

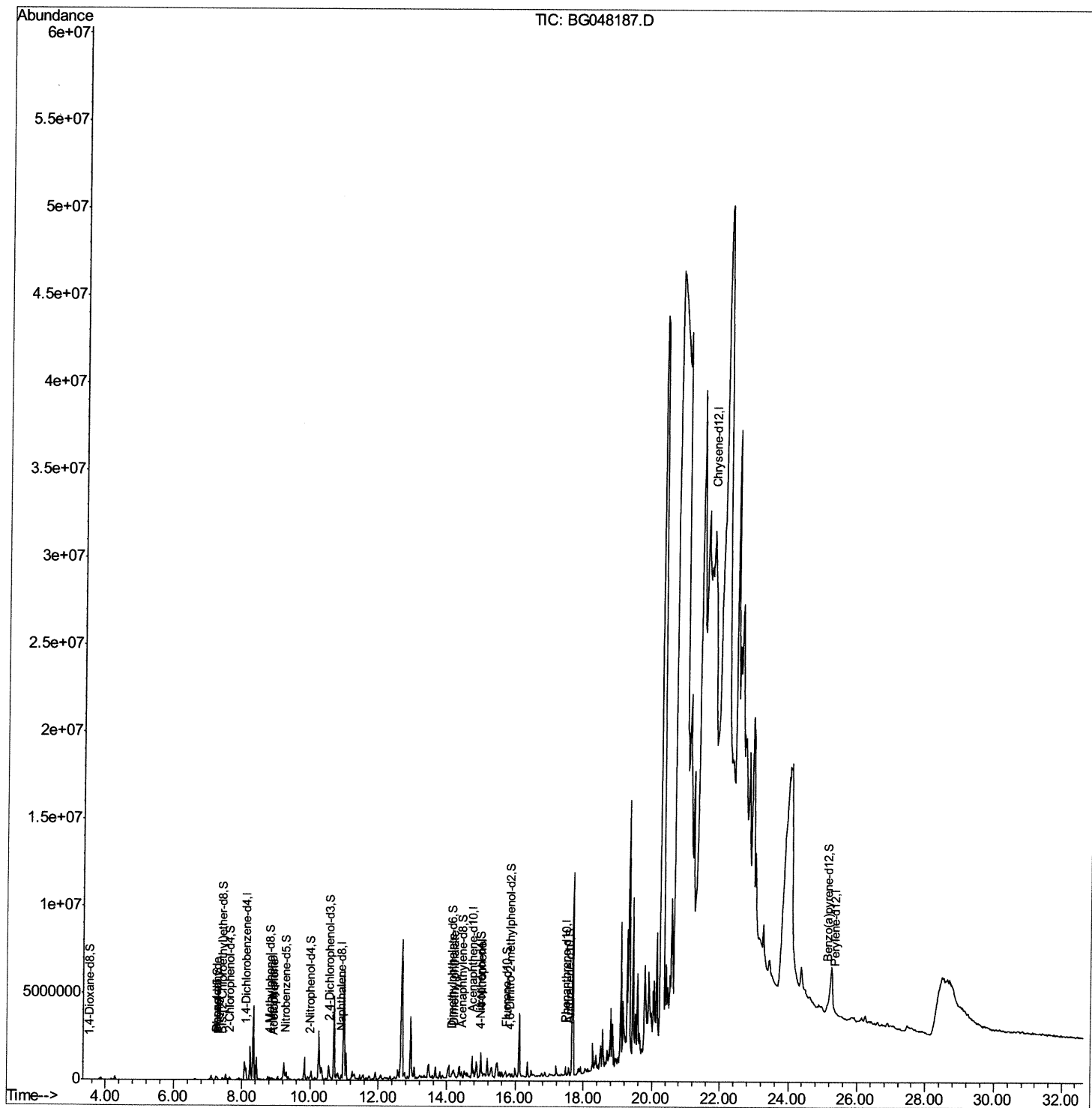
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
Data File : BG048187.D
Acq On : 17 Feb 2021 12:34
Operator : CG/JU
Sample : M1379-16
Misc :
ALS Vial : 29 Sample Multiplier: 1

Instrument :
BNA_G
ClientSampleId :
DBH00

Manual Integrations
APPROVED

mohammad
2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:39:05 2021
Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
Quant Title : SVOA CALIBRATION
QLast Update : Mon Feb 15 06:21:07 2021
Response via : Initial Calibration



Quantitation Report (Qedit)

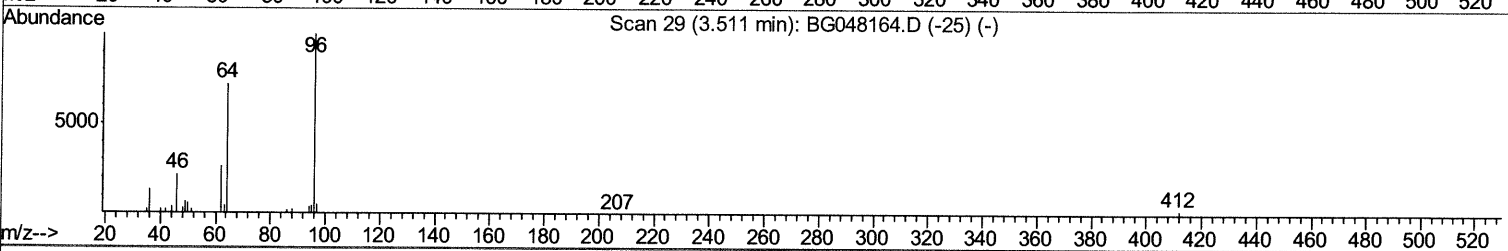
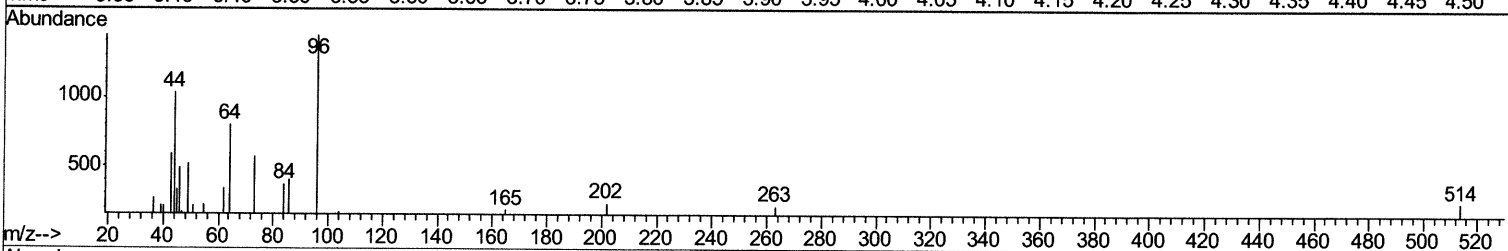
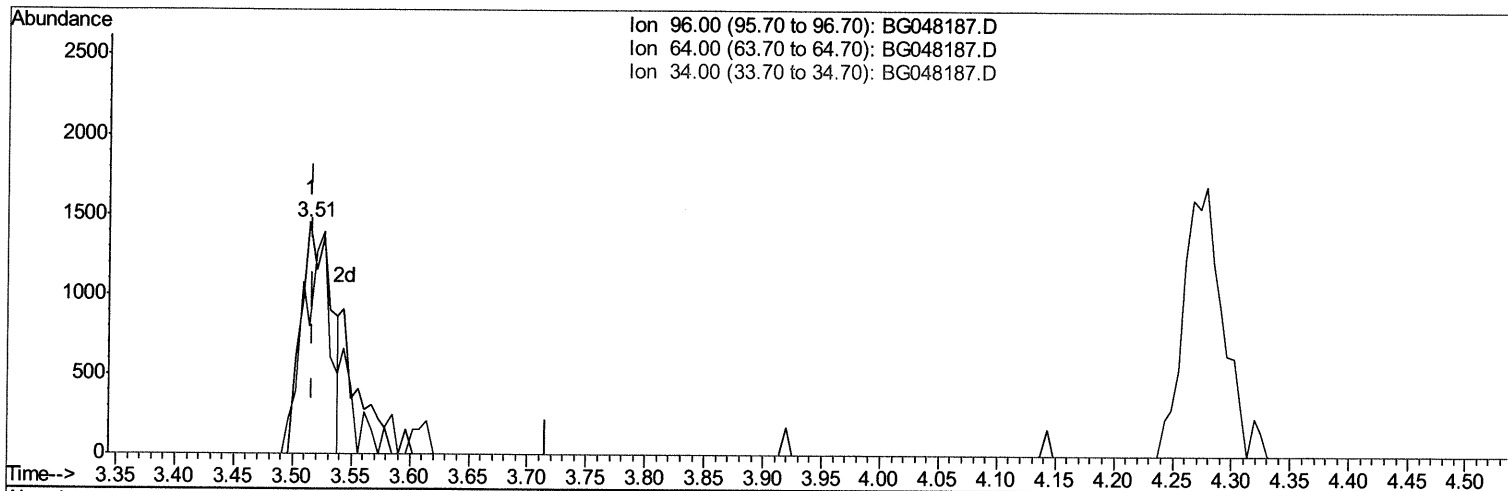
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:12:25 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(3) 1,4-Dioxane-d8 (S)

3.514min (-0.002) 1.89ng/uL

response 2561

Ion	Exp%	Act%
96.00	100	100
64.00	60.20	55.11
34.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

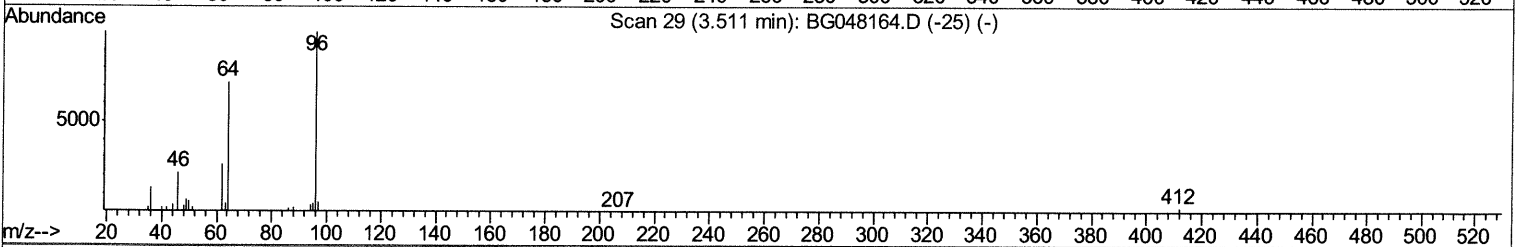
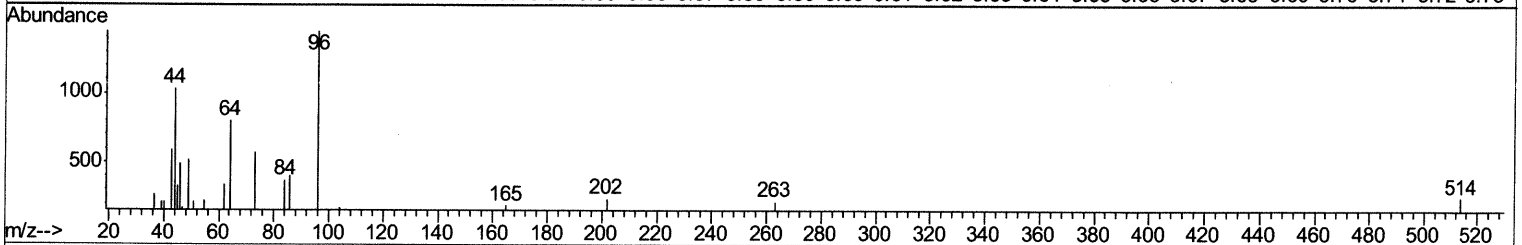
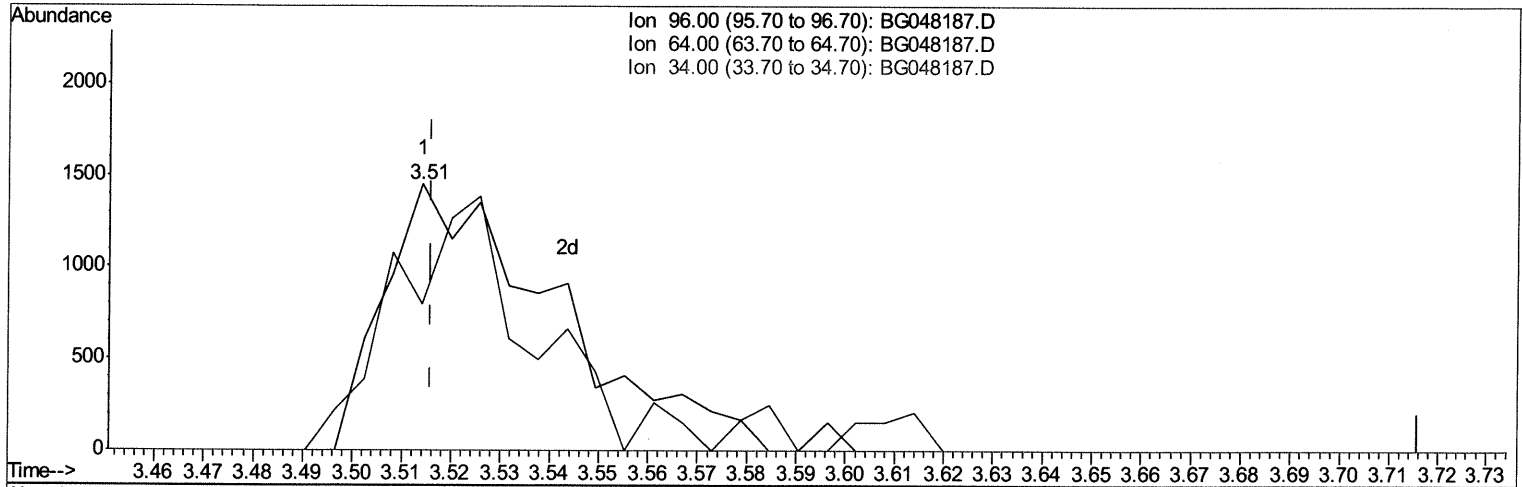
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
ClientSampleId :
 DBH00

Manual Integrations
APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:12:25 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(3) 1,4-Dioxane-d8 (S)

3.514min (-0.002) 2.58ng/uL m 02/24/21JU

response 3486

Ion	Exp%	Act%
96.00	100	100
64.00	60.20	55.11
34.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

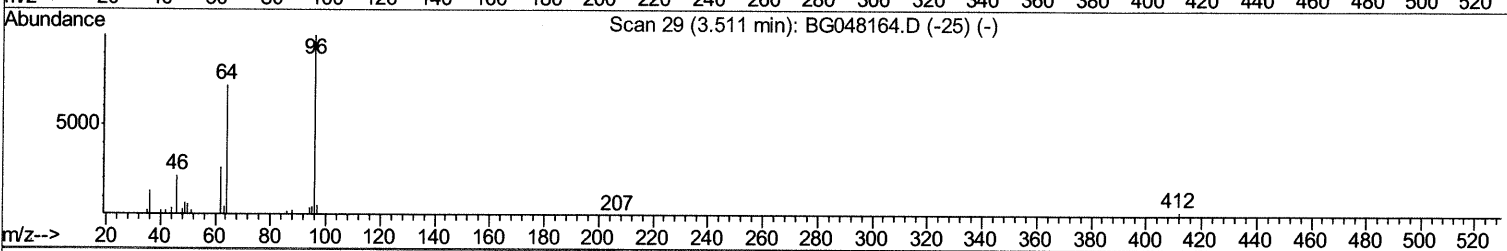
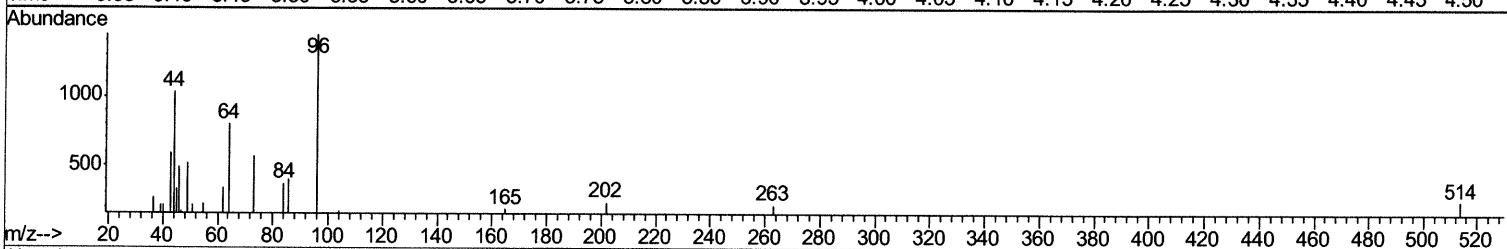
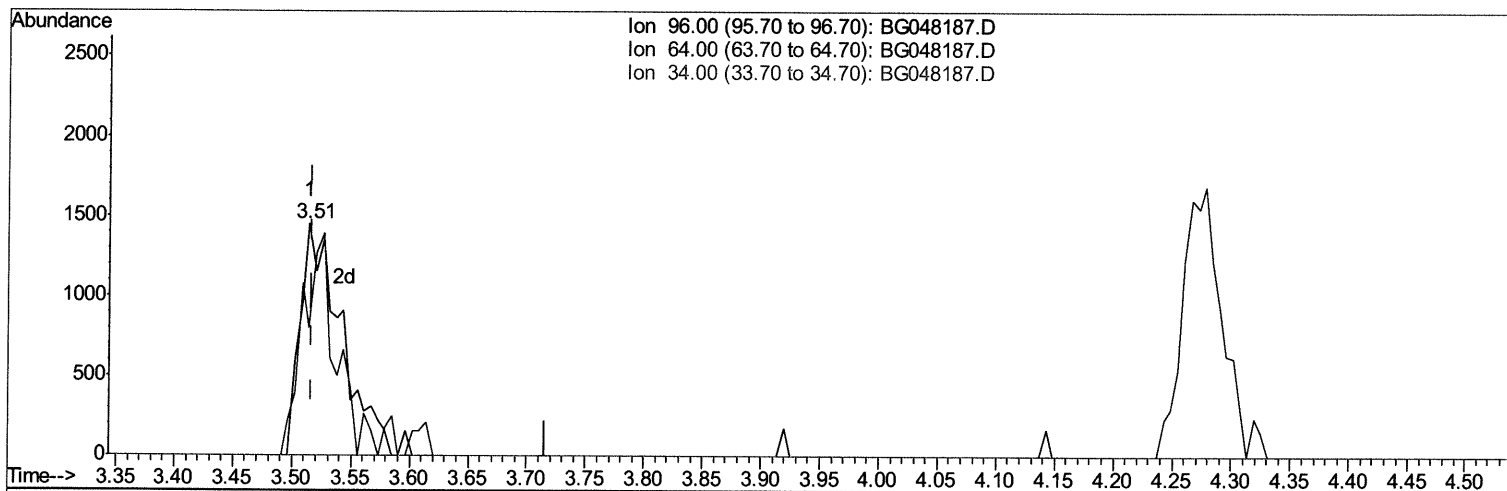
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:35:32 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(3) 1,4-Dioxane-d8 (S)

3.514min (-0.002) 2.58ng/uL m 02/24/21JU

response 3486

Ion	Exp%	Act%
96.00	100	100
64.00	60.20	55.11
34.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

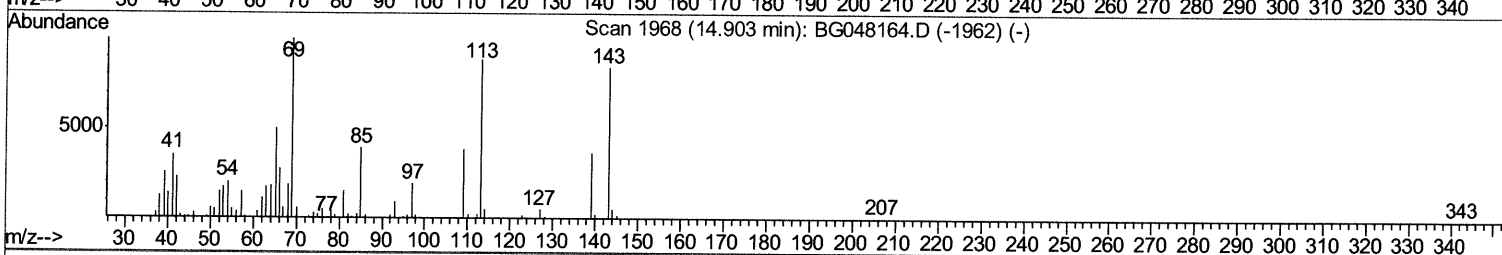
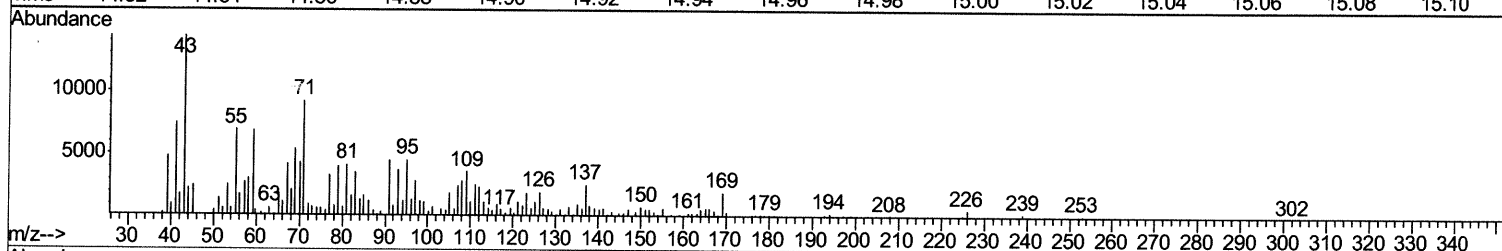
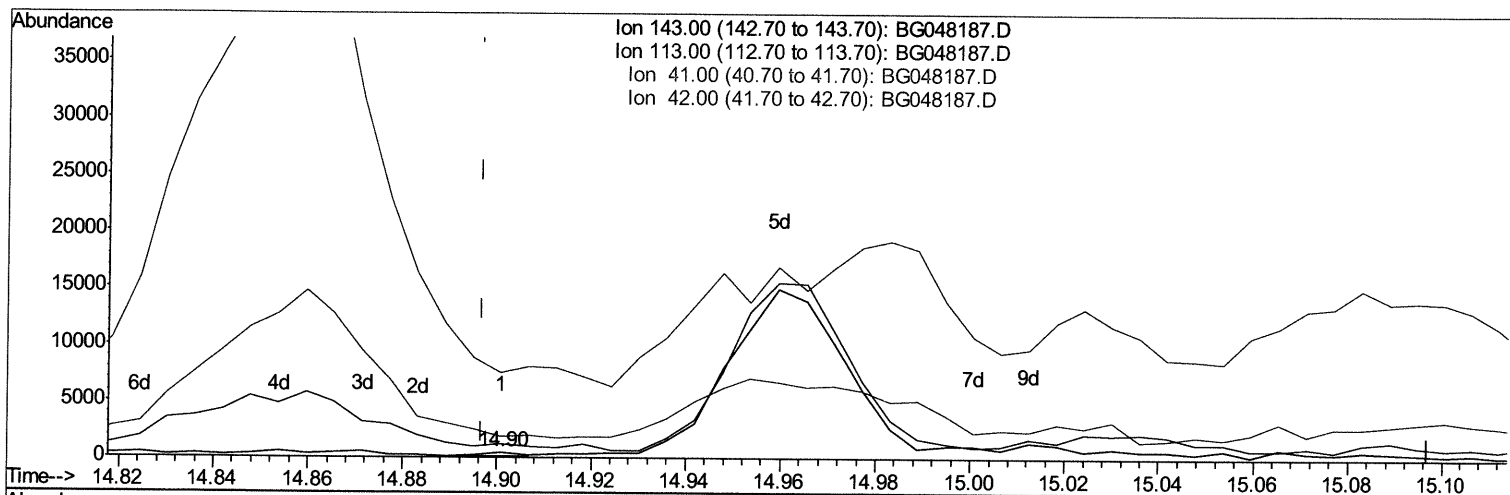
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:37:55 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(52) 4-Nitrophenol-d4 (S)

14.901min (+0.004) 0.09ng/ul

response 150

Ion	Exp%	Act%
143.00	100	100
113.00	111.20	272.44#
41.00	45.90	1665.56#
42.00	32.10	408.89#

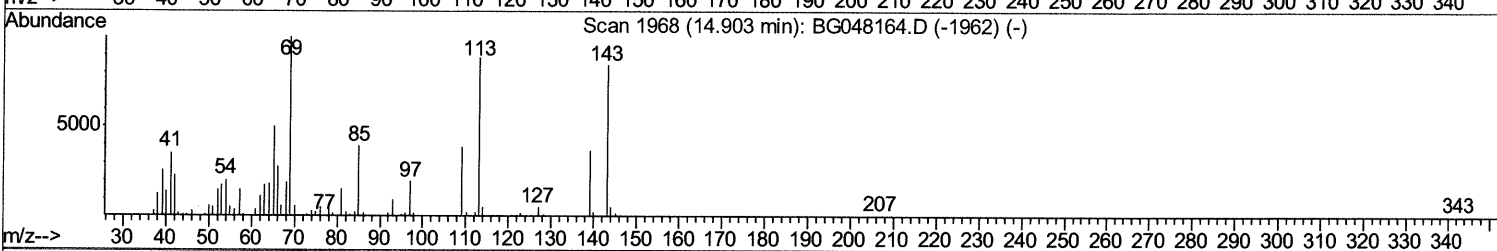
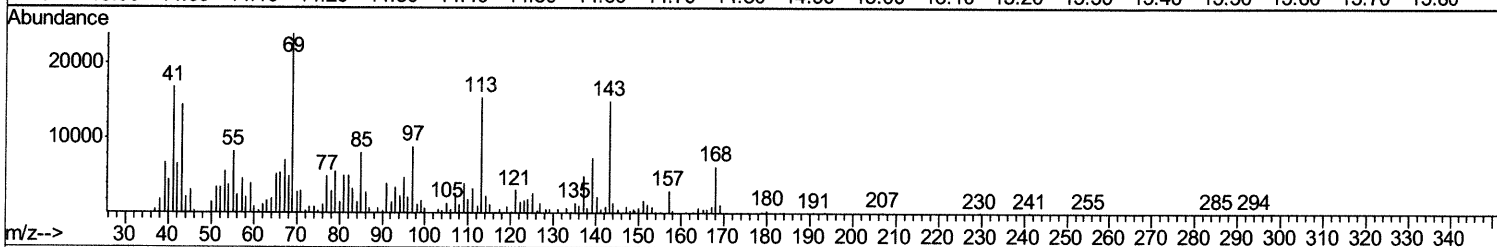
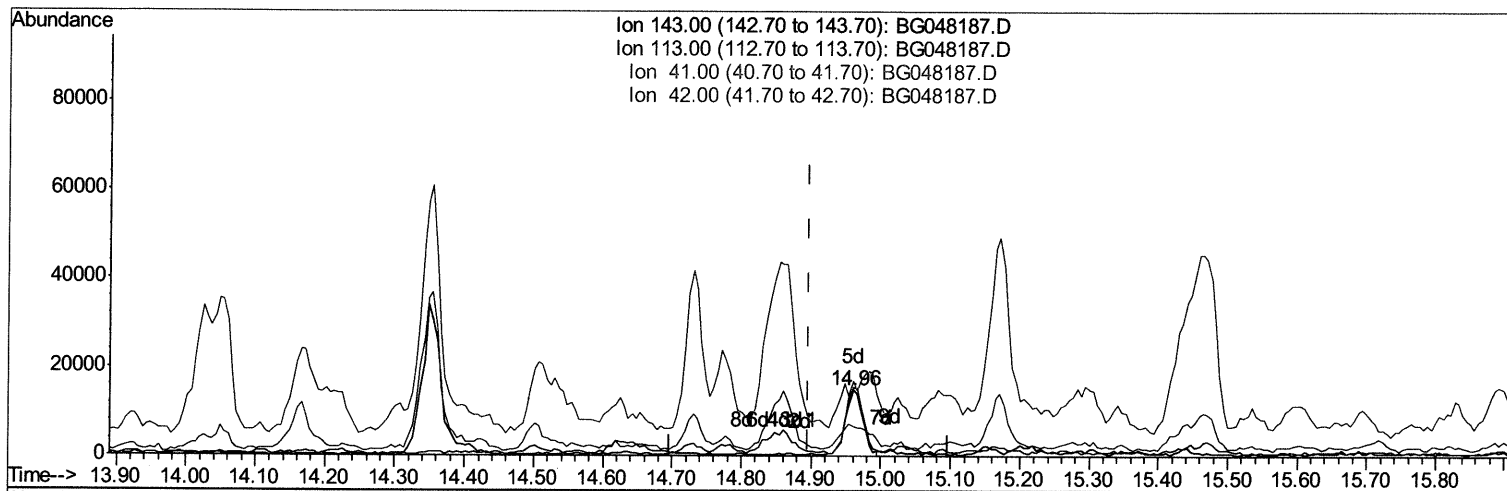
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
Data File : BG048187.D
Acq On : 17 Feb 2021 12:34
Operator : CG/JU
Sample : M1379-16
Misc :
ALS Vial : 29 Sample Multiplier: 1

Instrument :
BNA_G
ClientSampleId :
DBH00

Manual Integrations
APPROVED

mohammad
2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:37:55 2021
Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
Quant Title : SVOA CALIBRATION
QLast Update : Mon Feb 15 06:21:07 2021
Response via : Initial Calibration



TIC: BG048187.D

(52) 4-Nitrophenol-d4 (S)

14.960min (+0.063) 15.06ng/ul m 02/24/21 JU

response 26203

Ion	Exp%	Act%
143.00	100	100
113.00	111.20	103.33
41.00	45.90	112.88#
42.00	32.10	45.03#

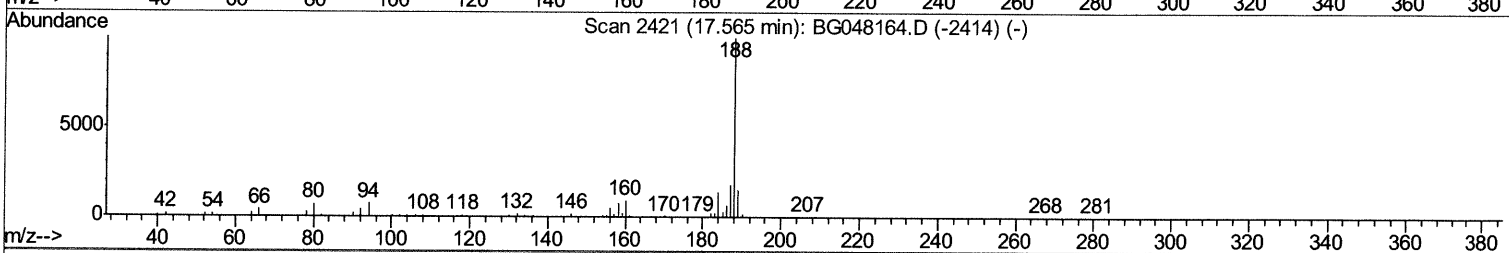
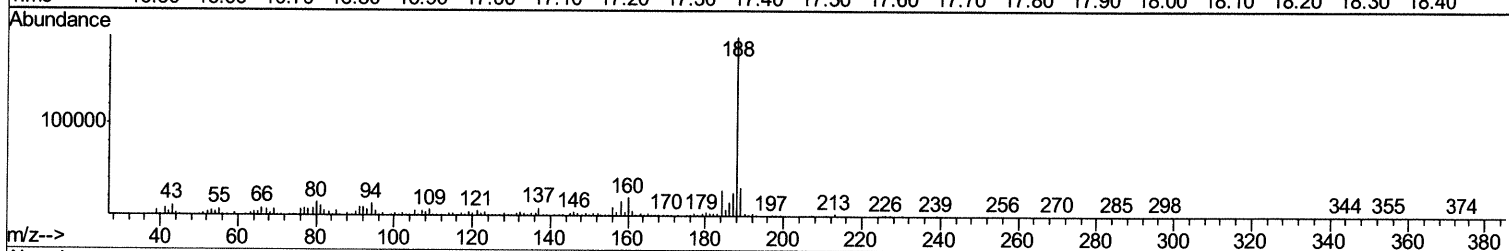
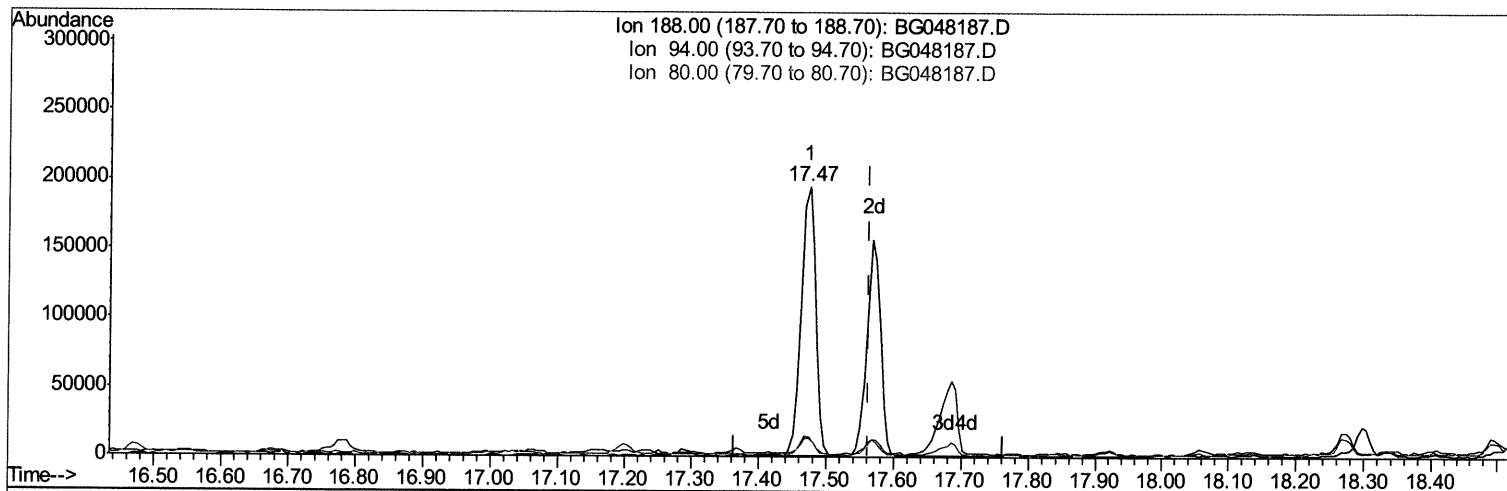
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
Data File : BG048187.D
Acq On : 17 Feb 2021 12:34
Operator : CG/JU
Sample : M1379-16
Misc :
ALS Vial : 29 Sample Multiplier: 1

Instrument :
BNA_G
ClientSampleId :
DBH00

Manual Integrations
APPROVED

mohammad
2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:37:55 2021
Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
Quant Title : SVOA CALIBRATION
QLast Update : Mon Feb 15 06:21:07 2021
Response via : Initial Calibration



TIC: BG048187.D

(71) Anthracene-d10 (S)

17.474min (-0.090) 23.32ng/ul

response 289065

Ion	Exp%	Act%
188.00	100	100
94.00	7.10	6.83
80.00	6.50	7.49
0.00	0.00	0.00

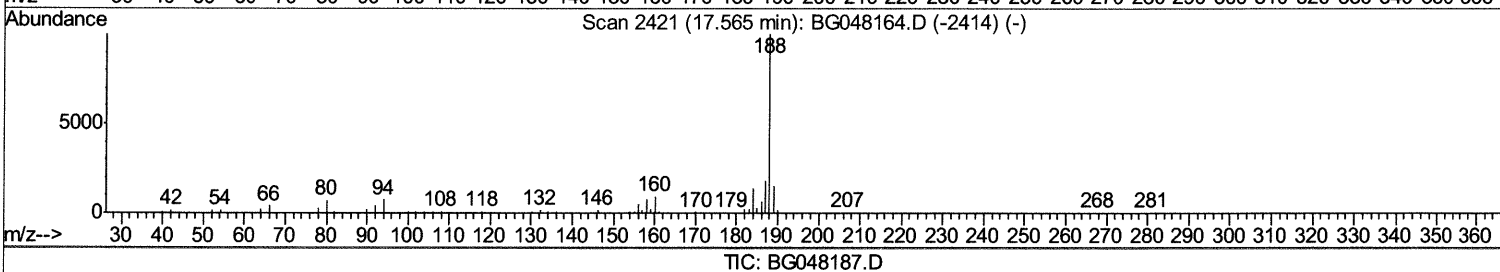
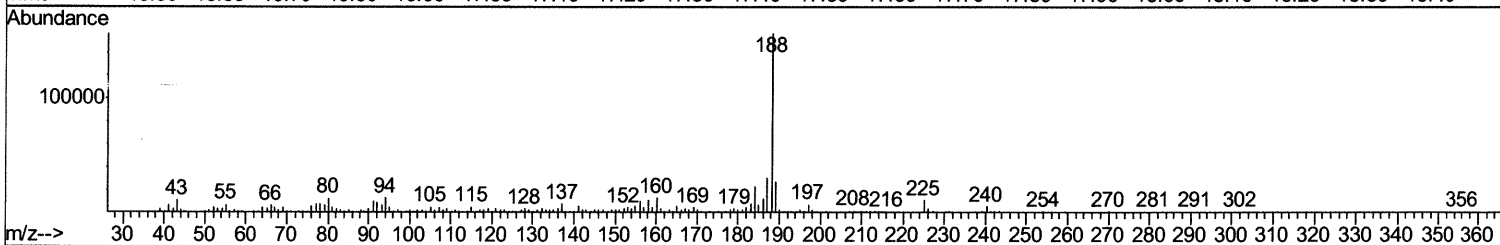
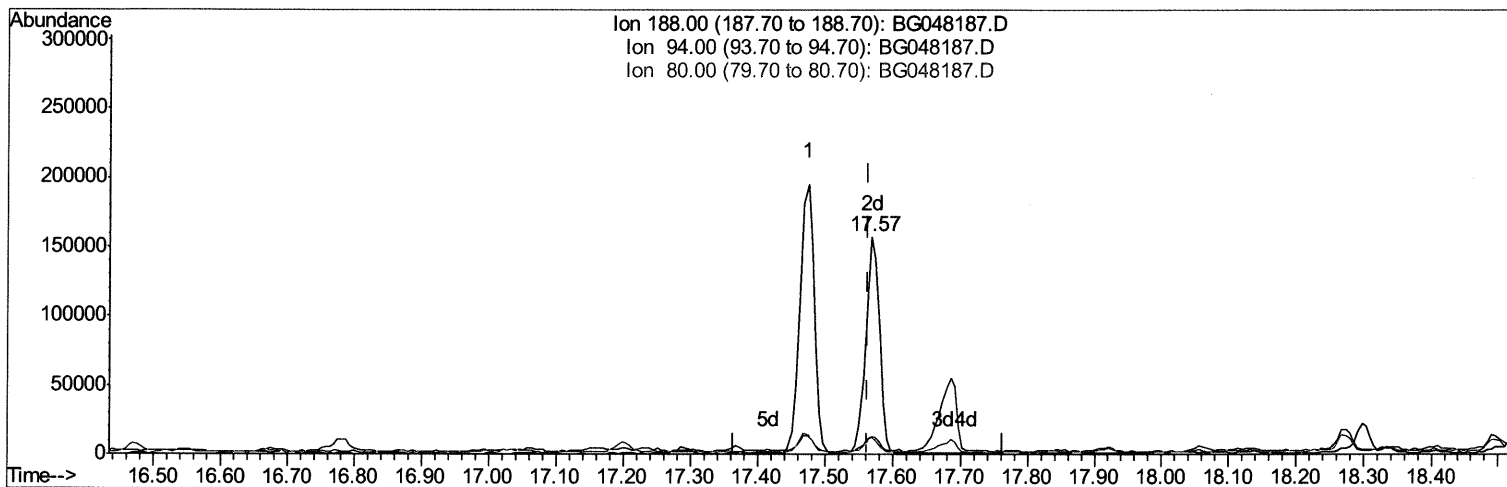
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
Data File : BG048187.D
Acq On : 17 Feb 2021 12:34
Operator : CG/JU
Sample : M1379-16
Misc :
ALS Vial : 29 Sample Multiplier: 1

Instrument :
BNA_G
ClientSampleId :
DBH00

Manual Integrations
APPROVED

mohammad
2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:37:55 2021
Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
Quant Title : SVOA CALIBRATION
QLast Update : Mon Feb 15 06:21:07 2021
Response via : Initial Calibration



(71) Anthracene-d10 (S)

17.568min (+0.004) 17.96ng/ul m 02/24/21 JU

response 222691

Ion	Exp%	Act%
188.00	100	100
94.00	7.10	8.10
80.00	6.50	7.83#
0.00	0.00	0.00

Quantitation Report (Qedit)

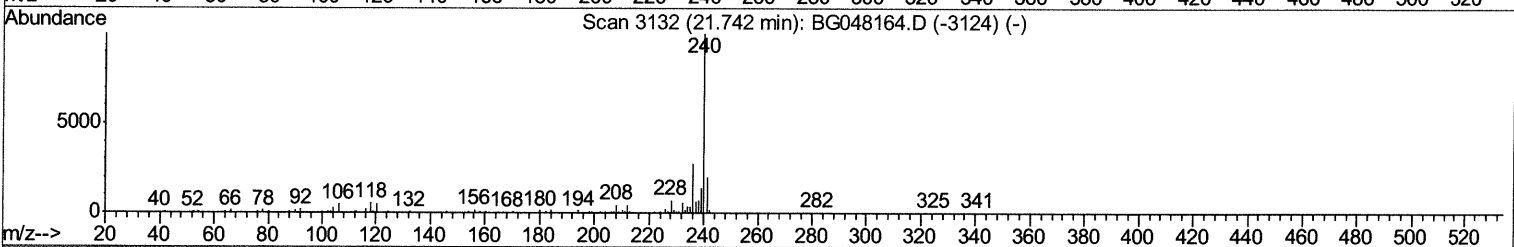
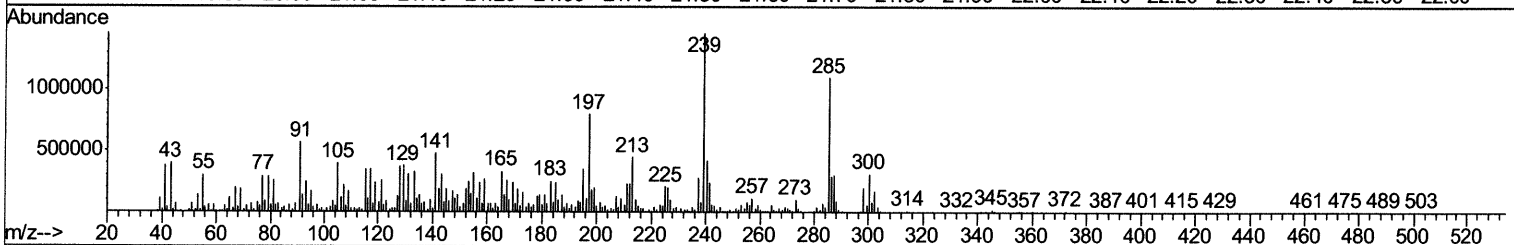
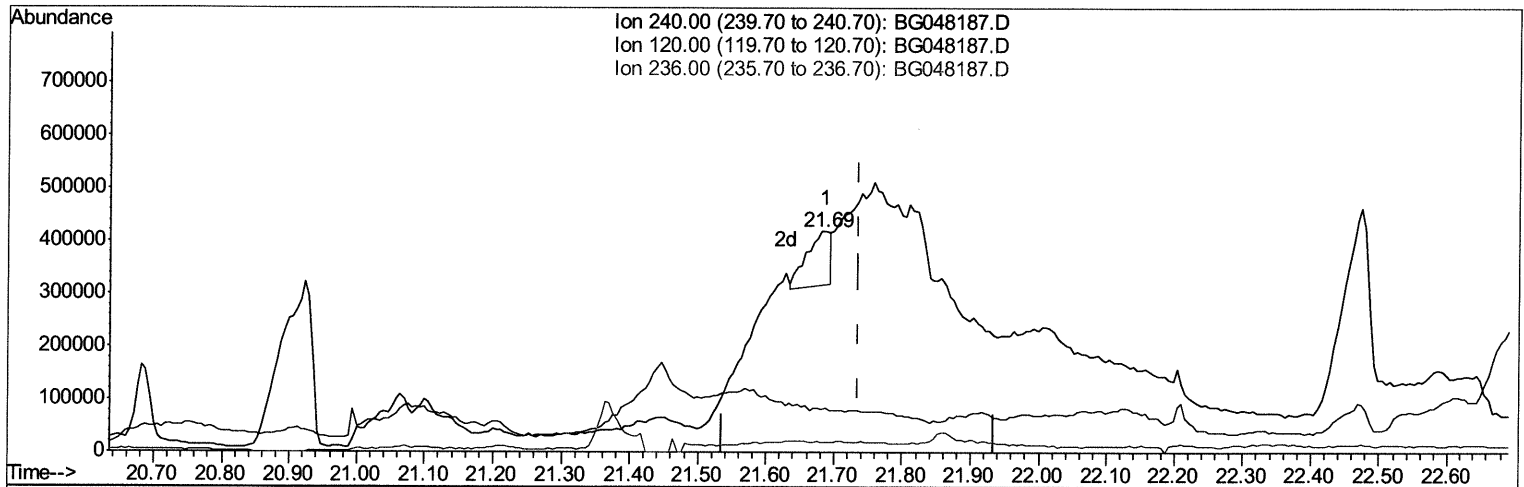
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
ClientSampled :
 DBH00

Manual Integrations
APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:39:18 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(78) Chrysene-d12 (I)

21.687min (-0.049) 20.00ng/ul

response 252043

Ion	Exp%	Act%
240.00	100	100
120.00	5.40	19.76#
236.00	26.90	4.46#
0.00	0.00	0.00

Quantitation Report (Qedit)

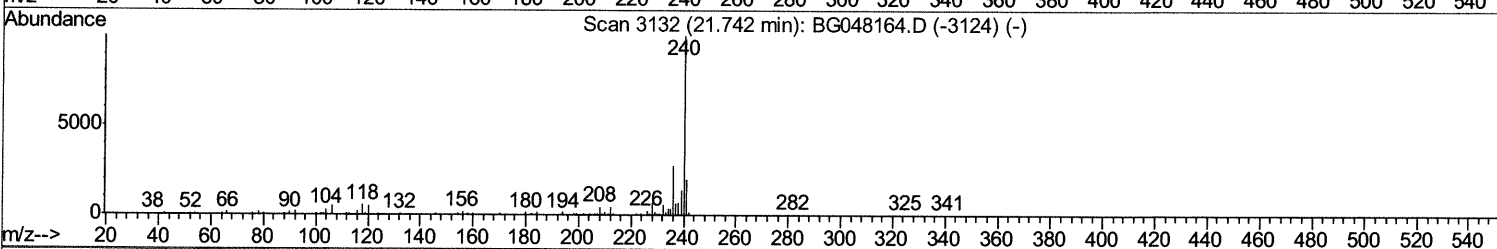
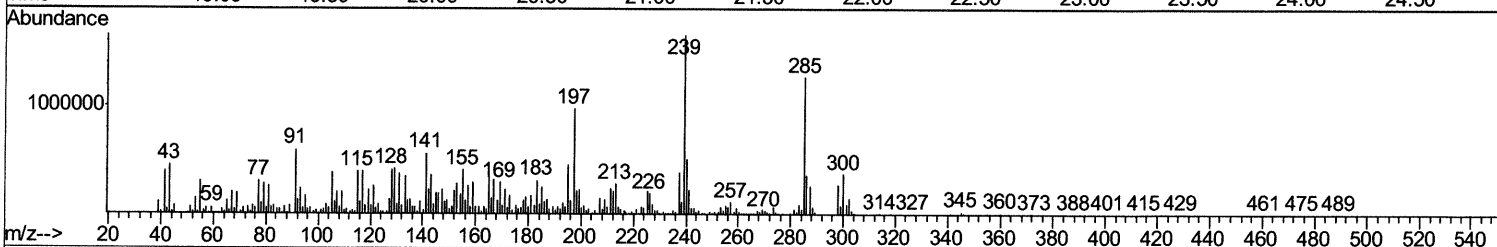
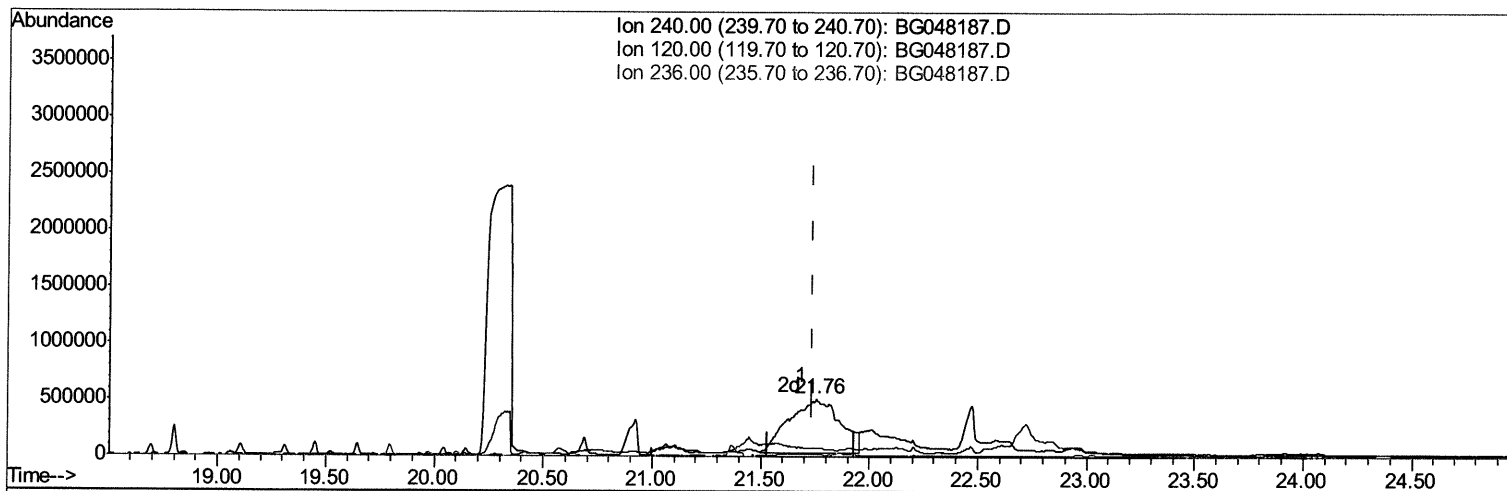
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
ClientSampleId :
 DBH00

Manual Integrations
APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 15:39:18 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(78) Chrysene-d12 (I)

21.757min (+0.022) 20.00ng/ul m 02/24/2021

response 7779746

Ion	Exp%	Act%
240.00	100	100
120.00	5.40	15.00#
236.00	26.90	3.56#
0.00	0.00	0.00

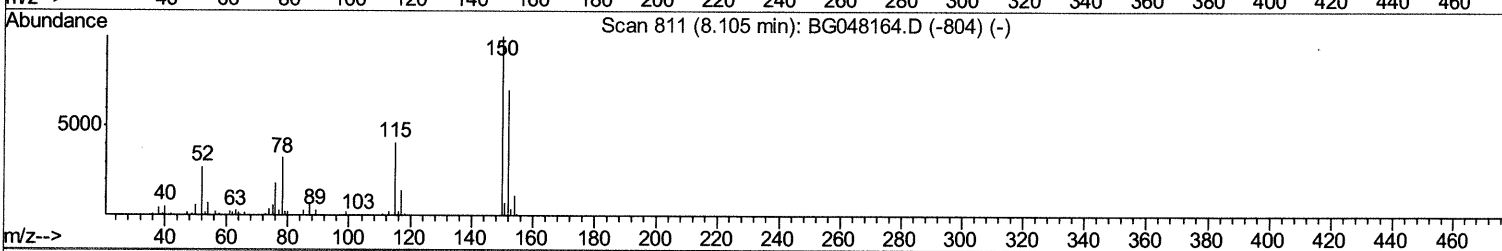
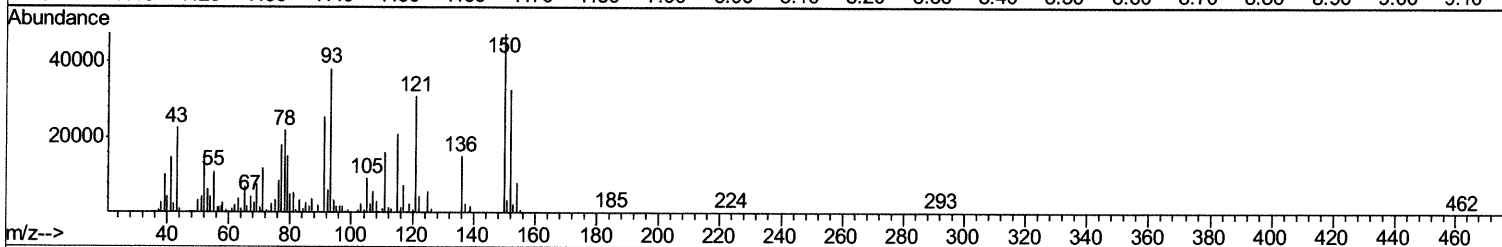
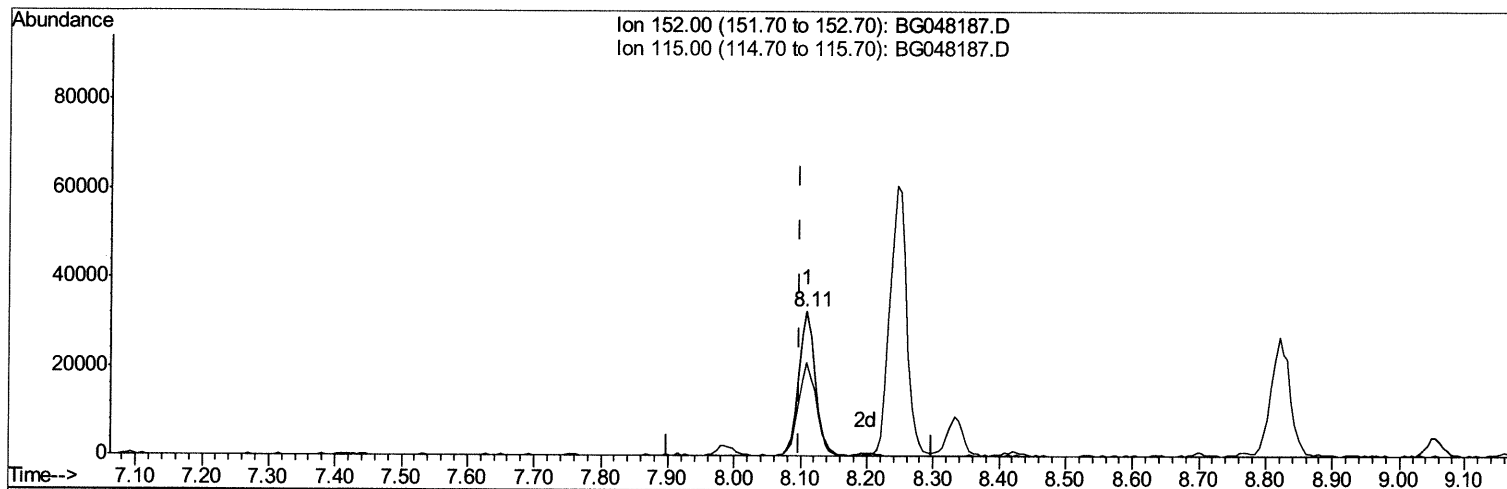
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
Data File : BG048187.D
Acq On : 17 Feb 2021 12:34
Operator : CG/JU
Sample : M1379-16
Misc :
ALS Vial : 29 Sample Multiplier: 1

Instrument :
BNA_G
ClientSampleId :
DBH00

Manual Integrations
APPROVED

mohammad
2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:09:57 2021
Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
Quant Title : SVOA CALIBRATION
QLast Update : Mon Feb 15 06:21:07 2021
Response via : Initial Calibration



TIC: BG048187.D

(1) 1,4-Dichlorobenzene-d4 (I)

8.109min (+0.010) 20.00ng/ul

response 56289

Ion	Exp%	Act%
152.00	100	100
115.00	62.70	64.55
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

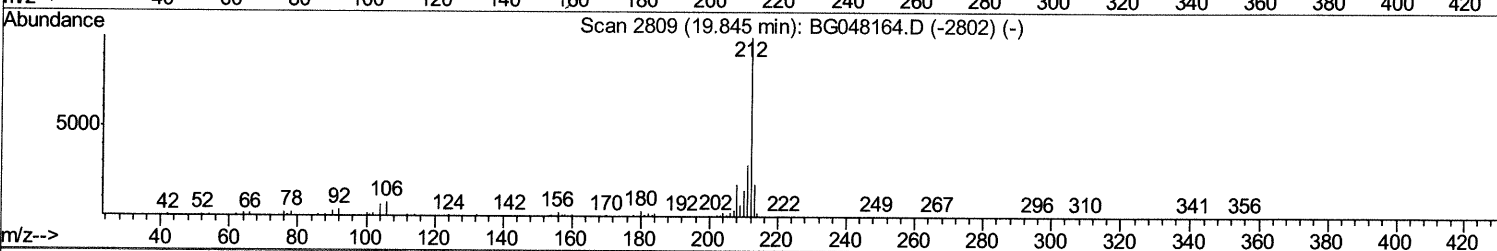
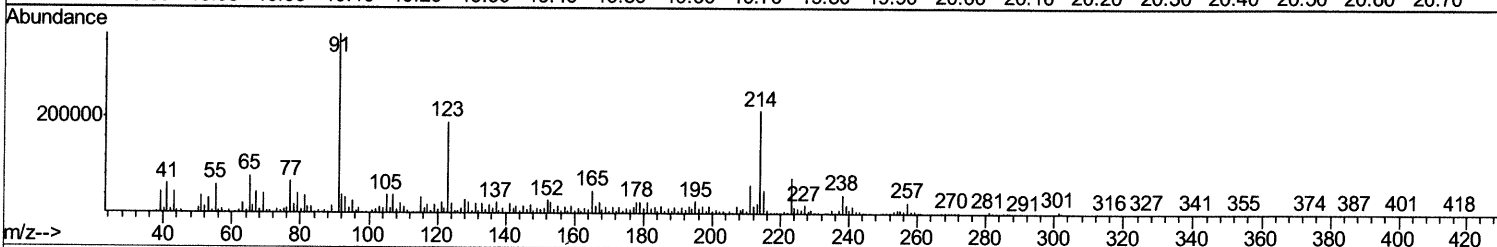
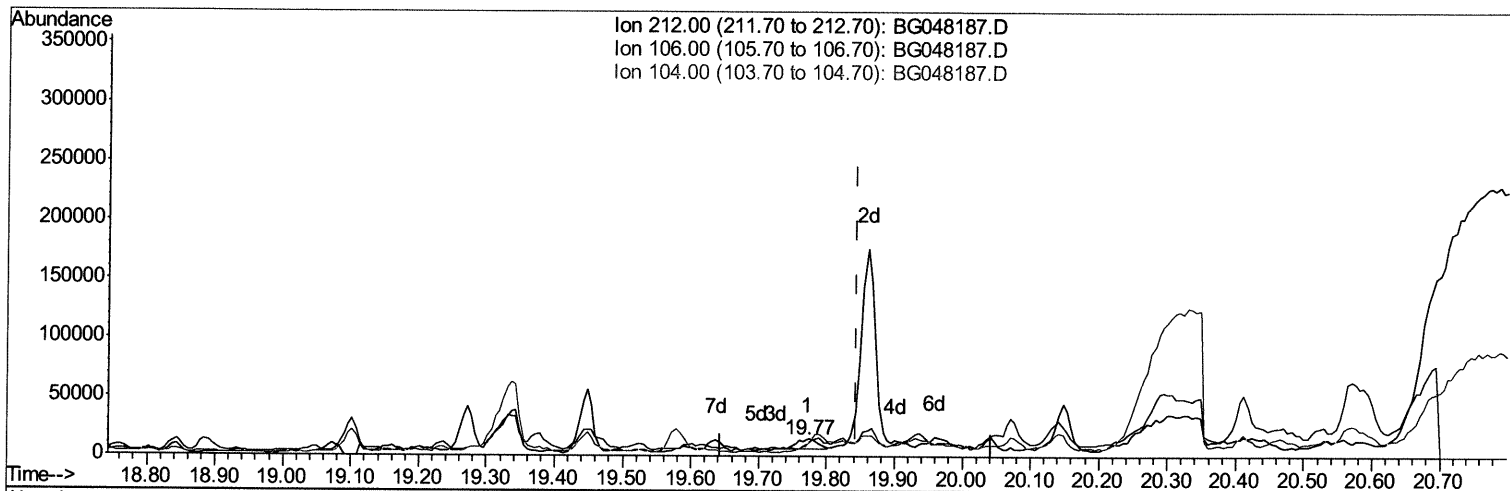
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampled :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:09:57 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(79) Pyrene-d10 (S)

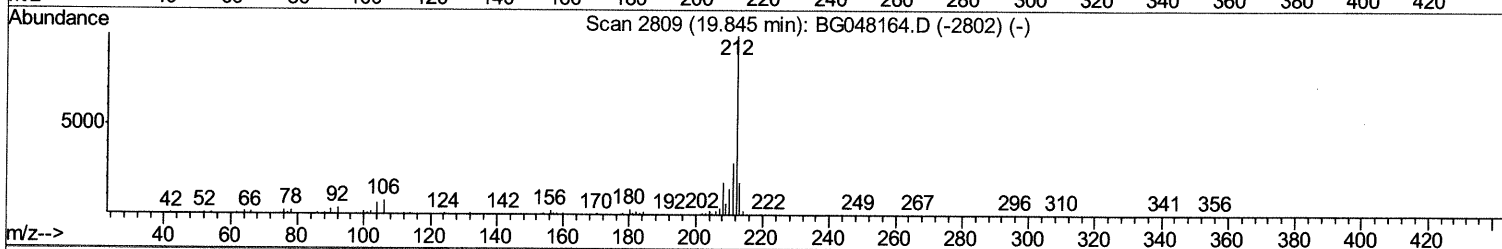
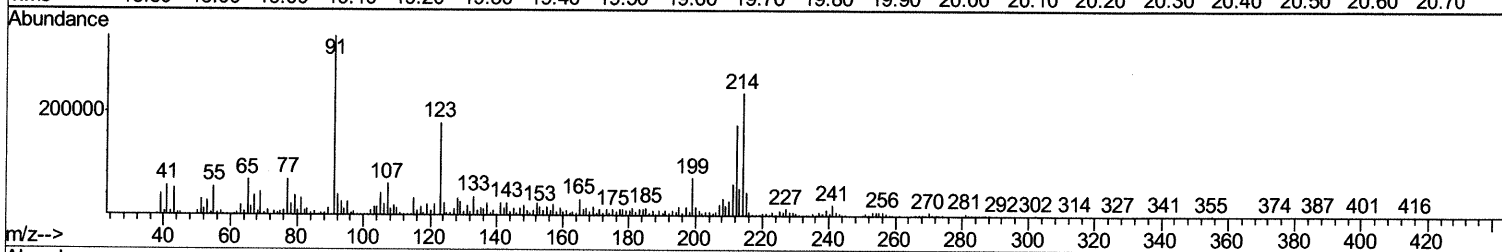
19.772min (-0.072) 0.04ng/ul

response 17185

Ion	Exp%	Act%
212.00	100	100
106.00	7.50	70.35#
104.00	5.30	70.51#
0.00	0.00	0.00

```
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\  
Data File : BG048187.D  
Acq On    : 17 Feb 2021  12:34  
Operator  : CG/JU  
Sample    : M1379-16  
Misc      :  
ALS Vial  : 29    Sample Multiplier: 1
```

mohammad
2/18/2021 1:38:30 PM



TIC: BG048187.D

Ion	Exp%	Act%
212.00	100	100
106.00	7.50	12.69#
104.00	5.30	10.18#
0.00	0.00	0.00

Quantitation Report (Qedit)

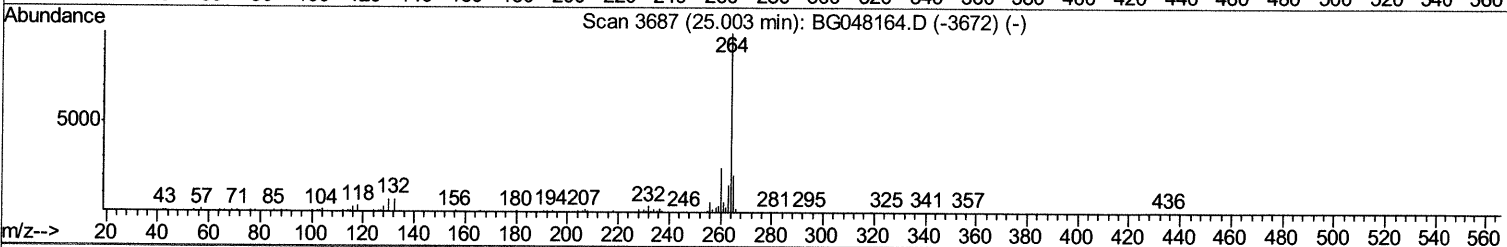
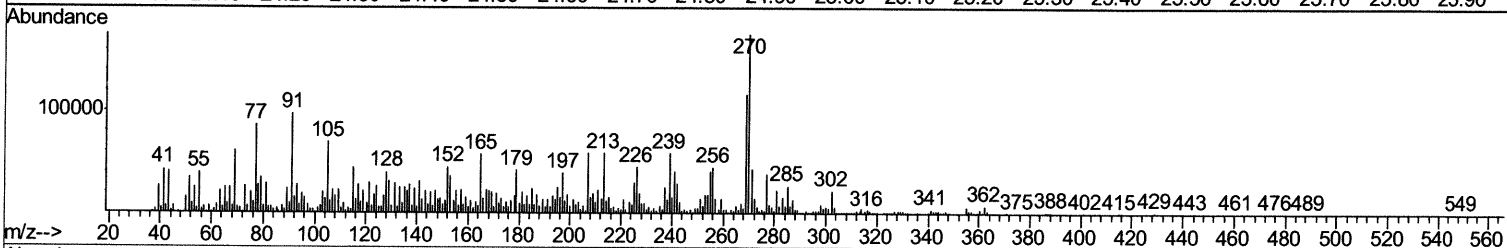
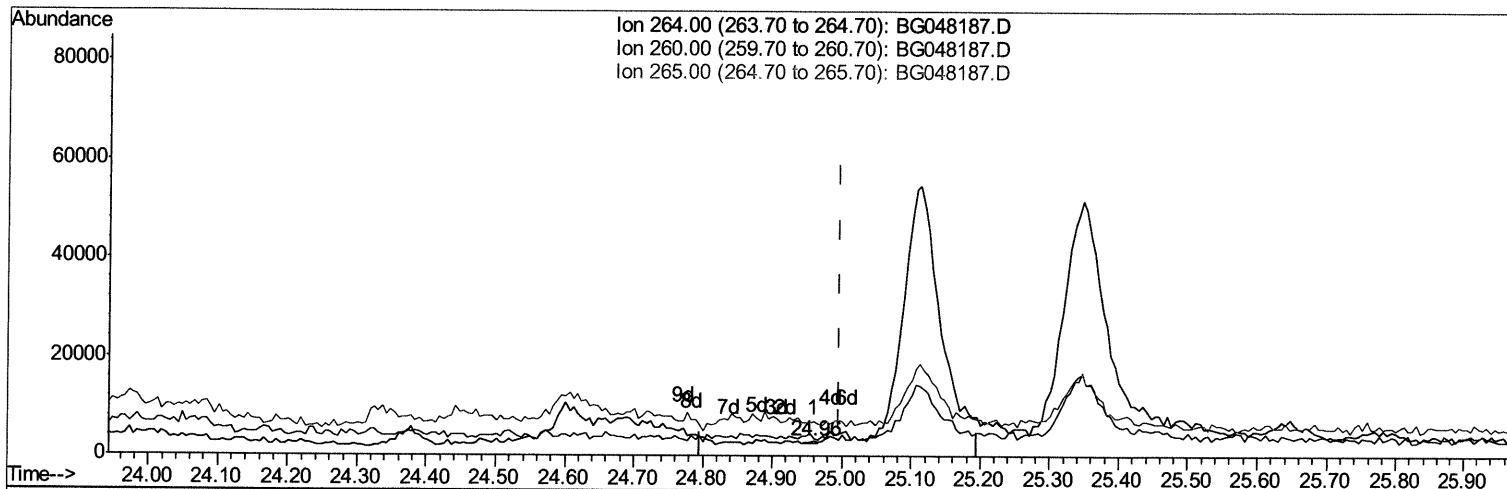
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:09:57 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(86) Perylene-d12 (I)

24.960min (-0.037) 20.00ng/ul

response 331

Ion	Exp%	Act%
264.00	100	100
260.00	24.10	119.18#
265.00	20.10	229.98#
0.00	0.00	0.00

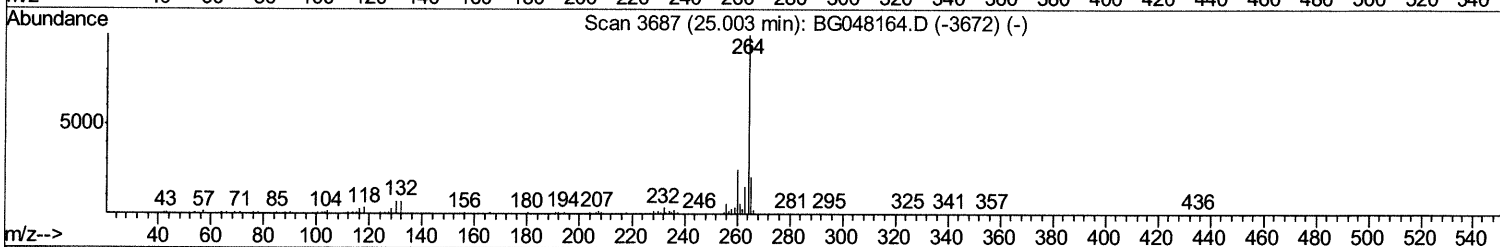
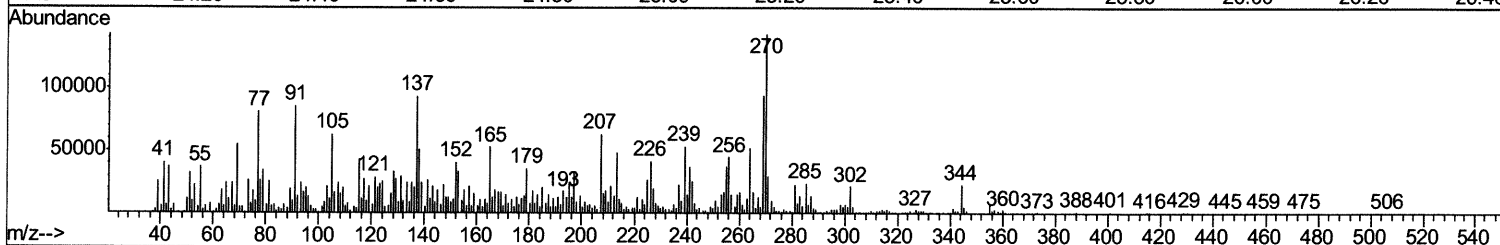
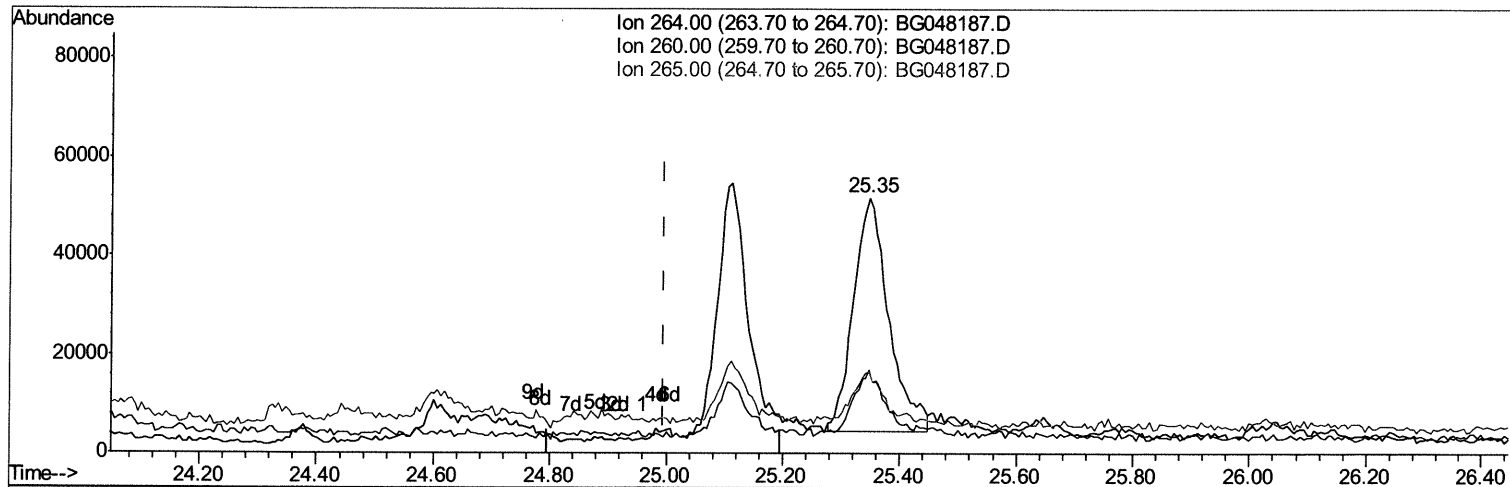
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
Data File : BG048187.D
Acq On : 17 Feb 2021 12:34
Operator : CG/JU
Sample : M1379-16
Misc :
ALS Vial : 29 Sample Multiplier: 1

Instrument :
BNA_G
ClientSampleId :
DBH00

Manual Integrations
APPROVED

mohammad
2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:09:57 2021
Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
Quant Title : SVOA CALIBRATION
QLast Update : Mon Feb 15 06:21:07 2021
Response via : Initial Calibration



TIC: BG048187.D

(86) Perylene-d12 (I)

25.347min (+0.351) 20.00ng/ul m 02/24/21JU

response 199071

Ion	Exp%	Act%
264.00	100	100
260.00	24.10	32.82#
265.00	20.10	32.01#
0.00	0.00	0.00

Quantitation Report (Qedit)

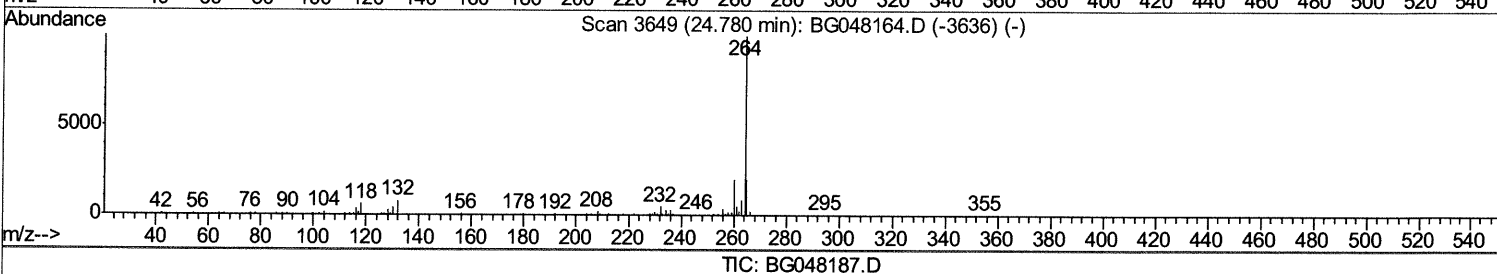
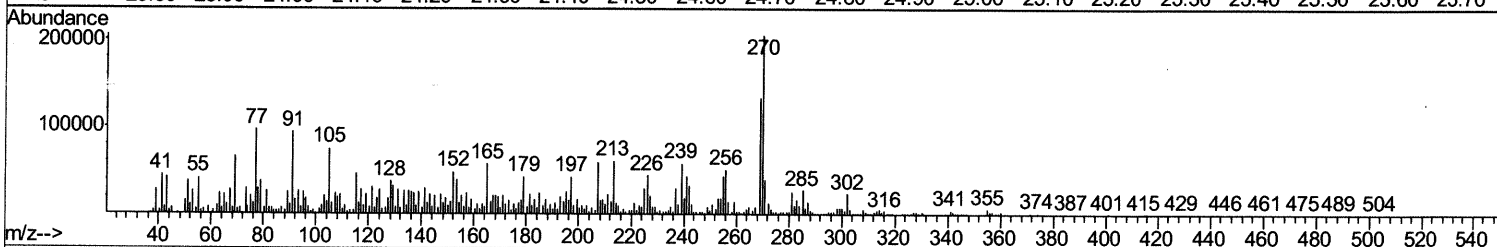
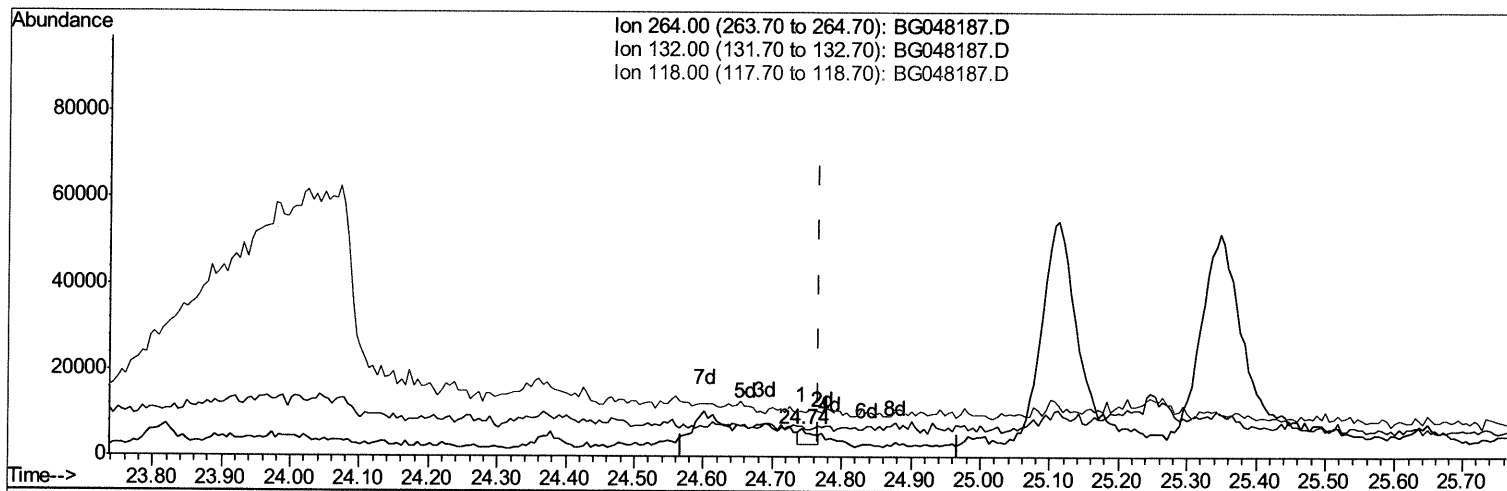
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:17:44 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



(90) Benzo(a)pyrene-d12 (S)

24.742min (-0.025) 0.45ng/ul

response 4613

Ion	Exp%	Act%
264.00	100	100
132.00	8.00	111.57#
118.00	6.40	164.50#
0.00	0.00	0.00

Quantitation Report (Qedit)

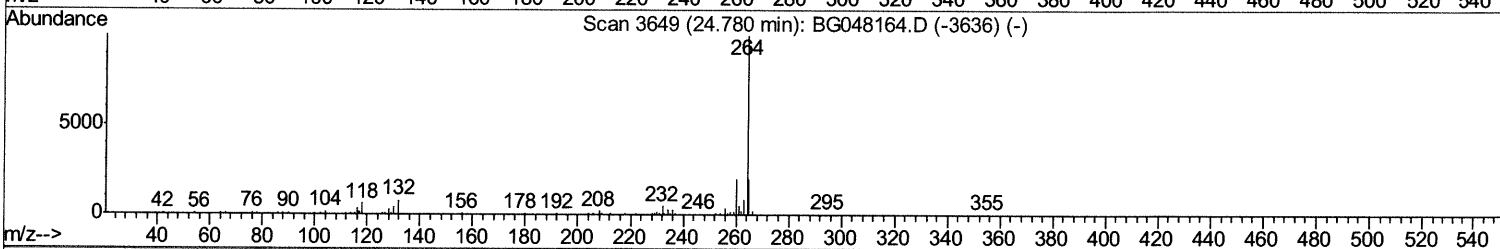
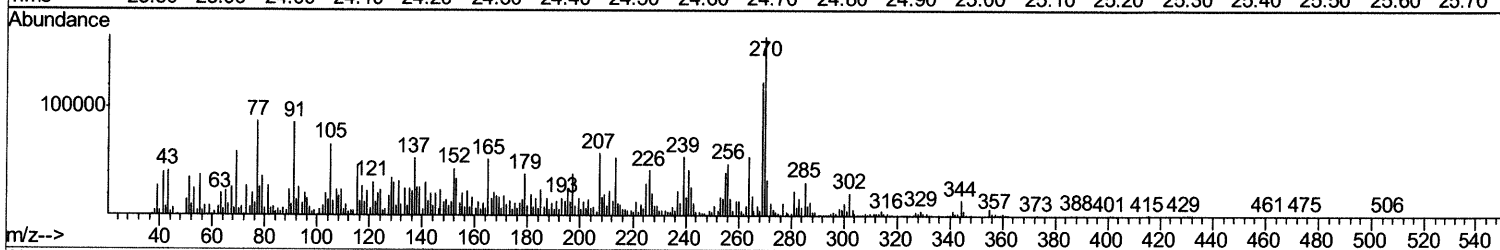
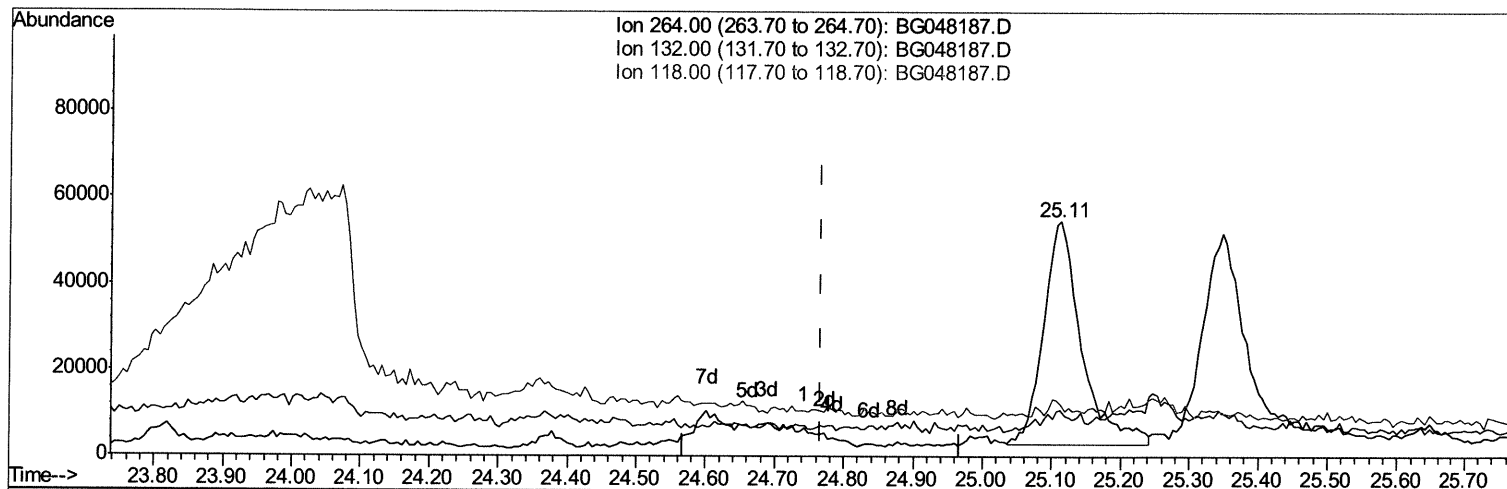
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
Data File : BG048187.D
Acq On : 17 Feb 2021 12:34
Operator : CG/JU
Sample : M1379-16
Misc :
ALS Vial : 29 Sample Multiplier: 1

Instrument :
BNA_G
ClientSampled :
DBH00

Manual Integrations
APPROVED

mohammad
2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:17:44 2021
Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
Quant Title : SVOA CALIBRATION
QLast Update : Mon Feb 15 06:21:07 2021
Response via : Initial Calibration



TIC: BG048187.D

(90) Benzo(a)pyrene-d12 (S)

25.112min (+0.345) 19.71ng/ul m 02/24/21 JU

response 200116

Ion	Exp%	Act%
264.00	100	100
132.00	8.00	20.02#
118.00	6.40	22.53#
0.00	0.00	0.00

Quantitation Report (Qedit)

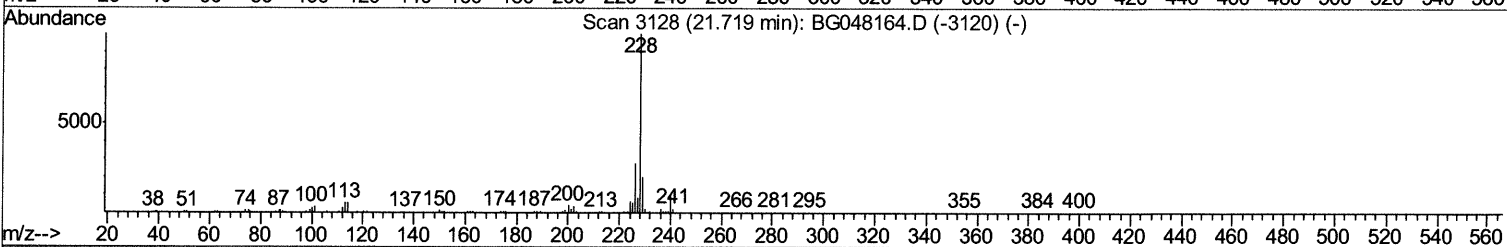
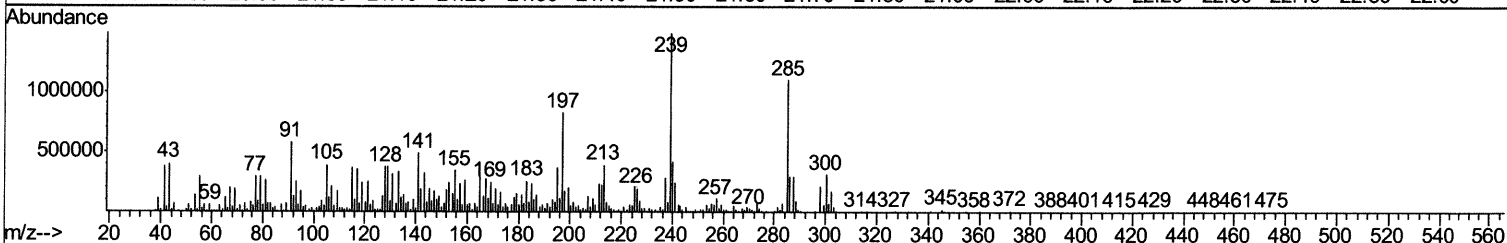
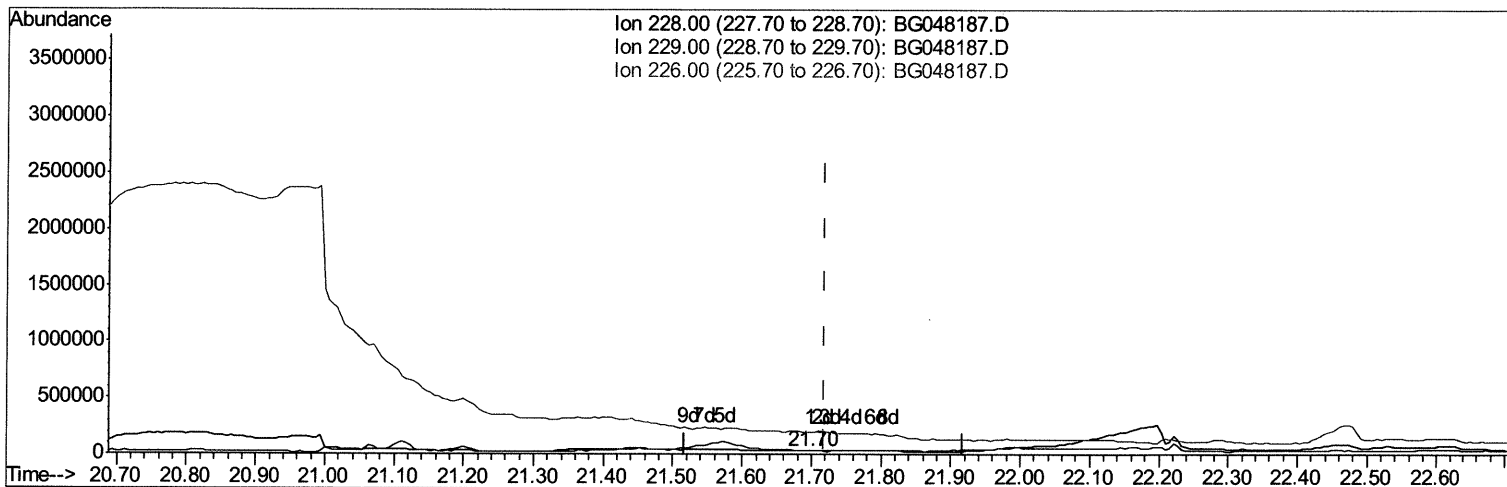
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:20:26 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(83) Benzo(a)anthracene

21.699min (-0.019) 0.00ng/ul

response 956

Ion	Exp%	Act%
228.00	100	100
229.00	19.50	112.12#
226.00	25.60	635.72#
0.00	0.00	0.00

Quantitation Report (Qedit)

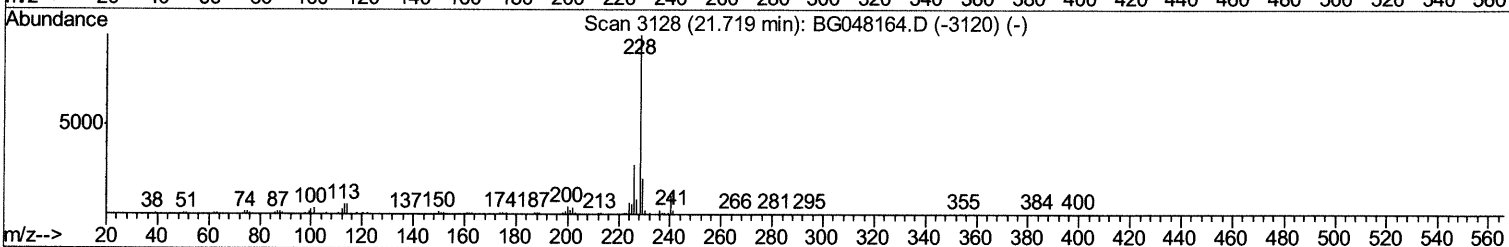
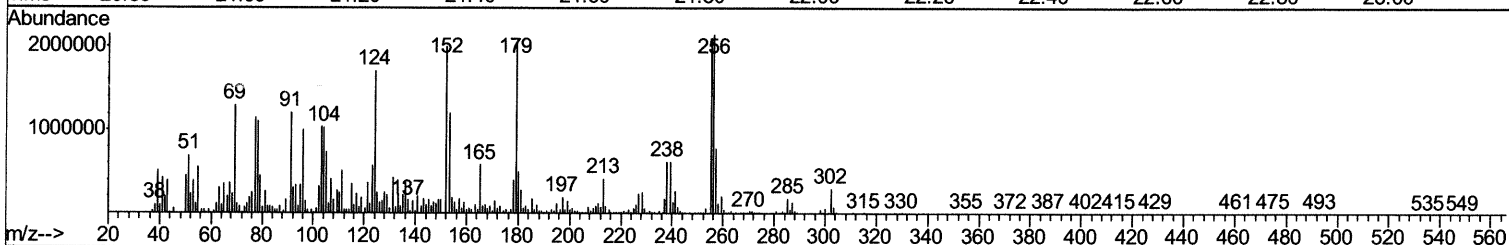
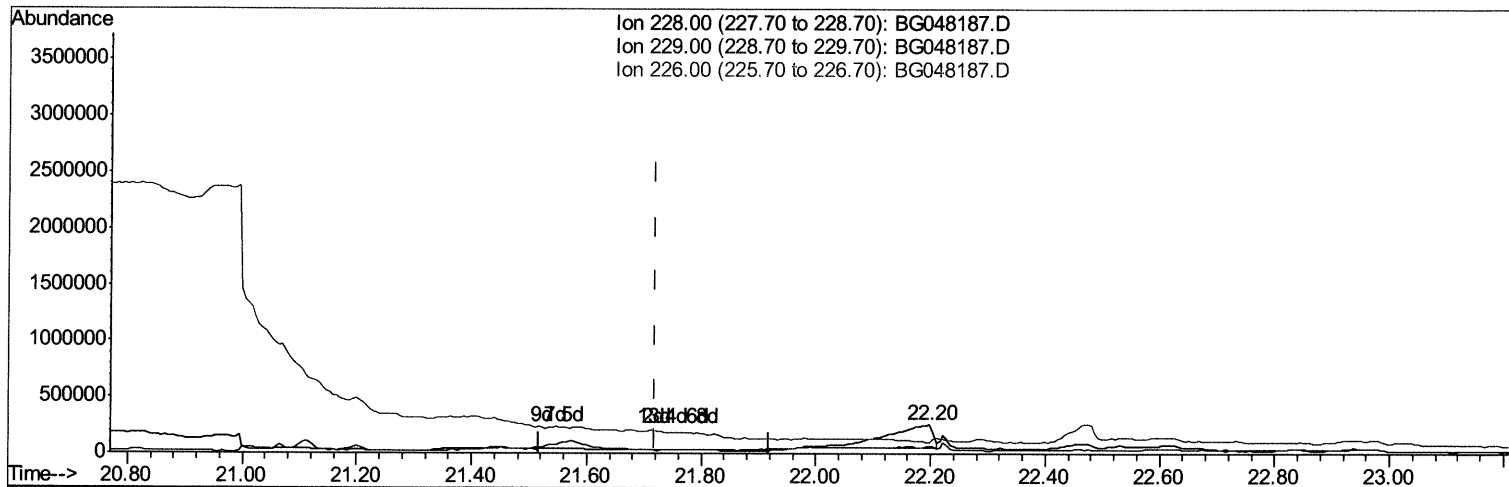
Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:20:26 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration



TIC: BG048187.D

(83) Benzo(a)anthracene

22.198min (+0.480) 2.30ng/ul m 02/24/2021

response 1118840

Ion	Exp%	Act%
228.00	100	100
229.00	19.50	24.09#
226.00	25.60	40.21#
0.00	0.00	0.00

Data Path : Z:\svoasrv\HPCHEM1\BNA G\Data\BG021621\
 Data File : BG048187.D
 Acq On : 17 Feb 2021 12:34
 Operator : CG/JU
 Sample : M1379-16
 Misc :
 ALS Vial : 29 Sample Multiplier: 1

Instrument :
 BNA_G
 ClientSampleId :
 DBH00

Manual Integrations
 APPROVED

mohammad
 2/18/2021 1:38:30 PM

Quant Time: Feb 17 17:39:05 2021
 Quant Method : Z:\SVOASRV\HPCHEM1\BNA_G\METHODS\SOM-EPA-BG021321MA.M
 Quant Title : SVOA CALIBRATION
 QLast Update : Mon Feb 15 06:21:07 2021
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	8.11	152	56289	20.00	ng/ul	0.00
18) Naphthalene-d8	10.92	136	212377	20.00	ng/ul	0.00
36) Acenaphthene-d10	14.73	164	138263	20.00	ng/ul	0.00
62) Phenanthrene-d10	17.47	188	289140	20.00	ng/ul	0.00
78) Chrysene-d12	21.76	240	7779746m	20.00	ng/ul	0.02
86) Perylene-d12	25.35	264	199071m	20.00	ng/ul	0.35
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.51	96	3486m	2.58	ng/uL	0.00
5) Phenol-d5	7.27	99	75743	15.97	ng/ul	0.03
7) Bis-(2-Chloroethyl)ether-d	7.43	67	46396	16.42	ng/ul	0.00
9) 2-Chlorophenol-d4	7.64	132	55890	16.79	ng/ul	0.02
13) 4-Methylphenol-d8	8.82	113	56670	15.23	ng/ul	0.03
19) Nitrobenzene-d5	9.27	128	34017	21.44	ng/ul	0.00
22) 2-Nitrophenol-d4	9.99	143	31112	16.21	ng/ul	0.00
26) 2,4-Dichlorophenol-d3	10.55	165	56378	15.00	ng/ul	0.03
29) 4-Chloroaniline-d4	11.07	131	2291	0.62	ng/ul	0.03
44) Dimethylphthalate-d6	14.14	166	155431	15.18	ng/ul	0.02
47) Acenaphthylene-d8	14.42	160	204209	16.31	ng/ul	0.00
52) 4-Nitrophenol-d4	14.96	143	26203m	15.06	ng/ul	0.06
58) Fluorene-d10	15.72	176	140203	15.35	ng/ul	0.00
63) 4,6-Dinitro-2-methylphenol	15.83	200	8365	4.72	ng/ul	0.02
71) Anthracene-d10	17.57	188	222691m	17.96	ng/ul	0.00
79) Pyrene-d10	19.86	212	250521m	0.64	ng/ul	0.02
90) Benzo(a)pyrene-d12	25.11	264	200116m	19.71	ng/ul	0.34
Target Compounds						
4) Benzaldehyde	7.25	77	68272	24.486	ng/ul	92
6) Phenol	7.30	94	24883	5.082	ng/ul	98
14) Acetophenone	8.93	105	21404	3.533	ng/ul#	84
16) 4-Methylphenol	8.88	108	42922	11.227	ng/ul	84
45) Dimethylphthalate	14.18	163	20123	1.901	ng/ul#	1
53) 4-Nitrophenol	14.98	109	64829m	32.998	ng/ul	>

(#) = qualifier out of range (m) = manual integration (+) = signals summed