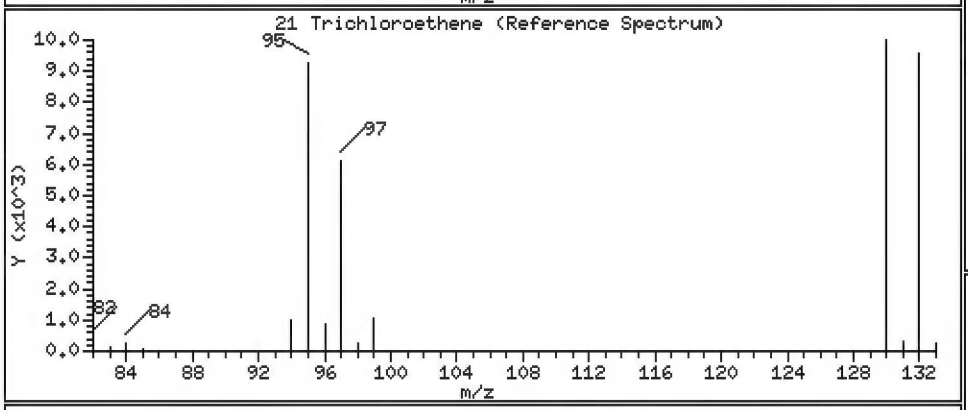
Column diameter: 0.32

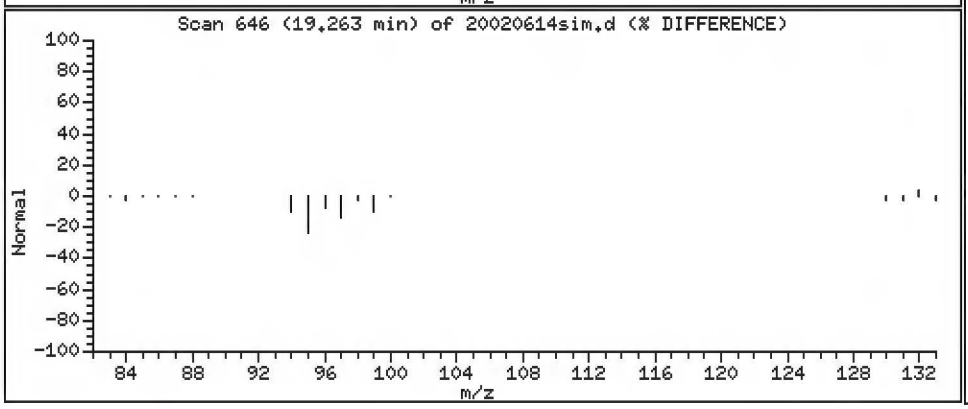
21 Trichloroethene

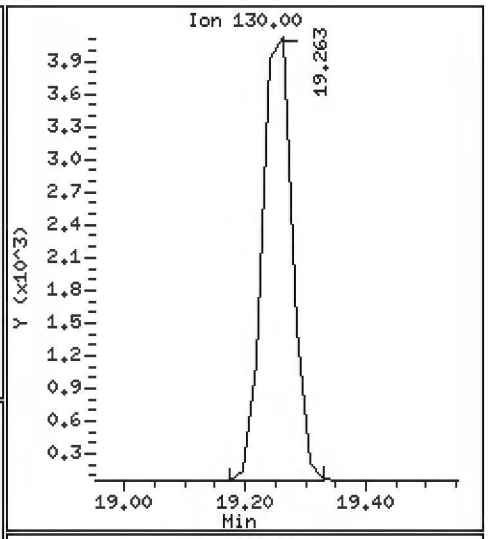
Concentration: 0.4080 PPBV

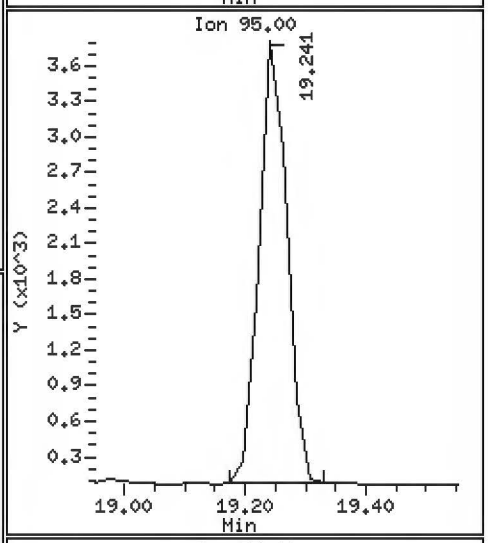


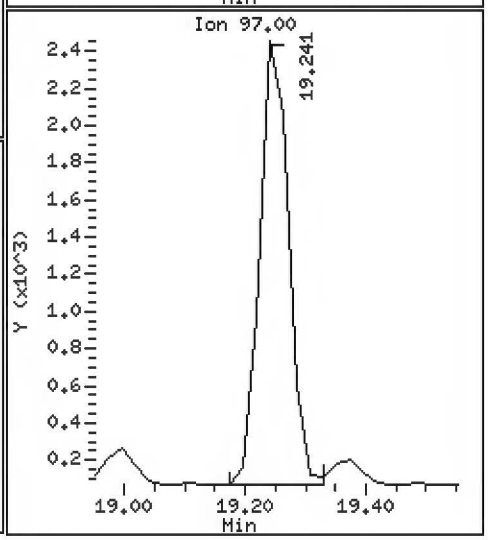












Data File: /chem/msd20.i/06feb20.b/20020614sim.d

Date : 06-FEB-2020 18:58

Client ID:

Instrument: msd20.i

Sample Info: 250mL #9192

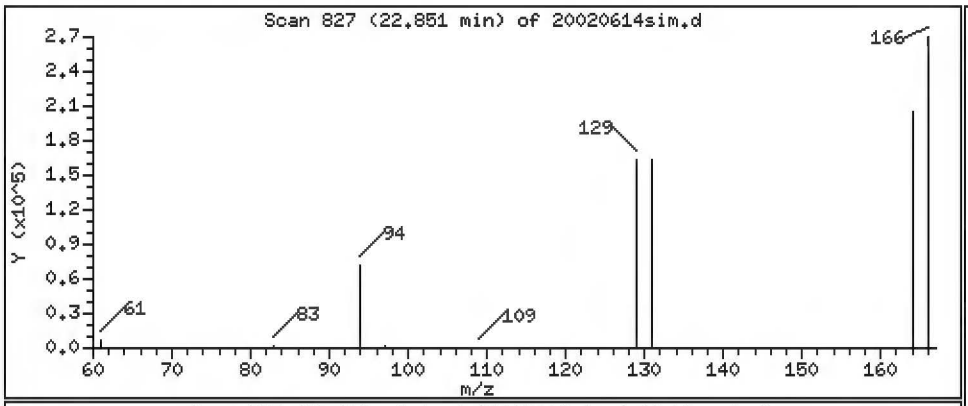
Operator: mb

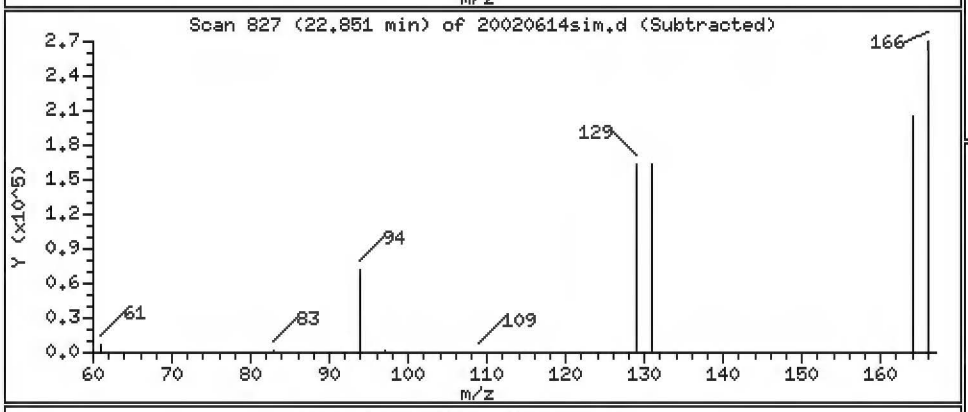
Column phase: RTX-624

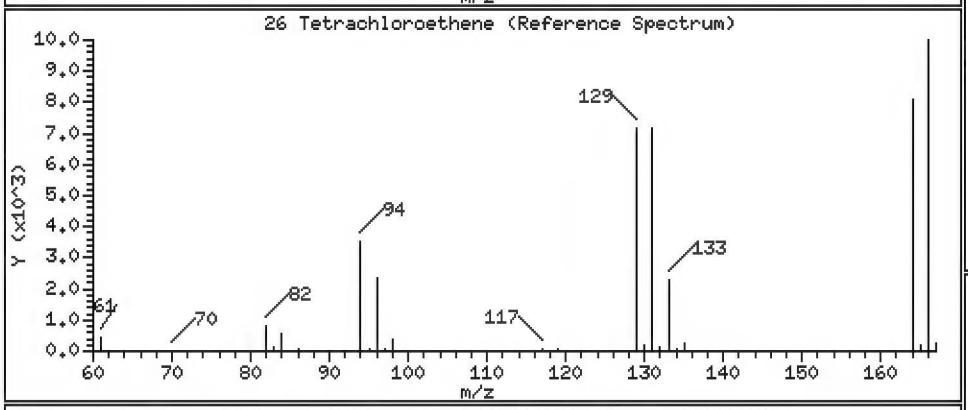
Column diameter: 0.32

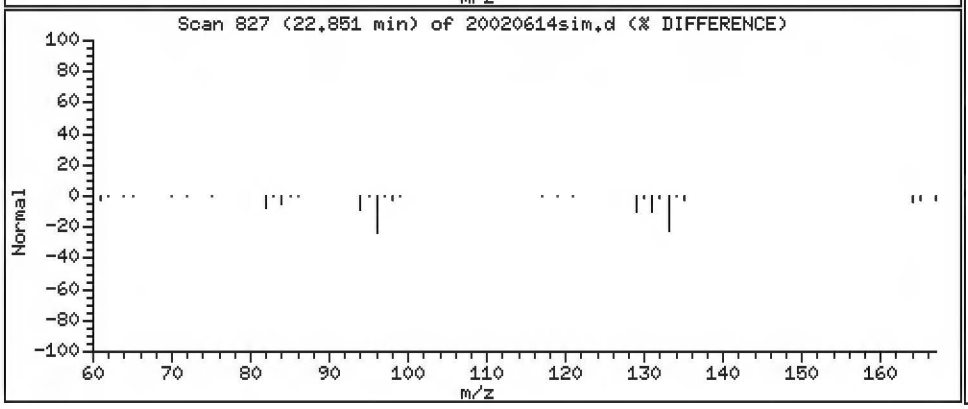
26 Tetrachloroethene

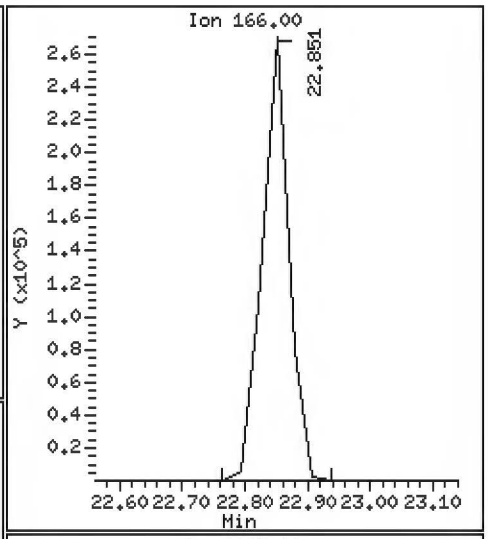
Concentration: 13.016 PPBV

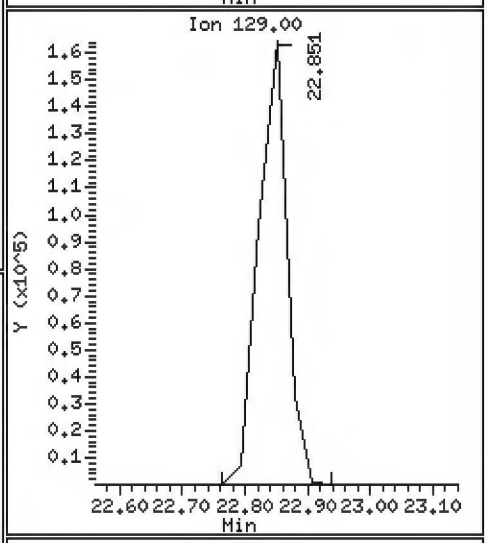


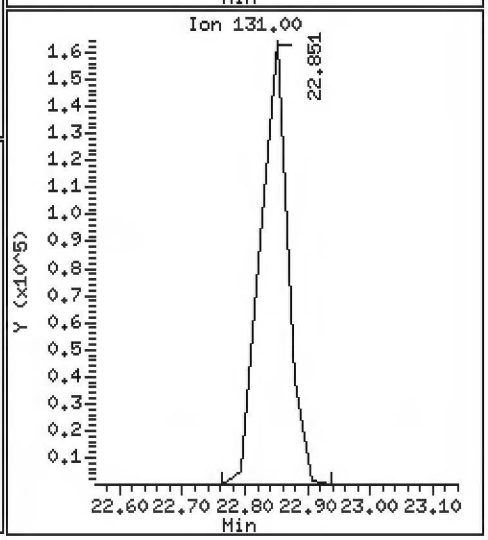












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASS-105-01292020		
Lab ID:	2001756-11A	**Date/Time Analyzed:**	2/6/20 09:35 PM
Date/Time Collected:	1/29/20 04:39 PM	**Dilution Factor:**	1.39
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020618sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.027	0.028	0.055	0.18
cis-1,2-Dichloroethene	156-59-2	0.017	0.055	0.11	10
Tetrachloroethene	127-18-4	0.017	0.094	0.19	62
trans-1,2-Dichloroethene	156-60-5	0.032	0.055	0.55	0.31 J
Trichloroethene	79-01-6	0.018	0.075	0.15	7.8
Vinyl Chloride	75-01-4	0.013	0.018	0.036	0.039

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020618sim.d
Lab Smp Id: 2001756-11A
Inj Date : 06-FEB-2020 21:35
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #N3478
Misc Info : 4.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.39000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.313	17.316 (1.000)	130	150347	5.00000		80.00- 120.00	100.00
17.313	17.316 (1.000)	128	115779			46.79- 106.79	77.01
17.313	17.316 (1.000)	49	137753			67.00- 127.00	91.62
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	457776	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	64536			0.00- 44.17	14.10
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	528000	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	244392			16.60- 76.60	46.29
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	198700	5.61434	5.614	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	101142			26.62- 86.62	50.90
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	395904	4.89109	4.891	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	46614			0.00- 40.95	11.77

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	249169			34.26- 94.26	62.94
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	405635	4.97746	4.977	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	341064			54.28- 114.28	84.08
25.927	25.927 (1.066)	176	394794			67.48- 127.48	97.33
4 Vinyl Chloride					CAS #: 75-01-4		
8.279	8.278 (0.478)	62	308	0.01088	0.01512	80.00- 120.00	100.00
8.297	8.278 (0.479)	64	158			2.23- 62.23	51.35
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.319	13.331 (0.769)	98	652	0.03218	0.04474	80.00- 120.00	100.00
13.319	13.328 (0.769)	61	873			194.63- 254.63	133.84
13.319	13.328 (0.769)	96	863			125.91- 185.91	132.32
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.076	15.080 (0.871)	98	1200	0.05709	0.07936	80.00- 120.00	100.00(a)
15.076	15.061 (0.871)	61	2087			161.94- 221.94	173.80
15.076	15.075 (0.871)	96	1764			125.44- 185.44	146.91
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.913	16.916 (0.977)	98	43406	1.85197	2.574	80.00- 120.00	100.00
16.913	16.916 (0.977)	61	75841			144.59- 204.59	174.72
16.913	16.916 (0.977)	96	66816			124.96- 184.96	153.93
21 Trichloroethene					CAS #: 79-01-6		
19.263	19.245 (1.022)	130	61946	1.04341	1.450	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	53372			56.54- 116.54	86.16
19.241	19.245 (1.021)	97	34686			26.43- 86.43	55.99
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	723988	6.56872	9.130	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	469446			34.72- 94.72	64.84
22.851	22.851 (0.940)	131	456915			33.00- 93.00	63.11

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 07-Feb-2020 12:14

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020618sim.d
Lab Smp Id: 2001756-11A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	150347	-18.01
20 1,4-Difluorobenze	549605	329763	769447	457776	-16.71
28 Chlorobenzene-d5	517348	310409	724287	528000	2.06

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.31	-0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-11A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.614	112.29
$ 22 Toluene-d8	5.000	4.891	97.82
$ 33 4-Bromofluorobenzene	5.000	4.977	99.55

Data File: /chem/msd20.i/06feb20.b/20020618sim.d

Date : 06-FEB-2020 21:35

Client ID:

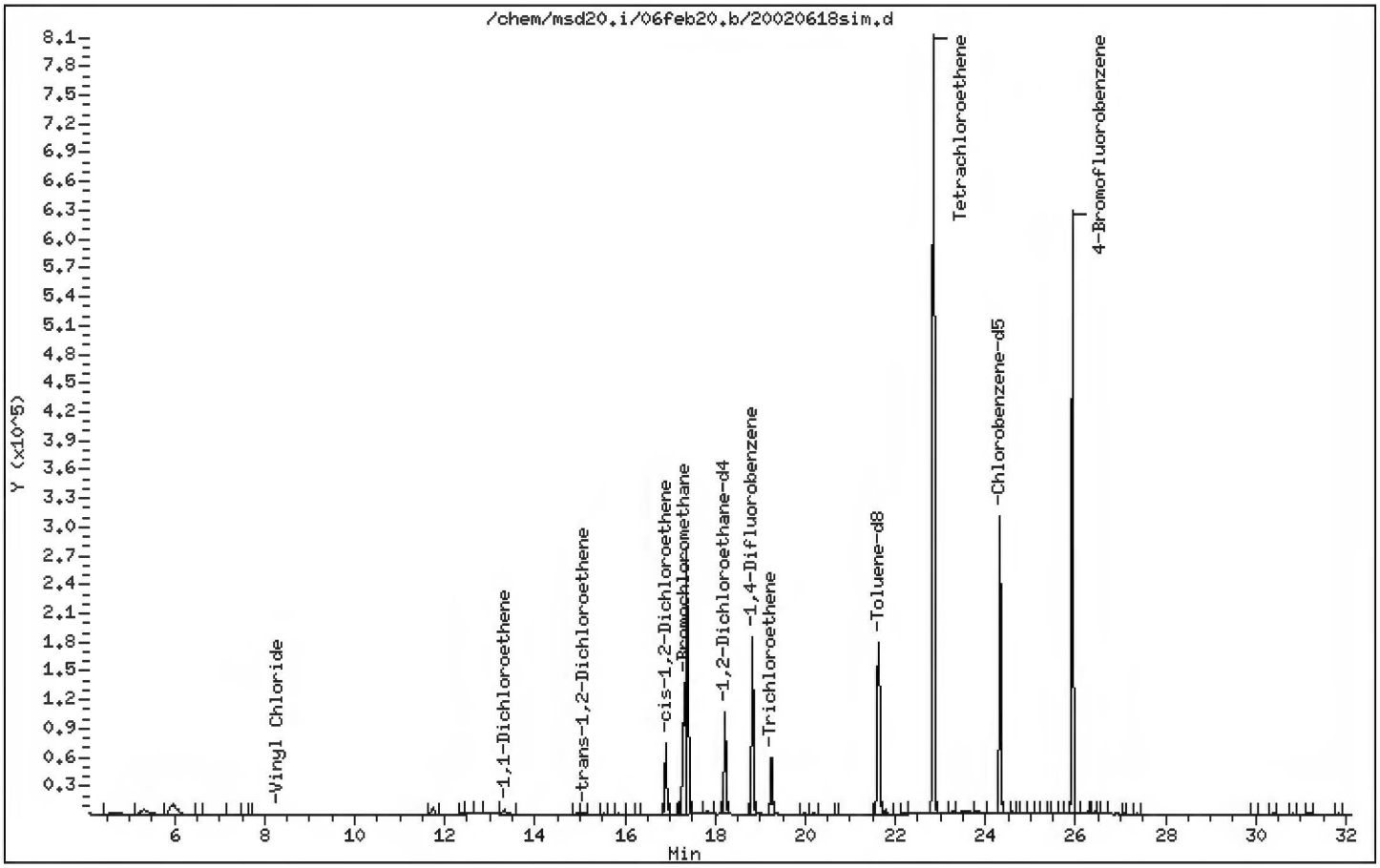
Instrument: msd20.i

Sample Info: 250mL #N3478

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020618sim.d

Date : 06-FEB-2020 21:35

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3478

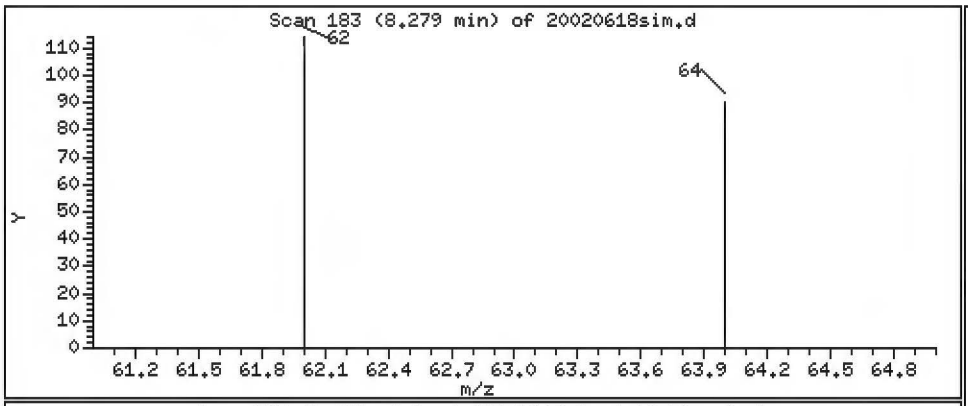
Operator: mb

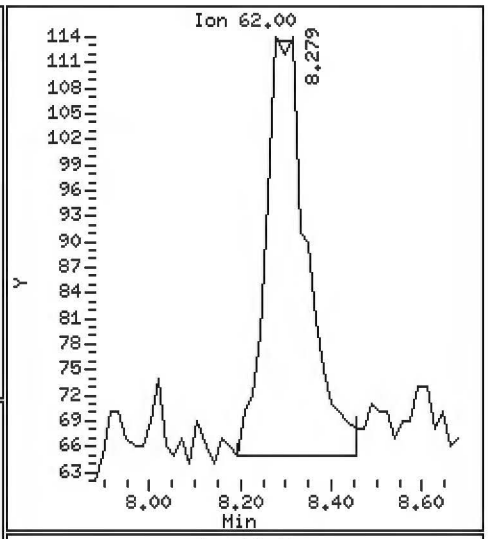
Column phase: RTX-624

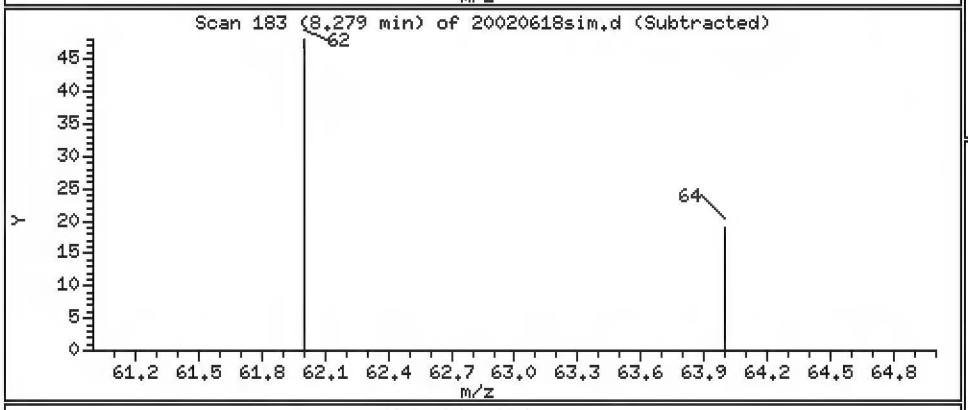
Column diameter: 0.32

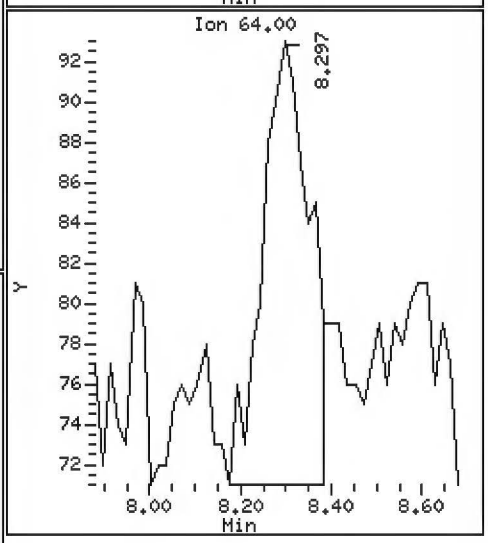
4 Vinyl Chloride

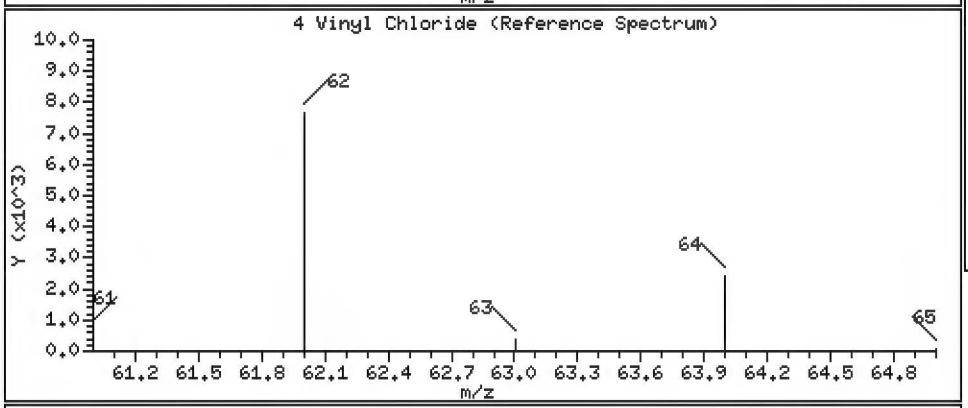
Concentration: 0.01512 PPBV

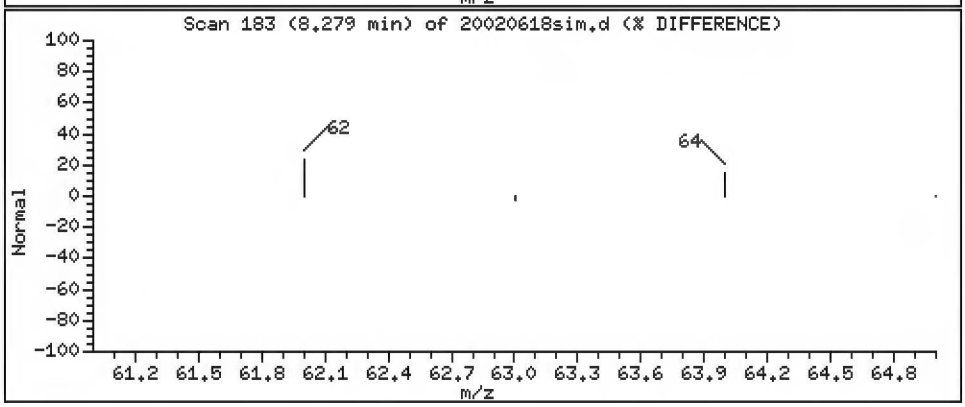












Data File: /chem/msd20.i/06feb20.b/20020618sim.d

Date : 06-FEB-2020 21:35

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3478

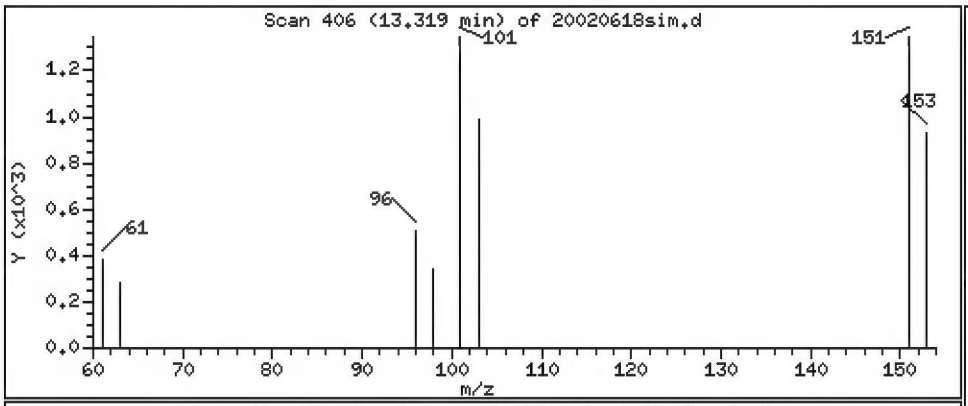
Operator: mb

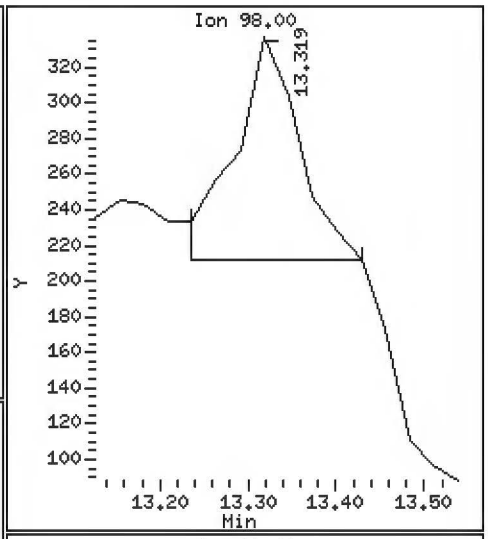
Column phase: RTX-624

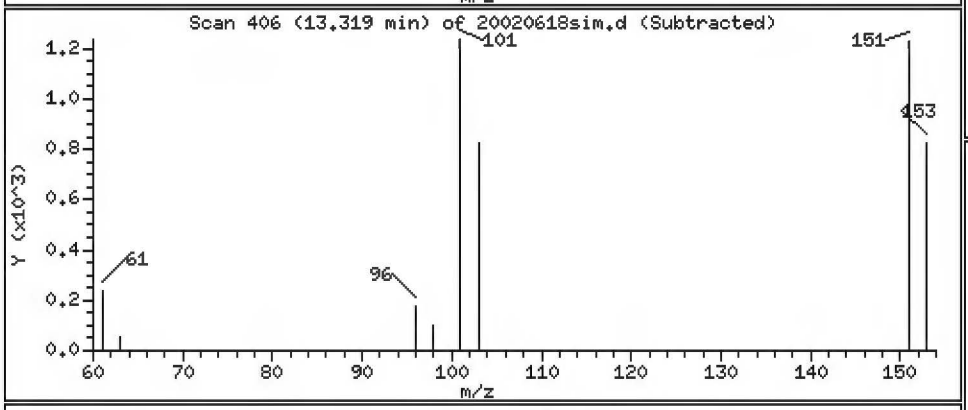
Column diameter: 0.32

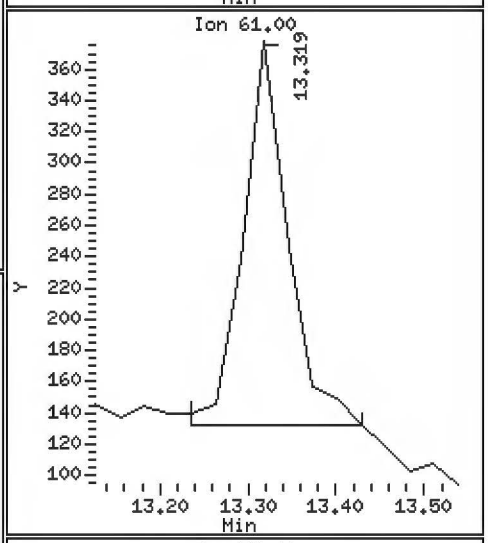
8 1,1-Dichloroethene

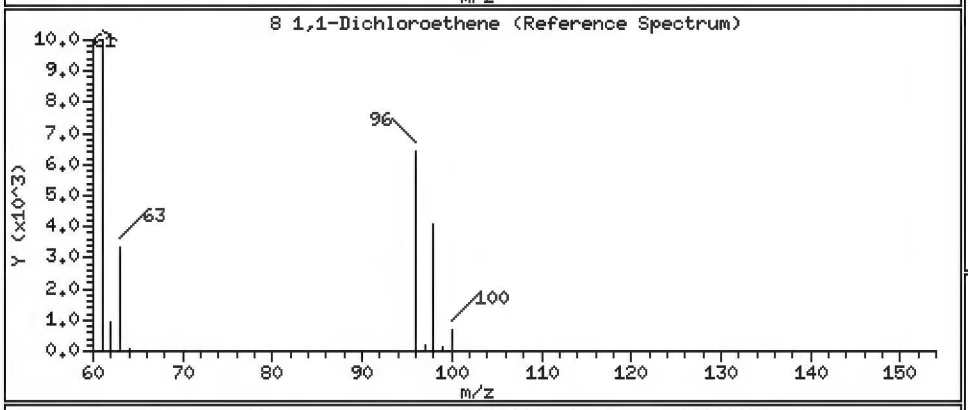
Concentration: 0.04474 PPBV

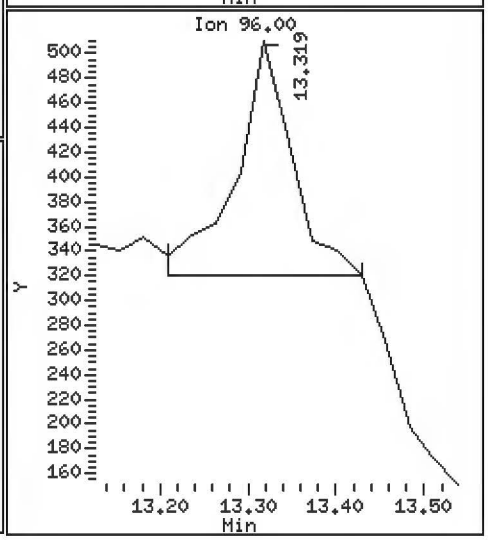


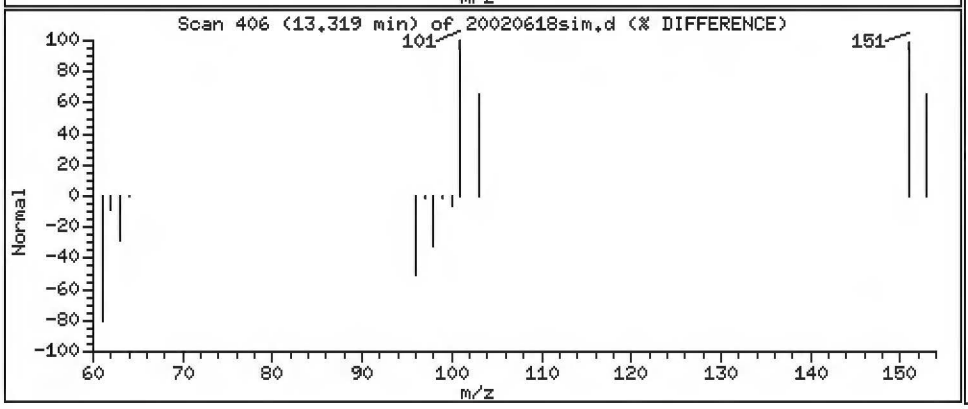












Data File: /chem/msd20.i/06feb20.b/20020618sim.d

Date : 06-FEB-2020 21:35

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3478

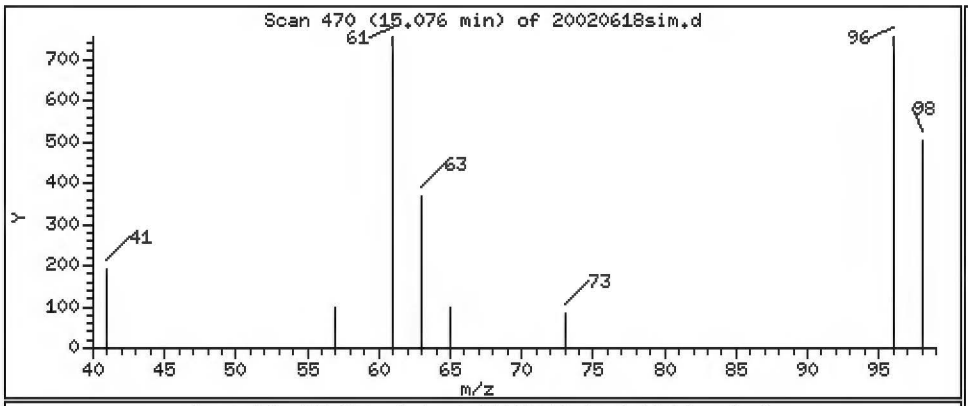
Operator: mb

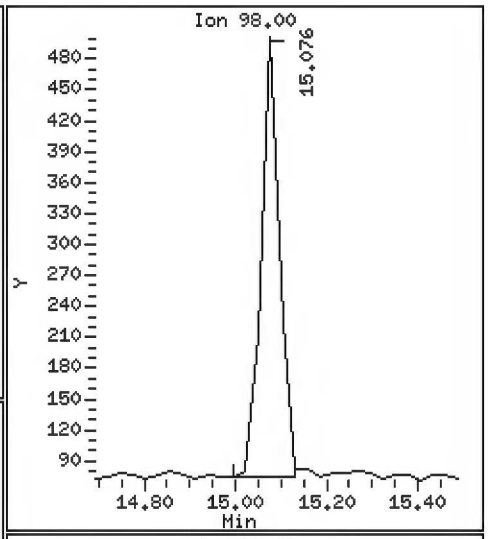
Column phase: RTX-624

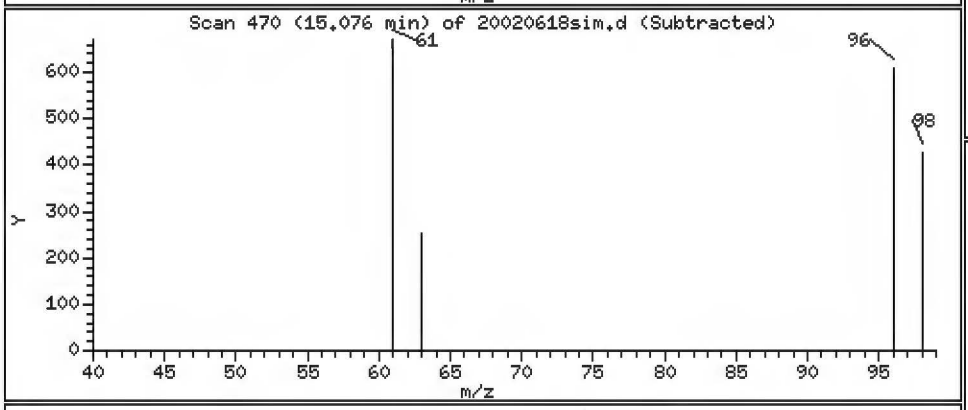
Column diameter: 0.32

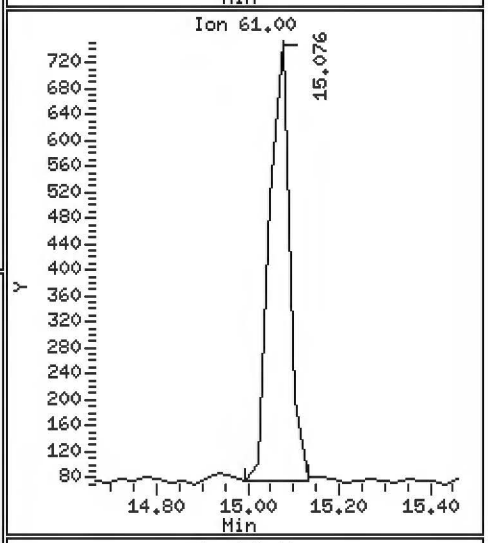
10 trans-1,2-Dichloroethene

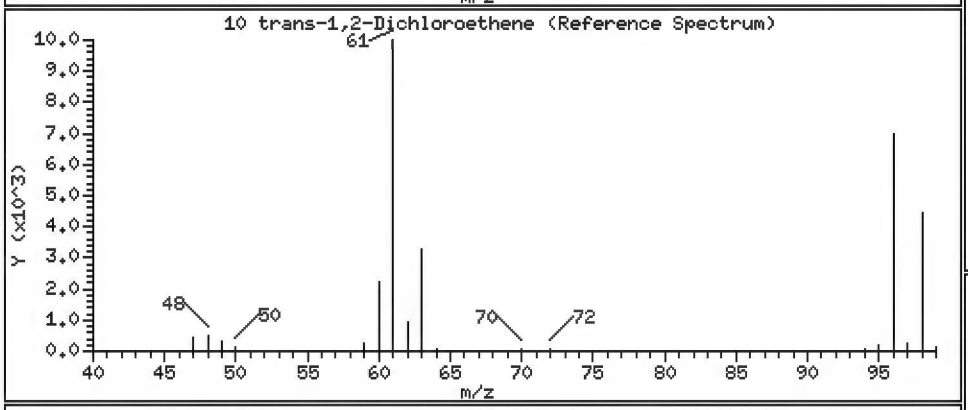
Concentration: 0.07936 PPBV

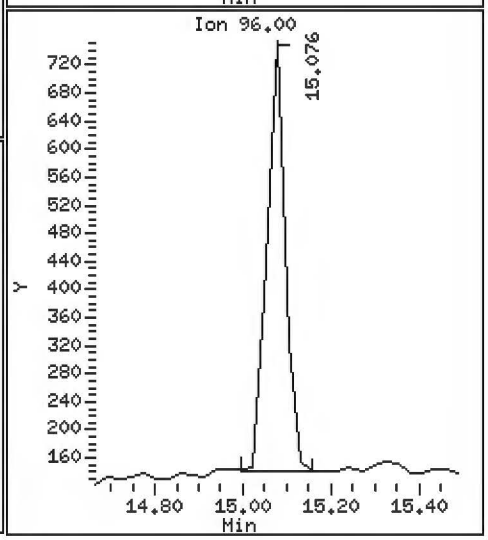


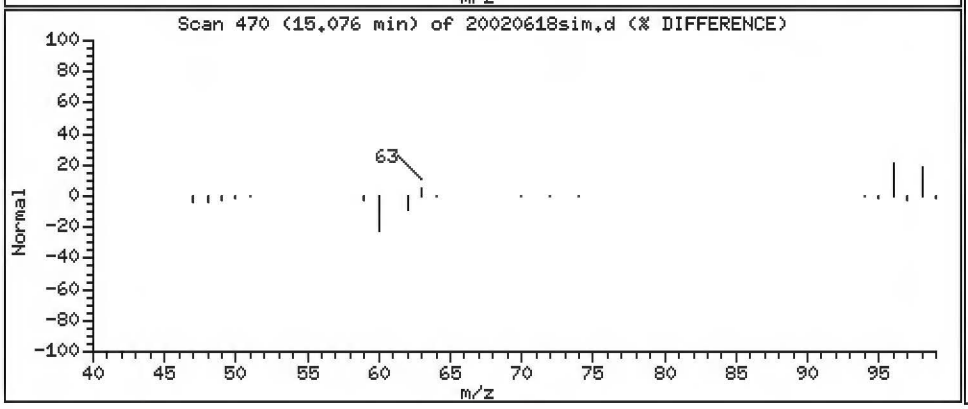












Data File: /chem/msd20.i/06feb20.b/20020618sim.d

Date : 06-FEB-2020 21:35

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3478

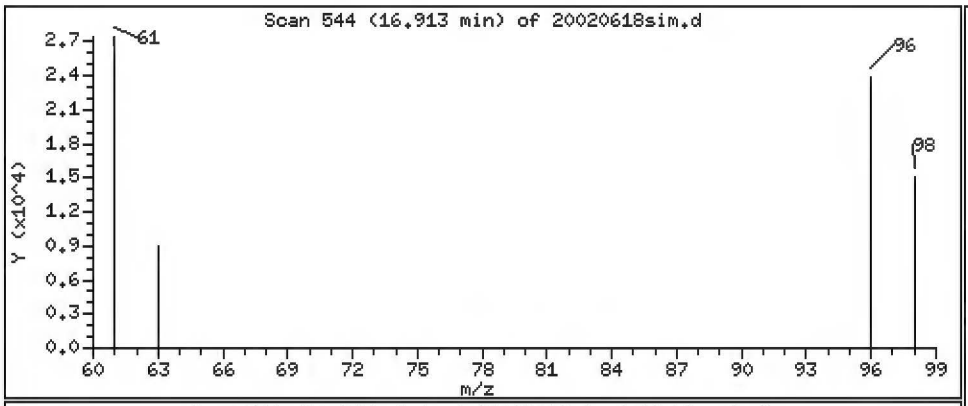
Operator: mb

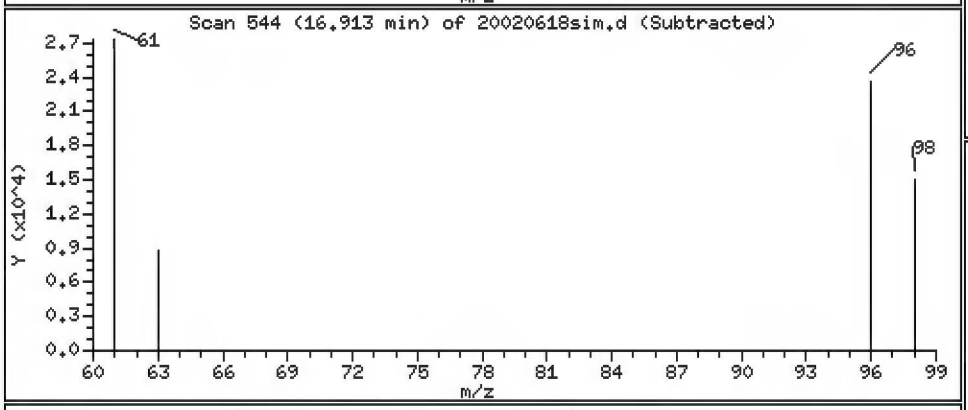
Column phase: RTX-624

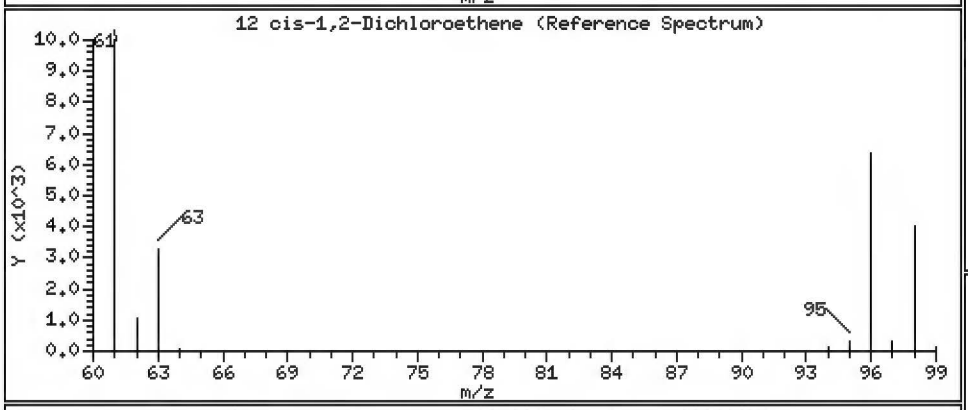
Column diameter: 0.32

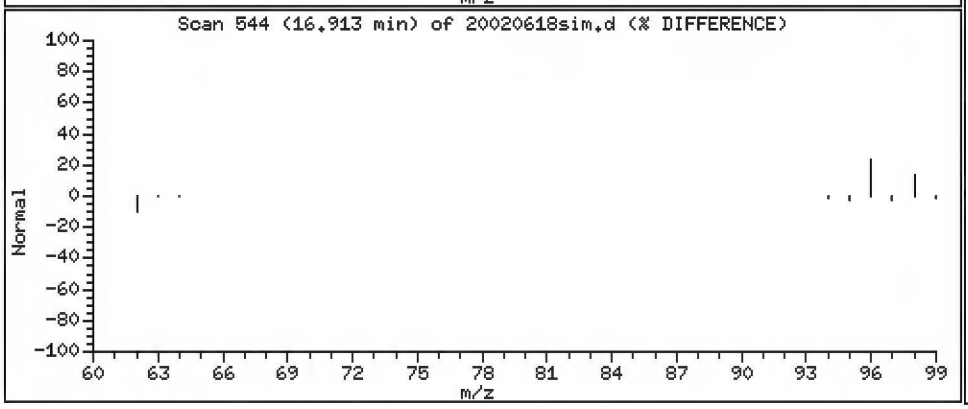
12 cis-1,2-Dichloroethene

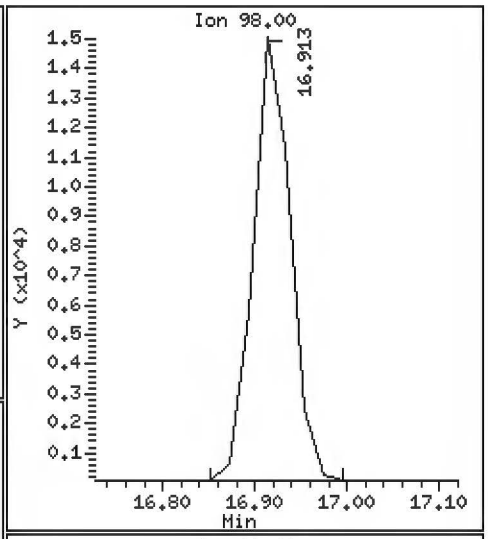
Concentration: 2.574 PPBV

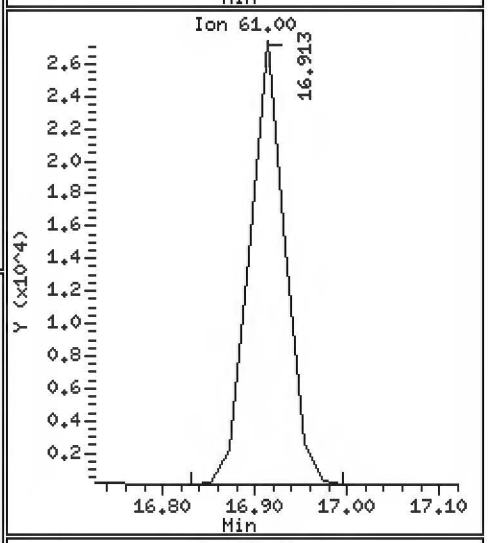


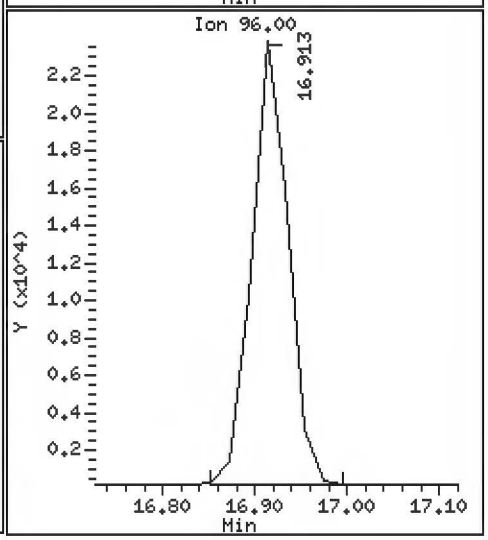












Data File: /chem/msd20.i/06feb20.b/20020618sim.d

Date : 06-FEB-2020 21:35

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3478

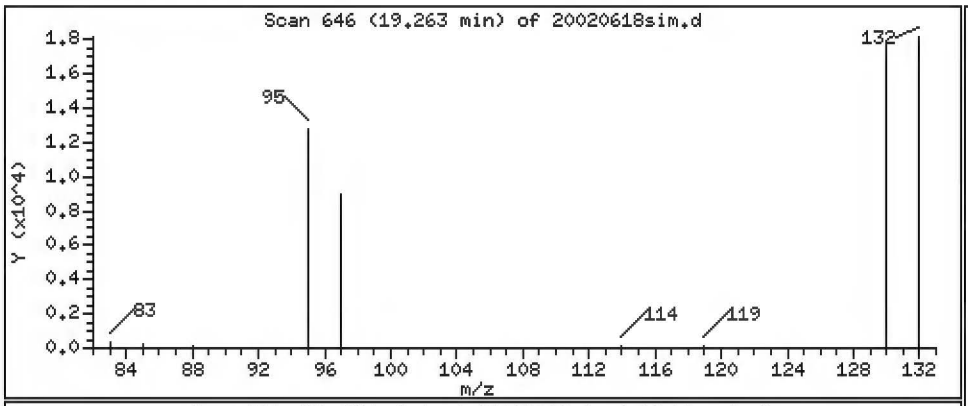
Operator: mb

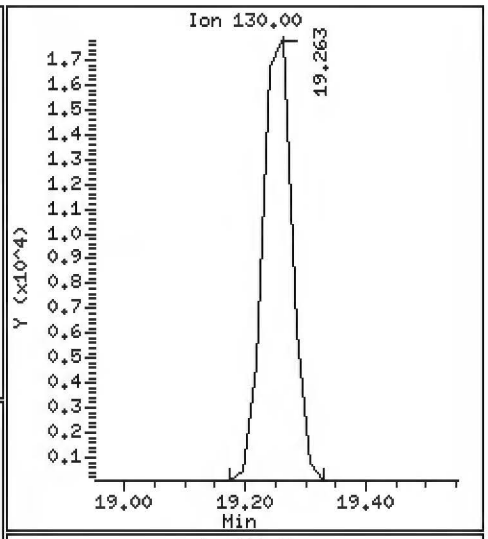
Column phase: RTX-624

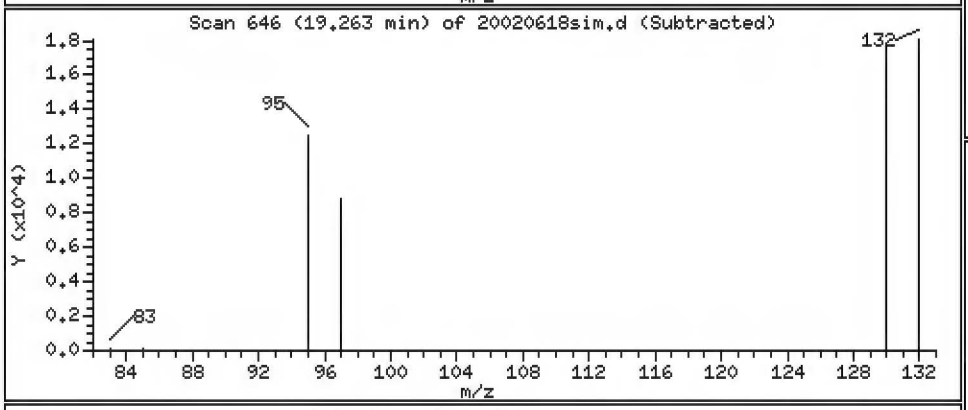
Column diameter: 0.32

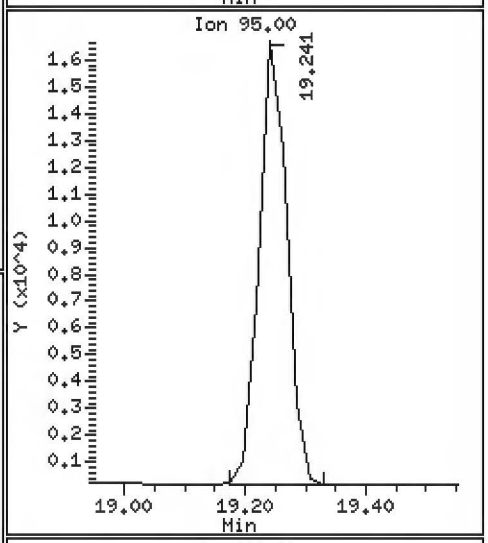
21 Trichloroethene

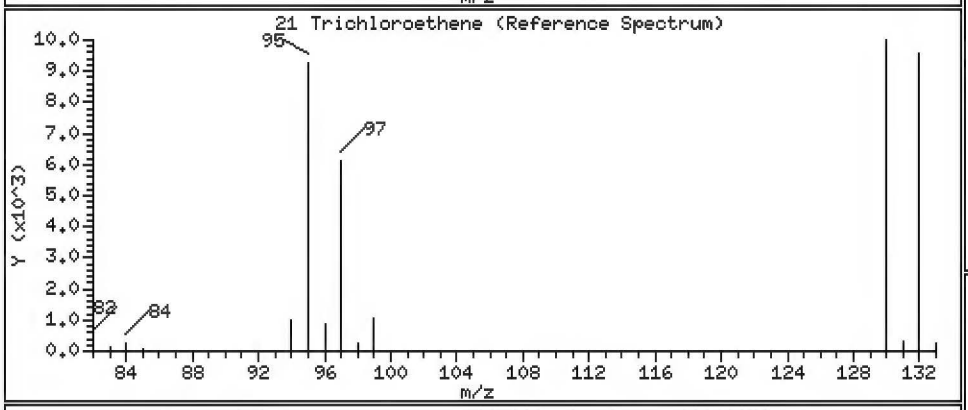
Concentration: 1.450 PPBV

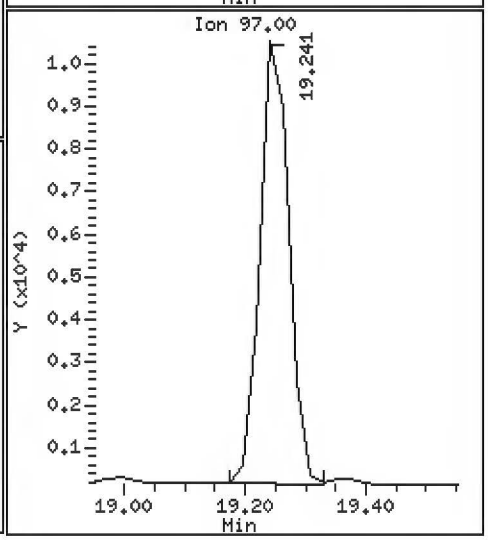


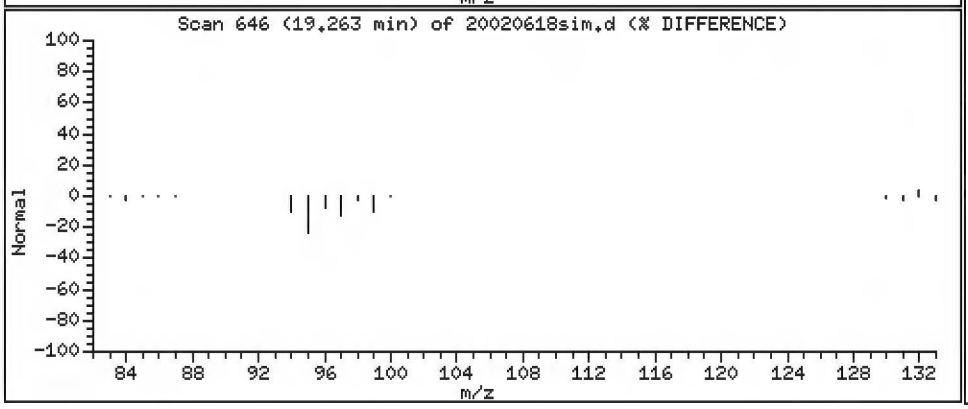












Data File: /chem/msd20.i/06feb20.b/20020618sim.d

Date : 06-FEB-2020 21:35

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N3478

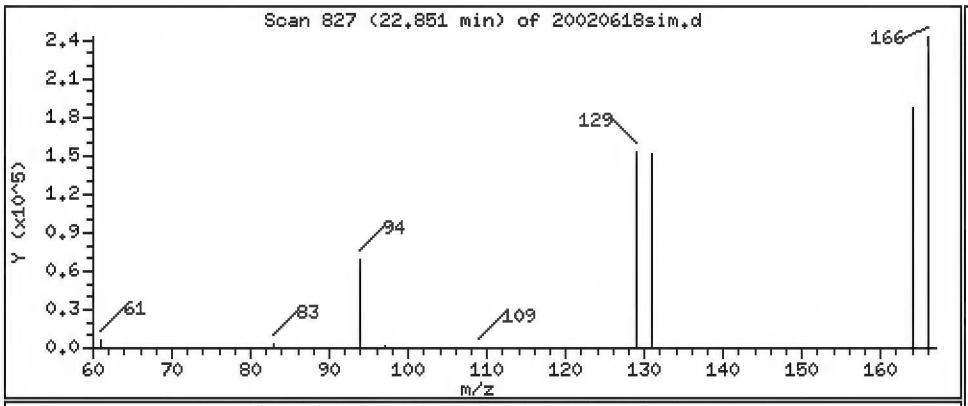
Operator: mb

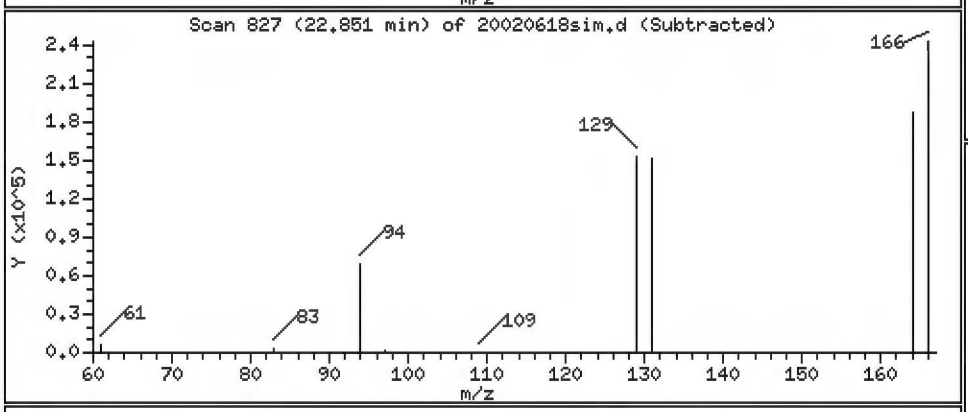
Column phase: RTX-624

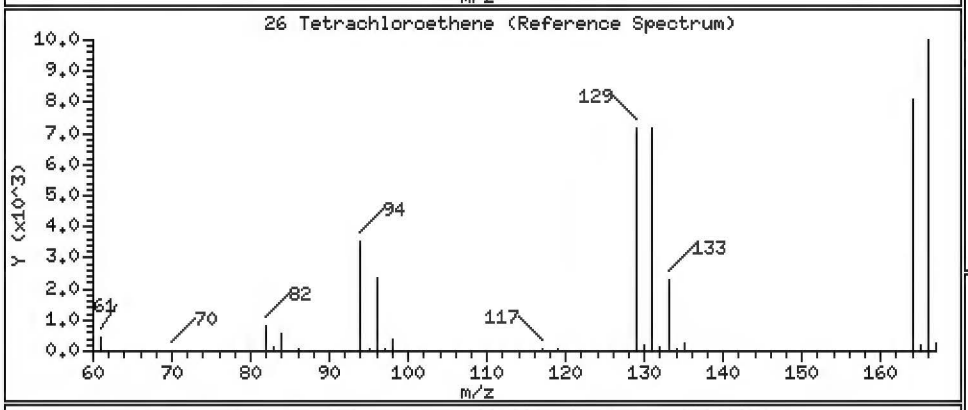
Column diameter: 0.32

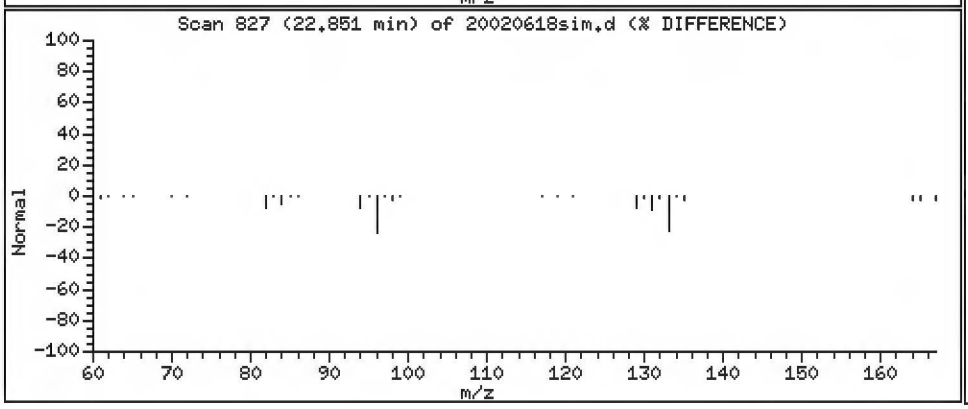
26 Tetrachloroethene

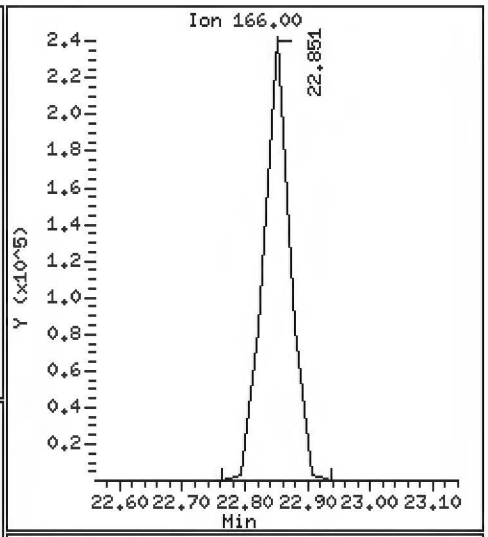
Concentration: 9.130 PPBV

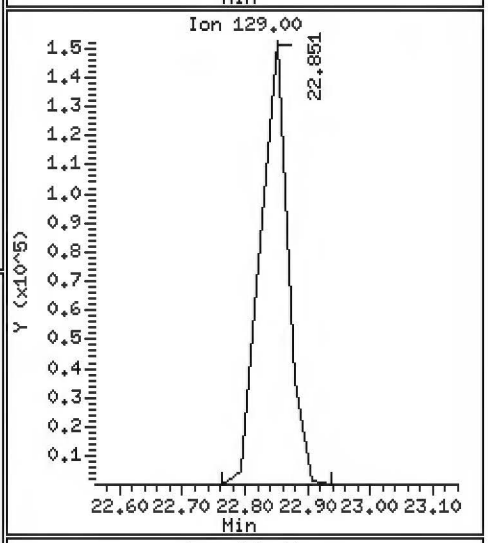


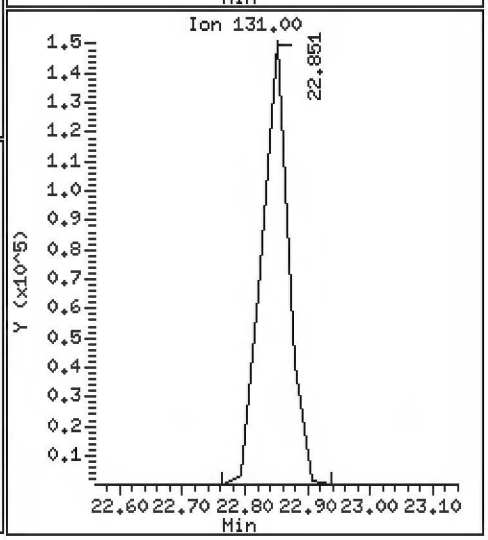












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASI-106-01292020		
Lab ID:	2001756-12A	**Date/Time Analyzed:**	2/6/20 10:14 PM
Date/Time Collected:	1/29/20 04:30 PM	**Dilution Factor:**	1.39
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020619sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.027	0.028	0.055	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.017	0.055	0.11	Not Detected
Tetrachloroethene	127-18-4	0.017	0.094	0.19	3.0
trans-1,2-Dichloroethene	156-60-5	0.032	0.055	0.55	Not Detected
Trichloroethene	79-01-6	0.018	0.075	0.15	0.022 J
Vinyl Chloride	75-01-4	0.013	0.018	0.036	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020619sim.d
Lab Smp Id: 2001756-12A
Inj Date : 06-FEB-2020 22:14
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #N4294
Misc Info : 4.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.39000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	150705	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	115471			46.79- 106.79	76.62
17.284	17.316 (1.000)	49	136623			67.00- 127.00	90.66
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.840	18.839 (1.000)	114	417368	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	58583			0.00- 44.17	14.04
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	427604	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	198304			16.60- 76.60	46.38
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	183189	5.16377	5.164	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	93533			26.62- 86.62	51.06
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	363087	4.91994	4.920	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	42829			0.00- 40.95	11.80

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.624	21.624	(1.148)	100	227869			34.26- 94.26	62.76
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.927	25.927	(1.066)	174	324429	4.91569	4.916	80.00- 120.00	100.00
25.927	25.927	(1.066)	95	271204			54.28- 114.28	83.59
25.927	25.927	(1.066)	176	315562			67.48- 127.48	97.27
21 Trichloroethene						CAS #: 79-01-6		
19.241	19.245	(1.021)	130	156	0.00289	0.004022	80.00- 120.00	100.00(a)
19.241	19.245	(1.021)	95	123			56.54- 116.54	78.63
19.353	19.245	(1.027)	97	338			26.43- 86.43	216.25
26 Tetrachloroethene						CAS #: 127-18-4		
22.851	22.851	(0.940)	166	28732	0.32189	0.4474	80.00- 120.00	100.00
22.851	22.851	(0.940)	129	18927			34.72- 94.72	65.87
22.851	22.851	(0.940)	131	18256			33.00- 93.00	63.54

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020619sim.d
Lab Smp Id: 2001756-12A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	150705	-17.82
20 1,4-Difluorobenze	549605	329763	769447	417368	-24.06
28 Chlorobenzene-d5	517348	310409	724287	427604	-17.35

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-12A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.164	103.28
$ 22 Toluene-d8	5.000	4.920	98.40
$ 33 4-Bromofluorobenzene	5.000	4.916	98.31

Data File: /chem/msd20.i/06feb20.b/20020619sim.d

Date : 06-FEB-2020 22:14

Client ID:

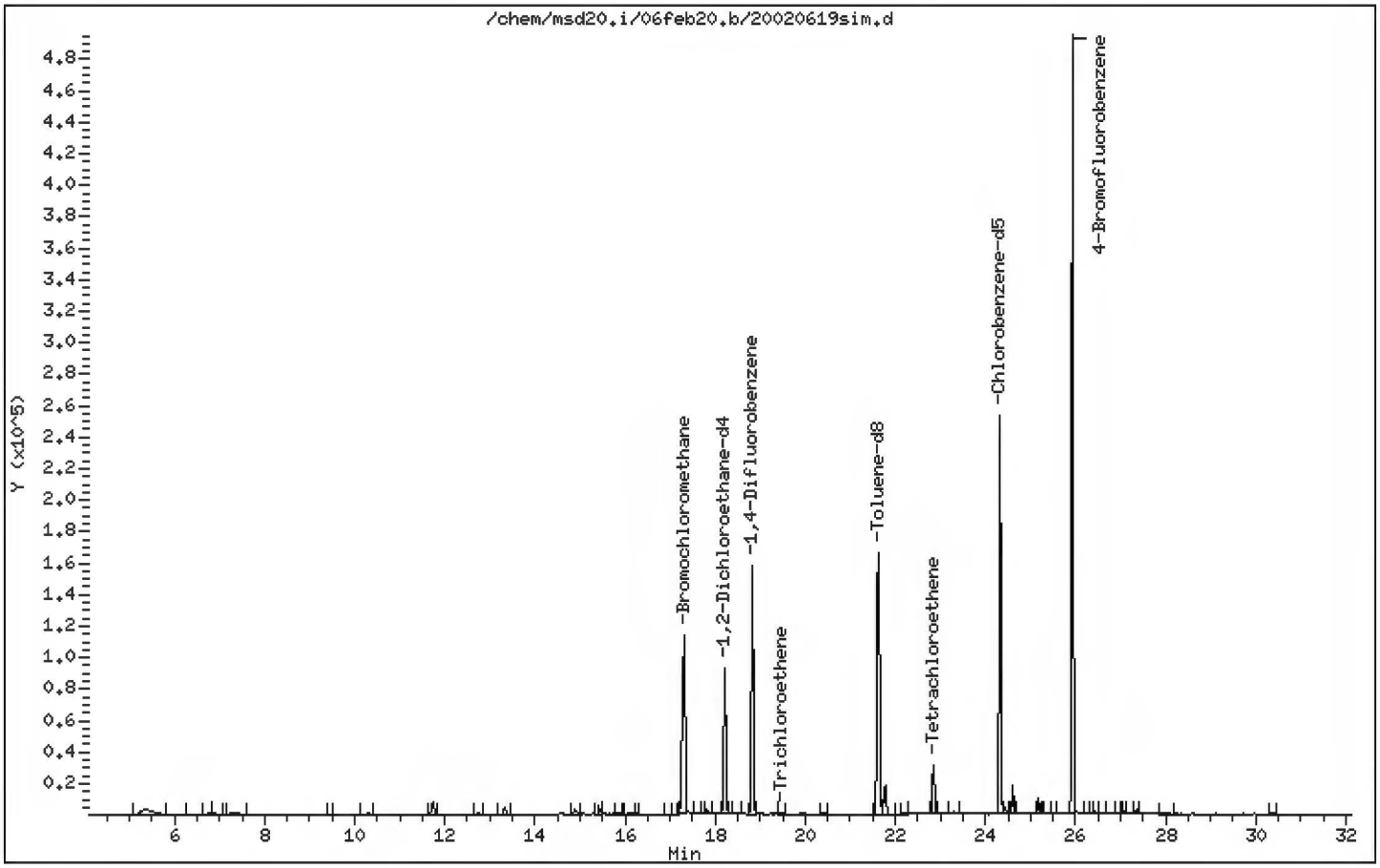
Instrument: msd20.i

Sample Info: 250mL #N4294

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020619sim.d

Date : 06-FEB-2020 22:14

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N4294

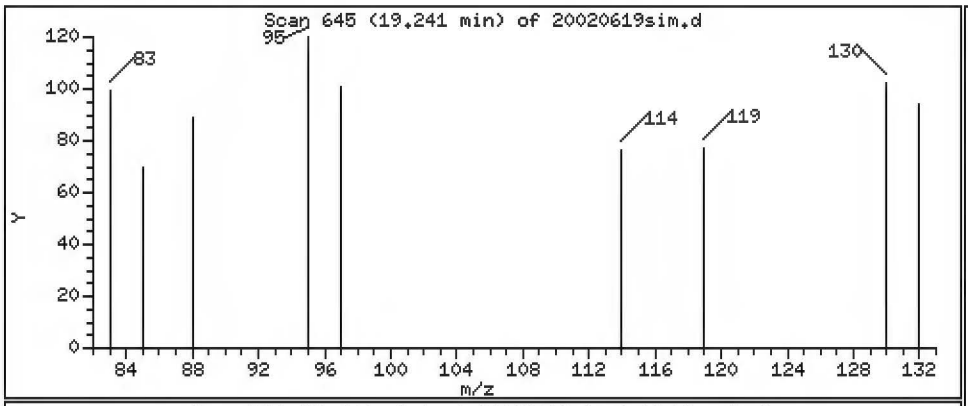
Operator: mb

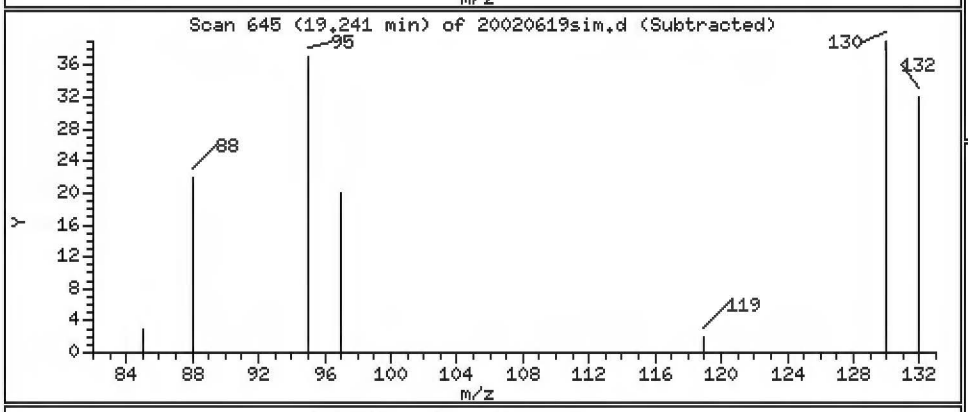
Column phase: RTX-624

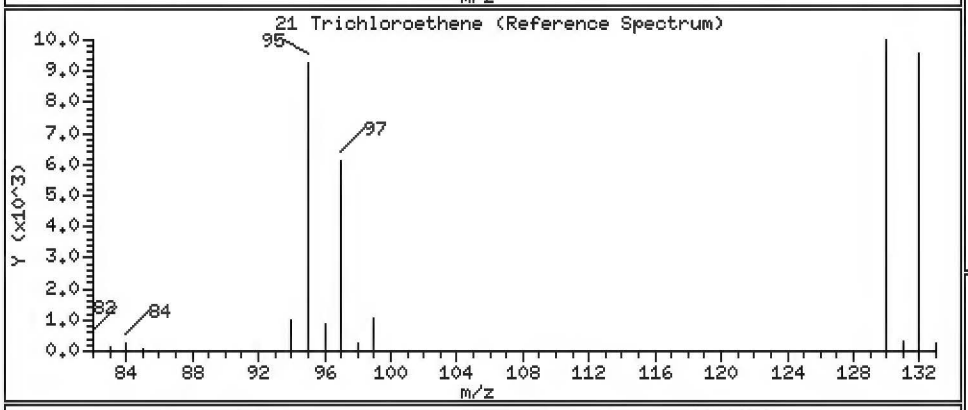
Column diameter: 0.32

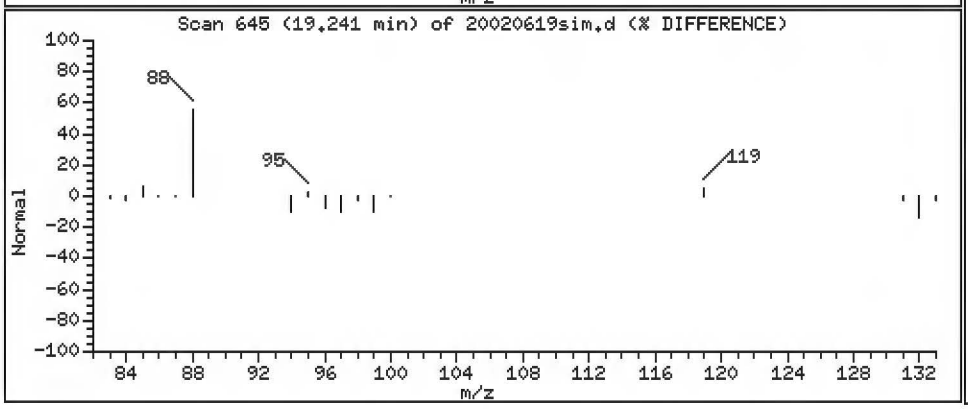
21 Trichloroethene

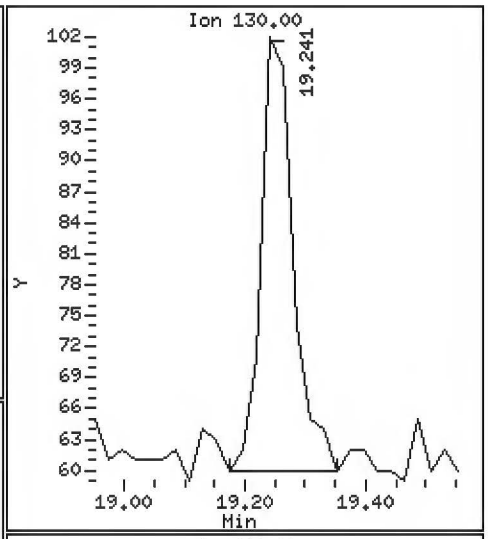
Concentration: 0.004022 PPBV

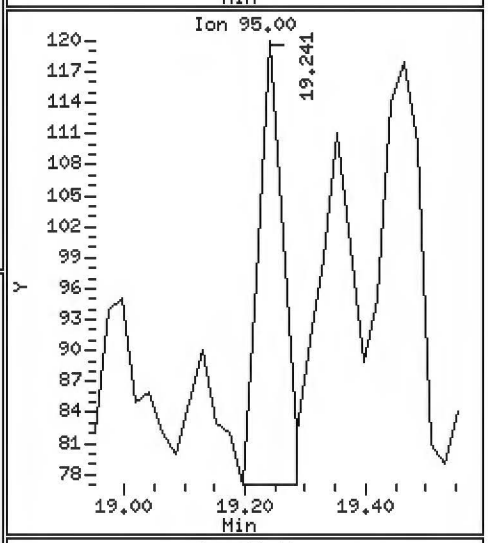


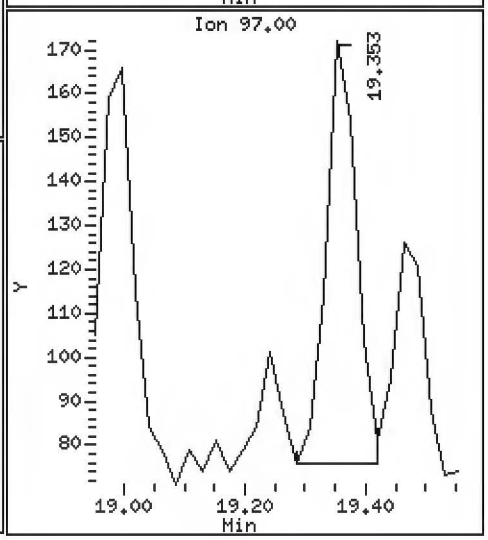












Data File: /chem/msd20.i/06feb20.b/20020619sim.d

Date : 06-FEB-2020 22:14

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N4294

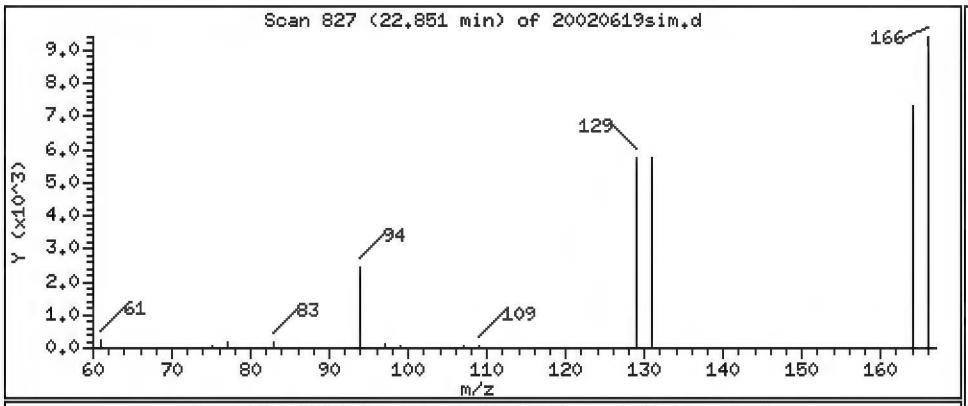
Operator: mb

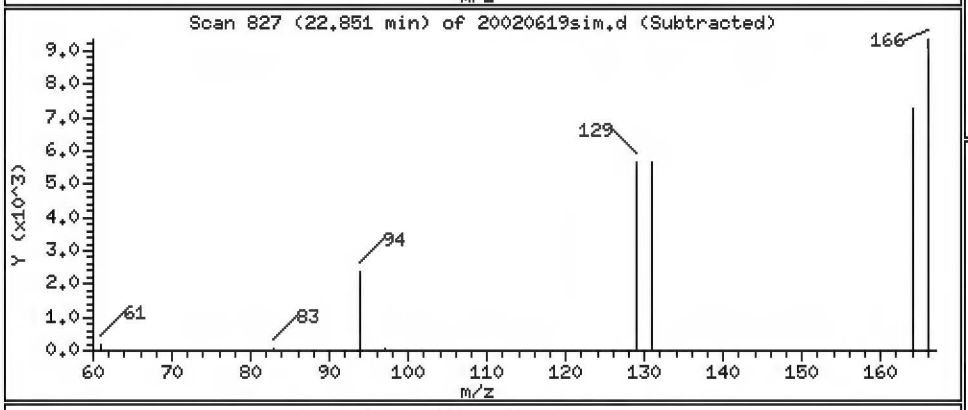
Column phase: RTX-624

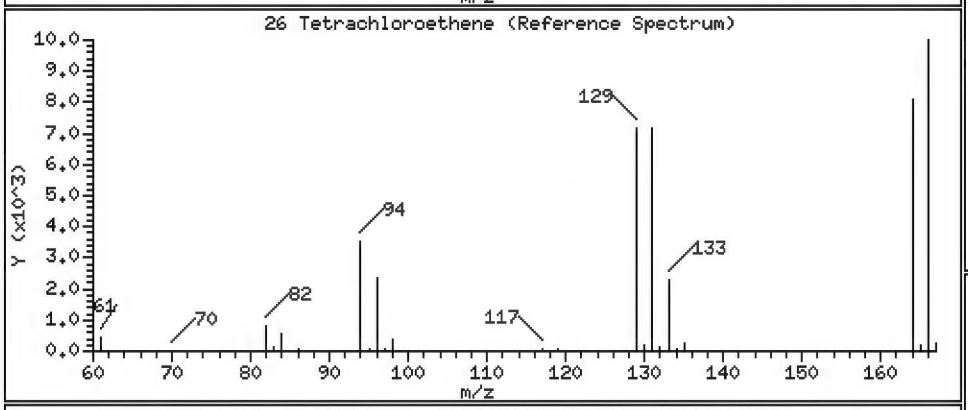
Column diameter: 0.32

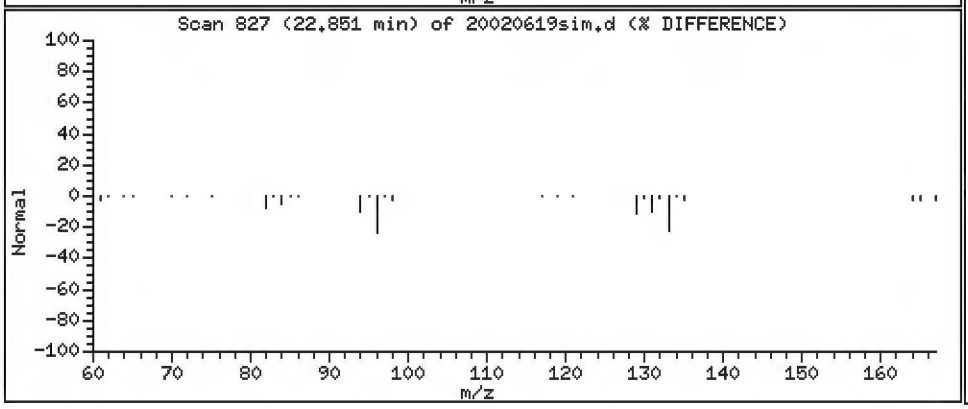
26 Tetrachloroethene

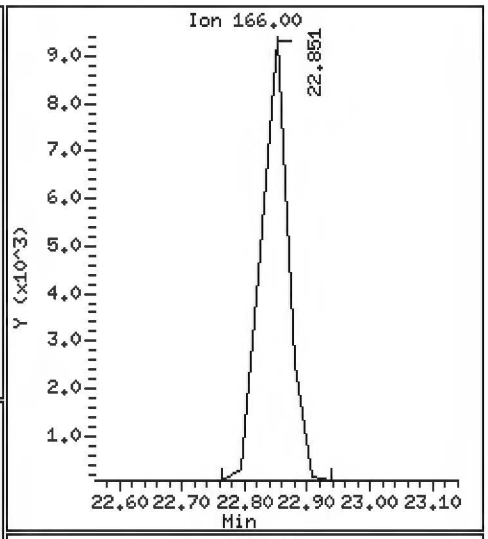
Concentration: 0.4474 PPBV

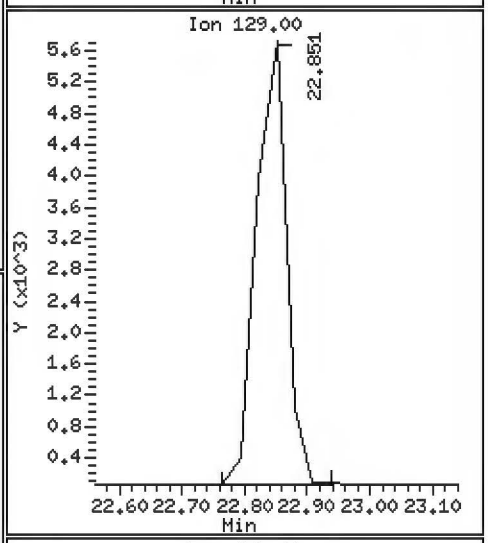


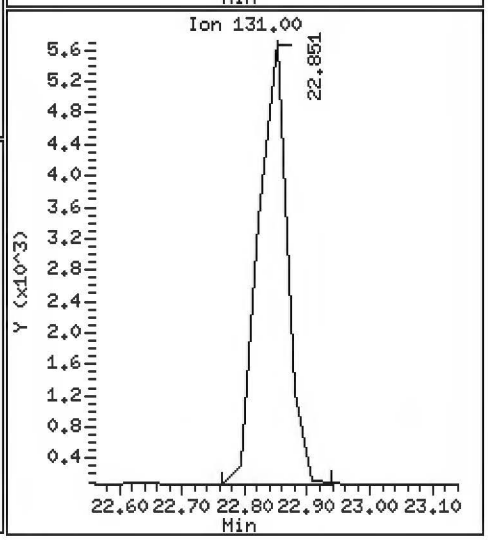












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASBKG-2-01292020		
Lab ID:	2001756-13A	**Date/Time Analyzed:**	2/6/20 10:53 PM
Date/Time Collected:	1/29/20 06:18 PM	**Dilution Factor:**	1.42
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020620sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.028	0.028	0.056	0.16
cis-1,2-Dichloroethene	156-59-2	0.017	0.056	0.11	Not Detected
Tetrachloroethene	127-18-4	0.018	0.096	0.19	0.27
trans-1,2-Dichloroethene	156-60-5	0.032	0.056	0.56	Not Detected
Trichloroethene	79-01-6	0.018	0.076	0.15	0.28
Vinyl Chloride	75-01-4	0.013	0.018	0.036	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	99

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020620sim.d
Lab Smp Id: 2001756-13A
Inj Date : 06-FEB-2020 22:53
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #33666
Misc Info : 4.5"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.42000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	150824	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	115362			46.79- 106.79	76.49
17.284	17.316 (1.000)	49	135886			67.00- 127.00	90.10
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	413512	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	57753			0.00- 44.17	13.97
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	415604	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	192236			16.60- 76.60	46.25
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	182449	5.13885	5.139	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	93197			26.62- 86.62	51.08
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	360485	4.93023	4.930	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	43069			0.00- 40.95	11.95

```
                                        CONCENTRATIONS
                                        ON-COL    FINAL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

$  22 Toluene-d8 (continued)
 21.624  21.624 (1.148)   100    226696                    34.26-  94.26    62.89
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    302223 4.71145    4.711  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    252174                   54.28- 114.28    83.44
 25.927  25.927 (1.066)   176    292117                   67.48- 127.48    96.66
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                            CAS #: 75-35-4
 13.329  13.331 (0.770)    98       596 0.02933  0.04165  80.00- 120.00   100.00
 13.329  13.328 (0.770)    61      1204                  194.63- 254.63   201.93
 13.329  13.328 (0.770)    96       901                  125.91- 185.91   151.09
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130      1986 0.03704  0.05260  80.00- 120.00   100.00
 19.241  19.245 (1.021)    95      1621                   56.54- 116.54    81.61
 19.241  19.245 (1.021)    97      1124                   26.43-  86.43    56.61
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166      2413 0.02782  0.03951  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129      1544                   34.72-  94.72    63.97
 22.851  22.851 (0.940)   131      1499                   33.00-  93.00    62.13
-------------------------------------------------------------------------------
```

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020620sim.d
Lab Smp Id: 2001756-13A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	150824	-17.75
20 1,4-Difluorobenze	549605	329763	769447	413512	-24.76
28 Chlorobenzene-d5	517348	310409	724287	415604	-19.67

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-13A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 4.5"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.139	102.78
$ 22 Toluene-d8	5.000	4.930	98.60
$ 33 4-Bromofluorobenzene	5.000	4.711	94.23

Data File: /chem/msd20.i/06feb20.b/20020620sim.d

Date : 06-FEB-2020 22:53

Client ID:

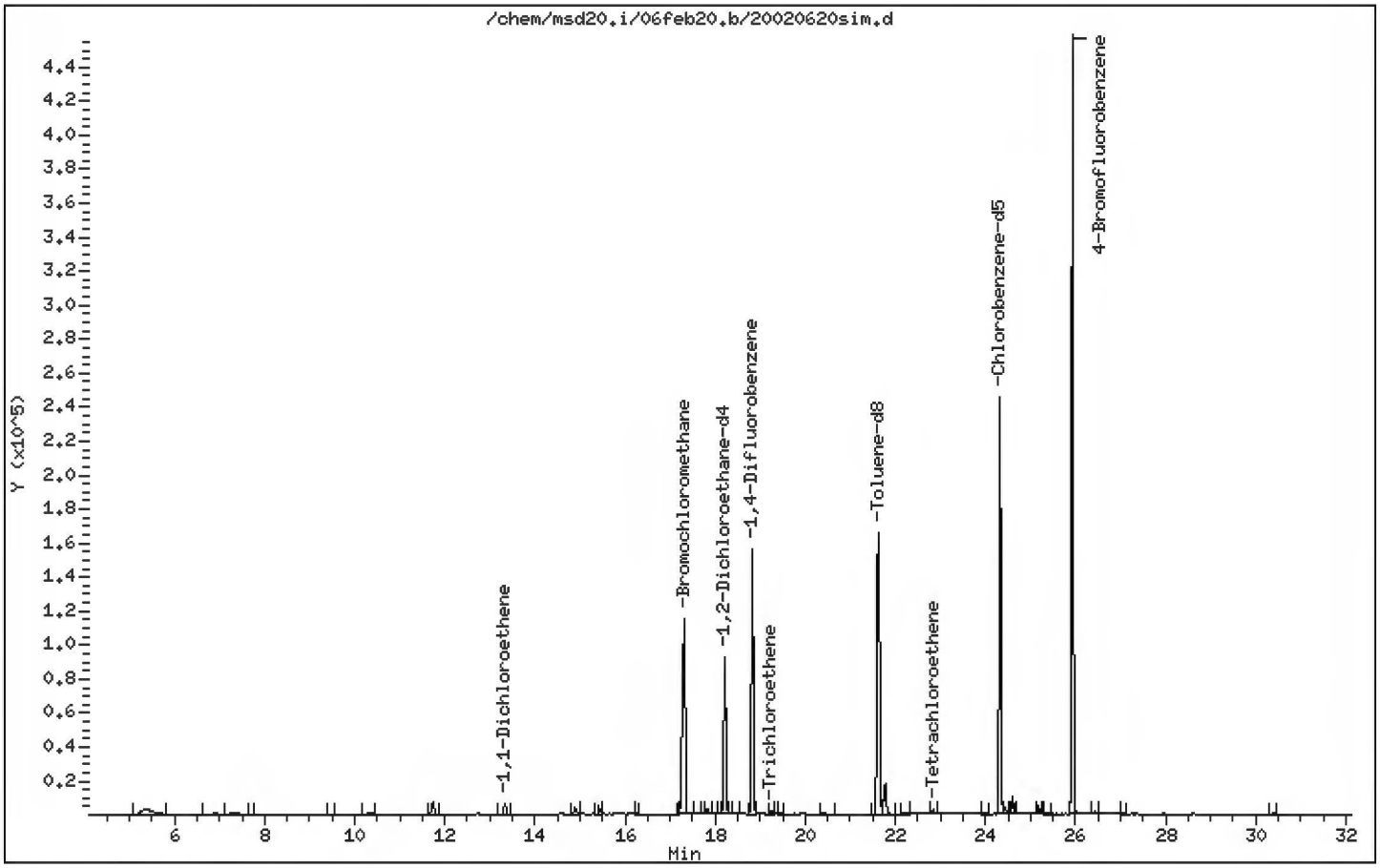
Instrument: msd20.i

Sample Info: 250mL #33666

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020620sim.d

Date : 06-FEB-2020 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL #33666

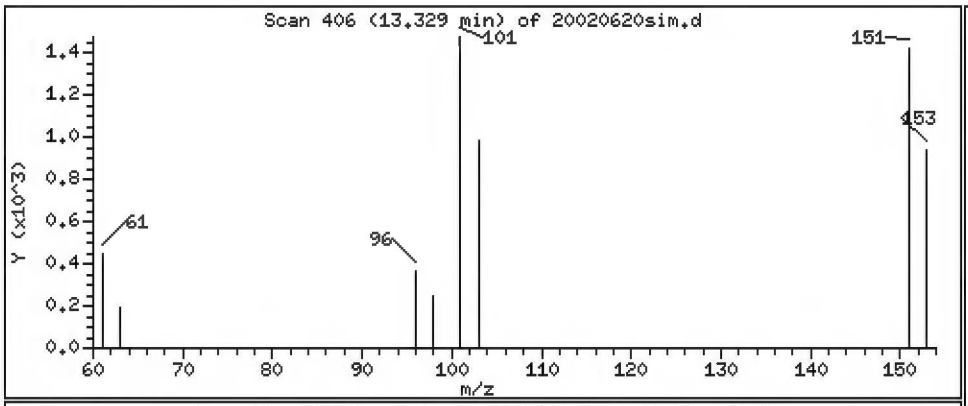
Operator: mb

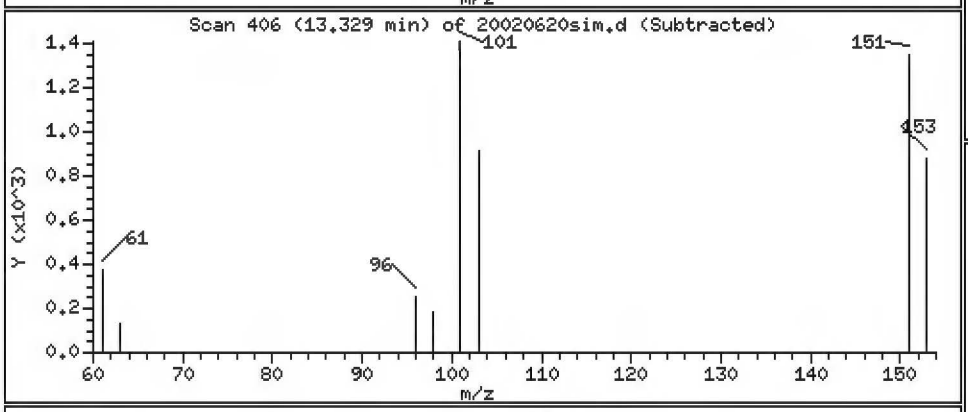
Column phase: RTX-624

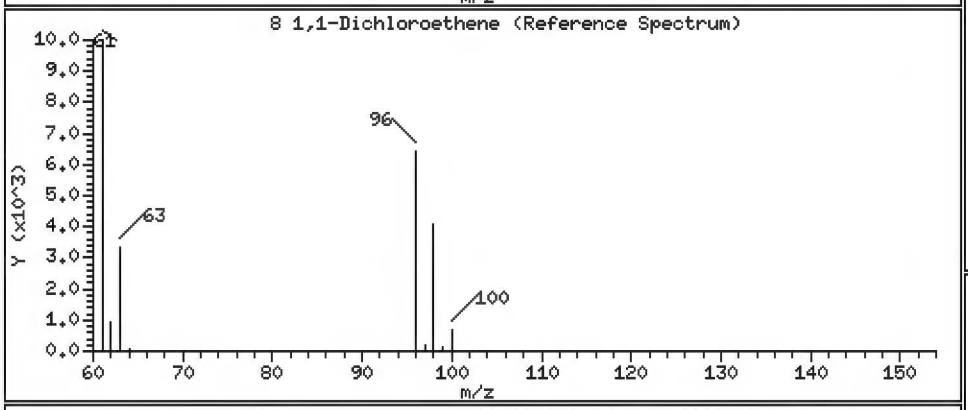
Column diameter: 0.32

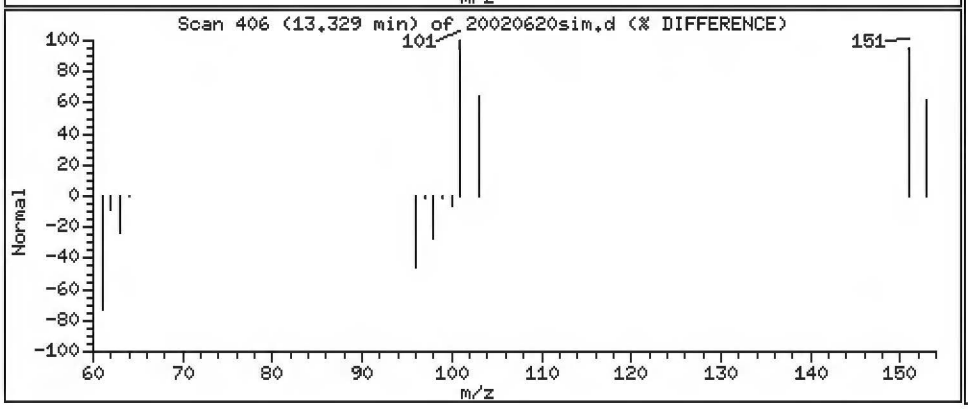
8 1,1-Dichloroethene

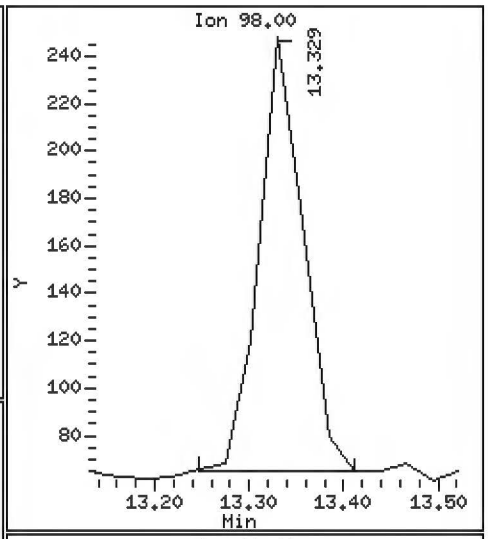
Concentration: 0.04165 PPBV

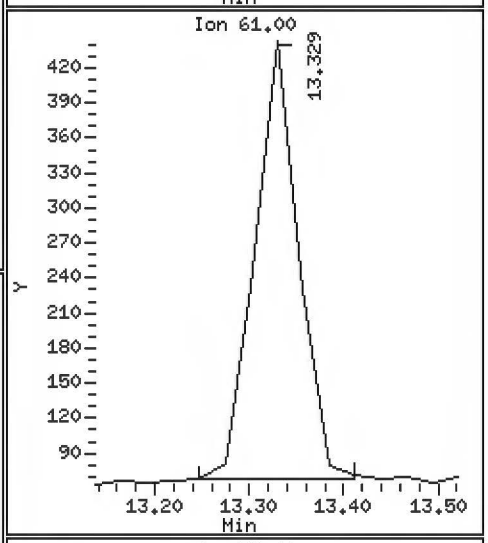


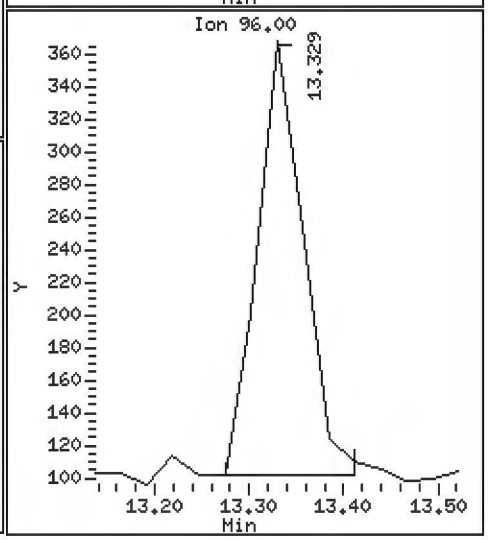












Data File: /chem/msd20.i/06feb20.b/20020620sim.d

Date : 06-FEB-2020 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL #33666

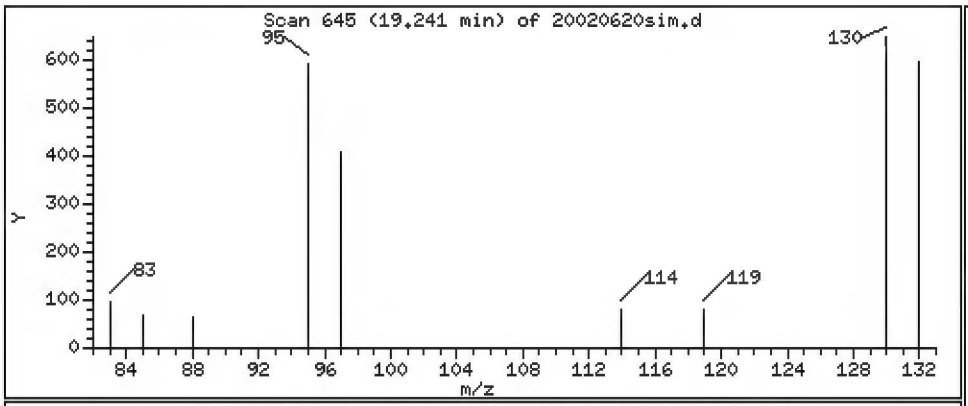
Operator: mb

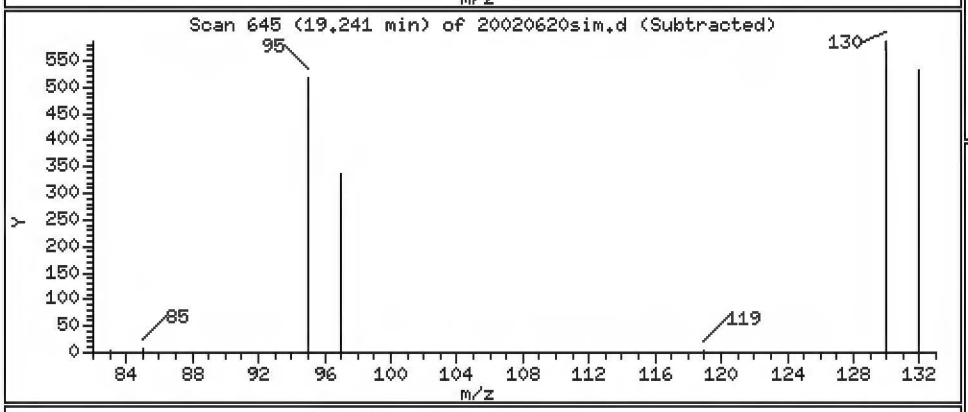
Column phase: RTX-624

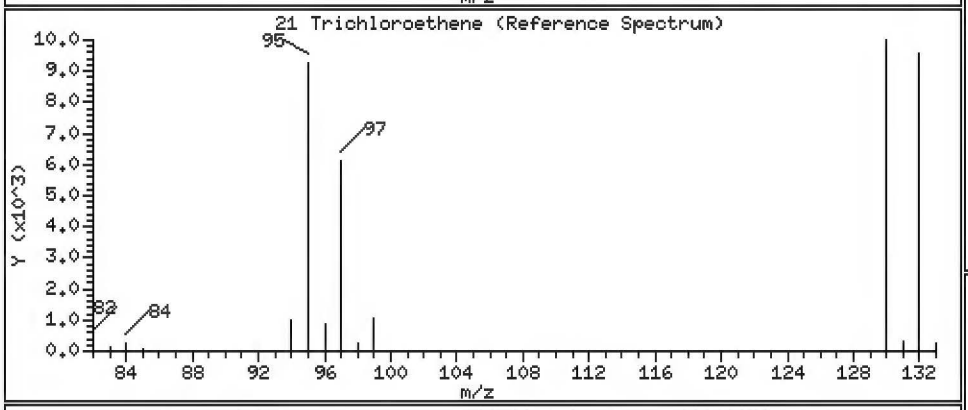
Column diameter: 0.32

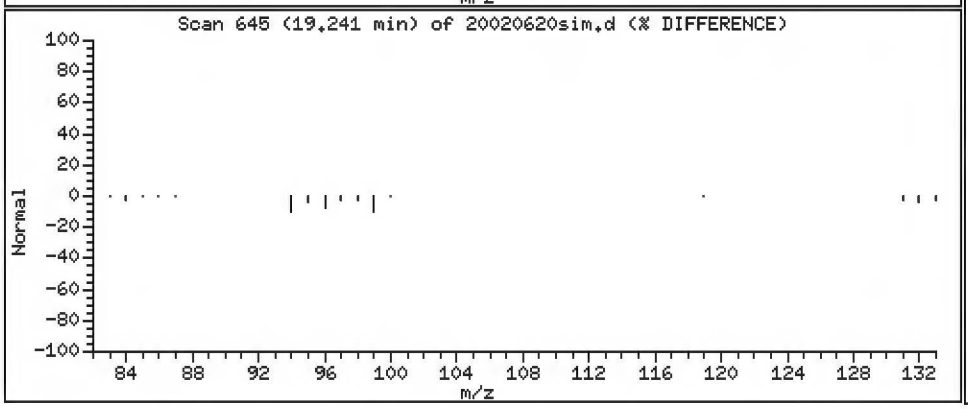
21 Trichloroethene

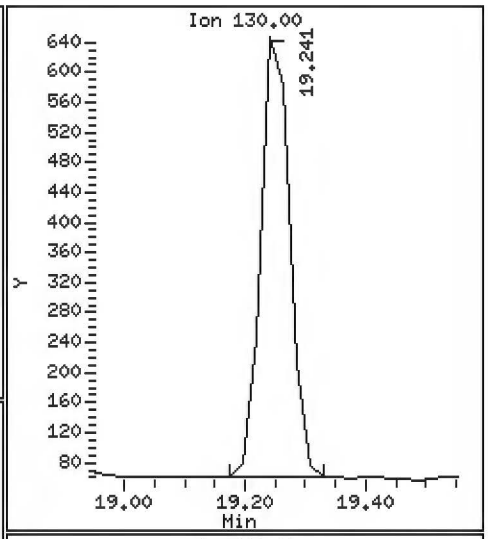
Concentration: 0.05260 PPBV

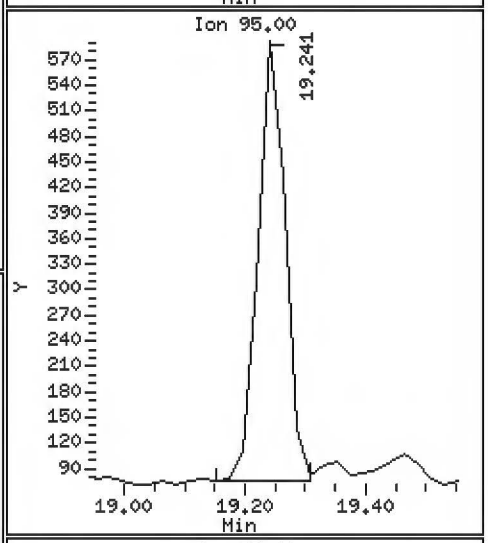


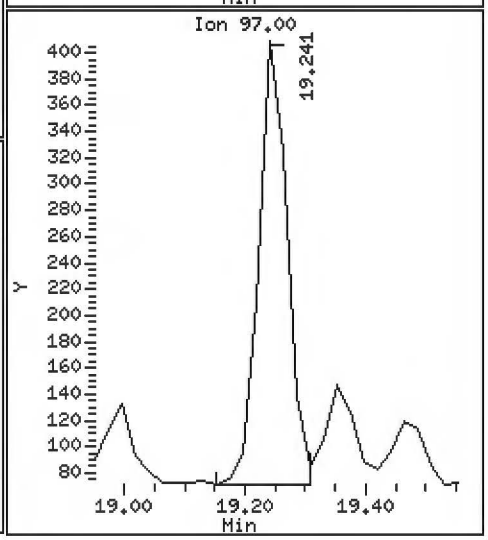












Data File: /chem/msd20.i/06feb20.b/20020620sim.d

Date : 06-FEB-2020 22:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL #33666

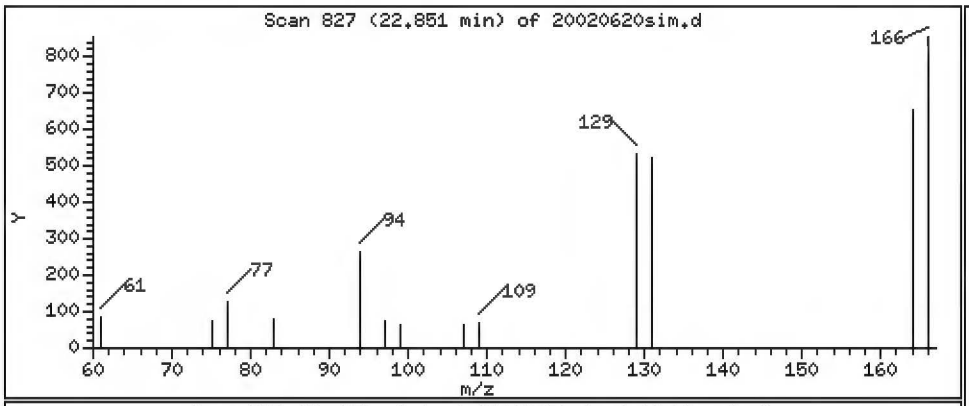
Operator: mb

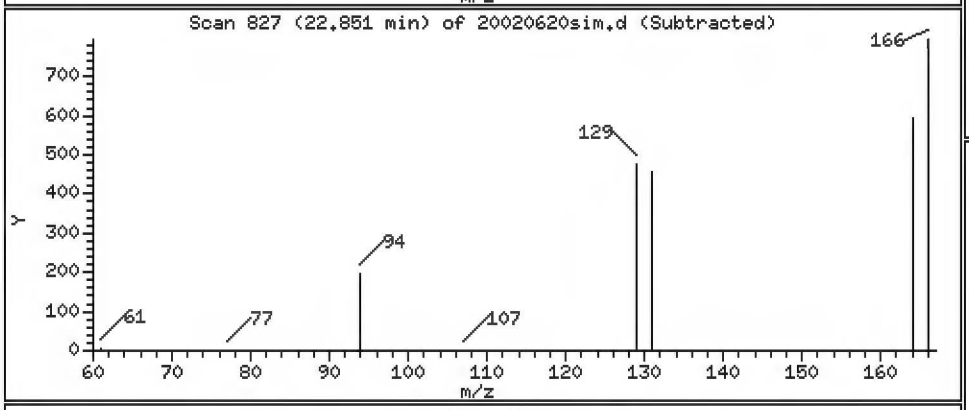
Column phase: RTX-624

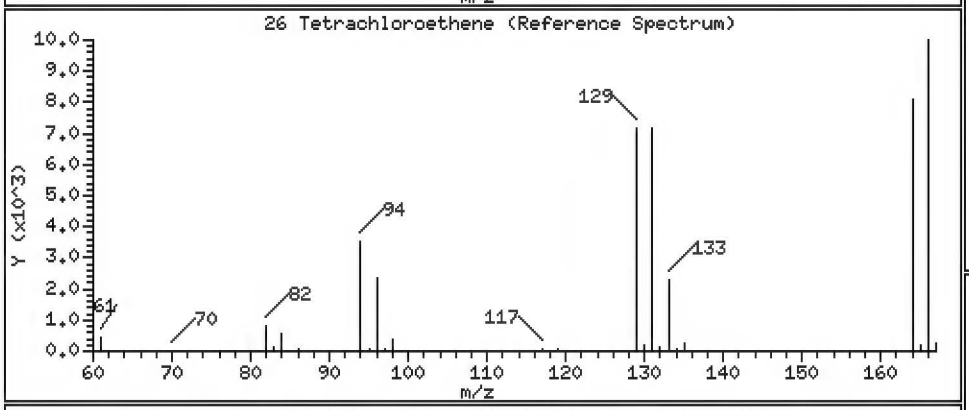
Column diameter: 0.32

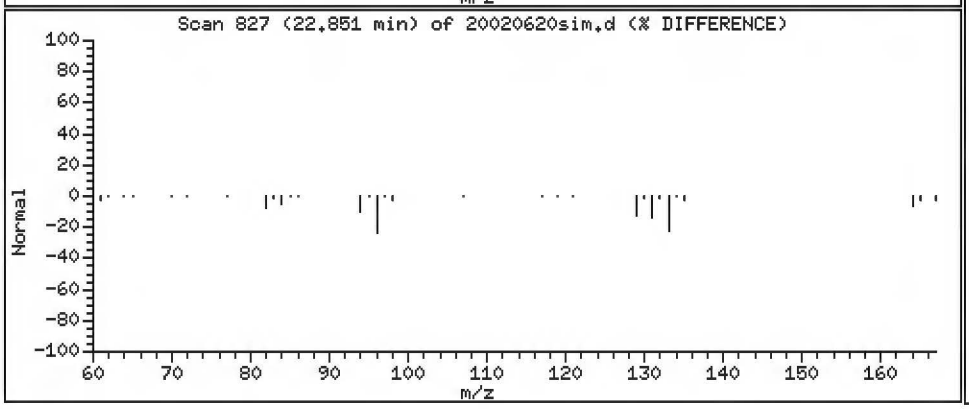
26 Tetrachloroethene

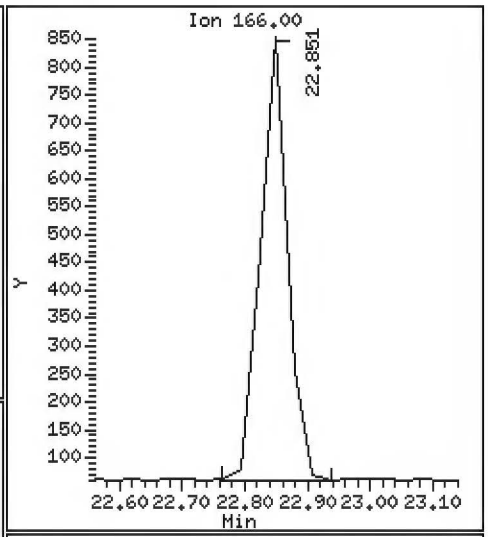
Concentration: 0.03951 PPBV

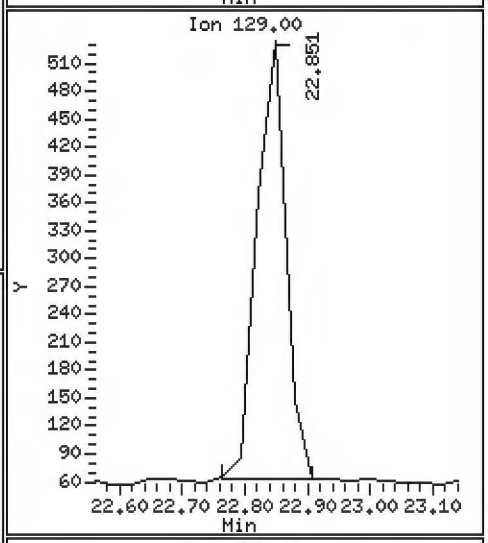


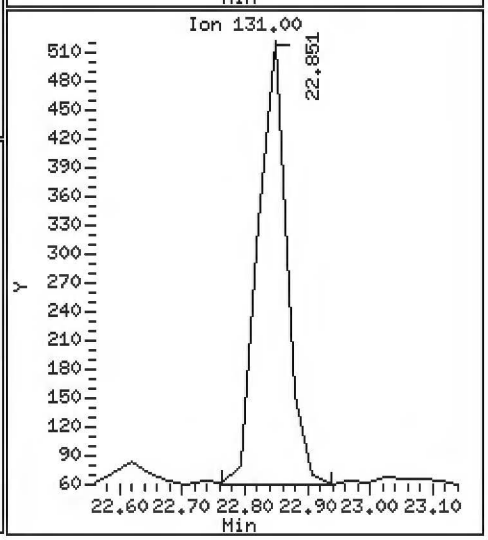












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASBKG-4-01292020		
Lab ID:	2001756-14A	**Date/Time Analyzed:**	2/6/20 11:53 PM
Date/Time Collected:	1/29/20 04:46 PM	**Dilution Factor:**	1.36
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020621sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.026	0.027	0.054	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.016	0.054	0.11	Not Detected
Tetrachloroethene	127-18-4	0.017	0.092	0.18	0.079 J
trans-1,2-Dichloroethene	156-60-5	0.031	0.054	0.54	Not Detected
Trichloroethene	79-01-6	0.018	0.073	0.15	Not Detected
Vinyl Chloride	75-01-4	0.013	0.017	0.035	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	94
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020621sim.d
Lab Smp Id: 2001756-14A
Inj Date : 06-FEB-2020 23:53
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #N2789
Misc Info : 3.5"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.36000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	143057	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	109875			46.79- 106.79	76.81
17.283	17.316 (1.000)	49	127255			67.00- 127.00	88.95
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	387352	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	53983			0.00- 44.17	13.94
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	393193	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	178933			16.60- 76.60	45.51
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.207	18.227 (1.051)	65	172867	5.13330	5.133	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	88063			26.62- 86.62	50.94
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	336641	4.91505	4.915	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	39932			0.00- 40.95	11.86

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.624	21.624	(1.148)	100	211116			34.26- 94.26	62.71
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.927	25.927	(1.066)	174	284954	4.69544	4.695	80.00- 120.00	100.00
25.927	25.927	(1.066)	95	236607			54.28- 114.28	83.03
25.927	25.927	(1.066)	176	276381			67.48- 127.48	96.99
26 Tetrachloroethene						CAS #: 127-18-4		
22.851	22.851	(0.940)	166	705	0.00860	0.01170	80.00- 120.00	100.00(a)
22.851	22.851	(0.940)	129	484			34.72- 94.72	68.64
22.851	22.851	(0.940)	131	465			33.00- 93.00	65.92

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020621sim.d
Lab Smp Id: 2001756-14A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 3.5"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	143057	-21.99
20 1,4-Difluorobenze	549605	329763	769447	387352	-29.52
28 Chlorobenzene-d5	517348	310409	724287	393193	-24.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-14A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 3.5"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.133	102.67
$ 22 Toluene-d8	5.000	4.915	98.30
$ 33 4-Bromofluorobenzene	5.000	4.695	93.91

Data File: /chem/msd20.i/06feb20.b/20020621sim.d

Date : 06-FEB-2020 23:53

Client ID:

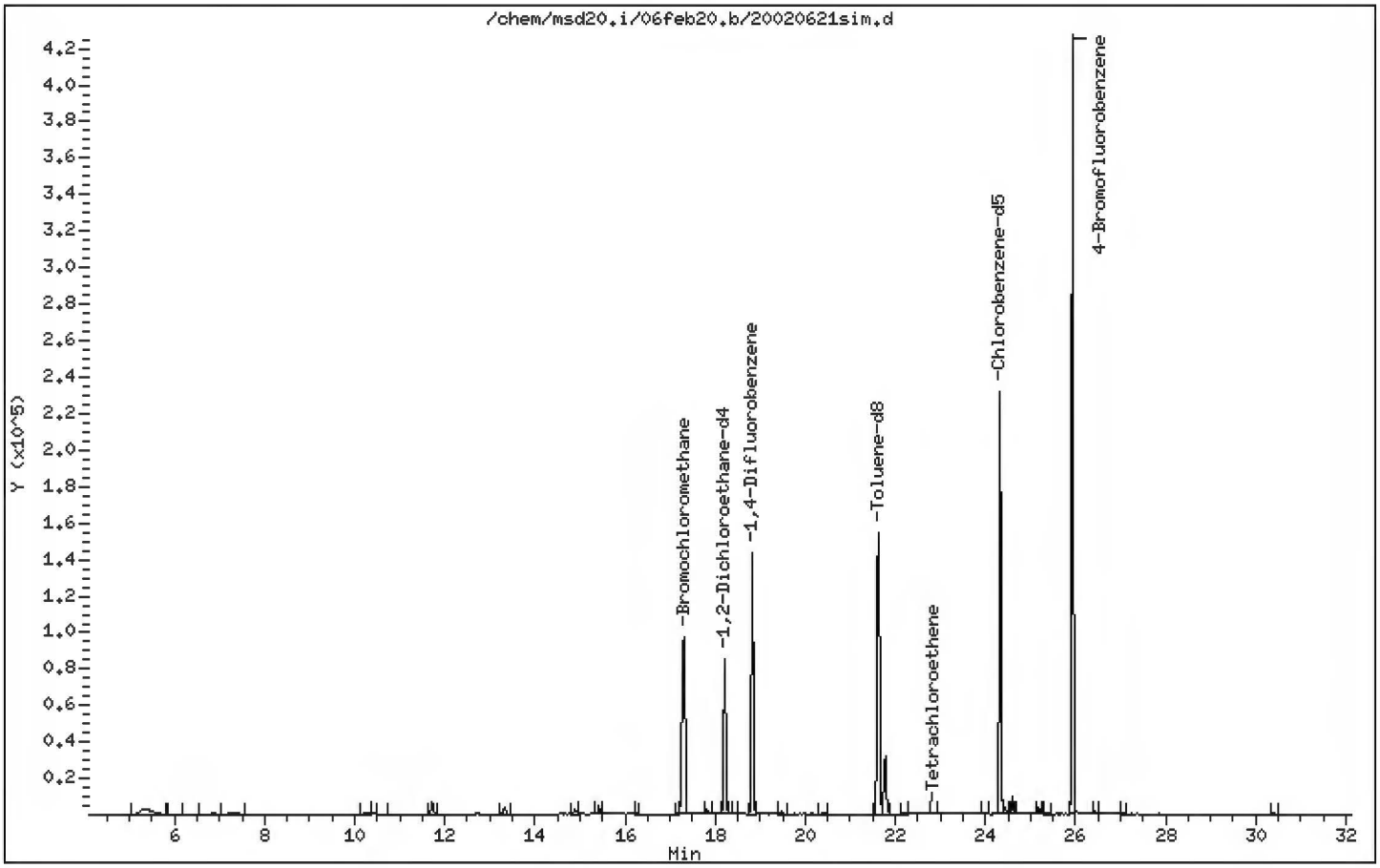
Instrument: msd20.i

Sample Info: 250mL #N2789

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020621sim.d

Date : 06-FEB-2020 23:53

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N2789

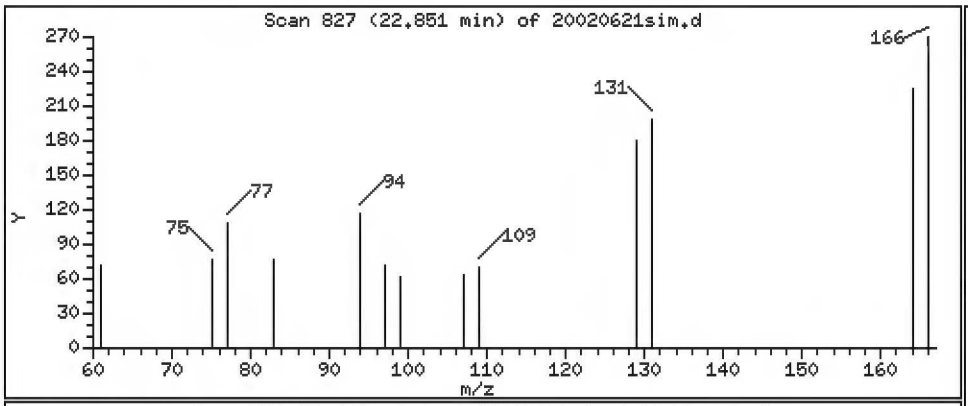
Operator: mb

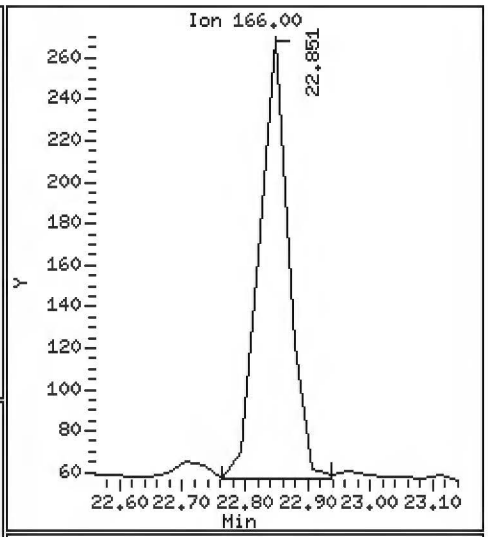
Column phase: RTX-624

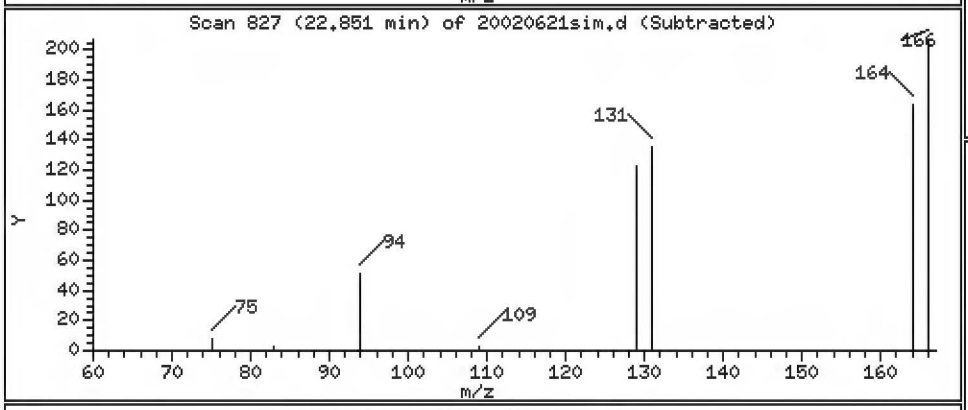
Column diameter: 0.32

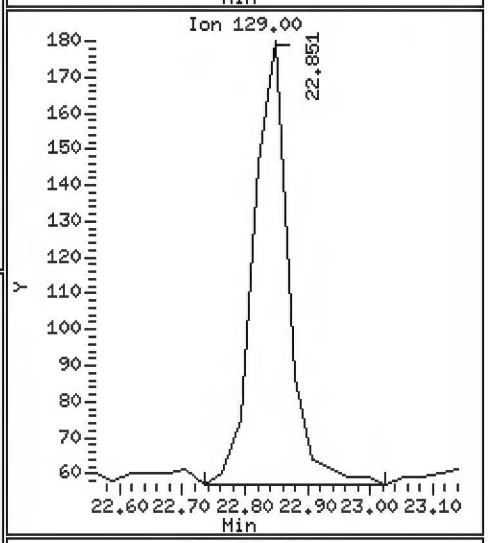
26 Tetrachloroethene

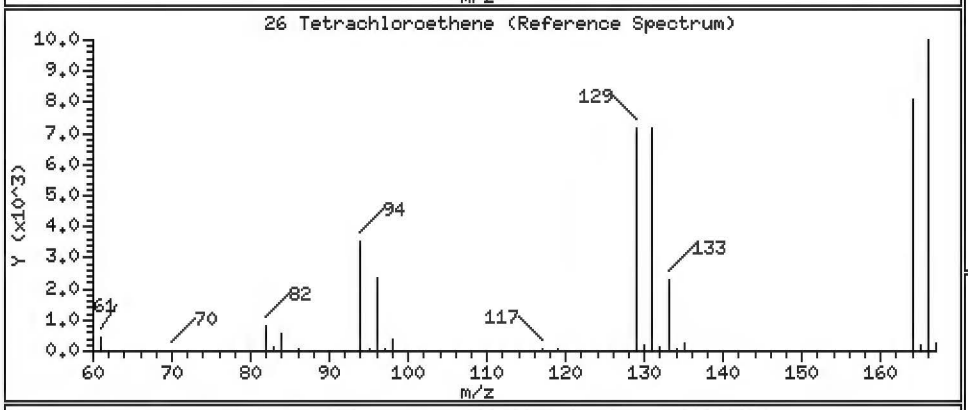
Concentration: 0.01170 PPBV

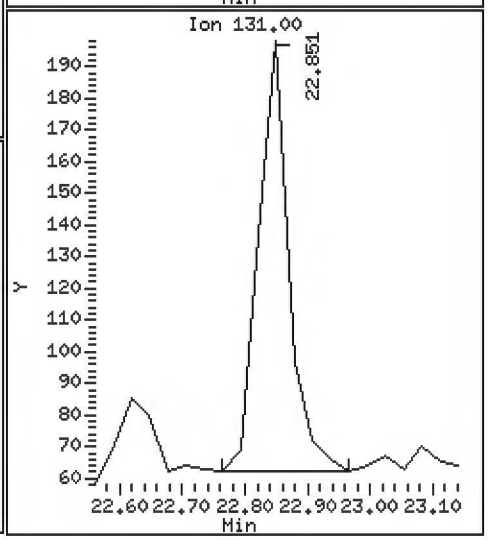


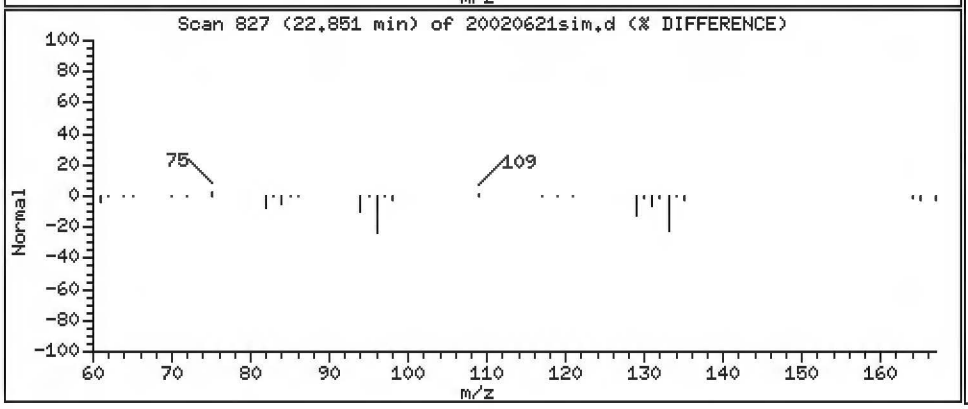












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	ASI-104-01292020		
Lab ID:	2001756-15A	**Date/Time Analyzed:**	2/7/20 12:32 AM
Date/Time Collected:	1/29/20 06:03 PM	**Dilution Factor:**	1.44
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020622sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.028	0.028	0.057	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.017	0.057	0.11	0.035 J
Tetrachloroethene	127-18-4	0.018	0.098	0.20	4.6
trans-1,2-Dichloroethene	156-60-5	0.033	0.057	0.57	Not Detected
Trichloroethene	79-01-6	0.018	0.077	0.15	0.034 J
Vinyl Chloride	75-01-4	0.013	0.018	0.037	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020622sim.d
Lab Smp Id: 2001756-15A
Inj Date : 07-FEB-2020 00:32
Operator : mb Inst ID: msd20.i
Smp Info : 250mL #O0455
Misc Info : 5.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.44000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	145059	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	111334			46.79- 106.79	76.75
17.284	17.316 (1.000)	49	129087			67.00- 127.00	88.99
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.840	18.839 (1.000)	114	407459	5.00000		80.00- 120.00	100.00
18.840	18.839 (1.000)	88	57048			0.00- 44.17	14.00
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	432423	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	199111			16.60- 76.60	46.05
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	174291	5.10420	5.104	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	88363			26.62- 86.62	50.70
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	355082	4.92848	4.928	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	42498			0.00- 40.95	11.97

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.624	21.624	(1.148)	100	222974			34.26- 94.26	62.79
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.927	25.927	(1.066)	174	321690	4.81987	4.820	80.00- 120.00	100.00
25.927	25.927	(1.066)	95	266665			54.28- 114.28	82.90
25.927	25.927	(1.066)	176	312323			67.48- 127.48	97.09
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
16.917	16.916	(0.977)	98	139	0.00616	0.008870	80.00- 120.00	100.00(a)
16.979	16.916	(0.981)	61	3543			144.59- 204.59	2543.88
16.917	16.916	(0.977)	96	181			124.96- 184.96	130.35
21 Trichloroethene						CAS #: 79-01-6		
19.241	19.245	(1.021)	130	228	0.00433	0.006237	80.00- 120.00	100.00(a)
19.241	19.245	(1.021)	95	230			56.54- 116.54	100.59
19.241	19.245	(1.021)	97	148			26.43- 86.43	64.92
26 Tetrachloroethene						CAS #: 127-18-4		
22.851	22.851	(0.940)	166	42651	0.47251	0.6804	80.00- 120.00	100.00
22.851	22.851	(0.940)	129	27659			34.72- 94.72	64.85
22.851	22.851	(0.940)	131	26882			33.00- 93.00	63.03

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020622sim.d
Lab Smp Id: 2001756-15A
Analysis Type: VOA
Quant Type: ISTD
Operator: mb
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	145059	-20.90
20 1,4-Difluorobenze	549605	329763	769447	407459	-25.86
28 Chlorobenzene-d5	517348	310409	724287	432423	-16.42

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-15A
Level: LOW Operator: mb
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.104	102.08
$ 22 Toluene-d8	5.000	4.928	98.57
$ 33 4-Bromofluorobenzene	5.000	4.820	96.40

Data File: /chem/msd20.i/06feb20.b/20020622sim.d

Date : 07-FEB-2020 00:32

Client ID:

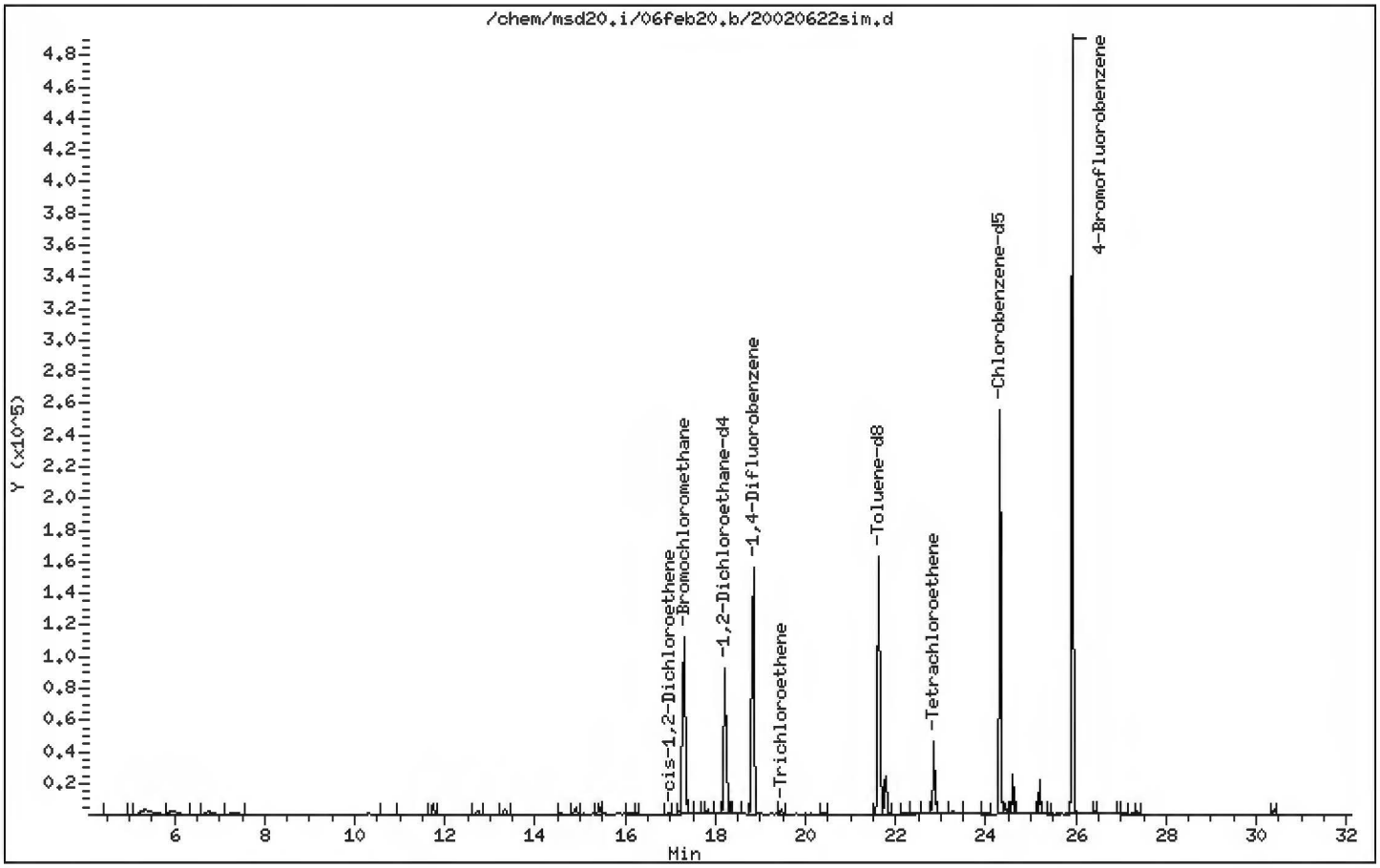
Instrument: msd20.i

Sample Info: 250mL #00455

Operator: mb

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020622sim.d

Date : 07-FEB-2020 00:32

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00455

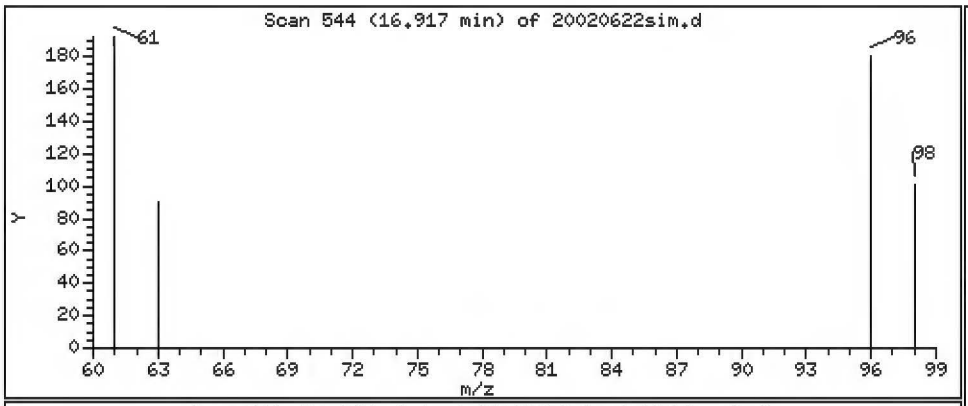
Operator: mb

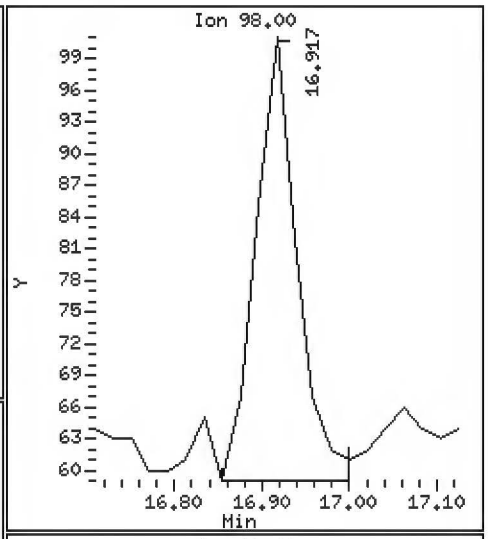
Column phase: RTX-624

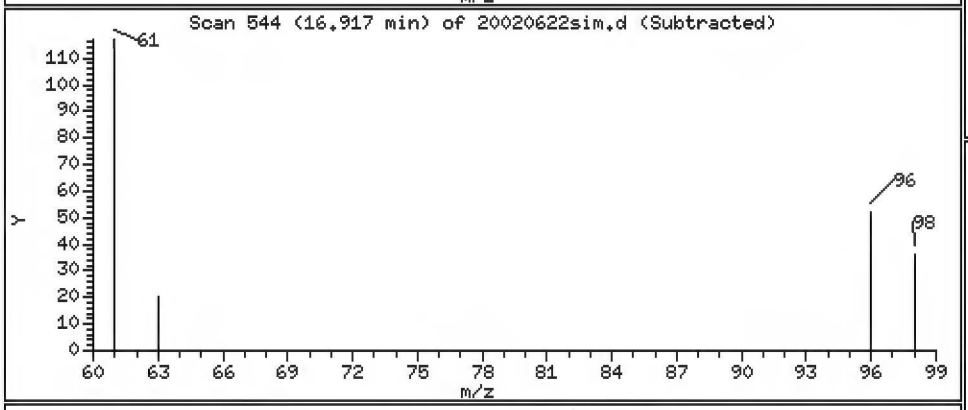
Column diameter: 0.32

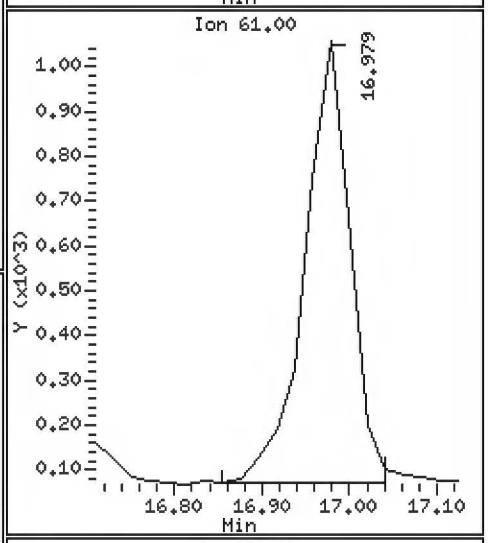
12 cis-1,2-Dichloroethene

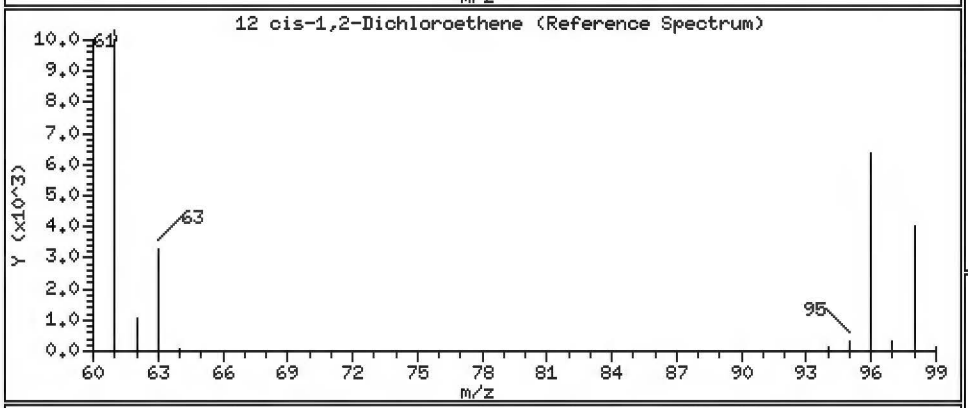
Concentration: 0.008870 PPBV

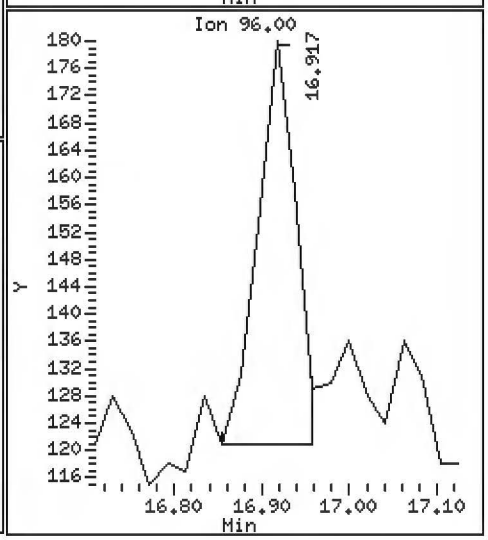


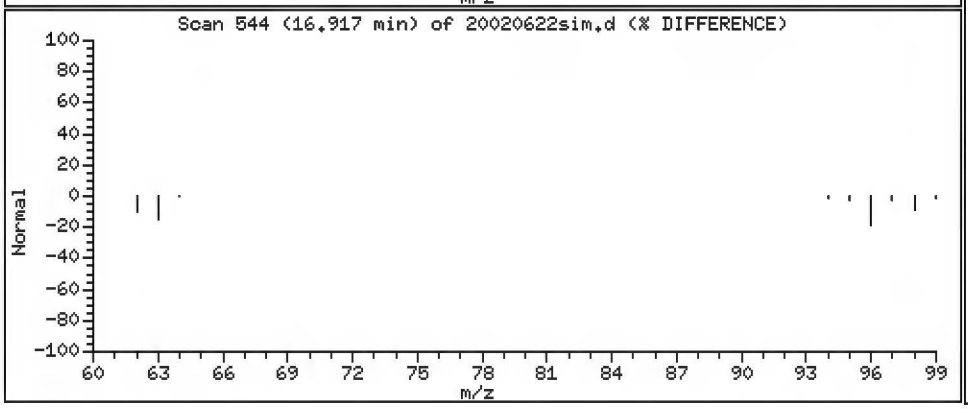












Data File: /chem/msd20.i/06feb20.b/20020622sim.d

Date : 07-FEB-2020 00:32

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00455

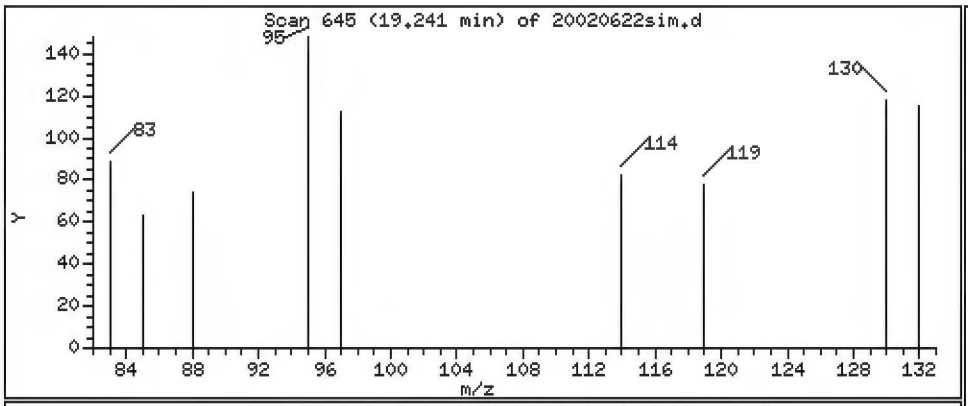
Operator: mb

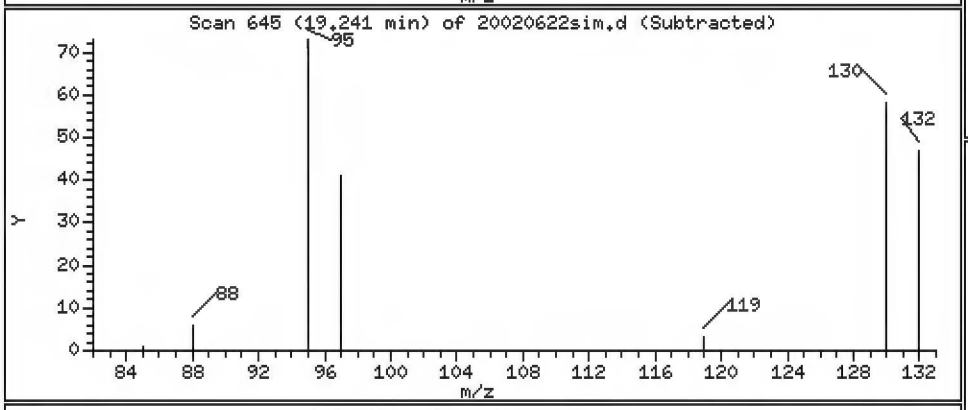
Column phase: RTX-624

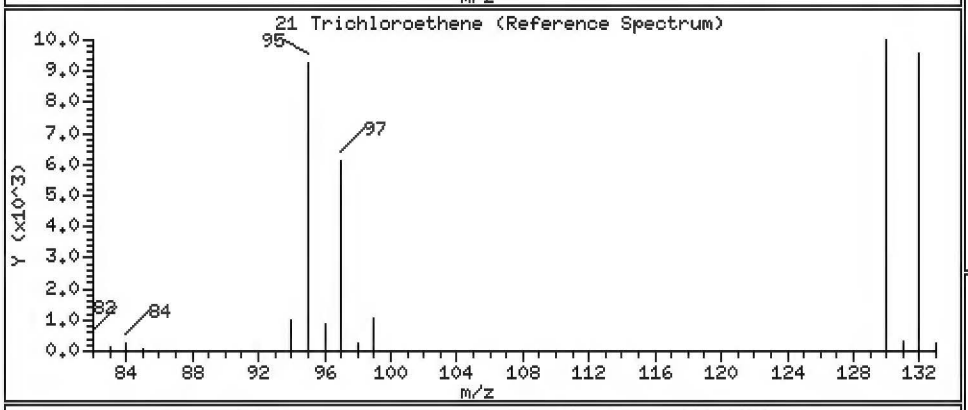
Column diameter: 0.32

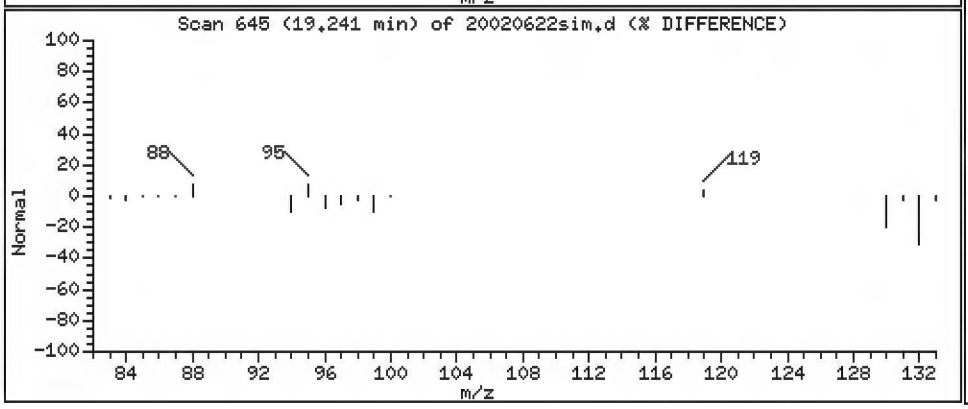
21 Trichloroethene

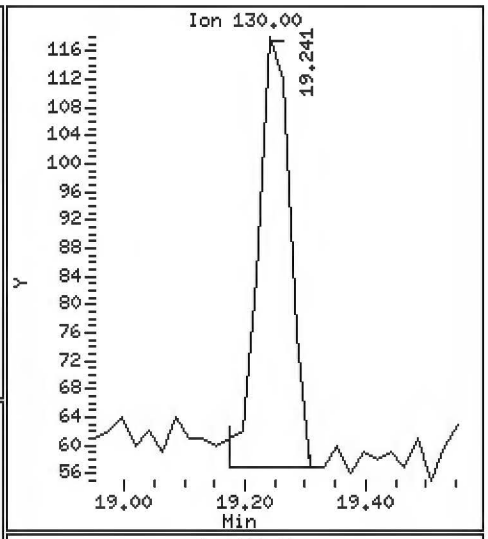
Concentration: 0.006237 PPBV

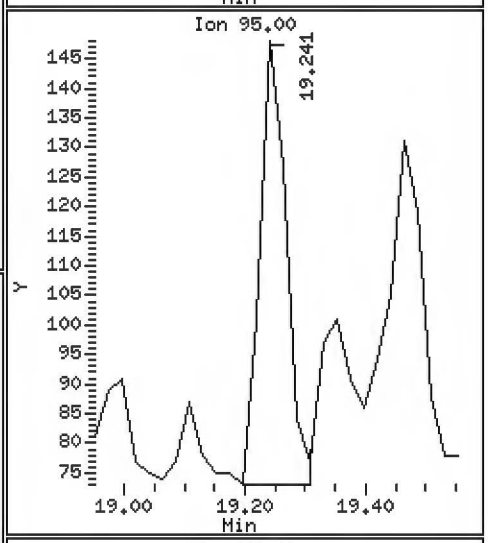


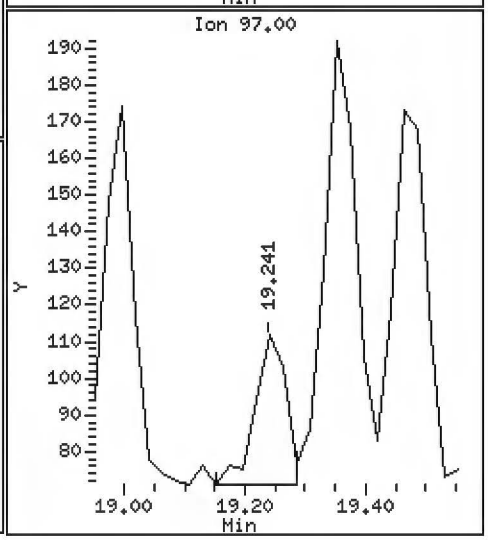












Data File: /chem/msd20.i/06feb20.b/20020622sim.d

Date : 07-FEB-2020 00:32

Client ID:

Instrument: msd20.i

Sample Info: 250mL #00455

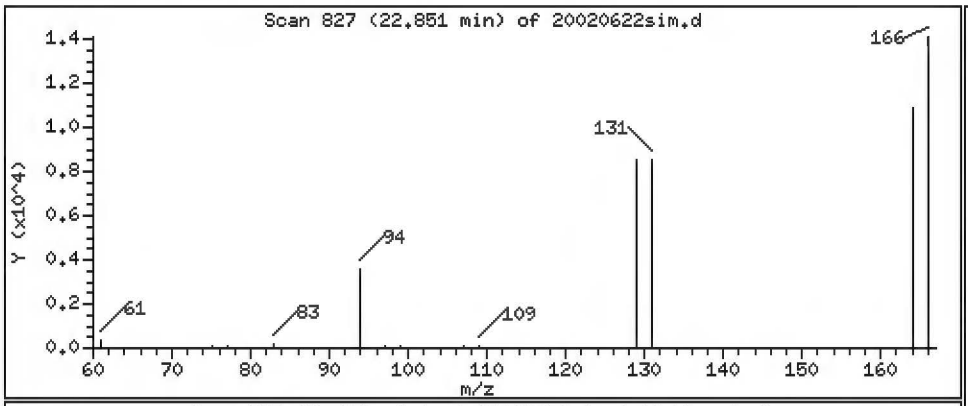
Operator: mb

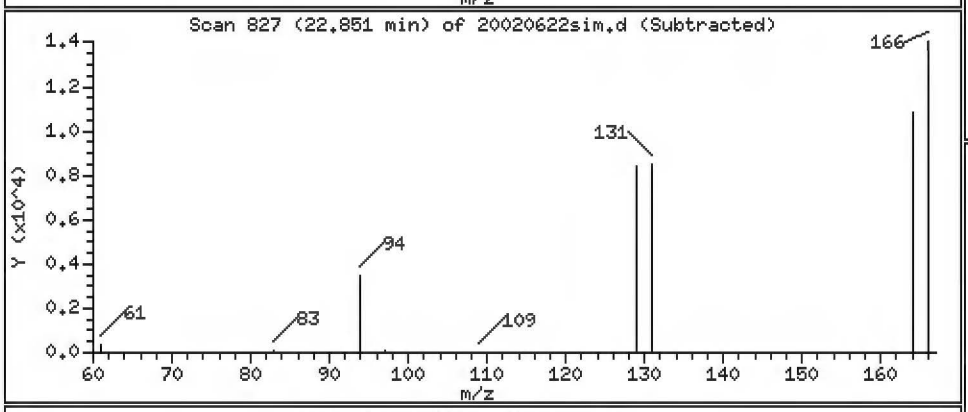
Column phase: RTX-624

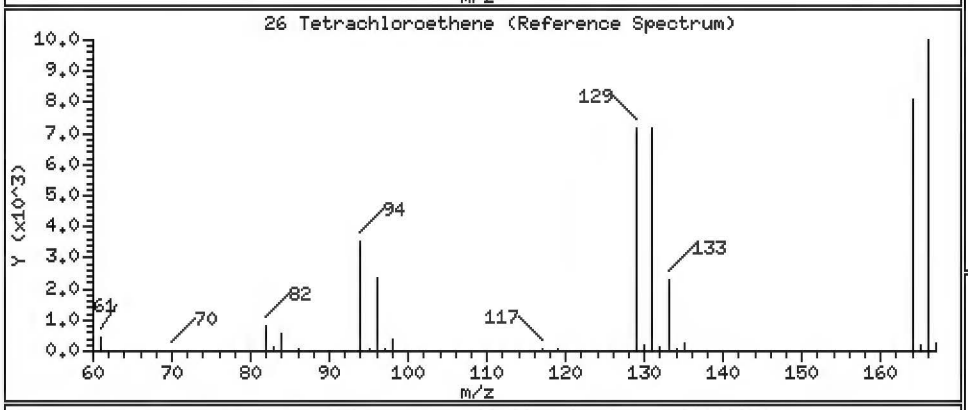
Column diameter: 0.32

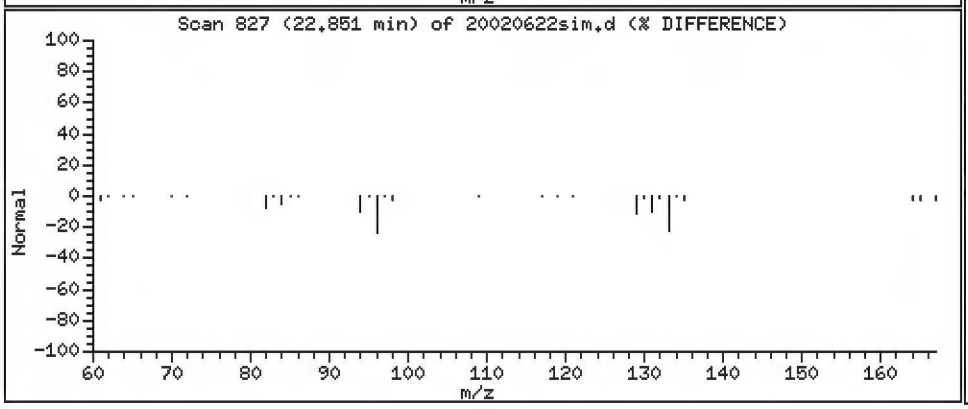
26 Tetrachloroethene

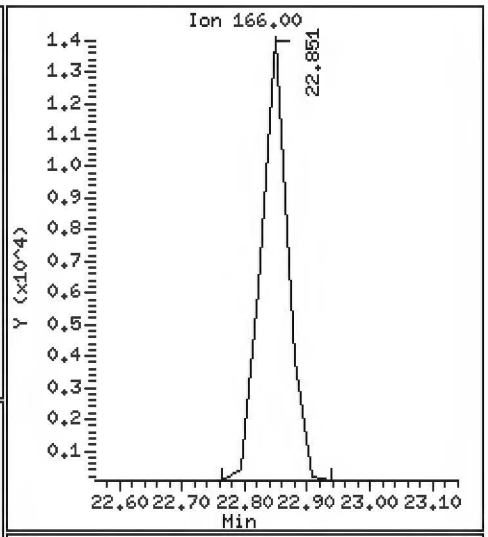
Concentration: 0.6804 PPBV

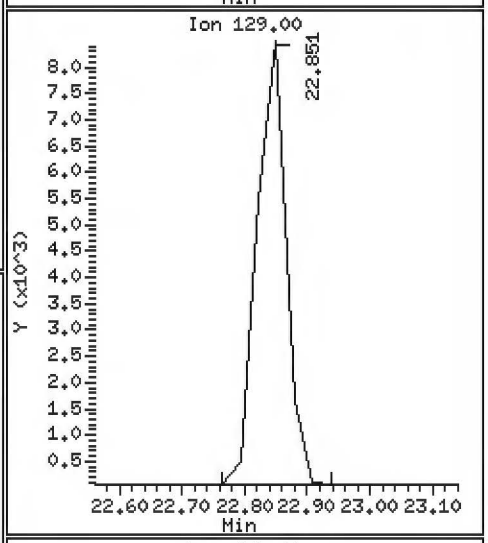


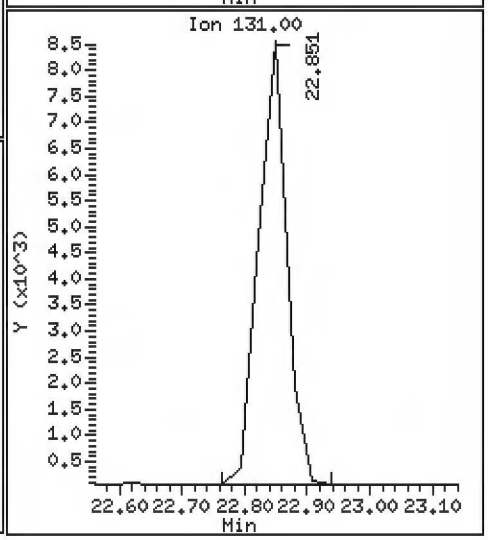












MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

eurofins | Air Toxics

Client ID:	ASI-103-01292020		
Lab ID:	2001756-16A	**Date/Time Analyzed:**	2/7/20 05:31 AM
Date/Time Collected:	1/29/20 06:08 PM	**Dilution Factor:**	1.29
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd20.i / 20020623sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.025	0.026	0.051	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.016	0.051	0.10	0.031 J
Tetrachloroethene	127-18-4	0.016	0.088	0.18	2.5
trans-1,2-Dichloroethene	156-60-5	0.029	0.051	0.51	Not Detected
Trichloroethene	79-01-6	0.017	0.069	0.14	0.031 J
Vinyl Chloride	75-01-4	0.012	0.016	0.033	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020623sim.d
Lab Smp Id: 2001756-16A
Inj Date : 07-FEB-2020 05:31
Operator : act Inst ID: msd20.i
Smp Info : 250mL #N2411
Misc Info : 2.0"Hg->3psi
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1
Dil Factor: 1.29000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.313	17.316 (1.000)	130	151756	5.00000		80.00- 120.00	100.00
17.313	17.316 (1.000)	128	116399			46.79- 106.79	76.70
17.280	17.316 (1.000)	49	135714			67.00- 127.00	89.43
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	416935	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	58543			0.00- 44.17	14.04
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	442051	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	203331			16.60- 76.60	46.00
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	179884	5.03550	5.036	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	91439			26.62- 86.62	50.83
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	360506	4.89003	4.890	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	43310			0.00- 40.95	12.01

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)								
21.624	21.624	(1.148)	100	227085			34.26- 94.26	62.99
$ 33 4-Bromofluorobenzene						CAS #: 460-00-4		
25.927	25.927	(1.066)	174	335550	4.91804	4.918	80.00- 120.00	100.00
25.927	25.927	(1.066)	95	279332			54.28- 114.28	83.25
25.927	25.927	(1.066)	176	325845			67.48- 127.48	97.11
12 cis-1,2-Dichloroethene						CAS #: 156-59-2		
16.913	16.916	(0.977)	98	143	0.00605	0.007799	80.00- 120.00	100.00(a)
16.975	16.916	(0.981)	61	5881			144.59- 204.59	4111.90
16.913	16.916	(0.977)	96	236			124.96- 184.96	165.21
21 Trichloroethene						CAS #: 79-01-6		
19.263	19.245	(1.022)	130	242	0.00448	0.005780	80.00- 120.00	100.00(a)
19.241	19.245	(1.021)	95	416			56.54- 116.54	171.83
19.241	19.245	(1.021)	97	136			26.43- 86.43	56.36
26 Tetrachloroethene						CAS #: 127-18-4		
22.851	22.851	(0.940)	166	26776	0.29017	0.3743	80.00- 120.00	100.00
22.851	22.851	(0.940)	129	17358			34.72- 94.72	64.83
22.851	22.851	(0.940)	131	17275			33.00- 93.00	64.52

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020623sim.d
Lab Smp Id: 2001756-16A
Analysis Type: VOA
Quant Type: ISTD
Operator: act
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 2.0"Hg->3psi

Calibration Date: 06-FEB-2020
Calibration Time: 07:41

Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	151756	-17.24
20 1,4-Difluorobenze	549605	329763	769447	416935	-24.14
28 Chlorobenzene-d5	517348	310409	724287	442051	-14.55

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.31	-0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:14

US32TAR1

RECOVERY REPORT

Client Name: Client SDG: 06feb20
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 2001756-16A
Level: LOW Operator: act
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 2.0"Hg->3psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.036	100.71
$ 22 Toluene-d8	5.000	4.890	97.80
$ 33 4-Bromofluorobenzene	5.000	4.918	98.36

Data File: /chem/msd20.i/06feb20.b/20020623sim.d

Date : 07-FEB-2020 05:31

Client ID:

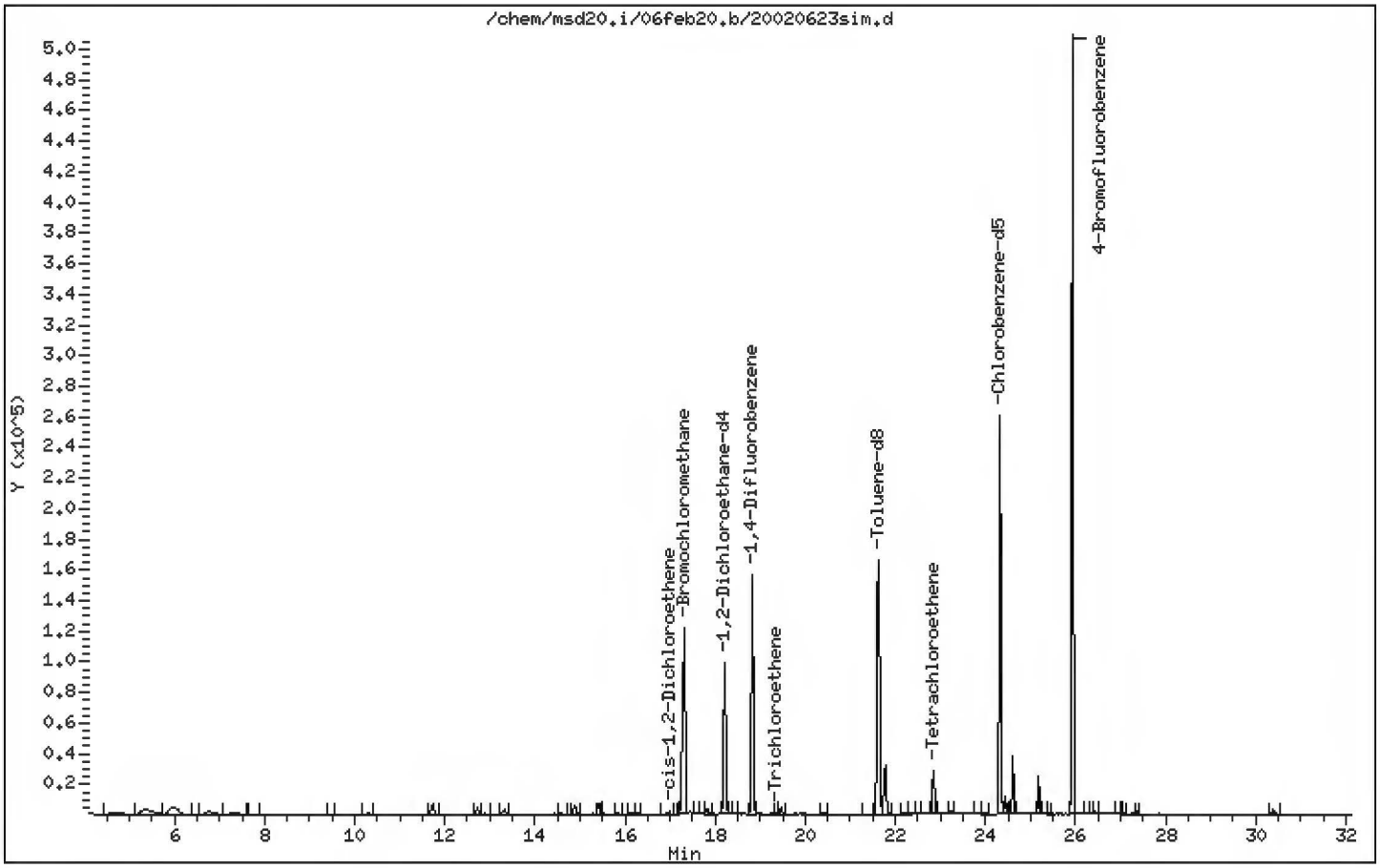
Instrument: msd20.i

Sample Info: 250mL #N2411

Operator: act

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020623sim.d

Date : 07-FEB-2020 05:31

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N2411

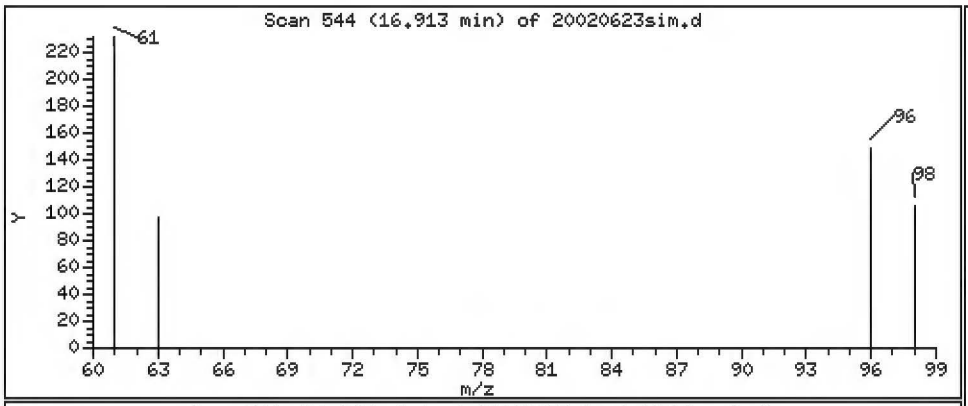
Operator: act

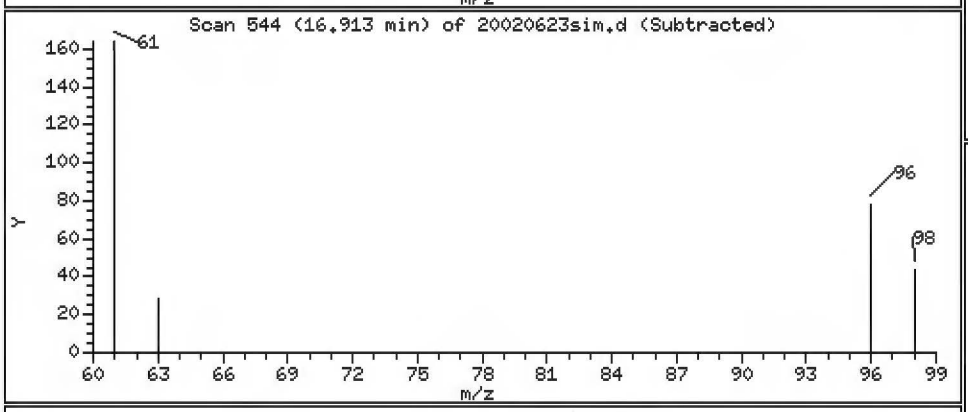
Column phase: RTX-624

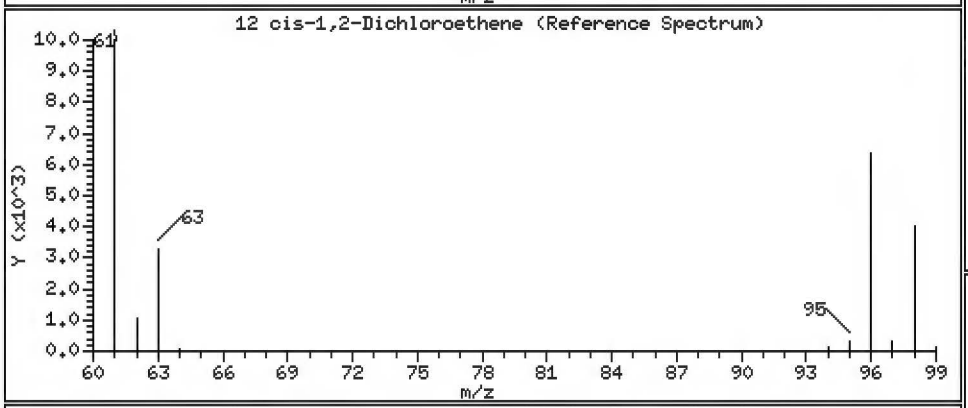
Column diameter: 0.32

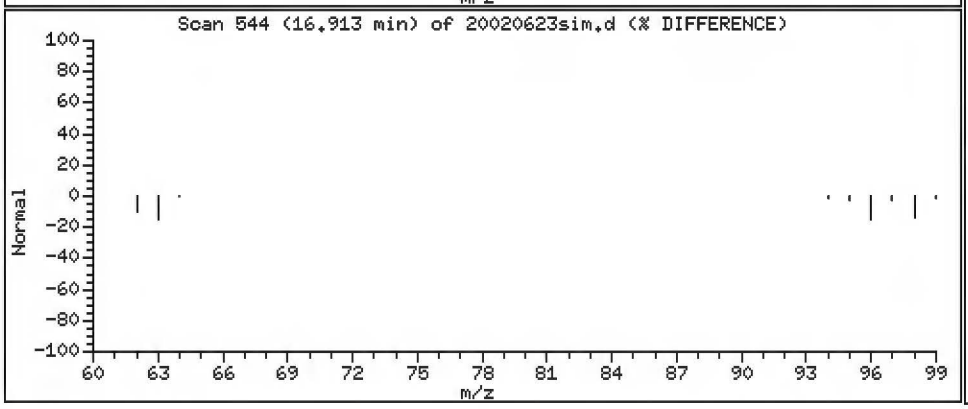
12 cis-1,2-Dichloroethene

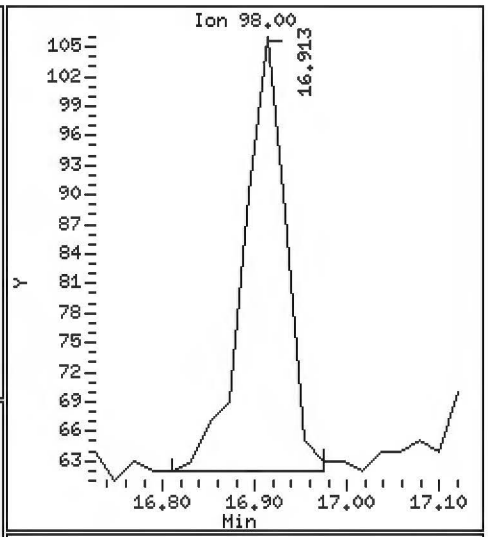
Concentration: 0.007799 PPBV

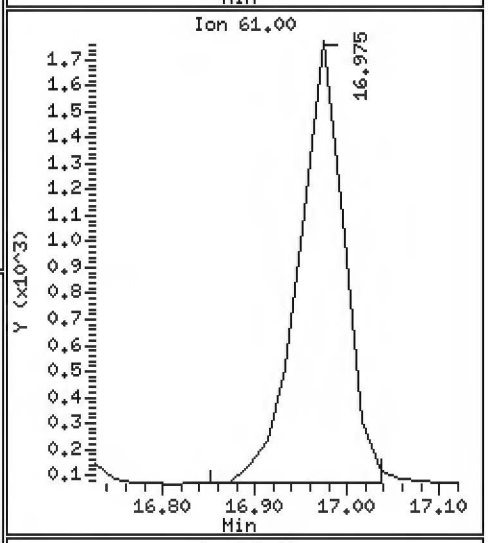


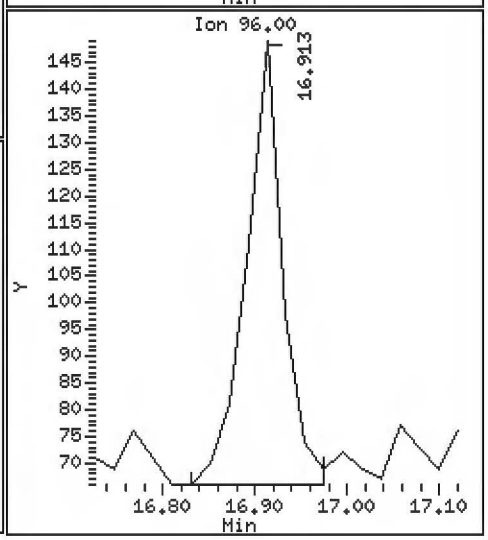












Data File: /chem/msd20.i/06feb20.b/20020623sim.d

Date : 07-FEB-2020 05:31

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N2411

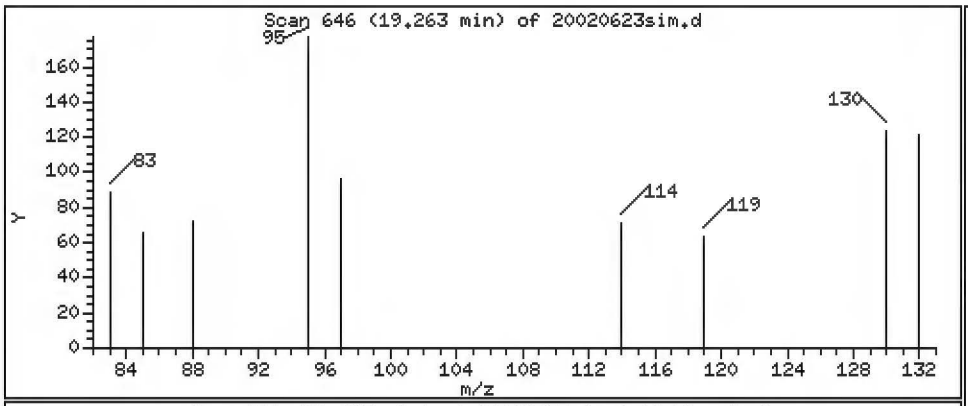
Operator: act

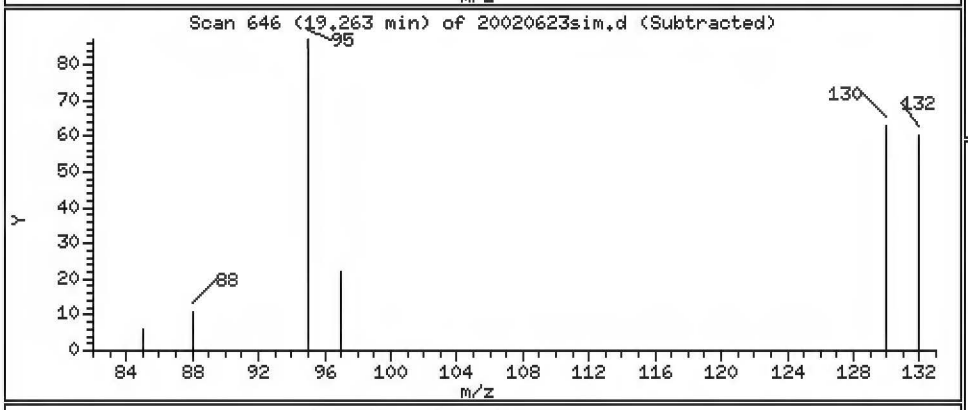
Column phase: RTX-624

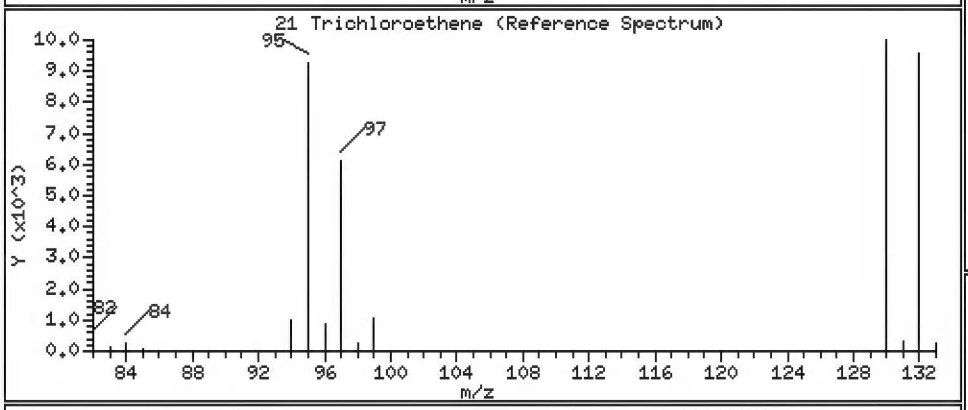
Column diameter: 0.32

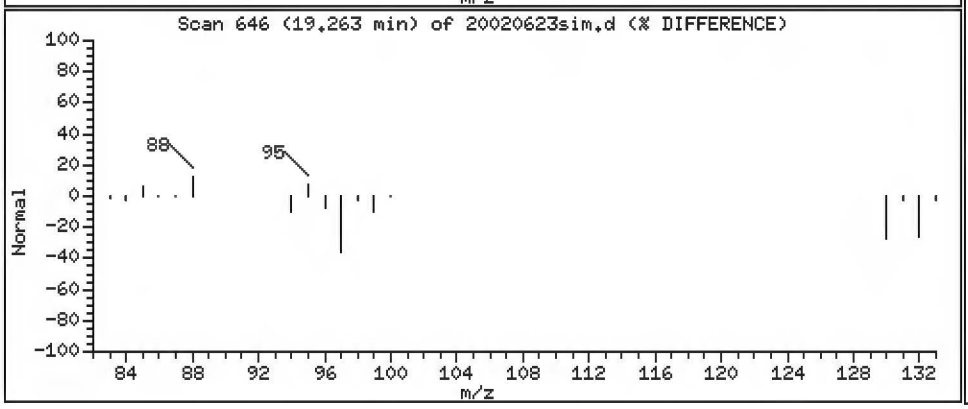
21 Trichloroethene

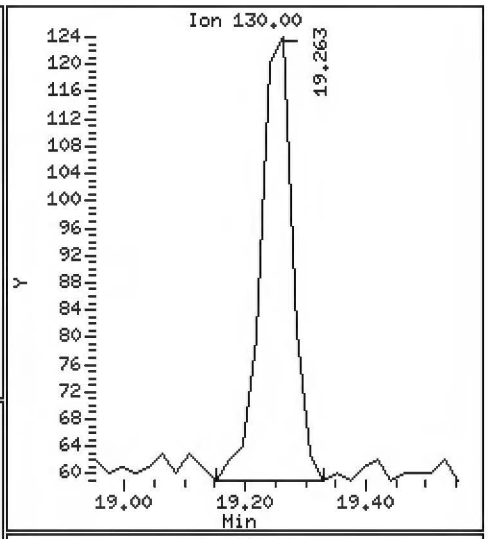
Concentration: 0.005780 PPBV

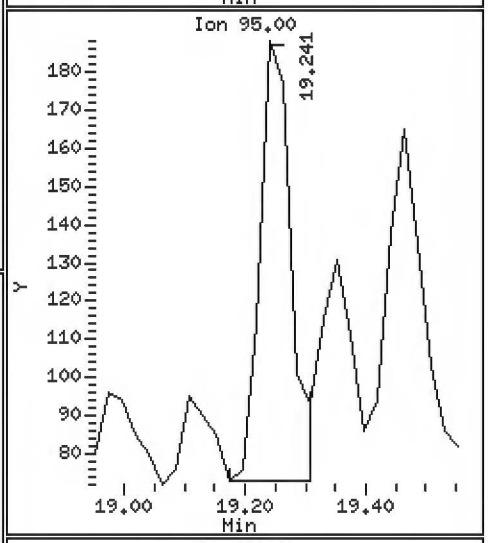


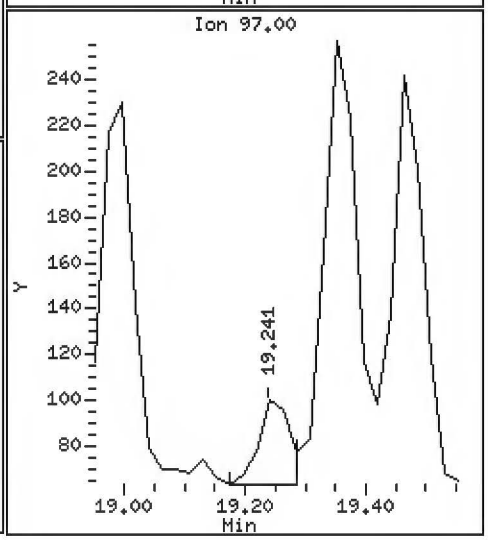












Data File: /chem/msd20.i/06feb20.b/20020623sim.d

Date : 07-FEB-2020 05:31

Client ID:

Instrument: msd20.i

Sample Info: 250mL #N2411

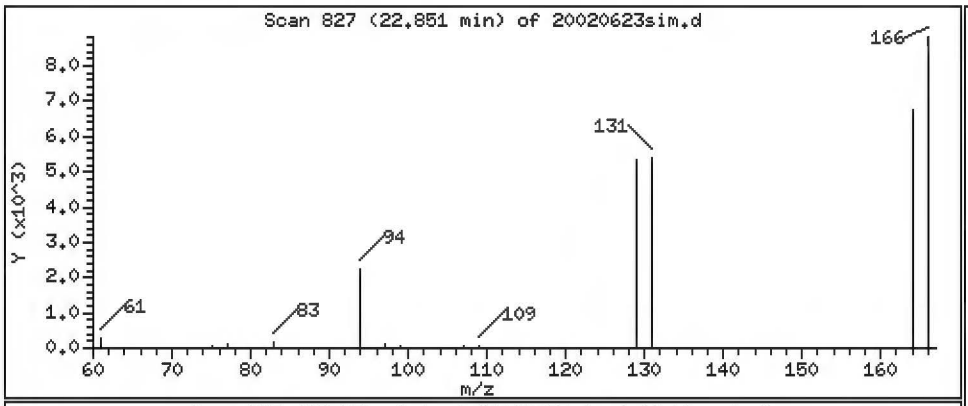
Operator: act

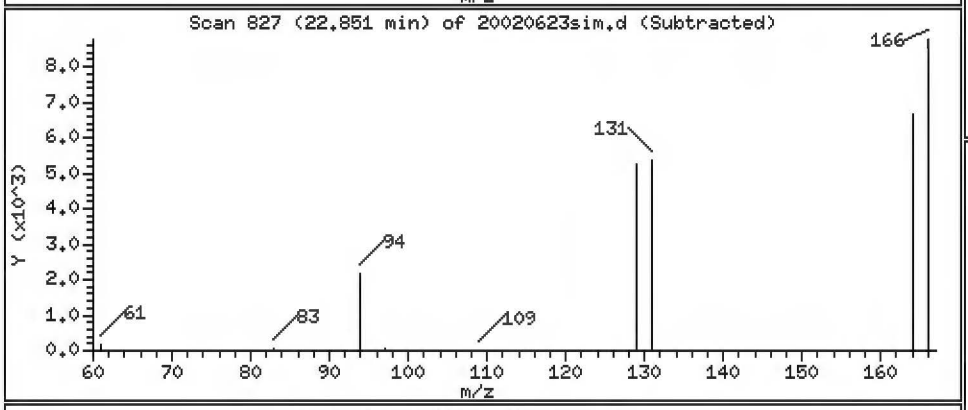
Column phase: RTX-624

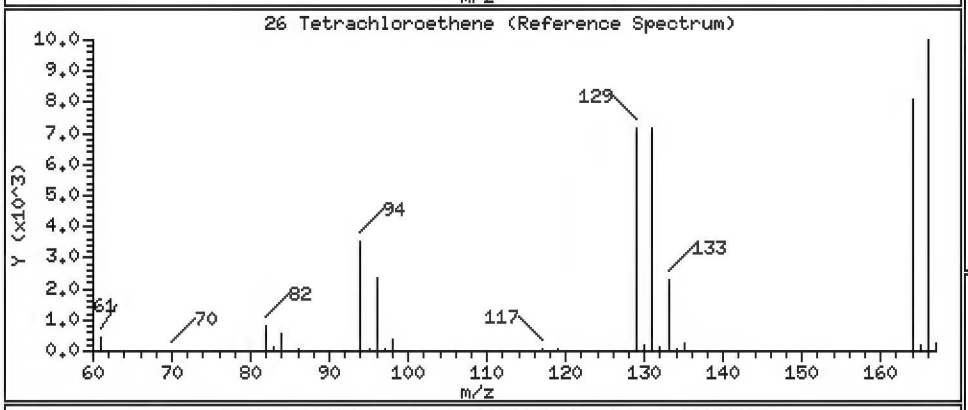
Column diameter: 0.32

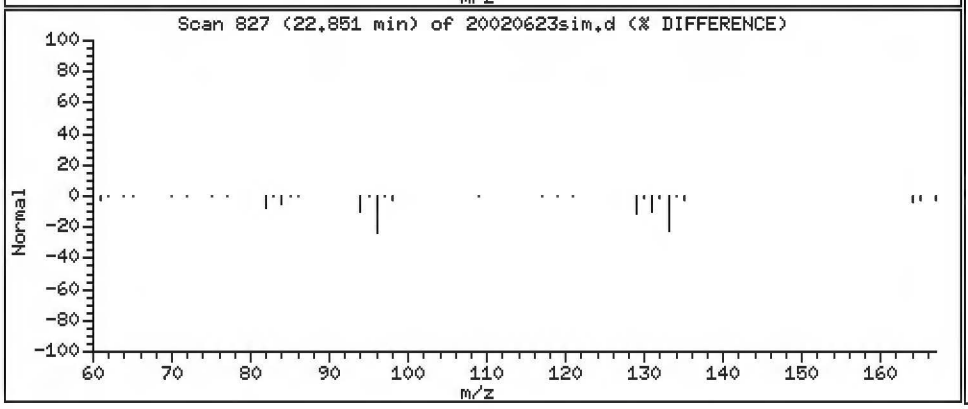
26 Tetrachloroethene

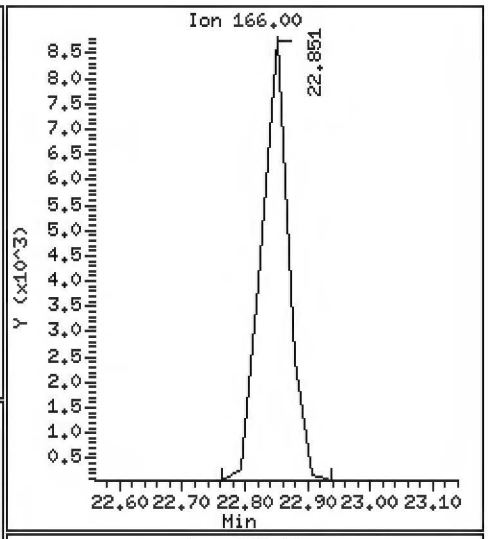
Concentration: 0.3743 PPBV

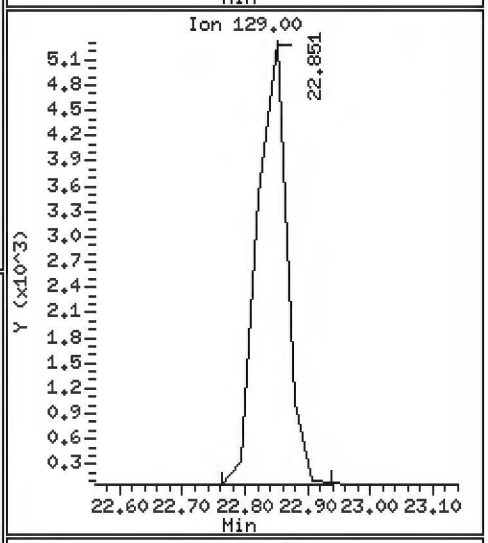


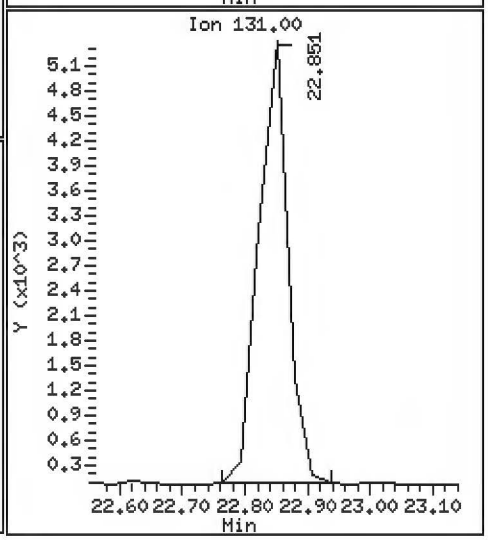












QC Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	Lab Blank		
Lab ID:	2001756-17A	**Date/Time Analyzed:**	2/6/20 10:20 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020606sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	75-35-4	0.020	0.020	0.040	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.012	0.040	0.079	Not Detected
Tetrachloroethene	127-18-4	0.012	0.068	0.14	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.023	0.040	0.40	Not Detected
Trichloroethene	79-01-6	0.013	0.054	0.11	0.016 J
Vinyl Chloride	75-01-4	0.0093	0.013	0.026	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	119
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	98

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020606sima.d
Lab Smp Id: LAB BLANK Client Smp ID: LAB BLANK
Inj Date : 06-FEB-2020 10:20
Operator : NS Inst ID: msd20.i
Smp Info : 250mL# 7632
Misc Info : Humid
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 07-Feb-2020 12:12 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1 QC Sample: Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: EAE21618.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.315	17.316 (1.000)	130	130513	5.00000		80.00- 120.00	100.00
17.315	17.316 (1.000)	128	100738			46.79- 106.79	77.19
17.283	17.316 (1.000)	49	117347			67.00- 127.00	89.91
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	409060	5.00000		80.00- 120.00	100.00
18.839	18.839 (1.000)	88	57563			0.00- 44.17	14.07
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	417620	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	192131			16.60- 76.60	46.01
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	183203	5.96314	5.963	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	93241			26.62- 86.62	50.90
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	355441	4.91415	4.914	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	41620			0.00- 40.95	11.71

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	223530			34.26- 94.26	62.89
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	311832	4.83778	4.838	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	259387			54.28- 114.28	83.18
25.927	25.927 (1.066)	176	302351			67.48- 127.48	96.96
21 Trichloroethene					CAS #: 79-01-6		
19.263	19.245 (1.022)	130	160	0.00302	0.003016	80.00- 120.00	100.00(a)
19.241	19.245 (1.021)	95	192			56.54- 116.54	120.00
0.000	19.245 (0.000)	97	0			26.43- 86.43	0.00

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020606sima.d
Lab Smp Id: LAB BLANK
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: Humid

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: LAB BLANK
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	130513	-28.83
20 1,4-Difluorobenze	549605	329763	769447	409060	-25.57
28 Chlorobenzene-d5	517348	310409	724287	417620	-19.28

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.01
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 12:13

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LAB BLANK
Client Smp ID: LAB BLANK
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: Sample
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: EAE21618.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	5.963	119.26
$ 22 Toluene-d8	5.000	4.914	98.28
$ 33 4-Bromofluorobenzene	5.000	4.838	96.76

Data File: /chem/msd20.i/06feb20.b/20020606sima.d

Date : 06-FEB-2020 10:20

Client ID: LAB BLANK

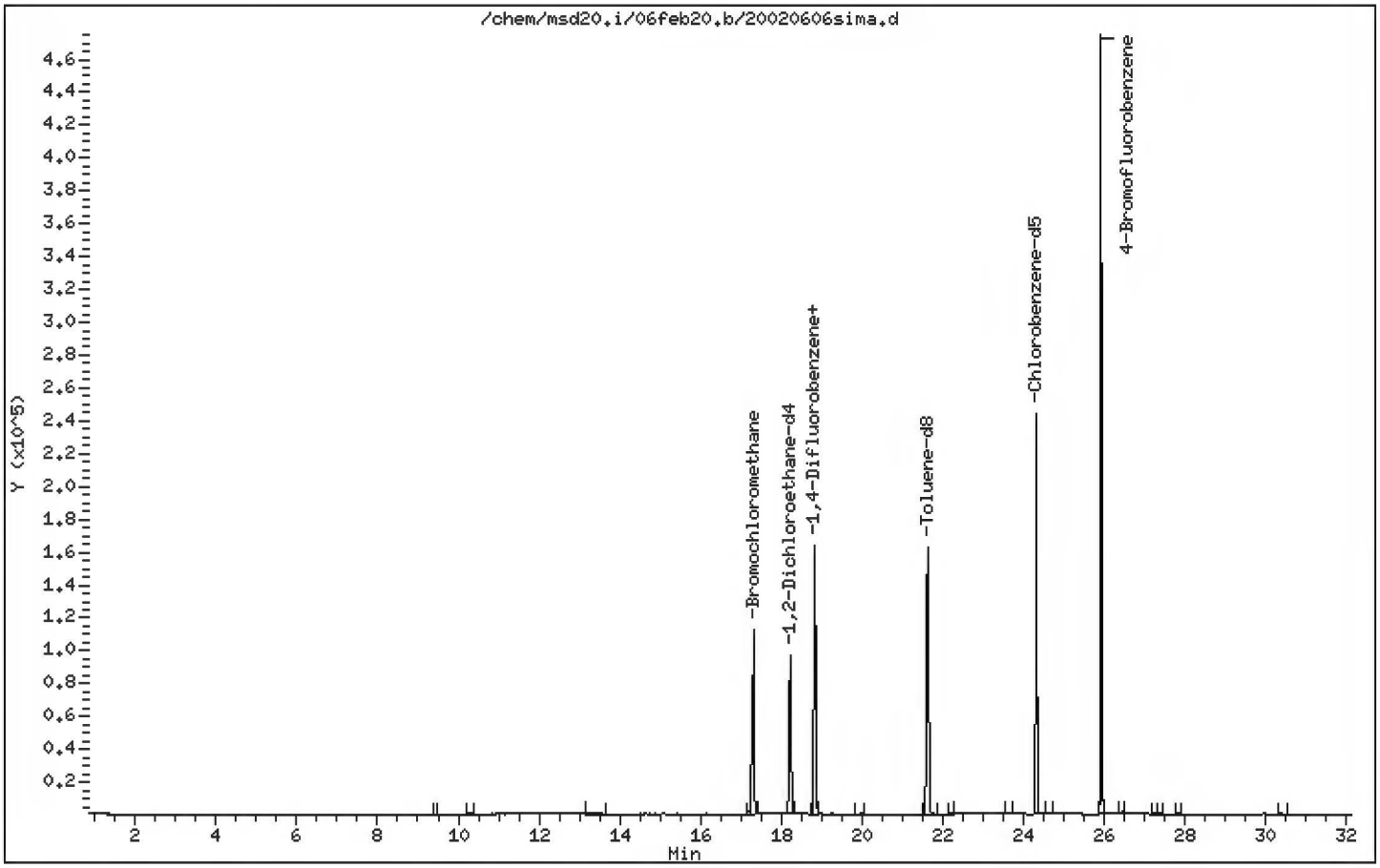
Instrument: msd20.i

Sample Info: 250mL# 7632

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd20.i/06feb20.b/20020606sima.d

Date : 06-FEB-2020 10:20

Client ID: LAB BLANK

Instrument: msd20.i

Sample Info: 250mL# 7632

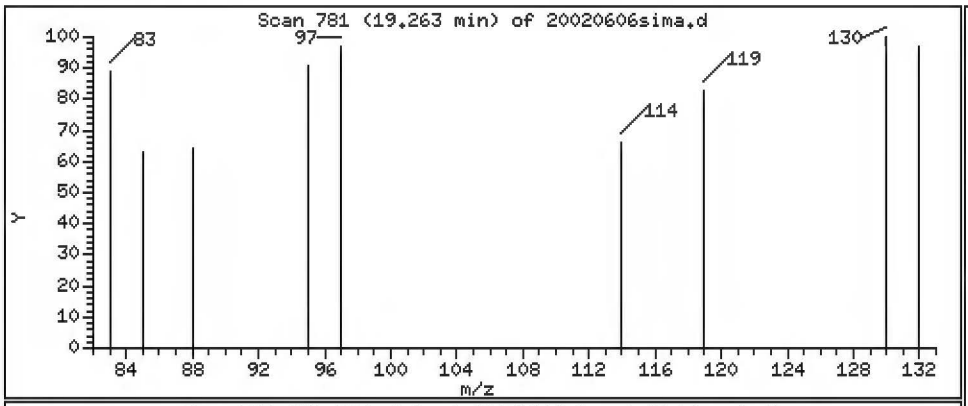
Operator: NS

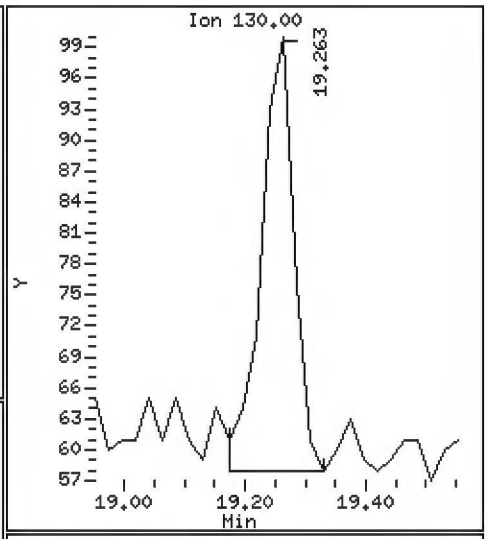
Column phase: RTX-624

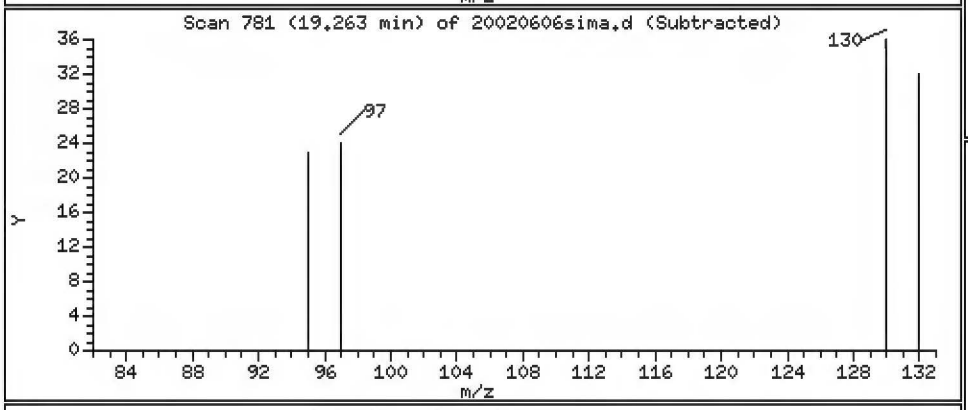
Column diameter: 0.32

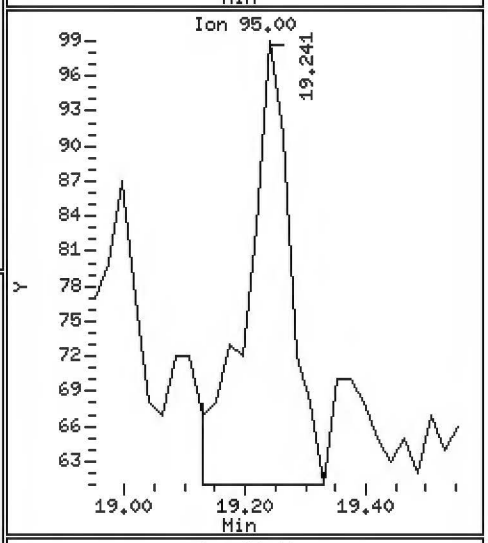
21 Trichloroethene

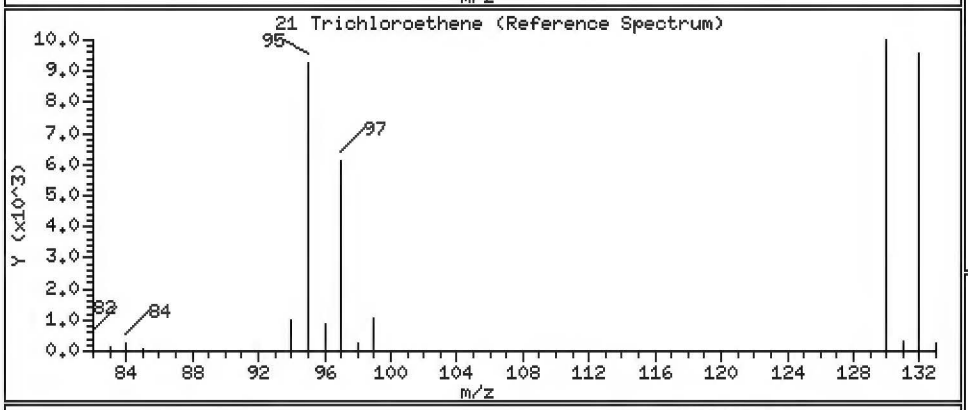
Concentration: 0.003016 PPBV

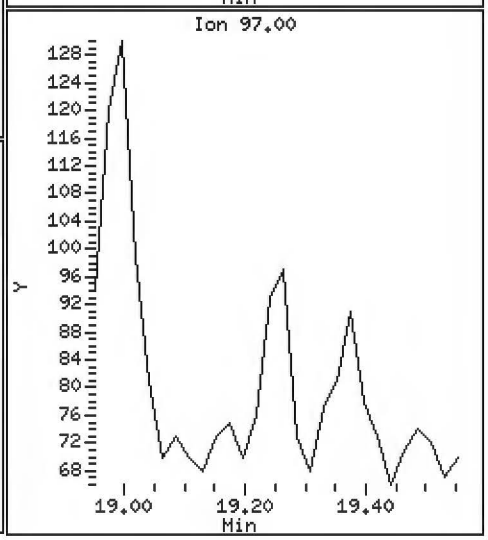


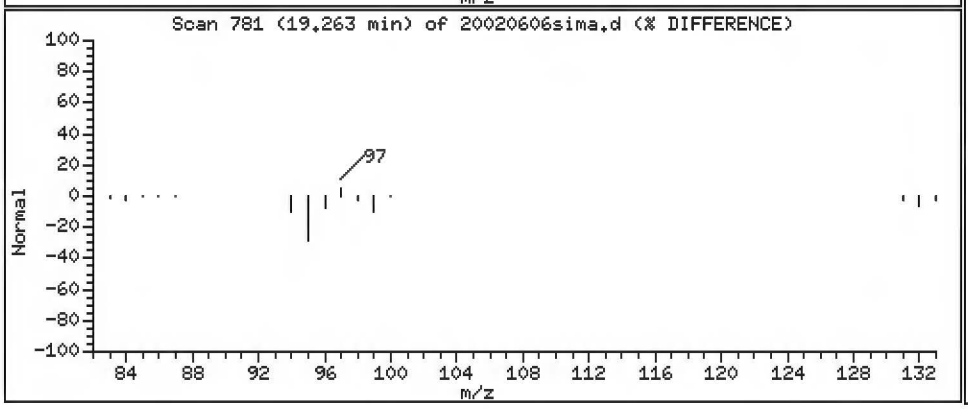












MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Jones Rd. Groundwater Plume

Client ID:	Lab Blank		
Lab ID:	2001756-17B	**Date/Time Analyzed:**	2/6/20 10:20 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020606a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	127-18-4	0.42	0.61	0.68	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	124
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	97

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020606a.d
Lab Smp Id: LAB BLANK Client Smp ID: LAB BLANK
Inj Date : 06-FEB-2020 10:20
Operator : NS Inst ID: msd20.i
Smp Info : 250mL# 7632
Misc Info : Humid
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m
Meth Date : 07-Feb-2020 10:42 unan Quant Type: ISTD
Cal Date : 05-FEB-2020 09:42 Cal File: 20020513.d
Als bottle: 1 QC Sample: Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PCE.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	127266	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	97699			46.61- 106.61	76.77
17.302	17.302 (1.000)	49	112620			58.08- 118.08	88.49
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.832	18.833 (1.000)	114	382261	5.00000		80.00- 120.00	100.00
18.832	18.833 (1.000)	88	53725			0.00- 44.22	14.05
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	396184	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	200987			18.72- 78.72	50.73
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	169617	6.18796	6.188	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	88206			30.76- 90.76	52.00
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	357741	4.83710	4.837	80.00- 120.00	100.00
21.617	21.617 (1.148)	70	41842			0.00- 41.39	11.70

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
21.617	21.617 (1.148)	100	233643			35.17- 95.17	65.31
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	298156	4.92025	4.920	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	248333			59.22- 119.22	83.29
25.920	25.920 (1.066)	176	281319			69.23- 129.23	94.35

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020606a.d
Lab Smp Id: LAB BLANK
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: Humid

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: LAB BLANK
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	180905	108543	253267	127266	-29.65
123 1,4-Difluorobenze	536645	321987	751303	382261	-28.77
163 Chlorobenzene-d5	492844	295706	689982	396184	-19.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	-0.01
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 07-Feb-2020 10:43

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LAB BLANK
Client Smp ID: LAB BLANK
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: Sample
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: PCE.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	5.000	6.188	123.76
$ 146 Toluene-d8	5.000	4.837	96.74
$ 177 4-Bromofluorobenzene	5.000	4.920	98.40

Data File: /chem/msd20.i/06feb20.b/20020606a.d

Date : 06-FEB-2020 10:20

Client ID: LAB BLANK

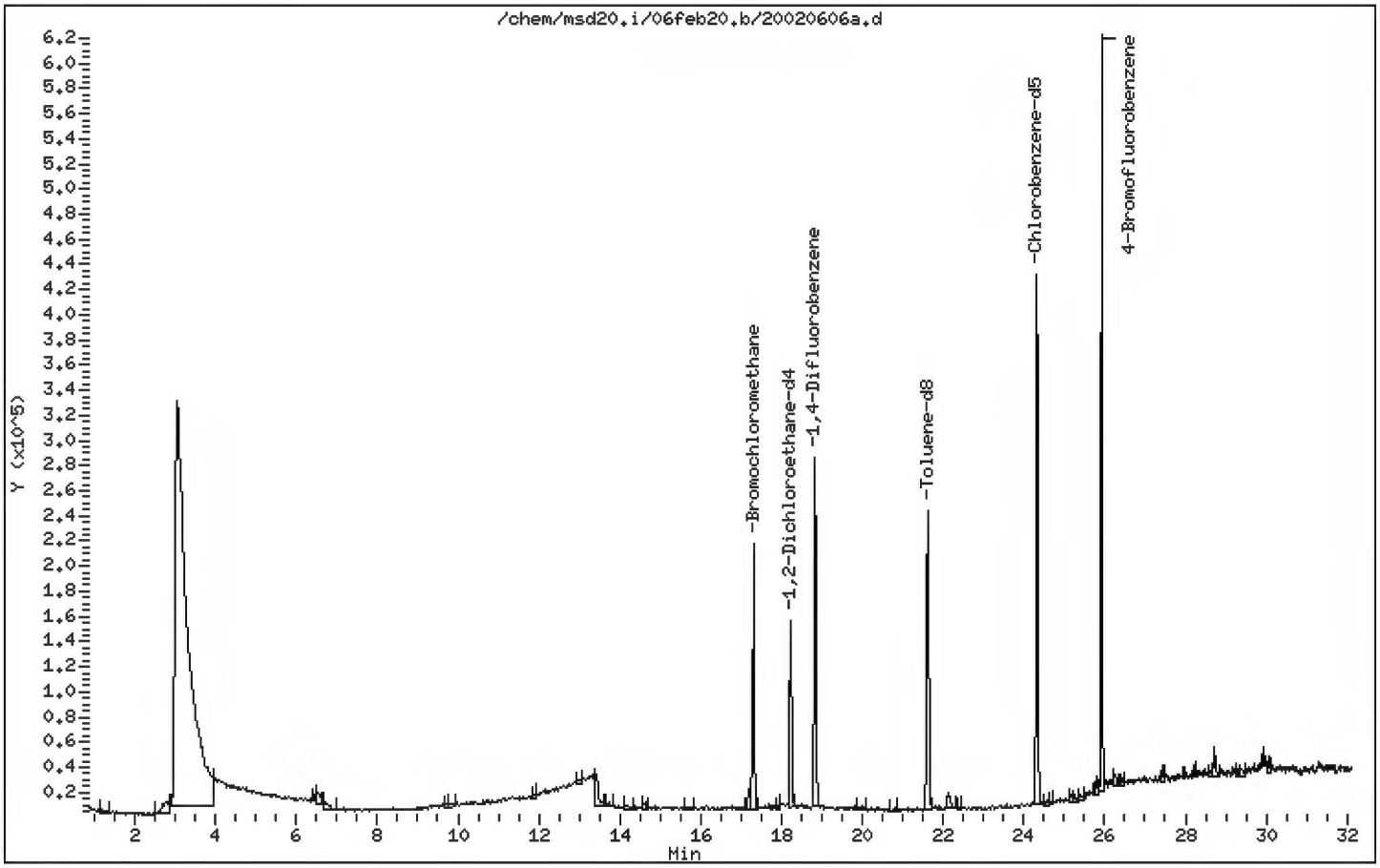
Instrument: msd20.i

Sample Info: 250mL# 7632

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-15 GC/MS SIM

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 2001756

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	TOTAL OUT
01	ASS-101-01292020	101		100		89				0
02	ASS-101-DUP-01292020	99		99		91				0
03	ASS-102-01292020	101		100		92				0
04	ASS-102-01292020	105		100		91				0
05	ASI-101-01292020	103		99		101				0
06	ASI-101-DUP-01292020	102		98		104				0
07	ASI-102-01292020	103		98		102				0
08	ASS-103-01292020	108		95		102				0
09	ASS-104-01292020	107		100		114				0
10	ASI-105-01292020	103		99		98				0
11	ASS-106-01292020	110		98		103				0
12	ASS-105-01292020	112		98		100				0
13	ASI-106-01292020	103		98		98				0
14	ASBKG-2-01292020	103		99		94				0
15	ASBKG-4-01292020	103		98		94				0
16	ASI-104-01292020	102		98		96				0
17	ASI-103-01292020	101		98		98				0
18	Lab Blank	119		98		97				0
19	Lab Blank	124		97		98				0
20	CCV	94		106		102				0
21	CCV	101		99		104				0
22	LCS	94		105		102				0
23	LCSD	94		104		102				0
24	LCS	96		105		102				0

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-15 GC/MS SIM

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 2001756

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								TOTAL OUT
			#		#		#		#	
01	LCSD	100		103		104				0
02										0
03										0
04										0
05										0
06										0
07										0
08										0
09										0
10										0
11										0
12										0
13										0
14										0
15										0
16										0
17										0
18										0
19										0
20										0
21										0
22										0
23										0
24										0

Surrogate Recovery Limits

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:	AIR TOXICS, LTD	SDG No:	2001756
Lab File ID:	20020602sim.d	Date Analyzed:	02/06/2020
Instrument ID:	msd20.i	Time Analyzed:	07:41 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	517348		24.32		549605		18.84		183377		17.32	
	UPPER LIMIT	724287		24.65		769447		19.17		256728		17.65	
	LOWER LIMIT	310409		23.99		329763		18.51		110026		16.99	
	CLIENT SAMPLE NO												
01	ASS-101-01292020	426885		24.32		372934		18.84		148285		17.32	
02	ASS-101-DUP-01292020	455465		24.32		398472		18.84		157923		17.32	
03	ASS-102-01292020	438050		24.32		381791		18.84		149244		17.32	
05	ASI-101-01292020	416260		24.32		411848		18.84		149917		17.32	
06	ASI-101-DUP-01292020	415609		24.32		407939		18.84		149092		17.32	
07	ASI-102-01292020	420160		24.32		417156		18.84		151477		17.32	
08	ASS-103-01292020	441631		24.32		433428		18.84		150225		17.32	
09	ASS-104-01292020	463903		24.32		402060		18.84		147155		17.32	
10	ASI-105-01292020	429112		24.32		410687		18.84		149229		17.32	
11	ASS-106-01292020	438385		24.32		395733		18.84		140130		17.32	
12	ASS-105-01292020	528000		24.32		457776		18.84		150347		17.31	
13	ASI-106-01292020	427604		24.32		417368		18.84		150705		17.32	
14	ASBKG-2-01292020	415604		24.32		413512		18.84		150824		17.32	
15	ASBKG-4-01292020	393193		24.32		387352		18.84		143057		17.32	
16	ASI-104-01292020	432423		24.32		407459		18.84		145059		17.32	
17	ASI-103-01292020	442051		24.32		416935		18.84		151756		17.31	
18	Lab Blank	417620		24.32		409060		18.84		130513		17.32	
20	CCV	517348		24.32		549605		18.84		183377		17.32	
22	LCS	540534		24.32		580235		18.84		188894		17.32	
23	LCSD	542986		24.32		585978		18.84		188180		17.32	
26													
27													
28													
29													
30													
31													
32													
33													
34													

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:	AIR TOXICS, LTD	SDG No:	2001756
Lab File ID:	20020602sim.d	Date Analyzed:	02/06/2020
Instrument ID:	msd20.i	Time Analyzed:	07:41 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	517348		24.32		549605		18.84		183377		17.32	
	UPPER LIMIT	724287		24.65		769447		19.17		256728		17.65	
	LOWER LIMIT	310409		23.99		329763		18.51		110026		16.99	
	CLIENT SAMPLE NO												
35													
36													
37													
38													
39													
40													
41													
42													
43													
44													

'Area Upper Limit=+40% of internal standard area'
'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT
RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:	AIR TOXICS, LTD	SDG No:	2001756
Lab File ID:	20020602.d	Date Analyzed:	02/06/2020
Instrument ID:	msd20.i	Time Analyzed:	07:41 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	492844		24.31		536645		18.83		180905		17.3	
	UPPER LIMIT	689982		24.64		751303		19.16		253267		17.63	
	LOWER LIMIT	295706		23.98		321987		18.50		108543		16.97	
	CLIENT SAMPLE NO												
04	ASS-102-01292020	421523		24.31		354618		18.83		148631		17.3	
19	Lab Blank	396184		24.31		382261		18.83		127266		17.3	
21	CCV	492844		24.31		536645		18.83		180905		17.3	
24	LCS	507497		24.31		543080		18.83		185897		17.3	
25	LCSD	506959		24.31		560899		18.83		190268		17.3	
26													
27													
28													
29													
30													
31													
32													
33													
34													
35													
36													
37													
38													
39													
40													
41													
42													
43													
44													

'Area Upper Limit=+40% of internal standard area'
'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT
RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 20020604sim.d & 20020603sim.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 2/6/20 & 2/6/20

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
75-35-4	1,1-Dichloroethene	97		98		1.0	
156-59-2	cis-1,2-Dichloroethene	94		95		1.0	
127-18-4	Tetrachloroethene	96		95		1.0	
156-60-5	trans-1,2-Dichloroethene	113		113		0	
79-01-6	Trichloroethene	95		94		1.0	
75-01-4	Vinyl Chloride	104		100		3.9	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 20020604.d & 20020603.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 2/6/20 & 2/6/20

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
75-35-4	1,1-Dichloroethene	ND		ND		0	
156-59-2	cis-1,2-Dichloroethene	ND		ND		0	
127-18-4	Tetrachloroethene	98		99		1.0	
156-60-5	trans-1,2-Dichloroethene	ND		ND		0	
79-01-6	Trichloroethene	ND		ND		0	
75-01-4	Vinyl Chloride	ND		ND		0	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 04-FEB-2020 22:56
End Cal Date : 05-FEB-2020 08:54
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Cal Date : 05-Feb-2020 14:15 uefi
Curve Type : Average

Calibration File Names:
Level 3: /chem/msd20.i/05feb20.b/20020503sim.d
Level 4: /chem/msd20.i/05feb20.b/20020504sim.d
Level 5: /chem/msd20.i/05feb20.b/20020505sim.d
Level 6: /chem/msd20.i/05feb20.b/20020506sim.d
Level 7: /chem/msd20.i/05feb20.b/20020507sim.d
Level 8: /chem/msd20.i/05feb20.b/20020508sim.d
Level 12: /chem/msd20.i/05feb20.b/20020509sim.d
Level 13: /chem/msd20.i/05feb20.b/20020510sim.d
Level 14: /chem/msd20.i/05feb20.b/20020511sim.d
Level 15: /chem/msd20.i/05feb20.b/20020512sim.d

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	RRF	% RSD
	5.000 Level 12	10.000 Level 13	15.000 Level 14	20.000 Level 15				
1 Freon 12	+++++	3.20477	3.60915	3.60866	3.43516	3.25394		
	3.28489	3.06624	2.99870	2.97164			3.27035	7.379
2 Freon 114	+++++	3.01953	2.94145	3.06635	2.84740	2.72250		
	2.77896	2.58733	2.53936	2.45821			2.77345	7.770
3 Chloromethane	+++++	+++++	1.27120	1.30047	1.06731	0.93931		
	0.85833	0.80332	0.79818	0.77091			0.97613	21.885
4 Vinyl Chloride	1.27760	0.99725	0.91212	0.92926	0.83927	0.83352		
	0.91062	0.90318	0.90977	0.91030			0.94229	13.405
5 Chloroethane	+++++	+++++	0.56876	0.28455	0.35729	0.37653		
	0.40305	0.40481	0.40063	0.39506			0.39883	19.931

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 04-FEB-2020 22:56
End Cal Date : 05-FEB-2020 08:54
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Cal Date : 05-Feb-2020 14:15 uefi
Curve Type : Average

Compound	0.01000 Level 3 / 5.000 Level 12	0.02000 Level 4 / 10.000 Level 13	0.05000 Level 5 / 15.000 Level 14	0.10000 Level 6 / 20.000 Level 15	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
6 Freon 11	+++++	2.57802	2.59613	2.57950	3.20307	3.22003		
	3.42364	3.18719	3.12185	2.99881			2.98980	10.813
7 Freon 113	+++++	2.99174	3.03973	3.25447	2.85570	2.77699		
	2.87423	2.65432	2.60343	2.55018			2.84453	8.001
8 1,1-Dichloroethene	1.10899	0.60205	0.64019	0.68474	0.57447	0.56734		
	0.63314	0.63465	0.65048	0.64757			0.67436	23.258
9 Methyl tert-butyl ether	+++++	1.91113	1.90483	1.96031	1.74520	1.80003		
	2.45126	2.60081	2.68282	2.68553			2.19355	18.286
10 trans-1,2-Dichloroethene	0.92740	0.63293	0.67229	0.65795	0.61042	0.61015		
	0.74463	0.72357	0.71811	0.69811			0.69956	13.284
11 1,1-Dichloroethane	2.24715	1.92966	1.88976	1.97606	1.81959	1.81566		
	2.02093	1.92494	1.88294	1.86340			1.93701	6.531
12 cis-1,2-Dichloroethene	0.93388	0.73790	0.71226	0.75154	0.66347	0.69045		
	0.83135	0.81864	0.82591	0.82930			0.77947	10.572
14 Chloroform	1.98126	1.81233	2.76518	2.91226	2.64969	2.61132		
	2.76473	2.58321	2.50965	2.47577			2.50654	13.912
15 1,1,1-Trichloroethane	2.98972	2.76481	3.05743	3.15048	2.84790	2.79747		
	3.00765	2.82232	2.76352	2.76527			2.89666	4.901

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 04-FEB-2020 22:56
End Cal Date : 05-FEB-2020 08:54
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Cal Date : 05-Feb-2020 14:15 uefi
Curve Type : Average

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	15.000 Level 14	20.000 Level 15				
16 Carbon Tetrachloride	+++++	1.47426	2.02998	2.35105	2.93215	2.97077		
	3.31868	3.11650	3.04857	3.04614			2.69868	22.684
17 Benzene	1.64378	1.24142	1.11210	1.14541	1.04861	1.04083		
	1.24115	1.17123	1.12777	1.09760			1.18699	14.704
19 1,2-Dichloroethane	0.67746	0.61043	0.60168	0.63641	0.57397	0.54275		
	0.57967	0.54221	0.52282	0.50569			0.57931	9.227
21 Trichloroethene	0.73811	0.64376	0.68996	0.70769	0.63983	0.60204		
	0.64411	0.61652	0.60404	0.59849			0.64845	7.454
23 Toluene	+++++	1.27030	1.26849	1.25977	1.15623	1.13226		
	1.34220	1.32598	1.26243	1.30805			1.25841	5.666
24 trans-1,3-Dichloropropene	+++++	0.35040	0.60007	0.54548	0.49312	0.50141		
	0.60729	0.61501	0.64066	0.63098			0.55383	16.904
25 1,1,2-Trichloroethane	0.71434	0.61334	0.62124	0.63362	0.58569	0.57304		
	0.61182	0.57156	0.56669	0.53918			0.60305	8.091
26 Tetrachloroethene	1.14110	1.09660	1.07698	1.02540	0.99105	0.98173		
	1.08356	1.02896	1.02749	0.98438			1.04373	5.143
27 1,2-Dibromoethane (EDB)	0.99271	0.94880	0.98023	0.89496	0.85596	0.85810		
	0.96211	0.91398	0.91604	0.87086			0.91937	5.443

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 04-FEB-2020 22:56
End Cal Date : 05-FEB-2020 08:54
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Cal Date : 05-Feb-2020 14:15 uefi
Curve Type : Average

Compound	0.01000 Level 3 / 5.000 Level 12	0.02000 Level 4 / 10.000 Level 13	0.05000 Level 5 / 15.000 Level 14	0.10000 Level 6 / 20.000 Level 15	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
29 Chlorobenzene	+++++	1.33021	1.37405	1.29003	1.20540	1.20639		
	1.32136	1.26596	1.25914	1.22775			1.27559	4.584
30 Ethyl Benzene	+++++	0.49654	0.48351	0.45689	0.42930	0.44058		
	0.56797	0.59236	0.59649	0.59596			0.51774	13.574
31 m,p-Xylene	+++++	0.57293	0.56410	0.51905	0.49840	0.51512		
	0.70533	0.71488	0.70769	0.70107			0.61095	15.433
32 o-Xylene	+++++	0.53197	0.53997	0.48616	0.46725	0.48058		
	0.61534	0.64282	0.65327	0.65714			0.56383	13.948
34 1,1,2,2-Tetrachloroethane	1.90252	1.41933	1.46693	1.35775	1.32616	1.31665		
	1.27320	1.18416	1.14876	1.10273			1.34982	16.758
35 1,3-Dichlorobenzene	+++++	1.63965	1.55138	1.39507	1.48537	1.53421		
	1.48270	1.41743	1.38892	1.34559			1.47115	6.374
36 1,4-Dichlorobenzene	1.95983	1.34183	1.45919	1.31851	1.37363	1.44344		
	1.47152	1.42547	1.40166	1.35188			1.45469	12.710
37 1,2-Dichlorobenzene	+++++	1.34183	1.40114	1.24773	1.37935	1.42909		
	1.37725	1.32914	1.31383	1.27448			1.34376	4.410
38 Naphthalene	+++++	+++++	+++++	1.02087	1.18599	1.36498		
	1.15048	1.31543	1.41937	1.55586			1.28757	14.050

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 04-FEB-2020 22:56
End Cal Date : 05-FEB-2020 08:54
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Cal Date : 05-Feb-2020 14:15 uefi
Curve Type : Average

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	15.000 Level 14	20.000 Level 15				
$ 18 1,2-Dichloroethane-d4	1.29393	1.20977	1.24237	1.20997	1.18768	1.20292		
	1.11980	1.10904	1.10087	1.09359			1.17699	5.772
$ 22 Toluene-d8	0.85524	0.87204	0.87793	0.87630	0.86053	0.84986		
	0.91037	0.92775	0.88920	0.92179			0.88410	3.120
$ 33 4-Bromofluorobenzene	0.78195	0.75582	0.74218	0.73953	0.76484	0.77509		
	0.80540	0.79345	0.77627	0.78275			0.77173	2.757

Calibration History

Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Start Cal Date: 04-FEB-2020 22:56
End Cal Date : 05-FEB-2020 08:54

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 3 , Cal Amount: 0.01000		
04-FEB-2020 22:56	Level3	/chem/msd20.i/05feb20.b/20020503sim.d
Cal Level: 4 , Cal Amount: 0.02000		
04-FEB-2020 23:34	Level4	/chem/msd20.i/05feb20.b/20020504sim.d
Cal Level: 5 , Cal Amount: 0.05000		
05-FEB-2020 00:13	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020505sim.d
Cal Level: 6 , Cal Amount: 0.10000		
05-FEB-2020 00:52	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020506sim.d
Cal Level: 7 , Cal Amount: 0.50000		
05-FEB-2020 05:32	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020507sim.d
Cal Level: 8 , Cal Amount: 1.00000		
05-FEB-2020 06:11	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020508sim.d
Cal Level: 12, Cal Amount: 5.00000		
05-FEB-2020 06:55	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020509sim.d
Cal Level: 13, Cal Amount: 10.00000		

```
|05-FEB-2020 07:34 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020510sim.d   |
+------------------+-----------------+----------------------------------------+

+------------------+-----------------+----------------------------------------+
| Cal Level: 14, Cal Amount: 15.00000                                         |
+=============================================================================+
|05-FEB-2020 08:13 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020511sim.d   |
+------------------+-----------------+----------------------------------------+

+------------------+-----------------+----------------------------------------+
| Cal Level: 15, Cal Amount: 20.00000                                         |
+=============================================================================+
|05-FEB-2020 08:54 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020512sim.d   |
+------------------+-----------------+----------------------------------------+


Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 13
+------------------+-----------------+----------------------------------------+
| Ccal Level: 13, Ccal Amount: 10.000                                         |
+=============================================================================+
|05-FEB-2020 07:34 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020510sima.d  |
+------------------+-----------------+----------------------------------------+
| Ccal Level: 13, Ccal Amount: 10.000                                         |
+=============================================================================+
|05-FEB-2020 07:34 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020510sim.d   |
+------------------+-----------------+----------------------------------------+
```

Curve Name: 200s0205a

Initial Calibration Narrative

An initial calibration curve was analyzed on 2/5/20 on MSD-20.

The instrument was set up to do Full Scan and Selective Ion Monitoring (SIM) simultaneously.

BFB Tune Files: 20020502.
ICAL: Zero (0) out.
Carbon Tetrachloride %RSD = 22.7%.
Naphthalene %RSD = 14.0%.
ICV: Zero (0) out; file 20020516sima.
DOD 5.0/5.1 ICV: Zero (0) out; file 20020516simc.
DOD 4.2 ICV: Zero (0) out; file 20020516simd.
RCP ICV: Zero (0) out; file 20020516sime.
Carbon Tetrachloride recovery = 118.4%
Naphthalene recovery = 113.8%.

Naphthalene was calibrated from 0.01ppbv to 2.0ppbv.

The following compounds were calibrated down to a special RL of 0.01ppbv:

trans-1,2-Dichloroethene
1,1-Dichloroethane
cis-1,2-Dichloroethene
Chloroform
1,1,1-Trichloroethane
Benzene
1,2-Dichloroethane
Trichloroethene
1,1,2-Trichloroethane
Tetrachloroethene
1,2-Dibromoethane (EDB)
1,1,2,2-Tertachloroethane
1,4-Dichlorobenzene

MDL expires 12/10/20. Naphthalene MDL expires 01/24/21.

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 04-FEB-2020 22:56
End Cal Date : 05-FEB-2020 08:54
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/20010205a.m/200s0205a.m
Cal Date : 05-Feb-2020 09:42 uefi
Curve Type : Average

Calibration File Names:
Level 3: /chem/msd20.i/05feb20.b/20020503sim.d
Level 4: /chem/msd20.i/05feb20.b/20020504sim.d
Level 5: /chem/msd20.i/05feb20.b/20020505sim.d
Level 6: /chem/msd20.i/05feb20.b/20020506sim.d
Level 7: /chem/msd20.i/05feb20.b/20020507sim.d
Level 8: /chem/msd20.i/05feb20.b/20020508sim.d
Level 12: /chem/msd20.i/05feb20.b/20020509sim.d
Level 13: /chem/msd20.i/05feb20.b/20020510sim.d
Level 14: /chem/msd20.i/05feb20.b/20020511sim.d
Level 15: /chem/msd20.i/05feb20.b/20020512sim.d

~~GS~~ 2/5/20
GH 2/5/20

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	RRF	% RSD
	5.000 Level 12	10.000 Level 13	15.000 Level 14	20.000 Level 15				
1 Freon 12	+++++	3.20477	3.60915	3.60866	3.43516	3.25394		
	3.28489	3.06624	2.99870	2.97164			3.27035	7.379
2 Freon 114	+++++	3.01953	2.94145	3.06635	2.84740	2.72250		
	2.77896	2.58733	2.53936	2.45821			2.77345	7.770
3 Chloromethane	+++++	+++++	1.27120	1.30047	1.06731	0.93931		
	0.85833	0.80332	0.79818	0.77091			0.97613	21.885
4 Vinyl Chloride	1.27760	0.99725	0.91212	0.92926	0.83927	0.83352		
	0.91062	0.90318	0.90977	0.91030			0.94229	13.405
5 Chloroethane	+++++	+++++	0.56876	0.28455	0.35729	0.37653		
	0.40305	0.40481	0.40063	0.39506			0.39883	19.931

Flow Meter: CN2295
nominal flow: 32.8 mL/m
Actual Flow: 24.7 mL/min

Eurofins Air Toxics **MSD-20** **Logbook #3131**

BFB Verification of 176/174 m/z Ratio:	594826 / 615658 x100 = 96.62%
Method Name:	200L0205A / 200S0205A

IS/S Std. #:	3128-120	Exp. Date:	4/21/20
BCM	LL: 192136	SIM:	194565
1,4-DFB	564474		596600
CB-d5	513463		550580

Verified CCV IS vs ICAL mid-point (-40%D): [illegible]

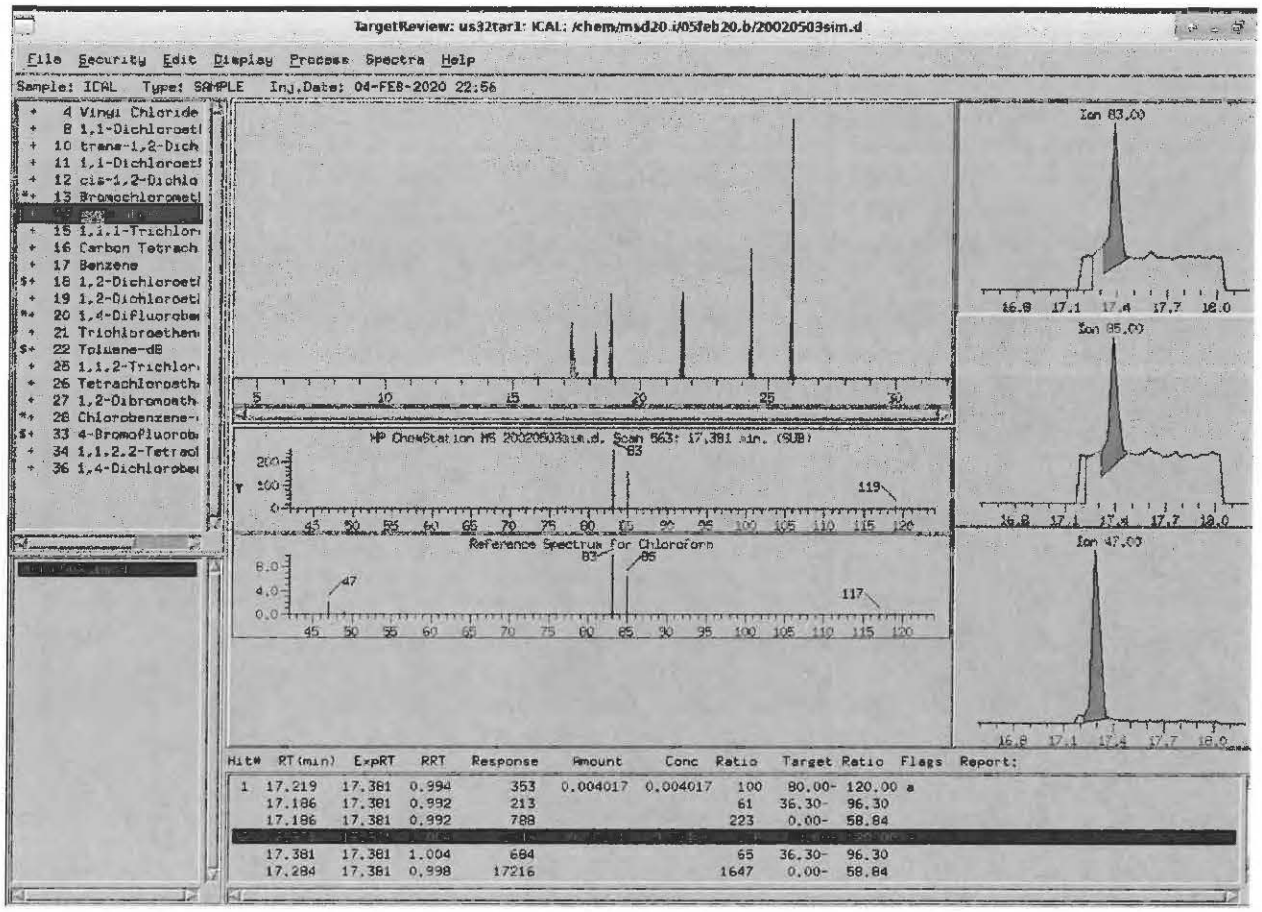
SOP# (Circle one): 6 / 83 / 38 / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date/Syringe ID
1	✓	20020502	BFB Tune Check	2610-1406	50ng	2.0mL	1.00	GH	2-4-20	2235	GH	
2	/	03	ICAL Level #3	3128-133	0.01ppbv	50mL	1.00	GH		2256	[illegible]	Exp. 5/4/20
3	/	04	#4		0.02ppbv	100mL	1.00	GH		2334	[illegible]	
4	/	05	#5		0.05ppbv	250mL	1.00	GH		0013	[illegible]	
5	/	06	#6	3128-134	0.1ppbv	25mL	1.00	GH		0052	[illegible]	Exp. 5/4/20
6	/	07	#7		0.5 ppbv	125mL	1.00	[illegible]	2/5/20	0532	[illegible]	
7	/	08	#8		1.0 ppbv	250mL	1.00	[illegible]		0611	[illegible]	
8	/	09	#12	3018-1179	5.0 ppbv	25mL	1.00	NS		0658	[illegible]	Exp. 5/4/20
9	/	10	#13		10 ppbv	50mL	1.00	NS		0734	[illegible]	CCV
10	/	11	#14		15 ppbv	75mL	1.00	NS		0813	[illegible]	
11	/	12	15		20 ppbv	100mL	1.00	[illegible]		0854	[illegible]	
12	/	13	16		40 ppbv	200mL	1.00	[illegible]		0942	[illegible]	
13	X /	14	System Blank	02253	Humid	250mL	1.00	[illegible]		1031	[illegible]	
14	/	15	System Blank	02253	Humid	250mL	1.00	[illegible]		1110	[illegible]	
15	/	16	LCV (50 ppbv)	3018-1182	10 ppbv	50mL	1.00	[illegible]		1340	[illegible]	LCS Exp. 5/4/20 [illegible]
16		17	LCSD (50 ppbv)	3018-1182	10 ppbv	50mL	1.00	[illegible]				Exp. 5/4/20
17												[illegible] 2/5/20

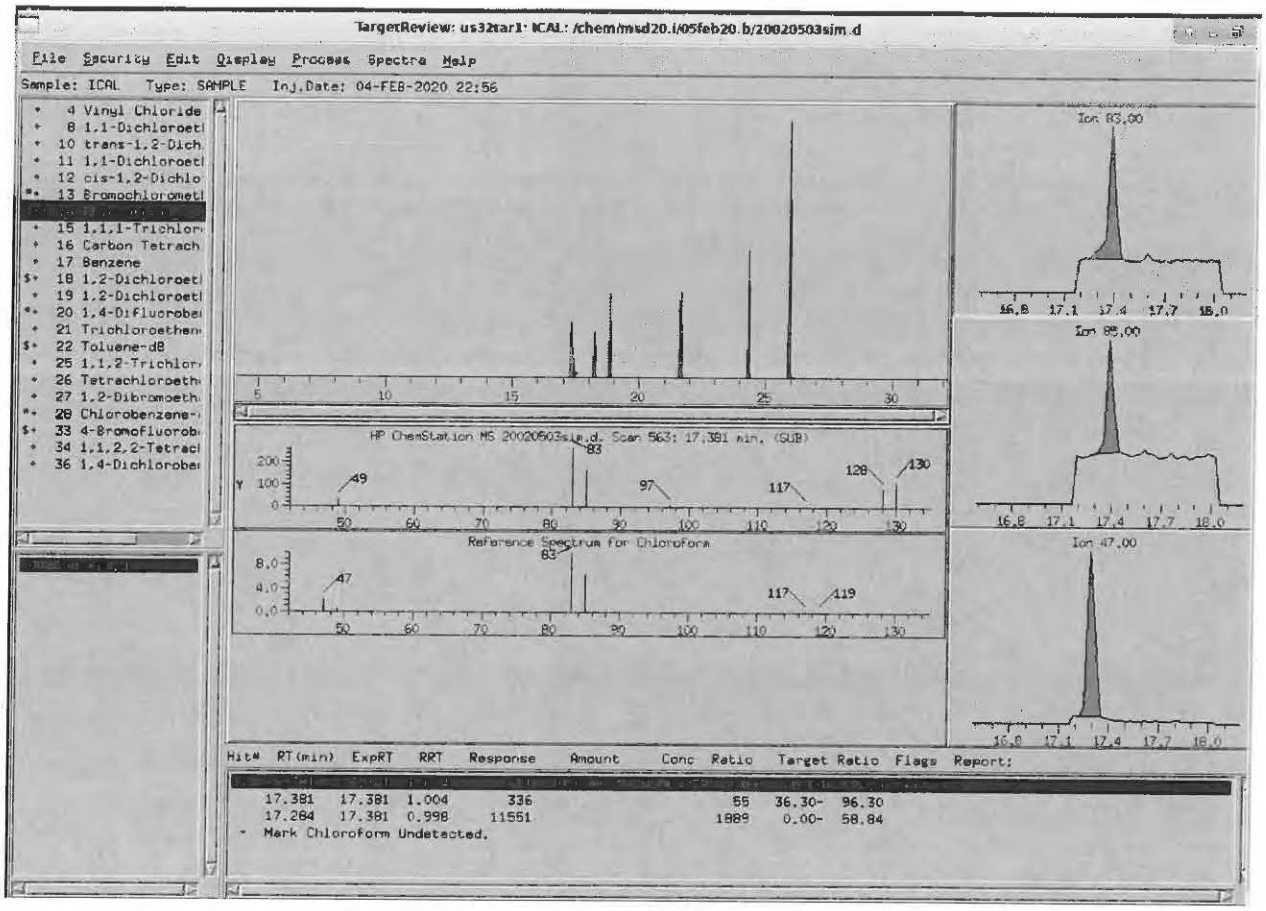
[illegible] 2/5/20

Reviewed* Date

*Must be an independent reviewer


TargetReview: us32tar1: ICAL: /chem/msd20.i/05feb20.b/20020503sim.d
File Security Edit Display Process Spectra Help
Sample: ICAL Type: SAMPLE Inj.Date: 04-FEB-2020 22:56
4 Vinyl Chloride
8 1,1-Dichloroetl
10 trans-1,2-Dich
11 1,1-Dichloroetl
12 cis-1,2-Dichlo
13 Bromochloroetl
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroetl
19 1,2-Dichloroetl
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
28 Chlorobenzene-
33 4-Bromofluorob
34 1,1,2,2-Tetrac
36 1,4-Dichlorobe
Ion 83.00
Ion 85.00
Ion 47.00
MP ChemStation MS 20020503sim.d, Scan 563: 17.381 min. (SUB)
Reference Spectrum for Chloroform
Hit# RT(min) ExpRT RRT Response Amount Conc Ratio Target Ratio Flags Report:
1 17.219 17.381 0.994 353 0.004017 0.004017 100 80.00- 120.00 a
17.186 17.381 0.992 213 61 36.30- 96.30
17.186 17.381 0.992 788 223 0.00- 58.84
17.381 17.381 1.004 684 65 36.30- 96.30
17.284 17.381 0.998 17216 1647 0.00- 58.84

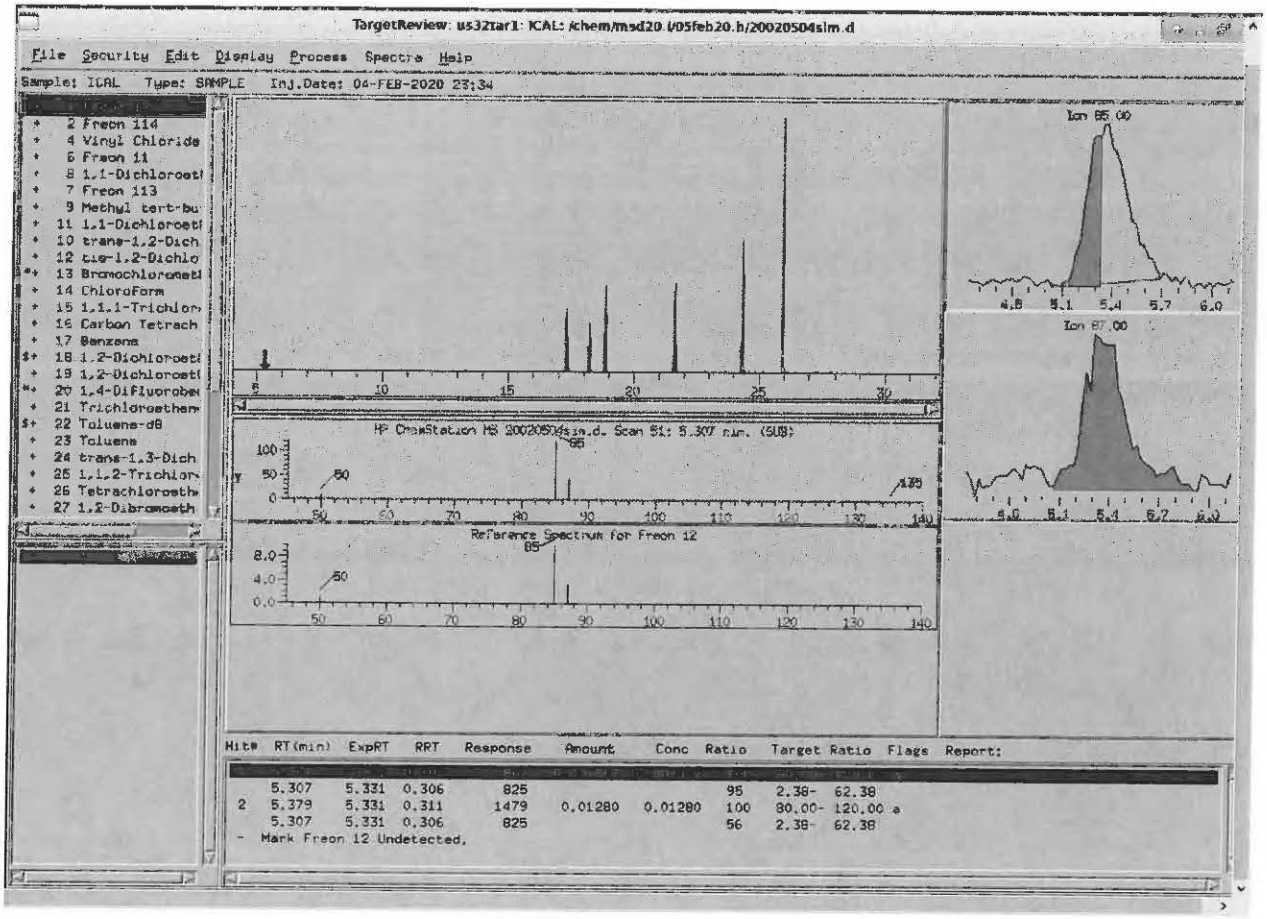
BS ONE



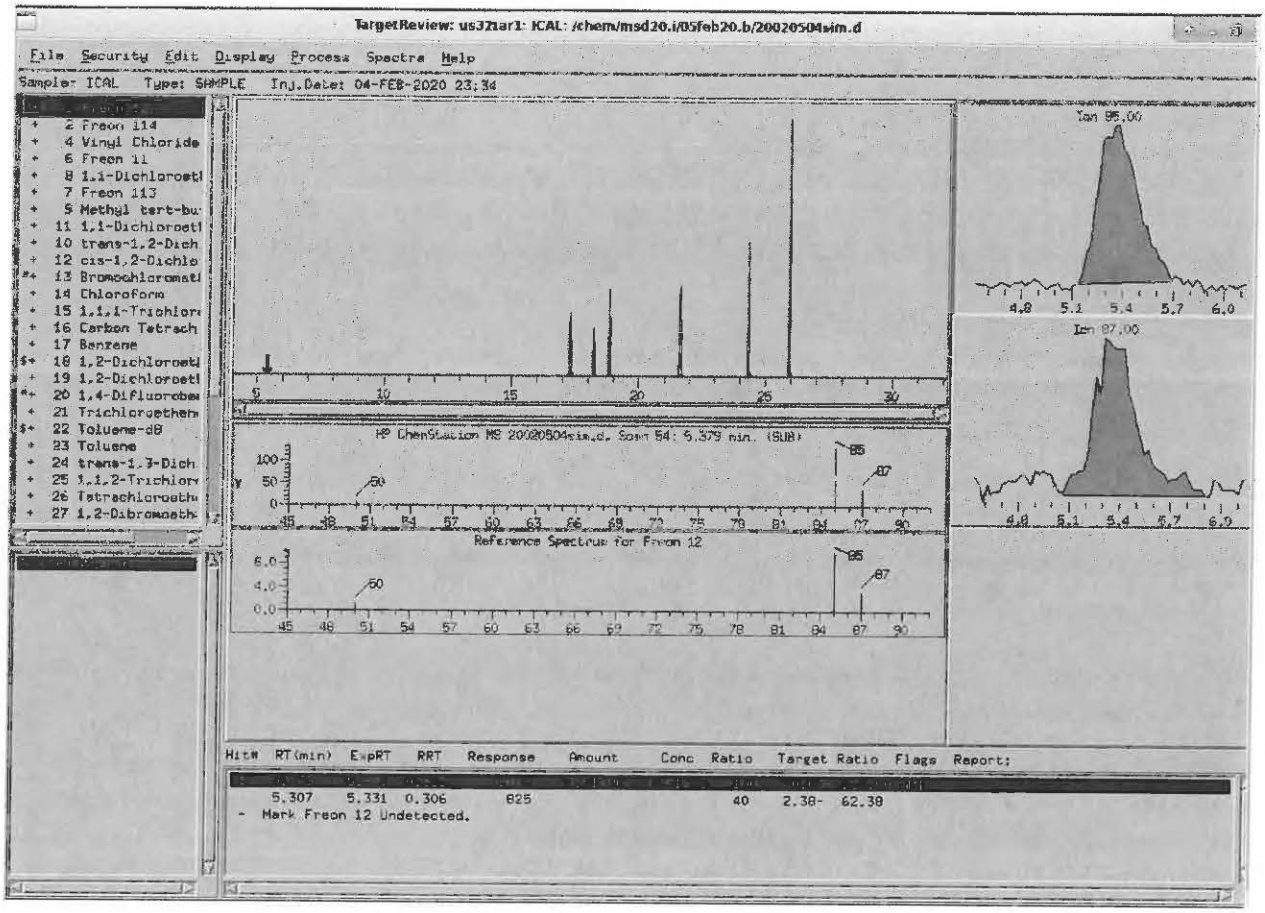
BT 2/5/20

After BT 2/5/20

Correct Baseline	X
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	


TargetReview: us32tar1: ICAL: /chem/msd20.i/05feb20.b/20020504sim.d
File Security Edit Display Process Spectra Help
Sample: ICAL Type: SAMPLE Inj.Date: 04-FEB-2020 23:34
2 Freon 114
4 Vinyl Chloride
6 Freon 11
8 1,1-Dichloroet
7 Freon 113
9 Methyl tert-bu
11 1,1-Dichloroet
10 trans-1,2-Dich
12 cis-1,2-Dichlo
13 Bromochloromet
14 Chloroform
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroet
19 1,2-Dichloroet
20 1,4-Difluorobe
21 Trichlorothen
22 Toluene-d8
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
Ion 85.00
Ion 87.00
HP ChemStation MS 20020504sim.d. Scan 51: 5.307 min. (SUB)
Reference Spectrum for Freon 12
Hit# RT(min) ExpRT RRT Response Amount Conc Ratio Target Ratio Flags Report:
5.307 5.331 0.306 825 95 2.38- 62.38
2 5.379 5.331 0.311 1479 0.01280 0.01280 100 80.00- 120.00 a
5.307 5.331 0.306 825 56 2.38- 62.38
- Mark Freon 12 Undetected.

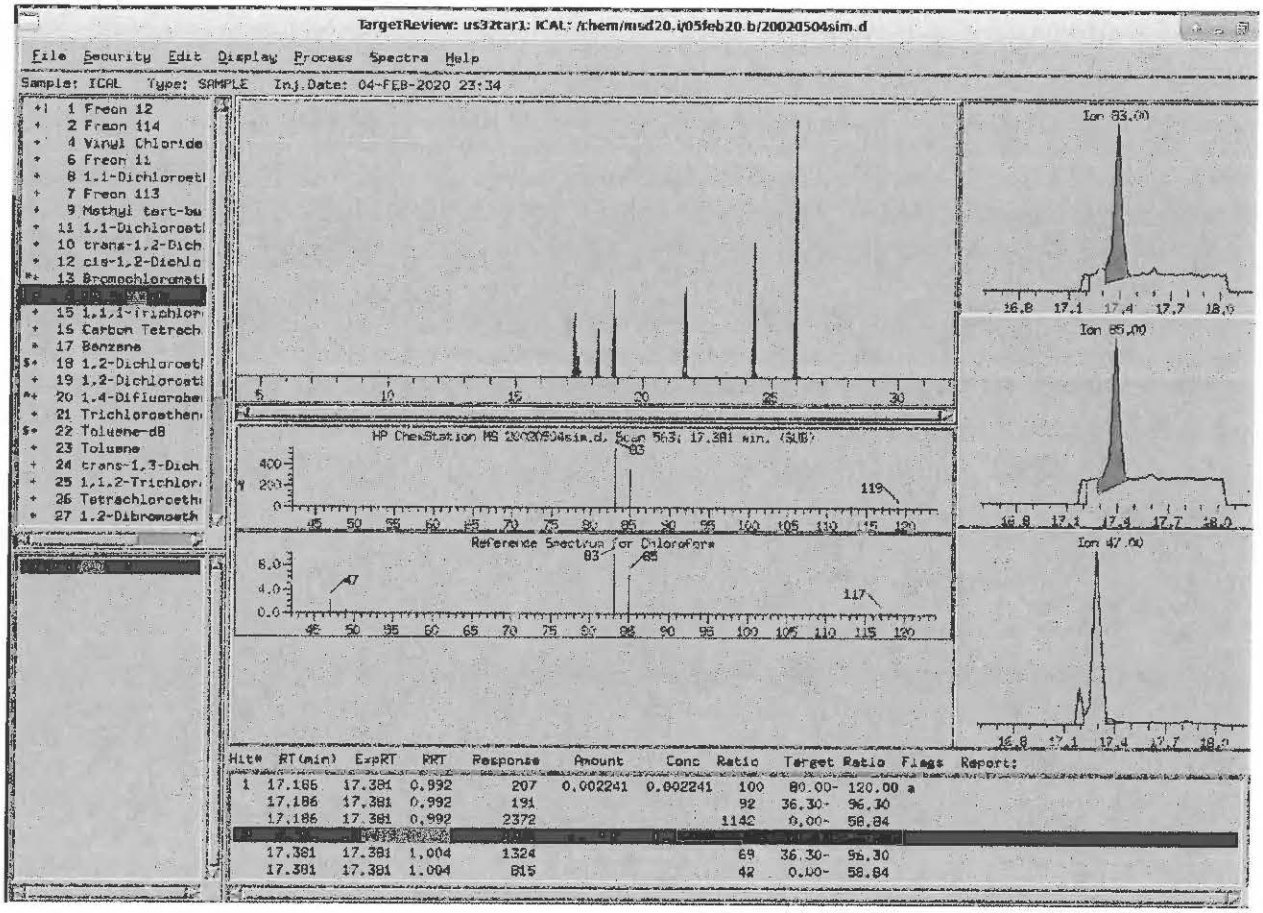
BEFORE



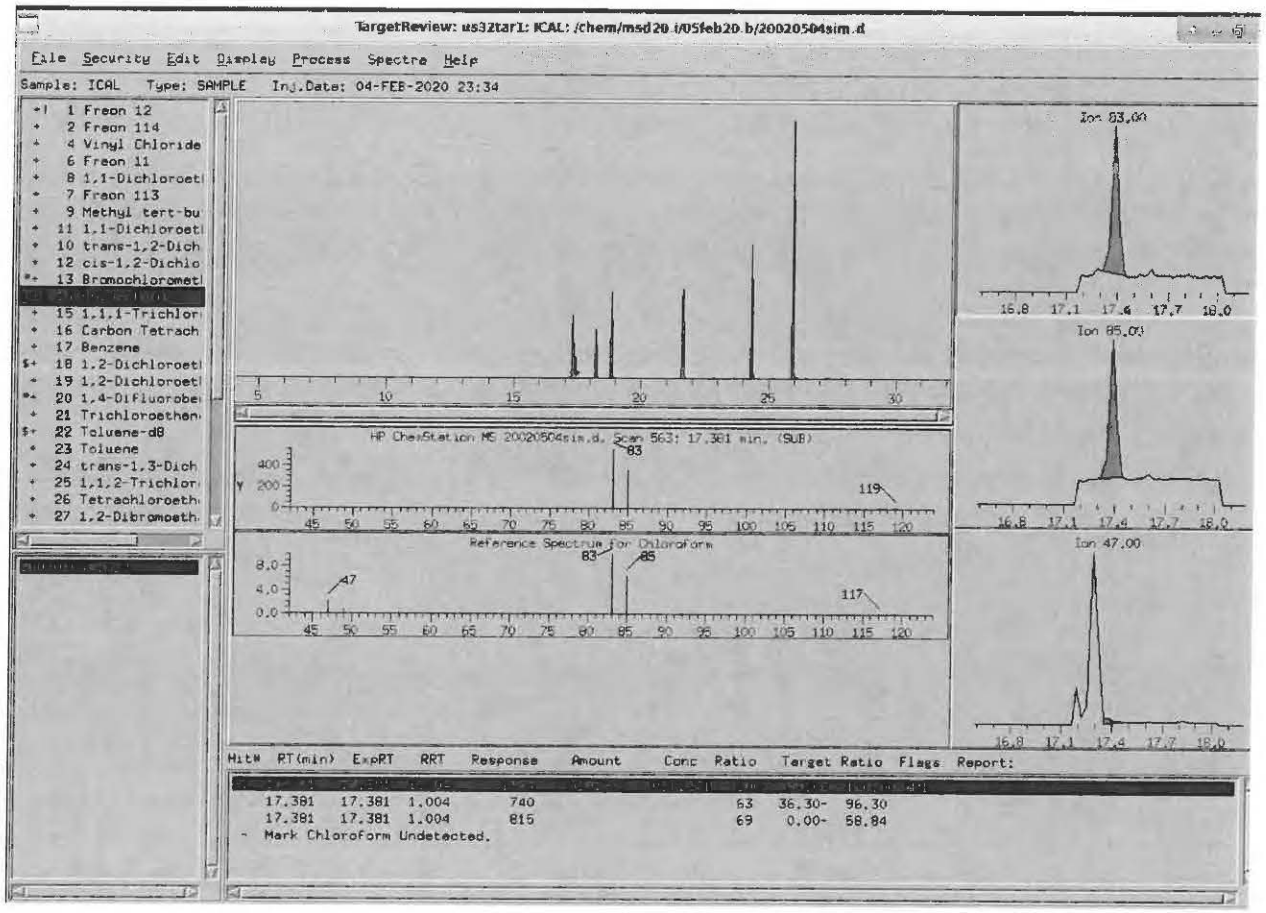
2/5/20

After 2/6/20

Correct Baseline	✓
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	


TargetReview: us32tar1: ICAL: /chem/msd20.i/05feb20.b/20020504sim.d
File Security Edit Display Process Spectra Help
Sample: ICAL Type: SAMPLE Inj.Date: 04-FEB-2020 23:34
1 Freon 12
2 Freon 114
4 Vinyl Chloride
6 Freon 11
8 1,1-Dichloroetl
7 Freon 113
9 Methyl tert-bu
11 1,1-Dichloroetl
10 trans-1,2-Dich
12 cis-1,2-Dichlo
13 Bromochloromet
15 1,1,1-Trichlor
16 Carbon Tetrach
17 Benzene
18 1,2-Dichloroetl
19 1,2-Dichloroetl
20 1,4-Difluorobe
21 Trichloroethen
22 Toluene-d8
23 Toluene
24 trans-1,3-Dich
25 1,1,2-Trichlor
26 Tetrachloroeth
27 1,2-Dibromoeth
Ion 83.00
Ion 85.00
Ion 47.00
HP ChemStation MS 20020504sim.d, Scan 563; 17.381 min. (SUB)
Reference Spectrum for Chloroform
Hit# RT(min) ExpRT RRT Response Amount Conc Ratio Target Ratio Flags Report:
1 17.186 17.381 0.992 207 0.002241 0.002241 100 80.00- 120.00 a
17.186 17.381 0.992 191 92 36.30- 96.30
17.186 17.381 0.992 2372 1142 0.00- 58.84
17.381 17.381 1.004 1324 69 36.30- 96.30
17.381 17.381 1.004 815 42 0.00- 58.84

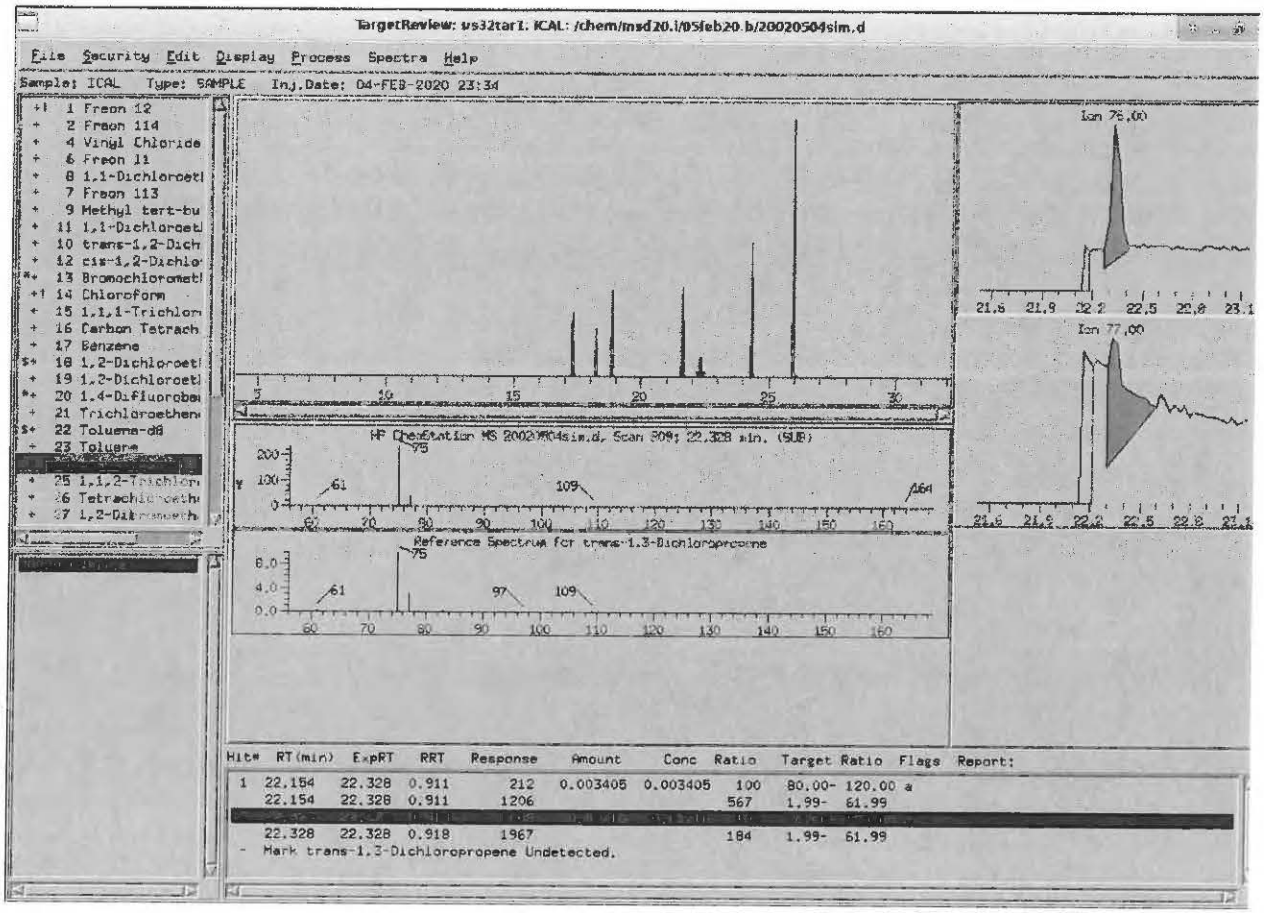
B5502

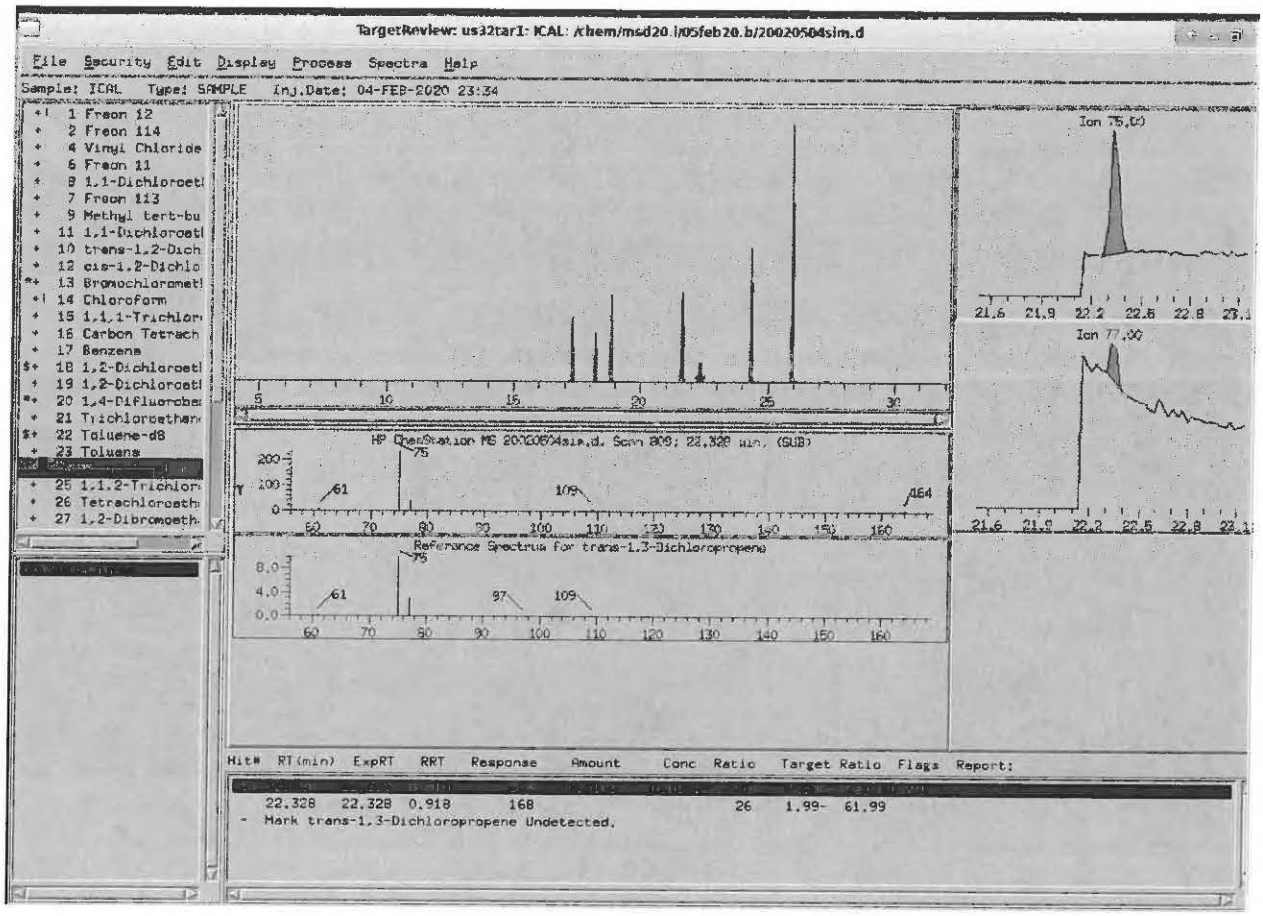


2/5/20

After 2/5/20

Correct Baseline	
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	


TargetReview: vs32tar1. ICAL: /chem/msd20.i/05feb20.b/20020504sim.d
File Security Edit Display Process Spectra Help
Sample: ICAL Type: SAMPLE Inj.Date: 04-FEB-2020 23:34
+! 1 Freon 12
+ 2 Freon 114
+ 4 Vinyl Chloride
+ 6 Freon 11
+ 8 1,1-Dichloroetl
+ 7 Freon 113
+ 9 Methyl tert-bu
+ 11 1,1-Dichloroetl
+ 10 trans-1,2-Dich
+ 12 cis-1,2-Dichlo
*+ 13 Bromochloromet
+! 14 Chloroform
+ 15 1,1,1-Trichlor
+ 16 Carbon Tetrach
+ 17 Benzene
$+ 18 1,2-Dichloroet
+ 19 1,2-Dichloroet
*+ 20 1,4-Difluorobe
+ 21 Trichloroethen
$+ 22 Toluene-d8
+ 23 Toluene
+ 25 1,1,2-Trichlor
+ 26 Tetrachloroeth
+ 27 1,2-Dibromoeth
Ion 76.00
Ion 77.00
Reference Spectrum for trans-1,3-Dichloropropene
Hit# RT(min) ExpRT RRT Response Amount Conc Ratio Target Ratio Flags Report:
1 22.154 22.328 0.911 212 0.003405 0.003405 100 80.00- 120.00 a
22.154 22.328 0.911 1206 567 1.99- 61.99
22.328 22.328 0.918 1967 184 1.99- 61.99
- Mark trans-1,3-Dichloropropene Undetected.



ST 2/5/20

After ZS 2/5/20

Correct Baseline	x
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

Modified EPA Methods TO-14A/TO-15 SIM
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane
Target Compounds:
Dichlorodifluoromethane (Fr12)
Freon 114
Chloromethane
Vinyl Chloride
Bromomethane
Chloroethane
Freon 11
Freon 113
1,1-Dichloroethene
trans-1,2-Dichloroethene
Methyl tert-butyl ether
1,1-Dichloroethane
cis-1,2-Dichloroethene
Chloroform
1,1,1-Trichloroethane
Carbon Tetrachloride
Surrogates:
1,2-Dichloroethane-d4

1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Trichloroethene
1,2-Dichloropropane
1,4-Dioxane
cis-1,3-Dichloropropene
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
Bromodichloromethane
trans-1,3-Dichloropropene
1,1,2-Trichloroethane
Tetrachloroethene
Dibromochloromethane
1,2-Dibromoethane
Chlorobenzene
Ethyl Benzene
m,p-Xylene
o-Xylene
Bromoform
1,1,2,2-Tetrachloroethane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,2-Dichlorobenzene
1,2,4-Trichlorobenzene
Hexachlorobutadiene
Naphthalene
Surrogates:
Bromofluorobenzene

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020516sima.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 05-FEB-2020 13:40
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 3018-1182
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 14:15 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	182997	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	140283			46.79- 106.79	76.66
17.284	17.316 (1.000)	49	181331			67.00- 127.00	99.09
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	568322	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	79606			0.00- 44.17	14.01
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	532803	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	246608			16.60- 76.60	46.29
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	198961	4.61870	4.619	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	104185			26.62- 86.62	52.36
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	523743	5.21185	5.212	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	56342			0.00- 40.95	10.76

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	337431			34.26- 94.26	64.43
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	427720	5.20115	5.201	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	357088			54.28- 114.28	83.49
25.927	25.927 (1.066)	176	417387			67.48- 127.48	97.58
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	1181240	9.86892	9.869	80.00- 120.00	100.00
5.331	5.336 (0.308)	87	384395			2.53- 62.53	32.54
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	1000488	9.85637	9.856	80.00- 120.00	100.00
6.898	6.895 (0.398)	137	322447			2.21- 62.21	32.23
3 Chloromethane					CAS #: 74-87-3		
7.283	7.301 (0.421)	50	307309	8.60189	8.602	80.00- 120.00	100.00
7.283	7.301 (0.421)	52	101163			2.83- 62.83	32.92
4 Vinyl Chloride					CAS #: 75-01-4		
8.280	8.278 (0.478)	62	350709	10.1692	10.169	80.00- 120.00	100.00
8.297	8.278 (0.479)	64	113306			2.23- 62.23	32.31
5 Chloroethane					CAS #: 75-00-3		
10.847	10.846 (0.626)	64	155797	10.6731	10.673	80.00- 120.00	100.00
10.847	10.846 (0.626)	66	50157			2.03- 62.03	32.19
6 Freon 11					CAS #: 75-69-4		
11.738	11.737 (0.678)	101	1215721	11.1101	11.110	80.00- 120.00	100.00
11.738	11.737 (0.678)	103	797668			35.56- 95.56	65.61
7 Freon 113					CAS #: 76-13-1		
13.329	13.328 (0.770)	151	1004421	9.64786	9.648	80.00- 120.00	100.00
13.329	13.328 (0.770)	153	652820			35.30- 95.30	64.99
13.329	13.328 (0.770)	101	989642			69.82- 129.82	98.53
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.329	13.331 (0.770)	98	242373	9.82014	9.820	80.00- 120.00	100.00
13.329	13.328 (0.770)	61	539678			194.63- 254.63	222.66
13.329	13.328 (0.770)	96	377935			125.91- 185.91	155.93
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.032	15.031 (0.868)	73	914149	11.3866	11.387	80.00- 120.00	100.00
15.004	15.031 (0.866)	57	186454			0.00- 51.41	20.40
15.004	15.031 (0.866)	41	222625			0.00- 53.76	24.35

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.059	15.080 (0.870)	98	291263	11.3760	11.376	80.00- 120.00	100.00
15.059	15.061 (0.870)	61	555297			161.94- 221.94	190.65
15.059	15.075 (0.870)	96	453598			125.44- 185.44	155.73
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.938	15.937 (0.920)	63	689020	9.71910	9.719	80.00- 120.00	100.00
15.938	15.937 (0.920)	65	221755			2.20- 62.20	32.18
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	272540	9.55337	9.553	80.00- 120.00	100.00
16.917	16.916 (0.977)	61	470286			144.59- 204.59	172.56
16.917	16.916 (0.977)	96	420989			124.96- 184.96	154.47
14 Chloroform					CAS #: 67-66-3		
17.381	17.381 (1.004)	83	954341	10.4029	10.403	80.00- 120.00	100.00
17.381	17.381 (1.004)	85	630294			35.98- 95.98	66.04
17.381	17.381 (1.004)	47	211003			0.00- 53.97	22.11
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.623	17.622 (1.018)	97	1065538	10.0507	10.051	80.00- 120.00	100.00
17.623	17.622 (1.018)	99	698599			35.55- 95.55	65.56
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.823	17.822 (1.029)	119	1169050	11.8361	11.836	80.00- 120.00	100.00
17.823	17.822 (1.029)	117	1197490			72.26- 132.26	102.43
17 Benzene					CAS #: 71-43-2		
18.206	18.207 (0.966)	78	1318161	9.77005	9.770	80.00- 120.00	100.00
18.206	18.207 (0.966)	77	307656			0.00- 53.31	23.34
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.330	18.330 (0.973)	62	591675	8.98563	8.986	80.00- 120.00	100.00
18.330	18.330 (0.973)	64	193539			2.73- 62.73	32.71
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	703626	9.54637	9.546	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	603852			56.54- 116.54	85.82
19.241	19.245 (1.021)	97	393068			26.43- 86.43	55.86
23 Toluene					CAS #: 108-88-3		
21.780	21.780 (1.156)	91	1494749	10.4501	10.450	80.00- 120.00	100.00
21.780	21.780 (1.156)	92	879671			28.65- 88.65	58.85
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.328	22.328 (0.918)	75	643427	10.9026	10.902	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
22.328	22.328 (0.918)	77	205835			1.94- 61.94	31.99
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.705	22.705 (0.934)	97	604970	9.41419	9.414	80.00- 120.00	100.00
22.705	22.705 (0.934)	99	381305			33.39- 93.39	63.03
22.705	22.705 (0.934)	83	490314			51.43- 111.43	81.05
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	1063235	9.55975	9.560	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	680270			34.72- 94.72	63.98
22.851	22.851 (0.940)	131	662249			33.00- 93.00	62.29
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.664	23.664 (0.973)	107	956804	9.76639	9.766	80.00- 120.00	100.00
23.664	23.664 (0.973)	109	921944			65.72- 125.72	96.36
29 Chlorobenzene					CAS #: 108-90-7		
24.359	24.359 (1.002)	112	1318846	9.70258	9.702	80.00- 120.00	100.00
24.359	24.359 (1.002)	114	433804			2.75- 62.75	32.89
24.359	24.359 (1.002)	77	657123			20.49- 80.49	49.83
30 Ethyl Benzene					CAS #: 100-41-4		
24.442	24.442 (1.005)	106	624925	11.3272	11.327	80.00- 120.00	100.00
24.442	24.442 (1.005)	91	1871680			269.97- 329.97	299.50
31 m,p-Xylene					CAS #: 108-38-3		
24.607	24.607 (1.012)	106	745534	11.4515	11.452	80.00- 120.00	100.00
24.607	24.607 (1.012)	91	1418230			161.51- 221.51	190.23
32 o-Xylene					CAS #: 95-47-6		
25.184	25.184 (1.036)	106	678193	11.2877	11.288	80.00- 120.00	100.00
25.184	25.184 (1.036)	91	1366529			171.59- 231.59	201.50
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.097	26.097 (1.073)	83	1206779	8.38987	8.390	80.00- 120.00	100.00
26.097	26.097 (1.073)	85	796499			35.87- 95.87	66.00
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.246	27.246 (1.120)	146	1473610	9.40004	9.400	80.00- 120.00	100.00
27.262	27.246 (1.121)	148	963261			35.51- 95.51	65.37
27.246	27.246 (1.120)	111	513006			5.09- 65.09	34.81
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.371	27.371 (1.126)	146	1504903	9.70823	9.708	80.00- 120.00	100.00
27.371	27.371 (1.126)	148	983870			35.48- 95.48	65.38

```
                                        CONCENTRATIONS
                                        ON-COL    FINAL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   36 1,4-Dichlorobenzene (continued)
 27.355  27.371 (1.125)   111    501257                     3.55-  63.55    33.31
-------------------------------------------------------------------------------
   37 1,2-Dichlorobenzene                           CAS #: 95-50-1
 27.854  27.840 (1.145)   146   1394529 9.73889    9.739  80.00- 120.00   100.00
 27.854  27.840 (1.145)   148    910161                   35.34-  95.34    65.27
 27.838  27.840 (1.145)   111    503103                    6.26-  66.26    36.08
-------------------------------------------------------------------------------
   38 Naphthalene                                   CAS #: 91-20-3
 30.395  30.395 (1.250)   128    156107 1.13777    1.138  80.00- 120.00   100.00
 30.395  30.395 (1.250)   127     20542                    0.00-  43.23    13.16
-------------------------------------------------------------------------------
```

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020516sima.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: ICV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	182997	-5.95
20 1,4-Difluorobenze	590660	354396	826924	568322	-3.78
28 Chlorobenzene-d5	550580	330348	770812	532803	-3.23

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 05-Feb-2020 14:26

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 05Feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: ICV
Client Smp ID: ICV
Level: LOW
Operator: ef
Data Type: MS DATA
SampleType: ICV
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
1 Freon 12	10.000	9.869	98.69
2 Freon 114	10.000	9.856	98.56
3 Chloromethane	10.000	8.602	86.02
4 Vinyl Chloride	10.000	10.169	101.69
5 Chloroethane	10.000	10.673	106.73
6 Freon 11	10.000	11.110	111.10
7 Freon 113	10.000	9.648	96.48
8 1,1-Dichloroethene	10.000	9.820	98.20
9 Methyl tert-butyl ether	10.000	11.387	113.87
10 trans-1,2-Dichloroethene	10.000	11.376	113.76
11 1,1-Dichloroethane	10.000	9.719	97.19
12 cis-1,2-Dichloroethene	10.000	9.553	95.53
14 Chloroform	10.000	10.403	104.03
15 1,1,1-Trichloroethane	10.000	10.051	100.51
16 Carbon Tetrachloride	10.000	11.836	118.36
17 Benzene	10.000	9.770	97.70
19 1,2-Dichloroethane	10.000	8.986	89.86
21 Trichloroethene	10.000	9.546	95.46
23 Toluene	10.000	10.450	104.50
24 trans-1,3-Dichloropropene	10.000	10.902	109.03
25 1,1,2-Trichloroethane	10.000	9.414	94.14
26 Tetrachloroethene	10.000	9.560	95.60
27 1,2-Dibromoethane (EDB)	10.000	9.766	97.66
29 Chlorobenzene	10.000	9.702	97.03
30 Ethyl Benzene	10.000	11.327	113.27
31 m,p-Xylene	10.000	11.452	114.52
32 o-Xylene	10.000	11.288	112.88
34 1,1,2,2-Tetrachloroethane	10.000	8.390	83.90
35 1,3-Dichlorobenzene	10.000	9.400	94.00
36 1,4-Dichlorobenzene	10.000	9.708	97.08
37 1,2-Dichlorobenzene	10.000	9.739	97.39
38 Naphthalene	1.000	1.138	113.78

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 05Feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: ICV
Client Smp ID: ICV
Level: LOW
Operator: ef
Data Type: MS DATA
SampleType: ICV
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	4.619	92.37
$ 22 Toluene-d8	5.000	5.212	104.24
$ 33 4-Bromofluorobenzene	5.000	5.201	104.02

Data File: /chem/msd20.i/05feb20.b/20020516sima.d

Date : 05-FEB-2020 13:40

Client ID: ICV

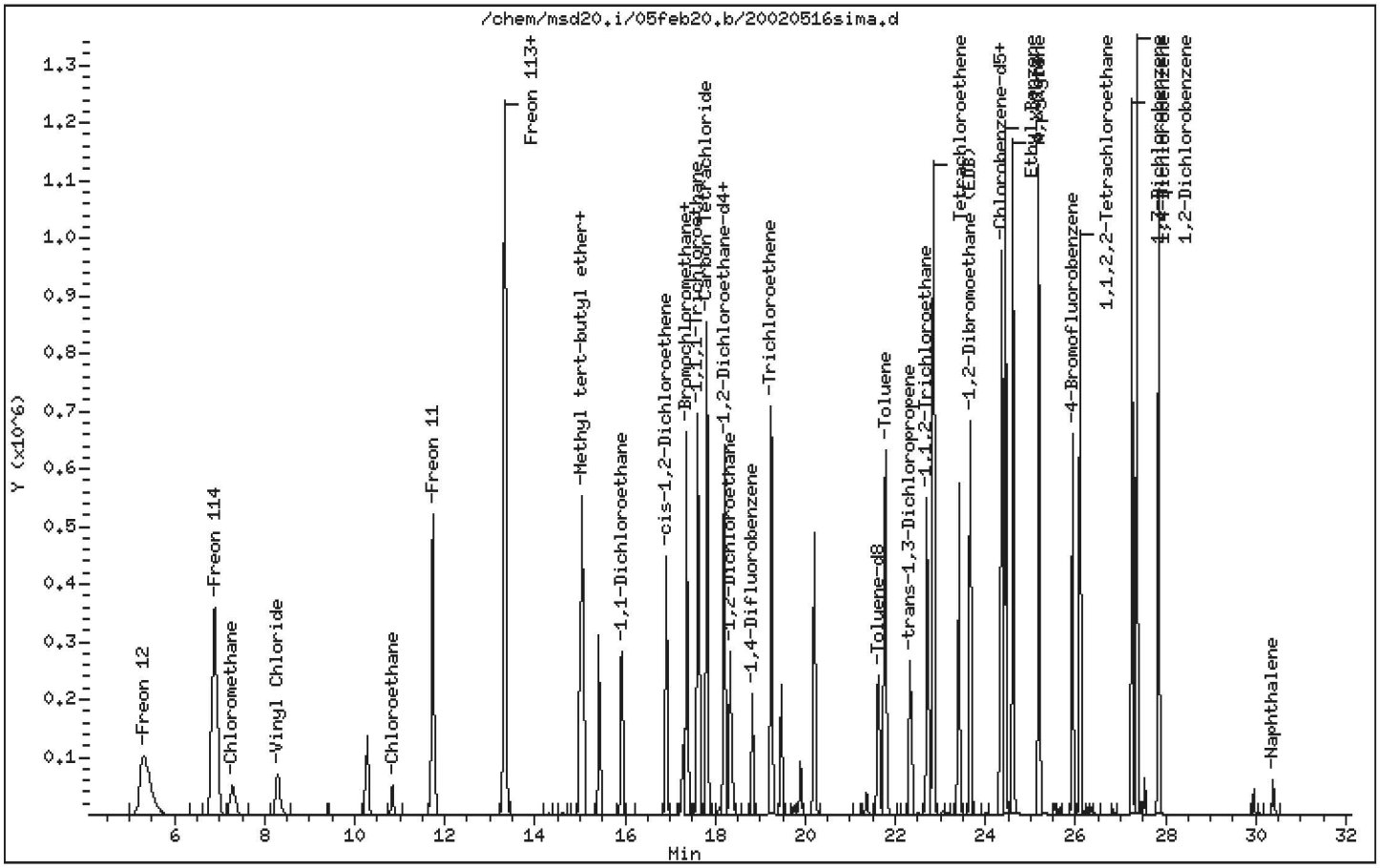
Instrument: msd20.i

Sample Info: 50mL# 3018-1182

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020503sim.d
Lab Smp Id: ICAL Client Smp ID: Level 3
Inj Date : 04-FEB-2020 22:56
Operator : gh Inst ID: msd20.i
Smp Info : 50mL# 3018-133
Misc Info : .01ppbv (.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 04-FEB-2020 22:56 Cal File: 20020503sim.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level3.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
4 Vinyl Chloride					CAS #: 75-01-4		
8.262	8.278 (0.477)	62	394	0.01000	0.01356	80.00- 120.00	100.00
8.279	8.283 (0.478)	64	166			2.23- 62.23	42.13
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.329	13.331 (0.770)	98	342	0.01000	0.01644	80.00- 120.00	100.00
13.329	13.328 (0.770)	61	561			194.63- 254.63	164.04
13.329	13.328 (0.770)	96	652			125.91- 185.91	190.64
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	286	0.01000	0.01326	80.00- 120.00	100.00(a)
15.059	15.061 (0.870)	61	454			161.94- 221.94	158.74
15.087	15.075 (0.871)	96	556			125.44- 185.44	194.41
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.938	15.937 (0.920)	63	693	0.01000	0.01160	80.00- 120.00	100.00(a)
15.938	15.937 (0.920)	65	242			2.20- 62.20	34.92
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	288	0.01000	0.01198	80.00- 120.00	100.00(a)

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   12 cis-1,2-Dichloroethene (continued)
 16.917  16.916 (0.977)    61       540                   144.59- 204.59   187.50
 16.917  16.916 (0.977)    96       492                   124.96- 184.96   170.83
-------------------------------------------------------------------------------
*  13 Bromochloromethane                            CAS #: 74-97-5
 17.316  17.316 (1.000)   130    154195 5.00000           80.00- 120.00   100.00
 17.316  17.316 (1.000)   128    118110                   46.79- 106.79    76.60
 17.284  17.283 (1.000)    49    139371                   67.00- 127.00    90.39
-------------------------------------------------------------------------------
   14 Chloroform                                    CAS #: 67-66-3
 17.381  17.381 (1.004)    83       611 0.01000  0.007904  80.00- 120.00   100.00(TaM1)
 17.381  17.381 (1.004)    85       336                   35.98-  95.98    54.99
 17.284  17.371 (0.998)    47     11551                    0.00-  53.97  1890.51
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                         CAS #: 71-55-6
 17.622  17.622 (1.018)    97       922 0.01000  0.01032  80.00- 120.00   100.00(a)
 17.622  17.622 (1.018)    99       623                   35.55-  95.55    67.57
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78      1599 0.01000  0.01385  80.00- 120.00   100.00(a)
 18.207  18.207 (0.966)    77       930                    0.00-  53.31    58.16
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                         CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    199518 5.00000    5.497  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67    101931                   26.62-  86.62    51.09
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62       659 0.01000  0.01169  80.00- 120.00   100.00(a)
 18.351  18.342 (0.974)    64       228                    2.73-  62.73    34.60
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                           CAS #: 540-36-3
 18.840  18.839 (1.000)   114    486378 5.00000           80.00- 120.00   100.00
 18.840  18.830 (1.000)    88     68846                    0.00-  44.17    14.15
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.263  19.245 (1.022)   130       718 0.01000  0.01138  80.00- 120.00   100.00(a)
 19.241  19.241 (1.021)    95       651                   56.54- 116.54    90.67
 19.241  19.241 (1.021)    97       467                   26.43-  86.43    65.04
-------------------------------------------------------------------------------
$  22 Toluene-d8                                    CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    415971 5.00000    4.837  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     47822                    0.00-  40.95    11.50
 21.624  21.624 (1.148)   100    263241                   34.26-  94.26    63.28
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.706  22.705 (0.934)    97       698 0.01000  0.01184  80.00- 120.00   100.00(a)
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   25 1,1,2-Trichloroethane (continued)
 22.706  22.705 (0.934)    99       399                    33.39-  93.39    57.16
 22.706  22.705 (0.934)    83       515                    51.43- 111.43    73.78
-------------------------------------------------------------------------------
   26 Tetrachloroethene                              CAS #: 127-18-4
 22.851  22.851 (0.940)   166      1115 0.01000  0.01093  80.00- 120.00   100.00(a)
 22.851  22.851 (0.940)   129       759                    34.72-  94.72    68.07
 22.851  22.851 (0.940)   131       677                    33.00-  93.00    60.72
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                        CAS #: 106-93-4
 23.664  23.664 (0.973)   107       970 0.01000  0.01080  80.00- 120.00   100.00(a)
 23.664  23.664 (0.973)   109       958                    65.72- 125.72    98.76
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    488563 5.00000           80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    224606                   16.60-  76.60    45.97
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                           CAS #: 460-00-4
 25.927  25.927 (1.066)   174    382032 5.00000    5.066  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    320756                   54.28- 114.28    83.96
 25.927  25.927 (1.066)   176    369208                   67.48- 127.48    96.64
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                      CAS #: 79-34-5
 26.097  26.097 (1.073)    83      1859 0.01000  0.01409  80.00- 120.00   100.00(a)
 26.097  26.097 (1.073)    85      1217                   35.87-  95.87    65.47
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                            CAS #: 106-46-7
 27.371  27.371 (1.126)   146      1915 0.01000  0.01347  80.00- 120.00   100.00(a)
 27.371  27.371 (1.126)   148      1281                   35.48-  95.48    66.89
 27.355  27.357 (1.125)   111       686                    3.55-  63.55    35.82
-------------------------------------------------------------------------------
```

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
    Target system did not integrate.

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020503sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: .01ppbv (.05ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 3
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	154195	-20.75
20 1,4-Difluorobenze	590660	354396	826924	486378	-17.66
28 Chlorobenzene-d5	550580	330348	770812	488563	-11.26

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020503sim.d

Date : 04-FEB-2020 22:56

Client ID: Level 3

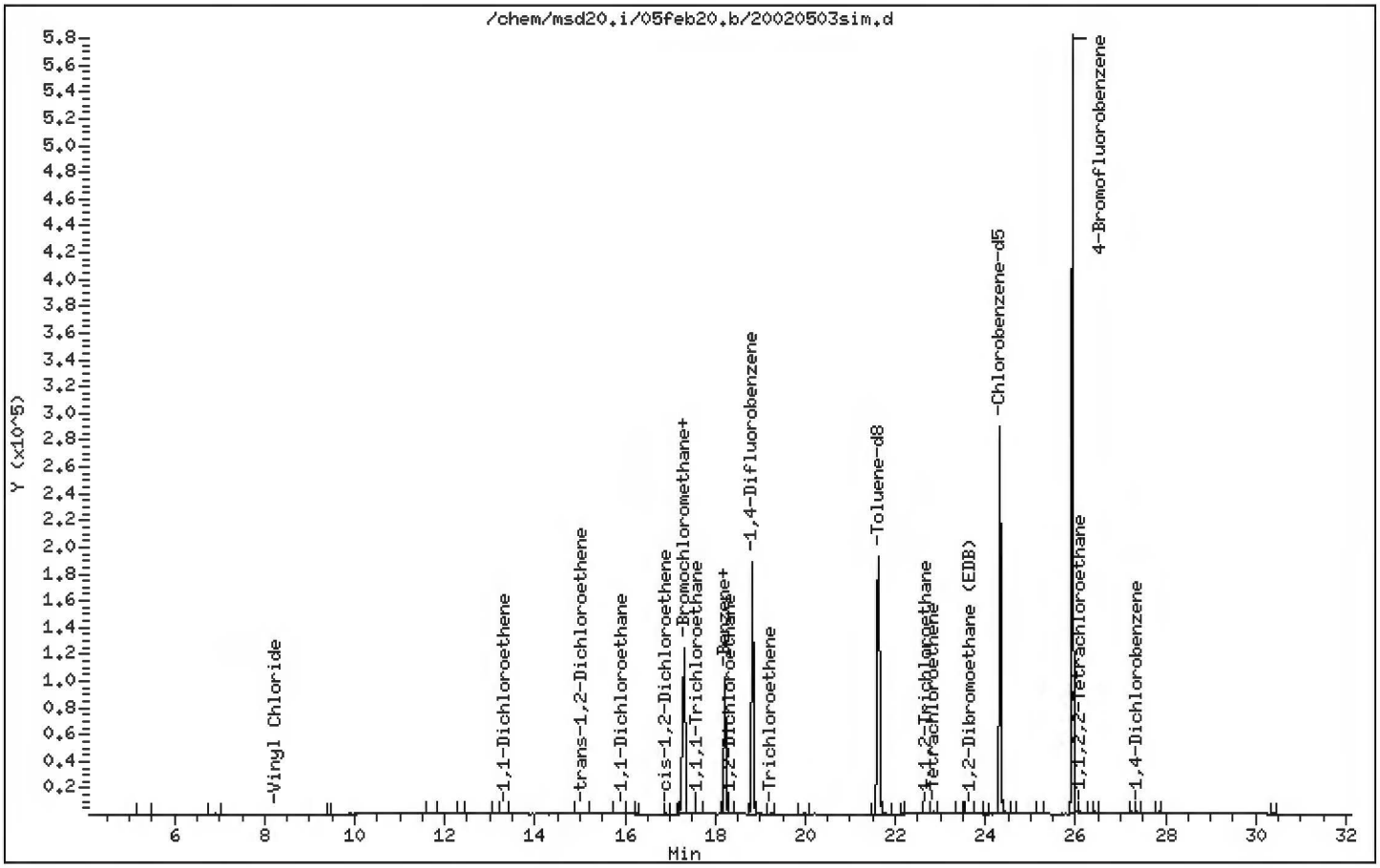
Instrument: msd20.i

Sample Info: 50mL# 3018-133

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020504sim.d
Lab Smp Id: ICAL Client Smp ID: Level 4
Inj Date : 04-FEB-2020 23:34
Operator : gh Inst ID: msd20.i
Smp Info : 100mL# 3018-133
Misc Info : .02ppbv (.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 04-FEB-2020 23:34 Cal File: 20020504sim.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level4.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.379	5.336 (0.311)	85	2076	0.02000	0.01960	80.00- 120.00	100.00(aM1)
5.307	5.334 (0.306)	87	825			2.53- 62.53	39.74
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	1956	0.02000	0.02177	80.00- 120.00	100.00
6.922	6.900 (0.400)	137	647			2.21- 62.21	33.08
4 Vinyl Chloride					CAS #: 75-01-4		
8.262	8.278 (0.477)	62	646	0.02000	0.02117	80.00- 120.00	100.00
8.262	8.283 (0.477)	64	308			2.23- 62.23	47.68
6 Freon 11					CAS #: 75-69-4		
11.738	11.737 (0.678)	101	1670	0.02000	0.01724	80.00- 120.00	100.00(a)
11.738	11.737 (0.678)	103	1079			35.56- 95.56	64.61
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.329	13.331 (0.770)	98	390	0.02000	0.01786	80.00- 120.00	100.00
13.329	13.328 (0.770)	61	886			194.63- 254.63	227.18
13.329	13.328 (0.770)	96	702			125.91- 185.91	180.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
7 Freon 113					CAS #: 76-13-1		
13.329	13.328 (0.770)	151	1938	0.02000	0.02104	80.00- 120.00	100.00
13.329	13.331 (0.770)	153	1315			35.30- 95.30	67.85
13.329	13.328 (0.770)	101	2013			69.82- 129.82	103.87
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.032	15.031 (0.868)	73	1238	0.02000	0.01742	80.00- 120.00	100.00(a)
15.032	15.018 (0.868)	57	253			0.00- 51.41	20.44
15.032	15.018 (0.868)	41	332			0.00- 53.76	26.82
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.938	15.937 (0.920)	63	1250	0.02000	0.01992	80.00- 120.00	100.00(a)
15.938	15.937 (0.920)	65	392			2.20- 62.20	31.36
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	410	0.02000	0.01810	80.00- 120.00	100.00(a)
15.059	15.061 (0.870)	61	802			161.94- 221.94	195.61
15.087	15.075 (0.871)	96	711			125.44- 185.44	173.41
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.916	16.916 (0.977)	98	478	0.02000	0.01893	80.00- 120.00	100.00(a)
16.916	16.916 (0.977)	61	828			144.59- 204.59	173.22
16.916	16.916 (0.977)	96	723			124.96- 184.96	151.26
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	161946	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	124793			46.79- 106.79	77.06
17.283	17.283 (1.000)	49	147910			67.00- 127.00	91.33
14 Chloroform					CAS #: 67-66-3		
17.381	17.381 (1.004)	83	1174	0.02000	0.01446	80.00- 120.00	100.00(aM1)
17.381	17.381 (1.004)	85	739			35.98- 95.98	62.95
17.381	17.371 (1.004)	47	815			0.00- 53.97	69.42
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.622	17.622 (1.018)	97	1791	0.02000	0.01909	80.00- 120.00	100.00(a)
17.622	17.622 (1.018)	99	1212			35.55- 95.55	67.67
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.823	17.822 (1.029)	119	955	0.02000	0.01092	80.00- 120.00	100.00(a)
17.823	17.822 (1.029)	117	944			72.26- 132.26	98.85
17 Benzene					CAS #: 71-43-2		
18.207	18.207 (0.966)	78	2235	0.02000	0.02092	80.00- 120.00	100.00(a)
18.207	18.207 (0.966)	77	878			0.00- 53.31	39.28

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

$  18 1,2-Dichloroethane-d4                          CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    195917 5.00000    5.139  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67     99559                    26.62-  86.62    50.82
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                               CAS #: 107-06-2
 18.330  18.330 (0.973)    62      1099 0.02000  0.02107  80.00- 120.00   100.00
 18.351  18.342 (0.974)    64       350                     2.73-  62.73    31.85
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                              CAS #: 540-36-3
 18.839  18.839 (1.000)   114    450091 5.00000           80.00- 120.00   100.00
 18.839  18.830 (1.000)    88     63720                     0.00-  44.17    14.16
-------------------------------------------------------------------------------
   21 Trichloroethene                                  CAS #: 79-01-6
 19.263  19.245 (1.022)   130      1159 0.02000  0.01986  80.00- 120.00   100.00(a)
 19.241  19.241 (1.021)    95      1117                    56.54- 116.54    96.38
 19.241  19.241 (1.021)    97       724                    26.43-  86.43    62.47
-------------------------------------------------------------------------------
$  22 Toluene-d8                                       CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    392496 5.00000    4.932  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     45491                     0.00-  40.95    11.59
 21.624  21.624 (1.148)   100    247341                    34.26-  94.26    63.02
-------------------------------------------------------------------------------
   23 Toluene                                          CAS #: 108-88-3
 21.780  21.780 (1.156)    91      2287 0.02000  0.02019  80.00- 120.00   100.00(a)
 21.780  21.780 (1.156)    92      1352                    28.65-  88.65    59.12
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                        CAS #: 10061-02-6
 22.328  22.328 (0.918)    75       633 0.02000  0.01265  80.00- 120.00   100.00(aM1)
 22.328  22.328 (0.918)    77       167                     1.94-  61.94    26.38
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                            CAS #: 79-00-5
 22.705  22.705 (0.934)    97      1108 0.02000  0.02034  80.00- 120.00   100.00
 22.705  22.705 (0.934)    99       709                    33.39-  93.39    63.99
 22.705  22.705 (0.934)    83       979                    51.43- 111.43    88.36
-------------------------------------------------------------------------------
   26 Tetrachloroethene                                CAS #: 127-18-4
 22.851  22.851 (0.940)   166      1981 0.02000  0.02101  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129      1284                    34.72-  94.72    64.82
 22.851  22.851 (0.940)   131      1225                    33.00-  93.00    61.84
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                          CAS #: 106-93-4
 23.664  23.664 (0.973)   107      1714 0.02000  0.02064  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109      1617                    65.72- 125.72    94.34
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                                 CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    451622 5.00000           80.00- 120.00   100.00
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

*  28 Chlorobenzene-d5 (continued)
 24.318  24.318 (1.000)    82    208524                    16.60-  76.60    46.17
-------------------------------------------------------------------------------
   29 Chlorobenzene                                CAS #: 108-90-7
 24.359  24.359 (1.002)   112      2403 0.02000  0.02086  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114      1001                    2.75-  62.75    41.66
 24.318  24.350 (1.000)    77      5208                   20.49-  80.49   216.73
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                CAS #: 100-41-4
 24.442  24.442 (1.005)   106       897 0.02000  0.01918  80.00- 120.00   100.00(a)
 24.442  24.442 (1.005)    91      2731                  269.97- 329.97   304.46
-------------------------------------------------------------------------------
   31 m,p-Xylene                                   CAS #: 108-38-3
 24.607  24.607 (1.012)   106      1035 0.02000  0.01876  80.00- 120.00   100.00(a)
 24.607  24.607 (1.012)    91      1930                  161.51- 221.51   186.47
-------------------------------------------------------------------------------
   32 o-Xylene                                     CAS #: 95-47-6
 25.184  25.184 (1.036)   106       961 0.02000  0.01887  80.00- 120.00   100.00(a)
 25.184  25.184 (1.036)    91      1988                  171.59- 231.59   206.87
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                         CAS #: 460-00-4
 25.927  25.927 (1.066)   174    341343 5.00000    4.897  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    283764                   54.28- 114.28    83.13
 25.927  25.927 (1.066)   176    330501                   67.48- 127.48    96.82
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                    CAS #: 79-34-5
 26.097  26.097 (1.073)    83      2564 0.02000  0.02103  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85      1720                   35.87-  95.87    67.08
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                          CAS #: 541-73-1
 27.246  27.246 (1.120)   146      2962 0.02000  0.02229  80.00- 120.00   100.00
 27.262  27.253 (1.121)   148      2069                   35.51-  95.51    69.85
 27.246  27.246 (1.120)   111      1063                    5.09-  65.09    35.89
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                          CAS #: 106-46-7
 27.371  27.371 (1.126)   146      2424 0.02000  0.01845  80.00- 120.00   100.00(a)
 27.371  27.371 (1.126)   148      1707                   35.48-  95.48    70.42
 27.355  27.357 (1.125)   111       814                    3.55-  63.55    33.58
-------------------------------------------------------------------------------
   37 1,2-Dichlorobenzene                          CAS #: 95-50-1
 27.838  27.840 (1.145)   146      2424 0.02000  0.01997  80.00- 120.00   100.00(a)
 27.854  27.851 (1.145)   148      1532                   35.34-  95.34    63.20
 27.838  27.838 (1.145)   111       892                    6.26-  66.26    36.80
-------------------------------------------------------------------------------
```

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
    Target system did not integrate.

Report Date: 05-Feb-2020 09:42

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020504sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: .02ppbv (.05ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 4
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	161946	-16.77
20 1,4-Difluorobenze	590660	354396	826924	450091	-23.80
28 Chlorobenzene-d5	550580	330348	770812	451622	-17.97

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020504sim.d

Date : 04-FEB-2020 23:34

Client ID: Level 4

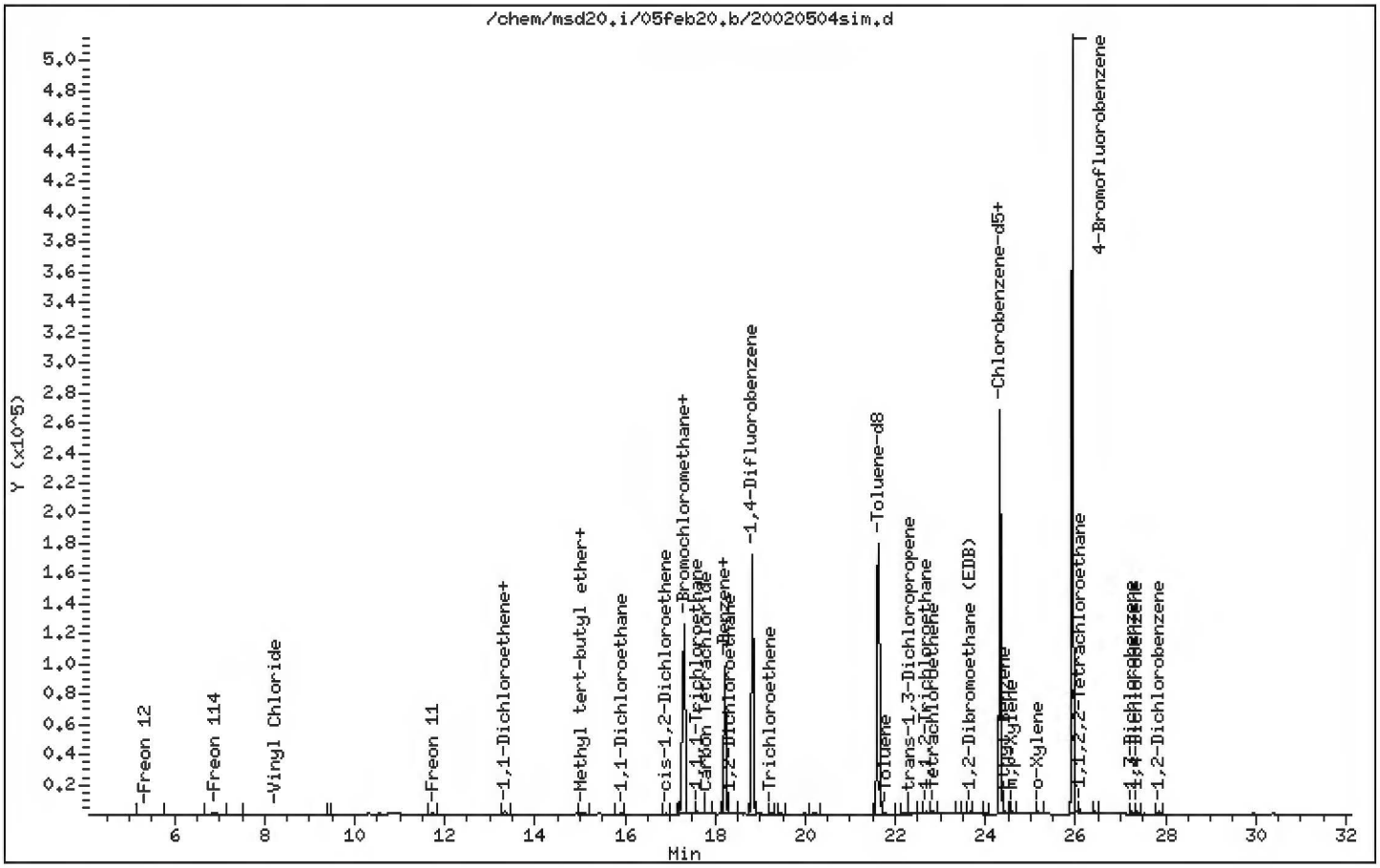
Instrument: msd20.i

Sample Info: 100mL# 3018-133

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020505sim.d
Lab Smp Id: ICAL Client Smp ID: Level 5
Inj Date : 05-FEB-2020 00:13
Operator : gh Inst ID: msd20.i
Smp Info : 250mL# 3018-133
Misc Info : .05ppbv (.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 00:13 Cal File: 20020505sim.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.355	5.336 (0.309)	85	5508	0.05000	0.05518	80.00- 120.00	100.00
5.355	5.334 (0.309)	87	1580			2.53- 62.53	28.69
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	4489	0.05000	0.05303	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	1482			2.21- 62.21	33.01
3 Chloromethane					CAS #: 74-87-3		
7.307	7.301 (0.422)	50	1940	0.05000	0.06511	80.00- 120.00	100.00
7.307	7.298 (0.422)	52	603			2.83- 62.83	31.08
4 Vinyl Chloride					CAS #: 75-01-4		
8.279	8.278 (0.478)	62	1392	0.05000	0.04840	80.00- 120.00	100.00(a)
8.297	8.283 (0.479)	64	531			2.23- 62.23	38.15
5 Chloroethane					CAS #: 75-00-3		
10.846	10.846 (0.626)	64	868	0.05000	0.07130	80.00- 120.00	100.00
10.870	10.849 (0.628)	66	475			2.03- 62.03	54.72

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

    6 Freon 11                                        CAS #: 75-69-4
 11.738  11.737 (0.678)   101      3962 0.05000  0.04342  80.00- 120.00   100.00(a)
 11.738  11.737 (0.678)   103      2575                   35.56-  95.56    64.99
-------------------------------------------------------------------------------
    7 Freon 113                                       CAS #: 76-13-1
 13.329  13.328 (0.770)   151      4639 0.05000  0.05343  80.00- 120.00   100.00
 13.329  13.331 (0.770)   153      3072                   35.30-  95.30    66.22
 13.329  13.328 (0.770)   101      4613                   69.82- 129.82    99.44
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                              CAS #: 75-35-4
 13.329  13.331 (0.770)    98       977 0.05000  0.04747  80.00- 120.00   100.00(a)
 13.329  13.328 (0.770)    61      2065                  194.63- 254.63   211.36
 13.329  13.328 (0.770)    96      1506                  125.91- 185.91   154.15
-------------------------------------------------------------------------------
    9 Methyl tert-butyl ether                         CAS #: 1634-04-4
 15.032  15.031 (0.868)    73      2907 0.05000  0.04342  80.00- 120.00   100.00(a)
 15.032  15.018 (0.868)    57       640                    0.00-  51.41    22.02
 15.032  15.018 (0.868)    41       836                    0.00-  53.76    28.76
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                        CAS #: 156-60-5
 15.087  15.080 (0.871)    98      1026 0.05000  0.04805  80.00- 120.00   100.00(a)
 15.059  15.061 (0.870)    61      1876                  161.94- 221.94   182.85
 15.087  15.075 (0.871)    96      1739                  125.44- 185.44   169.49
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                              CAS #: 75-34-3
 15.938  15.937 (0.920)    63      2884 0.05000  0.04878  80.00- 120.00   100.00(a)
 15.938  15.937 (0.920)    65       910                    2.20-  62.20    31.55
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                          CAS #: 156-59-2
 16.916  16.916 (0.977)    98      1087 0.05000  0.04569  80.00- 120.00   100.00(a)
 16.916  16.916 (0.977)    61      1891                  144.59- 204.59   173.97
 16.916  16.916 (0.977)    96      1781                  124.96- 184.96   163.85
-------------------------------------------------------------------------------
*  13 Bromochloromethane                              CAS #: 74-97-5
 17.316  17.316 (1.000)   130    152612 5.00000           80.00- 120.00   100.00
 17.316  17.316 (1.000)   128    117611                   46.79- 106.79    77.07
 17.283  17.283 (1.000)    49    139034                   67.00- 127.00    91.10
-------------------------------------------------------------------------------
   14 Chloroform                                      CAS #: 67-66-3
 17.381  17.381 (1.004)    83      4220 0.05000  0.05516  80.00- 120.00   100.00
 17.381  17.381 (1.004)    85      2722                   35.98-  95.98    64.50
 17.381  17.371 (1.004)    47      1377                    0.00-  53.97    32.63
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                           CAS #: 71-55-6
 17.622  17.622 (1.018)    97      4666 0.05000  0.05278  80.00- 120.00   100.00
 17.622  17.622 (1.018)    99      2994                   35.55-  95.55    64.17
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.823  17.822 (1.029)   119      3098 0.05000  0.03761  80.00- 120.00   100.00(a)
 17.823  17.822 (1.029)   117      3225                   72.26- 132.26   104.10
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78      4850 0.05000  0.04684  80.00- 120.00   100.00(a)
 18.207  18.207 (0.966)    77      1450                    0.00-  53.31    29.90
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                        CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    189600 5.00000    5.278  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67     96009                   26.62-  86.62    50.64
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62      2624 0.05000  0.05193  80.00- 120.00   100.00
 18.351  18.342 (0.974)    64       944                    2.73-  62.73    35.98
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                          CAS #: 540-36-3
 18.839  18.839 (1.000)   114    436110 5.00000           80.00- 120.00   100.00
 18.839  18.830 (1.000)    88     61030                    0.00-  44.17    13.99
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130      3009 0.05000  0.05320  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95      2631                   56.54- 116.54    87.44
 19.241  19.241 (1.021)    97      1722                   26.43-  86.43    57.23
-------------------------------------------------------------------------------
$  22 Toluene-d8                                   CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    382873 5.00000    4.965  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     44435                    0.00-  40.95    11.61
 21.624  21.624 (1.148)   100    241421                   34.26-  94.26    63.06
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91      5532 0.05000  0.05040  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92      3208                   28.65-  88.65    57.99
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75      2636 0.05000  0.05417  80.00- 120.00   100.00
 22.328  22.328 (0.918)    77      1965                    1.94-  61.94    74.54
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.705  22.705 (0.934)    97      2729 0.05000  0.05151  80.00- 120.00   100.00
 22.705  22.705 (0.934)    99      1707                   33.39-  93.39    62.55
 22.705  22.705 (0.934)    83      2214                   51.43- 111.43    81.13
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166      4731 0.05000  0.05159  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129      3109                   34.72-  94.72    65.72
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131      3070                    33.00-  93.00    64.89
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.664  23.664 (0.973)   107      4306 0.05000  0.05331  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109      3905                    65.72- 125.72    90.69
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    439285 5.00000            80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    204327                    16.60-  76.60    46.51
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112      6036 0.05000  0.05386  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114      2158                     2.75-  62.75    35.75
 24.318  24.350 (1.000)    77      6777                    20.49-  80.49   112.28
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106      2124 0.05000  0.04670  80.00- 120.00   100.00(a)
 24.442  24.442 (1.005)    91      6384                   269.97- 329.97   300.56
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106      2478 0.05000  0.04616  80.00- 120.00   100.00(a)
 24.607  24.607 (1.012)    91      4595                   161.51- 221.51   185.43
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106      2372 0.05000  0.04788  80.00- 120.00   100.00(a)
 25.184  25.184 (1.036)    91      4797                   171.59- 231.59   202.23
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    326027 5.00000    4.808  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    272233                    54.28- 114.28    83.50
 25.927  25.927 (1.066)   176    314987                    67.48- 127.48    96.61
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83      6444 0.05000  0.05434  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85      4242                    35.87-  95.87    65.83
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146      6815 0.05000  0.05273  80.00- 120.00   100.00
 27.262  27.253 (1.121)   148      4611                    35.51-  95.51    67.66
 27.246  27.246 (1.120)   111      2489                     5.09-  65.09    36.52
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146      6410 0.05000  0.05015  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148      3968                    35.48-  95.48    61.90
 27.355  27.357 (1.125)   111      2134                     3.55-  63.55    33.29
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.838	27.840	(1.145)	146	6155	0.05000	0.05214	80.00- 120.00	100.00
27.854	27.851	(1.145)	148	3848			35.34- 95.34	62.52
27.838	27.838	(1.145)	111	2166			6.26- 66.26	35.19
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	1021	0.00500	0.009026	80.00- 120.00	100.00(a)
30.395	30.403	(1.250)	127	291			0.00- 43.23	28.50

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 05-Feb-2020 09:42

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020505sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: .05ppbv (.05ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 5
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	152612	-21.56
20 1,4-Difluorobenze	590660	354396	826924	436110	-26.17
28 Chlorobenzene-d5	550580	330348	770812	439285	-20.21

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020505sim.d

Date : 05-FEB-2020 00:13

Client ID: Level 5

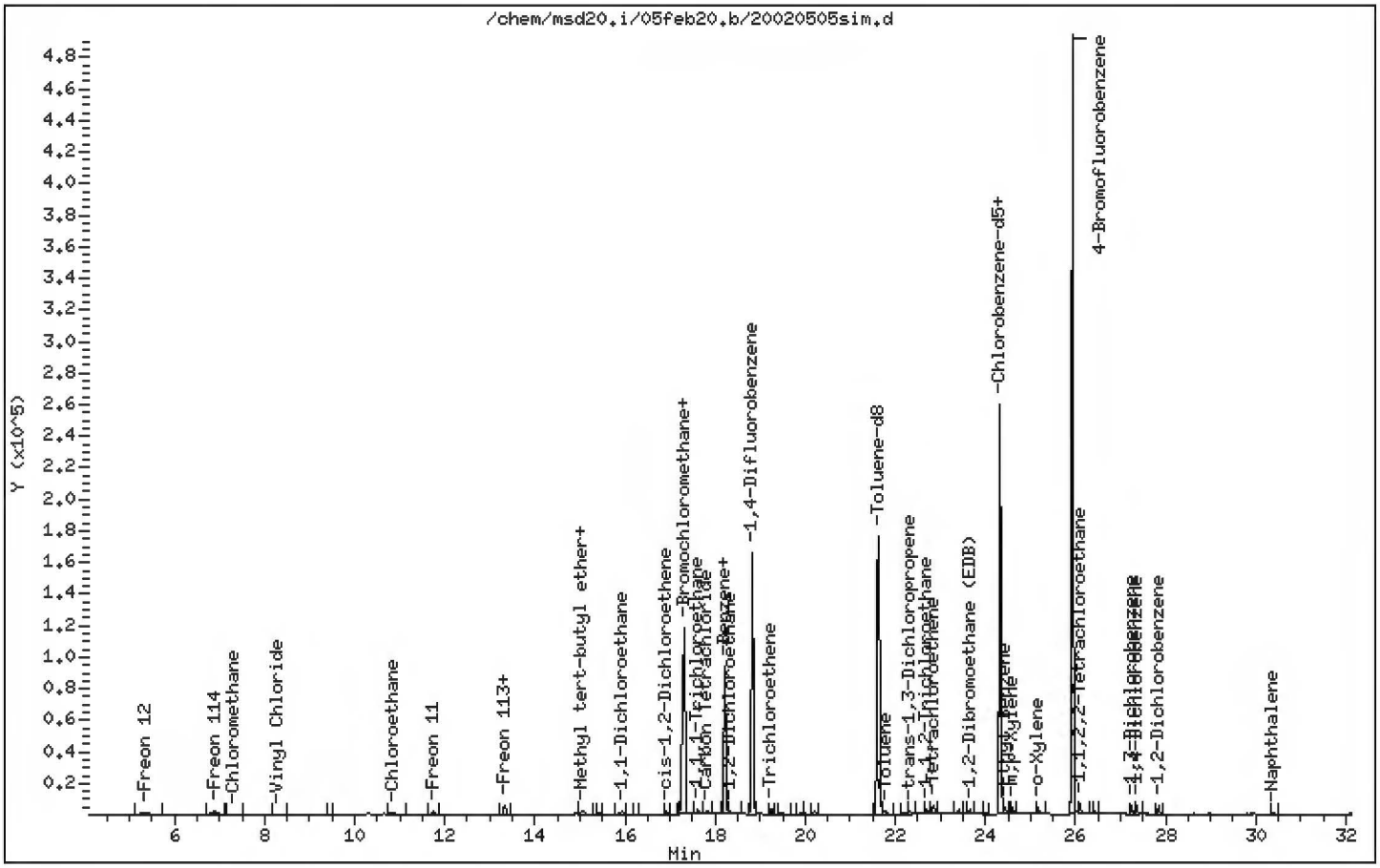
Instrument: msd20.i

Sample Info: 250mL# 3018-133

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020506sim.d
Lab Smp Id: ICAL Client Smp ID: Level 6
Inj Date : 05-FEB-2020 00:52
Operator : gh Inst ID: msd20.i
Smp Info : 25mL# 3018-134
Misc Info : 0.1ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 00:52 Cal File: 20020506sim.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	11452	0.10000	0.1103	80.00- 120.00	100.00
5.331	5.334 (0.308)	87	3784			2.53- 62.53	33.04
2 Freon 114					CAS #: 76-14-2		
6.874	6.895 (0.397)	135	9731	0.10000	0.1106	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	3190			2.21- 62.21	32.78
3 Chloromethane					CAS #: 74-87-3		
7.307	7.301 (0.422)	50	4127	0.10000	0.1332	80.00- 120.00	100.00
7.283	7.298 (0.421)	52	1420			2.83- 62.83	34.41
4 Vinyl Chloride					CAS #: 75-01-4		
8.245	8.278 (0.476)	62	2949	0.10000	0.09862	80.00- 120.00	100.00
8.245	8.283 (0.476)	64	964			2.23- 62.23	32.69
5 Chloroethane					CAS #: 75-00-3		
10.846	10.846 (0.626)	64	903	0.10000	0.07134	80.00- 120.00	100.00
10.846	10.849 (0.626)	66	339			2.03- 62.03	37.54

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
6 Freon 11					CAS #: 75-69-4		
11.738	11.737 (0.678)	101	8186	0.10000	0.08628	80.00- 120.00	100.00
11.738	11.737 (0.678)	103	5399			35.56- 95.56	65.95
7 Freon 113					CAS #: 76-13-1		
13.329	13.328 (0.770)	151	10328	0.10000	0.1144	80.00- 120.00	100.00
13.329	13.331 (0.770)	153	6605			35.30- 95.30	63.95
13.329	13.328 (0.770)	101	10309			69.82- 129.82	99.82
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.329	13.331 (0.770)	98	2173	0.10000	0.1015	80.00- 120.00	100.00
13.329	13.328 (0.770)	61	4653			194.63- 254.63	214.13
13.329	13.328 (0.770)	96	3223			125.91- 185.91	148.32
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.032	15.031 (0.868)	73	6221	0.10000	0.08937	80.00- 120.00	100.00
15.032	15.018 (0.868)	57	1385			0.00- 51.41	22.26
15.032	15.018 (0.868)	41	1805			0.00- 53.76	29.01
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	2088	0.10000	0.09405	80.00- 120.00	100.00
15.059	15.061 (0.870)	61	4059			161.94- 221.94	194.40
15.087	15.075 (0.871)	96	3439			125.44- 185.44	164.70
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.938	15.937 (0.920)	63	6271	0.10000	0.1020	80.00- 120.00	100.00
15.938	15.937 (0.920)	65	2075			2.20- 62.20	33.09
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	2385	0.10000	0.09642	80.00- 120.00	100.00
16.917	16.916 (0.977)	61	3981			144.59- 204.59	166.92
16.917	16.916 (0.977)	96	3733			124.96- 184.96	156.52
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	158674	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	122355			46.79- 106.79	77.11
17.284	17.283 (1.000)	49	144556			67.00- 127.00	91.10
14 Chloroform					CAS #: 67-66-3		
17.381	17.381 (1.004)	83	9242	0.10000	0.1162	80.00- 120.00	100.00
17.381	17.381 (1.004)	85	5993			35.98- 95.98	64.85
17.381	17.371 (1.004)	47	2412			0.00- 53.97	26.10
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.622	17.622 (1.018)	97	9998	0.10000	0.1088	80.00- 120.00	100.00
17.622	17.622 (1.018)	99	6349			35.55- 95.55	63.50

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.823  17.822 (1.029)   119      7461 0.10000  0.08712  80.00- 120.00   100.00
 17.823  17.822 (1.029)   117      7529                   72.26- 132.26   100.91
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78      9996 0.10000  0.09650  80.00- 120.00   100.00
 18.207  18.207 (0.966)    77      2502                    0.00-  53.31    25.03
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                         CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    191991 5.00000    5.140  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67     97265                   26.62-  86.62    50.66
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62      5554 0.10000   0.1098  80.00- 120.00   100.00
 18.351  18.342 (0.974)    64      1961                    2.73-  62.73    35.31
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                          CAS #: 540-36-3
 18.839  18.839 (1.000)   114    436351 5.00000           80.00- 120.00   100.00
 18.839  18.830 (1.000)    88     61301                    0.00-  44.17    14.05
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130      6176 0.10000   0.1091  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95      5331                   56.54- 116.54    86.32
 19.241  19.241 (1.021)    97      3504                   26.43-  86.43    56.74
-------------------------------------------------------------------------------
$  22 Toluene-d8                                    CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    382375 5.00000    4.956  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     44359                    0.00-  40.95    11.60
 21.624  21.624 (1.148)   100    240566                   34.26-  94.26    62.91
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91     10994 0.10000   0.1001  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92      6252                   28.65-  88.65    56.87
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75      4809 0.10000  0.09849  80.00- 120.00   100.00
 22.328  22.328 (0.918)    77      2387                    1.94-  61.94    49.64
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.706  22.705 (0.934)    97      5586 0.10000   0.1051  80.00- 120.00   100.00
 22.706  22.705 (0.934)    99      3542                   33.39-  93.39    63.41
 22.706  22.705 (0.934)    83      4515                   51.43- 111.43    80.83
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166      9040 0.10000  0.09824  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129      6083                   34.72-  94.72    67.29
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131      5780                    33.00-  93.00    63.94
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.664  23.664 (0.973)   107      7890 0.10000  0.09734  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109      7554                    65.72- 125.72    95.74
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                               CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    440802 5.00000            80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    203925                    16.60-  76.60    46.26
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112     11373 0.10000   0.1011  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114      3857                     2.75-  62.75    33.91
 24.359  24.350 (1.002)    77      9399                    20.49-  80.49    82.64
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106      4028 0.10000  0.08825  80.00- 120.00   100.00
 24.442  24.442 (1.005)    91     12142                   269.97- 329.97   301.44
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106      4576 0.10000  0.08496  80.00- 120.00   100.00
 24.607  24.607 (1.012)    91      8624                   161.51- 221.51   188.46
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106      4286 0.10000  0.08622  80.00- 120.00   100.00
 25.184  25.184 (1.036)    91      8611                   171.59- 231.59   200.91
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                           CAS #: 460-00-4
 25.927  25.927 (1.066)   174    325986 5.00000    4.791  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    272341                    54.28- 114.28    83.54
 25.927  25.927 (1.066)   176    317234                    67.48- 127.48    97.32
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83     11970 0.10000   0.1006  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85      7802                    35.87-  95.87    65.18
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146     12299 0.10000  0.09483  80.00- 120.00   100.00
 27.246  27.253 (1.120)   148      8010                    35.51-  95.51    65.13
 27.246  27.246 (1.120)   111      4407                     5.09-  65.09    35.83
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146     11624 0.10000  0.09064  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148      7514                    35.48-  95.48    64.64
 27.355  27.357 (1.125)   111      3882                     3.55-  63.55    33.40
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.838	27.840	(1.145)	146	11000	0.10000	0.09285	80.00- 120.00	100.00
27.854	27.851	(1.145)	148	7066			35.34- 95.34	64.24
27.838	27.838	(1.145)	111	3910			6.26- 66.26	35.55
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	900	0.01000	0.007929	80.00- 120.00	100.00(Ta)
30.520	30.403	(1.255)	127	119			0.00- 43.23	13.22

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Report Date: 05-Feb-2020 09:42

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020506sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 0.1ppbv (1.0ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 6
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	158674	-18.45
20 1,4-Difluorobenze	590660	354396	826924	436351	-26.12
28 Chlorobenzene-d5	550580	330348	770812	440802	-19.94

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020506sim.d

Date : 05-FEB-2020 00:52

Client ID: Level 6

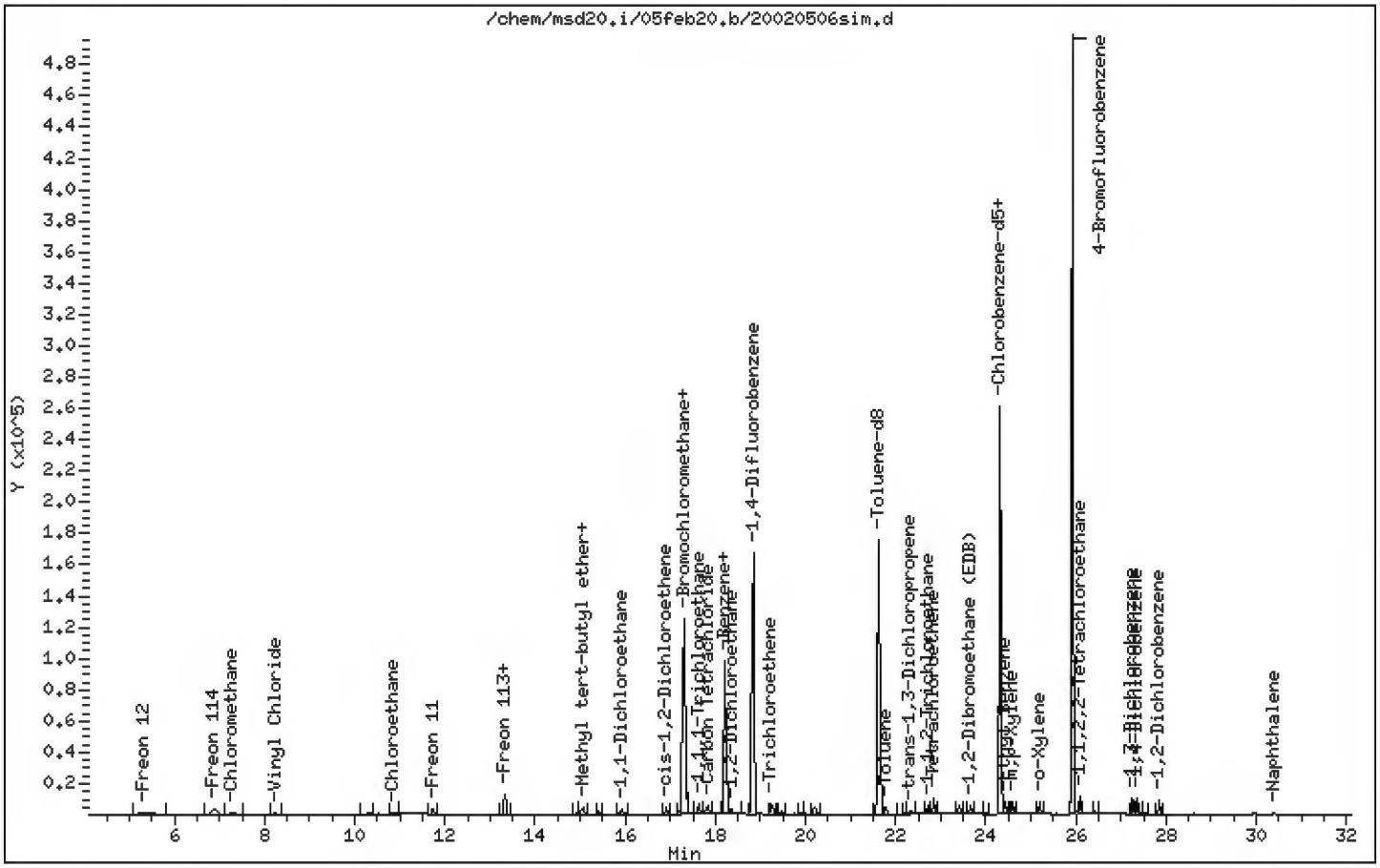
Instrument: msd20.i

Sample Info: 25mL# 3018-134

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020507sim.d
Lab Smp Id: ICAL Client Smp ID: Level 7
Inj Date : 05-FEB-2020 05:32
Operator : act Inst ID: msd20.i
Smp Info : 125mL# 3018-134
Misc Info : 0.5ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 05:32 Cal File: 20020507sim.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	55043	0.50000	0.5252	80.00- 120.00	100.00
5.331	5.334 (0.308)	87	17751			2.53- 62.53	32.25
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	45625	0.50000	0.5133	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	14694			2.21- 62.21	32.21
3 Chloromethane					CAS #: 74-87-3		
7.307	7.301 (0.422)	50	17102	0.50000	0.5467	80.00- 120.00	100.00
7.283	7.298 (0.421)	52	5433			2.83- 62.83	31.77
4 Vinyl Chloride					CAS #: 75-01-4		
8.262	8.278 (0.477)	62	13448	0.50000	0.4453	80.00- 120.00	100.00
8.262	8.283 (0.477)	64	4487			2.23- 62.23	33.37
5 Chloroethane					CAS #: 75-00-3		
10.846	10.846 (0.626)	64	5725	0.50000	0.4479	80.00- 120.00	100.00
10.846	10.849 (0.626)	66	1787			2.03- 62.03	31.21

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

    6 Freon 11                                          CAS #: 75-69-4
 11.738  11.737 (0.678)   101     51324 0.50000   0.5357  80.00- 120.00   100.00
 11.738  11.737 (0.678)   103     33261                   35.56-  95.56    64.81
-------------------------------------------------------------------------------
    7 Freon 113                                         CAS #: 76-13-1
 13.329  13.328 (0.770)   151     45758 0.50000   0.5020  80.00- 120.00   100.00
 13.329  13.331 (0.770)   153     29567                   35.30-  95.30    64.62
 13.329  13.328 (0.770)   101     45776                   69.82- 129.82   100.04
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                                CAS #: 75-35-4
 13.329  13.331 (0.770)    98      9205 0.50000   0.4259  80.00- 120.00   100.00
 13.329  13.328 (0.770)    61     20453                  194.63- 254.63   222.19
 13.329  13.328 (0.770)    96     14261                  125.91- 185.91   154.93
-------------------------------------------------------------------------------
    9 Methyl tert-butyl ether                           CAS #: 1634-04-4
 15.032  15.031 (0.868)    73     27964 0.50000   0.3978  80.00- 120.00   100.00
 15.004  15.018 (0.866)    57      6184                    0.00-  51.41    22.11
 15.004  15.018 (0.866)    41      8587                    0.00-  53.76    30.71
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                          CAS #: 156-60-5
 15.059  15.080 (0.870)    98      9781 0.50000   0.4363  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61     18435                  161.94- 221.94   188.48
 15.059  15.075 (0.870)    96     14982                  125.44- 185.44   153.17
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                                CAS #: 75-34-3
 15.938  15.937 (0.920)    63     29156 0.50000   0.4697  80.00- 120.00   100.00
 15.938  15.937 (0.920)    65      9229                    2.20-  62.20    31.65
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                            CAS #: 156-59-2
 16.916  16.916 (0.977)    98     10631 0.50000   0.4256  80.00- 120.00   100.00
 16.916  16.916 (0.977)    61     18565                  144.59- 204.59   174.63
 16.916  16.916 (0.977)    96     16702                  124.96- 184.96   157.11
-------------------------------------------------------------------------------
*  13 Bromochloromethane                                CAS #: 74-97-5
 17.316  17.316 (1.000)   130    160234 5.00000           80.00- 120.00   100.00
 17.316  17.316 (1.000)   128    123030                   46.79- 106.79    76.78
 17.283  17.283 (1.000)    49    145841                   67.00- 127.00    91.02
-------------------------------------------------------------------------------
   14 Chloroform                                        CAS #: 67-66-3
 17.381  17.381 (1.004)    83     42457 0.50000   0.5286  80.00- 120.00   100.00
 17.381  17.381 (1.004)    85     27718                   35.98-  95.98    65.28
 17.381  17.371 (1.004)    47      9590                    0.00-  53.97    22.59
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                             CAS #: 71-55-6
 17.622  17.622 (1.018)    97     45633 0.50000   0.4916  80.00- 120.00   100.00
 17.622  17.622 (1.018)    99     29462                   35.55-  95.55    64.56
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.823  17.822 (1.029)   119     46983 0.50000   0.5432  80.00- 120.00   100.00
 17.823  17.822 (1.029)   117     48483                   72.26- 132.26   103.19
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78     47238 0.50000   0.4417  80.00- 120.00   100.00
 18.207  18.207 (0.966)    77     11340                    0.00-  53.31    24.01
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                        CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    190306 5.00000    5.045  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67     98242                   26.62-  86.62    51.62
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62     25856 0.50000   0.4954  80.00- 120.00   100.00
 18.330  18.342 (0.973)    64      8542                    2.73-  62.73    33.04
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                          CAS #: 540-36-3
 18.839  18.839 (1.000)   114    450480 5.00000           80.00- 120.00   100.00
 18.817  18.830 (1.000)    88     63653                    0.00-  44.17    14.13
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130     28823 0.50000   0.4933  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95     24656                   56.54- 116.54    85.54
 19.241  19.241 (1.021)    97     16074                   26.43-  86.43    55.77
-------------------------------------------------------------------------------
$  22 Toluene-d8                                   CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    387652 5.00000    4.867  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     44988                    0.00-  40.95    11.61
 21.624  21.624 (1.148)   100    244633                   34.26-  94.26    63.11
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91     52086 0.50000   0.4594  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92     29753                   28.65-  88.65    57.12
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75     21650 0.50000   0.4452  80.00- 120.00   100.00
 22.328  22.328 (0.918)    77      7740                    1.94-  61.94    35.75
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.705  22.705 (0.934)    97     25714 0.50000   0.4856  80.00- 120.00   100.00
 22.705  22.705 (0.934)    99     16135                   33.39-  93.39    62.75
 22.705  22.705 (0.934)    83     20905                   51.43- 111.43    81.30
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166     43511 0.50000   0.4748  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129     28380                   34.72-  94.72    65.22
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131     27608                    33.00-  93.00    63.45
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                      CAS #: 106-93-4
 23.664  23.664 (0.973)   107     37580 0.50000   0.4655  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109     35679                    65.72- 125.72    94.94
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    439041 5.00000           80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    203284                   16.60-  76.60    46.30
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112     52922 0.50000   0.4725  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114     17002                     2.75-  62.75    32.13
 24.359  24.350 (1.002)    77     30131                   20.49-  80.49    56.93
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106     18848 0.50000   0.4146  80.00- 120.00   100.00
 24.442  24.442 (1.005)    91     57682                  269.97- 329.97   306.04
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106     21882 0.50000   0.4079  80.00- 120.00   100.00
 24.607  24.607 (1.012)    91     42404                  161.51- 221.51   193.78
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106     20514 0.50000   0.4143  80.00- 120.00   100.00
 25.184  25.184 (1.036)    91     42105                  171.59- 231.59   205.25
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    335796 5.00000    4.955  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    279937                   54.28- 114.28    83.37
 25.927  25.927 (1.066)   176    324423                   67.48- 127.48    96.61
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83     58224 0.50000   0.4912  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85     37777                   35.87-  95.87    64.88
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146     65214 0.50000   0.5048  80.00- 120.00   100.00
 27.262  27.253 (1.121)   148     41670                   35.51-  95.51    63.90
 27.246  27.246 (1.120)   111     22517                    5.09-  65.09    34.53
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146     60308 0.50000   0.4721  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148     38674                   35.48-  95.48    64.13
 27.371  27.357 (1.126)   111     19536                    3.55-  63.55    32.39
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.854	27.840	(1.145)	146	60559	0.50000	0.5132	80.00- 120.00	100.00
27.854	27.851	(1.145)	148	38739			35.34- 95.34	63.97
27.838	27.838	(1.145)	111	21121			6.26- 66.26	34.88
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	5207	0.05000	0.04606	80.00- 120.00	100.00(a)
30.395	30.403	(1.250)	127	818			0.00- 43.23	15.71

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020507sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: act
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 0.5ppbv (1.0ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 7
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	160234	-17.65
20 1,4-Difluorobenze	590660	354396	826924	450480	-23.73
28 Chlorobenzene-d5	550580	330348	770812	439041	-20.26

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020507sim.d

Date : 05-FEB-2020 05:32

Client ID: Level 7

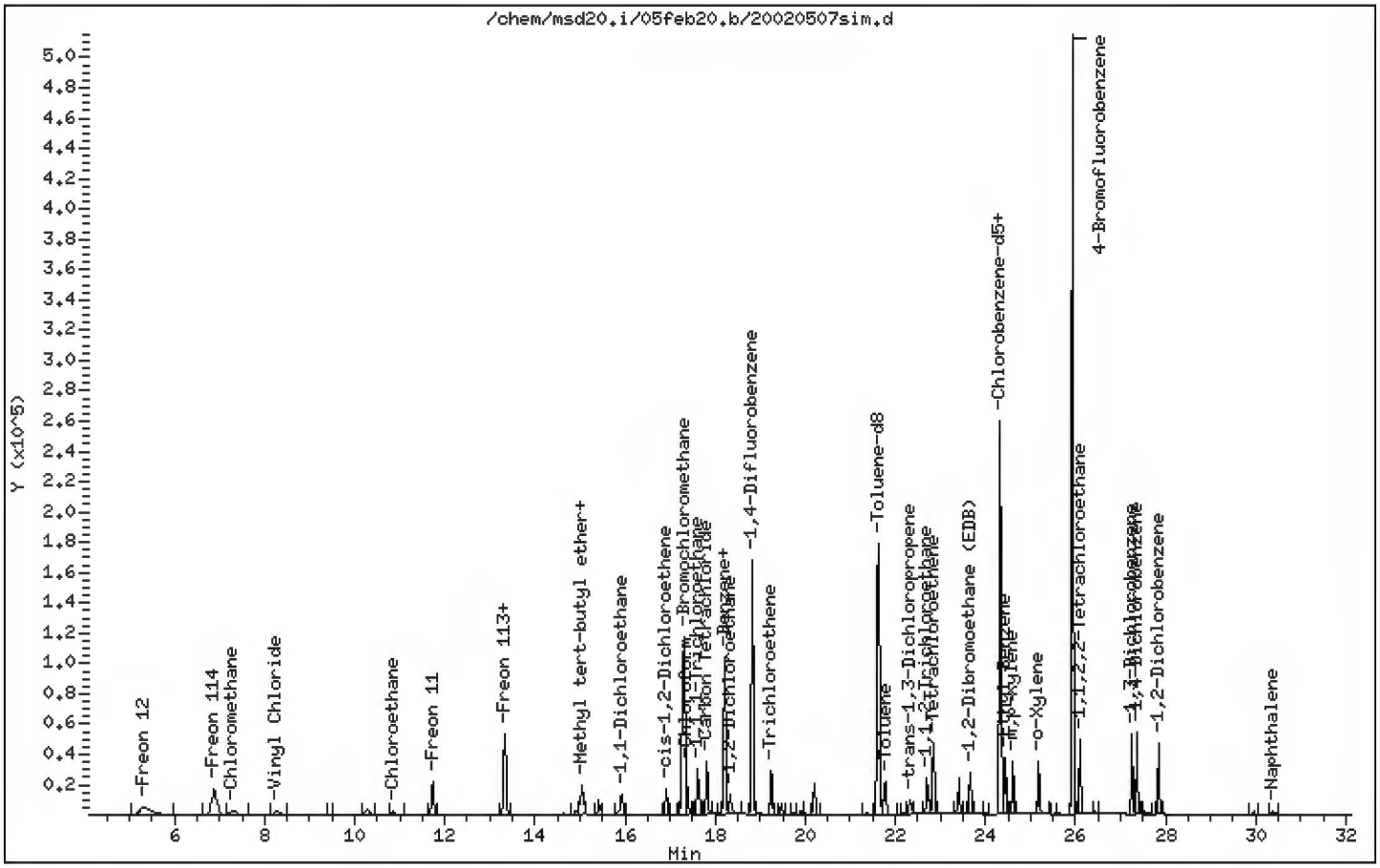
Instrument: msd20.i

Sample Info: 125mL# 3018-134

Operator: act

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020508sim.d
Lab Smp Id: ICAL Client Smp ID: Level 8
Inj Date : 05-FEB-2020 06:11
Operator : act Inst ID: msd20.i
Smp Info : 250mL# 3018-134
Misc Info : 1.0ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 06:11 Cal File: 20020508sim.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	106122	1.00000	0.9950	80.00- 120.00	100.00
5.331	5.334 (0.308)	87	34688			2.53- 62.53	32.69
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	88790	1.00000	0.9816	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	28532			2.21- 62.21	32.13
3 Chloromethane					CAS #: 74-87-3		
7.307	7.301 (0.422)	50	30634	1.00000	0.9623	80.00- 120.00	100.00
7.331	7.298 (0.423)	52	10142			2.83- 62.83	33.11
4 Vinyl Chloride					CAS #: 75-01-4		
8.297	8.278 (0.479)	62	27184	1.00000	0.8846	80.00- 120.00	100.00
8.297	8.283 (0.479)	64	8779			2.23- 62.23	32.29
5 Chloroethane					CAS #: 75-00-3		
10.846	10.846 (0.626)	64	12280	1.00000	0.9441	80.00- 120.00	100.00
10.846	10.849 (0.626)	66	3937			2.03- 62.03	32.06

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

    6 Freon 11                                          CAS #: 75-69-4
 11.738  11.737 (0.678)   101    105016 1.00000    1.077  80.00- 120.00   100.00
 11.738  11.737 (0.678)   103     68104                   35.56-  95.56    64.85
-------------------------------------------------------------------------------
    7 Freon 113                                         CAS #: 76-13-1
 13.329  13.328 (0.770)   151     90567 1.00000   0.9762  80.00- 120.00   100.00
 13.329  13.331 (0.770)   153     58212                   35.30-  95.30    64.28
 13.329  13.328 (0.770)   101     89858                   69.82- 129.82    99.22
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                                CAS #: 75-35-4
 13.329  13.331 (0.770)    98     18503 1.00000   0.8413  80.00- 120.00   100.00
 13.329  13.328 (0.770)    61     41394                  194.63- 254.63   223.72
 13.329  13.328 (0.770)    96     28907                  125.91- 185.91   156.23
-------------------------------------------------------------------------------
    9 Methyl tert-butyl ether                           CAS #: 1634-04-4
 15.032  15.031 (0.868)    73     58705 1.00000   0.8206  80.00- 120.00   100.00
 15.032  15.018 (0.868)    57     12820                    0.00-  51.41    21.84
 15.032  15.018 (0.868)    41     17622                    0.00-  53.76    30.02
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                          CAS #: 156-60-5
 15.086  15.080 (0.871)    98     19899 1.00000   0.8722  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61     38290                  161.94- 221.94   192.42
 15.086  15.075 (0.871)    96     31040                  125.44- 185.44   155.99
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                                CAS #: 75-34-3
 15.938  15.937 (0.920)    63     59215 1.00000   0.9374  80.00- 120.00   100.00
 15.938  15.937 (0.920)    65     19046                    2.20-  62.20    32.16
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                            CAS #: 156-59-2
 16.916  16.916 (0.977)    98     22518 1.00000   0.8858  80.00- 120.00   100.00
 16.916  16.916 (0.977)    61     39418                  144.59- 204.59   175.05
 16.916  16.916 (0.977)    96     34943                  124.96- 184.96   155.18
-------------------------------------------------------------------------------
*  13 Bromochloromethane                                CAS #: 74-97-5
 17.316  17.316 (1.000)   130    163067 5.00000           80.00- 120.00   100.00
 17.316  17.316 (1.000)   128    124425                   46.79- 106.79    76.30
 17.283  17.283 (1.000)    49    148862                   67.00- 127.00    91.29
-------------------------------------------------------------------------------
   14 Chloroform                                        CAS #: 67-66-3
 17.381  17.381 (1.004)    83     85164 1.00000    1.042  80.00- 120.00   100.00
 17.381  17.381 (1.004)    85     55660                   35.98-  95.98    65.36
 17.381  17.371 (1.004)    47     18905                    0.00-  53.97    22.20
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                             CAS #: 71-55-6
 17.622  17.622 (1.018)    97     91235 1.00000   0.9658  80.00- 120.00   100.00
 17.622  17.622 (1.018)    99     58649                   35.55-  95.55    64.28
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.823  17.822 (1.029)   119     96887 1.00000    1.101  80.00- 120.00   100.00
 17.823  17.822 (1.029)   117     99876                   72.26- 132.26   103.09
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78    101286 1.00000   0.8769  80.00- 120.00   100.00
 18.207  18.207 (0.966)    77     24418                    0.00-  53.31    24.11
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                        CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    196157 5.00000    5.110  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67    102349                   26.62-  86.62    52.18
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62     52817 1.00000   0.9369  80.00- 120.00   100.00
 18.351  18.342 (0.974)    64     17390                    2.73-  62.73    32.93
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                          CAS #: 540-36-3
 18.839  18.839 (1.000)   114    486565 5.00000           80.00- 120.00   100.00
 18.839  18.830 (1.000)    88     68513                    0.00-  44.17    14.08
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130     58586 1.00000   0.9284  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95     50575                   56.54- 116.54    86.33
 19.241  19.241 (1.021)    97     32856                   26.43-  86.43    56.08
-------------------------------------------------------------------------------
$  22 Toluene-d8                                   CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    413514 5.00000    4.806  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     47964                    0.00-  40.95    11.60
 21.624  21.624 (1.148)   100    261256                   34.26-  94.26    63.18
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91    110184 1.00000   0.8998  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92     63306                   28.65-  88.65    57.45
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75     45958 1.00000   0.9054  80.00- 120.00   100.00
 22.328  22.328 (0.918)    77     15499                    1.94-  61.94    33.72
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.705  22.705 (0.934)    97     52523 1.00000   0.9502  80.00- 120.00   100.00
 22.705  22.705 (0.934)    99     33316                   33.39-  93.39    63.43
 22.705  22.705 (0.934)    83     42277                   51.43- 111.43    80.49
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166     89982 1.00000   0.9406  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129     58848                   34.72-  94.72    65.40
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131     57254                    33.00-  93.00    63.63
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                      CAS #: 106-93-4
 23.664  23.664 (0.973)   107     78651 1.00000   0.9334  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109     74343                   65.72- 125.72    94.52
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    458284 5.00000           80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    211685                   16.60-  76.60    46.19
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112    110574 1.00000   0.9458  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114     35668                    2.75-  62.75    32.26
 24.359  24.350 (1.002)    77     58641                   20.49-  80.49    53.03
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106     40382 1.00000   0.8510  80.00- 120.00   100.00
 24.442  24.442 (1.005)    91    122870                  269.97- 329.97   304.27
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106     47214 1.00000   0.8431  80.00- 120.00   100.00
 24.607  24.607 (1.012)    91     91404                  161.51- 221.51   193.60
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106     44048 1.00000   0.8523  80.00- 120.00   100.00
 25.184  25.184 (1.036)    91     90846                  171.59- 231.59   206.24
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    355211 5.00000    5.022  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    298853                   54.28- 114.28    84.13
 25.927  25.927 (1.066)   176    344146                   67.48- 127.48    96.88
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83    120680 1.00000   0.9754  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85     78069                   35.87-  95.87    64.69
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146    140621 1.00000    1.043  80.00- 120.00   100.00
 27.262  27.253 (1.121)   148     90061                   35.51-  95.51    64.05
 27.246  27.246 (1.120)   111     48119                    5.09-  65.09    34.22
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146    132301 1.00000   0.9923  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148     84976                   35.48-  95.48    64.23
 27.355  27.357 (1.125)   111     43559                    3.55-  63.55    32.92
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.838	27.840	(1.145)	146	130986	1.00000	1.064	80.00- 120.00	100.00
27.854	27.851	(1.145)	148	83975			35.34- 95.34	64.11
27.838	27.838	(1.145)	111	46288			6.26- 66.26	35.34
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	12511	0.10000	0.1060	80.00- 120.00	100.00
30.395	30.403	(1.250)	127	1932			0.00- 43.23	15.44

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020508sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: act
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 1.0ppbv (1.0ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 8
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	163067	-16.19
20 1,4-Difluorobenze	590660	354396	826924	486565	-17.62
28 Chlorobenzene-d5	550580	330348	770812	458284	-16.76

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020508sim.d

Date : 05-FEB-2020 06:11

Client ID: Level 8

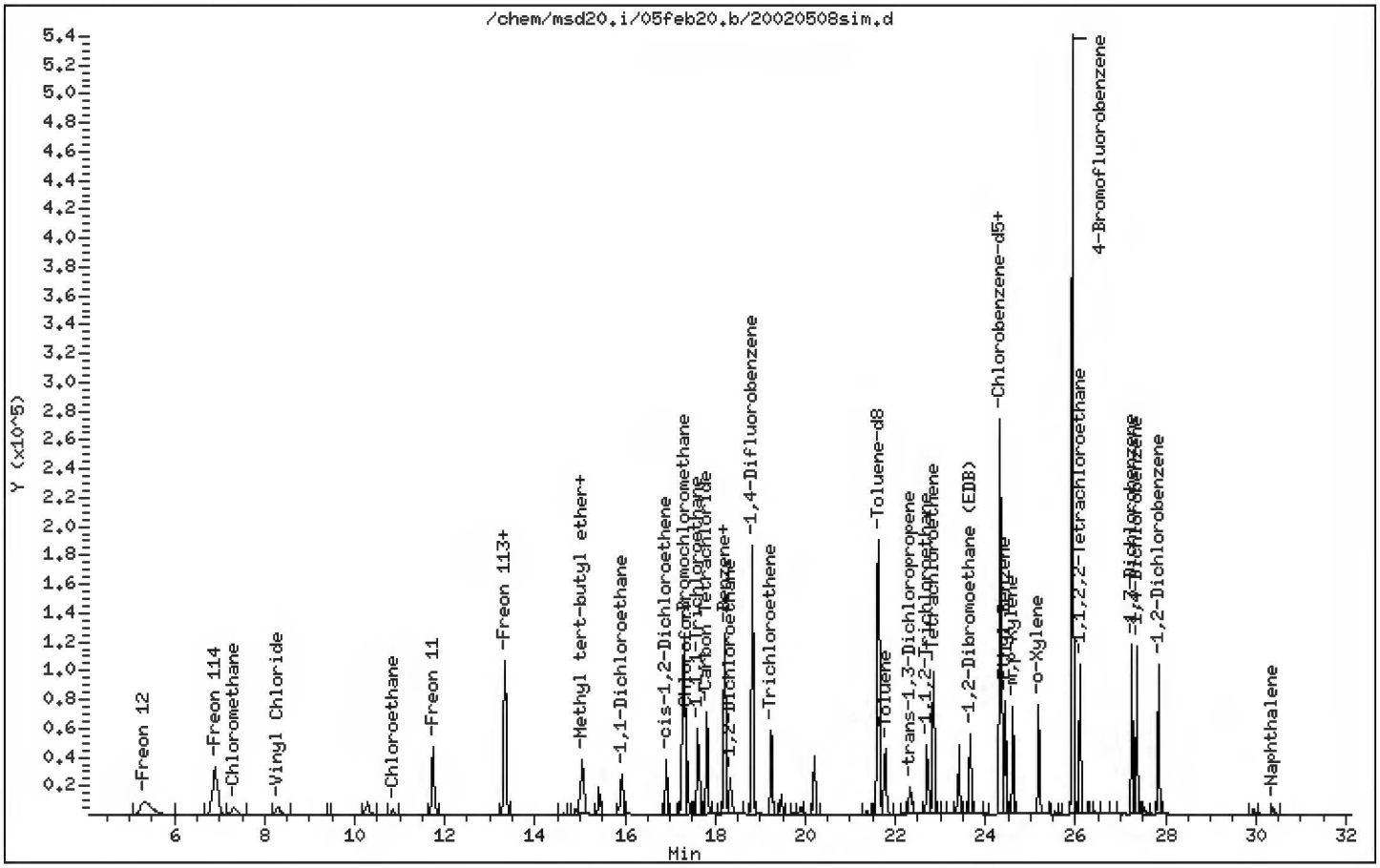
Instrument: msd20.i

Sample Info: 250mL# 3018-134

Operator: act

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020509sim.d
Lab Smp Id: ICAL Client Smp ID: Level 12
Inj Date : 05-FEB-2020 06:55
Operator : ns Inst ID: msd20.i
Smp Info : 25mL# 3018-1179
Misc Info : 5.0ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 06:55 Cal File: 20020509sim.d
Als bottle: 1 Calibration Sample, Level: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.307	5.336 (0.306)	85	608073	5.00000	5.022	80.00- 120.00	100.00
5.331	5.334 (0.308)	87	196574			2.53- 62.53	32.33
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	514419	5.00000	5.010	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	164896			2.21- 62.21	32.05
3 Chloromethane					CAS #: 74-87-3		
7.283	7.301 (0.421)	50	158888	5.00000	4.397	80.00- 120.00	100.00
7.283	7.298 (0.421)	52	51895			2.83- 62.83	32.66
4 Vinyl Chloride					CAS #: 75-01-4		
8.279	8.278 (0.478)	62	168566	5.00000	4.832	80.00- 120.00	100.00
8.297	8.283 (0.479)	64	53864			2.23- 62.23	31.95
5 Chloroethane					CAS #: 75-00-3		
10.846	10.846 (0.626)	64	74609	5.00000	5.053	80.00- 120.00	100.00
10.846	10.849 (0.626)	66	23985			2.03- 62.03	32.15

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

    6 Freon 11                                          CAS #: 75-69-4
 11.738  11.737 (0.678)   101    633756 5.00000    5.726  80.00- 120.00   100.00
 11.738  11.737 (0.678)   103    413613                   35.56-  95.56    65.26
-------------------------------------------------------------------------------
    7 Freon 113                                         CAS #: 76-13-1
 13.329  13.328 (0.770)   151    532055 5.00000    5.052  80.00- 120.00   100.00
 13.329  13.331 (0.770)   153    345115                   35.30-  95.30    64.86
 13.329  13.328 (0.770)   101    527914                   69.82- 129.82    99.22
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                                CAS #: 75-35-4
 13.329  13.331 (0.770)    98    117202 5.00000    4.694  80.00- 120.00   100.00
 13.329  13.328 (0.770)    61    261524                  194.63- 254.63   223.14
 13.329  13.328 (0.770)    96    181959                  125.91- 185.91   155.25
-------------------------------------------------------------------------------
    9 Methyl tert-butyl ether                           CAS #: 1634-04-4
 15.032  15.031 (0.868)    73    453758 5.00000    5.587  80.00- 120.00   100.00
 15.004  15.018 (0.866)    57     95143                    0.00-  51.41    20.97
 15.004  15.018 (0.866)    41    119630                    0.00-  53.76    26.36
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                          CAS #: 156-60-5
 15.059  15.080 (0.870)    98    137840 5.00000    5.322  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61    264873                  161.94- 221.94   192.16
 15.059  15.075 (0.870)    96    214632                  125.44- 185.44   155.71
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                                CAS #: 75-34-3
 15.938  15.937 (0.920)    63    374098 5.00000    5.217  80.00- 120.00   100.00
 15.938  15.937 (0.920)    65    119585                    2.20-  62.20    31.97
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                            CAS #: 156-59-2
 16.916  16.916 (0.977)    98    153893 5.00000    5.333  80.00- 120.00   100.00
 16.916  16.916 (0.977)    61    268583                  144.59- 204.59   174.53
 16.916  16.916 (0.977)    96    237561                  124.96- 184.96   154.37
-------------------------------------------------------------------------------
*  13 Bromochloromethane                                CAS #: 74-97-5
 17.316  17.316 (1.000)   130    185112 5.00000           80.00- 120.00   100.00
 17.316  17.316 (1.000)   128    141555                   46.79- 106.79    76.47
 17.283  17.283 (1.000)    49    176841                   67.00- 127.00    95.53
-------------------------------------------------------------------------------
   14 Chloroform                                        CAS #: 67-66-3
 17.381  17.381 (1.004)    83    511784 5.00000    5.515  80.00- 120.00   100.00
 17.381  17.381 (1.004)    85    335638                   35.98-  95.98    65.58
 17.381  17.371 (1.004)    47    131442                    0.00-  53.97    25.68
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                             CAS #: 71-55-6
 17.622  17.622 (1.018)    97    556752 5.00000    5.192  80.00- 120.00   100.00
 17.622  17.622 (1.018)    99    363977                   35.55-  95.55    65.38
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.823  17.822 (1.029)   119    614328 5.00000    6.149  80.00- 120.00   100.00
 17.823  17.822 (1.029)   117    632556                   72.26- 132.26   102.97
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78    693844 5.00000    5.228  80.00- 120.00   100.00
 18.207  18.207 (0.966)    77    162765                    0.00-  53.31    23.46
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                         CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    207288 5.00000    4.757  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67    114991                   26.62-  86.62    55.47
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62    324052 5.00000    5.003  80.00- 120.00   100.00
 18.330  18.342 (0.973)    64    105557                    2.73-  62.73    32.57
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                          CAS #: 540-36-3
 18.839  18.839 (1.000)   114    559031 5.00000           80.00- 120.00   100.00
 18.817  18.830 (1.000)    88     79225                    0.00-  44.17    14.17
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130    360075 5.00000    4.966  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95    312064                   56.54- 116.54    86.67
 19.241  19.241 (1.021)    97    203536                   26.43-  86.43    56.53
-------------------------------------------------------------------------------
$  22 Toluene-d8                                    CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    508925 5.00000    5.148  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     56639                    0.00-  40.95    11.13
 21.624  21.624 (1.148)   100    325343                   34.26-  94.26    63.93
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91    750334 5.00000    5.333  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92    436069                   28.65-  88.65    58.12
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75    312284 5.00000    5.483  80.00- 120.00   100.00
 22.328  22.328 (0.918)    77    100236                    1.94-  61.94    32.10
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.705  22.705 (0.934)    97    314614 5.00000    5.073  80.00- 120.00   100.00
 22.705  22.705 (0.934)    99    198712                   33.39-  93.39    63.16
 22.705  22.705 (0.934)    83    257585                   51.43- 111.43    81.87
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166    557199 5.00000    5.191  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129    359229                   34.72-  94.72    64.47
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131    348630                    33.00-  93.00    62.57
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.664  23.664 (0.973)   107    494746 5.00000    5.232  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109    472260                   65.72- 125.72    95.46
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    514229 5.00000           80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    239827                   16.60-  76.60    46.64
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112    679482 5.00000    5.179  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114    220954                    2.75-  62.75    32.52
 24.359  24.350 (1.002)    77    348673                   20.49-  80.49    51.31
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106    292069 5.00000    5.485  80.00- 120.00   100.00
 24.442  24.442 (1.005)    91    889119                  269.97- 329.97   304.42
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106    362701 5.00000    5.772  80.00- 120.00   100.00
 24.607  24.607 (1.012)    91    695541                  161.51- 221.51   191.77
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106    316426 5.00000    5.457  80.00- 120.00   100.00
 25.184  25.184 (1.036)    91    648891                  171.59- 231.59   205.07
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    414158 5.00000    5.218  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    349029                   54.28- 114.28    84.27
 25.927  25.927 (1.066)   176    403625                   67.48- 127.48    97.46
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83    654718 5.00000    4.716  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85    428584                   35.87-  95.87    65.46
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146    762446 5.00000    5.039  80.00- 120.00   100.00
 27.246  27.253 (1.120)   148    496054                   35.51-  95.51    65.06
 27.246  27.246 (1.120)   111    265486                    5.09-  65.09    34.82
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146    756697 5.00000    5.058  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148    492927                   35.48-  95.48    65.14
 27.355  27.357 (1.125)   111    252504                    3.55-  63.55    33.37
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.838	27.840	(1.145)	146	708223	5.00000	5.125	80.00- 120.00	100.00
27.854	27.851	(1.145)	148	458304			35.34- 95.34	64.71
27.838	27.838	(1.145)	111	253969			6.26- 66.26	35.86
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	59161	0.50000	0.4468	80.00- 120.00	100.00
30.379	30.403	(1.249)	127	7793			0.00- 43.23	13.17

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020509sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ns
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 5.0ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 12
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	185112	-4.86
20 1,4-Difluorobenze	590660	354396	826924	559031	-5.35
28 Chlorobenzene-d5	550580	330348	770812	514229	-6.60

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020509sim.d

Date : 05-FEB-2020 06:55

Client ID: Level 12

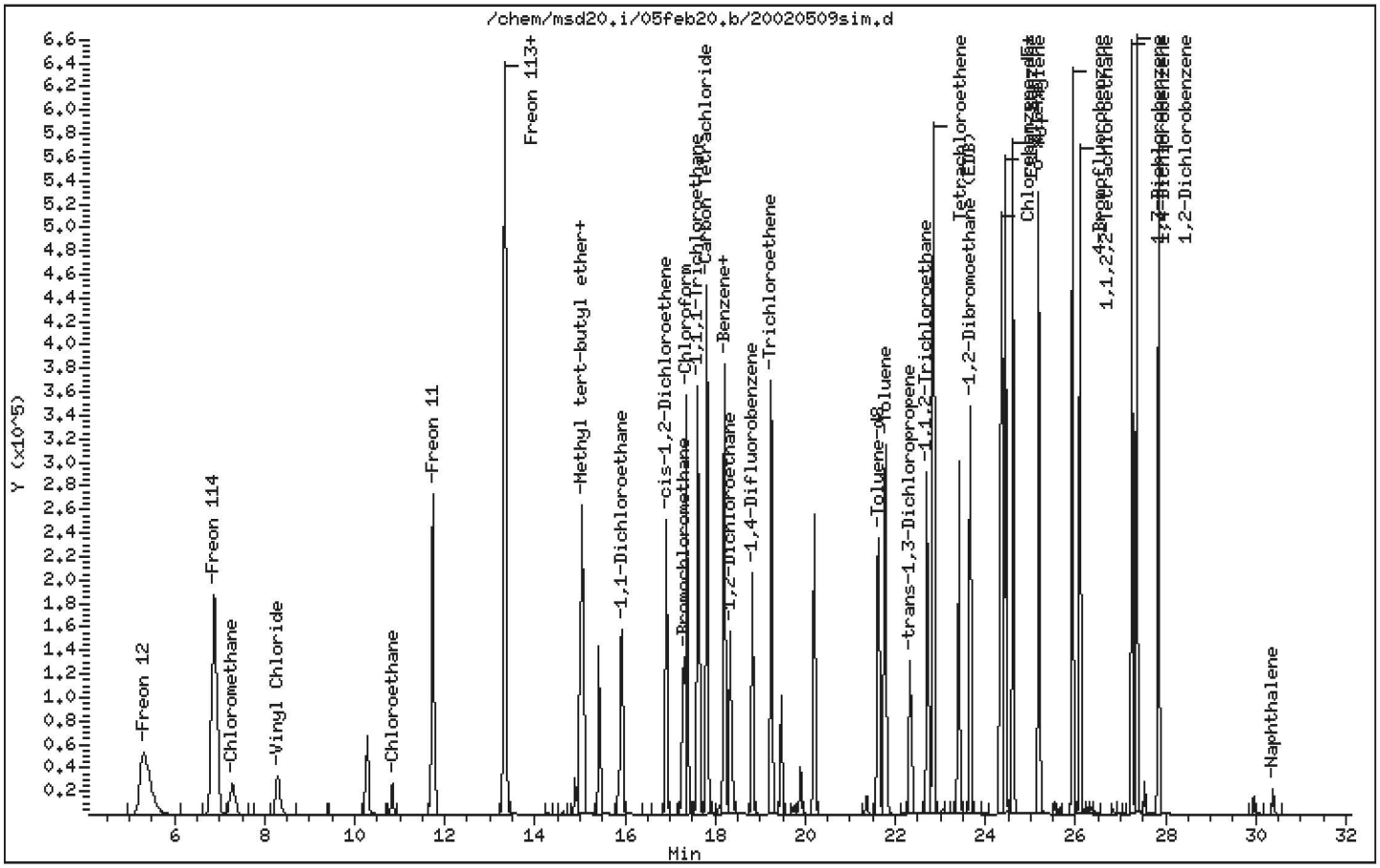
Instrument: msd20.i

Sample Info: 25mL# 3018-1179

Operator: ns

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020510sim.d
Lab Smp Id: ICAL Client Smp ID: Level 13
Inj Date : 05-FEB-2020 07:34
Operator : ns Inst ID: msd20.i
Smp Info : 50mL# 3018-1179
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 07:34 Cal File: 20020510sim.d
Als bottle: 1 Calibration Sample, Level: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	1193167	10.0000	9.376	80.00- 120.00	100.00
5.331	5.334 (0.308)	87	388142			2.53- 62.53	32.53
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	1006806	10.0000	9.329	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	324310			2.21- 62.21	32.21
3 Chloromethane					CAS #: 74-87-3		
7.284	7.301 (0.421)	50	312596	10.0000	8.230	80.00- 120.00	100.00
7.284	7.298 (0.421)	52	102611			2.83- 62.83	32.83
4 Vinyl Chloride					CAS #: 75-01-4		
8.297	8.278 (0.479)	62	351455	10.0000	9.585	80.00- 120.00	100.00
8.297	8.283 (0.479)	64	113265			2.23- 62.23	32.23
5 Chloroethane					CAS #: 75-00-3		
10.840	10.846 (0.626)	64	157524	10.0000	10.150	80.00- 120.00	100.00
10.840	10.849 (0.626)	66	50458			2.03- 62.03	32.03

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

    6 Freon 11                                        CAS #: 75-69-4
 11.731  11.737 (0.678)   101   1240233 10.0000   10.660  80.00- 120.00   100.00
 11.731  11.737 (0.678)   103    813111                   35.56-  95.56    65.56
-------------------------------------------------------------------------------
    7 Freon 113                                       CAS #: 76-13-1
 13.319  13.328 (0.769)   151   1032874 10.0000    9.331  80.00- 120.00   100.00
 13.346  13.331 (0.771)   153    674514                   35.30-  95.30    65.30
 13.319  13.328 (0.769)   101   1031036                   69.82- 129.82    99.82
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                              CAS #: 75-35-4
 13.346  13.331 (0.771)    98    246961 10.0000    9.411  80.00- 120.00   100.00
 13.319  13.328 (0.769)    61    554756                  194.63- 254.63   224.63
 13.319  13.328 (0.769)    96    385027                  125.91- 185.91   155.91
-------------------------------------------------------------------------------
    9 Methyl tert-butyl ether                         CAS #: 1634-04-4
 15.022  15.031 (0.868)    73   1012055 10.0000   11.857  80.00- 120.00   100.00
 15.022  15.018 (0.868)    57    216681                    0.00-  51.41    21.41
 15.022  15.018 (0.868)    41    240428                    0.00-  53.76    23.76
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                        CAS #: 156-60-5
 15.077  15.080 (0.871)    98    281563 10.0000   10.343  80.00- 120.00   100.00
 15.077  15.061 (0.871)    61    540437                  161.94- 221.94   191.94
 15.077  15.075 (0.871)    96    437671                  125.44- 185.44   155.44
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                              CAS #: 75-34-3
 15.928  15.937 (0.920)    63    749053 10.0000    9.938  80.00- 120.00   100.00
 15.928  15.937 (0.920)    65    241167                    2.20-  62.20    32.20
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                          CAS #: 156-59-2
 16.913  16.916 (0.977)    98    318557 10.0000   10.502  80.00- 120.00   100.00
 16.913  16.916 (0.977)    61    556164                  144.59- 204.59   174.59
 16.913  16.916 (0.977)    96    493623                  124.96- 184.96   154.96
-------------------------------------------------------------------------------
*  13 Bromochloromethane                              CAS #: 74-97-5
 17.313  17.316 (1.000)   130    194565 5.00000           80.00- 120.00   100.00
 17.313  17.316 (1.000)   128    149415                   46.79- 106.79    76.79
 17.280  17.283 (1.000)    49    188730                   67.00- 127.00    97.00
-------------------------------------------------------------------------------
   14 Chloroform                                      CAS #: 67-66-3
 17.378  17.381 (1.004)    83   1005206 10.0000   10.306  80.00- 120.00   100.00
 17.378  17.381 (1.004)    85    663262                   35.98-  95.98    65.98
 17.378  17.371 (1.004)    47    240899                    0.00-  53.97    23.97
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                           CAS #: 71-55-6
 17.619  17.622 (1.018)    97   1098248 10.0000    9.743  80.00- 120.00   100.00
 17.619  17.622 (1.018)    99    719917                   35.55-  95.55    65.55
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.820  17.822 (1.029)   119   1212722 10.0000   11.548  80.00- 120.00   100.00
 17.820  17.822 (1.029)   117   1240180                   72.26- 132.26   102.26
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.206  18.207 (0.966)    78   1383599 10.0000    9.867  80.00- 120.00   100.00
 18.206  18.207 (0.966)    77    322461                    0.00-  53.31    23.31
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                          CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    215781 5.00000    4.711  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67    122182                   26.62-  86.62    56.62
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62    640524 10.0000    9.360  80.00- 120.00   100.00
 18.351  18.342 (0.974)    64    209613                    2.73-  62.73    32.73
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                           CAS #: 540-36-3
 18.839  18.839 (1.000)   114    590660 5.00000           80.00- 120.00   100.00
 18.839  18.830 (1.000)    88     83699                    0.00-  44.17    14.17
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130    728310 10.0000    9.508  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95    630263                   56.54- 116.54    86.54
 19.241  19.241 (1.021)    97    410974                   26.43-  86.43    56.43
-------------------------------------------------------------------------------
$  22 Toluene-d8                                    CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    547986 5.00000    5.247  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     59997                    0.00-  40.95    10.95
 21.624  21.624 (1.148)   100    352131                   34.26-  94.26    64.26
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91   1566405 10.0000   10.537  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92    918637                   28.65-  88.65    58.65
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75    677226 10.0000   11.105  80.00- 120.00   100.00
 22.328  22.328 (0.918)    77    216287                    1.94-  61.94    31.94
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.705  22.705 (0.934)    97    629382 10.0000    9.478  80.00- 120.00   100.00
 22.705  22.705 (0.934)    99    398978                   33.39-  93.39    63.39
 22.705  22.705 (0.934)    83    512511                   51.43- 111.43    81.43
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166   1133052 10.0000    9.858  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129    733296                   34.72-  94.72    64.72
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131    713798                    33.00-  93.00    63.00
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.664  23.664 (0.973)   107   1006440 10.0000    9.941  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109    963379                    65.72- 125.72    95.72
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    550580 5.00000            80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    256584                    16.60-  76.60    46.60
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112   1394020 10.0000    9.924  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114    456491                     2.75-  62.75    32.75
 24.359  24.350 (1.002)    77    703813                    20.49-  80.49    50.49
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106    652287 10.0000   11.441  80.00- 120.00   100.00
 24.442  24.442 (1.005)    91   1956654                   269.97- 329.97   299.97
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106    787197 10.0000   11.701  80.00- 120.00   100.00
 24.607  24.607 (1.012)    91   1507558                   161.51- 221.51   191.51
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106    707848 10.0000   11.401  80.00- 120.00   100.00
 25.184  25.184 (1.036)    91   1426926                   171.59- 231.59   201.59
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    436857 5.00000    5.141  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    368189                    54.28- 114.28    84.28
 25.927  25.927 (1.066)   176    425841                    67.48- 127.48    97.48
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83   1303954 10.0000    8.773  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85    858978                    35.87-  95.87    65.87
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146   1560814 10.0000    9.635  80.00- 120.00   100.00
 27.246  27.253 (1.120)   148   1022448                    35.51-  95.51    65.51
 27.246  27.246 (1.120)   111    547701                     5.09-  65.09    35.09
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146   1569671 10.0000    9.799  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148   1027750                    35.48-  95.48    65.48
 27.355  27.357 (1.125)   111    526697                     3.55-  63.55    33.55
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   37 1,2-Dichlorobenzene                          CAS #: 95-50-1
 27.838  27.840 (1.145)   146   1463591 10.0000    9.891  80.00- 120.00   100.00
 27.838  27.851 (1.145)   148    956294                   35.34-  95.34    65.34
 27.838  27.838 (1.145)   111    530674                    6.26-  66.26    36.26
-------------------------------------------------------------------------------
   38 Naphthalene                                  CAS #: 91-20-3
 30.395  30.395 (1.250)   128    144850 1.00000    1.022  80.00- 120.00   100.00
 30.379  30.403 (1.249)   127     19170                    0.00-  43.23    13.23
-------------------------------------------------------------------------------
```

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020510sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ns
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 13
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	194565	0.00
20 1,4-Difluorobenze	590660	354396	826924	590660	0.00
28 Chlorobenzene-d5	550580	330348	770812	550580	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.31	0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020510sim.d

Date : 05-FEB-2020 07:34

Client ID: Level 13

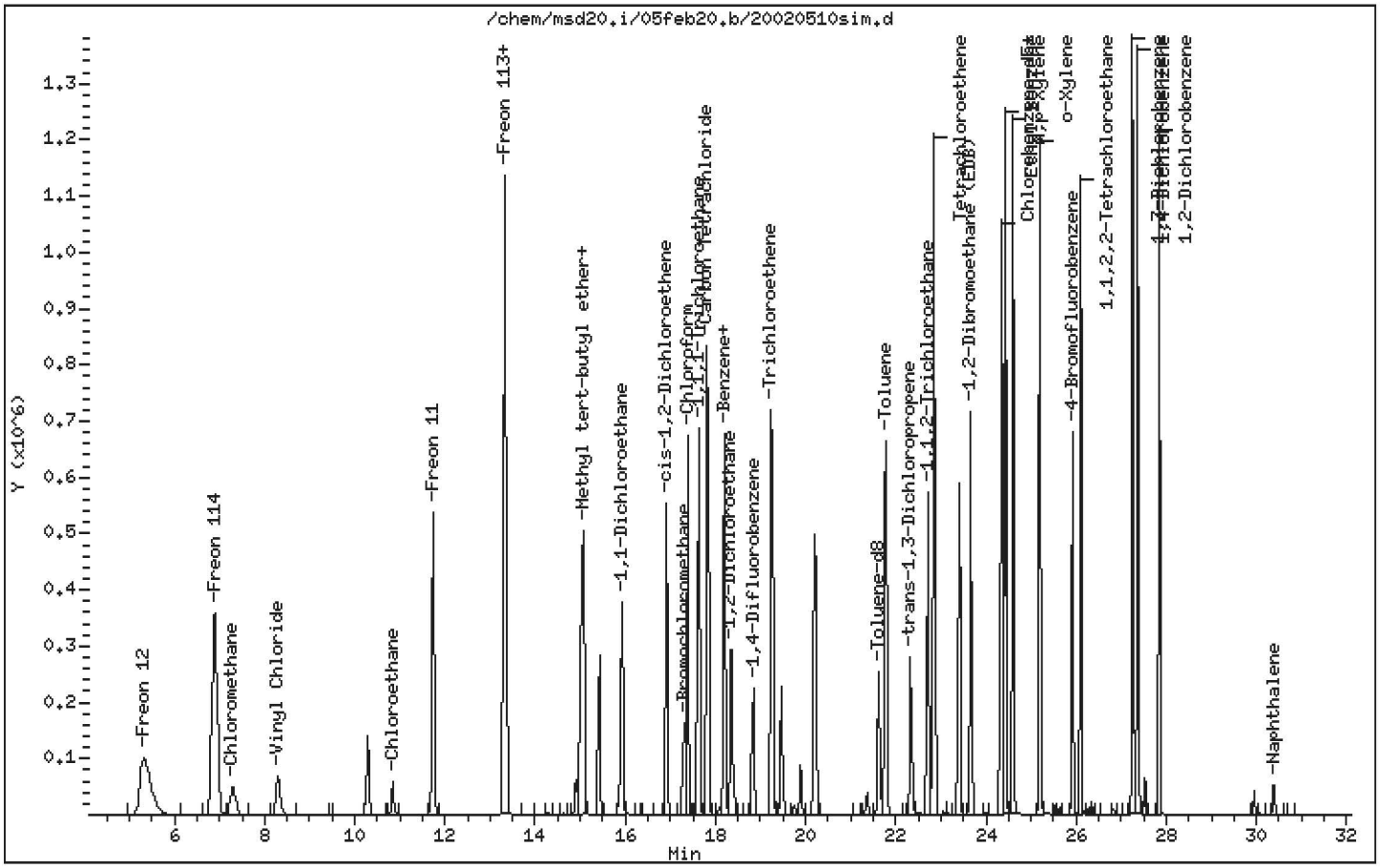
Instrument: msd20.i

Sample Info: 50mL# 3018-1179

Operator: ns

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020511sim.d
Lab Smp Id: ICAL Client Smp ID: Level 14
Inj Date : 05-FEB-2020 08:13
Operator : ns Inst ID: msd20.i
Smp Info : 75mL# 3018-1179
Misc Info : 15ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 08:13 Cal File: 20020511sim.d
Als bottle: 1 Calibration Sample, Level: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	1807598	15.0000	13.754	80.00- 120.00	100.00
5.355	5.334 (0.309)	87	589499			2.53- 62.53	32.61
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	1530708	15.0000	13.734	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	495022			2.21- 62.21	32.34
3 Chloromethane					CAS #: 74-87-3		
7.307	7.301 (0.422)	50	481139	15.0000	12.266	80.00- 120.00	100.00
7.307	7.298 (0.422)	52	157872			2.83- 62.83	32.81
4 Vinyl Chloride					CAS #: 75-01-4		
8.297	8.278 (0.479)	62	548403	15.0000	14.482	80.00- 120.00	100.00
8.297	8.283 (0.479)	64	176227			2.23- 62.23	32.13
5 Chloroethane					CAS #: 75-00-3		
10.846	10.846 (0.626)	64	241495	15.0000	15.067	80.00- 120.00	100.00
10.846	10.849 (0.626)	66	77480			2.03- 62.03	32.08

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

    6 Freon 11                                          CAS #: 75-69-4
 11.738  11.737 (0.678)   101   1881829 15.0000   15.662  80.00- 120.00   100.00
 11.738  11.737 (0.678)   103   1238677                    35.56-  95.56    65.82
-------------------------------------------------------------------------------
    7 Freon 113                                         CAS #: 76-13-1
 13.329  13.328 (0.770)   151   1569331 15.0000   13.729  80.00- 120.00   100.00
 13.329  13.331 (0.770)   153   1025344                    35.30-  95.30    65.34
 13.329  13.328 (0.770)   101   1554181                    69.82- 129.82    99.03
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                                CAS #: 75-35-4
 13.329  13.331 (0.770)    98    392103 15.0000   14.469  80.00- 120.00   100.00
 13.329  13.328 (0.770)    61    887100                   194.63- 254.63   226.24
 13.329  13.328 (0.770)    96    612962                   125.91- 185.91   156.33
-------------------------------------------------------------------------------
    9 Methyl tert-butyl ether                           CAS #: 1634-04-4
 15.032  15.031 (0.868)    73   1617188 15.0000   18.346  80.00- 120.00   100.00
 15.004  15.018 (0.866)    57    336733                     0.00-  51.41    20.82
 15.004  15.018 (0.866)    41    377059                     0.00-  53.76    23.32
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                          CAS #: 156-60-5
 15.087  15.080 (0.871)    98    432873 15.0000   15.398  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61    828885                   161.94- 221.94   191.48
 15.059  15.075 (0.870)    96    667198                   125.44- 185.44   154.13
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                                CAS #: 75-34-3
 15.938  15.937 (0.920)    63   1135022 15.0000   14.581  80.00- 120.00   100.00
 15.938  15.937 (0.920)    65    366908                     2.20-  62.20    32.33
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                            CAS #: 156-59-2
 16.917  16.916 (0.977)    98    497850 15.0000   15.894  80.00- 120.00   100.00
 16.917  16.916 (0.977)    61    865999                   144.59- 204.59   173.95
 16.917  16.916 (0.977)    96    765023                   124.96- 184.96   153.67
-------------------------------------------------------------------------------
*  13 Bromochloromethane                                CAS #: 74-97-5
 17.316  17.316 (1.000)   130    200931 5.00000           80.00- 120.00   100.00
 17.316  17.316 (1.000)   128    154650                    46.79- 106.79    76.97
 17.284  17.283 (1.000)    49    206434                    67.00- 127.00   102.74
-------------------------------------------------------------------------------
   14 Chloroform                                        CAS #: 67-66-3
 17.381  17.381 (1.004)    83   1512799 15.0000   15.019  80.00- 120.00   100.00
 17.381  17.381 (1.004)    85   1004941                    35.98-  95.98    66.43
 17.381  17.371 (1.004)    47    338232                     0.00-  53.97    22.36
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                             CAS #: 71-55-6
 17.622  17.622 (1.018)    97   1665832 15.0000   14.310  80.00- 120.00   100.00
 17.622  17.622 (1.018)    99   1093943                    35.55-  95.55    65.67
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.823  17.822 (1.029)   119   1837659 15.0000   16.945  80.00- 120.00   100.00
 17.823  17.822 (1.029)   117   1874408                   72.26- 132.26   102.00
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78   2090858 15.0000   14.252  80.00- 120.00   100.00
 18.207  18.207 (0.966)    77    486072                    0.00-  53.31    23.25
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                          CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    221198 5.00000    4.676  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67    127148                   26.62-  86.62    57.48
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62    969296 15.0000   13.537  80.00- 120.00   100.00
 18.330  18.342 (0.973)    64    319420                    2.73-  62.73    32.95
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                           CAS #: 540-36-3
 18.839  18.839 (1.000)   114    617992 5.00000           80.00- 120.00   100.00
 18.817  18.830 (1.000)    88     87554                    0.00-  44.17    14.17
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130   1119867 15.0000   13.972  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95    971606                   56.54- 116.54    86.76
 19.241  19.241 (1.021)    97    635527                   26.43-  86.43    56.75
-------------------------------------------------------------------------------
$  22 Toluene-d8                                    CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    549516 5.00000    5.029  80.00- 120.00   100.00
 21.624  21.622 (1.148)    70     59430                    0.00-  40.95    10.81
 21.624  21.624 (1.148)   100    352599                   34.26-  94.26    64.17
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91   2340513 15.0000   15.048  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92   1383720                   28.65-  88.65    59.12
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75   1062204 15.0000   17.352  80.00- 120.00   100.00
 22.328  22.328 (0.918)    77    339643                    1.94-  61.94    31.98
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.706  22.705 (0.934)    97    939555 15.0000   14.095  80.00- 120.00   100.00
 22.706  22.705 (0.934)    99    600040                   33.39-  93.39    63.86
 22.706  22.705 (0.934)    83    764655                   51.43- 111.43    81.38
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166   1703569 15.0000   14.767  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129   1091686                   34.72-  94.72    64.08
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131   1061497                    33.00-  93.00    62.31
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.664  23.664 (0.973)   107   1518773 15.0000   14.946  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109   1469096                    65.72- 125.72    96.73
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    552661 5.00000            80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    255527                    16.60-  76.60    46.24
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112   2087627 15.0000   14.806  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114    685857                     2.75-  62.75    32.85
 24.359  24.350 (1.002)    77   1040821                    20.49-  80.49    49.86
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106    988970 15.0000   17.282  80.00- 120.00   100.00
 24.442  24.442 (1.005)    91   2940948                   269.97- 329.97   297.37
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106   1173343 15.0000   17.375  80.00- 120.00   100.00
 24.607  24.607 (1.012)    91   2228809                   161.51- 221.51   189.95
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106   1083115 15.0000   17.379  80.00- 120.00   100.00
 25.184  25.184 (1.036)    91   2167825                   171.59- 231.59   200.15
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    429013 5.00000    5.029  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    360054                    54.28- 114.28    83.93
 25.927  25.927 (1.066)   176    419622                    67.48- 127.48    97.81
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83   1904620 15.0000   12.766  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85   1258155                    35.87-  95.87    66.06
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146   2302808 15.0000   14.162  80.00- 120.00   100.00
 27.246  27.253 (1.120)   148   1514990                    35.51-  95.51    65.79
 27.246  27.246 (1.120)   111    808583                     5.09-  65.09    35.11
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146   2323927 15.0000   14.453  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148   1526573                    35.48-  95.48    65.69
 27.355  27.357 (1.125)   111    785108                     3.55-  63.55    33.78
-------------------------------------------------------------------------------
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.838	27.840	(1.145)	146	2178303	15.0000	14.666	80.00- 120.00	100.00
27.838	27.851	(1.145)	148	1419101			35.34- 95.34	65.15
27.838	27.838	(1.145)	111	787121			6.26- 66.26	36.13
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	235329	1.50000	1.654	80.00- 120.00	100.00
30.379	30.403	(1.249)	127	30909			0.00- 43.23	13.13

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020511sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ns
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 15ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 14
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	200931	3.27
20 1,4-Difluorobenze	590660	354396	826924	617992	4.63
28 Chlorobenzene-d5	550580	330348	770812	552661	0.38

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020511sim.d

Date : 05-FEB-2020 08:13

Client ID: Level 14

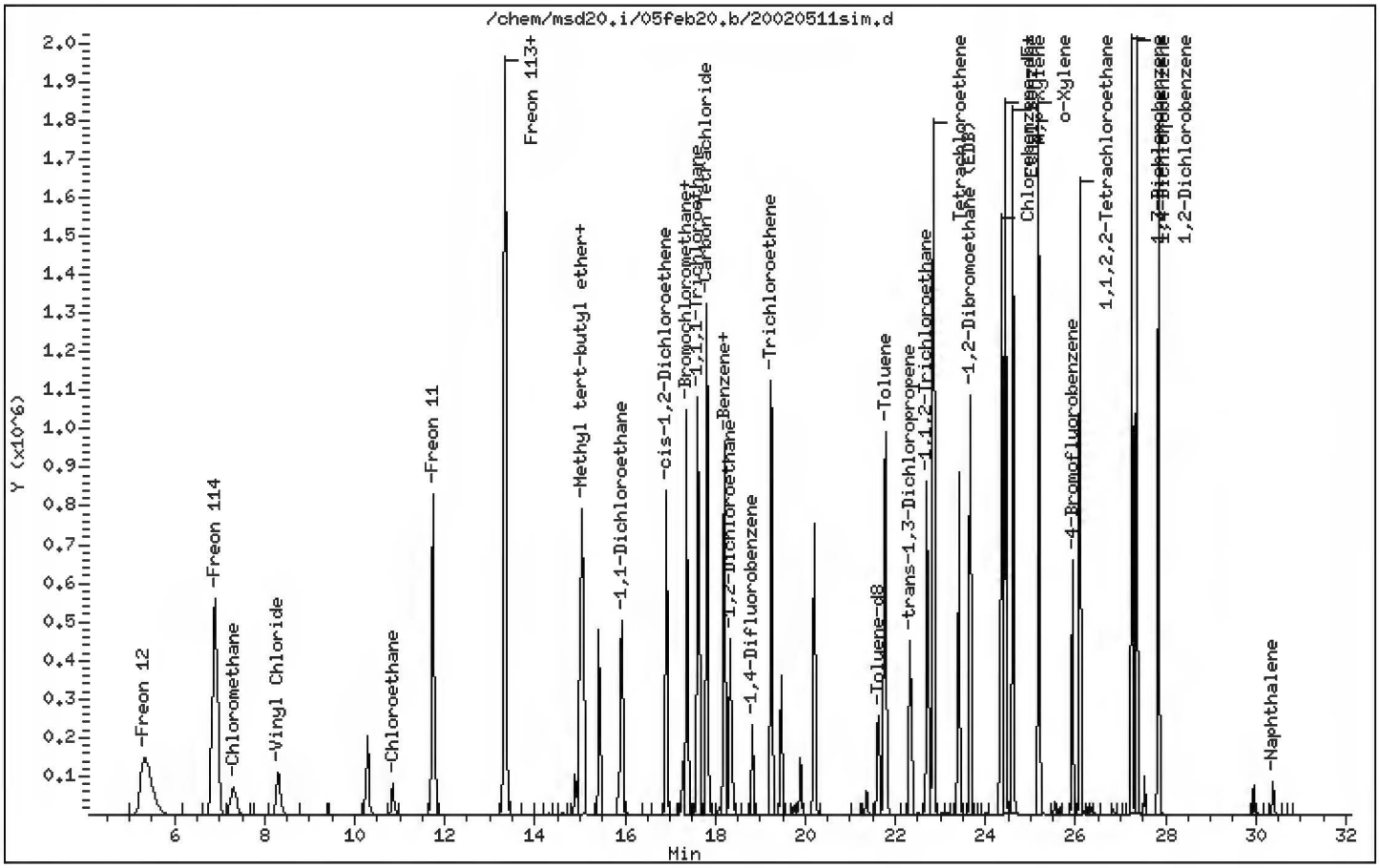
Instrument: msd20.i

Sample Info: 75mL# 3018-1179

Operator: ns

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020512sim.d
Lab Smp Id: ICAL Client Smp ID: Level 15
Inj Date : 05-FEB-2020 08:54
Operator : ef Inst ID: msd20.i
Smp Info : 100mL# 3018-1179
Misc Info : 20ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Meth Date : 05-Feb-2020 09:42 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1 Calibration Sample, Level: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	2317002	20.0000	18.173	80.00- 120.00	100.00
5.331	5.334 (0.308)	87	754417			2.53- 62.53	32.56
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	1916676	20.0000	17.727	80.00- 120.00	100.00
6.898	6.900 (0.398)	137	620306			2.21- 62.21	32.36
3 Chloromethane					CAS #: 74-87-3		
7.307	7.301 (0.422)	50	601084	20.0000	15.795	80.00- 120.00	100.00
7.307	7.298 (0.422)	52	197767			2.83- 62.83	32.90
4 Vinyl Chloride					CAS #: 75-01-4		
8.297	8.278 (0.479)	62	709768	20.0000	19.321	80.00- 120.00	100.00
8.297	8.283 (0.479)	64	228809			2.23- 62.23	32.24
5 Chloroethane					CAS #: 75-00-3		
10.846	10.846 (0.626)	64	308033	20.0000	19.811	80.00- 120.00	100.00
10.846	10.849 (0.626)	66	98968			2.03- 62.03	32.13

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

    6 Freon 11                                        CAS #: 75-69-4
 11.738  11.737 (0.678)   101   2338184 20.0000   20.060  80.00- 120.00   100.00(A)
 11.738  11.737 (0.678)   103   1543074                   35.56-  95.56    65.99
-------------------------------------------------------------------------------
    7 Freon 113                                       CAS #: 76-13-1
 13.329  13.328 (0.770)   151   1988384 20.0000   17.930  80.00- 120.00   100.00
 13.329  13.331 (0.770)   153   1302697                   35.30-  95.30    65.52
 13.329  13.328 (0.770)   101   1955066                   69.82- 129.82    98.32
-------------------------------------------------------------------------------
    8 1,1-Dichloroethene                              CAS #: 75-35-4
 13.329  13.331 (0.770)    98    504914 20.0000   19.205  80.00- 120.00   100.00
 13.329  13.328 (0.770)    61   1127634                  194.63- 254.63   223.33
 13.329  13.328 (0.770)    96    786962                  125.91- 185.91   155.86
-------------------------------------------------------------------------------
    9 Methyl tert-butyl ether                         CAS #: 1634-04-4
 15.032  15.031 (0.868)    73   2093920 20.0000   24.486  80.00- 120.00   100.00(A)
 15.004  15.018 (0.866)    57    430526                    0.00-  51.41    20.56
 15.004  15.018 (0.866)    41    457989                    0.00-  53.76    21.87
-------------------------------------------------------------------------------
   10 trans-1,2-Dichloroethene                        CAS #: 156-60-5
 15.087  15.080 (0.871)    98    544322 20.0000   19.959  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61   1029141                  161.94- 221.94   189.07
 15.059  15.075 (0.870)    96    837694                  125.44- 185.44   153.90
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                              CAS #: 75-34-3
 15.938  15.937 (0.920)    63   1452903 20.0000   19.240  80.00- 120.00   100.00
 15.938  15.937 (0.920)    65    470432                    2.20-  62.20    32.38
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                          CAS #: 156-59-2
 16.917  16.916 (0.977)    98    646608 20.0000   21.278  80.00- 120.00   100.00(A)
 16.917  16.916 (0.977)    61   1123055                  144.59- 204.59   173.68
 16.917  16.916 (0.977)    96    992536                  124.96- 184.96   153.50
-------------------------------------------------------------------------------
*  13 Bromochloromethane                              CAS #: 74-97-5
 17.316  17.316 (1.000)   130    194926 5.00000            80.00- 120.00   100.00
 17.316  17.316 (1.000)   128    149841                   46.79- 106.79    76.87
 17.284  17.283 (1.000)    49    208290                   67.00- 127.00   106.86
-------------------------------------------------------------------------------
   14 Chloroform                                      CAS #: 67-66-3
 17.381  17.381 (1.004)    83   1930367 20.0000   19.754  80.00- 120.00   100.00
 17.381  17.381 (1.004)    85   1282353                   35.98-  95.98    66.43
 17.381  17.371 (1.004)    47    431918                    0.00-  53.97    22.37
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                           CAS #: 71-55-6
 17.622  17.622 (1.018)    97   2156092 20.0000   19.093  80.00- 120.00   100.00
 17.622  17.622 (1.018)    99   1421924                   35.55-  95.55    65.95
-------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   16 Carbon Tetrachloride                          CAS #: 56-23-5
 17.823  17.822 (1.029)   119   2375084 20.0000   22.575  80.00- 120.00   100.00(A)
 17.823  17.822 (1.029)   117   2418220                   72.26- 132.26   101.82
-------------------------------------------------------------------------------
   17 Benzene                                       CAS #: 71-43-2
 18.207  18.207 (0.966)    78   2713426 20.0000   18.494  80.00- 120.00   100.00
 18.207  18.207 (0.966)    77    630017                    0.00-  53.31    23.22
-------------------------------------------------------------------------------
$  18 1,2-Dichloroethane-d4                         CAS #: 17060-07-0
 18.227  18.227 (1.053)    65    213170 5.00000    4.646  80.00- 120.00   100.00
 18.227  18.227 (1.053)    67    125581                   26.62-  86.62    58.91
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                            CAS #: 107-06-2
 18.330  18.330 (0.973)    62   1250133 20.0000   17.458  80.00- 120.00   100.00
 18.330  18.342 (0.973)    64    411366                    2.73-  62.73    32.91
-------------------------------------------------------------------------------
*  20 1,4-Difluorobenzene                          CAS #: 540-36-3
 18.840  18.839 (1.000)   114    618037 5.00000           80.00- 120.00   100.00
 18.817  18.830 (1.000)    88     87657                    0.00-  44.17    14.18
-------------------------------------------------------------------------------
   21 Trichloroethene                               CAS #: 79-01-6
 19.241  19.245 (1.021)   130   1479557 20.0000   18.459  80.00- 120.00   100.00
 19.241  19.241 (1.021)    95   1286058                   56.54- 116.54    86.92
 19.241  19.241 (1.021)    97    843770                   26.43-  86.43    57.03
-------------------------------------------------------------------------------
$  22 Toluene-d8                                    CAS #: 2037-26-5
 21.624  21.624 (1.148)    98    569702 5.00000    5.213  80.00- 120.00   100.00
 21.608  21.622 (1.147)    70     62216                    0.00-  40.95    10.92
 21.624  21.624 (1.148)   100    368177                   34.26-  94.26    64.63
-------------------------------------------------------------------------------
   23 Toluene                                       CAS #: 108-88-3
 21.780  21.780 (1.156)    91   3233696 20.0000   20.789  80.00- 120.00   100.00(A)
 21.780  21.780 (1.156)    92   1921336                   28.65-  88.65    59.42
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.328  22.328 (0.918)    75   1468313 20.0000   22.786  80.00- 120.00   100.00(A)
 22.328  22.328 (0.918)    77    475418                    1.94-  61.94    32.38
-------------------------------------------------------------------------------
   25 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.706  22.705 (0.934)    97   1254693 20.0000   17.882  80.00- 120.00   100.00
 22.706  22.705 (0.934)    99    801766                   33.39-  93.39    63.90
 22.706  22.705 (0.934)    83   1024571                   51.43- 111.43    81.66
-------------------------------------------------------------------------------
   26 Tetrachloroethene                             CAS #: 127-18-4
 22.851  22.851 (0.940)   166   2290675 20.0000   18.863  80.00- 120.00   100.00
 22.851  22.851 (0.940)   129   1482663                   34.72-  94.72    64.73
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   26 Tetrachloroethene (continued)
 22.851  22.851 (0.940)   131   1436267                    33.00-  93.00    62.70
-------------------------------------------------------------------------------
   27 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.664  23.664 (0.973)   107   2026509 20.0000   18.944  80.00- 120.00   100.00
 23.664  23.664 (0.973)   109   1966024                    65.72- 125.72    97.02
-------------------------------------------------------------------------------
*  28 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.318  24.318 (1.000)   117    581758 5.00000            80.00- 120.00   100.00
 24.318  24.318 (1.000)    82    271583                    16.60-  76.60    46.68
-------------------------------------------------------------------------------
   29 Chlorobenzene                                 CAS #: 108-90-7
 24.359  24.359 (1.002)   112   2857014 20.0000   19.250  80.00- 120.00   100.00
 24.359  24.359 (1.002)   114    948670                     2.75-  62.75    33.20
 24.359  24.350 (1.002)    77   1460827                    20.49-  80.49    51.13
-------------------------------------------------------------------------------
   30 Ethyl Benzene                                 CAS #: 100-41-4
 24.442  24.442 (1.005)   106   1386819 20.0000   23.022  80.00- 120.00   100.00(A)
 24.442  24.442 (1.005)    91   4140911                   269.97- 329.97   298.59
-------------------------------------------------------------------------------
   31 m,p-Xylene                                    CAS #: 108-38-3
 24.607  24.607 (1.012)   106   1631416 20.0000   22.950  80.00- 120.00   100.00(A)
 24.607  24.607 (1.012)    91   3113121                   161.51- 221.51   190.82
-------------------------------------------------------------------------------
   32 o-Xylene                                      CAS #: 95-47-6
 25.184  25.184 (1.036)   106   1529195 20.0000   23.310  80.00- 120.00   100.00(A)
 25.184  25.184 (1.036)    91   3050983                   171.59- 231.59   199.52
-------------------------------------------------------------------------------
$  33 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.927  25.927 (1.066)   174    455372 5.00000    5.071  80.00- 120.00   100.00
 25.927  25.927 (1.066)    95    385107                    54.28- 114.28    84.57
 25.927  25.927 (1.066)   176    443580                    67.48- 127.48    97.41
-------------------------------------------------------------------------------
   34 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.097  26.097 (1.073)    83   2566091 20.0000   16.339  80.00- 120.00   100.00
 26.097  26.097 (1.073)    85   1696169                    35.87-  95.87    66.10
-------------------------------------------------------------------------------
   35 1,3-Dichlorobenzene                           CAS #: 541-73-1
 27.246  27.246 (1.120)   146   3131231 20.0000   18.293  80.00- 120.00   100.00
 27.246  27.253 (1.120)   148   2064034                    35.51-  95.51    65.92
 27.246  27.246 (1.120)   111   1113386                     5.09-  65.09    35.56
-------------------------------------------------------------------------------
   36 1,4-Dichlorobenzene                           CAS #: 106-46-7
 27.371  27.371 (1.126)   146   3145866 20.0000   18.586  80.00- 120.00   100.00
 27.371  27.371 (1.126)   148   2068975                    35.48-  95.48    65.77
 27.355  27.357 (1.125)   111   1071799                     3.55-  63.55    34.07
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.838	27.840 (1.145)	146	2965759	20.0000	18.969	80.00- 120.00	100.00
27.854	27.851 (1.145)	148	1936858			35.34- 95.34	65.31
27.838	27.838 (1.145)	111	1084367			6.26- 66.26	36.56
38 Naphthalene					CAS #: 91-20-3		
30.395	30.395 (1.250)	128	362053	2.00000	2.417	80.00- 120.00	100.00
30.379	30.403 (1.249)	127	47216			0.00- 43.23	13.04

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020512sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/05feb20.b/200l0205a.m/200s0205a.m
Misc Info: 20ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 15
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	194565	116739	272391	194926	0.19
20 1,4-Difluorobenze	590660	354396	826924	618037	4.63
28 Chlorobenzene-d5	550580	330348	770812	581758	5.66

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.31	16.98	17.64	17.32	0.02
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020512sim.d

Date : 05-FEB-2020 08:54

Client ID: Level 15

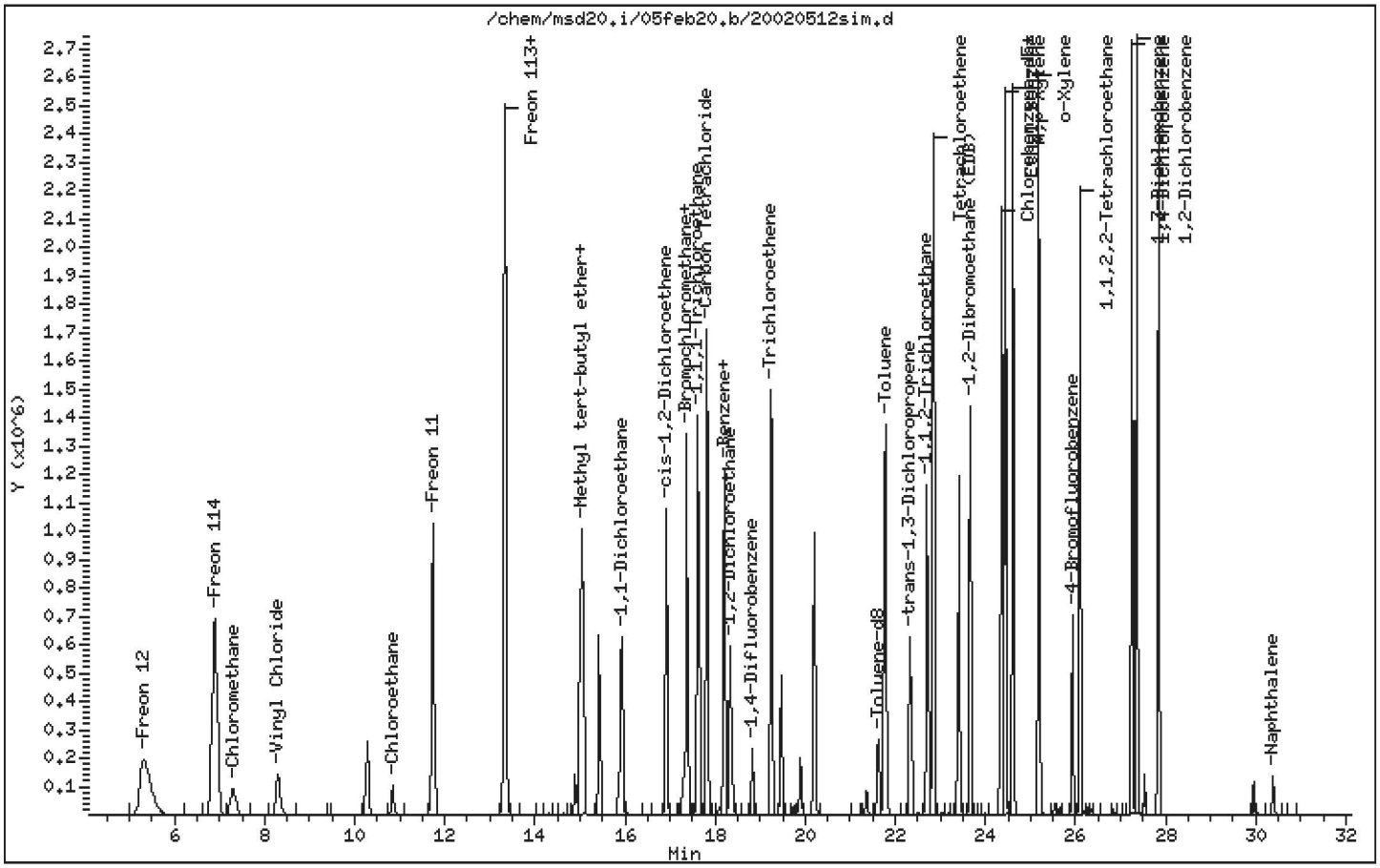
Instrument: msd20.i

Sample Info: 100mL# 3018-1179

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Calibration File Names:
Level 5: /chem/msd20.i/05feb20.b/20020505.d
Level 6: /chem/msd20.i/05feb20.b/20020506.d
Level 7: /chem/msd20.i/05feb20.b/20020507.d
Level 8: /chem/msd20.i/05feb20.b/20020508.d
Level 12: /chem/msd20.i/05feb20.b/20020509.d
Level 13: /chem/msd20.i/05feb20.b/20020510.d
Level 14: /chem/msd20.i/05feb20.b/20020511.d
Level 15: /chem/msd20.i/05feb20.b/20020512.d
Level 16: /chem/msd20.i/05feb20.b/20020513.d

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
6 Freon 143a	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
7 Freon 134a	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
8 Propane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
9 Propylene	+++++ 0.58748	+++++ 0.56716	+++++ 0.53069	+++++	0.57608	0.56374	0.56503	3.766
10 1,1-Difluoroethane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
11 Freon 12	+++++ 2.96030	+++++ 2.88724	3.41847 2.60545	3.12161	3.15528	2.92053	3.00984	8.466
12 Vinyl Fluoride	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
13 Chlorodifluoromethane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
14 Ethylene Oxide	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++

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Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
15 Freon 114	+++++	2.81007	2.78359	2.60303	2.65942	2.47243		
	2.50847	2.39573	2.23796				2.55884	7.608
16 Freon 142b	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
17 Chloromethane	+++++	+++++	1.03788	0.86148	0.84708	0.77426		
	0.79823	0.74016	0.67755				0.81952	14.016
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
23 Butane	+++++	+++++	0.15223	0.13646	0.14475	0.15374		
	0.15879	0.15210	0.15613				0.15060	5.046

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Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
25 Vinyl Chloride	+++++	0.94859	0.85272	0.79077	0.84806	0.87491		
	0.89418	0.87167	0.82719				0.86351	5.421
26 1,3-Butadiene	+++++	0.48416	0.52631	0.47871	0.57238	0.57645		
	0.62586	0.59145	0.58979				0.55564	9.615
27 3-Methyl-1-butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
28 Methanol	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
29 Bromomethane	+++++	+++++	0.45148	0.54297	0.80501	0.76780		
	0.74838	0.76140	0.69984				0.68241	19.476
30 Chloroethane	+++++	+++++	0.36028	0.36266	0.38785	0.39587		
	0.39679	0.38206	0.36499				0.37865	4.178
31 Isopentane	+++++	+++++	0.63601	0.59196	0.61144	0.61781		
	0.65301	0.64433	0.62542				0.62571	3.329
32 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
33 2-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
34 Pentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
35 Freon 11	2.50750	2.71612	2.99741	3.09769	3.24816	3.10860		
	3.11811	2.91667	2.77673				2.94300	8.037
36 1-Pentene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
37 Dichlorofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
38 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
39 Isoprene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
40 2-Methyl-2-butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
41 trans-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
42 Ethanol	+++++	+++++	0.25208	0.24163	0.23153	0.24539		
	0.24757	0.25100	0.24483				0.24486	2.818
43 1,2-Dichloro-1-fluoroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
44 Ethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
45 cis-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
46 Acrolein	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
47 Freon 123a	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
48 Freon 123	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
49 Freon 113	2.70940	3.21719	2.99816	2.75347	2.76962	2.57435		
	2.58881	2.48669	2.28382				2.70906	10.196
50 1,1-Dichloroethene	+++++	0.70588	0.51514	0.51158	0.63036	0.61511		
	0.65699	0.63775	0.62129				0.61176	10.948

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Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
51 2,2-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
52 Acetone	+++++	+++++	0.47525	0.39185	0.40588	0.40300		
	0.42617	0.39971	0.38559				0.41249	7.388
53 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
54 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
55 4-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
56 Carbon Disulfide	+++++	+++++	2.70913	2.66038	3.07671	2.93292		
	2.97374	2.81759	2.64432				2.83068	5.949
57 2-Propanol	+++++	+++++	1.19293	1.04640	1.06674	1.13669		
	1.21159	1.17793	1.21902				1.15019	6.047
58 3-Chloropropene	+++++	+++++	0.21828	0.21353	0.30709	0.34191		
	0.35762	0.35172	0.35230				0.30606	20.851
59 Cyclopentene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
60 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
61 Methyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
62 3-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
63 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
64 Cyclopentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
65 1-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
66 Methylene Chloride	+++++	1.52326	1.03179	0.96615	1.01179	0.95472		
	0.95765	0.91055	0.83808				1.02425	20.528
67 2-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
68 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
69 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
70 tert-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
71 tert-Butyl alcohol	+++++	+++++	1.22323	1.23145	1.49938	1.54332		
	1.66651	1.65814	1.68268				1.50067	13.235
72 Methyl tert-butyl ether	+++++	2.39355	1.77224	1.74040	2.47707	2.62174		
	2.82047	2.77000	2.63427				2.40372	17.600
73 trans-1,2-Dichloroethene	+++++	0.49355	0.62102	0.61536	0.67205	0.68214		
	0.71155	0.68627	0.63121				0.63914	10.669
74 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
75 trans-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
76 1-Hexene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
77 cis-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
78 Hexane	+++++	+++++	0.94110	0.90827	1.27603	1.37164		
	1.43598	1.42200	1.31359				1.23837	17.904
79 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
80 sec-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
81 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
82 1,1-Dichloroethane	+++++	2.00961	1.65827	1.77607	1.96790	1.86096		
	1.88539	1.81184	1.64210				1.82652	7.264
83 Isopropyl ether	+++++	+++++	1.79783	1.96419	2.55956	2.74446		
	2.92087	2.97060	2.71768				2.52503	18.328
84 1-Propanol	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
85 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
86 Vinyl Acetate	+++++	+++++	0.09804	0.16807	0.24764	0.26528		
	0.26514	0.27331	0.25960				0.22530	29.575

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Compound	0.05000 Level 5 / 15.000 Level 14	0.10000 Level 6 / 20.000 Level 15	0.50000 Level 7 / 40.000 Level 16	1.000 Level 8	5.000 Level 12	10.000 Level 13	RRF	% RSD
87 Butanal	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
88 Ethyl-tert-butyl ether	+++++ / 3.00195	+++++ / 3.07942	1.93425 / 2.85386	2.02665	2.65260	2.85869	2.62963	17.642
89 Isobutyl chloride	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
90 2,2-Dichloropropane	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
91 cis-1,2-Dichloroethene	+++++ / 0.82073	0.64795 / 0.80560	0.66637 / 0.74240	0.69679	0.81181	0.77555	0.74590	9.168
92 2-Butanone	+++++ / 0.49602	+++++ / 0.49964	0.33613 / 0.47083	0.38829	0.47111	0.48911	0.45016	13.981
93 Methyl Acrylate	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
94 Ethyl Acetate	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
95 Methacrylonitrile	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++

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Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
96 2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
97 2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
99 Tetrahydrofuran	+++++	+++++	0.61475	0.66580	0.84787	0.86792		
	0.94158	0.92759	0.88658				0.82173	15.691
100 Chloroform	+++++	2.55671	2.52824	2.53557	2.66974	2.47575		
	2.47929	2.42841	2.19320				2.48336	5.533
101 1-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
102 Cyclohexane	+++++	0.88095	1.30295	1.33346	1.93253	2.00020		
	2.07188	2.06982	1.87555				1.68342	26.667
103 1,1,1-Trichloroethane	2.53149	2.72176	2.54003	2.46762	2.78633	2.55599		
	2.64697	2.60579	2.34101				2.57744	5.170
104 Chloroacetonitrile	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
105 n-Butylchloride	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
106 Carbon Tetrachloride	2.14300	2.34407	2.76665	2.69614	3.09640	2.98012		
	2.88694	2.87018	2.58441				2.70755	11.337
107 1,1-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
108 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
109 2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
110 3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
113 2,2,4-Trimethylpentane	+++++	2.59273	2.00733	1.85304	2.27113	2.33527		
	2.27777	2.37507	2.16846				2.23510	10.188
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
115 Isobutanol	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
116 Benzene	+++++	0.95289	1.01523	1.05567	1.21555	1.15083		
	1.10738	1.10934	1.09014				1.08713	7.428
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
119 tert-Amyl methyl ether	+++++	+++++	0.21320	0.20962	0.24632	0.25971		
	0.26752	0.26935	0.27336				0.24844	10.779
120 1,2-Dichloroethane	0.54414	0.77506	0.61286	0.49706	0.54647	0.53412		
	0.51826	0.49297	0.49345				0.55715	16.141
121 Heptane	+++++	0.27951	0.20512	0.19301	0.31114	0.29641		
	0.29029	0.30059	0.29980				0.27198	16.918
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
124 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
125 Trichloroethene	0.80433	0.72428	0.56525	0.56673	0.62842	0.62428		
	0.63425	0.62353	0.63429				0.64504	11.698
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

US32TAR1

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Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
127 Methylcyclohexane	+++++	+++++	0.46603	0.44861	0.60610	0.65000		
	0.66543	0.67579	0.69154				0.60050	16.902
128 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
131 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
132 1,2-Dichloropropane	+++++	0.54318	0.39514	0.36257	0.41442	0.39848		
	0.39265	0.39140	0.39299				0.41135	13.404
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
134 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
136 1,4-Dioxane	+++++	0.16405	0.20440	0.21900	0.25014	0.26471		
	0.27162	0.27528	0.28022				0.24118	17.196
137 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
138 Bromodichloromethane	0.99000	0.96177	0.99660	0.94701	1.05992	0.99964		
	0.97990	0.91318	0.91492				0.97366	4.722
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
140 bis(chloromethyl) Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
143 2-Chloroethyl Vinyl Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
144 cis-1,3-Dichloropropene	+++++	0.66698	0.47443	0.47841	0.54542	0.56040		
	0.58457	0.60557	0.63621				0.56900	12.154

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Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5 / 15.000 Level 14	0.10000 Level 6 / 20.000 Level 15	0.50000 Level 7 / 40.000 Level 16	1.000 Level 8	5.000 Level 12	10.000 Level 13	RRF	% RSD
145 4-Methyl-2-pentanone	+++++	0.60411	0.53671	0.49441	0.61216	0.66521		
	0.66169	0.71140	0.73685				0.62782	13.235
147 Toluene	+++++	1.40093	1.16528	1.18419	1.37815	1.36667		
	1.31797	1.38128	1.40161				1.32451	7.261
148 Octane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
150 trans-1,3-Dichloropropene	+++++	0.62262	0.51009	0.45558	0.61491	0.60932		
	0.63489	0.63994	0.66256				0.59374	12.107
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
152 1-Chloro-2-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

US32TAR1

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Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
155 1,1,2-Trichloroethane	0.77914	0.99836	0.59037	0.57131	0.62845	0.59047		
	0.54095	0.53599	0.53134				0.64071	24.052
156 Tetrachloroethene	1.10695	1.24922	0.98387	1.01231	1.13051	1.07112		
	1.06012	1.05472	1.04949				1.07981	7.157
157 1,3-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
158 2-Hexanone	+++++	+++++	0.22895	0.23572	0.35834	0.38213		
	0.39936	0.41934	0.44207				0.35227	24.446
159 Butyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
160 Dibromochloromethane	1.08487	1.12772	1.25956	1.16851	1.35995	1.29090		
	1.25755	1.21408	1.21357				1.21964	6.926
161 1,2-Dibromoethane (EDB)	1.12394	0.86164	0.93959	0.86572	0.96543	0.94805		
	0.92675	0.89824	0.90009				0.93660	8.408
162 1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
164 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Curve Type : Average

Compound	0.05000 Level 5 / 15.000 Level 14	0.10000 Level 6 / 20.000 Level 15	0.50000 Level 7 / 40.000 Level 16	1.000 Level 8	5.000 Level 12	10.000 Level 13	RRF	% RSD
165 Chlorobenzene	+++++	1.31867	1.12934	1.17373	1.34815	1.30421		
	1.27344	1.25635	1.25168				1.25695	5.852
166 Butyl Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
167 Ethyl Benzene	+++++	0.49024	0.41694	0.43231	0.59668	0.62128		
	0.61871	0.62825	0.62834				0.55410	16.602
168 1,1,1,2-Tetrachloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
169 m,p-Xylene	+++++	0.69146	0.48878	0.47520	0.74270	0.75747		
	0.72088	0.73774	0.73464				0.66861	17.472
170 Nonane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
171 o-Xylene	+++++	0.42551	0.50217	0.50169	0.65022	0.67679		
	0.66082	0.68659	0.69362				0.59968	17.610
172 Styrene	+++++	0.86079	0.80605	0.83049	1.18831	1.19950		
	1.14577	1.14750	1.14348				1.04024	16.715
173 2-Heptanone	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
174 Bromoform	1.46170	1.41735	1.33733	1.35757	1.55186	1.50776		
	1.46396	1.43740	1.45162				1.44295	4.653
175 Cumene	+++++	1.56735	1.52979	1.63656	2.15700	2.21669		
	2.18452	2.17892	2.18367				1.95681	16.124
176 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
178 1-Decene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
179 alpha-Pinene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
180 Bromobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
181 1,1,2,2-Tetrachloroethane	1.88730	1.40346	1.33678	1.31874	1.28713	1.21226		
	1.14311	1.12635	1.12766				1.31587	17.972
182 Propylbenzene	+++++	2.04951	1.97083	2.11861	2.51520	2.53529		
	2.42088	2.37729	2.31426				2.28773	9.422
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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	15.000 Level 14	20.000 Level 15	40.000 Level 16					
184 trans-1,4-Dichloro-2-butene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
185 1,2,3-Trichloropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
187 Decane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
188 4-Ethyltoluene	1.64587	1.63729	1.68150	1.71263	2.28362	2.31331		
	2.22526	2.16612	2.06699				1.97029	14.954
189 2-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
190 1,3,5-Trimethylbenzene	1.92054	1.52822	1.38982	1.66168	2.22749	2.21917		
	2.15872	2.09486	2.05820				1.91763	16.408
191 4-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
192 beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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	15.000 Level 14	20.000 Level 15	40.000 Level 16					
193 Diisobutyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
194 alpha Methyl Styrene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
195 tert-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
196 1,2,4-Trimethylbenzene	1.63349	1.27567	1.24748	1.29856	1.65273	1.83984		
	1.85059	1.82675	1.86030				1.60949	16.481
197 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
198 Limonene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
199 D-Limonene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
200 Benzaldehyde	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
201 Indan	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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	15.000 Level 14	20.000 Level 15	40.000 Level 16					
202 Indene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
203 sec-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
206 bis(2-Chloroethyl) Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
207 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
208 1,3-Dichlorobenzene	1.76889	1.29198	1.51974	1.58064	1.46955	1.44949		
	1.39893	1.38142	1.36390				1.46939	9.634
209 1,4-Dichlorobenzene	1.51411	1.37266	1.31891	1.45134	1.48019	1.45681		
	1.41258	1.39601	1.36360				1.41847	4.393
210 1,2,3-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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	15.000 Level 14	20.000 Level 15	40.000 Level 16					
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
212 alpha-Chlorotoluene	+++++	1.02373	1.06117	1.18096	1.25055	1.27437		
	1.26309	1.33339	1.40567				1.22412	10.616
213 Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
214 1,2-Dichlorobenzene	1.35857	1.31118	1.33513	1.41298	1.40502	1.36525		
	1.31037	1.28761	1.28003				1.34068	3.597
215 Undecane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
216 4-Ethyl-1,2-dimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
217 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

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	15.000 Level 14	20.000 Level 15	40.000 Level 16					
220 1,2,4,5-tetramethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
221 1,2-Dibromo-3-chloropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
224 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
225 Dodecane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
226 1,2,4-Trichlorobenzene	1.41778	0.69641	0.93112	1.07405	0.75925	0.97578		
	1.08929	1.17642	1.32971				1.04998	22.858
227 Hexachlorobutadiene	+++++	0.75886	1.37384	1.50870	0.98342	1.13119		
	1.23163	1.27246	1.35906				1.20239	19.962
228 Naphthalene	+++++	+++++	+++++	1.52609	1.19737	1.33698		
	1.42357	1.55706	1.85875				1.48330	15.224

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
229 1,2,3-Trichlorobenzene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
230 Tridecane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
231 Quinoline	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
232 2-Methylnaphthalene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
233 1,3,5-Triethylbenzene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
234 Acenaphthylene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
235 Phenanthrene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
236 Anthracene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
M 237 1,2-Dichloroethene (Total)	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
M 238 Chlorobutane (Total)	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
M 239 Total Xylene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
M 240 3 and 4-Ethyltoluene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
241 Total Volatile Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
242 TPH reference to Hexane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
243 TPH reference to Heptane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
244 TPH reference to Gasoline	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
245 TPH reference MineralSpirits	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
246 TPH reference to Stoddard	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
247 TVOC reference to Hexane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
248 TVOC reference to Heptane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
249 TVOC reference to Toluene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
250 TVOC reference to Toluene-d8	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
251 NMOC reference to Hexane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
252 NMOC reference to Heptane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
253 NMOC reference to Toluene	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
254 C3 - C4 Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
255 C4 - C5 Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
256 C5 - C6 Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
257 C6 - C7 Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref C5 + C6	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref Heptane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref Decane	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	+++++	+++++

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5 / 15.000 Level 14	0.10000 Level 6 / 20.000 Level 15	0.50000 Level 7 / 40.000 Level 16	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
265 C10-C12 Aliphatic ref Dodecan	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
266 C8-C10 Aromatic	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,2,3-TMB	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,4,5-TMB	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naphthalene	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
$ 112 Benzene-d6	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++	+++++	+++++
$ 117 1,2-Dichloroethane-d4	1.13157 / 1.08947	1.12935 / 1.02256	1.14988 / 0.92660	1.13525	1.09859	1.00893	1.07691	6.985
$ 146 Toluene-d8	0.95548 / 0.98093	0.95276 / 0.99650	0.91739 / 1.04334	0.91264	0.95191	0.99540	0.96737	4.274

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/200l0205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	___ RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
$ 177 4-Bromofluorobenzene	0.72704	0.72995	0.75042	0.75454	0.81129	0.77948		
	0.75731	0.78686	0.78603				0.76477	3.676

Calibration History

Method : /chem/msd20.i/05feb20.b/200l0205a.m
Start Cal Date: 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 5 , Cal Amount: 0.05000		
05-FEB-2020 00:13	Level5	/chem/msd20.i/05feb20.b/20020505.d

Injection Date	Sublist	Calibration File
Cal Level: 6 , Cal Amount: 0.10000		
05-FEB-2020 00:52	Level6	/chem/msd20.i/05feb20.b/20020506.d

Injection Date	Sublist	Calibration File
Cal Level: 7 , Cal Amount: 0.50000		
05-FEB-2020 05:32	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020507.d

Injection Date	Sublist	Calibration File
Cal Level: 8 , Cal Amount: 1.00000		
05-FEB-2020 06:11	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020508.d

Injection Date	Sublist	Calibration File
Cal Level: 12, Cal Amount: 5.00000		
05-FEB-2020 06:55	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020509.d

Injection Date	Sublist	Calibration File
Cal Level: 13, Cal Amount: 10.00000		
05-FEB-2020 07:34	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020510.d

Injection Date	Sublist	Calibration File
Cal Level: 14, Cal Amount: 15.00000		
05-FEB-2020 08:13	HILOcrvFULL	/chem/msd20.i/05feb20.b/20020511.d

Injection Date	Sublist	Calibration File
Cal Level: 15, Cal Amount: 20.00000		

```
|05-FEB-2020 08:54 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020512.d      |
+------------------+-----------------+----------------------------------------+

+------------------+-----------------+----------------------------------------+
| Cal Level: 16, Cal Amount: 40.00000                                         |
+=============================================================================+
|05-FEB-2020 09:42 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020513.d      |
+------------------+-----------------+----------------------------------------+


Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 13
+------------------+-----------------+----------------------------------------+
| Ccal Level: 13, Ccal Amount: 10.000                                         |
+=============================================================================+
|05-FEB-2020 07:34 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020510a.d     |
+------------------+-----------------+----------------------------------------+
| Ccal Level: 13, Ccal Amount: 10.000                                         |
+=============================================================================+
|05-FEB-2020 07:34 |HILOcrvFULL      |/chem/msd20.i/05feb20.b/20020510.d      |
+------------------+-----------------+----------------------------------------+
```

Curve Name: 200L0205A

Initial Calibration Narrative

An initial calibration curve was analyzed on 2/5/20 on MSD-20.

The instrument was set up to do Full Scan and Selective Ion Monitoring (SIM) simultaneously.

Tune File: 20020502.
ICAL: Zero (0) out.
Naphthalene %RSD = 15.2%.
BTEX R.L. verification spike: 20020506x.
ICV: Zero (0) out; file 20020516a.
DOD 5.0/5.1 ICV: Zero (0) out; file 20020516c.
DOD 4.2 ICV: Zero (0) out; see file 20020516d.
RCP ICV: One (1) RCP compound out; trans-1,2-Dichloroethene @ 122.1%. Multiple non-RCP compounds out.
Naphthalene recovery = 101.0%.
Naphthalene was calibrated from 0.1ppbv to 4.0ppbv.

The reporting limit for Propylene was raised to 5.0ppbv due to poor peak quality at the normal RL.

The following compounds were calibrated down to a special RL of 0.05ppbv:

Freon 11
Freon 113
Carbon Tetrachloride
1,1,1-Trichloroethane
1,2-Dichloroethane
Trichloroethene
Bromodichloromethane
1,1,2-Trichloroethane
Tetrachloroethene
Dibromochloromethane
1,2-Dibromoethane (EDB)
Bromoform
1,1,2,2-Tetrachloroethane
4-Ethyltoluene
1,3,5-Trimethylbenzene
1,2,4-Trimethylbenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1,2-Dichlorobenzene
1,2,4-Trichlorobenzene

MDL expires 2/26/20.

US32TAR1

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2020 00:13
End Cal Date : 05-FEB-2020 09:42
Quant Method : ISTD
Origin : Disabled
Target Version : 3.60
Integrator : HP RTE
Method file : /chem/msd20.i/05feb20.b/20010205a.m
Cal Date : 05-Feb-2020 13:24 uefi
Curve Type : Average

Calibration File Names:
Level 5: /chem/msd20.i/05feb20.b/20020505.d
Level 6: /chem/msd20.i/05feb20.b/20020506.d
Level 7: /chem/msd20.i/05feb20.b/20020507.d
Level 8: /chem/msd20.i/05feb20.b/20020508.d
Level 12: /chem/msd20.i/05feb20.b/20020509.d
Level 13: /chem/msd20.i/05feb20.b/20020510.d
Level 14: /chem/msd20.i/05feb20.b/20020511.d
Level 15: /chem/msd20.i/05feb20.b/20020512.d
Level 16: /chem/msd20.i/05feb20.b/20020513.d

LB 2/6/20
GH 2/5/20

Compound	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	5.000 Level 12	10.000 Level 13	RRF	% RSD
	15.000 Level 14	20.000 Level 15	40.000 Level 16					
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++				+++++	+++++

Flow Meter: CN2295
nominal flow: 32.5 mL/m
Actual Flow: 24.7 mL/min

Eurofins Air Toxics **MSD-20** **Logbook #3131**

BFB Verification of 176/174 m/z Ratio: 594826 / 615658 x 100 = 96.62%	
Method Name: 20OL0205A / 20OS0205A	

IS/S Std. #:	3128-120	Exp. Date:	4/21/20
BCM	LL: 192135	SIM:	1945565
1,4-DFB	564474		590660
CB-d5	518463		550580

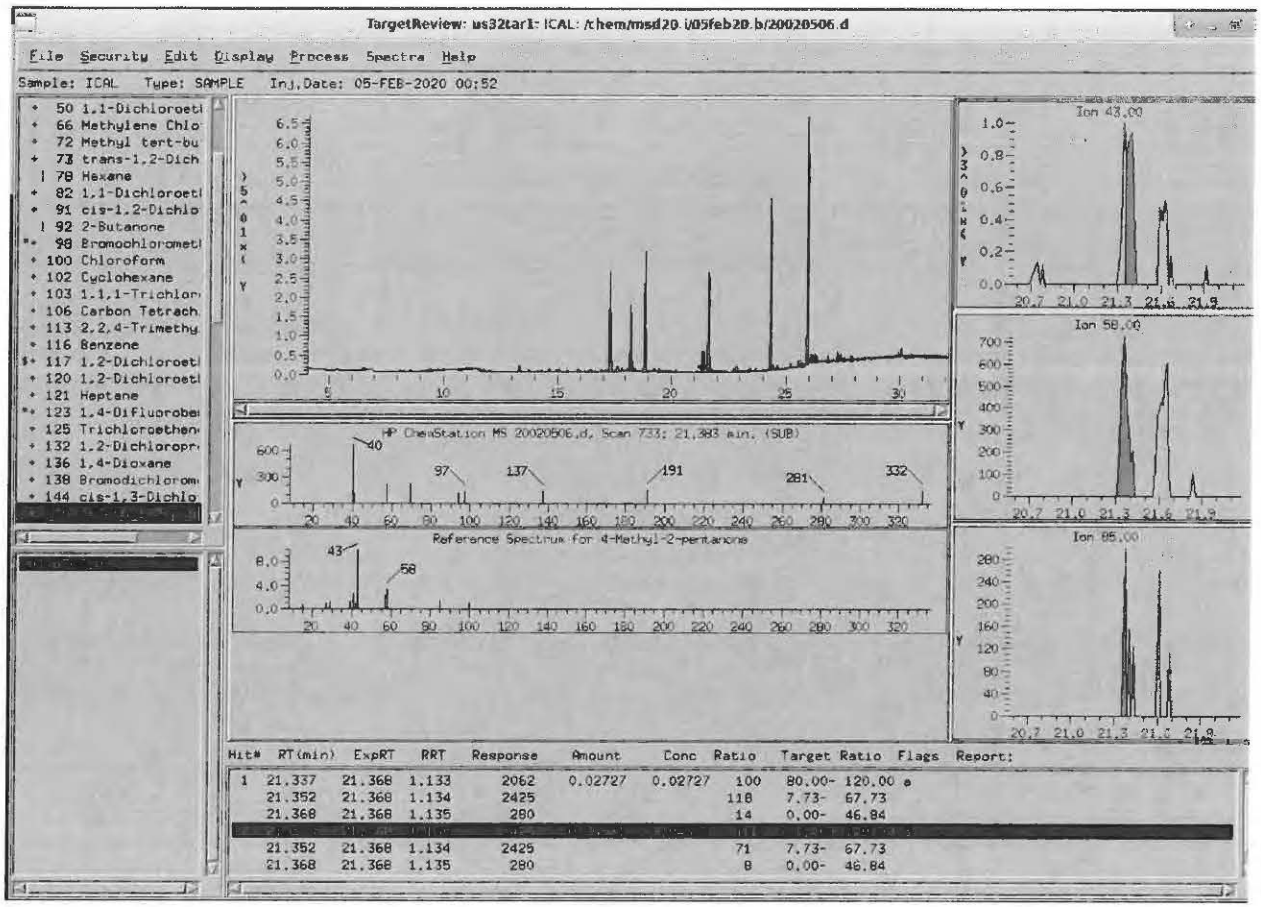
Verified CCV IS vs ICAL mid-point (-40%D): ___

SOP# (Circle one): 6 / 83 / 38 / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

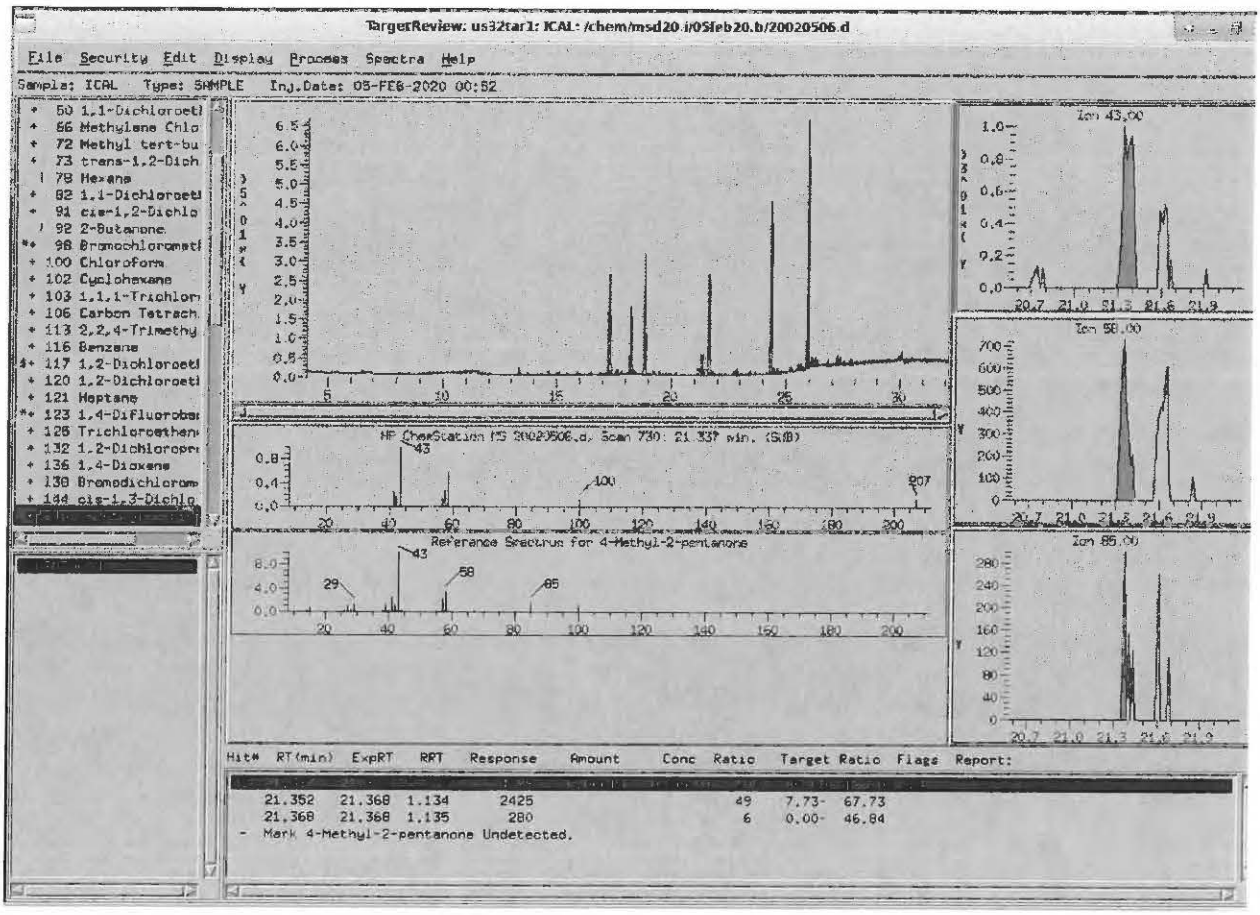
	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date/Syringe ID
1	✓	20020502	BFB Tune Check	2610-1406	50ng	2.6mL	1.00	GH	2-4-20	2235	GH	
2	✓	03	ICAL Level #3	3128-133	0.01ppbv	50mL	1.00	GH		2256	BS	Exp. 5/4/20
3	✓	04	#4		0.02ppbv	100mL	1.00	GH		2334	BS	
4	✓	05	#5		0.05ppbv	250mL	1.00	GH		0013	BS	
5	✓	06	#6	3128-134	0.1ppbv	25mL	1.00	GH		0052	BS	Exp. 5/4/20
6	✓	07	#7		0.5 ppbv	125mL	1.00	AT	2/5/20	0532	BS	
7	✓	08	#8		1.0 ppbv	250mL	1.00	AT		0611	BS	
8	✓	09	#12	3018-1179	5.0 ppbv	25ml	1.00	NJ		0655	BS	Exp. 5/4/20
9	✓	10	#13		10 ppbv	50ml	1.00	NJ		0734	BS	CCV
10	✓	11	#14		15 ppbv	75ml	1.00	NJ		0813	BS	
11	✓	12	15		20 ppbv	100mL	1.00	BS		0854	BS	
12	✓	13	16		40 ppbv	200mL	1.00	BS		0942	BS	
13	X	14	System Blank	02253	Humid	250mL	1.00	BS		1031	BS	
14	✓	15	System Blank	02253	Humid	250mL	1.00	BS		1110	BS	
15	✓	16	ICV (50 ppbv)	3018-1182	10 ppbv	50mL	1.00	BS		1340	BS	LCS Exp. 5/4/20 ✓
16		17	~~LCSD (50 ppbv)~~	~~3018-1182~~	~~10 ppbv~~	~~50mL~~	~~1.00~~	~~BS~~				~~Exp. 5/4/20~~
17												BS 2/5/20

Reviewed* 2/15/20 Date

*Must be an independent reviewer


TargetReview: us32tar1: ICAL: /chem/msd20.i/05feb20.b/20020506.d
File Security Edit Display Process Spectra Help
Sample: ICAL Type: SAMPLE Inj.Date: 05-FEB-2020 00:52
50 1,1-Dichloroeti
66 Methylene Chlo
72 Methyl tert-bu
73 trans-1,2-Dich
78 Hexane
82 1,1-Dichloroeti
91 cis-1,2-Dichlo
92 2-Butanone
98 Bromochlorometh
100 Chloroform
102 Cyclohexane
103 1,1,1-Trichlor
106 Carbon Tetrach
113 2,2,4-Trimethy
116 Benzene
117 1,2-Dichloroeti
120 1,2-Dichloroeti
121 Heptane
123 1,4-Difluorobe
125 Trichloroethen
132 1,2-Dichloropr
136 1,4-Dioxane
138 Bromodichlorom
144 cis-1,3-Dichlo
Ion 43.00
Ion 58.00
Ion 85.00
HP ChemStation MS 20020506.d, Scan 733: 21.383 min. (SUB)
Reference Spectrum for 4-Methyl-2-pentanone
Hit# RT(min) ExpRT RRT Response Amount Conc Ratio Target Ratio Flags Report:
1 21.337 21.368 1.133 2062 0.02727 0.02727 100 80.00- 120.00 a
21.352 21.368 1.134 2425 118 7.73- 67.73
21.368 21.368 1.135 280 14 0.00- 46.84
21.352 21.368 1.134 2425 71 7.73- 67.73
21.368 21.368 1.135 280 8 0.00- 46.84

BEFORE



2/5/20

After 2/5/20

Correct Baseline	
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

Modified EPA Methods TO-14A/TO-15 Low Level
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane
Target Compounds:
Freon 12
Freon 114
Chloromethane
Vinyl Chloride
1,3-Butadiene
Bromomethane
Chloroethane
Freon 11
Ethanol
Freon 113
1,1-Dichloroethene
Acetone
2-Propanol
Carbon Disulfide
3-Chloropropene
Methylene Chloride
Methyl tert-butyl ether
trans-1,2-Dichloroethene
Hexane
1,1-Dichloroethane
2-Butanone (Methyl Ethyl Ketone)
cis-1,2-Dichloroethene
Tetrahydrofuran
Chloroform
1,1,1-Trichloroethane
Cyclohexane
Carbon Tetrachloride
2,2,4-Trimethylpentane
Surrogates:
1,2-Dichloroethane-d4

1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Heptane
Trichloroethene
1,2-Dichloropropane
1,4-Dioxane
Bromodichloromethane
cis-1,3-Dichloropropene
4-Methyl-2-pentanone
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
trans-1,3-Dichloropropene
1,1,2-Trichloroethane
Tetrachloroethene
2-Hexanone
Dibromochloromethane
1,2-Dibromoethane (EDB)
Chlorobenzene
Ethyl Benzene
m,p-Xylene
o-Xylene
Styrene
Bromoform
Cumene
1,1,2,2-Tetrachloroethane
Propylbenzene
4-Ethyltoluene
1,3,5-Trimethylbenzene
1,2,4-Trimethylbenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
alpha-Chlorotoluene
1,2-Dichlorobenzene
1,2,4-Trichlorobenzene
Hexachlorobutadiene
Surrogates:
Bromofluorobenzene

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020516a.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 05-FEB-2020 13:40
Operator : ef Inst ID: msd20.i
Smp Info : 50mL# 3018-1182
Misc Info : 10ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 09:42 Cal File: 20020513.d
Als bottle: 1 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	178357	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	140953			46.61- 106.61	79.03
17.302	17.302 (1.000)	49	153071			58.08- 118.08	85.82
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.832	18.833 (1.000)	114	540538	5.00000		80.00- 120.00	100.00
18.832	18.833 (1.000)	88	76891			0.00- 44.22	14.22
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	507186	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	252048			18.72- 78.72	49.70
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	183187	4.76865	4.769	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	107627			30.76- 90.76	58.75
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	530396	5.07166	5.072	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	54012			0.00- 41.39	10.18

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
21.617	21.617 (1.148)	100	345881			35.17- 95.17	65.21
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	407064	5.24730	5.247	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	346471			59.22- 119.22	85.11
25.920	25.920 (1.066)	176	384827			69.23- 129.23	94.54
9 Propylene					CAS #: 115-07-1		
4.787	4.782 (0.277)	41	214153	10.6250	10.625	80.00- 120.00	100.00
4.787	4.797 (0.277)	42	139603			38.85- 98.85	65.19
4.787	4.792 (0.277)	39	164982			50.09- 110.09	77.04
11 Freon 12					CAS #: 75-71-8		
5.293	5.321 (0.306)	85	1114487	10.3803	10.380	80.00- 120.00	100.00
5.341	5.328 (0.309)	87	367322			2.53- 62.53	32.96
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	955832	10.4717	10.472	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	304755			2.72- 62.72	31.88
6.884	6.878 (0.398)	85	1093242			86.16- 146.16	114.38
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	295133	10.0957	10.096	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	98619			3.63- 63.63	33.42
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	55704	10.3692	10.369	80.00- 120.00	100.00
8.092	8.095 (0.468)	43	376230			627.99- 687.99	675.41
25 Vinyl Chloride					CAS #: 75-01-4		
8.266	8.277 (0.478)	62	338859	11.0010	11.001	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	106897			2.83- 62.83	31.55
26 1,3-Butadiene					CAS #: 106-99-0		
8.544	8.541 (0.494)	54	211731	10.6825	10.682	80.00- 120.00	100.00
8.544	8.541 (0.494)	39	204024			69.65- 129.65	96.36
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	293953	12.0757	12.076	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	282231			60.82- 120.82	96.01
30 Chloroethane					CAS #: 75-00-3		
10.833	10.846 (0.626)	64	151340	11.2047	11.205	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	36920			0.00- 55.00	24.40
10.833	10.835 (0.626)	66	48147			1.88- 61.88	31.81

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane						CAS #: 78-78-4		
10.977	10.976	(0.634)	57	233944	10.4814	10.481	80.00- 120.00	100.00
10.977	10.976	(0.634)	43	313751			111.40- 171.40	134.11
10.977	10.976	(0.634)	42	284806			96.33- 156.33	121.74
35 Freon 11						CAS #: 75-69-4		
11.724	11.723	(0.678)	101	1155846	11.0101	11.010	80.00- 120.00	100.00
11.724	11.723	(0.678)	103	768341			35.14- 95.14	66.47
42 Ethanol						CAS #: 64-17-5		
12.848	12.870	(0.743)	45	102818	11.7714	11.771	80.00- 120.00	100.00
12.848	12.870	(0.743)	46	38254			6.43- 66.43	37.21
49 Freon 113						CAS #: 76-13-1		
13.315	13.317	(0.770)	151	959040	9.92427	9.924	80.00- 120.00	100.00
13.315	13.323	(0.770)	153	623854			34.89- 94.89	65.05
13.315	13.320	(0.770)	101	970153			70.13- 130.13	101.16
50 1,1-Dichloroethene						CAS #: 75-35-4		
13.315	13.331	(0.770)	98	238656	10.9362	10.936	80.00- 120.00	100.00
13.315	13.324	(0.770)	61	530406			197.76- 257.76	222.25
13.315	13.324	(0.770)	96	360386			124.14- 184.14	151.01
52 Acetone						CAS #: 67-64-1		
13.700	13.706	(0.792)	58	149860	10.1847	10.185	80.00- 120.00	100.00
13.700	13.706	(0.792)	43	471696			291.24- 351.24	314.76
56 Carbon Disulfide						CAS #: 75-15-0		
13.727	13.726	(0.793)	76	1117695	11.0691	11.069	80.00- 120.00	100.00
57 2-Propanol						CAS #: 67-63-0		
14.112	14.110	(0.816)	45	439609	10.7147	10.715	80.00- 120.00	100.00
14.112	14.114	(0.816)	43	124144			0.00- 59.88	28.24
14.112	14.110	(0.816)	59	19290			0.00- 34.36	4.39
58 3-Chloropropene						CAS #: 107-05-1		
14.277	14.295	(0.825)	76	132718	12.1562	12.156	80.00- 120.00	100.00
14.277	14.295	(0.825)	41	286018			188.05- 248.05	215.51
66 Methylene Chloride						CAS #: 75-09-2		
14.634	14.632	(0.846)	84	355306	9.72470	9.725	80.00- 120.00	100.00
14.634	14.632	(0.846)	49	379372			79.75- 139.75	106.77
14.634	14.632	(0.846)	51	116939			4.54- 64.54	32.91
72 Methyl tert-butyl ether						CAS #: 1634-04-4		
15.018	15.017	(0.868)	73	907148	10.5797	10.580	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
72 Methyl tert-butyl ether (continued)							
15.018	15.017 (0.868)	57	188792			0.00- 50.29	20.81
15.018	15.017 (0.868)	41	216539			0.00- 53.61	23.87
73 trans-1,2-Dichloroethene						CAS #: 156-60-5	
15.073	15.072 (0.871)	98	278300	12.2066	12.207	80.00- 120.00	100.00
15.073	15.072 (0.871)	61	538973			166.73- 226.73	193.67
15.073	15.072 (0.871)	96	437491			131.17- 191.17	157.20
78 Hexane						CAS #: 110-54-3	
15.430	15.428 (0.892)	57	513969	11.6350	11.635	80.00- 120.00	100.00
15.430	15.428 (0.892)	43	303567			27.95- 87.95	59.06
15.430	15.428 (0.892)	86	99663			0.00- 48.76	19.39
82 1,1-Dichloroethane						CAS #: 75-34-3	
15.924	15.923 (0.920)	63	654442	10.0445	10.044	80.00- 120.00	100.00
15.924	15.923 (0.920)	65	214932			1.61- 61.61	32.84
86 Vinyl Acetate						CAS #: 108-05-4	
15.979	15.978 (0.923)	86	83788	10.4257	10.426	80.00- 120.00	100.00
15.979	15.978 (0.923)	42	69996			52.54- 112.54	83.54
15.979	15.978 (0.923)	43	703076			783.51- 843.51	839.11
91 cis-1,2-Dichloroethene						CAS #: 156-59-2	
16.903	16.902 (0.977)	98	259370	9.74808	9.748	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	451389			148.56- 208.56	174.03
16.903	16.902 (0.977)	96	400911			126.55- 186.55	154.57
92 2-Butanone						CAS #: 78-93-3	
16.924	16.926 (0.978)	72	180453	11.2377	11.238	80.00- 120.00	100.00
16.924	16.923 (0.978)	43	594805			309.31- 369.31	329.62
16.924	16.926 (0.978)	57	51066			0.00- 58.97	28.30
99 Tetrahydrofuran						CAS #: 109-99-9	
17.270	17.283 (0.998)	42	336609	11.4836	11.484	80.00- 120.00	100.00
17.270	17.283 (0.998)	71	157221			17.62- 77.62	46.71
17.270	17.283 (0.998)	72	173261			20.52- 80.52	51.47
100 Chloroform						CAS #: 67-66-3	
17.367	17.379 (1.004)	83	902957	10.1931	10.193	80.00- 120.00	100.00
17.367	17.383 (1.004)	85	595659			35.58- 95.58	65.97
102 Cyclohexane						CAS #: 110-82-7	
17.597	17.605 (1.017)	84	739338	12.3121	12.312	80.00- 120.00	100.00
17.597	17.602 (1.017)	56	739838			66.69- 126.69	100.07
17.597	17.602 (1.017)	41	400767			26.30- 86.30	54.21

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.619	17.631 (1.018)	97	970833	10.5593	10.559	80.00- 120.00	100.00
17.619	17.633 (1.018)	99	625023			34.72- 94.72	64.38
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	1080530	11.1877	11.188	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	1135787			72.39- 132.39	105.11
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	770452	9.66336	9.663	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	2490052			245.12- 305.12	323.19
18.121	18.121 (1.047)	41	678716			50.98- 110.98	88.09
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	1245740	10.5996	10.600	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	294490			0.00- 54.15	23.64
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	523871	8.69749	8.697	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	173449			0.98- 60.98	33.11
121 Heptane					CAS #: 142-82-5		
18.409	18.404 (0.978)	57	336582	11.4470	11.447	80.00- 120.00	100.00
18.409	18.406 (0.978)	100	171311			22.83- 82.83	50.90
18.409	18.409 (0.978)	43	543859			143.19- 203.19	161.58
125 Trichloroethene					CAS #: 79-01-6		
19.256	19.256 (1.022)	130	684334	9.81353	9.814	80.00- 120.00	100.00
19.256	19.254 (1.022)	95	575680			54.82- 114.82	84.12
19.256	19.259 (1.022)	97	371633			25.35- 85.35	54.31
127 Methylcyclohexane					CAS #: 108-87-2		
19.479	19.480 (1.034)	83	740412	11.4052	11.405	80.00- 120.00	100.00
19.479	19.480 (1.034)	55	510076			40.96- 100.96	68.89
19.479	19.480 (1.034)	56	159937			0.00- 52.45	21.60
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	434655	9.77400	9.774	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	308092			40.35- 100.35	70.88
19.747	19.750 (1.049)	41	227875			24.96- 84.96	52.43
136 1,4-Dioxane					CAS #: 123-91-1		
19.903	19.901 (1.057)	88	301400	11.5598	11.560	80.00- 120.00	100.00
19.903	19.906 (1.057)	58	171720			31.33- 91.33	56.97
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	1009853	10.2248	10.225	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
20.216	20.216 (0.832)	85	629429			34.54- 94.54	62.33
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.118	21.115 (1.121)	75	641179	10.4235	10.423	80.00- 120.00	100.00
21.118	21.120 (1.121)	77	206770			2.26- 62.26	32.25
21.118	21.120 (1.121)	39	275189			13.91- 73.91	42.92
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	739418	10.8943	10.894	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	304347			8.83- 68.83	41.16
21.368	21.362 (1.135)	85	150939			0.00- 50.74	20.41
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	1462966	10.2170	10.217	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	841346			27.71- 87.71	57.51
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	613388	10.1846	10.184	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	190833			3.18- 63.18	31.11
22.350	22.346 (0.919)	39	246592			13.49- 73.49	40.20
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	567574	8.73302	8.733	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	369175			31.74- 91.74	65.04
22.728	22.728 (0.935)	83	463361			51.17- 111.17	81.64
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	1064003	9.71396	9.714	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	670926			34.89- 94.89	63.06
22.844	22.844 (0.940)	131	660010			32.11- 92.11	62.03
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	383421	10.7300	10.730	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	726386			150.34- 210.34	189.45
23.076	23.076 (0.949)	100	100174			0.00- 55.47	26.13
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	1277564	10.3266	10.326	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	975358			46.51- 106.51	76.35
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	916665	9.64844	9.648	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	878847			64.58- 124.58	95.87
165 Chlorobenzene					CAS #: 108-90-7		
24.373	24.355 (1.003)	112	1265544	9.92575	9.926	80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
165 Chlorobenzene (continued)								
24.373	24.360	(1.003)	114	412794			1.57- 61.57	32.62
24.352	24.352	(1.002)	77	654459			21.74- 81.74	51.71
167 Ethyl Benzene						CAS #: 100-41-4		
24.435	24.435	(1.005)	106	602541	10.7202	10.720	80.00- 120.00	100.00
24.435	24.435	(1.005)	91	1832097			270.24- 330.24	304.06
169 m,p-Xylene						CAS #: 108-38-3		
24.621	24.621	(1.013)	106	716462	10.5639	10.564	80.00- 120.00	100.00
24.621	24.618	(1.013)	91	1392307			159.55- 219.55	194.33
171 o-Xylene						CAS #: 95-47-6		
25.198	25.198	(1.036)	106	659015	10.8338	10.834	80.00- 120.00	100.00
25.198	25.198	(1.036)	91	1323102			167.89- 227.89	200.77
172 Styrene						CAS #: 100-42-5		
25.219	25.219	(1.037)	104	1135849	10.7644	10.764	80.00- 120.00	100.00
25.219	25.219	(1.037)	78	537056			16.95- 76.95	47.28
174 Bromoform						CAS #: 75-25-2		
25.540	25.540	(1.051)	173	1480752	10.1166	10.116	80.00- 120.00	100.00
25.540	25.540	(1.051)	171	773329			19.65- 79.65	52.23
175 Cumene						CAS #: 98-82-8		
25.635	25.635	(1.054)	105	2169604	10.9303	10.930	80.00- 120.00	100.00
25.635	25.635	(1.054)	120	618623			0.00- 58.11	28.51
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.109	26.109	(1.074)	83	1153022	8.63831	8.638	80.00- 120.00	100.00
26.109	26.109	(1.074)	85	761504			35.51- 95.51	66.04
182 Propylbenzene						CAS #: 103-65-1		
26.166	26.154	(1.076)	91	2456222	10.5844	10.584	80.00- 120.00	100.00
26.166	26.154	(1.076)	120	645027			0.00- 55.59	26.26
188 4-Ethyltoluene						CAS #: 622-96-8		
26.299	26.299	(1.082)	105	2410784	12.0623	12.062	80.00- 120.00	100.00
26.299	26.295	(1.082)	120	710417			1.51- 61.51	29.47
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
26.356	26.356	(1.084)	105	2026635	10.4187	10.419	80.00- 120.00	100.00
26.356	26.356	(1.084)	120	1106599			21.30- 81.30	54.60
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
26.830	26.830	(1.104)	105	1799249	11.0206	11.021	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
196 1,2,4-Trimethylbenzene (continued)							
26.830	26.830 (1.104)	120	891768			18.64- 78.64	49.56
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.255	27.255 (1.121)	146	1403822	9.41839	9.418	80.00- 120.00	100.00
27.255	27.255 (1.121)	148	909938			34.75- 94.75	64.82
27.255	27.255 (1.121)	111	488934			5.38- 65.38	34.83
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.364	27.364 (1.126)	146	1447184	10.0579	10.058	80.00- 120.00	100.00
27.364	27.364 (1.126)	148	933010			34.92- 94.92	64.47
27.364	27.364 (1.126)	111	474948			3.67- 63.67	32.82
212 alpha-Chlorotoluene					CAS #: 100-44-7		
27.535	27.535 (1.133)	91	1367245	11.0110	11.011	80.00- 120.00	100.00
27.535	27.535 (1.133)	126	325367			0.00- 55.02	23.80
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.847	27.847 (1.145)	146	1338886	9.84511	9.845	80.00- 120.00	100.00
27.847	27.847 (1.145)	148	850374			33.90- 93.90	63.51
27.847	27.845 (1.145)	111	469629			5.97- 65.97	35.08
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
29.967	29.959 (1.233)	180	1012448	9.50593	9.506	80.00- 120.00	100.00
29.967	29.953 (1.233)	182	972143			67.09- 127.09	96.02
227 Hexachlorobutadiene					CAS #: 87-68-3		
30.076	30.076 (1.237)	225	1161042	9.51927	9.519	80.00- 120.00	100.00
30.076	30.076 (1.237)	223	735554			33.13- 93.13	63.35
228 Naphthalene					CAS #: 91-20-3		
30.388	30.388 (1.250)	128	151974	1.01005	1.010	80.00- 120.00	100.00
30.388	30.391 (1.250)	127	24510			0.00- 45.10	16.13

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020516a.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: ICV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	178357	-7.17
123 1,4-Difluorobenze	564474	338684	790264	540538	-4.24
163 Chlorobenzene-d5	513463	308078	718848	507186	-1.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 05-Feb-2020 14:24

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 05Feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: ICV
Client Smp ID: ICV
Level: LOW
Operator: ef
Data Type: MS DATA
SampleType: ICV
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
9 Propylene	10.000	10.625	106.25
11 Freon 12	10.000	10.380	103.80
15 Freon 114	10.000	10.472	104.72
17 Chloromethane	10.000	10.096	100.96
23 Butane	10.000	10.369	103.69
25 Vinyl Chloride	10.000	11.001	110.01
26 1,3-Butadiene	10.000	10.682	106.82
29 Bromomethane	10.000	12.076	120.76
30 Chloroethane	10.000	11.205	112.05
31 Isopentane	10.000	10.481	104.81
35 Freon 11	10.000	11.010	110.10
42 Ethanol	10.000	11.771	117.71
49 Freon 113	10.000	9.924	99.24
50 1,1-Dichloroethene	10.000	10.936	109.36
52 Acetone	10.000	10.185	101.85
56 Carbon Disulfide	10.000	11.069	110.69
57 2-Propanol	10.000	10.715	107.15
58 3-Chloropropene	10.000	12.156	121.56
66 Methylene Chloride	10.000	9.725	97.25
72 Methyl tert-butyl ether	10.000	10.580	105.80
73 trans-1,2-Dichloroethene	10.000	12.207	122.07
78 Hexane	10.000	11.635	116.35
82 1,1-Dichloroethane	10.000	10.044	100.44
86 Vinyl Acetate	10.000	10.426	104.26
91 cis-1,2-Dichloroethene	10.000	9.748	97.48
92 2-Butanone	10.000	11.238	112.38
99 Tetrahydrofuran	10.000	11.484	114.84
100 Chloroform	10.000	10.193	101.93
103 1,1,1-Trichloroethane	10.000	10.559	105.59
106 Carbon Tetrachloride	10.000	11.188	111.88
102 Cyclohexane	10.000	12.312	123.12
113 2,2,4-Trimethylpentane	10.000	9.663	96.63
116 Benzene	10.000	10.600	106.00

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
120 1,2-Dichloroethane	10.000	8.697	86.97
121 Heptane	10.000	11.447	114.47
125 Trichloroethene	10.000	9.814	98.14
127 Methylcyclohexane	10.000	11.405	114.05
132 1,2-Dichloropropane	10.000	9.774	97.74
136 1,4-Dioxane	10.000	11.560	115.60
138 Bromodichloromethane	10.000	10.225	102.25
144 cis-1,3-Dichloropropene	10.000	10.423	104.23
145 4-Methyl-2-pentanone	10.000	10.894	108.94
147 Toluene	10.000	10.217	102.17
150 trans-1,3-Dichloropropene	10.000	10.184	101.85
155 1,1,2-Trichloroethane	10.000	8.733	87.33
156 Tetrachloroethene	10.000	9.714	97.14
158 2-Hexanone	10.000	10.730	107.30
160 Dibromochloromethane	10.000	10.326	103.27
161 1,2-Dibromoethane (EDB)	10.000	9.648	96.48
165 Chlorobenzene	10.000	9.926	99.26
167 Ethyl Benzene	10.000	10.720	107.20
169 m,p-Xylene	10.000	10.564	105.64
171 o-Xylene	10.000	10.834	108.34
172 Styrene	10.000	10.764	107.64
174 Bromoform	10.000	10.116	101.17
175 Cumene	10.000	10.930	109.30
181 1,1,2,2-Tetrachloroethane	10.000	8.638	86.38
182 Propylbenzene	10.000	10.584	105.84
188 4-Ethyltoluene	10.000	12.062	120.62
190 1,3,5-Trimethylbenzene	10.000	10.419	104.19
196 1,2,4-Trimethylbenzene	10.000	11.021	110.21
208 1,3-Dichlorobenzene	10.000	9.418	94.18
209 1,4-Dichlorobenzene	10.000	10.058	100.58
212 alpha-Chlorotoluene	10.000	11.011	110.11
214 1,2-Dichlorobenzene	10.000	9.845	98.45
226 1,2,4-Trichlorobenzene	10.000	9.506	95.06
227 Hexachlorobutadiene	10.000	9.519	95.19
228 Naphthalene	1.000	1.010	101.00

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	5.000	4.769	95.37
$ 146 Toluene-d8	5.000	5.072	101.43
$ 177 4-Bromofluorobenzene	5.000	5.247	104.95

Data File: /chem/msd20.i/05feb20.b/20020516a.d

Date : 05-FEB-2020 13:40

Client ID: ICV

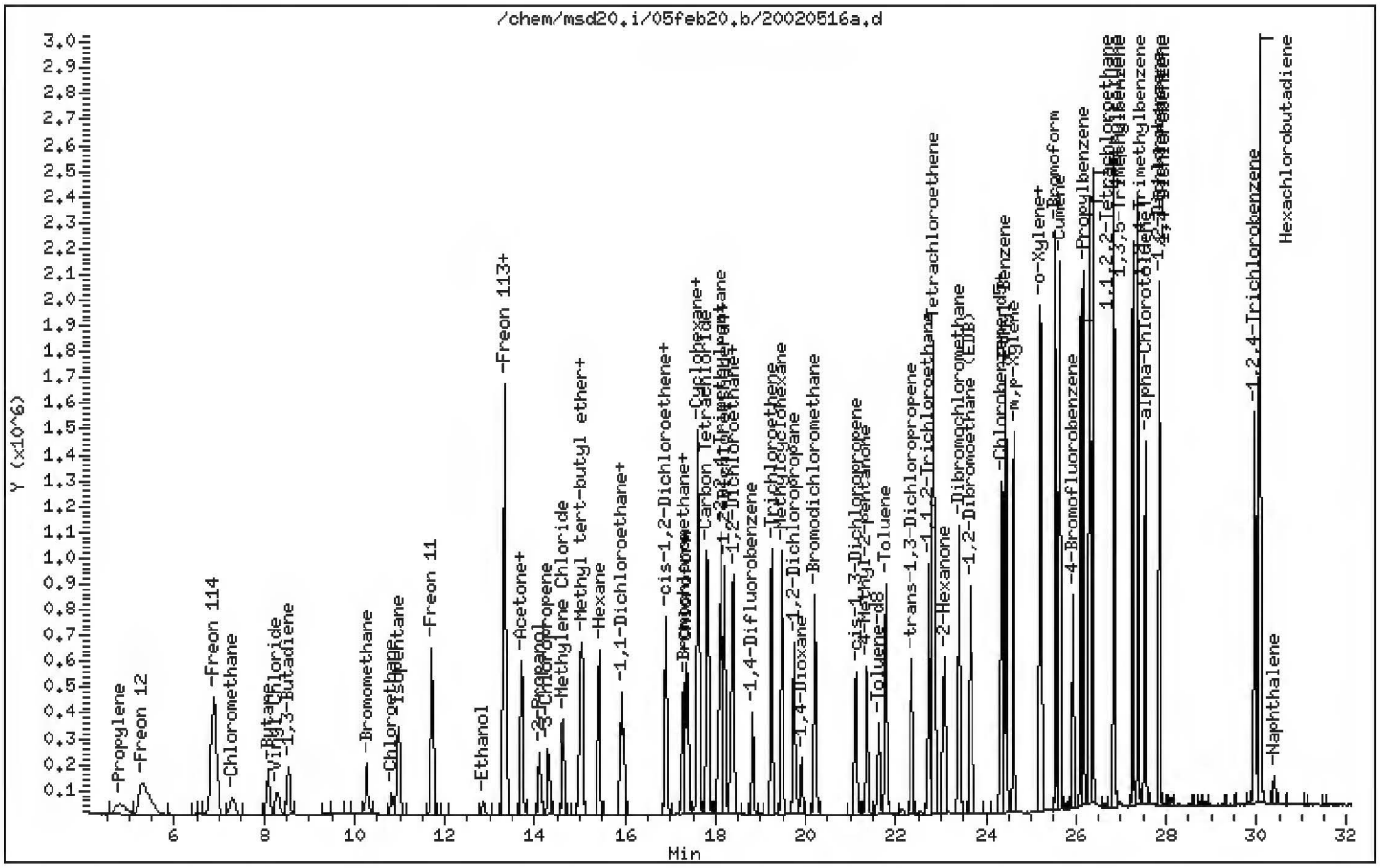
Instrument: msd20.i

Sample Info: 50mL# 3018-1182

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020505.d
Lab Smp Id: ICAL Client Smp ID: Level 5
Inj Date : 05-FEB-2020 00:13
Operator : gh Inst ID: msd20.i
Smp Info : 250mL# 3018-133
Misc Info : .05ppbv (.05ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 00:13 Cal File: 20020505.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level5.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	3763	0.05000	0.04260	80.00- 120.00	100.00(a)
11.748	11.723 (0.679)	103	2247			35.14- 95.14	59.71
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	4066	0.05000	0.05001	80.00- 120.00	100.00(a)
13.343	13.323 (0.771)	153	2541			34.89- 94.89	62.49
13.343	13.320 (0.771)	101	4754			70.13- 130.13	116.92
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	150070	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	113142			46.61- 106.61	75.39
17.302	17.302 (1.000)	49	129416			58.08- 118.08	86.24
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.619	17.631 (1.018)	97	3799	0.05000	0.04911	80.00- 120.00	100.00(a)
17.619	17.633 (1.018)	99	2393			34.72- 94.72	62.99
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	3216	0.05000	0.03957	80.00- 120.00	100.00(a)

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  106 Carbon Tetrachloride (continued)
 17.841  17.829 (1.031)   117      3465                    72.39- 132.39   107.74
--------------------------------------------------------------------------------
$ 117 1,2-Dichloroethane-d4                          CAS #: 17060-07-0
 18.224  18.224 (1.053)    65    169814 5.00000    5.254  80.00- 120.00   100.00
 18.224  18.224 (1.053)    67     88622                    30.76-  90.76    52.19
--------------------------------------------------------------------------------
  120 1,2-Dichloroethane                             CAS #: 107-06-2
 18.347  18.347 (0.974)    62      2244 0.05000  0.04883  80.00- 120.00   100.00(a)
 18.327  18.345 (0.973)    64      1690                     0.98-  60.98    75.31
--------------------------------------------------------------------------------
* 123 1,4-Difluorobenzene                            CAS #: 540-36-3
 18.832  18.833 (1.000)   114    412394 5.00000           80.00- 120.00   100.00
 18.832  18.833 (1.000)    88     54507                     0.00-  44.22    13.22
--------------------------------------------------------------------------------
  125 Trichloroethene                                CAS #: 79-01-6
 19.256  19.256 (1.022)   130      3317 0.05000  0.06235  80.00- 120.00   100.00(a)
 19.256  19.254 (1.022)    95      3034                    54.82- 114.82    91.47
 19.256  19.259 (1.022)    97      2193                    25.35-  85.35    66.11
--------------------------------------------------------------------------------
  138 Bromodichloromethane                           CAS #: 75-27-4
 20.216  20.216 (0.832)    83      4080 0.05000  0.05084  80.00- 120.00   100.00(a)
 20.216  20.216 (0.832)    85      2663                    34.54-  94.54    65.27
--------------------------------------------------------------------------------
$ 146 Toluene-d8                                     CAS #: 2037-26-5
 21.617  21.617 (1.148)    98    394035 5.00000    4.938  80.00- 120.00   100.00
 21.617  21.619 (1.148)    70     43608                     0.00-  41.39    11.07
 21.617  21.617 (1.148)   100    248825                    35.17-  95.17    63.15
--------------------------------------------------------------------------------
  155 1,1,2-Trichloroethane                          CAS #: 79-00-5
 22.728  22.724 (0.935)    97      3211 0.05000  0.06080  80.00- 120.00   100.00(a)
 22.728  22.728 (0.935)    99      2751                    31.74-  91.74    85.67
 22.728  22.728 (0.935)    83      3626                    51.17- 111.17   112.92
--------------------------------------------------------------------------------
  156 Tetrachloroethene                              CAS #: 127-18-4
 22.844  22.844 (0.940)   166      4562 0.05000  0.05126  80.00- 120.00   100.00(a)
 22.844  22.844 (0.940)   129      3267                    34.89-  94.89    71.61
 22.844  22.844 (0.940)   131      3251                    32.11-  92.11    71.26
--------------------------------------------------------------------------------
  160 Dibromochloromethane                           CAS #: 124-48-1
 23.425  23.405 (0.964)   129      4471 0.05000  0.04448  80.00- 120.00   100.00(a)
 23.425  23.402 (0.964)   127      6777                    46.51- 106.51   151.58
--------------------------------------------------------------------------------
  161 1,2-Dibromoethane (EDB)                        CAS #: 106-93-4
 23.657  23.657 (0.973)   107      4632 0.05000  0.06000  80.00- 120.00   100.00(a)
 23.657  23.657 (0.973)   109      4357                    64.58- 124.58    94.06
--------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

* 163 Chlorobenzene-d5                                CAS #: 3114-55-4
 24.311  24.311 (1.000)   117    412123 5.00000           80.00- 120.00   100.00
 24.311  24.311 (1.000)    82    201547                   18.72-  78.72    48.90
-------------------------------------------------------------------------------
  174 Bromoform                                       CAS #: 75-25-2
 25.540  25.540 (1.051)   173      6024 0.05000  0.05065  80.00- 120.00   100.00(a)
 25.540  25.540 (1.051)   171      3132                   19.65-  79.65    51.99
-------------------------------------------------------------------------------
$ 177 4-Bromofluorobenzene                            CAS #: 460-00-4
 25.920  25.920 (1.066)   174    299630 5.00000    4.753  80.00- 120.00   100.00
 25.920  25.920 (1.066)    95    251535                   59.22- 119.22    83.95
 25.920  25.920 (1.066)   176    290563                   69.23- 129.23    96.97
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                       CAS #: 79-34-5
 26.109  26.109 (1.074)    83      7778 0.05000  0.07171  80.00- 120.00   100.00(a)
 26.109  26.109 (1.074)    85      4452                   35.51-  95.51    57.24
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                                  CAS #: 622-96-8
 26.299  26.299 (1.082)   105      6783 0.05000  0.04177  80.00- 120.00   100.00(a)
 26.280  26.295 (1.081)   120      2924                    1.51-  61.51    43.11
-------------------------------------------------------------------------------
  190 1,3,5-Trimethylbenzene                          CAS #: 108-67-8
 26.356  26.356 (1.084)   105      7915 0.05000  0.05008  80.00- 120.00   100.00(a)
 26.356  26.356 (1.084)   120      3620                   21.30-  81.30    45.74
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                          CAS #: 95-63-6
 26.830  26.830 (1.104)   105      6732 0.05000  0.05074  80.00- 120.00   100.00(a)
 26.830  26.830 (1.104)   120      3258                   18.64-  78.64    48.40
-------------------------------------------------------------------------------
  208 1,3-Dichlorobenzene                             CAS #: 541-73-1
 27.255  27.255 (1.121)   146      7290 0.05000  0.06019  80.00- 120.00   100.00(a)
 27.255  27.255 (1.121)   148      4628                   34.75-  94.75    63.48
 27.270  27.255 (1.122)   111      2329                    5.38-  65.38    31.95
-------------------------------------------------------------------------------
  209 1,4-Dichlorobenzene                             CAS #: 106-46-7
 27.364  27.364 (1.126)   146      6240 0.05000  0.05337  80.00- 120.00   100.00(a)
 27.364  27.364 (1.126)   148      5375                   34.92-  94.92    86.14
 27.364  27.364 (1.126)   111      2173                    3.67-  63.67    34.82
-------------------------------------------------------------------------------
  214 1,2-Dichlorobenzene                             CAS #: 95-50-1
 27.847  27.847 (1.145)   146      5599 0.05000  0.05067  80.00- 120.00   100.00(a)
 27.847  27.847 (1.145)   148      4305                   33.90-  93.90    76.89
 27.831  27.845 (1.145)   111      2472                    5.97-  65.97    44.15
-------------------------------------------------------------------------------
  226 1,2,4-Trichlorobenzene                          CAS #: 120-82-1
 29.967  29.959 (1.233)   180      5843 0.05000  0.06751  80.00- 120.00   100.00(a)
```

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
226 1,2,4-Trichlorobenzene (continued)								
29.952	29.953	(1.232)	182	5219			67.09- 127.09	89.32

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020505.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: .05ppbv (.05ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 5
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	150070	-21.89
123 1,4-Difluorobenze	564474	338684	790264	412394	-26.94
163 Chlorobenzene-d5	513463	308078	718848	412123	-19.74

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020505.d

Date : 05-FEB-2020 00:13

Client ID: Level 5

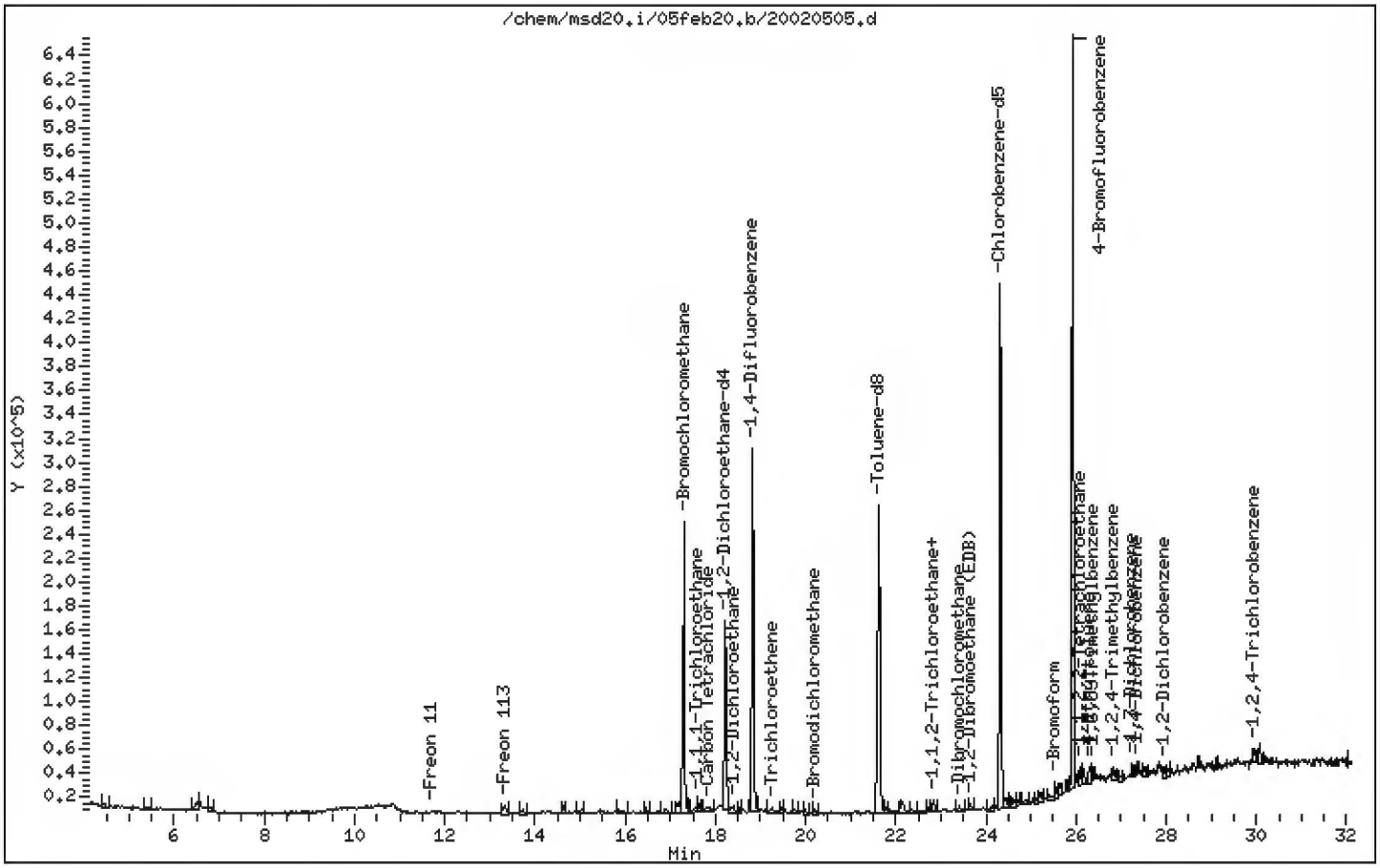
Instrument: msd20.i

Sample Info: 250mL# 3018-133

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020506.d
Lab Smp Id: ICAL Client Smp ID: Level 6
Inj Date : 05-FEB-2020 00:52
Operator : gh Inst ID: msd20.i
Smp Info : 25mL# 3018-134
Misc Info : 0.1ppbv (1.0ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 00:52 Cal File: 20020506.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level6.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	8973	0.10000	0.1098	80.00- 120.00	100.00(a)
6.908	6.893 (0.399)	137	1410			2.72- 62.72	15.71
6.884	6.878 (0.398)	85	10387			86.16- 146.16	115.76
25 Vinyl Chloride					CAS #: 75-01-4		
8.231	8.277 (0.476)	62	3029	0.10000	0.1098	80.00- 120.00	100.00(Ta)
8.214	8.274 (0.475)	64	887			2.83- 62.83	29.28
26 1,3-Butadiene					CAS #: 106-99-0		
8.543	8.541 (0.494)	54	1546	0.10000	0.08714	80.00- 120.00	100.00(a)
8.543	8.541 (0.494)	39	2347			69.65- 129.65	151.81
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	8673	0.10000	0.09229	80.00- 120.00	100.00(a)
11.700	11.723 (0.676)	103	5448			35.14- 95.14	62.82
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	10273	0.10000	0.1188	80.00- 120.00	100.00(a)
13.343	13.323 (0.771)	153	6312			34.89- 94.89	61.44

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   49 Freon 113 (continued)
 13.315  13.320 (0.770)   101     10541                    70.13- 130.13   102.61
--------------------------------------------------------------------------------
   50 1,1-Dichloroethene                           CAS #: 75-35-4
 13.343  13.331 (0.771)    98      2254 0.10000   0.1154  80.00- 120.00   100.00(a)
 13.343  13.324 (0.771)    61      5027                  197.76- 257.76   223.03
 13.343  13.324 (0.771)    96      4263                  124.14- 184.14   189.13
--------------------------------------------------------------------------------
   66 Methylene Chloride                           CAS #: 75-09-2
 14.634  14.632 (0.846)    84      4864 0.10000   0.1487  80.00- 120.00   100.00(a)
 14.634  14.632 (0.846)    49      6056                   79.75- 139.75   124.51
 14.634  14.632 (0.846)    51      1933                    4.54-  64.54    39.74
--------------------------------------------------------------------------------
   72 Methyl tert-butyl ether                      CAS #: 1634-04-4
 15.018  15.017 (0.868)    73      7643 0.10000  0.09958  80.00- 120.00   100.00(a)
 15.018  15.017 (0.868)    57      1163                    0.00-  50.29    15.22
 15.018  15.017 (0.868)    41      2108                    0.00-  53.61    27.58
--------------------------------------------------------------------------------
   73 trans-1,2-Dichloroethene                     CAS #: 156-60-5
 15.073  15.072 (0.871)    98      1576 0.10000  0.07722  80.00- 120.00   100.00(a)
 15.073  15.072 (0.871)    61      3987                  166.73- 226.73   252.98
 15.073  15.072 (0.871)    96      3862                  131.17- 191.17   245.05
--------------------------------------------------------------------------------
   82 1,1-Dichloroethane                           CAS #: 75-34-3
 15.924  15.923 (0.920)    63      6417 0.10000   0.1100  80.00- 120.00   100.00(a)
 15.924  15.923 (0.920)    65      1782                    1.61-  61.61    27.77
--------------------------------------------------------------------------------
   91 cis-1,2-Dichloroethene                       CAS #: 156-59-2
 16.903  16.902 (0.977)    98      2069 0.10000  0.08687  80.00- 120.00   100.00(a)
 16.903  16.902 (0.977)    61      4025                  148.56- 208.56   194.54
 16.903  16.902 (0.977)    96      4555                  126.55- 186.55   220.15
--------------------------------------------------------------------------------
*  98 Bromochloromethane                           CAS #: 74-97-5
 17.302  17.302 (1.000)   130    159658 5.00000           80.00- 120.00   100.00
 17.302  17.302 (1.000)   128    124132                   46.61- 106.61    77.75
 17.302  17.302 (1.000)    49    135790                   58.08- 118.08    85.05
--------------------------------------------------------------------------------
  100 Chloroform                                   CAS #: 67-66-3
 17.400  17.379 (1.006)    83      8164 0.10000   0.1030  80.00- 120.00   100.00(a)
 17.400  17.383 (1.006)    85      6136                   35.58-  95.58    75.16
--------------------------------------------------------------------------------
  102 Cyclohexane                                  CAS #: 110-82-7
 17.597  17.605 (1.017)    84      2813 0.10000  0.05233  80.00- 120.00   100.00(a)
 17.597  17.602 (1.017)    56      2874                   66.69- 126.69   102.17
 17.619  17.602 (1.018)    41      3567                   26.30-  86.30   126.80
--------------------------------------------------------------------------------
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  103 1,1,1-Trichloroethane                          CAS #: 71-55-6
 17.641  17.631 (1.020)    97      8691 0.10000   0.1056  80.00- 120.00   100.00(a)
 17.641  17.633 (1.020)    99      6308                   34.72-  94.72    72.58
-------------------------------------------------------------------------------
  106 Carbon Tetrachloride                           CAS #: 56-23-5
 17.819  17.824 (1.030)   119      7485 0.10000  0.08658  80.00- 120.00   100.00(a)
 17.842  17.829 (1.031)   117      6479                   72.39- 132.39    86.56
-------------------------------------------------------------------------------
  113 2,2,4-Trimethylpentane                         CAS #: 540-84-1
 18.121  18.121 (1.047)    56      8279 0.10000   0.1160  80.00- 120.00   100.00(a)
 18.121  18.121 (1.047)    57     15350                  245.12- 305.12   185.41
 18.121  18.121 (1.047)    41      8914                   50.98- 110.98   107.67
-------------------------------------------------------------------------------
  116 Benzene                                        CAS #: 71-43-2
 18.224  18.206 (0.968)    78      7882 0.10000  0.08765  80.00- 120.00   100.00(a)
 18.203  18.203 (0.967)    77      1154                    0.00-  54.15    14.64
-------------------------------------------------------------------------------
$ 117 1,2-Dichloroethane-d4                          CAS #: 17060-07-0
 18.224  18.224 (1.053)    65    180310 5.00000    5.243  80.00- 120.00   100.00
 18.224  18.224 (1.053)    67     89832                   30.76-  90.76    49.82
-------------------------------------------------------------------------------
  120 1,2-Dichloroethane                             CAS #: 107-06-2
 18.347  18.347 (0.974)    62      6411 0.10000   0.1391  80.00- 120.00   100.00
 18.347  18.345 (0.974)    64      1497                    0.98-  60.98    23.35
-------------------------------------------------------------------------------
  121 Heptane                                        CAS #: 142-82-5
 18.388  18.404 (0.976)    57      2312 0.10000   0.1028  80.00- 120.00   100.00(a)
 18.409  18.406 (0.978)   100      1712                   22.83-  82.83    74.05
 18.409  18.409 (0.978)    43      1775                  143.19- 203.19    76.77
-------------------------------------------------------------------------------
* 123 1,4-Difluorobenzene                            CAS #: 540-36-3
 18.833  18.833 (1.000)   114    413583 5.00000           80.00- 120.00   100.00
 18.833  18.833 (1.000)    88     54887                    0.00-  44.22    13.27
-------------------------------------------------------------------------------
  125 Trichloroethene                                CAS #: 79-01-6
 19.257  19.256 (1.022)   130      5991 0.10000   0.1123  80.00- 120.00   100.00(a)
 19.257  19.254 (1.022)    95      5929                   54.82- 114.82    98.97
 19.279  19.259 (1.024)    97      3595                   25.35-  85.35    60.01
-------------------------------------------------------------------------------
  132 1,2-Dichloropropane                            CAS #: 78-87-5
 19.747  19.747 (1.049)    63      4493 0.10000   0.1320  80.00- 120.00   100.00(a)
 19.747  19.747 (1.049)    62      3143                   40.35- 100.35    69.95
 19.770  19.750 (1.050)    41      2376                   24.96-  84.96    52.88
-------------------------------------------------------------------------------
  136 1,4-Dioxane                                    CAS #: 123-91-1
 19.881  19.901 (1.056)    88      1357 0.10000  0.06802  80.00- 120.00   100.00(a)
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  136 1,4-Dioxane (continued)
 19.926  19.906 (1.058)    58      1490                    31.33-  91.33   109.80
-------------------------------------------------------------------------------
  138 Bromodichloromethane                          CAS #: 75-27-4
 20.216  20.216 (0.832)    83      7963 0.10000  0.09878  80.00- 120.00   100.00(a)
 20.216  20.216 (0.832)    85      5255                    34.54-  94.54    65.99
-------------------------------------------------------------------------------
  144 cis-1,3-Dichloropropene                       CAS #: 10061-01-5
 21.103  21.115 (1.121)    75      5517 0.10000   0.1172  80.00- 120.00   100.00(a)
 21.119  21.120 (1.121)    77      1119                     2.26-  62.26    20.28
 21.134  21.120 (1.122)    39      2320                    13.91-  73.91    42.05
-------------------------------------------------------------------------------
  145 4-Methyl-2-pentanone                          CAS #: 108-10-1
 21.337  21.352 (1.133)    43      4997 0.10000  0.09622  80.00- 120.00   100.00(aM1)
 21.352  21.354 (1.134)    58      2425                     8.83-  68.83    48.53
 21.368  21.362 (1.135)    85       280                     0.00-  50.74     5.60
-------------------------------------------------------------------------------
$ 146 Toluene-d8                                    CAS #: 2037-26-5
 21.617  21.617 (1.148)    98    394046 5.00000    4.924  80.00- 120.00   100.00
 21.633  21.619 (1.149)    70     44588                     0.00-  41.39    11.32
 21.617  21.617 (1.148)   100    251240                    35.17-  95.17    63.76
-------------------------------------------------------------------------------
  147 Toluene                                       CAS #: 108-88-3
 21.773  21.773 (1.156)    91     11588 0.10000   0.1058  80.00- 120.00   100.00(a)
 21.788  21.775 (1.157)    92      7030                    27.71-  87.71    60.67
-------------------------------------------------------------------------------
  150 trans-1,3-Dichloropropene                     CAS #: 10061-02-6
 22.350  22.350 (0.919)    75      5155 0.10000   0.1049  80.00- 120.00   100.00(a)
 22.379  22.354 (0.921)    77      1044                     3.18-  63.18    20.25
 22.321  22.346 (0.918)    39      1465                    13.49-  73.49    28.42
-------------------------------------------------------------------------------
  155 1,1,2-Trichloroethane                         CAS #: 79-00-5
 22.699  22.724 (0.934)    97      8266 0.10000   0.1558  80.00- 120.00   100.00(a)
 22.728  22.728 (0.935)    99      3408                    31.74-  91.74    41.23
 22.728  22.728 (0.935)    83      4687                    51.17- 111.17    56.70
-------------------------------------------------------------------------------
  156 Tetrachloroethene                             CAS #: 127-18-4
 22.844  22.844 (0.940)   166     10343 0.10000   0.1157  80.00- 120.00   100.00(a)
 22.844  22.844 (0.940)   129      5908                    34.89-  94.89    57.12
 22.844  22.844 (0.940)   131      5280                    32.11-  92.11    51.05
-------------------------------------------------------------------------------
  160 Dibromochloromethane                          CAS #: 124-48-1
 23.425  23.405 (0.964)   129      9337 0.10000  0.09246  80.00- 120.00   100.00(a)
 23.425  23.402 (0.964)   127      8447                    46.51- 106.51    90.47
-------------------------------------------------------------------------------
  161 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.657  23.657 (0.973)   107      7134 0.10000  0.09200  80.00- 120.00   100.00(a)
```

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  161 1,2-Dibromoethane (EDB) (continued)
 23.657  23.657 (0.973)   109      8166                    64.58- 124.58   114.47
-------------------------------------------------------------------------------
* 163 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.311  24.311 (1.000)   117    413978 5.00000            80.00- 120.00   100.00
 24.311  24.311 (1.000)    82    201222                    18.72-  78.72    48.61
-------------------------------------------------------------------------------
  165 Chlorobenzene                                 CAS #: 108-90-7
 24.373  24.355 (1.003)   112     10918 0.10000   0.1049  80.00- 120.00   100.00(a)
 24.353  24.360 (1.002)   114      3249                     1.57-  61.57    29.76
 24.353  24.352 (1.002)    77     10250                    21.74-  81.74    93.88
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                 CAS #: 100-41-4
 24.435  24.435 (1.005)   106      4059 0.10000  0.08848  80.00- 120.00   100.00(a)
 24.435  24.435 (1.005)    91     11795                   270.24- 330.24   290.59
-------------------------------------------------------------------------------
  169 m,p-Xylene                                    CAS #: 108-38-3
 24.621  24.621 (1.013)   106      5725 0.10000   0.1034  80.00- 120.00   100.00(a)
 24.600  24.618 (1.012)    91      8718                   159.55- 219.55   152.28
-------------------------------------------------------------------------------
  171 o-Xylene                                      CAS #: 95-47-6
 25.198  25.198 (1.036)   106      3523 0.10000  0.07096  80.00- 120.00   100.00(a)
 25.198  25.198 (1.036)    91      9743                   167.89- 227.89   276.55
-------------------------------------------------------------------------------
  172 Styrene                                       CAS #: 100-42-5
 25.219  25.219 (1.037)   104      7127 0.10000  0.08275  80.00- 120.00   100.00(a)
 25.219  25.219 (1.037)    78      3309                    16.95-  76.95    46.43
-------------------------------------------------------------------------------
  174 Bromoform                                     CAS #: 75-25-2
 25.541  25.540 (1.051)   173     11735 0.10000  0.09822  80.00- 120.00   100.00(a)
 25.541  25.540 (1.051)   171      5579                    19.65-  79.65    47.54
-------------------------------------------------------------------------------
  175 Cumene                                        CAS #: 98-82-8
 25.635  25.635 (1.054)   105     12977 0.10000  0.08010  80.00- 120.00   100.00(a)
 25.635  25.635 (1.054)   120      3116                     0.00-  58.11    24.01
-------------------------------------------------------------------------------
$ 177 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.920  25.920 (1.066)   174    302184 5.00000    4.772  80.00- 120.00   100.00
 25.920  25.920 (1.066)    95    255546                    59.22- 119.22    84.57
 25.920  25.920 (1.066)   176    291249                    69.23- 129.23    96.38
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                     CAS #: 79-34-5
 26.109  26.109 (1.074)    83     11620 0.10000   0.1066  80.00- 120.00   100.00(a)
 26.109  26.109 (1.074)    85      8961                    35.51-  95.51    77.12
-------------------------------------------------------------------------------
  182 Propylbenzene                                 CAS #: 103-65-1
 26.147  26.154 (1.076)    91     16969 0.10000  0.08959  80.00- 120.00   100.00(a)
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
182 Propylbenzene (continued)							
26.147	26.154 (1.076)	120	4772			0.00- 55.59	28.12
188 4-Ethyltoluene					CAS #: 622-96-8		
26.299	26.299 (1.082)	105	13556	0.10000	0.08310	80.00- 120.00	100.00(a)
26.280	26.295 (1.081)	120	4485			1.51- 61.51	33.08
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
26.356	26.356 (1.084)	105	12653	0.10000	0.07969	80.00- 120.00	100.00(a)
26.356	26.356 (1.084)	120	5962			21.30- 81.30	47.12
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
26.830	26.830 (1.104)	105	10562	0.10000	0.07926	80.00- 120.00	100.00(a)
26.830	26.830 (1.104)	120	5322			18.64- 78.64	50.39
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.255	27.255 (1.121)	146	10697	0.10000	0.08792	80.00- 120.00	100.00(a)
27.255	27.255 (1.121)	148	7708			34.75- 94.75	72.06
27.239	27.255 (1.120)	111	4488			5.38- 65.38	41.96
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.364	27.364 (1.126)	146	11365	0.10000	0.09677	80.00- 120.00	100.00(a)
27.364	27.364 (1.126)	148	7700			34.92- 94.92	67.75
27.364	27.364 (1.126)	111	4865			3.67- 63.67	42.81
212 alpha-Chlorotoluene					CAS #: 100-44-7		
27.535	27.535 (1.133)	91	8476	0.10000	0.08363	80.00- 120.00	100.00(a)
27.535	27.535 (1.133)	126	1885			0.00- 55.02	22.24
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.847	27.847 (1.145)	146	10856	0.10000	0.09780	80.00- 120.00	100.00(a)
27.847	27.847 (1.145)	148	8164			33.90- 93.90	75.20
27.847	27.845 (1.145)	111	4600			5.97- 65.97	42.37
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
29.967	29.959 (1.233)	180	5766	0.10000	0.06633	80.00- 120.00	100.00(a)
29.967	29.953 (1.233)	182	5582			67.09- 127.09	96.81
227 Hexachlorobutadiene					CAS #: 87-68-3		
30.076	30.076 (1.237)	225	6283	0.10000	0.06311	80.00- 120.00	100.00(a)
30.076	30.076 (1.237)	223	5242			33.13- 93.13	83.43

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M1- Compound response manually integrated because
    Target system did not integrate.

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020506.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: gh
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 0.1ppbv (1.0ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 6
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	159658	-16.90
123 1,4-Difluorobenze	564474	338684	790264	413583	-26.73
163 Chlorobenzene-d5	513463	308078	718848	413978	-19.38

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020506.d

Date : 05-FEB-2020 00:52

Client ID: Level 6

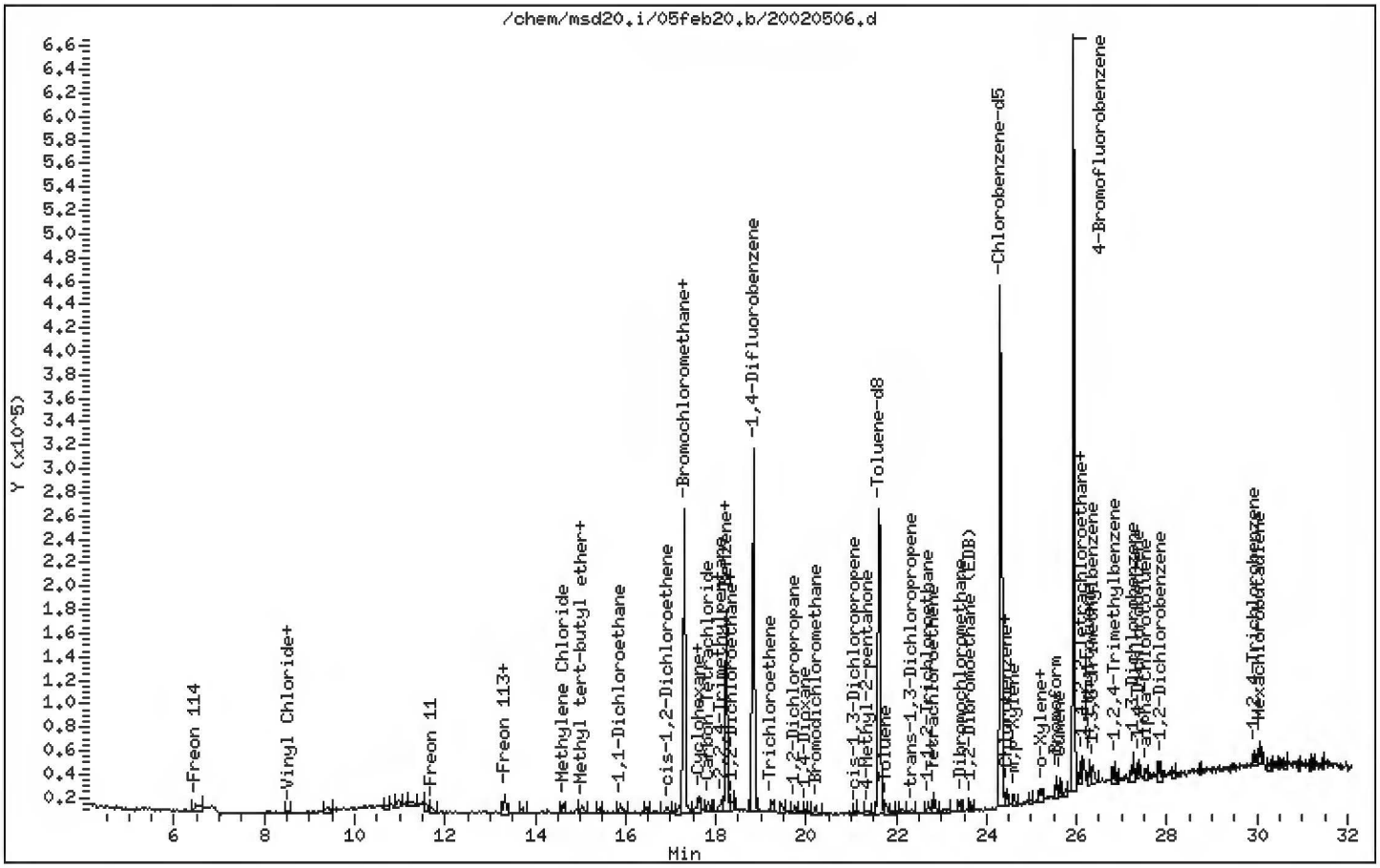
Instrument: msd20.i

Sample Info: 25mL# 3018-134

Operator: gh

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020507.d
Lab Smp Id: ICAL Client Smp ID: Level 7
Inj Date : 05-FEB-2020 05:32
Operator : act Inst ID: msd20.i
Smp Info : 125mL# 3018-134
Misc Info : 0.5ppbv (1.0ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 05:32 Cal File: 20020507.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
11 Freon 12					CAS #: 75-71-8		
5.293	5.321 (0.306)	85	54501	0.50000	0.5679	80.00- 120.00	100.00
5.293	5.328 (0.306)	87	13163			2.53- 62.53	24.15
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	44379	0.50000	0.5439	80.00- 120.00	100.00
6.908	6.893 (0.399)	137	13564			2.72- 62.72	30.56
6.860	6.878 (0.396)	85	49054			86.16- 146.16	110.53
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	16547	0.50000	0.6332	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	3617			3.63- 63.63	21.86
23 Butane					CAS #: 106-97-8		
8.075	8.092 (0.467)	58	2427	0.50000	0.5054	80.00- 120.00	100.00
8.092	8.095 (0.468)	43	16700			627.99- 687.99	688.09
25 Vinyl Chloride					CAS #: 75-01-4		
8.266	8.277 (0.478)	62	13595	0.50000	0.4938	80.00- 120.00	100.00
8.248	8.274 (0.477)	64	4591			2.83- 62.83	33.77

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
26 1,3-Butadiene					CAS #: 106-99-0		
8.526	8.541 (0.493)	54	8391	0.50000	0.4736	80.00- 120.00	100.00
8.526	8.541 (0.493)	39	7647			69.65- 129.65	91.13
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	7198	0.50000	0.3308	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	8611			60.82- 120.82	119.63
30 Chloroethane					CAS #: 75-00-3		
10.857	10.846 (0.627)	64	5744	0.50000	0.4758	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	1650			0.00- 55.00	28.73
10.833	10.835 (0.626)	66	2152			1.88- 61.88	37.47
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	10140	0.50000	0.5082	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	13930			111.40- 171.40	137.38
10.977	10.976 (0.634)	42	14426			96.33- 156.33	142.27
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	47788	0.50000	0.5092	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	33938			35.14- 95.14	71.02
42 Ethanol					CAS #: 64-17-5		
12.876	12.870 (0.744)	45	4019	0.50000	0.5147	80.00- 120.00	100.00
12.876	12.870 (0.744)	46	1369			6.43- 66.43	34.06
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	47800	0.50000	0.5534	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	28502			34.89- 94.89	59.63
13.315	13.320 (0.770)	101	44255			70.13- 130.13	92.58
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.315	13.331 (0.770)	98	8213	0.50000	0.4210	80.00- 120.00	100.00
13.315	13.324 (0.770)	61	18236			197.76- 257.76	222.04
13.315	13.324 (0.770)	96	13841			124.14- 184.14	168.53
52 Acetone					CAS #: 67-64-1		
13.727	13.706 (0.793)	58	7577	0.50000	0.5761	80.00- 120.00	100.00
13.727	13.706 (0.793)	43	22398			291.24- 351.24	295.61
56 Carbon Disulfide					CAS #: 75-15-0		
13.727	13.726 (0.793)	76	43192	0.50000	0.4785	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.112	14.110 (0.816)	45	19019	0.50000	0.5186	80.00- 120.00	100.00
14.112	14.114 (0.816)	43	8092			0.00- 59.88	42.55

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
57 2-Propanol (continued)							
14.112	14.110 (0.816)	59	1237			0.00- 34.36	6.50
58 3-Chloropropene					CAS #: 107-05-1		
14.277	14.295 (0.825)	76	3480	0.50000	0.3566	80.00- 120.00	100.00
14.304	14.295 (0.827)	41	8446			188.05- 248.05	242.70
66 Methylene Chloride					CAS #: 75-09-2		
14.634	14.632 (0.846)	84	16450	0.50000	0.5037	80.00- 120.00	100.00
14.634	14.632 (0.846)	49	19478			79.75- 139.75	118.41
14.634	14.632 (0.846)	51	6357			4.54- 64.54	38.64
71 tert-Butyl alcohol					CAS #: 75-65-0		
14.908	14.907 (0.862)	59	19502	0.50000	0.4076	80.00- 120.00	100.00
14.908	14.903 (0.862)	41	5736			0.00- 57.20	29.41
14.908	14.907 (0.862)	57	2509			0.00- 41.27	12.87
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.018	15.017 (0.868)	73	28255	0.50000	0.3686	80.00- 120.00	100.00
15.018	15.017 (0.868)	57	5592			0.00- 50.29	19.79
15.018	15.017 (0.868)	41	10151			0.00- 53.61	35.93
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.073	15.072 (0.871)	98	9901	0.50000	0.4858	80.00- 120.00	100.00
15.073	15.072 (0.871)	61	17272			166.73- 226.73	174.45
15.073	15.072 (0.871)	96	14231			131.17- 191.17	143.73
78 Hexane					CAS #: 110-54-3		
15.430	15.428 (0.892)	57	15004	0.50000	0.3800	80.00- 120.00	100.00
15.430	15.428 (0.892)	43	9375			27.95- 87.95	62.48
15.430	15.428 (0.892)	86	2202			0.00- 48.76	14.68
83 Isopropyl ether					CAS #: 108-20-3		
15.869	15.872 (0.917)	45	28663	0.50000	0.3560	80.00- 120.00	100.00
15.869	15.872 (0.917)	87	9232			3.75- 63.75	32.21
15.869	15.872 (0.917)	59	4332			0.00- 43.23	15.11
82 1,1-Dichloroethane					CAS #: 75-34-3		
15.924	15.923 (0.920)	63	26438	0.50000	0.4539	80.00- 120.00	100.00
15.924	15.923 (0.920)	65	9440			1.61- 61.61	35.71
86 Vinyl Acetate					CAS #: 108-05-4		
15.979	15.978 (0.923)	86	1563	0.50000	0.2176	80.00- 120.00	100.00
15.979	15.978 (0.923)	42	2889			52.54- 112.54	184.84
15.979	15.978 (0.923)	43	19682			783.51- 843.51	1259.25

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
16.467	16.467 (0.952)	59	30838	0.50000	0.3678	80.00- 120.00	100.00
16.467	16.467 (0.952)	87	15172			16.88- 76.88	49.20
16.467	16.467 (0.952)	41	8202			0.00- 52.99	26.60
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.903	16.902 (0.977)	98	10624	0.50000	0.4467	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	16542			148.56- 208.56	155.70
16.903	16.902 (0.977)	96	16667			126.55- 186.55	156.88
92 2-Butanone					CAS #: 78-93-3		
16.944	16.926 (0.979)	72	5359	0.50000	0.3733	80.00- 120.00	100.00
16.923	16.923 (0.978)	43	20306			309.31- 369.31	378.91
16.944	16.926 (0.979)	57	1271			0.00- 58.97	23.72
99 Tetrahydrofuran					CAS #: 109-99-9		
17.302	17.283 (1.000)	42	9801	0.50000	0.3740	80.00- 120.00	100.00
17.302	17.283 (1.000)	71	4251			17.62- 77.62	43.37
17.302	17.283 (1.000)	72	4220			20.52- 80.52	43.06
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	159431	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	118335			46.61- 106.61	74.22
17.302	17.302 (1.000)	49	135232			58.08- 118.08	84.82
100 Chloroform					CAS #: 67-66-3		
17.367	17.379 (1.004)	83	40308	0.50000	0.5090	80.00- 120.00	100.00
17.367	17.383 (1.004)	85	25440			35.58- 95.58	63.11
102 Cyclohexane					CAS #: 110-82-7		
17.619	17.605 (1.018)	84	20773	0.50000	0.3870	80.00- 120.00	100.00
17.597	17.602 (1.017)	56	20183			66.69- 126.69	97.16
17.597	17.602 (1.017)	41	13013			26.30- 86.30	62.64
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.619	17.631 (1.018)	97	40496	0.50000	0.4927	80.00- 120.00	100.00
17.641	17.633 (1.020)	99	24882			34.72- 94.72	61.44
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	44109	0.50000	0.5109	80.00- 120.00	100.00
17.841	17.829 (1.031)	117	44316			72.39- 132.39	100.47
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	32003	0.50000	0.4490	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	71194			245.12- 305.12	222.46
18.121	18.121 (1.047)	41	25852			50.98- 110.98	80.78

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	43966	0.50000	0.4669	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	11449			0.00- 54.15	26.04
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	183326	5.00000	5.339	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	89543			30.76- 90.76	48.84
119 tert-Amyl methyl ether					CAS #: 994-05-8		
18.265	18.265 (0.970)	87	9233	0.50000	0.4291	80.00- 120.00	100.00
18.265	18.265 (0.970)	73	31788			364.30- 424.30	344.29
18.265	18.265 (0.970)	55	12304			83.00- 143.00	133.26
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	26541	0.50000	0.5500	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	7822			0.98- 60.98	29.47
121 Heptane					CAS #: 142-82-5		
18.388	18.404 (0.976)	57	8883	0.50000	0.3771	80.00- 120.00	100.00
18.388	18.406 (0.976)	100	6447			22.83- 82.83	72.58
18.409	18.409 (0.978)	43	15995			143.19- 203.19	180.06
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.832	18.833 (1.000)	114	433065	5.00000		80.00- 120.00	100.00
18.832	18.833 (1.000)	88	62522			0.00- 44.22	14.44
125 Trichloroethene					CAS #: 79-01-6		
19.256	19.256 (1.022)	130	24479	0.50000	0.4382	80.00- 120.00	100.00
19.234	19.254 (1.021)	95	24313			54.82- 114.82	99.32
19.256	19.259 (1.022)	97	17167			25.35- 85.35	70.13
127 Methylcyclohexane					CAS #: 108-87-2		
19.479	19.480 (1.034)	83	20182	0.50000	0.3880	80.00- 120.00	100.00
19.479	19.480 (1.034)	55	16963			40.96- 100.96	84.05
19.479	19.480 (1.034)	56	6343			0.00- 52.45	31.43
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	17112	0.50000	0.4803	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	13800			40.35- 100.35	80.65
19.747	19.750 (1.049)	41	10419			24.96- 84.96	60.89
136 1,4-Dioxane					CAS #: 123-91-1		
19.903	19.901 (1.057)	88	8852	0.50000	0.4238	80.00- 120.00	100.00
19.903	19.906 (1.057)	58	6004			31.33- 91.33	67.83
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	41674	0.50000	0.5118	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
20.216	20.216 (0.832)	85	24731			34.54- 94.54	59.34
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.103	21.115 (1.121)	75	20546	0.50000	0.4169	80.00- 120.00	100.00
21.134	21.120 (1.122)	77	6388			2.26- 62.26	31.09
21.118	21.120 (1.121)	39	7950			13.91- 73.91	38.69
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.368	21.352 (1.135)	43	23243	0.50000	0.4274	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	9143			8.83- 68.83	39.34
21.368	21.362 (1.135)	85	4372			0.00- 50.74	18.81
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	397291	5.00000	4.742	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	46663			0.00- 41.39	11.75
21.617	21.617 (1.148)	100	254351			35.17- 95.17	64.02
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	50464	0.50000	0.4399	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	29329			27.71- 87.71	58.12
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	21330	0.50000	0.4296	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	8934			3.18- 63.18	41.88
22.350	22.346 (0.919)	39	10136			13.49- 73.49	47.52
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	24687	0.50000	0.4607	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	15169			31.74- 91.74	61.45
22.728	22.728 (0.935)	83	19078			51.17- 111.17	77.28
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	41142	0.50000	0.4556	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	28371			34.89- 94.89	68.96
22.844	22.844 (0.940)	131	25924			32.11- 92.11	63.01
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	9574	0.50000	0.3250	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	21734			150.34- 210.34	227.01
23.076	23.076 (0.949)	100	3035			0.00- 55.47	31.70
160 Dibromochloromethane					CAS #: 124-48-1		
23.425	23.405 (0.964)	129	52670	0.50000	0.5164	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	38273			46.51- 106.51	72.67

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	39290	0.50000	0.5016	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	32642			64.58- 124.58	83.08
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	418163	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	205301			18.72- 78.72	49.10
165 Chlorobenzene					CAS #: 108-90-7		
24.352	24.355 (1.002)	112	47225	0.50000	0.4492	80.00- 120.00	100.00
24.373	24.360 (1.003)	114	16141			1.57- 61.57	34.18
24.352	24.352 (1.002)	77	28327			21.74- 81.74	59.98
167 Ethyl Benzene					CAS #: 100-41-4		
24.435	24.435 (1.005)	106	17435	0.50000	0.3762	80.00- 120.00	100.00
24.435	24.435 (1.005)	91	54971			270.24- 330.24	315.29
169 m,p-Xylene					CAS #: 108-38-3		
24.621	24.621 (1.013)	106	20439	0.50000	0.3655	80.00- 120.00	100.00
24.621	24.618 (1.013)	91	43552			159.55- 219.55	213.08
171 o-Xylene					CAS #: 95-47-6		
25.198	25.198 (1.036)	106	20999	0.50000	0.4187	80.00- 120.00	100.00
25.198	25.198 (1.036)	91	44637			167.89- 227.89	212.57
172 Styrene					CAS #: 100-42-5		
25.219	25.219 (1.037)	104	33706	0.50000	0.3874	80.00- 120.00	100.00
25.219	25.219 (1.037)	78	16349			16.95- 76.95	48.50
174 Bromoform					CAS #: 75-25-2		
25.540	25.540 (1.051)	173	55922	0.50000	0.4634	80.00- 120.00	100.00
25.540	25.540 (1.051)	171	28792			19.65- 79.65	51.49
175 Cumene					CAS #: 98-82-8		
25.635	25.635 (1.054)	105	63970	0.50000	0.3909	80.00- 120.00	100.00
25.635	25.635 (1.054)	120	19083			0.00- 58.11	29.83
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	313796	5.00000	4.906	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	266447			59.22- 119.22	84.91
25.920	25.920 (1.066)	176	301061			69.23- 129.23	95.94
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.109	26.109 (1.074)	83	55899	0.50000	0.5079	80.00- 120.00	100.00
26.109	26.109 (1.074)	85	37317			35.51- 95.51	66.76

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
182 Propylbenzene					CAS #: 103-65-1		
26.166	26.154 (1.076)	91	82413	0.50000	0.4307	80.00- 120.00	100.00
26.166	26.154 (1.076)	120	22490			0.00- 55.59	27.29
188 4-Ethyltoluene					CAS #: 622-96-8		
26.299	26.299 (1.082)	105	70314	0.50000	0.4267	80.00- 120.00	100.00
26.299	26.295 (1.082)	120	20325			1.51- 61.51	28.91
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
26.356	26.356 (1.084)	105	58117	0.50000	0.3624	80.00- 120.00	100.00
26.356	26.356 (1.084)	120	30150			21.30- 81.30	51.88
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
26.830	26.830 (1.104)	105	52165	0.50000	0.3875	80.00- 120.00	100.00
26.830	26.830 (1.104)	120	26654			18.64- 78.64	51.10
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.255	27.255 (1.121)	146	63550	0.50000	0.5171	80.00- 120.00	100.00
27.255	27.255 (1.121)	148	37257			34.75- 94.75	58.63
27.255	27.255 (1.121)	111	22894			5.38- 65.38	36.03
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.364	27.364 (1.126)	146	55152	0.50000	0.4649	80.00- 120.00	100.00
27.364	27.364 (1.126)	148	36431			34.92- 94.92	66.06
27.364	27.364 (1.126)	111	19814			3.67- 63.67	35.93
212 alpha-Chlorotoluene					CAS #: 100-44-7		
27.535	27.535 (1.133)	91	44374	0.50000	0.4334	80.00- 120.00	100.00
27.535	27.535 (1.133)	126	12662			0.00- 55.02	28.53
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.847	27.847 (1.145)	146	55830	0.50000	0.4979	80.00- 120.00	100.00
27.847	27.847 (1.145)	148	35426			33.90- 93.90	63.45
27.847	27.845 (1.145)	111	20114			5.97- 65.97	36.03
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
29.967	29.959 (1.233)	180	38936	0.50000	0.4434	80.00- 120.00	100.00
29.952	29.953 (1.232)	182	35818			67.09- 127.09	91.99
227 Hexachlorobutadiene					CAS #: 87-68-3		
30.076	30.076 (1.237)	225	57449	0.50000	0.5713	80.00- 120.00	100.00
30.076	30.076 (1.237)	223	33048			33.13- 93.13	57.53

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020507.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: act
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 0.5ppbv (1.0ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 7
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	159431	-17.02
123 1,4-Difluorobenze	564474	338684	790264	433065	-23.28
163 Chlorobenzene-d5	513463	308078	718848	418163	-18.56

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020507.d

Date : 05-FEB-2020 05:32

Client ID: Level 7

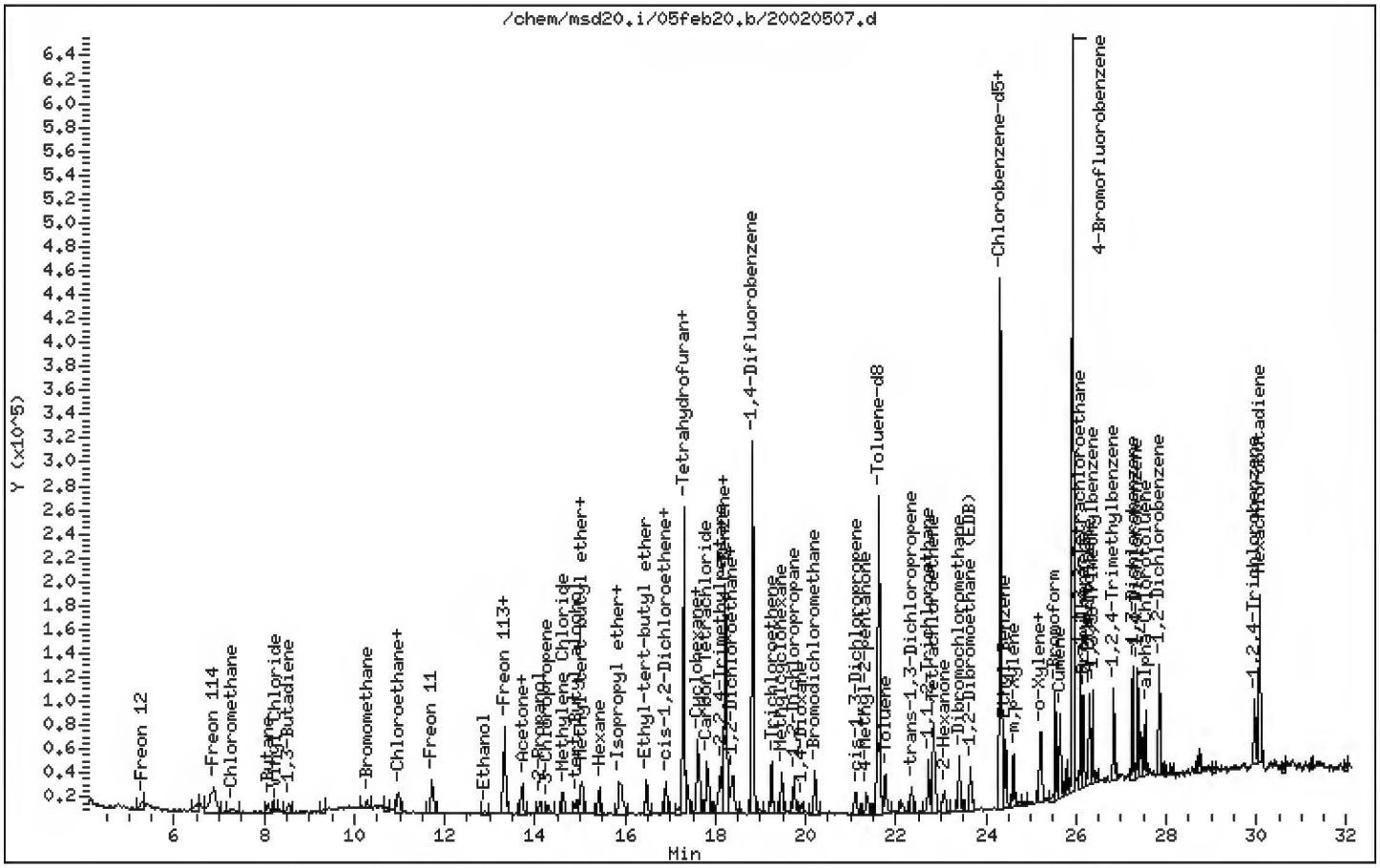
Instrument: msd20.i

Sample Info: 125mL# 3018-134

Operator: act

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020508.d
Lab Smp Id: ICAL Client Smp ID: Level 8
Inj Date : 05-FEB-2020 06:11
Operator : act Inst ID: msd20.i
Smp Info : 250mL# 3018-134
Misc Info : 1.0ppbv (1.0ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 06:11 Cal File: 20020508.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
11 Freon 12					CAS #: 75-71-8		
5.341	5.321 (0.309)	85	100742	1.00000	1.037	80.00- 120.00	100.00
5.341	5.328 (0.309)	87	31563			2.53- 62.53	31.33
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	84006	1.00000	1.017	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	28528			2.72- 62.72	33.96
6.884	6.878 (0.398)	85	97299			86.16- 146.16	115.82
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	27802	1.00000	1.051	80.00- 120.00	100.00
7.342	7.308 (0.424)	52	11261			3.63- 63.63	40.50
23 Butane					CAS #: 106-97-8		
8.109	8.092 (0.469)	58	4404	1.00000	0.9061	80.00- 120.00	100.00
8.109	8.095 (0.469)	43	31810			627.99- 687.99	722.30
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	25520	1.00000	0.9158	80.00- 120.00	100.00
8.300	8.274 (0.480)	64	8608			2.83- 62.83	33.73

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
26 1,3-Butadiene					CAS #: 106-99-0		
8.543	8.541 (0.494)	54	15449	1.00000	0.8615	80.00- 120.00	100.00
8.543	8.541 (0.494)	39	16100			69.65- 129.65	104.21
29 Bromomethane					CAS #: 74-83-9		
10.278	10.278 (0.594)	94	17523	1.00000	0.7957	80.00- 120.00	100.00
10.278	10.278 (0.594)	96	18993			60.82- 120.82	108.39
30 Chloroethane					CAS #: 75-00-3		
10.857	10.846 (0.627)	64	11704	1.00000	0.9578	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	3414			0.00- 55.00	29.17
10.833	10.835 (0.626)	66	3973			1.88- 61.88	33.95
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	19104	1.00000	0.9460	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	27403			111.40- 171.40	143.44
10.977	10.976 (0.634)	42	26398			96.33- 156.33	138.18
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	99970	1.00000	1.052	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	65469			35.14- 95.14	65.49
42 Ethanol					CAS #: 64-17-5		
12.876	12.870 (0.744)	45	7798	1.00000	0.9868	80.00- 120.00	100.00
12.876	12.870 (0.744)	46	2242			6.43- 66.43	28.75
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	88861	1.00000	1.016	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	55731			34.89- 94.89	62.72
13.315	13.320 (0.770)	101	83564			70.13- 130.13	94.04
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.343	13.331 (0.771)	98	16510	1.00000	0.8362	80.00- 120.00	100.00
13.315	13.324 (0.770)	61	40508			197.76- 257.76	245.35
13.315	13.324 (0.770)	96	27417			124.14- 184.14	166.06
52 Acetone					CAS #: 67-64-1		
13.727	13.706 (0.793)	58	12646	1.00000	0.9500	80.00- 120.00	100.00
13.727	13.706 (0.793)	43	40672			291.24- 351.24	321.62
56 Carbon Disulfide					CAS #: 75-15-0		
13.727	13.726 (0.793)	76	85857	1.00000	0.9398	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.112	14.110 (0.816)	45	33770	1.00000	0.9098	80.00- 120.00	100.00
14.139	14.114 (0.817)	43	15673			0.00- 59.88	46.41

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
57 2-Propanol (continued)							
14.112	14.110 (0.816)	59	1677			0.00- 34.36	4.97
58 3-Chloropropene					CAS #: 107-05-1		
14.304	14.295 (0.827)	76	6891	1.00000	0.6976	80.00- 120.00	100.00
14.304	14.295 (0.827)	41	16517			188.05- 248.05	239.69
66 Methylene Chloride					CAS #: 75-09-2		
14.634	14.632 (0.846)	84	31180	1.00000	0.9433	80.00- 120.00	100.00
14.634	14.632 (0.846)	49	36126			79.75- 139.75	115.86
14.634	14.632 (0.846)	51	10723			4.54- 64.54	34.39
71 tert-Butyl alcohol					CAS #: 75-65-0		
14.908	14.907 (0.862)	59	39742	1.00000	0.8206	80.00- 120.00	100.00
14.908	14.903 (0.862)	41	11410			0.00- 57.20	28.71
14.908	14.907 (0.862)	57	5440			0.00- 41.27	13.69
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.018	15.017 (0.868)	73	56167	1.00000	0.7240	80.00- 120.00	100.00
15.018	15.017 (0.868)	57	13502			0.00- 50.29	24.04
15.018	15.017 (0.868)	41	16893			0.00- 53.61	30.08
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.073	15.072 (0.871)	98	19859	1.00000	0.9628	80.00- 120.00	100.00
15.073	15.072 (0.871)	61	37606			166.73- 226.73	189.37
15.073	15.072 (0.871)	96	28493			131.17- 191.17	143.48
78 Hexane					CAS #: 110-54-3		
15.430	15.428 (0.892)	57	29312	1.00000	0.7334	80.00- 120.00	100.00
15.430	15.428 (0.892)	43	19344			27.95- 87.95	65.99
15.430	15.428 (0.892)	86	5889			0.00- 48.76	20.09
83 Isopropyl ether					CAS #: 108-20-3		
15.869	15.872 (0.917)	45	63389	1.00000	0.7779	80.00- 120.00	100.00
15.869	15.872 (0.917)	87	20286			3.75- 63.75	32.00
15.869	15.872 (0.917)	59	8517			0.00- 43.23	13.44
82 1,1-Dichloroethane					CAS #: 75-34-3		
15.924	15.923 (0.920)	63	57318	1.00000	0.9724	80.00- 120.00	100.00
15.924	15.923 (0.920)	65	17832			1.61- 61.61	31.11
86 Vinyl Acetate					CAS #: 108-05-4		
15.979	15.978 (0.923)	86	5424	1.00000	0.7460	80.00- 120.00	100.00
15.979	15.978 (0.923)	42	6594			52.54- 112.54	121.57
15.979	15.978 (0.923)	43	42871			783.51- 843.51	790.39

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
16.467	16.467 (0.952)	59	65405	1.00000	0.7707	80.00- 120.00	100.00
16.467	16.467 (0.952)	87	29640			16.88- 76.88	45.32
16.467	16.467 (0.952)	41	17808			0.00- 52.99	27.23
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.903	16.902 (0.977)	98	22487	1.00000	0.9342	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	37650			148.56- 208.56	167.43
16.903	16.902 (0.977)	96	34545			126.55- 186.55	153.62
92 2-Butanone					CAS #: 78-93-3		
16.923	16.926 (0.978)	72	12531	1.00000	0.8626	80.00- 120.00	100.00
16.923	16.923 (0.978)	43	44255			309.31- 369.31	353.16
16.923	16.926 (0.978)	57	3679			0.00- 58.97	29.36
99 Tetrahydrofuran					CAS #: 109-99-9		
17.302	17.283 (1.000)	42	21487	1.00000	0.8102	80.00- 120.00	100.00
17.302	17.283 (1.000)	71	10679			17.62- 77.62	49.70
17.302	17.283 (1.000)	72	9938			20.52- 80.52	46.25
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	161362	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	120286			46.61- 106.61	74.54
17.302	17.302 (1.000)	49	140836			58.08- 118.08	87.28
100 Chloroform					CAS #: 67-66-3		
17.400	17.379 (1.006)	83	81829	1.00000	1.021	80.00- 120.00	100.00
17.400	17.383 (1.006)	85	51574			35.58- 95.58	63.03
102 Cyclohexane					CAS #: 110-82-7		
17.619	17.605 (1.018)	84	43034	1.00000	0.7921	80.00- 120.00	100.00
17.619	17.602 (1.018)	56	44167			66.69- 126.69	102.63
17.597	17.602 (1.017)	41	24711			26.30- 86.30	57.42
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.641	17.631 (1.020)	97	79636	1.00000	0.9574	80.00- 120.00	100.00
17.619	17.633 (1.018)	99	53988			34.72- 94.72	67.79
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.841	17.824 (1.031)	119	87011	1.00000	0.9958	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	87383			72.39- 132.39	100.43
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	59802	1.00000	0.8291	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	164779			245.12- 305.12	275.54
18.121	18.121 (1.047)	41	56035			50.98- 110.98	93.70

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
116 Benzene						CAS #: 71-43-2		
18.203	18.206	(0.967)	78	98058	1.00000	0.9711	80.00- 120.00	100.00
18.203	18.203	(0.967)	77	25716			0.00- 54.15	26.23
$ 117 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
18.224	18.224	(1.053)	65	183186	5.00000	5.271	80.00- 120.00	100.00
18.224	18.224	(1.053)	67	95342			30.76- 90.76	52.05
119 tert-Amyl methyl ether						CAS #: 994-05-8		
18.265	18.265	(0.970)	87	19471	1.00000	0.8437	80.00- 120.00	100.00
18.265	18.265	(0.970)	73	70726			364.30- 424.30	363.24
18.265	18.265	(0.970)	55	21912			83.00- 143.00	112.54
120 1,2-Dichloroethane						CAS #: 107-06-2		
18.347	18.347	(0.974)	62	46170	1.00000	0.8921	80.00- 120.00	100.00
18.347	18.345	(0.974)	64	14773			0.98- 60.98	32.00
121 Heptane						CAS #: 142-82-5		
18.409	18.404	(0.978)	57	17928	1.00000	0.7096	80.00- 120.00	100.00
18.409	18.406	(0.978)	100	10152			22.83- 82.83	56.63
18.409	18.409	(0.978)	43	33157			143.19- 203.19	184.95
* 123 1,4-Difluorobenzene						CAS #: 540-36-3		
18.832	18.833	(1.000)	114	464434	5.00000		80.00- 120.00	100.00
18.832	18.833	(1.000)	88	66833			0.00- 44.22	14.39
125 Trichloroethene						CAS #: 79-01-6		
19.256	19.256	(1.022)	130	52642	1.00000	0.8786	80.00- 120.00	100.00
19.256	19.254	(1.022)	95	49134			54.82- 114.82	93.34
19.256	19.259	(1.022)	97	30301			25.35- 85.35	57.56
127 Methylcyclohexane						CAS #: 108-87-2		
19.479	19.480	(1.034)	83	41670	1.00000	0.7471	80.00- 120.00	100.00
19.479	19.480	(1.034)	55	33181			40.96- 100.96	79.63
19.479	19.480	(1.034)	56	12001			0.00- 52.45	28.80
132 1,2-Dichloropropane						CAS #: 78-87-5		
19.747	19.747	(1.049)	63	33678	1.00000	0.8814	80.00- 120.00	100.00
19.747	19.747	(1.049)	62	25609			40.35- 100.35	76.04
19.747	19.750	(1.049)	41	21511			24.96- 84.96	63.87
136 1,4-Dioxane						CAS #: 123-91-1		
19.903	19.901	(1.057)	88	20342	1.00000	0.9080	80.00- 120.00	100.00
19.903	19.906	(1.057)	58	13674			31.33- 91.33	67.22
138 Bromodichloromethane						CAS #: 75-27-4		
20.216	20.216	(0.832)	83	83017	1.00000	0.9726	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
20.216	20.216 (0.832)	85	51278			34.54- 94.54	61.77
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.118	21.115 (1.121)	75	44438	1.00000	0.8408	80.00- 120.00	100.00
21.118	21.120 (1.121)	77	15159			2.26- 62.26	34.11
21.118	21.120 (1.121)	39	18576			13.91- 73.91	41.80
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	45924	1.00000	0.7875	80.00- 120.00	100.00
21.368	21.354 (1.135)	58	16183			8.83- 68.83	35.24
21.368	21.362 (1.135)	85	8292			0.00- 50.74	18.06
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	423859	5.00000	4.717	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	49838			0.00- 41.39	11.76
21.617	21.617 (1.148)	100	270878			35.17- 95.17	63.91
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	109996	1.00000	0.8941	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	62164			27.71- 87.71	56.51
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	39937	1.00000	0.7673	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	14900			3.18- 63.18	37.31
22.350	22.346 (0.919)	39	21018			13.49- 73.49	52.63
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	50082	1.00000	0.8917	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	29589			31.74- 91.74	59.08
22.728	22.728 (0.935)	83	42257			51.17- 111.17	84.38
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	88741	1.00000	0.9375	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	56084			34.89- 94.89	63.20
22.844	22.844 (0.940)	131	53168			32.11- 92.11	59.91
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	20664	1.00000	0.6692	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	42400			150.34- 210.34	205.19
23.076	23.076 (0.949)	100	4539			0.00- 55.47	21.97
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	102434	1.00000	0.9581	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	85365			46.51- 106.51	83.34

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  161 1,2-Dibromoethane (EDB)                          CAS #: 106-93-4
 23.657  23.657 (0.973)   107     75891 1.00000   0.9243  80.00- 120.00   100.00
 23.657  23.657 (0.973)   109     68739                   64.58- 124.58    90.58
-------------------------------------------------------------------------------
* 163 Chlorobenzene-d5                                 CAS #: 3114-55-4
 24.311  24.311 (1.000)   117    438309 5.00000           80.00- 120.00   100.00
 24.311  24.311 (1.000)    82    216201                   18.72-  78.72    49.33
-------------------------------------------------------------------------------
  165 Chlorobenzene                                    CAS #: 108-90-7
 24.352  24.355 (1.002)   112    102891 1.00000   0.9338  80.00- 120.00   100.00
 24.373  24.360 (1.003)   114     35546                    1.57-  61.57    34.55
 24.352  24.352 (1.002)    77     62752                   21.74-  81.74    60.99
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                    CAS #: 100-41-4
 24.435  24.435 (1.005)   106     37897 1.00000   0.7802  80.00- 120.00   100.00
 24.435  24.435 (1.005)    91    127148                  270.24- 330.24   335.51
-------------------------------------------------------------------------------
  169 m,p-Xylene                                       CAS #: 108-38-3
 24.621  24.621 (1.013)   106     41657 1.00000   0.7107  80.00- 120.00   100.00
 24.621  24.618 (1.013)    91     88177                  159.55- 219.55   211.67
-------------------------------------------------------------------------------
  171 o-Xylene                                         CAS #: 95-47-6
 25.198  25.198 (1.036)   106     43979 1.00000   0.8366  80.00- 120.00   100.00
 25.198  25.198 (1.036)    91     86111                  167.89- 227.89   195.80
-------------------------------------------------------------------------------
  172 Styrene                                          CAS #: 100-42-5
 25.219  25.219 (1.037)   104     72802 1.00000   0.7984  80.00- 120.00   100.00
 25.219  25.219 (1.037)    78     32283                   16.95-  76.95    44.34
-------------------------------------------------------------------------------
  174 Bromoform                                        CAS #: 75-25-2
 25.540  25.540 (1.051)   173    119007 1.00000   0.9408  80.00- 120.00   100.00
 25.540  25.540 (1.051)   171     60558                   19.65-  79.65    50.89
-------------------------------------------------------------------------------
  175 Cumene                                           CAS #: 98-82-8
 25.635  25.635 (1.054)   105    143464 1.00000   0.8363  80.00- 120.00   100.00
 25.635  25.635 (1.054)   120     40802                    0.00-  58.11    28.44
-------------------------------------------------------------------------------
$ 177 4-Bromofluorobenzene                             CAS #: 460-00-4
 25.920  25.920 (1.066)   174    330722 5.00000    4.933  80.00- 120.00   100.00
 25.920  25.920 (1.066)    95    278490                   59.22- 119.22    84.21
 25.920  25.920 (1.066)   176    320660                   69.23- 129.23    96.96
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                        CAS #: 79-34-5
 26.109  26.109 (1.074)    83    115603 1.00000    1.002  80.00- 120.00   100.00
 26.109  26.109 (1.074)    85     74965                   35.51-  95.51    64.85
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RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
182 Propylbenzene					CAS #: 103-65-1		
26.166	26.154 (1.076)	91	185721	1.00000	0.9261	80.00- 120.00	100.00
26.147	26.154 (1.076)	120	49047			0.00- 55.59	26.41
188 4-Ethyltoluene					CAS #: 622-96-8		
26.299	26.299 (1.082)	105	150132	1.00000	0.8692	80.00- 120.00	100.00
26.299	26.295 (1.082)	120	46121			1.51- 61.51	30.72
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
26.356	26.356 (1.084)	105	145666	1.00000	0.8665	80.00- 120.00	100.00
26.356	26.356 (1.084)	120	78235			21.30- 81.30	53.71
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
26.830	26.830 (1.104)	105	113834	1.00000	0.8068	80.00- 120.00	100.00
26.830	26.830 (1.104)	120	55372			18.64- 78.64	48.64
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.255	27.255 (1.121)	146	138562	1.00000	1.076	80.00- 120.00	100.00
27.255	27.255 (1.121)	148	85275			34.75- 94.75	61.54
27.255	27.255 (1.121)	111	44158			5.38- 65.38	31.87
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.364	27.364 (1.126)	146	127227	1.00000	1.023	80.00- 120.00	100.00
27.364	27.364 (1.126)	148	80788			34.92- 94.92	63.50
27.364	27.364 (1.126)	111	40603			3.67- 63.67	31.91
212 alpha-Chlorotoluene					CAS #: 100-44-7		
27.535	27.535 (1.133)	91	103525	1.00000	0.9647	80.00- 120.00	100.00
27.535	27.535 (1.133)	126	24281			0.00- 55.02	23.45
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.847	27.847 (1.145)	146	123864	1.00000	1.054	80.00- 120.00	100.00
27.847	27.847 (1.145)	148	79058			33.90- 93.90	63.83
27.847	27.845 (1.145)	111	42562			5.97- 65.97	34.36
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
29.967	29.959 (1.233)	180	94153	1.00000	1.023	80.00- 120.00	100.00
29.952	29.953 (1.232)	182	86125			67.09- 127.09	91.47
227 Hexachlorobutadiene					CAS #: 87-68-3		
30.076	30.076 (1.237)	225	132255	1.00000	1.255	80.00- 120.00	100.00
30.076	30.076 (1.237)	223	81097			33.13- 93.13	61.32
228 Naphthalene					CAS #: 91-20-3		
30.388	30.388 (1.250)	128	13378	0.10000	0.1029	80.00- 120.00	100.00
30.404	30.391 (1.251)	127	2722			0.00- 45.10	20.35

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020508.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: act
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 1.0ppbv (1.0ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 8
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	161362	-16.02
123 1,4-Difluorobenze	564474	338684	790264	464434	-17.72
163 Chlorobenzene-d5	513463	308078	718848	438309	-14.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020508.d

Date : 05-FEB-2020 06:11

Client ID: Level 8

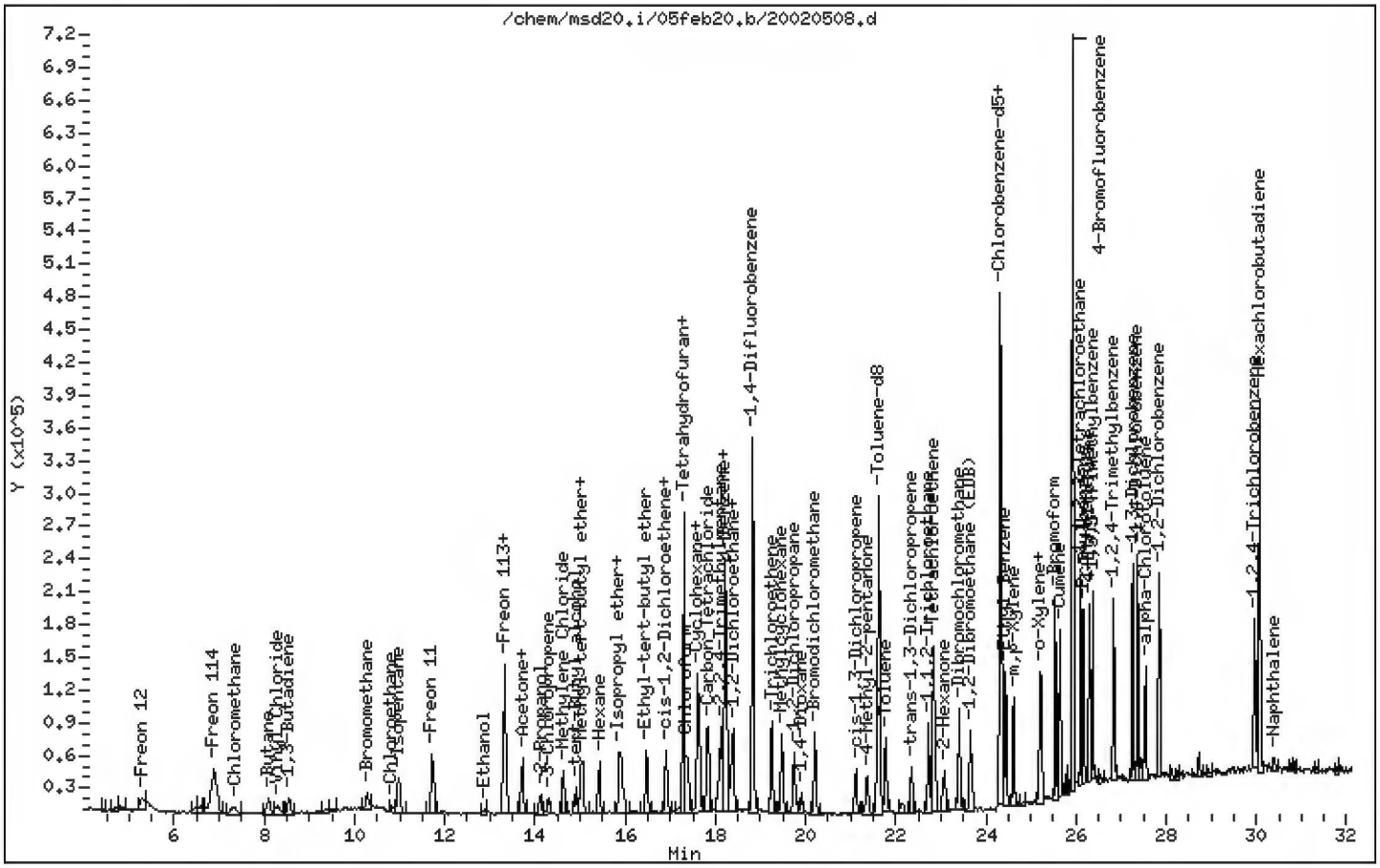
Instrument: msd20.i

Sample Info: 250mL# 3018-134

Operator: act

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020509.d
Lab Smp Id: ICAL Client Smp ID: Level 12
Inj Date : 05-FEB-2020 06:55
Operator : ns Inst ID: msd20.i
Smp Info : 25mL# 3018-1179
Misc Info : 5.0ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 06:55 Cal File: 20020509.d
Als bottle: 1 Calibration Sample, Level: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
9 Propylene					CAS #: 115-07-1		
4.811	4.782 (0.278)	41	105449	5.00000	5.098	80.00- 120.00	100.00
4.763	4.797 (0.275)	42	72668			38.85- 98.85	68.91
4.739	4.792 (0.274)	39	91183			50.09- 110.09	86.47
11 Freon 12					CAS #: 75-71-8		
5.317	5.321 (0.307)	85	577562	5.00000	5.242	80.00- 120.00	100.00
5.317	5.328 (0.307)	87	183593			2.53- 62.53	31.79
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	486796	5.00000	5.196	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	157376			2.72- 62.72	32.33
6.860	6.878 (0.396)	85	569638			86.16- 146.16	117.02
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	155055	5.00000	5.168	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	50240			3.63- 63.63	32.40
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	26495	5.00000	4.806	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
23 Butane (continued)							
8.092	8.095 (0.468)	43	179836			627.99- 687.99	678.75
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	155234	5.00000	4.910	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	51368			2.83- 62.83	33.09
26 1,3-Butadiene					CAS #: 106-99-0		
8.543	8.541 (0.494)	54	104772	5.00000	5.151	80.00- 120.00	100.00
8.543	8.541 (0.494)	39	99809			69.65- 129.65	95.26
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	147354	5.00000	5.898	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	141794			60.82- 120.82	96.23
30 Chloroethane					CAS #: 75-00-3		
10.833	10.846 (0.626)	64	70995	5.00000	5.122	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	19689			0.00- 55.00	27.73
10.833	10.835 (0.626)	66	23759			1.88- 61.88	33.47
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	111922	5.00000	4.886	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	151104			111.40- 171.40	135.01
10.977	10.976 (0.634)	42	141857			96.33- 156.33	126.75
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	594563	5.00000	5.518	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	391970			35.14- 95.14	65.93
42 Ethanol					CAS #: 64-17-5		
12.848	12.870 (0.743)	45	42380	5.00000	4.728	80.00- 120.00	100.00
12.848	12.870 (0.743)	46	16942			6.43- 66.43	39.98
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	506967	5.00000	5.112	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	328675			34.89- 94.89	64.83
13.315	13.320 (0.770)	101	507659			70.13- 130.13	100.14
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.315	13.331 (0.770)	98	115384	5.00000	5.152	80.00- 120.00	100.00
13.315	13.324 (0.770)	61	255716			197.76- 257.76	221.62
13.315	13.324 (0.770)	96	172730			124.14- 184.14	149.70
52 Acetone					CAS #: 67-64-1		
13.700	13.706 (0.792)	58	74295	5.00000	4.920	80.00- 120.00	100.00
13.700	13.706 (0.792)	43	240891			291.24- 351.24	324.24

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
56 Carbon Disulfide					CAS #: 75-15-0		
13.727	13.726 (0.793)	76	563180	5.00000	5.434	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.112	14.110 (0.816)	45	195263	5.00000	4.637	80.00- 120.00	100.00
14.112	14.114 (0.816)	43	68852			0.00- 59.88	35.26
14.112	14.110 (0.816)	59	9155			0.00- 34.36	4.69
58 3-Chloropropene					CAS #: 107-05-1		
14.277	14.295 (0.825)	76	56212	5.00000	5.017	80.00- 120.00	100.00
14.277	14.295 (0.825)	41	123936			188.05- 248.05	220.48
66 Methylene Chloride					CAS #: 75-09-2		
14.634	14.632 (0.846)	84	185204	5.00000	4.939	80.00- 120.00	100.00
14.634	14.632 (0.846)	49	201050			79.75- 139.75	108.56
14.634	14.632 (0.846)	51	63719			4.54- 64.54	34.40
71 tert-Butyl alcohol					CAS #: 75-65-0		
14.908	14.907 (0.862)	59	274455	5.00000	4.996	80.00- 120.00	100.00
14.908	14.903 (0.862)	41	77961			0.00- 57.20	28.41
14.908	14.907 (0.862)	57	29596			0.00- 41.27	10.78
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.018	15.017 (0.868)	73	453417	5.00000	5.152	80.00- 120.00	100.00
15.018	15.017 (0.868)	57	99445			0.00- 50.29	21.93
15.018	15.017 (0.868)	41	115783			0.00- 53.61	25.54
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.073	15.072 (0.871)	98	123016	5.00000	5.257	80.00- 120.00	100.00
15.073	15.072 (0.871)	61	254153			166.73- 226.73	206.60
15.073	15.072 (0.871)	96	201888			131.17- 191.17	164.12
78 Hexane					CAS #: 110-54-3		
15.430	15.428 (0.892)	57	233573	5.00000	5.152	80.00- 120.00	100.00
15.430	15.428 (0.892)	43	139916			27.95- 87.95	59.90
15.430	15.428 (0.892)	86	41123			0.00- 48.76	17.61
83 Isopropyl ether					CAS #: 108-20-3		
15.869	15.872 (0.917)	45	468518	5.00000	5.068	80.00- 120.00	100.00
15.869	15.872 (0.917)	87	161756			3.75- 63.75	34.53
15.869	15.872 (0.917)	59	63797			0.00- 43.23	13.62
82 1,1-Dichloroethane					CAS #: 75-34-3		
15.924	15.923 (0.920)	63	360217	5.00000	5.387	80.00- 120.00	100.00
15.924	15.923 (0.920)	65	112975			1.61- 61.61	31.36

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
86 Vinyl Acetate					CAS #: 108-05-4		
15.979	15.978 (0.923)	86	45329	5.00000	5.496	80.00- 120.00	100.00
15.979	15.978 (0.923)	42	37780			52.54- 112.54	83.35
15.979	15.978 (0.923)	43	363332			783.51- 843.51	801.54
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
16.467	16.467 (0.952)	59	485547	5.00000	5.044	80.00- 120.00	100.00
16.467	16.467 (0.952)	87	229342			16.88- 76.88	47.23
16.467	16.467 (0.952)	41	121038			0.00- 52.99	24.93
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.903	16.902 (0.977)	98	148599	5.00000	5.442	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	262873			148.56- 208.56	176.90
16.903	16.902 (0.977)	96	224094			126.55- 186.55	150.80
92 2-Butanone					CAS #: 78-93-3		
16.924	16.926 (0.978)	72	86234	5.00000	5.233	80.00- 120.00	100.00
16.924	16.923 (0.978)	43	302240			309.31- 369.31	350.49
16.924	16.926 (0.978)	57	25122			0.00- 58.97	29.13
99 Tetrahydrofuran					CAS #: 109-99-9		
17.270	17.283 (0.998)	42	155200	5.00000	5.159	80.00- 120.00	100.00
17.270	17.283 (0.998)	71	72551			17.62- 77.62	46.75
17.270	17.283 (0.998)	72	73727			20.52- 80.52	47.50
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	183046	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	141563			46.61- 106.61	77.34
17.302	17.302 (1.000)	49	157896			58.08- 118.08	86.26
100 Chloroform					CAS #: 67-66-3		
17.367	17.379 (1.004)	83	488686	5.00000	5.375	80.00- 120.00	100.00
17.367	17.383 (1.004)	85	309832			35.58- 95.58	63.40
102 Cyclohexane					CAS #: 110-82-7		
17.597	17.605 (1.017)	84	353741	5.00000	5.740	80.00- 120.00	100.00
17.597	17.602 (1.017)	56	326856			66.69- 126.69	92.40
17.597	17.602 (1.017)	41	214929			26.30- 86.30	60.76
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.619	17.631 (1.018)	97	510026	5.00000	5.405	80.00- 120.00	100.00
17.641	17.633 (1.020)	99	324523			34.72- 94.72	63.63
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	566783	5.00000	5.718	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	589651			72.39- 132.39	104.03

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	415722	5.00000	5.081	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	1056291			245.12- 305.12	254.09
18.121	18.121 (1.047)	41	333861			50.98- 110.98	80.31
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	654196	5.00000	5.591	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	153688			0.00- 54.15	23.49
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	201093	5.00000	5.101	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	109266			30.76- 90.76	54.34
119 tert-Amyl methyl ether					CAS #: 994-05-8		
18.265	18.265 (0.970)	87	132569	5.00000	4.957	80.00- 120.00	100.00
18.265	18.265 (0.970)	73	530336			364.30- 424.30	400.05
18.265	18.265 (0.970)	55	174775			83.00- 143.00	131.84
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	294101	5.00000	4.904	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	99716			0.98- 60.98	33.91
121 Heptane					CAS #: 142-82-5		
18.409	18.404 (0.978)	57	167452	5.00000	5.720	80.00- 120.00	100.00
18.409	18.406 (0.978)	100	85718			22.83- 82.83	51.19
18.409	18.409 (0.978)	43	268802			143.19- 203.19	160.52
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.833	18.833 (1.000)	114	538188	5.00000		80.00- 120.00	100.00
18.833	18.833 (1.000)	88	76785			0.00- 44.22	14.27
125 Trichloroethene					CAS #: 79-01-6		
19.256	19.256 (1.022)	130	338208	5.00000	4.871	80.00- 120.00	100.00
19.256	19.254 (1.022)	95	293108			54.82- 114.82	86.67
19.256	19.259 (1.022)	97	189916			25.35- 85.35	56.15
127 Methylcyclohexane					CAS #: 108-87-2		
19.480	19.480 (1.034)	83	326194	5.00000	5.047	80.00- 120.00	100.00
19.480	19.480 (1.034)	55	230544			40.96- 100.96	70.68
19.480	19.480 (1.034)	56	75233			0.00- 52.45	23.06
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	223036	5.00000	5.037	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	152332			40.35- 100.35	68.30
19.747	19.750 (1.049)	41	122933			24.96- 84.96	55.12

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
136 1,4-Dioxane					CAS #: 123-91-1		
19.903	19.901 (1.057)	88	134622	5.00000	5.186	80.00- 120.00	100.00
19.903	19.906 (1.057)	58	82327			31.33- 91.33	61.15
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	511776	5.00000	5.443	80.00- 120.00	100.00
20.216	20.216 (0.832)	85	327984			34.54- 94.54	64.09
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.118	21.115 (1.121)	75	293540	5.00000	4.793	80.00- 120.00	100.00
21.118	21.120 (1.121)	77	91127			2.26- 62.26	31.04
21.118	21.120 (1.121)	39	121766			13.91- 73.91	41.48
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	329458	5.00000	4.875	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	125630			8.83- 68.83	38.13
21.368	21.362 (1.135)	85	64543			0.00- 50.74	19.59
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	512309	5.00000	4.920	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	56909			0.00- 41.39	11.11
21.617	21.617 (1.148)	100	332221			35.17- 95.17	64.85
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	741706	5.00000	5.202	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	425570			27.71- 87.71	57.38
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	296903	5.00000	5.178	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	92574			3.18- 63.18	31.18
22.350	22.346 (0.919)	39	117089			13.49- 73.49	39.44
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	303443	5.00000	4.904	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	188460			31.74- 91.74	62.11
22.728	22.728 (0.935)	83	242379			51.17- 111.17	79.88
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	545860	5.00000	5.235	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	364513			34.89- 94.89	66.78
22.844	22.844 (0.940)	131	334475			32.11- 92.11	61.27
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	173021	5.00000	5.086	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	323550			150.34- 210.34	187.00
23.076	23.076 (0.949)	100	44073			0.00- 55.47	25.47

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	656643	5.00000	5.575	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	512543			46.51- 106.51	78.06
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	466152	5.00000	5.154	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	440635			64.58- 124.58	94.53
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	482843	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	243228			18.72- 78.72	50.37
165 Chlorobenzene					CAS #: 108-90-7		
24.352	24.355 (1.002)	112	650945	5.00000	5.363	80.00- 120.00	100.00
24.352	24.360 (1.002)	114	211317			1.57- 61.57	32.46
24.352	24.352 (1.002)	77	330756			21.74- 81.74	50.81
167 Ethyl Benzene					CAS #: 100-41-4		
24.435	24.435 (1.005)	106	288104	5.00000	5.384	80.00- 120.00	100.00
24.435	24.435 (1.005)	91	855866			270.24- 330.24	297.07
169 m,p-Xylene					CAS #: 108-38-3		
24.621	24.621 (1.013)	106	358607	5.00000	5.554	80.00- 120.00	100.00
24.621	24.618 (1.013)	91	673112			159.55- 219.55	187.70
171 o-Xylene					CAS #: 95-47-6		
25.198	25.198 (1.036)	106	313953	5.00000	5.421	80.00- 120.00	100.00
25.198	25.198 (1.036)	91	615948			167.89- 227.89	196.19
172 Styrene					CAS #: 100-42-5		
25.219	25.219 (1.037)	104	573769	5.00000	5.712	80.00- 120.00	100.00
25.219	25.219 (1.037)	78	263281			16.95- 76.95	45.89
174 Bromoform					CAS #: 75-25-2		
25.540	25.540 (1.051)	173	749304	5.00000	5.377	80.00- 120.00	100.00
25.540	25.540 (1.051)	171	373724			19.65- 79.65	49.88
175 Cumene					CAS #: 98-82-8		
25.635	25.635 (1.054)	105	1041492	5.00000	5.512	80.00- 120.00	100.00
25.635	25.635 (1.054)	120	297681			0.00- 58.11	28.58
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	391724	5.00000	5.304	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	326492			59.22- 119.22	83.35
25.920	25.920 (1.066)	176	371974			69.23- 129.23	94.96

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.109	26.109	(1.074)	83	621482	5.00000	4.891	80.00- 120.00	100.00
26.109	26.109	(1.074)	85	403949			35.51- 95.51	65.00
182 Propylbenzene						CAS #: 103-65-1		
26.166	26.154	(1.076)	91	1214449	5.00000	5.497	80.00- 120.00	100.00
26.166	26.154	(1.076)	120	318404			0.00- 55.59	26.22
188 4-Ethyltoluene						CAS #: 622-96-8		
26.299	26.299	(1.082)	105	1102629	5.00000	5.795	80.00- 120.00	100.00
26.299	26.295	(1.082)	120	341758			1.51- 61.51	30.99
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
26.356	26.356	(1.084)	105	1075529	5.00000	5.808	80.00- 120.00	100.00
26.356	26.356	(1.084)	120	538353			21.30- 81.30	50.05
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
26.830	26.830	(1.104)	105	798008	5.00000	5.134	80.00- 120.00	100.00
26.830	26.830	(1.104)	120	389165			18.64- 78.64	48.77
208 1,3-Dichlorobenzene						CAS #: 541-73-1		
27.255	27.255	(1.121)	146	709562	5.00000	5.000	80.00- 120.00	100.00
27.255	27.255	(1.121)	148	465423			34.75- 94.75	65.59
27.255	27.255	(1.121)	111	248133			5.38- 65.38	34.97
209 1,4-Dichlorobenzene						CAS #: 106-46-7		
27.364	27.364	(1.126)	146	714701	5.00000	5.218	80.00- 120.00	100.00
27.364	27.364	(1.126)	148	470332			34.92- 94.92	65.81
27.364	27.364	(1.126)	111	249007			3.67- 63.67	34.84
212 alpha-Chlorotoluene						CAS #: 100-44-7		
27.535	27.535	(1.133)	91	603819	5.00000	5.108	80.00- 120.00	100.00
27.535	27.535	(1.133)	126	144215			0.00- 55.02	23.88
214 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.847	27.847	(1.145)	146	678406	5.00000	5.240	80.00- 120.00	100.00
27.847	27.847	(1.145)	148	420751			33.90- 93.90	62.02
27.847	27.845	(1.145)	111	243880			5.97- 65.97	35.95
226 1,2,4-Trichlorobenzene						CAS #: 120-82-1		
29.952	29.959	(1.232)	180	366600	5.00000	3.616	80.00- 120.00	100.00
29.952	29.953	(1.232)	182	355262			67.09- 127.09	96.91
227 Hexachlorobutadiene						CAS #: 87-68-3		
30.076	30.076	(1.237)	225	474837	5.00000	4.089	80.00- 120.00	100.00
30.076	30.076	(1.237)	223	302418			33.13- 93.13	63.69

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
228 Naphthalene						CAS #: 91-20-3		
30.388	30.388	(1.250)	128	57814	0.50000	0.4036	80.00- 120.00	100.00
30.388	30.391	(1.250)	127	8846			0.00- 45.10	15.30

Report Date: 05-Feb-2020 13:24

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020509.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ns
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 5.0ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 12
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	183046	-4.73
123 1,4-Difluorobenze	564474	338684	790264	538188	-4.66
163 Chlorobenzene-d5	513463	308078	718848	482843	-5.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020509.d

Date : 05-FEB-2020 06:55

Client ID: Level 12

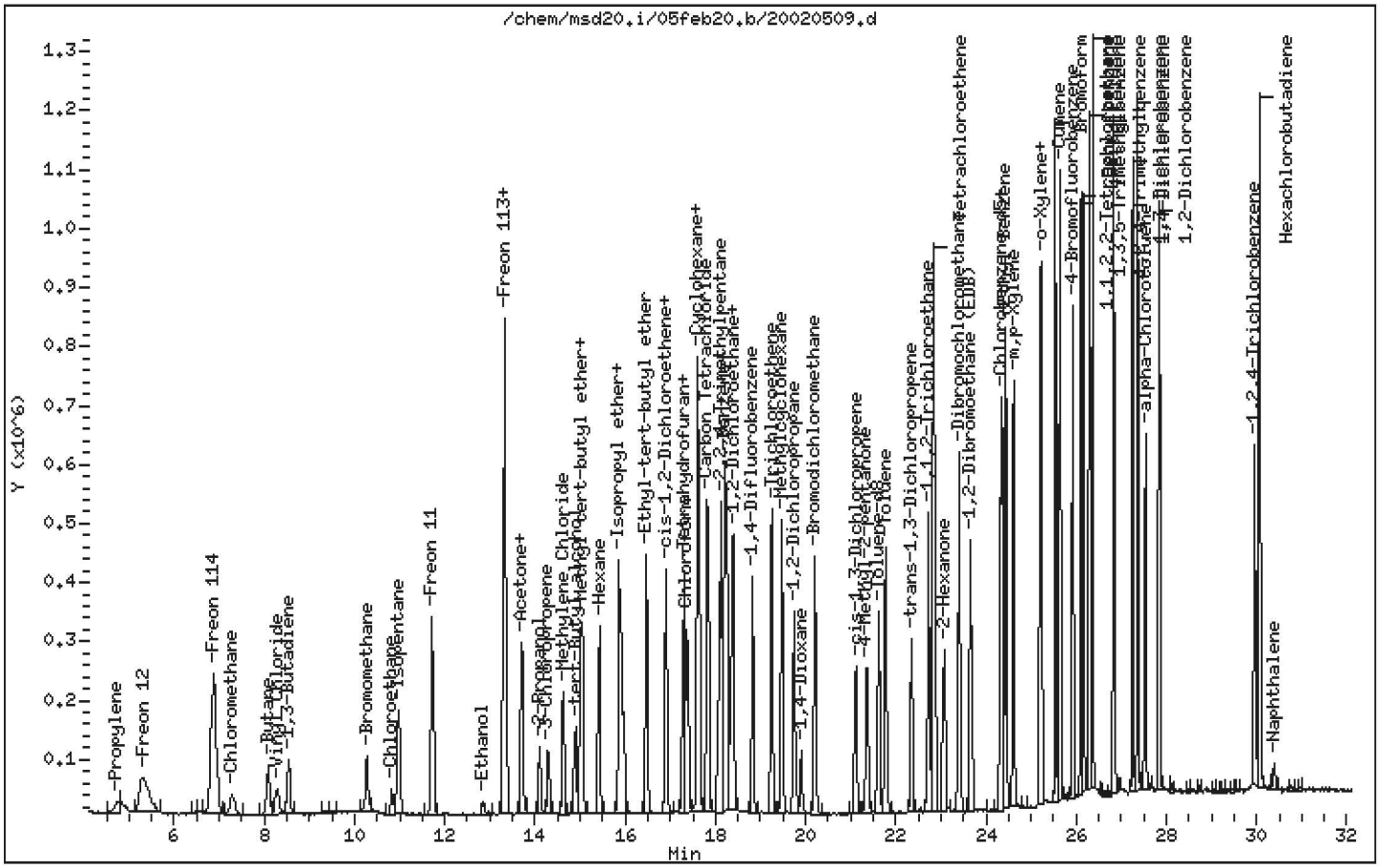
Instrument: msd20.i

Sample Info: 25mL# 3018-1179

Operator: ns

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020510.d
Lab Smp Id: ICAL Client Smp ID: Level 13
Inj Date : 05-FEB-2020 07:34
Operator : ns Inst ID: msd20.i
Smp Info : 50mL# 3018-1179
Misc Info : 10ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 07:34 Cal File: 20020510.d
Als bottle: 1 Calibration Sample, Level: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
9 Propylene					CAS #: 115-07-1		
4.763	4.782 (0.275)	41	216629	10.0000	9.977	80.00- 120.00	100.00
4.763	4.797 (0.275)	42	149148			38.85- 98.85	68.85
4.787	4.792 (0.277)	39	173488			50.09- 110.09	80.09
11 Freon 12					CAS #: 75-71-8		
5.317	5.321 (0.307)	85	1122271	10.0000	9.703	80.00- 120.00	100.00
5.317	5.328 (0.307)	87	365201			2.53- 62.53	32.54
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	950081	10.0000	9.662	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	310844			2.72- 62.72	32.72
6.884	6.878 (0.398)	85	1103640			86.16- 146.16	116.16
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	297526	10.0000	9.448	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	100065			3.63- 63.63	33.63
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	59076	10.0000	10.208	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
23 Butane (continued)							
8.092	8.095 (0.468)	43	388714			627.99- 687.99	657.99
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	336202	10.0000	10.132	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	110365			2.83- 62.83	32.83
26 1,3-Butadiene					CAS #: 106-99-0		
8.544	8.541 (0.494)	54	221514	10.0000	10.375	80.00- 120.00	100.00
8.544	8.541 (0.494)	39	220730			69.65- 129.65	99.65
29 Bromomethane					CAS #: 74-83-9		
10.272	10.278 (0.594)	94	295042	10.0000	11.251	80.00- 120.00	100.00
10.272	10.278 (0.594)	96	268087			60.82- 120.82	90.86
30 Chloroethane					CAS #: 75-00-3		
10.850	10.846 (0.627)	64	152122	10.0000	10.455	80.00- 120.00	100.00
10.826	10.835 (0.626)	49	38028			0.00- 55.00	25.00
10.826	10.835 (0.626)	66	48497			1.88- 61.88	31.88
31 Isopentane					CAS #: 78-78-4		
10.971	10.976 (0.634)	57	237407	10.0000	9.874	80.00- 120.00	100.00
10.971	10.976 (0.634)	43	335691			111.40- 171.40	141.40
10.971	10.976 (0.634)	42	302926			96.33- 156.33	127.60
35 Freon 11					CAS #: 75-69-4		
11.718	11.723 (0.677)	101	1194542	10.0000	10.563	80.00- 120.00	100.00
11.718	11.723 (0.677)	103	778156			35.14- 95.14	65.14
42 Ethanol					CAS #: 64-17-5		
12.866	12.870 (0.744)	45	94296	10.0000	10.022	80.00- 120.00	100.00
12.866	12.870 (0.744)	46	34355			6.43- 66.43	36.43
49 Freon 113					CAS #: 76-13-1		
13.333	13.317 (0.771)	151	989247	10.0000	9.503	80.00- 120.00	100.00
13.333	13.323 (0.771)	153	641952			34.89- 94.89	64.89
13.333	13.320 (0.771)	101	990511			70.13- 130.13	100.13
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.333	13.331 (0.771)	98	236370	10.0000	10.055	80.00- 120.00	100.00
13.333	13.324 (0.771)	61	538357			197.76- 257.76	227.76
13.333	13.324 (0.771)	96	364349			124.14- 184.14	154.14
52 Acetone					CAS #: 67-64-1		
13.690	13.706 (0.791)	58	154860	10.0000	9.770	80.00- 120.00	100.00
13.690	13.706 (0.791)	43	495675			291.24- 351.24	320.08

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
56 Carbon Disulfide					CAS #: 75-15-0		
13.717	13.726 (0.793)	76	1127032	10.0000	10.361	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.102	14.110 (0.815)	45	436797	10.0000	9.883	80.00- 120.00	100.00
14.102	14.114 (0.815)	43	130511			0.00- 59.88	29.88
14.102	14.110 (0.815)	59	19052			0.00- 34.36	4.36
58 3-Chloropropene					CAS #: 107-05-1		
14.294	14.295 (0.826)	76	131385	10.0000	11.171	80.00- 120.00	100.00
14.294	14.295 (0.826)	41	286479			188.05- 248.05	218.05
66 Methylene Chloride					CAS #: 75-09-2		
14.624	14.632 (0.845)	84	366872	10.0000	9.321	80.00- 120.00	100.00
14.624	14.632 (0.845)	49	402639			79.75- 139.75	109.75
14.624	14.632 (0.845)	51	126701			4.54- 64.54	34.54
71 tert-Butyl alcohol					CAS #: 75-65-0		
14.898	14.907 (0.861)	59	593050	10.0000	10.284	80.00- 120.00	100.00
14.898	14.903 (0.861)	41	161283			0.00- 57.20	27.20
14.898	14.907 (0.861)	57	66854			0.00- 41.27	11.27
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.008	15.017 (0.868)	73	1007455	10.0000	10.907	80.00- 120.00	100.00
15.008	15.017 (0.868)	57	204399			0.00- 50.29	20.29
15.008	15.017 (0.868)	41	237859			0.00- 53.61	23.61
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.063	15.072 (0.871)	98	262125	10.0000	10.673	80.00- 120.00	100.00
15.063	15.072 (0.871)	61	515689			166.73- 226.73	196.73
15.063	15.072 (0.871)	96	422460			131.17- 191.17	161.17
78 Hexane					CAS #: 110-54-3		
15.420	15.428 (0.891)	57	527080	10.0000	11.076	80.00- 120.00	100.00
15.420	15.428 (0.891)	43	305423			27.95- 87.95	57.95
15.420	15.428 (0.891)	86	98894			0.00- 48.76	18.76
83 Isopropyl ether					CAS #: 108-20-3		
15.887	15.872 (0.918)	45	1054615	10.0000	10.869	80.00- 120.00	100.00
15.887	15.872 (0.918)	87	355881			3.75- 63.75	33.75
15.887	15.872 (0.918)	59	139505			0.00- 43.23	13.23
82 1,1-Dichloroethane					CAS #: 75-34-3		
15.914	15.923 (0.920)	63	715112	10.0000	10.188	80.00- 120.00	100.00
15.914	15.923 (0.920)	65	226024			1.61- 61.61	31.61

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
86 Vinyl Acetate					CAS #: 108-05-4		
15.969	15.978 (0.923)	86	101941	10.0000	11.775	80.00- 120.00	100.00
15.969	15.978 (0.923)	42	84147			52.54- 112.54	82.54
15.969	15.978 (0.923)	43	829296			783.51- 843.51	813.51
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
16.464	16.467 (0.952)	59	1098507	10.0000	10.871	80.00- 120.00	100.00
16.464	16.467 (0.952)	87	514995			16.88- 76.88	46.88
16.464	16.467 (0.952)	41	252509			0.00- 52.99	22.99
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.900	16.902 (0.977)	98	298020	10.0000	10.397	80.00- 120.00	100.00
16.900	16.902 (0.977)	61	532135			148.56- 208.56	178.56
16.900	16.902 (0.977)	96	466565			126.55- 186.55	156.55
92 2-Butanone					CAS #: 78-93-3		
16.920	16.926 (0.978)	72	187949	10.0000	10.865	80.00- 120.00	100.00
16.920	16.923 (0.978)	43	637729			309.31- 369.31	339.31
16.920	16.926 (0.978)	57	54441			0.00- 58.97	28.97
99 Tetrahydrofuran					CAS #: 109-99-9		
17.299	17.283 (1.000)	42	333517	10.0000	10.562	80.00- 120.00	100.00
17.299	17.283 (1.000)	71	158826			17.62- 77.62	47.62
17.299	17.283 (1.000)	72	168493			20.52- 80.52	50.52
* 98 Bromochloromethane					CAS #: 74-97-5		
17.299	17.302 (1.000)	130	192135	5.00000		80.00- 120.00	100.00
17.299	17.302 (1.000)	128	147192			46.61- 106.61	76.61
17.299	17.302 (1.000)	49	169223			58.08- 118.08	88.08
100 Chloroform					CAS #: 67-66-3		
17.397	17.379 (1.006)	83	951358	10.0000	9.969	80.00- 120.00	100.00
17.397	17.383 (1.006)	85	623923			35.58- 95.58	65.58
102 Cyclohexane					CAS #: 110-82-7		
17.616	17.605 (1.018)	84	768616	10.0000	11.882	80.00- 120.00	100.00
17.616	17.602 (1.018)	56	743197			66.69- 126.69	96.69
17.616	17.602 (1.018)	41	432734			26.30- 86.30	56.30
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.638	17.631 (1.020)	97	982190	10.0000	9.917	80.00- 120.00	100.00
17.638	17.633 (1.020)	99	635677			34.72- 94.72	64.72
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.838	17.824 (1.031)	119	1145171	10.0000	11.007	80.00- 120.00	100.00
17.838	17.829 (1.031)	117	1172552			72.39- 132.39	102.39

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	897376	10.0000	10.448	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	2468876			245.12- 305.12	275.12
18.121	18.121 (1.047)	41	726707			50.98- 110.98	80.98
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	1299231	10.0000	10.586	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	313786			0.00- 54.15	24.15
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	193850	5.00000	4.684	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	117786			30.76- 90.76	60.76
119 tert-Amyl methyl ether					CAS #: 994-05-8		
18.265	18.265 (0.970)	87	293203	10.0000	10.454	80.00- 120.00	100.00
18.265	18.265 (0.970)	73	1156103			364.30- 424.30	394.30
18.265	18.265 (0.970)	55	331307			83.00- 143.00	113.00
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	602995	10.0000	9.587	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	186815			0.98- 60.98	30.98
121 Heptane					CAS #: 142-82-5		
18.409	18.404 (0.978)	57	334635	10.0000	10.898	80.00- 120.00	100.00
18.409	18.406 (0.978)	100	176783			22.83- 82.83	52.83
18.409	18.409 (0.978)	43	579556			143.19- 203.19	173.19
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.832	18.833 (1.000)	114	564474	5.00000		80.00- 120.00	100.00
18.832	18.833 (1.000)	88	80287			0.00- 44.22	14.22
125 Trichloroethene					CAS #: 79-01-6		
19.256	19.256 (1.022)	130	704776	10.0000	9.678	80.00- 120.00	100.00
19.256	19.254 (1.022)	95	597792			54.82- 114.82	84.82
19.256	19.259 (1.022)	97	390106			25.35- 85.35	55.35
127 Methylcyclohexane					CAS #: 108-87-2		
19.479	19.480 (1.034)	83	733820	10.0000	10.824	80.00- 120.00	100.00
19.479	19.480 (1.034)	55	520732			40.96- 100.96	70.96
19.479	19.480 (1.034)	56	164755			0.00- 52.45	22.45
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	449867	10.0000	9.687	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	316493			40.35- 100.35	70.35
19.747	19.750 (1.049)	41	247231			24.96- 84.96	54.96

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
136 1,4-Dioxane					CAS #: 123-91-1		
19.903	19.901 (1.057)	88	298842	10.0000	10.976	80.00- 120.00	100.00
19.903	19.906 (1.057)	58	183270			31.33- 91.33	61.33
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	1026555	10.0000	10.267	80.00- 120.00	100.00
20.216	20.216 (0.832)	85	662488			34.54- 94.54	64.54
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.118	21.115 (1.121)	75	632657	10.0000	9.849	80.00- 120.00	100.00
21.118	21.120 (1.121)	77	204092			2.26- 62.26	32.26
21.118	21.120 (1.121)	39	277802			13.91- 73.91	43.91
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	750986	10.0000	10.596	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	291579			8.83- 68.83	38.83
21.368	21.362 (1.135)	85	155749			0.00- 50.74	20.74
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	561877	5.00000	5.145	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	63998			0.00- 41.39	11.39
21.617	21.617 (1.148)	100	366187			35.17- 95.17	65.17
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	1542905	10.0000	10.318	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	890485			27.71- 87.71	57.71
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	625724	10.0000	10.262	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	207630			3.18- 63.18	33.18
22.350	22.346 (0.919)	39	272110			13.49- 73.49	43.49
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	606370	10.0000	9.216	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	374369			31.74- 91.74	61.74
22.728	22.728 (0.935)	83	492170			51.17- 111.17	81.17
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	1099966	10.0000	9.920	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	713786			34.89- 94.89	64.89
22.844	22.844 (0.940)	131	683213			32.11- 92.11	62.11
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	392422	10.0000	10.848	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	707679			150.34- 210.34	180.34
23.076	23.076 (0.949)	100	99949			0.00- 55.47	25.47

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	1325659	10.0000	10.584	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	1014316			46.51- 106.51	76.51
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	973573	10.0000	10.122	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	920790			64.58- 124.58	94.58
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	513463	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	250163			18.72- 78.72	48.72
165 Chlorobenzene					CAS #: 108-90-7		
24.352	24.355 (1.002)	112	1339327	10.0000	10.376	80.00- 120.00	100.00
24.352	24.360 (1.002)	114	422841			1.57- 61.57	31.57
24.352	24.352 (1.002)	77	692983			21.74- 81.74	51.74
167 Ethyl Benzene					CAS #: 100-41-4		
24.435	24.435 (1.005)	106	638011	10.0000	11.212	80.00- 120.00	100.00
24.435	24.435 (1.005)	91	1915548			270.24- 330.24	300.24
169 m,p-Xylene					CAS #: 108-38-3		
24.621	24.621 (1.013)	106	777865	10.0000	11.329	80.00- 120.00	100.00
24.621	24.618 (1.013)	91	1474471			159.55- 219.55	189.55
171 o-Xylene					CAS #: 95-47-6		
25.198	25.198 (1.036)	106	695015	10.0000	11.286	80.00- 120.00	100.00
25.198	25.198 (1.036)	91	1375385			167.89- 227.89	197.89
172 Styrene					CAS #: 100-42-5		
25.219	25.219 (1.037)	104	1231800	10.0000	11.531	80.00- 120.00	100.00
25.219	25.219 (1.037)	78	578390			16.95- 76.95	46.95
174 Bromoform					CAS #: 75-25-2		
25.540	25.540 (1.051)	173	1548361	10.0000	10.449	80.00- 120.00	100.00
25.540	25.540 (1.051)	171	768815			19.65- 79.65	49.65
175 Cumene					CAS #: 98-82-8		
25.635	25.635 (1.054)	105	2276380	10.0000	11.328	80.00- 120.00	100.00
25.635	25.635 (1.054)	120	639993			0.00- 58.11	28.11
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	400234	5.00000	5.096	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	357104			59.22- 119.22	89.22
25.920	25.920 (1.066)	176	397163			69.23- 129.23	99.23

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.109	26.109	(1.074)	83	1244904	10.0000	9.213	80.00- 120.00	100.00
26.109	26.109	(1.074)	85	815499		35.51- 95.51		65.51
182 Propylbenzene						CAS #: 103-65-1		
26.147	26.154	(1.076)	91	2603560	10.0000	11.082	80.00- 120.00	100.00
26.166	26.154	(1.076)	120	666176		0.00- 55.59		25.59
188 4-Ethyltoluene						CAS #: 622-96-8		
26.299	26.299	(1.082)	105	2375594	10.0000	11.741	80.00- 120.00	100.00
26.299	26.295	(1.082)	120	748587		1.51- 61.51		31.51
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
26.356	26.356	(1.084)	105	2278925	10.0000	11.572	80.00- 120.00	100.00
26.356	26.356	(1.084)	120	1169026		21.30- 81.30		51.30
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
26.830	26.830	(1.104)	105	1889381	10.0000	11.431	80.00- 120.00	100.00
26.830	26.830	(1.104)	120	918940		18.64- 78.64		48.64
208 1,3-Dichlorobenzene						CAS #: 541-73-1		
27.255	27.255	(1.121)	146	1488517	10.0000	9.864	80.00- 120.00	100.00
27.255	27.255	(1.121)	148	963792		34.75- 94.75		64.75
27.255	27.255	(1.121)	111	526688		5.38- 65.38		35.38
209 1,4-Dichlorobenzene						CAS #: 106-46-7		
27.364	27.364	(1.126)	146	1496035	10.0000	10.270	80.00- 120.00	100.00
27.364	27.364	(1.126)	148	971254		34.92- 94.92		64.92
27.364	27.364	(1.126)	111	503747		3.67- 63.67		33.67
212 alpha-Chlorotoluene						CAS #: 100-44-7		
27.535	27.535	(1.133)	91	1308685	10.0000	10.410	80.00- 120.00	100.00
27.535	27.535	(1.133)	126	327455		0.00- 55.02		25.02
214 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.847	27.847	(1.145)	146	1402010	10.0000	10.183	80.00- 120.00	100.00
27.847	27.847	(1.145)	148	895832		33.90- 93.90		63.90
27.847	27.845	(1.145)	111	504253		5.97- 65.97		35.97
226 1,2,4-Trichlorobenzene						CAS #: 120-82-1		
29.952	29.959	(1.232)	180	1002057	10.0000	9.293	80.00- 120.00	100.00
29.952	29.953	(1.232)	182	972946		67.09- 127.09		97.09
227 Hexachlorobutadiene						CAS #: 87-68-3		
30.076	30.076	(1.237)	225	1161645	10.0000	9.408	80.00- 120.00	100.00
30.076	30.076	(1.237)	223	733302		33.13- 93.13		63.13

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
228 Naphthalene					CAS #: 91-20-3		
30.388	30.388 (1.250)	128	137298	1.00000	0.9014	80.00- 120.00	100.00
30.388	30.391 (1.250)	127	20738			0.00- 45.10	15.10

Report Date: 05-Feb-2020 13:24

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020510.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ns
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 13
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	192135	0.00
123 1,4-Difluorobenze	564474	338684	790264	564474	0.00
163 Chlorobenzene-d5	513463	308078	718848	513463	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.00
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020510.d

Date : 05-FEB-2020 07:34

Client ID: Level 13

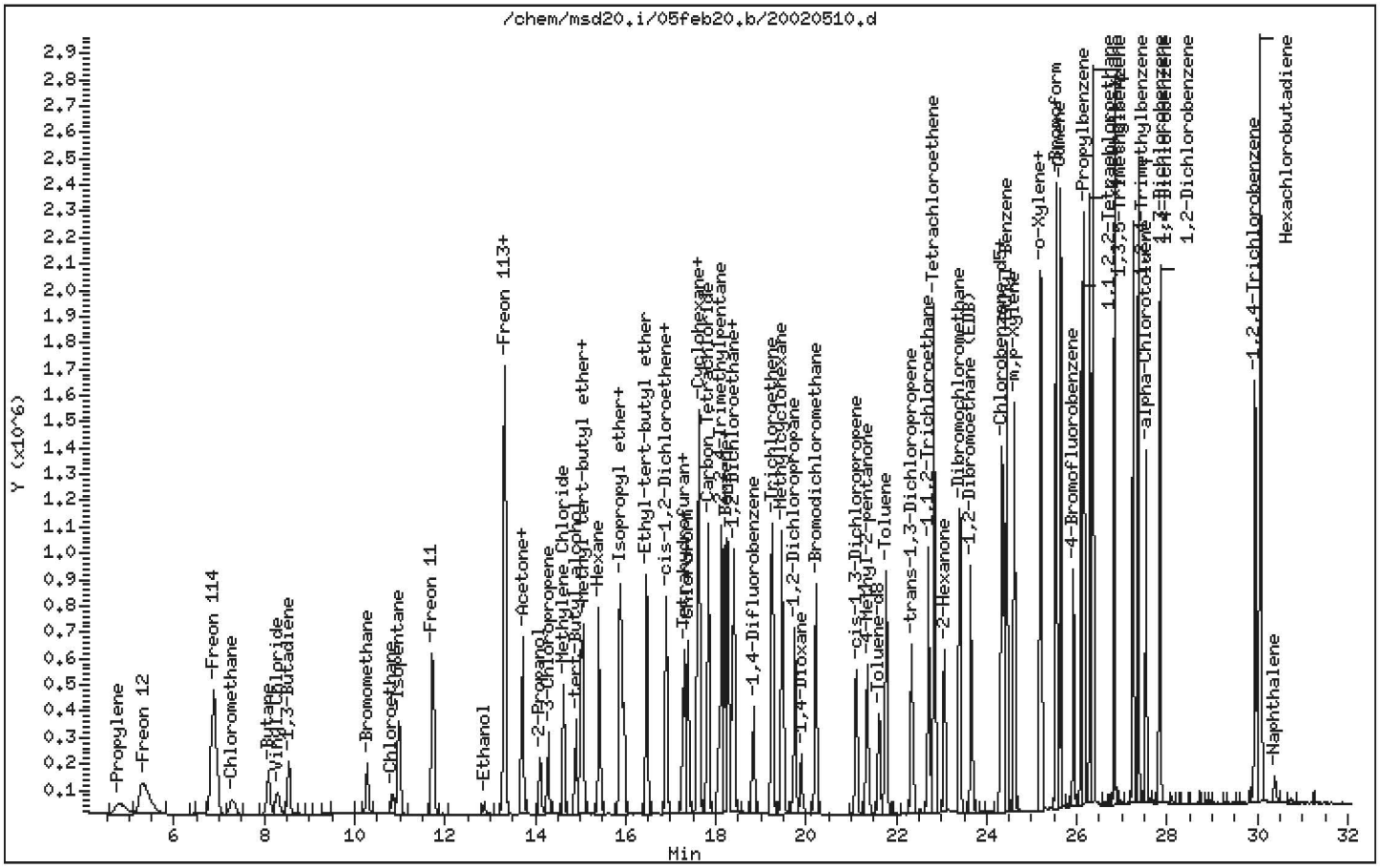
Instrument: msd20.i

Sample Info: 50mL# 3018-1179

Operator: ns

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020511.d
Lab Smp Id: ICAL Client Smp ID: Level 14
Inj Date : 05-FEB-2020 08:13
Operator : ns Inst ID: msd20.i
Smp Info : 75mL# 3018-1179
Misc Info : 15ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 08:13 Cal File: 20020511.d
Als bottle: 1 Calibration Sample, Level: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
9 Propylene					CAS #: 115-07-1		
4.763	4.782 (0.275)	41	342421	15.0000	15.596	80.00- 120.00	100.00
4.811	4.797 (0.278)	42	222627			38.85- 98.85	65.02
4.787	4.792 (0.277)	39	263309			50.09- 110.09	76.90
11 Freon 12					CAS #: 75-71-8		
5.317	5.321 (0.307)	85	1725441	15.0000	14.753	80.00- 120.00	100.00
5.365	5.328 (0.310)	87	558878			2.53- 62.53	32.39
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	1462087	15.0000	14.705	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	467874			2.72- 62.72	32.00
6.884	6.878 (0.398)	85	1707494			86.16- 146.16	116.78
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	465258	15.0000	14.610	80.00- 120.00	100.00
7.318	7.308 (0.423)	52	156006			3.63- 63.63	33.53
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	92552	15.0000	15.816	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
23 Butane (continued)							
8.092	8.095 (0.468)	43	624177			627.99- 687.99	674.41
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	521184	15.0000	15.533	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	167756			2.83- 62.83	32.19
26 1,3-Butadiene					CAS #: 106-99-0		
8.543	8.541 (0.494)	54	364789	15.0000	16.896	80.00- 120.00	100.00
8.543	8.541 (0.494)	39	354156			69.65- 129.65	97.09
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	436201	15.0000	16.450	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	422428			60.82- 120.82	96.84
30 Chloroethane					CAS #: 75-00-3		
10.833	10.846 (0.626)	64	231274	15.0000	15.719	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	59083			0.00- 55.00	25.55
10.833	10.835 (0.626)	66	74148			1.88- 61.88	32.06
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	380613	15.0000	15.654	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	510916			111.40- 171.40	134.24
10.977	10.976 (0.634)	42	449395			96.33- 156.33	118.07
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	1817424	15.0000	15.892	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	1191545			35.14- 95.14	65.56
42 Ethanol					CAS #: 64-17-5		
12.876	12.870 (0.744)	45	144301	15.0000	15.166	80.00- 120.00	100.00
12.876	12.870 (0.744)	46	60500			6.43- 66.43	41.93
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	1508919	15.0000	14.334	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	988917			34.89- 94.89	65.54
13.315	13.320 (0.770)	101	1505310			70.13- 130.13	99.76
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.343	13.331 (0.771)	98	382932	15.0000	16.109	80.00- 120.00	100.00
13.343	13.324 (0.771)	61	862097			197.76- 257.76	225.13
13.343	13.324 (0.771)	96	602686			124.14- 184.14	157.39
52 Acetone					CAS #: 67-64-1		
13.700	13.706 (0.792)	58	248399	15.0000	15.497	80.00- 120.00	100.00
13.700	13.706 (0.792)	43	762712			291.24- 351.24	307.05

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
56 Carbon Disulfide					CAS #: 75-15-0		
13.727	13.726 (0.793)	76	1733275	15.0000	15.758	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.112	14.110 (0.816)	45	706186	15.0000	15.801	80.00- 120.00	100.00
14.112	14.114 (0.816)	43	190332			0.00- 59.88	26.95
14.112	14.110 (0.816)	59	31509			0.00- 34.36	4.46
58 3-Chloropropene					CAS #: 107-05-1		
14.304	14.295 (0.827)	76	208443	15.0000	17.527	80.00- 120.00	100.00
14.304	14.295 (0.827)	41	469539			188.05- 248.05	225.26
66 Methylene Chloride					CAS #: 75-09-2		
14.634	14.632 (0.846)	84	558179	15.0000	14.025	80.00- 120.00	100.00
14.634	14.632 (0.846)	49	614987			79.75- 139.75	110.18
14.634	14.632 (0.846)	51	190206			4.54- 64.54	34.08
71 tert-Butyl alcohol					CAS #: 75-65-0		
14.908	14.907 (0.862)	59	971345	15.0000	16.658	80.00- 120.00	100.00
14.908	14.903 (0.862)	41	268387			0.00- 57.20	27.63
14.908	14.907 (0.862)	57	117398			0.00- 41.27	12.09
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.018	15.017 (0.868)	73	1643943	15.0000	17.601	80.00- 120.00	100.00
15.018	15.017 (0.868)	57	340010			0.00- 50.29	20.68
15.018	15.017 (0.868)	41	364908			0.00- 53.61	22.20
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.073	15.072 (0.871)	98	414733	15.0000	16.699	80.00- 120.00	100.00
15.073	15.072 (0.871)	61	802578			166.73- 226.73	193.52
15.073	15.072 (0.871)	96	635022			131.17- 191.17	153.12
78 Hexane					CAS #: 110-54-3		
15.430	15.428 (0.892)	57	836977	15.0000	17.394	80.00- 120.00	100.00
15.430	15.428 (0.892)	43	492727			27.95- 87.95	58.87
15.430	15.428 (0.892)	86	158438			0.00- 48.76	18.93
83 Isopropyl ether					CAS #: 108-20-3		
15.869	15.872 (0.917)	45	1702461	15.0000	17.352	80.00- 120.00	100.00
15.869	15.872 (0.917)	87	572970			3.75- 63.75	33.66
15.869	15.872 (0.917)	59	219100			0.00- 43.23	12.87
82 1,1-Dichloroethane					CAS #: 75-34-3		
15.924	15.923 (0.920)	63	1098918	15.0000	15.483	80.00- 120.00	100.00
15.924	15.923 (0.920)	65	352684			1.61- 61.61	32.09

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
86 Vinyl Acetate					CAS #: 108-05-4		
15.979	15.978 (0.923)	86	154542	15.0000	17.653	80.00- 120.00	100.00
15.979	15.978 (0.923)	42	130053			52.54- 112.54	84.15
15.979	15.978 (0.923)	43	1312249			783.51- 843.51	849.12
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
16.468	16.467 (0.952)	59	1749717	15.0000	17.124	80.00- 120.00	100.00
16.468	16.467 (0.952)	87	836094			16.88- 76.88	47.78
16.468	16.467 (0.952)	41	360744			0.00- 52.99	20.62
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.903	16.902 (0.977)	98	478373	15.0000	16.505	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	832880			148.56- 208.56	174.11
16.903	16.902 (0.977)	96	737237			126.55- 186.55	154.11
92 2-Butanone					CAS #: 78-93-3		
16.924	16.926 (0.978)	72	289112	15.0000	16.528	80.00- 120.00	100.00
16.924	16.923 (0.978)	43	1016569			309.31- 369.31	351.62
16.924	16.926 (0.978)	57	86276			0.00- 58.97	29.84
99 Tetrahydrofuran					CAS #: 109-99-9		
17.270	17.283 (0.998)	42	548813	15.0000	17.188	80.00- 120.00	100.00
17.270	17.283 (0.998)	71	255357			17.62- 77.62	46.53
17.270	17.283 (0.998)	72	271465			20.52- 80.52	49.46
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	194287	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	149907			46.61- 106.61	77.16
17.302	17.302 (1.000)	49	182229			58.08- 118.08	93.79
100 Chloroform					CAS #: 67-66-3		
17.367	17.379 (1.004)	83	1445080	15.0000	14.975	80.00- 120.00	100.00
17.400	17.383 (1.006)	85	950277			35.58- 95.58	65.76
102 Cyclohexane					CAS #: 110-82-7		
17.597	17.605 (1.017)	84	1207616	15.0000	18.461	80.00- 120.00	100.00
17.597	17.602 (1.017)	56	1191780			66.69- 126.69	98.69
17.597	17.602 (1.017)	41	667343			26.30- 86.30	55.26
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.641	17.631 (1.020)	97	1542818	15.0000	15.405	80.00- 120.00	100.00
17.641	17.633 (1.020)	99	1004085			34.72- 94.72	65.08
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	1682684	15.0000	15.994	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	1760687			72.39- 132.39	104.64

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	1327624	15.0000	15.286	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	3783132			245.12- 305.12	284.96
18.121	18.121 (1.047)	41	1116845			50.98- 110.98	84.12
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	1942464	15.0000	15.279	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	467768			0.00- 54.15	24.08
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	211669	5.00000	5.058	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	119096			30.76- 90.76	56.27
119 tert-Amyl methyl ether					CAS #: 994-05-8		
18.265	18.265 (0.970)	87	469258	15.0000	16.152	80.00- 120.00	100.00
18.265	18.265 (0.970)	73	1820878			364.30- 424.30	388.03
18.265	18.265 (0.970)	55	506563			83.00- 143.00	107.95
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	909077	15.0000	13.953	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	294877			0.98- 60.98	32.44
121 Heptane					CAS #: 142-82-5		
18.409	18.404 (0.978)	57	509205	15.0000	16.010	80.00- 120.00	100.00
18.409	18.406 (0.978)	100	276593			22.83- 82.83	54.32
18.409	18.409 (0.978)	43	879409			143.19- 203.19	172.70
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.833	18.833 (1.000)	114	584700	5.00000		80.00- 120.00	100.00
18.833	18.833 (1.000)	88	79978			0.00- 44.22	13.68
125 Trichloroethene					CAS #: 79-01-6		
19.256	19.256 (1.022)	130	1112546	15.0000	14.749	80.00- 120.00	100.00
19.256	19.254 (1.022)	95	936301			54.82- 114.82	84.16
19.256	19.259 (1.022)	97	623581			25.35- 85.35	56.05
127 Methylcyclohexane					CAS #: 108-87-2		
19.480	19.480 (1.034)	83	1167234	15.0000	16.622	80.00- 120.00	100.00
19.480	19.480 (1.034)	55	807467			40.96- 100.96	69.18
19.480	19.480 (1.034)	56	266419			0.00- 52.45	22.82
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	688739	15.0000	14.318	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	474157			40.35- 100.35	68.84
19.747	19.750 (1.049)	41	369475			24.96- 84.96	53.65

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  136 1,4-Dioxane                                  CAS #: 123-91-1
 19.904  19.901 (1.057)    88    476456 15.0000   16.894  80.00- 120.00   100.00
 19.904  19.906 (1.057)    58    297155                   31.33-  91.33    62.37
-------------------------------------------------------------------------------
  138 Bromodichloromethane                         CAS #: 75-27-4
 20.216  20.216 (0.832)    83   1557496 15.0000   15.096  80.00- 120.00   100.00
 20.216  20.216 (0.832)    85   1016245                   34.54-  94.54    65.25
-------------------------------------------------------------------------------
  144 cis-1,3-Dichloropropene                      CAS #: 10061-01-5
 21.119  21.115 (1.121)    75   1025393 15.0000   15.410  80.00- 120.00   100.00
 21.119  21.120 (1.121)    77    333812                    2.26-  62.26    32.55
 21.119  21.120 (1.121)    39    448580                   13.91-  73.91    43.75
-------------------------------------------------------------------------------
  145 4-Methyl-2-pentanone                         CAS #: 108-10-1
 21.352  21.352 (1.134)    43   1160665 15.0000   15.809  80.00- 120.00   100.00
 21.352  21.354 (1.134)    58    467029                    8.83-  68.83    40.24
 21.352  21.362 (1.134)    85    246342                    0.00-  50.74    21.22
-------------------------------------------------------------------------------
$ 146 Toluene-d8                                   CAS #: 2037-26-5
 21.617  21.617 (1.148)    98    573548 5.00000    5.070  80.00- 120.00   100.00
 21.617  21.619 (1.148)    70     63468                    0.00-  41.39    11.07
 21.617  21.617 (1.148)   100    371114                   35.17-  95.17    64.70
-------------------------------------------------------------------------------
  147 Toluene                                      CAS #: 108-88-3
 21.773  21.773 (1.156)    91   2311844 15.0000   14.926  80.00- 120.00   100.00
 21.773  21.775 (1.156)    92   1358734                   27.71-  87.71    58.77
-------------------------------------------------------------------------------
  150 trans-1,3-Dichloropropene                    CAS #: 10061-02-6
 22.350  22.350 (0.919)    75   1009134 15.0000   16.040  80.00- 120.00   100.00
 22.350  22.354 (0.919)    77    320003                    3.18-  63.18    31.71
 22.350  22.346 (0.919)    39    417211                   13.49-  73.49    41.34
-------------------------------------------------------------------------------
  155 1,1,2-Trichloroethane                        CAS #: 79-00-5
 22.728  22.724 (0.935)    97    859821 15.0000   12.664  80.00- 120.00   100.00
 22.728  22.728 (0.935)    99    558364                   31.74-  91.74    64.94
 22.728  22.728 (0.935)    83    715027                   51.17- 111.17    83.16
-------------------------------------------------------------------------------
  156 Tetrachloroethene                            CAS #: 127-18-4
 22.844  22.844 (0.940)   166   1685015 15.0000   14.726  80.00- 120.00   100.00
 22.844  22.844 (0.940)   129   1068394                   34.89-  94.89    63.41
 22.844  22.844 (0.940)   131   1049604                   32.11-  92.11    62.29
-------------------------------------------------------------------------------
  158 2-Hexanone                                   CAS #: 591-78-6
 23.076  23.076 (0.949)    58    634757 15.0000   17.005  80.00- 120.00   100.00
 23.076  23.072 (0.949)    43   1144788                  150.34- 210.34   180.35
 23.076  23.076 (0.949)   100    162302                    0.00-  55.47    25.57
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RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	1998821	15.0000	15.466	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	1540874			46.51- 106.51	77.09
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	1473018	15.0000	14.842	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	1383902			64.58- 124.58	93.95
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	529817	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	256180			18.72- 78.72	48.35
165 Chlorobenzene					CAS #: 108-90-7		
24.353	24.355 (1.002)	112	2024071	15.0000	15.197	80.00- 120.00	100.00
24.373	24.360 (1.003)	114	645032			1.57- 61.57	31.87
24.353	24.352 (1.002)	77	1051780			21.74- 81.74	51.96
167 Ethyl Benzene					CAS #: 100-41-4		
24.435	24.435 (1.005)	106	983406	15.0000	16.749	80.00- 120.00	100.00
24.435	24.435 (1.005)	91	2968115			270.24- 330.24	301.82
169 m,p-Xylene					CAS #: 108-38-3		
24.621	24.621 (1.013)	106	1145803	15.0000	16.173	80.00- 120.00	100.00
24.621	24.618 (1.013)	91	2223724			159.55- 219.55	194.08
171 o-Xylene					CAS #: 95-47-6		
25.198	25.198 (1.036)	106	1050338	15.0000	16.529	80.00- 120.00	100.00
25.198	25.198 (1.036)	91	2147152			167.89- 227.89	204.42
172 Styrene					CAS #: 100-42-5		
25.219	25.219 (1.037)	104	1821153	15.0000	16.522	80.00- 120.00	100.00
25.219	25.219 (1.037)	78	858019			16.95- 76.95	47.11
174 Bromoform					CAS #: 75-25-2		
25.541	25.540 (1.051)	173	2326891	15.0000	15.218	80.00- 120.00	100.00
25.541	25.540 (1.051)	171	1187171			19.65- 79.65	51.02
175 Cumene					CAS #: 98-82-8		
25.635	25.635 (1.054)	105	3472183	15.0000	16.745	80.00- 120.00	100.00
25.635	25.635 (1.054)	120	978987			0.00- 58.11	28.20
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	401235	5.00000	4.951	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	339209			59.22- 119.22	84.54
25.920	25.920 (1.066)	176	401126			69.23- 129.23	99.97

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  181 1,1,2,2-Tetrachloroethane                      CAS #: 79-34-5
 26.109  26.109 (1.074)    83   1816916 15.0000   13.031  80.00- 120.00   100.00
 26.109  26.109 (1.074)    85   1203671                   35.51-  95.51    66.25
-------------------------------------------------------------------------------
  182 Propylbenzene                                  CAS #: 103-65-1
 26.147  26.154 (1.076)    91   3847865 15.0000   15.873  80.00- 120.00   100.00
 26.147  26.154 (1.076)   120    997175                    0.00-  55.59    25.92
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                                 CAS #: 622-96-8
 26.299  26.299 (1.082)   105   3536941 15.0000   16.941  80.00- 120.00   100.00
 26.299  26.295 (1.082)   120   1119779                    1.51-  61.51    31.66
-------------------------------------------------------------------------------
  190 1,3,5-Trimethylbenzene                         CAS #: 108-67-8
 26.356  26.356 (1.084)   105   3431180 15.0000   16.886  80.00- 120.00   100.00
 26.356  26.356 (1.084)   120   1723442                   21.30-  81.30    50.23
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                         CAS #: 95-63-6
 26.830  26.830 (1.104)   105   2941424 15.0000   17.247  80.00- 120.00   100.00
 26.830  26.830 (1.104)   120   1426611                   18.64-  78.64    48.50
-------------------------------------------------------------------------------
  208 1,3-Dichlorobenzene                            CAS #: 541-73-1
 27.255  27.255 (1.121)   146   2223527 15.0000   14.281  80.00- 120.00   100.00
 27.255  27.255 (1.121)   148   1443978                   34.75-  94.75    64.94
 27.255  27.255 (1.121)   111    764654                    5.38-  65.38    34.39
-------------------------------------------------------------------------------
  209 1,4-Dichlorobenzene                            CAS #: 106-46-7
 27.364  27.364 (1.126)   146   2245228 15.0000   14.938  80.00- 120.00   100.00
 27.364  27.364 (1.126)   148   1426662                   34.92-  94.92    63.54
 27.364  27.364 (1.126)   111    750838                    3.67-  63.67    33.44
-------------------------------------------------------------------------------
  212 alpha-Chlorotoluene                            CAS #: 100-44-7
 27.535  27.535 (1.133)    91   2007619 15.0000   15.478  80.00- 120.00   100.00
 27.535  27.535 (1.133)   126    483197                    0.00-  55.02    24.07
-------------------------------------------------------------------------------
  214 1,2-Dichlorobenzene                            CAS #: 95-50-1
 27.847  27.847 (1.145)   146   2082765 15.0000   14.661  80.00- 120.00   100.00
 27.847  27.847 (1.145)   148   1363518                   33.90-  93.90    65.47
 27.847  27.845 (1.145)   111    738156                    5.97-  65.97    35.44
-------------------------------------------------------------------------------
  226 1,2,4-Trichlorobenzene                         CAS #: 120-82-1
 29.952  29.959 (1.232)   180   1731368 15.0000   15.562  80.00- 120.00   100.00
 29.952  29.953 (1.232)   182   1650391                   67.09- 127.09    95.32
-------------------------------------------------------------------------------
  227 Hexachlorobutadiene                            CAS #: 87-68-3
 30.076  30.076 (1.237)   225   1957616 15.0000   15.365  80.00- 120.00   100.00
 30.076  30.076 (1.237)   223   1212503                   33.13-  93.13    61.94
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RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
228 Naphthalene					CAS #: 91-20-3		
30.388	30.388 (1.250)	128	226269	1.50000	1.440	80.00- 120.00	100.00
30.388	30.391 (1.250)	127	30790			0.00- 45.10	13.61

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020511.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ns
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 15ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 14
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	194287	1.12
123 1,4-Difluorobenze	564474	338684	790264	584700	3.58
163 Chlorobenzene-d5	513463	308078	718848	529817	3.19

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020511.d

Date : 05-FEB-2020 08:13

Client ID: Level 14

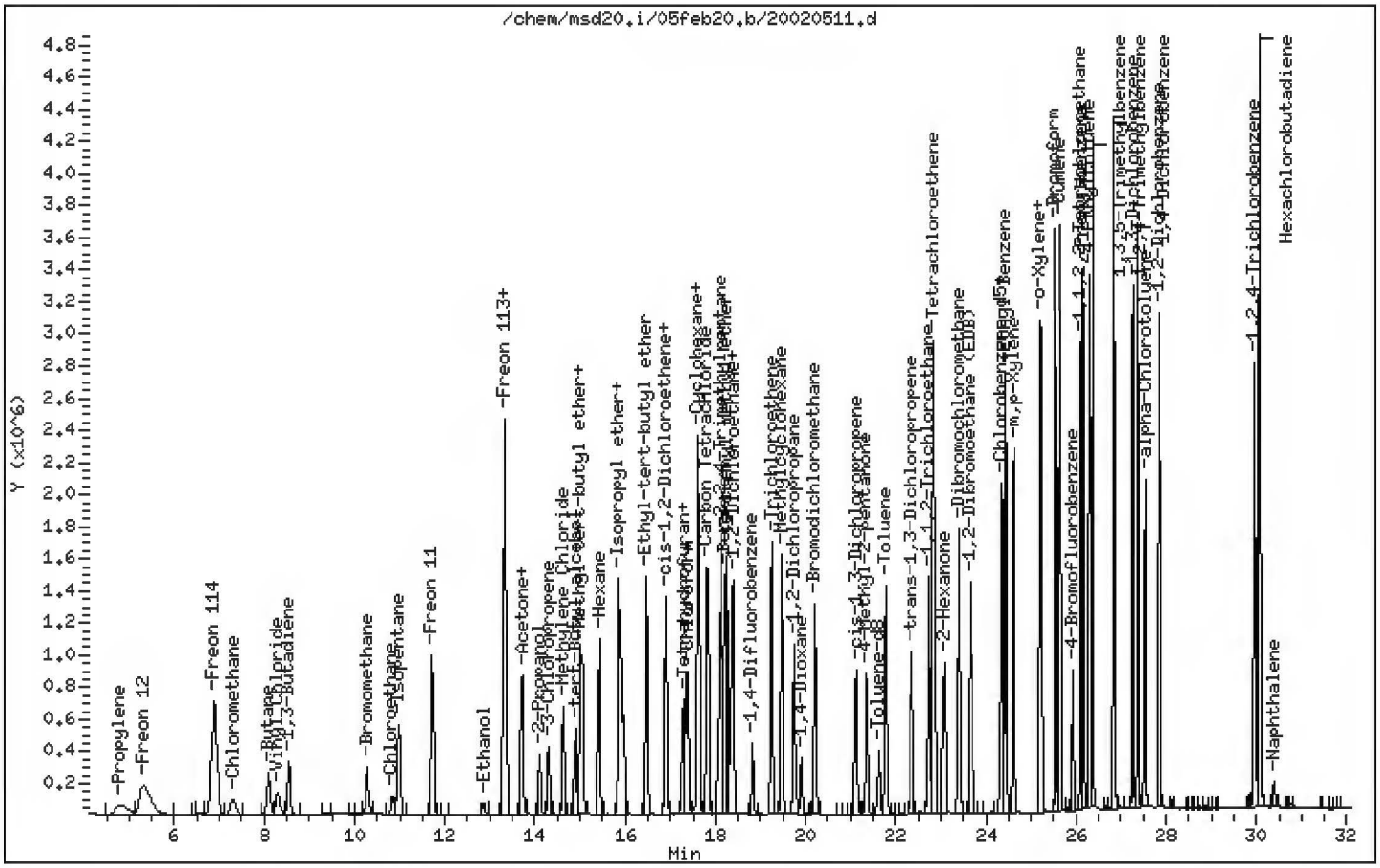
Instrument: msd20.i

Sample Info: 75mL# 3018-1179

Operator: ns

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020512.d
Lab Smp Id: ICAL Client Smp ID: Level 15
Inj Date : 05-FEB-2020 08:54
Operator : ef Inst ID: msd20.i
Smp Info : 100mL# 3018-1179
Misc Info : 20ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512.d
Als bottle: 1 Calibration Sample, Level: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
9 Propylene					CAS #: 115-07-1		
4.787	4.782 (0.277)	41	435377	20.0000	20.075	80.00- 120.00	100.00
4.787	4.797 (0.277)	42	283462			38.85- 98.85	65.11
4.811	4.792 (0.278)	39	331076			50.09- 110.09	76.04
11 Freon 12					CAS #: 75-71-8		
5.317	5.321 (0.307)	85	2216361	20.0000	19.185	80.00- 120.00	100.00
5.317	5.328 (0.307)	87	719826			2.53- 62.53	32.48
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	1839061	20.0000	18.725	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	595002			2.72- 62.72	32.35
6.884	6.878 (0.398)	85	2119995			86.16- 146.16	115.28
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	568174	20.0000	18.063	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	186057			3.63- 63.63	32.75
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	116760	20.0000	20.200	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
23 Butane (continued)							
8.092	8.095 (0.468)	43	792093			627.99- 687.99	678.39
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	669127	20.0000	20.189	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	218506			2.83- 62.83	32.66
26 1,3-Butadiene					CAS #: 106-99-0		
8.543	8.541 (0.494)	54	454023	20.0000	21.289	80.00- 120.00	100.00
8.543	8.541 (0.494)	39	444535			69.65- 129.65	97.91
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	584480	20.0000	22.315	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	548737			60.82- 120.82	93.88
30 Chloroethane					CAS #: 75-00-3		
10.833	10.846 (0.626)	64	293287	20.0000	20.180	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	69824			0.00- 55.00	23.81
10.833	10.835 (0.626)	66	93984			1.88- 61.88	32.05
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	494613	20.0000	20.595	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	658713			111.40- 171.40	133.18
10.977	10.976 (0.634)	42	578965			96.33- 156.33	117.05
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	2238953	20.0000	19.821	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	1469577			35.14- 95.14	65.64
42 Ethanol					CAS #: 64-17-5		
12.876	12.870 (0.744)	45	192675	20.0000	20.501	80.00- 120.00	100.00
12.876	12.870 (0.744)	46	74103			6.43- 66.43	38.46
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	1908881	20.0000	18.358	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	1222781			34.89- 94.89	64.06
13.315	13.320 (0.770)	101	1931983			70.13- 130.13	101.21
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.343	13.331 (0.771)	98	489564	20.0000	20.850	80.00- 120.00	100.00
13.315	13.324 (0.770)	61	1089066			197.76- 257.76	222.46
13.315	13.324 (0.770)	96	759235			124.14- 184.14	155.08
52 Acetone					CAS #: 67-64-1		
13.700	13.706 (0.792)	58	306834	20.0000	19.380	80.00- 120.00	100.00
13.700	13.706 (0.792)	43	938021			291.24- 351.24	305.71

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
56 Carbon Disulfide					CAS #: 75-15-0		
13.727	13.726 (0.793)	76	2162892	20.0000	19.907	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.112	14.110 (0.816)	45	904230	20.0000	20.482	80.00- 120.00	100.00
14.112	14.114 (0.816)	43	230811			0.00- 59.88	25.53
14.112	14.110 (0.816)	59	39991			0.00- 34.36	4.42
58 3-Chloropropene					CAS #: 107-05-1		
14.304	14.295 (0.827)	76	269995	20.0000	22.984	80.00- 120.00	100.00
14.304	14.295 (0.827)	41	589260			188.05- 248.05	218.25
66 Methylene Chloride					CAS #: 75-09-2		
14.634	14.632 (0.846)	84	698978	20.0000	17.780	80.00- 120.00	100.00
14.634	14.632 (0.846)	49	753164			79.75- 139.75	107.75
14.634	14.632 (0.846)	51	230508			4.54- 64.54	32.98
71 tert-Butyl alcohol					CAS #: 75-65-0		
14.908	14.907 (0.862)	59	1272852	20.0000	22.098	80.00- 120.00	100.00
14.881	14.903 (0.860)	41	332629			0.00- 57.20	26.13
14.908	14.907 (0.862)	57	136035			0.00- 41.27	10.69
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.018	15.017 (0.868)	73	2126359	20.0000	23.048	80.00- 120.00	100.00
15.018	15.017 (0.868)	57	436563			0.00- 50.29	20.53
15.018	15.017 (0.868)	41	433002			0.00- 53.61	20.36
73 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.073	15.072 (0.871)	98	526806	20.0000	21.475	80.00- 120.00	100.00
15.073	15.072 (0.871)	61	1002389			166.73- 226.73	190.28
15.073	15.072 (0.871)	96	810718			131.17- 191.17	153.89
78 Hexane					CAS #: 110-54-3		
15.430	15.428 (0.892)	57	1091582	20.0000	22.966	80.00- 120.00	100.00
15.430	15.428 (0.892)	43	639857			27.95- 87.95	58.62
15.430	15.428 (0.892)	86	214947			0.00- 48.76	19.69
83 Isopropyl ether					CAS #: 108-20-3		
15.869	15.872 (0.917)	45	2280354	20.0000	23.529	80.00- 120.00	100.00
15.869	15.872 (0.917)	87	777862			3.75- 63.75	34.11
15.869	15.872 (0.917)	59	293129			0.00- 43.23	12.85
82 1,1-Dichloroethane					CAS #: 75-34-3		
15.924	15.923 (0.920)	63	1390840	20.0000	19.839	80.00- 120.00	100.00
15.924	15.923 (0.920)	65	451898			1.61- 61.61	32.49

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
86 Vinyl Acetate					CAS #: 108-05-4		
15.979	15.978 (0.923)	86	209806	20.0000	24.262	80.00- 120.00	100.00
15.979	15.978 (0.923)	42	162608			52.54- 112.54	77.50
15.979	15.978 (0.923)	43	1760895			783.51- 843.51	839.30
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
16.468	16.467 (0.952)	59	2363884	20.0000	23.421	80.00- 120.00	100.00
16.468	16.467 (0.952)	87	1117424			16.88- 76.88	47.27
16.468	16.467 (0.952)	41	472105			0.00- 52.99	19.97
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.903	16.902 (0.977)	98	618411	20.0000	21.601	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	1085390			148.56- 208.56	175.51
16.903	16.902 (0.977)	96	955379			126.55- 186.55	154.49
92 2-Butanone					CAS #: 78-93-3		
16.924	16.926 (0.978)	72	383546	20.0000	22.198	80.00- 120.00	100.00
16.924	16.923 (0.978)	43	1322774			309.31- 369.31	344.88
16.924	16.926 (0.978)	57	113087			0.00- 58.97	29.48
99 Tetrahydrofuran					CAS #: 109-99-9		
17.270	17.283 (0.998)	42	712059	20.0000	22.577	80.00- 120.00	100.00
17.270	17.283 (0.998)	71	344565			17.62- 77.62	48.39
17.270	17.283 (0.998)	72	361011			20.52- 80.52	50.70
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	191910	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	149939			46.61- 106.61	78.13
17.302	17.302 (1.000)	49	178599			58.08- 118.08	93.06
100 Chloroform					CAS #: 67-66-3		
17.367	17.379 (1.004)	83	1864141	20.0000	19.557	80.00- 120.00	100.00
17.367	17.383 (1.004)	85	1219354			35.58- 95.58	65.41
102 Cyclohexane					CAS #: 110-82-7		
17.597	17.605 (1.017)	84	1588873	20.0000	24.591	80.00- 120.00	100.00
17.597	17.602 (1.017)	56	1572116			66.69- 126.69	98.95
17.597	17.602 (1.017)	41	842158			26.30- 86.30	53.00
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.641	17.631 (1.020)	97	2000310	20.0000	20.220	80.00- 120.00	100.00
17.641	17.633 (1.020)	99	1302213			34.72- 94.72	65.10
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	2203267	20.0000	21.201	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	2309949			72.39- 132.39	104.84

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	1823195	20.0000	21.252	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	5452238			245.12- 305.12	299.05
18.121	18.121 (1.047)	41	1494082			50.98- 110.98	81.95
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	2579723	20.0000	20.409	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	613245			0.00- 54.15	23.77
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	196240	5.00000	4.748	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	116231			30.76- 90.76	59.23
119 tert-Amyl methyl ether					CAS #: 994-05-8		
18.265	18.265 (0.970)	87	626371	20.0000	21.683	80.00- 120.00	100.00
18.265	18.265 (0.970)	73	2438768			364.30- 424.30	389.35
18.265	18.265 (0.970)	55	656129			83.00- 143.00	104.75
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	1146370	20.0000	17.696	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	373845			0.98- 60.98	32.61
121 Heptane					CAS #: 142-82-5		
18.409	18.404 (0.978)	57	699000	20.0000	22.103	80.00- 120.00	100.00
18.409	18.406 (0.978)	100	374749			22.83- 82.83	53.61
18.409	18.409 (0.978)	43	1213029			143.19- 203.19	173.54
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.833	18.833 (1.000)	114	581363	5.00000		80.00- 120.00	100.00
18.833	18.833 (1.000)	88	75669			0.00- 44.22	13.02
125 Trichloroethene					CAS #: 79-01-6		
19.257	19.256 (1.022)	130	1449987	20.0000	19.333	80.00- 120.00	100.00
19.257	19.254 (1.022)	95	1208849			54.82- 114.82	83.37
19.257	19.259 (1.022)	97	811102			25.35- 85.35	55.94
127 Methylcyclohexane					CAS #: 108-87-2		
19.480	19.480 (1.034)	83	1571517	20.0000	22.508	80.00- 120.00	100.00
19.480	19.480 (1.034)	55	1097037			40.96- 100.96	69.81
19.480	19.480 (1.034)	56	343231			0.00- 52.45	21.84
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	910192	20.0000	19.030	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	626262			40.35- 100.35	68.81
19.747	19.750 (1.049)	41	495874			24.96- 84.96	54.48

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
136 1,4-Dioxane					CAS #: 123-91-1		
19.904	19.901 (1.057)	88	640147	20.0000	22.828	80.00- 120.00	100.00
19.904	19.906 (1.057)	58	376652			31.33- 91.33	58.84
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	2018319	20.0000	18.758	80.00- 120.00	100.00
20.216	20.216 (0.832)	85	1287699			34.54- 94.54	63.80
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.119	21.115 (1.121)	75	1408233	20.0000	21.286	80.00- 120.00	100.00
21.119	21.120 (1.121)	77	443269			2.26- 62.26	31.48
21.119	21.120 (1.121)	39	607924			13.91- 73.91	43.17
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	1654333	20.0000	22.663	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	674644			8.83- 68.83	40.78
21.352	21.362 (1.134)	85	340610			0.00- 50.74	20.59
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	579327	5.00000	5.150	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	63138			0.00- 41.39	10.90
21.617	21.617 (1.148)	100	374061			35.17- 95.17	64.57
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	3212094	20.0000	20.857	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	1889565			27.71- 87.71	58.83
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	1414402	20.0000	21.556	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	432507			3.18- 63.18	30.58
22.350	22.346 (0.919)	39	580653			13.49- 73.49	41.05
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	1184653	20.0000	16.731	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	761608			31.74- 91.74	64.29
22.728	22.728 (0.935)	83	945770			51.17- 111.17	79.84
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	2331159	20.0000	19.535	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	1476894			34.89- 94.89	63.35
22.844	22.844 (0.940)	131	1411049			32.11- 92.11	60.53
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	926834	20.0000	23.808	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	1639248			150.34- 210.34	176.87
23.076	23.076 (0.949)	100	227215			0.00- 55.47	24.52

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
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  160 Dibromochloromethane                          CAS #: 124-48-1
 23.396  23.405 (0.962)   129   2683389 20.0000   19.909  80.00- 120.00   100.00
 23.396  23.402 (0.962)   127   2053641                   46.51- 106.51    76.53
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  161 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.657  23.657 (0.973)   107   1985315 20.0000   19.181  80.00- 120.00   100.00
 23.657  23.657 (0.973)   109   1892546                   64.58- 124.58    95.33
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* 163 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.311  24.311 (1.000)   117    552554 5.00000           80.00- 120.00   100.00
 24.311  24.311 (1.000)    82    271013                   18.72-  78.72    49.05
-------------------------------------------------------------------------------
  165 Chlorobenzene                                 CAS #: 108-90-7
 24.353  24.355 (1.002)   112   2776814 20.0000   19.990  80.00- 120.00   100.00
 24.353  24.360 (1.002)   114    914444                    1.57-  61.57    32.93
 24.353  24.352 (1.002)    77   1459668                   21.74-  81.74    52.57
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                 CAS #: 100-41-4
 24.435  24.435 (1.005)   106   1388576 20.0000   22.677  80.00- 120.00   100.00
 24.435  24.435 (1.005)    91   4152528                  270.24- 330.24   299.05
-------------------------------------------------------------------------------
  169 m,p-Xylene                                    CAS #: 108-38-3
 24.621  24.621 (1.013)   106   1630554 20.0000   22.068  80.00- 120.00   100.00
 24.621  24.618 (1.013)    91   3084868                  159.55- 219.55   189.19
-------------------------------------------------------------------------------
  171 o-Xylene                                      CAS #: 95-47-6
 25.198  25.198 (1.036)   106   1517509 20.0000   22.899  80.00- 120.00   100.00
 25.198  25.198 (1.036)    91   3018183                  167.89- 227.89   198.89
-------------------------------------------------------------------------------
  172 Styrene                                       CAS #: 100-42-5
 25.219  25.219 (1.037)   104   2536227 20.0000   22.062  80.00- 120.00   100.00
 25.219  25.219 (1.037)    78   1189992                   16.95-  76.95    46.92
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  174 Bromoform                                     CAS #: 75-25-2
 25.541  25.540 (1.051)   173   3176959 20.0000   19.923  80.00- 120.00   100.00
 25.541  25.540 (1.051)   171   1593654                   19.65-  79.65    50.16
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  175 Cumene                                        CAS #: 98-82-8
 25.635  25.635 (1.054)   105   4815873 20.0000   22.270  80.00- 120.00   100.00
 25.635  25.635 (1.054)   120   1350394                    0.00-  58.11    28.04
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$ 177 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.920  25.920 (1.066)   174    434780 5.00000    5.144  80.00- 120.00   100.00
 25.920  25.920 (1.066)    95    367389                   59.22- 119.22    84.50
 25.920  25.920 (1.066)   176    407727                   69.23- 129.23    93.78
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RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.110	26.109	(1.074)	83	2489480	20.0000	17.120	80.00- 120.00	100.00
26.110	26.109	(1.074)	85	1635393			35.51- 95.51	65.69
182 Propylbenzene						CAS #: 103-65-1		
26.147	26.154	(1.076)	91	5254325	20.0000	20.783	80.00- 120.00	100.00
26.147	26.154	(1.076)	120	1351140			0.00- 55.59	25.71
188 4-Ethyltoluene						CAS #: 622-96-8		
26.299	26.299	(1.082)	105	4787596	20.0000	21.988	80.00- 120.00	100.00
26.299	26.295	(1.082)	120	1489778			1.51- 61.51	31.12
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
26.356	26.356	(1.084)	105	4630087	20.0000	21.848	80.00- 120.00	100.00
26.356	26.356	(1.084)	120	2357352			21.30- 81.30	50.91
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
26.830	26.830	(1.104)	105	4037508	20.0000	22.700	80.00- 120.00	100.00
26.830	26.830	(1.104)	120	1973369			18.64- 78.64	48.88
208 1,3-Dichlorobenzene						CAS #: 541-73-1		
27.255	27.255	(1.121)	146	3053240	20.0000	18.803	80.00- 120.00	100.00
27.255	27.255	(1.121)	148	1963610			34.75- 94.75	64.31
27.255	27.255	(1.121)	111	1065959			5.38- 65.38	34.91
209 1,4-Dichlorobenzene						CAS #: 106-46-7		
27.364	27.364	(1.126)	146	3085473	20.0000	19.683	80.00- 120.00	100.00
27.364	27.364	(1.126)	148	1971170			34.92- 94.92	63.89
27.364	27.364	(1.126)	111	1017018			3.67- 63.67	32.96
212 alpha-Chlorotoluene						CAS #: 100-44-7		
27.535	27.535	(1.133)	91	2947089	20.0000	21.785	80.00- 120.00	100.00
27.535	27.535	(1.133)	126	704029			0.00- 55.02	23.89
214 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.847	27.847	(1.145)	146	2845886	20.0000	19.208	80.00- 120.00	100.00
27.847	27.847	(1.145)	148	1850548			33.90- 93.90	65.03
27.847	27.845	(1.145)	111	1034200			5.97- 65.97	36.34
226 1,2,4-Trichlorobenzene						CAS #: 120-82-1		
29.952	29.959	(1.232)	180	2600134	20.0000	22.408	80.00- 120.00	100.00
29.952	29.953	(1.232)	182	2504954			67.09- 127.09	96.34
227 Hexachlorobutadiene						CAS #: 87-68-3		
30.076	30.076	(1.237)	225	2812412	20.0000	21.165	80.00- 120.00	100.00
30.076	30.076	(1.237)	223	1764989			33.13- 93.13	62.76

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
228 Naphthalene					CAS #: 91-20-3		
30.388	30.388 (1.250)	128	344143	2.00000	2.099	80.00- 120.00	100.00
30.388	30.391 (1.250)	127	49450			0.00- 45.10	14.37

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020512.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 20ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 15
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	191910	-0.12
123 1,4-Difluorobenze	564474	338684	790264	581363	2.99
163 Chlorobenzene-d5	513463	308078	718848	552554	7.61

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020512.d

Date : 05-FEB-2020 08:54

Client ID: Level 15

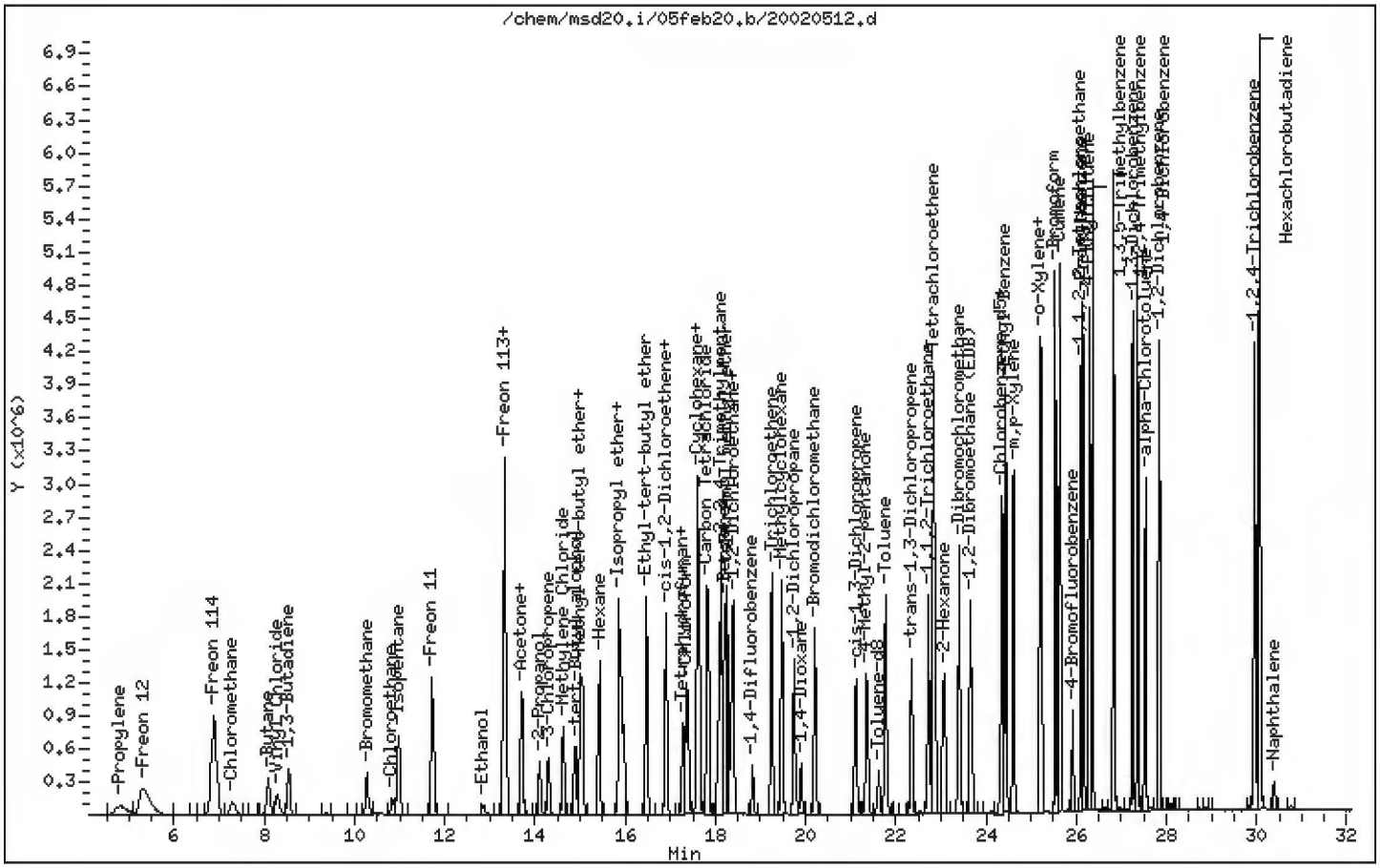
Instrument: msd20.i

Sample Info: 100mL# 3018-1179

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/05feb20.b/20020513.d
Lab Smp Id: ICAL Client Smp ID: Level 16
Inj Date : 05-FEB-2020 09:42
Operator : ef Inst ID: msd20.i
Smp Info : 200mL# 3018-1179
Misc Info : 40ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/05feb20.b/200l0205a.m
Meth Date : 05-Feb-2020 13:24 uefi Quant Type: ISTD
Cal Date : 05-FEB-2020 09:42 Cal File: 20020513.d
Als bottle: 1 Calibration Sample, Level: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
9 Propylene					CAS #: 115-07-1		
4.787	4.782 (0.277)	41	921382	40.0000	37.569	80.00- 120.00	100.00(T)
4.859	4.797 (0.281)	42	599881			38.85- 98.85	65.11
4.835	4.792 (0.279)	39	700904			50.09- 110.09	76.07
11 Freon 12					CAS #: 75-71-8		
5.341	5.321 (0.309)	85	4523540	40.0000	34.626	80.00- 120.00	100.00
5.341	5.328 (0.309)	87	1464025			2.53- 62.53	32.36
15 Freon 114					CAS #: 76-14-2		
6.908	6.887 (0.399)	135	3885519	40.0000	34.984	80.00- 120.00	100.00
6.908	6.893 (0.399)	137	1232252			2.72- 62.72	31.71
6.884	6.878 (0.398)	85	4521303			86.16- 146.16	116.36
17 Chloromethane					CAS #: 74-87-3		
7.318	7.297 (0.423)	50	1176346	40.0000	33.070	80.00- 120.00	100.00
7.318	7.308 (0.423)	52	389690			3.63- 63.63	33.13
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	271065	40.0000	41.468	80.00- 120.00	100.00(A)

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
23 Butane (continued)							
8.092	8.095 (0.468)	43	1810312			627.99- 687.99	667.85
25 Vinyl Chloride					CAS #: 75-01-4		
8.301	8.277 (0.480)	62	1436155	40.0000	38.318	80.00- 120.00	100.00
8.301	8.274 (0.480)	64	461820			2.83- 62.83	32.16
26 1,3-Butadiene					CAS #: 106-99-0		
8.544	8.541 (0.494)	54	1023977	40.0000	42.458	80.00- 120.00	100.00(A)
8.544	8.541 (0.494)	39	974622			69.65- 129.65	95.18
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	1215046	40.0000	41.021	80.00- 120.00	100.00(A)
10.279	10.278 (0.594)	96	1128542			60.82- 120.82	92.88
30 Chloroethane					CAS #: 75-00-3		
10.857	10.846 (0.627)	64	633695	40.0000	38.558	80.00- 120.00	100.00
10.857	10.835 (0.627)	49	159341			0.00- 55.00	25.14
10.857	10.835 (0.627)	66	206095			1.88- 61.88	32.52
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	1085840	40.0000	39.981	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	1437233			111.40- 171.40	132.36
10.977	10.976 (0.634)	42	1230897			96.33- 156.33	113.36
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	4820918	40.0000	37.740	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	3118754			35.14- 95.14	64.69
42 Ethanol					CAS #: 64-17-5		
12.876	12.870 (0.744)	45	425077	40.0000	39.995	80.00- 120.00	100.00
12.876	12.870 (0.744)	46	164342			6.43- 66.43	38.66
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	3965126	40.0000	33.721	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	2579935			34.89- 94.89	65.07
13.315	13.320 (0.770)	101	4003560			70.13- 130.13	100.97
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.315	13.331 (0.770)	98	1078681	40.0000	40.623	80.00- 120.00	100.00(A)
13.315	13.324 (0.770)	61	2458948			197.76- 257.76	227.96
13.315	13.324 (0.770)	96	1704156			124.14- 184.14	157.99
52 Acetone					CAS #: 67-64-1		
13.700	13.706 (0.792)	58	669460	40.0000	37.391	80.00- 120.00	100.00
13.700	13.706 (0.792)	43	2074824			291.24- 351.24	309.93

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
56 Carbon Disulfide						CAS #: 75-15-0		
13.727	13.726	(0.793)	76	4591025	40.0000	37.366	80.00- 120.00	100.00
57 2-Propanol						CAS #: 67-63-0		
14.112	14.110	(0.816)	45	2116438	40.0000	42.394	80.00- 120.00	100.00(A)
14.112	14.114	(0.816)	43	492394			0.00- 59.88	23.27
14.112	14.110	(0.816)	59	92579			0.00- 34.36	4.37
58 3-Chloropropene						CAS #: 107-05-1		
14.304	14.295	(0.827)	76	611656	40.0000	46.043	80.00- 120.00	100.00(A)
14.277	14.295	(0.825)	41	1347510			188.05- 248.05	220.31
66 Methylene Chloride						CAS #: 75-09-2		
14.634	14.632	(0.846)	84	1455060	40.0000	32.729	80.00- 120.00	100.00
14.634	14.632	(0.846)	49	1585699			79.75- 139.75	108.98
14.634	14.632	(0.846)	51	490779			4.54- 64.54	33.73
71 tert-Butyl alcohol						CAS #: 75-65-0		
14.908	14.907	(0.862)	59	2921449	40.0000	44.851	80.00- 120.00	100.00(A)
14.908	14.903	(0.862)	41	724373			0.00- 57.20	24.79
14.908	14.907	(0.862)	57	301546			0.00- 41.27	10.32
72 Methyl tert-butyl ether						CAS #: 1634-04-4		
15.018	15.017	(0.868)	73	4573573	40.0000	43.836	80.00- 120.00	100.00(A)
15.018	15.017	(0.868)	57	967498			0.00- 50.29	21.15
15.018	15.017	(0.868)	41	903657			0.00- 53.61	19.76
73 trans-1,2-Dichloroethene						CAS #: 156-60-5		
15.073	15.072	(0.871)	98	1095898	40.0000	39.504	80.00- 120.00	100.00
15.073	15.072	(0.871)	61	2112718			166.73- 226.73	192.78
15.073	15.072	(0.871)	96	1679143			131.17- 191.17	153.22
78 Hexane						CAS #: 110-54-3		
15.430	15.428	(0.892)	57	2280629	40.0000	42.429	80.00- 120.00	100.00(A)
15.430	15.428	(0.892)	43	1369693			27.95- 87.95	60.06
15.430	15.428	(0.892)	86	437932			0.00- 48.76	19.20
83 Isopropyl ether						CAS #: 108-20-3		
15.869	15.872	(0.917)	45	4718387	40.0000	43.052	80.00- 120.00	100.00(A)
15.869	15.872	(0.917)	87	1615066			3.75- 63.75	34.23
15.869	15.872	(0.917)	59	592423			0.00- 43.23	12.56
82 1,1-Dichloroethane						CAS #: 75-34-3		
15.924	15.923	(0.920)	63	2850988	40.0000	35.961	80.00- 120.00	100.00
15.924	15.923	(0.920)	65	924597			1.61- 61.61	32.43

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
86 Vinyl Acetate					CAS #: 108-05-4		
15.979	15.978 (0.923)	86	450719	40.0000	46.090	80.00- 120.00	100.00(A)
15.979	15.978 (0.923)	42	338829			52.54- 112.54	75.18
15.979	15.978 (0.923)	43	3685507			783.51- 843.51	817.70
88 Ethyl-tert-butyl ether					CAS #: 637-92-3		
16.468	16.467 (0.952)	59	4954821	40.0000	43.411	80.00- 120.00	100.00(A)
16.468	16.467 (0.952)	87	2339986			16.88- 76.88	47.23
16.468	16.467 (0.952)	41	933788			0.00- 52.99	18.85
91 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.903	16.902 (0.977)	98	1288944	40.0000	39.812	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	2275441			148.56- 208.56	176.54
16.903	16.902 (0.977)	96	2018091			126.55- 186.55	156.57
92 2-Butanone					CAS #: 78-93-3		
16.924	16.926 (0.978)	72	817449	40.0000	41.837	80.00- 120.00	100.00(A)
16.924	16.923 (0.978)	43	2747437			309.31- 369.31	336.10
16.924	16.926 (0.978)	57	234012			0.00- 58.97	28.63
99 Tetrahydrofuran					CAS #: 109-99-9		
17.270	17.283 (0.998)	42	1539259	40.0000	43.157	80.00- 120.00	100.00(A)
17.270	17.283 (0.998)	71	745585			17.62- 77.62	48.44
17.270	17.283 (0.998)	72	797317			20.52- 80.52	51.80
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	217023	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	167227			46.61- 106.61	77.05
17.302	17.302 (1.000)	49	198131			58.08- 118.08	91.29
100 Chloroform					CAS #: 67-66-3		
17.368	17.379 (1.004)	83	3807792	40.0000	35.326	80.00- 120.00	100.00
17.368	17.383 (1.004)	85	2493656			35.58- 95.58	65.49
102 Cyclohexane					CAS #: 110-82-7		
17.597	17.605 (1.017)	84	3256306	40.0000	44.565	80.00- 120.00	100.00(A)
17.597	17.602 (1.017)	56	3211737			66.69- 126.69	98.63
17.597	17.602 (1.017)	41	1732848			26.30- 86.30	53.22
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.619	17.631 (1.018)	97	4064426	40.0000	36.331	80.00- 120.00	100.00
17.619	17.633 (1.018)	99	2643019			34.72- 94.72	65.03
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	4487018	40.0000	38.181	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	4666273			72.39- 132.39	103.99

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  113 2,2,4-Trimethylpentane                          CAS #: 540-84-1
 18.121  18.121 (1.047)    56   3764854 40.0000   38.807  80.00- 120.00   100.00
 18.121  18.121 (1.047)    57  11440640                  245.12- 305.12   303.88
 18.121  18.121 (1.047)    41   2906291                   50.98- 110.98    77.20
-------------------------------------------------------------------------------
  116 Benzene                                         CAS #: 71-43-2
 18.203  18.206 (0.967)    78   5165764 40.0000   40.111  80.00- 120.00   100.00(A)
 18.203  18.203 (0.967)    77   1186244                    0.00-  54.15    22.96
-------------------------------------------------------------------------------
$ 117 1,2-Dichloroethane-d4                           CAS #: 17060-07-0
 18.224  18.224 (1.053)    65    201093 5.00000    4.302  80.00- 120.00   100.00
 18.224  18.224 (1.053)    67    127139                    30.76-  90.76    63.22
-------------------------------------------------------------------------------
  119 tert-Amyl methyl ether                          CAS #: 994-05-8
 18.265  18.265 (0.970)    87   1295354 40.0000   44.012  80.00- 120.00   100.00(A)
 18.265  18.265 (0.970)    73   4968818                  364.30- 424.30   383.59
 18.265  18.265 (0.970)    55   1253332                   83.00- 143.00    96.76
-------------------------------------------------------------------------------
  120 1,2-Dichloroethane                              CAS #: 107-06-2
 18.347  18.347 (0.974)    62   2338251 40.0000   35.426  80.00- 120.00   100.00
 18.347  18.345 (0.974)    64    775086                    0.98-  60.98    33.15
-------------------------------------------------------------------------------
  121 Heptane                                         CAS #: 142-82-5
 18.409  18.404 (0.978)    57   1420640 40.0000   44.091  80.00- 120.00   100.00(A)
 18.409  18.406 (0.978)   100    737366                   22.83-  82.83    51.90
 18.409  18.409 (0.978)    43   2393466                  143.19- 203.19   168.48
-------------------------------------------------------------------------------
* 123 1,4-Difluorobenzene                             CAS #: 540-36-3
 18.832  18.833 (1.000)   114    592326 5.00000           80.00- 120.00   100.00
 18.832  18.833 (1.000)    88     84921                    0.00-  44.22    14.34
-------------------------------------------------------------------------------
  125 Trichloroethene                                 CAS #: 79-01-6
 19.256  19.256 (1.022)   130   3005654 40.0000   39.333  80.00- 120.00   100.00
 19.256  19.254 (1.022)    95   2558764                   54.82- 114.82    85.13
 19.256  19.259 (1.022)    97   1674762                   25.35-  85.35    55.72
-------------------------------------------------------------------------------
  127 Methylcyclohexane                               CAS #: 108-87-2
 19.479  19.480 (1.034)    83   3276921 40.0000   46.064  80.00- 120.00   100.00(A)
 19.479  19.480 (1.034)    55   2268399                   40.96- 100.96    69.22
 19.479  19.480 (1.034)    56    734088                    0.00-  52.45    22.40
-------------------------------------------------------------------------------
  132 1,2-Dichloropropane                             CAS #: 78-87-5
 19.747  19.747 (1.049)    63   1862246 40.0000   38.215  80.00- 120.00   100.00
 19.747  19.747 (1.049)    62   1286944                   40.35- 100.35    69.11
 19.747  19.750 (1.049)    41    983246                   24.96-  84.96    52.80
-------------------------------------------------------------------------------
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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  136 1,4-Dioxane                                  CAS #: 123-91-1
 19.903  19.901 (1.057)    88   1327853 40.0000   46.475  80.00- 120.00   100.00(A)
 19.903  19.906 (1.057)    58    796232                   31.33-  91.33    59.96
--------------------------------------------------------------------------------
  138 Bromodichloromethane                         CAS #: 75-27-4
 20.216  20.216 (0.832)    83   4152497 40.0000   37.587  80.00- 120.00   100.00
 20.216  20.216 (0.832)    85   2690013                   34.54-  94.54    64.78
--------------------------------------------------------------------------------
  144 cis-1,3-Dichloropropene                      CAS #: 10061-01-5
 21.118  21.115 (1.121)    75   3014731 40.0000   44.725  80.00- 120.00   100.00(A)
 21.118  21.120 (1.121)    77    979563                    2.26-  62.26    32.49
 21.118  21.120 (1.121)    39   1338825                   13.91-  73.91    44.41
--------------------------------------------------------------------------------
  145 4-Methyl-2-pentanone                         CAS #: 108-10-1
 21.352  21.352 (1.134)    43   3491658 40.0000   46.947  80.00- 120.00   100.00(A)
 21.352  21.354 (1.134)    58   1425894                    8.83-  68.83    40.84
 21.352  21.362 (1.134)    85    748647                    0.00-  50.74    21.44
--------------------------------------------------------------------------------
$ 146 Toluene-d8                                   CAS #: 2037-26-5
 21.617  21.617 (1.148)    98    617999 5.00000    5.393  80.00- 120.00   100.00
 21.617  21.619 (1.148)    70     62354                    0.00-  41.39    10.09
 21.617  21.617 (1.148)   100    396721                   35.17-  95.17    64.19
--------------------------------------------------------------------------------
  147 Toluene                                      CAS #: 108-88-3
 21.773  21.773 (1.156)    91   6641690 40.0000   42.328  80.00- 120.00   100.00(A)
 21.773  21.775 (1.156)    92   3875581                   27.71-  87.71    58.35
--------------------------------------------------------------------------------
  150 trans-1,3-Dichloropropene                    CAS #: 10061-02-6
 22.350  22.350 (0.919)    75   3007109 40.0000   44.636  80.00- 120.00   100.00(A)
 22.350  22.354 (0.919)    77    954297                    3.18-  63.18    31.73
 22.350  22.346 (0.919)    39   1240911                   13.49-  73.49    41.27
--------------------------------------------------------------------------------
  155 1,1,2-Trichloroethane                        CAS #: 79-00-5
 22.728  22.724 (0.935)    97   2411557 40.0000   33.172  80.00- 120.00   100.00
 22.728  22.728 (0.935)    99   1508477                   31.74-  91.74    62.55
 22.728  22.728 (0.935)    83   1981418                   51.17- 111.17    82.16
--------------------------------------------------------------------------------
  156 Tetrachloroethene                            CAS #: 127-18-4
 22.844  22.844 (0.940)   166   4763269 40.0000   38.877  80.00- 120.00   100.00
 22.844  22.844 (0.940)   129   3021588                   34.89-  94.89    63.44
 22.844  22.844 (0.940)   131   2968540                   32.11-  92.11    62.32
--------------------------------------------------------------------------------
  158 2-Hexanone                                   CAS #: 591-78-6
 23.076  23.076 (0.949)    58   2006401 40.0000   50.196  80.00- 120.00   100.00(A)
 23.047  23.072 (0.948)    43   3515611                  150.34- 210.34   175.22
 23.076  23.076 (0.949)   100    494631                    0.00-  55.47    24.65
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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  160 Dibromochloromethane                          CAS #: 124-48-1
 23.396  23.405 (0.962)   129   5507985 40.0000   39.801  80.00- 120.00   100.00
 23.396  23.402 (0.962)   127   4218912                   46.51- 106.51    76.60
-------------------------------------------------------------------------------
  161 1,2-Dibromoethane (EDB)                       CAS #: 106-93-4
 23.657  23.657 (0.973)   107   4085173 40.0000   38.440  80.00- 120.00   100.00
 23.657  23.657 (0.973)   109   3907927                   64.58- 124.58    95.66
-------------------------------------------------------------------------------
* 163 Chlorobenzene-d5                              CAS #: 3114-55-4
 24.311  24.311 (1.000)   117    567331 5.00000           80.00- 120.00   100.00
 24.311  24.311 (1.000)    82    275947                   18.72-  78.72    48.64
-------------------------------------------------------------------------------
  165 Chlorobenzene                                 CAS #: 108-90-7
 24.352  24.355 (1.002)   112   5680926 40.0000   39.832  80.00- 120.00   100.00
 24.352  24.360 (1.002)   114   1863627                    1.57-  61.57    32.80
 24.352  24.352 (1.002)    77   2953928                   21.74-  81.74    52.00
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                 CAS #: 100-41-4
 24.435  24.435 (1.005)   106   2851836 40.0000   45.360  80.00- 120.00   100.00(A)
 24.435  24.435 (1.005)    91   8531005                  270.24- 330.24   299.14
-------------------------------------------------------------------------------
  169 m,p-Xylene                                    CAS #: 108-38-3
 24.621  24.621 (1.013)   106   3334266 40.0000   43.950  80.00- 120.00   100.00(A)
 24.621  24.618 (1.013)    91   6319377                  159.55- 219.55   189.53
-------------------------------------------------------------------------------
  171 o-Xylene                                      CAS #: 95-47-6
 25.198  25.198 (1.036)   106   3148086 40.0000   46.266  80.00- 120.00   100.00(A)
 25.198  25.198 (1.036)    91   6296379                  167.89- 227.89   200.01
-------------------------------------------------------------------------------
  172 Styrene                                       CAS #: 100-42-5
 25.219  25.219 (1.037)   104   5189849 40.0000   43.970  80.00- 120.00   100.00(A)
 25.219  25.219 (1.037)    78   2445069                   16.95-  76.95    47.11
-------------------------------------------------------------------------------
  174 Bromoform                                     CAS #: 75-25-2
 25.540  25.540 (1.051)   173   6588385 40.0000   40.240  80.00- 120.00   100.00(A)
 25.540  25.540 (1.051)   171   3339478                   19.65-  79.65    50.69
-------------------------------------------------------------------------------
  175 Cumene                                        CAS #: 98-82-8
 25.635  25.635 (1.054)   105   9910931 40.0000   44.637  80.00- 120.00   100.00(A)
 25.635  25.635 (1.054)   120   2823336                    0.00-  58.11    28.49
-------------------------------------------------------------------------------
$ 177 4-Bromofluorobenzene                          CAS #: 460-00-4
 25.920  25.920 (1.066)   174    445939 5.00000    5.139  80.00- 120.00   100.00
 25.920  25.920 (1.066)    95    385063                   59.22- 119.22    86.35
 25.920  25.920 (1.066)   176    430270                   69.23- 129.23    96.49
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
181 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.109	26.109 (1.074)	83	5118073	40.0000	34.279	80.00- 120.00	100.00
26.109	26.109 (1.074)	85	3336185			35.51- 95.51	65.18
182 Propylbenzene					CAS #: 103-65-1		
26.147	26.154 (1.076)	91	10503620	40.0000	40.464	80.00- 120.00	100.00(A)
26.147	26.154 (1.076)	120	2735349			0.00- 55.59	26.04
188 4-Ethyltoluene					CAS #: 622-96-8		
26.299	26.299 (1.082)	105	9381338	40.0000	41.963	80.00- 120.00	100.00(A)
26.299	26.295 (1.082)	120	3000000			1.51- 61.51	31.98
190 1,3,5-Trimethylbenzene					CAS #: 108-67-8		
26.356	26.356 (1.084)	105	9341467	40.0000	42.932	80.00- 120.00	100.00(A)
26.356	26.356 (1.084)	120	4777304			21.30- 81.30	51.14
196 1,2,4-Trimethylbenzene					CAS #: 95-63-6		
26.830	26.830 (1.104)	105	8443245	40.0000	46.233	80.00- 120.00	100.00(A)
26.830	26.830 (1.104)	120	4071497			18.64- 78.64	48.22
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.255	27.255 (1.121)	146	6190246	40.0000	37.128	80.00- 120.00	100.00
27.255	27.255 (1.121)	148	3982761			34.75- 94.75	64.34
27.255	27.255 (1.121)	111	2149858			5.38- 65.38	34.73
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.364	27.364 (1.126)	146	6188906	40.0000	38.453	80.00- 120.00	100.00
27.364	27.364 (1.126)	148	4013506			34.92- 94.92	64.85
27.364	27.364 (1.126)	111	2072520			3.67- 63.67	33.49
212 alpha-Chlorotoluene					CAS #: 100-44-7		
27.535	27.535 (1.133)	91	6379839	40.0000	45.932	80.00- 120.00	100.00(A)
27.535	27.535 (1.133)	126	1517567			0.00- 55.02	23.79
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.847	27.847 (1.145)	146	5809628	40.0000	38.190	80.00- 120.00	100.00
27.847	27.847 (1.145)	148	3738120			33.90- 93.90	64.34
27.847	27.845 (1.145)	111	2096548			5.97- 65.97	36.09
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
29.952	29.959 (1.232)	180	6035091	40.0000	50.657	80.00- 120.00	100.00(A)
29.952	29.953 (1.232)	182	5863747			67.09- 127.09	97.16
227 Hexachlorobutadiene					CAS #: 87-68-3		
30.076	30.076 (1.237)	225	6168309	40.0000	45.212	80.00- 120.00	100.00(A)
30.076	30.076 (1.237)	223	3791290			33.13- 93.13	61.46

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
228 Naphthalene						CAS #: 91-20-3		
30.388	30.388	(1.250)	128	843622	4.00000	5.012	80.00- 120.00	100.00
30.388	30.391	(1.250)	127	111356			0.00- 45.10	13.20

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020513.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd20.i/05feb20.b/200l0205a.m
Misc Info: 40ppbv (50ppbv)

Calibration Date: 05-FEB-2020
Calibration Time: 07:34
Client Smp ID: Level 16
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	192135	115281	268989	217023	12.95
123 1,4-Difluorobenze	564474	338684	790264	592326	4.93
163 Chlorobenzene-d5	513463	308078	718848	567331	10.49

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.02
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/05feb20.b/20020513.d

Date : 05-FEB-2020 09:42

Client ID: Level 16

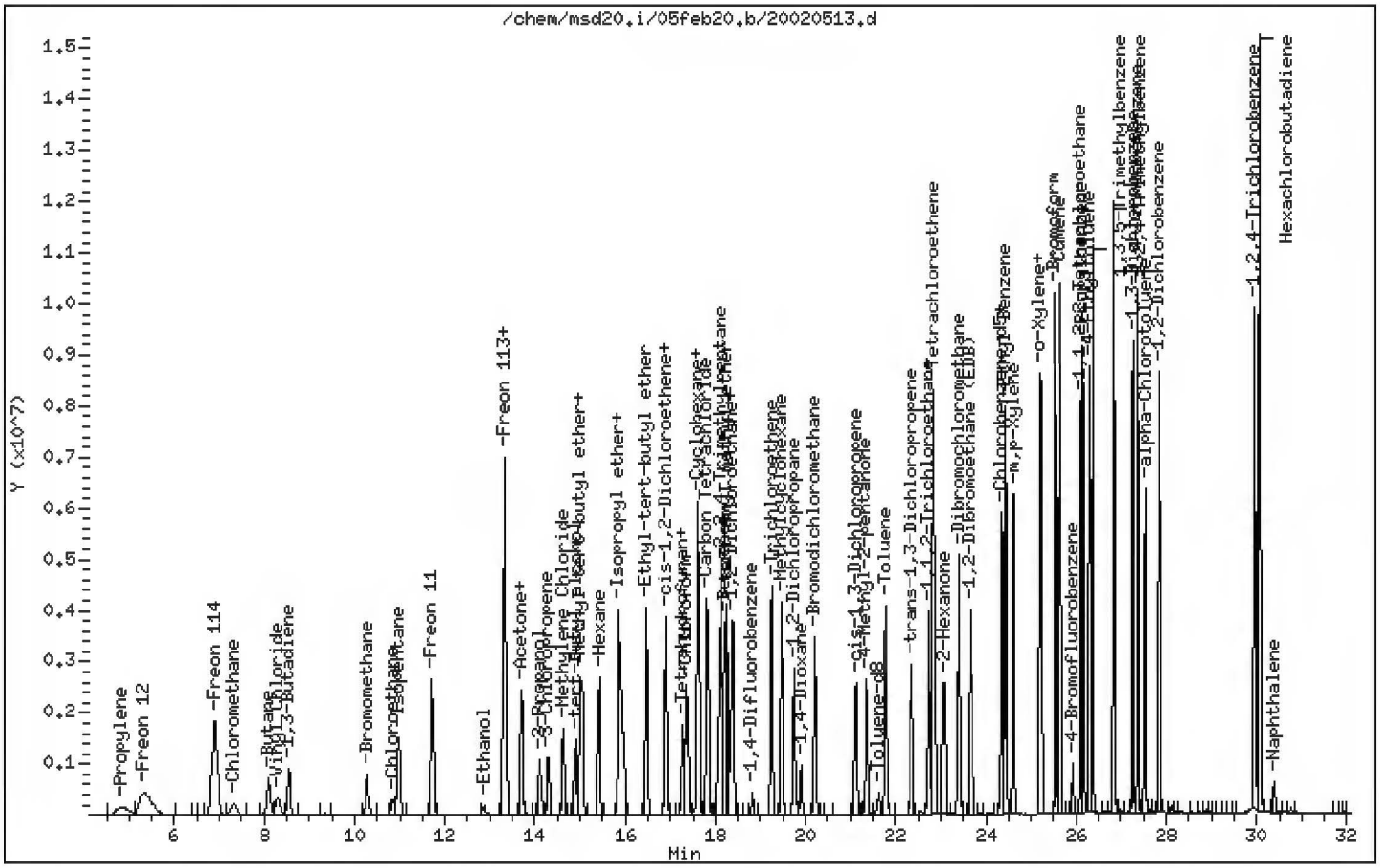
Instrument: msd20.i

Sample Info: 200mL# 3018-1179

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics 4Q 2019 TO-14A/TO-15 SIM DoD 5.0 Limit of Detections (LODs) Effective 12-13-19						
CAS #	Analyte	Molecular Weight (MW)	LOD (ppbv)	LOQ (ppbv)	LOD (ug/m3)	LOQ (ug/m3)
71-55-6	1,1,1-Trichloroethane	133.42	0.01	0.02	0.0545685	0.10914
79-34-5	1,1,2,2-Tetrachloroethane	167.86	0.01	0.02	0.0686544	0.13731
79-00-5	1,1,2-Trichloroethane	133.42	0.01	0.02	0.0545685	0.10914
75-34-3	1,1-Dichloroethane	98.97	0.01	0.02	0.0404785	0.08096
75-35-4	1,1-Dichloroethene	96.95	0.005	0.01	0.0198262	0.03965
106-93-4	1,2-Dibromoethane (EDB)	187.88	0.01	0.02	0.0768425	0.15369
107-06-2	1,2-Dichloroethane	98.96	0.01	0.02	0.0404744	0.08095
106-46-7	1,4-Dichlorobenzene	147.01	0.015	0.02	0.0901902	0.12025
71-43-2	Benzene	78.11	0.01	0.05	0.0319468	0.15973
56-23-5	Carbon Tetrachloride	153.84	0.01	0.02	0.0629202	0.12584
75-00-3	Chloroethane	64.52	0.01	0.05	0.0263885	0.13194
67-66-3	Chloroform	119.39	0.01	0.02	0.0488303	0.09766
74-87-3	Chloromethane	50.49	0.01	0.5	0.0206503	1.0325
156-59-2	cis-1,2-Dichloroethene	96.94	0.01	0.02	0.0396483	0.0793
100-41-4	Ethyl Benzene	106.16	0.01	0.02	0.0434192	0.08684
76-13-1	Freon 113	187.39	0.01	0.02	0.0766421	0.15328
76-14-2	Freon 114	170.93	0.01	0.02	0.06991	0.13982
75-69-4	Freon 11	137.38	0.01	0.02	0.0561881	0.11238
75-71-8	Freon 12	120.92	0.01	0.02	0.049456	0.09891
108-38-3	m,p-Xylene	106.17	0.01	0.04	0.0434233	0.17369
1634-04-4	Methyl tert-butyl ether	88.15	0.01	0.1	0.0360532	0.36053
91-20-3	Naphthalene	128.17	0.02	0.05	0.1048	0.2621
95-47-6	o-Xylene	106.17	0.01	0.02	0.0434233	0.08685
127-18-4	Tetrachloroethene	165.85	0.01	0.02	0.0678323	0.13566
108-88-3	Toluene	92.13	0.01	0.05	0.037681	0.1884
156-60-5	trans-1,2-Dichloroethene	96.94	0.01	0.1	0.0396483	0.39648
79-01-6	Trichloroethene	131.39	0.01	0.02	0.0537423	0.10748
75-01-4	Vinyl Chloride	62.5	0.005	0.01	0.0127812	0.02556

Instrument ID - msd20.i file msd20.i/13dec19.b/20121307sima.d msd20.i/13dec19.b/20121308sima.d msd20.i/17dec19.b/20121724sima.d/ msd20.i//25sep19.b//20092508sim.d

0.04 ppbv SIM MDL

Standard #3128-68 [0.05 ppbv], 200 mL Load Volume

spiked at 0.04 ppbv

Report Date : 12-Dec-2019 15:18

US32TAR1
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05dec19.b/201911121a.m/2019s1121a.m
Batch File: /chem/msd20.i/05dec19.b
Inst ID: msd20.i

mdl.rp (05dec19.b)

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20120510sim	20120511sim	20120512sim	20120907sim	20120908sim	20120909sim	20121007sim	20121008sim
INJ.DATE:	05-DEC-2019	05-DEC-2019	05-DEC-2019	09-DEC-2019	09-DEC-2019	09-DEC-2019	10-DEC-2019	10-DEC-2019
INJ.TIME:	15:04	15:43	16:22	09:49	10:28	11:07	11:11	11:50

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	MDLSpike	MDLBlank
1 Freon 12	45.33	45.20	45.45	44.19	43.87	42.33	45.60	42.35	44.29	1.35	4.05	20	40	
2 Freon 114	46.59	47.56	45.99	44.95	45.34	43.46	47.24	45.73	45.86	1.32	3.96	20		
3 Chloromethane	47.95	51.37	52.05	50.31	50.60	50.92	49.84	53.11	50.77	1.54	4.61	500		
4 Vinyl Chloride	36.64	35.79	37.98	35.59	38.21	36.98	39.12	36.75	37.13	1.22	3.65	10 GR 12/18/19		
5 Chloroethane	31.91	31.88	31.90	31.90	34.37	37.68	27.12	33.86	32.58	2.99	8.96	50		
6 Freon 11	39.01	39.62	40.49	39.75	40.36	40.96	40.40	41.85	40.31	0.87	2.61	20		
7 Freon 113	45.77	44.74	46.73	45.85	44.44	44.88	46.52	44.00	45.37	0.99	2.98	20		
8 1,1-Dichloroethene	36.87	36.12	36.72	37.35	36.83	35.88	38.99	33.16	36.49	1.64	4.93	10		
9 Methyl tert-butyl ethe	28.42	28.60	29.48	26.97	27.68	28.03	28.96	26.99	28.14	0.90	2.70	100		
10 trans-1,2-Dichloroethe	37.40	37.99	40.55	35.60	36.65	35.96	40.31	39.30	37.97	1.91	5.74	100		
11 1,1-Dichloroethane	37.40	38.32	39.80	37.84	38.15	38.04	38.83	37.95	38.29	0.73	2.20	20		
12 cis-1,2-Dichloroethene	37.21	35.78	37.65	35.44	35.63	34.98	37.27	35.60	36.19	1.01	3.04	20		
* 13 Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00			
14 Chloroform	48.34	46.67	49.13	46.31	44.05	47.97	48.09	46.98	47.19	1.58	4.74	20		
15 1,1,1-Trichloroethane	40.68	41.01	42.07	40.09	41.11	41.01	41.51	40.15	40.95	0.66	1.98			
16 Carbon Tetrachloride	31.05	31.72	32.58	33.29	33.22	34.19	34.34	33.60	33.00	1.15	3.46			
17 Benzene	45.35	45.24	45.12	44.04	44.68	44.14	45.17	45.35	44.89	0.54	1.61	50		4.73

Reviewer 1 GR Date: 12/12/2019
Reviewer 2 Date: 12/18/19

$\bar{x}$ = ~~4.692~~ 4.962 GR 12/12/19

$2(\bar{x})$ = 9.924

$3(\bar{x})$ = 14.886

$4(\bar{x})$ = 19.848

MDL Verification spike (0.010 ppbv) file 20121308sima

Special MDL Verification spike (0.005 ppbv) file 20121307sima

The ratio of the mean recovered concentration and the MDL was between 1 and 20 for all compounds, except:

1,1,1-Trichloroethane
Trichloroethene
Tetrachloroethane

No Naphthalene, Naphthalene MDL expires 01/14/20

US32TAR1
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05dec19.b/2019l1121a.m/2019s1121a.m
Batch File: /chem/msd20.i/05dec19.b
Inst ID: msd20.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	MDL Spike	MDL Blank
$	18 1,2-Dichloroethane-d4	4938.52	4944.38	5021.29	4865.73	4904.57	4906.32	4925.15	4849.56	4919.44	52.85	158.45			
	19 1,2-Dichloroethane	47.72	49.18	48.39	48.14	47.44	48.32	47.92	47.99	48.14	0.52	1.56	20	40	4.21
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00			
	21 Trichloroethene	49.98	50.26	50.53	50.26	50.15	50.15	51.70	51.70	50.59	0.70	2.11	20		2.40
$	22 Toluene-d8	5128.18	5057.48	5113.05	5124.53	5055.61	5073.66	5110.55	5025.42	5086.06	38.09	114.20			
	23 Toluene	46.27	45.51	46.85	45.54	45.64	45.12	46.35	44.71	45.75	0.70	2.10	50		3.04
	24 trans-1,3-Dichloroprop	27.64	27.57	27.31	27.72	27.78	26.37	28.86	28.94	27.77	0.83	2.48	20		~~8.44~~ 5.94 GR 12/17
	25 1,1,2-Trichloroethane	48.57	49.45	49.48	47.62	48.25	50.75	48.62	50.81	49.19	1.15	3.45			
	26 Tetrachloroethene	48.83	48.90	49.88	48.05	48.41	48.21	48.80	49.40	48.81	0.61	1.83			
	27 1,2-Dibromoethane (EDB	46.32	47.17	46.22	46.29	46.22	46.08	47.98	47.33	46.70	0.70	2.09			7.75
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00			
	29 Chlorobenzene	48.75	49.51	49.65	48.28	47.84	49.08	50.57	49.11	49.10	0.85	2.54	20		3.65
	30 Ethyl Benzene	38.65	39.15	39.02	37.06	38.65	37.66	39.28	39.06	38.57	0.80	2.38	20		~~4.38~~ GR 12/17
	31 m,p-Xylene	35.95	36.55	36.03	34.63	35.47	35.85	36.45	36.02	35.87	0.61	1.82	40		3.64
	32 o-Xylene	35.88	36.10	35.96	35.10	35.81	35.11	35.25	34.33	35.44	0.60	1.81	20		2.33
$	33 4-Bromofluorobenzene	4820.17	4853.42	4874.75	4890.97	4875.85	4901.26	4901.42	4862.12	4872.50	27.34	81.96			
	34 1,1,2,2-Tetrachloroeth	54.36	52.39	52.04	51.53	50.73	51.29	57.64	52.99	52.87	2.23	6.68	20		GD 12/17 ~~5.07~~ 5.67
	35 1,3-Dichlorobenzene	55.95	51.29	51.09	52.57	49.86	49.81	57.41	52.96	52.62	2.77	8.32	100		~~11.18~~ 5.75 4.37
	36 1,4-Dichlorobenzene	55.38	50.23	48.98	49.09	48.88	45.21	54.08	49.92	50.22	3.19	9.57	20		13.02
	37 1,2-Dichlorobenzene	56.00	53.20	51.06	51.39	49.78	49.47	57.70	51.58	52.52	2.94	8.82	50		13.00 GR 12/17
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			

TO15 SIM MDL Blank

Humid Lab Blank # 7632

Report Date : 18-DEC-2019 10:32

US32TAR1

SPIKED METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05dec19.b/201911121a.m/2019s1121a.m

Batch File: /chem/msd20.i/05dec19.b

Instrument Names: msd20.i

Student T 2.998 for 8 Replicates with 99% Confidence

Spiked ID(s) _____ Spiked Vol(s) _____

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20120307simMDLBLK	20120308simMDLBLK	20120406simMDLBLK	20120407simMDLBLK	20120408simMDLBLK	20120506simMDLBLK	20120507simMDLBLK	20120508simMDLBLK
INJ.DATE:	03-DEC-2019	03-DEC-2019	04-DEC-2019	04-DEC-2019	04-DEC-2019	05-DEC-2019	05-DEC-2019	05-DEC-2019
INJ.TIME:	12:49	14:28	11:21	12:19	13:18	11:22	12:14	13:10

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	SPK AMT	RL	RATIO	MDL	
1 Freon 12	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
2 Freon 114	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
3 Chloromethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
4 Vinyl Chloride	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.00	1.00	0.000000	
5 Chloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	50.00	1.00	0.000000	
6 Freon 11	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
7 Freon 113	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
8 1,1-Dichloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.00	1.00	0.000000	
9 Methyl tert-butyl ether	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
10 trans-1,2-Dichloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
11 1,1-Dichloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
12 cis-1,2-Dichloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
* 13 Bromochloromethane	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	0.000000	0.000000	20.00	1.00	0.000000	
14 Chloroform	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
15 1,1,1-Trichloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
16 Carbon Tetrachloride	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
17 Benzene	3.54	3.86	3.59	3.73	2.51	3.13	3.05	3.65	3.38	0.452	0.000000	50.00	2.50	1.35	4.73
$ 18 1,2-Dichloroethane-d4	5276.50	5350.40	5065.30	5107.00	5119.30	4859.60	4846.50	4837.20	5057.72	197.23	0.000000	20.00	8.55	591.30	
19 1,2-Dichloroethane	4.21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.526	1.49	0.000000	20.00	0.118	4.46	Ratio 1 to 20 Fai
* 20 1,4-Difluorobenzene	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	0.000000	0.000000	20.00	1.00	0.000000	
21 Trichloroethene	2.40	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.300	0.850	0.000000	20.00	0.118	2.55	Ratio 1 to 20 Fai

Reviewer 1 GR 12/18/19 Date: 12/18/19

Reviewer 2 [illegible] Date: 12/18/19

Report Date : 18-DEC-2019 10:32

US32TAR1

SPIKED METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05dec19.b/2019l1121a.m/2019s1121a.m

Batch File: /chem/msd20.i/05dec19.b

Instrument Names: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	SPK AMT	RL	RATIO	MDL	
$ 22 Toluene-d8	4985.80	4978.00	5041.70	5125.30	5121.90	5104.40	5095.90	5084.10	5067.14	58.67	0.000000	20.00	28.81	175.89	
23 Toluene	1.52	1.91	2.22	1.65	1.84	2.37	2.48	2.17	2.02	0.342	0.000000	50.00	1.97	1.02	3.04
24 trans-1,3-Dichloropropene	5.94	3.17	4.07	2.79	2.09	2.67	1.46	0.000000	2.77	1.76	0.000000	20.00	0.524	5.29	Ratio 1 to 20 Fai
25 1,1,2-Trichloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
26 Tetrachloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
27 1,2-Dibromoethane (EDB)	6.18	3.63	4.75	3.26	2.28	3.75	2.89	1.80	3.57	1.40	0.000000	20.00	0.853	4.18	7.75 Ratio 1 to 20 Fai
* 28 Chlorobenzene-d5	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	0.000000	0.000000	20.00	1.00	0.000000	
29 Chlorobenzene	3.65	2.17	3.08	2.56	0.000000	3.34	2.11	1.96	2.36	1.14	0.000000	20.00	0.693	3.40	Ratio 1 to 20 -Fai
30 Ethyl Benzene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.00	1.00	0.000000	
31 m,p-Xylene	2.35	0.000000	2.83	2.23	2.36	3.61	3.27	3.07	2.47	1.11	0.000000	40.00	0.741	3.33	Ratio 1 to 20 Fai
32 o-Xylene	2.33	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.291	0.824	0.000000	20.00	0.118	2.47	Ratio 1 to 20 Fai
$ 33 4-Bromofluorobenzene	5114.00	5147.00	4994.40	4952.80	4951.10	4871.50	4881.10	4858.70	4971.32	109.08	0.000000	20.00	15.20	327.03	
34 1,1,2,2-Tetrachloroethane	2.42	0.000000	5.07	2.42	1.71	5.67	3.77	2.19	2.91	1.85	0.000000	20.00	0.524	5.55	Ratio 1 to 20 Fai
35 1,3-Dichlorobenzene	5.97	2.59	6.85	3.42	2.39	6.67	3.74	2.50	4.27	1.92	0.000000	20.00	0.742	5.75	Ratio 1 to 20 Fai
36 1,4-Dichlorobenzene	8.07	4.02	8.69	4.05	3.12	8.78	4.60	3.27	5.57	2.48	0.000000	20.00	0.748	7.45	10.02 Ratio 1 to 20 Fai
37 1,2-Dichlorobenzene	6.45	2.17	8.53	3.83	2.69	8.97	5.09	3.12	5.11	2.63	0.000000	20.00	0.647	7.89	13.02 Ratio 1 to 20 Fai
38 Naphthalene	5.40	2.42	6.89	3.90	2.95	7.17	3.97	2.79	4.44	1.85	0.000000	50.00	0.801	5.54	13.00 Ratio 1 to 20 Fai

Reviewer 1 GR Date: 12/18/19

Reviewer 2 _____ Date: _____

— Naph only —
MSD20

Report Date : 15-Jan-2019 13:41

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/08Jan19.b/201811210b.m/2018s1210a.m
Batch File: /chem/msd20.i/08Jan19.b
Inst ID: msd20.i

Spiked ID — Spiked Vol
Std# 3084-3 (1.0ppbv) 10 ml
Naph = (0.1ppbv) = 0.05ppbv

MDL verification 3084-3 Load 10ml 0.02ppb
File# 20011608sim

PPTV

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20010808sim	20010809sim	20011009sim	20011010sim	20011011sim	20011409sim	20011410sim	20011411sim
INJ.DATE:	08-JAN-2019	08-JAN-2019	10-JAN-2019	10-JAN-2019	10-JAN-2019	14-JAN-2019	14-JAN-2019	14-JAN-2019
INJ.TIME:	16:18	16:57	16:09	16:48	17:36	16:28	17:07	17:48

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3	Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5	Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
17	Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Reviewer 1 _____ Date: 1/17/19
Reviewer 2 _____ Date: 1/17/19

$\bar{X} = 0.0093$

$2x = 0.02$

Naph - Met the ratio of the mean recovered concentration and the MDL value between 1 and 20

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/08Jan19.b/201811210b.m/2018s1210a.m
Batch File: /chem/msd20.i/08Jan19.b
Inst ID: msd20.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
$	18 1,2-Dichloroethane-d4	4548.24	4489.17	4540.00	4493.76	4539.86	4541.69	4478.56	4492.20	4515.43	29.34	87.95
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	22 Toluene-d8	4792.80	4787.66	4836.17	4775.19	4811.03	4829.33	4806.05	4796.00	4804.28	20.76	62.23
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	33 4-Bromofluorobenzene	5231.65	5251.23	5255.26	5209.06	5233.92	5288.57	5274.00	5253.19	5249.61	24.99	74.93
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	38 Naphthalene	45.25	47.34	43.77	45.46	45.10	41.01	42.44	43.17	44.19	1.99	5.98

MDL BLANK

9.28

(RL)

(0.05ppbv)

— MDL BLANK —

Report Date : 15-Jan-2019 13:52

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/08Jan19.b/201811210b.m/2018s1210a.m
Batch File: /chem/msd20.i/08Jan19.b
Inst ID: msd20.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	20010806simblk	20010807sim	20011006sim	20011007sim	20011008sim	20011406simblk	20011407sim	20011408sim
INJ.DATE:	08-JAN-2019	08-JAN-2019	10-JAN-2019	10-JAN-2019	10-JAN-2019	14-JAN-2019	14-JAN-2019	14-JAN-2019
INJ.TIME:	13:39	14:59	13:06	14:16	15:16	13:12	14:06	15:29

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
	1 Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	2 Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	3 Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	4 Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	5 Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	6 Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	7 Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	8 1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	9 Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	10 trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	11 1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	12 cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	13 Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5.00	5000.00	5000.00	5000.00	4375.62	1766.00	5294.47
	14 Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	15 1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	16 Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	17 Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/08Jan19.b/201811210b.m/2018s1210a.m
Batch File: /chem/msd20.i/08Jan19.b
Inst ID: msd20.i

MDL Blank

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
$ 18 1,2-Dichloroethane-d4	4683.75	4603.99	4577.93	4576.82	4.60	4644.53	4684.21	4650.34	4053.27	1636.46	4906.12
19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5.00	5000.00	5000.00	5000.00	4375.62	1766.00	5294.47
21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 22 Toluene-d8	4802.10	4781.67	4814.02	4806.51	4.80	4842.95	4862.82	4866.43	4222.66	1704.54	5110.21
23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5.00	5000.00	5000.00	5000.00	4375.62	1766.00	5294.47
29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 33 4-Bromofluorobenzene	5275.25	5291.89	5296.35	5268.37	5.22	5409.32	5345.25	5283.41	4646.88	1876.10	5624.54
34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
38 Naphthalene	5.76	3.62	4.87	2.18	0.00	5.51	3.08	2.16	3.40	1.96	5.88

9.28

MSD-20 SIM MDL CASE NARRATIVE

A Method Detection Limit Study for TO-15 SIM method was performed December 3rd, 4th, 5th, 9th, & 10th, 2019. The MDL was performed at the following concentration:

0.04ppbv: Standard # 3128-68 (0.05ppbv); 200mL load volume.

NOTES:

1. Two (2) MDL verifications were analyzed on 12/13/19:
   a) Standard # 3128-62 (0.05ppbv) ; 50ml load volume; file 20121308sima, (spike 0.01 ppbv) for standard Reporting Limits.
   b) A 25ml load volume of #3128-62 was also analyzed to verify Special Reporting Limits (spike 0.005 ppbv); file 20121307sima.
2. An additional MDL verification was analyzed on 12/17/19, Standard # 3128-62, 75 ml load volume, file 20121724sim, (spike 0.015 ppbv) for 1,3- & 1,4- & 1,2-Dichlorobenzene.
3. MDL spike: File 20120510sima; 0.04ppbv.

**Due to multiple Limit of Detections, the MDL verification 2X-4X criteria was not met. The MDL verification was spiked at the average of all compounds.

The MDL values for the following compounds were taken from the MDL lab blank:

- **1,2-Dichloroethane (0.00421 ppbv)**
- **Trichloroethane (0.00240 ppbv)**
- **Benzene (0.00473 ppbv)**
- **Toluene (0.00304 ppbv)**
- **Trans-1,3-DCP (0.00594 ppbv)**
- **1,2-Dibromoethane (0.00775 ppbv)**
- **Chlorobenzene (0.00365 ppbv)**
- **1,3-Dichlorobenzene (0.01002 ppbv)**
- **mp-xylene (0.00361 ppbv)**
- **o-xylene (0.00233 ppbv)**
- **1,4-Dichlorobenzene (0.01302 ppbv)**
- **1,2-Dichlorobenzene (0.01300 ppbv)**

The ratio of the mean recovered concentration and the MDL is between 1 and 20 for all compounds except Tetrachloroethene, Trichloroethene, and 1,1,1-Trichhloroethane.

MDL values exceeded MA-CAM compound RLs for; Vinyl Chloride, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,2-Dibromoethane (EDB), 1,1,2,2-tetrachloroethane, and 1,4-Dichlorobenzene

MDL expires 12/10/20

Naphthalene MDL expires 01/14/2020

Eurofins Air Toxics 4Q 2019 TO-14A/TO-15 Low Level DoD Limit of Detections (LODs) Effective 01-01-20						
CAS #	Analyte	Molecular Weight (MW)	LOD (ppbv)	LOQ (ppbv)	LOD (ug/m3)	LOQ (ug/m3)
71-55-6	1,1,1-Trichloroethane	133.42	0.09	0.1	0.49112	0.54569
79-34-5	1,1,2,2-Tetrachloroethane	167.86	0.09	0.1	0.61789	0.68654
79-00-5	1,1,2-Trichloroethane	133.42	0.09	0.1	0.49112	0.54569
75-34-3	1,1-Dichloroethane	98.97	0.09	0.1	0.36431	0.40479
75-35-4	1,1-Dichloroethene	96.95	0.09	0.1	0.35687	0.39652
120-82-1	1,2,4-Trichlorobenzene	181.46	0.3	0.5	2.2265	3.71084
95-63-6	1,2,4-Trimethylbenzene	120.19	0.09	0.1	0.44242	0.49157
106-93-4	1,2-Dibromoethane (EDB)	187.88	0.09	0.1	0.69158	0.76843
95-50-1	1,2-Dichlorobenzene	147.01	0.09	0.1	0.54114	0.60127
107-06-2	1,2-Dichloroethane	98.96	0.09	0.1	0.36427	0.40474
78-87-5	1,2-Dichloropropane	112.99	0.09	0.1	0.41591	0.46213
108-67-8	1,3,5-Trimethylbenzene	120.19	0.09	0.1	0.44242	0.49157
106-99-0	1,3-Butadiene	54.09	0.09	0.1	0.1991	0.22123
541-73-1	1,3-Dichlorobenzene	147.01	0.09	0.1	0.54114	0.60127
106-46-7	1,4-Dichlorobenzene	147.01	0.09	0.1	0.54114	0.60127
123-91-1	1,4-Dioxane	88.11	0.09	0.1	0.32433	0.36037
540-84-1	2,2,4-Trimethylpentane	114.22	0.3	0.5	1.40147	2.33579
78-93-3	2-Butanone	72.11	0.3	0.5	0.88479	1.4744
591-78-6	2-Hexanone	100.16	0.3	0.5	1.22896	2.04826
67-63-0	2-Propanol	60.09	0.3	0.5	0.7373	1.22883
107-05-1	3-Chloropropene	76.53	0.3	0.5	0.93902	1.56503
622-96-8	4-Ethyltoluene	120.19	0.09	0.1	0.44242	0.49157
108-10-1	4-Methyl-2-pentanone	100.16	0.09	0.1	0.36869	0.40965
67-64-1	Acetone	58.08	0.5	1	1.1877	2.3755
100-44-7	alpha-Chlorotoluene	126.58	0.09	0.1	0.46594	0.51771
71-43-2	Benzene	78.11	0.09	0.1	0.28752	0.31947
75-27-4	Bromodichloromethane	163.83	0.09	0.1	0.60306	0.67006
75-25-2	Bromoform	252.77	0.09	0.1	0.93044	1.03382
74-83-9	Bromomethane	94.95	0.3	0.5	1.16503	1.9417
75-15-0	Carbon Disulfide	76.14	0.3	0.5	0.93423	1.55706
56-23-5	Carbon Tetrachloride	153.84	0.09	0.1	0.56628	0.6292
108-90-7	Chlorobenzene	112.56	0.09	0.1	0.41433	0.46037
75-00-3	Chloroethane	64.52	0.3	0.5	0.79166	1.31943
67-66-3	Chloroform	119.39	0.09	0.1	0.43947	0.4883
74-87-3	Chloromethane	50.49	0.3	0.5	0.61951	1.03252
156-59-2	cis-1,2-Dichloroethene	96.94	0.09	0.1	0.35683	0.39648
10061-01-5	cis-1,3-Dichloropropene	110.97	0.09	0.1	0.40848	0.45387
98-82-8	Cumene	120.19	0.09	0.1	0.44242	0.49157
110-82-7	Cyclohexane	84.16	0.09	0.1	0.30979	0.34421
124-48-1	Dibromochloromethane	208.28	0.09	0.1	0.76667	0.85186
64-17-5	Ethanol	46.07	0.3	1	0.56528	1.8843

100-41-4	Ethyl Benzene	106.16	0.09	0.1	0.39077	0.43419
75-69-4	Freon 11	137.38	0.09	0.1	0.50569	0.56188
76-13-1	Freon 113	187.39	0.09	0.1	0.68978	0.76642
76-14-2	Freon 114	170.93	0.09	0.1	0.62919	0.6991
75-71-8	Freon 12	120.92	0.3	0.5	1.48368	2.4728
142-82-5	Heptane	100.2	0.3	0.5	1.2294	2.0491
87-68-3	Hexachlorobutadiene	260.76	0.3	0.5	3.19951	5.33252
110-54-3	Hexane	86.17	0.3	0.5	1.0573	1.7622
108-38-3	m,p-Xylene	106.17	0.09	0.1	0.39081	0.43423
1634-04-4	Methyl tert-butyl ether	88.15	0.09	0.1	0.32448	0.36053
75-09-2	Methylene Chloride	84.94	0.15	0.2	0.5211	0.69481
91-20-3	Naphthalene	128.17	0.03	0.5	0.15726	2.62106
95-47-6	o-Xylene	106.17	0.09	0.1	0.39081	0.43423
103-65-1	Propylbenzene	120.19	0.09	0.1	0.44242	0.49157
100-42-5	Styrene	104.14	0.09	0.1	0.38334	0.42593
127-18-4	Tetrachloroethene	165.85	0.09	0.1	0.61049	0.67832
109-99-9	Tetrahydrofuran	72.1	0.3	0.5	0.88466	1.47444
108-88-3	Toluene	92.13	0.09	0.1	0.33913	0.37681
156-60-5	trans-1,2-Dichloroethene	96.94	0.09	0.1	0.35683	0.39648
10061-02-6	trans-1,3-Dichloropropene	110.97	0.09	0.1	0.40848	0.45387
79-01-6	Trichloroethene	131.39	0.09	0.1	0.48364	0.53738
108-05-4	Vinyl Acetate	86.09	0.3	0.5	1.05632	1.76053
75-01-4	Vinyl Chloride	62.5	0.09	0.1	0.23006	0.25562

ppbv - part per billion by volume

Concentration (ug/m3) = Concentration (ppbv)*MW/24.45

Instrument ID - msd20.i file msd20.i//05dec19.b//20120522.d/ msd20.i//05dec19.b//20120523a.d/ msd20.i//05dec19.b//20120523.d/ msd20.i//05dec19.b//20120524.d/ msd20.i//07oct19.b//20100722.d/

TO15 0.1 ppbv LL MDL

STANDARD #3084.32 (1.0 ppbv); 50mL LOAD VOLUME

SPIKE CONC. OF 0.2 ppbv

Report Date : 13-Mar-2019 10:33

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09
FILENAME:	20022209	20022210	20022211	20022509	20022510	20022511	20022609	20022610	20022611
INJ.DATE:	22-FEB-2019	22-FEB-2019	22-FEB-2019	25-FEB-2019	25-FEB-2019	25-FEB-2019	26-FEB-2019	26-FEB-2019	26-FEB-2019
INJ.TIME:	17:11	17:56	18:47	16:52	17:36	18:15	13:30	14:10	14:57

Ref (ppbv) MDL BLANKS

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
6 Freon 143a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
7 Freon 134a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
8 Propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
9 Propylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
10 1,1-Difluoroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
11 Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
12 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
13 Chlorodifluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
14 Ethylene Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
15 Freon 114	235.54	205.32	220.88	218.53	212.15	208.93	199.74	208.23	223.80	214.79	10.97	31.78	rlo
16 Freon 142b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
17 Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

Reviewer 1 [signature] Date: 3/20/19
Reviewer 2 [signature] Date: 3/21/19

$\bar{x}$ = ~~41.48~~ 41.475
$2\bar{x}$ = ~~84.96~~ 82.95
$3\bar{x}$ = ~~127.44~~ 124.43
BT 3/21/19

THE RATIO OF THE MEAN RECOVERED CONCENTRATION AND THE MDL IS ~~BETWEEN~~ 1 AND 10 FOR ALL COMPOUNDS.

MDL VERIFICATION
#3084-70 (1.0 ppbv)
22.5 mL LOAD;
SPIKE CONC. OF 0.889 ppbv.
FILE 200319 19

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	B.L (ppb)	MDL	BLANK
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
23 Butane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
25 Vinyl Chloride	200.76	190.84	216.65	203.41	204.95	185.09	187.69	198.29	214.59	200.25	11.11	32.17	100		—
26 1,3-Butadiene	199.86	210.51	188.32	180.85	192.55	163.58	180.34	203.37	199.73	191.01	14.43	41.80	100		
27 3-Methyl-1-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
28 Methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
29 Bromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
30 Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
31 Isopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
32 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
33 2-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
34 Pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
35 Freon 11	197.57	198.47	194.32	185.38	180.70	196.72	187.02	180.13	189.47	189.97	7.14	20.66	100		—
36 1-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
37 Dichlorofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
38 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			
39 Isoprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++			

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	RL(PPB)	MDL Blanks
40 2-Methyl-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
41 trans-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
42 Ethanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
43 1,2-Dichloro-1-fluoroe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
44 Ethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
45 cis-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
46 Acrolein	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
47 Freon 123a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
48 Freon 123	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
49 Freon 113	208.49	231.50	235.22	210.17	206.95	222.56	193.89	197.74	210.18	212.97	14.14	40.94	100	—
50 1,1-Dichloroethene	190.50	213.19	193.84	192.12	186.10	199.96	196.76	187.40	189.41	194.37	8.31	24.08	100	—
51 2,2-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
52 Acetone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
53 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
54 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
55 4-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
56 Carbon Disulfide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
57 2-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
58 3-Chloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
59 Cyclopentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
60 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
61 Methyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
62 3-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
63 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	All (PBW)	MDL Blank
64 Cyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
65 1-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
66 Methylene Chloride	263.99	248.24	244.72	241.90	203.92	254.12	222.00	189.27	200.52	229.85	26.69	77.30	200	137.62
67 2-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
68 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
69 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
70 tert-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
71 tert-Butyl alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
72 Methyl tert-butyl ethe	160.53	165.06	143.91	171.72	171.09	165.46	168.11	168.26	176.68	165.65	9.36	27.10	100	—
73 trans-1,2-Dichloroethe	215.49	234.32	203.78	214.22	213.30	209.29	181.76	209.89	168.74	205.64	19.43	56.26	100	
74 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
75 trans-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
76 1-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
77 cis-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
78 Hexane	187.66	146.20	153.61	168.15	160.46	155.75	226.79	163.28	151.31	168.13	25.08	72.64	100	—
79 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
80 sec-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
81 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
82 1,1-Dichloroethane	207.26	212.15	199.59	207.15	177.20	206.69	200.71	185.39	208.12	200.47	11.69	33.86	100	79.12
83 Isopropyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
84 1-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
85 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
86 Vinyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

55
3/21/19

No Blank MDL Too

1,1-DCA

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	Pt(ppb)	MDL Blank
87 Butanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
88 Ethyl-tert-butyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
89 Isobutyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
90 2,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
91 cis-1,2-Dichloroethene	193.19	217.32	204.02	166.46	174.06	173.32	177.47	163.01	197.91	185.20	18.64	53.98	100	—
92 2-Butanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
93 Methyl Acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
94 Ethyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
95 Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
96 2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
97 2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
* 98 Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00		
99 Tetrahydrofuran	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
100 Chloroform	191.98	202.87	198.82	192.66	185.60	185.51	203.01	202.27	194.43	195.24	6.95	20.12	100	—
101 1-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
102 Cyclohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
103 1,1,1-Trichloroethane	166.11	184.45	192.26	186.15	201.80	169.32	188.66	173.60	204.47	185.20	13.52	39.14	100	—
104 Chloroacetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
105 n-Butylchloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
106 Carbon Tetrachloride	193.59	197.18	170.60	175.36	180.83	193.40	162.55	188.37	191.87	183.75	12.04	34.86	100	—
107 1,1-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
108 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
109 2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
110 3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

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METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	Rt (PFTV)	MDL Blanks
111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$ 112 Benzene-d6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
113 2,2,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
115 Isobutanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
116 Benzene	194.14	196.32	226.01	179.55	219.18	205.27	197.73	235.15	194.73	205.34	17.85	51.70	100	16.71
$ 117 1,2-Dichloroethane-d4	5218.63	5212.13	5319.54	4914.88	4968.68	5284.45	5060.37	4988.38	4980.01	5105.23	153.53	444.61		
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
119 tert-Amyl methyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
120 1,2-Dichloroethane	192.90	205.47	217.36	167.56	234.31	214.98	177.50	233.41	208.27	205.75	22.99	66.59	100	—
121 Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
* 123 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00		
124 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
125 Trichloroethene	177.18	196.50	228.97	208.35	197.54	215.00	182.50	194.84	218.27	202.13	16.95	49.09	100	—
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
127 Methylcyclohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
128 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
131 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
132 1,2-Dichloropropane	226.15	225.62	210.68	219.52	219.05	194.27	243.50	227.73	250.88	224.16	16.70	48.35	100	—
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
134 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

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Method File: /chem/msd20.i/22feb19.b/201910219a.m
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Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	PQL (PPB)	MDL FLAG
135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
136 1,4-Dioxane	251.11	189.03	183.21	206.02	217.34	213.04	207.11	177.99	153.10	199.77	27.96	80.98	100	—
137 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
138 Bromodichloromethane	211.30	173.99	211.13	237.39	217.29	190.50	209.20	211.11	203.66	207.28	17.53	50.77	100	—
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
140 bis(chloromethyl) Ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
143 2-Chloroethyl Vinyl Et	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
144 cis-1,3-Dichloropropen	181.89	187.21	170.19	172.97	185.00	197.50	178.64	193.04	203.77	185.58	11.12	32.20	100	—
145 4-Methyl-2-pentanone	191.05	195.44	174.67	197.52	184.65	168.54	159.51	180.16	190.35	182.43	12.86	37.23	100	—
$ 146 Toluene-d8	5036.61	5126.93	5006.94	5123.86	4991.20	4920.69	5000.04	4964.04	5109.44	5031.08	73.98	214.24		
147 Toluene	211.70	217.06	196.74	187.83	202.34	220.88	213.97	210.46	214.13	208.35	10.64	30.81	100	2.70
148 Octane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
150 trans-1,3-Dichloroprop	194.63	194.61	158.61	191.67	165.52	176.69	165.89	206.59	191.79	182.89	16.63	48.15	100	12.44
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
152 1-Chloro-2-Bromopropan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
155 1,1,2-Trichloroethane	213.18	174.02	246.15	213.63	190.66	207.21	238.91	231.81	220.35	215.10	22.89	66.28	100	
156 Tetrachloroethene	216.77	201.08	192.09	219.30	206.21	150.64	199.40	222.18	204.46	201.35	21.47	62.18	100	—
157 1,3-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
158 2-Hexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

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METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
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Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	Rel(PPTV)	MDL PLANM
159 Butyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
160 Dibromochloromethane	196.87	193.72	180.73	207.50	198.40	198.75	186.90	215.90	224.17	200.32	13.64	39.50	100	—
161 1,2-Dibromoethane (EDB	205.36	173.66	169.64	184.37	193.24	188.18	176.25	178.42	195.20	184.93	11.63	33.67	100	—
162 1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
* 163 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00		
164 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
165 Chlorobenzene	215.37	193.51	187.33	231.72	201.64	184.79	214.56	214.51	213.57	206.33	15.51	44.92	100	—
166 Butyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
167 Ethyl Benzene	170.11	158.14	170.12	202.20	172.19	199.51	208.83	182.35	196.06	184.39	17.78	51.49	100	—
168 1,1,1,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
169 m,p-Xylene	208.48	163.01	192.10	174.96	158.94	171.70	176.88	175.40	158.32	175.53	16.22	46.98	100	—
170 Nonane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
171 o-Xylene	188.80	174.74	172.45	181.61	178.87	167.23	187.54	161.46	170.02	175.86	9.19	26.60	100	
172 Styrene	161.72	176.81	175.35	163.32	177.40	175.10	174.05	152.64	158.97	168.37	9.25	26.79	100	—
173 2-Heptanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		—
174 Bromoform	202.11	172.36	176.73	203.61	176.58	195.08	179.99	188.10	183.59	186.46	11.50	33.30	100	—
175 Cumene	168.30	171.65	169.65	182.94	182.36	164.50	170.02	168.99	166.22	171.62	6.59	19.09	100	—
176 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$ 177 4-Bromofluorobenzene	4941.51	4936.44	4748.12	4910.75	4927.38	4922.88	4979.69	4942.73	4949.39	4917.65	66.44	192.42		
178 1-Decene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
179 alpha-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
180 Bromobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
181 1,1,2,2-Tetrachloroeth	203.38	218.00	188.41	208.58	227.47	185.35	204.37	220.90	201.55	206.44	14.13	40.92	100	10.46
182 Propylbenzene	205.08	188.39	204.83	206.59	197.76	200.98	198.77	201.52	189.28	199.24	6.58	19.07	100	3.53

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Method File: /chem/msd20.i/22feb19.b/201910219a.m
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Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	RL(PPM)	MDL BLANK
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
184 trans-1,4-Dichloro-2-b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
185 1,2,3-Trichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
187 Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
188 4-Ethyltoluene	174.50	182.47	163.02	196.47	186.32	187.11	186.43	185.22	187.62	183.24	9.48	27.45	100	—
189 2-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
190 1,3,5-Trimethylbenzene	167.72	167.20	166.71	167.78	181.77	190.38	175.06	185.18	166.10	174.21	9.32	26.98	100	5.47
191 4-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
192 beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
193 Diisobutyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
194 alpha Methyl Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
195 tert-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
196 1,2,4-Trimethylbenzene	164.94	160.82	159.48	173.29	158.42	178.17	152.34	167.30	165.16	164.44	7.87	22.81	100	7.39
197 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
198 Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
199 D-Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
200 Benzaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
201 Indan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
202 Indene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
203 sec-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

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Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	RL(0.5TV)	MDL FRAMM
206 bis(2-Chloroethyl) Eth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
207 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
208 1,3-Dichlorobenzene	215.51	207.46	208.43	209.58	228.62	209.28	231.58	232.60	212.06	217.24	10.58	30.65	100	10.16
209 1,4-Dichlorobenzene	207.22	214.69	222.07	231.34	219.75	220.67	226.12	222.69	222.47	220.78	6.80	19.70	100	11.13
210 1,2,3-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
212 alpha-Chlorotoluene	194.98	204.86	195.76	211.16	218.11	194.34	220.21	206.06	214.46	206.66	10.04	29.08	100	18.52
213 Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
214 1,2-Dichlorobenzene	217.34	222.62	234.23	241.81	237.03	222.24	242.05	257.00	240.20	234.95	12.45	36.05	100	8.95
215 Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
216 4-Ethyl-1,2-dimethylbe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
217 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
220 1,2,4,5-tetramethylben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
221 1,2-Dibromo-3-chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
224 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
225 Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
226 1,2,4-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
227 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
228 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
229 1,2,3-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

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METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
230 Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
231 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
232 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
233 1,3,5-Triethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
234 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
235 Phenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
236 Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 237 1,2-Dichloroethene (To	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 238 Chlorobutane (Total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 239 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 240 3 and 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
241 Total Volatile Hydroca	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
242 TPH reference to Hexan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
243 TPH reference to Hepta	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
244 TPH reference to Gasol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
245 TPH reference MineralS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
246 TPH reference to Stodd	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
247 TVOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
248 TVOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
249 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
250 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
251 NMOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
252 NMOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
253 NMOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
254 C3 - C4 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
255 C4 - C5 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
256 C5 - C6 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
257 C6 - C7 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref He	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref D	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
265 C10-C12 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
266 C8-C10 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naph	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

TO15 0.5 ppbv LL MDL
STANDARD # 3084-32 (1.0 ppbv); 250mL LOAD VOLUME
SPIKE CONC. OF 1.0 ppbv

Report Date : 27-Feb-2019 11:14

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09
FILENAME:	20022212	20022213	20022214	20022512	20022513	20022514	20022612	20022613	20022614
INJ.DATE:	22 FEB-2019	22-FEB-2019	22-FEB-2019	25-FEB-2019	25-FEB-2019	25-FEB-2019	26-FEB-2019	26-FEB-2019	26-FEB-2019
INJ.TIME:	19:39	20:17	22:05	18:54	19:33	20:41	16:01	16:41	17:21

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	LL (ppbv)	MDL Elim
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
6 Freon 143a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
7 Freon 134a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
8 Propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
9 Propylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
10 1,1-Difluoroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
11 Freon 12	1092.04	1043.24	1051.75	1104.27	1075.35	1064.68	1051.92	1032.38	1068.82	1064.94	23.13	66.98	500 ~~Fece~~ 25 2/21/19	—
12 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
13 Chlorodifluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
14 Ethylene Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
15 Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
16 Freon 142b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
17 Chloromethane	1088.79	1140.48	1104.68	1148.96	1205.22	1217.85	1137.95	1149.71	1253.81	1160.83	54.10	156.66	500	—

Reviewer 1 _____ Date: 3/20/19
Reviewer 2 _____ Date: 3/21/19

$\bar{x}$ = ~~128.47~~ 136.728
$2\bar{x}$ = ~~256.95~~ 273.46
$3\bar{x}$ = ~~385.42~~ 410.18
& 3/21/19

THE RATIO OF THE MEAN RECOVERED CONCENTRATION AND THE MDL IS BETWEEN 1 AND 20 FOR ALL COMPOUNDS

MDL VERIFICATION
#3084-70 (1.0 ppbv)
75mL LOAD;
SPIKE CONC. OF 0.3 ppbv
FILE# 20033920

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	2L(ppbv)	[illegible]
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
23 Butane	1022.45	1109.72	1060.37	1141.62	875.09	965.53	995.16	945.90	965.73	1009.06	83.98	243.20	500	—
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
25 Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
26 1,3-Butadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
27 3-Methyl-1-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
28 Methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
29 Bromomethane	897.83	792.92	910.82	861.73	811.38	858.77	873.98	796.66	801.98	845.12	45.36	131.37	500	=
30 Chloroethane	859.28	915.45	843.59	914.73	773.23	957.06	820.51	886.16	853.59	869.29	55.68	161.24	500	—
31 Isopentane	995.22	1040.75	1020.08	1022.03	939.45	979.46	938.58	957.06	978.01	985.63	36.91	106.90	500	
32 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
33 2-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
34 Pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
35 Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
36 1-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
37 Dichlorofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
38 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
39 Isoprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/20190219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	µL (ppb)	µL Blank
40 2-Methyl-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
41 trans-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
42 Ethanol	916.22	921.45	861.93	893.02	950.25	962.95	887.12	906.65	852.75	905.82	36.82	106.64	500	—
43 1,2-Dichloro-1-fluoroe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
44 Ethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
45 cis-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
46 Acrolein	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
47 Freon 123a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
48 Freon 123	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
49 Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
50 1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
51 2,2-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
52 Acetone	1109.14	1107.15	1140.59	1112.64	1148.24	1180.52	1191.17	1107.46	1037.99	1126.10	45.87	132.84	500	330.41
53 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
54 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
55 4-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
56 Carbon Disulfide	986.21	977.76	939.28	958.46	960.50	1025.69	946.09	944.58	1002.93	971.28	29.33	84.93	500	—
57 2-Propanol	997.17	909.40	908.44	961.33	961.58	920.13	890.66	866.17	997.61	934.72	46.73	135.34	500	24.08
58 3-Chloropropene	637.96	793.56	703.86	607.45	662.64	635.36	626.29	655.77	674.18	666.34	55.47	160.64	500	—
59 Cyclopentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
60 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
61 Methyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
62 3-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
63 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	
64 Cyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
65 1-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
66 Methylene Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
67 2-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
68 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
69 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
70 tert-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
71 tert-Butyl alcohol	907.86	852.56	882.09	890.21	846.76	892.03	859.16	838.37	837.77	867.42	26.02	75.34	500
72 Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
73 trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
74 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
75 trans-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
76 1-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
77 cis-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
78 Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
79 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
80 sec-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
81 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
82 1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
83 Isopropyl ether	855.77	855.98	833.83	836.72	829.82	884.41	829.76	828.12	853.03	845.27	18.69	54.13	500
84 1-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
85 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
86 Vinyl Acetate	804.54	764.63	883.38	710.39	811.57	856.73	931.17	867.89	831.05	829.04	65.95	190.99	500

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	RL(ppb)	MDL Blank
	87 Butanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	88 Ethyl-tert-butyl ether	896.04	843.34	850.31	865.19	866.15	822.21	823.22	863.55	814.69	849.41	26.39	76.43	500	—
	89 Isobutyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	90 2,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	91 cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	92 2-Butanone	932.31	966.90	920.71	919.75	918.17	1017.61	974.35	969.57	925.20	949.40	34.54	100.03	500	—
	93 Methyl Acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	94 Ethyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	95 Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	96 2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	97 2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
*	98 Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00		
	99 Tetrahydrofuran	983.74	912.06	870.76	865.73	949.02	908.78	849.08	842.13	924.62	900.66	47.71	138.17	500	—
	100 Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	101 1-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	102 Cyclohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	103 1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	104 Chloroacetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	105 n-Butylchloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	106 Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	107 1,1-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	108 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	109 2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	110 3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/22feb19.b/201910219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	µL(Pin)
111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$ 112 Benzene-d6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
113 2,2,4-Trimethylpentane	1050.78	985.48	806.11	979.89	841.23	958.44	859.36	911.19	978.45	930.10	80.53	233.22	500
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
115 Isobutanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
116 Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
$ 117 1,2-Dichloroethane-d4	5430.15	5574.16	5221.23	5336.95	5319.60	5698.84	5356.66	5309.18	5134.41	5375.69	172.59	499.81	
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
119 tert-Amyl methyl ether	859.45	818.84	794.14	930.14	1094.66	901.57	798.42	924.16	801.34	880.30	97.07	281.13	500
120 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
121 Heptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
* 123 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
124 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
125 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
127 Methylcyclohexane	820.79	842.16	851.28	901.68	907.05	875.34	842.62	840.42	829.38	856.75	30.91	89.53	500
128 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
131 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
132 1,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
134 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

MDL BLANK

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Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
136 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
137 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
138 Bromodichloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
140 bis(chloromethyl) Ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
143 2-Chloroethyl Vinyl Et	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
144 cis-1,3-Dichloropropen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
145 4-Methyl-2-pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 146 Toluene-d8	4850.50	4920.75	4988.13	5100.51	5169.13	4939.54	4756.23	4840.46	4762.76	4925.33	142.36	412.26
147 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
148 Octane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
150 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
152 1-Chloro-2-Bromopropan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
155 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
156 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
157 1,3-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
158 2-Hexanone	796.43	934.55	873.67	854.24	897.44	824.87	816.51	812.00	804.24	845.99	47.43	137.34

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Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
159 Butyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
160 Dibromochloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
161 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
162 1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 163 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
164 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
165 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
166 Butyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
167 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
168 1,1,1,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
169 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
170 Nonane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
171 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
172 Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
173 2-Heptanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
174 Bromoform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
175 Cumene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
176 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 177 4-Bromofluorobenzene	5035.71	4948.93	4734.40	4804.25	5001.42	5040.68	4781.75	4942.84	5006.40	4921.82	117.44	340.10
178 1-Decene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
179 alpha-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
180 Bromobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
181 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
182 Propylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
184 trans-1,4-Dichloro-2-b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
185 1,2,3-Trichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
187 Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
188 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
189 2-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
190 1,3,5-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
191 4-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
192 beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
193 Diisobutyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
194 alpha Methyl Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
195 tert-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
196 1,2,4-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
197 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
198 Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
199 D-Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
200 Benzaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
201 Indan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
202 Indene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
203 sec-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Method File: /chem/msd20.i/22feb19.b/20190219a.m
Batch File: /chem/msd20.i/22feb19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL	Rl(ppb)
206 bis(2-Chloroethyl) Eth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
207 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
208 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
209 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
210 1,2,3-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
212 alpha-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
213 Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
214 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
215 Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
216 4-Ethyl-1,2-dimethylbe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
217 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
220 1,2,4,5-tetramethylben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
221 1,2-Dibromo-3-chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
224 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
225 Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
226 1,2,4-Trichlorobenzene	1158.41	1253.28	1253.32	1164.10	1197.20	1219.68	1186.39	1196.07	1210.34	1204.31	33.98	98.40	500
227 Hexachlorobutadiene	1287.57	1314.45	1320.26	1312.99	1397.94	1356.77	1331.19	1388.97	1360.47	1341.18	37.15	107.59	500
228 Naphthalene	121.32	113.74	120.13	120.22	114.49	129.47	119.16	123.60	125.27	120.82	4.95	14.35	500
229 1,2,3-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	

73.57
57.79
4.74

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230 Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
231 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
232 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
233 1,3,5-Triethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
234 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
235 Phenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
236 Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 237 1,2-Dichloroethene (To	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 238 Chlorobutane (Total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 239 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 240 3 and 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
241 Total Volatile Hydroca	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
242 TPH reference to Hexan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
243 TPH reference to Hepta	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
244 TPH reference to Gasol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
245 TPH reference MineralS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
246 TPH reference to Stodd	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
247 TVOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
248 TVOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
249 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
250 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
251 NMOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
252 NMOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
253 NMOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
254 C3 - C4 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
255 C4 - C5 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
256 C5 - C6 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
257 C6 - C7 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref He	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref D	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
265 C10-C12 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
266 C8-C10 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naph	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

TO15 LL MDL BLANK.

Report Date : 27-FEB-2019 11:50 Page 1

US32APPTV002

SPIKED METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/26feb19.b/201910219a.m

Batch File: /chem/msd20.i/26feb19.b

Instrument Names: msd20.i

Student T 2.896 for 9 Replicates with 99% Confidence

	Spiked ID(s)	Spiked Vol(s)
	Nr	Nr
	1	1

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09
FILENAME:	20022206EPALB	20022207EPALB	20022208EPALB	20022506EPALB	20022507EPALB	20022508EPALB	20022606EPALB	20022607EPALB	20022608EPALB
INJ.DATE:	22-FEB-2019	22-FEB-2019	22-FEB-2019	25-FEB-2019	25-FEB-2019	25-FEB-2019	26-FEB-2019	26-FEB-2019	26-FEB-2019
INJ.TIME:	13:49	14:34	16:25	13:39	14:38	15:48	10:52	11:45	12:47

Compound		MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	SPK AMT	RL	RATIO	MDL	
1 Propylene		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1000.00	1.00	0.000000	
2 Freon 12		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
3 Freon 114		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
4 Chloromethane		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
5 Butane		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
6 Vinyl Chloride		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
7 1,3-Butadiene		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
8 Bromomethane		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
9 Chloroethane		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
10 Isopentane		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
11 Freon 11		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
12 Ethanol		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
13 Freon 113		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
14 1,1-Dichloroethene		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
15 Carbon Disulfide		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
16 Acetone	330.21	189.75	162.37	204.27	164.98	265.36	218.19	101.68	92.62	155.14	172.71	54.63	0.000000	500.00	1.09	158.20	
17 2-Propanol	29.03	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19.30	21.02	29.08	7.71	11.86	0.000000	500.00	0.225	34.33	Ratio 1 t
18 3-Chloropropene		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
19 Methylene Chloride	137.62	79.75	67.64	91.29	53.58	53.34	41.60	110.36	87.99	81.73	74.14	21.92	0.000000	500.00	1.17	63.48	
20 tert-Butyl alcohol		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
21 Methyl tert-butyl ether		0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	

Reviewer 1 _____ Date: 3/20/19

Reviewer 2 _____ Date: 3/20/19

US32APPTV002

SPIKED METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/26feb19.b/201910219a.m

Batch File: /chem/msd20.i/26feb19.b

Instrument Names: msd20.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	SPK AMT	RL	RATIO	MDL	
	22 trans-1,2-Dichloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	23 Hexane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	24 Isopropyl ether	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
	25 1,1-Dichloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	26 Vinyl Acetate	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
	27 Ethyl-tert-butyl ether	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
	28 cis-1,2-Dichloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	29 2-Butanone	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
	30 Tetrahydrofuran	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
*	31 Bromochloromethane	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	0.000000	0.000000	500.00	1.00	0.000000	
	32 Chloroform	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	33 Cyclohexane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	34 1,1,1-Trichloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	35 Carbon Tetrachloride	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	36 2,2,4-Trimethylpentane 7.12	24.17	48.42	20.74	7.49	63.98	25.86	21.49	34.97	29.94	30.78	16.69	0.000000	500.00	0.637	48.34	Ratio 1
	37 Benzene 16.71	0.000000	0.000000	5.83	8.52	4.51	4.88	16.71	11.51	0.000000	5.77	5.73	0.000000	100.00	0.348	16.59	Ratio 1
S	38 1,2-Dichloroethane-d4	5688.60	5384.70	5043.00	5564.10	5413.60	5284.50	5370.90	5166.80	5452.30	5374.28	194.76	0.000000	500.00	9.53	564.01	
	39 tert-Amyl methyl ether	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
	40 1,2-Dichloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	41 Heptane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
*	42 1,4-Difluorobenzene	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	0.000000	0.000000	500.00	1.00	0.000000	
	43 Trichloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	44 Methylcyclohexane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
	45 1,2-Dichloropropane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	46 1,4-Dioxane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	47 Bromodichloromethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	48 cis-1,3-Dichloropropene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
	49 4-Methyl-2-pentanone	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	

Reviewer 1 _____ Date:_____

Reviewer 2 _____ Date:_____

Report Date : 27-FEB-2019 11:50

US32APPTV002

SPIKED METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/26feb19.b/201910219a.m

Batch File: /chem/msd20.i/26feb19.b

Instrument Names: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	SPK AMT	RL	RATIO	MDL	
$ 50 Toluene-d8	5129.30	4975.20	5127.40	5254.30	5089.50	5101.00	5176.80	5071.40	5079.00	5111.54	76.70	0.000000	500.00	23.01	222.12	
51 Toluene 2.70	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.70	0.000000	0.300	0.900	0.000000	100.00	0.115	2.61	Ratio 1
52 trans-1,3-Dichloropropene 12.44	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.44	0.000000	1.38	4.15	0.000000	100.00	0.115	12.01	Ratio 1
53 1,1,2-Trichloroethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
54 Tetrachloroethene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
55 2-Hexanone	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	500.00	1.00	0.000000	
56 Dibromochloromethane	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
57 1,2-Dibromoethane (EDB)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
* 58 Chlorobenzene d5	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	0.000000	0.000000	500.00	1.00	0.000000	
59 Chlorobenzene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
60 Ethyl Benzene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
61 m,p-Xylene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
62 o-Xylene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
63 Styrene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
64 Bromoform	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
65 Cumene	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.00	1.00	0.000000	
$ 66 4-Bromofluorobenzene	4760.40	4886.40	4691.10	4895.60	4973.90	4897.90	5091.30	4796.90	4749.60	4860.34	124.74	0.000000	500.00	13.45	361.26	
67 1,1,2,2-Tetrachloroethane 10.46	0.000000	3.76	0.000000	3.73	0.000000	0.000000	10.46	0.000000	0.000000	1.99	3.57	0.000000	100.00	0.193	10.33	Ratio 1
68 Propylbenzene 3.53	0.000000	0.000000	0.000000	0.000000	0.000000	3.53	0.000000	0.000000	0.000000	0.392	1.18	0.000000	100.00	0.115	3.41	Ratio 1
69 4-Ethyltoluene	0.000000	2.97	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.330	0.989	0.000000	100.00	0.115	2.86	Ratio 1
70 1,3,5-Trimethylbenzene 5.47	5.47	2.61	0.000000	2.28	3.58	0.000000	0.000000	0.000000	0.000000	1.55	2.04	0.000000	100.00	0.263	5.90	Ratio 1
71 1,2,4-Trimethylbenzene 7.33	7.33	0.000000	0.000000	2.68	0.000000	0.000000	0.000000	0.000000	0.000000	1.11	2.49	0.000000	100.00	0.154	7.22	Ratio 1
72 1,3-Dichlorobenzene 10.16	9.18	2.61	0.000000	5.06	0.000000	0.000000	10.16	0.000000	0.000000	3.00	4.17	0.000000	100.00	0.249	12.07	Ratio 1
73 1,4-Dichlorobenzene 11.13	6.43	5.53	0.000000	3.58	0.000000	0.000000	11.13	5.91	0.000000	3.62	3.96	0.000000	100.00	0.315	11.47	Ratio 1
74 alpha-Chlorotoluene 18.50	18.50	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.40	0.000000	4.10	8.14	0.000000	100.00	0.174	23.56	Ratio 1
75 1,2-Dichlorobenzene 2.95	7.27	5.24	0.000000	3.44	0.000000	1.78	8.95	5.37	0.000000	3.56	3.35	0.000000	100.00	0.366	9.71	Ratio 1
76 1,2,4-Trichlorobenzene 73.57	34.30	19.09	13.57	46.55	8.68	14.46	56.14	28.39	17.38	26.51	16.25	0.000000	500.00	0.563	47.06	Ratio 1
77 Hexachlorobutadiene 57.74	28.27	9.68	9.48	41.24	11.46	8.21	36.14	28.63	18.52	21.29	12.60	0.000000	500.00	0.583	36.50	Ratio 1
78 Naphthalene 9.74	9.74	0.000000	0.000000	9.11	0.000000	0.000000	3.27	0.000000	0.000000	2.46	4.10	0.000000	500.00	0.207	11.86	Ratio 1

TO15 0.1 ppbv is MDL FOR CYCLOHEXANE AND HEPTANE ONLY.
STANDARD # 3084-36A (1.5 ppbv); 50 mL LOAD VOLUME
SPIKE CONC. OF 0.1 ppbv and 3084-54 (0.1 ppbv); 250 mL LOAD VOLUME
spike conc. of 0.1 ppbv

Report Date : 13-Mar-2019 12:40

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05mar19.b/201910219a.m
Batch File: /chem/msd20.i/05mar19.b
Inst ID: msd20.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09
FILENAME:	20030509	20030510	20030511	20031111	20031112	20031113	20031206	20031207	20031208
INJ.DATE:	05-MAR-2019	05-MAR-2019	05-MAR-2019	11-MAR-2019	11-MAR-2019	11-MAR-2019	12-MAR-2019	12-MAR-2019	12-MAR-2019
INJ.TIME:	14:46	15:25	16:13	16:45	17:25	18:04	11:10	11:57	12:43

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
1 Dimethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2 Freon 14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3 Acetaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4 Hexafluoropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5 Freon 13	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6 Freon 143a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7 Freon 134a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8 Propane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
9 Propylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10 1,1-Difluoroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
11 Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
12 Vinyl Fluoride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
13 Chlorodifluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
14 Ethylene Oxide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
15 Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
16 Freon 142b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
17 Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Reviewer 1 _____ Date: 3/20/19
Reviewer 2 _____ Date: 3/21/19

$\bar{x}$ = 69.965
$2\bar{x}$ = 139.93
$3\bar{x}$ = 209.895

THE RATIO OF THE MEAN RECOVERED CONCENTRATION AND THE MDL IS BETWEEN 1 AND 20 FOR CYCLOHEXANE AND ~~[illegible]~~ HEPTANE. # 3/21/19

MDL VERIFICATION
#3084-70 (1.0 ppbv)
22.5 mL LOAD,
SPIKE CONC. OF 0.09 ppbv
FILE # 20030919

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05mar19.b/201910219a.m
Batch File: /chem/msd20.i/05mar19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
18 Isobutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
19 Isobutylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
20 2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
21 trans-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
22 1-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
23 Butane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
24 cis-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
25 Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
26 1,3-Butadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
27 3-Methyl-1-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
28 Methanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
29 Bromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
30 Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
31 Isopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
32 Vinyl Bromide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
33 2-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
34 Pentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
35 Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
36 1-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
37 Dichlorofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
38 2,3-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
39 Isoprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
40 2-Methyl-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
41 trans-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
42 Ethanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
43 1,2-Dichloro-1-fluoroe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
44 Ethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
45 cis-2-Pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
46 Acrolein	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
47 Freon 123a	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
48 Freon 123	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
51 2,2-Dimethylbutane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
52 Acetone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
53 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
54 Bromoethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
55 4-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
56 Carbon Disulfide	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
57 2-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
58 3-Chloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
59 Cyclopentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
60 2-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
61 Methyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
62 3-Methylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
63 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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64 Cyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
65 1-Chloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
66 Methylene Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
67 2-Methyl-1-pentene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
68 2,4-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
69 2,3-Dimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
70 tert-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
71 tert-Butyl alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
72 Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
73 trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
74 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
75 trans-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
76 1-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
77 cis-2-Hexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
78 Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
79 Methylcyclopentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
80 sec-Butyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
81 2,3,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
82 1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
83 Isopropyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
84 1-Propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
85 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
86 Vinyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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87 Butanal	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
88 Ethyl-tert-butyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
89 Isobutyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
90 2,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
91 cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
92 2-Butanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
93 Methyl Acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
94 Ethyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
95 Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
96 2-Chloropentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
97 2-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 98 Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
99 Tetrahydrofuran	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
100 Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
101 1-Bromopropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
102 Cyclohexane	57.41	82.99	74.15	83.40	66.26	70.68	101.93	68.87	60.71	74.04	13.68	39.63
103 1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
104 Chloroacetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
105 n-Butylchloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
106 Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
107 1,1-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
108 Thiophene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
109 2-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
110 3-Methylhexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

MDL Blank

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111 Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 112 Benzene-d6	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
113 2,2,4-Trimethylpentane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
114 1-Methoxy-2-propanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
115 Isobutanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
116 Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 117 1,2-Dichloroethane-d4	4984.85	4713.12	5090.97	5929.69	5306.05	5548.28	5644.01	5633.64	5825.43	5408.45	410.11	1187.67
118 1-Heptene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
119 tert-Amyl methyl ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
120 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
121 Heptane	46.75	103.71	107.16	162.32	95.96	141.26	69.95	116.66	92.37	104.01	34.63	100.30
122 2,3-Dichloro-1-propene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 123 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
124 n-Butanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
125 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
126 Bromodichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
127 Methylcyclohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
128 Ethyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
129 2-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
130 3-Methylheptane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
131 2-Pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
132 1,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
133 1-Bromo-2-Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
134 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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135 Diethyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
136 1,4-Dioxane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
137 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
138 Bromodichloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
139 2-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
140 bis(chloromethyl) Ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
141 1-Octene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
142 Epichlorohydrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
143 2-Chloroethyl Vinyl Et	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
144 cis-1,3-Dichloropropen	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
145 4-Methyl-2-pentanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 146 Toluene-d8	5140.21	4989.16	4942.34	5066.47	4994.92	5028.36	4939.12	5121.04	4919.03	5015.63	79.89	231.37
147 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
148 Octane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
149 Vinyl Cyclohexene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
150 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
151 Ethyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
152 1-Chloro-2-Bromopropan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
153 1-Nitropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
154 Bromodichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
155 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
156 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
157 1,3-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
158 2-Hexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

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159 Butyl Acetate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
160 Dibromochloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
161 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
162 1-Nonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 163 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
164 1-Chlorohexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
165 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
166 Butyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
167 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
168 1,1,1,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
169 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
170 Nonane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
171 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
172 Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
173 2-Heptanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
174 Bromoform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
175 Cumene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
176 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 177 4-Bromofluorobenzene	4691.61	4704.91	4714.29	5070.91	5005.03	4896.74	5021.87	4810.19	4697.64	4845.91	155.63	450.71
178 1-Decene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
179 alpha-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
180 Bromobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
181 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
182 Propylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05mar19.b/201910219a.m
Batch File: /chem/msd20.i/05mar19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
183 1,4-Dichloro-2-Butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
184 trans-1,4-Dichloro-2-b	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
185 1,2,3-Trichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
186 3-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
187 Decane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
188 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
189 2-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
190 1,3,5-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
191 4-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
192 beta-Pinene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
193 Diisobutyl Ketone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
194 alpha Methyl Styrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
195 tert-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
196 1,2,4-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
197 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
198 Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
199 D-Limonene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
200 Benzaldehyde	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
201 Indan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
202 Indene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
203 sec-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
204 Isobutylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
205 2-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05mar19.b/201910219a.m
Batch File: /chem/msd20.i/05mar19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
206 bis(2-Chloroethyl) Eth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
207 p-Cymene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
208 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
209 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
210 1,2,3-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
211 1-Undecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
212 alpha-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
213 Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
214 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
215 Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
216 4-Ethyl-1,2-dimethylbe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
217 Hexachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
218 1,3-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
219 1,4-Diethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
220 1,2,4,5-tetramethylben	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
221 1,2-Dibromo-3-chloropr	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
222 1-Dodecene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
223 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
224 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
225 Dodecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
226 1,2,4-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
227 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
228 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
229 1,2,3-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05mar19.b/201910219a.m
Batch File: /chem/msd20.i/05mar19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
230 Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
231 Quinoline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
232 2-Methylnaphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
233 1,3,5-Triethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
234 Acenaphthylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
235 Phenanthrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
236 Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 237 1,2-Dichloroethene (To	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 238 Chlorobutane (Total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 239 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
M 240 3 and 4-Ethyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
241 Total Volatile Hydroca	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
242 TPH reference to Hexan	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
243 TPH reference to Hepta	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
244 TPH reference to Gasol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
245 TPH reference MineralS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
246 TPH reference to Stodd	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
247 TVOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
248 TVOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
249 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
250 TVOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
251 NMOC reference to Hexa	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
252 NMOC reference to Hept	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
253 NMOC reference to Tolu	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

US32APPTV002
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd20.i/05mar19.b/201910219a.m
Batch File: /chem/msd20.i/05mar19.b
Inst ID: msd20.i

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	MDL09	AVG CONC	STD DEV	MDL
254 C3 - C4 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
255 C4 - C5 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
256 C5 - C6 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
257 C6 - C7 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
258 C7 - C8 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
259 C8 - C9 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
260 C9 - C10 Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
261 C10+ Hydrocarbons	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
262 C5 - C6 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
263 C6-C8 Aliphatic ref He	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
264 C8-C10 Aliphatic ref D	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
265 C10-C12 Aliphatic ref	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
266 C8-C10 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
267 C8-C10 Aromatic ref 1,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
268 C10-C12 Aromatic	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
269 C10-C12 Aromatic 1,2,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
270 C10-C12 Aromatic Naph	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	CCV		
Lab ID:	2001756-18A	**Date/Time Analyzed:**	2/6/20 07:41 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020602sim

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	94
cis-1,2-Dichloroethene	156-59-2	105
Tetrachloroethene	127-18-4	101
trans-1,2-Dichloroethene	156-60-5	104
Trichloroethene	79-01-6	96
Vinyl Chloride	75-01-4	96

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	106

US32TAR1

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd20.i Injection Date: 06-FEB-2020 07:41
Lab File ID: 20020602sim.d Init. Cal. Date(s): 04-FEB-2020 05-FEB-2020
Analysis Type: AIR Init. Cal. Times: 22:56 08:54
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m

COMPOUND	RRF / AMOUNT	RF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 18 1,2-Dichloroethane-d4	1.17699	1.10772	0.010	5.88590	30.00000	Averaged
$ 22 Toluene-d8	0.88410	0.93681	0.010	-5.96178	30.00000	Averaged
$ 33 4-Bromofluorobenzene	0.77173	0.78931	0.010	-2.27800	30.00000	Averaged
1 Freon 12	3.27035	3.11486	0.010	4.75469	30.00000	Averaged
2 Freon 114	2.77345	2.63717	0.010	4.91380	30.00000	Averaged
3 Chloromethane	0.97613	0.80067	0.010	17.97450	30.00000	Averaged
4 Vinyl Chloride	0.94229	0.90825	0.010	3.61261	30.00000	Averaged
5 Chloroethane	0.39883	0.39963	0.010	-0.19857	30.00000	Averaged
6 Freon 11	2.98980	3.23788	0.010	-8.29746	30.00000	Averaged
7 Freon 113	2.84453	2.71023	0.010	4.72140	30.00000	Averaged
8 1,1-Dichloroethene	0.67436	0.63313	0.010	6.11488	30.00000	Averaged
9 Methyl tert-butyl ether	2.19355	2.58094	0.010	-17.66074	30.00000	Averaged
10 trans-1,2-Dichloroethene	0.69956	0.72774	0.010	-4.02808	30.00000	Averaged
11 1,1-Dichloroethane	1.93701	1.93200	0.010	0.25885	30.00000	Averaged
12 cis-1,2-Dichloroethene	0.77947	0.82037	0.010	-5.24667	30.00000	Averaged
14 Chloroform	2.50654	2.59363	0.010	-3.47458	30.00000	Averaged
15 1,1,1-Trichloroethane	2.89666	2.83557	0.010	2.10881	30.00000	Averaged
16 Carbon Tetrachloride	2.69868	3.09827	0.010	-14.80704	30.00000	Averaged
17 Benzene	1.18699	1.19728	0.010	-0.86657	30.00000	Averaged
19 1,2-Dichloroethane	0.57931	0.55295	0.010	4.55018	30.00000	Averaged
21 Trichloroethene	0.64845	0.62347	0.010	3.85269	30.00000	Averaged
23 Toluene	1.25841	1.35948	0.010	-8.03173	30.00000	Averaged
24 trans-1,3-Dichloropropene	0.55383	0.61310	0.010	-10.70222	30.00000	Averaged
25 1,1,2-Trichloroethane	0.60305	0.57949	0.010	3.90732	30.00000	Averaged
26 Tetrachloroethene	1.04373	1.05055	0.010	-0.65344	30.00000	Averaged
27 1,2-Dibromoethane (EDB)	0.91937	0.92031	0.010	-0.10175	30.00000	Averaged
29 Chlorobenzene	1.27559	1.30112	0.010	-2.00193	30.00000	Averaged
30 Ethyl Benzene	0.51774	0.60753	0.010	-17.34368	30.00000	Averaged
31 m,p-Xylene	0.61095	0.73629	0.010	-20.51558	30.00000	Averaged
32 o-Xylene	0.56383	0.66199	0.010	-17.40860	30.00000	Averaged
34 1,1,2,2-Tetrachloroethane	1.34982	1.20610	0.010	10.64748	30.00000	Averaged
35 1,3-Dichlorobenzene	1.47115	1.49314	0.010	-1.49521	30.00000	Averaged
36 1,4-Dichlorobenzene	1.45469	1.49781	0.010	-2.96371	30.00000	Averaged
37 1,2-Dichlorobenzene	1.34376	1.40565	0.010	-4.60552	30.00000	Averaged
38 Naphthalene	1.28757	1.25833	0.010	2.27052	30.00000	Averaged

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020602sim.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 06-FEB-2020 07:41
Operator : NS Inst ID: msd20.i
Smp Info : 50mL# 3018-1179
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 06-Feb-2020 13:44 lw7b Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	183377	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	140521			46.79- 106.79	76.63
17.284	17.316 (1.000)	49	182620			67.00- 127.00	99.59
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.839	18.839 (1.000)	114	549605	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	77635			0.00- 44.17	14.13
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	517348	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	240526			16.60- 76.60	46.49
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	203130	5.00000	4.706	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	115318			26.62- 86.62	56.77
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	514875	5.00000	5.298	80.00- 120.00	100.00
21.608	21.624 (1.147)	70	56739			0.00- 40.95	11.02

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	330535			34.26- 94.26	64.20
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	408346	5.00000	5.114	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	343006			54.28- 114.28	84.00
25.927	25.927 (1.066)	176	399989			67.48- 127.48	97.95
1 Freon 12					CAS #: 75-71-8		
5.307	5.336 (0.306)	85	1142388	10.0000	9.524	80.00- 120.00	100.00
5.331	5.336 (0.308)	87	372098			2.53- 62.53	32.57
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	967194	10.0000	9.509	80.00- 120.00	100.00
6.898	6.895 (0.398)	137	311287			2.21- 62.21	32.18
3 Chloromethane					CAS #: 74-87-3		
7.283	7.301 (0.421)	50	293651	10.0000	8.202	80.00- 120.00	100.00
7.283	7.301 (0.421)	52	96362			2.83- 62.83	32.82
4 Vinyl Chloride					CAS #: 75-01-4		
8.280	8.278 (0.478)	62	333104	10.0000	9.639	80.00- 120.00	100.00
8.297	8.278 (0.479)	64	107102			2.23- 62.23	32.15
5 Chloroethane					CAS #: 75-00-3		
10.847	10.846 (0.626)	64	146565	10.0000	10.020	80.00- 120.00	100.00
10.847	10.846 (0.626)	66	47243			2.03- 62.03	32.23
6 Freon 11					CAS #: 75-69-4		
11.738	11.737 (0.678)	101	1187507	10.0000	10.830	80.00- 120.00	100.00
11.738	11.737 (0.678)	103	779123			35.56- 95.56	65.61
7 Freon 113					CAS #: 76-13-1		
13.329	13.328 (0.770)	151	993989	10.0000	9.528	80.00- 120.00	100.00
13.329	13.328 (0.770)	153	645607			35.30- 95.30	64.95
13.329	13.328 (0.770)	101	978320			69.82- 129.82	98.42
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.329	13.331 (0.770)	98	232201	10.0000	9.388	80.00- 120.00	100.00
13.329	13.328 (0.770)	61	518615			194.63- 254.63	223.35
13.329	13.328 (0.770)	96	361648			125.91- 185.91	155.75
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.032	15.031 (0.868)	73	946573	10.0000	11.766	80.00- 120.00	100.00
15.004	15.031 (0.866)	57	197173			0.00- 51.41	20.83
15.004	15.031 (0.866)	41	234451			0.00- 53.76	24.77

```
                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   10 trans-1,2-Dichloroethene                          CAS #: 156-60-5
 15.059  15.080 (0.870)    98    266900 10.0000   10.403  80.00- 120.00   100.00
 15.059  15.061 (0.870)    61    512941                  161.94- 221.94   192.18
 15.059  15.075 (0.870)    96    416971                  125.44- 185.44   156.23
-------------------------------------------------------------------------------
   11 1,1-Dichloroethane                                CAS #: 75-34-3
 15.938  15.937 (0.920)    63    708568 10.0000    9.974  80.00- 120.00   100.00
 15.938  15.937 (0.920)    65    229051                    2.20-  62.20    32.33
-------------------------------------------------------------------------------
   12 cis-1,2-Dichloroethene                            CAS #: 156-59-2
 16.917  16.916 (0.977)    98    300873 10.0000   10.525  80.00- 120.00   100.00
 16.917  16.916 (0.977)    61    521922                  144.59- 204.59   173.47
 16.917  16.916 (0.977)    96    464814                  124.96- 184.96   154.49
-------------------------------------------------------------------------------
   14 Chloroform                                        CAS #: 67-66-3
 17.381  17.381 (1.004)    83    951226 10.0000   10.347  80.00- 120.00   100.00
 17.381  17.381 (1.004)    85    628615                   35.98-  95.98    66.08
 17.381  17.381 (1.004)    47    212262                    0.00-  53.97    22.31
-------------------------------------------------------------------------------
   15 1,1,1-Trichloroethane                             CAS #: 71-55-6
 17.623  17.622 (1.018)    97   1039959 10.0000    9.789  80.00- 120.00   100.00
 17.623  17.622 (1.018)    99    682070                   35.55-  95.55    65.59
-------------------------------------------------------------------------------
   16 Carbon Tetrachloride                              CAS #: 56-23-5
 17.823  17.822 (1.029)   119   1136305 10.0000   11.481  80.00- 120.00   100.00
 17.823  17.822 (1.029)   117   1164087                   72.26- 132.26   102.44
-------------------------------------------------------------------------------
   17 Benzene                                           CAS #: 71-43-2
 18.206  18.207 (0.966)    78   1316059 10.0000   10.087  80.00- 120.00   100.00
 18.206  18.207 (0.966)    77    307450                    0.00-  53.31    23.36
-------------------------------------------------------------------------------
   19 1,2-Dichloroethane                                CAS #: 107-06-2
 18.330  18.330 (0.973)    62    607807 10.0000    9.545  80.00- 120.00   100.00
 18.330  18.330 (0.973)    64    199254                    2.73-  62.73    32.78
-------------------------------------------------------------------------------
   21 Trichloroethene                                   CAS #: 79-01-6
 19.241  19.245 (1.021)   130    685325 10.0000    9.615  80.00- 120.00   100.00
 19.241  19.245 (1.021)    95    590902                   56.54- 116.54    86.22
 19.241  19.245 (1.021)    97    387581                   26.43-  86.43    56.55
-------------------------------------------------------------------------------
   23 Toluene                                           CAS #: 108-88-3
 21.780  21.780 (1.156)    91   1494360 10.0000   10.803  80.00- 120.00   100.00
 21.780  21.780 (1.156)    92    877614                   28.65-  88.65    58.73
-------------------------------------------------------------------------------
   24 trans-1,3-Dichloropropene                         CAS #: 10061-02-6
 22.328  22.328 (0.918)    75    634368 10.0000   11.070  80.00- 120.00   100.00
```

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
22.328	22.328 (0.918)	77	203407			1.94- 61.94	32.06
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.705	22.705 (0.934)	97	599593	10.0000	9.609	80.00- 120.00	100.00
22.705	22.705 (0.934)	99	377915			33.39- 93.39	63.03
22.705	22.705 (0.934)	83	485874			51.43- 111.43	81.03
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	1086995	10.0000	10.065	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	697840			34.72- 94.72	64.20
22.851	22.851 (0.940)	131	678708			33.00- 93.00	62.44
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.664	23.664 (0.973)	107	952240	10.0000	10.010	80.00- 120.00	100.00
23.664	23.664 (0.973)	109	919176			65.72- 125.72	96.53
29 Chlorobenzene					CAS #: 108-90-7		
24.359	24.359 (1.002)	112	1346267	10.0000	10.200	80.00- 120.00	100.00
24.359	24.359 (1.002)	114	441079			2.75- 62.75	32.76
24.359	24.359 (1.002)	77	674732			20.49- 80.49	50.12
30 Ethyl Benzene					CAS #: 100-41-4		
24.442	24.442 (1.005)	106	628608	10.0000	11.734	80.00- 120.00	100.00
24.442	24.442 (1.005)	91	1894439			269.97- 329.97	301.37
31 m,p-Xylene					CAS #: 108-38-3		
24.607	24.607 (1.012)	106	761840	10.0000	12.052	80.00- 120.00	100.00
24.607	24.607 (1.012)	91	1456079			161.51- 221.51	191.13
32 o-Xylene					CAS #: 95-47-6		
25.184	25.184 (1.036)	106	684956	10.0000	11.741	80.00- 120.00	100.00
25.184	25.184 (1.036)	91	1389713			171.59- 231.59	202.89
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.097	26.097 (1.073)	83	1247944	10.0000	8.935	80.00- 120.00	100.00
26.097	26.097 (1.073)	85	823752			35.87- 95.87	66.01
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.246	27.246 (1.120)	146	1544949	10.0000	10.150	80.00- 120.00	100.00
27.246	27.246 (1.120)	148	1013003			35.51- 95.51	65.57
27.246	27.246 (1.120)	111	540506			5.09- 65.09	34.99
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.371	27.371 (1.126)	146	1549775	10.0000	10.296	80.00- 120.00	100.00
27.371	27.371 (1.126)	148	1015865			35.48- 95.48	65.55

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
27.355	27.371 (1.125)	111	519798			3.55- 63.55	33.54
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.838	27.840 (1.145)	146	1454416	10.0000	10.460	80.00- 120.00	100.00
27.854	27.840 (1.145)	148	949952			35.34- 95.34	65.32
27.838	27.840 (1.145)	111	527783			6.26- 66.26	36.29
38 Naphthalene					CAS #: 91-20-3		
30.395	30.395 (1.250)	128	130199	1.00000	0.9773	80.00- 120.00	100.00
30.395	30.395 (1.250)	127	17167			0.00- 43.23	13.19

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020602sim.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	183377	0.00
20 1,4-Difluorobenze	549605	329763	769447	549605	0.00
28 Chlorobenzene-d5	517348	310409	724287	517348	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/06feb20.b/20020602sim.d

Date : 06-FEB-2020 07:41

Client ID: CCV

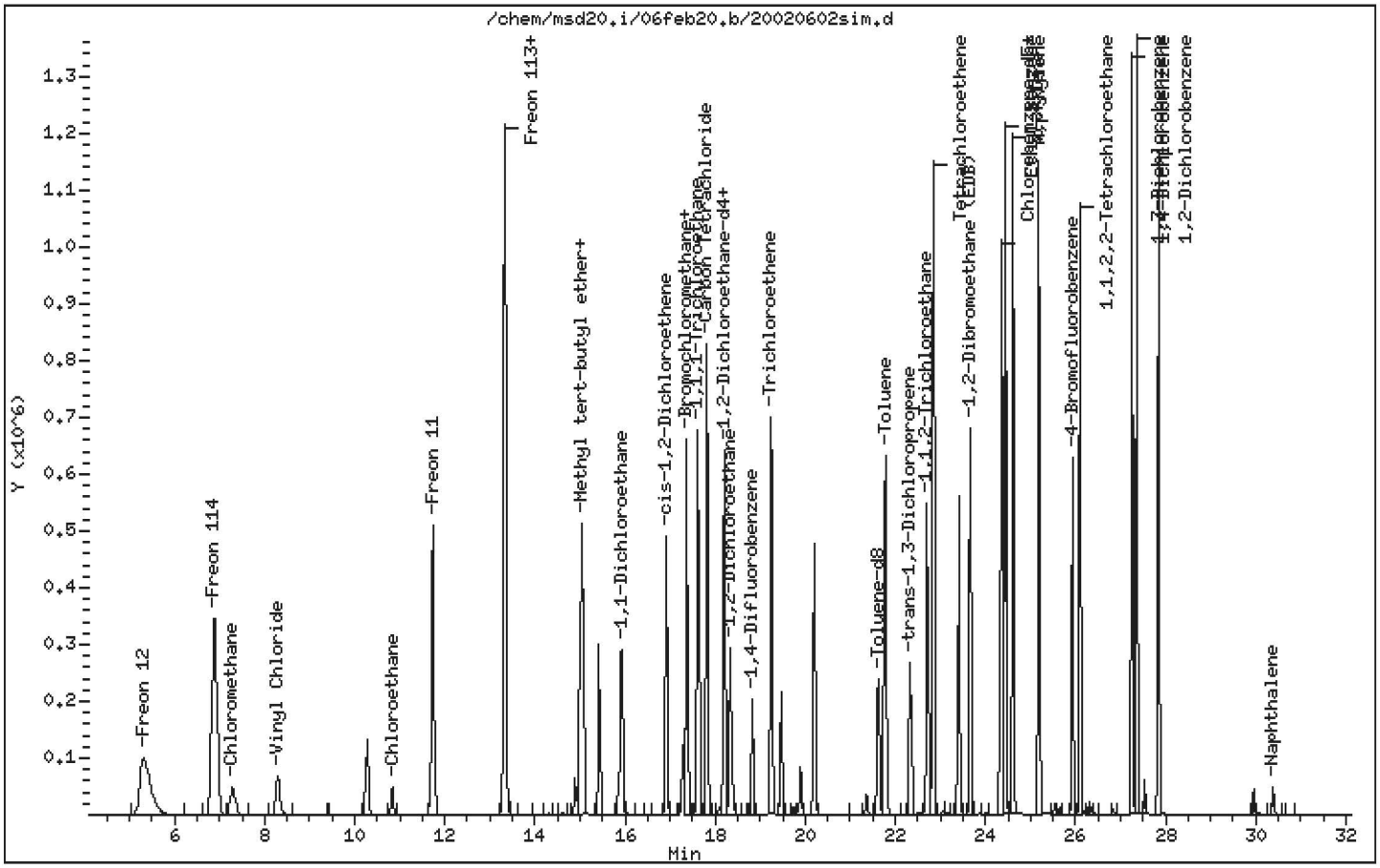
Instrument: msd20.i

Sample Info: 50mL# 3018-1179

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Jones Rd. Groundwater Plume

Client ID:	CCV		
Lab ID:	2001756-18B	**Date/Time Analyzed:**	2/6/20 07:41 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020602

Compound	CAS#	%Recovery
Tetrachloroethene	127-18-4	103

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	99

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd20.i Injection Date: 06-FEB-2020 07:41
Lab File ID: 20020602.d Init. Cal. Date(s): 05-FEB-2020 05-FEB-2020
Analysis Type: AIR Init. Cal. Times: 00:13 09:42
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd20.i/06feb20.b/200l0205a.m

COMPOUND	RRF / AMOUNT	RF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 117 1,2-Dichloroethane-d4	1.07691	1.08809	0.010	-1.03848	30.00000	Averaged
$ 146 Toluene-d8	0.96737	0.95587	0.010	1.18939	30.00000	Averaged
$ 177 4-Bromofluorobenzene	0.76477	0.79678	0.010	-4.18606	30.00000	Averaged
9 Propylene	0.56503	0.57407	0.010	-1.59978	40.00000	Averaged
11 Freon 12	3.00984	3.00708	0.010	0.09178	30.00000	Averaged
15 Freon 114	2.55884	2.51276	0.010	1.80083	30.00000	Averaged
17 Chloromethane	0.81952	0.76560	0.010	6.57979	30.00000	Averaged
23 Butane	0.15060	0.15440	0.010	-2.52284	40.00000	Averaged
25 Vinyl Chloride	0.86351	0.87235	0.010	-1.02318	30.00000	Averaged
26 1,3-Butadiene	0.55564	0.58012	0.010	-4.40635	30.00000	Averaged
29 Bromomethane	0.68241	0.79014	0.010	-15.78595	30.00000	Averaged
30 Chloroethane	0.37865	0.39209	0.010	-3.55101	30.00000	Averaged
31 Isopentane	0.62571	0.61440	0.010	1.80727	40.00000	Averaged
35 Freon 11	2.94300	3.13106	0.010	-6.39022	30.00000	Averaged
42 Ethanol	0.24486	0.23577	0.010	3.71247	30.00000	Averaged
49 Freon 113	2.70906	2.64353	0.010	2.41879	30.00000	Averaged
50 1,1-Dichloroethene	0.61176	0.63360	0.010	-3.56936	30.00000	Averaged
52 Acetone	0.41249	0.40828	0.010	1.02166	30.00000	Averaged
56 Carbon Disulfide	2.83068	2.97974	0.010	-5.26565	30.00000	Averaged
57 2-Propanol	1.15019	1.11633	0.010	2.94372	30.00000	Averaged
58 3-Chloropropene	0.30606	0.33965	0.010	-10.97287	30.00000	Averaged
66 Methylene Chloride	1.02425	0.94562	0.010	7.67668	30.00000	Averaged
71 tert-Butyl alcohol	1.50067	1.54889	0.010	-3.21332	40.00000	Averaged
72 Methyl tert-butyl ether	2.40372	2.62587	0.010	-9.24192	30.00000	Averaged
73 trans-1,2-Dichloroethene	0.63914	0.70466	0.010	-10.25112	30.00000	Averaged
78 Hexane	1.23837	1.33899	0.010	-8.12497	30.00000	Averaged
83 Isopropyl ether	2.52503	2.65285	0.010	-5.06224	40.00000	Averaged
82 1,1-Dichloroethane	1.82652	1.89291	0.010	-3.63468	30.00000	Averaged
86 Vinyl Acetate	0.22530	0.25324	0.010	-12.40174	40.00000	Averaged
88 Ethyl-tert-butyl ether	2.62963	2.75296	0.010	-4.68989	40.00000	Averaged
91 cis-1,2-Dichloroethene	0.74590	0.79183	0.010	-6.15819	30.00000	Averaged
92 2-Butanone	0.45016	0.47586	0.010	-5.70936	30.00000	Averaged
99 Tetrahydrofuran	0.82173	0.86382	0.010	-5.12172	30.00000	Averaged
100 Chloroform	2.48336	2.51115	0.010	-1.11878	30.00000	Averaged
102 Cyclohexane	1.68342	1.90240	0.010	-13.00817	30.00000	Averaged
103 1,1,1-Trichloroethane	2.57744	2.62923	0.010	-2.00920	30.00000	Averaged

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd20.i Injection Date: 06-FEB-2020 07:41
Lab File ID: 20020602.d Init. Cal. Date(s): 05-FEB-2020 05-FEB-2020
Analysis Type: AIR Init. Cal. Times: 00:13 09:42
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd20.i/06feb20.b/200l0205a.m

COMPOUND	RRF / AMOUNT	RF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
106 Carbon Tetrachloride	2.70755	2.93205	0.010	-8.29170	30.00000	Averaged
113 2,2,4-Trimethylpentane	2.23510	2.25921	0.010	-1.07884	30.00000	Averaged
116 Benzene	1.08713	1.16119	0.010	-6.81272	30.00000	Averaged
119 tert-Amyl methyl ether	0.24844	0.25151	0.010	-1.23604	40.00000	Averaged
120 1,2-Dichloroethane	0.55715	0.53169	0.010	4.57023	30.00000	Averaged
121 Heptane	0.27198	0.29654	0.010	-9.02940	30.00000	Averaged
125 Trichloroethene	0.64504	0.62387	0.010	3.28243	30.00000	Averaged
127 Methylcyclohexane	0.60050	0.64257	0.010	-7.00663	40.00000	Averaged
132 1,2-Dichloropropane	0.41135	0.39919	0.010	2.95683	30.00000	Averaged
136 1,4-Dioxane	0.24118	0.26242	0.010	-8.80869	30.00000	Averaged
138 Bromodichloromethane	0.97366	0.97508	0.010	-0.14623	30.00000	Averaged
144 cis-1,3-Dichloropropene	0.56900	0.55728	0.010	2.05927	30.00000	Averaged
145 4-Methyl-2-pentanone	0.62782	0.63638	0.010	-1.36329	30.00000	Averaged
147 Toluene	1.32451	1.35793	0.010	-2.52348	30.00000	Averaged
150 trans-1,3-Dichloropropene	0.59374	0.61601	0.010	-3.75044	30.00000	Averaged
155 1,1,2-Trichloroethane	0.64071	0.56965	0.010	11.09014	30.00000	Averaged
156 Tetrachloroethene	1.07981	1.11027	0.010	-2.82016	30.00000	Averaged
158 2-Hexanone	0.35227	0.37619	0.010	-6.78832	30.00000	Averaged
160 Dibromochloromethane	1.21964	1.27611	0.010	-4.63068	30.00000	Averaged
161 1,2-Dibromoethane (EDB)	0.93660	0.93205	0.010	0.48676	30.00000	Averaged
165 Chlorobenzene	1.25695	1.31784	0.010	-4.84474	30.00000	Averaged
167 Ethyl Benzene	0.55410	0.62716	0.010	-13.18689	30.00000	Averaged
169 m,p-Xylene	0.66861	0.75663	0.010	-13.16453	30.00000	Averaged
171 o-Xylene	0.59968	0.68477	0.010	-14.19031	30.00000	Averaged
172 Styrene	1.04024	1.20535	0.010	-15.87235	30.00000	Averaged
174 Bromoform	1.44295	1.48909	0.010	-3.19739	30.00000	Averaged
175 Cumene	1.95681	2.26474	0.010	-15.73631	30.00000	Averaged
181 1,1,2,2-Tetrachloroethane	1.31587	1.21825	0.010	7.41851	30.00000	Averaged
182 Propylbenzene	2.28773	2.55548	0.010	-11.70346	30.00000	Averaged
188 4-Ethyltoluene	1.97029	2.30915	0.010	-17.19869	30.00000	Averaged
190 1,3,5-Trimethylbenzene	1.91763	2.25425	0.010	-17.55391	30.00000	Averaged
196 1,2,4-Trimethylbenzene	1.60949	1.88550	0.010	-17.14909	30.00000	Averaged
208 1,3-Dichlorobenzene	1.46939	1.50748	0.010	-2.59213	30.00000	Averaged
209 1,4-Dichlorobenzene	1.41847	1.51838	0.010	-7.04350	30.00000	Averaged
212 alpha-Chlorotoluene	1.22412	1.31502	0.010	-7.42648	30.00000	Averaged

US32TAR1

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd20.i Injection Date: 06-FEB-2020 07:41
Lab File ID: 20020602.d Init. Cal. Date(s): 05-FEB-2020 05-FEB-2020
Analysis Type: AIR Init. Cal. Times: 00:13 09:42
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd20.i/06feb20.b/200l0205a.m

COMPOUND	RRF / AMOUNT	RF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
214 1,2-Dichlorobenzene	1.34068	1.42639	0.010	-6.39269	30.00000	Averaged
226 1,2,4-Trichlorobenzene	1.04998	1.08631	0.010	-3.46013	30.00000	Averaged
227 Hexachlorobutadiene	1.20239	1.29865	0.010	-8.00497	30.00000	Averaged
228 Naphthalene	1.48330	1.27154	0.010	14.27656	40.00000	Averaged

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020602.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 06-FEB-2020 07:41
Operator : NS Inst ID: msd20.i
Smp Info : 50mL# 3018-1179
Misc Info : 10ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m
Meth Date : 06-Feb-2020 08:24 uexa Quant Type: ISTD
Cal Date : 05-FEB-2020 09:42 Cal File: 20020513.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	180905	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	136191			46.61- 106.61	75.28
17.302	17.302 (1.000)	49	154717			58.08- 118.08	85.52
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.832	18.833 (1.000)	114	536645	5.00000		80.00- 120.00	100.00
18.832	18.833 (1.000)	88	79243			0.00- 44.22	14.77
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	492844	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	234148			18.72- 78.72	47.51
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	196841	5.00000	5.052	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	106747			30.76- 90.76	54.23
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	512961	5.00000	4.940	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	59099			0.00- 41.39	11.52

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
21.617	21.617 (1.148)	100	333266			35.17- 95.17	64.97
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	392689	5.00000	5.209	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	332650			59.22- 119.22	84.71
25.920	25.920 (1.066)	176	364534			69.23- 129.23	92.83
9 Propylene					CAS #: 115-07-1		
4.787	4.782 (0.277)	41	207705	10.0000	10.160	80.00- 120.00	100.00
4.811	4.797 (0.278)	42	143726			38.85- 98.85	69.20
4.787	4.792 (0.277)	39	168677			50.09- 110.09	81.21
11 Freon 12					CAS #: 75-71-8		
5.317	5.321 (0.307)	85	1087993	10.0000	9.991	80.00- 120.00	100.00
5.317	5.328 (0.307)	87	351543			2.53- 62.53	32.31
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	909142	10.0000	9.820	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	284305			2.72- 62.72	31.27
6.860	6.878 (0.396)	85	1073370			86.16- 146.16	118.06
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	277001	10.0000	9.342	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	95731			3.63- 63.63	34.56
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	55862	10.0000	10.252	80.00- 120.00	100.00
8.092	8.095 (0.468)	43	372473			627.99- 687.99	666.76
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	315624	10.0000	10.102	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	100052			2.83- 62.83	31.70
26 1,3-Butadiene					CAS #: 106-99-0		
8.526	8.541 (0.493)	54	209894	10.0000	10.441	80.00- 120.00	100.00
8.526	8.541 (0.493)	39	204354			69.65- 129.65	97.36
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	285879	10.0000	11.578	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	273838			60.82- 120.82	95.79
30 Chloroethane					CAS #: 75-00-3		
10.833	10.846 (0.626)	64	141862	10.0000	10.355	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	35608			0.00- 55.00	25.10
10.833	10.835 (0.626)	66	43407			1.88- 61.88	30.60

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	222297	10.0000	9.819	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	301290			111.40- 171.40	135.53
10.977	10.976 (0.634)	42	281554			96.33- 156.33	126.66
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	1132852	10.0000	10.639	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	738950			35.14- 95.14	65.23
42 Ethanol					CAS #: 64-17-5		
12.848	12.870 (0.743)	45	85304	10.0000	9.629	80.00- 120.00	100.00
12.848	12.870 (0.743)	46	33202			6.43- 66.43	38.92
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	956458	10.0000	9.758	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	617509			34.89- 94.89	64.56
13.315	13.320 (0.770)	101	952706			70.13- 130.13	99.61
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.315	13.331 (0.770)	98	229243	10.0000	10.357	80.00- 120.00	100.00
13.315	13.324 (0.770)	61	498348			197.76- 257.76	217.39
13.315	13.324 (0.770)	96	347604			124.14- 184.14	151.63
52 Acetone					CAS #: 67-64-1		
13.700	13.706 (0.792)	58	147720	10.0000	9.898	80.00- 120.00	100.00
13.700	13.706 (0.792)	43	461535			291.24- 351.24	312.44
56 Carbon Disulfide					CAS #: 75-15-0		
13.727	13.726 (0.793)	76	1078101	10.0000	10.526	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.112	14.110 (0.816)	45	403899	10.0000	9.706	80.00- 120.00	100.00
14.112	14.114 (0.816)	43	121031			0.00- 59.88	29.97
14.112	14.110 (0.816)	59	17720			0.00- 34.36	4.39
58 3-Chloropropene					CAS #: 107-05-1		
14.304	14.295 (0.827)	76	122888	10.0000	11.097	80.00- 120.00	100.00
14.277	14.295 (0.825)	41	267408			188.05- 248.05	217.60
66 Methylene Chloride					CAS #: 75-09-2		
14.634	14.632 (0.846)	84	342136	10.0000	9.232	80.00- 120.00	100.00
14.634	14.632 (0.846)	49	378796			79.75- 139.75	110.71
14.634	14.632 (0.846)	51	120851			4.54- 64.54	35.32
71 tert-Butyl alcohol					CAS #: 75-65-0		
14.908	14.907 (0.862)	59	560406	10.0000	10.321	80.00- 120.00	100.00

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                                          AMOUNTS
                                       CAL-AMT   ON-COL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   71 tert-Butyl alcohol (continued)
 14.908  14.903 (0.862)    41    161631                     0.00-  57.20    28.84
 14.908  14.907 (0.862)    57     61592                     0.00-  41.27    10.99
-------------------------------------------------------------------------------
   72 Methyl tert-butyl ether                        CAS #: 1634-04-4
 15.018  15.017 (0.868)    73    950067 10.0000   10.924  80.00- 120.00   100.00
 15.018  15.017 (0.868)    57    200465                     0.00-  50.29    21.10
 15.018  15.017 (0.868)    41    225405                     0.00-  53.61    23.73
-------------------------------------------------------------------------------
   73 trans-1,2-Dichloroethene                       CAS #: 156-60-5
 15.073  15.072 (0.871)    98    254954 10.0000   11.025  80.00- 120.00   100.00
 15.073  15.072 (0.871)    61    495088                   166.73- 226.73   194.19
 15.073  15.072 (0.871)    96    403186                   131.17- 191.17   158.14
-------------------------------------------------------------------------------
   78 Hexane                                         CAS #: 110-54-3
 15.430  15.428 (0.892)    57    484460 10.0000   10.812  80.00- 120.00   100.00
 15.430  15.428 (0.892)    43    284683                    27.95-  87.95    58.76
 15.430  15.428 (0.892)    86     92818                     0.00-  48.76    19.16
-------------------------------------------------------------------------------
   83 Isopropyl ether                                CAS #: 108-20-3
 15.869  15.872 (0.917)    45    959830 10.0000   10.506  80.00- 120.00   100.00
 15.869  15.872 (0.917)    87    339757                     3.75-  63.75    35.40
 15.869  15.872 (0.917)    59    125042                     0.00-  43.23    13.03
-------------------------------------------------------------------------------
   82 1,1-Dichloroethane                             CAS #: 75-34-3
 15.924  15.923 (0.920)    63    684873 10.0000   10.363  80.00- 120.00   100.00
 15.924  15.923 (0.920)    65    220123                     1.61-  61.61    32.14
-------------------------------------------------------------------------------
   86 Vinyl Acetate                                  CAS #: 108-05-4
 15.979  15.978 (0.923)    86     91624 10.0000   11.240  80.00- 120.00   100.00
 15.979  15.978 (0.923)    42     74811                    52.54- 112.54    81.65
 15.979  15.978 (0.923)    43    739687                   783.51- 843.51   807.30
-------------------------------------------------------------------------------
   88 Ethyl-tert-butyl ether                         CAS #: 637-92-3
 16.468  16.467 (0.952)    59    996049 10.0000   10.469  80.00- 120.00   100.00
 16.468  16.467 (0.952)    87    484393                    16.88-  76.88    48.63
 16.468  16.467 (0.952)    41    229797                     0.00-  52.99    23.07
-------------------------------------------------------------------------------
   91 cis-1,2-Dichloroethene                         CAS #: 156-59-2
 16.903  16.902 (0.977)    98    286494 10.0000   10.616  80.00- 120.00   100.00
 16.903  16.902 (0.977)    61    505655                   148.56- 208.56   176.50
 16.903  16.902 (0.977)    96    455426                   126.55- 186.55   158.97
-------------------------------------------------------------------------------
   92 2-Butanone                                     CAS #: 78-93-3
 16.924  16.926 (0.978)    72    172172 10.0000   10.571  80.00- 120.00   100.00
 16.924  16.923 (0.978)    43    596890                   309.31- 369.31   346.68
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RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
92 2-Butanone (continued)								
16.924	16.926	(0.978)	57	52792			0.00- 58.97	30.66
99 Tetrahydrofuran						CAS #: 109-99-9		
17.270	17.283	(0.998)	42	312537	10.0000	10.512	80.00- 120.00	100.00
17.270	17.283	(0.998)	71	146867			17.62- 77.62	46.99
17.270	17.283	(0.998)	72	154342			20.52- 80.52	49.38
100 Chloroform						CAS #: 67-66-3		
17.367	17.379	(1.004)	83	908560	10.0000	10.112	80.00- 120.00	100.00
17.367	17.383	(1.004)	85	596352			35.58- 95.58	65.64
102 Cyclohexane						CAS #: 110-82-7		
17.597	17.605	(1.017)	84	688307	10.0000	11.301	80.00- 120.00	100.00
17.597	17.602	(1.017)	56	701735			66.69- 126.69	101.95
17.597	17.602	(1.017)	41	395805			26.30- 86.30	57.50
103 1,1,1-Trichloroethane						CAS #: 71-55-6		
17.619	17.631	(1.018)	97	951283	10.0000	10.201	80.00- 120.00	100.00
17.619	17.633	(1.018)	99	628720			34.72- 94.72	66.09
106 Carbon Tetrachloride						CAS #: 56-23-5		
17.819	17.824	(1.030)	119	1060846	10.0000	10.829	80.00- 120.00	100.00
17.819	17.829	(1.030)	117	1086256			72.39- 132.39	102.40
113 2,2,4-Trimethylpentane						CAS #: 540-84-1		
18.121	18.121	(1.047)	56	817408	10.0000	10.108	80.00- 120.00	100.00
18.121	18.121	(1.047)	57	2432464			245.12- 305.12	297.58
18.121	18.121	(1.047)	41	695023			50.98- 110.98	85.03
116 Benzene						CAS #: 71-43-2		
18.203	18.206	(0.967)	78	1246299	10.0000	10.681	80.00- 120.00	100.00
18.203	18.203	(0.967)	77	286103			0.00- 54.15	22.96
119 tert-Amyl methyl ether						CAS #: 994-05-8		
18.265	18.265	(0.970)	87	269946	10.0000	10.124	80.00- 120.00	100.00
18.265	18.265	(0.970)	73	1069589			364.30- 424.30	396.22
18.265	18.265	(0.970)	55	301494			83.00- 143.00	111.69
120 1,2-Dichloroethane						CAS #: 107-06-2		
18.347	18.347	(0.974)	62	570657	10.0000	9.543	80.00- 120.00	100.00
18.347	18.345	(0.974)	64	188061			0.98- 60.98	32.96
121 Heptane						CAS #: 142-82-5		
18.409	18.404	(0.978)	57	318276	10.0000	10.903	80.00- 120.00	100.00
18.409	18.406	(0.978)	100	173176			22.83- 82.83	54.41

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
121 Heptane (continued)							
18.409	18.409 (0.978)	43	526649			143.19- 203.19	165.47
125 Trichloroethene					CAS #: 79-01-6		
19.256	19.256 (1.022)	130	669590	10.0000	9.672	80.00- 120.00	100.00
19.256	19.254 (1.022)	95	548372			54.82- 114.82	81.90
19.256	19.259 (1.022)	97	370238			25.35- 85.35	55.29
127 Methylcyclohexane					CAS #: 108-87-2		
19.479	19.480 (1.034)	83	689668	10.0000	10.701	80.00- 120.00	100.00
19.479	19.480 (1.034)	55	485840			40.96- 100.96	70.45
19.479	19.480 (1.034)	56	153418			0.00- 52.45	22.25
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	428448	10.0000	9.704	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	292552			40.35- 100.35	68.28
19.747	19.750 (1.049)	41	233756			24.96- 84.96	54.56
136 1,4-Dioxane					CAS #: 123-91-1		
19.903	19.901 (1.057)	88	281656	10.0000	10.881	80.00- 120.00	100.00
19.903	19.906 (1.057)	58	167673			31.33- 91.33	59.53
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	961127	10.0000	10.015	80.00- 120.00	100.00
20.216	20.216 (0.832)	85	620828			34.54- 94.54	64.59
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.118	21.115 (1.121)	75	598124	10.0000	9.794	80.00- 120.00	100.00
21.118	21.120 (1.121)	77	186203			2.26- 62.26	31.13
21.118	21.120 (1.121)	39	253356			13.91- 73.91	42.36
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	683017	10.0000	10.136	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	269628			8.83- 68.83	39.48
21.352	21.362 (1.134)	85	143783			0.00- 50.74	21.05
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	1457458	10.0000	10.252	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	844155			27.71- 87.71	57.92
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	607189	10.0000	10.375	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	192839			3.18- 63.18	31.76
22.350	22.346 (0.919)	39	254457			13.49- 73.49	41.91
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	561500	10.0000	8.891	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
155 1,1,2-Trichloroethane (continued)							
22.728	22.728 (0.935)	99	349708			31.74- 91.74	62.28
22.728	22.728 (0.935)	83	460402			51.17- 111.17	81.99
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	1094377	10.0000	10.282	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	678519			34.89- 94.89	62.00
22.844	22.844 (0.940)	131	676932			32.11- 92.11	61.86
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	370803	10.0000	10.679	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	671112			150.34- 210.34	180.99
23.076	23.076 (0.949)	100	92004			0.00- 55.47	24.81
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	1257850	10.0000	10.463	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	963409			46.51- 106.51	76.59
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	918706	10.0000	9.951	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	869940			64.58- 124.58	94.69
165 Chlorobenzene					CAS #: 108-90-7		
24.352	24.355 (1.002)	112	1298982	10.0000	10.484	80.00- 120.00	100.00
24.373	24.360 (1.003)	114	429677			1.57- 61.57	33.08
24.352	24.352 (1.002)	77	664914			21.74- 81.74	51.19
167 Ethyl Benzene					CAS #: 100-41-4		
24.435	24.435 (1.005)	106	618188	10.0000	11.319	80.00- 120.00	100.00
24.435	24.435 (1.005)	91	1847327			270.24- 330.24	298.83
169 m,p-Xylene					CAS #: 108-38-3		
24.621	24.621 (1.013)	106	745798	10.0000	11.316	80.00- 120.00	100.00
24.621	24.618 (1.013)	91	1422699			159.55- 219.55	190.76
171 o-Xylene					CAS #: 95-47-6		
25.198	25.198 (1.036)	106	674970	10.0000	11.419	80.00- 120.00	100.00
25.198	25.198 (1.036)	91	1348951			167.89- 227.89	199.85
172 Styrene					CAS #: 100-42-5		
25.219	25.219 (1.037)	104	1188097	10.0000	11.587	80.00- 120.00	100.00
25.219	25.219 (1.037)	78	549679			16.95- 76.95	46.27
174 Bromoform					CAS #: 75-25-2		
25.540	25.540 (1.051)	173	1467774	10.0000	10.320	80.00- 120.00	100.00
25.540	25.540 (1.051)	171	750997			19.65- 79.65	51.17

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
175 Cumene						CAS #: 98-82-8		
25.635	25.635	(1.054)	105	2232331	10.0000	11.574	80.00- 120.00	100.00
25.635	25.635	(1.054)	120	630181			0.00- 58.11	28.23
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.109	26.109	(1.074)	83	1200812	10.0000	9.258	80.00- 120.00	100.00
26.109	26.109	(1.074)	85	788246			35.51- 95.51	65.64
182 Propylbenzene						CAS #: 103-65-1		
26.147	26.154	(1.076)	91	2518906	10.0000	11.170	80.00- 120.00	100.00
26.166	26.154	(1.076)	120	650500			0.00- 55.59	25.82
188 4-Ethyltoluene						CAS #: 622-96-8		
26.299	26.299	(1.082)	105	2276101	10.0000	11.720	80.00- 120.00	100.00
26.299	26.295	(1.082)	120	729884			1.51- 61.51	32.07
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
26.356	26.356	(1.084)	105	2221992	10.0000	11.755	80.00- 120.00	100.00
26.356	26.356	(1.084)	120	1123471			21.30- 81.30	50.56
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
26.830	26.830	(1.104)	105	1858518	10.0000	11.715	80.00- 120.00	100.00
26.830	26.830	(1.104)	120	914275			18.64- 78.64	49.19
208 1,3-Dichlorobenzene						CAS #: 541-73-1		
27.255	27.255	(1.121)	146	1485907	10.0000	10.259	80.00- 120.00	100.00
27.255	27.255	(1.121)	148	966889			34.75- 94.75	65.07
27.255	27.255	(1.121)	111	507535			5.38- 65.38	34.16
209 1,4-Dichlorobenzene						CAS #: 106-46-7		
27.364	27.364	(1.126)	146	1496647	10.0000	10.704	80.00- 120.00	100.00
27.364	27.364	(1.126)	148	956438			34.92- 94.92	63.91
27.364	27.364	(1.126)	111	490766			3.67- 63.67	32.79
212 alpha-Chlorotoluene						CAS #: 100-44-7		
27.535	27.535	(1.133)	91	1296204	10.0000	10.743	80.00- 120.00	100.00
27.535	27.535	(1.133)	126	307326			0.00- 55.02	23.71
214 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.847	27.847	(1.145)	146	1405973	10.0000	10.639	80.00- 120.00	100.00
27.847	27.847	(1.145)	148	890493			33.90- 93.90	63.34
27.847	27.845	(1.145)	111	501518			5.97- 65.97	35.67
226 1,2,4-Trichlorobenzene						CAS #: 120-82-1		
29.952	29.959	(1.232)	180	1070763	10.0000	10.346	80.00- 120.00	100.00
29.952	29.953	(1.232)	182	1020091			67.09- 127.09	95.27

RT	EXP RT	(REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
227 Hexachlorobutadiene						CAS #: 87-68-3		
30.076	30.076	(1.237)	225	1280060	10.0000	10.800	80.00- 120.00	100.00
30.076	30.076	(1.237)	223	802673			33.13- 93.13	62.71
228 Naphthalene						CAS #: 91-20-3		
30.388	30.388	(1.250)	128	125334	1.00000	0.8572	80.00- 120.00	100.00
30.388	30.391	(1.250)	127	17848			0.00- 45.10	14.24

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020602.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	180905	108543	253267	180905	0.00
123 1,4-Difluorobenze	536645	321987	751303	536645	0.00
163 Chlorobenzene-d5	492844	295706	689982	492844	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	0.00
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/06feb20.b/20020602.d

Date : 06-FEB-2020 07:41

Client ID: CCV

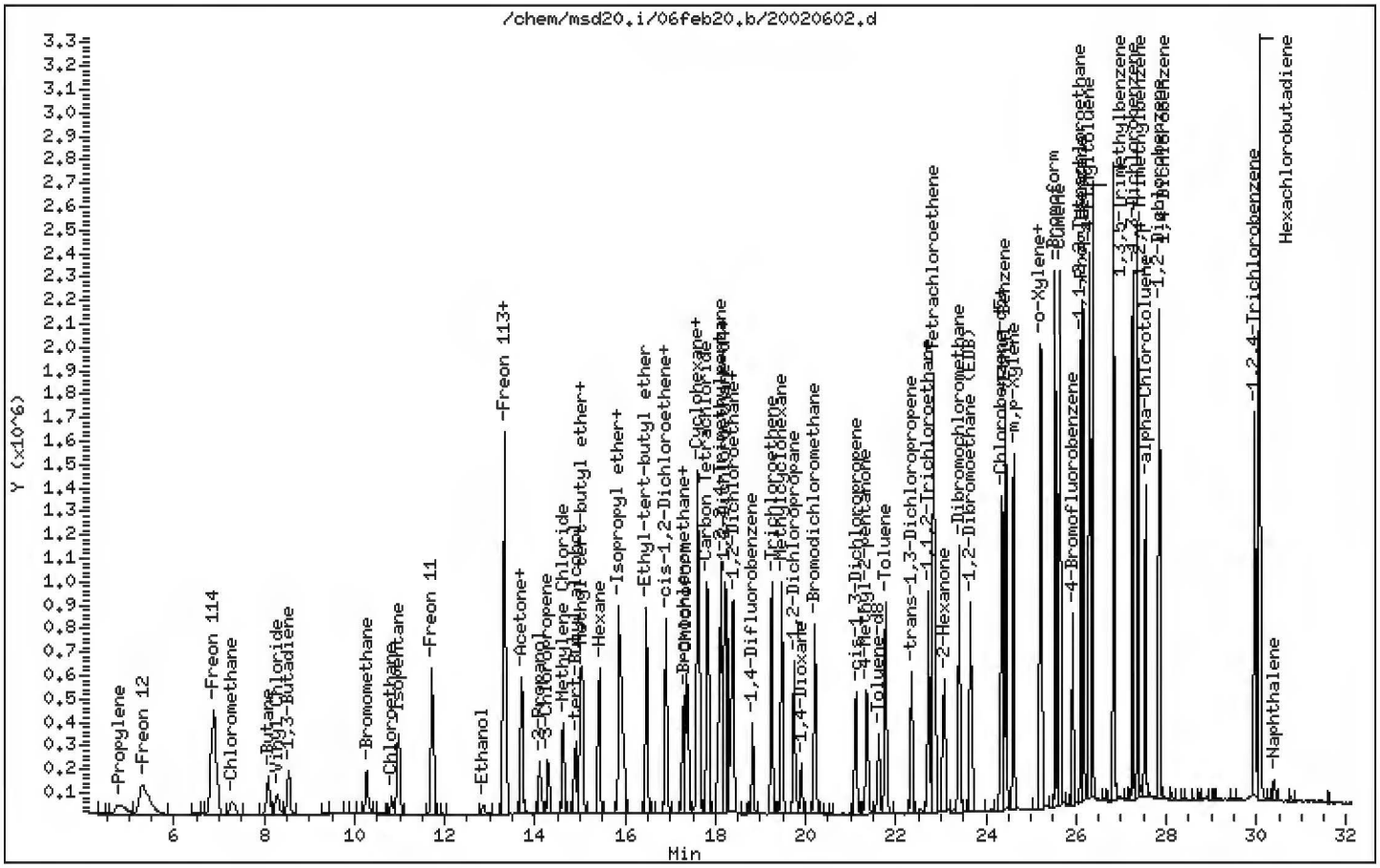
Instrument: msd20.i

Sample Info: 50mL# 3018-1179

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	LCS		
Lab ID:	2001756-19A	**Date/Time Analyzed:**	2/6/20 08:20 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020603sim

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	97
cis-1,2-Dichloroethene	156-59-2	94
Tetrachloroethene	127-18-4	96
trans-1,2-Dichloroethene	156-60-5	113
Trichloroethene	79-01-6	95
Vinyl Chloride	75-01-4	104

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	105

* % Recovery is calculated using unrounded analytical results.

Report Date: 06-Feb-2020 09:00

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LCS
Client Smp ID: LCS
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: LCS
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
1 Freon 12	10.000	9.898	98.98
2 Freon 114	10.000	9.887	98.87
3 Chloromethane	10.000	8.745	87.45
4 Vinyl Chloride	10.000	10.385	103.85
5 Chloroethane	10.000	10.844	108.44
6 Freon 11	10.000	11.053	110.53
7 Freon 113	10.000	9.623	96.23
8 1,1-Dichloroethene	10.000	9.700	97.00
9 Methyl tert-butyl ether	10.000	11.336	113.36
10 trans-1,2-Dichloroethene	10.000	11.347	113.47
11 1,1-Dichloroethane	10.000	9.674	96.74
12 cis-1,2-Dichloroethene	10.000	9.426	94.26
14 Chloroform	10.000	10.431	104.31
15 1,1,1-Trichloroethane	10.000	10.083	100.83
16 Carbon Tetrachloride	10.000	11.835	118.35
17 Benzene	10.000	9.887	98.87
19 1,2-Dichloroethane	10.000	9.160	91.60
21 Trichloroethene	10.000	9.546	95.46
23 Toluene	10.000	10.493	104.93
24 trans-1,3-Dichloropropene	10.000	11.012	110.12
25 1,1,2-Trichloroethane	10.000	9.586	95.86
26 Tetrachloroethene	10.000	9.573	95.73
27 1,2-Dibromoethane (EDB)	10.000	9.787	97.87
29 Chlorobenzene	10.000	9.744	97.44
30 Ethyl Benzene	10.000	11.388	113.88
31 m,p-Xylene	10.000	11.508	115.08
32 o-Xylene	10.000	11.404	114.04
34 1,1,2,2-Tetrachloroethane	10.000	8.599	85.99
35 1,3-Dichlorobenzene	10.000	9.599	95.99
36 1,4-Dichlorobenzene	10.000	9.946	99.46
37 1,2-Dichlorobenzene	10.000	10.056	100.57
38 Naphthalene	1.000	1.305	130.46

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LCS
Client Smp ID: LCS
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: LCS
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	4.688	93.76
$ 22 Toluene-d8	5.000	5.255	105.11
$ 33 4-Bromofluorobenzene	5.000	5.080	101.61

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020603sim.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 06-FEB-2020 08:20
Operator : NS Inst ID: msd20.i
Smp Info : 50mL# 3018-1182
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 06-Feb-2020 08:16 lw7b Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	188894	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	144717			46.79- 106.79	76.61
17.284	17.316 (1.000)	49	184965			67.00- 127.00	97.92
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.840	18.839 (1.000)	114	580235	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	82150			0.00- 44.17	14.16
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	540534	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	250704			16.60- 76.60	46.38
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	208462	4.68820	4.688	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	109771			26.62- 86.62	52.66
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	539185	5.25535	5.255	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	58751			0.00- 40.95	10.90

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	346140			34.26- 94.26	64.20
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	423862	5.08052	5.080	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	357623			54.28- 114.28	84.37
25.927	25.927 (1.066)	176	416243			67.48- 127.48	98.20
1 Freon 12					CAS #: 75-71-8		
5.331	5.336 (0.308)	85	1222949	9.89840	9.898	80.00- 120.00	100.00
5.331	5.336 (0.308)	87	397594			2.53- 62.53	32.51
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	1035914	9.88677	9.887	80.00- 120.00	100.00
6.898	6.895 (0.398)	137	333352			2.21- 62.21	32.18
3 Chloromethane					CAS #: 74-87-3		
7.283	7.301 (0.421)	50	322501	8.74532	8.745	80.00- 120.00	100.00
7.308	7.301 (0.422)	52	105788			2.83- 62.83	32.80
4 Vinyl Chloride					CAS #: 75-01-4		
8.297	8.278 (0.479)	62	369701	10.3853	10.385	80.00- 120.00	100.00
8.297	8.278 (0.479)	64	119136			2.23- 62.23	32.23
5 Chloroethane					CAS #: 75-00-3		
10.847	10.846 (0.626)	64	163397	10.8443	10.844	80.00- 120.00	100.00
10.847	10.846 (0.626)	66	52479			2.03- 62.03	32.12
6 Freon 11					CAS #: 75-69-4		
11.738	11.737 (0.678)	101	1248475	11.0532	11.053	80.00- 120.00	100.00
11.738	11.737 (0.678)	103	816651			35.56- 95.56	65.41
7 Freon 113					CAS #: 76-13-1		
13.329	13.328 (0.770)	151	1034089	9.62273	9.623	80.00- 120.00	100.00
13.329	13.328 (0.770)	153	674455			35.30- 95.30	65.22
13.329	13.328 (0.770)	101	1017814			69.82- 129.82	98.43
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.329	13.331 (0.770)	98	247120	9.69991	9.700	80.00- 120.00	100.00
13.329	13.328 (0.770)	61	553462			194.63- 254.63	223.96
13.329	13.328 (0.770)	96	385885			125.91- 185.91	156.15
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.032	15.031 (0.868)	73	939391	11.3358	11.336	80.00- 120.00	100.00
15.004	15.031 (0.866)	57	193122			0.00- 51.41	20.56
15.004	15.031 (0.866)	41	231730			0.00- 53.76	24.67

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	299880	11.3469	11.347	80.00- 120.00	100.00
15.059	15.061 (0.870)	61	572196			161.94- 221.94	190.81
15.059	15.075 (0.870)	96	464682			125.44- 185.44	154.96
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.938	15.937 (0.920)	63	707898	9.67365	9.674	80.00- 120.00	100.00
15.938	15.937 (0.920)	65	227742			2.20- 62.20	32.17
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	277568	9.42589	9.426	80.00- 120.00	100.00
16.917	16.916 (0.977)	61	480914			144.59- 204.59	173.26
16.917	16.916 (0.977)	96	427727			124.96- 184.96	154.10
14 Chloroform					CAS #: 67-66-3		
17.381	17.381 (1.004)	83	987775	10.4312	10.431	80.00- 120.00	100.00
17.381	17.381 (1.004)	85	650549			35.98- 95.98	65.86
17.381	17.381 (1.004)	47	220274			0.00- 53.97	22.30
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.622	17.622 (1.018)	97	1103459	10.0835	10.083	80.00- 120.00	100.00
17.622	17.622 (1.018)	99	721944			35.55- 95.55	65.43
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.823	17.822 (1.029)	119	1206633	11.8352	11.835	80.00- 120.00	100.00
17.823	17.822 (1.029)	117	1234998			72.26- 132.26	102.35
17 Benzene					CAS #: 71-43-2		
18.207	18.207 (0.966)	78	1361952	9.88735	9.887	80.00- 120.00	100.00
18.207	18.207 (0.966)	77	318321			0.00- 53.31	23.37
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.330	18.330 (0.973)	62	615819	9.16027	9.160	80.00- 120.00	100.00
18.330	18.330 (0.973)	64	200971			2.73- 62.73	32.63
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	718357	9.54613	9.546	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	619439			56.54- 116.54	86.23
19.241	19.245 (1.021)	97	401758			26.43- 86.43	55.93
23 Toluene					CAS #: 108-88-3		
21.780	21.780 (1.156)	91	1532320	10.4928	10.493	80.00- 120.00	100.00
21.780	21.780 (1.156)	92	899961			28.65- 88.65	58.73
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.328	22.328 (0.918)	75	659336	11.0124	11.012	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
22.328	22.328 (0.918)	77	211287			1.94- 61.94	32.05
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.706	22.705 (0.934)	97	624981	9.58649	9.586	80.00- 120.00	100.00
22.706	22.705 (0.934)	99	395096			33.39- 93.39	63.22
22.706	22.705 (0.934)	83	505107			51.43- 111.43	80.82
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	1080169	9.57309	9.573	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	696076			34.72- 94.72	64.44
22.851	22.851 (0.940)	131	676165			33.00- 93.00	62.60
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.664	23.664 (0.973)	107	972773	9.78736	9.787	80.00- 120.00	100.00
23.664	23.664 (0.973)	109	936993			65.72- 125.72	96.32
29 Chlorobenzene					CAS #: 108-90-7		
24.360	24.359 (1.002)	112	1343707	9.74409	9.744	80.00- 120.00	100.00
24.360	24.359 (1.002)	114	439912			2.75- 62.75	32.74
24.360	24.359 (1.002)	77	673917			20.49- 80.49	50.15
30 Ethyl Benzene					CAS #: 100-41-4		
24.442	24.442 (1.005)	106	637384	11.3878	11.388	80.00- 120.00	100.00
24.442	24.442 (1.005)	91	1900870			269.97- 329.97	298.23
31 m,p-Xylene					CAS #: 108-38-3		
24.607	24.607 (1.012)	106	760100	11.5083	11.508	80.00- 120.00	100.00
24.607	24.607 (1.012)	91	1457370			161.51- 221.51	191.73
32 o-Xylene					CAS #: 95-47-6		
25.185	25.184 (1.036)	106	695147	11.4044	11.404	80.00- 120.00	100.00
25.185	25.184 (1.036)	91	1400757			171.59- 231.59	201.51
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.097	26.097 (1.073)	83	1254846	8.59927	8.599	80.00- 120.00	100.00
26.097	26.097 (1.073)	85	826047			35.87- 95.87	65.83
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.246	27.246 (1.120)	146	1526636	9.59901	9.599	80.00- 120.00	100.00
27.246	27.246 (1.120)	148	999003			35.51- 95.51	65.44
27.246	27.246 (1.120)	111	536463			5.09- 65.09	35.14
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.371	27.371 (1.126)	146	1564070	9.94560	9.946	80.00- 120.00	100.00
27.371	27.371 (1.126)	148	1023321			35.48- 95.48	65.43

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)								
27.355	27.371	(1.125)	111	525079			3.55- 63.55	33.57
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.839	27.840	(1.145)	146	1460918	10.0566	10.056	80.00- 120.00	100.00
27.854	27.840	(1.145)	148	949997			35.34- 95.34	65.03
27.839	27.840	(1.145)	111	526790			6.26- 66.26	36.06
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	181597	1.30463	1.305	80.00- 120.00	100.00
30.380	30.395	(1.249)	127	24227			0.00- 43.23	13.34

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020603sim.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	188894	3.01
20 1,4-Difluorobenze	549605	329763	769447	580235	5.57
28 Chlorobenzene-d5	517348	310409	724287	540534	4.48

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/06feb20.b/20020603sim.d

Date : 06-FEB-2020 08:20

Client ID: LCS

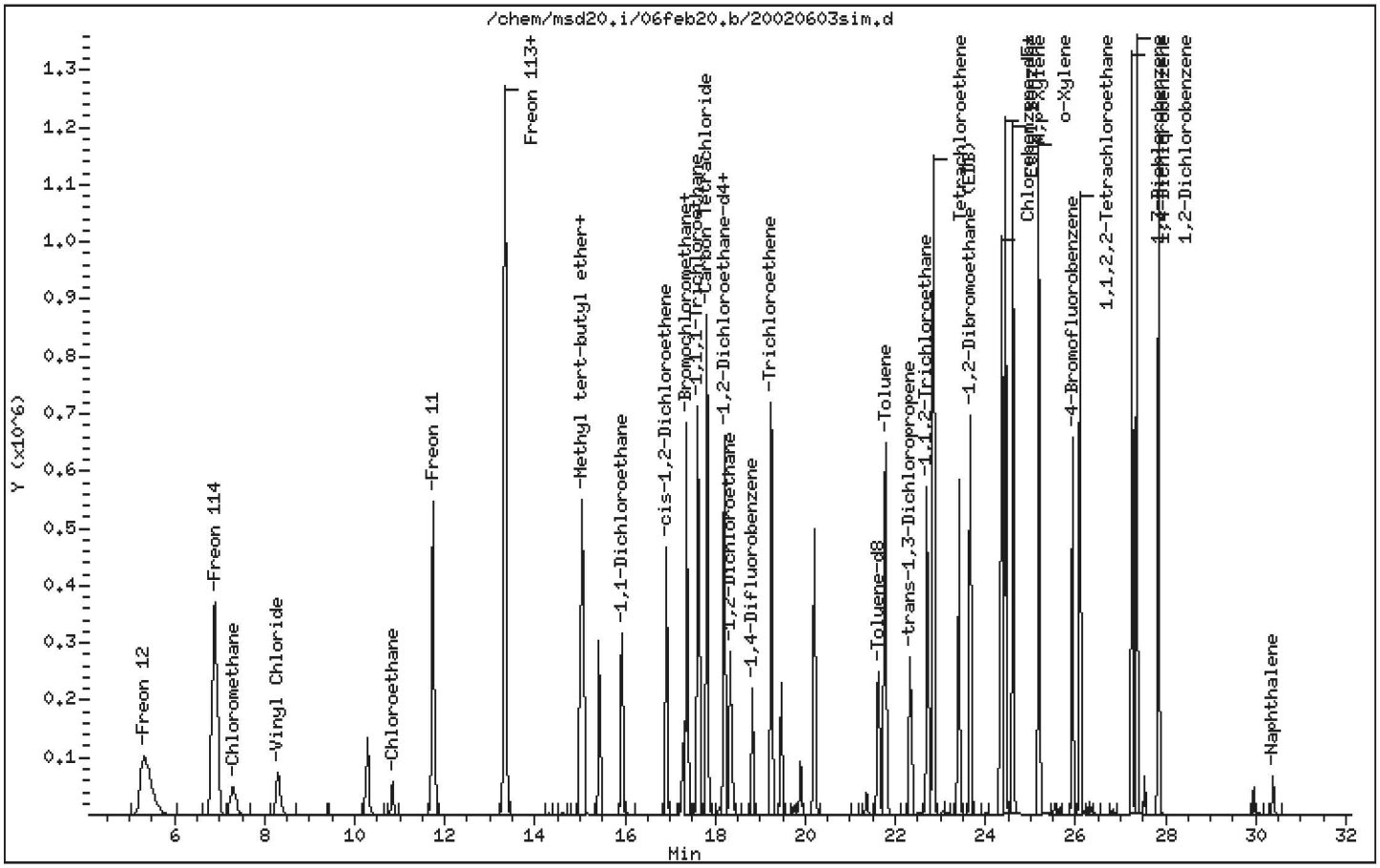
Instrument: msd20.i

Sample Info: 50mL# 3018-1182

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Jones Rd. Groundwater Plume

Client ID:	LCSD		
Lab ID:	2001756-19AA	**Date/Time Analyzed:**	2/6/20 09:00 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020604sim

Compound	CAS#	%Recovery
1,1-Dichloroethene	75-35-4	98
cis-1,2-Dichloroethene	156-59-2	95
Tetrachloroethene	127-18-4	95
trans-1,2-Dichloroethene	156-60-5	113
Trichloroethene	79-01-6	94
Vinyl Chloride	75-01-4	100

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	104

* % Recovery is calculated using unrounded analytical results.

Report Date: 06-Feb-2020 10:03

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LCSD
Client Smp ID: LCSD
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: LCSD
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
1 Freon 12	10.000	9.557	95.57
2 Freon 114	10.000	9.784	97.84
3 Chloromethane	10.000	8.405	84.05
4 Vinyl Chloride	10.000	10.049	100.49
5 Chloroethane	10.000	10.349	103.49
6 Freon 11	10.000	10.961	109.61
7 Freon 113	10.000	9.542	95.42
8 1,1-Dichloroethene	10.000	9.781	97.81
9 Methyl tert-butyl ether	10.000	11.430	114.30
10 trans-1,2-Dichloroethene	10.000	11.316	113.16
11 1,1-Dichloroethane	10.000	9.676	96.76
12 cis-1,2-Dichloroethene	10.000	9.479	94.79
14 Chloroform	10.000	10.380	103.80
15 1,1,1-Trichloroethane	10.000	9.993	99.93
16 Carbon Tetrachloride	10.000	11.824	118.24
17 Benzene	10.000	9.714	97.14
19 1,2-Dichloroethane	10.000	9.035	90.35
21 Trichloroethene	10.000	9.458	94.58
23 Toluene	10.000	10.346	103.46
24 trans-1,3-Dichloropropene	10.000	10.944	109.44
25 1,1,2-Trichloroethane	10.000	9.464	94.64
26 Tetrachloroethene	10.000	9.468	94.68
27 1,2-Dibromoethane (EDB)	10.000	9.662	96.62
29 Chlorobenzene	10.000	9.654	96.54
30 Ethyl Benzene	10.000	11.317	113.17
31 m,p-Xylene	10.000	11.529	115.29
32 o-Xylene	10.000	11.348	113.48
34 1,1,2,2-Tetrachloroethane	10.000	8.321	83.21
35 1,3-Dichlorobenzene	10.000	9.292	92.92
36 1,4-Dichlorobenzene	10.000	9.603	96.03
37 1,2-Dichlorobenzene	10.000	9.669	96.69
38 Naphthalene	1.000	1.216	121.59

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LCSD
Client Smp ID: LCSD
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: LCSD
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 18 1,2-Dichloroethane-d4	5.000	4.698	93.97
$ 22 Toluene-d8	5.000	5.212	104.24
$ 33 4-Bromofluorobenzene	5.000	5.125	102.51

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020604sim.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 06-FEB-2020 09:00
Operator : NS Inst ID: msd20.i
Smp Info : 50mL# 3018-1182
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Meth Date : 06-Feb-2020 08:16 lw7b Quant Type: ISTD
Cal Date : 05-FEB-2020 08:54 Cal File: 20020512sim.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane					CAS #: 74-97-5		
17.316	17.316 (1.000)	130	188180	5.00000		80.00- 120.00	100.00
17.316	17.316 (1.000)	128	144071			46.79- 106.79	76.56
17.284	17.316 (1.000)	49	184742			67.00- 127.00	98.17
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
18.840	18.839 (1.000)	114	585978	5.00000		80.00- 120.00	100.00
18.817	18.839 (1.000)	88	83039			0.00- 44.17	14.17
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
24.318	24.318 (1.000)	117	542986	5.00000		80.00- 120.00	100.00
24.318	24.318 (1.000)	82	251578			16.60- 76.60	46.33
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.227	18.227 (1.053)	65	208133	4.69853	4.698	80.00- 120.00	100.00
18.227	18.227 (1.053)	67	108515			26.62- 86.62	52.14
$ 22 Toluene-d8					CAS #: 2037-26-5		
21.624	21.624 (1.148)	98	540048	5.21218	5.212	80.00- 120.00	100.00
21.624	21.624 (1.148)	70	58732			0.00- 40.95	10.88

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
21.624	21.624 (1.148)	100	346330			34.26- 94.26	64.13
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
25.927	25.927 (1.066)	174	429536	5.12528	5.125	80.00- 120.00	100.00
25.927	25.927 (1.066)	95	361628			54.28- 114.28	84.19
25.927	25.927 (1.066)	176	419029			67.48- 127.48	97.55
1 Freon 12					CAS #: 75-71-8		
5.307	5.336 (0.306)	85	1176281	9.55679	9.557	80.00- 120.00	100.00
5.307	5.336 (0.306)	87	382217			2.53- 62.53	32.49
2 Freon 114					CAS #: 76-14-2		
6.898	6.895 (0.398)	135	1021273	9.78400	9.784	80.00- 120.00	100.00
6.898	6.895 (0.398)	137	329535			2.21- 62.21	32.27
3 Chloromethane					CAS #: 74-87-3		
7.283	7.301 (0.421)	50	308768	8.40468	8.405	80.00- 120.00	100.00
7.283	7.301 (0.421)	52	102075			2.83- 62.83	33.06
4 Vinyl Chloride					CAS #: 75-01-4		
8.297	8.278 (0.479)	62	356378	10.0490	10.049	80.00- 120.00	100.00
8.297	8.278 (0.479)	64	114776			2.23- 62.23	32.21
5 Chloroethane					CAS #: 75-00-3		
10.847	10.846 (0.626)	64	155346	10.3491	10.349	80.00- 120.00	100.00
10.847	10.846 (0.626)	66	50067			2.03- 62.03	32.23
6 Freon 11					CAS #: 75-69-4		
11.738	11.737 (0.678)	101	1233380	10.9610	10.961	80.00- 120.00	100.00
11.738	11.737 (0.678)	103	808325			35.56- 95.56	65.54
7 Freon 113					CAS #: 76-13-1		
13.329	13.328 (0.770)	151	1021534	9.54195	9.542	80.00- 120.00	100.00
13.329	13.328 (0.770)	153	664898			35.30- 95.30	65.09
13.329	13.328 (0.770)	101	1006574			69.82- 129.82	98.54
8 1,1-Dichloroethene					CAS #: 75-35-4		
13.329	13.331 (0.770)	98	248241	9.78085	9.781	80.00- 120.00	100.00
13.329	13.328 (0.770)	61	555466			194.63- 254.63	223.76
13.329	13.328 (0.770)	96	387306			125.91- 185.91	156.02
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.032	15.031 (0.868)	73	943634	11.4301	11.430	80.00- 120.00	100.00
15.004	15.031 (0.866)	57	193710			0.00- 51.41	20.53
15.004	15.031 (0.866)	41	229634			0.00- 53.76	24.34

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
15.087	15.080 (0.871)	98	297947	11.3165	11.316	80.00- 120.00	100.00
15.059	15.061 (0.870)	61	571122			161.94- 221.94	191.69
15.059	15.075 (0.870)	96	461280			125.44- 185.44	154.82
11 1,1-Dichloroethane					CAS #: 75-34-3		
15.938	15.937 (0.920)	63	705371	9.67567	9.676	80.00- 120.00	100.00
15.938	15.937 (0.920)	65	226882			2.20- 62.20	32.16
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
16.917	16.916 (0.977)	98	278087	9.47932	9.479	80.00- 120.00	100.00
16.917	16.916 (0.977)	61	484102			144.59- 204.59	174.08
16.917	16.916 (0.977)	96	429926			124.96- 184.96	154.60
14 Chloroform					CAS #: 67-66-3		
17.381	17.381 (1.004)	83	979244	10.3803	10.380	80.00- 120.00	100.00
17.381	17.381 (1.004)	85	646471			35.98- 95.98	66.02
17.381	17.381 (1.004)	47	219465			0.00- 53.97	22.41
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.622	17.622 (1.018)	97	1089423	9.99297	9.993	80.00- 120.00	100.00
17.622	17.622 (1.018)	99	713389			35.55- 95.55	65.48
16 Carbon Tetrachloride					CAS #: 56-23-5		
17.823	17.822 (1.029)	119	1200942	11.8240	11.824	80.00- 120.00	100.00
17.823	17.822 (1.029)	117	1229855			72.26- 132.26	102.41
17 Benzene					CAS #: 71-43-2		
18.207	18.207 (0.966)	78	1351315	9.71399	9.714	80.00- 120.00	100.00
18.207	18.207 (0.966)	77	315240			0.00- 53.31	23.33
19 1,2-Dichloroethane					CAS #: 107-06-2		
18.330	18.330 (0.973)	62	613407	9.03498	9.035	80.00- 120.00	100.00
18.330	18.330 (0.973)	64	200231			2.73- 62.73	32.64
21 Trichloroethene					CAS #: 79-01-6		
19.241	19.245 (1.021)	130	718783	9.45818	9.458	80.00- 120.00	100.00
19.241	19.245 (1.021)	95	619360			56.54- 116.54	86.17
19.241	19.245 (1.021)	97	403262			26.43- 86.43	56.10
23 Toluene					CAS #: 108-88-3		
21.780	21.780 (1.156)	91	1525810	10.3458	10.346	80.00- 120.00	100.00
21.780	21.780 (1.156)	92	896260			28.65- 88.65	58.74
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.328	22.328 (0.918)	75	658189	10.9436	10.944	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
22.328	22.328 (0.918)	77	210094			1.94- 61.94	31.92
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.706	22.705 (0.934)	97	619789	9.46392	9.464	80.00- 120.00	100.00
22.706	22.705 (0.934)	99	391677			33.39- 93.39	63.20
22.706	22.705 (0.934)	83	502422			51.43- 111.43	81.06
26 Tetrachloroethene					CAS #: 127-18-4		
22.851	22.851 (0.940)	166	1073109	9.46758	9.468	80.00- 120.00	100.00
22.851	22.851 (0.940)	129	691561			34.72- 94.72	64.44
22.851	22.851 (0.940)	131	672268			33.00- 93.00	62.65
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.664	23.664 (0.973)	107	964673	9.66204	9.662	80.00- 120.00	100.00
23.664	23.664 (0.973)	109	926636			65.72- 125.72	96.06
29 Chlorobenzene					CAS #: 108-90-7		
24.360	24.359 (1.002)	112	1337279	9.65368	9.654	80.00- 120.00	100.00
24.360	24.359 (1.002)	114	438172			2.75- 62.75	32.77
24.360	24.359 (1.002)	77	671250			20.49- 80.49	50.20
30 Ethyl Benzene					CAS #: 100-41-4		
24.442	24.442 (1.005)	106	636311	11.3173	11.317	80.00- 120.00	100.00
24.442	24.442 (1.005)	91	1914720			269.97- 329.97	300.91
31 m,p-Xylene					CAS #: 108-38-3		
24.607	24.607 (1.012)	106	764958	11.5295	11.529	80.00- 120.00	100.00
24.607	24.607 (1.012)	91	1466131			161.51- 221.51	191.66
32 o-Xylene					CAS #: 95-47-6		
25.185	25.184 (1.036)	106	694859	11.3482	11.348	80.00- 120.00	100.00
25.185	25.184 (1.036)	91	1413415			171.59- 231.59	203.41
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
26.097	26.097 (1.073)	83	1219727	8.32086	8.321	80.00- 120.00	100.00
26.097	26.097 (1.073)	85	804082			35.87- 95.87	65.92
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.246	27.246 (1.120)	146	1484449	9.29159	9.292	80.00- 120.00	100.00
27.246	27.246 (1.120)	148	974062			35.51- 95.51	65.62
27.246	27.246 (1.120)	111	520582			5.09- 65.09	35.07
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.371	27.371 (1.126)	146	1517072	9.60319	9.603	80.00- 120.00	100.00
27.371	27.371 (1.126)	148	990807			35.48- 95.48	65.31

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)								
27.355	27.371	(1.125)	111	510784			3.55- 63.55	33.67
37 1,2-Dichlorobenzene						CAS #: 95-50-1		
27.839	27.840	(1.145)	146	1411022	9.66927	9.669	80.00- 120.00	100.00
27.839	27.840	(1.145)	148	917515			35.34- 95.34	65.02
27.839	27.840	(1.145)	111	507612			6.26- 66.26	35.97
38 Naphthalene						CAS #: 91-20-3		
30.395	30.395	(1.250)	128	170021	1.21594	1.216	80.00- 120.00	100.00
30.380	30.395	(1.249)	127	22154			0.00- 43.23	13.03

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020604sim.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m/200s0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	183377	110026	256728	188180	2.62
20 1,4-Difluorobenze	549605	329763	769447	585978	6.62
28 Chlorobenzene-d5	517348	310409	724287	542986	4.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
13 Bromochloromethan	17.32	16.99	17.65	17.32	-0.00
20 1,4-Difluorobenze	18.84	18.51	19.17	18.84	0.00
28 Chlorobenzene-d5	24.32	23.99	24.65	24.32	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/06feb20.b/20020604sim.d

Date : 06-FEB-2020 09:00

Client ID: LCSD

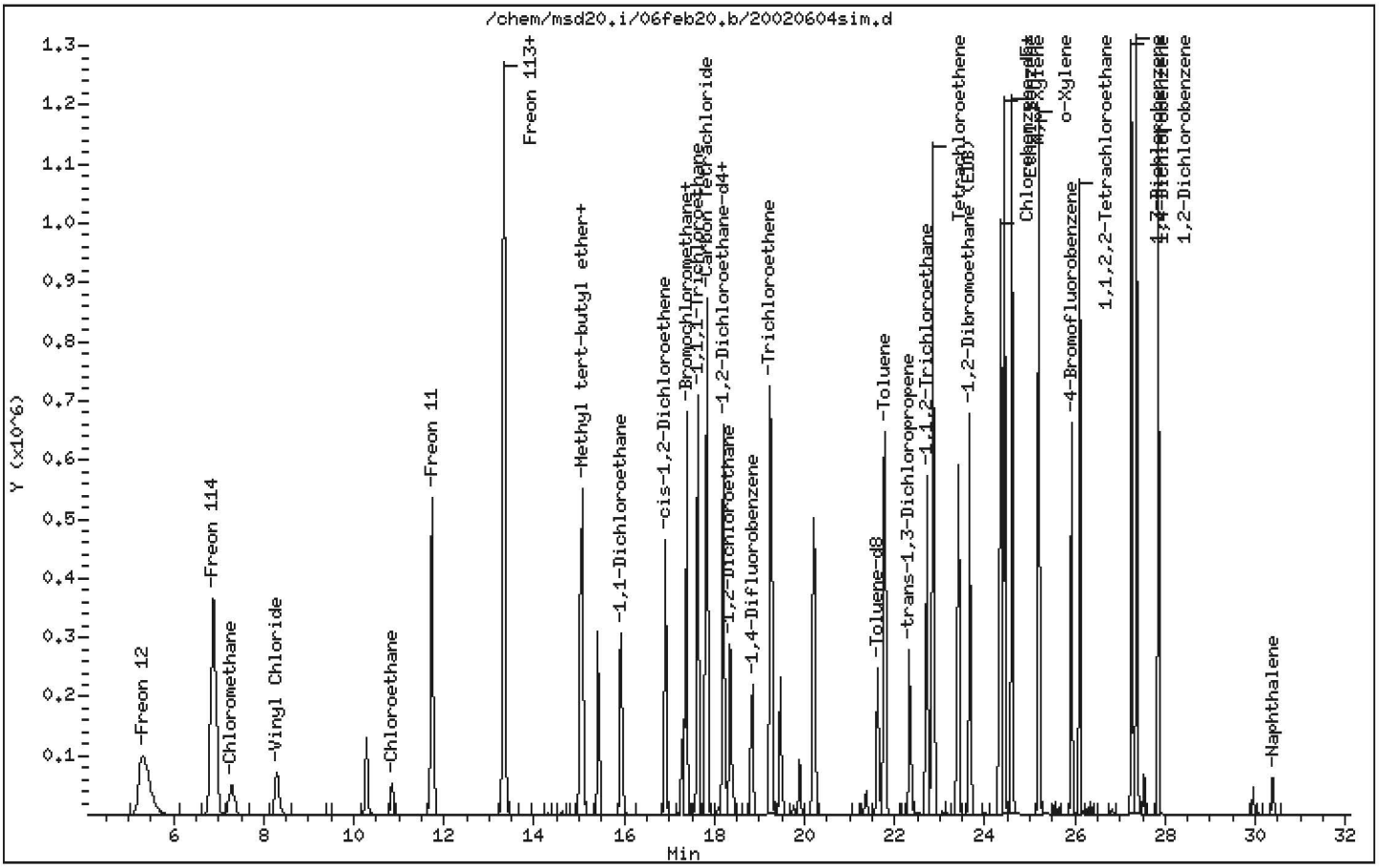
Instrument: msd20.i

Sample Info: 50mL# 3018-1182

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Jones Rd. Groundwater Plume

Client ID:	LCS		
Lab ID:	2001756-19B	**Date/Time Analyzed:**	2/6/20 08:20 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020603

Compound	CAS#	%Recovery
Tetrachloroethene	127-18-4	98

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	105

* % Recovery is calculated using unrounded analytical results.

Report Date: 06-Feb-2020 09:00

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LCS
Client Smp ID: LCS
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: LCS
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
9 Propylene	10.000	10.386	103.87
11 Freon 12	10.000	10.340	103.40
15 Freon 114	10.000	10.301	103.01
17 Chloromethane	10.000	10.250	102.50
23 Butane	10.000	10.513	105.13
25 Vinyl Chloride	10.000	11.097	110.97
26 1,3-Butadiene	10.000	10.971	109.71
29 Bromomethane	10.000	11.763	117.63
30 Chloroethane	10.000	11.329	113.29
31 Isopentane	10.000	10.300	103.00
35 Freon 11	10.000	10.797	107.97
42 Ethanol	10.000	11.961	119.61
49 Freon 113	10.000	9.720	97.21
50 1,1-Dichloroethene	10.000	10.260	102.60
52 Acetone	10.000	10.215	102.15
56 Carbon Disulfide	10.000	10.794	107.94
57 2-Propanol	10.000	10.689	106.89
58 3-Chloropropene	10.000	12.290	122.90
66 Methylene Chloride	10.000	9.641	96.41
72 Methyl tert-butyl ether	10.000	10.546	105.46
73 trans-1,2-Dichloroethene	10.000	11.934	119.34
78 Hexane	10.000	11.358	113.58
82 1,1-Dichloroethane	10.000	9.904	99.04
86 Vinyl Acetate	10.000	10.417	104.17
91 cis-1,2-Dichloroethene	10.000	9.593	95.93
92 2-Butanone	10.000	10.884	108.84
99 Tetrahydrofuran	10.000	10.940	109.40
100 Chloroform	10.000	10.159	101.59
103 1,1,1-Trichloroethane	10.000	10.356	103.56
106 Carbon Tetrachloride	10.000	11.015	110.15
102 Cyclohexane	10.000	12.090	120.90
113 2,2,4-Trimethylpentane	10.000	9.619	96.19
116 Benzene	10.000	10.809	108.09

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
120 1,2-Dichloroethane	10.000	9.099	90.99
121 Heptane	10.000	11.718	117.18
125 Trichloroethene	10.000	10.115	101.15
127 Methylcyclohexane	10.000	11.319	113.19
132 1,2-Dichloropropane	10.000	10.010	100.10
136 1,4-Dioxane	10.000	11.649	116.49
138 Bromodichloromethane	10.000	10.313	103.13
144 cis-1,3-Dichloropropene	10.000	10.829	108.29
145 4-Methyl-2-pentanone	10.000	11.268	112.68
147 Toluene	10.000	10.391	103.91
150 trans-1,3-Dichloropropene	10.000	10.444	104.44
155 1,1,2-Trichloroethane	10.000	9.122	91.23
156 Tetrachloroethene	10.000	9.798	97.98
158 2-Hexanone	10.000	11.300	113.00
160 Dibromochloromethane	10.000	10.670	106.70
161 1,2-Dibromoethane (EDB)	10.000	9.849	98.49
165 Chlorobenzene	10.000	10.206	102.06
167 Ethyl Benzene	10.000	11.225	112.25
169 m,p-Xylene	10.000	11.221	112.21
171 o-Xylene	10.000	11.046	110.46
172 Styrene	10.000	11.146	111.46
174 Bromoform	10.000	10.493	104.93
175 Cumene	10.000	11.116	111.16
181 1,1,2,2-Tetrachloroethane	10.000	9.087	90.87
182 Propylbenzene	10.000	11.022	110.22
188 4-Ethyltoluene	10.000	11.860	118.60
190 1,3,5-Trimethylbenzene	10.000	11.574	115.74
196 1,2,4-Trimethylbenzene	10.000	11.443	114.43
208 1,3-Dichlorobenzene	10.000	9.772	97.72
209 1,4-Dichlorobenzene	10.000	10.399	103.99
212 alpha-Chlorotoluene	10.000	11.444	114.45
214 1,2-Dichlorobenzene	10.000	10.329	103.29
226 1,2,4-Trichlorobenzene	10.000	10.648	106.48
227 Hexachlorobutadiene	10.000	10.144	101.44
228 Naphthalene	1.000	1.146	114.66

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	5.000	4.777	95.54
$ 146 Toluene-d8	5.000	5.254	105.08
$ 177 4-Bromofluorobenzene	5.000	5.102	102.04

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020603.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 06-FEB-2020 08:20
Operator : NS Inst ID: msd20.i
Smp Info : 50mL# 3018-1182
Misc Info : 10ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m
Meth Date : 06-Feb-2020 08:24 uexa Quant Type: ISTD
Cal Date : 05-FEB-2020 09:42 Cal File: 20020513.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	185897	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	138945			46.61- 106.61	74.74
17.302	17.302 (1.000)	49	159920			58.08- 118.08	86.03
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.833	18.833 (1.000)	114	543080	5.00000		80.00- 120.00	100.00
18.833	18.833 (1.000)	88	78268			0.00- 44.22	14.41
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	507497	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	245499			18.72- 78.72	48.37
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	191272	4.77714	4.777	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	105978			30.76- 90.76	55.41
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	552046	5.25397	5.254	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	57978			0.00- 41.39	10.50

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
21.617	21.617 (1.148)	100	358485			35.17- 95.17	64.94
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	396024	5.10185	5.102	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	346365			59.22- 119.22	87.46
25.920	25.920 (1.066)	176	387192			69.23- 129.23	97.77
9 Propylene					CAS #: 115-07-1		
4.787	4.782 (0.277)	41	218197	10.3866	10.386	80.00- 120.00	100.00
4.763	4.797 (0.275)	42	145920			38.85- 98.85	66.88
4.811	4.792 (0.278)	39	170823			50.09- 110.09	78.29
11 Freon 12					CAS #: 75-71-8		
5.341	5.321 (0.309)	85	1157115	10.3402	10.340	80.00- 120.00	100.00
5.317	5.328 (0.307)	87	381241			2.53- 62.53	32.95
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	980028	10.3013	10.301	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	321814			2.72- 62.72	32.84
6.884	6.878 (0.398)	85	1141412			86.16- 146.16	116.47
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	312323	10.2504	10.250	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	103064			3.63- 63.63	33.00
23 Butane					CAS #: 106-97-8		
8.092	8.092 (0.468)	58	58865	10.5132	10.513	80.00- 120.00	100.00
8.092	8.095 (0.468)	43	392305			627.99- 687.99	666.44
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	356279	11.0973	11.097	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	109605			2.83- 62.83	30.76
26 1,3-Butadiene					CAS #: 106-99-0		
8.544	8.541 (0.494)	54	226647	10.9712	10.971	80.00- 120.00	100.00
8.544	8.541 (0.494)	39	219823			69.65- 129.65	96.99
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	298454	11.7633	11.763	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	285376			60.82- 120.82	95.62
30 Chloroethane					CAS #: 75-00-3		
10.833	10.846 (0.626)	64	159484	11.3287	11.329	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	37920			0.00- 55.00	23.78
10.833	10.835 (0.626)	66	50126			1.88- 61.88	31.43

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane						CAS #: 78-78-4		
10.977	10.976	(0.634)	57	239624	10.3004	10.300	80.00- 120.00	100.00
10.977	10.976	(0.634)	43	333309			111.40- 171.40	139.10
10.977	10.976	(0.634)	42	293364			96.33- 156.33	122.43
35 Freon 11						CAS #: 75-69-4		
11.724	11.723	(0.678)	101	1181386	10.7969	10.797	80.00- 120.00	100.00
11.724	11.723	(0.678)	103	775752			35.14- 95.14	65.66
42 Ethanol						CAS #: 64-17-5		
12.876	12.870	(0.744)	45	108895	11.9615	11.961	80.00- 120.00	100.00
12.876	12.870	(0.744)	46	42185			6.43- 66.43	38.74
49 Freon 113						CAS #: 76-13-1		
13.315	13.317	(0.770)	151	979073	9.72059	9.720	80.00- 120.00	100.00
13.315	13.323	(0.770)	153	631916			34.89- 94.89	64.54
13.315	13.320	(0.770)	101	990905			70.13- 130.13	101.21
50 1,1-Dichloroethene						CAS #: 75-35-4		
13.343	13.331	(0.771)	98	233363	10.2599	10.260	80.00- 120.00	100.00
13.343	13.324	(0.771)	61	534080			197.76- 257.76	228.86
13.343	13.324	(0.771)	96	366672			124.14- 184.14	157.12
52 Acetone						CAS #: 67-64-1		
13.700	13.706	(0.792)	58	156657	10.2148	10.215	80.00- 120.00	100.00
13.700	13.706	(0.792)	43	479529			291.24- 351.24	306.10
56 Carbon Disulfide						CAS #: 75-15-0		
13.727	13.726	(0.793)	76	1136022	10.7942	10.794	80.00- 120.00	100.00
57 2-Propanol						CAS #: 67-63-0		
14.112	14.110	(0.816)	45	457088	10.6888	10.689	80.00- 120.00	100.00
14.112	14.114	(0.816)	43	127319			0.00- 59.88	27.85
14.112	14.110	(0.816)	59	20540			0.00- 34.36	4.49
58 3-Chloropropene						CAS #: 107-05-1		
14.304	14.295	(0.827)	76	139856	12.2905	12.290	80.00- 120.00	100.00
14.304	14.295	(0.827)	41	300425			188.05- 248.05	214.81
66 Methylene Chloride						CAS #: 75-09-2		
14.634	14.632	(0.846)	84	367146	9.64116	9.641	80.00- 120.00	100.00
14.634	14.632	(0.846)	49	399693			79.75- 139.75	108.86
14.634	14.632	(0.846)	51	121714			4.54- 64.54	33.15
72 Methyl tert-butyl ether						CAS #: 1634-04-4		
15.018	15.017	(0.868)	73	942493	10.5461	10.546	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
72 Methyl tert-butyl ether (continued)							
15.018	15.017 (0.868)	57	195069			0.00- 50.29	20.70
15.018	15.017 (0.868)	41	228585			0.00- 53.61	24.25
73 trans-1,2-Dichloroethene						CAS #: 156-60-5	
15.073	15.072 (0.871)	98	283596	11.9343	11.934	80.00- 120.00	100.00
15.073	15.072 (0.871)	61	548163			166.73- 226.73	193.29
15.073	15.072 (0.871)	96	445760			131.17- 191.17	157.18
78 Hexane						CAS #: 110-54-3	
15.430	15.428 (0.892)	57	522945	11.3580	11.358	80.00- 120.00	100.00
15.430	15.428 (0.892)	43	320935			27.95- 87.95	61.37
15.430	15.428 (0.892)	86	104141			0.00- 48.76	19.91
82 1,1-Dichloroethane						CAS #: 75-34-3	
15.924	15.923 (0.920)	63	672596	9.90435	9.904	80.00- 120.00	100.00
15.924	15.923 (0.920)	65	216214			1.61- 61.61	32.15
86 Vinyl Acetate						CAS #: 108-05-4	
15.979	15.978 (0.923)	86	87259	10.4172	10.417	80.00- 120.00	100.00
15.979	15.978 (0.923)	42	71176			52.54- 112.54	81.57
15.979	15.978 (0.923)	43	707740			783.51- 843.51	811.08
91 cis-1,2-Dichloroethene						CAS #: 156-59-2	
16.903	16.902 (0.977)	98	266043	9.59327	9.593	80.00- 120.00	100.00
16.903	16.902 (0.977)	61	458438			148.56- 208.56	172.32
16.903	16.902 (0.977)	96	411462			126.55- 186.55	154.66
92 2-Butanone						CAS #: 78-93-3	
16.924	16.926 (0.978)	72	182161	10.8839	10.884	80.00- 120.00	100.00
16.924	16.923 (0.978)	43	622973			309.31- 369.31	341.99
16.924	16.926 (0.978)	57	51596			0.00- 58.97	28.32
99 Tetrahydrofuran						CAS #: 109-99-9	
17.270	17.283 (0.998)	42	334234	10.9400	10.940	80.00- 120.00	100.00
17.270	17.283 (0.998)	71	161945			17.62- 77.62	48.45
17.270	17.283 (0.998)	72	167437			20.52- 80.52	50.10
100 Chloroform						CAS #: 67-66-3	
17.400	17.379 (1.006)	83	937994	10.1591	10.159	80.00- 120.00	100.00
17.400	17.383 (1.006)	85	610600			35.58- 95.58	65.10
102 Cyclohexane						CAS #: 110-82-7	
17.597	17.605 (1.017)	84	756675	12.0896	12.090	80.00- 120.00	100.00
17.597	17.602 (1.017)	56	756342			66.69- 126.69	99.96
17.597	17.602 (1.017)	41	402016			26.30- 86.30	53.13

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.641	17.631 (1.020)	97	992430	10.3563	10.356	80.00- 120.00	100.00
17.641	17.633 (1.020)	99	642666			34.72- 94.72	64.76
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.842	17.824 (1.031)	119	1108796	11.0147	11.015	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	1161107			72.39- 132.39	104.72
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	799351	9.61913	9.619	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	2429014			245.12- 305.12	303.87
18.121	18.121 (1.047)	41	687138			50.98- 110.98	85.96
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	1276283	10.8086	10.809	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	300132			0.00- 54.15	23.52
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	550646	9.09923	9.099	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	185639			0.98- 60.98	33.71
121 Heptane					CAS #: 142-82-5		
18.409	18.404 (0.978)	57	346184	11.7184	11.718	80.00- 120.00	100.00
18.409	18.406 (0.978)	100	183676			22.83- 82.83	53.06
18.409	18.409 (0.978)	43	573414			143.19- 203.19	165.64
125 Trichloroethene					CAS #: 79-01-6		
19.257	19.256 (1.022)	130	708668	10.1149	10.115	80.00- 120.00	100.00
19.257	19.254 (1.022)	95	581890			54.82- 114.82	82.11
19.257	19.259 (1.022)	97	381425			25.35- 85.35	53.82
127 Methylcyclohexane					CAS #: 108-87-2		
19.480	19.480 (1.034)	83	738295	11.3194	11.319	80.00- 120.00	100.00
19.480	19.480 (1.034)	55	526758			40.96- 100.96	71.35
19.480	19.480 (1.034)	56	170256			0.00- 52.45	23.06
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	447223	10.0096	10.010	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	314218			40.35- 100.35	70.26
19.747	19.750 (1.049)	41	244306			24.96- 84.96	54.63
136 1,4-Dioxane					CAS #: 123-91-1		
19.904	19.901 (1.057)	88	305161	11.6492	11.649	80.00- 120.00	100.00
19.904	19.906 (1.057)	58	183296			31.33- 91.33	60.07
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	1019194	10.3130	10.313	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
20.216	20.216 (0.832)	85	668752			34.54- 94.54	65.62
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.119	21.115 (1.121)	75	669281	10.8294	10.829	80.00- 120.00	100.00
21.119	21.120 (1.121)	77	213818			2.26- 62.26	31.95
21.119	21.120 (1.121)	39	292332			13.91- 73.91	43.68
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	768384	11.2681	11.268	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	301676			8.83- 68.83	39.26
21.352	21.362 (1.134)	85	161628			0.00- 50.74	21.03
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	1494846	10.3908	10.391	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	879305			27.71- 87.71	58.82
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	629419	10.4443	10.444	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	202318			3.18- 63.18	32.14
22.350	22.346 (0.919)	39	256539			13.49- 73.49	40.76
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	593256	9.12258	9.122	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	376187			31.74- 91.74	63.41
22.728	22.728 (0.935)	83	466338			51.17- 111.17	78.61
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	1073838	9.79773	9.798	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	695857			34.89- 94.89	64.80
22.844	22.844 (0.940)	131	659723			32.11- 92.11	61.44
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	404029	11.2998	11.300	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	753808			150.34- 210.34	186.57
23.076	23.076 (0.949)	100	111446			0.00- 55.47	27.58
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	1320848	10.6699	10.670	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	1006841			46.51- 106.51	76.23
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	936337	9.84944	9.849	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	908772			64.58- 124.58	97.06
165 Chlorobenzene					CAS #: 108-90-7		
24.353	24.355 (1.002)	112	1302129	10.2064	10.206	80.00- 120.00	100.00

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                                        CONCENTRATIONS
                                        ON-COL    FINAL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

  165 Chlorobenzene (continued)
 24.353  24.360 (1.002)   114    414556                     1.57-  61.57    31.84
 24.353  24.352 (1.002)    77    664087                    21.74-  81.74    51.00
-------------------------------------------------------------------------------
  167 Ethyl Benzene                                  CAS #: 100-41-4
 24.435  24.435 (1.005)   106    631321 11.2254   11.225  80.00- 120.00   100.00
 24.435  24.435 (1.005)    91   1864080                   270.24- 330.24   295.27
-------------------------------------------------------------------------------
  169 m,p-Xylene                                     CAS #: 108-38-3
 24.621  24.621 (1.013)   106    761498 11.2210   11.221  80.00- 120.00   100.00
 24.621  24.618 (1.013)    91   1432310                   159.55- 219.55   188.09
-------------------------------------------------------------------------------
  171 o-Xylene                                       CAS #: 95-47-6
 25.198  25.198 (1.036)   106    672342 11.0461   11.046  80.00- 120.00   100.00
 25.198  25.198 (1.036)    91   1352552                   167.89- 227.89   201.17
-------------------------------------------------------------------------------
  172 Styrene                                        CAS #: 100-42-5
 25.219  25.219 (1.037)   104   1176882 11.1464   11.146  80.00- 120.00   100.00
 25.219  25.219 (1.037)    78    552152                    16.95-  76.95    46.92
-------------------------------------------------------------------------------
  174 Bromoform                                      CAS #: 75-25-2
 25.541  25.540 (1.051)   173   1536807 10.4931   10.493  80.00- 120.00   100.00
 25.541  25.540 (1.051)   171    779971                    19.65-  79.65    50.75
-------------------------------------------------------------------------------
  175 Cumene                                         CAS #: 98-82-8
 25.635  25.635 (1.054)   105   2207789 11.1159   11.116  80.00- 120.00   100.00
 25.635  25.635 (1.054)   120    636373                     0.00-  58.11    28.82
-------------------------------------------------------------------------------
  181 1,1,2,2-Tetrachloroethane                      CAS #: 79-34-5
 26.110  26.109 (1.074)    83   1213655 9.08698    9.087  80.00- 120.00   100.00
 26.110  26.109 (1.074)    85    775359                    35.51-  95.51    63.89
-------------------------------------------------------------------------------
  182 Propylbenzene                                  CAS #: 103-65-1
 26.147  26.154 (1.076)    91   2559342 11.0220   11.022  80.00- 120.00   100.00
 26.166  26.154 (1.076)   120    640164                     0.00-  55.59    25.01
-------------------------------------------------------------------------------
  188 4-Ethyltoluene                                 CAS #: 622-96-8
 26.299  26.299 (1.082)   105   2371755 11.8598   11.860  80.00- 120.00   100.00
 26.299  26.295 (1.082)   120    758565                     1.51-  61.51    31.98
-------------------------------------------------------------------------------
  190 1,3,5-Trimethylbenzene                         CAS #: 108-67-8
 26.356  26.356 (1.084)   105   2252817 11.5743   11.574  80.00- 120.00   100.00
 26.356  26.356 (1.084)   120   1131552                    21.30-  81.30    50.23
-------------------------------------------------------------------------------
  196 1,2,4-Trimethylbenzene                         CAS #: 95-63-6
 26.830  26.830 (1.104)   105   1869302 11.4427   11.443  80.00- 120.00   100.00
```

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
196 1,2,4-Trimethylbenzene (continued)							
26.830	26.830 (1.104)	120	918876			18.64- 78.64	49.16
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.255	27.255 (1.121)	146	1457351	9.77152	9.772	80.00- 120.00	100.00
27.255	27.255 (1.121)	148	939439			34.75- 94.75	64.46
27.255	27.255 (1.121)	111	511210			5.38- 65.38	35.08
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.364	27.364 (1.126)	146	1497247	10.3994	10.399	80.00- 120.00	100.00
27.364	27.364 (1.126)	148	959904			34.92- 94.92	64.11
27.364	27.364 (1.126)	111	498677			3.67- 63.67	33.31
212 alpha-Chlorotoluene					CAS #: 100-44-7		
27.535	27.535 (1.133)	91	1421954	11.4446	11.444	80.00- 120.00	100.00
27.535	27.535 (1.133)	126	345316			0.00- 55.02	24.28
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.847	27.847 (1.145)	146	1405565	10.3291	10.329	80.00- 120.00	100.00
27.847	27.847 (1.145)	148	890356			33.90- 93.90	63.35
27.847	27.845 (1.145)	111	497659			5.97- 65.97	35.41
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
29.952	29.959 (1.232)	180	1134777	10.6479	10.648	80.00- 120.00	100.00
29.952	29.953 (1.232)	182	1083187			67.09- 127.09	95.45
227 Hexachlorobutadiene					CAS #: 87-68-3		
30.076	30.076 (1.237)	225	1237979	10.1438	10.144	80.00- 120.00	100.00
30.076	30.076 (1.237)	223	774215			33.13- 93.13	62.54
228 Naphthalene					CAS #: 91-20-3		
30.388	30.388 (1.250)	128	172625	1.14660	1.146	80.00- 120.00	100.00
30.388	30.391 (1.250)	127	23353			0.00- 45.10	13.53

Report Date: 06-Feb-2020 09:00

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020603.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	180905	108543	253267	185897	2.76
123 1,4-Difluorobenze	536645	321987	751303	543080	1.20
163 Chlorobenzene-d5	492844	295706	689982	507497	2.97

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	-0.00
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/06feb20.b/20020603.d

Date : 06-FEB-2020 08:20

Client ID: LCS

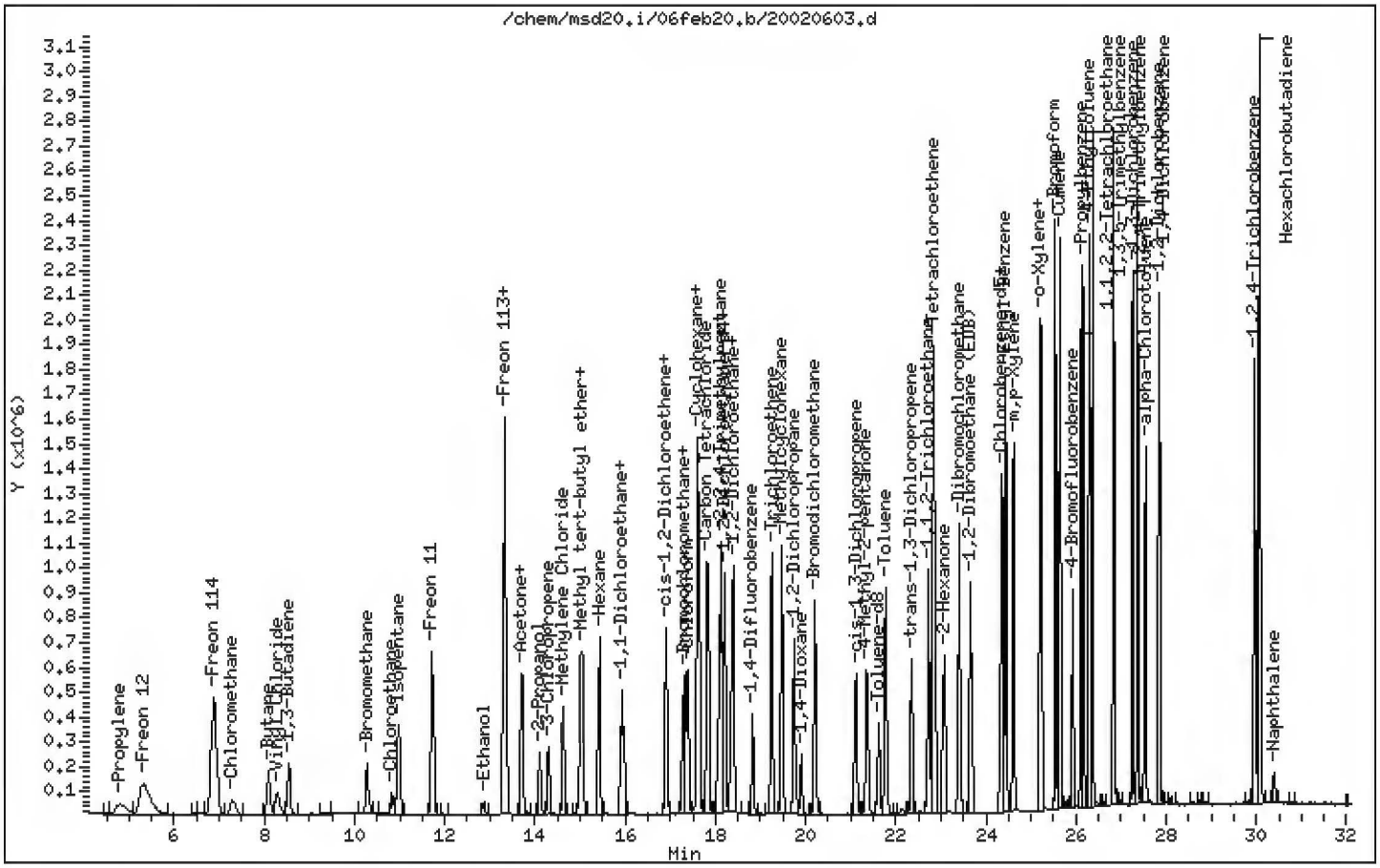
Instrument: msd20.i

Sample Info: 50mL# 3018-1182

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Jones Rd. Groundwater Plume

Client ID:	LCSD		
Lab ID:	2001756-19BB	**Date/Time Analyzed:**	2/6/20 09:00 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd20.i / 20020604

Compound	CAS#	%Recovery
Tetrachloroethene	127-18-4	99

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	103

* % Recovery is calculated using unrounded analytical results.

Report Date: 06-Feb-2020 10:03

US32TAR1

RECOVERY REPORT

Client Name:
Client SDG: 06feb20
Sample Matrix: GAS
Fraction: VOA
Lab Smp Id: LCSD
Client Smp ID: LCSD
Level: LOW
Operator: NS
Data Type: MS DATA
SampleType: LCSD
SpikeList File: AT12.spk
Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
9 Propylene	10.000	10.185	101.85
11 Freon 12	10.000	9.752	97.52
15 Freon 114	10.000	9.899	98.99
17 Chloromethane	10.000	9.619	96.19
23 Butane	10.000	10.297	102.97
25 Vinyl Chloride	10.000	10.224	102.24
26 1,3-Butadiene	10.000	10.698	106.98
29 Bromomethane	10.000	11.638	116.38
30 Chloroethane	10.000	10.567	105.67
31 Isopentane	10.000	10.207	102.07
35 Freon 11	10.000	10.437	104.37
42 Ethanol	10.000	11.770	117.70
49 Freon 113	10.000	9.577	95.77
50 1,1-Dichloroethene	10.000	10.502	105.02
52 Acetone	10.000	9.937	99.37
56 Carbon Disulfide	10.000	10.434	104.34
57 2-Propanol	10.000	10.650	106.50
58 3-Chloropropene	10.000	11.600	116.00
66 Methylene Chloride	10.000	9.189	91.89
72 Methyl tert-butyl ether	10.000	10.198	101.98
73 trans-1,2-Dichloroethene	10.000	11.639	116.39
78 Hexane	10.000	11.313	113.13
82 1,1-Dichloroethane	10.000	9.837	98.37
86 Vinyl Acetate	10.000	9.595	95.95
91 cis-1,2-Dichloroethene	10.000	9.293	92.93
92 2-Butanone	10.000	10.858	108.58
99 Tetrahydrofuran	10.000	10.828	108.28
100 Chloroform	10.000	9.951	99.51
103 1,1,1-Trichloroethane	10.000	10.158	101.58
106 Carbon Tetrachloride	10.000	10.602	106.02
102 Cyclohexane	10.000	11.924	119.24
113 2,2,4-Trimethylpentane	10.000	10.150	101.51
116 Benzene	10.000	10.550	105.50

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
120 1,2-Dichloroethane	10.000	8.931	89.31
121 Heptane	10.000	11.246	112.46
125 Trichloroethene	10.000	9.758	97.58
127 Methylcyclohexane	10.000	11.178	111.78
132 1,2-Dichloropropane	10.000	9.517	95.17
136 1,4-Dioxane	10.000	11.332	113.32
138 Bromodichloromethane	10.000	10.349	103.49
144 cis-1,3-Dichloropropene	10.000	10.461	104.61
145 4-Methyl-2-pentanone	10.000	10.781	107.81
147 Toluene	10.000	9.969	99.69
150 trans-1,3-Dichloropropene	10.000	10.424	104.24
155 1,1,2-Trichloroethane	10.000	9.041	90.41
156 Tetrachloroethene	10.000	9.863	98.63
158 2-Hexanone	10.000	11.292	112.92
160 Dibromochloromethane	10.000	10.650	106.50
161 1,2-Dibromoethane (EDB)	10.000	9.913	99.13
165 Chlorobenzene	10.000	10.052	100.53
167 Ethyl Benzene	10.000	10.899	108.99
169 m,p-Xylene	10.000	10.791	107.91
171 o-Xylene	10.000	10.942	109.42
172 Styrene	10.000	11.424	114.24
174 Bromoform	10.000	10.299	102.99
175 Cumene	10.000	11.267	112.67
181 1,1,2,2-Tetrachloroethane	10.000	8.846	88.46
182 Propylbenzene	10.000	10.750	107.50
188 4-Ethyltoluene	10.000	11.569	115.69
190 1,3,5-Trimethylbenzene	10.000	11.115	111.15
196 1,2,4-Trimethylbenzene	10.000	11.156	111.56
208 1,3-Dichlorobenzene	10.000	9.476	94.76
209 1,4-Dichlorobenzene	10.000	10.130	101.30
212 alpha-Chlorotoluene	10.000	11.158	111.58
214 1,2-Dichlorobenzene	10.000	9.778	97.78
226 1,2,4-Trichlorobenzene	10.000	10.163	101.63
227 Hexachlorobutadiene	10.000	10.000	100.00
228 Naphthalene	1.000	1.112	111.16

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED
$ 117 1,2-Dichloroethane-d4	5.000	5.003	100.07
$ 146 Toluene-d8	5.000	5.130	102.60
$ 177 4-Bromofluorobenzene	5.000	5.178	103.55

US32TAR1

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd20.i/06feb20.b/20020604.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 06-FEB-2020 09:00
Operator : NS Inst ID: msd20.i
Smp Info : 50mL# 3018-1182
Misc Info : 10ppbv (50ppbv)
Comment : LOW LEVEL - GC/MS
Method : /chem/msd20.i/06feb20.b/200l0205a.m
Meth Date : 06-Feb-2020 08:24 uexa Quant Type: ISTD
Cal Date : 05-FEB-2020 09:42 Cal File: 20020513.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Sample Matrix: AIR
Processing Host: us32tar1

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
* 98 Bromochloromethane					CAS #: 74-97-5		
17.302	17.302 (1.000)	130	190268	5.00000		80.00- 120.00	100.00
17.302	17.302 (1.000)	128	142976			46.61- 106.61	75.15
17.302	17.302 (1.000)	49	160556			58.08- 118.08	84.38
* 123 1,4-Difluorobenzene					CAS #: 540-36-3		
18.833	18.833 (1.000)	114	560899	5.00000		80.00- 120.00	100.00
18.833	18.833 (1.000)	88	78788			0.00- 44.22	14.05
* 163 Chlorobenzene-d5					CAS #: 3114-55-4		
24.311	24.311 (1.000)	117	506959	5.00000		80.00- 120.00	100.00
24.311	24.311 (1.000)	82	250409			18.72- 78.72	49.39
$ 117 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
18.224	18.224 (1.053)	65	205034	5.00326	5.003	80.00- 120.00	100.00
18.224	18.224 (1.053)	67	105063			30.76- 90.76	51.24
$ 146 Toluene-d8					CAS #: 2037-26-5		
21.617	21.617 (1.148)	98	556721	5.13014	5.130	80.00- 120.00	100.00
21.617	21.619 (1.148)	70	63859			0.00- 41.39	11.47

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 146 Toluene-d8 (continued)							
21.617	21.617 (1.148)	100	361904			35.17- 95.17	65.01
$ 177 4-Bromofluorobenzene					CAS #: 460-00-4		
25.920	25.920 (1.066)	174	401473	5.17754	5.178	80.00- 120.00	100.00
25.920	25.920 (1.066)	95	343733			59.22- 119.22	85.62
25.920	25.920 (1.066)	176	394494			69.23- 129.23	98.26
9 Propylene					CAS #: 115-07-1		
4.811	4.782 (0.278)	41	218986	10.1847	10.185	80.00- 120.00	100.00
4.763	4.797 (0.275)	42	137510			38.85- 98.85	62.79
4.787	4.792 (0.277)	39	161940			50.09- 110.09	73.95
11 Freon 12					CAS #: 75-71-8		
5.317	5.321 (0.307)	85	1116934	9.75188	9.752	80.00- 120.00	100.00
5.317	5.328 (0.307)	87	374461			2.53- 62.53	33.53
15 Freon 114					CAS #: 76-14-2		
6.884	6.887 (0.398)	135	963921	9.89927	9.899	80.00- 120.00	100.00
6.884	6.893 (0.398)	137	314630			2.72- 62.72	32.64
6.884	6.878 (0.398)	85	1130175			86.16- 146.16	117.25
17 Chloromethane					CAS #: 74-87-3		
7.294	7.297 (0.422)	50	299985	9.61933	9.619	80.00- 120.00	100.00
7.294	7.308 (0.422)	52	94715			3.63- 63.63	31.57
23 Butane					CAS #: 106-97-8		
8.075	8.092 (0.467)	58	59011	10.2972	10.297	80.00- 120.00	100.00
8.092	8.095 (0.468)	43	395801			627.99- 687.99	670.72
25 Vinyl Chloride					CAS #: 75-01-4		
8.283	8.277 (0.479)	62	335948	10.2237	10.224	80.00- 120.00	100.00
8.283	8.274 (0.479)	64	108439			2.83- 62.83	32.28
26 1,3-Butadiene					CAS #: 106-99-0		
8.544	8.541 (0.494)	54	226206	10.6984	10.698	80.00- 120.00	100.00
8.544	8.541 (0.494)	39	215807			69.65- 129.65	95.40
29 Bromomethane					CAS #: 74-83-9		
10.279	10.278 (0.594)	94	302230	11.6385	11.638	80.00- 120.00	100.00
10.279	10.278 (0.594)	96	281661			60.82- 120.82	93.19
30 Chloroethane					CAS #: 75-00-3		
10.833	10.846 (0.626)	64	152253	10.5667	10.567	80.00- 120.00	100.00
10.833	10.835 (0.626)	49	34625			0.00- 55.00	22.74
10.833	10.835 (0.626)	66	47977			1.88- 61.88	31.51

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
31 Isopentane					CAS #: 78-78-4		
10.977	10.976 (0.634)	57	243033	10.2069	10.207	80.00- 120.00	100.00
10.977	10.976 (0.634)	43	325779			111.40- 171.40	134.05
10.977	10.976 (0.634)	42	290687			96.33- 156.33	119.61
35 Freon 11					CAS #: 75-69-4		
11.724	11.723 (0.678)	101	1168896	10.4373	10.437	80.00- 120.00	100.00
11.724	11.723 (0.678)	103	774585			35.14- 95.14	66.27
42 Ethanol					CAS #: 64-17-5		
12.848	12.870 (0.743)	45	109666	11.7695	11.770	80.00- 120.00	100.00
12.848	12.870 (0.743)	46	42077			6.43- 66.43	38.37
49 Freon 113					CAS #: 76-13-1		
13.315	13.317 (0.770)	151	987248	9.57663	9.577	80.00- 120.00	100.00
13.315	13.323 (0.770)	153	634424			34.89- 94.89	64.26
13.315	13.320 (0.770)	101	971197			70.13- 130.13	98.37
50 1,1-Dichloroethene					CAS #: 75-35-4		
13.343	13.331 (0.771)	98	244480	10.5018	10.502	80.00- 120.00	100.00
13.315	13.324 (0.770)	61	531906			197.76- 257.76	217.57
13.315	13.324 (0.770)	96	376505			124.14- 184.14	154.00
52 Acetone					CAS #: 67-64-1		
13.700	13.706 (0.792)	58	155984	9.93731	9.937	80.00- 120.00	100.00
13.700	13.706 (0.792)	43	494982			291.24- 351.24	317.33
56 Carbon Disulfide					CAS #: 75-15-0		
13.727	13.726 (0.793)	76	1123947	10.4342	10.434	80.00- 120.00	100.00
57 2-Propanol					CAS #: 67-63-0		
14.112	14.110 (0.816)	45	466117	10.6495	10.650	80.00- 120.00	100.00
14.112	14.114 (0.816)	43	132868			0.00- 59.88	28.51
14.112	14.110 (0.816)	59	21455			0.00- 34.36	4.60
58 3-Chloropropene					CAS #: 107-05-1		
14.304	14.295 (0.827)	76	135103	11.6000	11.600	80.00- 120.00	100.00
14.304	14.295 (0.827)	41	295512			188.05- 248.05	218.73
66 Methylene Chloride					CAS #: 75-09-2		
14.634	14.632 (0.846)	84	358146	9.18881	9.189	80.00- 120.00	100.00
14.634	14.632 (0.846)	49	391854			79.75- 139.75	109.41
14.634	14.632 (0.846)	51	117889			4.54- 64.54	32.92
72 Methyl tert-butyl ether					CAS #: 1634-04-4		
15.018	15.017 (0.868)	73	932792	10.1978	10.198	80.00- 120.00	100.00

```
                                        CONCENTRATIONS
                                        ON-COL    FINAL
   RT   EXP RT (REL RT)  MASS  RESPONSE ( PPBV)  ( PPBV)   TARGET RANGE    RATIO
   ==   ====== ========  ====  ======== =======  =======   ============    =====

   72 Methyl tert-butyl ether (continued)
 15.018  15.017 (0.868)    57    200730                     0.00-  50.29    21.52
 15.018  15.017 (0.868)    41    221918                     0.00-  53.61    23.79
-------------------------------------------------------------------------------
   73 trans-1,2-Dichloroethene                      CAS #: 156-60-5
 15.073  15.072 (0.871)    98    283070 11.6386   11.639  80.00- 120.00   100.00
 15.073  15.072 (0.871)    61    555877                  166.73- 226.73   196.37
 15.073  15.072 (0.871)    96    429253                  131.17- 191.17   151.64
-------------------------------------------------------------------------------
   78 Hexane                                        CAS #: 110-54-3
 15.430  15.428 (0.892)    57    533134 11.3133   11.313  80.00- 120.00   100.00
 15.430  15.428 (0.892)    43    317017                   27.95-  87.95    59.46
 15.430  15.428 (0.892)    86     98195                    0.00-  48.76    18.42
-------------------------------------------------------------------------------
   82 1,1-Dichloroethane                            CAS #: 75-34-3
 15.924  15.923 (0.920)    63    683729 9.83704    9.837  80.00- 120.00   100.00
 15.924  15.923 (0.920)    65    212909                    1.61-  61.61    31.14
-------------------------------------------------------------------------------
   86 Vinyl Acetate                                 CAS #: 108-05-4
 15.979  15.978 (0.923)    86     82259 9.59474    9.595  80.00- 120.00   100.00
 15.979  15.978 (0.923)    42     78109                   52.54- 112.54    94.96
 15.979  15.978 (0.923)    43    723605                  783.51- 843.51   879.66
-------------------------------------------------------------------------------
   91 cis-1,2-Dichloroethene                        CAS #: 156-59-2
 16.903  16.902 (0.977)    98    263774 9.29301    9.293  80.00- 120.00   100.00
 16.903  16.902 (0.977)    61    467934                  148.56- 208.56   177.40
 16.903  16.902 (0.977)    96    412651                  126.55- 186.55   156.44
-------------------------------------------------------------------------------
   92 2-Butanone                                    CAS #: 78-93-3
 16.924  16.926 (0.978)    72    186001 10.8581   10.858  80.00- 120.00   100.00
 16.924  16.923 (0.978)    43    633410                  309.31- 369.31   340.54
 16.924  16.926 (0.978)    57     53674                    0.00-  58.97    28.86
-------------------------------------------------------------------------------
   99 Tetrahydrofuran                               CAS #: 109-99-9
 17.270  17.283 (0.998)    42    338582 10.8278   10.828  80.00- 120.00   100.00
 17.270  17.283 (0.998)    71    167229                   17.62-  77.62    49.39
 17.270  17.283 (0.998)    72    172994                   20.52-  80.52    51.09
-------------------------------------------------------------------------------
  100 Chloroform                                    CAS #: 67-66-3
 17.367  17.379 (1.004)    83    940390 9.95112    9.951  80.00- 120.00   100.00
 17.367  17.383 (1.004)    85    608396                   35.58-  95.58    64.70
-------------------------------------------------------------------------------
  102 Cyclohexane                                   CAS #: 110-82-7
 17.597  17.605 (1.017)    84    763828 11.9236   11.924  80.00- 120.00   100.00
 17.619  17.602 (1.018)    56    763247                   66.69- 126.69    99.92
 17.597  17.602 (1.017)    41    416400                   26.30-  86.30    54.51
-------------------------------------------------------------------------------
```

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
103 1,1,1-Trichloroethane					CAS #: 71-55-6		
17.641	17.631 (1.020)	97	996330	10.1582	10.158	80.00- 120.00	100.00
17.619	17.633 (1.018)	99	642291			34.72- 94.72	64.47
106 Carbon Tetrachloride					CAS #: 56-23-5		
17.819	17.824 (1.030)	119	1092343	10.6020	10.602	80.00- 120.00	100.00
17.819	17.829 (1.030)	117	1150963			72.39- 132.39	105.37
113 2,2,4-Trimethylpentane					CAS #: 540-84-1		
18.121	18.121 (1.047)	56	863339	10.1505	10.150	80.00- 120.00	100.00
18.121	18.121 (1.047)	57	2488417			245.12- 305.12	288.23
18.121	18.121 (1.047)	41	704770			50.98- 110.98	81.63
116 Benzene					CAS #: 71-43-2		
18.203	18.206 (0.967)	78	1286573	10.5496	10.550	80.00- 120.00	100.00
18.203	18.203 (0.967)	77	299798			0.00- 54.15	23.30
120 1,2-Dichloroethane					CAS #: 107-06-2		
18.347	18.347 (0.974)	62	558216	8.93126	8.931	80.00- 120.00	100.00
18.347	18.345 (0.974)	64	187115			0.98- 60.98	33.52
121 Heptane					CAS #: 142-82-5		
18.409	18.404 (0.978)	57	343135	11.2462	11.246	80.00- 120.00	100.00
18.409	18.406 (0.978)	100	176534			22.83- 82.83	51.45
18.409	18.409 (0.978)	43	568928			143.19- 203.19	165.80
125 Trichloroethene					CAS #: 79-01-6		
19.257	19.256 (1.022)	130	706058	9.75751	9.758	80.00- 120.00	100.00
19.257	19.254 (1.022)	95	585350			54.82- 114.82	82.90
19.257	19.259 (1.022)	97	387861			25.35- 85.35	54.93
127 Methylcyclohexane					CAS #: 108-87-2		
19.480	19.480 (1.034)	83	752963	11.1775	11.178	80.00- 120.00	100.00
19.480	19.480 (1.034)	55	527069			40.96- 100.96	70.00
19.480	19.480 (1.034)	56	171942			0.00- 52.45	22.84
132 1,2-Dichloropropane					CAS #: 78-87-5		
19.747	19.747 (1.049)	63	439189	9.51745	9.517	80.00- 120.00	100.00
19.747	19.747 (1.049)	62	298877			40.35- 100.35	68.05
19.747	19.750 (1.049)	41	247853			24.96- 84.96	56.43
136 1,4-Dioxane					CAS #: 123-91-1		
19.904	19.901 (1.057)	88	306602	11.3324	11.332	80.00- 120.00	100.00
19.904	19.906 (1.057)	58	184354			31.33- 91.33	60.13
138 Bromodichloromethane					CAS #: 75-27-4		
20.216	20.216 (0.832)	83	1021639	10.3487	10.349	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
138 Bromodichloromethane (continued)							
20.216	20.216 (0.832)	85	665525			34.54- 94.54	65.14
144 cis-1,3-Dichloropropene					CAS #: 10061-01-5		
21.119	21.115 (1.121)	75	667738	10.4612	10.461	80.00- 120.00	100.00
21.119	21.120 (1.121)	77	218306			2.26- 62.26	32.69
21.119	21.120 (1.121)	39	285344			13.91- 73.91	42.73
145 4-Methyl-2-pentanone					CAS #: 108-10-1		
21.352	21.352 (1.134)	43	759277	10.7808	10.781	80.00- 120.00	100.00
21.352	21.354 (1.134)	58	309901			8.83- 68.83	40.82
21.352	21.362 (1.134)	85	160700			0.00- 50.74	21.16
147 Toluene					CAS #: 108-88-3		
21.773	21.773 (1.156)	91	1481224	9.96897	9.969	80.00- 120.00	100.00
21.773	21.775 (1.156)	92	872973			27.71- 87.71	58.94
150 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
22.350	22.350 (0.919)	75	627533	10.4241	10.424	80.00- 120.00	100.00
22.350	22.354 (0.919)	77	204129			3.18- 63.18	32.53
22.350	22.346 (0.919)	39	260237			13.49- 73.49	41.47
155 1,1,2-Trichloroethane					CAS #: 79-00-5		
22.728	22.724 (0.935)	97	587340	9.04119	9.041	80.00- 120.00	100.00
22.728	22.728 (0.935)	99	363974			31.74- 91.74	61.97
22.728	22.728 (0.935)	83	482321			51.17- 111.17	82.12
156 Tetrachloroethene					CAS #: 127-18-4		
22.844	22.844 (0.940)	166	1079876	9.86329	9.863	80.00- 120.00	100.00
22.844	22.844 (0.940)	129	666584			34.89- 94.89	61.73
22.844	22.844 (0.940)	131	650237			32.11- 92.11	60.21
158 2-Hexanone					CAS #: 591-78-6		
23.076	23.076 (0.949)	58	403334	11.2923	11.292	80.00- 120.00	100.00
23.076	23.072 (0.949)	43	748124			150.34- 210.34	185.48
23.076	23.076 (0.949)	100	97929			0.00- 55.47	24.28
160 Dibromochloromethane					CAS #: 124-48-1		
23.396	23.405 (0.962)	129	1317006	10.6501	10.650	80.00- 120.00	100.00
23.396	23.402 (0.962)	127	1005240			46.51- 106.51	76.33
161 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
23.657	23.657 (0.973)	107	941346	9.91265	9.913	80.00- 120.00	100.00
23.657	23.657 (0.973)	109	883662			64.58- 124.58	93.87
165 Chlorobenzene					CAS #: 108-90-7		
24.353	24.355 (1.002)	112	1281145	10.0526	10.052	80.00- 120.00	100.00

RT	EXP RT	(REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
165 Chlorobenzene (continued)								
24.353	24.360	(1.002)	114	402516			1.57- 61.57	31.42
24.353	24.352	(1.002)	77	654765			21.74- 81.74	51.11
167 Ethyl Benzene						CAS #: 100-41-4		
24.435	24.435	(1.005)	106	612333	10.8993	10.899	80.00- 120.00	100.00
24.435	24.435	(1.005)	91	1871448			270.24- 330.24	305.63
169 m,p-Xylene						CAS #: 108-38-3		
24.621	24.621	(1.013)	106	731529	10.7909	10.791	80.00- 120.00	100.00
24.621	24.618	(1.013)	91	1423292			159.55- 219.55	194.56
171 o-Xylene						CAS #: 95-47-6		
25.198	25.198	(1.036)	106	665297	10.9420	10.942	80.00- 120.00	100.00
25.198	25.198	(1.036)	91	1343920			167.89- 227.89	202.00
172 Styrene						CAS #: 100-42-5		
25.219	25.219	(1.037)	104	1204858	11.4235	11.424	80.00- 120.00	100.00
25.219	25.219	(1.037)	78	548901			16.95- 76.95	45.56
174 Bromoform						CAS #: 75-25-2		
25.541	25.540	(1.051)	173	1506847	10.2995	10.299	80.00- 120.00	100.00
25.541	25.540	(1.051)	171	783835			19.65- 79.65	52.02
175 Cumene						CAS #: 98-82-8		
25.635	25.635	(1.054)	105	2235525	11.2675	11.267	80.00- 120.00	100.00
25.635	25.635	(1.054)	120	631796			0.00- 58.11	28.26
181 1,1,2,2-Tetrachloroethane						CAS #: 79-34-5		
26.110	26.109	(1.074)	83	1180260	8.84633	8.846	80.00- 120.00	100.00
26.110	26.109	(1.074)	85	756886			35.51- 95.51	64.13
182 Propylbenzene						CAS #: 103-65-1		
26.147	26.154	(1.076)	91	2493566	10.7501	10.750	80.00- 120.00	100.00
26.147	26.154	(1.076)	120	649596			0.00- 55.59	26.05
188 4-Ethyltoluene						CAS #: 622-96-8		
26.299	26.299	(1.082)	105	2311162	11.5691	11.569	80.00- 120.00	100.00
26.299	26.295	(1.082)	120	750015			1.51- 61.51	32.45
190 1,3,5-Trimethylbenzene						CAS #: 108-67-8		
26.356	26.356	(1.084)	105	2161201	11.1154	11.115	80.00- 120.00	100.00
26.356	26.356	(1.084)	120	1107606			21.30- 81.30	51.25
196 1,2,4-Trimethylbenzene						CAS #: 95-63-6		
26.830	26.830	(1.104)	105	1820533	11.1560	11.156	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
196 1,2,4-Trimethylbenzene (continued)							
26.830	26.830 (1.104)	120	872575			18.64- 78.64	47.93
208 1,3-Dichlorobenzene					CAS #: 541-73-1		
27.255	27.255 (1.121)	146	1411852	9.47650	9.476	80.00- 120.00	100.00
27.255	27.255 (1.121)	148	915454			34.75- 94.75	64.84
27.255	27.255 (1.121)	111	498526			5.38- 65.38	35.31
209 1,4-Dichlorobenzene					CAS #: 106-46-7		
27.364	27.364 (1.126)	146	1456962	10.1304	10.130	80.00- 120.00	100.00
27.364	27.364 (1.126)	148	941668			34.92- 94.92	64.63
27.364	27.364 (1.126)	111	491492			3.67- 63.67	33.73
212 alpha-Chlorotoluene					CAS #: 100-44-7		
27.535	27.535 (1.133)	91	1384859	11.1578	11.158	80.00- 120.00	100.00
27.535	27.535 (1.133)	126	338692			0.00- 55.02	24.46
214 1,2-Dichlorobenzene					CAS #: 95-50-1		
27.847	27.847 (1.145)	146	1329111	9.77760	9.778	80.00- 120.00	100.00
27.847	27.847 (1.145)	148	866423			33.90- 93.90	65.19
27.847	27.845 (1.145)	111	486987			5.97- 65.97	36.64
226 1,2,4-Trichlorobenzene					CAS #: 120-82-1		
29.952	29.959 (1.232)	180	1081983	10.1633	10.163	80.00- 120.00	100.00
29.952	29.953 (1.232)	182	1033772			67.09- 127.09	95.54
227 Hexachlorobutadiene					CAS #: 87-68-3		
30.076	30.076 (1.237)	225	1219138	10.0001	10.000	80.00- 120.00	100.00
30.076	30.076 (1.237)	223	758791			33.13- 93.13	62.24
228 Naphthalene					CAS #: 91-20-3		
30.388	30.388 (1.250)	128	167179	1.11160	1.112	80.00- 120.00	100.00
30.388	30.391 (1.250)	127	23889			0.00- 45.10	14.29

Report Date: 06-Feb-2020 10:03

US32TAR1

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd20.i
Lab File ID: 20020604.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: NS
Method File: /chem/msd20.i/06feb20.b/200l0205a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 06-FEB-2020
Calibration Time: 07:41
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	180905	108543	253267	190268	5.18
123 1,4-Difluorobenze	536645	321987	751303	560899	4.52
163 Chlorobenzene-d5	492844	295706	689982	506959	2.86

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
98 Bromochloromethan	17.30	16.97	17.63	17.30	-0.00
123 1,4-Difluorobenze	18.83	18.50	19.16	18.83	0.00
163 Chlorobenzene-d5	24.31	23.98	24.64	24.31	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd20.i/06feb20.b/20020604.d

Date : 06-FEB-2020 09:00

Client ID: LCSD

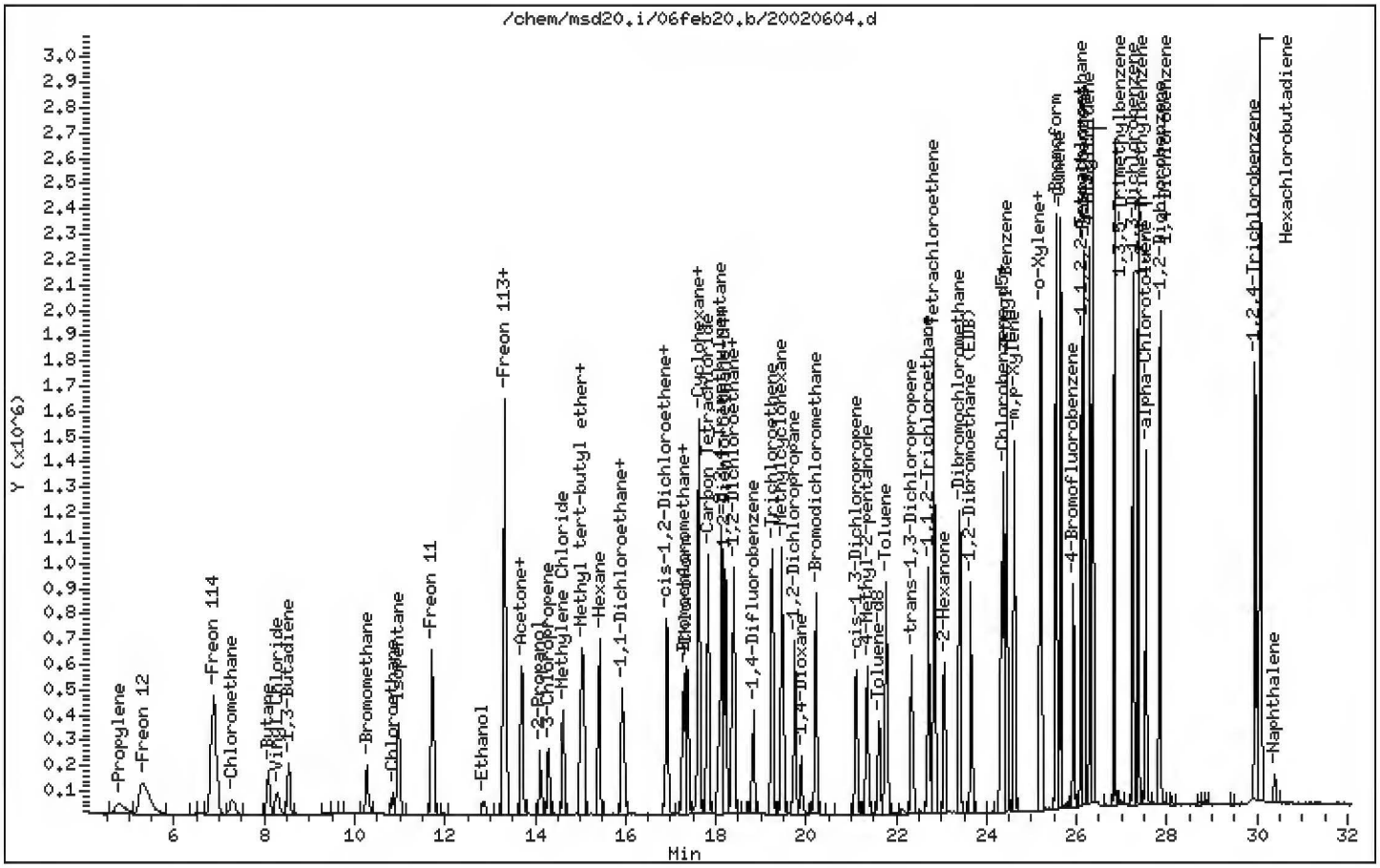
Instrument: msd20.i

Sample Info: 50mL# 3018-1182

Operator: NS

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics **MSD-20** **Logbook #3131**

BFB Verification of 176/174 m/z Ratio: 452032/464640 X100 = 97.29	
Method Name: 200L0208A / 200S0208A	

NS 02/06/20 5 5 NS 2/6/20

IS/S Std. #: 3128-120		Exp. Date: 4/21/20
BCM	180905 LL	183377 SM
1,4-DFB	536645	519605
CB-d5	492844	517348

Verified CCV IS vs ICAL mid-point (-40%D): NS

SOP# (Circle one): 6 / 83 / 38 / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date/Syringe ID
1	/	20020601	BFB tune check	2810-1406	50ng	2µl	1.00	NS	2/6/20	0709	NS	
2	/	02	CCV (50 ppbv)	3018-1117	10 ppbv	50ml	1.00	NS		0741	NS	Exp. 5/4/20 ø out
3	/	03	LCS (50ppbv)	3018-1182	10 ppbv	50ml	1.00	NS		0820	NS	ø out
4	/	04	LCSD (50ppbv)		10 ppbv	50ml	1.00	NS		0900	NS	ø out
5	X	05	System blank	7632	Humid	250ml	1.00	NS		0940	NS	
6	/	06	lab blank				1.00	NS		1020	NS	
7		~~07~~	~~20017756-01A~~	~~00190~~	~~5Hg+3psi~~	~~250ml~~	~~1.44~~	~~NS~~				not loaded MO 02/06/20
8	✓	20020608	20017756-01A	5738	4.5"Hg+3psi	250mL MO 02/06/20	1.42	MO	02/06/20	1457	MO	25mL DF=14.2, dil TC
9	✓	09	-05A	N3499	4.5"Hg+3psi	250mL	1.42	MO		1536	MO	"E" EtOH (NTC)
10	✓	10	-06A	00601	4.0"Hg+3psi	250mL	1.39	MO		1615	MO	
11	✓	11	-07A	N0439	4.5"Hg+3psi	250mL	1.42	MO		1654	MO	
12	X	12	-05AA	N3497	4.5"Hg+3psi	250mL	1.42	MO		1734	MO	not needed
13	✓	13	-09A	9226	5.0"Hg+3psi	250mL	1.44	MO		1817	MO	"E" EtOH (NTC)
14	✓	14	-10A	9192	5.5"Hg+3psi	250mL	1.47	MO		1858	MO	
15	✓	15	-02A	600602	4.0"Hg+3psi	25mL	13.9	MO		1937	MO	dil TC
16	✓	16	-04A	00190	5.0"Hg+3psi	250mL	1.44	MO		2016	MO	
17	✓	17	-08A	611586	2.0"Hg+3psi	250mL MO 02/06/20	2.58	MO		2055	MO	125mL, dil TC

Dave Finz 2/6/20

Reviewed* Date

*Must be an independent reviewer

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date/Syringe ID
18	/	20020618	2001756-11A	N3478	4.0"Hg→3psi	250mL	1.39	MD	02/06/20	2135	DF	
19	/	19	-12A	N4294	1	250mL	1.39	MD	↓	2214	DF	
20	✓	20	-13A	33664	4.5"Hg→3psi	250mL	1.42	DF	↓	2253	GH	
21	/	21	-14A	N2789	3.5"Hg-3psi	250mL	1.36	GH	↓	2353	NS	df = 1.36 - LA 2/7/20
22	/	22	-15A	00455	5.0"Hg-3psi	250mL	1.44	GH	2/7/20	0032	NS	"E" NTC LL
23	/	23	-16A	N2411	2.0"Hg→3psi	250mL	1.09	AG	↓	0531	NS	"E" NTC LL
24	/	24	-03A	N0651	4.0"Hg→3psi	25mL	13.9	AG	↓	0613	NS	"E" PCE by Sum
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												NS 2/7/20
39												

AK 2/7/20

Reviewed* Date

*Must be an independent reviewer

US32TAR1

Data file : /chem/msd20.i/05feb20.b/20020502.d
Lab Smp Id: BFB Tune Check Client Smp ID: BFB
Inj Date : 04-FEB-2020 22:35
Operator : gh Inst ID: msd20.i
Smp Info : 2.0uL# 2810-1406
Misc Info : 50ng
Comment :
Method : /chem/msd20.i/05feb20.b/bfb60.m
Meth Date : 05-Feb-2020 09:16 uefi Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: WATER
Processing Host: us32tar1

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
6.785	6.785	0.000	95	527701			100.00- 100.00	85.71
6.785	6.785	0.000	50	84830			8.00- 40.00	16.08
6.785	6.785	0.000	75	248837			30.00- 66.00	47.15
6.785	6.785	0.000	96	32371			5.00- 9.00	6.13
6.785	6.785	0.000	173	6758			0.00- 1.99	1.10
6.785	6.785	0.000	174	615658			50.00- 120.00	116.67
6.785	6.785	0.000	175	46491			4.00- 9.00	7.55
6.785	6.785	0.000	176	594828			93.00- 101.00	96.62
6.785	6.785	0.000	177	40499			5.00- 9.00	6.81

Data File: /chem/msd20.i/05feb20.b/20020502.d

Date : 04-FEB-2020 22:35

Client ID: BFB

Instrument: msd20.i

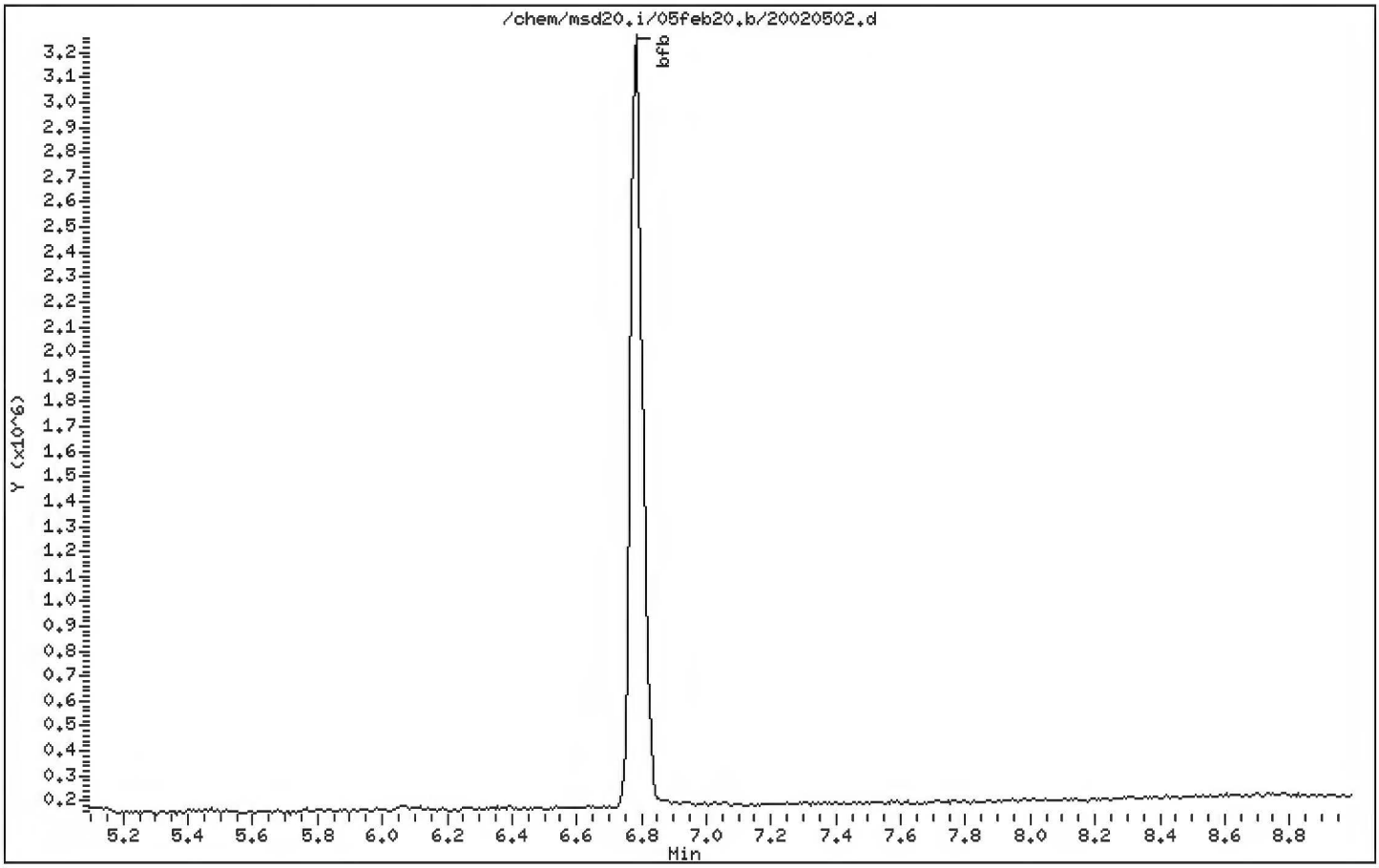
Sample Info: 2.0uL# 2810-1406

Volume Injected (uL): 1.0

Operator: gh

Column phase:

Column diameter: 2.00



Data File: /chem/msd20.i/05feb20.b/20020502.d

Date : 04-FEB-2020 22:35

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL# 2810-1406

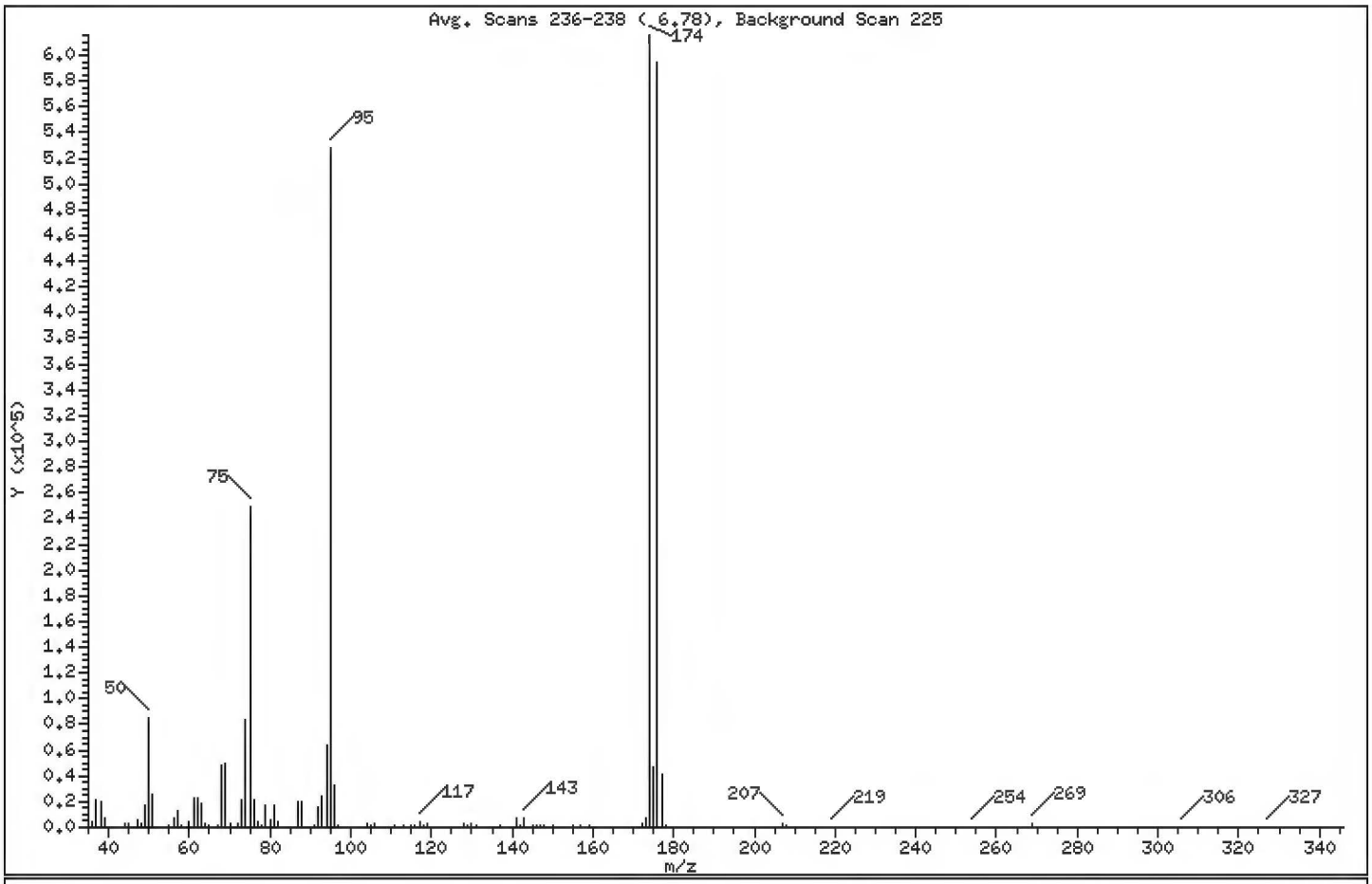
Volume Injected (uL): 1.0

Operator: gh

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	16.08
75	30.00 - 66.00% of mass 95	47.15
96	5.00 - 9.00% of mass 95	6.13
173	Less than 1.99% of mass 174	1.28 (1.10)
174	50.00 - 120.00% of mass 95	116.67
175	4.00 - 9.00% of mass 174	8.81 (7.55)
176	93.00 - 101.00% of mass 174	112.72 (96.62)
177	5.00 - 9.00% of mass 176	7.67 (6.81)

Data File: /chem/msd20.i/05feb20.b/20020502.d

Date : 04-FEB-2020 22:35

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL# 2810-1406

Volume Injected (uL): 1.0

Operator: gh

Column phase:

Column diameter: 2.00

Data File: 20020502.d
Spectrum: Avg. Scans 236-238 (6.78), Background Scan 225
Location of Maximum: 174.00
Number of points: 197

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	3720	90.00	359	148.00	809	233.00	64
37.00	21248	91.00	1663	149.00	471	234.00	256
38.00	19472	92.00	15150	150.00	993	235.00	46
39.00	6907	93.00	24160	151.00	166	237.00	12
40.00	559	94.00	63632	152.00	405	239.00	208
41.00	199	95.00	527680	153.00	573	240.00	51
44.00	3135	96.00	32368	154.00	484	241.00	106
45.00	3508	97.00	744	155.00	1656	243.00	54
46.00	472	101.00	292	156.00	499	247.00	27
47.00	5092	104.00	2697	157.00	1378	248.00	335
48.00	2511	105.00	1033	158.00	645	253.00	432
49.00	17608	106.00	2302	159.00	842	254.00	582
50.00	84824	107.00	296	161.00	665	255.00	439
51.00	25576	108.00	326	162.00	179	256.00	236
52.00	684	109.00	162	163.00	335	261.00	302
53.00	112	110.00	232	164.00	284	263.00	66
54.00	123	111.00	791	165.00	284	264.00	55
55.00	984	112.00	566	167.00	112	265.00	161
56.00	6528	113.00	835	168.00	104	268.00	189
57.00	12830	115.00	776	169.00	425	269.00	2904
58.00	733	116.00	2086	170.00	384	270.00	684
59.00	54	117.00	3957	171.00	691	272.00	180
60.00	4080	118.00	2115	172.00	2781	273.00	59
61.00	22752	119.00	2824	173.00	6758	277.00	71
62.00	22352	120.00	95	174.00	615616	281.00	58
63.00	18456	122.00	128	175.00	46488	282.00	465
64.00	2168	123.00	197	176.00	594816	283.00	193
65.00	1179	124.00	552	177.00	40496	284.00	451
66.00	358	125.00	42	178.00	1360	285.00	275
67.00	1711	126.00	6	179.00	413	293.00	143
68.00	48152	128.00	2584	180.00	39	295.00	147
69.00	49752	129.00	1118	183.00	56	306.00	512
70.00	3461	130.00	2138	190.00	216	311.00	290
71.00	266	131.00	752	191.00	623	313.00	5
72.00	3235	132.00	339	192.00	152	314.00	69

Data File: /chem/msd20.i/05feb20.b/20020502.d

Date : 04-FEB-2020 22:35

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL# 2810-1406

Volume Injected (uL): 1.0

Operator: gh

Column phase:

Column diameter: 2.00

Data File: 20020502.d
Spectrum: Avg. Scans 236-238 (6.78), Background Scan 225
Location of Maximum: 174.00
Number of points: 197

m/z	Y	m/z	Y	m/z	Y	m/z	Y
73.00	21152	133.00	338	195.00	185	315.00	320
74.00	83592	134.00	117	196.00	183	320.00	55
75.00	248832	135.00	317	201.00	81	324.00	32
76.00	21696	136.00	166	203.00	158	327.00	603
77.00	3710	137.00	998	205.00	41	329.00	166
78.00	1740	138.00	54	207.00	3202	331.00	141
79.00	16496	139.00	132	208.00	1762	332.00	93
80.00	4968	140.00	480	210.00	204	334.00	544
81.00	16720	141.00	6587	211.00	161	341.00	515
82.00	4058	142.00	862	216.00	166	342.00	415
83.00	611	143.00	7647	218.00	33	343.00	292
85.00	123	144.00	528	219.00	299	345.00	308
86.00	650	145.00	1905	220.00	125		
87.00	20304	146.00	1039	222.00	80		
88.00	20184	147.00	1589	232.00	140		

US32TAR1

Data file : /chem/msd20.i/06feb20.b/20020601.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 06-FEB-2020 07:09
Operator : ns Inst ID: msd20.i
Smp Info : 2.0uL# 2810-1406; BFB Tune Check
Misc Info : 50ng
Comment :
Method : /chem/msd20.i/06feb20.b/bfb60.m
Meth Date : 05-Sep-2019 07:36 lw7b Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: WATER
Processing Host: us32tar1

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
6.792	6.640	0.152	95	397440			100.00- 100.00	85.53
6.792	6.640	0.152	50	64363			8.00- 40.00	16.19
6.792	6.640	0.152	75	190278			30.00- 66.00	47.88
6.792	6.640	0.152	96	26594			5.00- 9.00	6.69
6.792	6.640	0.152	173	5558			0.00- 1.99	1.20
6.792	6.640	0.152	174	464682			50.00- 120.00	116.92
6.792	6.640	0.152	175	35981			4.00- 9.00	7.74
6.792	6.640	0.152	176	452060			93.00- 101.00	97.28
6.792	6.640	0.152	177	30111			5.00- 9.00	6.66

Data File: /chem/msd20.i/06feb20.b/20020601.d

Date : 06-FEB-2020 07:09

Client ID: BFB

Instrument: msd20.i

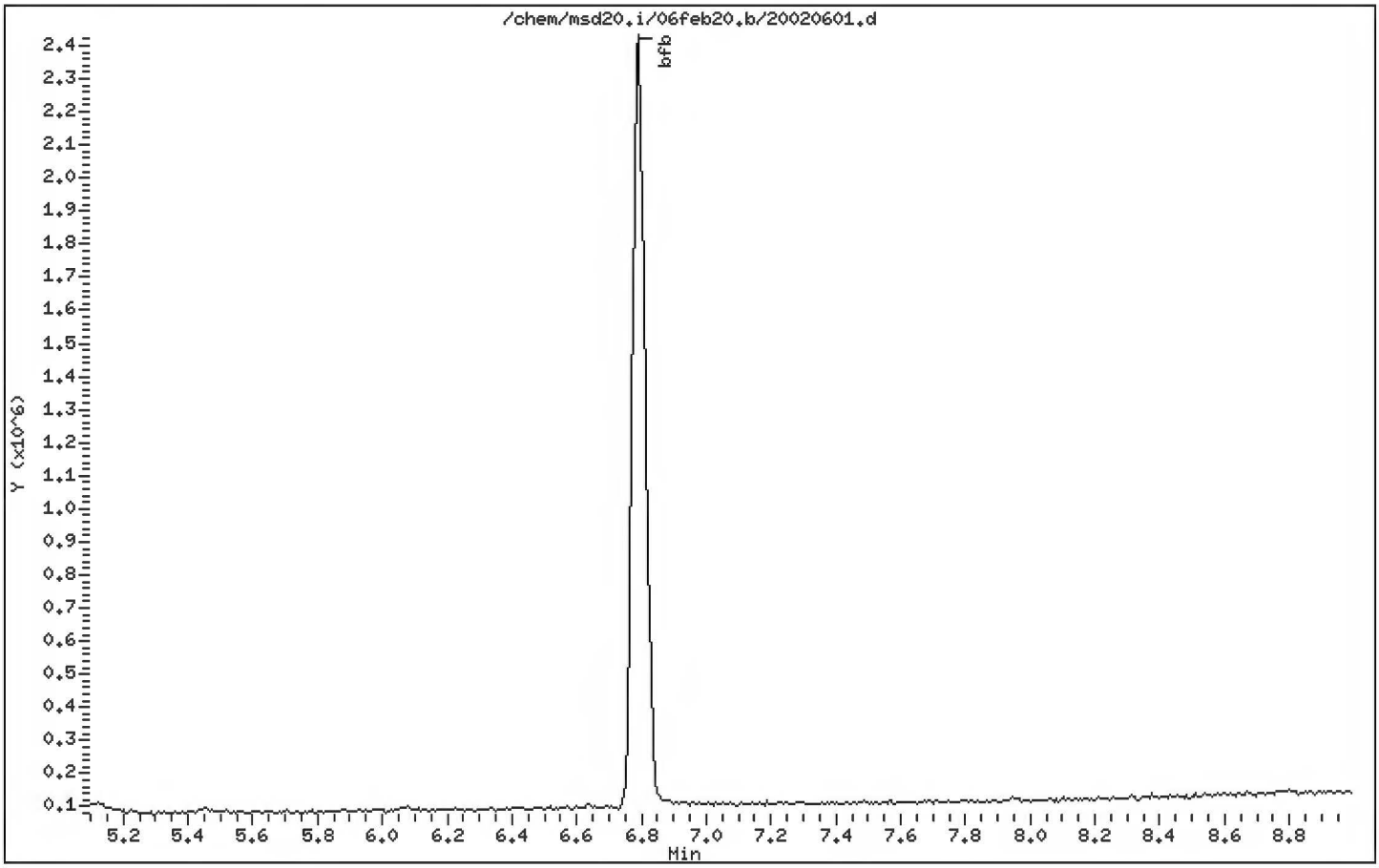
Sample Info: 2.0uL# 2810-1406; BFB Tune Check

Volume Injected (uL): 1.0

Operator: ns

Column phase:

Column diameter: 2.00



Data File: /chem/msd20.i/06feb20.b/20020601.d

Date : 06-FEB-2020 07:09

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL# 2810-1406; BFB Tune Check

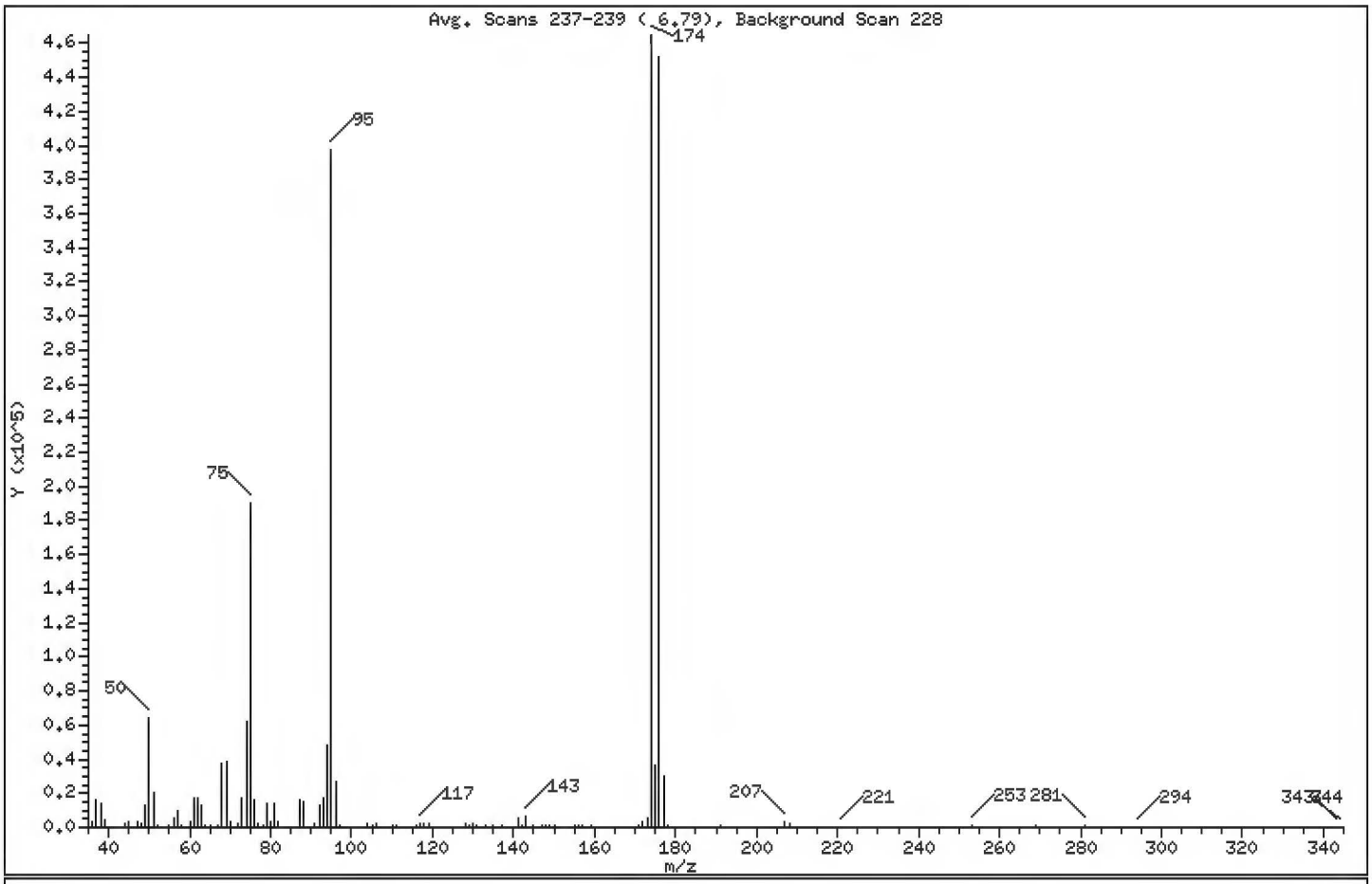
Volume Injected (uL): 1.0

Operator: ns

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	16.19
75	30.00 - 66.00% of mass 95	47.88
96	5.00 - 9.00% of mass 95	6.69
173	Less than 1.99% of mass 174	1.40 (1.20)
174	50.00 - 120.00% of mass 95	116.92
175	4.00 - 9.00% of mass 174	9.05 (7.74)
176	93.00 - 101.00% of mass 174	113.74 (97.28)
177	5.00 - 9.00% of mass 176	7.58 (6.66)

Data File: /chem/msd20.i/06feb20.b/20020601.d

Date : 06-FEB-2020 07:09

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL# 2810-1406; BFB Tune Check

Volume Injected (uL): 1.0

Operator: ns

Column phase:

Column diameter: 2.00

Data File: 20020601.d
Spectrum: Avg. Scans 237-239 (6.79), Background Scan 228
Location of Maximum: 174.00
Number of points: 193

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2749	86.00	329	145.00	1295	221.00	278
37.00	16367	87.00	16244	146.00	296	223.00	199
38.00	13559	88.00	15176	147.00	803	233.00	114
39.00	4375	91.00	2101	148.00	1331	234.00	35
40.00	137	92.00	12301	149.00	624	235.00	82
41.00	229	93.00	16832	150.00	962	236.00	63
42.00	343	94.00	47568	152.00	498	237.00	76
43.00	93	95.00	397440	153.00	430	239.00	212
44.00	1688	96.00	26592	154.00	238	247.00	186
45.00	2845	97.00	1009	155.00	1370	248.00	88
46.00	484	101.00	54	156.00	579	251.00	422
47.00	3564	102.00	204	157.00	1006	253.00	569
48.00	2019	103.00	346	158.00	371	261.00	271
49.00	12745	104.00	1642	159.00	1047	262.00	123
50.00	64360	105.00	982	161.00	418	267.00	273
51.00	20120	106.00	1892	162.00	2	268.00	138
52.00	698	107.00	415	163.00	162	269.00	812
53.00	316	108.00	120	164.00	132	270.00	38
55.00	931	109.00	259	165.00	176	271.00	230
56.00	5599	110.00	585	166.00	52	272.00	6
57.00	9174	111.00	580	167.00	137	280.00	143
58.00	684	112.00	383	168.00	139	281.00	1442
59.00	70	113.00	474	169.00	109	282.00	367
60.00	3139	115.00	503	170.00	310	283.00	344
61.00	17304	116.00	1363	171.00	655	284.00	402
62.00	16736	117.00	2361	172.00	2964	285.00	85
63.00	12427	118.00	1869	173.00	5558	293.00	54
64.00	1567	119.00	2276	174.00	464640	294.00	203
65.00	1200	120.00	236	175.00	35976	295.00	83
66.00	303	123.00	240	176.00	452032	306.00	158
67.00	1091	124.00	500	177.00	30104	313.00	98
68.00	37624	125.00	352	178.00	730	315.00	64
69.00	38648	126.00	293	179.00	108	318.00	65
70.00	3039	127.00	503	180.00	65	322.00	194
71.00	281	128.00	1918	181.00	179	325.00	173

Data File: /chem/msd20.i/06feb20.b/20020601.d

Date : 06-FEB-2020 07:09

Client ID: BFB

Instrument: msd20.i

Sample Info: 2.0uL# 2810-1406; BFB Tune Check

Volume Injected (uL): 1.0

Operator: ns

Column phase:

Column diameter: 2.00

Data File: 20020601.d
Spectrum: Avg. Scans 237-239 (6.79), Background Scan 228
Location of Maximum: 174.00
Number of points: 193

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	2183	129.00	687	189.00	63	326.00	72
73.00	17024	130.00	1871	190.00	103	329.00	72
74.00	62360	131.00	786	191.00	712	331.00	45
75.00	190272	133.00	641	193.00	475	332.00	135
76.00	15786	135.00	1060	195.00	368	334.00	402
77.00	2531	136.00	45	196.00	132	335.00	44
78.00	1356	137.00	1184	203.00	218	336.00	165
79.00	13956	138.00	151	204.00	54	339.00	146
80.00	3689	139.00	206	207.00	2994	342.00	229
81.00	14106	140.00	323	208.00	1943	343.00	503
82.00	3061	141.00	4837	210.00	356	344.00	69
83.00	338	142.00	610	216.00	151		
84.00	65	143.00	6232	219.00	45		
85.00	124	144.00	424	220.00	86		

Shipping/ Receiving Documents

eurofins | Air Toxics

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

PID: _____ Workorder #: 2001756

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Client: EA Engineering, Science, + Technology
Project Name: Jones Rd. Groundwater Plume
Project Manager: Pat Appel Project # 14342129B6
Sampler: Jason Stroup PO 15790
Site Name: Jones Rd. Groundwater Plume

Special Instructions/Notes:

Turnaround Time (Rush surcharges may apply): Standard X Rush _____ (specify)

Lab ID	Field Sample Identification(Location)	Can #	Flow Controller #	Start Sampling Information Date	Start Sampling Information Time	Stop Sampling Information Date	Stop Sampling Information Time	Canister Vacuum/Pressure Initial (in Hg)	Canister Vacuum/Pressure Final (in Hg)	Lab Use Only Receipt	Lab Use Only Final (psig) Gas: N_2 / He	Requested Analyses TO15 SIM			
01A	ASS-101-01292020	000001290	23345	1-29-20	0914	1-29-20	1725	-30	-5.0			X			
02A	ASS-101-DUP-01292020	6L0602	23402	1-29-20	0914	1-29-20	1725	-30	-4.0			X			
03A	ASS-102-01292020	6L0454	23742	1-29-20	0916	1-29-20	1732	-30	-4.5			X			
04A	ASI-101-01292020	6L0608	24786	1-29-20	0913	1-29-20	1723	-30	-5.5			X			
05A	ASI-101-DUP-01292020	6L1811	24214	1-29-20	0913	1-29-20	1723	-30	-5.0			X			
06A	ASI-102-01292020	6L0236	24302	1-29-20	0917	1-29-20	1731	-30	-5.0			X			
07A	ASS-103-01292020	6L0073	23261	1-29-20	1006	1-29-20	1807	-30	-6.0			X			
08A	ASS-104-01292020	6L1586	23442	1-29-20	1002	1-29-20	1803	-30	-6.5			X			
09A	ASI-105-01292020	9226	24259	1-29-20	0832	1-29-20	1638	-30	-5			X			
10A	ASS-106-01292020	9192	24215	1-29-20	0828	1-29-20	1631	-30	-8			X			
11A	ASS-105-01292020	6L1854	24684	1-29-20	0831	1-29-20	1639	-30	-4.5			X			
12A	ASI-106-01292020	6L1982	24505	1-29-20	0827	1-29-20	1630	-30	-7.5			X			
13A	ASBKG-2-01292020	000003158	23431	1-29-20	1130	1-29-20	1810	-30	-7.0			X			
14A	ASBKG-4-01292020	6L1668	23408	1-29-20	0825	1-29-20	1640	-30	-4.5			X			
15A	ASI-104-01292020	6L0092	24382	1-29-20	1003	1-29-20	1803	-30	-4.5			X			
16A	ASI-103-01292020	6L1529	23555	1-29-20	1007	1-29-20	1808	-30	-6.0			X			

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
EA	1/30/2020	1300	[illegible]	1/31/20	0950
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Lab Use Only

Shipper Name: FedEx Custody Seals Intact? Yes No None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 2001756

Client

Ms. Pamela Moss
EA Engineering
7995 E. Prentice Ave
Suite 206E
Greenwood Village, CO 80111

Sales Rep: N/A

Phone

303-590-9143

Fax

Date Promised: 02/07/20 4:00 pm
Date Completed: 2/7/20
Date Received: 1/31/20
PO#: 15790
Project#: 14342129B6 Jones Rd. Groundwater Plume
Total $: $ 3,200.00
Logged By: LD

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	ASS-101-01292020	Modified TO-15 SIM	1/29/2020	4.5 "Hg	$200.00
02A	ASS-101-DUP-01292020	Modified TO-15 SIM	1/29/2020	4.0 "Hg	$200.00
03A	ASS-102-01292020	Modified TO-15 SIM	1/29/2020	4.0 "Hg	$200.00
03B	ASS-102-01292020	Modified TO-15 SIM	1/29/2020	4.0 "Hg	$0.00
04A	ASI-101-01292020	Modified TO-15 SIM	1/29/2020	5.0 "Hg	$200.00
05A	ASI-101-DUP-01292020	Modified TO-15 SIM	1/29/2020	4.5 "Hg	$200.00
06A	ASI-102-01292020	Modified TO-15 SIM	1/29/2020	4.0 "Hg	$200.00
07A	ASS-103-01292020	Modified TO-15 SIM	1/29/2020	4.5 "Hg	$200.00
08A	ASS-104-01292020	Modified TO-15 SIM	1/29/2020	2.0 "Hg	$200.00
09A	ASI-105-01292020	Modified TO-15 SIM	1/29/2020	5.0 "Hg	$200.00
10A	ASS-106-01292020	Modified TO-15 SIM	1/29/2020	5.5 "Hg	$200.00
11A	ASS-105-01292020	Modified TO-15 SIM	1/29/2020	4.0 "Hg	$200.00
12A	ASI-106-01292020	Modified TO-15 SIM	1/29/2020	4.0 "Hg	$200.00
13A	ASBKG-2-01292020	Modified TO-15 SIM	1/29/2020	4.5 "Hg	$200.00
14A	ASBKG-4-01292020	Modified TO-15 SIM	1/29/2020	3.5 "Hg	$200.00
15A	ASI-104-01292020	Modified TO-15 SIM	1/29/2020	5.0 "Hg	$200.00
16A	ASI-103-01292020	Modified TO-15 SIM	1/29/2020	2.0 "Hg	$200.00
17A	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00
17B	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00
18A	CCV	Modified TO-15 SIM	NA	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: EPA Jones Road/21618

BILL TO: Accounts Payable - Lewisville
EA Engineering
405 S. Highway 121
Suite C-100
Lewisville, TX 75067

Analysis Code: pptv

TERMS: PWP

Reporting Method: Modified TO-15 SIM (Sh)-1,1-DCE, c/t-1,2 DCE, PCE, TCE & VC

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY Continued

Client

Ms. Pamela Moss
EA Engineering
7995 E. Prentice Ave
Suite 206E
Greenwood Village, CO 80111

Sales Rep: N/A

Phone

303-590-9143

Fax

Date Promised: 02/07/20 4:00 pm
Date Completed: 2/7/20
Date Received: 1/31/20
PO#: 15790
Project#: 14342129B6 Jones Rd. Groundwater Plume
Total $: $ 3,200.00
Logged By: LD

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
18B	CCV	Modified TO-15 SIM	NA	NA	$0.00
19A	LCS	Modified TO-15 SIM	NA	NA	$0.00
19AA	LCSD	Modified TO-15 SIM	NA	NA	$0.00
19B	LCS	Modified TO-15 SIM	NA	NA	$0.00
19BB	LCSD	Modified TO-15 SIM	NA	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: EPA Jones Road/21618

BILL TO: Accounts Payable - Lewisville
EA Engineering
405 S. Highway 121
Suite C-100
Lewisville, TX 75067

Analysis Code: pptv

TERMS: PWP

Reporting Method: Modified TO-15 SIM (Sh)-1,1-DCE, c/t-1,2 DCE, PCE, TCE & VC

Sample Discrepancy Report

Identification

Initiated By: LD **Project ID:** 21618 **PM:** BSW **Date:** 1/31/2020 **Discrepancy Type:** ☒ **1.** ☐ **2.** ☐ **3.**

Workorder(s) affected: 2001756 **Sample(s) affected:** 02A

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube) was received broken, however sample was intact.
1.2. ☐ No brass cap on canister.
1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.
1.4. ☐ Sampling year not documented on COC but noted on sample tag.
1.5. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C but less than 6°C.

Notify Lab for further determination:

1.6. ☐ Tedlar bag received with minimal volume.

Narration Required in Lab Narrative and Sample Confirmation:

1.7. ☐ COC was not filled out in ink.
1.8. ☐ COC improperly relinquished / received.
☐Signature missing ☐date missing ☐time missing.
1.9. ☒ Sample ID on tags do not match the COC.
1.10. ☐ Can numbers do not match the COC.
1.11. ☐ Sampling date discrepancy.
1.12. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).
1.13. ☐ ID-none on the sample Tag/Blank.
1.14. ☐ Other (describe below).

Initials: _____ Date: _____

Describe the Discrepancy: 1.9-02A

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.
2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.
2.3. ☐ Incorrect sampling media / container for analysis requested.
2.4. ☐ Number of samples on the COC does not match the number of samples that were received.
2.5. ☐ Samples were received expired.
2.6. ☐ Sampling date is not documented for ☐ *some* / ☐ *any* samples (check one).
2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.
2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.
2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.
2.10. ☐ Sorbent samples -sampling volume was not provided.
2.11. ☐ Flow controller used – canister samples received at ambient or under pressure.
2.12. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
☐ Canister valve was open.
☐ Brass nut was loose/not present.
☐ Sample can be analyzed.
☐ Sample cannot be analyzed.
2.13. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. and the final recorded vac. on the COC.
☐ Canister passed leak check in lab <2psi, no evidence sample was compromised.
☐ Canister failed lab leak check, canister found to be leaking. Canister sample compromised.
2.14. ☐ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).
2.15. ☐ Canister Trip Blank received at low vacuum (<25"Hg).
2.16. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).
2.17. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐

Describe the Discrepancy:

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ Sample loss due to instrument malfunction / broken glassware.

3.6. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.7. ☐ Reporting Limit was raised.

3.8. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.9. ☐ Sample Trip Blank has a reportable level(s) of target compound(s) present. Re-analysis confirmed the initial result.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

_____

_____

How Does this Affect Client: _____

_____

_____

Project Manager Use Only

Project Manager Notification ☐ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☐ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials:_____ Date: _____

☐ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials:_____ Person notified: _____ Date: _____

☐ Waiting for Client Reply

Comments: _____

_____

☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐ _____

☐ **Additional notifications attached.**

Additional Comments:

_____

Other Records

DILUTION FACTORS

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{\text{14.7 psi + Final Pressure (psi)}}{\text{14.7 psi - [(Initial Pressure ("Hg)) (14.7 psi / 30 "Hg)]}}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{\text{14.7 psi + Final Pressure (psi)}}{\text{14.7 psi + Initial Pressure (psi)}}$$

Initial Vacuum ("Hg)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.5	1.36	1.71	2.05
1.0	1.39	1.74	2.09
1.5	1.41	1.77	2.13
2.0	1.44	1.80	2.16
2.5	1.46	1.83	2.20
3.0	1.49	1.87	2.24
3.5	1.52	1.90	2.29
4.0	1.55	1.94	2.33
4.5	1.58	1.98	2.38
5.0	1.61	2.02	2.42
5.5	1.64	2.06	2.47
6.0	1.68	2.10	2.53
6.5	1.71	2.15	2.58
7.0	1.75	2.19	2.64
7.5	1.79	2.24	2.69
8.0	1.83	2.29	2.76
8.5	1.87	2.34	2.82
9.0	1.91	2.40	2.89
9.5	1.96	2.46	2.96
10.0	2.01	2.52	3.03
10.5	2.06	2.59	3.11
11.0	2.12	2.65	3.19
11.5	2.17	2.72	3.28
12.0	2.23	2.80	3.37
12.5	2.30	2.88	3.46
13.0	2.36	2.97	3.57
13.5	2.44	3.06	3.67
14.0	2.51	3.15	3.79
14.5	2.59	3.25	3.91
15.0	2.68	3.36	4.04
15.5	2.77	3.48	4.18
16.0	2.87	3.60	4.33
16.5	2.98	3.73	4.49
17.0	3.09	3.88	4.66
17.5	3.22	4.03	4.85
18.0	3.35	4.20	5.05
18.5	3.50	4.38	5.27
19.0	3.65	4.58	5.51
19.5	3.83	4.80	5.77
20.0	4.02	5.04	6.06
20.5	4.23	5.31	6.38

Initial Vacuum ("Hg)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
21.0	4.47	5.60	6.73
21.5	4.73	5.93	7.13
22.0	5.03	6.30	7.58
22.5	5.36	6.72	8.08
23.0	5.74	7.20	8.66
23.5	6.19	7.76	9.32
24.0	6.70	8.40	10.10
24.5	7.31	9.17	11.02
25.0	8.04	10.08	12.12
25.5	8.93	11.20	13.47
26.0	10.05	12.60	15.15
26.5	11.49	14.40	17.32
27.0	13.40	16.80	20.20
27.5	16.08	20.16	24.24
28.0	20.10	25.20	30.31
28.5	26.80	33.61	40.41
29.0	40.20	50.41	60.61

Initial Pressure (psi)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.2	1.32	1.66	1.99
0.4	1.30	1.64	1.97
0.6	1.29	1.61	1.94
0.8	1.27	1.59	1.92
1.0	1.25	1.57	1.89
1.2	1.24	1.55	1.87
1.4	1.22	1.53	1.84
1.6	1.21	1.52	1.82
1.8	1.19	1.50	1.80
2.0	1.18	1.48	1.78
2.2	1.17	1.46	1.76
2.4	1.15	1.44	1.74
2.6	1.14	1.43	1.72
2.8	1.13	1.41	1.70
3.0	1.11	1.40	1.68
3.2	1.10	1.38	1.66
3.4	1.09	1.36	1.64
3.6	1.08	1.35	1.62
3.8	1.06	1.34	1.61
4.0	1.05	1.32	1.59

DILUTION FACTORS

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{ psi} + \text{Final Pressure (psi)}}{14.7\text{ psi} + \text{Initial Pressure (psi)}}$$

Initial Pressure (psi)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
0.0	1.34	1.68	2.02
0.2	1.32	1.66	1.99
0.4	1.30	1.64	1.97
0.6	1.29	1.61	1.94
0.8	1.27	1.59	1.92
1.0	1.25	1.57	1.89
1.2	1.24	1.55	1.87
1.4	1.22	1.53	1.84
1.6	1.21	1.52	1.82
1.8	1.19	1.50	1.80
2.0	1.18	1.48	1.78
2.2	1.17	1.46	1.76
2.4	1.15	1.44	1.74
2.6	1.14	1.43	1.72
2.8	1.13	1.41	1.70
3.0	1.11	1.40	1.68
3.2	1.10	1.38	1.66
3.4	1.09	1.36	1.64
3.6	1.08	1.35	1.62
3.8	1.06	1.34	1.61
4.0	1.05	1.32	1.59
4.2	1.04	1.31	1.57
4.4	1.03	1.29	1.55
4.6	1.02	1.28	1.54
4.8	1.01	1.27	1.52
5.0	1.00	1.25	1.51
5.2	NA	1.24	1.49
5.4	NA	1.23	1.48
5.6	NA	1.22	1.46
5.8	NA	1.20	1.45
6.0	NA	1.19	1.43
6.2	NA	1.18	1.42
6.4	NA	1.17	1.41
6.6	NA	1.16	1.39
6.8	NA	1.15	1.38
7.0	NA	1.14	1.37
7.2	NA	1.13	1.36
7.4	NA	1.12	1.34

Initial Pressure (psi)	**5 psi** Final Press. Dil. Factor	**10 psi** Final Press. Dil. Factor	**15 psi** Final Press. Dil. Factor
7.6	NA	1.11	1.33
7.8	NA	1.10	1.32
8.0	NA	1.09	1.31
8.2	NA	1.08	1.30
8.4	NA	1.07	1.29
8.6	NA	1.06	1.27
8.8	NA	1.05	1.26
9.0	NA	1.04	1.25
9.2	NA	1.03	1.24
9.4	NA	1.02	1.23
9.6	NA	1.02	1.22
9.8	NA	1.01	1.21
10.0	NA	1.00	1.20
10.2	NA	NA	1.19
10.4	NA	NA	1.18
10.6	NA	NA	1.17
10.8	NA	NA	1.16
11.0	NA	NA	1.16
11.2	NA	NA	1.15
11.4	NA	NA	1.14
11.6	NA	NA	1.13
11.8	NA	NA	1.12
12.0	NA	NA	1.11
12.2	NA	NA	1.10
12.4	NA	NA	1.10
12.6	NA	NA	1.09
12.8	NA	NA	1.08
13.0	NA	NA	1.07
13.2	NA	NA	1.06
13.4	NA	NA	1.06
13.6	NA	NA	1.05
13.8	NA	NA	1.04
14.0	NA	NA	1.03
14.2	NA	NA	1.03
14.4	NA	NA	1.02
14.6	NA	NA	1.01
14.8	NA	NA	1.01

Compound Listing

Modified TO-15 SIM (Sh)-1,1-DCE, c/t-1,2 DCE, PCE, TCE & VC

CAS Number	Compound	Detection Limit ppbv	Type
75-01-4	Vinyl Chloride	0.010	
156-59-2	cis-1,2-Dichloroethene	0.020	
79-01-6	Trichloroethene	0.020	
127-18-4	Tetrachloroethene	0.020	
156-60-5	trans-1,2-Dichloroethene	0.10	
17060-07-0	1,2-Dichloroethane-d4		
75-35-4	1,1-Dichloroethene	0.010	
2037-26-5	Toluene-d8		
460-00-4	4-Bromofluorobenzene		

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Media Certification Report

Canister Number: 1290
Can#: 129938-5738
Date : 01/07/20 0:25
Data File: o010616.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I0602
Can#: 129938-0199
Date : 01/07/20 6:09
Data File: o010627.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	98.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

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Media Certification Report

Canister Number: 6I0454
Can#: 129938-0651
Date : 01/07/20 7:11
Data File: o010629.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	99.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I0608
Can#: 129938-0190
Date : 01/09/20 12:34
Data File: d010839.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	97.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1811
Can#: 129938-3499
Date : 01/07/20 9:47
Data File: o010634.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I0236
Can#: 129938-0601
Date : 01/06/20 19:09
Data File: o010606.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	98.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

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Media Certification Report

Canister Number: 6I0073
Can#: 129938-0439
Date : 01/06/20 23:54
Data File: o010615.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	97.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1586
Can#: 129938-6L1586
Date : 01/06/20 23:22
Data File: o010614.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	96.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 9226
Can#: 129938-9226ta
Date : 01/07/20 11:21
Data File: o010637.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	101.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 9192
Can#: 129938-9192ta
Date : 01/07/20 4:04
Data File: o010623.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	99.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1854
Can#: 129938-3478
Date : 01/07/20 10:49
Data File: o010636.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	100.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1982
Can#: 129938-4294
Date : 01/07/20 3:33
Data File: o010622.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	98.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 3158
Can#: 129938-33666
Date : 01/07/20 11:52
Data File: o010638.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	102.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1668
Can#: 129938-2789
Date : 01/07/20 8:13
Data File: o010631.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	97.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I0092
Can#: 129938-0455
Date : 01/07/20 6:40
Data File: o010628.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	98.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

eurofins | Air Toxics

Media Certification Report

Canister Number: 6I1529
Can#: 129938-2411
Date : 01/06/20 22:19
Data File: o010612.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Conc.	Units
1,1-Dichloroethene	75-35-4	ND	ppbv
cis-1,2-Dichloroethene	156-59-2	ND	ppbv
Tetrachloroethene	127-18-4	ND	ppbv
trans-1,2-Dichloroethene	156-60-5	ND	ppbv
Trichloroethene	79-01-6	ND	ppbv
Vinyl Chloride	75-01-4	ND	ppbv
4-Bromofluorobenzene	460-00-4	97.00	% Recovery

**** All canisters have been certified according to the project-specific requirements and/or Standard Operating Procedures.***

Eurofins Air Toxics	Data Review Checklist			Release Date: 10/22/19
Workorder # 2001756	Form F1.27	Revision #17	Revision Date: 10/22/19	Page 1 of 2

S1	S2	S3	S4	D	Section 1 – Spec Out				
					Initials/Instrument/Date	S1: NS, MSD-20 2/6/20	S2:	S3:	S4:
✓				■	Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
✓				■	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
NA				■	Manual Integrations included and approved				
✓				✓	Chain of Custody verified for special comments/notes and analyses requested (add comments below)				
✓				■	Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				
✓				■	Verified standard expiration dates				

Profile, analyses, reporting, special notes and unusual circumstances: S1 ∅ out blank ∅

A1	A2	A3	A4	D	Section 2 – Sample Analysis				
					Initials/Date	A1: DMR 02/06/20	A2: GH 2/6/20	A3: NS 2/7/20	A4:
✓	✓			✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, Canister #s Verified and dilution ranges are met per SOP (ex. Over-ranged/overdiluted)				
NA	✓			✓	a) Tedlar Bag IDs verified against COC b) Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
NA	✓			✓	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓	✓			■	12/24 Hr clock time & Hold Time met for all samples				
✓	NA			✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on auto samplers have been verified (system blks, confirmation runs)				
✓	✓			✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: A1. 01A, 02A, 08A: dil 1:2, 04A-07A, 09A, 10A: Full load
A2 = 11A-13A - full load A3: 14A-16A full load, 13A dilut @ 10x for TC
report PCE in LL

D1	D2	D3	D4	T	3T	Section 3 – Target Data Reduction	Technical Review Needed? Circle one: Yes/No		T:	
						Initials/Instrument/ Date	D1: MSD-20 LA 2/7/20	D2:	D3:	D4:
✓					■	CAR # (if applicable)				
✓					■	Spectra Verified (documentation of spectral defense included if applicable)				
✓					■	TICs resemble reference spectra/ TICs between sample dups. are consistent (if applicable)				
✓						Lab Narrative is correct				
✓					■	TPH/NMOC calculations complete and included in folder				

Special notes:

A	3T	Section 4- Atlas Data Entry	Lumen verified and included in folder	Circle one: Yes/No
		Initials/Date: LA 2/7/20	3rd Tier: (needed only for DOD or per client request)	
✓		Sample Discrepancy Report (SDR) complete and approved (if applicable)		
✓		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				**Reason for Reissue:**
W	**T**	**3T**	**Q**	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Workorder # :				**Reason for Reissue:**
W	**T**	**3T**	**Q**	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable