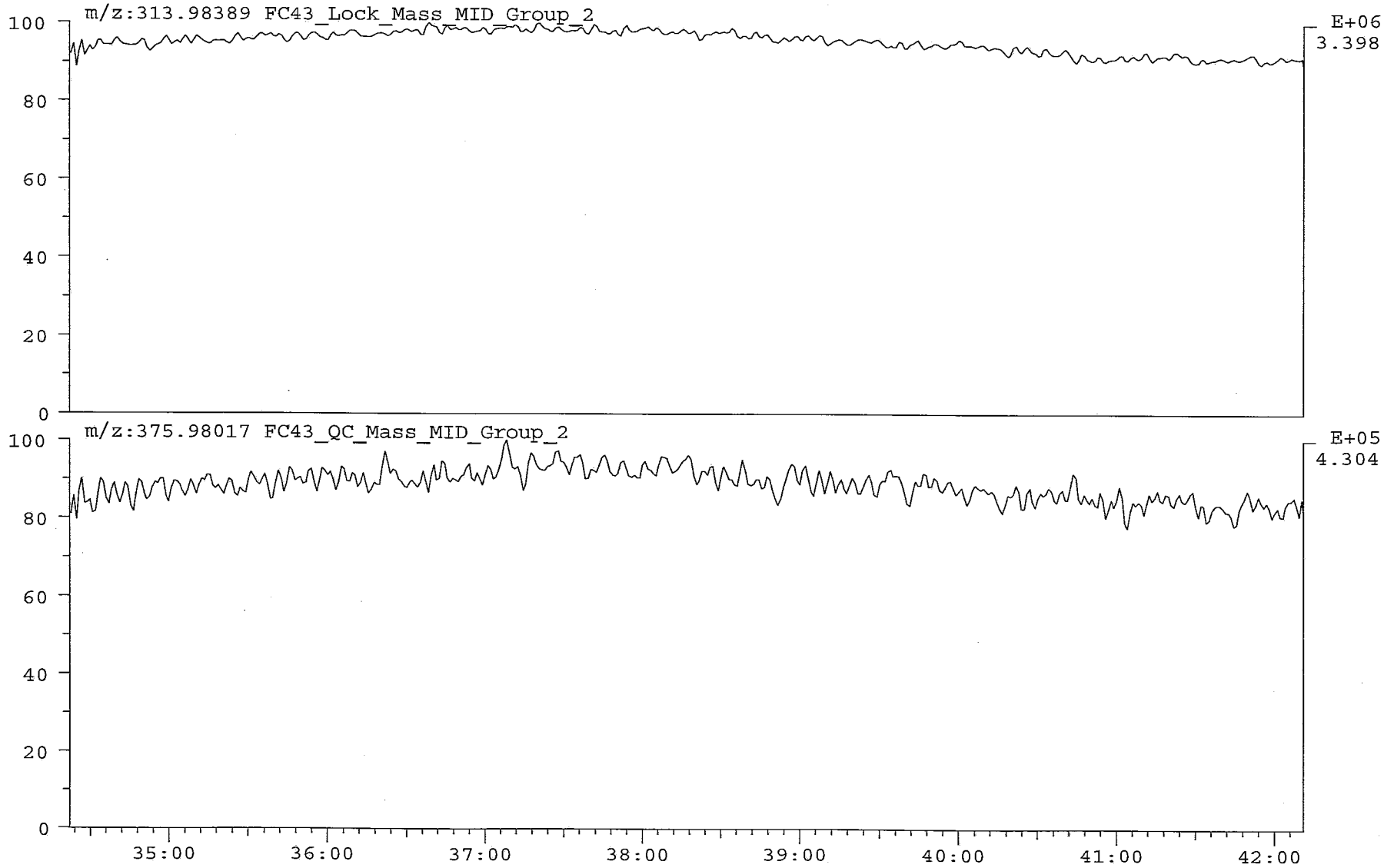
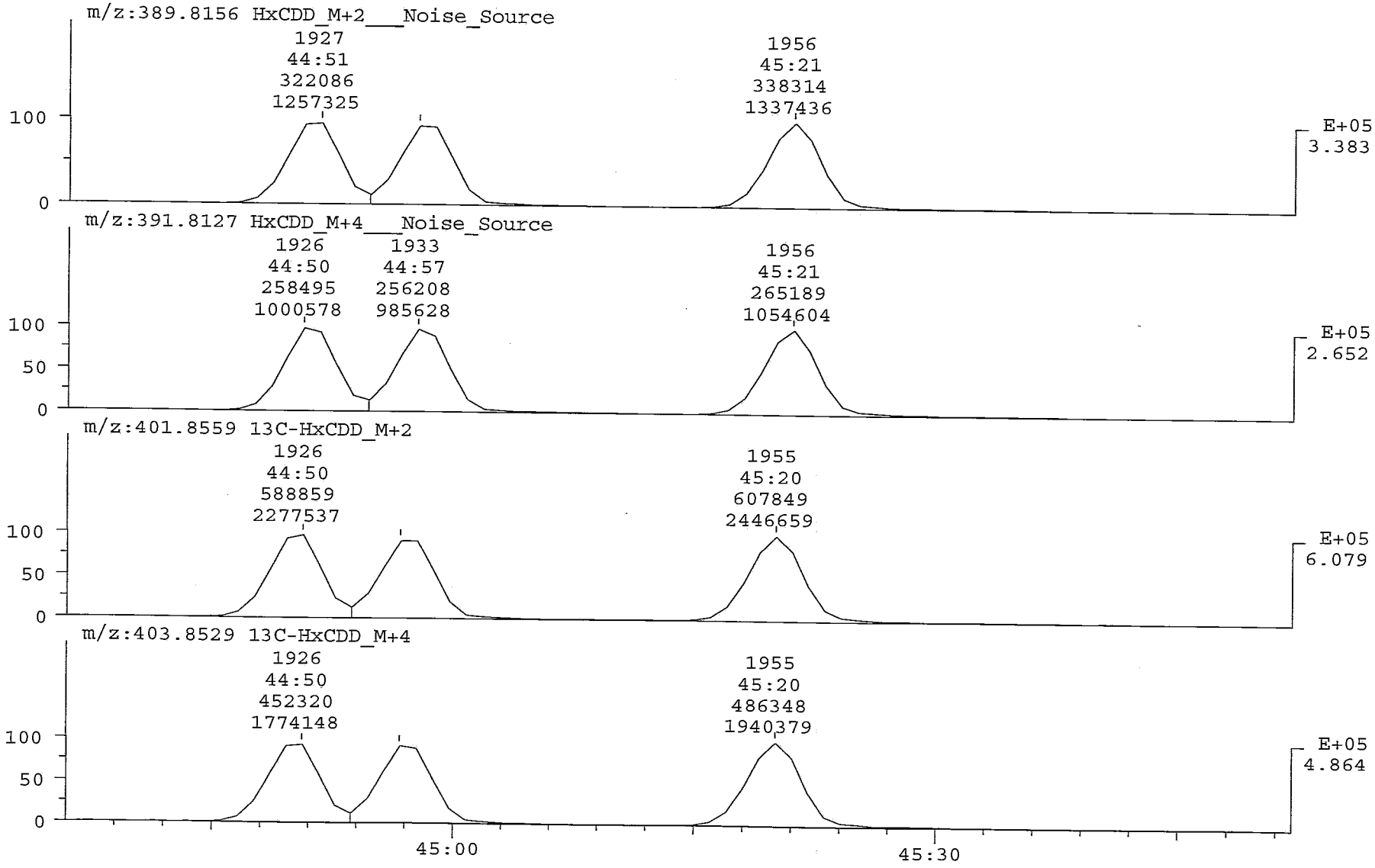
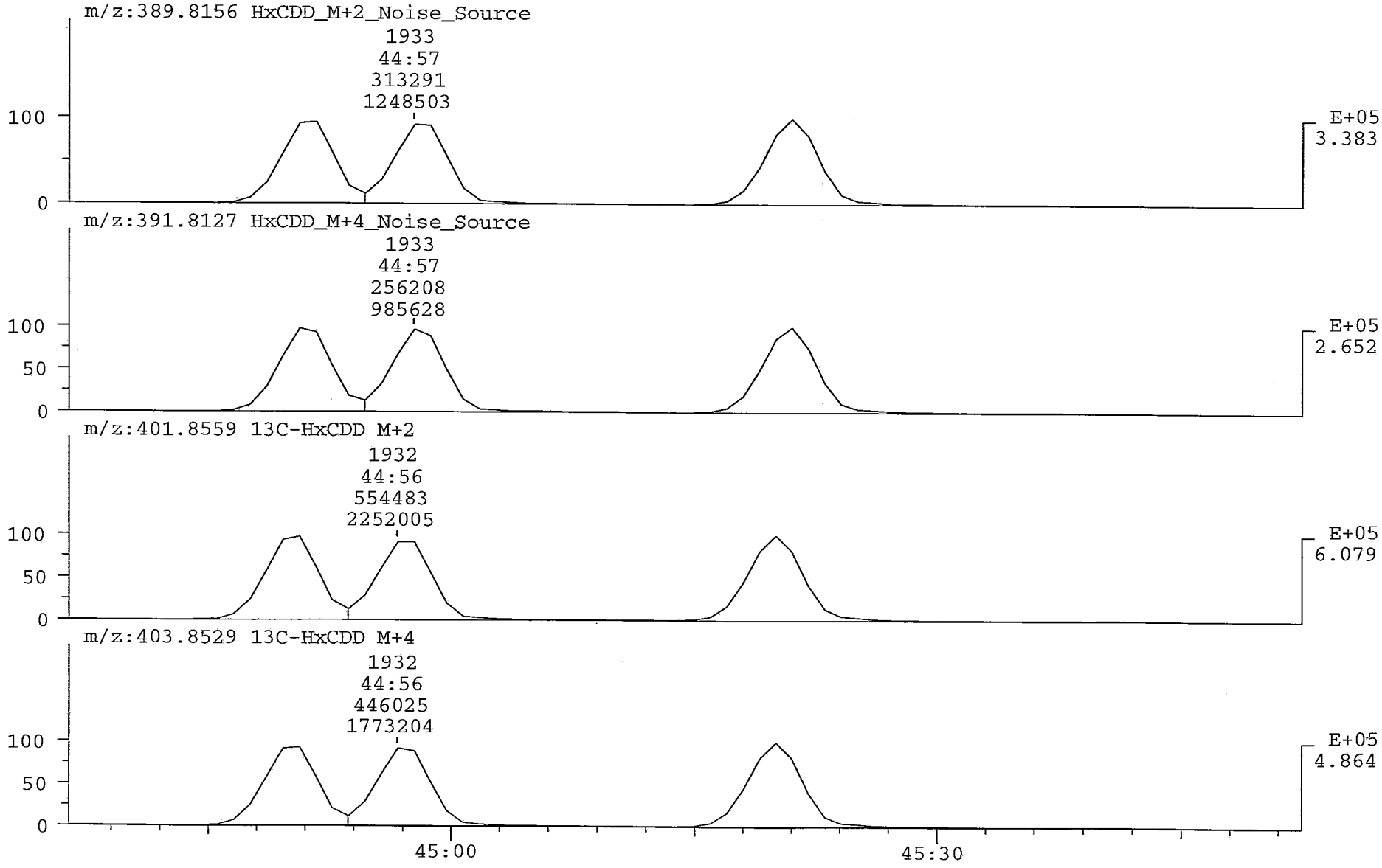
```
CHRO:  d1150409i3                          09-Apr-15   Elapse:  39:34      1622
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1321 > 1774       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



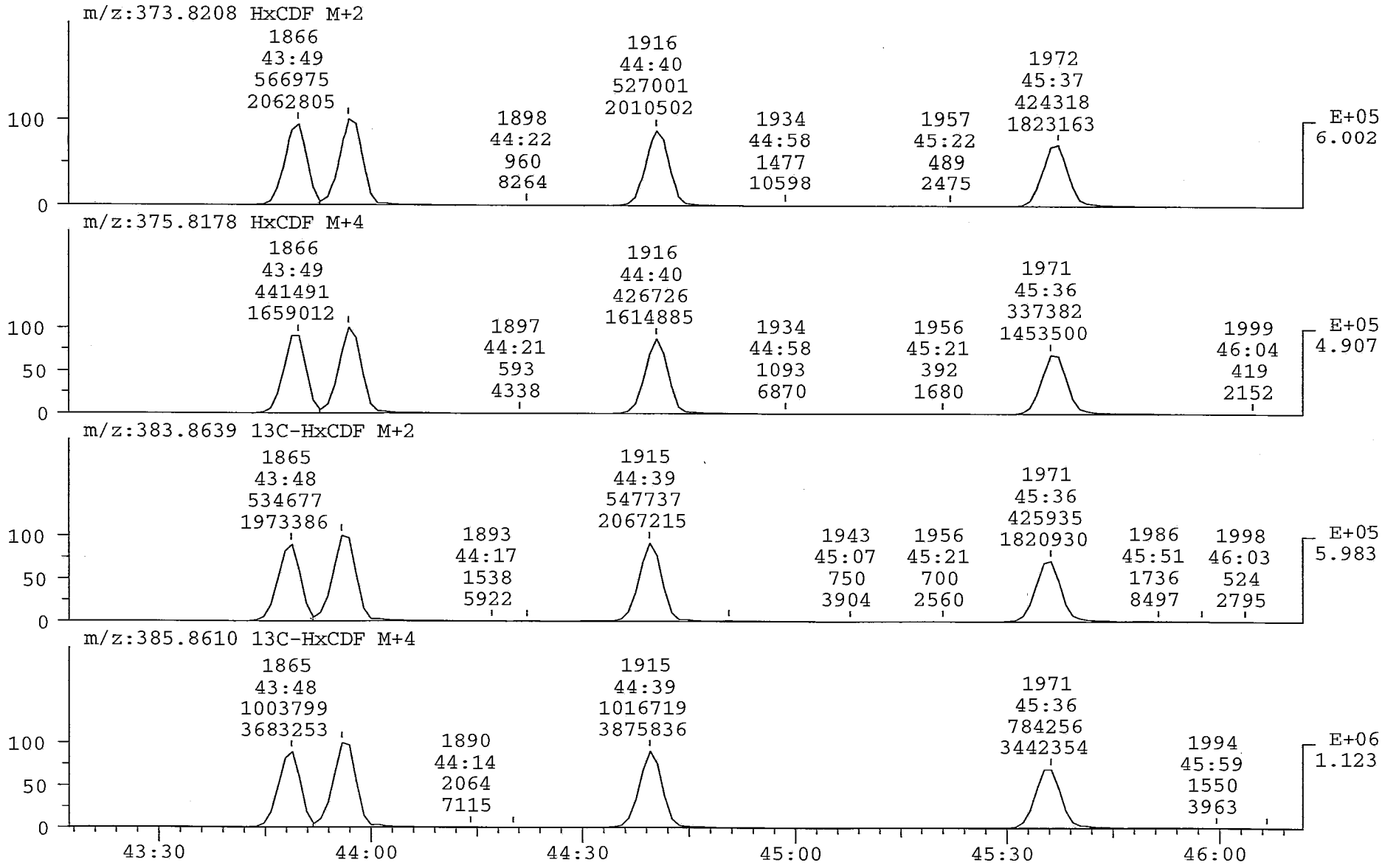
CHRO: d115040913 09-Apr-15 Elapse: 45:13 1949
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1912 > 1987 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



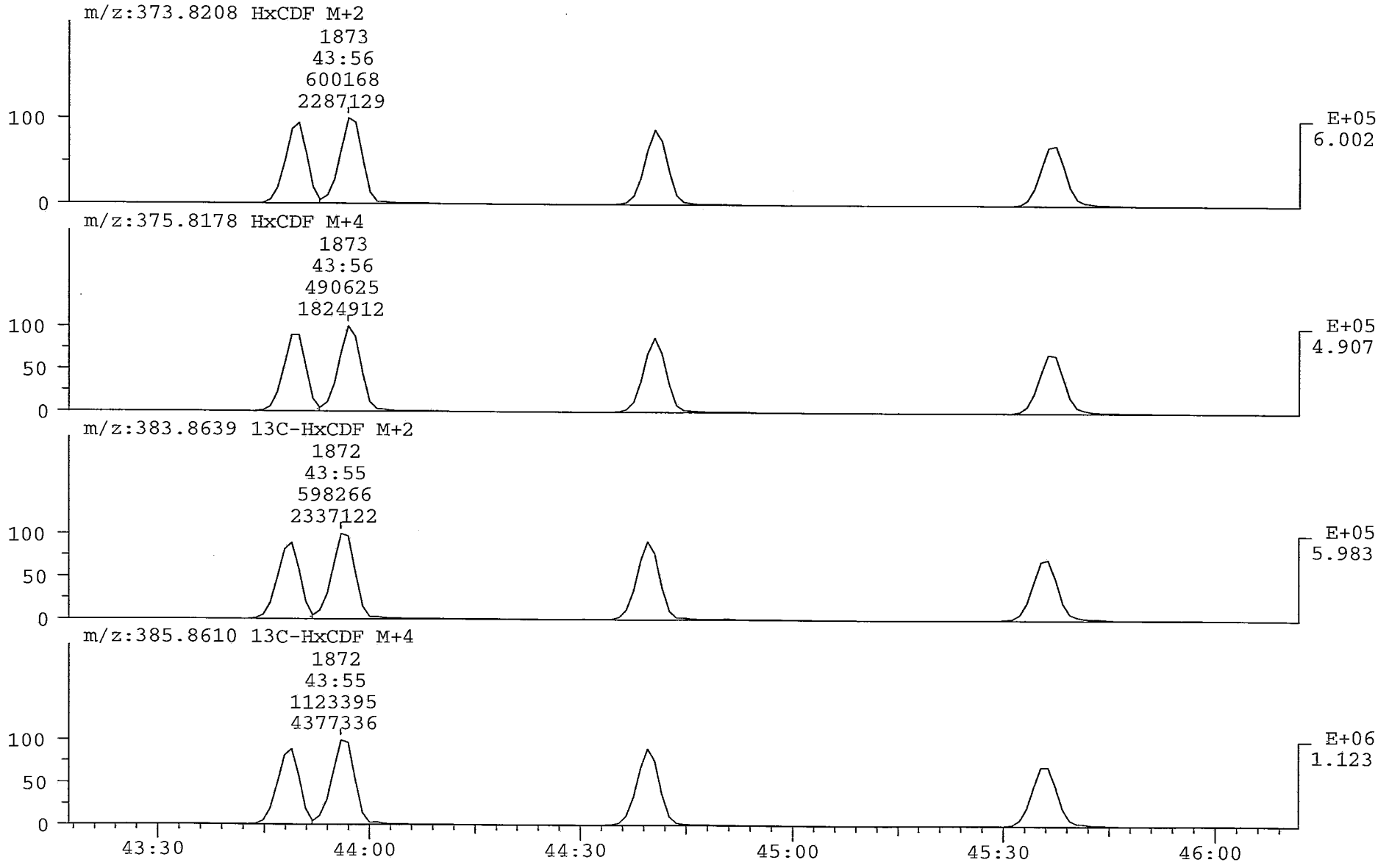
```
CHRO:  d1150409i3                          09-Apr-15   Elapse:  44:57      1933
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                    Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1930 > 1936       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



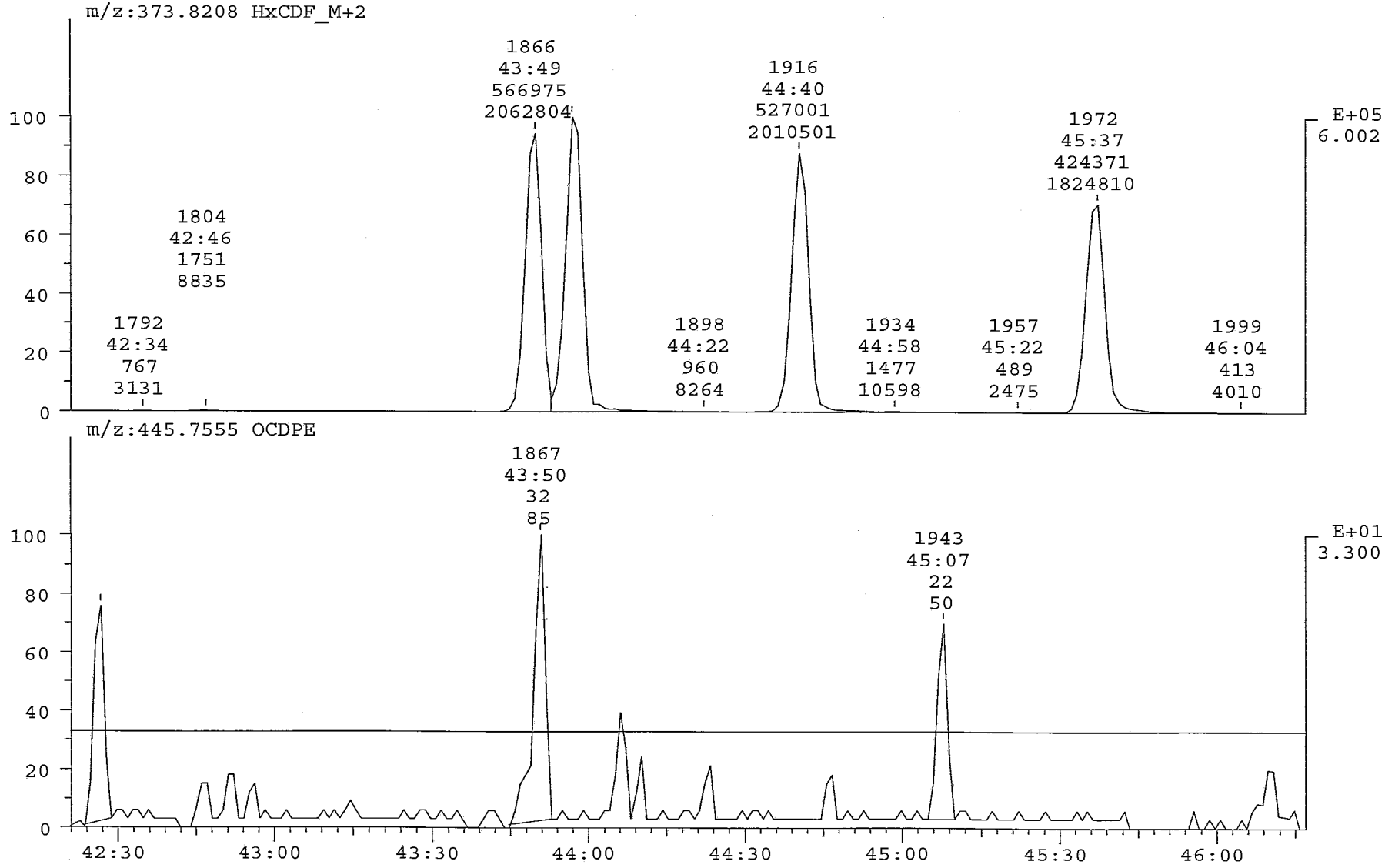
CHRO: d115040 9i3 09-Apr-15 Elapse: 44:57 1933
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1834 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



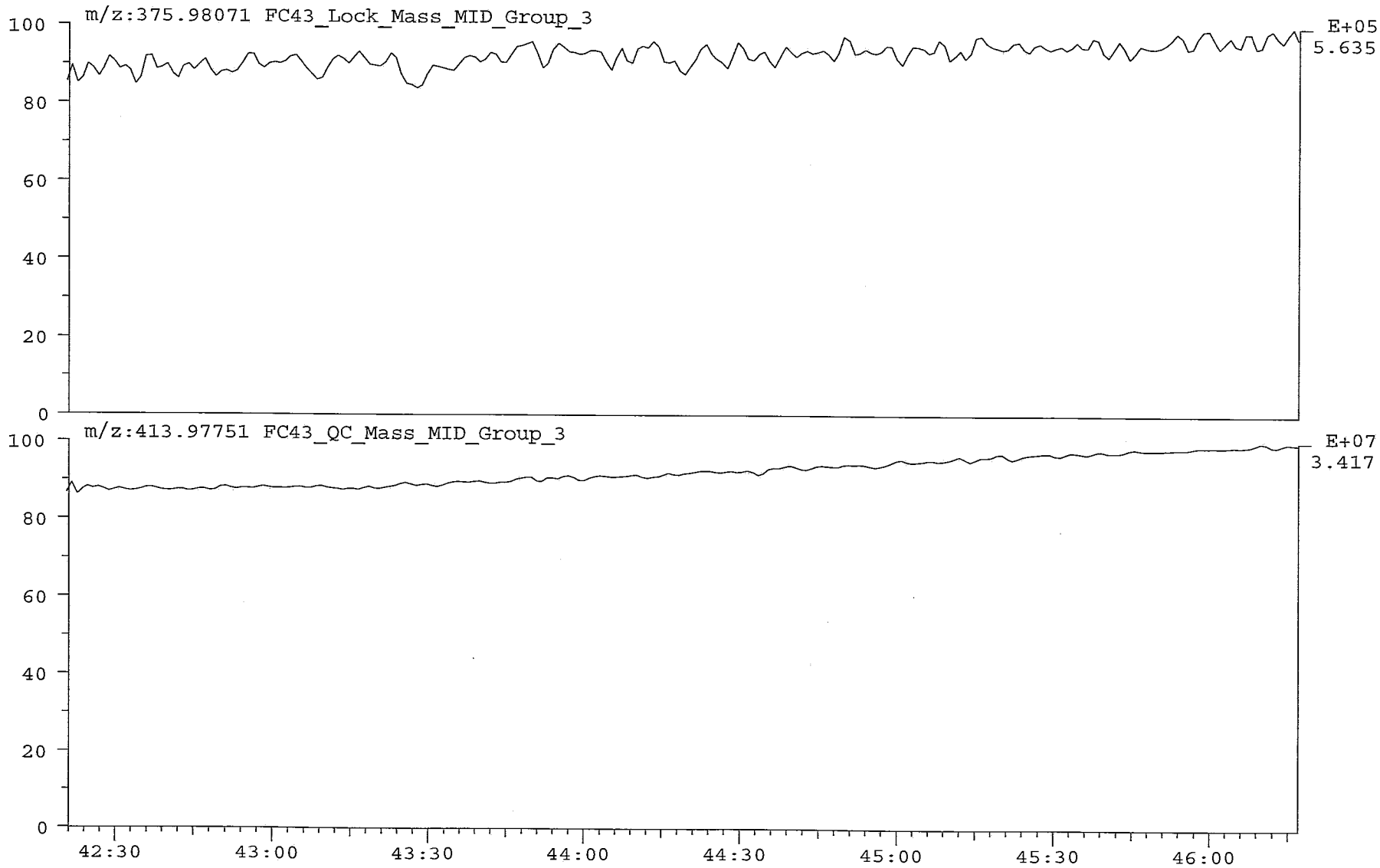
CHRO: d1150409i3 09-Apr-15 Elapse: 43:57 1874
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1871 > 1877 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



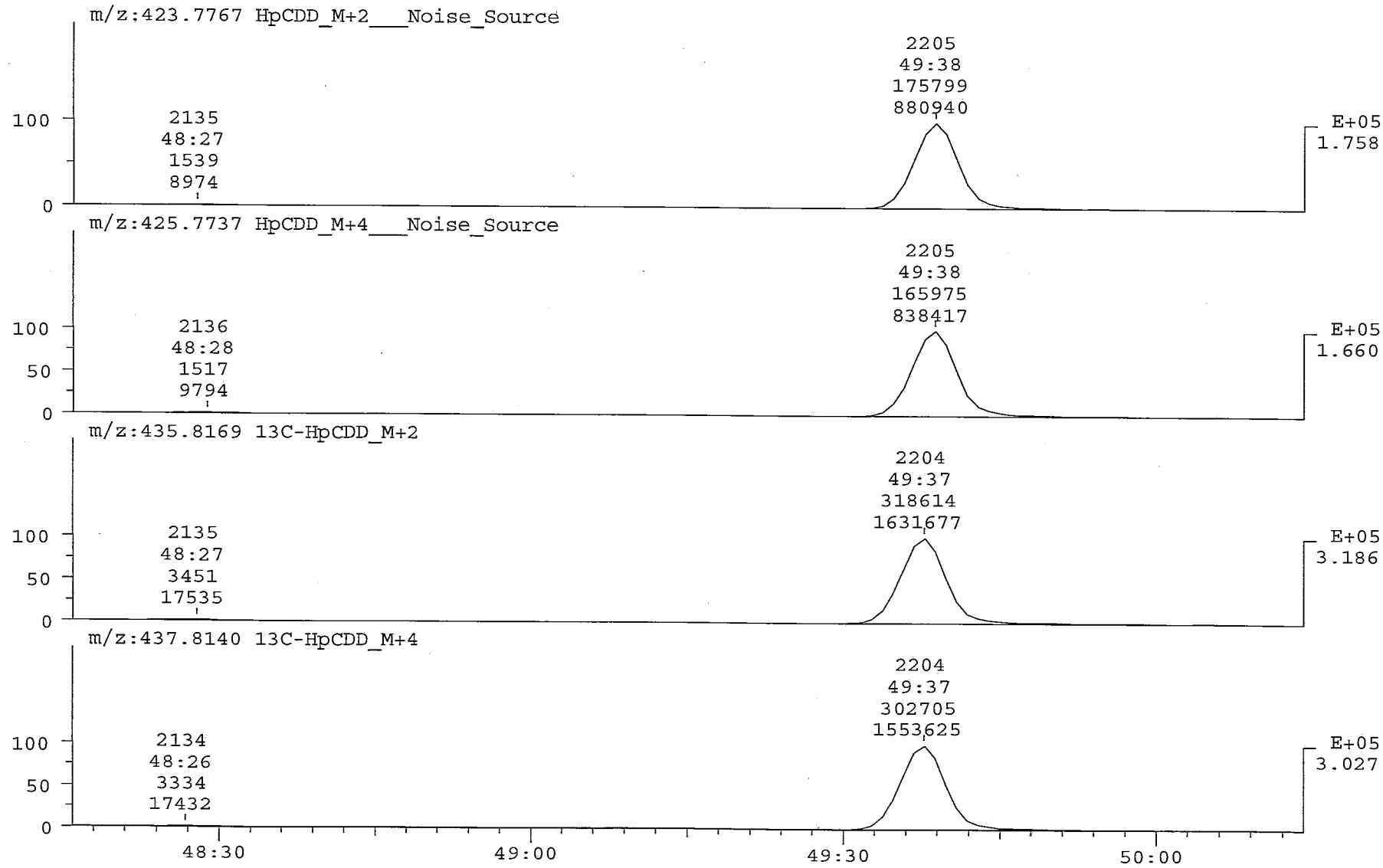
```
CHRO:  d1150409i3                          09-Apr-15  Elapse:  44:02      1879
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                   Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1778 > 2011      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



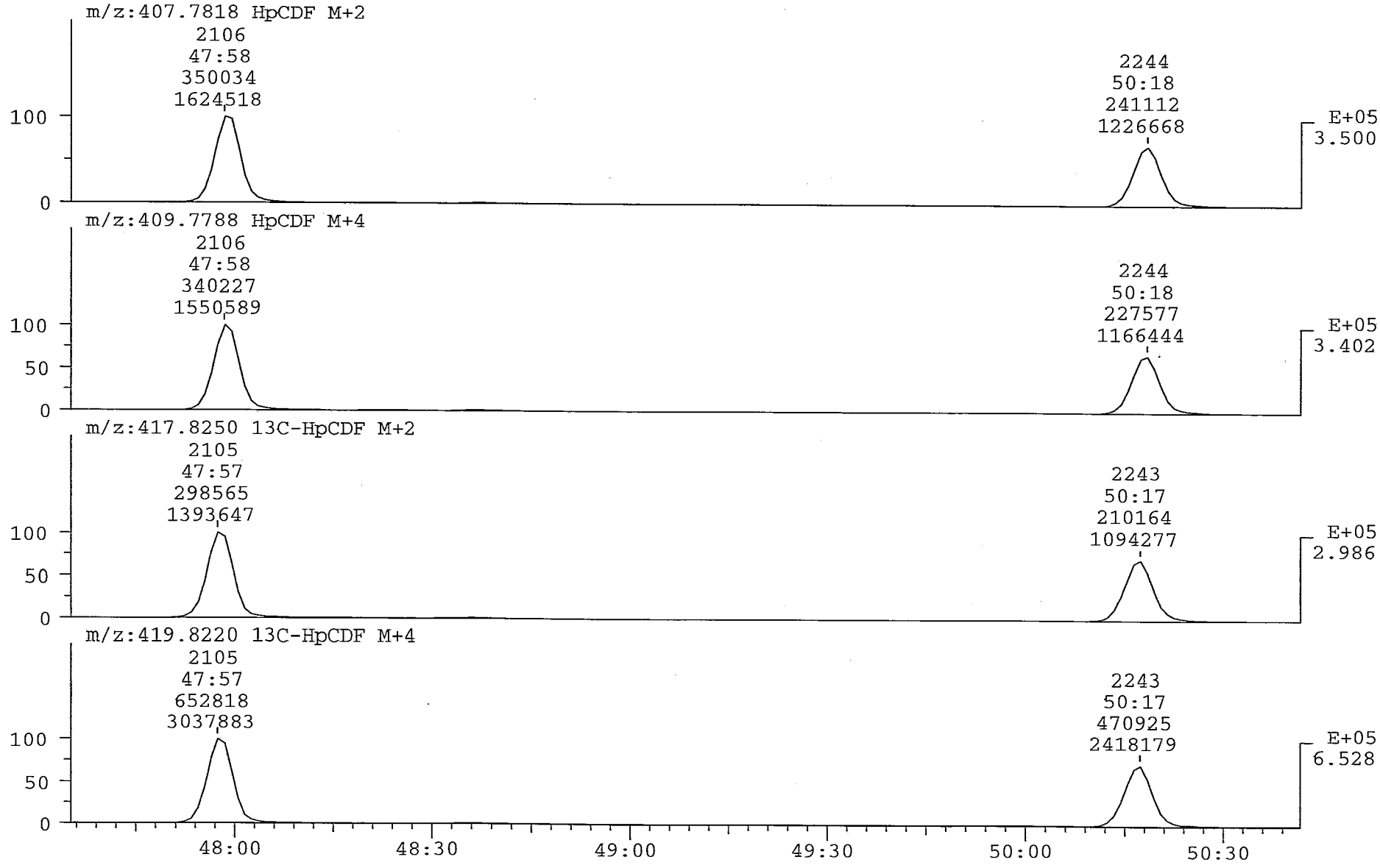
```
CHRO:  d1150409i3                                09-Apr-15  Elapse:  44:02      1879
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                         Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  1613/8290 ICAL
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1778 > 2011            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



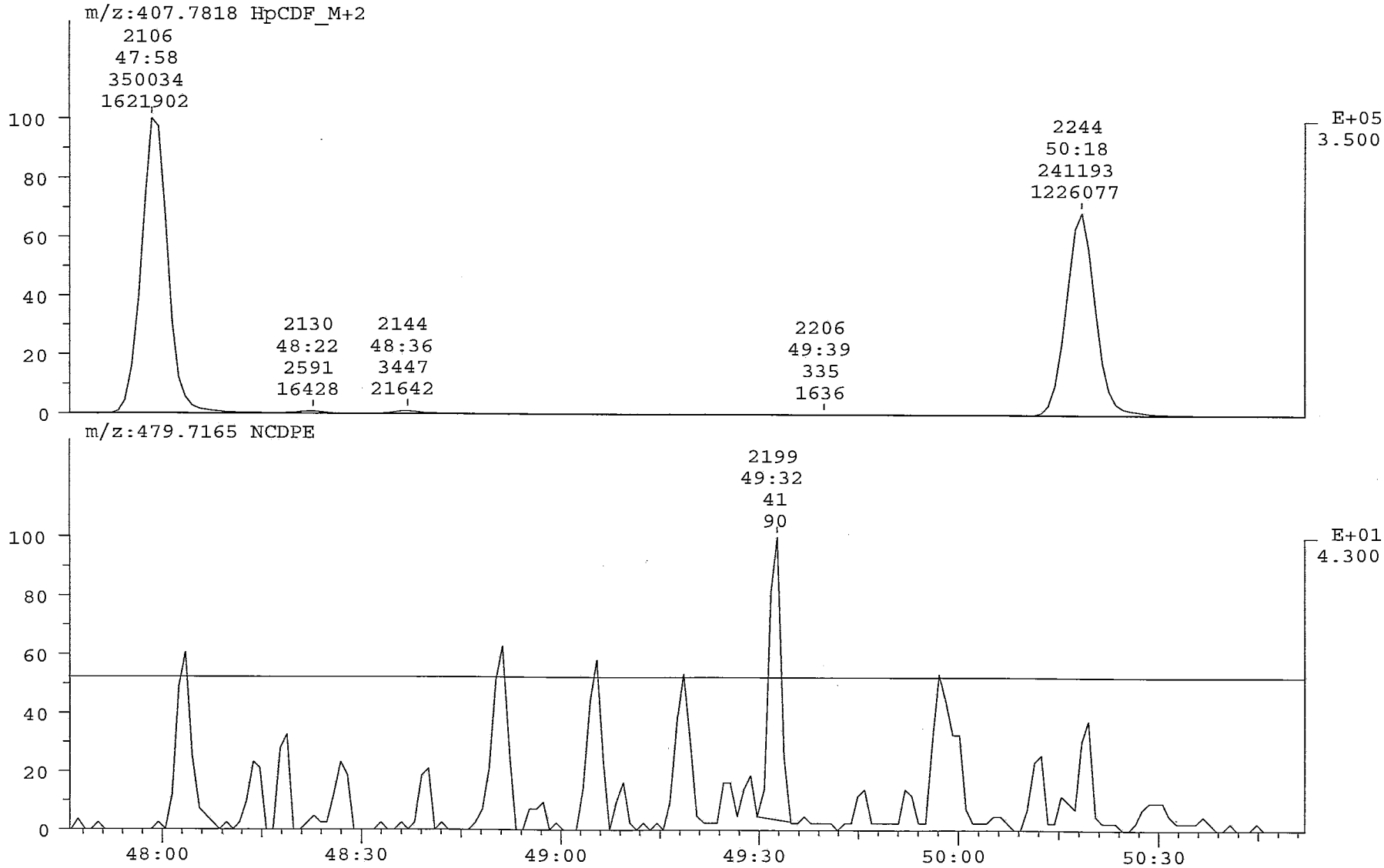
CHRO: d115040913 09-Apr-15 Elapse: 44:02 1879
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2123 > 2240 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



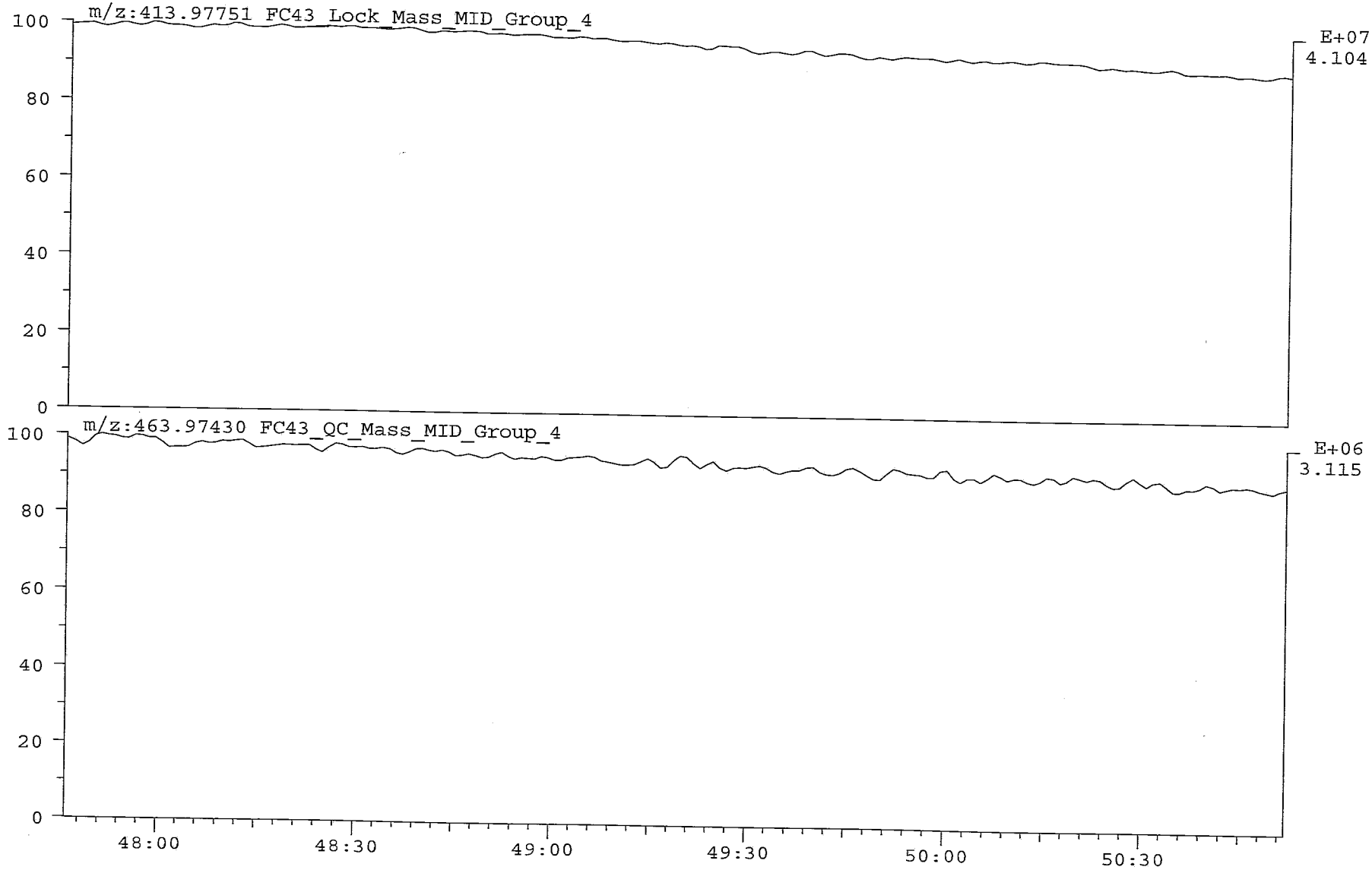
CHRO: d1150409i3 09-Apr-15 Elapse: 43:57 1874
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2083 > 2267 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



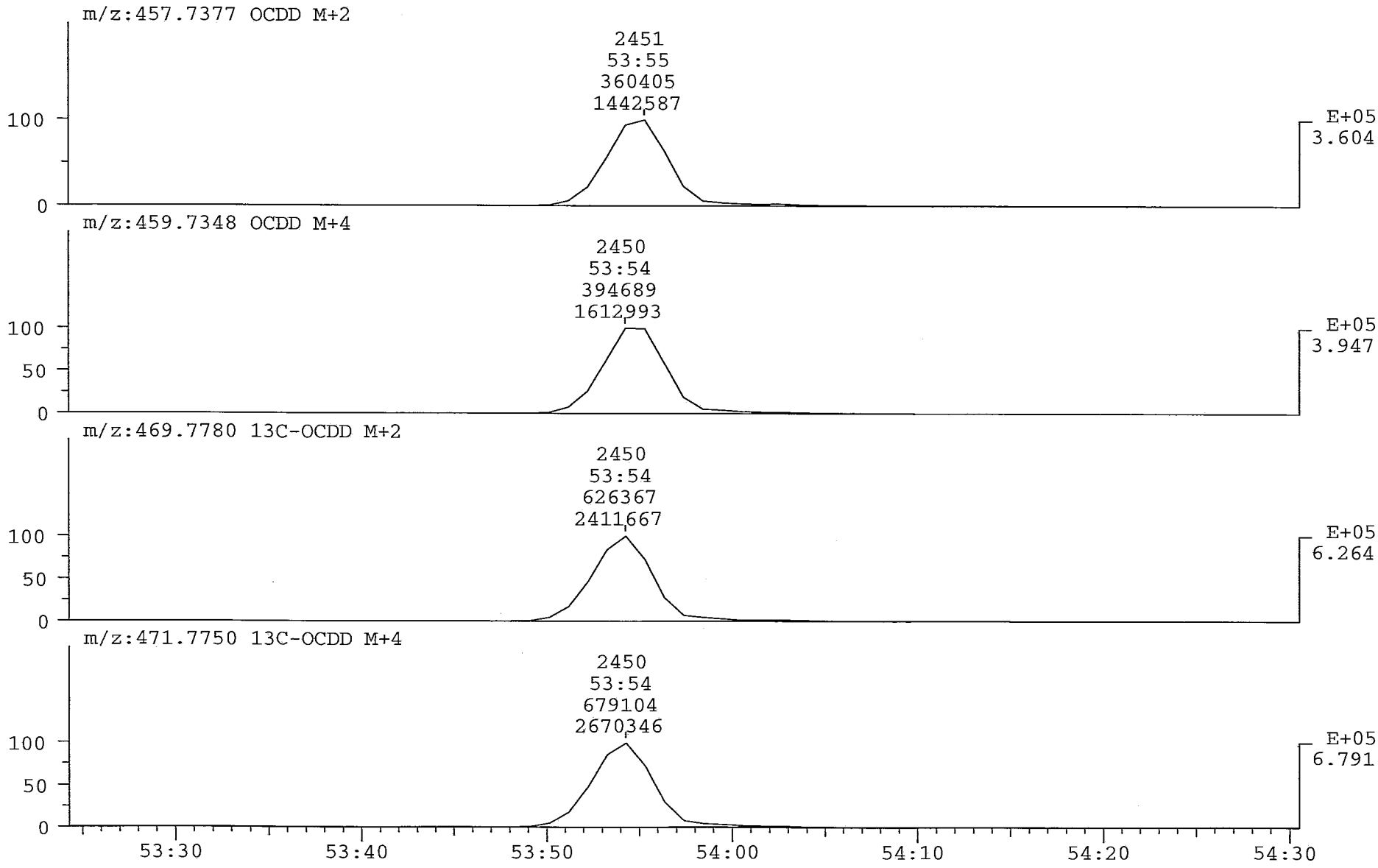
CHRO: d1150409i3 09-Apr-15 Elapse: 49:19 2186
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2094 > 2277 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



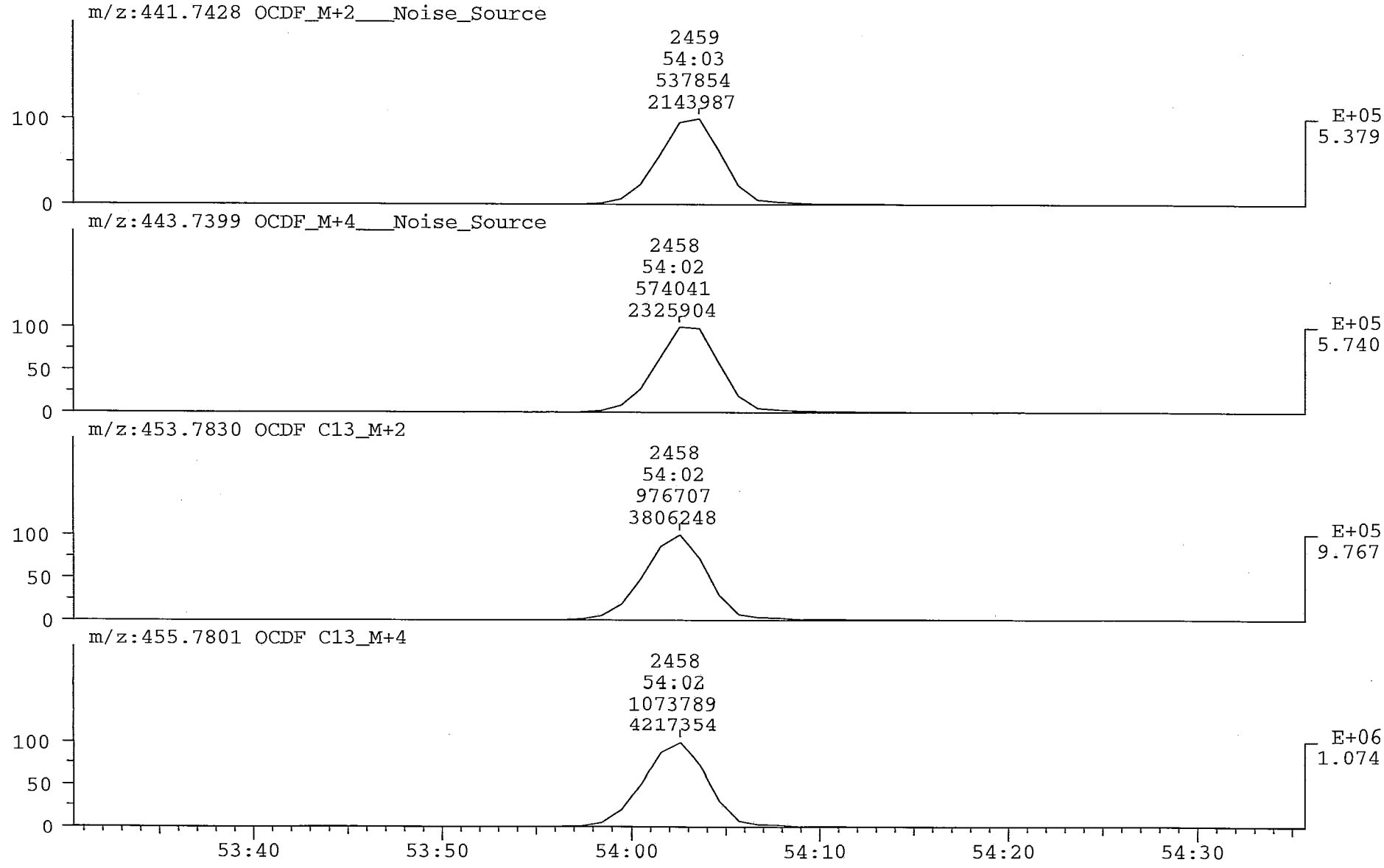
CHRO: d1150409i3 09-Apr-15 Elapse: 49:19 2186
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2094 > 2277 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



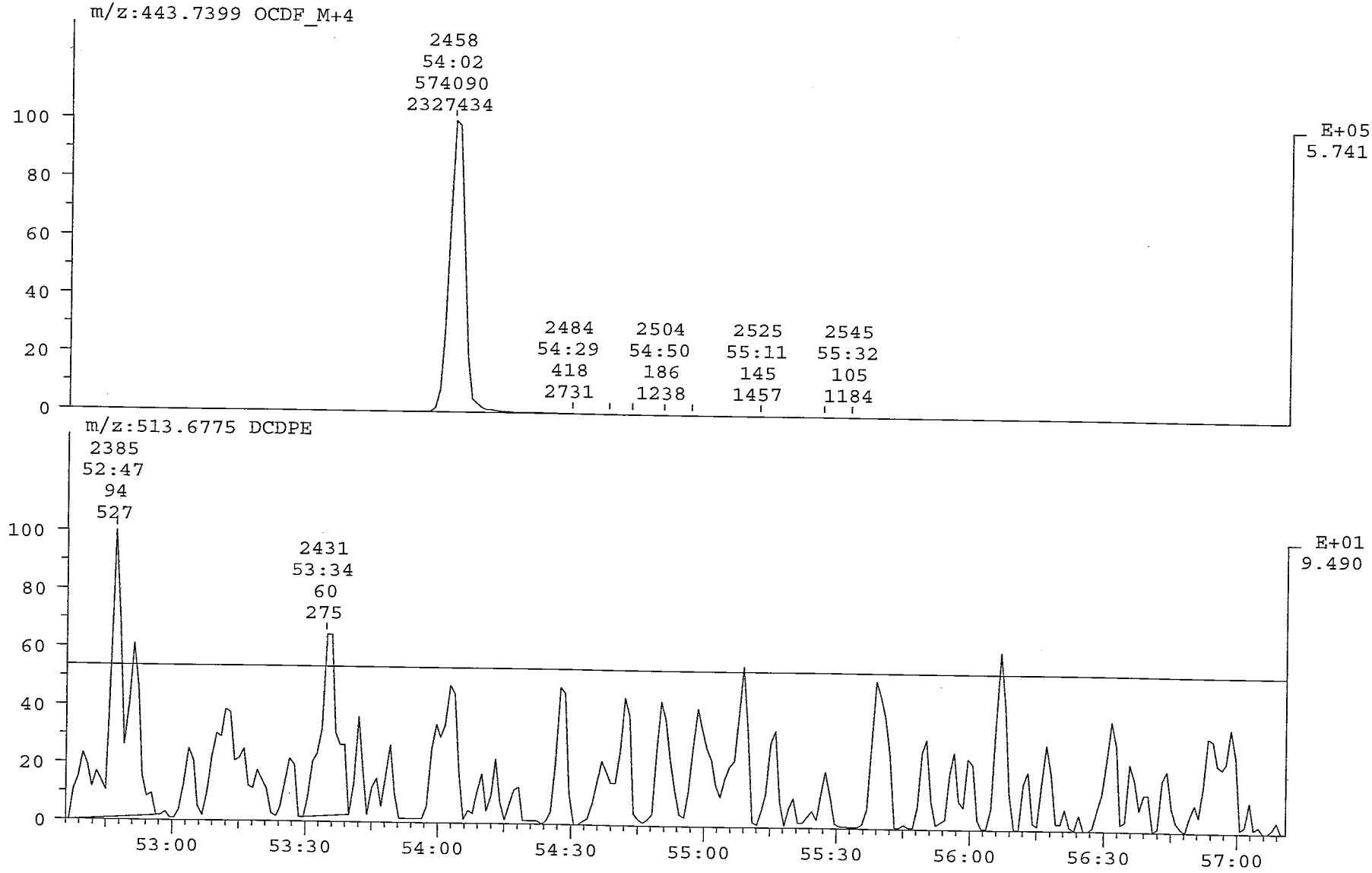
CHRO: d1150409i3 09-Apr-15 Elapse: 43:57 1874
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2421 > 2485 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



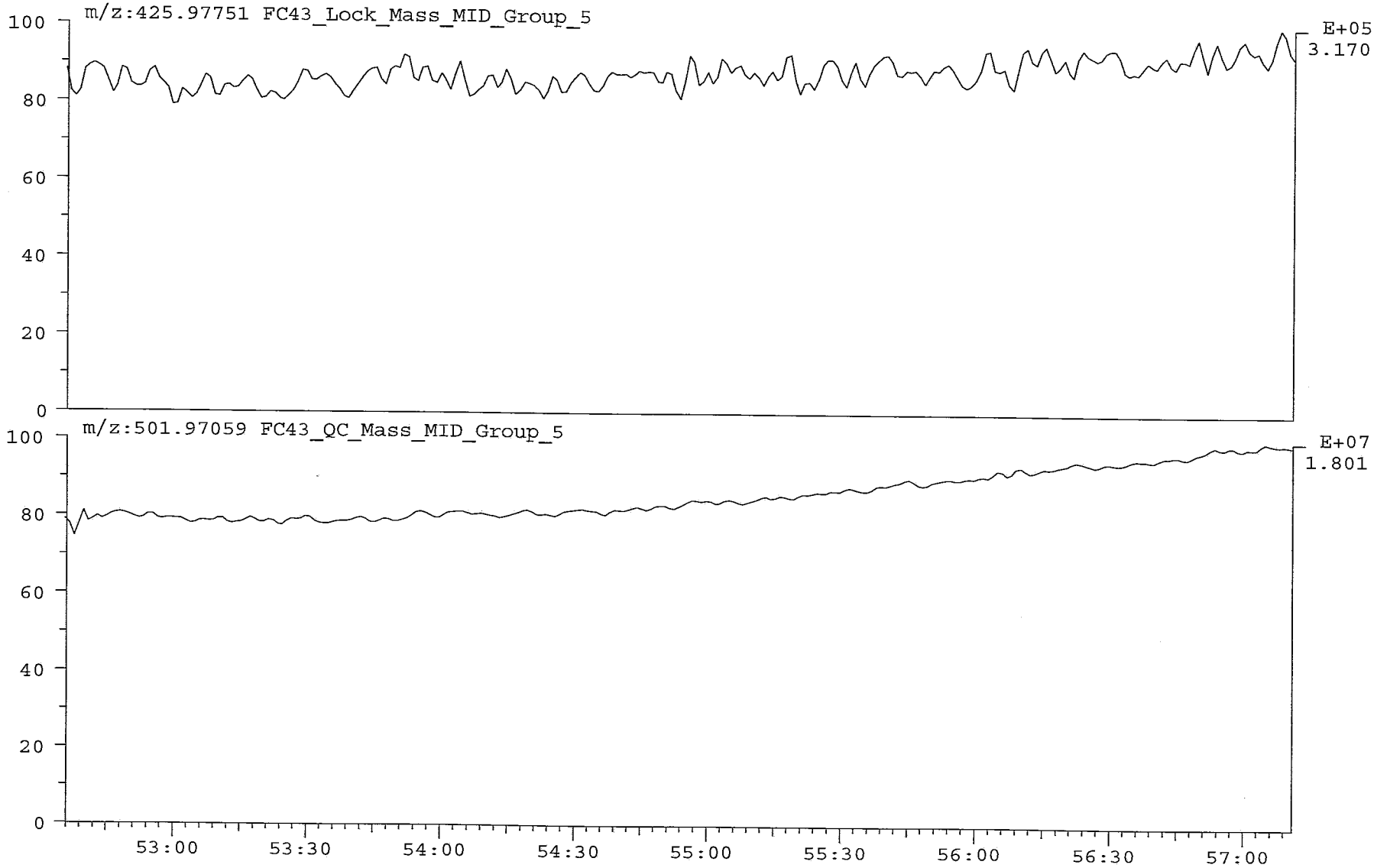
```
CHRO:  d1150409i3                          09-Apr-15  Elapse:  43:57      1874
Samp:  WO=4104:74cs3 Meth=F8o Dil=1                   Start :  04:03:45   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2427 > 2490      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d115040 9i3 09-Apr-15 Elapse: 54:09 2465
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2640 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150409i3 09-Apr-15 Elapse: 54:09 2465
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2640 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Apr 09 04:08:19 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 04:08:18

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409011218

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:16 min	34:16 min	1.00 sec
# 2	34:16 min	7:55 min	42:12 min	1.00 sec
# 3	42:12 min	4:51 min	47:03 min	1.00 sec
# 4	47:03 min	5:26 min	52:30 min	1.00 sec
# 5	52:30 min	4:42 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 34.283333 minutes
MID Window end time was 34.280000 minutes
MID Window terminated after 42.200000 minutes
MID Window end time was 42.200000 minutes
MID Window terminated after 47.066667 minutes
MID Window end time was 47.060000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	310.4834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	239.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	170.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0458	FVSRC	0.0477
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	310.4834	LKM	425.9770	MASS	310.4834
MDAC	3567486.3716	MRANGE	1252.5112	NSAM	200.0000
NSCAN	2662.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.9035	RELEN	0.0000
RES	9900.8065	RPUSHER	-10.9817	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1250	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:         3.5e-005 mbar
Analyzer Penning:     6.2e-008 mbar
Pirani Analyse:       3.9e-003 mbar
Pirani Source:        4.8e-002 mbar
Pirani Inlet System: 4.6e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10485.
MID Time Window 2: Resolution is 9875.
MID Time Window 3: Resolution is 10074.
MID Time Window 4: Resolution is 9754.
MID Time Window 5: Resolution is 9900.

Amplifier Offset: 89.


*** File closed Thu Apr 09 05:05:32 2015
  ***
```

QUAN: d115040913.q0 Entries: 92

Data file(s) used
File: d115040913 09-Apr-15
Samp: WO=4104:74cs3 Meth=F8o Dil=1 Start : 04:03:45 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	30:41	264661.	26523.	30:25	30:56	35.	1	1.0	AVV
321.8775	30:40	340800.	35276.	30:24	30:55	51.	1	1.0	AVV
319.8805	30:41	264661.	26523.	30:25	30:56	35.	2	5.0	AVV
321.8775	30:40	340800.	35276.	30:24	30:55	51.	2	5.0	AVV
331.9202	30:06	2209138.	229652.	29:51	30:21	119.	2	5.0	AVV
331.9202	30:36	2396717.	243391.	30:24	30:52	119.	2	5.0	AVV
333.9171	30:07	2795254.	289591.	29:52	30:22	115.	2	5.0	ABV
333.9171	30:38	2978249.	297291.	30:23	30:53	115.	2	5.0	AVV
327.8683	30:40	584899.	58888.	30:25	30:55	38.	1	1.0	AVV
327.8683	30:40	584924.	58888.	30:24	30:55	38.	2	5.0	AVV
303.8864	28:41	404013.	43038.	28:27	28:56	49.	1	1.0	ABV
305.8834	28:41	519385.	55959.	28:26	28:56	45.	1	1.0	AVV
303.8864	28:41	404013.	43038.	28:27	28:56	49.	2	5.0	ABV
305.8834	28:41	519385.	55959.	28:26	28:56	45.	2	5.0	AVV
315.9261	28:39	3998283.	428497.	28:24	28:54	130.	2	5.0	AVV
317.9230	28:39	4946431.	525876.	28:24	28:54	132.	2	5.0	AVV
355.8368	40:34	1237755.	285840.	40:25	40:49	35.	1	1.0	AVV
357.8337	40:34	792616.	181472.	40:25	40:49	30.	1	1.0	ABV
355.8368	40:34	1237801.	285840.	40:22	40:49	35.	2	5.0	ABV
357.8337	40:34	792616.	181472.	40:25	40:49	30.	2	5.0	ABV
367.8765	40:33	2375994.	535211.	40:23	40:43	49.	2	5.0	ABV
369.8734	40:33	1481152.	332073.	40:22	40:48	43.	2	5.0	ABV
339.8427	38:44	2316920.	440288.	38:33	38:58	96.	1	1.0	ABV
341.8396	38:44	1472533.	286199.	38:32	38:57	75.	1	1.0	ABV
339.8427	38:44	2316920.	440288.	38:33	38:58	96.	2	5.0	ABV
339.8427	40:01	2175657.	471673.	39:52	40:16	96.	2	5.0	ABV
341.8396	38:44	1472533.	286199.	38:32	38:57	75.	2	5.0	ABV
341.8396	40:01	1378811.	301275.	39:52	40:16	75.	2	5.0	ABV
351.8824	38:43	4012844.	776719.	38:33	38:57	204.	2	5.0	ABV
351.8824	39:59	3980973.	857577.	39:45	40:15	204.	2	5.0	ABV
353.8793	38:43	2521414.	490609.	38:32	38:56	93.	2	5.0	ABV
353.8793	39:59	2489718.	538251.	39:47	40:15	93.	2	5.0	ABV
389.7961	45:21	1337436.	338314.	45:14	45:36	191.	1	1.0	AVV
391.7931	45:21	1054604.	265189.	45:11	45:33	74.	1	1.0	AVV
389.7961	44:51	1257325.	322086.	44:44	44:54	191.	2	5.0	ABV
389.7961	44:57	1248503.	313291.	44:54	45:12	191.	2	5.0	AVV
389.7961	45:21	1337436.	338314.	45:14	45:36	191.	2	5.0	AVV
391.7931	44:50	1000578.	258495.	44:43	44:54	74.	2	5.0	ABV
391.7931	44:57	985628.	256208.	44:54	45:11	74.	2	5.0	AVV
391.7931	45:21	1054604.	265189.	45:11	45:33	74.	2	5.0	AVV
401.8358	44:50	2277537.	588859.	44:42	44:53	136.	2	5.0	ABV
401.8358	44:56	2252005.	554483.	44:53	45:11	136.	2	5.0	AVV
401.8358	45:20	2446659.	607849.	45:12	45:35	136.	2	5.0	AVV
403.8327	44:50	1774148.	452320.	44:43	44:53	190.	2	5.0	ABV
403.8327	44:56	1773204.	446025.	44:53	45:11	190.	2	5.0	AVV
403.8327	45:20	1940379.	486348.	45:12	45:35	190.	2	5.0	AVV
373.8021	43:56	2287139.	600169.	43:52	44:12	89.	1	1.0	AVV
375.7990	43:56	1824912.	490625.	43:52	44:12	86.	1	1.0	AVV
373.8021	43:49	2062811.	566975.	43:41	43:52	89.	2	5.0	ABV
373.8021	43:56	2287139.	600169.	43:52	44:12	89.	2	5.0	AVV

373.8021	44:40	2010508.	527001.	44:30	44:55	89.	2	5.0 AVV
373.8021	45:37	1821587.	424261.	45:29	45:52	89.	2	5.0 ABV
375.7990	43:49	1659012.	441491.	43:40	43:52	86.	2	5.0 ABV
375.7990	43:56	1824912.	490625.	43:52	44:12	86.	2	5.0 AVV
383.8447	43:48	1973386.	534677.	43:40	43:51	102.	2	5.0 ABV
383.8447	43:55	2337122.	598266.	43:51	44:11	102.	2	5.0 AVV
383.8447	44:39	2067215.	547737.	44:28	44:48	102.	2	5.0 AVV
383.8447	45:36	1820442.	425917.	45:27	45:49	102.	2	5.0 ABV
385.8417	43:48	3683253.	1003799.	43:40	43:51	133.	2	5.0 ABV
385.8417	43:55	4377336.	1123395.	43:51	44:11	133.	2	5.0 AVV
385.8417	44:39	3875836.	1016719.	44:27	44:54	133.	2	5.0 AVV
385.8417	45:36	3442354.	784256.	45:28	45:51	133.	2	5.0 ABV
423.7555	49:38	880940.	175799.	49:30	49:54	45.	1	1.0 ABV
425.7524	49:38	838417.	165975.	49:29	49:54	35.	1	1.0 ABV
423.7555	48:27	8974.	1539.	48:22	48:43	45.	2	5.0 ABV
423.7555	49:38	880940.	175799.	49:30	49:54	45.	2	5.0 ABV
425.7524	48:28	9794.	1517.	48:19	48:44	35.	2	5.0 ABV
425.7524	49:38	838417.	165975.	49:29	49:54	35.	2	5.0 ABV
435.7951	48:27	17535.	3451.	48:19	48:36	24.	2	5.0 ABB
435.7951	49:37	1631677.	318614.	49:26	49:53	24.	2	5.0 ABV
437.7921	48:26	17432.	3334.	48:21	48:42	40.	2	5.0 ABB
437.7921	49:37	1553625.	302704.	49:27	49:53	40.	2	5.0 ABV
407.7614	47:58	1621902.	350034.	47:50	48:13	60.	1	1.0 ABV
409.7583	47:58	1547429.	340227.	47:50	48:13	51.	1	1.0 ABV
407.7614	47:58	1621902.	350034.	47:50	48:13	60.	2	5.0 ABV
407.7614	50:18	1226077.	241193.	50:09	50:33	60.	2	5.0 ABV
409.7583	47:58	1547429.	340227.	47:50	48:13	51.	2	5.0 ABV
409.7583	50:18	1166508.	227668.	50:09	50:33	51.	2	5.0 ABV
417.8041	47:57	1388989.	298558.	47:49	48:12	62.	2	5.0 ABV
417.8041	50:17	1096735.	210271.	50:06	50:32	62.	2	5.0 ABV
419.8010	47:57	3027714.	652817.	47:49	48:12	90.	2	5.0 ABV
419.8010	50:17	2418681.	471118.	50:08	50:32	90.	2	5.0 ABV
457.7148	53:55	1443053.	360418.	53:48	54:10	34.	1	1.0 ABV
459.7118	53:54	1613013.	394690.	53:47	54:09	61.	1	1.0 ABV
457.7148	53:55	1443053.	360418.	53:48	54:10	34.	2	5.0 ABV
459.7118	53:54	1613013.	394690.	53:47	54:09	61.	2	5.0 ABV
469.7545	53:54	2412930.	626404.	53:47	54:09	43.	2	5.0 ABV
471.7514	53:54	2671194.	679128.	53:47	54:09	75.	2	5.0 ABV
441.7207	54:03	2145804.	537911.	53:51	54:19	47.	1	1.0 ABV
443.7177	54:02	2326494.	574060.	53:51	54:18	55.	1	1.0 ABV
441.7207	54:03	2145804.	537911.	53:51	54:19	47.	2	5.0 ABV
443.7177	54:02	2326494.	574060.	53:51	54:18	55.	2	5.0 ABV

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IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/20150409i/d115040914.d	Prep Date		SDG No	
Analysis ID	169127	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	05:05	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	30:42	2740060	281379	1.000	40.00	45.052238	112.63	45.052238	0.0374
Total TCDD				1.000		45.052238		45.052238	0.0374
2,3,7,8-TCDF	28:42	4164103	455115	1.000	40.00	42.129590	105.32	42.129590	0.0327
Total TCDF				1.000		42.129590		42.129590	0.0327
1,2,3,7,8-PeCDD	40:33	9394451	2183167	1.000	200.0	211.043535	105.52	211.043535	0.0305
Total PeCDD				1.000		211.043535		211.043535	0.0305
1,2,3,7,8-PeCDF	38:44	17445183	3415182	1.000	200.0	229.091957	114.55	229.091957	0.0459
2,3,4,7,8-PeCDF	40:01	16138234	3552715	1.000	200.0	216.121162	108.06	216.121162	0.0423
Total PeCDF				1.000		445.213119		445.213119	0.0440
1,2,3,4,7,8-HxCDD	44:50	10746484	2776294	1.000	200.0	220.734285	110.37	220.734285	0.0581
1,2,3,6,7,8-HxCDD	44:57	10533358	2761872	1.000	200.0	219.795945	109.90	219.795945	0.0596
1,2,3,7,8,9-HxCDD	45:20	11365722	2943659	1.000	200.0	235.294427	117.65	235.294427	0.0589
Total HxCDD				1.000		675.824657		675.824657	0.0589
1,2,3,4,7,8-HxCDF	43:49	17082044	4662178	1.000	200.0	259.836739	129.92	259.836739	0.0395
1,2,3,6,7,8-HxCDF	43:56	18767967	5003659	1.000	200.0	235.400154	117.70	235.400154	0.0343
2,3,4,6,7,8-HxCDF	44:39	16650491	4448392	1.000	200.0	235.646988	117.82	235.646988	0.0384
1,2,3,7,8,9-HxCDF	45:36	15477143	3679959	1.000	200.0	240.827051	120.41	240.827051	0.0473
Total HxCDF				1.000		971.710933		971.710933	0.0394
1,2,3,4,6,7,8-HpCDD	49:37	8436238	1714355	1.000	200.0	222.399911	111.20	222.399911	0.0449
Total HpCDD				1.000		222.399911		222.399911	0.0449
1,2,3,4,6,7,8-HpCDF	47:57	15004783	3278477	1.000	200.0	284.000231	142.00	284.000231	0.0440
1,2,3,4,7,8,9-HpCDF	50:17	11713811	2354488	1.000	200.0	273.986894	136.99	273.986894	0.0595
Total HpCDF				1.000		557.987125		557.987125	0.0506
OCDD	53:54	15163143	3865552	1.000	400.0	463.146000	115.79	463.146000	0.0410
OCDF	54:02	22296853	5762598	1.000	400.0	419.236082	104.81	419.236082	0.0329
13C-2,3,7,8-TCDD	30:39	6081962	622233	1.000	100.0	109.936122	109.94	109.936122	0.115
13C-2,3,7,8-TCDF	28:40	9884034	1069875	1.000	100.0	178.661486	178.66	178.661486	0.0799
13C-1,2,3,7,8-PeCDD	40:32	4451428	1032237	1.000	100.0	80.462971	80.46	80.462971	0.0370
13C-1,2,3,7,8-PeCDF	38:43	7614926	1481253	1.000	100.0	137.645621	137.65	137.645621	0.102
13C-2,3,4,7,8-PeCDF	40:00	7467216	1606472	1.000	100.0	134.975649	134.98	134.975649	0.102
13C-1,2,3,4,7,8-HxCDD	44:49	4868516	1256256	1.000	100.0	91.637531	91.64	91.637531	0.0443
13C-1,2,3,6,7,8-HxCDD	44:56	4792335	1223887	1.000	100.0	90.203616	90.20	90.203616	0.0443
13C-1,2,3,4,7,8-HxCDF	43:48	6574145	1831326	1.000	100.0	123.741694	123.74	123.741694	0.0397
13C-1,2,3,6,7,8-HxCDF	43:55	7972793	2103470	1.000	100.0	150.067714	150.07	150.067714	0.0397
13C-2,3,4,6,7,8-HxCDF	44:38	7065862	1880252	1.000	100.0	132.997026	133.00	132.997026	0.0397
13C-1,2,3,7,8,9-HxCDF	45:35	6426663	1528525	1.000	100.0	120.965717	120.97	120.965717	0.0397
13C-1,2,3,4,6,7,8-HpCDD	49:36	3793274	752011	1.000	100.0	71.398813	71.40	71.398813	0.0217
13C-1,2,3,4,6,7,8-HpCDF	47:56	5283370	1148396	1.000	100.0	99.446111	99.45	99.446111	0.0298
13C-1,2,3,4,7,8,9-HpCDF	50:16	4275318	849150	1.000	100.0	80.472075	80.47	80.472075	0.0298
13C-OCDD	53:53	6547889	1717531	1.000	200.0	123.247491	61.62	123.247491	0.0167
13C-OCDF	54:01	10636896	2795366	1.000	200.0	200.212732	100.11	200.212732	0.0206
37Cl4-2,3,7,8-TCDD	30:42	2705665	279363	1.000	40.00	48.906967	122.27	48.906967	0.0314
13C-1,2,3,4-TCDD	30:08	5532269	588297	1.000	100.0	100.000000	100.00	100.000000	0.115
13C-1,2,3,7,8,9-HxCDD	45:19	5312797	1360135	1.000	100.0	100.000000	100.00	100.000000	0.0443

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/20150409i/d115040914.	Prep Date		SDG No	
Analysis ID	169127	Prep Exp Date		Date Received	
Analysis Date	04/09/15 05:05	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	150	200	60	80	0.75	/	
	2,3,7,8-TCDF	28:42	00:00	0	1841987	2322116	201840	253275	0.79	ABV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	240	230	96	92	1.04 *	/	
	13C-2,3,7,8-TCDF	28:40	00:00	0	4407831	5476203	472861	597014	0.80	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	113	120	45	48	0.94 *	/	
	2,3,7,8-TCDD	30:42	00:00	0	1209515	1530545	124466	156913	0.79	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	185		74				
	37Cl4-2,3,7,8-TCDD	30:42	00:00	0	2705665		279363			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	385	293	154	117	1.32 *	/	
	13C-1,2,3,4-TCDD	30:08	00:00	0	2477032	3055237	264538	323759	0.81	AVV/ABV	
	13C-2,3,7,8-TCDD	30:39	00:00	0	2726495	3355467	276528	345705	0.81	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	305	375	122	150	0.81 *	/	
	1,2,3,7,8-PeCDF	38:44	00:00	0	10615634	6829549	2063652	1351530	1.55	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:01	00:00	0	9781263	6356971	2160562	1392153	1.54	ABV/ABV	M
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	320	280	128	112	1.14 *	/	
	13C-1,2,3,7,8-PeCDF	38:43	00:00	0	4677626	2937300	911288	569965	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:00	00:00	0	4578062	2889154	989040	617432	1.58	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	185	130	74	52	1.42	/	
	1,2,3,7,8-PeCDD	40:33	00:00	0	5718714	3675737	1318256	864911	1.56	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	138	80	55	32	1.72	/	
	13C-1,2,3,7,8-PeCDD	40:32	00:00	0	2727552	1723876	628646	403591	1.58	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	368	355	147	142	1.04 *	/	
	1,2,3,4,7,8-HxCDF	43:49	00:00	0	9481241	7600803	2622150	2040028	1.25	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	43:56	00:00	0	10409931	8358036	2752241	2251418	1.25	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	44:39	00:00	0	9192641	7457850	2446475	2001917	1.23	AVV/AVV	M
	1,2,3,7,8,9-HxCDF	45:36	00:00	0	8579776	6897367	2045781	1634178	1.24	ABV/ABV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	268	273	107	109	0.98 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:48	00:00	0	2277201	4296944	637591	1193735	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	43:55	00:00	0	2788706	5184087	737031	1366439	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:38	00:00	0	2469285	4596577	661137	1219115	0.54	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:35	00:00	0	2233071	4193592	537164	991361	0.53	AVV/ABV	
	Unidentified	45:53	00:00	0	4259	10591	1358	1766	0.40 *	AVV/AVV	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/20150409i/d1150409i4.	Prep Date		SDG No	
Analysis ID	169127	Prep Exp Date		Date Received	
Analysis Date	04/09/15 05:05	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

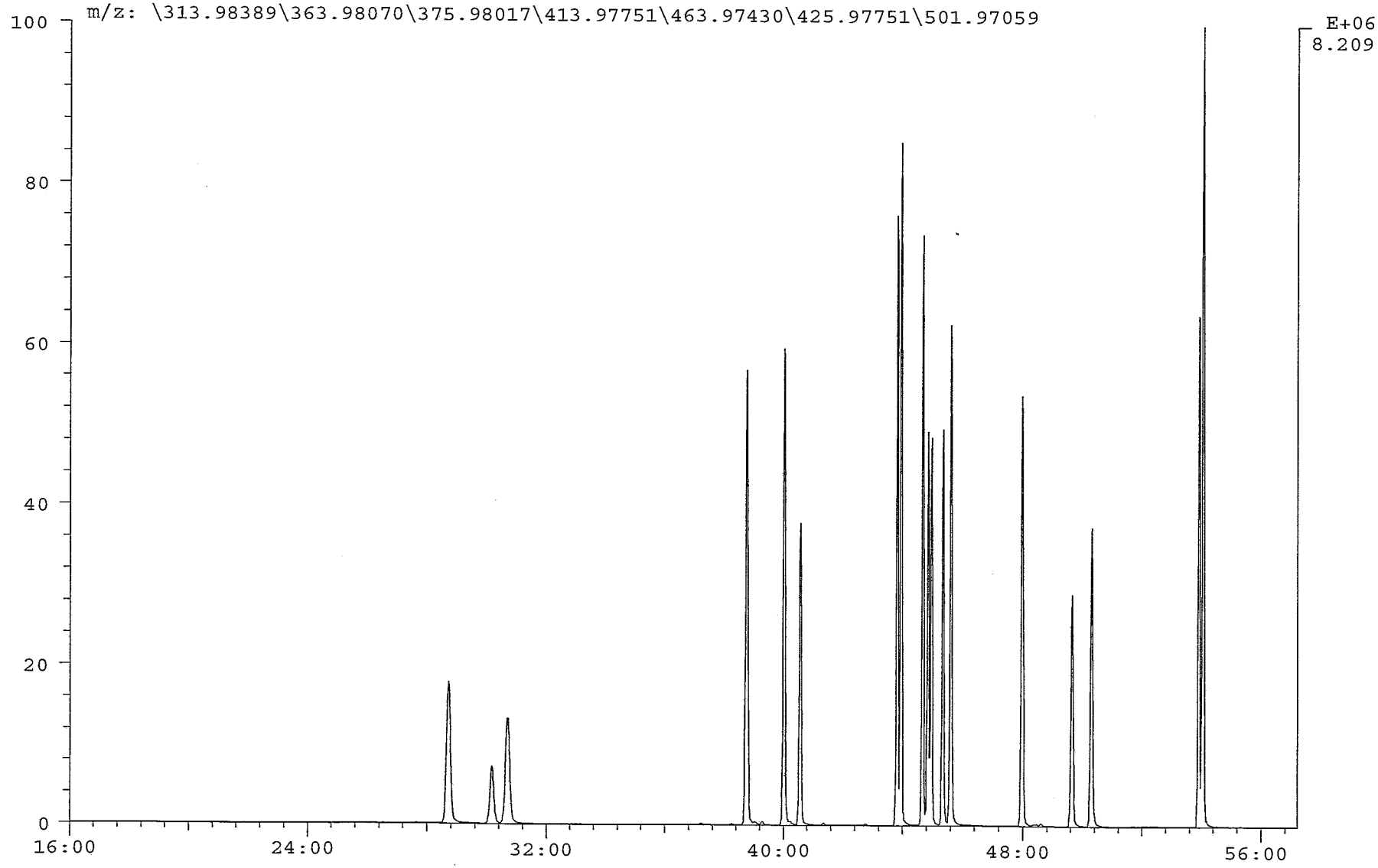
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	418	313	167	125	1.34	/	
	1,2,3,4,7,8-HxCDD	44:50	00:00	0	5951770	4794714	1527147	1249147	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	44:57	00:00	0	5858727	4674631	1517931	1243941	1.25	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:20	00:00	0	6308868	5056854	1633986	1309673	1.25	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	235	368	94	147	0.64 *	/	
	13C-1,2,3,4,7,8-HxCDD	44:49	00:00	0	2725297	2143219	705240	551016	1.27	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	44:56	00:00	0	2696639	2095696	686190	537697	1.29	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:19	00:00	0	2972498	2340299	761354	598781	1.27	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	268	238	107	95	1.13	/	
	1,2,3,4,6,7,8-HpCDF	47:57	00:00	0	7660083	7344700	1652380	1626097	1.04	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:17	00:00	0	5972088	5741723	1201820	1152668	1.04	ABB/ABB	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	158	248	63	99	0.64 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	47:56	00:00	0	1662648	3620722	361136	787260	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:16	00:00	0	1339032	2936286	264821	584329	0.46	ABV/ABB	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	193	145	77	58	1.33 *	/	
	1,2,3,4,6,7,8-HpCDD	49:37	00:00	0	4304924	4131314	874517	839838	1.04	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	100	195	40	78	0.51 *	/	
	Unidentified	48:26	00:00	0	15833	12118	3042	2534	1.31 *	ABB/ABB	R
	13C-1,2,3,4,6,7,8-HpCDD	49:36	00:00	0	1944034	1849240	382995	369016	1.05	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	220	240	88	96	0.92	/	
	OCDF	54:02	00:00	0	10634765	11662088	2779447	2983151	0.91	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	125	155	50	62	0.81	/	
	13C-OCDF	54:01	00:00	0	5080837	5556059	1342030	1453336	0.91	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	143	210	57	84	0.68 *	/	
	OCDD	53:54	00:00	0	7186210	7976933	1845189	2020363	0.90	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	148	80	59	32	1.84 *	/	
	13C-OCDD	53:53	00:00	0	3122510	3425379	811710	905821	0.91	ABV/ABV	

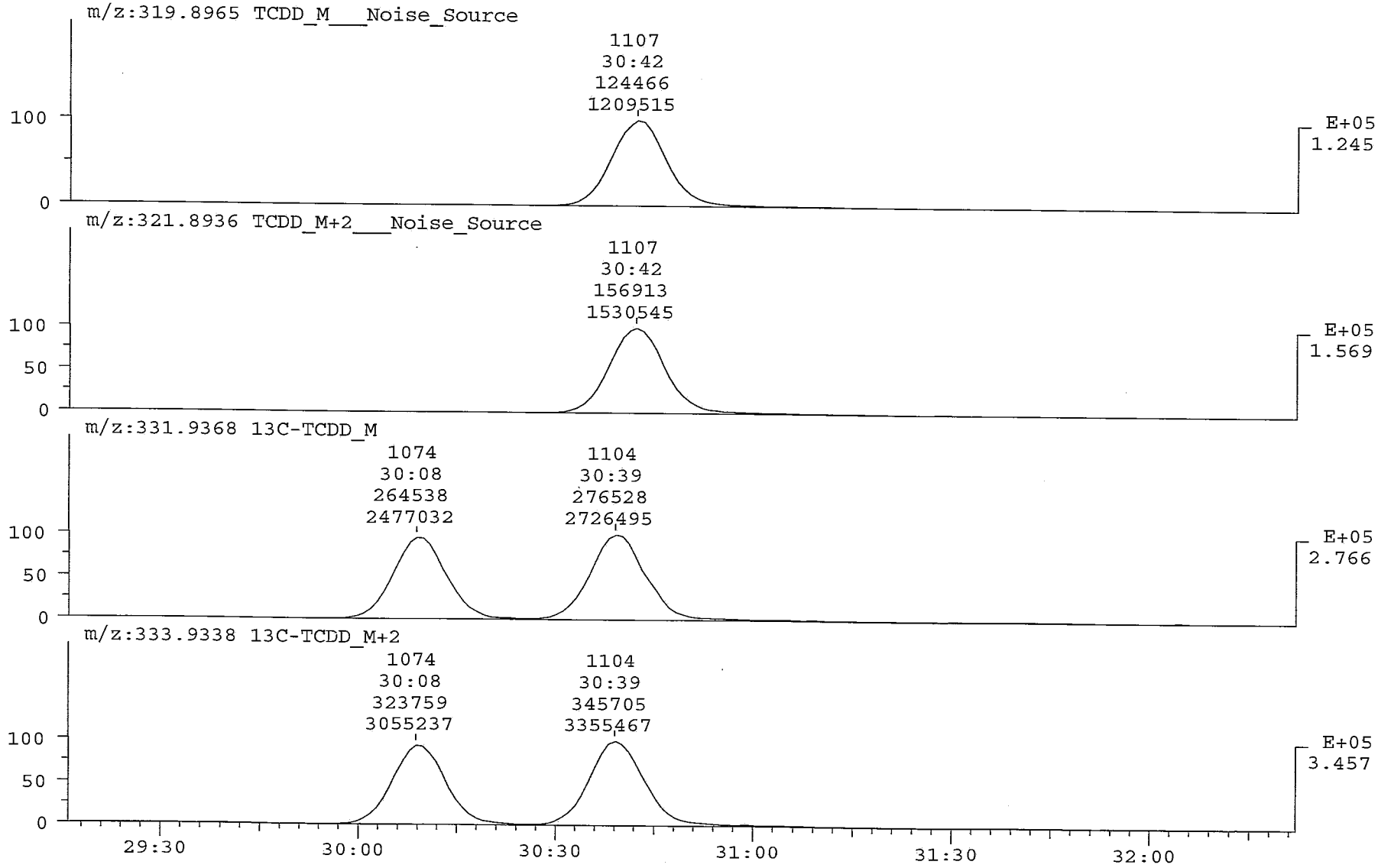
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. Klu 4/9/15
+ Calc.
@CKM 4-9-15

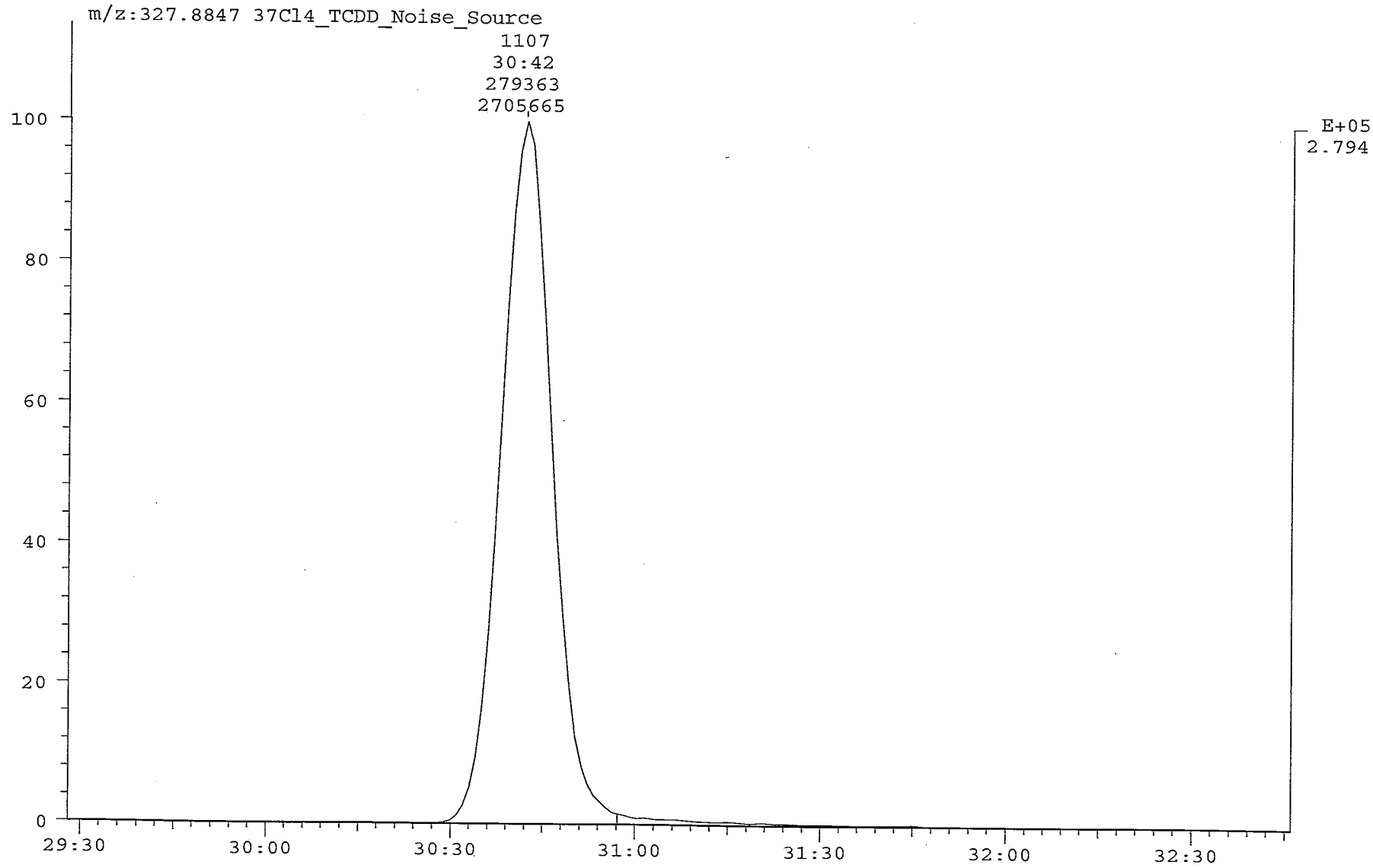
CHRO: d115040914 09-Apr-15 Elapse: 54:10 2465
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 234 > 2641 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



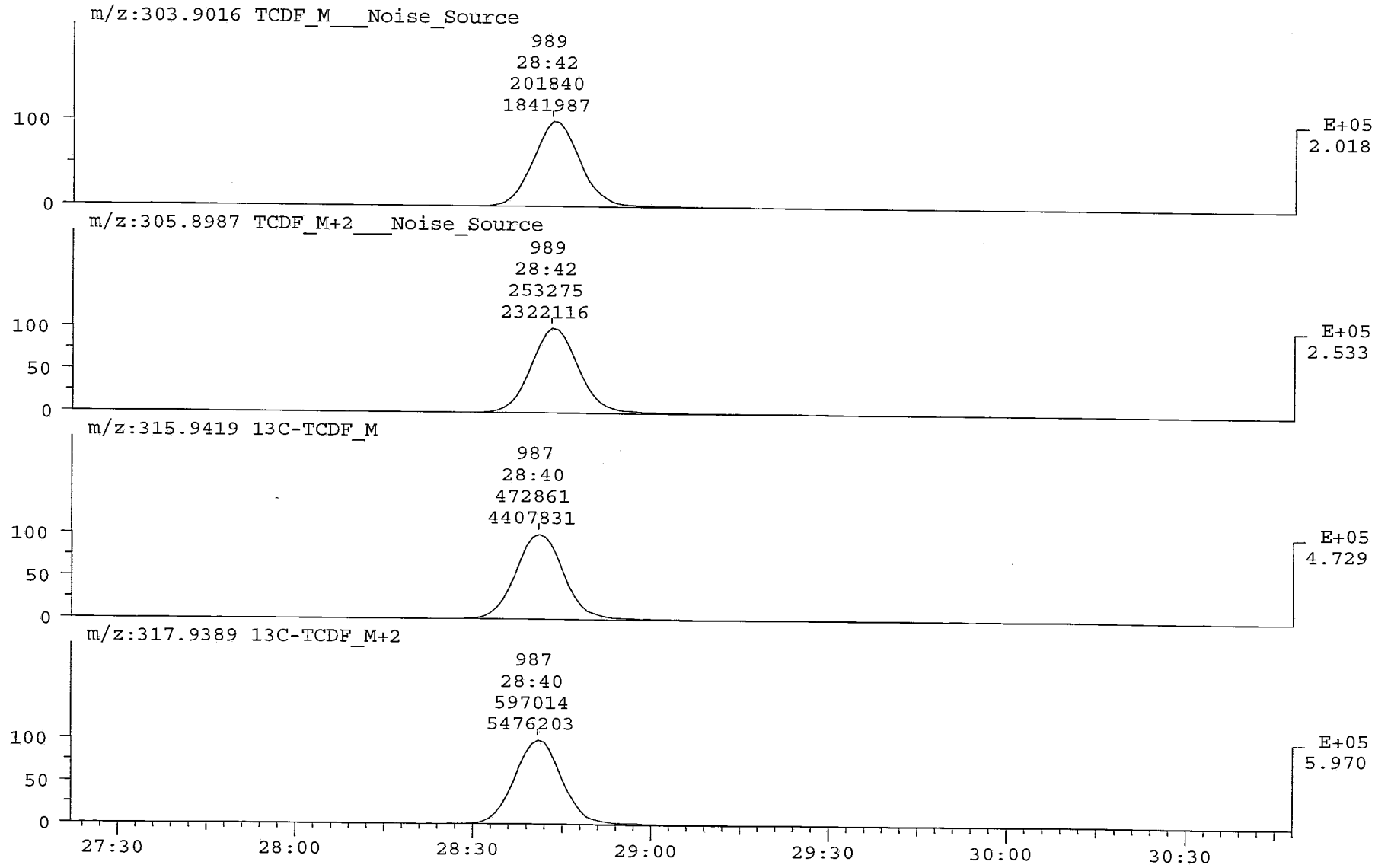
CHRO: d1150409i4 09-Apr-15 Elapse: 30:49 1114
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1022 > 1206 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



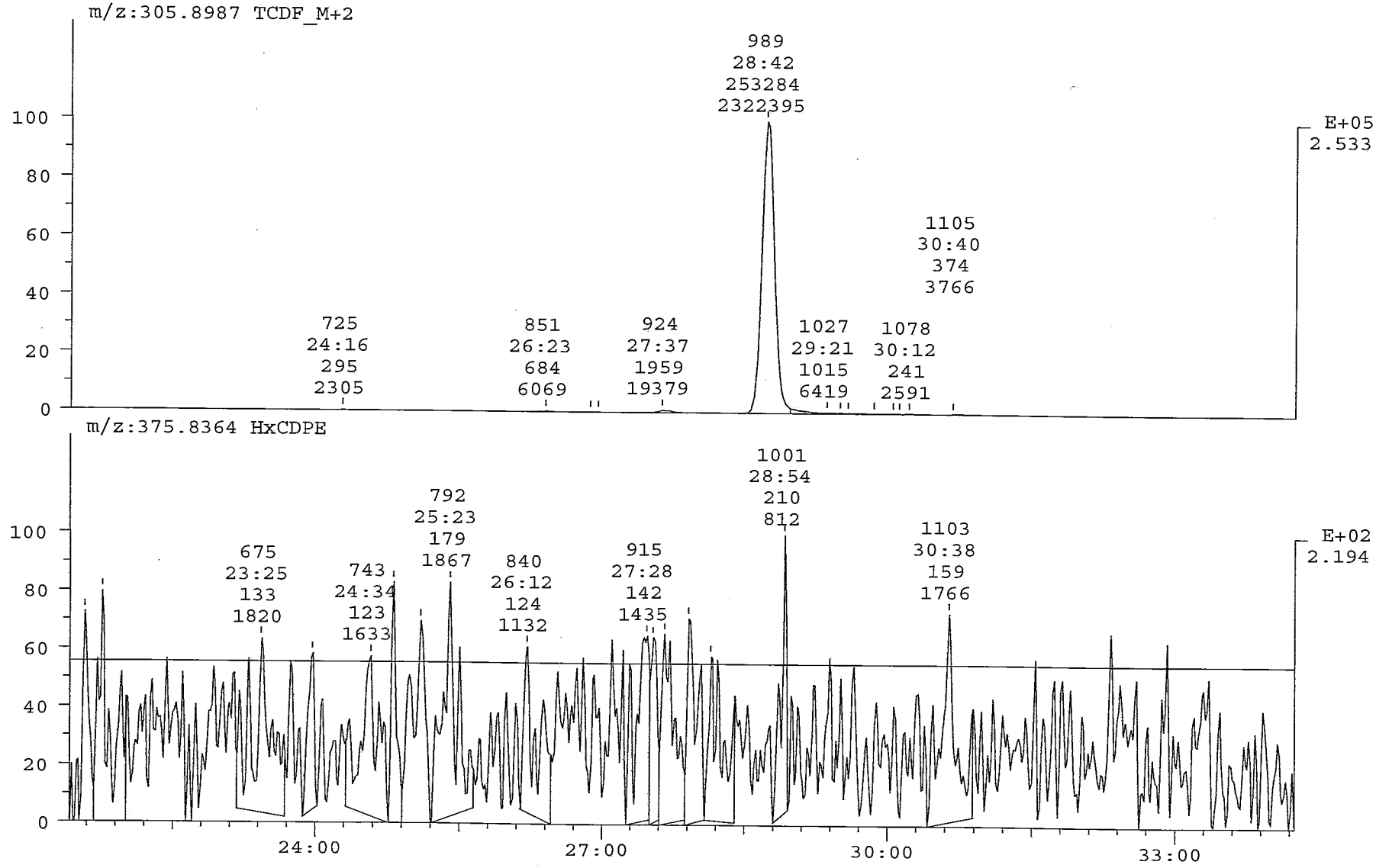
CHRO: d1150409i4 09-Apr-15 Elapse: 31:04 1129
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1034 > 1230 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



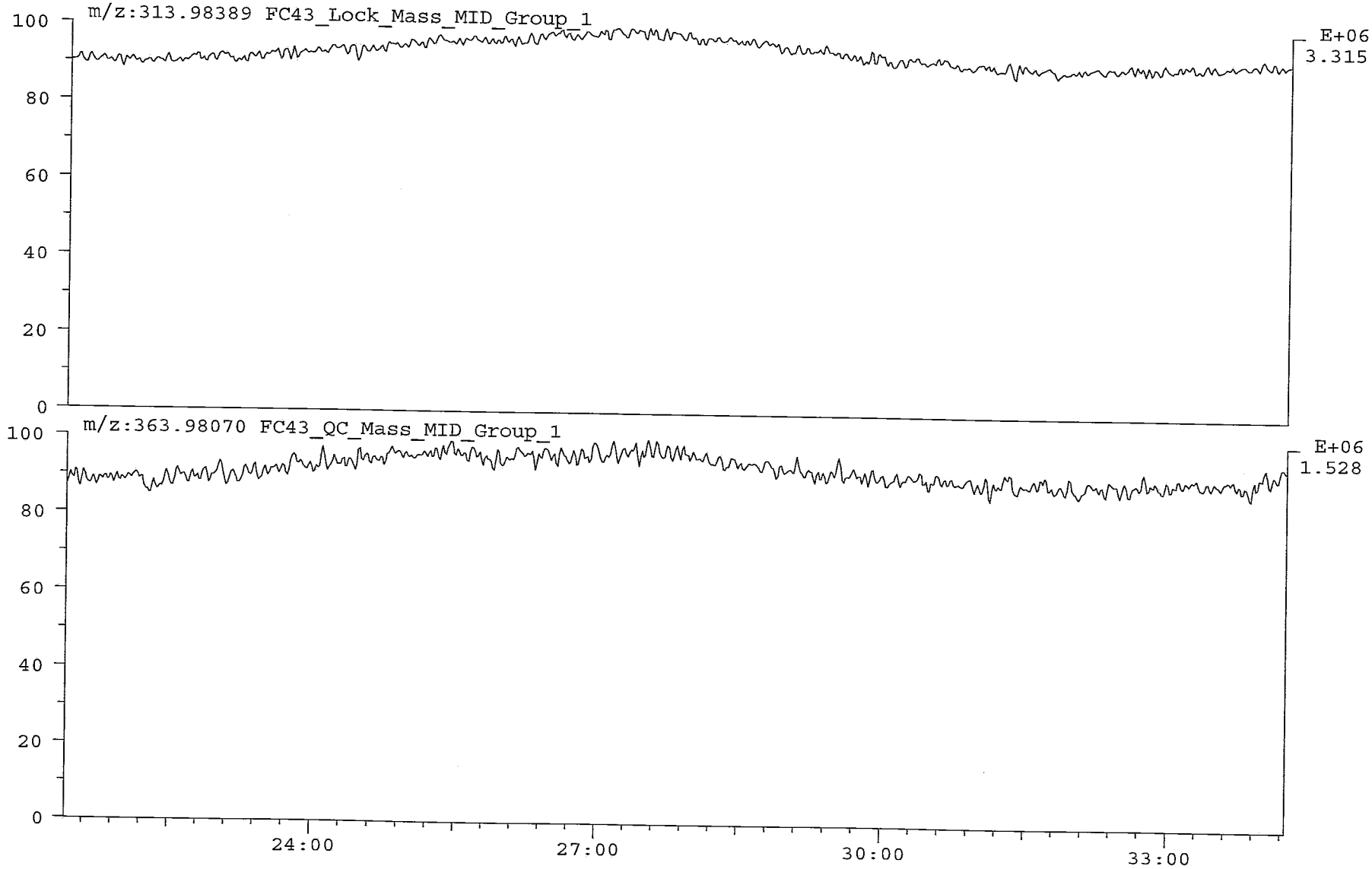
CHRO: d1150409i4 09-Apr-15 Elapse: 29:02 1008
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 909 > 1113 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



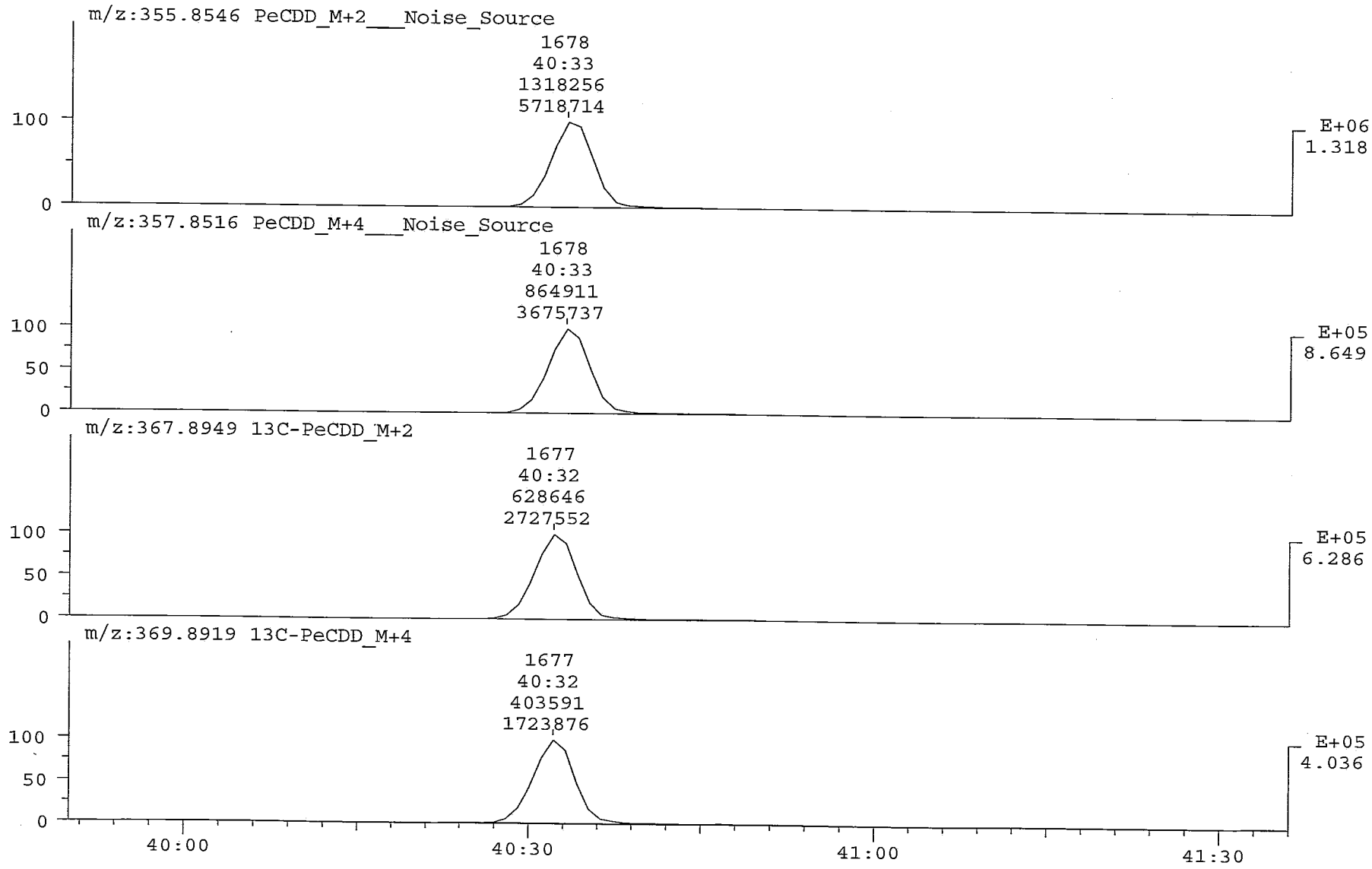
```
CHRO:  d1150409i4                                  09-Apr-15  Elapse:  29:02      1008
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                           Start :  05:05:34   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                    Study :  1613/8290 ICAL
Oper:  LKM                                                    Inlet :  LC
Peak:  100.00  ppm     Label wndw:   556 > 1318               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



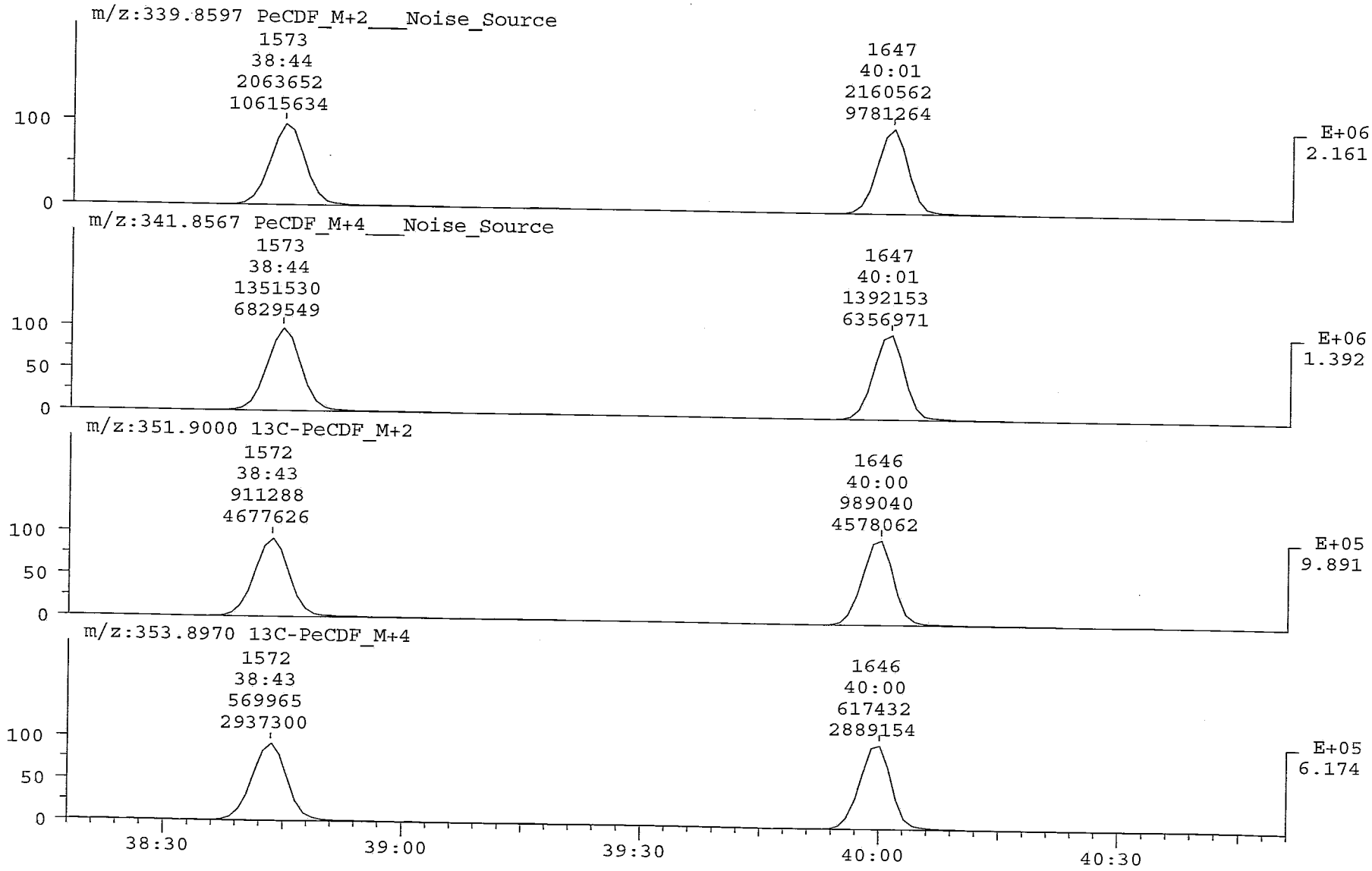
CHRO: d115040 9i4 09-Apr-15 Elapse: 29:02 1008
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 556 > 1318 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



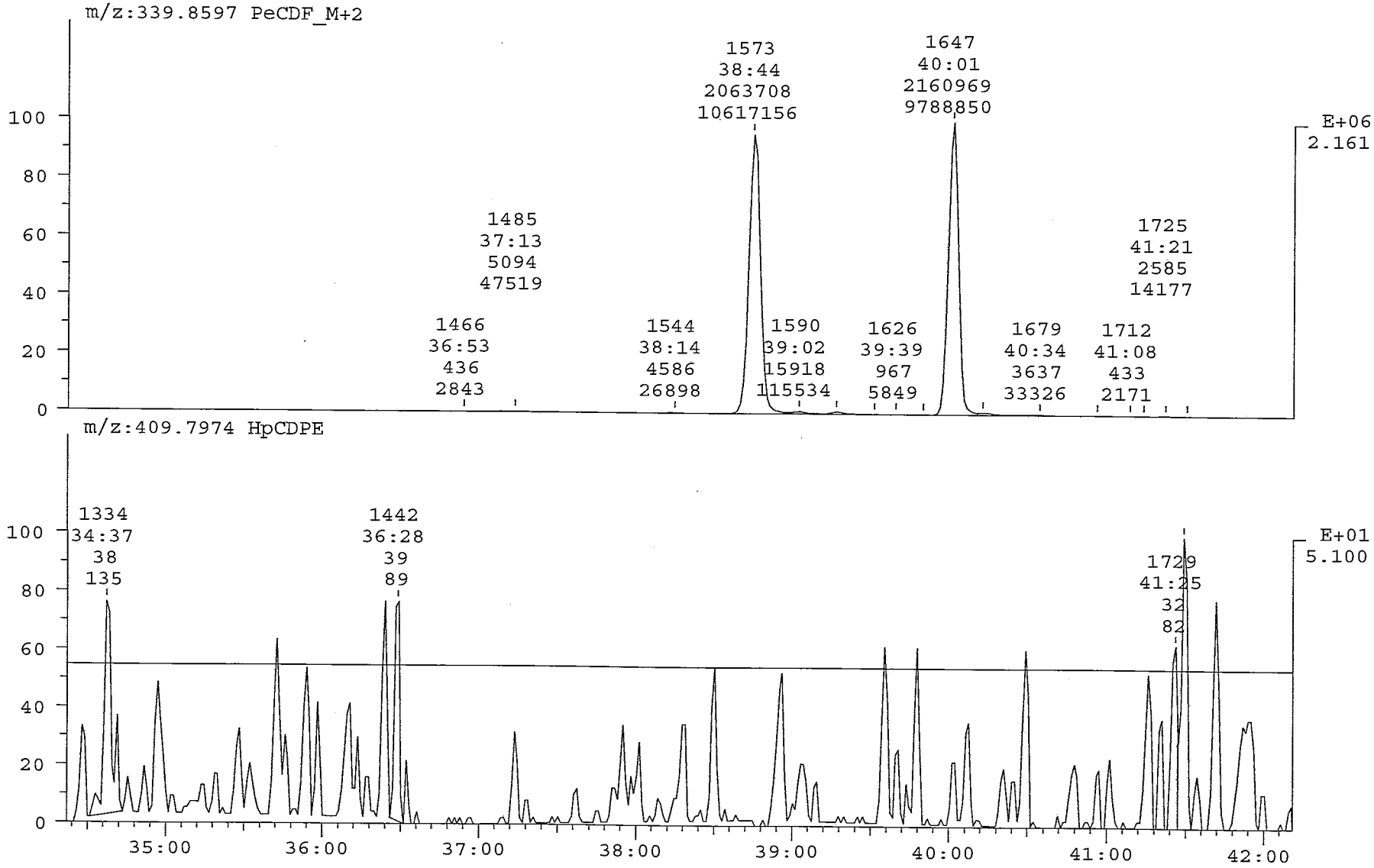
CHRO: d1150409i4 09-Apr-15 Elapse: 40:40 1685
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1636 > 1739 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



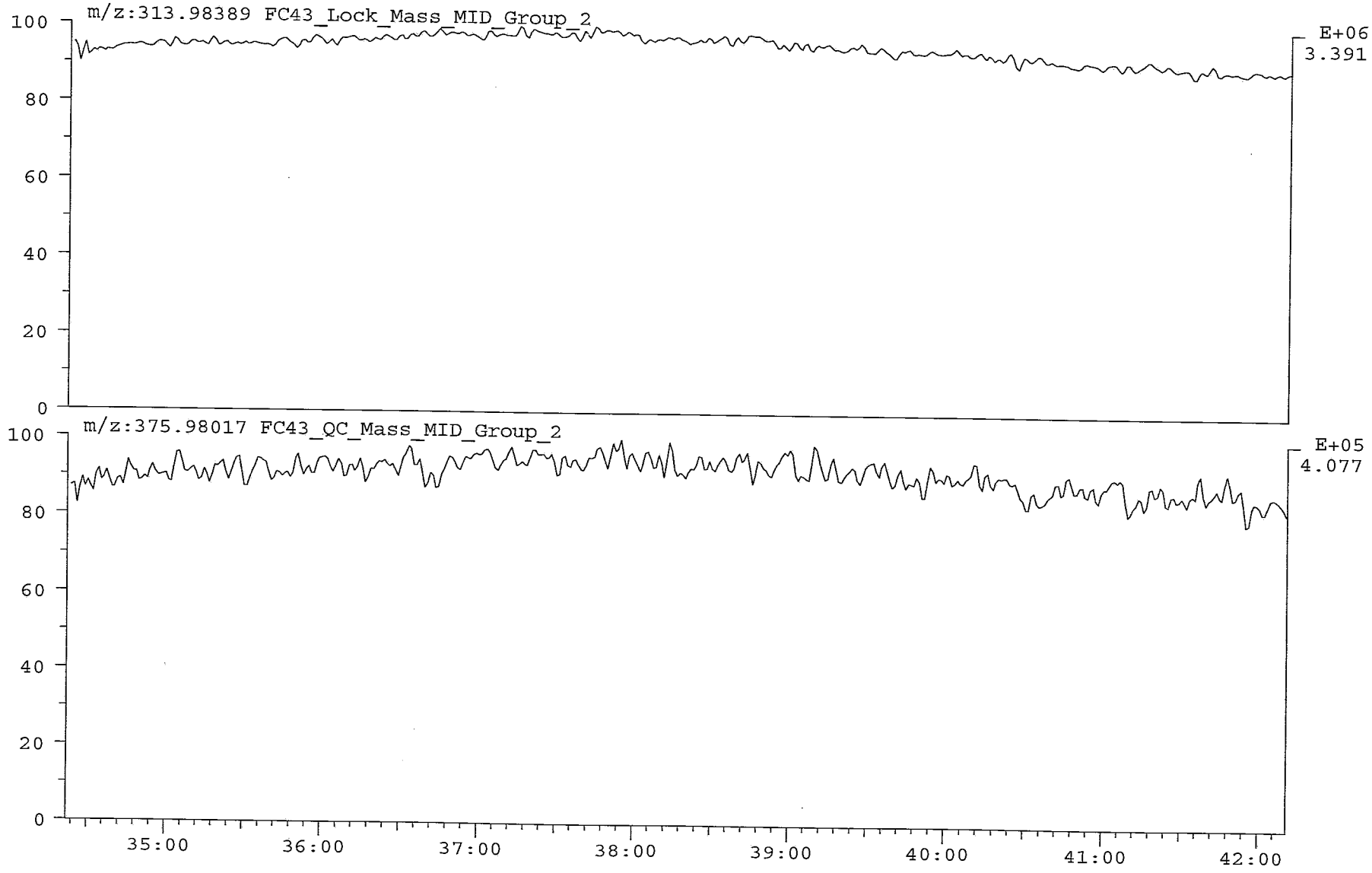
CHRO: d115040 9i4 09-Apr-15 Elapse: 39:34 1621
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1547 > 1695 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



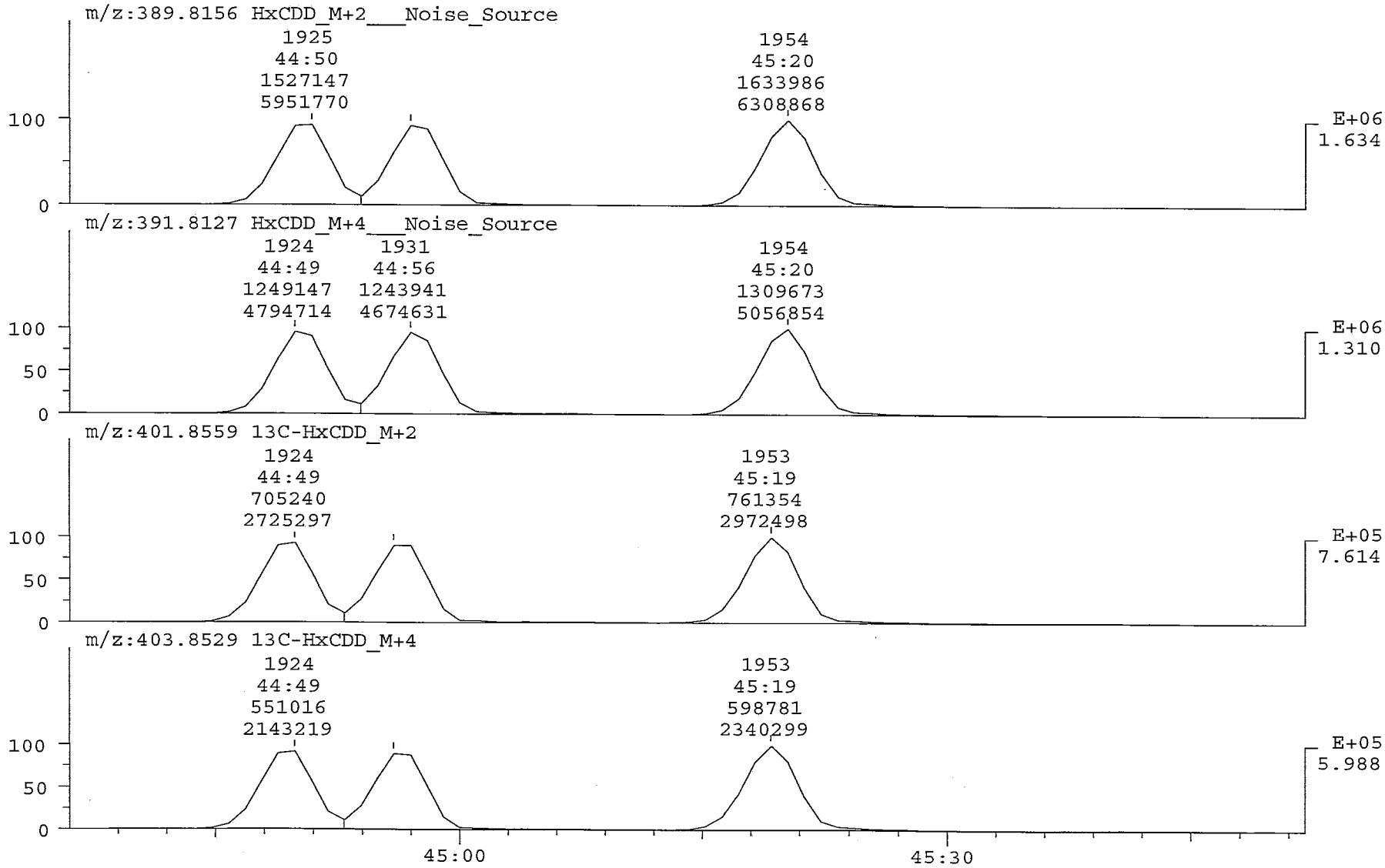
CHRO: d1150409i4 09-Apr-15 Elapse: 39:34 1621
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1321 > 1773 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



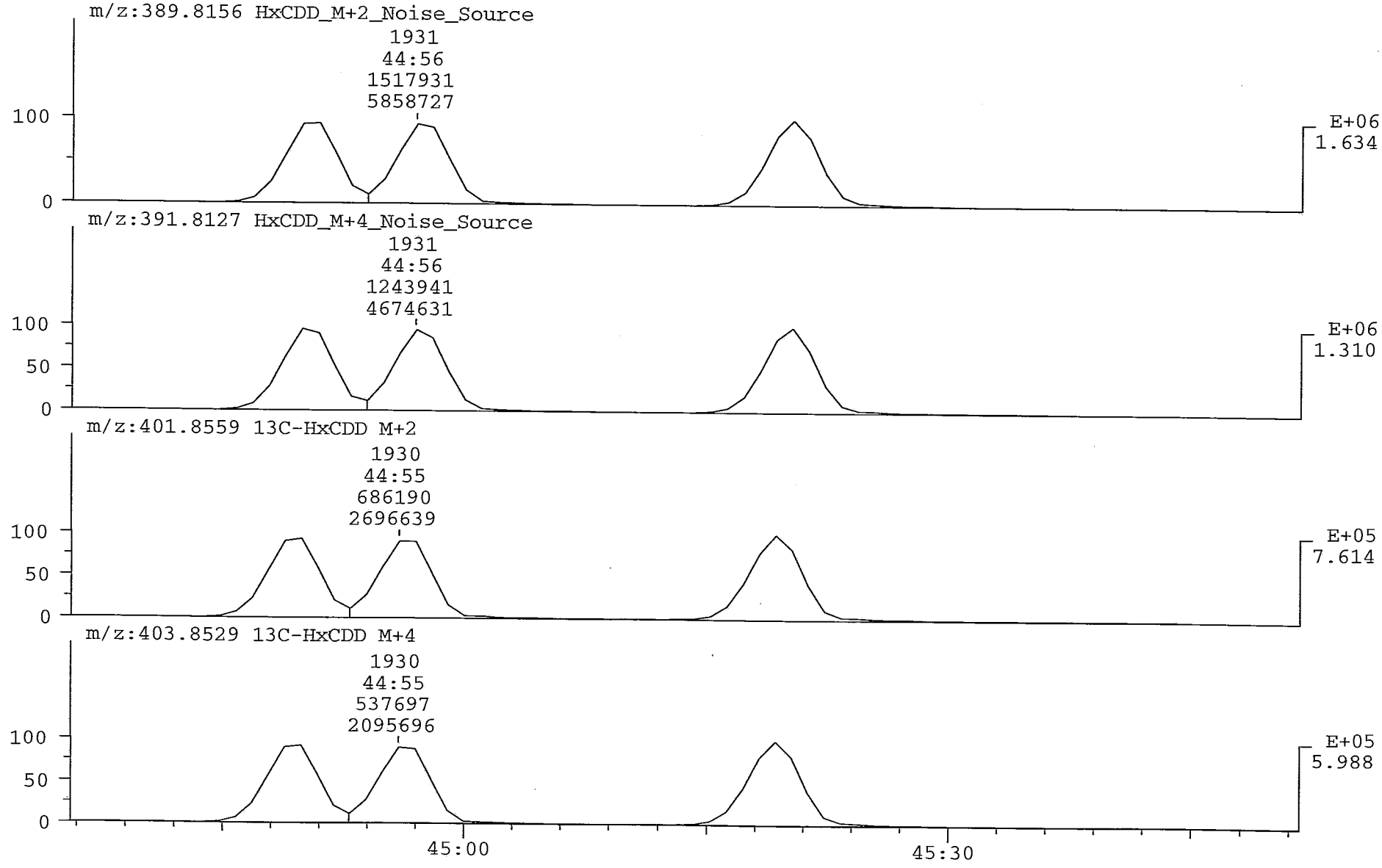
CHRO: d1150409i4 09-Apr-15 Elapse: 39:34 1621
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1321 > 1773 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



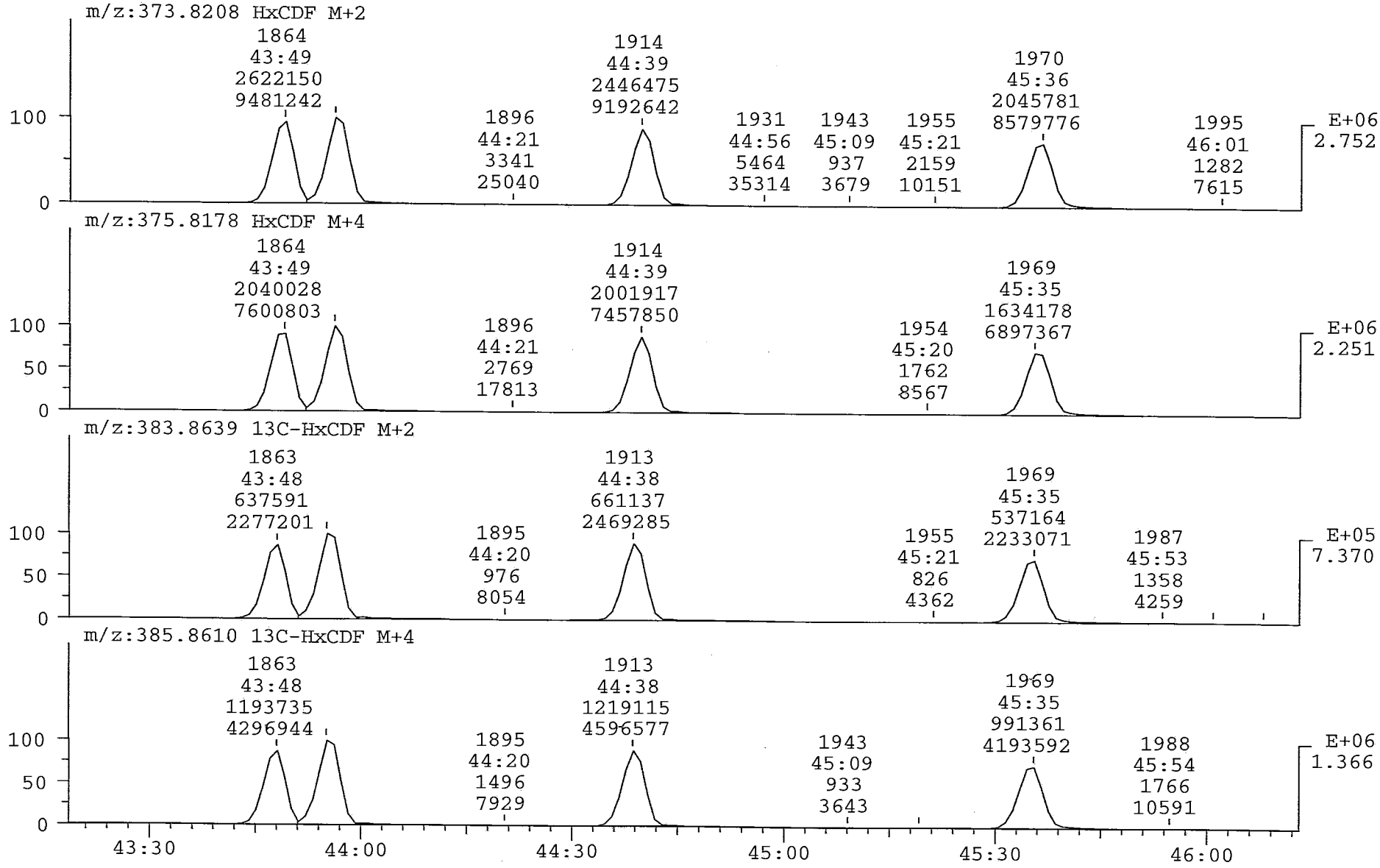
```
CHRO:  d1150409i4                                09-Apr-15  Elapse:  45:14      1948
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                         Start :  05:05:34   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  1613/8290 ICAL
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1910 > 1985            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



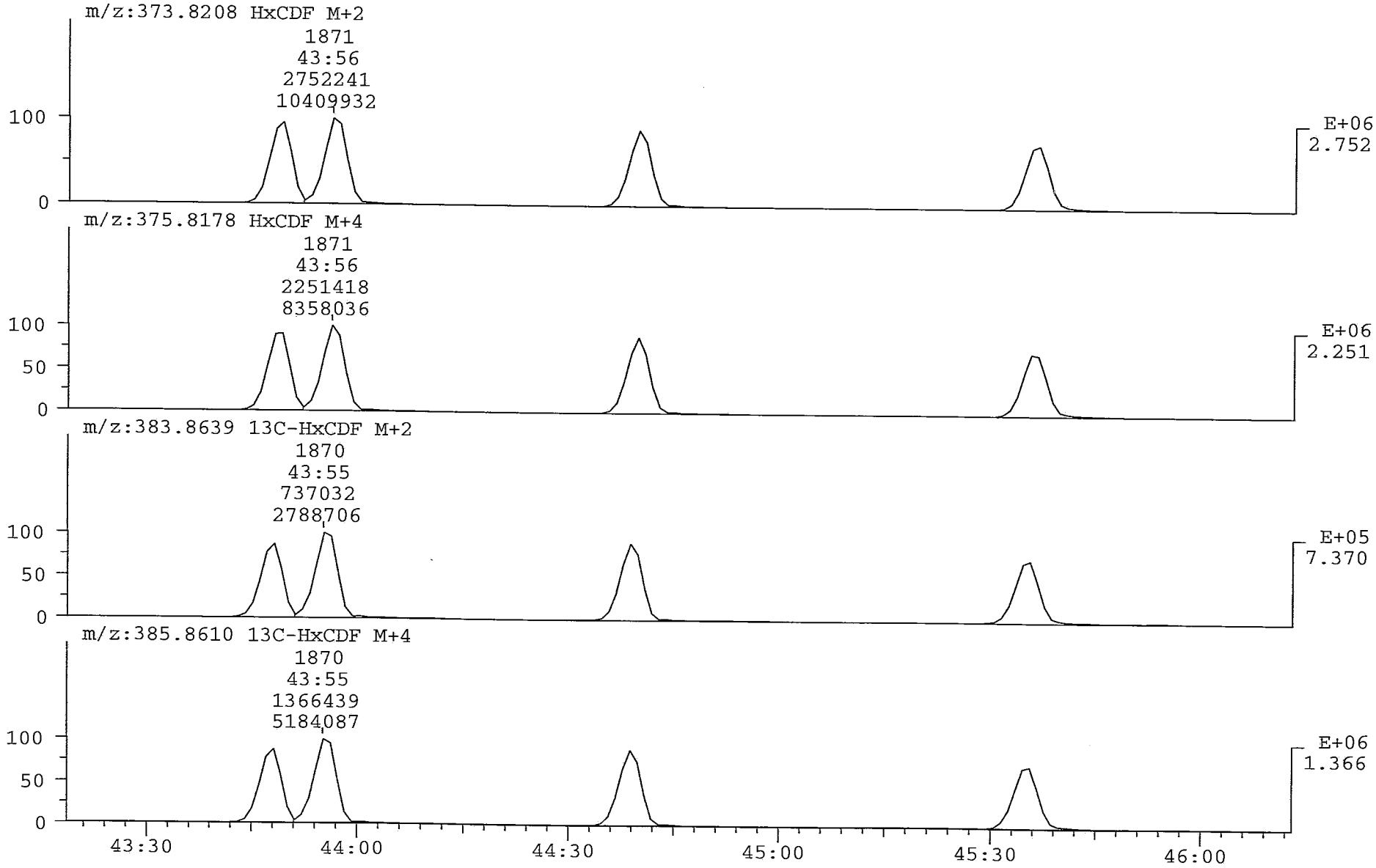
CHRO: d1150409i4 09-Apr-15 Elapse: 44:56 1931
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1928 > 1934 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150409i4 09-Apr-15 Elapse: 44:56 1931
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1834 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



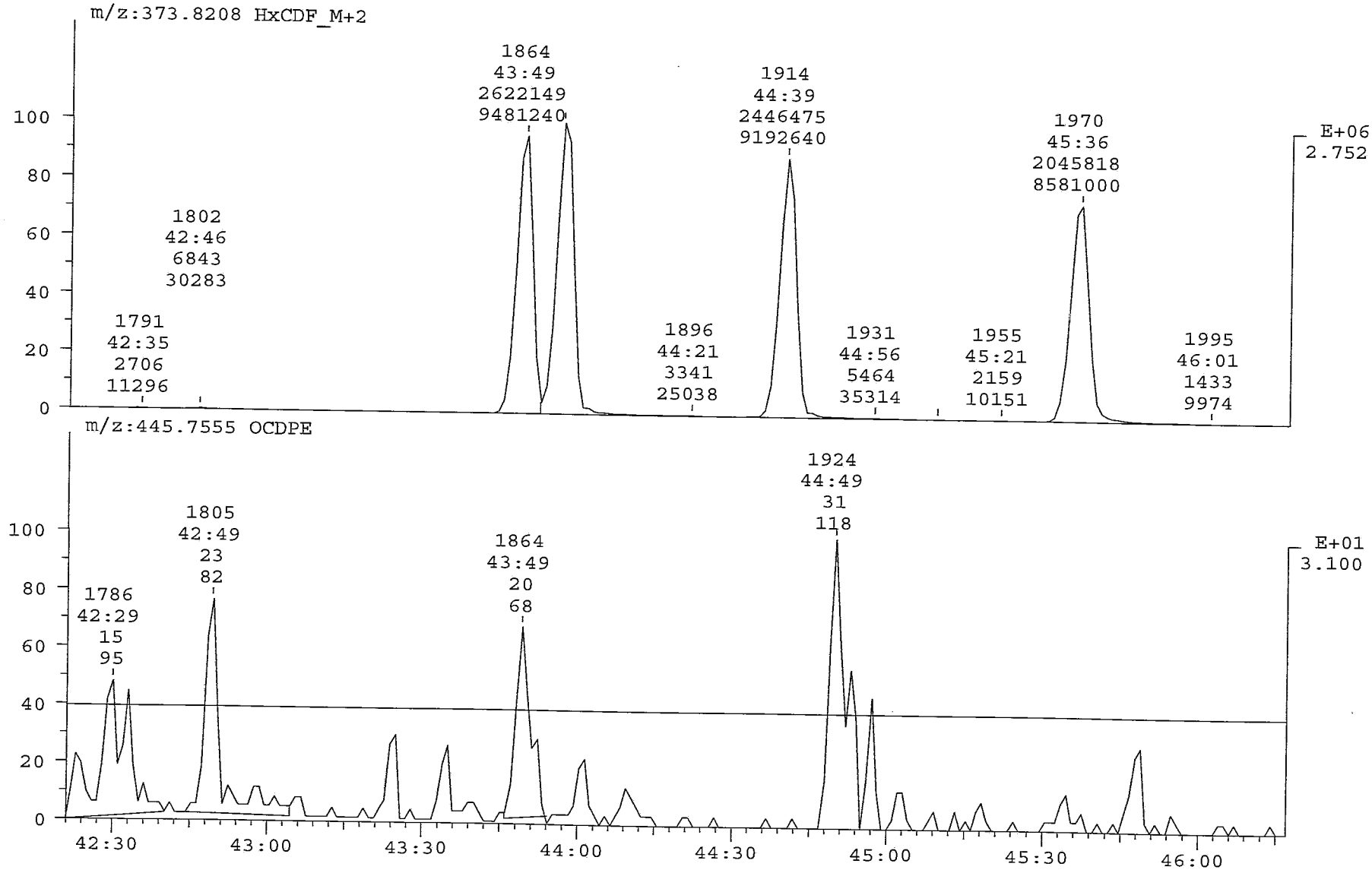
CHRO: d1150409i4 09-Apr-15 Elapse: 43:57 1872
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1869 > 1875 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



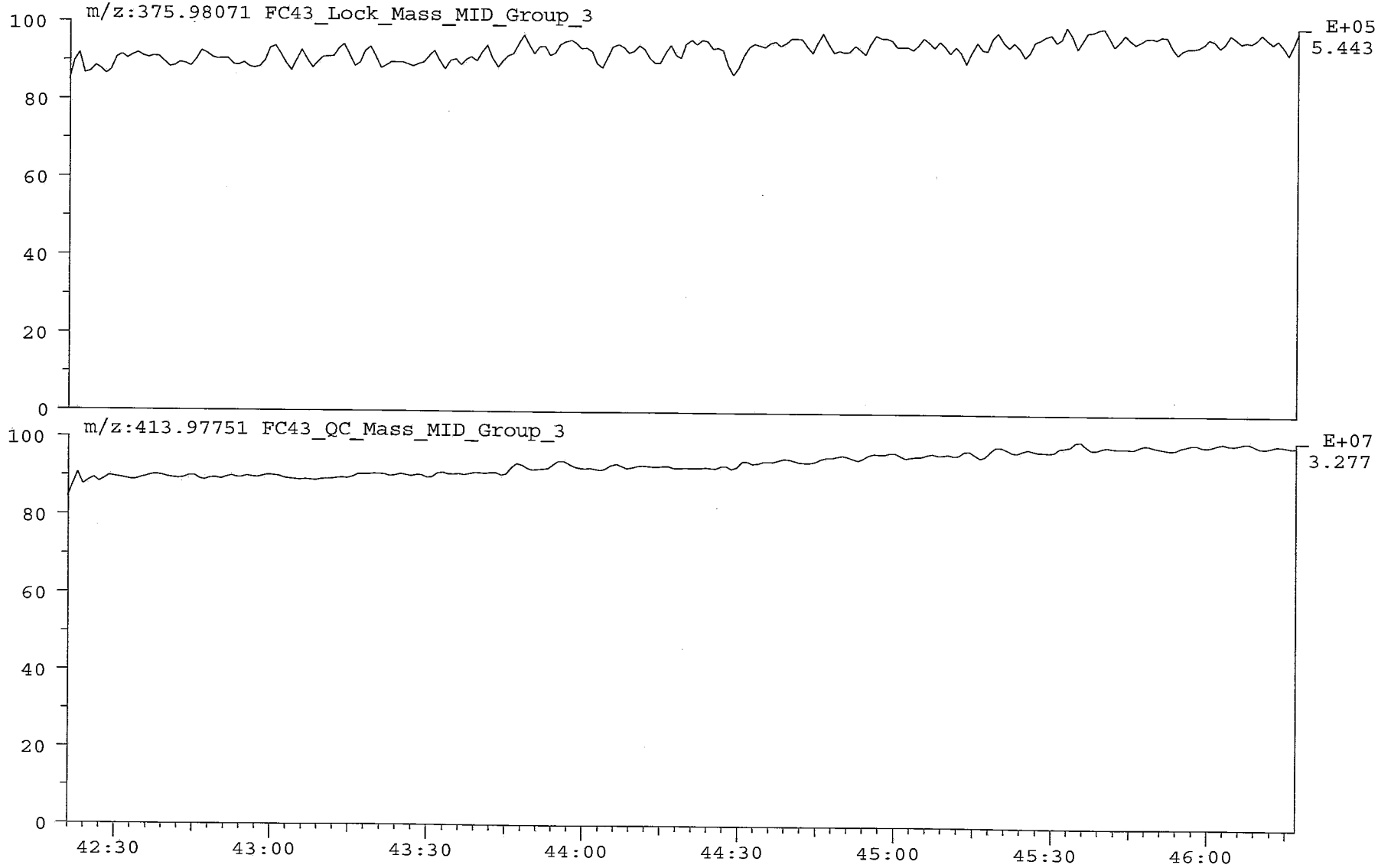
CHRO: d115040914
Samp: WO=4104:74cs4 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm Label wndw: 1777 > 2010
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

09-Apr-15

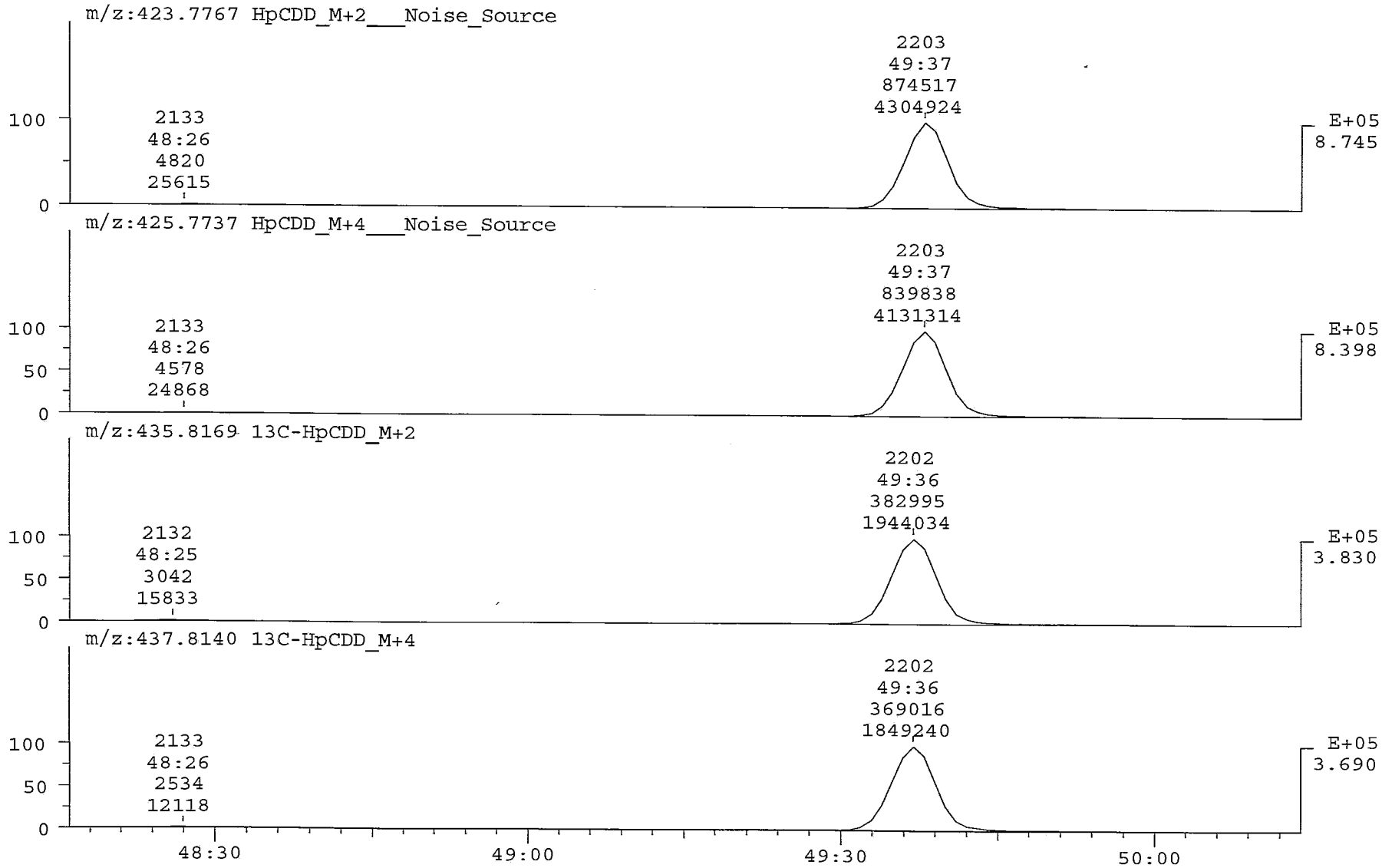
Elapse: 44:03 1878
Start : 05:05:34 2641
Study : 1613/8290 ICAL
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



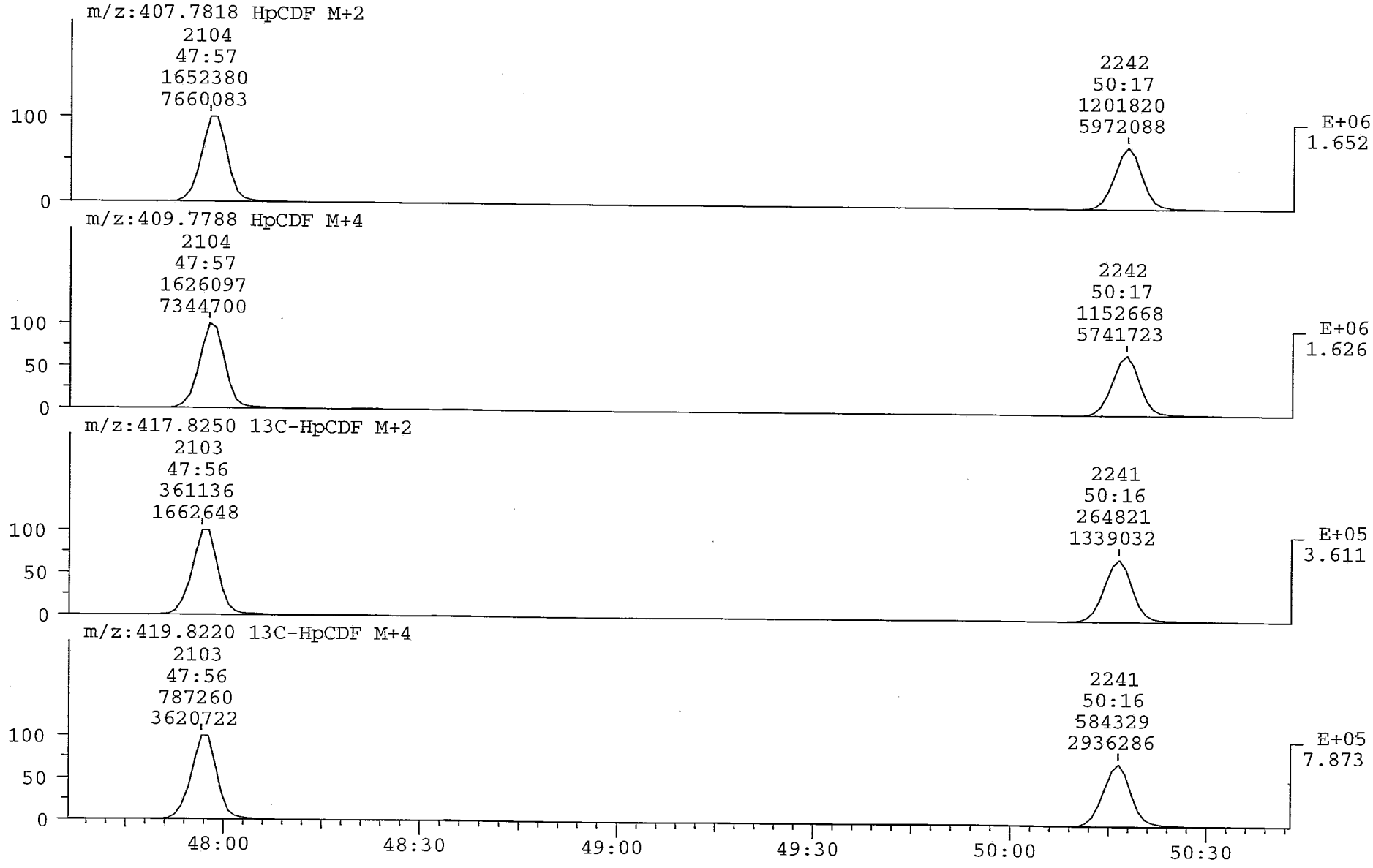
CHRO: d1150409i4 09-Apr-15 Elapse: 44:03 1878
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1777 > 2010 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



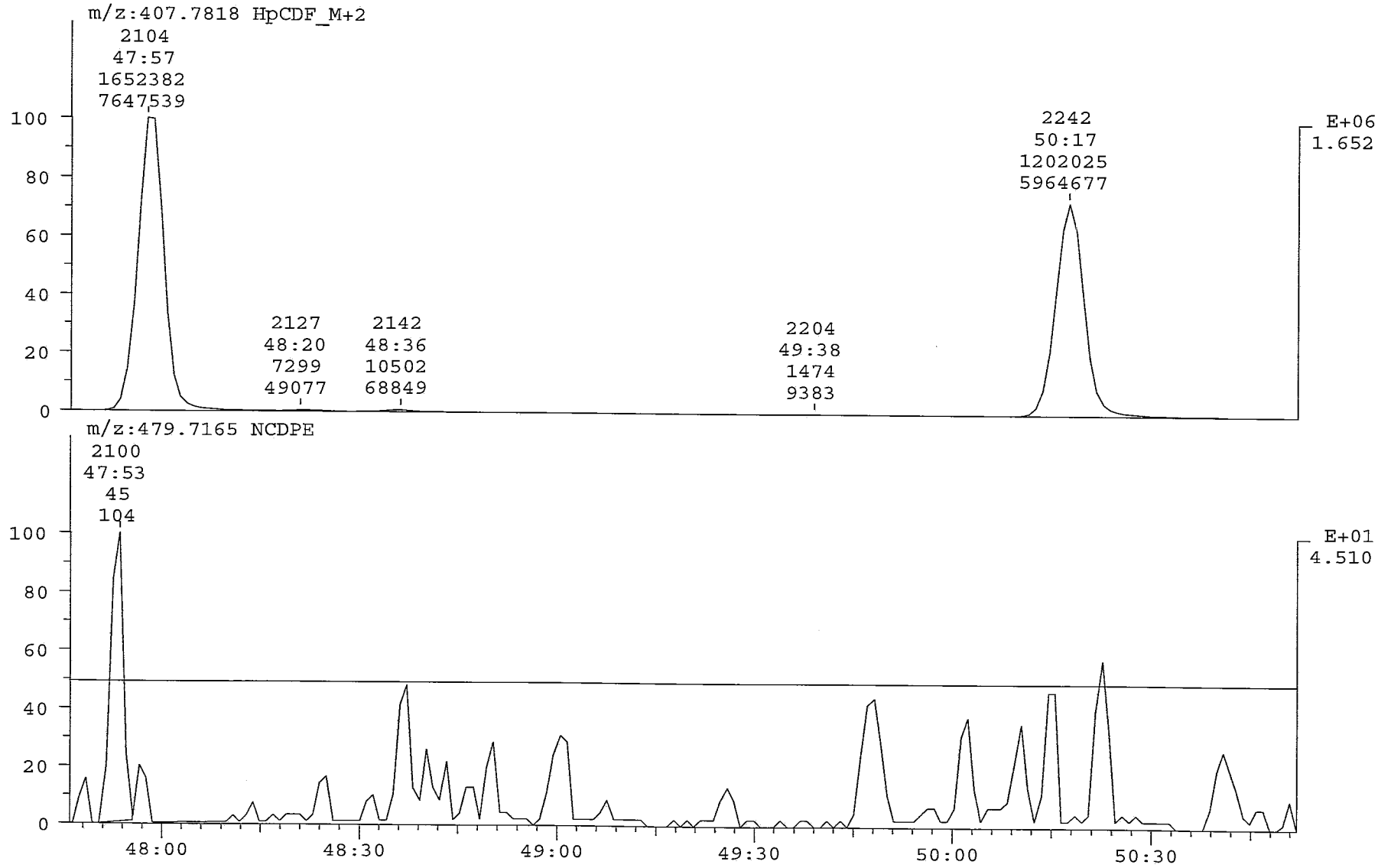
CHRO: d1150409i4 09-Apr-15 Elapse: 44:03 1878
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2122 > 2239 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



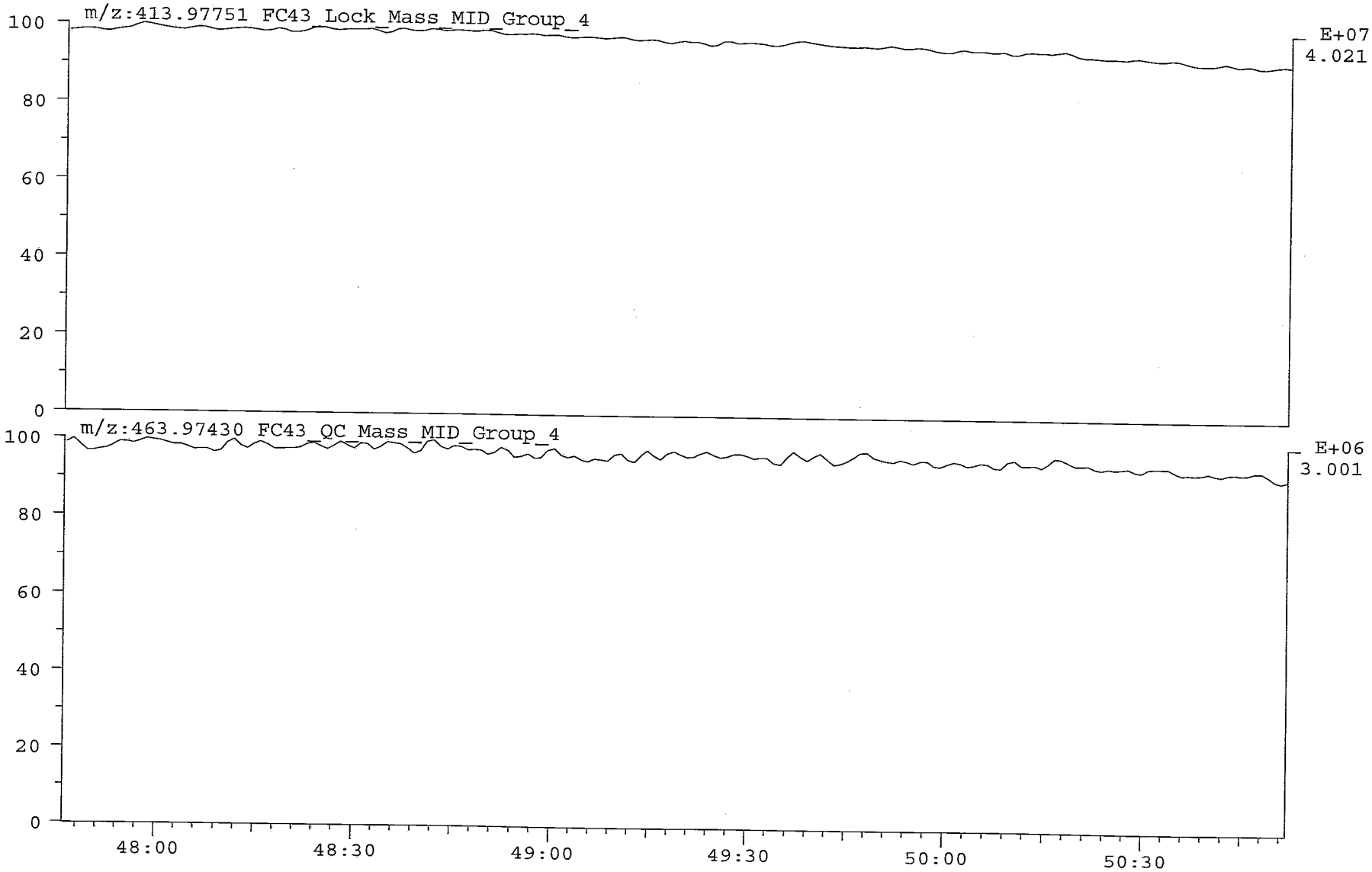
CHRO: d1150409i4 09-Apr-15 Elapse: 43:57 1872
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2083 > 2267 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



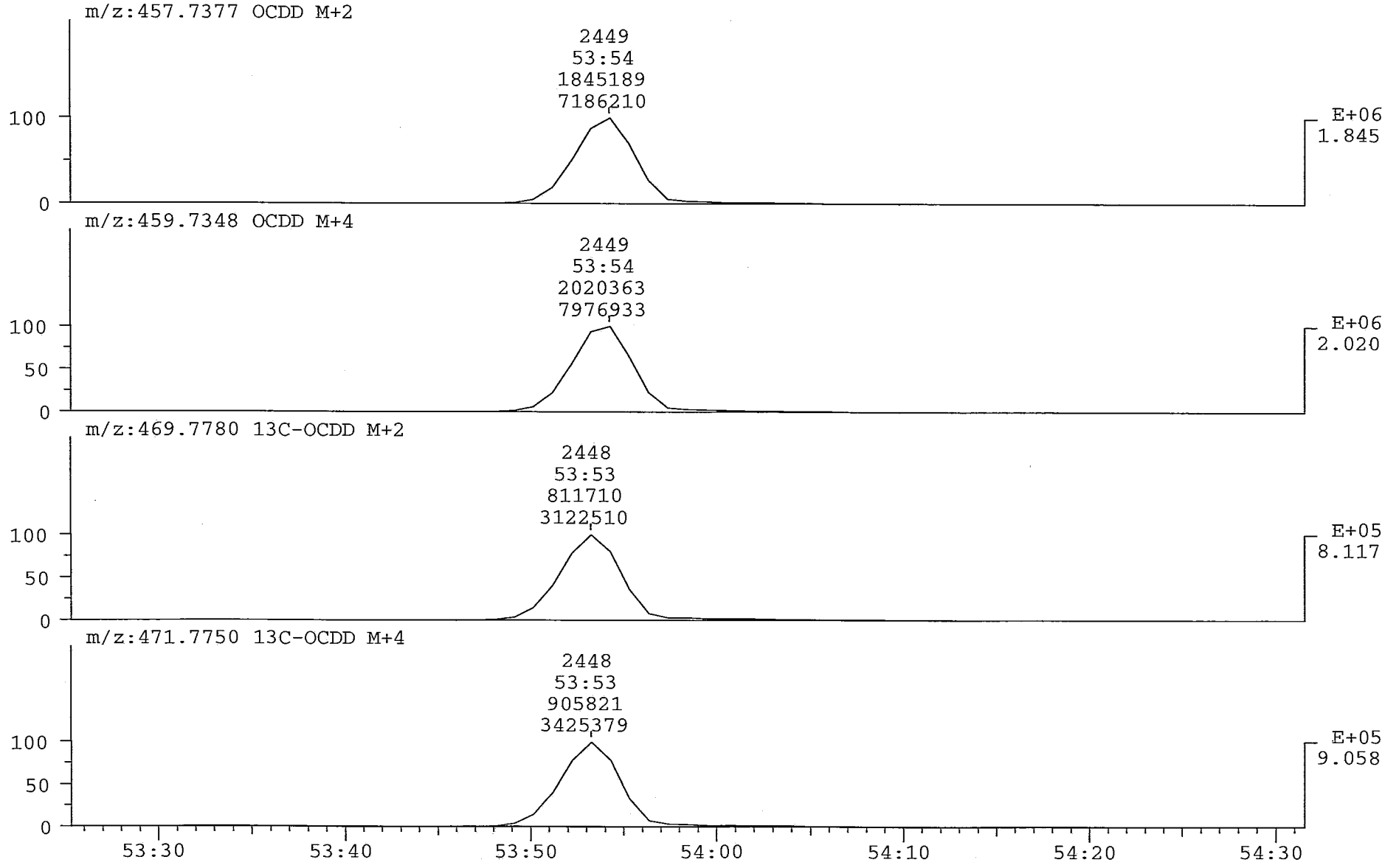
CHRO: d1150409i4 09-Apr-15 Elapse: 49:18 2184
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2093 > 2276 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



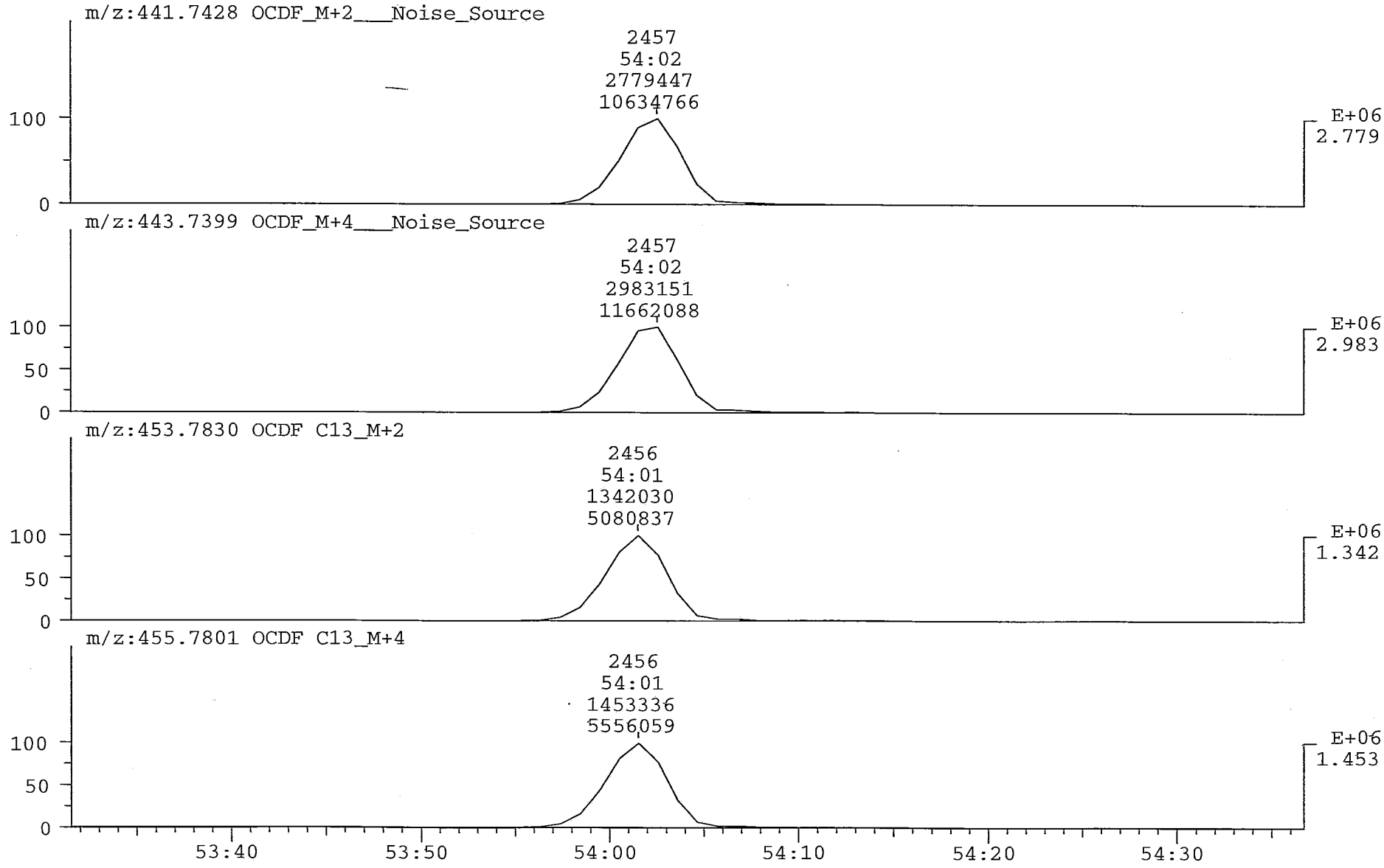
CHRO: d1150409i4 09-Apr-15 Elapse: 49:18 2184
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2093 > 2276 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



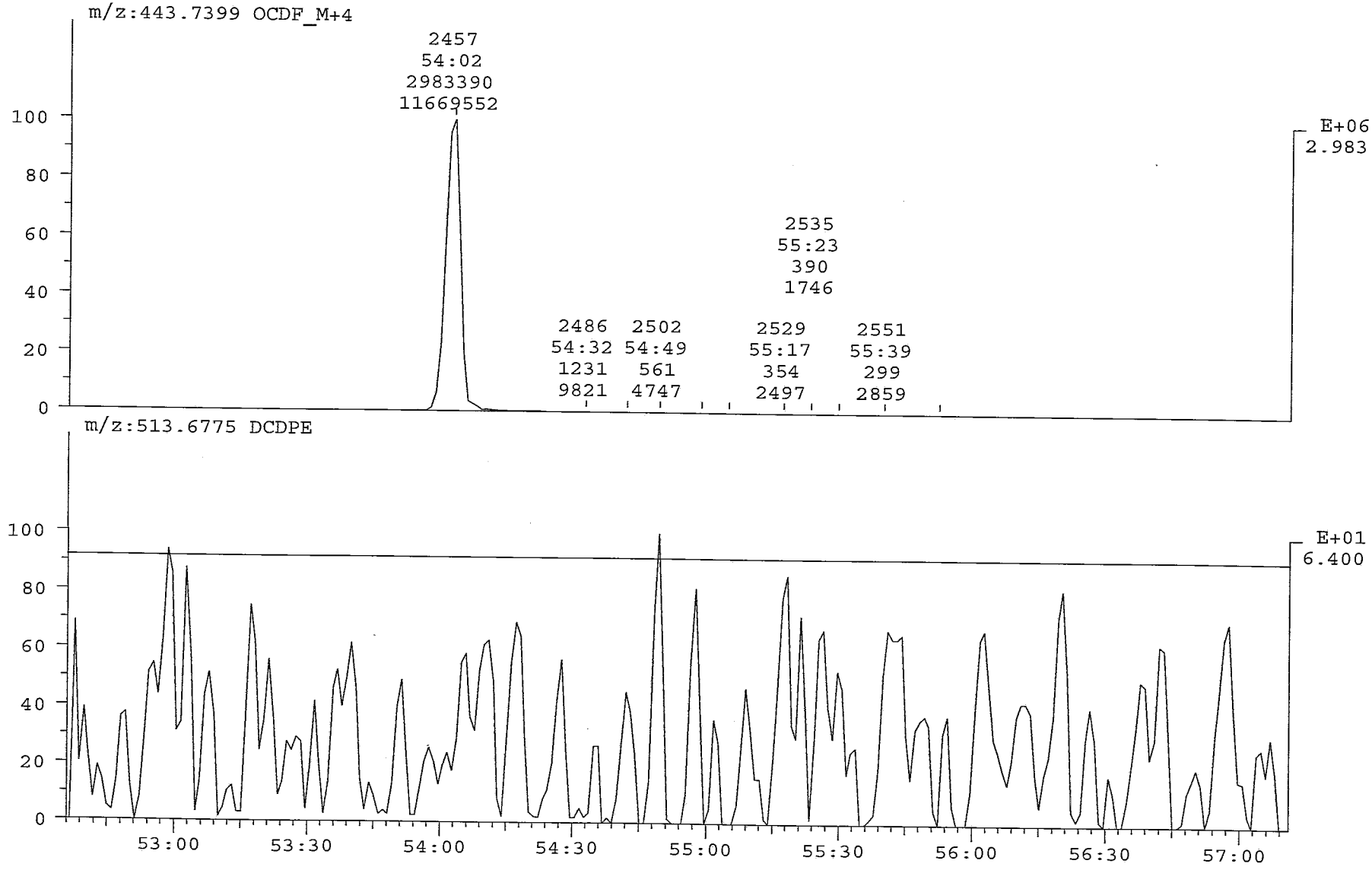
```
CHRO:  d1150409i4                          09-Apr-15   Elapse:  43:57      1872
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                    Start :  05:05:34   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2421 > 2485       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



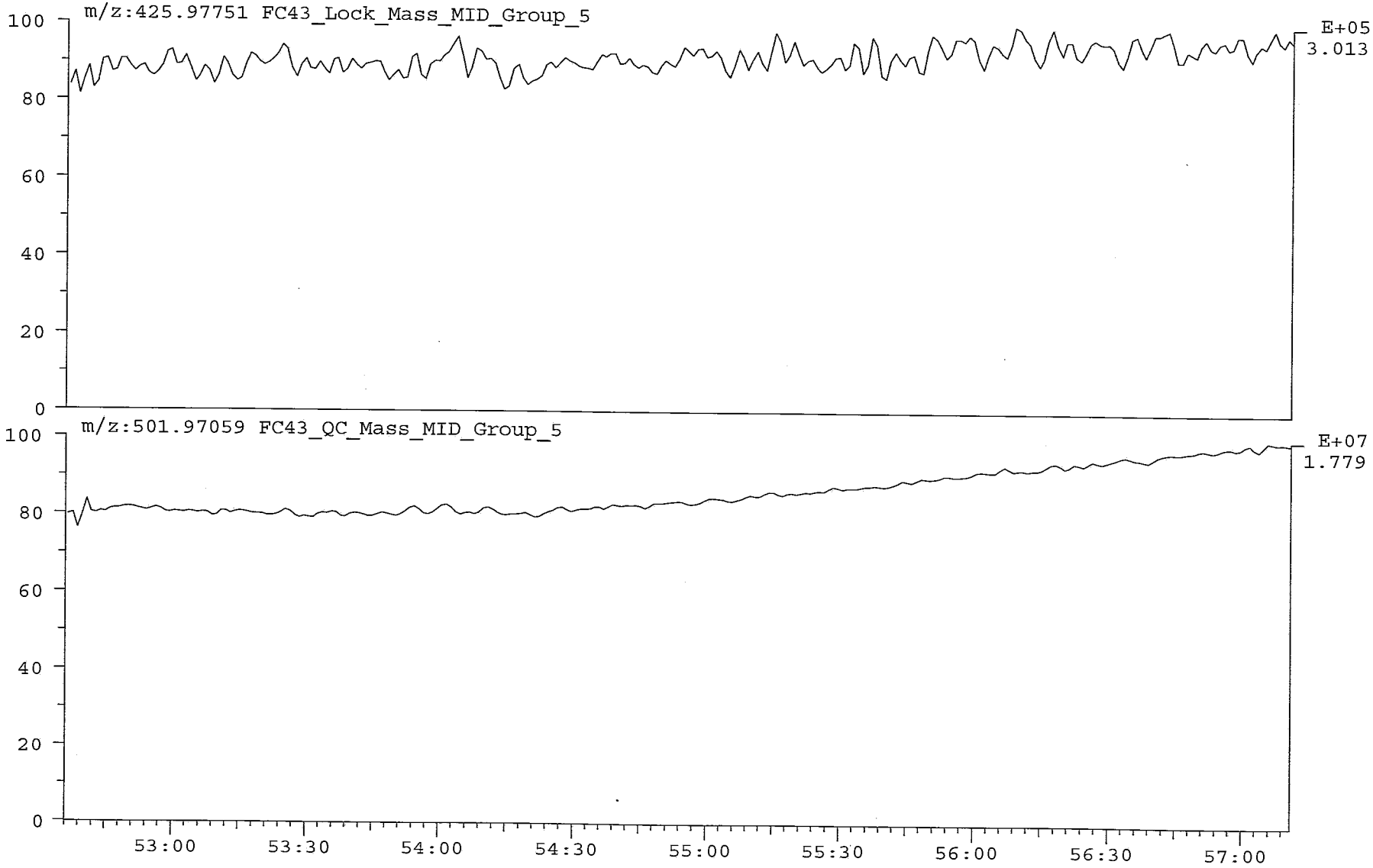
```
CHRO:  d1150409i4                          09-Apr-15   Elapse:  43:57      1872
Samp:  WO=4104:74cs4 Meth=F8o Dil=1                    Start :  05:05:34   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2427 > 2490       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1150409i4 09-Apr-15 Elapse: 54:09 2464
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2639 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150409i4 09-Apr-15 Elapse: 54:09 2464
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2639 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Apr 09 05:10:12 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 05:10:12

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409011222

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:16 min	34:16 min	1.00 sec
# 2	34:16 min	7:55 min	42:12 min	1.00 sec
# 3	42:12 min	4:51 min	47:03 min	1.00 sec
# 4	47:03 min	5:26 min	52:30 min	1.00 sec
# 5	52:30 min	4:42 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.283333 minutes
MID Window end time was 34.280000 minutes
MID Window terminated after 42.200000 minutes
MID Window end time was 42.200000 minutes
MID Window terminated after 47.066667 minutes
MID Window end time was 47.060000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.9834
 BQUAD            1.1000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE      16.0000   ECORR           1.0001   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9995   EDACZ         4144.0190
 ELEN           -45.0000   EMULT        1652.0000   ENS            239.0000
 ENSBR            1.1000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           170.0000   EXSBR           -1.1000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            5.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0456	FVSRC	0.0474
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	309.9834	LKM	425.9770	MASS	309.9834
MDAC	3563370.5773	MRANGE	1252.5112	NSAM	200.0000
NSCAN	2662.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.9001	RELEN	0.0000
RES	8996.3877	RPUSHER	-10.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1250	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.9834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:          3.5e-005 mbar
Analyzer Penning:      6.2e-008 mbar
Pirani Analyse:        3.9e-003 mbar
Pirani Source:         4.7e-002 mbar
Pirani Inlet System: 4.6e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10409.
MID Time Window 2: Resolution is 10267.
MID Time Window 3: Resolution is 9657.
MID Time Window 4: Resolution is 9597.
MID Time Window 5: Resolution is 8996.

Amplifier Offset: 88.


*** File closed Thu Apr 09 06:07:26 2015
  ***
```

QUAN: d115040914.q0 Entries: 92

Data file(s) used
File: d115040914 09-Apr-15
Samp: WO=4104:74cs4 Meth=F8o Dil=1 Start : 05:05:34 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	30:42	1209515.	124466.	30:26	30:57	45.	1	1.0	AVV
321.8775	30:42	1530545.	156913.	30:26	30:57	48.	1	1.0	AVV
319.8805	30:42	1209515.	124466.	30:26	30:57	45.	2	5.0	AVV
321.8775	30:42	1530545.	156913.	30:26	30:57	48.	2	5.0	AVV
331.9202	30:08	2477032.	264538.	29:53	30:23	154.	2	5.0	AVV
331.9202	30:39	2726495.	276528.	30:25	30:54	154.	2	5.0	AVV
333.9171	30:08	3055237.	323759.	29:53	30:23	117.	2	5.0	ABV
333.9171	30:39	3355467.	345705.	30:25	30:54	117.	2	5.0	AVV
327.8683	30:42	2705665.	279363.	30:26	30:57	74.	1	1.0	AVV
327.8683	30:42	2705665.	279363.	30:26	30:57	74.	2	5.0	AVV
303.8864	28:42	1841987.	201840.	28:27	28:58	60.	1	1.0	ABV
305.8834	28:42	2322116.	253275.	28:27	28:58	80.	1	1.0	AVV
303.8864	28:42	1841987.	201840.	28:27	28:58	60.	2	5.0	ABV
305.8834	28:42	2322116.	253275.	28:27	28:58	80.	2	5.0	AVV
315.9261	28:40	4407831.	472861.	28:25	28:56	96.	2	5.0	AVV
317.9230	28:40	5476203.	597014.	28:25	28:56	92.	2	5.0	ABV
355.8368	40:33	5718714.	1318256.	40:24	40:48	74.	1	1.0	ABV
357.8337	40:33	3675737.	864911.	40:23	40:48	52.	1	1.0	ABV
355.8368	40:33	5718714.	1318256.	40:24	40:48	74.	2	5.0	ABV
357.8337	40:33	3675737.	864911.	40:23	40:48	52.	2	5.0	ABV
367.8765	40:32	2727552.	628646.	40:23	40:47	55.	2	5.0	ABV
369.8734	40:32	1723876.	403591.	40:23	40:44	32.	2	5.0	ABV
339.8427	38:44	10615634.	2063652.	38:32	38:58	122.	1	1.0	ABV
341.8396	38:44	6829549.	1351530.	38:32	38:58	150.	1	1.0	ABV
339.8427	38:44	10615634.	2063652.	38:32	38:58	122.	2	5.0	ABV
339.8427	40:01	9781263.	2160562.	39:51	40:10	122.	2	5.0	ABV
341.8396	38:44	6829549.	1351530.	38:32	38:58	150.	2	5.0	ABV
341.8396	40:01	6356971.	1392153.	39:51	40:11	150.	2	5.0	ABV
351.8824	38:43	4677626.	911288.	38:32	38:59	128.	2	5.0	ABV
351.8824	40:00	4578062.	989040.	39:46	40:15	128.	2	5.0	ABV
353.8793	38:43	2937300.	569965.	38:33	38:59	112.	2	5.0	ABV
353.8793	40:00	2889154.	617432.	39:46	40:15	112.	2	5.0	ABV
389.7961	45:20	6308868.	1633986.	45:13	45:32	167.	1	1.0	AVV
391.7931	45:20	5056854.	1309673.	45:13	45:32	125.	1	1.0	AVV
389.7961	44:50	5951770.	1527147.	44:42	44:53	167.	2	5.0	ABV
389.7961	44:57	5858727.	1517931.	44:53	45:12	167.	2	5.0	AVV
389.7961	45:20	6308868.	1633986.	45:13	45:32	167.	2	5.0	AVV
391.7931	44:49	4794714.	1249147.	44:42	44:53	125.	2	5.0	ABV
391.7931	44:57	4674631.	1243941.	44:53	45:12	125.	2	5.0	AVV
391.7931	45:20	5056854.	1309673.	45:13	45:32	125.	2	5.0	AVV
401.8358	44:49	2725297.	705240.	44:36	44:52	94.	2	5.0	ABV
401.8358	44:56	2696639.	686190.	44:52	45:09	94.	2	5.0	AVV
401.8358	45:19	2972498.	761354.	45:09	45:31	94.	2	5.0	AVV
403.8327	44:49	2143219.	551016.	44:42	44:52	147.	2	5.0	ABV
403.8327	44:56	2095696.	537697.	44:52	45:06	147.	2	5.0	AVV
403.8327	45:19	2340299.	598781.	45:06	45:34	147.	2	5.0	AVV
373.8021	43:56	10409932.	2752241.	43:52	44:11	147.	1	1.0	AVV
375.7990	43:56	8357506.	2251390.	43:52	44:11	142.	1	1.0	AVV
373.8021	43:49	9481241.	2622150.	43:40	43:52	147.	2	5.0	ABV
373.8021	43:56	10409932.	2752241.	43:52	44:11	147.	2	5.0	AVV

373.8021	44:39	9192641.	2446475.	44:29	44:54	147.	2	5.0 AVV
373.8021	45:36	8577357.	2045709.	45:28	45:51	147.	2	5.0 ABV
375.7990	43:49	7600495.	2039999.	43:40	43:52	142.	2	5.0 ABV
375.7990	43:56	8357506.	2251390.	43:52	44:11	142.	2	5.0 AVV
375.7990	44:39	7457249.	2001893.	44:29	44:54	142.	2	5.0 AVV
375.7990	45:35	6895953.	1634131.	45:28	45:50	142.	2	5.0 ABV
383.8447	43:55	2788741.	737033.	43:51	44:10	107.	2	5.0 AVV
383.8447	44:38	2469309.	661138.	44:26	44:53	107.	2	5.0 AVV
385.8417	43:48	4296944.	1193735.	43:39	43:51	109.	2	5.0 ABV
385.8417	43:55	5184087.	1366439.	43:51	44:10	109.	2	5.0 AVV
385.8417	44:38	4596577.	1219115.	44:26	44:53	109.	2	5.0 AVV
385.8417	45:35	4193087.	991346.	45:27	45:50	109.	2	5.0 ABV
423.7555	49:37	4304924.	874517.	49:28	49:53	77.	1	1.0 ABV
425.7524	49:37	4131314.	839838.	49:28	49:53	58.	1	1.0 ABV
423.7555	48:27	25615.	4820.	48:20	48:42	77.	2	5.0 ABV
423.7555	49:37	4304924.	874517.	49:28	49:53	77.	2	5.0 ABV
425.7524	48:27	24868.	4578.	48:20	48:42	58.	2	5.0 ABV
425.7524	49:37	4131314.	839838.	49:28	49:53	58.	2	5.0 ABV
435.7951	48:26	15833.	3042.	48:19	48:39	40.	2	5.0 ABB
435.7951	49:36	1944034.	382995.	49:27	49:52	40.	2	5.0 ABV
437.7921	48:27	12118.	2534.	48:19	48:35	78.	2	5.0 ABB
437.7921	49:36	1849240.	369016.	49:27	49:52	78.	2	5.0 ABV
407.7614	47:57	7647539.	1652382.	47:49	48:12	107.	1	1.0 ABV
409.7583	47:57	7335532.	1626097.	47:49	48:12	95.	1	1.0 ABV
407.7614	47:57	7647539.	1652382.	47:49	48:12	107.	2	5.0 ABV
407.7614	50:17	5964677.	1202025.	50:07	50:32	107.	2	5.0 ABV
409.7583	47:57	7335532.	1626097.	47:49	48:12	95.	2	5.0 ABV
409.7583	50:17	5737765.	1152923.	50:07	50:32	95.	2	5.0 ABV
417.8041	47:56	1661707.	361134.	47:48	48:11	63.	2	5.0 ABV
417.8041	50:16	1338454.	264888.	50:07	50:31	63.	2	5.0 ABV
419.8010	47:56	3613673.	787262.	47:48	48:11	99.	2	5.0 ABV
419.8010	50:16	2931342.	584427.	50:03	50:31	99.	2	5.0 ABV
457.7148	53:54	7186988.	1845211.	53:46	54:09	57.	1	1.0 ABV
459.7118	53:54	7978702.	2020415.	53:46	54:09	84.	1	1.0 ABV
457.7148	53:54	7186988.	1845211.	53:46	54:09	57.	2	5.0 ABV
459.7118	53:54	7978702.	2020415.	53:46	54:09	84.	2	5.0 ABV
469.7545	53:53	3122936.	811723.	53:46	54:08	59.	2	5.0 ABV
471.7514	53:53	3425663.	905829.	53:46	54:08	32.	2	5.0 ABV
441.7207	54:02	10637917.	2779548.	53:50	54:18	88.	1	1.0 ABV
443.7177	54:02	11665470.	2983260.	53:50	54:18	96.	1	1.0 ABV
441.7207	54:02	10637917.	2779548.	53:50	54:18	88.	2	5.0 ABV
443.7177	54:02	11665470.	2983260.	53:50	54:18	96.	2	5.0 ABV

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20150409i/d115040915.d	Prep Date		SDG No	
Analysis ID	169128	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	06:07	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	30:43	14757744	1547801	1.000	200.0	230.460764	115.23	230.460764	0.0612
Total TCDD				1.000		230.460764		230.460764	0.0612
2,3,7,8-TCDF	28:44	21471945	2403190	1.000	200.0	210.059223	105.03	210.059223	0.0489
Total TCDF				1.000		210.059223		210.059223	0.0489
1,2,3,7,8-PeCDD	40:34	54180886	13534431	1.000	1000	1044.24831	104.42	1044.24831	0.0393
Total PeCDD				1.000		1044.24831		1044.24831	0.0393
1,2,3,7,8-PeCDF	38:45	102480804	21860958	1.000	1000	1183.08028	118.31	1183.08028	0.0535
2,3,4,7,8-PeCDF	40:01	95701560	22712266	1.000	1000	1119.25784	111.93	1119.25784	0.0473
Total PeCDF				1.000		2302.33813		2302.33813	0.0502
1,2,3,4,7,8-HxCDD	44:51	63633928	18409606	1.000	1000	1080.29563	108.03	1080.29563	0.0674
1,2,3,6,7,8-HxCDD	44:58	63026104	17616324	1.000	1000	1092.51624	109.25	1092.51624	0.0689
1,2,3,7,8,9-HxCDD	45:21	69022504	18597578	1.000	1000	1183.98931	118.40	1183.98931	0.0681
Total HxCDD				1.000		3356.80118		3356.80118	0.0681
1,2,3,4,7,8-HxCDF	43:49	107726992	31127315	1.000	1000	1375.47811	137.55	1375.47811	0.0474
1,2,3,6,7,8-HxCDF	43:57	115118176	34566283	1.000	1000	1257.82975	125.78	1257.82975	0.0391
2,3,4,6,7,8-HxCDF	44:40	103772600	29709545	1.000	1000	1255.22195	125.52	1255.22195	0.0446
1,2,3,7,8,9-HxCDF	45:36	97101808	26226561	1.000	1000	1252.19479	125.22	1252.19479	0.0515
Total HxCDF				1.000		5140.72460		5140.72460	0.0452
1,2,3,4,6,7,8-HpCDD	49:39	51904710	11220047	1.000	1000	1066.70844	106.67	1066.70844	0.0508
Total HpCDD				1.000		1066.70844		1066.70844	0.0508
1,2,3,4,6,7,8-HpCDF	47:58	94050092	23195261	1.000	1000	1443.29870	144.33	1443.29870	0.0479
1,2,3,4,7,8,9-HpCDF	50:17	72074908	15548704	1.000	1000	1337.60976	133.76	1337.60976	0.0662
Total HpCDF				1.000		2780.90846		2780.90846	0.0556
OCDD	53:55	102507592	29618651	1.000	2000	2394.18105	119.71	2394.18105	0.0397
OCDF	54:03	158216056	44659420	1.000	2000	2354.87710	117.74	2354.87710	0.0338
13C-2,3,7,8-TCDD	30:40	6403582	678287	1.000	100.0	120.121202	120.12	120.121202	0.0670
13C-2,3,7,8-TCDF	28:42	10221853	1156219	1.000	100.0	191.746005	191.75	191.746005	0.0744
13C-1,2,3,7,8-PeCDD	40:33	5188506	1271424	1.000	100.0	97.328273	97.33	97.328273	0.0348
13C-1,2,3,7,8-PeCDF	38:44	8662202	1752025	1.000	100.0	162.489387	162.49	162.489387	0.0727
13C-2,3,4,7,8-PeCDF	40:00	8550448	1980523	1.000	100.0	160.393057	160.39	160.393057	0.0727
13C-1,2,3,4,7,8-HxCDD	44:50	5890418	1617569	1.000	100.0	90.209475	90.21	90.209475	0.0204
13C-1,2,3,6,7,8-HxCDD	44:57	5768894	1583081	1.000	100.0	88.348382	88.35	88.348382	0.0204
13C-1,2,3,4,7,8-HxCDF	43:49	7831967	2163204	1.000	100.0	119.943547	119.94	119.943547	0.0235
13C-1,2,3,6,7,8-HxCDF	43:56	9152127	2624528	1.000	100.0	140.161287	140.16	140.161287	0.0235
13C-2,3,4,6,7,8-HxCDF	44:39	8267271	2298882	1.000	100.0	126.610060	126.61	126.610060	0.0235
13C-1,2,3,7,8,9-HxCDF	45:35	7754529	1990421	1.000	100.0	118.757614	118.76	118.757614	0.0235
13C-1,2,3,4,6,7,8-HpCDD	49:38	4865876	1033024	1.000	100.0	74.519010	74.52	74.519010	0.00911
13C-1,2,3,4,6,7,8-HpCDF	47:57	6516329	1548606	1.000	100.0	99.795060	99.80	99.795060	0.0189
13C-1,2,3,4,7,8,9-HpCDF	50:16	5388336	1120846	1.000	100.0	82.520283	82.52	82.520283	0.0189
13C-OCDD	53:54	8563061	2390912	1.000	200.0	131.139969	65.57	131.139969	0.0159
13C-OCDF	54:02	13437309	3668566	1.000	200.0	205.787193	102.89	205.787193	0.00669
37Cl4-2,3,7,8-TCDD	30:43	14248747	1483809	1.000	200.0	267.284251	133.64	267.284251	0.0348
13C-1,2,3,4-TCDD	30:10	5330934	574660	1.000	100.0	100.000000	100.00	100.000000	0.0670
13C-1,2,3,7,8,9-HxCDD	45:20	6529711	1756363	1.000	100.0	100.000000	100.00	100.000000	0.0204

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20150409i/d115040915.	Prep Date		SDG No	
Analysis ID	169128	Prep Exp Date		Date Received	
Analysis Date	04/09/15 06:07	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	260	305	104	122	0.85	/	
	2,3,7,8-TCDF	28:44	00:00	0	9498720	11973225	1068304	1334886	0.79	AVV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	233	195	93	78	1.19 *	/	
	13C-2,3,7,8-TCDF	28:42	00:00	0	4544542	5677311	511141	645078	0.80	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	225	190	90	76	1.18 *	/	
	2,3,7,8-TCDD	30:43	00:00	0	6518135	8239609	686807	860994	0.79	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	200		80				
	37Cl4-2,3,7,8-TCDD	30:43	00:00	0	14248747		1483809			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	218	168	87	67	1.30 *	/	
	13C-1,2,3,4-TCDD	30:10	00:00	0	2371542	2959392	258757	315903	0.80	AVV/ABV	
	13C-2,3,7,8-TCDD	30:40	00:00	0	2832713	3570869	299302	378985	0.79	AVB/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	523	415	209	166	1.26 *	/	
	1,2,3,7,8-PeCDF	38:45	00:00	0	63335920	39144884	13584958	8276000	1.62	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:01	00:00	0	59010252	36691308	13964375	8747891	1.61	ABV/ABV	M
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	263	155	105	62	1.69	/	
	13C-1,2,3,7,8-PeCDF	38:44	00:00	0	5315784	3346418	1072382	679643	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:00	00:00	0	5275693	3274755	1216627	763896	1.61	AVV/AVV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	285	215	114	86	1.33	/	
	1,2,3,7,8-PeCDD	40:34	00:00	0	33419168	20761718	8426247	5108184	1.61	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	85	115	34	46	0.74 *	/	
	13C-1,2,3,7,8-PeCDD	40:33	00:00	0	3203146	1985360	781280	490144	1.61	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	538	488	215	195	1.10	/	
	1,2,3,4,7,8-HxCDF	43:49	00:00	0	60348584	47378408	17225606	13901709	1.27	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	43:57	00:00	0	64458952	50659224	19304636	15261647	1.27	AVB/AVB	M
	2,3,4,6,7,8-HxCDF	44:40	00:00	0	57947624	45824976	16772585	12936960	1.26	AVB/AVB	M
	1,2,3,7,8,9-HxCDF	45:36	00:00	0	54425724	42676084	14631611	11594950	1.28	AVV/AVV	M
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	188	225	75	90	0.83 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:49	00:00	0	2745161	5086806	762133	1401071	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	43:56	00:00	0	3215801	5936326	926978	1697550	0.54	AVB/AVB	
	Unidentified	44:01	00:00	0	35560	67739	13797	26376	0.52	ABV/ABV	
	13C-2,3,4,6,7,8-HxCDF	44:39	00:00	0	2907249	5360022	816959	1481923	0.54	AVV/AVV	
	Unidentified	44:58	00:00	0	6478	15529	1352	3063	0.42 *	AVV/AVV	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20150409i/d1150409i5.	Prep Date		SDG No	
Analysis ID	169128	Prep Exp Date		Date Received	
Analysis Date	04/09/15 06:07	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

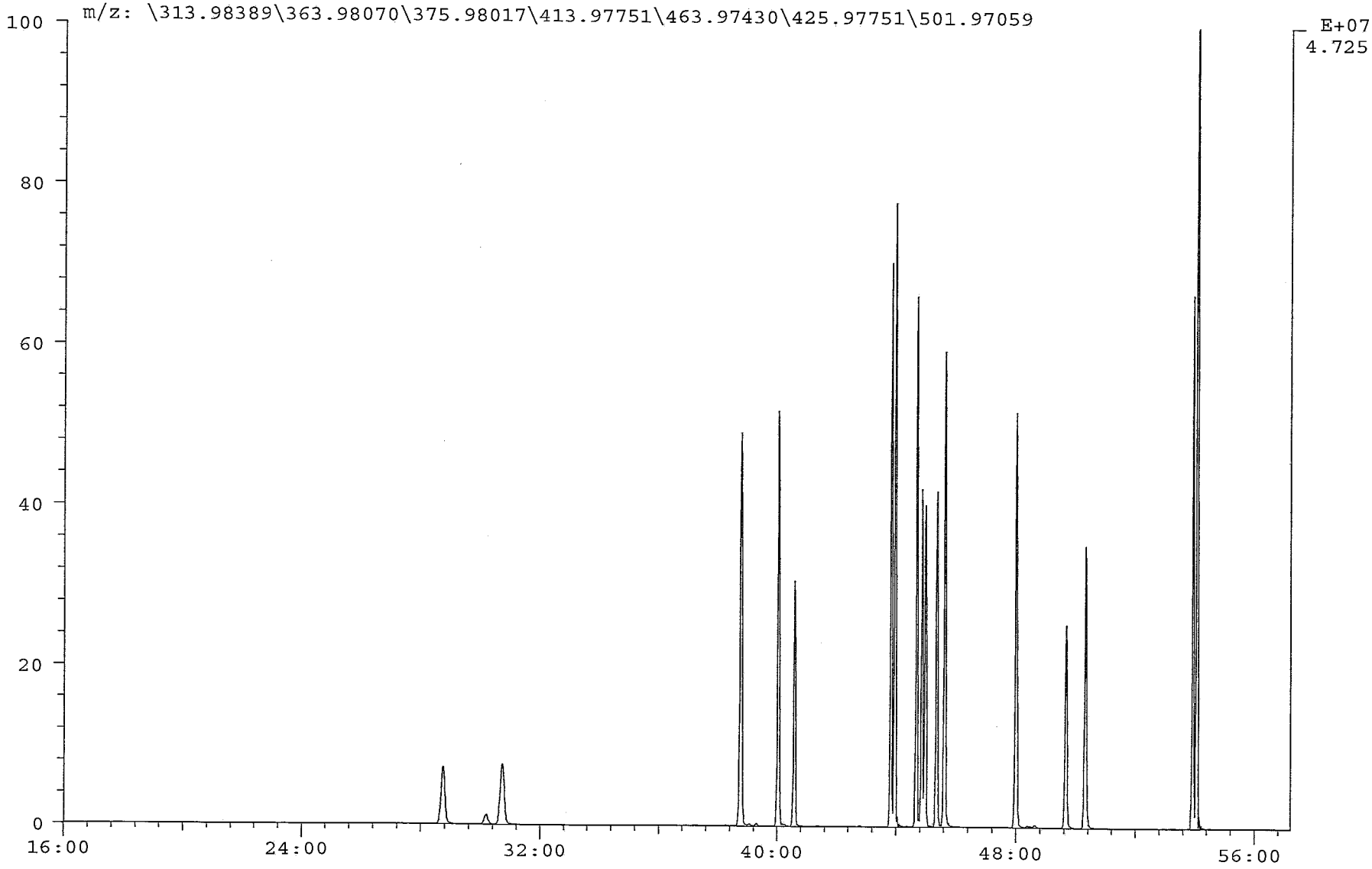
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	13C-1,2,3,7,8,9-HxCDF	45:35	00:00	0	2713598	5040931	694852	1295569	0.54	ABV/AVV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	693	398	277	159	1.74 *	/	
	1,2,3,4,7,8-HxCDD	44:51	00:00	0	35640040	27993888	10298393	8111213	1.27	ABV/ABV	M
	1,2,3,6,7,8-HxCDD	44:58	00:00	0	35292304	27733800	9836774	7779550	1.27	AVV/AVV	M
	1,2,3,7,8,9-HxCDD	45:21	00:00	0	38563304	30459200	10548473	8049105	1.27	AVV/AVV	M
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	188	170	75	68	1.10	/	
	13C-1,2,3,4,7,8-HxCDD	44:50	00:00	0	3343864	2546554	902201	715368	1.31	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	44:57	00:00	0	3164500	2604394	877233	705848	1.22	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:20	00:00	0	3650664	2879047	987015	769348	1.27	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	350	393	140	157	0.89	/	
	1,2,3,4,6,7,8-HpCDF	47:58	00:00	0	47968124	46081968	11825597	11369664	1.04	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	50:17	00:00	0	36804480	35270428	7862912	7685792	1.04	ABB/ABB	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	143	190	57	76	0.75 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	47:57	00:00	0	2044952	4471377	489568	1059038	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:16	00:00	0	1690536	3697800	348782	772064	0.46	ABB/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	300	225	120	90	1.33 *	/	
	1,2,3,4,6,7,8-HpCDD	49:39	00:00	0	26616478	25288232	5805702	5414345	1.05	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	58	103	23	41	0.56 *	/	
	Unidentified	48:27	00:00	0	16162	16380	3180	3139	0.99	ABB/ABB	
	13C-1,2,3,4,6,7,8-HpCDD	49:38	00:00	0	2505459	2360417	532006	501018	1.06	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	323	298	129	119	1.08 *	/	
	OCDF	54:03	00:00	0	75190896	83025160	21531628	23127792	0.91	ABB/ABB	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	63	55	25	22	1.14 *	/	
	13C-OCDF	54:02	00:00	0	6388587	7048722	1754705	1913861	0.91	ABB/ABB	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	230	245	92	98	0.94	/	
	OCDD	53:55	00:00	0	48227224	54280368	14097388	15521263	0.89	ABB/ABB	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	143	138	57	55	1.04 *	/	
	13C-OCDD	53:54	00:00	0	4076338	4486723	1141849	1249063	0.91	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. KL 4/9/15
Calc.
@CKM 4-9-15

CHRO: d1150409i5 09-Apr-15 Elapse: 54:09 2464
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 235 > 2641 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



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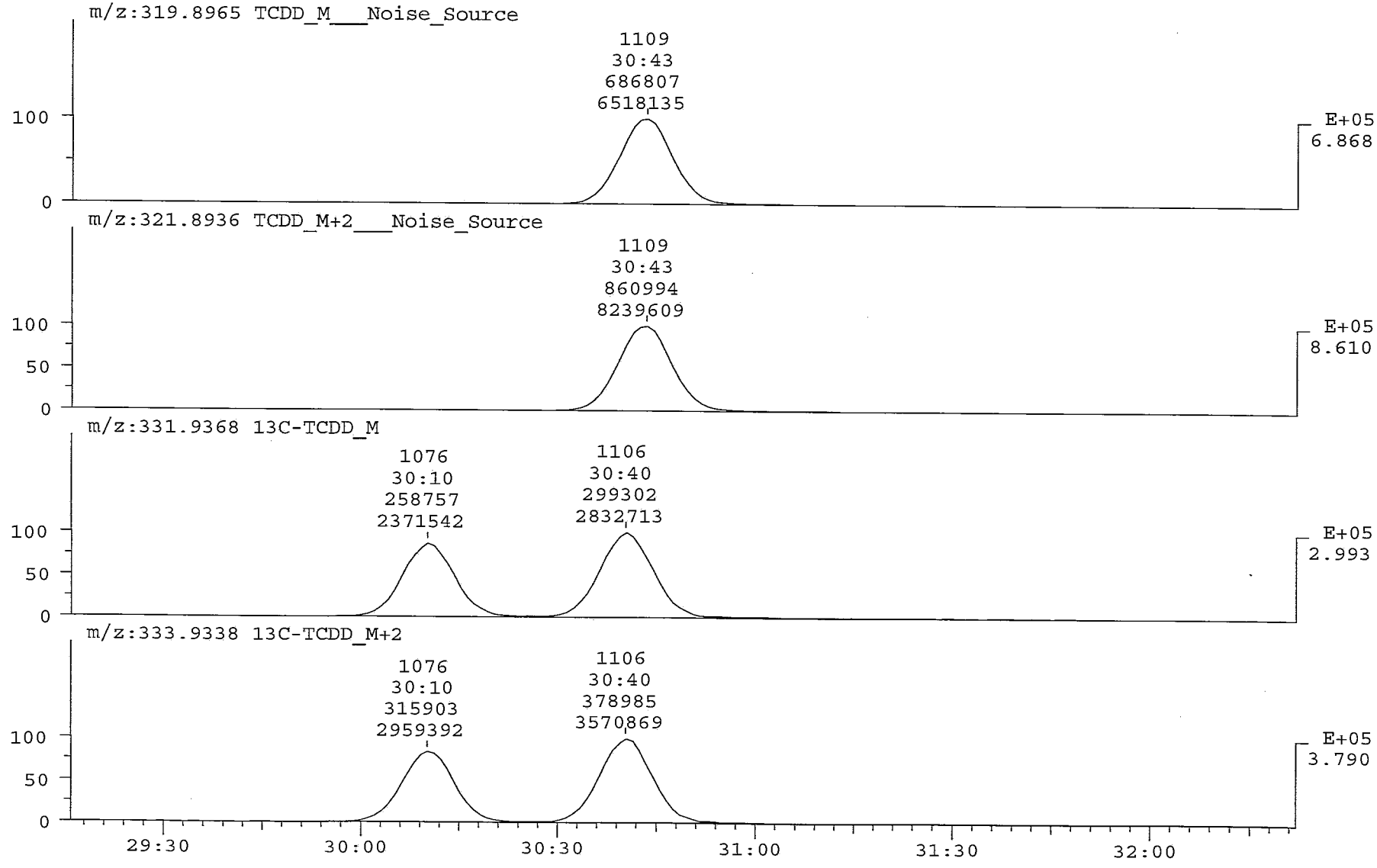
CHRO:  d1150409i5                                09-Apr-15   Elapse:  30:49      1115
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                          Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  1613/8290 ICAL
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1023 > 1207             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  2, 5.0
Disp:  Height  Area
```



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CHRO:  d115040915                          09-Apr-15  Elapse:  31:03      1129
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                   Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1034 > 1230      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```

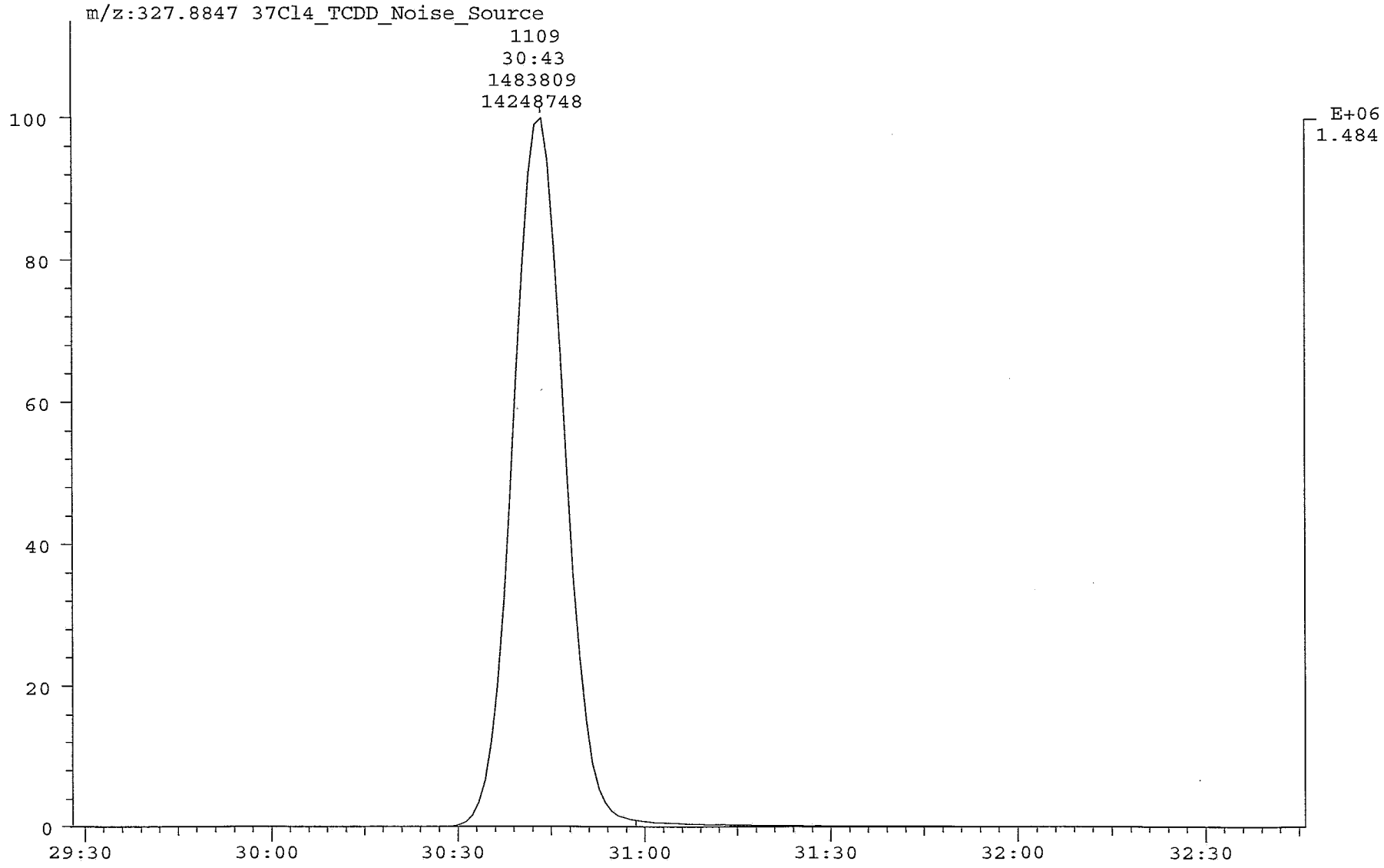

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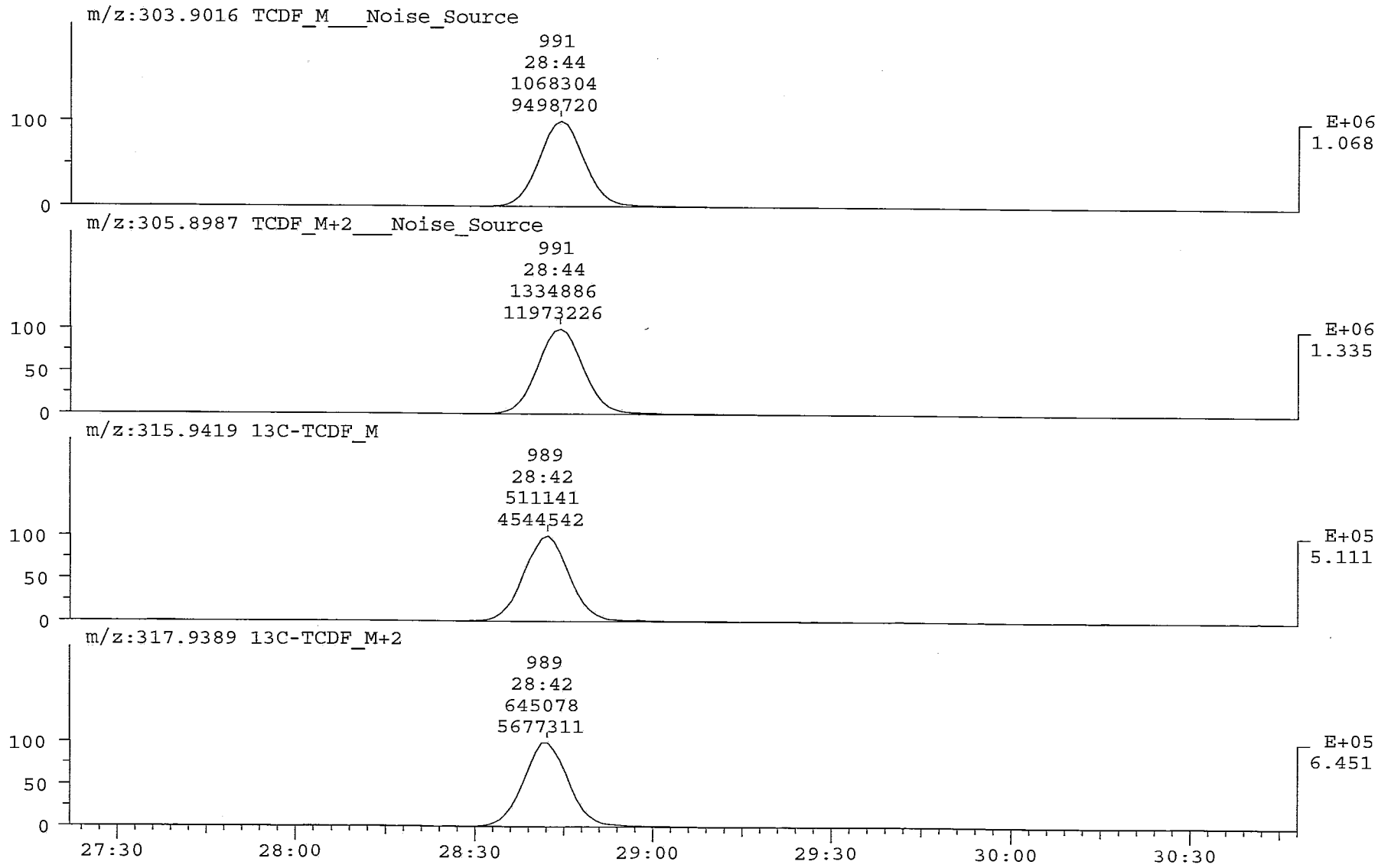
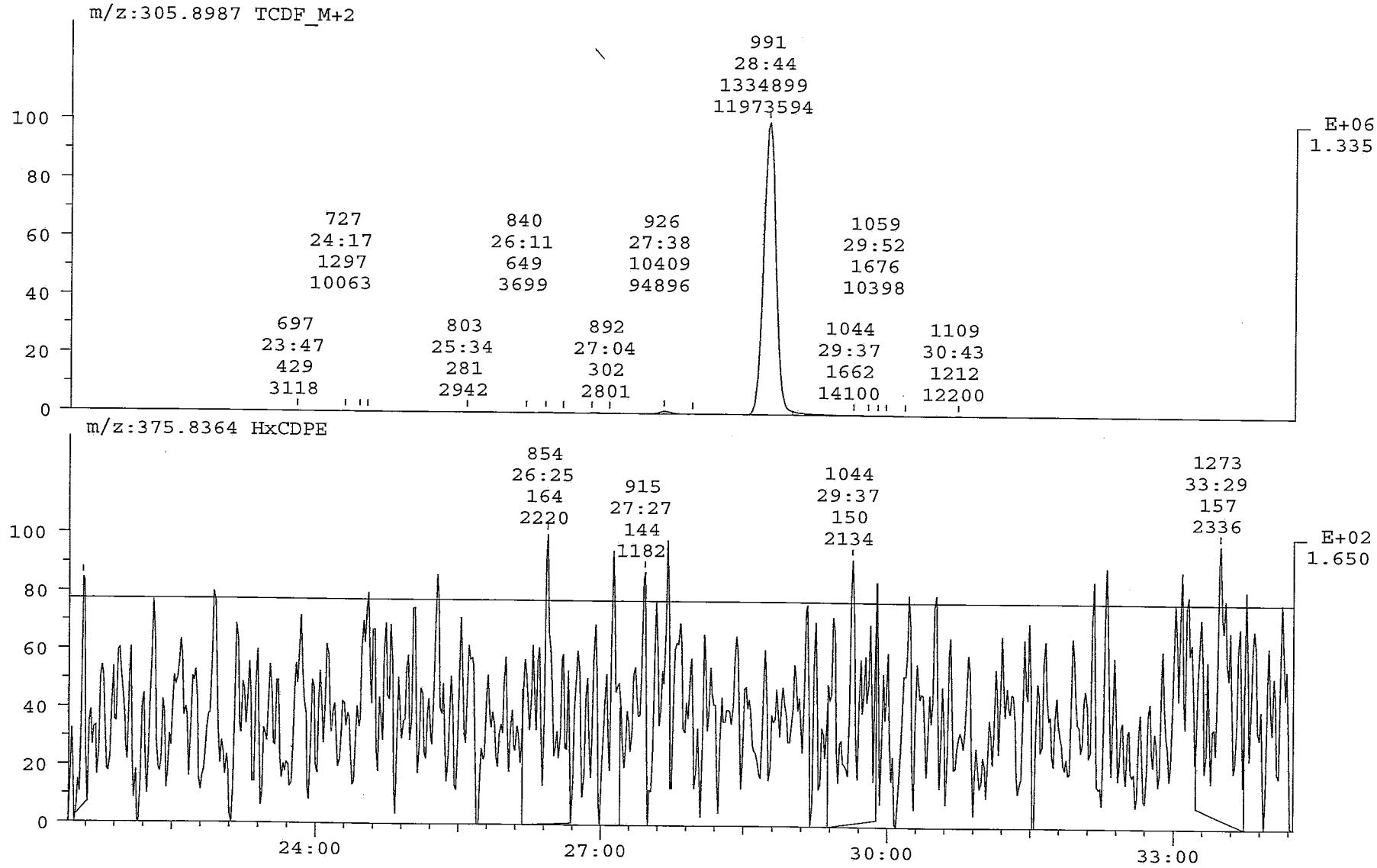
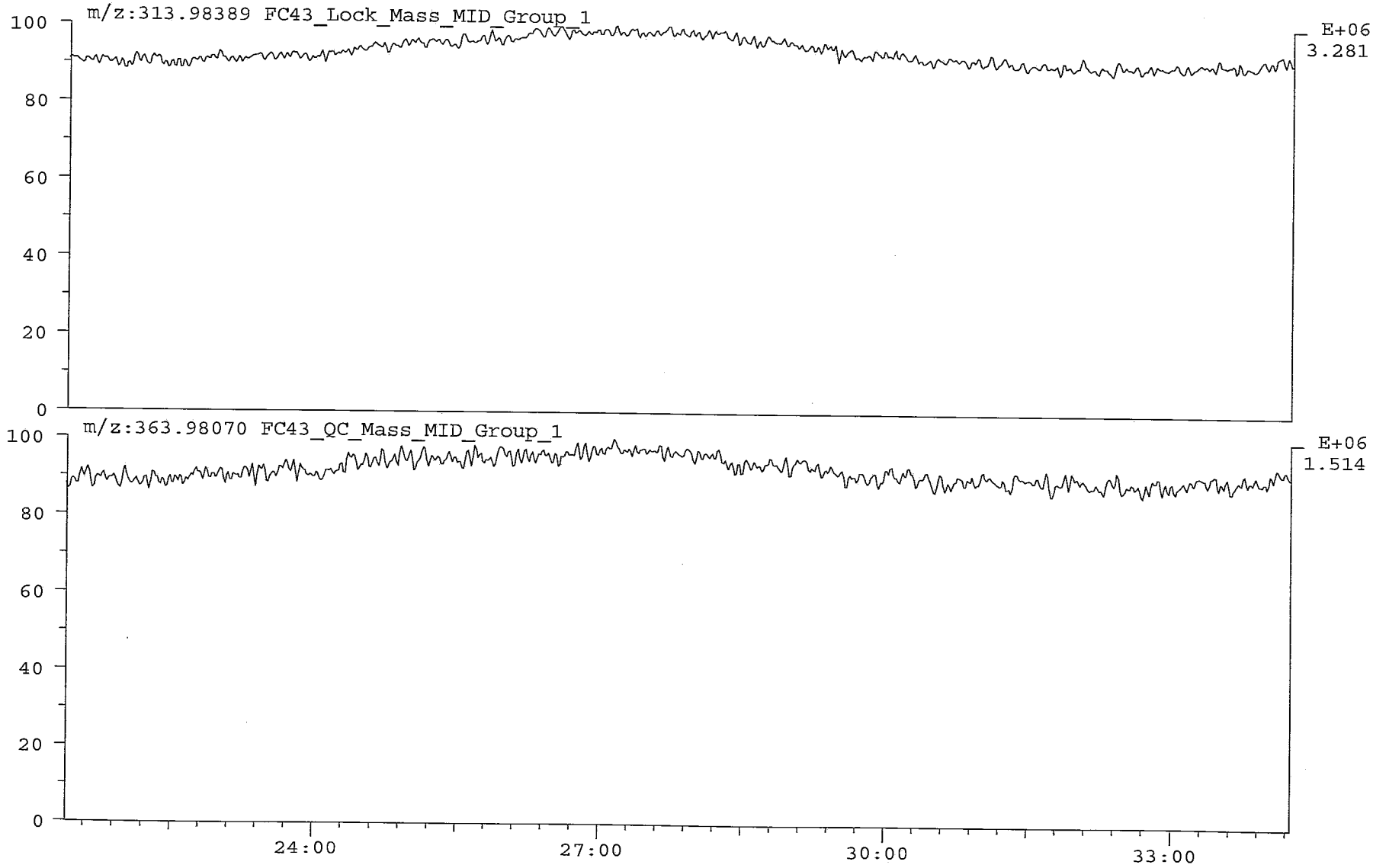
CHRO:  d115040915                          09-Apr-15   Elapse:  29:02      1009
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                    Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   910 > 1114        Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



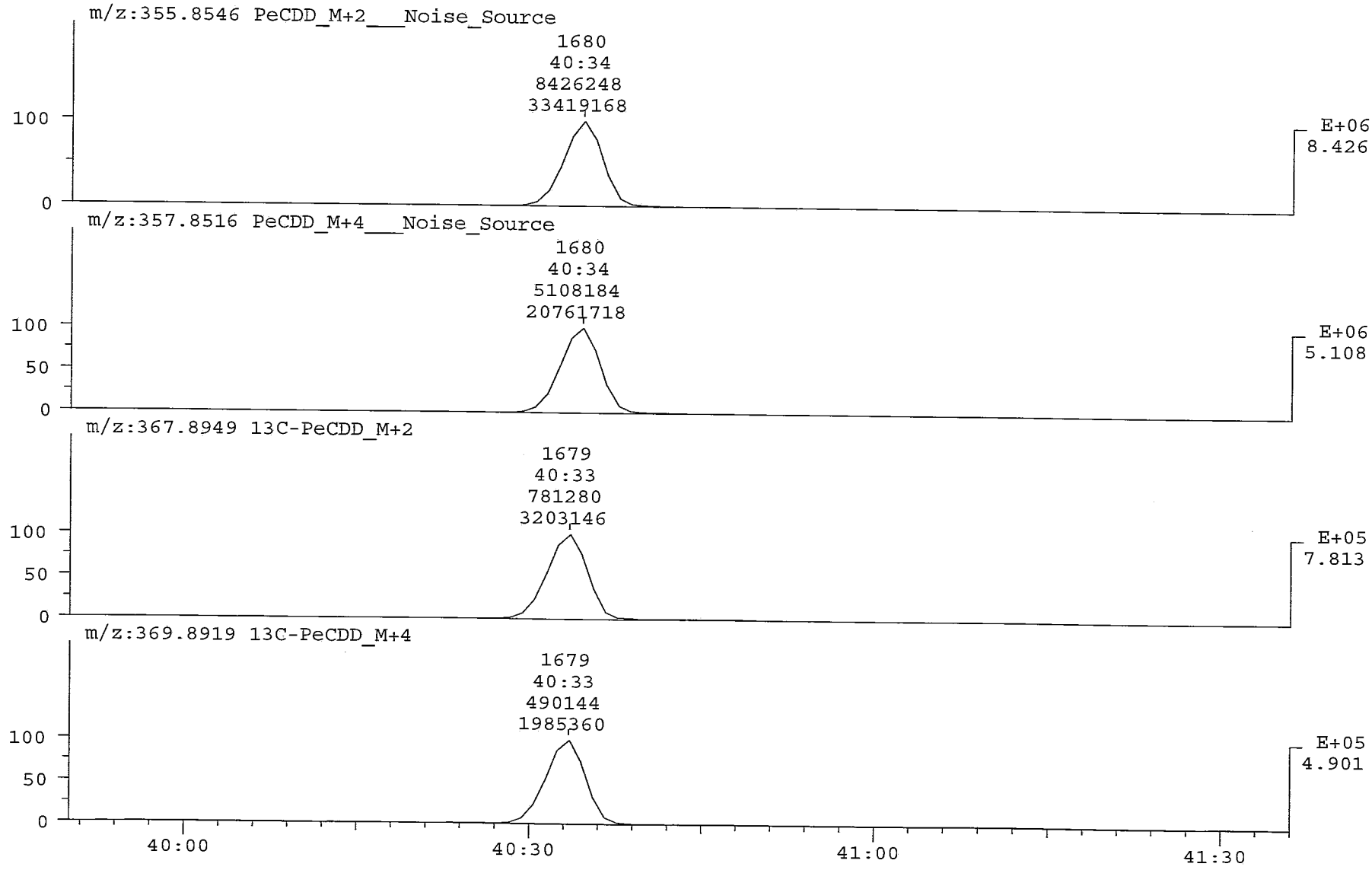
CHRO: d1150409i5 09-Apr-15 Elapse: 29:02 1009
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 556 > 1318 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



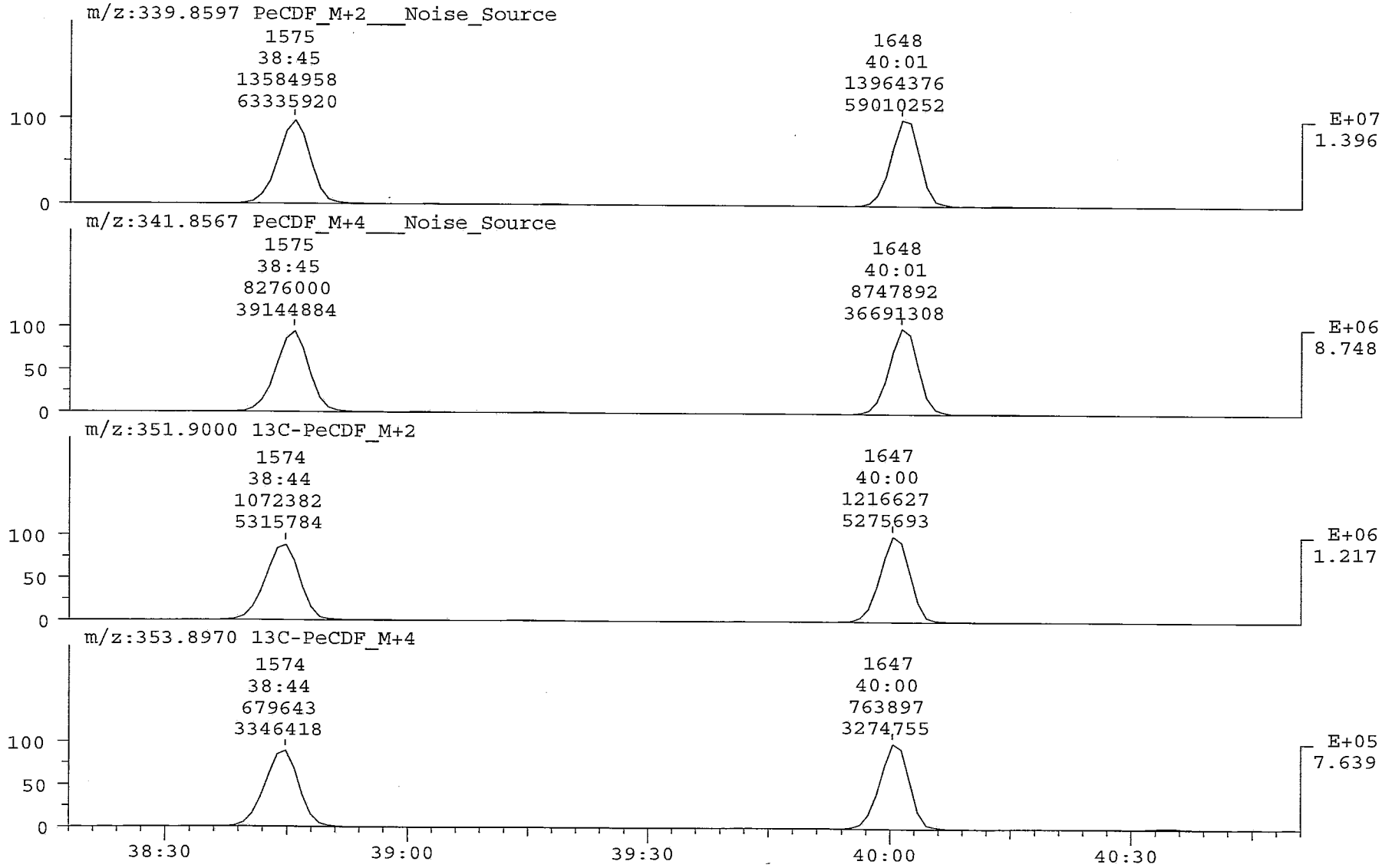
CHRO: d1150409i5 09-Apr-15 Elapse: 29:02 1009
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 556 > 1318 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



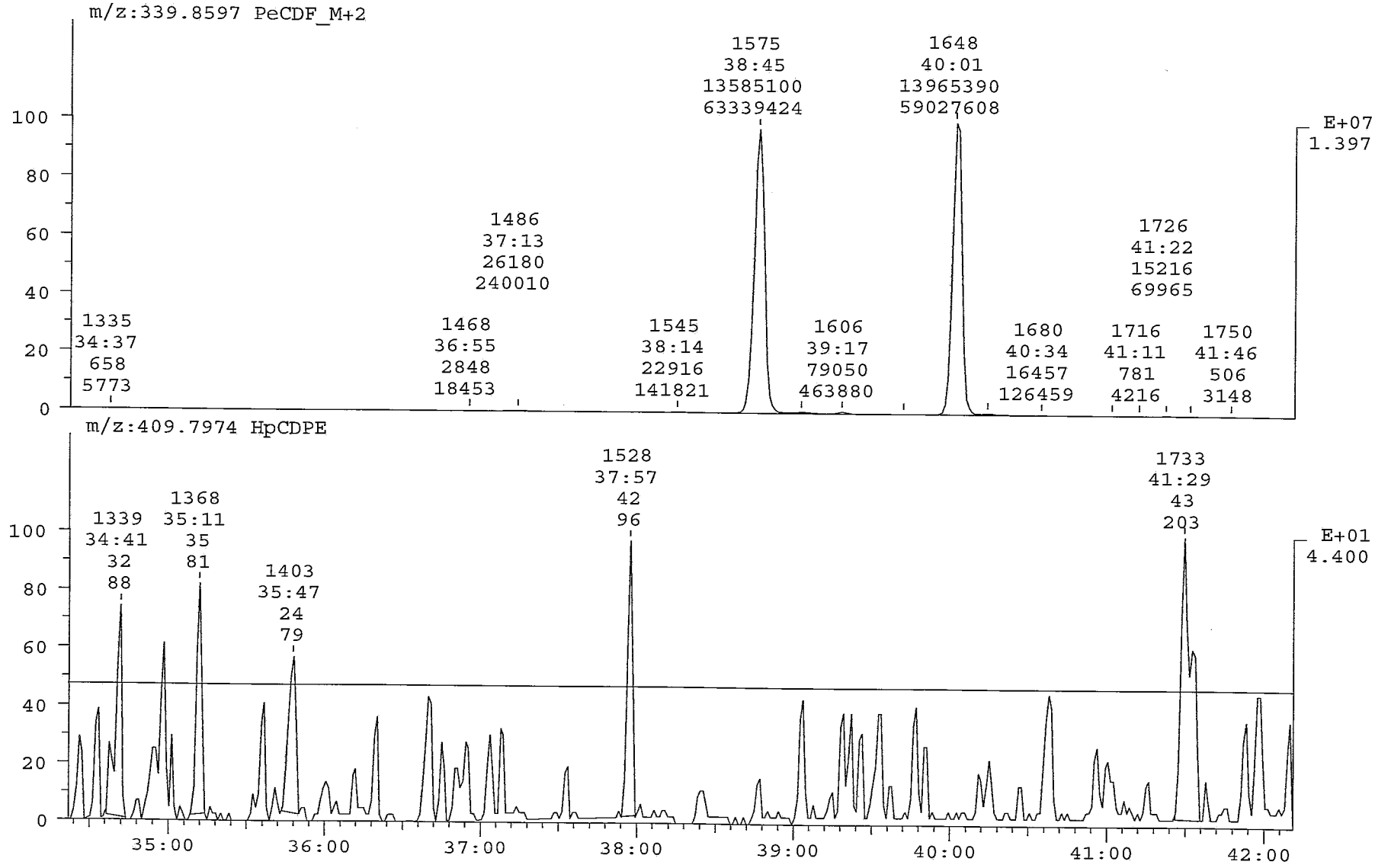
CHRO: d115040915 09-Apr-15 Elapse: 40:39 1685
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1637 > 1740 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



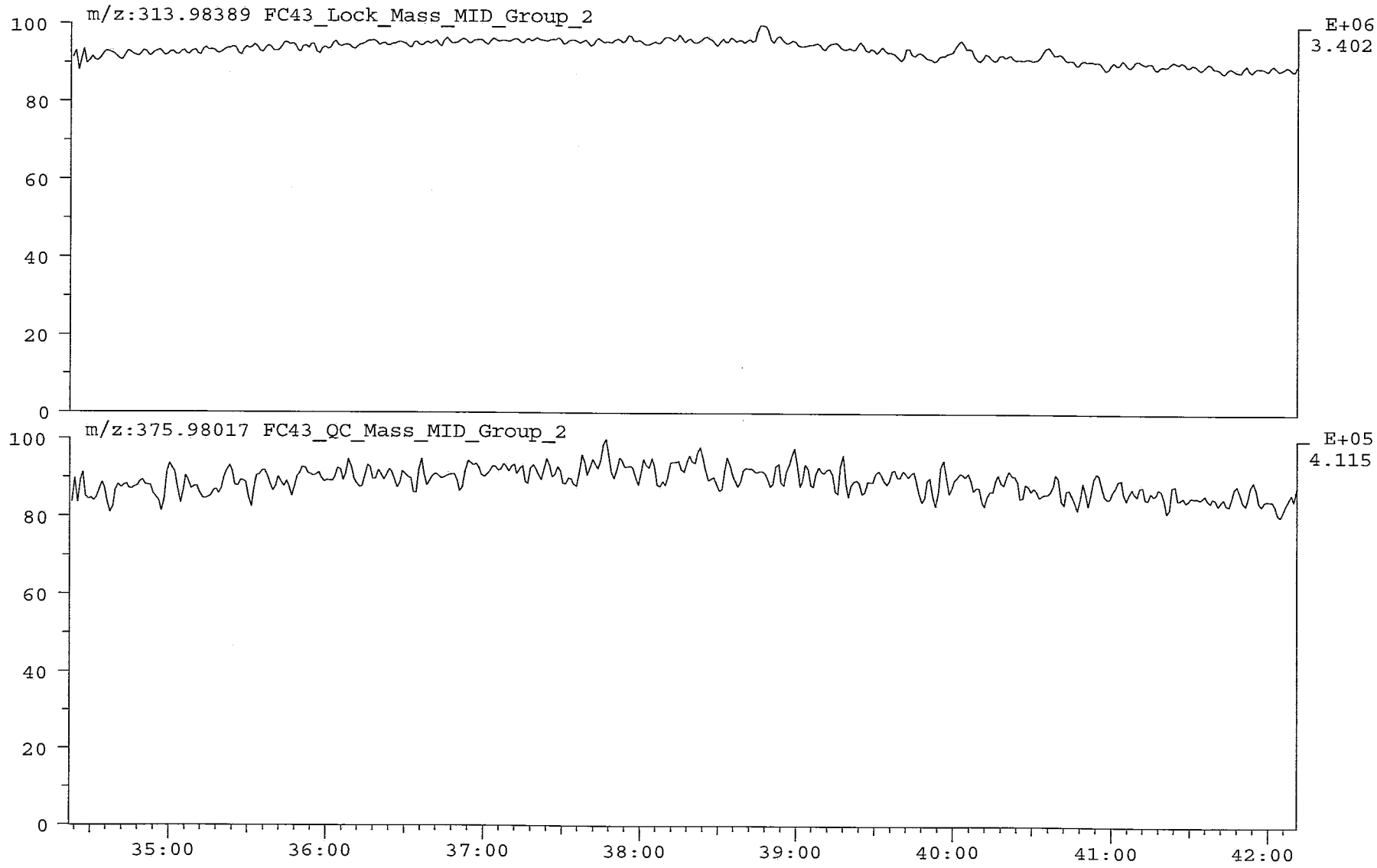
CHRO: d1150409i5 09-Apr-15 Elapse: 39:34 1622
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1548 > 1696 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



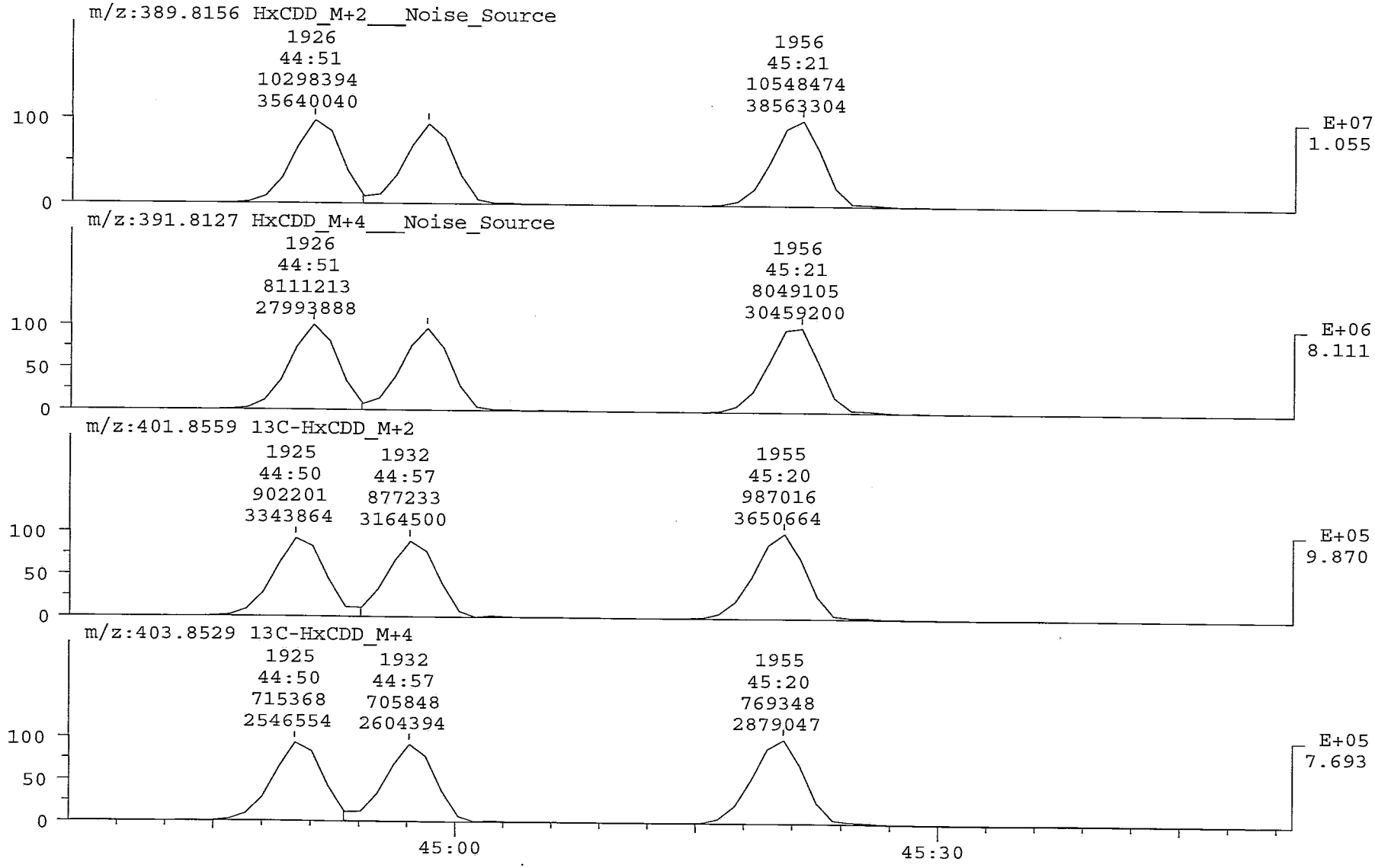
CHRO: d1150409i5 09-Apr-15 Elapse: 39:34 1622
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1321 > 1773 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



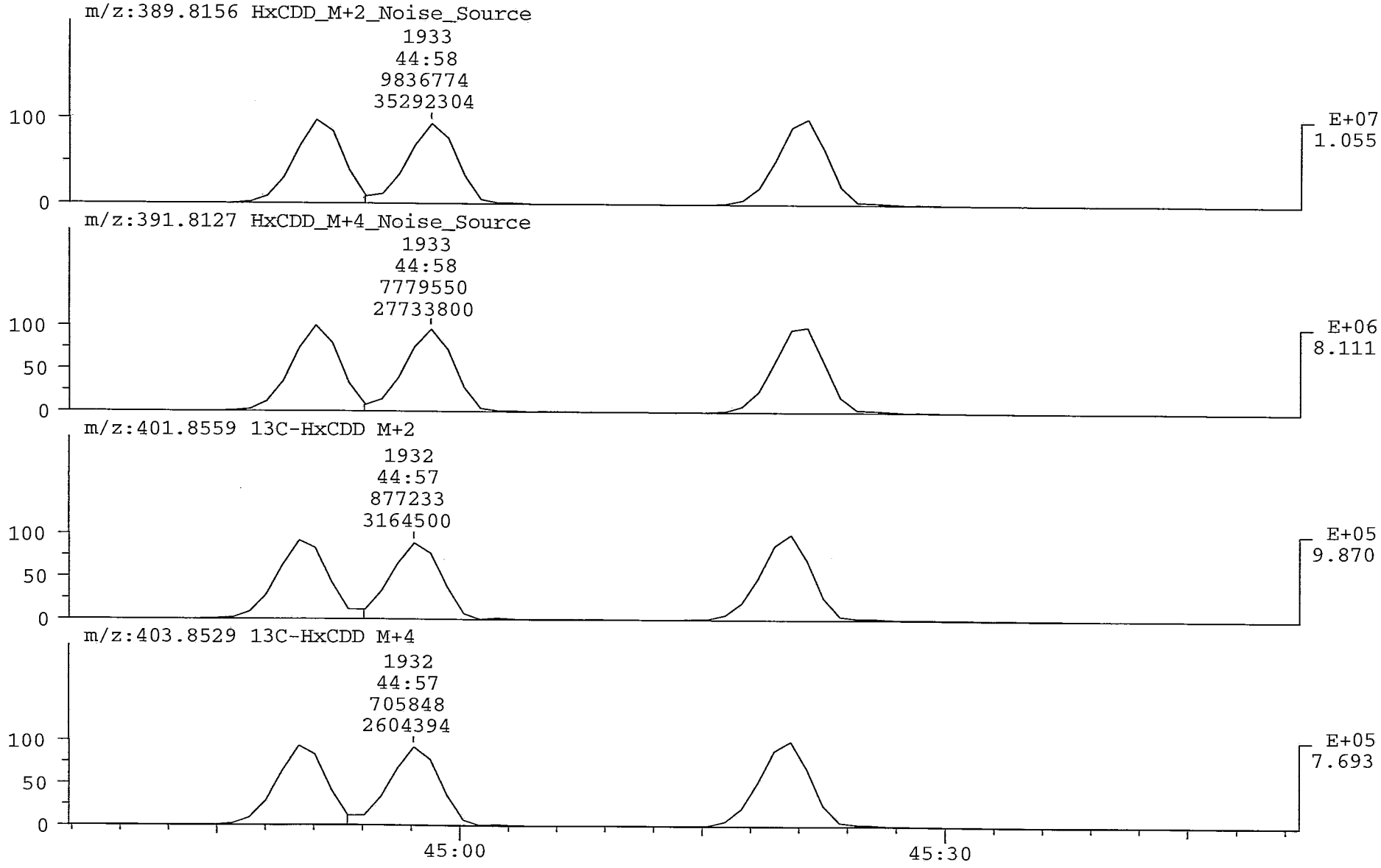
```
CHRO:  d1150409i5                          09-Apr-15   Elapse:  39:34      1622
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                    Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                             Study :  1613/8290 ICAL
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1321 > 1773       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



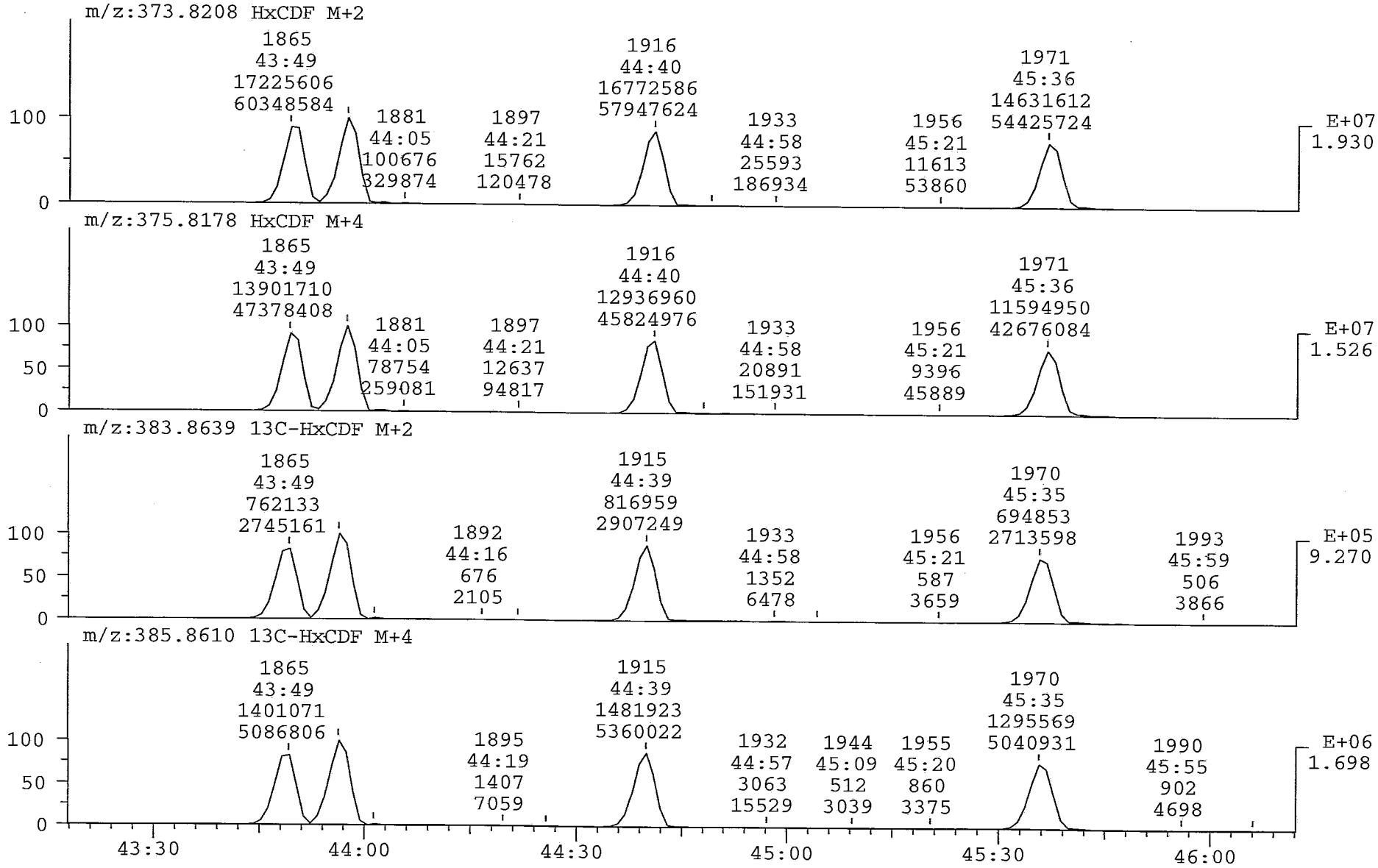
CHRO: d1150409i5 09-Apr-15 Elapse: 45:14 1949
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1911 > 1986 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



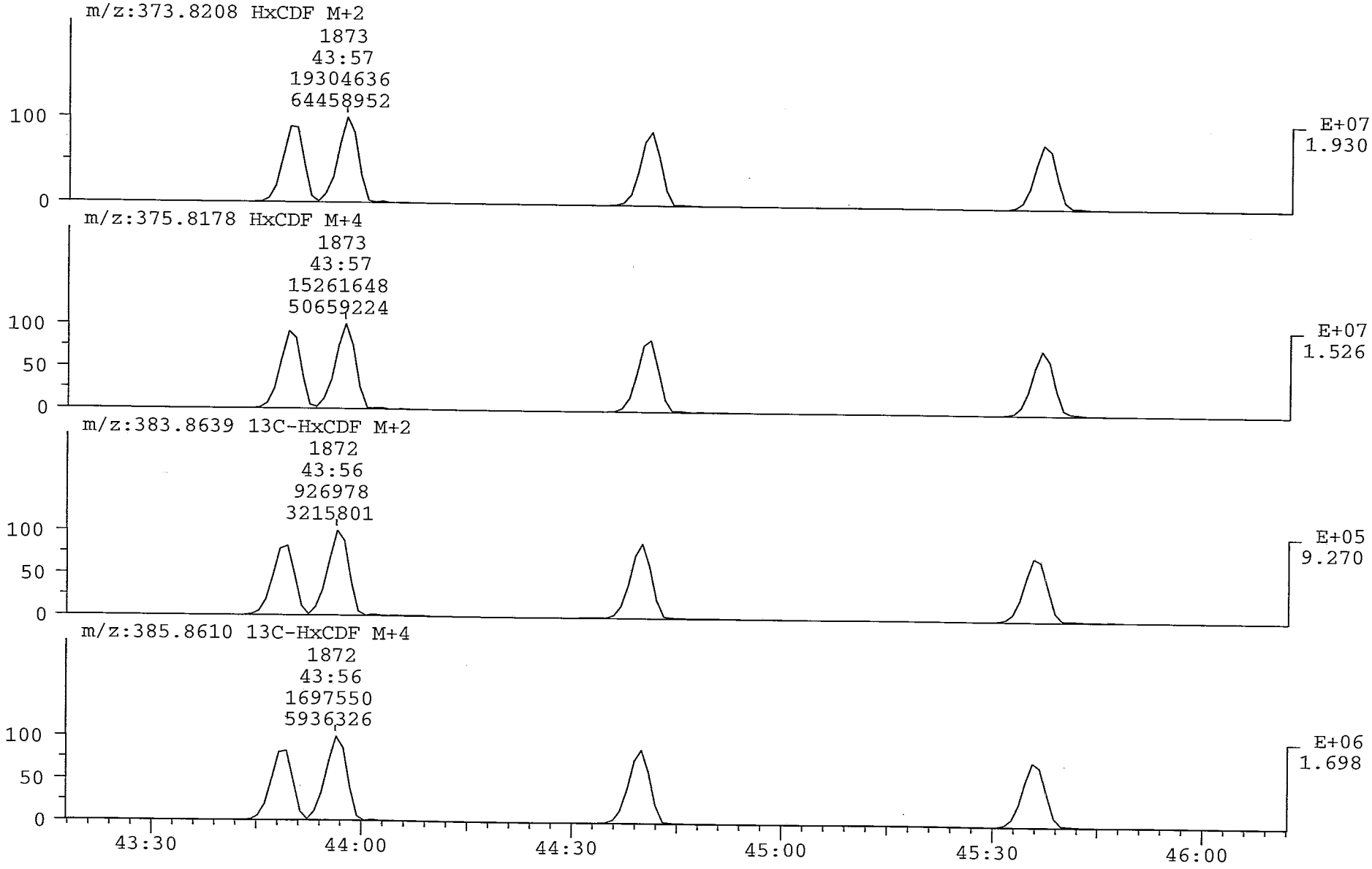
CHRO: d1150409i5 09-Apr-15 Elapse: 44:58 1933
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1930 > 1936 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



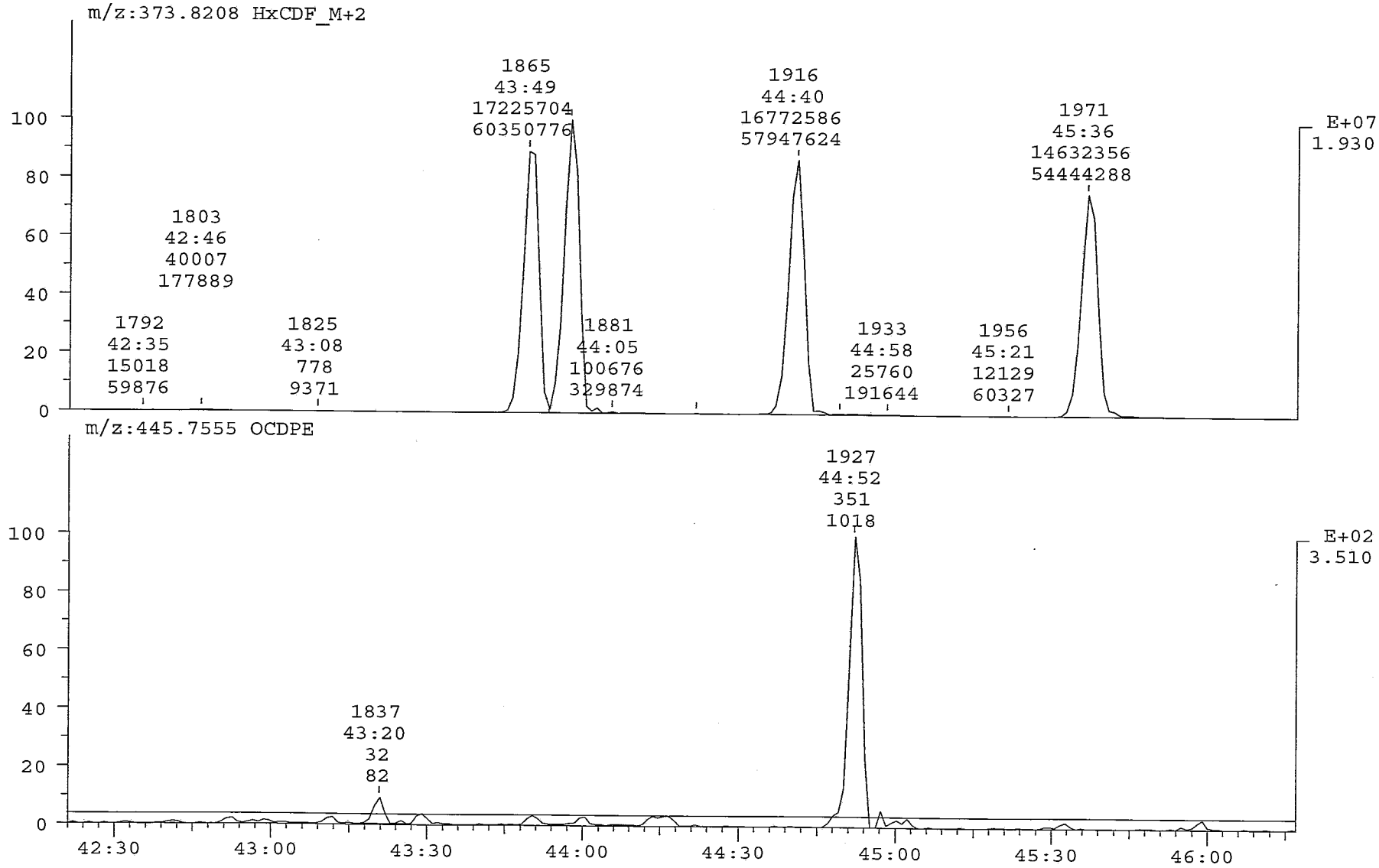
CHRO: d1150409i5 09-Apr-15 Elapse: 44:58 1933
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1834 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



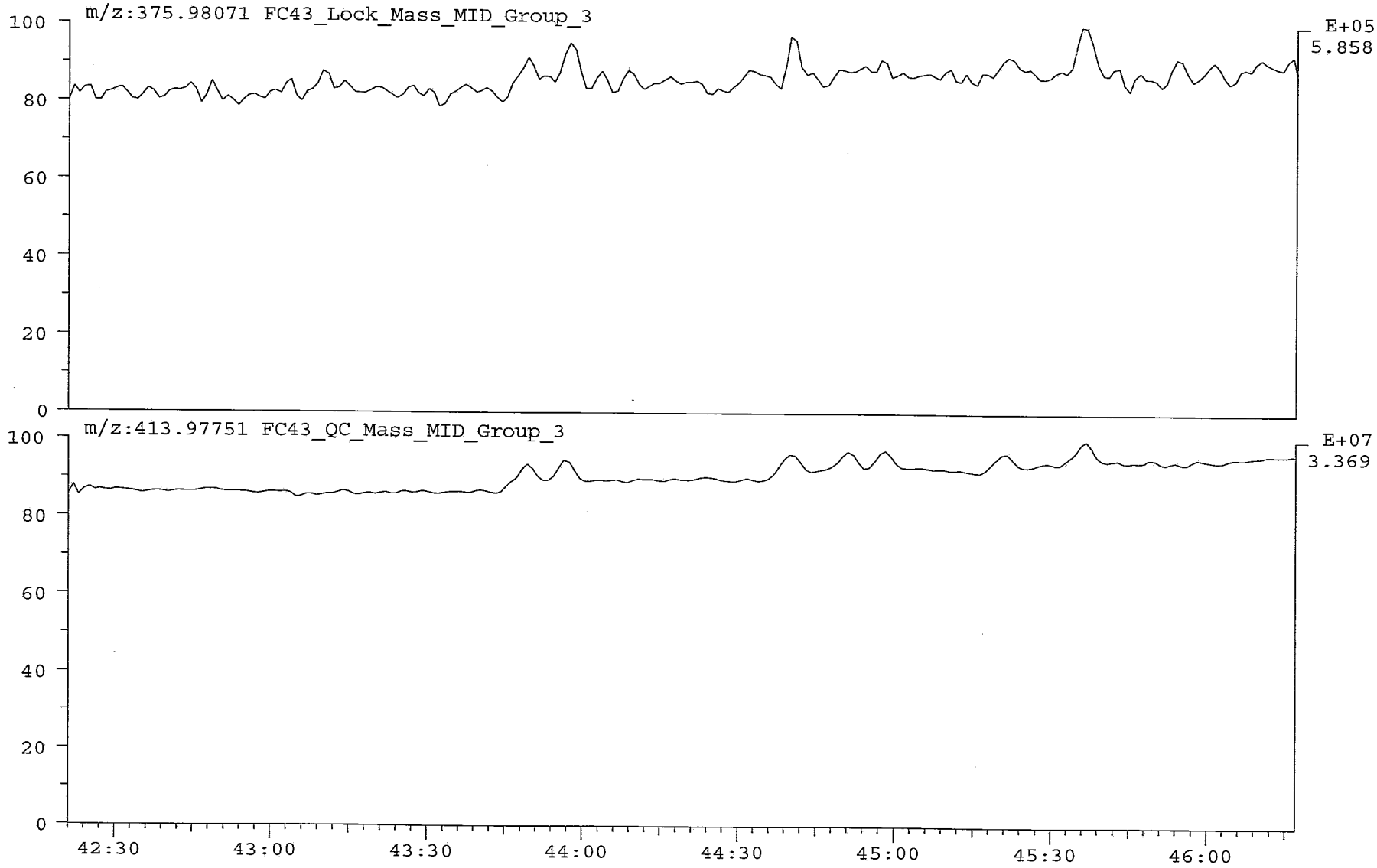
CHRO: d1150409i5 09-Apr-15 Elapse: 43:57 1873
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1870 > 1876 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



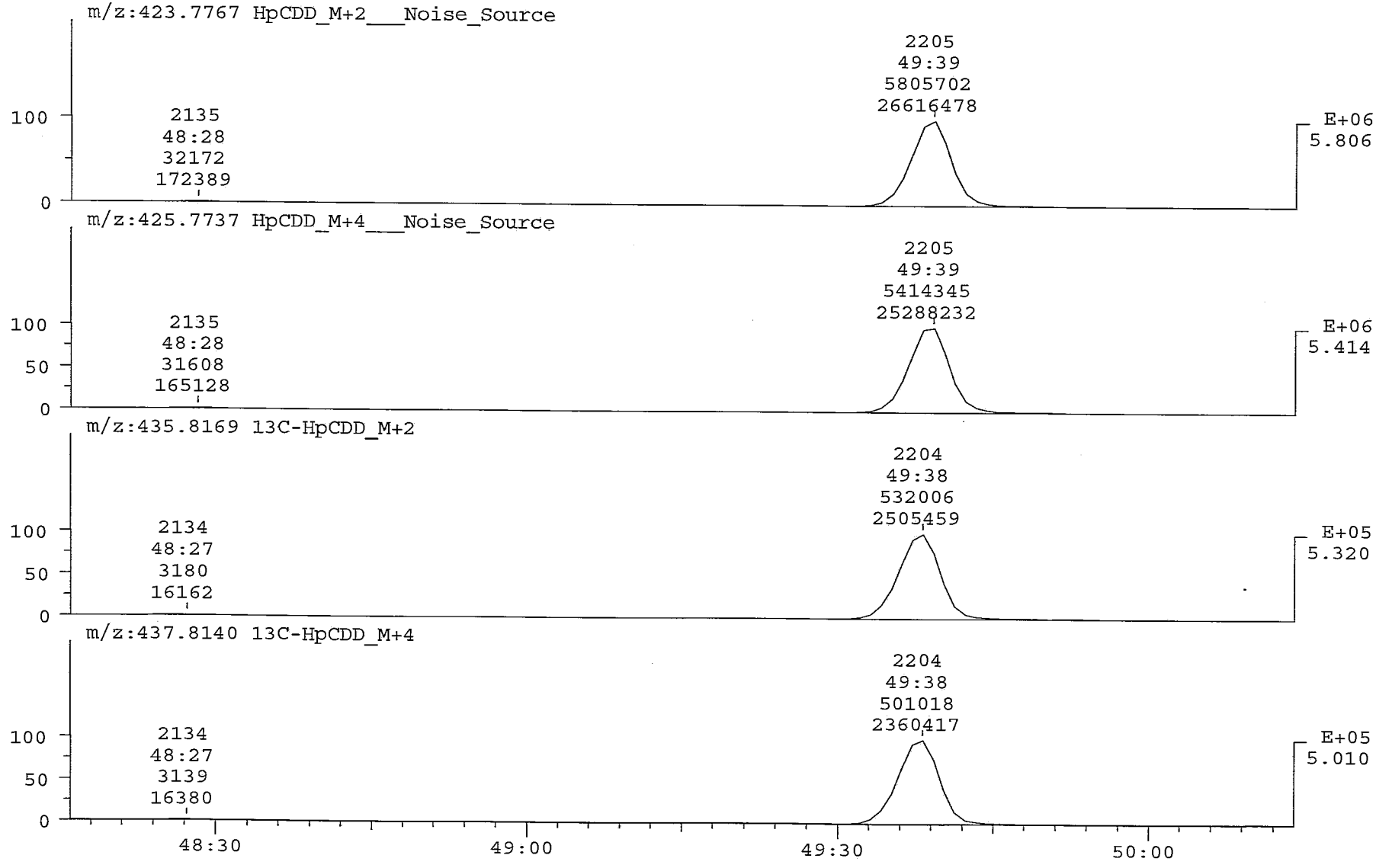
CHRO: d1150409i5 09-Apr-15 Elapse: 44:03 1879
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1778 > 2011 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



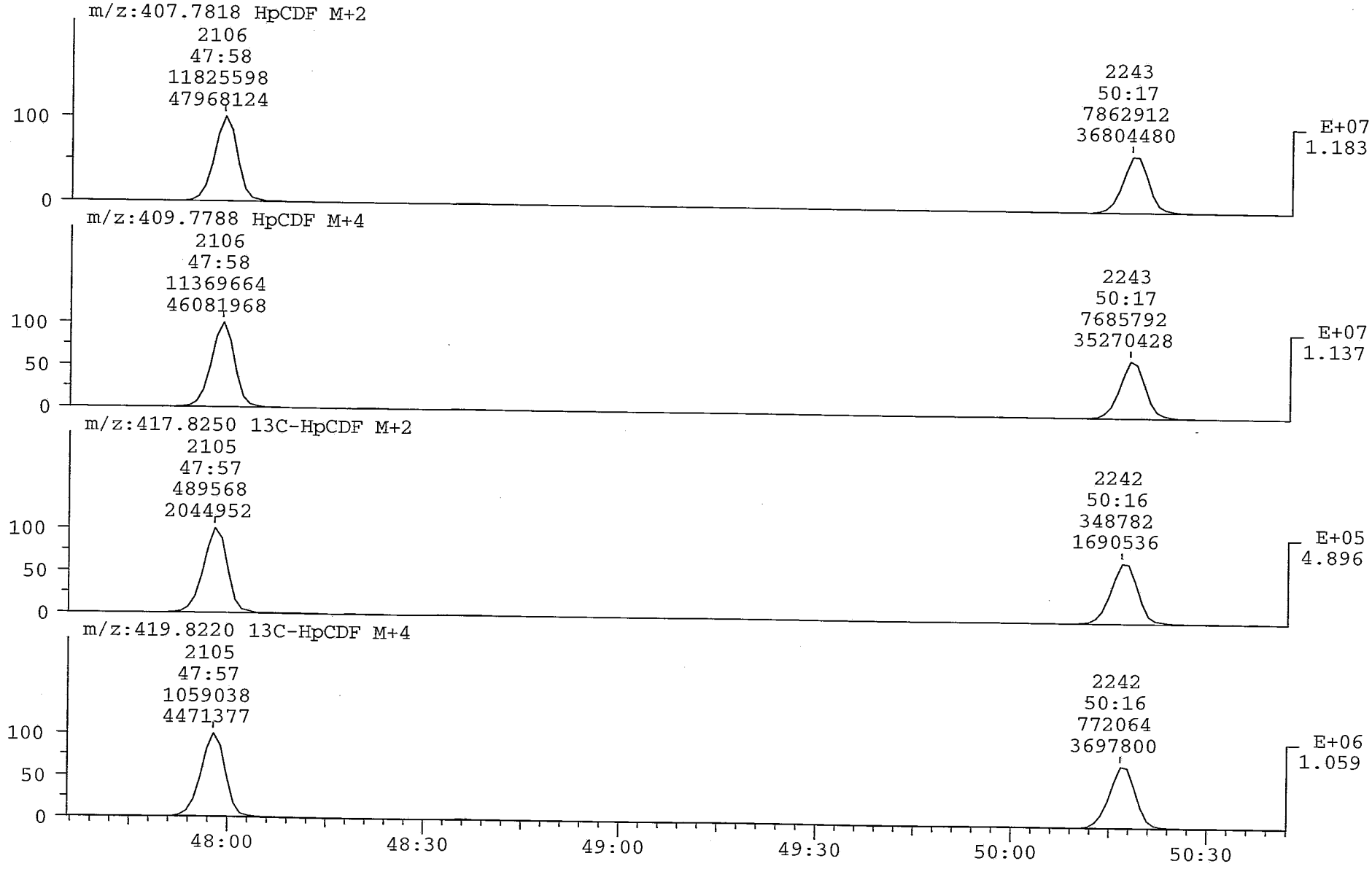
CHRO: d115040915 09-Apr-15 Elapse: 44:03 1879
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1778 > 2011 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



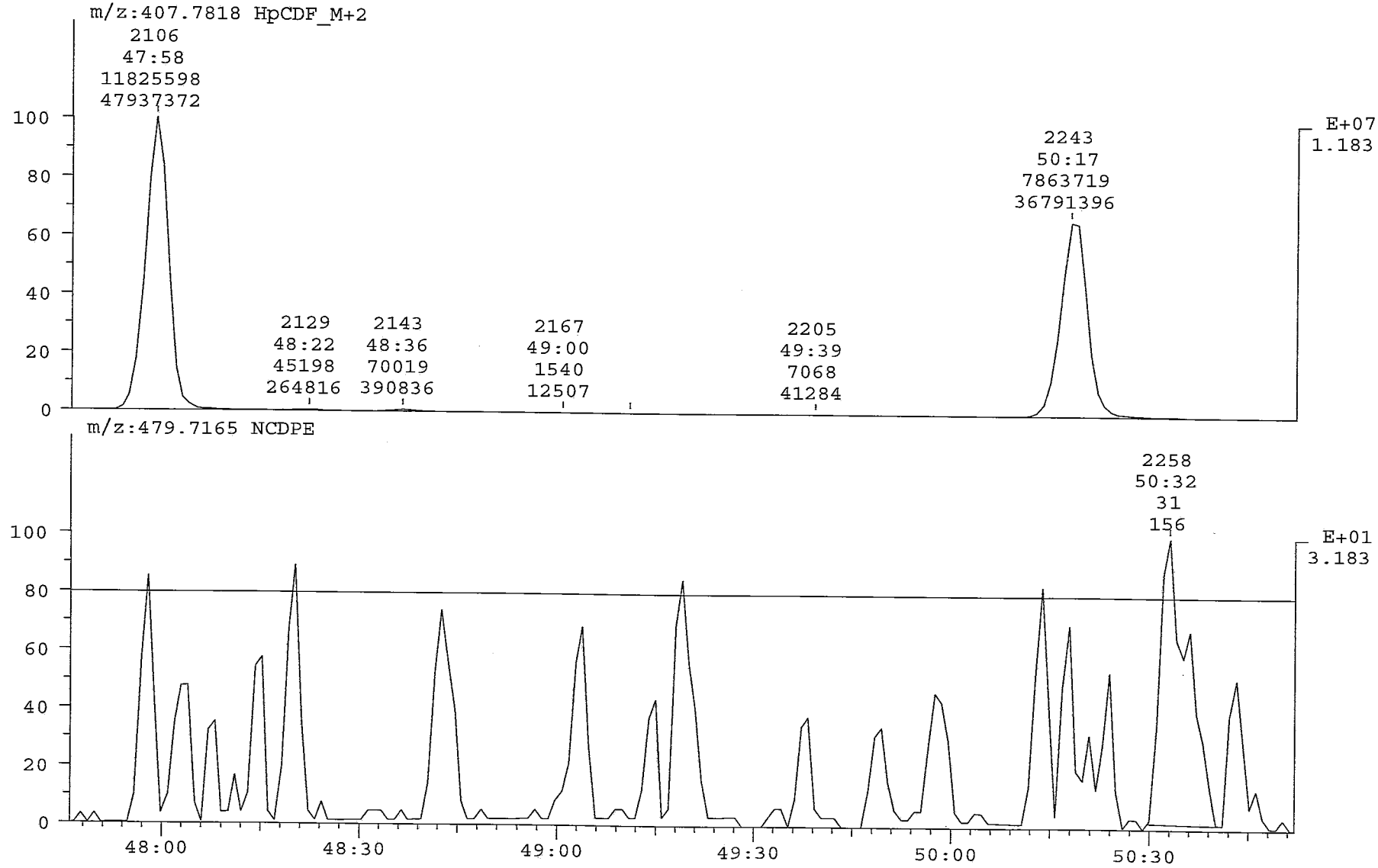
CHRO: d115040 9i5 09-Apr-15 Elapse: 44:03 1879
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2123 > 2239 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



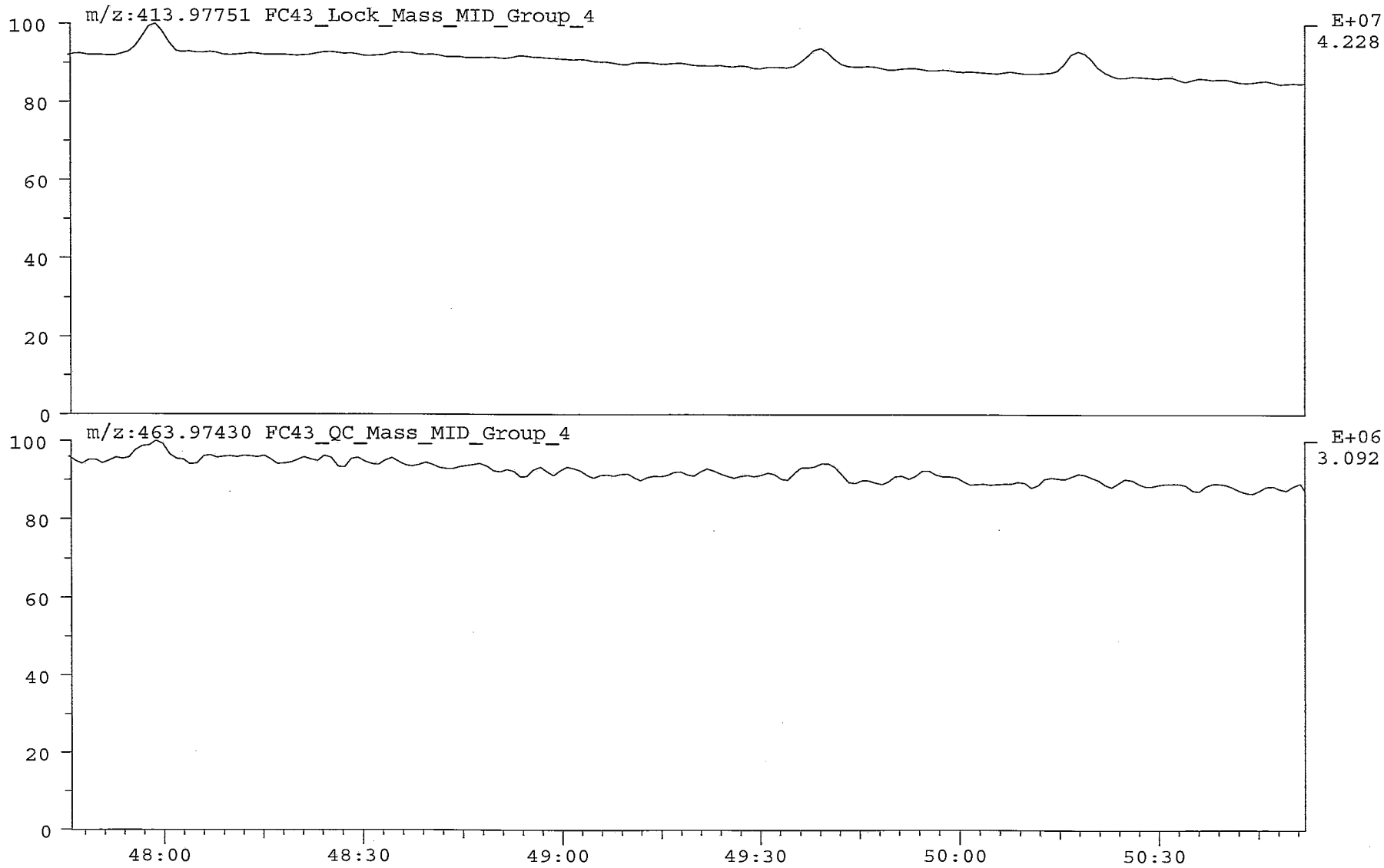
CHRO: d1150409i5 09-Apr-15 Elapse: 43:57 1873
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2083 > 2267 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1150409i5                                09-Apr-15  Elapse:  49:18      2185
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                         Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  1613/8290 ICAL
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2093 > 2277            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1150409i5                          09-Apr-15  Elapse:  49:18      2185
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                   Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2093 > 2277      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```

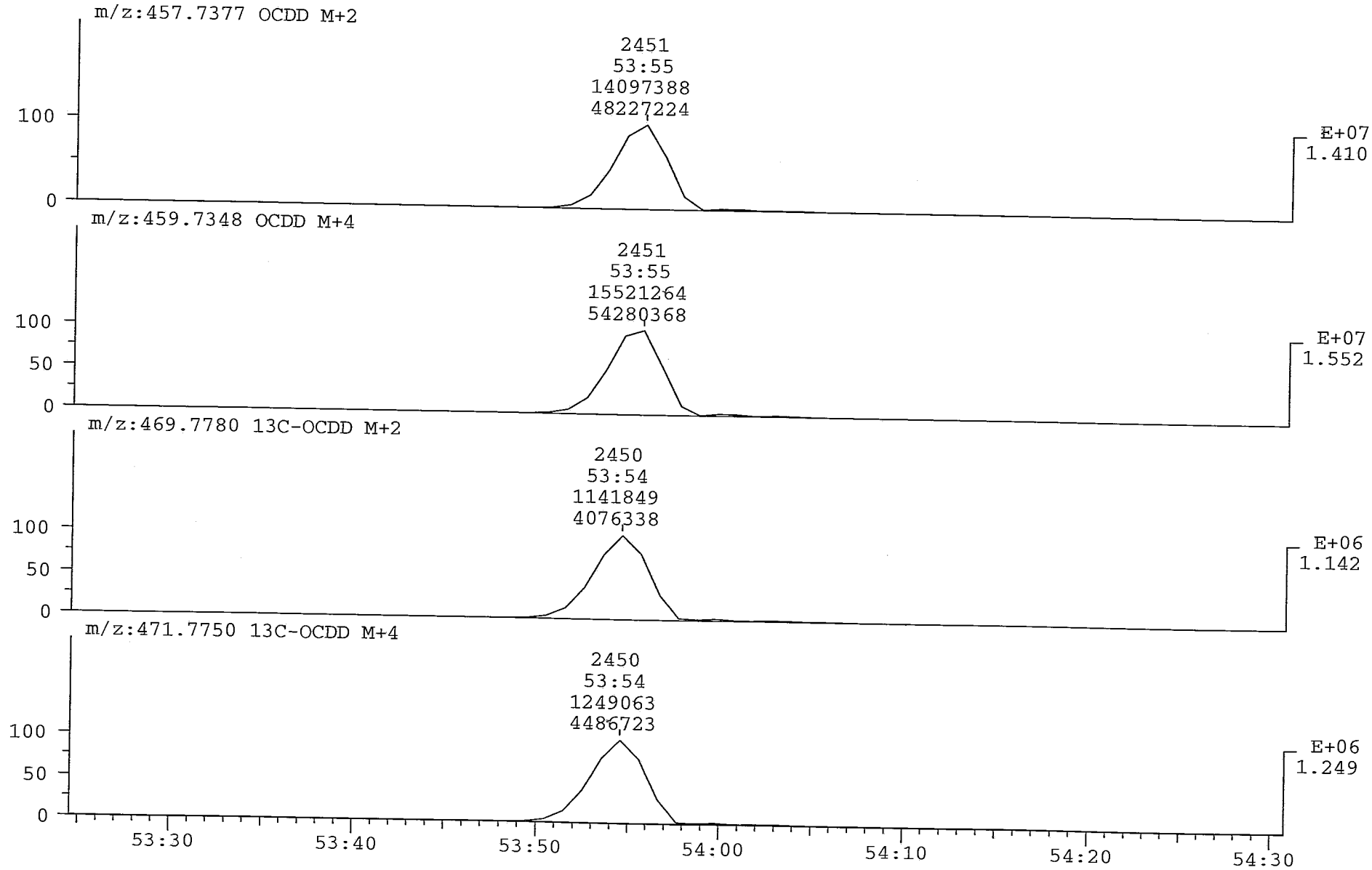


CHRO: d1150409i5
Samp: WO=4104:74cs5 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

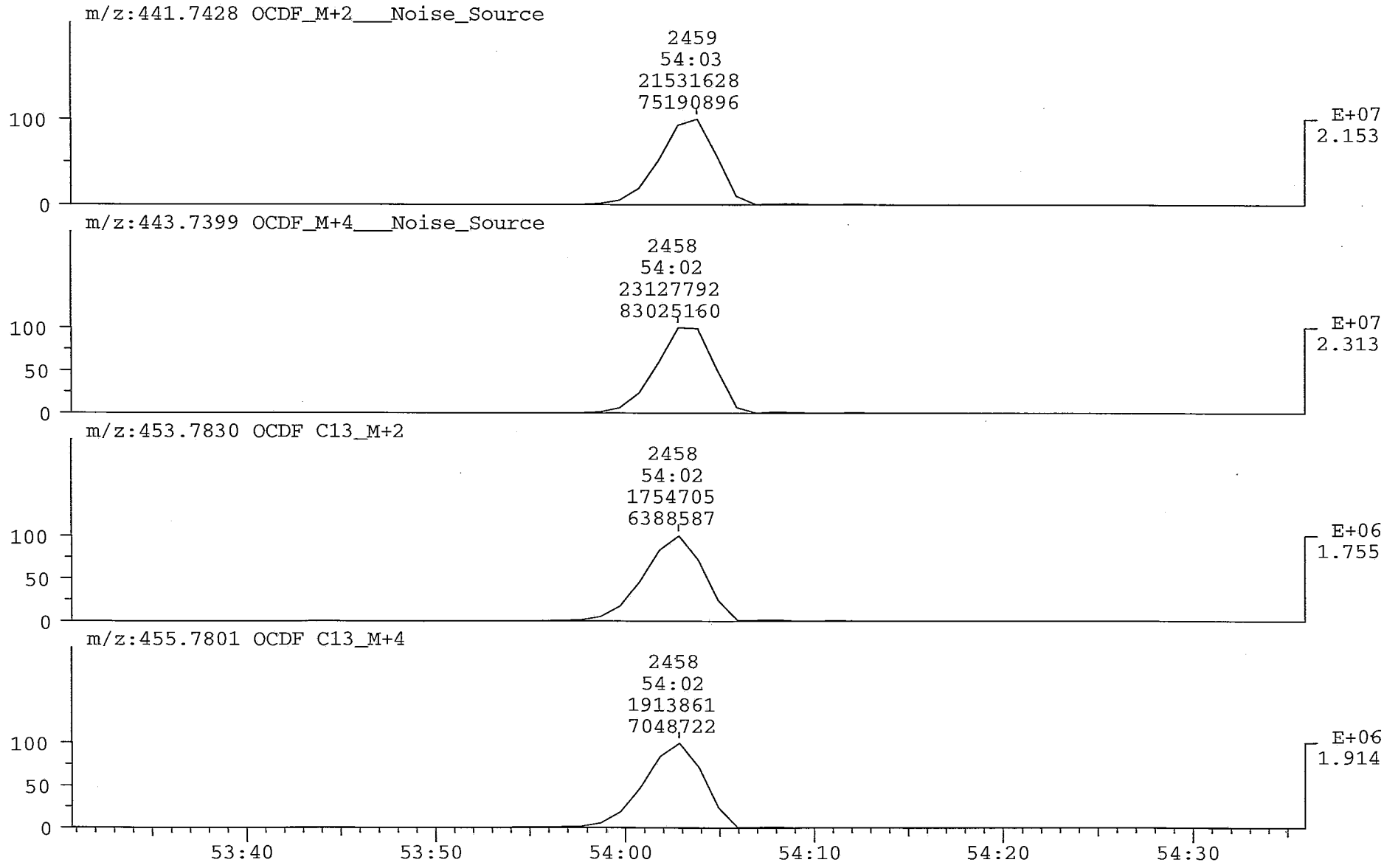
Label wndw: 2421 > 2485
Baseline : 100, 3

09-Apr-15

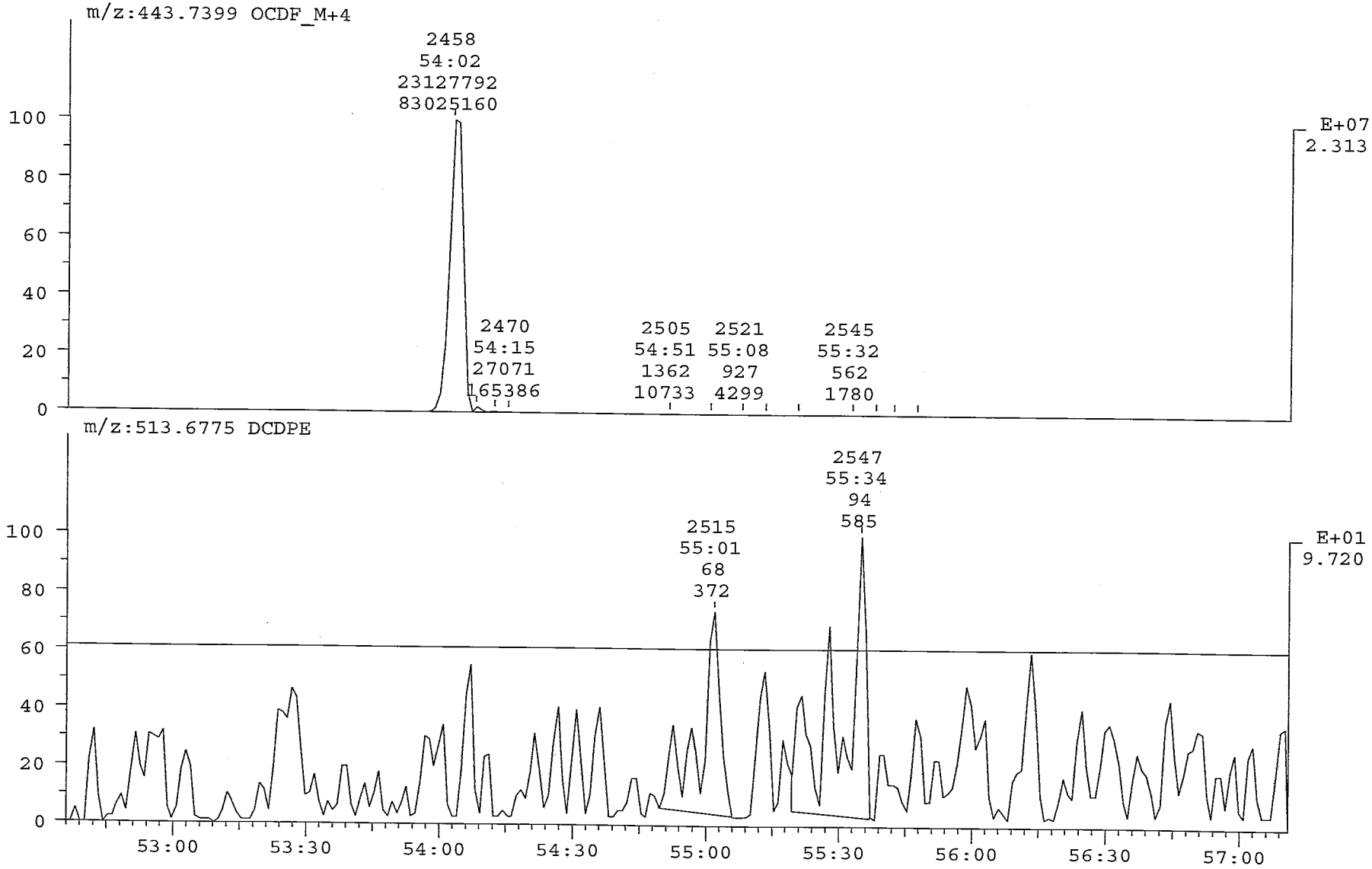
Elapse: 43:57 1873
Start : 06:07:29 2641
Study : 1613/8290 ICAL
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



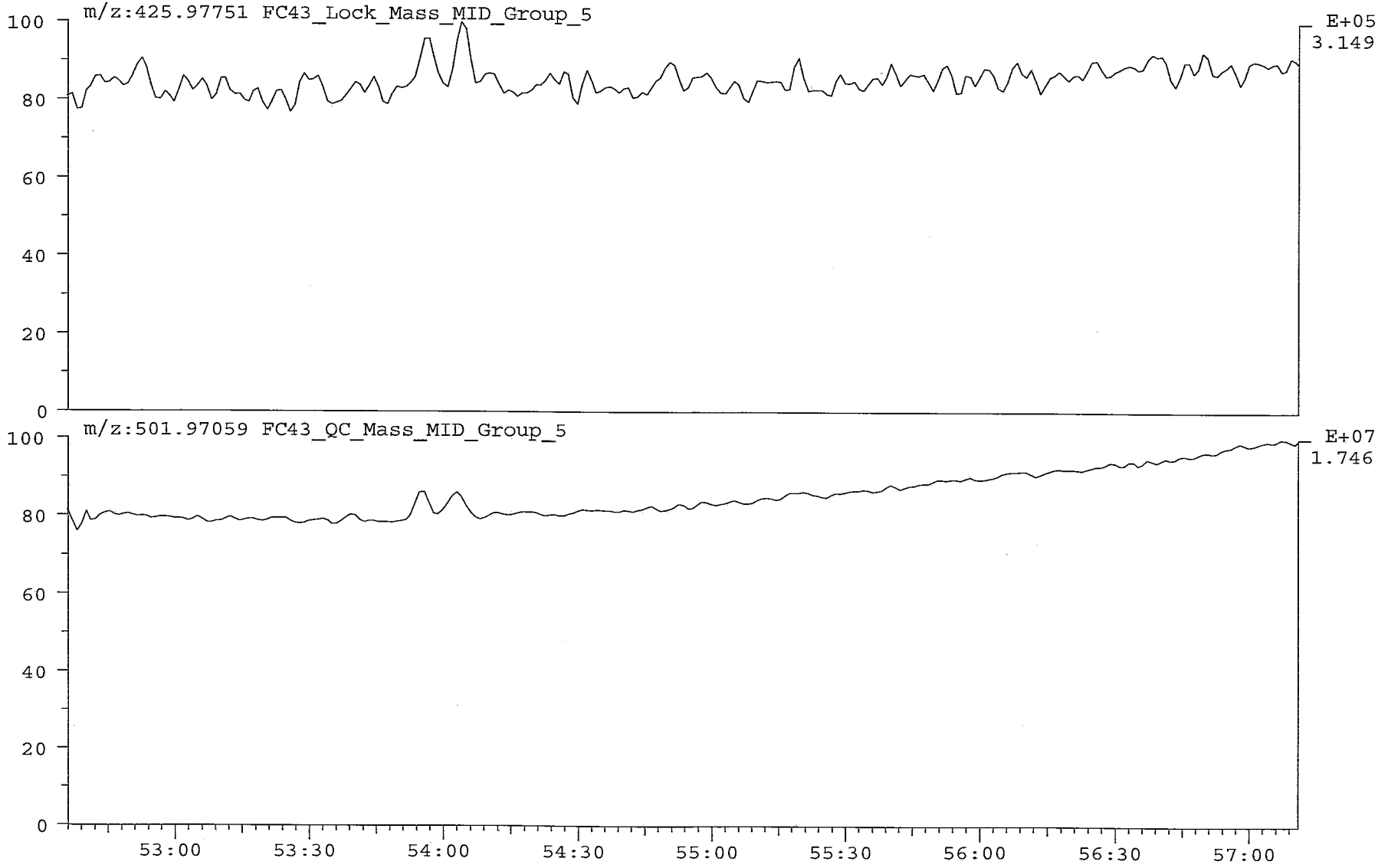
```
CHRO:  d1150409i5                          09-Apr-15  Elapse:  43:57      1873
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                   Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2427 > 2490      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1150409i5 09-Apr-15 Elapse: 54:10 2465
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2640 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1150409i5                          09-Apr-15  Elapse:  54:10      2465
Samp:  WO=4104:74cs5 Meth=F8o Dil=1                   Start :  06:07:29   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2374 > 2640      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Apr 09 06:11:51 2015 ***

```
Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01
```

Analysis started at: 09-Apr-15 06:11:51

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409011227

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:16 min	34:16 min	1.00 sec
# 2	34:16 min	7:55 min	42:12 min	1.00 sec
# 3	42:12 min	4:51 min	47:03 min	1.00 sec
# 4	47:03 min	5:26 min	52:30 min	1.00 sec
# 5	52:30 min	4:42 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 34.283333 minutes
MID Window end time was 34.280000 minutes
MID Window terminated after 42.200000 minutes
MID Window end time was 42.200000 minutes
MID Window terminated after 47.066667 minutes
MID Window end time was 47.060000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          309.4834
 BQUAD            1.1000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       16.0000  ECORR           1.0001   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9995   EDACZ         4144.0190
 ELEN           -45.0000   EMULT        1652.0000   ENS            239.0000
 ENSBR            1.1000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           170.0000   EXSBR           -1.1000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            5.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0040	FVINLET	0.0464	FVSRC	0.0477
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	309.4834	LKM	425.9770	MASS	309.4834
MDAC	3559251.4883	MRANGE	1252.5112	NSAM	200.0000
NSCAN	2662.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8977	RELEN	0.0000
RES	9980.6263	RPUSHER	-10.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1250	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:         3.5e-005 mbar
Analyzer Penning:     6.3e-008 mbar
Pirani Analyse:       4.0e-003 mbar
Pirani Source:        4.8e-002 mbar
Pirani Inlet System: 4.6e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10439.
MID Time Window 2: Resolution is 10038.
MID Time Window 3: Resolution is 9950.
MID Time Window 4: Resolution is 9655.
MID Time Window 5: Resolution is 9980.

Amplifier Offset: 89.


*** File closed Thu Apr 09 07:09:05 2015
  ***
```

QUAN: d115040915.q0 Entries: 92

Data file(s) used
File: d115040915 09-Apr-15
Samp: WO=4104:74cs5 Meth=F8o Dil=1 Start : 06:07:29 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	30:43	6518135.	686807.	30:28	30:58	90.	1	1.0	AVV
321.8775	30:43	8239609.	860994.	30:28	30:58	76.	1	1.0	AVV
319.8805	30:43	6518135.	686807.	30:28	30:58	90.	2	5.0	AVV
321.8775	30:43	8239609.	860994.	30:28	30:58	76.	2	5.0	AVV
331.9202	30:10	2371542.	258757.	29:54	30:24	87.	2	5.0	AVV
331.9202	30:40	2832713.	299302.	30:25	30:55	87.	2	5.0	AVB
333.9171	30:10	2959392.	315903.	29:54	30:25	67.	2	5.0	ABV
333.9171	30:40	3570869.	378985.	30:25	30:55	67.	2	5.0	AVV
327.8683	30:43	14248747.	1483809.	30:28	30:58	80.	1	1.0	AVV
327.8683	30:43	14248747.	1483809.	30:28	30:58	80.	2	5.0	AVV
303.8864	28:44	9498720.	1068304.	28:29	28:59	104.	1	1.0	AVV
305.8834	28:44	11973225.	1334886.	28:29	28:59	122.	1	1.0	AVV
303.8864	28:44	9498720.	1068304.	28:29	28:59	104.	2	5.0	AVV
305.8834	28:44	11973225.	1334886.	28:29	28:59	122.	2	5.0	AVV
315.9261	28:42	4544542.	511141.	28:27	28:57	93.	2	5.0	AVV
317.9230	28:42	5677311.	645078.	28:27	28:57	78.	2	5.0	AVV
355.8368	40:34	33419168.	8426247.	40:25	40:50	114.	1	1.0	ABV
357.8337	40:34	20761718.	5108184.	40:23	40:50	86.	1	1.0	ABV
355.8368	40:34	33419168.	8426247.	40:25	40:50	114.	2	5.0	ABV
357.8337	40:34	20761718.	5108184.	40:23	40:50	86.	2	5.0	ABV
367.8765	40:33	3203146.	781280.	40:23	40:43	34.	2	5.0	ABV
369.8734	40:33	1985360.	490144.	40:24	40:44	46.	2	5.0	ABV
339.8427	38:45	63335920.	13584958.	38:32	38:58	209.	1	1.0	ABV
341.8396	38:45	39144884.	8276000.	38:31	38:58	166.	1	1.0	ABV
339.8427	38:45	63335920.	13584958.	38:32	38:58	209.	2	5.0	ABV
339.8427	40:01	59010252.	13964375.	39:52	40:08	209.	2	5.0	ABV
341.8396	38:45	39144884.	8276000.	38:31	38:58	166.	2	5.0	ABV
341.8396	40:01	36691308.	8747891.	39:52	40:10	166.	2	5.0	ABV
351.8824	38:44	5315784.	1072382.	38:33	38:58	105.	2	5.0	ABV
351.8824	40:00	5275693.	1216627.	39:52	40:15	105.	2	5.0	AVV
353.8793	38:44	3346418.	679643.	38:32	38:55	62.	2	5.0	ABV
353.8793	40:00	3274755.	763896.	39:44	40:15	62.	2	5.0	AVV
389.7961	45:21	38563304.	10548473.	45:13	45:30	277.	1	1.0	AVV
391.7931	45:21	30459200.	8049105.	45:13	45:33	159.	1	1.0	AVV
389.7961	44:51	35640040.	10298393.	44:44	44:54	277.	2	5.0	ABV
389.7961	44:58	35292304.	9836774.	44:54	45:13	277.	2	5.0	AVV
389.7961	45:21	38563304.	10548473.	45:13	45:30	277.	2	5.0	AVV
391.7931	44:51	27993888.	8111213.	44:44	44:54	159.	2	5.0	ABV
391.7931	44:58	27733800.	7779550.	44:54	45:13	159.	2	5.0	AVV
391.7931	45:21	30459200.	8049105.	45:13	45:33	159.	2	5.0	AVV
401.8358	44:50	3343864.	902201.	44:39	44:54	75.	2	5.0	ABV
401.8358	44:57	3164500.	877233.	44:54	45:09	75.	2	5.0	AVV
401.8358	45:20	3650664.	987015.	45:09	45:32	75.	2	5.0	AVV
403.8327	44:50	2546554.	715368.	44:43	44:53	68.	2	5.0	ABV
403.8327	44:57	2604394.	705848.	44:53	45:12	68.	2	5.0	AVV
403.8327	45:20	2879047.	769348.	45:13	45:32	68.	2	5.0	AVV
373.8021	43:57	64458956.	19304638.	43:53	44:03	215.	1	1.0	AVB
375.7990	43:57	50659236.	15261648.	43:53	44:03	195.	1	1.0	AVB
373.8021	43:49	60348600.	17225606.	43:41	43:53	215.	2	5.0	ABV
373.8021	43:57	64458956.	19304638.	43:53	44:03	215.	2	5.0	AVB

373.8021	44:40	57947624.	16772585.	44:29	44:47	215.	2	5.0	AVB
373.8021	45:36	54422140.	14631468.	45:28	45:51	215.	2	5.0	AVV
375.7990	43:49	47378456.	13901712.	43:39	43:53	195.	2	5.0	ABV
375.7990	43:57	50659236.	15261648.	43:53	44:03	195.	2	5.0	AVB
375.7990	44:40	45824976.	12936960.	44:29	44:47	195.	2	5.0	AVB
375.7990	45:36	42661484.	11594366.	45:28	45:51	195.	2	5.0	AVV
383.8447	43:56	3215801.	926978.	43:52	44:00	75.	2	5.0	AVB
383.8447	44:39	2907249.	816959.	44:25	44:55	75.	2	5.0	AVV
385.8417	43:49	5086807.	1401072.	43:40	43:52	90.	2	5.0	ABV
385.8417	43:56	5936327.	1697550.	43:52	44:00	90.	2	5.0	AVB
385.8417	44:39	5360022.	1481923.	44:28	44:55	90.	2	5.0	AVV
385.8417	45:35	5039490.	1295546.	45:28	45:50	90.	2	5.0	AVV
423.7555	49:39	26616478.	5805702.	49:29	49:54	120.	1	1.0	ABV
425.7524	49:39	25288232.	5414345.	49:29	49:54	90.	1	1.0	ABV
423.7555	48:28	172389.	32172.	48:21	48:43	120.	2	5.0	ABV
423.7555	49:39	26616478.	5805702.	49:29	49:54	120.	2	5.0	ABV
425.7524	48:28	165128.	31608.	48:20	48:41	90.	2	5.0	ABV
425.7524	49:39	25288232.	5414345.	49:29	49:54	90.	2	5.0	ABV
435.7951	48:27	16162.	3180.	48:18	48:40	23.	2	5.0	ABB
435.7951	49:38	2505459.	532006.	49:28	49:53	23.	2	5.0	ABV
437.7921	48:27	16380.	3139.	48:20	48:39	41.	2	5.0	ABB
437.7921	49:38	2360417.	501018.	49:28	49:53	41.	2	5.0	ABV
407.7614	47:58	47937372.	11825597.	47:49	48:14	140.	1	1.0	ABV
409.7583	47:58	46062808.	11369662.	47:49	48:14	157.	1	1.0	ABV
407.7614	47:58	47937372.	11825597.	47:49	48:14	140.	2	5.0	ABV
407.7614	50:17	36791396.	7863719.	50:08	50:33	140.	2	5.0	ABV
409.7583	47:58	46062808.	11369662.	47:49	48:14	157.	2	5.0	ABV
409.7583	50:17	35266784.	7686688.	50:08	50:33	157.	2	5.0	ABV
417.8041	47:57	2043250.	489565.	47:48	48:13	57.	2	5.0	ABV
417.8041	50:16	1687624.	348812.	50:08	50:32	57.	2	5.0	ABV
419.8010	47:57	4468242.	1059038.	47:48	48:13	76.	2	5.0	ABV
419.8010	50:16	3696119.	772158.	50:01	50:32	76.	2	5.0	AVV
457.7148	53:55	48227144.	14097386.	53:47	53:58	92.	1	1.0	ABB
459.7118	53:55	54280368.	15521263.	53:46	53:58	98.	1	1.0	ABB
457.7148	53:55	48227144.	14097386.	53:47	53:58	92.	2	5.0	ABB
459.7118	53:55	54280368.	15521263.	53:46	53:58	98.	2	5.0	ABB
469.7545	53:54	4076362.	1141850.	53:46	54:10	57.	2	5.0	ABV
471.7514	53:54	4486887.	1249068.	53:46	54:10	55.	2	5.0	ABV
441.7207	54:03	75190896.	21531628.	53:50	54:07	129.	1	1.0	ABB
443.7177	54:02	83025176.	23127790.	53:49	54:07	119.	1	1.0	ABB
441.7207	54:03	75190896.	21531628.	53:50	54:07	129.	2	5.0	ABB
443.7177	54:02	83025176.	23127790.	53:49	54:07	119.	2	5.0	ABB

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IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:05	Prep Batch		Lot No	
Data File	/20150409i/d1150409ss.d	Prep Date		SDG No	
Analysis ID	169137	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	08:14	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	30:38	394180	37153	1.144	10.00	10.715084	107.15	10.715084	E	0.0764
Total TCDD				1.144		10.715084		10.715084	E	0.0764
2,3,7,8-TCDF	28:40	619809	64303	1.066	10.00	9.433369	94.33	9.433369	E	0.0382
Total TCDF				1.066		9.433369		9.433369	E	0.0382
1,2,3,7,8-PeCDD	40:31	1315159	289244	1.060	50.00	50.730302	101.46	50.730302	E	0.0303
Total PeCDD				1.060		50.730302		50.730302	E	0.0303
1,2,3,7,8-PeCDF	38:43	2359468	445095	1.179	50.00	44.833948	89.67	44.833948	E	0.0324
2,3,4,7,8-PeCDF	39:59	2462748	507880	1.115	50.00	48.756661	97.51	48.756661	E	0.0292
Total PeCDF				1.147		93.590609		93.590609	E	0.0306
1,2,3,4,7,8-HxCDD	44:49	1357528	349283	1.131	50.00	47.400410	94.80	47.400410	E	0.0566
1,2,3,6,7,8-HxCDD	44:56	1430404	343333	1.116	50.00	45.123502	90.25	45.123502	E	0.0541
1,2,3,7,8,9-HxCDD	45:18	1344233	322708	1.205	50.00	41.522752	83.05	41.522752	E	0.0515
Total HxCDD				1.151		134.046665		134.046665	E	0.0540
1,2,3,4,7,8-HxCDF	43:47	2144346	592196	1.350	50.00	44.495793	88.99	44.495793	E	0.0384
1,2,3,6,7,8-HxCDF	43:55	2480681	605354	1.242	50.00	46.542844	93.09	46.542844	E	0.0391
2,3,4,6,7,8-HxCDF	44:38	2210282	553380	1.241	50.00	50.851570	101.70	50.851570	E	0.0478
1,2,3,7,8,9-HxCDF	45:35	1861038	421538	1.262	50.00	46.164088	92.33	46.164088	E	0.0564
Total HxCDF				1.274		188.054295		188.054295	E	0.0444
1,2,3,4,6,7,8-HpCDD	49:36	1058177	207294	1.114	50.00	47.842219	95.68	47.842219	E	0.0553
Total HpCDD				1.114		47.842219		47.842219	E	0.0553
1,2,3,4,6,7,8-HpCDF	47:57	2004588	427328	1.461	50.00	45.911534	91.82	45.911534	E	0.0310
1,2,3,4,7,8,9-HpCDF	50:16	1533330	295507	1.370	50.00	50.102768	100.21	50.102768	E	0.0486
Total HpCDF				1.416		96.014303		96.014303	E	0.0381
OCDD	53:52	1867693	455566	1.203	100.0	89.260812	89.26	89.260812	E	0.0612
OCDF	54:01	2637372	650771	1.134	100.0	98.662821	98.66	98.662821	E	0.0442
13C-2,3,7,8-TCDD	30:35	3217015	303449	1.093	100.0	90.423502	90.42	90.423502		0.292
13C-2,3,7,8-TCDF	28:37	6165976	638638	1.794	100.0	105.525905	105.53	105.525905		0.0883
13C-1,2,3,7,8-PeCDD	40:30	2445960	545730	0.800	100.0	93.894848	93.89	93.894848		0.0747
13C-1,2,3,7,8-PeCDF	38:41	4463168	812414	1.356	100.0	101.044790	101.04	101.044790		0.116
13C-2,3,4,7,8-PeCDF	39:57	4531894	952520	1.343	100.0	103.626711	103.63	103.626711		0.117
13C-1,2,3,4,7,8-HxCDD	44:48	2531994	640883	0.916	100.0	113.685666	113.69	113.685666		0.140
13C-1,2,3,6,7,8-HxCDD	44:55	2840602	679623	0.906	100.0	128.889865	128.89	128.889865		0.141
13C-1,2,3,4,7,8-HxCDF	43:46	3568635	979005	1.268	100.0	115.697523	115.70	115.697523		0.0816
13C-1,2,3,6,7,8-HxCDF	43:54	4292694	1046161	1.506	100.0	117.248550	117.25	117.248550		0.0688
13C-2,3,4,6,7,8-HxCDF	44:37	3502803	855631	1.344	100.0	107.177987	107.18	107.177987		0.0771
13C-1,2,3,7,8,9-HxCDF	45:34	3194288	712578	1.202	100.0	109.273329	109.27	109.273329		0.0862
13C-1,2,3,4,6,7,8-HpCDD	49:35	1985961	385552	0.728	100.0	112.116270	112.12	112.116270		0.0560
13C-1,2,3,4,6,7,8-HpCDF	47:56	2988467	624413	1.008	100.0	121.908912	121.91	121.908912		0.0736
13C-1,2,3,4,7,8,9-HpCDF	50:15	2233282	423797	0.811	100.0	113.271105	113.27	113.271105		0.0915
13C-OCDD	53:51	3478658	821365	0.597	200.0	239.461590	119.73	239.461590		0.131
13C-OCDF	54:00	4713056	1106795	0.946	200.0	204.873365	102.44	204.873365		0.0631
37Cl4-2,3,7,8-TCDD	30:38	398896	38888	1.233	10.00	9.931628	99.32	9.931628	E	0.0291
13C-1,2,3,4-TCDD	30:05	3256469	334555	1.000	100.0	100.000000	100.00	100.000000		0.319
13C-1,2,3,7,8,9-HxCDD	45:17	2431817	569708	1.000	100.0	100.000000	100.00	100.000000		0.128

Ken 4/9/15
KM 4-9-15

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:05	Prep Batch		Lot No	
Data File	/20150409i/d1150409ss.	Prep Date		SDG No	
Analysis ID	169137	Prep Exp Date		Date Received	
Analysis Date	04/09/15 08:14	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	118	143	47	57	0.82	/	
	2,3,7,8-TCDF	28:40	28:39	1	268355	351454	26985	37318	0.76	ABV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	293	238	117	95	1.23 *	/	
	13C-2,3,7,8-TCDF	28:37	28:37	0	2732517	3433459	281504	357134	0.80	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	130	135	52	54	0.96 *	/	
	2,3,7,8-TCDD	30:38	30:38	0	173787	220393	16318	20835	0.79	AVV/AVV	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	120		48				
	37Cl4-2,3,7,8-TCDD	30:38	30:38	0	398896		38888			ABV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	513	555	205	222	0.92 *	/	
	13C-1,2,3,4-TCDD	30:05	30:05	0	1444746	1811723	149749	184806	0.80	ABV/ABV	
	13C-2,3,7,8-TCDD	30:35	30:35	0	1430813	1786202	137204	166245	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	175	135	70	54	1.30 *	/	
	1,2,3,7,8-PeCDF	38:43	38:42	1	1439990	919478	273740	171355	1.57	ABV/ABV	
	2,3,4,7,8-PeCDF	39:59	39:59	0	1505434	957314	313341	194539	1.57	AVV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	303	223	121	89	1.36	/	
	13C-1,2,3,7,8-PeCDF	38:41	38:41	0	2735502	1727666	499209	313205	1.58	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	39:57	39:57	0	2770417	1761477	585199	367321	1.57	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	103	73	41	29	1.41	/	
	1,2,3,7,8-PeCDD	40:31	40:31	0	804072	511087	177082	112162	1.57	ABV/ABV	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	118	83	47	33	1.42	/	
	13C-1,2,3,7,8-PeCDD	40:30	40:30	0	1492054	953906	332216	213514	1.56	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	225	283	90	113	0.80 *	/	
	1,2,3,4,7,8-HxCDF	43:47	43:48	-1	1190429	953917	330701	261495	1.25	ABV/ABV	
	1,2,3,6,7,8-HxCDF	43:55	43:55	0	1383852	1096829	339804	265550	1.26	AVV/AVV	
	2,3,4,6,7,8-HxCDF	44:38	44:38	0	1224380	985902	304763	248617	1.24	AVV/AVV	
	1,2,3,7,8,9-HxCDF	45:35	45:35	0	1032933	828105	235900	185638	1.25	ABV/ABV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	243	348	97	139	0.70 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:46	43:47	-1	1219322	2349313	332701	646304	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	43:54	43:54	0	1496038	2796656	364023	682138	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:37	44:37	0	1222518	2280285	298643	556988	0.54	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	45:34	45:34	0	1116860	2077428	248900	463678	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:05	Prep Batch		Lot No	
Data File	/20150409i/d1150409ss.	Prep Date		SDG No	
Analysis ID	169137	Prep Exp Date		Date Received	
Analysis Date	04/09/15 08:14	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

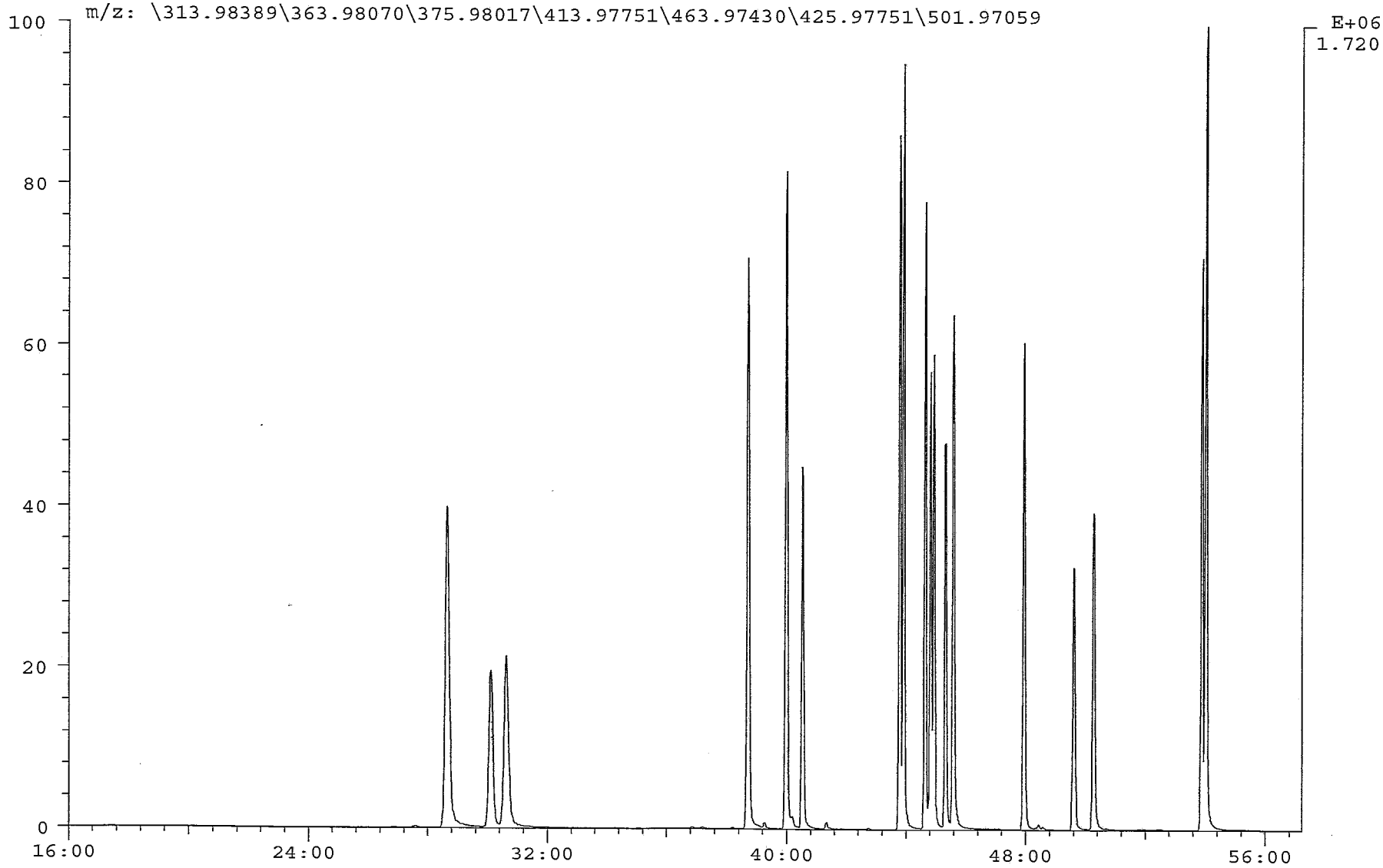
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration Flags
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43	
	Noise	00:00	00:00	0	230	180	92	72	1.28	/
	1,2,3,4,7,8-HxCDD	44:49	44:49	0	752993	604535	196301	152982	1.25	ABV/ABV
	1,2,3,6,7,8-HxCDD	44:56	44:56	0	798010	632394	193947	149386	1.26	AVV/AVV
	1,2,3,7,8,9-HxCDD	45:18	45:19	-1	742654	601579	178087	144621	1.23	AVV/AVV
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43	
	Noise	00:00	00:00	0	355	375	142	150	0.95 *	/
	13C-1,2,3,4,7,8-HxCDD	44:48	44:48	0	1417790	1114204	361778	279105	1.27	ABV/ABV
	13C-1,2,3,6,7,8-HxCDD	44:55	44:55	0	1601997	1238605	384957	294666	1.29	AVV/AVV
	13C-1,2,3,7,8,9-HxCDD	45:17	45:18	-1	1359240	1072577	317134	252574	1.27	AVV/AVV
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20	
	Noise	00:00	00:00	0	153	130	61	52	1.17	/
	1,2,3,4,6,7,8-HpCDF	47:57	47:57	0	1018003	986585	218091	209237	1.03	ABV/ABV
	1,2,3,4,7,8,9-HpCDF	50:16	50:16	0	787994	745336	152342	143165	1.06	ABB/ABB
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51	
	Noise	00:00	00:00	0	128	295	51	118	0.43	/
	13C-1,2,3,4,6,7,8-HpCDF	47:56	47:55	1	927520	2060947	194058	430355	0.45	ABV/ABV
	13C-1,2,3,4,7,8,9-HpCDF	50:15	50:15	0	708696	1524586	132663	291134	0.46	ABV/ABB
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20	
	Noise	00:00	00:00	0	105	133	42	53	0.79 *	/
	1,2,3,4,6,7,8-HpCDD	49:36	49:37	-1	543179	514998	106691	100603	1.05	ABV/ABV
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20	
	Noise	00:00	00:00	0	115	118	46	47	0.98	/
	Unidentified	48:24	00:00	0	21582	23176	4069	4668	0.93	ABB/ABB
	13C-1,2,3,4,6,7,8-HpCDD	49:35	49:36	-1	1037701	948260	198400	187152	1.09	ABV/ABV
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02	
	Noise	00:00	00:00	0	163	115	65	46	1.41 *	/
	OCDF	54:01	54:01	0	1253849	1383523	307855	342916	0.91	ABV/ABV
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02	
	Noise	00:00	00:00	0	213	128	85	51	1.67 *	/
	13C-OCDF	54:00	54:00	0	2234701	2478355	522459	584336	0.90	ABV/ABV
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02	
	Noise	00:00	00:00	0	130	173	52	69	0.75 *	/
	OCDD	53:52	53:53	-1	886036	981657	214623	240943	0.90	ABV/ABV
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02	
	Noise	00:00	00:00	0	208	240	83	96	0.86	/
	13C-OCDD	53:51	53:52	-1	1640022	1838636	385549	435816	0.89	ABV/ABV

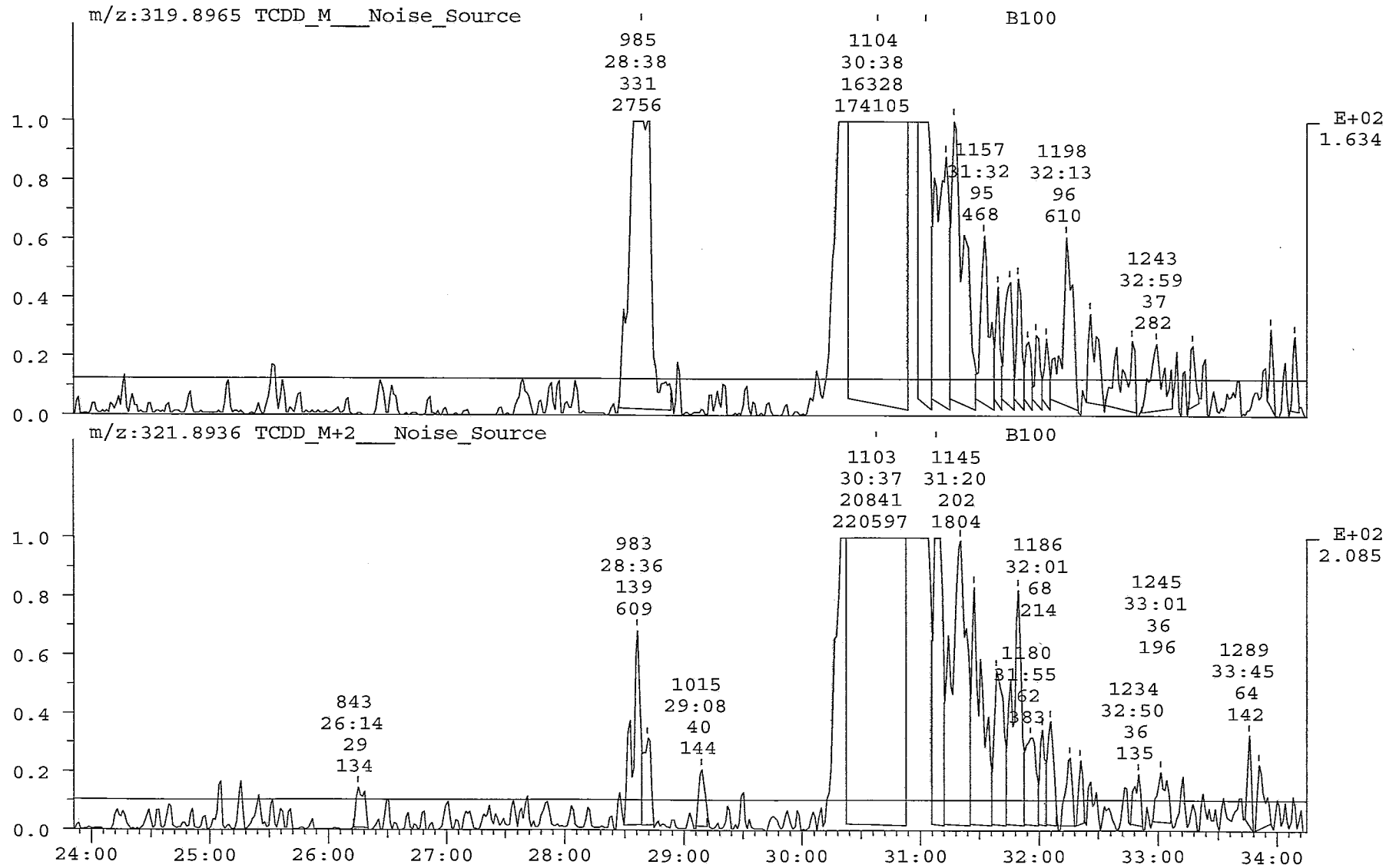
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int./Calc. KM 4/9/15
QCKM 4-9-15

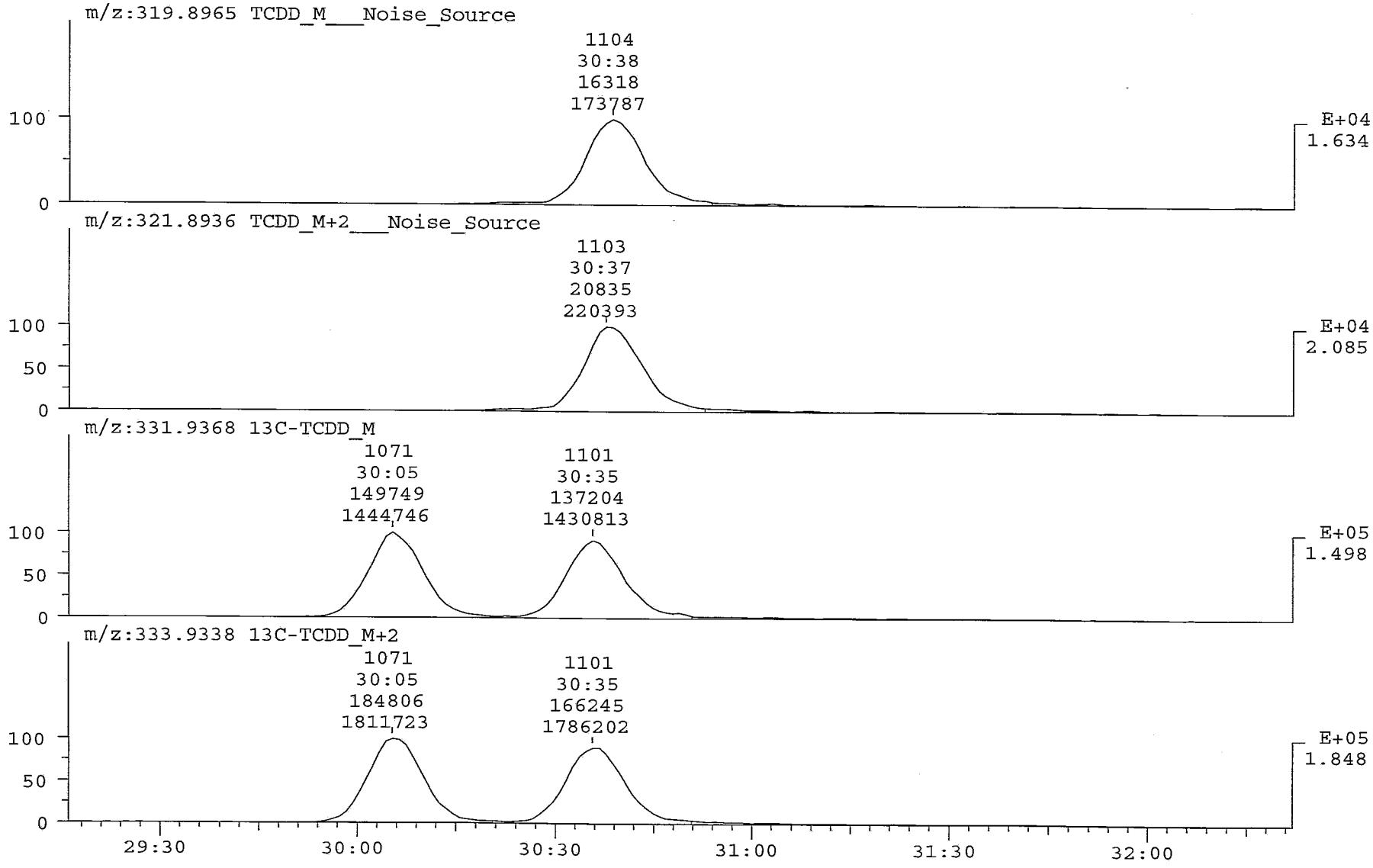
CHRO: d1150409ss 09-Apr-15 Elapse: 43:59 1875
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 234 > 2641 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



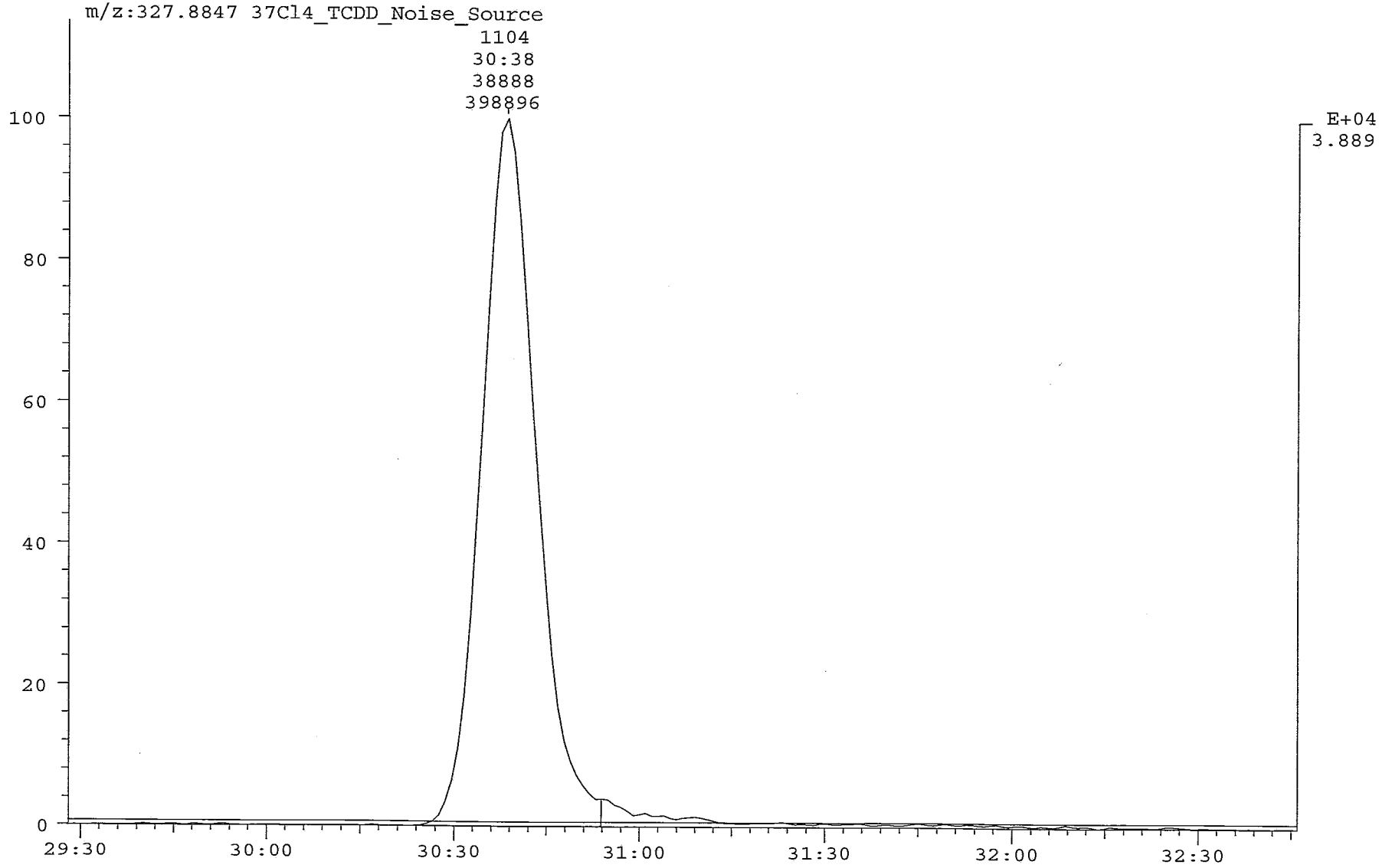
CHRO: d1150409ss 09-Apr-15 Elapse: 43:59 1875
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 701 > 1318 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



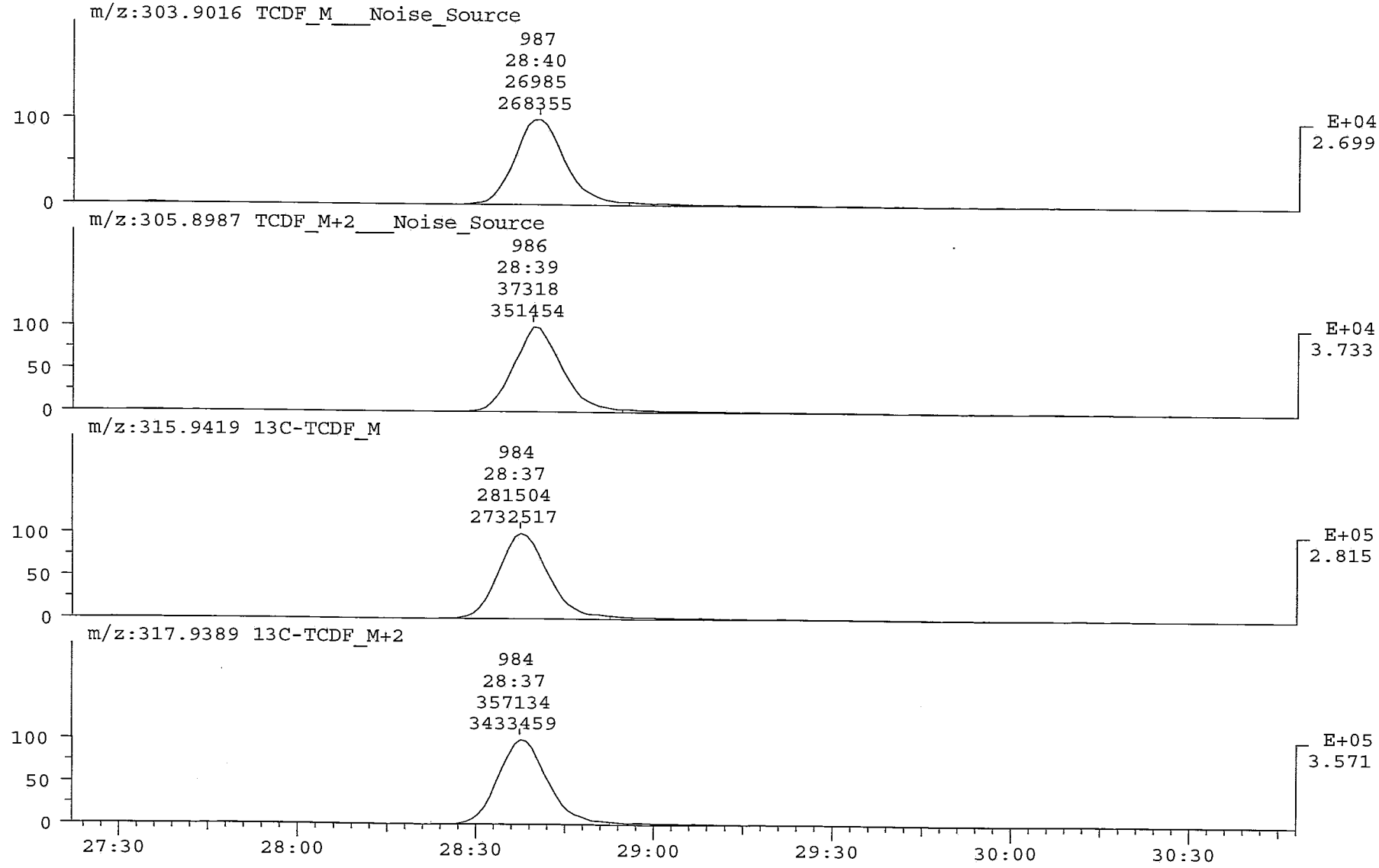
CHRO: d1150409ss 09-Apr-15 Elapse: 30:48 1114
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1022 > 1206 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



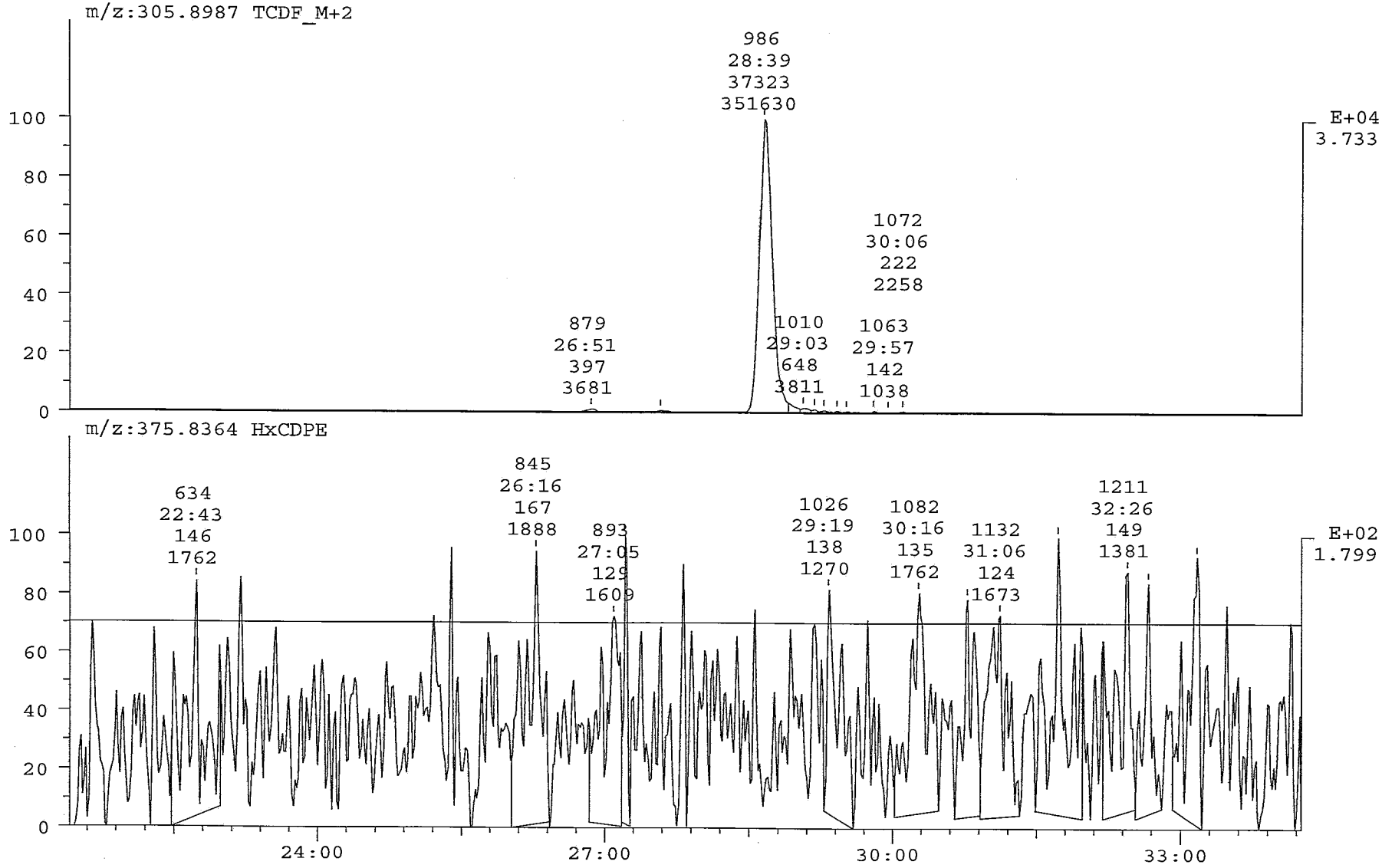
```
CHRO:  d1150409ss                                09-Apr-15  Elapse:  31:03       1129
Samp:  WO=4966:05 Meth=F8o Dil=1                            Start :  08:14:09    2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  1613/8290 ICAL
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1034 > 1230            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



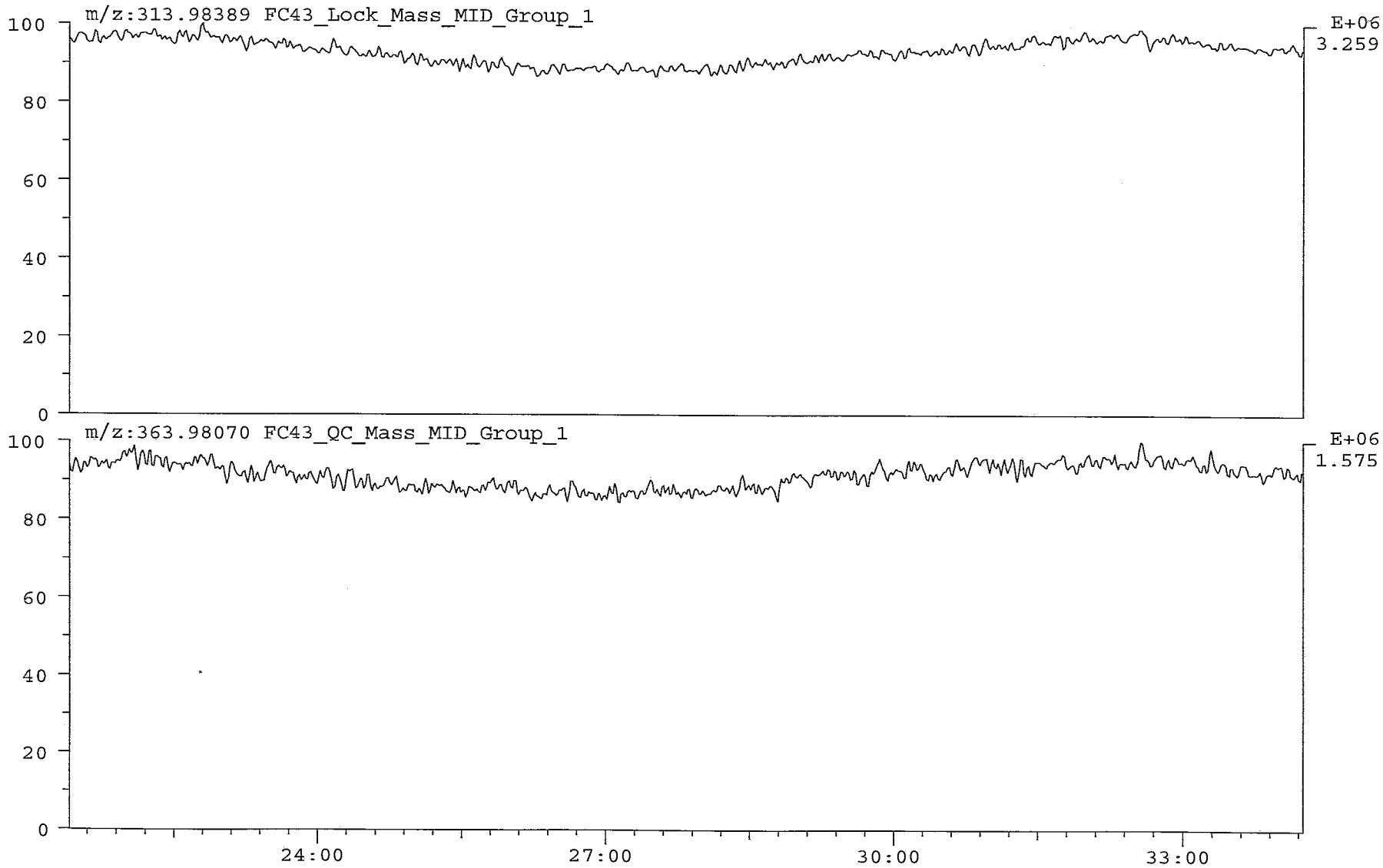
CHRO: d1150409ss 09-Apr-15 Elapse: 29:01 1008
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 909 > 1113 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



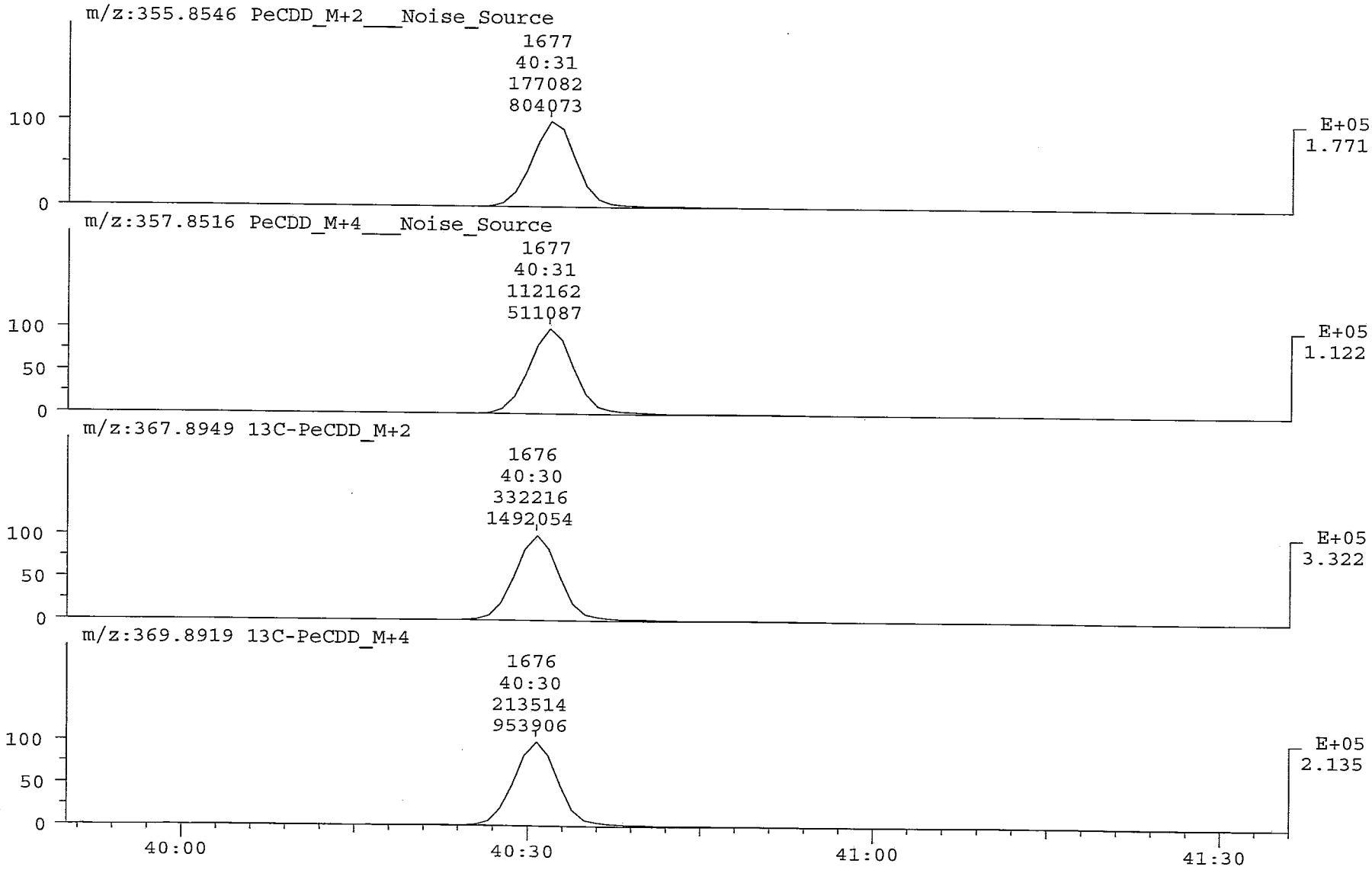
CHRO: d1150409ss 09-Apr-15 Elapse: 29:01 1008
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 556 > 1318 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



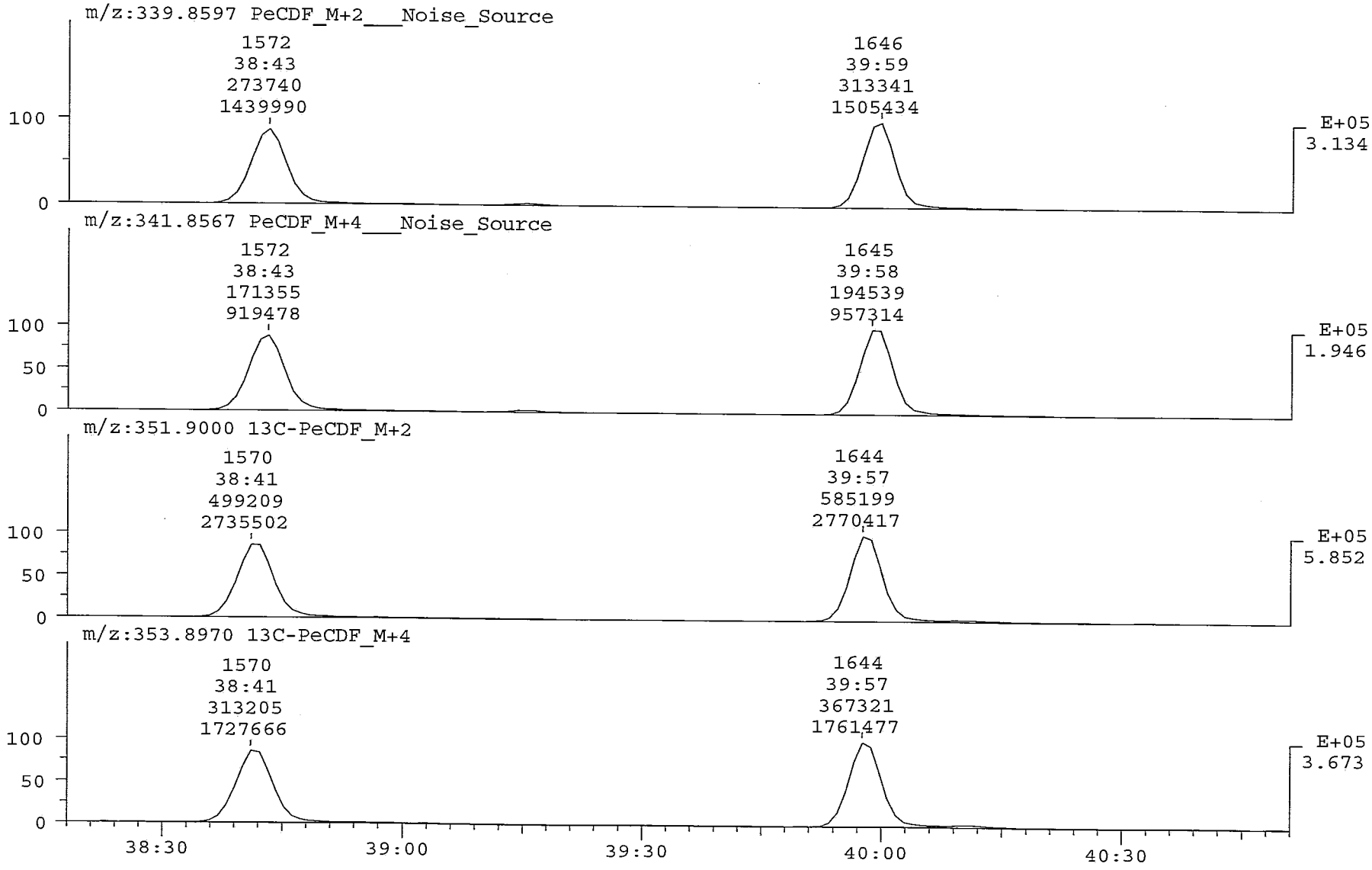
```
CHRO:  d1150409ss                          09-Apr-15  Elapse:  29:01      1008
Samp:  WO=4966:05 Meth=F8o Dil=1                      Start :  08:14:09   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   556 > 1318       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



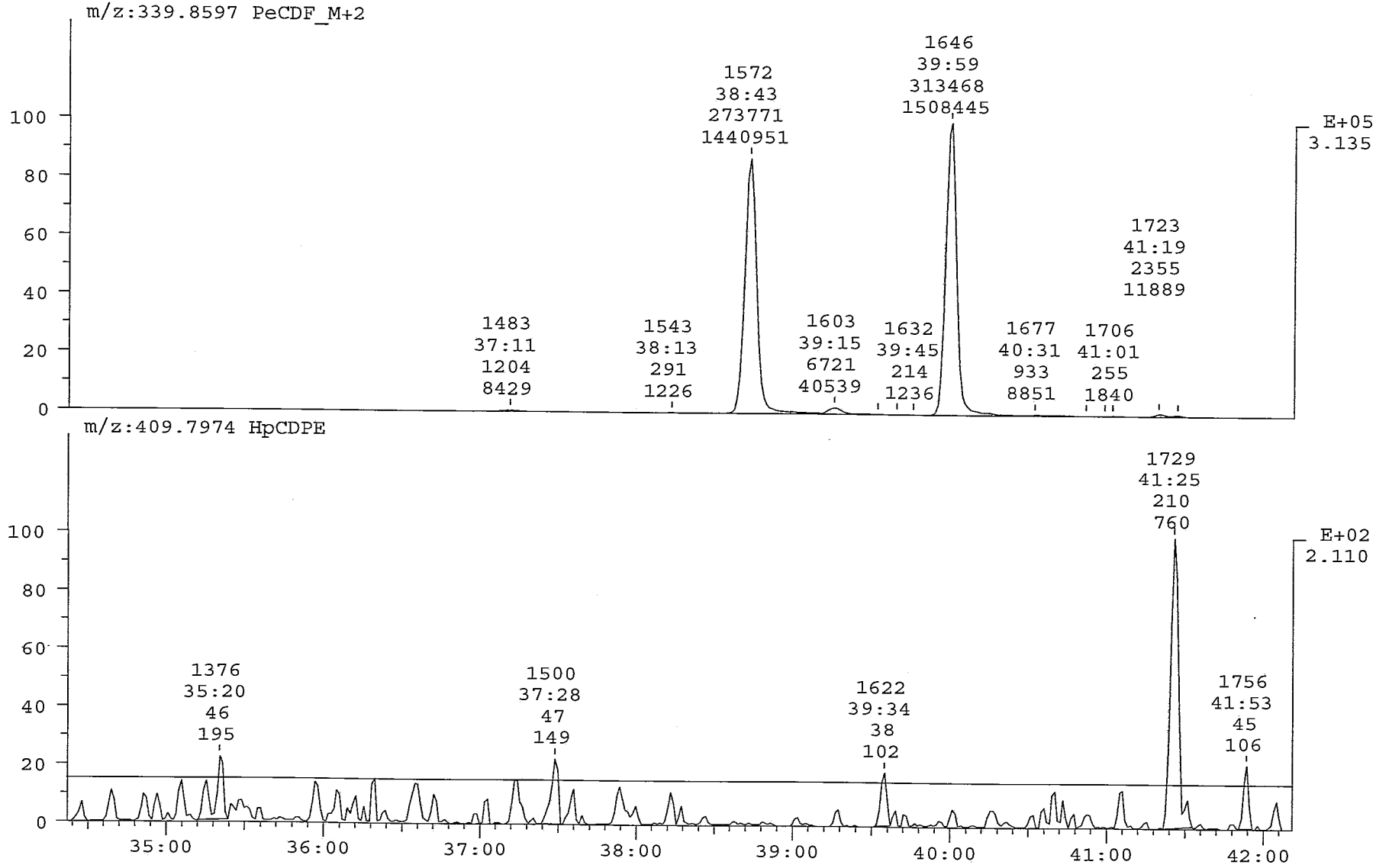
CHRO: d1150409ss 09-Apr-15 Elapse: 40:40 1685
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1637 > 1739 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



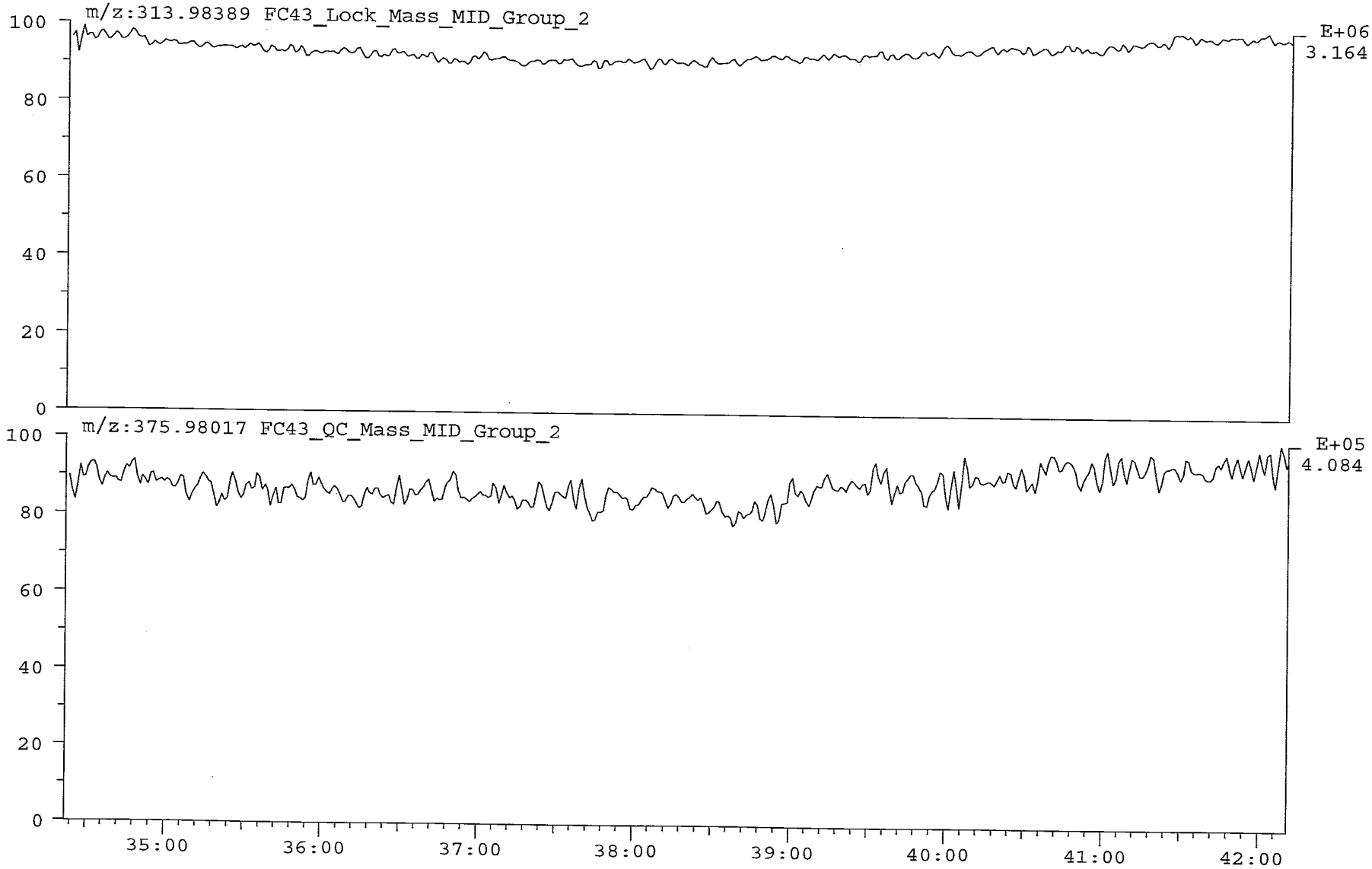
CHRO: d1150409ss 09-Apr-15 Elapse: 39:33 1621
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1548 > 1696 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



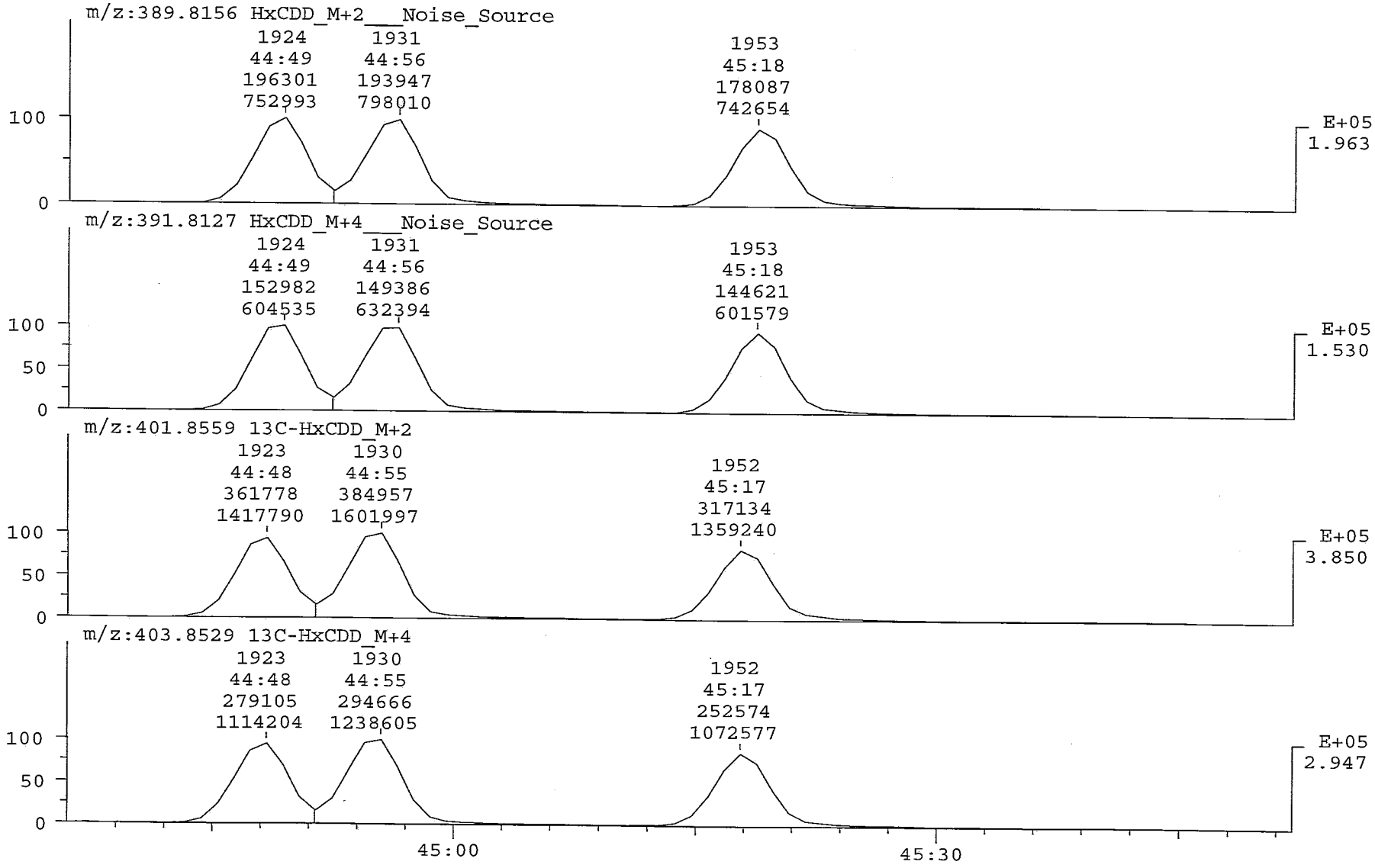
CHRO: d1150409ss 09-Apr-15 Elapse: 39:33 1621
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1321 > 1773 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



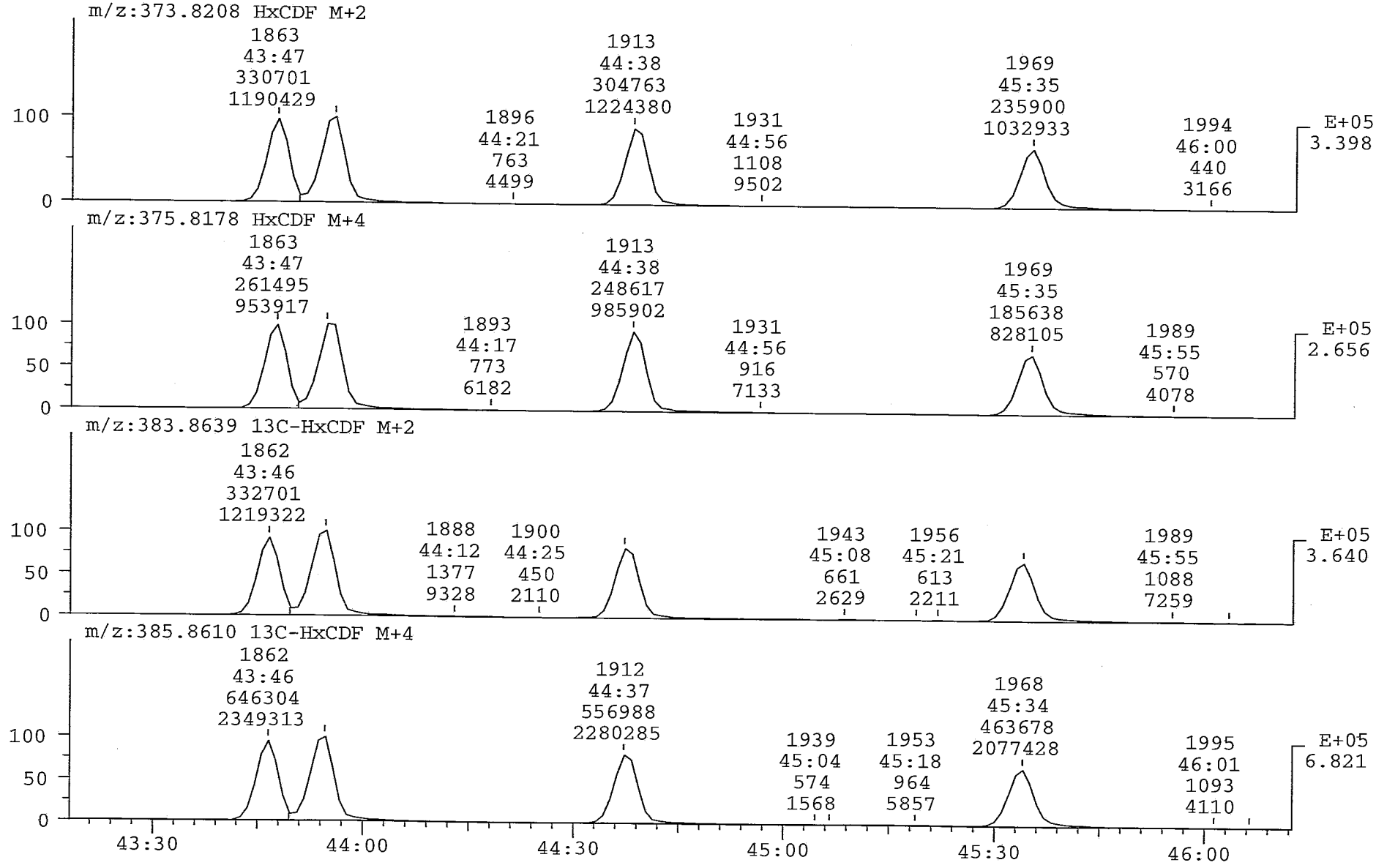
CHRO: d1150409ss 09-Apr-15 Elapse: 39:33 1621
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1321 > 1773 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



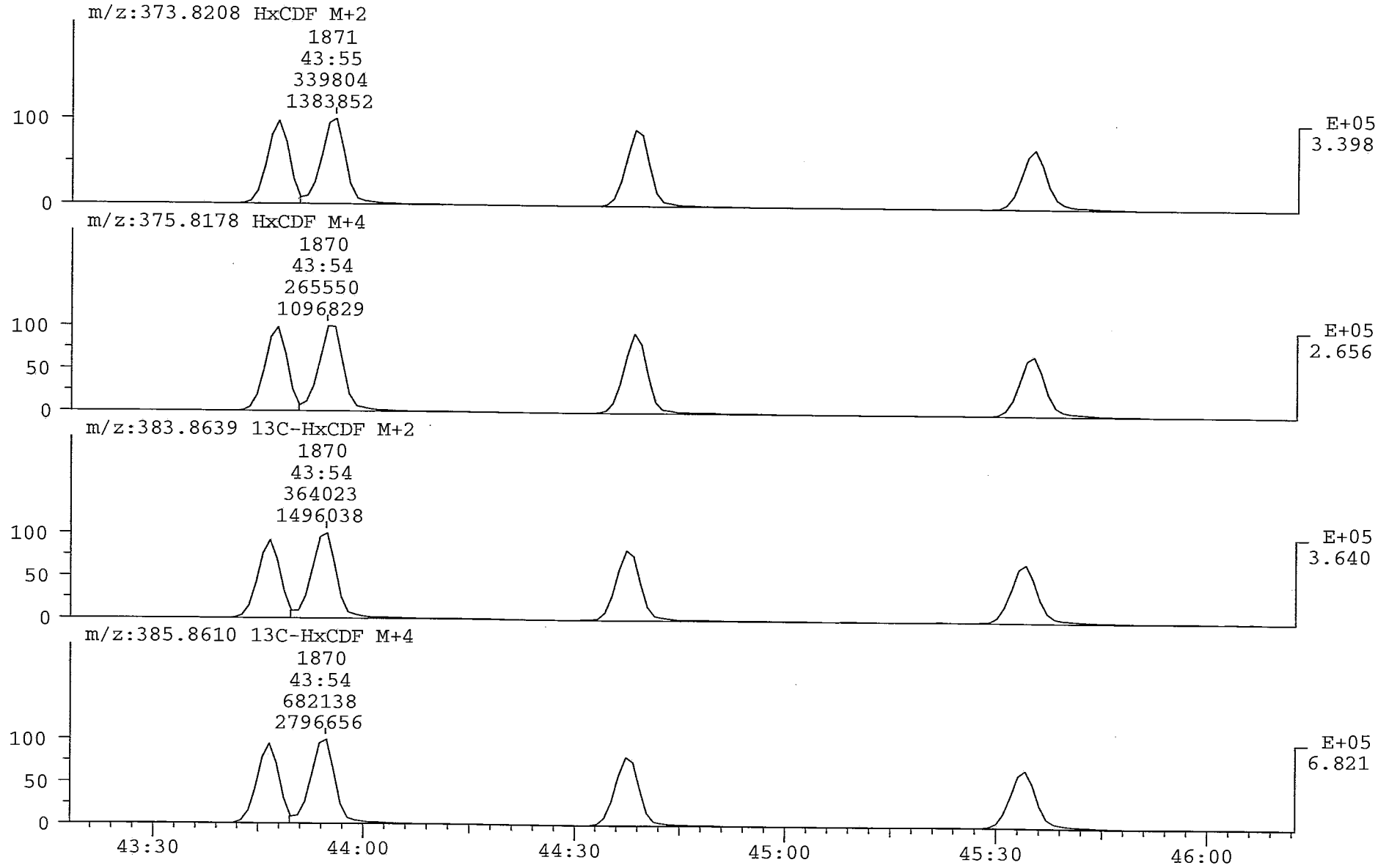
CHRO: d1150409ss 09-Apr-15 Elapse: 45:13 1948
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1911 > 1986 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



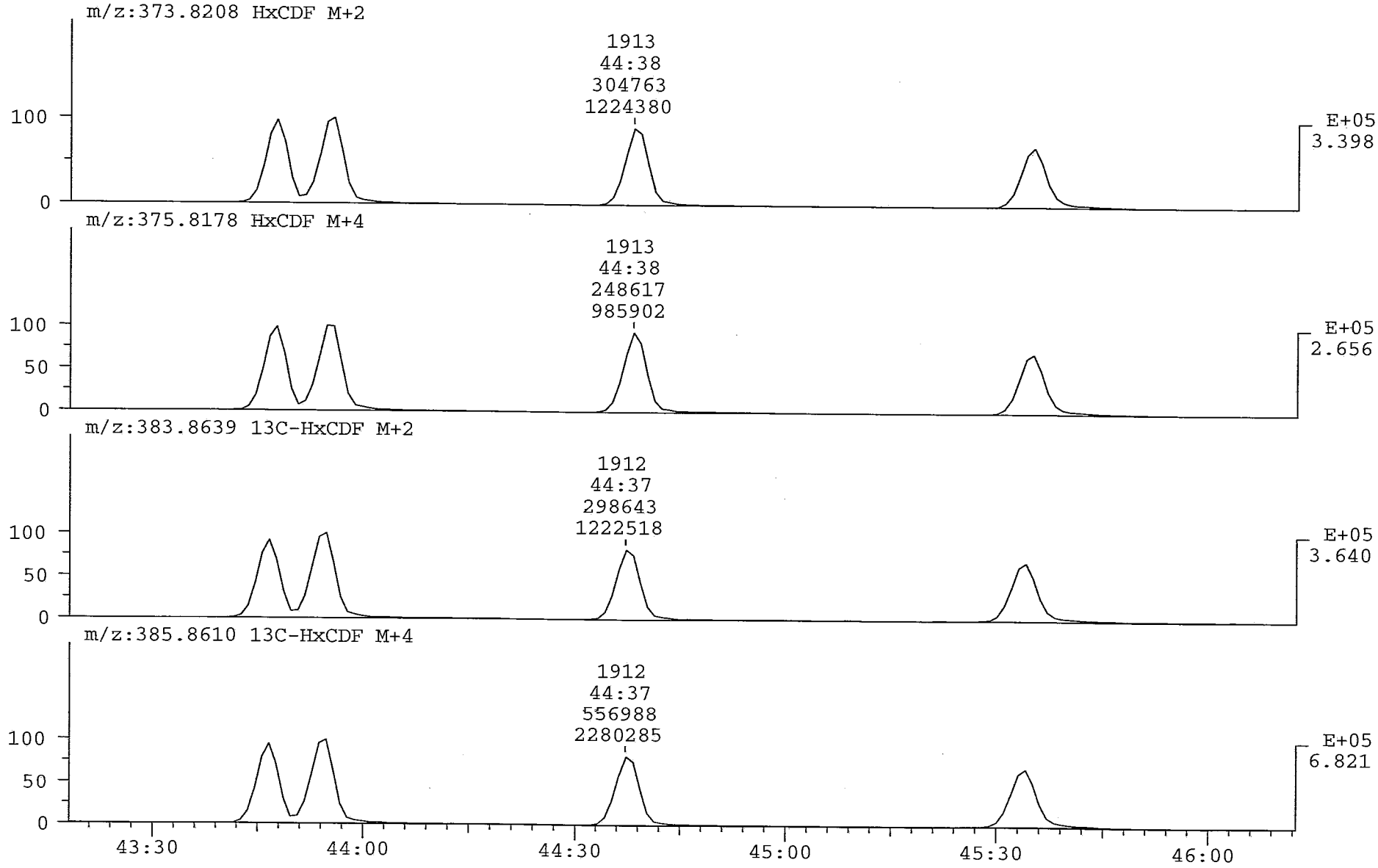
CHRO: d1150409ss 09-Apr-15 Elapse: 54:10 2465
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1834 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



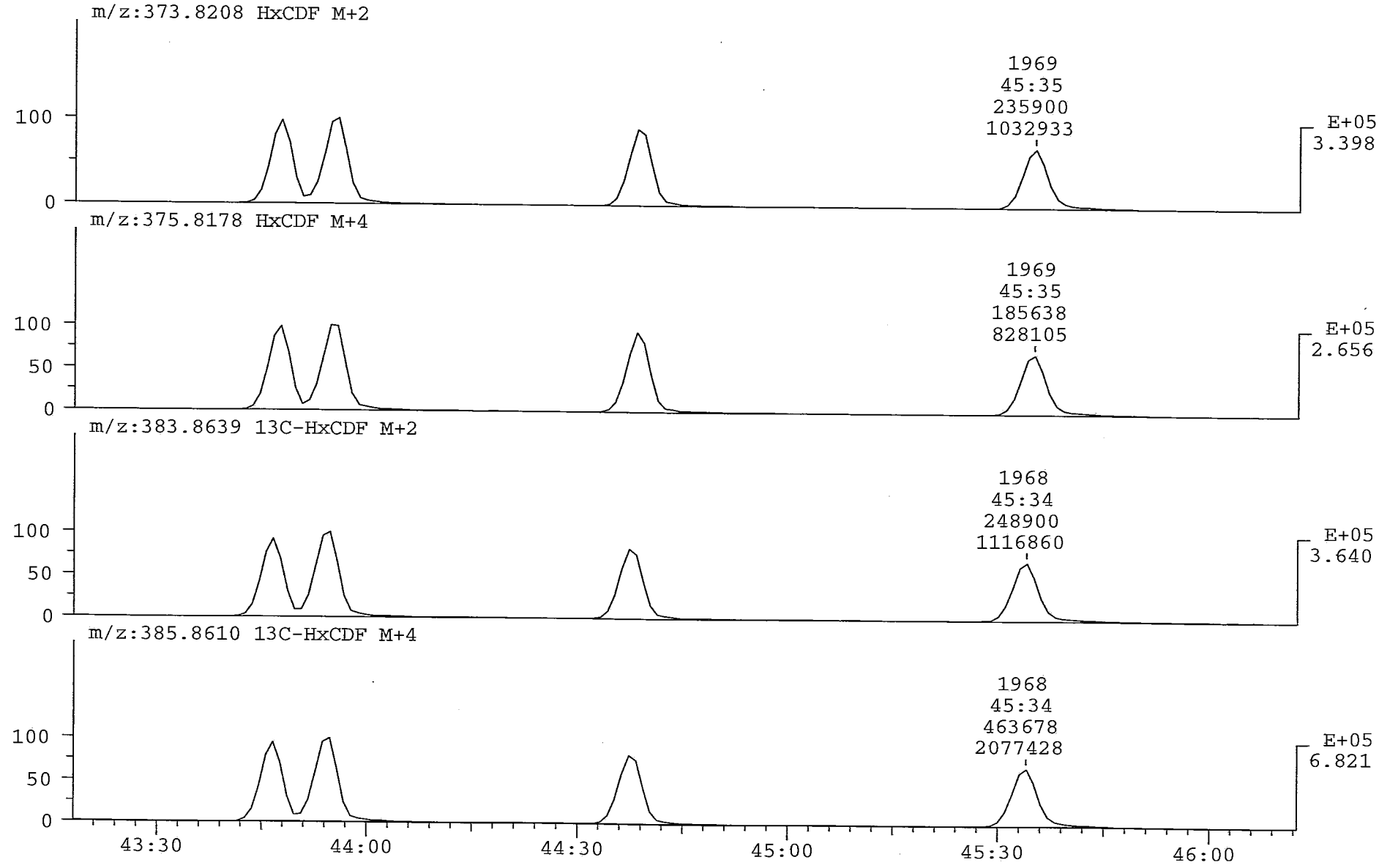
CHRO: d1150409ss 09-Apr-15 Elapse: 43:55 1871
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1868 > 1874 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



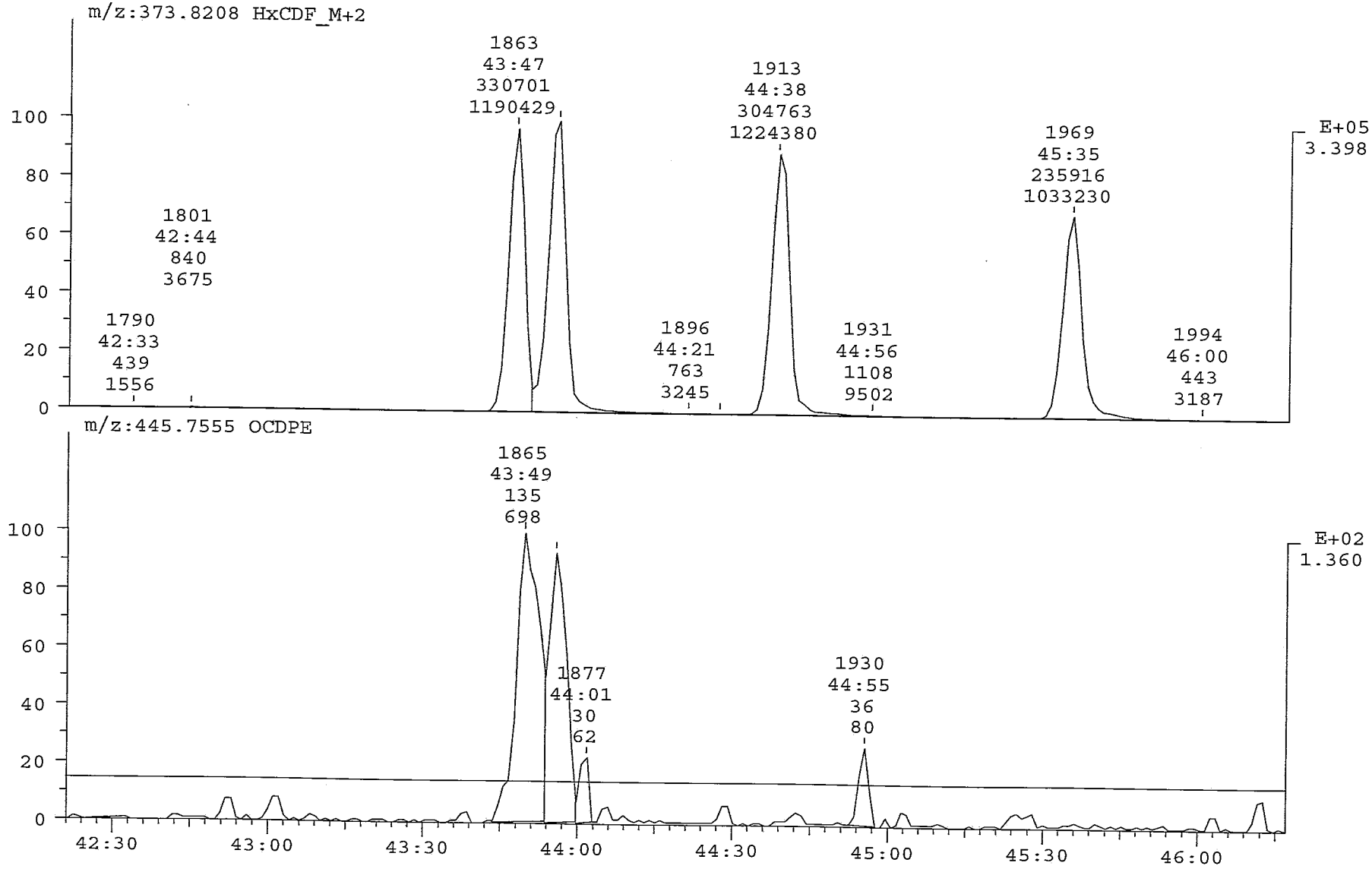
CHRO: d1150409ss 09-Apr-15 Elapse: 44:39 1914
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1911 > 1917 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



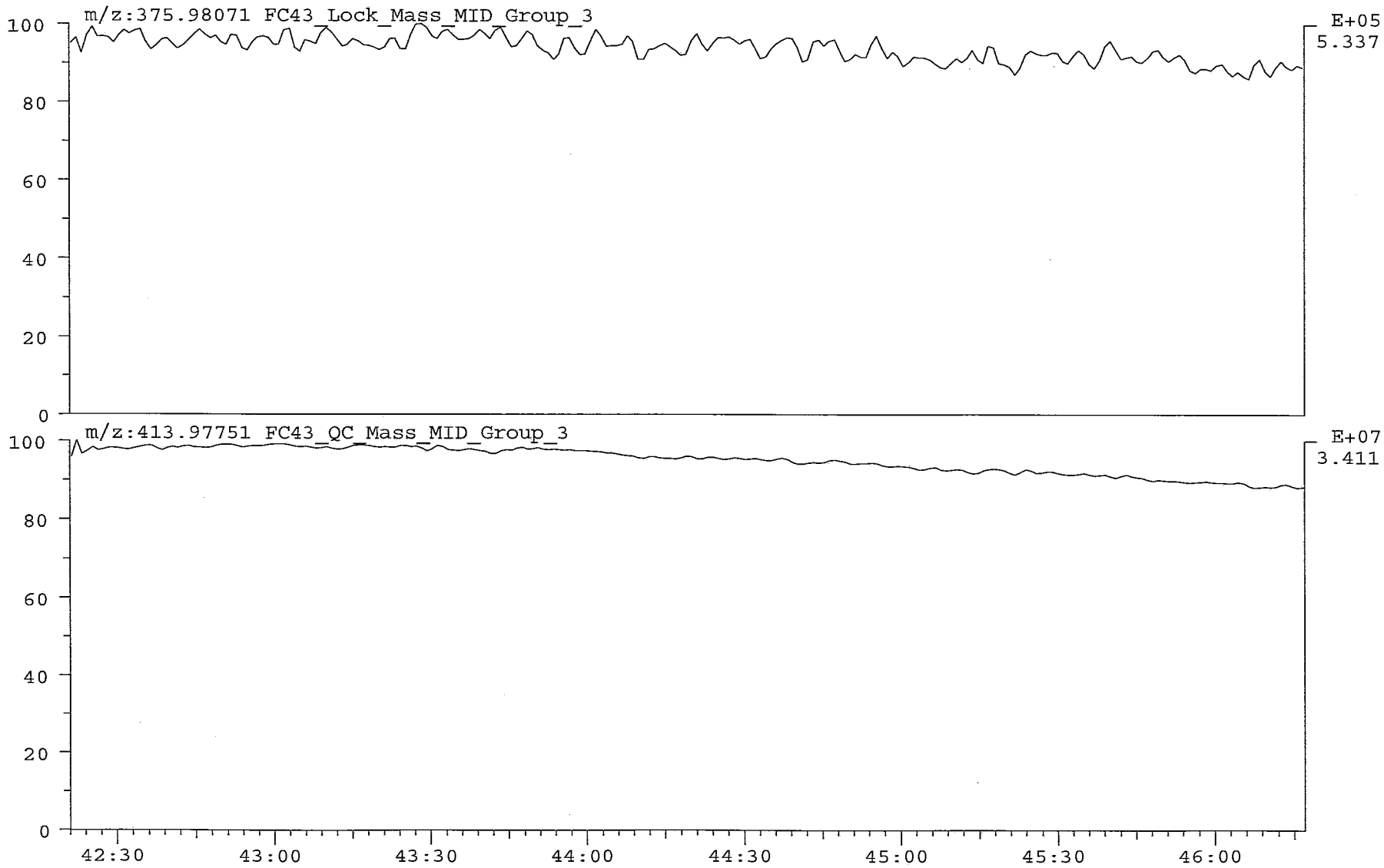
CHRO: d1150409ss 09-Apr-15 Elapse: 45:35 1969
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1966 > 1972 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150409ss 09-Apr-15 Elapse: 44:02 1878
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1778 > 2010 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1150409ss                          09-Apr-15  Elapse:  44:02      1878
Samp:  WO=4966:05 Meth=F8o Dil=1                      Start :  08:14:09   2641
Comm:  Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode:  EI ESI + Q1MS UP LR                            Study :  1613/8290 ICAL
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1778 > 2010      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```

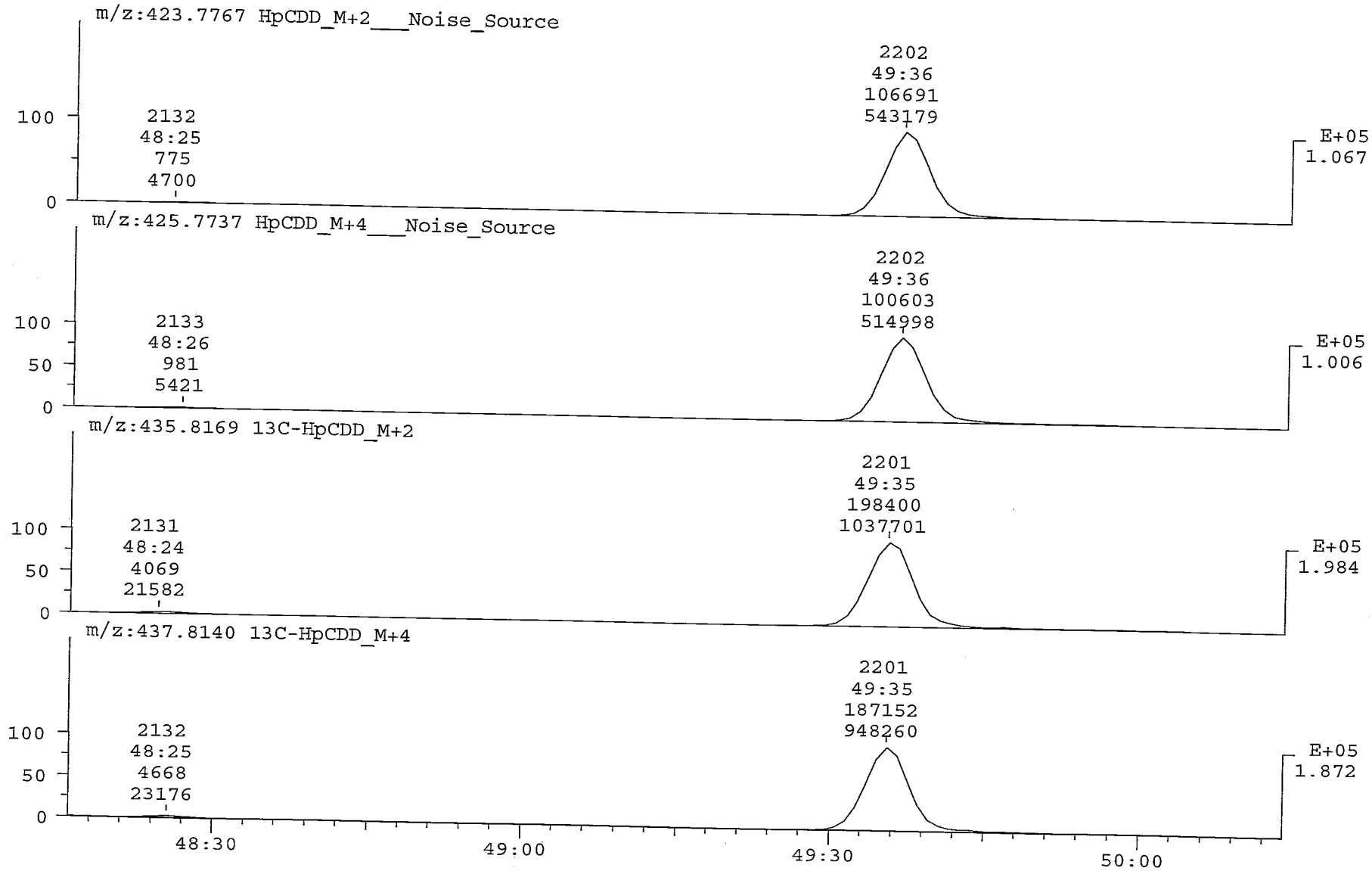


CHRO: d1150409ss
Samp: WO=4966:05 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

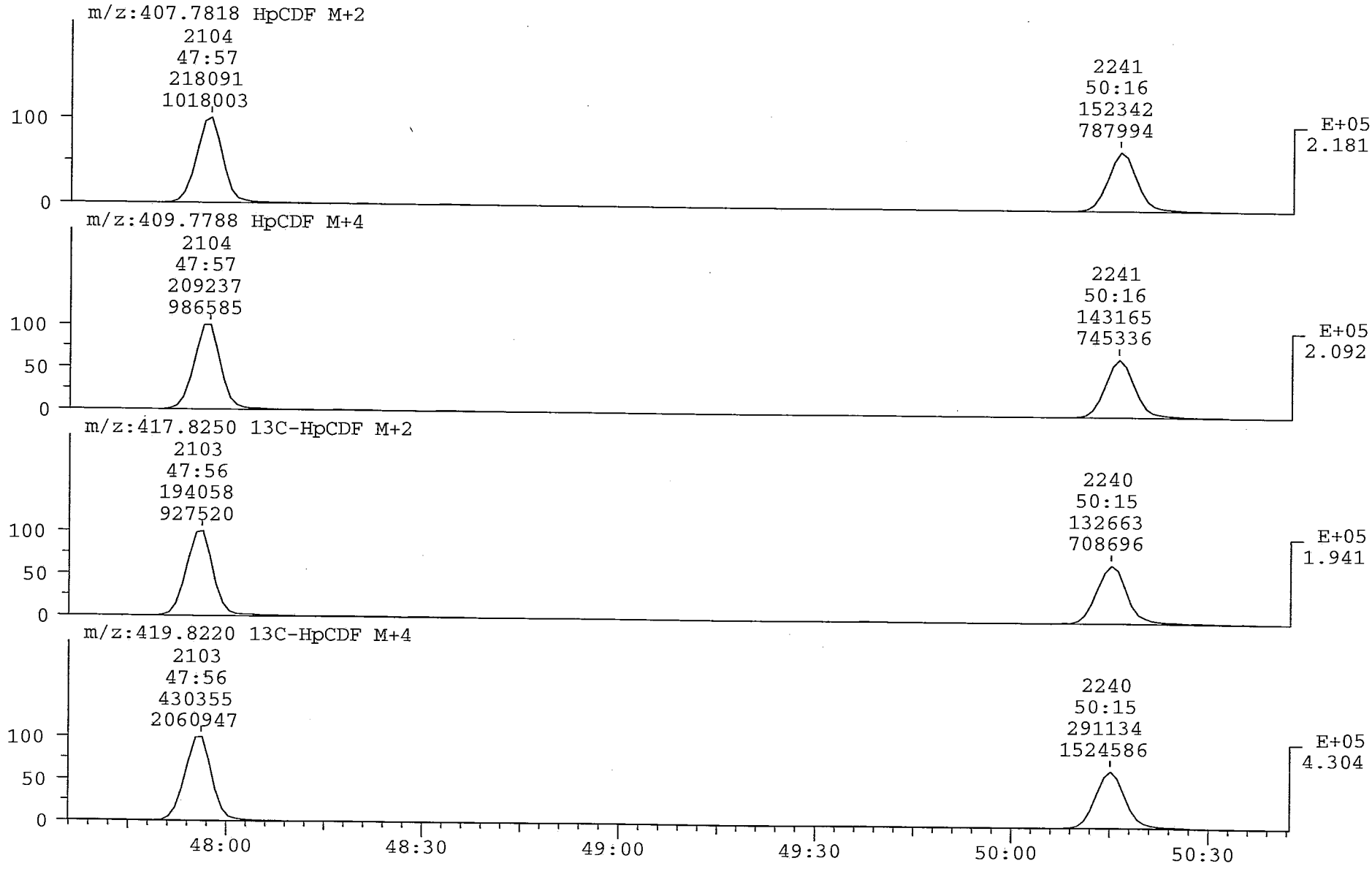
Label wndw: 2123 > 2239
Baseline : 100, 3

09-Apr-15

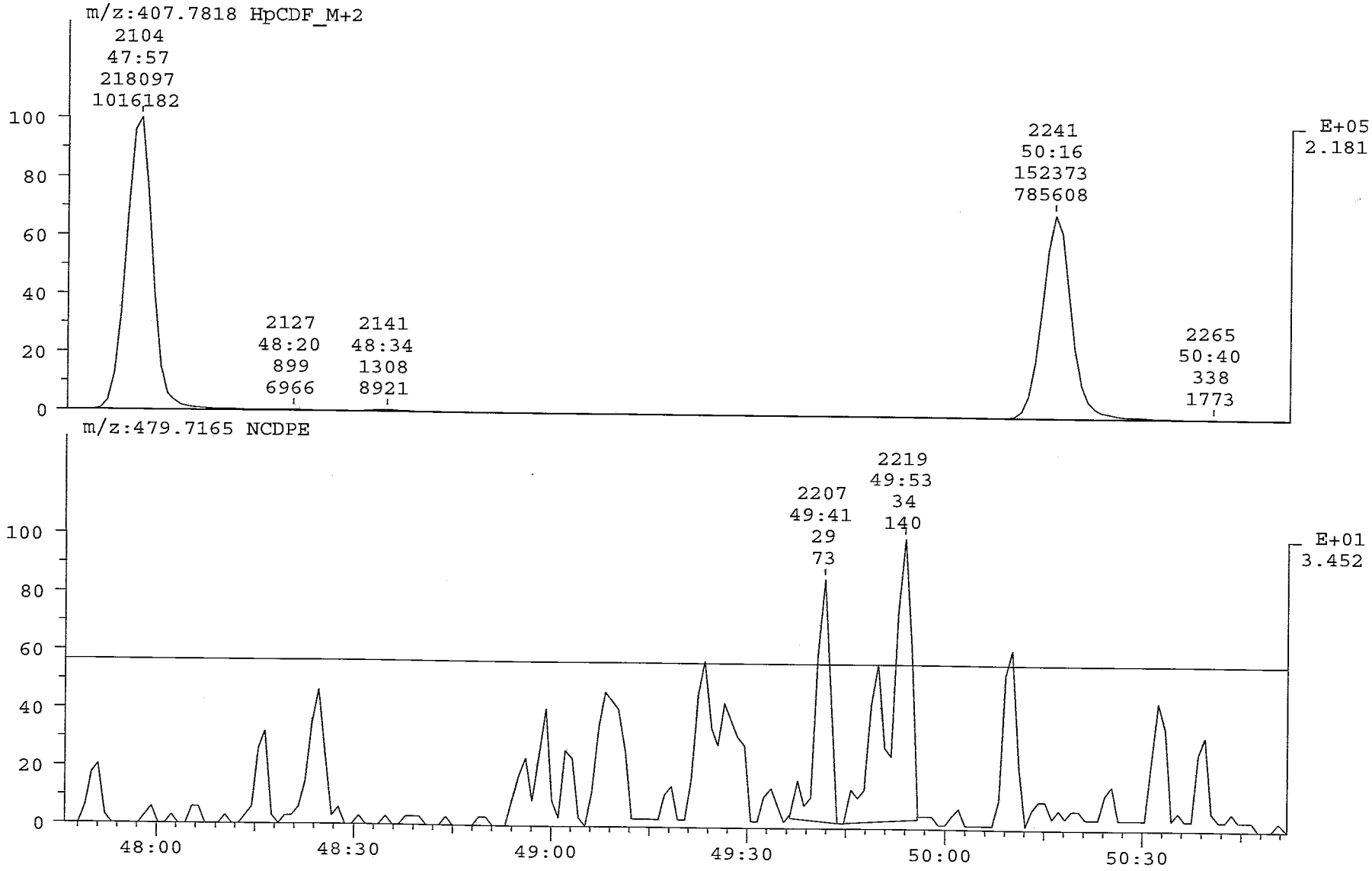
Elapse: 44:02 1878
Start : 08:14:09 2641
Study : 1613/8290 ICAL
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d1150409ss 09-Apr-15 Elapse: 45:35 1969
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2083 > 2267 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150409ss 09-Apr-15 Elapse: 49:19 2185
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2093 > 2276 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

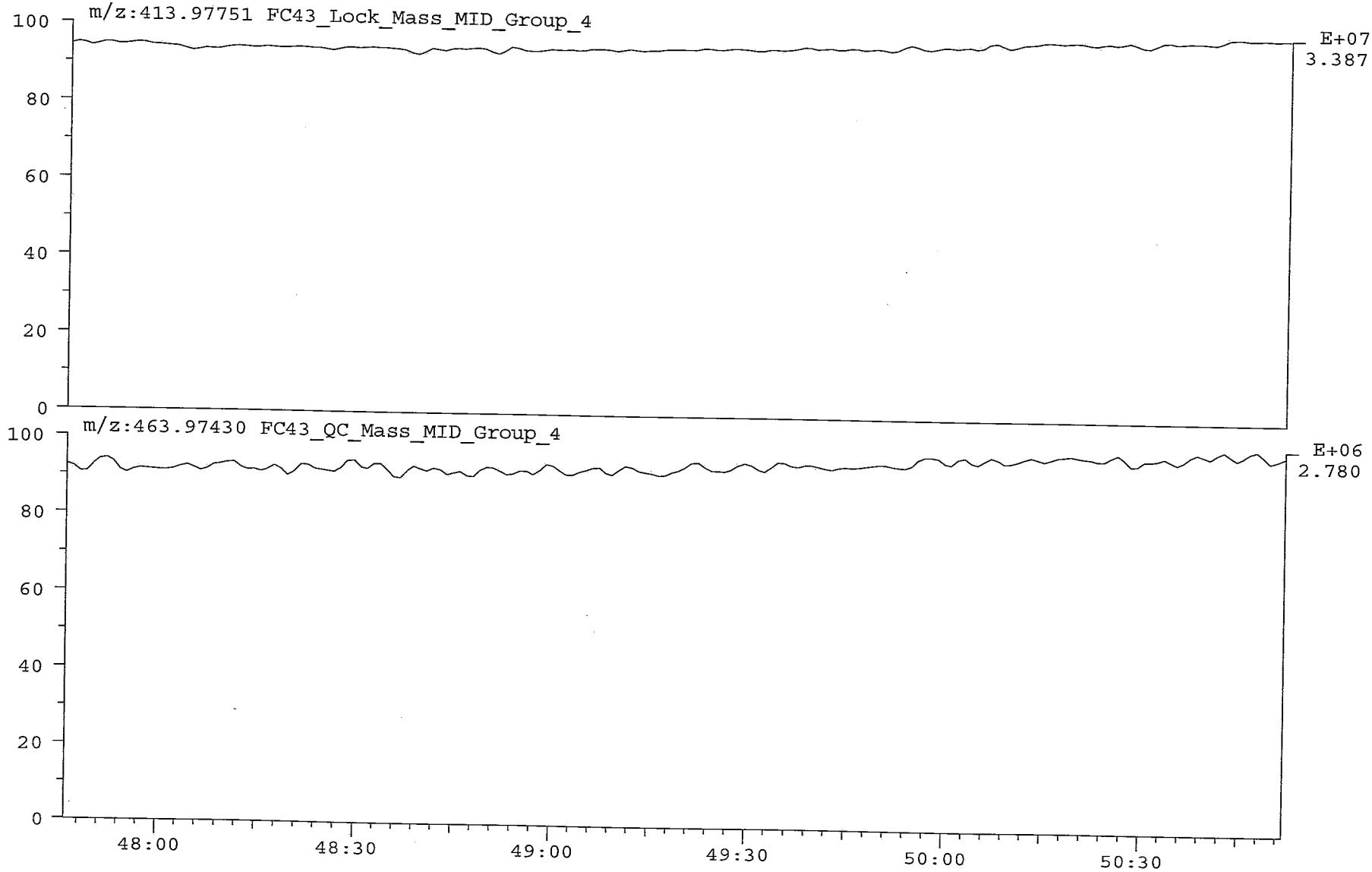


CHRO: d1150409ss
Samp: WO=4966:05 Meth=F8o Dil=1
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

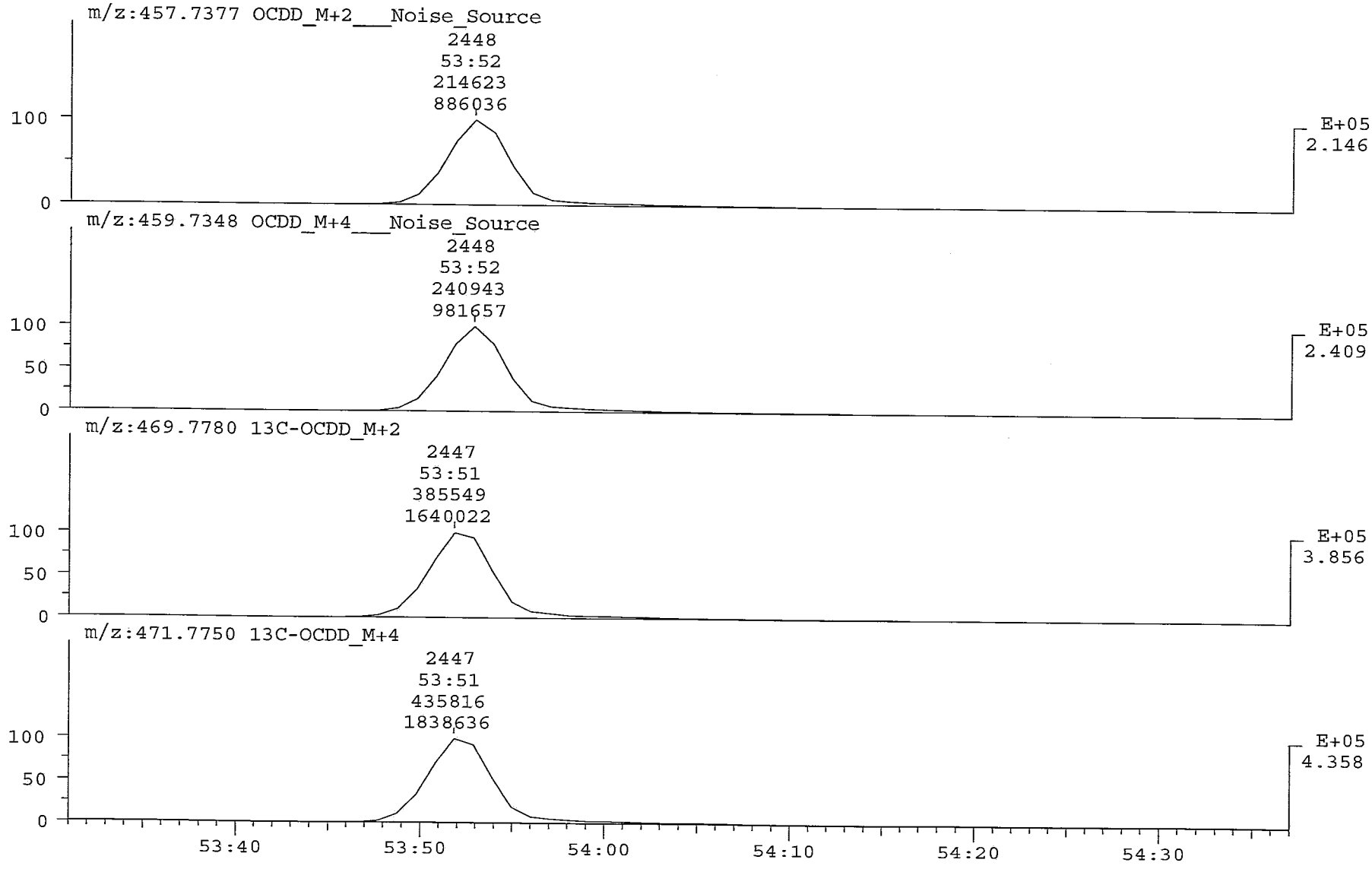
Label wndw: 2093 > 2276
Baseline : 100, 3

09-Apr-15

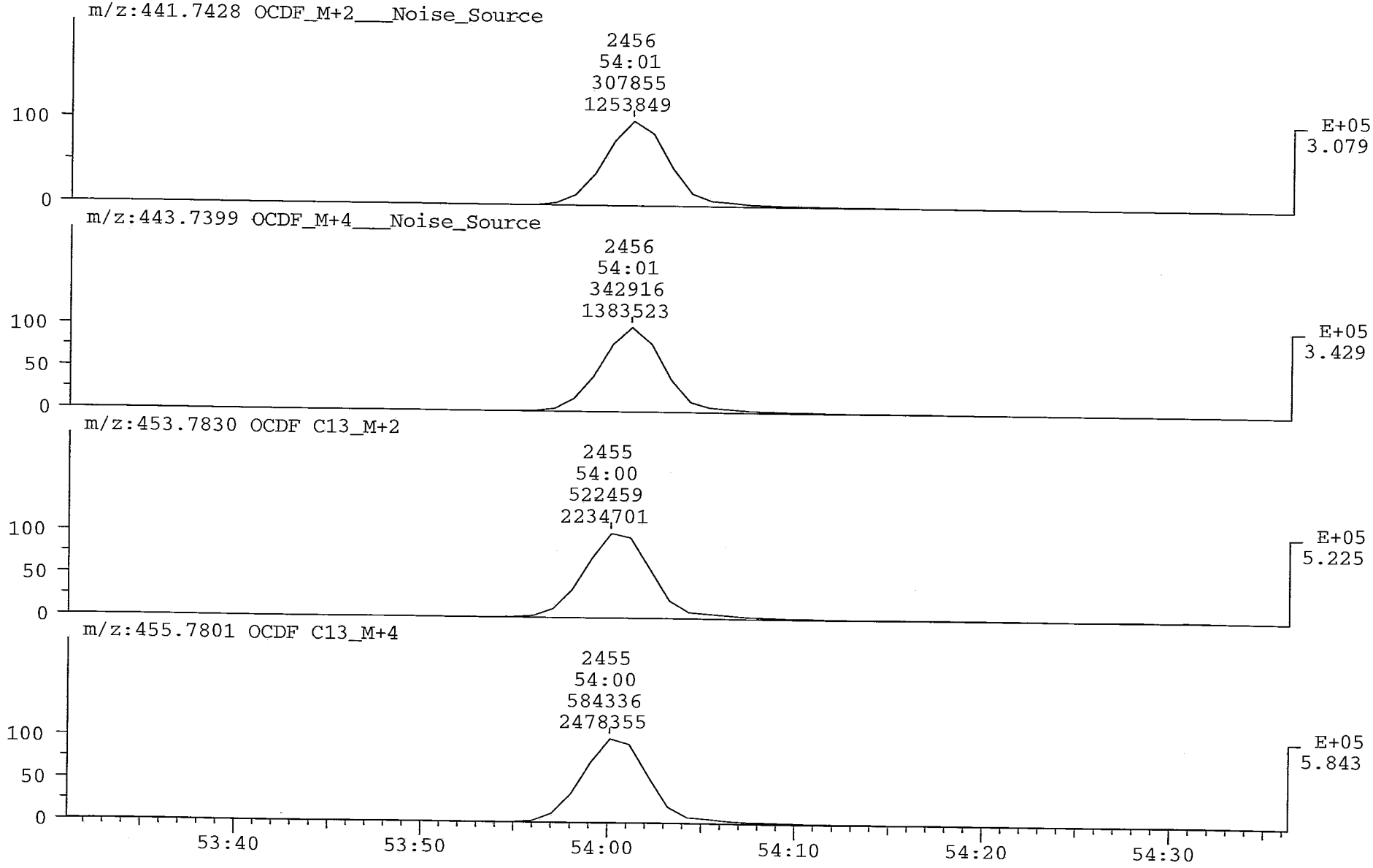
Elapse: 49:19 2185
Start : 08:14:09 2641
Study : 1613/8290 ICAL
Inlet : LC
Masses: 303 > 514
Label : 0, 0.0



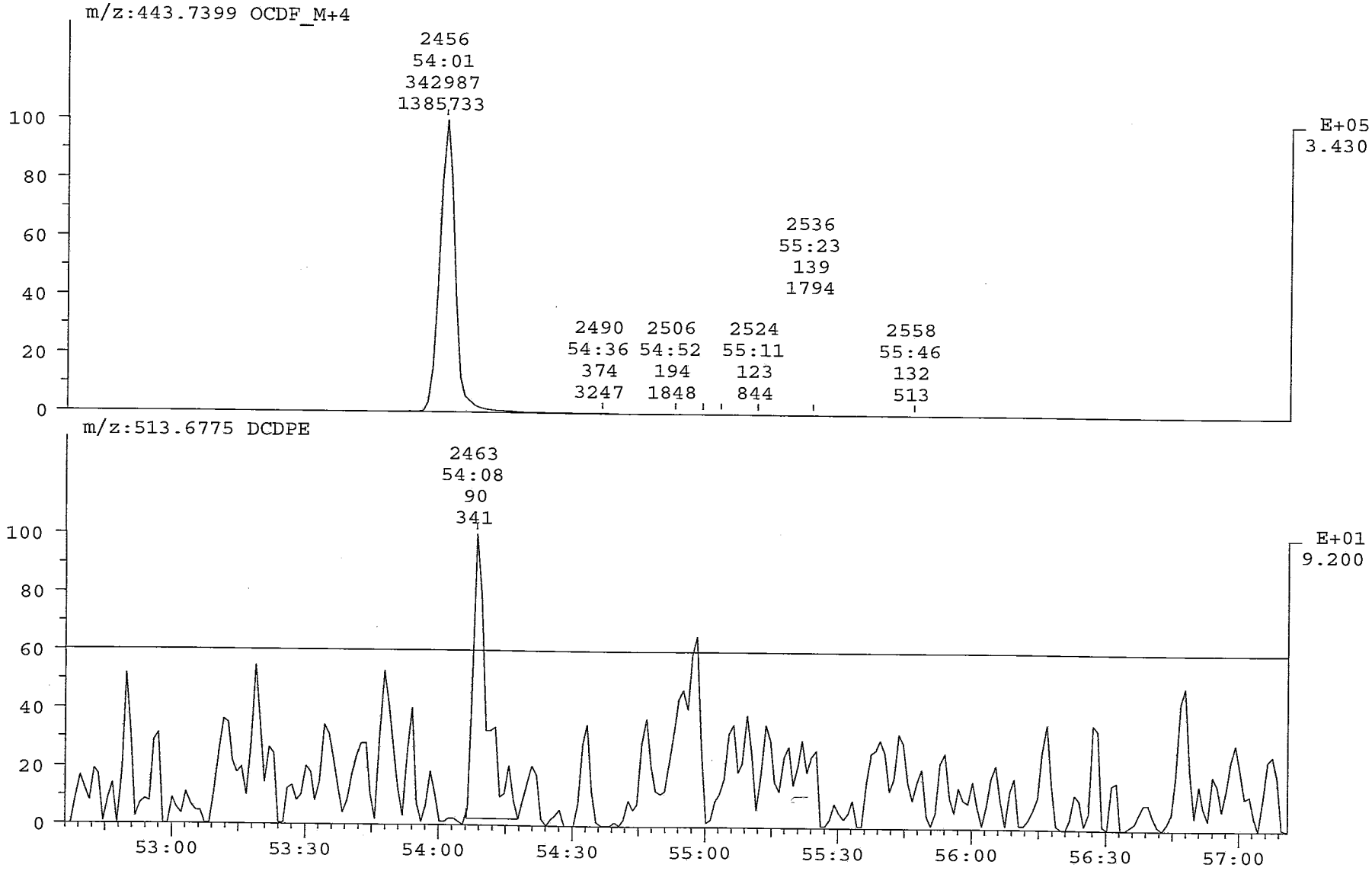
CHRO: d1150409ss 09-Apr-15 Elapse: 54:01 2456
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2427 > 2491 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



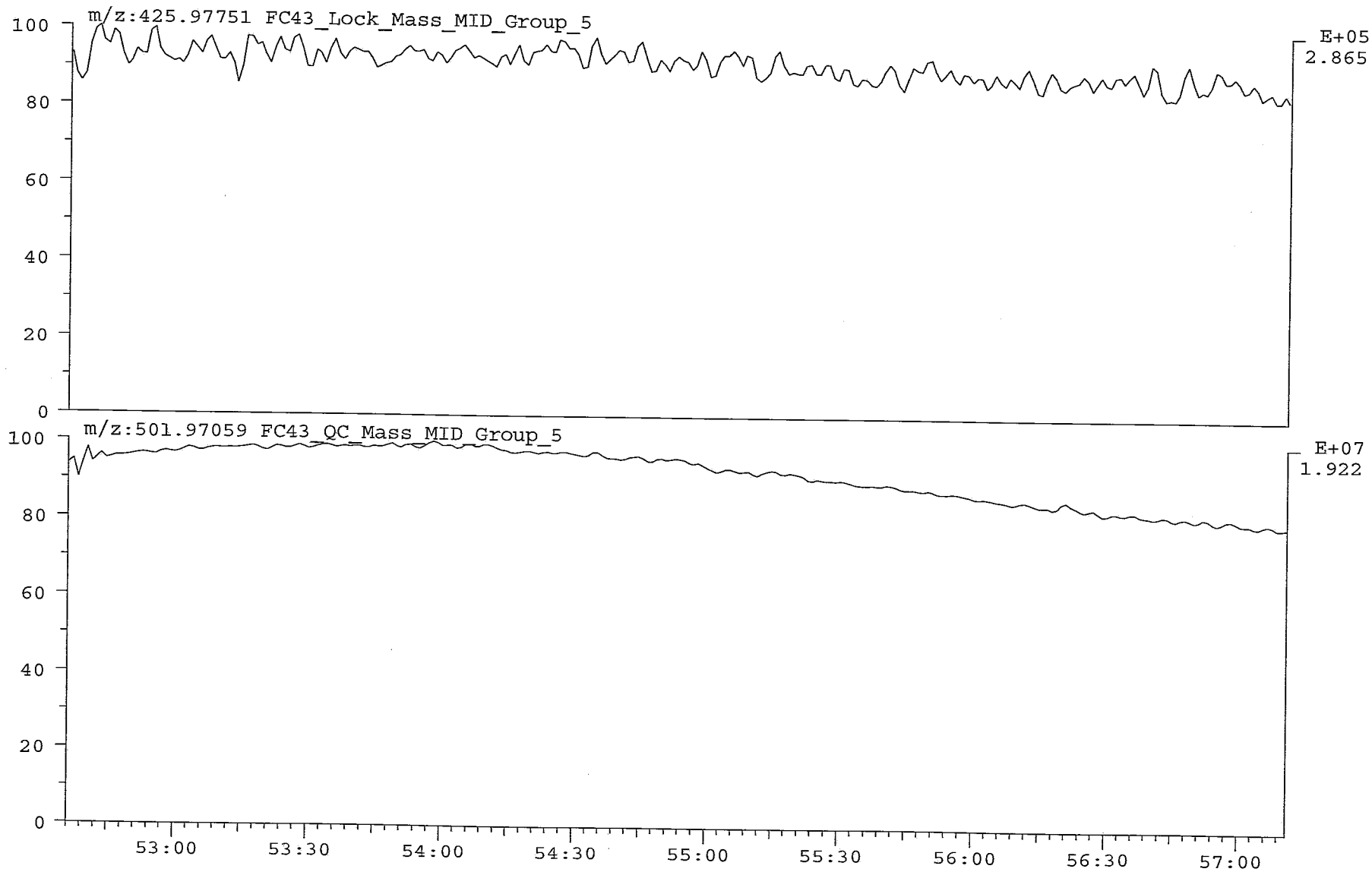
CHRO: d1150409ss 09-Apr-15 Elapse: 45:35 1969
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2427 > 2490 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150409ss 09-Apr-15 Elapse: 54:10 2465
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2639 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1150409ss 09-Apr-15 Elapse: 54:10 2465
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290 ICAL
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2374 > 2639 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Apr 09 08:18:50 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 08:18:50

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409011252

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:16 min	34:16 min	1.00 sec
# 2	34:16 min	7:55 min	42:12 min	1.00 sec
# 3	42:12 min	4:51 min	47:03 min	1.00 sec
# 4	47:03 min	5:26 min	52:30 min	1.00 sec
# 5	52:30 min	4:42 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834	-	20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 34.283333 minutes
MID Window end time was 34.280000 minutes
MID Window terminated after 42.200000 minutes
MID Window end time was 42.200000 minutes
MID Window terminated after 47.066667 minutes
MID Window end time was 47.060000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	306.9834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	239.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	170.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0456	FVSRC	0.0474
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	306.9834	LKM	425.9770	MASS	306.9834
MDAC	3538606.3470	MRANGE	1252.5112	NSAM	200.0000
NSCAN	2662.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8982	RELEN	0.0000
RES	9629.2271	RPUSHER	-10.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1250	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	306.9834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:          3.6e-005 mbar
Analyzer Penning:      6.3e-008 mbar
Pirani Analyse:        3.9e-003 mbar
Pirani Source:         4.8e-002 mbar
Pirani Inlet System:   4.6e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 10318.
MID Time Window 2: Resolution is 10202.
MID Time Window 3: Resolution is 9672.
MID Time Window 4: Resolution is 9381.
MID Time Window 5: Resolution is 9629.

Amplifier Offset: 87.


*** File closed Thu Apr 09 09:16:04 2015
  ***
```

QUAN: d1150409ss.q0 Entries: 92

Data file(s) used
File: d1150409ss 09-Apr-15
Samp: WO=4966:05 Meth=F8o Dil=1 Start : 08:14:09 2641
Comm: Inst=d11a/1259376 Batch=20150409i Ccal=D1150324S1
Mode: EI ESI + Q1MS UP LR Study : 1613/8290
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	30:38	173787.	16318.	30:23	30:53	52.	1	1.0	AVV
321.8775	30:37	220393.	20835.	30:22	30:52	54.	1	1.0	AVV
319.8805	30:38	173787.	16318.	30:23	30:53	52.	2	5.0	AVV
321.8775	30:37	220393.	20835.	30:22	30:52	54.	2	5.0	AVV
331.9202	30:05	1444746.	149749.	29:50	30:20	205.	2	5.0	ABV
331.9202	30:35	1430813.	137204.	30:20	30:50	205.	2	5.0	AVV
333.9171	30:05	1811723.	184806.	29:50	30:20	222.	2	5.0	ABV
333.9171	30:35	1786202.	166245.	30:22	30:50	222.	2	5.0	AVV
327.8683	30:38	398896.	38888.	30:23	30:53	48.	1	1.0	ABV
327.8683	30:38	398896.	38888.	30:23	30:53	48.	2	5.0	ABV
303.8864	28:40	268355.	26985.	28:26	28:55	47.	1	1.0	ABV
305.8834	28:39	351454.	37318.	28:25	28:54	57.	1	1.0	ABV
303.8864	28:40	268355.	26985.	28:26	28:55	47.	2	5.0	ABV
305.8834	28:39	351454.	37318.	28:25	28:54	57.	2	5.0	ABV
315.9261	28:37	2732517.	281504.	28:22	28:52	117.	2	5.0	ABV
317.9230	28:37	3433459.	357134.	28:23	28:52	95.	2	5.0	ABV
355.8368	40:31	804072.	177082.	40:23	40:47	41.	1	1.0	ABV
357.8337	40:31	511087.	112162.	40:23	40:47	29.	1	1.0	ABV
355.8368	40:31	804072.	177082.	40:23	40:47	41.	2	5.0	ABV
357.8337	40:31	511087.	112162.	40:23	40:47	29.	2	5.0	ABV
367.8765	40:30	1492054.	332216.	40:22	40:46	47.	2	5.0	ABV
369.8734	40:30	953906.	213514.	40:21	40:46	33.	2	5.0	ABV
339.8427	39:59	1505130.	313341.	39:49	40:15	70.	1	1.0	AVV
341.8396	39:58	957314.	194539.	39:50	40:14	54.	1	1.0	ABV
339.8427	38:43	1439990.	273740.	38:29	38:58	70.	2	5.0	ABV
339.8427	39:59	1505434.	313341.	39:44	40:15	70.	2	5.0	AVV
341.8396	38:43	919478.	171355.	38:31	38:58	54.	2	5.0	ABV
341.8396	39:58	957314.	194539.	39:50	40:14	54.	2	5.0	ABV
351.8824	38:41	2735502.	499209.	38:31	38:56	121.	2	5.0	ABV
351.8824	39:57	2770417.	585199.	39:49	40:06	121.	2	5.0	ABV
353.8793	38:41	1727666.	313205.	38:31	38:56	89.	2	5.0	ABV
353.8793	39:57	1761477.	367321.	39:49	40:08	89.	2	5.0	ABV
389.7961	44:56	798010.	193947.	44:52	45:11	92.	1	1.0	AVV
391.7931	44:56	632394.	149386.	44:52	45:11	72.	1	1.0	AVV
389.7961	44:49	752993.	196301.	44:42	44:52	92.	2	5.0	ABV
389.7961	44:56	798010.	193947.	44:52	45:11	92.	2	5.0	AVV
389.7961	45:18	742654.	178087.	45:12	45:32	92.	2	5.0	AVV
391.7931	44:49	604535.	152982.	44:42	44:52	72.	2	5.0	ABV
391.7931	44:56	632394.	149386.	44:52	45:11	72.	2	5.0	AVV
391.7931	45:18	601579.	144621.	45:11	45:34	72.	2	5.0	AVV
401.8358	44:48	1417790.	361778.	44:41	44:51	142.	2	5.0	ABV
401.8358	44:55	1601997.	384957.	44:51	45:10	142.	2	5.0	AVV
401.8358	45:17	1359240.	317134.	45:10	45:33	142.	2	5.0	AVV
403.8327	44:48	1114204.	279105.	44:40	44:51	150.	2	5.0	ABV
403.8327	44:55	1238605.	294666.	44:51	45:09	150.	2	5.0	AVV
403.8327	45:17	1072577.	252574.	45:09	45:33	150.	2	5.0	AVV
373.8021	43:55	1383942.	339809.	43:50	44:10	90.	1	1.0	AVV
375.7990	43:54	1097017.	265562.	43:50	44:09	113.	1	1.0	AVV
373.8021	43:47	1190486.	330706.	43:39	43:50	90.	2	5.0	ABV
373.8021	43:55	1383942.	339809.	43:50	44:10	90.	2	5.0	AVV

373.8021	44:38	1224431.	304765.	44:29	44:53	90.	2	5.0 AVV
373.8021	45:35	1032919.	235900.	45:27	45:50	90.	2	5.0 ABV
375.7990	43:54	1097017.	265562.	43:50	44:09	113.	2	5.0 AVB
375.7990	44:38	985895.	248617.	44:30	44:53	113.	2	5.0 AVB
383.8447	43:46	1219179.	332691.	43:39	43:49	97.	2	5.0 ABV
383.8447	43:54	1495866.	364014.	43:49	44:09	97.	2	5.0 AVV
383.8447	44:37	1222409.	298639.	44:28	44:52	97.	2	5.0 AVV
383.8447	45:34	1116910.	248901.	45:25	45:49	97.	2	5.0 ABV
385.8417	43:46	2349300.	646302.	43:39	43:49	139.	2	5.0 ABV
385.8417	43:54	2796549.	682134.	43:49	44:09	139.	2	5.0 AVV
385.8417	44:37	2279901.	556973.	44:28	44:52	139.	2	5.0 AVV
385.8417	45:34	2076261.	463645.	45:26	45:49	139.	2	5.0 ABV
423.7555	49:36	543179.	106691.	49:28	49:51	42.	1	1.0 ABV
425.7524	49:36	514998.	100603.	49:27	49:51	53.	1	1.0 ABV
423.7555	48:25	4700.	775.	48:21	48:40	42.	2	5.0 ABB
423.7555	49:36	543179.	106691.	49:28	49:51	42.	2	5.0 ABV
425.7524	48:26	5421.	981.	48:20	48:41	53.	2	5.0 ABV
425.7524	49:36	514998.	100603.	49:27	49:51	53.	2	5.0 ABV
435.7951	48:24	21582.	4069.	48:18	48:34	46.	2	5.0 ABB
435.7951	49:35	1037701.	198400.	49:26	49:50	46.	2	5.0 ABV
437.7921	48:25	23176.	4668.	48:18	48:39	47.	2	5.0 ABB
437.7921	49:35	948260.	187152.	49:27	49:50	47.	2	5.0 ABV
407.7614	47:57	1016182.	218097.	47:49	48:12	61.	1	1.0 ABV
409.7583	47:57	985431.	209241.	47:48	48:12	52.	1	1.0 ABV
407.7614	47:57	1016182.	218097.	47:49	48:12	61.	2	5.0 ABV
407.7614	50:16	785608.	152373.	50:07	50:31	61.	2	5.0 ABV
409.7583	47:57	985431.	209241.	47:48	48:12	52.	2	5.0 ABV
409.7583	50:16	744512.	143226.	50:06	50:31	52.	2	5.0 ABV
417.8041	47:56	924094.	194039.	47:48	48:11	51.	2	5.0 ABV
417.8041	50:15	709204.	132730.	50:06	50:30	51.	2	5.0 ABV
419.8010	47:56	2055543.	430356.	47:47	48:11	118.	2	5.0 ABV
419.8010	50:15	1525791.	291275.	50:06	50:30	118.	2	5.0 ABV
457.7148	53:52	886036.	214623.	53:45	54:08	52.	1	1.0 ABV
459.7118	53:52	981657.	240943.	53:45	54:08	69.	1	1.0 ABV
457.7148	53:52	886036.	214623.	53:45	54:08	52.	2	5.0 ABV
459.7118	53:52	981657.	240943.	53:45	54:08	69.	2	5.0 ABV
469.7545	53:51	1640022.	385549.	53:44	54:07	83.	2	5.0 ABV
471.7514	53:51	1838636.	435816.	53:45	54:07	96.	2	5.0 ABV
441.7207	54:01	1254811.	307886.	53:50	54:16	65.	1	1.0 ABV
443.7177	54:01	1384938.	342961.	53:48	54:16	46.	1	1.0 ABV
441.7207	54:01	1254811.	307886.	53:50	54:16	65.	2	5.0 ABV
443.7177	54:01	1384938.	342961.	53:48	54:16	46.	2	5.0 ABV

TestAmerica Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R16

Start Mass Res. ✓:	9:13	Ver Filename:	d116081751	Inst:	DFS-11 (DIIA)
End Mass Res. ✓:	20:27	Win Filename:	↓	ICAL Date:	4/9/15
		Col Perf Filename:			
		End Ver Filename:	d116081752		

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
7. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram. Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.	✓				✓
8. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs?		✓			✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?.		✓			✓
16. Were manual integrations documented properly?	✓				✓
17. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
18. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards?					✓

Analyst: [signature]	**Date:** 8/17/16	**2nd Level Reviewer :** [signature]	**Date:** 8-17-16
Comments:		**Comments:**	

ID022R26.doc, 061616

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
8/15/16	12:29	KLR	Nonane	Rinse	OK	—	QC		1	Flush
8/15/16	12:45	KLR	↓	↓	OK	—	↓		1	↓
8/15/16	13:01	KLR	↓	↓	OK	—	↓		1	↓
8/15/16	13:18	KLR	M8ONQ1AA	dltm8onqbc	OK	H_2O	QC		1	system Blk
8/15/16	14:20	KLR	M8XQE1AA	dltm8xqe	OK	↓	Sam		1	H6G150410-010
8/15/16	15:21	KLR	M8X4M1AA	dltm8x4m	OK	↓	Sam		1	H6G190403-001
8/15/16	16:23	KLR	M8X4N1AA	dltm8x4n	OK	↓	Sam		1	↓ -002
8/15/16	17:25	KLR	M8X4P1AA	dltm8x4p	OK	↓	Sam		1	↓ -003
8/15/16	18:26	KLR	Nonane	Rinse	OK	—	QC		1	Flush
8/15/16	18:43	KLR	49666:41	d1160815s2	OK	—	ver win		1	ver/win
8-15-16	20:08	LKR	FC-43	d1160815r2	OK	—	Res		—	MassResChect
8/16/16	9:50	KLR	FC-43	d1160816r1	OK	—	Res		—	mass Res chk
8/16/16	9:59	KLR	49666:24	d2160816w1	OK	—	win		2	column perf.
8/16/16	10:32	KLR	Nonane	Rinse	OK	—	QC		2	Flush
8/16/16	10:50	KLR	49666:41	d2160816s1	OK	—	ver		2	verf.
8/16/16	11:24	KLR	M81QP1AA	d2fm81qpb	OK	solid	QC		2	system Blk
8/16/16	11:58	KLR	M8OMQ1AD	d2fm8omq	OK	↓	Sam		2	H6G220402-001
8/16/16	12:32	KLR	Nonane	Rinse	OK	—	QC		2	Flush
8/16/16	12:52	KLR	49666:41	d2160816s2	OK	—	ver		2	verf.
8/16/16	13:44	KLR	FC-43	d1160816r2	OK	—	Res		—	mass Res chk
8/17/16	9:13	KLR	FC-43	d1160817r1	OK	—	Res		—	mass Res chk
8/17/16	9:22	KLR	49666:41	d1160817s1	OK	—	ver win		1	ver/win
8/17/16	10:23	KLR	M82RE1AC	dltm82rec	OK	solid	QC		1	H6H040002-014C
8/17/16	11:24	KLR	Nonane	Rinse	OK	—	QC		1	Flush
8/17/16	11:40	KLR	↓	↓	OK	—	↓		1	↓
8/17/16	11:56	KLR	↓	↓	OK	—	↓		1	↓
8/17/16	12:13	KLR	↓	↓	OK	—	↓		1	↓
8/17/16	12:29	KLR	M82RE1AA	dltm82reb	OK	Solid	QC		1	H6H040010-014B
8/17/16	13:31	KLR	M811L1AC	dltm811l	OK	↓	Sam		1	H6G290408-001
8/17/16	14:33	KLR	M811M1AC	dltm811m	OK	↓	Sam			↓ -002
8/17/16	15:34	KLR	M811N1AC	dltm811n	OK	↓	Sam			↓ -003
8/17/16	16:36	KLR	M811P1AC	dltm811p	BI	↓	Sam			↓ -004

KLR 8/15/16

Read and Understood by: LKR Date: 8-17-16

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
8/17/16	17:38	KLR	M811Q1AC	d1tm811q	ok	solid	Sam		1	H6G290408-005
8/17/16	18:39	KLR	Nonane	Rinse	ok	—	QC		1	Flush
8/17/16	9:22	KLR	4966:41	d1160817s2	ok	—	ver win		1	ver/win
8-17-16	20:27	LK	FC-43	d1160817r2	ok	—	Res		-	MassRecChal

Read and Understood by:_____ Date: _____

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89922 - D1160817S1
CCAL Filename: d1160817s1
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160817s1/d1160817s1.d
CCAL Date/Time: 08/17/16 09:22

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	10.2	1.144	1.164	1.8	20.0	True
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	10.4	1.066	1.105	3.7	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	49	1.060	1.039	-1.9	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	50	1.179	1.174	-0.4	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	49	1.115	1.096	-1.6	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	50	1.131	1.130	-0.1	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	50	1.116	1.122	0.6	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	49	1.205	1.175	-2.5	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	50	1.350	1.361	0.8	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51	1.242	1.264	1.8	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	50	1.241	1.250	0.7	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	49	1.262	1.242	-1.6	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	49	1.114	1.085	-2.6	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	51	1.461	1.495	2.4	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.06	0.88-1.20	50	1.370	1.373	0.2	20.0	True
OCDD	M+2/M+4	0.90	0.76-1.02	99	1.203	1.187	-1.3	20.0	True
OCDF	M+2/M+4	0.91	0.76-1.02	92	1.134	1.043	-8.1	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	96	1.093	1.044	-4.4	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.81	0.65-0.89	94	1.794	1.685	-6.1	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32-1.78	106	0.800	0.852	6.5	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	97	1.356	1.320	-2.6	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	104	1.343	1.392	3.7	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	101	0.916	0.926	1.1	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	103	0.906	0.930	2.6	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	102	1.268	1.289	1.6	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	98	1.506	1.472	-2.2	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	100	1.344	1.344	0.0	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43-0.59	90	1.202	1.080	-10.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	110	0.728	0.802	10.1	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37-0.51	100	1.008	1.008	0.0	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	97	0.811	0.787	-2.9	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	218	0.597	0.651	9.0	30.0	True
13C-OCDF	M+2/M+4	0.90	0.76-1.02	203	0.946	0.962	1.6	30.0	True

Qcd h 8-17-16

8/17/16

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89922 - D1160817S1
CCAL Filename: d1160817s1
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160817s1/d1160817s1.d
CCAL Date/Time: 08/17/16 09:22

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	30:41	33:03	142	1.002	1.002	-	
2,3,7,8-TCDF	28:42	30:53	131	1.001	1.002	-	
1,2,3,7,8-PeCDD	40:33	41:29	56	1.000	1.000	-	
1,2,3,7,8-PeCDF	38:44	39:51	67	1.000	1.001	-	
2,3,4,7,8-PeCDF	40:01	40:59	58	1.001	1.000	-	
1,2,3,4,7,8-HxCDD	44:50	45:43	53	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	44:57	45:50	53	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:20	46:14	54	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	43:49	44:38	49	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:56	44:46	50	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	44:39	45:32	53	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	45:36	46:32	56	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	49:38	50:45	67	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:58	49:02	64	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:17	51:22	65	1.000	1.000	-	
OCDD	53:54	54:45	51	1.000	1.000	-	
OCDF	54:02	54:53	51	1.000	1.000	-	
13C-2,3,7,8-TCDD	30:38	33:00	142	1.017	1.017	-	
13C-2,3,7,8-TCDF	28:40	30:50	130	0.951	0.950	-	
13C-1,2,3,7,8-PeCDD	40:32	41:28	56	1.346	1.278	-	
13C-1,2,3,7,8-PeCDF	38:43	39:49	66	1.285	1.227	-	
13C-2,3,4,7,8-PeCDF	39:59	40:58	59	1.327	1.262	-	
13C-1,2,3,4,7,8-HxCDD	44:49	45:42	53	0.989	0.989	-	
13C-1,2,3,6,7,8-HxCDD	44:56	45:49	53	0.992	0.991	-	
13C-1,2,3,4,7,8-HxCDF	43:48	44:37	49	0.966	0.965	-	
13C-1,2,3,6,7,8-HxCDF	43:55	44:45	50	0.969	0.968	-	
13C-2,3,4,6,7,8-HxCDF	44:38	45:31	53	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	45:35	46:31	56	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	49:37	50:44	67	1.095	1.098	-	
13C-1,2,3,4,6,7,8-HpCDF	47:56	49:01	65	1.058	1.061	-	
13C-1,2,3,4,7,8,9-HpCDF	50:16	51:21	65	1.109	1.111	-	
13C-OCDD	53:53	54:44	51	1.189	1.184	-	
13C-OCDF	54:01	54:52	51	1.192	1.187	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89922 - D1160817S1

WIN Filename: d1160817s1

WIN Sample ID: 4966:41

WIN Result Dir: /20160817s1/d1160817s1.d

WIN Date/Time: 08/17/16 09:22

Method: 9Ao - DX8290A

Instrument: D11A

Column SN: 1379922

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	33:00	26:39	0.8076	35:48	1.0848
Total TCDF	13C-2,3,7,8-TCDF	304	30:50	24:03	0.7800	35:43	1.1584
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	41:28	38:46	0.9349	42:07	1.0157
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:49	36:18	0.9117	42:14	1.0607
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:49	44:04	0.9618	46:14	1.0091
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:37	43:23	0.9724	46:40	1.0459
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	50:44	49:33	0.9767	50:45	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	49:01	49:02	1.0003	51:22	1.0479
OCDD	13C-OCDD	458	54:44	54:45	1.0003	54:45	1.0003
OCDF	13C-OCDF	442	54:52	54:53	1.0003	54:53	1.0003

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s1/d1160817s1.d	Prep Date		SDG No	
Analysis ID	180396	Prep Exp Date		Date Received	
Analysis Date	8/17/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	09:22	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	33:03	585958	58596	1.144	10.00	10.175946	101.76	10.175946	E	0.0451
Total TCDD		2307757	265737	1.144		50.253239		50.253239	E	0.0451
2,3,7,8-TCDF	30:53	897884	93109	1.066	10.00	10.371924	103.72	10.371924	E	0.0170
Total TCDF		1853812	259364	1.066		31.786267		31.786267	E	0.0170
1,2,3,7,8-PeCDD	41:29	2134479	540553	1.060	50.00	49.032811	98.07	49.032811	E	0.0246
Total PeCDD		4197003	893273	1.060		145.445499		145.445499	E	0.0246
1,2,3,7,8-PeCDF	39:51	3736724	784251	1.179	50.00	49.778831	99.56	49.778831	E	0.0219
2,3,4,7,8-PeCDF	40:59	3678601	877639	1.115	50.00	49.176738	98.35	49.176738	E	0.0192
Total PeCDF		6801827	1316089	1.147		189.657685		189.657685	E	0.0204
1,2,3,4,7,8-HxCDD	45:43	2644240	661325	1.131	50.00	49.948752	99.90	49.948752	E	0.0335
1,2,3,6,7,8-HxCDD	45:50	2637865	650731	1.116	50.00	50.285711	100.57	50.285711	E	0.0347
1,2,3,7,8,9-HxCDD	46:14	2756400	663987	1.205	50.00	48.762915	97.53	48.762915	E	0.0318
Total HxCDD		2984860	795623	1.151		204.298261		204.298261	E	0.0333
1,2,3,4,7,8-HxCDF	44:38	4431363	1180204	1.350	50.00	50.376756	100.75	50.376756	E	0.0252
1,2,3,6,7,8-HxCDF	44:46	4701680	1175049	1.242	50.00	50.893360	101.79	50.893360	E	0.0253
2,3,4,6,7,8-HxCDF	45:32	4245459	1061344	1.241	50.00	50.370903	100.74	50.370903	E	0.0281
1,2,3,7,8,9-HxCDF	46:32	3389240	810326	1.262	50.00	49.191038	98.38	49.191038	E	0.0367
Total HxCDF		7515537	1925835	1.274		290.893255		290.893255	E	0.0282
1,2,3,4,6,7,8-HpCDD	50:45	2198706	471636	1.114	50.00	48.709135	97.42	48.709135	E	0.0393
Total HpCDD		2370915	484415	1.114		101.233310		101.233310	E	0.0393
1,2,3,4,6,7,8-HpCDF	49:02	3811161	804413	1.461	50.00	51.177154	102.35	51.177154	E	0.0249
1,2,3,4,7,8,9-HpCDF	51:22	2730655	603972	1.370	50.00	50.097939	100.20	50.097939	E	0.0324
Total HpCDF				1.416		101.275093		101.275093	E	0.0283
OCDD	54:45	3908136	994878	1.203	100.0	98.706603	98.71	98.706603	E	0.0212
OCDF	54:53	5068526	1293712	1.134	100.0	91.927816	91.93	91.927816	E	0.0185
13C-2,3,7,8-TCDD	33:00	5035537	479989	1.093	100.0	95.600201	95.60	95.600201		0.0263
13C-2,3,7,8-TCDF	30:50	8124033	843092	1.794	100.0	93.910404	93.91	93.910404		0.0106
13C-1,2,3,7,8-PeCDD	41:28	4107179	1027723	0.800	100.0	106.492940	106.49	106.492940		0.0186
13C-1,2,3,7,8-PeCDF	39:49	6366232	1345575	1.356	100.0	97.350442	97.35	97.350442		0.0284
13C-2,3,4,7,8-PeCDF	40:58	6711455	1619850	1.343	100.0	103.655757	103.66	103.655757		0.0287
13C-1,2,3,4,7,8-HxCDD	45:42	4680284	1174697	0.916	100.0	101.097146	101.10	101.097146		0.0311
13C-1,2,3,6,7,8-HxCDD	45:49	4700699	1148265	0.906	100.0	102.611131	102.61	102.611131		0.0314
13C-1,2,3,4,7,8-HxCDF	44:37	6513784	1732582	1.268	100.0	101.596543	101.60	101.596543		0.0285
13C-1,2,3,6,7,8-HxCDF	44:45	7440530	1876395	1.506	100.0	97.769877	97.77	97.769877		0.0240
13C-2,3,4,6,7,8-HxCDF	45:31	6792307	1689380	1.344	100.0	99.984077	99.98	99.984077		0.0269
13C-1,2,3,7,8,9-HxCDF	46:31	5459331	1272108	1.202	100.0	89.846917	89.85	89.846917		0.0301
13C-1,2,3,4,6,7,8-HpCDD	50:44	4053036	863428	0.728	100.0	110.078382	110.08	110.078382		0.0125
13C-1,2,3,4,6,7,8-HpCDF	49:01	5097137	1084708	1.008	100.0	100.031538	100.03	100.031538		0.0346
13C-1,2,3,4,7,8,9-HpCDF	51:21	3977559	889107	0.811	100.0	97.054538	97.05	97.054538		0.0430
13C-OCDD	54:44	6582495	1722456	0.597	200.0	217.990875	109.00	217.990875		0.0361
13C-OCDF	54:52	9721191	2547581	0.946	200.0	203.294686	101.65	203.294686		0.0184
37Cl4-2,3,7,8-TCDD	33:02	563502	54567	1.233	10.00	9.476348	94.76	9.476348	E	0.0287
13C-1,2,3,4-TCDD	32:27	4821278	487115	1.000	100.0	100.000000	100.00	100.000000		0.0287
13C-1,2,3,7,8,9-HxCDD	46:13	5054838	1204043	1.000	100.0	100.000000	100.00	100.000000		0.0284

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s1/d1160817s1	Prep Date		SDG No	
Analysis ID	180396	Prep Exp Date		Date Received	
Analysis Date	08/17/16 09:22	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	70	83	28	33	0.85	/	
	Unidentified	24:03	00:00	0	494407	601548	69527	83832	0.82	ABV/ABV	
	2,3,7,8-TCDF	30:53	31:06	-13	392675	505209	39625	53484	0.78	ABV/AVV	M
	Unidentified	35:43	00:00	0	335212	422645	46883	59122	0.79	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	53	40	21	16	1.31 *	/	
	13C-2,3,7,8-TCDF	30:50	31:04	-14	3635441	4488592	377576	465516	0.81	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	110	138	44	55	0.80	/	
	Unidentified	26:39	00:00	0	254371	316595	32043	38553	0.80	ABV/ABV	
	Unidentified	32:30	00:00	0	230728	283432	24515	29554	0.81	ABV/AVV	
	Unidentified	32:46	00:00	0	213638	272450	20240	26246	0.78	AVV/AVB	M
	2,3,7,8-TCDD	33:03	32:47	16	262485	323473	26142	32454	0.81	AVV/AVV	M
	Unidentified	33:35	00:00	0	239627	302312	23906	29708	0.79	AVV/AVV	
	Unidentified	35:48	00:00	0	84312	110292	17364	23608	0.76	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	173		69				
	37Cl4-2,3,7,8-TCDD	33:02	32:47	15	563502		54567			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	73	68	29	27	1.07 *	/	
	13C-1,2,3,4-TCDD	32:27	32:18	9	2151358	2669920	217429	269686	0.81	ABV/AVV	
	13C-2,3,7,8-TCDD	33:00	32:44	16	2239885	2795652	215721	264268	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	193	155	77	62	1.24 *	/	
	Unidentified	36:18	00:00	0	2296101	1452559	344796	216220	1.58	ABV/ABV	
	1,2,3,7,8-PeCDF	39:51	39:56	-5	2288884	1447840	480691	303560	1.58	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:59	41:08	-9	2251145	1427456	535864	341775	1.58	ABV/ABV	M
	Unidentified	42:14	00:00	0	1869131	1184036	462643	292430	1.58	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	133	55	53	22	2.41 *	/	
	13C-1,2,3,7,8-PeCDF	39:49	39:55	-6	3888701	2477531	815607	529968	1.57	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:58	41:06	-8	4129293	2582162	1004229	615621	1.60	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	158	110	63	44	1.43	/	
	Unidentified	38:46	00:00	0	1261857	784089	214764	139420	1.61	ABV/ABV	
	1,2,3,7,8-PeCDD	41:29	41:38	-9	1304609	829870	327464	213089	1.57	ABV/ABV	M
	Unidentified	42:07	00:00	0	1321577	829480	328098	210991	1.59	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	48	25	19	10	1.90 *	/	
	13C-1,2,3,7,8-PeCDD	41:28	41:37	-9	2520921	1586258	631795	395928	1.59	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	290	300	116	120	0.97 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s1/d1160817s1	Prep Date		SDG No	
Analysis ID	180396	Prep Exp Date		Date Received	
Analysis Date	08/17/16 09:22	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	43:23	00:00	0	2328059	1867127	645079	516329	1.25	ABV/ABV	
	1,2,3,4,7,8-HxCDF	44:38	44:44	-6	2462318	1969045	654593	525611	1.25	ABV/AVV	M
	1,2,3,6,7,8-HxCDF	44:46	44:51	-5	2624519	2077161	651500	523549	1.26	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	45:32	45:33	-1	2364829	1880630	593407	467937	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDF	46:32	46:29	3	1896430	1492810	452218	358108	1.27	ABV/ABV	M
	Unidentified	46:40	00:00	0	1840141	1480210	424841	339586	1.24	AVV/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	168	268	67	107	0.63 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:37	44:43	-6	2269013	4244771	601923	1130659	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:45	44:50	-5	2622722	4817808	647861	1228534	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:31	45:32	-1	2405611	4386696	606241	1083139	0.55	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:31	46:28	3	1919706	3539625	447279	824829	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	268	178	107	71	1.51 *	/	
	Unidentified	44:04	00:00	0	1660853	1324007	442648	352975	1.25	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:43	45:44	-1	1478250	1165990	372788	288537	1.27	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:50	45:50	0	1472380	1165485	361983	288748	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:14	46:13	1	1531618	1224782	371347	292640	1.25	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	243	100	97	40	2.43 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:42	45:43	-1	2633050	2047234	661592	513105	1.29	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:49	45:49	0	2618901	2081798	640140	508125	1.26	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:13	46:12	1	2817993	2236845	670788	533255	1.26	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	190	205	76	82	0.93	/	
	1,2,3,4,6,7,8-HpCDF	49:02	48:49	13	1954587	1856574	407819	396594	1.05	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	51:22	51:10	12	1403133	1327522	309028	294944	1.06	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	188	233	75	93	0.81 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	49:01	48:47	14	1619419	3477718	339584	745124	0.47	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	51:21	51:09	12	1249994	2727565	278474	610633	0.46	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	215	163	86	65	1.32 *	/	
	Unidentified	49:33	00:00	0	1206764	1164151	250947	233468	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:45	50:30	15	1121815	1076891	241406	230230	1.04	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	43	68	17	27	0.63 *	/	
	Unidentified	49:32	00:00	0	22126	21072	4799	5055	1.05	ABB/ABB	
	13C-1,2,3,4,6,7,8-HpCDD	50:44	50:29	15	2074770	1978266	436715	426713	1.05	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	138	130	55	52	1.06 *	/	
	OCDF	54:53	55:03	-10	2415022	2653504	624575	669137	0.91	ABV/ABV	M

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s1/d1160817s1	Prep Date		SDG No	
Analysis ID	180396	Prep Exp Date		Date Received	
Analysis Date	08/17/16 09:22	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

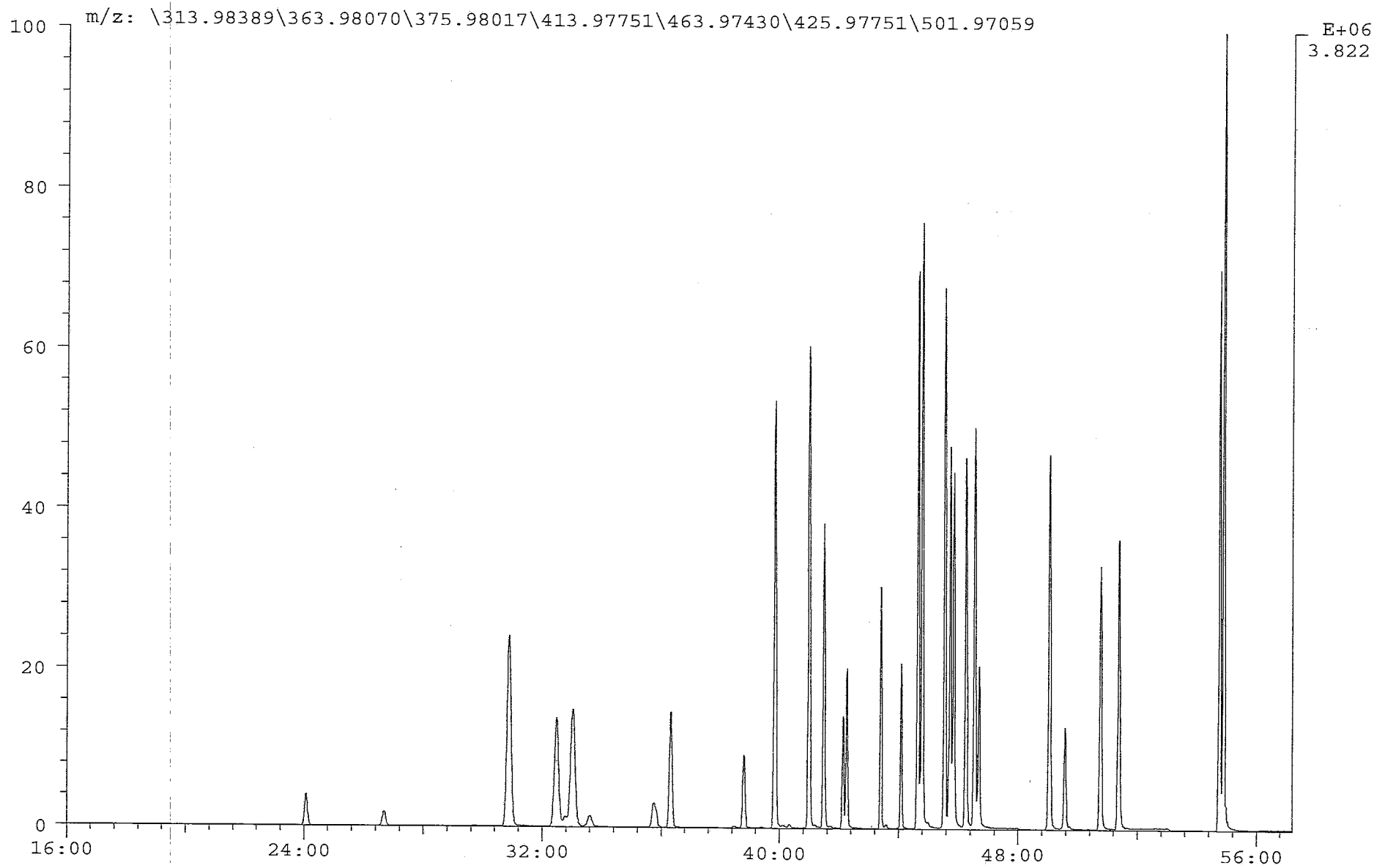
Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	75	135	30	54	0.56 *	/	
	13C-OCDF	54:52	55:02	-10	4614576	5106615	1212874	1334707	0.90	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	125	95	50	38	1.32 *	/	
	OCDD	54:45	54:55	-10	1852541	2055595	475558	519320	0.90	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	148	113	59	45	1.31 *	/	
	13C-OCDD	54:44	54:54	-10	3128446	3454049	822877	899579	0.91	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int./Calc. /u 8/17/16

Qid LM 8-17-16

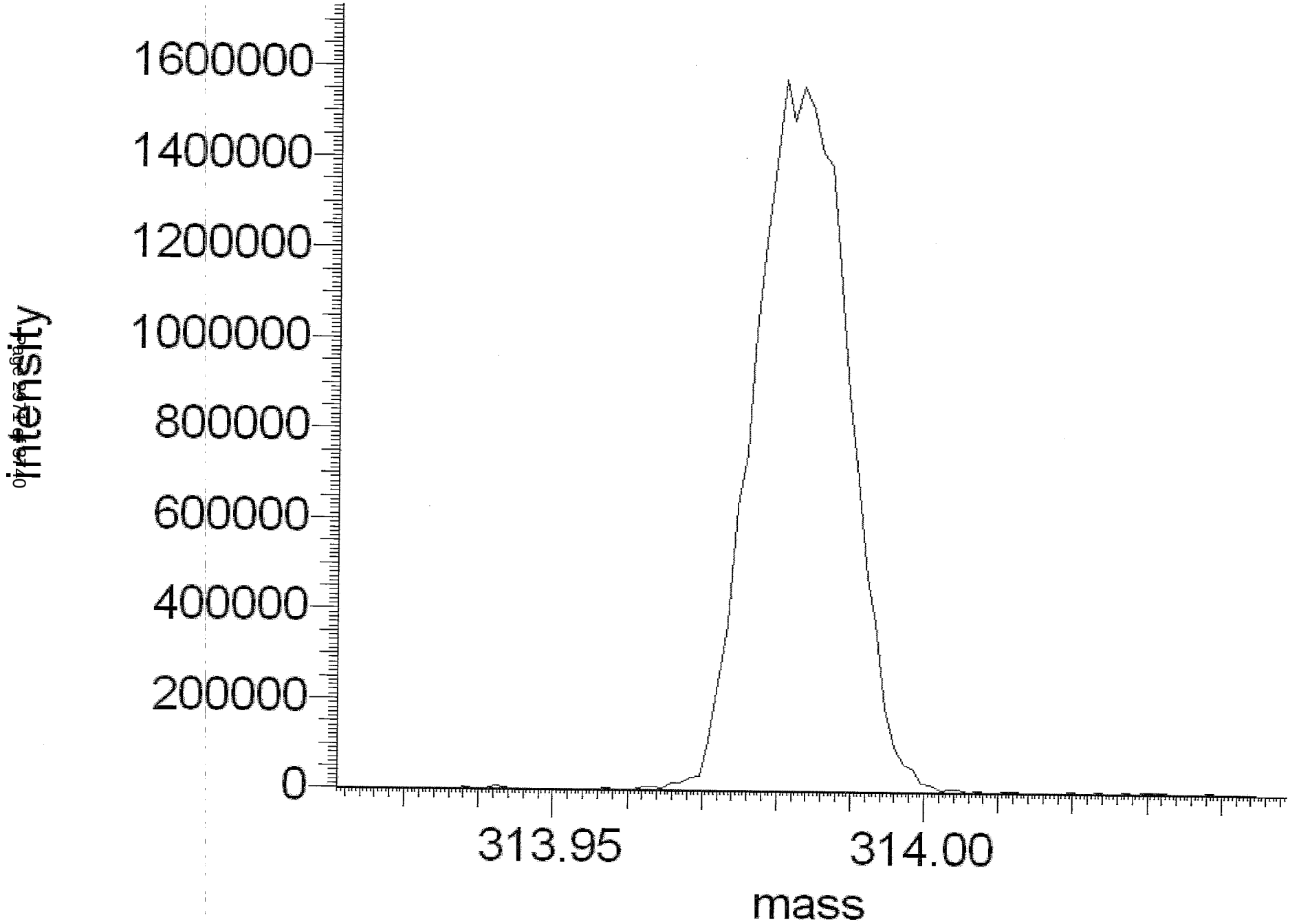
CHRO: d1160817s1 17-Aug-16 Elapse: 12:03.7 1
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



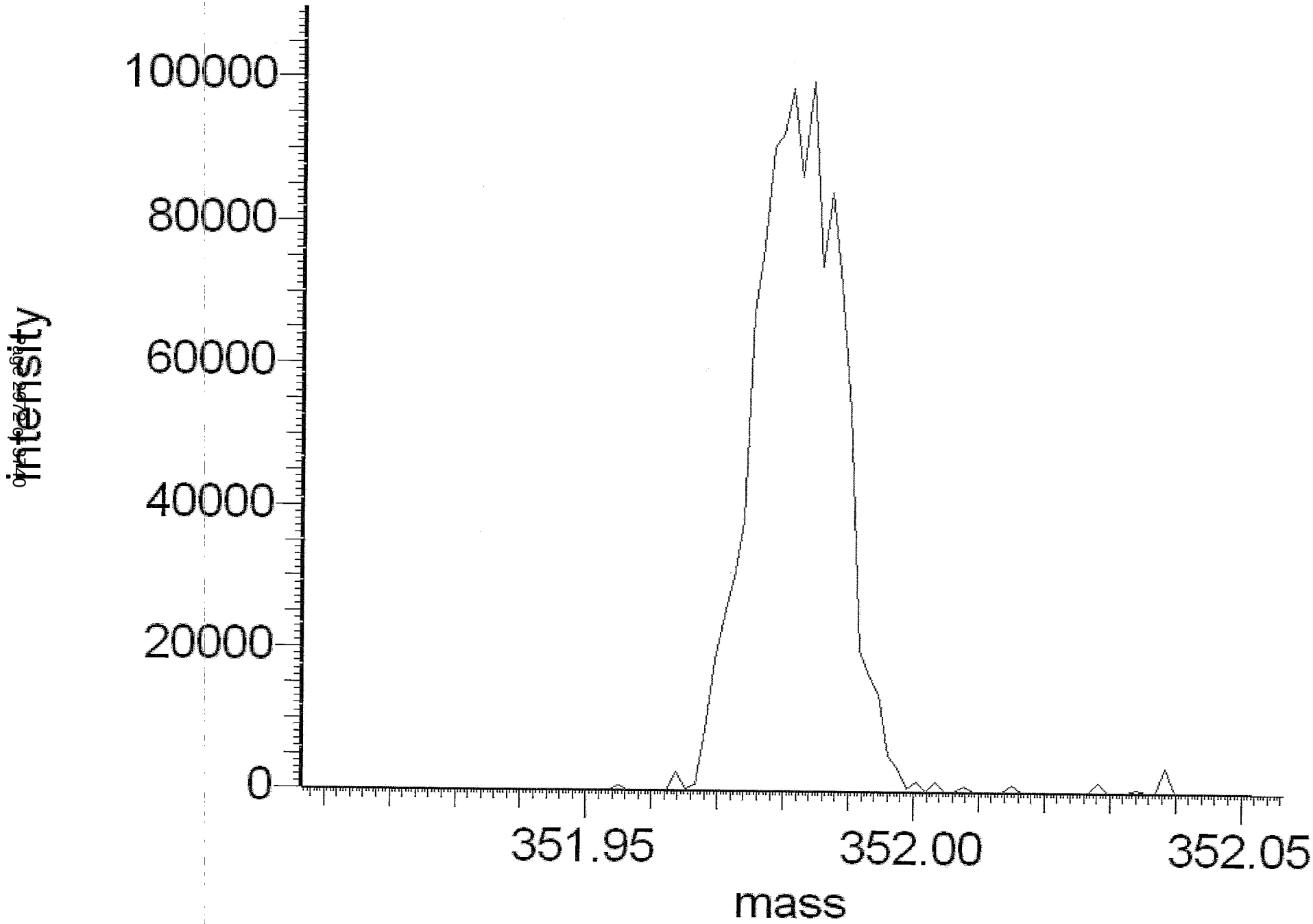
```
Reports
09:20:33:  Peak matching procedure started
09:20:34:
09:20:34:  Reference mass: 313.98336
09:20:35:  Sample mass: 364.0
09:20:35:
09:20:36:  Finding reference mass
09:20:37:  Finding sample mass
09:20:37:
09:20:43:  [1]   363.9820 amu, mean: 363.9820
09:20:46:  [2]   363.9821 amu, mean: 363.9820     SD: 0.08 mmu or: 0.21 ppm
09:20:49:  [3]   363.9815 amu, mean: 363.9818     SD: 0.30 mmu or: 0.81 ppm
09:20:52:  [4]   363.9819 amu, mean: 363.9819     SD: 0.24 mmu or: 0.67 ppm
09:20:55:  [5]   363.9822 amu, mean: 363.9819     SD: 0.25 mmu or: 0.69 ppm
09:20:59:  [6]   363.9816 amu, mean: 363.9819     SD: 0.26 mmu or: 0.72 ppm
09:21:02:  [7]   363.9824 amu, mean: 363.9819     SD: 0.32 mmu or: 0.88 ppm
09:21:05:  [8]   363.9823 amu, mean: 363.9820     SD: 0.32 mmu or: 0.88 ppm
09:21:08:  [9]   363.9819 amu, mean: 363.9820     SD: 0.30 mmu or: 0.83 ppm
09:21:11:  [10]   363.9816 amu, mean: 363.9819     SD: 0.31 mmu or: 0.84 ppm
09:21:12:
09:21:12:  Stop requested. Please wait for procedure to finish.
09:21:12:
09:21:14:  [11]   363.9813 amu, mean: 363.9819     SD: 0.34 mmu or: 0.94 ppm
09:21:16:
09:21:16:  Peakmatching stopped
```

Signature 8/17/16

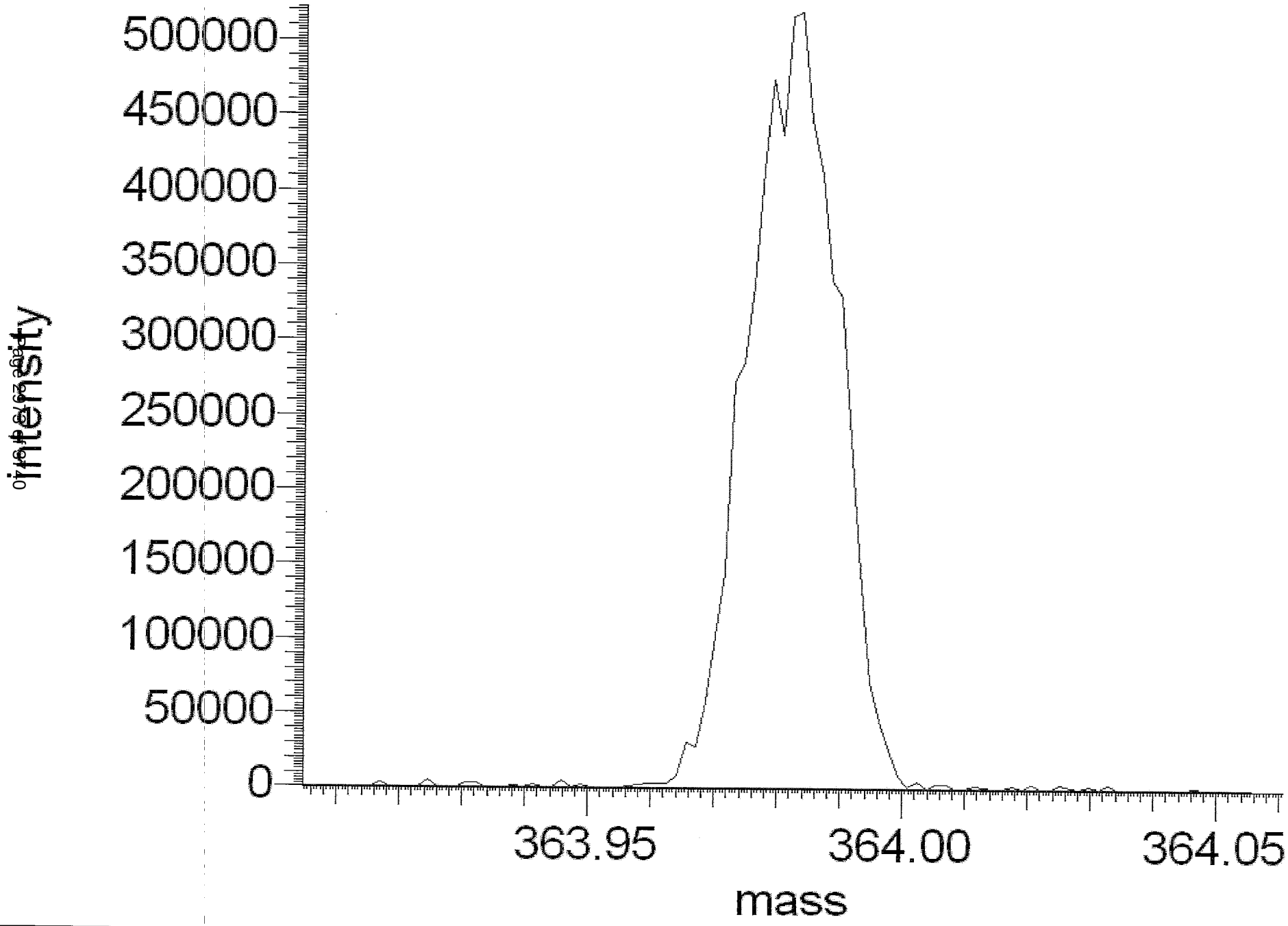
LockMass: 313.9838 Instr.: DFS-1209
Resolution: 12458 (08/17/16 09:13:50)



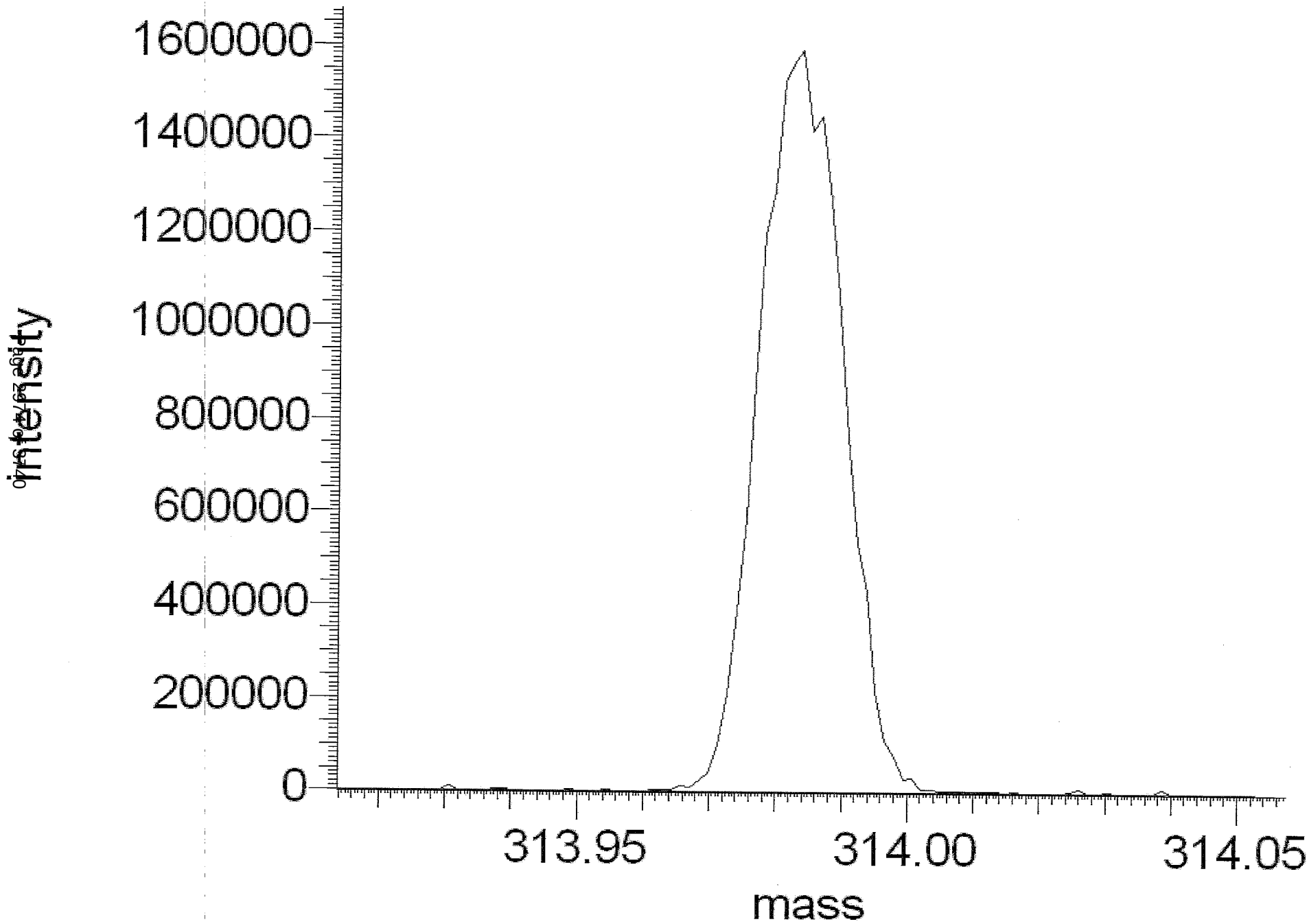
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12780 (08/17/16 09:14:36)



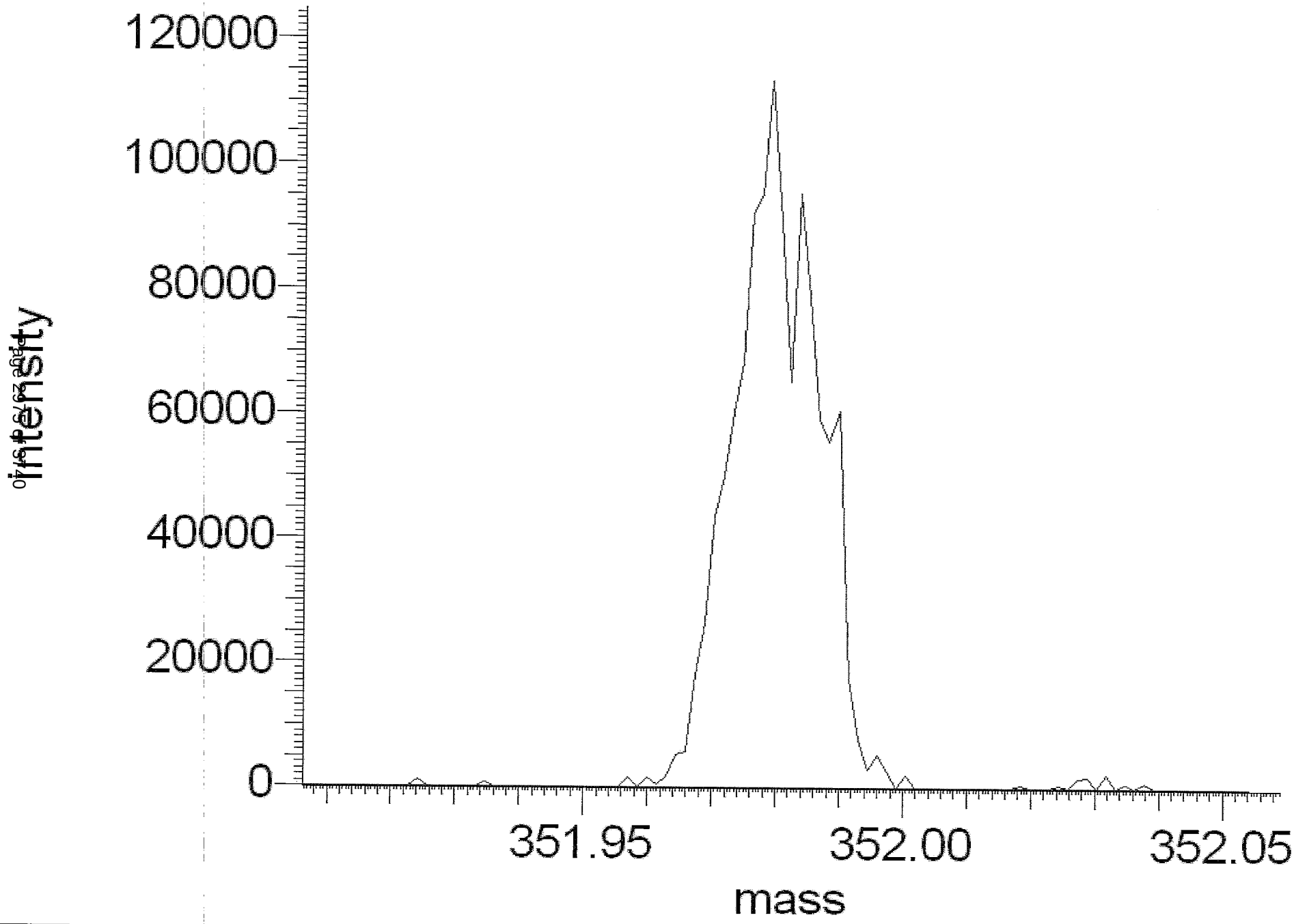
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 11184 (08/17/16 09:14:39)



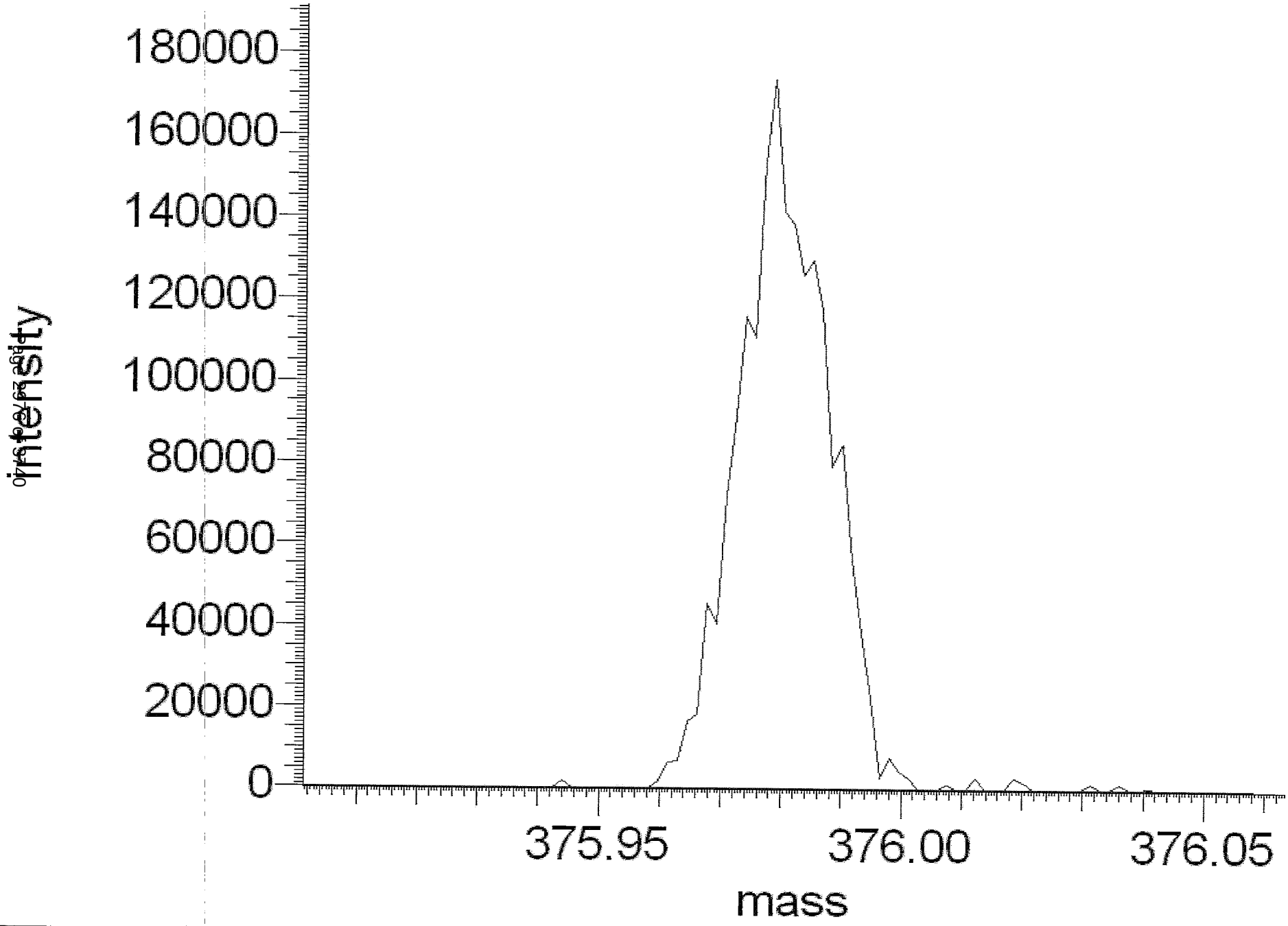
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 11184 (08/17/16 09:14:54)

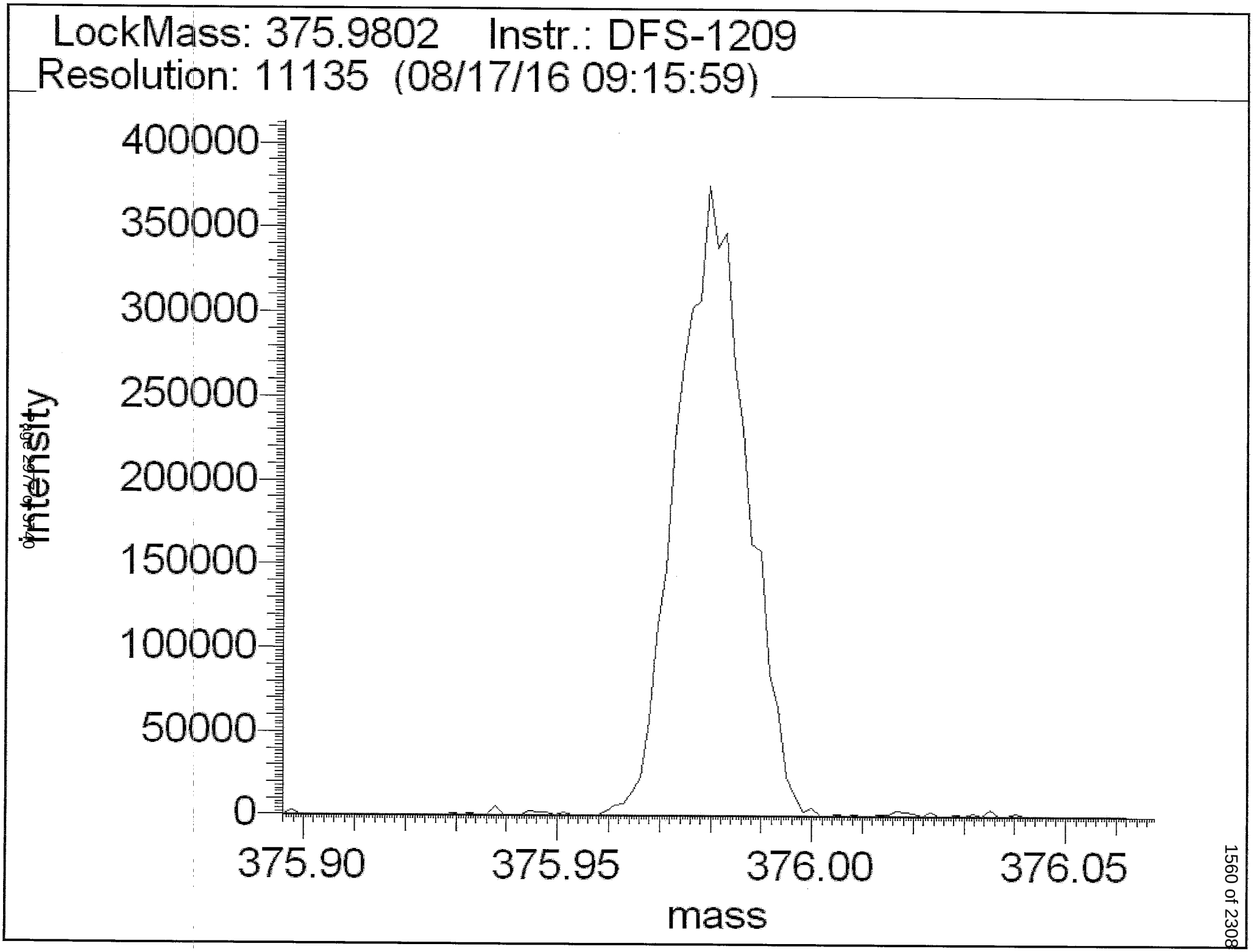


Mass: 351.9802 Instr.: DFS-1209
Resolution: 12535 (08/17/16 09:15:41)

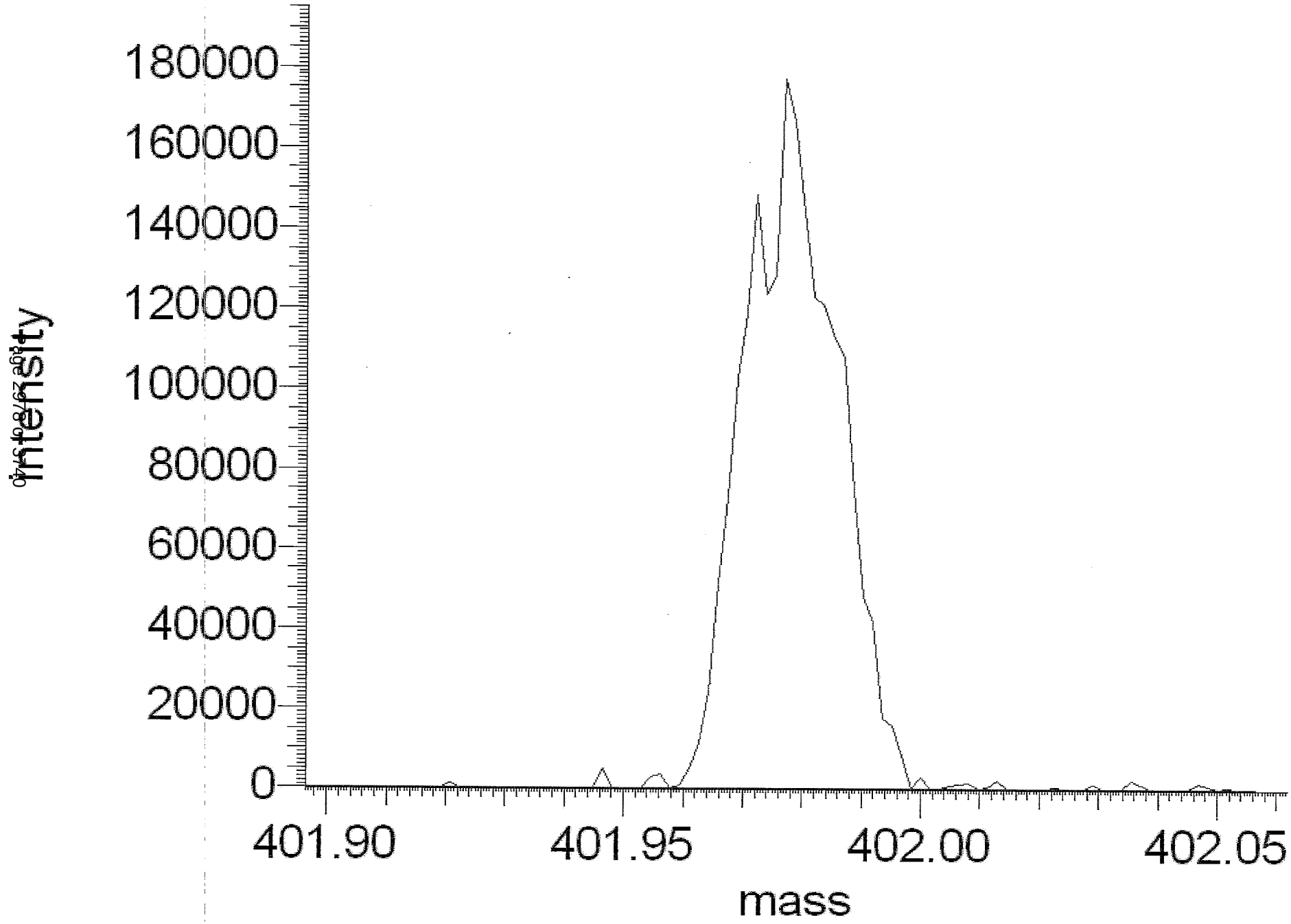


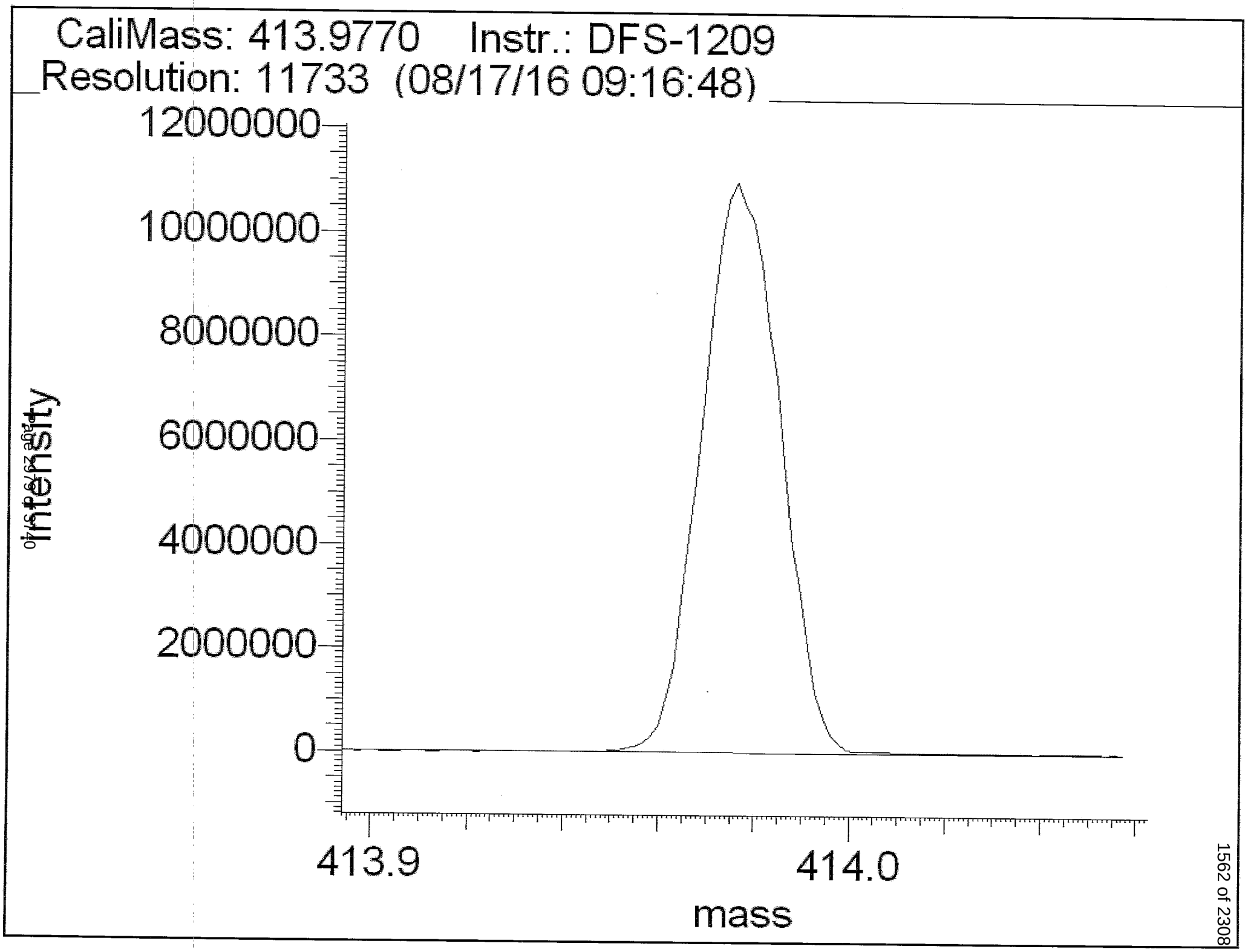
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 11135 (08/17/16 09:15:44)



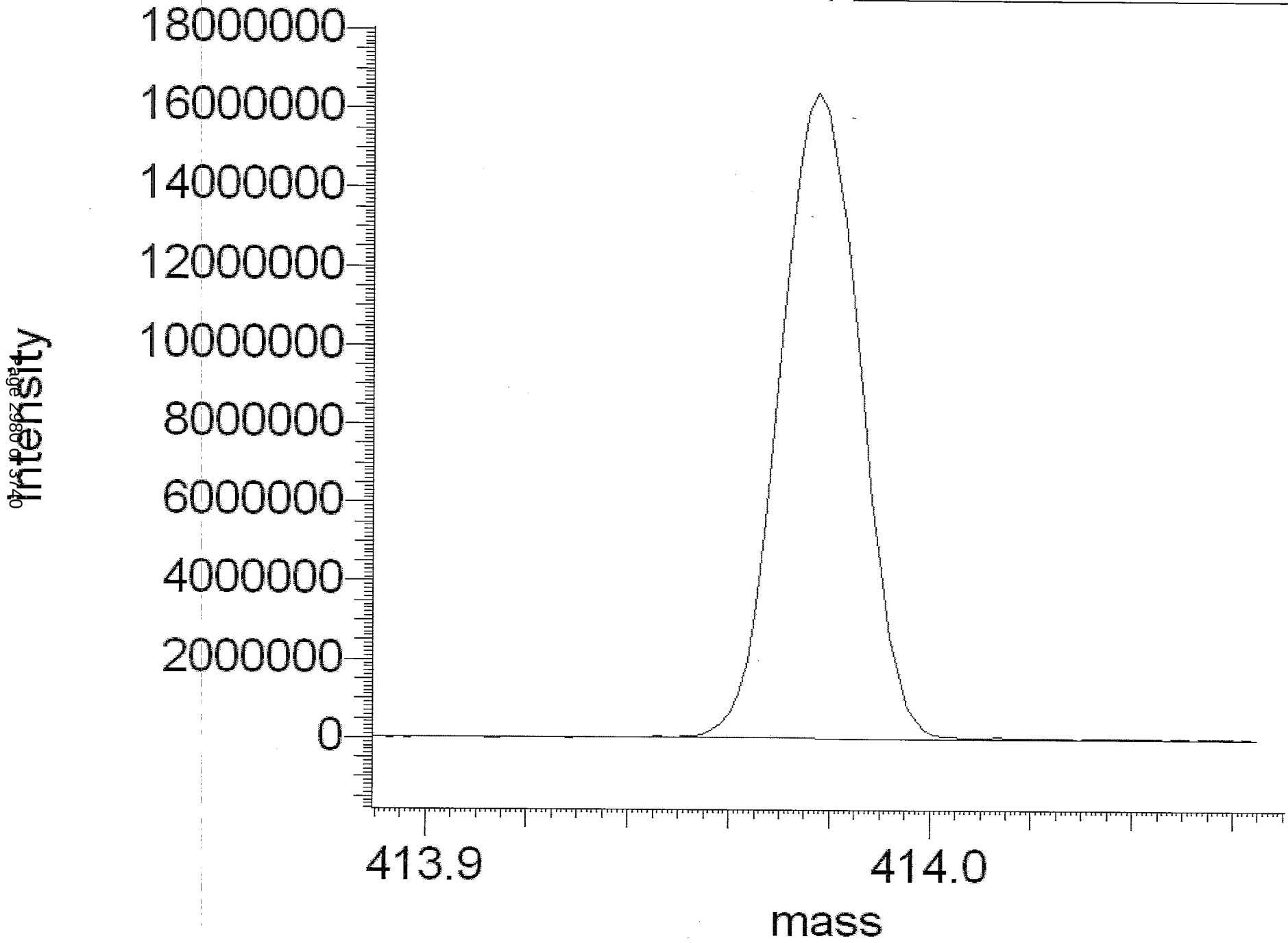

LockMass: 375.9802 Instr.: DFS-1209
Resolution: 11135 (08/17/16 09:15:59)
400000
350000
300000
250000
200000
150000
100000
50000
0
intensity
375.90
375.95
376.00
376.05
mass

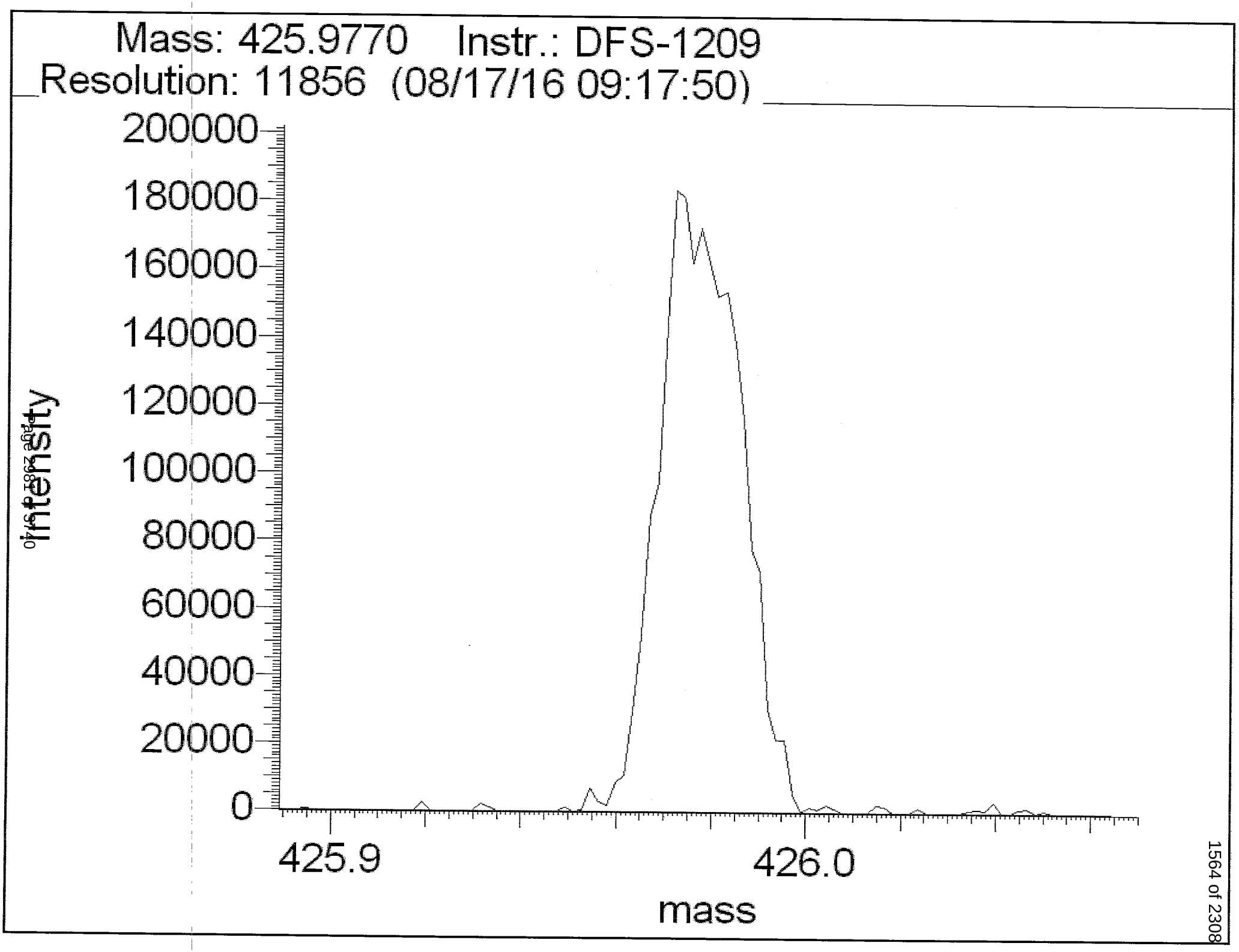
Mass: 401.9770 Instr.: DFS-1209
Resolution: 12128 (08/17/16 09:16:45)



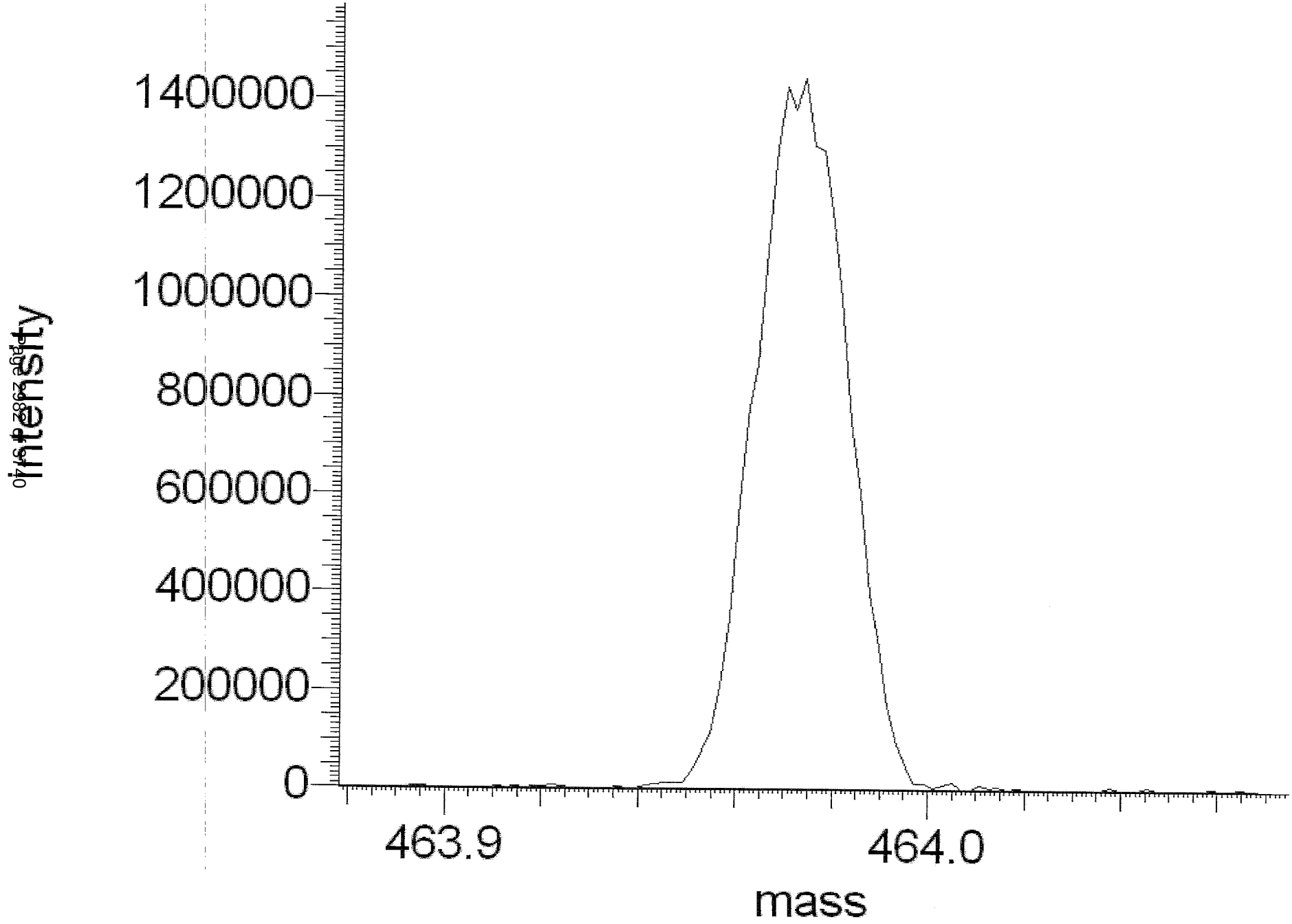

CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 11733 (08/17/16 09:16:48)
12000000
10000000
8000000
6000000
4000000
2000000
0
Intensity
413.9
414.0
mass

LockMass: 413.9775 Instr.: DFS-1209
Resolution: 11733 (08/17/16 09:17:03)

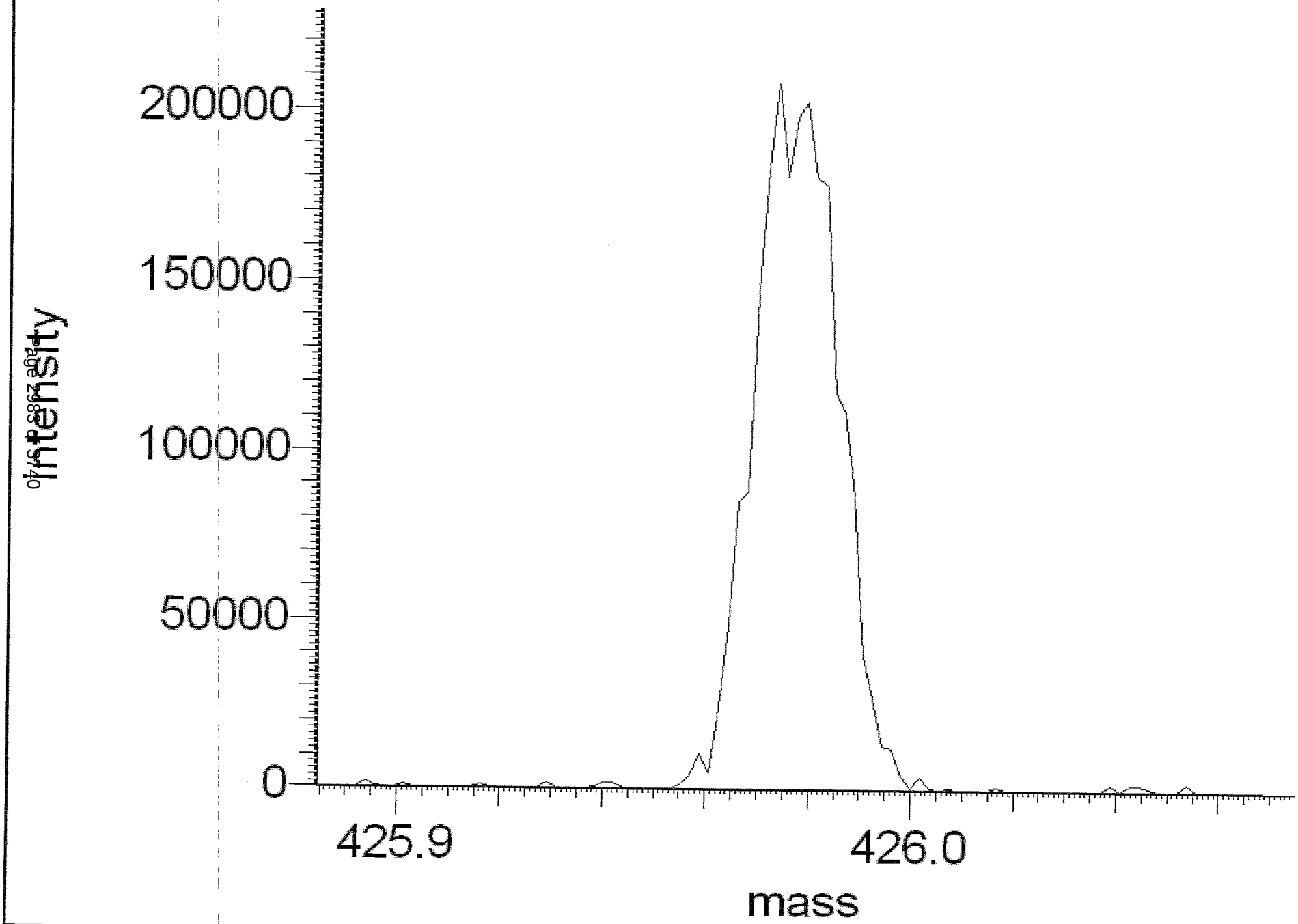



Mass: 425.9770 Instr.: DFS-1209
Resolution: 11856 (08/17/16 09:17:50)
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
Intensity
425.9
426.0
mass

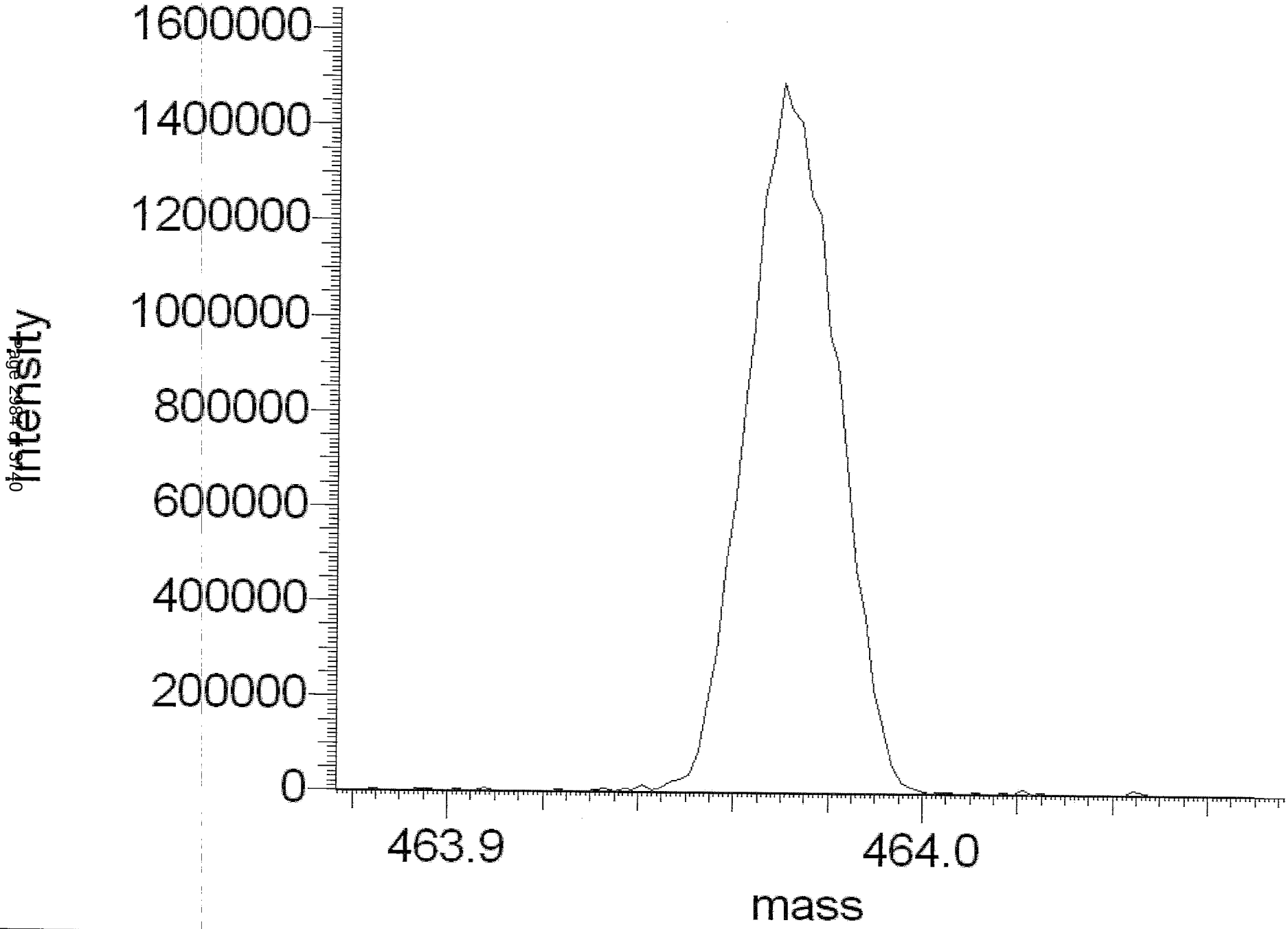
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 11439 (08/17/16 09:17:53)



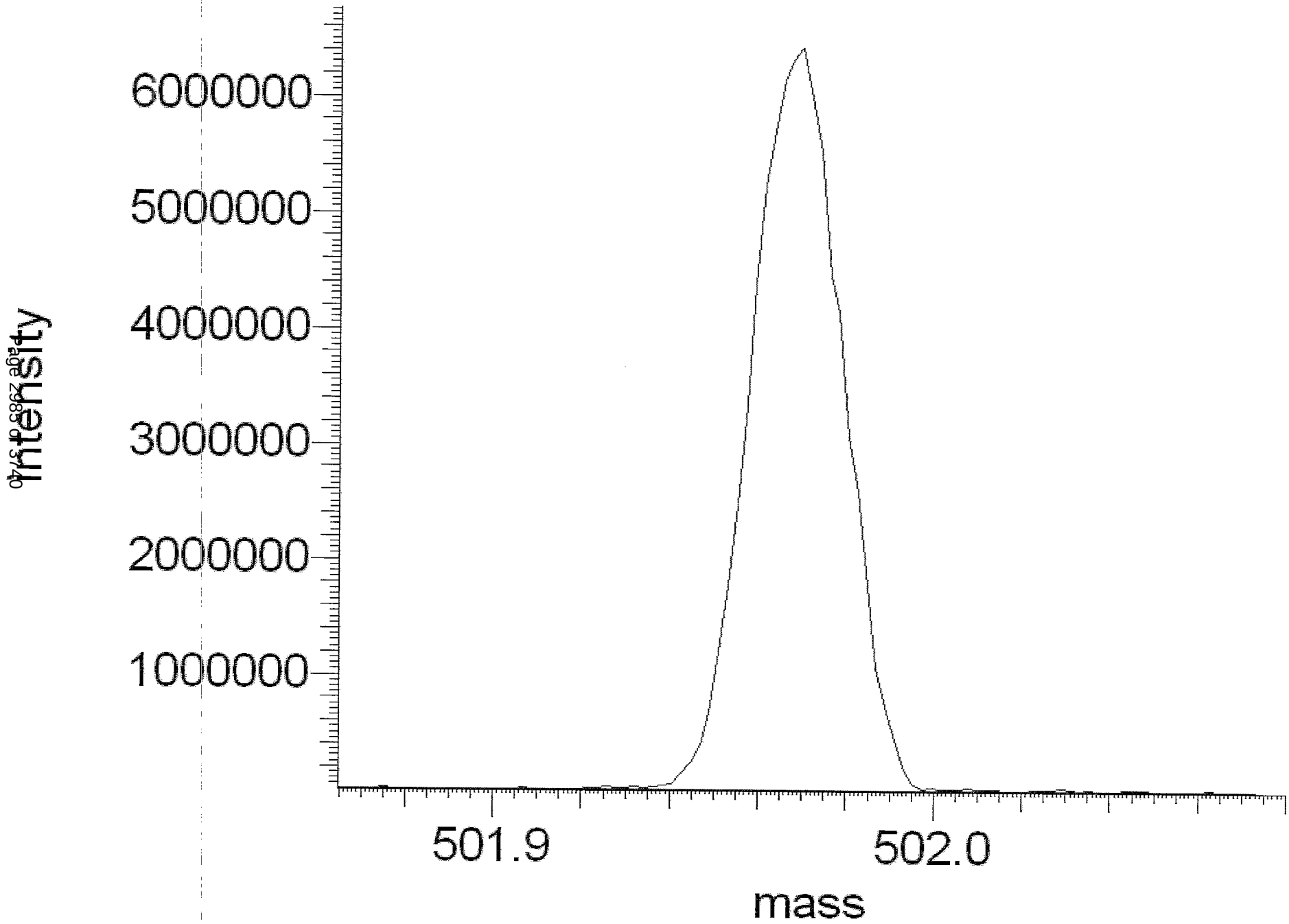
LockMass: 425.9775 Instr.: DFS-1209
Resolution: 11439 (08/17/16 09:18:08)



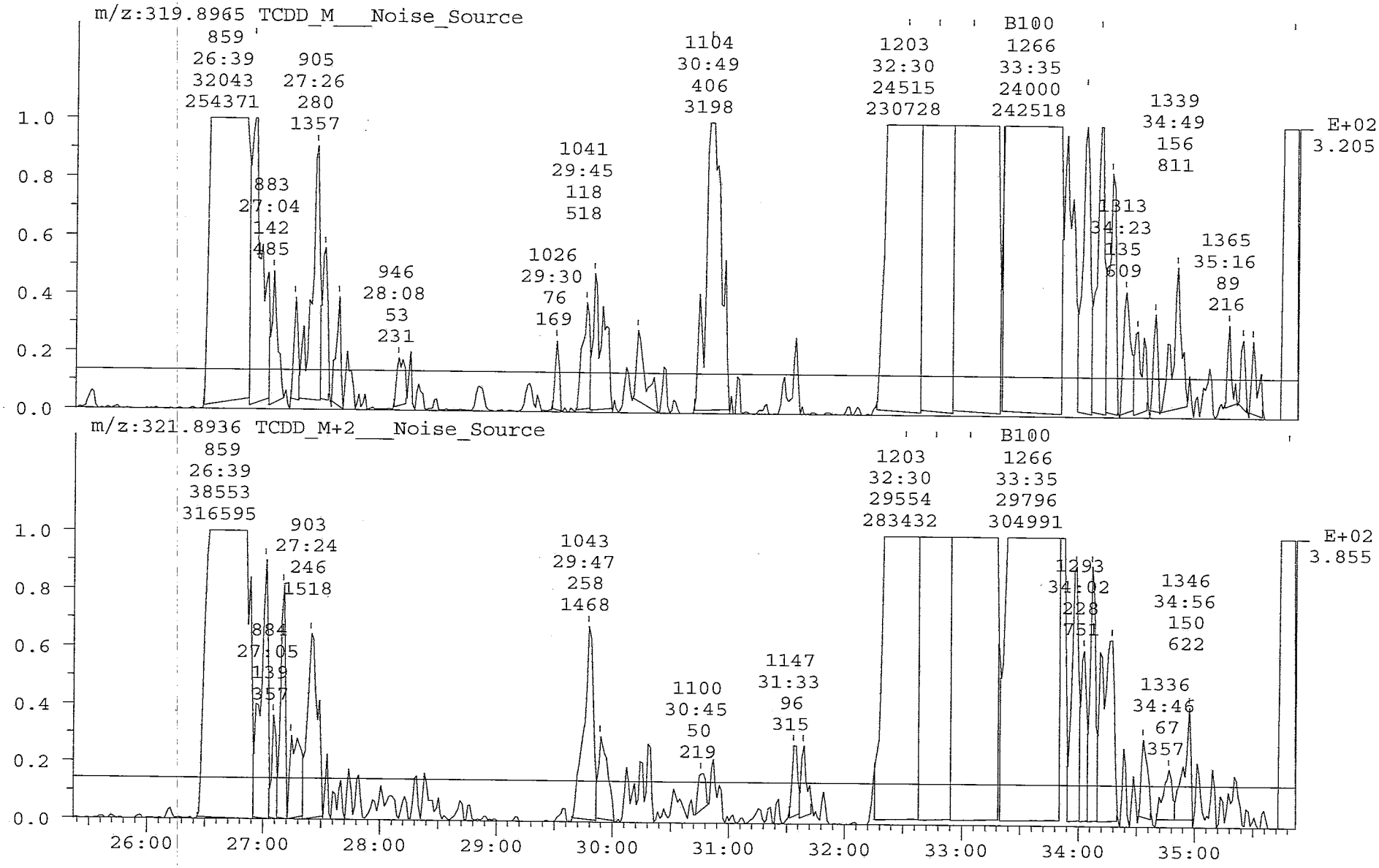
Mass: 463.9743 Instr.: DFS-1209
Resolution: 11430 (08/17/16 09:18:54)



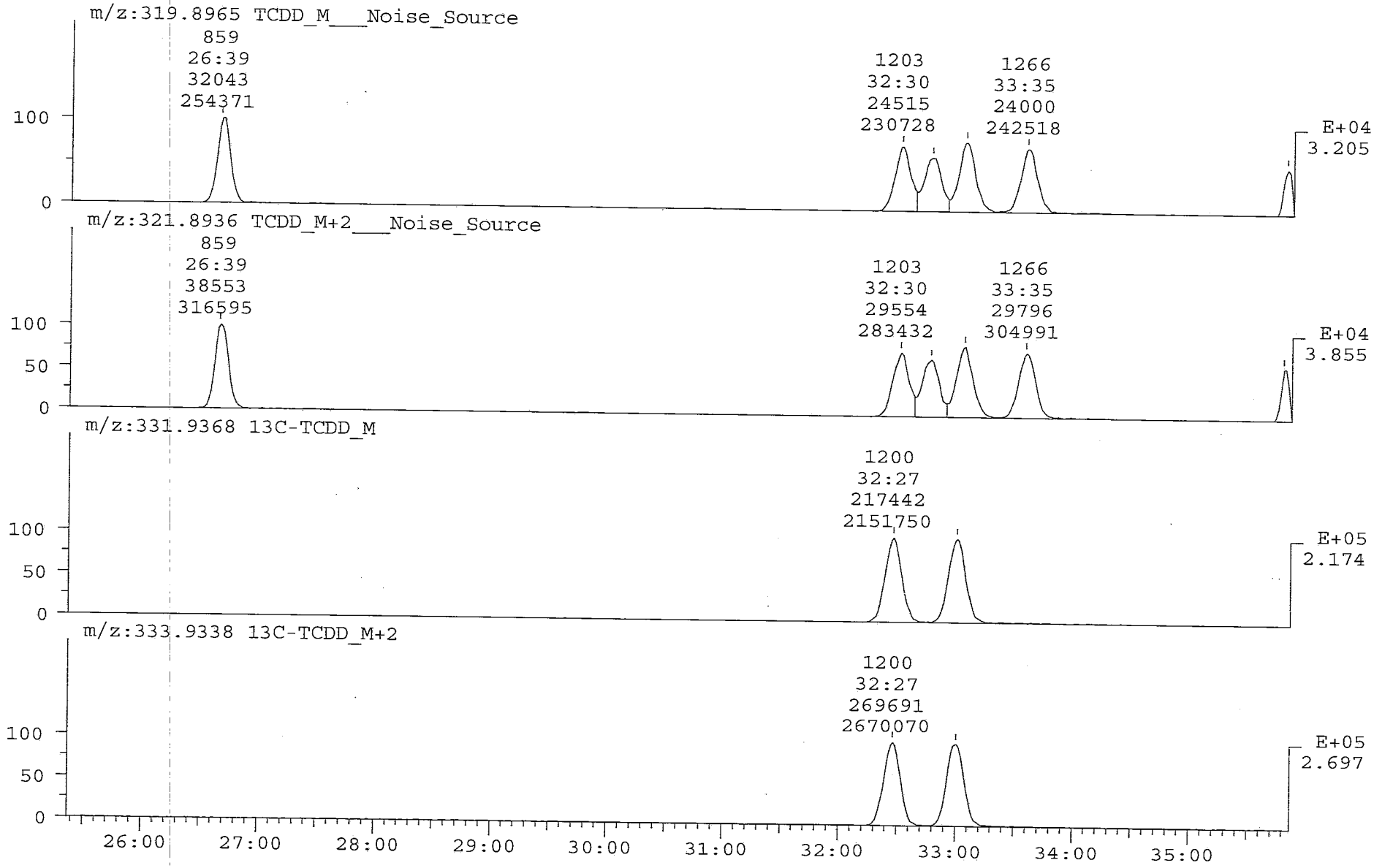
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 11021 (08/17/16 09:18:57)



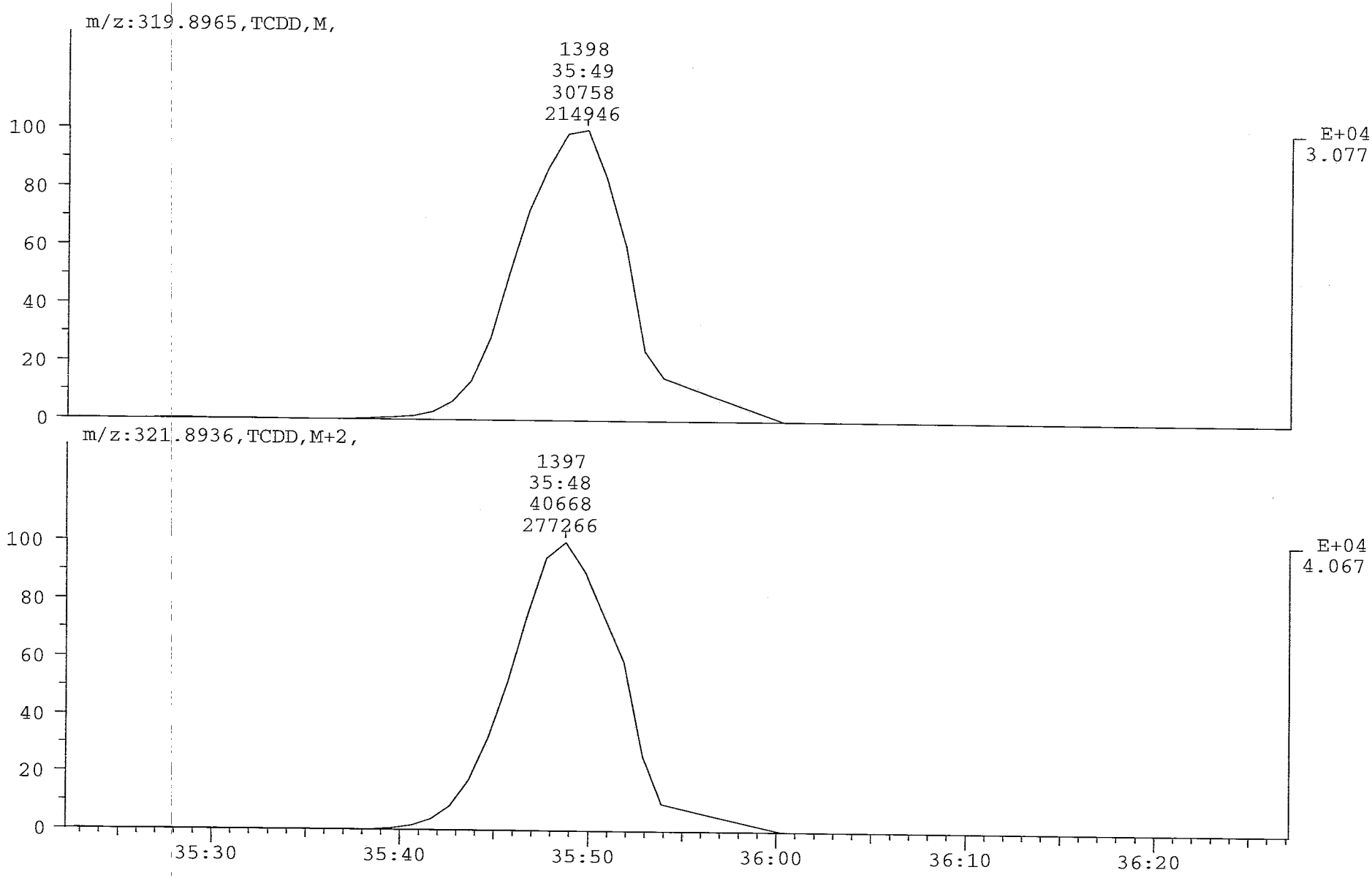
CHRO: d1160817s1 17-Aug-16 Elapse: 12:03.7 1
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 783 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



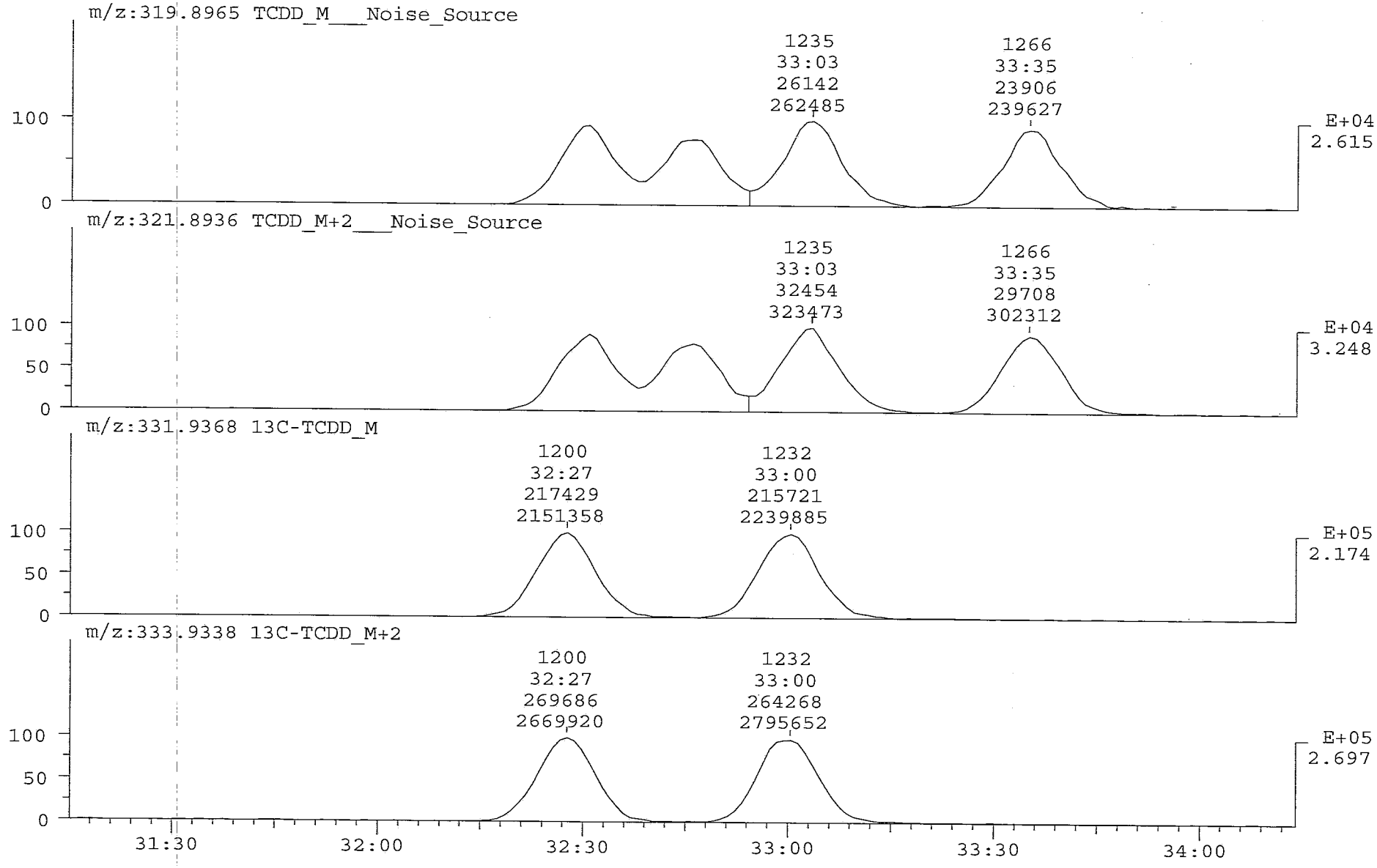
CHRO: d1160817s1 17-Aug-16 Elapse: 12:03.7 1
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 783 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



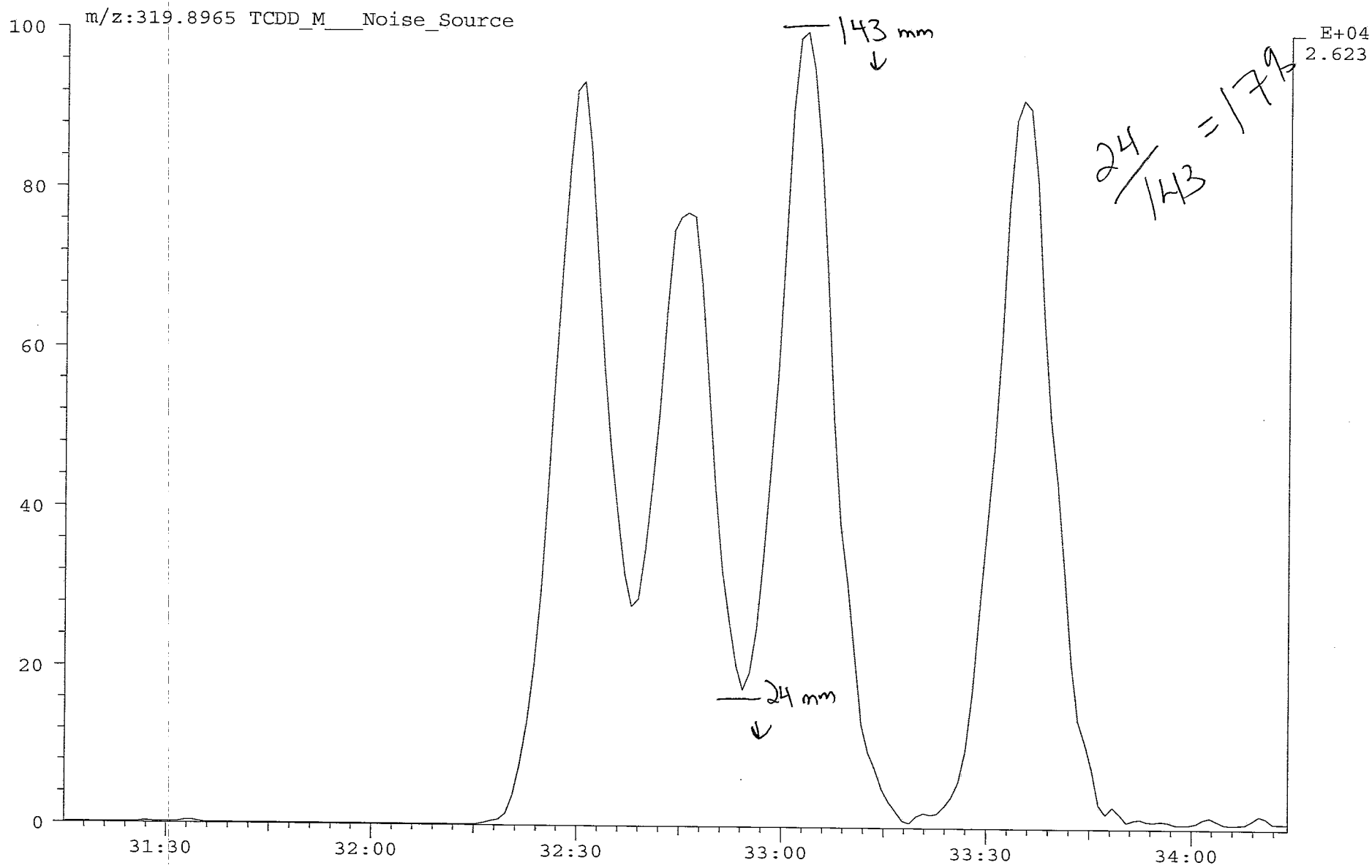
CHRO: d1160817s1 17-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1371 > 1429 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



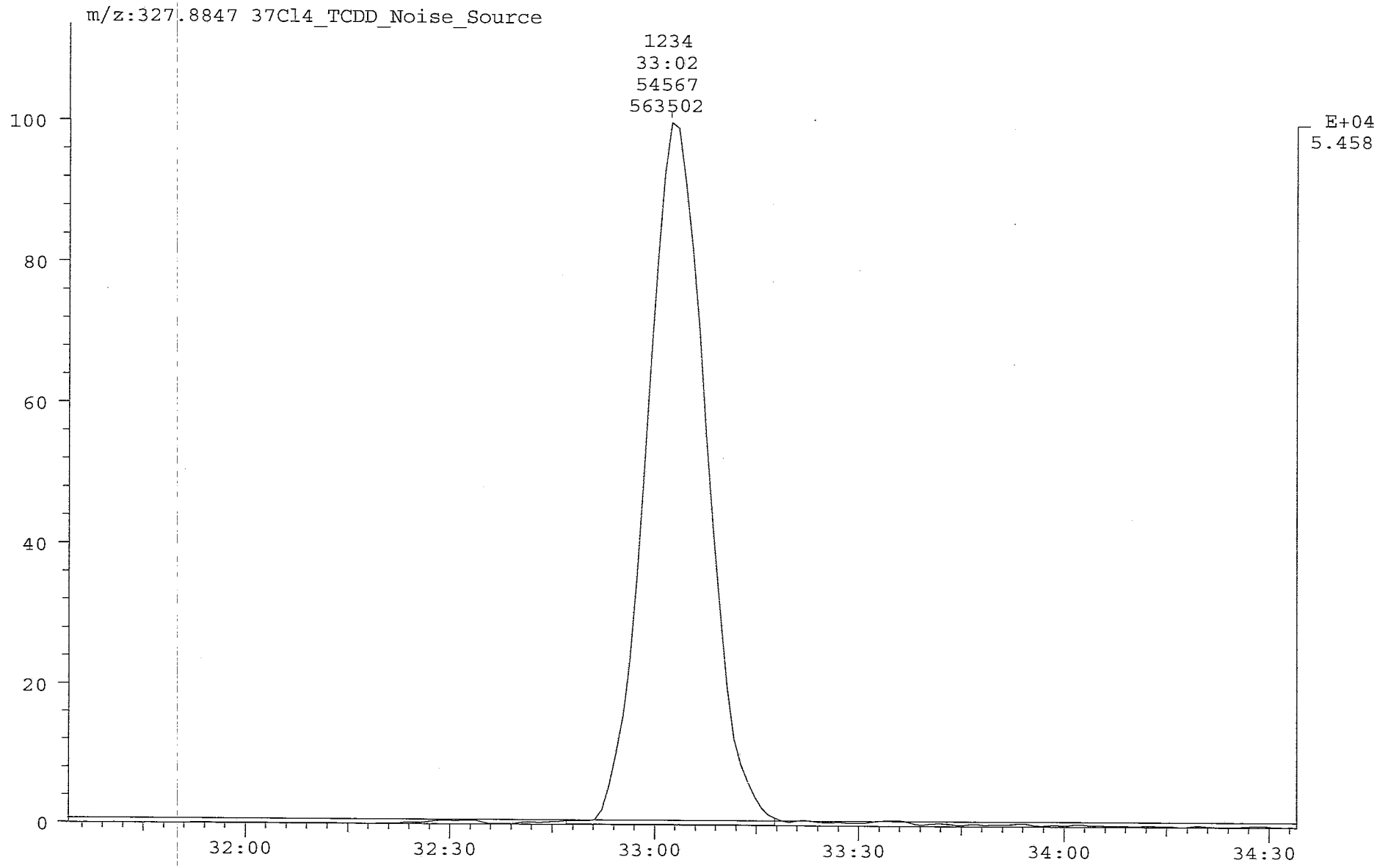
```
CHRO:  d1160817s1                                17-Aug-16  Elapse:  32:44      1216
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  09:22:51   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1129 > 1304            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



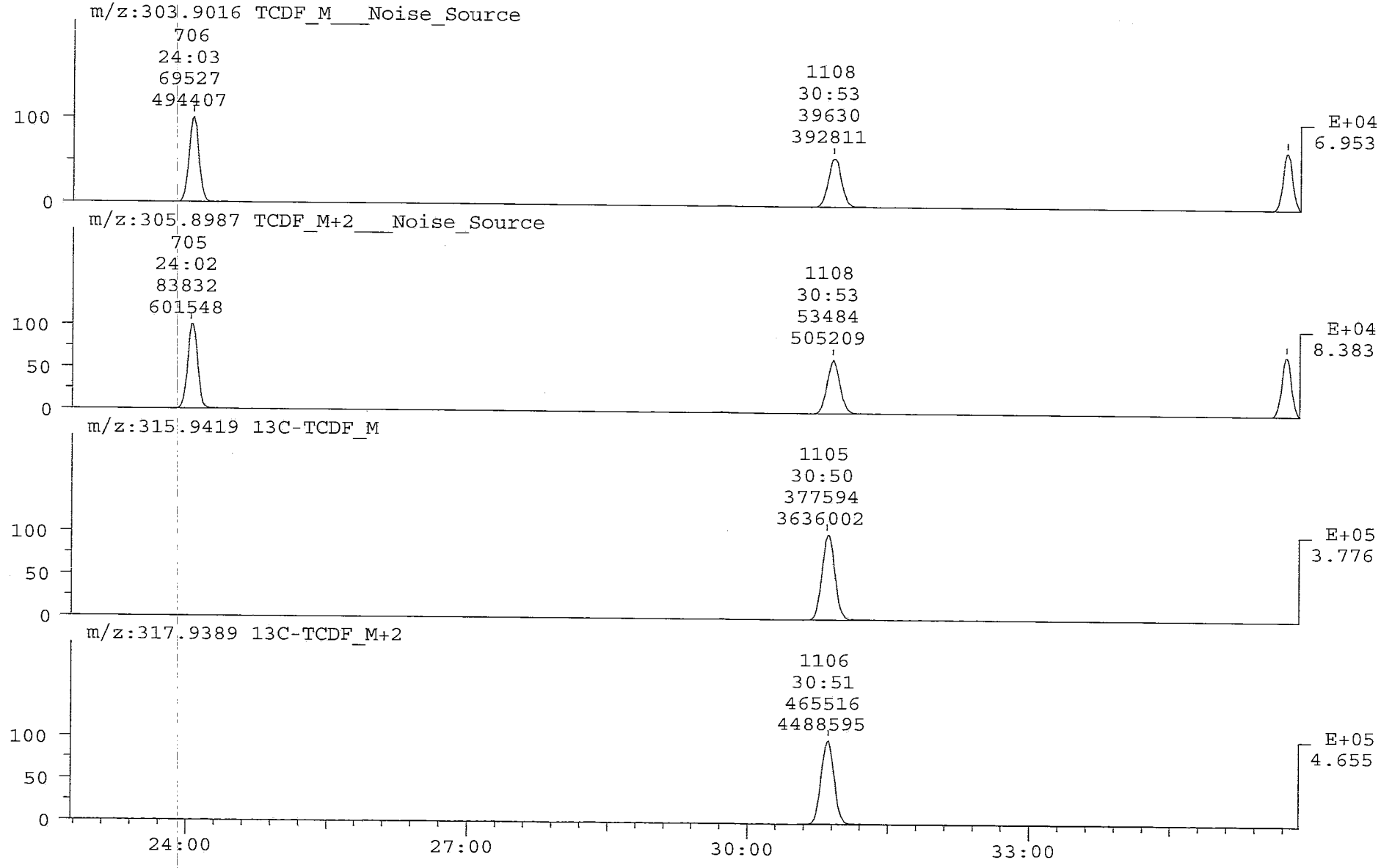
CHRO: d1160817s1 17-Aug-16 Elapse: 32:44 1216
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1129 > 1304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



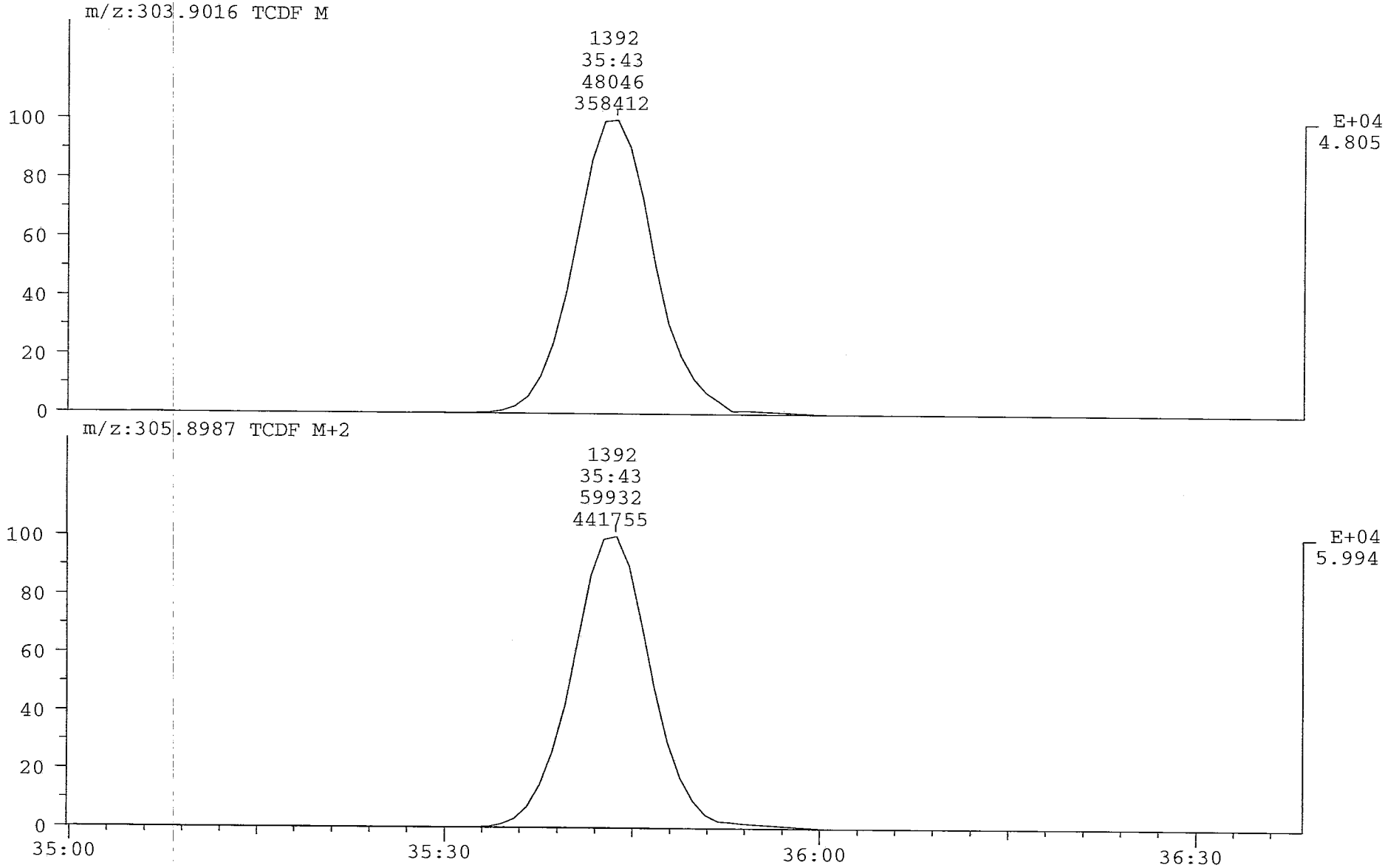
```
CHRO:  d1160817s1                          17-Aug-16  Elapse:  33:01      1233
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  09:22:51   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1147 > 1324      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



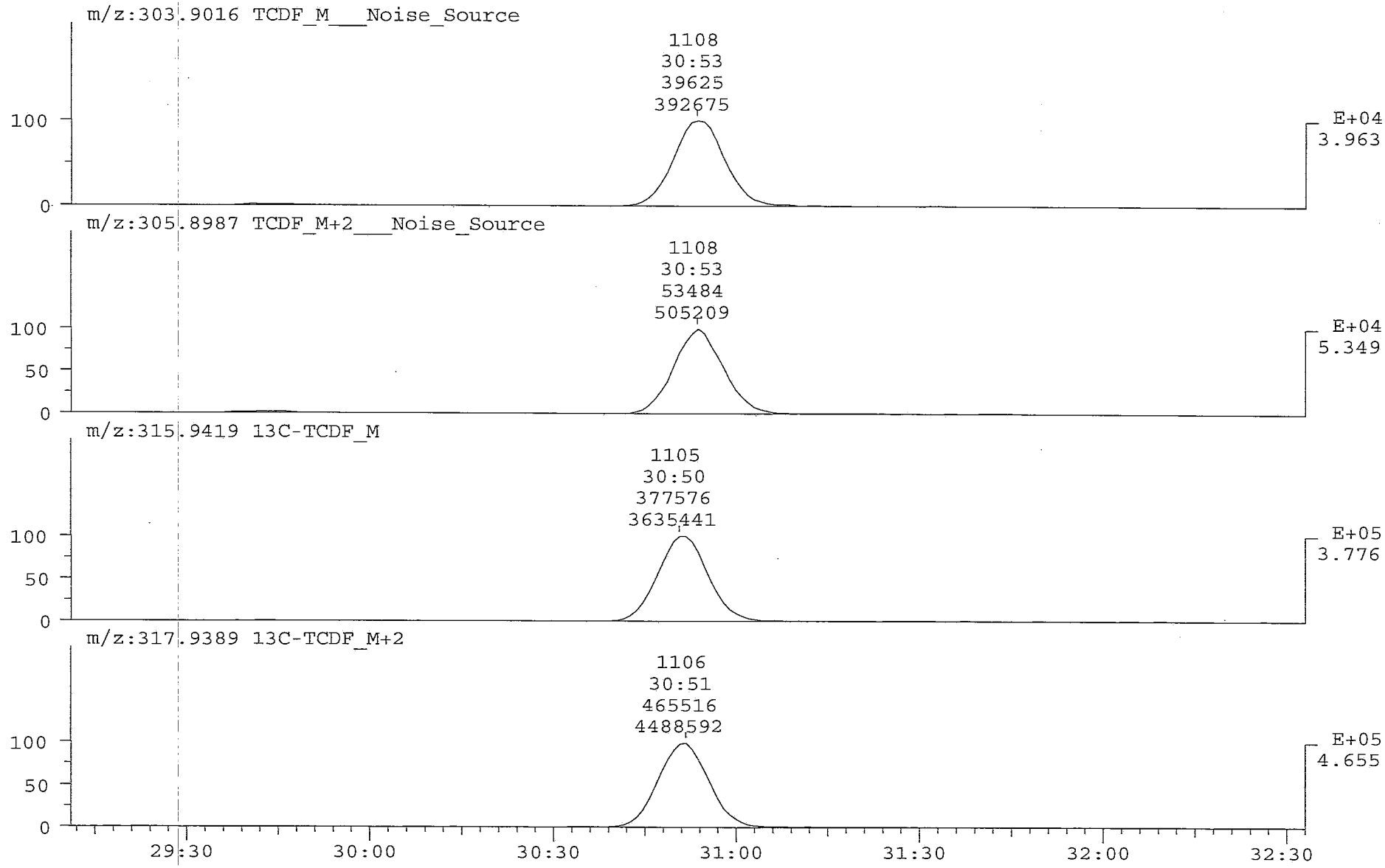
CHRO: d1160817s1 17-Aug-16 Elapse: 33:01 1233
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 630 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



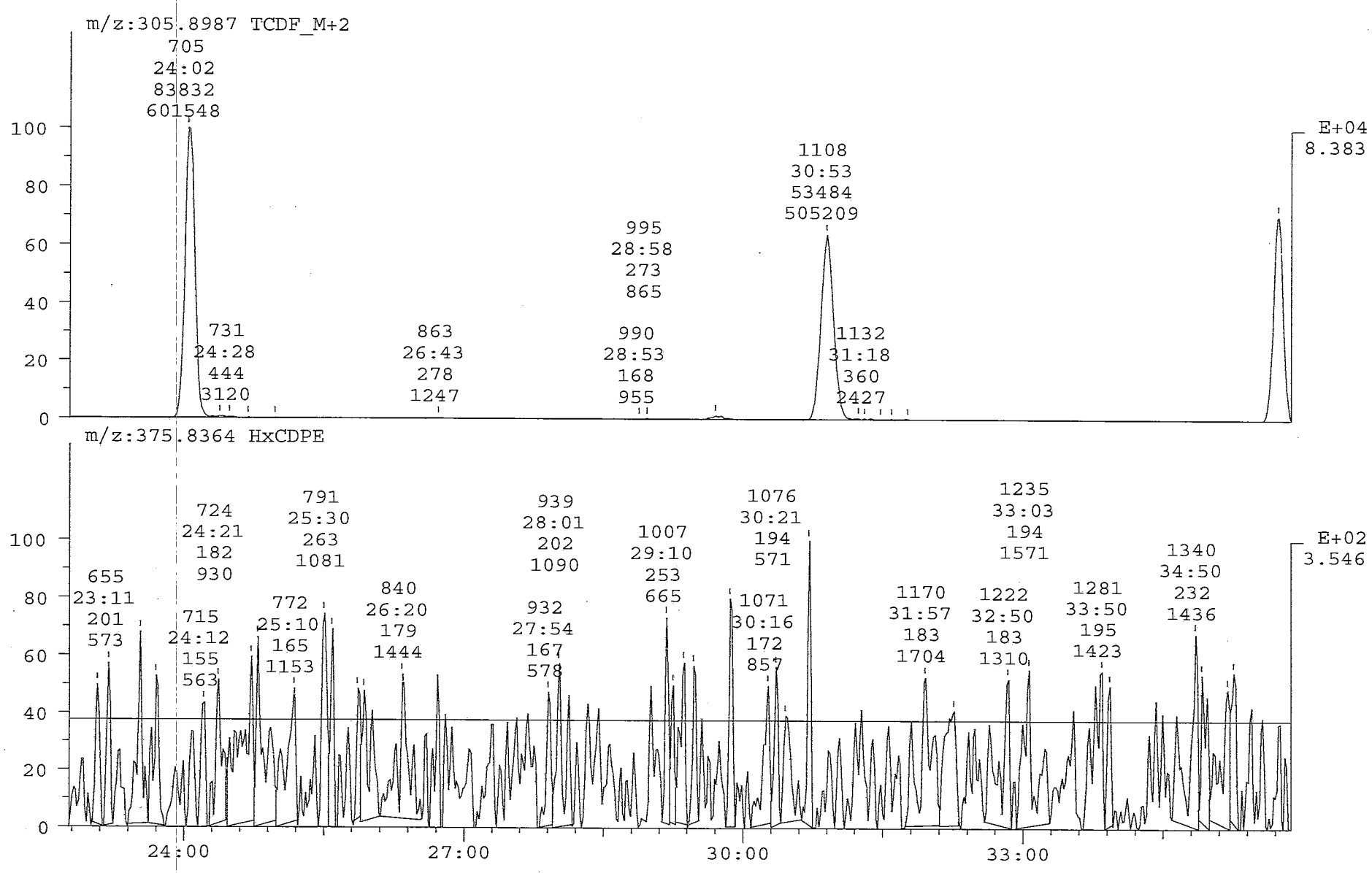
CHRO: d1160817s1 17-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1349 > 1440 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



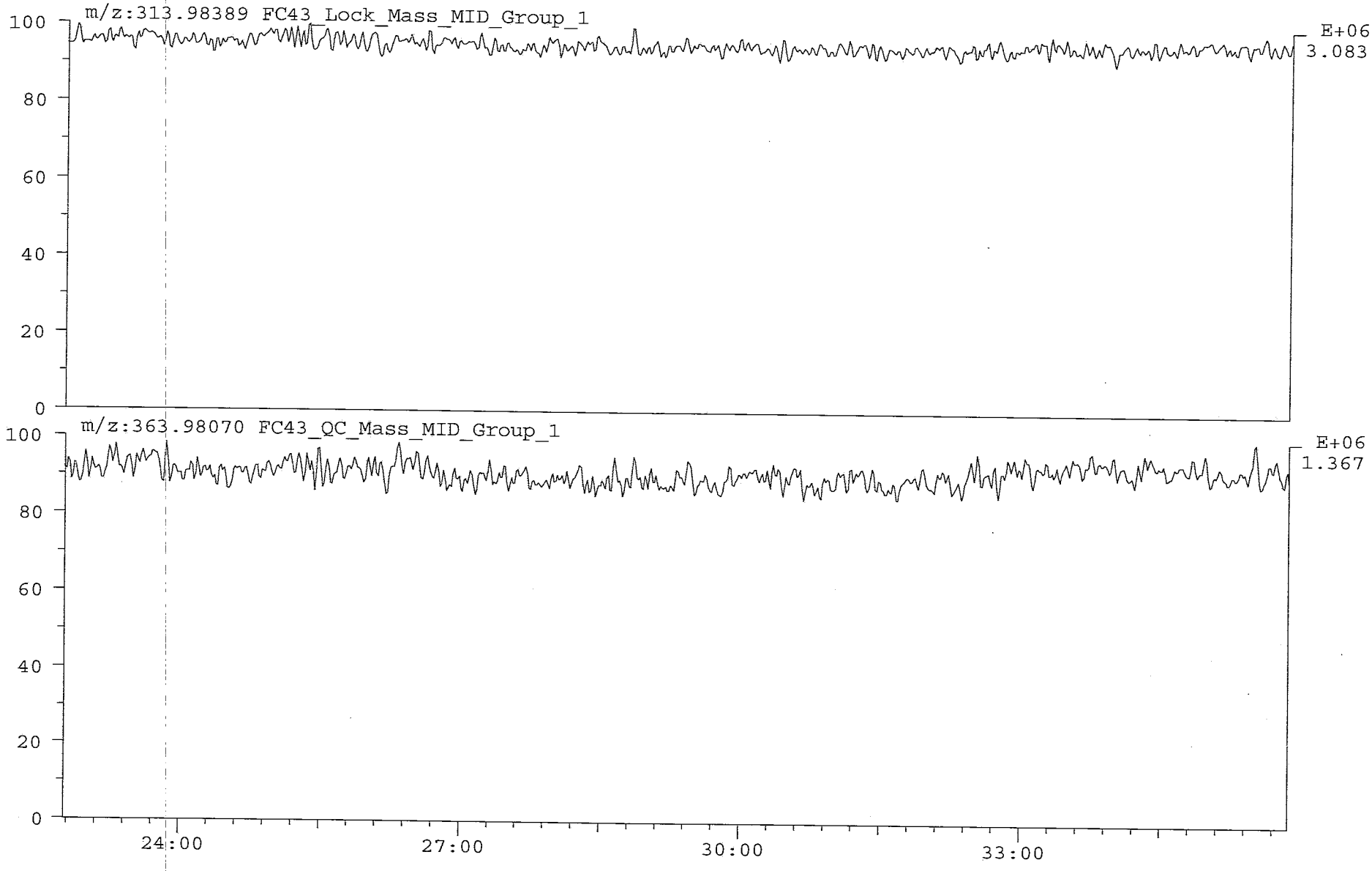
```
CHRO:  d1160817s1                          17-Aug-16  Elapse:  30:48      1103
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  09:22:51   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1007 > 1205      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



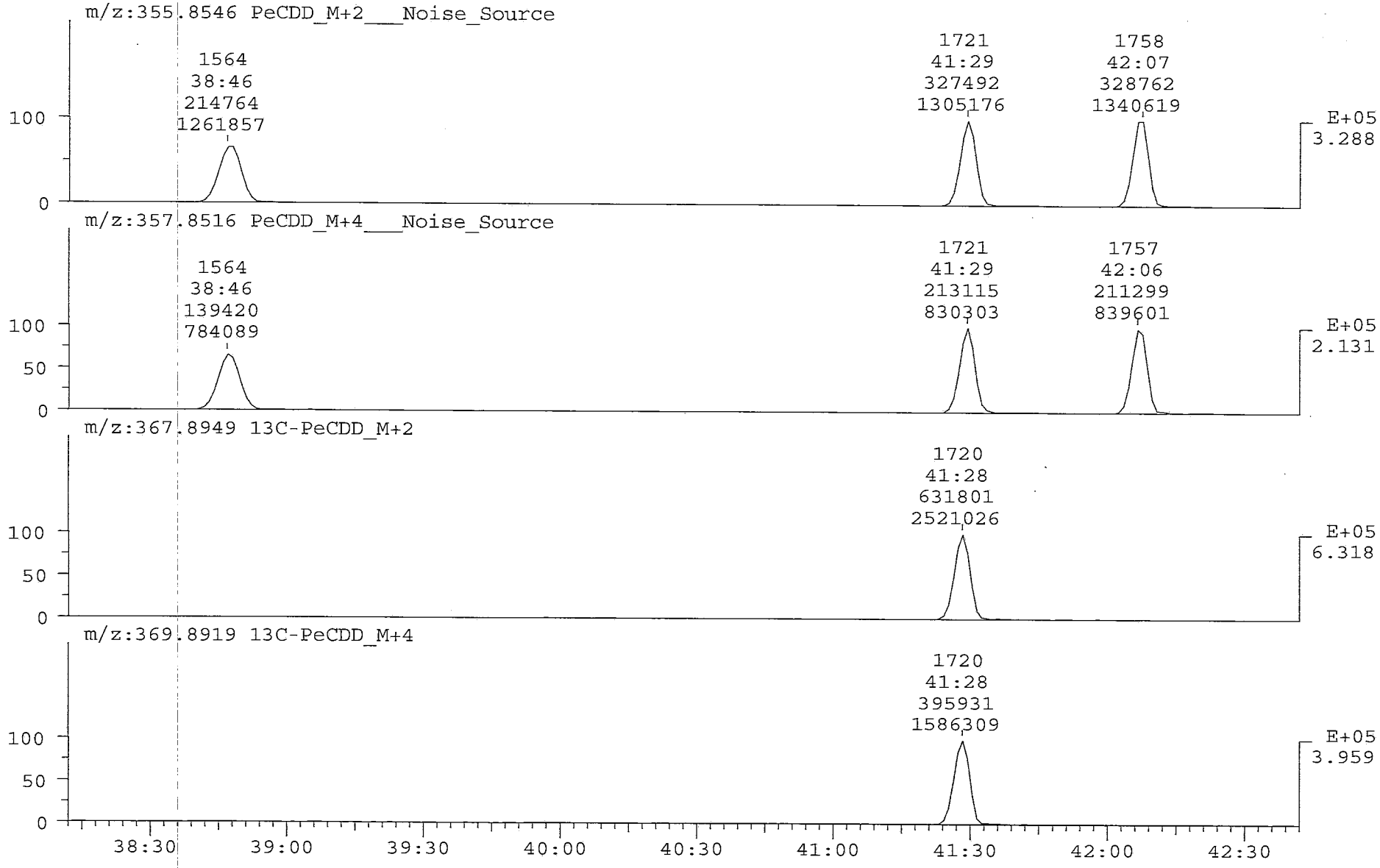
```
CHRO:  d1160817s1                                  17-Aug-16  Elapse:  30:48      1103
Samp:  WO=4966:41 Meth=F8o Dil=1                              Start :  09:22:51   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode:  EI ESI + Q1MS UP LR                                    Study :  VER/WIN
Oper:  KLR                                                    Inlet :  LC
Peak:  100.00  ppm     Label wndw:   630 > 1400               Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



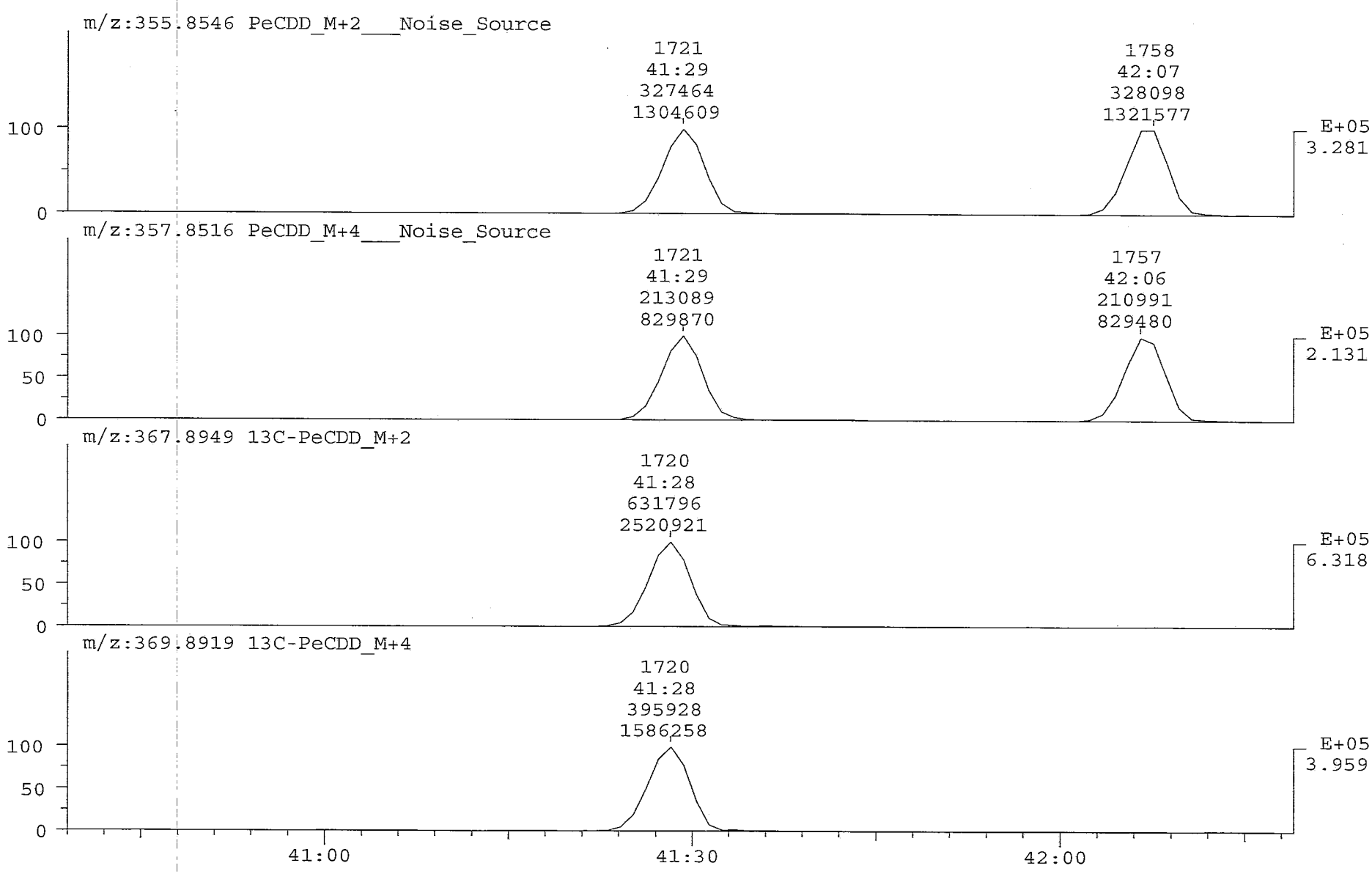
CHRO: d1160817s1 17-Aug-16 Elapse: 30:48 1103
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 630 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



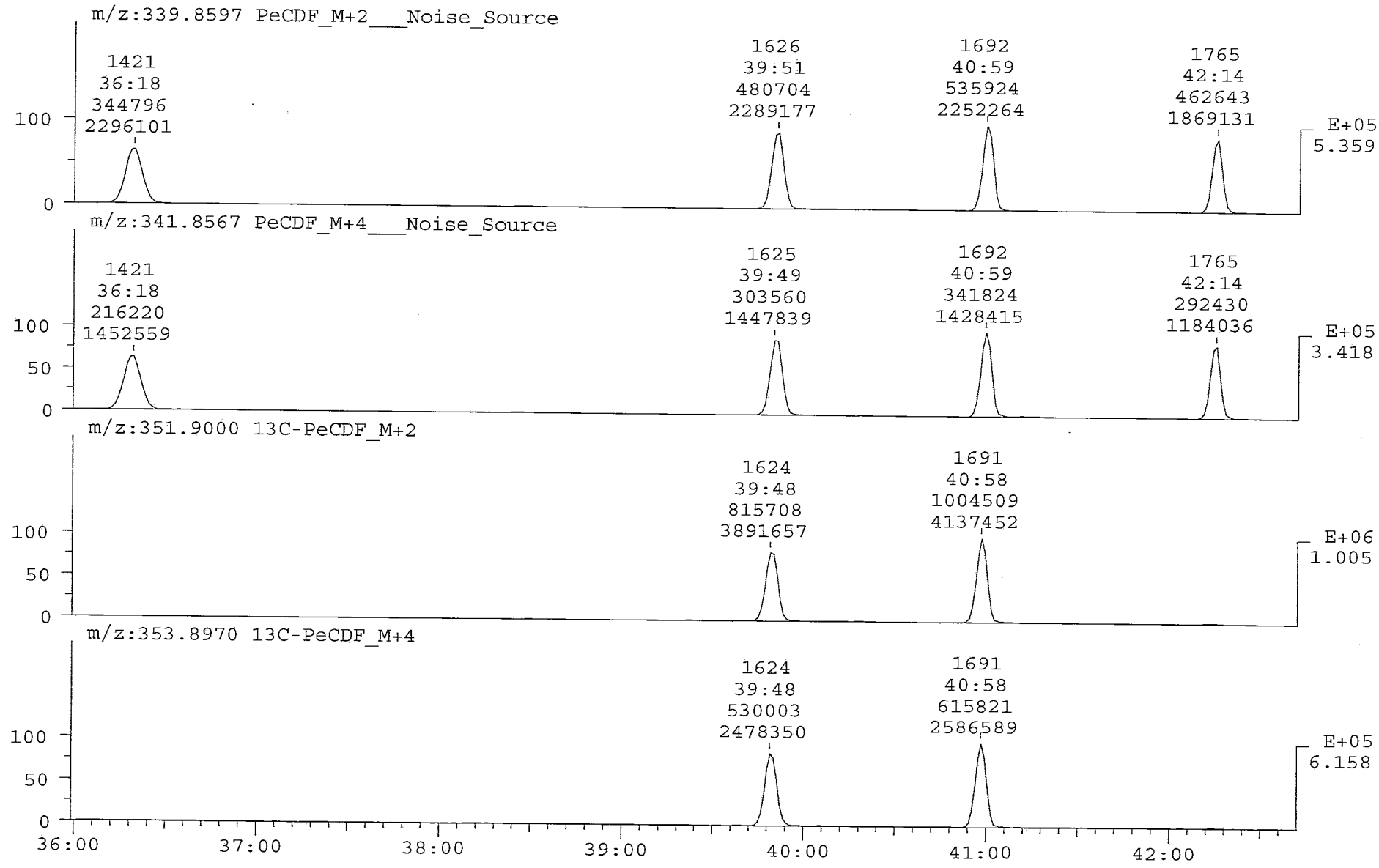
CHRO: d1160817s1 17-Aug-16 Elapse: 30:48 1103
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1530 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



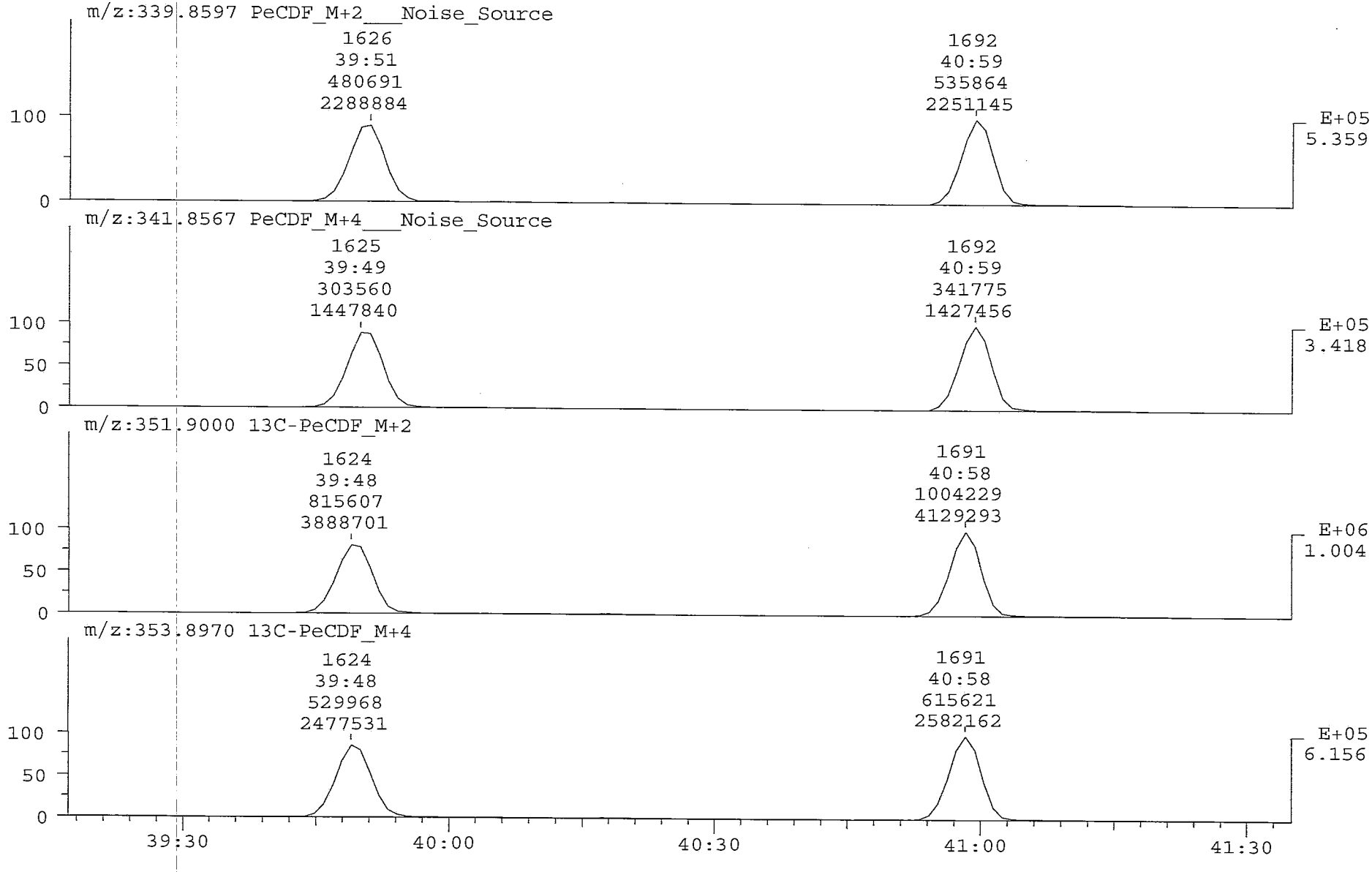
CHRO: d1160817s1 17-Aug-16 Elapse: 41:26 1718
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1672 > 1769 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



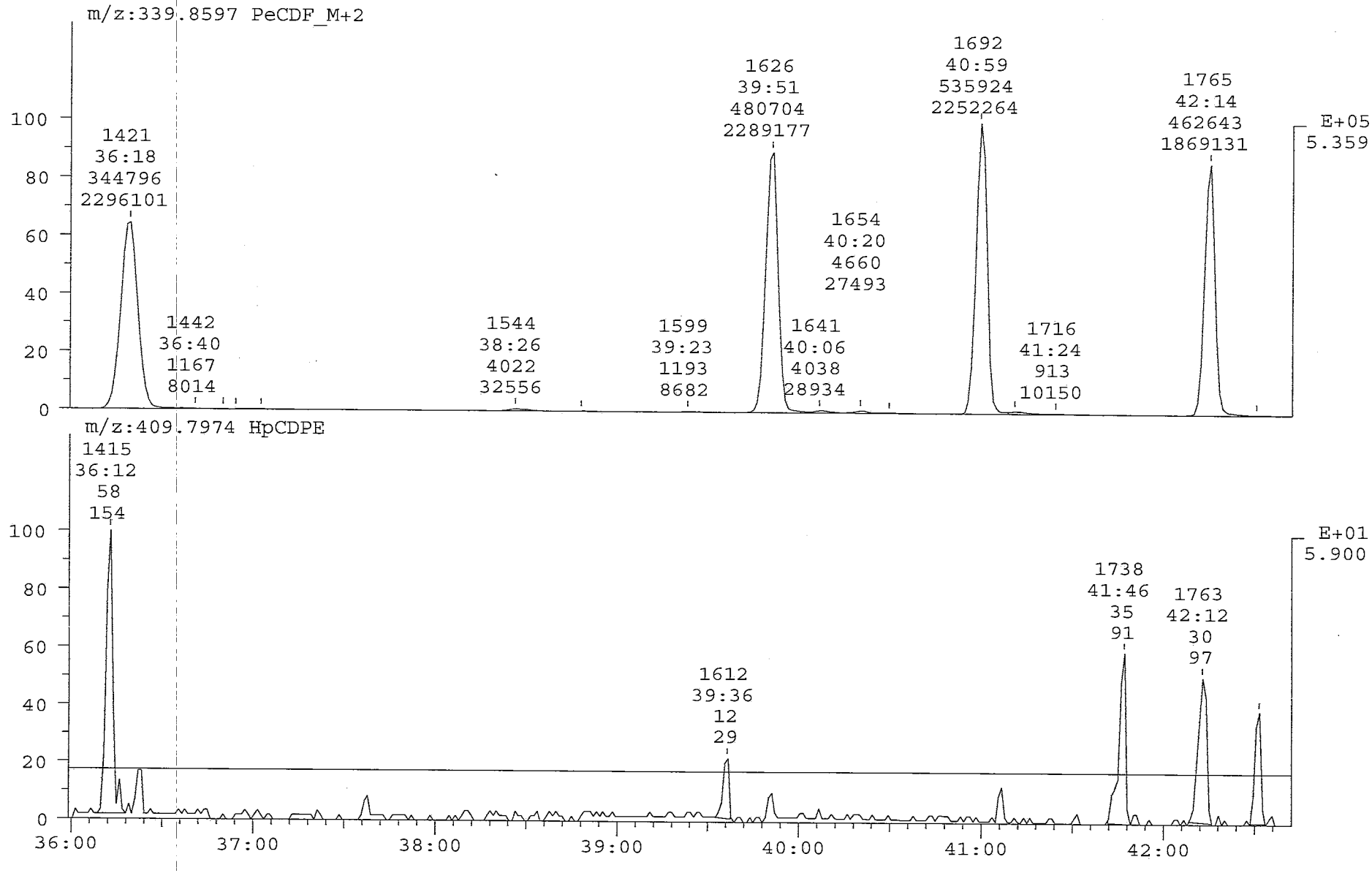
CHRO: d1160817s1 17-Aug-16 Elapse: 41:26 1718
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



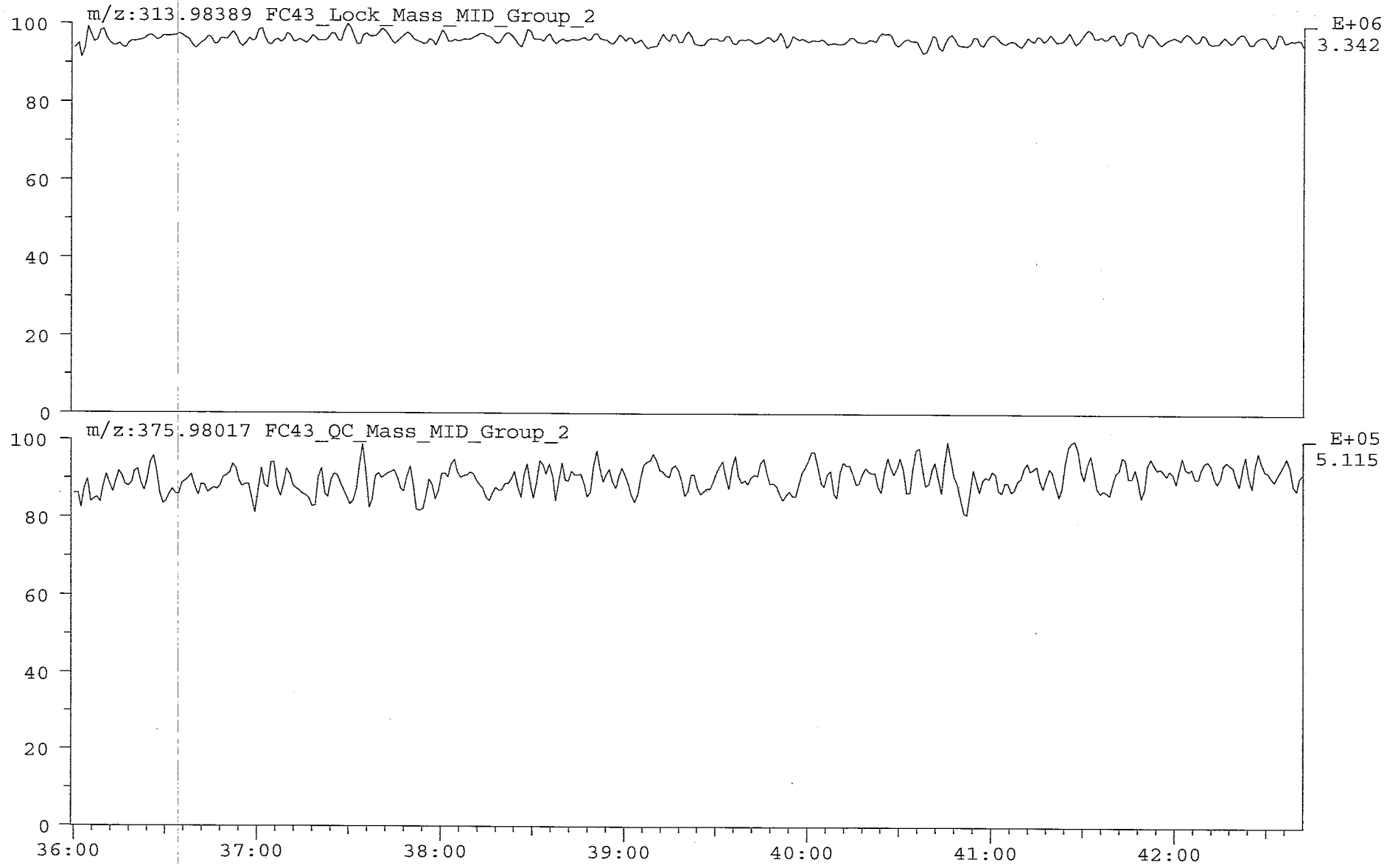
CHRO: d1160817s1 17-Aug-16 Elapse: 40:26 1660
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1727 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



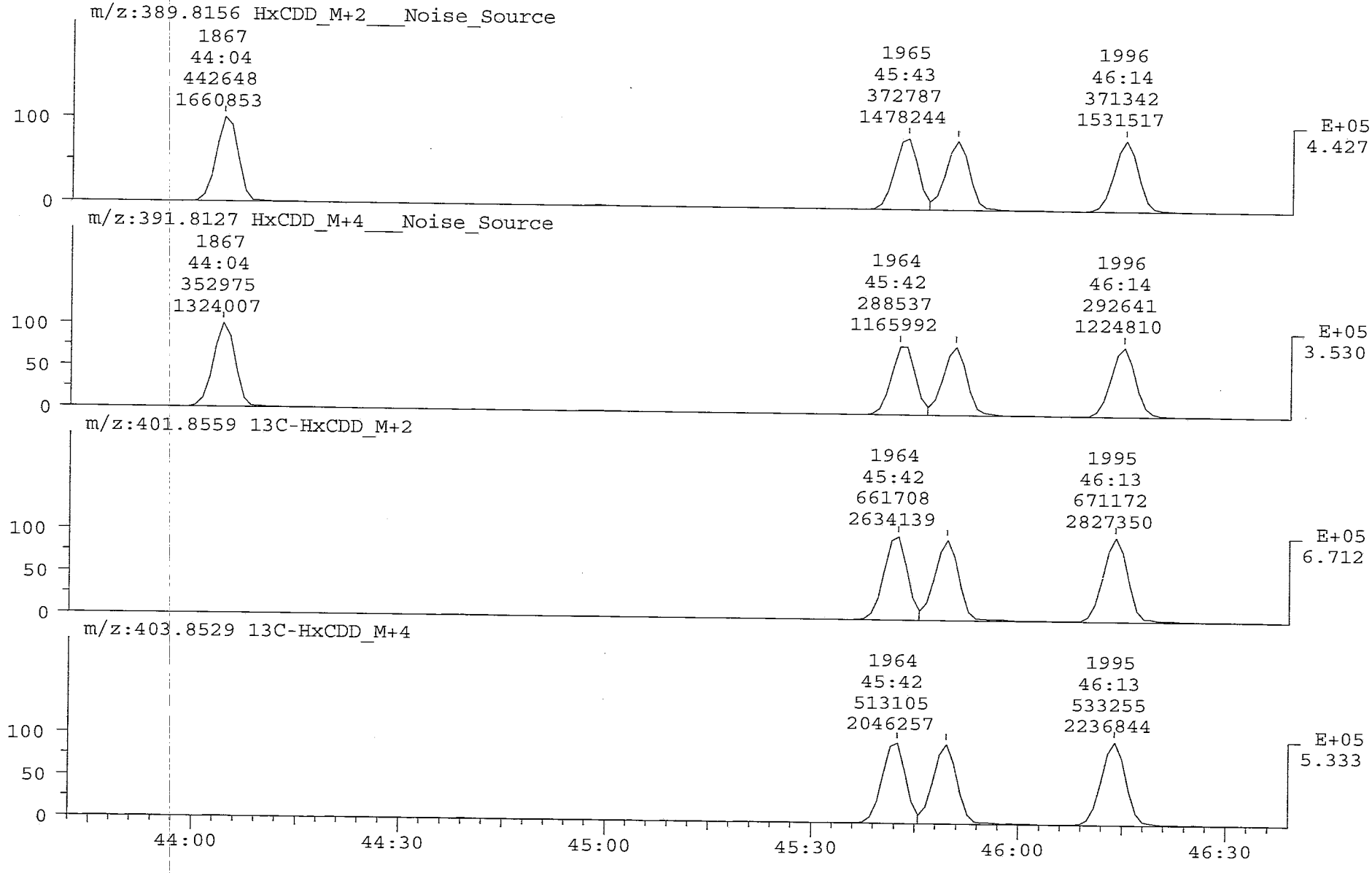
CHRO: d1160817s1 17-Aug-16 Elapse: 40:26 1660
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



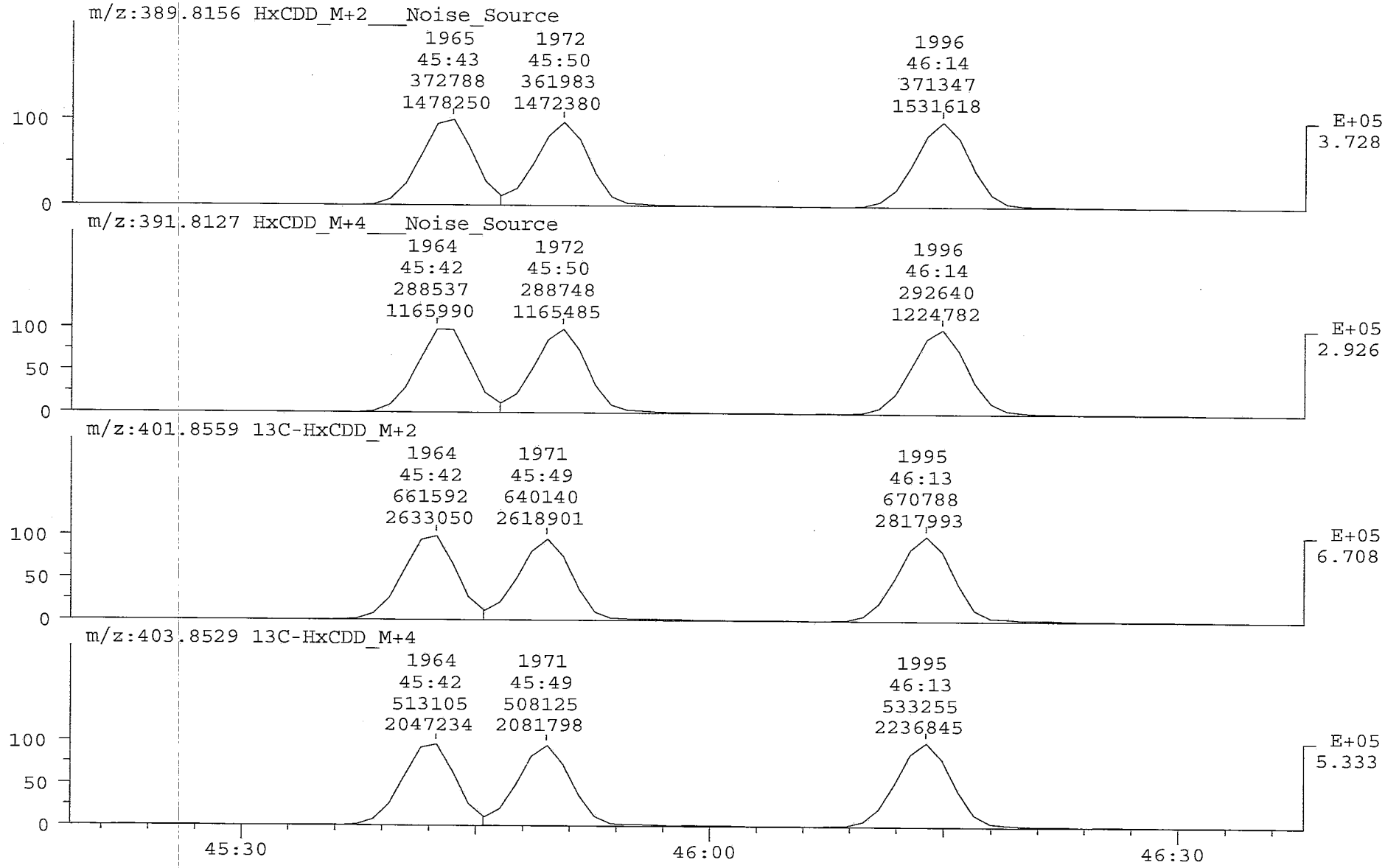
CHRO: d1160817s1 17-Aug-16 Elapse: 40:26 1660
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



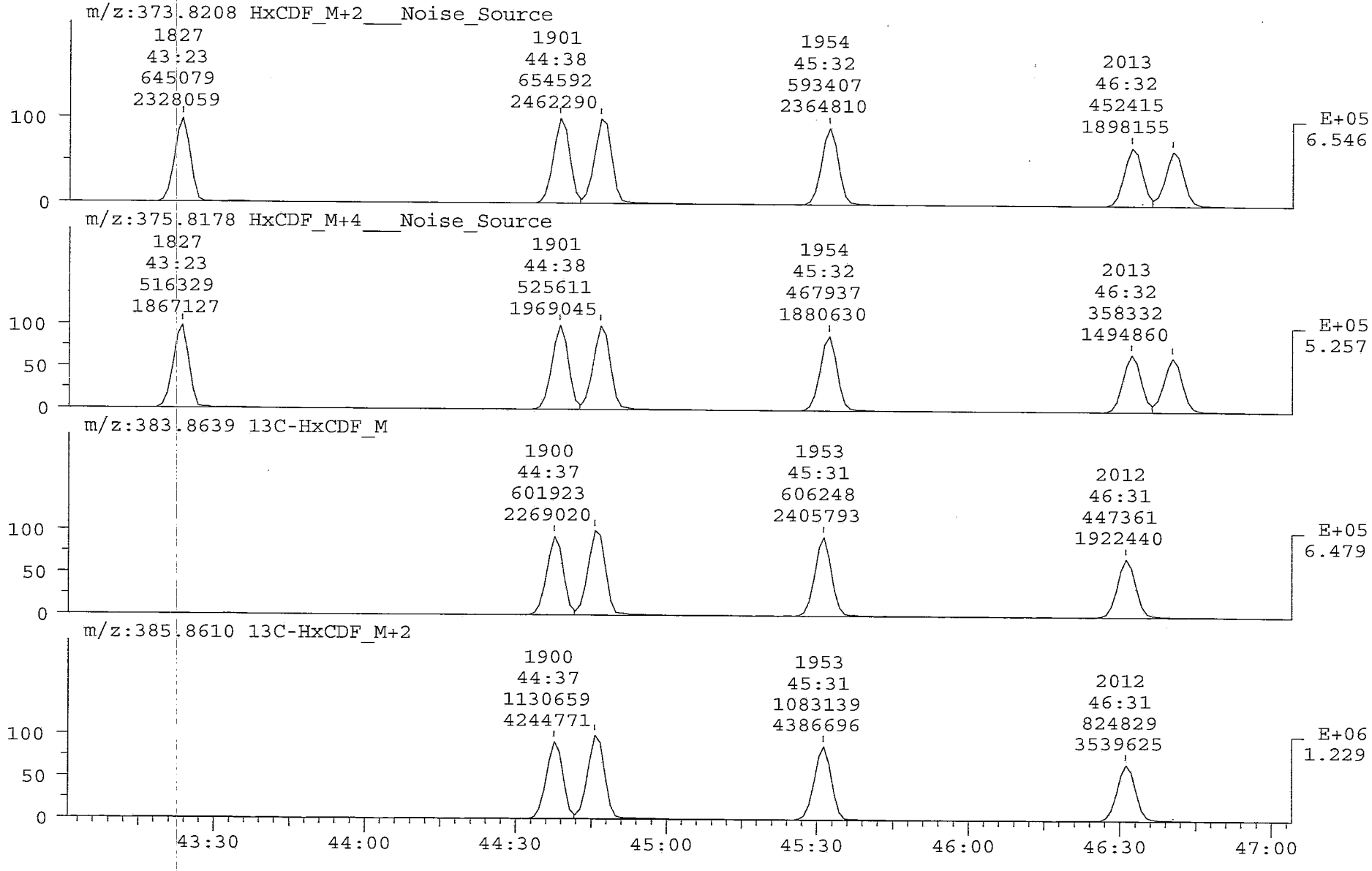
CHRO: d1160817s1 17-Aug-16 Elapse: 40:26 1660
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1845 > 2020 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



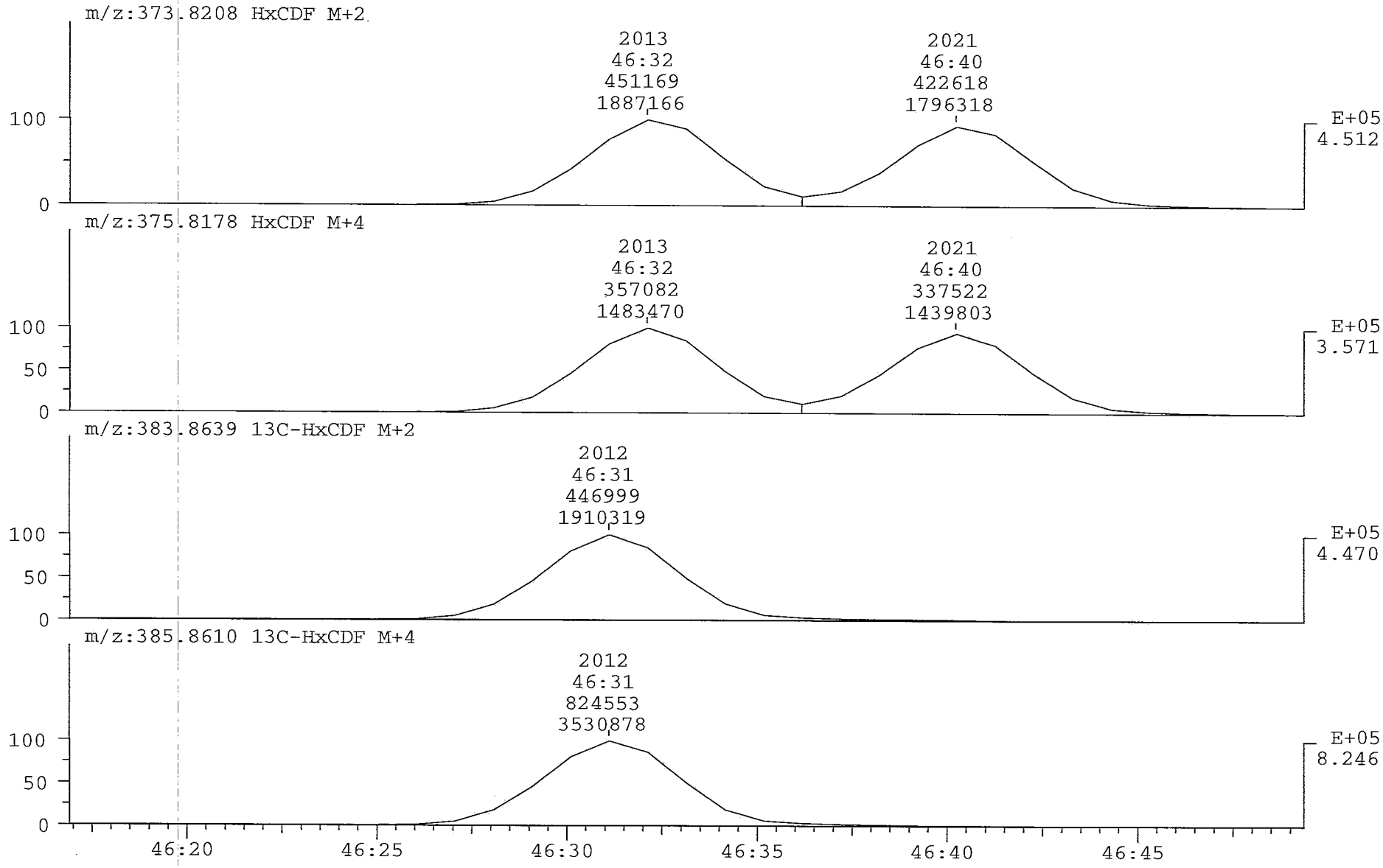
CHRO: d1160817s1 17-Aug-16 Elapse: 45:57 1979
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 2019 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



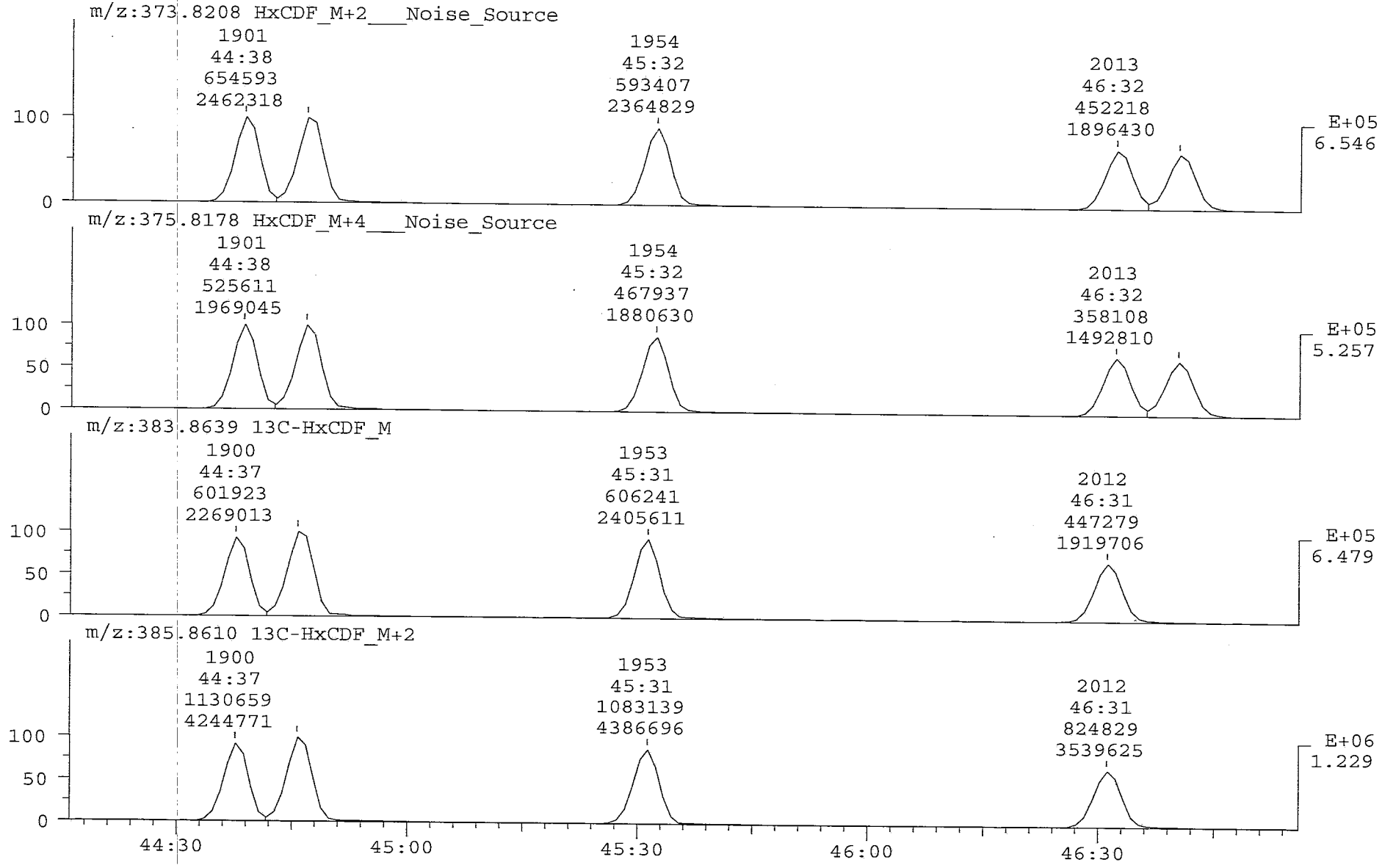
```
CHRO:  d1160817s1                                17-Aug-16  Elapse:  45:57      1979
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  09:22:51   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1805 > 2044            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



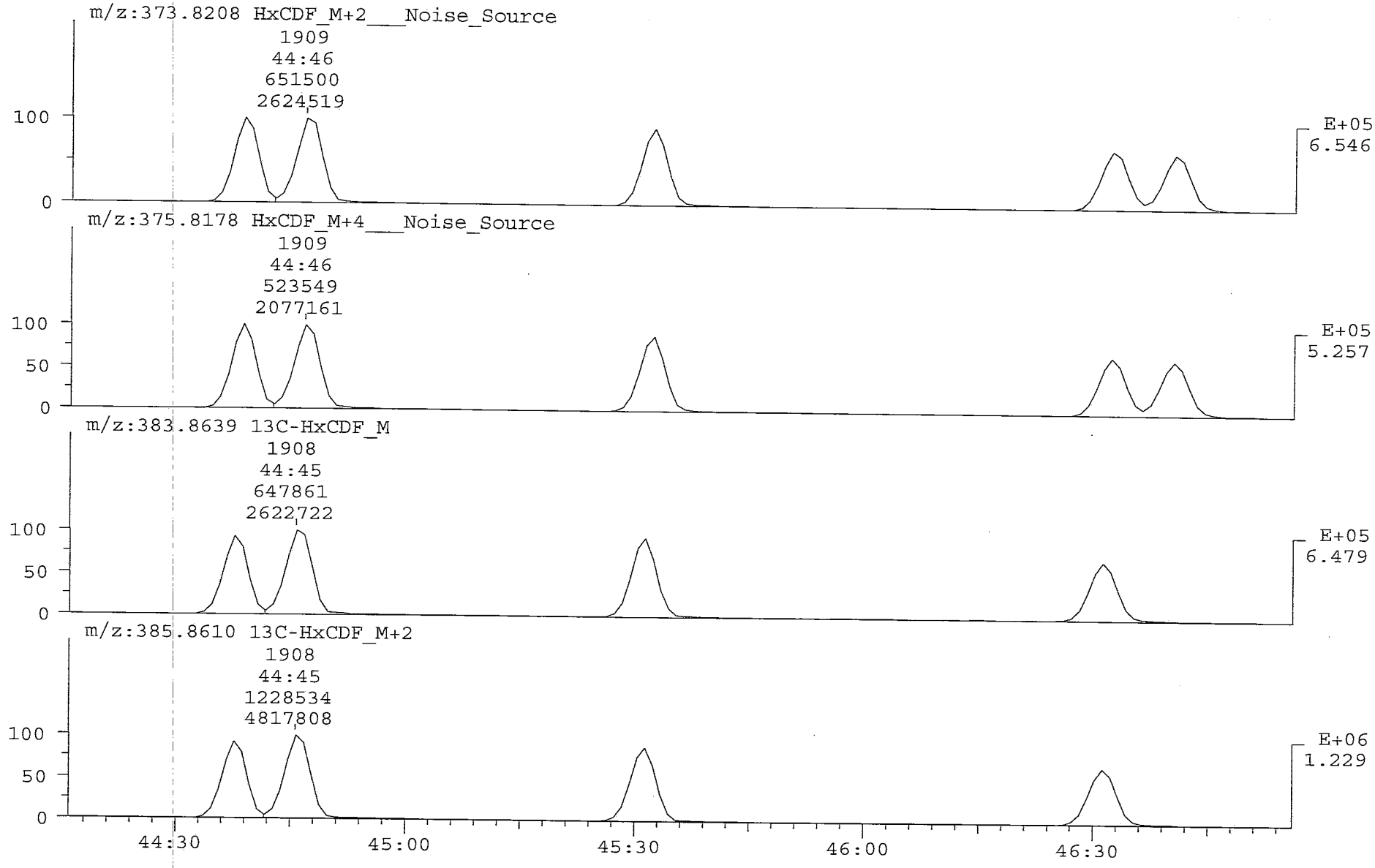
CHRO: d1160817s1 17-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1998 > 2030 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



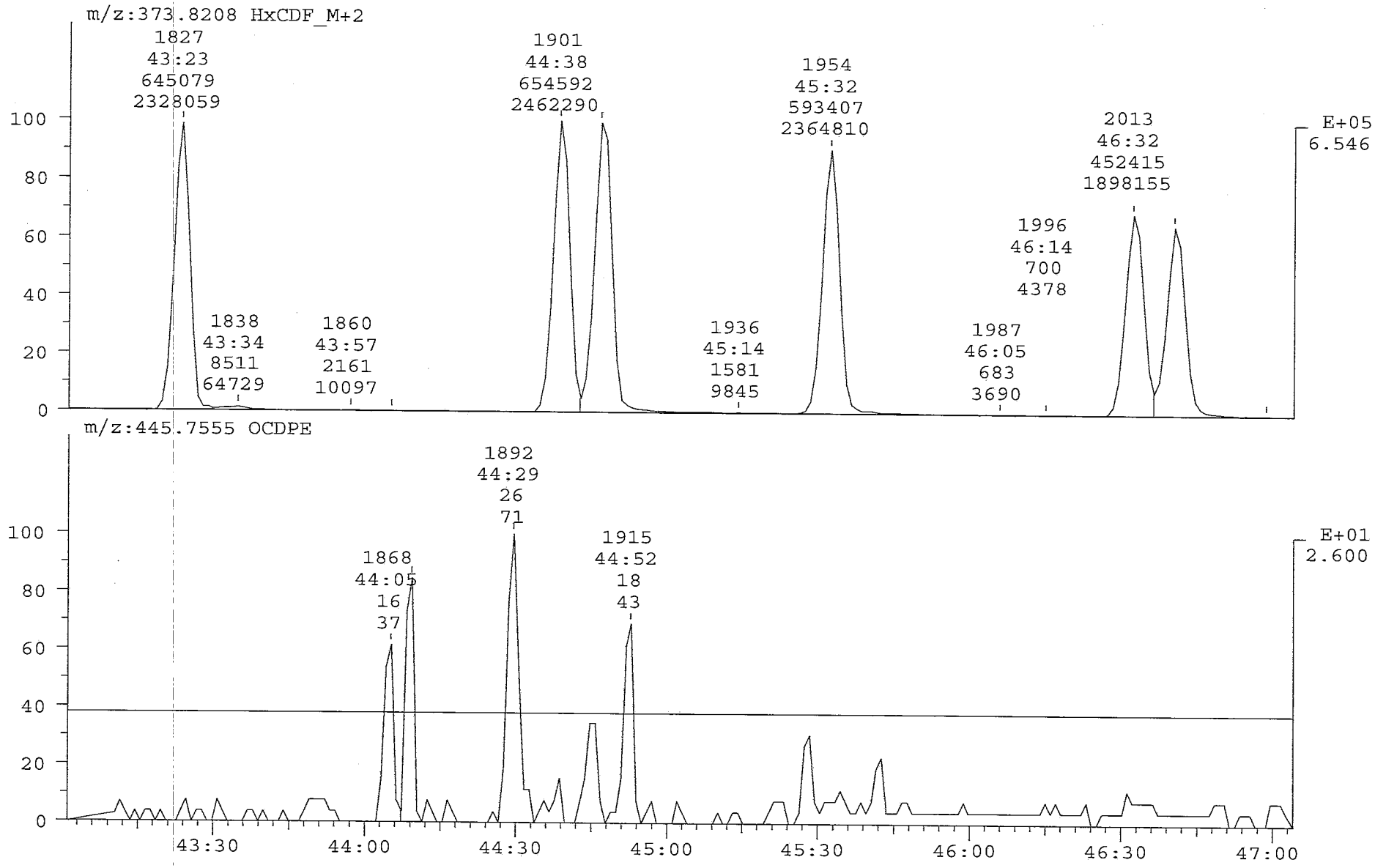
CHRO: d1160817s1 17-Aug-16 Elapse: 45:36 1958
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1879 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



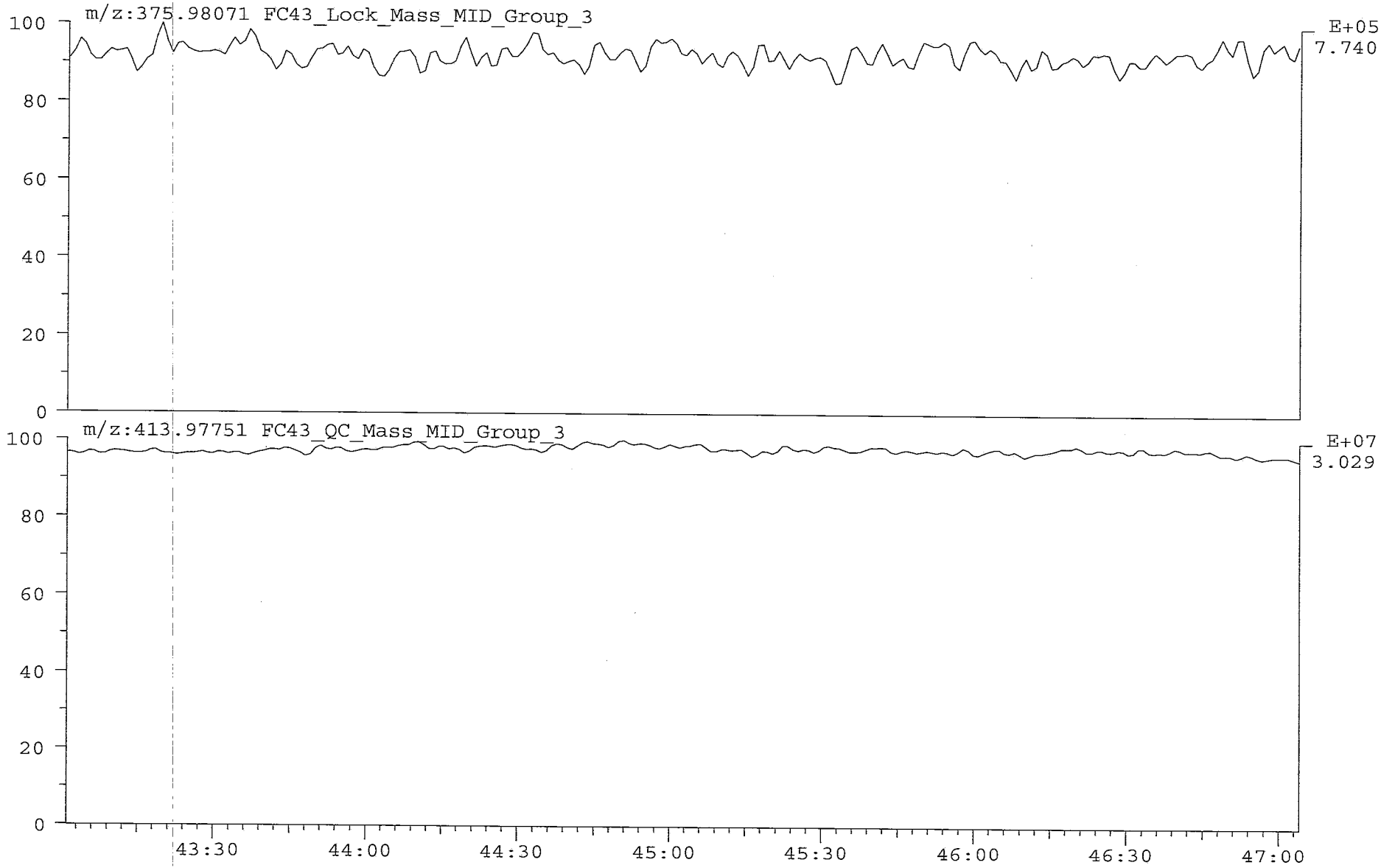
CHRO: d1160817s1 17-Aug-16 Elapse: 44:43 1906
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1902 > 1910 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



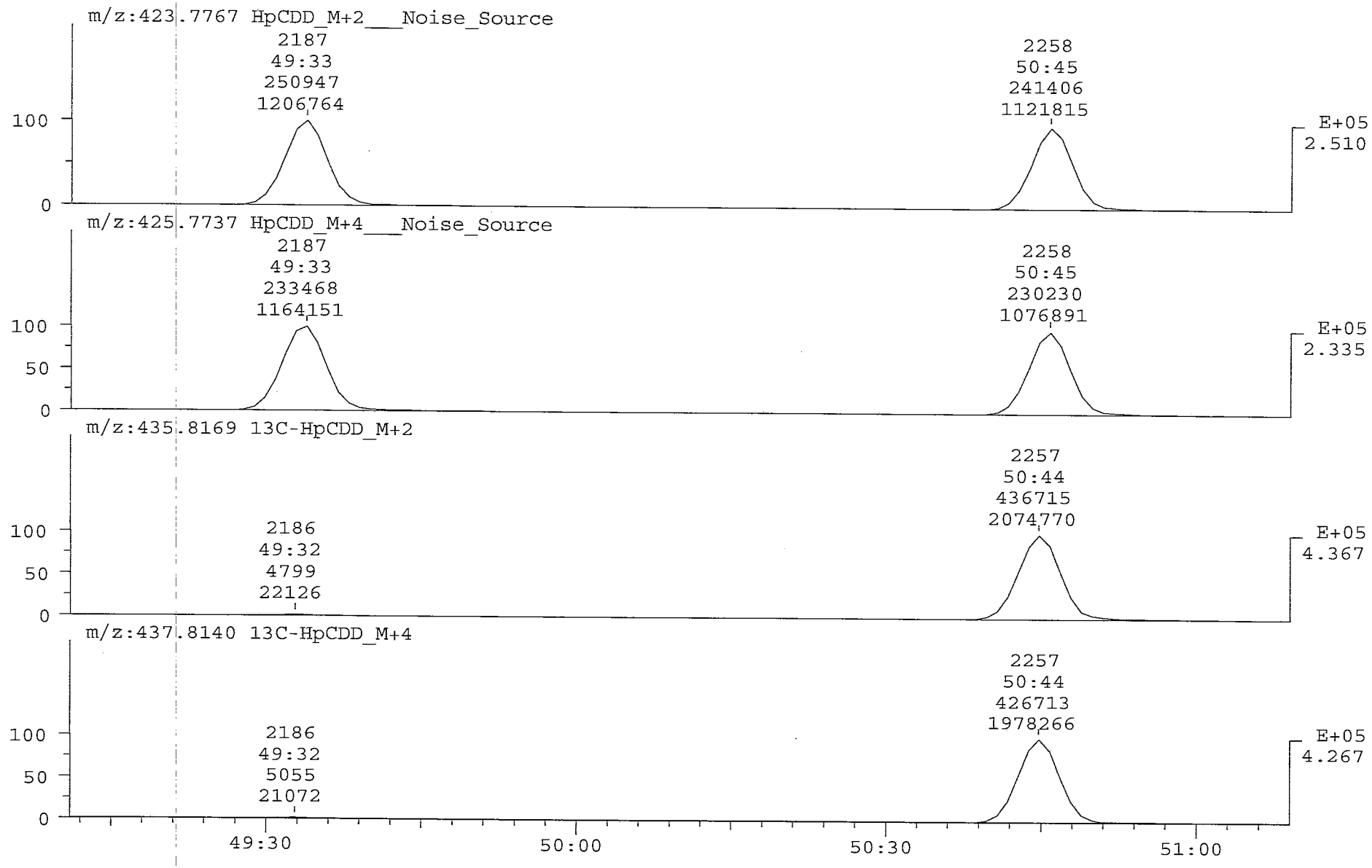
CHRO: d1160817s1 17-Aug-16 Elapse: 44:43 1906
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1805 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



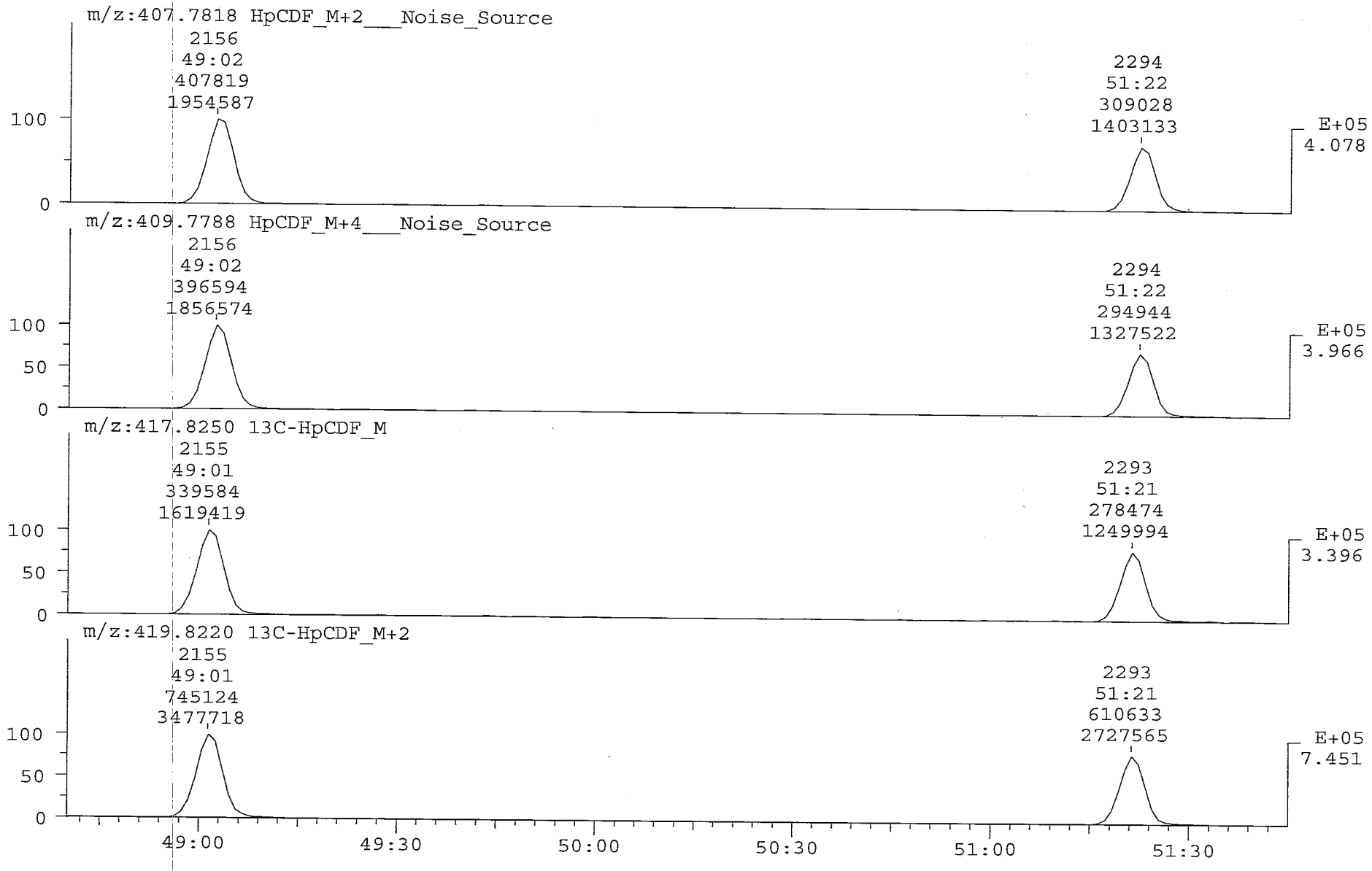
CHRO: d1160817s1 17-Aug-16 Elapse: 44:43 1906
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1805 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



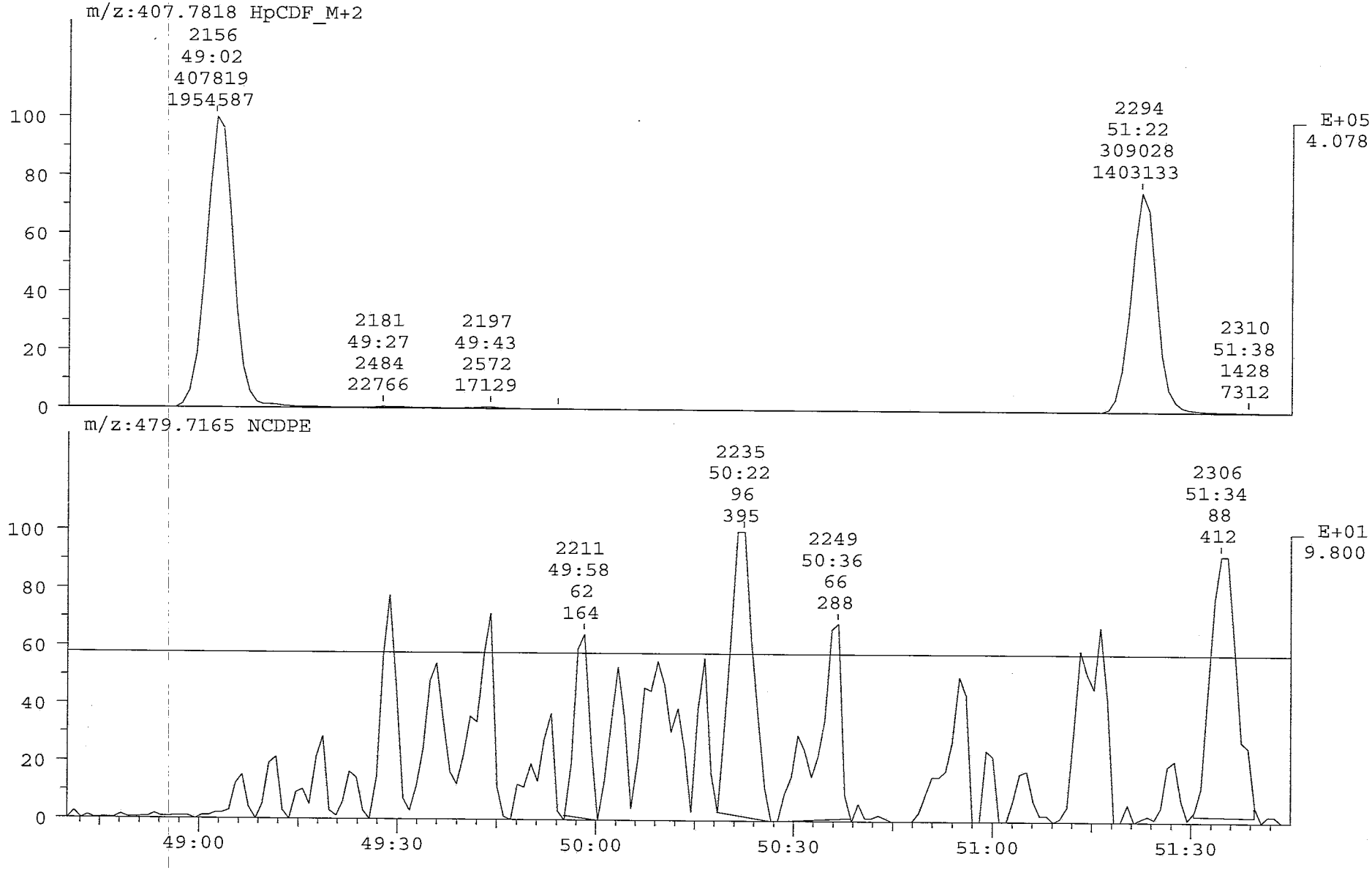
CHRO: d1160817s1 17-Aug-16 Elapse: 44:43 1906
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2165 > 2281 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



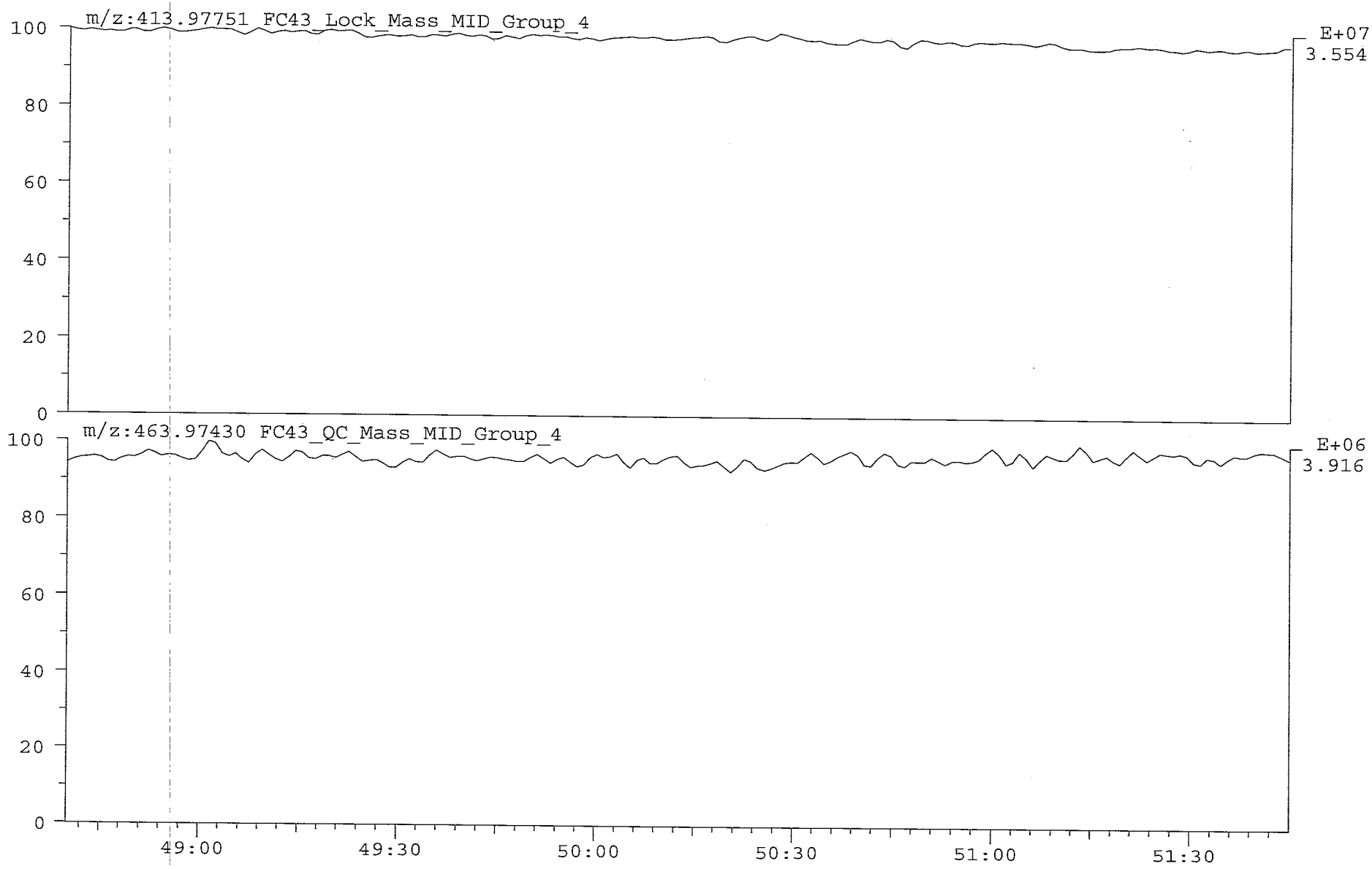
CHRO: d1160817s1 17-Aug-16 Elapse: 50:12 2225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2134 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



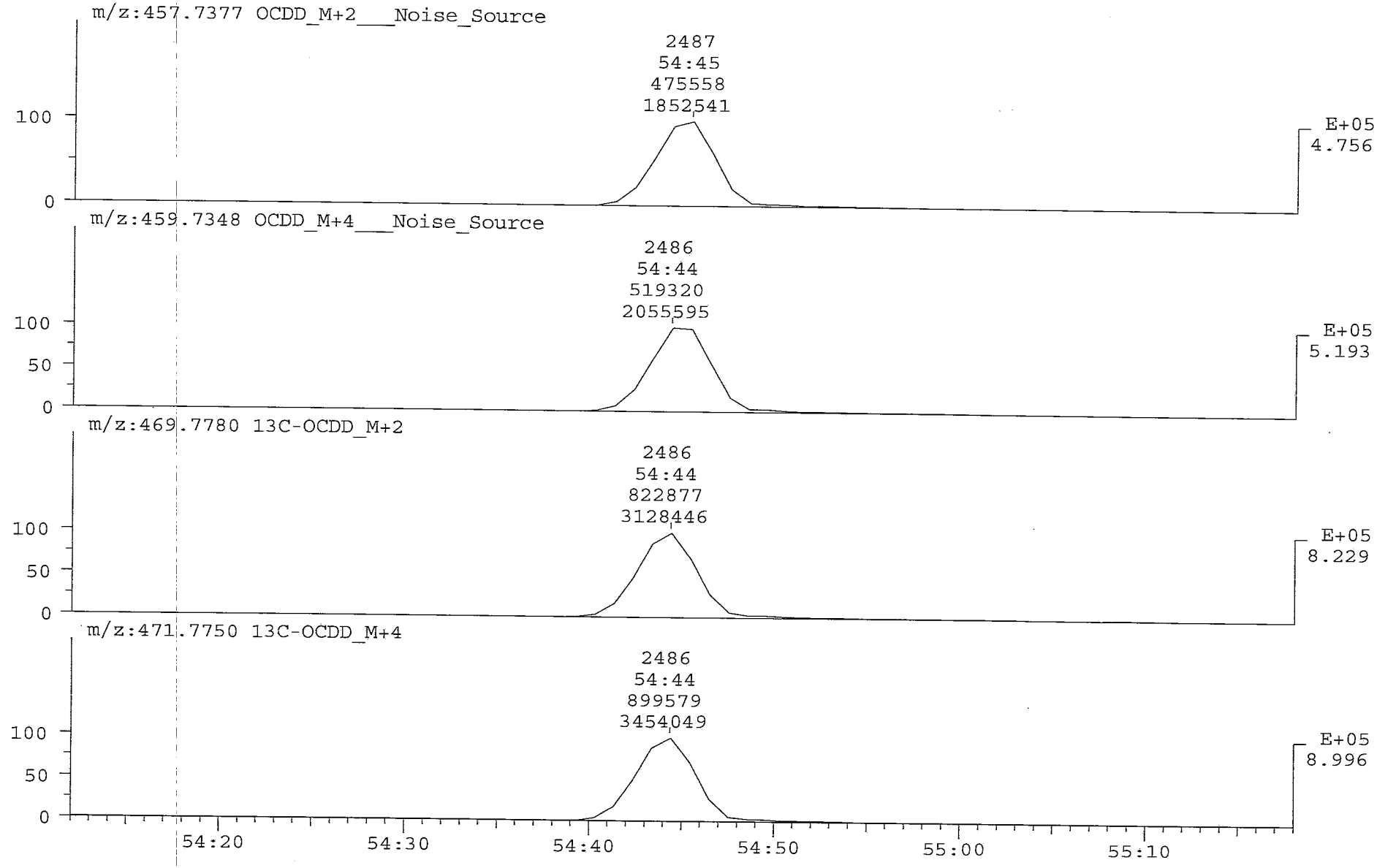
CHRO: d1160817s1 17-Aug-16 Elapse: 50:12 2225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2134 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



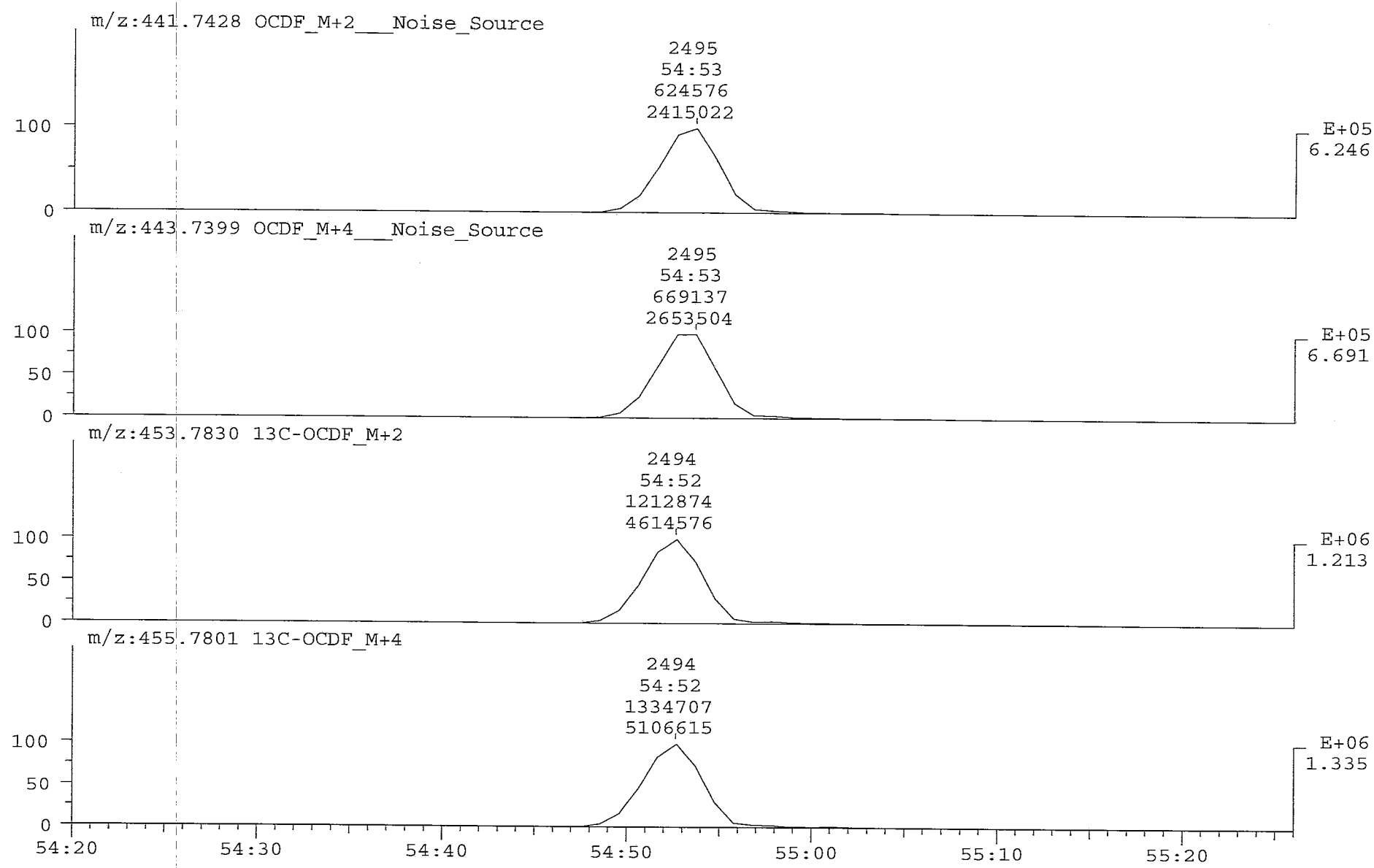
CHRO: d1160817s1 17-Aug-16 Elapse: 50:12 2225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2134 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



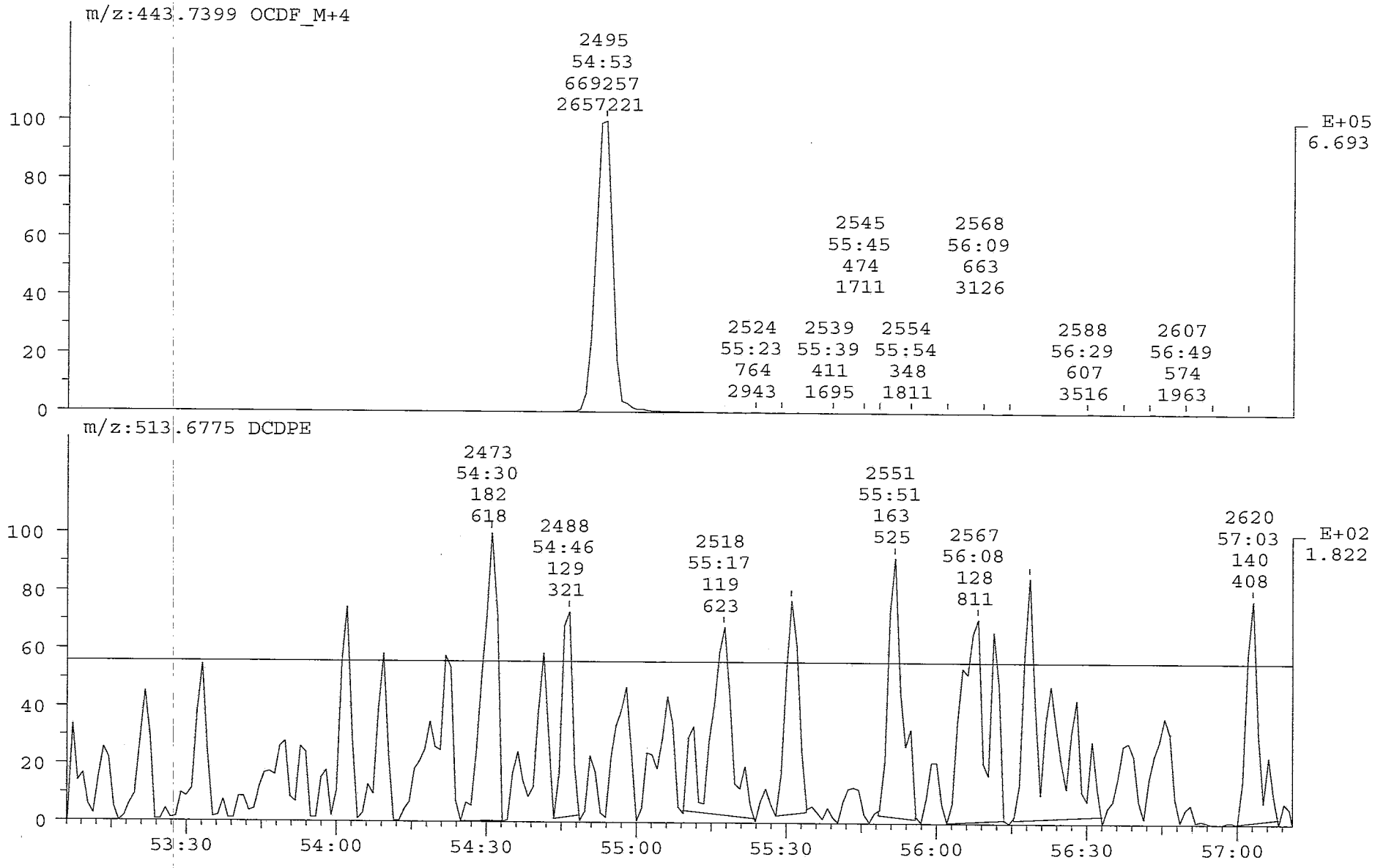
CHRO: d1160817s1 17-Aug-16 Elapse: 54:42 2484
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



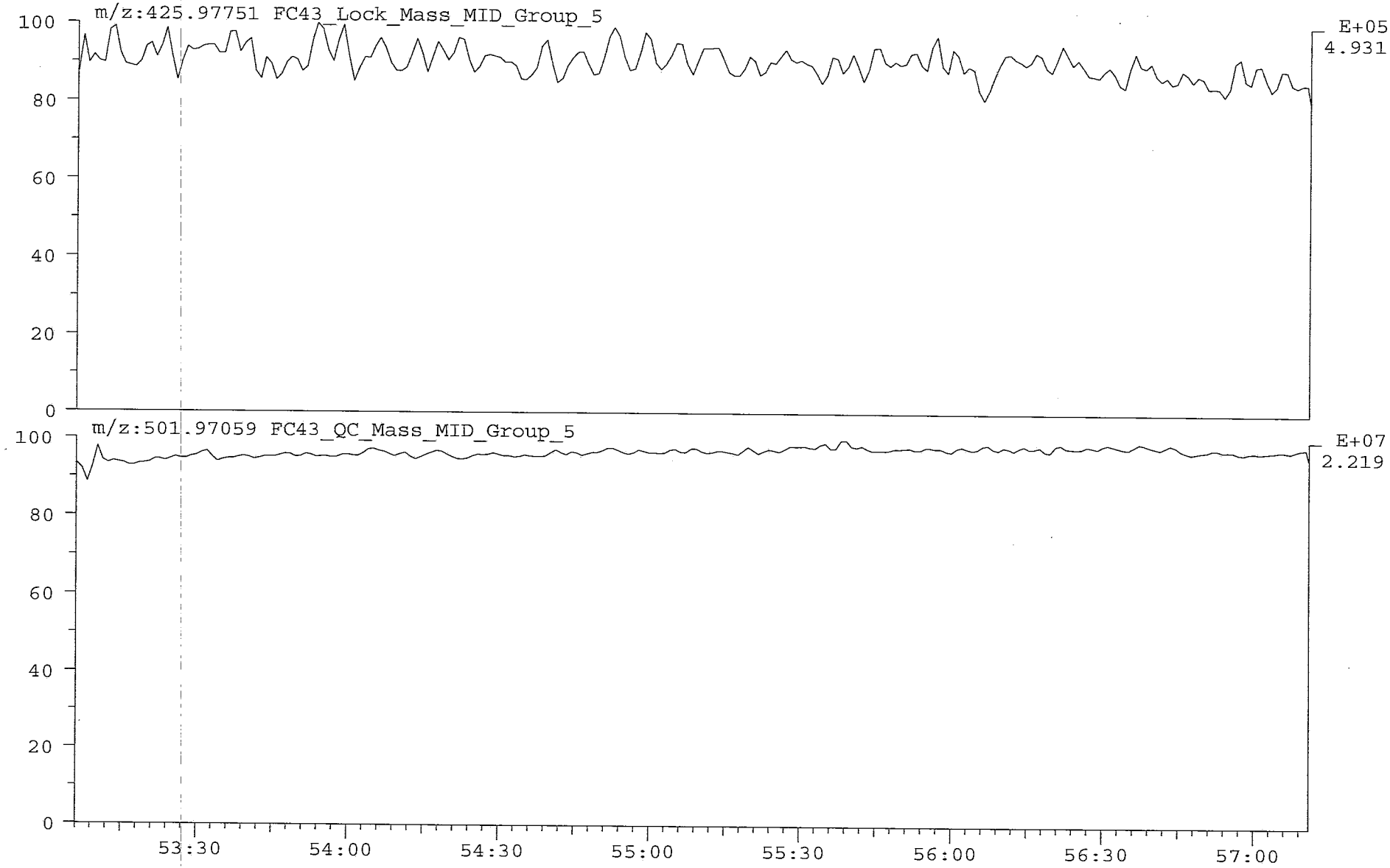
```
CHRO:  d1160817s1                          17-Aug-16  Elapse:  54:49      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  09:22:51   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1160817s1 17-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2391 > 2628 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1160817s1 17-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2391 > 2628 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 17 09:25:55 2016 ***

```
Started by                  - Xcalibur
Instrument Internet name    - DFS MS
Instrument model            - DFS MS
Instrument service number   - 0000
Workstation internet name   - KNXDXNDFS01
```

Analysis started at: 17-Aug-16 09:25:54

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817092250

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	313.4834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0008	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	172.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	20.0000	FQUAD	6.4000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0043	FVINLET	0.0466	FVSRC	0.0392
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	313.4834	LKM	425.9770	MASS	313.4834
MDAC	3592224.0474	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.9001	RELEN	0.0000
RES	11869.3550	RPUSHER	-1.9707	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:          2.5e-005 mbar
Analyzer Penning:      9.3e-008 mbar
Pirani Analyse:        4.3e-003 mbar
Pirani Source:         3.9e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11823.
MID Time Window 2: Resolution is 11465.
MID Time Window 3: Resolution is 12776.
MID Time Window 4: Resolution is 12403.
MID Time Window 5: Resolution is 11869.

Amplifier Offset: 88.


*** File closed Wed Aug 17 10:23:09 2016
  ***
```

QUAN: d1160817s1.q0 Entries: 180

Data file(s) used
File: d1160817s1 17-Aug-16
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 09:22:51 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160815S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	33:03	263985.	26199.	32:54	33:18	44.	1	1.0	AVV
321.8775	33:03	324972.	32513.	32:54	33:18	55.	1	1.0	AVV
319.8805	26:39	254371.	32043.	26:28	26:51	44.	2	5.0	ABV
319.8805	32:30	230728.	24515.	32:15	32:37	44.	2	5.0	ABV
319.8805	32:46	213638.	20240.	32:37	32:54	44.	2	5.0	AVV
319.8805	33:03	263985.	26199.	32:54	33:18	44.	2	5.0	AVB
319.8805	33:35	242518.	24000.	33:19	33:50	44.	2	5.0	AVB
319.8805	35:48	84312.	17364.	35:42	35:51	44.	2	5.0	ABB
321.8775	26:39	316595.	38553.	26:26	26:55	55.	2	5.0	ABV
321.8775	32:30	283432.	29554.	32:15	32:37	55.	2	5.0	AVV
321.8775	32:46	272450.	26246.	32:37	32:54	55.	2	5.0	AVB
321.8775	33:03	324972.	32513.	32:54	33:18	55.	2	5.0	AVV
321.8775	33:35	304991.	29796.	33:19	33:50	55.	2	5.0	AVV
321.8775	35:47	110292.	23608.	35:42	35:51	55.	2	5.0	ABB
331.9202	32:27	2151750.	217442.	32:12	32:43	29.	2	5.0	AVV
331.9202	33:00	2240550.	215744.	32:47	33:15	29.	2	5.0	AVB
333.9171	32:27	2670070.	269691.	32:12	32:43	27.	2	5.0	AVV
333.9171	33:00	2795748.	264271.	32:45	33:15	27.	2	5.0	AVV
319.8805	33:03	262485.	26142.	32:54	33:18	105.	2	5.0	AVV
319.8805	33:35	239627.	23906.	33:19	33:50	105.	2	5.0	AVV
321.8775	33:03	323473.	32454.	32:54	33:18	153.	2	5.0	AVV
321.8775	33:35	302312.	29708.	33:19	33:50	153.	2	5.0	AVV
331.9202	32:27	2151358.	217429.	32:12	32:43	140.	2	5.0	ABV
331.9202	33:00	2239885.	215721.	32:47	33:15	140.	2	5.0	AVV
333.9171	32:27	2669920.	269686.	32:12	32:43	127.	2	5.0	AVV
333.9171	33:00	2795652.	264268.	32:45	33:15	127.	2	5.0	AVV
327.8683	33:02	563502.	54567.	32:47	33:17	69.	1	1.0	AVV
327.8683	33:02	563502.	54567.	32:47	33:17	69.	2	5.0	AVV
303.8864	24:03	494407.	69527.	23:50	24:18	28.	1	1.0	ABV
305.8834	24:02	601548.	83832.	23:50	24:15	33.	1	1.0	ABV
303.8864	24:03	494407.	69527.	23:50	24:18	28.	2	5.0	ABV
303.8864	30:53	392811.	39630.	30:39	31:09	28.	2	5.0	ABV
303.8864	35:43	335212.	46883.	35:33	35:51	28.	2	5.0	ABB
305.8834	24:02	601548.	83832.	23:50	24:15	33.	2	5.0	ABV
305.8834	30:53	505209.	53484.	30:38	31:09	33.	2	5.0	AVV
305.8834	35:43	422645.	59122.	35:32	35:51	33.	2	5.0	ABB
315.9261	30:50	3636002.	377594.	30:35	31:06	21.	2	5.0	AVV
317.9230	30:51	4488595.	465516.	30:36	31:07	16.	2	5.0	AVV
303.8864	30:53	392675.	39625.	30:39	31:09	63.	2	5.0	ABV
305.8834	30:53	505209.	53484.	30:38	31:09	53.	2	5.0	AVV
315.9261	30:50	3635441.	377576.	30:35	31:06	59.	2	5.0	AVV
317.9230	30:51	4488592.	465516.	30:36	31:07	67.	2	5.0	AVV
355.8368	42:07	1340619.	328762.	41:58	42:23	63.	1	1.0	AVV
357.8337	42:06	839601.	211299.	41:58	42:22	44.	1	1.0	AVV
355.8368	38:46	1261857.	214764.	38:37	39:02	63.	2	5.0	ABV
355.8368	41:29	1305176.	327492.	41:19	41:39	63.	2	5.0	ABV
355.8368	42:07	1340619.	328762.	41:58	42:23	63.	2	5.0	AVV
357.8337	38:46	784089.	139420.	38:37	39:01	44.	2	5.0	ABV
357.8337	41:29	830303.	213115.	41:20	41:37	44.	2	5.0	ABV
357.8337	42:06	839601.	211299.	41:58	42:22	44.	2	5.0	AVV

367.8765	41:28	2521026.	631801.	41:20	41:40	19.	2	5.0 ABV
369.8734	41:28	1586309.	395931.	41:21	41:39	10.	2	5.0 ABV
355.8368	41:29	1304609.	327464.	41:19	41:39	73.	2	5.0 ABV
355.8368	42:07	1321577.	328098.	41:58	42:19	73.	2	5.0 ABB
357.8337	41:29	829870.	213089.	41:20	41:37	42.	2	5.0 ABV
357.8337	42:06	829480.	210991.	41:59	42:16	42.	2	5.0 ABB
367.8765	41:28	2520921.	631795.	41:20	41:40	45.	2	5.0 ABV
369.8734	41:28	1586258.	395928.	41:21	41:39	22.	2	5.0 ABV
339.8427	36:18	2296101.	344796.	36:06	36:34	77.	1	1.0 ABV
341.8396	36:18	1452559.	216220.	36:07	36:32	62.	1	1.0 ABV
339.8427	36:18	2296101.	344796.	36:06	36:34	77.	2	5.0 ABV
339.8427	39:51	2289177.	480704.	39:39	40:02	77.	2	5.0 ABV
339.8427	40:59	2252264.	535924.	40:50	41:08	77.	2	5.0 AVB
339.8427	42:14	1869131.	462643.	42:04	42:28	77.	2	5.0 ABV
341.8396	36:18	1452559.	216220.	36:07	36:32	62.	2	5.0 ABV
341.8396	39:50	1447839.	303560.	39:34	40:01	62.	2	5.0 ABV
341.8396	40:59	1428415.	341824.	40:43	41:08	62.	2	5.0 ABV
341.8396	42:14	1184036.	292430.	42:03	42:30	62.	2	5.0 ABV
351.8824	39:49	3891657.	815708.	39:36	40:01	53.	2	5.0 AVB
351.8824	40:58	4137452.	1004509.	40:44	41:13	53.	2	5.0 AVB
353.8793	39:49	2478350.	530003.	39:35	40:00	22.	2	5.0 ABV
353.8793	40:58	2586589.	615821.	40:45	41:08	22.	2	5.0 AVV
339.8427	39:51	2288884.	480691.	39:39	40:02	110.	2	5.0 ABV
339.8427	40:59	2251145.	535864.	40:51	41:08	110.	2	5.0 ABV
341.8396	39:50	1447840.	303560.	39:34	40:01	87.	2	5.0 ABV
341.8396	40:59	1427456.	341775.	40:43	41:08	87.	2	5.0 ABV
351.8824	39:49	3888701.	815607.	39:40	40:01	135.	2	5.0 ABV
351.8824	40:58	4129293.	1004229.	40:44	41:13	135.	2	5.0 ABV
353.8793	39:49	2477531.	529968.	39:36	40:00	79.	2	5.0 ABV
353.8793	40:58	2582162.	615621.	40:45	41:08	79.	2	5.0 ABV
389.7961	44:04	1660853.	442648.	43:58	44:19	107.	1	1.0 ABV
391.7931	44:04	1324007.	352975.	43:57	44:19	71.	1	1.0 ABV
389.7961	44:04	1660853.	442648.	43:58	44:19	107.	2	5.0 ABV
389.7961	45:43	1478244.	372787.	45:36	45:46	107.	2	5.0 ABV
389.7961	45:50	1472334.	361981.	45:46	46:05	107.	2	5.0 AVV
389.7961	46:14	1531517.	371342.	46:07	46:28	107.	2	5.0 AVV
391.7931	44:04	1324007.	352975.	43:57	44:19	71.	2	5.0 ABV
391.7931	45:42	1165992.	288537.	45:36	45:46	71.	2	5.0 ABV
391.7931	45:50	1165496.	288749.	45:46	46:05	71.	2	5.0 AVV
391.7931	46:14	1224810.	292641.	46:05	46:30	71.	2	5.0 AVV
401.8358	45:42	2634139.	661708.	45:33	45:45	97.	2	5.0 ABV
401.8358	45:49	2623216.	640316.	45:45	46:04	97.	2	5.0 AVV
401.8358	46:13	2827350.	671172.	46:06	46:29	97.	2	5.0 AVV
403.8327	45:42	2046257.	513105.	45:36	45:45	40.	2	5.0 AVV
403.8327	45:49	2081796.	508125.	45:45	46:04	40.	2	5.0 AVV
403.8327	46:13	2236844.	533255.	46:04	46:29	40.	2	5.0 AVV
389.7961	45:43	1478250.	372788.	45:36	45:46	163.	2	5.0 ABV
389.7961	45:50	1472380.	361983.	45:46	46:05	163.	2	5.0 AVV
389.7961	46:14	1531618.	371347.	46:07	46:28	163.	2	5.0 AVV
391.7931	45:42	1165990.	288537.	45:36	45:46	92.	2	5.0 ABV
391.7931	45:50	1165485.	288748.	45:46	46:05	92.	2	5.0 AVV
391.7931	46:14	1224782.	292640.	46:05	46:30	92.	2	5.0 AVV
401.8358	45:42	2633050.	661592.	45:34	45:45	216.	2	5.0 ABV
401.8358	45:49	2618901.	640140.	45:45	46:04	216.	2	5.0 AVV
401.8358	46:13	2817993.	670788.	46:06	46:29	216.	2	5.0 AVV
403.8327	45:42	2047234.	513105.	45:31	45:45	92.	2	5.0 ABV
403.8327	45:49	2081798.	508125.	45:45	46:04	92.	2	5.0 AVV
403.8327	46:13	2236845.	533255.	46:04	46:29	92.	2	5.0 AVV
373.8021	44:46	2624492.	651499.	44:42	45:01	116.	1	1.0 AVV
375.7990	44:46	2077161.	523549.	44:42	45:01	120.	1	1.0 AVV
373.8021	43:23	2328059.	645079.	43:16	43:29	116.	2	5.0 ABV
373.8021	44:38	2462290.	654592.	44:25	44:42	116.	2	5.0 ABV
373.8021	44:46	2624492.	651499.	44:42	45:01	116.	2	5.0 AVV
373.8021	45:32	2364810.	593407.	45:21	45:47	116.	2	5.0 AVV
373.8021	46:32	1898155.	452415.	46:25	46:36	116.	2	5.0 ABV
373.8021	46:40	1851235.	425262.	46:36	46:55	116.	2	5.0 AVV
375.7990	43:23	1867127.	516328.	43:14	43:29	120.	2	5.0 ABV

375.7990	44:38	1969045.	525611.	44:23	44:42	120.	2	5.0 AVV
375.7990	44:46	2077161.	523549.	44:42	45:01	120.	2	5.0 AVV
375.7990	45:32	1880630.	467937.	45:22	45:47	120.	2	5.0 AVV
375.7990	46:32	1494860.	358332.	46:24	46:36	120.	2	5.0 ABV
375.7990	46:40	1491832.	340035.	46:36	46:55	120.	2	5.0 AVV
383.8447	44:37	2269020.	601923.	44:30	44:41	67.	2	5.0 ABV
383.8447	44:45	2622769.	647862.	44:41	45:00	67.	2	5.0 AVV
383.8447	45:31	2405793.	606248.	45:22	45:46	67.	2	5.0 AVV
383.8447	46:31	1922440.	447361.	46:23	46:46	67.	2	5.0 ABV
385.8417	44:37	4244771.	1130659.	44:30	44:41	107.	2	5.0 ABV
385.8417	44:45	4817808.	1228534.	44:41	44:56	107.	2	5.0 AVV
385.8417	45:31	4386696.	1083139.	45:18	45:46	107.	2	5.0 AVV
385.8417	46:31	3539625.	824829.	46:21	46:46	107.	2	5.0 ABV
373.8021	44:38	2462318.	654593.	44:25	44:42	140.	2	5.0 ABV
373.8021	44:46	2624519.	651500.	44:42	45:01	140.	2	5.0 AVV
373.8021	45:32	2364829.	593407.	45:21	45:47	140.	2	5.0 AVV
373.8021	46:32	1896430.	452218.	46:25	46:36	140.	2	5.0 ABV
373.8021	46:40	1840141.	424841.	46:36	46:55	140.	2	5.0 AVV
375.7990	44:38	1969045.	525611.	44:23	44:42	132.	2	5.0 AVV
375.7990	44:46	2077161.	523549.	44:42	45:01	132.	2	5.0 AVV
375.7990	45:32	1880630.	467937.	45:22	45:47	132.	2	5.0 AVV
375.7990	46:32	1492810.	358108.	46:24	46:36	132.	2	5.0 ABV
375.7990	46:40	1480210.	339586.	46:36	46:55	132.	2	5.0 AVV
383.8447	44:37	2269013.	601923.	44:30	44:41	119.	2	5.0 ABV
383.8447	44:45	2622722.	647861.	44:41	45:00	119.	2	5.0 AVV
383.8447	45:31	2405611.	606241.	45:22	45:46	119.	2	5.0 AVV
383.8447	46:31	1919706.	447279.	46:23	46:46	119.	2	5.0 ABV
385.8417	44:37	4244771.	1130659.	44:30	44:41	188.	2	5.0 ABV
385.8417	44:45	4817808.	1228534.	44:41	44:56	188.	2	5.0 AVV
385.8417	45:31	4386696.	1083139.	45:18	45:46	188.	2	5.0 AVV
385.8417	46:31	3539625.	824829.	46:21	46:46	188.	2	5.0 ABV
423.7555	49:33	1206764.	250947.	49:25	49:49	86.	1	1.0 ABV
425.7524	49:33	1164151.	233468.	49:21	49:46	65.	1	1.0 ABV
423.7555	49:33	1206764.	250947.	49:25	49:49	86.	2	5.0 ABV
423.7555	50:45	1121815.	241406.	50:36	51:01	86.	2	5.0 ABV
425.7524	49:33	1164151.	233468.	49:21	49:46	65.	2	5.0 ABV
425.7524	50:45	1076891.	230230.	50:37	51:00	65.	2	5.0 ABV
435.7951	49:32	22126.	4799.	49:26	49:41	17.	2	5.0 ABB
435.7951	50:44	2074770.	436715.	50:36	51:00	17.	2	5.0 ABV
437.7921	49:32	21072.	5055.	49:26	49:39	27.	2	5.0 ABB
437.7921	50:44	1978266.	426713.	50:36	51:00	27.	2	5.0 ABV
407.7614	49:02	1954587.	407819.	48:54	49:17	76.	1	1.0 ABV
409.7583	49:02	1856574.	396594.	48:54	49:17	82.	1	1.0 ABV
407.7614	49:02	1954587.	407819.	48:54	49:17	76.	2	5.0 ABV
407.7614	51:22	1403133.	309028.	51:15	51:35	76.	2	5.0 ABV
409.7583	49:02	1856574.	396594.	48:54	49:17	82.	2	5.0 ABV
409.7583	51:22	1327522.	294944.	51:13	51:37	82.	2	5.0 ABV
417.8041	49:01	1619419.	339584.	48:53	49:16	75.	2	5.0 ABV
417.8041	51:21	1249994.	278474.	51:15	51:35	75.	2	5.0 ABV
419.8010	49:01	3477718.	745124.	48:52	49:16	93.	2	5.0 ABV
419.8010	51:21	2727565.	610633.	51:11	51:34	93.	2	5.0 ABV
457.7148	54:45	1852541.	475558.	54:38	55:01	50.	1	1.0 ABV
459.7118	54:44	2055595.	519320.	54:38	54:59	38.	1	1.0 ABV
457.7148	54:45	1852541.	475558.	54:38	55:01	50.	2	5.0 ABV
459.7118	54:44	2055595.	519320.	54:38	54:59	38.	2	5.0 ABV
469.7545	54:44	3128446.	822877.	54:36	54:59	59.	2	5.0 ABV
471.7514	54:44	3454049.	899579.	54:37	54:59	45.	2	5.0 ABV
441.7207	54:53	2415022.	624575.	54:42	55:09	55.	1	1.0 ABV
443.7177	54:53	2653504.	669137.	54:41	55:09	52.	1	1.0 ABV
441.7207	54:53	2415022.	624575.	54:42	55:09	55.	2	5.0 ABV
443.7177	54:53	2653504.	669137.	54:41	55:09	52.	2	5.0 ABV
453.7603	54:52	4614576.	1212874.	54:41	55:08	30.	2	5.0 ABV
455.7573	54:52	5106615.	1334707.	54:40	55:08	54.	2	5.0 ABV

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89931 - D1160817S2

CCAL Filename: d1160817s2

CCAL Sample ID: 4966:41

CCAL Result Dir: /20160817s2/d1160817s2.d

CCAL Date/Time: 08/17/16 18:56

ICAL Date: 04/09/15

Method: IN2o - DX8290_2

Instrument: D11A

Column SN: 1379922

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	10.3	1.144	1.181	3.3	20.0	True
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	10.5	1.066	1.124	5.4	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	48	1.060	1.022	-3.6	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	51	1.179	1.211	2.7	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	50	1.115	1.112	-0.3	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51	1.131	1.154	2.0	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	51	1.116	1.146	2.7	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	51	1.205	1.228	1.9	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	51	1.350	1.372	1.6	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	52	1.242	1.290	3.9	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	51	1.241	1.263	1.8	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05-1.43	50	1.262	1.257	-0.4	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	50	1.114	1.106	-0.7	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88-1.20	51	1.461	1.502	2.8	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.08	0.88-1.20	51	1.370	1.395	1.8	20.0	True
OCDD	M+2/M+4	0.90	0.76-1.02	103	1.203	1.237	2.8	20.0	True
OCDF	M+2/M+4	0.92	0.76-1.02	93	1.134	1.060	-6.6	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	94	1.093	1.024	-6.3	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.83	0.65-0.89	96	1.794	1.716	-4.4	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	108	0.800	0.862	7.7	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	93	1.356	1.264	-6.8	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.64	1.32-1.78	104	1.343	1.395	3.9	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	100	0.916	0.920	0.4	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	98	0.906	0.891	-1.7	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	102	1.268	1.294	2.0	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	99	1.506	1.494	-0.8	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43-0.59	101	1.344	1.359	1.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	93	1.202	1.124	-6.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.09	0.88-1.20	113	0.728	0.820	12.6	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	102	1.008	1.028	2.0	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	105	0.811	0.849	4.8	30.0	True
13C-OCDD	M+2/M+4	0.90	0.76-1.02	222	0.597	0.662	10.8	30.0	True
13C-OCDF	M+2/M+4	0.89	0.76-1.02	212	0.946	1.005	6.2	30.0	True

KL 8/18/16

LM 8-17-16

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89931 - D1160817S2
CCAL Filename: d1160817s2
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160817s2/d1160817s2.d
CCAL Date/Time: 08/17/16 18:56

ICAL Date: 04/09/15
Method: IN2o - DX8290_2
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	30:41	32:53	132	1.002	1.003	-	
2,3,7,8-TCDF	28:42	30:43	121	1.001	1.001	-	
1,2,3,7,8-PeCDD	40:33	41:25	52	1.000	1.000	-	
1,2,3,7,8-PeCDF	38:44	39:46	62	1.000	1.000	-	
2,3,4,7,8-PeCDF	40:01	40:55	54	1.001	1.000	-	
1,2,3,4,7,8-HxCDD	44:50	45:40	50	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	44:57	45:48	51	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:20	46:12	52	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	43:49	44:36	47	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:56	44:44	48	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	44:39	45:29	50	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	45:36	46:29	53	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	49:38	50:43	65	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:58	49:00	62	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:17	51:19	62	1.000	1.000	-	
OCDD	53:54	54:43	49	1.000	1.000	-	
OCDF	54:02	54:52	50	1.000	1.000	-	
13C-2,3,7,8-TCDD	30:38	32:48	130	1.017	1.016	-	
13C-2,3,7,8-TCDF	28:40	30:41	121	0.951	0.950	-	
13C-1,2,3,7,8-PeCDD	40:32	41:24	52	1.346	1.282	-	
13C-1,2,3,7,8-PeCDF	38:43	39:45	62	1.285	1.231	-	
13C-2,3,4,7,8-PeCDF	39:59	40:54	55	1.327	1.267	-	
13C-1,2,3,4,7,8-HxCDD	44:49	45:39	50	0.989	0.988	-	
13C-1,2,3,6,7,8-HxCDD	44:56	45:47	51	0.992	0.991	-	
13C-1,2,3,4,7,8-HxCDF	43:48	44:35	47	0.966	0.965	-	
13C-1,2,3,6,7,8-HxCDF	43:55	44:43	48	0.969	0.968	-	
13C-2,3,4,6,7,8-HxCDF	44:38	45:28	50	0.985	0.984	-	
13C-1,2,3,7,8,9-HxCDF	45:35	46:28	53	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	49:37	50:42	65	1.095	1.098	-	
13C-1,2,3,4,6,7,8-HpCDF	47:56	48:59	63	1.058	1.061	-	
13C-1,2,3,4,7,8,9-HpCDF	50:16	51:18	62	1.109	1.111	-	
13C-OCDD	53:53	54:42	49	1.189	1.184	-	
13C-OCDF	54:01	54:51	50	1.192	1.188	-	

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290 w/16 IS's (13C-OCDF

CCAL ID: 89931 - D1160817S2

WIN Filename: d1160817s2

WIN Sample ID: 4966:41

WIN Result Dir: /20160817s2/d1160817s2.d

WIN Date/Time: 08/17/16 18:56

Method: IN2o - DX8290_2

Instrument: D11A

Column SN: 1379922

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	32:48	26:31	0.8084	35:42	1.0884
Total TCDF	13C-2,3,7,8-TCDF	304	30:41	23:55	0.7795	35:36	1.1602
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	41:24	38:42	0.9348	42:04	1.0161
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:45	36:12	0.9107	42:11	1.0612
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:47	44:01	0.9614	46:12	1.0091
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:35	43:21	0.9723	46:37	1.0456
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	50:42	49:30	0.9763	50:43	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:59	49:00	1.0003	51:19	1.0476
OCDD	13C-OCDD	458	54:42	54:43	1.0003	54:43	1.0003
OCDF	13C-OCDF	442	54:51	54:52	1.0003	54:52	1.0003

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s2/d1160817s2.d	Prep Date		SDG No	
Analysis ID	180433	Prep Exp Date		Date Received	
Analysis Date	8/17/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	18:56	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	32:53	526251	52810	1.144	10.00	10.329121	103.29	10.329121	E	0.0497
Total TCDD		2351823	262585	1.144		56.490103		56.490103	E	0.0497
2,3,7,8-TCDF	30:43	838941	86369	1.066	10.00	10.543666	105.44	10.543666	E	0.0162
Total TCDF		1694306	228566	1.066		31.837413		31.837413	E	0.0162
1,2,3,7,8-PeCDD	41:25	1917516	475913	1.060	50.00	48.222198	96.44	48.222198	E	0.0228
Total PeCDD		3786791	831025	1.060		143.453416		143.453416	E	0.0228
1,2,3,7,8-PeCDF	39:46	3332074	718278	1.179	50.00	51.371881	102.74	51.371881	E	0.0213
2,3,4,7,8-PeCDF	40:55	3375230	812573	1.115	50.00	49.873458	99.75	49.873458	E	0.0185
Total PeCDF		6134025	1189552	1.147		193.679458		193.679458	E	0.0197
1,2,3,4,7,8-HxCDD	45:40	2533907	633671	1.131	50.00	50.989907	101.98	50.989907	E	0.0292
1,2,3,6,7,8-HxCDD	45:48	2439283	602044	1.116	50.00	51.353765	102.71	51.353765	E	0.0301
1,2,3,7,8,9-HxCDD	46:12	2656395	640487	1.205	50.00	50.966000	101.93	50.966000	E	0.0277
Total HxCDD		2801402	767485	1.151		209.598734		209.598734	E	0.0290
1,2,3,4,7,8-HxCDF	44:36	4240002	1133018	1.350	50.00	50.796635	101.59	50.796635	E	0.0193
1,2,3,6,7,8-HxCDF	44:44	4603006	1181912	1.242	50.00	51.956187	103.91	51.956187	E	0.0192
2,3,4,6,7,8-HxCDF	45:29	4099909	1030092	1.241	50.00	50.897909	101.80	50.897909	E	0.0214
1,2,3,7,8,9-HxCDF	46:29	3373162	800465	1.262	50.00	49.801661	99.60	49.801661	E	0.0271
Total HxCDF		7126556	1809140	1.274		292.350672		292.350672	E	0.0213
1,2,3,4,6,7,8-HpCDD	50:43	2167379	463663	1.114	50.00	49.665435	99.33	49.665435	E	0.0251
Total HpCDD		2276717	457276	1.114		101.836347		101.836347	E	0.0251
1,2,3,4,6,7,8-HpCDF	49:00	3689632	781993	1.461	50.00	51.409555	102.82	51.409555	E	0.0226
1,2,3,4,7,8,9-HpCDF	51:19	2830409	625492	1.370	50.00	50.914435	101.83	50.914435	E	0.0283
Total HpCDF				1.416		102.323990		102.323990	E	0.0252
OCDD	54:43	3909530	1006647	1.203	100.0	102.795721	102.80	102.795721	E	0.0225
OCDF	54:52	5085611	1303268	1.134	100.0	93.420503	93.42	93.420503	E	0.0134
13C-2,3,7,8-TCDD	32:48	4455369	430723	1.093	100.0	93.691530	93.69	93.691530		0.0283
13C-2,3,7,8-TCDF	30:41	7467075	783834	1.794	100.0	95.608429	95.61	95.608429		0.0102
13C-1,2,3,7,8-PeCDD	41:24	3751721	950044	0.800	100.0	107.748532	107.75	107.748532		0.0329
13C-1,2,3,7,8-PeCDF	39:45	5500793	1182859	1.356	100.0	93.171783	93.17	93.171783		0.0325
13C-2,3,4,7,8-PeCDF	40:54	6071942	1445062	1.343	100.0	103.874273	103.87	103.874273		0.0328
13C-1,2,3,4,7,8-HxCDD	45:39	4393417	1088421	0.916	100.0	100.436334	100.44	100.436334		0.0258
13C-1,2,3,6,7,8-HxCDD	45:47	4256419	1071385	0.906	100.0	98.332740	98.33	98.332740		0.0261
13C-1,2,3,4,7,8-HxCDF	44:35	6180980	1659310	1.268	100.0	102.029241	102.03	102.029241		0.0274
13C-1,2,3,6,7,8-HxCDF	44:43	7135365	1814263	1.506	100.0	99.229117	99.23	99.229117		0.0231
13C-2,3,4,6,7,8-HxCDF	45:28	6491524	1626617	1.344	100.0	101.130449	101.13	101.130449		0.0259
13C-1,2,3,7,8,9-HxCDF	46:28	5366813	1264505	1.202	100.0	93.476395	93.48	93.476395		0.0290
13C-1,2,3,4,6,7,8-HpCDD	50:42	3918360	848177	0.728	100.0	112.628330	112.63	112.628330		0.0484
13C-1,2,3,4,6,7,8-HpCDF	48:59	4912294	1035903	1.008	100.0	102.027378	102.03	102.027378		0.0347
13C-1,2,3,4,7,8,9-HpCDF	51:18	4056747	884255	0.811	100.0	104.760817	104.76	104.760817		0.0432
13C-OCDD	54:42	6322904	1680016	0.597	200.0	221.608340	110.80	221.608340		0.0687
13C-OCDF	54:51	9598109	2533791	0.946	200.0	212.429078	106.21	212.429078		0.0323
37Cl4-2,3,7,8-TCDD	32:53	497352	49801	1.233	10.00	9.264309	92.64	9.264309	E	0.0227
13C-1,2,3,4-TCDD	32:17	4352698	436587	1.000	100.0	100.000000	100.00	100.000000		0.0309
13C-1,2,3,7,8,9-HxCDD	46:11	4776233	1163386	1.000	100.0	100.000000	100.00	100.000000		0.0236

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s2/d1160817s2	Prep Date		SDG No	
Analysis ID	180433	Prep Exp Date		Date Received	
Analysis Date	08/17/16 18:56	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	65	70	26	28	0.93 *	/	
	Unidentified	23:55	00:00	0	434169	539095	60779	73315	0.81	ABV/ABV	
	2,3,7,8-TCDF	30:43	30:55	-12	369879	469062	36942	49427	0.79	ABV/ABV	M
	Unidentified	35:36	00:00	0	322473	398569	43187	51285	0.81	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	45	35	18	14	1.29 *	/	
	13C-2,3,7,8-TCDF	30:41	30:53	-12	3380045	4087030	354894	428940	0.83	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	115	130	46	52	0.88	/	
	Unidentified	26:31	00:00	0	224890	280498	28416	34461	0.80	ABV/ABV	
	Unidentified	32:19	00:00	0	206602	268633	20294	26191	0.77	ABV/ABV	
	Unidentified	32:34	00:00	0	196102	239651	20210	25124	0.82	AVV/AVV	
	2,3,7,8-TCDD	32:53	32:37	16	234010	292241	23452	29358	0.80	AVV/AVV	M
	Unidentified	33:24	00:00	0	214050	270295	19018	25468	0.79	AVV/AVV	
	Unidentified	35:42	00:00	0	200846	250256	28638	34765	0.80	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	123		49				
	37Cl4-2,3,7,8-TCDD	32:53	32:37	16	497352		49801			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	75	60	30	24	1.25 *	/	
	13C-1,2,3,4-TCDD	32:17	32:09	8	1962866	2389832	200739	235848	0.82	AVV/ABV	
	13C-2,3,7,8-TCDD	32:48	32:35	13	1968466	2486903	196379	234344	0.79	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	148	150	59	60	0.98 *	/	
	Unidentified	36:12	00:00	0	2027134	1266086	300904	190109	1.60	ABV/ABV	
	1,2,3,7,8-PeCDF	39:46	39:51	-5	2040683	1291391	440509	277769	1.58	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:55	41:04	-9	2058356	1316874	493840	318733	1.56	ABV/ABV	M
	Unidentified	42:11	00:00	0	1743184	1097621	425977	272562	1.59	AVV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	145	48	58	19	3.05 *	/	
	13C-1,2,3,7,8-PeCDF	39:45	39:51	-6	3402711	2098082	740134	442725	1.62	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:54	41:02	-8	3770884	2301058	902874	542188	1.64	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	110	120	44	48	0.92 *	/	
	Unidentified	38:42	00:00	0	1065453	682481	183496	118208	1.56	ABV/ABV	
	1,2,3,7,8-PeCDD	41:25	41:34	-9	1171050	746466	289260	186653	1.57	ABV/ABV	M
	Unidentified	42:04	00:00	0	1249630	789227	323950	205371	1.58	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	75	40	30	16	1.88 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:33	-9	2309073	1442648	587966	362078	1.60	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	208	225	83	90	0.92 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s2/d1160817s2	Prep Date		SDG No	
Analysis ID	180433	Prep Exp Date		Date Received	
Analysis Date	08/17/16 18:56	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	43:21	00:00	0	2208821	1764303	602467	478289	1.25	ABV/ABV	
	1,2,3,4,7,8-HxCDF	44:36	44:42	-6	2354468	1885534	630246	502772	1.25	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:44	44:48	-4	2571492	2031514	658363	523549	1.27	AVV/AVB	DM
	2,3,4,6,7,8-HxCDF	45:29	45:30	-1	2289008	1810901	582609	447483	1.26	AVV/AVB	
	1,2,3,7,8,9-HxCDF	46:29	46:26	3	1893117	1480045	451205	349260	1.28	ABV/ABV	M
	Unidentified	46:37	00:00	0	1763877	1389555	409765	318619	1.27	AVV/AVB	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	155	250	62	100	0.62 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:35	44:41	-6	2146491	4034489	582991	1076319	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:43	44:47	-4	2508343	4627022	639671	1174592	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:28	45:29	-1	2312878	4178646	587430	1039187	0.55	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:28	46:25	3	1847203	3519610	442107	822398	0.52	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	173	188	69	75	0.92 *	/	
	Unidentified	44:01	00:00	0	1564498	1236904	425445	342040	1.26	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:40	45:41	-1	1415170	1118737	353812	279859	1.26	AVV/ABV	
	1,2,3,6,7,8-HxCDD	45:48	45:48	0	1357731	1081552	337033	265011	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:12	46:10	2	1485845	1170550	360519	279968	1.27	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	178	98	71	39	1.82 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:39	45:40	-1	2453281	1940136	604848	483573	1.26	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:47	45:47	0	2377591	1878828	597548	473837	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:11	46:09	2	2693757	2082476	657893	505493	1.29	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	158	185	63	74	0.85 *	/	
	1,2,3,4,6,7,8-HpCDF	49:00	48:47	13	1893276	1796356	402841	379152	1.05	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	51:19	51:08	11	1466463	1363946	324071	301421	1.08	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	198	210	79	84	0.94 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:59	48:45	14	1556653	3355641	332215	703688	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	51:18	51:07	11	1281587	2775160	282935	601320	0.46	ABV/AVV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	130	108	52	43	1.21 *	/	
	Unidentified	49:30	00:00	0	1160603	1116114	230631	226645	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:43	50:28	15	1102748	1064631	236767	226896	1.04	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	260	150	104	60	1.73 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:42	50:27	15	2044497	1873863	439563	408614	1.09	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	73	120	29	48	0.60 *	/	
	OCDF	54:52	55:01	-9	2433502	2652109	634492	668776	0.92	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
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T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s2/d1160817s2	Prep Date		SDG No	
Analysis ID	180433	Prep Exp Date		Date Received	
Analysis Date	08/17/16 18:56	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	113	243	45	97	0.46 *	/	
	13C-OCDF	54:51	55:00	-9	4516315	5081794	1202460	1331331	0.89	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	133	95	53	38	1.39 *	/	
	OCDD	54:43	54:53	-10	1854194	2055336	483666	522981	0.90	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	173	305	69	122	0.57 *	/	
	13C-OCDD	54:42	54:52	-10	2987609	3335295	794192	885824	0.90	ABV/ABV	

Notes:
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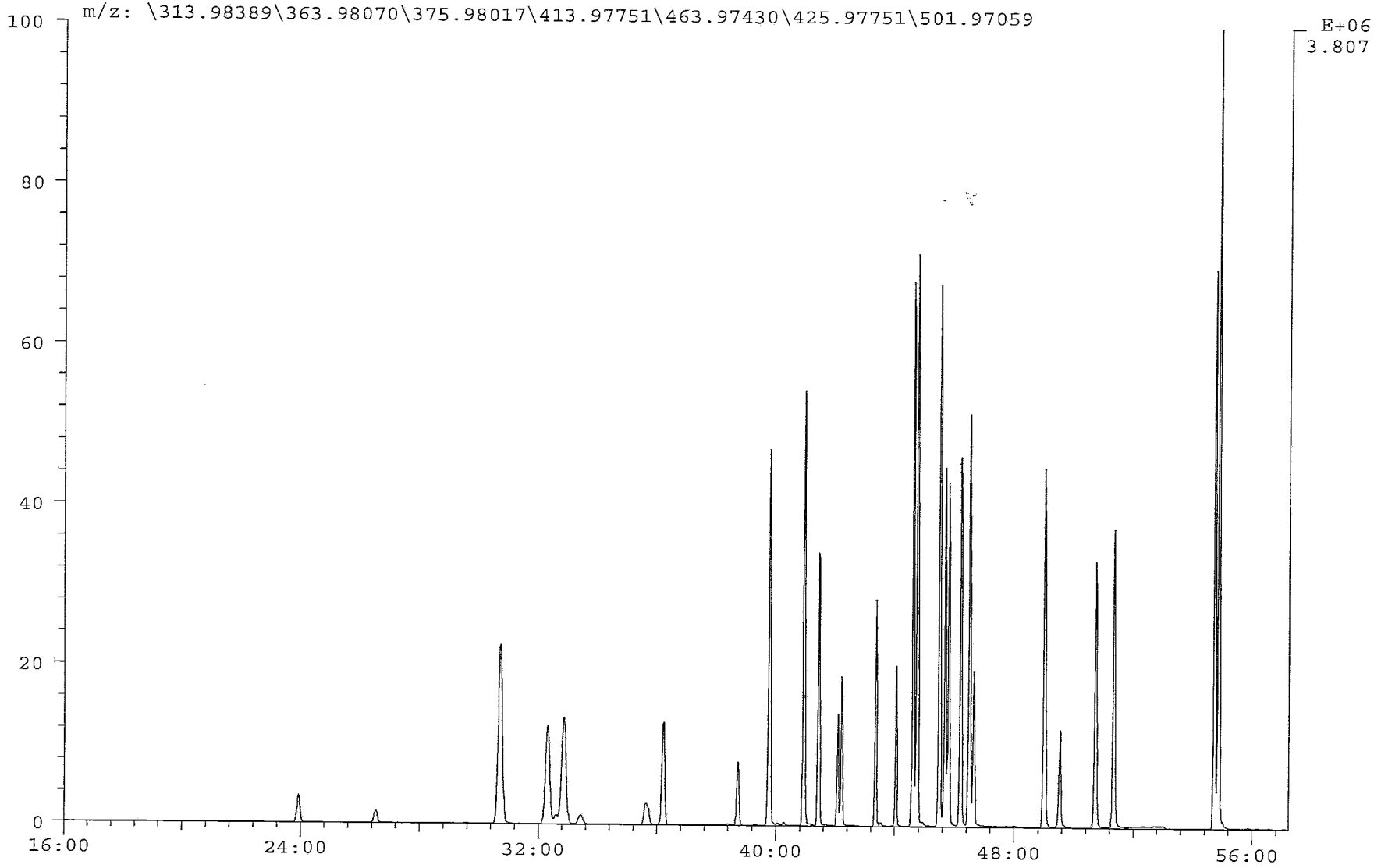
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int/Calc 8-17-16
QC 8/18/16

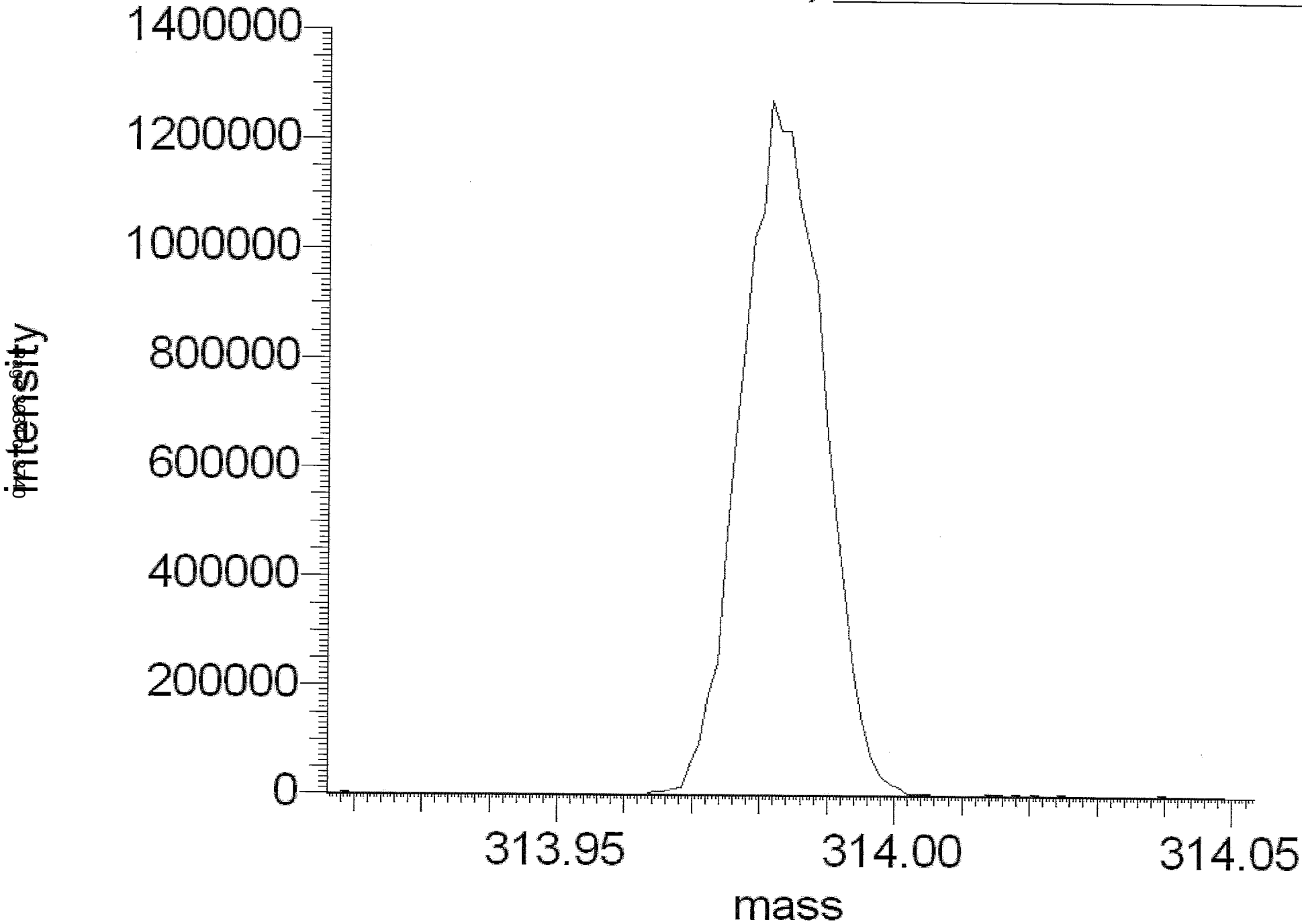
CHRO: d1160817s2 17-Aug-16 Elapse: 12:04.5 1
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



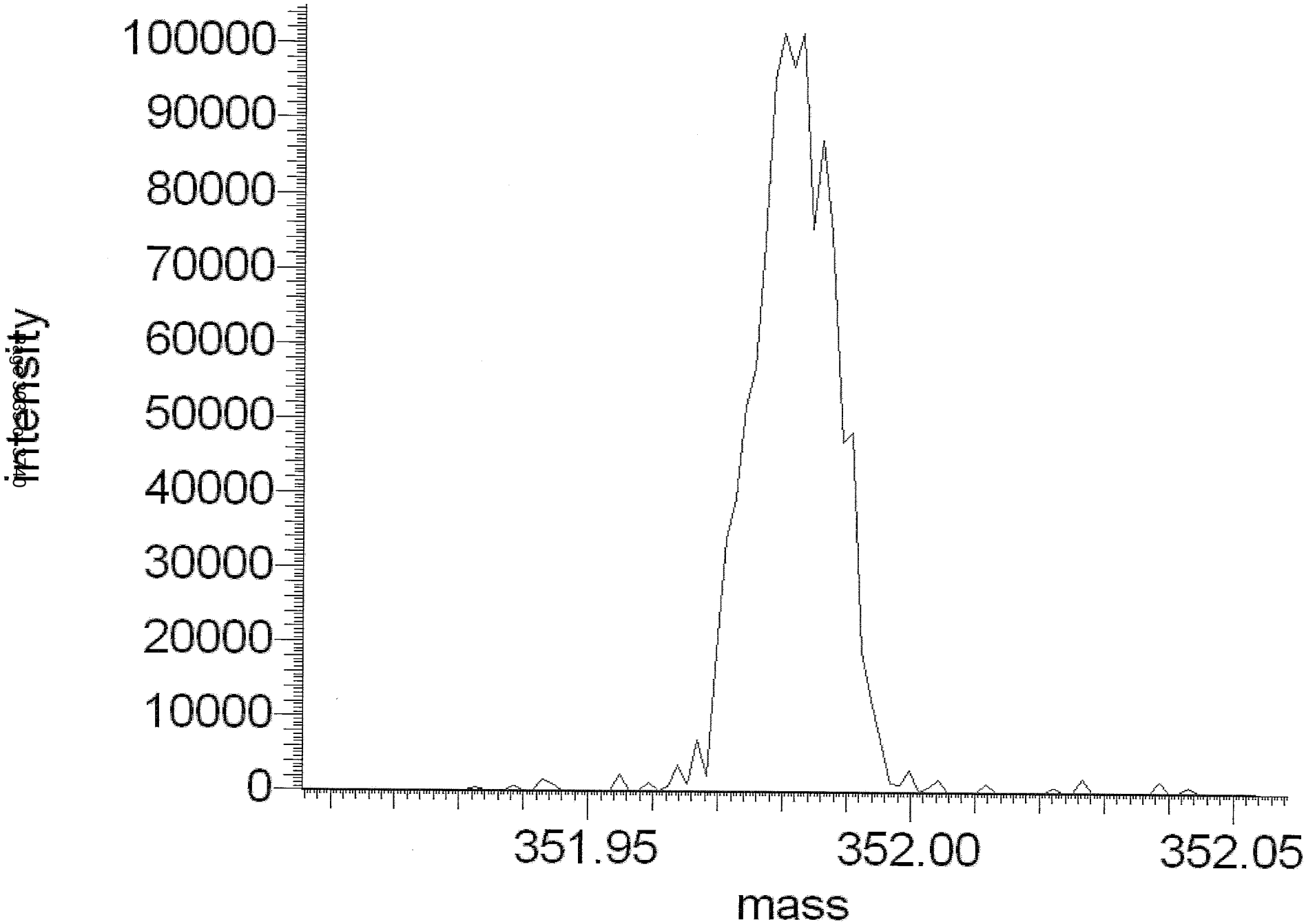
```
Reports
20:36:29:  Peak matching procedure started
20:36:30:
20:36:30:  Reference mass: 313.98336
20:36:31:  Sample mass: 364.0
20:36:31:
20:36:32:  Finding reference mass
20:36:33:  Finding sample mass
20:36:33:
20:36:39:  [1]   363.9783 amu, mean: 363.9783
20:36:42:  [2]   363.9779 amu, mean: 363.9781     SD: 0.26 mmu or: 0.73 ppm
20:36:45:  [3]   363.9778 amu, mean: 363.9780     SD: 0.26 mmu or: 0.71 ppm
20:36:49:  [4]   363.9784 amu, mean: 363.9781     SD: 0.31 mmu or: 0.85 ppm
20:36:52:  [5]   363.9780 amu, mean: 363.9781     SD: 0.27 mmu or: 0.74 ppm
20:36:55:  [6]   363.9783 amu, mean: 363.9781     SD: 0.25 mmu or: 0.69 ppm
20:36:58:  [7]   363.9784 amu, mean: 363.9782     SD: 0.26 mmu or: 0.71 ppm
20:37:01:  [8]   363.9784 amu, mean: 363.9782     SD: 0.25 mmu or: 0.69 ppm
20:37:04:  [9]   363.9784 amu, mean: 363.9782     SD: 0.24 mmu or: 0.66 ppm
20:37:07:  [10]   363.9784 amu, mean: 363.9782     SD: 0.23 mmu or: 0.64 ppm
20:37:11:  [11]   363.9786 amu, mean: 363.9783     SD: 0.24 mmu or: 0.67 ppm
20:37:14:  [12]   363.9782 amu, mean: 363.9783     SD: 0.23 mmu or: 0.64 ppm
20:37:17:  [13]   363.9779 amu, mean: 363.9782     SD: 0.24 mmu or: 0.66 ppm
20:37:18:
20:37:18:  Stop requested. Please wait for procedure to finish.
20:37:18:
20:37:20:
20:37:20:  Peakmatching stopped
```

Signature 8-17-16

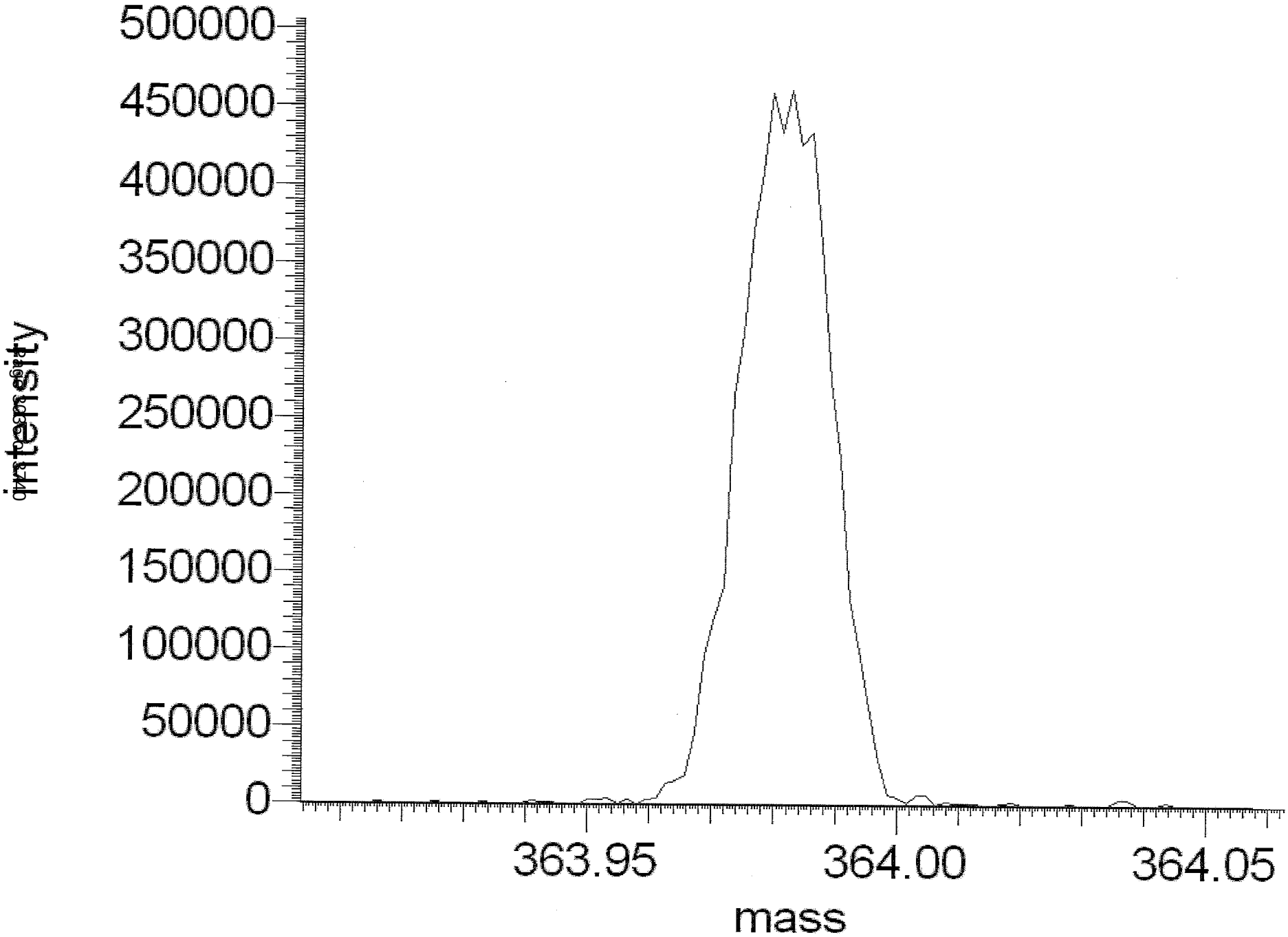
LockMass: 313.9838 Instr.: DFS-1209
Resolution: 11571 (08/17/16 20:27:27)



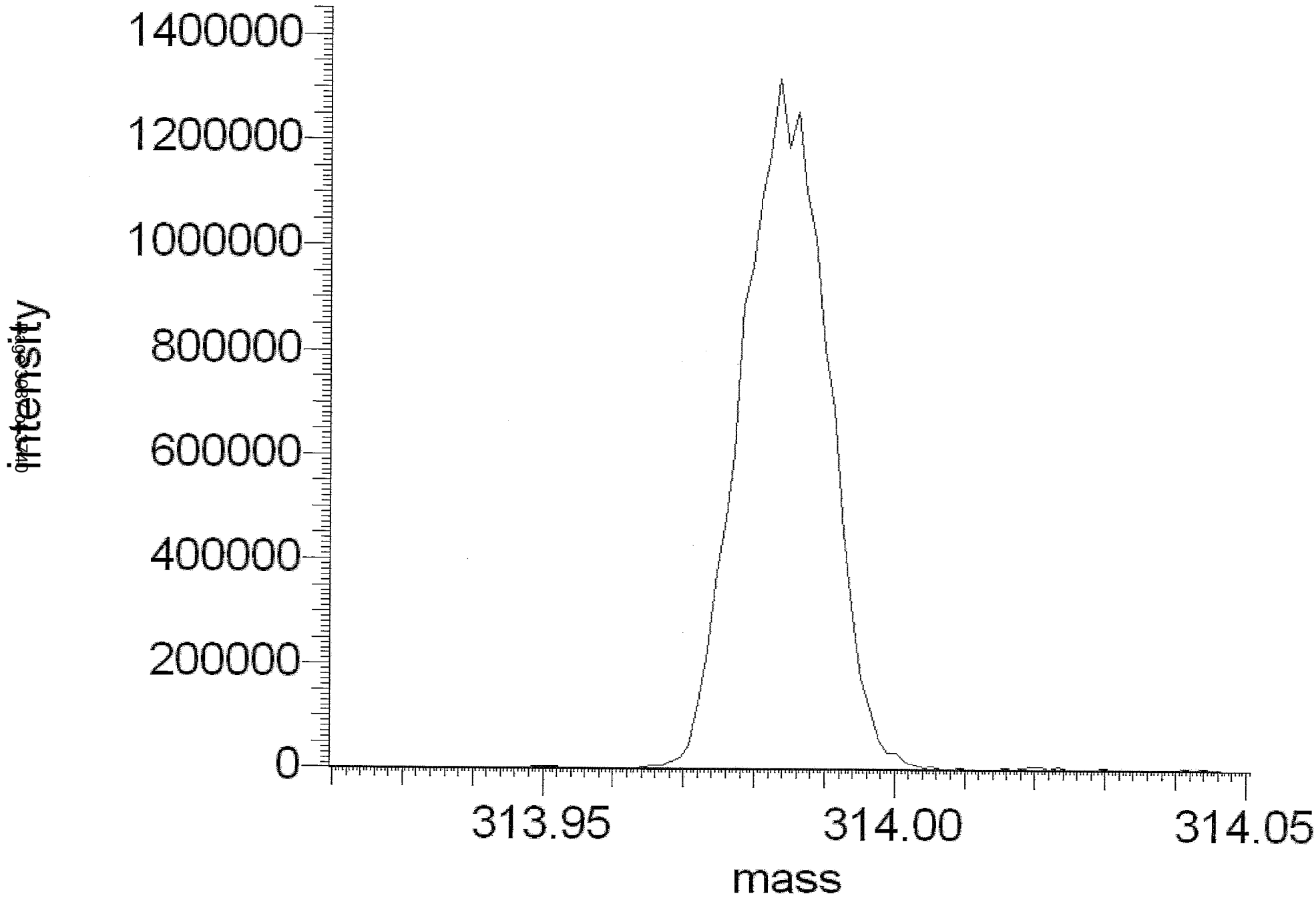
Mass: 351.9802 Instr.: DFS-1209
Resolution: 11769 (08/17/16 20:28:14)



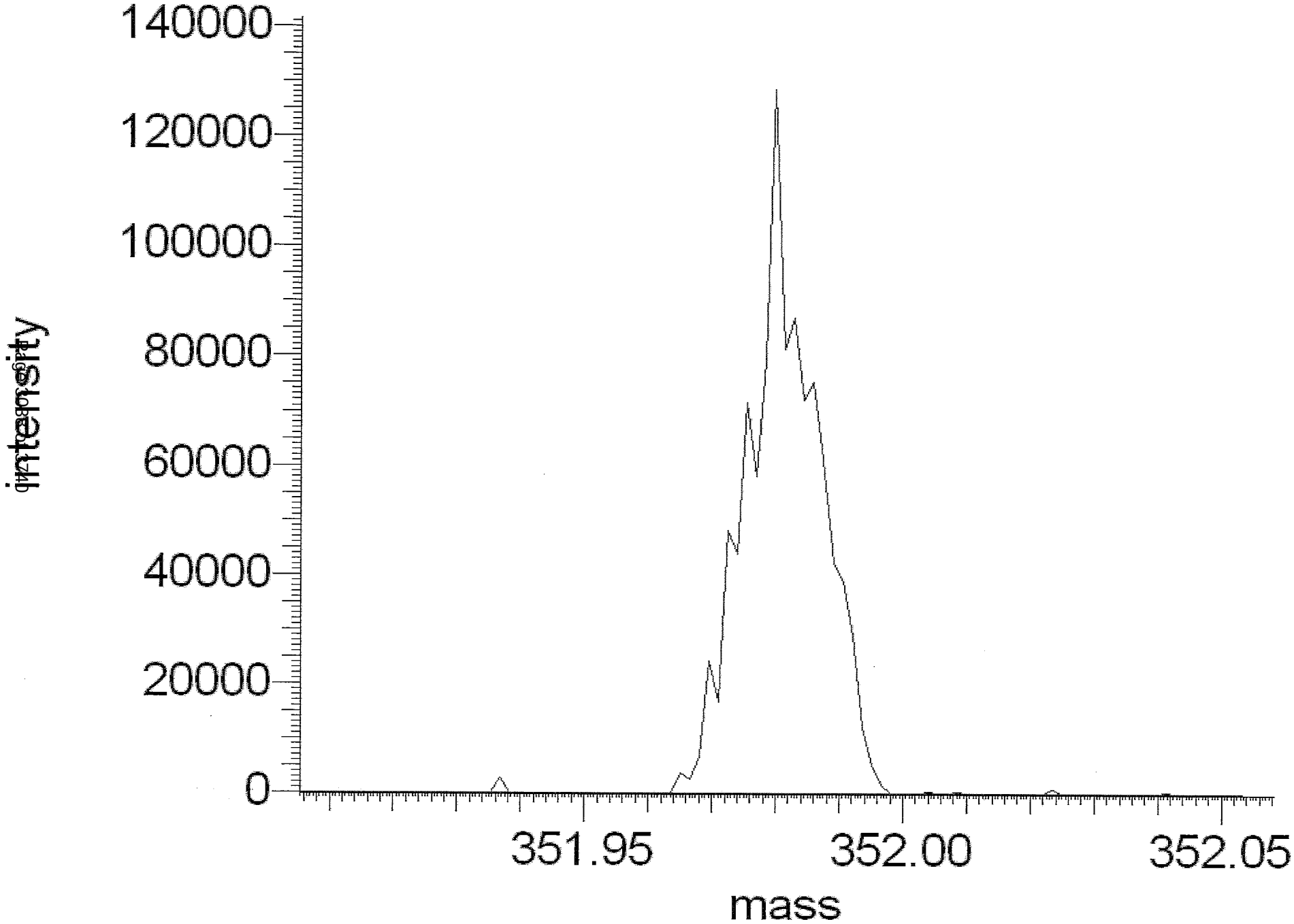
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 12187 (08/17/16 20:28:17)



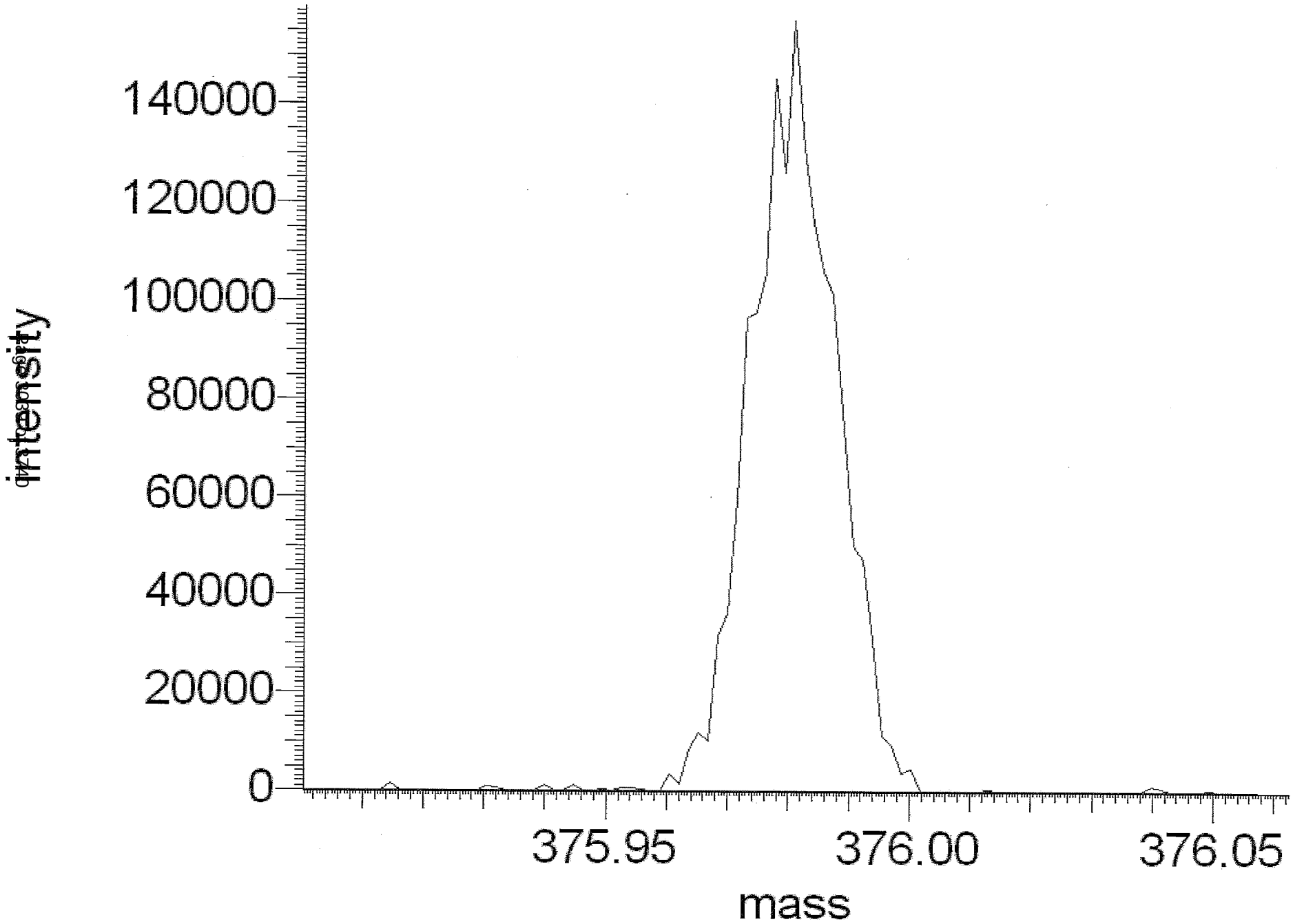
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 12187 (08/17/16 20:28:32)



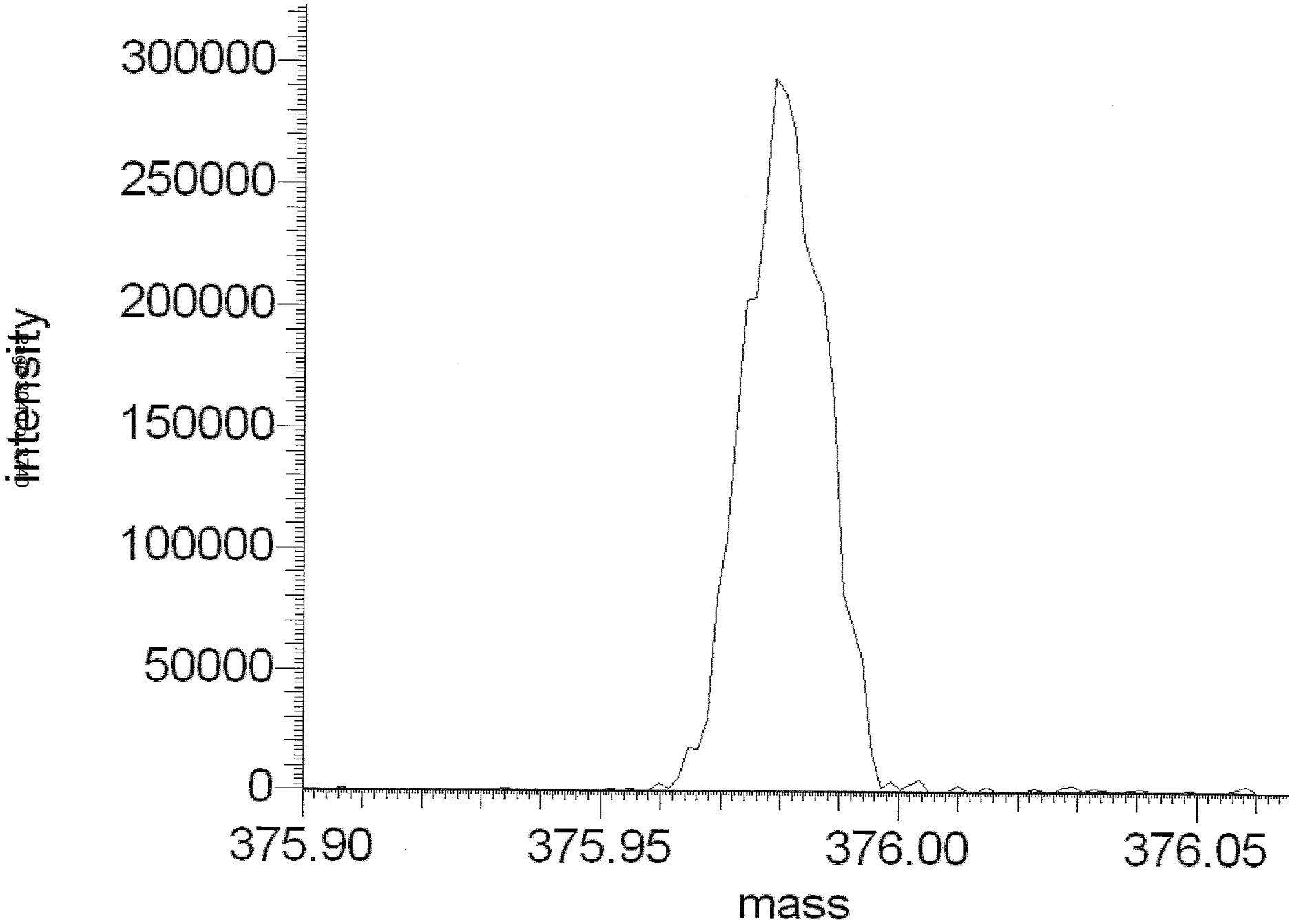
Mass: 351.9802 Instr.: DFS-1209
Resolution: 13163 (08/17/16 20:29:19)



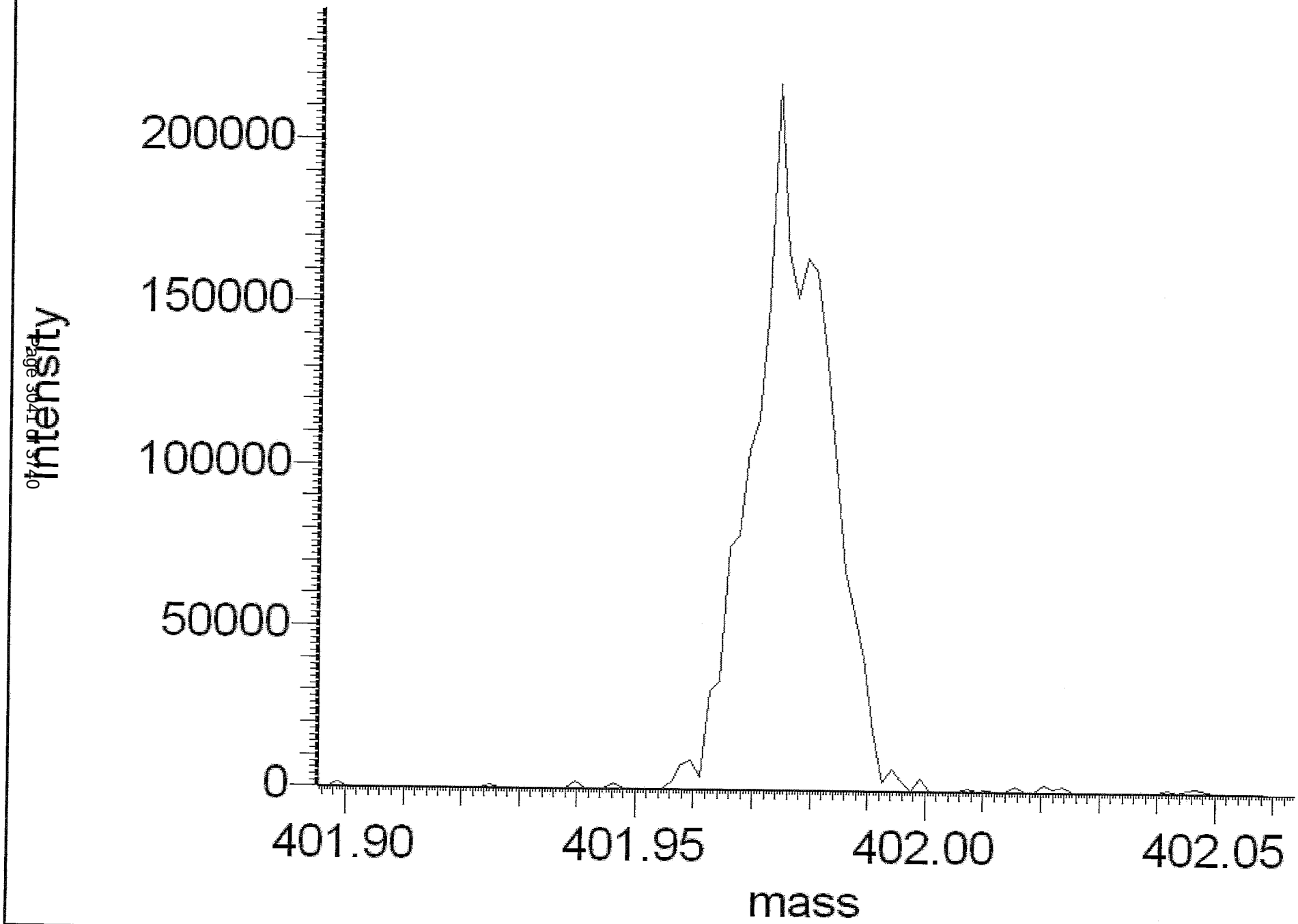
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 11711 (08/17/16 20:29:22)



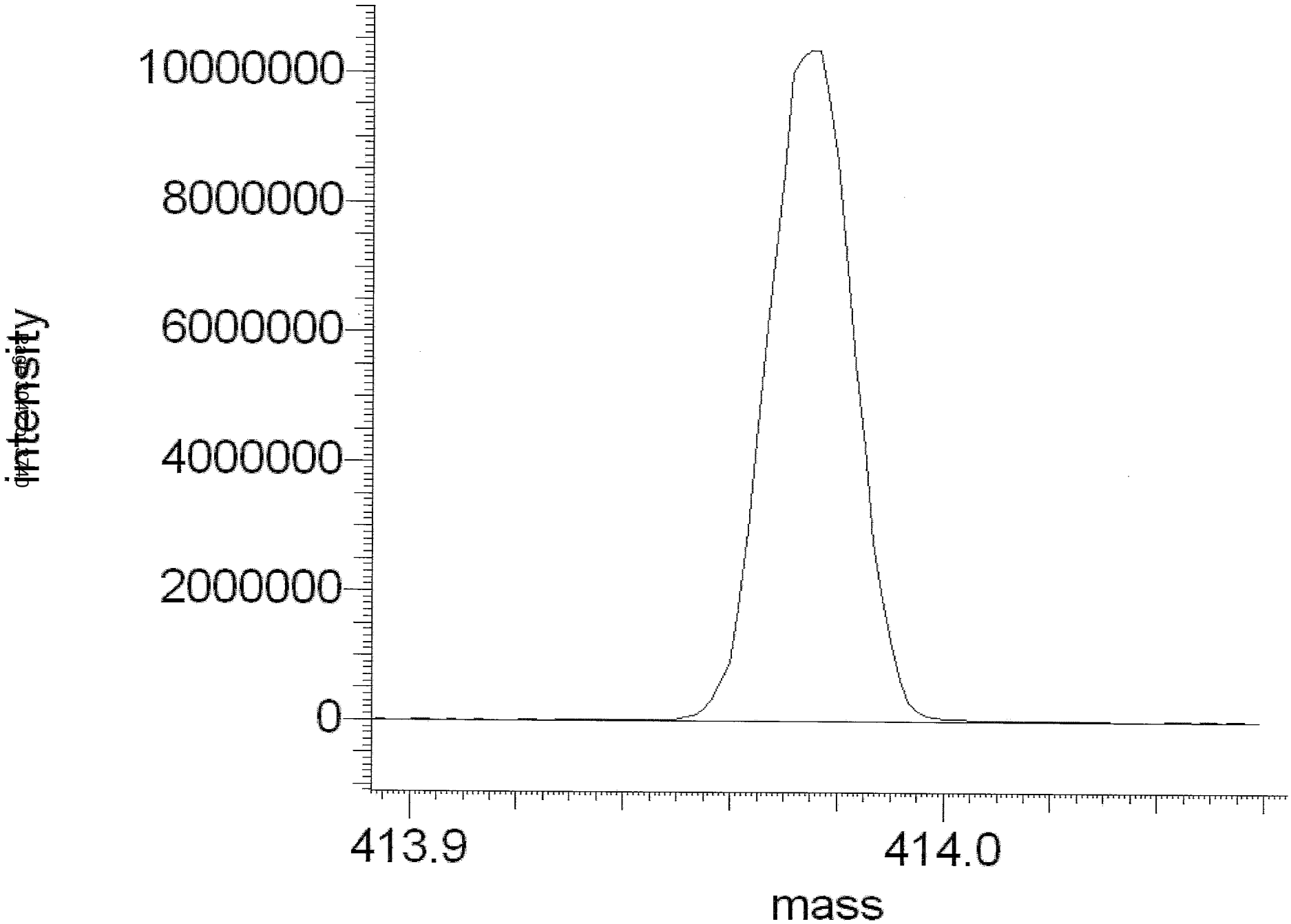
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 11711 (08/17/16 20:29:37)



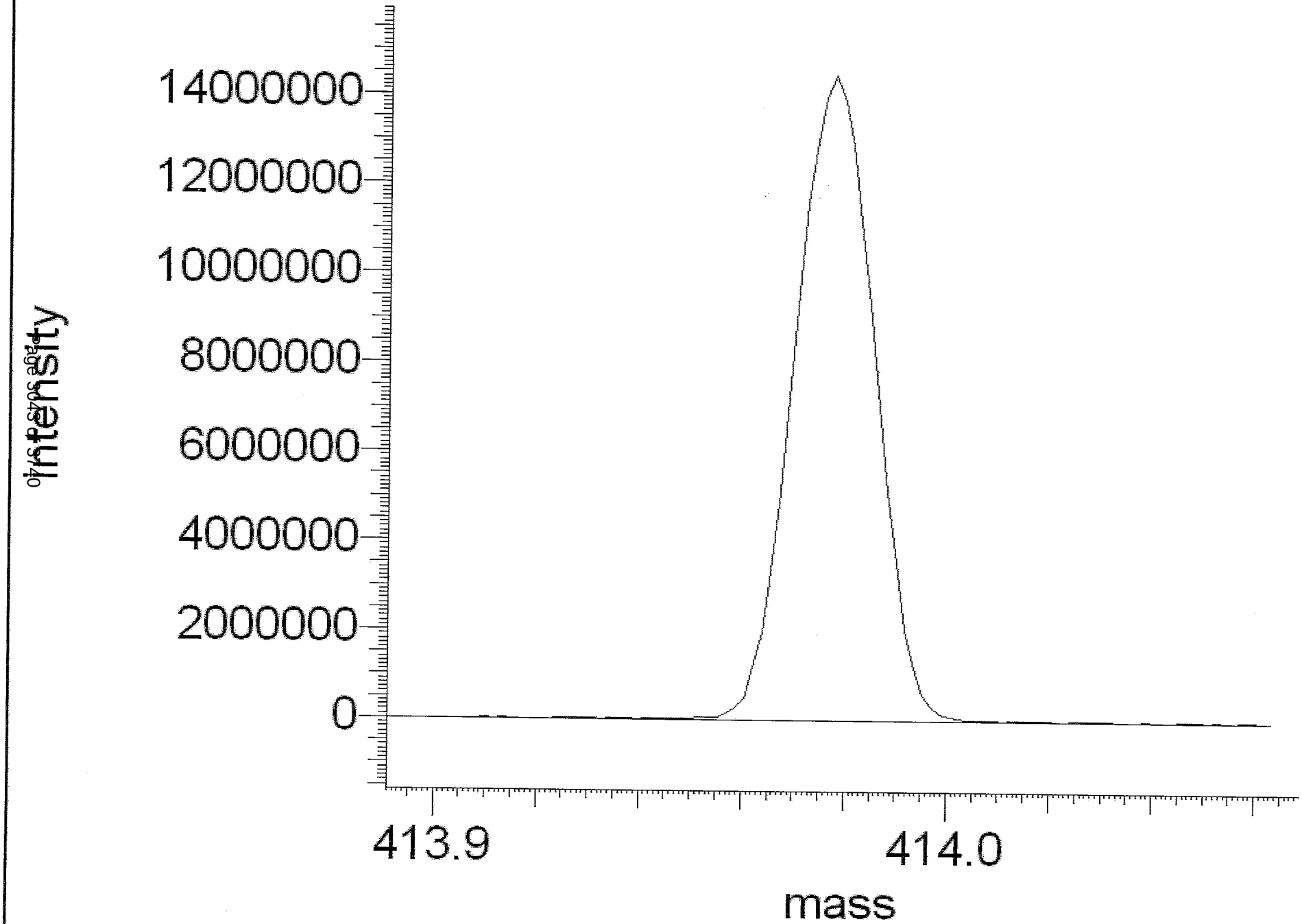
Mass: 401.9770 Instr.: DFS-1209
Resolution: 12082 (08/17/16 20:30:23)



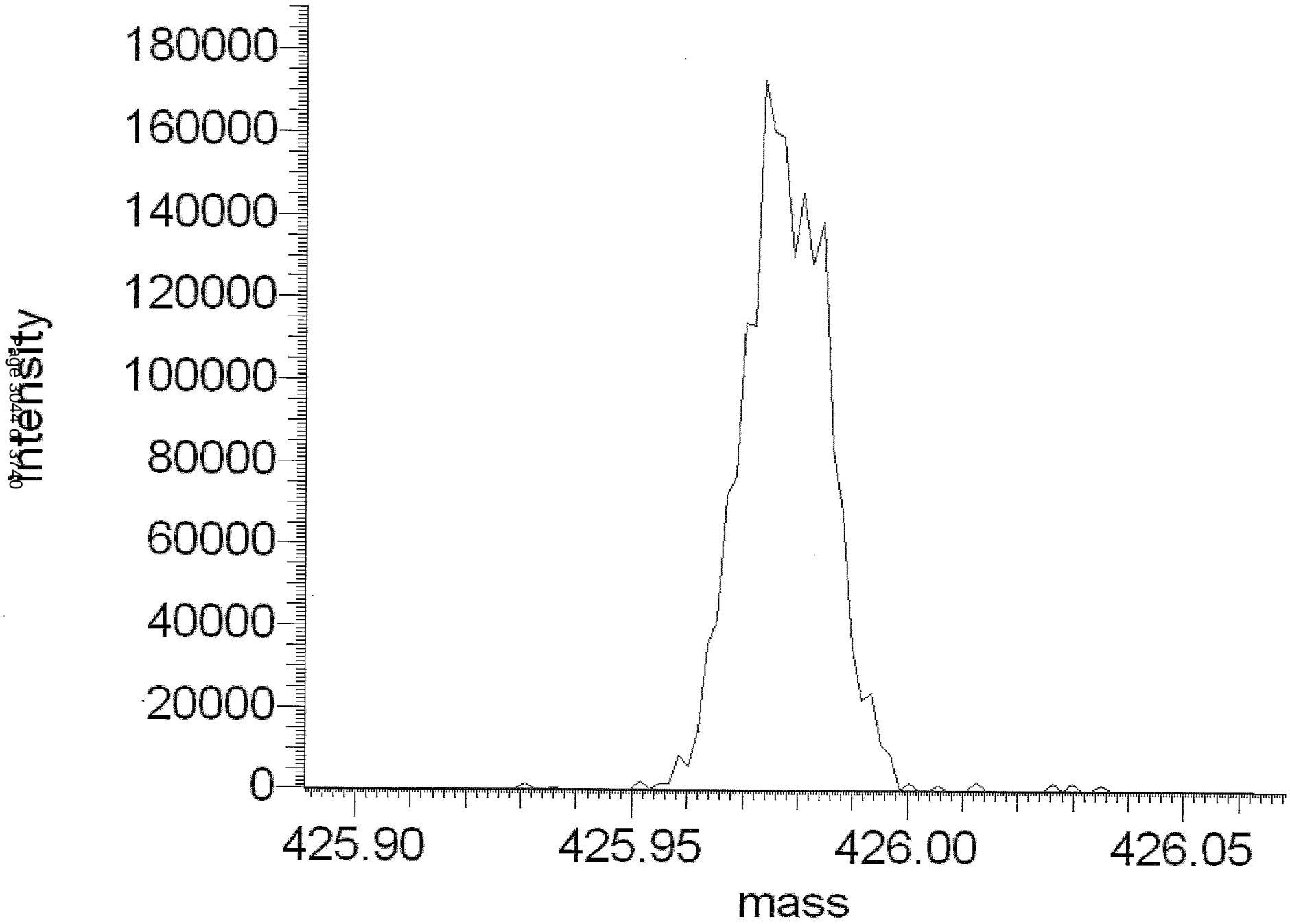
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 11949 (08/17/16 20:30:26)



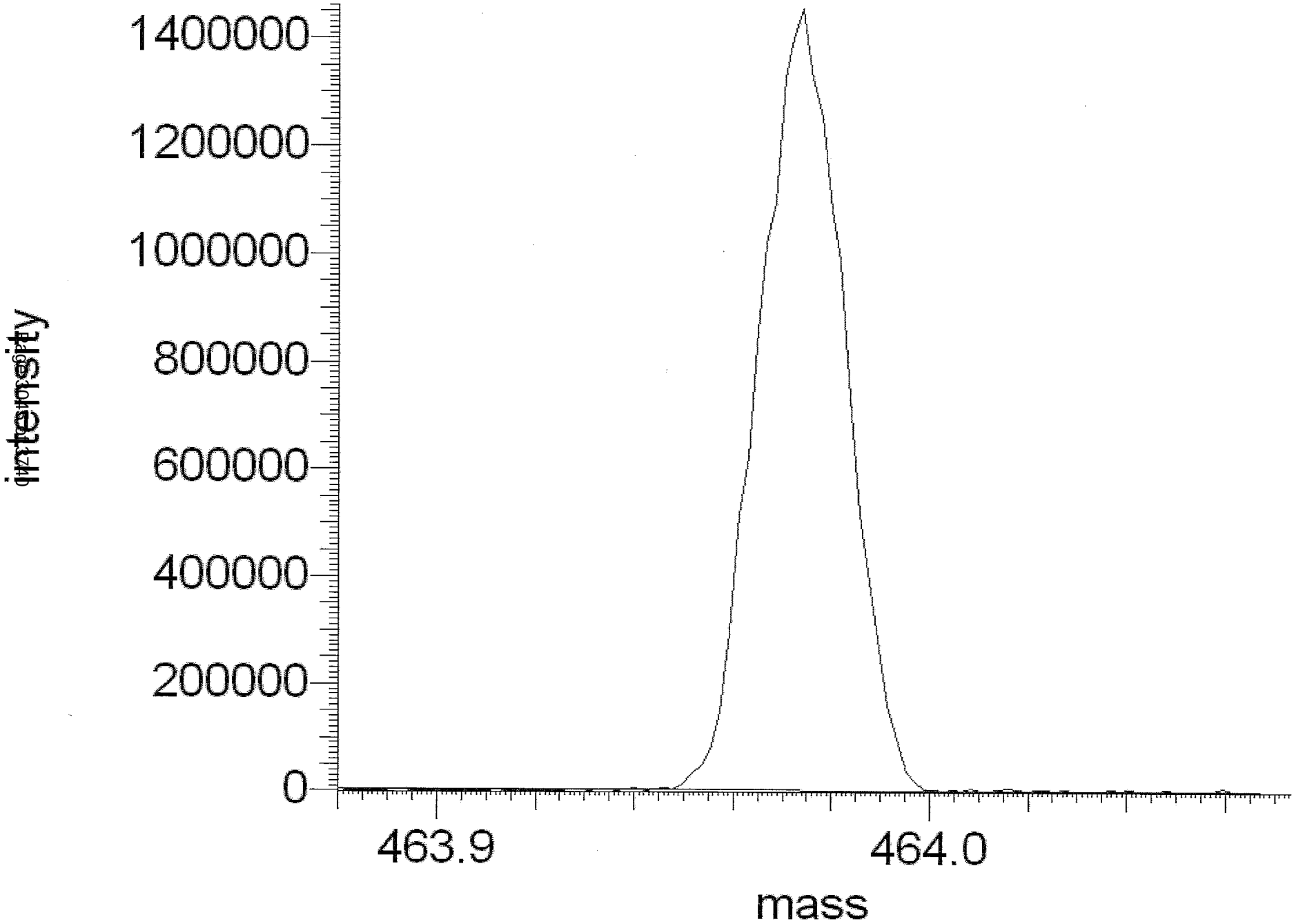
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 11949 (08/17/16 20:30:41)



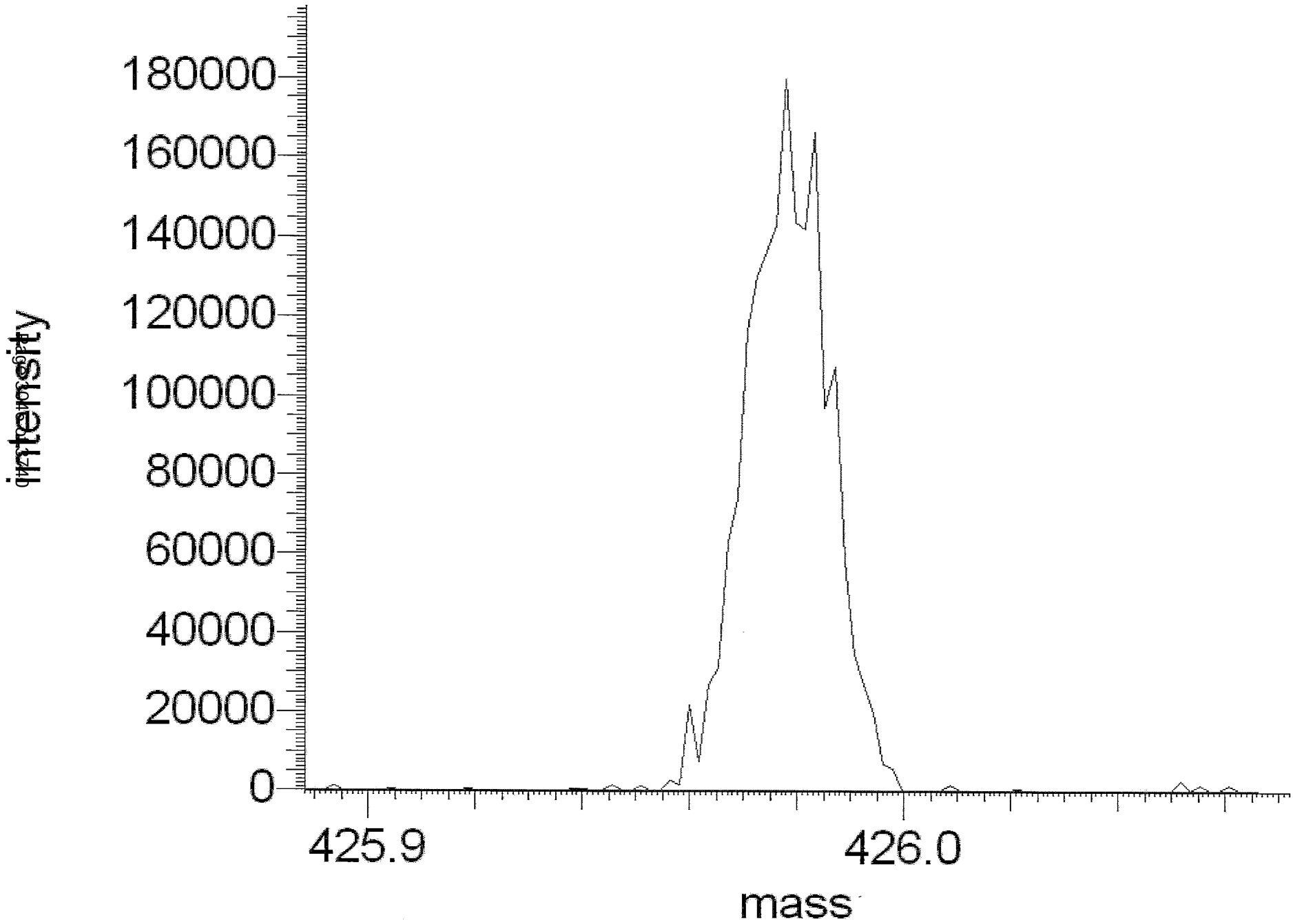
Mass: 425.9770 Instr.: DFS-1209
Resolution: 12110 (08/17/16 20:31:28)



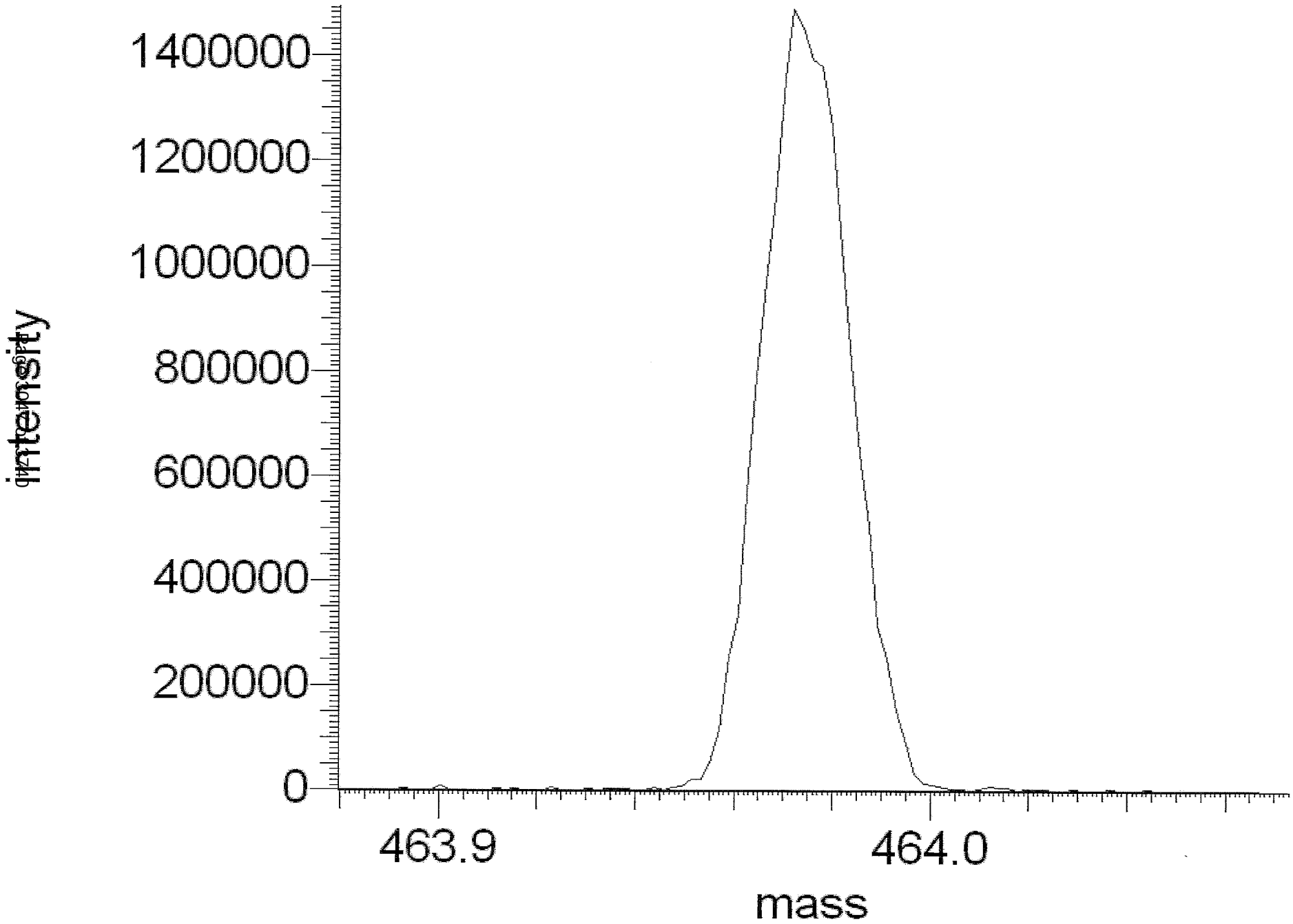
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 11893 (08/17/16 20:31:31)

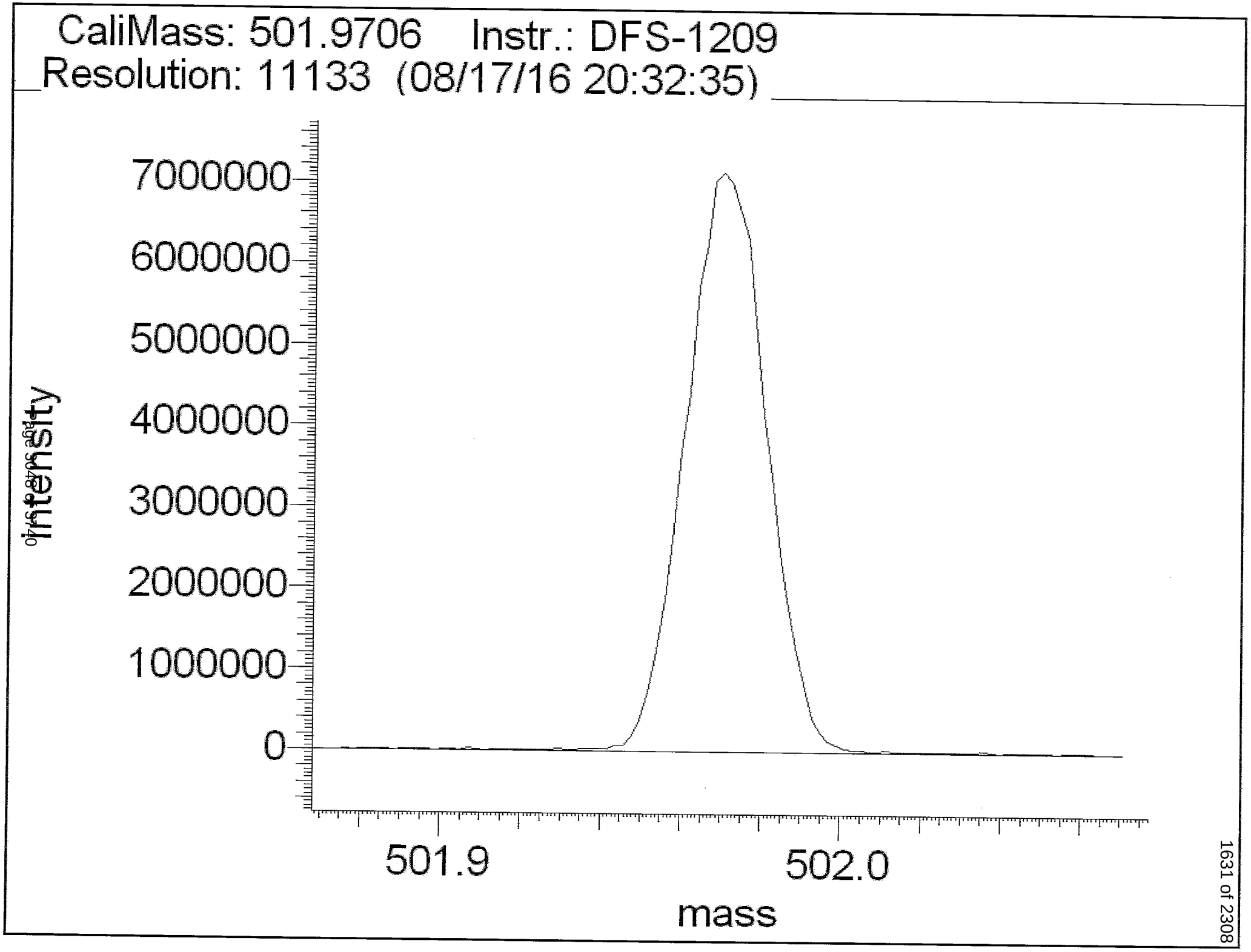


LockMass: 425.9775 Instr.: DFS-1209
Resolution: 11893 (08/17/16 20:31:46)

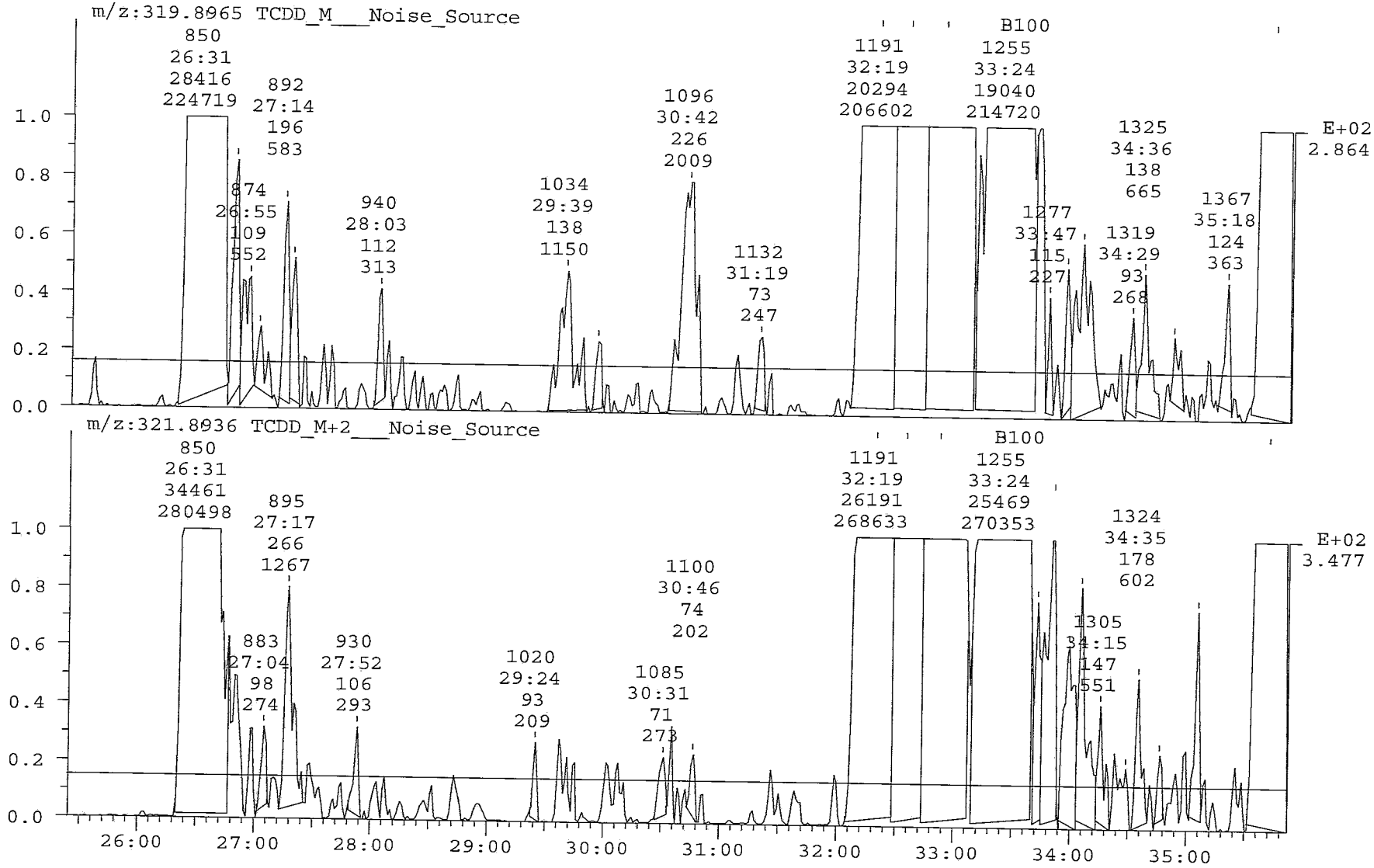


Mass: 463.9743 Instr.: DFS-1209
Resolution: 11857 (08/17/16 20:32:32)

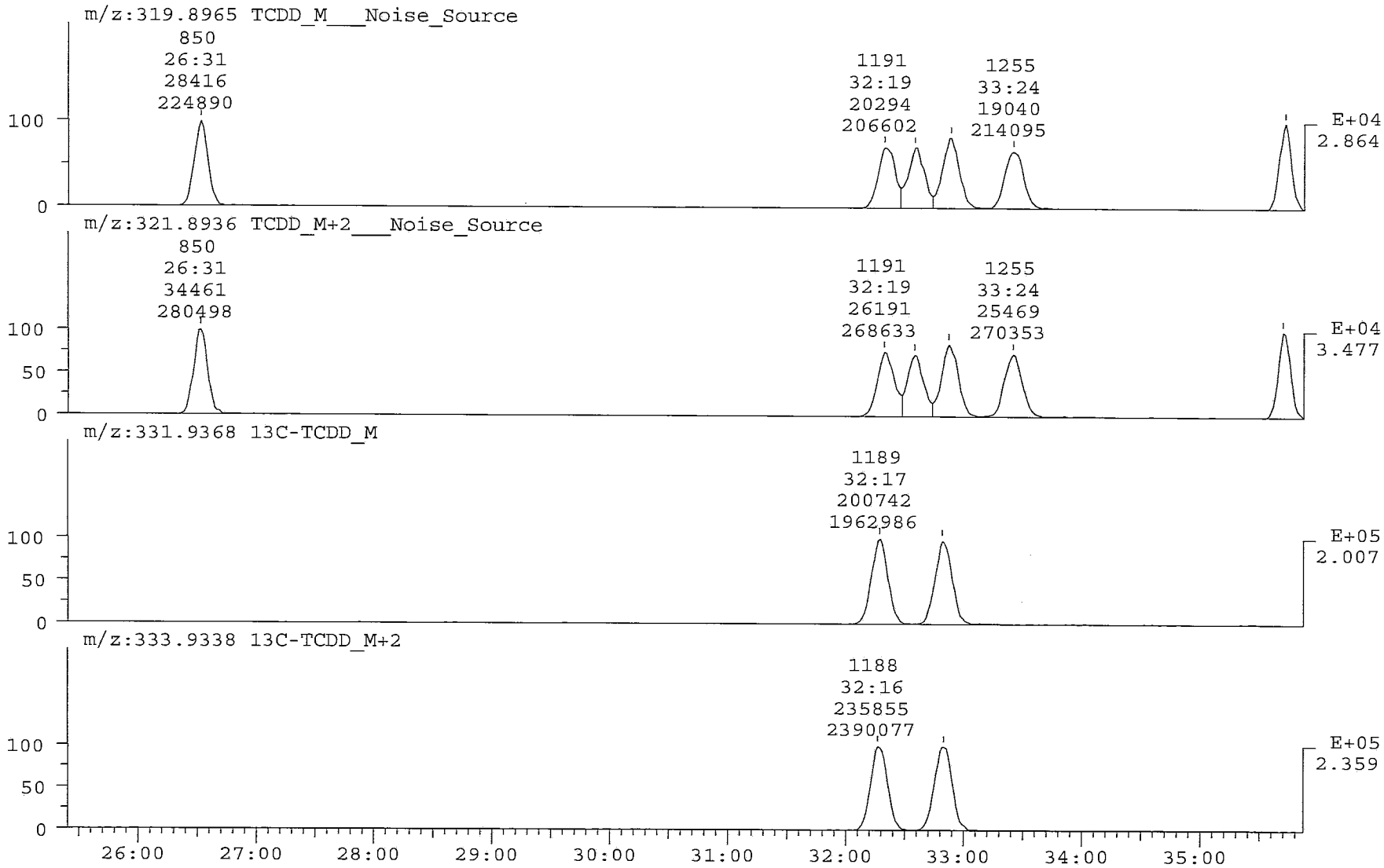



CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 11133 (08/17/16 20:32:35)
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
Intensity
501.9
502.0
mass

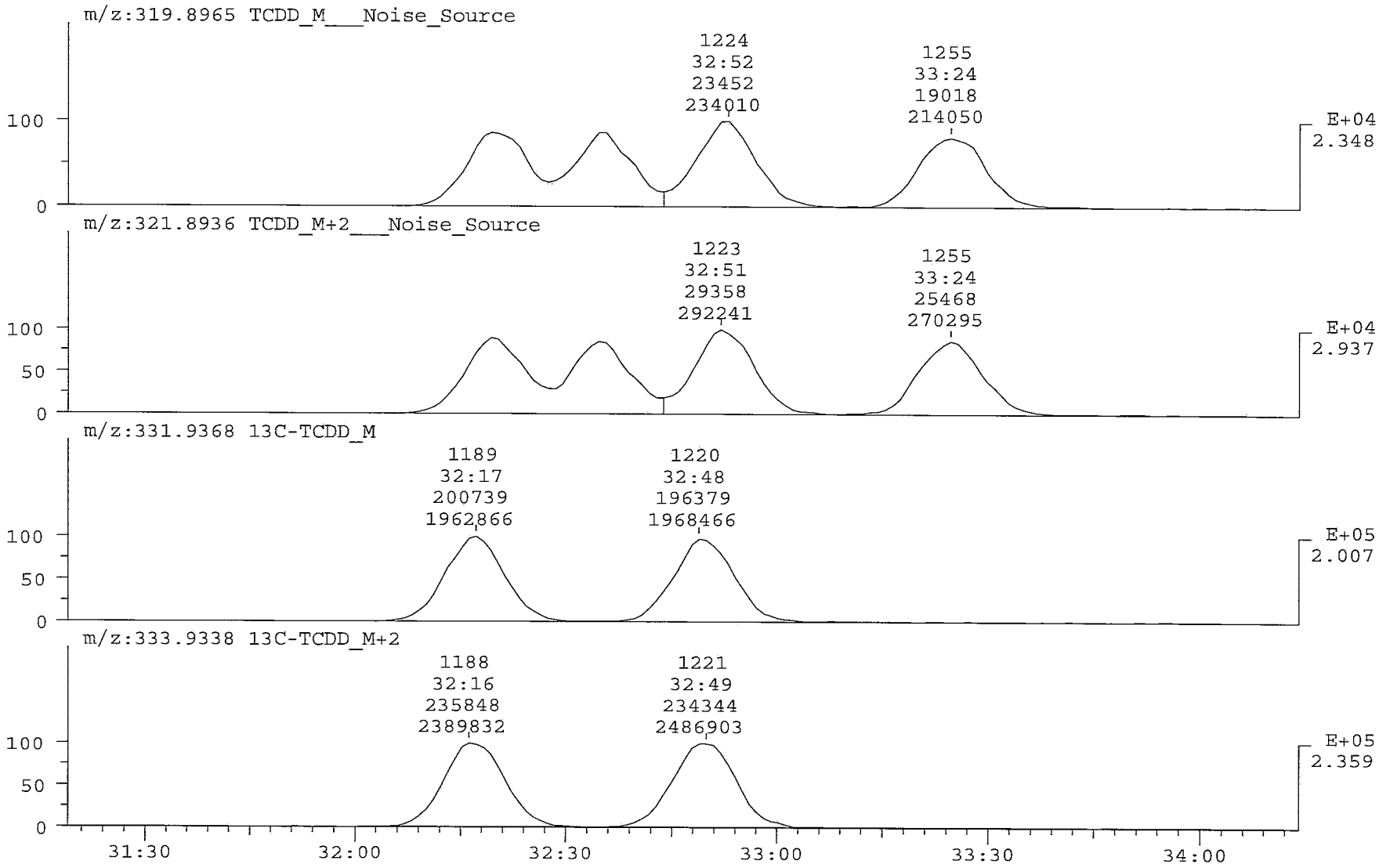
CHRO: d1160817s2 17-Aug-16 Elapse: 12:04.5 1
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 784 > 1399 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



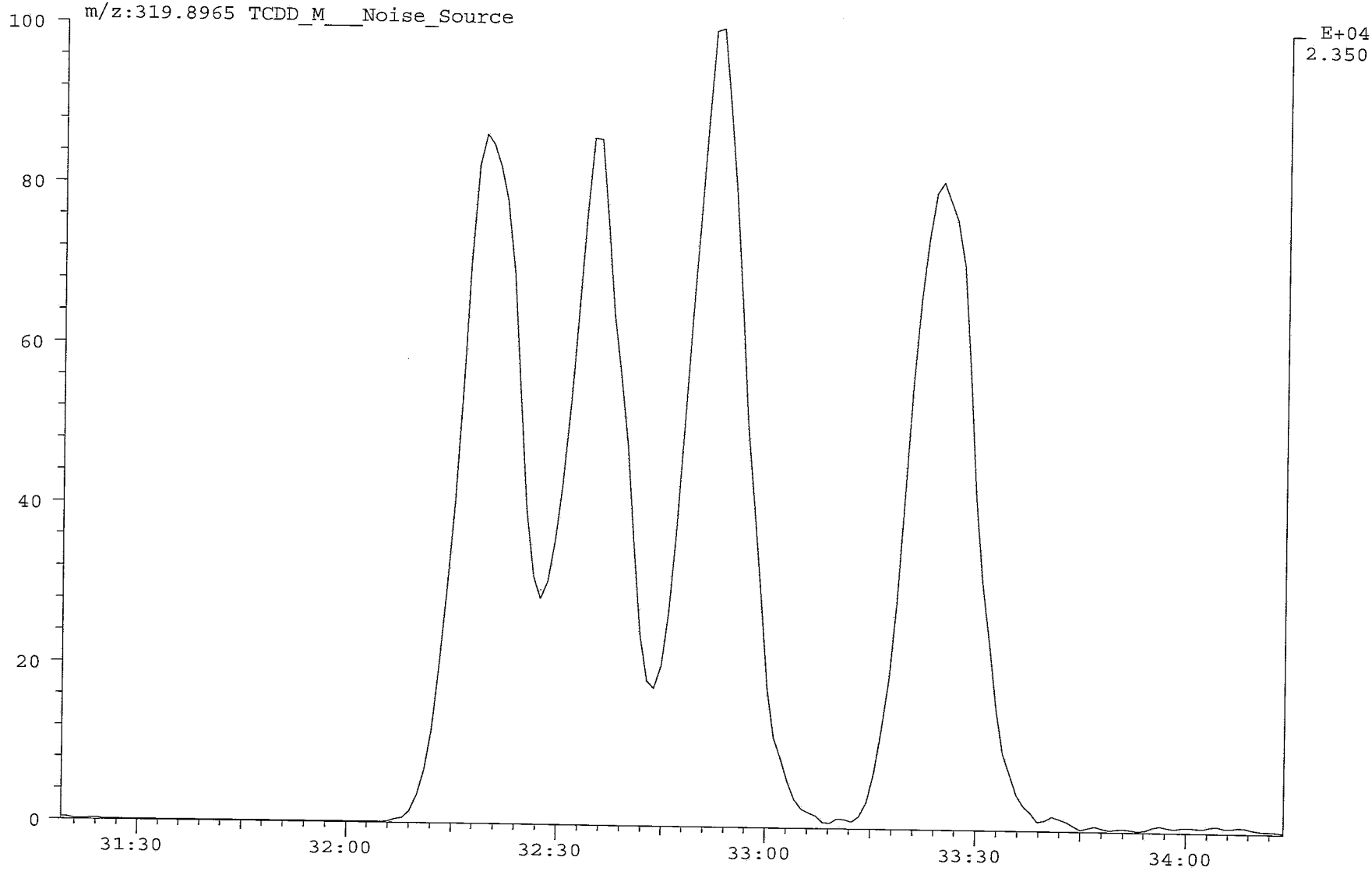
CHRO: d1160817s2 17-Aug-16 Elapse: 12:04.5 1
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 784 > 1399 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



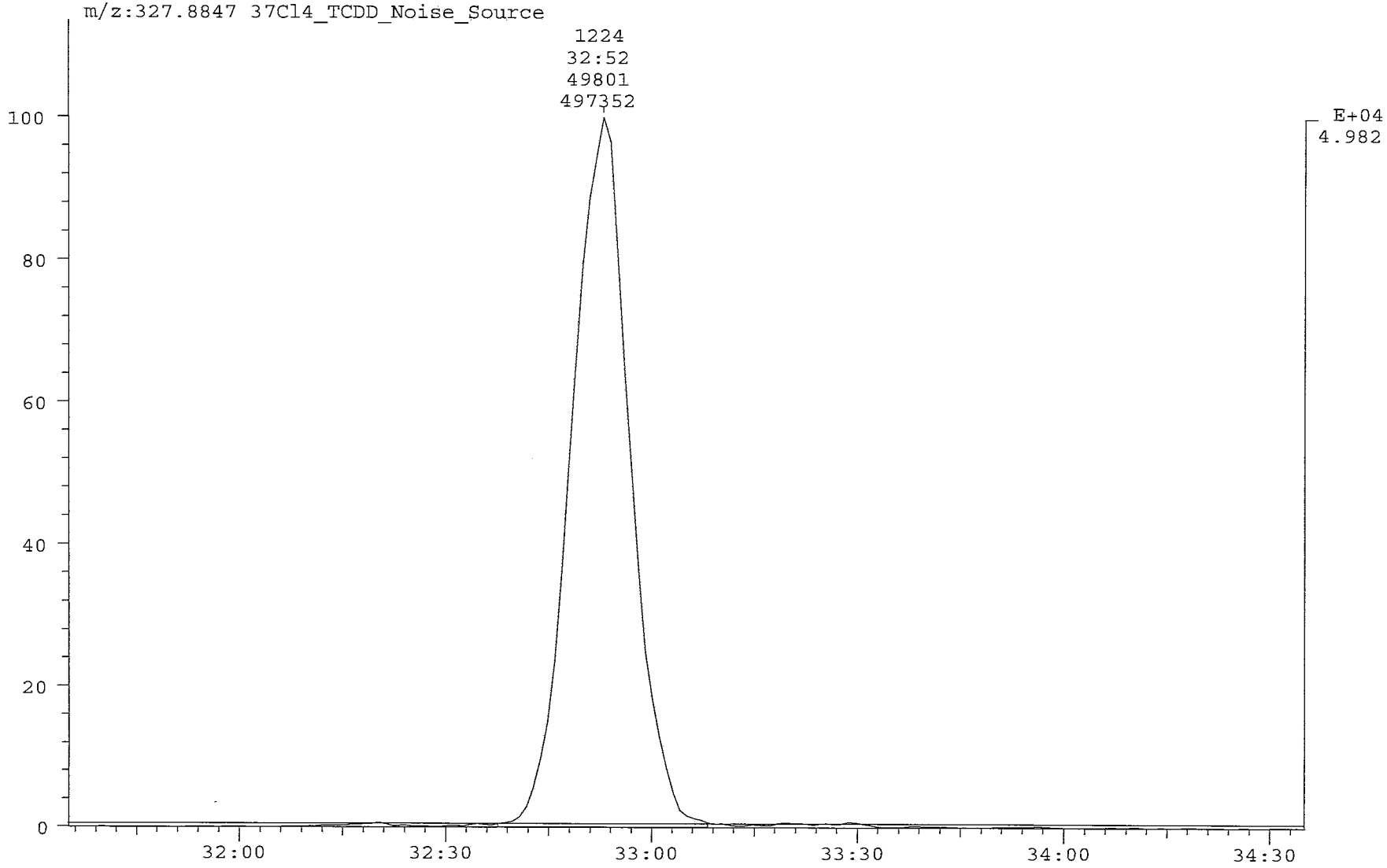
```
CHRO:  d1160817s2                          17-Aug-16   Elapse:  32:45      1217
Samp:  WO=4966:41 Meth=F8o Dil=1                       Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                             Study :  VER/WIN
Oper:  KLR                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1132 > 1303       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



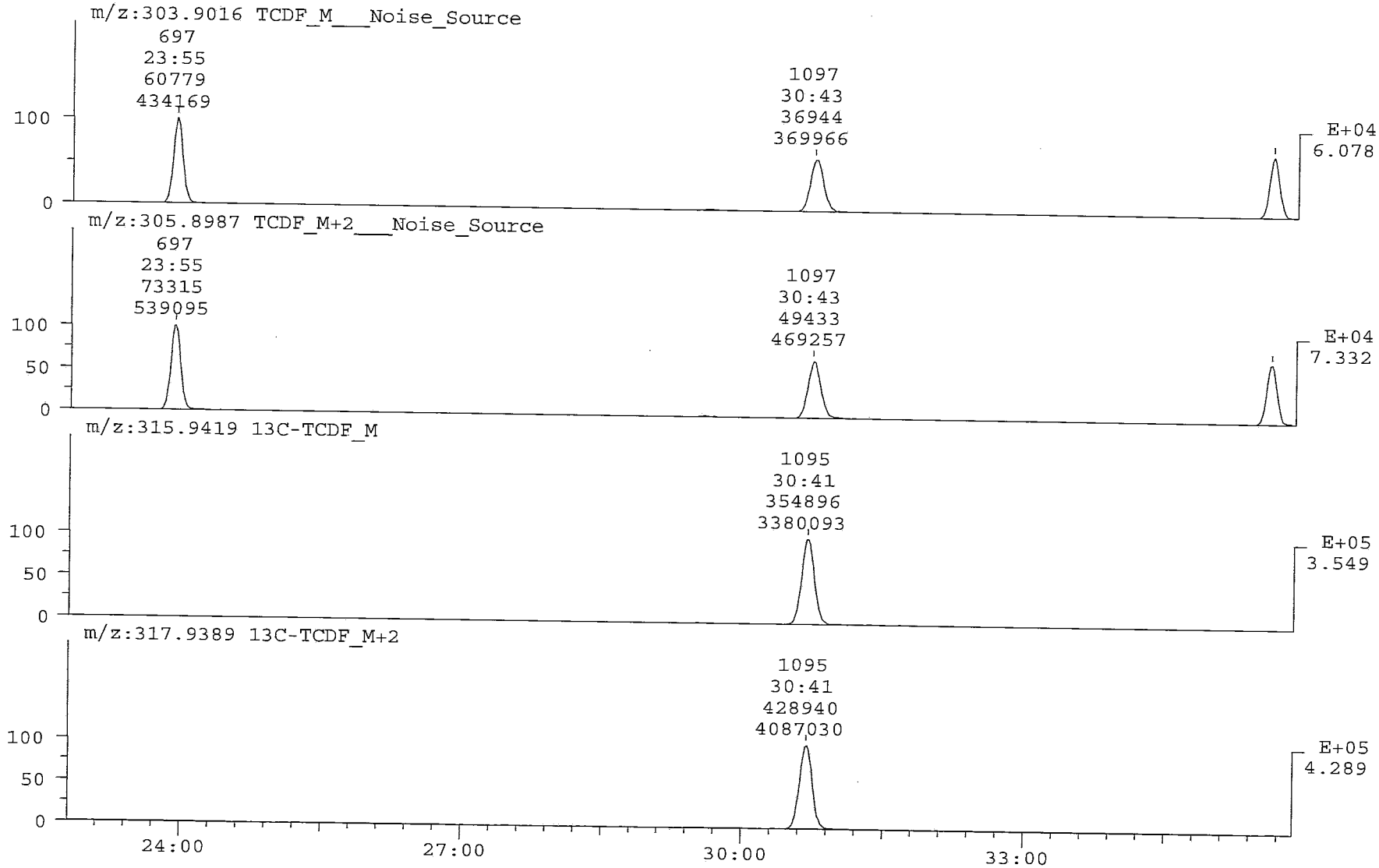
CHRO: d1160817s2 17-Aug-16 Elapse: 32:45 1217
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1132 > 1303 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



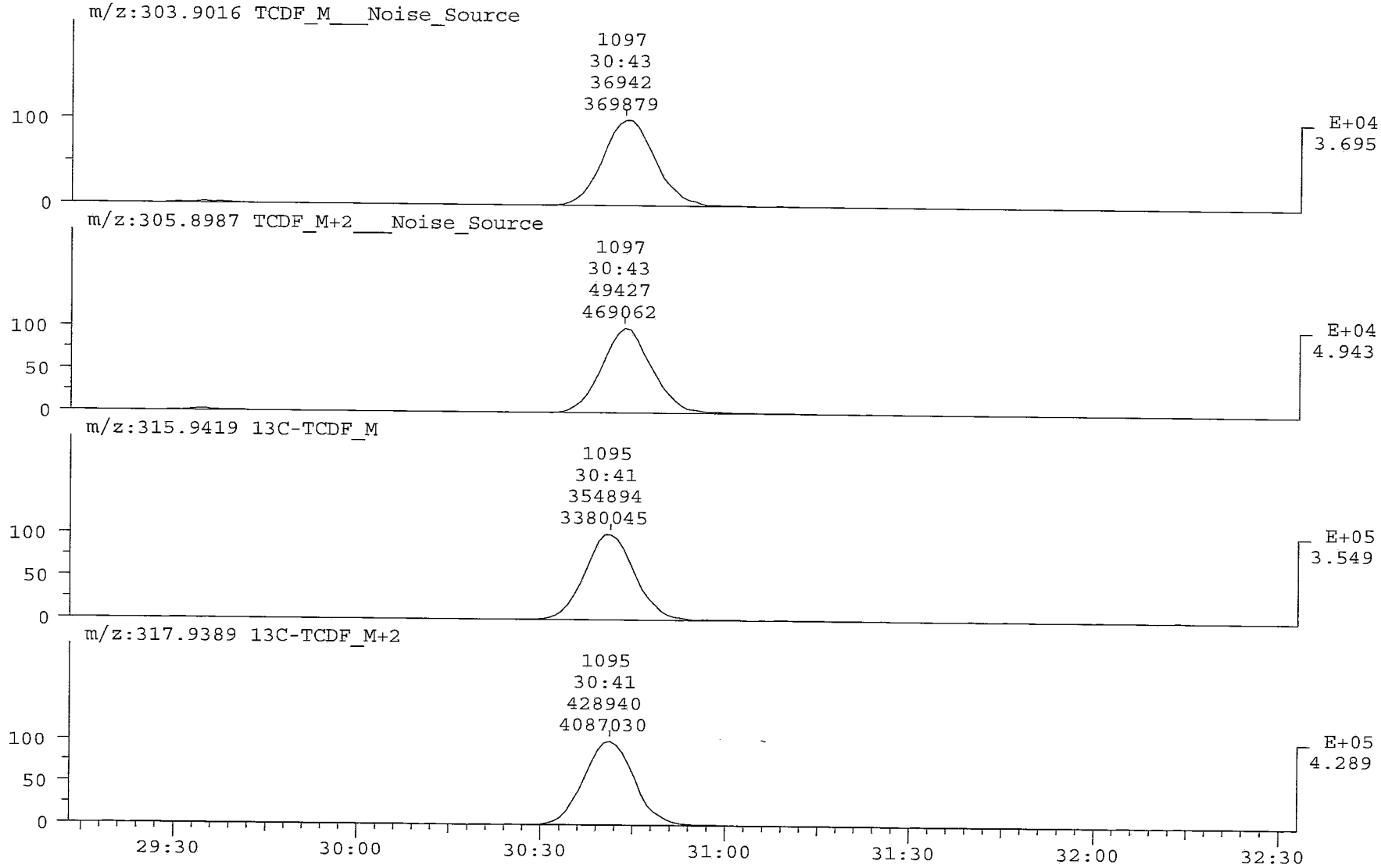
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  33:02      1233
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1148 > 1324      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



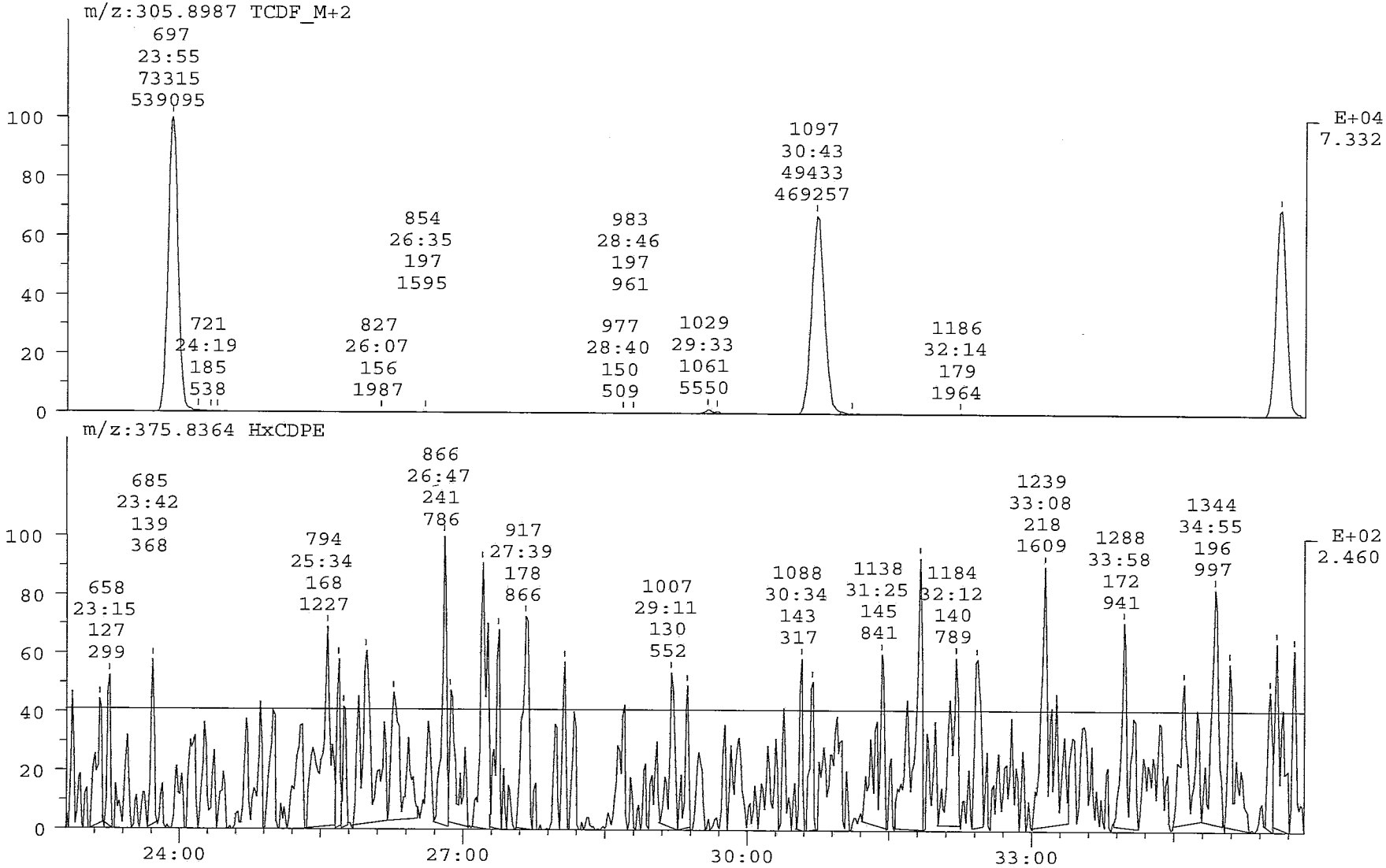
CHRO: d1160817s2 17-Aug-16 Elapse: 33:02 1233
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 631 > 1399 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



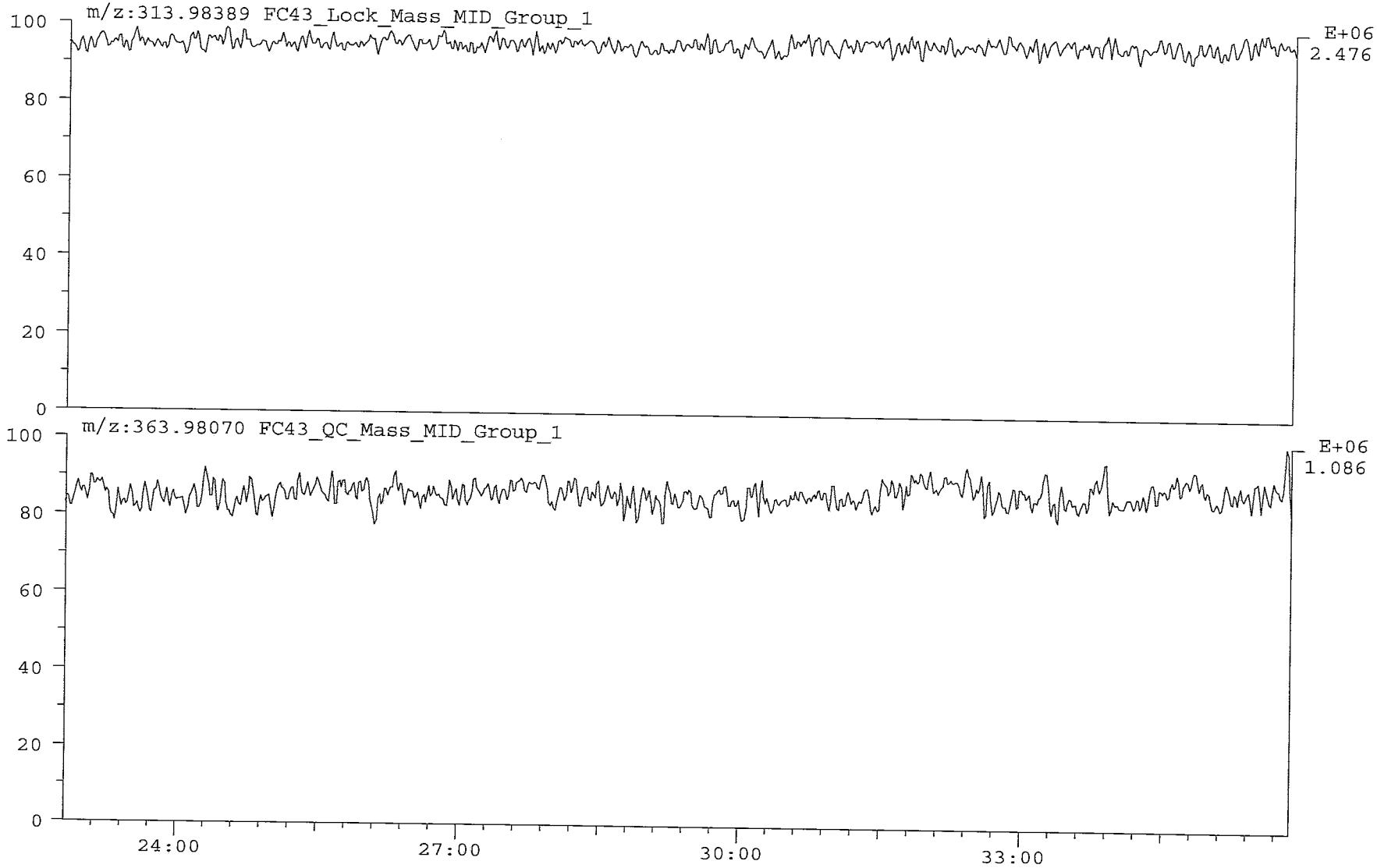
```
CHRO:  d1160817s2                                17-Aug-16   Elapse:  30:50      1104
Samp:  WO=4966:41 Meth=F8o Dil=1                             Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  VER/WIN
Oper:  KLR                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1009 > 1204             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  2, 5.0
Disp:  Height  Area
```



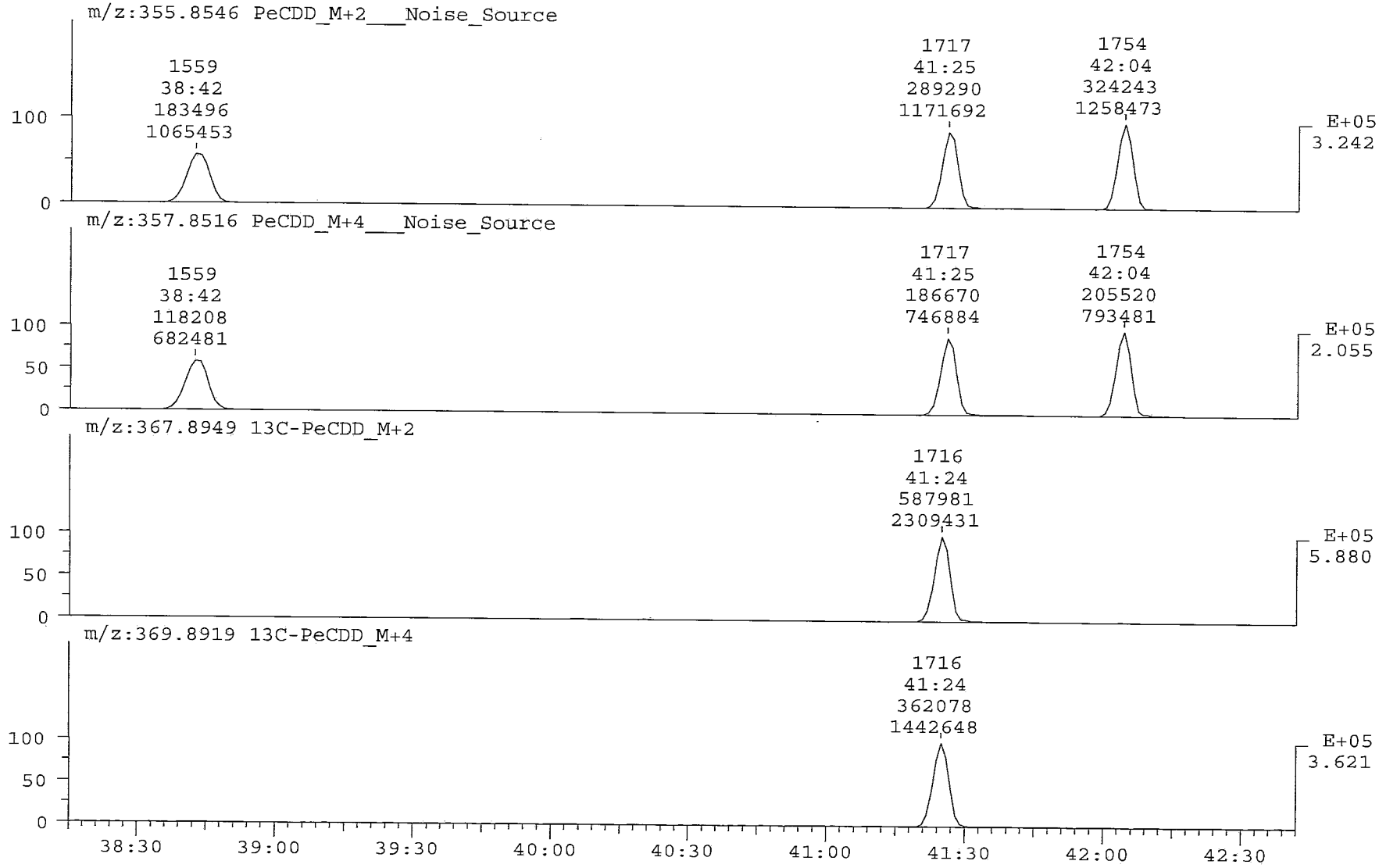
CHRO: d1160817s2 17-Aug-16 Elapse: 30:50 1104
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 631 > 1399 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



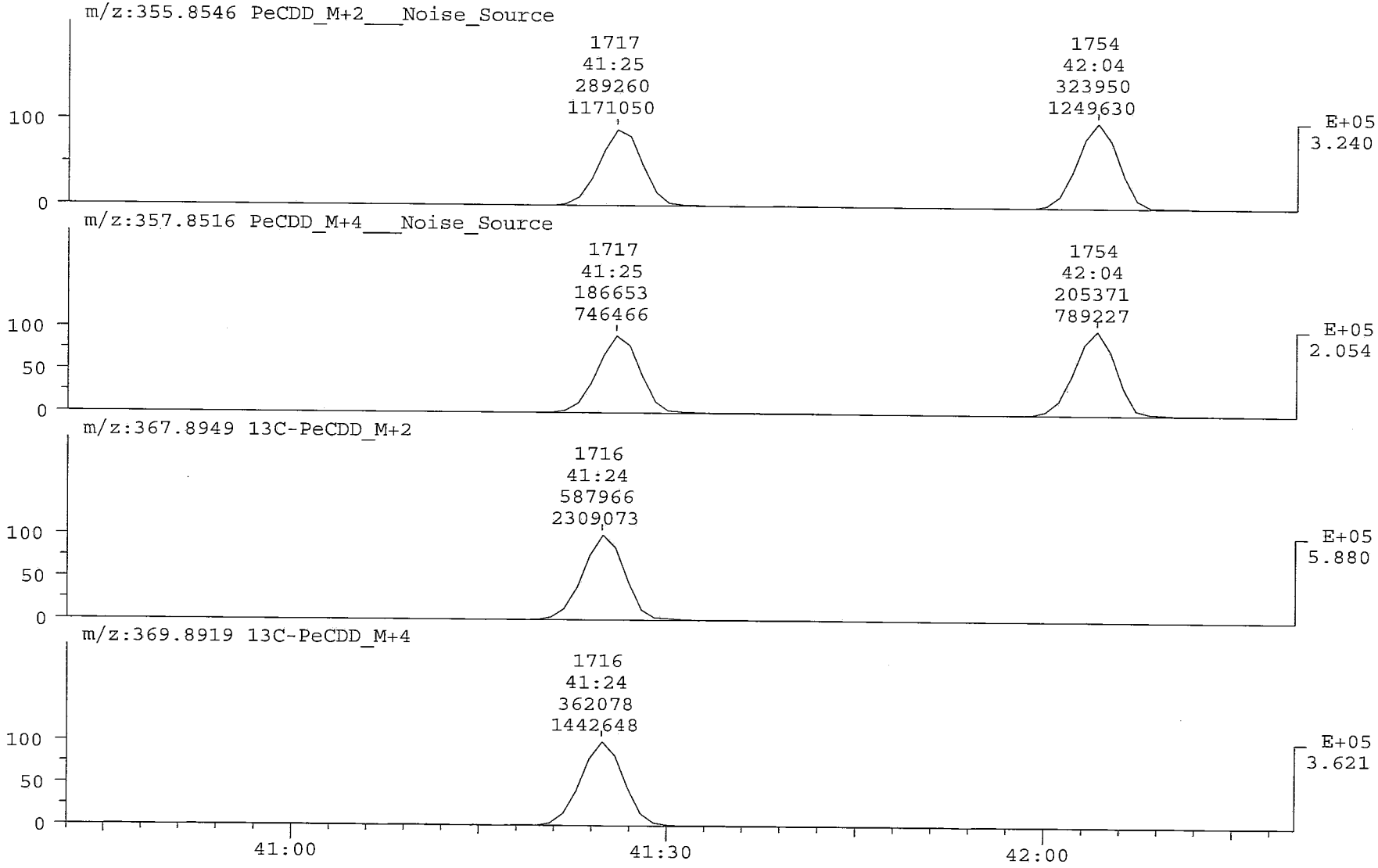
CHRO: d1160817s2 17-Aug-16 Elapse: 30:50 1104
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 631 > 1399 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



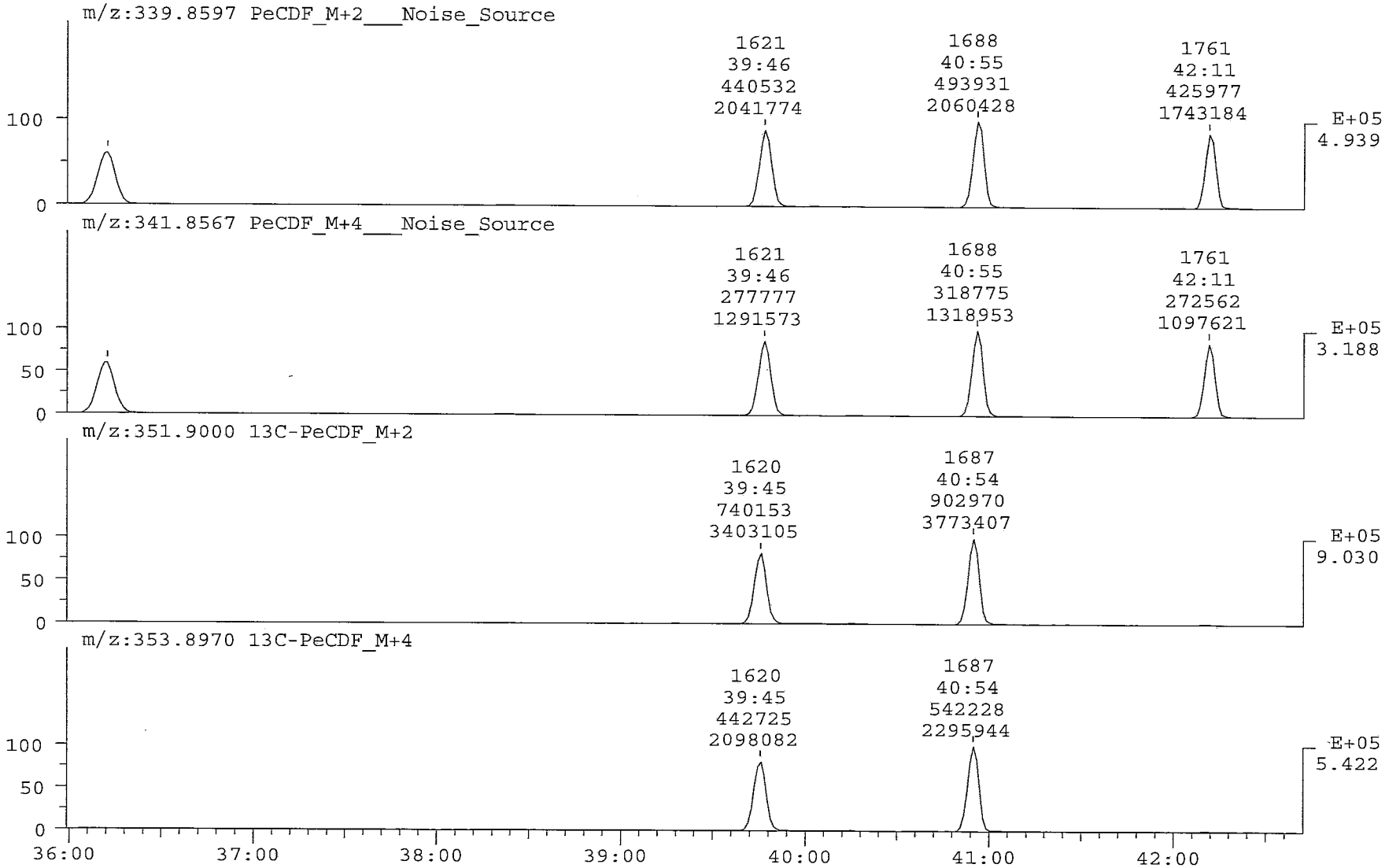
CHRO: d1160817s2 17-Aug-16 Elapse: 30:50 1104
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1533 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



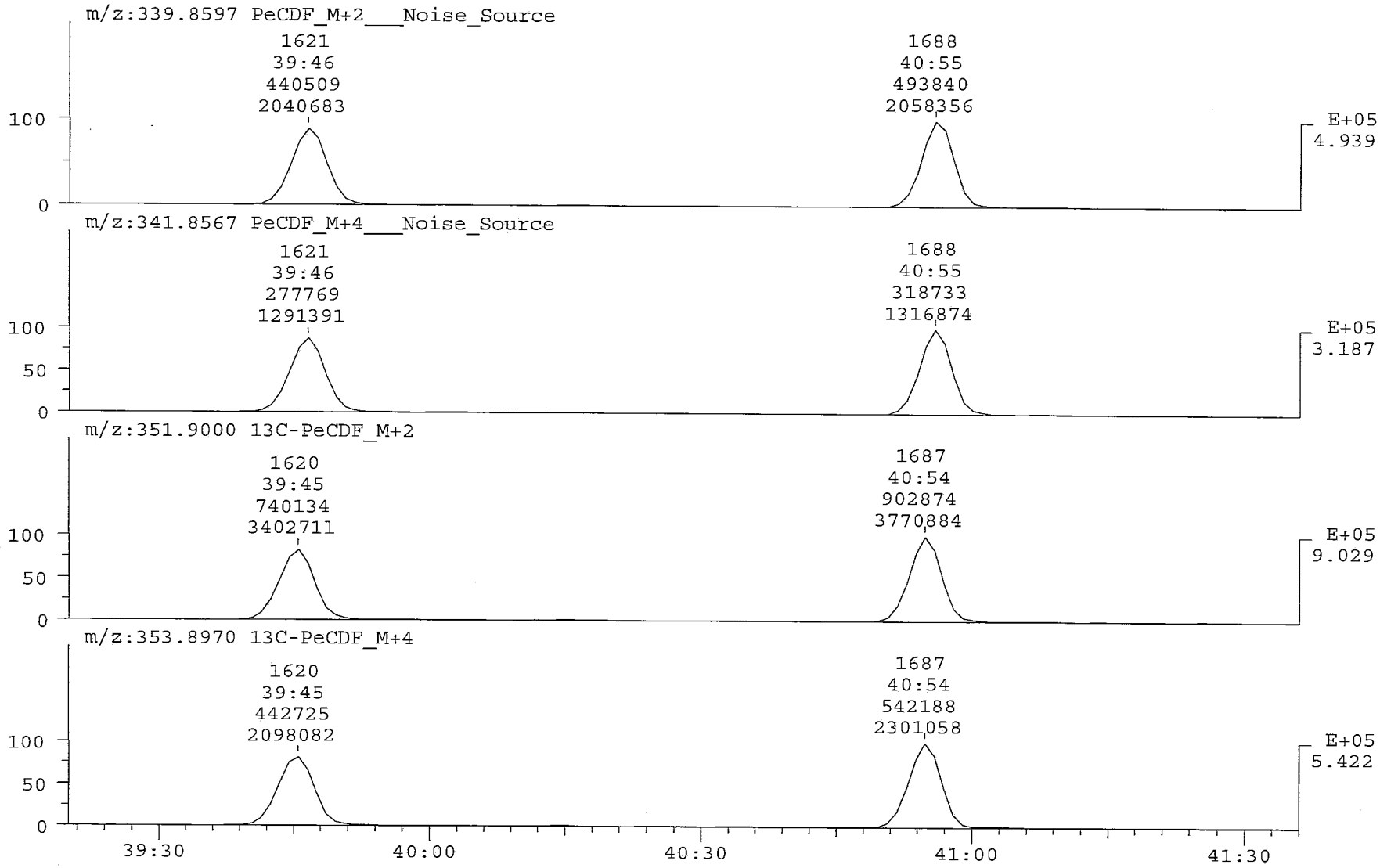
CHRO: d1160817s2 17-Aug-16 Elapse: 41:27 1719
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1675 > 1769 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



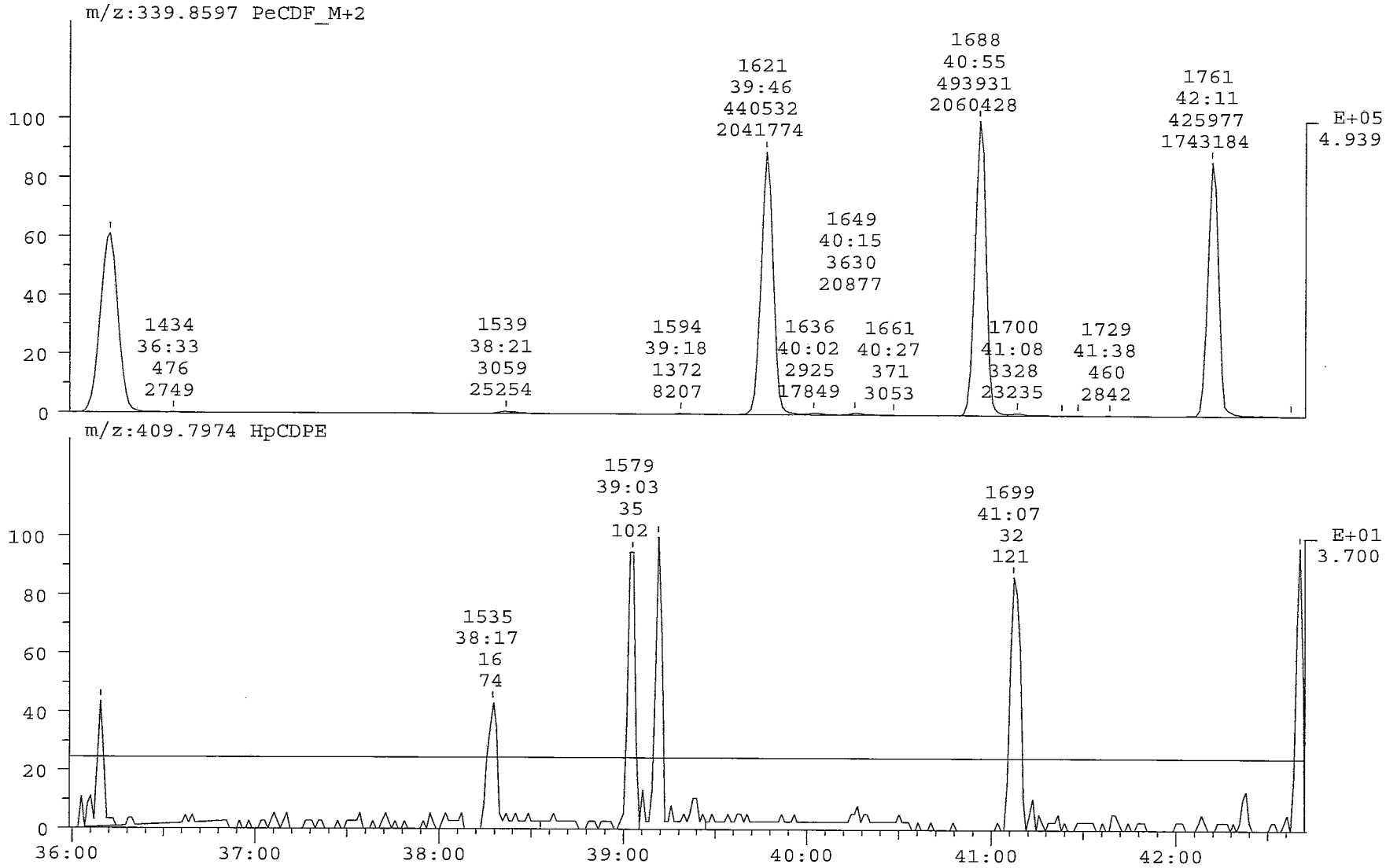
CHRO: d1160817s2 17-Aug-16 Elapse: 41:27 1719
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



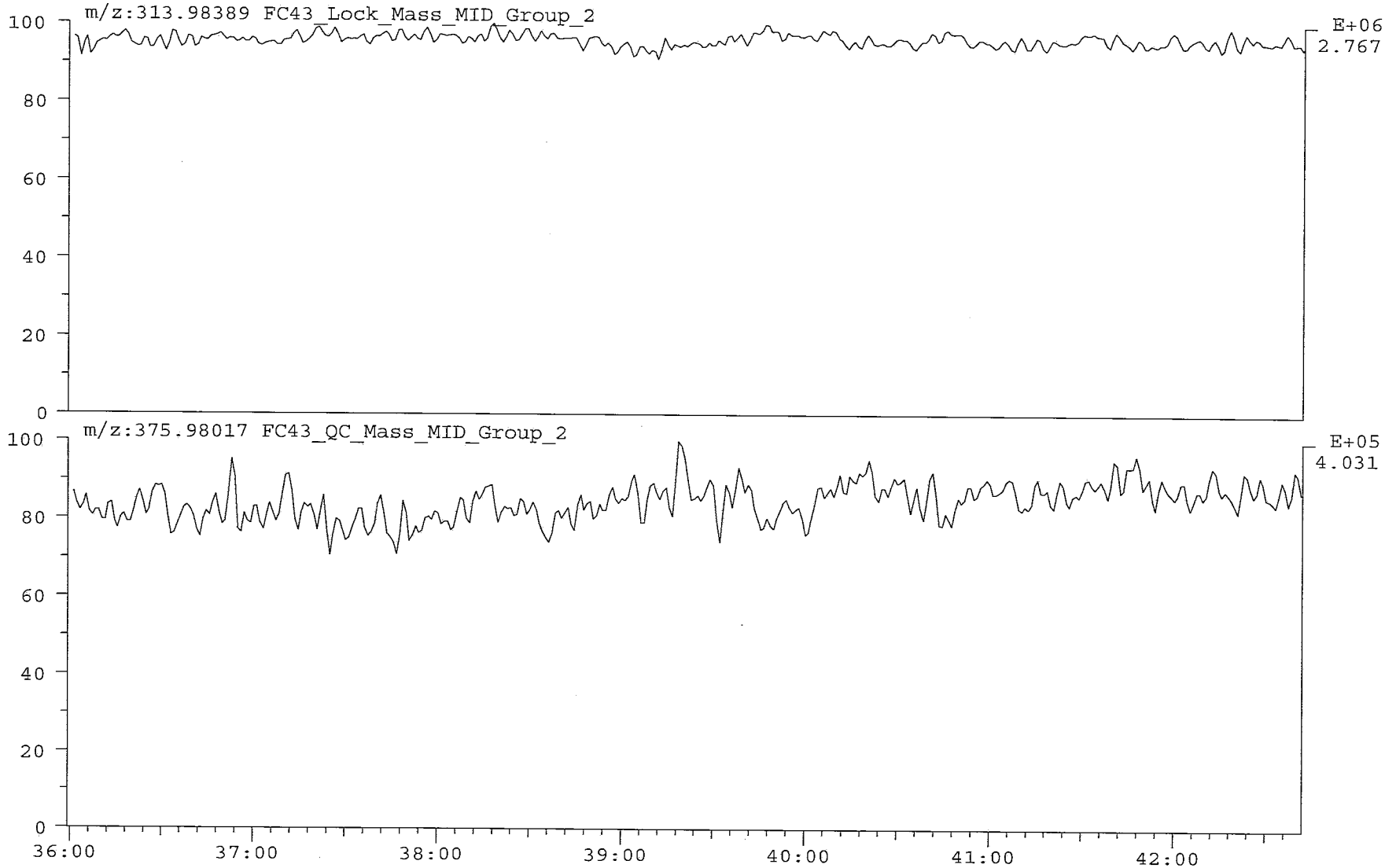
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  40:27      1661
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1595 > 1727      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



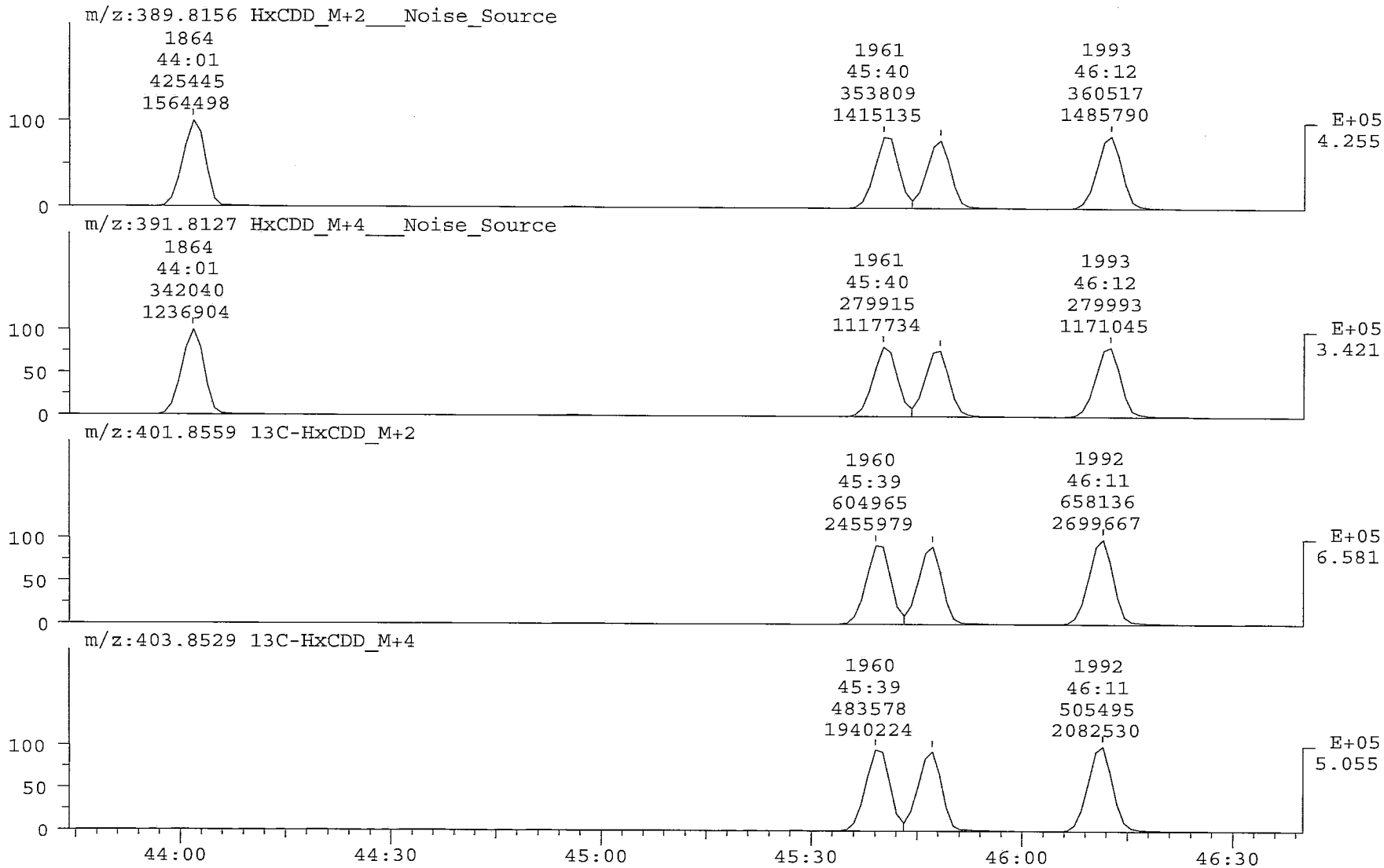
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  40:27      1661
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



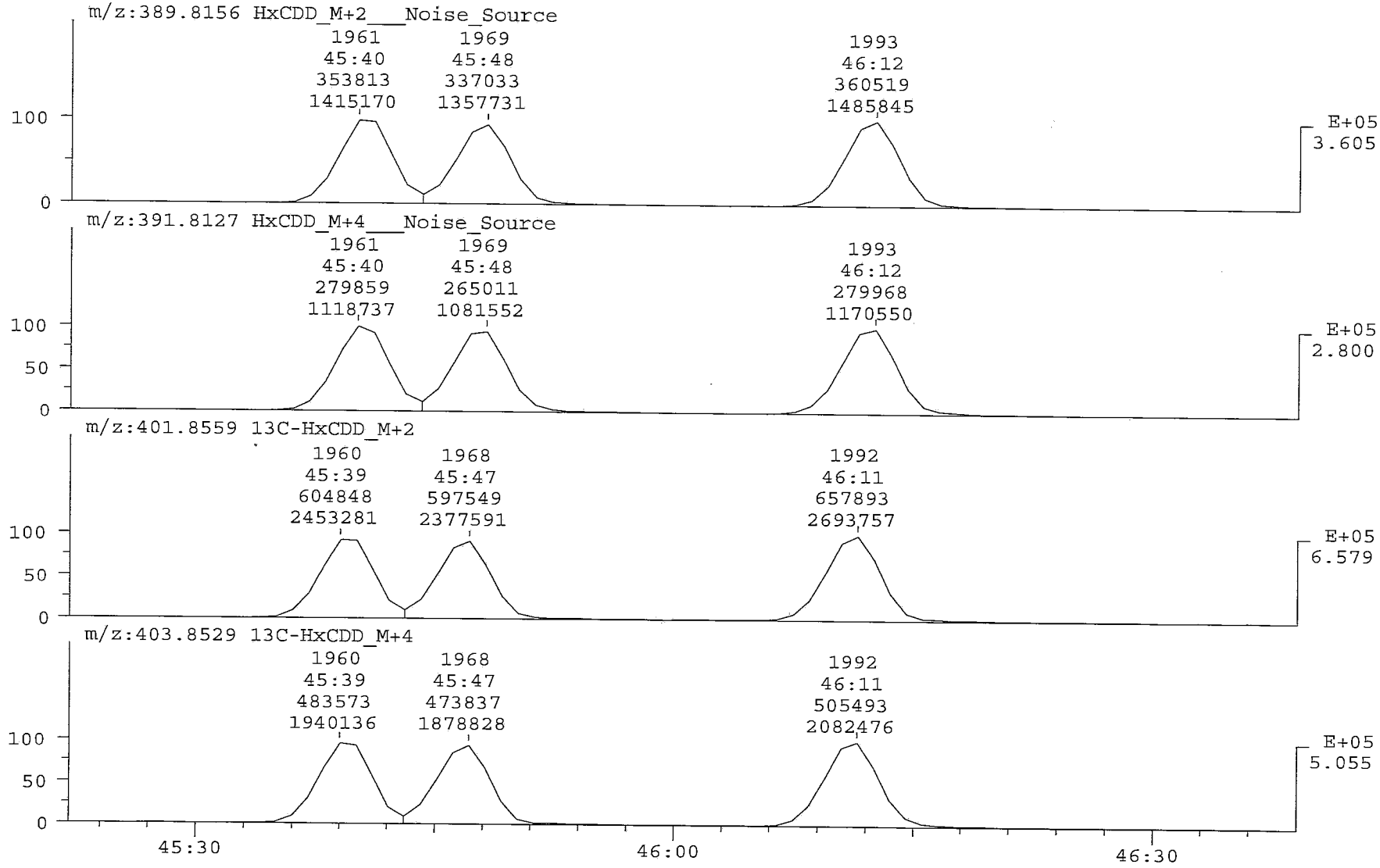
```
CHRO:  d1160817s2                                17-Aug-16  Elapse:  40:27      1661
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791            Masses:  303 > 514
Area:  5,. 0.50, 15    Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



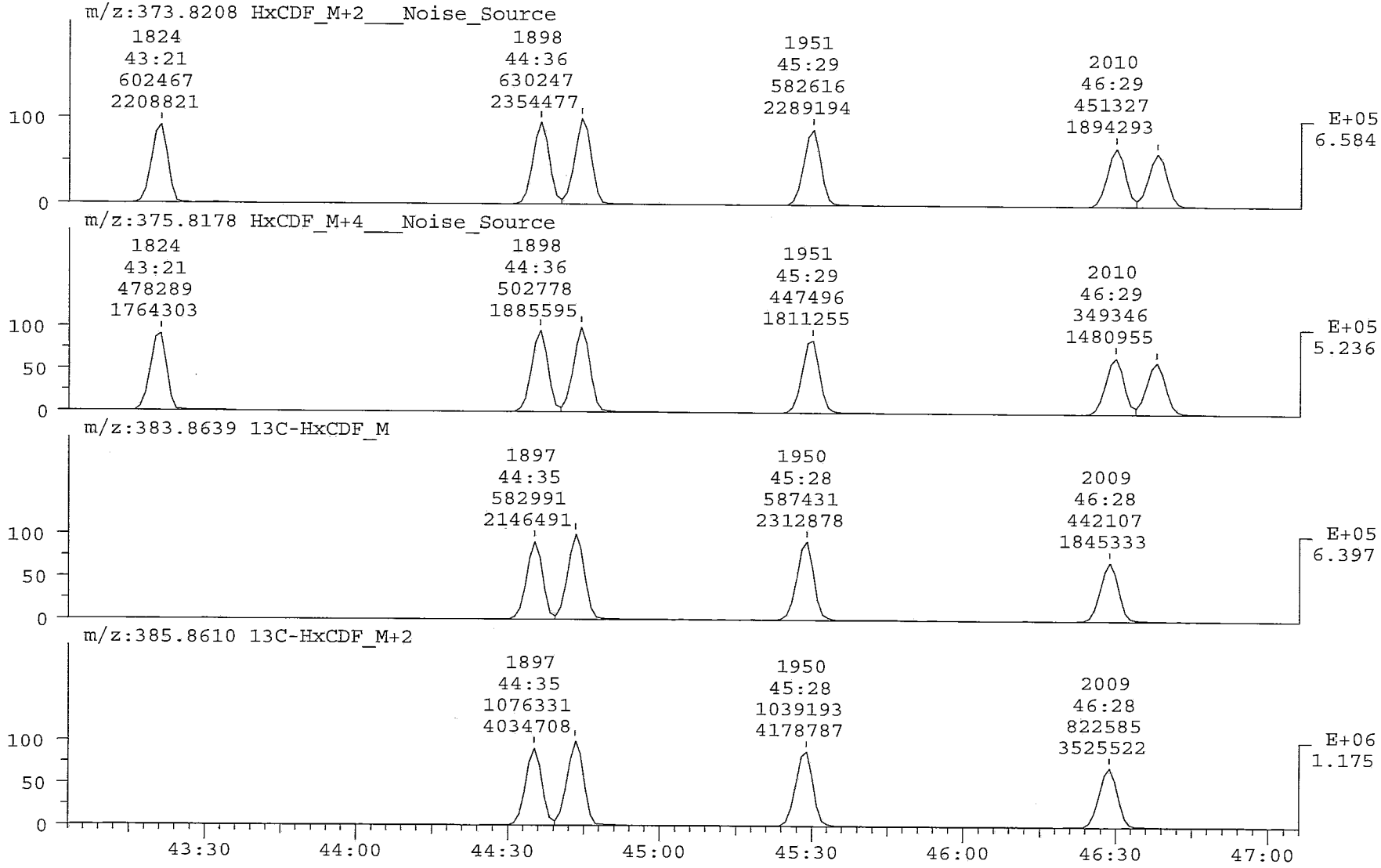
CHRO: d1160817s2 17-Aug-16 Elapse: 40:27 1661
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1847 > 2020 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



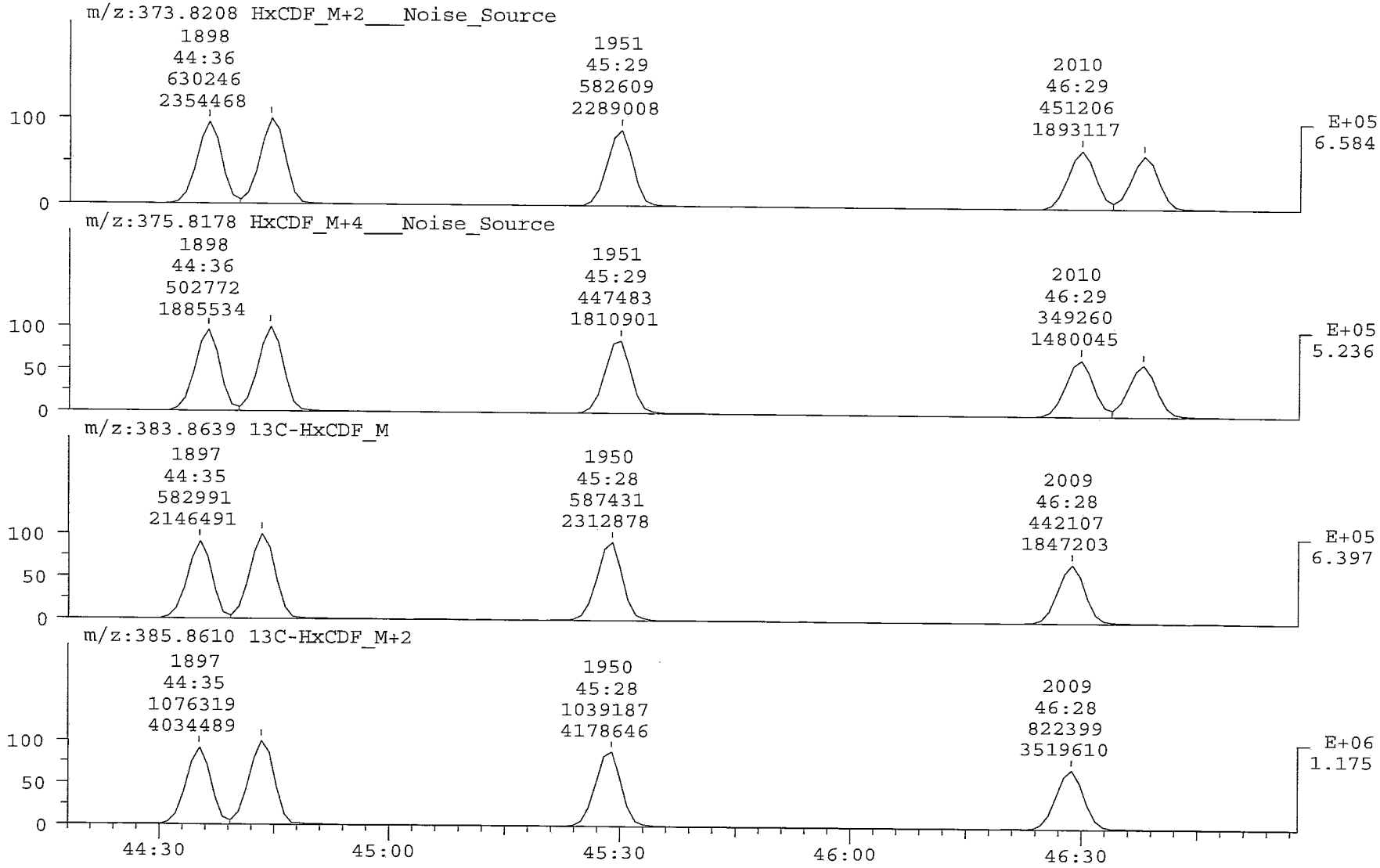
CHRO: d1160817s2 17-Aug-16 Elapse: 46:00 1981
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1943 > 2019 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



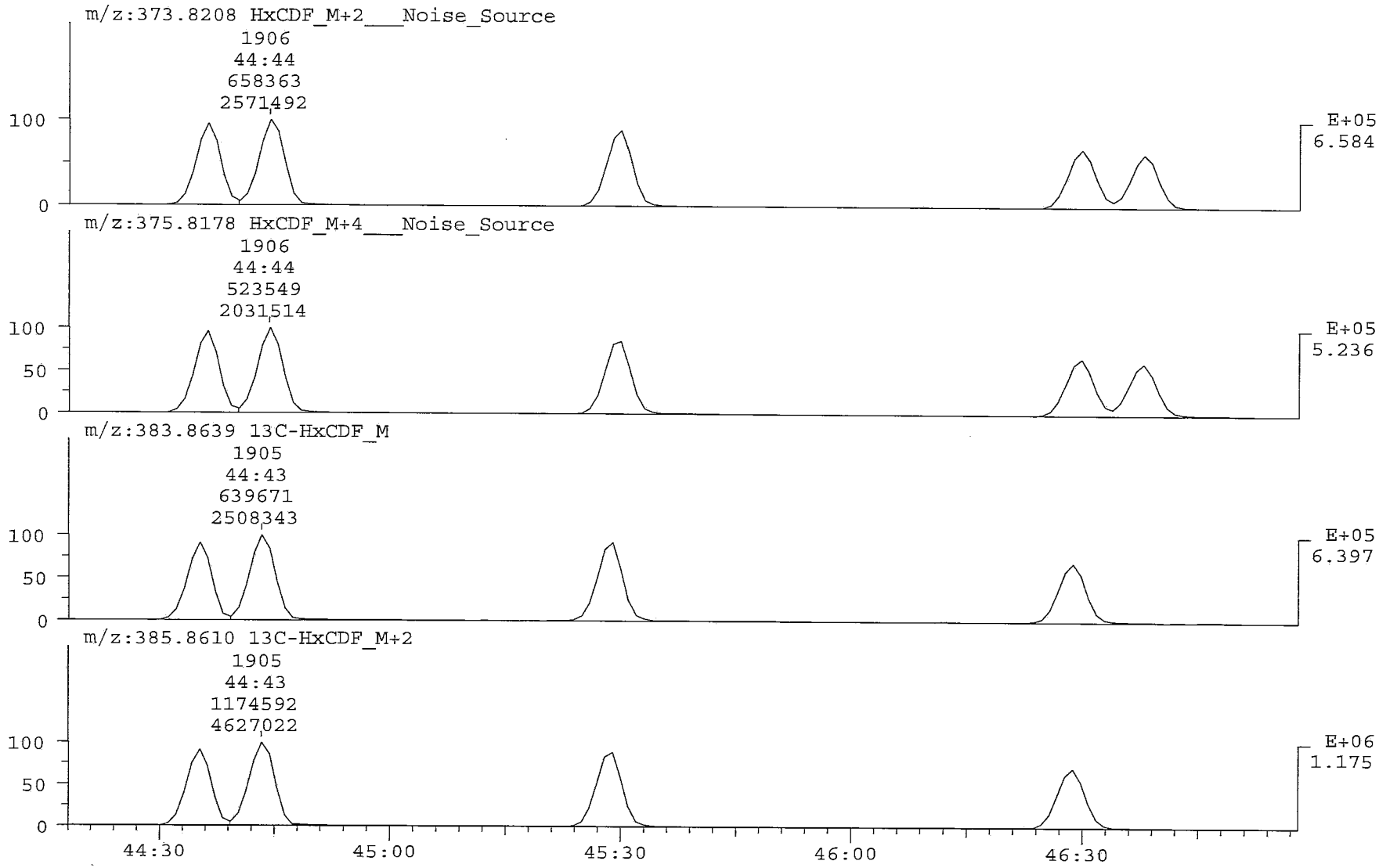
```
CHRO:  d1160817s2                                17-Aug-16  Elapse:  46:00      1981
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1806 > 2046            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



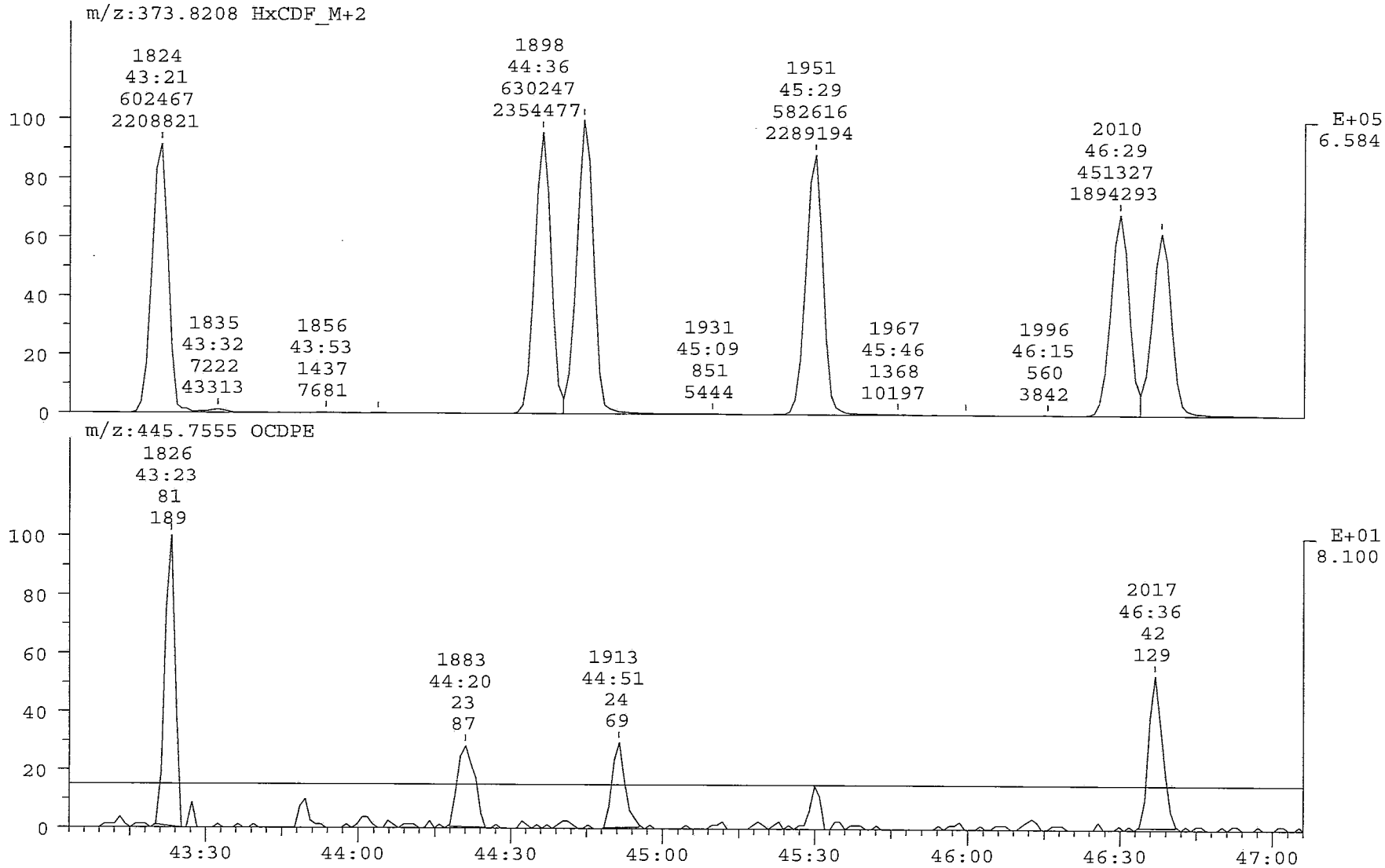
CHRO: d1160817s2 17-Aug-16 Elapse: 45:38 1959
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1880 > 2038 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



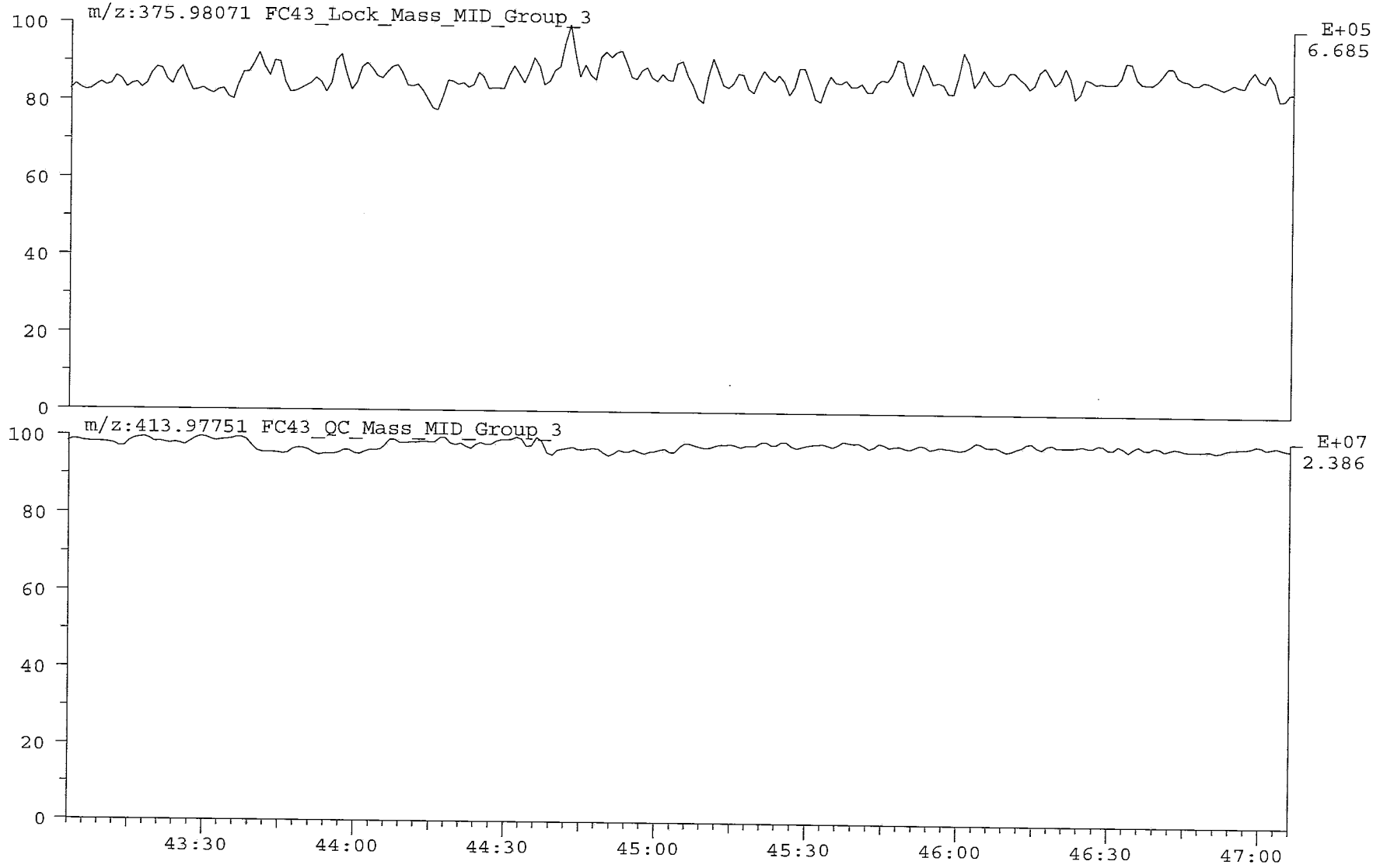
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  44:46      1908
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1904 > 1912      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



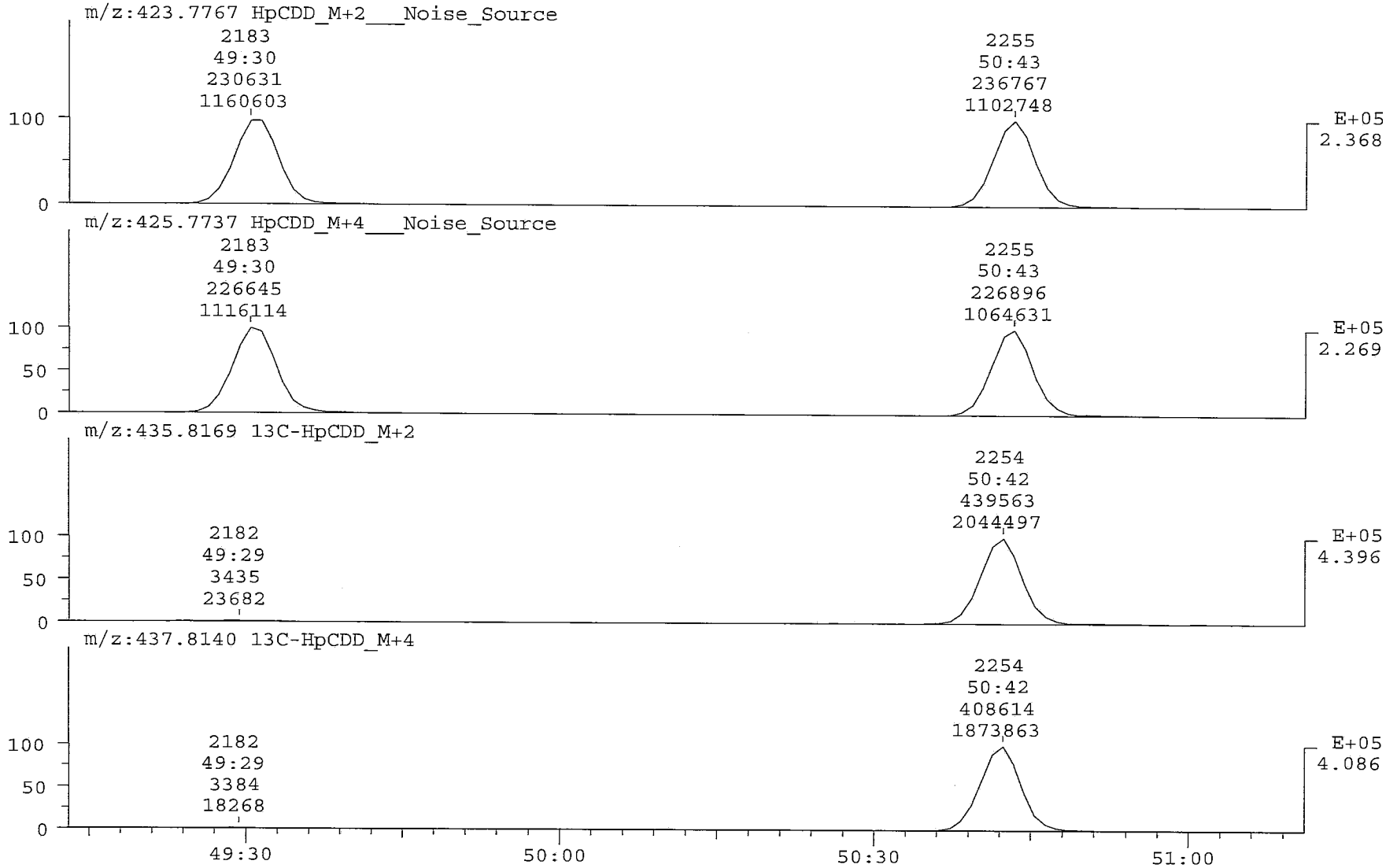
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  44:46      1908
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1806 > 2046      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



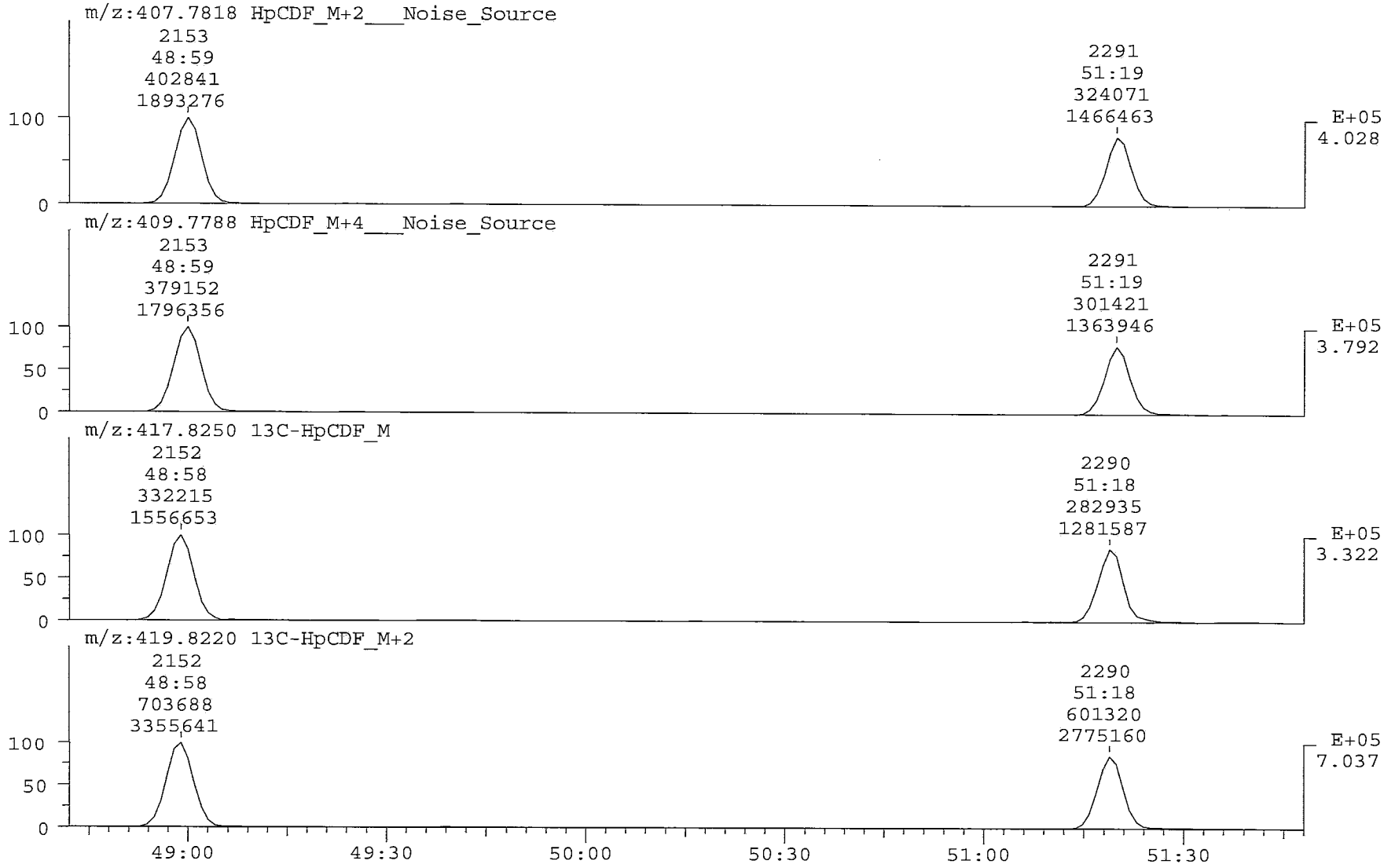
CHRO: d1160817s2 17-Aug-16 Elapse: 44:46 1908
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1806 > 2046 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



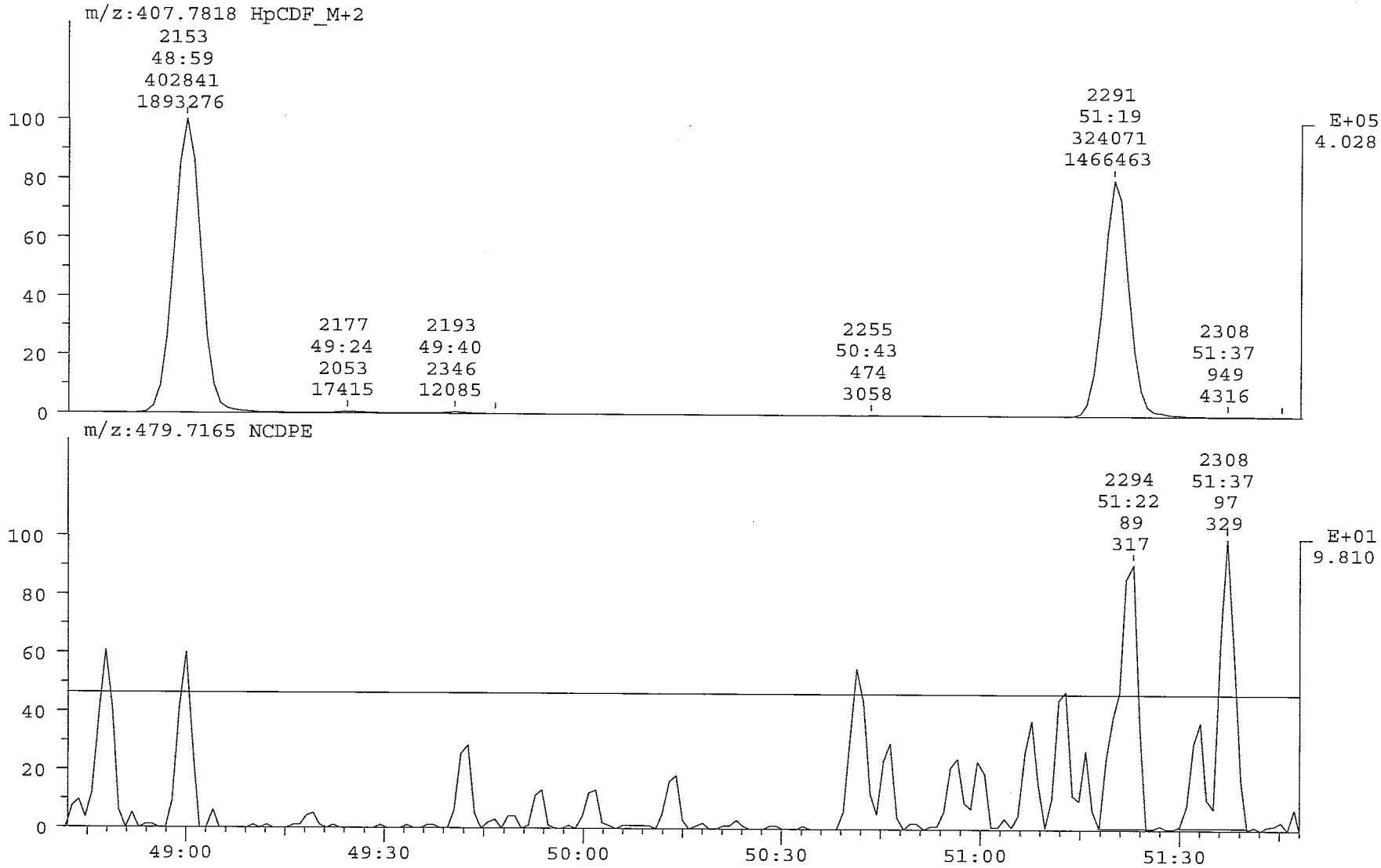
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  44:46      1908
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2166 > 2282      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



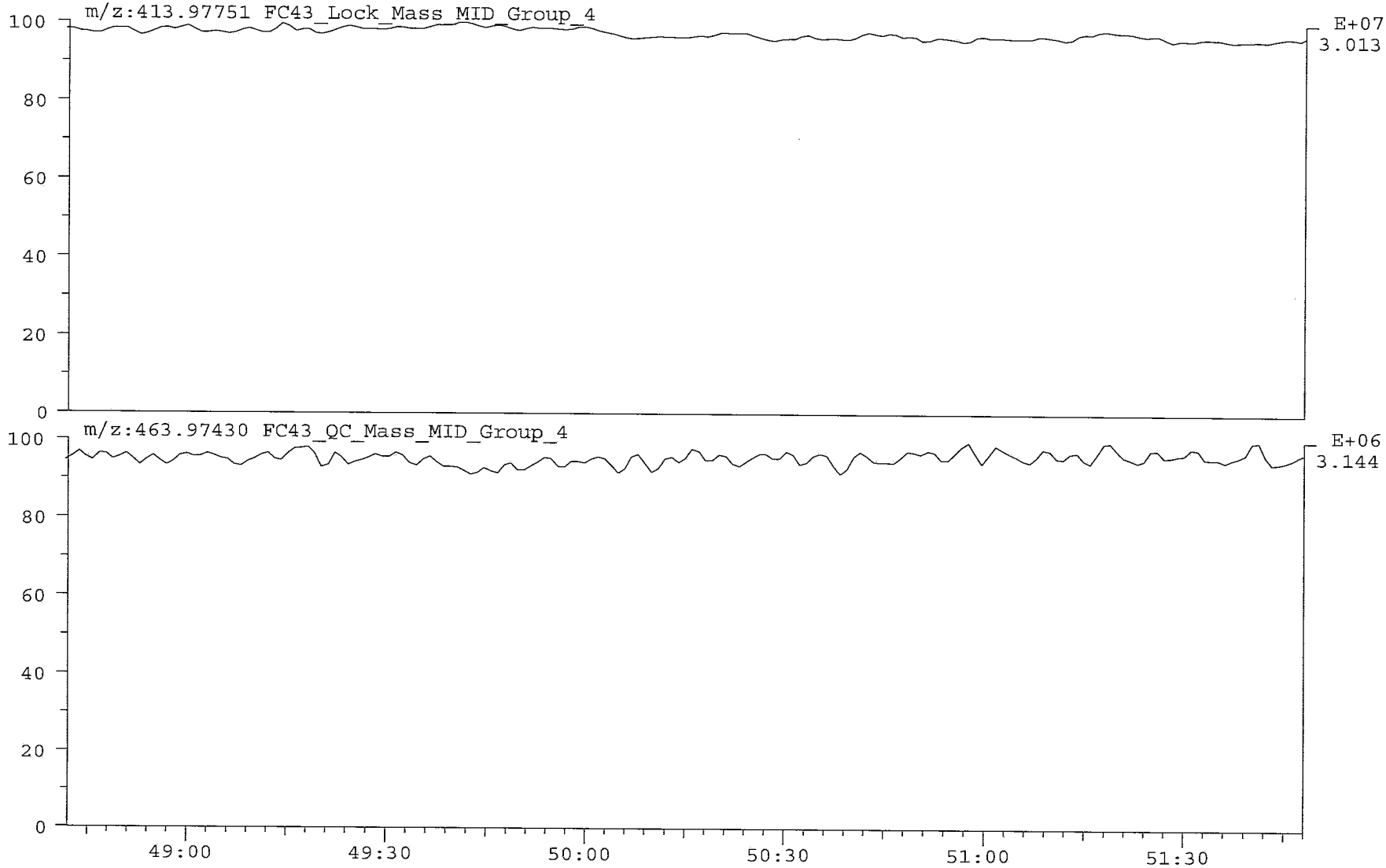
CHRO: d1160817s2 17-Aug-16 Elapse: 50:14 2227
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



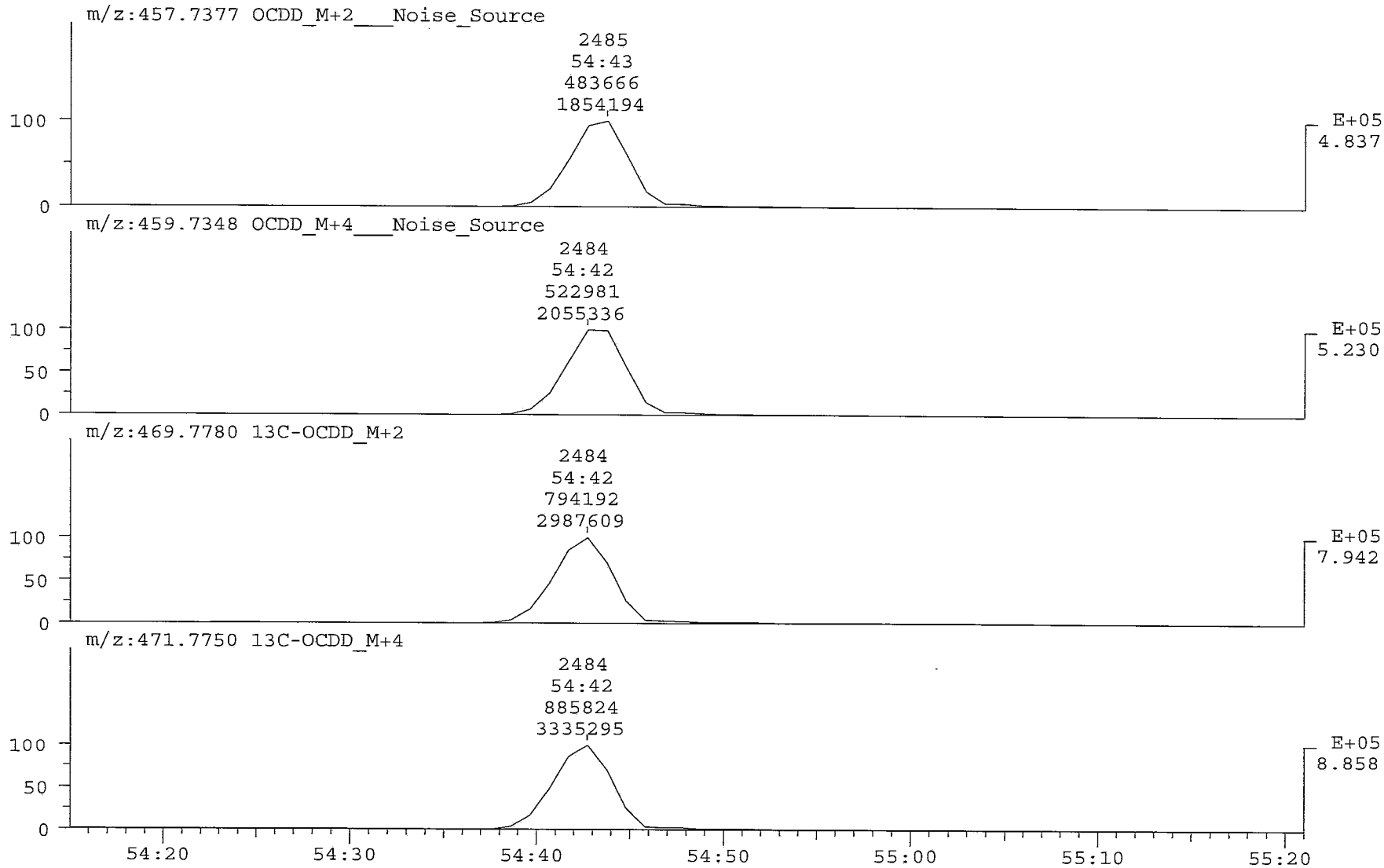
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  50:14      2227
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2319      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



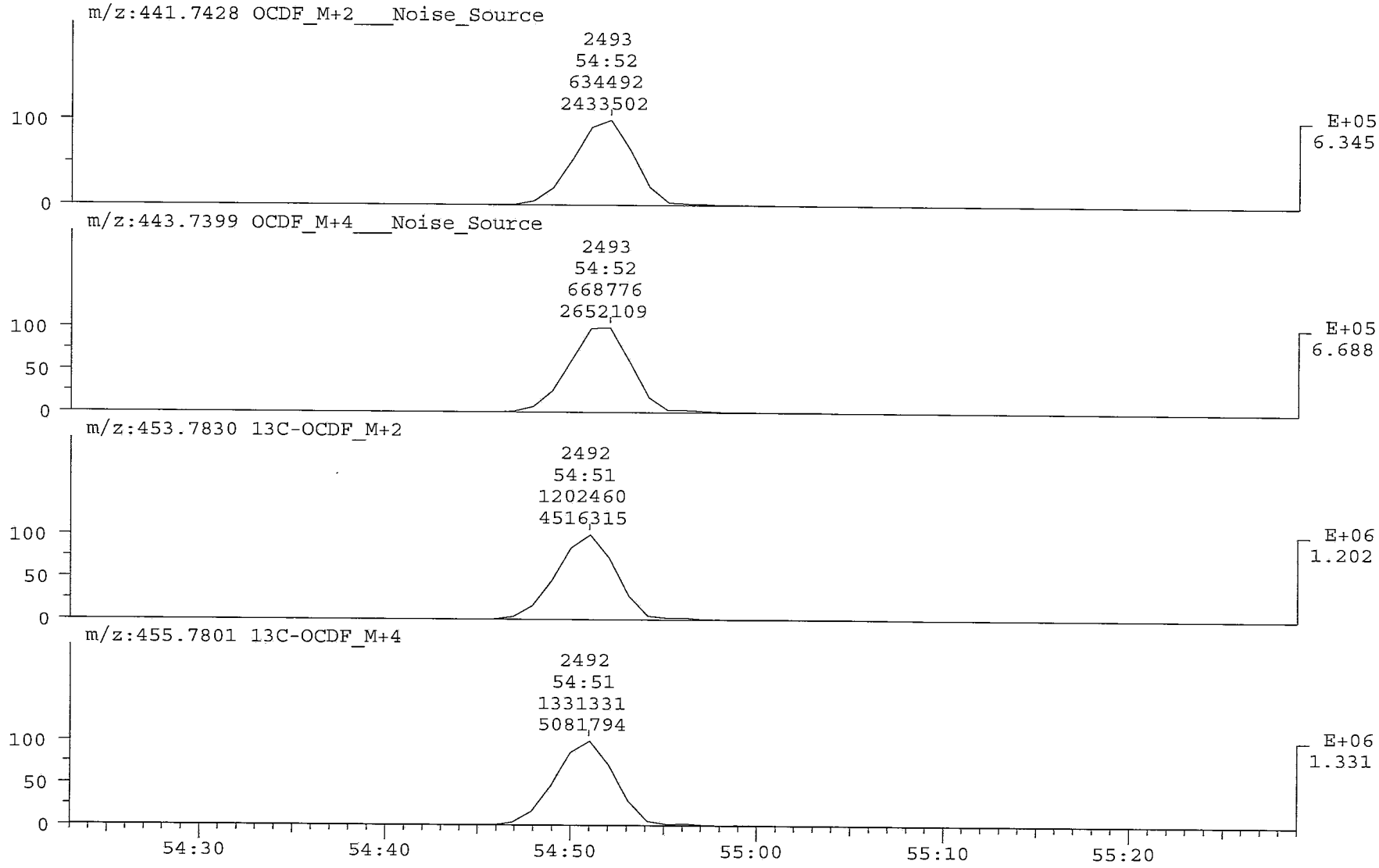
```
CHRO:  d1160817s2                                17-Aug-16   Elapse:  50:14      2227
Samp:  WO=4966:41 Meth=F8o Dil=1                             Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  VER/WIN
Oper:  KLR                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2135 > 2319             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  0, 0.0
Disp:  Height  Area
```



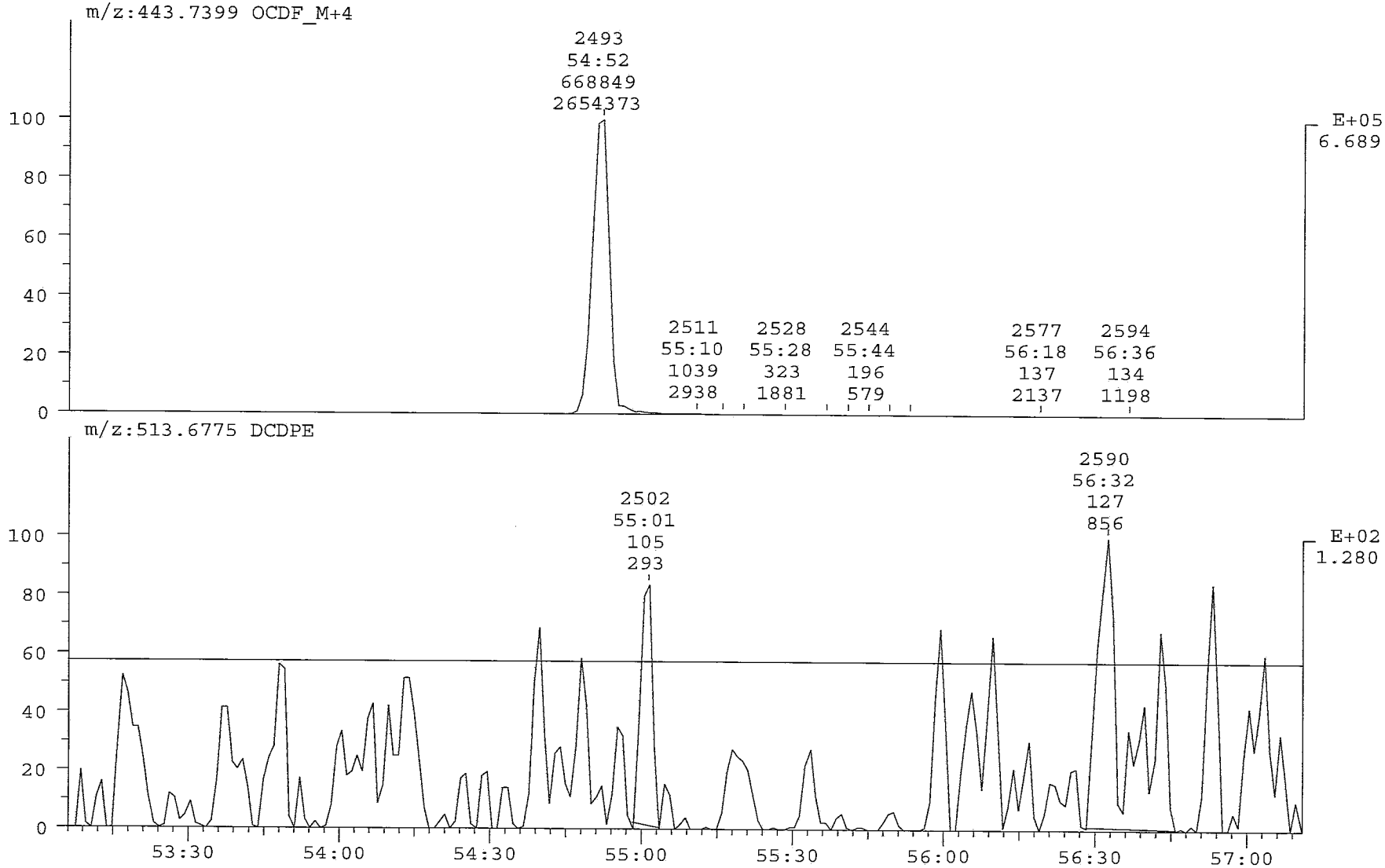
CHRO: d1160817s2 17-Aug-16 Elapse: 54:44 2486
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2457 > 2521 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



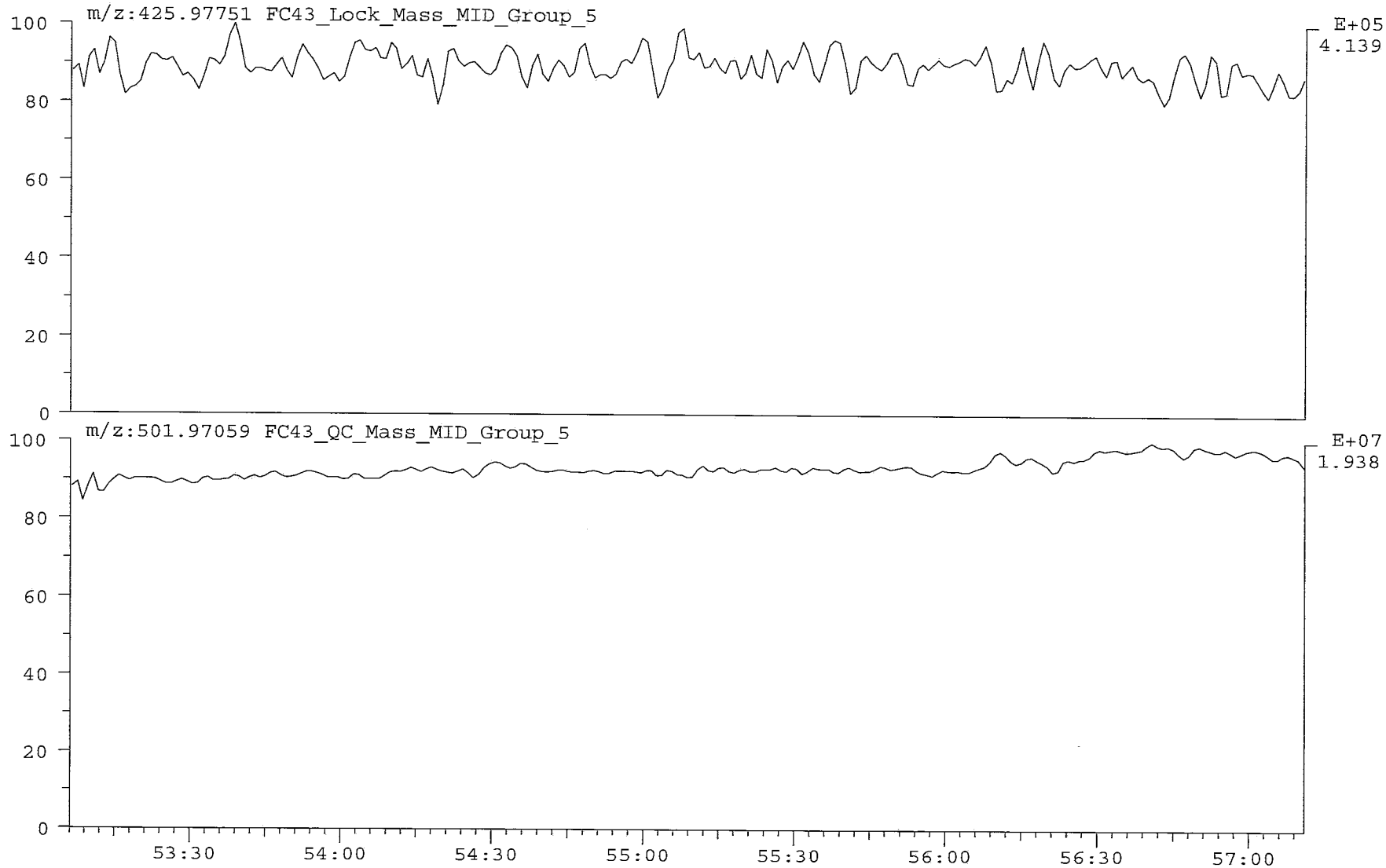
```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  54:53      2494
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2465 > 2529      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1160817s2                          17-Aug-16   Elapse:  54:53      2494
Samp:  WO=4966:41 Meth=F8o Dil=1                       Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                             Study :  VER/WIN
Oper:  KLR                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2391 > 2627       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1160817s2                          17-Aug-16  Elapse:  54:53      2494
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:56:17   2629
Comm:  Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2391 > 2627      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Wed Aug 17 19:01:06 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 17-Aug-16 19:01:05

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817130341

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          306.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.4000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0043	FVINLET	0.0466	FVSRC	0.0392
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	306.9834	LKM	425.9770	MASS	306.9834
MDAC	3538723.3056	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.8987	RELEN	0.0000
RES	13056.1155	RPUSHER	-1.9267	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	306.9834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:        2.5e-005 mbar
Analyzer Penning:    9.4e-008 mbar
Pirani Analyse:      4.3e-003 mbar
Pirani Source:       3.9e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12145.
MID Time Window 2: Resolution is 11651.
MID Time Window 3: Resolution is 12852.
MID Time Window 4: Resolution is 12059.
MID Time Window 5: Resolution is 13056.

Amplifier Offset: 88.


*** File closed Wed Aug 17 19:58:20 2016
  ***
```

QUAN: d1160817s2.q0 Entries: 180

Data file(s) used
File: d1160817s2 17-Aug-16
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:56:17 2629
Comm: Inst=d11a/1379922 Batch=20160817s2 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:53	234411.	23468.	32:43	33:08	46.	1	1.0	AVV
321.8775	32:51	292330.	29362.	32:43	33:07	52.	1	1.0	AVV
319.8805	26:31	224890.	28416.	26:19	26:46	46.	2	5.0	ABV
319.8805	32:19	206602.	20294.	32:05	32:27	46.	2	5.0	ABV
319.8805	32:34	196102.	20210.	32:27	32:43	46.	2	5.0	AVV
319.8805	32:53	234411.	23468.	32:43	33:08	46.	2	5.0	AVB
319.8805	33:24	214095.	19040.	33:12	33:39	46.	2	5.0	AVV
319.8805	35:42	200846.	28638.	35:31	35:51	46.	2	5.0	ABB
321.8775	26:31	280498.	34461.	26:20	26:46	52.	2	5.0	ABV
321.8775	32:19	268633.	26191.	32:05	32:28	52.	2	5.0	ABV
321.8775	32:34	239651.	25124.	32:28	32:43	52.	2	5.0	AVV
321.8775	32:51	292330.	29362.	32:43	33:07	52.	2	5.0	AVB
321.8775	33:24	270353.	25469.	33:09	33:39	52.	2	5.0	AVB
321.8775	35:41	250256.	34765.	35:31	35:51	52.	2	5.0	ABB
331.9202	32:17	1962986.	200742.	32:01	32:32	30.	2	5.0	AVV
331.9202	32:48	1968531.	196381.	32:34	33:04	30.	2	5.0	AVV
333.9171	32:16	2390077.	235855.	32:00	32:31	24.	2	5.0	ABV
333.9171	32:49	2487030.	234348.	32:34	33:05	24.	2	5.0	AVV
319.8805	32:53	234010.	23452.	32:43	33:08	134.	2	5.0	AVV
319.8805	33:24	214050.	19018.	33:09	33:39	134.	2	5.0	AVV
321.8775	32:51	292241.	29358.	32:43	33:07	144.	2	5.0	AVV
321.8775	33:24	270295.	25468.	33:09	33:39	144.	2	5.0	AVV
331.9202	32:17	1962866.	200739.	32:01	32:32	111.	2	5.0	AVV
331.9202	32:48	1968466.	196379.	32:34	33:04	111.	2	5.0	AVV
333.9171	32:16	2389832.	235848.	32:01	32:31	114.	2	5.0	ABV
333.9171	32:49	2486903.	234344.	32:34	33:05	114.	2	5.0	AVV
327.8683	32:53	497352.	49801.	32:37	33:08	49.	1	1.0	AVV
327.8683	32:53	497352.	49801.	32:37	33:08	49.	2	5.0	AVV
303.8864	23:55	434169.	60779.	23:43	24:10	26.	1	1.0	ABV
305.8834	23:55	539095.	73315.	23:42	24:09	28.	1	1.0	ABV
303.8864	23:55	434169.	60779.	23:43	24:10	26.	2	5.0	ABV
303.8864	30:43	369966.	36944.	30:29	30:58	26.	2	5.0	ABV
303.8864	35:36	322473.	43187.	35:23	35:49	26.	2	5.0	ABB
305.8834	23:55	539095.	73315.	23:42	24:09	28.	2	5.0	ABV
305.8834	30:43	469257.	49433.	30:28	30:58	28.	2	5.0	ABV
305.8834	35:36	398569.	51285.	35:24	35:50	28.	2	5.0	ABB
315.9261	30:41	3380093.	354896.	30:26	30:56	18.	2	5.0	AVV
317.9230	30:41	4087030.	428940.	30:26	30:56	14.	2	5.0	ABV
303.8864	30:43	369879.	36942.	30:29	30:58	45.	2	5.0	ABV
305.8834	30:43	469062.	49427.	30:29	30:58	52.	2	5.0	ABV
315.9261	30:41	3380045.	354894.	30:26	30:56	34.	2	5.0	AVV
317.9230	30:41	4087030.	428940.	30:26	30:56	53.	2	5.0	ABV
355.8368	42:04	1259811.	324243.	41:51	42:19	44.	1	1.0	AVV
357.8337	42:04	793481.	205520.	41:54	42:19	48.	1	1.0	AVV
355.8368	38:42	1065453.	183496.	38:32	38:57	44.	2	5.0	ABV
355.8368	41:25	1171692.	289290.	41:18	41:36	44.	2	5.0	ABV
355.8368	42:04	1258473.	324243.	41:57	42:19	44.	2	5.0	AVV
357.8337	38:42	682481.	118208.	38:33	38:57	48.	2	5.0	ABV
357.8337	41:25	746884.	186670.	41:18	41:37	48.	2	5.0	ABV
357.8337	42:04	793481.	205520.	41:54	42:19	48.	2	5.0	AVB

367.8765	41:24	2309431.	587981.	41:13	41:37	30.	2	5.0 ABV
369.8734	41:24	1442648.	362078.	41:17	41:32	16.	2	5.0 ABV
355.8368	41:25	1171050.	289260.	41:18	41:36	62.	2	5.0 ABV
355.8368	42:04	1249630.	323950.	41:57	42:19	62.	2	5.0 ABB
357.8337	41:25	746466.	186653.	41:18	41:37	47.	2	5.0 ABV
357.8337	42:04	789227.	205371.	41:55	42:19	47.	2	5.0 ABB
367.8765	41:24	2309073.	587966.	41:15	41:37	53.	2	5.0 ABV
369.8734	41:24	1442648.	362078.	41:17	41:32	38.	2	5.0 ABV
339.8427	40:55	2059985.	493931.	40:47	41:05	59.	1	1.0 AVV
341.8396	40:55	1317600.	318775.	40:48	41:05	60.	1	1.0 AVV
339.8427	36:12	2027134.	300904.	36:01	36:27	59.	2	5.0 ABV
339.8427	39:46	2041774.	440532.	39:31	39:58	59.	2	5.0 AVV
339.8427	40:55	2060428.	493931.	40:42	41:05	59.	2	5.0 AVB
339.8427	42:11	1743184.	425977.	41:55	42:26	59.	2	5.0 AVV
341.8396	36:12	1266086.	190109.	36:01	36:27	60.	2	5.0 ABV
341.8396	39:46	1291573.	277777.	39:35	39:57	60.	2	5.0 ABV
341.8396	40:55	1318953.	318775.	40:40	41:05	60.	2	5.0 AVV
341.8396	42:11	1097621.	272562.	41:56	42:26	60.	2	5.0 ABV
351.8824	39:45	3403105.	740152.	39:34	39:55	58.	2	5.0 ABV
351.8824	40:54	3773407.	902970.	40:46	41:10	58.	2	5.0 AVB
353.8793	39:45	2098082.	442725.	39:36	39:58	19.	2	5.0 ABV
353.8793	40:54	2295944.	542228.	40:45	41:07	19.	2	5.0 ABV
339.8427	39:46	2040683.	440509.	39:36	39:58	85.	2	5.0 ABV
339.8427	40:55	2058356.	493840.	40:48	41:05	85.	2	5.0 ABV
341.8396	39:46	1291391.	277769.	39:35	39:57	83.	2	5.0 ABV
341.8396	40:55	1316874.	318733.	40:48	41:05	83.	2	5.0 ABV
351.8824	39:45	3402711.	740134.	39:35	39:55	122.	2	5.0 ABV
351.8824	40:54	3770884.	902874.	40:46	41:10	122.	2	5.0 ABV
353.8793	39:45	2098082.	442725.	39:36	39:58	49.	2	5.0 ABV
353.8793	40:54	2301058.	542188.	40:45	41:10	49.	2	5.0 ABV
389.7961	44:01	1564498.	425445.	43:55	44:16	69.	1	1.0 ABV
391.7931	44:01	1236904.	342040.	43:54	44:14	75.	1	1.0 ABV
389.7961	44:01	1564498.	425445.	43:55	44:16	69.	2	5.0 ABV
389.7961	45:40	1415135.	353809.	45:33	45:44	69.	2	5.0 AVV
389.7961	45:48	1357678.	337030.	45:44	46:03	69.	2	5.0 AVB
389.7961	46:12	1485790.	360517.	46:03	46:27	69.	2	5.0 AVB
391.7931	44:01	1236904.	342040.	43:54	44:14	75.	2	5.0 ABV
391.7931	45:40	1117734.	279914.	45:34	45:44	75.	2	5.0 AVV
391.7931	45:48	1082363.	265058.	45:44	46:03	75.	2	5.0 AVV
391.7931	46:12	1171045.	279992.	46:03	46:25	75.	2	5.0 AVB
401.8358	45:39	2455979.	604965.	45:23	45:43	71.	2	5.0 AVV
401.8358	45:47	2380260.	597697.	45:43	45:59	71.	2	5.0 AVV
401.8358	46:11	2699667.	658136.	45:59	46:23	71.	2	5.0 AVB
403.8327	45:39	1940224.	483578.	45:30	45:43	39.	2	5.0 ABV
403.8327	45:47	1878903.	473842.	45:43	46:01	39.	2	5.0 AVV
403.8327	46:11	2082530.	505495.	46:01	46:26	39.	2	5.0 AVV
389.7961	45:40	1415170.	353812.	45:33	45:44	100.	2	5.0 AVV
389.7961	45:48	1357731.	337033.	45:44	46:03	100.	2	5.0 AVV
389.7961	46:12	1485845.	360519.	46:03	46:27	100.	2	5.0 AVV
391.7931	45:40	1118737.	279859.	45:24	45:44	105.	2	5.0 ABV
391.7931	45:48	1081552.	265011.	45:44	46:03	105.	2	5.0 AVV
391.7931	46:12	1170550.	279968.	46:03	46:25	105.	2	5.0 AVV
401.8358	45:39	2453281.	604848.	45:29	45:43	115.	2	5.0 ABV
401.8358	45:47	2377591.	597548.	45:43	45:59	115.	2	5.0 AVV
401.8358	46:11	2693757.	657893.	45:59	46:23	115.	2	5.0 AVV
403.8327	45:39	1940136.	483573.	45:32	45:43	94.	2	5.0 ABV
403.8327	45:47	1878828.	473837.	45:43	46:01	94.	2	5.0 AVV
403.8327	46:11	2082476.	505493.	46:01	46:26	94.	2	5.0 AVV
373.8021	44:44	2571539.	658365.	44:40	44:59	83.	1	1.0 AVV
375.7990	44:44	2031656.	523556.	44:40	44:59	90.	1	1.0 AVV
373.8021	43:21	2208821.	602467.	43:14	43:27	83.	2	5.0 ABV
373.8021	44:36	2354477.	630247.	44:27	44:40	83.	2	5.0 ABV
373.8021	44:44	2571539.	658365.	44:40	44:59	83.	2	5.0 AVV
373.8021	45:29	2289194.	582616.	45:16	45:44	83.	2	5.0 AVV
373.8021	46:29	1894293.	451327.	46:21	46:33	83.	2	5.0 ABV
373.8021	46:37	1769587.	409990.	46:33	46:53	83.	2	5.0 AVV
375.7990	43:21	1764303.	478289.	43:12	43:27	90.	2	5.0 ABV

375.7990	44:36	1885595.	502778.	44:28	44:40	90.	2	5.0 ABV
375.7990	44:44	2031656.	523556.	44:40	44:59	90.	2	5.0 AVV
375.7990	45:29	1811255.	447496.	45:17	45:45	90.	2	5.0 AVV
375.7990	46:29	1480955.	349346.	46:20	46:33	90.	2	5.0 ABV
375.7990	46:37	1393156.	318765.	46:33	46:53	90.	2	5.0 AVV
383.8447	44:35	2146491.	582991.	44:27	44:39	62.	2	5.0 ABV
383.8447	44:43	2508342.	639671.	44:39	44:58	62.	2	5.0 AVV
383.8447	45:28	2312878.	587430.	45:15	45:44	62.	2	5.0 AVB
383.8447	46:28	1845333.	442107.	46:20	46:43	62.	2	5.0 AVV
385.8417	44:35	4034708.	1076331.	44:25	44:39	100.	2	5.0 ABV
385.8417	44:43	4627193.	1174603.	44:39	44:55	100.	2	5.0 AVV
385.8417	45:28	4178787.	1039193.	45:17	45:43	100.	2	5.0 AVV
385.8417	46:28	3525522.	822585.	46:18	46:43	100.	2	5.0 ABV
373.8021	44:36	2354468.	630246.	44:27	44:40	91.	2	5.0 ABV
373.8021	44:44	2571492.	658363.	44:40	44:59	91.	2	5.0 AVV
373.8021	45:29	2289008.	582609.	45:16	45:44	91.	2	5.0 AVV
373.8021	46:29	1893117.	451205.	46:22	46:33	91.	2	5.0 ABV
373.8021	46:37	1763877.	409765.	46:33	46:53	91.	2	5.0 AVV
375.7990	44:36	1885534.	502772.	44:28	44:40	101.	2	5.0 ABV
375.7990	44:44	2031514.	523549.	44:40	44:59	101.	2	5.0 AVB
375.7990	45:29	1810901.	447483.	45:17	45:45	101.	2	5.0 AVB
375.7990	46:29	1480045.	349260.	46:21	46:33	101.	2	5.0 ABV
375.7990	46:37	1389555.	318619.	46:33	46:53	101.	2	5.0 AVB
383.8447	44:35	2146491.	582991.	44:27	44:39	106.	2	5.0 ABV
383.8447	44:43	2508343.	639671.	44:39	44:58	106.	2	5.0 AVV
383.8447	45:28	2312878.	587430.	45:15	45:44	106.	2	5.0 AVV
383.8447	46:28	1847203.	442107.	46:14	46:43	106.	2	5.0 ABV
385.8417	44:35	4034489.	1076319.	44:26	44:39	144.	2	5.0 ABV
385.8417	44:43	4627022.	1174592.	44:39	44:55	144.	2	5.0 AVV
385.8417	45:28	4178646.	1039187.	45:17	45:43	144.	2	5.0 AVV
385.8417	46:28	3519610.	822398.	46:18	46:43	144.	2	5.0 ABV
423.7555	49:30	1160603.	230631.	49:22	49:45	52.	1	1.0 ABV
425.7524	49:30	1116114.	226645.	49:22	49:45	43.	1	1.0 ABV
423.7555	49:30	1160603.	230631.	49:22	49:45	52.	2	5.0 ABV
423.7555	50:43	1102748.	236767.	50:35	50:58	52.	2	5.0 ABV
425.7524	49:30	1116114.	226645.	49:22	49:45	43.	2	5.0 ABV
425.7524	50:43	1064631.	226896.	50:32	50:58	43.	2	5.0 ABV
435.7951	49:29	23682.	3435.	49:19	49:34	104.	2	5.0 ABB
435.7951	50:42	2044497.	439563.	50:32	50:56	104.	2	5.0 ABV
437.7921	49:29	18268.	3384.	49:22	49:42	60.	2	5.0 ABB
437.7921	50:42	1873863.	408614.	50:32	50:57	60.	2	5.0 ABV
407.7614	49:00	1893276.	402841.	48:50	49:15	63.	1	1.0 ABV
409.7583	49:00	1796356.	379152.	48:51	49:15	74.	1	1.0 ABV
407.7614	49:00	1893276.	402841.	48:50	49:15	63.	2	5.0 ABV
407.7614	51:19	1466463.	324071.	51:06	51:35	63.	2	5.0 ABV
409.7583	49:00	1796356.	379152.	48:51	49:15	74.	2	5.0 ABV
409.7583	51:19	1363946.	301421.	51:09	51:35	74.	2	5.0 ABV
417.8041	48:59	1556653.	332215.	48:50	49:14	79.	2	5.0 ABV
417.8041	51:18	1281587.	282935.	51:07	51:32	79.	2	5.0 ABV
419.8010	48:59	3355641.	703688.	48:48	49:14	84.	2	5.0 ABV
419.8010	51:18	2775160.	601320.	51:08	51:34	84.	2	5.0 AVV
457.7148	54:43	1854194.	483666.	54:36	54:59	53.	1	1.0 ABV
459.7118	54:42	2055336.	522981.	54:35	54:58	38.	1	1.0 ABV
457.7148	54:43	1854194.	483666.	54:36	54:59	53.	2	5.0 ABV
459.7118	54:42	2055336.	522981.	54:35	54:58	38.	2	5.0 ABV
469.7545	54:42	2987609.	794192.	54:35	54:58	69.	2	5.0 ABV
471.7514	54:42	3335295.	885824.	54:35	54:55	122.	2	5.0 ABV
441.7207	54:52	2433502.	634492.	54:38	55:07	29.	1	1.0 ABV
443.7177	54:52	2652109.	668776.	54:40	55:07	48.	1	1.0 ABV
441.7207	54:52	2433502.	634492.	54:38	55:07	29.	2	5.0 ABV
443.7177	54:52	2652109.	668776.	54:40	55:07	48.	2	5.0 ABV
453.7603	54:51	4516315.	1202460.	54:38	55:06	45.	2	5.0 ABV
455.7573	54:51	5081794.	1331331.	54:38	55:06	97.	2	5.0 ABV

TestAmerica Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R16

Start Mass Res. ✓:	21:56	Ver Filename:	d116081753	Inst:	d11a
End Mass Res. ✓:	9:04	Win Filename:	↓	ICAL Date:	4-9-15
		Col Perf Filename:			
		End Ver Filename:	d116081851		

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓		—	✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
7. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram. Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.	✓				✓
8. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs?		✓			✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?.		✓			✓
16. Were manual integrations documented properly?	✓				✓
17. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
18. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards?		✓			✓

Analyst: CKn	**Date:** 8-17-16	**2nd Level Reviewer :** Kn	**Date:** 8/18/16
Comments:		**Comments:**	

ID022R26.doc, 061616

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
8/17/16	17:38	KLR	M811Q1AC	dltm811q	ok	solid	Sam		1	H6G290408-005
8/17/16	18:39	KLR	Nonane	Rinse	ok	—	QC		1	Flush
8/17/16	9:22	KLR	4966:41	d1160817s2	ok	—	Ver win		1	ver/win
8-17-16	20:27	LK	FC-43	d1160817r2	ok	—	Res		-	MassResChek
8-17-16	21:56	LK	FC-43	d1160817r3	ok	—	Res		-	MassResCheck
8-17-16	22:05	LK	4966:41	d1160817s3	ok	—	Ver		1	Ver/window
8-17-16	23:08	LKM	nonane	rinse	ok	—	QC		1	flush
8-17-16	23:25	LKM	↓	↓	ok	—	QC		1	↓
8-17-16	23:41	LKM	↓	↓	ok	—	QC		1	↓
8-17-16	23:57	LKM	↓	↓	ok	—	QC		1	↓
8-18-16	00:09	LKM	M82RE1AA	dltm82reba	ok	Solid	QC		1	System Blank
8-18-16	1:16	LKM	M811P 1AC	dltm811pa	ok	Solid	SAM		1	H6G290408-004
8-18-16	2:15	LKM	M811R 1AC	dltm811r	ok	Solid	SAM		1	-006
8-18-16	3:17	LKM	M811T 1AC	dltm811t	ok	Solid	SAM		1	-007
8-18-16	4:19	LKM	M811V 1AC	dltm811v	ok	Solid	SAM		1	-008
8-18-16	5:21	LKM	M811W 1AC	dltm811w	ok	Solid	SAM		1	-009
8-18-16	6:22	LKM	M811X 1AC	dltm811x	ok	Solid	SAM		1	-010
8-18-16	7:24	LKM	nonane	rinse	ok	—	QC		1	flush
8-18-16	7:40	LKM	4966:41	d1160818s1	ok	—	Ver		1	Ver/window
8/18/16	9:04	KLR	FC-43	d1160818r1	ok	—	Res		-	mass Res cht.

Read and Understood by:_____ Date: _____

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89943 - D1160817S3
CCAL Filename: d1160817s3
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160817s3/d1160817s3.d
CCAL Date/Time: 08/17/16 22:05

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.6	1.144	1.095	-4.3	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	8.9	1.066	0.946	-11.2	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	51	1.060	1.075	1.4	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	48	1.179	1.142	-3.2	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32-1.78	48	1.115	1.076	-3.4	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	45	1.131	1.018	-10.0	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	45	1.116	0.994	-11.0	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05-1.43	44	1.205	1.060	-12.1	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	45	1.350	1.221	-9.6	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	45	1.242	1.109	-10.7	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	45	1.241	1.125	-9.4	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	44	1.262	1.099	-13.0	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	45	1.114	1.010	-9.3	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88-1.20	46	1.461	1.350	-7.6	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	47	1.370	1.291	-5.8	20.0	True
OCDD	M+2/M+4	0.89	0.76-1.02	95	1.203	1.147	-4.7	20.0	True
OCDF	M+2/M+4	0.91	0.76-1.02	84	1.134	0.955	-15.8	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	96	1.093	1.045	-4.4	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	86	1.794	1.549	-13.7	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	101	0.800	0.806	0.8	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	98	1.356	1.331	-1.9	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	101	1.343	1.355	0.9	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	100	0.916	0.918	0.2	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	105	0.906	0.950	4.9	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	87	1.268	1.109	-12.6	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	86	1.506	1.298	-13.8	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	87	1.344	1.167	-13.1	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	82	1.202	0.983	-18.2	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88-1.20	107	0.728	0.783	7.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	84	1.008	0.851	-15.6	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37-0.51	86	0.811	0.699	-13.7	30.0	True
13C-OCDD	M+2/M+4	0.89	0.76-1.02	220	0.597	0.659	10.2	30.0	True
13C-OCDF	M+2/M+4	0.89	0.76-1.02	194	0.946	0.917	-3.1	30.0	True

KL 8/18/16

LKM 8-17-16

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89943 - D1160817S3
CCAL Filename: d1160817s3
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160817s3/d1160817s3.d
CCAL Date/Time: 08/17/16 22:05

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	30:41	32:58	137	1.002	1.002	-	
2,3,7,8-TCDF	28:42	30:50	128	1.001	1.002	-	
1,2,3,7,8-PeCDD	40:33	41:26	53	1.000	1.000	-	
1,2,3,7,8-PeCDF	38:44	39:48	64	1.000	1.001	-	
2,3,4,7,8-PeCDF	40:01	40:56	55	1.001	1.000	-	
1,2,3,4,7,8-HxCDD	44:50	45:40	50	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	44:57	45:47	50	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:20	46:12	52	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	43:49	44:35	46	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:56	44:44	48	1.000	1.001	-	
2,3,4,6,7,8-HxCDF	44:39	45:29	50	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	45:36	46:29	53	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	49:38	50:43	65	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:58	48:59	61	1.000	1.000	-	
1,2,3,4,7,8,9-HpCDF	50:17	51:19	62	1.000	1.000	-	
OCDD	53:54	54:42	48	1.000	1.000	-	
OCDF	54:02	54:50	48	1.000	1.000	-	
13C-2,3,7,8-TCDD	30:38	32:55	137	1.017	1.016	-	
13C-2,3,7,8-TCDF	28:40	30:46	126	0.951	0.950	-	
13C-1,2,3,7,8-PeCDD	40:32	41:25	53	1.346	1.279	-	
13C-1,2,3,7,8-PeCDF	38:43	39:46	63	1.285	1.228	-	
13C-2,3,4,7,8-PeCDF	39:59	40:55	56	1.327	1.264	-	
13C-1,2,3,4,7,8-HxCDD	44:49	45:39	50	0.989	0.988	-	
13C-1,2,3,6,7,8-HxCDD	44:56	45:46	50	0.992	0.991	-	
13C-1,2,3,4,7,8-HxCDF	43:48	44:34	46	0.966	0.965	-	
13C-1,2,3,6,7,8-HxCDF	43:55	44:42	47	0.969	0.968	-	
13C-2,3,4,6,7,8-HxCDF	44:38	45:28	50	0.985	0.984	-	
13C-1,2,3,7,8,9-HxCDF	45:35	46:28	53	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	49:37	50:42	65	1.095	1.098	-	
13C-1,2,3,4,6,7,8-HpCDF	47:56	48:58	62	1.058	1.060	-	
13C-1,2,3,4,7,8,9-HpCDF	50:16	51:18	62	1.109	1.111	-	
13C-OCDD	53:53	54:41	48	1.189	1.184	-	
13C-OCDF	54:01	54:49	48	1.192	1.187	-	

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IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89943 - D1160817S3

WIN Filename: d1160817s3

WIN Sample ID: 4966:41

WIN Result Dir: /20160817s3/d1160817s3.d

WIN Date/Time: 08/17/16 22:05

Method: 9Ao - DX8290A

Instrument: D11A

Column SN: 1379922

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	32:55	26:36	0.8081	35:46	1.0866
Total TCDF	13C-2,3,7,8-TCDF	304	30:46	23:59	0.7795	35:40	1.1593
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	41:25	38:44	0.9352	42:04	1.0157
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:46	36:15	0.9116	42:12	1.0612
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:46	44:02	0.9621	46:12	1.0095
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:34	43:20	0.9723	46:37	1.0460
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	50:42	49:31	0.9767	50:43	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:58	48:59	1.0003	51:19	1.0480
OCDD	13C-OCDD	458	54:41	54:42	1.0003	54:42	1.0003
OCDF	13C-OCDF	442	54:49	54:50	1.0003	54:50	1.0003

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s3/d1160817s3.d	Prep Date		SDG No	
Analysis ID	180435	Prep Exp Date		Date Received	
Analysis Date	8/17/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	22:05	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	32:58	812430	78653	1.144	10.00	9.574970	95.75	9.574970	E	0.0354
Total TCDD		3514062	397512	1.144		50.990278		50.990278	E	0.0354
2,3,7,8-TCDF	30:50	1040734	105505	1.066	10.00	8.878649	88.79	8.878649	E	0.0116
Total TCDF		2124305	289030	1.066		27.001395		27.001395	E	0.0116
1,2,3,7,8-PeCDD	41:26	3075592	760806	1.060	50.00	50.693371	101.39	50.693371	E	0.0190
Total PeCDD		6206251	1330288	1.060		152.987754		152.987754	E	0.0190
1,2,3,7,8-PeCDF	39:48	5396492	1134700	1.179	50.00	48.416435	96.83	48.416435	E	0.0148
2,3,4,7,8-PeCDF	40:56	5178021	1246529	1.115	50.00	48.280918	96.56	48.280918	E	0.0133
Total PeCDF		9633127	1862707	1.147		184.766633		184.766633	E	0.0140
1,2,3,4,7,8-HxCDD	45:40	3017387	760891	1.131	50.00	45.006284	90.01	45.006284	E	0.0258
1,2,3,6,7,8-HxCDD	45:47	3049895	757424	1.116	50.00	44.521793	89.04	44.521793	E	0.0257
1,2,3,7,8,9-HxCDD	46:12	3196708	762558	1.205	50.00	43.968521	87.94	43.968521	E	0.0240
Total HxCDD		3369039	878358	1.151		182.026075		182.026075	E	0.0252
1,2,3,4,7,8-HxCDF	44:35	4372645	1151169	1.350	50.00	45.217675	90.44	45.217675	E	0.0167
1,2,3,6,7,8-HxCDF	44:44	4649072	1141566	1.242	50.00	44.668490	89.34	44.668490	E	0.0168
2,3,4,6,7,8-HxCDF	45:29	4239322	1065926	1.241	50.00	45.313947	90.63	45.313947	E	0.0184
1,2,3,7,8,9-HxCDF	46:29	3488332	829782	1.262	50.00	43.523507	87.05	43.523507	E	0.0229
Total HxCDF		7462409	1908046	1.274		258.342506		258.342506	E	0.0184
1,2,3,4,6,7,8-HpCDD	50:43	2553291	530423	1.114	50.00	45.342813	90.69	45.342813	E	0.0249
Total HpCDD		2686757	536529	1.114		93.055792		93.055792	E	0.0249
1,2,3,4,6,7,8-HpCDF	48:59	3712356	783636	1.461	50.00	46.214306	92.43	46.214306	E	0.0177
1,2,3,4,7,8,9-HpCDF	51:19	2916153	639207	1.370	50.00	47.102257	94.20	47.102257	E	0.0221
Total HpCDF				1.416		93.316563		93.316563	E	0.0197
OCDD	54:42	4878131	1285831	1.203	100.0	95.319784	95.32	95.319784	E	0.0173
OCDF	54:50	5657827	1498832	1.134	100.0	84.216874	84.22	84.216874	E	0.0126
13C-2,3,7,8-TCDD	32:55	7419978	709368	1.093	100.0	95.634938	95.63	95.634938		0.0272
13C-2,3,7,8-TCDF	30:46	11000277	1152714	1.794	100.0	86.326991	86.33	86.326991		0.0135
13C-1,2,3,7,8-PeCDD	41:25	5724217	1428491	0.800	100.0	100.761408	100.76	100.761408		0.0177
13C-1,2,3,7,8-PeCDF	39:46	9452678	1997269	1.356	100.0	98.132143	98.13	98.132143		0.0288
13C-2,3,4,7,8-PeCDF	40:55	9622369	2338035	1.343	100.0	100.892691	100.89	100.892691		0.0291
13C-1,2,3,4,7,8-HxCDD	45:39	5927258	1498480	0.916	100.0	100.193593	100.19	100.193593		0.0270
13C-1,2,3,6,7,8-HxCDD	45:46	6138563	1523163	0.906	100.0	104.862010	104.86	104.862010		0.0273
13C-1,2,3,4,7,8-HxCDF	44:34	7160811	1893835	1.268	100.0	87.403178	87.40	87.403178		0.0178
13C-1,2,3,6,7,8-HxCDF	44:42	8382565	2044509	1.506	100.0	86.198074	86.20	86.198074		0.0150
13C-2,3,4,6,7,8-HxCDF	45:28	7539402	1875584	1.344	100.0	86.850009	86.85	86.850009		0.0168
13C-1,2,3,7,8,9-HxCDF	46:28	6350633	1480753	1.202	100.0	81.789999	81.79	81.789999		0.0188
13C-1,2,3,4,6,7,8-HpCDD	50:42	5056099	1054134	0.728	100.0	107.462410	107.46	107.462410		0.0117
13C-1,2,3,4,6,7,8-HpCDF	48:58	5498172	1159648	1.008	100.0	84.440033	84.44	84.440033		0.0314
13C-1,2,3,4,7,8,9-HpCDF	51:18	4517917	991631	0.811	100.0	86.269424	86.27	86.269424		0.0390
13C-OCDD	54:41	8508196	2213755	0.597	200.0	220.498020	110.25	220.498020		0.0180
13C-OCDF	54:49	11845006	3085770	0.946	200.0	193.847975	96.92	193.847975		0.0205
37Cl4-2,3,7,8-TCDD	32:59	825773	80242	1.233	10.00	9.427731	94.28	9.427731	E	0.0197
13C-1,2,3,4-TCDD	32:23	7101682	690122	1.000	100.0	100.000000	100.00	100.000000		0.0297
13C-1,2,3,7,8,9-HxCDD	46:11	6459335	1558314	1.000	100.0	100.000000	100.00	100.000000		0.0247

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s3/d1160817s3	Prep Date		SDG No	
Analysis ID	180435	Prep Exp Date		Date Received	
Analysis Date	08/17/16 22:05	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	70	73	28	29	0.97 *	/	
	Unidentified	23:59	00:00	0	525003	679652	70404	93041	0.77	ABV/ABV	
	2,3,7,8-TCDF	30:50	31:01	-11	453098	587636	45599	59906	0.77	AVV/AVV	M
	Unidentified	35:40	00:00	0	403261	516389	55599	69986	0.78	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	115	53	46	21	2.19 *	/	
	13C-2,3,7,8-TCDF	30:46	31:00	-14	4788953	6211324	515528	637186	0.77	ABV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	143	145	57	58	0.98 *	/	
	Unidentified	26:36	00:00	0	334965	432731	41359	54220	0.77	ABV/ABV	
	Unidentified	32:27	00:00	0	314116	417370	33197	40930	0.75	ABV/ABV	
	Unidentified	32:42	00:00	0	295168	367232	28154	35604	0.80	AVV/AVV	DM
	2,3,7,8-TCDD	32:58	32:42	16	360511	451919	35314	43339	0.80	AVV/AVB	M
	Unidentified	33:32	00:00	0	334699	422876	32720	41142	0.79	AVV/AVV	
	Unidentified	35:46	00:00	0	264465	330440	39319	50867	0.80	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	168		67				
	37Cl4-2,3,7,8-TCDD	32:59	32:42	17	825773		80242			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	120	85	48	34	1.41 *	/	
	13C-1,2,3,4-TCDD	32:23	32:14	9	3183999	3917683	307438	382684	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:55	32:40	15	3266901	4153077	312293	397075	0.79	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	180	168	72	67	1.07 *	/	
	Unidentified	36:15	00:00	0	3224505	2093373	483620	312916	1.54	ABV/ABV	
	1,2,3,7,8-PeCDF	39:48	39:53	-5	3281406	2115086	690042	444658	1.55	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:56	41:05	-9	3146768	2031253	753322	493207	1.55	ABV/ABV	M
	Unidentified	42:12	00:00	0	2638897	1676352	654908	411263	1.57	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	175	95	70	38	1.84 *	/	
	13C-1,2,3,7,8-PeCDF	39:46	39:52	-6	5762573	3690105	1214166	783103	1.56	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:55	41:03	-8	5893462	3728907	1433913	904122	1.58	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	170	118	68	47	1.45	/	
	Unidentified	38:44	00:00	0	1848002	1182903	314555	205473	1.56	ABV/ABV	
	1,2,3,7,8-PeCDD	41:26	41:35	-9	1878521	1197071	463500	297306	1.57	ABV/ABV	M
	Unidentified	42:04	00:00	0	1948770	1226576	501901	308359	1.59	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	55	43	22	17	1.29 *	/	
	13C-1,2,3,7,8-PeCDD	41:25	41:34	-9	3518371	2205846	885346	543145	1.60	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	193	235	77	94	0.82 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s3/d1160817s3	Prep Date		SDG No	
Analysis ID	180435	Prep Exp Date		Date Received	
Analysis Date	08/17/16 22:05	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	43:20	00:00	0	2258122	1834496	629626	515709	1.23	ABV/ABV	
	1,2,3,4,7,8-HxCDF	44:35	44:41	-6	2421487	1951158	636154	515015	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:44	44:48	-4	2577315	2071757	627432	514134	1.24	AVB/AVV	M
	2,3,4,6,7,8-HxCDF	45:29	45:30	-1	2358485	1880837	592517	473409	1.25	AVV/AVV	
	1,2,3,7,8,9-HxCDF	46:29	46:26	3	1942441	1545891	462140	367642	1.26	ABV/ABV	M
	Unidentified	46:37	00:00	0	1869827	1499964	421337	341374	1.25	AVV/AVB	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	133	220	53	88	0.60 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:40	-6	2475443	4685368	658699	1235136	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:47	-5	2885292	5497273	706879	1337630	0.52	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:28	45:29	-1	2572200	4967202	636626	1238958	0.52	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:28	46:25	3	2183963	4166670	512830	967923	0.52	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	280	158	112	63	1.78 *	/	
	Unidentified	44:02	00:00	0	1846633	1522406	475220	403138	1.21	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:40	45:41	-1	1663087	1354300	423539	337352	1.23	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:47	45:48	-1	1681130	1368765	416970	340454	1.23	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:12	46:10	2	1763078	1433630	425023	337535	1.23	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	253	133	101	53	1.91 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:39	45:40	-1	3340206	2587052	849518	648962	1.29	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:46	45:47	-1	3415625	2722938	849676	673487	1.25	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:11	46:09	2	3585745	2873590	868596	689718	1.25	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	165	135	66	54	1.22 *	/	
	1,2,3,4,6,7,8-HpCDF	48:59	48:47	12	1888804	1823552	401056	382580	1.04	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	51:19	51:07	12	1492649	1423504	326211	312996	1.05	AVV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	190	303	76	121	0.63 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:58	48:45	13	1731576	3766596	360892	798756	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	51:18	51:06	12	1387344	3130573	306941	684690	0.44	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	140	153	56	61	0.92	/	
	Unidentified	49:31	00:00	0	1360071	1326686	273630	262899	1.03	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:43	50:27	16	1303752	1249539	277182	253241	1.04	AVV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	55	78	22	31	0.71 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:42	50:26	16	2611962	2444137	548457	505677	1.07	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	90	130	36	52	0.69 *	/	
	OCDF	54:50	55:00	-10	2699605	2958222	722104	776728	0.91	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160817s3/d1160817s3	Prep Date		SDG No	
Analysis ID	180435	Prep Exp Date		Date Received	
Analysis Date	08/17/16 22:05	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

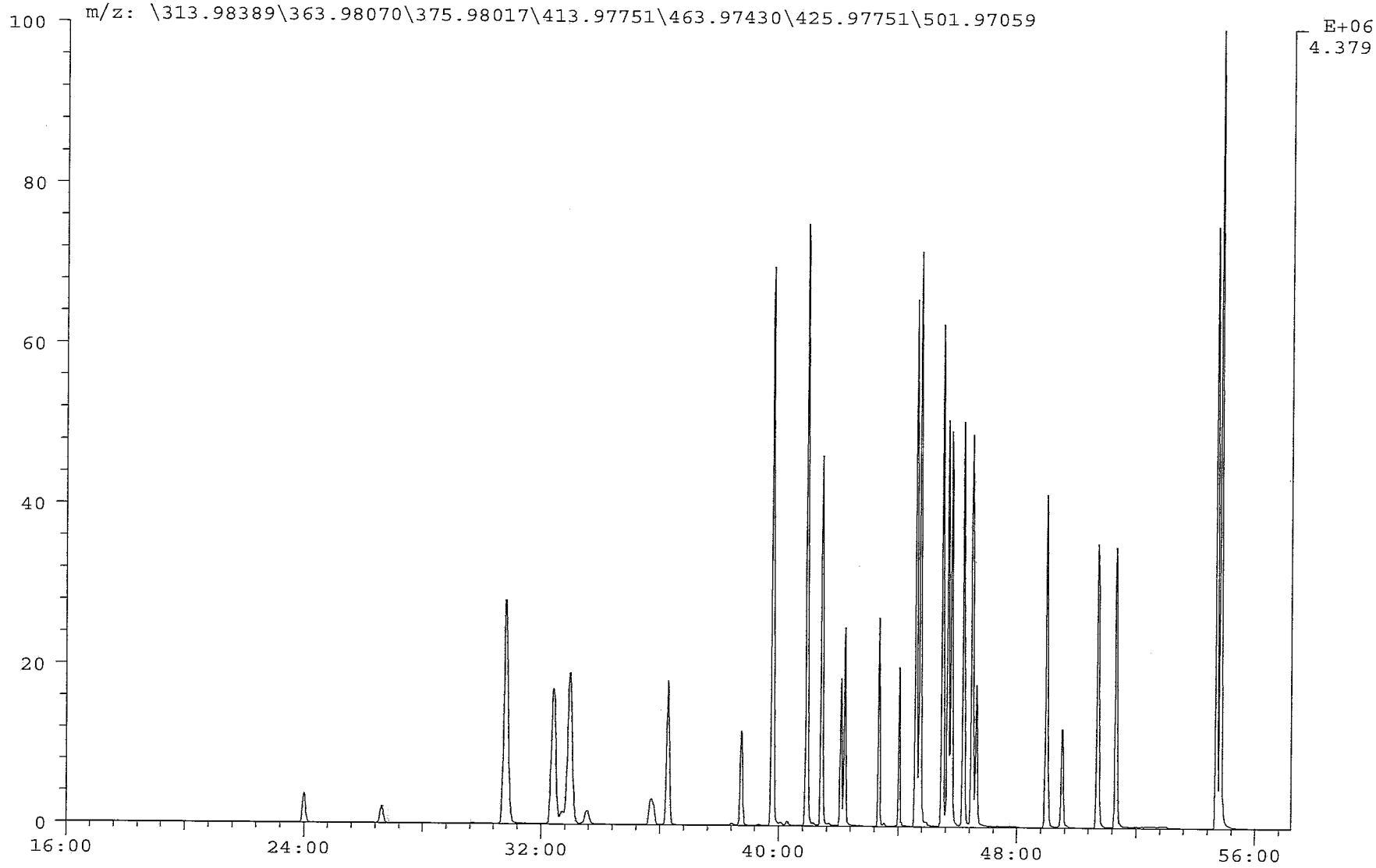
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	93	210	37	84	0.44 *	/	
	13C-OCDF	54:49	54:59	-10	5575163	6269843	1454759	1631011	0.89	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	93	138	37	55	0.67 *	/	
	OCDD	54:42	54:52	-10	2302927	2575204	609993	675838	0.89	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	90	78	36	31	1.16 *	/	
	13C-OCDD	54:41	54:51	-10	4007039	4501157	1049736	1164019	0.89	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. LKM 8-17-16
Cal 7
QC LKM 8/18/16

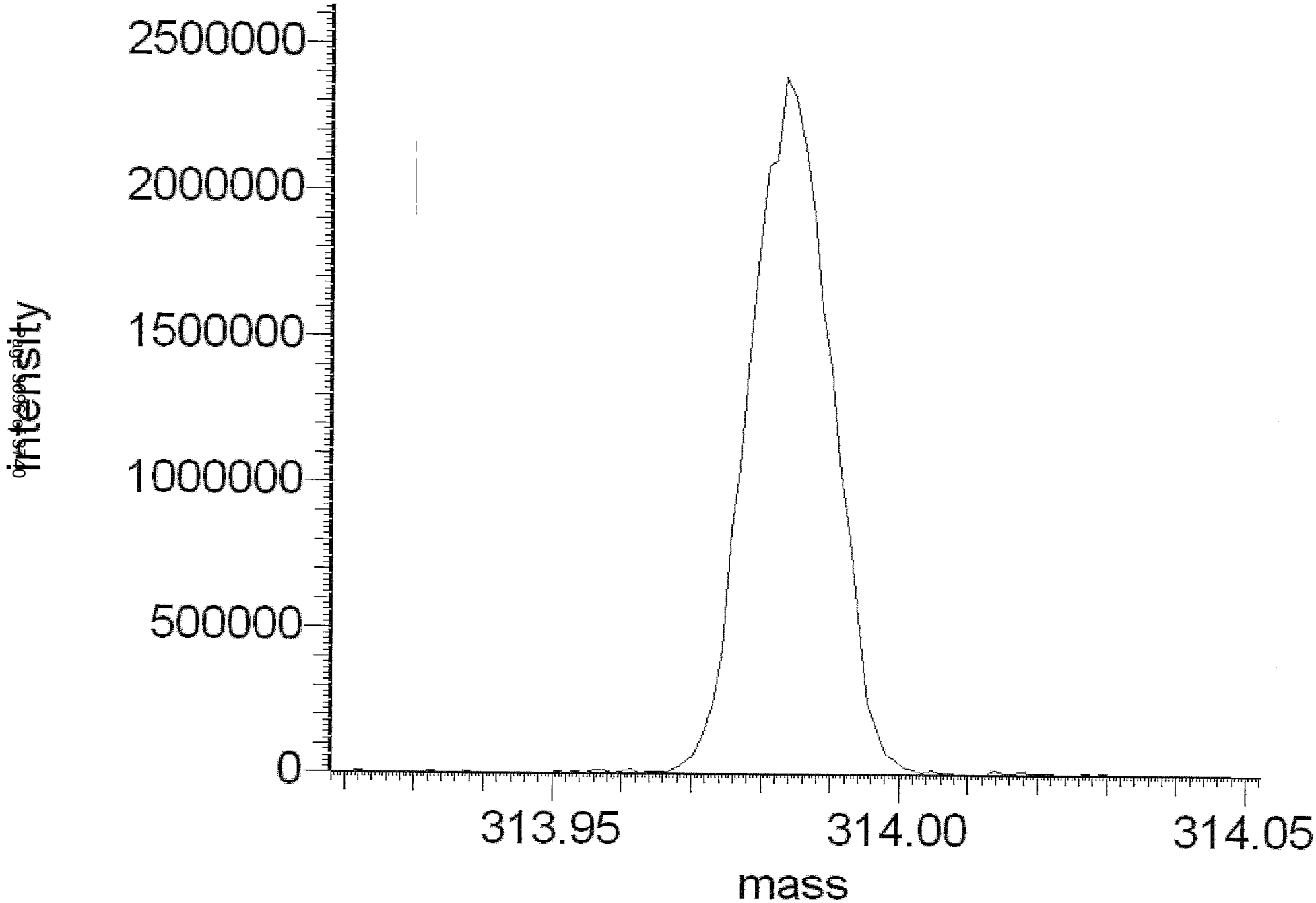
CHRO: d1160817s3 17-Aug-16 Elapse: 39:45 1620
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



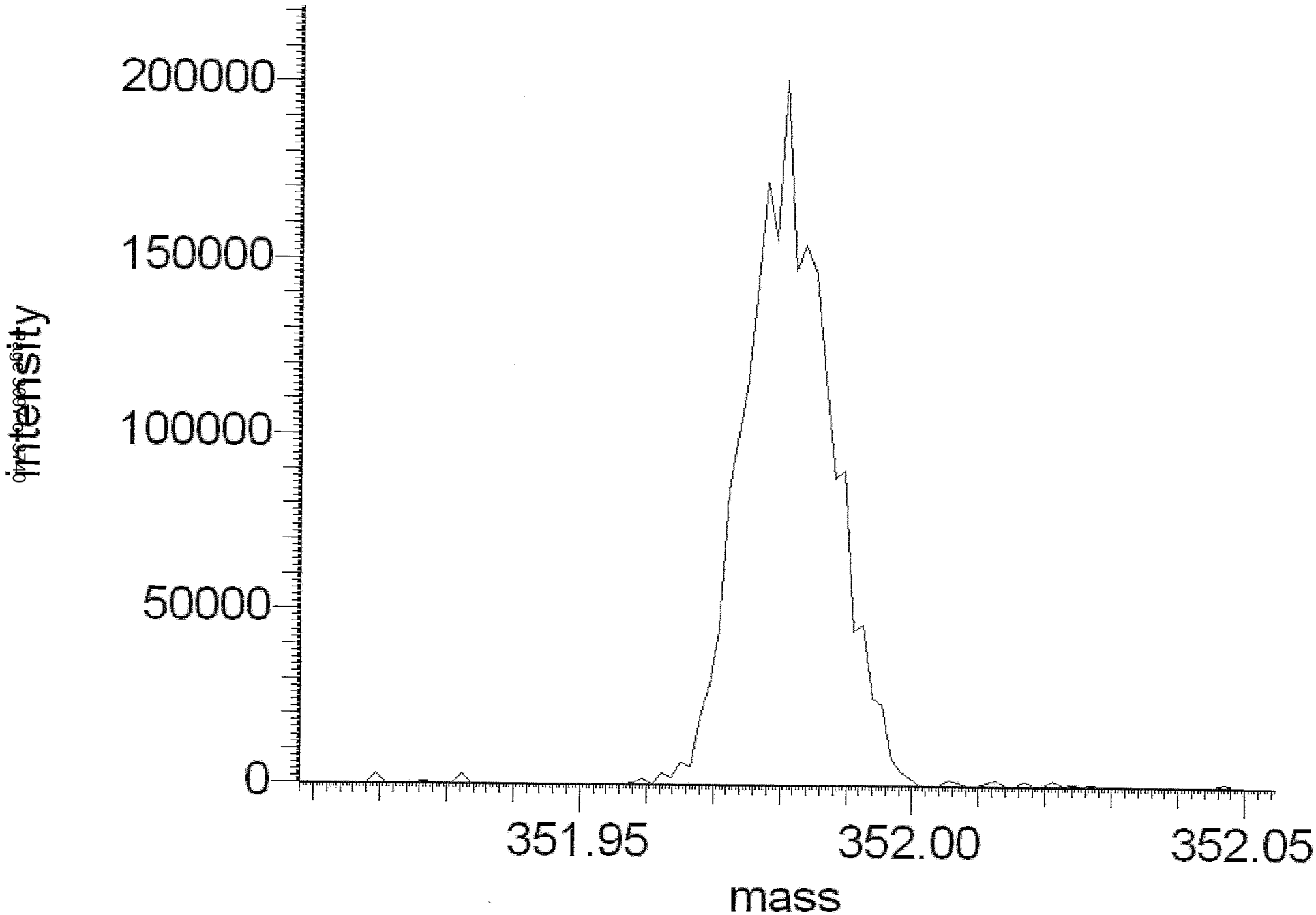
```
Reports
22:04:06:  Peak matching procedure started
22:04:07:
22:04:07:  Reference mass: 313.98336
22:04:08:  Sample mass: 364.0
22:04:08:
22:04:09:  Finding reference mass
22:04:10:  Finding sample mass
22:04:10:
22:04:16:  [1]   363.9783 amu, mean: 363.9783
22:04:19:  [2]   363.9783 amu, mean: 363.9783     SD: 0.01 mmu or: 0.02 ppm
22:04:22:  [3]   363.9783 amu, mean: 363.9783     SD: 0.01 mmu or: 0.02 ppm
22:04:25:  [4]   363.9788 amu, mean: 363.9785     SD: 0.25 mmu or: 0.70 ppm
22:04:28:  [5]   363.9787 amu, mean: 363.9785     SD: 0.25 mmu or: 0.68 ppm
22:04:31:  [6]   363.9785 amu, mean: 363.9785     SD: 0.22 mmu or: 0.61 ppm
22:04:34:  [7]   363.9780 amu, mean: 363.9784     SD: 0.28 mmu or: 0.78 ppm
22:04:38:  [8]   363.9786 amu, mean: 363.9785     SD: 0.27 mmu or: 0.74 ppm
22:04:41:  [9]   363.9797 amu, mean: 363.9786     SD: 0.49 mmu or: 1.35 ppm
22:04:44:  [10]   363.9788 amu, mean: 363.9786     SD: 0.47 mmu or: 1.28 ppm
22:04:47:  [11]   363.9786 amu, mean: 363.9786     SD: 0.44 mmu or: 1.22 ppm
22:04:48:
22:04:48:  Stop requested. Please wait for procedure to finish.
22:04:48:
22:04:50:
22:04:51:  Peakmatching stopped
```

Signature Lh 8-17-16

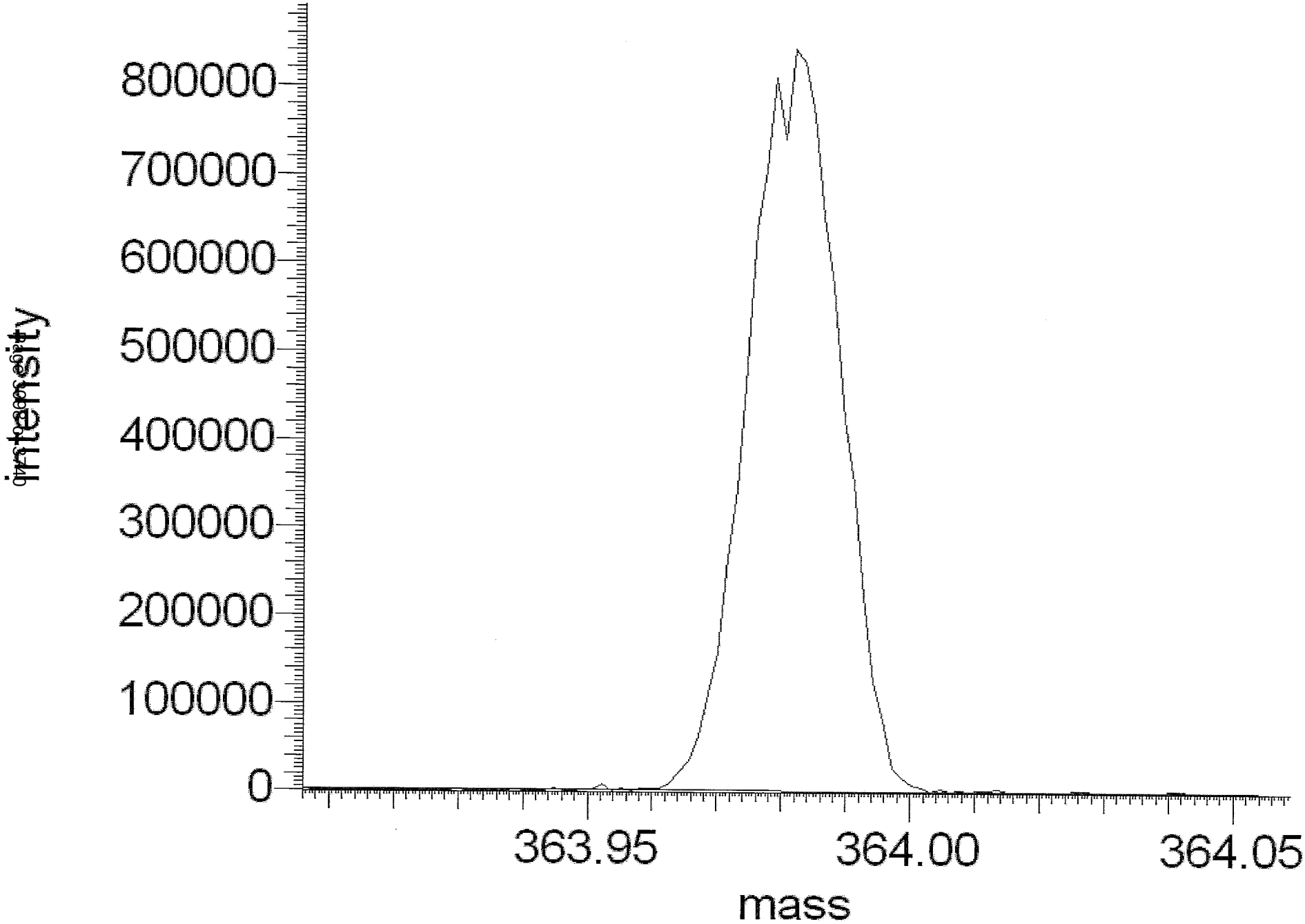
LockMass: 313.9838 Instr.: DFS-1209
Resolution: 11917 (08/17/16 21:56:31)



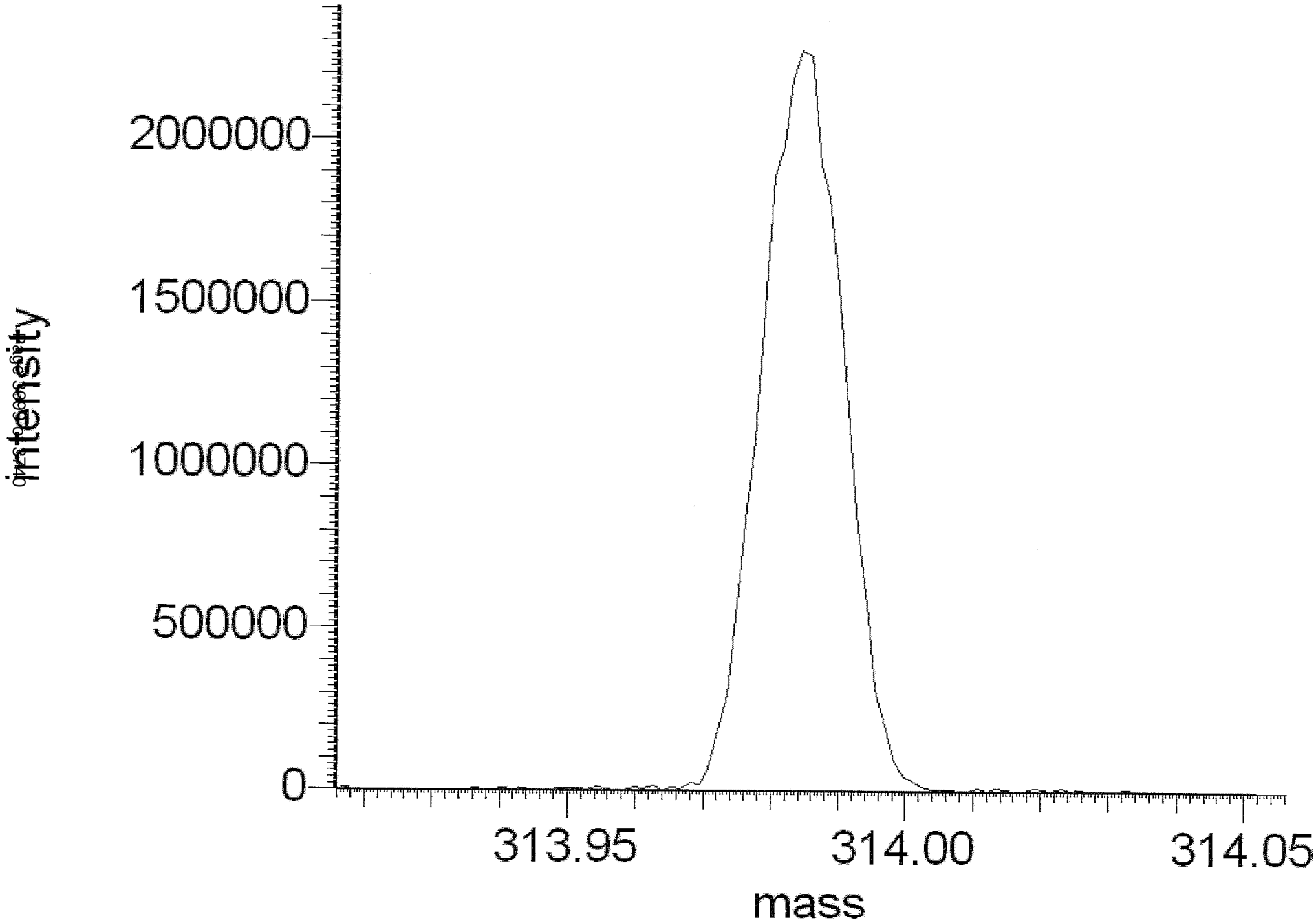
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12179 (08/17/16 21:57:17)



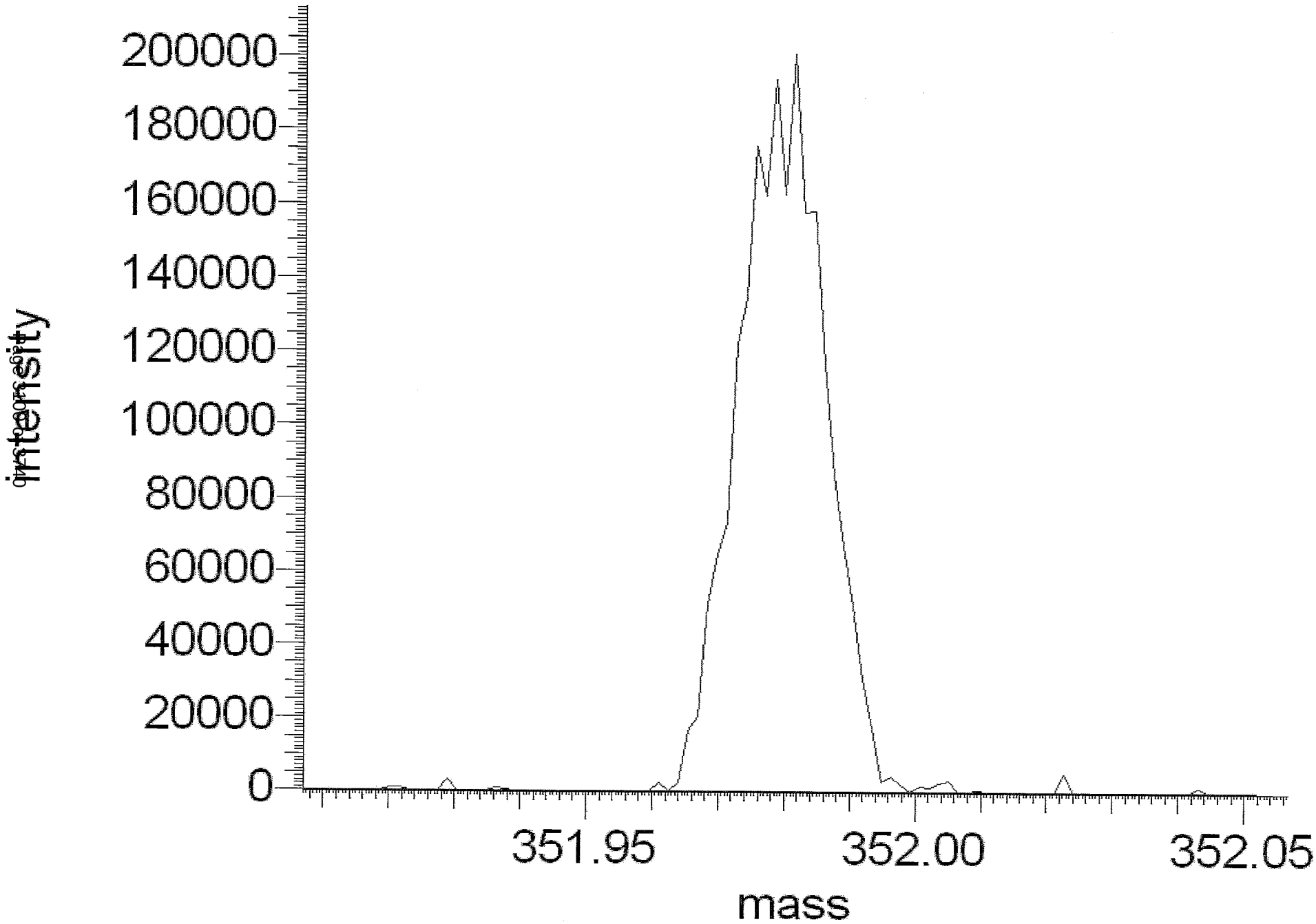
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 11532 (08/17/16 21:57:20)



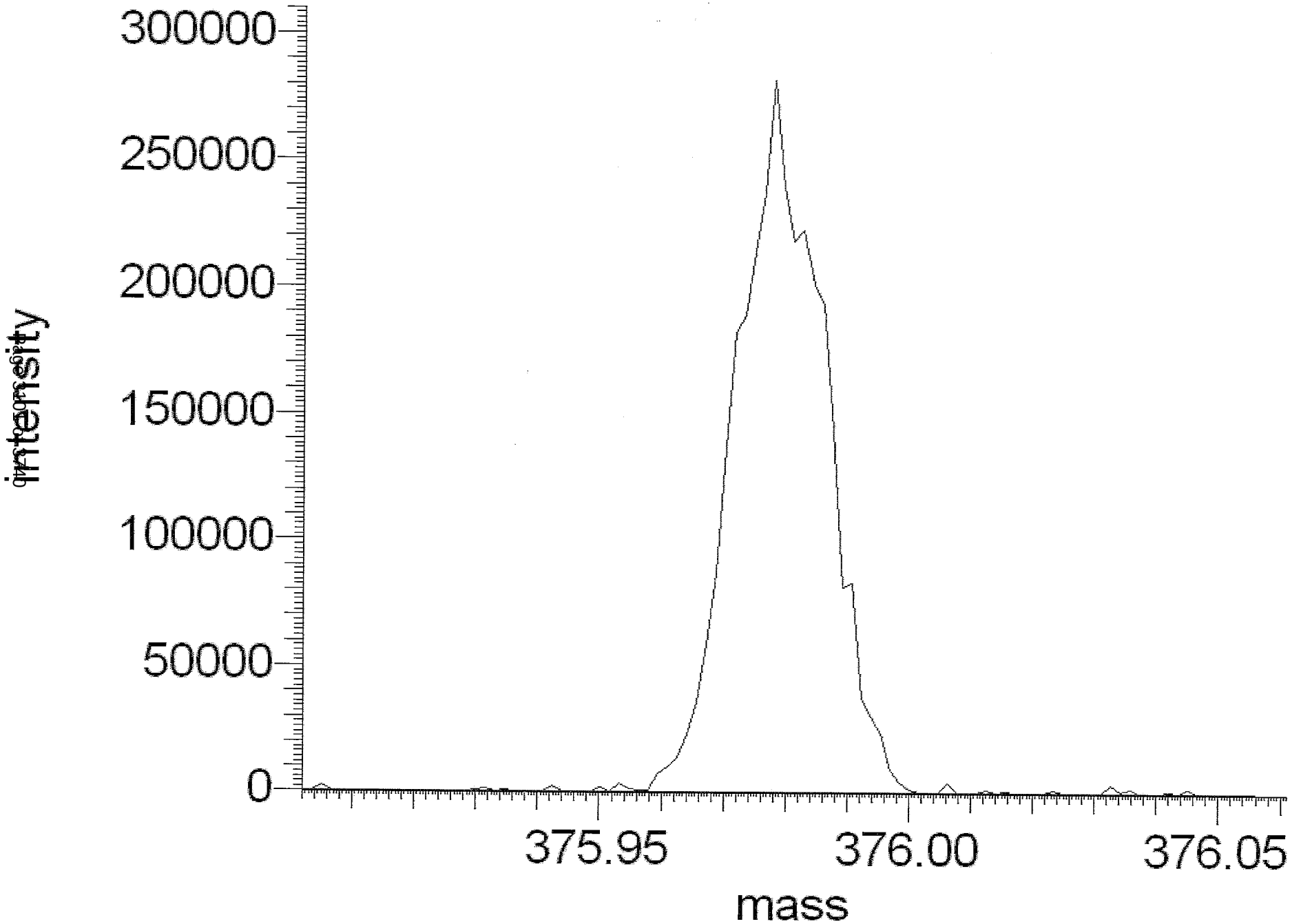
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 11532 (08/17/16 21:57:35)



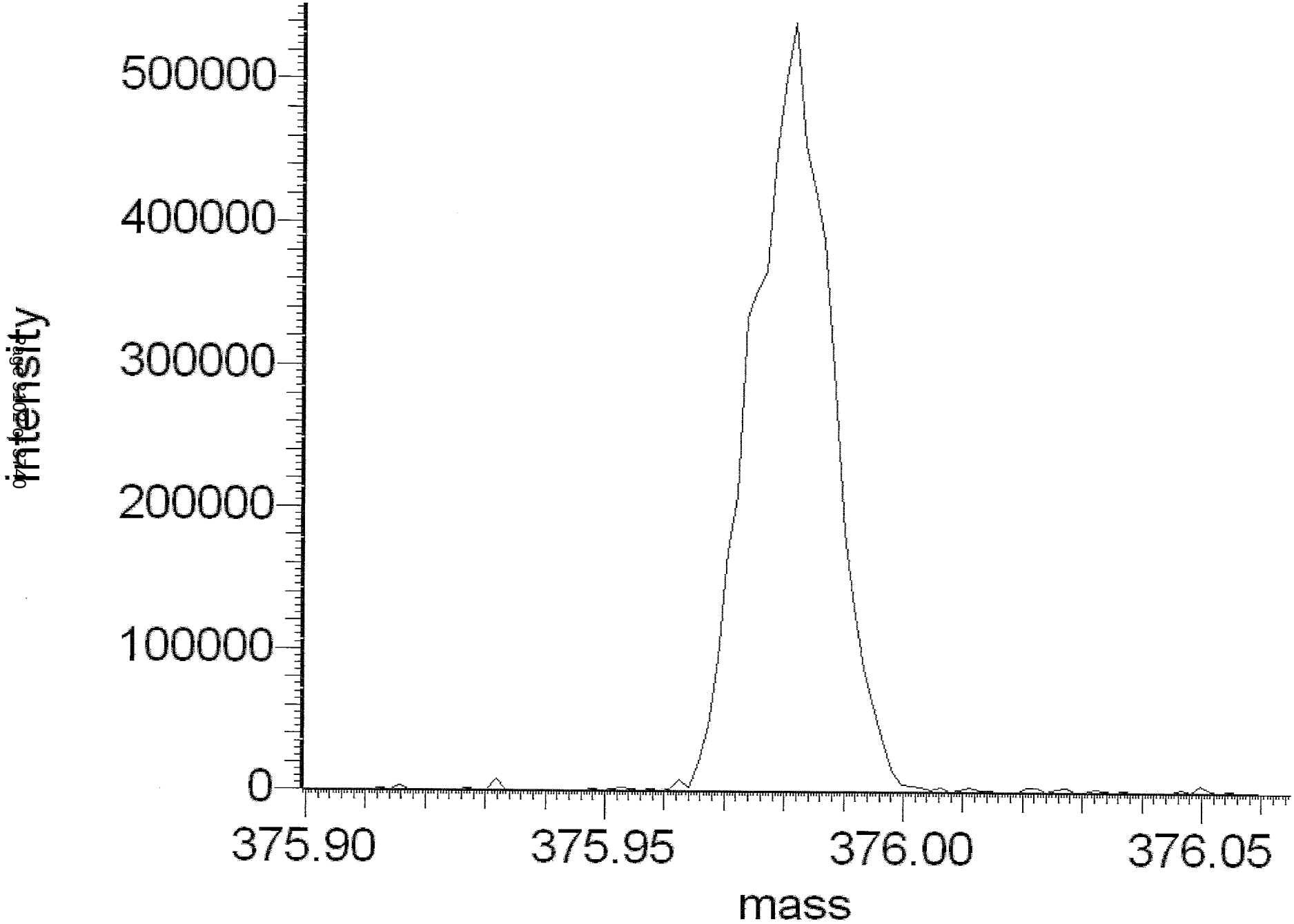
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12476 (08/17/16 21:58:22)



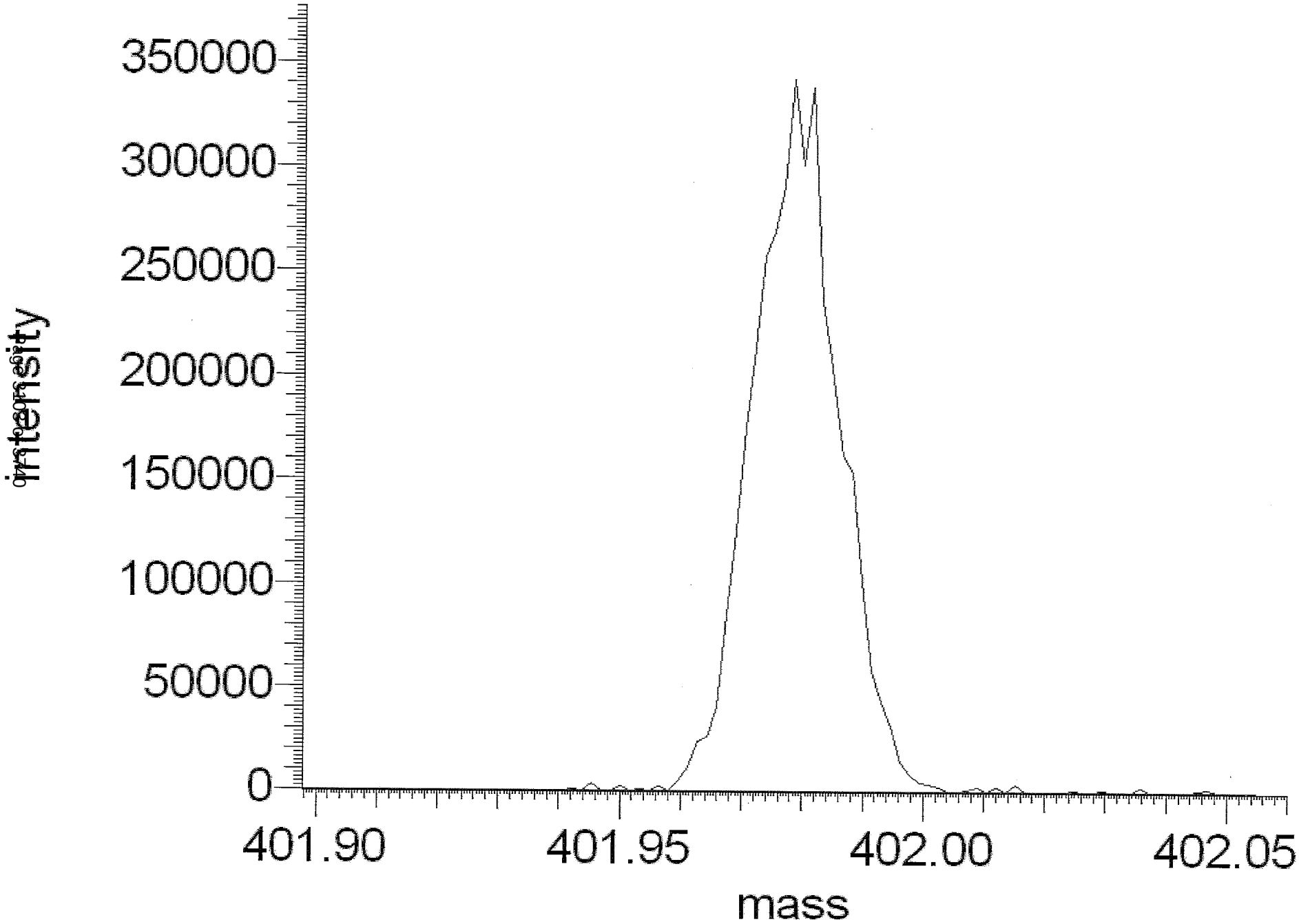
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 11631 (08/17/16 21:58:25)



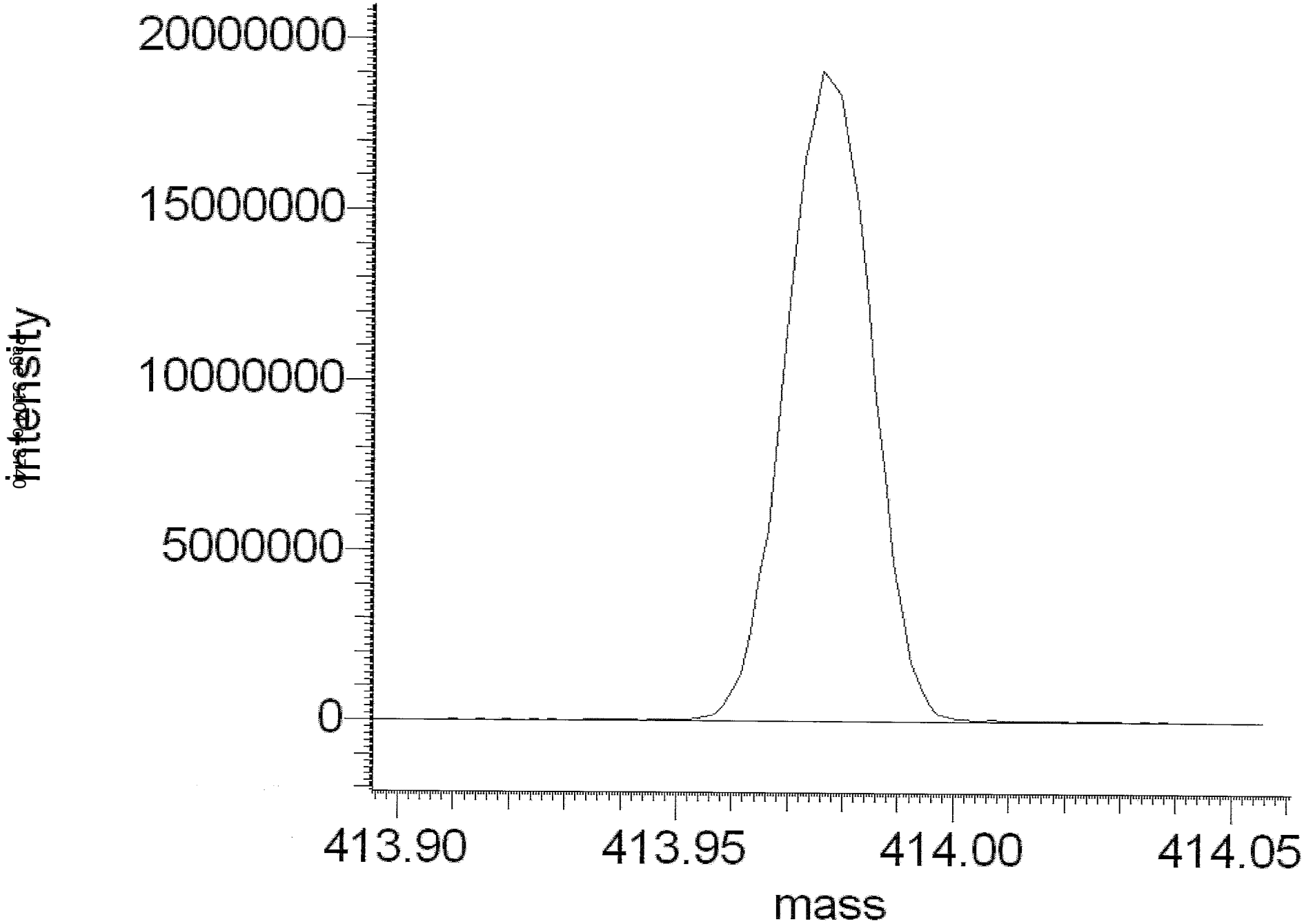
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 11631 (08/17/16 21:58:40)



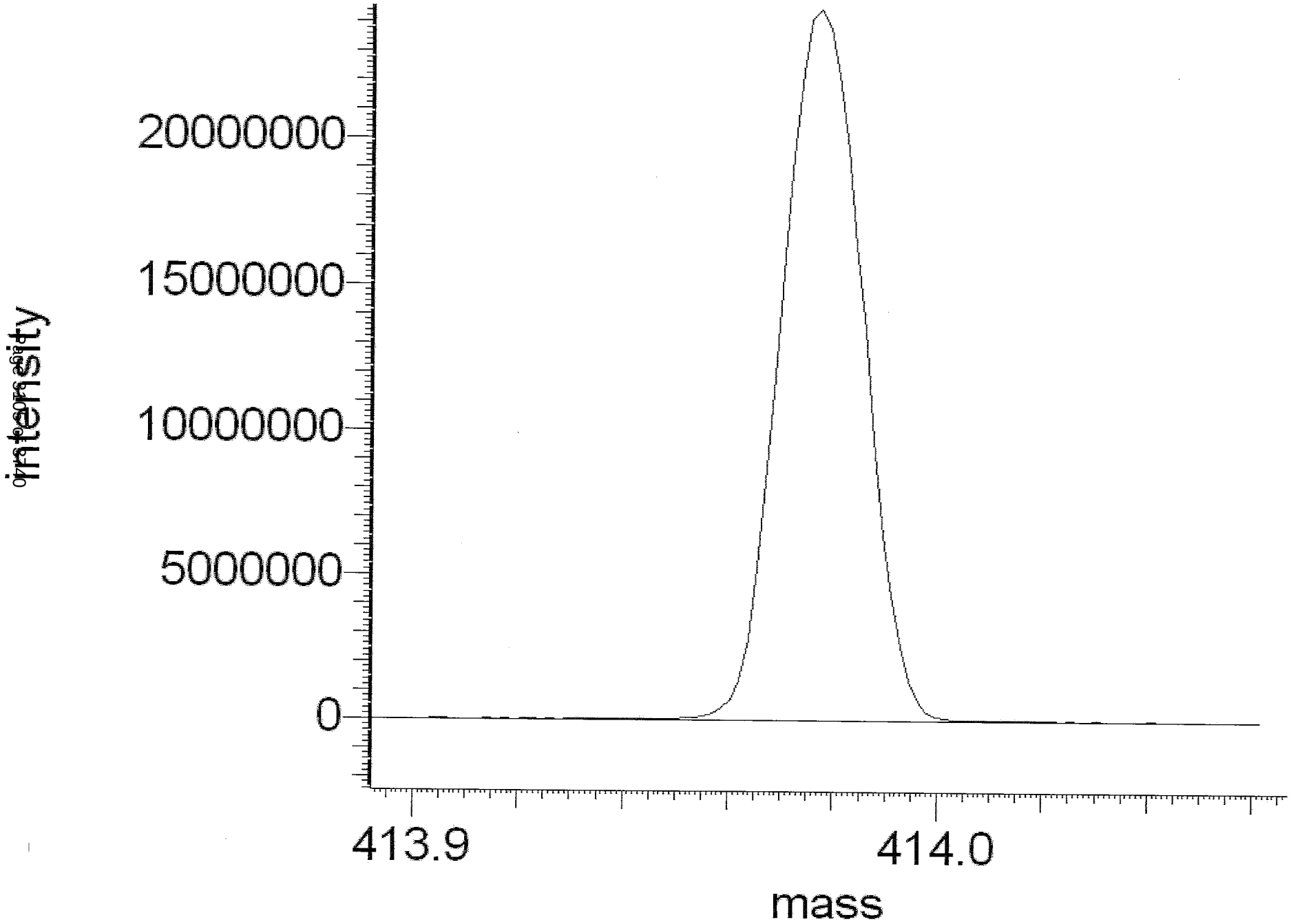
Mass: 401.9770 Instr.: DFS-1209
Resolution: 12139 (08/17/16 21:59:27)



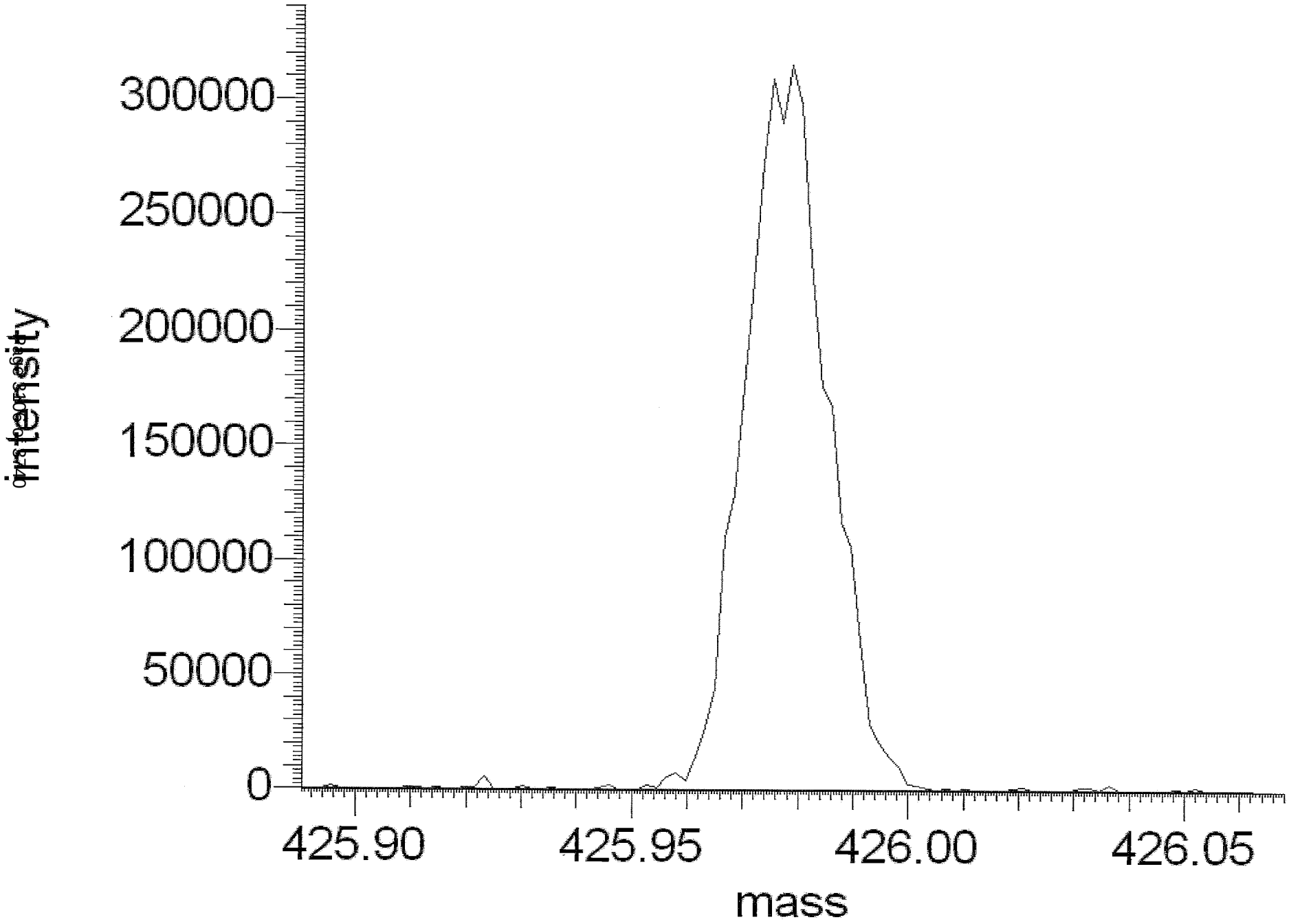
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 12106 (08/17/16 21:59:30)



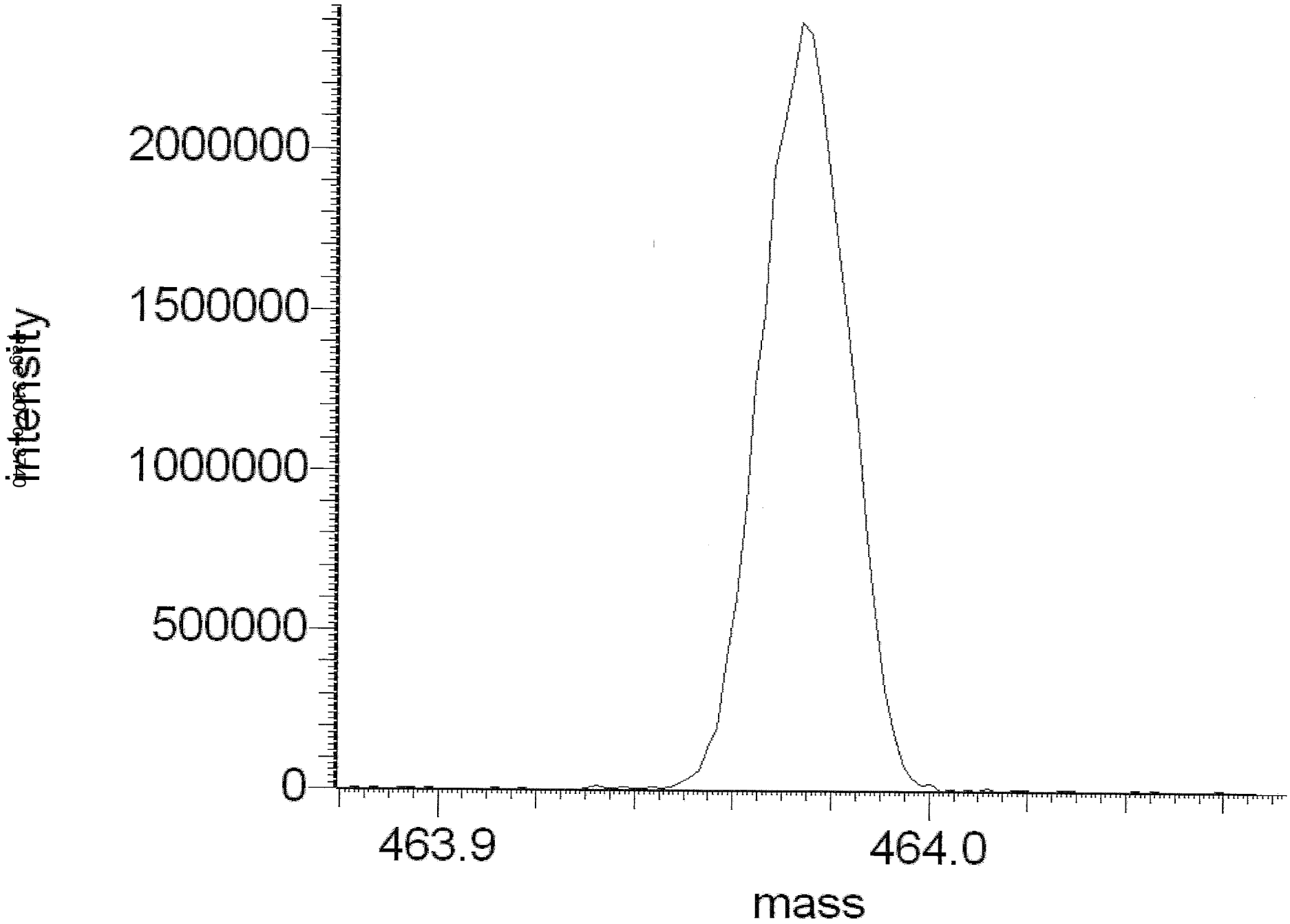
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 12106 (08/17/16 21:59:45)



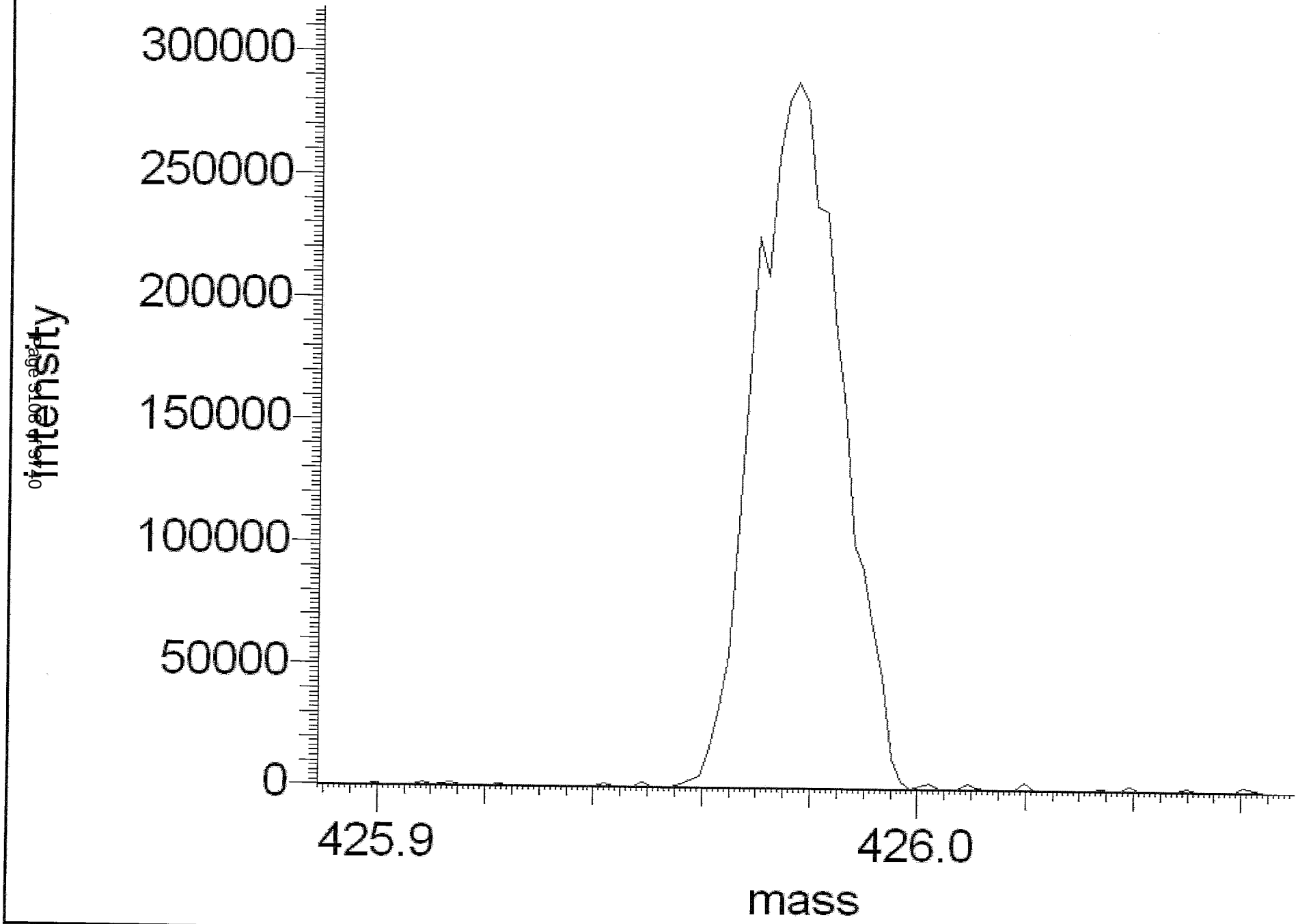
Mass: 425.9770 Instr.: DFS-1209
Resolution: 12176 (08/17/16 22:00:31)



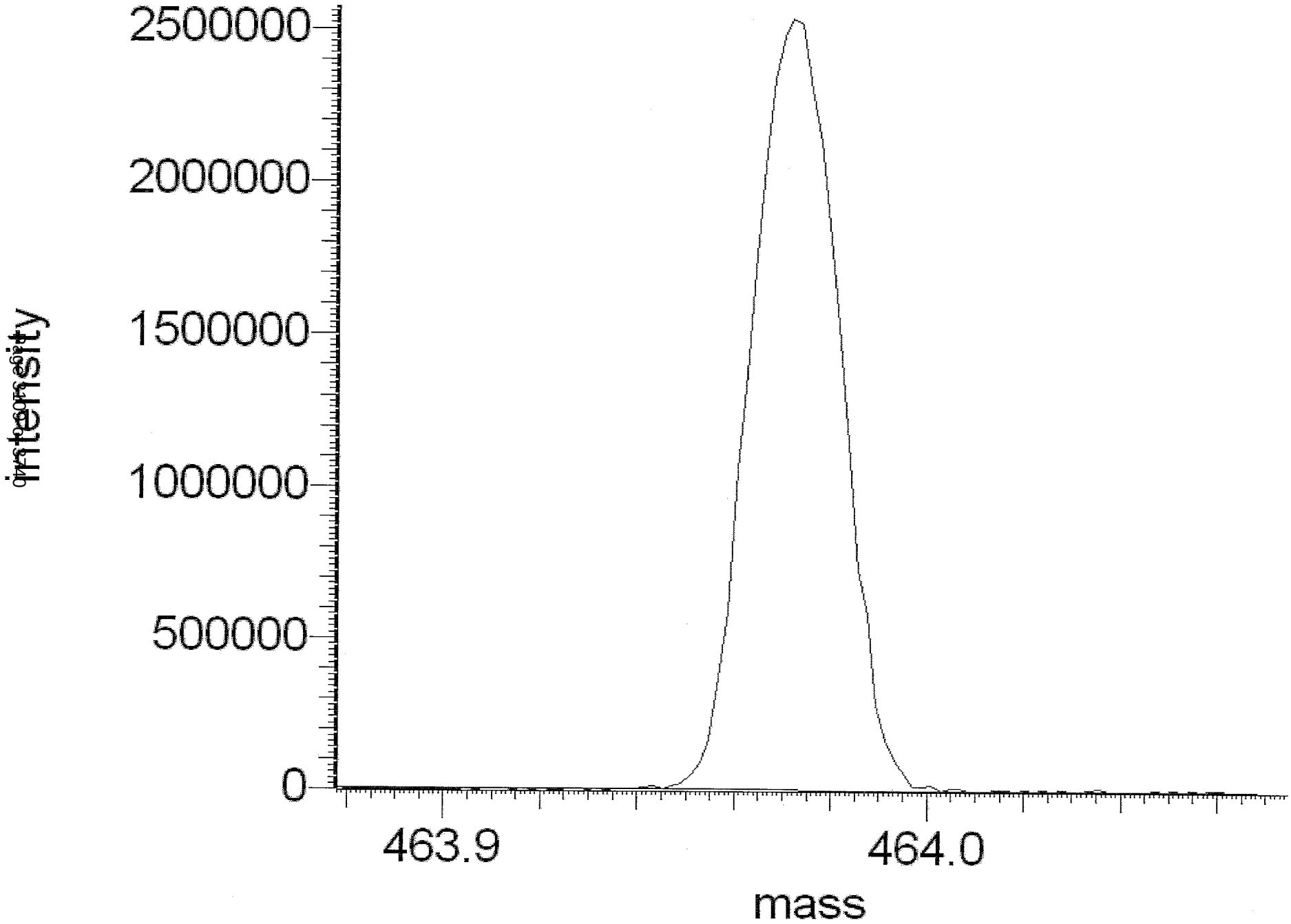
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 12002 (08/17/16 22:00:34)



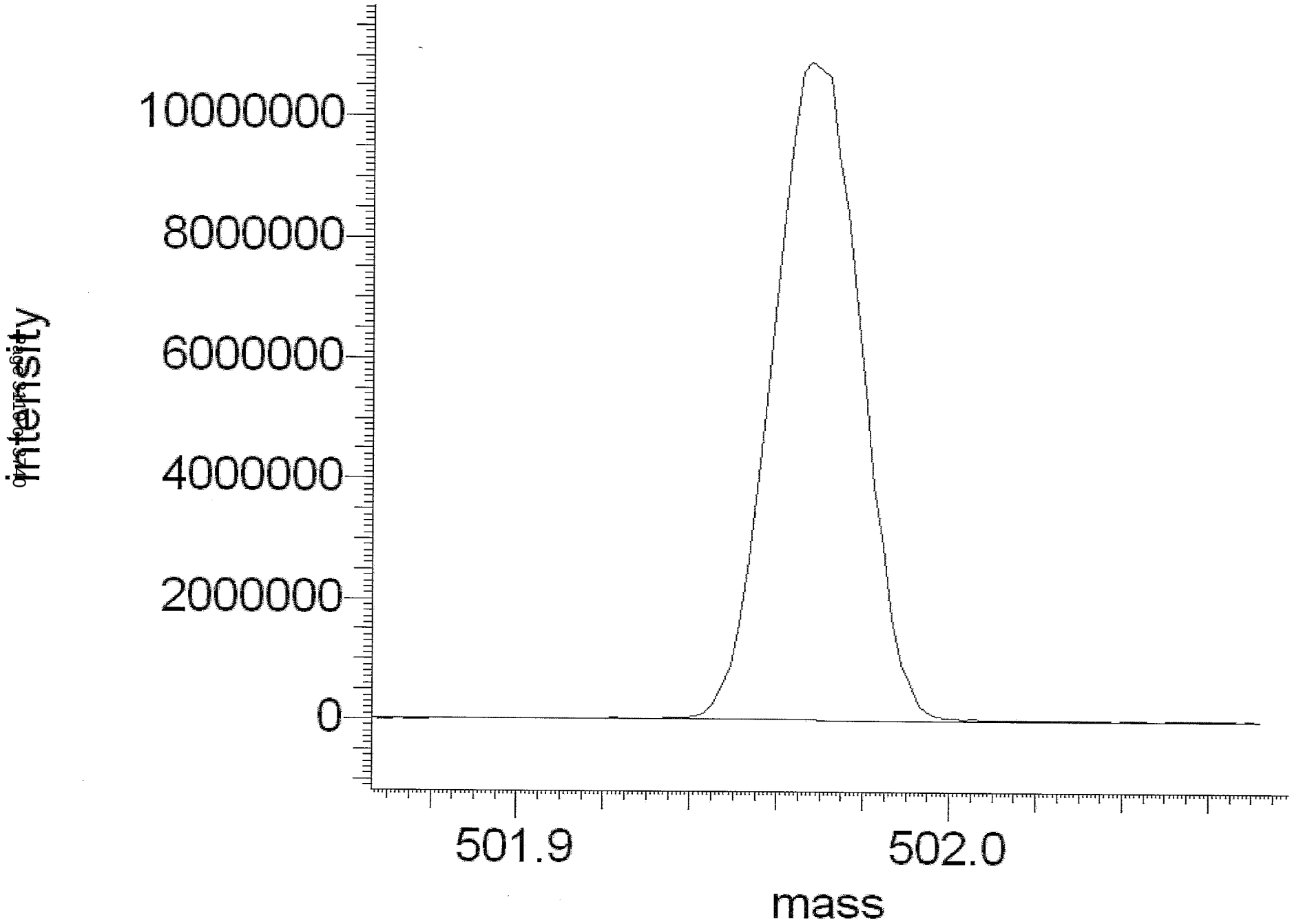
LockMass: 425.9775 Instr.: DFS-1209
Resolution: 12002 (08/17/16 22:00:49)



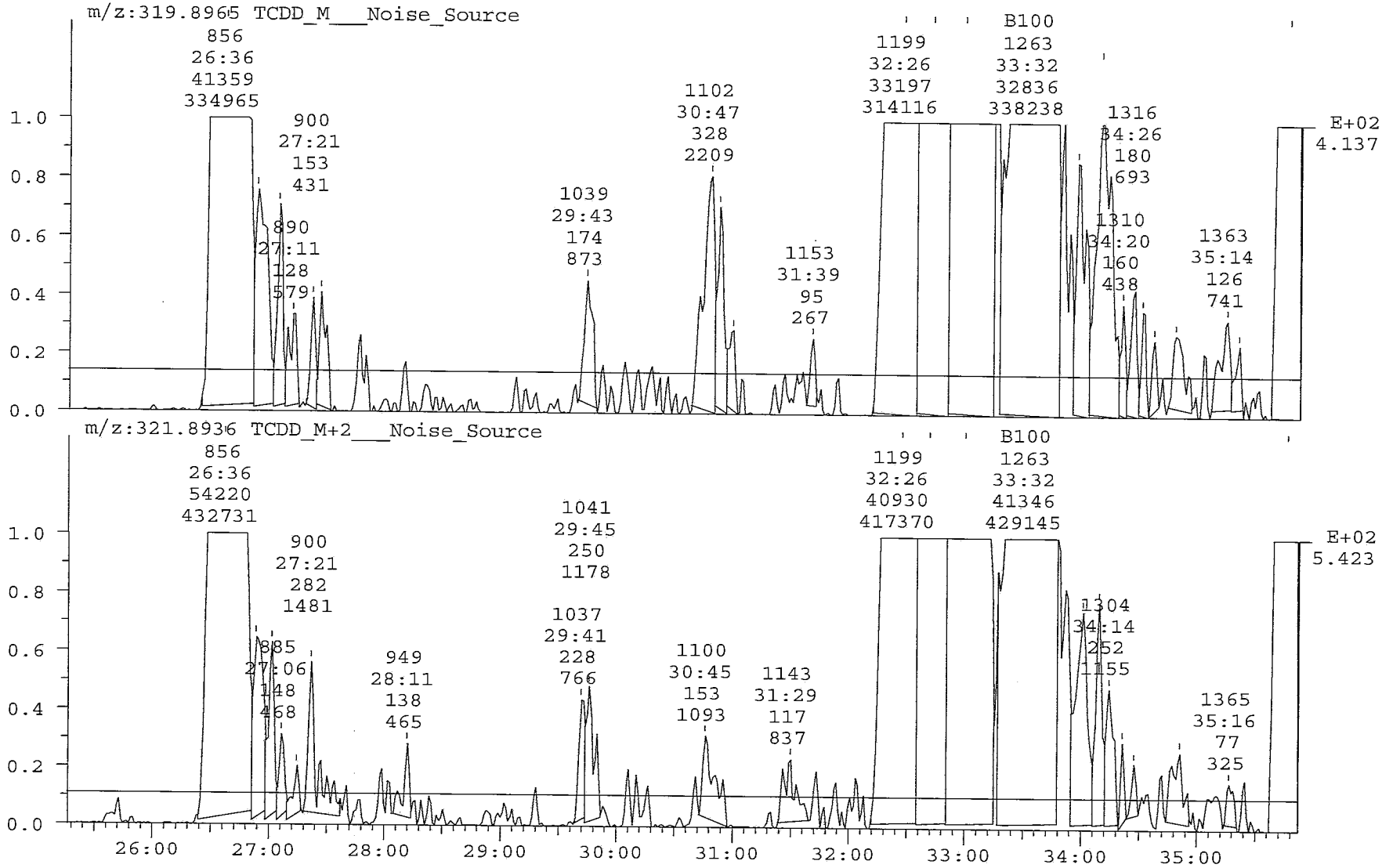
Mass: 463.9743 Instr.: DFS-1209
Resolution: 11826 (08/17/16 22:01:36)



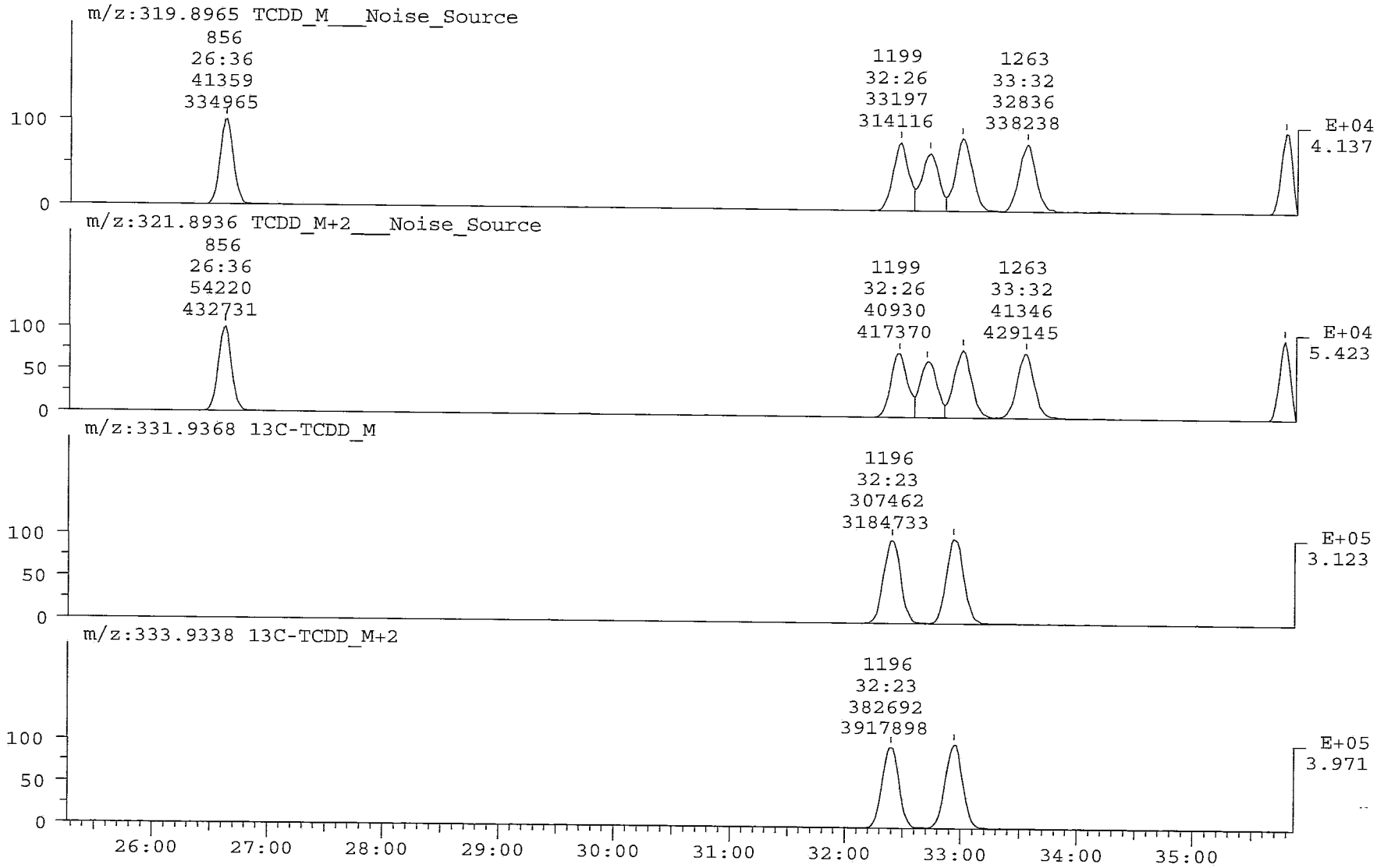
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 11656 (08/17/16 22:01:39)



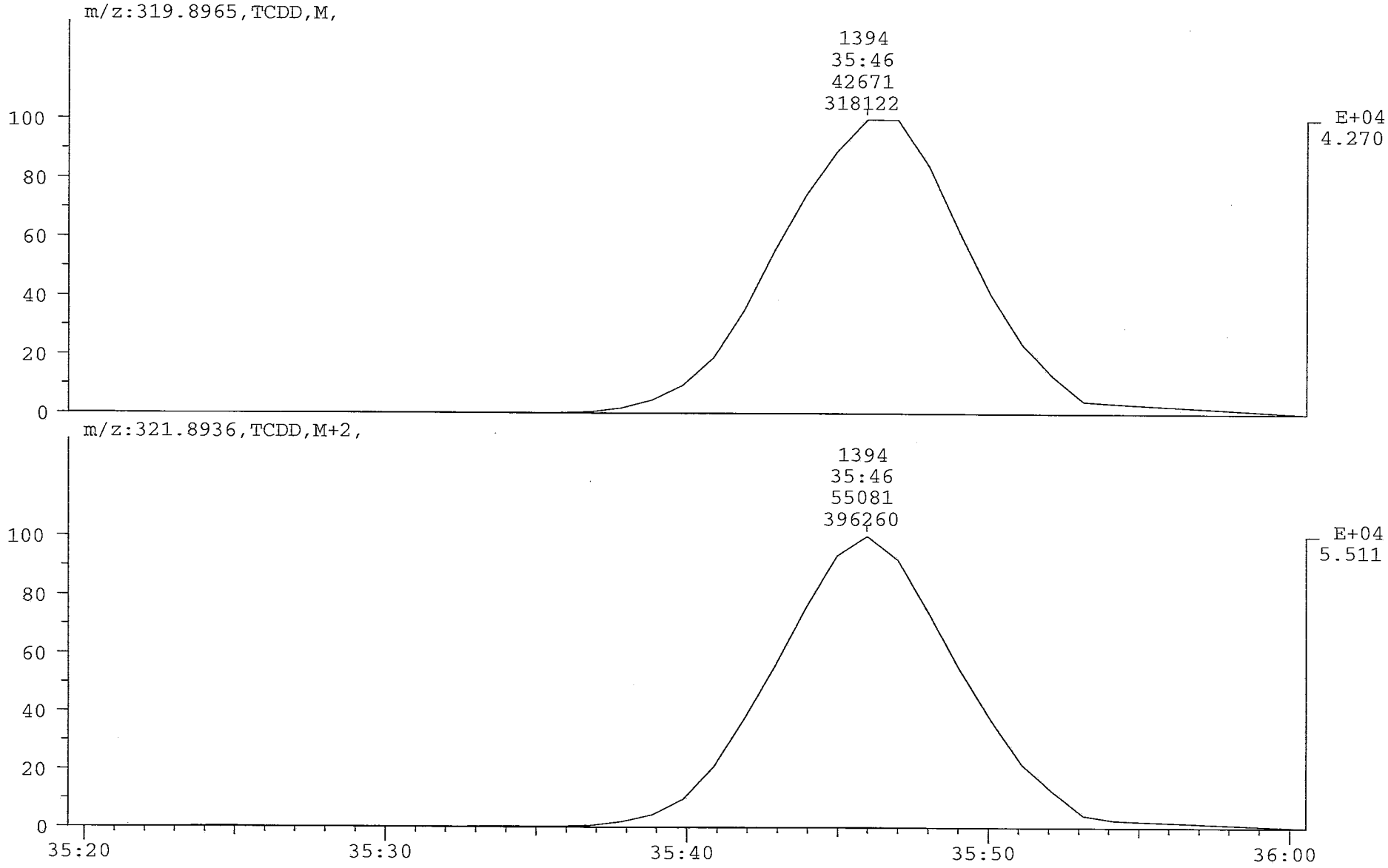
CHRO: d1160817s3 17-Aug-16 Elapse: 39:45 1620
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 777 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



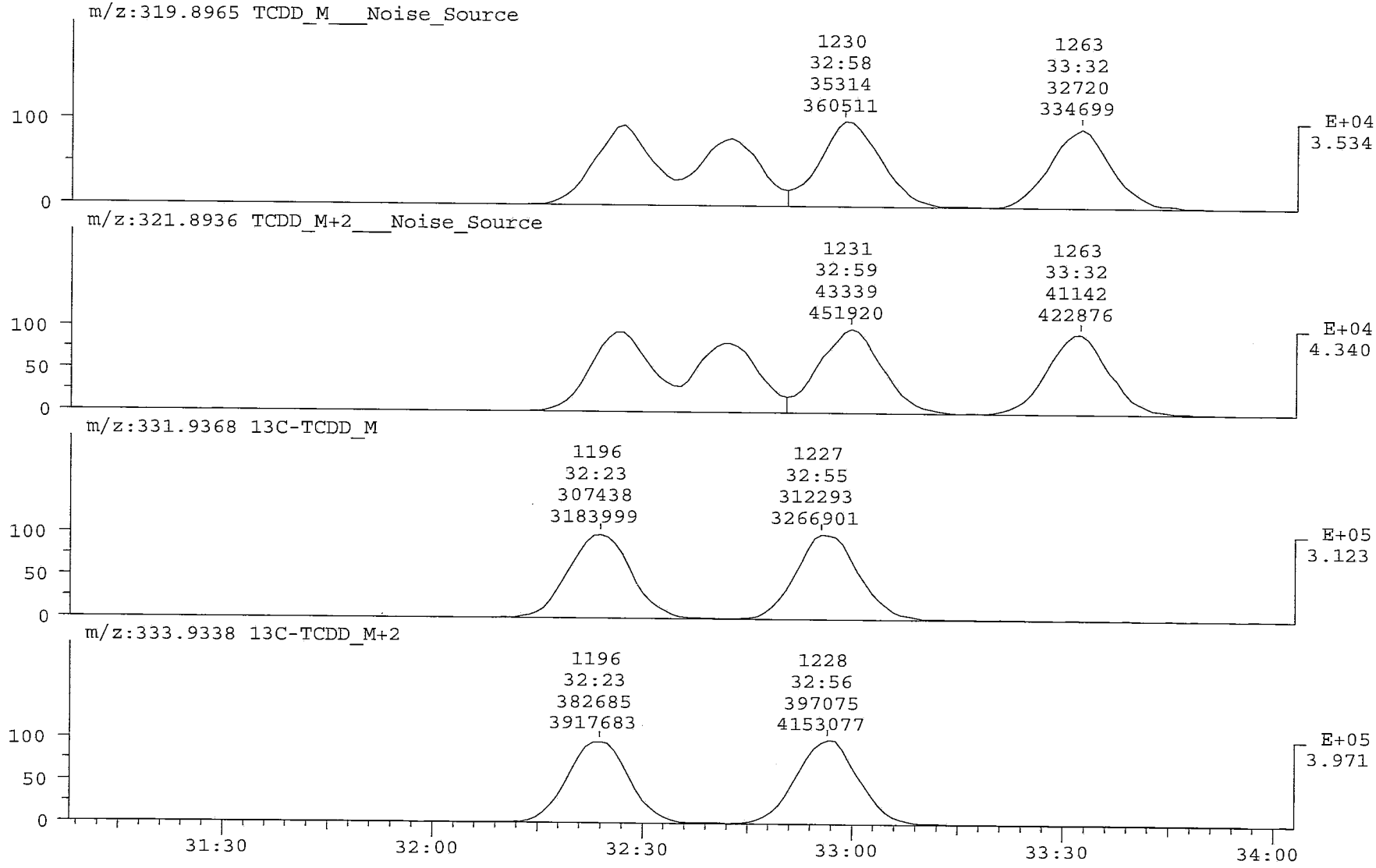
CHRO: d1160817s3 17-Aug-16 Elapse: 39:45 1620
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 777 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



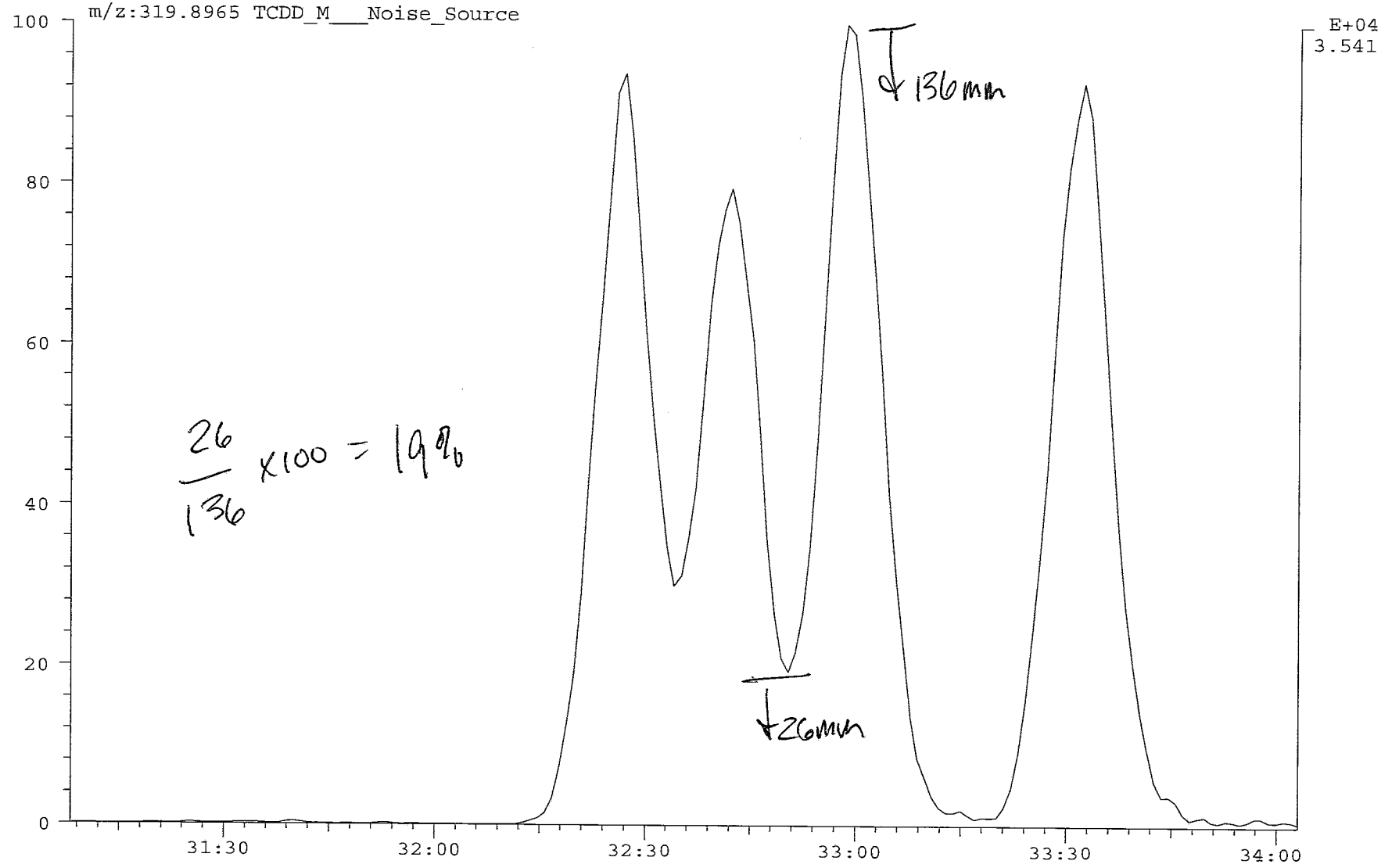
```
CHRO:  d1160817s3                          17-Aug-16  Elapse:  54:51      2493
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1368 > 1403      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



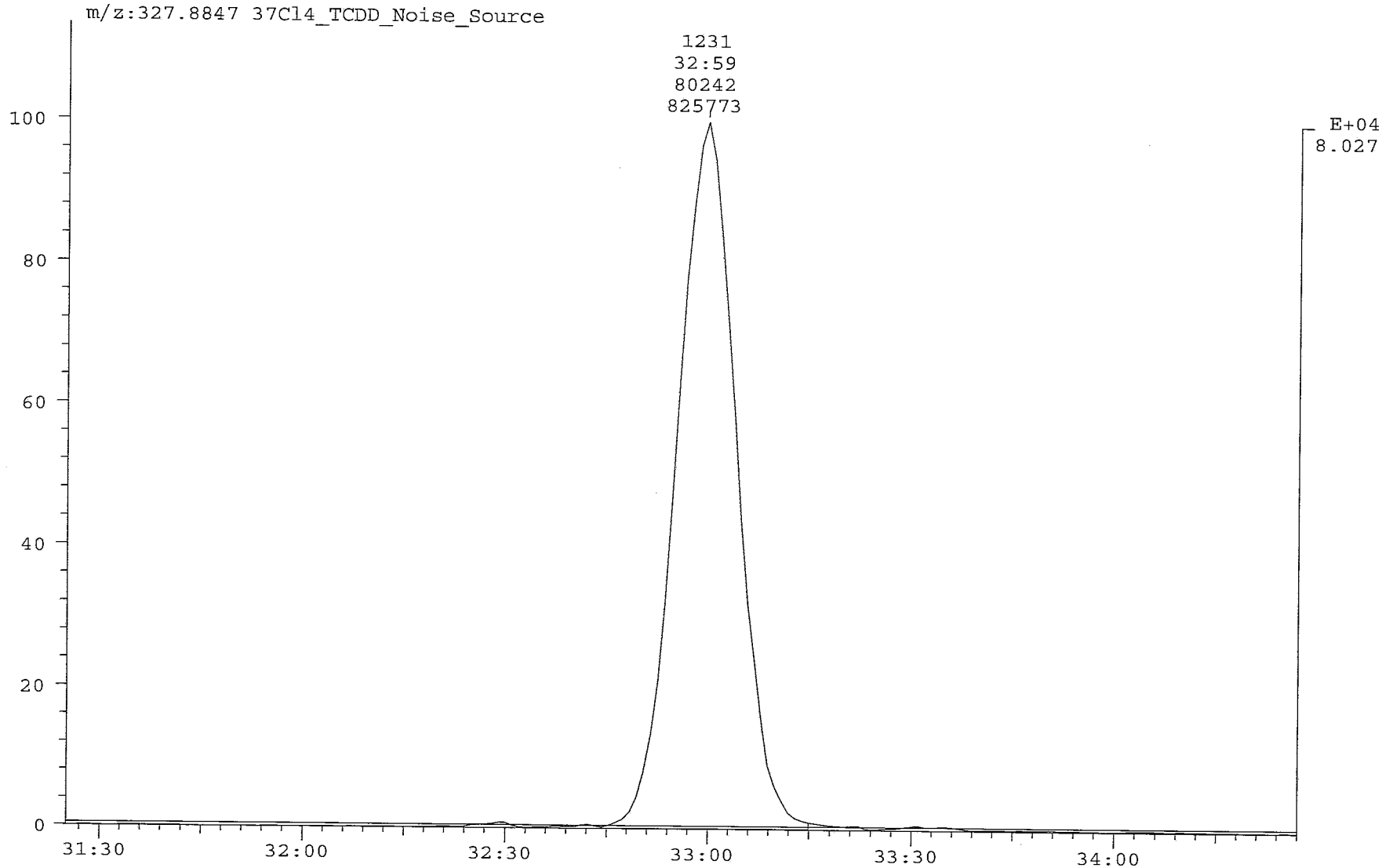
CHRO: d1160817s3 17-Aug-16 Elapse: 32:35 1207
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1122 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



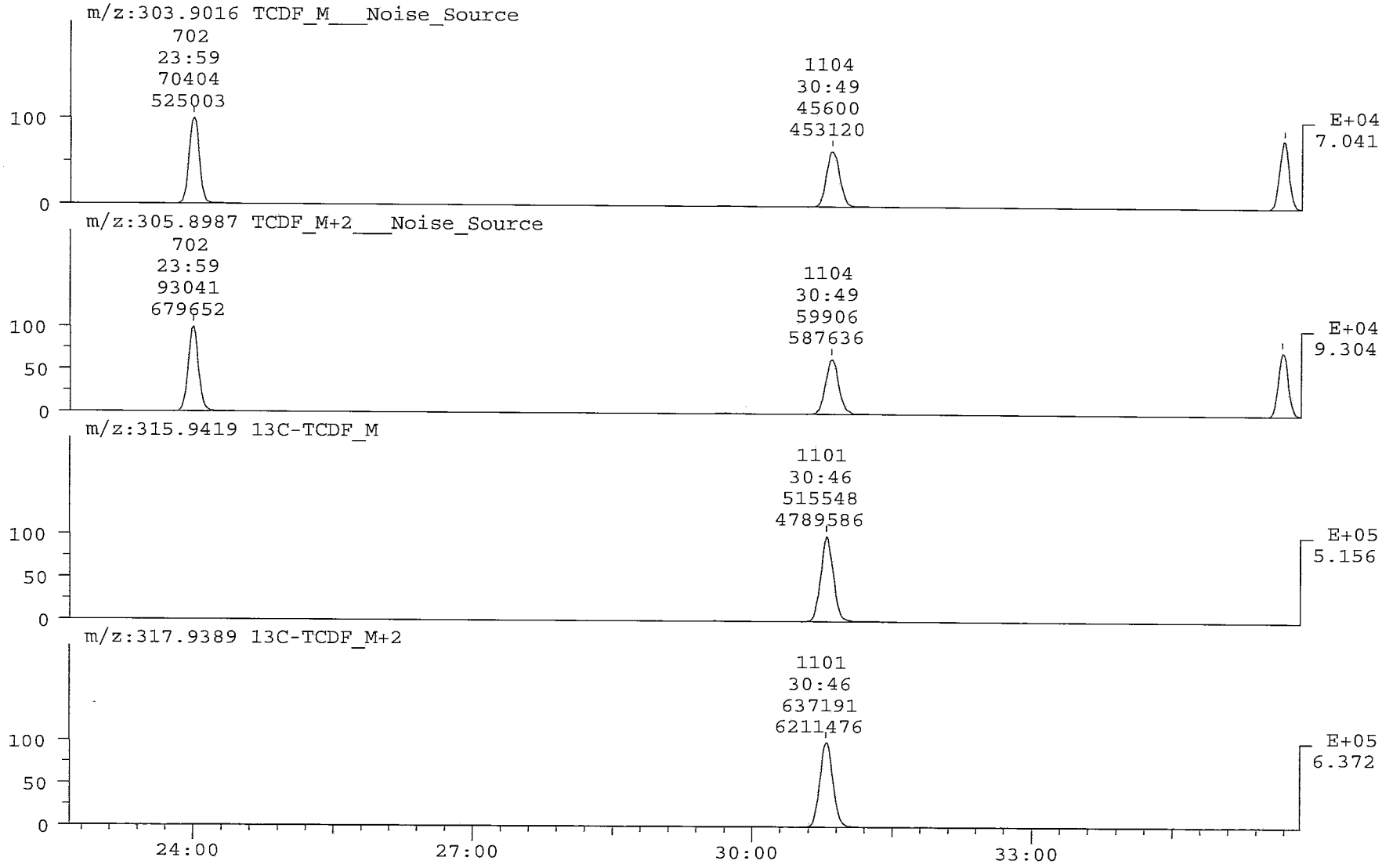
CHRO: d1160817s3 17-Aug-16 Elapse: 32:35 1207
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1122 > 1293 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



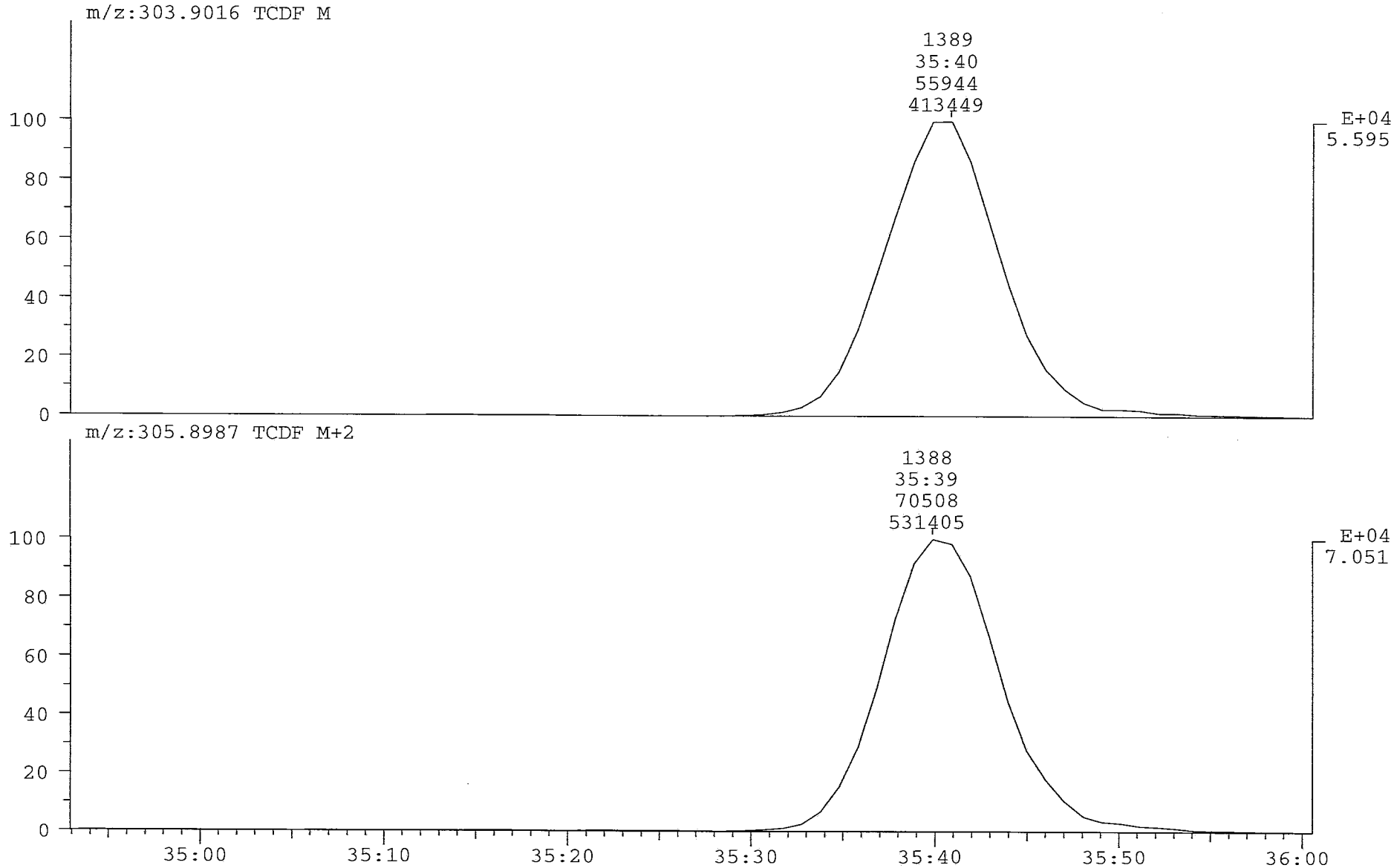
CHRO: d1160817s3 17-Aug-16 Elapse: 32:53 1225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1138 > 1317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



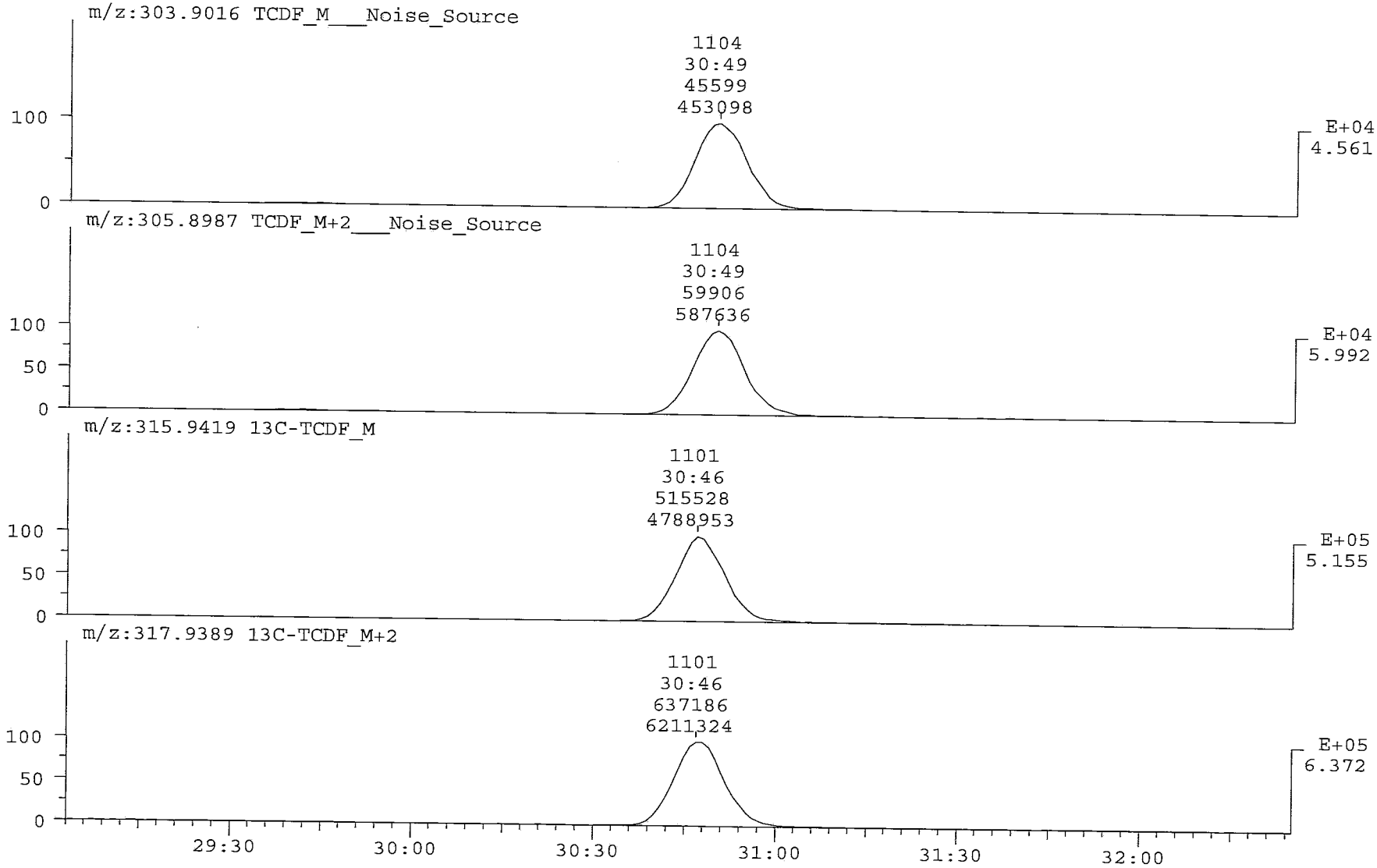
CHRO: d1160817s3 17-Aug-16 Elapse: 32:53 1225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



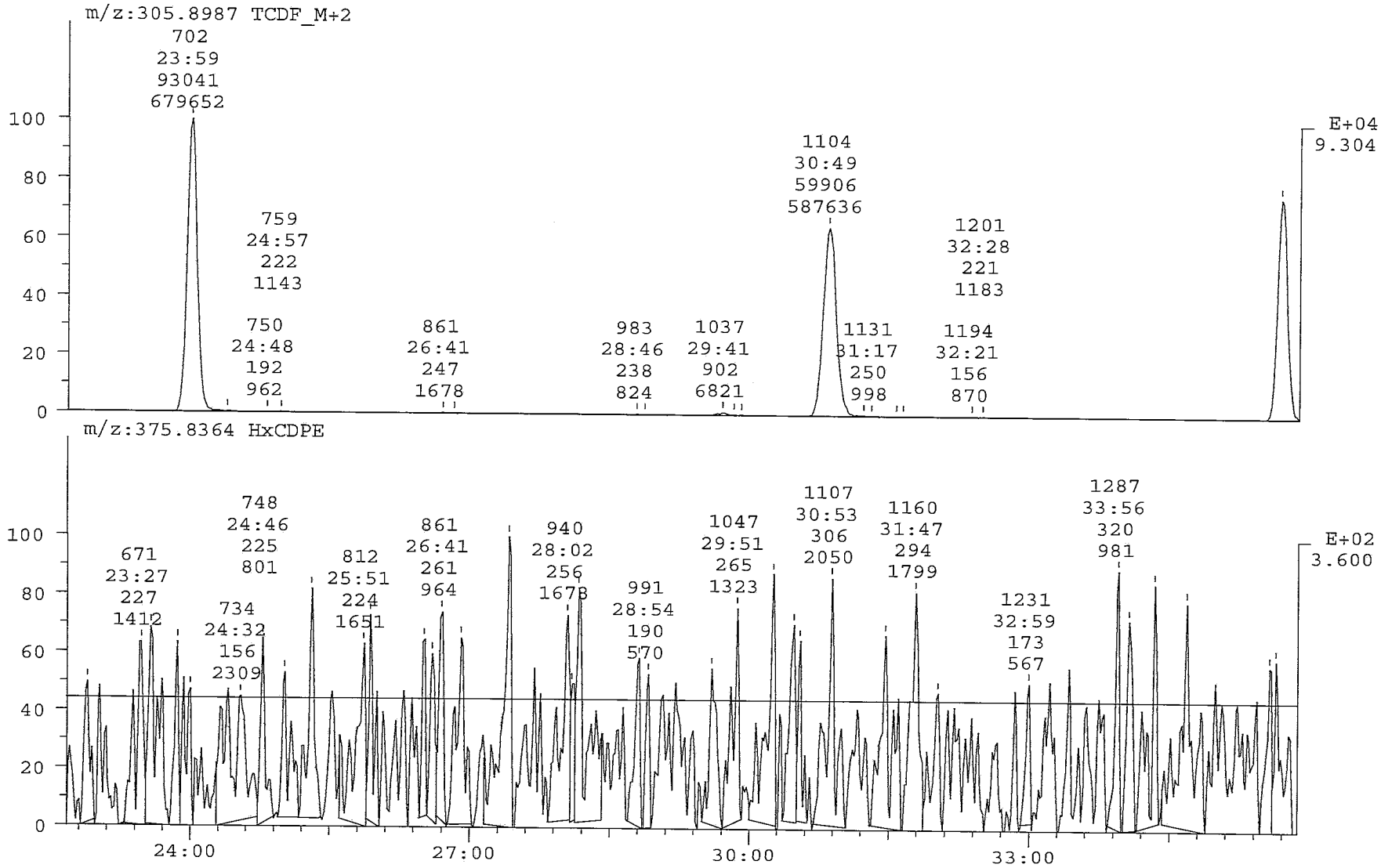
```
CHRO:  d1160817s3                          17-Aug-16   Elapse:  54:51      2493
Samp:  WO=4966:41 Meth=F8o Dil=1                       Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                             Study :  VER/WIN
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1342 > 1403       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  2, 5.0
Disp:  Height  Area
```



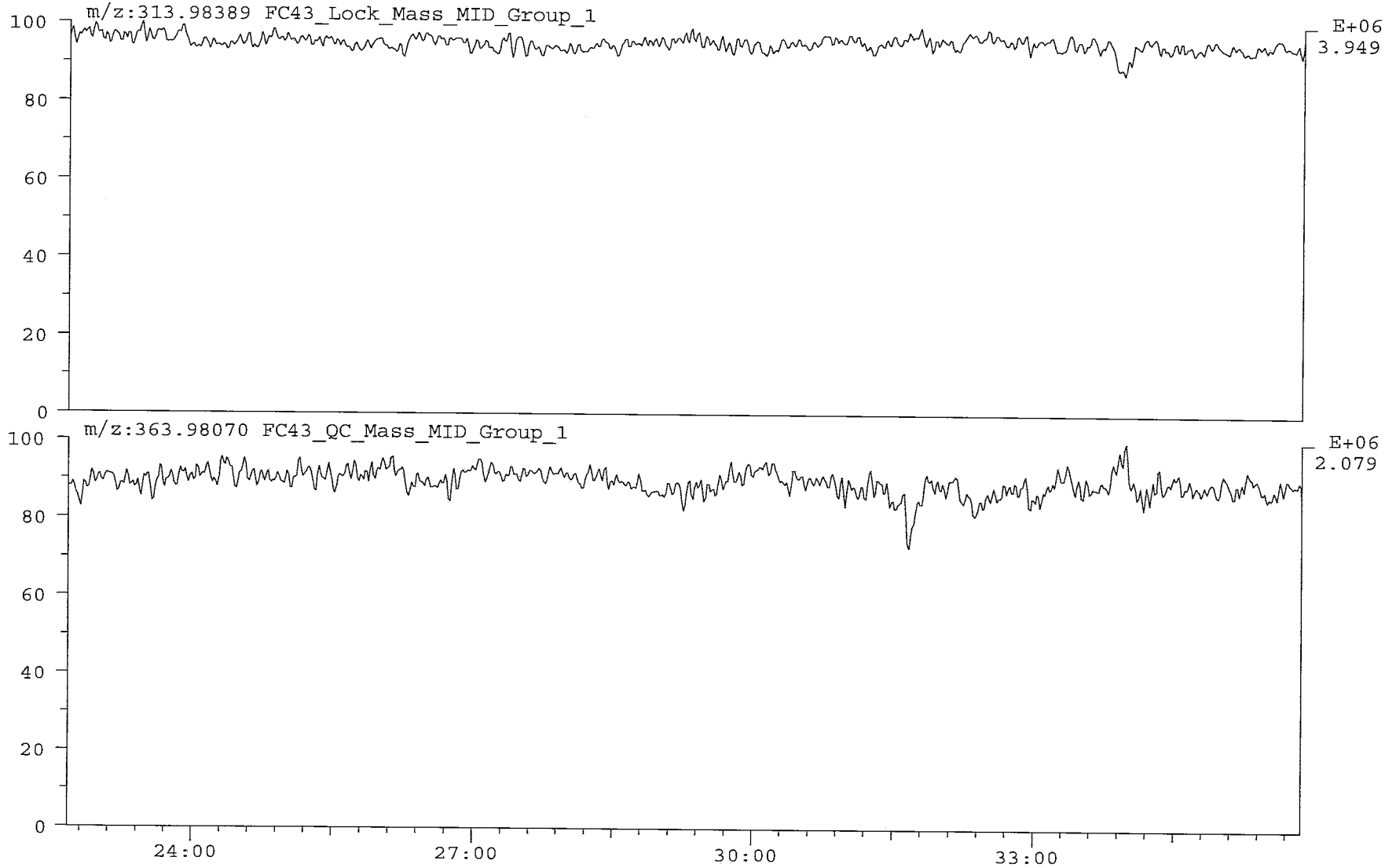
CHRO: d1160817s3 17-Aug-16 Elapse: 30:40 1095
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 999 > 1197 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



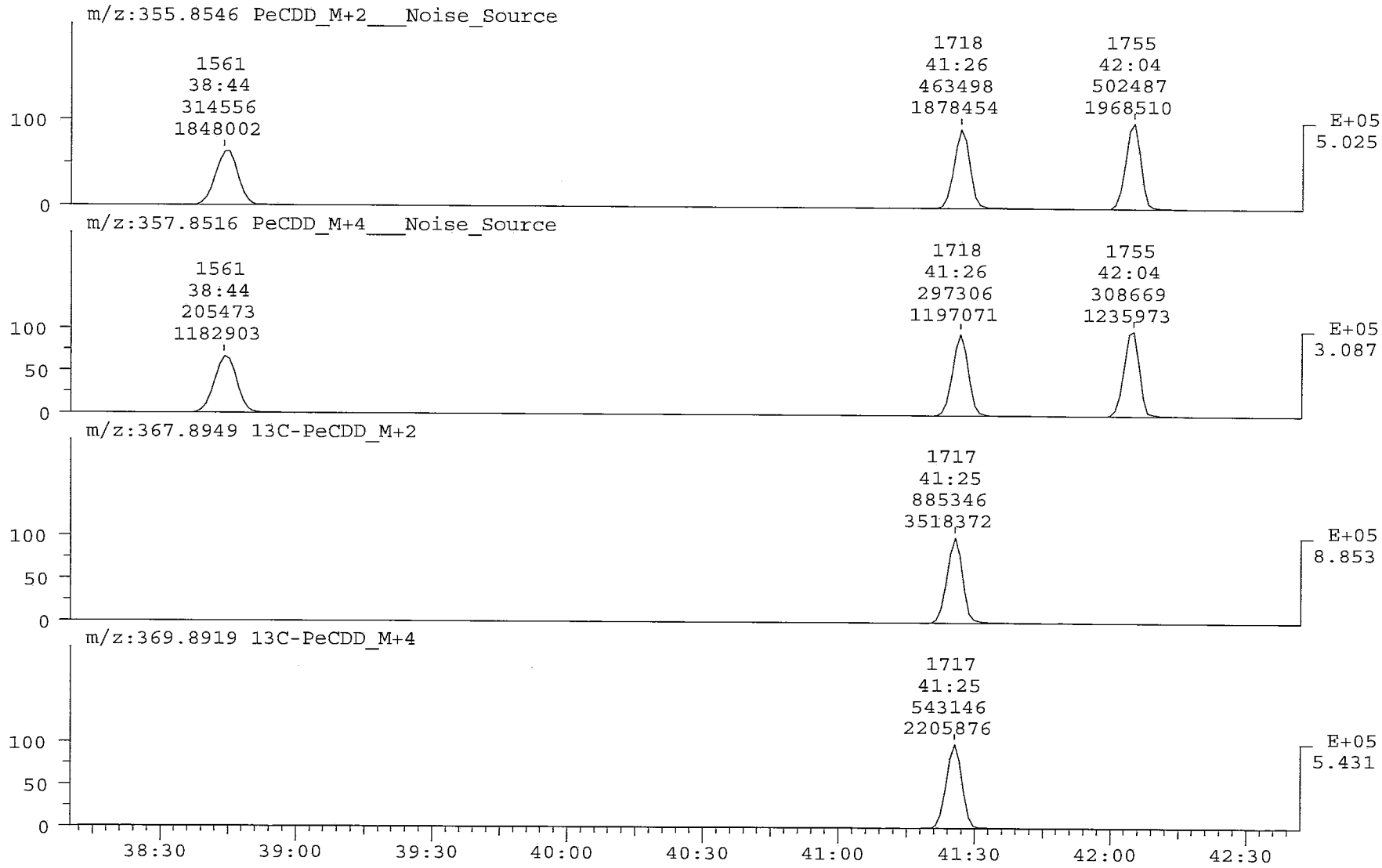
CHRO: d1160817s3 17-Aug-16 Elapse: 30:40 1095
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



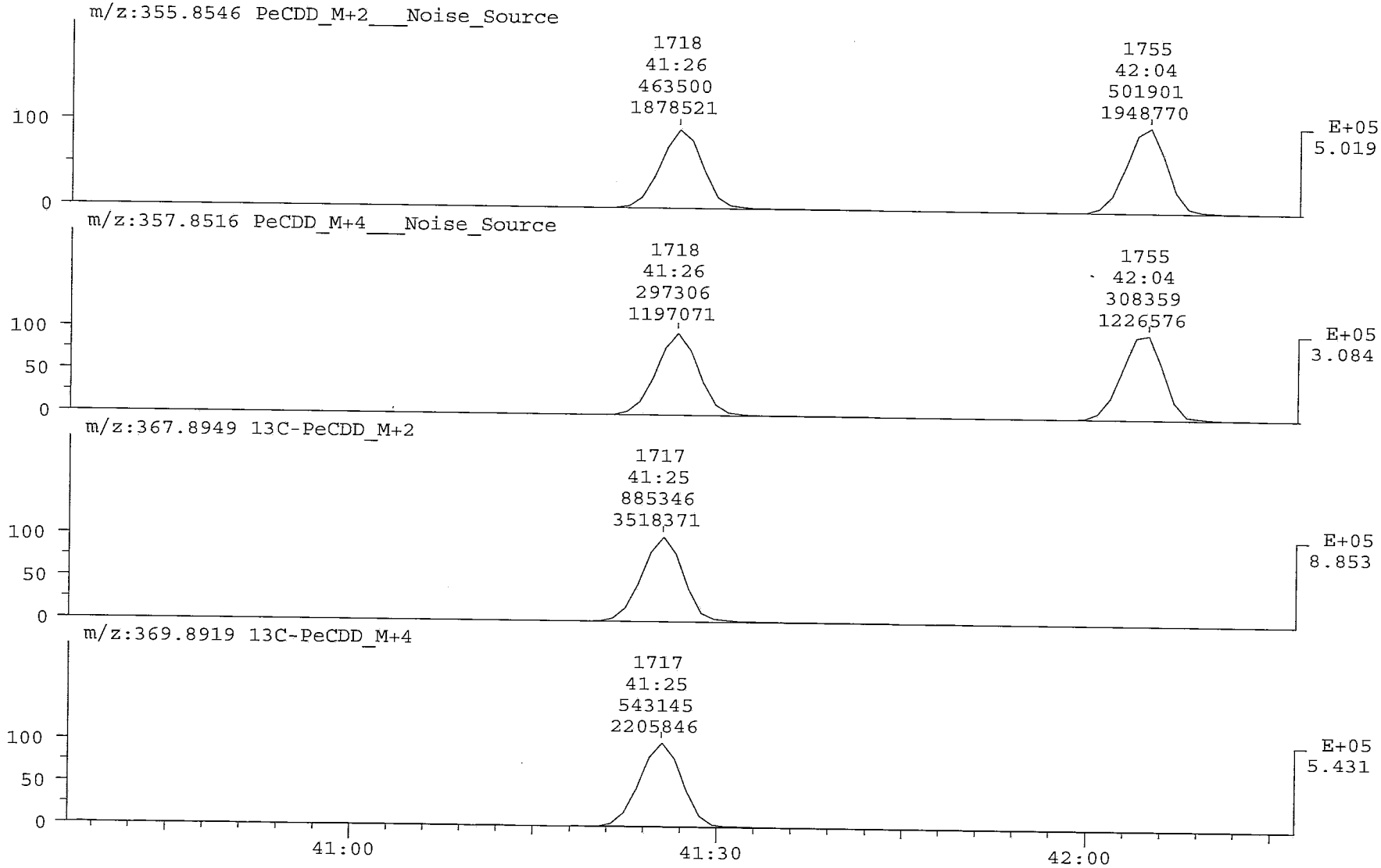
CHRO: d1160817s3 17-Aug-16 Elapse: 30:40 1095
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 624 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



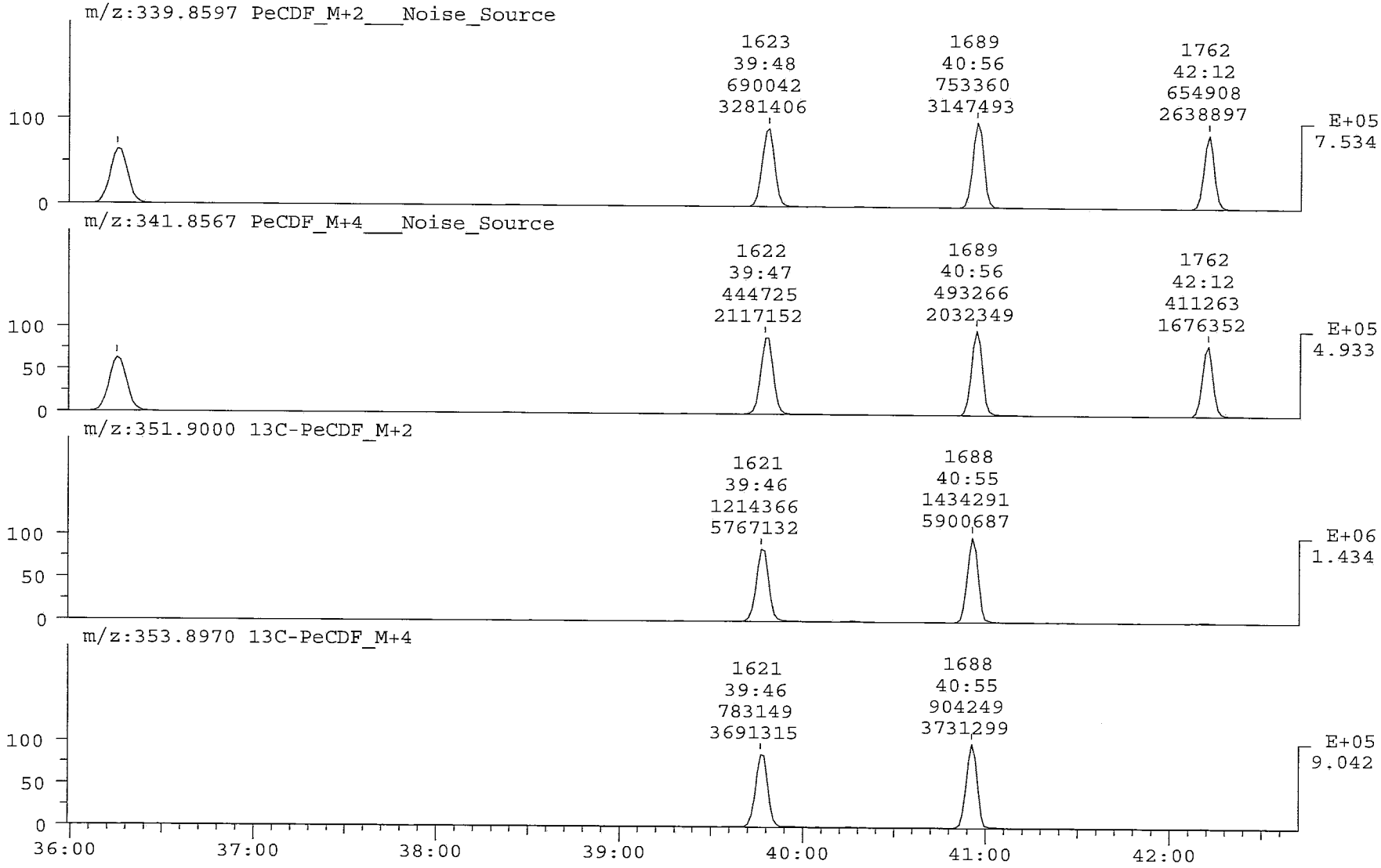
CHRO: d1160817s3 17-Aug-16 Elapse: 30:40 1095
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1528 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



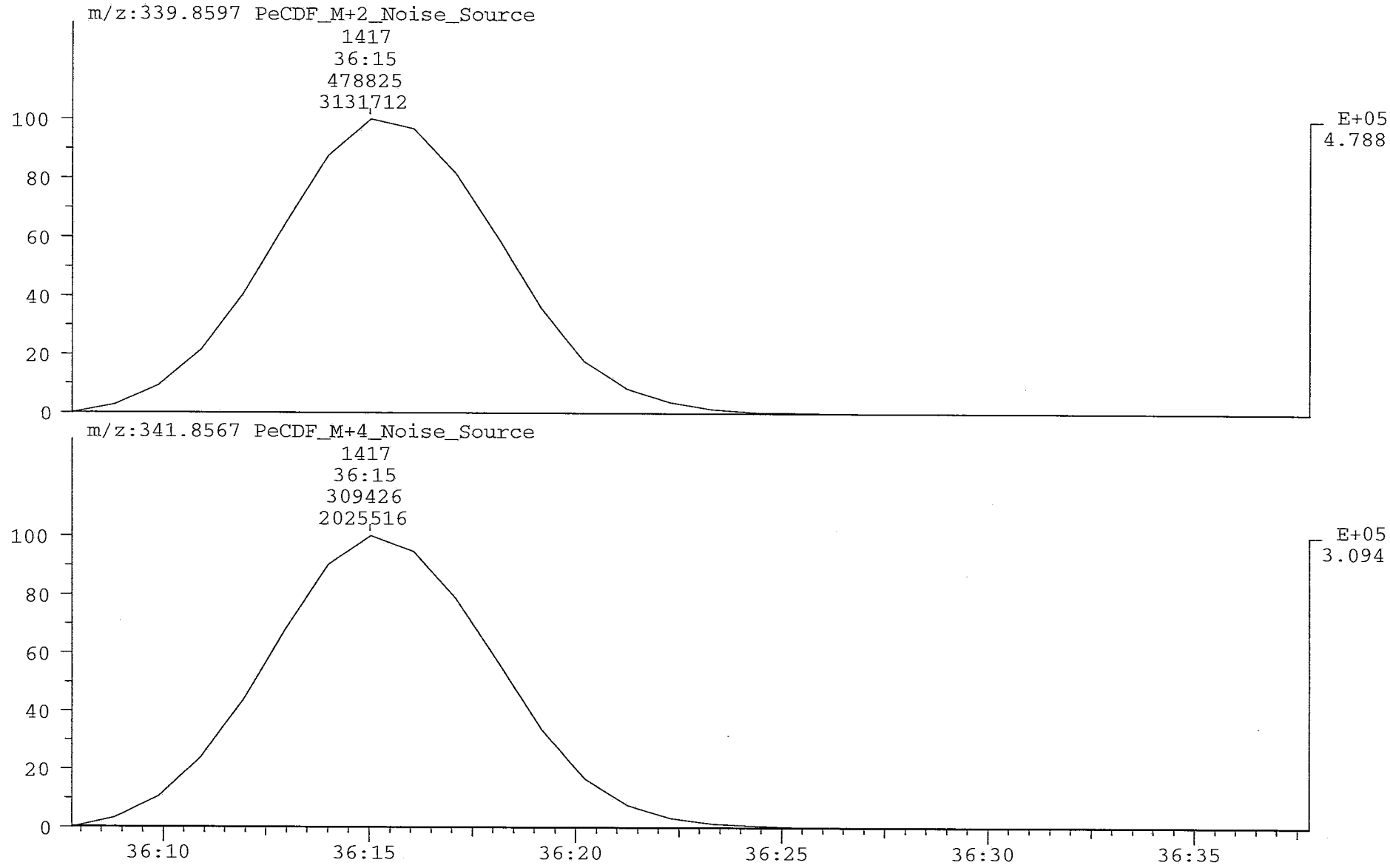
CHRO: d1160817s3 17-Aug-16 Elapse: 41:24 1716
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1670 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



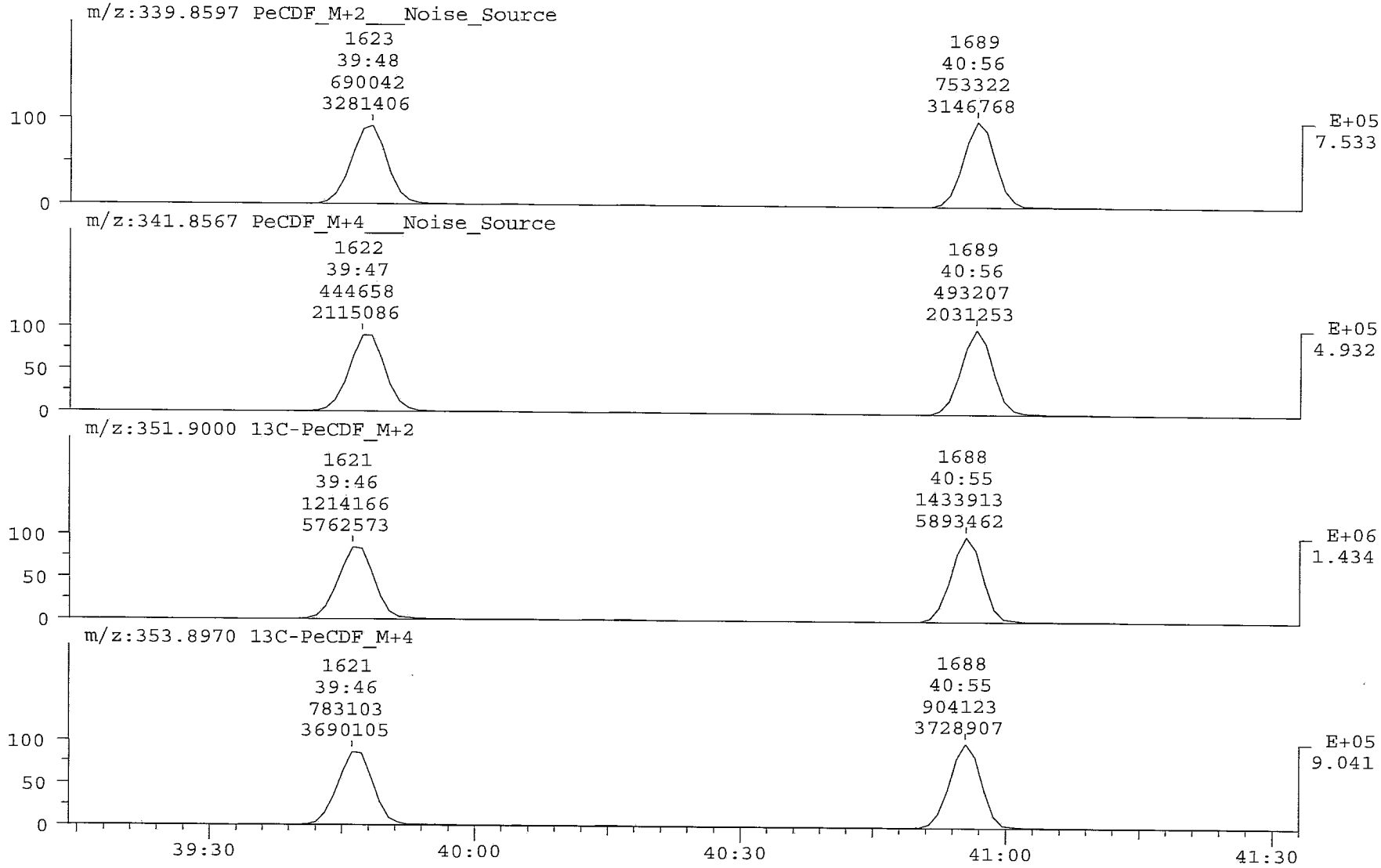
CHRO: d1160817s3 17-Aug-16 Elapse: 41:24 1716
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



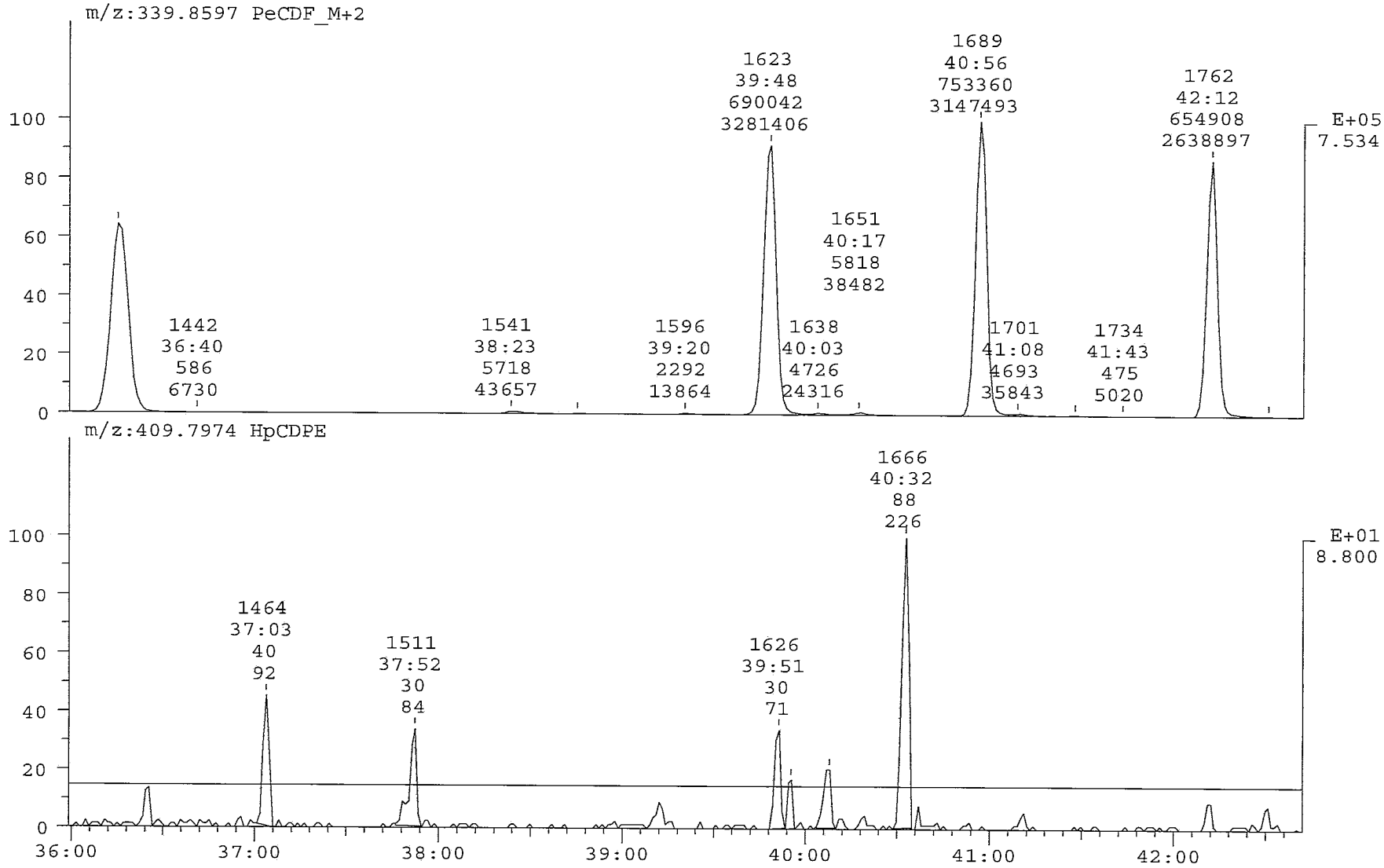
```
CHRO:  d1160817s3                          17-Aug-16   Elapse:  54:51      2493
Samp:  WO=4966:41 Meth=F8o Dil=1                       Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                             Study :  VER/WIN
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1410 > 1439       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



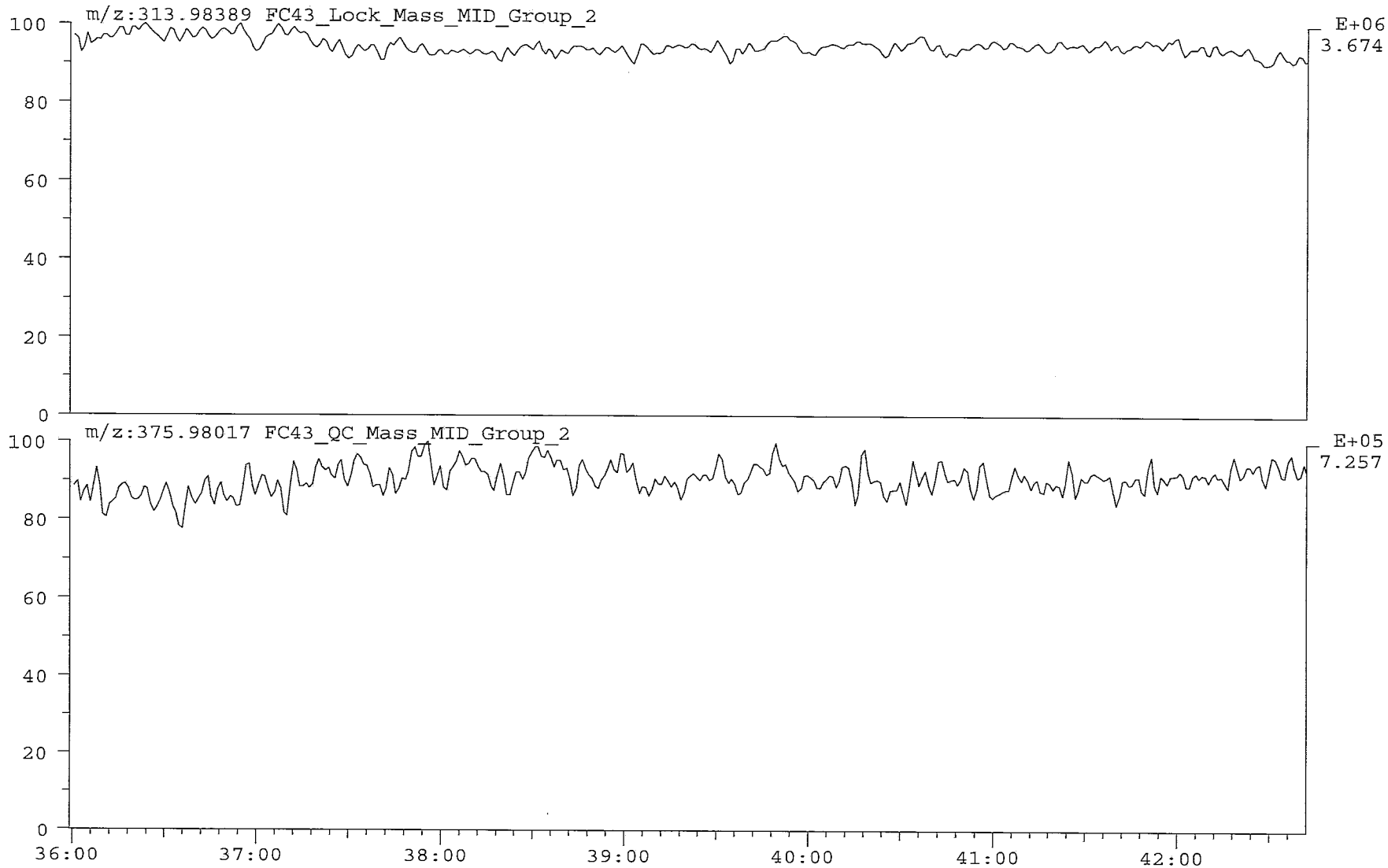
CHRO: d1160817s3 17-Aug-16 Elapse: 40:23 1657
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1590 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



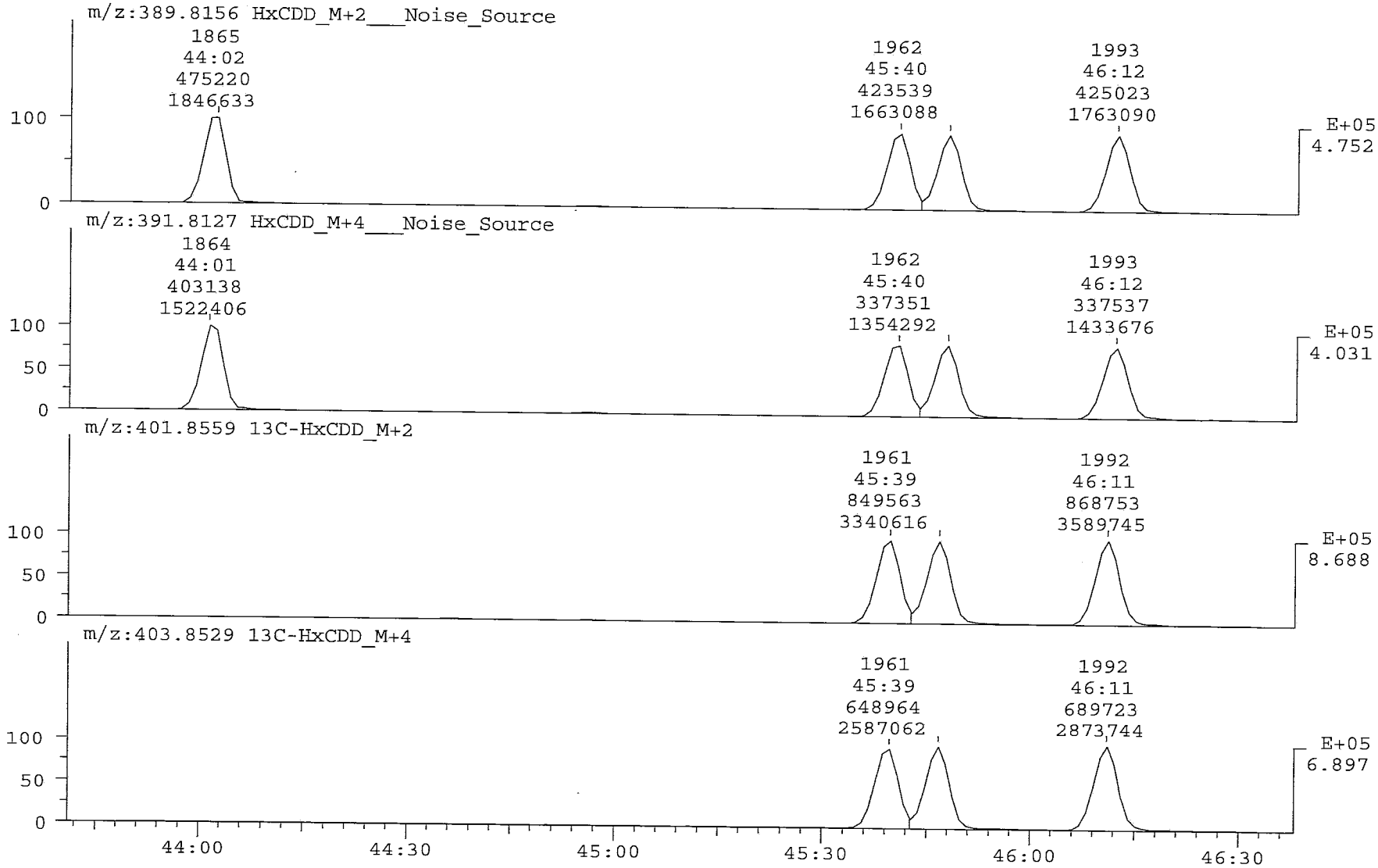
```
CHRO:  d1160817s3                                17-Aug-16  Elapse:  40:23      1657
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



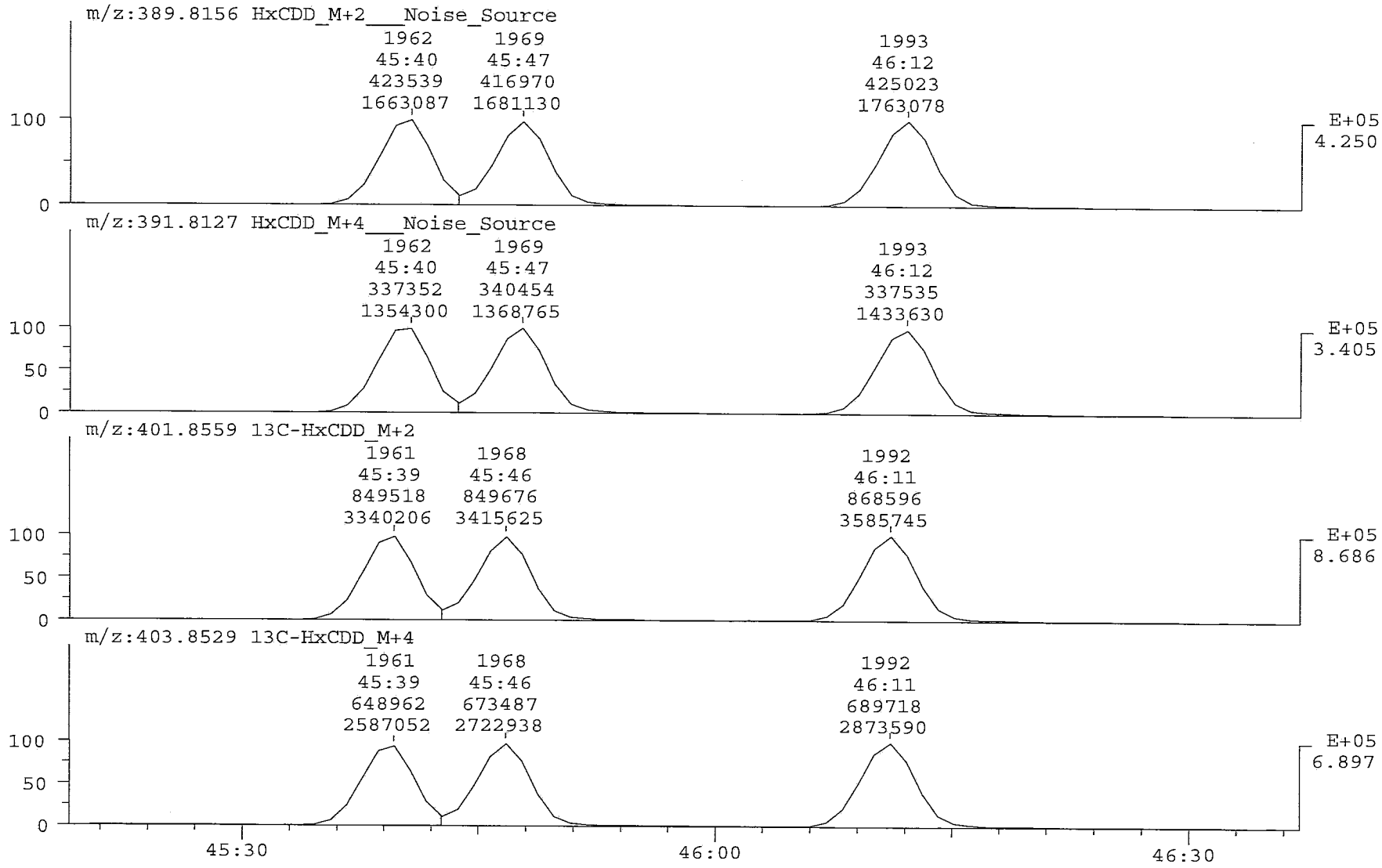
```
CHRO:  d1160817s3                          17-Aug-16  Elapse:  40:23      1657
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



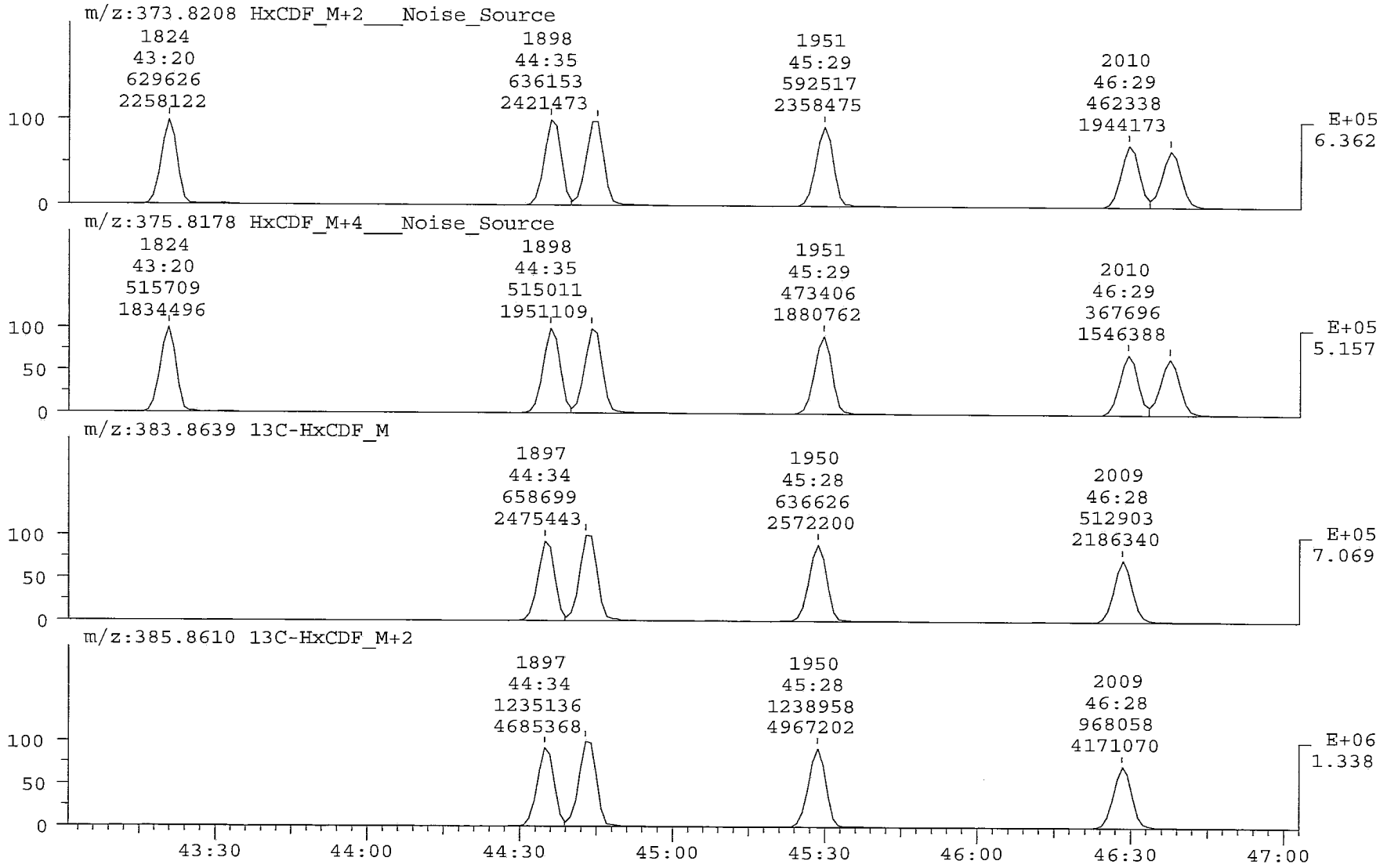
CHRO: d1160817s3 17-Aug-16 Elapse: 40:23 1657
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1844 > 2019 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



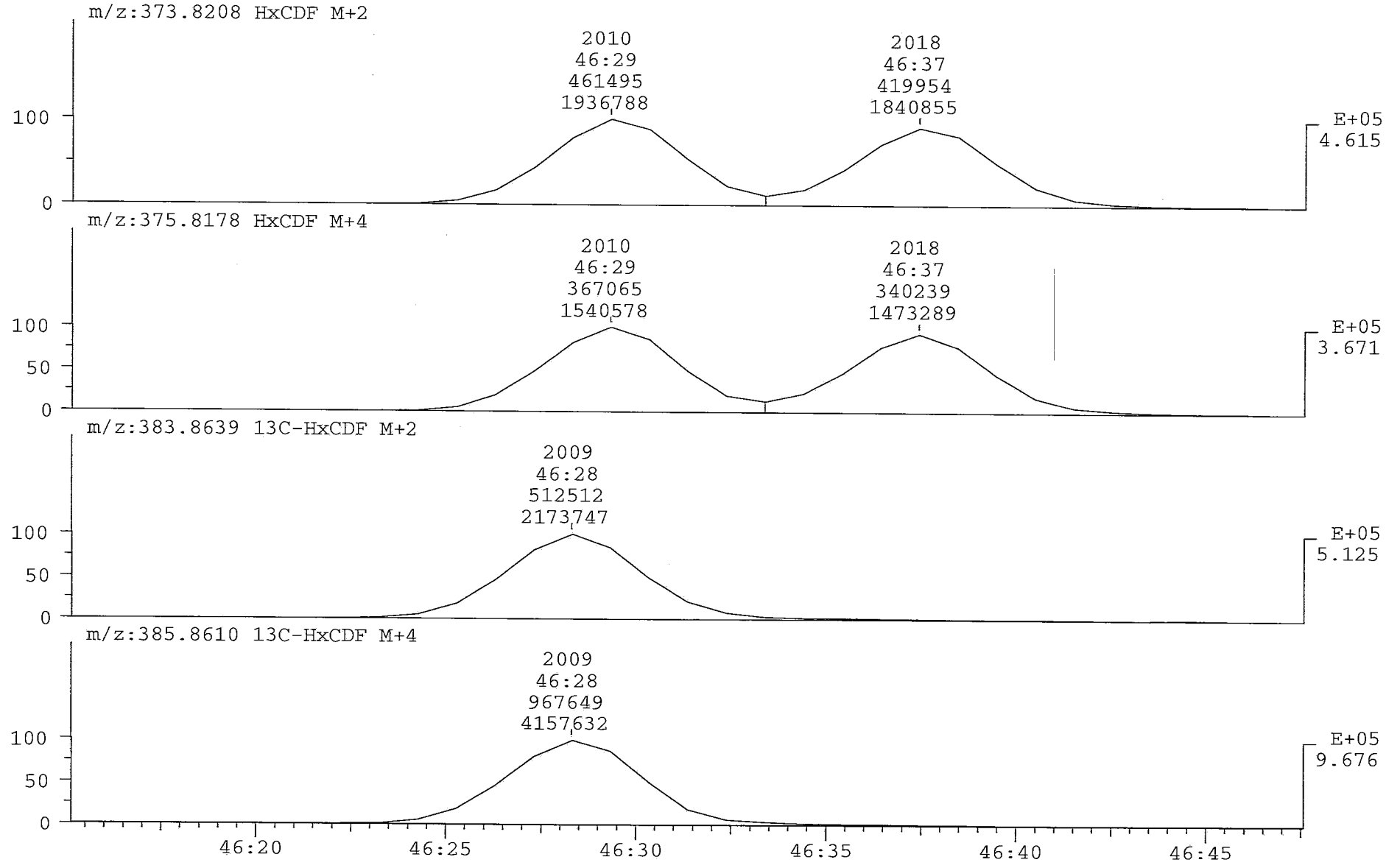
CHRO: d1160817s3 17-Aug-16 Elapse: 45:57 1979
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1941 > 2018 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



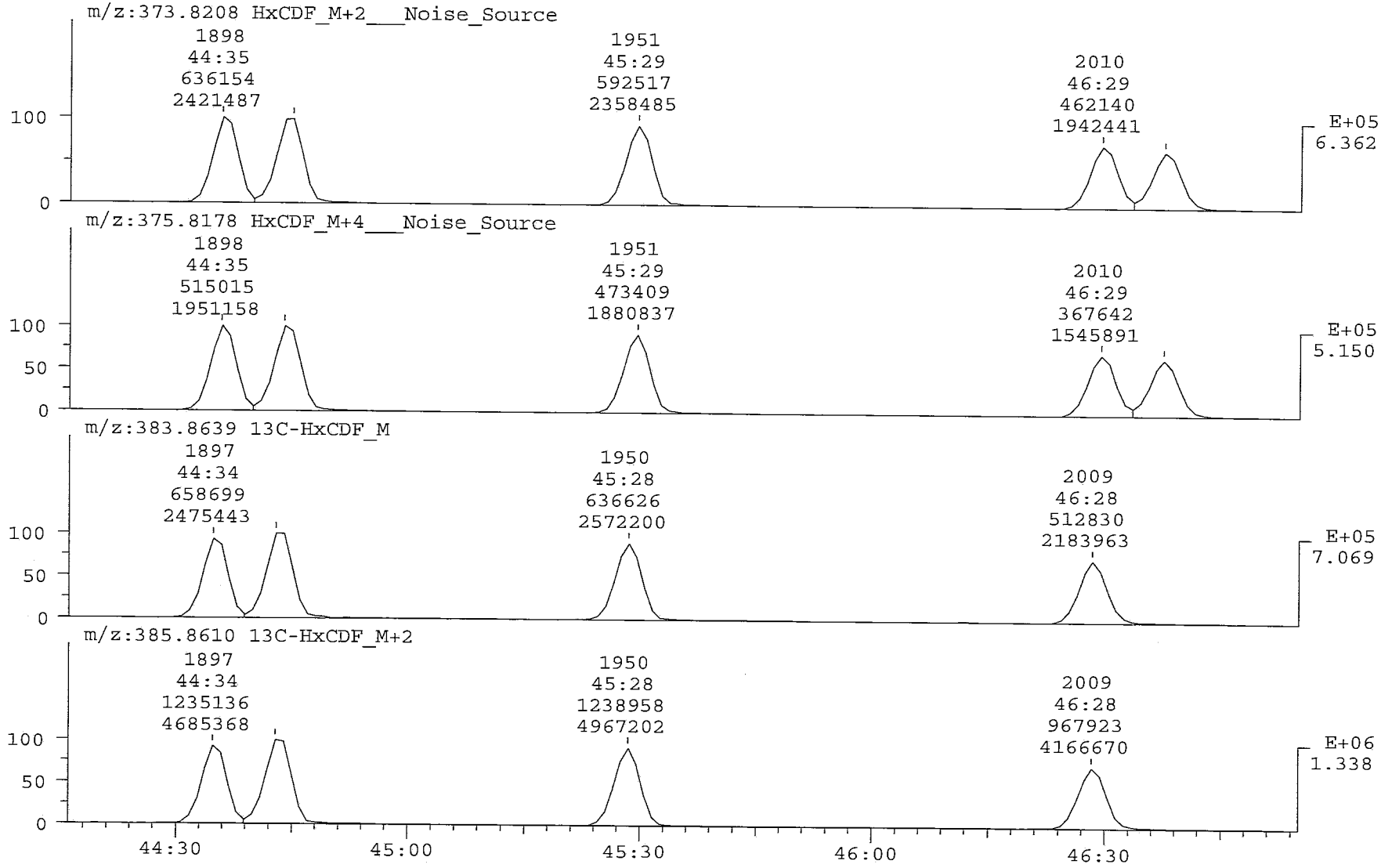
CHRO: d1160817s3 17-Aug-16 Elapse: 45:57 1979
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1805 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



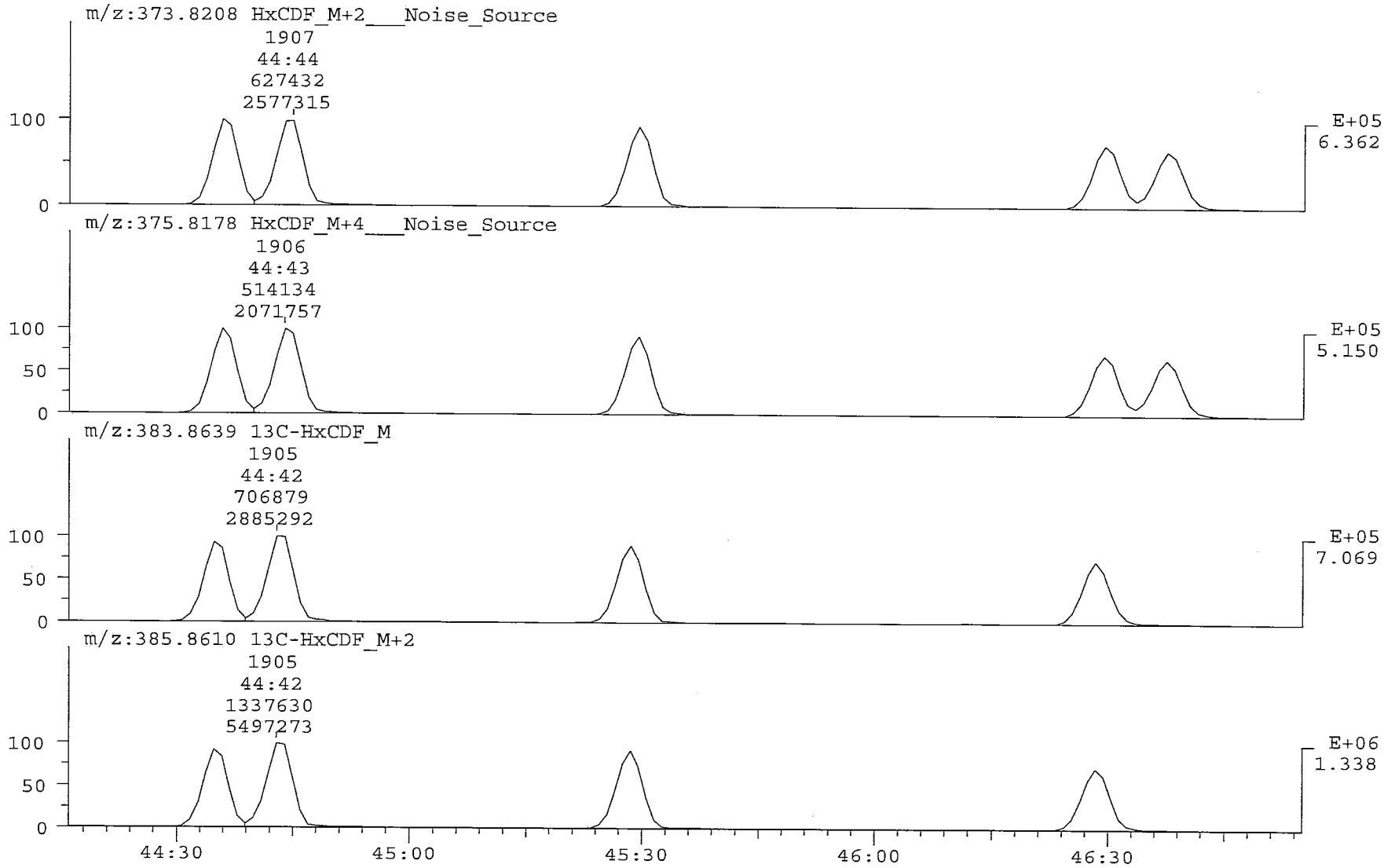
```
CHRO:  d1160817s3                          17-Aug-16   Elapse:  54:51      2493
Samp:  WO=4966:41 Meth=F8o Dil=1                       Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                             Study :  VER/WIN
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1996 > 2028       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



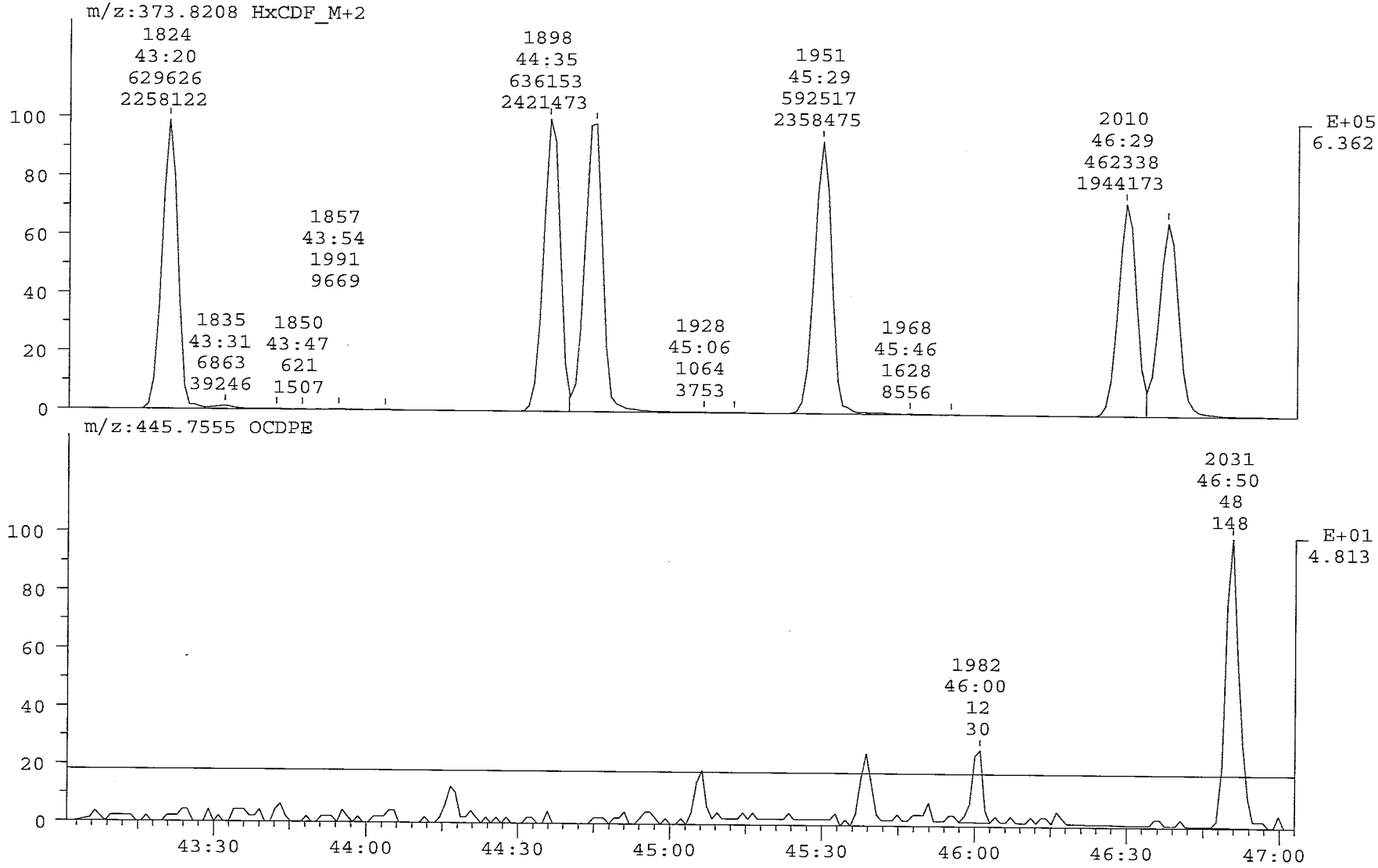
```
CHRO:  d1160817s3                                17-Aug-16  Elapse:  45:34      1956
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1879 > 2035            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



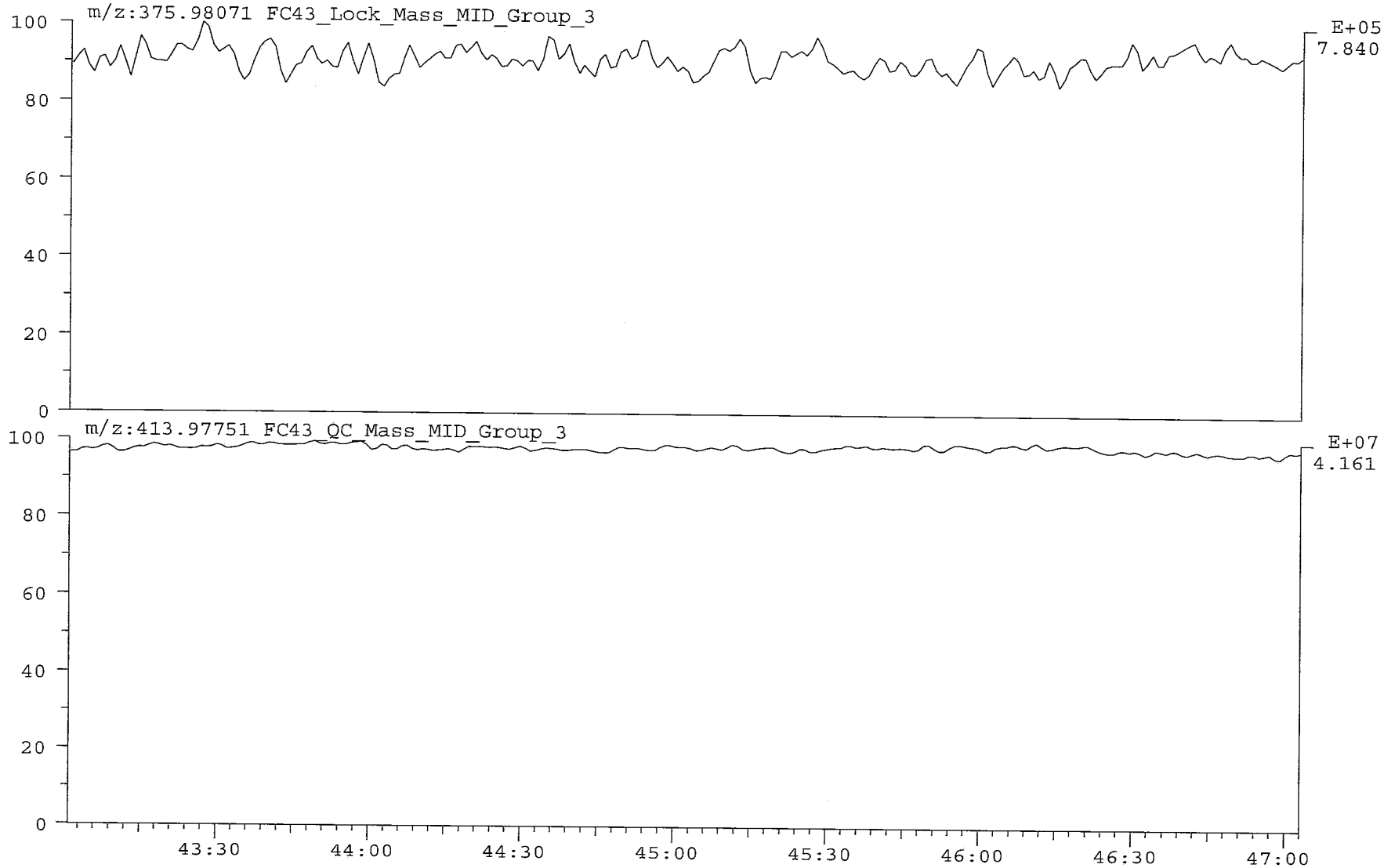
CHRO: d1160817s3 17-Aug-16 Elapse: 44:43 1906
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1902 > 1910 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1160817s3 17-Aug-16 Elapse: 44:43 1906
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1805 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1160817s3 17-Aug-16 Elapse: 44:43 1906
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1805 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



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CHRO:  d1160817s3                                17-Aug-16   Elapse:  44:43      1906
Samp:  WO=4966:41 Meth=F8o Dil=1                             Start :  22:05:50   2629
Comm:  Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode:  EI ESI + Q1MS UP LR                                   Study :  VER/WIN
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2163 > 2281             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```
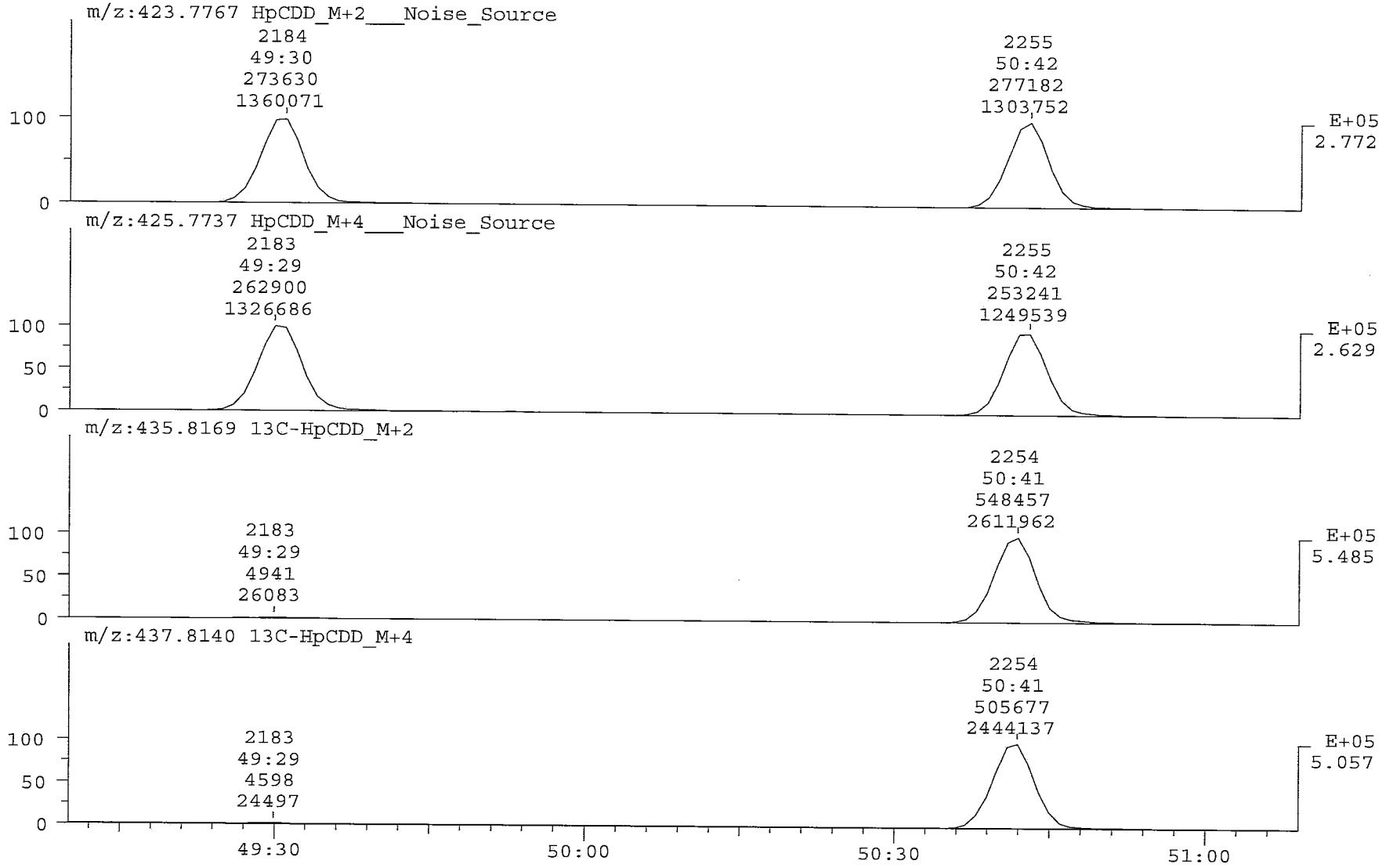
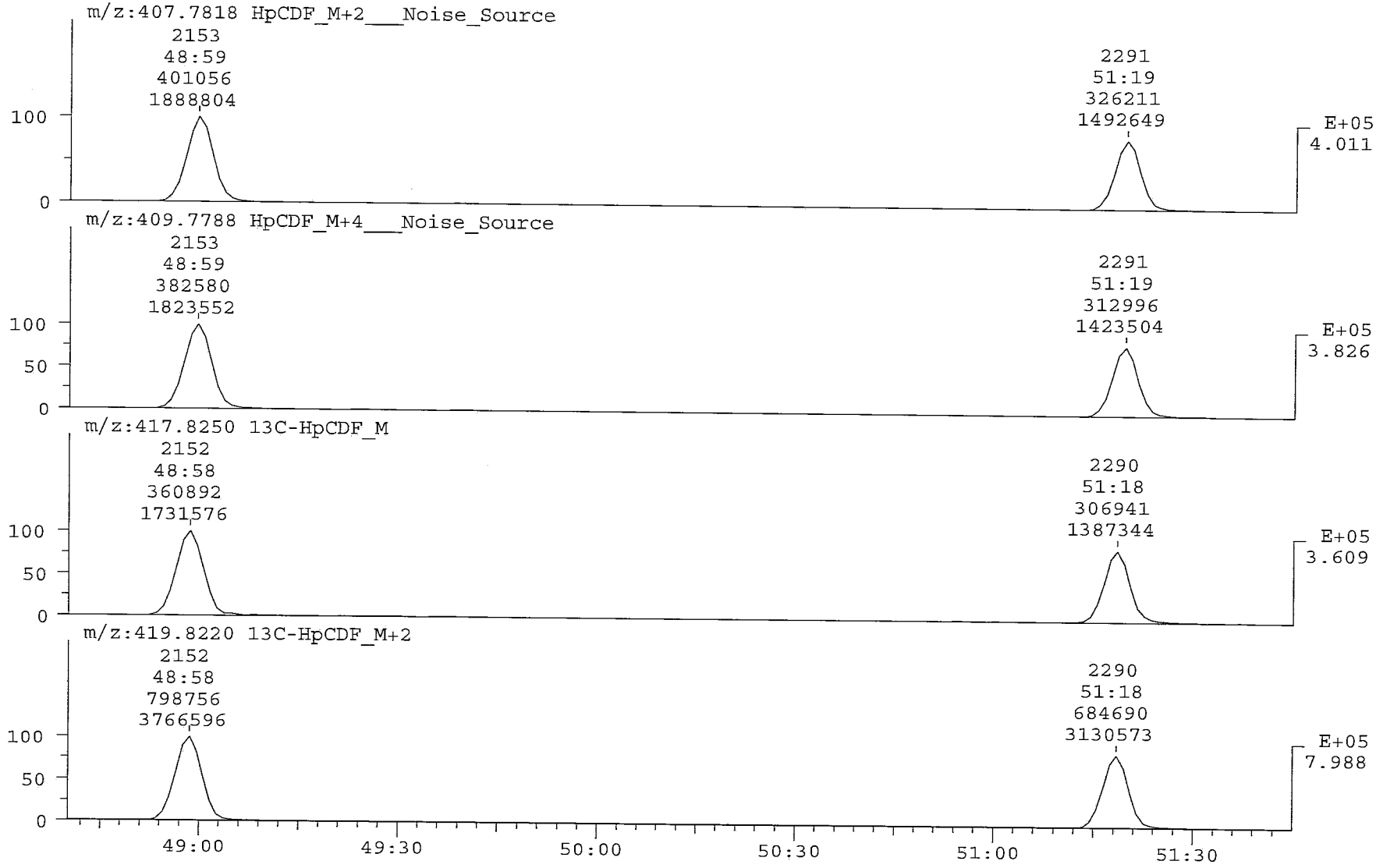
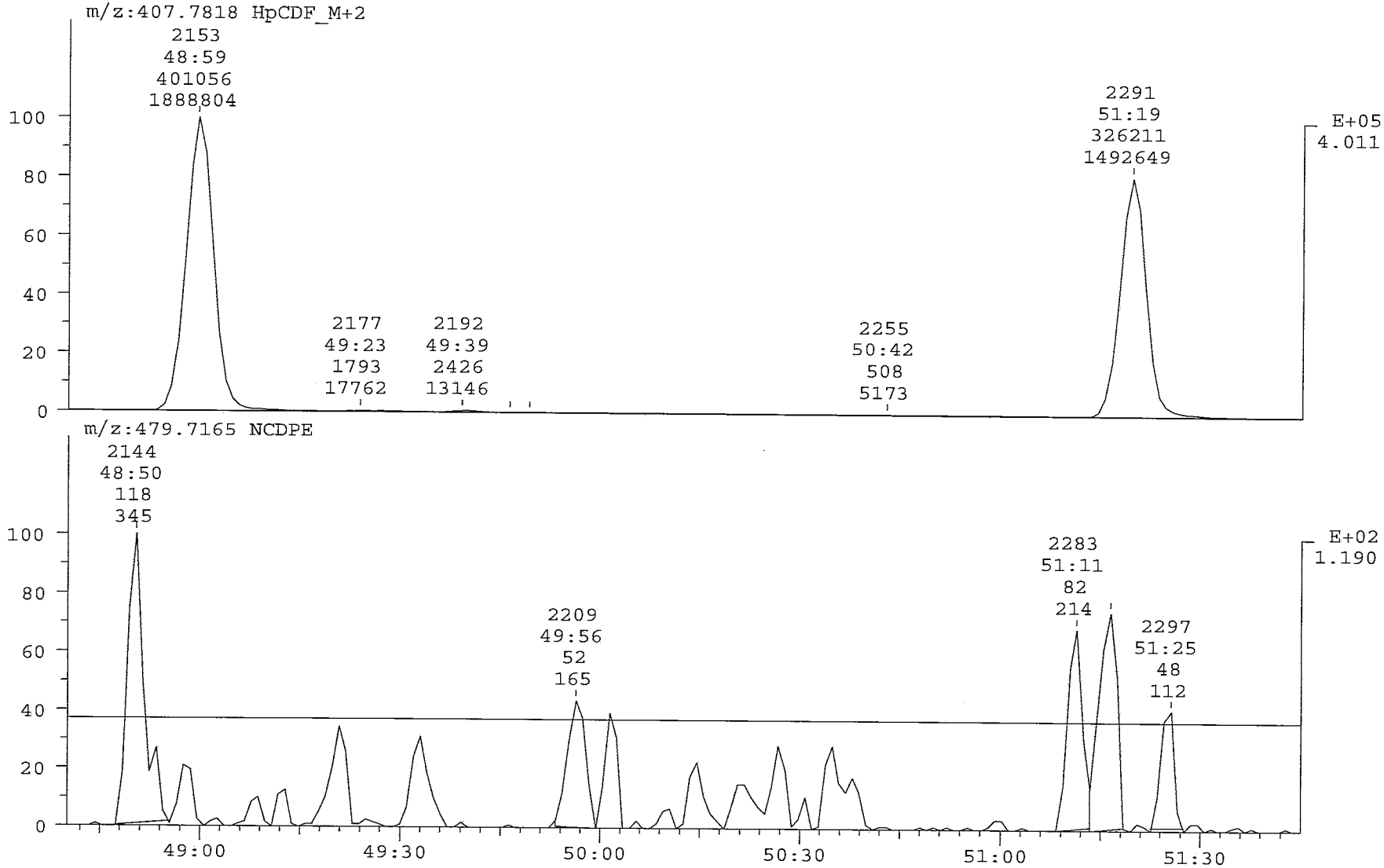



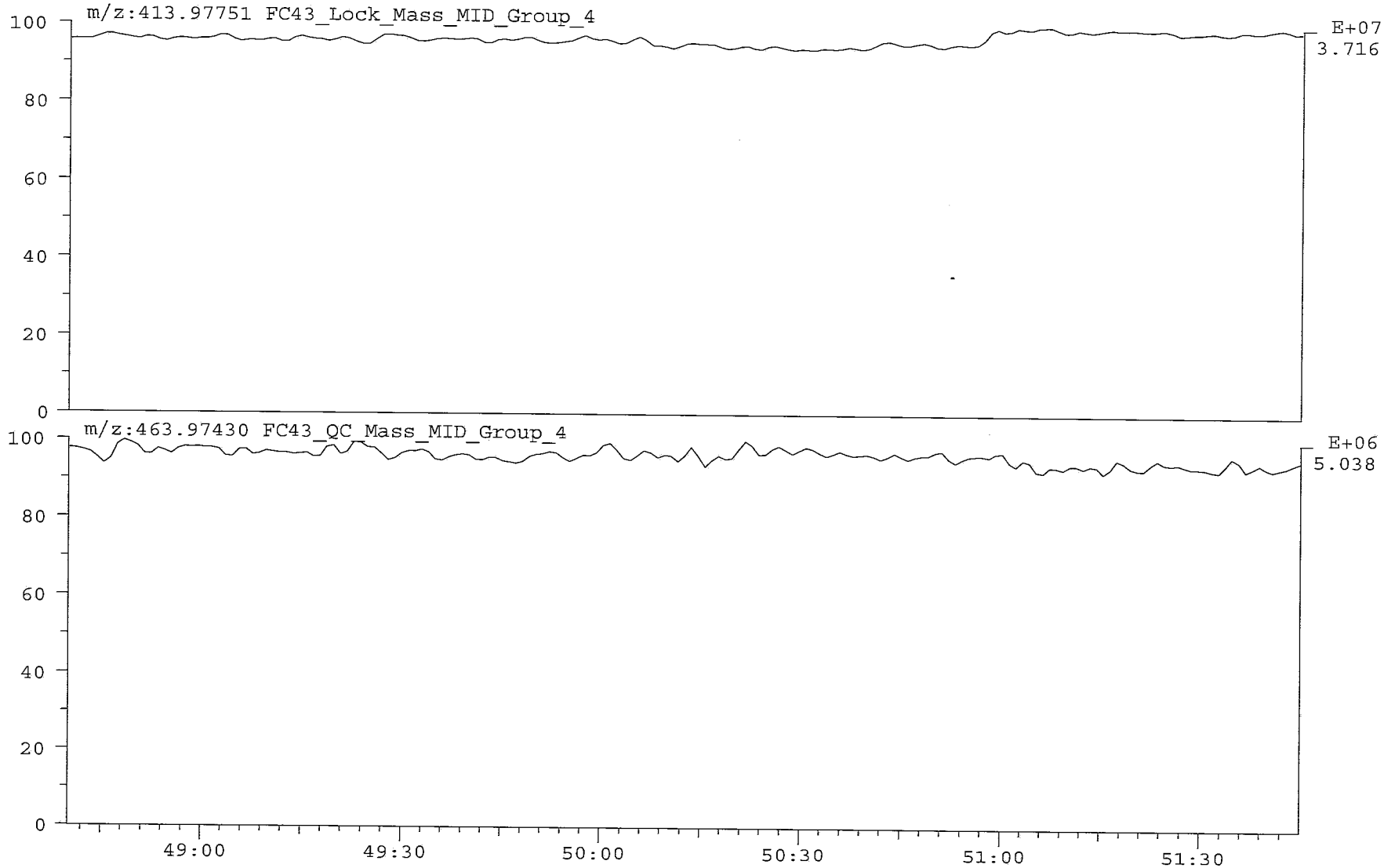
CHRO: d1160817s3 17-Aug-16 Elapse: 50:11 2224
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2134 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



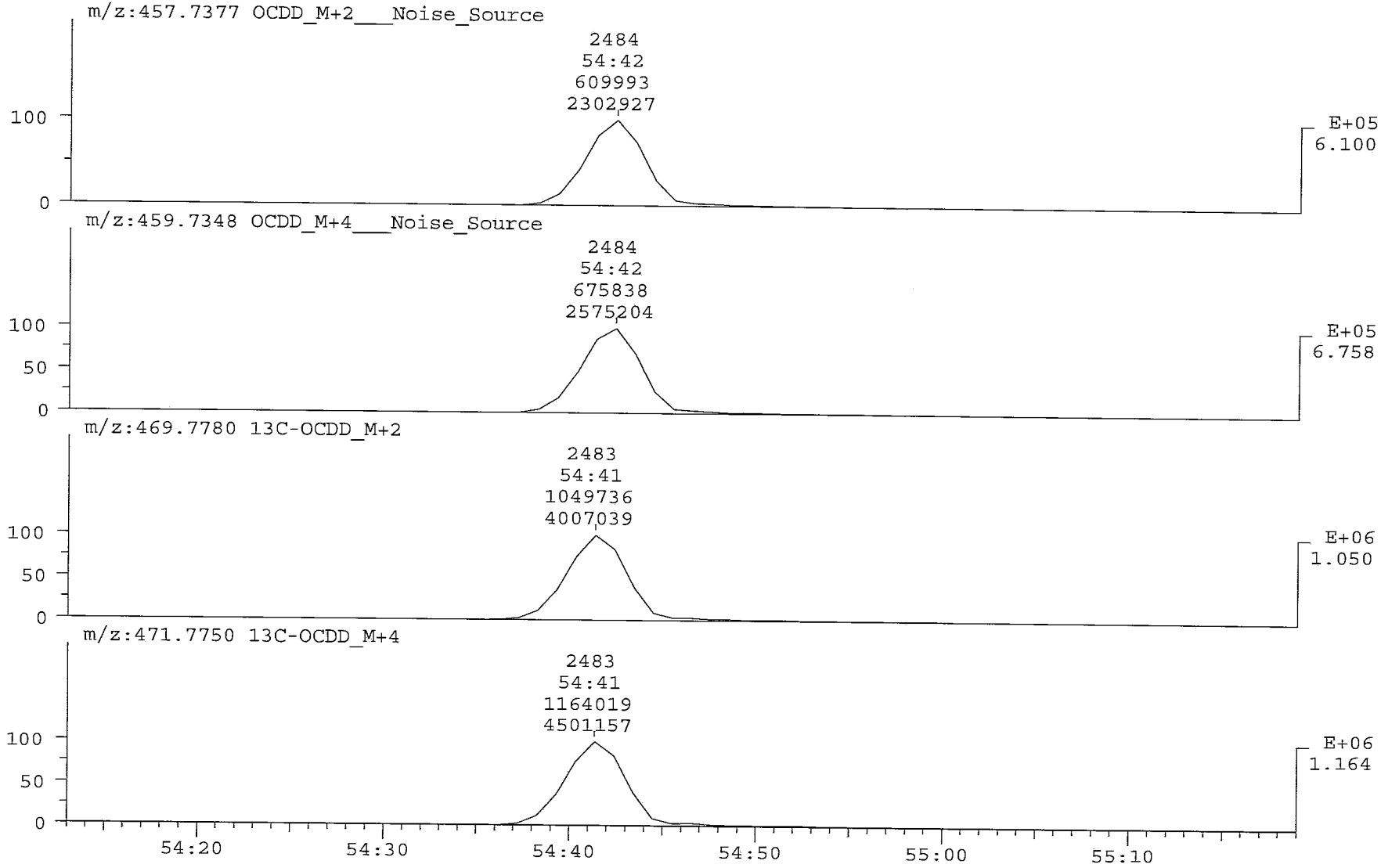
CHRO: d1160817s3 17-Aug-16 Elapse: 50:11 2224
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2134 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



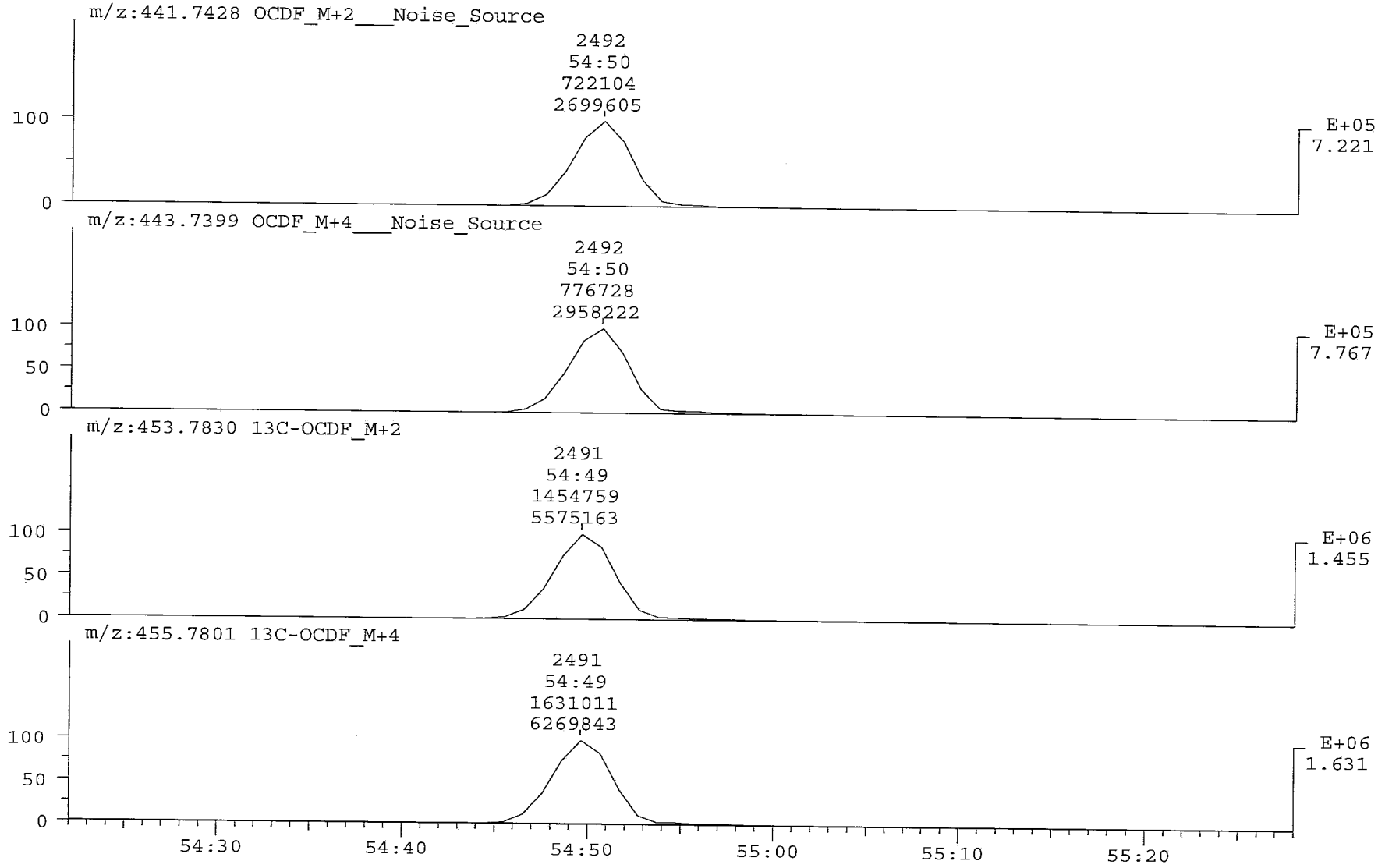
CHRO: d1160817s3 17-Aug-16 Elapse: 50:11 2224
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2134 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



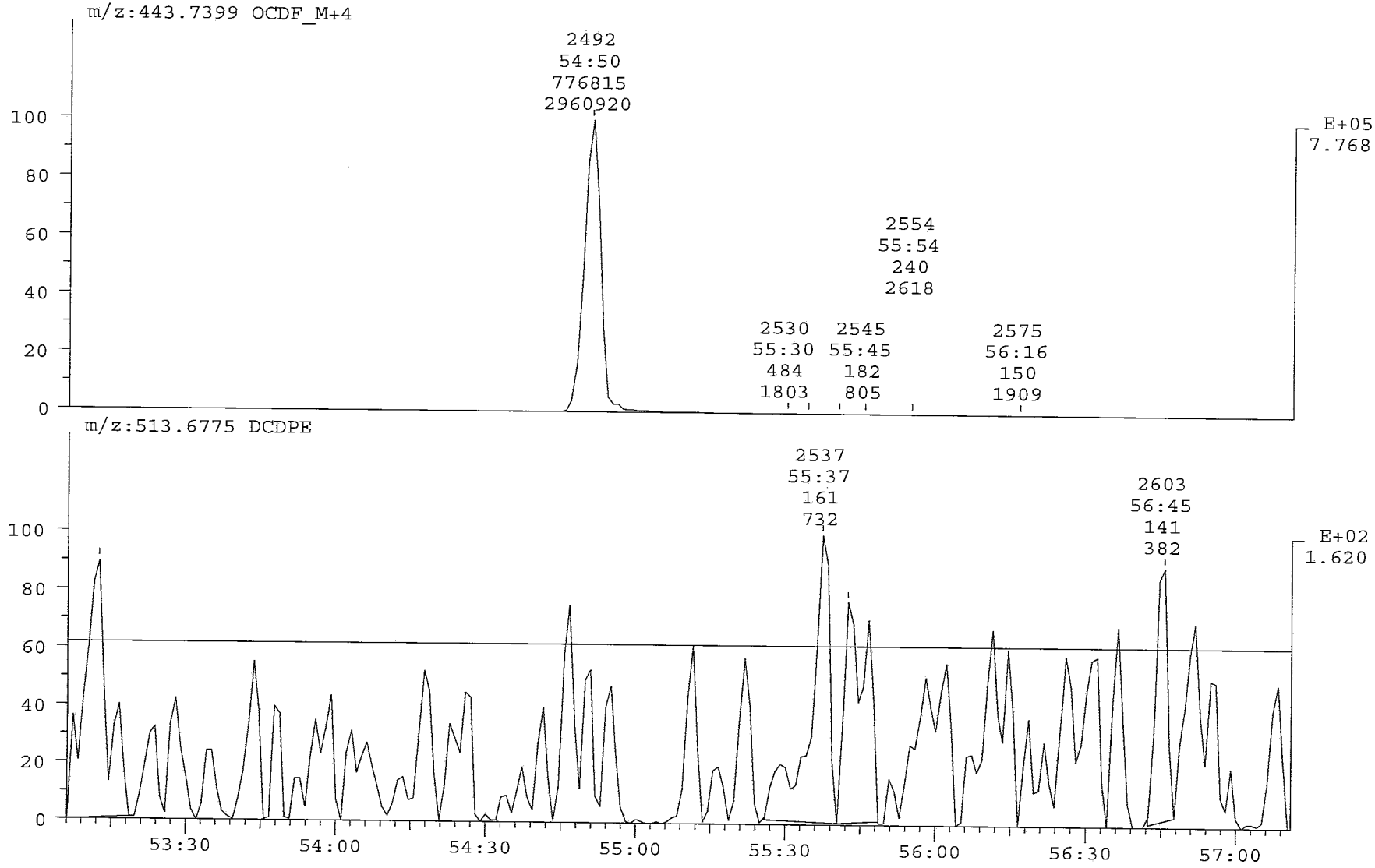
CHRO: d1160817s3 17-Aug-16 Elapse: 54:43 2485
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2456 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



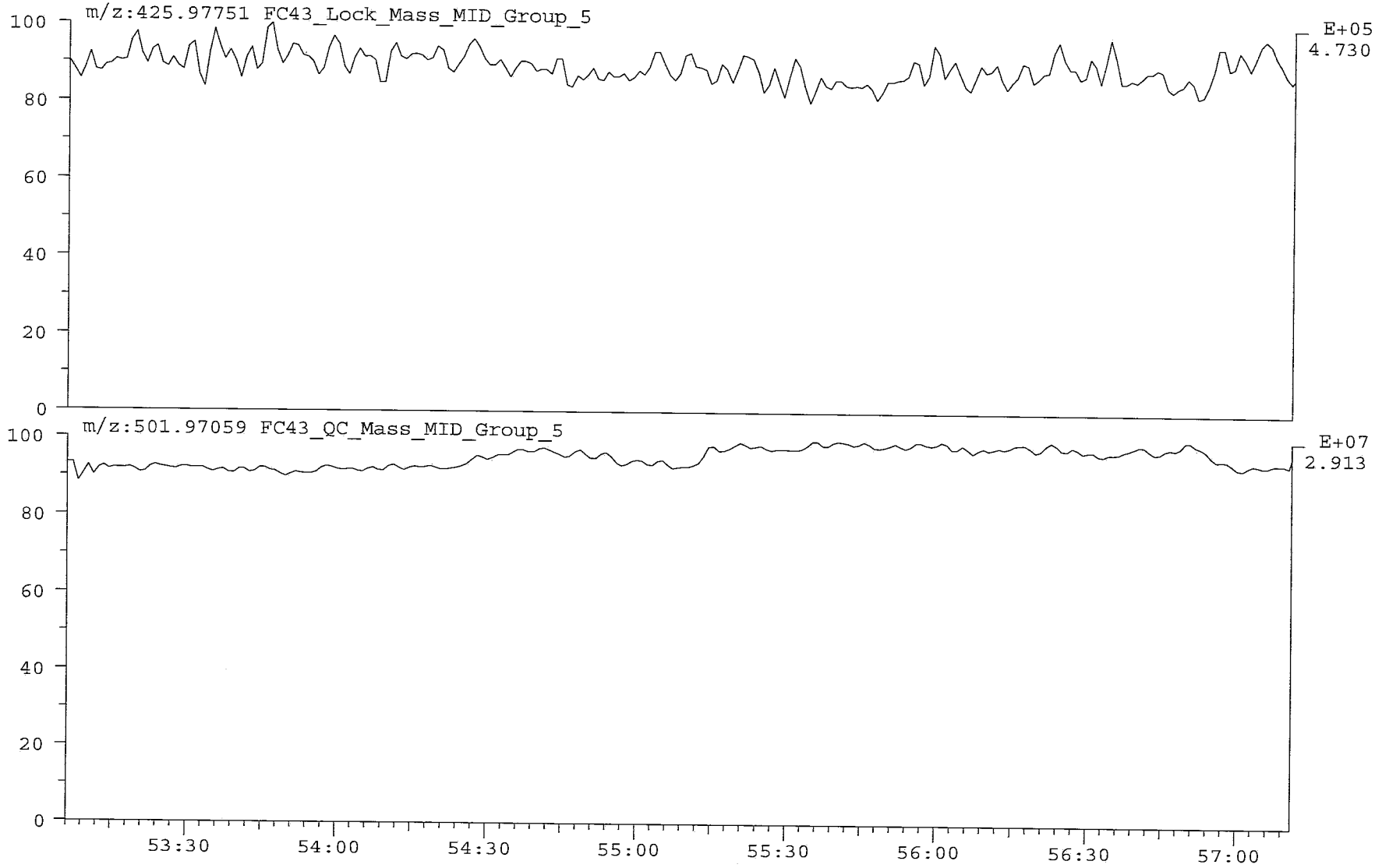
CHRO: d1160817s3 17-Aug-16 Elapse: 54:51 2493
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2464 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1160817s3 17-Aug-16 Elapse: 54:51 2493
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2391 > 2628 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1160817s3 17-Aug-16 Elapse: 54:51 2493
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2391 > 2628 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 17 22:08:01 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 17-Aug-16 22:08:01

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817220549

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          313.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII           50.0000   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0043	FVINLET	0.0471	FVSRC	0.0394
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	313.4834	LKM	425.9770	MASS	313.4834
MDAC	3592224.0474	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8972	RELEN	0.0000
RES	11461.2454	RPUSHER	-6.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:          2.5e-005 mbar
Analyzer Penning:      9.3e-008 mbar
Pirani Analyse:        4.3e-003 mbar
Pirani Source:         3.9e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11831.
MID Time Window 2: Resolution is 12512.
MID Time Window 3: Resolution is 12160.
MID Time Window 4: Resolution is 12083.
MID Time Window 5: Resolution is 11461.

Amplifier Offset: 89.


*** File closed Wed Aug 17 23:05:15 2016
  ***
```

QUAN: d1160817s3.q0 Entries: 180

Data file(s) used
File: d1160817s3 17-Aug-16
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 22:05:50 2629
Comm: Inst=d11a/1379922 Batch=20160817s3 Ccal=D1160817S2
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:58	362358.	35388.	32:50	33:13	57.	1	1.0	AVV
321.8775	32:59	455627.	43482.	32:50	33:14	58.	1	1.0	AVV
319.8805	26:36	334965.	41359.	26:24	26:51	57.	2	5.0	ABV
319.8805	32:27	314116.	33197.	32:11	32:34	57.	2	5.0	ABV
319.8805	32:42	295168.	28154.	32:34	32:50	57.	2	5.0	AVV
319.8805	32:58	362358.	35388.	32:50	33:13	57.	2	5.0	AVV
319.8805	33:32	338238.	32836.	33:17	33:47	57.	2	5.0	AVV
319.8805	35:46	264465.	39319.	35:36	35:52	57.	2	5.0	ABB
321.8775	26:36	432731.	54220.	26:23	26:51	58.	2	5.0	ABV
321.8775	32:27	417370.	40930.	32:11	32:35	58.	2	5.0	ABV
321.8775	32:41	367232.	35604.	32:35	32:50	58.	2	5.0	AVV
321.8775	32:59	455627.	43482.	32:50	33:14	58.	2	5.0	AVV
321.8775	33:32	429145.	41346.	33:17	33:47	58.	2	5.0	AVV
321.8775	35:46	330440.	50867.	35:36	35:52	58.	2	5.0	ABB
331.9202	32:23	3184733.	307462.	32:08	32:39	48.	2	5.0	AVV
331.9202	32:55	3268285.	312340.	32:42	33:10	48.	2	5.0	AVV
333.9171	32:23	3917898.	382691.	32:08	32:39	34.	2	5.0	AVV
333.9171	32:56	4153211.	397079.	32:42	33:11	34.	2	5.0	AVV
319.8805	32:58	360511.	35314.	32:50	33:13	164.	2	5.0	AVV
319.8805	33:32	334699.	32720.	33:17	33:47	164.	2	5.0	AVV
321.8775	32:59	451919.	43339.	32:50	33:14	168.	2	5.0	AVB
321.8775	33:32	422876.	41142.	33:17	33:47	168.	2	5.0	AVV
331.9202	32:23	3183999.	307438.	32:08	32:39	198.	2	5.0	AVV
331.9202	32:55	3266901.	312293.	32:42	33:10	198.	2	5.0	AVV
333.9171	32:23	3917683.	382684.	32:08	32:39	169.	2	5.0	AVV
333.9171	32:56	4153077.	397075.	32:42	33:11	169.	2	5.0	AVV
327.8683	32:59	825773.	80242.	32:44	33:14	67.	1	1.0	AVV
327.8683	32:59	825773.	80242.	32:44	33:14	67.	2	5.0	AVV
303.8864	23:59	525003.	70404.	23:47	24:14	28.	1	1.0	ABV
305.8834	23:59	679652.	93041.	23:47	24:14	29.	1	1.0	ABV
303.8864	23:59	525003.	70404.	23:47	24:14	28.	2	5.0	ABV
303.8864	30:50	453120.	45600.	30:34	31:05	28.	2	5.0	AVV
303.8864	35:40	403261.	55599.	35:28	35:52	28.	2	5.0	ABB
305.8834	23:59	679652.	93041.	23:47	24:14	29.	2	5.0	ABV
305.8834	30:50	587636.	59906.	30:34	31:05	29.	2	5.0	AVV
305.8834	35:39	516389.	69986.	35:27	35:52	29.	2	5.0	ABB
315.9261	30:46	4789586.	515548.	30:31	31:02	46.	2	5.0	ABV
317.9230	30:46	6211476.	637191.	30:31	31:02	21.	2	5.0	AVV
303.8864	30:50	453098.	45599.	30:34	31:05	35.	2	5.0	AVV
305.8834	30:50	587636.	59906.	30:34	31:05	51.	2	5.0	AVV
315.9261	30:46	4788953.	515528.	30:32	31:02	131.	2	5.0	ABV
317.9230	30:46	6211324.	637186.	30:31	31:02	70.	2	5.0	AVV
355.8368	42:04	1968510.	502487.	41:57	42:20	68.	1	1.0	ABV
357.8337	42:04	1235973.	308669.	41:56	42:19	47.	1	1.0	ABV
355.8368	38:44	1848002.	314555.	38:34	38:59	68.	2	5.0	ABV
355.8368	41:26	1878454.	463498.	41:16	41:35	68.	2	5.0	ABV
355.8368	42:04	1968510.	502487.	41:57	42:20	68.	2	5.0	ABV
357.8337	38:44	1182903.	205473.	38:33	38:59	47.	2	5.0	ABV
357.8337	41:26	1197071.	297306.	41:17	41:36	47.	2	5.0	ABV
357.8337	42:04	1235973.	308669.	41:56	42:19	47.	2	5.0	ABV

367.8765	41:25	3518372.	885346.	41:16	41:35	22.	2	5.0 ABV
369.8734	41:25	2205876.	543146.	41:18	41:36	17.	2	5.0 ABV
355.8368	41:26	1878521.	463500.	41:15	41:35	54.	2	5.0 ABV
355.8368	42:04	1948770.	501901.	41:57	42:17	54.	2	5.0 ABB
357.8337	41:26	1197071.	297306.	41:17	41:36	50.	2	5.0 ABV
357.8337	42:04	1226576.	308359.	41:56	42:17	50.	2	5.0 ABB
367.8765	41:25	3518371.	885346.	41:16	41:35	46.	2	5.0 ABV
369.8734	41:25	2205846.	543145.	41:18	41:36	42.	2	5.0 ABV
339.8427	39:48	3281406.	690042.	39:36	40:00	72.	1	1.0 ABV
341.8396	39:47	2117152.	444725.	39:31	39:59	67.	1	1.0 AVV
339.8427	36:15	3224505.	483620.	36:03	36:30	72.	2	5.0 ABV
339.8427	39:48	3281406.	690042.	39:36	40:00	72.	2	5.0 ABV
339.8427	40:56	3147493.	753360.	40:49	41:05	72.	2	5.0 ABV
339.8427	42:12	2638897.	654908.	42:01	42:27	72.	2	5.0 ABV
341.8396	36:15	2093373.	312916.	36:00	36:30	67.	2	5.0 ABV
341.8396	39:47	2117152.	444725.	39:31	39:59	67.	2	5.0 AVV
341.8396	40:56	2032349.	493266.	40:47	41:05	67.	2	5.0 ABV
341.8396	42:12	1676352.	411263.	42:00	42:25	67.	2	5.0 ABV
351.8824	39:46	5767132.	1214366.	39:34	39:57	70.	2	5.0 AVV
351.8824	40:55	5900687.	1434291.	40:47	41:05	70.	2	5.0 AVV
353.8793	39:46	3691315.	783149.	39:32	39:59	38.	2	5.0 ABV
353.8793	40:55	3731299.	904249.	40:47	41:05	38.	2	5.0 AVV
339.8427	39:48	3281406.	690042.	39:36	40:00	102.	2	5.0 ABV
339.8427	40:56	3146768.	753322.	40:49	41:05	102.	2	5.0 ABV
341.8396	39:47	2115086.	444658.	39:35	39:59	95.	2	5.0 ABV
341.8396	40:56	2031253.	493207.	40:47	41:05	95.	2	5.0 ABV
351.8824	39:46	5762573.	1214166.	39:34	39:57	151.	2	5.0 ABV
351.8824	40:55	5893462.	1433913.	40:47	41:05	151.	2	5.0 ABV
353.8793	39:46	3690105.	783103.	39:34	39:59	125.	2	5.0 ABV
353.8793	40:55	3728907.	904122.	40:47	41:05	125.	2	5.0 ABV
389.7961	44:02	1846633.	475220.	43:55	44:17	112.	1	1.0 ABV
391.7931	44:01	1522406.	403138.	43:55	44:16	63.	1	1.0 ABV
389.7961	44:02	1846633.	475220.	43:55	44:17	112.	2	5.0 ABV
389.7961	45:40	1663088.	423539.	45:32	45:43	112.	2	5.0 ABV
389.7961	45:47	1681135.	416971.	45:43	46:03	112.	2	5.0 AVV
389.7961	46:12	1763090.	425023.	46:03	46:25	112.	2	5.0 AVV
391.7931	44:01	1522406.	403138.	43:55	44:16	63.	2	5.0 ABV
391.7931	45:40	1354292.	337351.	45:33	45:43	63.	2	5.0 ABV
391.7931	45:47	1368773.	340454.	45:43	46:03	63.	2	5.0 AVB
391.7931	46:12	1433676.	337537.	46:03	46:24	63.	2	5.0 AVV
401.8358	45:39	3340616.	849563.	45:30	45:42	101.	2	5.0 ABV
401.8358	45:46	3417239.	849746.	45:42	46:01	101.	2	5.0 AVV
401.8358	46:11	3589745.	868753.	46:01	46:25	101.	2	5.0 AVV
403.8327	45:39	2587062.	648963.	45:31	45:42	53.	2	5.0 ABV
403.8327	45:46	2722997.	673489.	45:42	46:02	53.	2	5.0 AVV
403.8327	46:11	2873744.	689723.	46:02	46:26	53.	2	5.0 AVV
389.7961	45:40	1663087.	423539.	45:32	45:43	120.	2	5.0 ABV
389.7961	45:47	1681130.	416970.	45:43	46:03	120.	2	5.0 AVV
389.7961	46:12	1763078.	425023.	46:03	46:25	120.	2	5.0 AVV
391.7931	45:40	1354300.	337352.	45:33	45:43	81.	2	5.0 ABV
391.7931	45:47	1368765.	340454.	45:43	46:03	81.	2	5.0 AVV
391.7931	46:12	1433630.	337535.	46:03	46:24	81.	2	5.0 AVV
401.8358	45:39	3340206.	849518.	45:30	45:42	203.	2	5.0 ABV
401.8358	45:46	3415625.	849676.	45:42	46:01	203.	2	5.0 AVV
401.8358	46:11	3585745.	868596.	46:01	46:25	203.	2	5.0 AVV
403.8327	45:39	2587052.	648962.	45:31	45:42	183.	2	5.0 ABV
403.8327	45:46	2722938.	673487.	45:42	46:02	183.	2	5.0 AVV
403.8327	46:11	2873590.	689718.	46:02	46:26	183.	2	5.0 AVV
373.8021	44:44	2577298.	627431.	44:39	45:00	77.	1	1.0 AVV
375.7990	44:43	2071688.	514130.	44:39	44:59	94.	1	1.0 AVV
373.8021	43:20	2258122.	629626.	43:12	43:27	77.	2	5.0 ABV
373.8021	44:35	2421473.	636153.	44:26	44:39	77.	2	5.0 ABV
373.8021	44:44	2577298.	627431.	44:39	45:00	77.	2	5.0 AVV
373.8021	45:29	2358475.	592517.	45:19	45:44	77.	2	5.0 AVV
373.8021	46:29	1944173.	462338.	46:22	46:33	77.	2	5.0 ABV
373.8021	46:37	1880972.	421760.	46:33	46:52	77.	2	5.0 AVV
375.7990	43:20	1834496.	515709.	43:13	43:26	94.	2	5.0 ABV

375.7990	44:35	1951109.	515011.	44:26	44:39	94.	2	5.0 ABV
375.7990	44:43	2071688.	514130.	44:39	44:59	94.	2	5.0 AVB
375.7990	45:29	1880762.	473406.	45:18	45:43	94.	2	5.0 AVV
375.7990	46:29	1546388.	367696.	46:21	46:33	94.	2	5.0 ABV
375.7990	46:37	1502625.	341478.	46:33	46:52	94.	2	5.0 AVV
383.8447	44:34	2475443.	658699.	44:27	44:38	53.	2	5.0 ABV
383.8447	44:42	2885292.	706879.	44:38	44:57	53.	2	5.0 AVV
383.8447	45:28	2572200.	636626.	45:19	45:43	53.	2	5.0 AVB
383.8447	46:28	2186340.	512903.	46:19	46:43	53.	2	5.0 ABV
385.8417	44:34	4685368.	1235136.	44:27	44:38	88.	2	5.0 ABV
385.8417	44:42	5497273.	1337630.	44:38	44:58	88.	2	5.0 AVV
385.8417	45:28	4967202.	1238958.	45:19	45:43	88.	2	5.0 AVV
385.8417	46:28	4171070.	968058.	46:19	46:43	88.	2	5.0 ABV
373.8021	44:35	2421487.	636154.	44:26	44:39	81.	2	5.0 ABV
373.8021	44:44	2577315.	627432.	44:39	45:00	81.	2	5.0 AVB
373.8021	45:29	2358485.	592517.	45:19	45:44	81.	2	5.0 AVV
373.8021	46:29	1942441.	462140.	46:22	46:33	81.	2	5.0 ABV
373.8021	46:37	1869827.	421337.	46:33	46:52	81.	2	5.0 AVV
375.7990	44:35	1951158.	515015.	44:26	44:39	104.	2	5.0 ABV
375.7990	44:43	2071757.	514134.	44:39	44:59	104.	2	5.0 AVV
375.7990	45:29	1880837.	473409.	45:18	45:43	104.	2	5.0 AVV
375.7990	46:29	1545891.	367642.	46:21	46:33	104.	2	5.0 ABV
375.7990	46:37	1499964.	341374.	46:33	46:52	104.	2	5.0 AVB
383.8447	44:34	2475443.	658699.	44:27	44:38	90.	2	5.0 ABV
383.8447	44:42	2885292.	706879.	44:38	44:57	90.	2	5.0 AVV
383.8447	45:28	2572200.	636626.	45:19	45:43	90.	2	5.0 AVV
383.8447	46:28	2183963.	512830.	46:19	46:43	90.	2	5.0 ABV
385.8417	44:34	4685368.	1235136.	44:27	44:38	142.	2	5.0 ABV
385.8417	44:42	5497273.	1337630.	44:38	44:58	142.	2	5.0 AVV
385.8417	45:28	4967202.	1238958.	45:19	45:43	142.	2	5.0 AVV
385.8417	46:28	4166670.	967923.	46:19	46:43	142.	2	5.0 ABV
423.7555	49:31	1360071.	273630.	49:21	49:45	56.	1	1.0 ABV
425.7524	49:30	1326686.	262899.	49:19	49:45	61.	1	1.0 ABV
423.7555	49:31	1360071.	273630.	49:21	49:45	56.	2	5.0 ABV
423.7555	50:43	1303752.	277182.	50:27	50:58	56.	2	5.0 AVV
425.7524	49:30	1326686.	262899.	49:19	49:45	61.	2	5.0 ABV
425.7524	50:43	1249539.	253241.	50:34	50:58	61.	2	5.0 ABV
435.7951	49:30	26083.	4941.	49:21	49:38	22.	2	5.0 ABB
435.7951	50:42	2611962.	548457.	50:32	50:57	22.	2	5.0 ABV
437.7921	49:30	24497.	4598.	49:22	49:36	31.	2	5.0 ABB
437.7921	50:42	2444137.	505677.	50:33	50:57	31.	2	5.0 ABV
407.7614	48:59	1888804.	401056.	48:50	49:14	66.	1	1.0 ABV
409.7583	48:59	1823552.	382580.	48:51	49:14	54.	1	1.0 ABV
407.7614	48:59	1888804.	401056.	48:50	49:14	66.	2	5.0 ABV
407.7614	51:19	1492649.	326211.	51:04	51:34	66.	2	5.0 AVV
409.7583	48:59	1823552.	382580.	48:51	49:14	54.	2	5.0 ABV
409.7583	51:19	1423504.	312996.	51:10	51:34	54.	2	5.0 ABV
417.8041	48:58	1731576.	360892.	48:50	49:13	76.	2	5.0 ABV
417.8041	51:18	1387344.	306941.	51:11	51:31	76.	2	5.0 ABV
419.8010	48:58	3766596.	798756.	48:50	49:10	121.	2	5.0 ABV
419.8010	51:18	3130573.	684690.	51:10	51:33	121.	2	5.0 ABV
457.7148	54:42	2302927.	609993.	54:35	54:57	37.	1	1.0 ABV
459.7118	54:42	2575204.	675838.	54:35	54:57	55.	1	1.0 ABV
457.7148	54:42	2302927.	609993.	54:35	54:57	37.	2	5.0 ABV
459.7118	54:42	2575204.	675838.	54:35	54:57	55.	2	5.0 ABV
469.7545	54:41	4007039.	1049736.	54:34	54:56	36.	2	5.0 ABV
471.7514	54:41	4501157.	1164019.	54:34	54:56	31.	2	5.0 ABV
441.7207	54:50	2699605.	722104.	54:38	55:06	36.	1	1.0 ABV
443.7177	54:50	2958222.	776728.	54:38	55:06	52.	1	1.0 ABV
441.7207	54:50	2699605.	722104.	54:38	55:06	36.	2	5.0 ABV
443.7177	54:50	2958222.	776728.	54:38	55:06	52.	2	5.0 ABV
453.7603	54:49	5575163.	1454759.	54:38	55:02	37.	2	5.0 ABV
455.7573	54:49	6269843.	1631011.	54:38	55:05	84.	2	5.0 ABV

TestAmerica Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R16

Start Mass Res. ✓:	9:04	Ver Filename:	d1160818S1	Inst:	DFS-11 (D11A)
End Mass Res. ✓:	19:50	Win Filename:		ICAL Date:	4/9/15
		Col Perf Filename:	⊥		
		End Ver Filename:	d1160818S2		

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?		✓			✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
7. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram. Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.	✓				✓
8. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs?					✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?.		✓			✓
16. Were manual integrations documented properly?	✓				✓
17. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
18. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards?		✓			✓

Analyst: KCM	Date: 8/18/16	2nd Level Reviewer : CM	Date: 8-18-16
Comments:		Comments:	

ID022R26.doc, 061616

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
8/17/16	17:38	KLR	M811Q1AC	dltm811q	ok	solid	sam		1	H6G290408-005
8/17/16	18:39	KLR	Nonane	Rinse	ok	—	QC		1	Flush
8/17/16	9:22	KLR	4966:41	d1160817s2	ok	—	ver win		1	ver/win
8-17-16	20:27	LK	FC-43	d1160817r2	ok	—	Res		-	MassResChek
8-17-16	21:56	LK	FC-43	d1160817r3	ok	—	Res		-	MassResChek
8-17-16	22:05	LK	4966:41	d1160817s3	ok	—	Ver		1	Ver/window
8-17-16	23:08	LKM	nonane	rinse	ok	—	QC		1	flush
8-17-16	23:25	LKM	↓	↓	ok	—	QC		1	↓
8-17-16	23:41	LKM	↓	↓	ok	—	QC		1	↓
8-17-16	23:57	LKM	↓	↓	ok	—	QC		1	↓
8-18-16	00:09	LKM	M82REIAA	dltm82reba	ok	Solid	QC		1	System Blank
8-18-16	1:16	LKM	M811P1AC	dltm811pa	ok	Solid	SAM		1	H6G290408-004
8-18-16	2:15	LKM	M811R1AC	dltm811r	ok	Solid	SAM		1	↓
8-18-16	3:17	LKM	M811T1AC	dltm811t	ok	Solid	SAM		1	-006
8-18-16	4:19	LKM	M811V1AC	dltm811v	ok	Solid	SAM		1	-007
8-18-16	5:21	LKM	M811W1AC	dltm811w	ok	Solid	SAM		1	-008
8-18-16	6:22	LKM	M811X1AC	dltm811x	ok	Solid	SAM		1	-009
8-18-16	7:24	LKM	nonane	rinse	ok	—	QC		1	-010
8-18-16	7:40	LKM	4966:41	d1160818s1	ok	—	Ver		1	flush
8/18/16	9:04	KLR	FC-43	d1160818r1	ok	—	Res		—	Ver/window
8/18/16	9:12	KLR	M811X1AD	dltm811xs	ok	solid	QC		1	mass Res cht.
8/18/16	10:13	KLR	M811X1AE	dltm811xd	ok	↓	QC		1	H6G290408-005
8/18/16	11:14	KLR	Nonane	Rinse	ok	—	QC		1	↓ -010D
8/18/16	11:30	KLR	↓	↓	ok	—	↓		1	Flush
8/18/16	11:47	KLR	↓	↓	ok	—	↓		1	↓
8/18/16	12:03	KLR	M82REIAA	dltm82rebb	ok	Solid	QC		1	System Blk
↓	13:05	KLR	M8110IAC	dltm8110	ok	↓	sam		1	H6G290408-011
	14:06	KLR	M8111IAC	dltm8111	ok	↓	sam		1	-012
	15:08	KLR	M8112IAC	dltm8112	ok	↓	sam		1	-013
	16:10	KLR	M8113IAC	dltm8113	ok	↓	sam		1	-014
	17:12	KLR	M8114IAC	dltm8114	ok	↓	sam		1	-015
↓	18:13	KLR	Nonane	Rinse	ok	—	QC		1	Flush

Read and Understood by: LK Date: 8-18-16

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
8-18-16	18:29	LK	4966:41	d116081852	ok	—	Ver		1	Ver/window
8-18-16	19:50	LK	FC-43	ok ~~d116081852~~	ok	—	Res		—	Mass Fescheck

Read and Understood by:_____ Date: _____

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89961 - D1160818S1
CCAL Filename: d1160818s1
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160818s1/d1160818s1.d
CCAL Date/Time: 08/18/16 07:40

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.6	1.144	1.101	-3.7	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.0	1.066	0.963	-9.6	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	50	1.060	1.060	0.0	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	51	1.179	1.198	1.6	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	50	1.115	1.125	0.9	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	45	1.131	1.028	-9.1	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	46	1.116	1.019	-8.7	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05-1.43	44	1.205	1.057	-12.3	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	45	1.350	1.215	-10.0	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	45	1.242	1.128	-9.1	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	45	1.241	1.111	-10.5	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	44	1.262	1.100	-12.9	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88-1.20	46	1.114	1.023	-8.2	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88-1.20	45	1.461	1.318	-9.8	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	47	1.370	1.293	-5.7	20.0	True
OCDD	M+2/M+4	0.88	0.76-1.02	98	1.203	1.173	-2.5	20.0	True
OCDF	M+2/M+4	0.90	0.76-1.02	86	1.134	0.975	-14.1	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	95	1.093	1.039	-4.9	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	86	1.794	1.551	-13.5	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32-1.78	103	0.800	0.827	3.4	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	93	1.356	1.261	-7.0	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	98	1.343	1.318	-1.8	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	102	0.916	0.938	2.5	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	99	0.906	0.896	-1.1	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	85	1.268	1.081	-14.8	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	80	1.506	1.210	-19.6	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	84	1.344	1.130	-15.9	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	79	1.202	0.955	-20.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	111	0.728	0.808	11.0	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37-0.51	82	1.008	0.831	-17.6	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37-0.51	89	0.811	0.722	-10.9	30.0	True
13C-OCDD	M+2/M+4	0.90	0.76-1.02	222	0.597	0.664	11.1	30.0	True
13C-OCDF	M+2/M+4	0.89	0.76-1.02	201	0.946	0.949	0.3	30.0	True

KL 8/18/16

QiC L 8-18-16

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89961 - D1160818S1
CCAL Filename: d1160818s1
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160818s1/d1160818s1.d
CCAL Date/Time: 08/18/16 07:40

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	30:41	32:51	130	1.002	1.002	-	
2,3,7,8-TCDF	28:42	30:43	121	1.001	1.002	-	
1,2,3,7,8-PeCDD	40:33	41:25	52	1.000	1.000	-	
1,2,3,7,8-PeCDF	38:44	39:45	61	1.000	1.000	-	
2,3,4,7,8-PeCDF	40:01	40:55	54	1.001	1.000	-	
1,2,3,4,7,8-HxCDD	44:50	45:39	49	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	44:57	45:47	50	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:20	46:11	51	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	43:49	44:35	46	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:56	44:43	47	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	44:39	45:29	50	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	45:36	46:29	53	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	49:38	50:41	63	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:58	48:59	61	1.000	1.001	-	
1,2,3,4,7,8,9-HpCDF	50:17	51:19	62	1.000	1.000	-	
OCDD	53:54	54:42	48	1.000	1.000	-	
OCDF	54:02	54:50	48	1.000	1.000	-	
13C-2,3,7,8-TCDD	30:38	32:48	130	1.017	1.017	-	
13C-2,3,7,8-TCDF	28:40	30:40	120	0.951	0.950	-	
13C-1,2,3,7,8-PeCDD	40:32	41:24	52	1.346	1.283	-	
13C-1,2,3,7,8-PeCDF	38:43	39:44	61	1.285	1.231	-	
13C-2,3,4,7,8-PeCDF	39:59	40:54	55	1.327	1.268	-	
13C-1,2,3,4,7,8-HxCDD	44:49	45:38	49	0.989	0.988	-	
13C-1,2,3,6,7,8-HxCDD	44:56	45:46	50	0.992	0.991	-	
13C-1,2,3,4,7,8-HxCDF	43:48	44:34	46	0.966	0.965	-	
13C-1,2,3,6,7,8-HxCDF	43:55	44:42	47	0.969	0.968	-	
13C-2,3,4,6,7,8-HxCDF	44:38	45:28	50	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	45:35	46:28	53	1.006	1.006	-	
13C-1,2,3,4,6,7,8-HpCDD	49:37	50:40	63	1.095	1.097	-	
13C-1,2,3,4,6,7,8-HpCDF	47:56	48:57	61	1.058	1.060	-	
13C-1,2,3,4,7,8,9-HpCDF	50:16	51:18	62	1.109	1.111	-	
13C-OCDD	53:53	54:42	49	1.189	1.185	-	
13C-OCDF	54:01	54:50	49	1.192	1.188	-	

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89961 - D1160818S1

WIN Filename: d1160818s1

Method: 9Ao - DX8290A

WIN Sample ID: 4966:41

Instrument: D11A

WIN Result Dir: /20160818s1/d1160818s1.d

Column SN: 1379922

WIN Date/Time: 08/18/16 07:40

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	32:48	26:30	0.8079	35:41	1.0879
Total TCDF	13C-2,3,7,8-TCDF	304	30:40	23:55	0.7799	35:35	1.1603
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	41:24	38:42	0.9348	42:03	1.0157
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:44	36:11	0.9107	42:10	1.0612
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:46	44:01	0.9618	46:11	1.0091
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:34	43:20	0.9723	46:37	1.0460
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	50:40	49:29	0.9766	50:41	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:57	48:59	1.0007	51:19	1.0483
OCDD	13C-OCDD	458	54:42	54:42	1.0000	54:42	1.0000
OCDF	13C-OCDF	442	54:50	54:50	1.0000	54:50	1.0000

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s1/d1160818s1.d	Prep Date		SDG No	
Analysis ID	180445	Prep Exp Date		Date Received	
Analysis Date	8/18/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	07:40	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	32:51	835870	81761	1.144	10.00	9.625526	96.26	9.625526	E	0.0313
Total TCDD		3724106	414139	1.144		52.510758		52.510758	E	0.0313
2,3,7,8-TCDF	30:43	1091426	113388	1.066	10.00	9.035582	90.36	9.035582	E	0.0114
Total TCDF		2284107	307702	1.066		27.945005		27.945005	E	0.0114
1,2,3,7,8-PeCDD	41:25	3203173	794837	1.060	50.00	49.984392	99.97	49.984392	E	0.0157
Total PeCDD		6298041	1388887	1.060		148.263115		148.263115	E	0.0157
1,2,3,7,8-PeCDF	39:45	5522006	1185879	1.179	50.00	50.802787	101.61	50.802787	E	0.0163
2,3,4,7,8-PeCDF	40:55	5416695	1293073	1.115	50.00	50.453107	100.91	50.453107	E	0.0151
Total PeCDF		10062233	1926474	1.147		194.342969		194.342969	E	0.0156
1,2,3,4,7,8-HxCDD	45:39	3542765	889937	1.131	50.00	45.444540	90.89	45.444540	E	0.0181
1,2,3,6,7,8-HxCDD	45:47	3351014	825271	1.116	50.00	45.635642	91.27	45.635642	E	0.0193
1,2,3,7,8,9-HxCDD	46:11	3559892	850064	1.205	50.00	43.852503	87.71	43.852503	E	0.0174
Total HxCDD		3831597	1042181	1.151		184.363535		184.363535	E	0.0183
1,2,3,4,7,8-HxCDF	44:35	4823901	1307330	1.350	50.00	45.000137	90.00	45.000137	E	0.0164
1,2,3,6,7,8-HxCDF	44:43	5014097	1304539	1.242	50.00	45.429456	90.86	45.429456	E	0.0163
2,3,4,6,7,8-HxCDF	45:29	4608576	1144354	1.241	50.00	44.765835	89.53	44.765835	E	0.0184
1,2,3,7,8,9-HxCDF	46:29	3857845	912939	1.262	50.00	43.572659	87.15	43.572659	E	0.0225
Total HxCDF		8081737	2090831	1.274		257.735487		257.735487	E	0.0181
1,2,3,4,6,7,8-HpCDD	50:41	3035581	649475	1.114	50.00	45.910987	91.82	45.910987	E	0.0252
Total HpCDD		3040816	639013	1.114		91.901151		91.901151	E	0.0252
1,2,3,4,6,7,8-HpCDF	48:59	4023185	837800	1.461	50.00	45.112636	90.23	45.112636	E	0.0160
1,2,3,4,7,8,9-HpCDF	51:19	3428666	757574	1.370	50.00	47.166912	94.33	47.166912	E	0.0188
Total HpCDF				1.416		92.279548		92.279548	E	0.0173
OCDD	54:42	5721074	1481044	1.203	100.0	97.548082	97.55	97.548082	E	0.0166
OCDF	54:50	6793534	1759519	1.134	100.0	85.938523	85.94	85.938523	E	0.0114
13C-2,3,7,8-TCDD	32:48	7593961	741334	1.093	100.0	95.117495	95.12	95.117495		0.0201
13C-2,3,7,8-TCDF	30:40	11335715	1196172	1.794	100.0	86.450991	86.45	86.450991		0.0109
13C-1,2,3,7,8-PeCDD	41:24	6046228	1490640	0.800	100.0	103.428621	103.43	103.428621		0.0116
13C-1,2,3,7,8-PeCDF	39:44	9218186	1982372	1.356	100.0	92.999360	93.00	92.999360		0.0216
13C-2,3,4,7,8-PeCDF	40:54	9632526	2255706	1.343	100.0	98.151279	98.15	98.151279		0.0218
13C-1,2,3,4,7,8-HxCDD	45:38	6892180	1735279	0.916	100.0	102.460906	102.46	102.460906		0.0242
13C-1,2,3,6,7,8-HxCDD	45:46	6580010	1644954	0.906	100.0	98.853825	98.85	98.853825		0.0244
13C-1,2,3,4,7,8-HxCDF	44:34	7937994	2106703	1.268	100.0	85.210132	85.21	85.210132		0.0199
13C-1,2,3,6,7,8-HxCDF	44:42	8889291	2311573	1.506	100.0	80.390220	80.39	80.390220		0.0167
13C-2,3,4,6,7,8-HxCDF	45:28	8296453	2051830	1.344	100.0	84.050613	84.05	84.050613		0.0188
13C-1,2,3,7,8,9-HxCDF	46:28	7015422	1644743	1.202	100.0	79.460712	79.46	79.460712		0.0210
13C-1,2,3,4,6,7,8-HpCDD	50:40	5936752	1281278	0.728	100.0	110.969947	110.97	110.969947		0.0113
13C-1,2,3,4,6,7,8-HpCDF	48:57	6104034	1282052	1.008	100.0	82.444650	82.44	82.444650		0.0185
13C-1,2,3,4,7,8,9-HpCDF	51:18	5304658	1164639	0.811	100.0	89.082317	89.08	89.082317		0.0230
13C-OCDD	54:42	9750478	2529344	0.597	200.0	222.233015	111.12	222.233015		0.0220
13C-OCDF	54:50	13937748	3619322	0.946	200.0	200.601443	100.30	200.601443		0.0181
37Cl4-2,3,7,8-TCDD	32:51	841905	83710	1.233	10.00	9.340877	93.41	9.340877	E	0.0154
13C-1,2,3,4-TCDD	32:16	7307741	752174	1.000	100.0	100.000000	100.00	100.000000		0.0219
13C-1,2,3,7,8,9-HxCDD	46:10	7344671	1785335	1.000	100.0	100.000000	100.00	100.000000		0.0221

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s1/d1160818s1	Prep Date		SDG No	
Analysis ID	180445	Prep Exp Date		Date Received	
Analysis Date	08/18/16 07:40	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	70	75	28	30	0.93 *	/	
	Unidentified	23:55	00:00	0	579734	739010	79654	100529	0.78	ABV/ABV	
	2,3,7,8-TCDF	30:43	30:54	-11	476430	614996	50105	63283	0.77	AVV/AVV	M
	Unidentified	35:35	00:00	0	433742	531621	56518	71001	0.82	ABB/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	100	48	40	19	2.11 *	/	
	13C-2,3,7,8-TCDF	30:40	30:53	-13	5050266	6285449	545086	651086	0.80	ABV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	128	138	51	55	0.93 *	/	
	Unidentified	26:30	00:00	0	346455	448492	42930	55569	0.77	ABV/ABV	
	Unidentified	32:19	00:00	0	319767	408013	31913	42446	0.78	ABV/AVV	
	Unidentified	32:34	00:00	0	307843	389323	30698	38555	0.79	AVV/AVV	
	2,3,7,8-TCDD	32:51	32:37	14	372722	463148	36702	45059	0.80	AVV/AVV	M
	Unidentified	33:24	00:00	0	341586	434651	33114	39954	0.79	AVV/AVV	
	Unidentified	35:41	00:00	0	313881	414095	41757	57203	0.76	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	143		57				
	37Cl4-2,3,7,8-TCDD	32:51	32:37	14	841905		83710			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	125	40	50	16	3.13 *	/	
	13C-1,2,3,4-TCDD	32:16	32:08	8	3273429	4034312	341516	410658	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:48	32:34	14	3407522	4186439	323282	418052	0.81	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	205	175	82	70	1.17 *	/	
	Unidentified	36:11	00:00	0	3258486	2100217	481731	308364	1.55	ABV/ABV	
	1,2,3,7,8-PeCDF	39:45	39:51	-6	3381527	2140479	723116	462763	1.58	AVV/ABV	M
	2,3,4,7,8-PeCDF	40:55	41:03	-8	3300086	2116609	779981	513092	1.56	ABV/ABV	M
	Unidentified	42:10	00:00	0	2872420	1831110	686097	450282	1.57	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	128	93	51	37	1.38	/	
	13C-1,2,3,7,8-PeCDF	39:44	39:50	-6	5632850	3585336	1211776	770596	1.57	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:54	41:01	-7	5951295	3681231	1383284	872422	1.62	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	143	105	57	42	1.36	/	
	Unidentified	38:42	00:00	0	1765449	1110877	306542	193662	1.59	ABV/ABV	
	1,2,3,7,8-PeCDD	41:25	41:33	-8	1957602	1245571	481891	312946	1.57	ABV/ABV	M
	Unidentified	42:03	00:00	0	2104479	1317236	546298	342385	1.60	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	43	28	17	11	1.55	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:32	-8	3696941	2349287	914726	575914	1.57	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	233	235	93	94	0.99 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s1/d1160818s1	Prep Date		SDG No	
Analysis ID	180445	Prep Exp Date		Date Received	
Analysis Date	08/18/16 07:40	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	43:20	00:00	0	2495245	1991844	693966	554153	1.25	ABV/ABV	
	1,2,3,4,7,8-HxCDF	44:35	44:41	-6	2684630	2139271	727177	580153	1.25	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:43	44:48	-5	2796177	2217920	726084	578455	1.26	AVV/AVV	M
	2,3,4,6,7,8-HxCDF	45:29	45:30	-1	2559256	2049320	642877	501477	1.25	AVV/AVV	
	1,2,3,7,8,9-HxCDF	46:29	46:25	4	2150242	1707603	514891	398048	1.26	ABV/ABV	M
	Unidentified	46:37	00:00	0	2001668	1592980	466735	375977	1.26	AVV/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	140	310	56	124	0.45	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:40	-6	2737828	5200166	723352	1383351	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:47	-5	3079721	5809570	801925	1509648	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:28	45:29	-1	2860543	5435910	716861	1334969	0.53	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:28	46:24	4	2384645	4630777	556263	1088480	0.51	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	193	163	77	65	1.18	/	
	Unidentified	44:01	00:00	0	2116980	1714617	568586	473595	1.23	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:39	45:40	-1	1950946	1591819	486363	403574	1.23	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:47	45:47	0	1858474	1492540	460445	364826	1.25	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:11	46:10	1	1964300	1595592	476050	374014	1.23	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	303	93	121	37	3.27 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:39	-1	3871893	3020287	965083	770196	1.28	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:46	45:46	0	3686216	2893794	920388	724566	1.27	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:10	46:09	1	4069452	3275219	995751	789584	1.24	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	153	148	61	59	1.03	/	
	1,2,3,4,6,7,8-HpCDF	48:59	48:47	12	2051767	1971418	429538	408262	1.04	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	51:19	51:07	12	1748231	1680435	389729	367845	1.04	AVV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	163	170	65	68	0.96 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:45	12	1893495	4210539	400221	881831	0.45	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	51:18	51:06	12	1636579	3668079	356977	807662	0.45	AVV/AVV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	158	203	63	81	0.78 *	/	
	Unidentified	49:29	00:00	0	1548448	1492368	324269	314744	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:28	13	1550776	1484805	328729	320746	1.04	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	98	50	39	20	1.95 *	/	
	Unidentified	49:28	00:00	0	25907	24477	5871	4970	1.06	ABV/ABV	
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:27	13	3005818	2930934	649076	632202	1.03	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	113	123	45	49	0.92	/	
	OCDF	54:50	55:01	-11	3224354	3569180	823456	936063	0.90	ABV/ABV	M

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s1/d1160818s1	Prep Date		SDG No	
Analysis ID	180445	Prep Exp Date		Date Received	
Analysis Date	08/18/16 07:40	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	LKM	Diluton Factor	1.00	Code	F8o

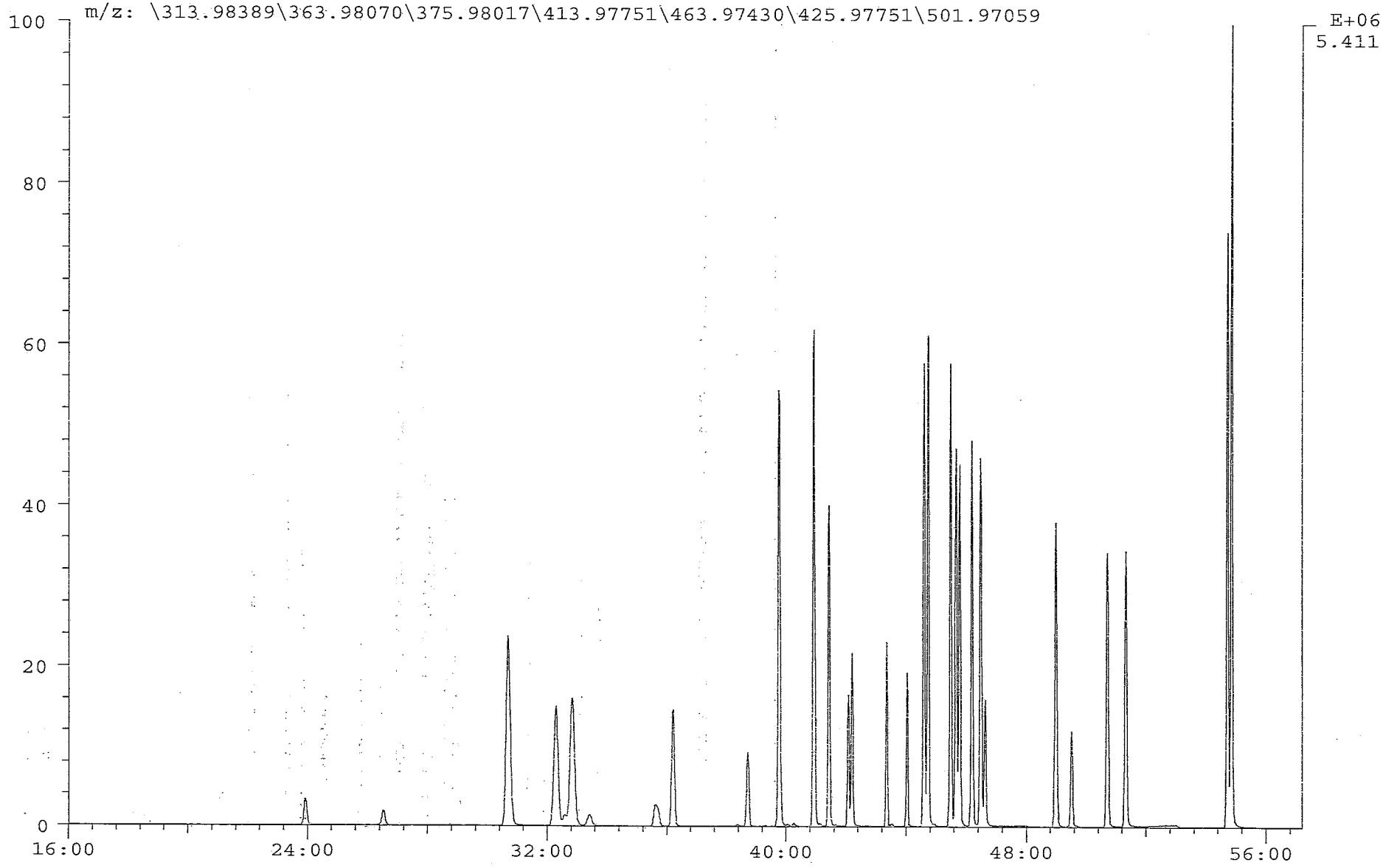
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	133	173	53	69	0.77	/	
	13C-OCDF	54:50	54:59	-9	6577473	7360275	1732095	1887227	0.89	ABV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	125	128	50	51	0.98	/	
	OCDD	54:42	54:52	-10	2675635	3045439	684361	796683	0.88	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	120	115	48	46	1.04 *	/	
	13C-OCDD	54:42	54:51	-9	4628649	5121829	1199942	1329402	0.90	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int./Cdo. LK 8/18/16
Qid L 8-18-16

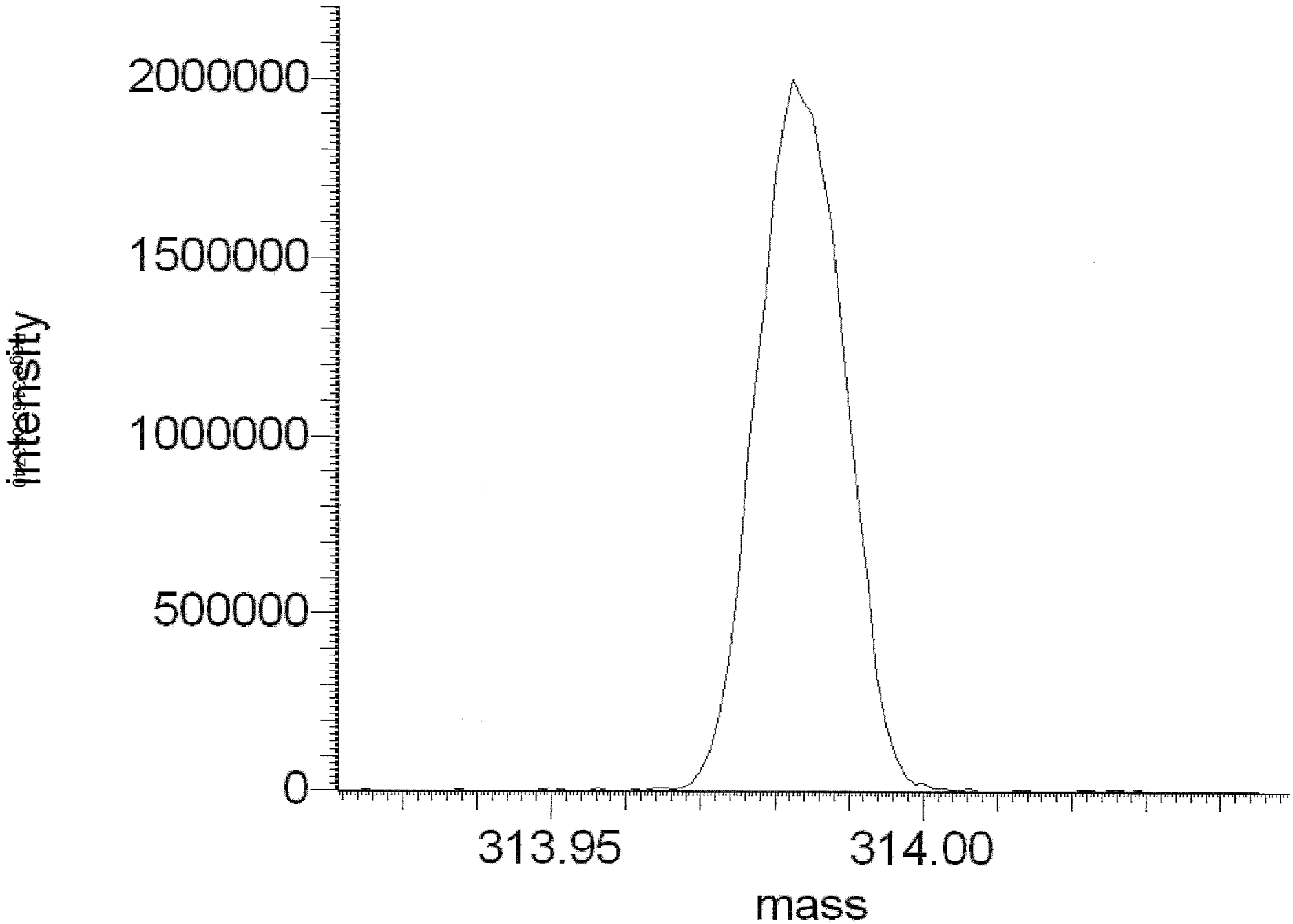
CHRO:	d1160818s1	18-Aug-16	Elapse:	12:04.5	1
Samp:	WO=4966:41 Meth=F8o Dil=1		Start :	07:40:19	2628
Comm:	Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3				
Mode:	EI ESI + Q1MS UP LR		Study :	VER/WIN	
Oper:	LKM		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 232 > 2628	Masses:	303 > 514	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



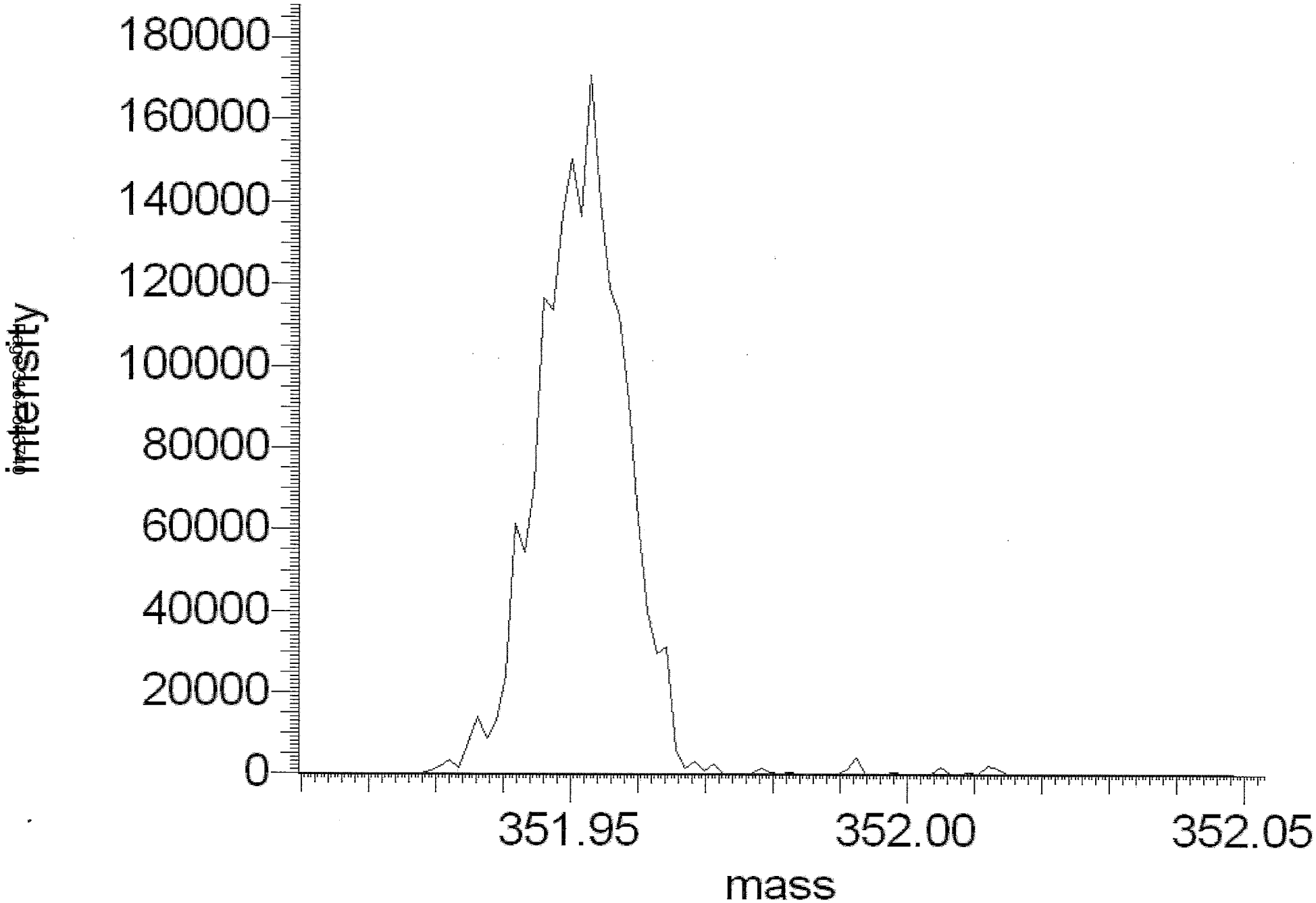
```
Reports
09:10:03:  Peak matching procedure started
09:10:03:
09:10:04:  Reference mass: 313.98336
09:10:04:  Sample mass: 364.0
09:10:05:
09:10:05:  Finding reference mass
09:10:06:  Finding sample mass
09:10:07:
09:10:12:  [1]   363.9785 amu, mean: 363.9785
09:10:15:  [2]   363.9789 amu, mean: 363.9787     SD: 0.30 mmu or: 0.82 ppm
09:10:19:  [3]   363.9793 amu, mean: 363.9789     SD: 0.41 mmu or: 1.13 ppm
09:10:22:  [4]   363.9791 amu, mean: 363.9790     SD: 0.35 mmu or: 0.96 ppm
09:10:25:  [5]   363.9787 amu, mean: 363.9789     SD: 0.32 mmu or: 0.89 ppm
09:10:28:  [6]   363.9782 amu, mean: 363.9788     SD: 0.41 mmu or: 1.13 ppm
09:10:31:  [7]   363.9787 amu, mean: 363.9788     SD: 0.38 mmu or: 1.03 ppm
09:10:34:  [8]   363.9794 amu, mean: 363.9789     SD: 0.40 mmu or: 1.10 ppm
09:10:37:  [9]   363.9789 amu, mean: 363.9789     SD: 0.37 mmu or: 1.03 ppm
09:10:41:  [10]   363.9792 amu, mean: 363.9789     SD: 0.37 mmu or: 1.01 ppm
09:10:41:
09:10:41:  Stop requested. Please wait for procedure to finish.
09:10:41:
09:10:44:
09:10:45:  Peakmatching stopped
```

Signature 8/18/16

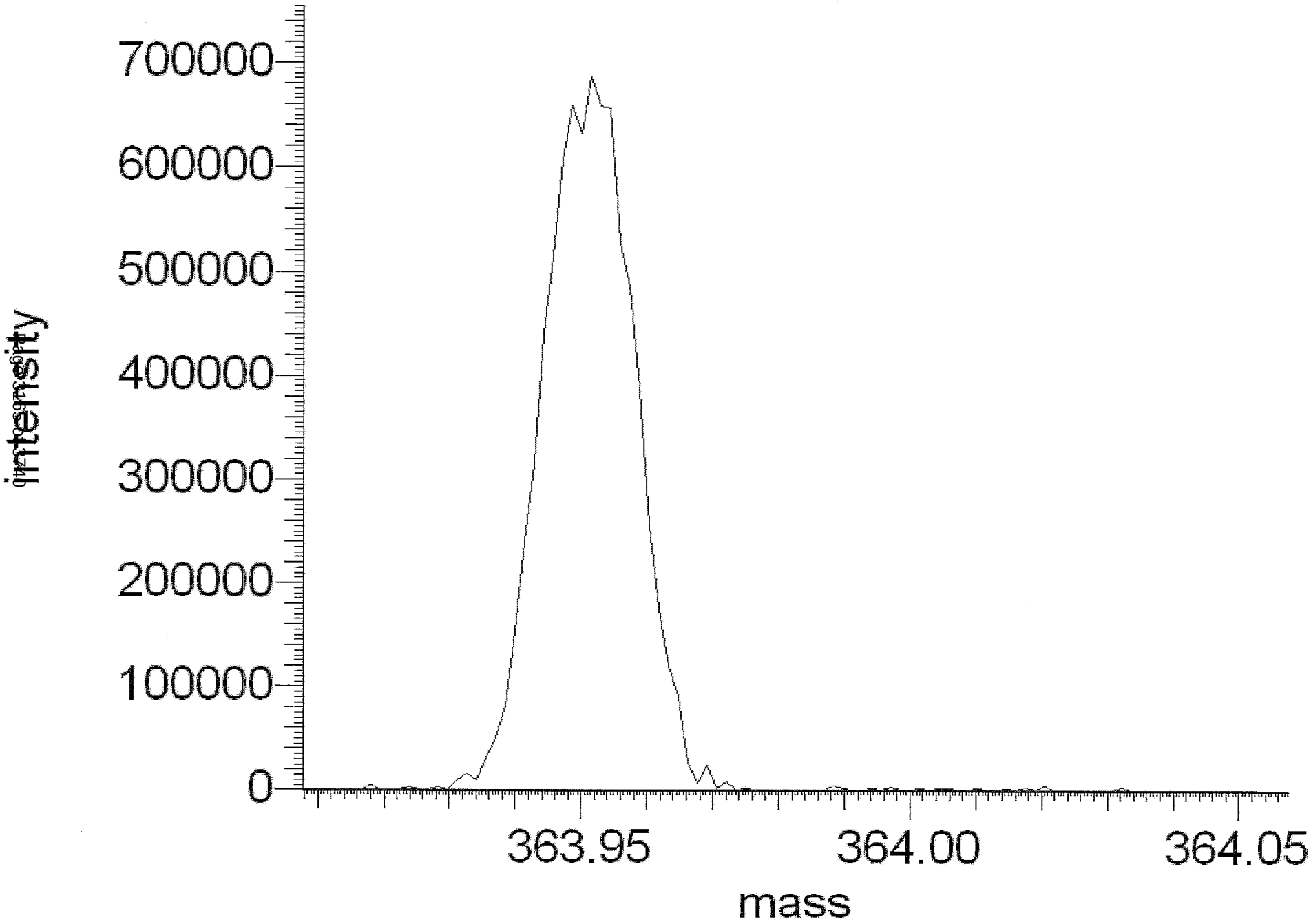
LockMass: 313.9838 Instr.: DFS-1209
Resolution: 12538 (08/18/16 09:04:04)



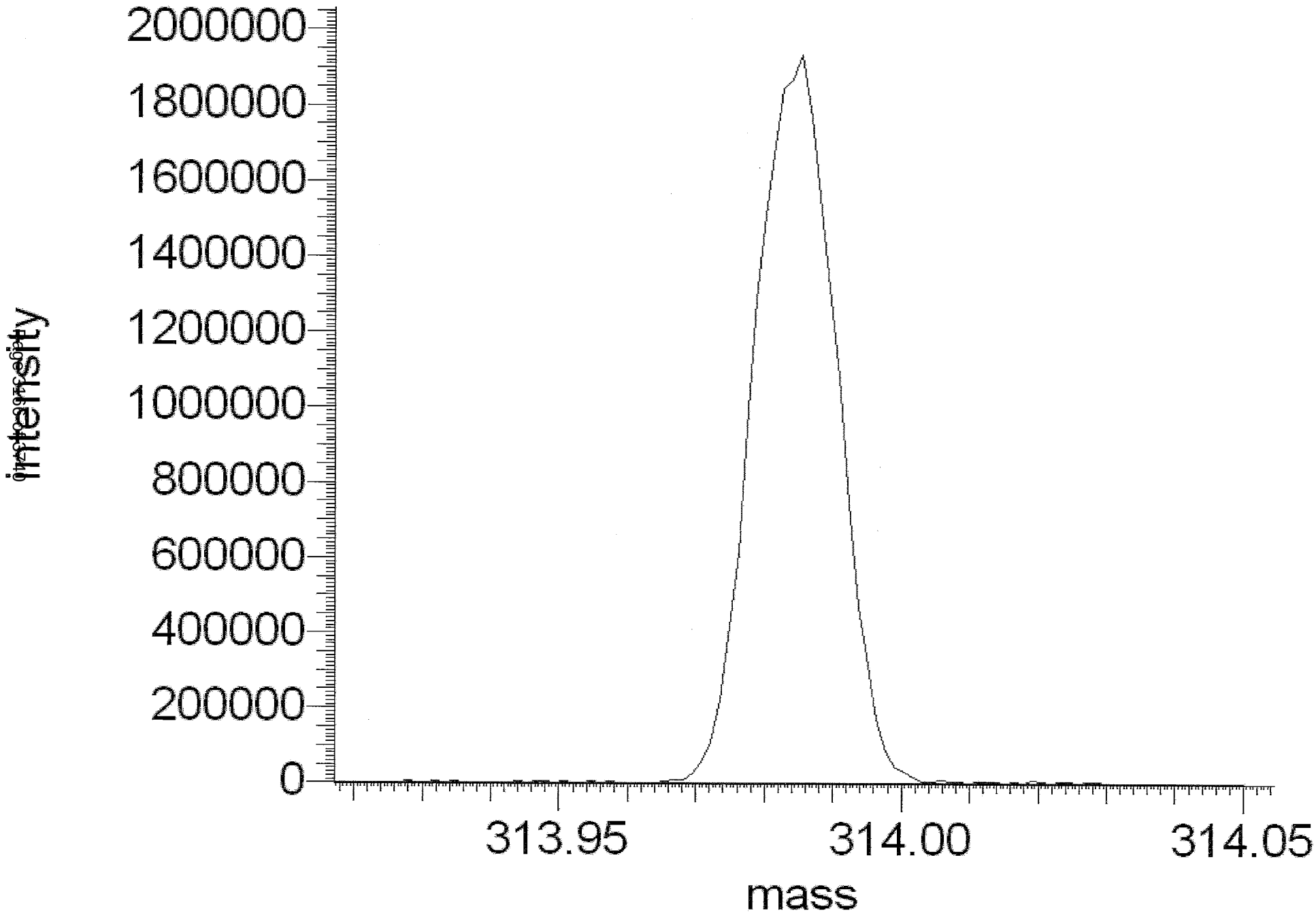
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12085 (08/18/16 09:04:51)



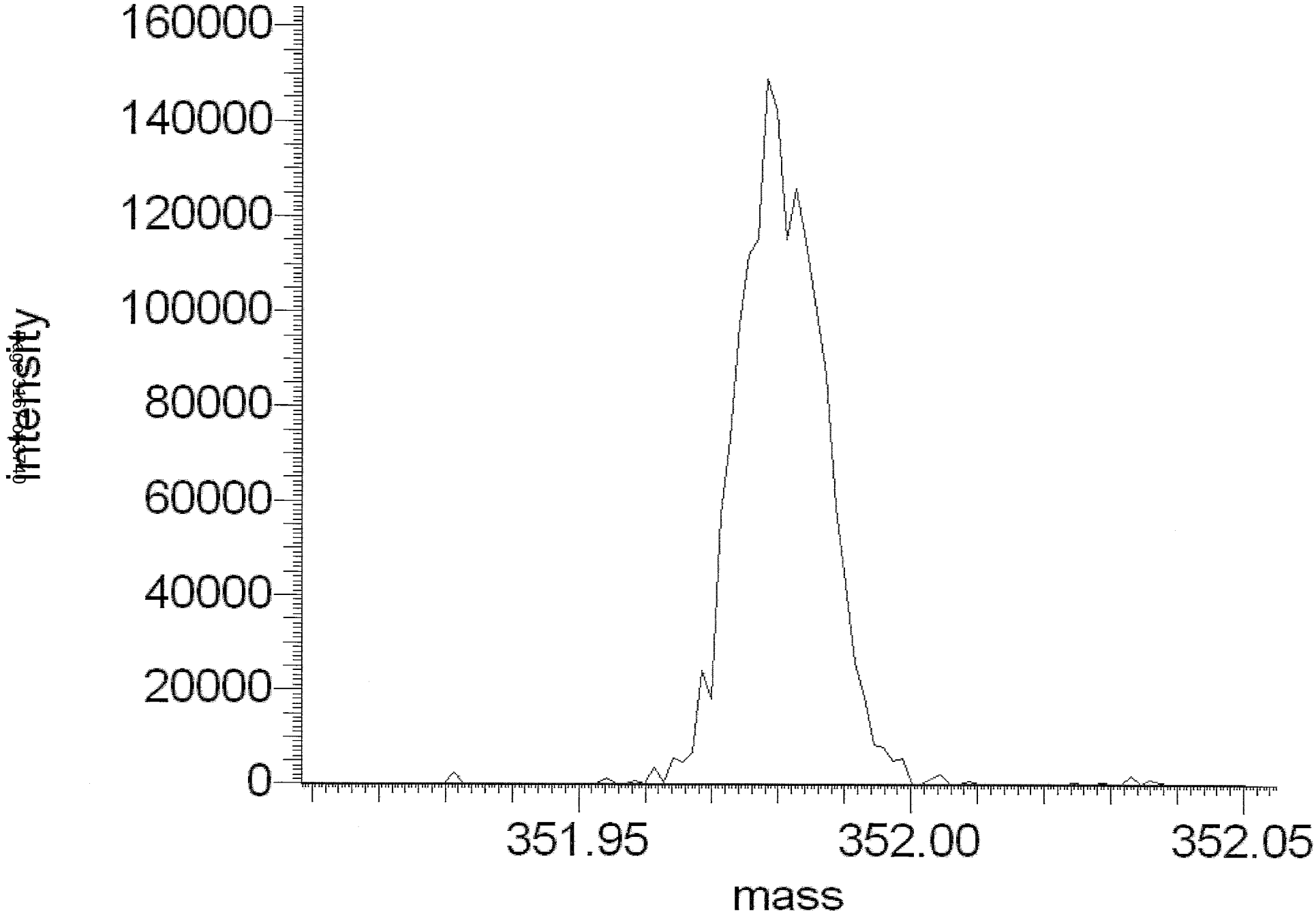
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 11751 (08/18/16 09:04:54)



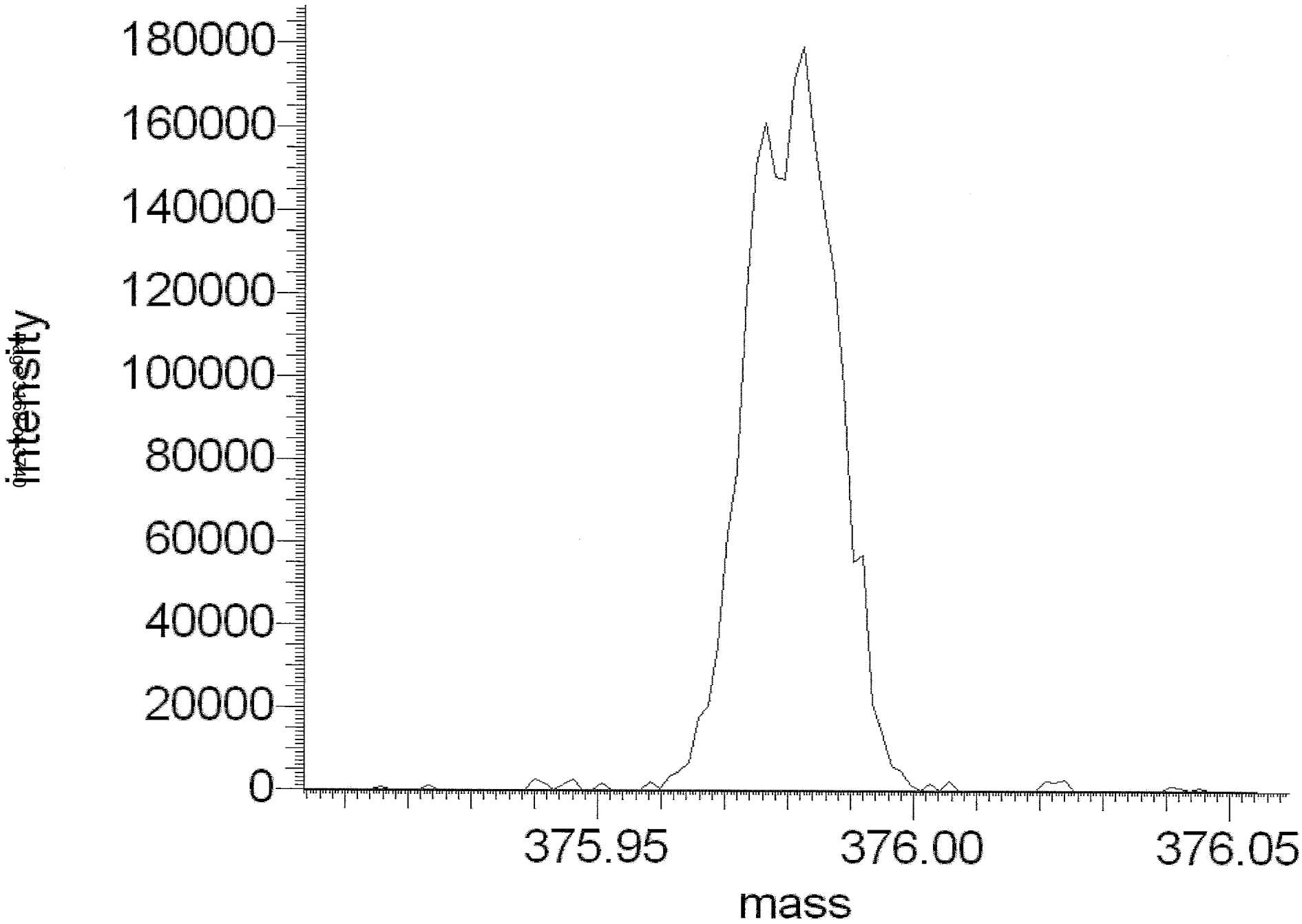
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 11751 (08/18/16 09:05:09)



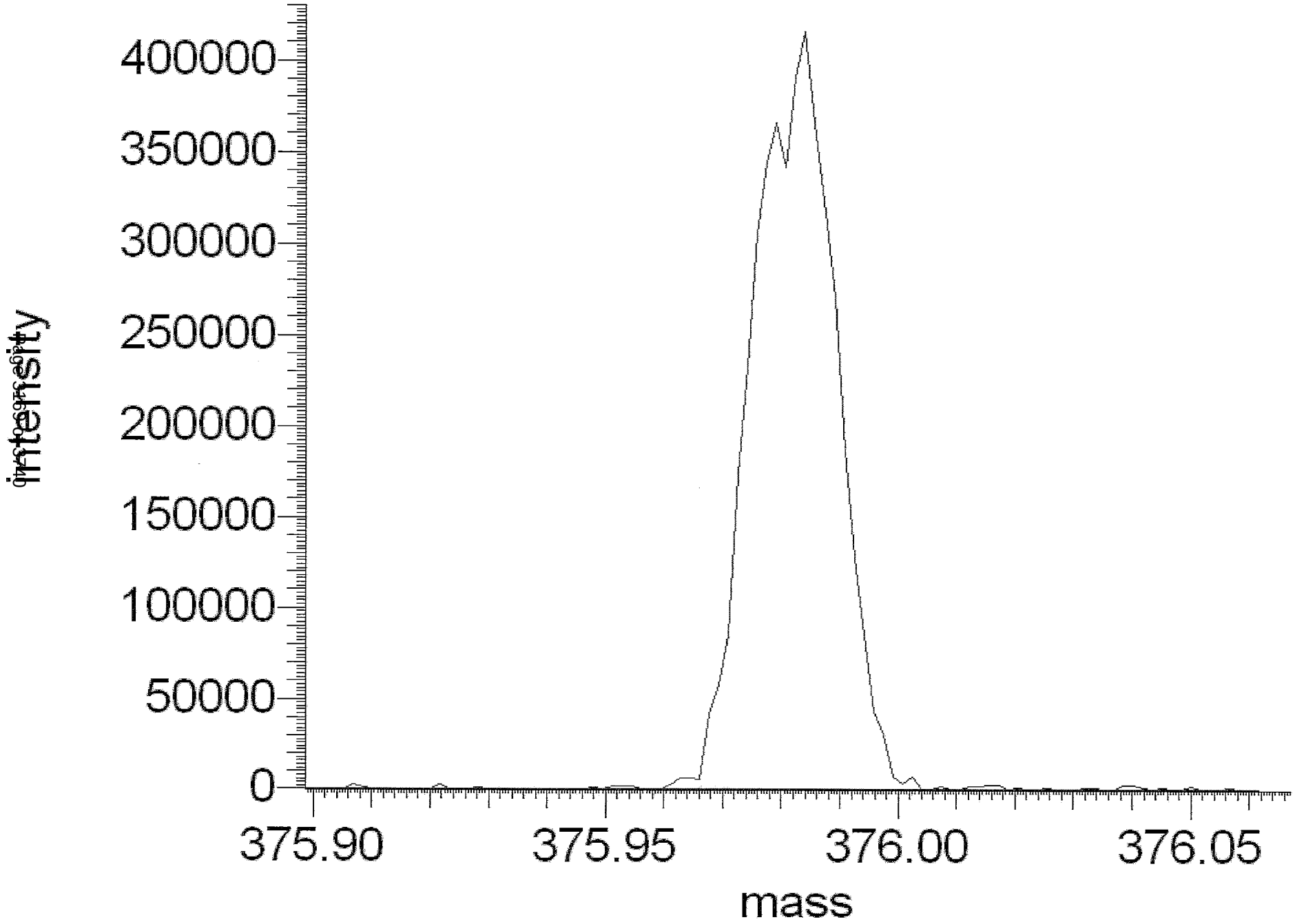
Mass: 351.9802 Instr.: DFS-1209
Resolution: 13543 (08/18/16 09:05:55)



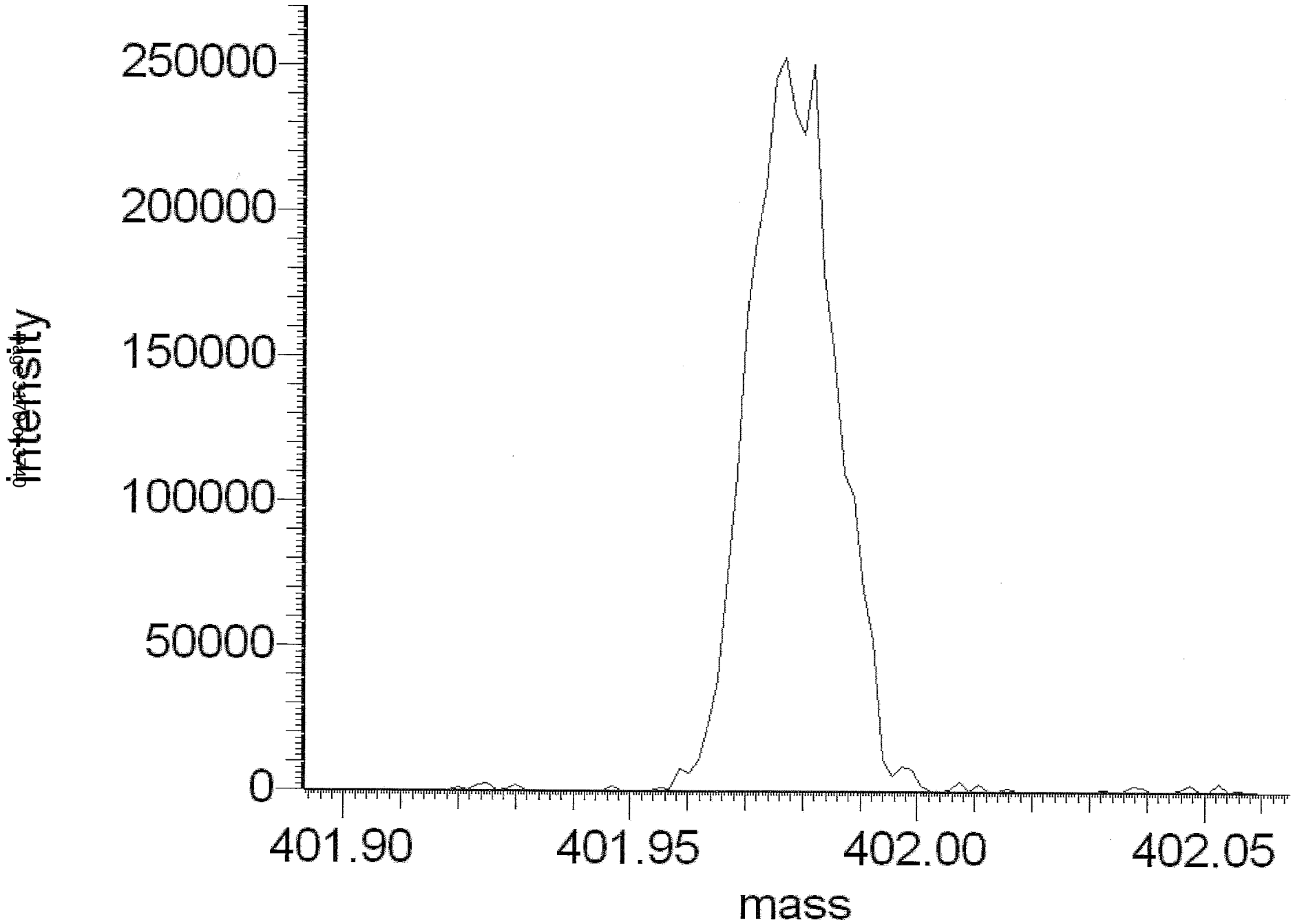
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 11509 (08/18/16 09:05:58)



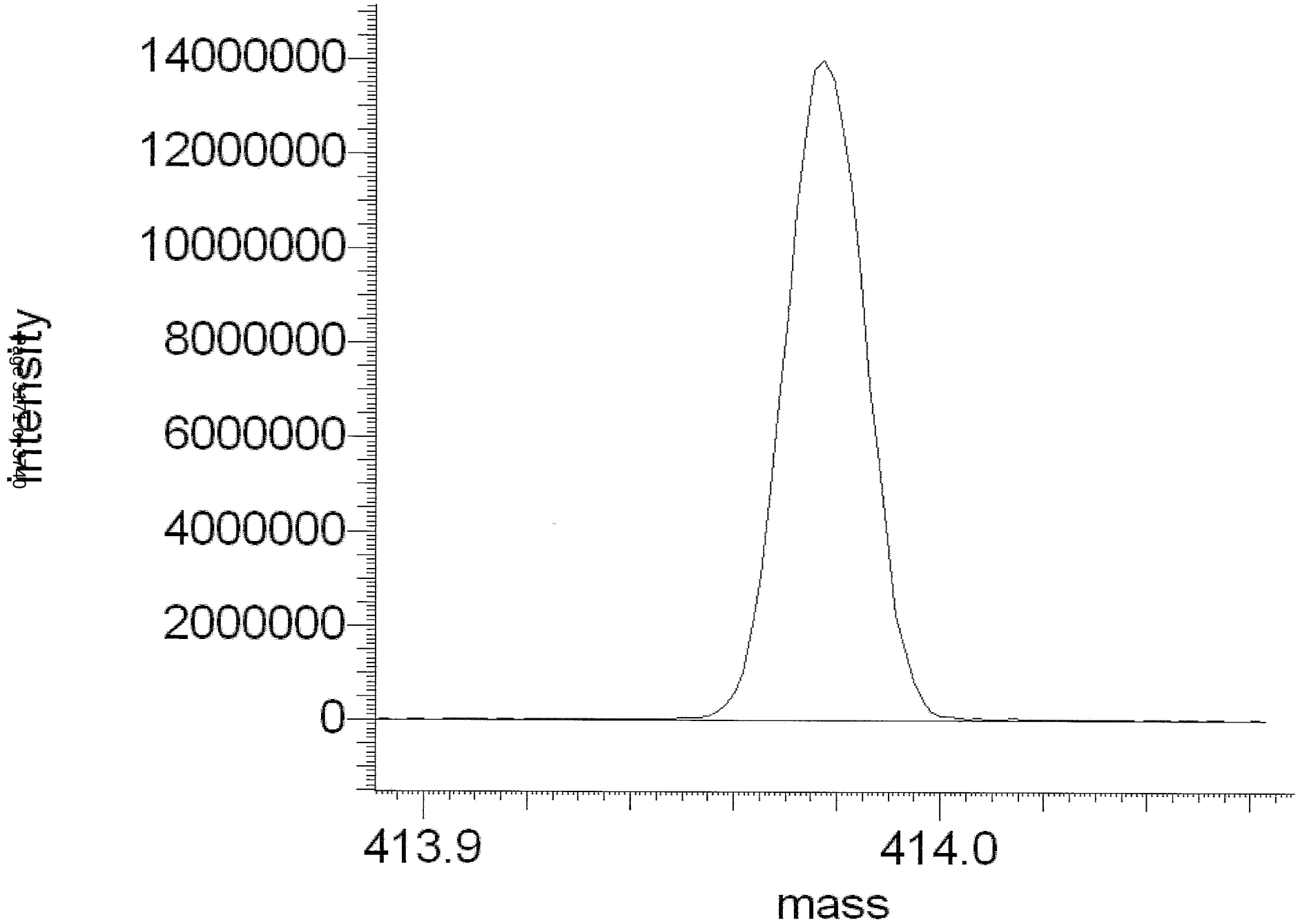
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 11509 (08/18/16 09:06:13)



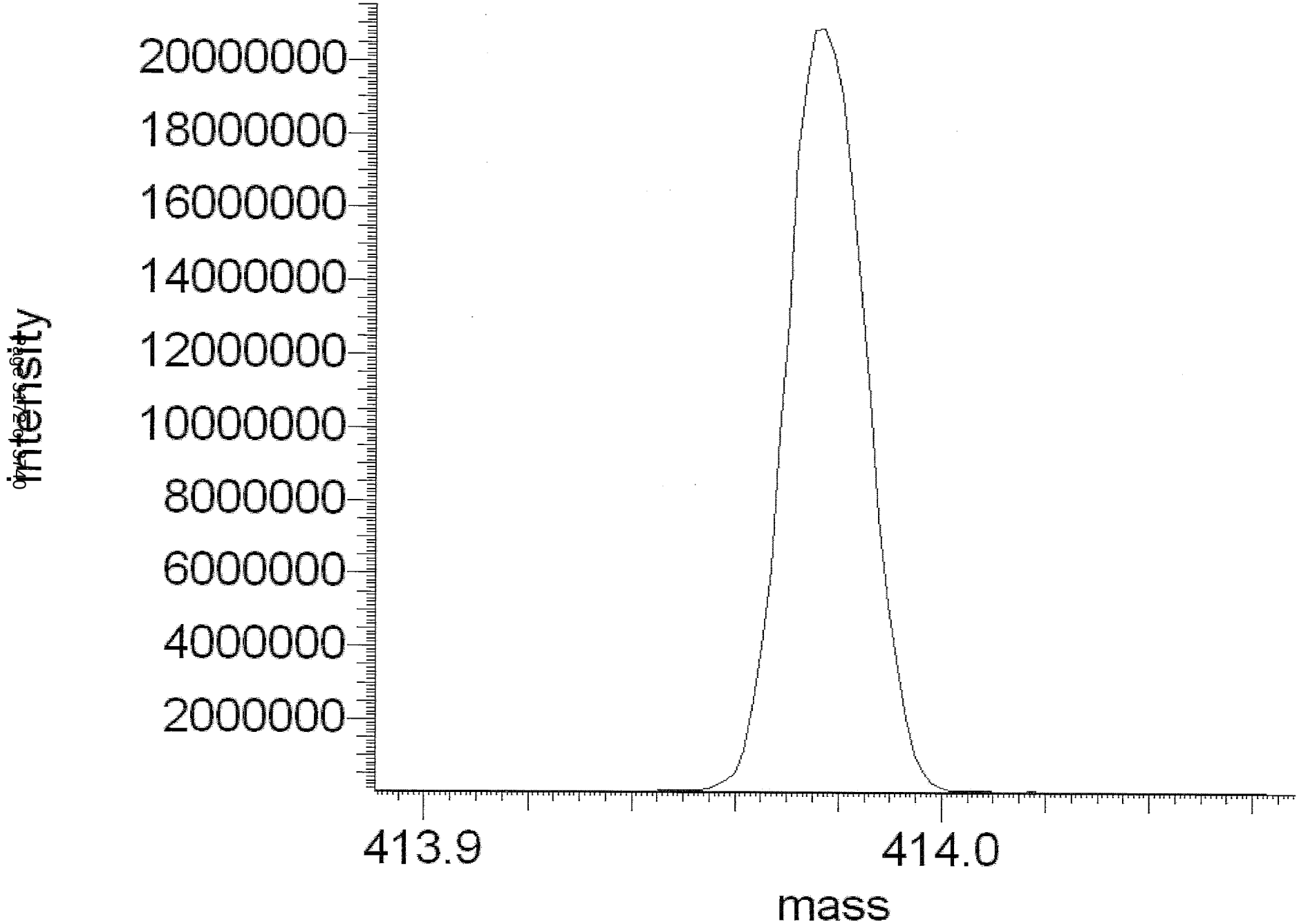
Mass: 401.9770 Instr.: DFS-1209
Resolution: 11995 (08/18/16 09:07:00)



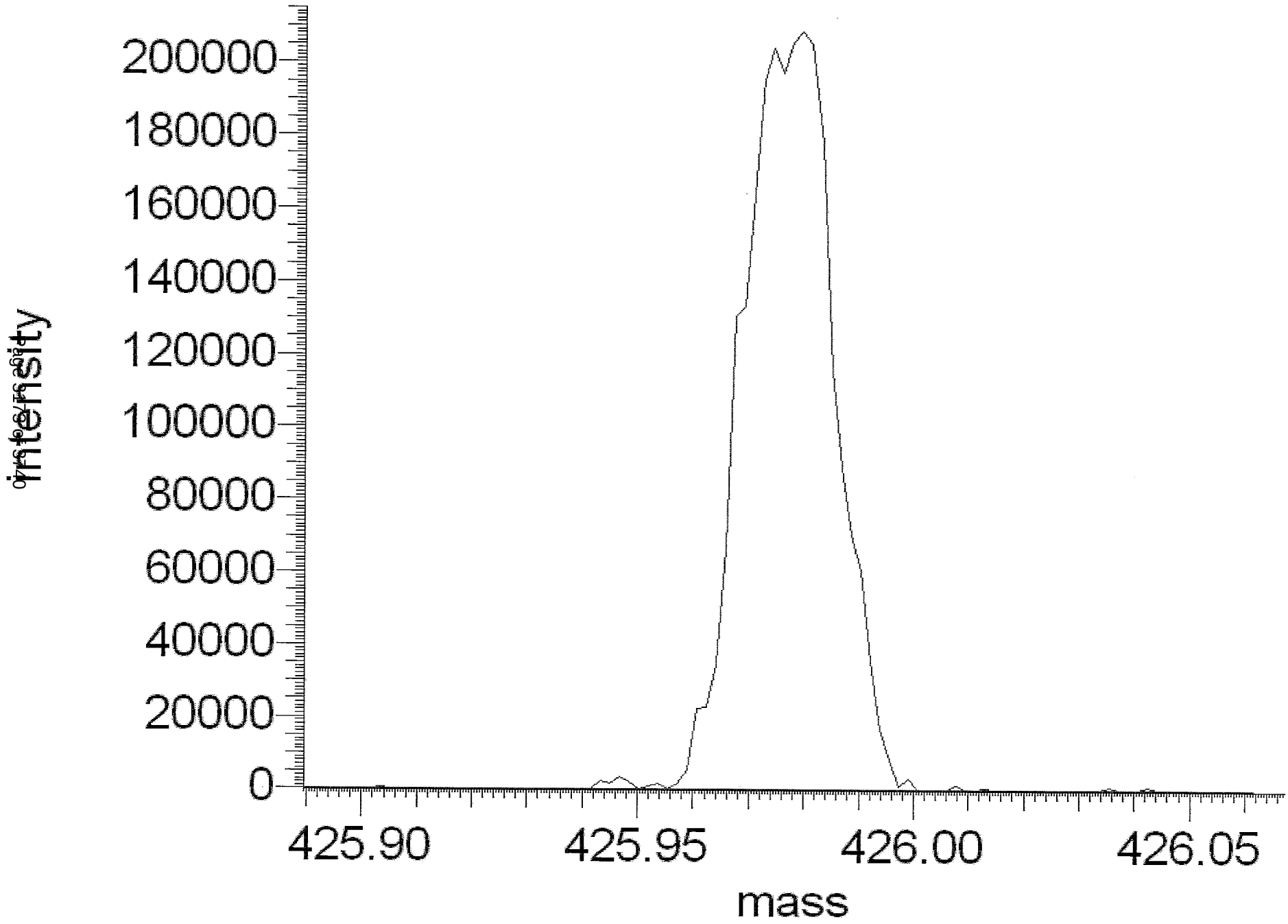
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 11874 (08/18/16 09:07:03)



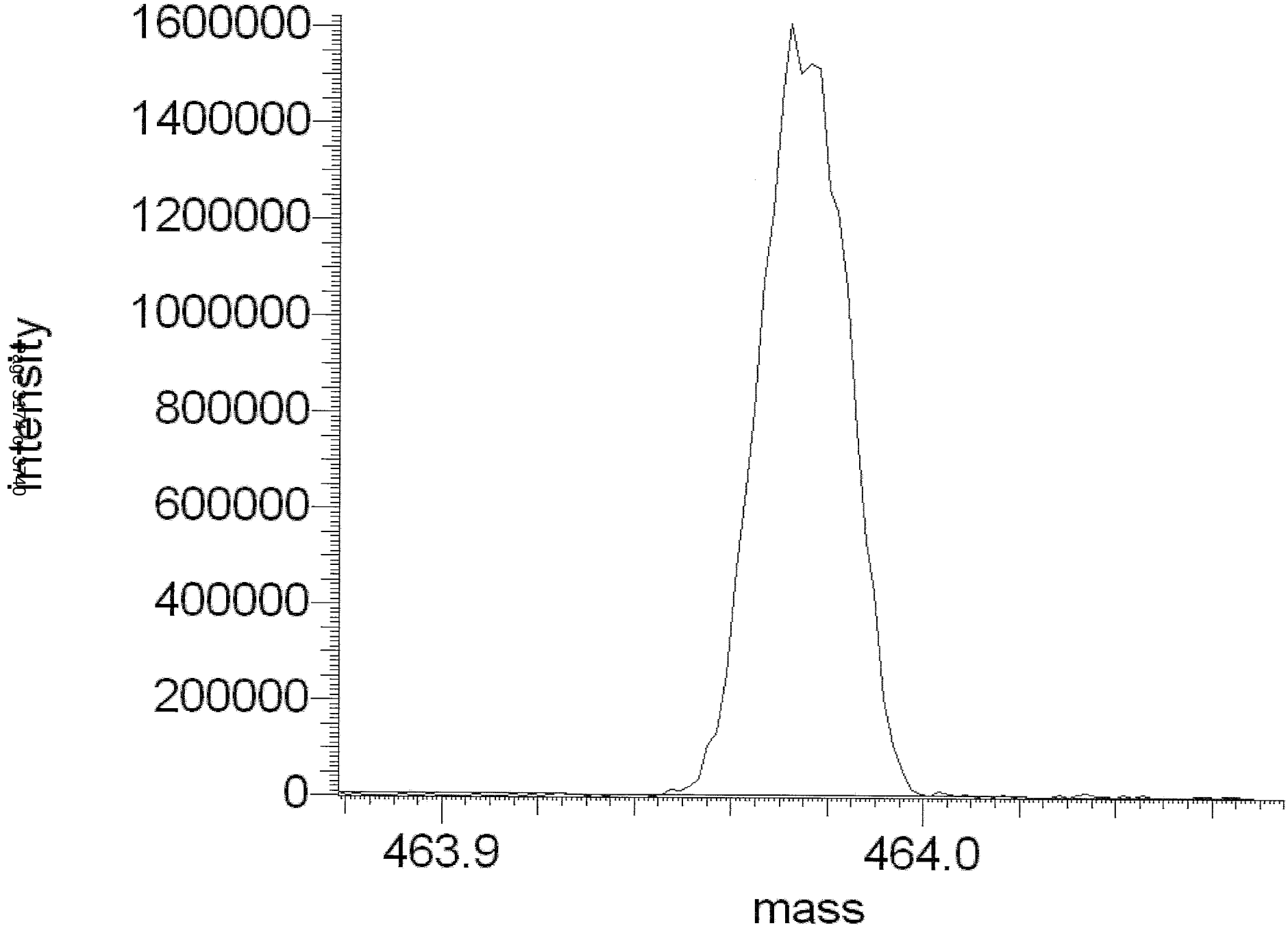
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 11874 (08/18/16 09:07:18)



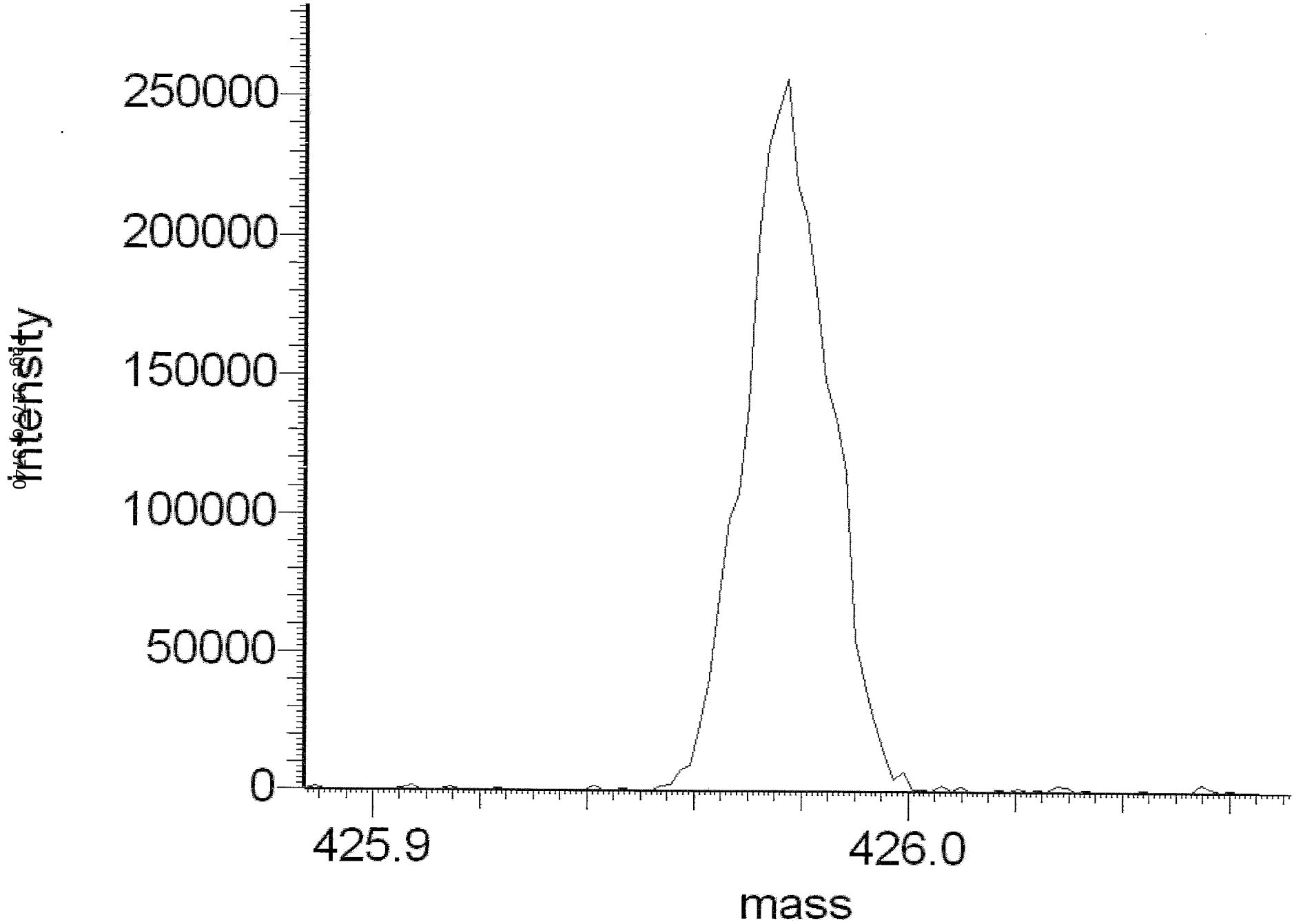
Mass: 425.9770 Instr.: DFS-1209
Resolution: 12522 (08/18/16 09:08:05)



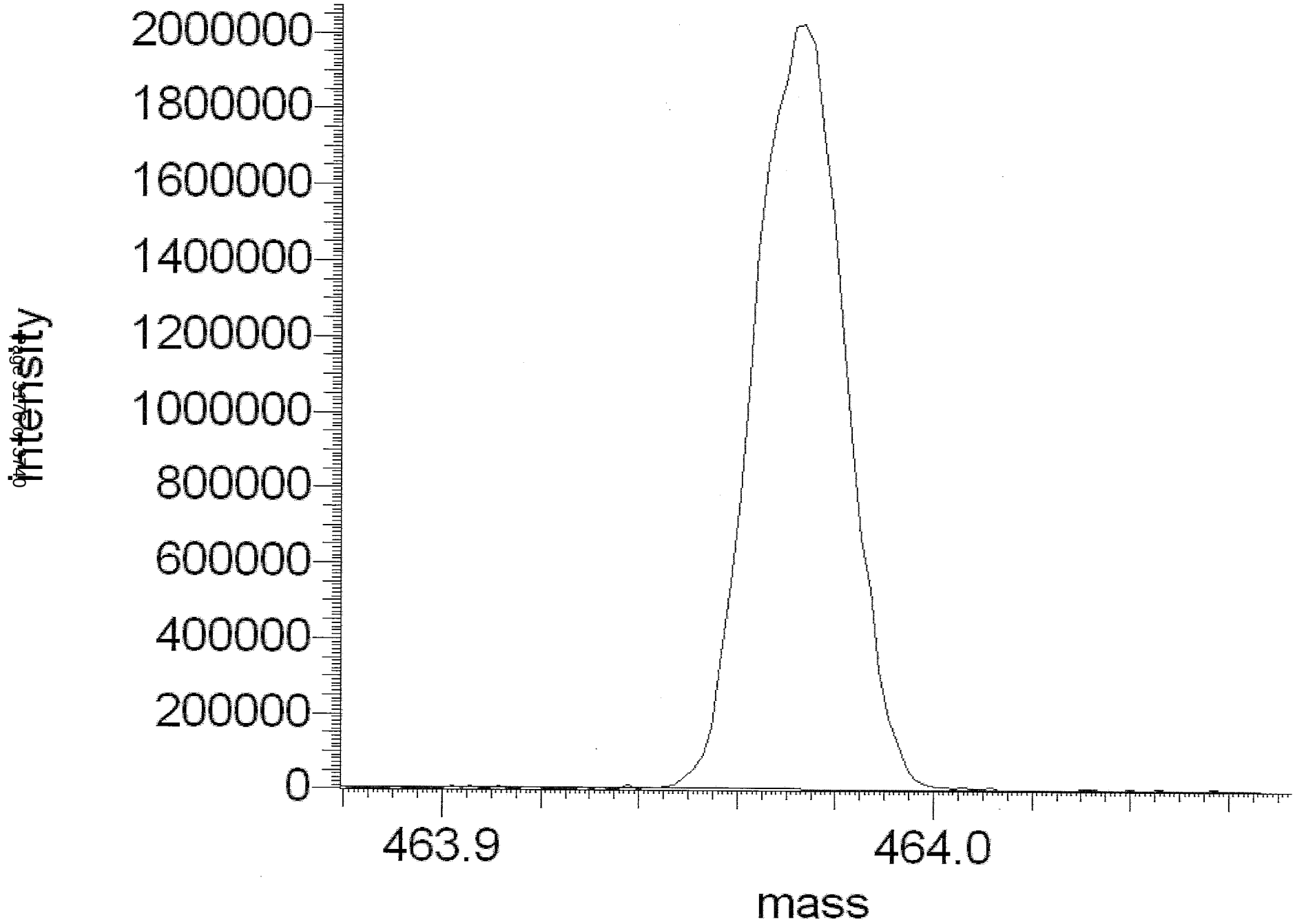
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 11796 (08/18/16 09:08:08)



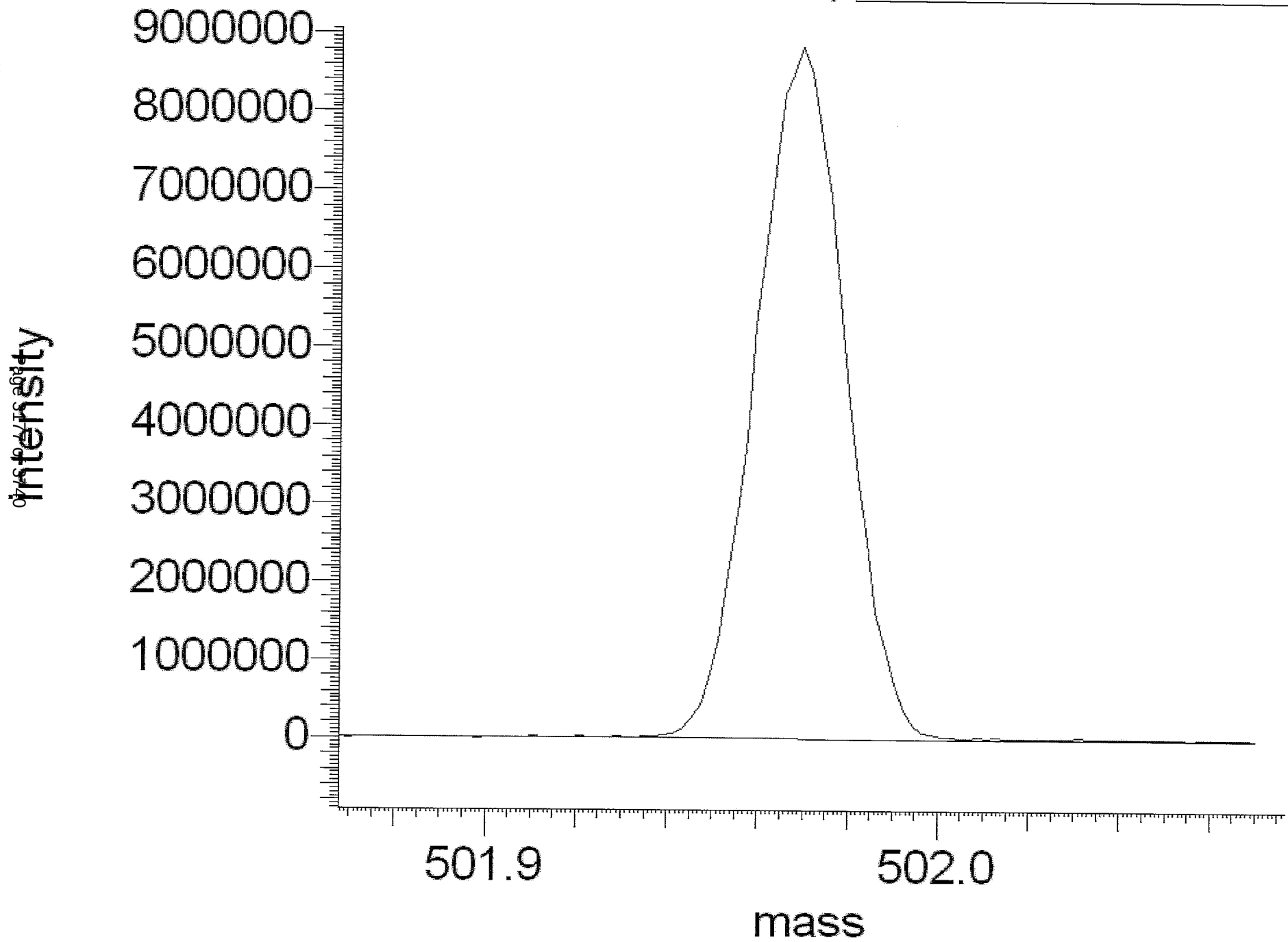
LockMass: 425.9775 Instr.: DFS-1209
Resolution: 11796 (08/18/16 09:08:23)



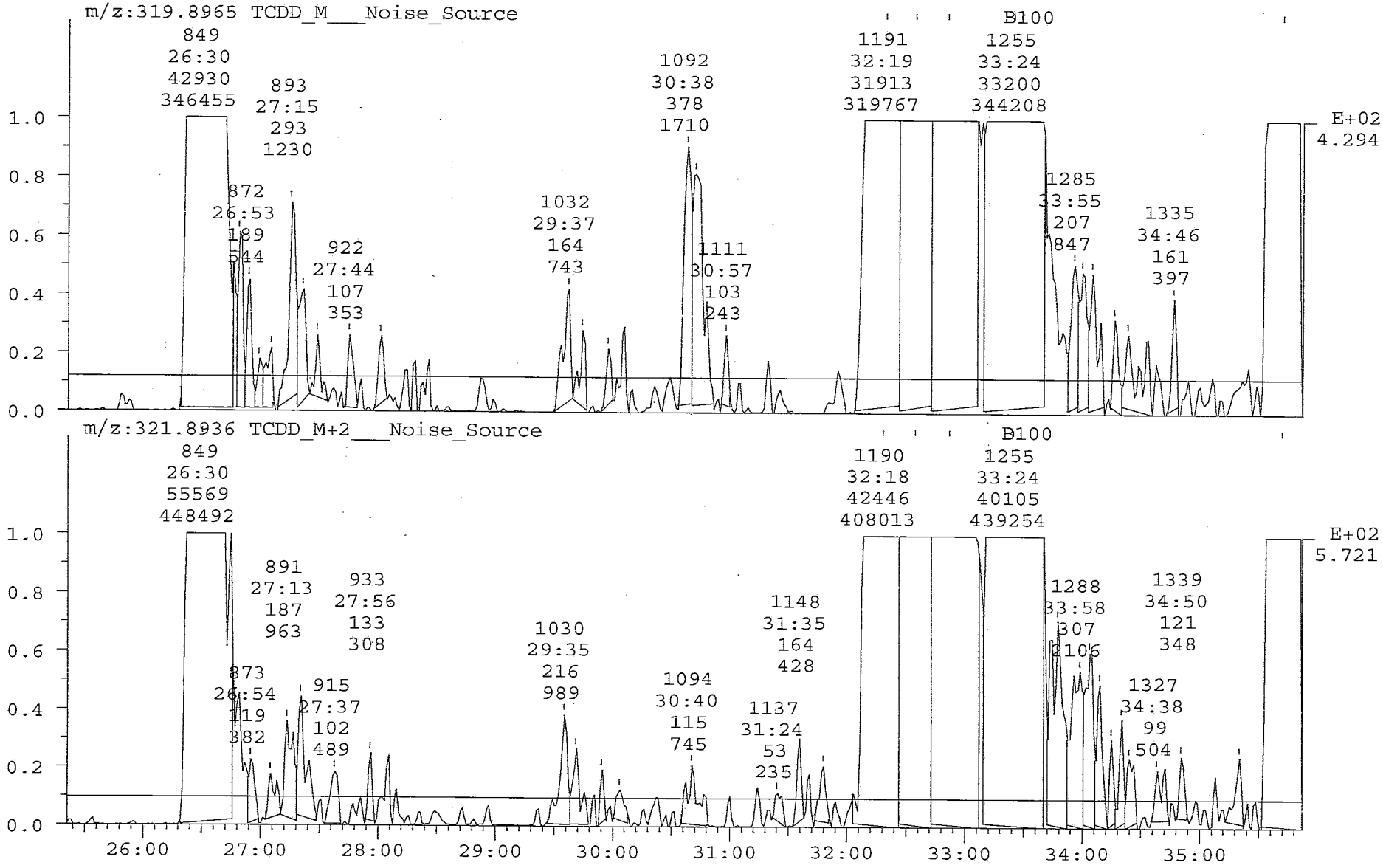
Mass: 463.9743 Instr.: DFS-1209
Resolution: 11635 (08/18/16 09:09:09)



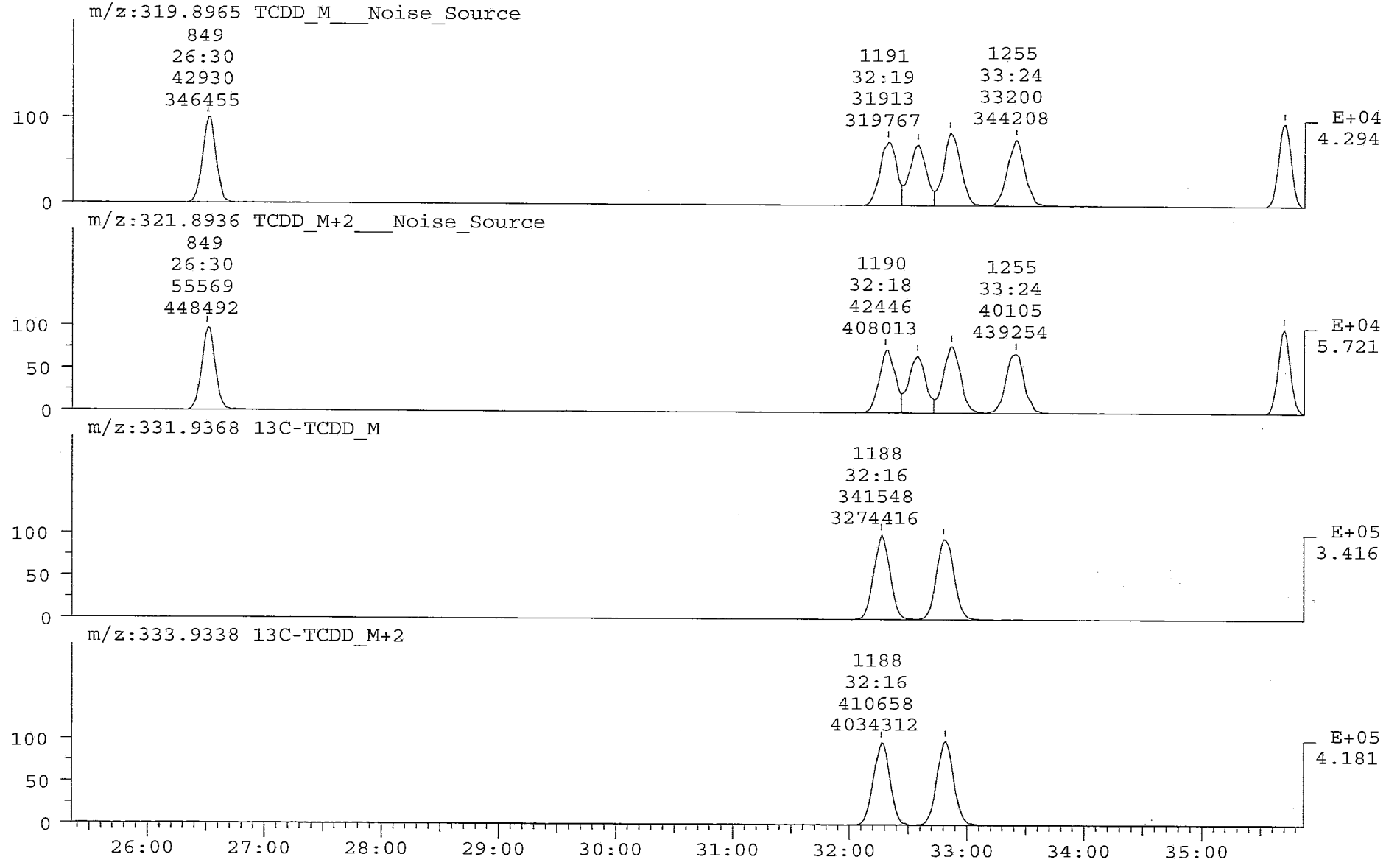
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 11391 (08/18/16 09:09:12)



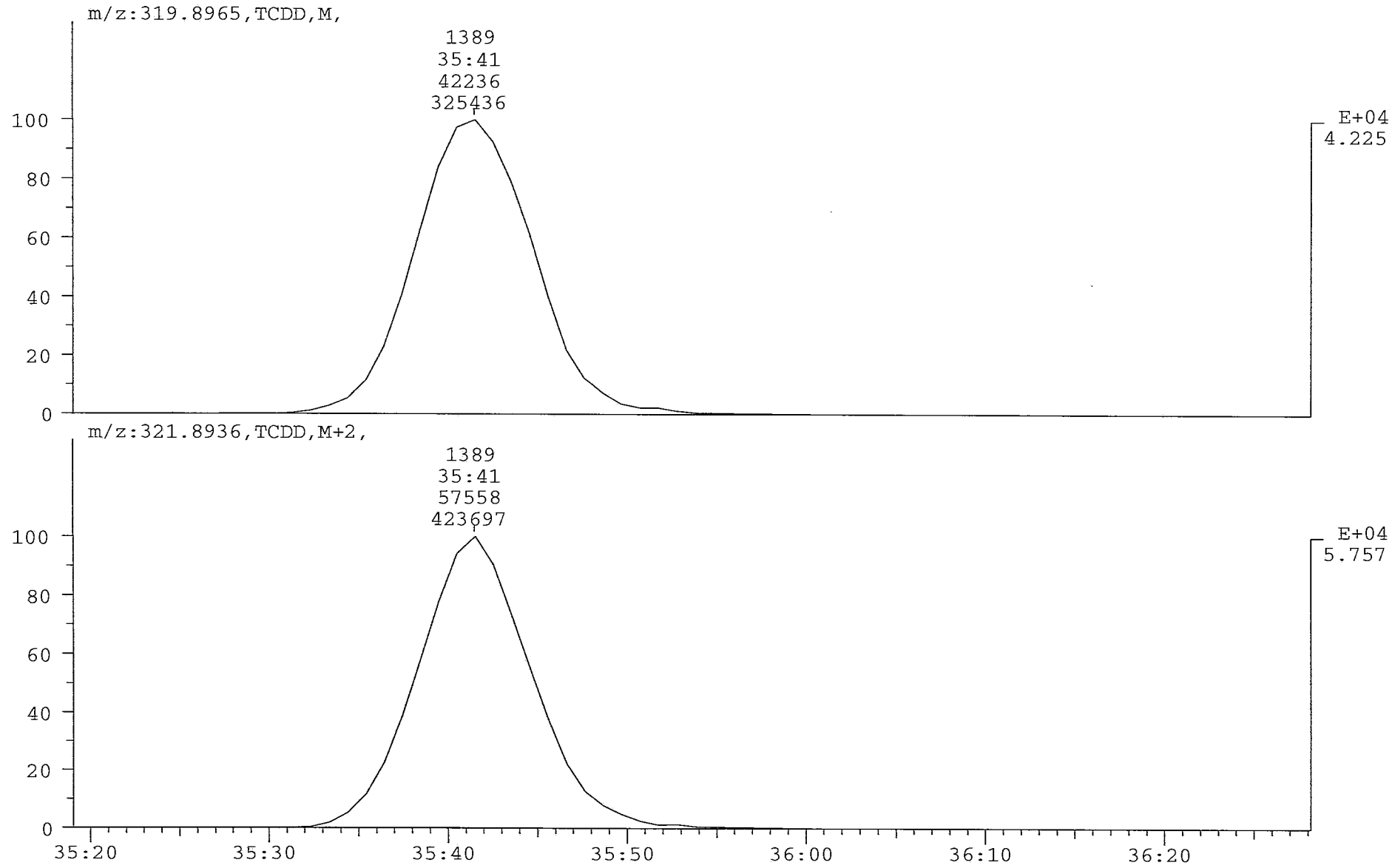
```
CHRO:  d1160818s1                                18-Aug-16  Elapse:  12:04.5        1
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  07:40:19    2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm      Label wndw:   781 > 1399            Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :  -3, 1.0
Disp:  Height  Area
```



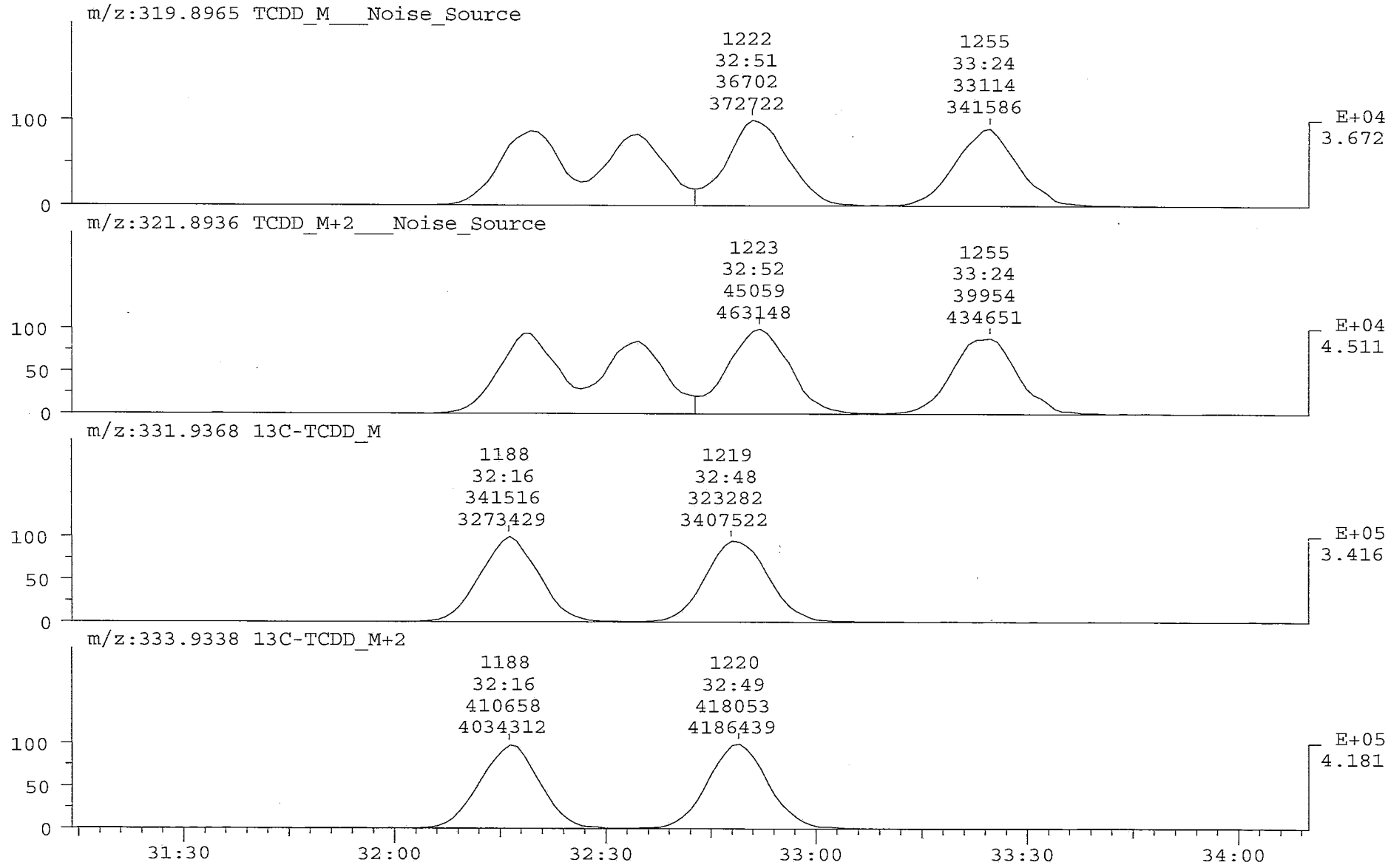
```
CHRO:  d1160818s1                                18-Aug-16  Elapse:  12:04.5        1
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  07:40:19    2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   781 > 1399             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



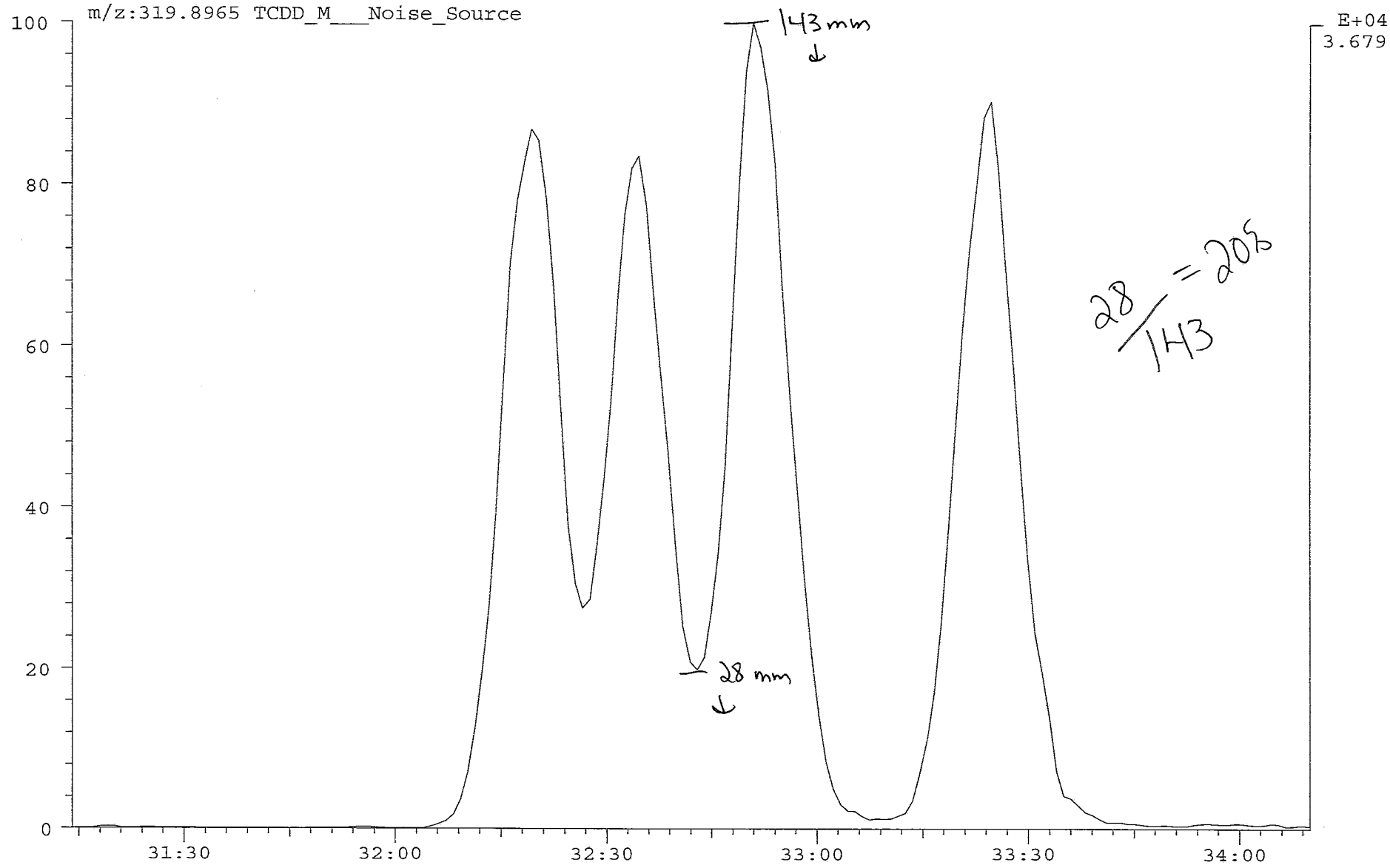
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  54:50      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1367 > 1429      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



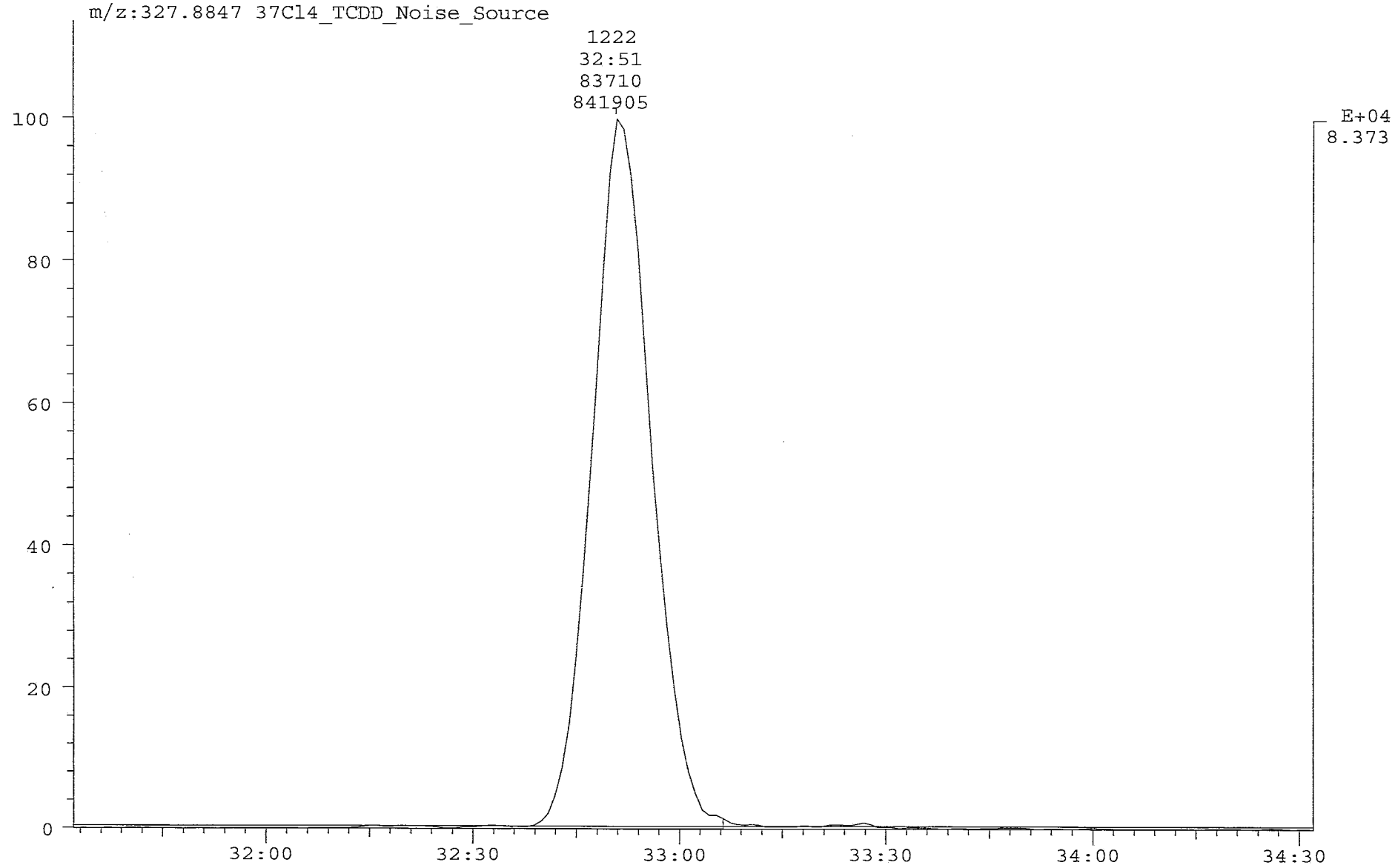
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  32:41      1213
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1127 > 1299      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



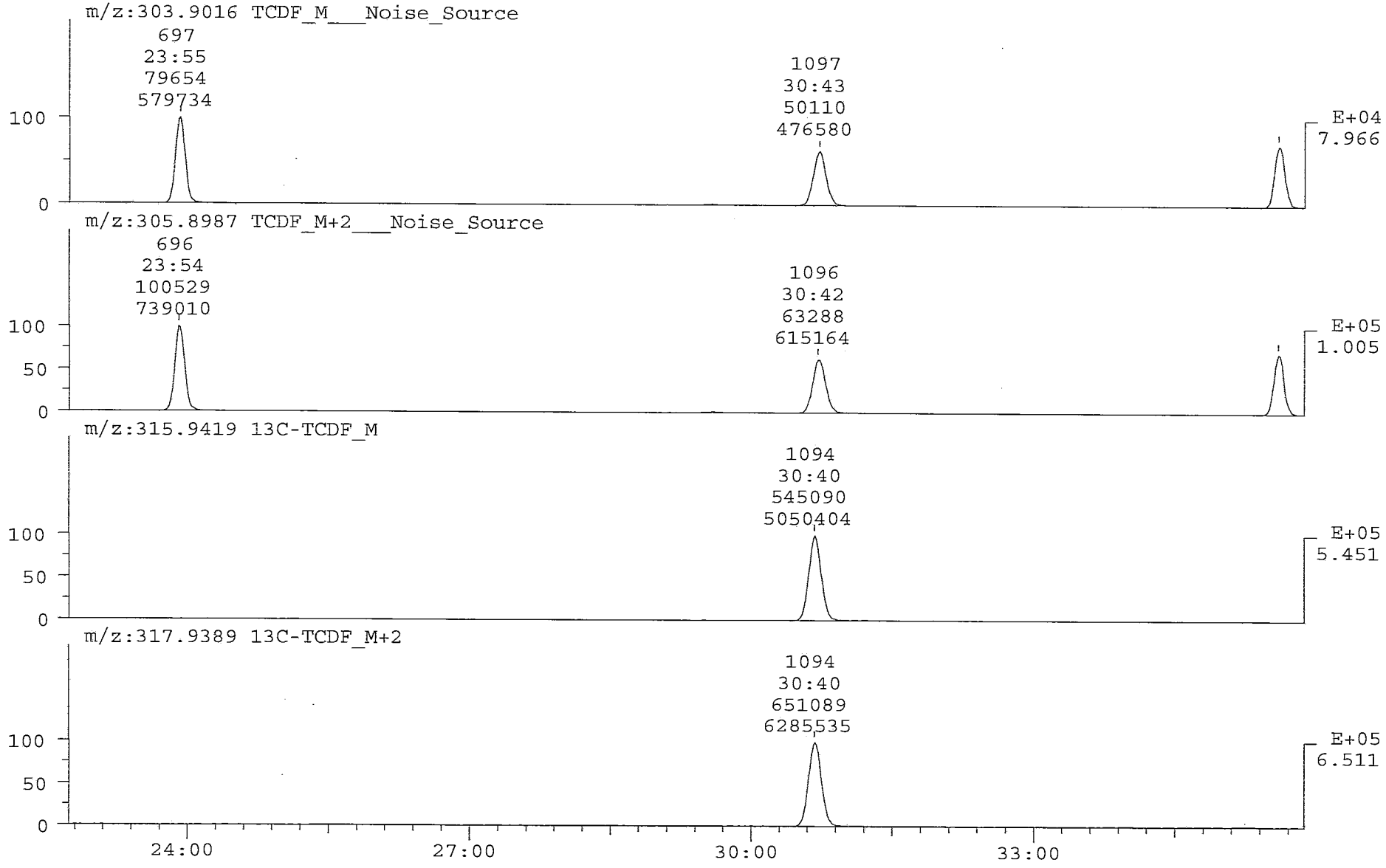
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  32:41      1213
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1127 > 1299      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



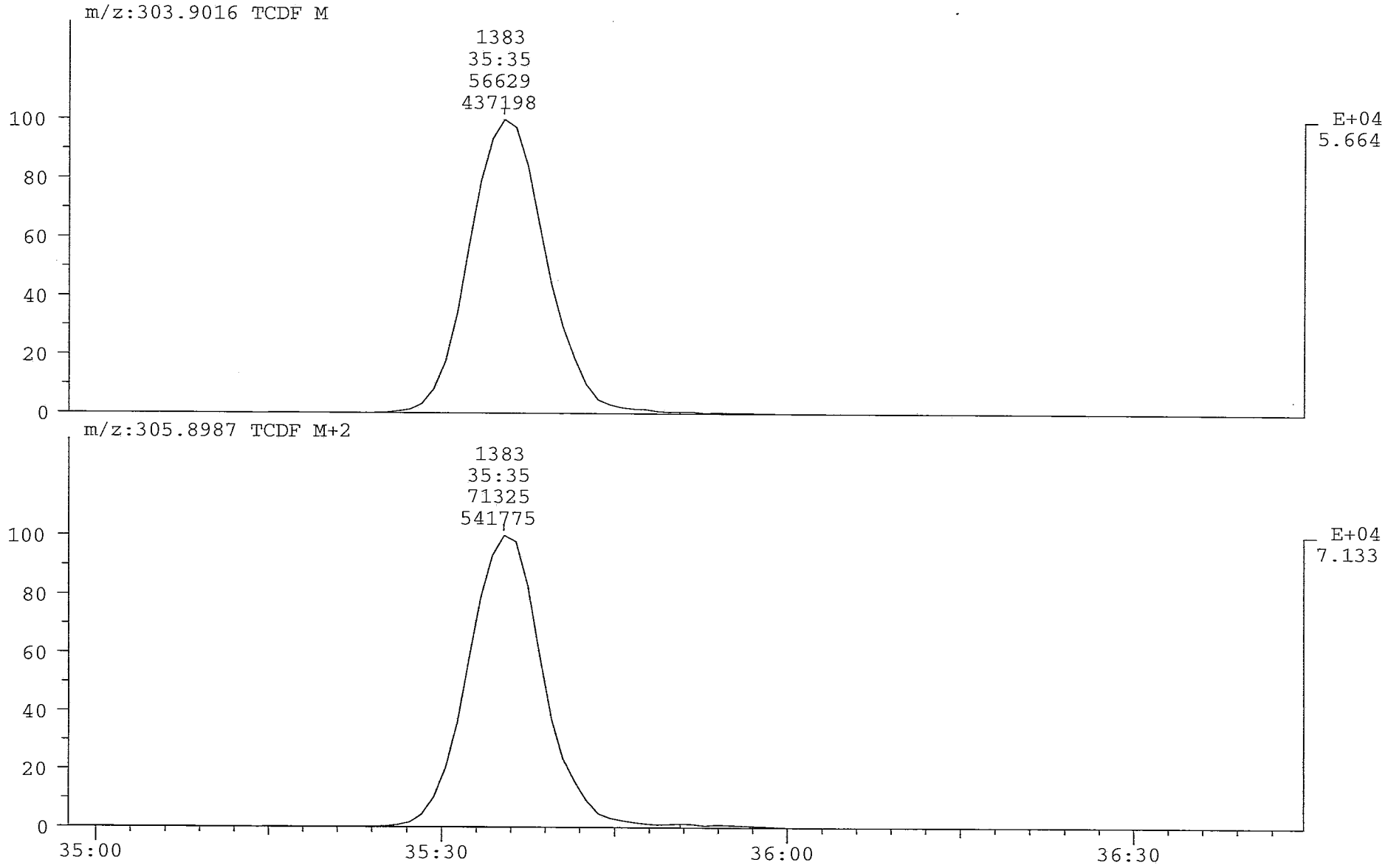
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  32:59      1230
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1145 > 1321      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



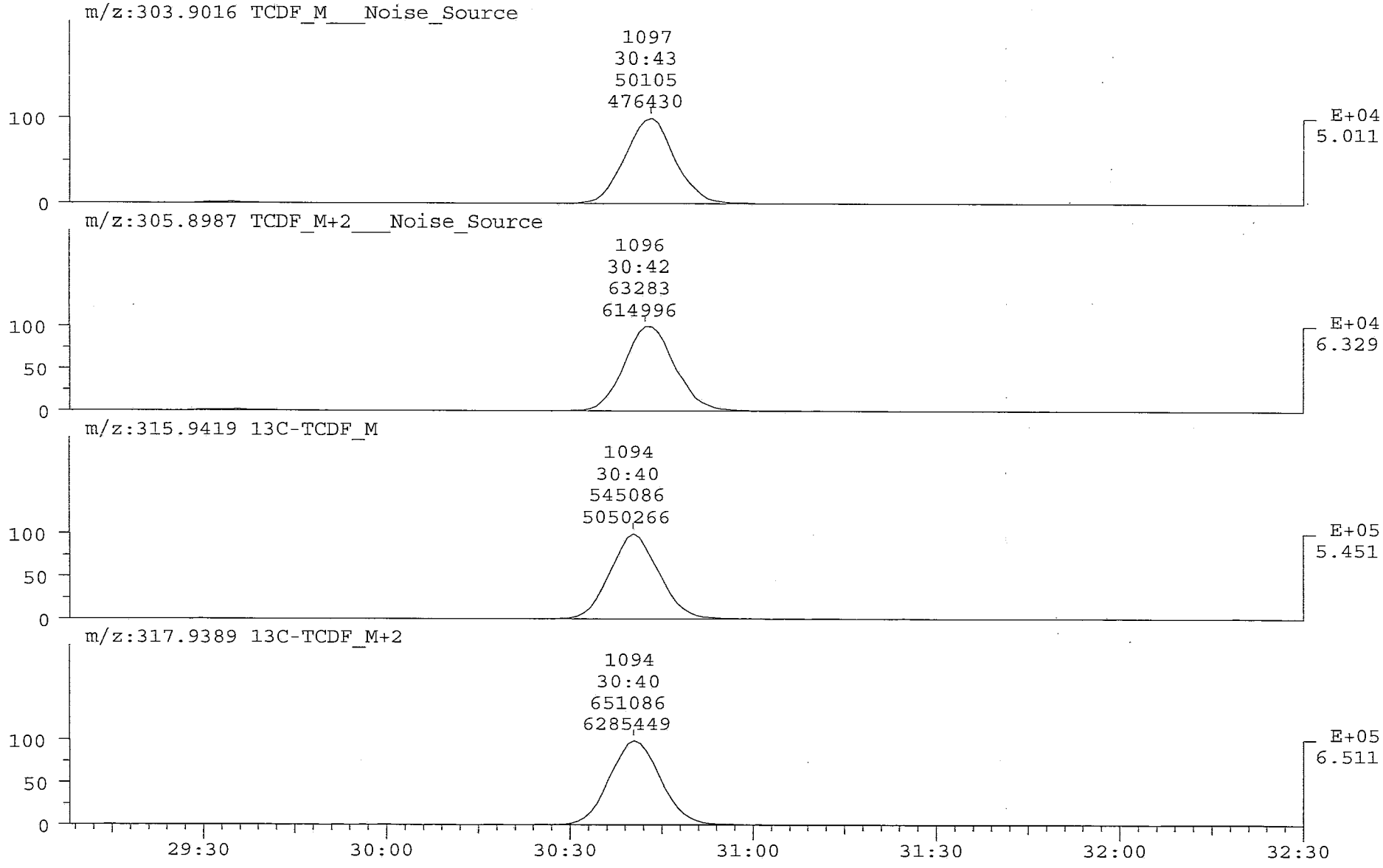
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  32:59      1230
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   627 > 1399       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



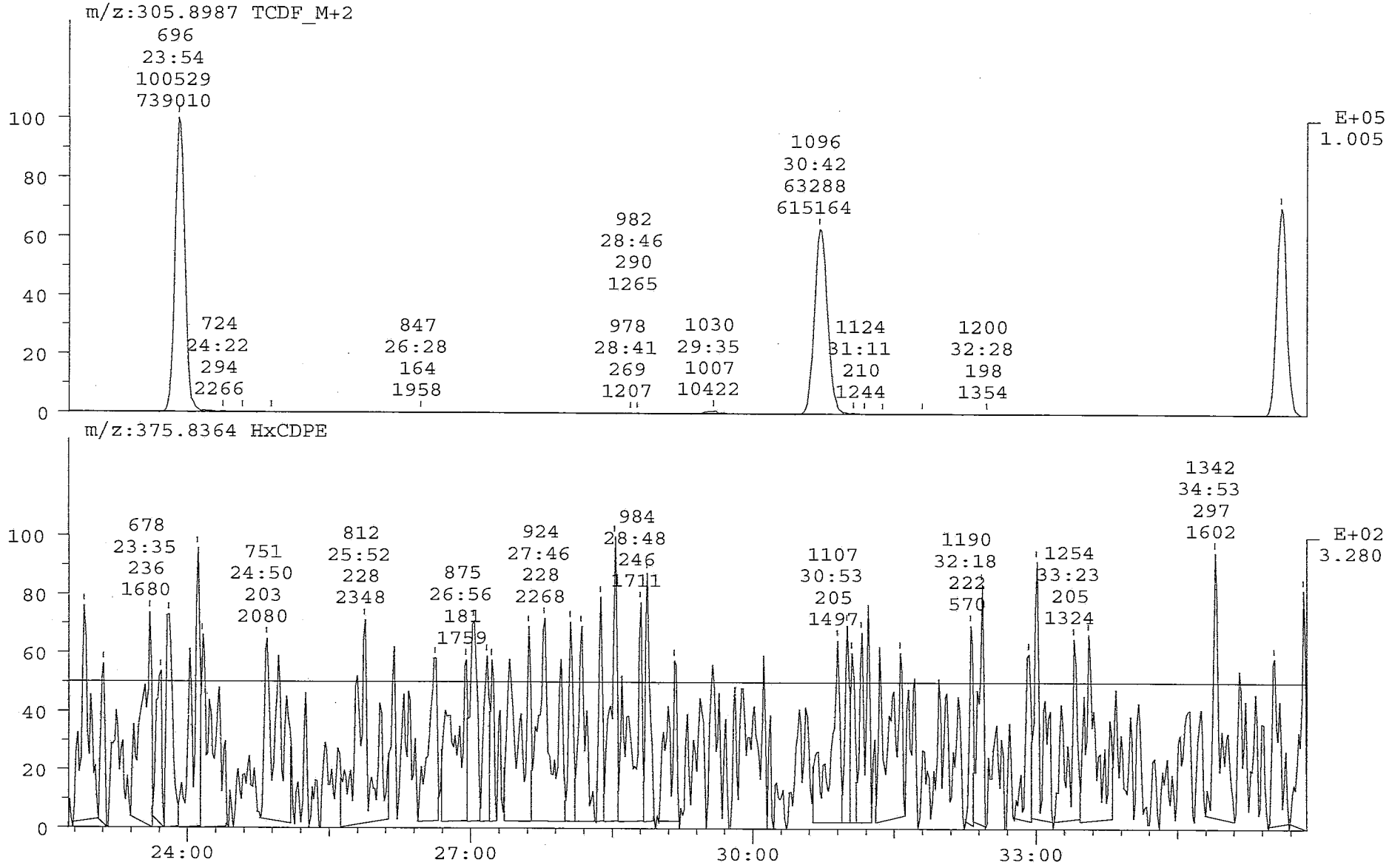
CHRO: d1160818s1 18-Aug-16 Elapse: 54:50 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1346 > 1445 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



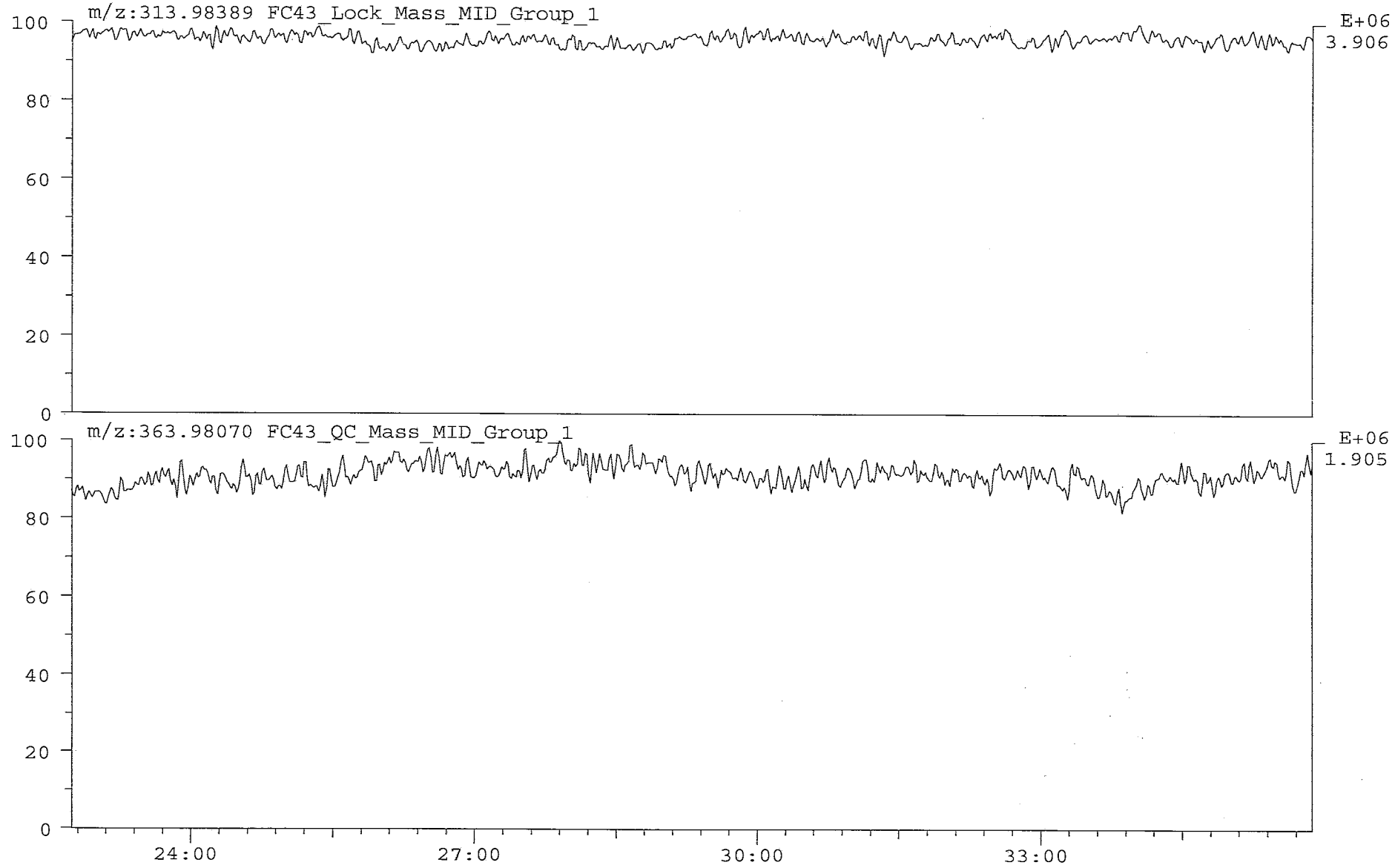
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  30:46      1100
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1004 > 1201      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



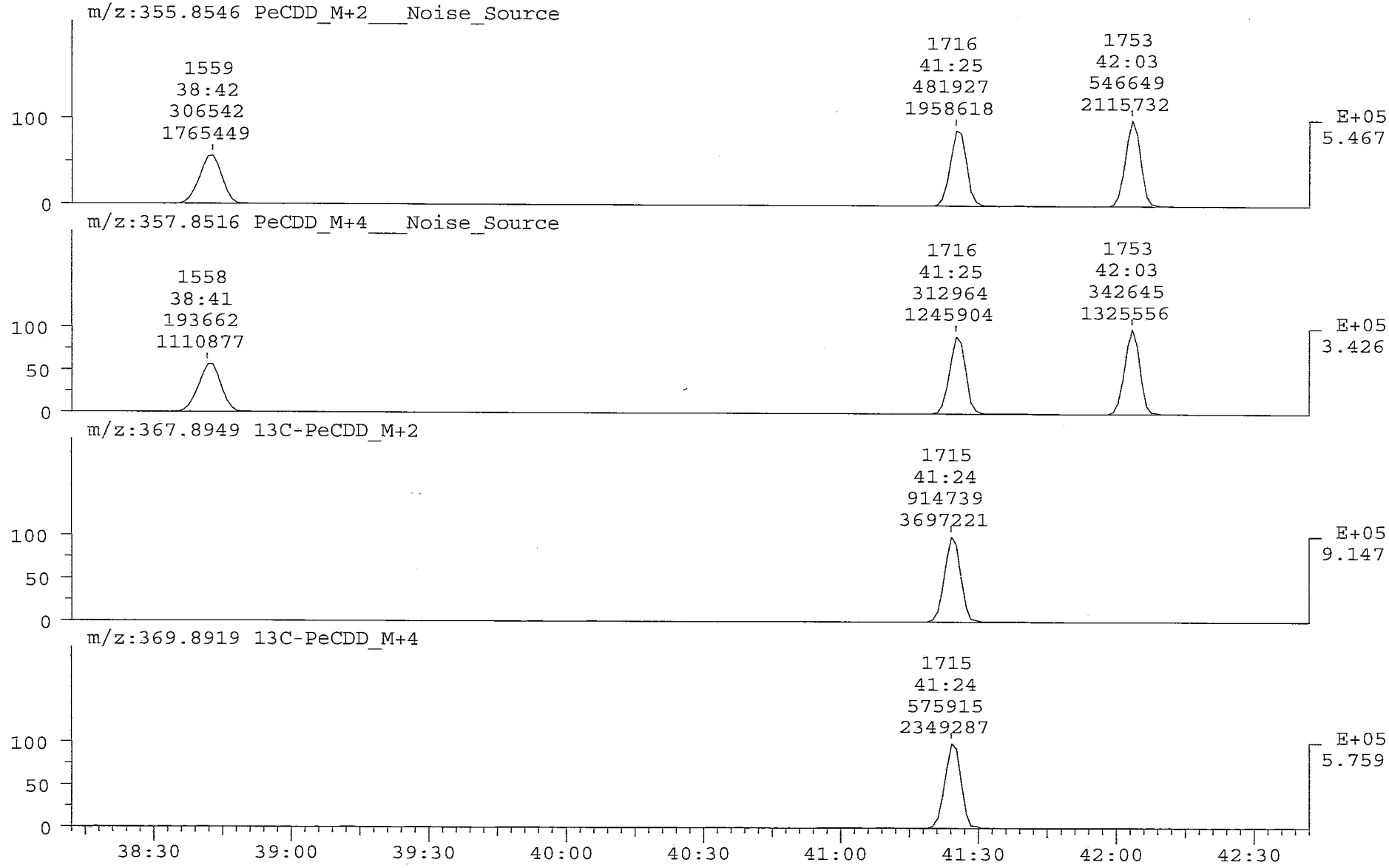
```
CHRO:  d1160818s1                                18-Aug-16  Elapse:  30:46      1100
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   627 > 1399             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



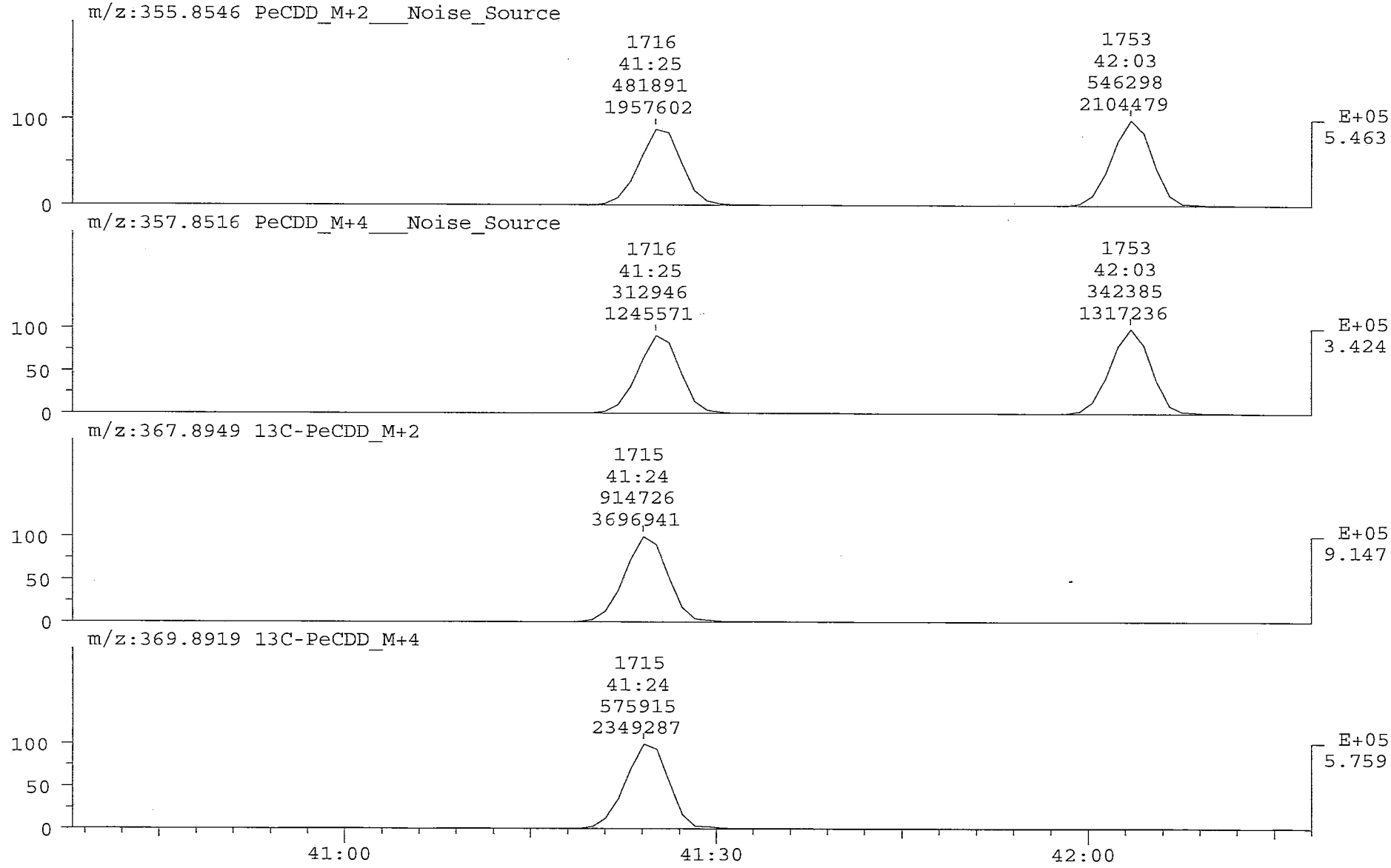
CHRO: d1160818s1 18-Aug-16 Elapse: 30:46 1100
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 627 > 1399 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



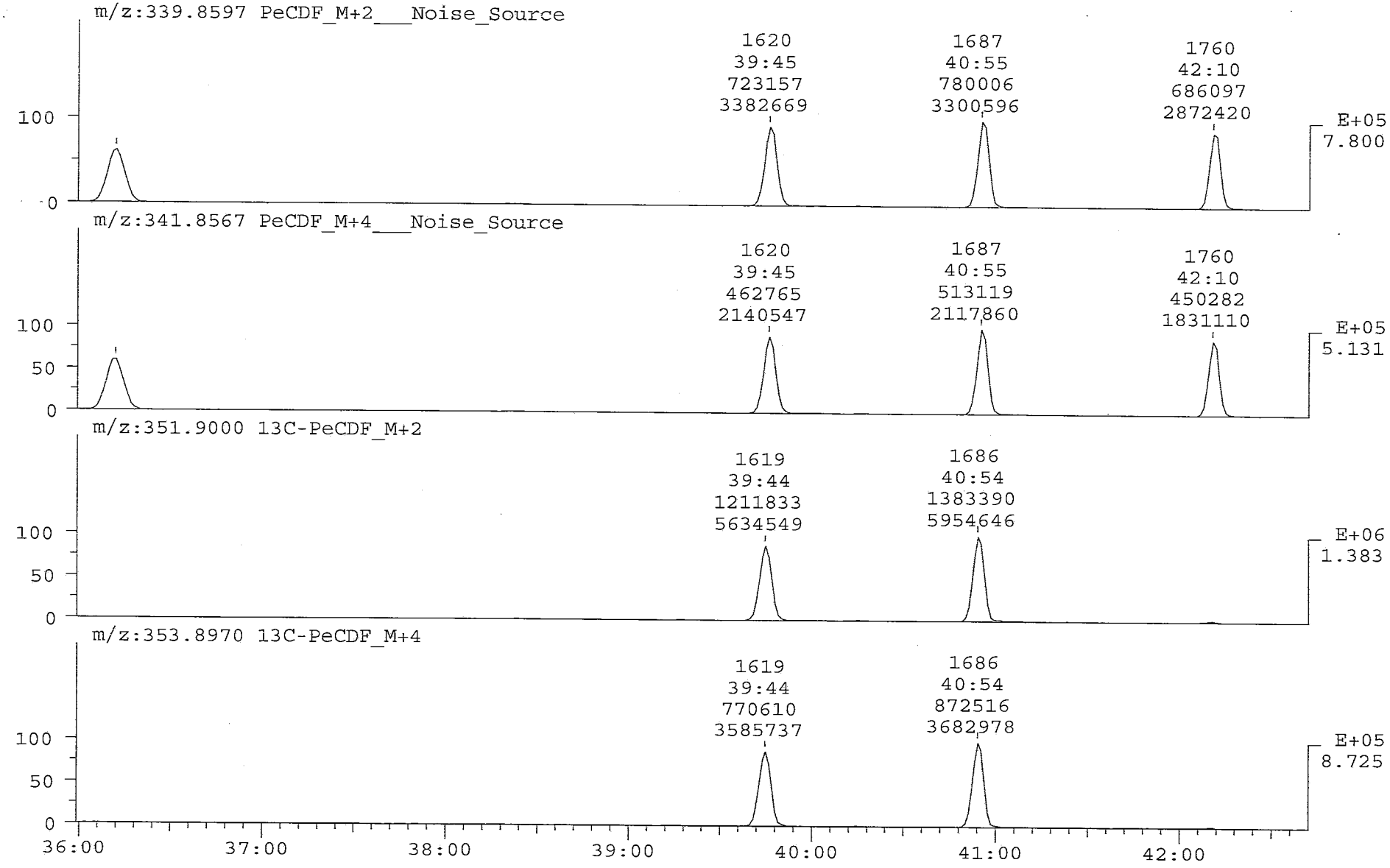
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  30:46      1100
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1529 > 1790      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



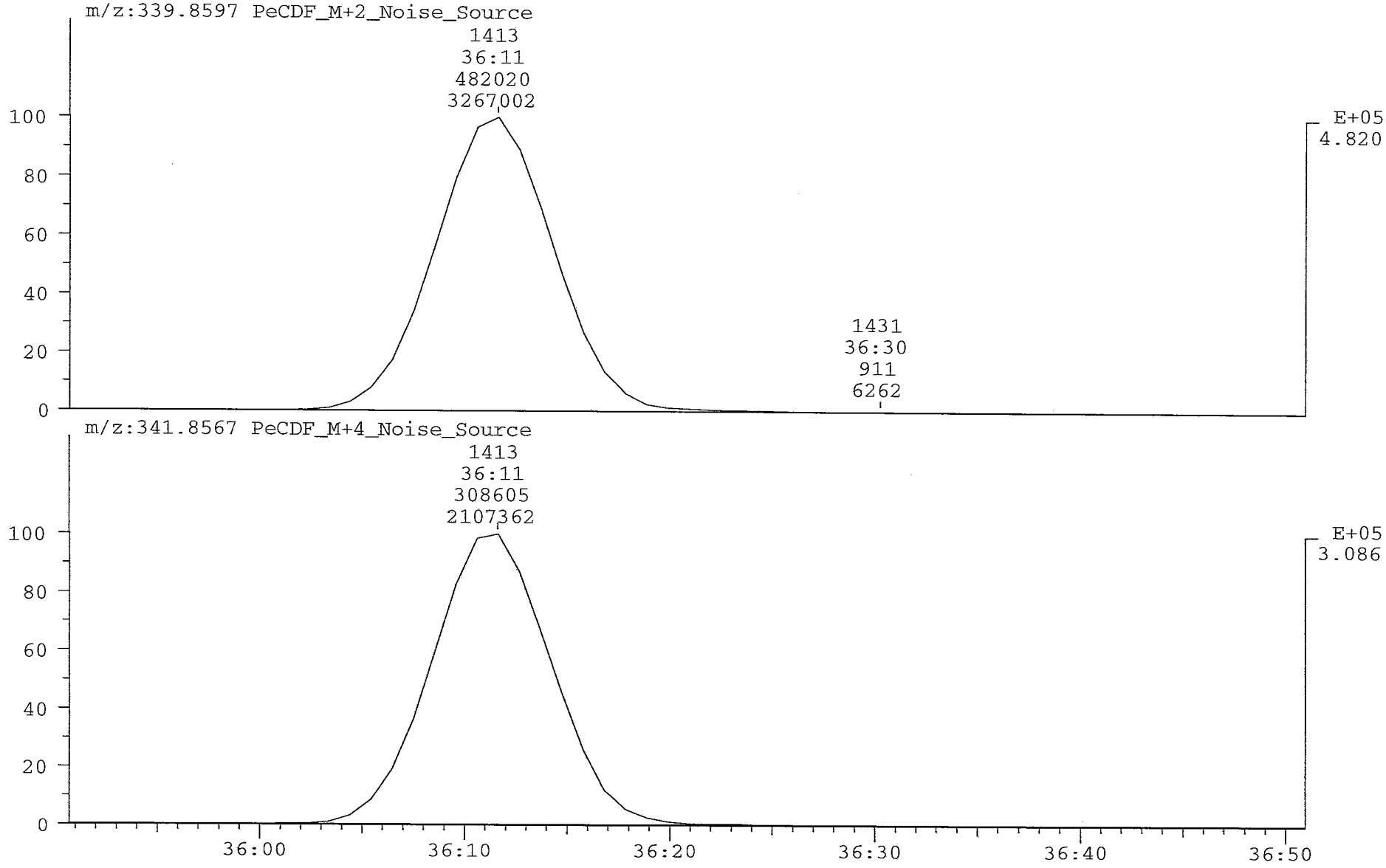
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  41:25      1716
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1670 > 1767      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



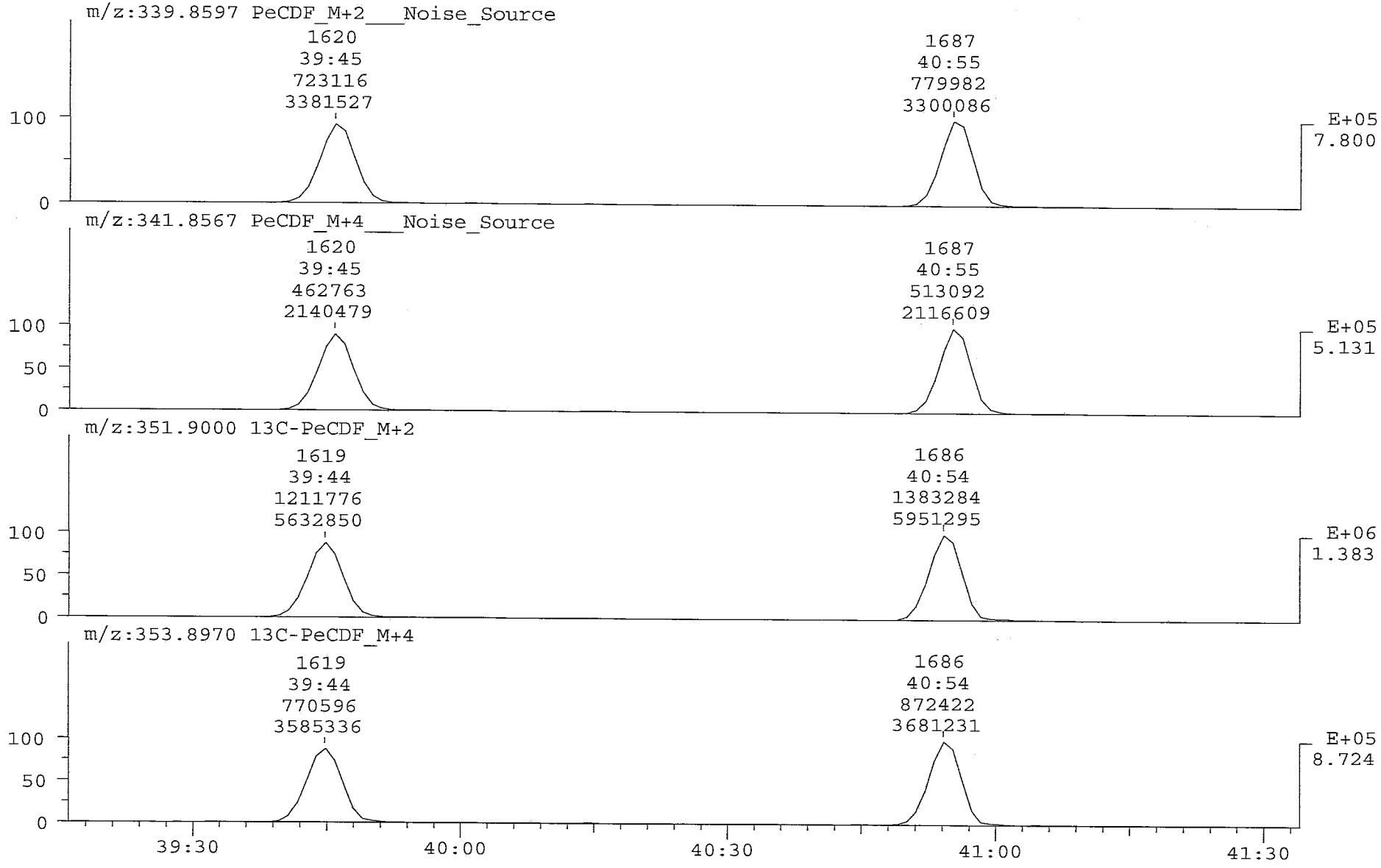
```
CHRO:  d1160818s1                                18-Aug-16  Elapse:  41:25      1716
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1402 > 1790            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



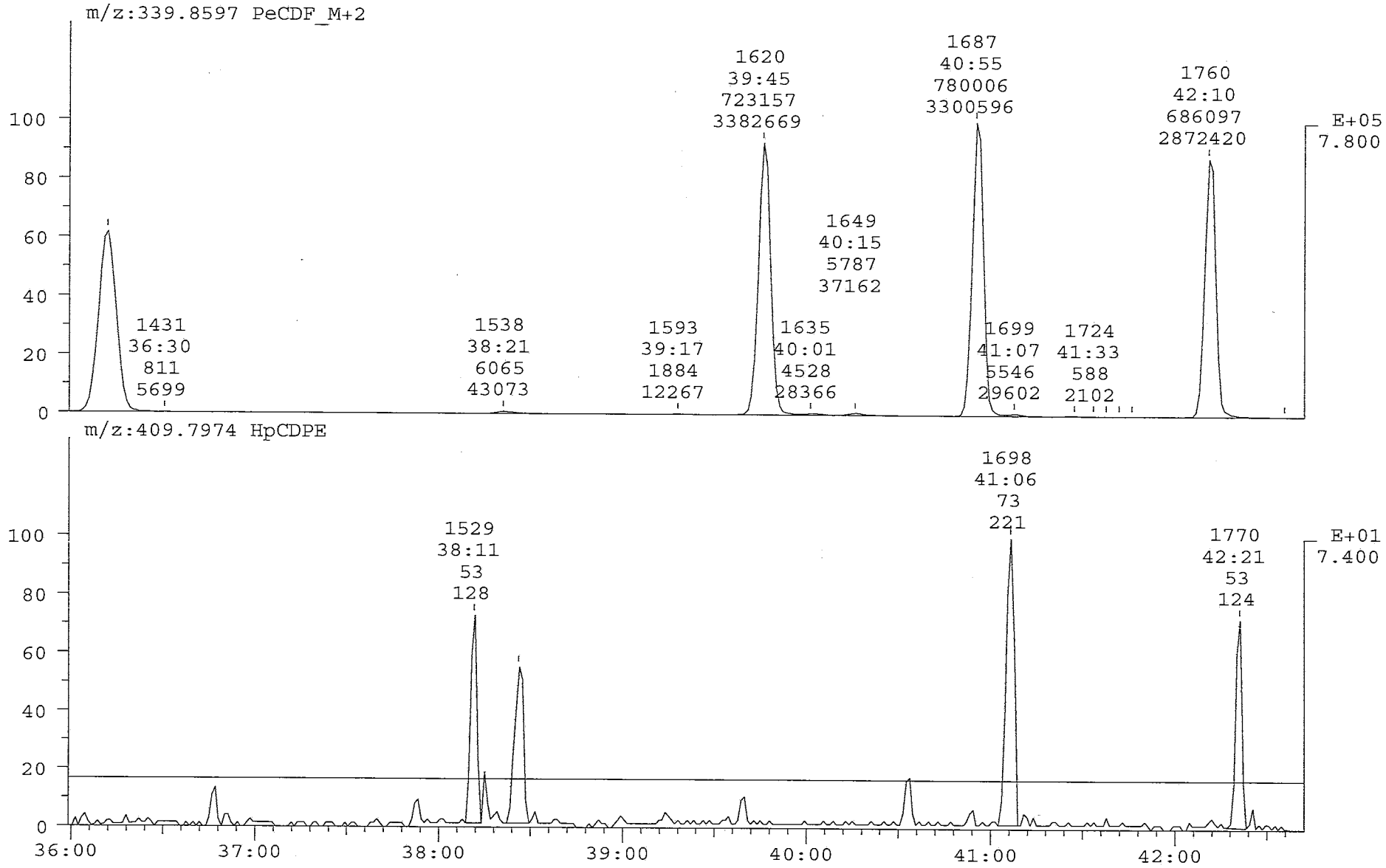
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  54:50      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1398 > 1451      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



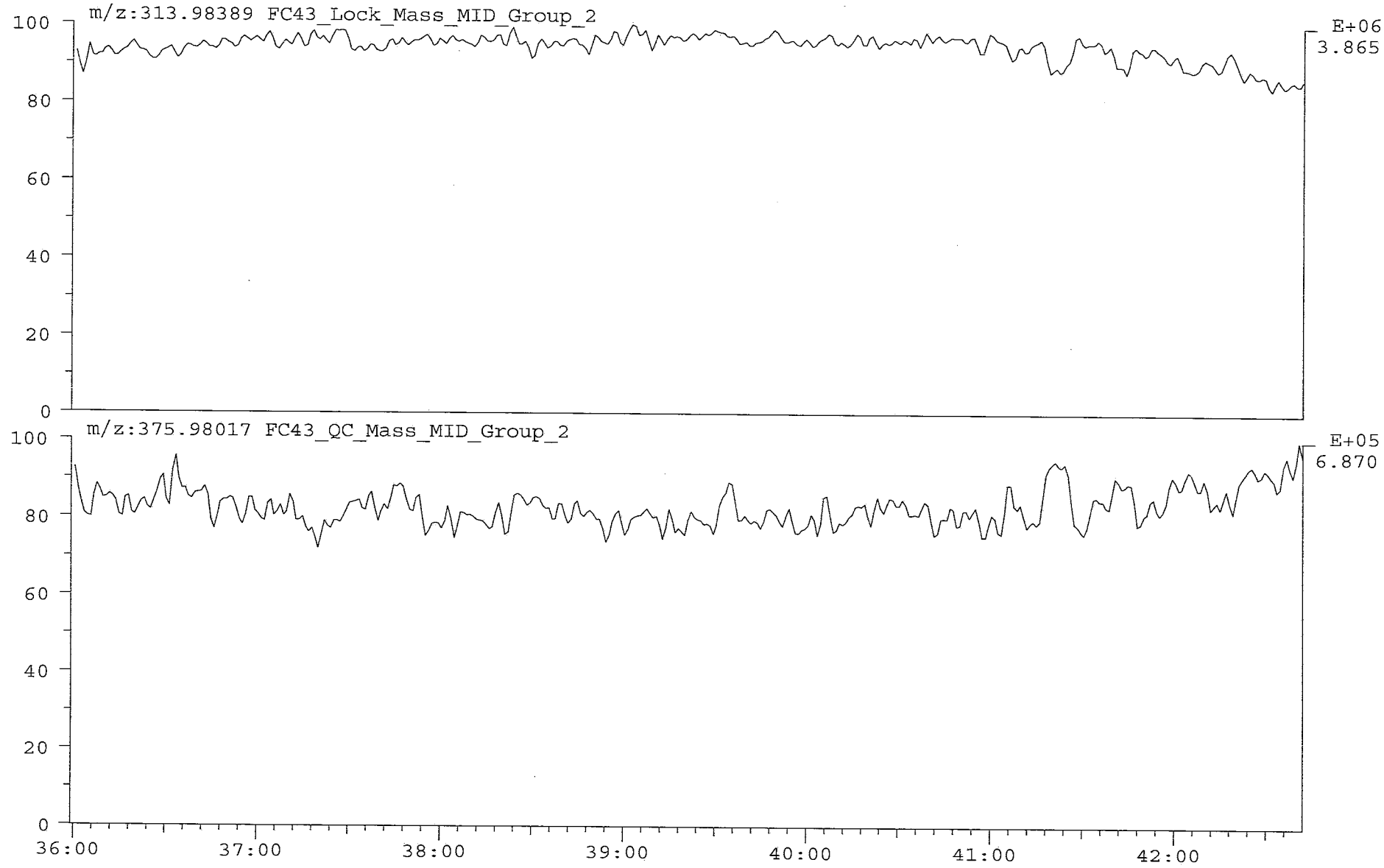
```
CHRO:  d1160818s1                                18-Aug-16  Elapse:  40:25      1658
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1591 > 1725            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



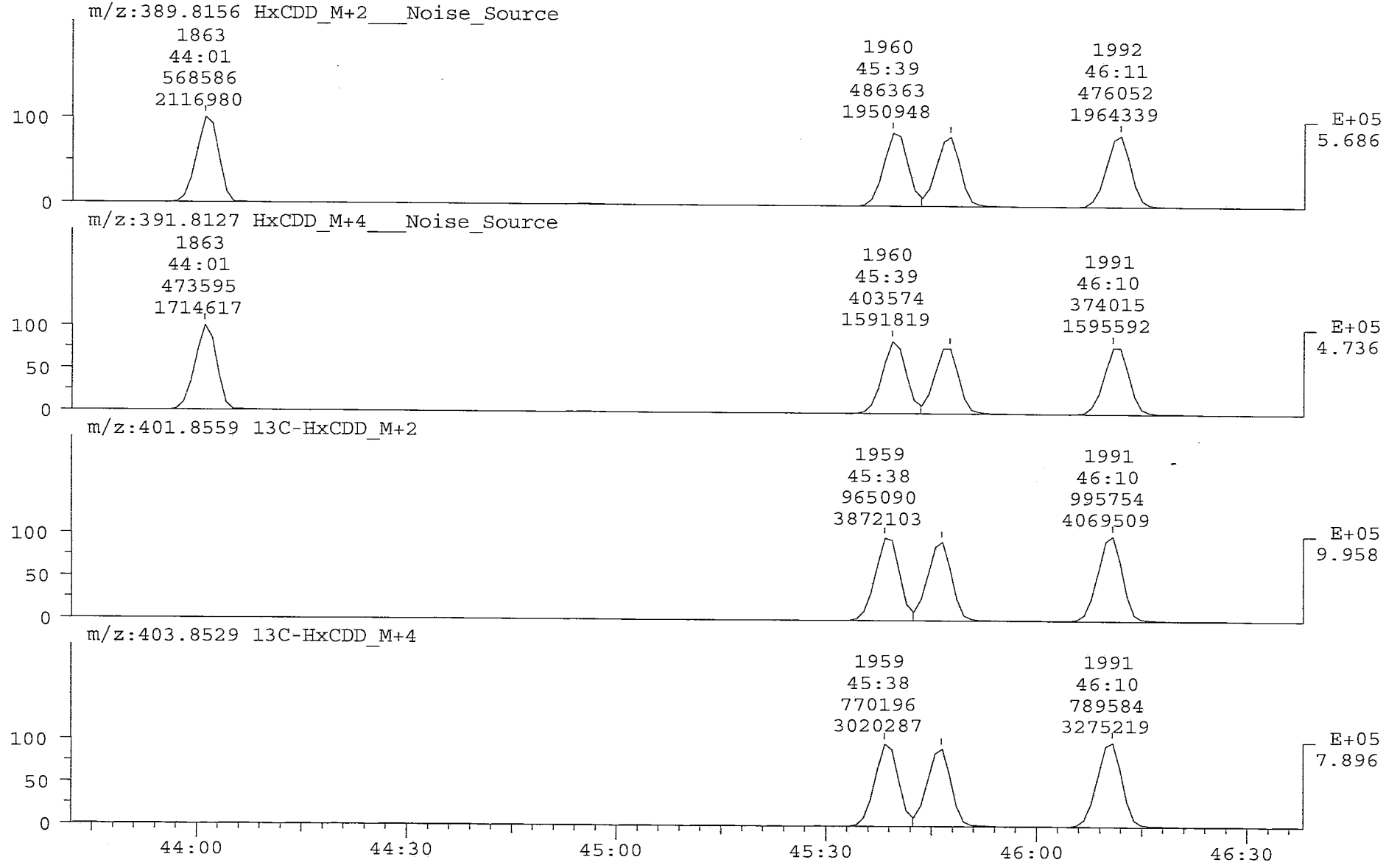
```
CHRO:  d1160818s1                                18-Aug-16  Elapse:  40:25      1658
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1402 > 1790            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



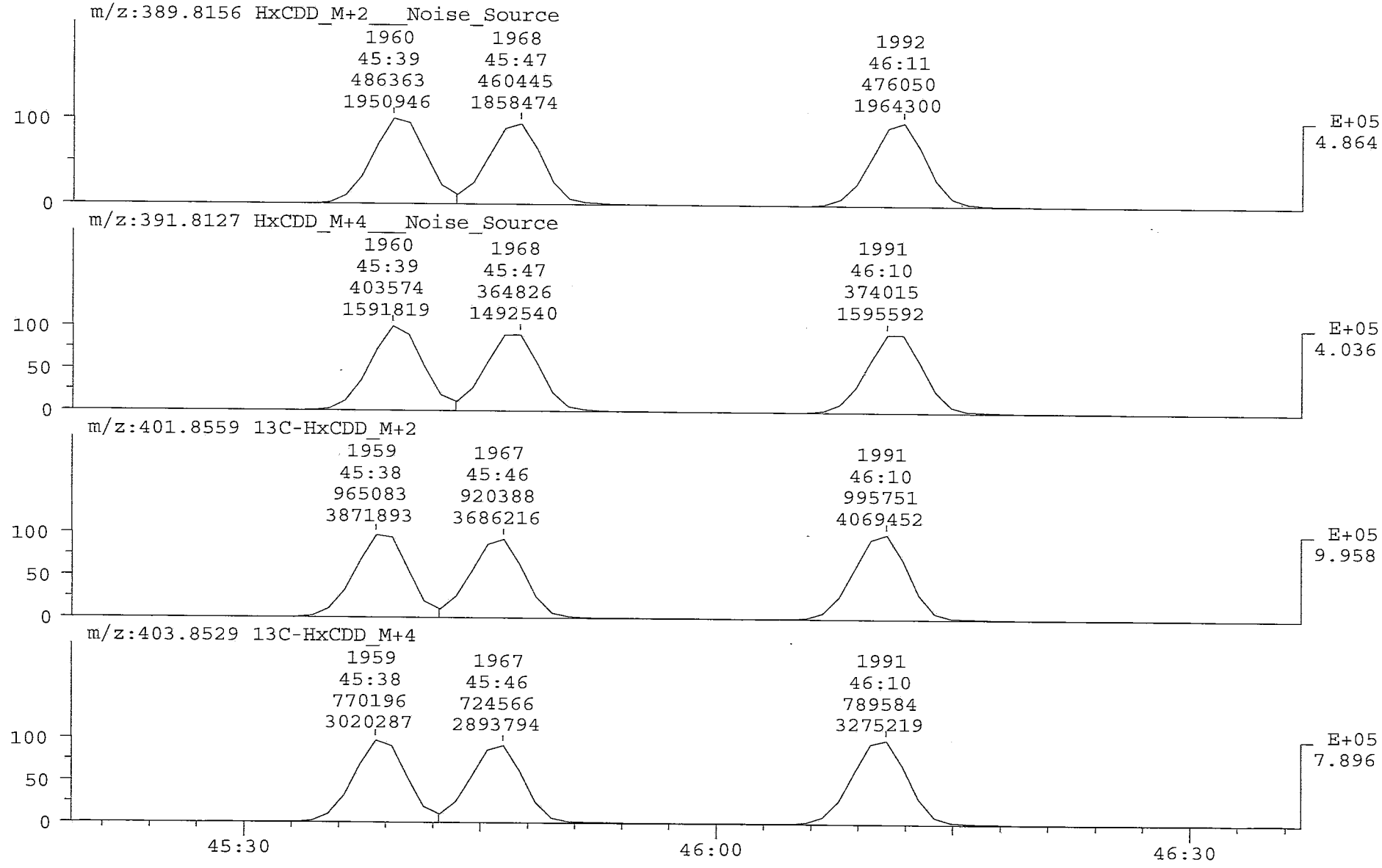
CHRO: d1160818s1 18-Aug-16 Elapse: 40:25 1658
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1402 > 1790 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



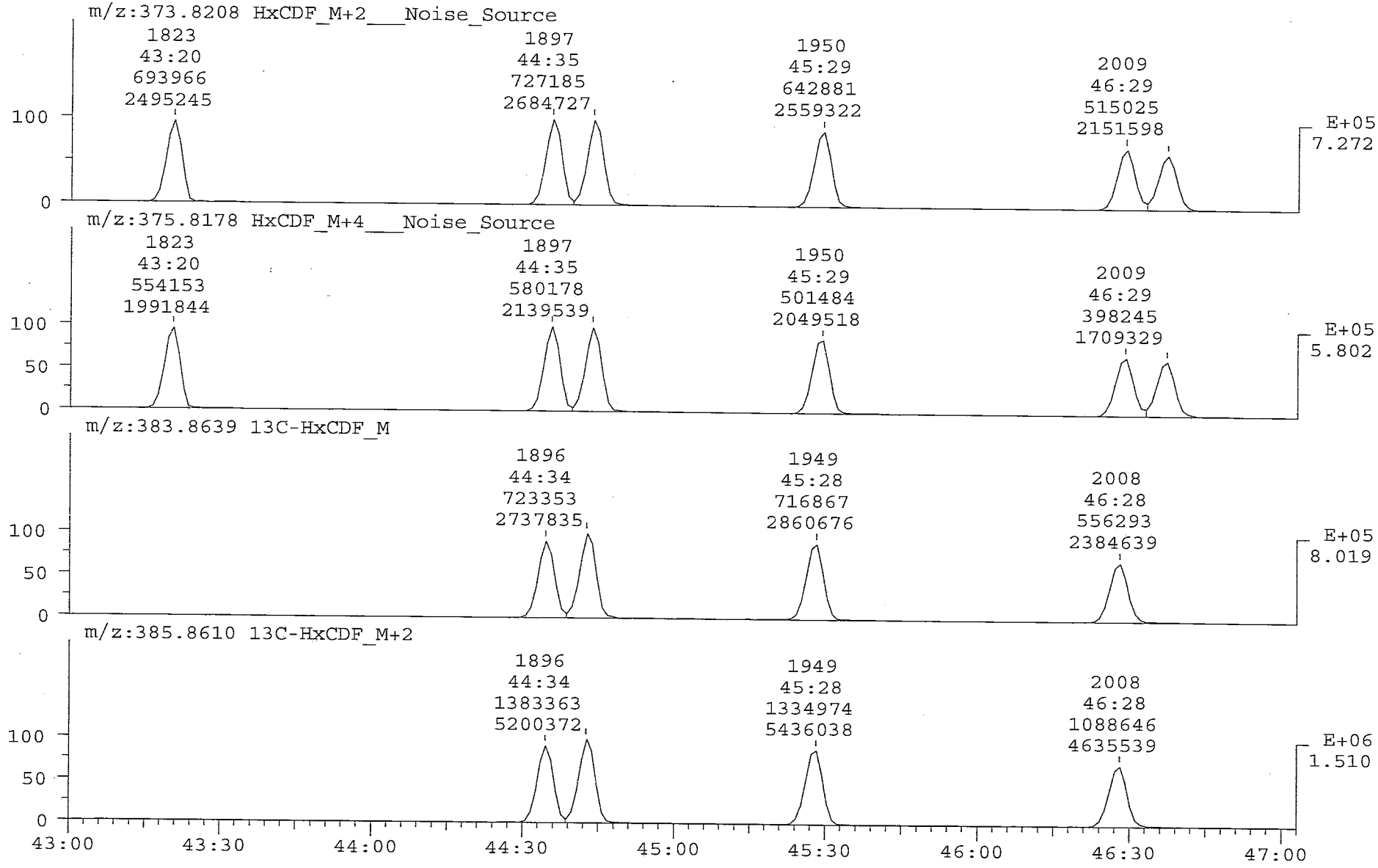
CHRO: d1160818s1 18-Aug-16 Elapse: 40:25 1658
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1844 > 2018 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



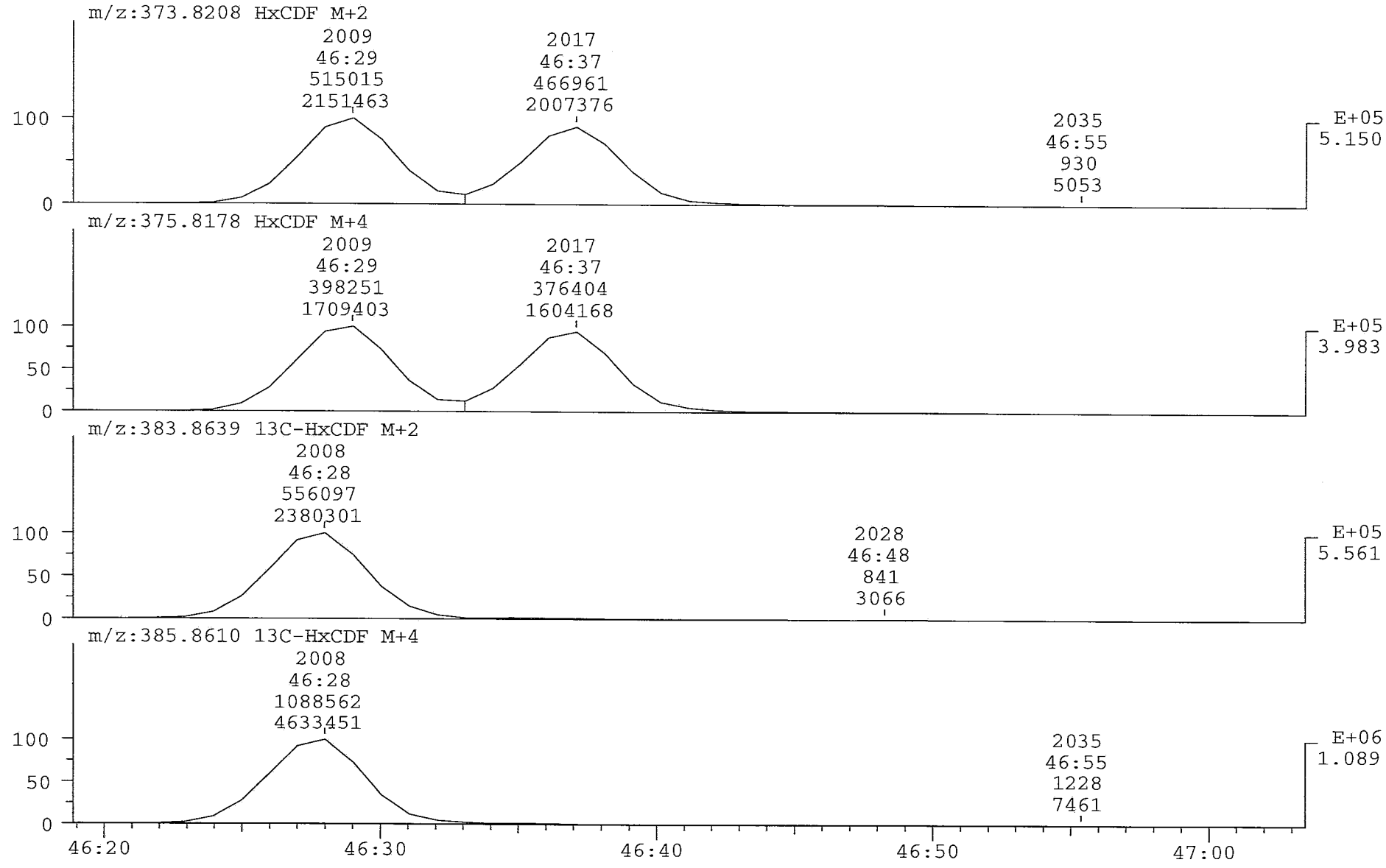
CHRO: d1160818s1 18-Aug-16 Elapse: 45:57 1978
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



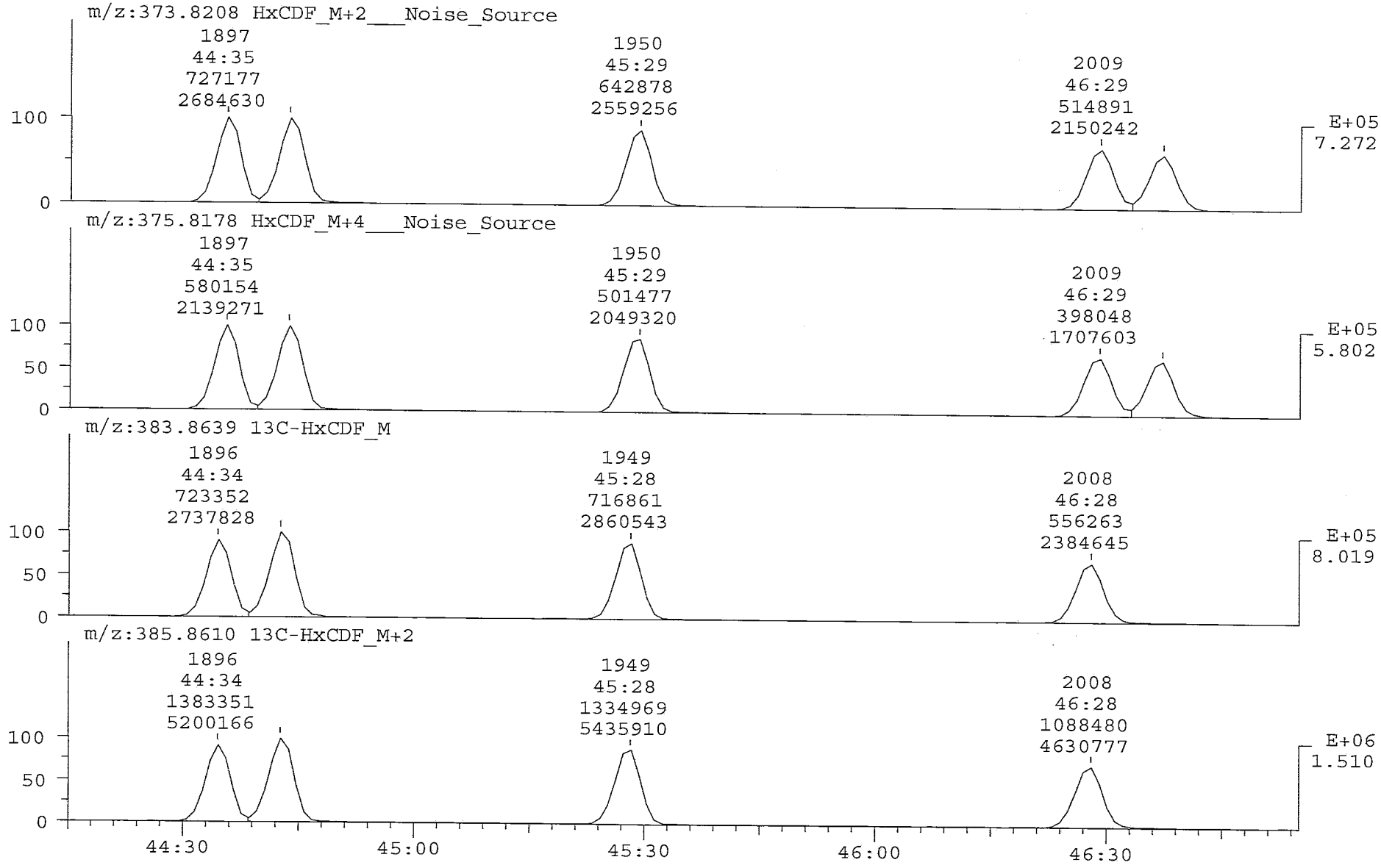
CHRO: d1160818s1 18-Aug-16 Elapse: 45:57 1978
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1803 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



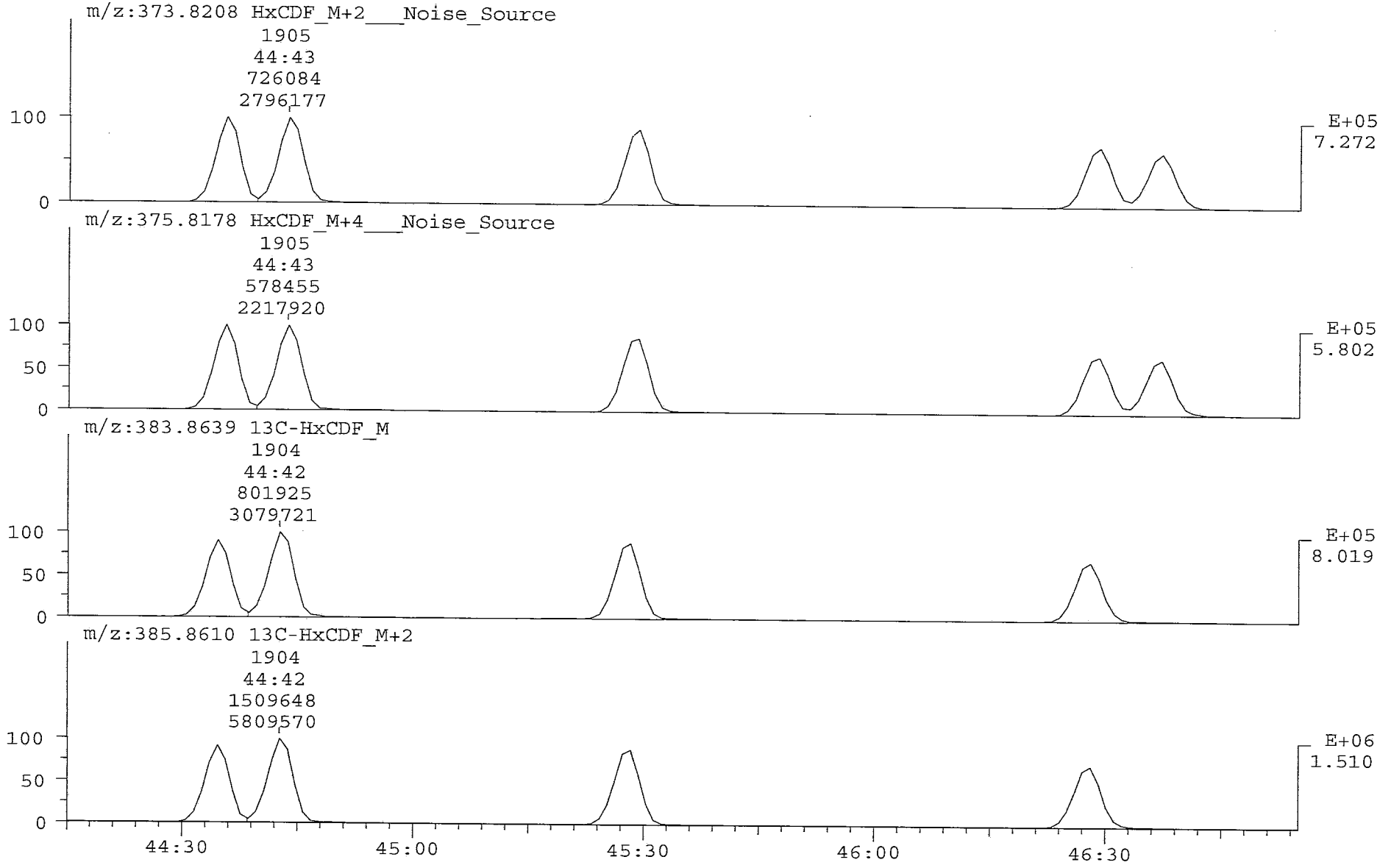
```
CHRO:  d1160818s1                          18-Aug-16   Elapse:  54:50      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                       Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                             Study :  VER/WIN
Oper:  LKM                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1999 > 2043       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



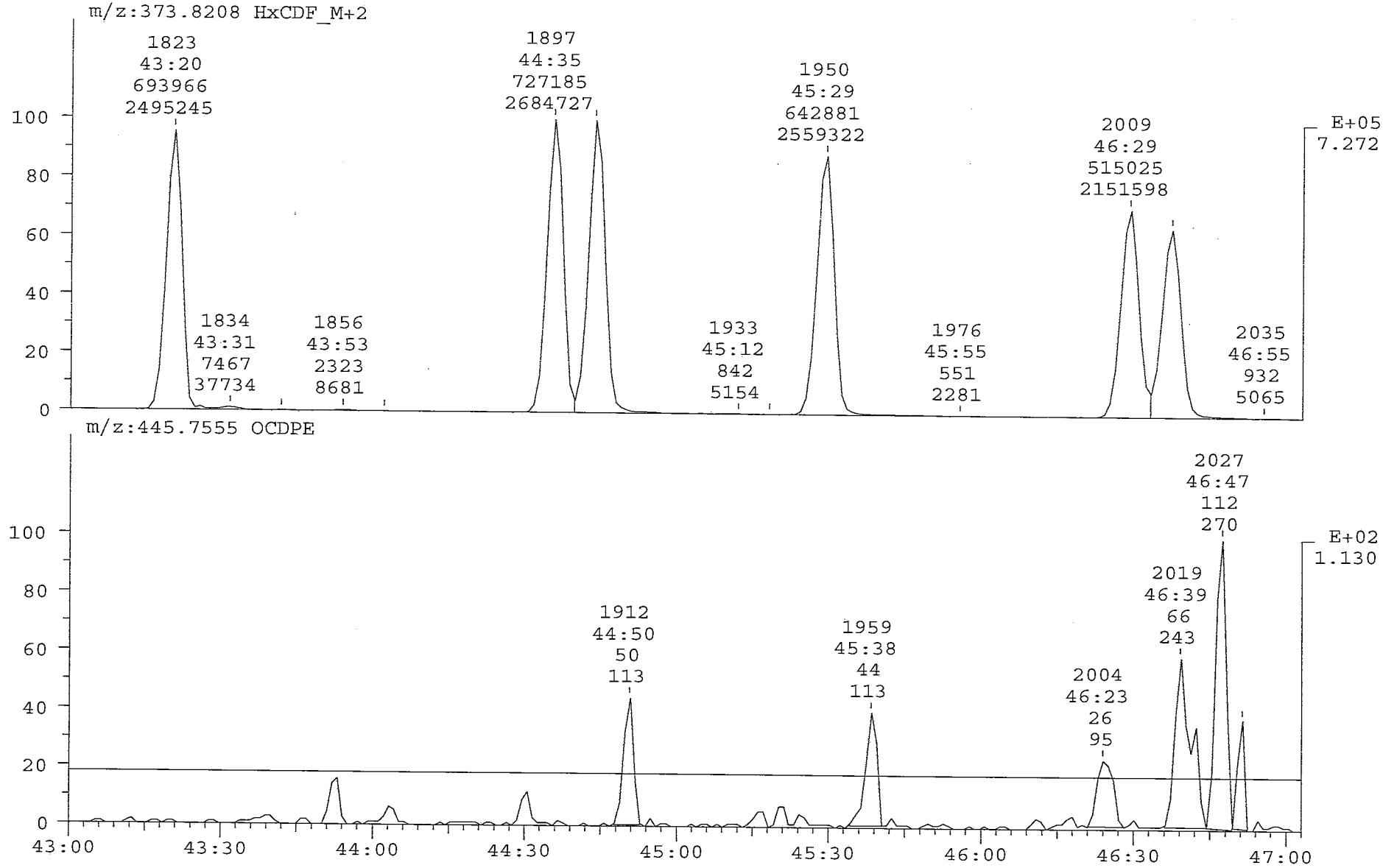
CHRO: d1160818s1 18-Aug-16 Elapse: 45:35 1956
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



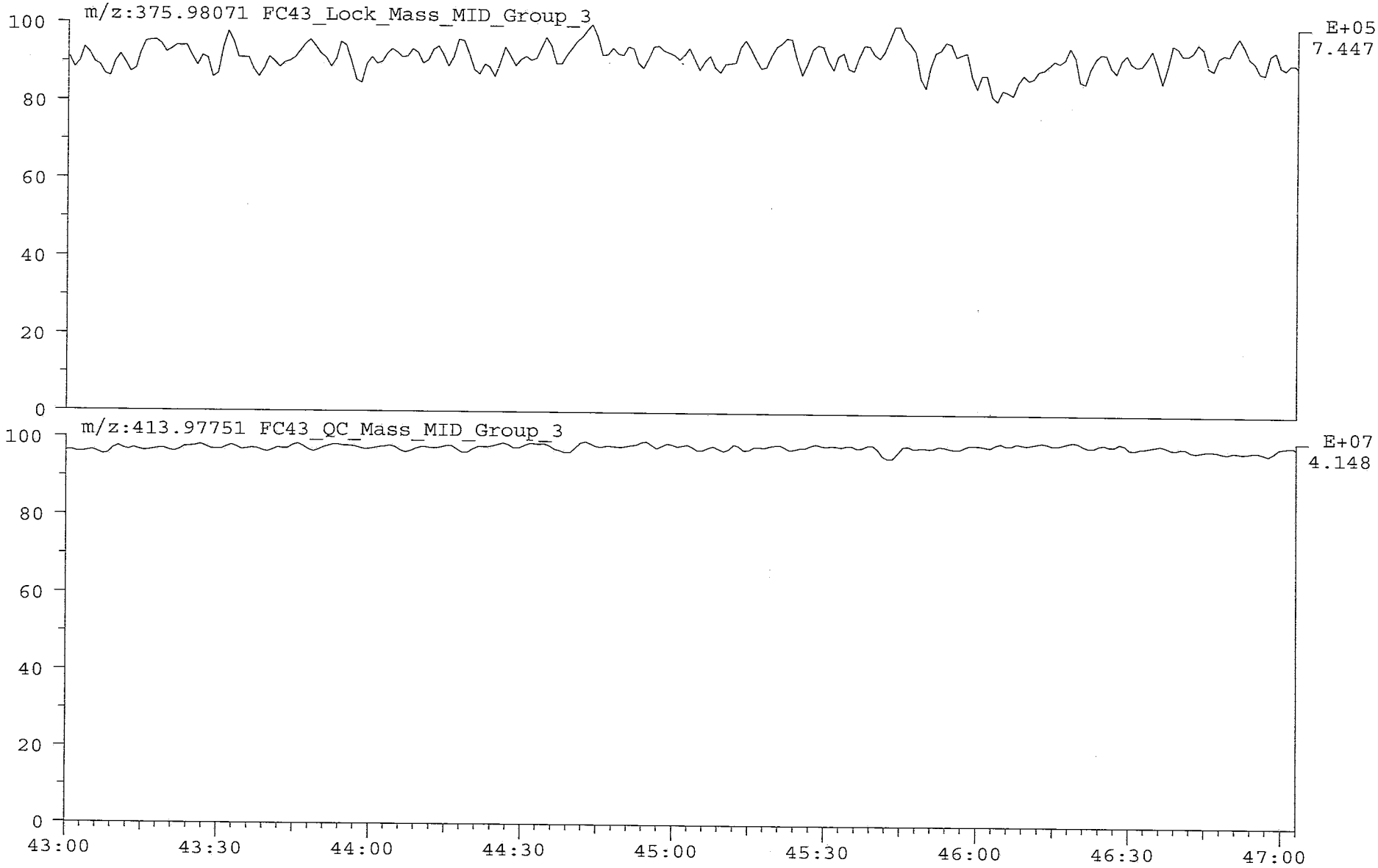
```
CHRO:  d1160818s1                                18-Aug-16  Elapse:  44:43      1905
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1901 > 1909            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



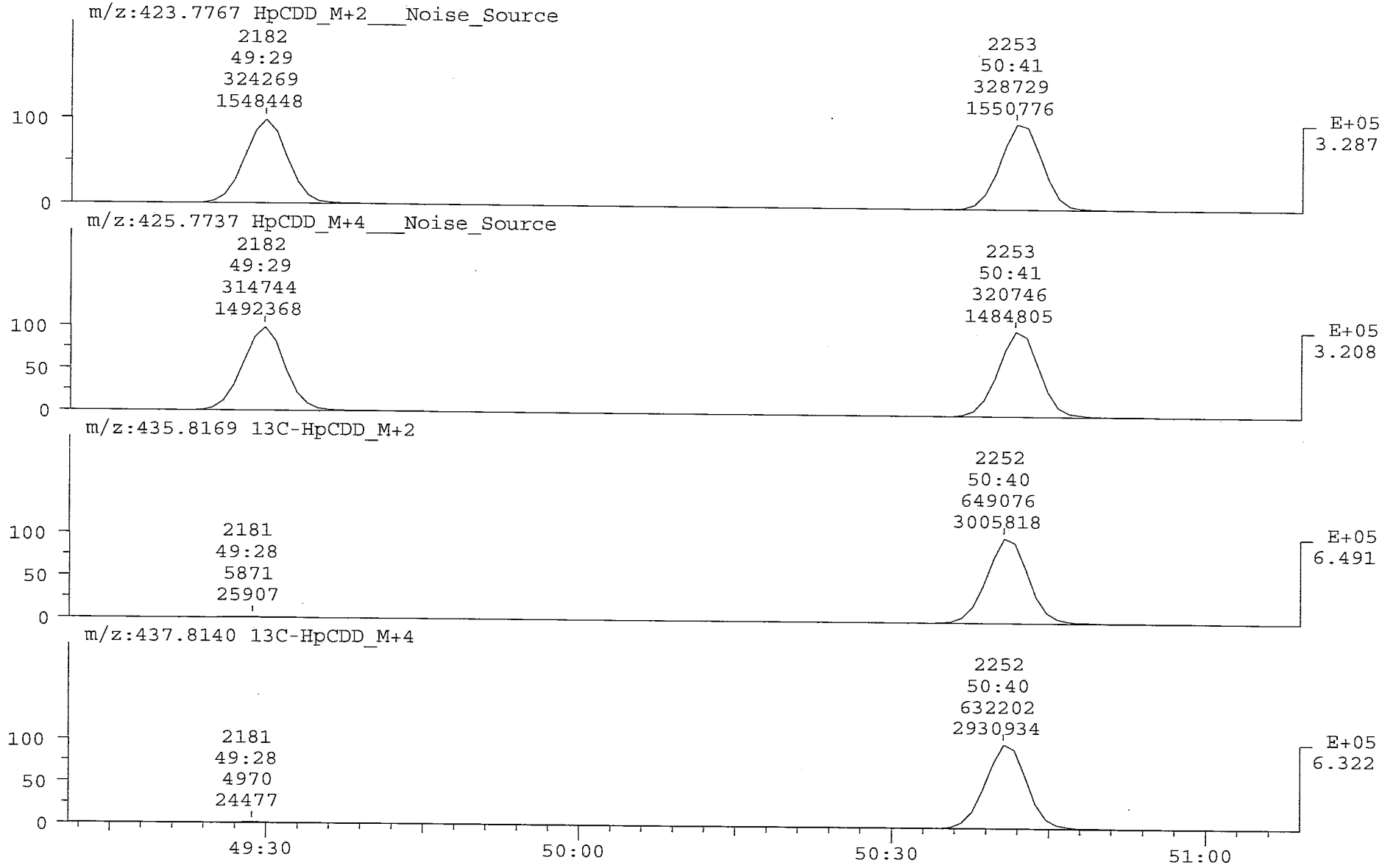
CHRO: d1160818s1 18-Aug-16 Elapse: 44:43 1905
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1803 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



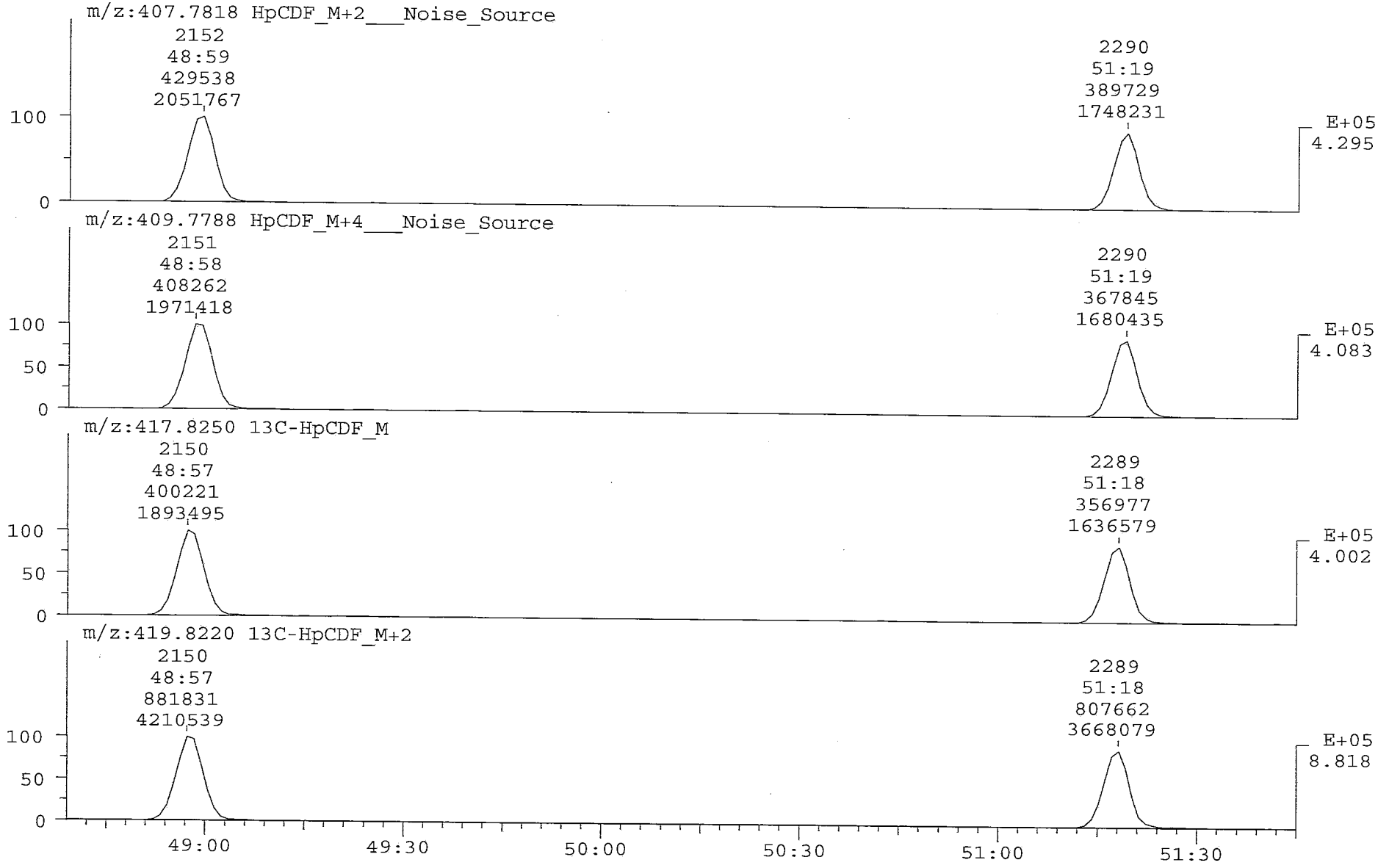
CHRO: d1160818s1 18-Aug-16 Elapse: 44:43 1905
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1803 > 2043 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



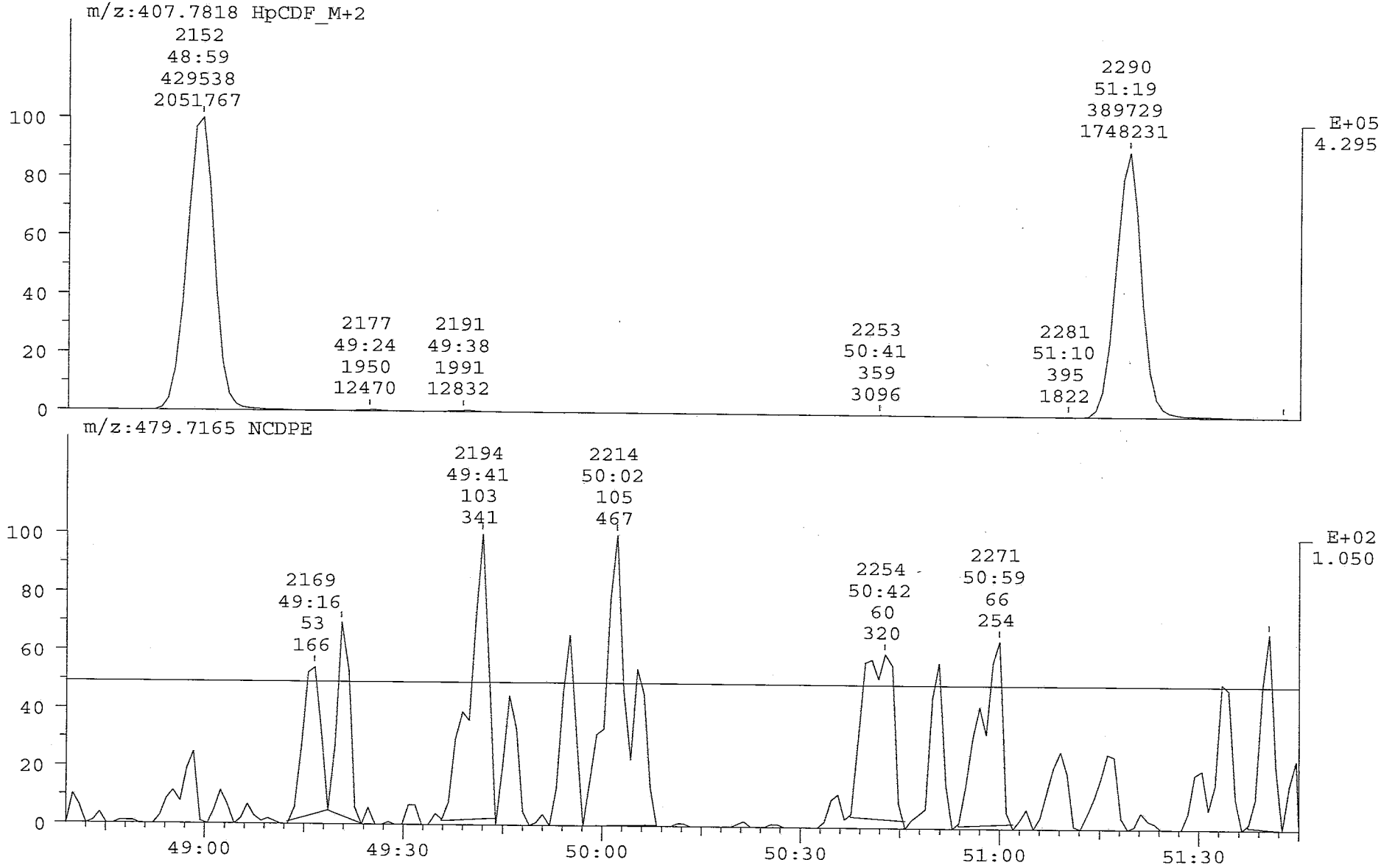
CHRO: d1160818s1 18-Aug-16 Elapse: 44:43 1905
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2164 > 2280 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



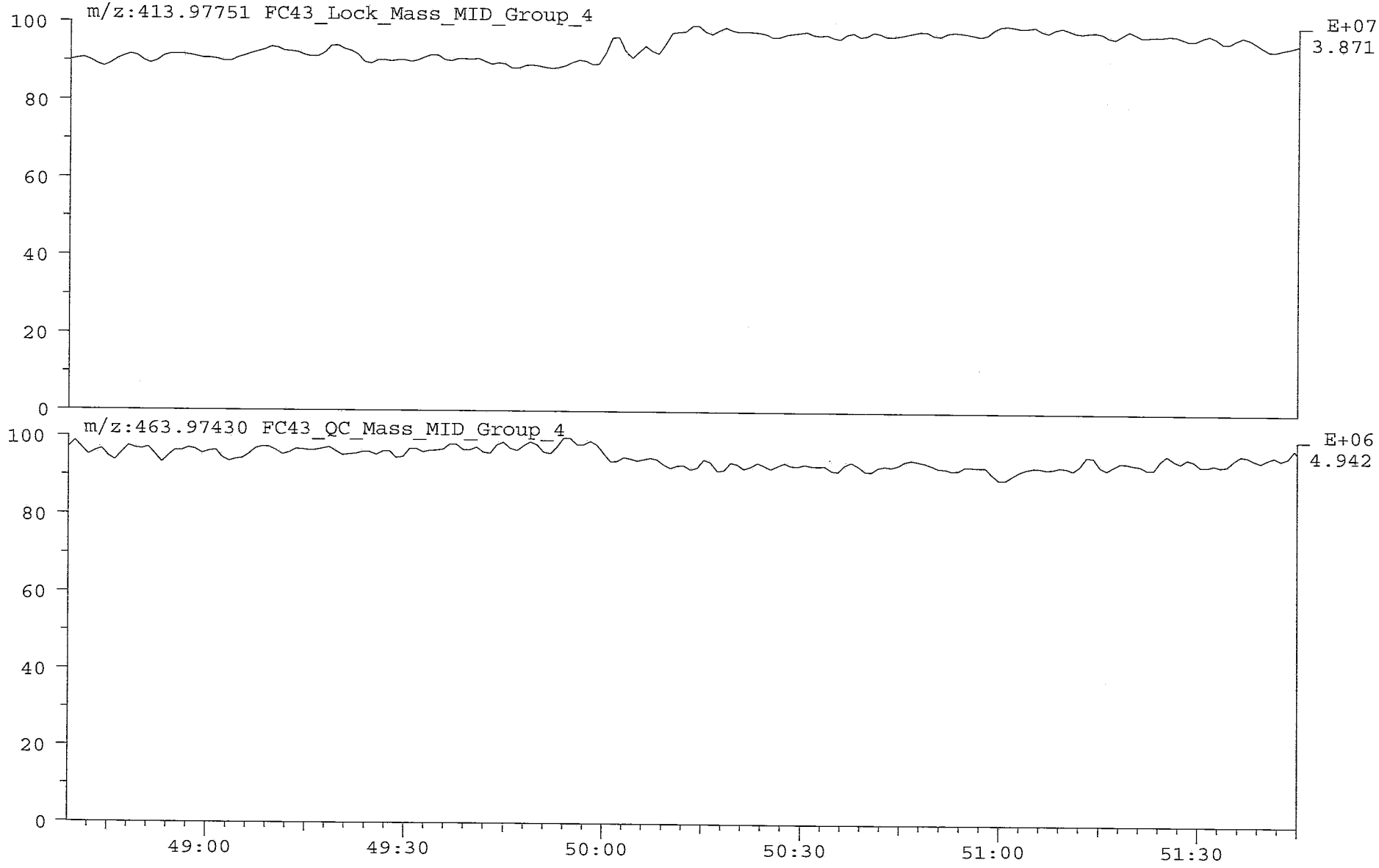
CHRO: d1160818s1 18-Aug-16 Elapse: 50:12 2224
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2132 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



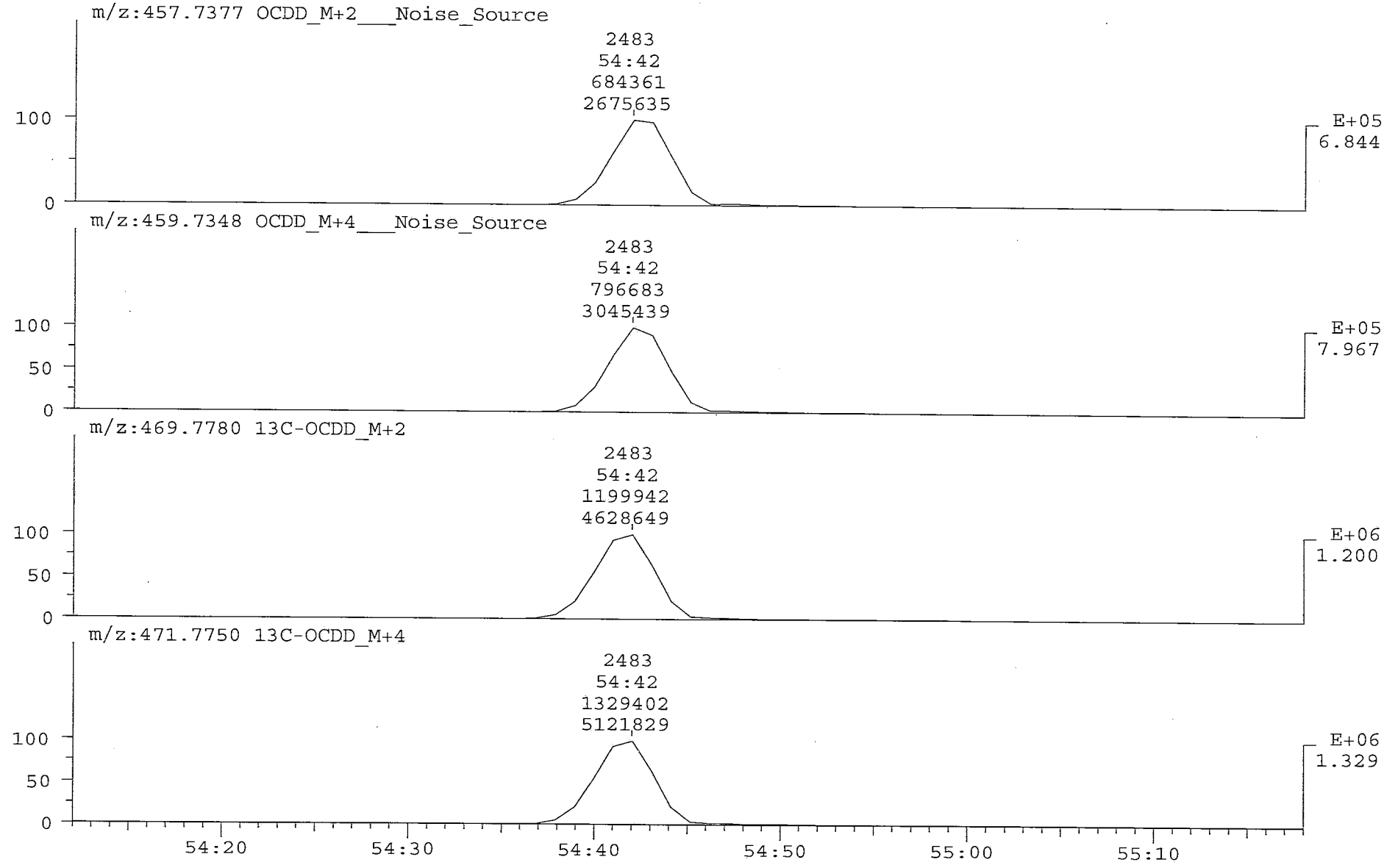
CHRO: d1160818s1 18-Aug-16 Elapse: 50:12 2224
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2132 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



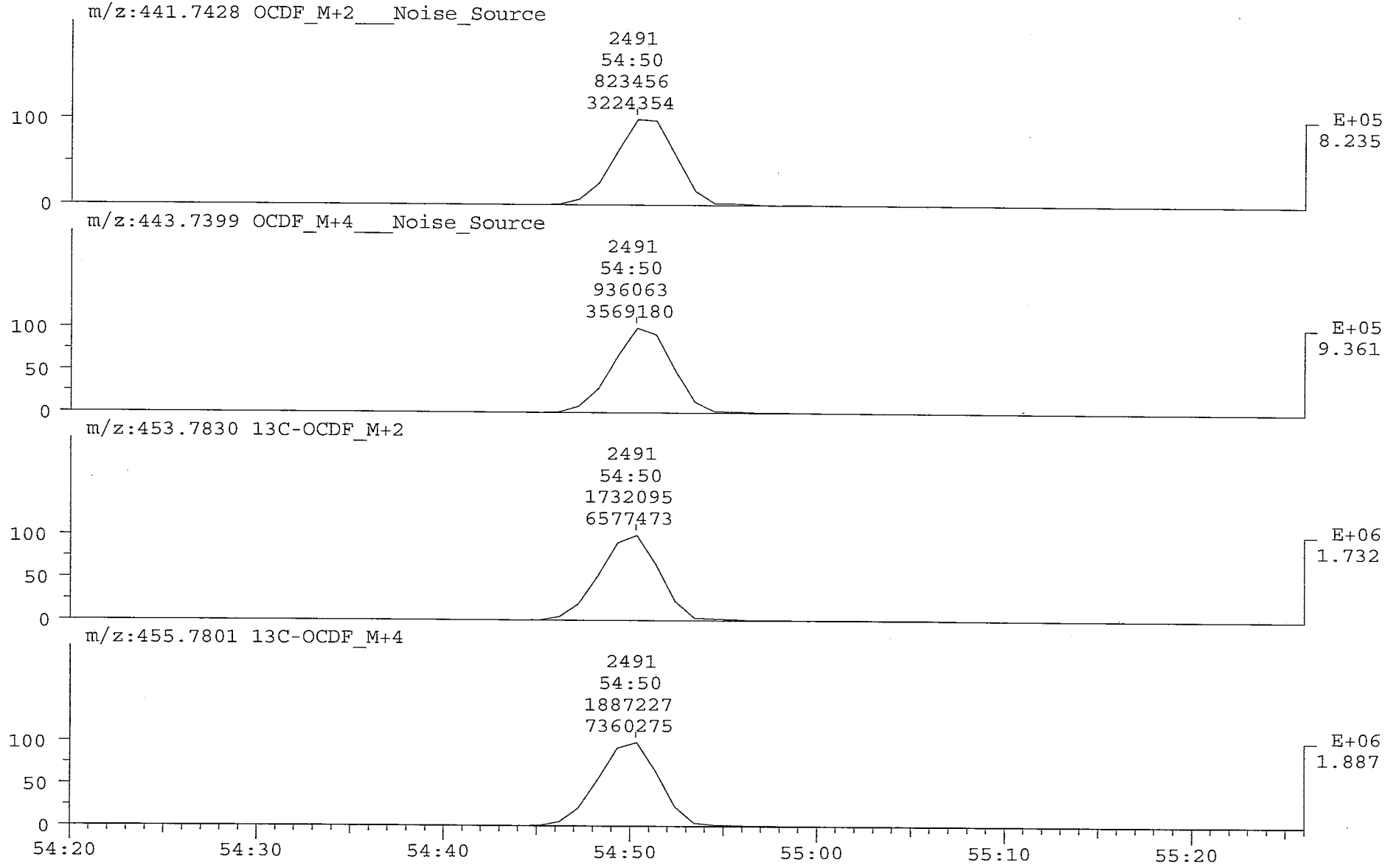
CHRO: d1160818s1 18-Aug-16 Elapse: 50:12 2224
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2132 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



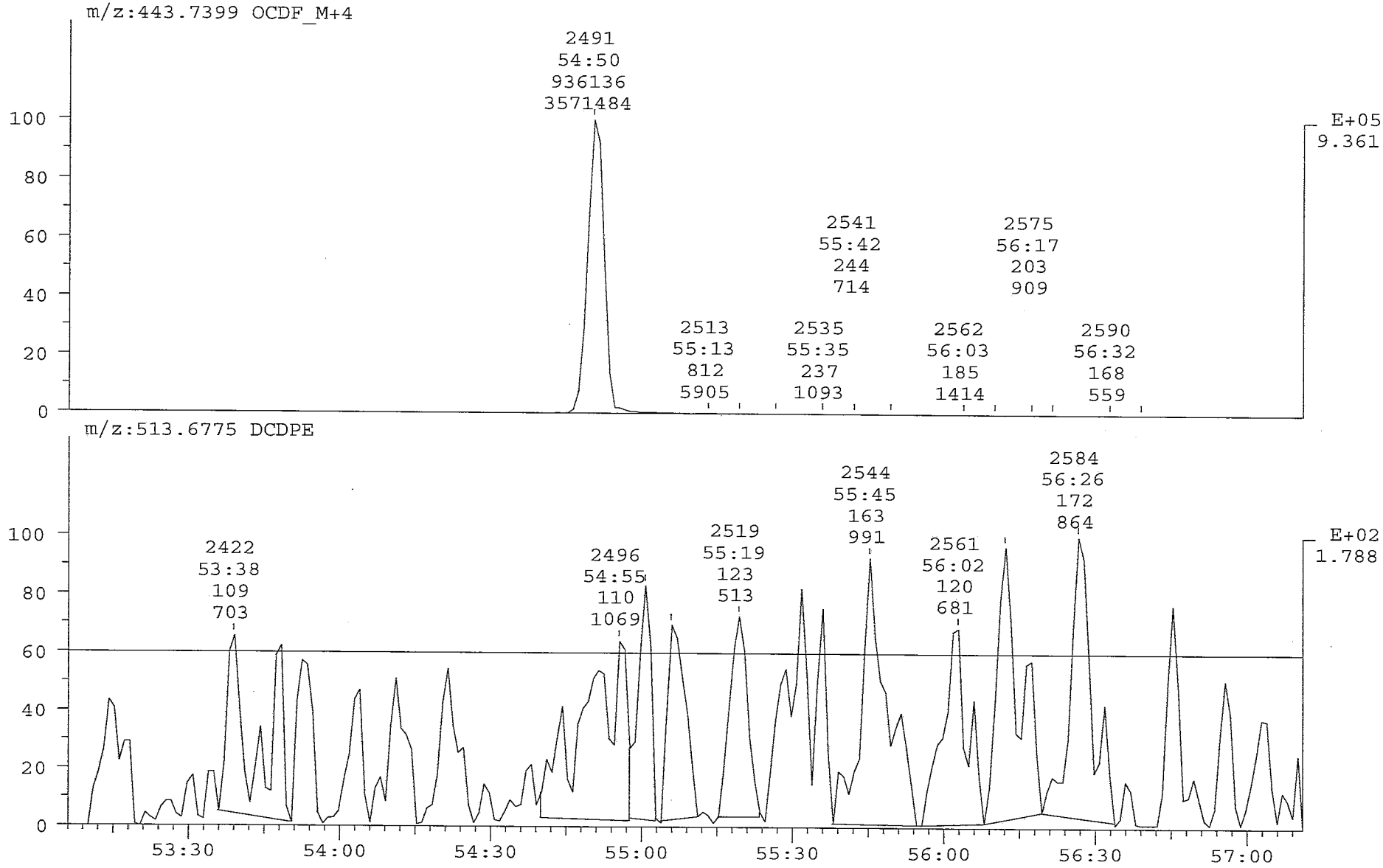
CHRO: d1160818s1 18-Aug-16 Elapse: 54:42 2483
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2454 > 2518 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



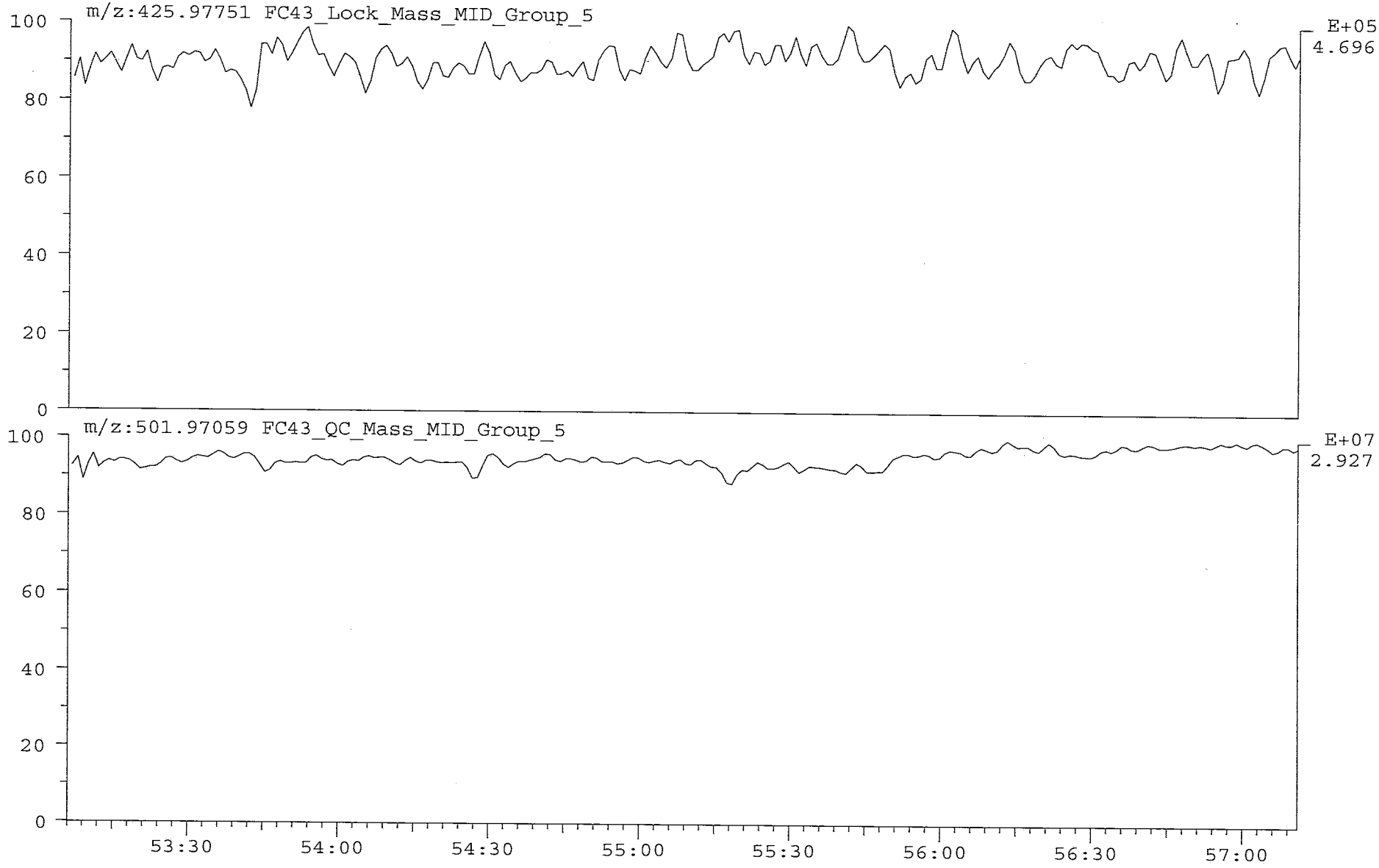
```
CHRO:  d1160818s1                          18-Aug-16  Elapse:  54:50      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2525      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1160818s1                                18-Aug-16   Elapse:  54:50      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                             Start :  07:40:19   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode:  EI ESI + Q1MS UP LR                                   Study :  VER/WIN
Oper:  LKM                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2391 > 2627             Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1160818s1 18-Aug-16 Elapse: 54:50 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 2391 > 2627 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Aug 18 07:45:08 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 07:45:08

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818012421

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	307.4834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0008	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	172.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0477	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	307.4834	LKM	425.9770	MASS	307.4834
MDAC	3542858.7661	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2649.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.9104	RELEN	0.0000
RES	11864.3441	RPUSHER	-6.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	307.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

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Source Gauge:          2.6e-005 mbar
Analyzer Penning:      9.4e-008 mbar
Pirani Analyse:        4.4e-003 mbar
Pirani Source:         4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12141.
MID Time Window 2: Resolution is 11932.
MID Time Window 3: Resolution is 12398.
MID Time Window 4: Resolution is 12175.
MID Time Window 5: Resolution is 11864.

Amplifier Offset: 90.


*** File closed Thu Aug 18 08:42:22 2016
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QUAN: d1160818s1.q0 Entries: 180

Data file(s) used
File: d1160818s1 18-Aug-16
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 07:40:19 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160817S3
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:51	373988.	36752.	32:42	33:06	51.	1	1.0	AVV
321.8775	32:52	465840.	45165.	32:42	33:07	55.	1	1.0	AVV
319.8805	26:30	346455.	42930.	26:19	26:45	51.	2	5.0	ABV
319.8805	32:19	319767.	31913.	32:04	32:26	51.	2	5.0	ABV
319.8805	32:34	307843.	30698.	32:26	32:42	51.	2	5.0	AVV
319.8805	32:51	373988.	36752.	32:42	33:06	51.	2	5.0	AVB
319.8805	33:24	344208.	33200.	33:09	33:40	51.	2	5.0	AVV
319.8805	35:41	313881.	41757.	35:30	35:51	51.	2	5.0	ABB
321.8775	26:30	448492.	55569.	26:19	26:45	55.	2	5.0	ABV
321.8775	32:18	408013.	42446.	32:03	32:26	55.	2	5.0	AVV
321.8775	32:34	389323.	38555.	32:26	32:42	55.	2	5.0	AVV
321.8775	32:52	465840.	45165.	32:42	33:07	55.	2	5.0	AVB
321.8775	33:24	439254.	40105.	33:09	33:40	55.	2	5.0	AVV
321.8775	35:41	414095.	57203.	35:31	35:51	55.	2	5.0	ABB
331.9202	32:16	3274416.	341548.	32:01	32:31	50.	2	5.0	AVV
331.9202	32:48	3408902.	323329.	32:33	33:03	50.	2	5.0	AVV
333.9171	32:16	4034312.	410658.	32:01	32:31	16.	2	5.0	AVV
333.9171	32:49	4186439.	418053.	32:33	33:04	16.	2	5.0	AVV
319.8805	32:51	372722.	36702.	32:42	33:06	142.	2	5.0	AVV
319.8805	33:24	341586.	33114.	33:09	33:40	142.	2	5.0	AVV
321.8775	32:52	463148.	45059.	32:42	33:07	177.	2	5.0	AVV
321.8775	33:24	434651.	39954.	33:09	33:40	177.	2	5.0	AVV
331.9202	32:16	3273429.	341516.	32:01	32:31	248.	2	5.0	AVV
331.9202	32:48	3407522.	323282.	32:33	33:03	248.	2	5.0	AVV
333.9171	32:16	4034312.	410658.	32:01	32:31	71.	2	5.0	AVV
333.9171	32:49	4186439.	418052.	32:33	33:04	71.	2	5.0	AVV
327.8683	32:51	841905.	83710.	32:35	33:06	57.	1	1.0	AVV
327.8683	32:51	841905.	83710.	32:35	33:06	57.	2	5.0	AVV
303.8864	23:55	579665.	79654.	23:43	24:10	28.	1	1.0	AVV
305.8834	23:54	739010.	100529.	23:41	24:09	30.	1	1.0	ABV
303.8864	23:55	579734.	79654.	23:40	24:10	28.	2	5.0	ABV
303.8864	30:43	476580.	50110.	30:28	30:58	28.	2	5.0	AVV
303.8864	35:35	433742.	56518.	35:24	35:49	28.	2	5.0	ABB
305.8834	23:54	739010.	100529.	23:41	24:09	30.	2	5.0	ABV
305.8834	30:42	615164.	63288.	30:27	30:57	30.	2	5.0	AVV
305.8834	35:35	531621.	71001.	35:24	35:48	30.	2	5.0	ABB
315.9261	30:40	5050404.	545090.	30:25	30:55	40.	2	5.0	ABV
317.9230	30:40	6285535.	651088.	30:25	30:55	19.	2	5.0	AVV
303.8864	30:43	476430.	50105.	30:28	30:58	45.	2	5.0	AVV
305.8834	30:42	614996.	63283.	30:27	30:57	46.	2	5.0	AVV
315.9261	30:40	5050266.	545086.	30:25	30:55	105.	2	5.0	ABV
317.9230	30:40	6285449.	651086.	30:25	30:55	76.	2	5.0	AVV
355.8368	42:03	2115732.	546649.	41:55	42:19	57.	1	1.0	AVV
357.8337	42:03	1325556.	342645.	41:48	42:18	42.	1	1.0	AVV
355.8368	38:42	1765449.	306542.	38:32	38:58	57.	2	5.0	ABV
355.8368	41:25	1958618.	481927.	41:09	41:34	57.	2	5.0	AVV
355.8368	42:03	2115732.	546649.	41:55	42:19	57.	2	5.0	AVV
357.8337	38:41	1110877.	193662.	38:32	38:57	42.	2	5.0	ABV
357.8337	41:25	1245904.	312964.	41:18	41:34	42.	2	5.0	ABV
357.8337	42:03	1325556.	342645.	41:48	42:18	42.	2	5.0	AVV

367.8765	41:24	3697221.	914739.	41:15	41:34	17.	2	5.0 ABV
369.8734	41:24	2349287.	575914.	41:14	41:39	11.	2	5.0 ABV
355.8368	41:25	1957602.	481891.	41:15	41:34	61.	2	5.0 ABV
355.8368	42:03	2104479.	546298.	41:55	42:18	61.	2	5.0 ABB
357.8337	41:25	1245571.	312946.	41:18	41:34	55.	2	5.0 ABV
357.8337	42:03	1317236.	342385.	41:56	42:18	55.	2	5.0 ABB
367.8765	41:24	3696941.	914726.	41:15	41:34	48.	2	5.0 ABV
369.8734	41:24	2349287.	575914.	41:14	41:39	21.	2	5.0 ABV
339.8427	39:45	3382669.	723157.	39:30	39:58	82.	1	1.0 AVV
341.8396	39:45	2140547.	462765.	39:32	39:58	70.	1	1.0 ABV
339.8427	36:11	3258486.	481731.	36:00	36:27	82.	2	5.0 ABV
339.8427	39:45	3382669.	723157.	39:30	39:58	82.	2	5.0 AVV
339.8427	40:55	3300596.	780006.	40:47	41:05	82.	2	5.0 ABV
339.8427	42:10	2872420.	686097.	42:00	42:26	82.	2	5.0 ABV
341.8396	36:11	2100217.	308364.	36:00	36:27	70.	2	5.0 ABV
341.8396	39:45	2140547.	462765.	39:32	39:58	70.	2	5.0 ABV
341.8396	40:55	2117860.	513119.	40:40	41:04	70.	2	5.0 ABV
341.8396	42:10	1831110.	450282.	41:56	42:26	70.	2	5.0 ABV
351.8824	39:44	5634549.	1211833.	39:30	39:58	51.	2	5.0 ABV
351.8824	40:54	5954646.	1383390.	40:43	41:09	51.	2	5.0 ABV
353.8793	39:44	3585737.	770610.	39:31	39:58	37.	2	5.0 ABV
353.8793	40:54	3682978.	872516.	40:46	41:03	37.	2	5.0 ABV
339.8427	39:45	3381527.	723116.	39:30	39:58	125.	2	5.0 AVV
339.8427	40:55	3300086.	779981.	40:47	41:05	125.	2	5.0 ABV
341.8396	39:45	2140479.	462763.	39:33	39:58	88.	2	5.0 ABV
341.8396	40:55	2116609.	513092.	40:46	41:04	88.	2	5.0 ABV
351.8824	39:44	5632850.	1211776.	39:32	39:58	145.	2	5.0 ABV
351.8824	40:54	5951295.	1383284.	40:44	41:09	145.	2	5.0 ABV
353.8793	39:44	3585336.	770596.	39:32	39:58	142.	2	5.0 ABV
353.8793	40:54	3681231.	872422.	40:46	41:03	142.	2	5.0 ABV
389.7961	44:01	2116980.	568586.	43:54	44:16	77.	1	1.0 ABV
391.7931	44:01	1714617.	473595.	43:54	44:16	65.	1	1.0 ABV
389.7961	44:01	2116980.	568586.	43:54	44:16	77.	2	5.0 ABV
389.7961	45:39	1950948.	486363.	45:32	45:43	77.	2	5.0 ABV
389.7961	45:47	1858491.	460445.	45:43	46:02	77.	2	5.0 AVB
389.7961	46:11	1964339.	476052.	46:04	46:26	77.	2	5.0 AVV
391.7931	44:01	1714617.	473595.	43:54	44:16	65.	2	5.0 ABV
391.7931	45:39	1591819.	403574.	45:32	45:43	65.	2	5.0 ABV
391.7931	45:47	1492540.	364826.	45:43	45:59	65.	2	5.0 AVV
391.7931	46:10	1595592.	374014.	46:04	46:26	65.	2	5.0 AVV
401.8358	45:38	3872103.	965090.	45:23	45:42	121.	2	5.0 ABV
401.8358	45:46	3686315.	920393.	45:42	46:01	121.	2	5.0 AVV
401.8358	46:10	4069509.	995754.	46:01	46:26	121.	2	5.0 AVB
403.8327	45:38	3020287.	770196.	45:31	45:42	37.	2	5.0 ABV
403.8327	45:46	2893794.	724566.	45:42	46:01	37.	2	5.0 AVV
403.8327	46:10	3275219.	789584.	46:03	46:22	37.	2	5.0 AVV
389.7961	45:39	1950946.	486363.	45:32	45:43	112.	2	5.0 ABV
389.7961	45:47	1858474.	460445.	45:43	46:02	112.	2	5.0 AVV
389.7961	46:11	1964300.	476050.	46:04	46:26	112.	2	5.0 AVV
391.7931	45:39	1591819.	403574.	45:32	45:43	95.	2	5.0 ABV
391.7931	45:47	1492540.	364826.	45:43	45:59	95.	2	5.0 AVV
391.7931	46:10	1595592.	374014.	46:04	46:26	95.	2	5.0 AVV
401.8358	45:38	3871893.	965083.	45:24	45:42	234.	2	5.0 ABV
401.8358	45:46	3686216.	920388.	45:42	46:01	234.	2	5.0 AVV
401.8358	46:10	4069452.	995751.	46:01	46:26	234.	2	5.0 AVV
403.8327	45:38	3020287.	770196.	45:31	45:42	78.	2	5.0 ABV
403.8327	45:46	2893794.	724566.	45:42	46:01	78.	2	5.0 AVV
403.8327	46:10	3275219.	789584.	46:03	46:22	78.	2	5.0 AVV
373.8021	44:43	2796309.	726092.	44:39	44:58	93.	1	1.0 AVV
375.7990	44:43	2218313.	578477.	44:39	44:58	94.	1	1.0 AVV
373.8021	43:20	2495245.	693966.	43:13	43:27	93.	2	5.0 ABV
373.8021	44:35	2684727.	727185.	44:27	44:39	93.	2	5.0 ABV
373.8021	44:43	2796309.	726092.	44:39	44:58	93.	2	5.0 AVV
373.8021	45:29	2559322.	642881.	45:20	45:44	93.	2	5.0 AVV
373.8021	46:29	2151598.	515024.	46:18	46:33	93.	2	5.0 ABV
373.8021	46:37	2007480.	466968.	46:33	46:52	93.	2	5.0 AVV
375.7990	43:20	1991844.	554153.	43:10	43:26	94.	2	5.0 ABV

375.7990	44:35	2139539.	580178.	44:28	44:39	94.	2	5.0 ABV
375.7990	44:43	2218313.	578477.	44:39	44:58	94.	2	5.0 AVV
375.7990	45:29	2049518.	501484.	45:17	45:44	94.	2	5.0 AVV
375.7990	46:29	1709329.	398245.	46:22	46:33	94.	2	5.0 ABV
375.7990	46:37	1604095.	376399.	46:33	46:52	94.	2	5.0 AVV
383.8447	44:34	2737835.	723353.	44:27	44:38	56.	2	5.0 ABV
383.8447	44:42	3079750.	801927.	44:38	44:52	56.	2	5.0 AVV
383.8447	45:28	2860676.	716867.	45:16	45:36	56.	2	5.0 AVV
383.8447	46:28	2384639.	556293.	46:18	46:43	56.	2	5.0 AVV
385.8417	44:34	5200372.	1383363.	44:25	44:38	124.	2	5.0 ABV
385.8417	44:42	5809765.	1509658.	44:38	44:57	124.	2	5.0 AVV
385.8417	45:28	5436038.	1334974.	45:16	45:43	124.	2	5.0 AVV
385.8417	46:28	4635539.	1088646.	46:16	46:43	124.	2	5.0 ABV
373.8021	44:35	2684630.	727177.	44:27	44:39	108.	2	5.0 ABV
373.8021	44:43	2796177.	726084.	44:39	44:58	108.	2	5.0 AVV
373.8021	45:29	2559256.	642877.	45:20	45:44	108.	2	5.0 AVV
373.8021	46:29	2150242.	514891.	46:18	46:33	108.	2	5.0 ABV
373.8021	46:37	2001668.	466735.	46:33	46:52	108.	2	5.0 AVV
375.7990	44:35	2139271.	580153.	44:28	44:39	106.	2	5.0 ABV
375.7990	44:43	2217920.	578455.	44:39	44:58	106.	2	5.0 AVV
375.7990	45:29	2049320.	501477.	45:17	45:44	106.	2	5.0 AVV
375.7990	46:29	1707603.	398048.	46:22	46:33	106.	2	5.0 ABV
375.7990	46:37	1592980.	375977.	46:33	46:52	106.	2	5.0 AVV
383.8447	44:34	2737828.	723352.	44:27	44:38	91.	2	5.0 ABV
383.8447	44:42	3079721.	801925.	44:38	44:52	91.	2	5.0 AVV
383.8447	45:28	2860543.	716861.	45:16	45:36	91.	2	5.0 AVV
383.8447	46:28	2384645.	556263.	46:15	46:43	91.	2	5.0 ABV
385.8417	44:34	5200166.	1383351.	44:26	44:38	209.	2	5.0 ABV
385.8417	44:42	5809570.	1509648.	44:38	44:57	209.	2	5.0 AVV
385.8417	45:28	5435910.	1334969.	45:16	45:43	209.	2	5.0 AVV
385.8417	46:28	4630777.	1088480.	46:18	46:43	209.	2	5.0 ABV
423.7555	50:41	1550776.	328729.	50:33	50:56	63.	1	1.0 ABV
425.7524	49:29	1492368.	314744.	49:19	49:44	81.	1	1.0 ABV
423.7555	49:29	1548448.	324269.	49:20	49:44	63.	2	5.0 ABV
423.7555	50:41	1550776.	328729.	50:33	50:56	63.	2	5.0 ABV
425.7524	49:29	1492368.	314744.	49:19	49:44	81.	2	5.0 ABV
425.7524	50:41	1484805.	320746.	50:31	50:56	81.	2	5.0 ABV
435.7951	49:28	25907.	5871.	49:21	49:37	39.	2	5.0 ABV
435.7951	50:40	3005818.	649076.	50:31	50:52	39.	2	5.0 ABV
437.7921	49:28	24477.	4970.	49:21	49:38	20.	2	5.0 ABV
437.7921	50:40	2930934.	632202.	50:32	50:55	20.	2	5.0 ABV
407.7614	48:59	2051767.	429538.	48:50	49:14	61.	1	1.0 ABV
409.7583	48:58	1971418.	408262.	48:50	49:13	59.	1	1.0 ABV
407.7614	48:59	2051767.	429538.	48:50	49:14	61.	2	5.0 ABV
407.7614	51:19	1748231.	389729.	51:11	51:34	61.	2	5.0 AVV
409.7583	48:58	1971418.	408262.	48:50	49:13	59.	2	5.0 ABV
409.7583	51:19	1680435.	367845.	51:09	51:34	59.	2	5.0 ABV
417.8041	48:57	1893495.	400221.	48:49	49:12	65.	2	5.0 ABV
417.8041	51:18	1636579.	356977.	51:10	51:33	65.	2	5.0 AVV
419.8010	48:57	4210539.	881831.	48:48	49:12	68.	2	5.0 ABV
419.8010	51:18	3668079.	807662.	51:09	51:33	68.	2	5.0 AVV
457.7148	54:42	2675635.	684361.	54:35	54:57	50.	1	1.0 ABV
459.7118	54:42	3045439.	796683.	54:34	54:57	51.	1	1.0 ABV
457.7148	54:42	2675635.	684361.	54:35	54:57	50.	2	5.0 ABV
459.7118	54:42	3045439.	796683.	54:34	54:57	51.	2	5.0 ABV
469.7545	54:42	4628649.	1199942.	54:33	54:57	48.	2	5.0 ABV
471.7514	54:42	5121829.	1329402.	54:34	54:57	46.	2	5.0 ABV
441.7207	54:50	3224354.	823456.	54:39	55:05	45.	1	1.0 ABV
443.7177	54:50	3569180.	936063.	54:39	55:05	49.	1	1.0 ABV
441.7207	54:50	3224354.	823456.	54:39	55:05	45.	2	5.0 ABV
443.7177	54:50	3569180.	936063.	54:39	55:05	49.	2	5.0 ABV
453.7603	54:50	6577473.	1732095.	54:36	55:05	53.	2	5.0 ABV
455.7573	54:50	7360275.	1887227.	54:36	55:05	69.	2	5.0 ABV

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89985 - D1160818S2
CCAL Filename: d1160818s2
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160818s2/d1160818s2.d
CCAL Date/Time: 08/18/16 18:29

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.9	1.144	1.130	-1.2	20.0	True
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	9.4	1.066	1.000	-6.1	20.0	True
1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	51	1.060	1.087	2.5	20.0	True
1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	51	1.179	1.202	2.0	20.0	True
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	49	1.115	1.101	-1.2	20.0	True
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	48	1.131	1.089	-3.7	20.0	True
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	48	1.116	1.065	-4.6	20.0	True
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05-1.43	48	1.205	1.146	-4.9	20.0	True
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	46	1.350	1.242	-8.0	20.0	True
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	47	1.242	1.157	-6.8	20.0	True
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	46	1.241	1.151	-7.2	20.0	True
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05-1.43	46	1.262	1.160	-8.1	20.0	True
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	47	1.114	1.056	-5.2	20.0	True
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88-1.20	46	1.461	1.349	-7.6	20.0	True
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88-1.20	48	1.370	1.306	-4.7	20.0	True
OCDD	M+2/M+4	0.90	0.76-1.02	99	1.203	1.187	-1.3	20.0	True
OCDF	M+2/M+4	0.91	0.76-1.02	88	1.134	0.999	-11.9	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	96	1.093	1.044	-4.4	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	88	1.794	1.578	-12.0	30.0	True
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32-1.78	98	0.800	0.783	-2.1	30.0	True
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	93	1.356	1.268	-6.5	30.0	True
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32-1.78	101	1.343	1.359	1.2	30.0	True
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05-1.43	102	0.916	0.933	1.8	30.0	True
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05-1.43	101	0.906	0.915	1.0	30.0	True
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	91	1.268	1.153	-9.1	30.0	True
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	89	1.506	1.336	-11.3	30.0	True
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43-0.59	93	1.344	1.246	-7.3	30.0	True
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43-0.59	87	1.202	1.040	-13.5	30.0	True
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	111	0.728	0.807	10.8	30.0	True
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37-0.51	90	1.008	0.912	-9.5	30.0	True
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37-0.51	94	0.811	0.761	-6.1	30.0	True
13C-OCDD	M+2/M+4	0.91	0.76-1.02	224	0.597	0.670	12.1	30.0	True
13C-OCDF	M+2/M+4	0.90	0.76-1.02	204	0.946	0.963	1.8	30.0	True

Km 8/19/16

Km 8-18-16

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89985 - D1160818S2
CCAL Filename: d1160818s2
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160818s2/d1160818s2.d
CCAL Date/Time: 08/18/16 18:29

ICAL Date: 04/09/15
Method: 9Ao - DX8290A
Instrument: D11A
Column SN: 1379922
Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	30:41	32:49	128	1.002	1.002	-	
2,3,7,8-TCDF	28:42	30:41	119	1.001	1.002	-	
1,2,3,7,8-PeCDD	40:33	41:23	50	1.000	1.000	-	
1,2,3,7,8-PeCDF	38:44	39:43	59	1.000	1.000	-	
2,3,4,7,8-PeCDF	40:01	40:53	52	1.001	1.000	-	
1,2,3,4,7,8-HxCDD	44:50	45:37	47	1.000	1.000	-	
1,2,3,6,7,8-HxCDD	44:57	45:45	48	1.000	1.000	-	
1,2,3,7,8,9-HxCDD	45:20	46:09	49	1.009	1.009	-	
1,2,3,4,7,8-HxCDF	43:49	44:33	44	1.000	1.000	-	
1,2,3,6,7,8-HxCDF	43:56	44:41	45	1.000	1.000	-	
2,3,4,6,7,8-HxCDF	44:39	45:27	48	1.000	1.000	-	
1,2,3,7,8,9-HxCDF	45:36	46:27	51	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDD	49:38	50:39	61	1.000	1.000	-	
1,2,3,4,6,7,8-HpCDF	47:58	48:57	59	1.000	1.001	-	
1,2,3,4,7,8,9-HpCDF	50:17	51:17	60	1.000	1.000	-	
OCDD	53:54	54:40	46	1.000	1.000	-	
OCDF	54:02	54:48	46	1.000	1.000	-	
13C-2,3,7,8-TCDD	30:38	32:45	127	1.017	1.016	-	
13C-2,3,7,8-TCDF	28:40	30:38	118	0.951	0.950	-	
13C-1,2,3,7,8-PeCDD	40:32	41:22	50	1.346	1.283	-	
13C-1,2,3,7,8-PeCDF	38:43	39:42	59	1.285	1.232	-	
13C-2,3,4,7,8-PeCDF	39:59	40:52	53	1.327	1.268	-	
13C-1,2,3,4,7,8-HxCDD	44:49	45:36	47	0.989	0.988	-	
13C-1,2,3,6,7,8-HxCDD	44:56	45:44	48	0.992	0.991	-	
13C-1,2,3,4,7,8-HxCDF	43:48	44:32	44	0.966	0.965	-	
13C-1,2,3,6,7,8-HxCDF	43:55	44:40	45	0.969	0.968	-	
13C-2,3,4,6,7,8-HxCDF	44:38	45:26	48	0.985	0.985	-	
13C-1,2,3,7,8,9-HxCDF	45:35	46:26	51	1.006	1.007	-	
13C-1,2,3,4,6,7,8-HpCDD	49:37	50:38	61	1.095	1.098	-	
13C-1,2,3,4,6,7,8-HpCDF	47:56	48:55	59	1.058	1.060	-	
13C-1,2,3,4,7,8,9-HpCDF	50:16	51:16	60	1.109	1.111	-	
13C-OCDD	53:53	54:39	46	1.189	1.185	-	
13C-OCDF	54:01	54:47	46	1.192	1.188	-	

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

CCAL ID: 89985 - D1160818S2

WIN Filename: d1160818s2

WIN Sample ID: 4966:41

WIN Result Dir: /20160818s2/d1160818s2.d

WIN Date/Time: 08/18/16 18:29

Method: 9Ao - DX8290A

Instrument: D11A

Column SN: 1379922

Column Desc: Rtx-5 60m x 0.32mm ID x 0.25um

Window Defining First/Last Eluter Retention Times

Analyte	Reference	M/Z	Ref RT	First Eluter RT	First Eluter RRT	Last Eluter RT	Last Eluter RRT
Total TCDD	13C-2,3,7,8-TCDD	320	32:45	26:28	0.8081	35:39	1.0885
Total TCDF	13C-2,3,7,8-TCDF	304	30:38	23:52	0.7791	35:33	1.1605
Total PeCDD	13C-1,2,3,7,8-PeCDD	356	41:22	38:39	0.9343	42:01	1.0157
Total PeCDF	13C-1,2,3,7,8-PeCDF	340	39:42	36:09	0.9106	42:08	1.0613
Total HxCDD	13C-1,2,3,6,7,8-HxCDD	390	45:44	43:59	0.9617	46:09	1.0091
Total HxCDF	13C-1,2,3,4,7,8-HxCDF	374	44:32	43:18	0.9723	46:35	1.0460
Total HpCDD	13C-1,2,3,4,6,7,8-HpCDD	424	50:38	49:27	0.9766	50:39	1.0003
Total HpCDF	13C-1,2,3,4,6,7,8-HpCDF	408	48:55	48:57	1.0007	51:17	1.0484
OCDD	13C-OCDD	458	54:39	54:40	1.0003	54:40	1.0003
OCDF	13C-OCDF	442	54:47	54:48	1.0003	54:48	1.0003

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s2/d1160818s2.d	Prep Date		SDG No	
Analysis ID	180466	Prep Exp Date		Date Received	
Analysis Date	8/18/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	18:29	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613B
Instrument	D11A	Dil Factor	1.00	Code	F8o
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	32:49	898073	88401	1.144	10.00	9.882724	98.83	9.882724	E	0.0351
Total TCDD		3984253	447171	1.144		53.726903		53.726903	E	0.0351
2,3,7,8-TCDF	30:41	1201150	125380	1.066	10.00	9.387239	93.87	9.387239	E	0.0122
Total TCDF		2482954	341421	1.066		28.792044		28.792044	E	0.0122
1,2,3,7,8-PeCDD	41:23	3237281	790907	1.060	50.00	51.269960	102.54	51.269960	E	0.0163
Total PeCDD		6453158	1413135	1.060		153.470897		153.470897	E	0.0163
1,2,3,7,8-PeCDF	39:43	5798975	1247243	1.179	50.00	50.989412	101.98	50.989412	E	0.0171
2,3,4,7,8-PeCDF	40:53	5689913	1364376	1.115	50.00	49.376811	98.75	49.376811	E	0.0148
Total PeCDF		10199413	1968387	1.147		189.371182		189.371182	E	0.0158
1,2,3,4,7,8-HxCDD	45:37	3839697	973408	1.131	50.00	48.131431	96.26	48.131431	E	0.0247
1,2,3,6,7,8-HxCDD	45:45	3683800	911744	1.116	50.00	47.705466	95.41	47.705466	E	0.0264
1,2,3,7,8,9-HxCDD	46:09	4003737	959246	1.205	50.00	47.554137	95.11	47.554137	E	0.0238
Total HxCDD		4145509	1129429	1.151		194.956782		194.956782	E	0.0249
1,2,3,4,7,8-HxCDF	44:33	5417936	1446696	1.350	50.00	45.995899	91.99	45.995899	E	0.0176
1,2,3,6,7,8-HxCDF	44:41	5844562	1505707	1.242	50.00	46.593863	93.19	46.593863	E	0.0173
2,3,4,6,7,8-HxCDF	45:27	5424891	1338398	1.241	50.00	46.389191	92.78	46.389191	E	0.0194
1,2,3,7,8,9-HxCDF	46:27	4562999	1063302	1.262	50.00	45.966010	91.93	45.966010	E	0.0243
Total HxCDF		9250394	2339005	1.274		265.380746		265.380746	E	0.0193
1,2,3,4,6,7,8-HpCDD	50:39	3223864	686619	1.114	50.00	47.402763	94.81	47.402763	E	0.0236
Total HpCDD		3366635	690036	1.114		96.904789		96.904789	E	0.0236
1,2,3,4,6,7,8-HpCDF	48:57	4653896	971535	1.461	50.00	46.182109	92.36	46.182109	E	0.0183
1,2,3,4,7,8,9-HpCDF	51:17	3760935	813215	1.370	50.00	47.656015	95.31	47.656015	E	0.0224
Total HpCDF				1.416		93.838124		93.838124	E	0.0202
OCDD	54:40	6016683	1608755	1.203	100.0	98.708184	98.71	98.708184	E	0.0160
OCDF	54:48	7275304	1947334	1.134	100.0	88.070761	88.07	88.070761	E	0.0151
13C-2,3,7,8-TCDD	32:45	7946741	778696	1.093	100.0	95.602124	95.60	95.602124		0.0214
13C-2,3,7,8-TCDF	30:38	12007985	1268128	1.794	100.0	87.958464	87.96	87.958464		0.0106
13C-1,2,3,7,8-PeCDD	41:22	5957389	1477942	0.800	100.0	97.881049	97.88	97.881049		0.0181
13C-1,2,3,7,8-PeCDF	39:42	9645114	2035726	1.356	100.0	93.460543	93.46	93.460543		0.0284
13C-2,3,4,7,8-PeCDF	40:52	10338947	2486821	1.343	100.0	101.185557	101.19	101.185557		0.0287
13C-1,2,3,4,7,8-HxCDD	45:36	7052842	1808456	0.916	100.0	101.820170	101.82	101.820170		0.0169
13C-1,2,3,6,7,8-HxCDD	45:44	6919622	1711259	0.906	100.0	100.952570	100.95	100.952570		0.0171
13C-1,2,3,4,7,8-HxCDF	44:32	8722500	2340155	1.268	100.0	90.926303	90.93	90.926303		0.0298
13C-1,2,3,6,7,8-HxCDF	44:40	10102647	2601377	1.506	100.0	88.723641	88.72	88.723641		0.0251
13C-2,3,4,6,7,8-HxCDF	45:26	9424246	2317510	1.344	100.0	92.717801	92.72	92.717801		0.0282
13C-1,2,3,7,8,9-HxCDF	46:26	7865687	1817779	1.202	100.0	86.517387	86.52	86.517387		0.0315
13C-1,2,3,4,6,7,8-HpCDD	50:38	6106562	1314310	0.728	100.0	110.846331	110.85	110.846331		0.00922
13C-1,2,3,4,6,7,8-HpCDF	48:55	6897442	1443537	1.008	100.0	90.469392	90.47	90.469392		0.0246
13C-1,2,3,4,7,8,9-HpCDF	51:16	5759009	1254883	0.811	100.0	93.918242	93.92	93.918242		0.0306
13C-OCDD	54:39	10133770	2602432	0.597	200.0	224.296138	112.15	224.296138		0.0223
13C-OCDF	54:47	14564787	3740558	0.946	200.0	203.569948	101.78	203.569948		0.0203
37Cl4-2,3,7,8-TCDD	32:48	880753	84095	1.233	10.00	9.385667	93.86	9.385667	E	0.0187
13C-1,2,3,4-TCDD	32:14	7608459	759698	1.000	100.0	100.000000	100.00	100.000000		0.0234
13C-1,2,3,7,8,9-HxCDD	46:08	7563177	1823179	1.000	100.0	100.000000	100.00	100.000000		0.0155

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s2/d1160818s2	Prep Date		SDG No	
Analysis ID	180466	Prep Exp Date		Date Received	
Analysis Date	08/18/16 18:29	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	80	85	32	34	0.94 *	/	
	Unidentified	23:52	00:00	0	641780	819927	89009	111786	0.78	ABV/ABV	
	2,3,7,8-TCDF	30:41	30:52	-11	520779	680371	54694	70686	0.77	AVV/ABV	M
	Unidentified	35:33	00:00	0	455429	565818	61979	78647	0.80	ABV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	90	55	36	22	1.64 *	/	
	13C-2,3,7,8-TCDF	30:38	30:50	-12	5325244	6682741	557287	710841	0.80	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	153	160	61	64	0.95 *	/	
	Unidentified	26:28	00:00	0	376089	486962	49032	62171	0.77	ABV/ABV	
	Unidentified	32:16	00:00	0	338208	442970	34413	45494	0.76	ABV/AVV	
	Unidentified	32:32	00:00	0	325869	411348	32250	40053	0.79	AVV/AVV	DM
	2,3,7,8-TCDD	32:49	32:34	15	398884	499189	39862	48539	0.80	AVV/AVV	M
	Unidentified	33:21	00:00	0	362790	467446	33980	44457	0.78	AVV/AVV	
	Unidentified	35:39	00:00	0	337552	435019	47047	58274	0.78	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	175		70				
	37Cl4-2,3,7,8-TCDD	32:48	32:34	14	880753		84095			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	93	85	37	34	1.09 *	/	
	13C-1,2,3,4-TCDD	32:14	32:06	8	3362865	4245594	333590	426108	0.79	AVV/AVV	
	13C-2,3,7,8-TCDD	32:45	32:32	13	3490301	4456440	342942	435754	0.78	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	205	205	82	82	1.00 *	/	
	Unidentified	36:09	00:00	0	3321400	2130946	496249	315865	1.56	ABB/ABB	
	1,2,3,7,8-PeCDF	39:43	39:49	-6	3550091	2248884	763101	484142	1.58	ABV/ABV	M
	2,3,4,7,8-PeCDF	40:53	41:01	-8	3453724	2236189	823394	540982	1.54	ABV/ABV	M
	Unidentified	42:08	00:00	0	2890346	1856721	695254	461019	1.56	ABV/ABV	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	183	110	73	44	1.66	/	
	13C-1,2,3,7,8-PeCDF	39:42	39:48	-6	5933229	3711885	1243252	792474	1.60	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:52	40:59	-7	6325552	4013395	1518636	968185	1.58	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	158	98	63	39	1.62	/	
	Unidentified	38:39	00:00	0	1867724	1187902	322888	207724	1.57	ABV/ABV	
	1,2,3,7,8-PeCDD	41:23	41:31	-8	1991008	1246273	485717	305190	1.60	ABV/ABV	M
	Unidentified	42:01	00:00	0	2086265	1311267	541414	341109	1.59	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	60	50	24	20	1.20 *	/	
	13C-1,2,3,7,8-PeCDD	41:22	41:30	-8	3663803	2293586	907838	570104	1.60	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	260	298	104	119	0.87 *	/	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s2/d1160818s2	Prep Date		SDG No	
Analysis ID	180466	Prep Exp Date		Date Received	
Analysis Date	08/18/16 18:29	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Unidentified	43:18	00:00	0	2768163	2248684	752906	601907	1.23	ABV/ABV	
	1,2,3,4,7,8-HxCDF	44:33	44:39	-6	2995273	2422663	799698	646998	1.24	ABV/ABV	M
	1,2,3,6,7,8-HxCDF	44:41	44:46	-5	3237006	2607556	827765	677942	1.24	AVV/AVV	DM
	2,3,4,6,7,8-HxCDF	45:27	45:28	-1	3002352	2422539	748874	589524	1.24	AVV/AVB	
	1,2,3,7,8,9-HxCDF	46:27	46:23	4	2539021	2023978	596101	467201	1.25	ABV/ABV	M
	Unidentified	46:35	00:00	0	2355420	1878127	549764	434428	1.25	AVV/AVV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	195	495	78	198	0.39 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:32	44:38	-6	3010216	5712284	798138	1542017	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:40	44:45	-5	3526799	6575848	917175	1684202	0.54	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:26	45:27	-1	3287804	6136442	810615	1506895	0.54	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:26	46:22	4	2756878	5108809	641609	1176170	0.54	AVV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	235	270	94	108	0.87 *	/	
	Unidentified	43:59	00:00	0	2293779	1851730	619390	510039	1.24	ABV/ABV	
	1,2,3,4,7,8-HxCDD	45:37	45:38	-1	2137436	1702261	541817	431591	1.26	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:45	45:45	0	2046536	1637264	509135	402609	1.25	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:09	46:08	1	2216159	1787578	534992	424254	1.24	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	203	80	81	32	2.53 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:36	45:37	-1	3971124	3081718	1011665	796791	1.29	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:44	45:44	0	3857216	3062406	947830	763429	1.26	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:08	46:07	1	4220524	3342653	1018321	804858	1.26	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	198	188	79	75	1.05	/	
	1,2,3,4,6,7,8-HpCDF	48:57	48:44	13	2362549	2291347	492349	479186	1.03	ABV/ABV	M
	1,2,3,4,7,8,9-HpCDF	51:17	51:05	12	1919521	1841414	418685	394530	1.04	ABV/ABV	M
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	153	300	61	120	0.51 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:55	48:42	13	2185555	4711887	457191	986346	0.46	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	51:16	51:04	12	1812904	3946105	396774	858109	0.46	AVV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	163	183	65	73	0.89	/	
	Unidentified	49:27	00:00	0	1714014	1652621	351734	338302	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:39	50:25	14	1637263	1586601	347158	339461	1.03	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	80	43	32	17	1.88 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	50:38	50:24	14	3130150	2976412	673242	641068	1.05	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	178	143	71	57	1.25 *	/	
	OCDF	54:48	54:58	-10	3461904	3813400	928218	1019116	0.91	ABV/ABV	M
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 1613B (w/13C-OCDF)

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160818s2/d1160818s2	Prep Date		SDG No	
Analysis ID	180466	Prep Exp Date		Date Received	
Analysis Date	08/18/16 18:29	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D11A	Extract Vol		Method	DX1613B
Analyst	KLR	Diluton Factor	1.00	Code	F8o

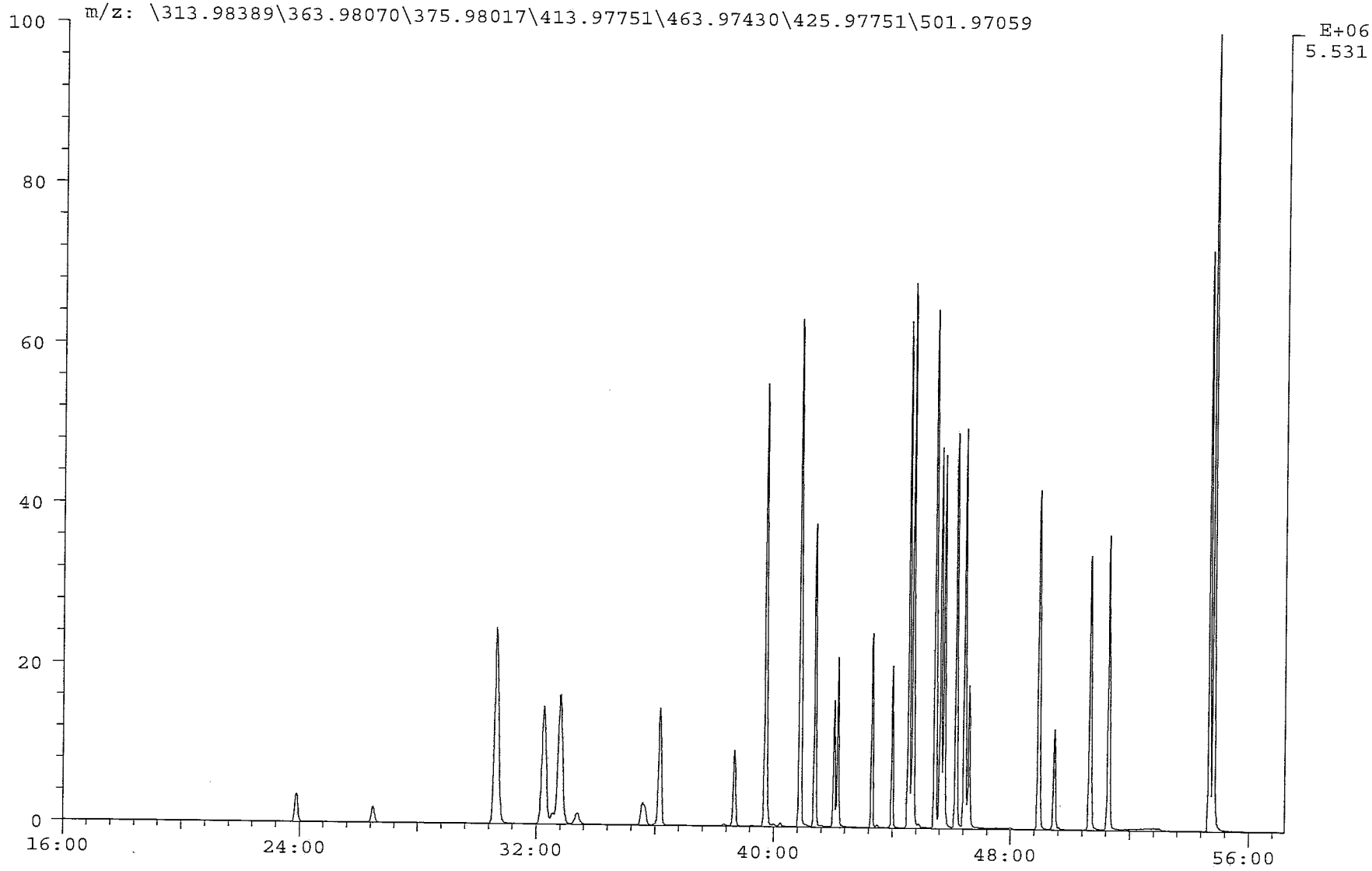
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	188	163	75	65	1.15 *	/	
	13C-OCDF	54:47	54:57	-10	6902800	7661987	1780848	1959710	0.90	AVV/ABV	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	95	155	38	62	0.61 *	/	
	OCDD	54:40	54:49	-9	2843202	3173481	755736	853019	0.90	ABV/ABV	M
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	135	108	54	43	1.26 *	/	
	13C-OCDD	54:39	54:48	-9	4827627	5306143	1240295	1362137	0.91	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int/Calc LK 8-18-16
QC LK 8/19/16

CHRO: d1160818s2 18-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 233 > 2629 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

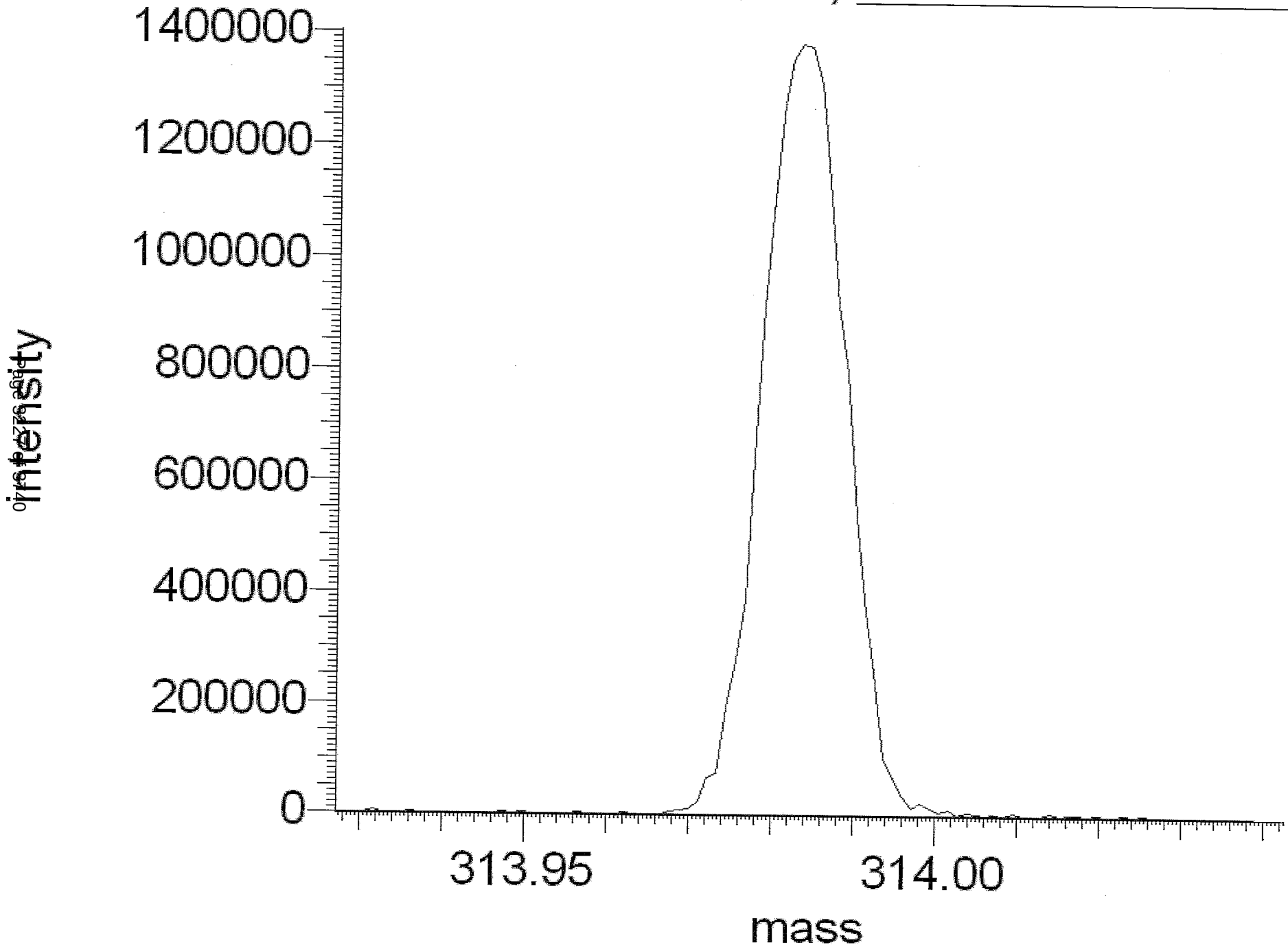


DFS Peak Matching results

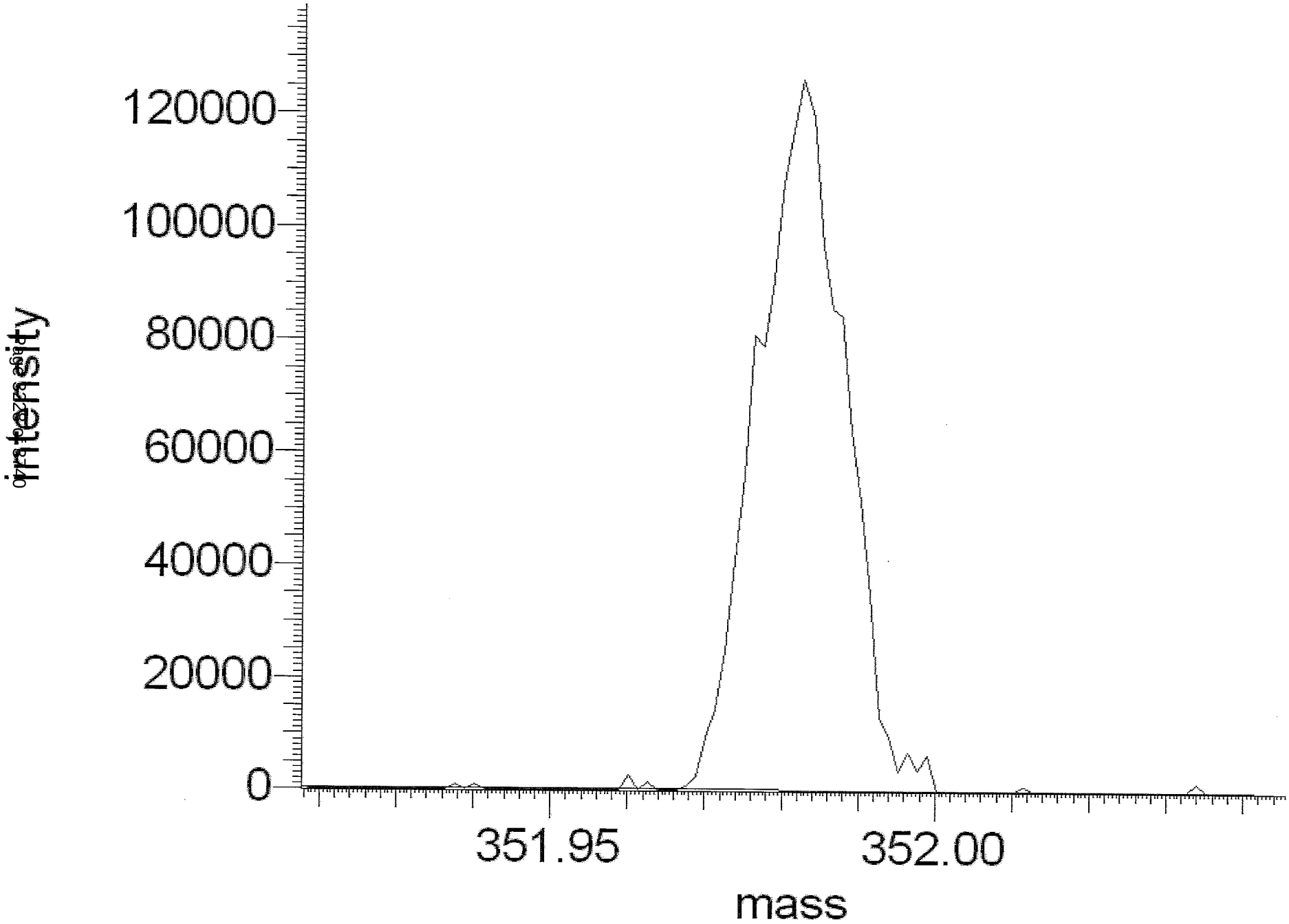

```
Reports
20:00:29:  Peak matching procedure started
20:00:30:
20:00:30:  Reference mass: 313.98336
20:00:31:  Sample mass: 364.0
20:00:31:
20:00:32:  Finding reference mass
20:00:33:  Finding sample mass
20:00:33:
20:00:39:  [1]   363.9789 amu, mean: 363.9789
20:00:42:  [2]   363.9793 amu, mean: 363.9791     SD: 0.33 mmu or: 0.90 ppm
20:00:45:  [3]   363.9789 amu, mean: 363.9790     SD: 0.26 mmu or: 0.72 ppm
20:00:49:  [4]   363.9792 amu, mean: 363.9791     SD: 0.23 mmu or: 0.62 ppm
20:00:52:  [5]   363.9790 amu, mean: 363.9791     SD: 0.20 mmu or: 0.54 ppm
20:00:55:  [6]   363.9789 amu, mean: 363.9790     SD: 0.19 mmu or: 0.53 ppm
20:00:58:  [7]   363.9790 amu, mean: 363.9790     SD: 0.18 mmu or: 0.49 ppm
20:01:01:  [8]   363.9792 amu, mean: 363.9790     SD: 0.17 mmu or: 0.48 ppm
20:01:04:  [9]   363.9789 amu, mean: 363.9790     SD: 0.17 mmu or: 0.45 ppm
20:01:07:  [10]   363.9797 amu, mean: 363.9791     SD: 0.27 mmu or: 0.74 ppm
20:01:09:
20:01:09:  Stop requested. Please wait for procedure to finish.
20:01:09:
20:01:11:  [11]   363.9788 amu, mean: 363.9791     SD: 0.27 mmu or: 0.75 ppm
20:01:12:
20:01:13:  Peakmatching stopped
```

Signature LM 8-18-16

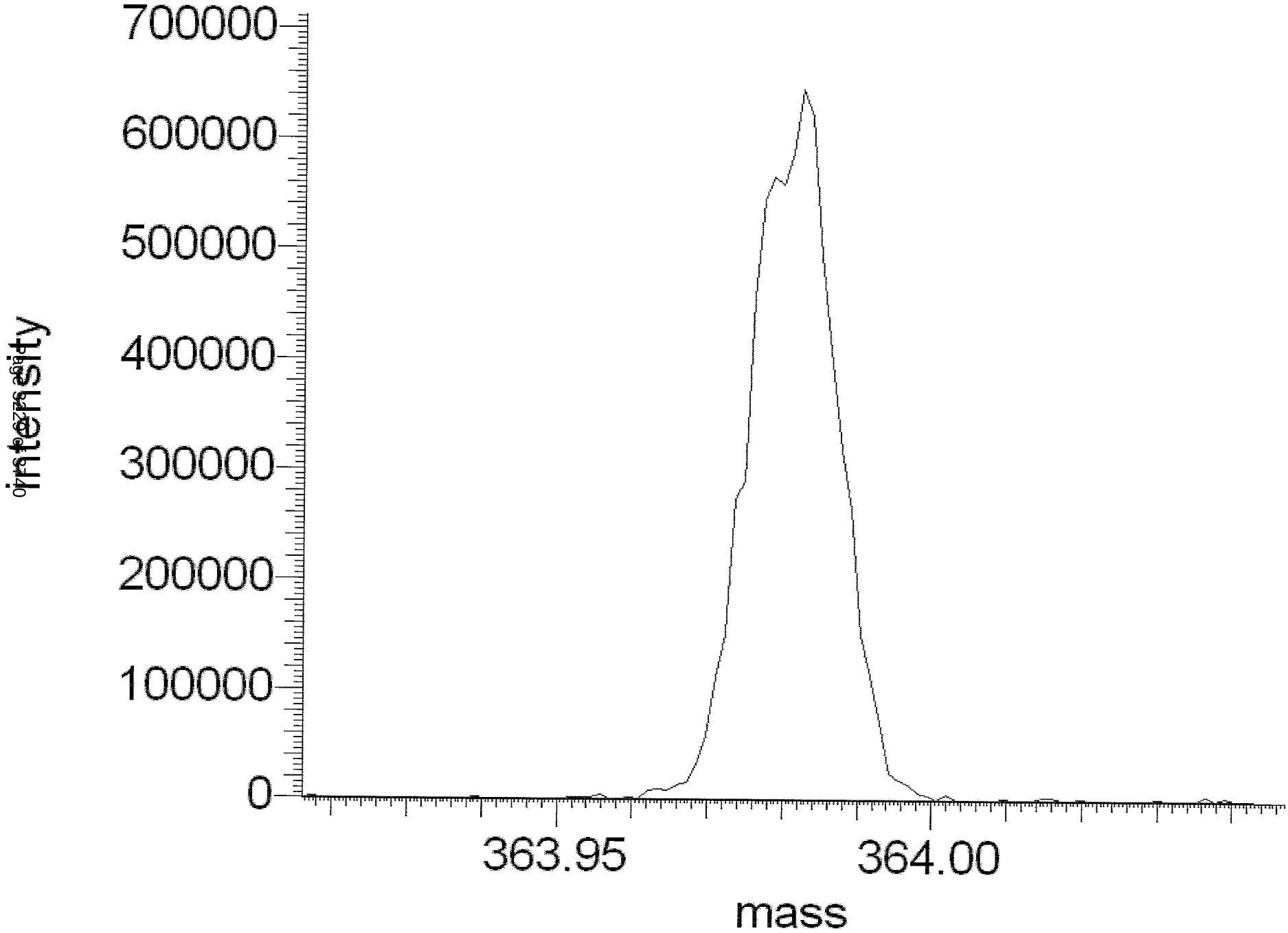
LockMass: 313.9838 Instr.: DFS-1209
Resolution: 13839 (08/18/16 19:50:31)



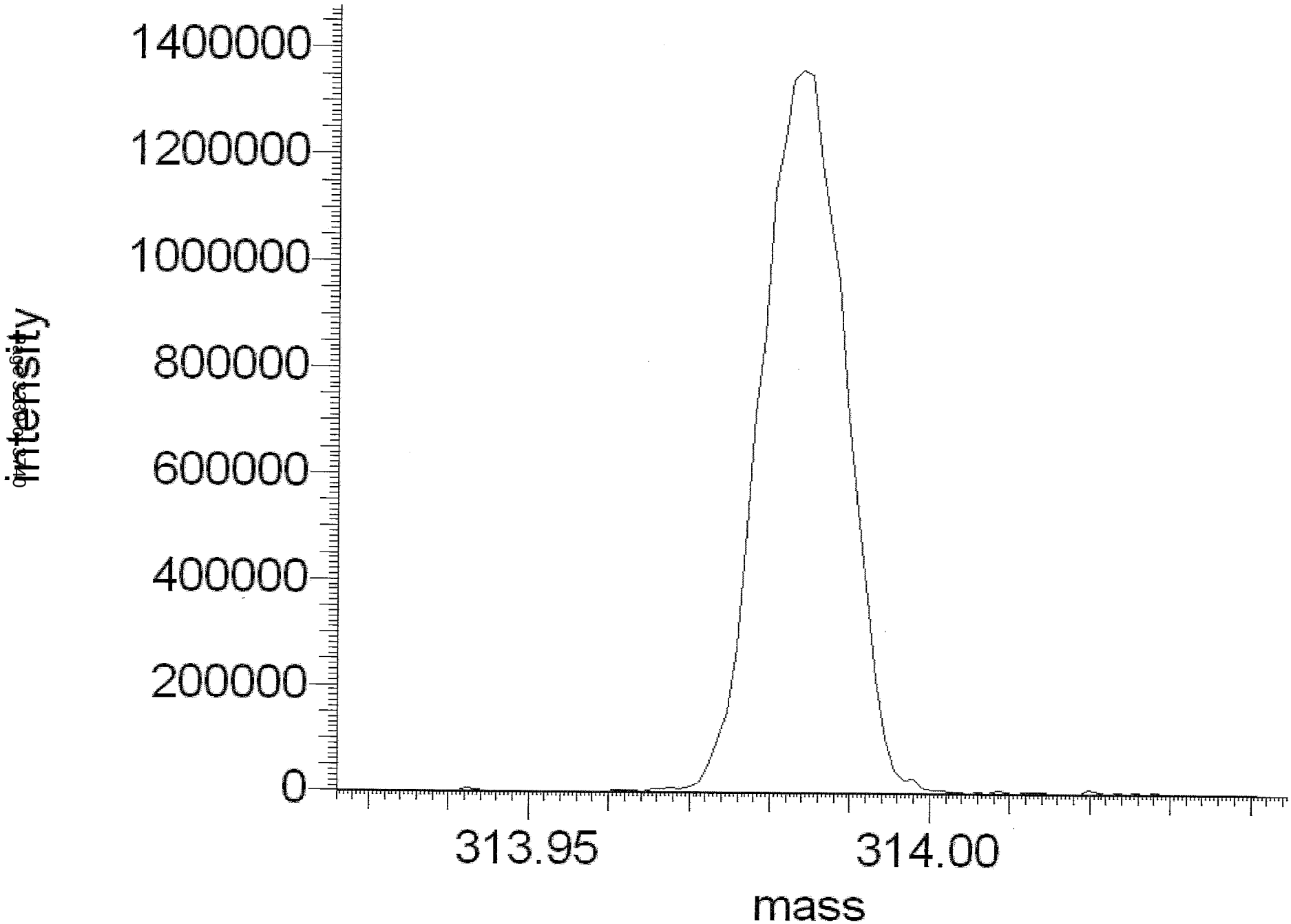
Mass: 351.9802 Instr.: DFS-1209
Resolution: 14508 (08/18/16 19:51:18)



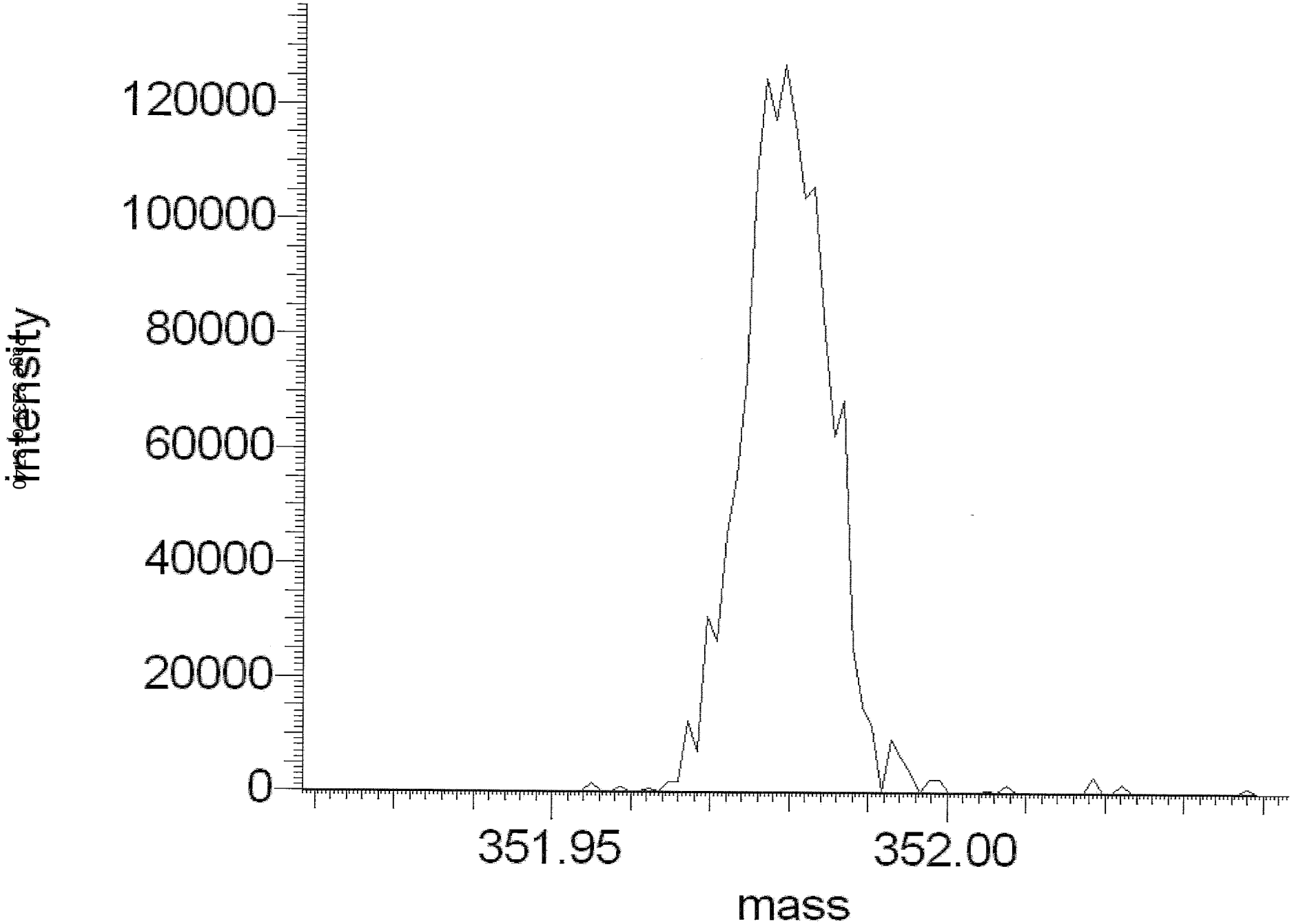
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 13546 (08/18/16 19:51:21)



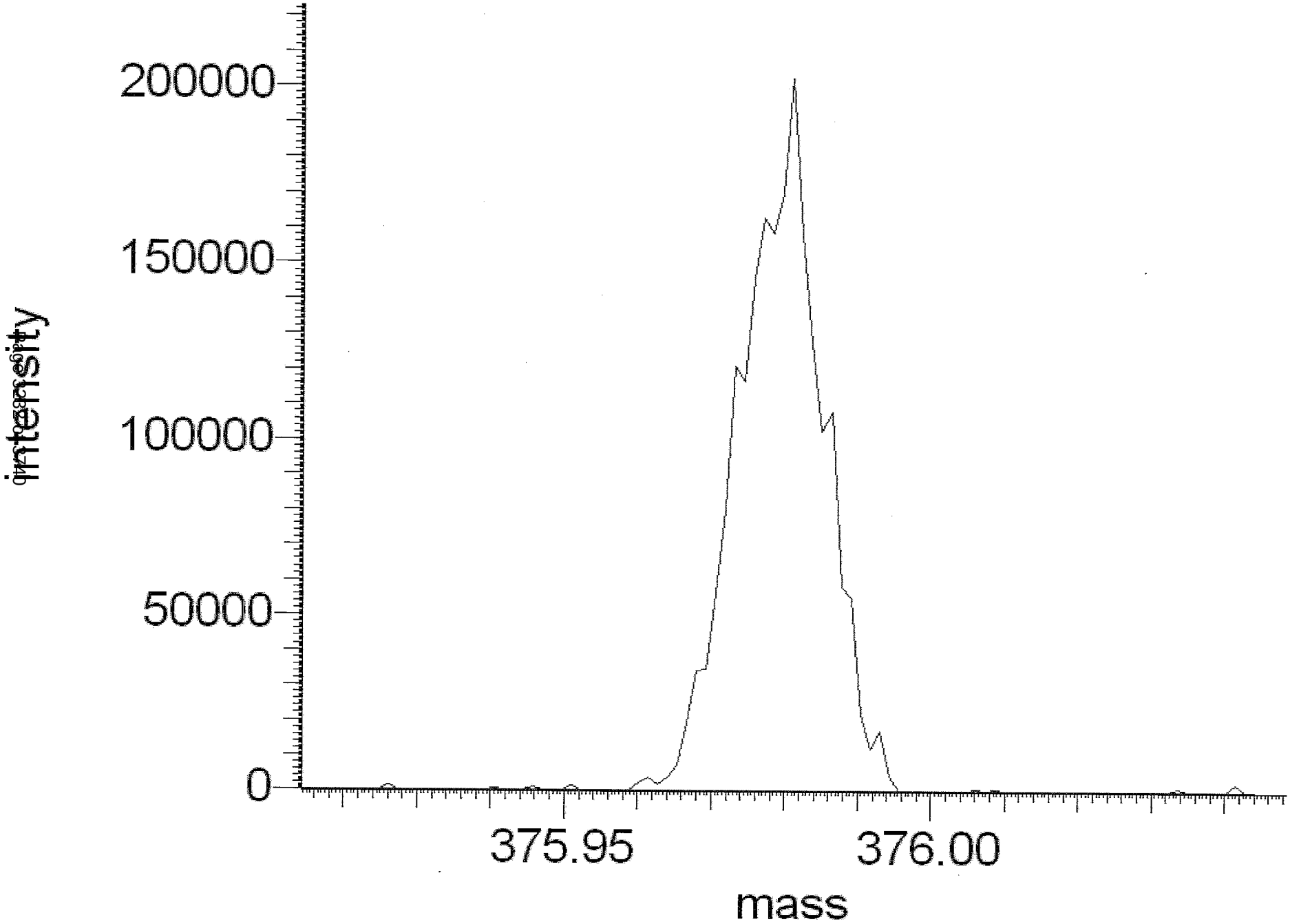
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 13546 (08/18/16 19:51:36)



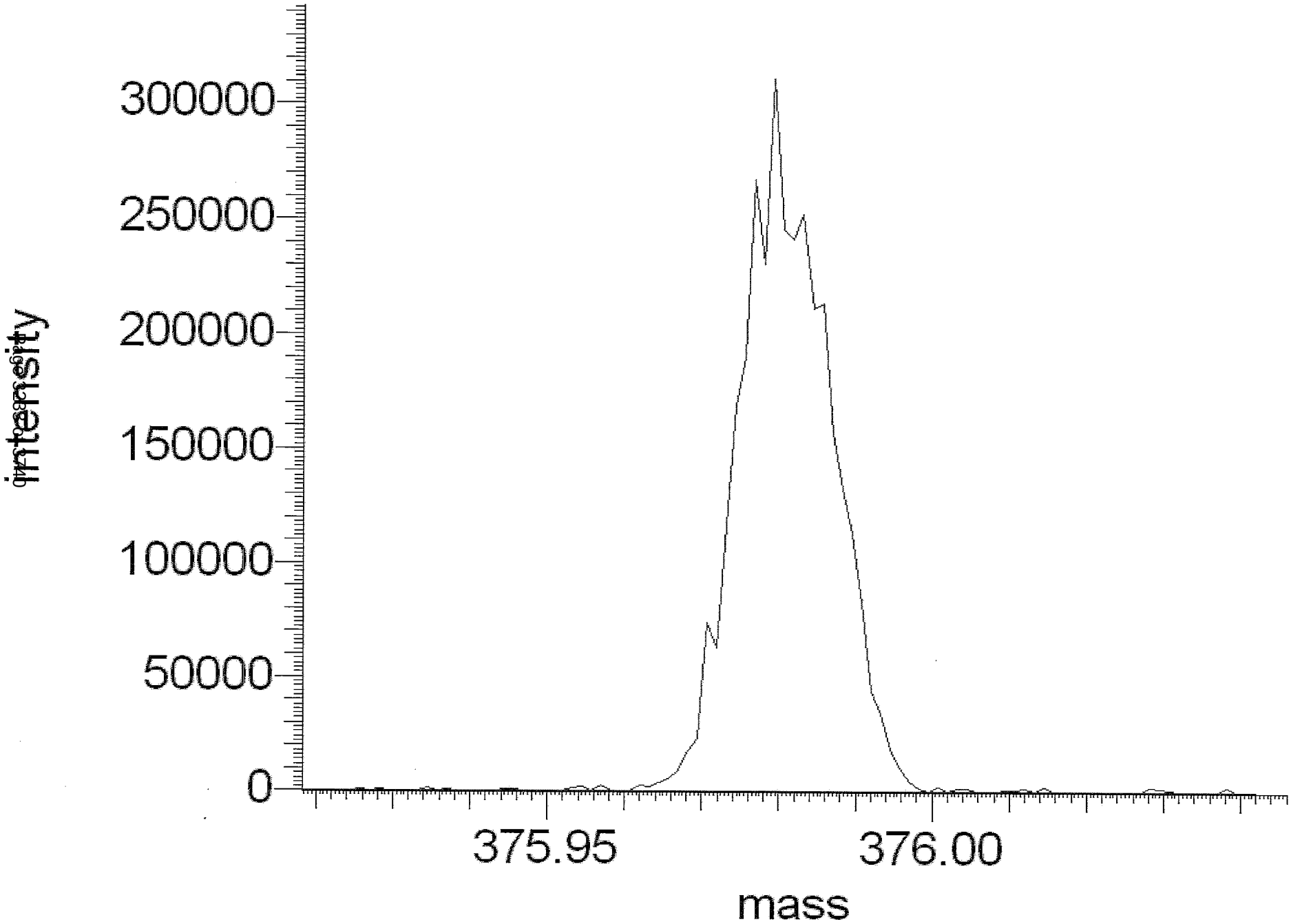
Mass: 351.9802 Instr.: DFS-1209
Resolution: 13640 (08/18/16 19:52:23)



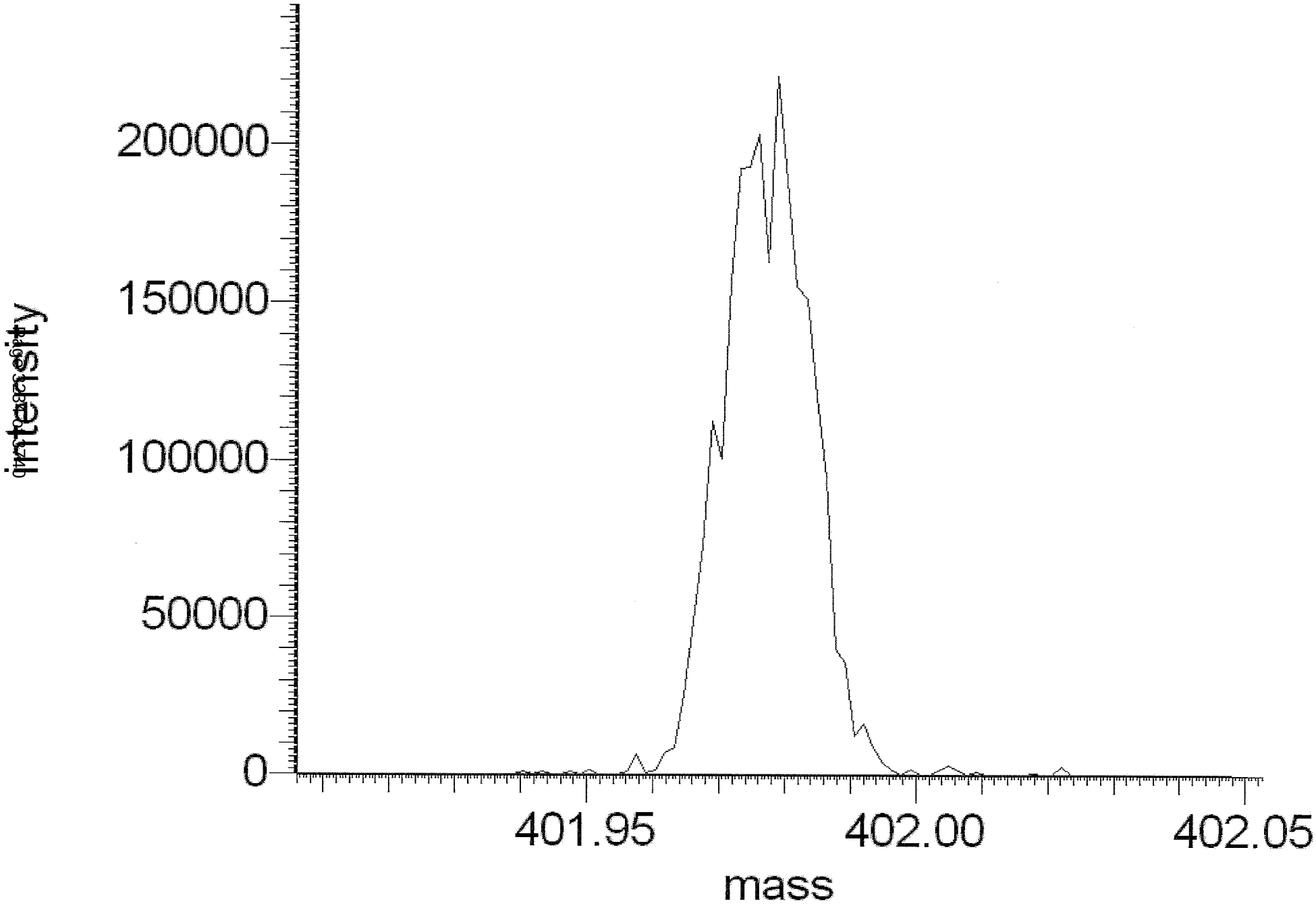
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 15150 (08/18/16 19:52:26)



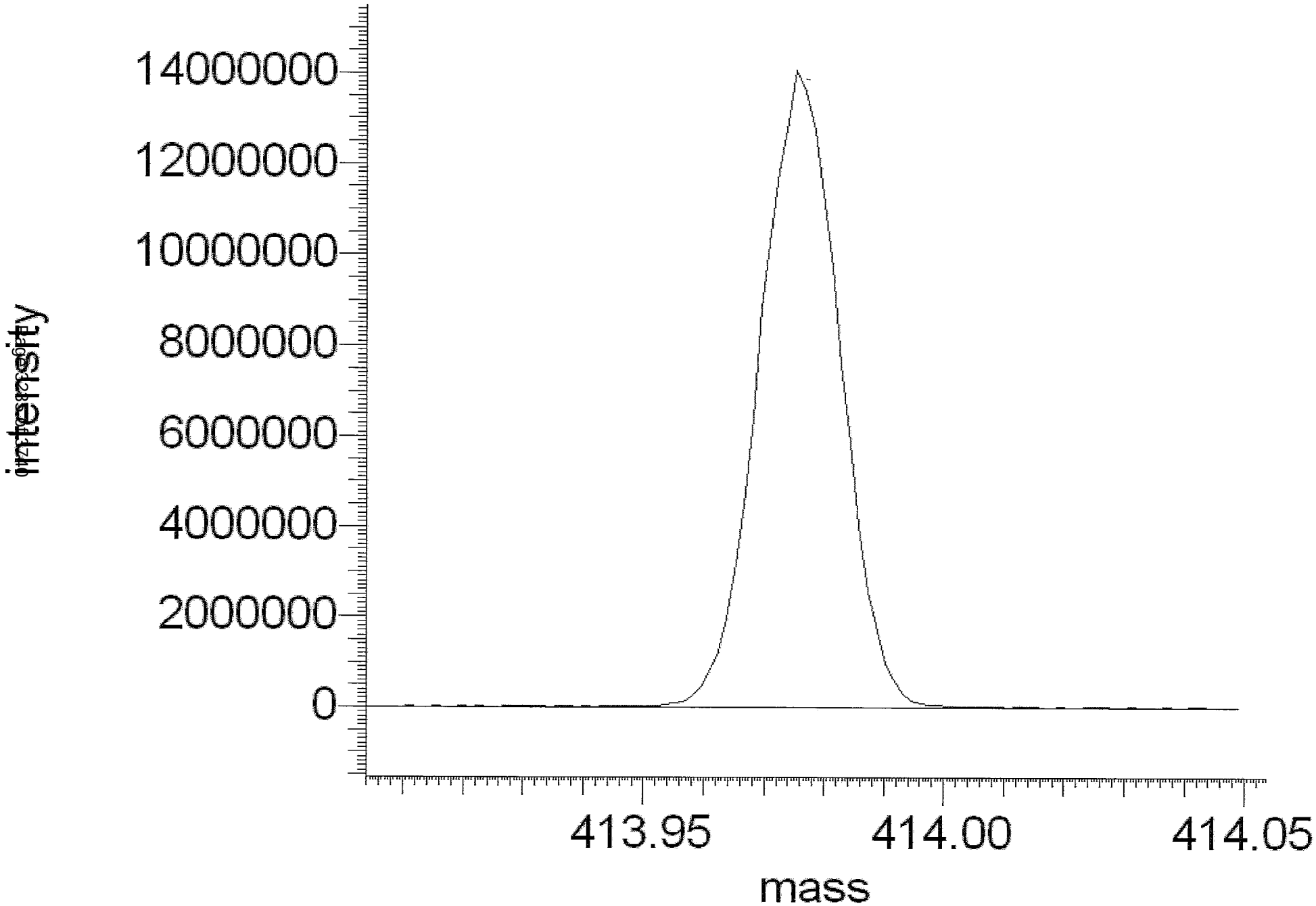
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 15150 (08/18/16 19:52:41)



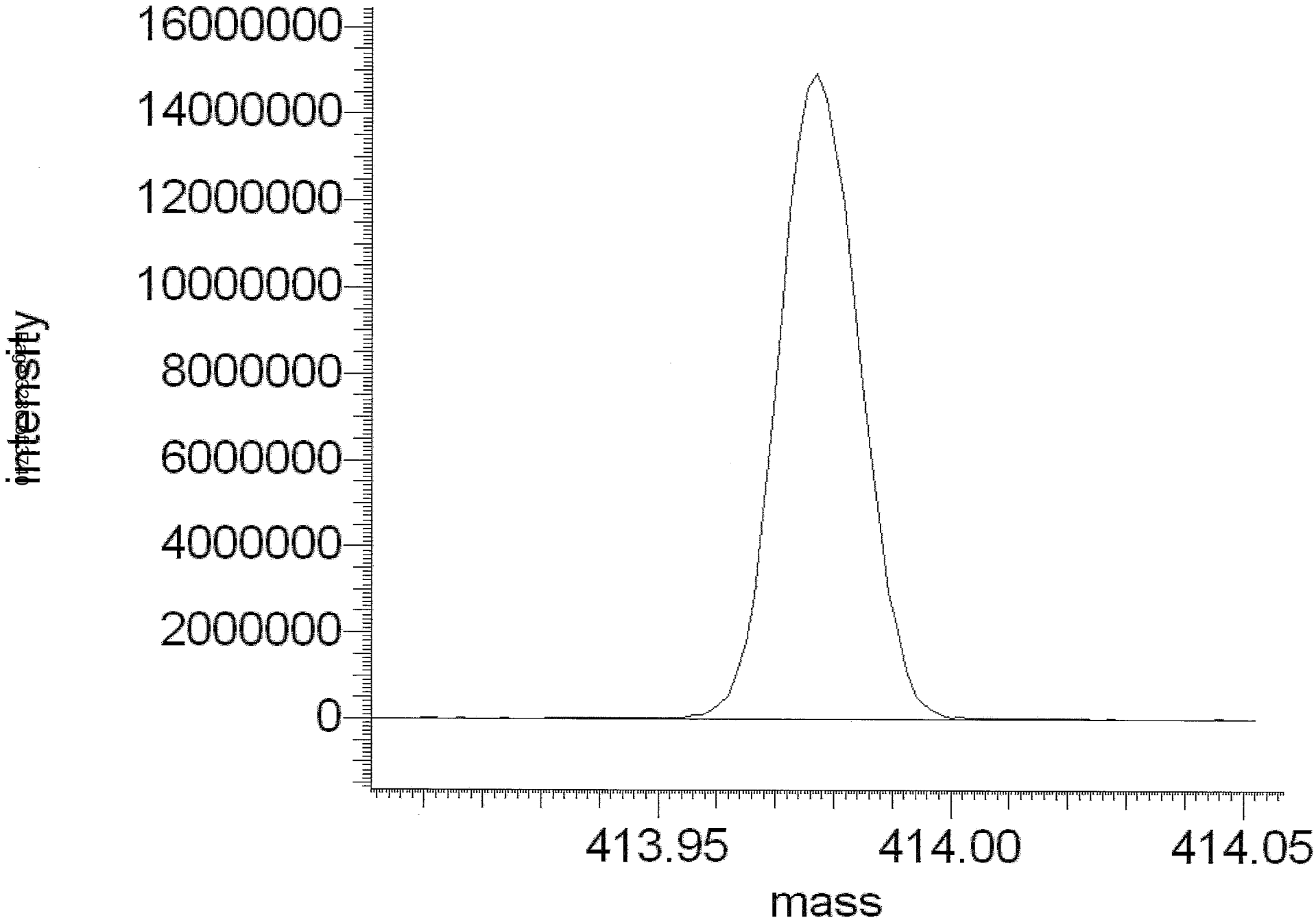
Mass: 401.9770 Instr.: DFS-1209
Resolution: 14207 (08/18/16 19:53:27)



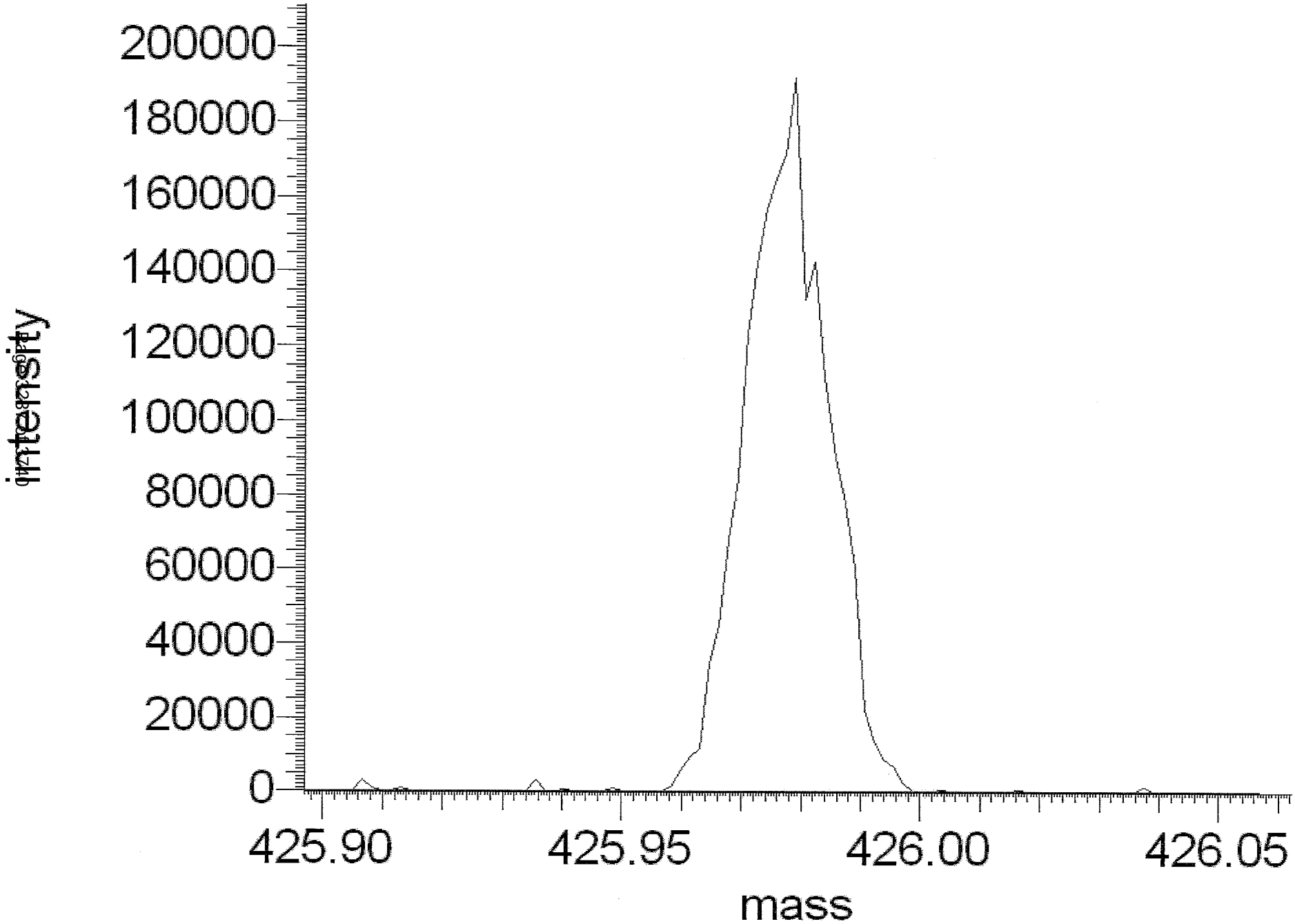
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 13506 (08/18/16 19:53:31)



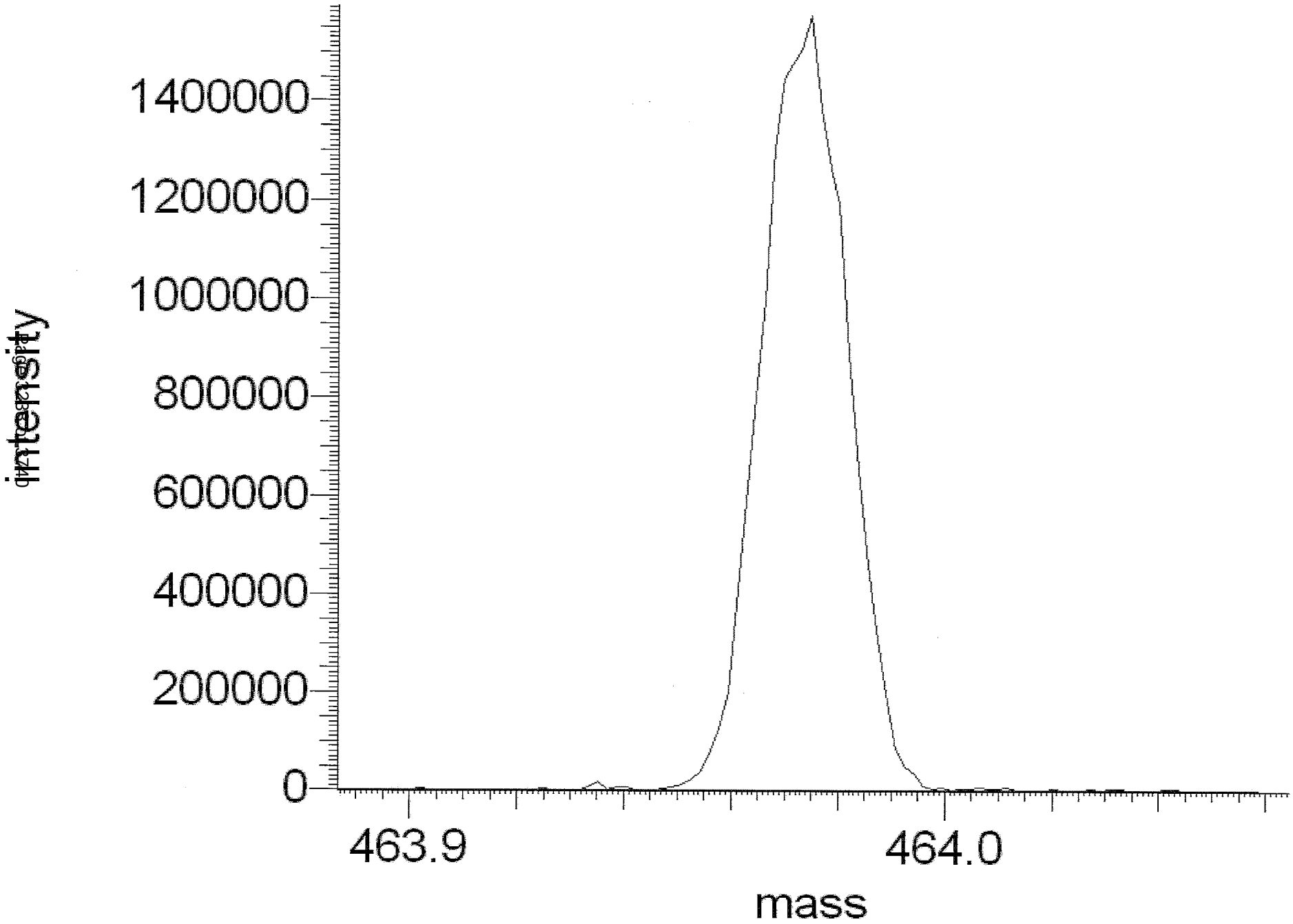
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 13506 (08/18/16 19:53:46)



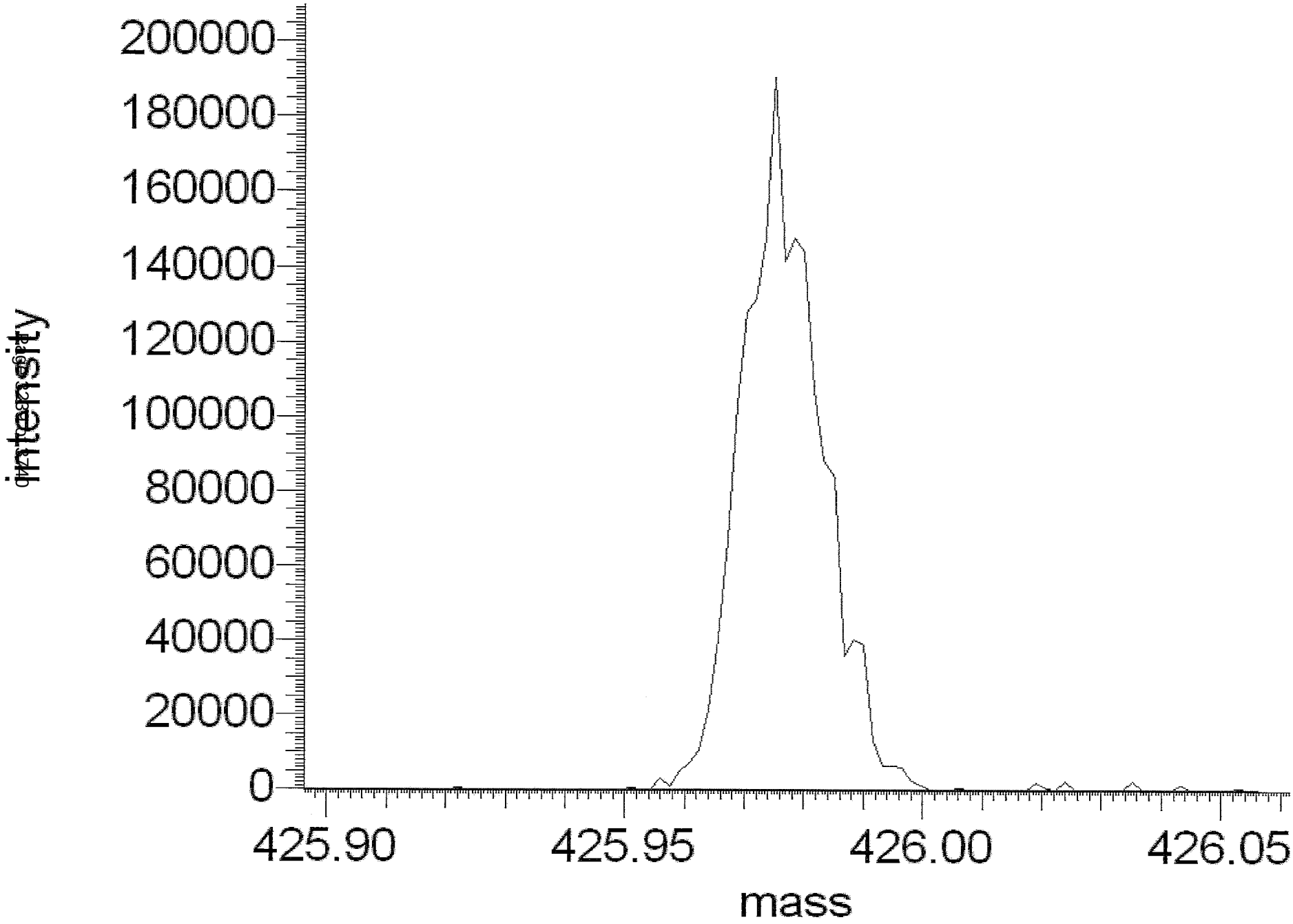
Mass: 425.9770 Instr.: DFS-1209
Resolution: 13802 (08/18/16 19:54:32)



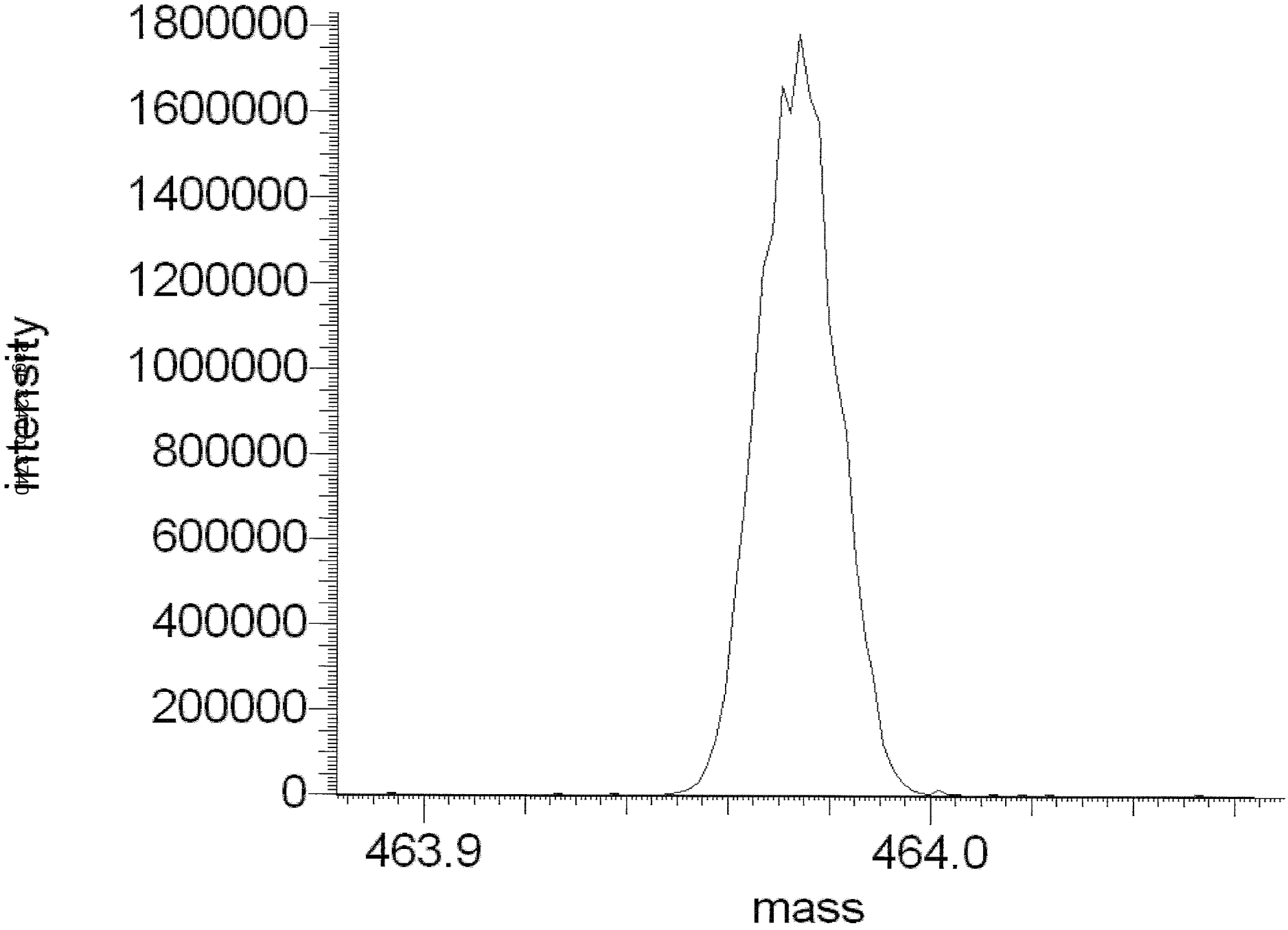
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 13074 (08/18/16 19:54:35)



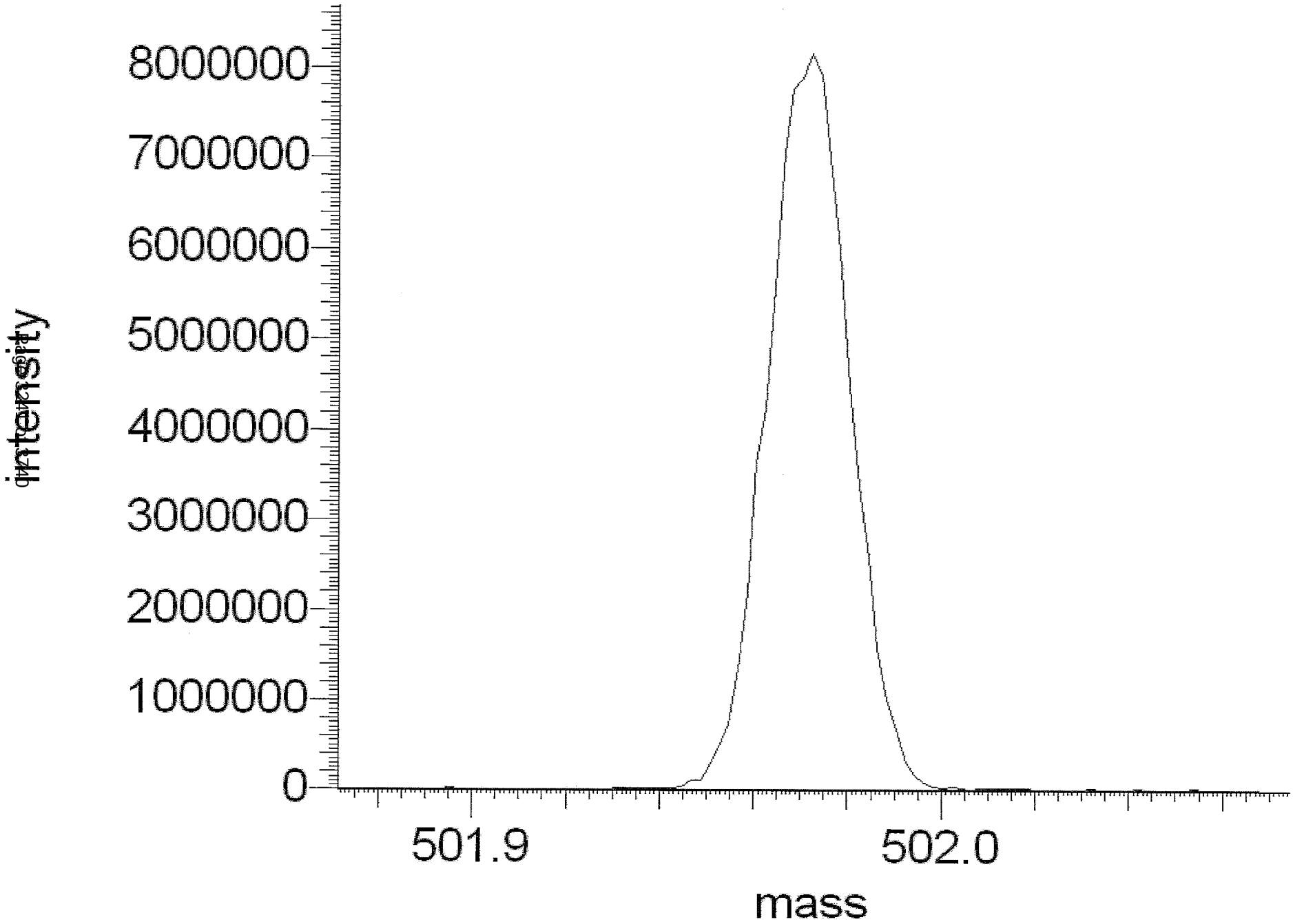
LockMass: 425.9775 Instr.: DFS-1209
Resolution: 13074 (08/18/16 19:54:50)



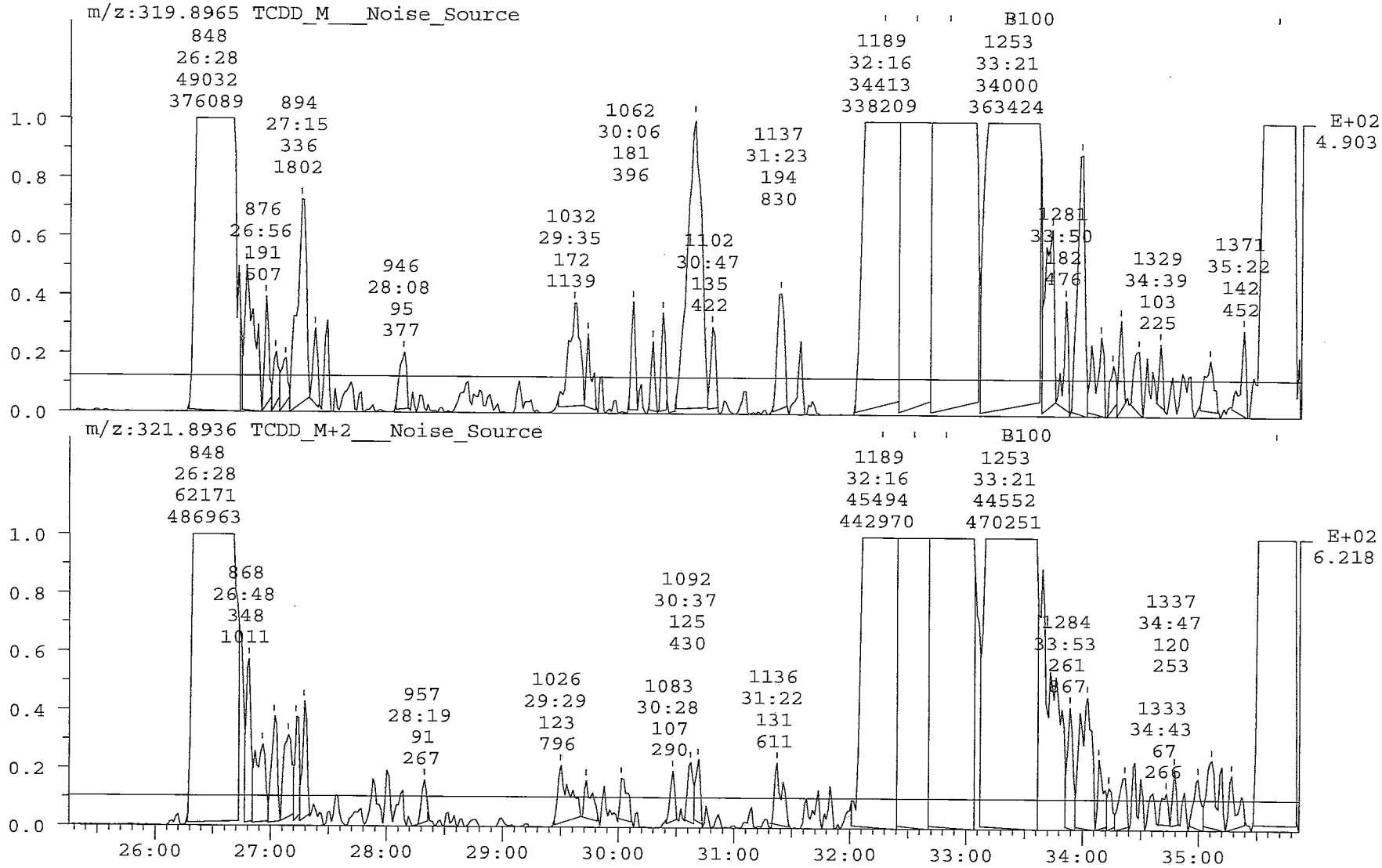
Mass: 463.9743 Instr.: DFS-1209
Resolution: 13319 (08/18/16 19:55:37)



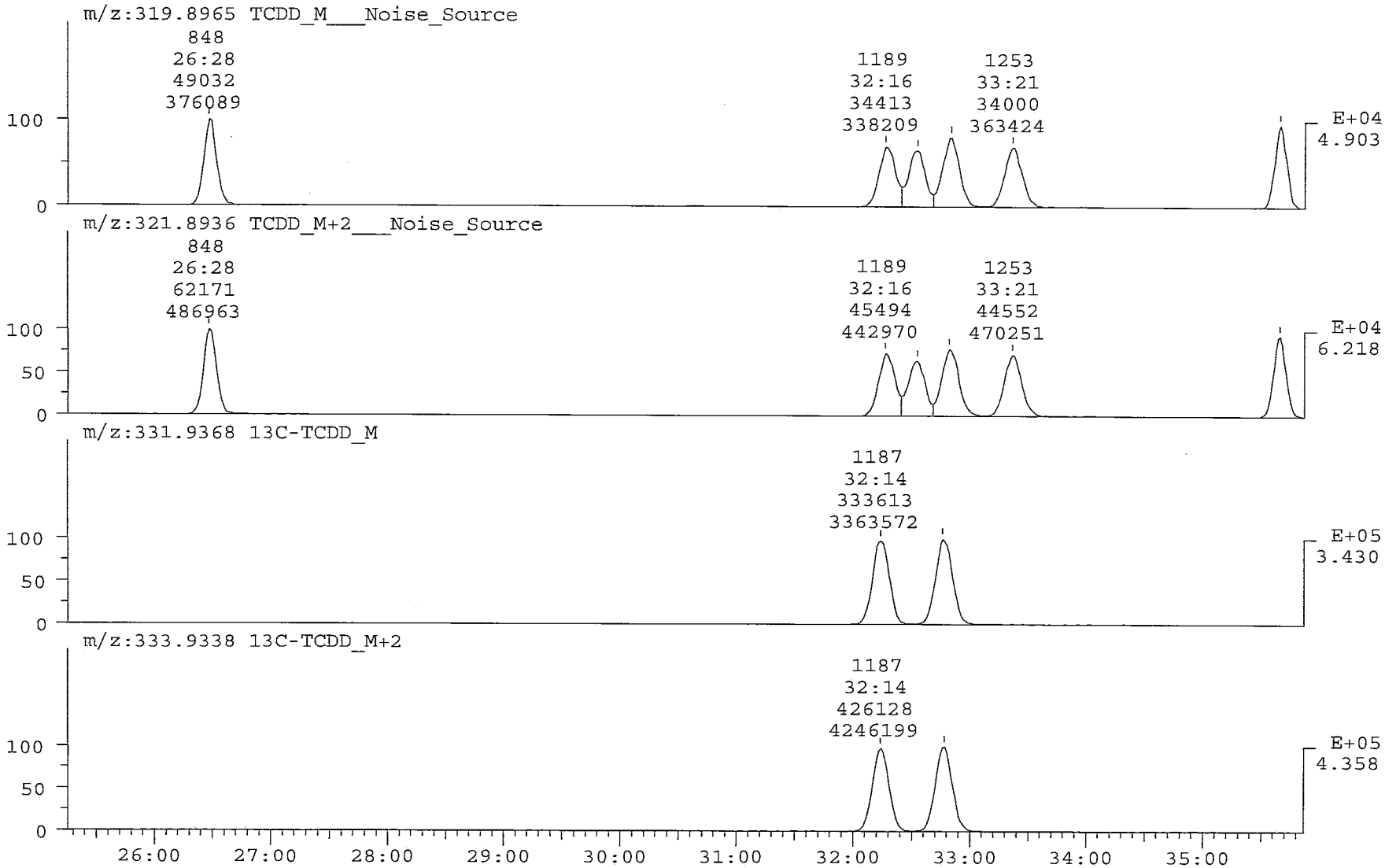
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 12667 (08/18/16 19:55:40)



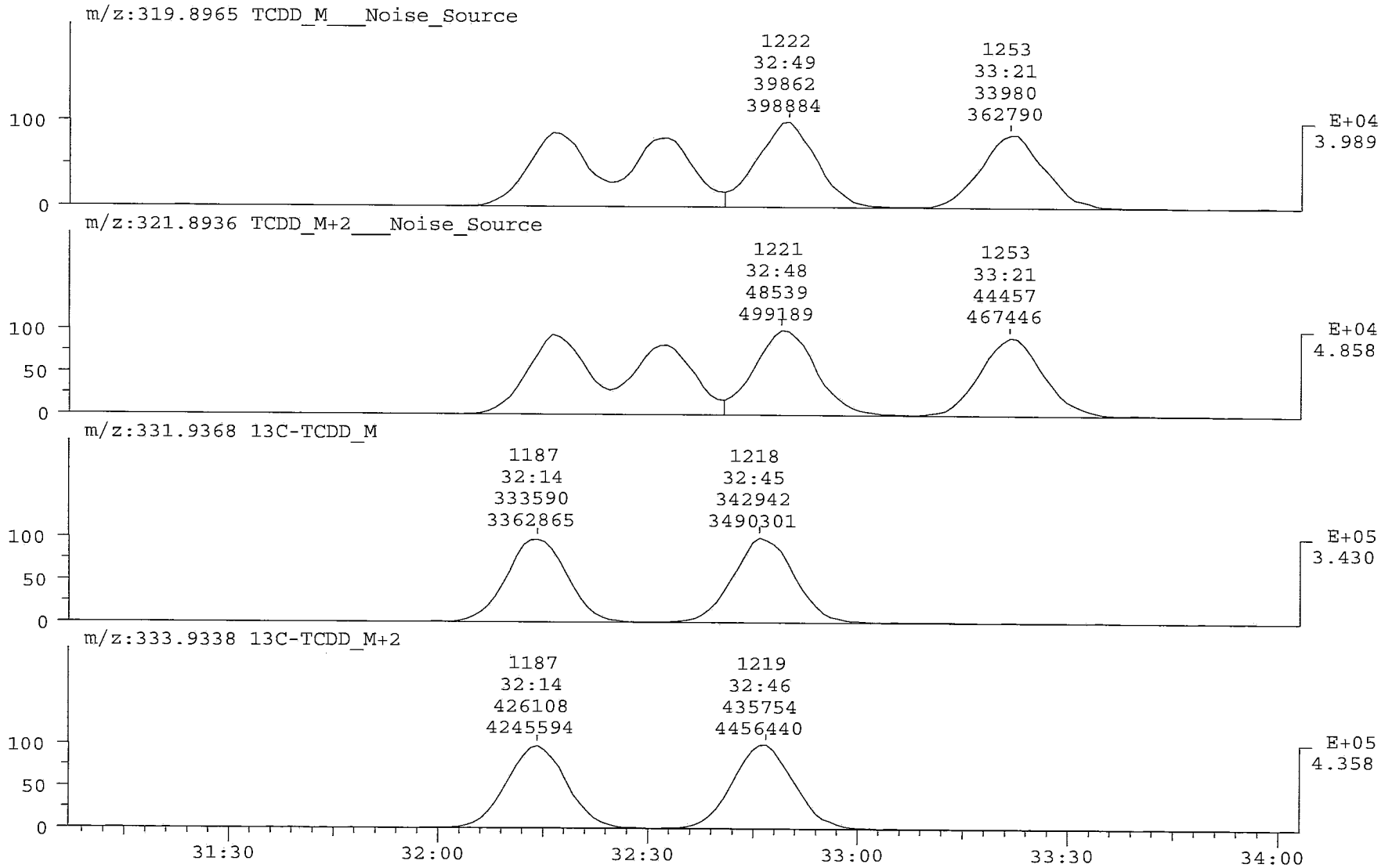
CHRO: d1160818s2 18-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 776 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



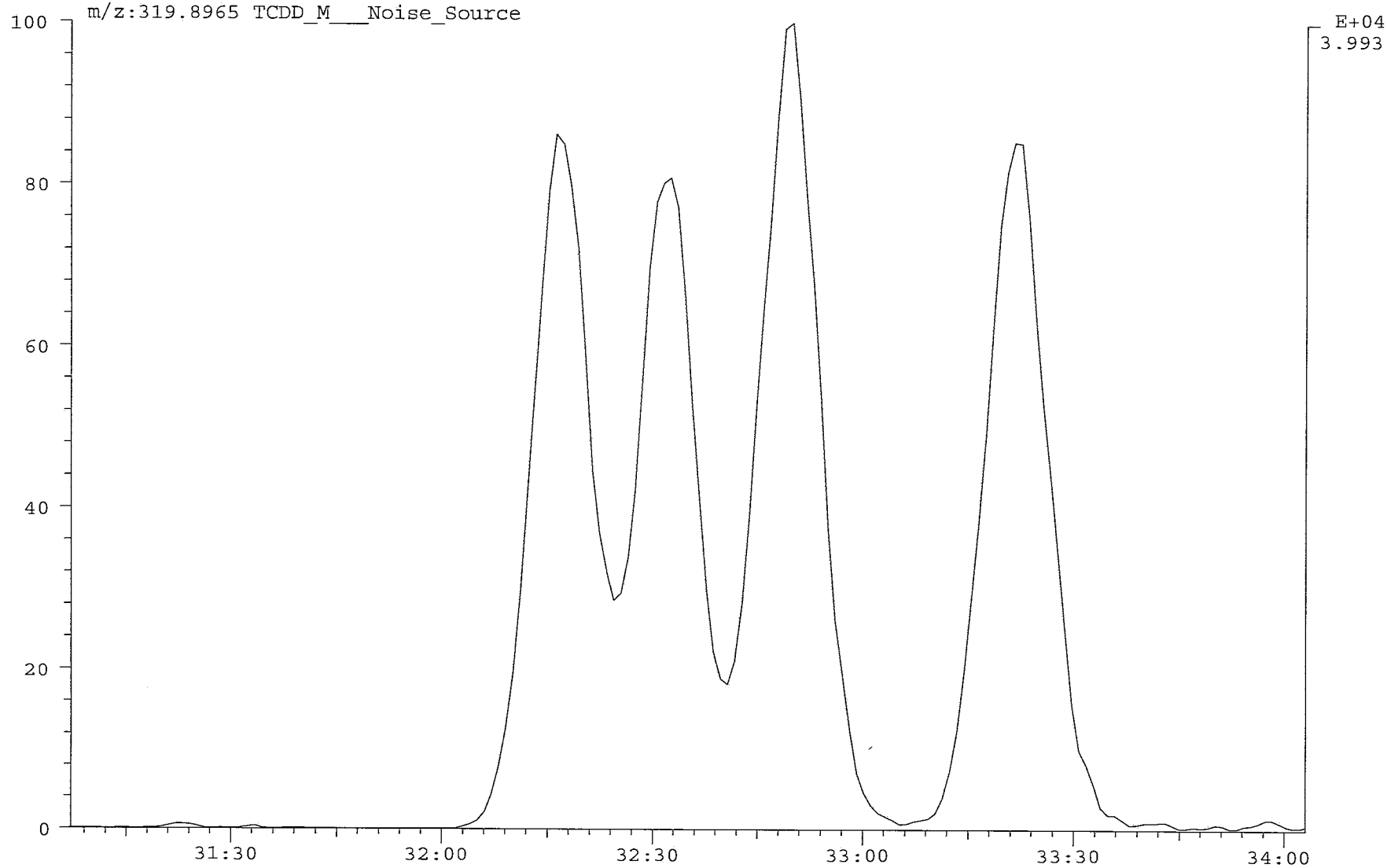
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  54:49      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   776 > 1400       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



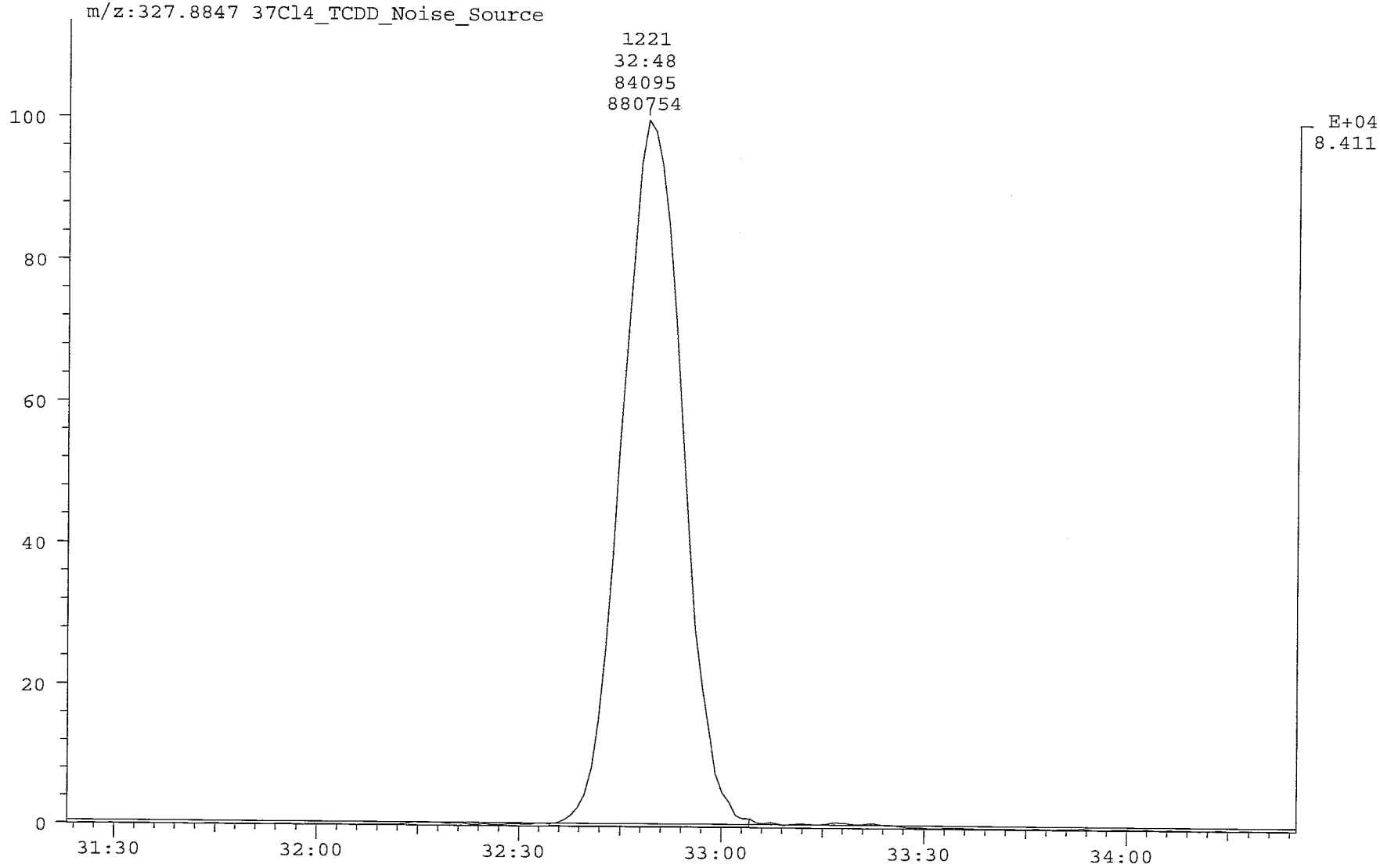
CHRO: d1160818s2 18-Aug-16 Elapse: 32:34 1207
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1121 > 1294 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



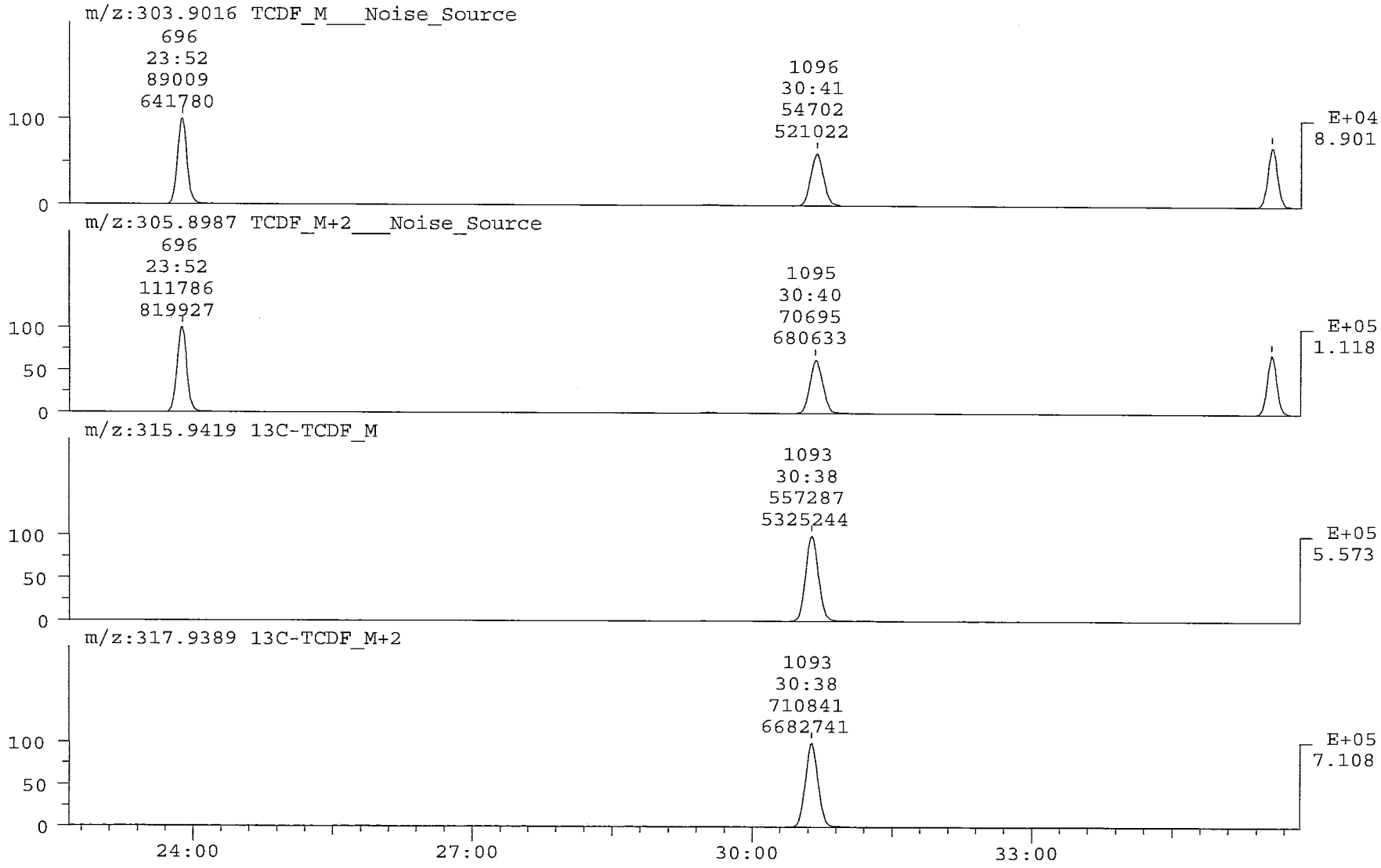
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  32:34      1207
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1121 > 1294      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



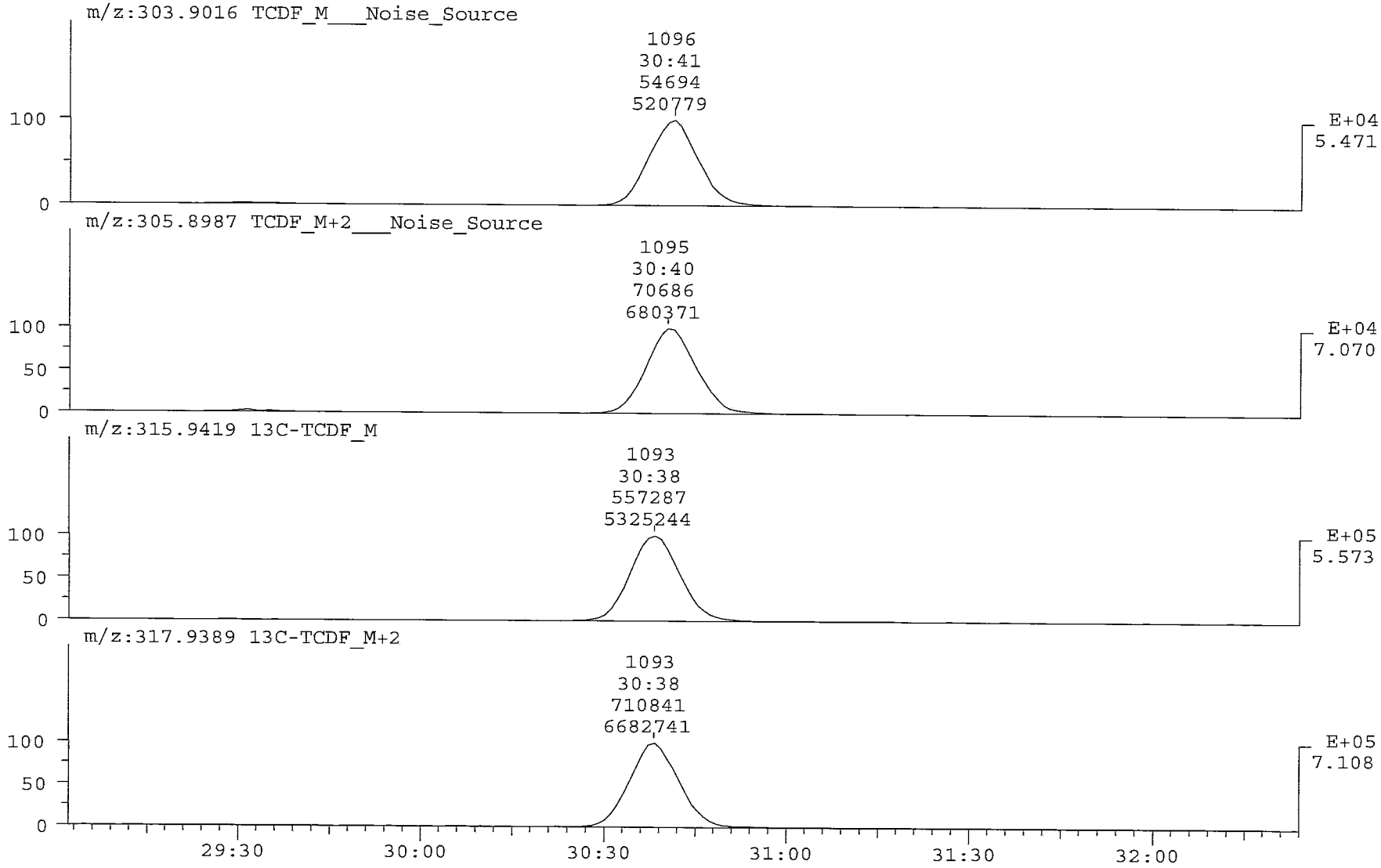
```
CHRO:  d1160818s2                                18-Aug-16  Elapse:  32:50      1223
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1137 > 1315            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



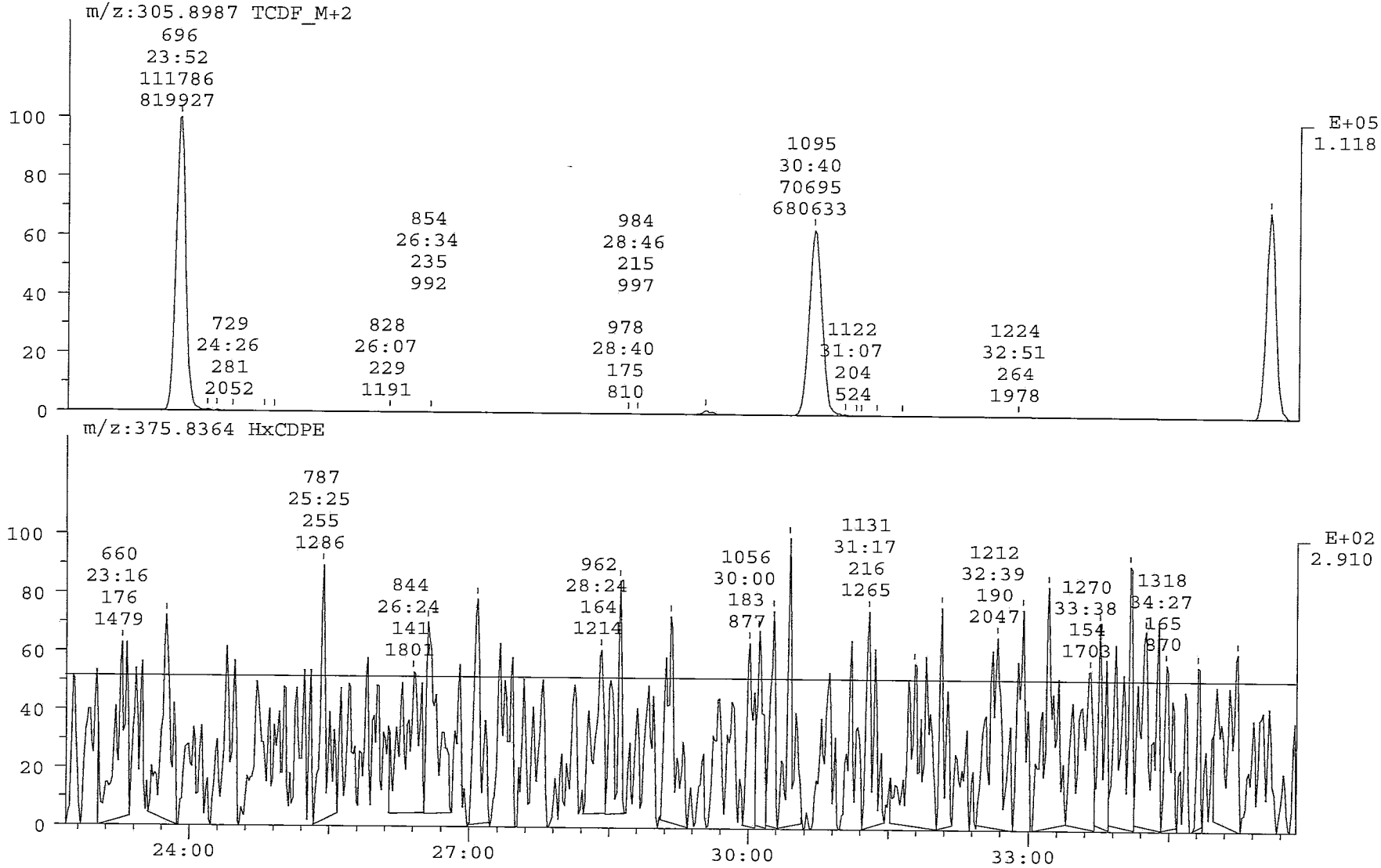
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  32:50      1223
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   625 > 1400       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



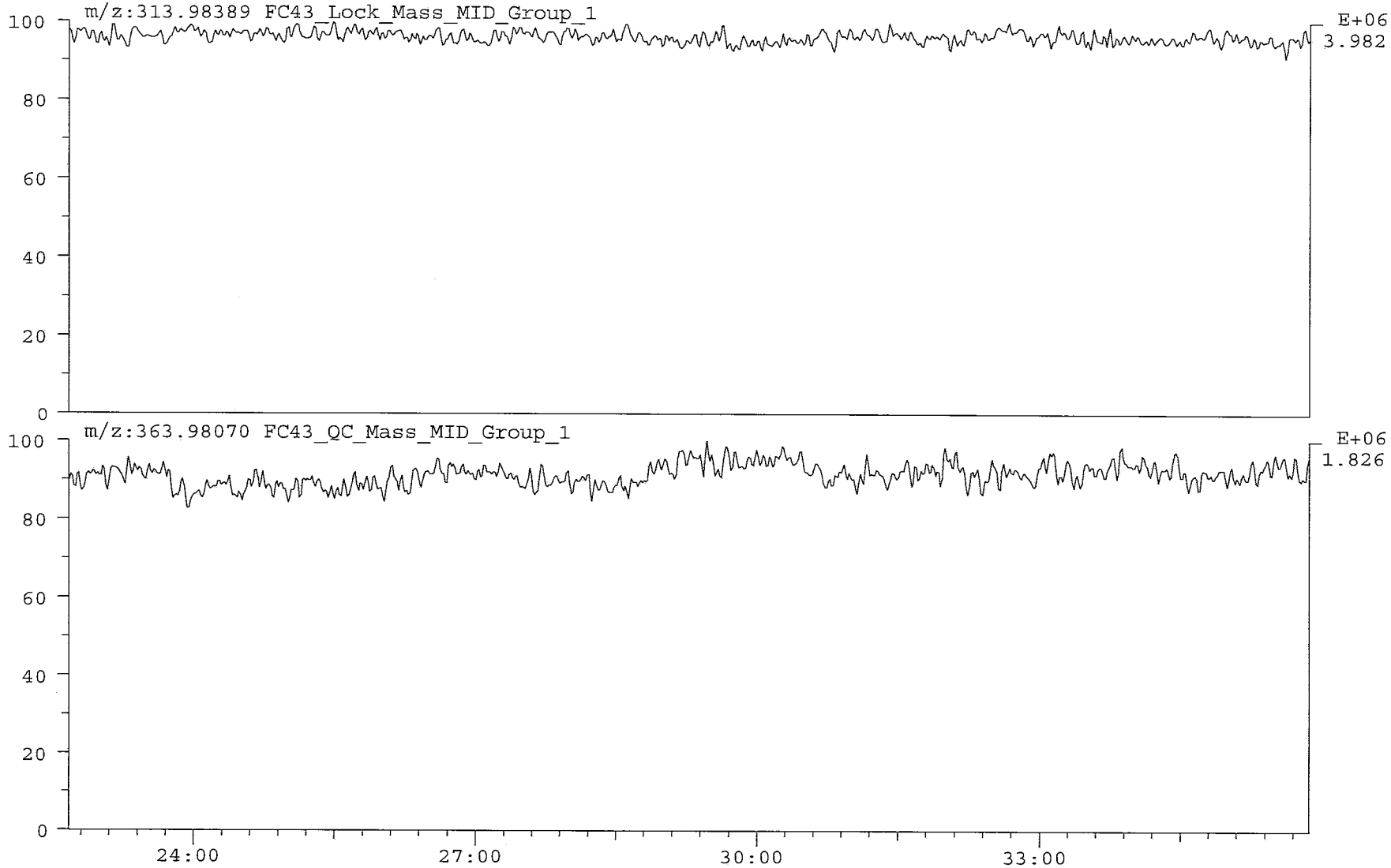
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  30:40      1095
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   999 > 1197       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



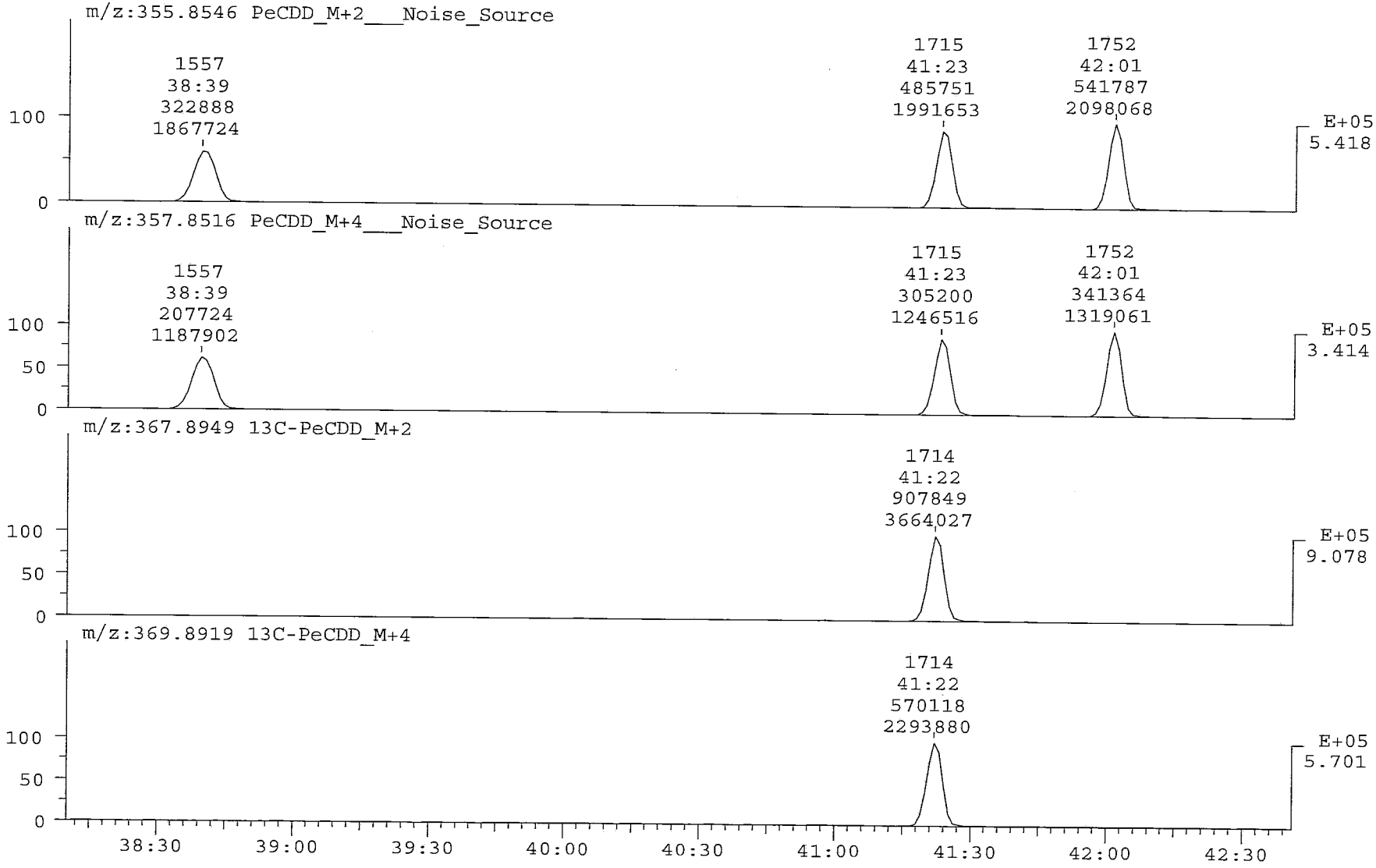
CHRO: d1160818s2 18-Aug-16 Elapse: 30:40 1095
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 625 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



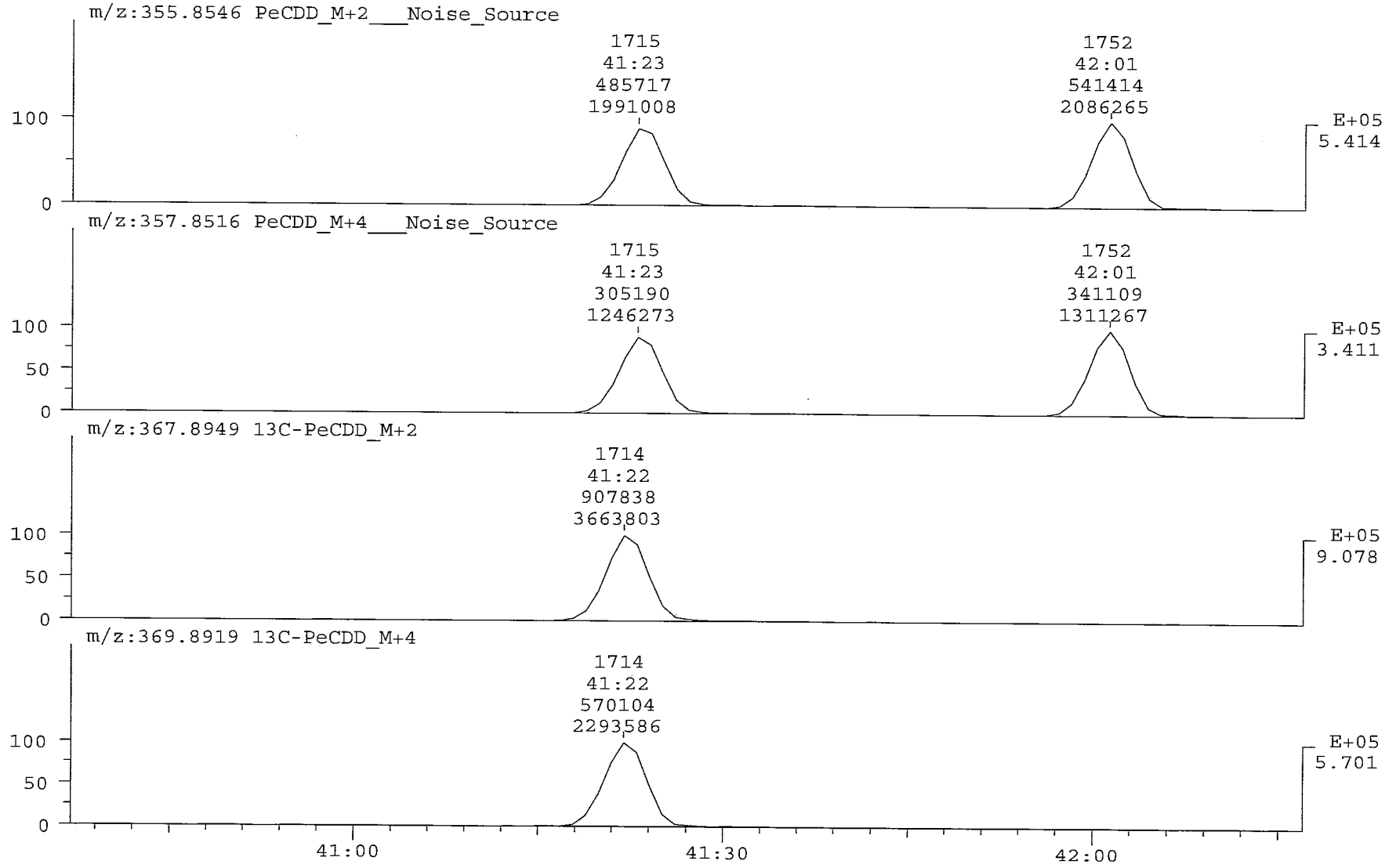
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  30:40      1095
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   625 > 1400       Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



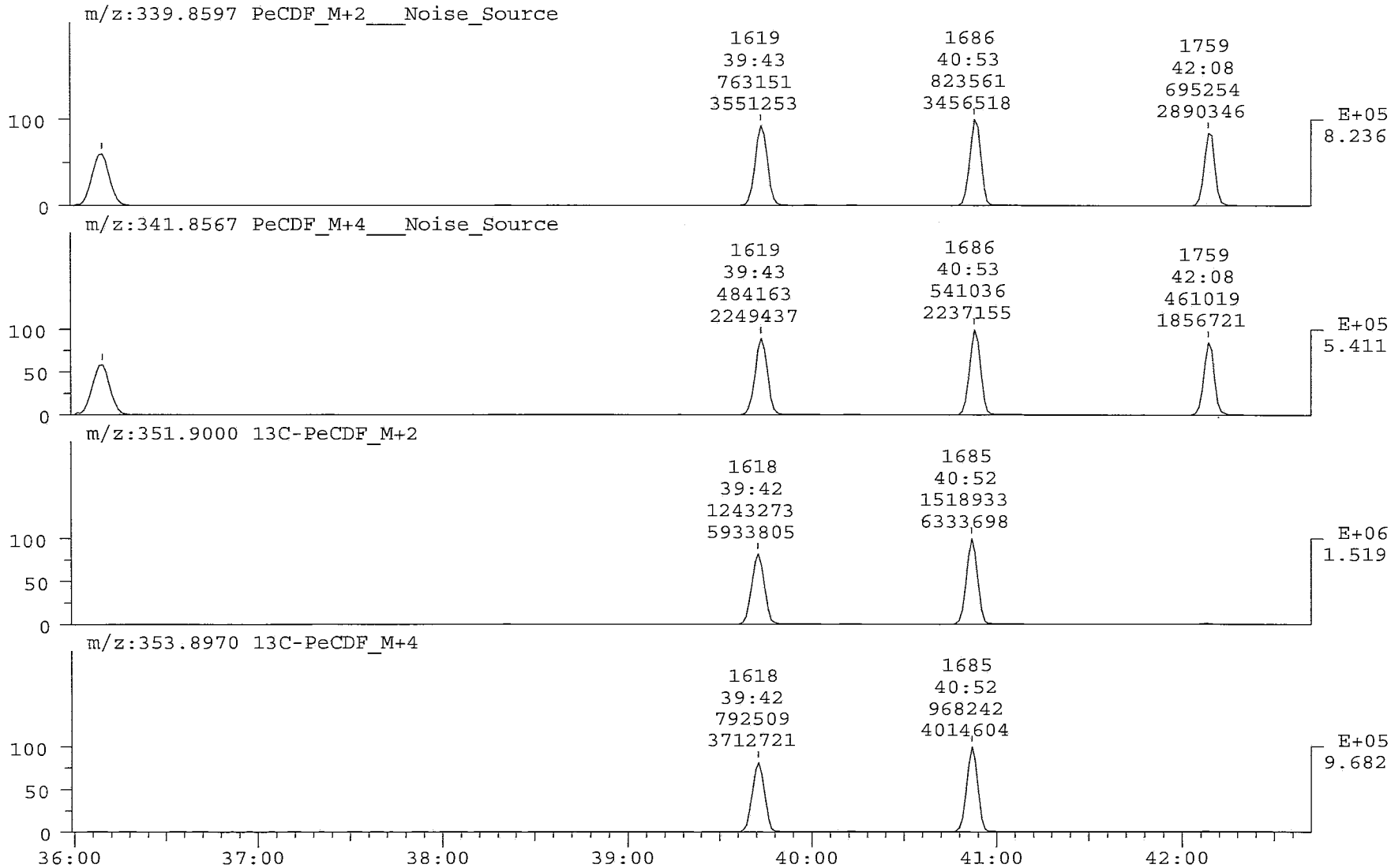
CHRO: d1160818s2 18-Aug-16 Elapse: 30:40 1095
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1528 > 1790 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



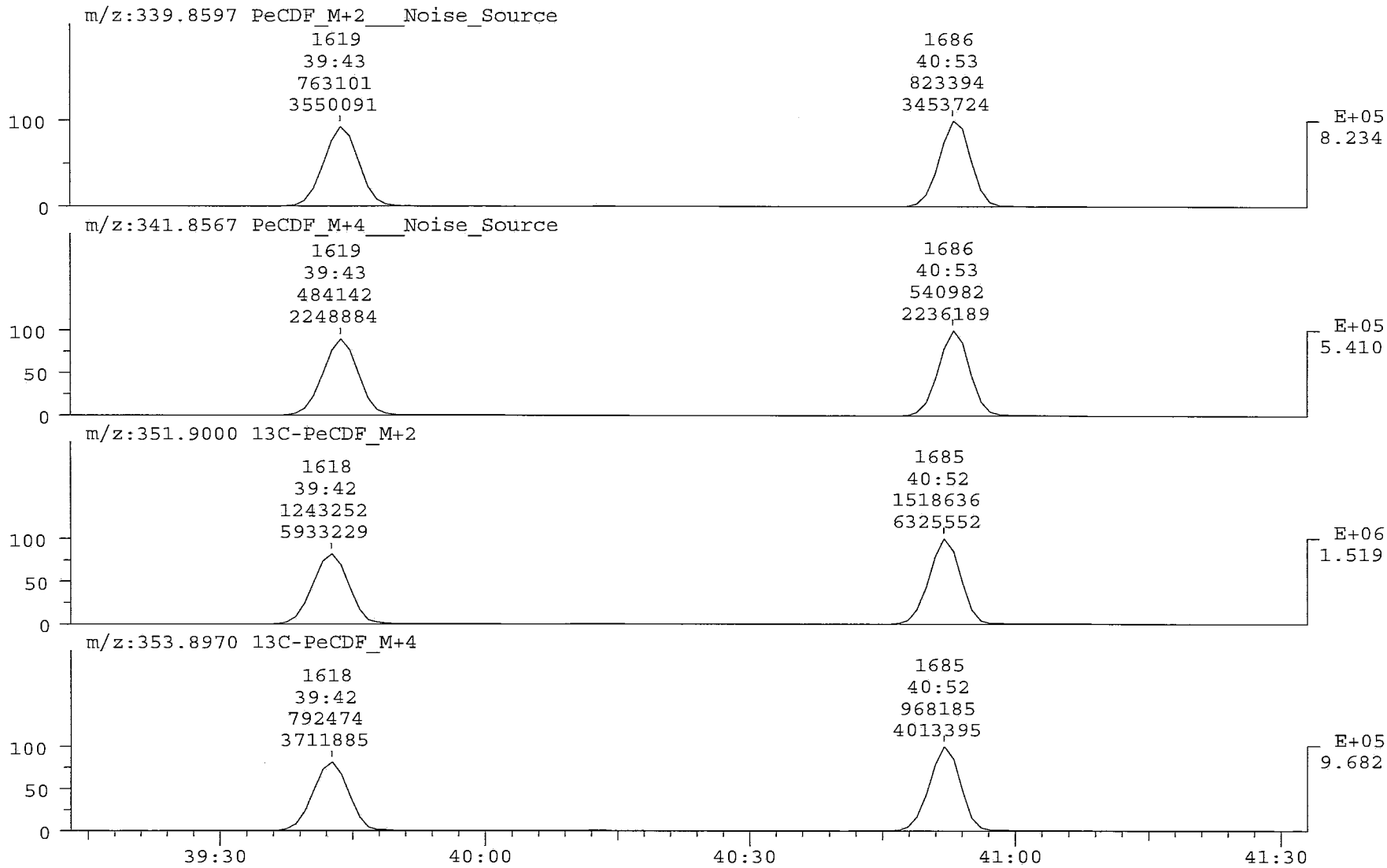
CHRO: d1160818s2 18-Aug-16 Elapse: 41:24 1716
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



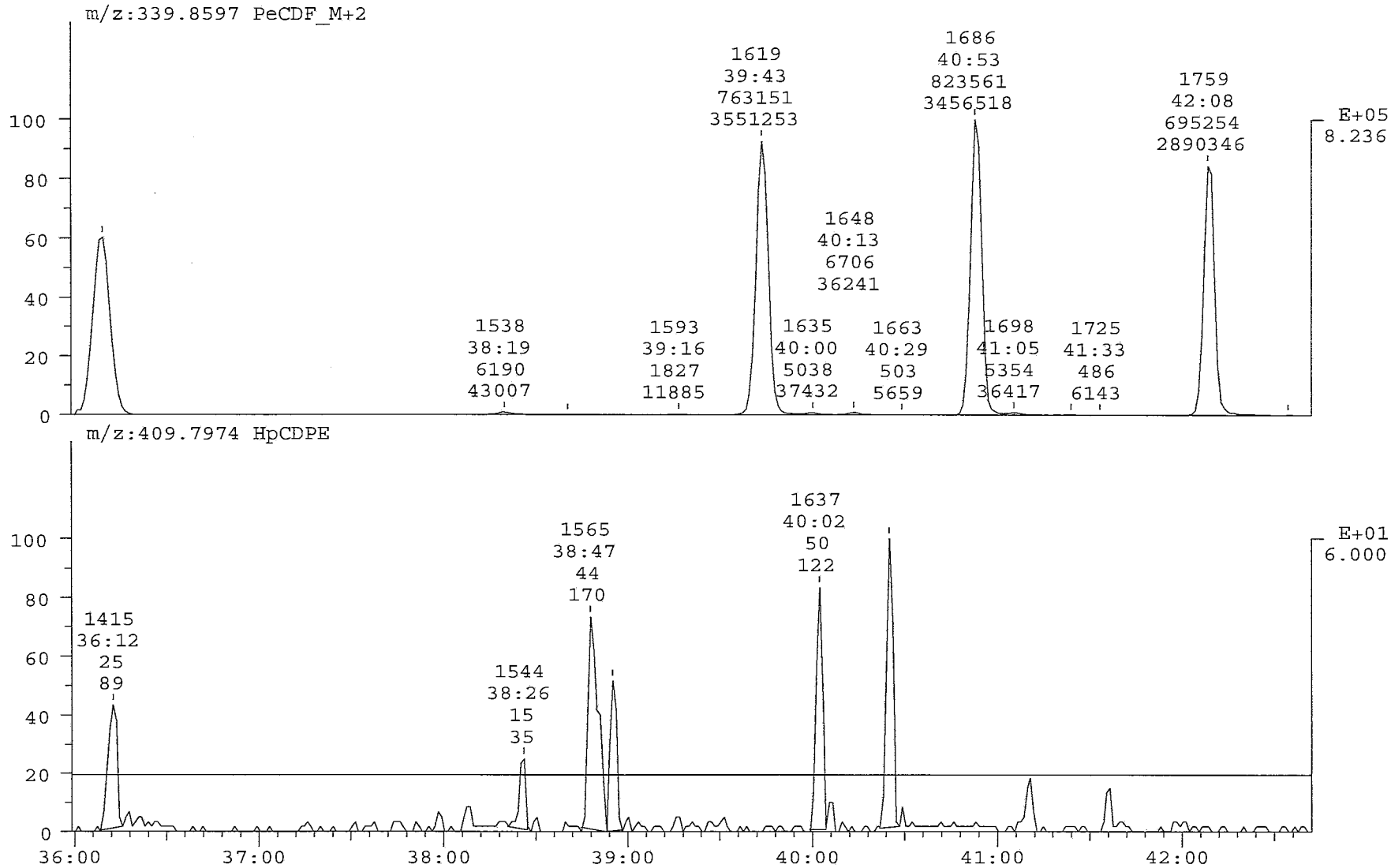
CHRO: d1160818s2 18-Aug-16 Elapse: 41:24 1716
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



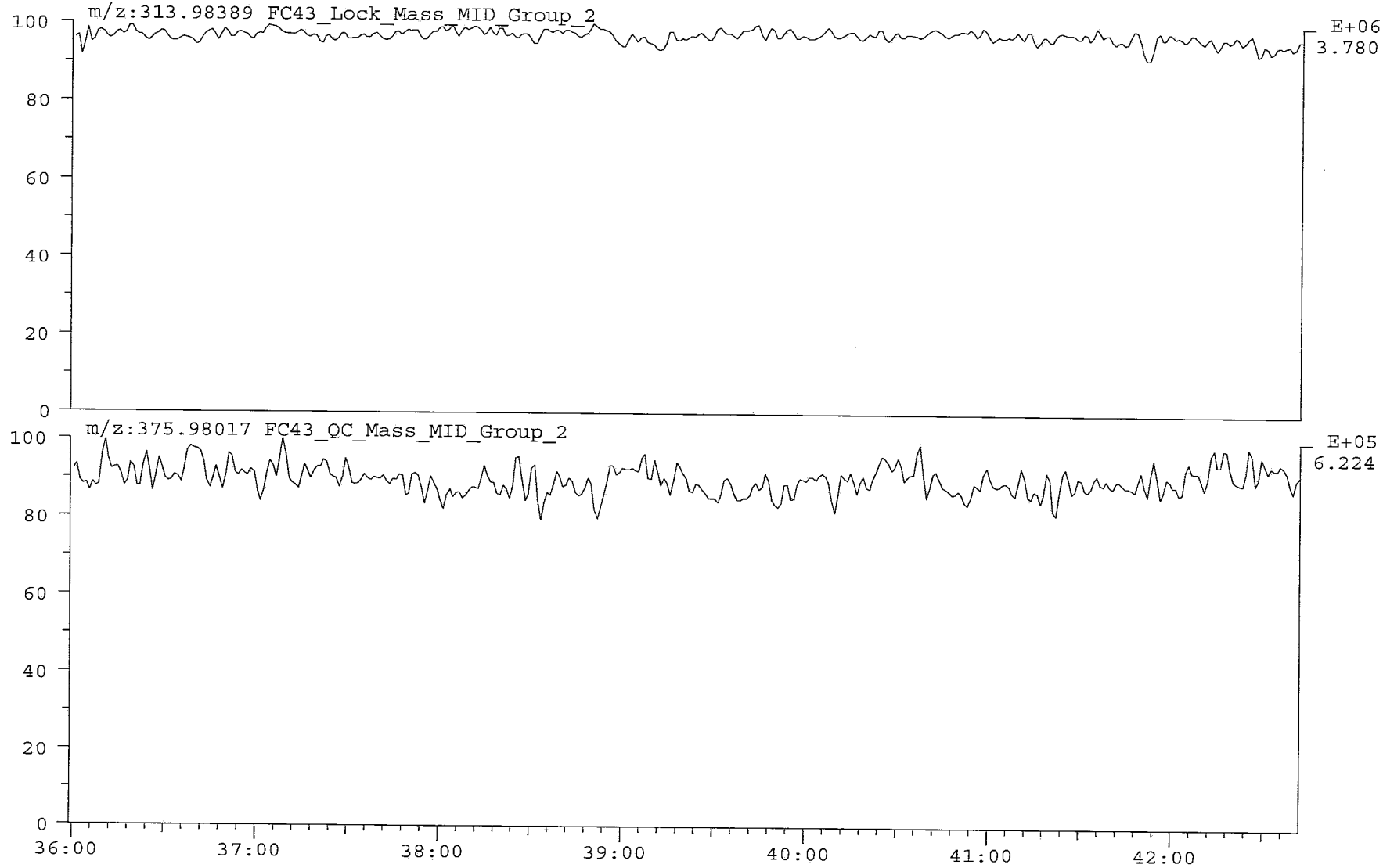
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  40:23      1657
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1589 > 1725      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



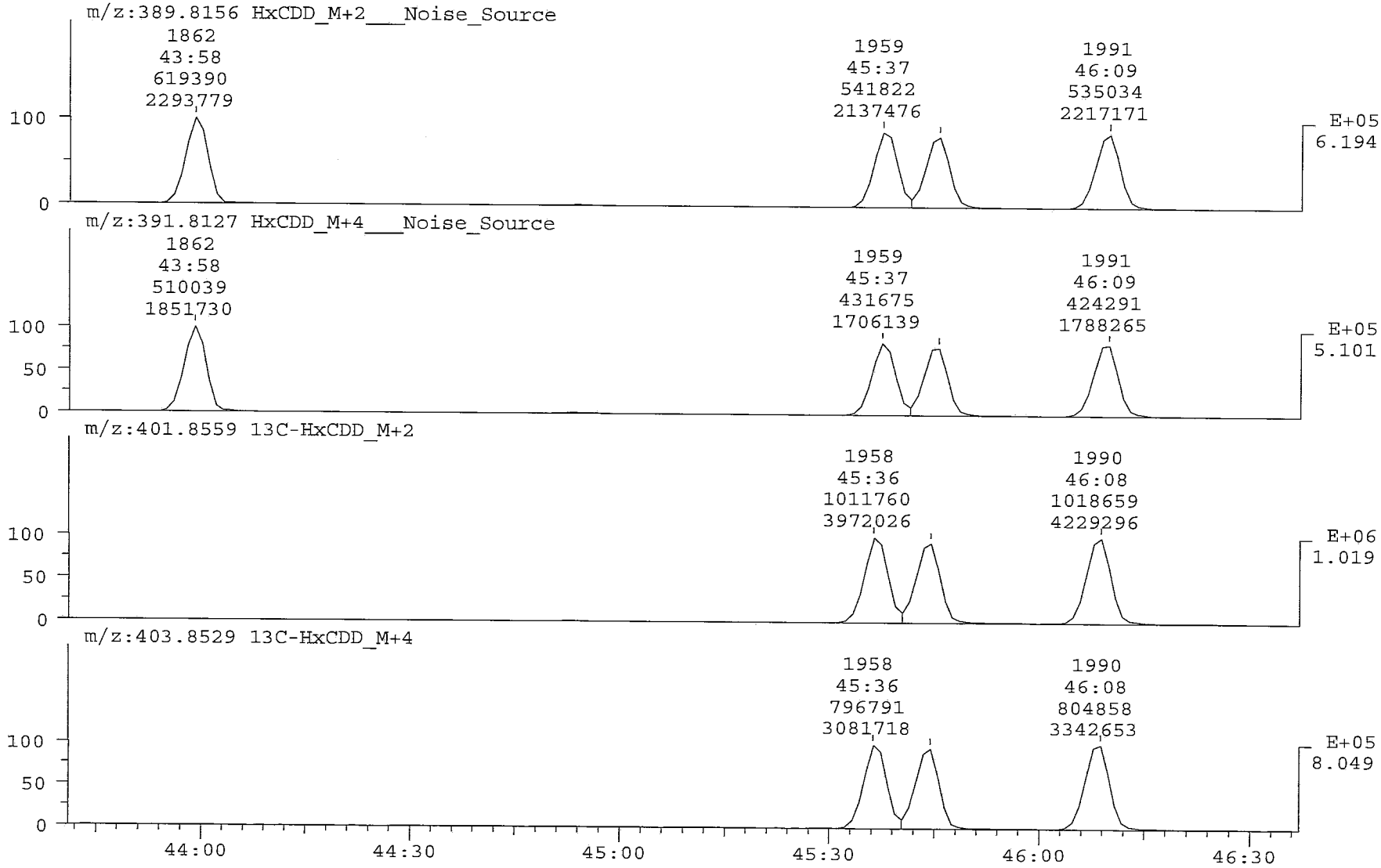
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  40:23      1657
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



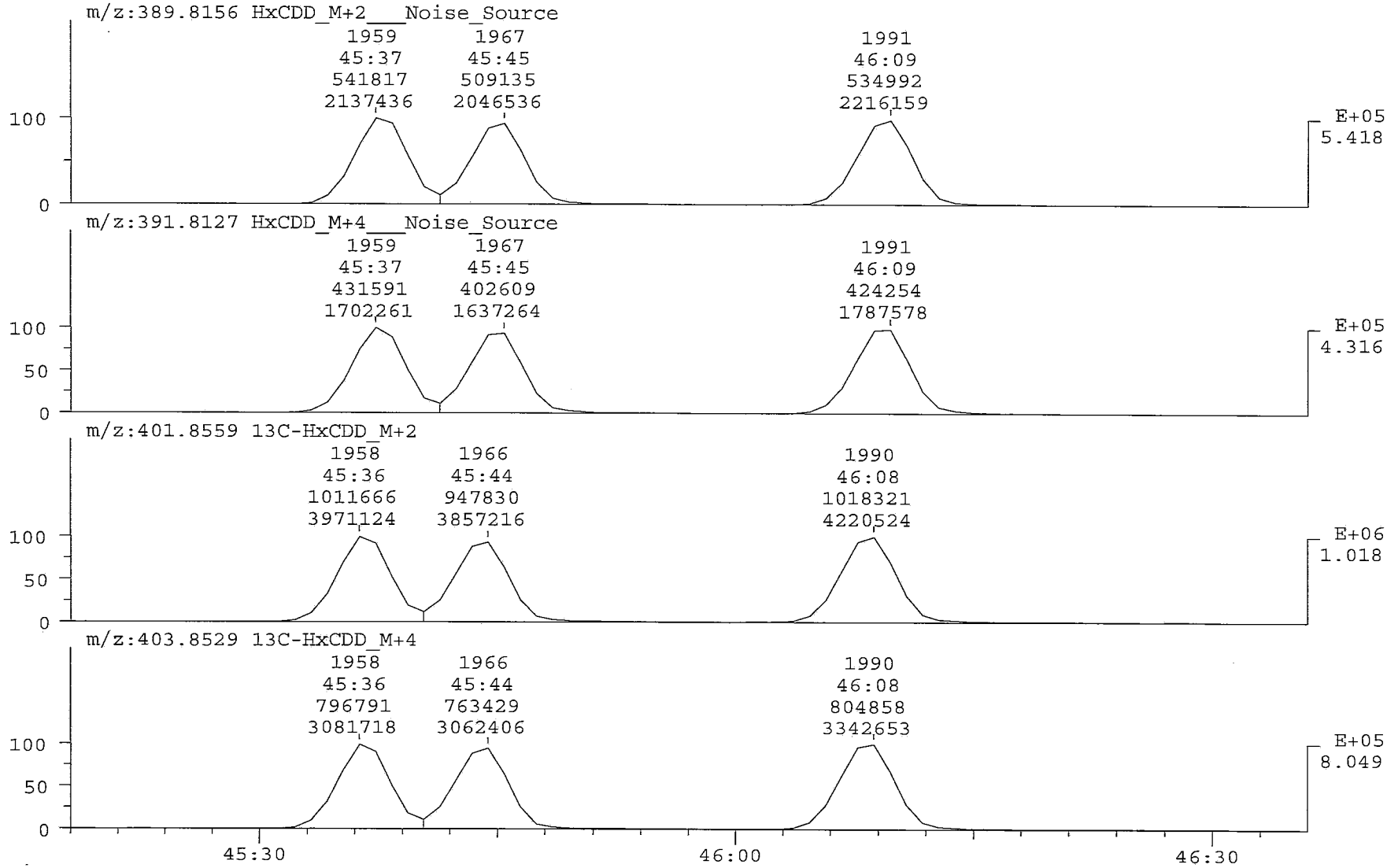
```
CHRO:  d1160818s2                                18-Aug-16  Elapse:  40:23      1657
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



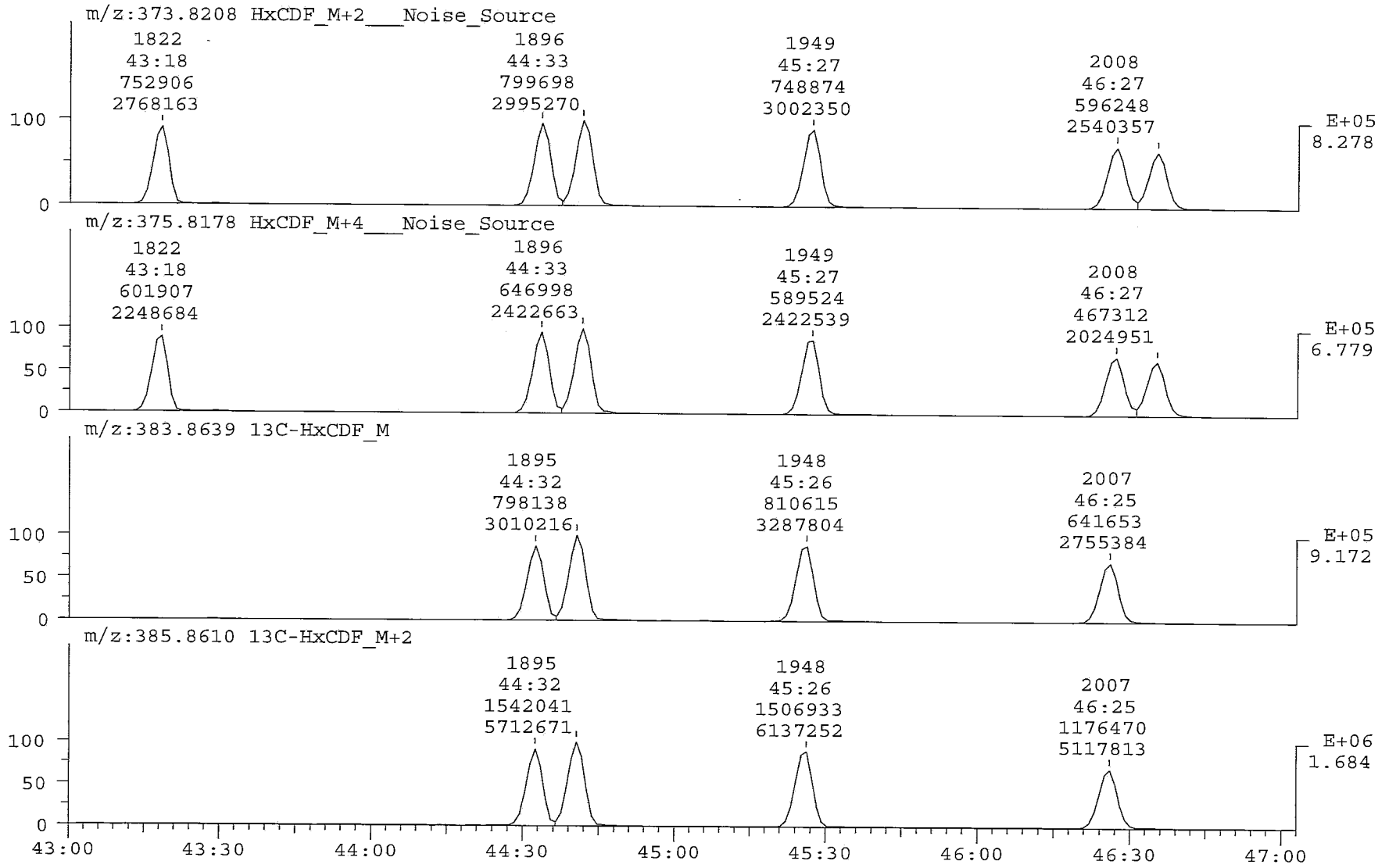
```
CHRO:  d1160818s2                                18-Aug-16  Elapse:  40:23      1657
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1844 > 2018            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 5.0
Disp:  Height  Area
```



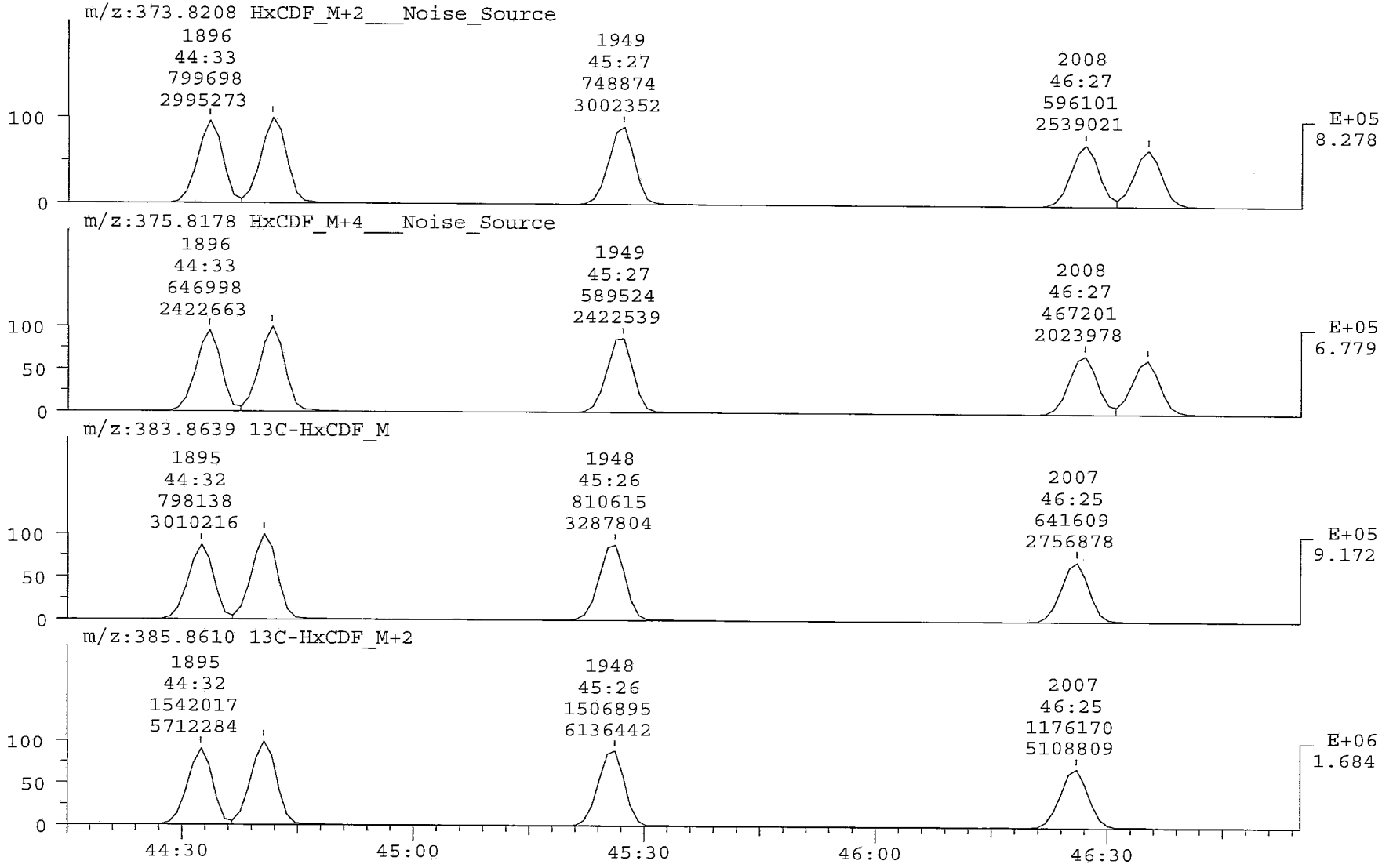
```
CHRO:  d1160818s2                          18-Aug-16  Elapse:  45:56      1978
Samp:  WO=4966:41 Meth=F8o Dil=1                      Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                            Study :  VER/WIN
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1940 > 2017      Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  2, 5.0
Disp:  Height  Area
```



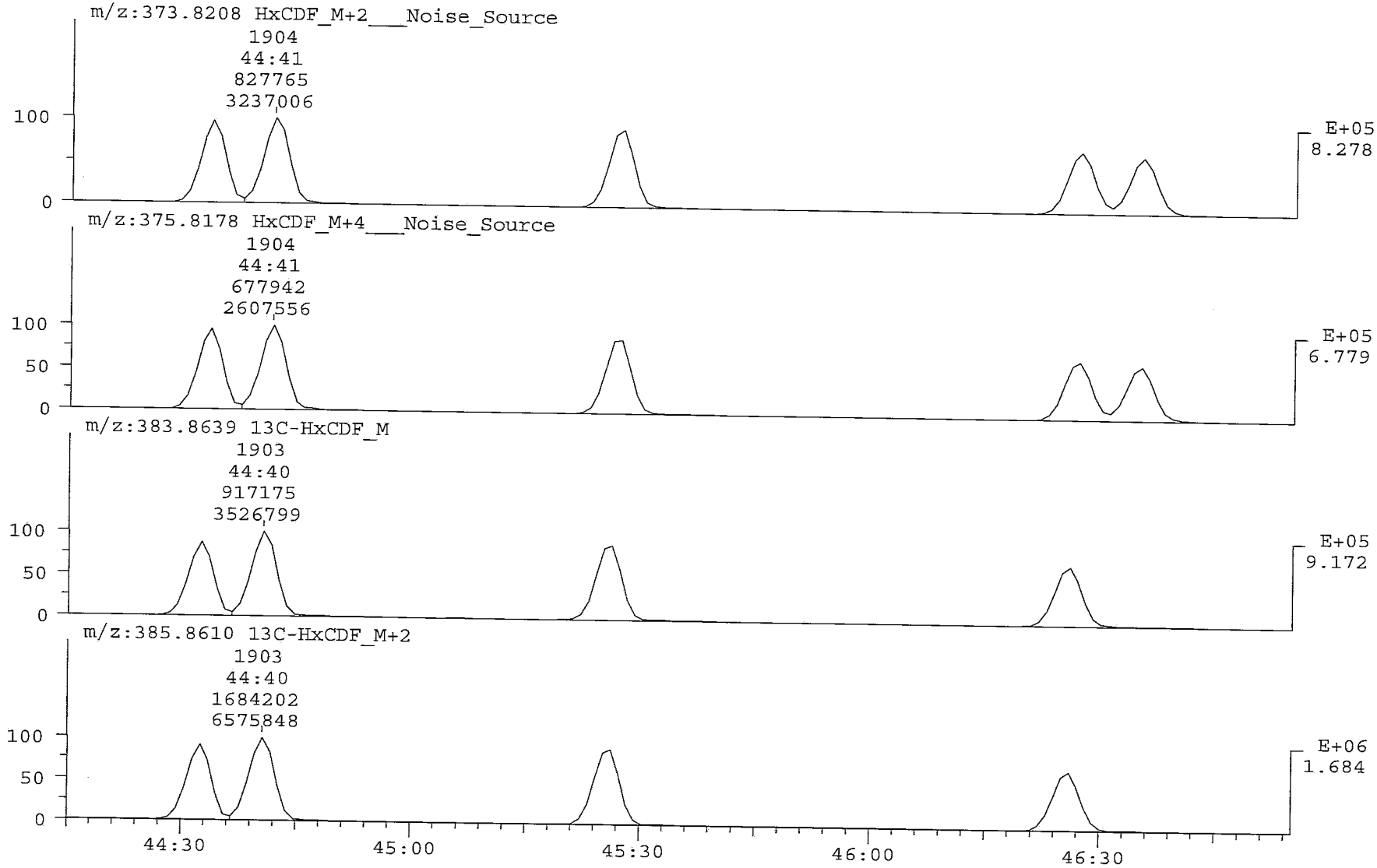
CHRO: d1160818s2 18-Aug-16 Elapse: 45:56 1978
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



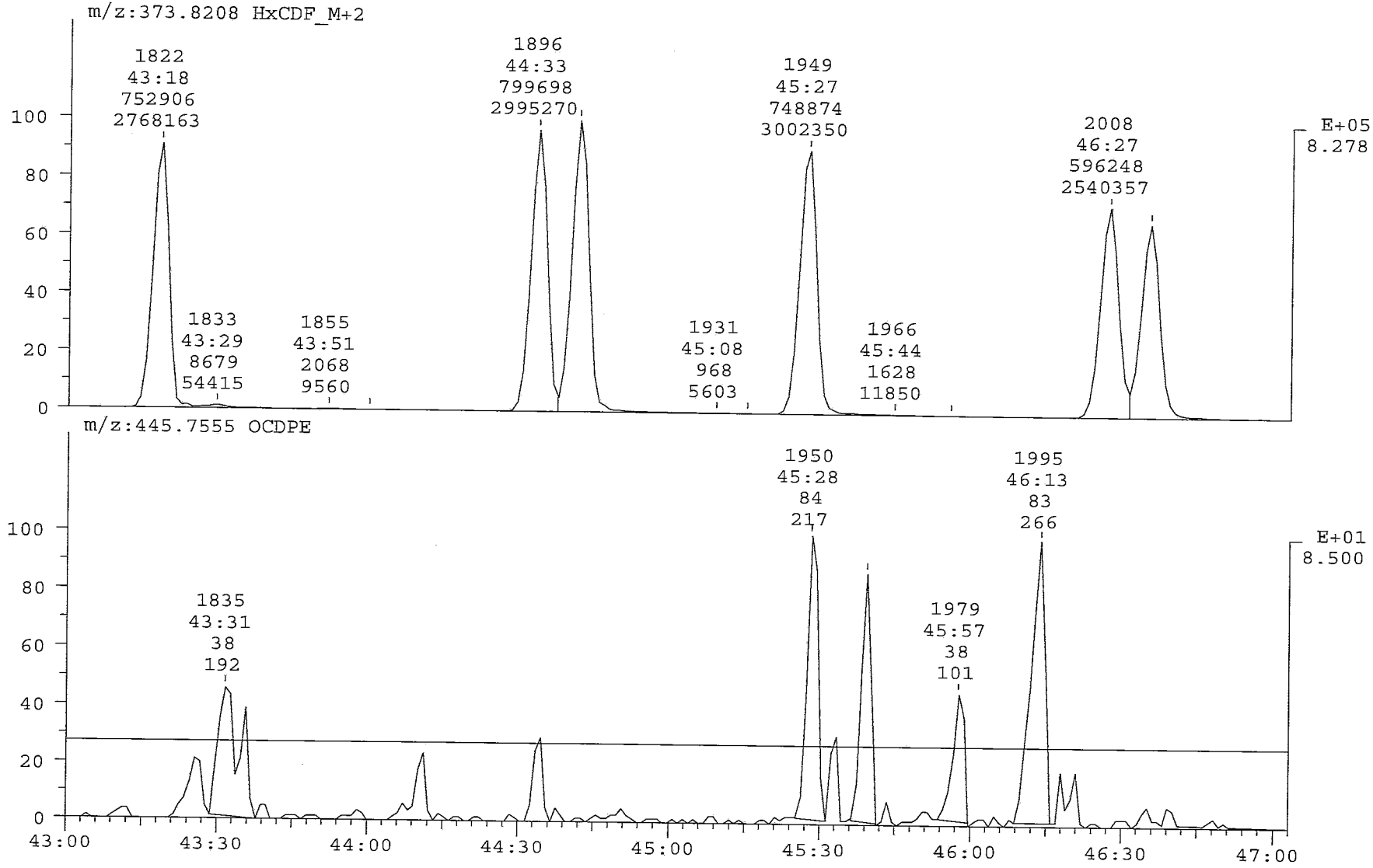
CHRO: d1160818s2 18-Aug-16 Elapse: 45:35 1957
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1878 > 2036 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 5.0
Disp: Height Area



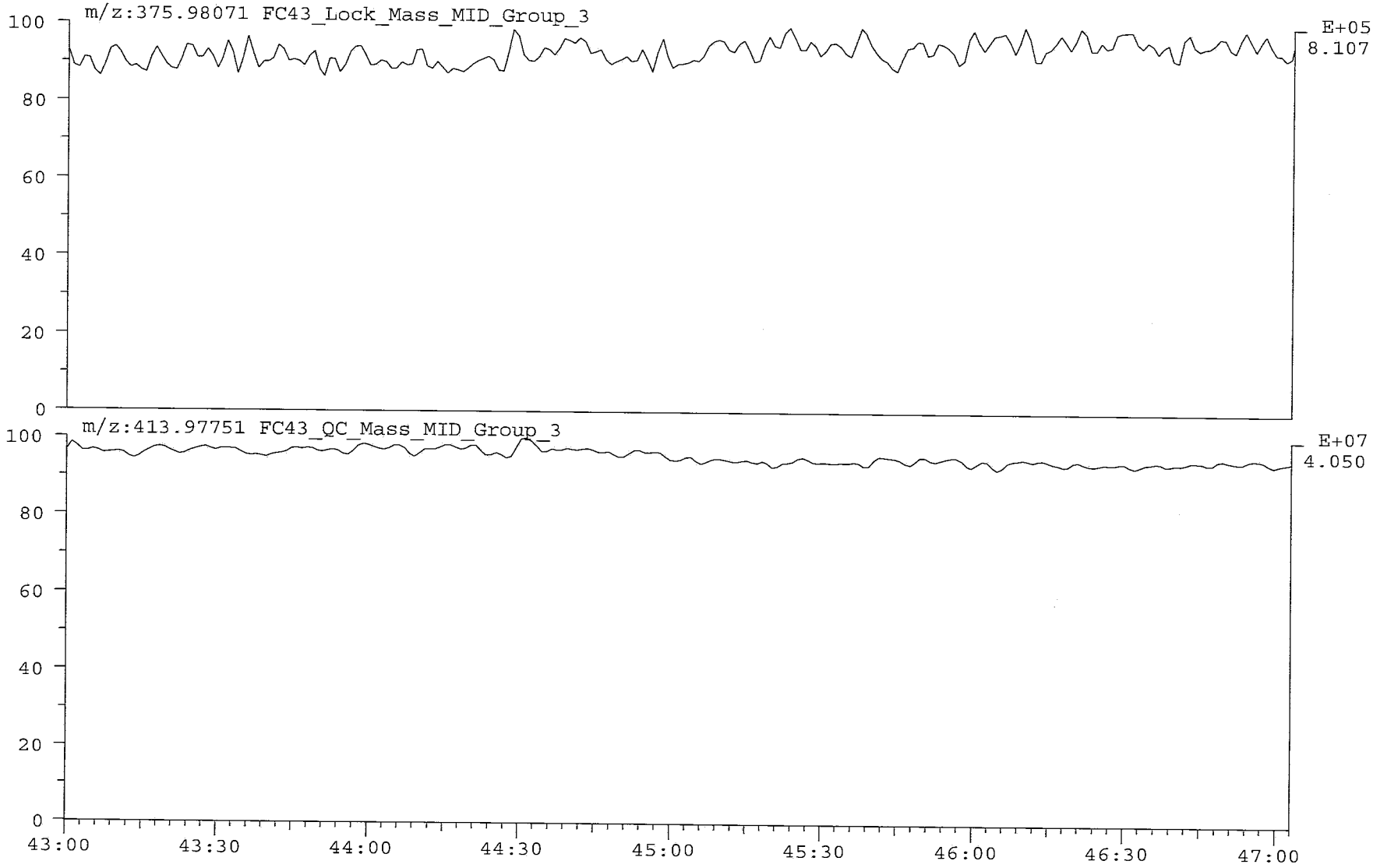
CHRO: d1160818s2 18-Aug-16 Elapse: 44:42 1905
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1901 > 1909 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



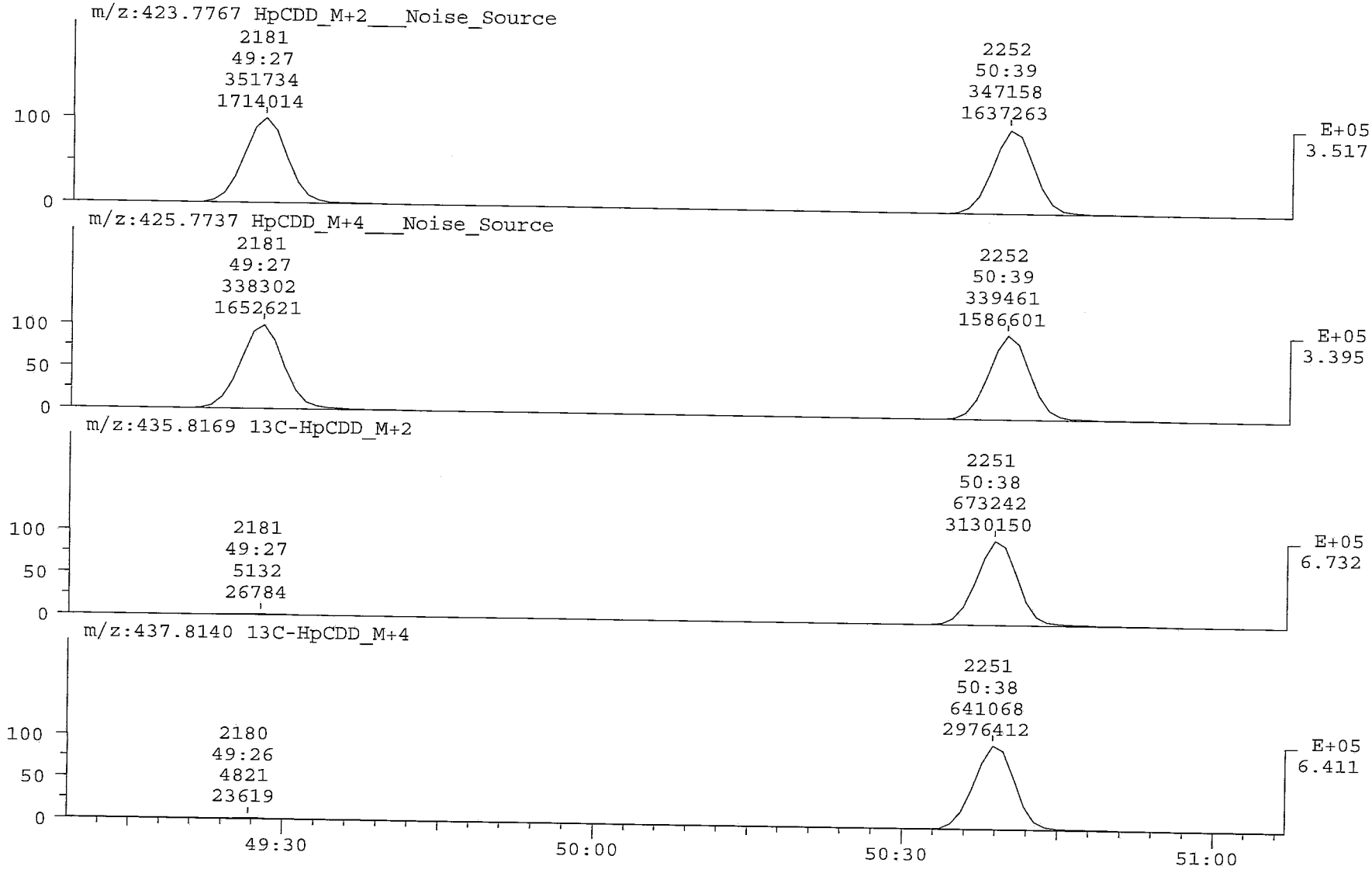
CHRO: d1160818s2 18-Aug-16 Elapse: 44:42 1905
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



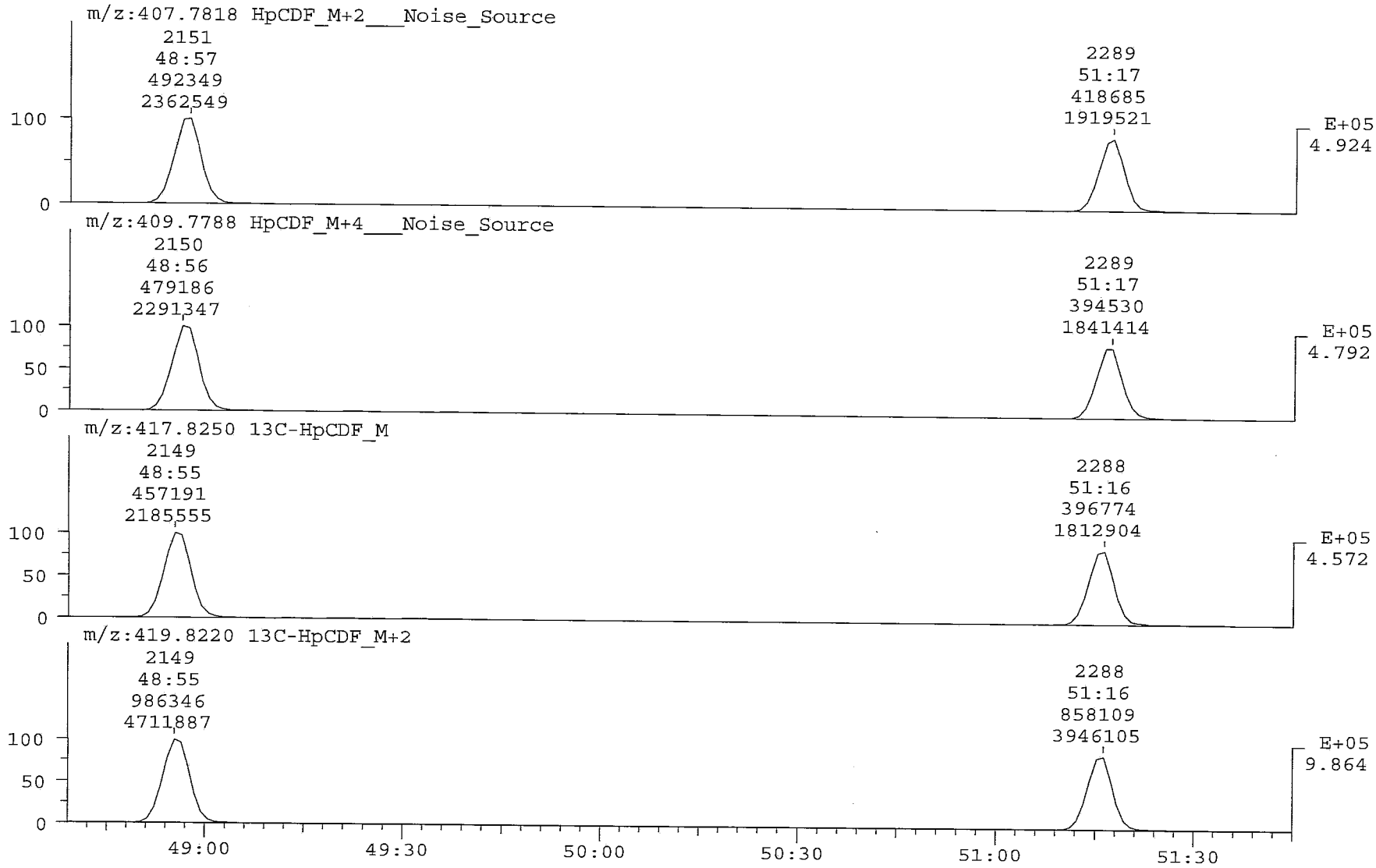
CHRO: d1160818s2 18-Aug-16 Elapse: 44:42 1905
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



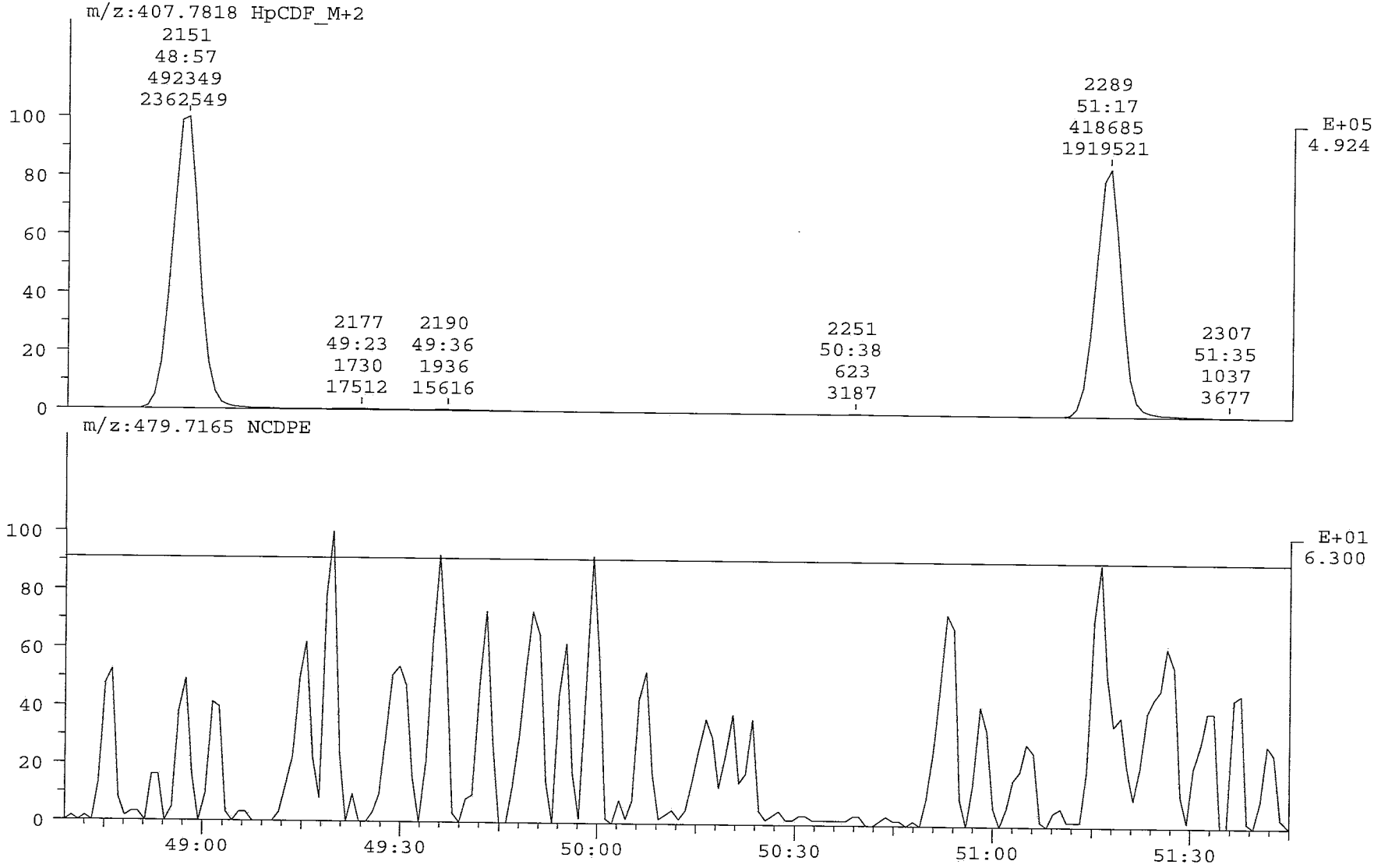
CHRO: d1160818s2 18-Aug-16 Elapse: 44:42 1905
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2163 > 2279 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



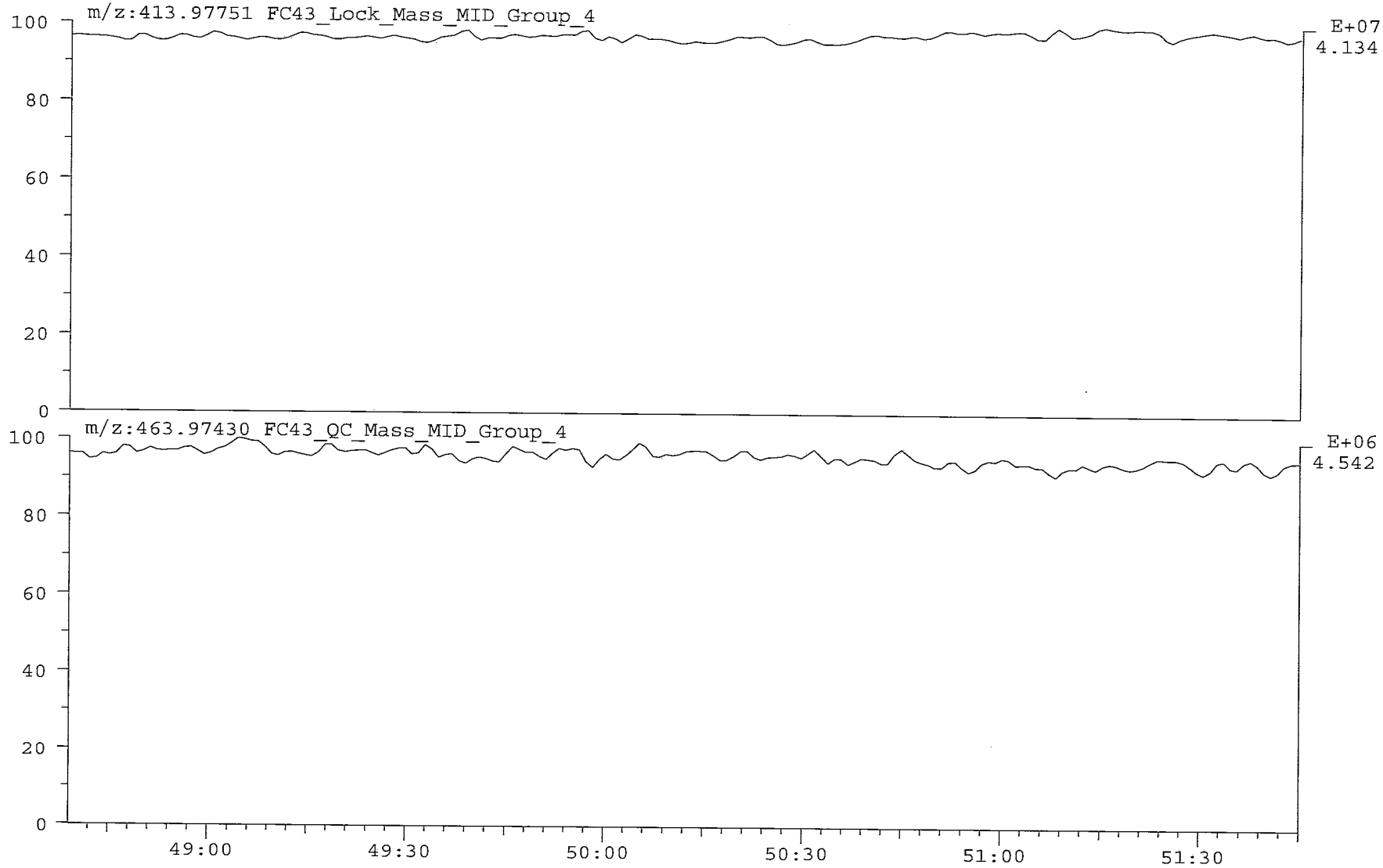
CHRO: d1160818s2 18-Aug-16 Elapse: 50:12 2225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



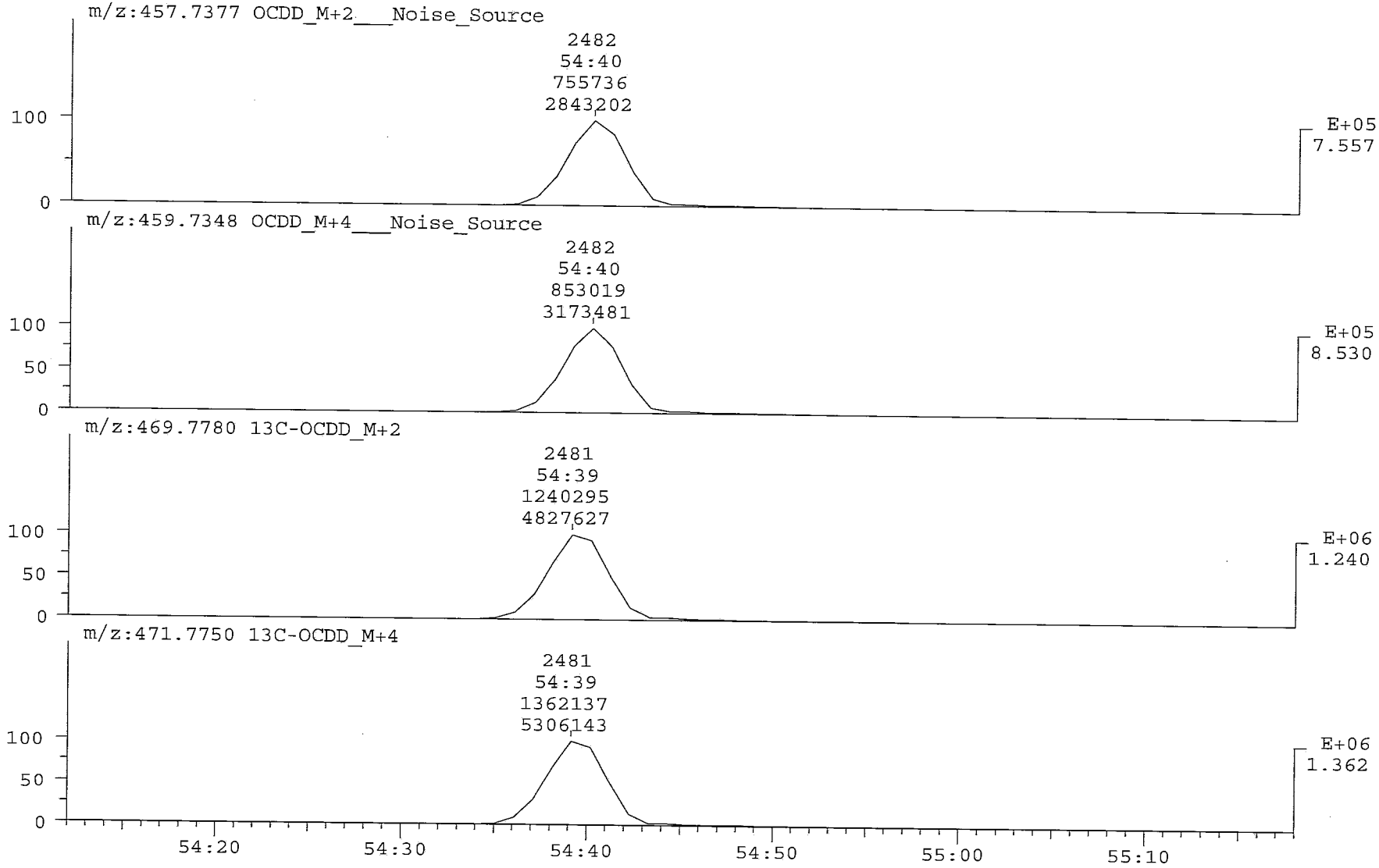
CHRO: d1160818s2 18-Aug-16 Elapse: 50:12 2225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



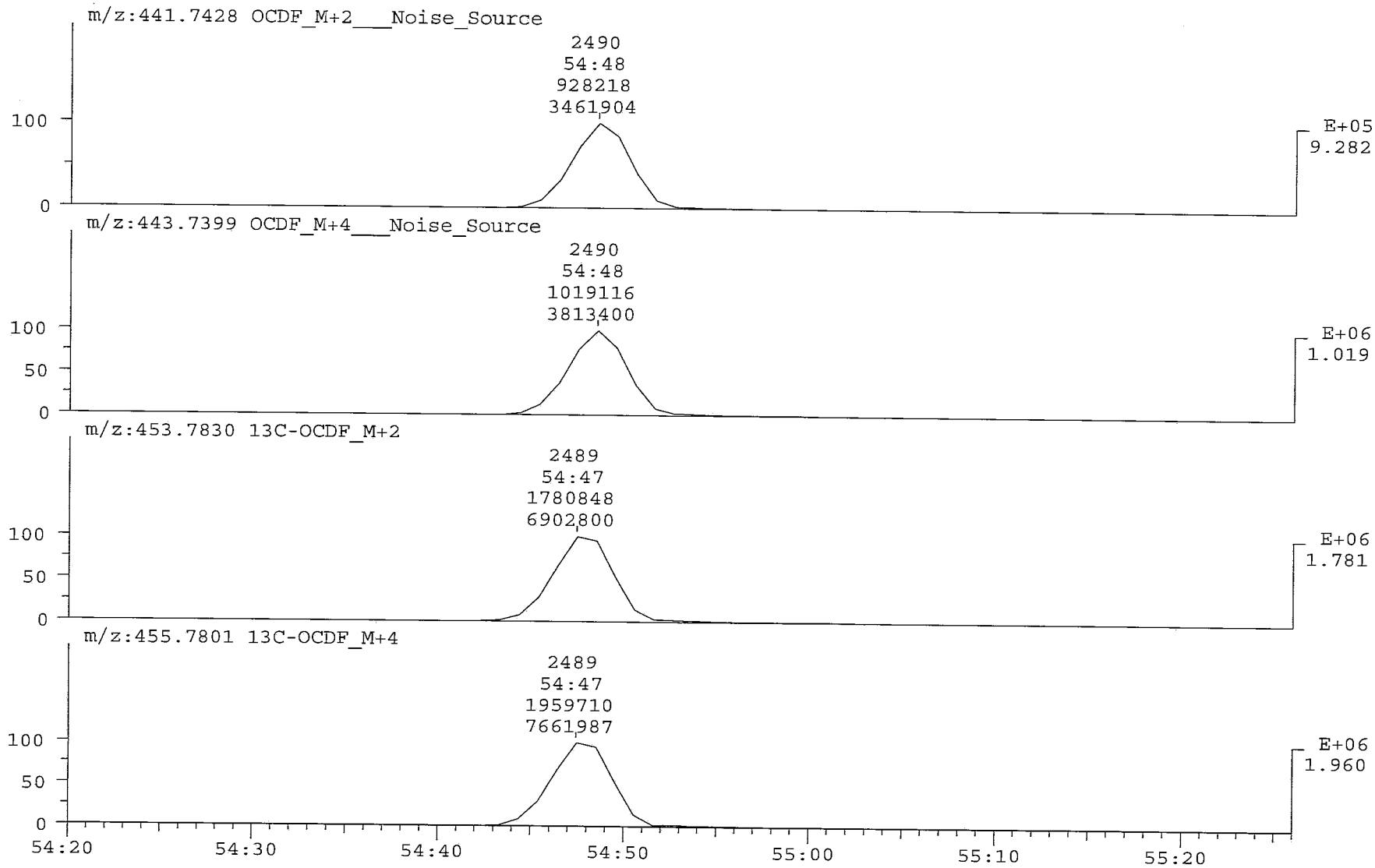
CHRO: d1160818s2 18-Aug-16 Elapse: 50:12 2225
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2316 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



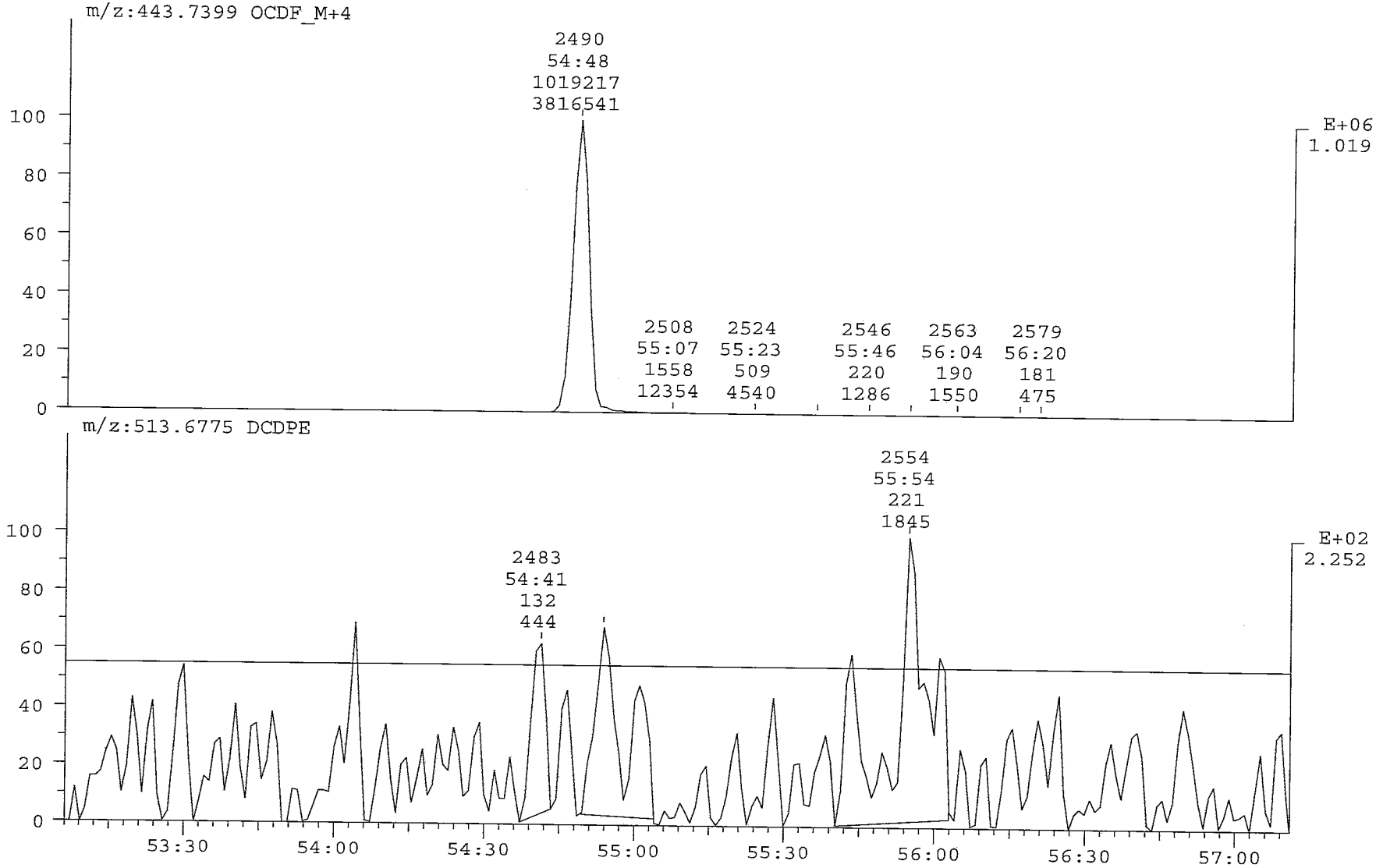
CHRO: d1160818s2 18-Aug-16 Elapse: 54:42 2484
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



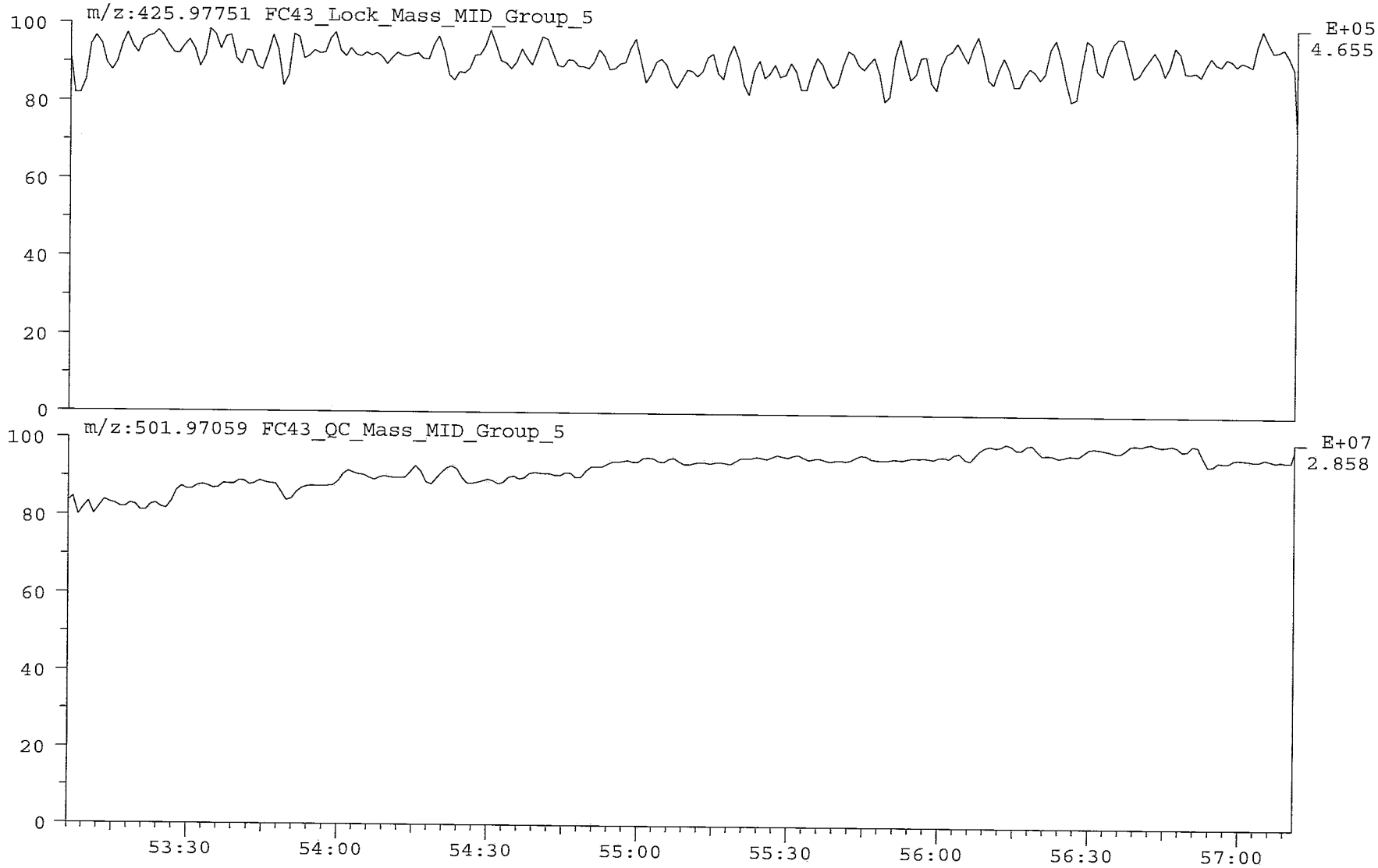
CHRO: d1160818s2 18-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2462 > 2526 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1160818s2 18-Aug-16 Elapse: 54:49 2491
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2391 > 2628 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d1160818s2                                18-Aug-16  Elapse:  54:49      2491
Samp:  WO=4966:41 Meth=F8o Dil=1                            Start :  18:29:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  VER/WIN
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2391 > 2628            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Aug 18 18:34:25 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 18:34:24

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818150201

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	307.4834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0008	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	172.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0482	FVSRC	0.0400
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	307.4834	LKM	425.9770	MASS	307.4834
MDAC	3542859.0969	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.9026	RELEN	0.0000
RES	12383.1069	RPUSHER	-6.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	307.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:          2.6e-005 mbar
Analyzer Penning:      9.5e-008 mbar
Pirani Analyse:        4.4e-003 mbar
Pirani Source:         4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12181.
MID Time Window 2: Resolution is 12179.
MID Time Window 3: Resolution is 12561.
MID Time Window 4: Resolution is 11964.
MID Time Window 5: Resolution is 12383.

Amplifier Offset: 88.


*** File closed Thu Aug 18 19:31:39 2016
  ***
```

QUAN: d1160818s2.q0 Entries: 180

Data file(s) used
File: d1160818s2 18-Aug-16
Samp: WO=4966:41 Meth=F8o Dil=1 Start : 18:29:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s2 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : VER/WIN
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:49	399210.	39874.	32:40	33:05	61.	1	1.0	AVV
321.8775	32:48	500957.	48612.	32:40	33:04	64.	1	1.0	AVV
319.8805	26:28	376089.	49032.	26:16	26:43	61.	2	5.0	ABV
319.8805	32:16	338208.	34413.	32:01	32:24	61.	2	5.0	ABV
319.8805	32:32	325869.	32250.	32:24	32:40	61.	2	5.0	AVV
319.8805	32:49	399210.	39874.	32:40	33:05	61.	2	5.0	AVV
319.8805	33:21	363424.	34000.	33:06	33:36	61.	2	5.0	AVV
319.8805	35:39	337552.	47047.	35:25	35:51	61.	2	5.0	ABB
321.8775	26:28	486962.	62171.	26:16	26:43	64.	2	5.0	ABV
321.8775	32:16	442970.	45494.	32:00	32:24	64.	2	5.0	AVV
321.8775	32:32	411348.	40053.	32:24	32:40	64.	2	5.0	AVV
321.8775	32:48	500957.	48612.	32:40	33:04	64.	2	5.0	AVV
321.8775	33:21	470251.	44552.	33:07	33:36	64.	2	5.0	AVV
321.8775	35:39	435019.	58274.	35:28	35:50	64.	2	5.0	ABB
331.9202	32:14	3363572.	333613.	31:58	32:29	37.	2	5.0	AVV
331.9202	32:45	3491177.	342971.	32:30	33:01	37.	2	5.0	AVB
333.9171	32:14	4246199.	426128.	31:58	32:29	34.	2	5.0	AVV
333.9171	32:46	4458181.	435811.	32:31	33:02	34.	2	5.0	AVV
319.8805	32:49	398884.	39862.	32:40	33:05	169.	2	5.0	AVV
319.8805	33:21	362790.	33980.	33:06	33:36	169.	2	5.0	AVV
321.8775	32:48	499189.	48539.	32:40	33:04	202.	2	5.0	AVV
321.8775	33:21	467446.	44457.	33:07	33:36	202.	2	5.0	AVV
331.9202	32:14	3362865.	333590.	31:58	32:29	158.	2	5.0	AVV
331.9202	32:45	3490301.	342942.	32:30	33:01	158.	2	5.0	AVV
333.9171	32:14	4245594.	426108.	31:58	32:29	155.	2	5.0	AVV
333.9171	32:46	4456440.	435754.	32:31	33:02	155.	2	5.0	AVV
327.8683	32:48	881078.	84095.	32:33	33:04	70.	1	1.0	AVV
327.8683	32:48	880753.	84095.	32:34	33:04	70.	2	5.0	AVV
303.8864	23:52	641780.	89009.	23:41	24:08	32.	1	1.0	ABV
305.8834	23:52	819927.	111786.	23:40	24:08	34.	1	1.0	ABV
303.8864	23:52	641780.	89009.	23:41	24:08	32.	2	5.0	ABV
303.8864	30:41	521022.	54702.	30:26	30:56	32.	2	5.0	AVV
303.8864	35:33	455429.	61979.	35:21	35:48	32.	2	5.0	ABV
305.8834	23:52	819927.	111786.	23:40	24:08	34.	2	5.0	ABV
305.8834	30:40	680633.	70695.	30:26	30:55	34.	2	5.0	ABV
305.8834	35:33	565818.	78647.	35:22	35:48	34.	2	5.0	ABV
315.9261	30:38	5325244.	557287.	30:22	30:53	36.	2	5.0	AVV
317.9230	30:38	6682741.	710841.	30:22	30:53	22.	2	5.0	AVV
303.8864	30:41	520779.	54694.	30:26	30:56	59.	2	5.0	AVV
305.8834	30:40	680371.	70686.	30:26	30:55	60.	2	5.0	ABV
315.9261	30:38	5325244.	557287.	30:22	30:53	107.	2	5.0	AVV
317.9230	30:38	6682741.	710841.	30:22	30:53	76.	2	5.0	AVV
355.8368	42:01	2098068.	541787.	41:54	42:16	63.	1	1.0	AVV
357.8337	42:01	1320416.	341364.	41:48	42:16	39.	1	1.0	AVV
355.8368	38:39	1867724.	322888.	38:30	38:55	63.	2	5.0	ABV
355.8368	41:23	1991653.	485751.	41:10	41:32	63.	2	5.0	ABV
355.8368	42:01	2098068.	541787.	41:54	42:16	63.	2	5.0	AVV
357.8337	38:39	1187902.	207724.	38:30	38:54	39.	2	5.0	ABV
357.8337	41:23	1246516.	305200.	41:14	41:34	39.	2	5.0	ABV
357.8337	42:01	1319061.	341364.	41:55	42:16	39.	2	5.0	AVV

367.8765	41:22	3664027.	907849.	41:13	41:34	24.	2	5.0 ABV
369.8734	41:22	2293880.	570118.	41:14	41:32	20.	2	5.0 ABV
355.8368	41:23	1991008.	485717.	41:10	41:32	88.	2	5.0 ABV
355.8368	42:01	2086265.	541414.	41:54	42:16	88.	2	5.0 ABB
357.8337	41:23	1246273.	305190.	41:14	41:34	52.	2	5.0 ABV
357.8337	42:01	1311267.	341109.	41:55	42:16	52.	2	5.0 ABB
367.8765	41:22	3663803.	907838.	41:14	41:34	70.	2	5.0 ABV
369.8734	41:22	2293586.	570104.	41:14	41:32	53.	2	5.0 ABV
339.8427	39:43	3551253.	763151.	39:29	39:54	82.	1	1.0 ABV
341.8396	39:43	2249437.	484163.	39:28	39:55	82.	1	1.0 ABV
339.8427	36:09	3321400.	496249.	36:00	36:21	82.	2	5.0 ABB
339.8427	39:43	3551253.	763151.	39:29	39:54	82.	2	5.0 ABV
339.8427	40:53	3456518.	823561.	40:45	41:02	82.	2	5.0 AVV
339.8427	42:08	2890346.	695254.	41:54	42:24	82.	2	5.0 ABV
341.8396	36:09	2130946.	315865.	36:00	36:20	82.	2	5.0 ABB
341.8396	39:43	2249437.	484163.	39:28	39:55	82.	2	5.0 ABV
341.8396	40:53	2237155.	541036.	40:44	41:02	82.	2	5.0 AVV
341.8396	42:08	1856721.	461019.	41:56	42:24	82.	2	5.0 ABV
351.8824	39:42	5933805.	1243273.	39:32	39:56	73.	2	5.0 ABV
351.8824	40:52	6333698.	1518933.	40:41	41:07	73.	2	5.0 AVV
353.8793	39:42	3712721.	792509.	39:32	39:56	44.	2	5.0 ABV
353.8793	40:52	4014604.	968242.	40:40	41:02	44.	2	5.0 AVV
339.8427	39:43	3550091.	763101.	39:30	39:54	93.	2	5.0 ABV
339.8427	40:53	3453724.	823394.	40:45	41:02	93.	2	5.0 ABV
341.8396	39:43	2248884.	484142.	39:29	39:55	88.	2	5.0 ABV
341.8396	40:53	2236189.	540982.	40:44	41:02	88.	2	5.0 ABV
351.8824	39:42	5933229.	1243252.	39:32	39:56	137.	2	5.0 ABV
351.8824	40:52	6325552.	1518636.	40:41	41:07	137.	2	5.0 ABV
353.8793	39:42	3711885.	792474.	39:33	39:56	189.	2	5.0 ABV
353.8793	40:52	4013395.	968185.	40:41	41:02	189.	2	5.0 ABV
389.7961	43:59	2293779.	619390.	43:51	44:14	94.	1	1.0 ABV
391.7931	43:59	1851730.	510039.	43:51	44:14	108.	1	1.0 ABV
389.7961	43:59	2293779.	619390.	43:51	44:14	94.	2	5.0 ABV
389.7961	45:37	2137476.	541822.	45:31	45:41	94.	2	5.0 ABV
389.7961	45:45	2046933.	509149.	45:41	46:00	94.	2	5.0 AVV
389.7961	46:09	2217171.	535034.	46:01	46:24	94.	2	5.0 AVB
391.7931	43:59	1851730.	510039.	43:51	44:14	108.	2	5.0 ABV
391.7931	45:37	1706139.	431675.	45:22	45:41	108.	2	5.0 AVV
391.7931	45:45	1638500.	402681.	45:41	46:00	108.	2	5.0 AVB
391.7931	46:09	1788265.	424291.	46:01	46:21	108.	2	5.0 AVB
401.8358	45:36	3972026.	1011760.	45:29	45:40	81.	2	5.0 ABV
401.8358	45:44	3861011.	947985.	45:40	45:59	81.	2	5.0 AVB
401.8358	46:08	4229296.	1018659.	45:59	46:24	81.	2	5.0 AVB
403.8327	45:36	3081718.	796791.	45:27	45:40	32.	2	5.0 ABV
403.8327	45:44	3062406.	763429.	45:40	45:59	32.	2	5.0 AVV
403.8327	46:08	3342653.	804858.	46:00	46:20	32.	2	5.0 AVV
389.7961	45:37	2137436.	541817.	45:31	45:41	119.	2	5.0 ABV
389.7961	45:45	2046536.	509135.	45:41	46:00	119.	2	5.0 AVV
389.7961	46:09	2216159.	534992.	46:01	46:24	119.	2	5.0 AVV
391.7931	45:37	1702261.	431591.	45:31	45:41	176.	2	5.0 ABV
391.7931	45:45	1637264.	402609.	45:41	46:00	176.	2	5.0 AVV
391.7931	46:09	1787578.	424254.	46:01	46:21	176.	2	5.0 AVV
401.8358	45:36	3971124.	1011665.	45:29	45:40	198.	2	5.0 ABV
401.8358	45:44	3857216.	947830.	45:40	45:59	198.	2	5.0 AVV
401.8358	46:08	4220524.	1018321.	45:59	46:24	198.	2	5.0 AVV
403.8327	45:36	3081718.	796791.	45:27	45:40	58.	2	5.0 ABV
403.8327	45:44	3062406.	763429.	45:40	45:59	58.	2	5.0 AVV
403.8327	46:08	3342653.	804858.	46:00	46:20	58.	2	5.0 AVV
373.8021	44:41	3237002.	827765.	44:37	44:56	104.	1	1.0 AVV
375.7990	44:41	2607556.	677942.	44:37	44:56	119.	1	1.0 AVV
373.8021	43:18	2768163.	752906.	43:11	43:24	104.	2	5.0 ABV
373.8021	44:33	2995270.	799698.	44:25	44:37	104.	2	5.0 ABV
373.8021	44:41	3237002.	827765.	44:37	44:56	104.	2	5.0 AVV
373.8021	45:27	3002350.	748874.	45:18	45:42	104.	2	5.0 AVV
373.8021	46:27	2540357.	596248.	46:18	46:31	104.	2	5.0 ABV
373.8021	46:35	2362988.	550057.	46:31	46:50	104.	2	5.0 AVV
375.7990	43:18	2248684.	601907.	43:11	43:26	119.	2	5.0 ABV

375.7990	44:33	2422663.	646998.	44:25	44:37	119.	2 5.0 ABV
375.7990	44:41	2607556.	677942.	44:37	44:56	119.	2 5.0 AVV
375.7990	45:27	2422539.	589524.	45:18	45:42	119.	2 5.0 AVV
375.7990	46:27	2024951.	467312.	46:19	46:31	119.	2 5.0 ABV
375.7990	46:35	1884366.	434666.	46:31	46:50	119.	2 5.0 AVV
383.8447	44:32	3010216.	798138.	44:24	44:36	78.	2 5.0 ABV
383.8447	44:40	3526798.	917175.	44:36	44:51	78.	2 5.0 AVV
383.8447	45:26	3287804.	810615.	45:18	45:41	78.	2 5.0 AVV
383.8447	46:26	2755384.	641653.	46:18	46:41	78.	2 5.0 AVV
385.8417	44:32	5712671.	1542041.	44:22	44:36	198.	2 5.0 ABV
385.8417	44:40	6576382.	1684228.	44:36	44:55	198.	2 5.0 AVV
385.8417	45:26	6137252.	1506933.	45:15	45:36	198.	2 5.0 AVV
385.8417	46:26	5117813.	1176470.	46:13	46:41	198.	2 5.0 ABV
373.8021	44:33	2995273.	799698.	44:25	44:37	116.	2 5.0 ABV
373.8021	44:41	3237006.	827765.	44:37	44:56	116.	2 5.0 AVV
373.8021	45:27	3002352.	748874.	45:18	45:42	116.	2 5.0 AVV
373.8021	46:27	2539021.	596101.	46:18	46:31	116.	2 5.0 ABV
373.8021	46:35	2355420.	549764.	46:31	46:50	116.	2 5.0 AVV
375.7990	44:33	2422663.	646998.	44:25	44:37	137.	2 5.0 ABV
375.7990	44:41	2607556.	677942.	44:37	44:56	137.	2 5.0 AVV
375.7990	45:27	2422539.	589524.	45:18	45:42	137.	2 5.0 AVB
375.7990	46:27	2023978.	467201.	46:19	46:31	137.	2 5.0 ABV
375.7990	46:35	1878127.	434428.	46:31	46:50	137.	2 5.0 AVV
383.8447	44:32	3010216.	798138.	44:24	44:36	118.	2 5.0 ABV
383.8447	44:40	3526799.	917175.	44:36	44:51	118.	2 5.0 AVV
383.8447	45:26	3287804.	810615.	45:18	45:41	118.	2 5.0 AVV
383.8447	46:26	2756878.	641609.	46:10	46:41	118.	2 5.0 AVV
385.8417	44:32	5712284.	1542017.	44:23	44:36	310.	2 5.0 ABV
385.8417	44:40	6575848.	1684202.	44:36	44:55	310.	2 5.0 AVV
385.8417	45:26	6136442.	1506895.	45:15	45:36	310.	2 5.0 AVV
385.8417	46:26	5108809.	1176170.	46:13	46:41	310.	2 5.0 ABV
423.7555	49:27	1714014.	351734.	49:19	49:43	65.	1 1.0 ABV
425.7524	49:27	1652621.	338302.	49:16	49:43	73.	1 1.0 ABV
423.7555	49:27	1714014.	351734.	49:19	49:43	65.	2 5.0 ABV
423.7555	50:39	1637263.	347158.	50:31	50:55	65.	2 5.0 ABV
425.7524	49:27	1652621.	338302.	49:16	49:43	73.	2 5.0 ABV
425.7524	50:39	1586601.	339461.	50:29	50:55	73.	2 5.0 ABV
435.7951	49:27	26784.	5132.	49:20	49:34	32.	2 5.0 ABV
435.7951	50:38	3130150.	673242.	50:30	50:54	32.	2 5.0 ABV
437.7921	49:26	23619.	4821.	49:20	49:32	17.	2 5.0 ABB
437.7921	50:38	2976412.	641068.	50:29	50:54	17.	2 5.0 ABV
407.7614	48:57	2362549.	492349.	48:47	49:12	79.	1 1.0 ABV
409.7583	48:56	2291347.	479186.	48:48	49:11	75.	1 1.0 ABV
407.7614	48:57	2362549.	492349.	48:47	49:12	79.	2 5.0 ABV
407.7614	51:17	1919521.	418685.	51:08	51:32	79.	2 5.0 ABV
409.7583	48:56	2291347.	479186.	48:48	49:11	75.	2 5.0 ABV
409.7583	51:17	1841414.	394530.	51:06	51:32	75.	2 5.0 ABV
417.8041	48:55	2185555.	457191.	48:47	49:10	61.	2 5.0 ABV
417.8041	51:16	1812904.	396774.	51:07	51:30	61.	2 5.0 AVV
419.8010	48:55	4711887.	986346.	48:47	49:10	120.	2 5.0 ABV
419.8010	51:16	3946105.	858109.	51:07	51:31	120.	2 5.0 ABV
457.7148	54:40	2843202.	755736.	54:33	54:55	38.	1 1.0 ABV
459.7118	54:40	3173481.	853019.	54:33	54:55	62.	1 1.0 ABV
457.7148	54:40	2843202.	755736.	54:33	54:55	38.	2 5.0 ABV
459.7118	54:40	3173481.	853019.	54:33	54:55	62.	2 5.0 ABV
469.7545	54:39	4827627.	1240295.	54:33	54:54	54.	2 5.0 ABV
471.7514	54:39	5306143.	1362137.	54:32	54:54	43.	2 5.0 ABV
441.7207	54:48	3461904.	928218.	54:36	55:04	71.	1 1.0 ABV
443.7177	54:48	3813400.	1019116.	54:36	55:04	57.	1 1.0 ABV
441.7207	54:48	3461904.	928218.	54:36	55:04	71.	2 5.0 ABV
443.7177	54:48	3813400.	1019116.	54:36	55:04	57.	2 5.0 ABV
453.7603	54:47	6902800.	1780848.	54:40	55:03	75.	2 5.0 AVV
455.7573	54:47	7661987.	1959710.	54:36	55:03	65.	2 5.0 ABV

Standards Data
DB-225 Column

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: 1613B - KNOX-ID-0004-R14

Mass Res.✓ Date/Time:	10:21 4/9/15	Inst:	D12C	Win Filename:	N/A	Col Perf Filename:	d215040 9w1

CS0.5 Filename	CS1Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
N/A	d215040 9i1	d215040 9i2	d215040 9i3	d215040 9i4	d215040 9i5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or m/z363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?	✓				✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.	✓			Does not apply to second column confirmation.	✓
7. Were the five calibration standard solutions, at the concentrations specified in Table 5 of the SOP, analyzed (6 point calibration used for microwave extractions)?		✓			✓
8. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21) and formula (Section 10.2.7)?		✓			✓
10. Is the retention time of $^{13}C_{12}$-1,2,3,4-TCDD >25.0 minutes on the DB/Rtx-5 column (15.0 minutes on the DB/Rtx-225 column)?		✓			✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are %RSD ≤20% for all unlabeled native analytes except 1,2,3,7,8,9-HxCDD and OCDF?		✓			✓
13. Are %RSD ≤35% for 1,2,3,7,8,9-HxCDD and OCDF and all labeled internal standards?		✓			✓
14. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
15. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
16. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
17. Was DoD ICV Criteria met? (For unlabeled standards, RF within ± 20% D of RF established in the ICAL.For labeled standards, RF within ± 30% D of the mean RF established in ICAL.		✓			✓
18. If manual integrations were performed, are they clearly identified, initialed and dated?		✓			✓
19. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
20. Were manual integrations documented properly?		✓			✓
21. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
22. Does the ICAL folder contain **complete** data in the following order: Data review checklist, a **complete** run log, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst: [signature]	Date: 4/10/15	2nd Level Reviewer : [signature]	Date: 4/10/15
Comments:		Comments:	

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R14

Mass Res. ✓ Date/Time:	10:21 4/9/15	Inst:	D12C	Win Filename:	N/A	Col Perf Filename:	d21504090l

CS0.5 Filename	CS1 Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
N/A	d21504091l	d21504091 2	d21504091 3	d21504091 4	d21504091 5

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?	✓				✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram Absolute retention times for switching from one homologous series to the next ≥ 10 seconds for all components of the mixture.	✓				✓
7. Were the five calibration standard solutions, at the concentrations specified in Table 5 of the SOP, analyzed (6 point calibration used for microwave extractions)?		✓			✓
8. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
11. Are %RSD ≤20% for all unlabeled native analytes?		✓			✓
12. **8290**, are %RSD ≤30% for all labeled internal standards?		✓			✓
13. **8090A**, are %RSD ≤20% for all labeled internal standards?		✓			✓
14. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
15. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
16. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
17. Was DoD ICV Criteria met? (For unlabeled standards, RF within ± 20% D of RF established in the ICAL.For labeled standards, RF within ± 30% D of the mean RF established in ICAL.		✓			✓
1. If manual integrations were performed, are they clearly identified, initialed and dated?		✓			✓
2. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
3. Were manual integrations documented properly?		✓			✓
18. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
19. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst: [signature]	Date: 4/10/15	2nd Level Reviewer : [signature]	Date: 4/10/15
Comments:		Comments:	

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist

KNOX-ID-0004-R14 Method: ☒0023A/8290 ☒EPA 23 ☒0023A/8290A

Mass Res. ✓ Date/Time:	10:21 4/9/15	Inst:	D12C	Win Filename:	N/A	Col Perf Filename:	d21504091

CS1 Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
d21504091	d21504092	d21504093	d21504094	d21504095

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?	✓				✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
6. Were the five calibration standard solutions, at the concentrations specified in Table 6 of the SOP, analyzed?		✓			✓
7. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 4), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
9. Are the %RSDs for all unlabeled native analytes within the limits in Table 6?		✓			✓
10. Are the %RSDs for all labeled internal standards and surrogate standards within the limits in Table 6? Are labeled internal standards for 8290 %RSD ≤ 30% and 8290A % RSD ≤ 20%.		✓			✓
11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
12. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
13. Was the second source ICV standard analyzed according to Sec 10.2.9 of the SOP?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?		✓			✓
15. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
16. Does the ICAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst: [signature]	Date: 4/10/15	2nd Level Reviewer : [signature]	Date: 4/10/15
Comments:		Comments:	

TestAmerica Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
Method: TO-9A - KNOX-ID-0004-R11

Mass Res. ✓ Date/Time:	10:21 4/9/15	Inst:	D12C	Win Filename:	N/A	Col Perf Filename:	d2150409 w1

CS1 Filename	CS2 Filename	CS3 Filename	CS4 Filename	CS5 Filename
d2150409i1	d2150409i2	d2150409i3	d2150409i4	d2150409 i5

Review Items	NA	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented before beginning the initial calibration?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 or FC43 m/z 313.9838 and m/z 363.9807?		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or m/z363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?	✓				✓
5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer?		✓			✓
6. Were the five calibration standard solutions, at the concentrations specified in Table 6 of the SOP, analyzed?		✓			✓
7. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 4), quantitation ions (Table 22), and formula (Section 10.2.6)?		✓			✓
9. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
10. Are %RSD for all unlabeled native analytes ≤ criteria in Table 6?		✓			✓
11. Are %RSD for all labeled internal standards ≤ criteria in Table 6?		✓			✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
14. Was the second source (Wellington) ICV standard analyzed, and the %D calculated and within the acceptance criteria of < ±35%?		✓			✓
15. If manual integrations were performed, are they clearly identified, initialed and dated?		✓			✓
16. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
17. Does the ICAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard, ICV Summary Table, Calculation Summary, and chromatograms?		✓			✓

Analyst: KSM	Date: 4/10/15	2nd Level Reviewer: WJSD	Date: 4/10/15
Comments:		Comments:	

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
4.8.15	23:43	LKM	FC-43	d1150408r4	ok	—	Res		—	Mass Res Check
4.8.15	23:55	LKM	4966:04	d1150408w1	ok	—	Win		1	Win/Col. Perf
4.9.15	00:56	LKM	nonane	— rinse	ok	—	QC		1	flush
4.9.15	1:11	LKM	↓	— ↓	ok	—	QC		1	↓
4.9.15	1:27	LKM	↓	— ↓	ok	—	QC		1	↓
4.9.15	1:43	LKM	↓	— ↓	ok	—	QC		1	↓
4.9.15	2:00	LKM	4104:74 cs1	d1150409i1	ok	—	ICAL		1	1613/8290 CS1
4.9.15	3:02	LKM	4104:74 cs2	d1150409i2	ok	—	↓		1	↓ CS2
4.9.15	4:03	LKM	4104:74cs3	d1150409i3	ok	—	↓		1	↓ CS3
4.9.15	5:05	LKM	4104:74cs4	d1150409i4	ok	—	↓		1	↓ CS4
4.9.15	6:07	LKM	4104:74cs5	d1150409i5	ok	—	↓		1	↓ CS5
4.9.15	7:09	LKM	nonane	— rinse	ok	—	QC		1	flush
4.9.15	7:25	LKM	↓	— ↓	ok	—	QC		1	↓
4.9.15	7:41	LKM	↓	— ↓	ok	—	QC		1	↓
4.9.15	7:57	LKM	↓	— ↓	ok	—	QC		1	↓
4.9.15	8:14	LKM	4966:05	d1150409ss	ok	—	SS		1	2nd Source
4/9/15	10:21	KLR	FC-43	d1150409r2	ok	—	Res		—	Mass Res Chk.
4/9/15	10:30	KLR	4104:68	d2150409w1	ok	—	win		2	Column perf.
4/9/15	11:08	KLR	Nonane	— Rinse	ok	—	QC		2	Flush
4/9/15	11:27	KLR	↓	— ↓	ok	—	↓		2	↓
4/9/15	11:45	KLR	4104:74cs1	d2150409i1	ok	—	ICAL		2	Db-225 ICAL CS1
4/9/15	12:15	KLR	Nonane	— Rinse	ok	—	QC		2	Flush
4/9/15	12:35	KLR	4104:74cs2	d2150409i2	ok	—	ICAL		2	CS2
4/9/15	13:06	KLR	Nonane	— Rinse	ok	—	QC		2	Flush
4/9/15	13:25	KLR	4104:74cs3	d2150409i3	ok	—	ICAL		2	CS3
4/9/15	13:56	KLR	Nonane	— Rinse	ok	—	QC		2	Flush
4/9/15	14:15	KLR	4104:74cs4	d2150409i4	ok	—	ICAL		2	CS4
4/9/15	14:46	KLR	Nonane	— Rinse	ok	—	QC		2	Flush
4/9/15	15:05	KLR	4104:74cs5	d2150409i5	ok	—	ICAL		2	CS5
4/9/15	15:36	KLR	Nonane	— Rinse	ok	—	QC		2	Flush
4/9/15	15:55	KLR	↓	— ↓	ok	—	↓		2	↓
4/9/15	17:47	KLR	4966:05	d2150409ss	ok	—	CCV		2	Second Source

Read and Understood by: [illegible] Date: 4-9-15

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 1613B - DB-225

ICAL ID: 78079 - 20150409I
Date: 04/09/15 11:45
Method: L1c - DX1613_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d215040 9i1	04/09/15	11:45	4104:74CS1	/20150409i/d215040 9i1.d
CS2:	d215040 9i2	04/09/15	12:35	4104:74CS2	/20150409i/d215040 9i2.d
CS3:	d215040 9i3	04/09/15	13:25	4104:74CS3	/20150409i/d215040 9i3.d
CS4:	d215040 9i4	04/09/15	14:15	4104:74CS4	/20150409i/d215040 9i4.d
CS5:	d215040 9i5	04/09/15	15:05	4104:74CS5	/20150409i/d215040 9i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.334	1.228	1.056	1.066	1.061	1.149	11.0	20.0	True
2,3,7,8-TCDF	1.219	1.105	0.981	0.977	0.946	1.046	11.0	20.0	True
37Cl4-2,3,7,8-TCDD	1.341	1.170	1.078	1.113	1.084	1.157	9.4	35.0	True
13C-2,3,7,8-TCDD	1.015	0.987	0.997	1.016	1.024	1.008	1.5	35.0	True
13C-2,3,7,8-TCDF	1.463	1.514	1.491	1.532	1.554	1.511	2.3	35.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

KLn 4/10/15
MLM 4/10/15

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 1613B - DB-225

ICAL ID: 78079 - 20150409I
Date: 04/09/15 11:45
Method: L1c - DX1613_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.74	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.88	0.81	0.79	0.78	0.78	0.65-0.89	True
37Cl4-2,3,7,8-TCDD	M							
13C-2,3,7,8-TCDD	M/M+2	0.80	0.78	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.79	0.80	0.81	0.78	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.80	0.80	0.79	0.81	0.81	0.65-0.89	True

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 1613B - DB-225

ICAL ID: 78079 - 20150409I
Date: 04/09/15 11:45
Method: L1c - DX1613_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	RRT Limits		Valid?
2,3,7,8-TCDD	1.002	1.001	1.001	1.001	1.001	0.999	-1.002	True
2,3,7,8-TCDF	1.002	1.002	1.002	1.001	1.002	0.999	-1.003	True
37Cl4-2,3,7,8-TCDD	0.985	0.985	0.985	0.985	0.984	0.989	-1.052	~~False~~ NA KW 4/10/15
13C-2,3,7,8-TCDD	0.984	0.984	0.984	0.984	0.983	0.976	-1.043	True
13C-2,3,7,8-TCDF	1.091	1.090	1.090	1.091	1.090	0.923	-1.103	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	-1.000	True

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 8290 - DB-225

ICAL ID: 78080 - 20150409I
Date: 04/09/15 11:45
Method: IN2c - IN2c

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.334	1.228	1.056	1.066	1.061	1.149	11.0	20.0	True
2,3,7,8-TCDF	1.219	1.105	0.981	0.977	0.946	1.046	11.0	20.0	True
13C-2,3,7,8-TCDD	1.015	0.987	0.997	1.016	1.024	1.008	1.5	30.0	True
13C-2,3,7,8-TCDF	1.463	1.514	1.491	1.532	1.554	1.511	2.3	30.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

UMD 4/10/15
KLu 4/10/15

TestAmerica
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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 8290 - DB-225

ICAL ID: 78080 - 20150409I
Date: 04/09/15 11:45
Method: IN2c - IN2c

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.74	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.88	0.81	0.79	0.78	0.78	0.65-0.89	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.78	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.79	0.80	0.81	0.78	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.80	0.80	0.79	0.81	0.81	0.65-0.89	True

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 8290 - DB-225

ICAL ID: 78080 - 20150409I
Date: 04/09/15 11:45
Method: IN2c - IN2c

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.001	1.001	1.001	1.001	1.001	1.001-1.002	0.001
2,3,7,8-TCDF	1.002	1.002	1.002	1.001	1.002	1.002	1.001-1.002	0.001
13C-2,3,7,8-TCDD	0.984	0.984	0.984	0.984	0.983	0.984	0.984-0.984	0.000
13C-2,3,7,8-TCDF	1.091	1.090	1.090	1.091	1.090	1.090	1.090-1.091	0.001
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 8290A - DB-225

ICAL ID: 78081 - 20150409I
Date: 04/09/15 11:45
Method: 9Ac - DX8290A Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.334	1.228	1.056	1.066	1.061	1.149	11.0	20.0	True
2,3,7,8-TCDF	1.219	1.105	0.981	0.977	0.946	1.046	11.0	20.0	True
13C-2,3,7,8-TCDD	1.015	0.987	0.997	1.016	1.024	1.008	1.5	20.0	True
13C-2,3,7,8-TCDF	1.463	1.514	1.491	1.532	1.554	1.511	2.3	20.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

KSh 4/10/15
MID 4/10/15

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 8290A - DB-225

ICAL ID: 78081 - 20150409I
Date: 04/09/15 11:45
Method: 9Ac - DX8290A Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.74	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.88	0.81	0.79	0.78	0.78	0.65-0.89	True
13C-2,3,7,8-TCDD	M/M+2	0.80	0.78	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.79	0.80	0.81	0.78	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.80	0.80	0.79	0.81	0.81	0.65-0.89	True

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 8290A - DB-225

ICAL ID: 78081 - 20150409I
Date: 04/09/15 11:45
Method: 9Ac - DX8290A Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25µm
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.001	1.001	1.001	1.001	1.001	1.001-1.002	0.001
2,3,7,8-TCDF	1.002	1.002	1.002	1.001	1.002	1.002	1.001-1.002	0.001
13C-2,3,7,8-TCDD	0.984	0.984	0.984	0.984	0.983	0.984	0.984-0.984	0.000
13C-2,3,7,8-TCDF	1.091	1.090	1.090	1.091	1.090	1.090	1.090-1.091	0.001
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 23 - DB-225

ICAL ID: 78082 - 20150409I
Date: 04/09/15 11:45
Method: KP2c - DX23_2_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.334	1.228	1.056	1.066	1.061	1.149	11.0	25.0	True
2,3,7,8-TCDF	1.219	1.105	0.981	0.977	0.946	1.046	11.0	25.0	True
37Cl4-2,3,7,8-TCDD	1.322	1.185	1.082	1.095	1.059	1.149	9.4	25.0	True
13C-2,3,7,8-TCDD	1.015	0.987	0.997	1.016	1.024	1.008	1.5	25.0	True
13C-2,3,7,8-TCDF	1.463	1.514	1.491	1.532	1.554	1.511	2.3	30.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

KLu 4/10/15
WWD 4/10/15

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 23 - DB-225

ICAL ID: 78082 - 20150409I
Date: 04/09/15 11:45
Method: KP2c - DX23_2_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.74	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.88	0.81	0.79	0.78	0.78	0.65-0.89	True
37Cl4-2,3,7,8-TCDD	M							
13C-2,3,7,8-TCDD	M/M+2	0.80	0.78	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.79	0.80	0.81	0.78	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.80	0.80	0.79	0.81	0.81	0.65-0.89	True

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 23 - DB-225

ICAL ID: 78082 - 20150409I
Date: 04/09/15 11:45
Method: KP2c - DX23_2_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.001	1.001	1.001	1.001	1.001	1.001-1.002	0.001
2,3,7,8-TCDF	1.002	1.002	1.002	1.001	1.002	1.002	1.001-1.002	0.001
37Cl4-2,3,7,8-TCDD	1.001	1.001	1.001	1.001	1.001	1.001	1.001-1.001	0.000
13C-2,3,7,8-TCDD	0.984	0.984	0.984	0.984	0.983	0.984	0.984-0.984	0.000
13C-2,3,7,8-TCDF	1.091	1.090	1.090	1.091	1.090	1.090	1.090-1.091	0.001
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 0023/8290 - DB-225

ICAL ID: 78083 - 20150409I
Date: 04/09/15 11:45
Method: X8c - 0023/8290_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.334	1.228	1.056	1.066	1.061	1.149	11.0	20.0	True
2,3,7,8-TCDF	1.219	1.105	0.981	0.977	0.946	1.046	11.0	20.0	True
37Cl4-2,3,7,8-TCDD	1.322	1.185	1.082	1.095	1.059	1.149	9.4	30.0	True
13C-2,3,7,8-TCDD	1.015	0.987	0.997	1.016	1.024	1.008	1.5	30.0	True
13C-2,3,7,8-TCDF	1.463	1.514	1.491	1.532	1.554	1.511	2.3	30.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

KLn 4/10/15
MID 4/10/15

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 0023/8290 - DB-225

ICAL ID: 78083 - 20150409I
Date: 04/09/15 11:45
Method: X8c - 0023/8290_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d215040 9i1	04/09/15	11:45	4104:74CS1	/20150409i/d215040 9i1.d
CS2:	d215040 9i2	04/09/15	12:35	4104:74CS2	/20150409i/d215040 9i2.d
CS3:	d215040 9i3	04/09/15	13:25	4104:74CS3	/20150409i/d215040 9i3.d
CS4:	d215040 9i4	04/09/15	14:15	4104:74CS4	/20150409i/d215040 9i4.d
CS5:	d215040 9i5	04/09/15	15:05	4104:74CS5	/20150409i/d215040 9i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.74	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.88	0.81	0.79	0.78	0.78	0.65-0.89	True
37Cl4-2,3,7,8-TCDD	M							
13C-2,3,7,8-TCDD	M/M+2	0.80	0.78	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.79	0.80	0.81	0.78	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.80	0.80	0.79	0.81	0.81	0.65-0.89	True

TestAmerica
Knoxville

IsoCalc Initial Calibration Report

TCDD/F by EPA Method 0023/8290 - DB-225

ICAL ID: 78083 - 20150409I
Date: 04/09/15 11:45
Method: X8c - 0023/8290_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.001	1.001	1.001	1.001	1.001	1.001-1.002	0.001
2,3,7,8-TCDF	1.002	1.002	1.002	1.001	1.002	1.002	1.001-1.002	0.001
37Cl4-2,3,7,8-TCDD	1.001	1.001	1.001	1.001	1.001	1.001	1.001-1.001	0.000
13C-2,3,7,8-TCDD	0.984	0.984	0.984	0.984	0.983	0.984	0.984-0.984	0.000
13C-2,3,7,8-TCDF	1.091	1.090	1.090	1.091	1.090	1.090	1.090-1.091	0.001
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 0023/8290A - DB-225

ICAL ID: 78084 - 20150409I
Date: 04/09/15 11:45
Method: X8cA - 0023/8290A_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time	Sample ID	Result Directory
CS1:	d2150409i1	04/09/15 11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15 12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15 13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15 14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15 15:05	4104:74CS5	/20150409i/d2150409i5.d

Response Factors

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RF	%RSD	Limit	Valid?
2,3,7,8-TCDD	1.334	1.228	1.056	1.066	1.061	1.149	11.0	20.0	True
2,3,7,8-TCDF	1.219	1.105	0.981	0.977	0.946	1.046	11.0	20.0	True
37Cl4-2,3,7,8-TCDD	1.322	1.185	1.082	1.095	1.059	1.149	9.4	30.0	True
13C-2,3,7,8-TCDD	1.015	0.987	0.997	1.016	1.024	1.008	1.5	20.0	True
13C-2,3,7,8-TCDF	1.463	1.514	1.491	1.532	1.554	1.511	2.3	20.0	True
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	0.0	0.0	True

Kln 4/10/15
MMD 4/10/15

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 0023/8290A - DB-225

ICAL ID: 78084 - 20150409I
Date: 04/09/15 11:45
Method: X8cA - 0023/8290A_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Ion Abundance Ratios

Analyte	M/Z's	CS1	CS2	CS3	CS4	CS5	Ratio Limits	Valid?
2,3,7,8-TCDD	M/M+2	0.75	0.74	0.78	0.79	0.79	0.65-0.89	True
2,3,7,8-TCDF	M/M+2	0.88	0.81	0.79	0.78	0.78	0.65-0.89	True
37Cl4-2,3,7,8-TCDD	M							
13C-2,3,7,8-TCDD	M/M+2	0.80	0.78	0.80	0.81	0.79	0.65-0.89	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.79	0.80	0.81	0.78	0.65-0.89	True
13C-1,2,3,4-TCDD	M/M+2	0.80	0.80	0.79	0.81	0.81	0.65-0.89	True

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IsoCalc Initial Calibration Report

TCDD/F by EPA Method 0023/8290A - DB-225

ICAL ID: 78084 - 20150409I
Date: 04/09/15 11:45
Method: X8cA - 0023/8290A_Conf

Instrument: D12C
Column Desc: DB-225 30m x 0.32mm ID x 0.25um
Column S/N: 154214

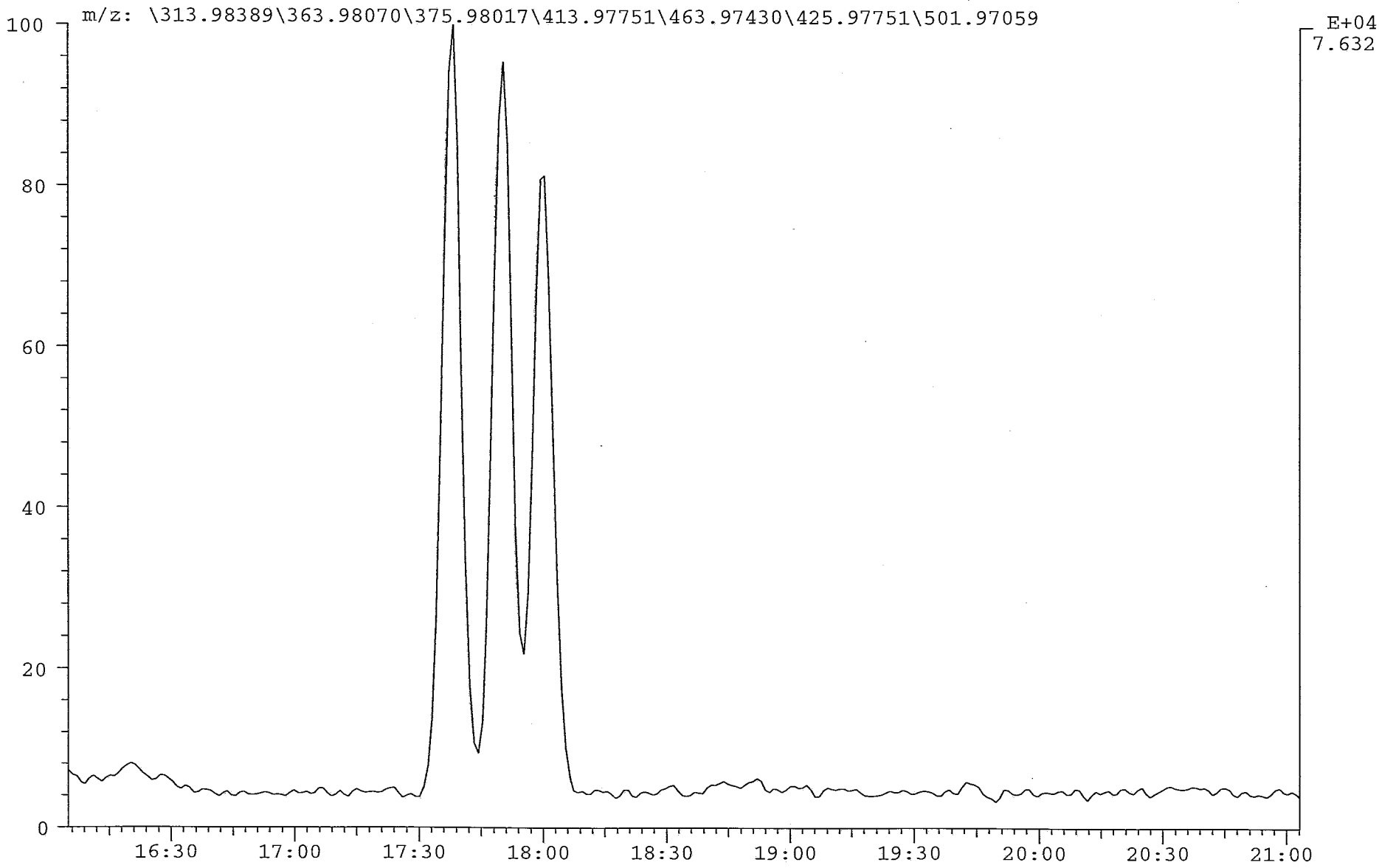
Level	Filename	Date/Time		Sample ID	Result Directory
CS1:	d2150409i1	04/09/15	11:45	4104:74CS1	/20150409i/d2150409i1.d
CS2:	d2150409i2	04/09/15	12:35	4104:74CS2	/20150409i/d2150409i2.d
CS3:	d2150409i3	04/09/15	13:25	4104:74CS3	/20150409i/d2150409i3.d
CS4:	d2150409i4	04/09/15	14:15	4104:74CS4	/20150409i/d2150409i4.d
CS5:	d2150409i5	04/09/15	15:05	4104:74CS5	/20150409i/d2150409i5.d

Relative Retention Time

Analyte	CS1	CS2	CS3	CS4	CS5	Mean RRT	Range	Window
2,3,7,8-TCDD	1.002	1.001	1.001	1.001	1.001	1.001	1.001-1.002	0.001
2,3,7,8-TCDF	1.002	1.002	1.002	1.001	1.002	1.002	1.001-1.002	0.001
37Cl4-2,3,7,8-TCDD	1.001	1.001	1.001	1.001	1.001	1.001	1.001-1.001	0.000
13C-2,3,7,8-TCDD	0.984	0.984	0.984	0.984	0.983	0.984	0.984-0.984	0.000
13C-2,3,7,8-TCDF	1.091	1.090	1.090	1.091	1.090	1.090	1.090-1.091	0.001
13C-1,2,3,4-TCDD	1.000	1.000	1.000	1.000	1.000	1.000	1.000-1.000	0.000

Int./Calc./Ck 4/9/15
QC LLD 4/10/15

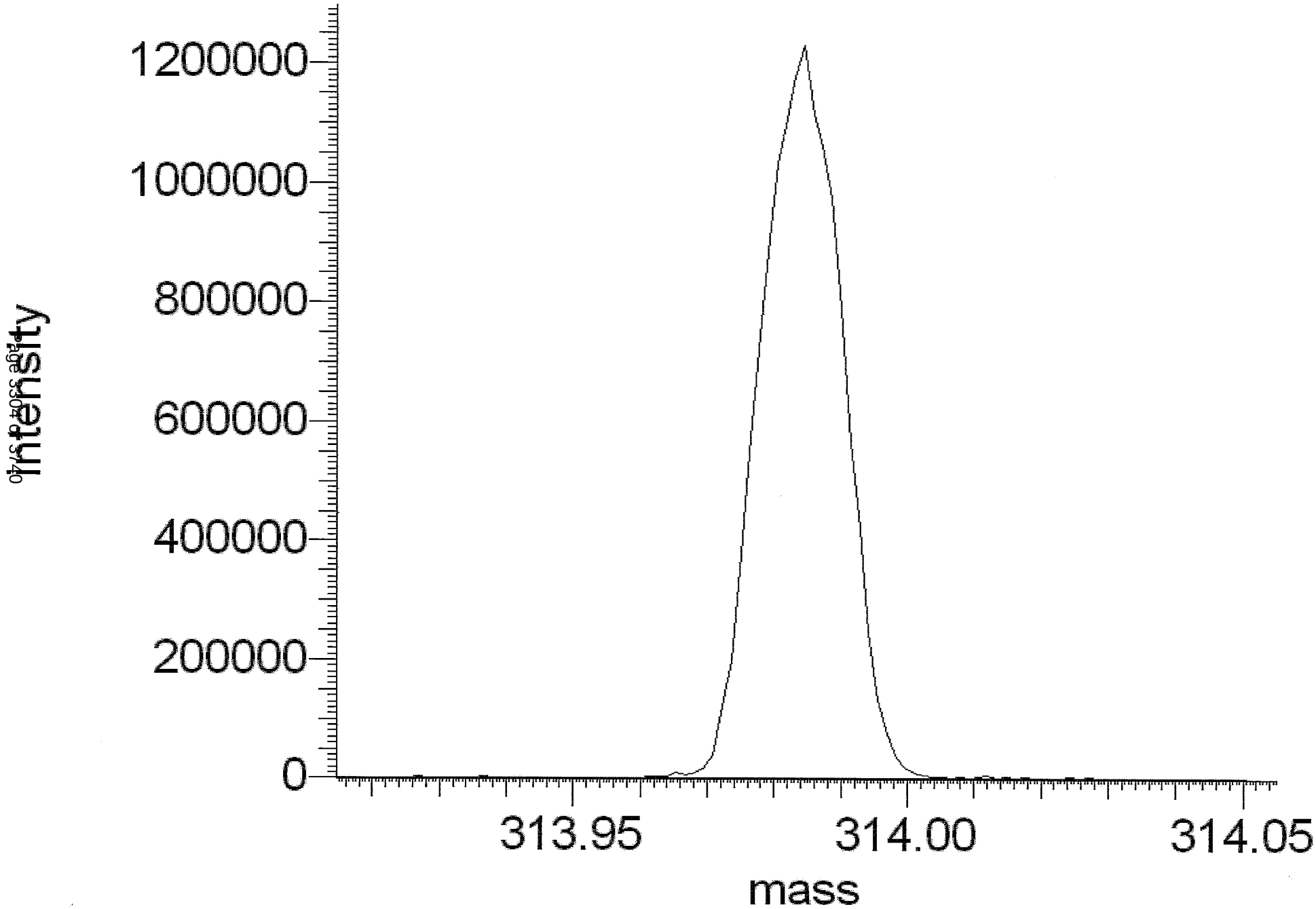
CHRO: d2150409w1 09-Apr-15 Elapse: 41:12 1969
Samp: WO=4104:68 Meth=L1c Dil=1 Start : 10:30:26 1156
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 477 > 772 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



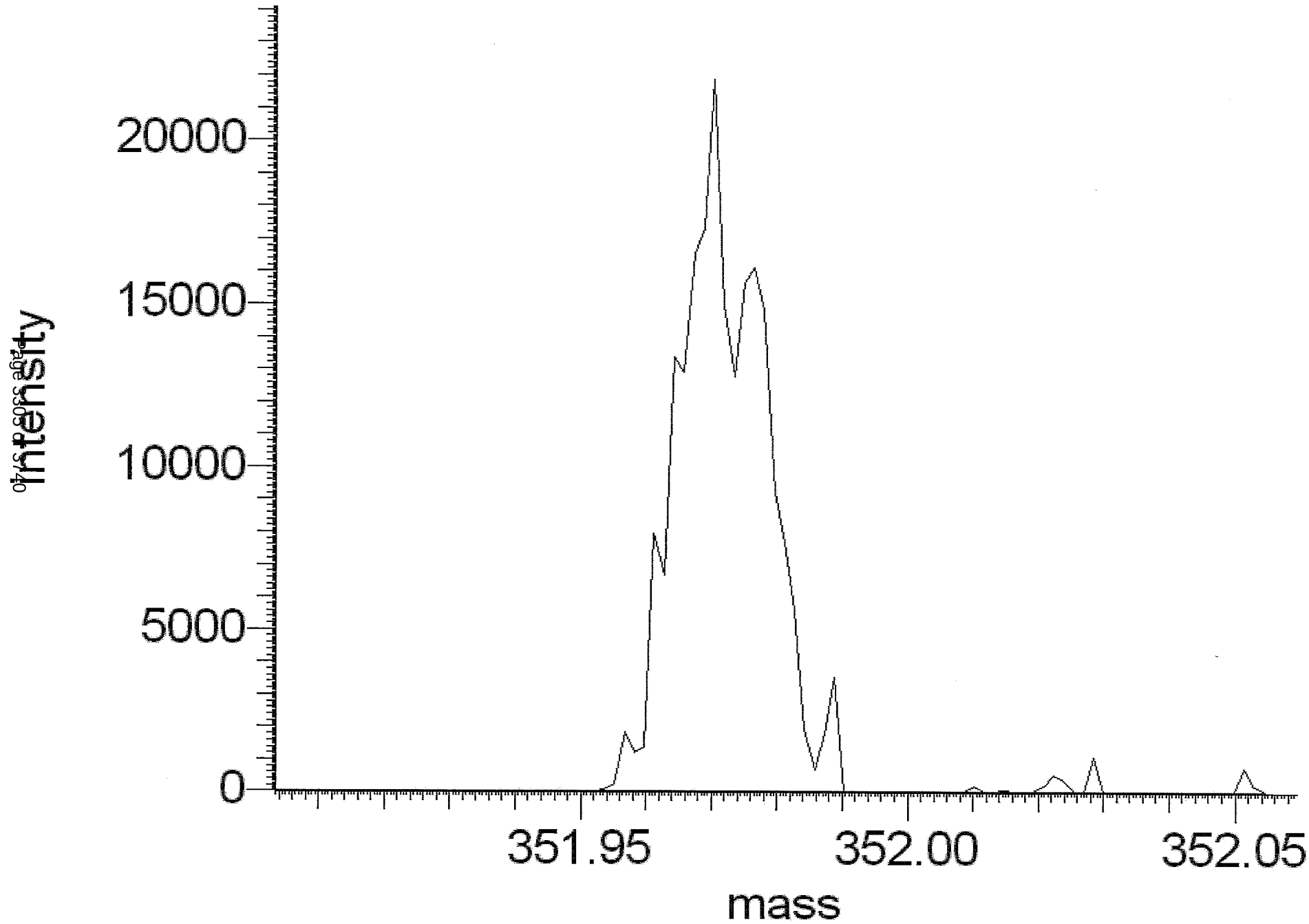
```
Reports
10:28:46:  Peak matching procedure started
10:28:46:
10:28:47:  Reference mass: 313.98336
10:28:47:  Sample mass: 364.0
10:28:48:
10:28:48:  Finding reference mass
10:28:50:  Finding sample mass
10:28:50:
10:28:55:  [1]   363.9781 amu, mean: 363.9781
10:28:58:  [2]   363.9784 amu, mean: 363.9783     SD: 0.17 mmu or: 0.46 ppm
10:29:02:  [3]   363.9776 amu, mean: 363.9780     SD: 0.42 mmu or: 1.14 ppm
10:29:05:  [4]   363.9774 amu, mean: 363.9779     SD: 0.45 mmu or: 1.24 ppm
10:29:08:  [5]   363.9786 amu, mean: 363.9780     SD: 0.51 mmu or: 1.40 ppm
10:29:11:  [6]   363.9781 amu, mean: 363.9780     SD: 0.46 mmu or: 1.26 ppm
10:29:15:  [7]   363.9783 amu, mean: 363.9781     SD: 0.43 mmu or: 1.19 ppm
10:29:17:  [8]   363.9787 amu, mean: 363.9782     SD: 0.46 mmu or: 1.26 ppm
10:29:20:  [9]   363.9788 amu, mean: 363.9782     SD: 0.48 mmu or: 1.33 ppm
10:29:24:  [10]   363.9776 amu, mean: 363.9782     SD: 0.50 mmu or: 1.36 ppm
10:29:24:
10:29:24:  Stop requested. Please wait for procedure to finish.
10:29:24:
10:29:27:
10:29:27:  Peakmatching stopped
```

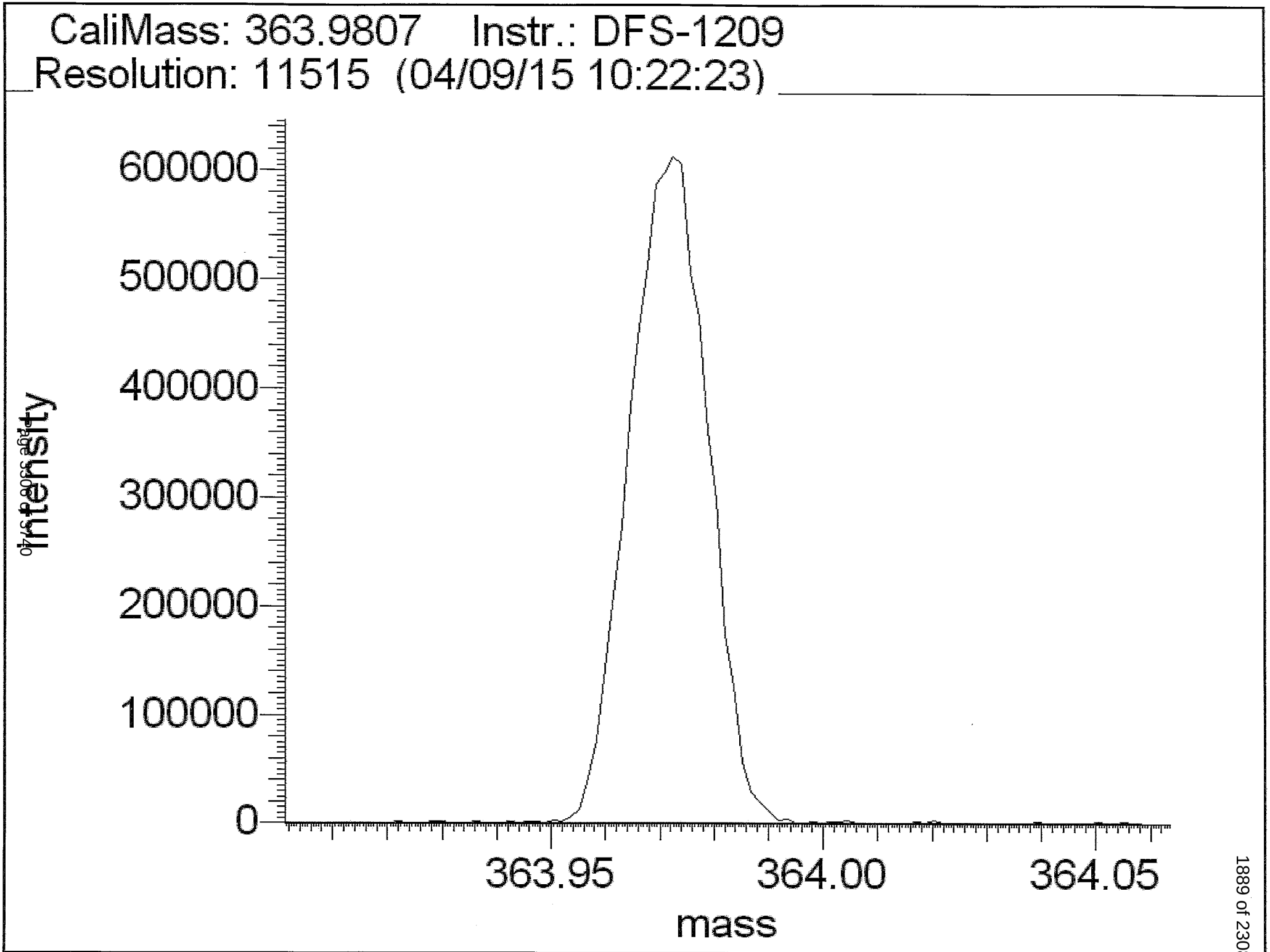
Signature 4/9/15

LockMass: 313.9838 Instr.: DFS-1209
Resolution: 11330 (04/09/15 10:21:33)

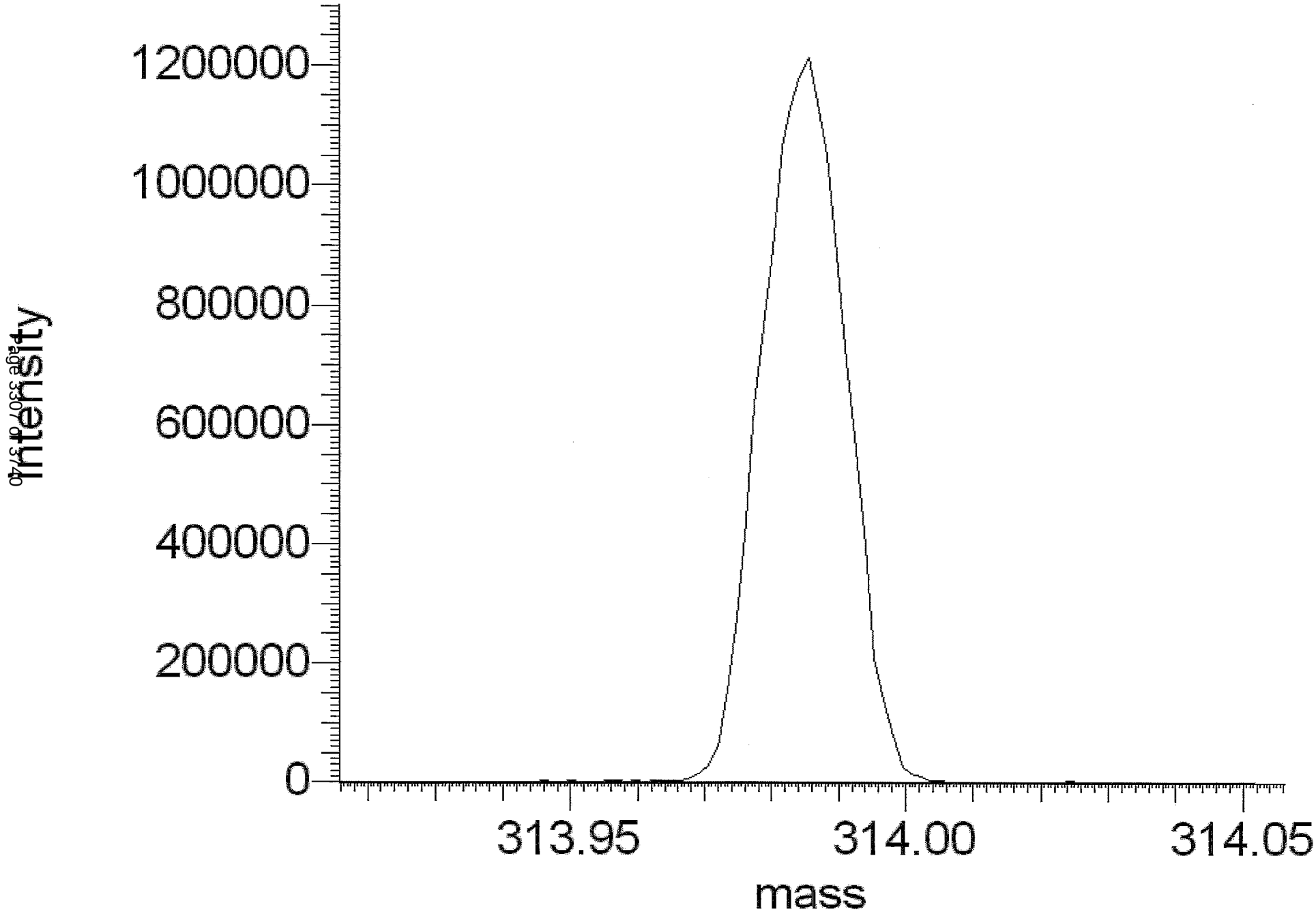


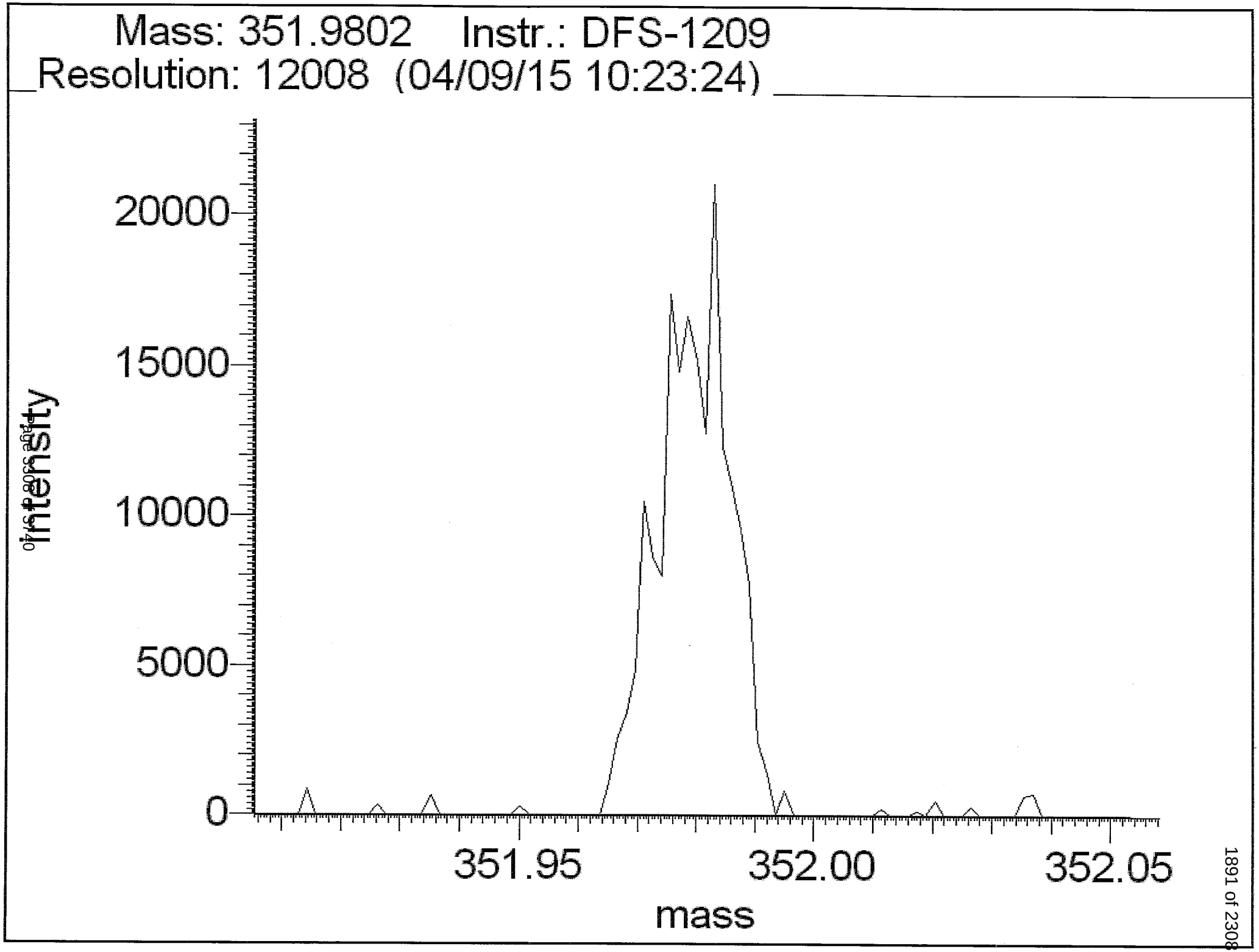
Mass: 351.9802 Instr.: DFS-1209
Resolution: 11440 (04/09/15 10:22:20)



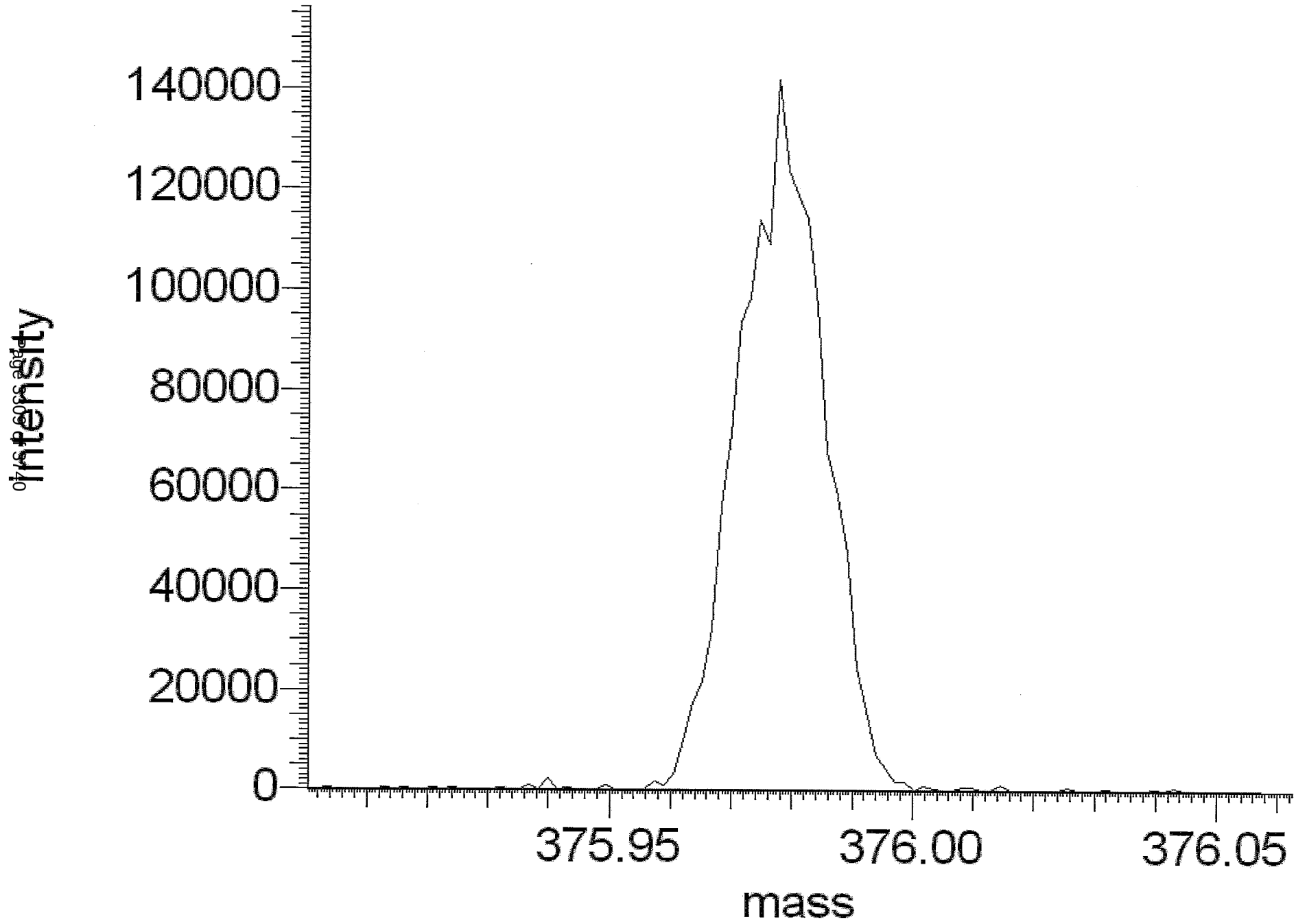

CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 11515 (04/09/15 10:22:23)
Intensity
600000
500000
400000
300000
200000
100000
0
363.95
364.00
364.05
mass

LockMass: 313.9839 Instr.: DFS-1209
Resolution: 11515 (04/09/15 10:22:38)

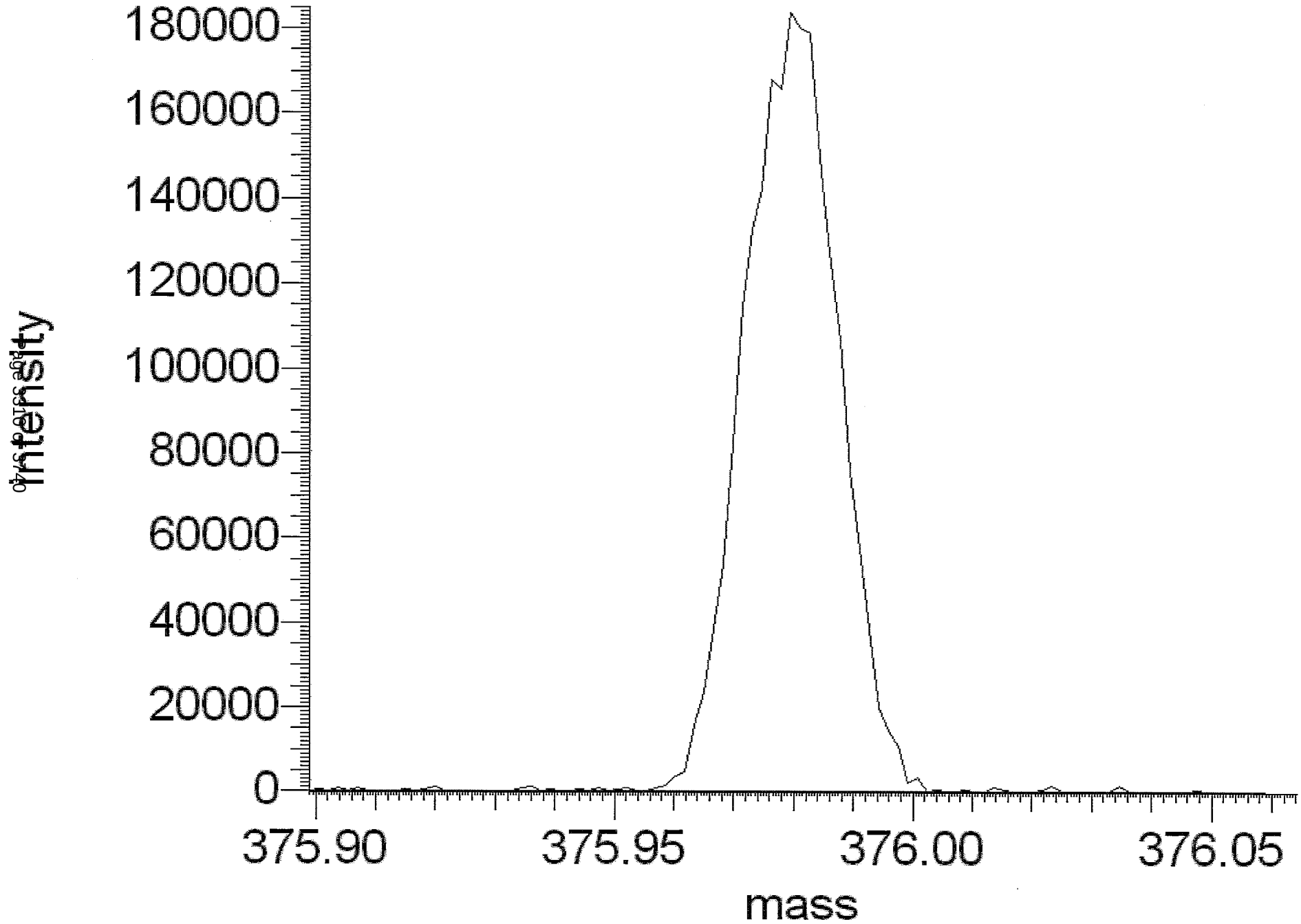



Mass: 351.9802 Instr.: DFS-1209
Resolution: 12008 (04/09/15 10:23:24)
Intensity
20000
15000
10000
5000
0
351.95
352.00
352.05
mass

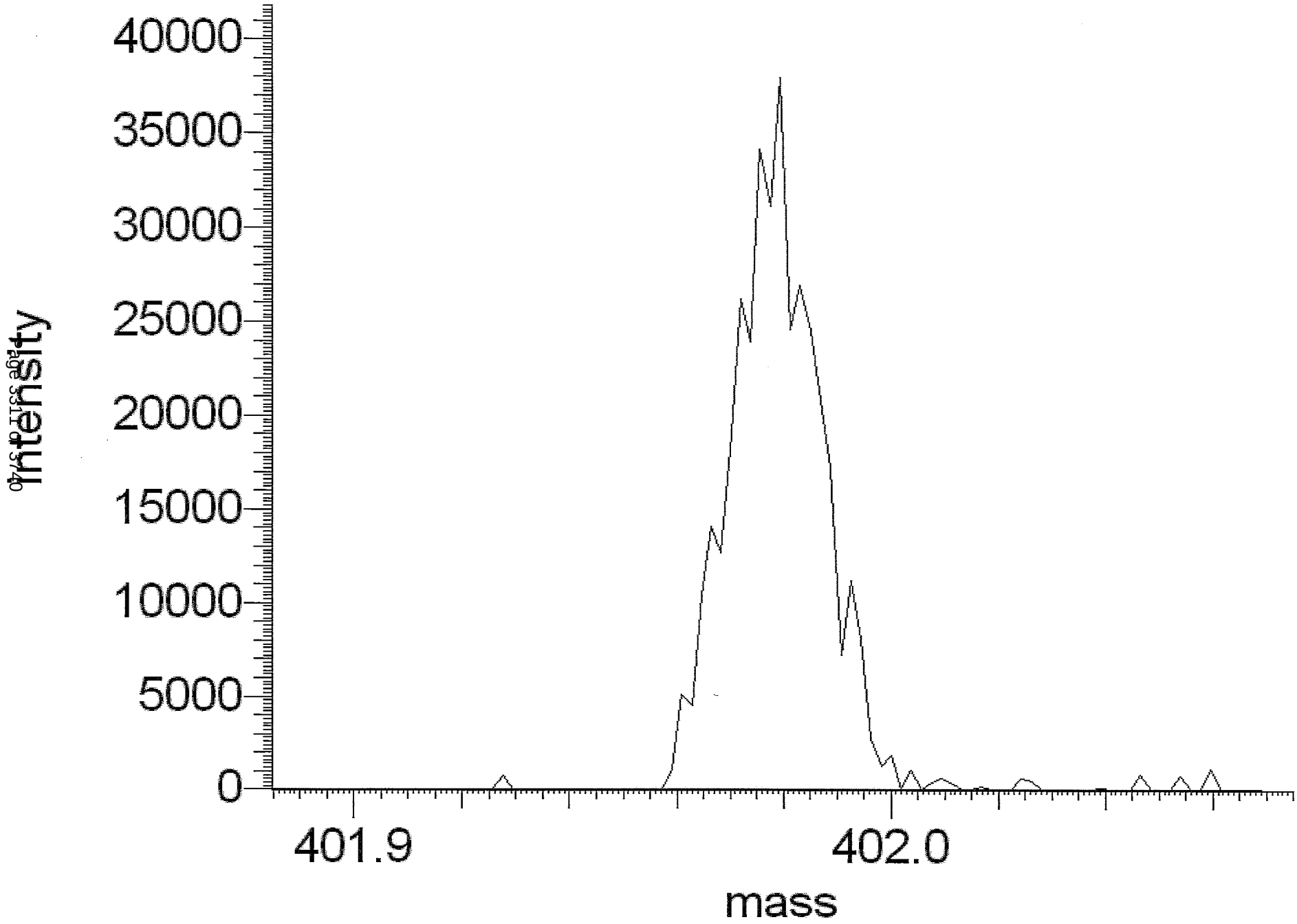
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 11546 (04/09/15 10:23:27)



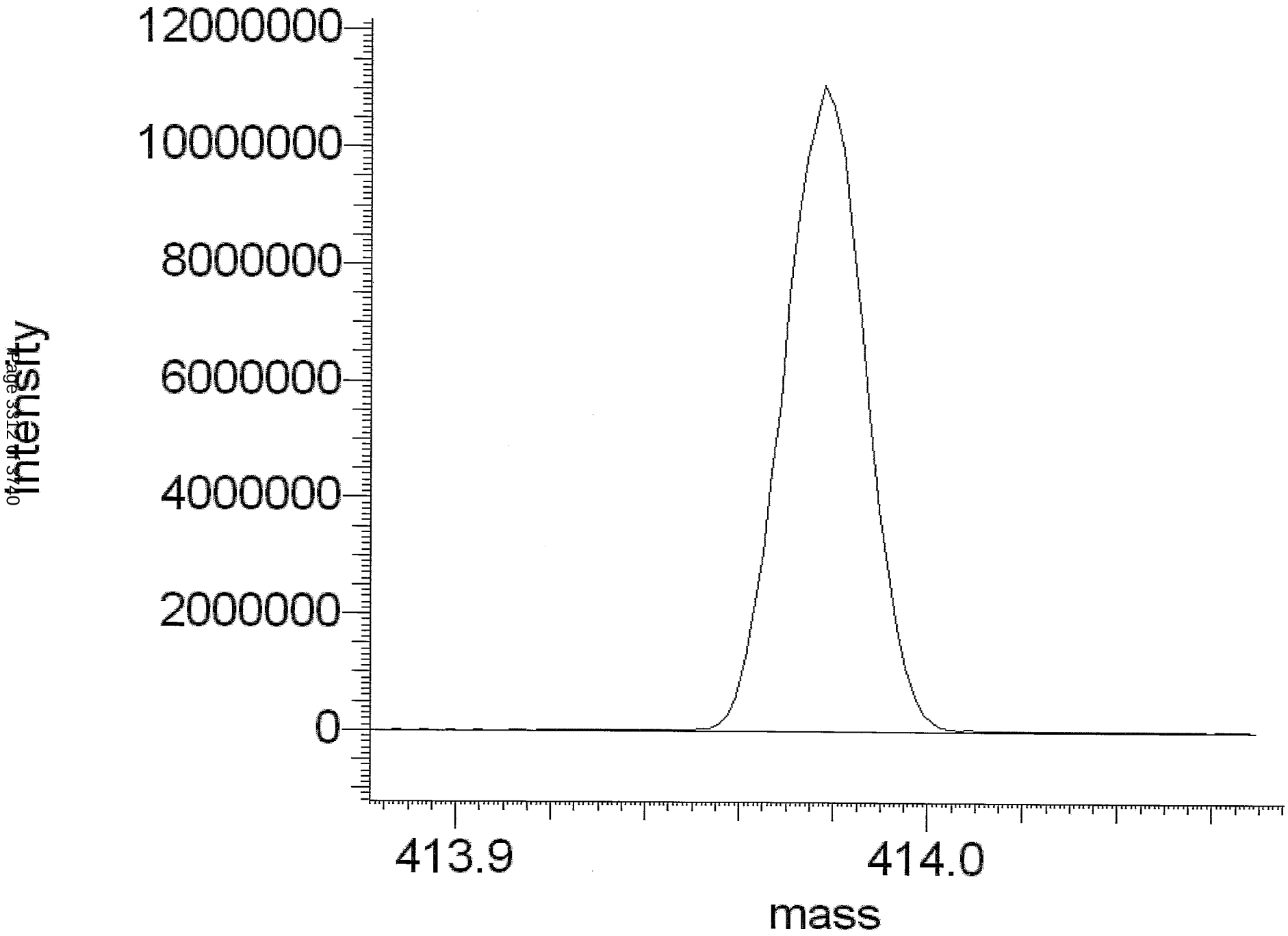
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 11546 (04/09/15 10:23:42)



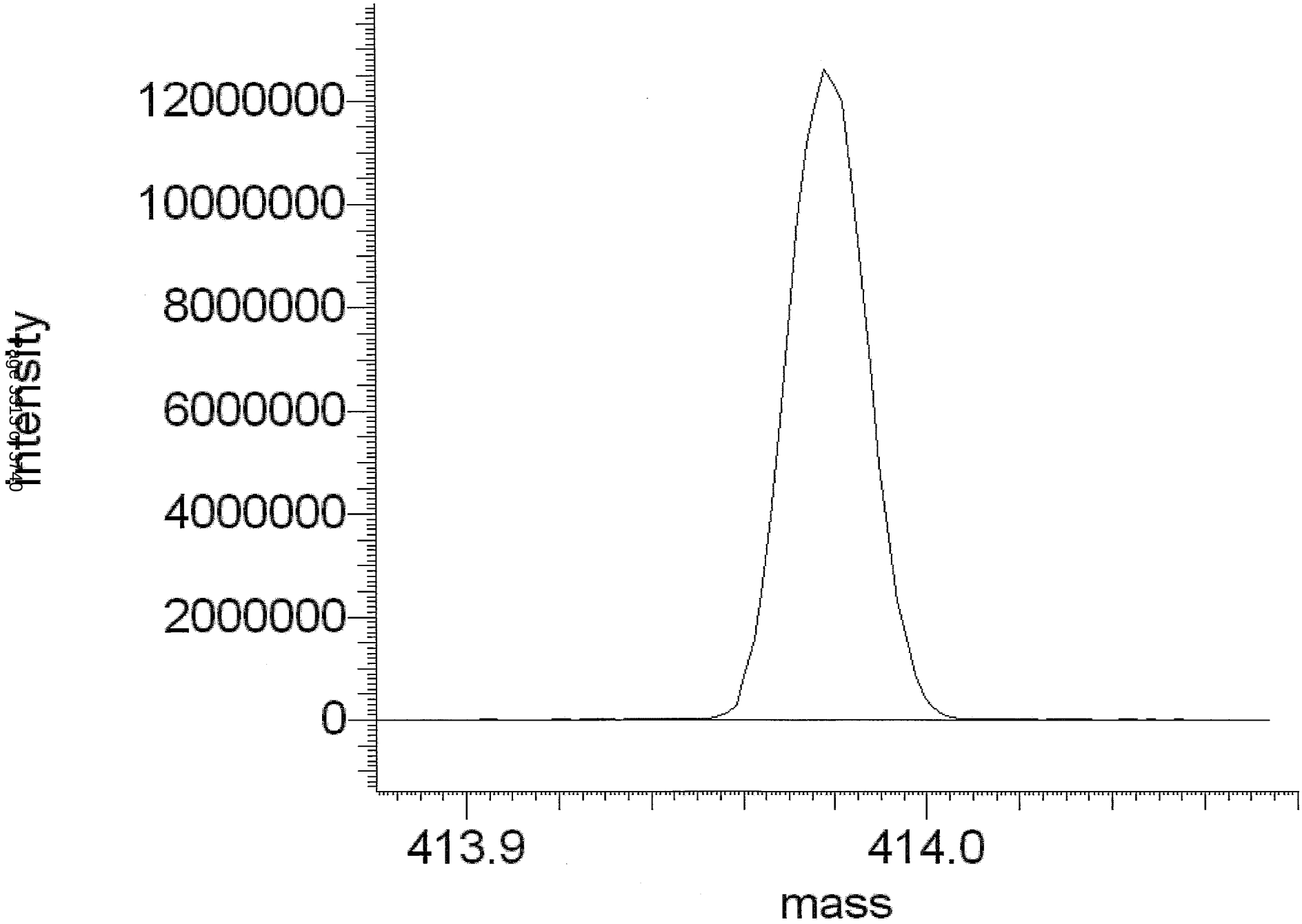
Mass: 401.9770 Instr.: DFS-1209
Resolution: 11110 (04/09/15 10:24:29)



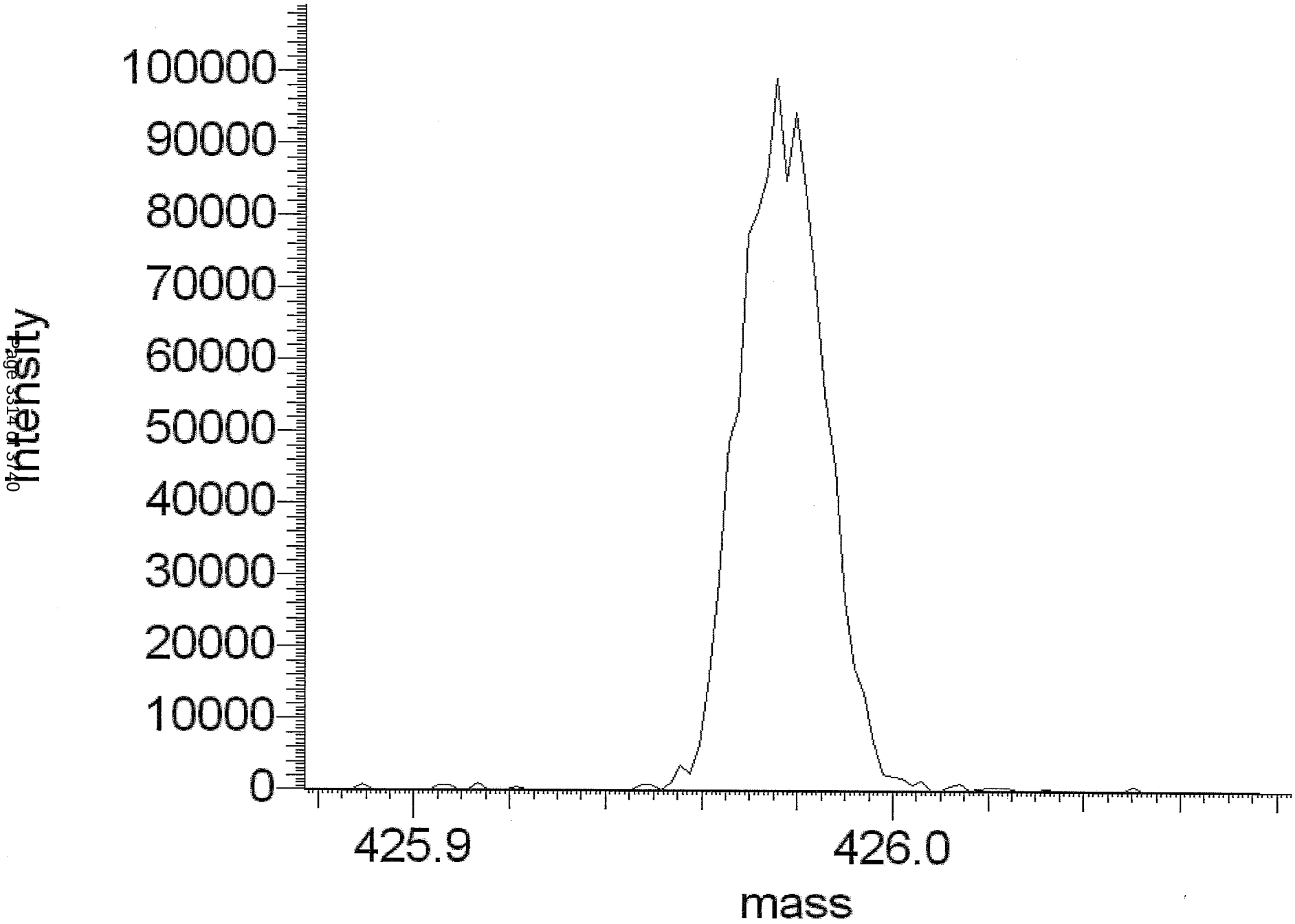
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 10652 (04/09/15 10:24:32)



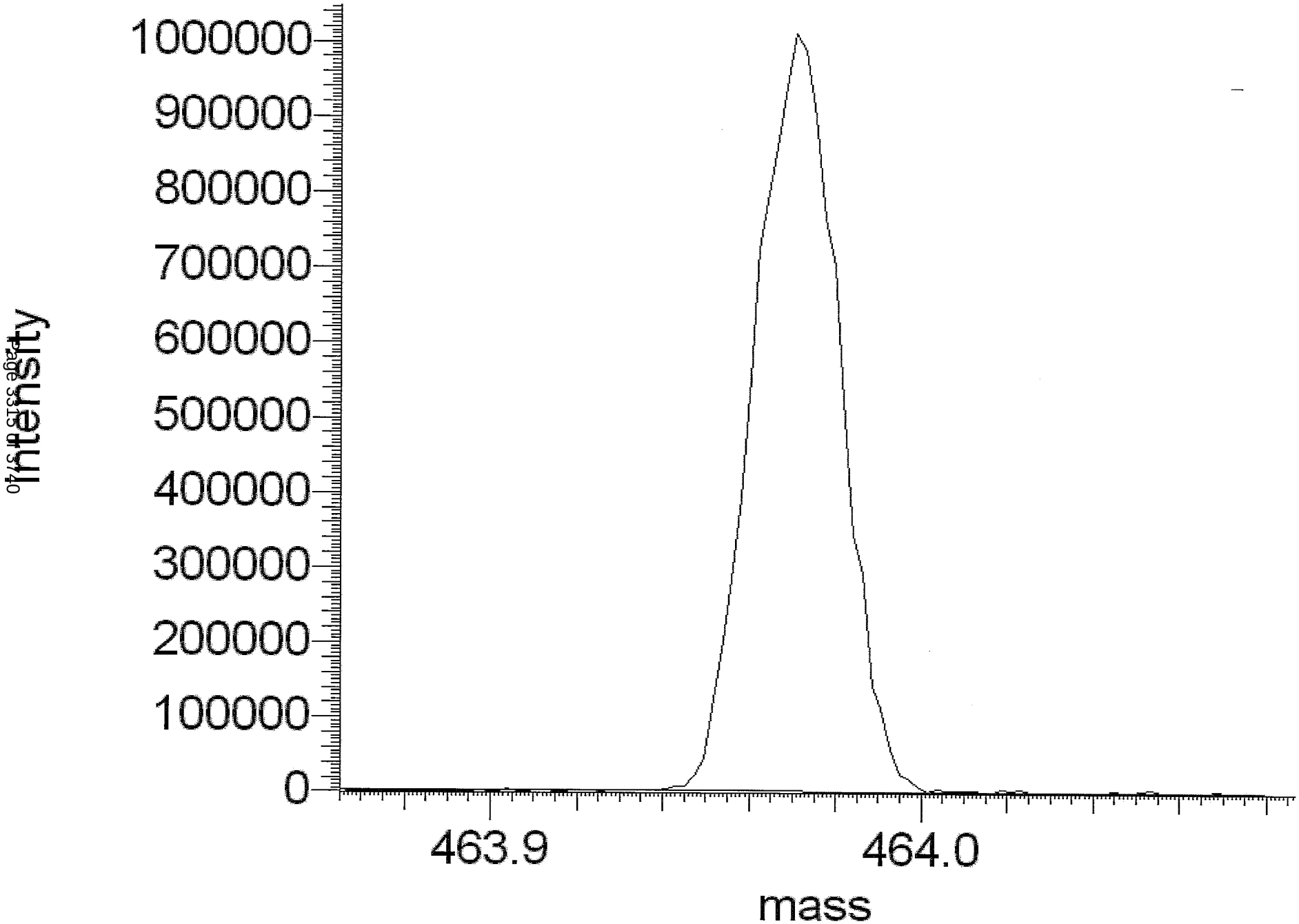
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 10652 (04/09/15 10:24:47)



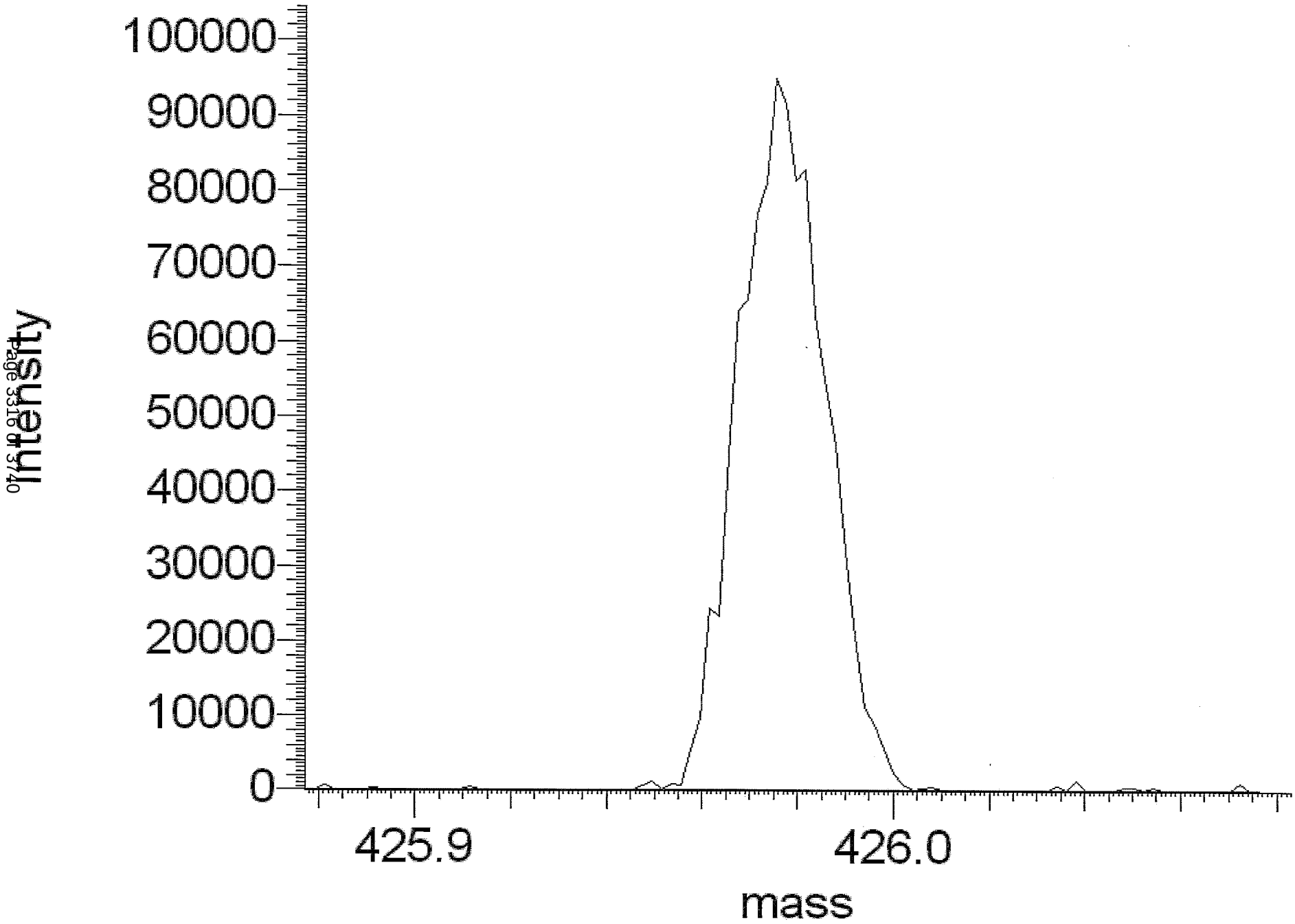
Mass: 425.9770 Instr.: DFS-1209
Resolution: 11042 (04/09/15 10:25:34)



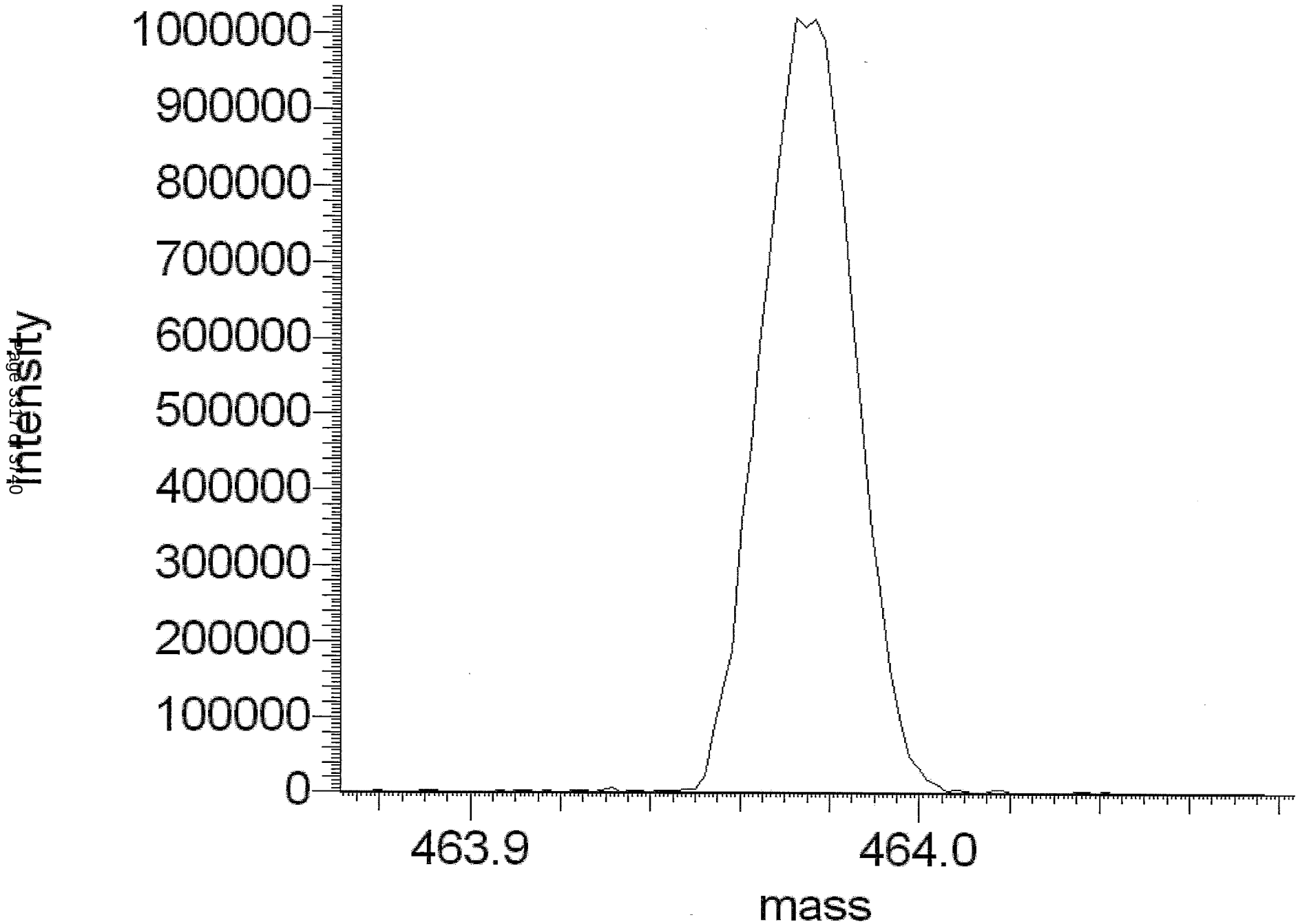
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 10598 (04/09/15 10:25:37)



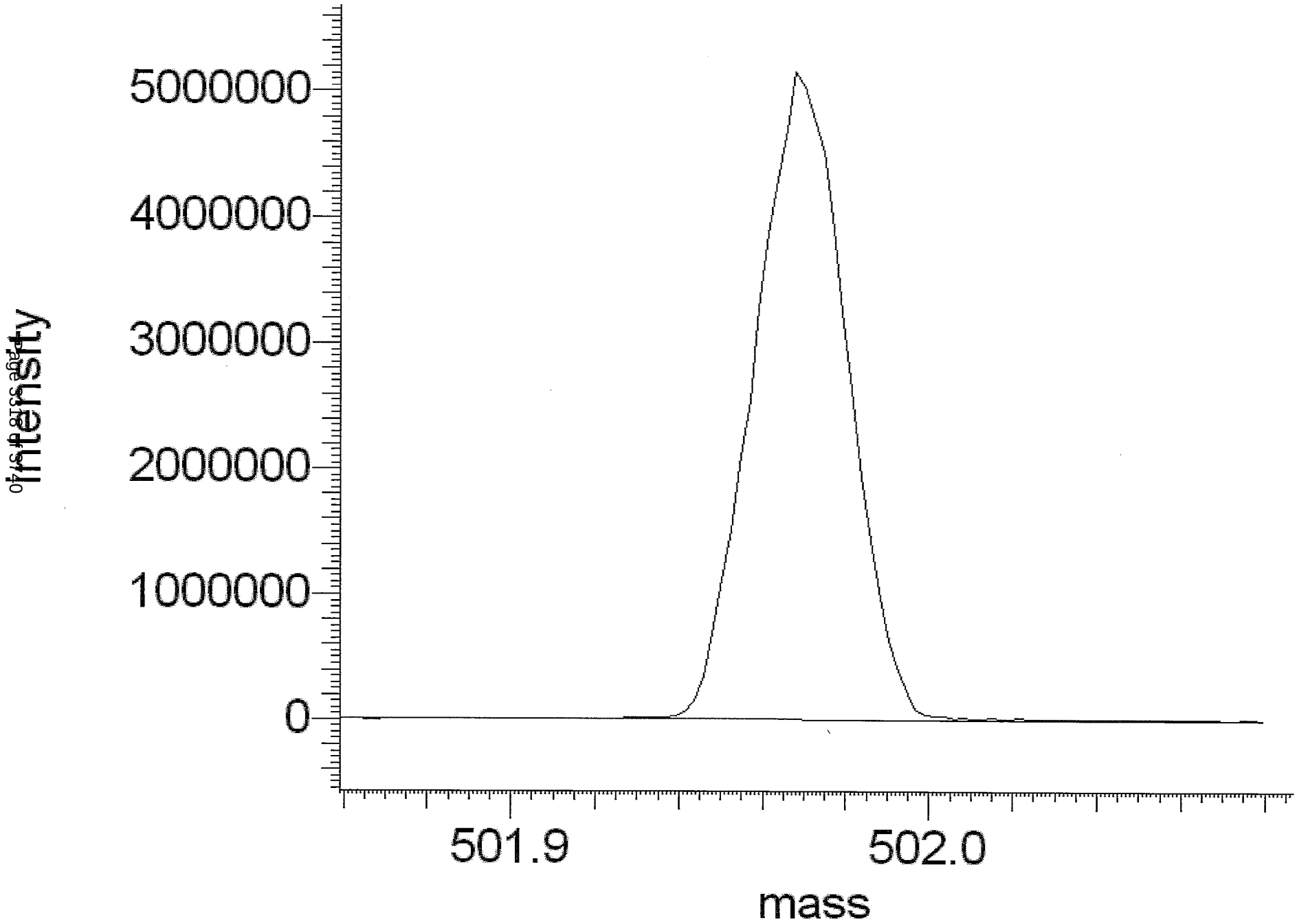
LockMass: 425.9775 Instr.: DFS-1209
Resolution: 10598 (04/09/15 10:25:52)



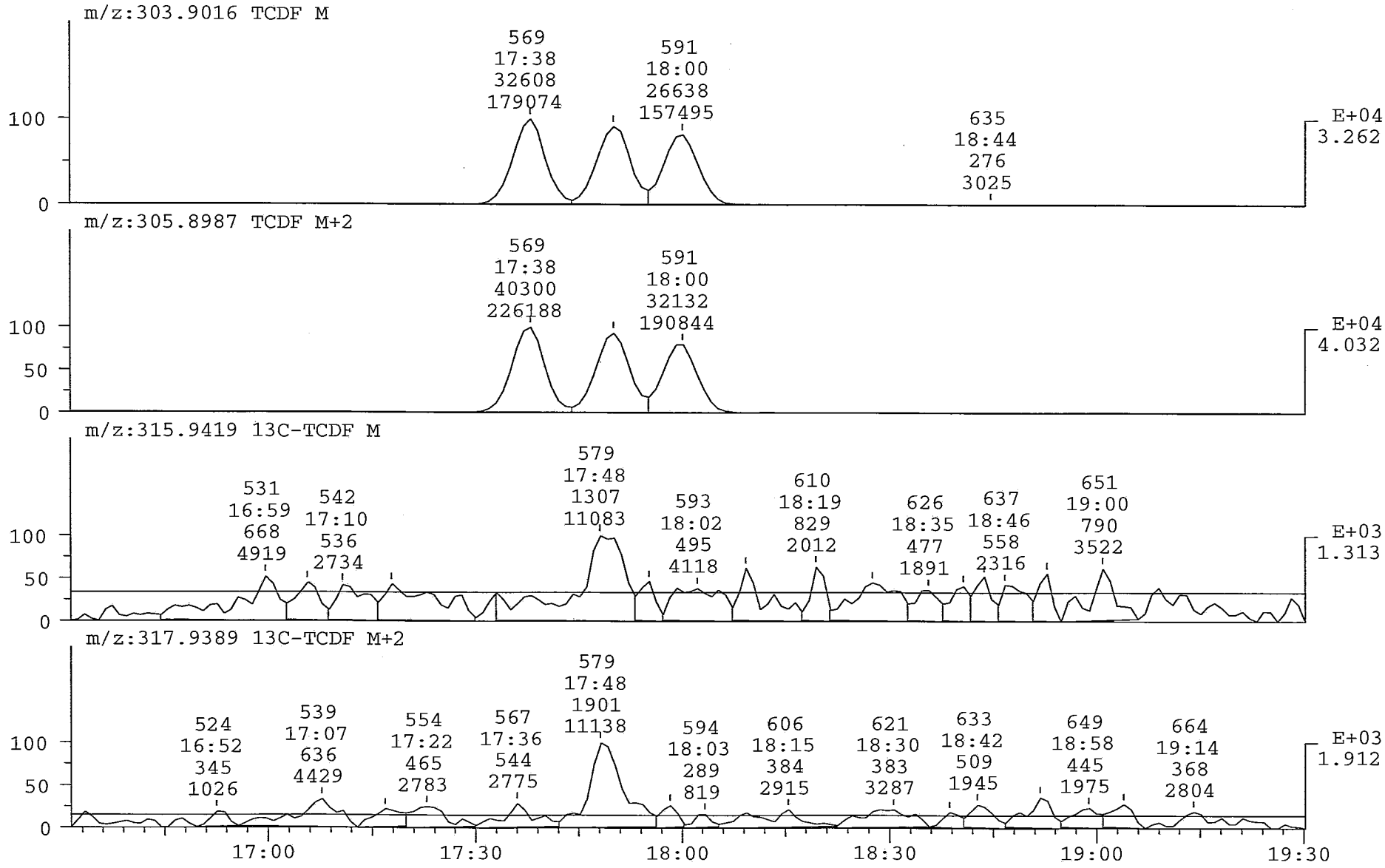
Mass: 463.9743 Instr.: DFS-1209
Resolution: 10437 (04/09/15 10:26:39)



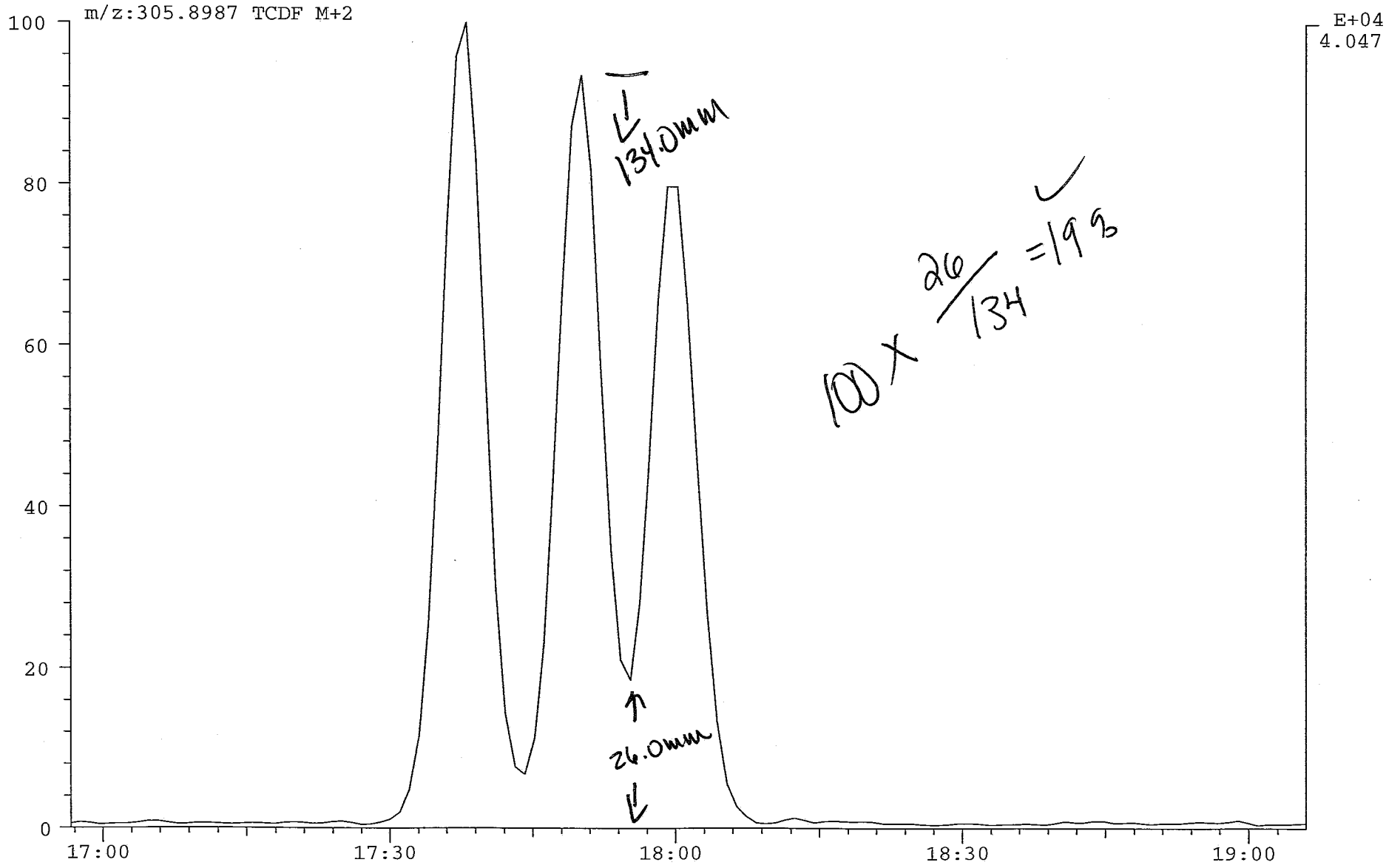
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 10208 (04/09/15 10:26:42)



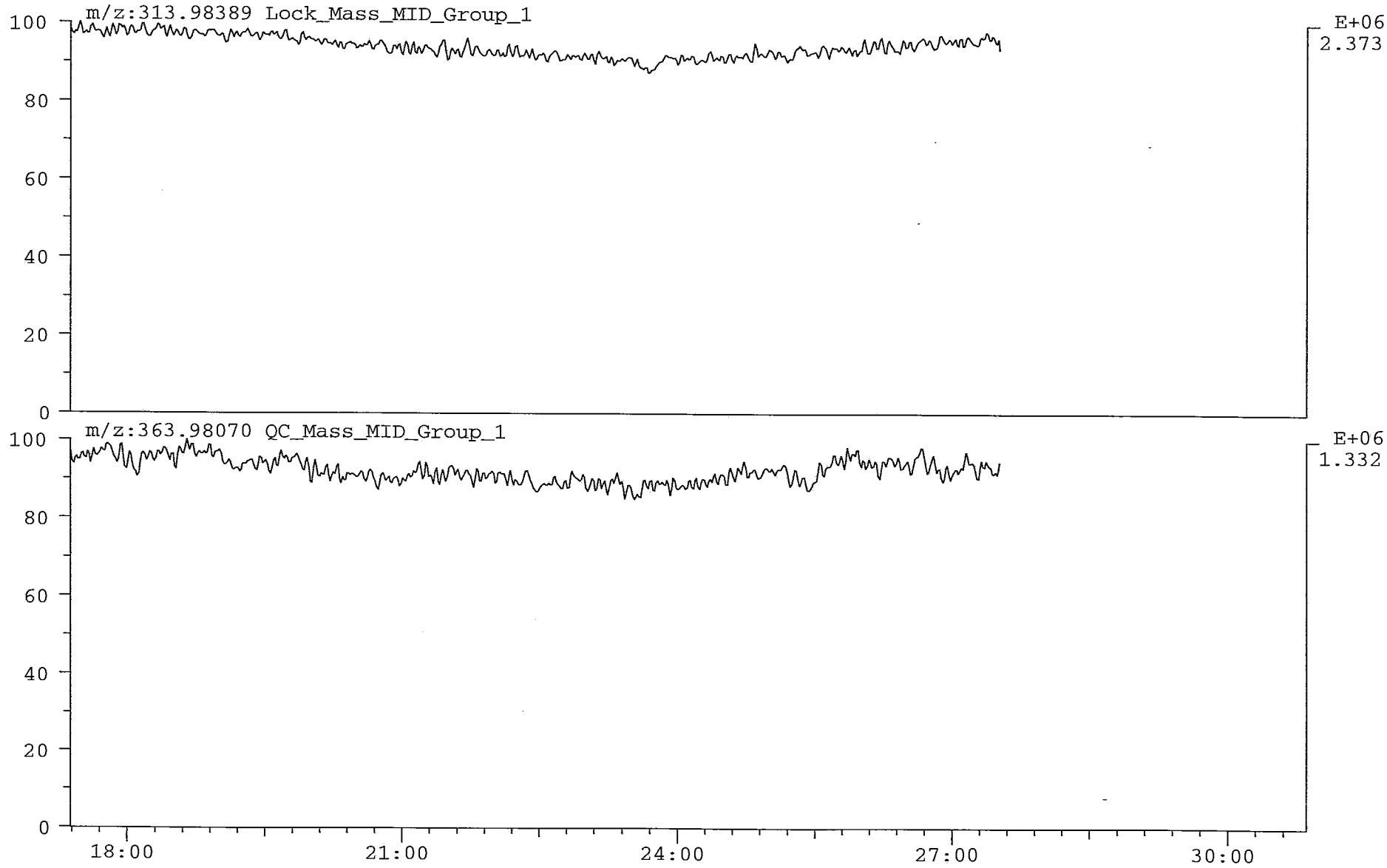
CHRO: d2150409w1 09-Apr-15 Elapse: 41:12 1969
Samp: WO=4104:68 Meth=L1c Dil=1 Start : 10:30:26 1156
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 503 > 680 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2150409w1 09-Apr-15 Elapse: 41:12 1969
Samp: WO=4104:68 Meth=L1c Dil=1 Start : 10:30:26 1156
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 528 > 656 Masses: 303 > 376
Area: 0, 0.50, 0 Baseline : 100, 3 Label : 0, 2.5



CHRO: d2150409w1 09-Apr-15 Elapse: 41:12 1969
Samp: WO=4104:68 Meth=L1c Dil=1 Start : 10:30:26 1156
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 554 > 1354 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



d2150409w1.log

```
*** file opened Thu Apr 09 10:33:28 2015 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 09-Apr-15 10:33:28


  Analysis will stop at user request


  Firmware Version: 1.03


  MCAL file name: mcal1.cal


  Sequence : 102913KLR_150409103025


  MID procedure: 5W_DB225_FC43_SINGLEGC



  Mid Time Windows:
        Start        Measure      End       Cycletime

  # 1   8:00 min  19:30 min  27:30 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      124
    305.8987     1  1      124
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      124
    321.8936     1  1      124
    327.8847     1  1      124
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802    20  1        6
    375.8364     1  1      124

  MID Window terminated after 27.500000 minutes
  MID Window end time was 27.500000 minutes

  Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

  DFS - Parameter

   ACCU          1000.0000   BCORRS          0.0169   BMASS          313.4834
   BQUAD            1.1000   CAPIL           0.0000   CAPTSET        200.0000
   CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
   DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
   DYNVOLTAGE       16.0000  ECORR           1.0001   ECURR            1.0000
   EDAC        7969177.0000  EDACG           0.9995   EDACZ         4144.0190
```

Page 1

ELEN	-45.0000	EMULT	1652.0000	ENS	237.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	167.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0038	FVINLET	0.0426	FVSRC	0.0438
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	313.4834	LKM	313.9834	MASS	313.4834
MDAC	3592108.9072	MRANGE	1252.5112	NSAM	200.0000
NSCAN	1161.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8996	RELEN	0.0000
RES	11445.4859	RPUSHER	-10.9377	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0995	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:        3.1e-005 mbar
Analyzer Penning:    6.2e-008 mbar
Pirani Analyse:      3.8e-003 mbar
Pirani Source:       4.4e-002 mbar
Pirani Inlet System: 4.3e-002 mbar

Scantype is magnetic


Sourcemode is EI POS

MID Time Window 1: Resolution is 11445.

Amplifier Offset: 89.


*** File closed Thu Apr 09 11:01:01 2015
  ***
```

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20150409i/d2150409i1.d	Prep Date		SDG No	
Analysis ID	169138	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	11:45	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	16:06	24374	4268	1.000	0.500	0.666831	133.37	0.666831	0.0287
2,3,7,8-TCDF	17:51	32124	5100	1.000	0.500	0.609667	121.93	0.609667	0.0271
37Cl4-2,3,7,8-TCDD	16:05	24152	4471	1.000	0.500	0.670577	134.12	0.670577	0.0113
13C-2,3,7,8-TCDD	16:04	3655198	739237	1.000	100.0	101.486115	101.49	101.486115	0.0428
13C-2,3,7,8-TCDF	17:49	5269108	902645	1.000	100.0	146.296124	146.30	146.296124	0.0516
13C-1,2,3,4-TCDD	16:20	3601673	706822	1.000	100.0	100.000000	100.00	100.000000	0.0428

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS1	Prep Batch		Lot No	
Data File	/20150409i/d215040911.	Prep Date		SDG No	
Analysis ID	169138	Prep Exp Date		Date Received	
Analysis Date	04/09/15 11:45	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	KLR	Diluton Factor	1.00	Code	L1c

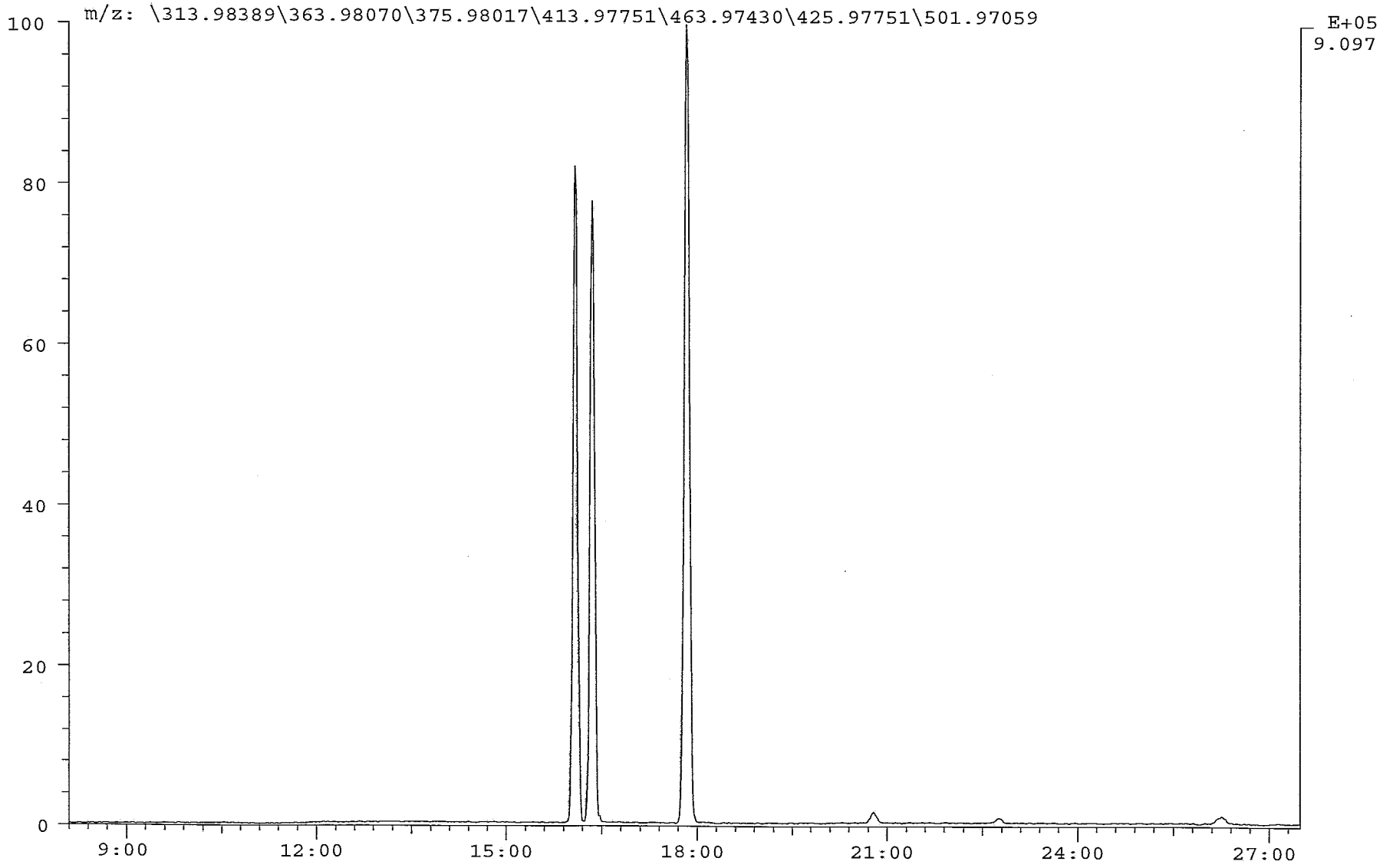
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	125	120	50	48	1.04 *	/	
	2,3,7,8-TCDF	17:51	00:00	0	15029	17095	2408	2692	0.88	MVV/MVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	200	165	80	66	1.21 *	/	
	13C-2,3,7,8-TCDF	17:49	00:00	0	2310563	2958545	391738	510907	0.78	ABV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	100	113	40	45	0.89	/	
	2,3,7,8-TCDD	16:06	00:00	0	10482	13892	1877	2391	0.75	AVB/MVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	80		32				
	37Cl4-2,3,7,8-TCDD	16:05	00:00	0	24152		4471			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	183	120	73	48	1.52 *	/	
	13C-2,3,7,8-TCDD	16:04	00:00	0	1620166	2035032	323721	415516	0.80	AVV/AVV	M
	13C-1,2,3,4-TCDD	16:20	00:00	0	1599034	2002639	314249	392573	0.80	AVV/AVV	M

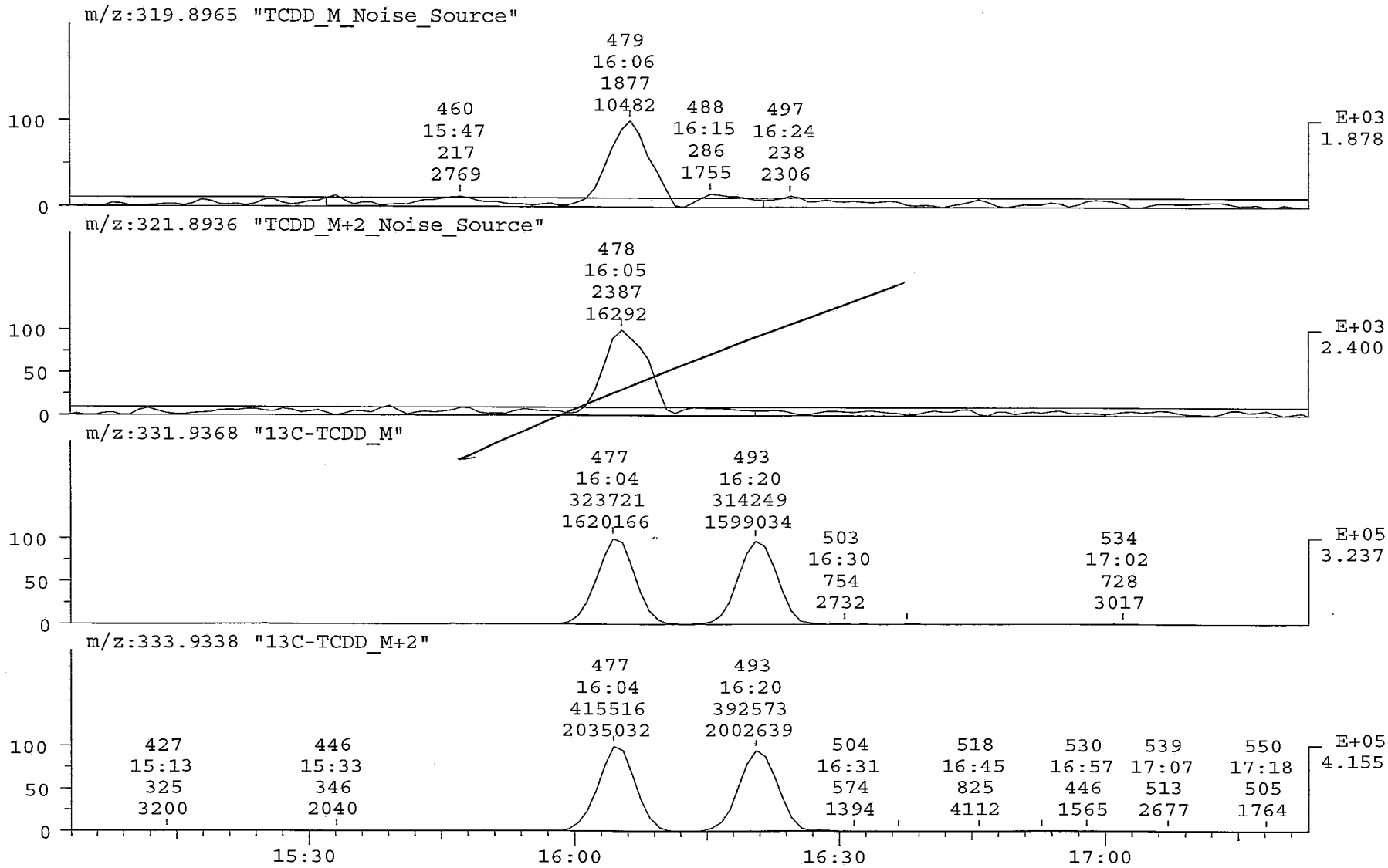
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int./Calc. KN 4/9/15
QC MCD 4/10/15

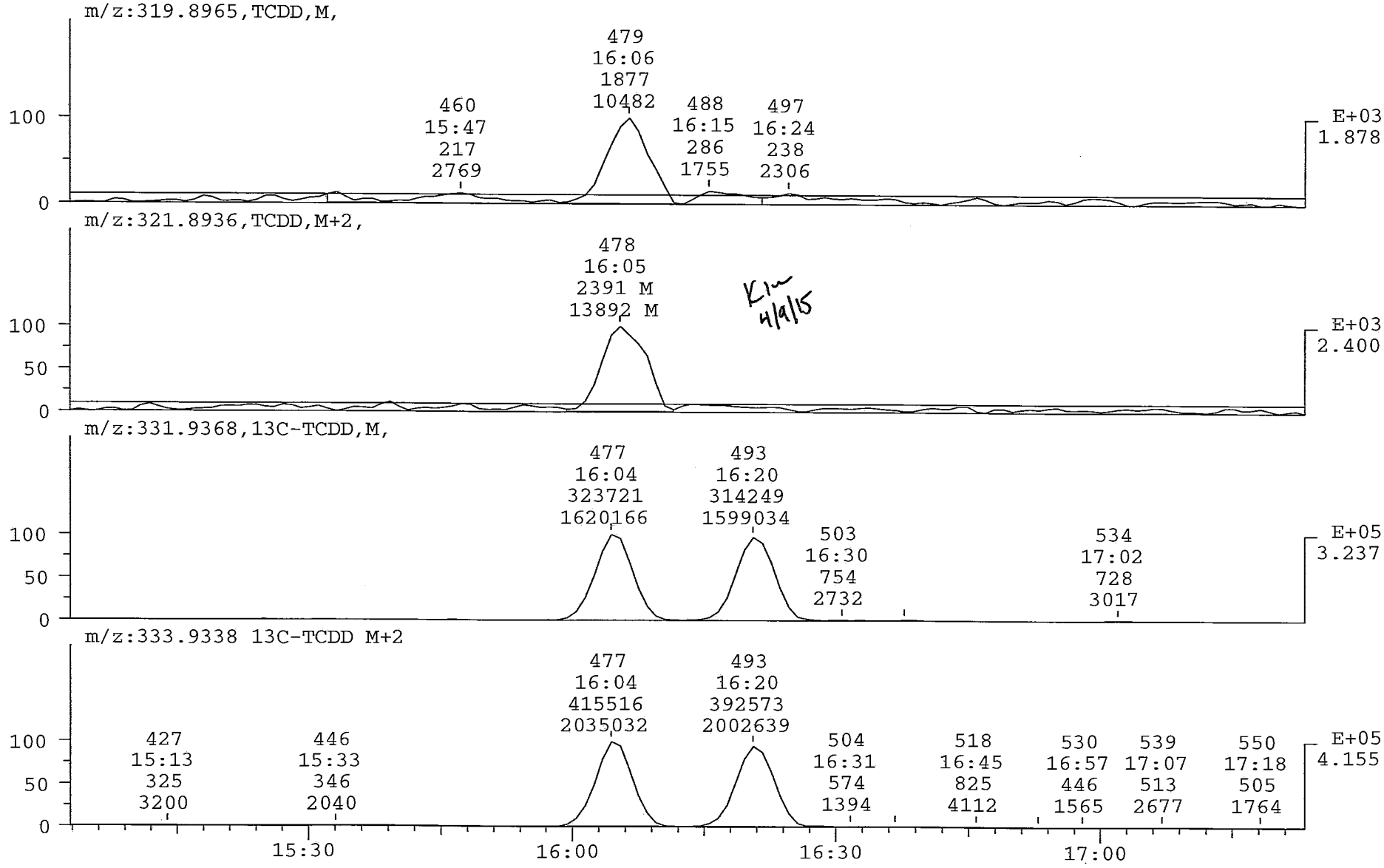
CHRO: d2150409i1 09-Apr-15 Elapse: 41:12 1969
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 4 > 1155 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



CHRO: d2150409i1 09-Apr-15 Elapse: 16:13.5 486
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 416 > 555 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

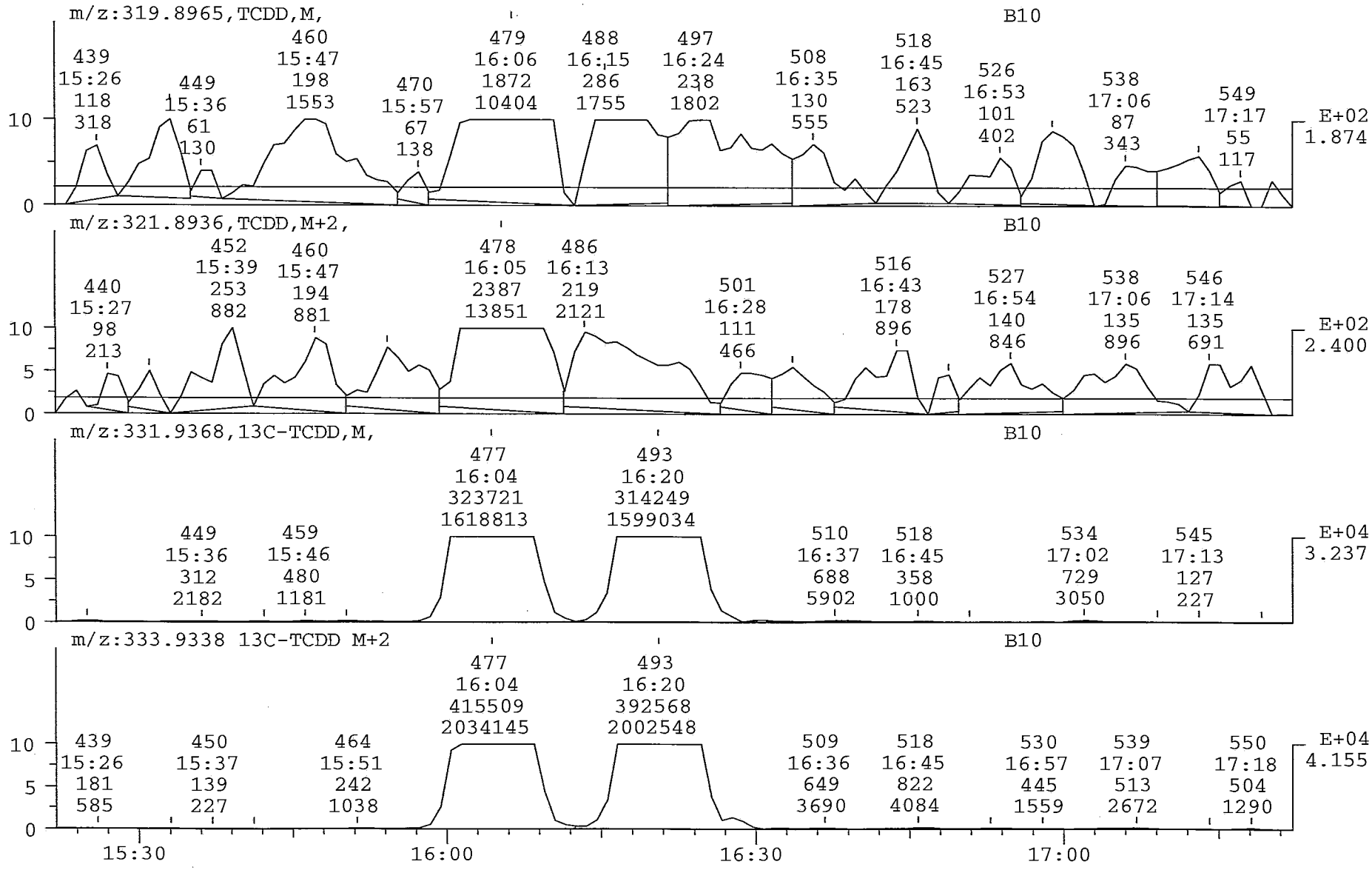


CHRO: d2150409i1 09-Apr-15 Elapse: 18:03.6 595
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 416 > 555 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

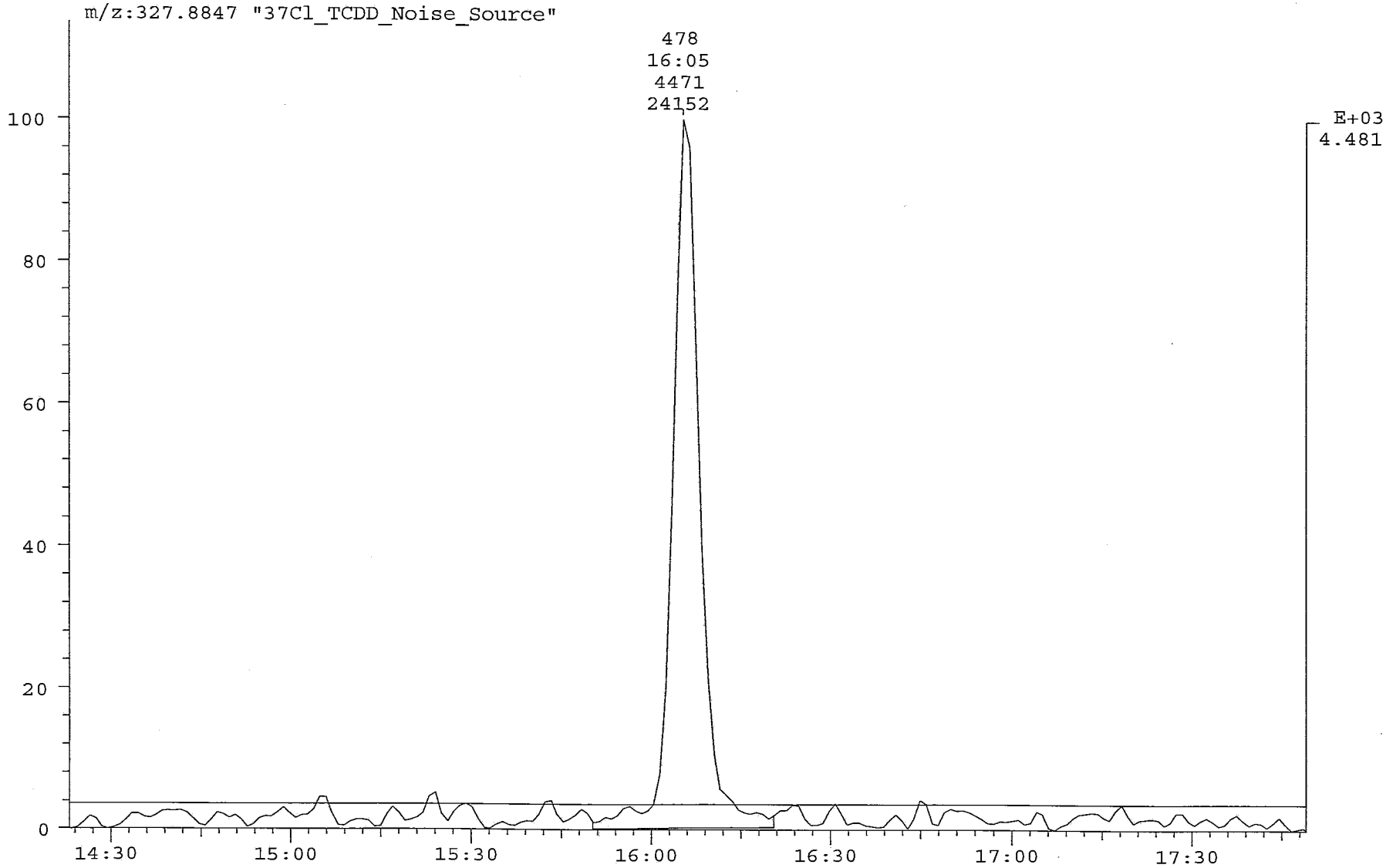


KLW 4/9/15

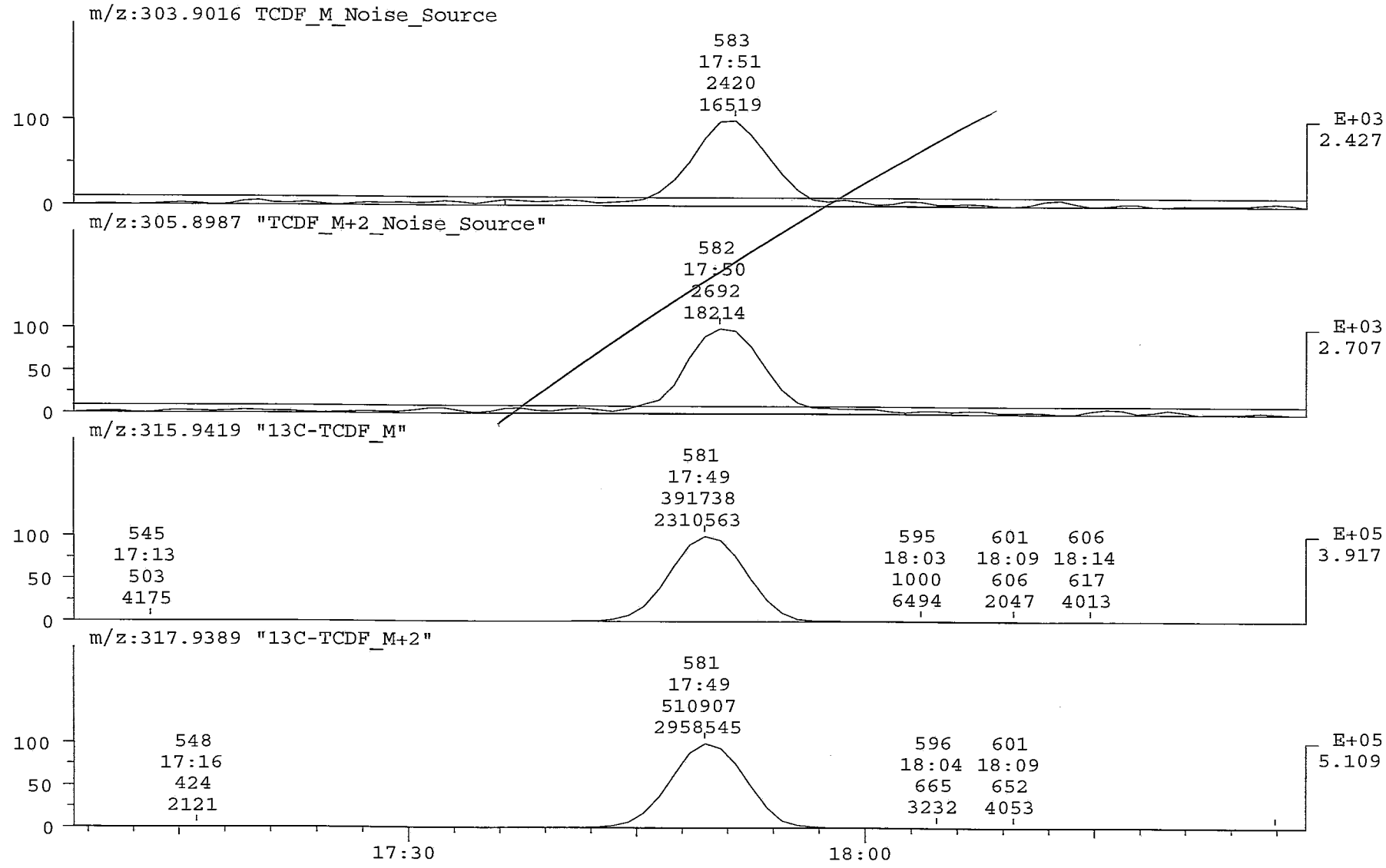
CHRO: d2150409i1 09-Apr-15 Elapse: 17:53.5 585
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 435 > 554 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



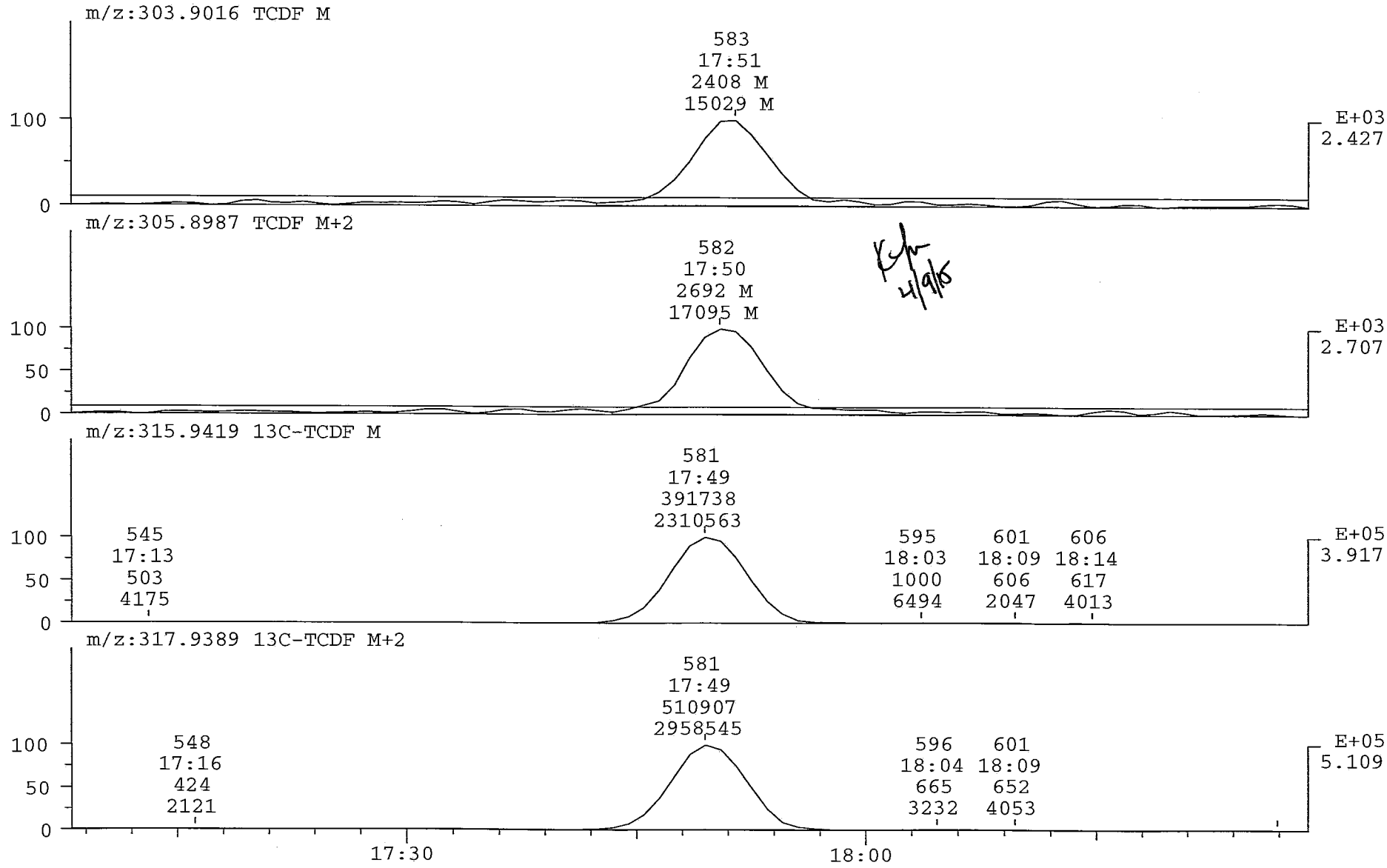
```
CHRO:  d2150409i1                                09-Apr-15  Elapse:  16:03.4      476
Samp:  WO=4104:74cs1 Meth=L1c Dil=1                         Start :  11:45:10    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  DB-225 ICAL
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   377 > 581              Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d2150409i1 09-Apr-15 Elapse: 17:48.5 580
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 540 > 620 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

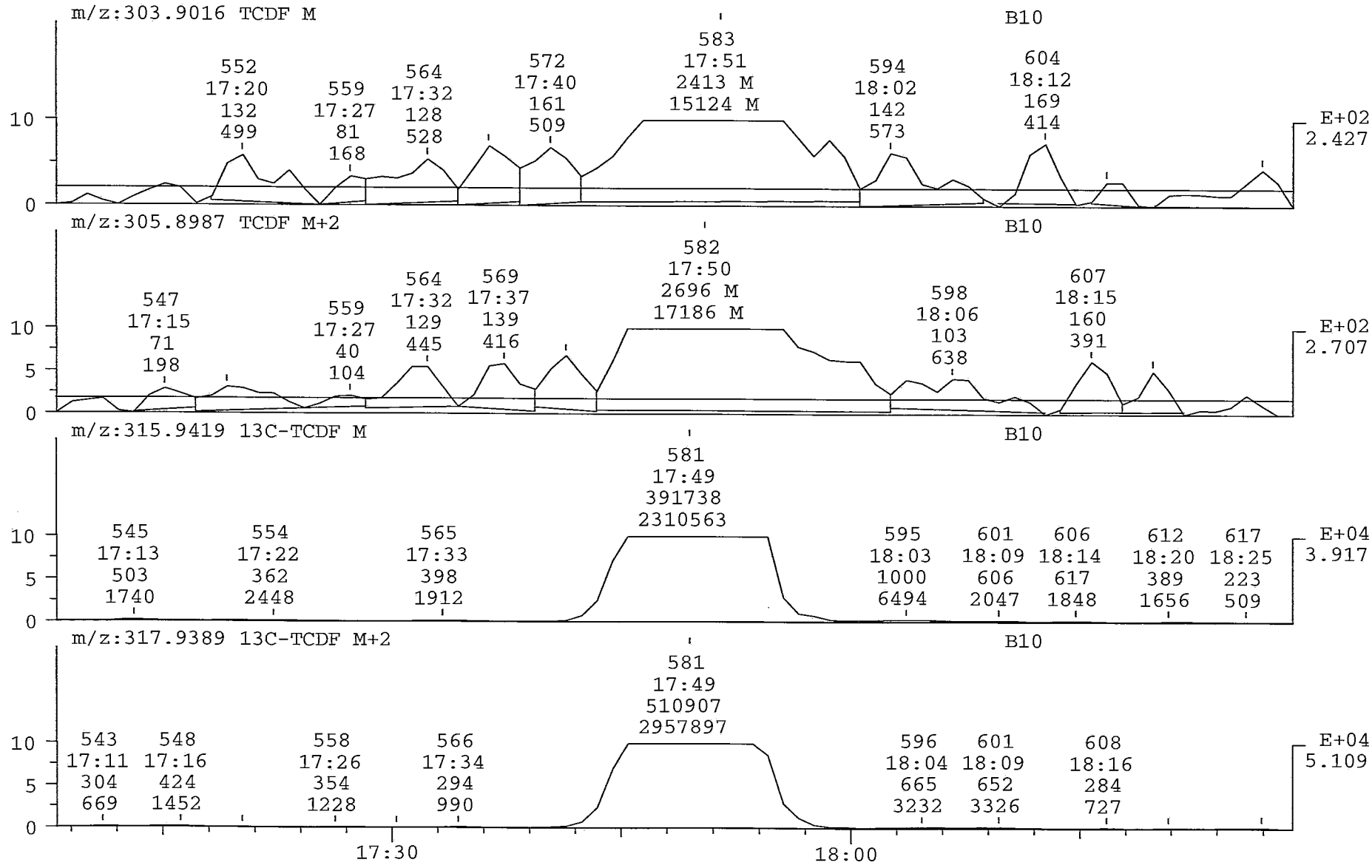


CHRO: d2150409i1 09-Apr-15 Elapse: 18:03.6 595
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 540 > 620 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

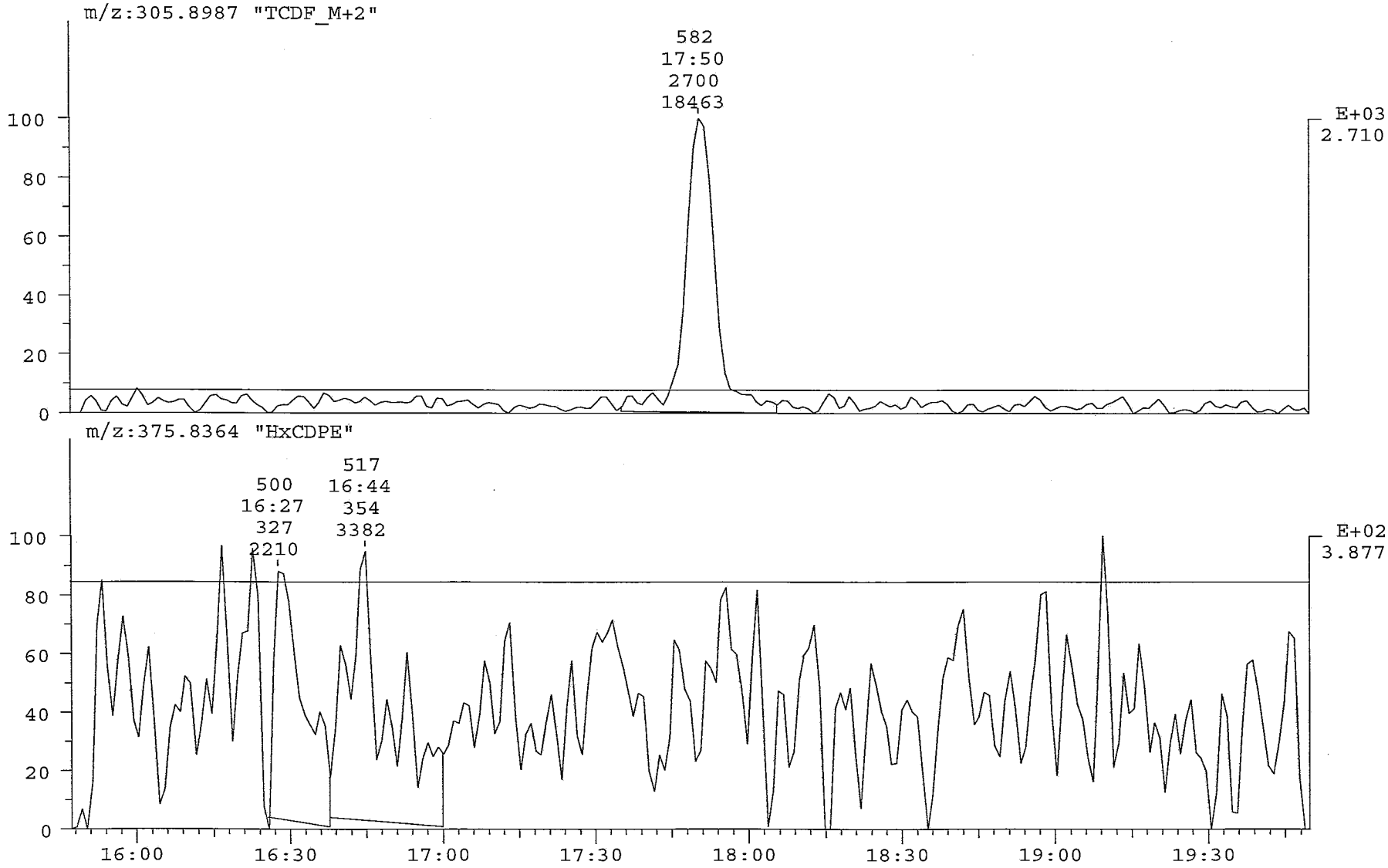


KLM 4/9/15

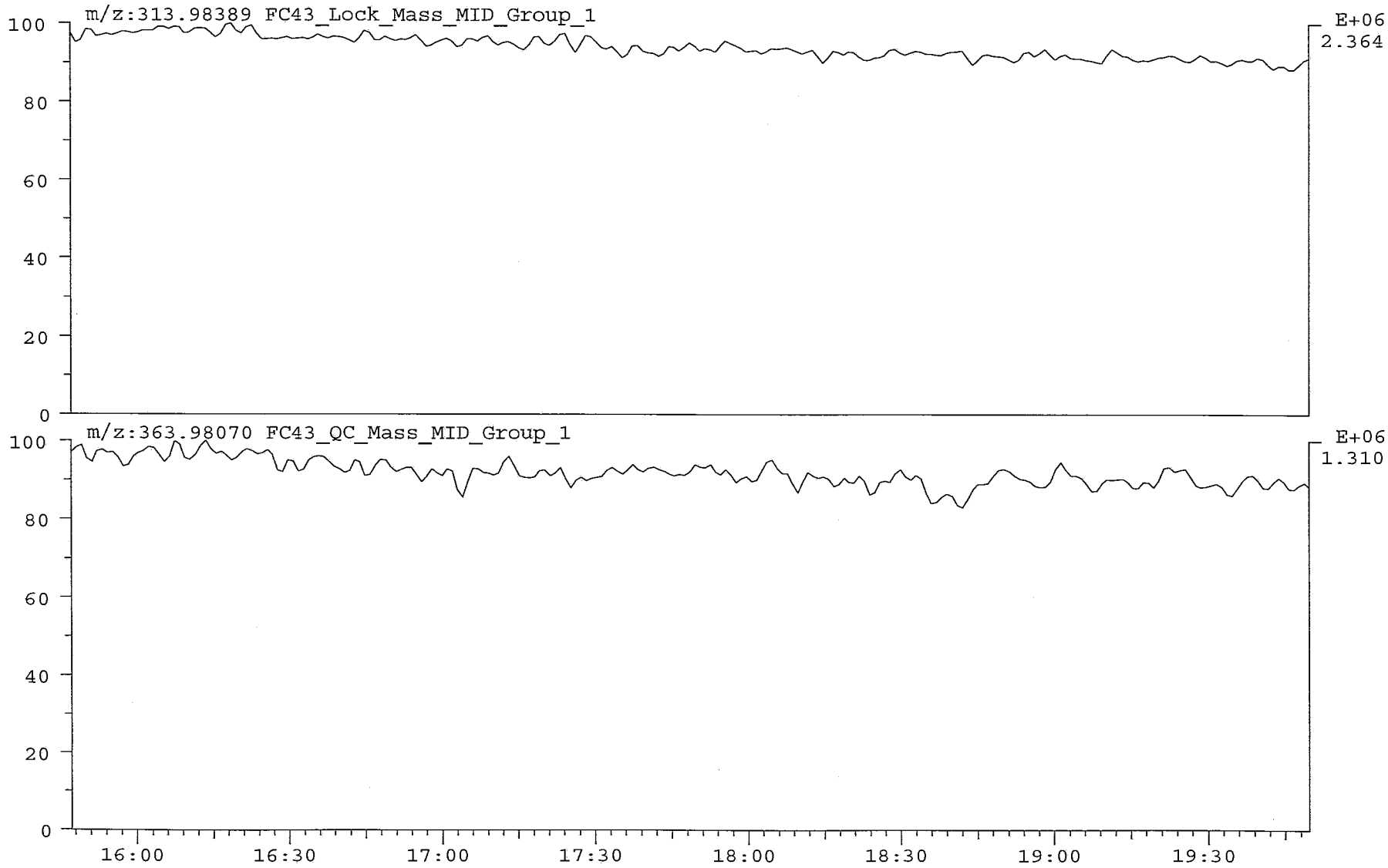
CHRO: d2150409i1 09-Apr-15 Elapse: 17:53.5 585
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 540 > 620 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



```
CHRO:  d2150409i1                                09-Apr-15   Elapse:  17:48.5      580
Samp:  WO=4104:74cs1 Meth=L1c Dil=1                          Start :  11:45:10    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  DB-225 ICAL
Oper:  KLR                                                   Inlet :  LC
Peak:  100.00  ppm      Label wndw:   460 > 700              Masses:  303 > 376
Area:  5, 0.50, 15      Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2150409i1                          09-Apr-15   Elapse:  17:48.5      580
Samp:  WO=4104:74cs1 Meth=L1c Dil=1                    Start :  11:45:10    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                             Study :  DB-225 ICAL
Oper:  KLR                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   460 > 700         Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Apr 09 11:48:04 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 11:48:03

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409111201

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	312.4834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	237.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	167.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0038	FVINLET	0.0428	FVSRC	0.0441
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	312.4834	LKM	313.9834	MASS	312.4834
MDAC	3583917.0889	MRANGE	1252.5112	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8982	RELEN	0.0000
RES	11588.3893	RPUSHER	-10.9524	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:         3.2e-005 mbar
Analyzer Penning:     6.2e-008 mbar
Pirani Analyse:       3.8e-003 mbar
Pirani Source:        4.4e-002 mbar
Pirani Inlet System: 4.3e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11588.

Amplifier Offset: 88.


*** File closed Thu Apr 09 12:15:35 2015
  ***
```

QUAN: d2150409i1.q0 Entries: 19

Data file(s) used
File: d2150409i1 09-Apr-15
Samp: WO=4104:74cs1 Meth=L1c Dil=1 Start : 11:45:10 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICA
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	16:06	10482.	1877.	15:58	16:12	40.	1	1.0	AVB
321.8775	16:05	13851.	2387.	15:59	16:11	45.	1	1.0	AVV
319.8805	15:47	2769.	217.	15:32	15:58	40.	2	5.0	AVV
319.8805	16:06	10482.	1877.	15:58	16:12	40.	2	5.0	AVB
319.8805	16:15	1755.	286.	16:12	16:21	40.	2	5.0	ABV
319.8805	16:24	2306.	238.	16:21	16:39	40.	2	5.0	AVV
321.8775	16:05	16292.	2387.	15:50	16:20	45.	2	5.0	AVV
331.9202	16:04	1620166.	323721.	15:49	16:12	73.	2	5.0	AVV
331.9202	16:20	1599034.	314249.	16:12	16:28	73.	2	5.0	AVV
333.9171	16:04	2035032.	415516.	15:49	16:12	48.	2	5.0	AVV
333.9171	16:20	2002639.	392573.	16:12	16:30	48.	2	5.0	AVV
327.8683	16:05	23400.	4471.	15:58	16:19	32.	1	1.0	AVV
327.8683	16:05	24152.	4471.	15:50	16:20	32.	2	5.0	AVV
303.8864	17:51	15244.	2420.	17:42	18:00	50.	1	1.0	AVV
305.8834	17:50	17111.	2692.	17:43	18:02	48.	1	1.0	AVV
303.8864	17:51	16519.	2420.	17:36	18:06	50.	2	5.0	AVV
305.8834	17:50	18214.	2692.	17:35	18:05	48.	2	5.0	AVV
315.9261	17:49	2310563.	391738.	17:39	17:59	80.	2	5.0	ABV
317.9230	17:49	2958545.	510907.	17:34	18:00	66.	2	5.0	AVV

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20150409i/d2150409i2.d	Prep Date		SDG No	
Analysis ID	169139	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	12:35	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	16:06	60585	11147	1.000	2.000	2.455998	122.80	2.455998	0.0507
2,3,7,8-TCDF	17:51	83595	12971	1.000	2.000	2.210482	110.52	2.210482	0.0345
37Cl4-2,3,7,8-TCDD	16:06	58476	11356	1.000	2.000	2.340619	117.03	2.340619	0.0181
13C-2,3,7,8-TCDD	16:05	2466818	492970	1.000	100.0	98.739349	98.74	98.739349	0.0529
13C-2,3,7,8-TCDF	17:49	3781754	644224	1.000	100.0	151.372306	151.37	151.372306	0.0720
13C-1,2,3,4-TCDD	16:21	2498313	482415	1.000	100.0	100.000000	100.00	100.000000	0.0529

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IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS2	Prep Batch		Lot No	
Data File	/20150409i/d2150409i2.	Prep Date		SDG No	
Analysis ID	169139	Prep Exp Date		Date Received	
Analysis Date	04/09/15 12:35	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	KLR	Diluton Factor	1.00	Code	L1c

View Small Peaks? False View deleted peaks? False

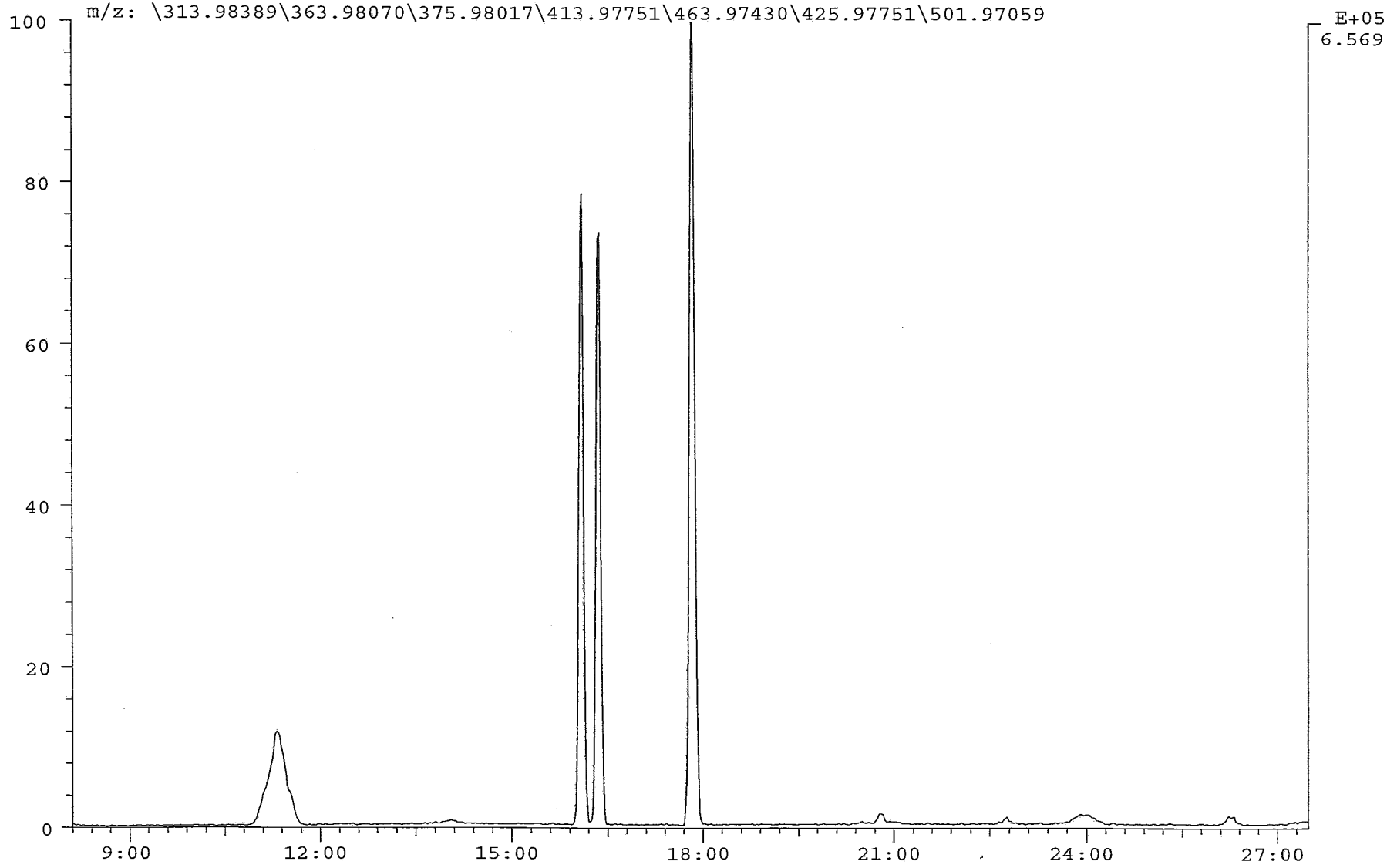
Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	115	108	46	43	1.07 *	/	
	2,3,7,8-TCDF	17:51	00:00	0	37515	46080	5752	7219	0.81	ABV/ABV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	183	165	73	66	1.11 *	/	
	13C-2,3,7,8-TCDF	17:49	00:00	0	1670847	2110907	285278	358946	0.79	ABV/ABB	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	115	135	46	54	0.85	/	
	2,3,7,8-TCDD	16:06	00:00	0	25771	34814	4814	6333	0.74	ABV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	88		35				
	37Cl4-2,3,7,8-TCDD	16:06	00:00	0	58476		11356			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	155	100	62	40	1.55 *	/	
	13C-2,3,7,8-TCDD	16:05	00:00	0	1079462	1387356	211917	281053	0.78	AVV/ABV	M
	13C-1,2,3,4-TCDD	16:21	00:00	0	1113665	1384648	215642	266773	0.80	AVV/AVV	M

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

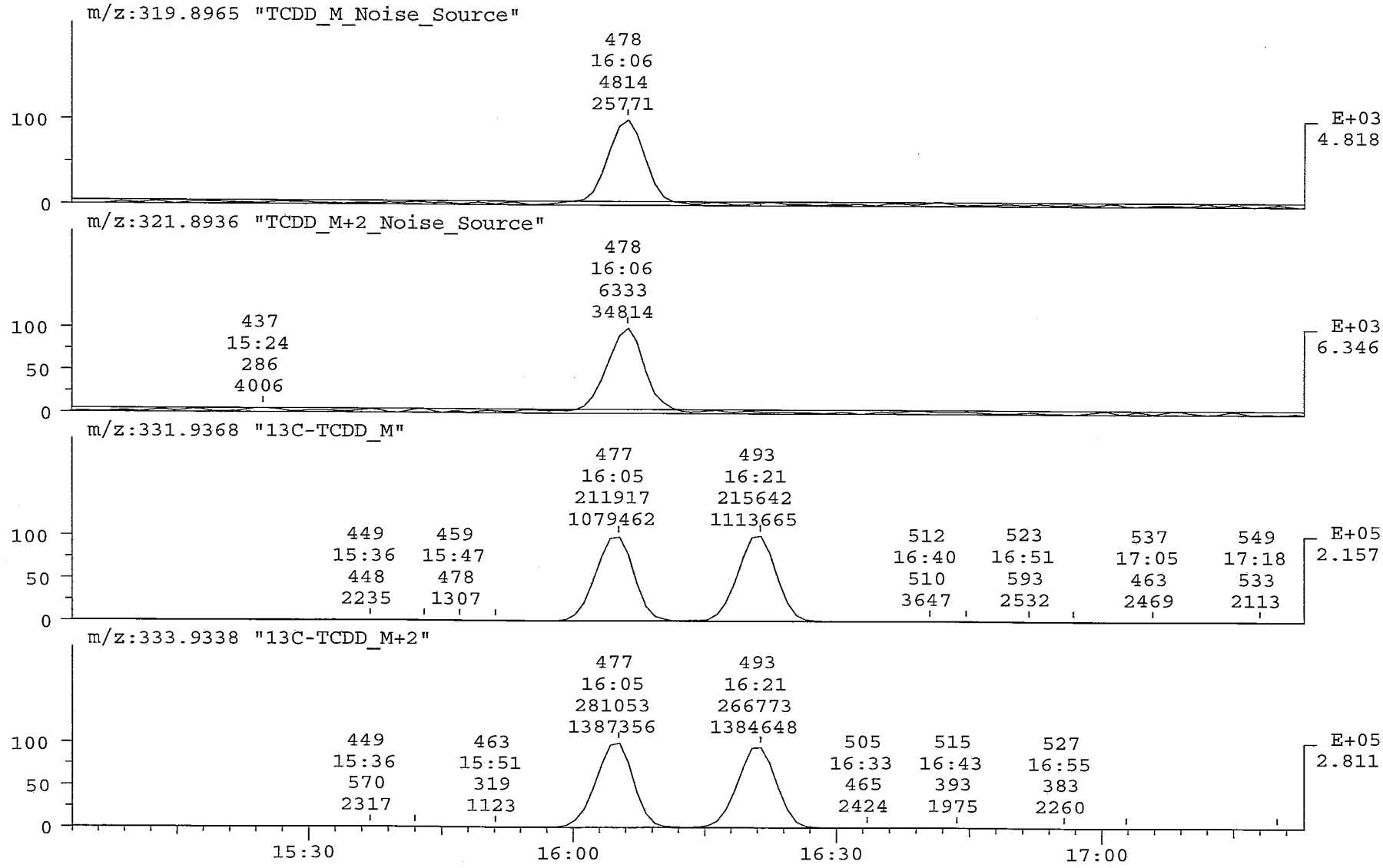
Int. Calc. Kln 4/9/15

QC MID 4/10/15

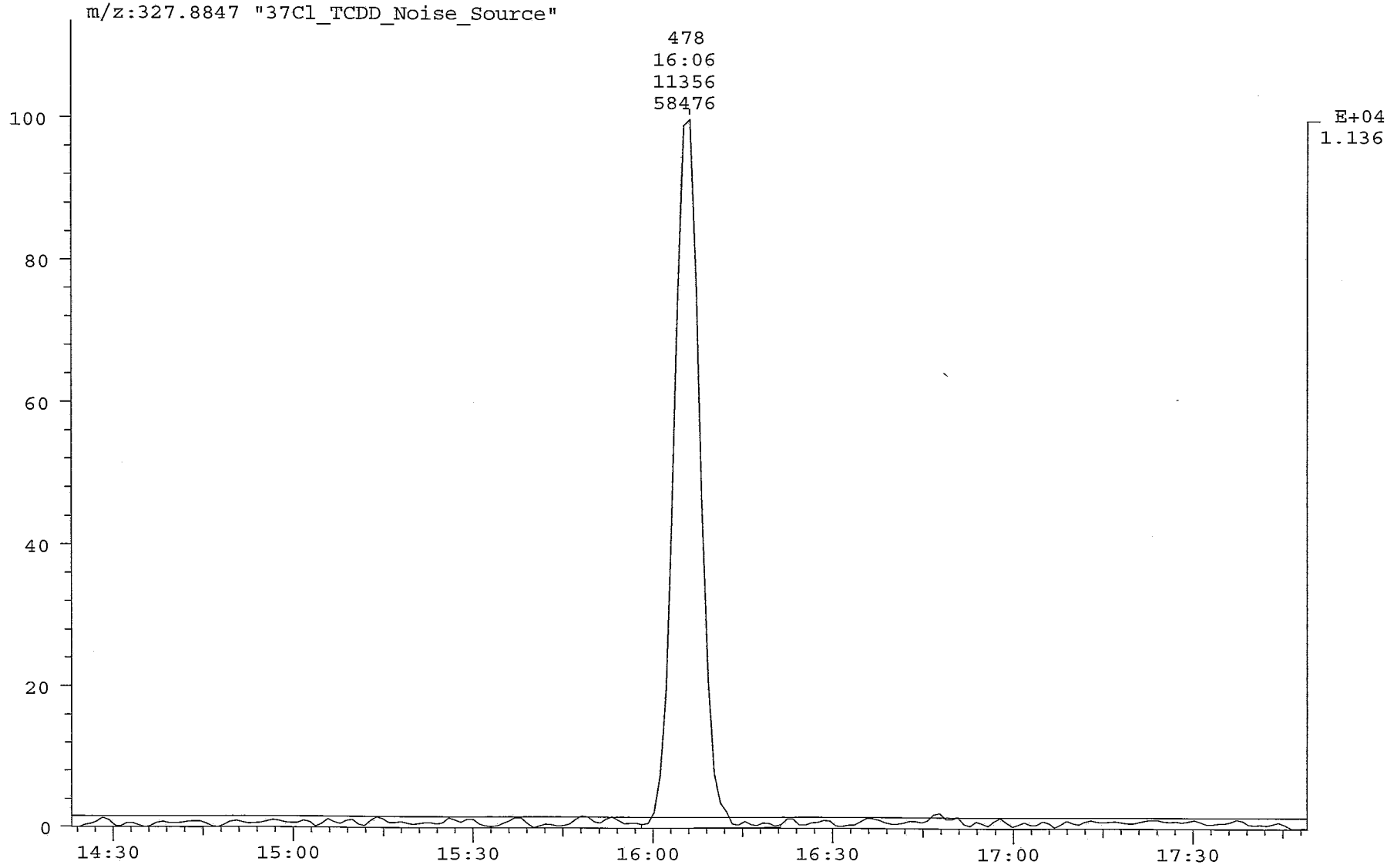
```
CHRO:  d2150409i2                          09-Apr-15  Elapse:  18:04.4      595
Samp:  WO=4104:74cs2 Meth=L1c Dil=1                   Start :  12:35:16    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                            Study :  DB-225 ICAL
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   3 > 1154         Masses:  303 > 376
Area:  5, 0.50, 0      Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



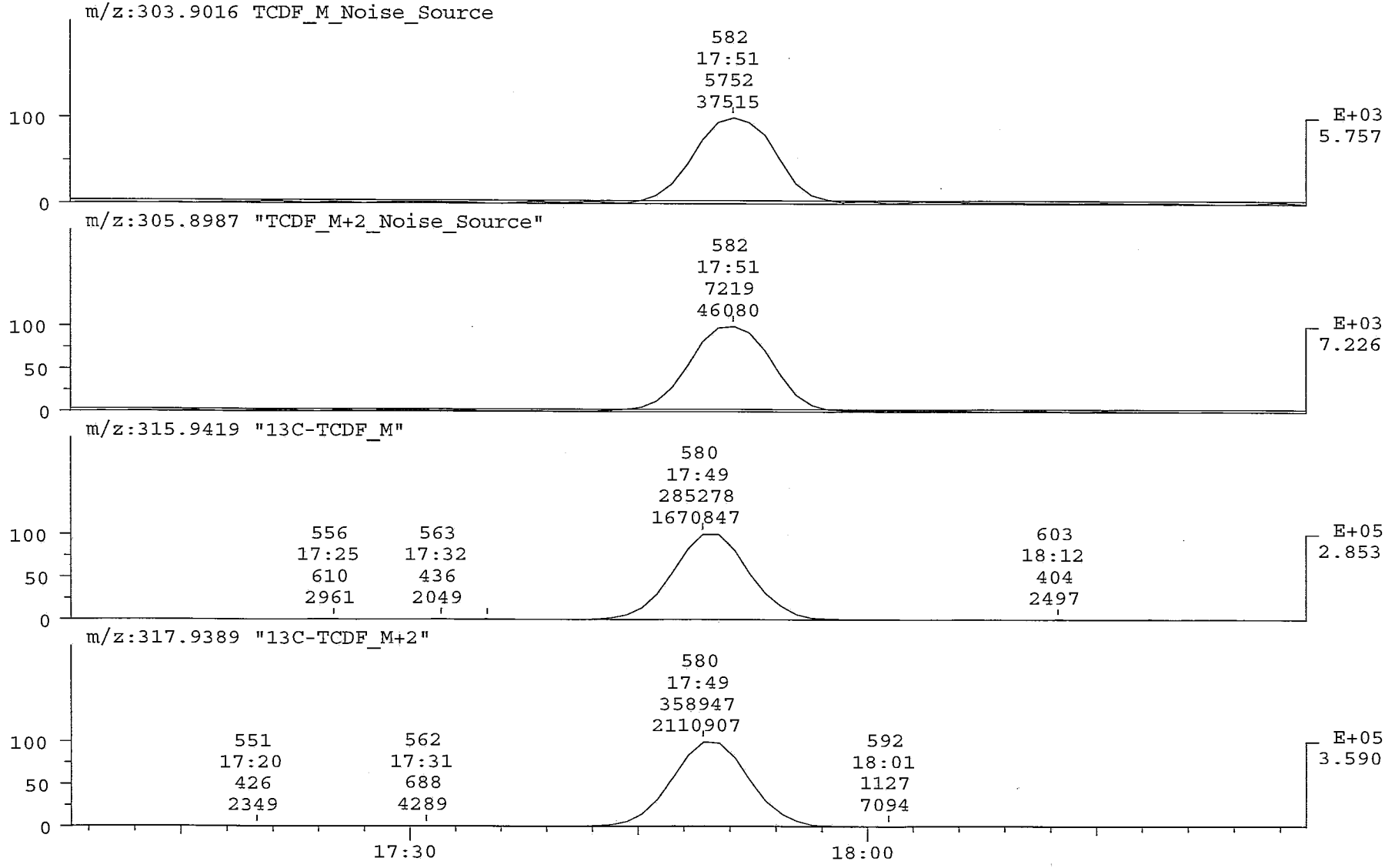
CHRO: d2150409i2 09-Apr-15 Elapse: 16:13.3 485
Samp: WO=4104:74cs2 Meth=L1c Dil=1 Start : 12:35:16 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 415 > 554 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



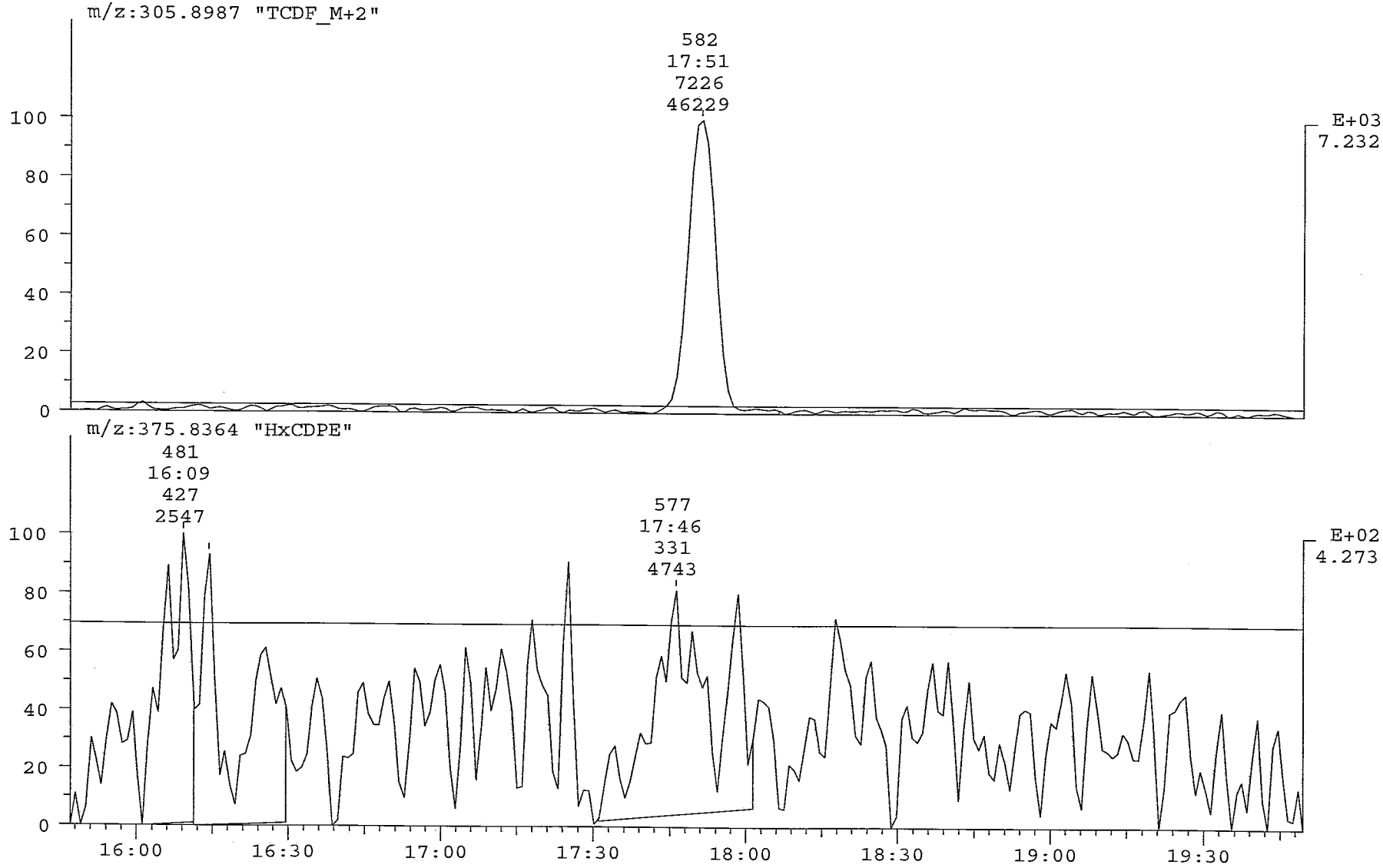
CHRO: d2150409i2 09-Apr-15 Elapse: 16:03.2 475
Samp: WO=4104:74cs2 Meth=L1c Dil=1 Start : 12:35:16 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 376 > 580 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



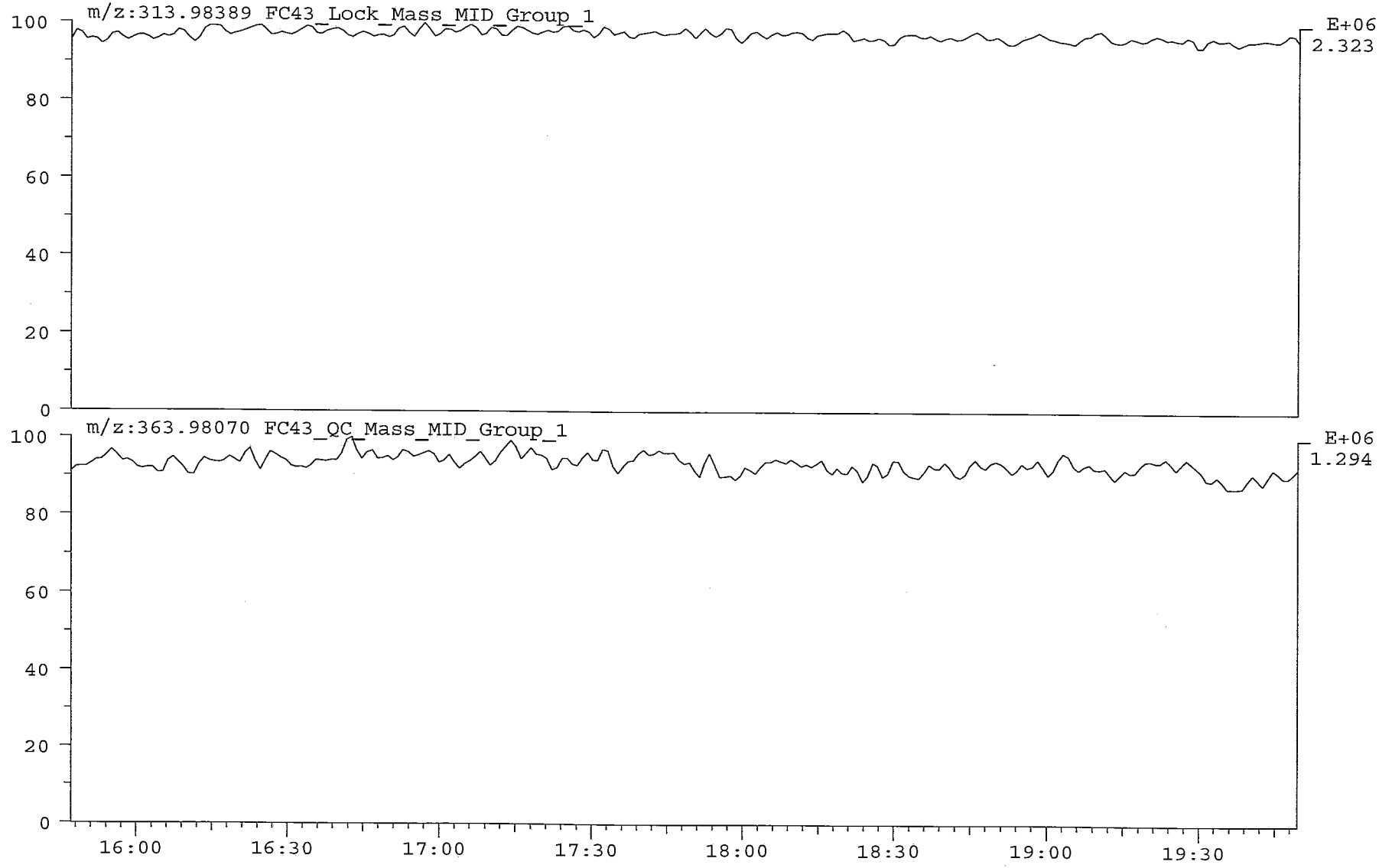
```
CHRO:  d2150409i2                          09-Apr-15  Elapse:  17:48.3      579
Samp:  WO=4104:74cs2 Meth=L1c Dil=1                   Start :  12:35:16    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                            Study :  DB-225 ICAL
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   539 > 619        Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d2150409i2 09-Apr-15 Elapse: 17:48.3 579
Samp: WO=4104:74cs2 Meth=L1c Dil=1 Start : 12:35:16 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2150409i2 09-Apr-15 Elapse: 17:48.3 579
Samp: WO=4104:74cs2 Meth=L1c Dil=1 Start : 12:35:16 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Apr 09 12:38:09 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 12:38:09

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409121830

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	311.4834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	237.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	167.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0038	FVINLET	0.0428	FVSRC	0.0438
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	311.4834	LKM	313.9834	MASS	311.4834
MDAC	3575708.4367	MRANGE	1252.5112	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8987	RELEN	0.0000
RES	11568.5448	RPUSHER	-10.9377	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	311.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:          3.2e-005 mbar
Analyzer Penning:      6.1e-008 mbar
Pirani Analyse:        3.8e-003 mbar
Pirani Source:         4.4e-002 mbar
Pirani Inlet System: 4.3e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11568.

Amplifier Offset: 89.


*** File closed Thu Apr 09 13:05:41 2015
  ***
```

QUAN: d215040 9i2.q0 Entries: 17

Data file(s) used
File: d215040 9i2 09-Apr-15
Samp: WO=4104:74cs2 Meth=L1c Dil=1 Start : 12:35:16 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICA
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	16:06	24879.	4814.	15:55	16:13	46.	1	1.0	ABV
321.8775	16:06	32277.	6333.	15:59	16:13	54.	1	1.0	AVV
319.8805	16:06	25771.	4814.	15:55	16:21	46.	2	5.0	ABV
321.8775	15:24	4006.	286.	15:09	15:39	54.	2	5.0	AVB
321.8775	16:06	34814.	6333.	15:51	16:21	54.	2	5.0	AVV
331.9202	16:05	1079462.	211917.	15:54	16:12	62.	2	5.0	AVV
331.9202	16:21	1113665.	215642.	16:12	16:33	62.	2	5.0	AVV
333.9171	16:05	1387356.	281053.	15:54	16:13	40.	2	5.0	ABV
333.9171	16:21	1384648.	266773.	16:13	16:31	40.	2	5.0	AVV
327.8683	16:06	58440.	11356.	15:58	16:20	35.	1	1.0	AVV
327.8683	16:06	58476.	11356.	15:58	16:21	35.	2	5.0	AVV
303.8864	17:51	36302.	5752.	17:44	18:01	46.	1	1.0	AVV
305.8834	17:51	45449.	7219.	17:41	17:59	43.	1	1.0	ABV
303.8864	17:51	37515.	5752.	17:36	18:06	46.	2	5.0	ABV
305.8834	17:51	46080.	7219.	17:41	18:06	43.	2	5.0	ABV
315.9261	17:49	1670847.	285278.	17:40	18:04	73.	2	5.0	ABV
317.9230	17:49	2110907.	358946.	17:37	17:59	66.	2	5.0	ABB

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IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20150409i/d2150409i3.d	Prep Date		SDG No	
Analysis ID	169141	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	13:25	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	16:06	358050	74511	1.000	10.00	10.555474	105.55	10.555474	0.0331
2,3,7,8-TCDF	17:51	497796	86936	1.000	10.00	9.808763	98.09	9.808763	0.0389
37Cl4-2,3,7,8-TCDD	16:06	366916	76092	1.000	10.00	10.780404	107.80	10.780404	0.0135
13C-2,3,7,8-TCDD	16:05	3392079	686982	1.000	100.0	99.663087	99.66	99.663087	0.0409
13C-2,3,7,8-TCDF	17:49	5075013	880793	1.000	100.0	149.109576	149.11	149.109576	0.0710
13C-1,2,3,4-TCDD	16:21	3403546	665946	1.000	100.0	100.000000	100.00	100.000000	0.0409

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IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS3	Prep Batch		Lot No	
Data File	/20150409i/d215040913.	Prep Date		SDG No	
Analysis ID	169141	Prep Exp Date		Date Received	
Analysis Date	04/09/15 13:25	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	KLR	Diluton Factor	1.00	Code	L1c

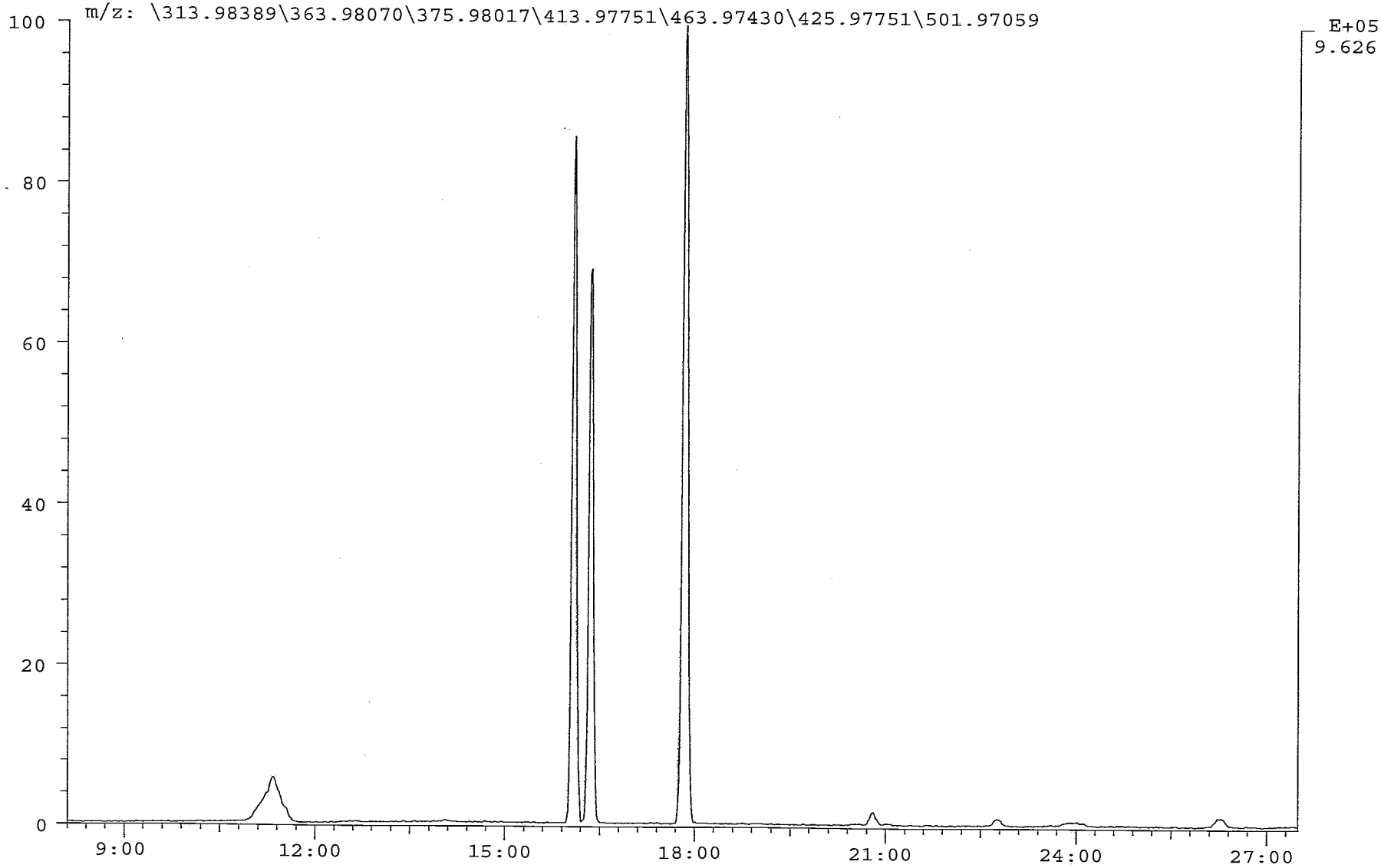
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	210	133	84	53	1.58 *	/	
	2,3,7,8-TCDF	17:51	00:00	0	219372	278424	38043	48893	0.79	AVV/AVB	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	290	183	116	73	1.59 *	/	
	13C-2,3,7,8-TCDF	17:49	00:00	0	2256751	2818262	386297	494496	0.80	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	100	128	40	51	0.78	/	
	2,3,7,8-TCDD	16:06	00:00	0	157280	200770	33005	41506	0.78	ABV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	90		36				
	37Cl4-2,3,7,8-TCDD	16:06	00:00	0	366916		76092			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	155	118	62	47	1.32 *	/	
	13C-2,3,7,8-TCDD	16:05	00:00	0	1506590	1885489	304663	382319	0.80	AVV/AVV	M
	13C-1,2,3,4-TCDD	16:21	00:00	0	1507187	1896359	295877	370069	0.79	AVV/AVV	M

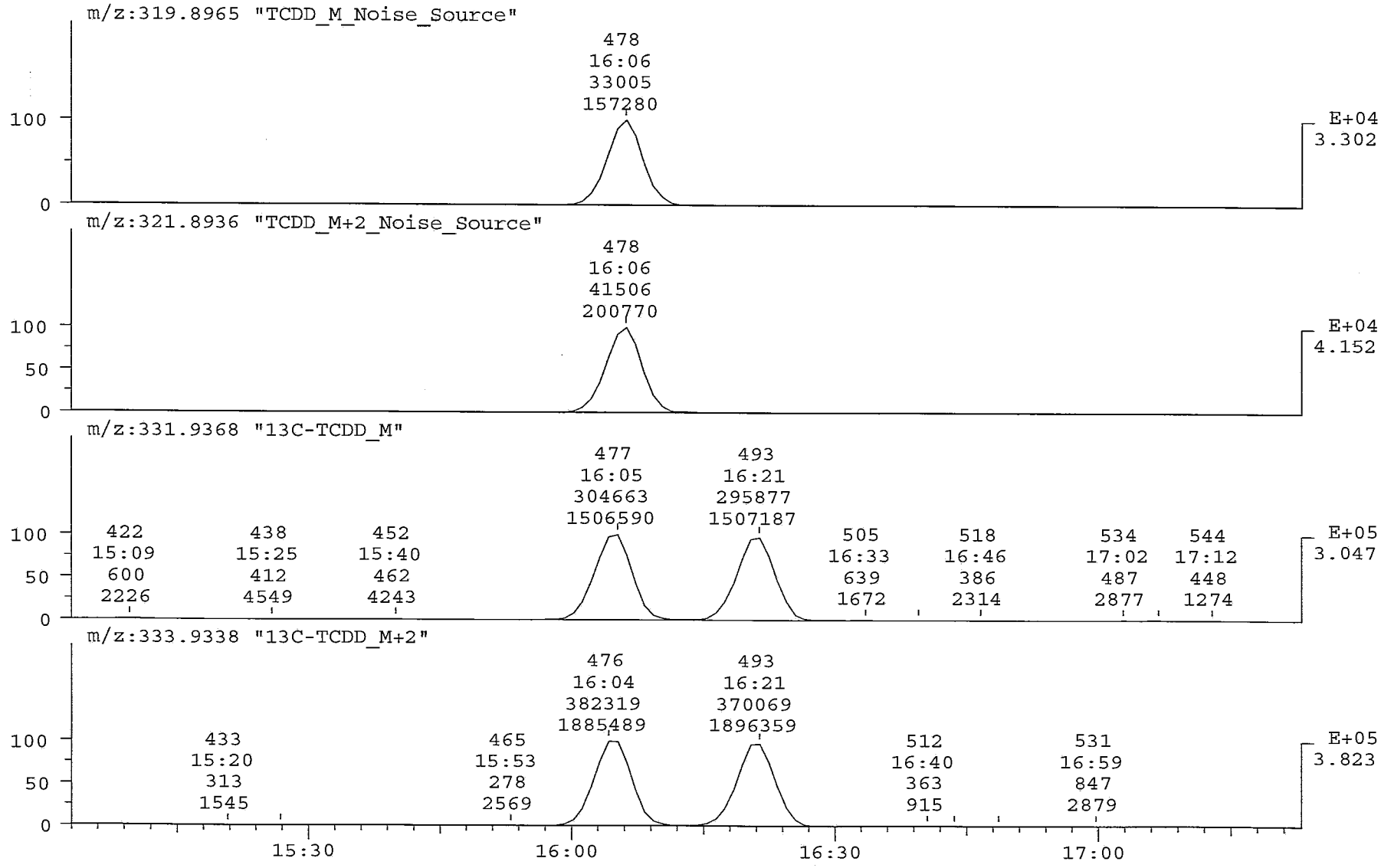
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. | Calc. Kln 4/9/15
QCWD 4/10/15

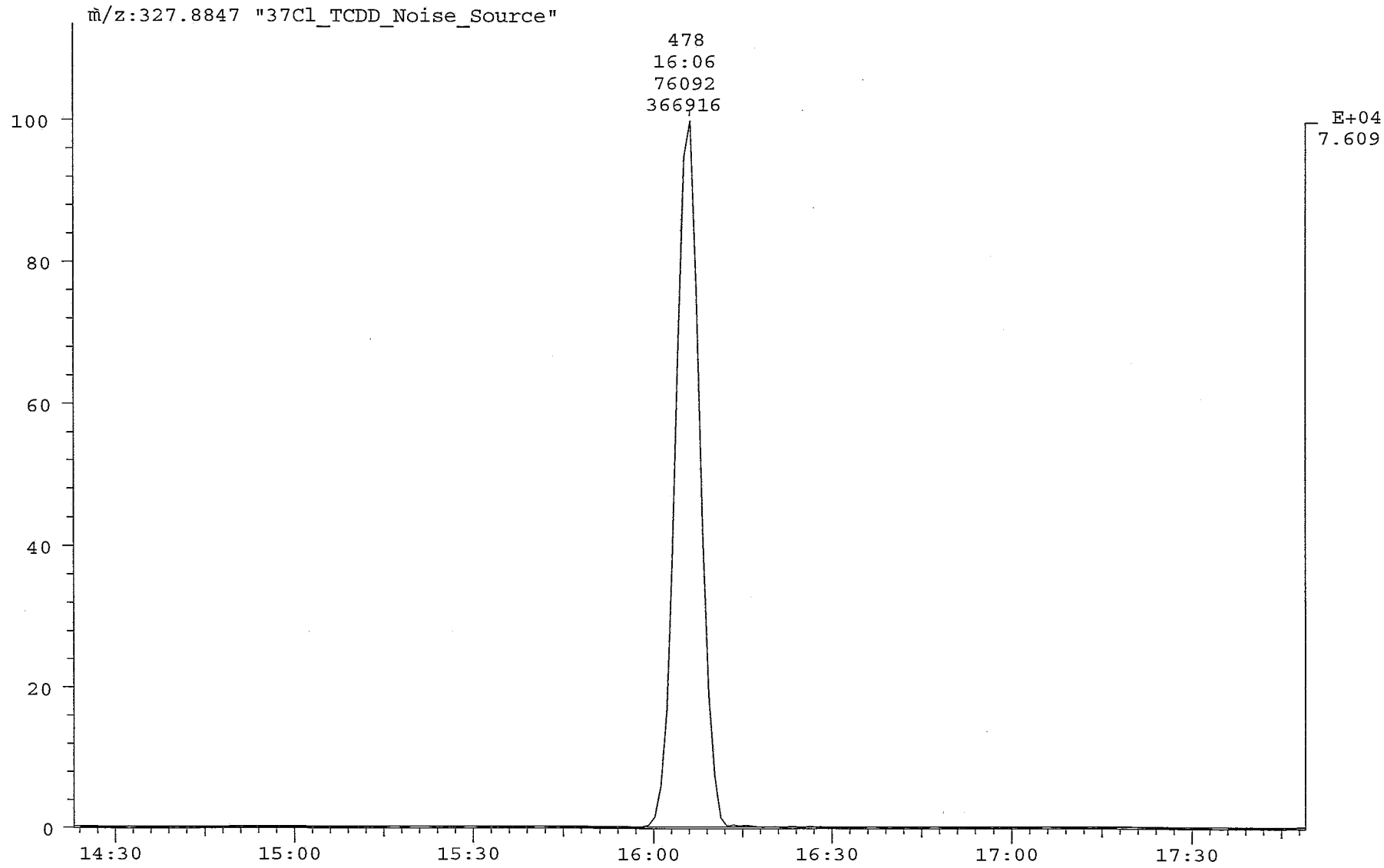
CHRO: d2150409i3 09-Apr-15 Elapse: 17:54.3 585
Samp: WO=4104:74cs3 Meth=L1c Dil=1 Start : 13:25:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 3 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



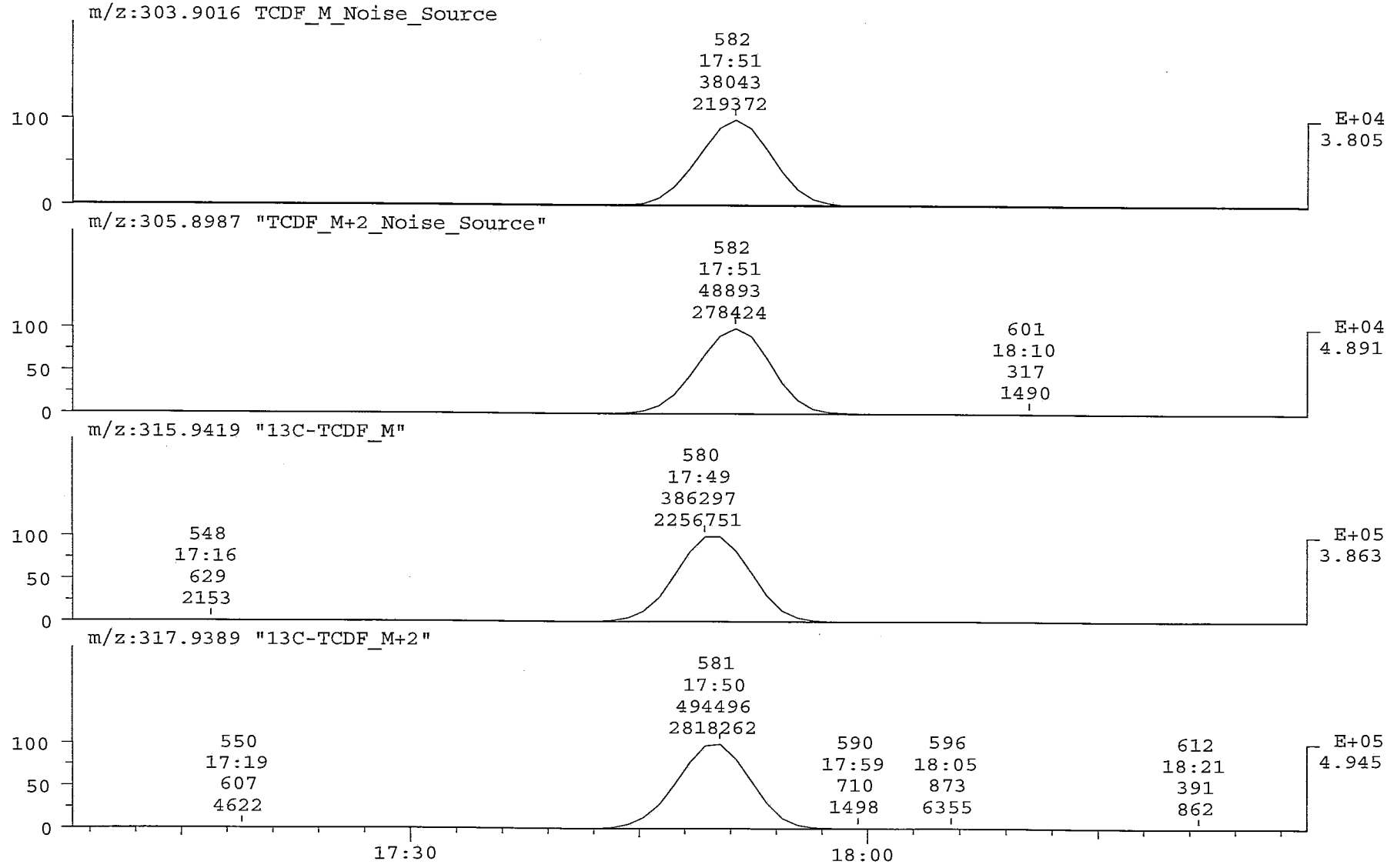
```
CHRO:  d2150409i3                          09-Apr-15  Elapse:  16:13.3     485
Samp:  WO=4104:74cs3 Meth=L1c Dil=1                   Start :  13:25:20   1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                            Study :  DB-225 ICAL
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   415 > 554        Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



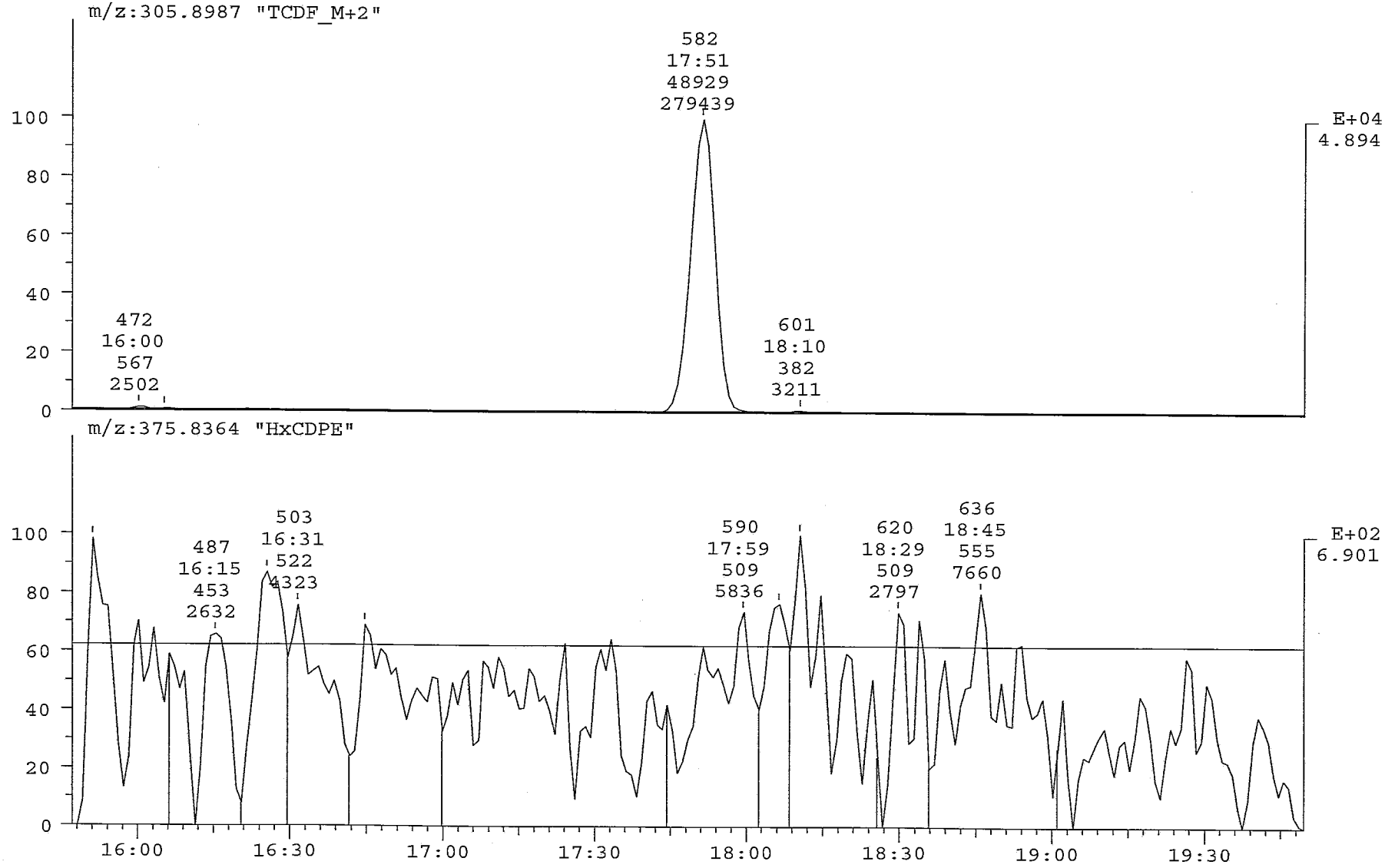
```
CHRO:  d2150409i3                                09-Apr-15  Elapse:  16:03.2      475
Samp:  WO=4104:74cs3 Meth=L1c Dil=1                         Start :  13:25:20    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  DB-225 ICAL
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   376 > 580              Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



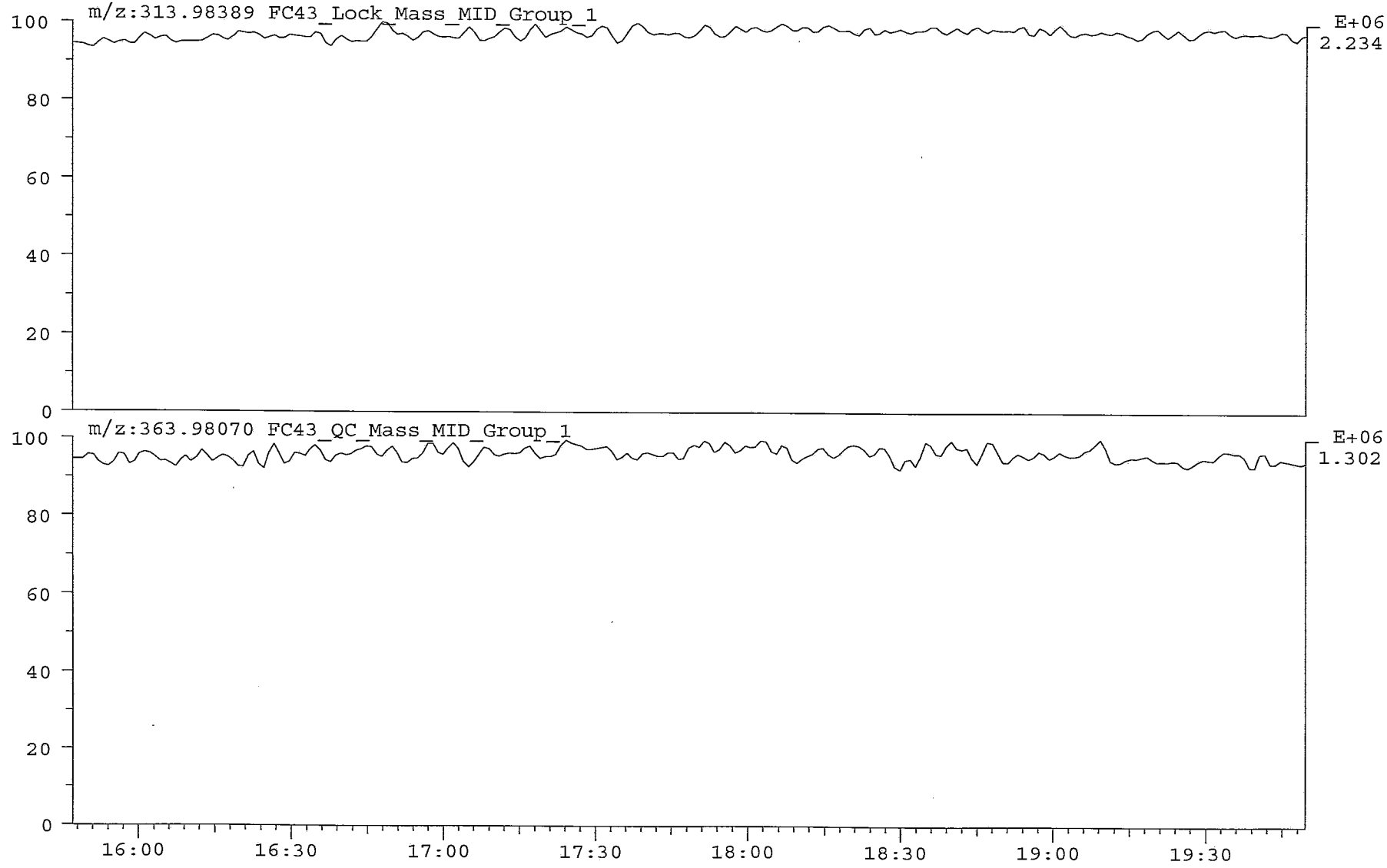
CHRO: d2150409i3 09-Apr-15 Elapse: 17:48.3 579
Samp: WO=4104:74cs3 Meth=L1c Dil=1 Start : 13:25:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 539 > 619 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2150409i3 09-Apr-15 Elapse: 17:48.3 579
Samp: WO=4104:74cs3 Meth=L1c Dil=1 Start : 13:25:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2150409i3 09-Apr-15 Elapse: 17:48.3 579
Samp: WO=4104:74cs3 Meth=L1c Dil=1 Start : 13:25:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Apr 09 13:28:11 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 13:28:11

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409130753

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	310.4834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	237.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	167.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0433	FVSRC	0.0443
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	310.4834	LKM	313.9834	MASS	310.4834
MDAC	3567486.7007	MRANGE	1252.5112	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.9006	RELEN	0.0000
RES	11850.3120	RPUSHER	-10.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

Source Gauge: 3.3e-005 mbar
Analyzer Penning: 6.2e-008 mbar
Pirani Analyse: 3.8e-003 mbar
Pirani Source: 4.5e-002 mbar
Pirani Inlet System: 4.3e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11850.

Amplifier Offset: 88.

*** File closed Thu Apr 09 13:55:43 2015
***

QUAN: d215040913.q0 Entries: 17

Data file(s) used
File: d215040913 09-Apr-15
Samp: WO=4104:74cs3 Meth=L1c Dil=1 Start : 13:25:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICA
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	16:06	156645.	33005.	15:58	16:16	40.	1	1.0	ABV
321.8775	16:06	199860.	41506.	15:53	16:17	51.	1	1.0	AVV
319.8805	16:06	157280.	33005.	15:58	16:21	40.	2	5.0	ABV
321.8775	16:06	200770.	41506.	15:51	16:21	51.	2	5.0	AVV
331.9202	16:05	1506590.	304663.	15:54	16:12	62.	2	5.0	AVV
331.9202	16:21	1507187.	295877.	16:12	16:31	62.	2	5.0	AVV
333.9171	16:04	1885489.	382319.	15:55	16:11	47.	2	5.0	AVV
333.9171	16:21	1896359.	370069.	16:11	16:36	47.	2	5.0	AVV
327.8683	16:06	366254.	76092.	15:54	16:18	36.	1	1.0	AVV
327.8683	16:06	366916.	76092.	15:51	16:21	36.	2	5.0	AVV
303.8864	17:51	217426.	38043.	17:42	17:59	84.	1	1.0	AVV
305.8834	17:51	278424.	48893.	17:36	18:05	53.	1	1.0	AVB
303.8864	17:51	219372.	38043.	17:36	18:06	84.	2	5.0	AVV
305.8834	17:51	278424.	48893.	17:36	18:05	53.	2	5.0	AVB
305.8834	18:10	1490.	317.	18:05	18:16	53.	2	5.0	ABB
315.9261	17:49	2256751.	386297.	17:37	18:04	116.	2	5.0	ABV
317.9230	17:50	2818262.	494496.	17:40	17:58	73.	2	5.0	ABV

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/201504091/d215040914.d	Prep Date		SDG No	
Analysis ID	169142	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	14:15	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	16:05	1486615	315907	1.000	40.00	42.633237	106.58	42.633237	0.0317
2,3,7,8-TCDF	17:50	2054104	364256	1.000	40.00	39.089612	97.72	39.089612	0.0202
37Cl4-2,3,7,8-TCDD	16:05	1527054	326666	1.000	40.00	44.505694	111.26	44.505694	0.0139
13C-2,3,7,8-TCDD	16:04	3486986	741957	1.000	100.0	101.627533	101.63	101.627533	0.0361
13C-2,3,7,8-TCDF	17:49	5254859	915407	1.000	100.0	153.151851	153.15	153.151851	0.0868
13C-1,2,3,4-TCDD	16:20	3431143	685183	1.000	100.0	100.000000	100.00	100.000000	0.0361

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS4	Prep Batch		Lot No	
Data File	/20150409i/d2150409i4.	Prep Date		SDG No	
Analysis ID	169142	Prep Exp Date		Date Received	
Analysis Date	04/09/15 14:15	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	KLR	Diluton Factor	1.00	Code	L1c

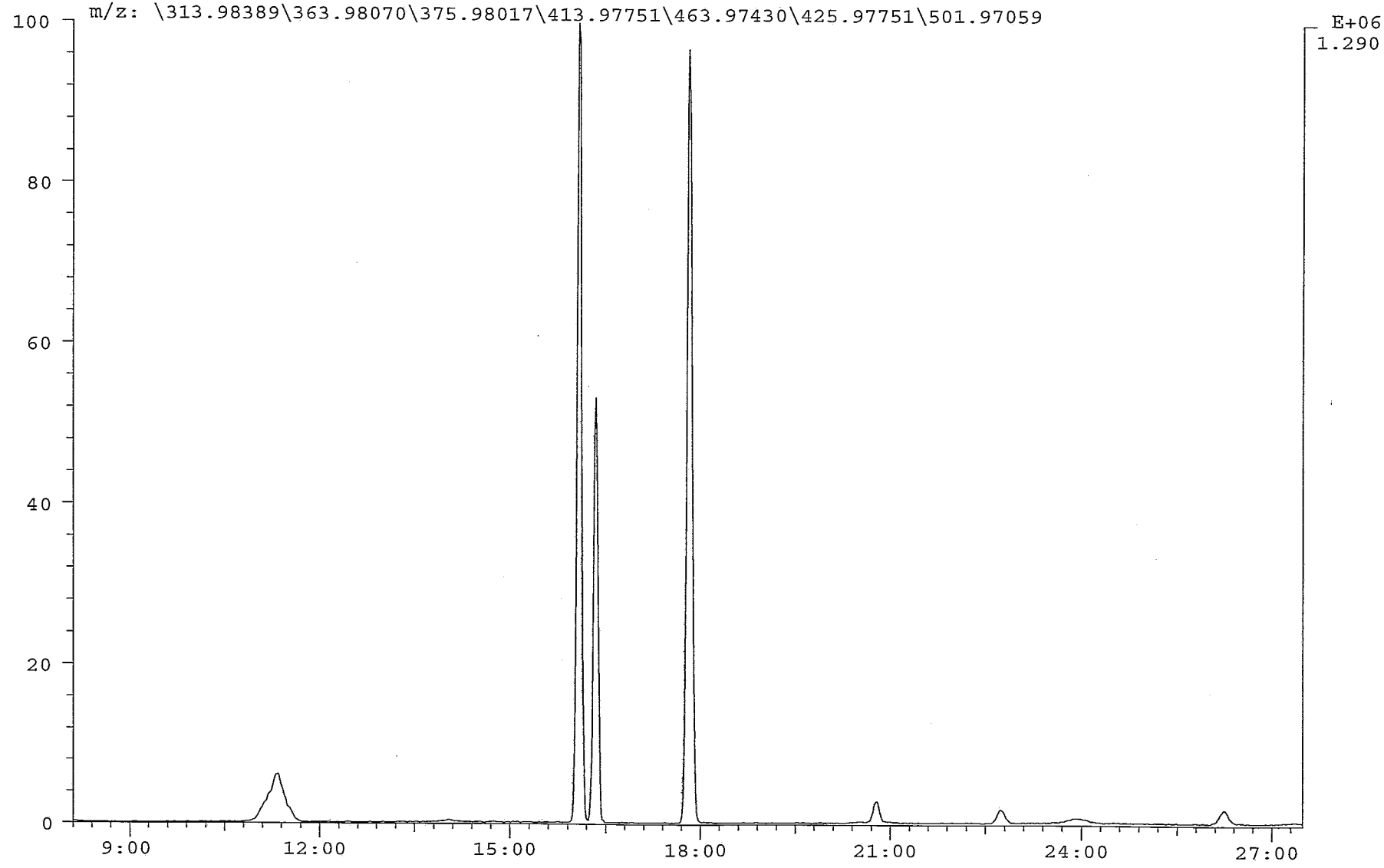
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	93	93	37	37	1.00 *	/	
	2,3,7,8-TCDF	17:50	00:00	0	901094	1153010	158808	205448	0.78	AVV/ABV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	198	398	79	159	0.50 *	/	
	13C-2,3,7,8-TCDF	17:49	00:00	0	2349443	2905416	408781	506626	0.81	AVV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	115	120	46	48	0.96 *	/	
	2,3,7,8-TCDD	16:05	00:00	0	656840	829775	139035	176872	0.79	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	95		38				
	37Cl4-2,3,7,8-TCDD	16:05	00:00	0	1527054		326666			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	153	95	61	38	1.61 *	/	
	13C-2,3,7,8-TCDD	16:04	00:00	0	1556990	1929996	334058	407899	0.81	AVV/AVV	M
	13C-1,2,3,4-TCDD	16:20	00:00	0	1537075	1894068	306396	378787	0.81	AVV/AVV	M

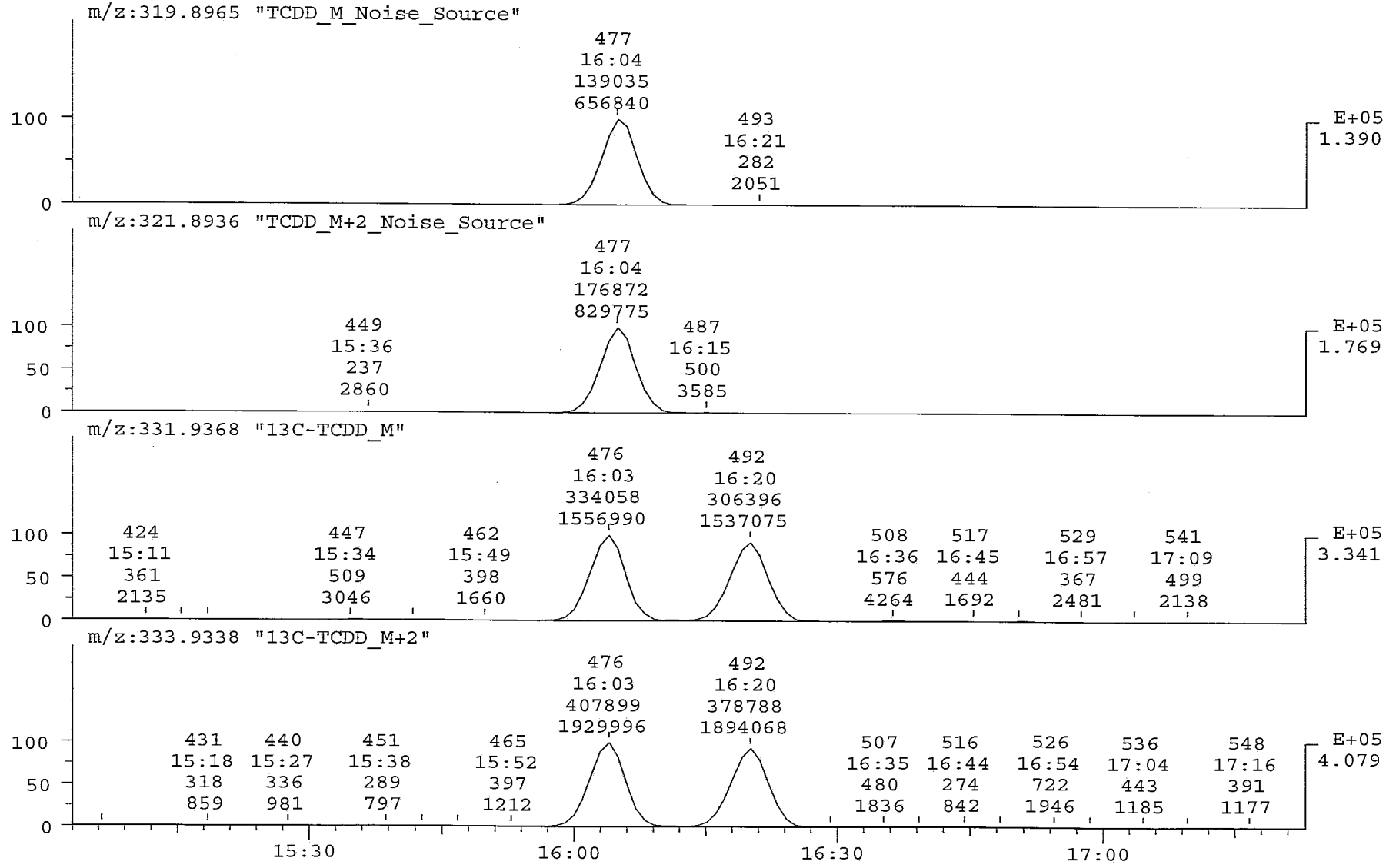
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int./Calc. KLU 4/9/15
QCULD 4/10/15

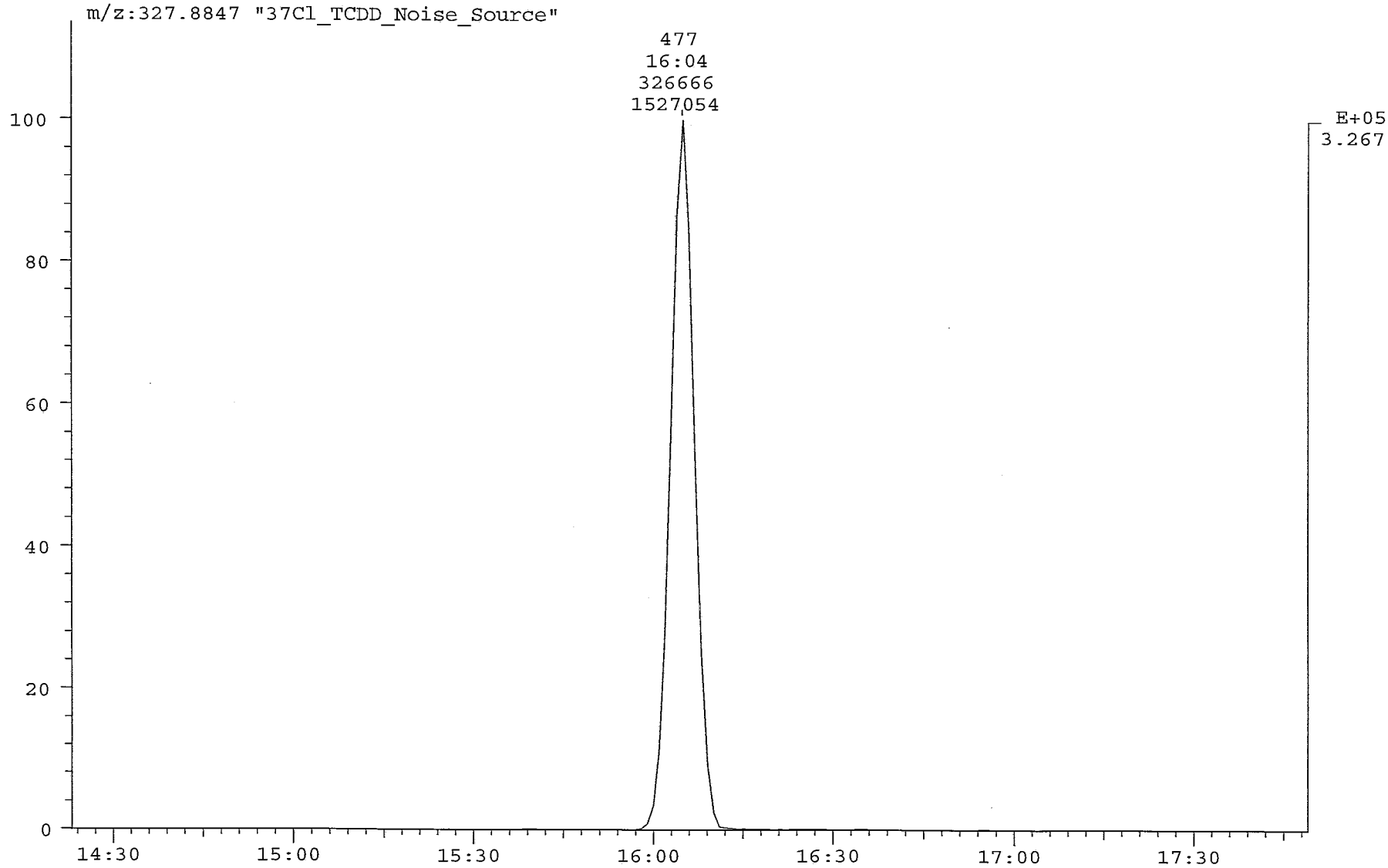
CHRO: d2150409i4 09-Apr-15 Elapse: 17:48.9 579
Samp: WO=4104:74cs4 Meth=L1c Dil=1 Start : 14:15:22 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 3 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



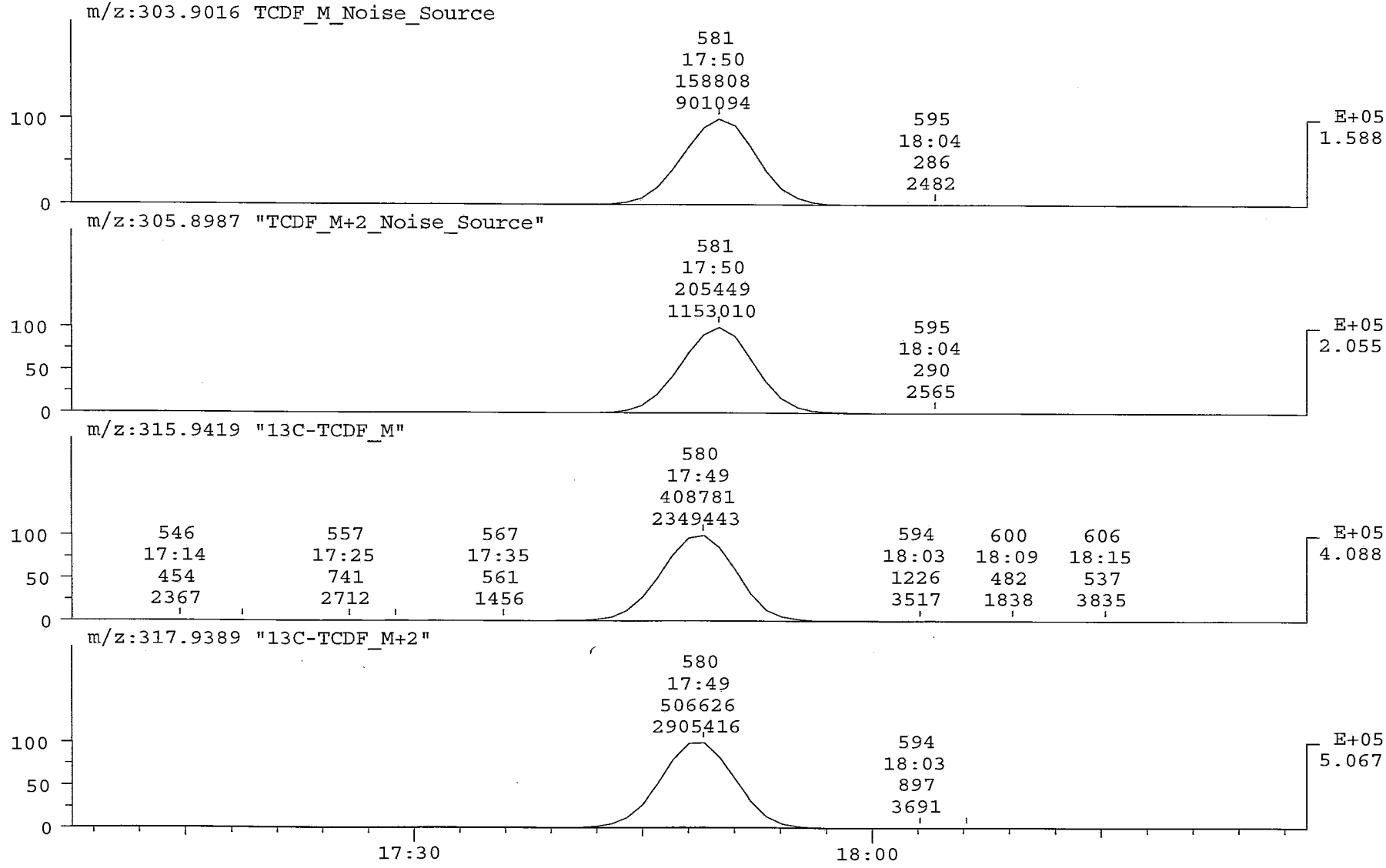
CHRO: d2150409i4 09-Apr-15 Elapse: 16:13.0 485
Samp: WO=4104:74cs4 Meth=L1c Dil=1 Start : 14:15:22 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 416 > 554 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



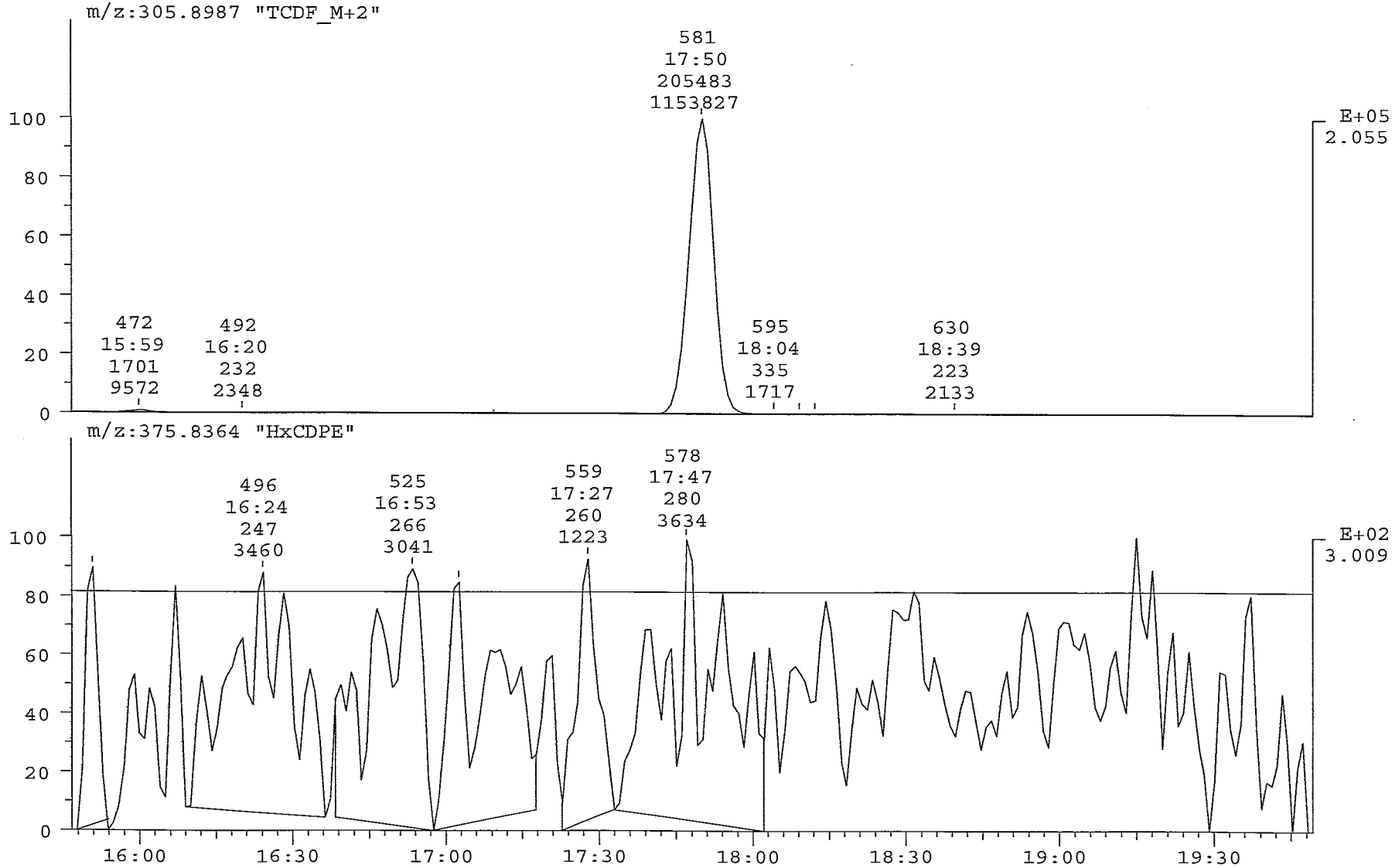
```
CHRO:  d2150409i4                                09-Apr-15  Elapse:  16:02.9      475
Samp:  WO=4104:74cs4 Meth=L1c Dil=1                         Start :  14:15:22    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  DB-225 ICAL
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   376 > 580              Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



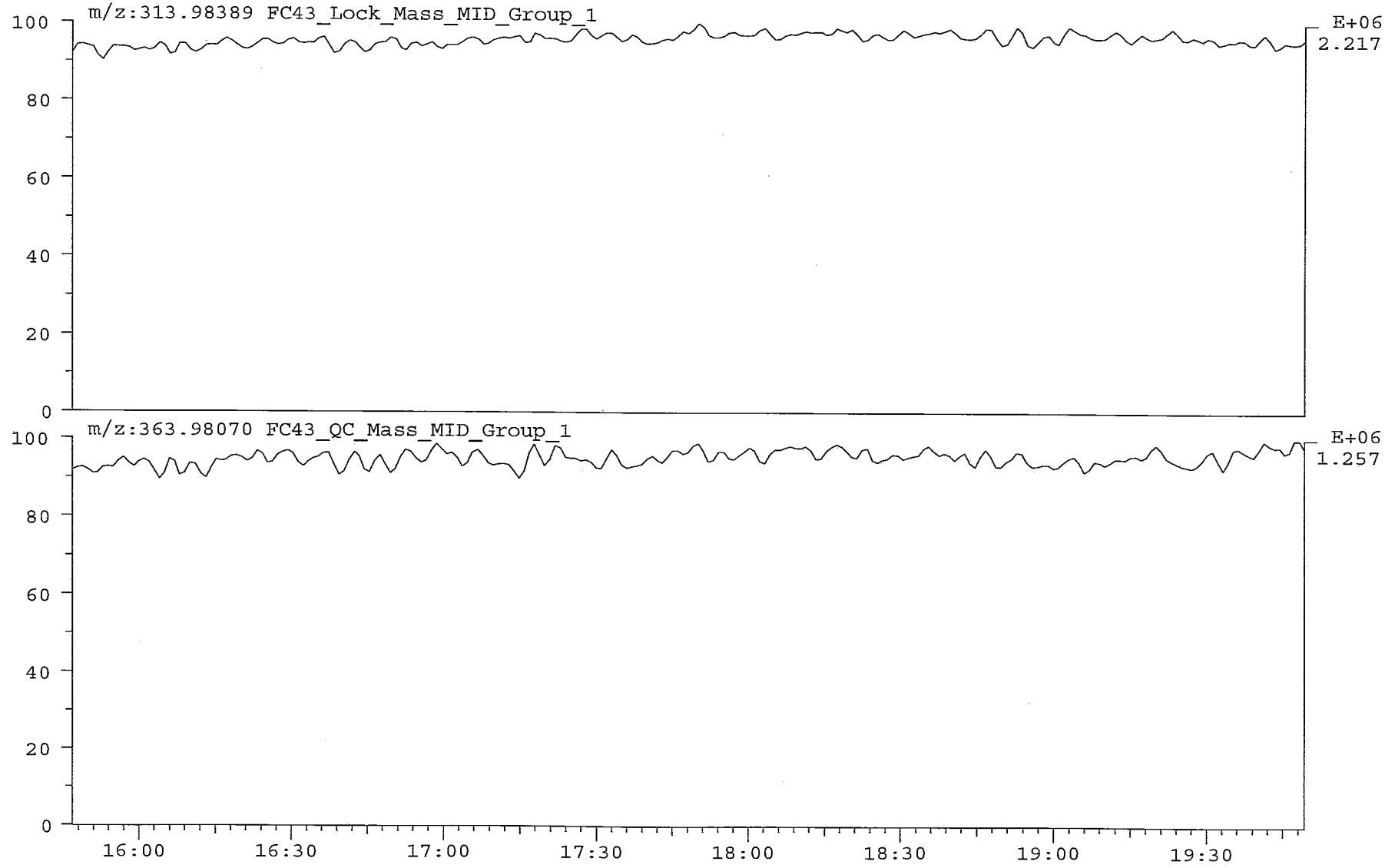
```
CHRO:  d2150409i4                          09-Apr-15  Elapse:  17:48.9      579
Samp:  WO=4104:74cs4 Meth=L1c Dil=1                   Start :  14:15:22    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                            Study :  DB-225 ICAL
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   539 > 619        Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2150409i4                          09-Apr-15   Elapse:  17:48.9      579
Samp:  WO=4104:74cs4 Meth=L1c Dil=1                    Start :  14:15:22    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                             Study :  DB-225 ICAL
Oper:  KLR                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   459 > 699         Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d2150409i4                          09-Apr-15   Elapse:  17:48.9      579
Samp:  WO=4104:74cs4 Meth=L1c Dil=1                    Start :  14:15:22    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                             Study :  DB-225 ICAL
Oper:  KLR                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   459 > 699         Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Apr 09 14:18:14 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 14:18:14

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409133701

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	309.4834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	237.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	167.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0038	FVINLET	0.0428	FVSRC	0.0443
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	309.4834	LKM	313.9834	MASS	309.4834
MDAC	3559251.8180	MRANGE	1252.5112	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8991	RELEN	0.0000
RES	11702.5390	RPUSHER	-10.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	309.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

Source Gauge: 3.2e-005 mbar
Analyzer Penning: 6.1e-008 mbar
Pirani Analyse: 3.8e-003 mbar
Pirani Source: 4.4e-002 mbar
Pirani Inlet System: 4.3e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11702.

Amplifier Offset: 89.

*** File closed Thu Apr 09 14:45:45 2015
***

QUAN: d2150409i4.q0 Entries: 21

Data file(s) used
File: d2150409i4 09-Apr-15
Samp: WO=4104:74cs4 Meth=L1c Dil=1 Start : 14:15:22 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICA
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	16:05	656367.	139035.	15:55	16:19	46.	1	1.0	AVV
321.8775	16:05	830780.	176872.	15:56	16:20	48.	1	1.0	AVV
319.8805	16:05	656840.	139035.	15:49	16:19	46.	2	5.0	AVV
319.8805	16:21	2051.	282.	16:19	16:36	46.	2	5.0	AVV
321.8775	15:36	2860.	237.	15:21	15:45	48.	2	5.0	ABB
321.8775	16:05	829775.	176872.	15:49	16:14	48.	2	5.0	AVV
321.8775	16:15	3585.	500.	16:14	16:30	48.	2	5.0	AVV
331.9202	16:04	1556990.	334058.	15:53	16:12	61.	2	5.0	AVV
331.9202	16:20	1537075.	306396.	16:12	16:29	61.	2	5.0	AVV
333.9171	16:04	1929996.	407899.	15:54	16:12	38.	2	5.0	AVV
333.9171	16:20	1894068.	378787.	16:12	16:28	38.	2	5.0	AVV
327.8683	16:05	1526680.	326666.	15:52	16:20	38.	1	1.0	AVV
327.8683	16:05	1527054.	326666.	15:49	16:20	38.	2	5.0	AVV
303.8864	17:50	900813.	158808.	17:38	18:00	37.	1	1.0	AVV
305.8834	17:50	1153010.	205448.	17:34	18:00	37.	1	1.0	ABV
303.8864	17:50	901094.	158808.	17:34	18:00	37.	2	5.0	AVV
303.8864	18:04	2482.	286.	18:00	18:17	37.	2	5.0	AVB
305.8834	17:50	1153010.	205448.	17:34	18:00	37.	2	5.0	ABV
305.8834	18:04	2565.	290.	18:00	18:19	37.	2	5.0	AVV
315.9261	17:49	2349443.	408781.	17:37	18:01	79.	2	5.0	AVV
317.9230	17:49	2905416.	506626.	17:33	17:58	159.	2	5.0	AVV

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20150409i/d2150409i5.d	Prep Date		SDG No	
Analysis ID	169147	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	15:05	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)	DL (ng/mL)
2,3,7,8-TCDD	16:04	7488875	1569743	1.000	200.0	212.159230	106.08	212.159230	0.0407
2,3,7,8-TCDF	17:50	10135312	1806748	1.000	200.0	189.176171	94.59	189.176171	0.0312
37Cl4-2,3,7,8-TCDD	16:04	7477931	1538407	1.000	200.0	216.885715	108.44	216.885715	0.0178
13C-2,3,7,8-TCDD	16:03	3529837	736210	1.000	100.0	102.377412	102.38	102.377412	0.0403
13C-2,3,7,8-TCDF	17:48	5357605	929154	1.000	100.0	155.388969	155.39	155.388969	0.0573
13C-1,2,3,4-TCDD	16:20	3447867	675989	1.000	100.0	100.000000	100.00	100.000000	0.0403

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4104:74CS5	Prep Batch		Lot No	
Data File	/20150409i/d2150409i5.	Prep Date		SDG No	
Analysis ID	169147	Prep Exp Date		Date Received	
Analysis Date	04/09/15 15:05	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	KLR	Diluton Factor	1.00	Code	L1c

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	143	148	57	59	0.97 *	/	
	2,3,7,8-TCDF	17:50	00:00	0	4441835	5693477	796680	1010068	0.78	AVV/AVV	M
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	190	198	76	79	0.96 *	/	
	13C-2,3,7,8-TCDF	17:48	00:00	0	2355307	3002298	407236	521918	0.78	ABV/AVV	D
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	115	185	46	74	0.62 *	/	
	2,3,7,8-TCDD	16:04	00:00	0	3299887	4188988	692496	877247	0.79	AVV/AVV	M
328					327.8847		327.8847				
	Noise	00:00	00:00	0	120		48				
	37Cl4-2,3,7,8-TCDD	16:04	00:00	0	7477931		1538407			AVV	M
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	150	123	60	49	1.22 *	/	
	13C-2,3,7,8-TCDD	16:03	00:00	0	1553403	1976434	320908	415302	0.79	AVV/ABV	M
	13C-1,2,3,4-TCDD	16:20	00:00	0	1538677	1909190	301190	374799	0.81	AVV/AVV	M

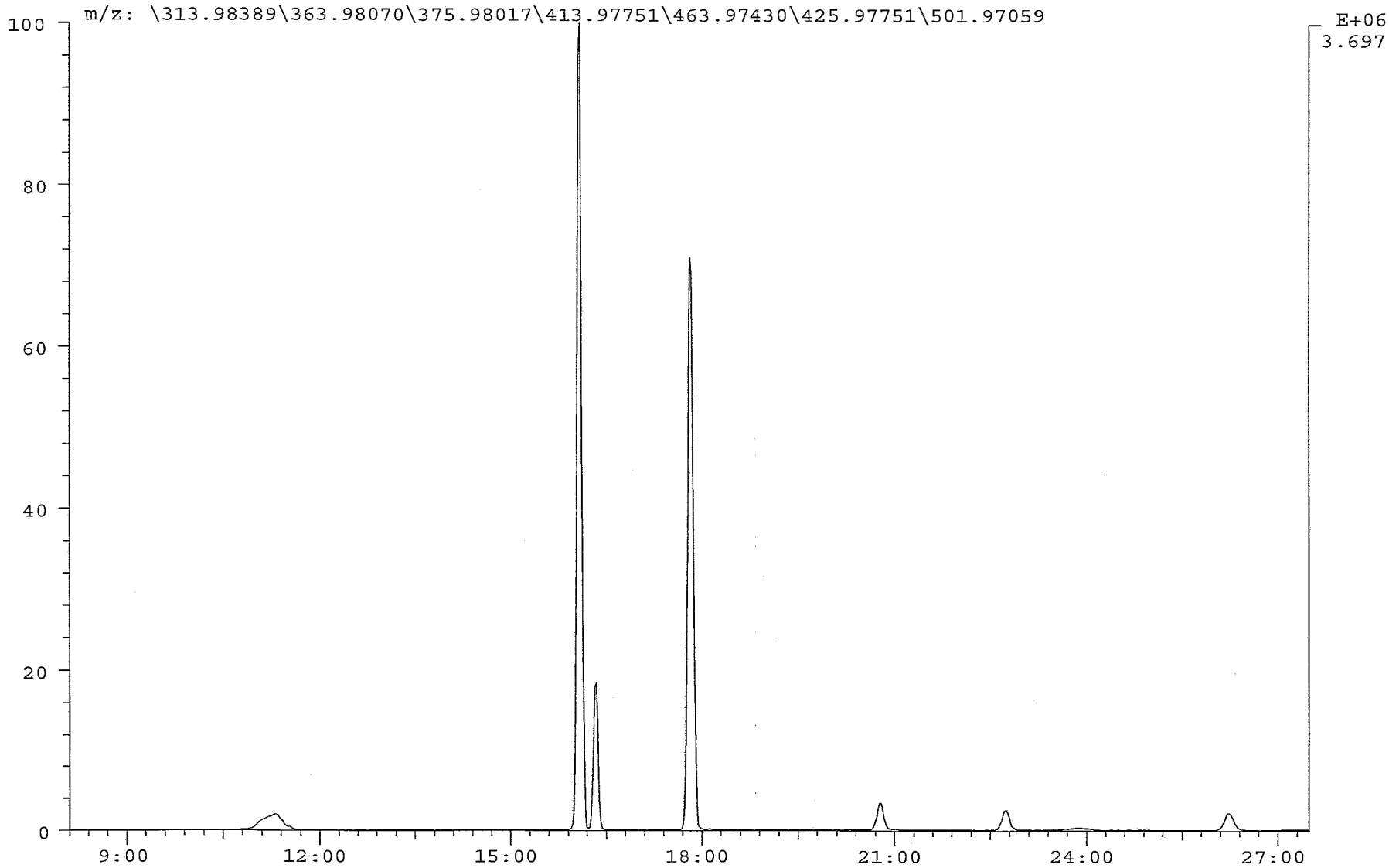
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int/Calc LKR 4-9-15

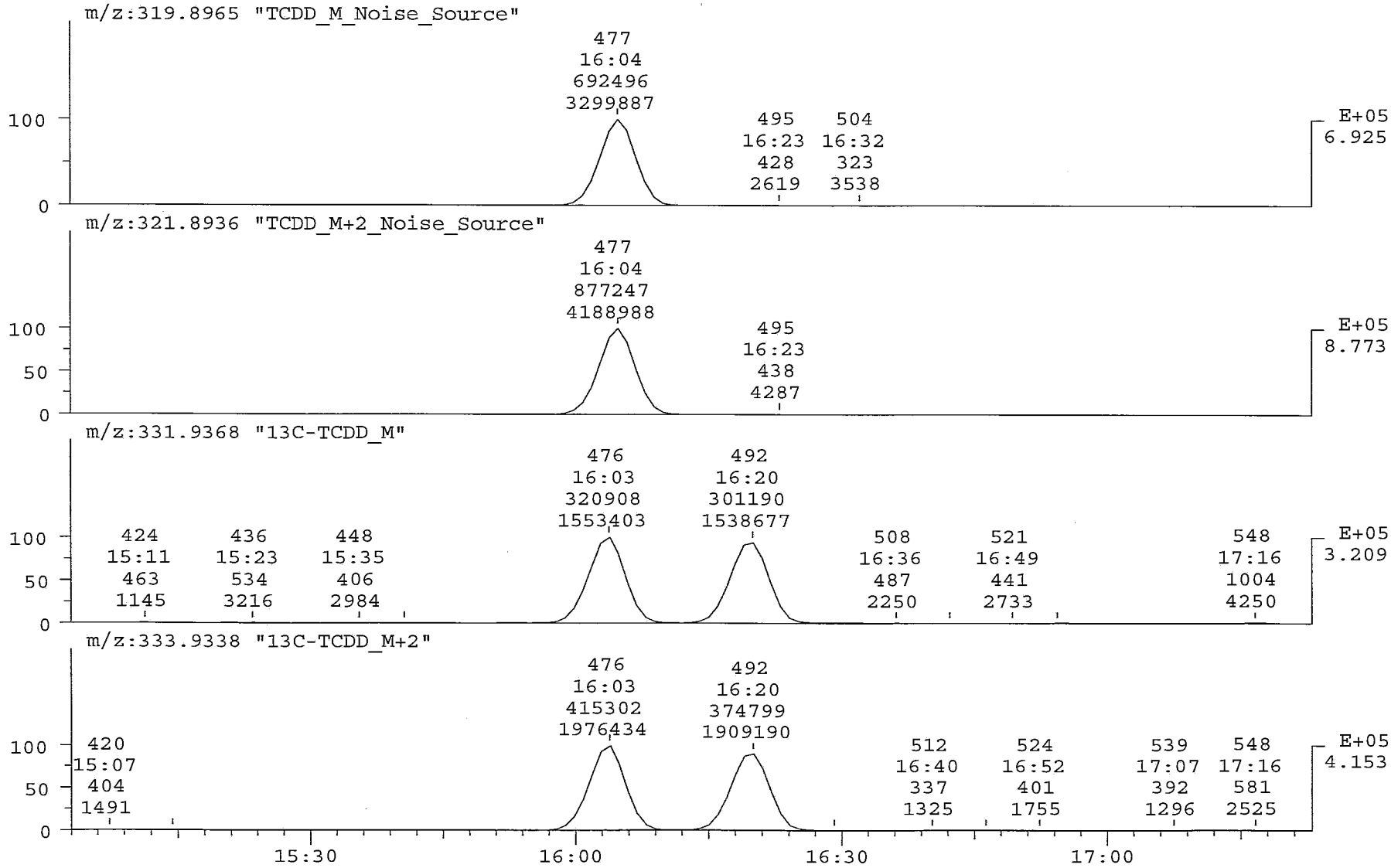
QC KLR 4/10/15

1

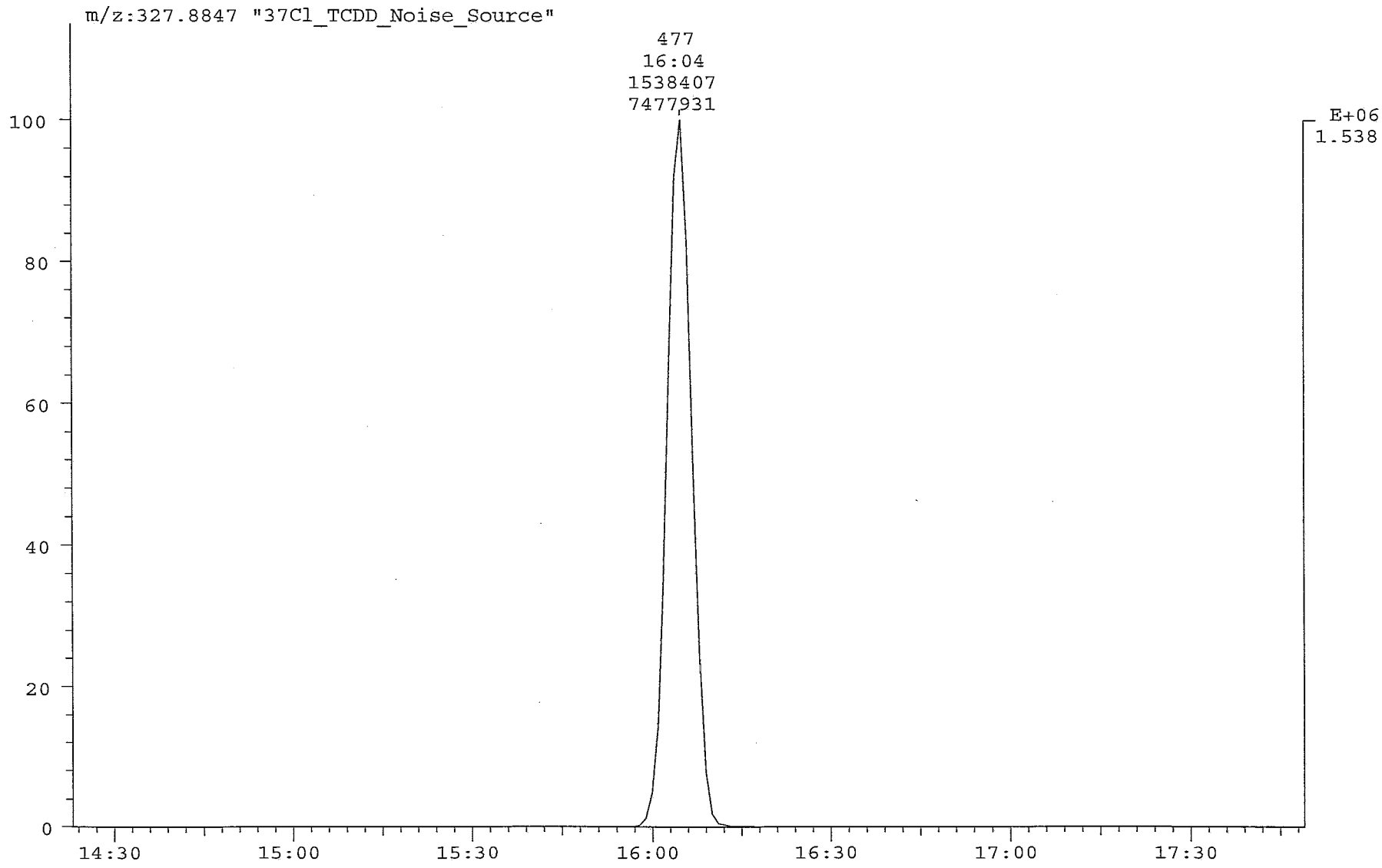
```
CHRO:  d2150409i5                          09-Apr-15  Elapse:  17:47.9      579
Samp:  WO=4104:74cs5 Meth=L1c Dil=1                   Start :  15:05:31    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                            Study :  DB-225 ICAL
Oper:  KLR                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   3 > 1154         Masses:  303 > 376
Area:  5, 0.50, 0      Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



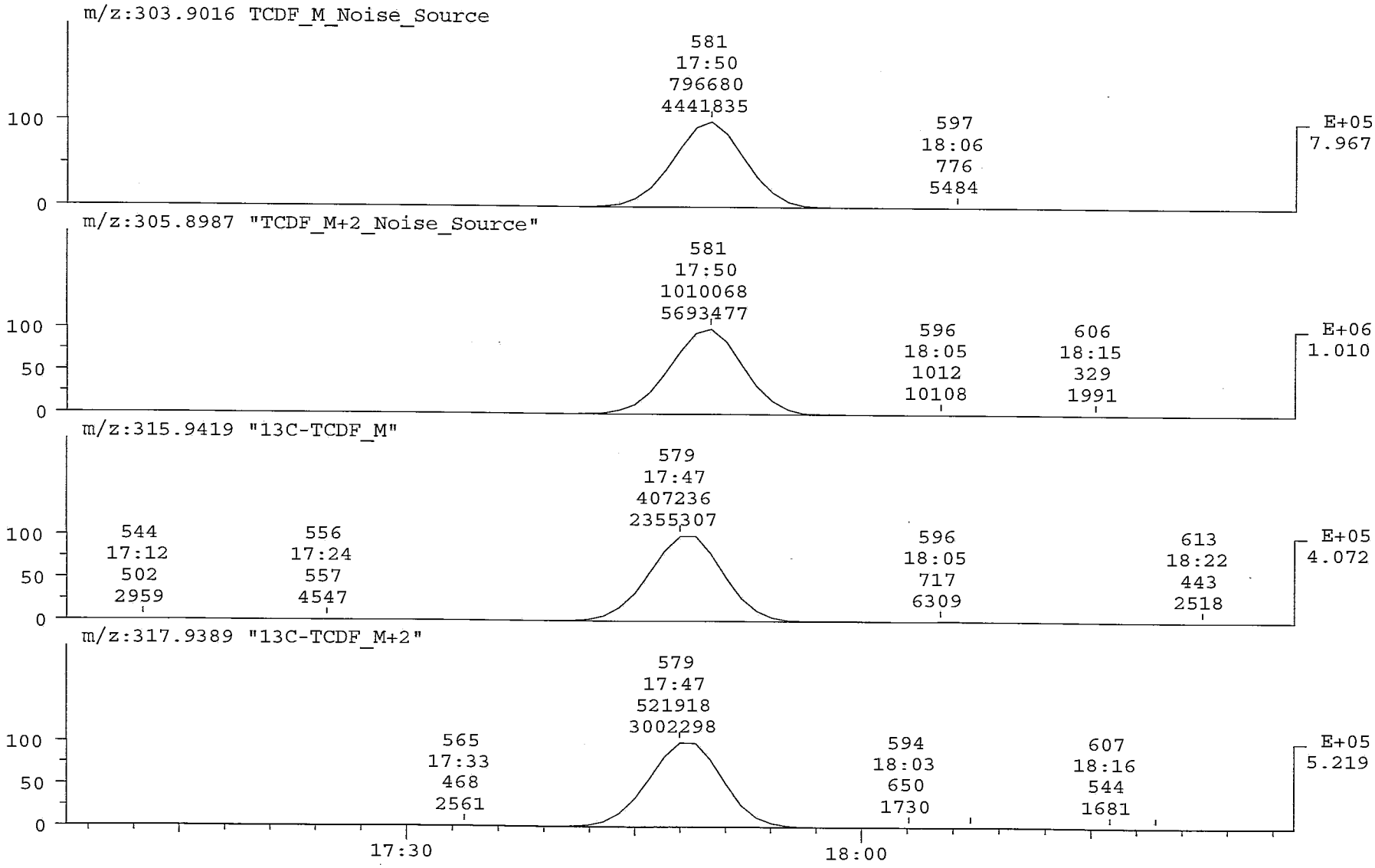
CHRO: d2150409i5 09-Apr-15 Elapse: 16:13.9 485
Samp: WO=4104:74cs5 Meth=L1c Dil=1 Start : 15:05:31 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 416 > 554 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



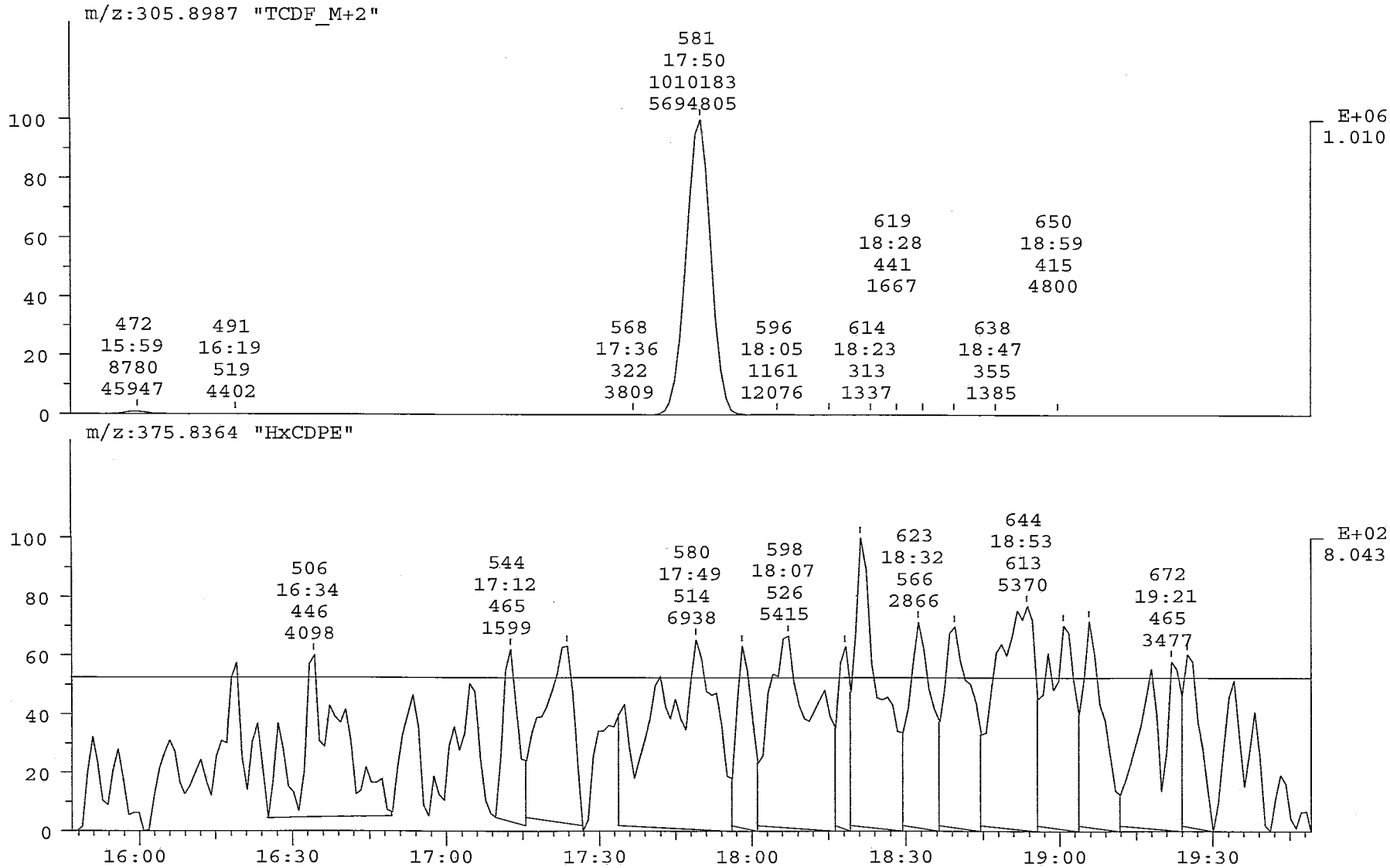
```
CHRO:  d2150409i5                          09-Apr-15   Elapse:  16:02.9      475
Samp:  WO=4104:74cs5 Meth=L1c Dil=1                    Start :  15:05:31    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                             Study :  DB-225 ICAL
Oper:  KLR                                             Inlet :  LC
Peak:  100.00  ppm     Label wndw:   376 > 580         Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3            Label :  -2, 5.0
Disp:  Height  Area
```



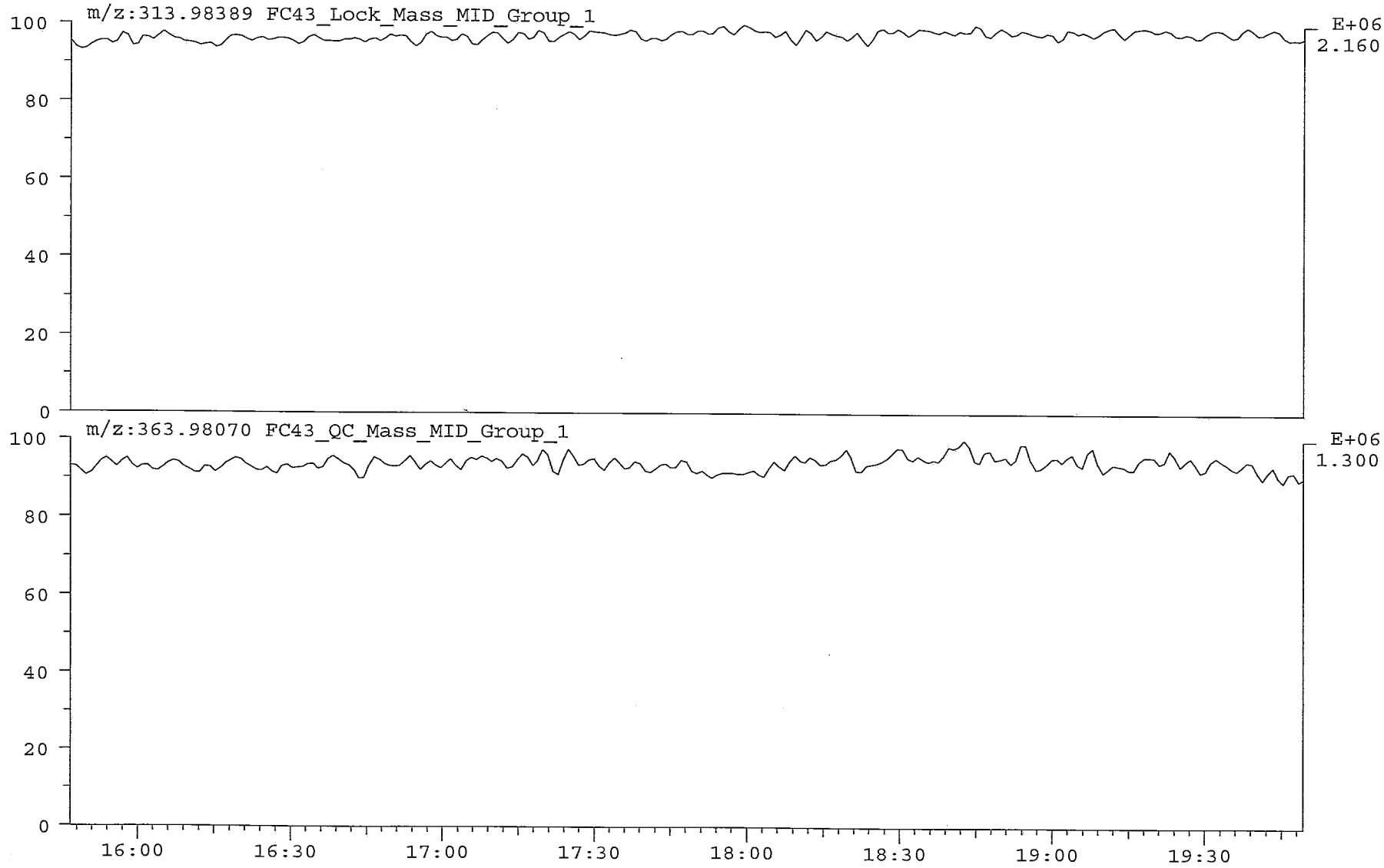
```
CHRO:  d2150409i5                                09-Apr-15  Elapse:  17:47.9      579
Samp:  WO=4104:74cs5 Meth=L1c Dil=1                         Start :  15:05:31    1155
Comm:  Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  DB-225 ICAL
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   539 > 619              Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d2150409i5 09-Apr-15 Elapse: 17:47.9 579
Samp: WO=4104:74cs5 Meth=L1c Dil=1 Start : 15:05:31 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2150409i5 09-Apr-15 Elapse: 17:47.9 579
Samp: WO=4104:74cs5 Meth=L1c Dil=1 Start : 15:05:31 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Apr 09 15:08:23 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 15:08:22

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409142439

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	308.4834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	237.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	167.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0038	FVINLET	0.0433	FVSRC	0.0443
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	308.4834	LKM	313.9834	MASS	308.4834
MDAC	3551003.7253	MRANGE	1252.5112	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8977	RELEN	0.0000
RES	11411.4970	RPUSHER	-10.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	308.4834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

```
Source Gauge:         3.3e-005 mbar
Analyzer Penning:     6.1e-008 mbar
Pirani Analyse:       3.8e-003 mbar
Pirani Source:        4.4e-002 mbar
Pirani Inlet System: 4.3e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11411.

Amplifier Offset: 89.


*** File closed Thu Apr 09 15:35:54 2015
  ***
```

QUAN: d215040915.q0 Entries: 22

Data file(s) used
File: d215040915 09-Apr-15
Samp: WO=4104:74cs5 Meth=L1c Dil=1 Start : 15:05:31 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICA
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	16:04	3299057.	692496.	15:55	16:20	46.	1	1.0	AVV
321.8775	16:04	4188230.	877247.	15:54	16:20	74.	1	1.0	AVV
319.8805	16:04	3299887.	692496.	15:49	16:20	46.	2	5.0	AVV
319.8805	16:23	2619.	428.	16:21	16:29	46.	2	5.0	AVV
319.8805	16:32	3538.	323.	16:29	16:47	46.	2	5.0	AVV
321.8775	16:04	4188988.	877247.	15:49	16:20	74.	2	5.0	AVV
321.8775	16:23	4287.	438.	16:21	16:38	74.	2	5.0	AVV
331.9202	16:03	1553403.	320908.	15:48	16:12	60.	2	5.0	AVV
331.9202	16:20	1538677.	301190.	16:12	16:34	60.	2	5.0	AVV
333.9171	16:03	1976434.	415302.	15:52	16:11	49.	2	5.0	ABV
333.9171	16:20	1909190.	374799.	16:11	16:27	49.	2	5.0	AVV
327.8683	16:04	7477807.	1538407.	15:51	16:19	48.	1	1.0	AVV
327.8683	16:04	7477931.	1538407.	15:49	16:19	48.	2	5.0	AVV
303.8864	17:50	4441671.	796680.	17:37	18:02	57.	1	1.0	AVV
305.8834	17:50	5692624.	1010068.	17:39	17:59	59.	1	1.0	AVV
303.8864	17:50	4441835.	796680.	17:34	18:02	57.	2	5.0	AVV
303.8864	18:06	5484.	776.	18:02	18:13	57.	2	5.0	AVB
305.8834	17:50	5693477.	1010068.	17:34	17:59	59.	2	5.0	AVV
305.8834	18:05	10108.	1012.	17:59	18:12	59.	2	5.0	AVV
305.8834	18:15	1991.	329.	18:12	18:25	59.	2	5.0	AVB
315.9261	17:48	2355307.	407236.	17:36	18:03	76.	2	5.0	ABV
317.9230	17:48	3002298.	521918.	17:35	18:01	79.	2	5.0	AVV

Second Source CCV

TestAmerica
Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4966:05	Prep Batch		Lot No	
Data File	/20150409i/d2150409ss.d	Prep Date		SDG No	
Analysis ID	169157	Prep Exp Date		Date Received	
Analysis Date	4/9/2015	Matrix	UNKNOWN	Date Sampled	
Analysis Time	16:13	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	KLR				

ICAL

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	16:05	248292	48386	1.149	10.00	10.773884	107.74	10.773884	E	0.0524
2,3,7,8-TCDF	17:49	337706	59484	1.046	10.00	9.473137	94.73	9.473137	E	0.0419
37Cl4-2,3,7,8-TCDD	16:04	245376	50211	1.157	10.00	10.552605	105.53	10.552605	E	0.0214
13C-2,3,7,8-TCDD	16:03	2006127	419436	1.008	100.0	99.076095	99.08	99.076095		0.0717
13C-2,3,7,8-TCDF	17:48	3409038	604299	1.511	100.0	112.318358	112.32	112.318358		0.0810
13C-1,2,3,4-TCDD	16:19	2009189	394192	1.000	100.0	100.000000	100.00	100.000000		0.0723

WCD 4/10/15
KLR 4/10/15

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4966:05	Prep Batch		Lot No	
Data File	/20150409i/d2150409ss.	Prep Date		SDG No	
Analysis ID	169157	Prep Exp Date		Date Received	
Analysis Date	04/09/15 16:13	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	KLR	Diluton Factor	1.00	Code	L1c

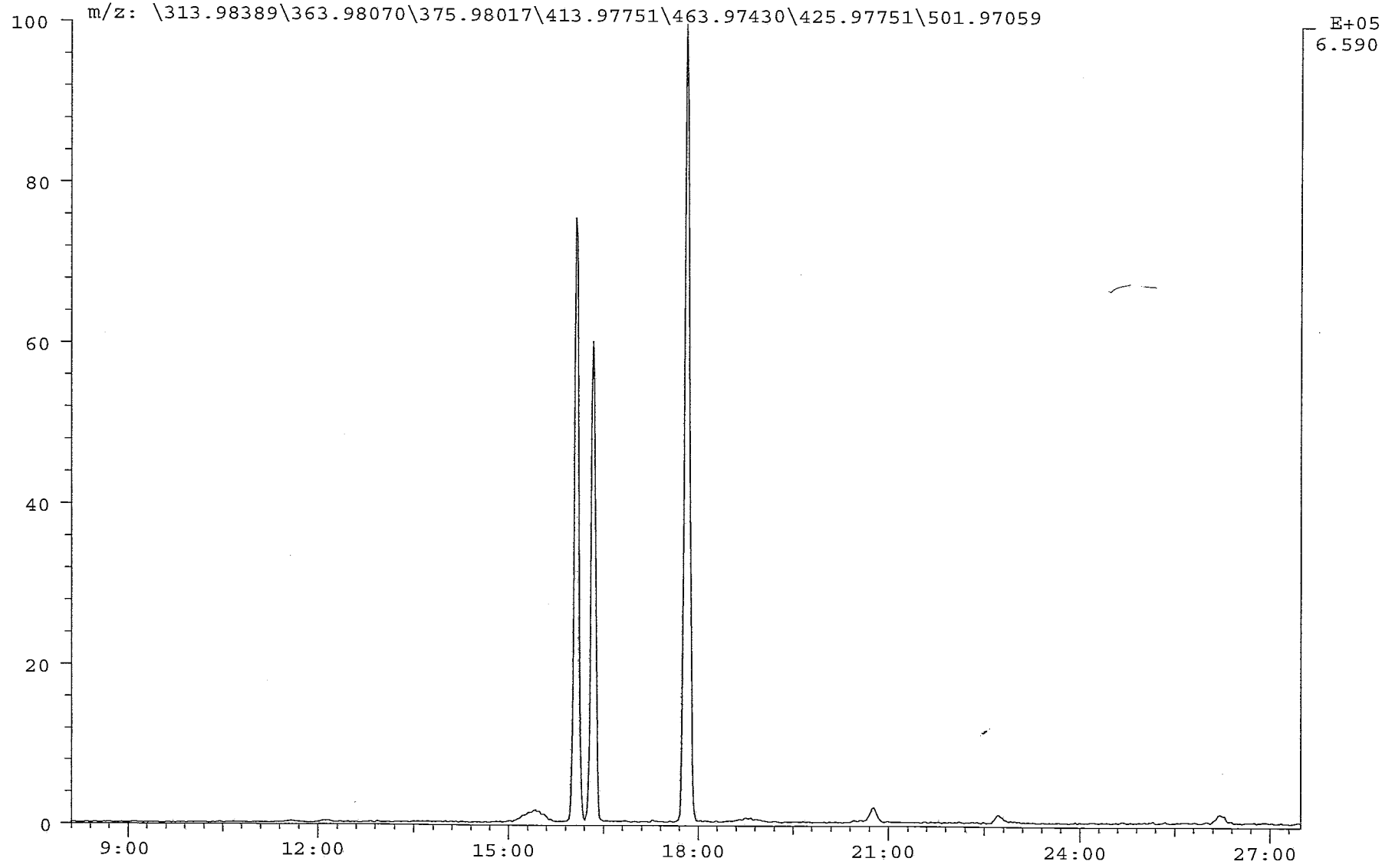
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	133	133	53	53	1.00 *	/	
	2,3,7,8-TCDF	17:49	17:50	-1	149964	187742	26486	32998	0.80	ABV/ABV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	198	285	79	114	0.69	/	
	13C-2,3,7,8-TCDF	17:48	17:48	0	1519276	1889762	266937	337362	0.80	ABV/AVV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	130	123	52	49	1.06 *	/	
	2,3,7,8-TCDD	16:05	16:04	1	109453	138839	21058	27328	0.79	AVV/AVV	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	98		39				
	37Cl4-2,3,7,8-TCDD	16:04	16:04	0	245376		50211			AVV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	163	123	65	49	1.33 *	/	
	13C-2,3,7,8-TCDD	16:03	16:03	0	893014	1113113	185034	234402	0.80	AVV/AVV	
	13C-1,2,3,4-TCDD	16:19	16:19	0	876419	1132770	172413	221779	0.77	AVV/AVV	

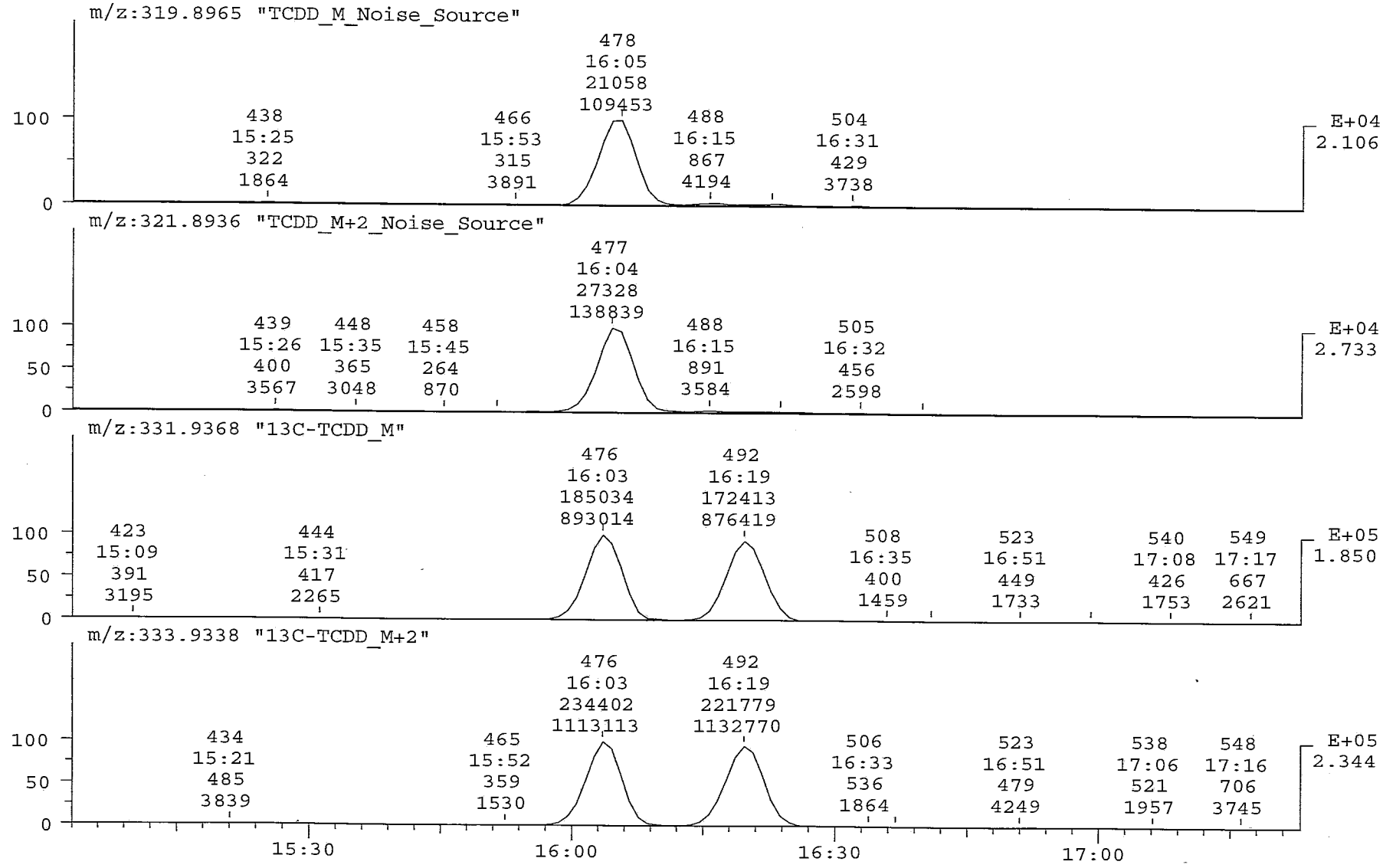
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d2150409ss 09-Apr-15 Elapse: 17:47.6 579
Samp: WO=4966:05 Meth=L1c Dil=1 Start : 16:13:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 3 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

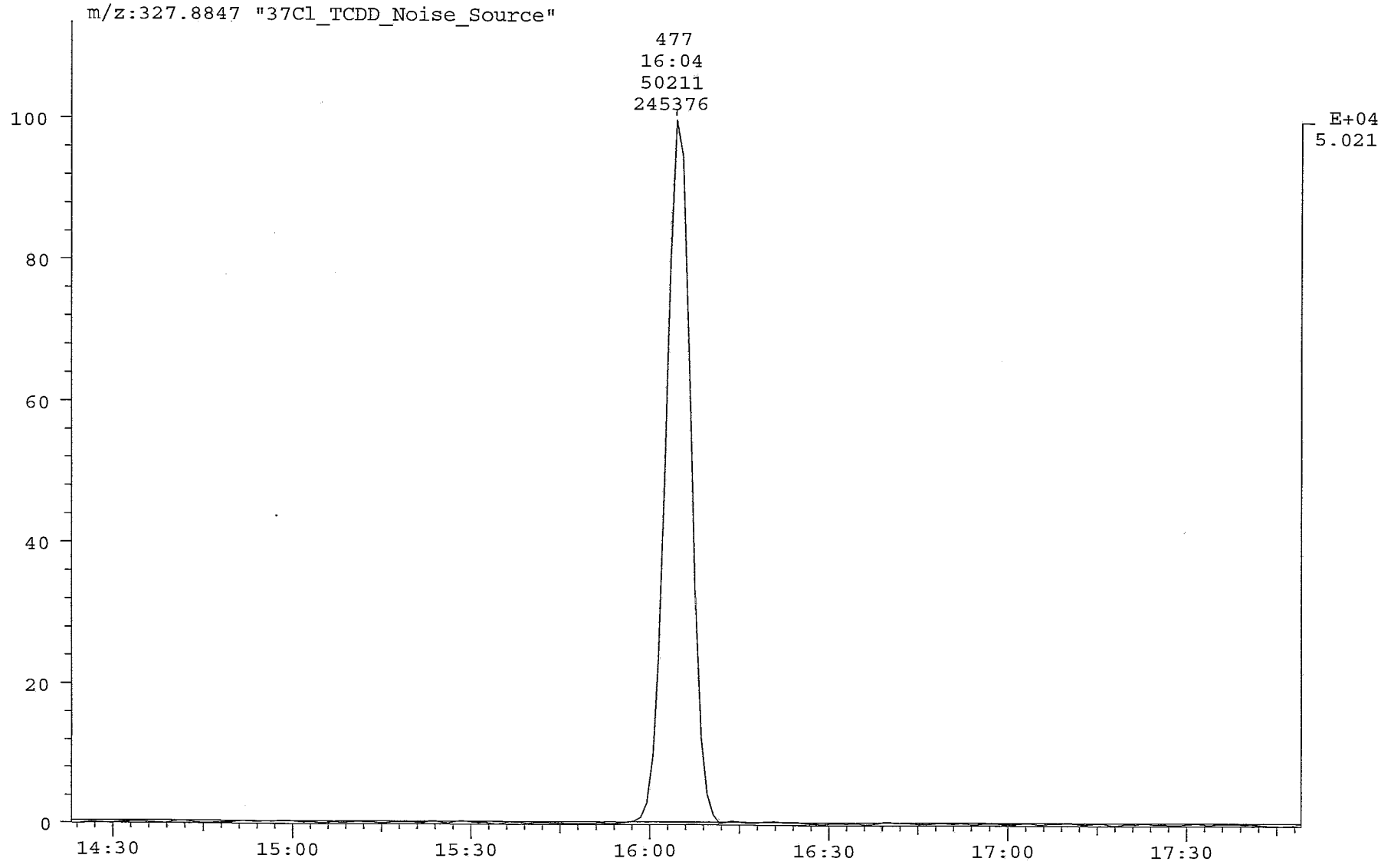
Int. LM 4-9-15
Calc. KL 4/10/15
QC Rev MLD 4/10/15



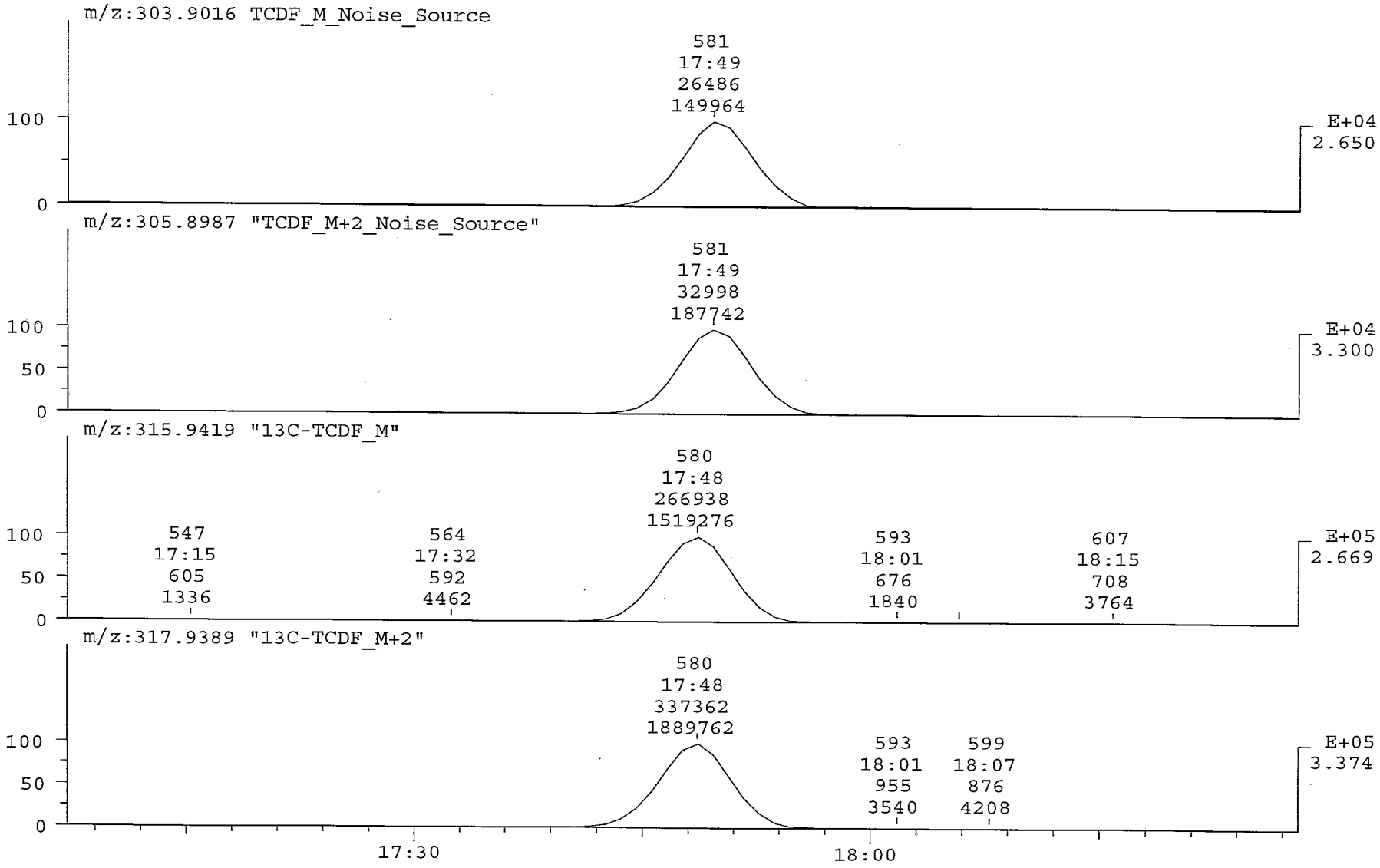
CHRO: d2150409ss 09-Apr-15 Elapse: 16:12.6 485
Samp: WO=4966:05 Meth=L1c Dil=1 Start : 16:13:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 416 > 555 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



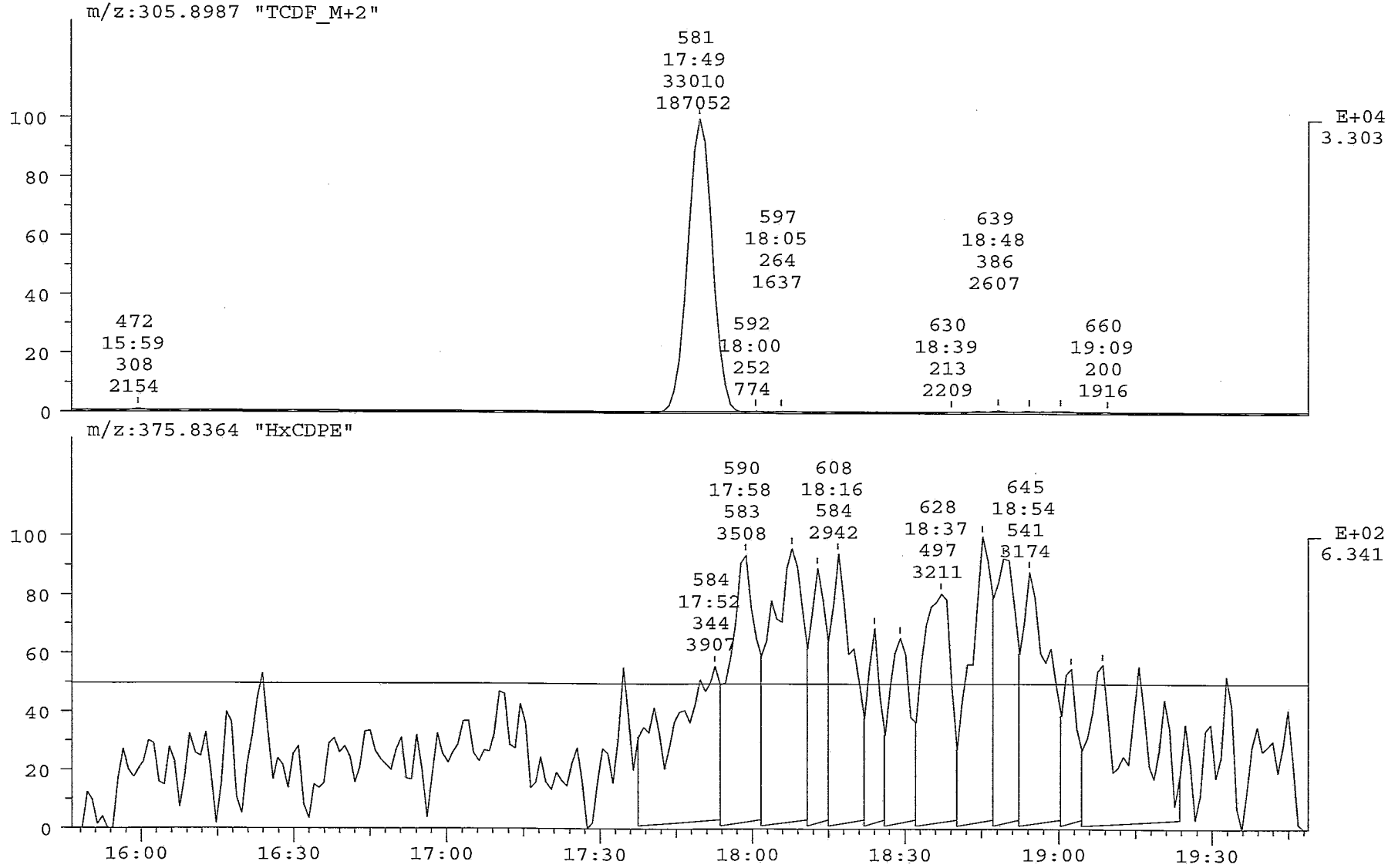
CHRO: d2150409ss 09-Apr-15 Elapse: 16:03.5 476
Samp: WO=4966:05 Meth=L1c Dil=1 Start : 16:13:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 377 > 580 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



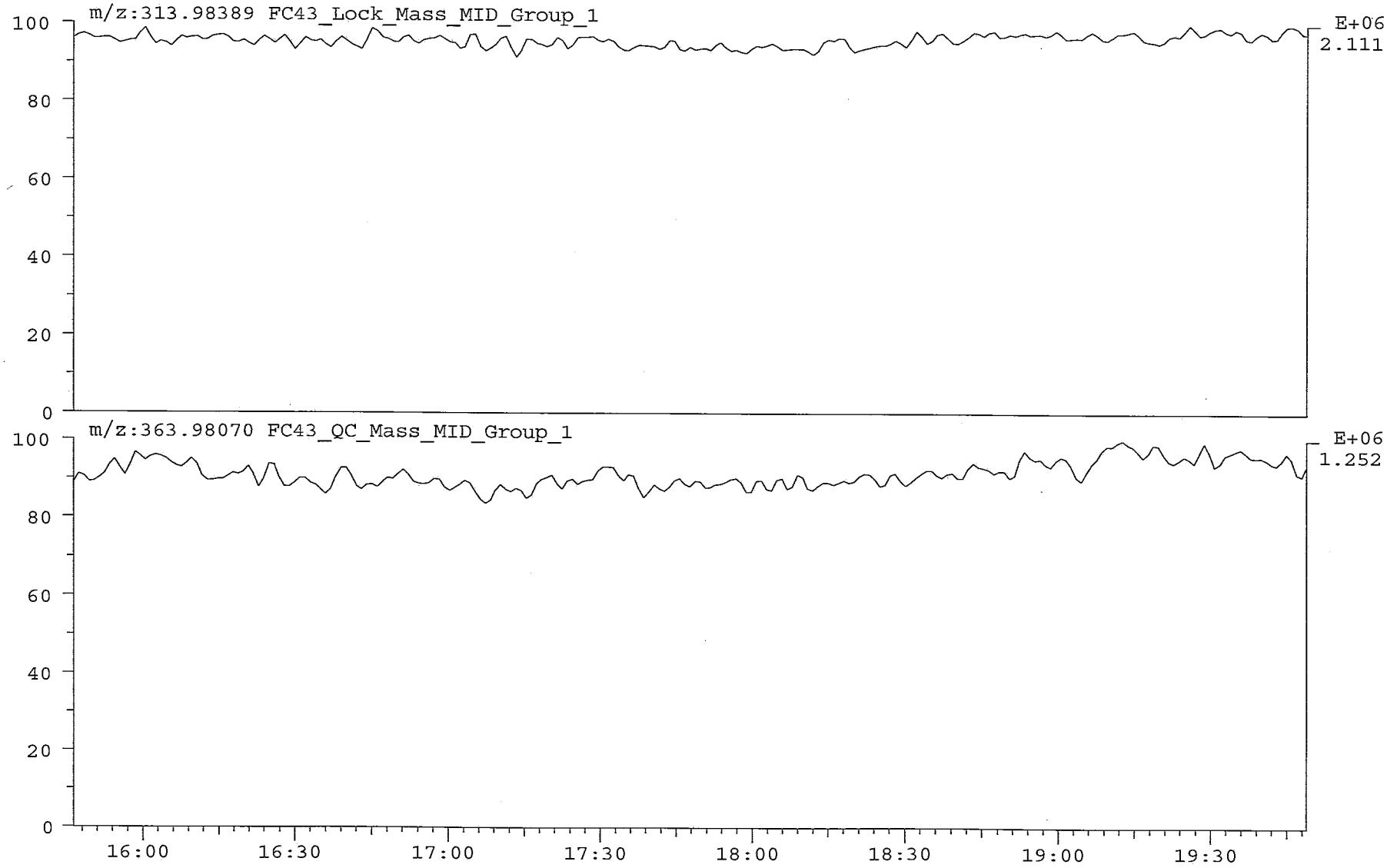
CHRO: d2150409ss 09-Apr-15 Elapse: 17:47.6 579
Samp: WO=4966:05 Meth=L1c Dil=1 Start : 16:13:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 539 > 619 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2150409ss 09-Apr-15 Elapse: 17:47.6 579
Samp: WO=4966:05 Meth=L1c Dil=1 Start : 16:13:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2150409ss 09-Apr-15 Elapse: 17:47.6 579
Samp: WO=4966:05 Meth=L1c Dil=1 Start : 16:13:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICAL
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 459 > 699 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Apr 09 16:16:12 2015 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 09-Apr-15 16:16:11

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 102913KLR_150409142713

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	306.9834
BQUAD	1.1000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	16.0000	ECORR	1.0001	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9995	EDACZ	4144.0190
ELEN	-45.0000	EMULT	1652.0000	ENS	237.0000
ENSBR	1.1000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	167.0000	EXSBR	-1.1000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	5.4000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0039	FVINLET	0.0441	FVSRC	0.0448
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	686.0000
LENS_SYM	-6.0000	LM	375.8364	LMII	500.0000
LMASS	306.9834	LKM	313.9834	MASS	306.9834
MDAC	3538606.6780	MRANGE	1252.5112	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.0000	RECURR	0.8982	RELEN	0.0000
RES	11490.5436	RPUSHER	-10.9231	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	710.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	3.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	306.9834	XLENS_POT	854.0000
XLENS_SYM	8.0000	YLENS_POT	692.0000	YLENS_SYM	-2.0000

Source Gauge: 3.3e-005 mbar
Analyzer Penning: 6.1e-008 mbar
Pirani Analyse: 3.9e-003 mbar
Pirani Source: 4.4e-002 mbar
Pirani Inlet System: 4.3e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11490.

Amplifier Offset: 88.

*** File closed Thu Apr 09 16:43:43 2015
***

QUAN: d2150409ss.q0 Entries: 29

Data file(s) used
File: d2150409ss 09-Apr-15
Samp: WO=4966:05 Meth=L1c Dil=1 Start : 16:13:20 1155
Comm: Inst=d12c/154214 Batch=20150409i Ccal=D2150407S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 ICA
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	16:05	109453.	21058.	15:57	16:12	52.	1	1.0	AVV
321.8775	16:04	138839.	27328.	15:53	16:13	49.	1	1.0	AVV
319.8805	15:25	1864.	322.	15:21	15:31	52.	2	5.0	ABV
319.8805	15:53	3891.	315.	15:38	15:57	52.	2	5.0	AVV
319.8805	16:05	109453.	21058.	15:57	16:12	52.	2	5.0	AVV
319.8805	16:15	4194.	867.	16:12	16:18	52.	2	5.0	AVV
319.8805	16:22	5563.	680.	16:18	16:29	52.	2	5.0	AVV
319.8805	16:31	3738.	429.	16:29	16:47	52.	2	5.0	AVV
321.8775	15:26	3567.	400.	15:11	15:28	49.	2	5.0	AVV
321.8775	15:35	3048.	365.	15:28	15:43	49.	2	5.0	AVV
321.8775	15:45	870.	264.	15:43	15:47	49.	2	5.0	AVV
321.8775	15:51	1654.	354.	15:47	15:53	49.	2	5.0	AVV
321.8775	16:04	138839.	27328.	15:53	16:13	49.	2	5.0	AVV
321.8775	16:15	3584.	891.	16:13	16:18	49.	2	5.0	AVV
321.8775	16:23	5428.	633.	16:18	16:28	49.	2	5.0	AVV
321.8775	16:32	2598.	456.	16:28	16:35	49.	2	5.0	AVV
321.8775	16:39	4484.	356.	16:35	16:55	49.	2	5.0	AVV
331.9202	16:03	893014.	185034.	15:48	16:11	65.	2	5.0	AVV
331.9202	16:19	876419.	172413.	16:11	16:33	65.	2	5.0	AVV
333.9171	16:03	1113113.	234402.	15:55	16:11	49.	2	5.0	AVV
333.9171	16:19	1132770.	221779.	16:11	16:29	49.	2	5.0	AVV
327.8683	16:04	245085.	50211.	15:53	16:11	39.	1	1.0	AVV
327.8683	16:04	245376.	50211.	15:49	16:11	39.	2	5.0	AVV
303.8864	17:49	149050.	26486.	17:35	17:58	53.	1	1.0	ABV
305.8834	17:49	186821.	32998.	17:39	17:58	53.	1	1.0	ABV
303.8864	17:49	149964.	26486.	17:35	18:04	53.	2	5.0	ABV
305.8834	17:49	187742.	32998.	17:39	18:04	53.	2	5.0	ABV
315.9261	17:48	1519276.	266937.	17:35	17:59	79.	2	5.0	ABV
317.9230	17:48	1889762.	337362.	17:33	17:57	114.	2	5.0	AVV

TestAmerica Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist

KNOX-ID-0004-R16 Method: ☒ 0023A/8290 ☐ EPA 23 ☐ 0023A/8290A

Start Mass Res. ✓:	23:39	Start Ver Filename:	d216082351	Inst:	d12c
End Mass Res. ✓:	9:17	Win Filename:	NA	ICAL Date:	4-9-15
		Col Perf Filename:	d216082 2W1		
		End Ver Filename:	d216082352		

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?	✓				✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
7. Were continuing calibrations performed at the beginning and end (0023A/8290) of the 12-hour period, with successful mass resolution and GC resolution performance checks?		✓			✓
8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 4), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
9. Are the measured RRFs for each compound within the specified control limits in Table 8 for all PCDDs/PCDFs?		✓			✓
10. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
11. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
12. If manual integrations were performed, are they clearly identified, initialed, dated and performed properly?	✓				✓
13. Were before and after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
15. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards?		✓			✓

Analyst: CL	Date: 8-23-16	2nd Level Reviewer :	Date: 8/23/16
Comments:		Comments:	

ID052R13.doc, 061616

TestAmerica Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
Method: 8290/8290A - KNOX-ID-0004-R16

Start Mass Res. ✓:	23:39	Ver Filename:	d21608 2351	Inst:	d12c
End Mass Res. ✓:	9:12	Win Filename:	NA	ICAL Date:	4-9-15
		Col Perf Filename:	d21608 22w1		
		End Ver Filename:	d21408 2352		

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Was the mass resolution documented at both the beginning and end of the 12 hour shift?		✓			✓
2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (MAT) and > 10,000 on FC43 m/z 313.9838, 351.9802 and 363.9807? FC43 m/z 313.9838, 351.9802 and 375.9802? FC43 m/z 375.9802, 401.9770 and 413.9770? FC43 m/z 413.9775, 425.9770 and 463.9738? FC43 m/z 425.9775, 463.9743 and 501.9706? (DFS)		✓			✓
3. Was the measured exact mass of m/z 380.9760 (PFK) or 363.9807 (FC43) within 5 ppm at reduced accelerating voltage?		✓			✓
4. Was date/time of analysis verified between analysis header and logbook as correct?		✓			✓
5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group?	✓				✓
6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer on their respective columns?		✓			✓
7. Was DoD Performance check criteria met? Identification of all first and last eluters of the eight homologue retention time windows and documentation by labeling (F/L) on the chromatogram. Absolute retention times for switching from one homologous series to the next > 10 seconds for all components of the mixture.	✓				✓
8. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks?		✓			✓
9. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 21), and formula (Section 10.2.7)?		✓			✓
10. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs?		✓			✓
11. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3?		✓			✓
12. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards?		✓			✓
13. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP?		✓			✓
14. If manual integrations were performed, are they clearly identified, initialed and dated?	✓				✓
15. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?.		✓			✓
16. Were manual integrations documented properly?	✓				✓
17. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder?	✓				✓
18. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK/FC43 resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards?		✓			✓

Analyst: LM	**Date:** 8-23-16	**2nd Level Reviewer :**	**Date:** 8/23/16
Comments:		**Comments:**	

ID022R26.doc, 061616

TESTAMERICA KNOXVILLE
SPECIALTY ORGANICS INSTRUMENT DFS 1

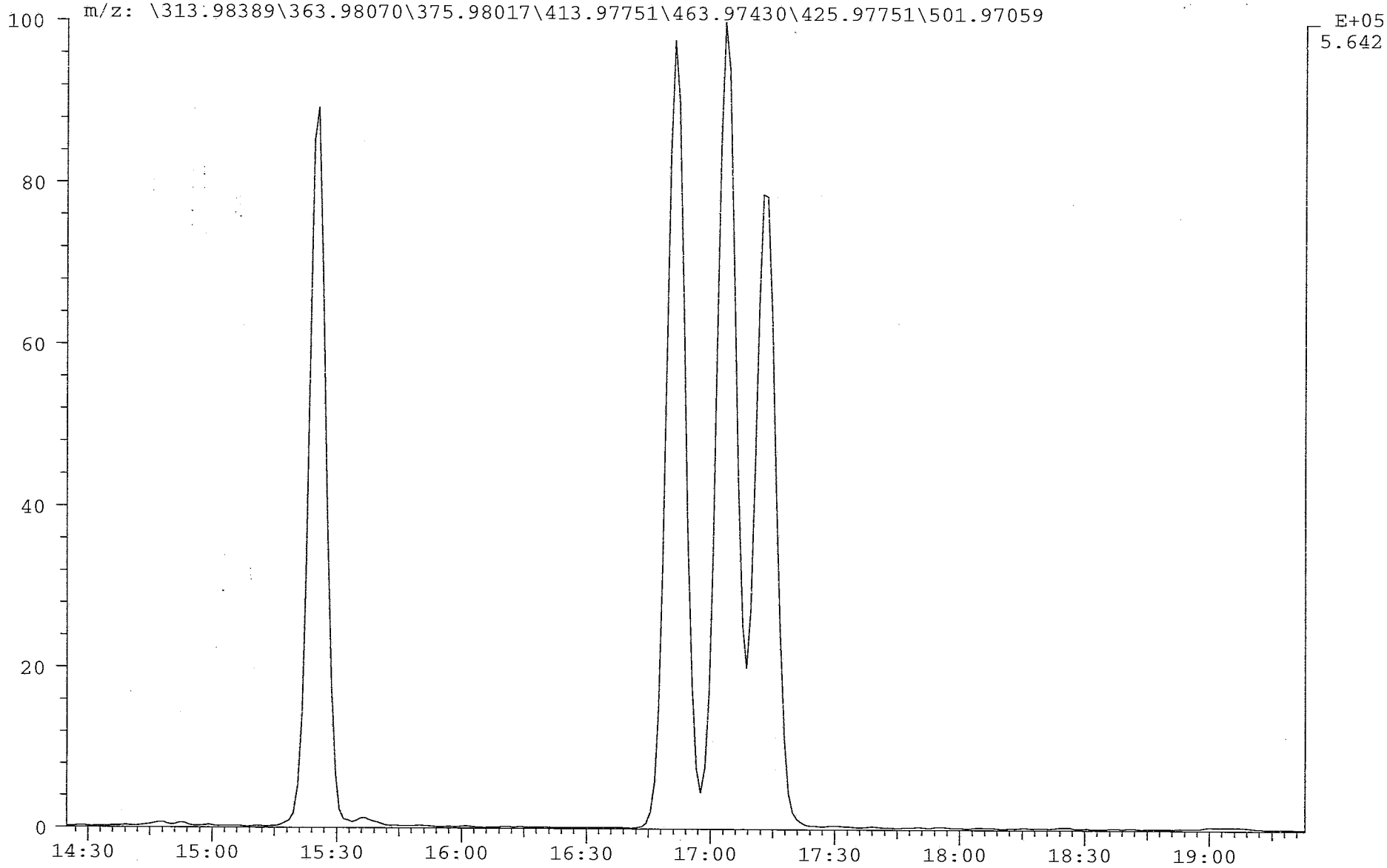
Date	Time	Opr	Sample ID	Filename	Code	Matrix	Type	Tape	GC #	Lot#/Comments
8-18-16	18:29	LK	4966:41	d1160818S2	ok	—	Ver		1	Ver/window
8-18-16	19:50	LK	FC-43	ok ~~d1160818~~r2	ok	—	Res		—	MassResChect
8-22-16	23:39	LKM	FC-43	d1160822r1	ok	—	Res		—	MassResChect
8-22-16	23:51	LK	4966:24	d2160822W1	ok	—	Win		2	Col. Perf
8-22-16	00:27	LKM	nonane	— rinse	ok	—	QC		2	flush
8-23-16	00:44	LKM	4966:41	d2160823S1	ok	—	Ver		2	Ver/ccv
8-23-16	1:22	LK	nonane	— rinse	ok	—	QC		2	flush
8-23-16	1:37	LKM	M83H01AA	— d2fm83hob	ok	Air	QC		2	System Blank
8-23-16	2:22	LKM	M8290 1AC	d2fm8290	ok	Air	SAM		2	H6H080407-002
8-23-16	2:54	LK	M8292 1AC	d2fm8292	ok	Air	SAM		2	-004
8-23-16	3:28	LKM	M8294 1AC	d2fm8294	ok	Air	SAM		2	-006
8-23-16	4:02	LKM	M811L 1AD	d2fm811l	ok	Solid	SAM		2	H6G290408-001
8-23-16	4:36	LK	M811M 1AE	d2fm811m	ok	Solid	SAM		2	-002
8-23-16	5:10	LK	M811P 1AD	d2fm811p	ok	solid	SAM		2	-004
8-23-16	5:44	LK	M8111 1AD	d2fm8111	ok	Solid	SAM		2	-012
8-23-16	6:18	LKM	nonane	— rinse	ok	—	QC		2	flush
8-23-16	6:36	LKM	4966:41	d2160823S2	ok	—	Ver		2	Ver/ccv
8/23/16	9:12	KLK	FC-43	d1160823r1	ok	—	Res		—	Mass Res Chk.

k 8/23/16 x2

Read and Understood by:_____ Date: _____

Int/Calc [illegible] 8-23-16
QC [illegible] 8/23/14

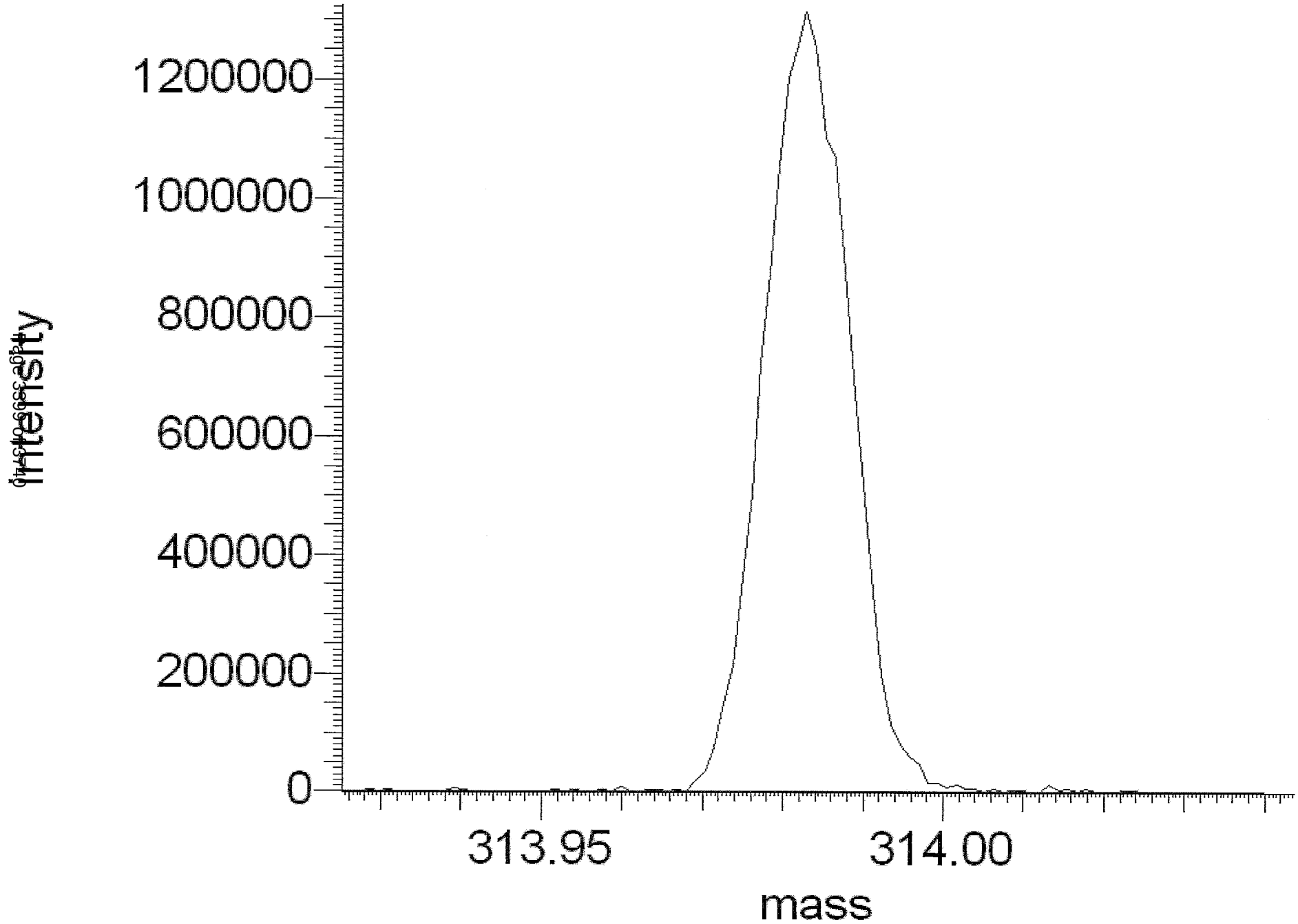
CHRO:	d2160822w1	22-Aug-16	Elapse:	17:06.5	538
Samp:	WO=4966:24 Meth=L1c Dil=1		Start :	23:51:28	1155
Comm:	Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1				
Mode:	EI ESI + Q1MS UP LR		Study :	DB-225 WIN	
Oper:	LKM		Inlet :	LC	
Peak:	100.00 ppm	Label wndw: 378 > 673	Masses:	303 > 376	
Area:	5, 0.50, 0	Baseline : 100, 3	Label :	0, 0.0	
Disp:	Height Area				



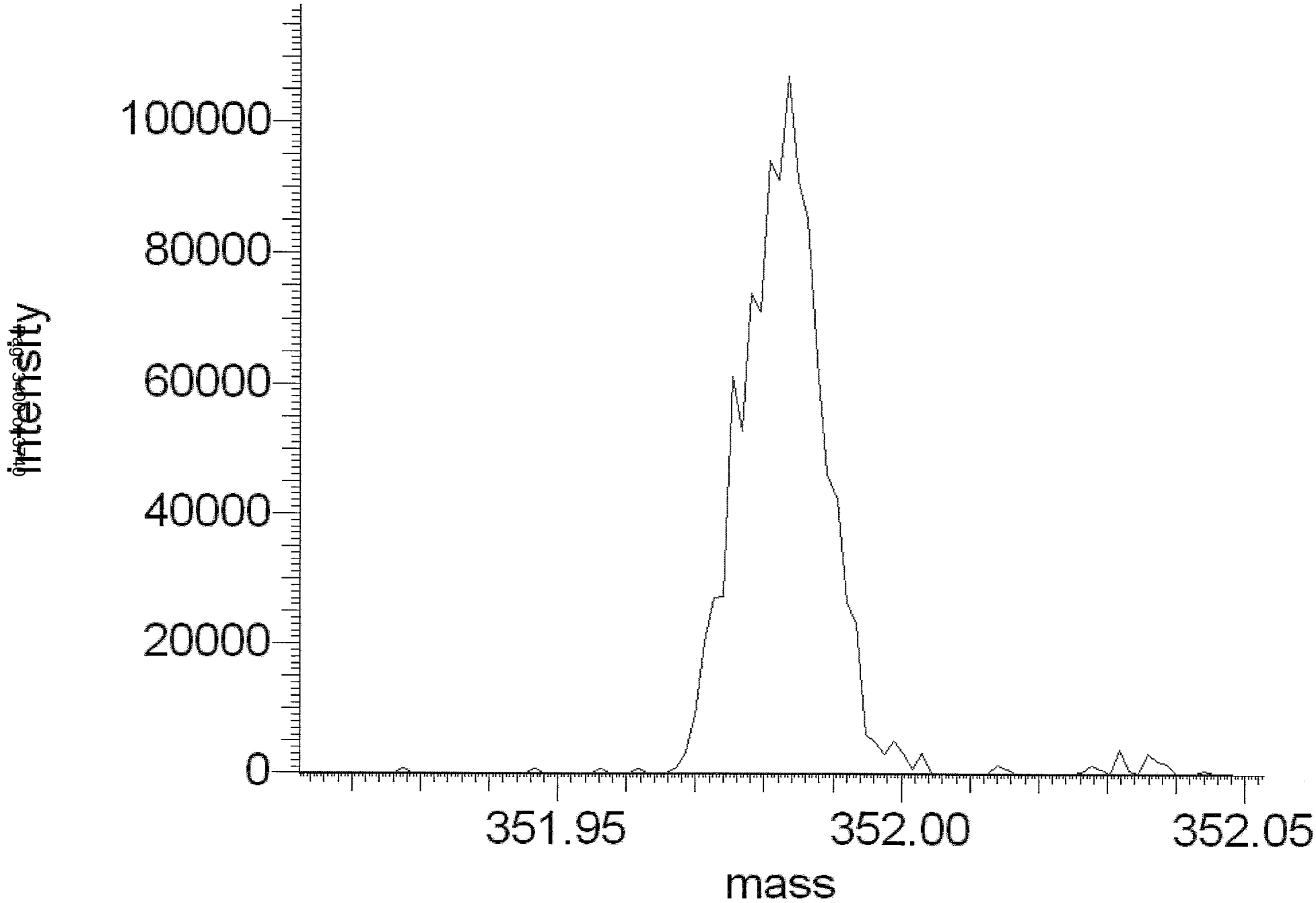
```
Reports
23:48:07:  Peak matching procedure started
23:48:07:
23:48:08:  Reference mass: 313.98336
23:48:08:  Sample mass: 364.0
23:48:09:
23:48:09:  Finding reference mass
23:48:10:  Finding sample mass
23:48:11:
23:48:16:  [1]   363.9833 amu, mean: 363.9833
23:48:20:  [2]   363.9835 amu, mean: 363.9834     SD: 0.14 mmu or: 0.38 ppm
23:48:23:  [3]   363.9837 amu, mean: 363.9835     SD: 0.22 mmu or: 0.62 ppm
23:48:26:  [4]   363.9832 amu, mean: 363.9834     SD: 0.24 mmu or: 0.65 ppm
23:48:29:  [5]   363.9832 amu, mean: 363.9834     SD: 0.23 mmu or: 0.64 ppm
23:48:32:  [6]   363.9835 amu, mean: 363.9834     SD: 0.22 mmu or: 0.59 ppm
23:48:35:  [7]   363.9833 amu, mean: 363.9834     SD: 0.20 mmu or: 0.54 ppm
23:48:38:  [8]   363.9827 amu, mean: 363.9833     SD: 0.30 mmu or: 0.81 ppm
23:48:41:  [9]   363.9830 amu, mean: 363.9833     SD: 0.30 mmu or: 0.82 ppm
23:48:44:  [10]   363.9830 amu, mean: 363.9832     SD: 0.29 mmu or: 0.80 ppm
23:48:48:  [11]   363.9830 amu, mean: 363.9832     SD: 0.29 mmu or: 0.80 ppm
23:48:48:
23:48:48:  Stop requested. Please wait for procedure to finish.
23:48:48:
23:48:51:
23:48:52:  Peakmatching stopped
```

Signature LM 8-23-16

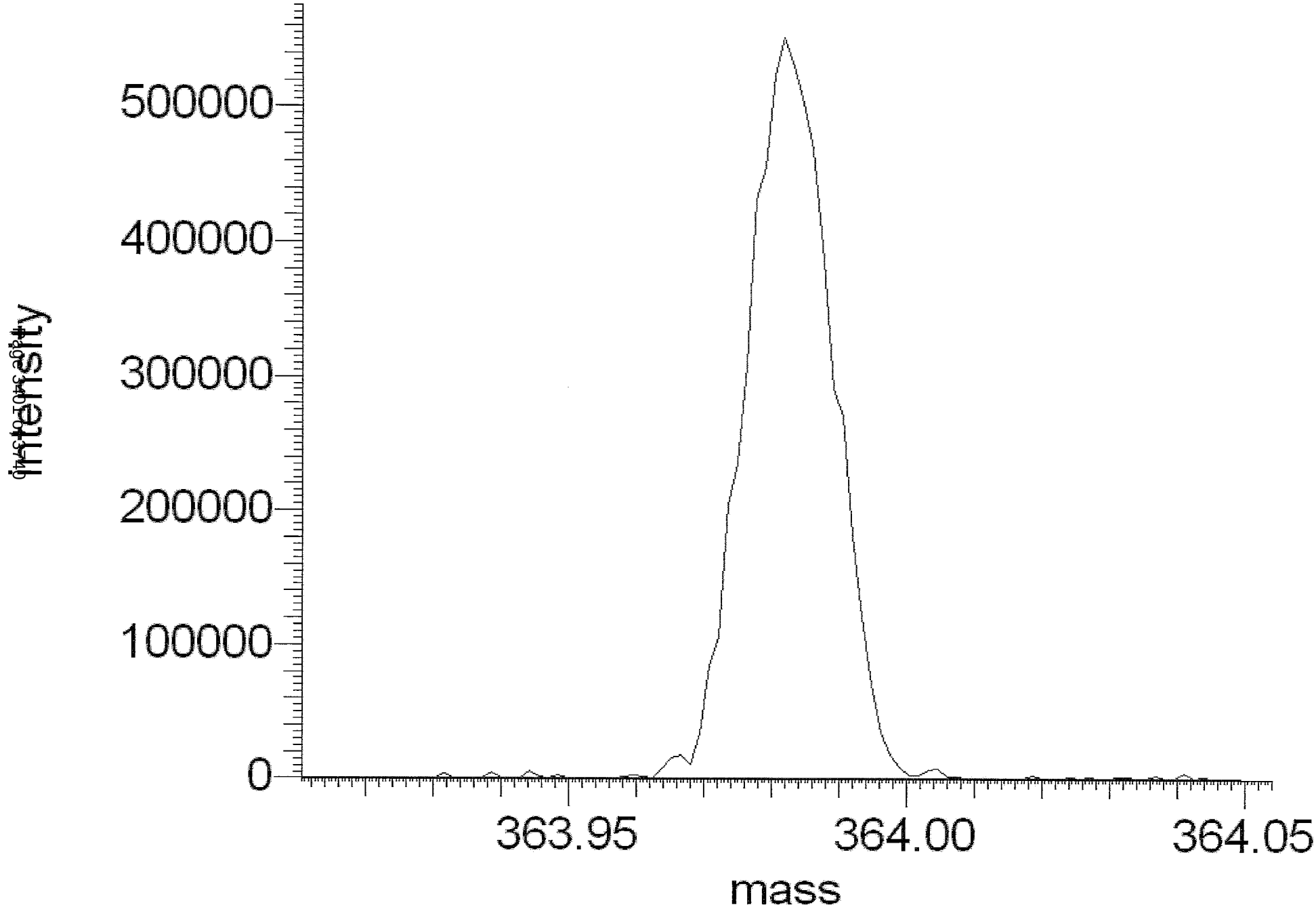
LockMass: 313.9838 Instr.: DFS-1209
Resolution: 13369 (08/22/16 23:39:10)



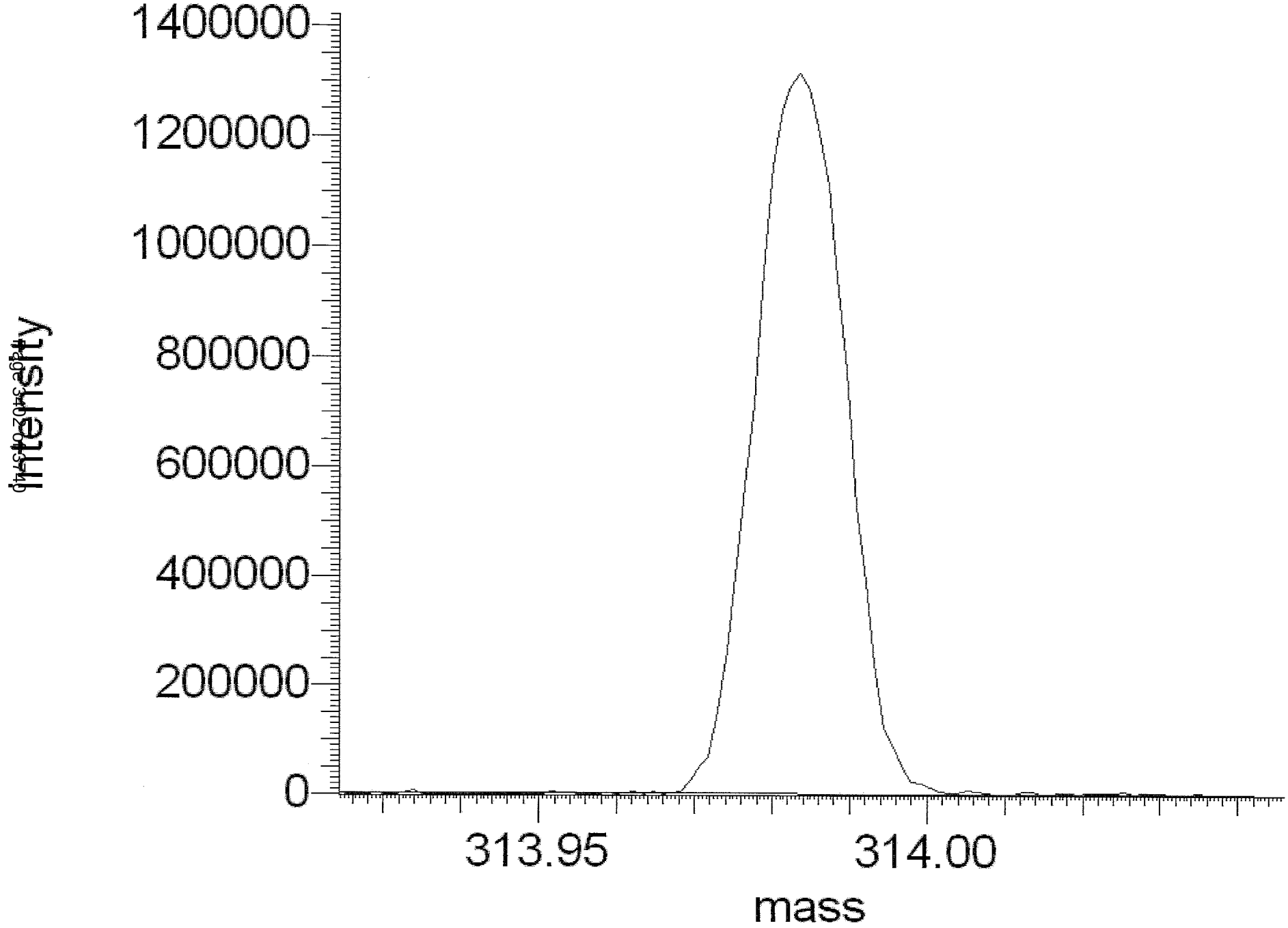
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12724 (08/22/16 23:39:57)



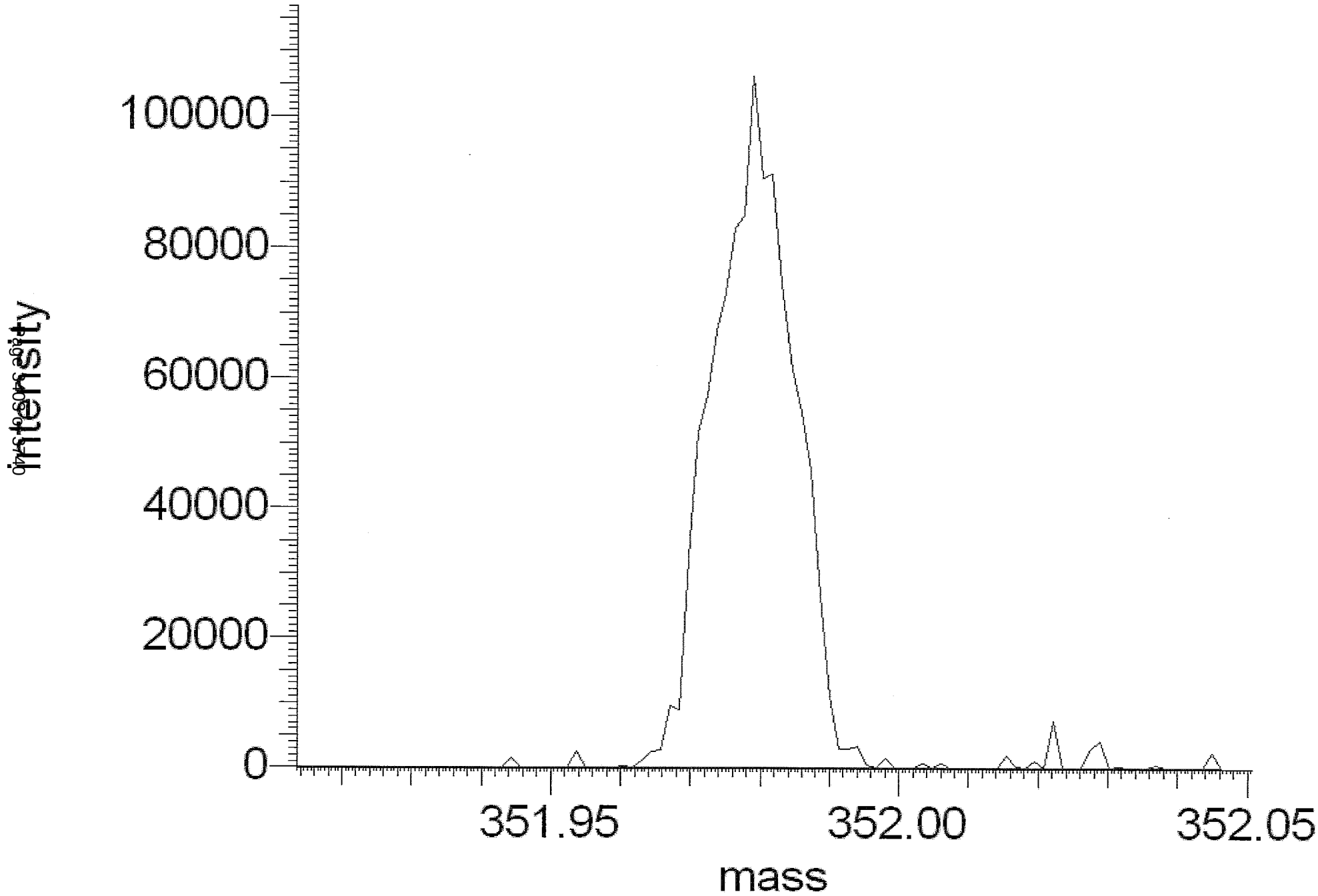
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 13145 (08/22/16 23:40:00)



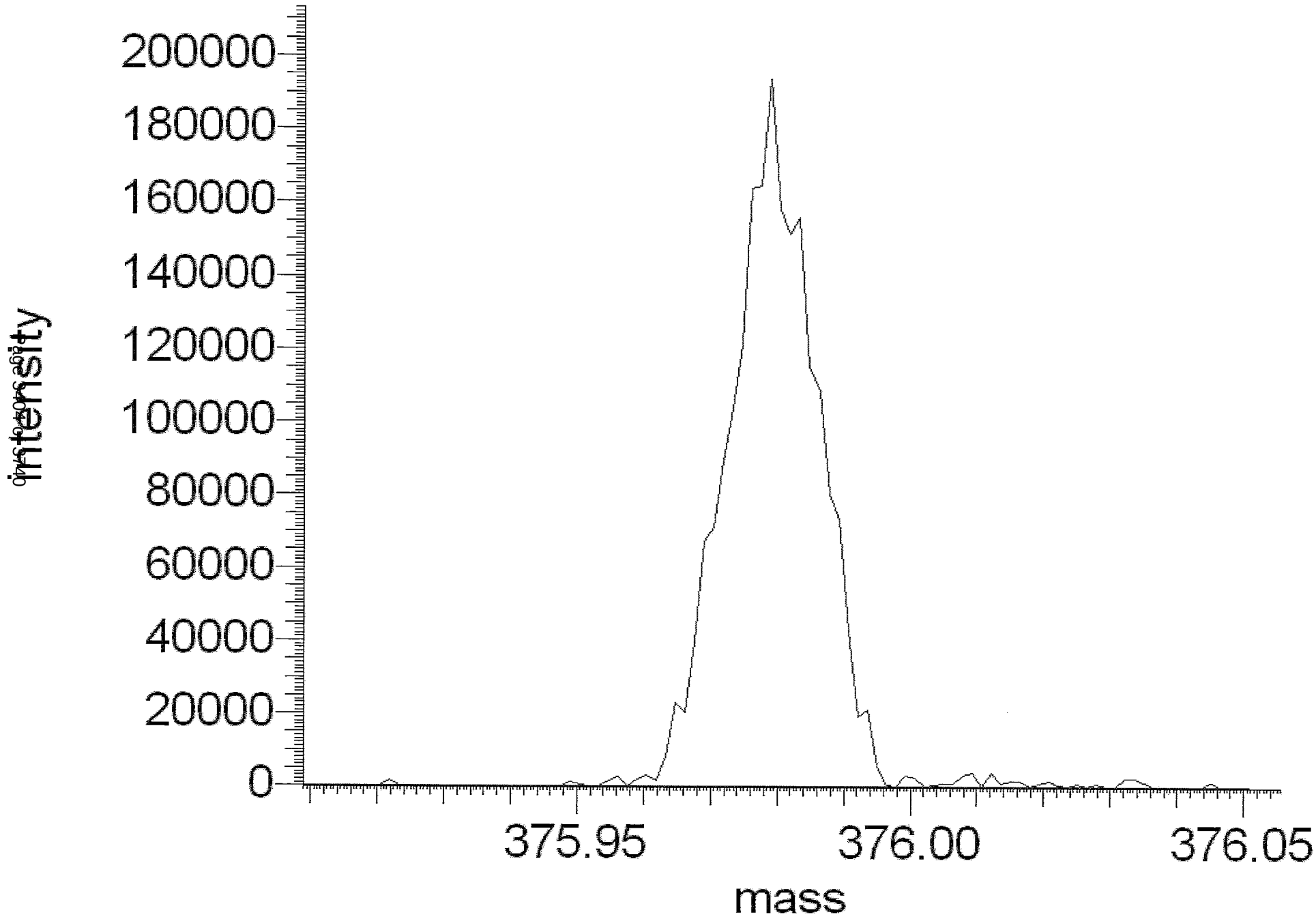
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 13145 (08/22/16 23:40:15)



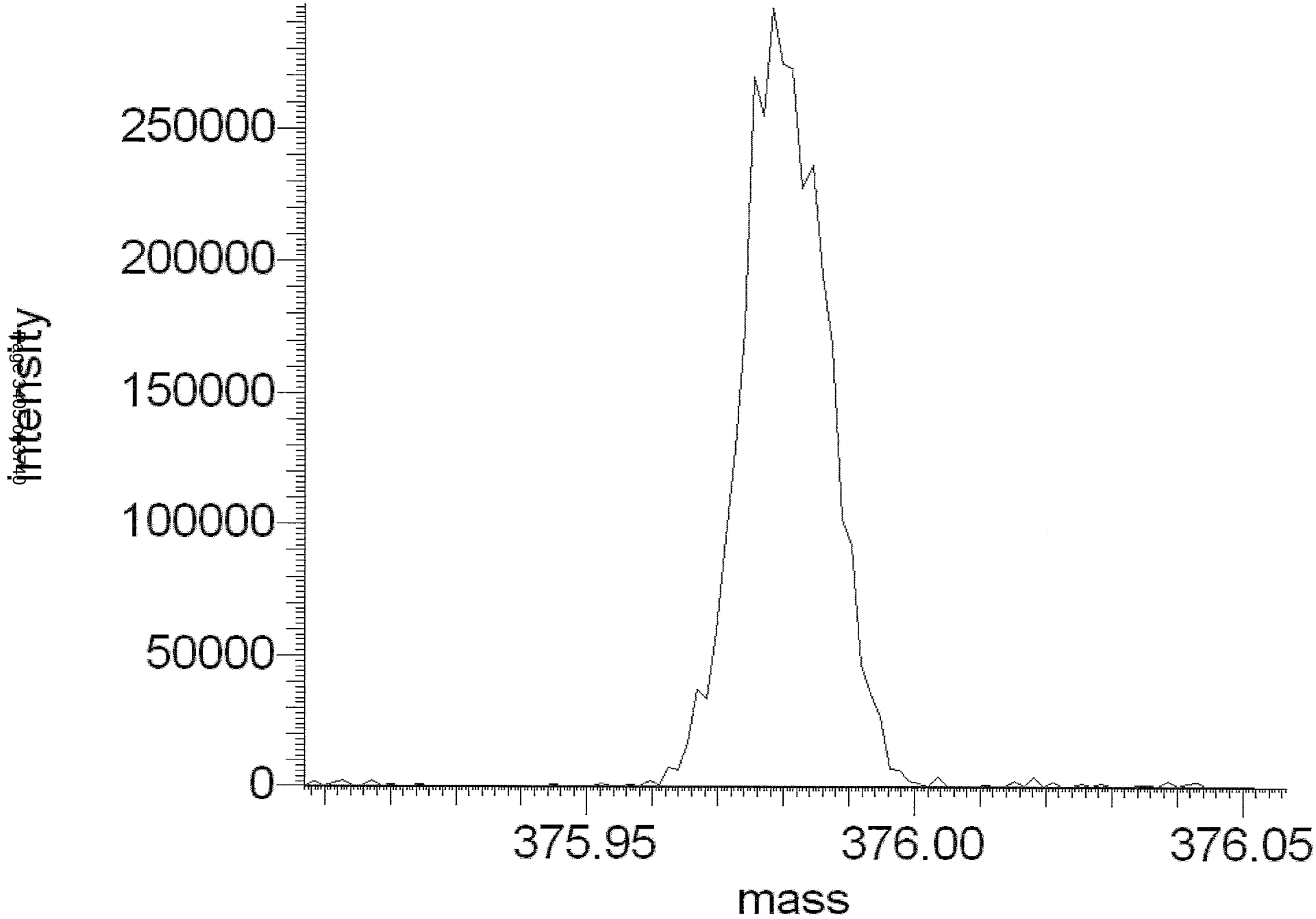
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12779 (08/22/16 23:41:01)



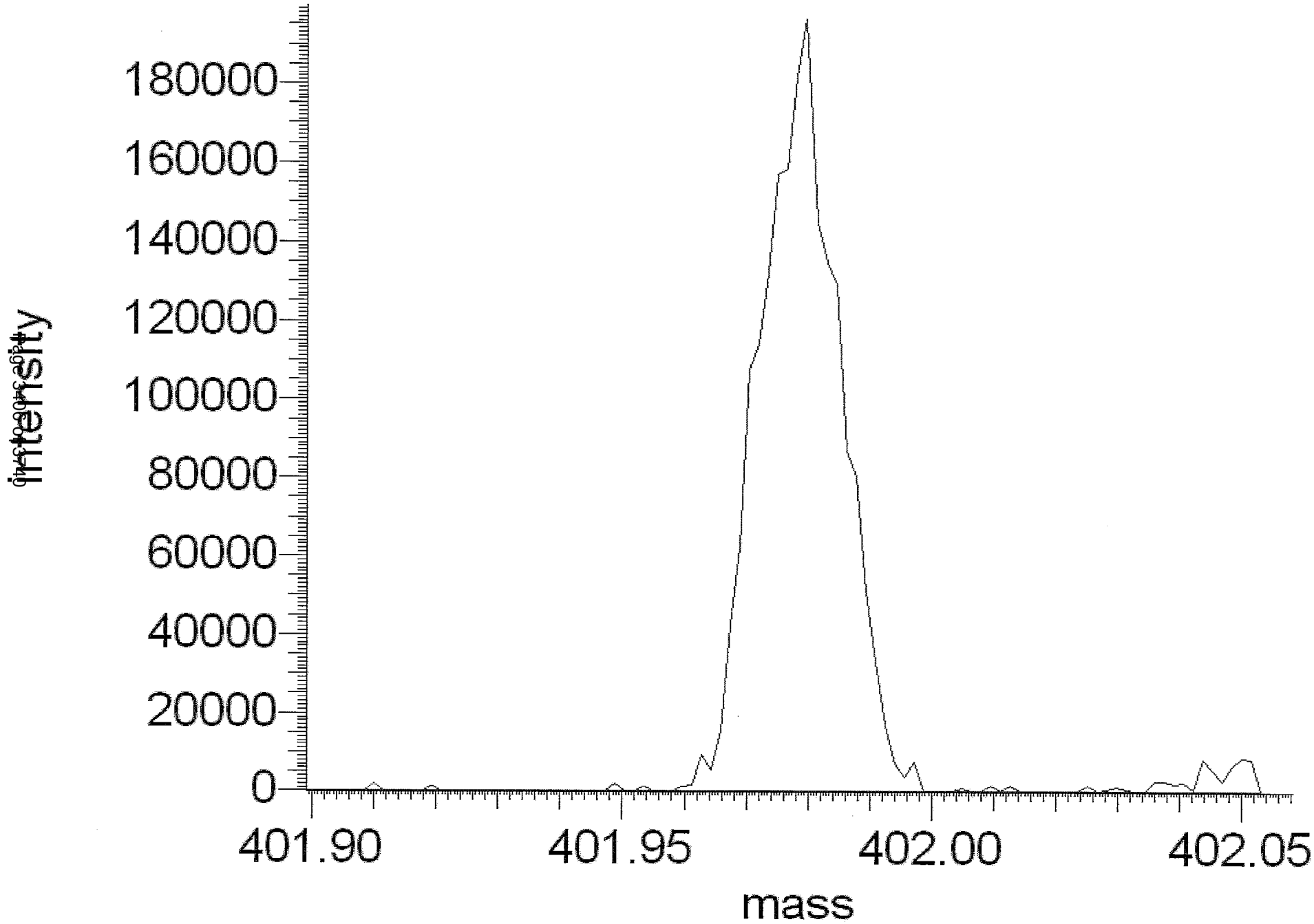
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 12804 (08/22/16 23:41:04)



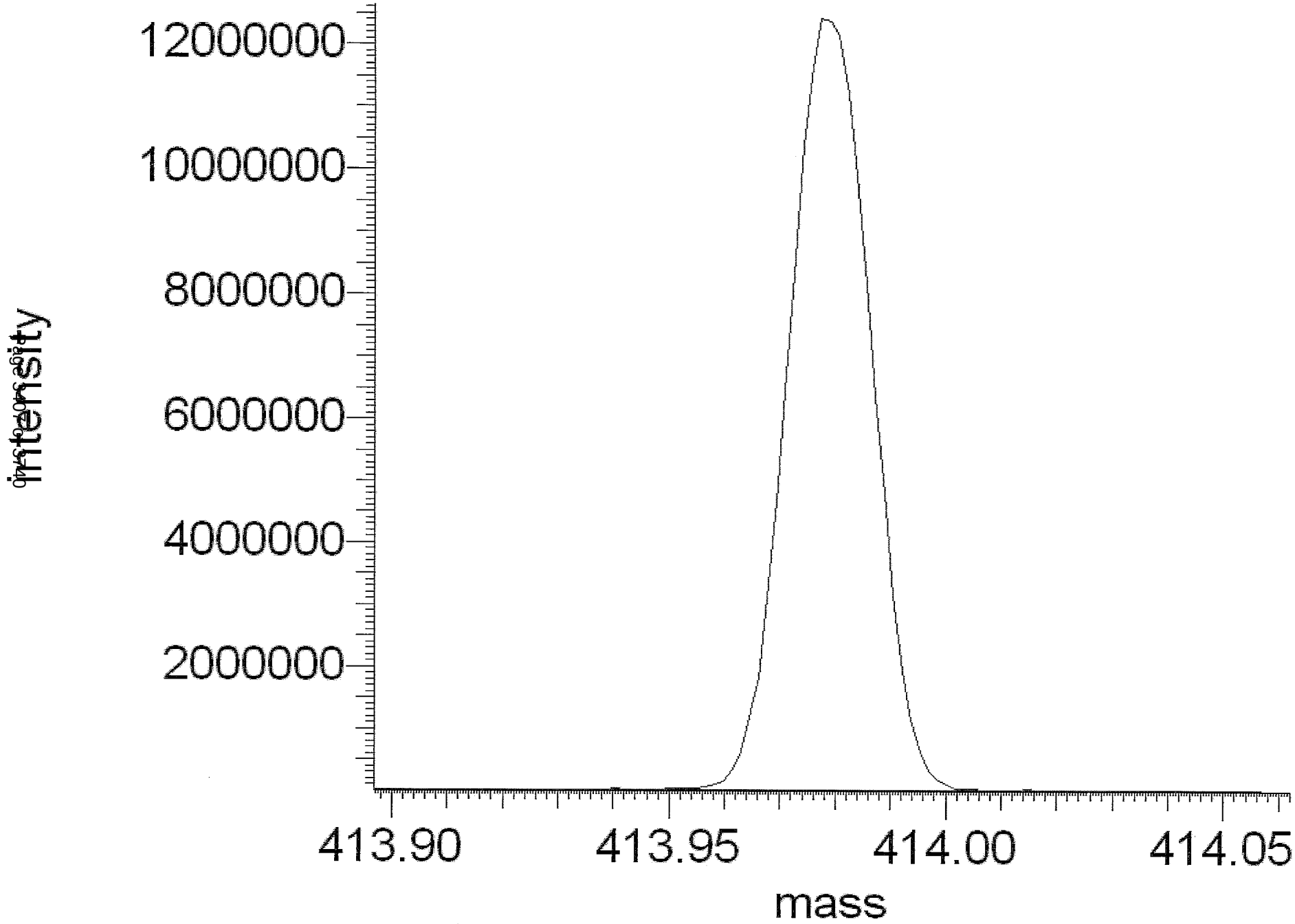
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 12804 (08/22/16 23:41:20)



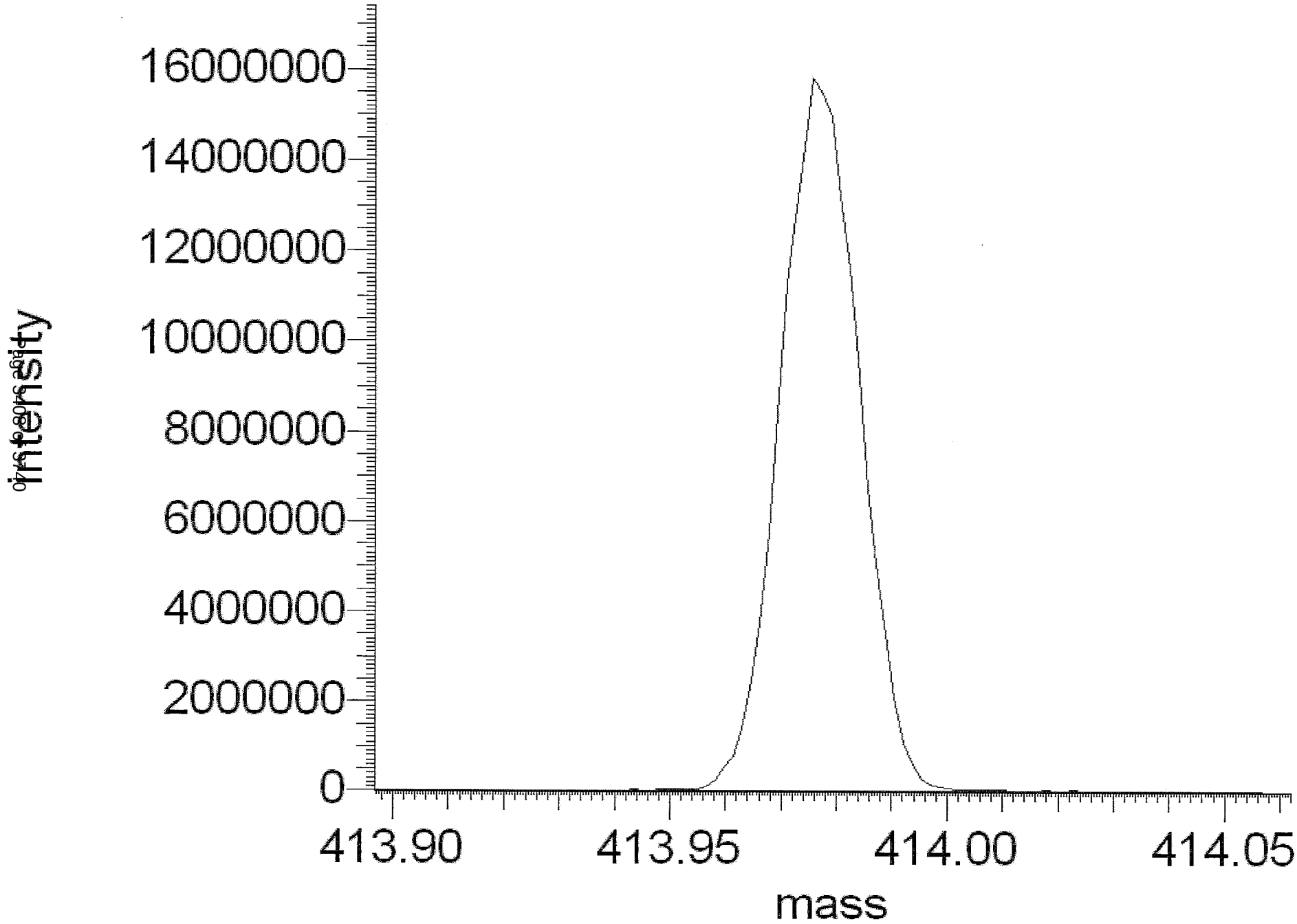
Mass: 401.9770 Instr.: DFS-1209
Resolution: 12963 (08/22/16 23:42:06)



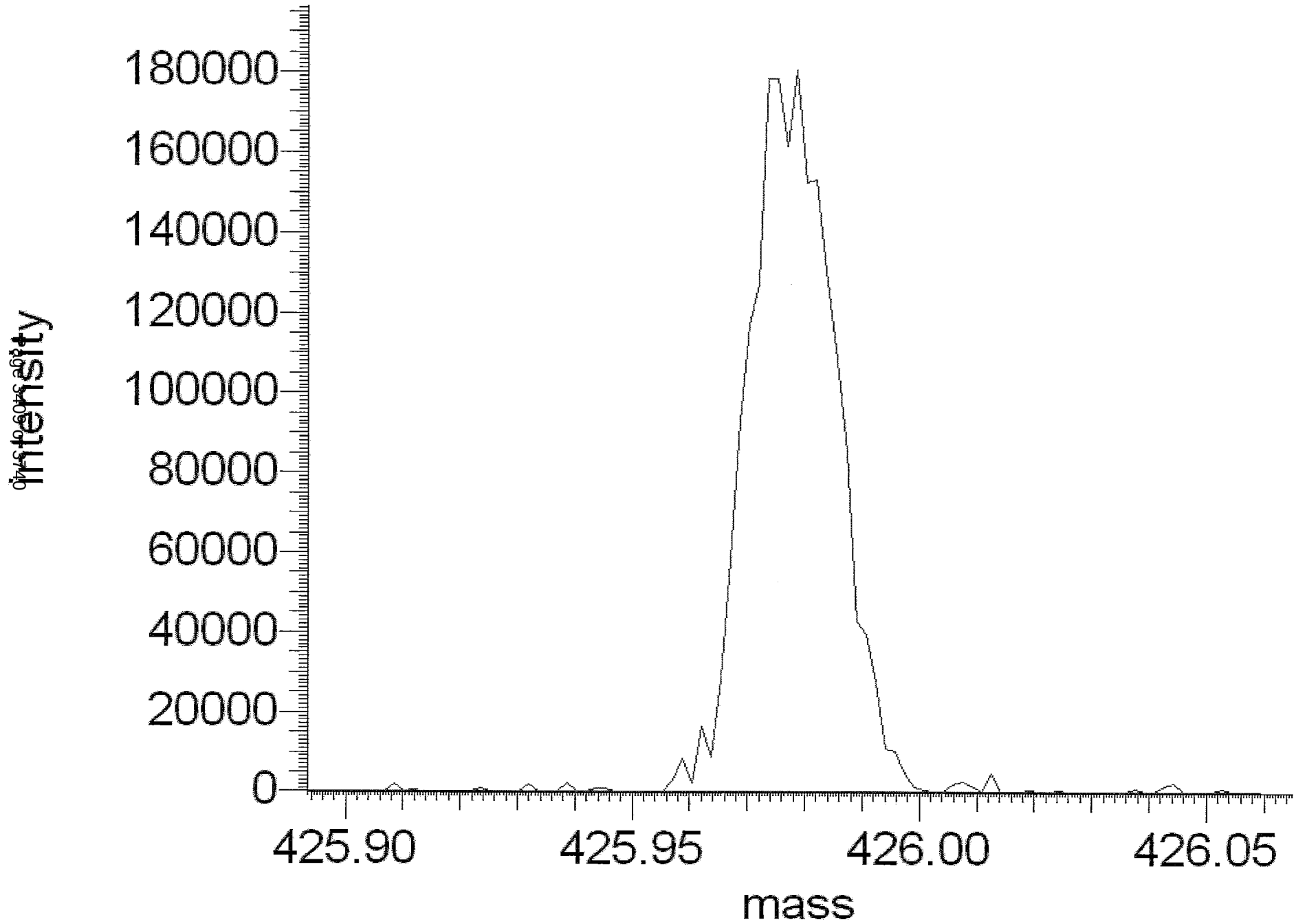
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 12791 (08/22/16 23:42:09)



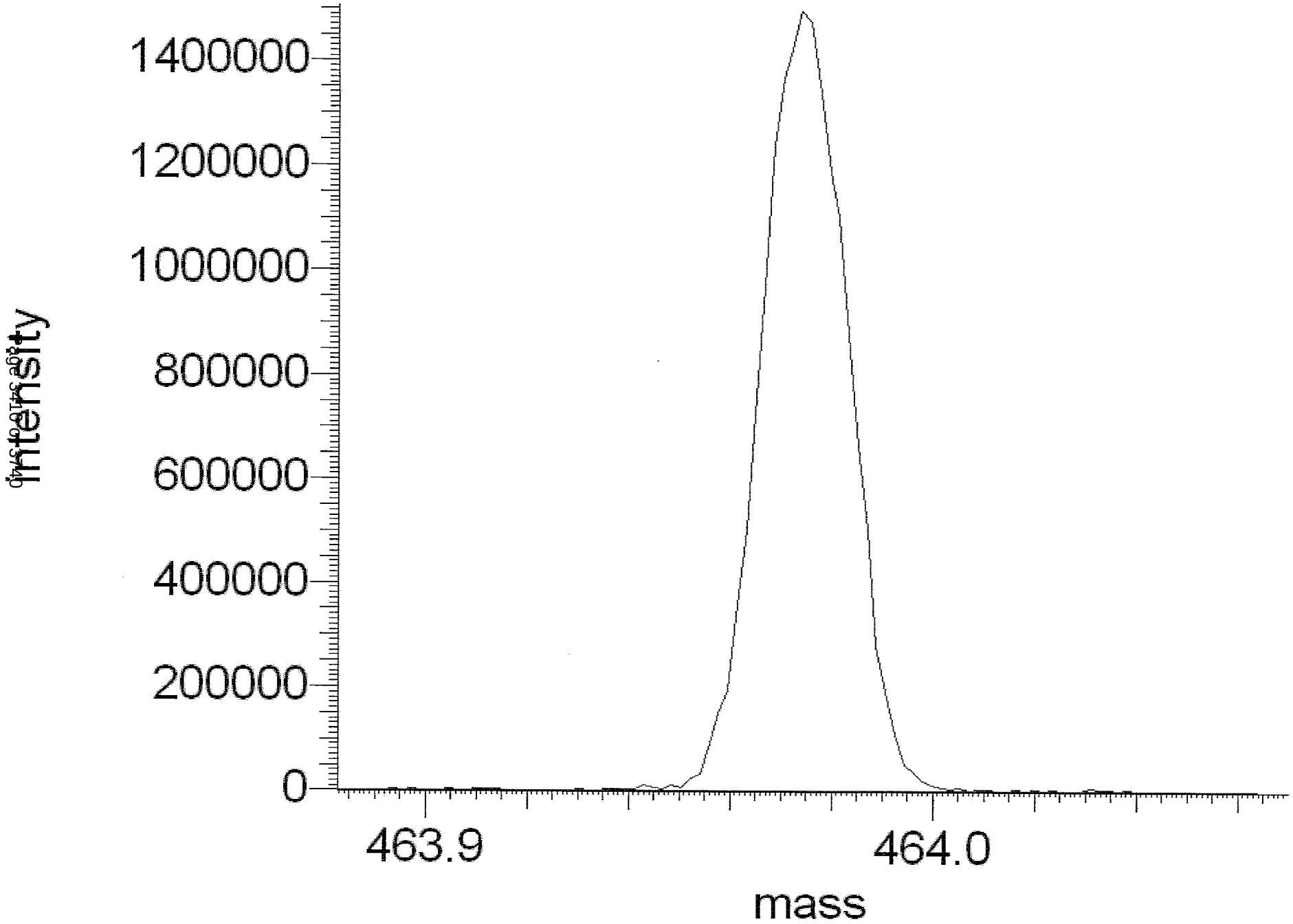
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 12791 (08/22/16 23:42:24)



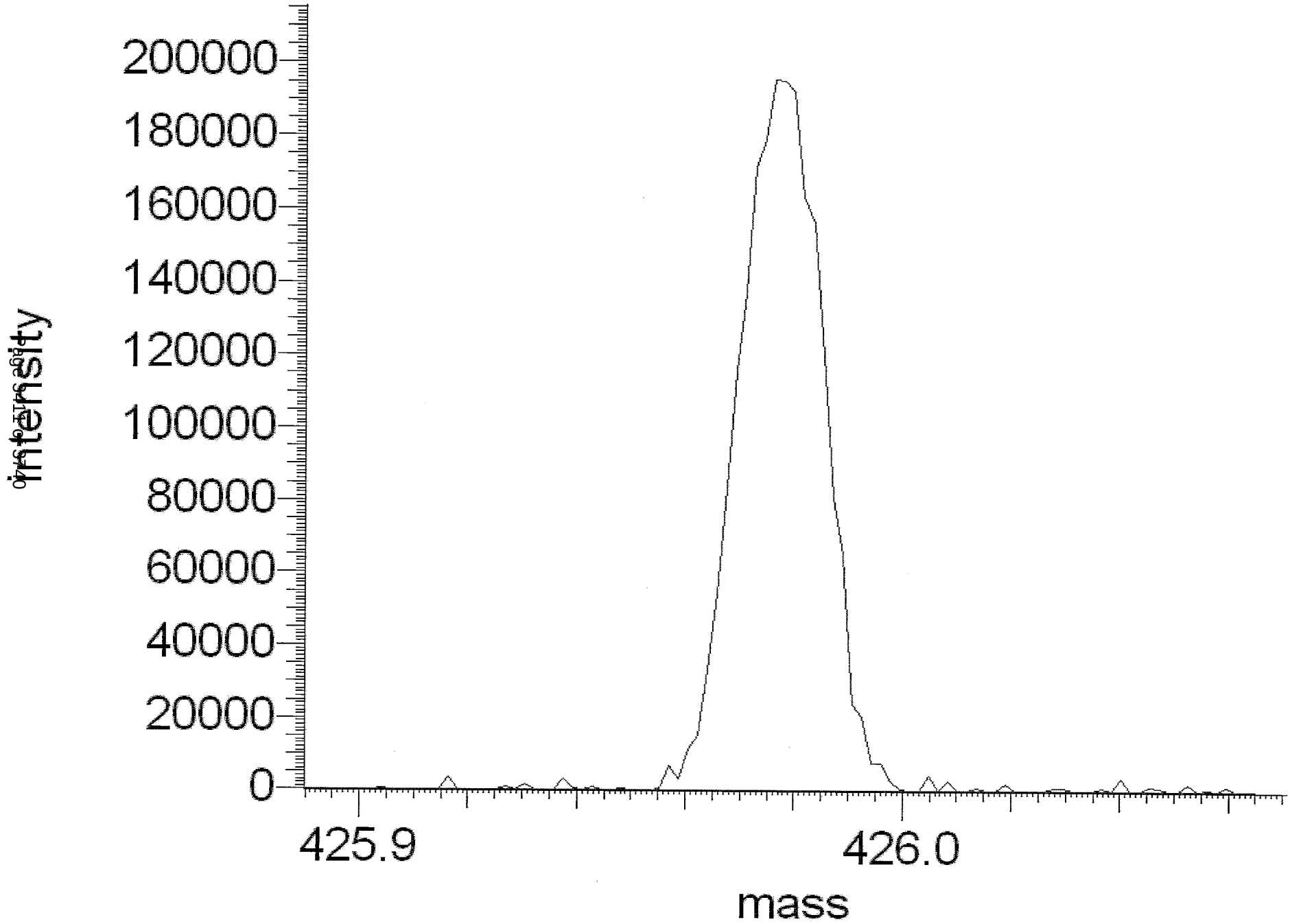
Mass: 425.9770 Instr.: DFS-1209
Resolution: 14146 (08/22/16 23:43:11)



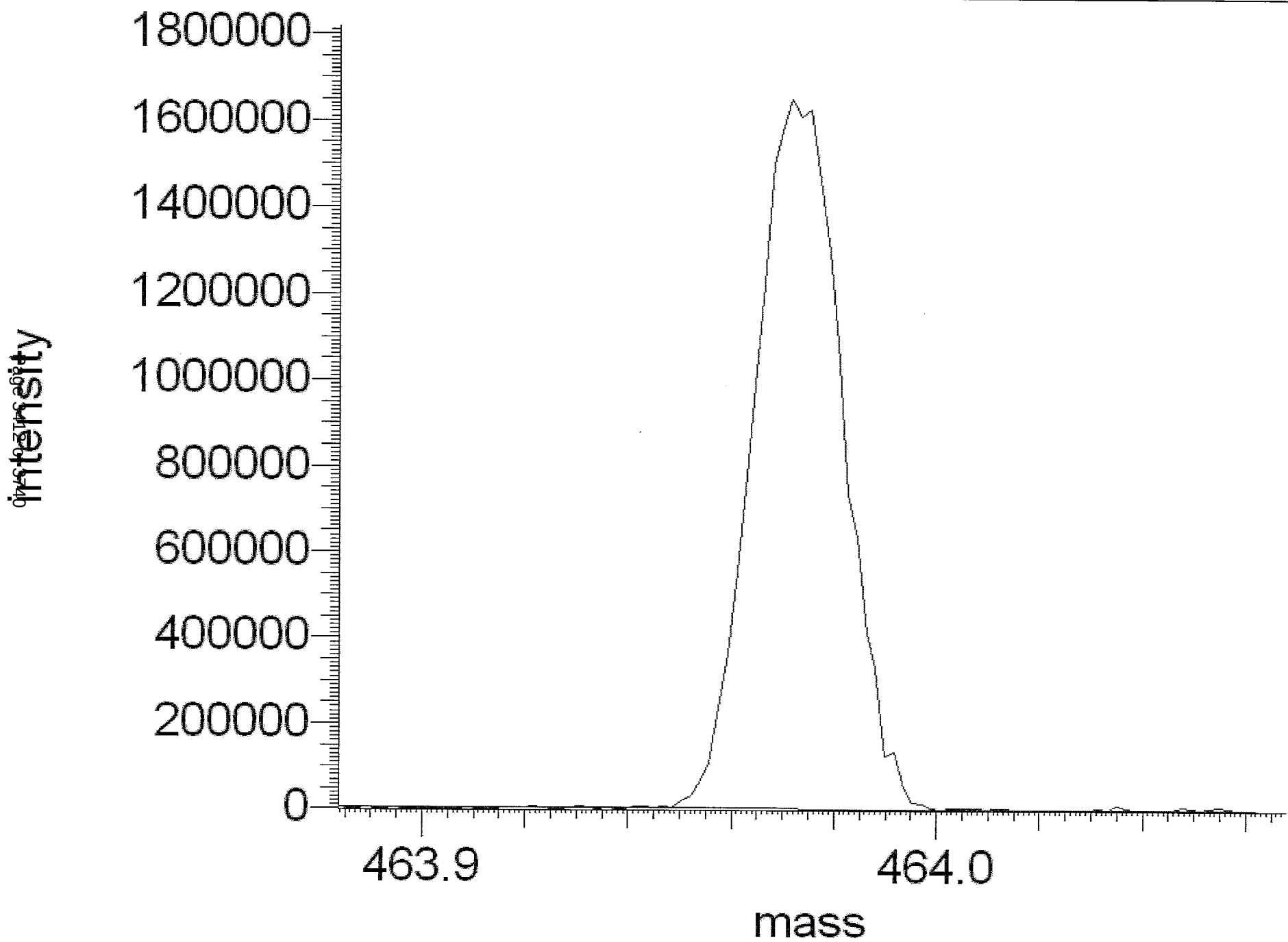
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 12131 (08/22/16 23:43:14)



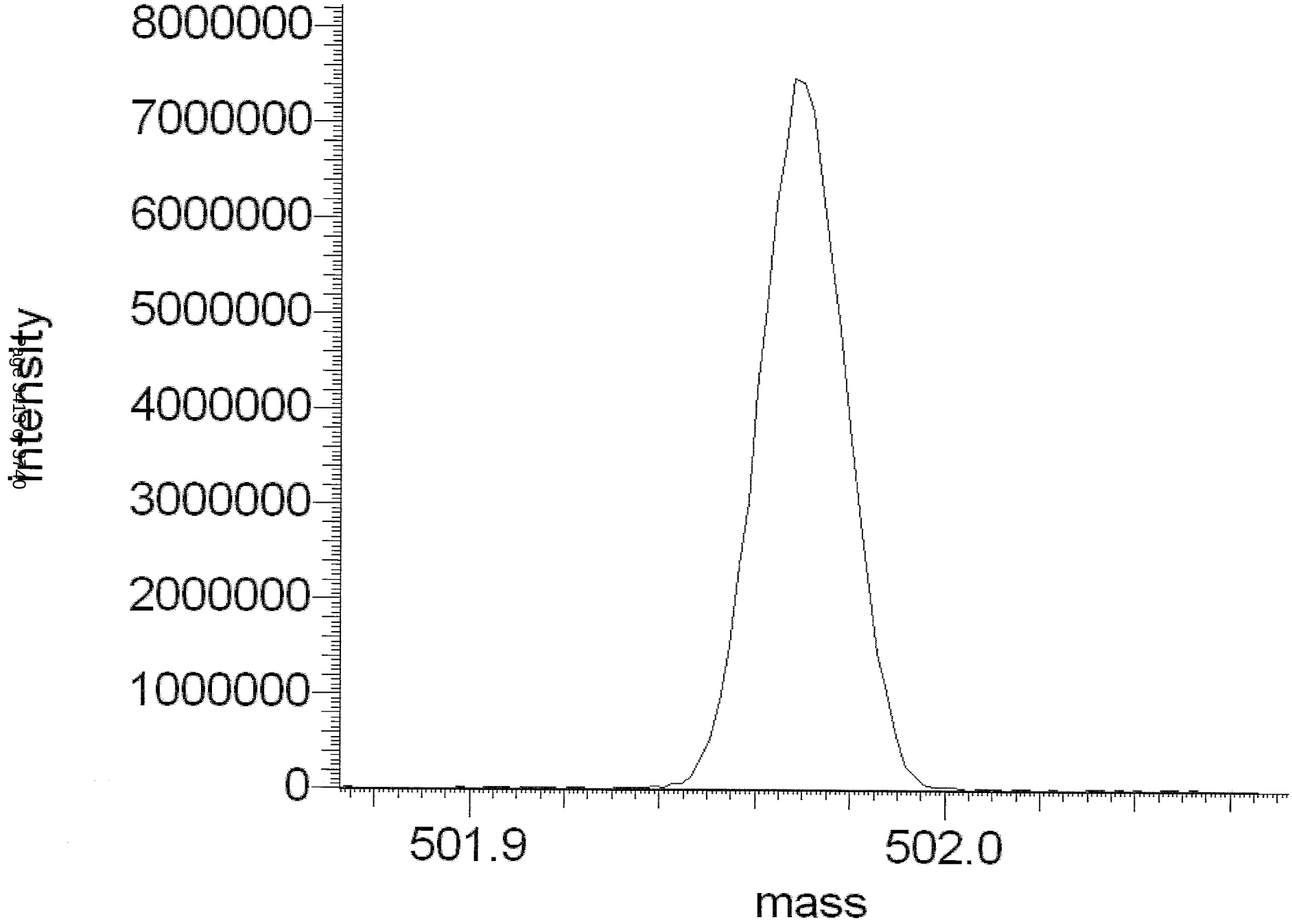
LockMass: 425.9775 Instr.: DFS-1209
Resolution: 12131 (08/22/16 23:43:29)



Mass: 463.9743 Instr.: DFS-1209
Resolution: 12583 (08/22/16 23:44:15)



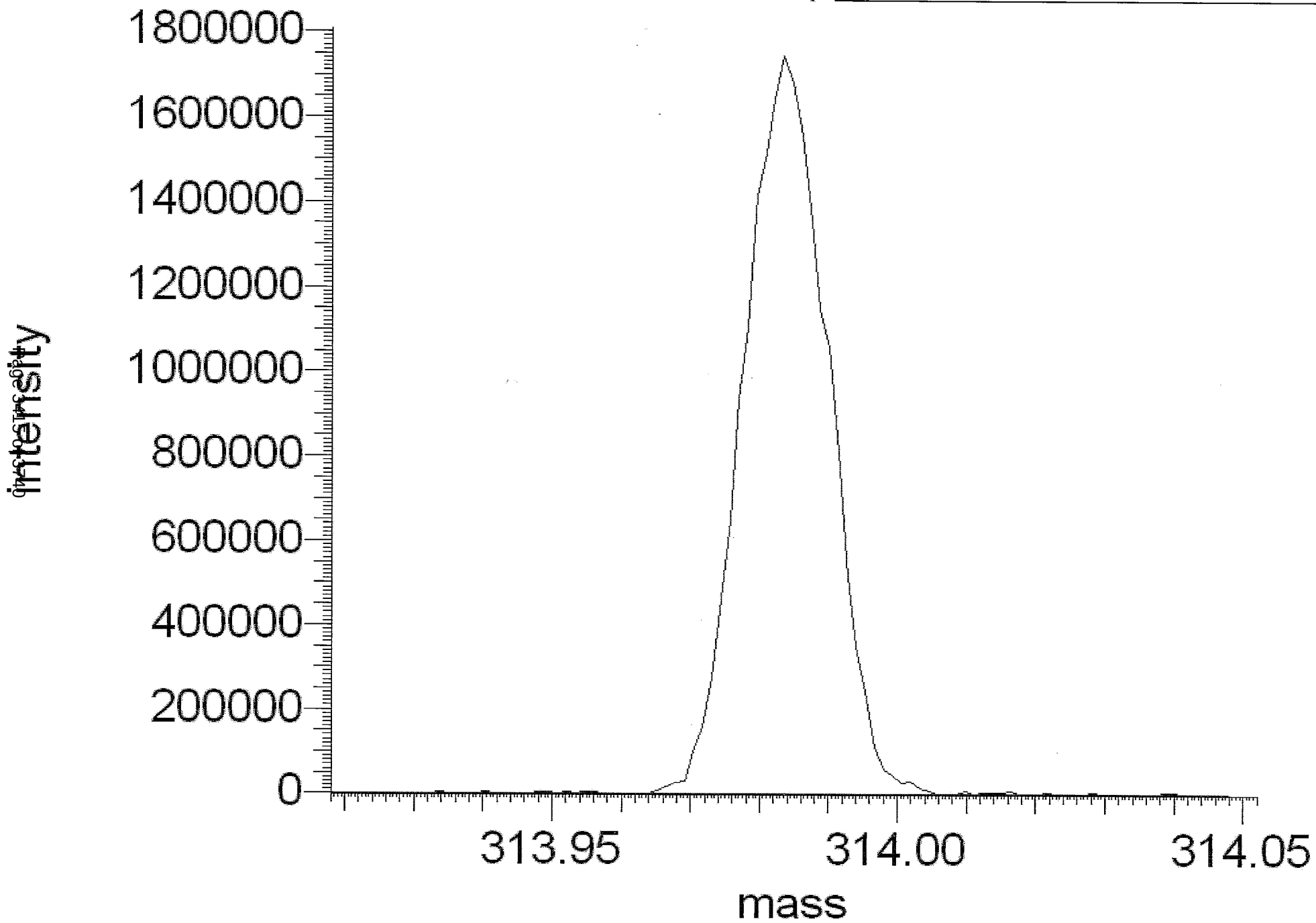
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 11808 (08/22/16 23:44:18)



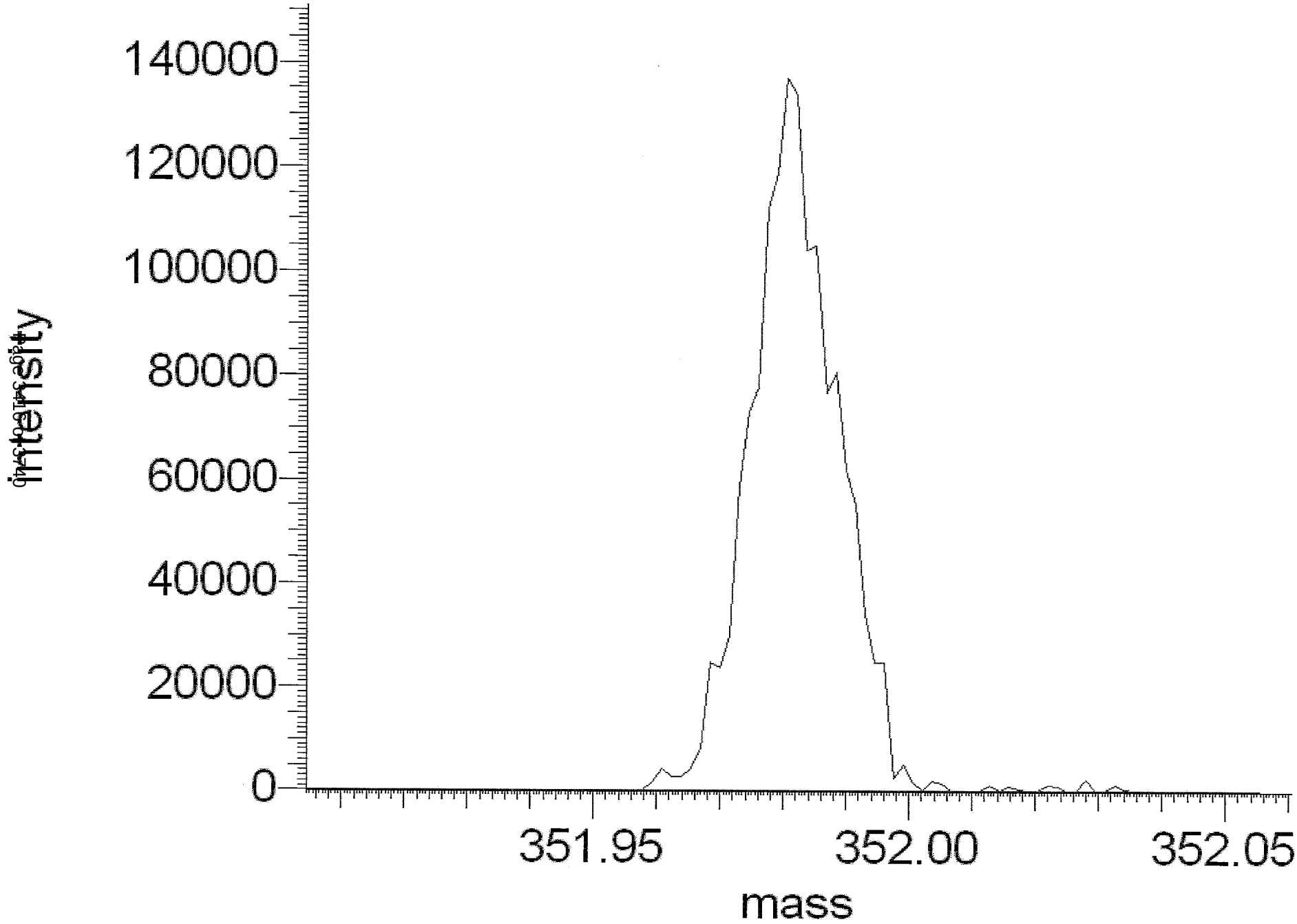
```
Reports
09:25:19:  Peak matching procedure started
09:25:20:
09:25:20:  Reference mass: 313.98336
09:25:21:  Sample mass: 364.0
09:25:21:
09:25:22:  Finding reference mass
09:25:23:  Finding sample mass
09:25:23:
09:25:29:  [1]   363.9797 amu, mean: 363.9797
09:25:32:  [2]   363.9806 amu, mean: 363.9802     SD: 0.63 mmu or: 1.74 ppm
09:25:35:  [3]   363.9802 amu, mean: 363.9802     SD: 0.45 mmu or: 1.23 ppm
09:25:38:  [4]   363.9794 amu, mean: 363.9800     SD: 0.53 mmu or: 1.47 ppm
09:25:41:  [5]   363.9804 amu, mean: 363.9801     SD: 0.51 mmu or: 1.39 ppm
09:25:45:  [6]   363.9799 amu, mean: 363.9800     SD: 0.46 mmu or: 1.26 ppm
09:25:48:  [7]   363.9807 amu, mean: 363.9801     SD: 0.50 mmu or: 1.37 ppm
09:25:51:  [8]   363.9803 amu, mean: 363.9802     SD: 0.47 mmu or: 1.28 ppm
09:25:54:  [9]   363.9792 amu, mean: 363.9801     SD: 0.54 mmu or: 1.48 ppm
09:25:57:  [10]   363.9803 amu, mean: 363.9801     SD: 0.51 mmu or: 1.41 ppm
09:25:58:
09:25:58:  Stop requested. Please wait for procedure to finish.
09:25:58:
09:26:01:
09:26:01:  Peakmatching stopped
```

Signature 8/23/16

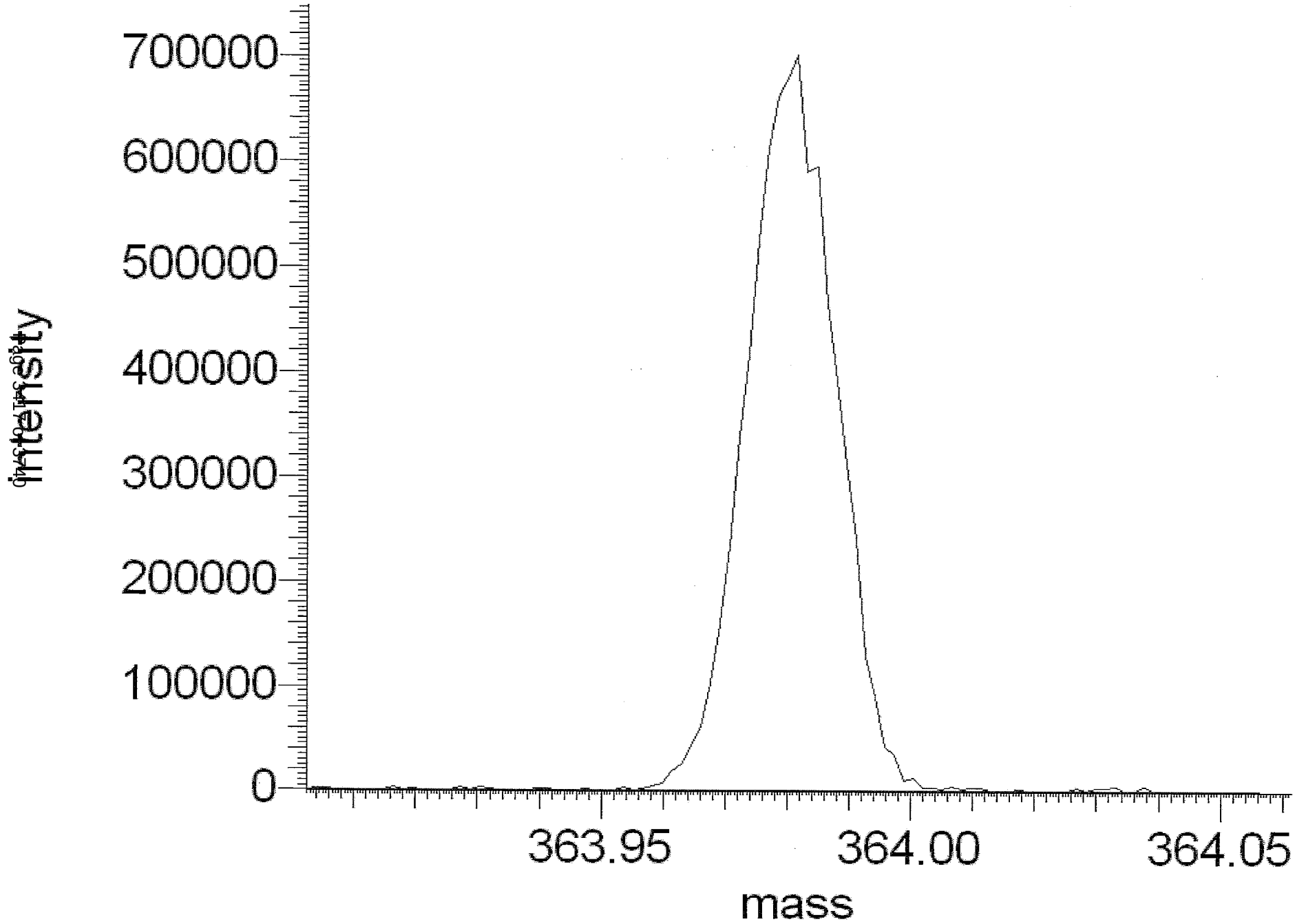
LockMass: 313.9838 Instr.: DFS-1209
Resolution: 11910 (08/23/16 09:12:49)



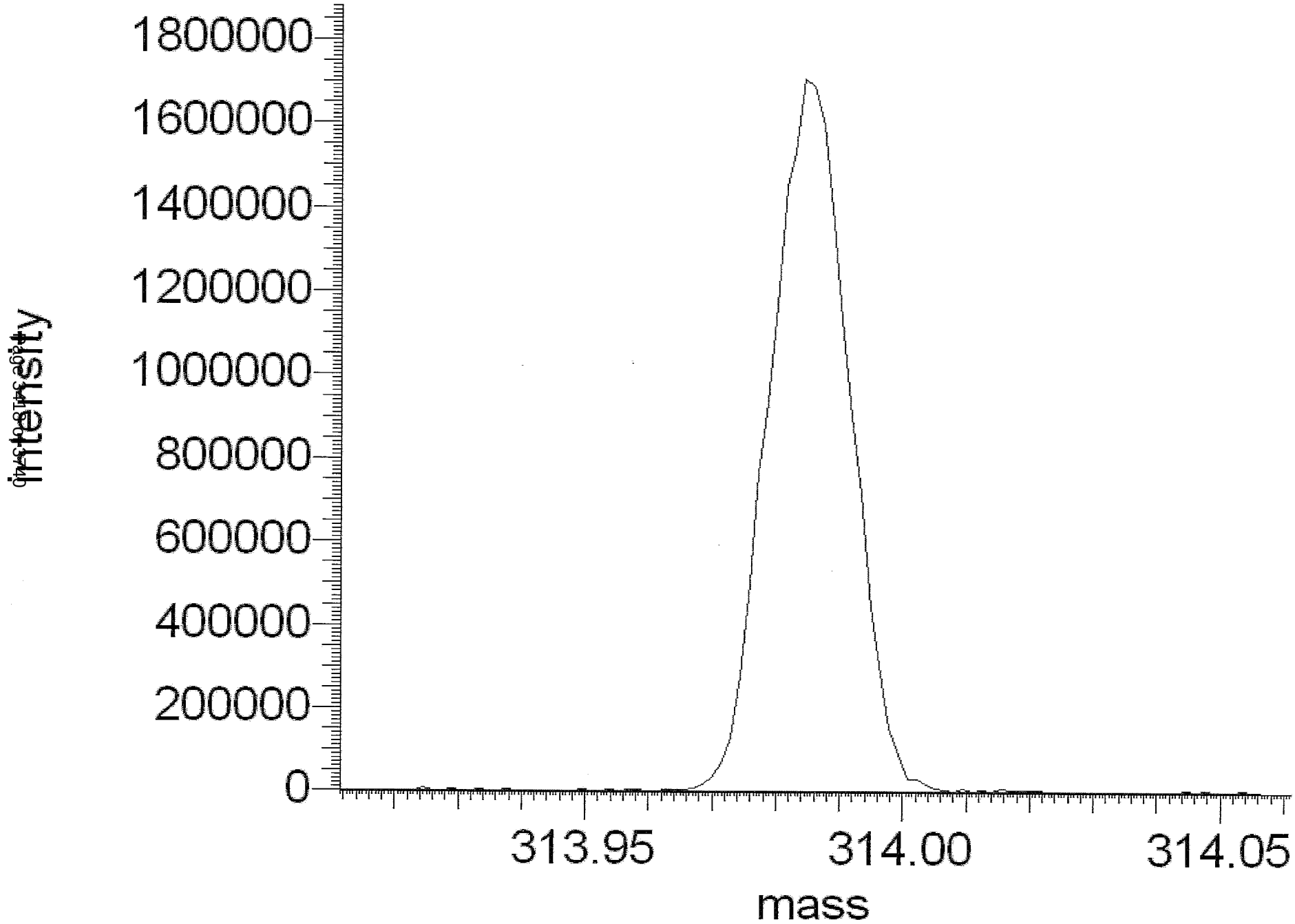
Mass: 351.9802 Instr.: DFS-1209
Resolution: 12296 (08/23/16 09:13:36)



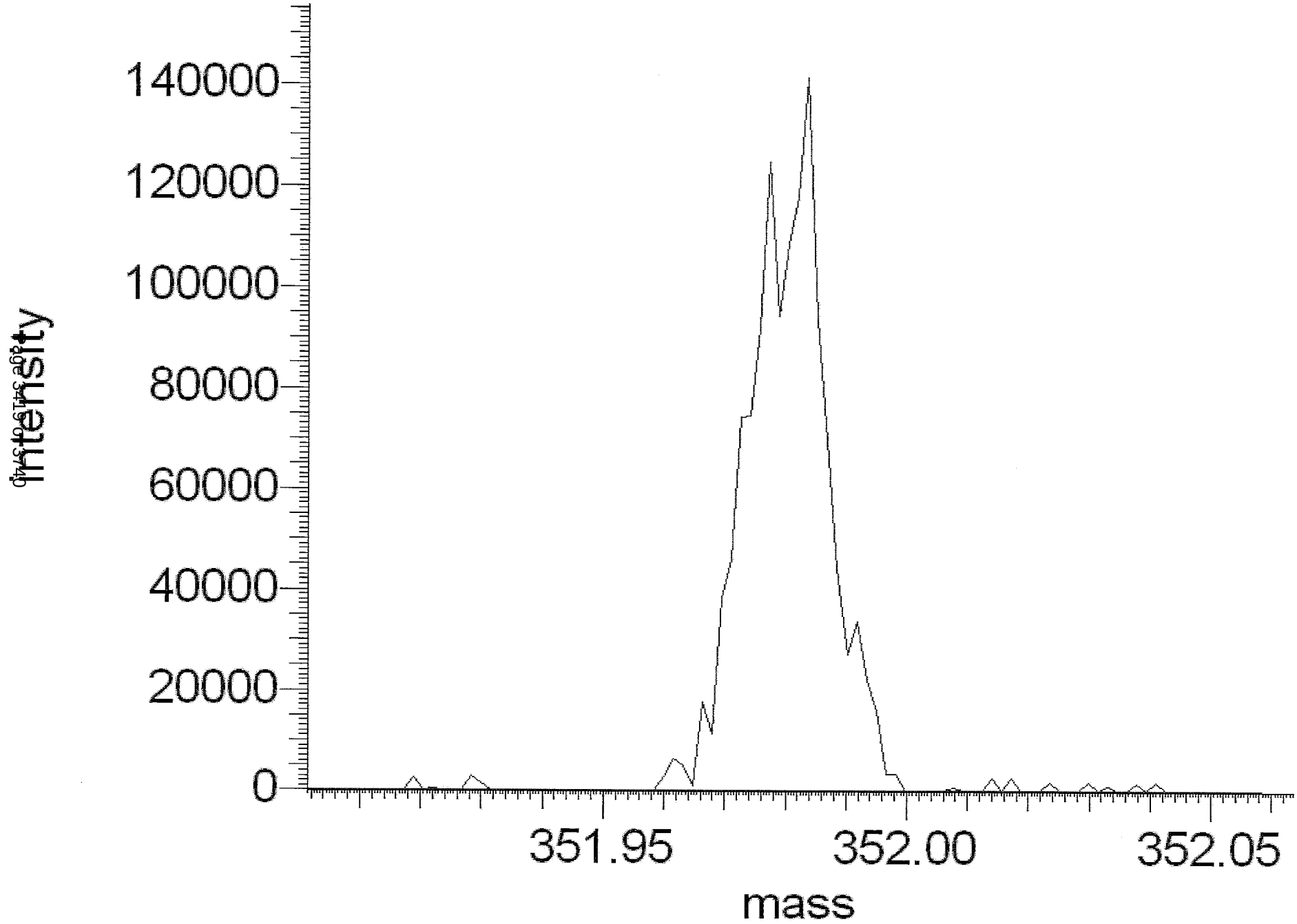
CaliMass: 363.9807 Instr.: DFS-1209
Resolution: 10820 (08/23/16 09:13:39)



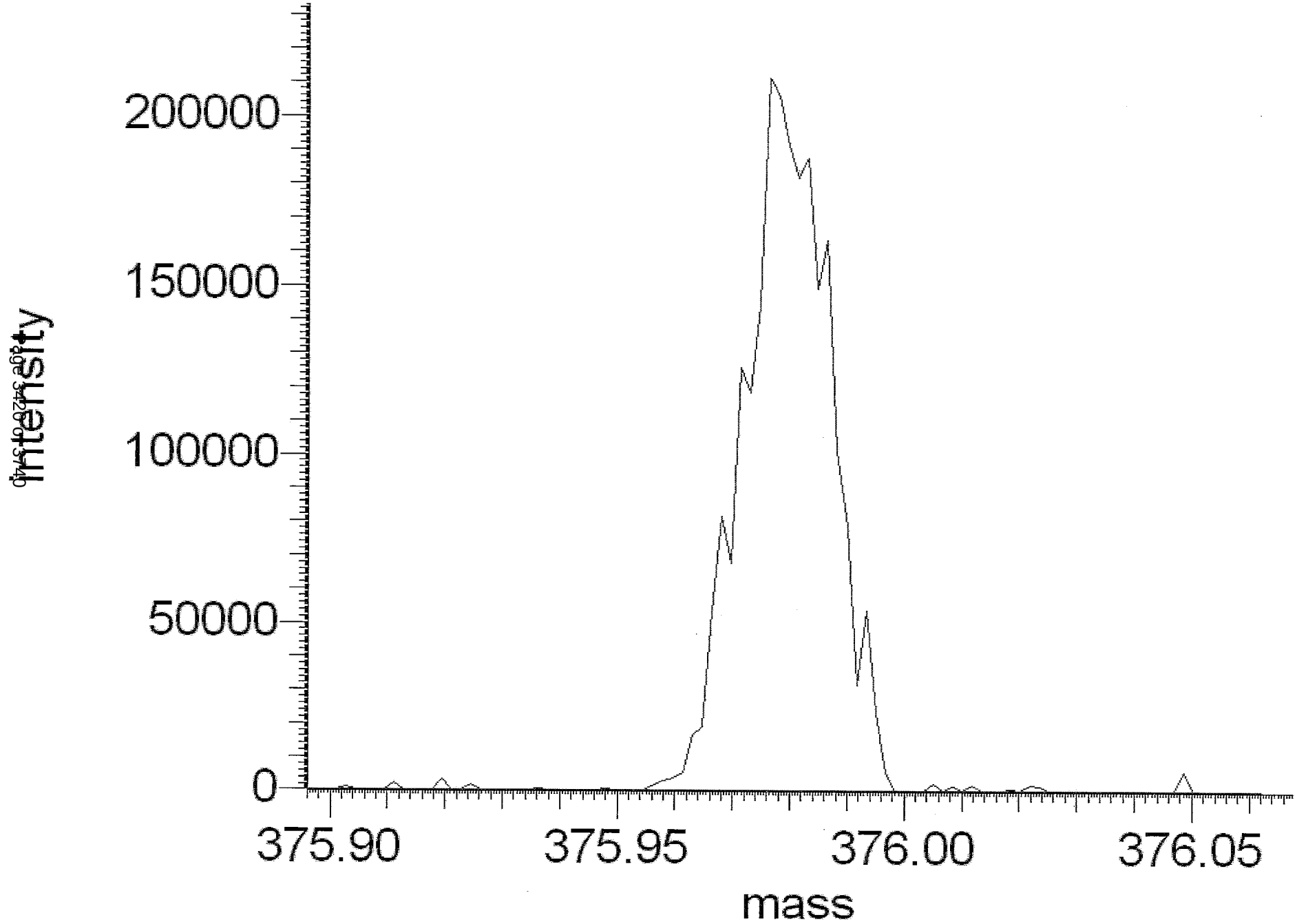
LockMass: 313.9839 Instr.: DFS-1209
Resolution: 10820 (08/23/16 09:13:54)



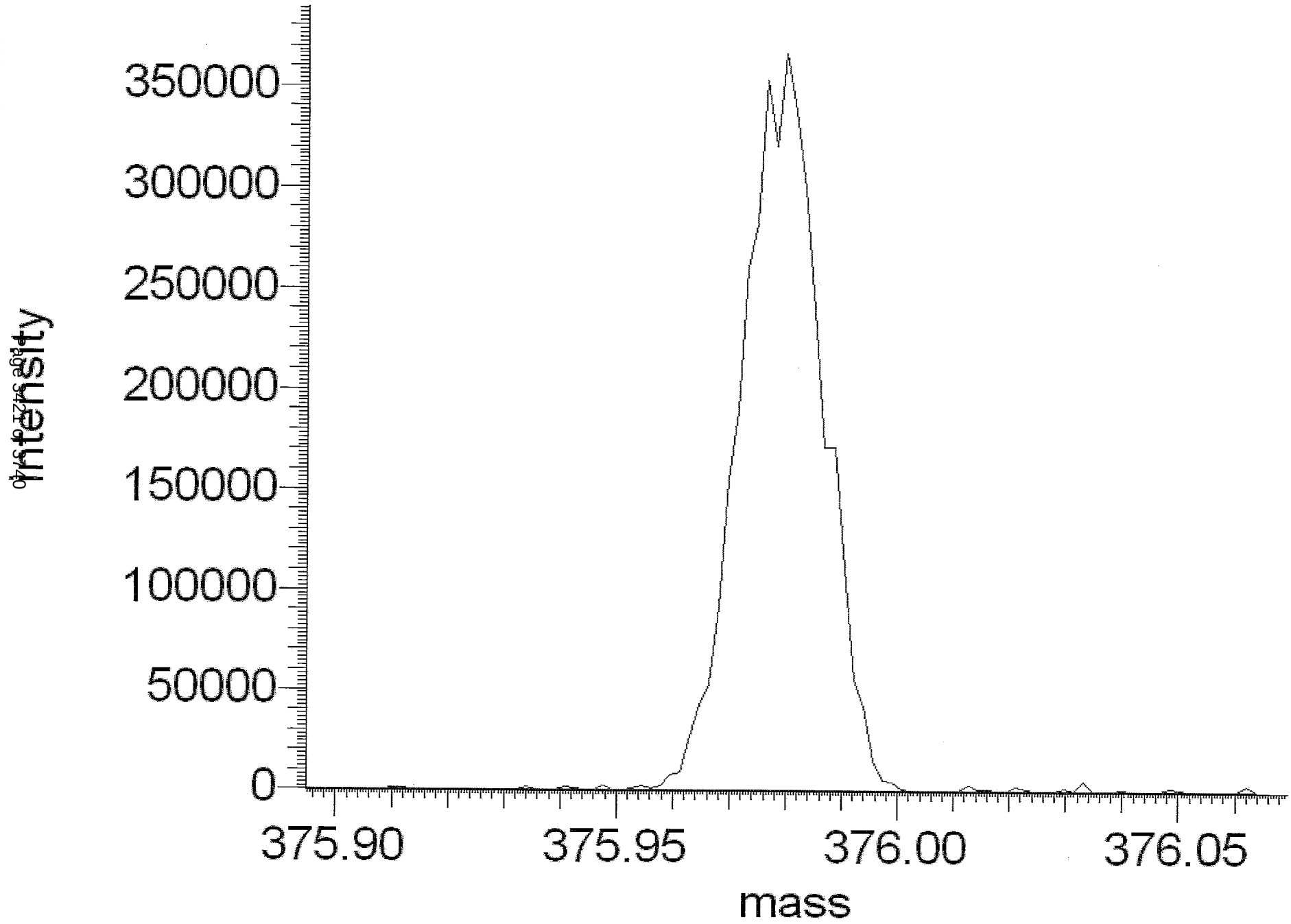
Mass: 351.9802 Instr.: DFS-1209
Resolution: 10593 (08/23/16 09:14:41)



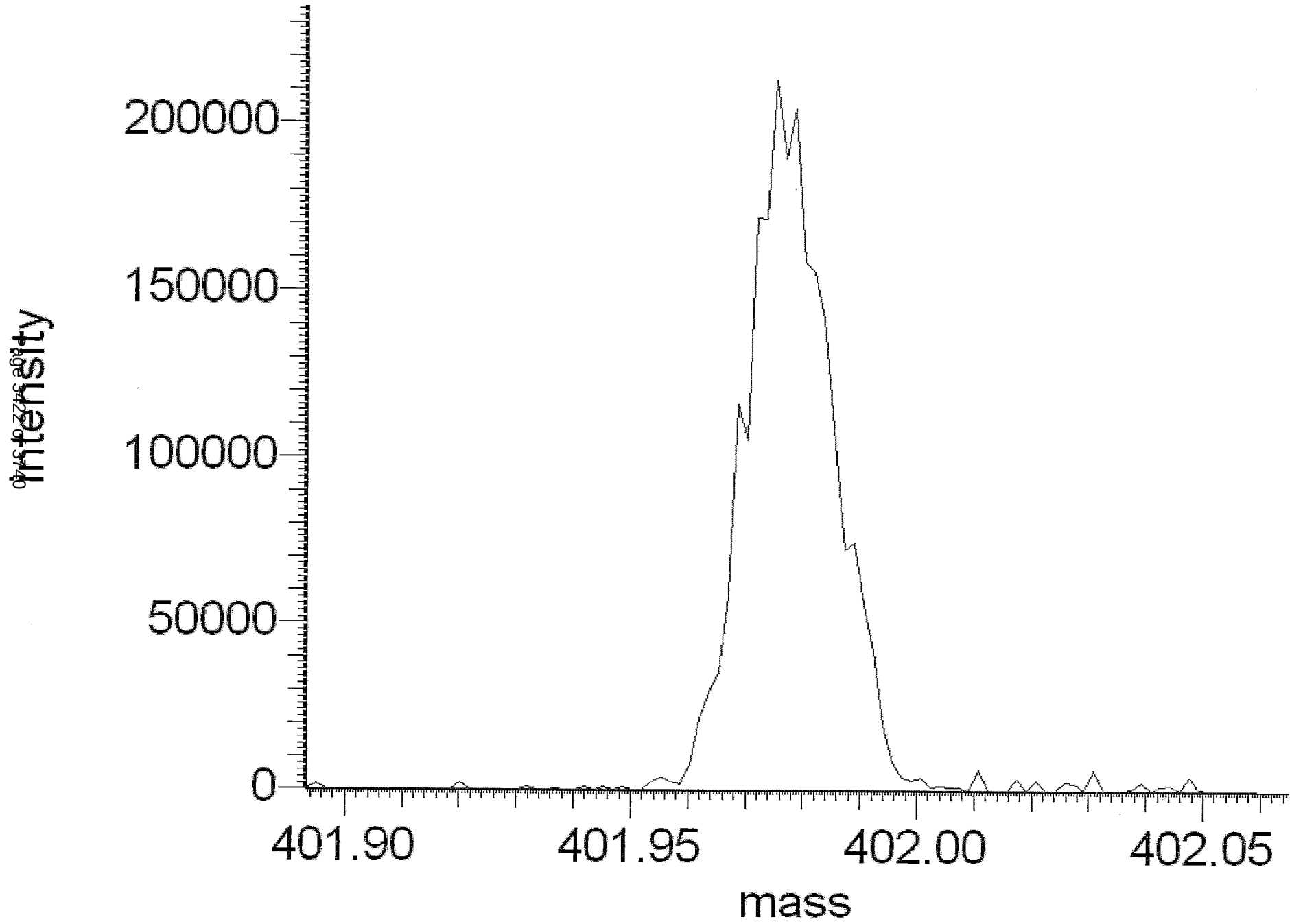
CaliMass: 375.9802 Instr.: DFS-1209
Resolution: 10987 (08/23/16 09:14:44)



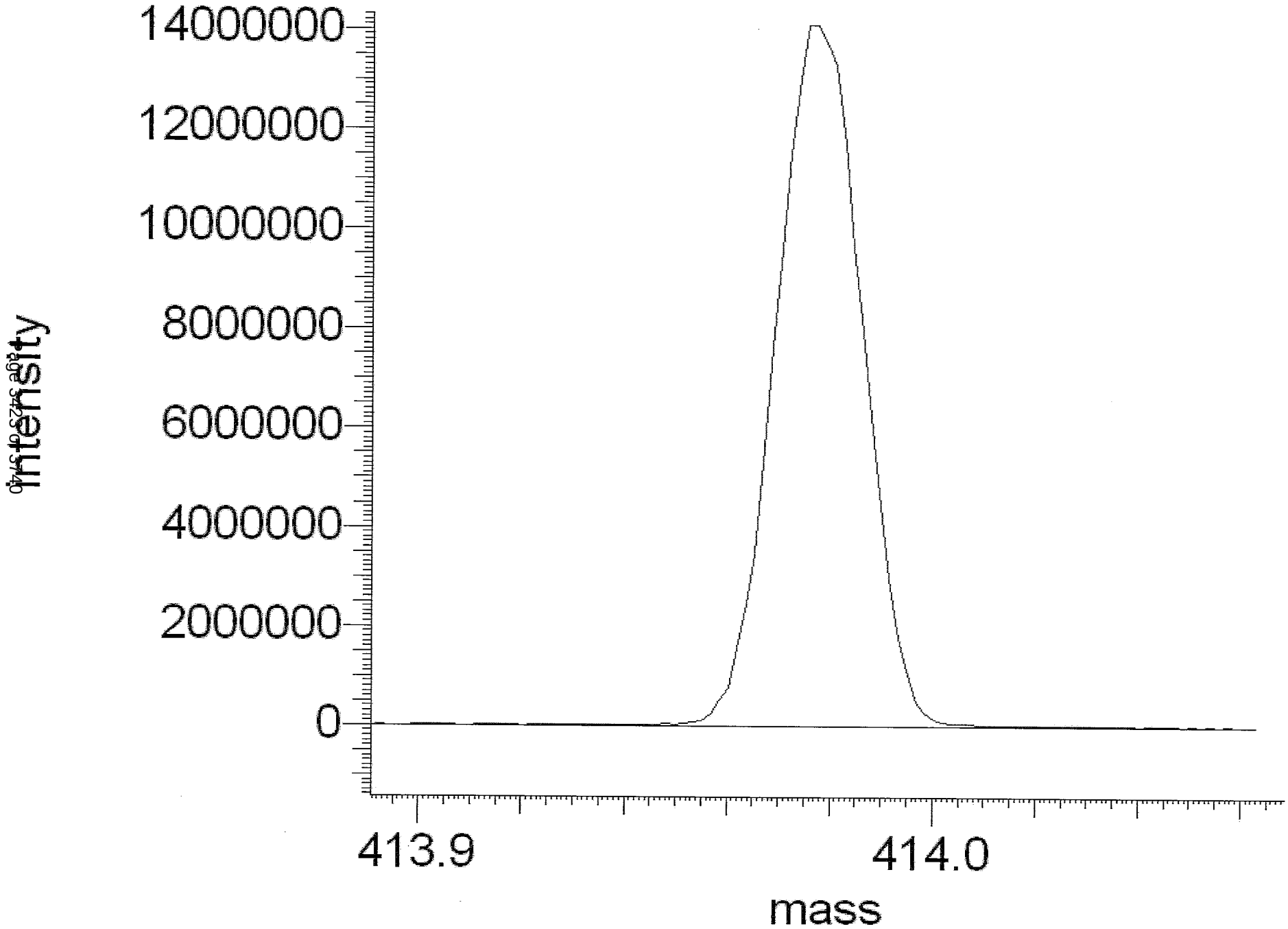
LockMass: 375.9802 Instr.: DFS-1209
Resolution: 10987 (08/23/16 09:14:59)



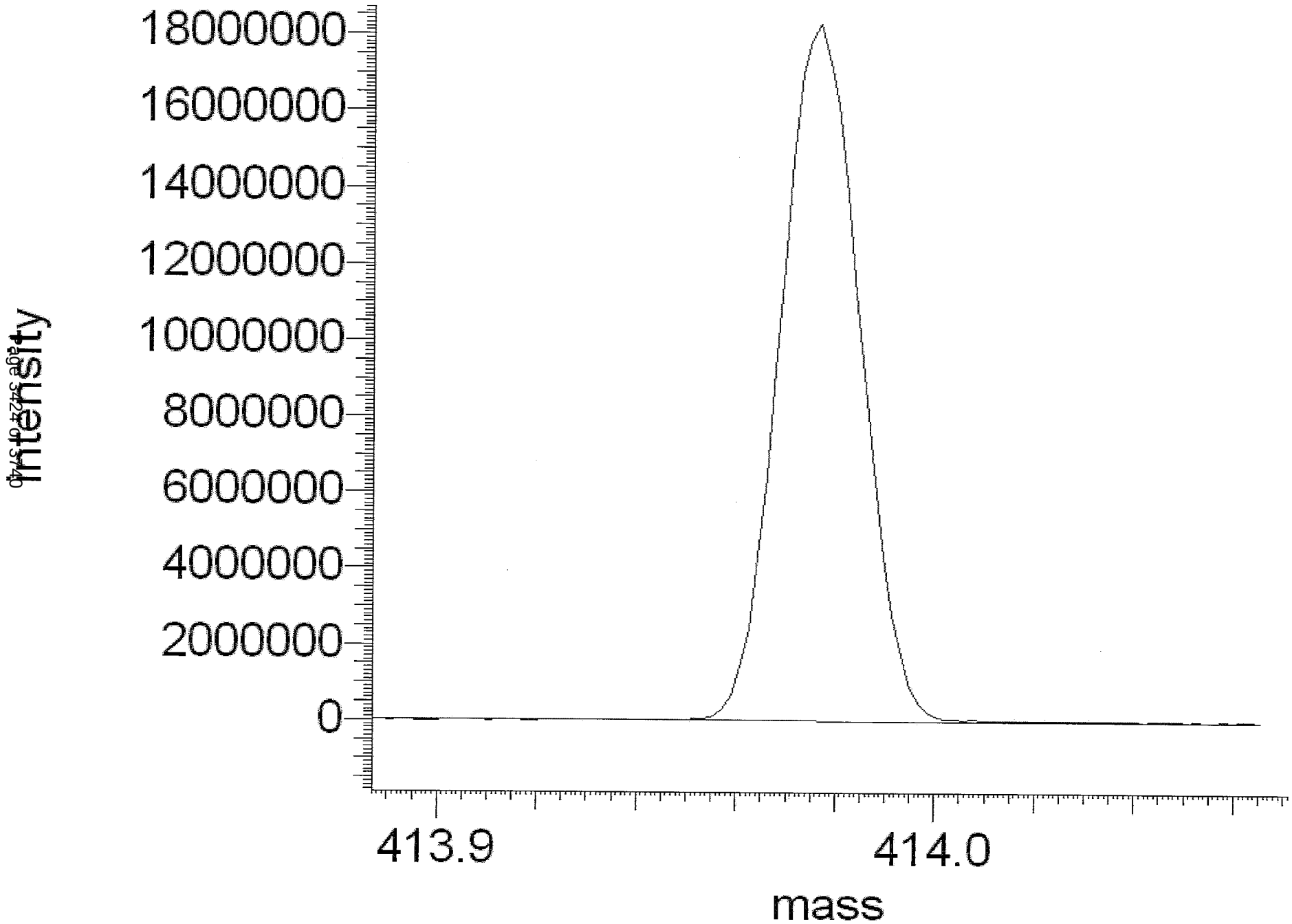
Mass: 401.9770 Instr.: DFS-1209
Resolution: 10939 (08/23/16 09:15:45)



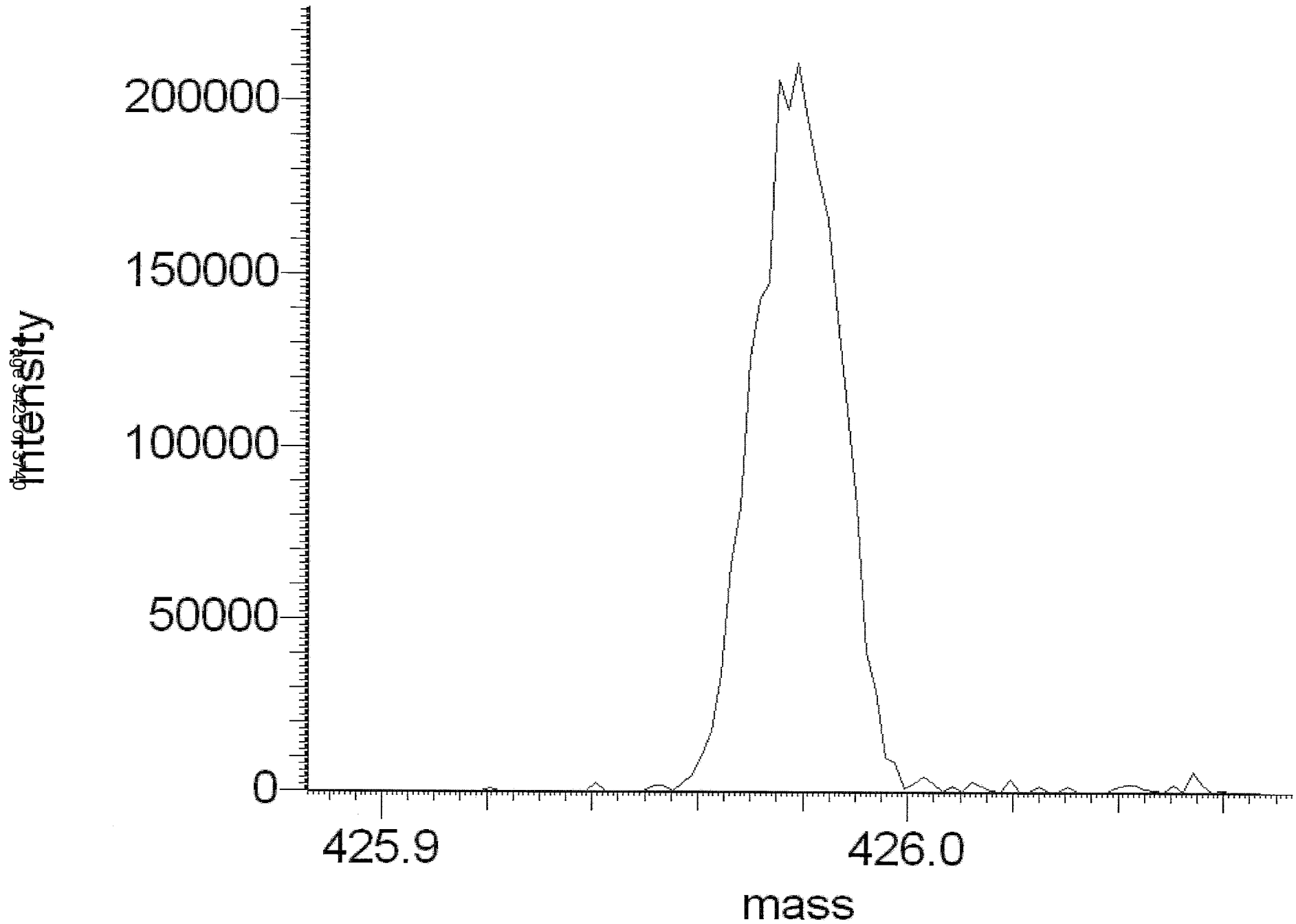
CaliMass: 413.9770 Instr.: DFS-1209
Resolution: 11429 (08/23/16 09:15:48)



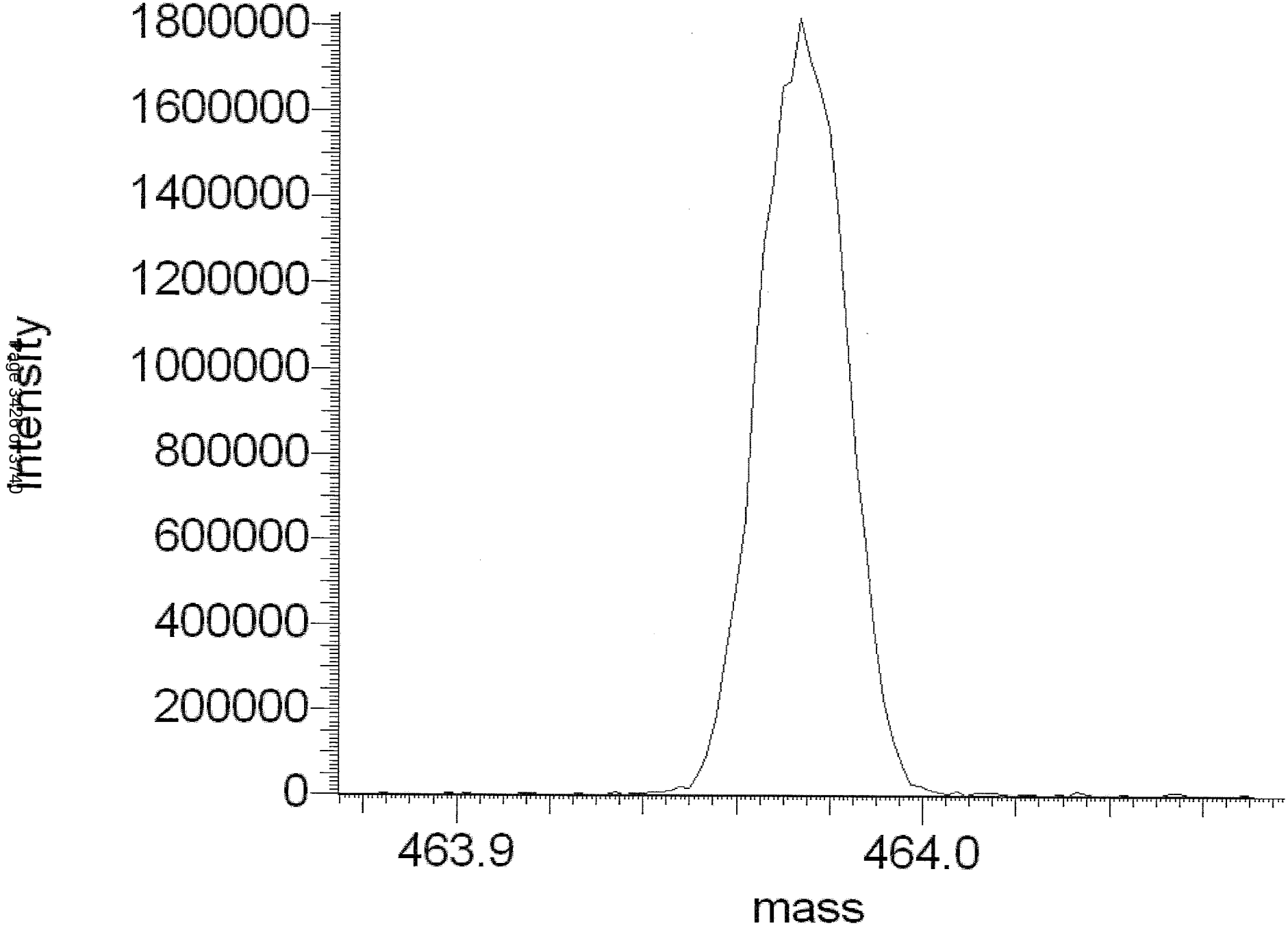
LockMass: 413.9775 Instr.: DFS-1209
Resolution: 11429 (08/23/16 09:16:04)



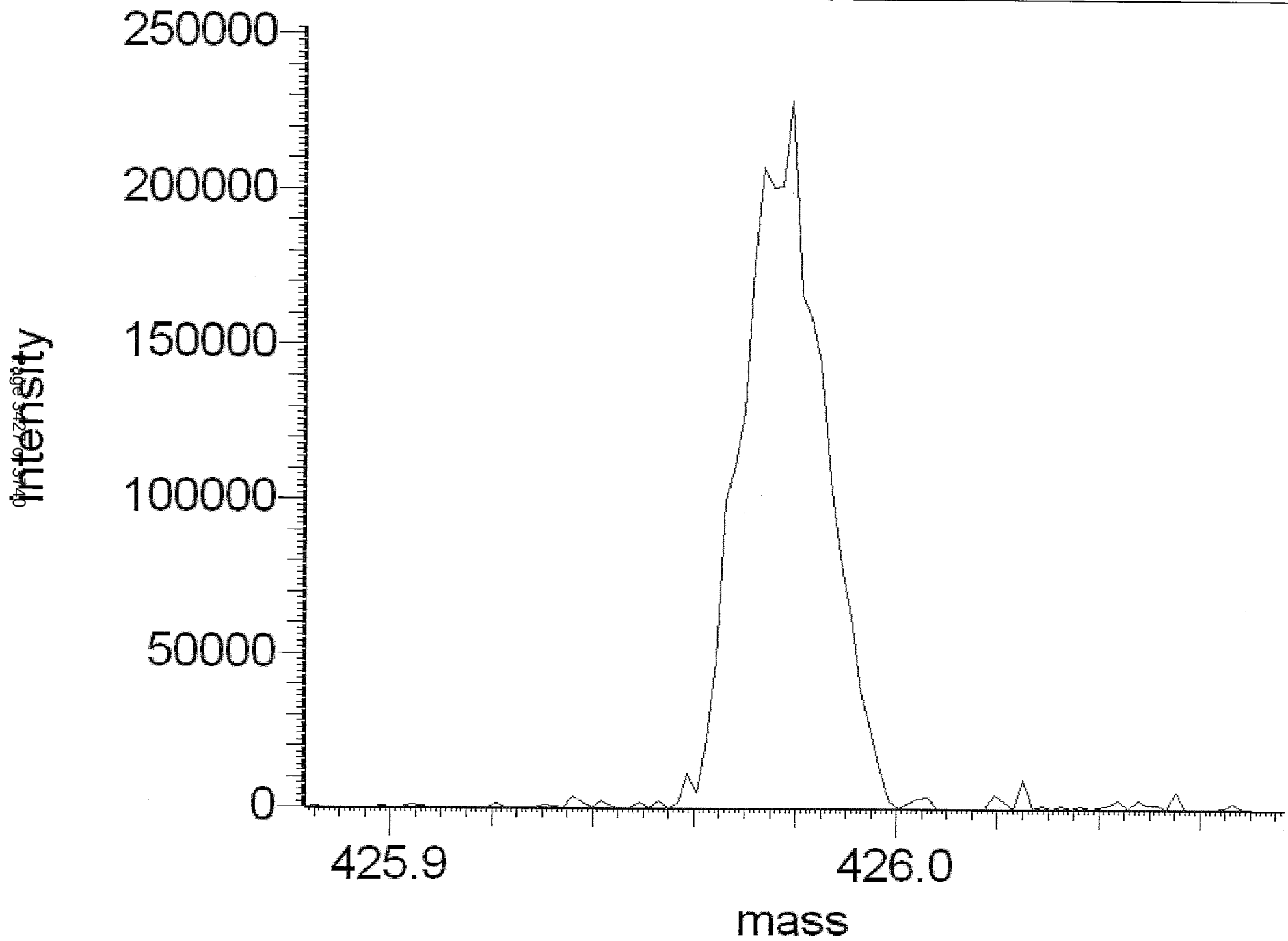
Mass: 425.9770 Instr.: DFS-1209
Resolution: 11683 (08/23/16 09:16:50)



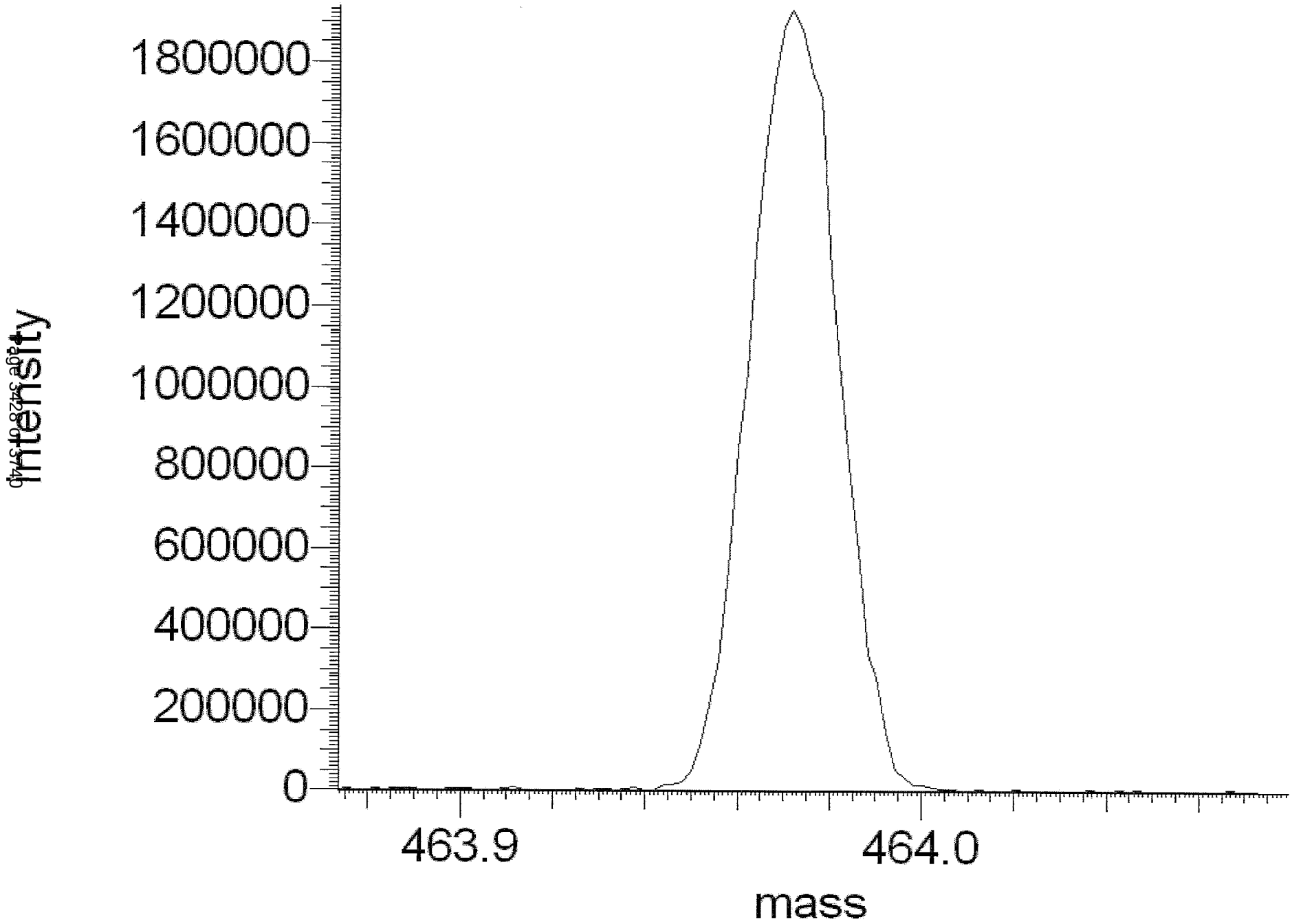
CaliMass: 463.9738 Instr.: DFS-1209
Resolution: 11270 (08/23/16 09:16:53)



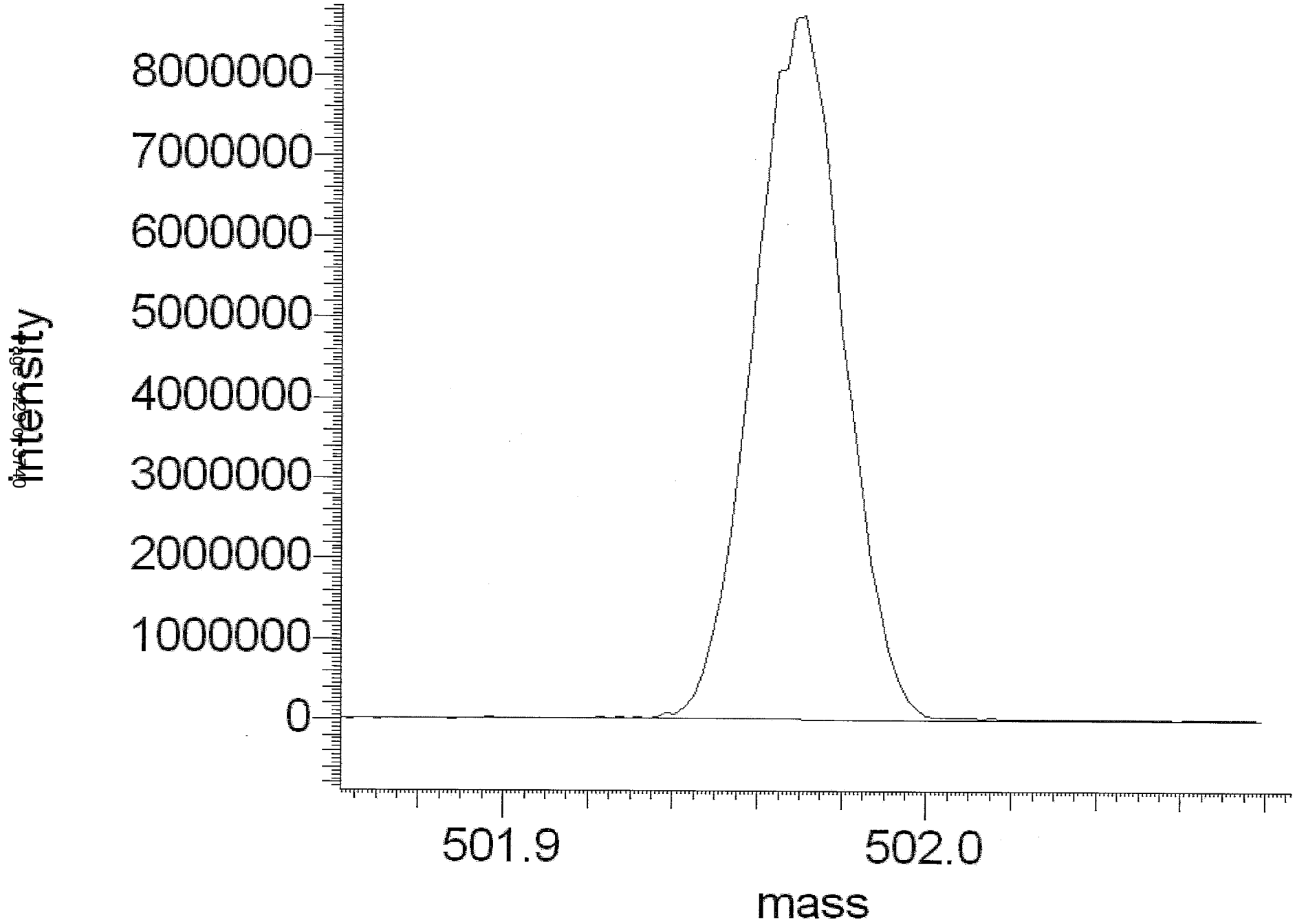
LockMass: 425.9775 Instr.: DFS-1209
Resolution: 11270 (08/23/16 09:17:08)



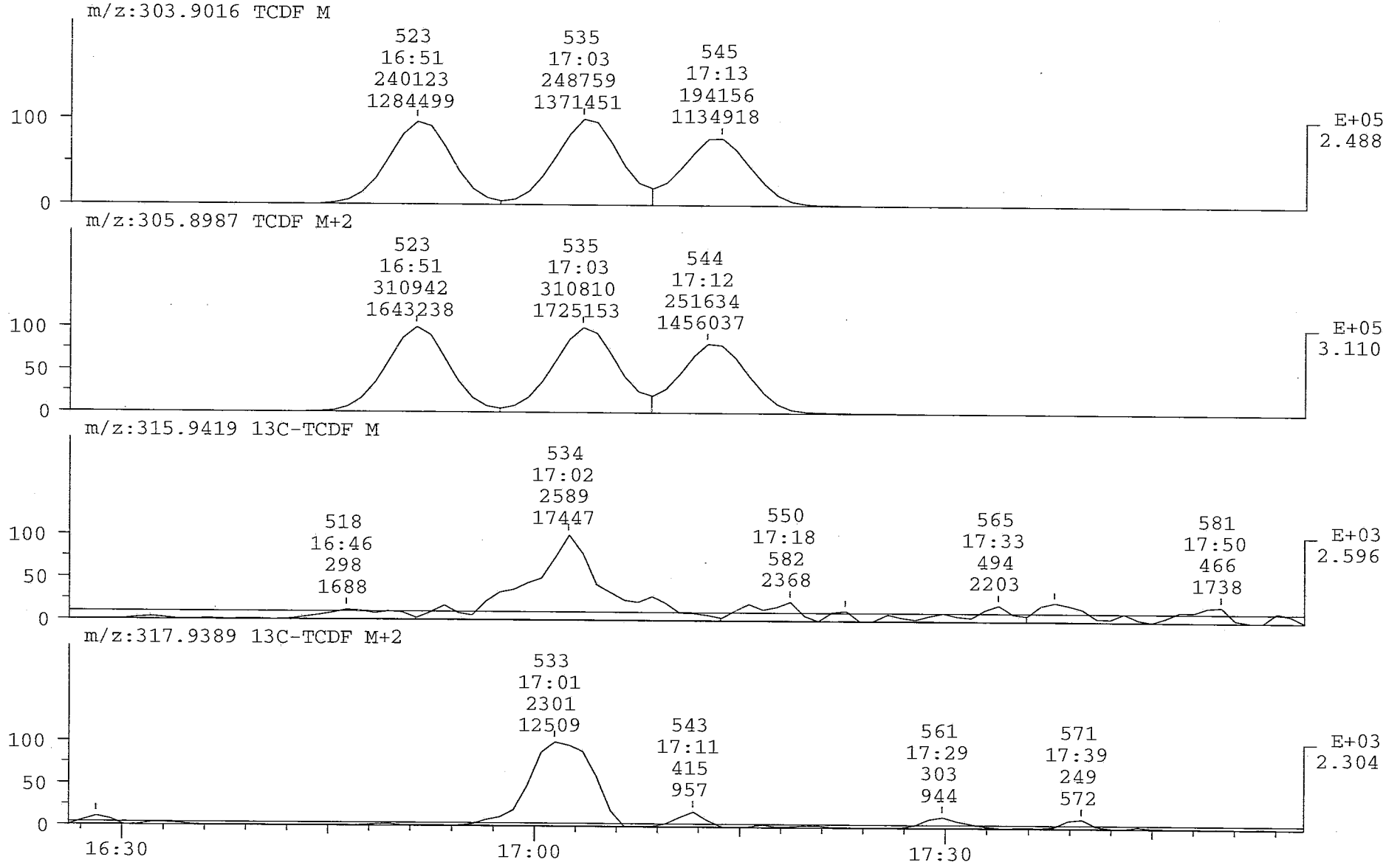
Mass: 463.9743 Instr.: DFS-1209
Resolution: 11214 (08/23/16 09:17:55)



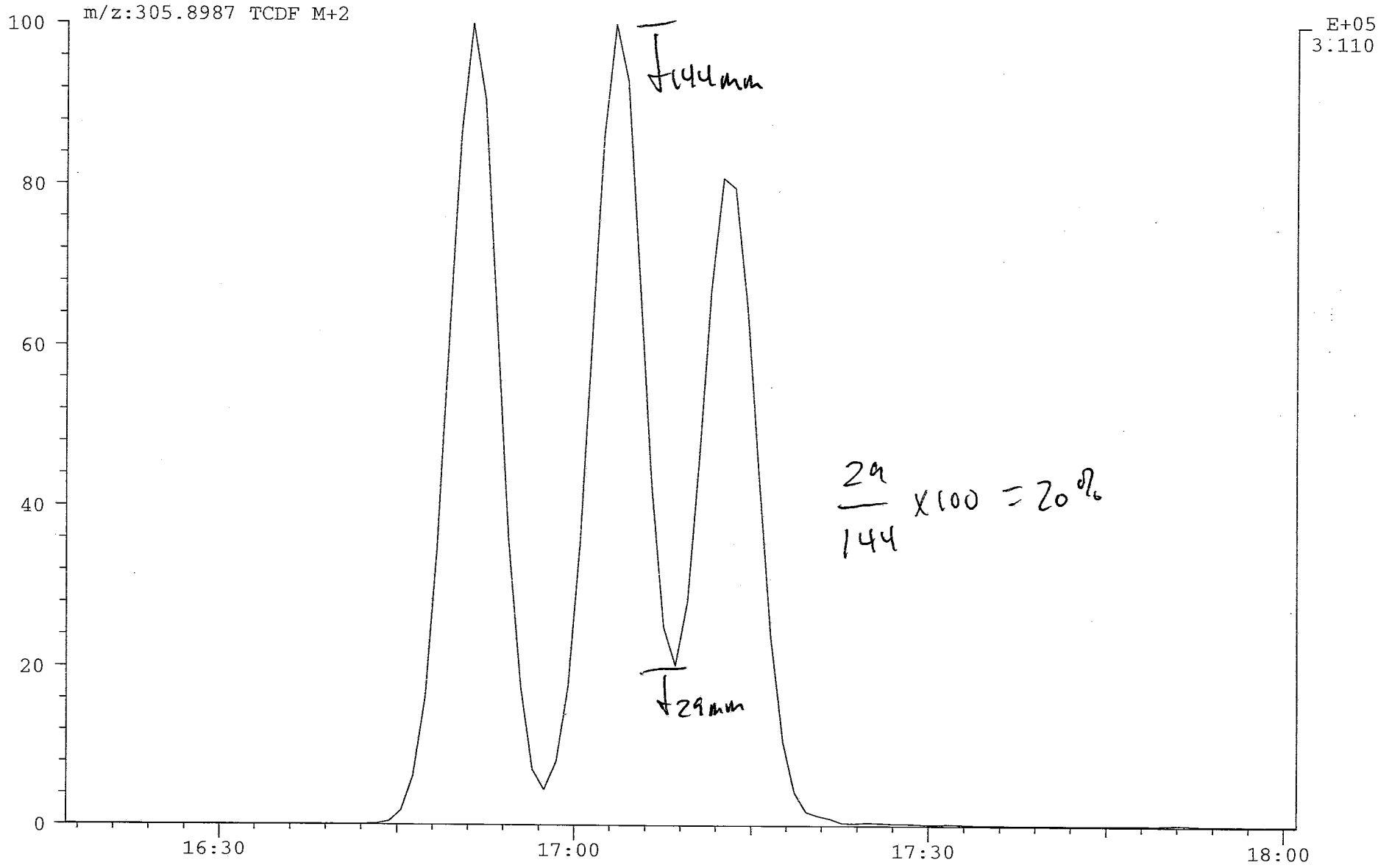
CaliMass: 501.9706 Instr.: DFS-1209
Resolution: 10633 (08/23/16 09:17:58)



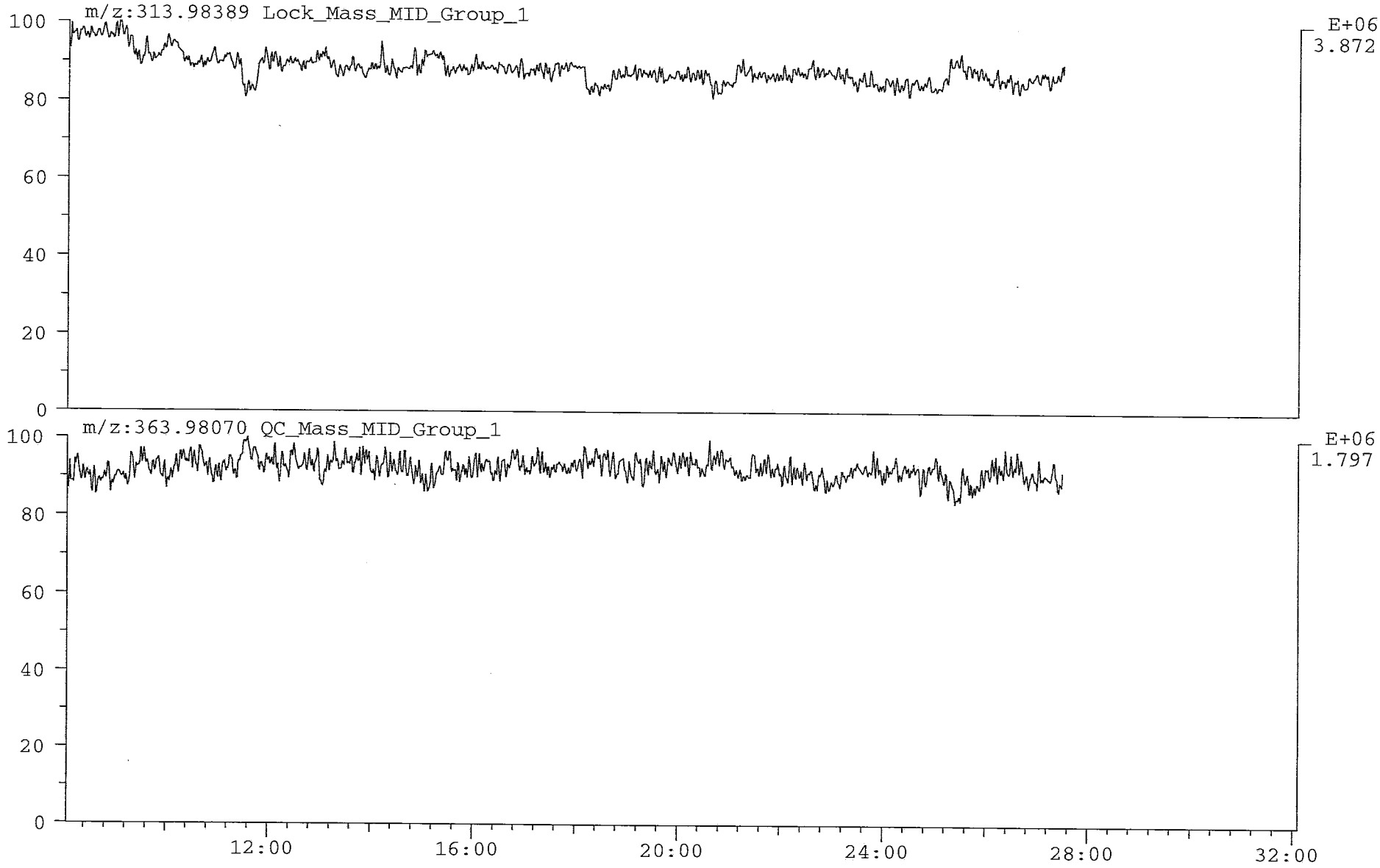
CHRO: d2160822w1 22-Aug-16 Elapse: 17:06.5 538
Samp: WO=4966:24 Meth=L1c Dil=1 Start : 23:51:28 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 498 > 587 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2160822w1 22-Aug-16 Elapse: 17:06.5 538
Samp: WO=4966:24 Meth=L1c Dil=1 Start : 23:51:28 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 489 > 592 Masses: 303 > 376
Area: 0, 0.50, 0 Baseline : 100, 3 Label : 0, 2.5



CHRO: d2160822w1 22-Aug-16 Elapse: 17:06.5 538
Samp: WO=4966:24 Meth=L1c Dil=1 Start : 23:51:28 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 1 > 1428 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



```
*** file opened Mon Aug 22 23:53:22 2016 ***

Started by                - Xcalibur
Instrument Internet name  - DFS MS
Instrument model          - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

  Analysis started at: 22-Aug-16 23:53:21

  Analysis will stop at user request

  Firmware Version: 1.03

  MCAL file name: mcal1.cal

  Sequence : 021716KLR_160822235128

  MID procedure: 5W_DB225_FC43_SINGLEGC


  Mid Time Windows:
        Start        Measure      End       Cycletime

  # 1   8:00 min  19:30 min  27:30 min   1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    303.9016     1  1      124
    305.8987     1  1      124
    313.9834 l  20  1        6
    313.9834    20  1        6
    315.9419     5  1       24
    317.9389     5  1       24
    319.8965     1  1      124
    321.8936     1  1      124
    327.8847     1  1      124
    331.9368     5  1       24
    333.9338     5  1       24
    363.9802 c  20  1        6
    363.9802    20  1        6
    375.8364     1  1      124

  MID Window terminated after 27.500000 minutes
  MID Window end time was 27.500000 minutes

  Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

  DFS - Parameter

   ACCU          1000.0000   BCORRS          0.0169   BMASS          313.4834
   BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
   CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
   DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
   DYNVOLTAGE       18.0000  ECORR           1.0007   ECURR            1.0000
   EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
   ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
   ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
   ESIPAR           0.0000   EXS           173.0000   EXSBR            2.5000
   FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
   FM             375.8364   FMII           50.0000   FQUAD            6.7000
   FQUADGAIN        0.2000   FREQ          400.0000   FSLOPE    36000000.0000
   FVANAL           0.0044   FVINLET         0.0493   FVSRC            0.0417
   FWIN             0.7000   HCURR           0.0000   HVANAL           0.0000
   HVSRC            0.0000   ICAL0           0.0011   ICAL1            0.4030
   ICAL2            0.5865   IONEN           0.0000   IST              0.0000
```

ISTC	260.0000	ISTS	260.0000	LENS_POT	628.0000
LENS_SYM	1.7500	LM	375.8364	LMII	500.0000
LMASS	313.4834	LKM	313.9834	MASS	313.4834
MDAC	3592224.0474	MRANGE	1241.7659	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-6.0000	RECURR	0.8987	RELEN	0.0000
RES	11577.1408	RPUSHER	-5.9707	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:          2.7e-005 mbar
Analyzer Penning:      9.3e-008 mbar
Pirani Analyse:        4.3e-003 mbar
Pirani Source:         4.2e-002 mbar
Pirani Inlet System: 5.0e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11577.

Amplifier Offset: 88.


*** File closed Tue Aug 23 00:20:53 2016
  ***
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QUAN: d2160822w1.q0 Entries: 27

Data file(s) used
File: d2160822w1 22-Aug-16
Samp: WO=4966:24 Meth=L1c Dil=1 Start : 23:51:28 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 WIN
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	15:25	1044606.	217790.	15:15	15:40	27.	1	1.0	ABV
321.8775	15:25	1356050.	279227.	15:14	15:40	42.	1	1.0	ABV
319.8805	15:25	1044606.	217790.	15:15	15:40	27.	2	5.0	ABV
319.8805	15:44	2433.	372.	15:41	15:52	27.	2	5.0	AVV
319.8805	16:01	1195.	255.	15:52	16:04	27.	2	5.0	AVV
319.8805	16:08	548.	161.	16:04	16:11	27.	2	5.0	AVB
319.8805	16:44	893.	282.	16:41	16:47	27.	2	5.0	ABB
321.8775	15:25	1356050.	279227.	15:14	15:40	42.	2	5.0	ABV
321.8775	16:00	2038.	286.	15:51	16:03	42.	2	5.0	AVV
321.8775	16:29	3018.	261.	16:14	16:40	42.	2	5.0	AVB
321.8775	16:44	768.	265.	16:41	16:46	42.	2	5.0	ABB
331.9202	15:24	9163.	1447.	15:18	15:29	36.	2	5.0	AVB
331.9202	15:36	6303.	1569.	15:31	15:41	36.	2	5.0	ABB
333.9171	15:23	6971.	1600.	15:18	15:28	17.	2	5.0	ABV
333.9171	15:36	12289.	2044.	15:28	15:43	17.	2	5.0	AVB
327.8683	15:25	15929.	3276.	15:14	15:34	26.	1	1.0	ABB
327.8683	15:25	15929.	3276.	15:14	15:34	26.	2	5.0	ABB
303.8864	17:03	1371451.	248759.	16:57	17:08	119.	1	1.0	AVV
305.8834	17:03	1724993.	310796.	16:57	17:08	81.	1	1.0	AVV
303.8864	16:51	1284499.	240123.	16:42	16:57	119.	2	5.0	ABV
303.8864	17:03	1371451.	248759.	16:57	17:08	119.	2	5.0	AVV
303.8864	17:13	1134918.	194156.	17:08	17:28	119.	2	5.0	AVV
305.8834	16:51	1642635.	310921.	16:41	16:57	81.	2	5.0	ABV
305.8834	17:03	1724993.	310796.	16:57	17:08	81.	2	5.0	AVV
305.8834	17:12	1455935.	251626.	17:08	17:27	81.	2	5.0	AVV
315.9261	17:02	17447.	2589.	16:51	17:13	48.	2	5.0	AVV
317.9230	17:01	12509.	2301.	16:54	17:06	18.	2	5.0	ABB

TestAmerica Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 0023/8290 - DB-225

CCAL ID: 90042 - D2160823S1
CCAL Filename: d2160823s1
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160823s1/d2160823s1.d
CCAL Date/Time: 08/23/16 00:44

ICAL Date: 04/09/15
Method: X8c - 0023/8290_Conf
Instrument: D12C
Column SN: 154214
Column Desc: DB-225 30m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.8	1.149	1.123	-2.2	20.0	True
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	9.5	1.046	0.996	-4.7	20.0	True
37Cl4-2,3,7,8-TCDD	M		-	9.5	1.149	1.120	-2.4	30.0	
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	98	1.008	0.985	-2.3	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	97	1.511	1.470	-2.7	30.0	True

lh 8/23/16

lh 8-23-16

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 0023/8290 - DB-225

CCAL ID:	90042 - D2160823S1	ICAL Date:	04/09/15
CCAL Filename:	d2160823s1	Method:	X8c - 0023/8290_Conf
CCAL Sample ID:	4966:41	Instrument:	D12C
CCAL Result Dir:	/20160823s1/d2160823s1.d	Column SN:	154214
CCAL Date/Time:	08/23/16 00:44	Column Desc:	DB-225 30m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	16:05	15:26	-39	1.001	1.001	-	
2,3,7,8-TCDF	17:51	17:04	-47	1.002	1.001	-	
37Cl4-2,3,7,8-TCDD	16:05	15:26	-39	1.001	1.001	-	
13C-2,3,7,8-TCDD	16:04	15:25	-39	0.983	0.986	-	
13C-2,3,7,8-TCDF	17:49	17:03	-46	1.090	1.091	-	

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 8290A - DB-225

CCAL ID:	90044 - D2160823S1	ICAL Date:	04/09/15
CCAL Filename:	d2160823s1	Method:	9Ac - DX8290A Conf
CCAL Sample ID:	4966:41	Instrument:	D12C
CCAL Result Dir:	/20160823s1/d2160823s1.d	Column SN:	154214
CCAL Date/Time:	08/23/16 00:44	Column Desc:	DB-225 30m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	9.8	1.149	1.123	-2.2	20.0	True
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	9.5	1.046	0.996	-4.7	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	98	1.008	0.985	-2.3	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65-0.89	97	1.511	1.470	-2.7	30.0	True

LM 8/23/16

LM 8-23-16

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 8290A - DB-225

CCAL ID: 90044 - D2160823S1
CCAL Filename: d2160823s1
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160823s1/d2160823s1.d
CCAL Date/Time: 08/23/16 00:44

ICAL Date: 04/09/15
Method: 9Ac - DX8290A Conf
Instrument: D12C
Column SN: 154214
Column Desc: DB-225 30m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	16:05	15:26	-39	1.001	1.001	-	
2,3,7,8-TCDF	17:51	17:04	-47	1.002	1.001	-	
13C-2,3,7,8-TCDD	16:04	15:25	-39	0.983	0.986	-	
13C-2,3,7,8-TCDF	17:49	17:03	-46	1.090	1.091	-	

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160823s1/d2160823s1.d	Prep Date		SDG No	
Analysis ID	180552	Prep Exp Date		Date Received	
Analysis Date	8/23/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	00:44	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	15:26	1054721	219373	1.149	10.00	9.779486	97.79	9.779486	E	0.0117
2,3,7,8-TCDF	17:04	1396734	246697	1.046	10.00	9.527970	95.28	9.527970	E	0.00942
37Cl4-2,3,7,8-TCDD	15:26	1051953	216092	1.157	10.00	9.533166	95.33	9.533166	E	0.00339
13C-2,3,7,8-TCDD	15:25	9388356	1949474	1.008	100.0	97.704197	97.70	97.704197		0.0106
13C-2,3,7,8-TCDF	17:03	14018457	2538562	1.511	100.0	97.326774	97.33	97.326774		0.0145
13C-1,2,3,4-TCDD	15:38	9534712	1973555	1.000	100.0	100.000000	100.00	100.000000		0.0106

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160823s1/d2160823s1	Prep Date		SDG No	
Analysis ID	180552	Prep Exp Date		Date Received	
Analysis Date	08/23/16 00:44	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	LKM	Diluton Factor	1.00	Code	L1c

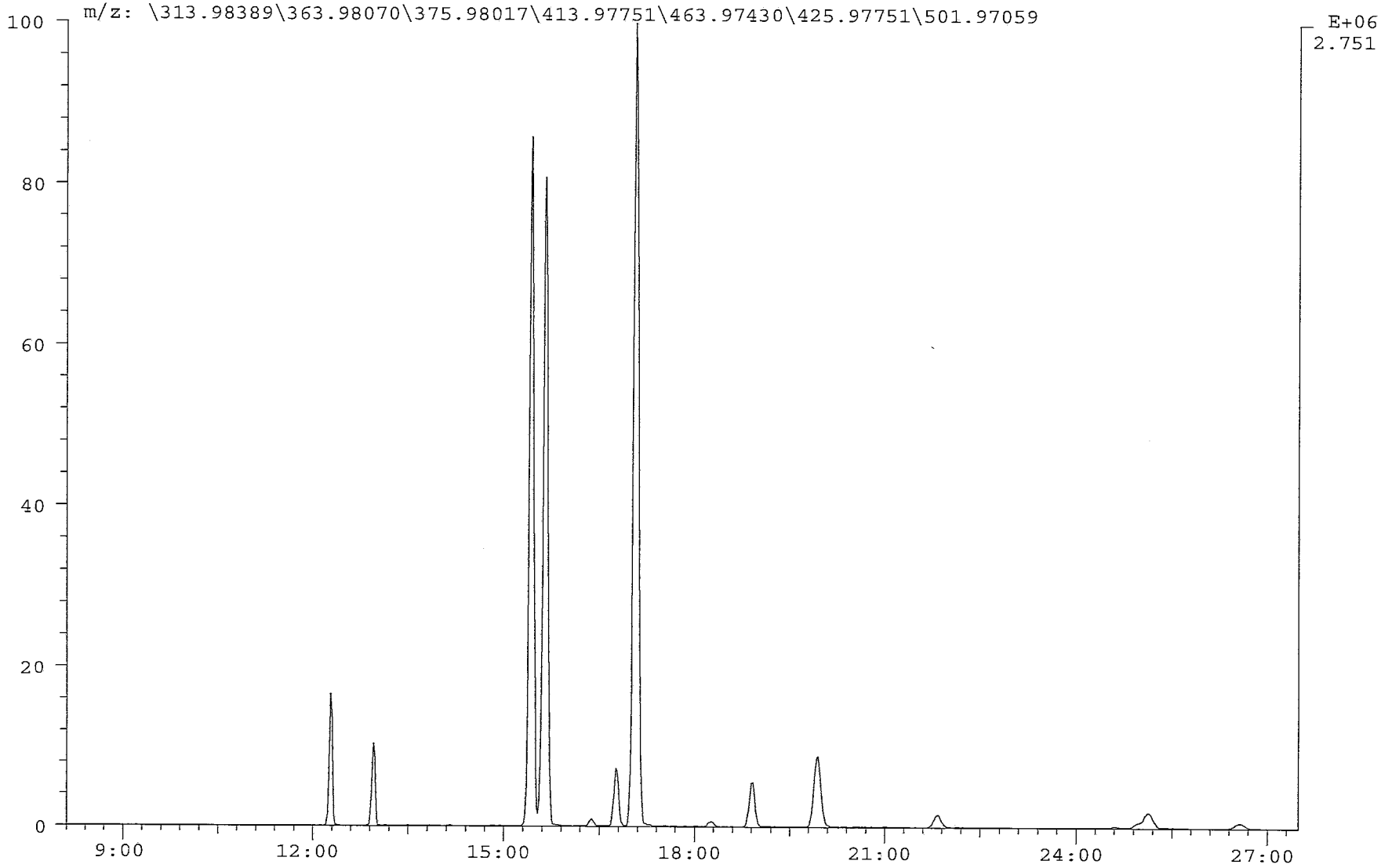
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	113	138	45	55	0.82	/	
	2,3,7,8-TCDF	17:04	17:05	-1	618147	778587	109392	137305	0.79	AVV/AVV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	268	165	107	66	1.62 *	/	
	13C-2,3,7,8-TCDF	17:03	17:03	0	6229673	7788784	1132357	1406205	0.80	AVV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	115	148	46	59	0.78	/	
	2,3,7,8-TCDD	15:26	15:25	1	463677	591044	95612	123761	0.78	ABV/AVV	
	Unidentified	15:38	00:00	0	844128	1081499	109959	138342	0.78	AVV/AVV	
	Unidentified	16:45	00:00	0	125109	170822	39266	52393	0.73	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	78		31				
	37Cl4-2,3,7,8-TCDD	15:26	15:25	1	1051953		216092			ABV	D
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	100	110	40	44	0.91 *	/	
	13C-2,3,7,8-TCDD	15:25	15:24	1	4212859	5175497	884804	1064670	0.81	ABV/ABV	
	13C-1,2,3,4-TCDD	15:38	15:39	-1	4255316	5279396	878821	1094734	0.81	AVV/AVV	

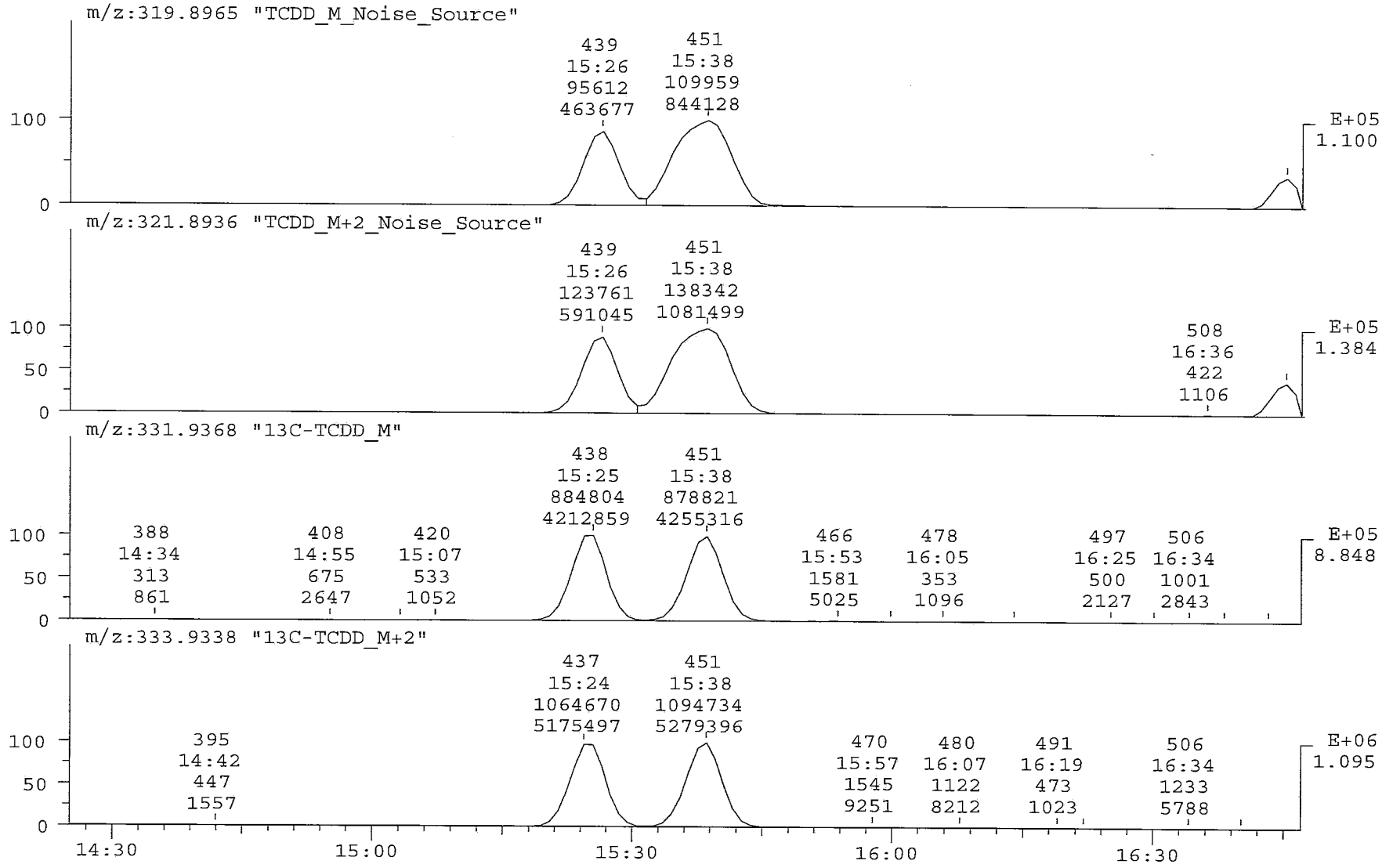
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int/Cal 8-23-16
QC 8/23/16

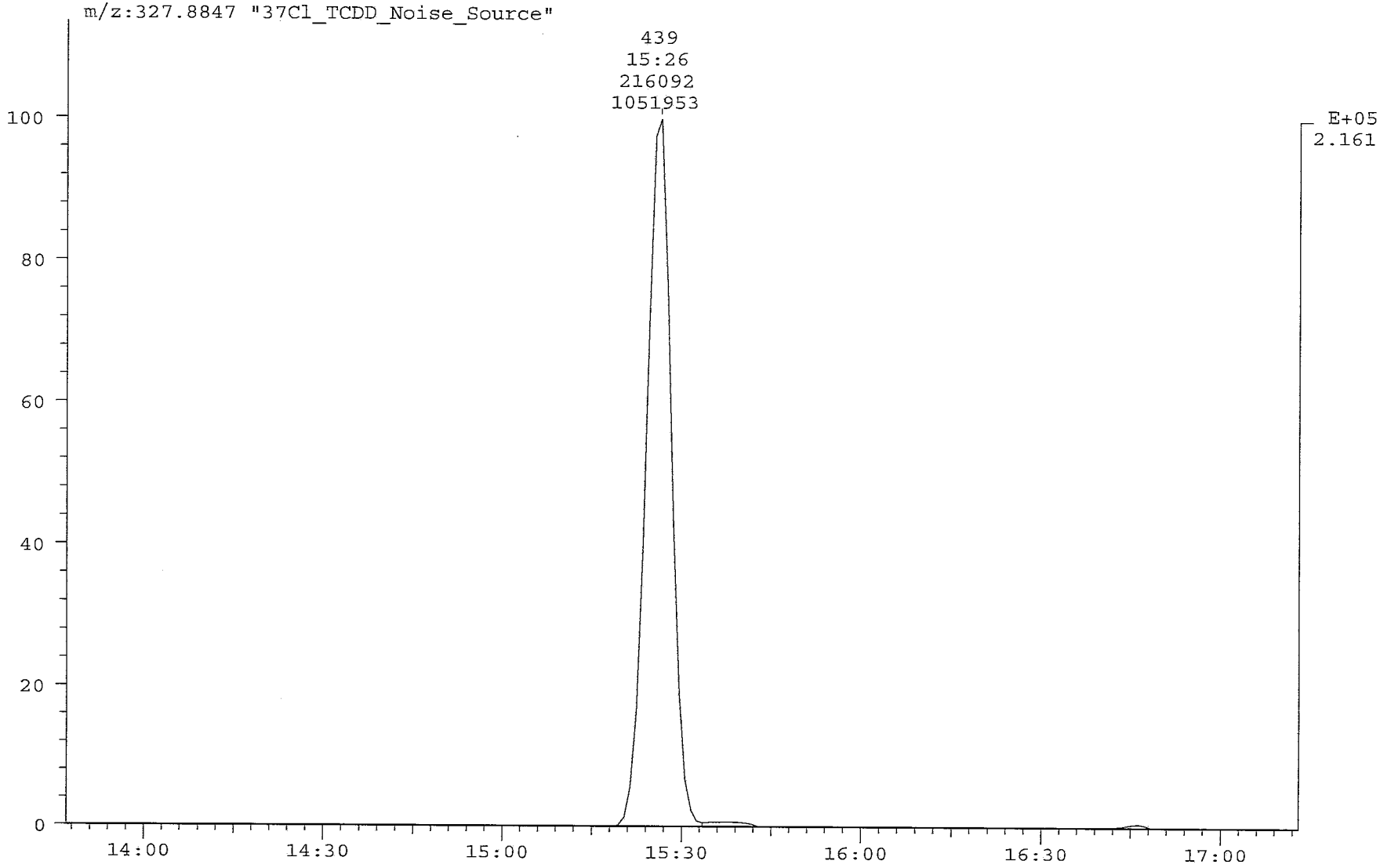
CHRO: d2160823s1 23-Aug-16 Elapse: 17:06.4 538
Samp: WO=4966:41 Meth=L1c Dil=1 Start : 00:44:49 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 VER
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 3 > 1154 Masses: 303 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



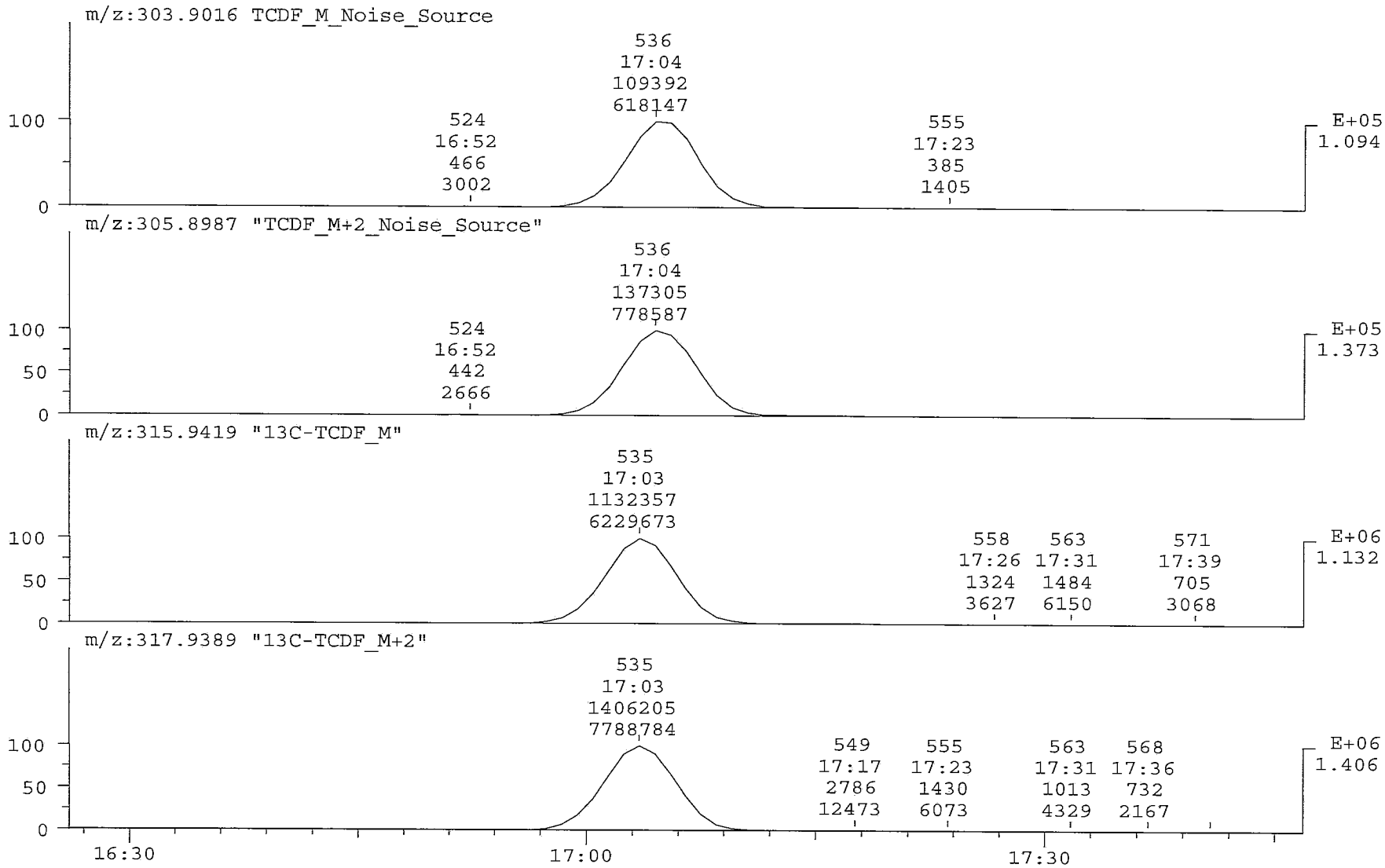
```
CHRO:  d2160823s1                                23-Aug-16  Elapse:  15:35.5     448
Samp:  WO=4966:41 Meth=L1c Dil=1                            Start :  00:44:49   1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  DB-225 VER
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   378 > 519              Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



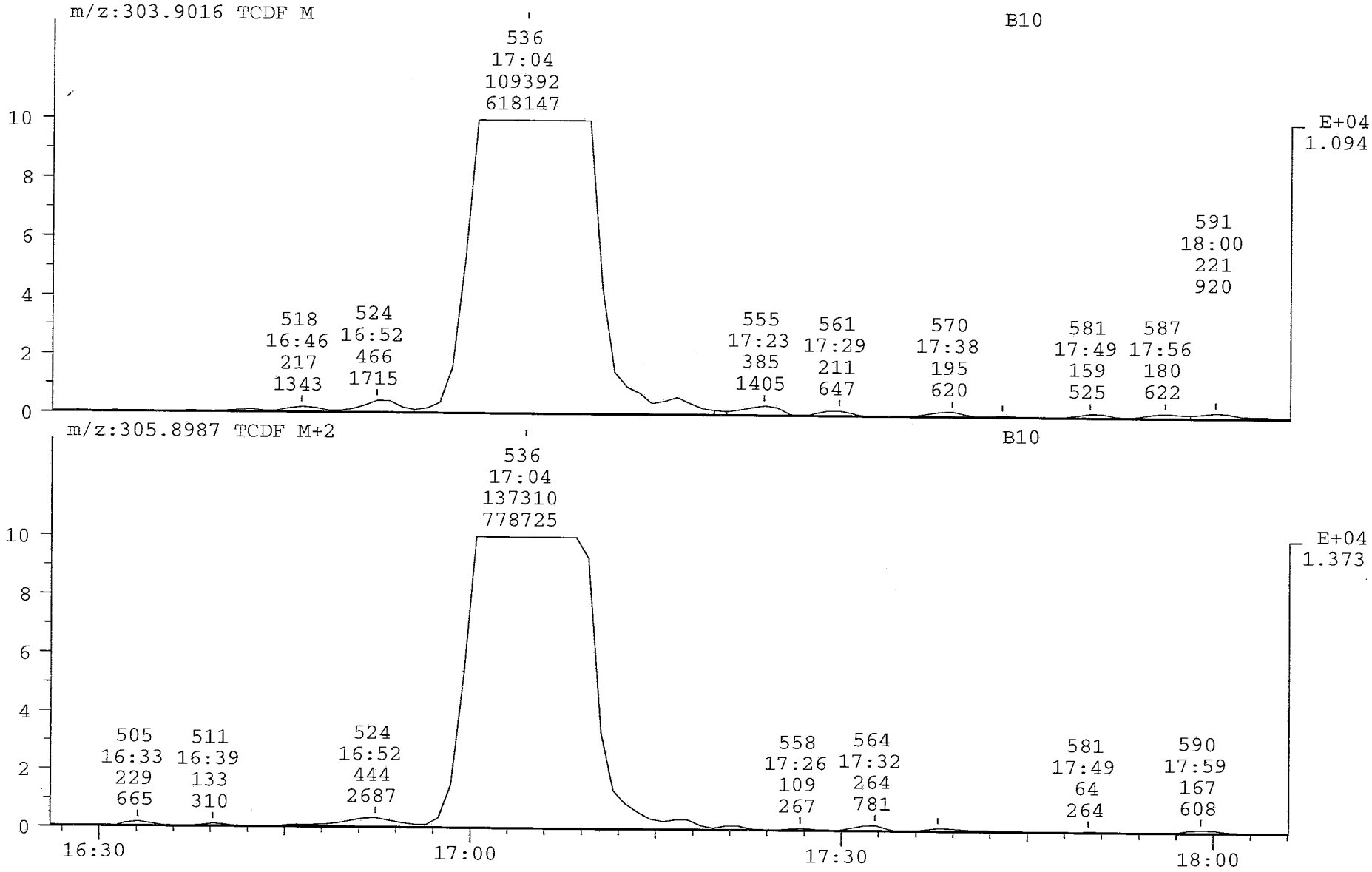
```
CHRO:  d2160823s1                                23-Aug-16  Elapse:  15:27.4      440
Samp:  WO=4966:41 Meth=L1c Dil=1                            Start :  00:44:49    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  DB-225 VER
Oper:  LKM                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   341 > 544              Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



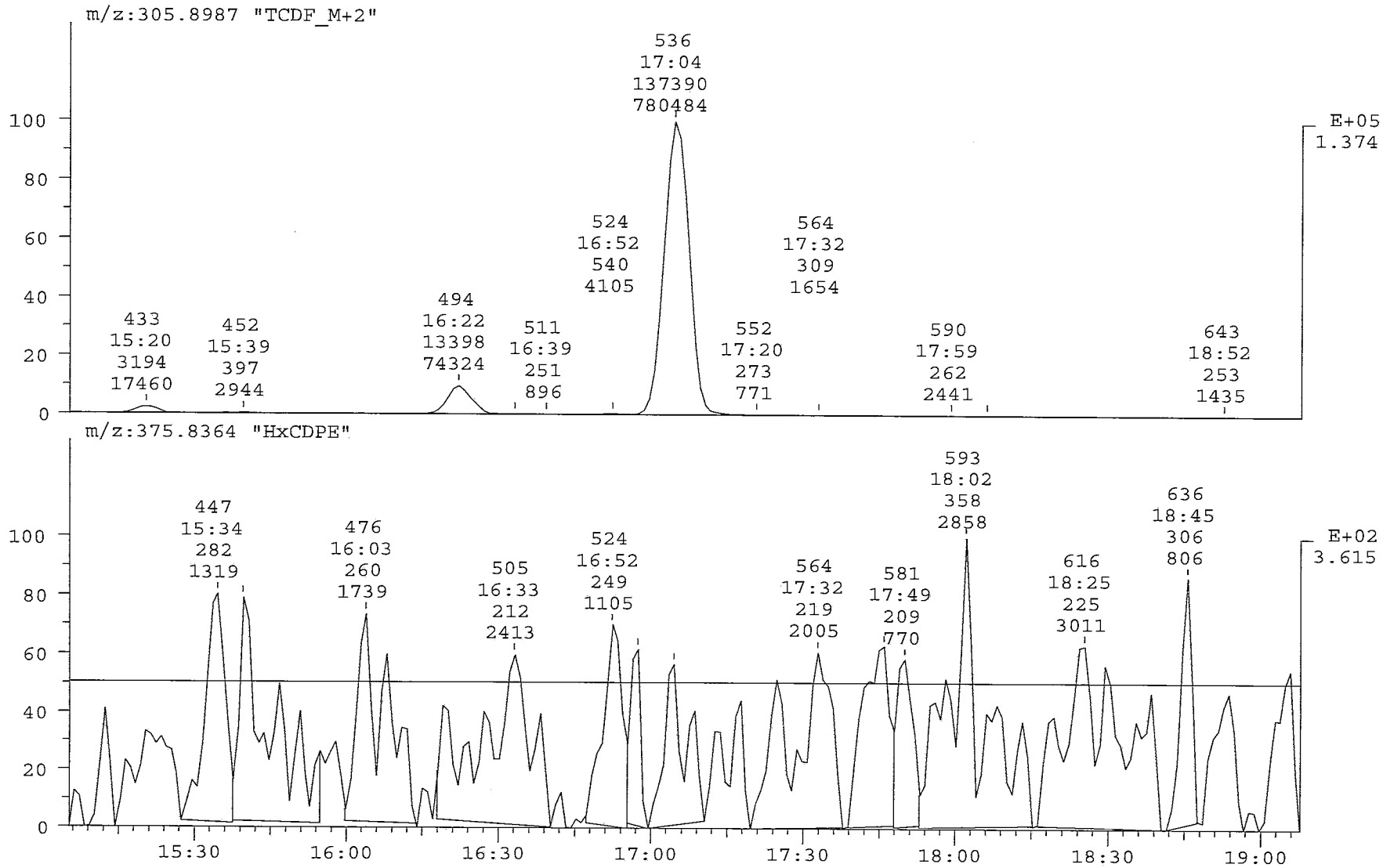
```
CHRO:  d2160823s1                          23-Aug-16  Elapse:  17:06.4      538
Samp:  WO=4966:41 Meth=L1c Dil=1                      Start :  00:44:49    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode:  EI ESI + Q1MS UP LR                            Study :  DB-225 VER
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   498 > 578        Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  -2, 5.0
Disp:  Height  Area
```



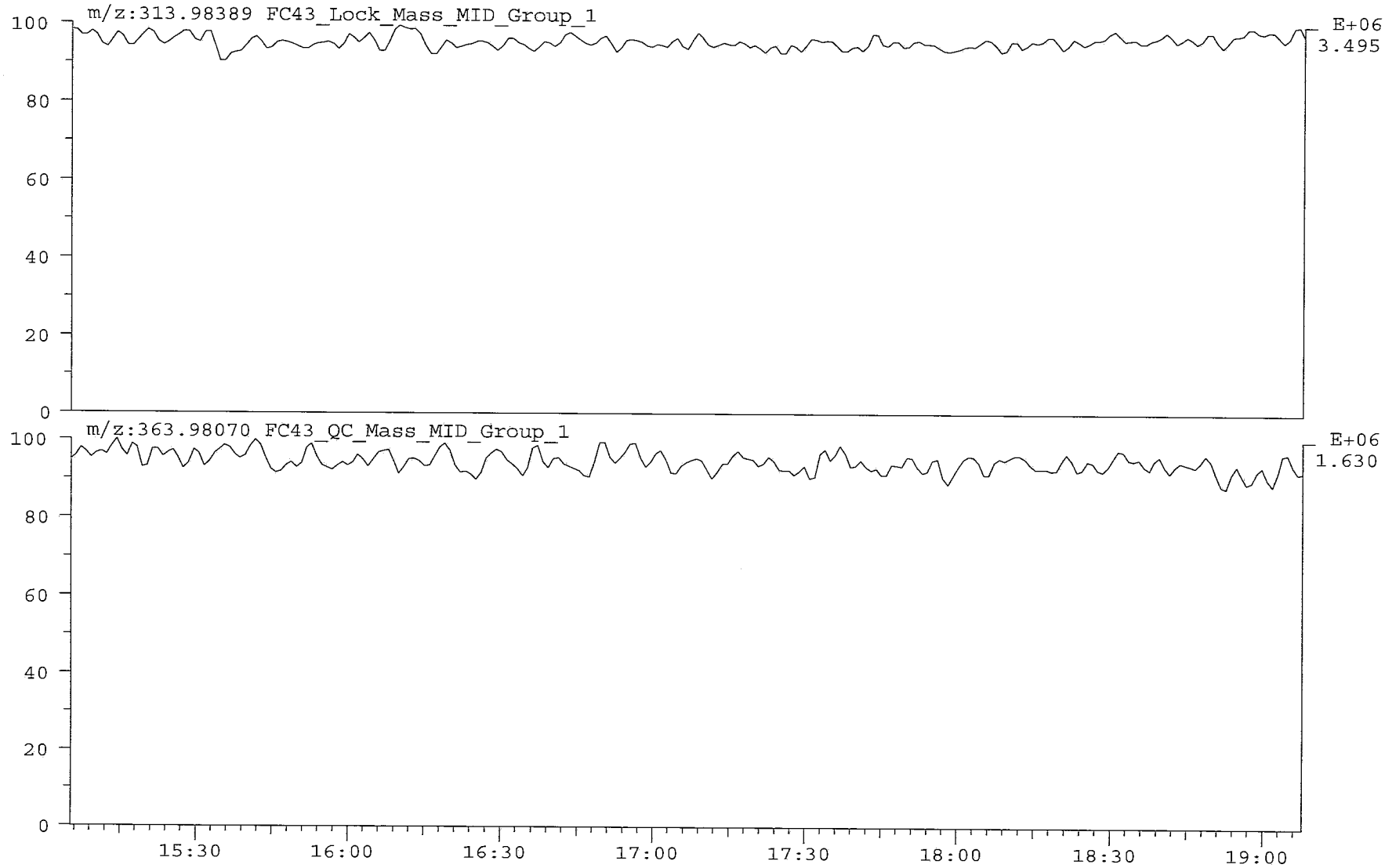
CHRO: d2160823s1 23-Aug-16 Elapse: 17:06.4 538
Samp: WO=4966:41 Meth=L1c Dil=1 Start : 00:44:49 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 VER
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 498 > 597 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



CHRO: d2160823s1 23-Aug-16 Elapse: 17:06.4 538
Samp: WO=4966:41 Meth=L1c Dil=1 Start : 00:44:49 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 VER
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 418 > 658 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



```
CHRO:  d2160823s1                          23-Aug-16  Elapse:  17:06.4      538
Samp:  WO=4966:41 Meth=L1c Dil=1                      Start :  00:44:49    1155
Comm:  Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode:  EI ESI + Q1MS UP LR                            Study :  DB-225 VER
Oper:  LKM                                            Inlet :  LC
Peak:  100.00  ppm     Label wndw:   418 > 658        Masses:  303 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3           Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Tue Aug 23 00:46:43 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 23-Aug-16 00:46:42

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160823004449

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	312.4834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	173.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0493	FVSRC	0.0419
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	628.0000
LENS_SYM	1.7500	LM	375.8364	LMII	500.0000
LMASS	312.4834	LKM	313.9834	MASS	312.4834
MDAC	3584035.7936	MRANGE	1241.7659	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-6.0000	RECURR	0.8987	RELEN	0.0000
RES	11531.0288	RPUSHER	-6.0440	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:        2.8e-005 mbar
Analyzer Penning:    9.4e-008 mbar
Pirani Analyse:      4.4e-003 mbar
Pirani Source:       4.1e-002 mbar
Pirani Inlet System: 4.9e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11531.

Amplifier Offset: 88.


*** File closed Tue Aug 23 01:14:14 2016
  ***
```

QUAN: d2160823s1.q0 Entries: 24

Data file(s) used
File: d2160823s1 23-Aug-16
Samp: WO=4966:41 Meth=L1c Dil=1 Start : 00:44:49 1155
Comm: Inst=d12c/154214 Batch=20160823s1 Ccal=D2160816S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 VER
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	15:38	844128.	109959.	15:31	15:53	46.	1	1.0	AVV
321.8775	15:38	1081499.	138342.	15:30	15:53	59.	1	1.0	AVV
319.8805	15:26	463677.	95612.	15:17	15:31	46.	2	5.0	ABV
319.8805	15:38	844128.	109959.	15:31	15:53	46.	2	5.0	AVV
319.8805	16:45	125109.	39266.	16:41	16:47	46.	2	5.0	ABB
321.8775	15:26	591044.	123761.	15:11	15:30	59.	2	5.0	AVV
321.8775	15:38	1081499.	138342.	15:30	15:53	59.	2	5.0	AVV
321.8775	16:36	1106.	422.	16:33	16:38	59.	2	5.0	ABB
321.8775	16:45	170822.	52393.	16:41	16:47	59.	2	5.0	ABB
331.9202	15:25	4212859.	884804.	15:14	15:31	40.	2	5.0	ABV
331.9202	15:38	4255316.	878821.	15:31	15:51	40.	2	5.0	AVV
333.9171	15:24	5175497.	1064670.	15:15	15:31	44.	2	5.0	ABV
333.9171	15:38	5279396.	1094734.	15:31	15:53	44.	2	5.0	AVV
327.8683	15:26	1051953.	216092.	15:15	15:33	31.	1	1.0	ABV
327.8683	15:26	1051953.	216092.	15:15	15:33	31.	2	5.0	ABV
303.8864	17:04	618147.	109392.	16:55	17:19	45.	1	1.0	AVV
305.8834	17:04	778587.	137305.	16:56	17:19	55.	1	1.0	AVV
303.8864	16:52	3002.	466.	16:37	16:55	45.	2	5.0	AVV
303.8864	17:04	618147.	109392.	16:55	17:19	45.	2	5.0	AVV
303.8864	17:23	1405.	385.	17:20	17:26	45.	2	5.0	AVB
305.8834	16:52	2666.	442.	16:43	16:56	55.	2	5.0	ABV
305.8834	17:04	778587.	137305.	16:56	17:19	55.	2	5.0	AVV
315.9261	17:03	6229673.	1132357.	16:48	17:18	107.	2	5.0	AVV
317.9230	17:03	7788784.	1406205.	16:53	17:15	66.	2	5.0	ABV

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 0023/8290 - DB-225

CCAL ID: 90052 - D2160823S2
CCAL Filename: d2160823s2
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160823s2/d2160823s2.d
CCAL Date/Time: 08/23/16 06:36

ICAL Date: 04/09/15
Method: X8c - 0023/8290_Conf
Instrument: D12C
Column SN: 154214
Column Desc: DB-225 30m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.7	1.149	1.114	-3.0	20.0	True
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	9.5	1.046	0.995	-4.9	20.0	True
37Cl4-2,3,7,8-TCDD	M		-	9.9	1.149	1.142	-0.5	30.0	
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	100	1.008	1.007	-0.1	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	98	1.511	1.474	-2.4	30.0	True

Qcd L 8-23-16

K 8/23/16

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 0023/8290 - DB-225

CCAL ID: 90052 - D2160823S2
CCAL Filename: d2160823s2
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160823s2/d2160823s2.d
CCAL Date/Time: 08/23/16 06:36

ICAL Date: 04/09/15
Method: X8c - 0023/8290_Conf
Instrument: D12C
Column SN: 154214
Column Desc: DB-225 30m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	16:05	15:25	-40	1.001	1.001	-	
2,3,7,8-TCDF	17:51	17:04	-47	1.002	1.002	-	
37Cl4-2,3,7,8-TCDD	16:05	15:25	-40	1.001	1.001	-	
13C-2,3,7,8-TCDD	16:04	15:24	-40	0.983	0.986	-	
13C-2,3,7,8-TCDF	17:49	17:02	-47	1.090	1.091	-	

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 8290A - DB-225

CCAL ID: 90054 - D2160823S2
CCAL Filename: d2160823s2
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160823s2/d2160823s2.d
CCAL Date/Time: 08/23/16 06:36

ICAL Date: 04/09/15
Method: 9Ac - DX8290A Conf
Instrument: D12C
Column SN: 154214
Column Desc: DB-225 30m x 0.32mm ID x 0.25um

Analytes	m/z's Forming Ratio	Ion Abund Ratio	QC Limits	Calc Conc (ng/mL)	ICAL RF	CCAL RF	%D	QC Limit	Valid?
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89	9.7	1.149	1.114	-3.0	20.0	True
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	9.5	1.046	0.995	-4.9	20.0	True
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	100	1.008	1.007	-0.1	30.0	True
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	98	1.511	1.474	-2.4	30.0	True

K 8/23/16

TestAmerica
Knoxville

IsoCalc Continuing Calibration Report

TCDD/F by EPA Method 8290A - DB-225

CCAL ID: 90054 - D2160823S2
CCAL Filename: d2160823s2
CCAL Sample ID: 4966:41
CCAL Result Dir: /20160823s2/d2160823s2.d
CCAL Date/Time: 08/23/16 06:36

ICAL Date: 04/09/15
Method: 9Ac - DX8290A Conf
Instrument: D12C
Column SN: 154214
Column Desc: DB-225 30m x 0.32mm ID x 0.25um

Analytes	ICAL RT	CCAL RT	RT Diff	ICAL RRT	CCAL RRT	RRT QC Limit	Valid?
2,3,7,8-TCDD	16:05	15:25	-40	1.001	1.001	-	
2,3,7,8-TCDF	17:51	17:04	-47	1.002	1.002	-	
13C-2,3,7,8-TCDD	16:04	15:24	-40	0.983	0.986	-	
13C-2,3,7,8-TCDF	17:49	17:02	-47	1.090	1.091	-	

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160823s2/d2160823s2.d	Prep Date		SDG No	
Analysis ID	180554	Prep Exp Date		Date Received	
Analysis Date	8/23/2016	Matrix	UNKNOWN	Date Sampled	
Analysis Time	06:36	Initial Wt/Vol		Lims Test Code	
Anal Exp Date		Extract Vol		Method	DX1613_Conf
Instrument	D12C	Dil Factor	1.00	Code	L1c
Analyst	LKM				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (ng/mL)		DL (ng/mL)
2,3,7,8-TCDD	15:25	1099186	233129	1.149	10.00	9.698040	96.98	9.698040	E	0.00995
2,3,7,8-TCDF	17:04	1436031	253812	1.046	10.00	9.510318	95.10	9.510318	E	0.00683
37Cl4-2,3,7,8-TCDD	15:25	1127052	239113	1.157	10.00	9.940948	99.41	9.940948	E	0.00523
13C-2,3,7,8-TCDD	15:24	9866320	2100708	1.008	100.0	99.935993	99.94	99.935993		0.00711
13C-2,3,7,8-TCDF	17:02	14439617	2556347	1.511	100.0	97.573269	97.57	97.573269		0.0129
13C-1,2,3,4-TCDD	15:37	9796355	2023425	1.000	100.0	100.000000	100.00	100.000000		0.00717

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

TCDD/F by EPA Method 1613B - DB-225

Workorder	4966:41	Prep Batch		Lot No	
Data File	/20160823s2/d2160823s2	Prep Date		SDG No	
Analysis ID	180554	Prep Exp Date		Date Received	
Analysis Date	08/23/16 06:36	Matrix	UNKNOWN	Date Sampled	
Anal Exp Date		Initial Wt/Vol		Lims Test Code	
Instrument	D12C	Extract Vol		Method	DX1613_Conf
Analyst	LKM	Diluton Factor	1.00	Code	L1c

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	93	90	37	36	1.03 *	/	
	Unidentified	16:40	00:00	0	1443	797	267	326	1.81 *	ABV/ABB	R
	2,3,7,8-TCDF	17:04	17:04	0	634498	801533	111243	142569	0.79	ABV/AVV	
	Unidentified	17:20	00:00	0	2234	2050	244	405	1.09 *	AVV/AVV	RT
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	193	203	77	81	0.95 *	/	
	13C-2,3,7,8-TCDF	17:02	17:02	0	6348028	8091589	1127383	1428964	0.78	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	150	90	60	36	1.67 *	/	
	2,3,7,8-TCDD	15:25	15:24	1	488612	610574	104613	128516	0.80	ABV/ABV	
	Unidentified	15:38	00:00	0	860623	1113340	104988	140330	0.77	AVV/AVV	
	Unidentified	16:44	00:00	0	28410	42244	14039	18856	0.67	ABB/ABB	
328					327.8847		327.8847				
	Noise	00:00	00:00	0	123		49				
	37Cl4-2,3,7,8-TCDD	15:25	15:24	1	1127052		239113			ABV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	63	83	25	33	0.76	/	
	13C-2,3,7,8-TCDD	15:24	15:23	1	4413235	5453085	935669	1165039	0.81	ABV/ABV	
	13C-1,2,3,4-TCDD	15:37	15:38	-1	4419617	5376738	924007	1099418	0.82	AVV/AVV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

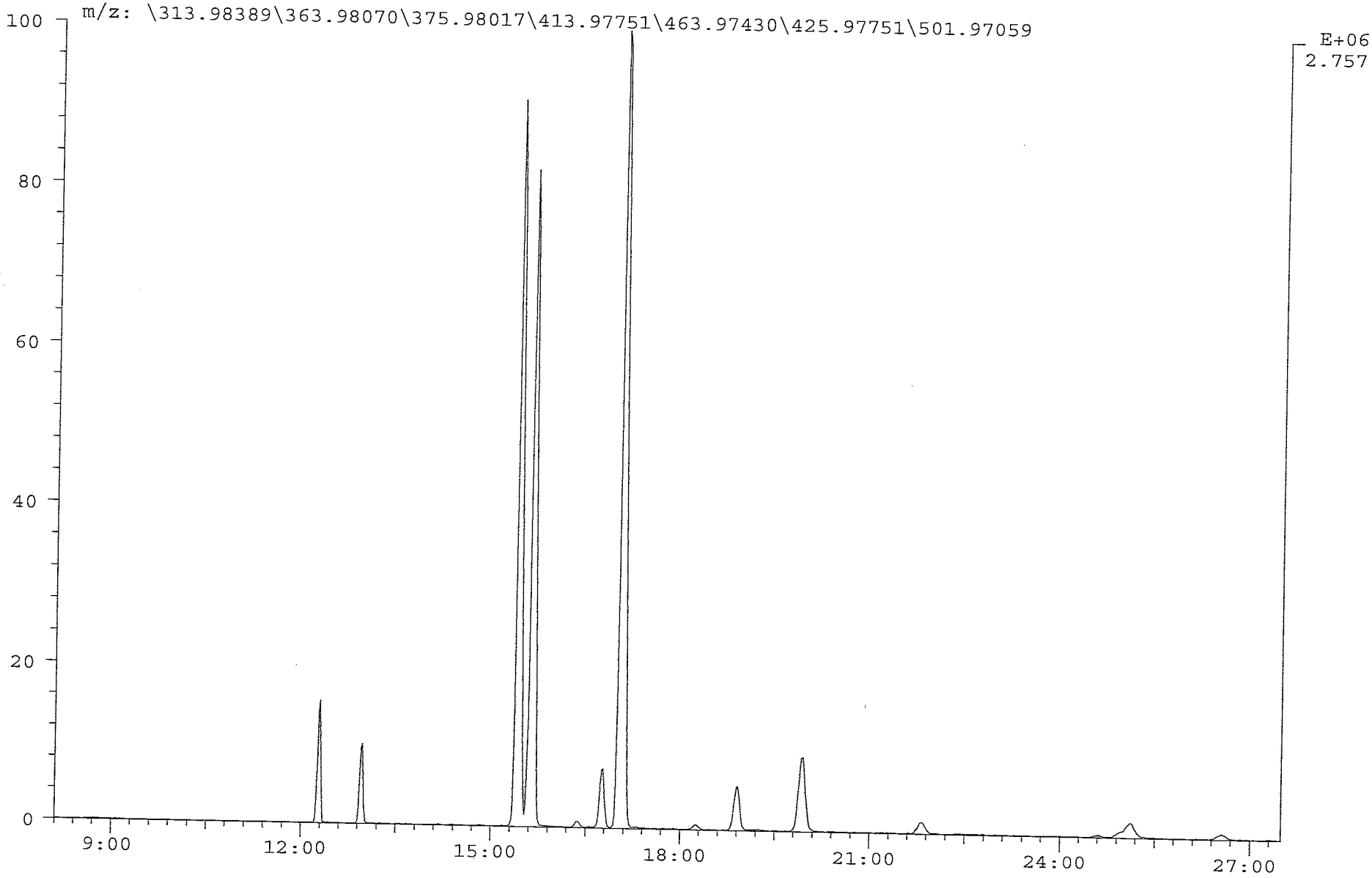
Int. | Calc. | n 8/23/14
Qid n 8-23-16

CHRO: d2160823s2
Samp: WO=4966:41 Meth=L1c Dil=1
Comm: Inst=d12c/154214 Batch=20160823s2 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 0
Disp: Height Area

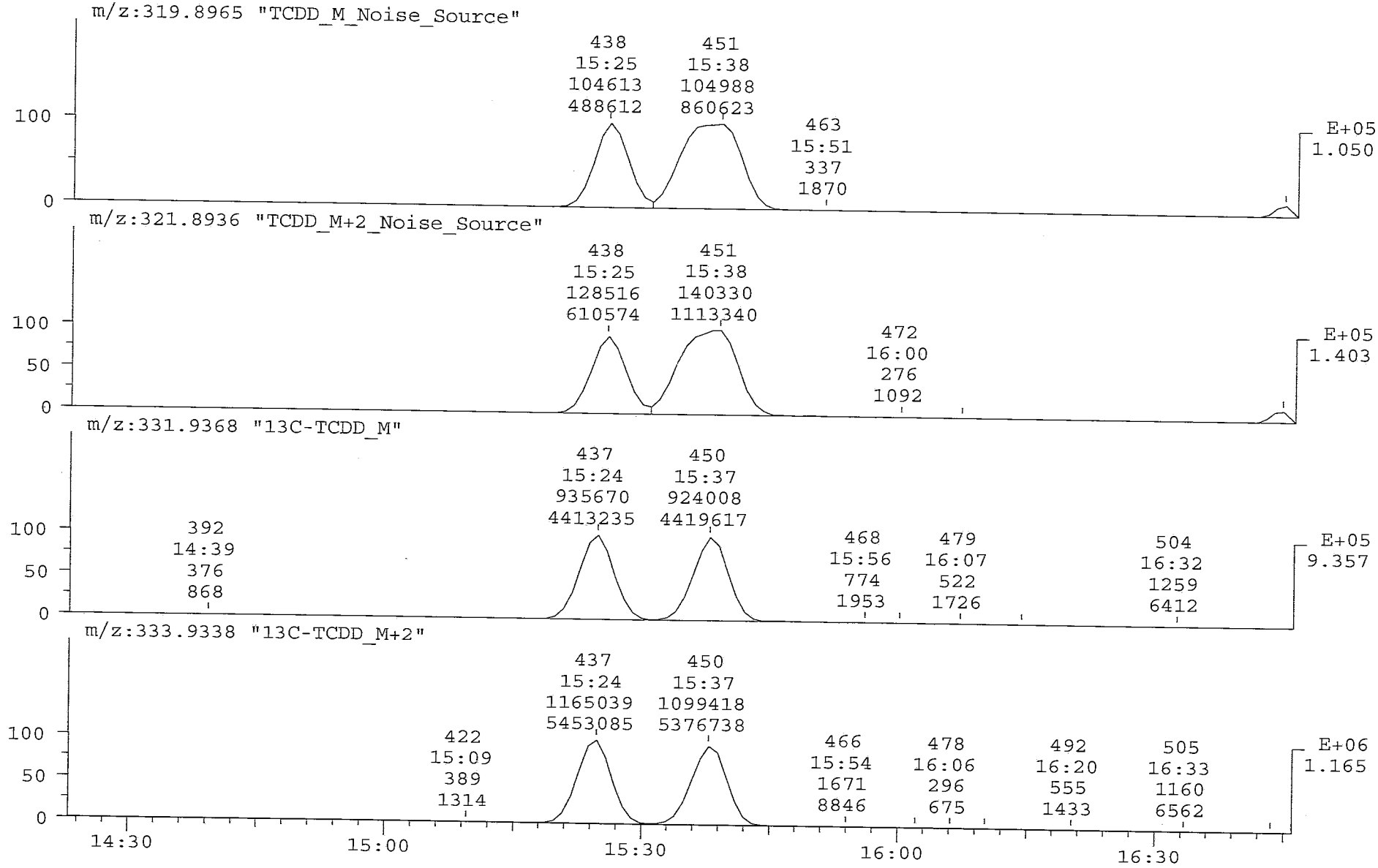
Label wndw: 3 > 1154
Baseline : 100, 3

23-Aug-16

Elapse: 17:04.8 536
Start : 06:36:57 1155
Study : DB-225 VER
Inlet : LC
Masses: 303 > 376
Label : 0, 0.0



CHRO: d2160823s2 23-Aug-16 Elapse: 15:33.8 446
Samp: WO=4966:41 Meth=L1c Dil=1 Start : 06:36:57 1155
Comm: Inst=d12c/154214 Batch=20160823s2 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 VER
Oper: LKM Inlet : LC
Peak: 100.00 ppm Label wndw: 376 > 517 Masses: 303 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

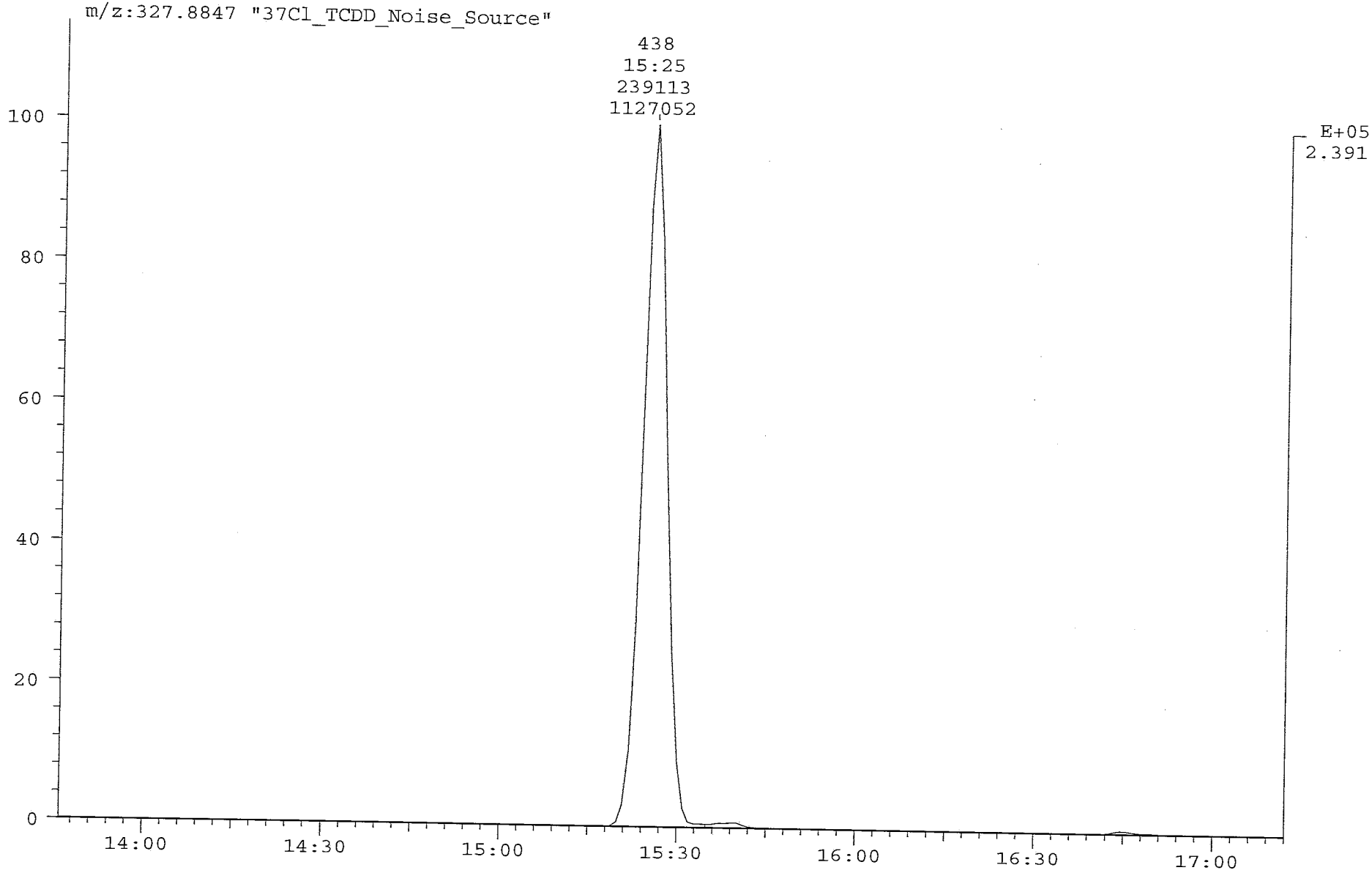


CHRO: d2160823s2
Samp: WO=4966:41 Meth=L1c Dil=1
Comm: Inst=d12c/154214 Batch=20160823s2 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 339 > 543
Baseline : 100, 3

23-Aug-16

Elapse: 15:25.7 438
Start : 06:36:57 1155
Study : DB-225 VER
Inlet : LC
Masses: 303 > 376
Label : -2, 5.0

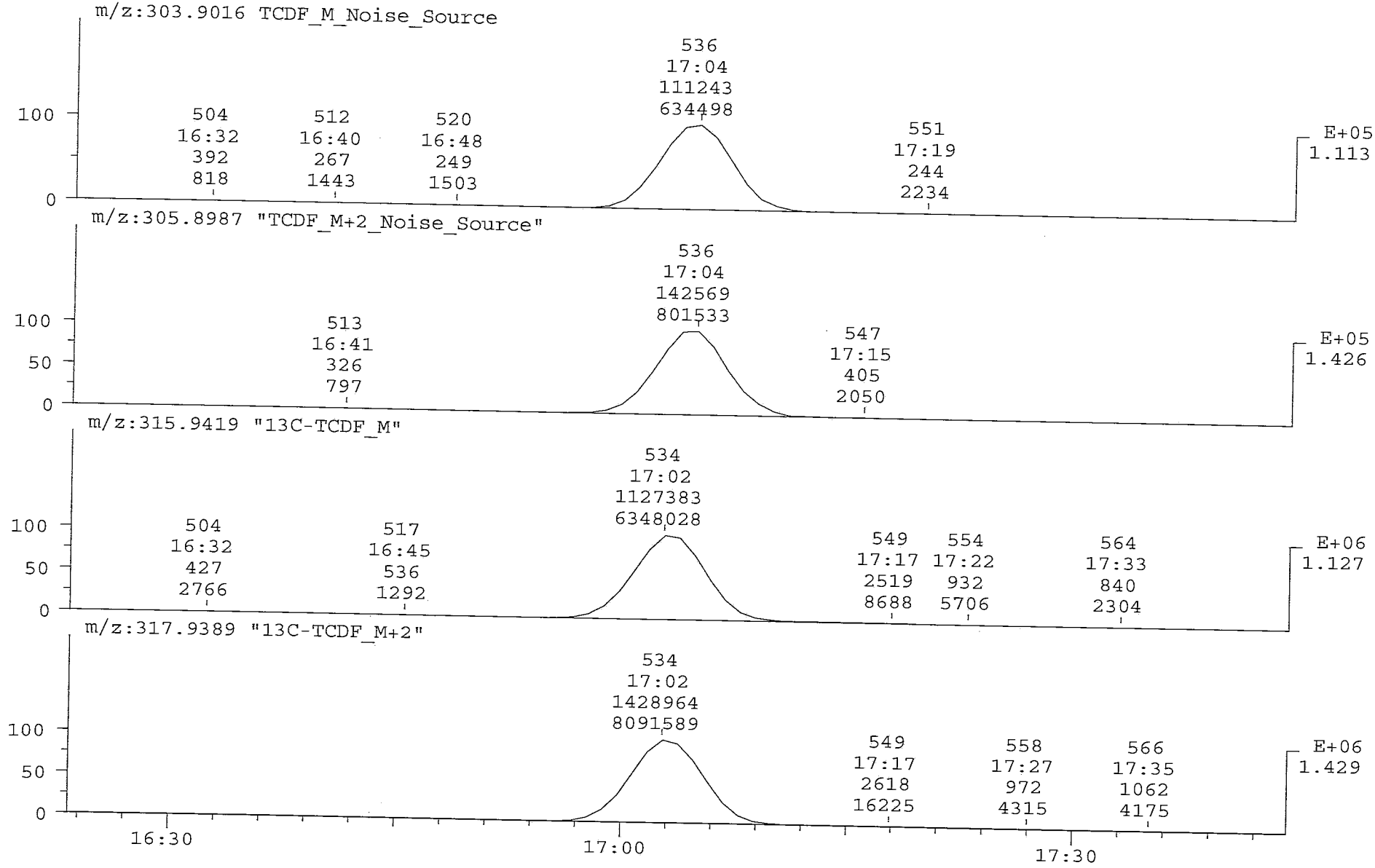


CHRO: d2160823s2
Samp: WO=4966:41 Meth=L1c Dil=1
Comm: Inst=d12c/154214 Batch=20160823s2 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 495 > 575
Baseline : 100, 3

23-Aug-16

Elapse: 17:03.8 535
Start : 06:36:57 1155
Study : DB-225 VER
Inlet : LC
Masses: 303 > 376
Label : -2, 5.0

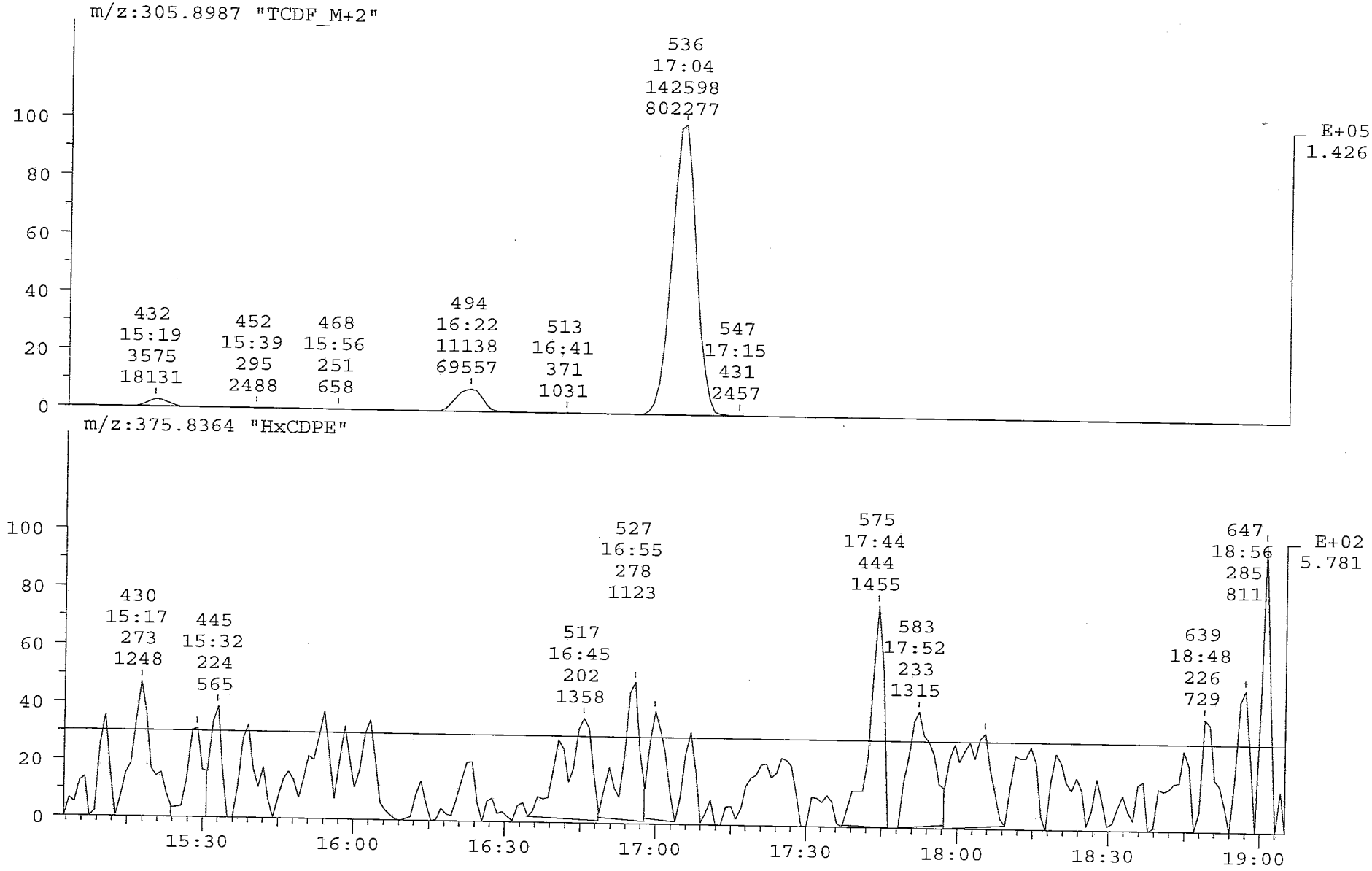


CHRO: d2160823s2
Samp: WO=4966:41 Meth=L1c Dil=1
Comm: Inst=d12c/154214 Batch=20160823s2 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 415 > 655
Baseline : 100, 3

23-Aug-16

Elapse: 17:03.8 535
Start : 06:36:57 1155
Study : DB-225 VER
Inlet : LC
Masses: 303 > 376
Label : -2, 5.0

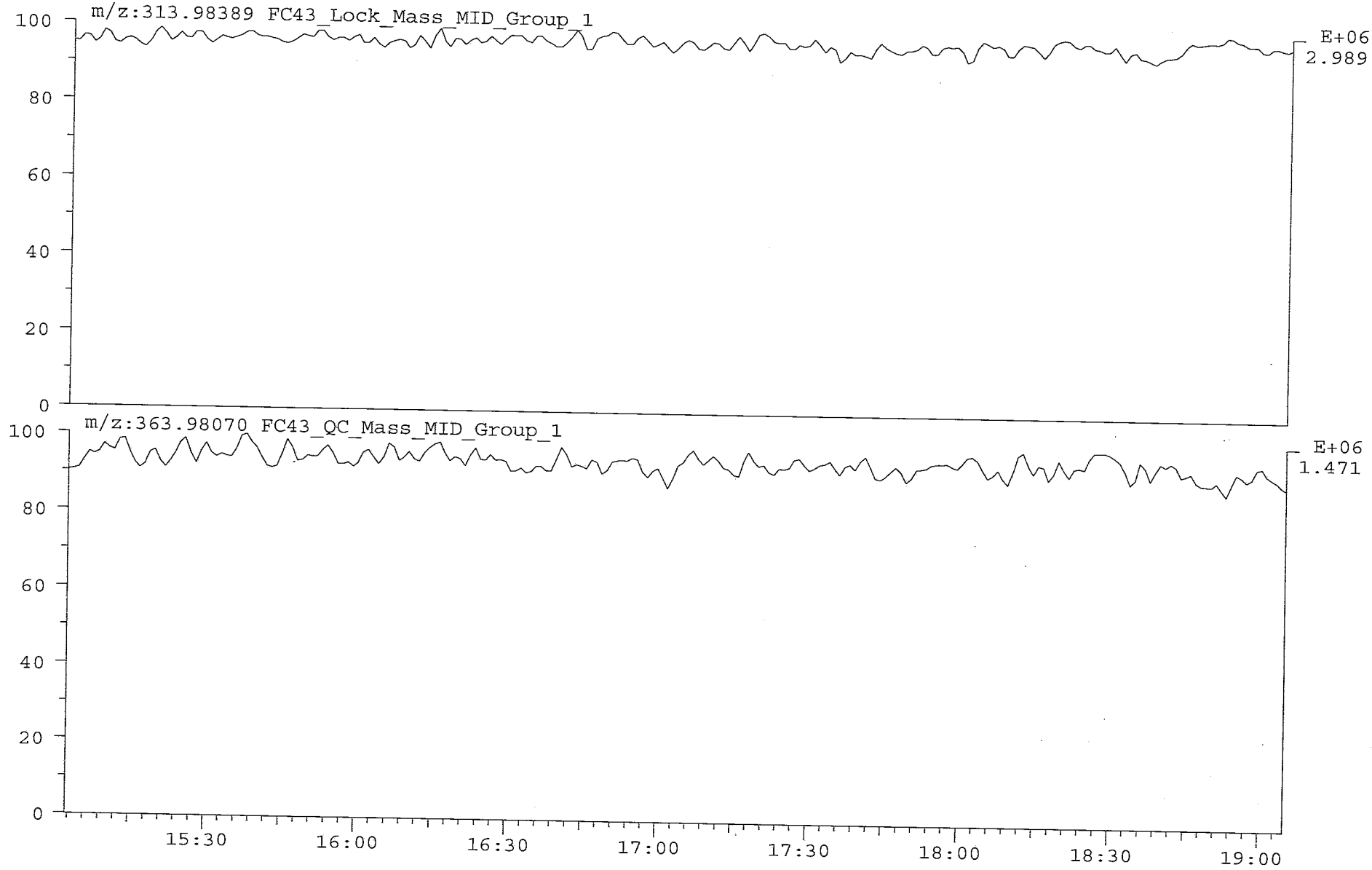


CHRO: d2160823s2
Samp: WO=4966:41 Meth=L1c Dil=1
Comm: Inst=d12c/154214 Batch=20160823s2 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR
Oper: LKM
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 415 > 655
Baseline : 100, 3

23-Aug-16

Elapse: 17:03.8 535
Start : 06:36:57 1155
Study : DB-225 VER
Inlet : LC
Masses: 303 > 376
Label : 0, 0.0



*** file opened Tue Aug 23 06:39:49 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 23-Aug-16 06:39:48

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160823022940

MID procedure: 5W_DB225_FC43_SINGLEGC

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	8:00 min	19:30 min	27:30 min	1.00 sec

Mid Masses:
Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	124
305.8987		1	1	124
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	124
321.8936		1	1	124
327.8847		1	1	124
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	124

MID Window terminated after 27.500000 minutes
MID Window end time was 27.500000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	306.9834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	173.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.7000
FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0496	FVSRC	0.0419
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000

ISTC	260.0000	ISTS	260.0000	LENS_POT	628.0000
LENS_SYM	1.7500	LM	375.8364	LMII	500.0000
LMASS	306.9834	LKM	313.9834	MASS	306.9834
MDAC	3538723.3056	MRANGE	1241.7659	NSAM	200.0000
NSCAN	1160.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	14.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-6.0000	RECURR	0.8987	RELEN	0.0000
RES	11648.9090	RPUSHER	-5.9414	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.1270	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	306.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

Source Gauge: 2.8e-005 mbar
Analyzer Penning: 9.6e-008 mbar
Pirani Analyse: 4.4e-003 mbar
Pirani Source: 4.2e-002 mbar
Pirani Inlet System: 5.0e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11648.

Amplifier Offset: 88.

*** File closed Tue Aug 23 07:07:20 2016
***

QUAN: d2160823s2.q0 Entries: 27

Data file(s) used
File: d2160823s2 23-Aug-16
Samp: WO=4966:41 Meth=L1c Dil=1 Start : 06:36:57 1155
Comm: Inst=d12c/154214 Batch=20160823s2 Ccal=D2160823S1
Mode: EI ESI + Q1MS UP LR Study : DB-225 VER
Oper: LKM Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	15:25	488612.	104613.	15:17	15:30	60.	2	5.0	ABV
319.8805	15:38	860623.	104988.	15:30	15:48	60.	2	5.0	AVV
319.8805	15:51	1870.	337.	15:48	16:00	60.	2	5.0	AVB
319.8805	16:44	28410.	14039.	16:41	16:45	60.	2	5.0	ABB
321.8775	15:25	610574.	128516.	15:16	15:30	36.	2	5.0	ABV
321.8775	15:38	1113340.	140330.	15:30	15:54	36.	2	5.0	AVV
321.8775	16:00	1092.	276.	15:57	16:03	36.	2	5.0	AVV
321.8775	16:07	2173.	214.	16:03	16:22	36.	2	5.0	AVV
321.8775	16:44	42244.	18856.	16:41	16:45	36.	2	5.0	ABB
331.9202	15:24	4413235.	935669.	15:13	15:30	25.	2	5.0	ABV
331.9202	15:37	4419617.	924007.	15:30	15:53	25.	2	5.0	AVV
333.9171	15:24	5453085.	1165039.	15:15	15:30	33.	2	5.0	ABV
333.9171	15:37	5376738.	1099418.	15:30	15:51	33.	2	5.0	AVV
327.8683	15:25	1127052.	239113.	15:15	15:34	49.	1	1.0	ABV
327.8683	15:25	1127052.	239113.	15:15	15:34	49.	2	5.0	ABV
303.8864	17:04	634498.	111243.	16:54	17:17	37.	1	1.0	ABV
305.8834	17:04	802650.	142569.	16:50	17:20	36.	1	1.0	AVV
303.8864	16:32	818.	392.	16:30	16:34	37.	2	5.0	ABB
303.8864	16:40	1443.	267.	16:34	16:43	37.	2	5.0	ABV
303.8864	16:48	1503.	249.	16:43	16:54	37.	2	5.0	AVB
303.8864	17:04	634498.	111243.	16:54	17:17	37.	2	5.0	ABV
303.8864	17:20	2234.	244.	17:17	17:35	37.	2	5.0	AVV
305.8834	16:41	797.	326.	16:38	16:43	36.	2	5.0	ABB
305.8834	17:04	801533.	142569.	16:49	17:13	36.	2	5.0	AVV
305.8834	17:15	2050.	405.	17:13	17:31	36.	2	5.0	AVV
315.9261	17:02	6348028.	1127383.	16:51	17:15	77.	2	5.0	ABV
317.9230	17:02	8091589.	1428964.	16:47	17:12	81.	2	5.0	ABV

Raw QC Data

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6G290000 - 032B	**Work Order #....:**	M812E1AA	**Matrix....:**	WATER
Dilution Factor:	1				
Prep Date....:	07/31/16	**Analysis Date....:**	08/03/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	1000 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		10	0.38	pg/L
1,2,3,7,8-PeCDD	ND		50	0.30	pg/L
1,2,3,4,7,8-HxCDD	ND		50	0.75	pg/L
1,2,3,6,7,8-HxCDD	ND		50	0.77	pg/L
1,2,3,7,8,9-HxCDD	ND		50	0.72	pg/L
1,2,3,4,6,7,8-HpCDD	ND		50	0.90	pg/L
OCDD	**5.6**	**J**	**100**	**0.33**	**pg/L**
2,3,7,8-TCDF	ND		10	0.59	pg/L
1,2,3,7,8-PeCDF	ND		50	0.45	pg/L
2,3,4,7,8-PeCDF	ND		50	0.41	pg/L
1,2,3,4,7,8-HxCDF	ND		50	0.80	pg/L
1,2,3,6,7,8-HxCDF	ND		50	0.82	pg/L
2,3,4,6,7,8-HxCDF	ND		50	0.47	pg/L
1,2,3,7,8,9-HxCDF	ND		50	0.58	pg/L
1,2,3,4,6,7,8-HpCDF	**1.8**	**Q J**	**50**	**0.31**	**pg/L**
1,2,3,4,7,8,9-HpCDF	**2.4**	**J**	**50**	**0.29**	**pg/L**
OCDF	**3.7**	**Q J**	**100**	**0.28**	**pg/L**

INTERNAL STANDARDS	PERCENT RECOVERY		RECOVERY LIMITS
13C-2,3,7,8-TCDD	64		40 - 135
13C-1,2,3,7,8-PeCDD	54		40 - 135
13C-1,2,3,4,7,8-HxCDD	52		40 - 135
13C-1,2,3,6,7,8-HxCDD	51		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	69		40 - 135
13C-OCDD	59		40 - 135
13C-2,3,7,8-TCDF	62		40 - 135
13C-1,2,3,7,8-PeCDF	57		40 - 135
13C-2,3,4,7,8-PeCDF	58		40 - 135
13C-1,2,3,4,7,8-HxCDF	38	*	40 - 135
13C-1,2,3,6,7,8-HxCDF	37	*	40 - 135
13C-2,3,4,6,7,8-HxCDF	74		40 - 135
13C-1,2,3,7,8,9-HxCDF	73		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	44		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	63		40 - 135
13C-OCDF	49		40 - 135

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6G290000 - 032B	**Work Order #....:**	M812E1AA	**Matrix....:**	WATER
Dilution Factor:	1				
Prep Date....:	07/31/16	**Analysis Date....:**	08/03/16		
Prep Batch # ....:	6211032				
Initial Wgt/Vol :	1000 mL	**Instrument ID....:**	D2A	**Method:**	SW846 8290A
Analyst ID....:	Melissa A. Davidson				

QUALIFIERS

* Surrogate recovery is outside stated control limits.

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	H6G290408	**Work Order # ...:**	M812E1AC-LCS	**Matrix .....:**	WATER
LCS Lot-Sample#:	H6G290000 - 032				
Prep Date .....:	07/31/16	**Analysis Date ..:**	08/03/16		
Prep Batch # ...:	6211032				
Dilution Factor :	1				
Analyst ID.....:	Melissa A. Davidson	**Instrument ID..:**	D2A	**Method.....:**	SW846 8290A
Initial Wgt/Vol:	1000 mL				

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY		RECOVERY LIMITS
2,3,7,8-TCDD	**200**	**217**	**pg/L**	**108**		**(77 - 127)**
1,2,3,7,8-PeCDD	**1000**	**1040**	**pg/L**	**104**		**(78 - 128)**
1,2,3,4,7,8-HxCDD	**1000**	**1080**	**pg/L**	**108**		**(73 - 123)**
1,2,3,6,7,8-HxCDD	**1000**	**1030**	**pg/L**	**103**		**(72 - 127)**
1,2,3,7,8,9-HxCDD	**1000**	**1190**	**pg/L**	**119**		**(76 - 126)**
1,2,3,4,6,7,8-HpCDD	**1000**	**1050**	**pg/L**	**105**		**(73 - 123)**
OCDD	**2000**	**1840**	**pg/L**	**92**	**B**	**(75 - 125)**
2,3,7,8-TCDF	**200**	**225**	**pg/L**	**112**		**(74 - 124)**
1,2,3,7,8-PeCDF	**1000**	**969**	**pg/L**	**97**		**(74 - 124)**
2,3,4,7,8-PeCDF	**1000**	**1040**	**pg/L**	**104**		**(74 - 124)**
1,2,3,4,7,8-HxCDF	**1000**	**1060**	**pg/L**	**106**		**(75 - 125)**
1,2,3,6,7,8-HxCDF	**1000**	**1030**	**pg/L**	**103**		**(75 - 125)**
2,3,4,6,7,8-HxCDF	**1000**	**1050**	**pg/L**	**105**		**(76 - 126)**
1,2,3,7,8,9-HxCDF	**1000**	**1000**	**pg/L**	**100**		**(76 - 126)**
1,2,3,4,6,7,8-HpCDF	**1000**	**1060**	**pg/L**	**106**	**B**	**(71 - 121)**
1,2,3,4,7,8,9-HpCDF	**1000**	**983**	**pg/L**	**98**	**B**	**(73 - 123)**
OCDF	**2000**	**1910**	**pg/L**	**96**	**B**	**(68 - 132)**

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	69	(40 - 135)
13C-1,2,3,7,8-PeCDD	68	(40 - 135)
13C-1,2,3,4,7,8-HxCDD	72	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	70	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	87	(40 - 135)
13C-OCDD	81	(40 - 135)
13C-2,3,7,8-TCDF	72	(40 - 135)
13C-1,2,3,7,8-PeCDF	66	(40 - 135)
13C-2,3,4,7,8-PeCDF	67	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	66	(40 - 135)
13C-1,2,3,6,7,8-HxCDF	61	(40 - 135)
13C-2,3,4,6,7,8-HxCDF	86	(40 - 135)
13C-1,2,3,7,8,9-HxCDF	86	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	67	(40 - 135)
13C-1,2,3,4,7,8,9-HpCDF	88	(40 - 135)
13C-OCDF	73	(40 - 135)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Notes:

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M812E1AA	Prep Batch	6211032	Lot No	H6G290000-032
Data File	/20160803s2/d2tm812eb.d	Prep Date	07/31/16	SDG No	
Analysis ID	180498	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/3/2016	Matrix	AQUEOUS	Date Sampled	07/25/16
Analysis Time	14:40	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09Q&01
Anal Exp Date	09/14/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D2A	Dil Factor	1.00	Code	9Ao
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/L)		DL (pg/L)
2,3,7,8-TCDD				1.171				ND		0.382
Total TCDD		476	137	1.171		0.583567		0.583567	QJ	0.382
2,3,7,8-TCDF				1.090				ND		0.591
Total TCDF				1.090				ND		0.591
1,2,3,7,8-PeCDD				1.047				ND		0.304
Total PeCDD				1.047				ND		0.304
1,2,3,7,8-PeCDF				1.187				ND		0.454
2,3,4,7,8-PeCDF				1.105				ND		0.414
Total PeCDF		2201	523	1.146		2.385673		2.385673	QJ	0.431
1,2,3,4,7,8-HxCDD				1.140				ND		0.754
1,2,3,6,7,8-HxCDD				1.146				ND		0.767
1,2,3,7,8,9-HxCDD				1.210				ND		0.718
Total HxCDD				1.166				ND		0.746
1,2,3,4,7,8-HxCDF				1.364				ND		0.802
1,2,3,6,7,8-HxCDF				1.278				ND		0.819
2,3,4,6,7,8-HxCDF				1.267				ND		0.467
1,2,3,7,8,9-HxCDF				1.285				ND		0.584
Total HxCDF				1.299				ND		0.630
1,2,3,4,6,7,8-HpCDD				1.121				ND		0.904
Total HpCDD				1.121				ND		0.904
1,2,3,4,6,7,8-HpCDF	48:10	1263	338	1.497		1.795882		1.795882	QJ	0.306
1,2,3,4,7,8,9-HpCDF	50:31	1874	482	1.383		2.375513		2.375513	J	0.291
Total HpCDF				1.440		4.171395		4.171395	QJ	0.298
OCDD	54:03	2918	748	1.243		5.589737		5.589737	J	0.327
OCDF	54:10	2172	695	1.119		3.683028		3.683028	QJ	0.278
13C-2,3,7,8-TCDD	31:16	696570	67082	1.067	1000	640.519765	64.05	640.519765		5.09
13C-2,3,7,8-TCDF	29:15	1107432	124256	1.750	1000	621.024546	62.10	621.024546		0.789
13C-1,2,3,7,8-PeCDD	40:47	477266	109817	0.873	1000	536.399378	53.64	536.399378		0.264
13C-1,2,3,7,8-PeCDF	39:01	800398	153231	1.368	1000	573.956989	57.40	573.956989		1.26
13C-2,3,4,7,8-PeCDF	40:15	809891	180597	1.381	1000	575.654266	57.57	575.654266		1.25
13C-1,2,3,4,7,8-HxCDD	45:00	468859	119196	0.893	1000	522.585194	52.26	522.585194		1.79
13C-1,2,3,6,7,8-HxCDD	45:07	472102	116522	0.929	1000	505.547317	50.55	505.547317		1.72
13C-1,2,3,4,7,8-HxCDF	43:58	462335	134792	1.213	1000	379.195420	37.92	379.195420		1.51
13C-1,2,3,6,7,8-HxCDF	44:06	554199	140901	1.489	1000	370.494264	37.05	370.494264		1.23
13C-2,3,4,6,7,8-HxCDF	44:50	1005857	249229	1.346	1000	743.502577	74.35	743.502577		1.36
13C-1,2,3,7,8,9-HxCDF	45:46	885693	196377	1.210	1000	728.648925	72.86	728.648925		1.52
13C-1,2,3,4,6,7,8-HpCDD	49:50	567646	106062	0.823	1000	686.258016	68.63	686.258016		0.241
13C-1,2,3,4,6,7,8-HpCDF	48:09	469752	98282	1.069	1000	437.118780	43.71	437.118780		0.809
13C-1,2,3,4,7,8,9-HpCDF	50:29	570294	111665	0.904	1000	627.711524	62.77	627.711524		0.957
13C-OCDD	54:02	839828	209279	0.708	2000	1180.92375	59.05	1180.92375		0.766
13C-1,2,3,4-TCDD	30:46	2038105	217217	1.000	2000	2000.00000	100.00	2000.00000		5.43
13C-1,2,3,7,8,9-HxCDD	45:29	2009843	479659	1.000	2000	2000.00000	100.00	2000.00000		1.59
13C-OCDF	54:10	1053674	256837	1.072	2000	977.923747	48.90	977.923747		0.379

KL 8/19/16
KM 8-25-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M812E1AA	Prep Batch	6211032	Lot No	H6G290000-032
Data File	/20160803s2/d2tm812eb.180498	Prep Date	07/31/16	SDG No	
Analysis ID		Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/03/16 14:40	Matrix	AQUEOUS	Date Sampled	07/25/16
Anal Exp Date	09/14/16	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09Q&01
Instrument	D2A	Extract Vol	20 uL	Method	DX8290A
Analyst	MSD	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	15	65	6	26	0.23 *	/	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	75	75	30	30	1.00 *	/	
	13C-2,3,7,8-TCDF	29:15	29:15	0	504305	603127	57102	67154	0.84	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	15	15	6	6	1.00 *	/	
	Unidentified	32:12	00:00	0	286	190	68	69	1.51 *	ABB/MVV	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	410	180	164	72	2.28 *	/	
	13C-1,2,3,4-TCDD	30:46	30:46	0	912069	1126036	96586	120631	0.81	ABV/ABV	
	13C-2,3,7,8-TCDD	31:16	31:17	-1	303977	392593	30826	36256	0.77	AVV/ABV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	23	60	9	24	0.38 *	/	
	Unidentified	41:34	00:00	0	1032	1169	216	307	0.88 *	ABB/ABB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	143	45	57	18	3.17 *	/	
	13C-1,2,3,7,8-PeCDF	39:01	39:00	1	491266	309132	95208	58023	1.59	ABV/ABV	
	13C-2,3,4,7,8-PeCDF	40:15	40:15	0	492415	317476	111610	68987	1.55		M
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	23	13	9	5	1.80 *	/	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	15	10	6	4	1.50	/	
	13C-1,2,3,7,8-PeCDD	40:47	40:46	1	288804	188462	65906	43911	1.53	ABV/ABB	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	30	118	12	47	0.26 *	/	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	170	270	68	108	0.63 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:58	43:58	0	156153	306182	45526	89266	0.51	ABV/ABV	M
	13C-1,2,3,6,7,8-HxCDF	44:06	44:06	0	197751	356448	50427	90474	0.55	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:50	44:49	1	354098	651759	85676	163553	0.54		M
	13C-1,2,3,7,8,9-HxCDF	45:46	45:46	0	309652	576041	70450	125927	0.54	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	48	55	19	22	0.86 *	/	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	278	105	111	42	2.64 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:00	45:00	0	253411	215448	62449	56747	1.18	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:07	45:07	0	255082	217020	64103	52419	1.18	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	45:29	45:29	0	1111579	898264	260900	218759	1.24	ABV/ABV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	28	18	11	7	1.57 *	/	
	1,2,3,4,6,7,8-HpCDF	48:10	48:10	0	912	351	250	88	2.60 *	ABB/ABB	R
	1,2,3,4,7,8,9-HpCDF	50:31	50:29	2	1017	857	236	246	1.19	MBB/ABB	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M812E1AA	Prep Batch	6211032	Lot No	H6G290000-032
Data File	/20160803s2/d2tm812eb.	Prep Date	07/31/16	SDG No	
Analysis ID	180498	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/03/16 14:40	Matrix	AQUEOUS	Date Sampled	07/25/16
Anal Exp Date	09/14/16	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09Q&01
Instrument	D2A	Extract Vol	20 uL	Method	DX8290A
Analyst	MSD	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	70	138	28	55	0.51	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:09	48:09	0	144769	324983	32795	65487	0.45	ABV/ABV	
	13C-1,2,3,4,7,8,9-HpCDF	50:29	50:28	1	177663	392631	34741	76924	0.45	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	25	83	10	33	0.30 *	/	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	15	33	6	13	0.46 *	/	
	13C-1,2,3,4,6,7,8-HpCDD	49:50	49:50	0	294486	273160	56344	49718	1.08	ABV/ABV	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	15	25	6	10	0.60 *	/	
	OCDF	54:10	54:11	-1	931	1241	324	371	0.75 *	MBB/ABV	R
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	38	60	15	24	0.63 *	/	
	13C-OCDF	54:10	54:10	0	512159	541515	126554	130283	0.95	ABV/ABV	
	Unidentified	54:26	00:00	0	4748	1385	916	452	3.43 *	AVV/AVV	R
	Unidentified	54:35	00:00	0	1866	2679	508	533	0.70 *	AVB/AVB	R
	Unidentified	54:42	00:00	0	691	719	328	312	0.96	ABB/ABB	
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	13	30	5	12	0.42 *	/	
	OCDD	54:03	54:03	0	1360	1558	397	351	0.87	ABB/ABB	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	45	85	18	34	0.53 *	/	
	13C-OCDD	54:02	54:02	0	385746	454082	95108	114171	0.85	ABV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d2tm8116b M812E1AA 9A0
Samp: WO=~~m81161aa~~ Meth=~~IN2o~~ Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 0
Disp: Height Area

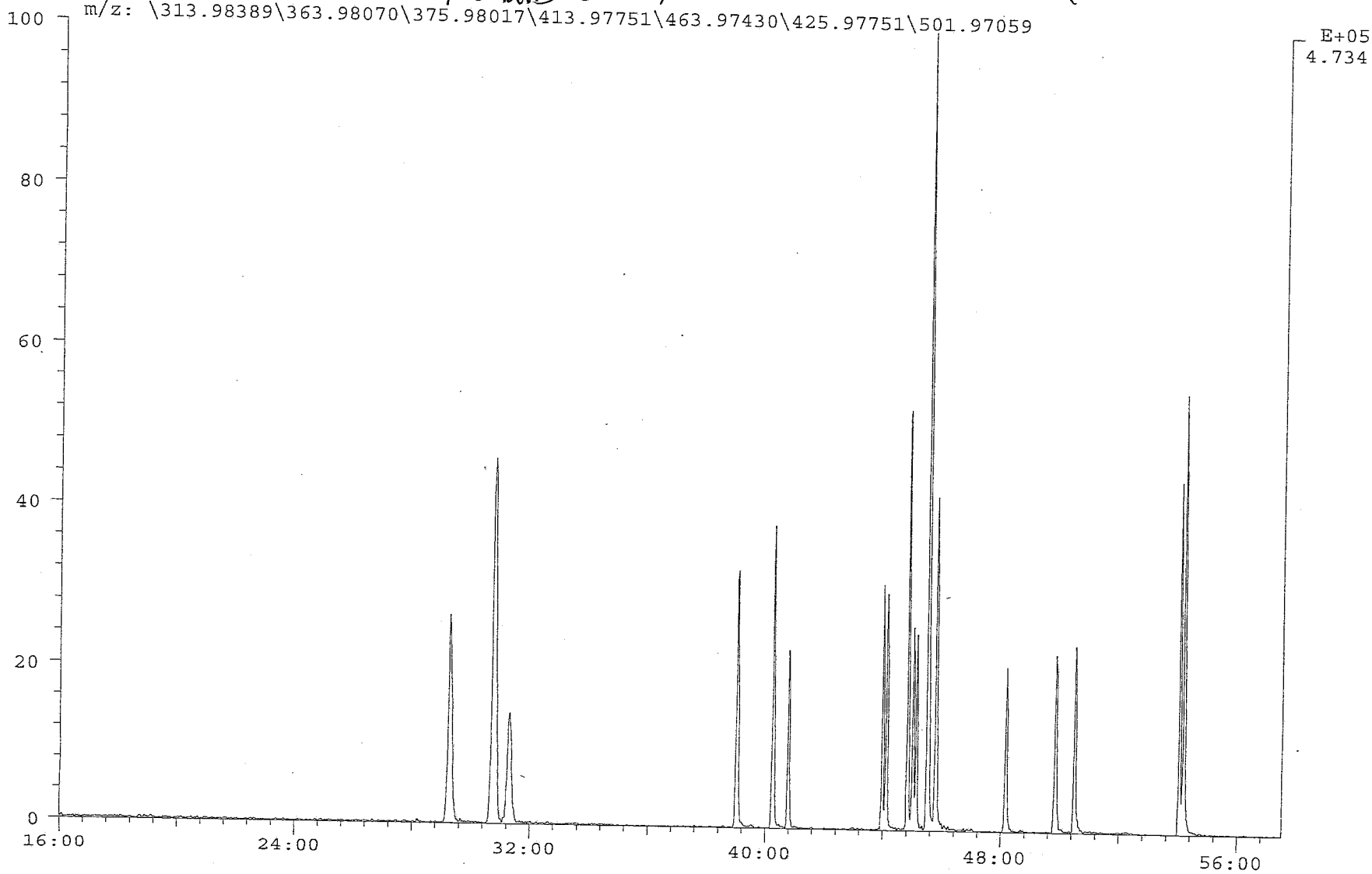
Label wndw: 238 > 2678
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : 0, 0.0

Jut MID 8.3.16
Calc. la 8/19/16
QC Rev KM 8-25-14

X2 MID 8.3.16

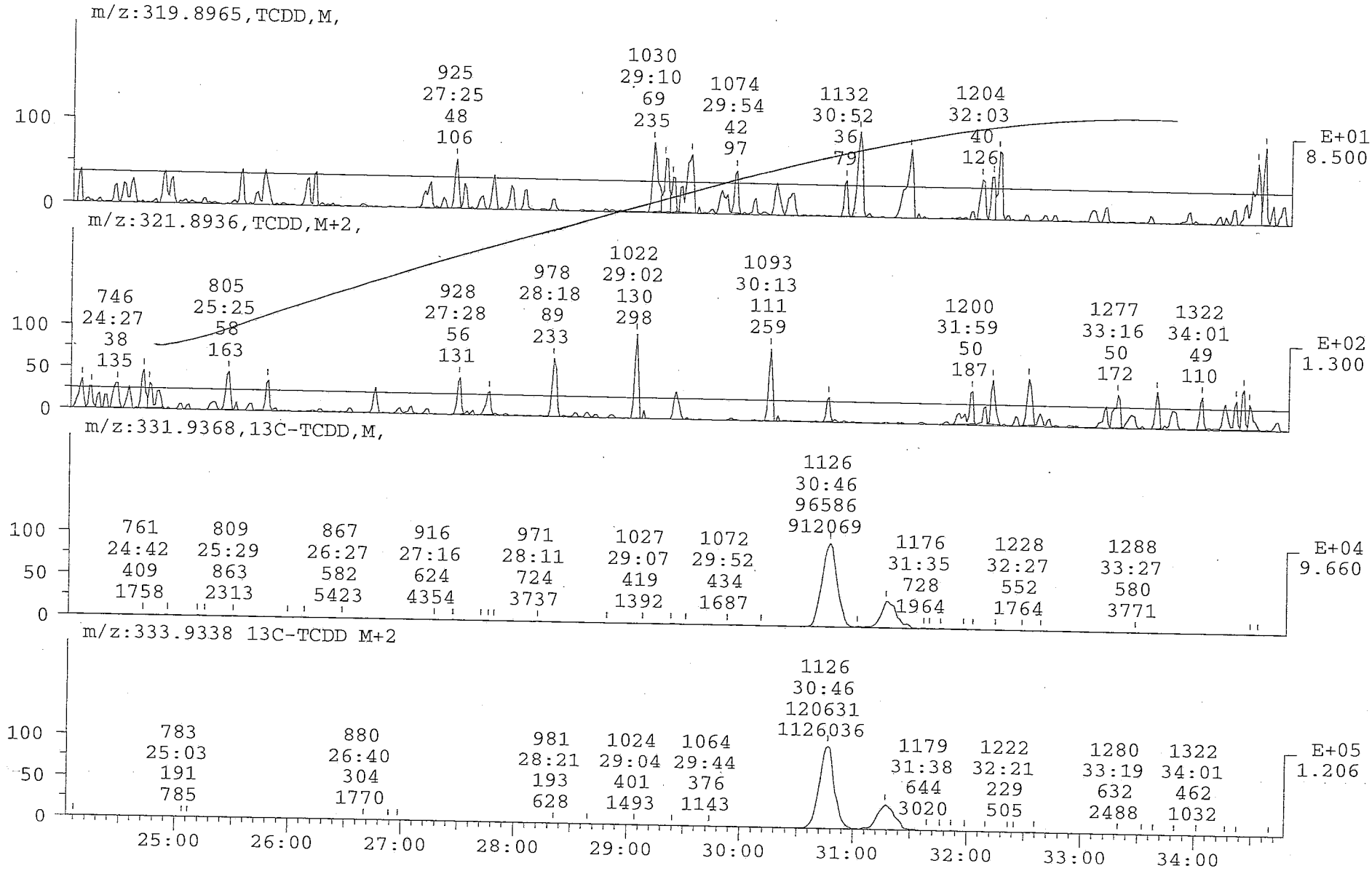


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

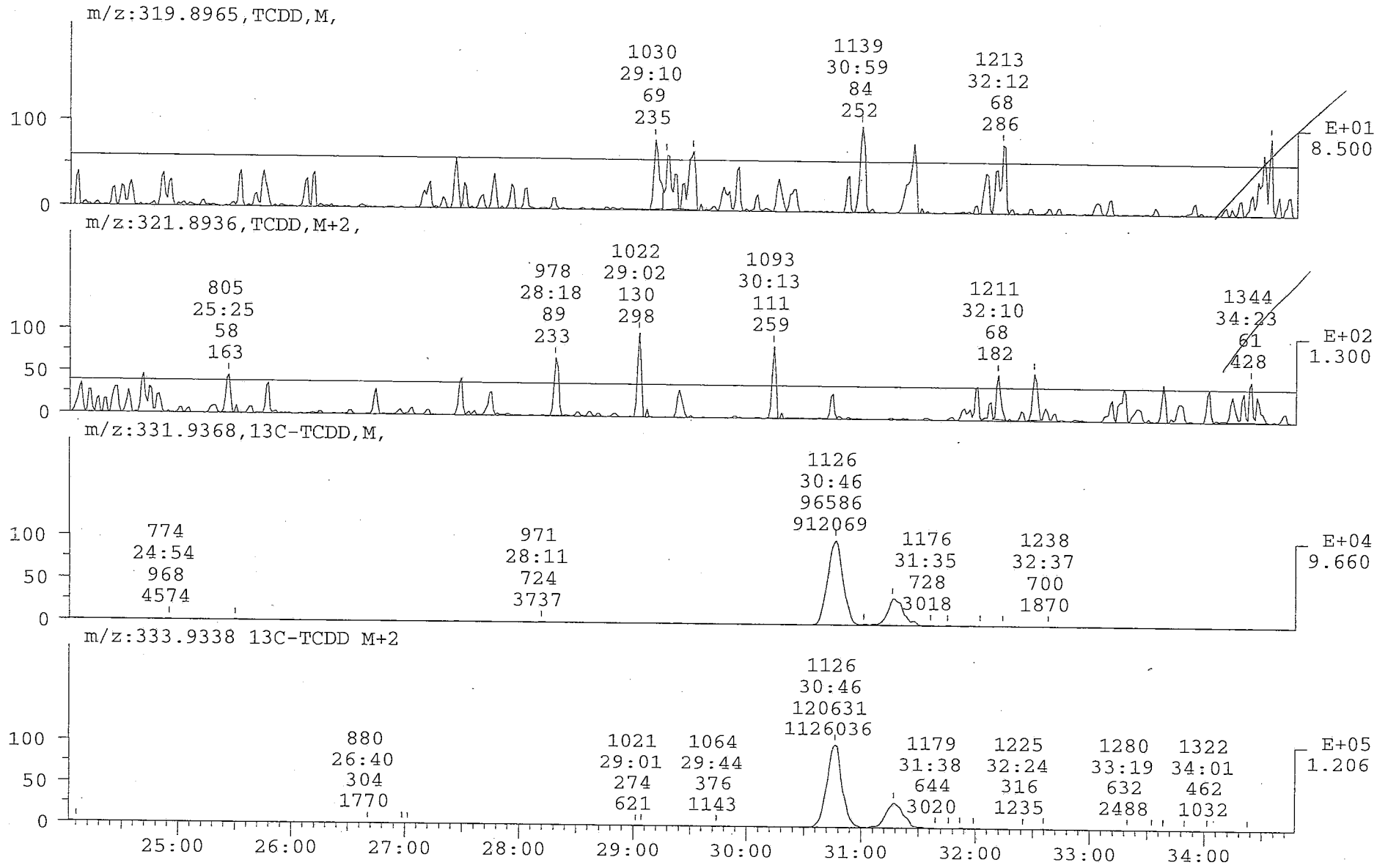
Label wndw: 721 > 1368
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116b 03-Aug-16 Elapse: 54:09 2484
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 721 > 1368 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area

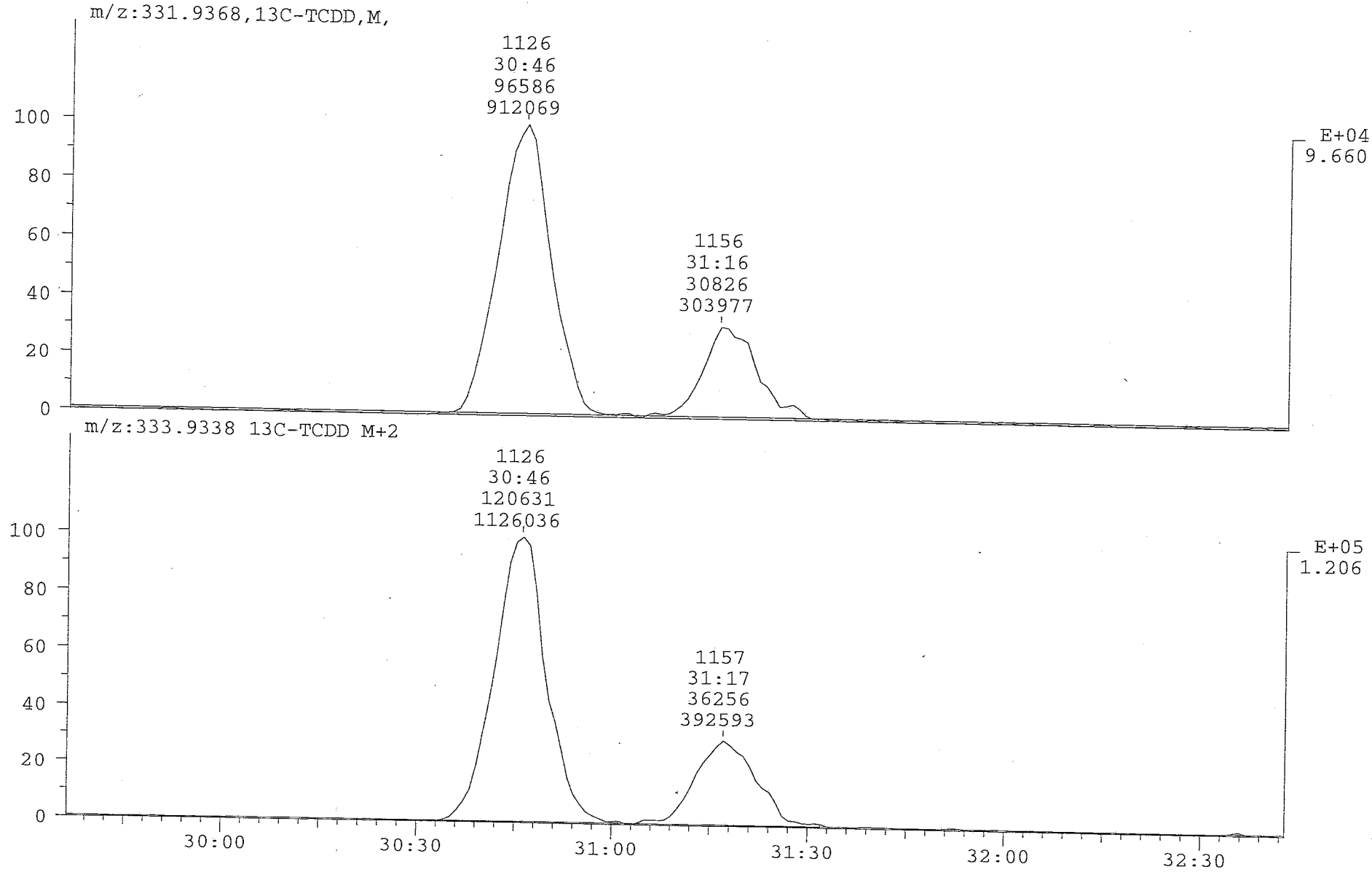


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1056 > 1243
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

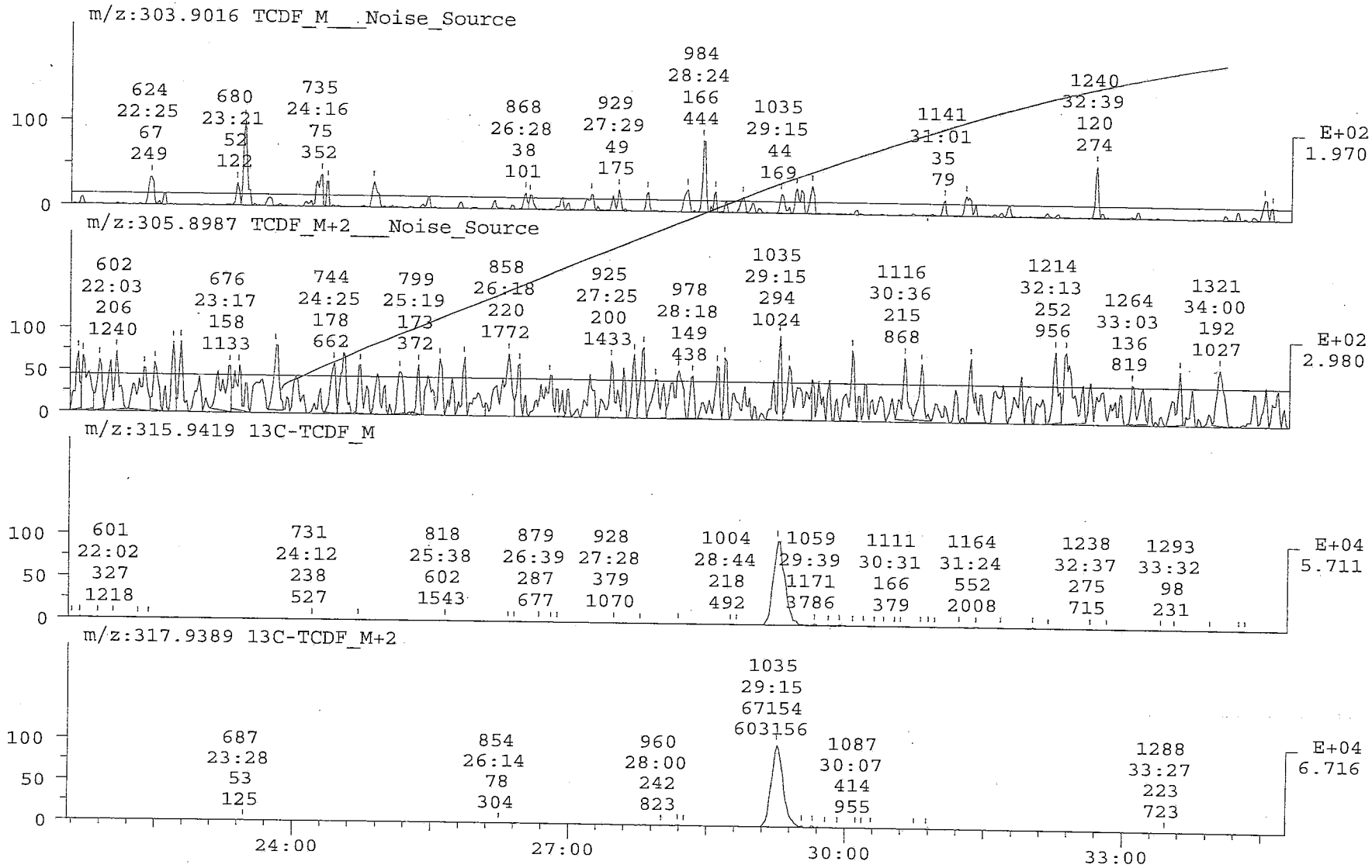


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

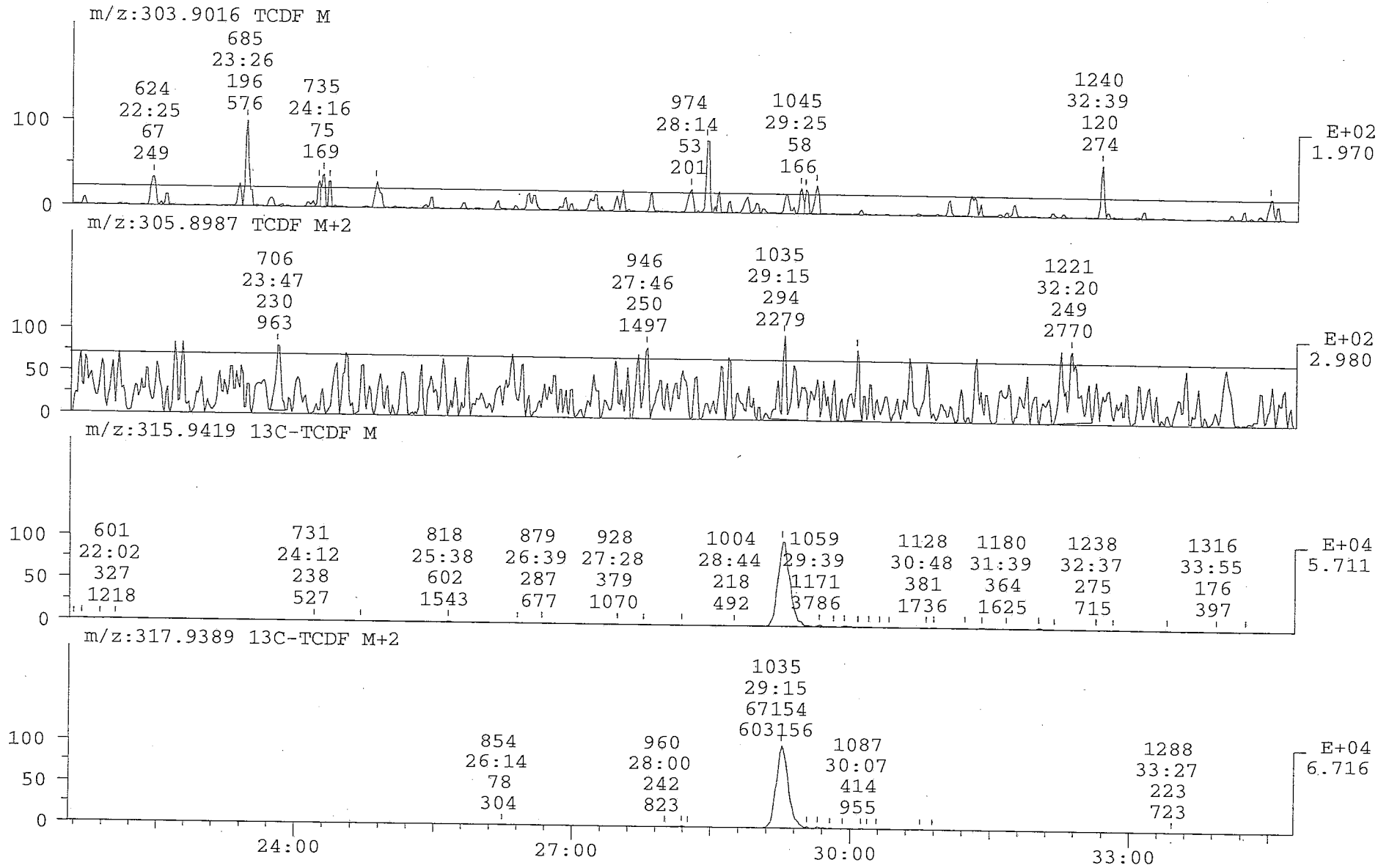
Label wndw: 572 > 1367
Baseline : 100, 3

03-Aug-16

Elapse: 31:01 1141
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



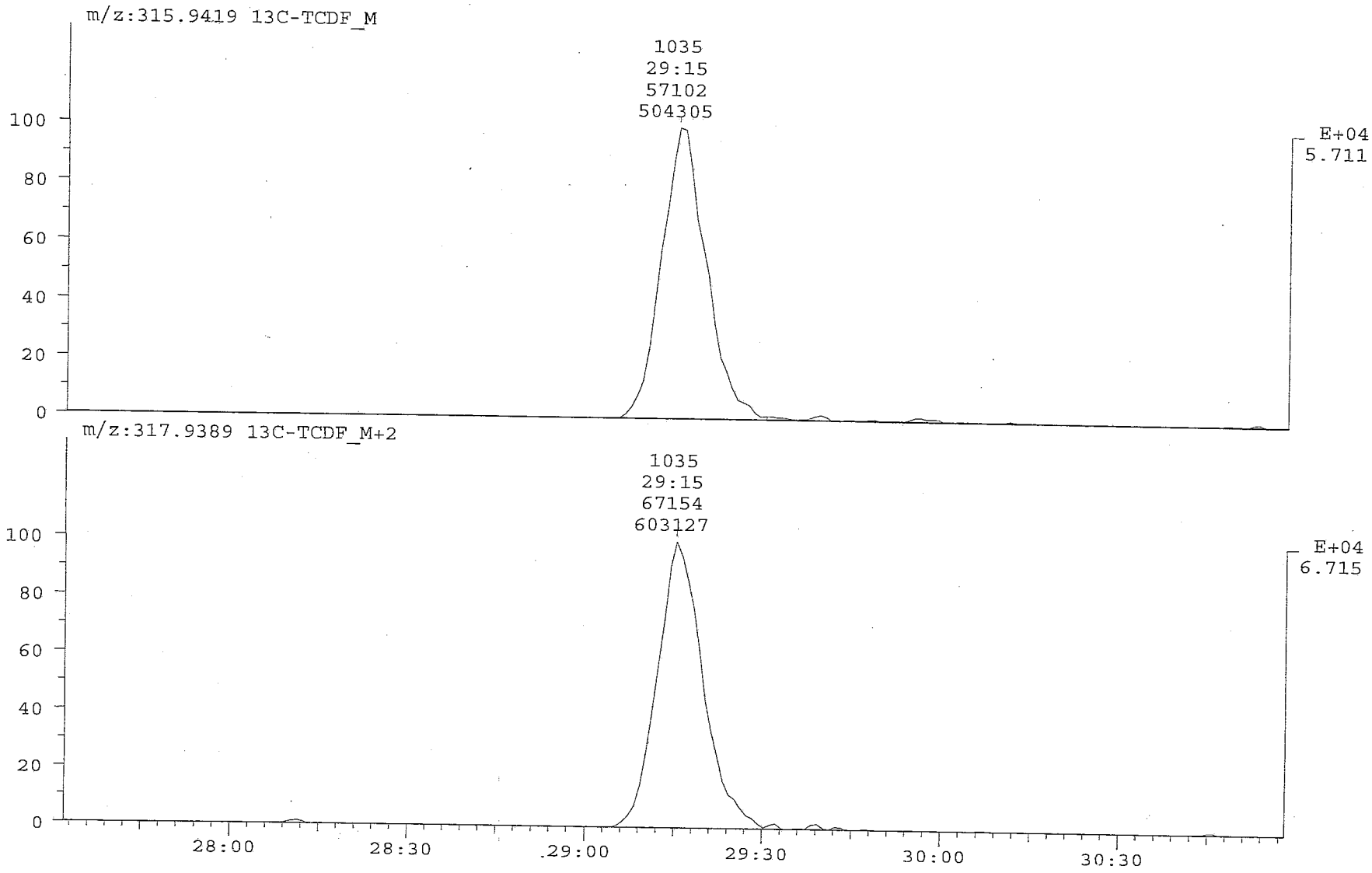
CHRO: d2tm8116b 03-Aug-16 Elapse: 54:09 2484
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 571 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



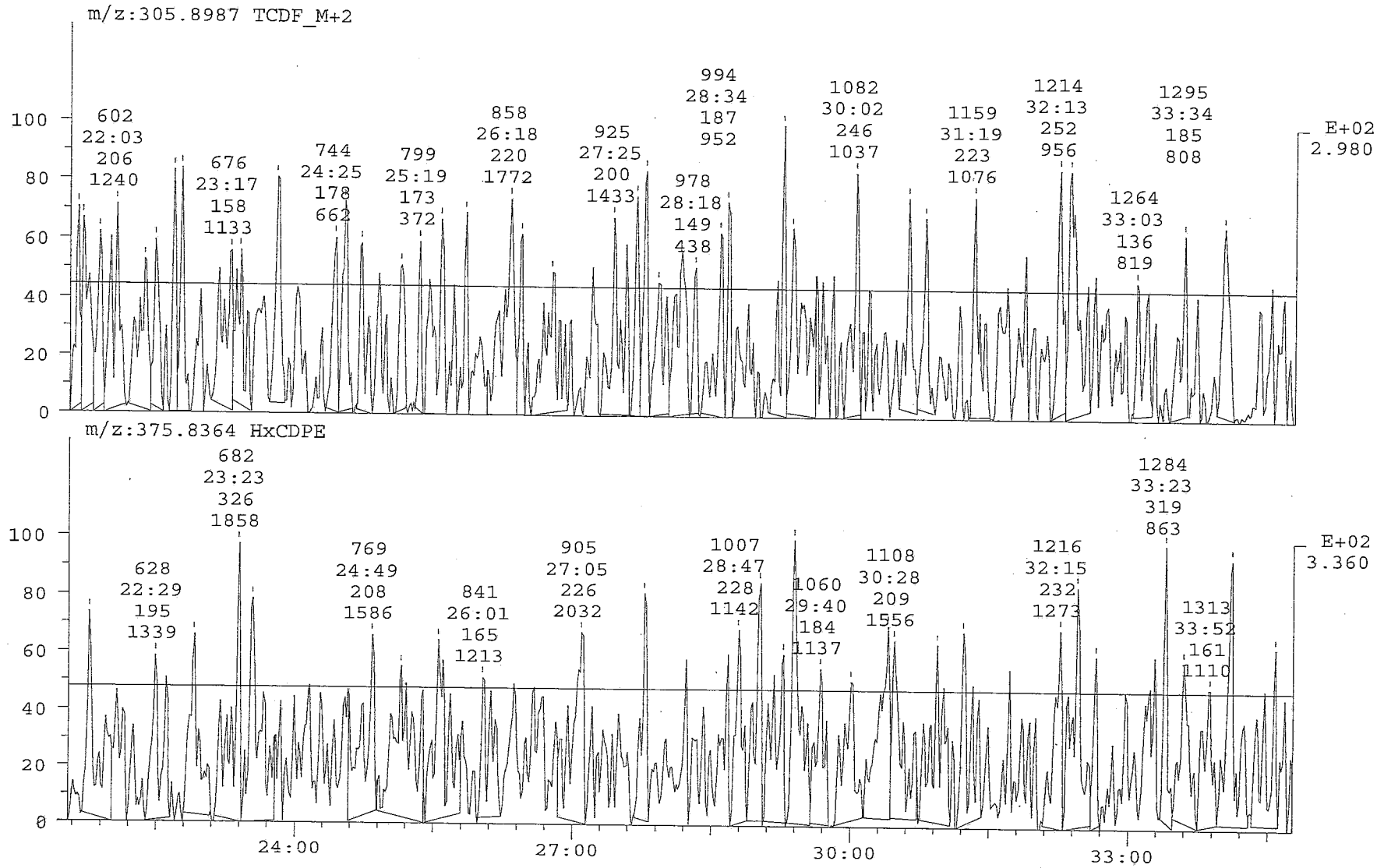
CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 931 > 1138
Area: 5, 0.50, 15 Baseline ⁄: 100, 3
Disp: Height Area

03-Aug-16

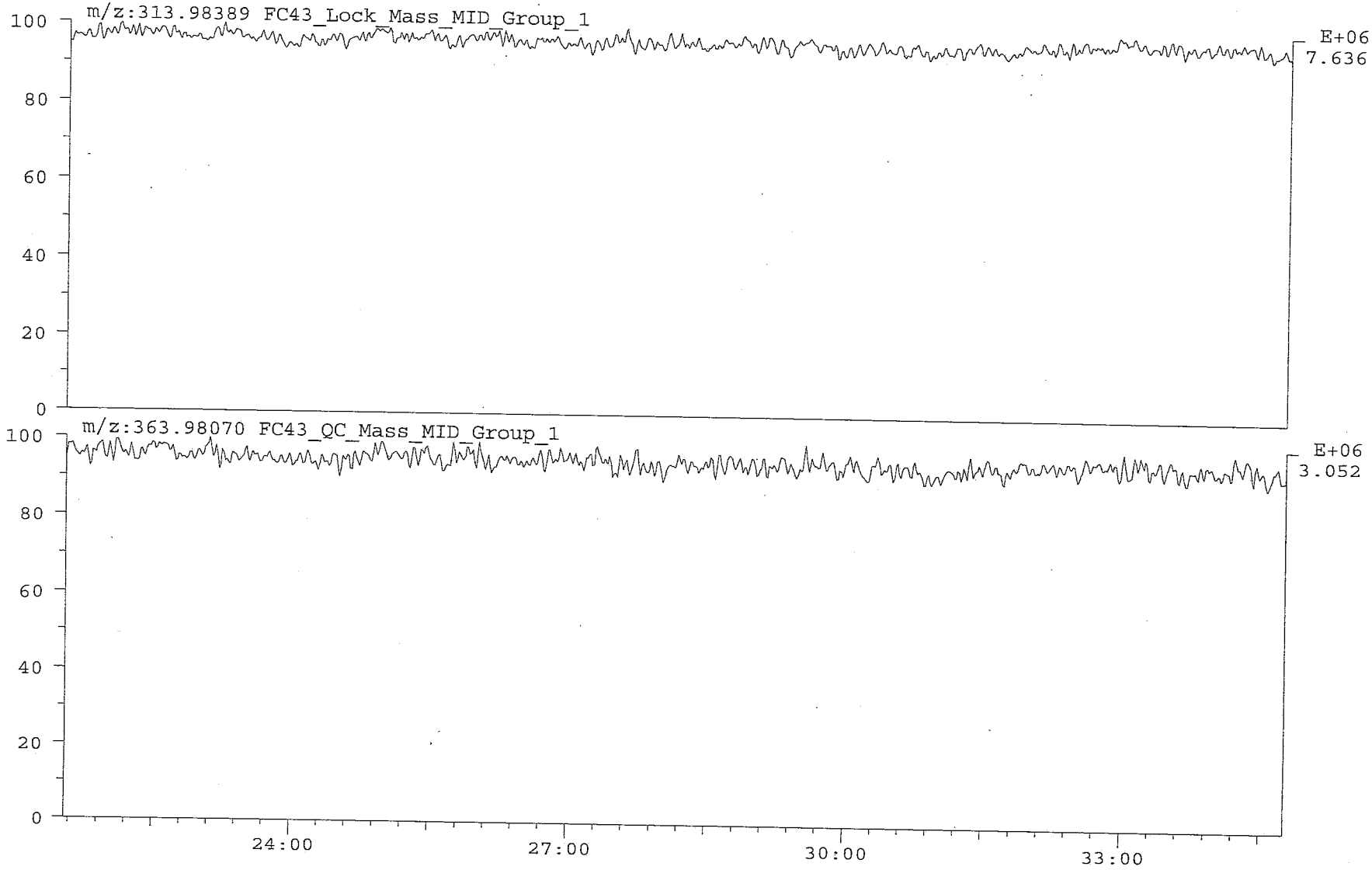
Elapse: 29:12 1032
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



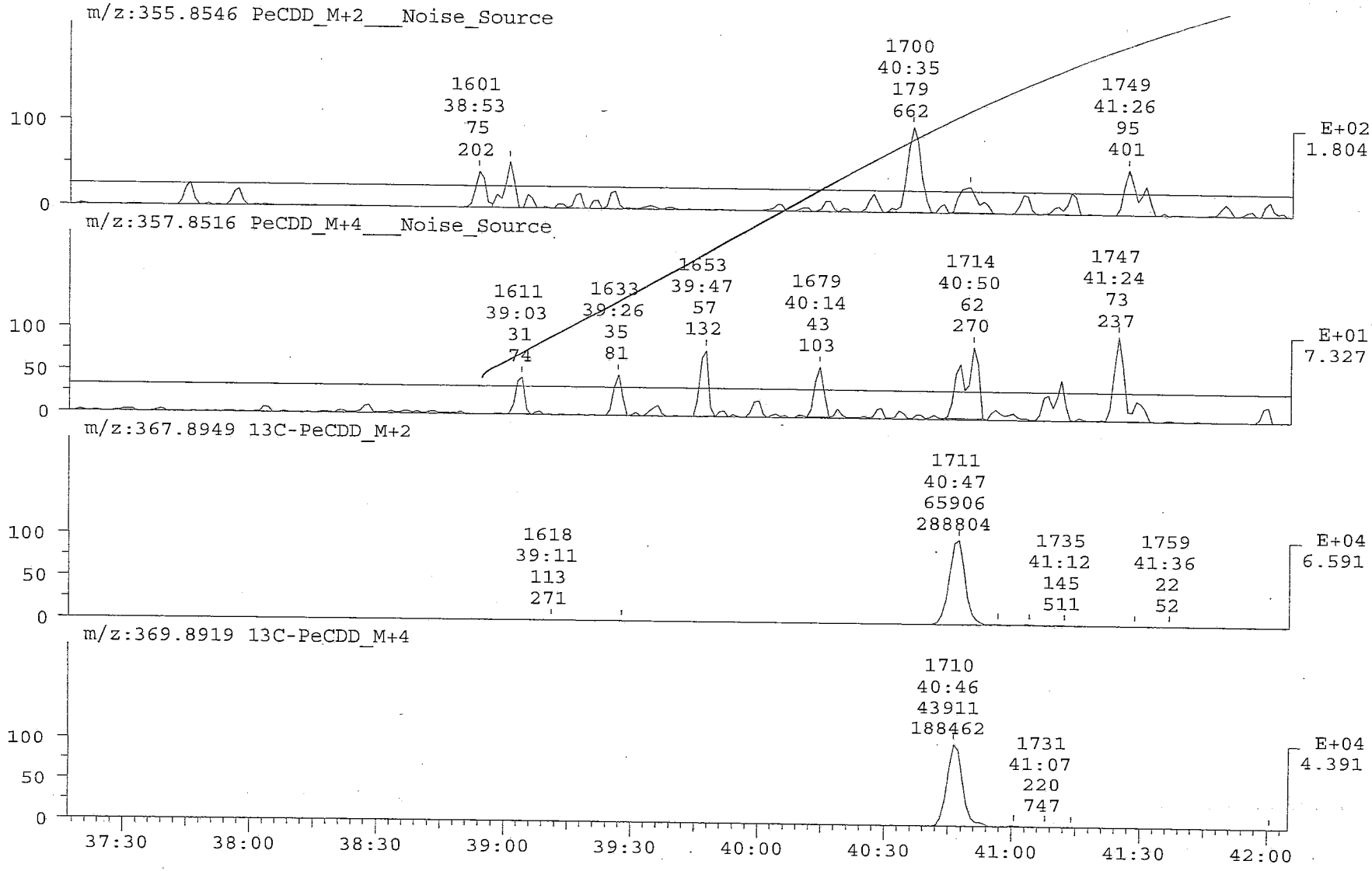
CHRO: d2tm8116b 03-Aug-16 Elapse: 29:12 1032
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 572 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2tm8116b 03-Aug-16 Elapse: 29:12 1032
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 572 > 1367 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



CHRO: d2tm8116b 03-Aug-16 Elapse: 29:12 1032
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1508 > 1786 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

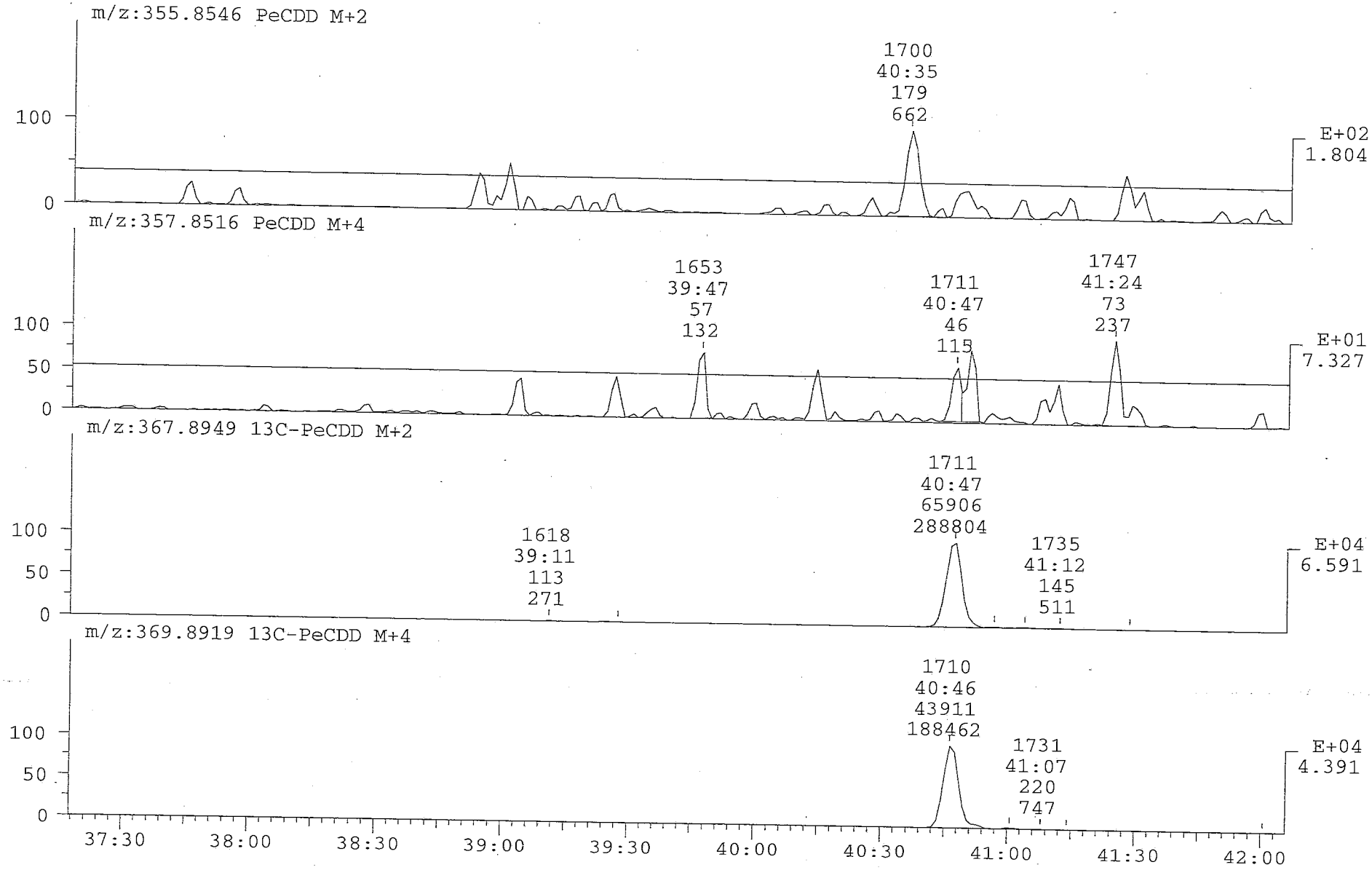


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 0
Disp: Height Area

Label wndw: 1508 > 1787
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 8.0

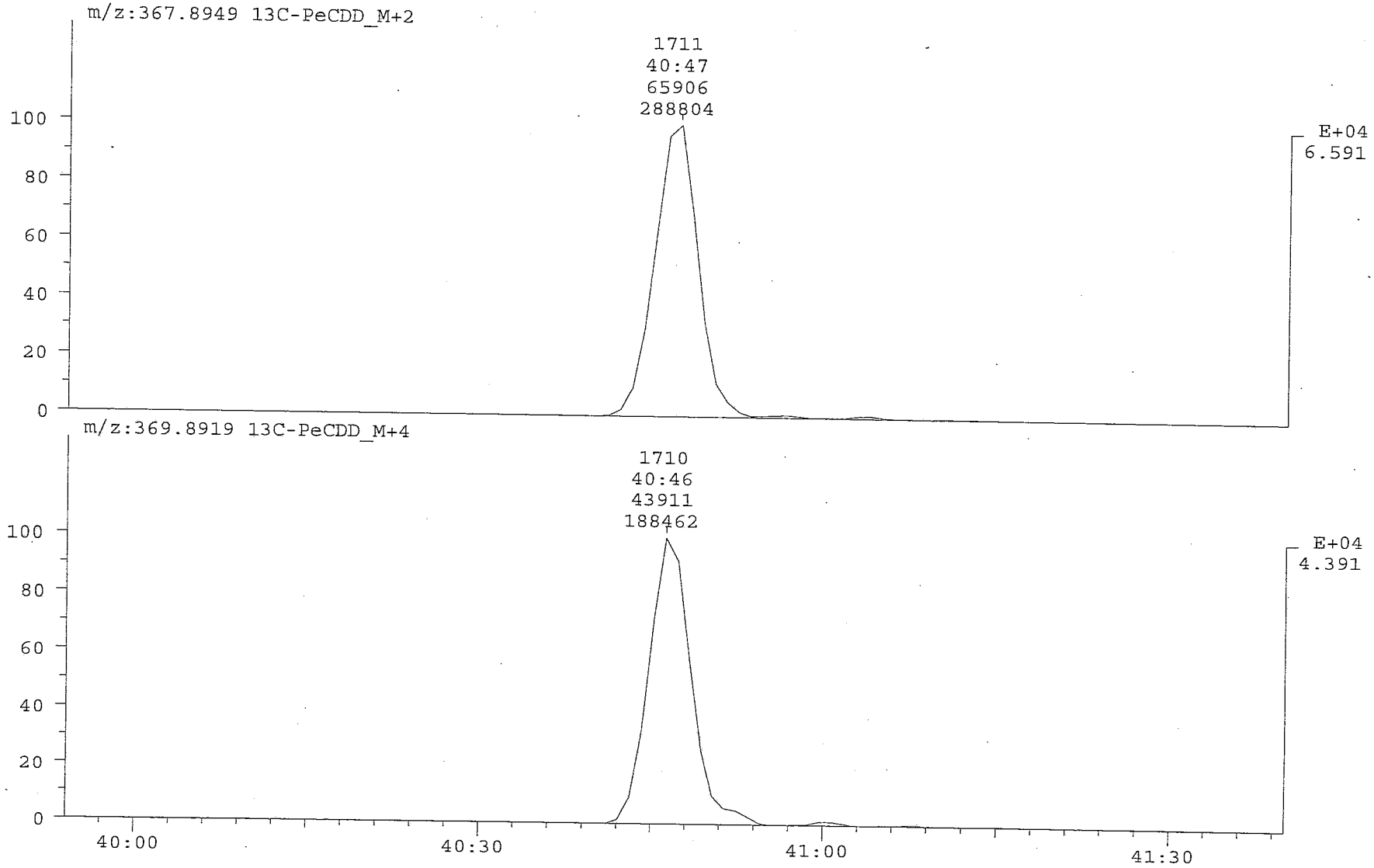


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1659 > 1762
Baseline : 100, 3

03-Aug-16

Elapse: 40:44 1708
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

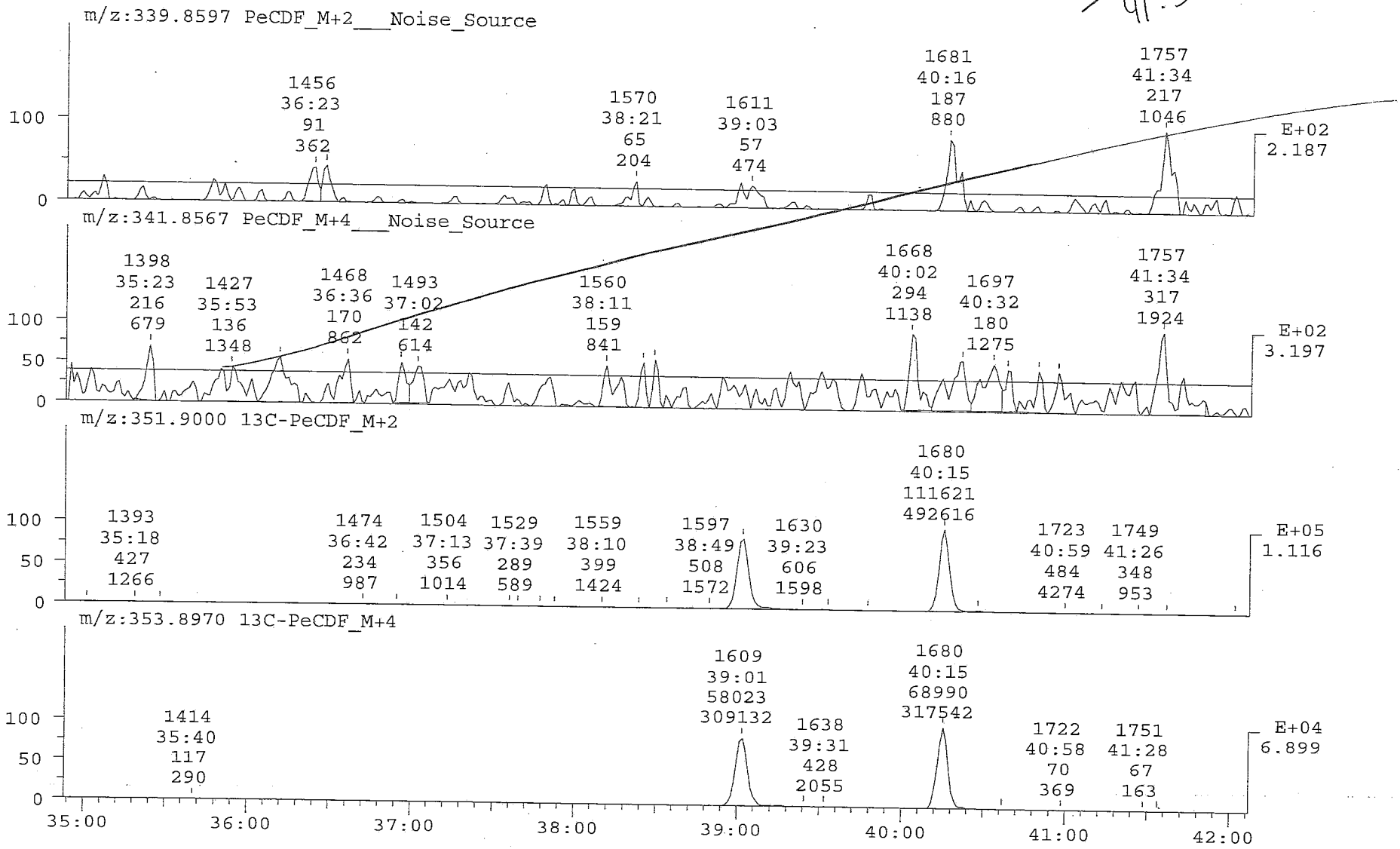


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 1369 > 1788
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

Elapse: 40:44 1708
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

Last 41:33

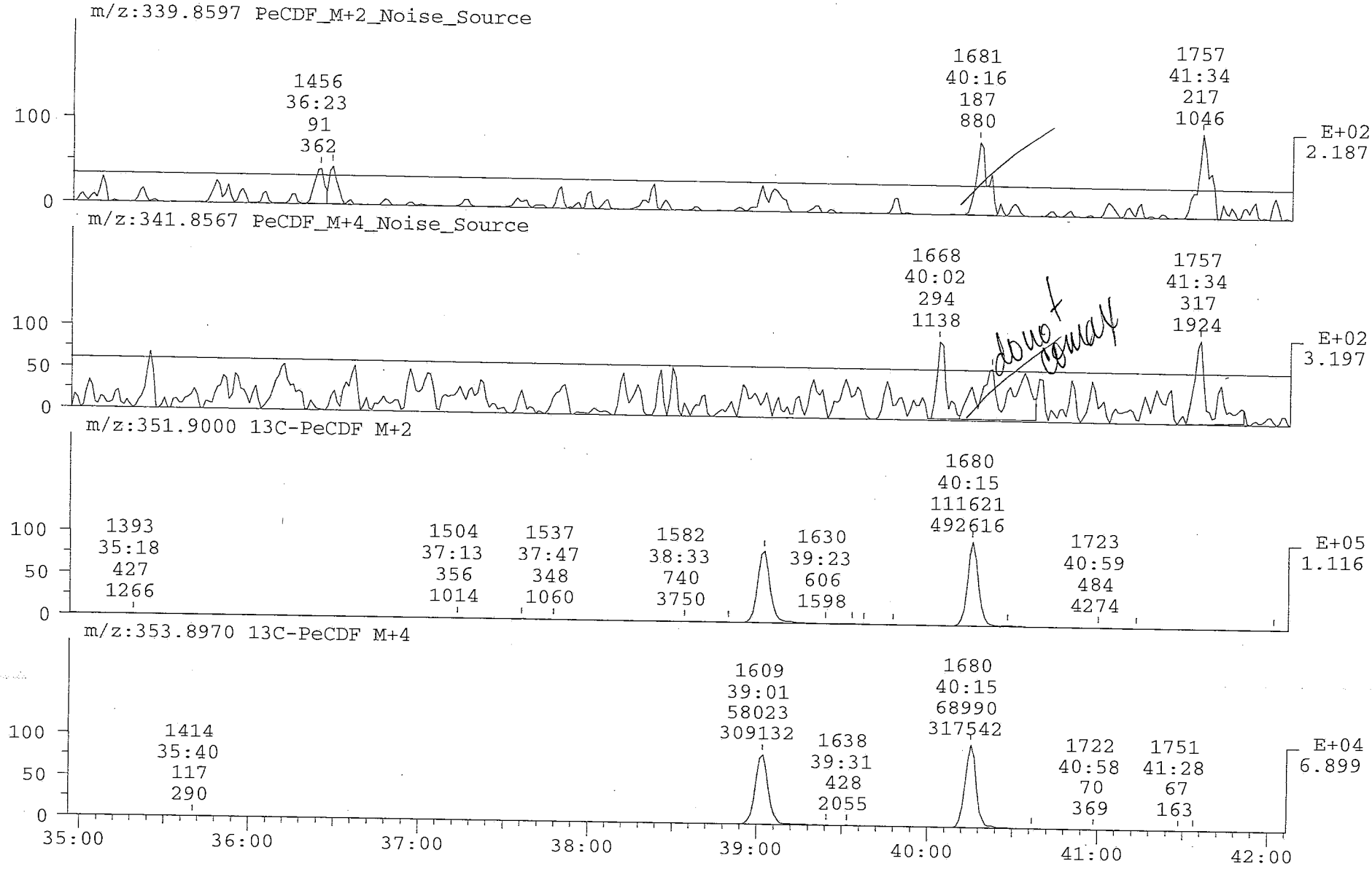


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

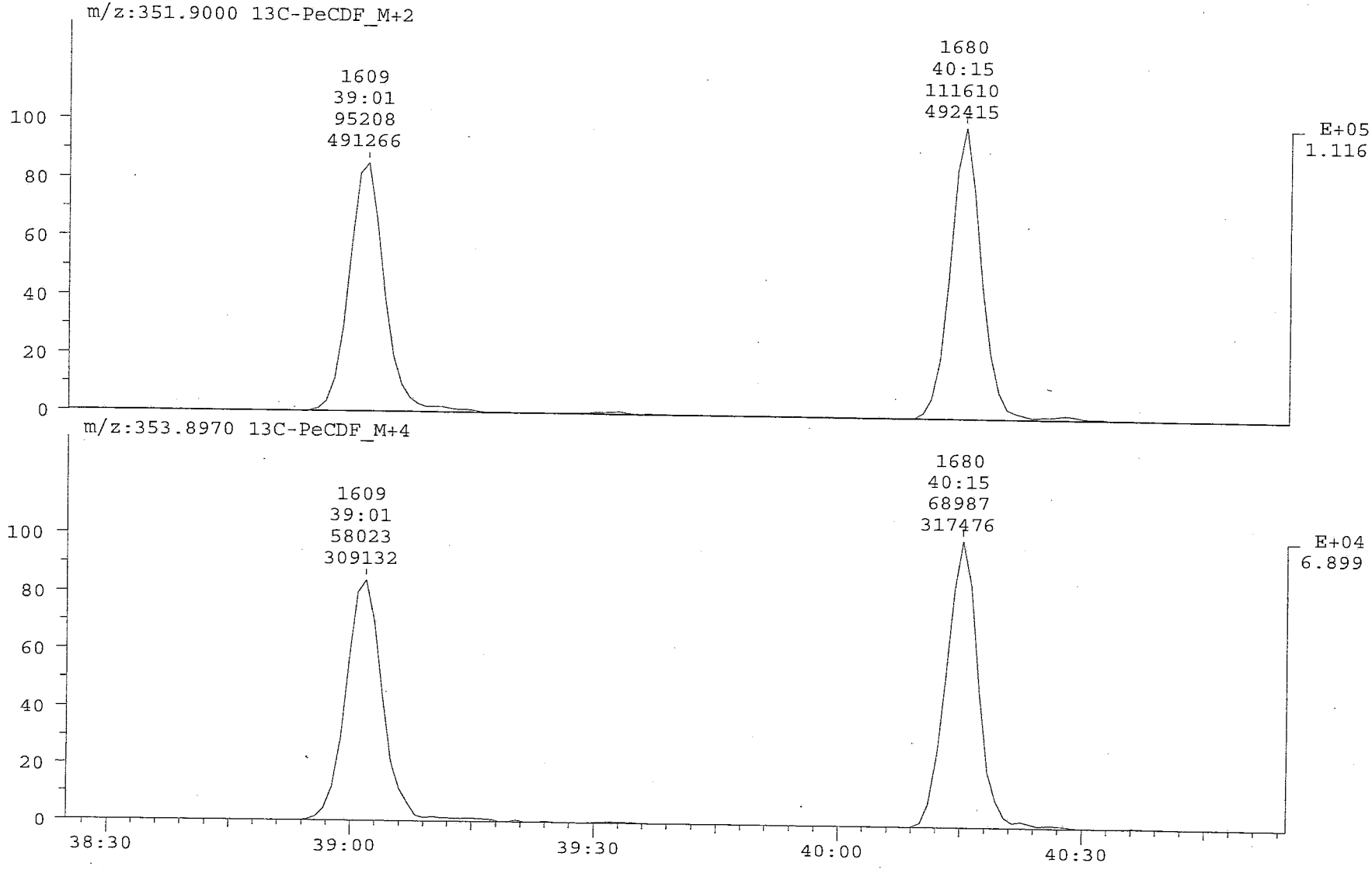
Label wndw: 1371 > 1788
Baseline : 100, 3

03-Aug-16

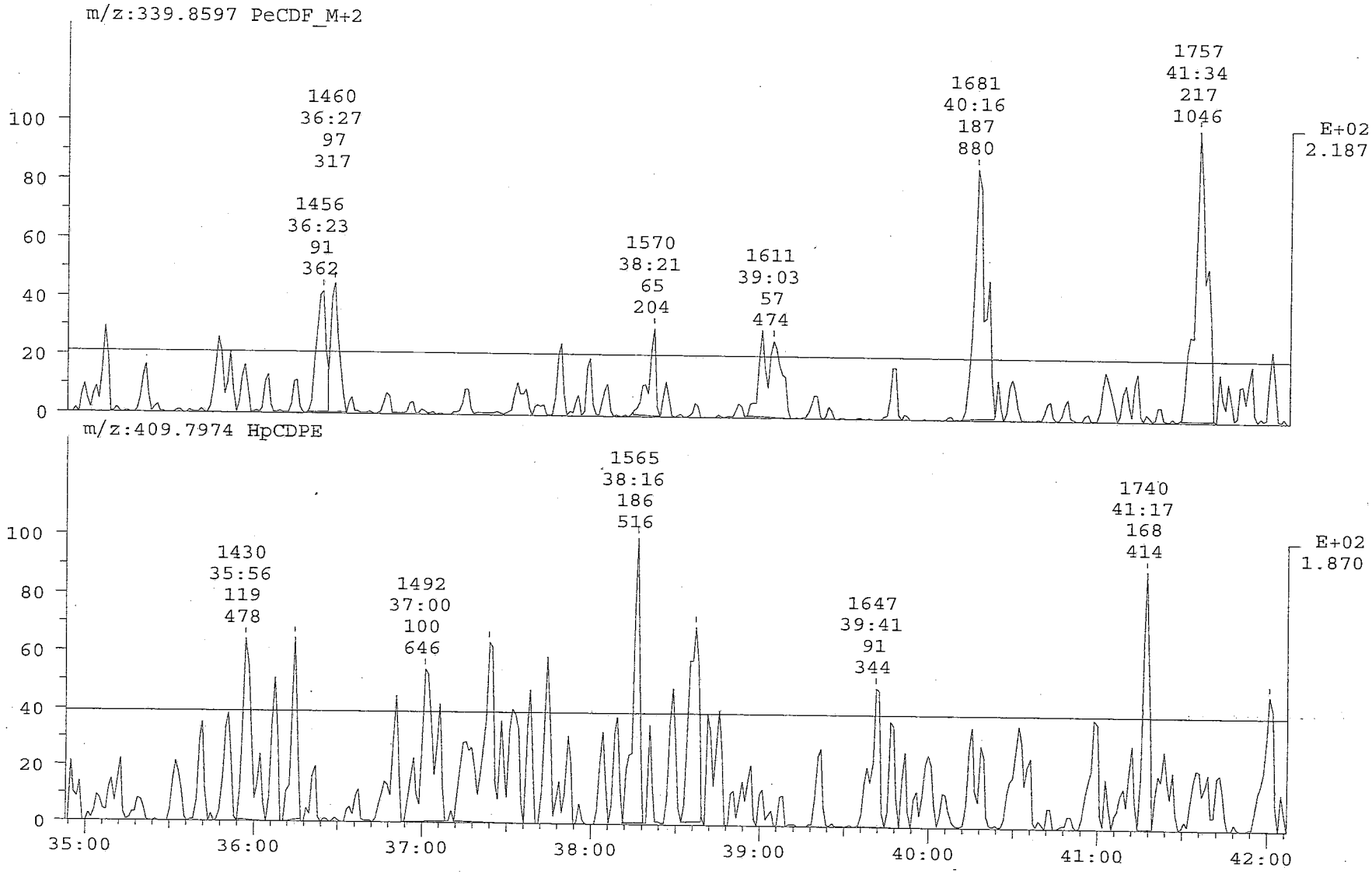
Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 8.0



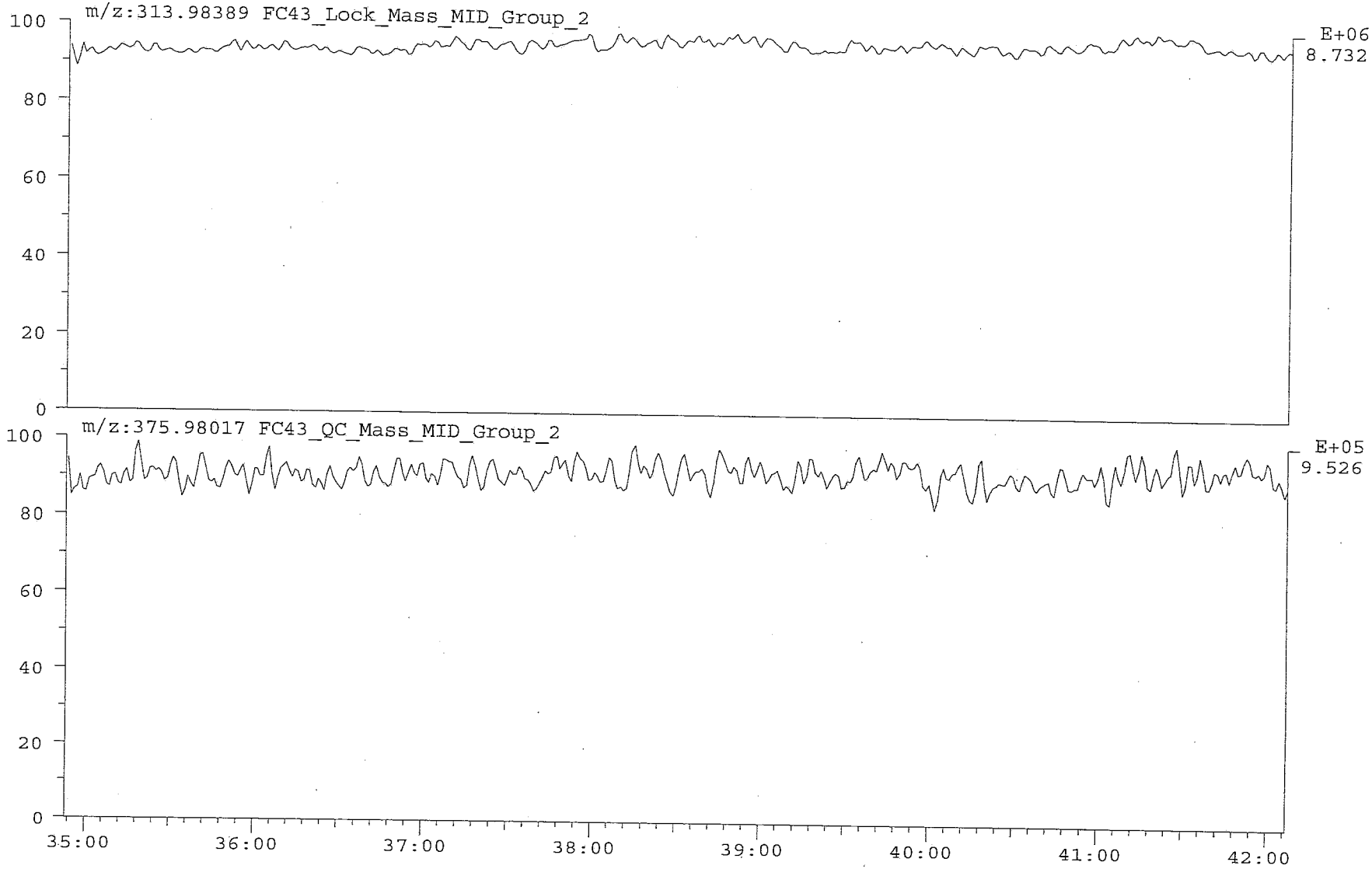
CHRO: d2tm8116b 03-Aug-16 Elapse: 39:40 1646
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1573 > 1719 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2tm8116b 03-Aug-16 Elapse: 39:40 1646
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2tm8116b 03-Aug-16 Elapse: 39:40 1646
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

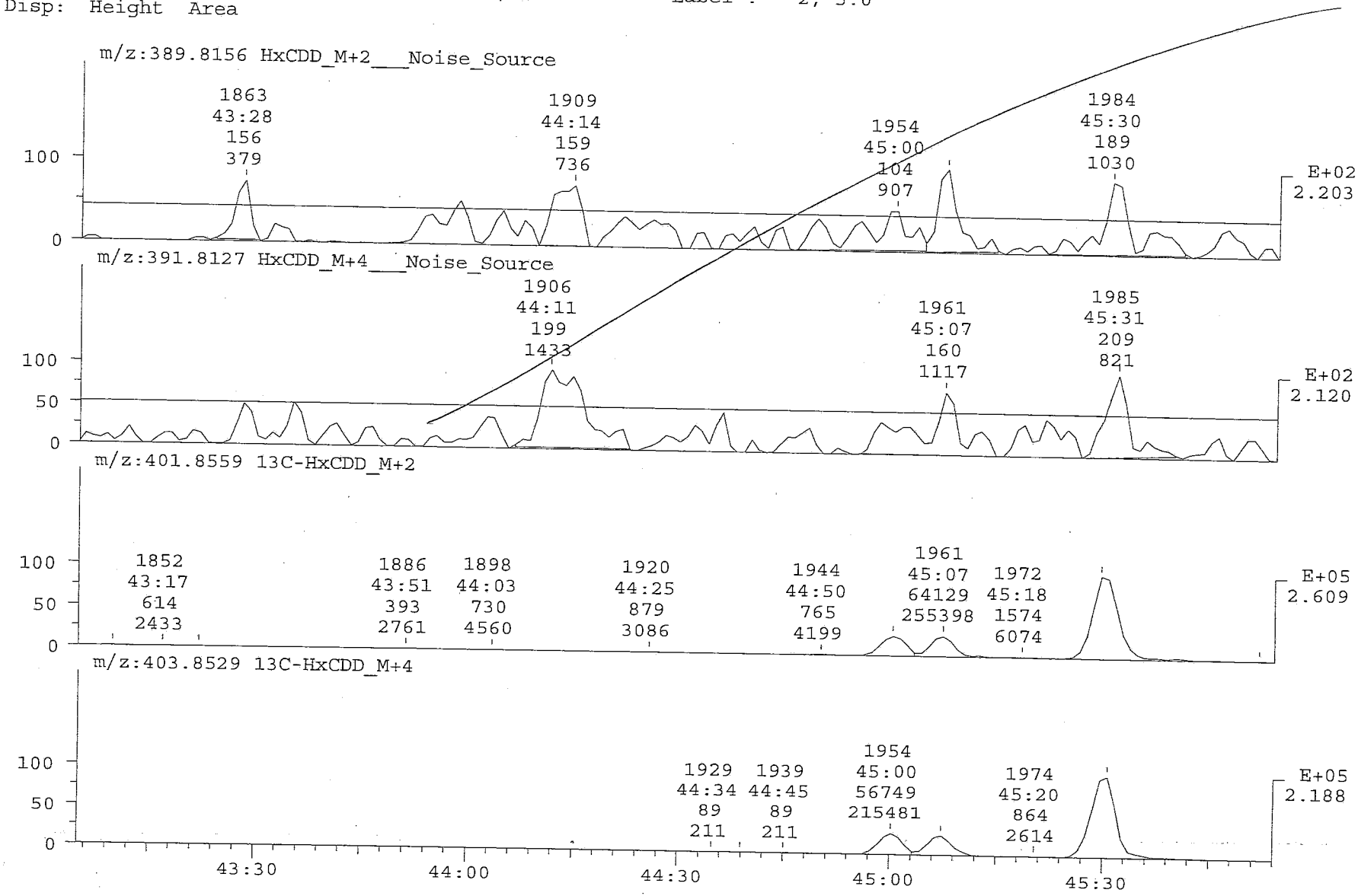


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1840 > 2007
Baseline : 100, 3

03-Aug-16

Elapse: 39:40 1646
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

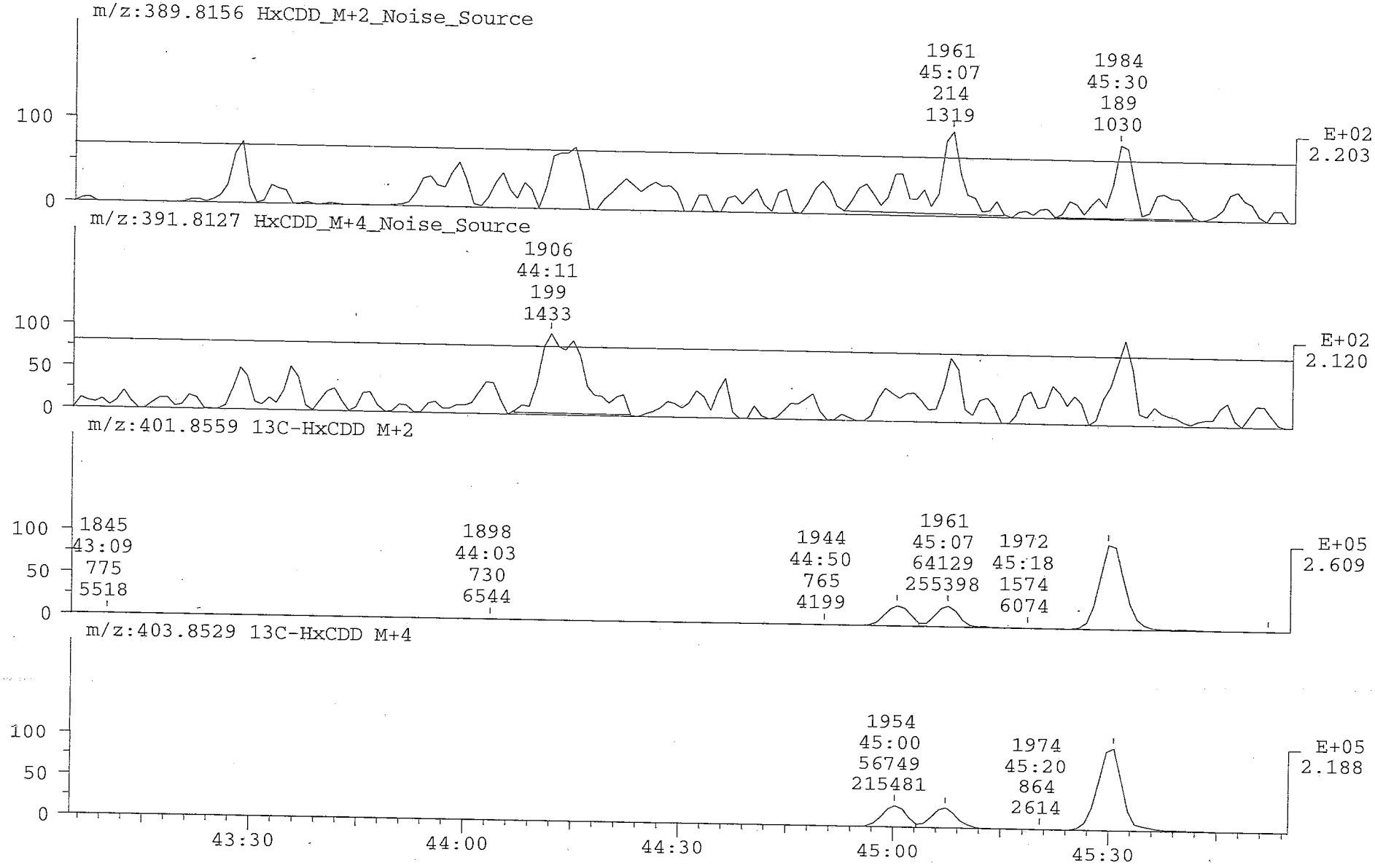


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1840 > 2008
Baseline : 100, 3

03-Aug-16

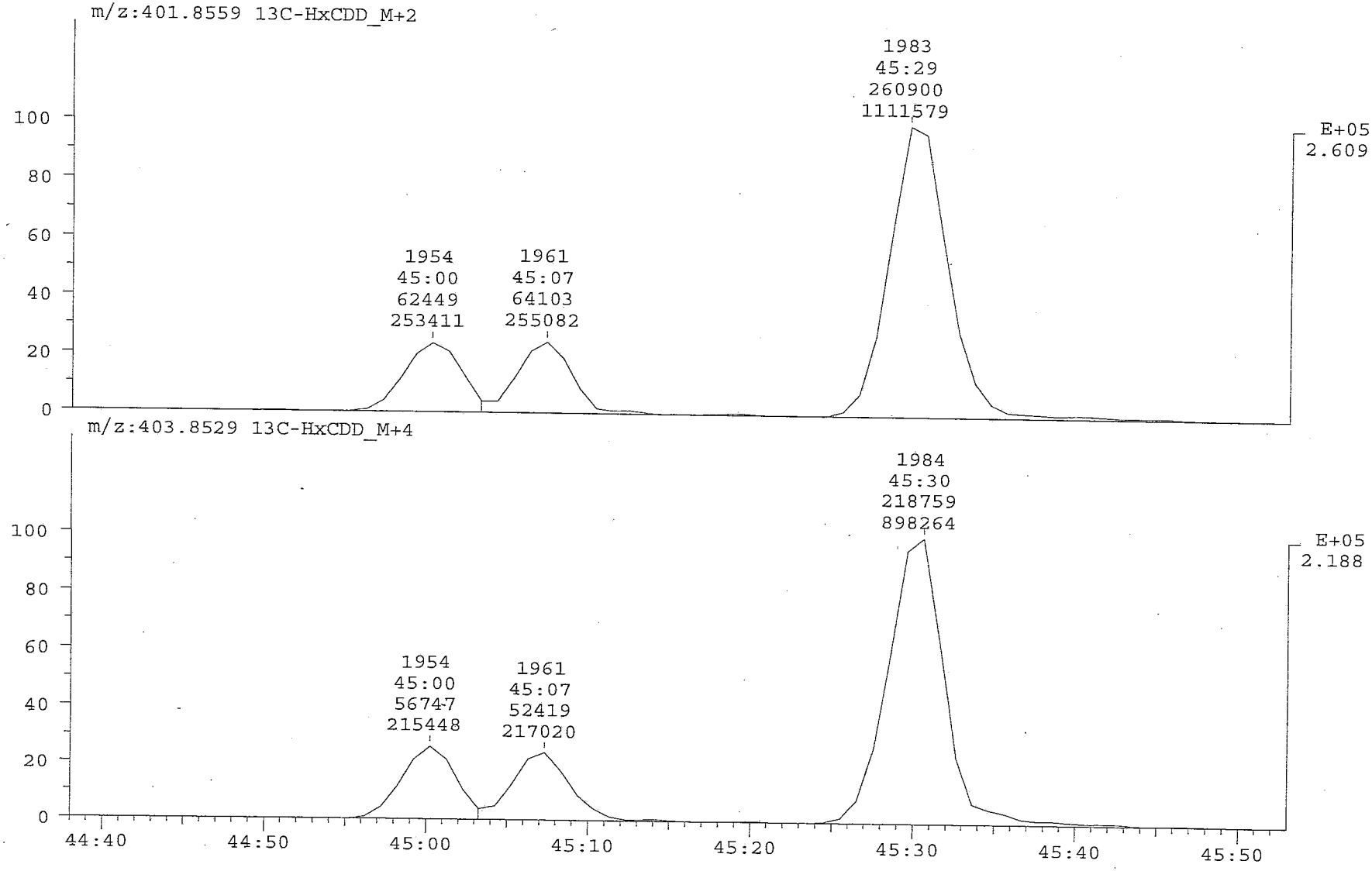
Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 8.0



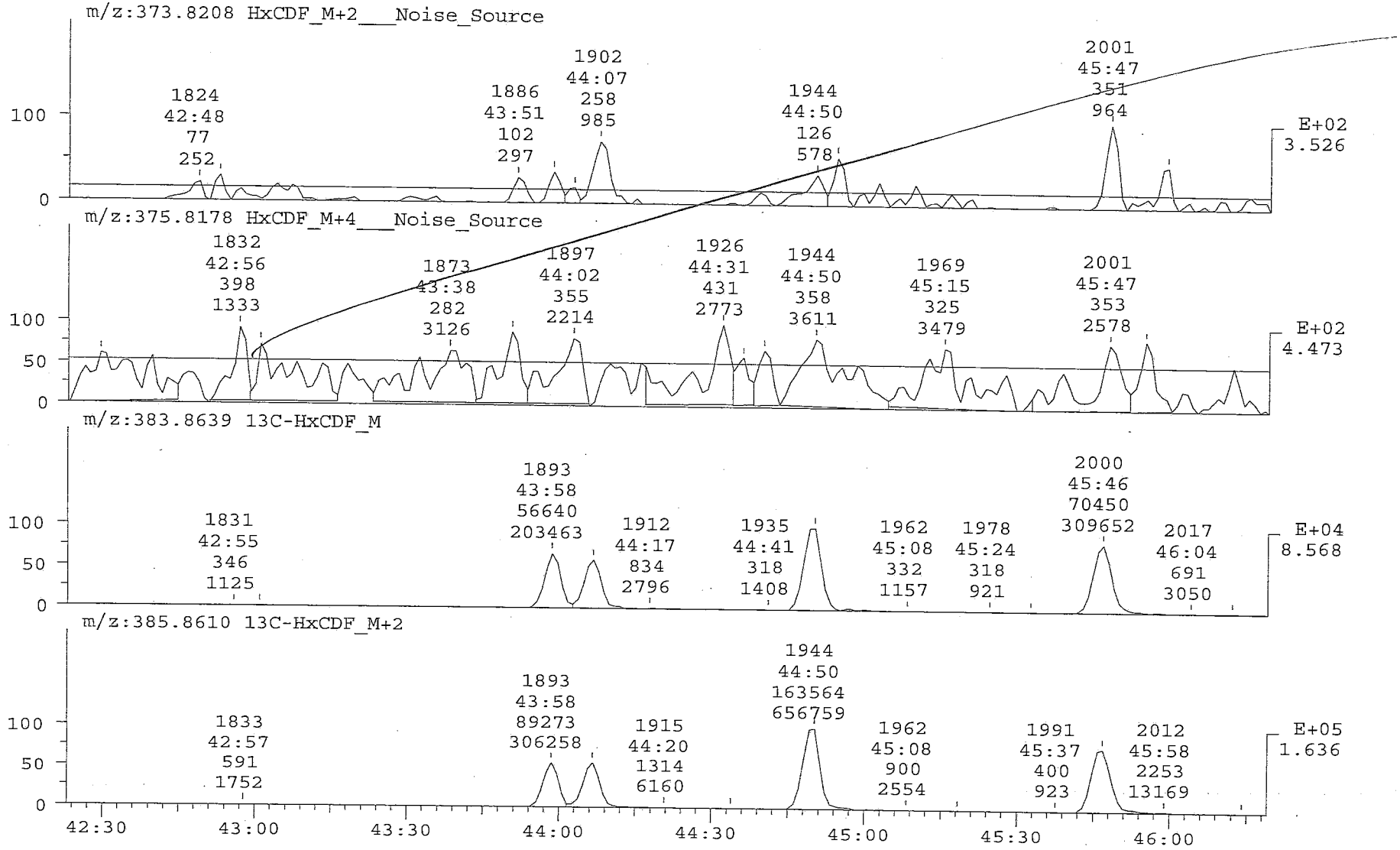
CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 1932 > 2006
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

Elapse: 45:15 1969
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116b 03-Aug-16 Elapse: 45:15 1969
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1799 > 2032 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

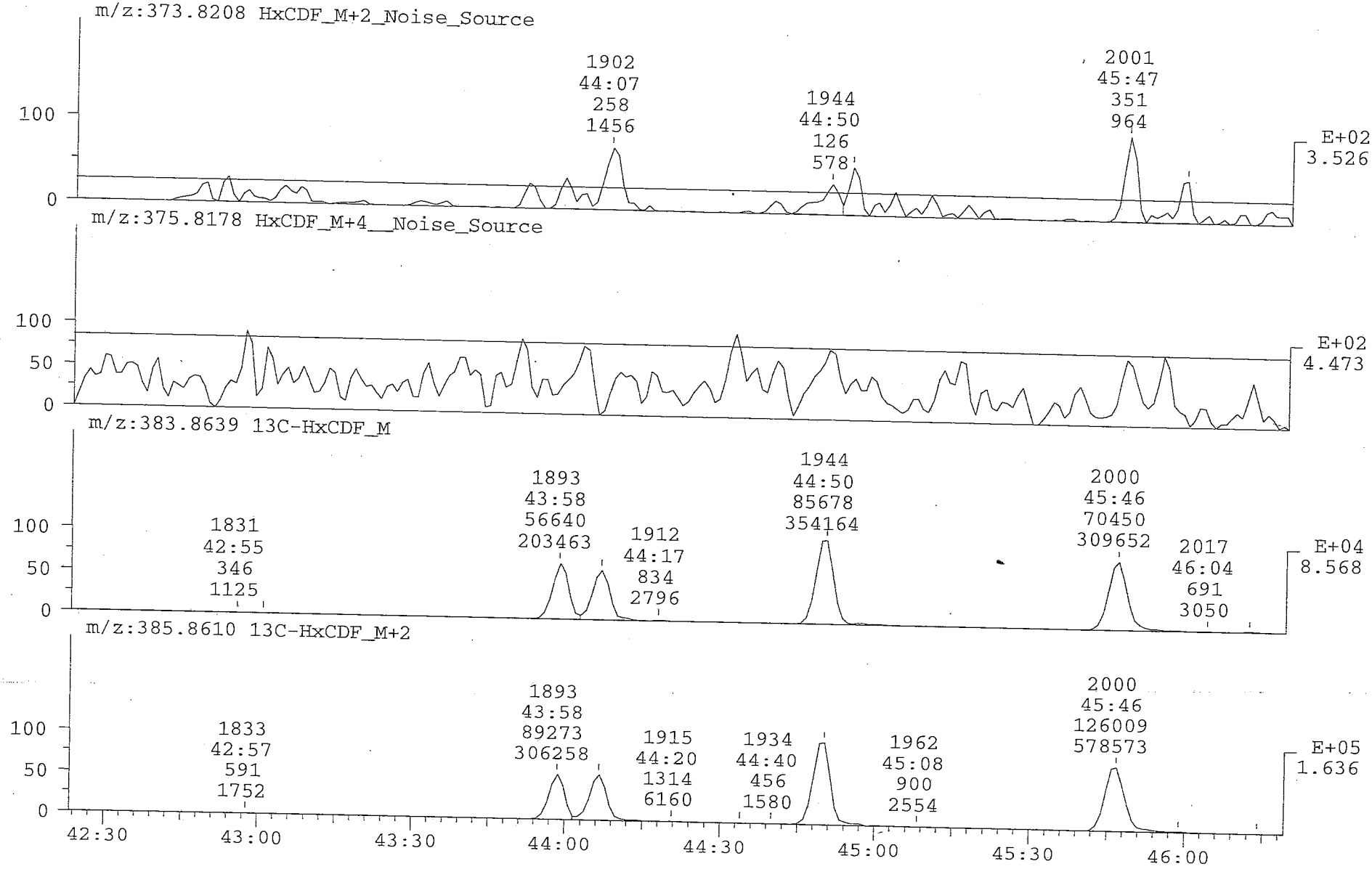


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

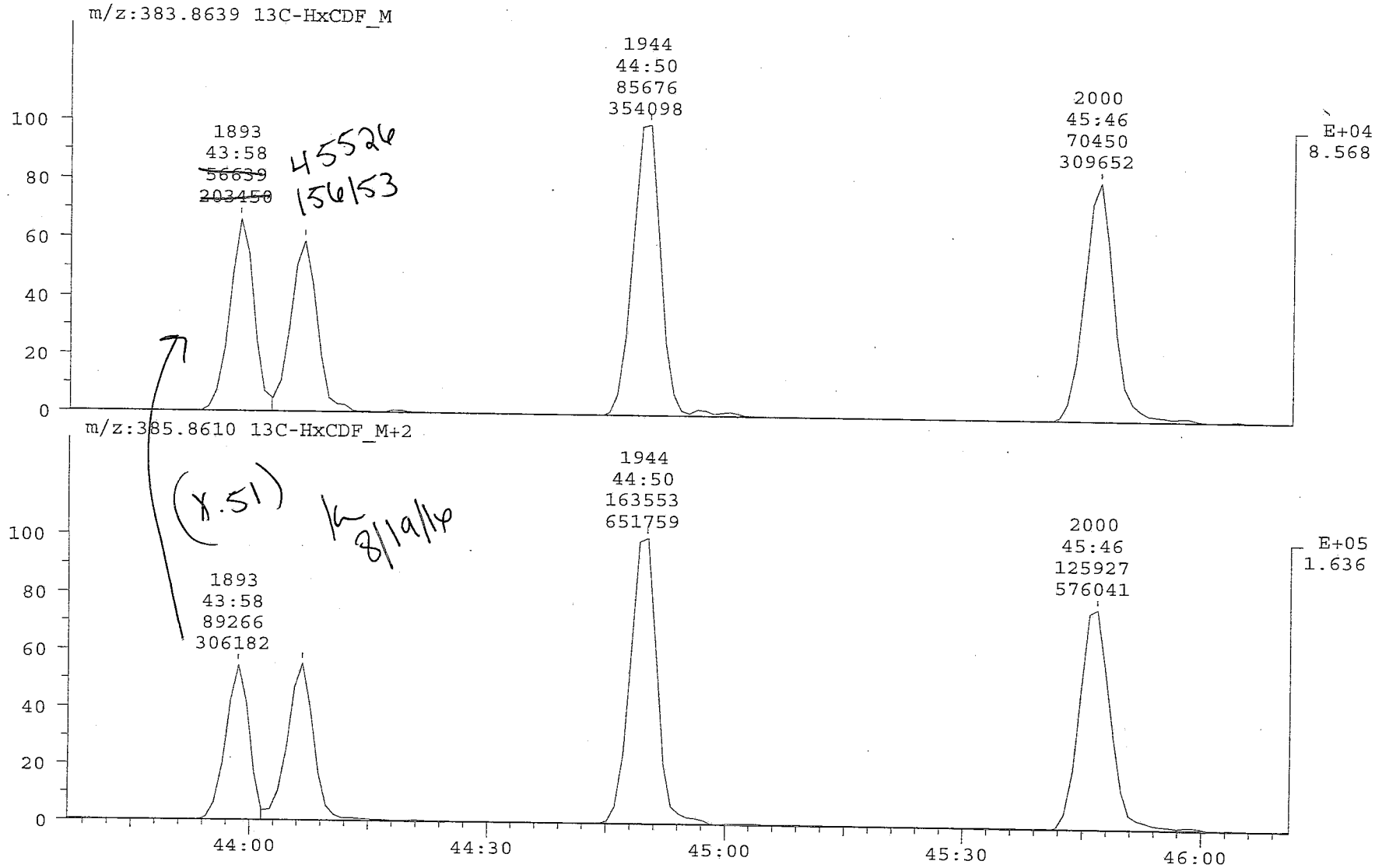
Label wndw: 1799 > 2032
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 8.0



CHRO: d2tm8116b 03-Aug-16 Elapse: 44:54 1948
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1872 > 2024 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

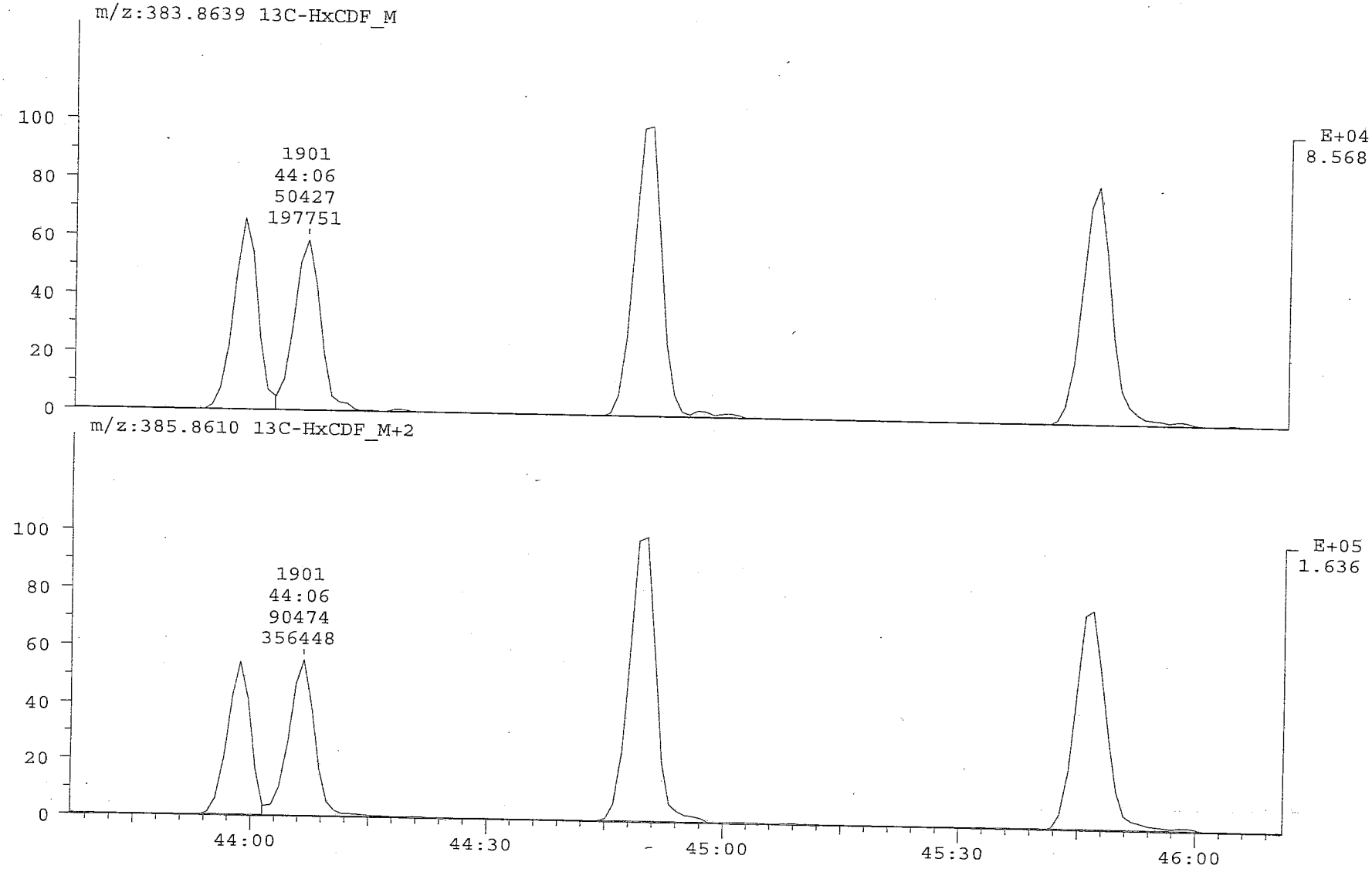


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1895 > 1903
Baseline : 100, 3

03-Aug-16

Elapse: 44:04 1899
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

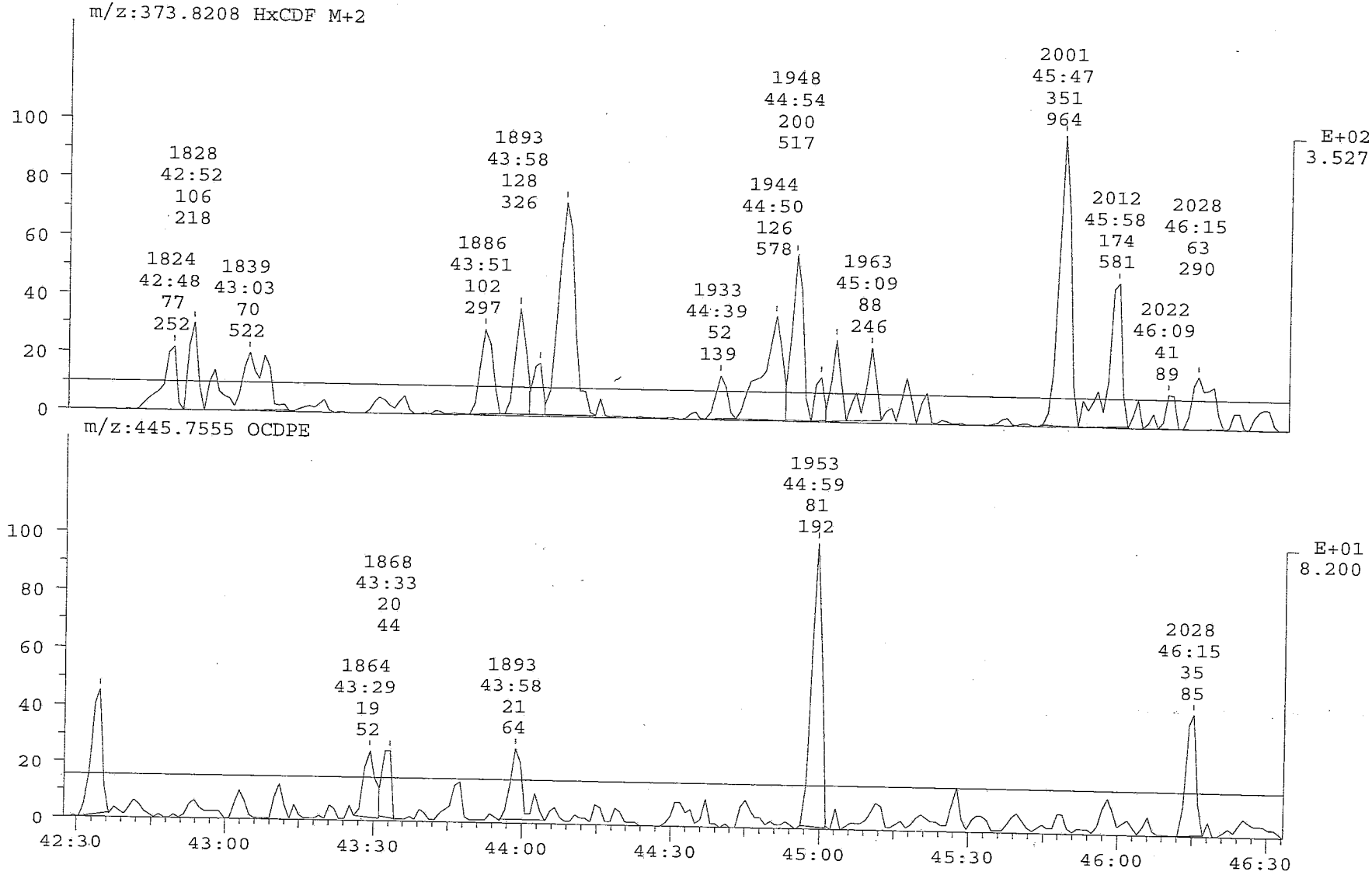


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1803 > 2046
Baseline : 100, 3

03-Aug-16

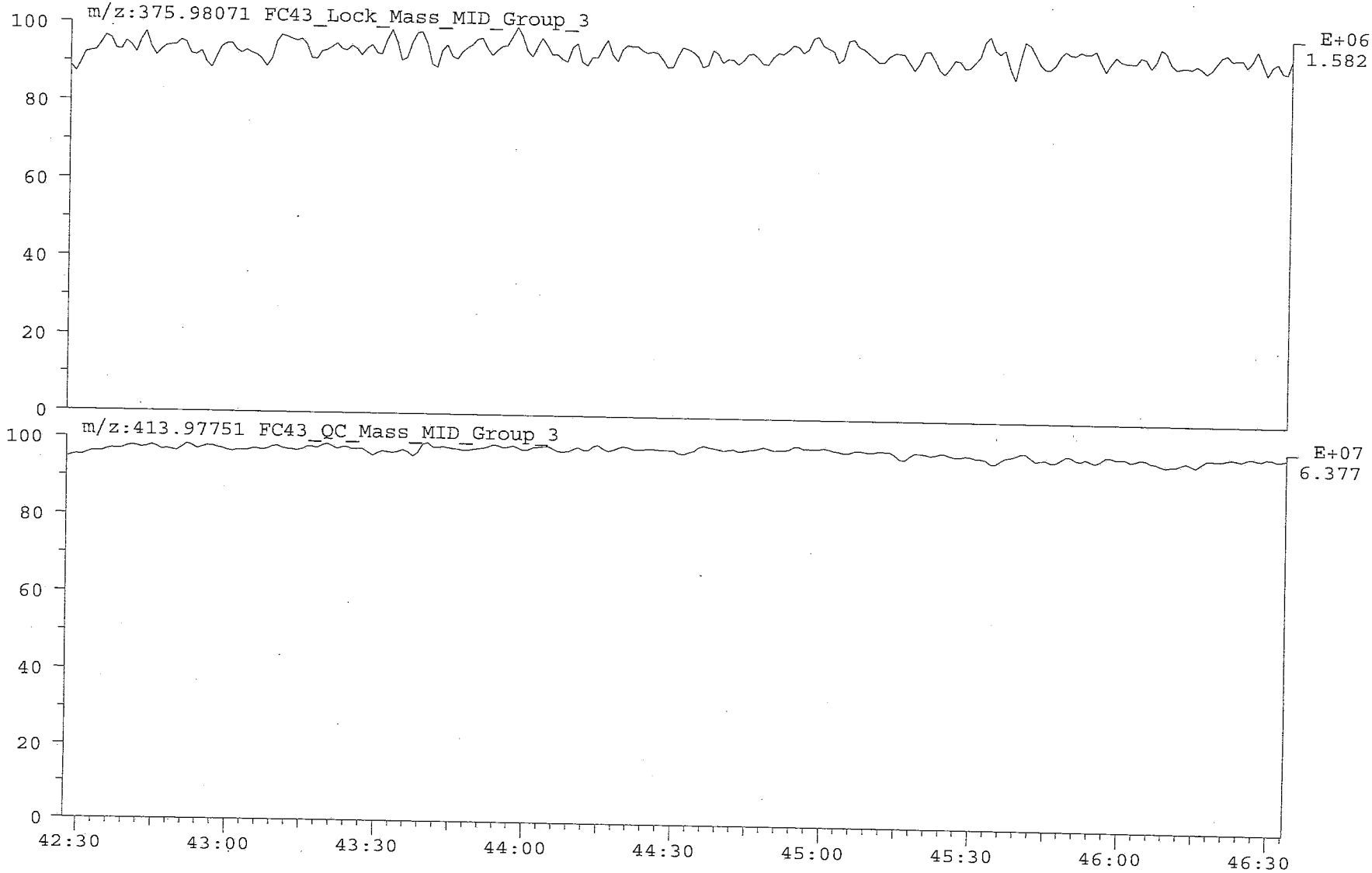
Elapse: 44:04 1899
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 3.0



CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 1803 > 2046
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

Elapse: 44:04 1899
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : 0, 0.0

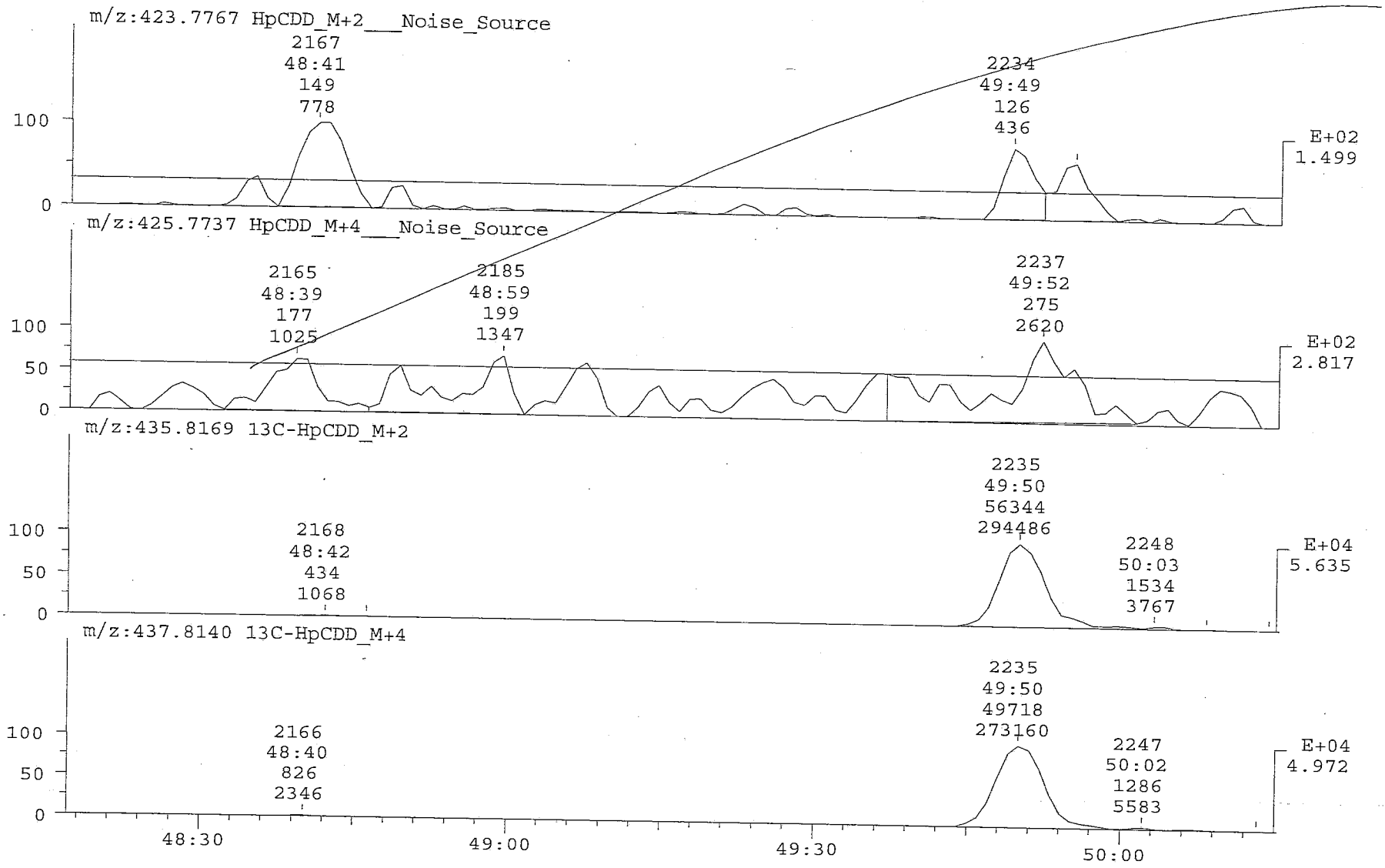


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2143 > 2260
Baseline : 100, 3

03-Aug-16

Elapse: 44:04 1899
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

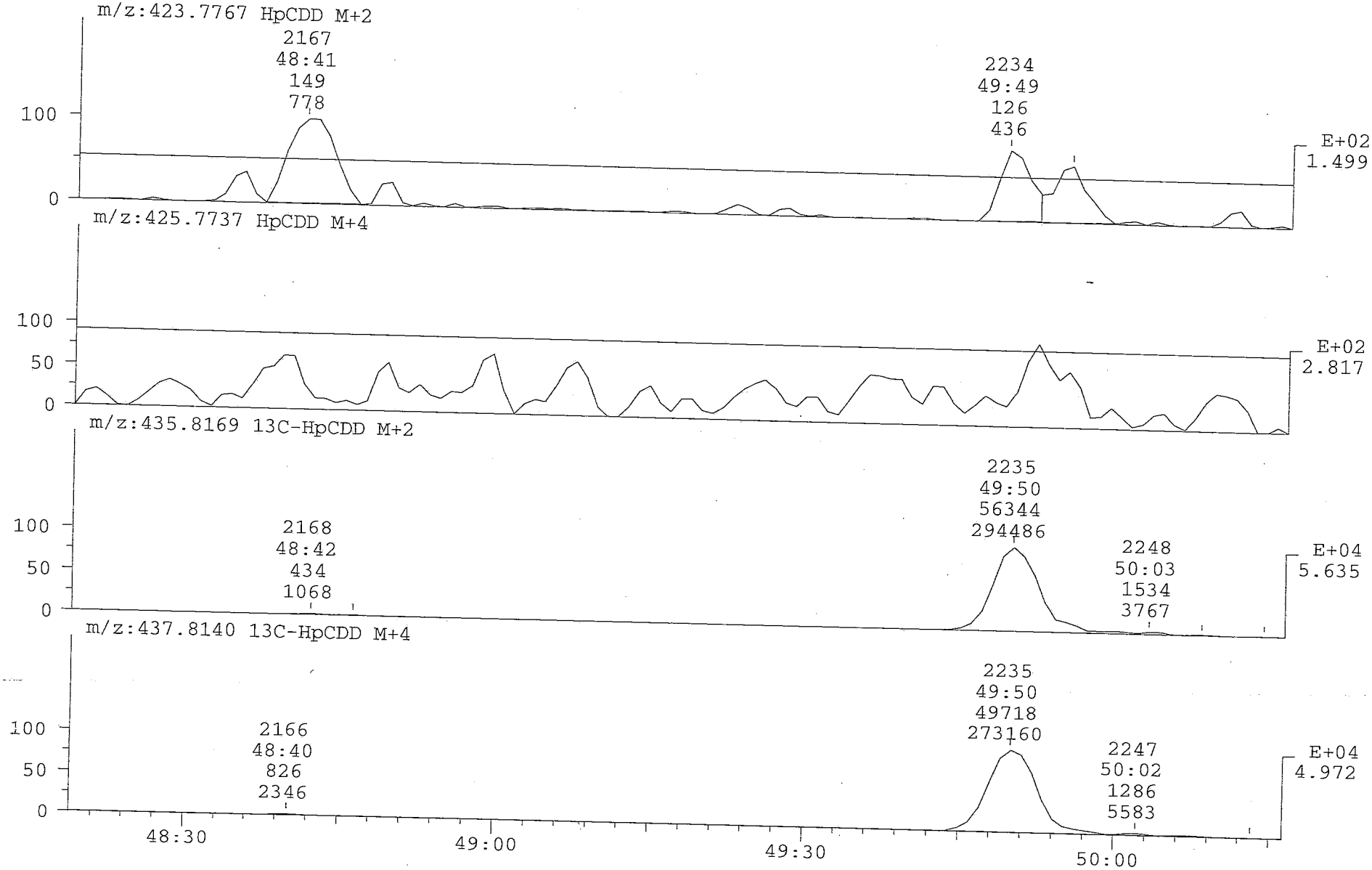


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1 > 3000
Baseline : 100, 3

03-Aug-16

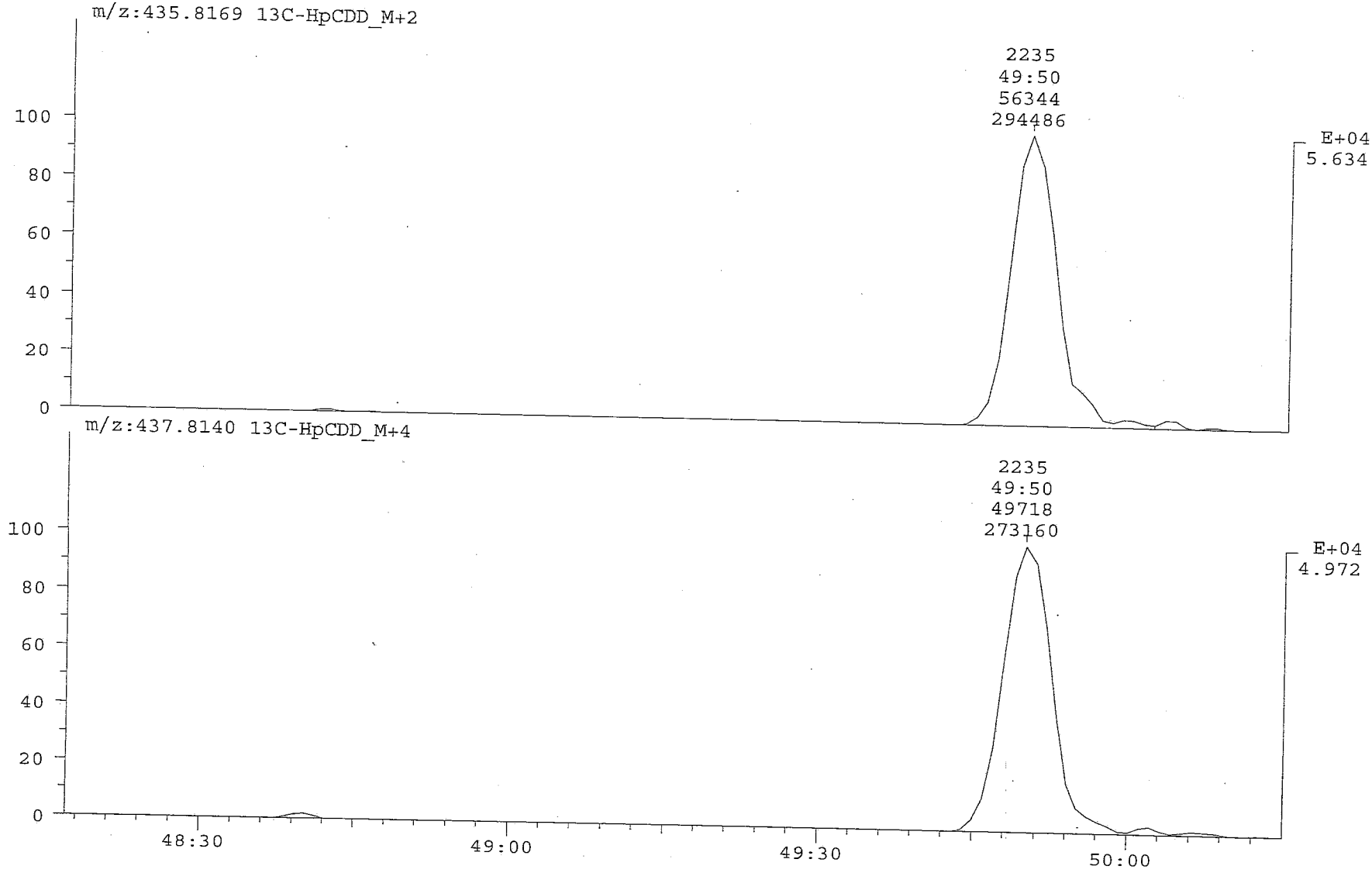
Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 8.0



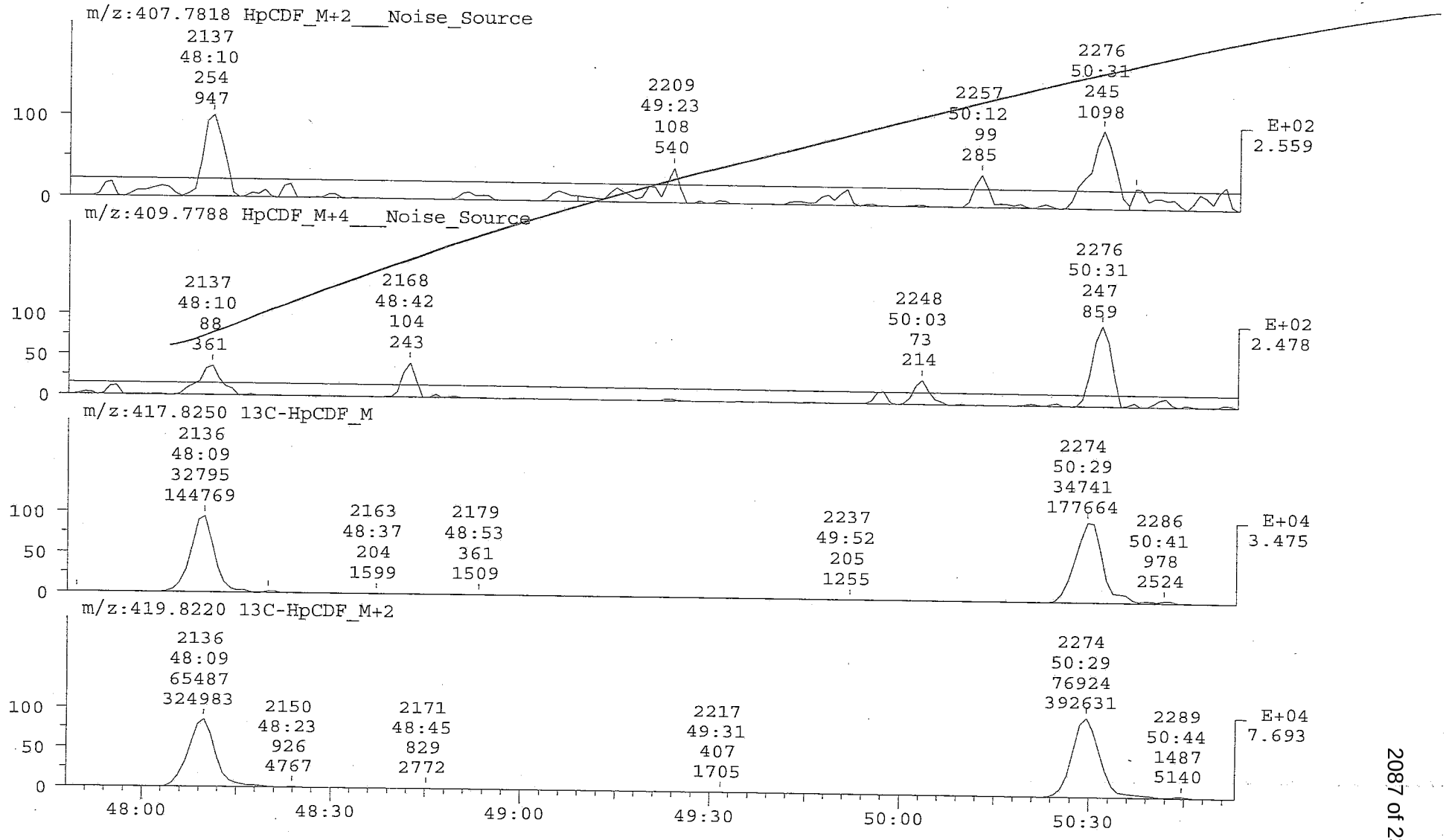
CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 2143 > 2260
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

Elapse: 44:04 1899
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116b 03-Aug-16 Elapse: 49:19 2205
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2114 > 2297 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

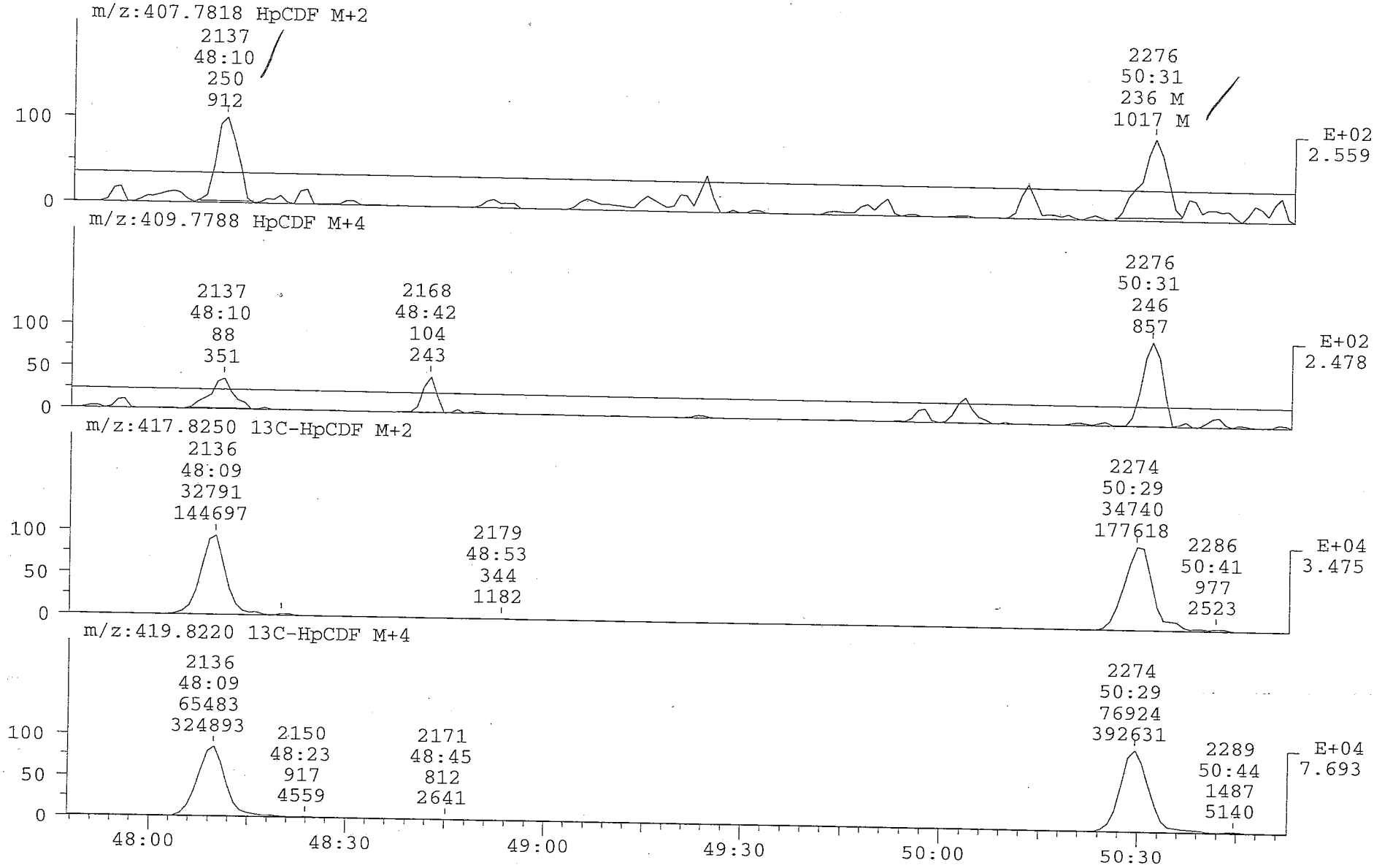


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 1.00, 15
Disp: Height Area

Label wndw: 2114 > 2297
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 8.0

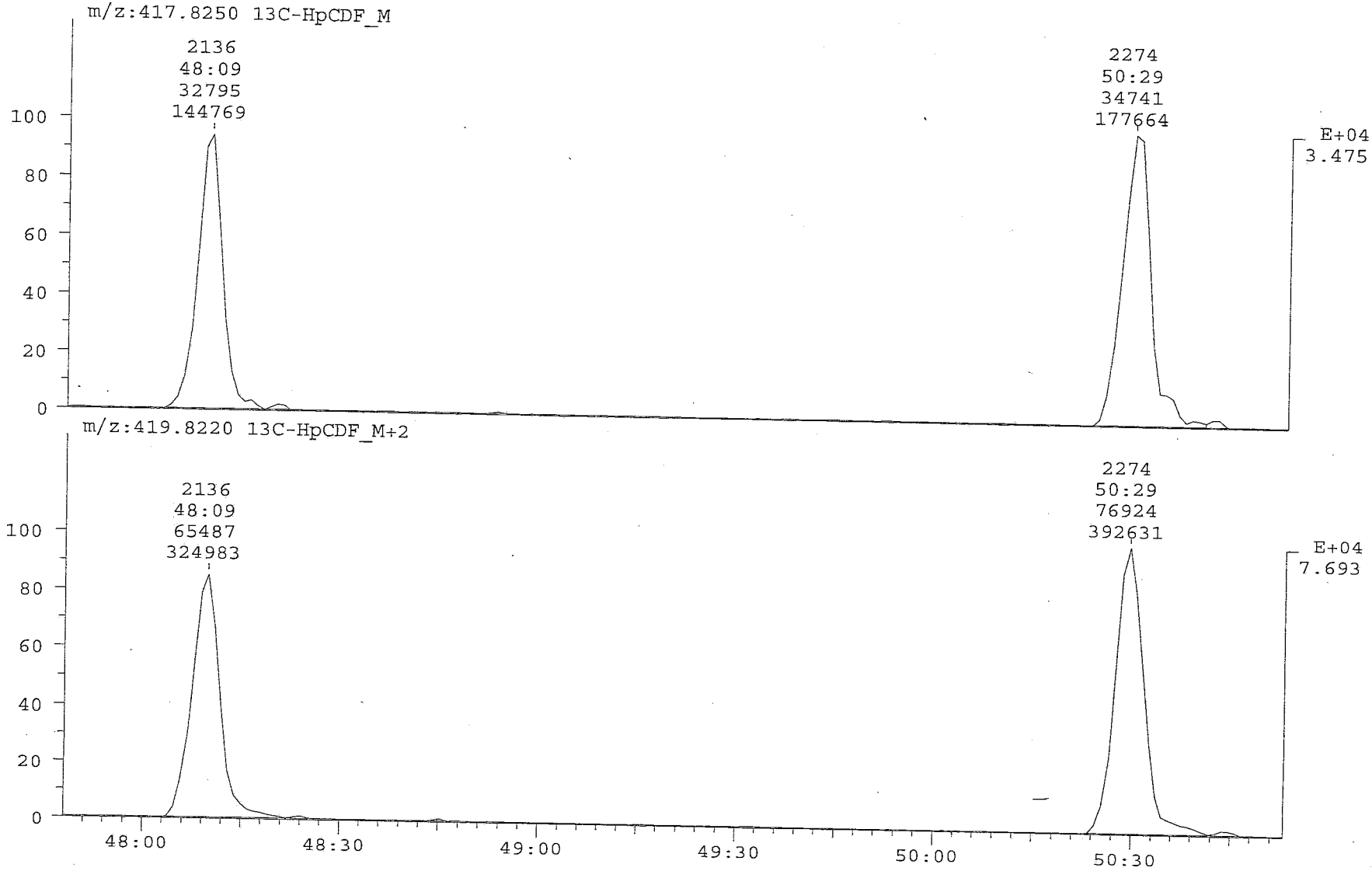


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2114 > 2297
Baseline : 100, 3

03-Aug-16

Elapse: 49:19 2205
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

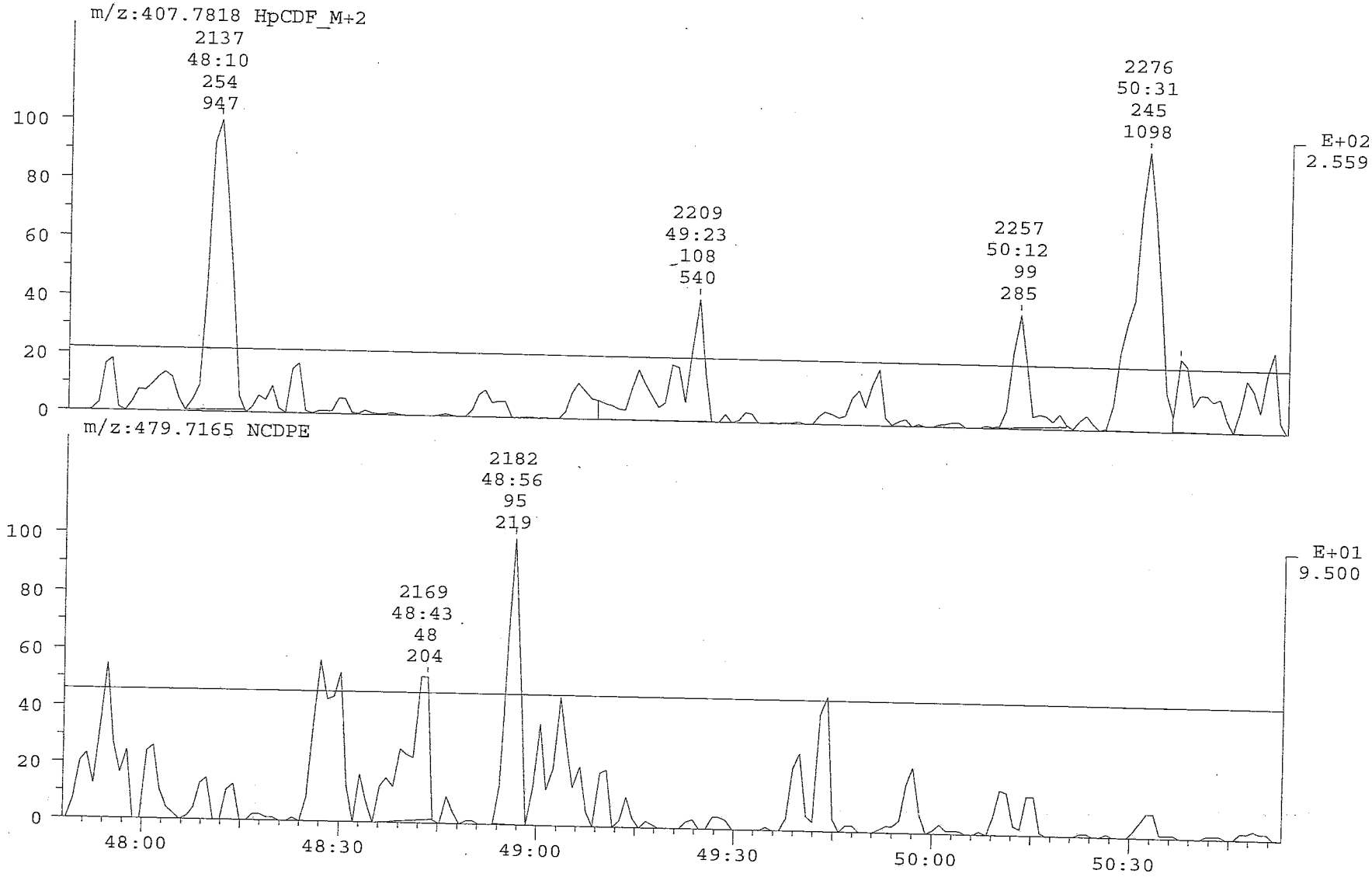


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2114 > 2297
Baseline : 100, 3

03-Aug-16

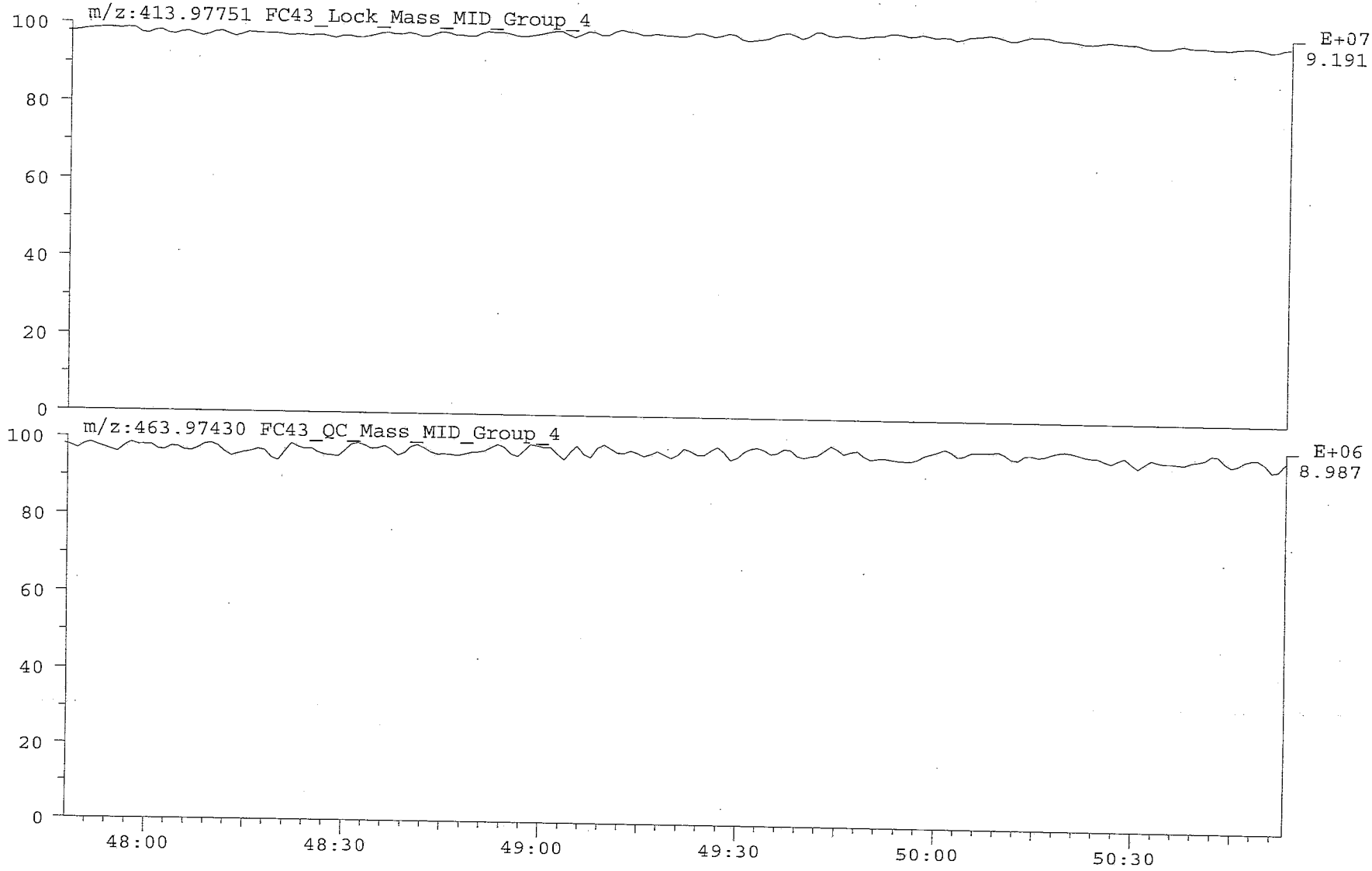
Elapse: 49:19 2205
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 2114 > 2297
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

Elapse: 49:19 2205
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : 0, 0.0

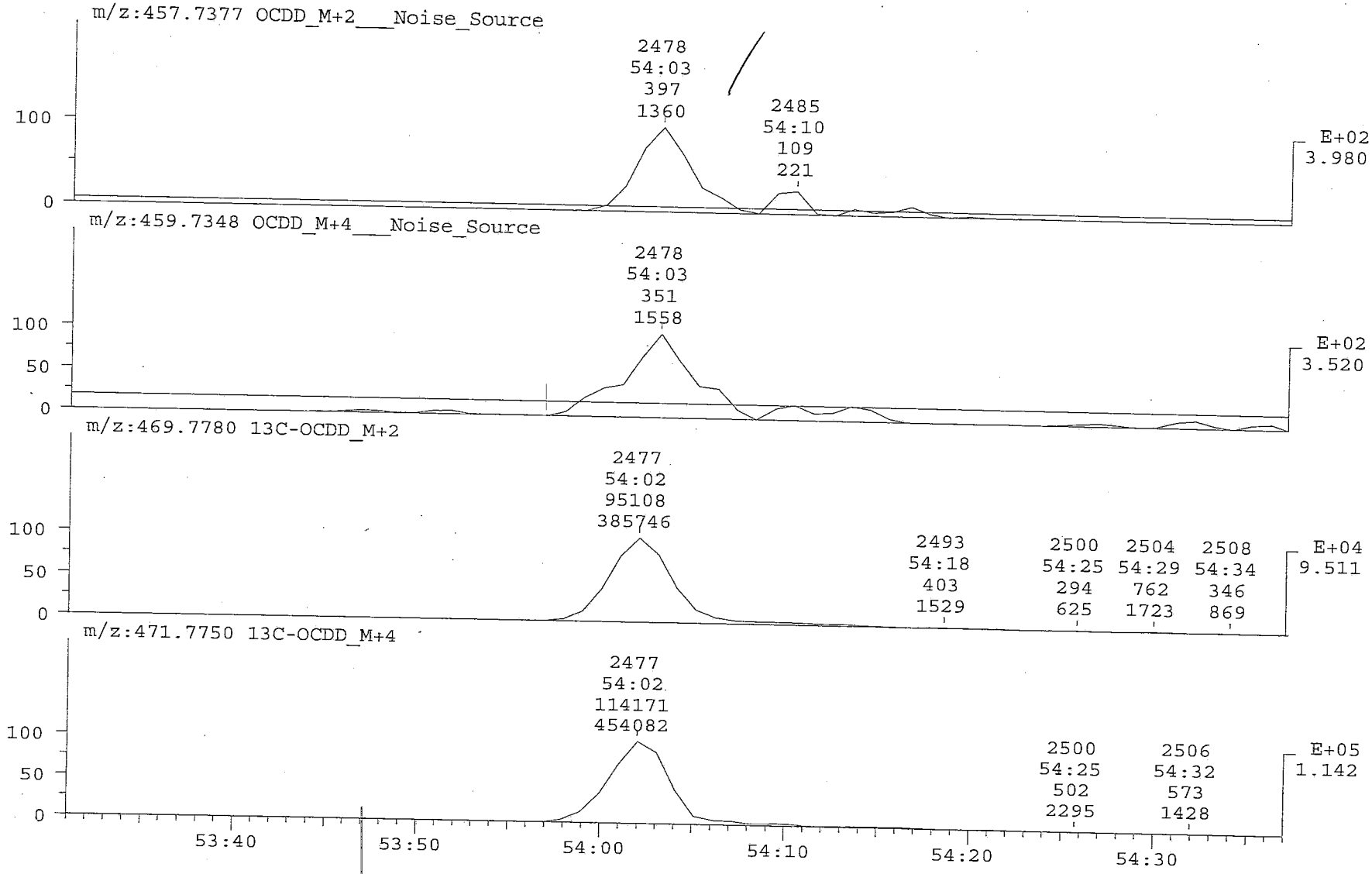


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2447 > 2511
Baseline : 100, 3

03-Aug-16

Elapse: 54:01 2476
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

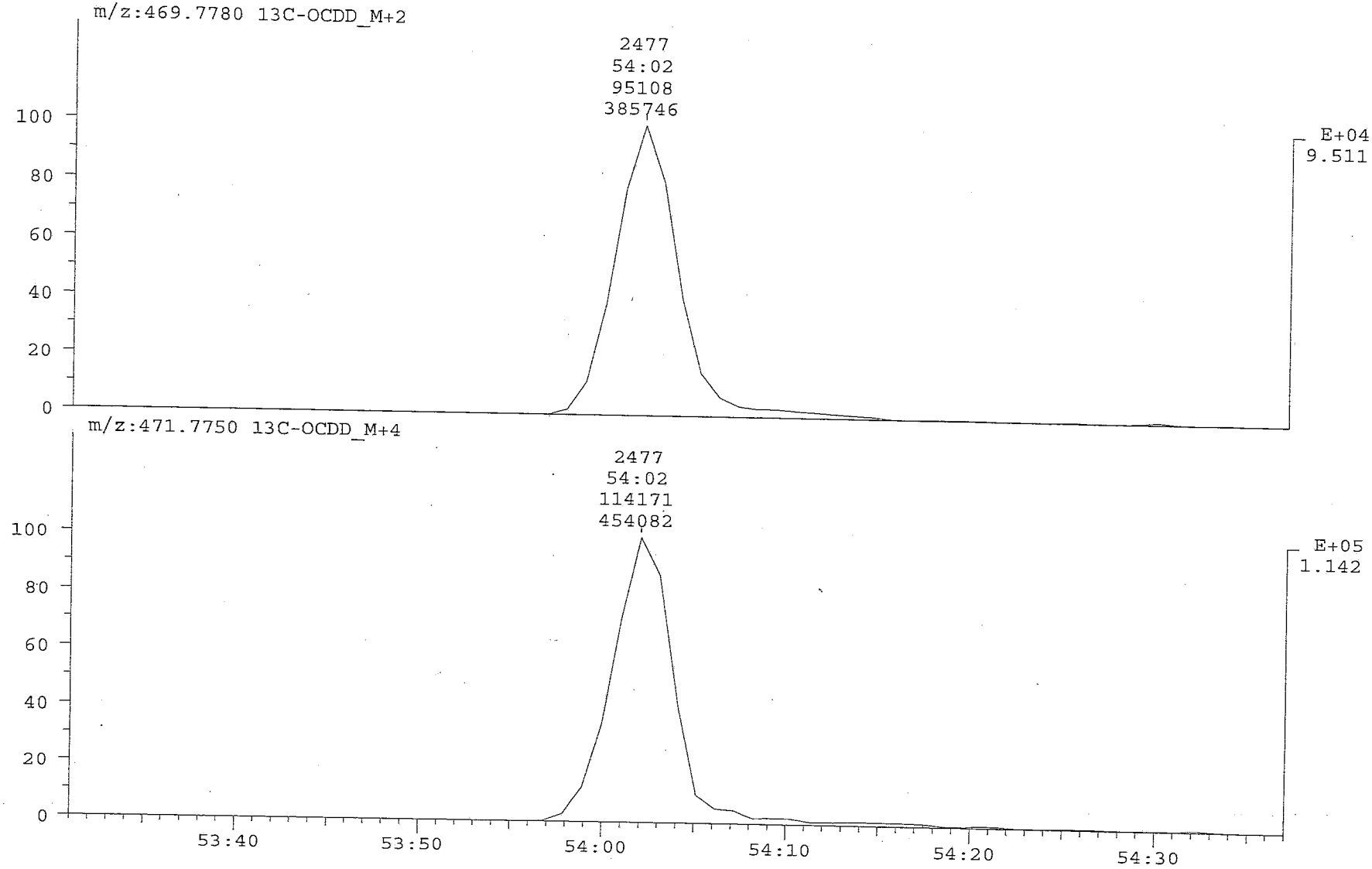


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2447 > 2511
Baseline : 100, 3

03-Aug-16

Elapse: 54:01 2476
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

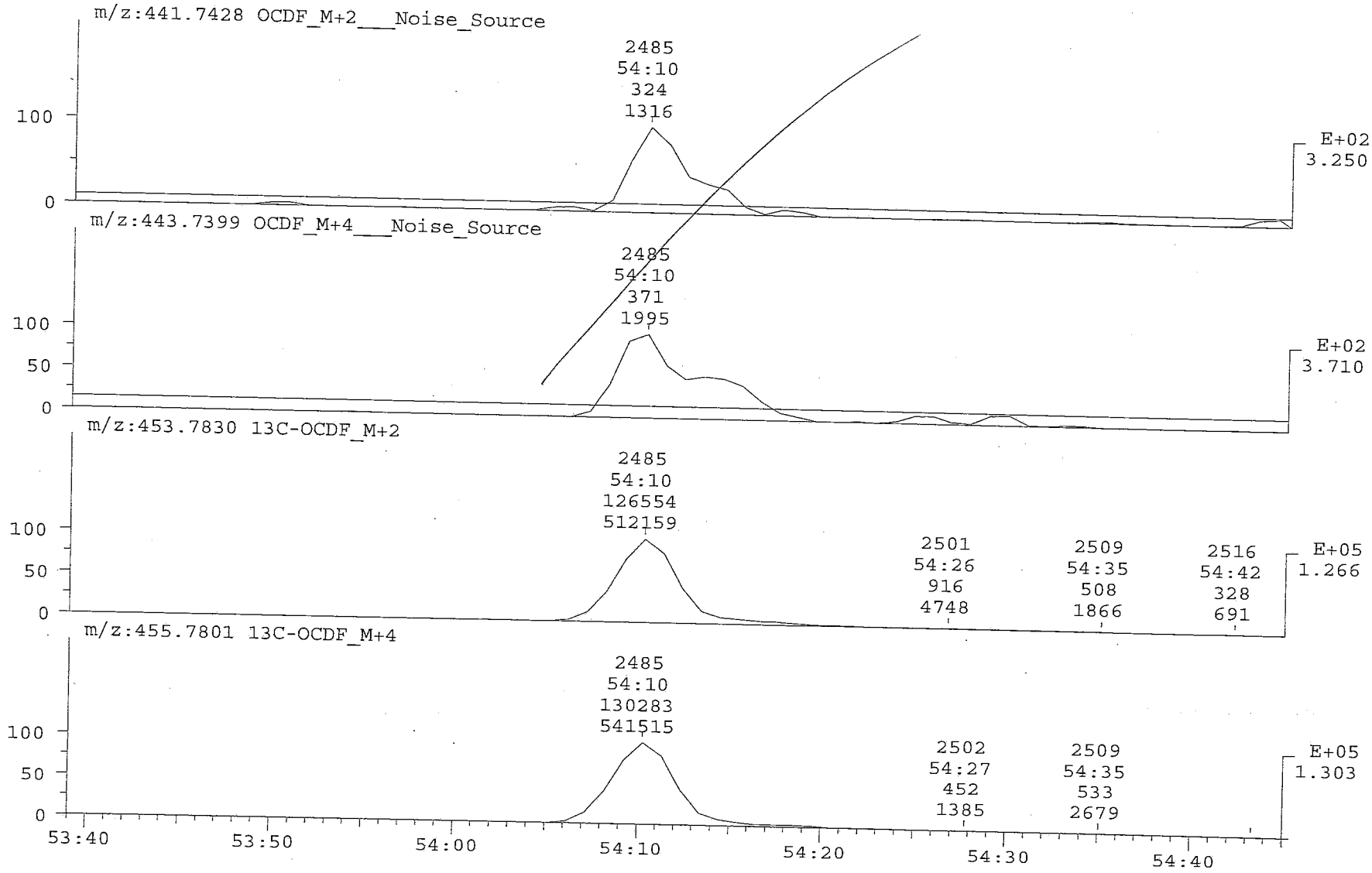


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2455 > 2519
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

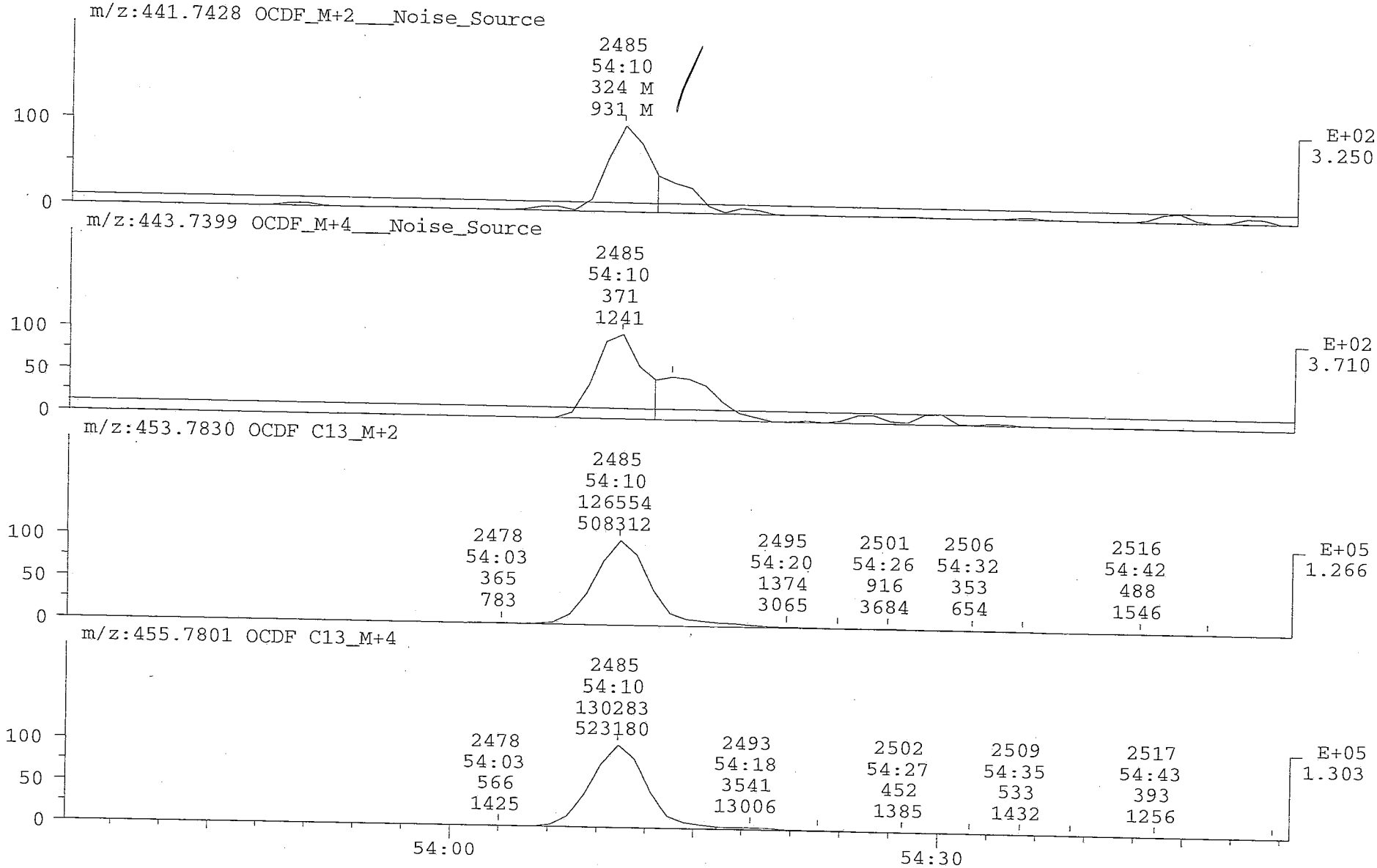


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

03-Aug-16

Label wndw: 2452 > 2525
Baseline : 100, 1

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

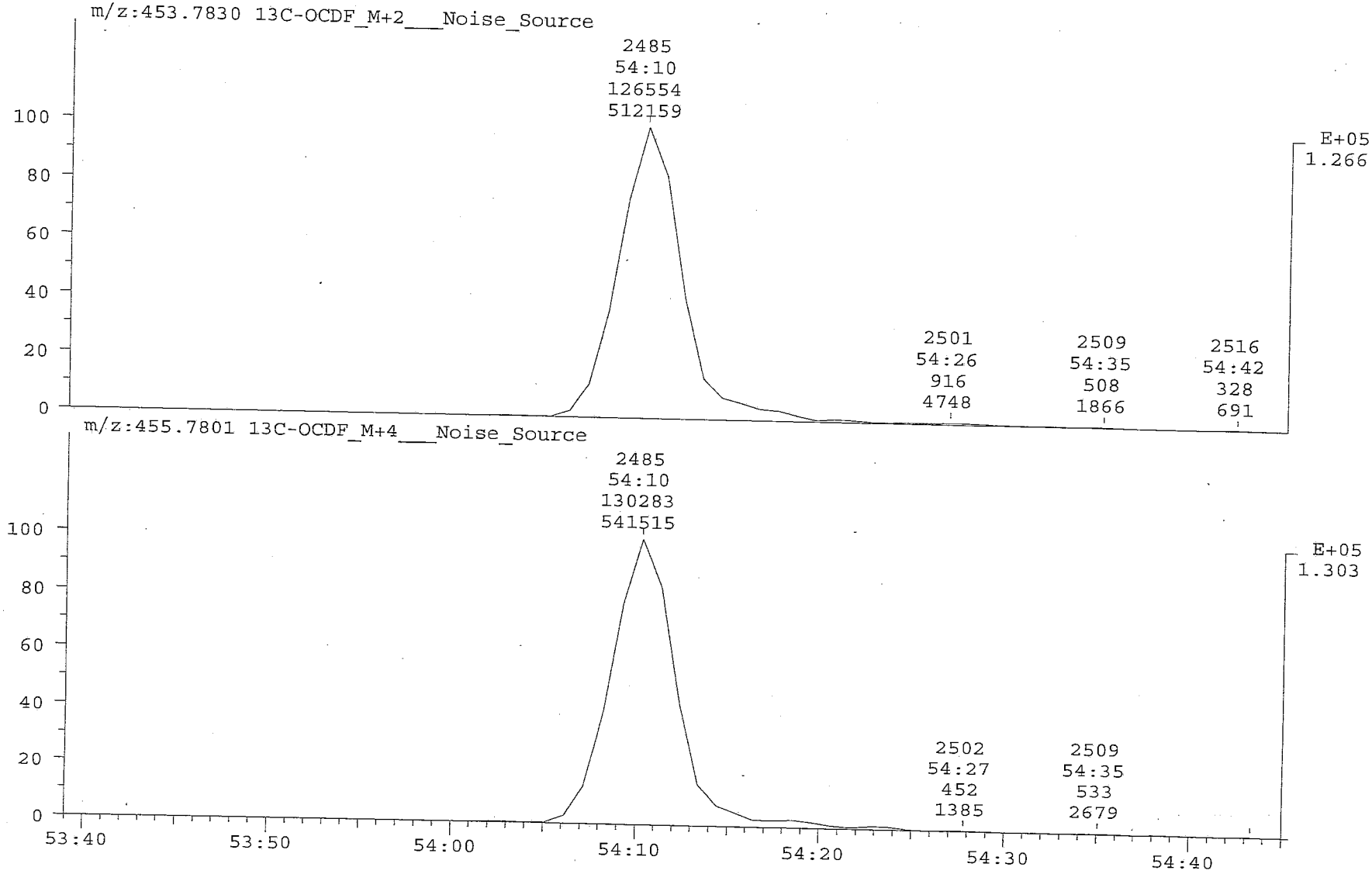


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2455 > 2519
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

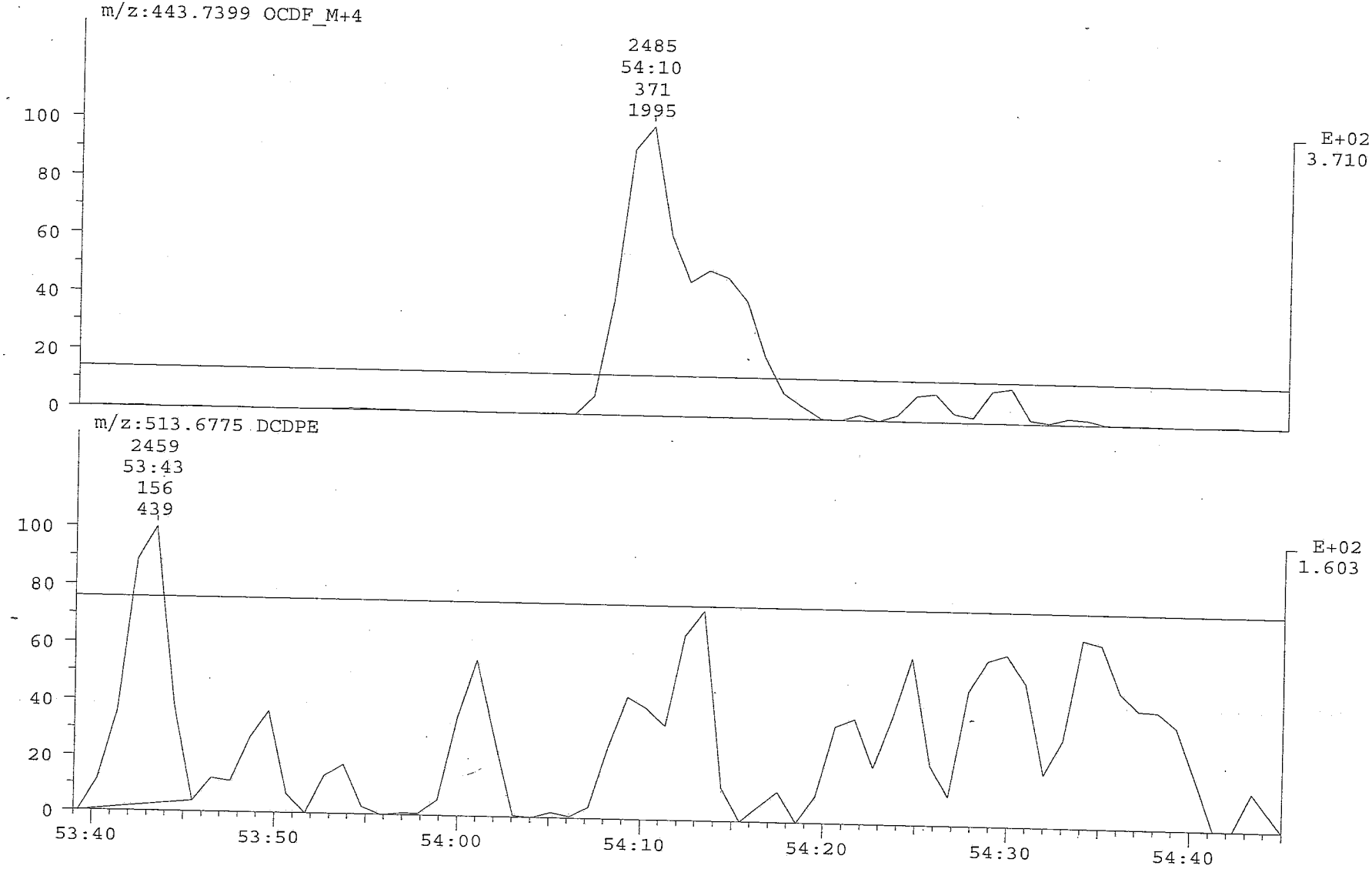


CHRO: d2tm8116b
Samp: WO=m81161aa Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

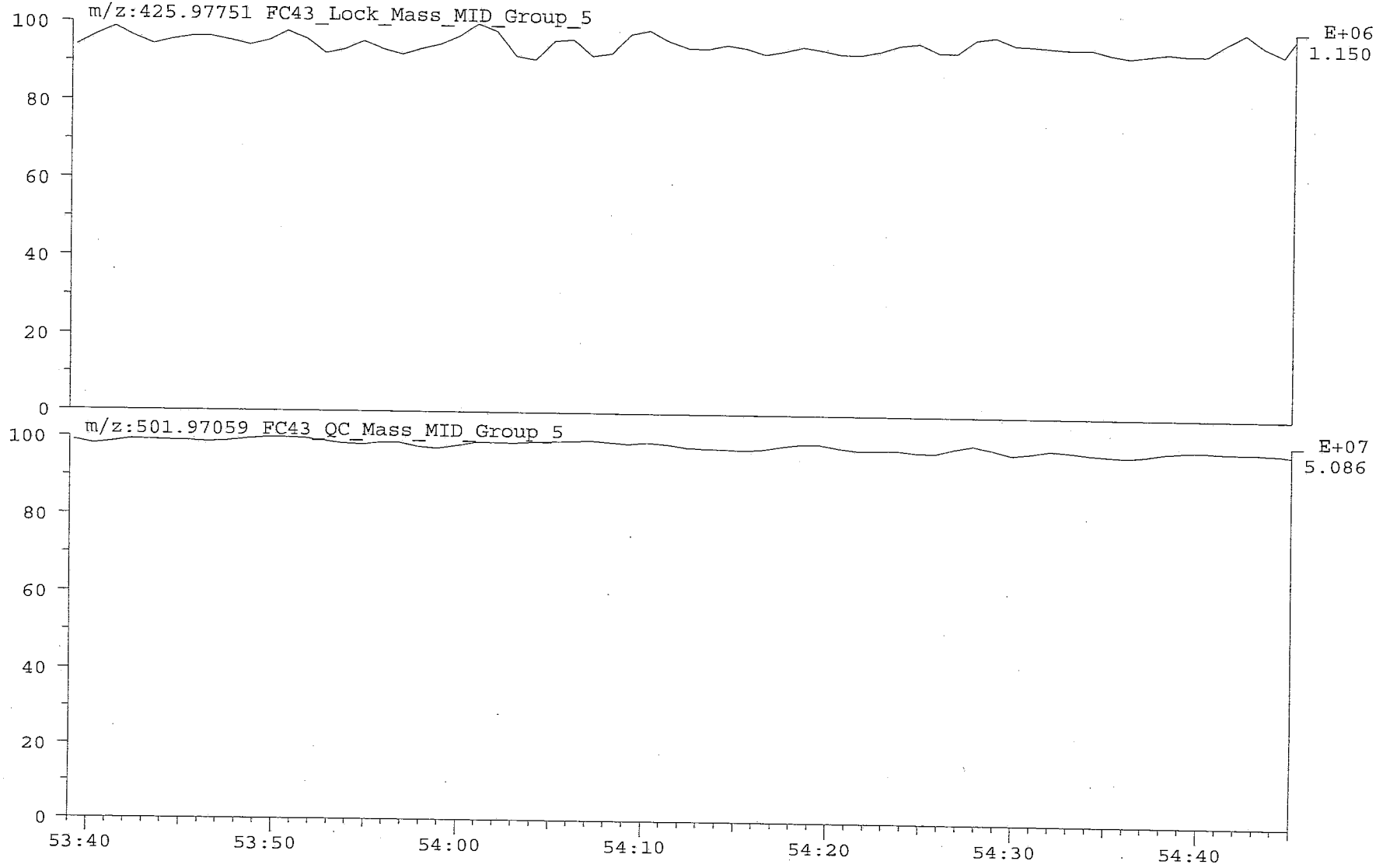
Label wndw: 2455 > 2519
Baseline : 100, 3

03-Aug-16

Elapse: 54:09 2484
Start : 14:40:27 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116b 03-Aug-16 Elapse: 54:09 2484
Samp: WO=m81161aa Meth=IN2o Dil=1 Start : 14:40:27 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 03 14:42:54 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 03-Aug-16 14:42:54

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:47 min	34:47 min	0.99 sec
# 2	34:47 min	7:21 min	42:08 min	1.00 sec
# 3	42:08 min	4:51 min	47:00 min	1.00 sec
# 4	47:00 min	5:30 min	52:30 min	1.00 sec
# 5	52:30 min	5:00 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7
375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 34.800000 minutes
MID Window end time was 34.800000 minutes
MID Window terminated after 42.150000 minutes
MID Window end time was 42.150000 minutes
MID Window terminated after 47.000000 minutes
MID Window end time was 47.000000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\system\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	2000.0000	BCORRS	0.0177	BMASS	310.4834
BQUAD	7.9000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	15.5000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2469.0000
ELEN	-45.0000	EMULT	1687.0000	ENS	176.0000
ENSBR	7.9000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	176.0000	EXSBR	2.6000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	14.8000
FQUADGAIN	22.0000	FREQ	200.0000	FSLOPE	36000000.0000
FVANAL	0.0307	FVINLET	0.0286	FVSRC	0.0253
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	763.0000
LENS_SYM	0.0000	LM	375.8364	LMII	500.0000
LMASS	310.4834	LKM	425.9770	MASS	310.4834
MDAC	3516951.9748	MRANGE	1238.2603	NSAM	100.0000
NSCAN	2699.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.3000	RECURR	0.8982	RELEN	0.0000
RES	11116.9309	RPUSHER	-11.1868	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	766.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0534	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	100.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.4834	XLENS_POT	988.0000
XLENS_SYM	16.5000	YLENS_POT	738.0000	YLENS_SYM	30.8000

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 8.4e-008 mbar
Pirani Analyse: 3.1e-002 mbar
Pirani Source: 2.5e-002 mbar
Pirani Inlet System: 2.9e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 11238.
MID Time Window 2: Resolution is 11460.
MID Time Window 3: Resolution is 10753.
MID Time Window 4: Resolution is 11214.
MID Time Window 5: Resolution is 11116.

Amplifier Offset: 95.

*** File closed Wed Aug 03 15:40:25 2016
***

User: finnigan
Host: knx-alpha5.tai.com
Class: knx-alpha5.tai.com
Job: d2tm8116b.log

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M812E1AC	Prep Batch	6211032	Lot No	H6G290000-032
Data File	/20160803s2/d2tm812ec.d	Prep Date	07/31/16	SDG No	
Analysis ID	180499	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/3/2016	Matrix	AQUEOUS	Date Sampled	07/25/16
Analysis Time	12:39	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09Q&01
Anal Exp Date	09/14/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D2A	Dil Factor	1.00	Code	9Ao
Analyst	MSD				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/L)		DL (pg/L)
2,3,7,8-TCDD	31:18	189720	18713	1.171	200.0	216.954142	108.48	216.954142		1.69
Total TCDD				1.171		216.954142		216.954142		1.69
2,3,7,8-TCDF	29:15	311055	33672	1.090	200.0	224.833899	112.42	224.833899		1.57
Total TCDF		4351	697	1.090		227.978849		227.978849	Q	1.57
1,2,3,7,8-PeCDD	40:45	656526	148784	1.047	1000	1037.66369	103.77	1037.66369		1.13
Total PeCDD		9145	1755	1.047		1052.11770		1052.11770	Q	1.13
1,2,3,7,8-PeCDF	39:01	1052161	204837	1.187	1000	968.824466	96.88	968.824466		1.22
2,3,4,7,8-PeCDF	40:14	1079571	240111	1.105	1000	1038.23523	103.82	1038.23523		1.09
Total PeCDF		45247	6283	1.146		2049.60659		2049.60659	Q	1.14
1,2,3,4,7,8-HxCDD	44:59	817185	214640	1.140	1000	1081.93904	108.19	1081.93904		2.54
1,2,3,6,7,8-HxCDD	45:06	794637	192619	1.146	1000	1025.21047	102.52	1025.21047		2.58
1,2,3,7,8,9-HxCDD	45:28	967249	238266	1.210	1000	1193.66690	119.37	1193.66690		2.42
Total HxCDD				1.166		3300.81641		3300.81641		2.51
1,2,3,4,7,8-HxCDF	43:57	1192370	323566	1.364	1000	1060.78563	106.08	1060.78563		1.42
1,2,3,6,7,8-HxCDF	44:05	1222232	299381	1.278	1000	1027.11773	102.71	1027.11773		1.49
2,3,4,6,7,8-HxCDF	44:48	1592174	400113	1.267	1000	1049.94390	104.99	1049.94390		1.12
1,2,3,7,8,9-HxCDF	45:45	1388115	310867	1.285	1000	1000.19726	100.02	1000.19726		1.32
Total HxCDF		14254	2604	1.299		4148.93475		4148.93475	Q	1.32
1,2,3,4,6,7,8-HpCDD	49:49	874802	171297	1.121	1000	1051.11572	105.11	1051.11572		1.11
Total HpCDD		27081	5215	1.121		1083.65482		1083.65482	Q	1.11
1,2,3,4,6,7,8-HpCDF	48:08	1163764	243295	1.497	1000	1055.70636	105.57	1055.70636	B	0.903
1,2,3,4,7,8,9-HpCDF	50:27	1122477	217508	1.383	1000	983.084230	98.31	983.084230	B	0.921
Total HpCDF		19305	3825	1.440		2055.95656		2055.95656	QB	0.911
OCDD	54:00	1345817	324560	1.243	2000	1839.96385	92.00	1839.96385	B	1.40
OCDF	54:09	1737908	418282	1.119	2000	1913.21591	95.66	1913.21591	B	1.55
13C-2,3,7,8-TCDD	31:14	746782	75587	1.067	1000	691.367220	69.14	691.367220		4.96
13C-2,3,7,8-TCDF	29:13	1269704	135977	1.750	1000	716.871573	71.69	716.871573		1.19
13C-1,2,3,7,8-PeCDD	40:44	604150	141753	0.873	1000	683.627811	68.36	683.627811		0.561
13C-1,2,3,7,8-PeCDF	38:59	914843	176744	1.368	1000	660.491294	66.05	660.491294		1.95
13C-2,3,4,7,8-PeCDF	40:13	941322	212409	1.381	1000	673.628630	67.36	673.628630		1.93
13C-1,2,3,4,7,8-HxCDD	44:58	662677	167392	0.893	1000	718.797677	71.88	718.797677		2.13
13C-1,2,3,6,7,8-HxCDD	45:05	676174	163864	0.929	1000	704.651466	70.47	704.651466		2.04
13C-1,2,3,4,7,8-HxCDF	43:56	824185	225222	1.213	1000	657.841005	65.78	657.841005		1.00
13C-1,2,3,6,7,8-HxCDF	44:03	931213	230308	1.489	1000	605.835481	60.58	605.835481		0.817
13C-2,3,4,6,7,8-HxCDF	44:47	1196448	307458	1.346	1000	860.656765	86.07	860.656765		0.903
13C-1,2,3,7,8,9-HxCDF	45:44	1079865	257360	1.210	1000	864.558738	86.46	864.558738		1.01
13C-1,2,3,4,6,7,8-HpCDD	49:47	742584	143199	0.823	1000	873.665849	87.37	873.665849		0.348
13C-1,2,3,4,6,7,8-HpCDF	48:07	736317	157202	1.069	1000	666.784627	66.68	666.784627		0.712
13C-1,2,3,4,7,8,9-HpCDF	50:26	825417	166818	0.904	1000	884.147315	88.41	884.147315		0.842
13C-OCDD	54:00	1176720	295050	0.708	2000	1610.25466	80.51	1610.25466		0.698
13C-1,2,3,4-TCDD	30:43	2024321	204025	1.000	2000	2000.00000	100.00	2000.00000		5.29
13C-1,2,3,7,8,9-HxCDD	45:27	2065248	505888	1.000	2000	2000.00000	100.00	2000.00000		1.90
13C-OCDF	54:08	1622984	391366	1.072	2000	1465.89509	73.29	1465.89509		0.424

kc 8/19/16
KMS 8-25-16

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M812E1AC	Prep Batch	6211032	Lot No	H6G290000-032
Data File	/20160803s2/d2tm812ec.d	Prep Date	07/31/16	SDG No	
Analysis ID	180499	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/03/16 12:39	Matrix	AQUEOUS	Date Sampled	07/25/16
Anal Exp Date	09/14/16	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09Q&01
Instrument	D2A	Extract Vol	20 uL	Method	DX8290A
Analyst	MSD	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	85	148	34	59	0.58 *	/	
	2,3,7,8-TCDF	29:15	29:15	0	137691	173364	15304	18368	0.79	ABV/ABV	
	Unidentified	29:39	00:00	0	904	3447	296	401	0.26 *	AVB/AVV	R
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	110	103	44	41	1.07 *	/	
	13C-2,3,7,8-TCDF	29:13	29:12	1	561900	707804	63548	72429	0.79	ABV/ABV	
	Unidentified	29:36	00:00	0	1134	5349	560	901	0.21 *	AVV/AVV	RT
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	75	75	30	30	1.00 *	/	
	2,3,7,8-TCDD	31:18	31:17	1	87257	102463	8695	10018	0.85	ABV/ABV	D
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	315	225	126	90	1.40 *	/	
	13C-1,2,3,4-TCDD	30:43	30:43	0	904512	1119809	90856	113169	0.81	AVV/ABV	
	13C-2,3,7,8-TCDD	31:14	31:14	0	332684	414098	32840	42747	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	130	125	52	50	1.04 *	/	
	1,2,3,7,8-PeCDF	39:01	39:00	1	646805	405356	125852	78985	1.60	ABV/ABV	
	Unidentified	39:18	00:00	0	9358	5556	1195	651	1.68	AVV/AVV	
	Unidentified	39:32	00:00	0	9940	5844	1372	1017	1.70	AVV/AVB	
	2,3,4,7,8-PeCDF	40:14	40:14	0	665642	413929	147852	92259	1.61	ABV/AVV	
	Unidentified	40:26	00:00	0	8087	6462	1226	822	1.25 *	AVV/AVB	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	180	93	72	37	1.95 *	/	
	13C-1,2,3,7,8-PeCDF	38:59	38:58	1	565872	348971	107794	68950	1.62	ABV/ABV	
	Unidentified	39:30	00:00	0	6531	2121	1339	492	3.08 *	ABV/AVB	RT
	13C-2,3,4,7,8-PeCDF	40:13	40:13	0	582872	358450	131823	80586	1.63	ABV/ABV	
	Unidentified	40:26	00:00	0	2343	5767	981	850	0.41 *	AVV/AVB	RT
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	120	48	48	19	2.53 *	/	
	1,2,3,7,8-PeCDD	40:45	40:45	0	406506	250020	91632	57152	1.63	ABV/ABV	
	Unidentified	41:03	00:00	0	2767	560	370	149	4.94 *	AVV/AVB	RT
	Unidentified	41:25	00:00	0	3589	2229	911	325	1.61	ABB/ABB	
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	38	13	15	5	3.00 *	/	
	13C-1,2,3,7,8-PeCDD	40:44	40:44	0	373520	230630	88912	52841	1.62	ABV/ABV	
	Unidentified	40:57	00:00	0	4675	1344	1146	347	3.48 *	AVB/AVB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	245	193	98	77	1.27	/	
	1,2,3,4,7,8-HxCDF	43:57	43:57	0	665261	527109	182522	141044	1.26	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:05	44:05	0	678135	544097	165454	133927	1.25	AVV/AVV	
	Unidentified	44:26	00:00	0	2647	3302	762	774	0.80 *	AVV/AVV	RT
	Unidentified	44:35	00:00	0	4264	4041	554	514	1.06	AVV/AVB	T

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M812E1AC	Prep Batch	6211032	Lot No	H6G290000-032
Data File	/20160803s2/d2tm812ec.	Prep Date	07/31/16	SDG No	
Analysis ID	180499	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/03/16 12:39	Matrix	AQUEOUS	Date Sampled	07/25/16
Anal Exp Date	09/14/16	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09Q&01
Instrument	D2A	Extract Vol	20 uL	Method	DX8290A
Analyst	MSD	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	2,3,4,6,7,8-HxCDF	44:48	44:48	0	892470	699704	224197	175916	1.28	AVV/ABV	
	1,2,3,7,8,9-HxCDF	45:45	45:45	0	782059	606056	176278	134589	1.29	ABV/ABV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	155	153	62	61	1.02 *	/	
	13C-1,2,3,4,7,8-HxCDF	43:56	43:56	0	290105	534080	82181	143041	0.54	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:03	44:04	-1	331973	599240	82796	147512	0.55	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	44:47	44:47	0	413295	783153	107329	200129	0.53	ABV/AVV	
	Unidentified	44:58	00:00	0	3329	11500	995	2114	0.29 *	AVV/AVV	RT
	13C-1,2,3,7,8,9-HxCDF	45:44	45:44	0	370417	709448	87373	169987	0.52	ABV/ABV	
	Unidentified	45:53	00:00	0	5245	18405	1503	4861	0.28 *	AVV/AVV	R
	Unidentified	46:01	00:00	0	3081	9659	903	2014	0.32 *	AVV/AVB	R
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	183	303	73	121	0.60 *	/	
	1,2,3,4,7,8-HxCDD	44:59	44:59	0	461768	355417	122561	92079	1.30	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:06	45:06	0	445589	349048	109650	82969	1.28	AVV/AVV	
	1,2,3,7,8,9-HxCDD	45:28	45:28	0	550468	416781	134353	103913	1.32	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	228	253	91	101	0.90 *	/	
	13C-1,2,3,4,7,8-HxCDD	44:58	44:58	0	375606	287071	96696	70696	1.31	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:05	45:05	0	389775	286399	95966	67898	1.36	AVV/AVB	
	13C-1,2,3,7,8,9-HxCDD	45:27	45:27	0	1166354	898894	284846	221042	1.30	AVV/ABV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	113	100	45	40	1.13	/	
	1,2,3,4,6,7,8-HpCDF	48:08	48:08	0	603248	560516	125429	117866	1.08	ABV/ABV	
	Unidentified	48:26	00:00	0	2669	2012	550	684	1.33 *	AVV/AVV	R
	Unidentified	48:31	00:00	0	2138	3335	442	530	0.64 *	AVV/AVV	R
	Unidentified	48:40	00:00	0	1284	713	412	231	1.80 *	AVV/AVV	R
	Unidentified	48:50	00:00	0	4354	2800	474	502	1.56 *	AVB/AVV	RT
	1,2,3,4,7,8,9-HpCDF	50:27	50:27	0	579968	542509	111422	106086	1.07	ABV/ABV	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	98	95	39	38	1.03 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:07	48:07	0	224986	511331	48034	109168	0.44	ABB/ABV	M
	Unidentified	48:29	00:00	0	2398	2079	468	537	1.15 *	ABB/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	50:26	50:26	0	258041	567376	52594	114224	0.45	ABV/ABV	
	Unidentified	50:38	00:00	0	6257	4187	1237	1203	1.49 *	AVB/AVV	R
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	53	125	21	50	0.42 *	/	
	Unidentified	48:38	00:00	0	12483	14598	2456	2759	0.86 *	ABV/ABV	R
	1,2,3,4,6,7,8-HpCDD	49:49	49:49	0	445714	429088	87897	83400	1.04	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	35	38	14	15	0.93	/	
	Unidentified	48:37	00:00	0	1406	4086	463	1434	0.34 *	ABB/ABB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M812E1AC	Prep Batch	6211032	Lot No	H6G290000-032
Data File	/20160803s2/d2tm812ec.	Prep Date	07/31/16	SDG No	
Analysis ID	180499	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/03/16 12:39	Matrix	AQUEOUS	Date Sampled	07/25/16
Anal Exp Date	09/14/16	Initial Wt/Vol	1000 mL	Lims Test Code	XXI09Q&01
Instrument	D2A	Extract Vol	20 uL	Method	DX8290A
Analyst	MSD	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

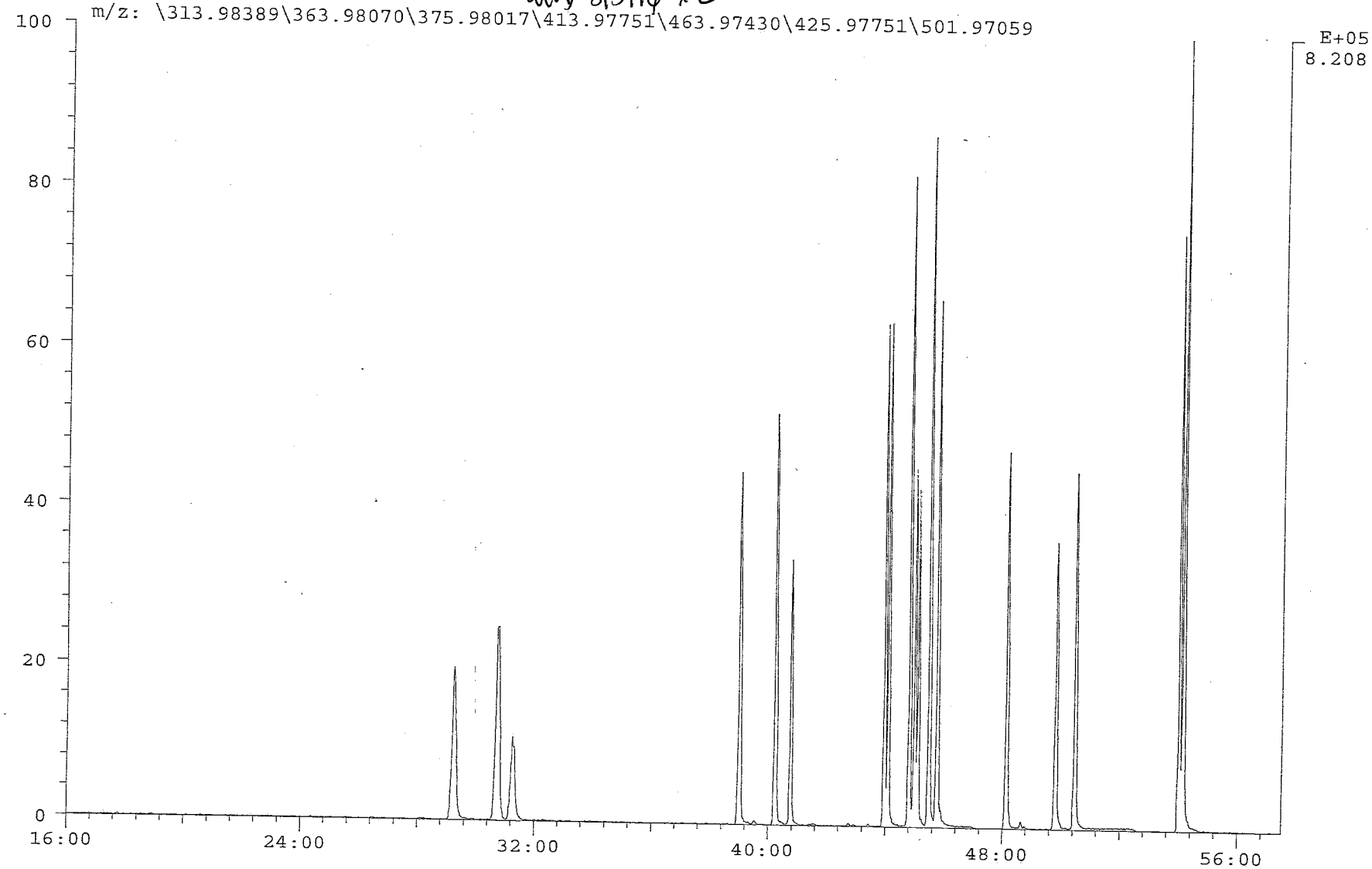
Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	13C-1,2,3,4,6,7,8-HpCDD	49:47	49:48	-1	384058	358526	76503	66696	1.07	ABV/ABV	
	Unidentified	50:09	00:00	0	2631	2660	397	765	0.99	AVB/AVB	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	213	128	85	51	1.67 *	/	
	OCDF	54:09	54:09	0	841135	896773	199391	218891	0.94	ABV/ABV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	80	35	32	14	2.29 *	/	
	13C-OCDF	54:08	54:08	0	771552	851432	183980	207386	0.91	ABV/ABV	
	Unidentified	54:33	00:00	0	4539	3957	893	767	1.15 *	AVV/AVV	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	115	143	46	57	0.81	/	
	OCDD	54:00	54:01	-1	642382	703435	153340	171220	0.91	ABV/ABV	
	Unidentified	54:23	00:00	0	2664	885	531	349	3.01 *	AVV/AVV	R
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	75	50	30	20	1.50 *	/	
	13C-OCDD	54:00	54:00	0	549727	626993	137240	157810	0.88	ABV/ABV	
	Unidentified	54:18	00:00	0	5507	1690	1163	474	3.26 *	AVV/AVV	RT
	Unidentified	54:29	00:00	0	2788	2128	740	524	1.31 *	AVB/AVB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

CHRO: d2tm8116c M8/2E/AC 9A6
Samp: WO=~~m8116lac~~ Meth=~~IN2o~~ Dil=1 03-Aug-16 Elapse: 54:08 2483
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2 Start : 12:39:36 2678
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 238 > 2678 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int MLD 8-3-16
Calc In 8/19/16
QC/Rev CM 8-25-16

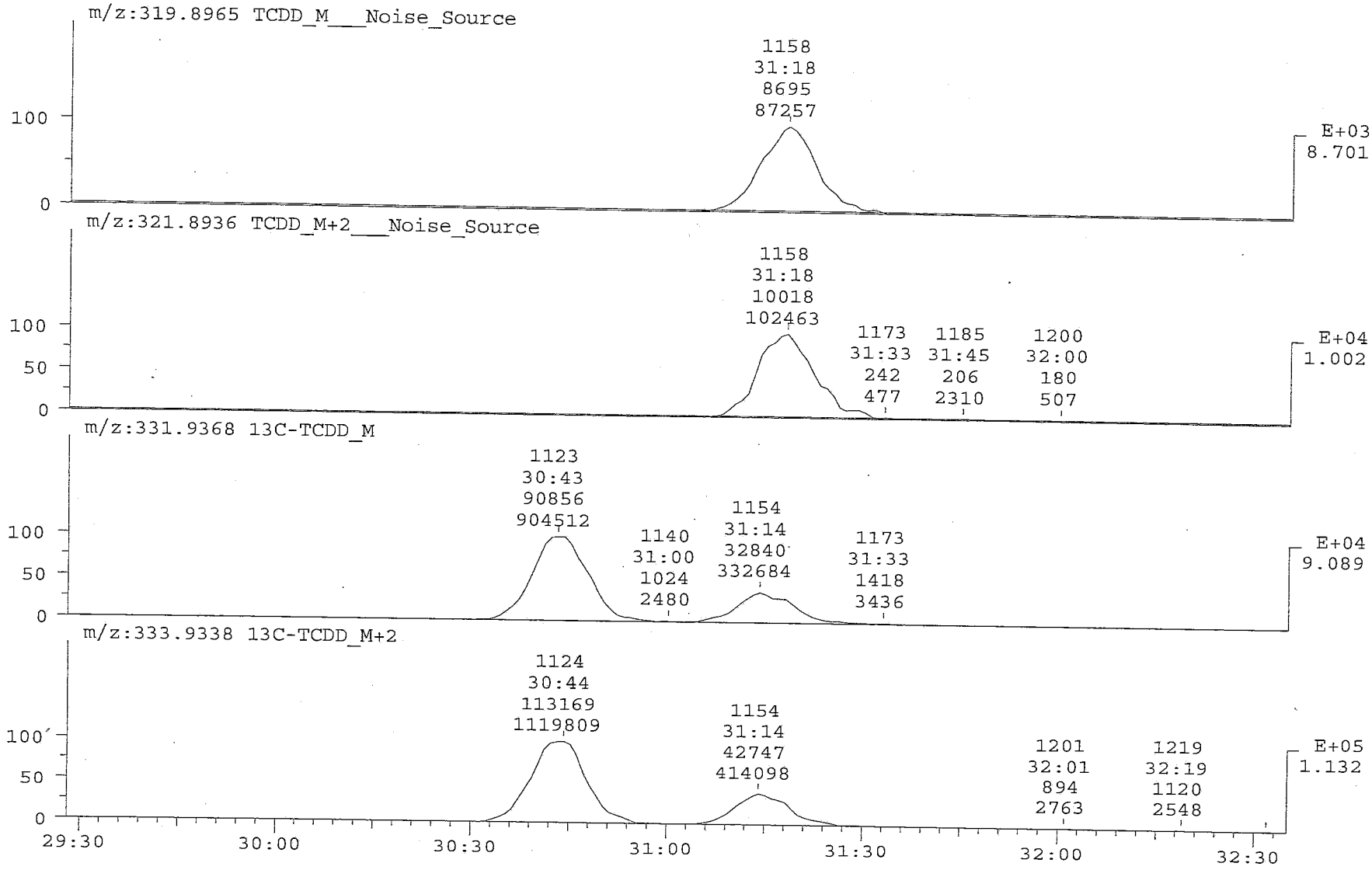
MLD 8/3/16 x2



CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 1048 > 1235
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

Elapse: 31:01 1141
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

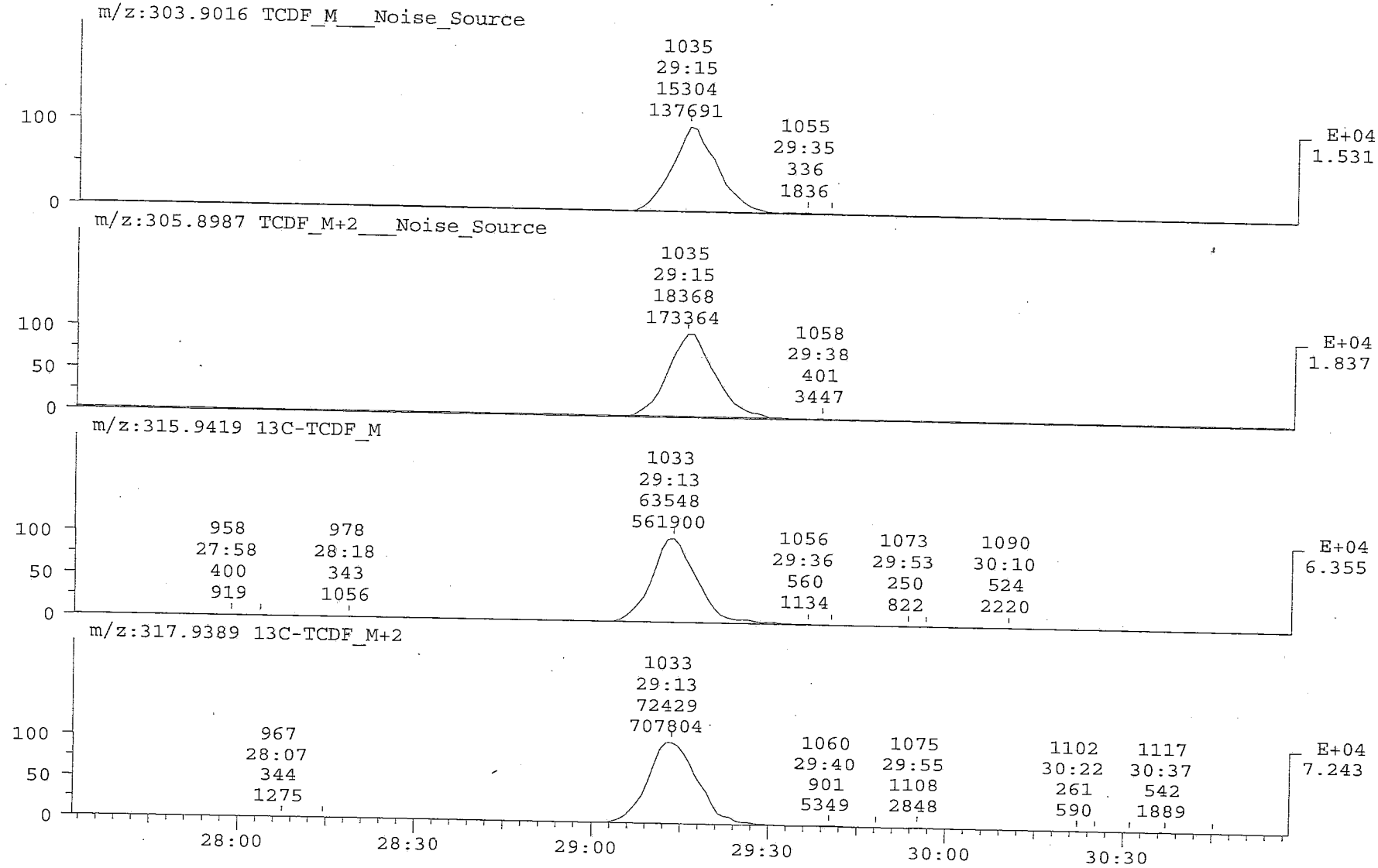


CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 931 > 1138
Baseline : 100, 3

03-Aug-16

Elapse: 29:12 1032
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

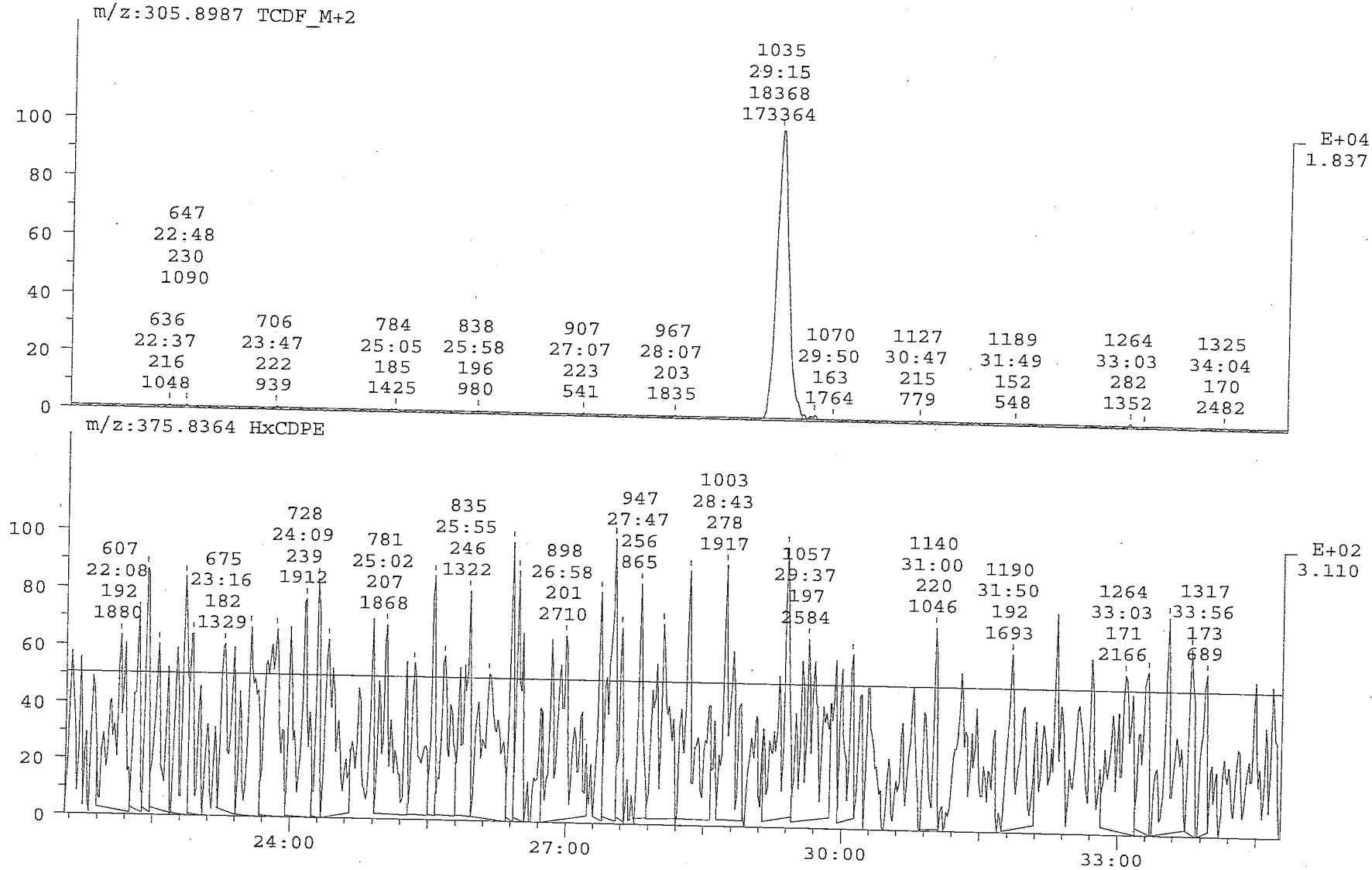


CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

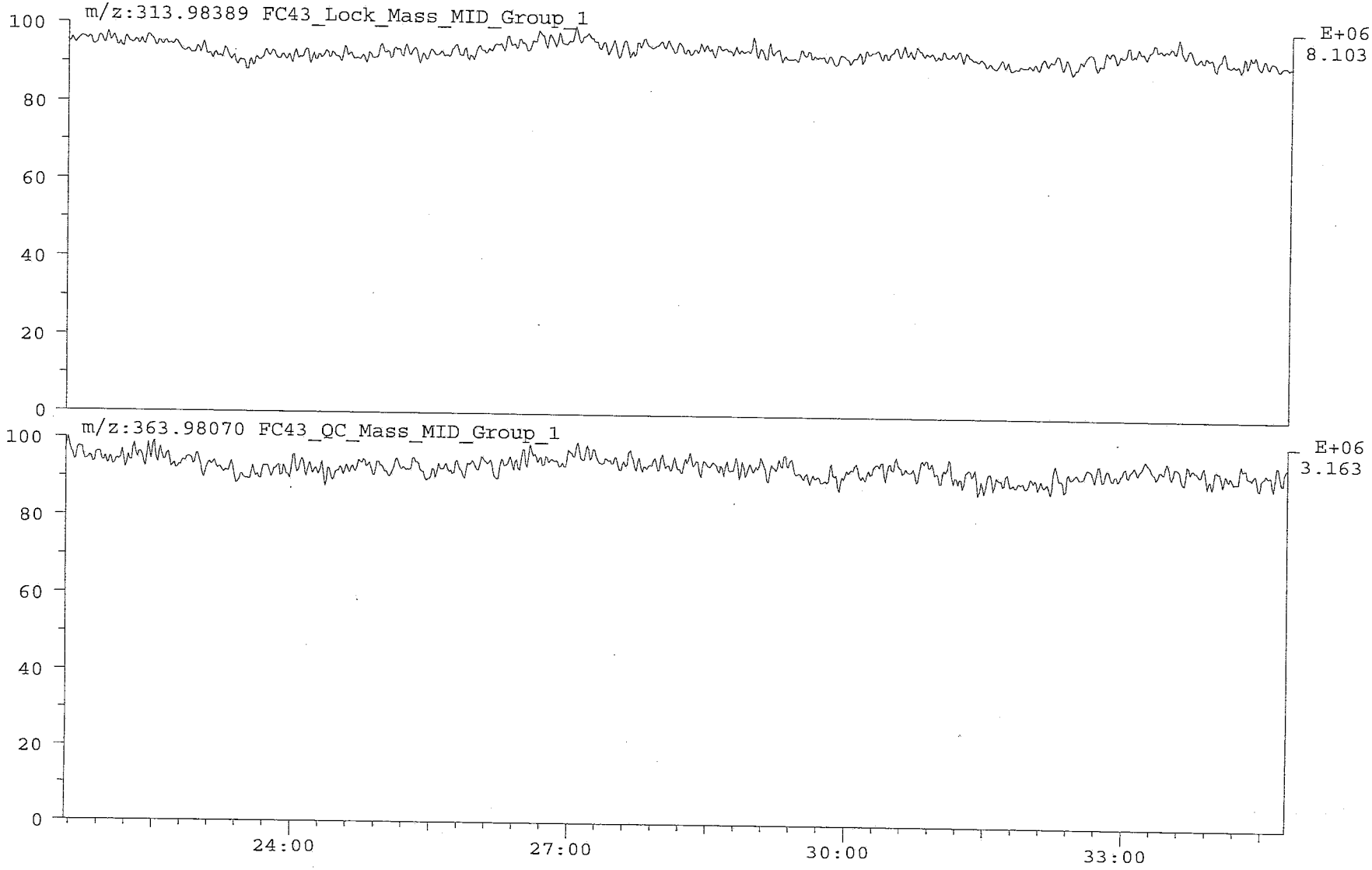
Label wndw: 571 > 1366
Baseline : 100, 3

03-Aug-16

Elapse: 29:12 1032
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116c 03-Aug-16 Elapse: 29:12 1032
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 571 > 1366 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

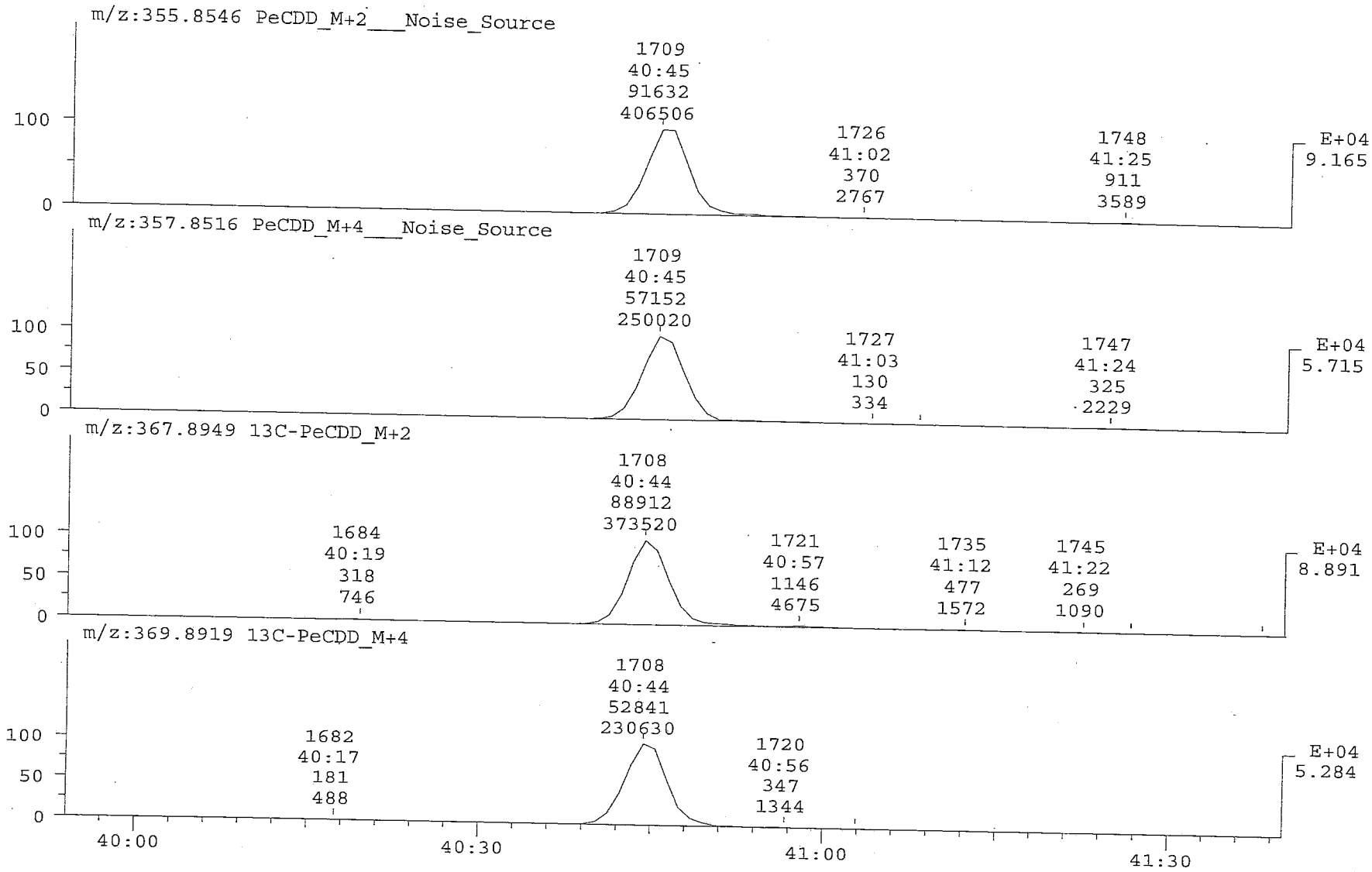


CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1659 > 1762
Baseline : 100, 3

03-Aug-16

Elapse: 40:44 1708
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0

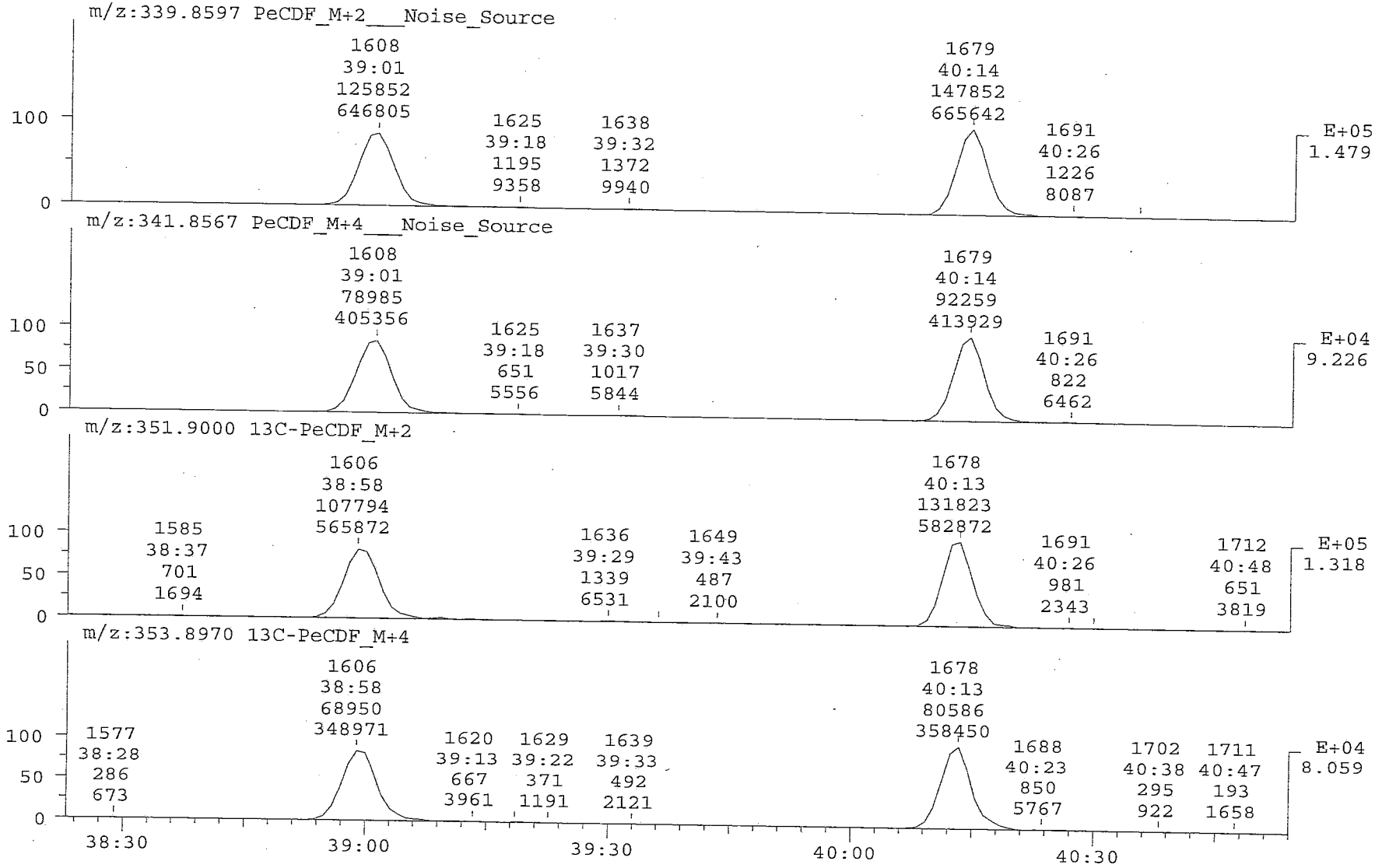


CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 1571 > 1717
Baseline : 100, 3

03-Aug-16

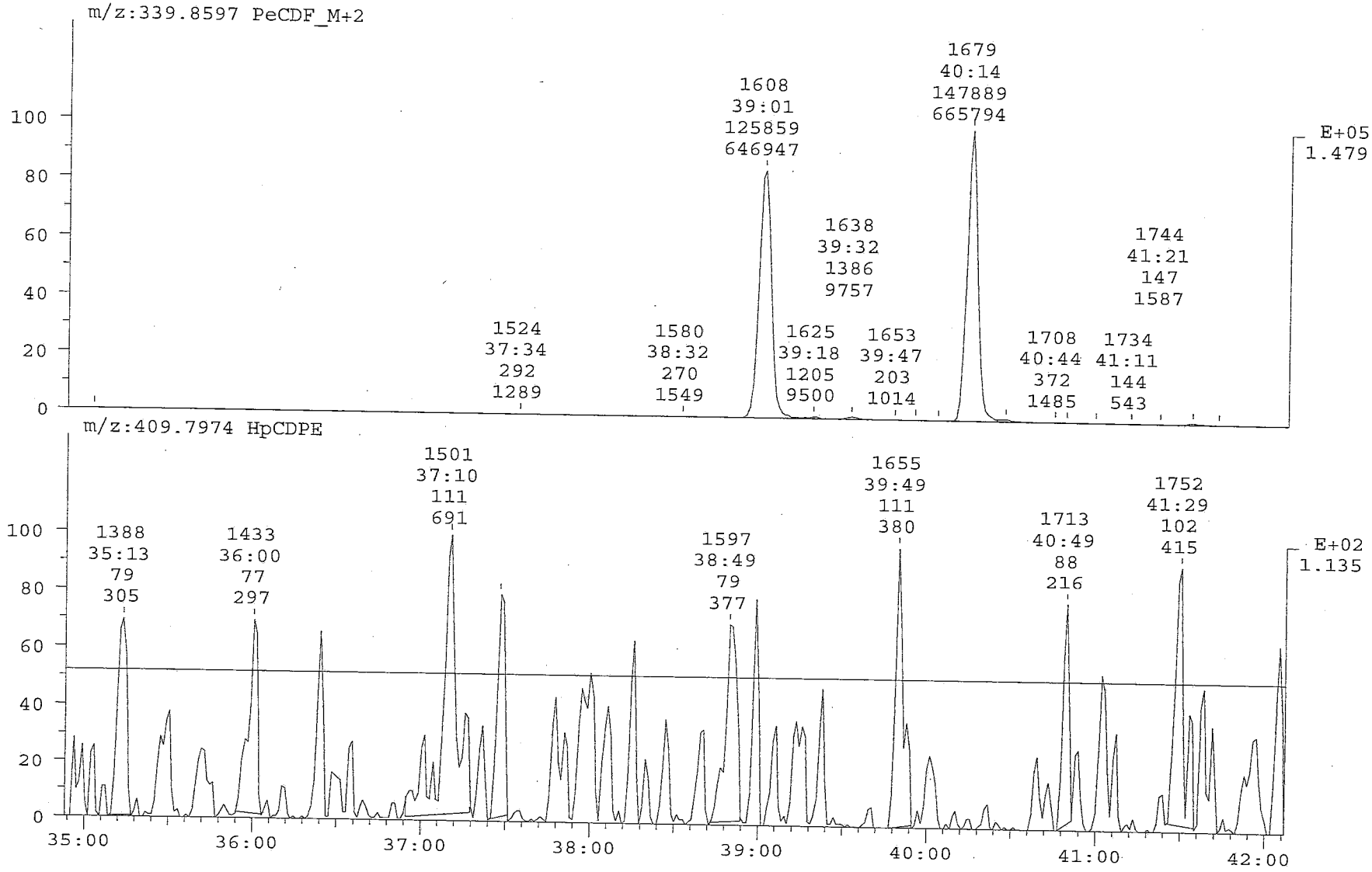
Elapse: 39:38 1644
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



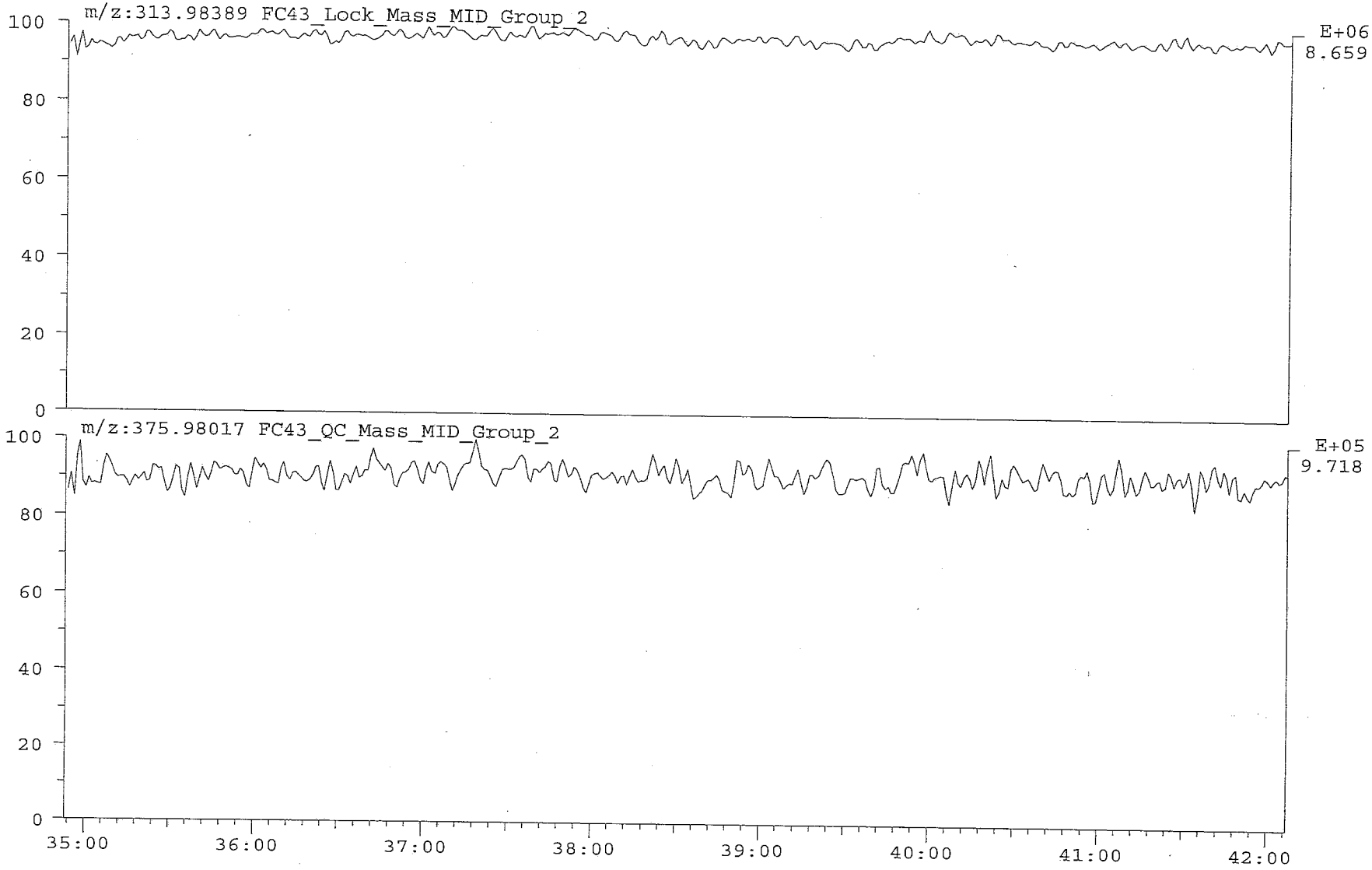
CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 1369 > 1788
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

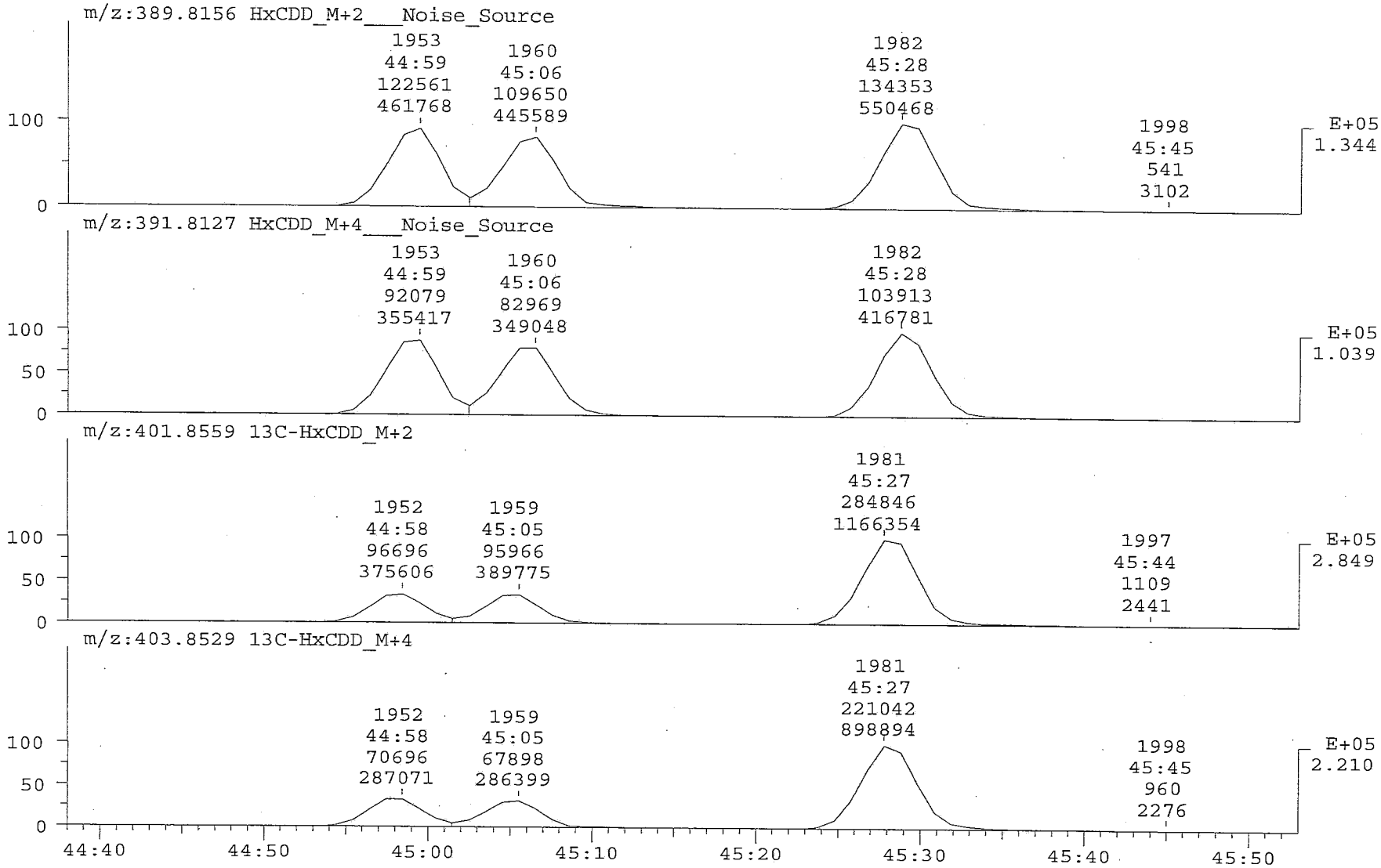
Elapse: 39:38 1644
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116c 03-Aug-16 Elapse: 39:38 1644
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1369 > 1788 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



CHRO: d2tm8116c 03-Aug-16 Elapse: 45:14 1968
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1932 > 2006 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area

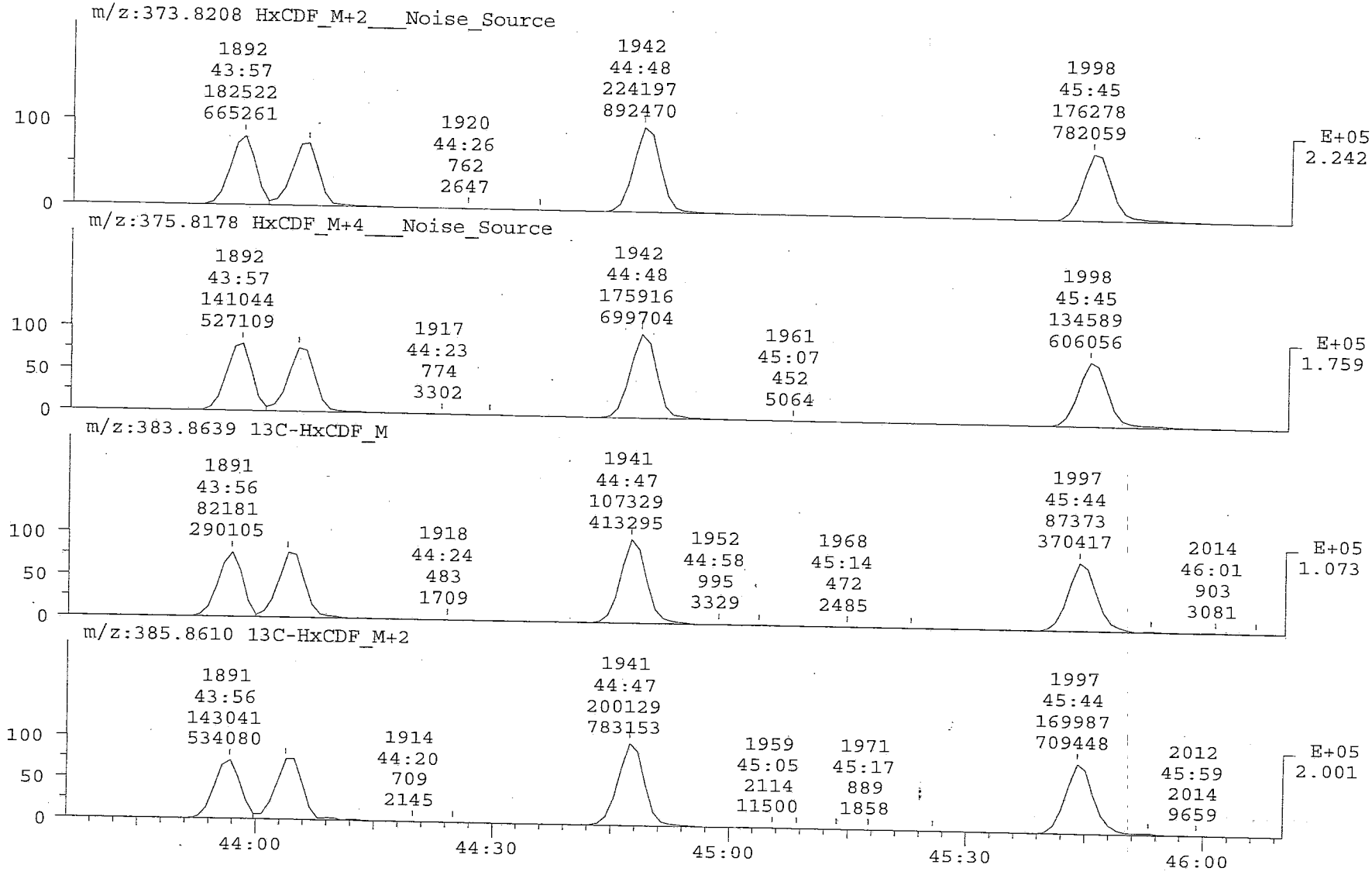


CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

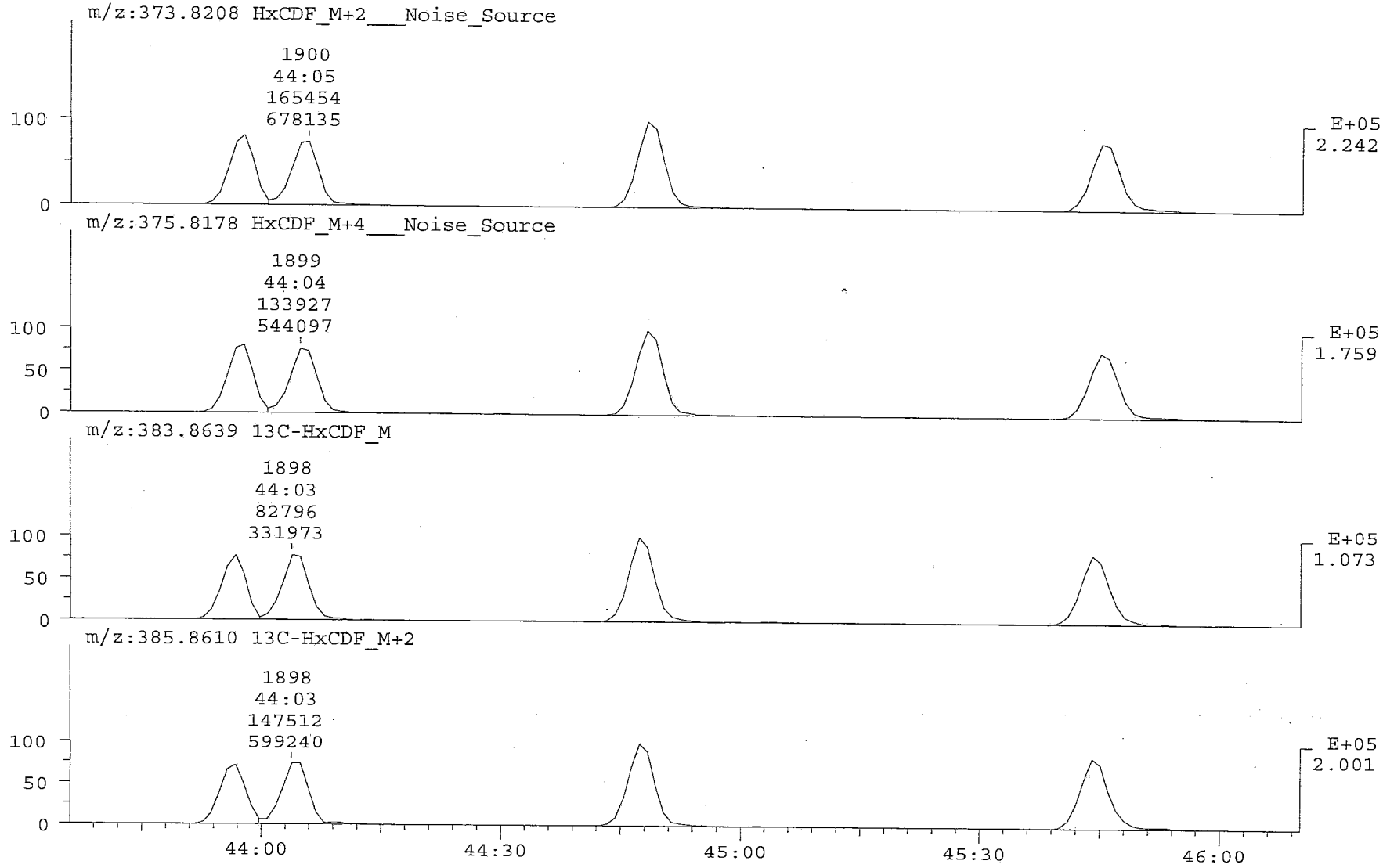
Label wndw: 1871 > 2023
Baseline : 100, 3

03-Aug-16

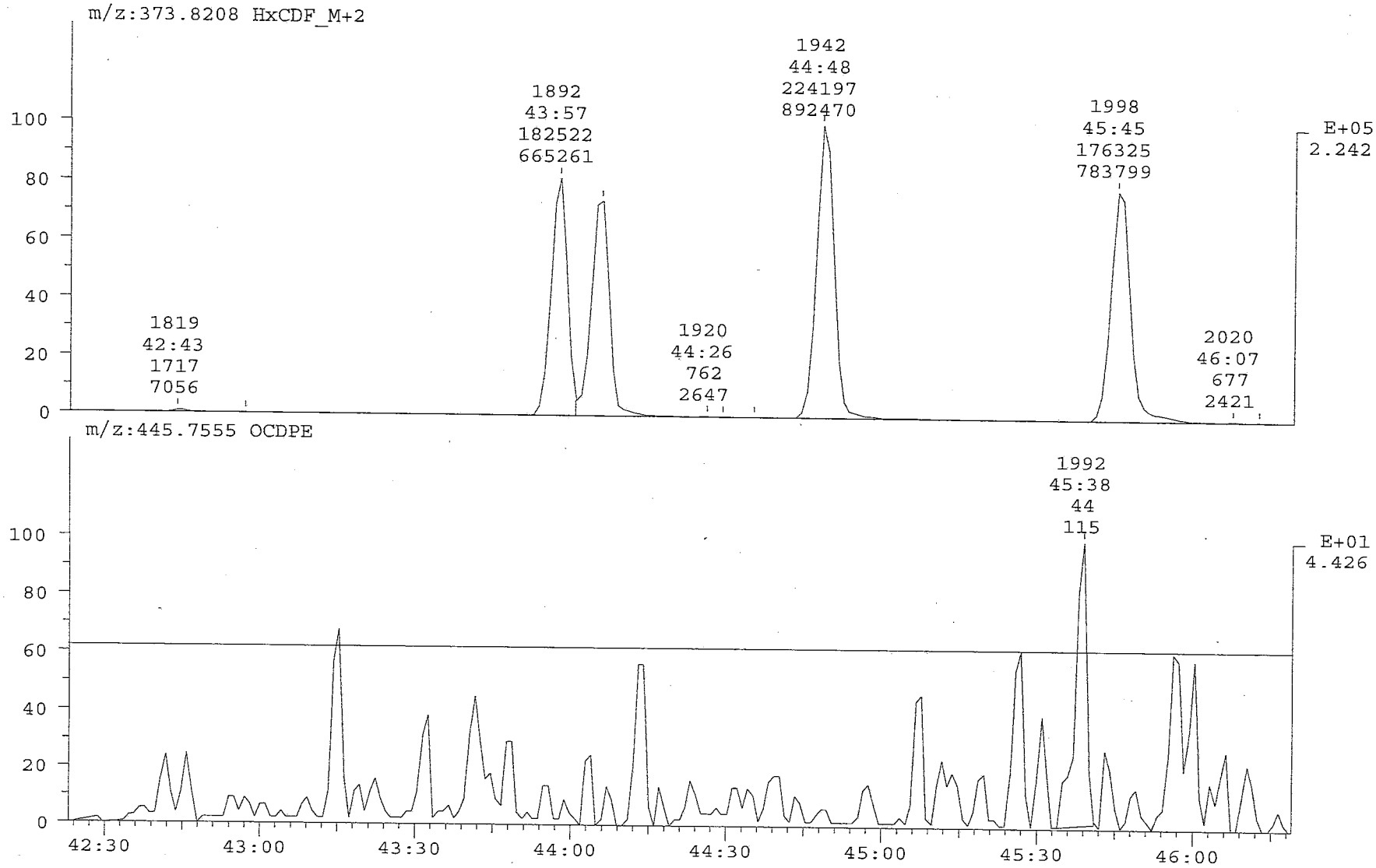
Elapse: 44:53 1947
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



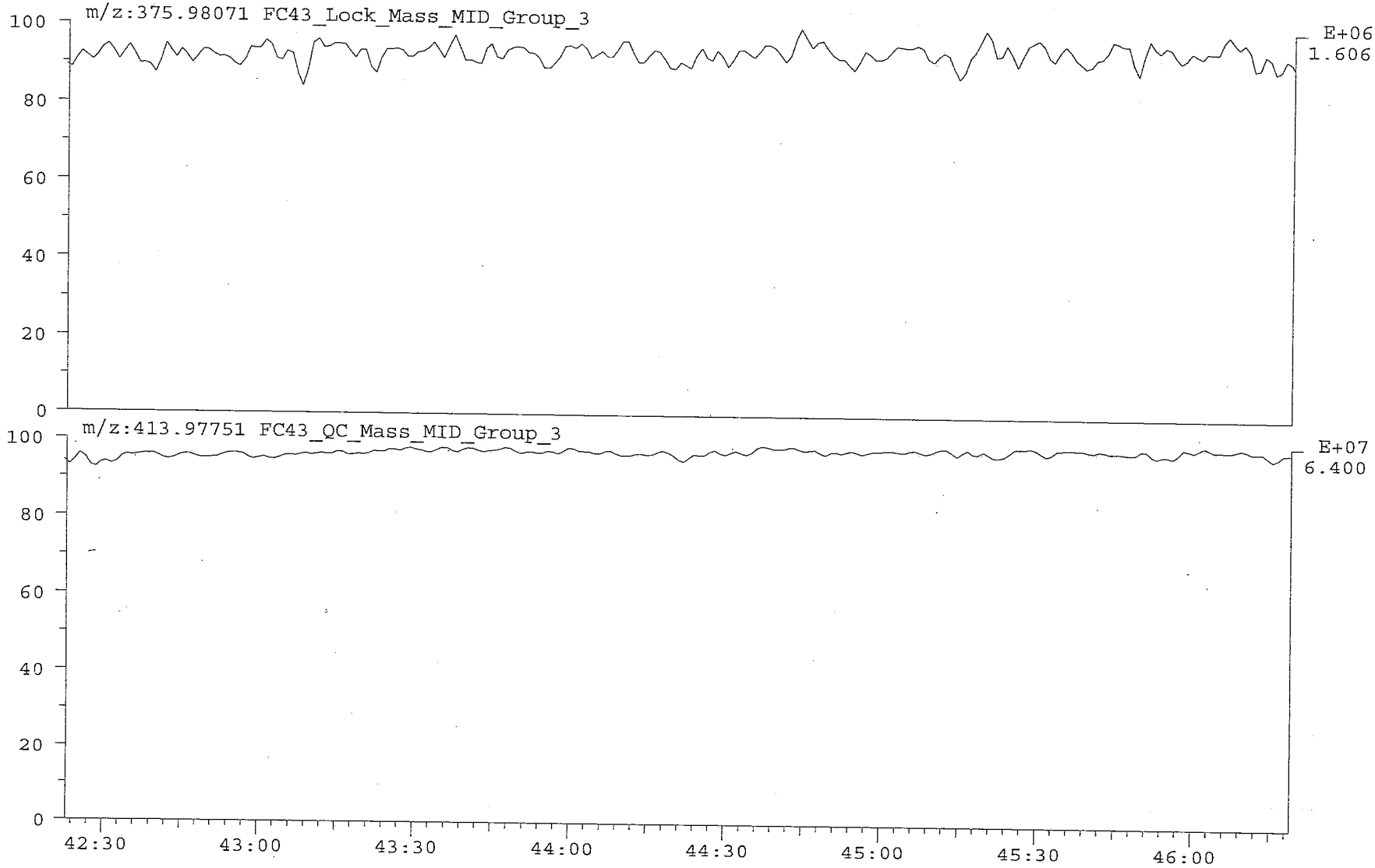
CHRO: d2tm8116c 03-Aug-16 Elapse: 44:03 1898
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1894 > 1902 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



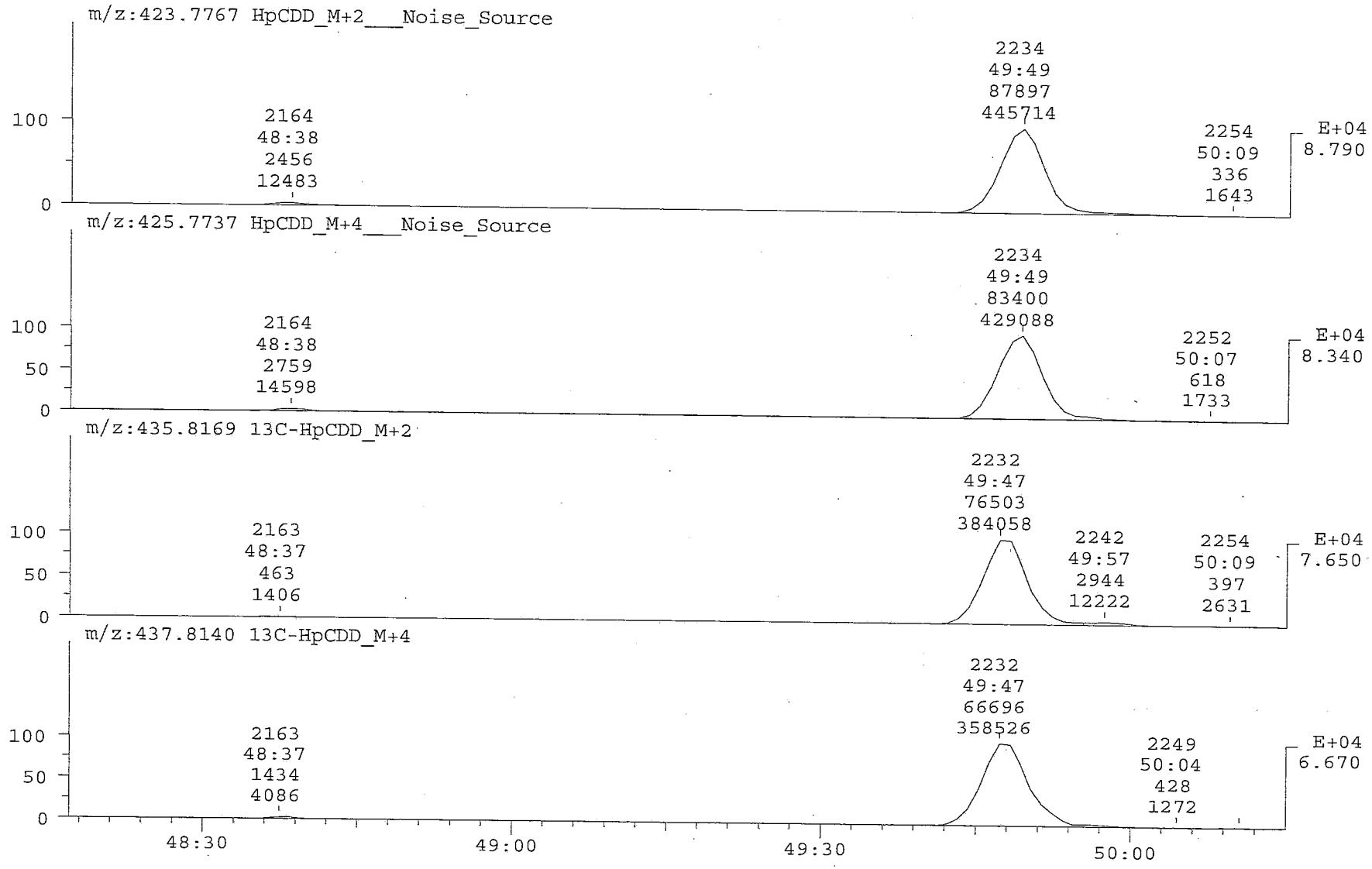
CHRO: d2tm8116c 03-Aug-16 Elapse: 44:03 1898
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1798 > 2032 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



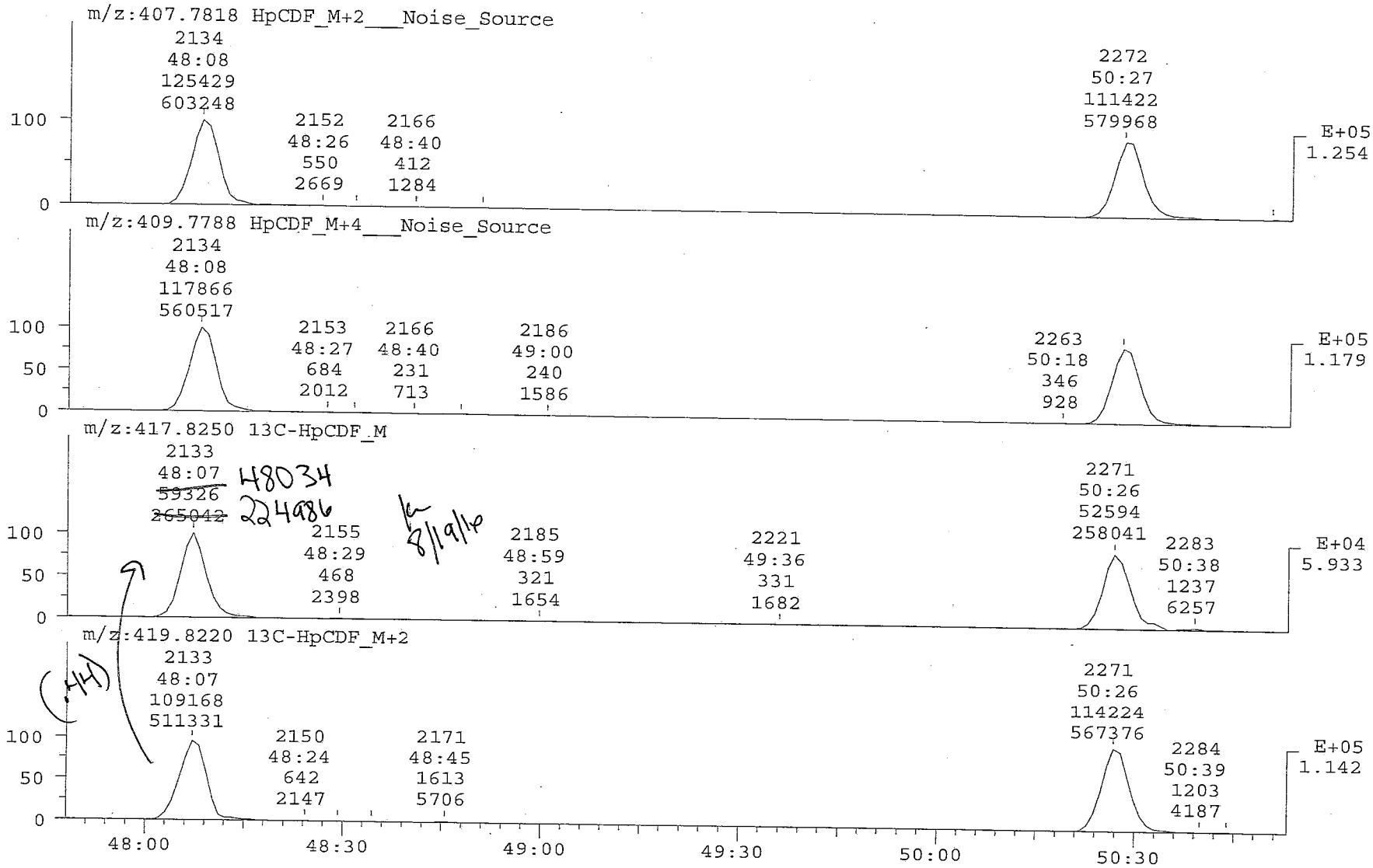
CHRO: d2tm8116c 03-Aug-16 Elapse: 44:03 1898
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 1798 > 2032 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



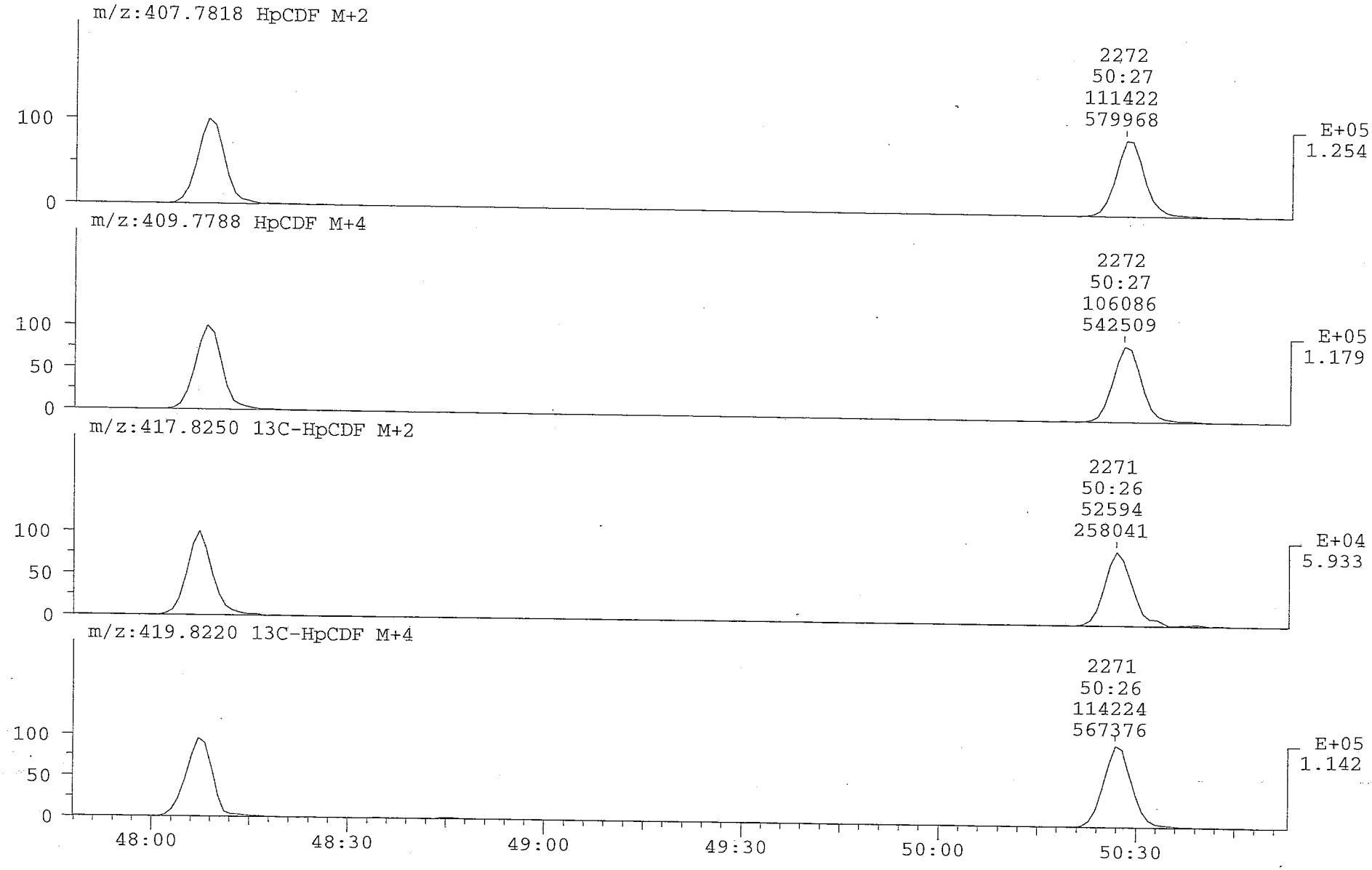
CHRO: d2tm8116c 03-Aug-16 Elapse: 44:03 1898
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2143 > 2259 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



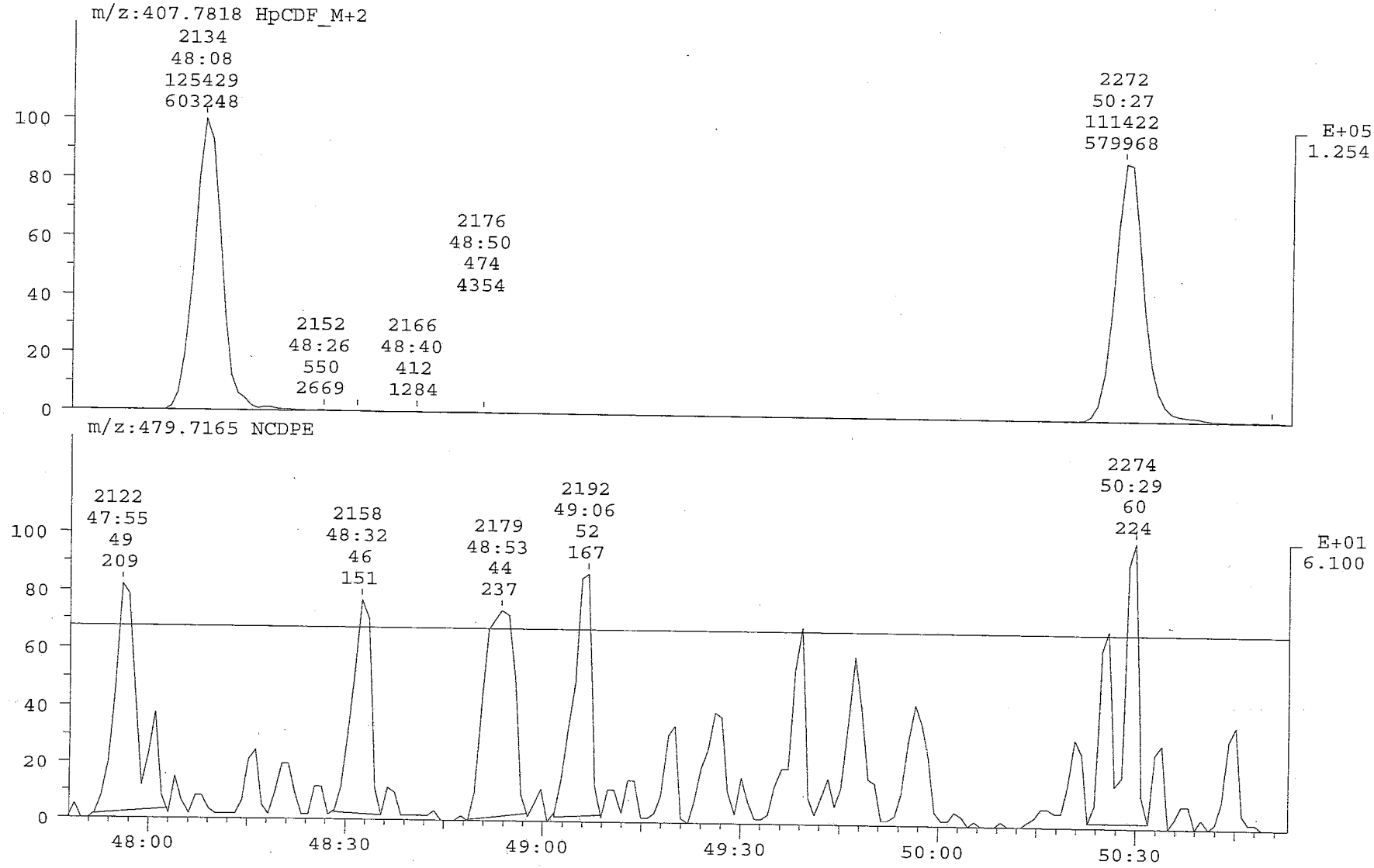
CHRO: d2tm8116c 03-Aug-16 Elapse: 49:19 2205
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2114 > 2297 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



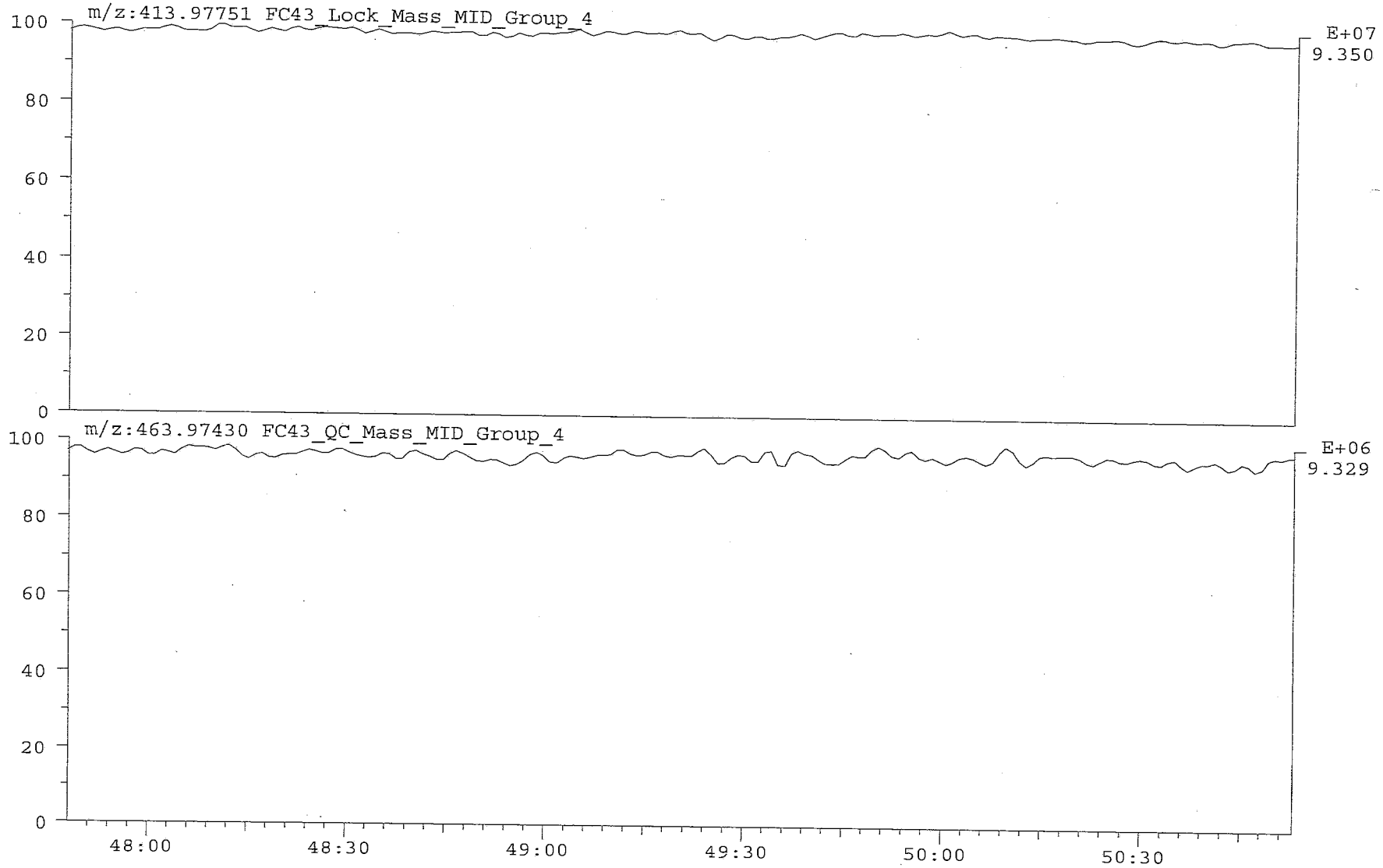
CHRO: d2tm8116c 03-Aug-16 Elapse: 50:28 2273
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2270 > 2276 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2tm8116c 03-Aug-16 Elapse: 49:19 2205
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2114 > 2297 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2tm8116c 03-Aug-16 Elapse: 49:19 2205
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2114 > 2297 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

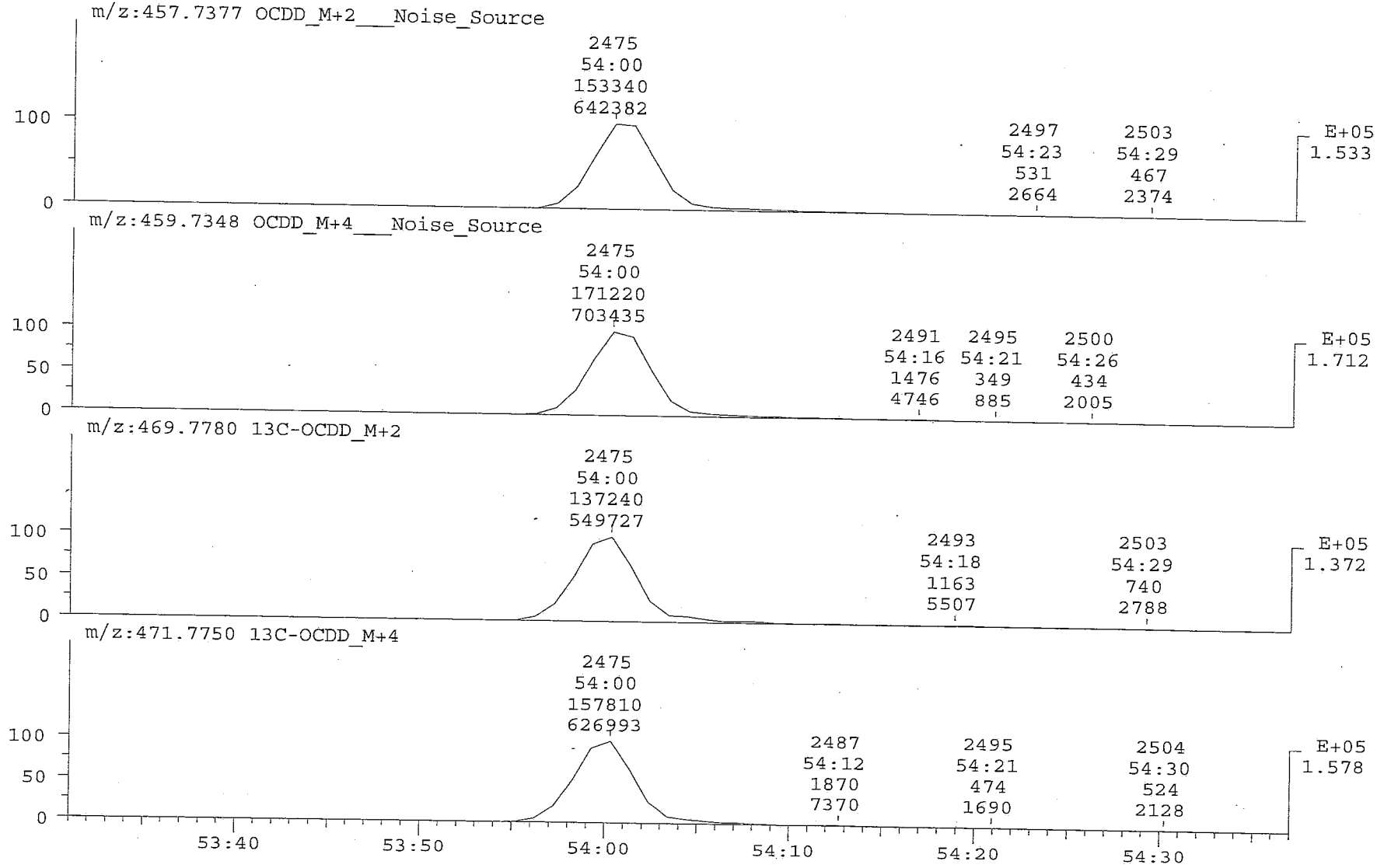


CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm
Area: 5, 0.50, 15
Disp: Height Area

Label wndw: 2447 > 2511
Baseline : 100, 3

03-Aug-16

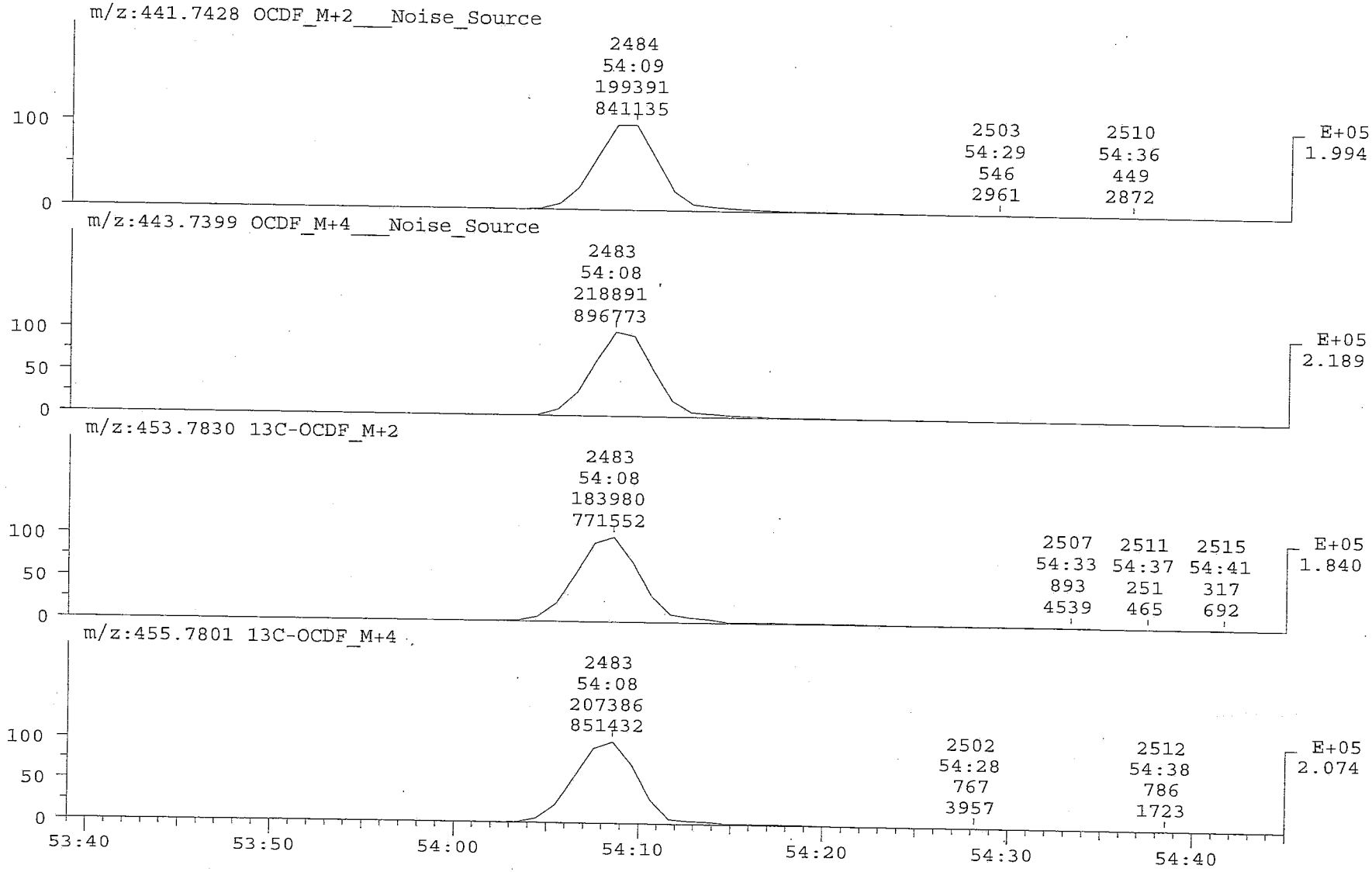
Elapse: 54:01 2476
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



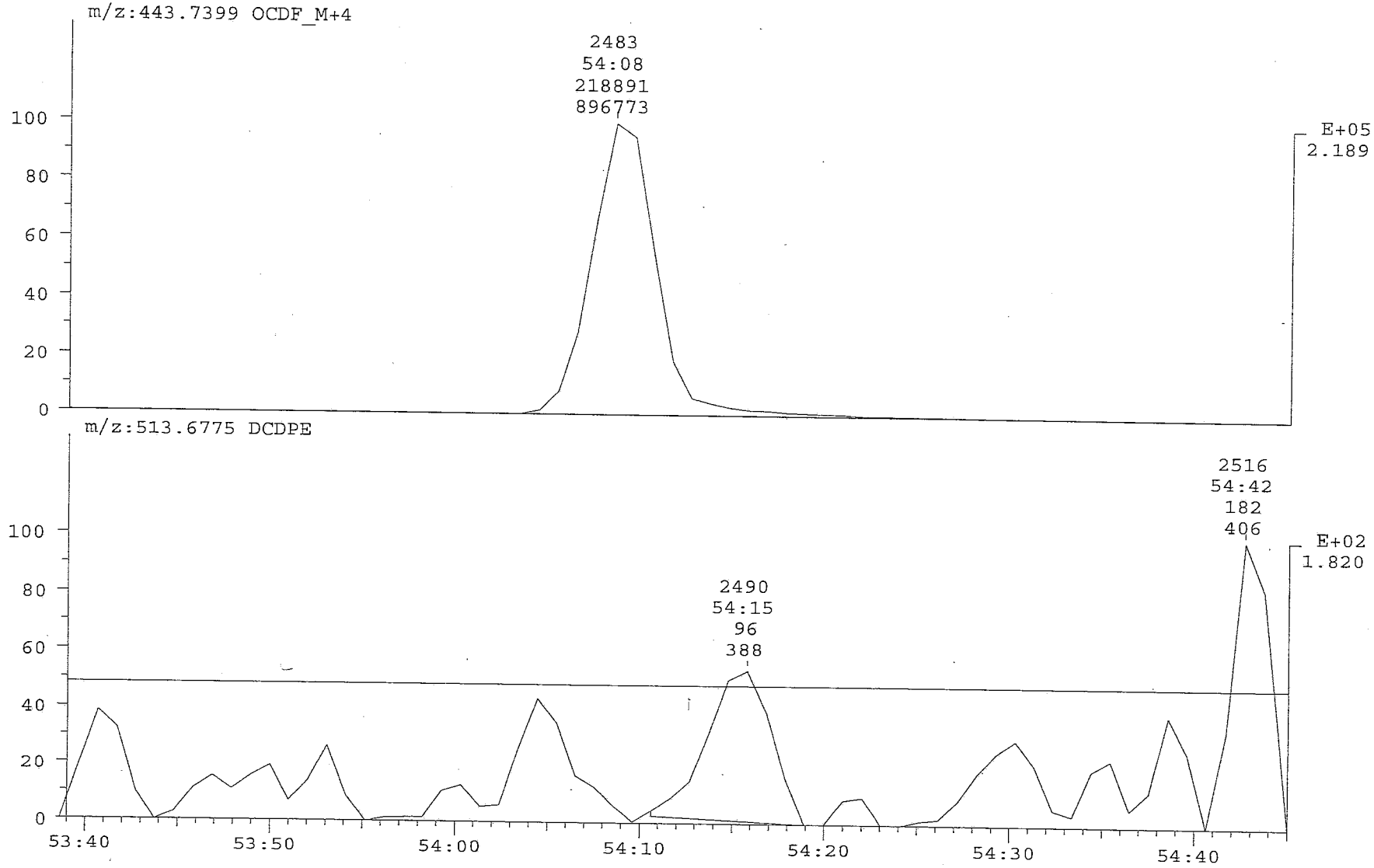
CHRO: d2tm8116c
Samp: WO=m81161ac Meth=IN2o Dil=1
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR
Oper: MSD
Peak: 100.00 ppm Label wndw: 2454 > 2518
Area: 5, 0.50, 15 Baseline : 100, 3
Disp: Height Area

03-Aug-16

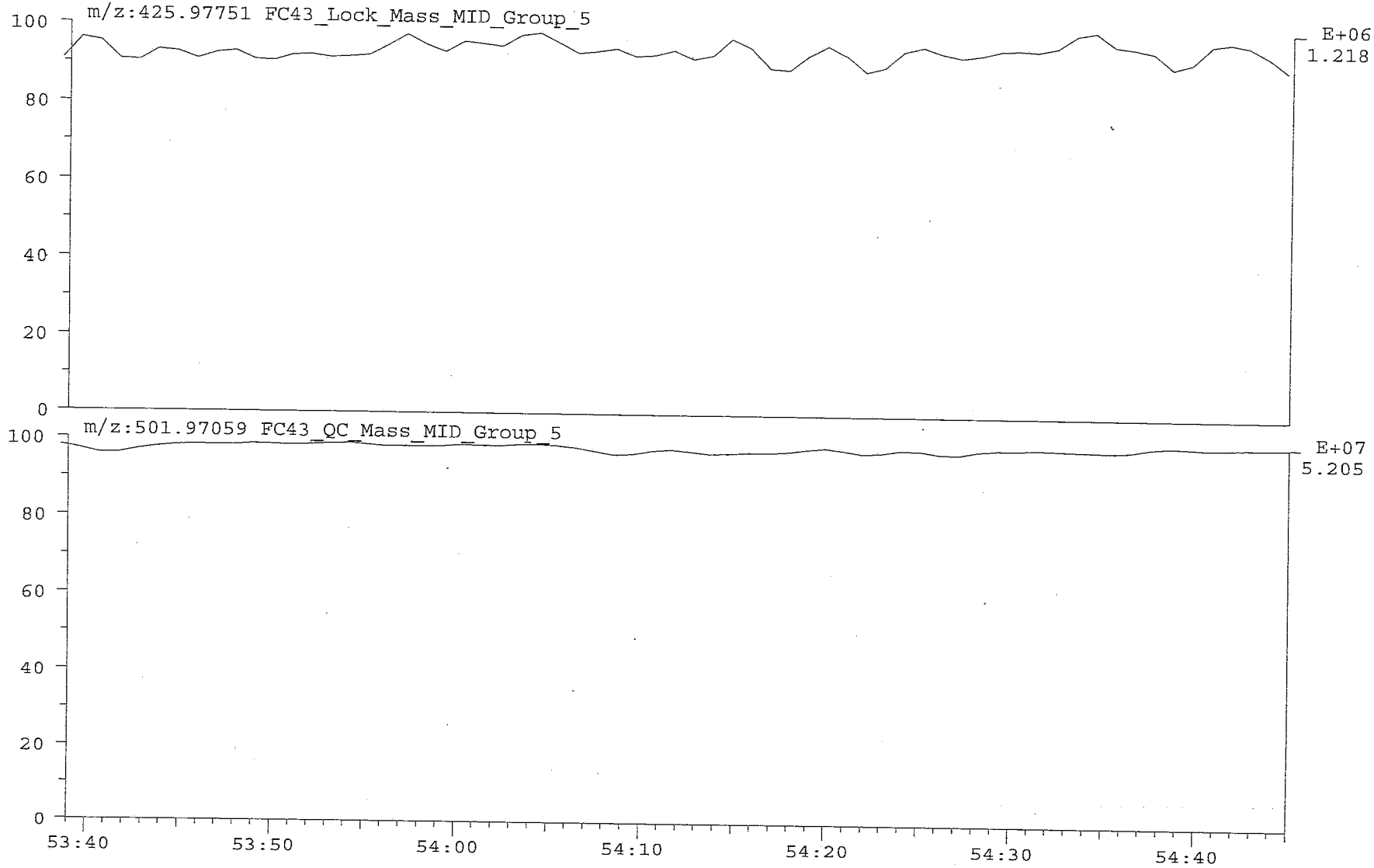
Elapse: 54:08 2483
Start : 12:39:36 2678
Study : 6211030,1,2 (1.000L)
Inlet : LC
Masses: 303 > 514
Label : -2, 5.0



CHRO: d2tm8116c 03-Aug-16 Elapse: 54:08 2483
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2454 > 2518 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d2tm8116c 03-Aug-16 Elapse: 54:08 2483
Samp: WO=m81161ac Meth=IN2o Dil=1 Start : 12:39:36 2678
Comm: Inst=d2a/1379923 Batch=20160803s2 Ccal=D3160803S2
Mode: EI ESI + Q1MS UP LR Study : 6211030,1,2 (1.000L)
Oper: MSD Inlet : LC
Peak: 100.00 ppm Label wndw: 2454 > 2518 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 03 12:41:29 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - D5FBM84J

Analysis started at: 03-Aug-16 12:41:28

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence :

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	22:47 min	34:47 min	0.99 sec
# 2	34:47 min	7:21 min	42:08 min	1.00 sec
# 3	42:08 min	4:51 min	47:00 min	1.00 sec
# 4	47:00 min	5:30 min	52:30 min	1.00 sec
# 5	52:30 min	5:00 min	57:30 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	122
305.8987		1	1	122
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	122
321.8936		1	1	122
327.8847		1	1	122
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802		20	1	6
375.8364		1	1	122

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7

375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7
375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 34.800000 minutes
MID Window end time was 34.800000 minutes
MID Window terminated after 42.150000 minutes
MID Window end time was 42.150000 minutes
MID Window terminated after 47.000000 minutes
MID Window end time was 47.000000 minutes
MID Window terminated after 52.500000 minutes
MID Window end time was 52.500000 minutes
MID Window terminated after 57.500000 minutes
MID Window end time was 57.500000 minutes

Tune file name: C:\Xcalibur\system\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	2000.0000	BCORRS	0.0177	BMASS	312.9834
BQUAD	7.9000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	15.5000	ECORR	1.0007	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2469.0000
ELEN	-45.0000	EMULT	1687.0000	ENS	176.0000
ENSBR	7.9000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	176.0000	EXSBR	2.6000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	14.8000
FQUADGAIN	22.0000	FREQ	200.0000	FSLOPE	36000000.0000
FVANAL	0.0314	FVINLET	0.0284	FVSRC	0.0255
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	763.0000
LENS_SYM	0.0000	LM	375.8364	LMII	500.0000
LMASS	312.9834	LKM	425.9770	MASS	312.9834
MDAC	3537447.8647	MRANGE	1238.2603	NSAM	100.0000
NSCAN	2699.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-11.3000	RECURR	0.9001	RELEN	0.0000
RES	10905.6911	RPUSHER	-11.1575	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	766.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0534	TANAL	0.0000	TCURR	0.0000
TD	30.0000	TS	0.0002	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	100.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.9834	XLENS_POT	988.0000
XLENS_SYM	16.5000	YLENS_POT	738.0000	YLENS_SYM	30.8000

Source Gauge: 1.5e-005 mbar
Analyzer Penning: 8.5e-008 mbar
Pirani Analyse: 3.1e-002 mbar
Pirani Source: 2.6e-002 mbar
Pirani Inlet System: 2.9e-002 mbar

Scantype is electric

Sourcemode is EI POS

MID Time Window 1: Resolution is 11571.
MID Time Window 2: Resolution is 11317.
MID Time Window 3: Resolution is 11095.
MID Time Window 4: Resolution is 11279.
MID Time Window 5: Resolution is 10905.

Amplifier Offset: 95.

*** File closed Wed Aug 03 13:39:00 2016
***

User: finnigan
Host: knx-alpha5.tai.com
Class: knx-alpha5.tai.com
Job: d2tm8116c.log

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6H040000 - 014B	**Work Order #....:**	M82RE1AA	**Matrix....:**	SOLID
Dilution Factor:	1				
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture:**	0.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		1.0	0.016	pg/g
1,2,3,7,8-PeCDD	**0.13**	**Q J**	**5.0**	**0.021**	**pg/g**
1,2,3,4,7,8-HxCDD	ND		5.0	0.034	pg/g
1,2,3,6,7,8-HxCDD	ND		5.0	0.037	pg/g
1,2,3,7,8,9-HxCDD	ND		5.0	0.033	pg/g
1,2,3,4,6,7,8-HpCDD	ND		5.0	0.025	pg/g
OCDD	**0.51**	**Q J**	**10**	**0.032**	**pg/g**
2,3,7,8-TCDF	ND		1.0	0.0087	pg/g
1,2,3,7,8-PeCDF	ND		5.0	0.017	pg/g
2,3,4,7,8-PeCDF	ND		5.0	0.015	pg/g
1,2,3,4,7,8-HxCDF	**0.20**	**Q J**	**5.0**	**0.021**	**pg/g**
1,2,3,6,7,8-HxCDF	ND		5.0	0.021	pg/g
2,3,4,6,7,8-HxCDF	ND		5.0	0.021	pg/g
1,2,3,7,8,9-HxCDF	**0.15**	**Q J**	**5.0**	**0.027**	**pg/g**
1,2,3,4,6,7,8-HpCDF	**0.088**	**Q J**	**5.0**	**0.018**	**pg/g**
1,2,3,4,7,8,9-HpCDF	**0.13**	**Q J**	**5.0**	**0.021**	**pg/g**
OCDF	**0.28**	**Q J**	**10**	**0.014**	**pg/g**

INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	63	40 - 135
13C-1,2,3,7,8-PeCDD	78	40 - 135
13C-1,2,3,4,7,8-HxCDD	68	40 - 135
13C-1,2,3,6,7,8-HxCDD	68	40 - 135
13C-1,2,3,4,6,7,8-HpCDD	82	40 - 135
13C-OCDD	69	40 - 135
13C-2,3,7,8-TCDF	68	40 - 135
13C-1,2,3,7,8-PeCDF	72	40 - 135
13C-2,3,4,7,8-PeCDF	79	40 - 135
13C-1,2,3,4,7,8-HxCDF	69	40 - 135
13C-1,2,3,6,7,8-HxCDF	67	40 - 135
13C-2,3,4,6,7,8-HxCDF	74	40 - 135
13C-1,2,3,7,8,9-HxCDF	69	40 - 135
13C-1,2,3,4,6,7,8-HpCDF	65	40 - 135
13C-1,2,3,4,7,8,9-HpCDF	71	40 - 135
13C-OCDF	58	40 - 135

Method Blank Report

Trace Level Organic Compounds

Lot - Sample #....:	H6H040000 - 014B	**Work Order #....:**	M82RE1AA	**Matrix....:**	SOLID
Dilution Factor:	1				
Prep Date....:	08/04/16	**Analysis Date....:**	08/17/16	**Percent Moisture:**	0.0
Prep Batch # ....:	6217014				
Initial Wgt/Vol :	10 g	**Instrument ID....:**	D11A	**Method:**	SW846 8290A
Analyst ID....:	Kenneya L. Reynolds				

QUALIFIERS

J Estimated Result.

Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	H6G290408	**Work Order # ...:**	M82RE1AC-LCS	**Matrix .....:**	SOLID
LCS Lot-Sample# :	H6H040000 - 014				
Prep Date .....:	08/04/16	**Analysis Date ..:**	08/17/16		
Prep Batch # ...:	6217014				
Dilution Factor :	1				
Analyst ID.....:	Kenneya L. Reynolds	**Instrument ID..:**	D11A	**Method.....:**	SW846 8290A
Initial Wgt/Vol:	10 g				

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY		RECOVERY LIMITS
2,3,7,8-TCDD	**20.0**	**21.6**	pg/g	108		(79 - 129)
1,2,3,7,8-PeCDD	**100**	**100**	pg/g	100	B	(79 - 129)
1,2,3,4,7,8-HxCDD	**100**	**104**	pg/g	104		(73 - 123)
1,2,3,6,7,8-HxCDD	**100**	**102**	pg/g	102		(74 - 124)
1,2,3,7,8,9-HxCDD	**100**	**112**	pg/g	112		(70 - 124)
1,2,3,4,6,7,8-HpCDD	**100**	**97.4**	pg/g	97		(73 - 123)
OCDD	**200**	**196**	pg/g	98	B	(75 - 125)
2,3,7,8-TCDF	**20.0**	**21.7**	pg/g	108		(75 - 125)
1,2,3,7,8-PeCDF	**100**	**96.0**	pg/g	96		(74 - 124)
2,3,4,7,8-PeCDF	**100**	**103**	pg/g	103		(75 - 125)
1,2,3,4,7,8-HxCDF	**100**	**104**	pg/g	104	B	(75 - 125)
1,2,3,6,7,8-HxCDF	**100**	**102**	pg/g	102		(76 - 126)
2,3,4,6,7,8-HxCDF	**100**	**102**	pg/g	102		(76 - 126)
1,2,3,7,8,9-HxCDF	**100**	**100**	pg/g	100	B	(77 - 127)
1,2,3,4,6,7,8-HpCDF	**100**	**104**	pg/g	104	B	(77 - 127)
1,2,3,4,7,8,9-HpCDF	**100**	**97.5**	pg/g	97	B	(73 - 123)
OCDF	**200**	**188**	pg/g	94	B	(49 - 128)

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	65	(40 - 135)
13C-1,2,3,7,8-PeCDD	82	(40 - 135)
13C-1,2,3,4,7,8-HxCDD	70	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	71	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	84	(40 - 135)
13C-OCDD	71	(40 - 135)
13C-2,3,7,8-TCDF	70	(40 - 135)
13C-1,2,3,7,8-PeCDF	75	(40 - 135)
13C-2,3,4,7,8-PeCDF	83	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	71	(40 - 135)
13C-1,2,3,6,7,8-HxCDF	70	(40 - 135)
13C-2,3,4,6,7,8-HxCDF	77	(40 - 135)
13C-1,2,3,7,8,9-HxCDF	72	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	69	(40 - 135)
13C-1,2,3,4,7,8,9-HpCDF	74	(40 - 135)
13C-OCDF	60	(40 - 135)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Notes:

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AA	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82reb.d	Prep Date	08/04/16	SDG No	
Analysis ID	180425	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	8/17/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	12:29	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD				1.144				ND		0.0162
Total TCDD		302	81	1.144		0.168310		0.016831	QJ	0.0162
2,3,7,8-TCDF				1.066				ND		0.00872
Total TCDF		1681	540	1.066		0.569792		0.056979	QJ	0.00872
1,2,3,7,8-PeCDD	41:25	1994	497	1.060		1.322720		0.132272	QJ	0.0206
Total PeCDD				1.060		1.322720		0.132272	QJ	0.0206
1,2,3,7,8-PeCDF				1.179				ND		0.0170
2,3,4,7,8-PeCDF				1.115				ND		0.0153
Total PeCDF				1.147				ND		0.0161
1,2,3,4,7,8-HxCDD				1.131				ND		0.0337
1,2,3,6,7,8-HxCDD				1.116				ND		0.0375
1,2,3,7,8,9-HxCDD				1.205				ND		0.0331
Total HxCDD		3862	852	1.151		2.274018		0.227402	QJ	0.0346
1,2,3,4,7,8-HxCDF	44:36	5662	1360	1.350		2.007461		0.200746	QJ	0.0212
1,2,3,6,7,8-HxCDF				1.242				ND		0.0206
2,3,4,6,7,8-HxCDF				1.241				ND		0.0210
1,2,3,7,8,9-HxCDF	46:29	3793	633	1.262		1.534942		0.153494	QJ	0.0274
Total HxCDF				1.274		3.542403		0.354240	QJ	0.0222
1,2,3,4,6,7,8-HpCDD				1.114				ND		0.0253
Total HpCDD		2393	366	1.114		1.504569		0.150457	QJ	0.0253
1,2,3,4,6,7,8-HpCDF	49:00	1998	451	1.461		0.877879		0.087788	QJ	0.0176
1,2,3,4,7,8,9-HpCDF	51:20	2465	702	1.370		1.317681		0.131768	QJ	0.0209
Total HpCDF				1.416		2.195560		0.219556	QJ	0.0191
OCDD	54:44	6037	1427	1.203		5.131722		0.513172	QJ	0.0321
OCDF	54:51	4157	1116	1.134		2.825802		0.282580	QJ	0.0143
13C-2,3,7,8-TCDD	32:48	1569100	148074	1.093	1000	634.092782	63.41	63.409278		0.249
13C-2,3,7,8-TCDF	30:40	2768613	296123	1.794	1000	681.229517	68.12	68.122952		0.0880
13C-1,2,3,7,8-PeCDD	41:24	1422315	342709	0.800	1000	784.986435	78.50	78.498644		0.104
13C-1,2,3,7,8-PeCDF	39:44	2205418	461454	1.356	1000	717.853060	71.79	71.785306		0.120
13C-2,3,4,7,8-PeCDF	40:54	2395196	542750	1.343	1000	787.420974	78.74	78.742097		0.121
13C-1,2,3,4,7,8-HxCDD	45:39	1483818	387353	0.916	1000	681.663526	68.17	68.166353		0.121
13C-1,2,3,6,7,8-HxCDD	45:46	1467900	352921	0.906	1000	681.477049	68.15	68.147705		0.122
13C-1,2,3,4,7,8-HxCDF	44:34	2088570	531661	1.268	1000	692.815107	69.28	69.281511		0.0610
13C-1,2,3,6,7,8-HxCDF	44:43	2414569	596901	1.506	1000	674.782099	67.48	67.478210		0.0514
13C-2,3,4,6,7,8-HxCDF	45:28	2350136	586264	1.344	1000	735.748292	73.57	73.574829		0.0575
13C-1,2,3,7,8,9-HxCDF	46:27	1958006	441729	1.202	1000	685.331205	68.53	68.533120		0.0643
13C-1,2,3,4,6,7,8-HpCDD	50:42	1428086	292775	0.728	1000	824.895000	82.49	82.489500		0.0213
13C-1,2,3,4,6,7,8-HpCDF	48:59	1557780	330876	1.008	1000	650.188817	65.02	65.018882		0.0476
13C-1,2,3,4,7,8,9-HpCDF	51:19	1365137	296918	0.811	1000	708.432033	70.84	70.843203		0.0591
13C-OCDD	54:42	1955803	504660	0.597	2000	1377.51272	68.88	137.751272		0.0419
13C-1,2,3,4-TCDD	32:16	4530050	456157	1.000	2000	2000.00000	100.00	200.000000		0.272
13C-1,2,3,7,8,9-HxCDD	46:10	4753511	1157547	1.000	2000	2000.00000	100.00	200.000000		0.111
13C-OCDF	54:50	2593720	676552	0.946	2000	1153.59237	57.68	115.359237		0.0192

KLK by LKM 8-17-16

QCd h 8-17-16

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AA	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82reb.	Prep Date	08/04/16	SDG No	
Analysis ID	180425	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	08/17/16 12:29	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	10	18	4	7	0.57 *	/	
	Unidentified	30:04	00:00	0	232	603	99	157	0.38 *	ABB/ABB	RT
	Unidentified	30:50	00:00	0	355	491	146	138	0.72	ABB/AVB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	178	183	71	73	0.97 *	/	
	13C-2,3,7,8-TCDF	30:40	30:39	1	1241076	1527537	134714	161409	0.81	ABV/ABV	
	Unidentified	31:02	00:00	0	8027	4561	974	1167	1.76 *	AVV/AVB	R
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	8	20	3	8	0.38 *	/	
	Unidentified	32:22	00:00	0	53	249	27	54	0.21 *	AVB/ABV	RT
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	355	265	142	106	1.34 *	/	
	13C-1,2,3,4-TCDD	32:16	32:17	-1	2055165	2474885	207346	248811	0.83	AVV/ABV	
	13C-2,3,7,8-TCDD	32:48	32:50	-2	723167	845933	65689	82385	0.85	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	38	55	15	22	0.68 *	/	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	188	183	75	73	1.03 *	/	
	13C-1,2,3,7,8-PeCDF	39:44	39:42	2	1339106	866312	280166	181288	1.55	ABV/ABV	
	Unidentified	40:07	00:00	0	5234	2961	1209	989	1.77	AVV/AVV	T
	Unidentified	40:12	00:00	0	18425	11424	2573	2648	1.61	AVV/AVV	
	13C-2,3,4,7,8-PeCDF	40:54	40:52	2	1481928	913268	332551	210199	1.62	AVV/ABV	
	Unidentified	41:13	00:00	0	3978	9399	1656	1504	0.42 *	AVV/AVV	RT
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	50	25	20	10	2.00 *	/	
	1,2,3,7,8-PeCDD	41:25	41:23	2	898	1096	273	224	0.82 *	MBB/ABB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	105	85	42	34	1.24 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:22	2	882418	539897	207680	135029	1.63	ABV/ABV	
	Unidentified	41:47	00:00	0	2027	2714	577	695	0.75 *	AVB/AVV	R
	Unidentified	41:55	00:00	0	2584	1318	620	485	1.96 *	ABV/AVB	R
	Unidentified	42:02	00:00	0	5773	2635	1306	778	2.19 *	AVB/ABV	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	53	100	21	40	0.53 *	/	
	1,2,3,4,7,8-HxCDF	44:36	44:33	3	2775	2887	693	667	0.96 *	MBB/MBB	RM
	1,2,3,7,8,9-HxCDF	46:29	46:28	1	1473	2320	292	341	0.63 *	ABV/MVV	R
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	208	240	83	96	0.86 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:34	44:32	2	742007	1346563	191275	340386	0.55	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:43	44:40	3	835375	1579194	205598	391303	0.53	AVV/AVV	M
	Unidentified	44:57	00:00	0	6704	14397	1440	2999	0.47	AVV/AVV	
	Unidentified	45:08	00:00	0	5313	9809	1321	1371	0.54	AVV/AVV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AA	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82reb.	Prep Date	08/04/16	SDG No	
Analysis ID	180425	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	08/17/16 12:29	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	13C-2,3,4,6,7,8-HxCDF	45:28	45:27	1	791408	1558728	199407	386857	0.51	AVV/AVV	
	Unidentified	45:42	00:00	0	2457	13157	969	2126	0.19 *	AVV/AVV	R
	Unidentified	45:51	00:00	0	2124	6175	904	1341	0.34 *	AVV/AVV	R
	13C-1,2,3,7,8,9-HxCDF	46:27	46:27	0	671232	1286774	150109	291620	0.52	ABV/ABV	
	Unidentified	46:50	00:00	0	10862	7158	1334	1602	1.52 *	AVB/AVB	RT
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	80	68	32	27	1.19	/	
	Unidentified	45:27	00:00	0	993	595	248	140	1.67 *	ABV/ABB	R
	Unidentified	46:09	00:00	0	679	1595	177	287	0.43 *	ABV/ABB	R
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	330	313	132	125	1.06	/	
	13C-1,2,3,4,7,8-HxCDD	45:39	45:38	1	848280	635538	219905	167448	1.33	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:46	45:45	1	825954	641946	198902	154019	1.29	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:10	46:09	1	2676831	2076680	652042	505505	1.29	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	55	30	22	12	1.83 *	/	
	1,2,3,4,6,7,8-HpCDF	49:00	48:59	1	1309	689	259	192	1.90 *	ABB/MBB	R
	1,2,3,4,7,8,9-HpCDF	51:20	51:20	0	1704	761	529	173	2.24 *	MBB/ABB	R
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	120	158	48	63	0.76 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:59	48:58	1	498536	1059244	106446	224430	0.47	ABV/ABV	
	Unidentified	49:22	00:00	0	8714	17174	1630	2702	0.51	AVV/AVV	
	Unidentified	49:39	00:00	0	6493	14760	1084	3417	0.44	AVB/AVV	
	13C-1,2,3,4,7,8,9-HpCDF	51:19	51:19	0	446204	918933	97249	199669	0.49	ABV/ABV	
	Unidentified	51:35	00:00	0	2726	12047	672	1528	0.23 *	AVV/AVB	R
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	18	65	7	26	0.27 *	/	
	Unidentified	49:31	00:00	0	680	1713	173	193	0.40 *	ABB/AVV	R
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	48	43	19	17	1.12	/	
	Unidentified	49:29	00:00	0	16815	6472	3300	2170	2.60 *	ABV/AVB	RT
	13C-1,2,3,4,6,7,8-HpCDD	50:42	50:42	0	726956	701130	145958	146817	1.04	ABV/ABV	
	Unidentified	51:01	00:00	0	3314	3627	717	882	0.91	AVB/AVV	T
	Unidentified	51:09	00:00	0	666	3160	335	1279	0.21 *	ABB/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	30	25	12	10	1.20 *	/	
	OCDF	54:51	54:53	-2	1473	2684	414	702	0.55 *	ABV/ABB	R
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	50	55	20	22	0.91	/	
	13C-OCDF	54:50	54:52	-2	1206250	1387470	311590	364962	0.87	ABV/ABV	
	Unidentified	55:20	00:00	0	1922	2802	601	755	0.69 *	AVV/AVV	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AA	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82reb.	Prep Date	08/04/16	SDG No	
Analysis ID	180425	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	08/17/16 12:29	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

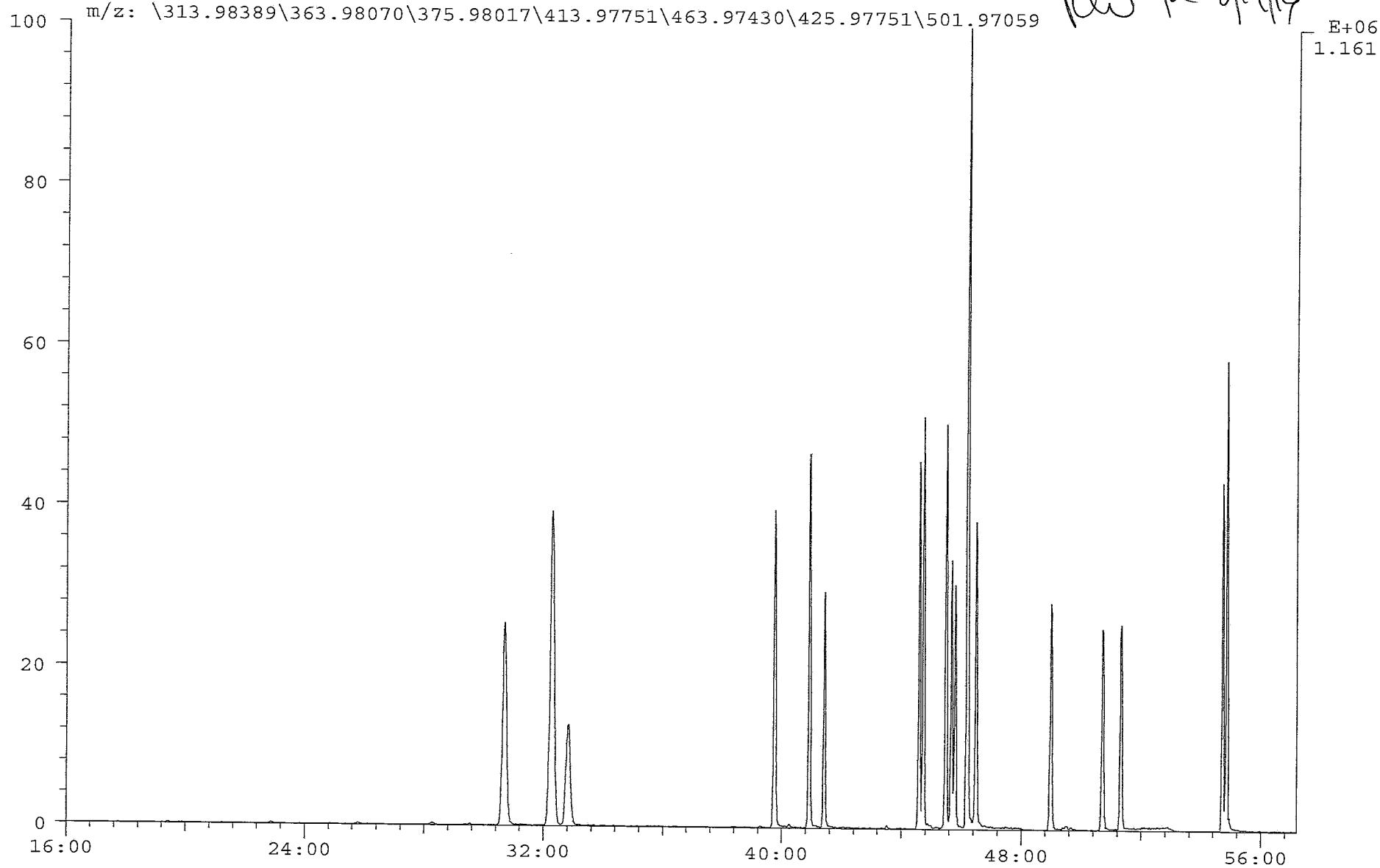
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	48	50	19	20	0.95	/	
	OCDD	54:44	54:45	-1	3076	2961	697	730	1.04 *	ABB/ABB	R
	Unidentified	54:51	00:00	0	975	789	329	185	1.24 *	ABB/ABB	R
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	80	65	32	26	1.23 *	/	
	13C-OCDD	54:42	54:44	-2	923157	1032646	239410	265250	0.89	ABV/ABV	
	Unidentified	55:06	00:00	0	5751	4069	923	670	1.41 *	AVB/AVB	RT

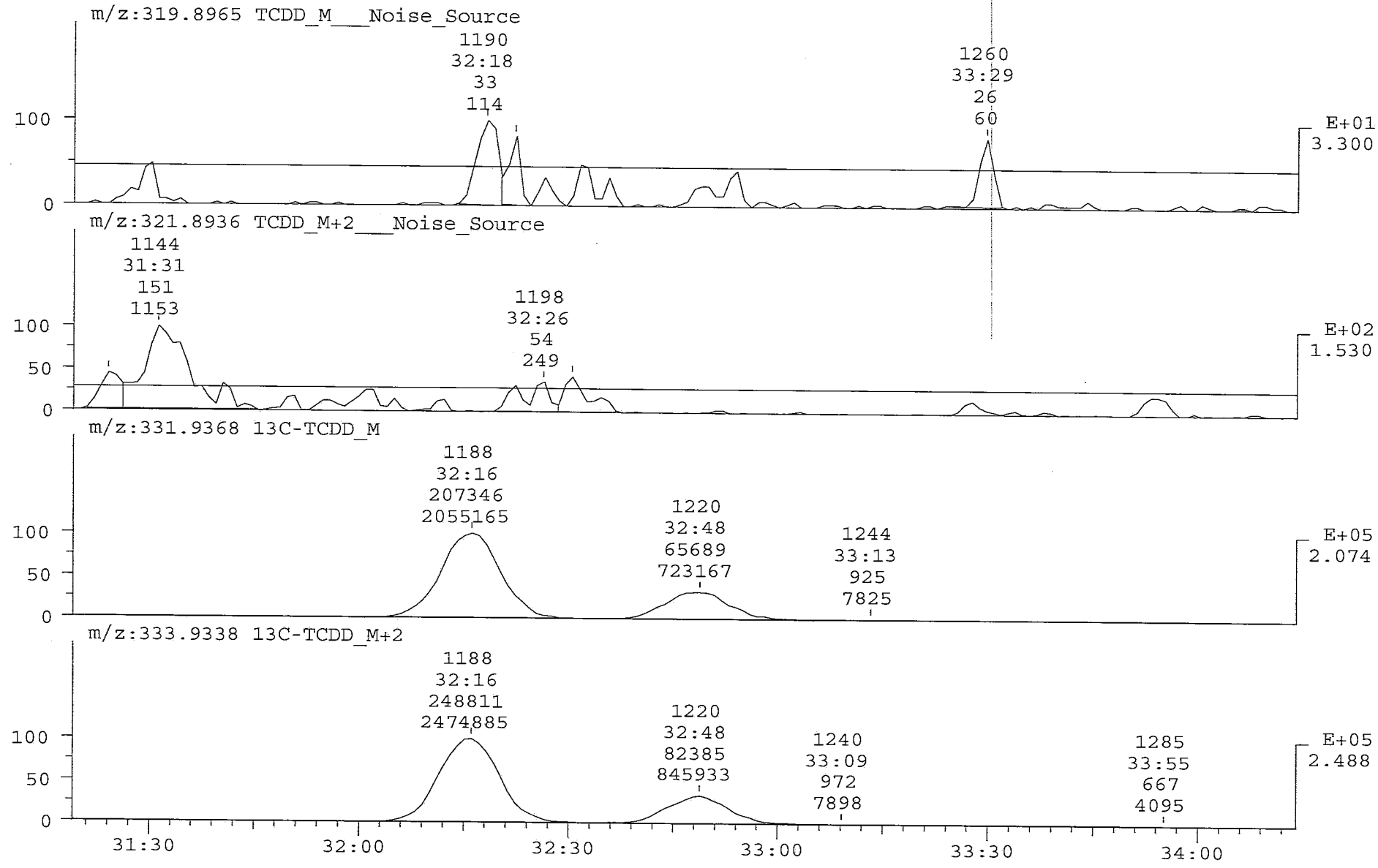
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. kr 8/17/16
+ Calc.
Qid kr 8-17-16
Rev kr 8/19/16

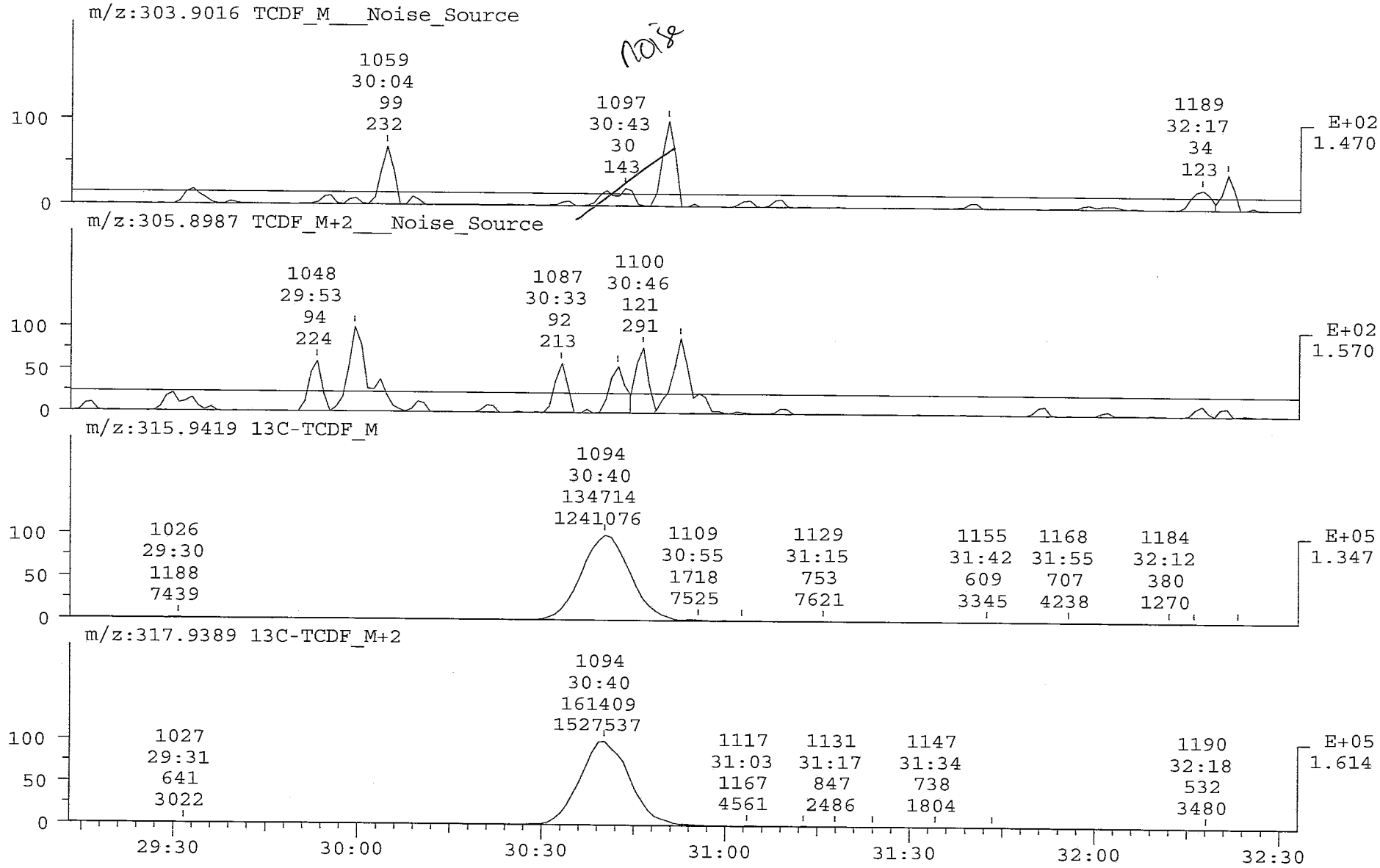
CHRO: d1tm82reb 17-Aug-16 Elapse: 51:19 2290
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2628 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



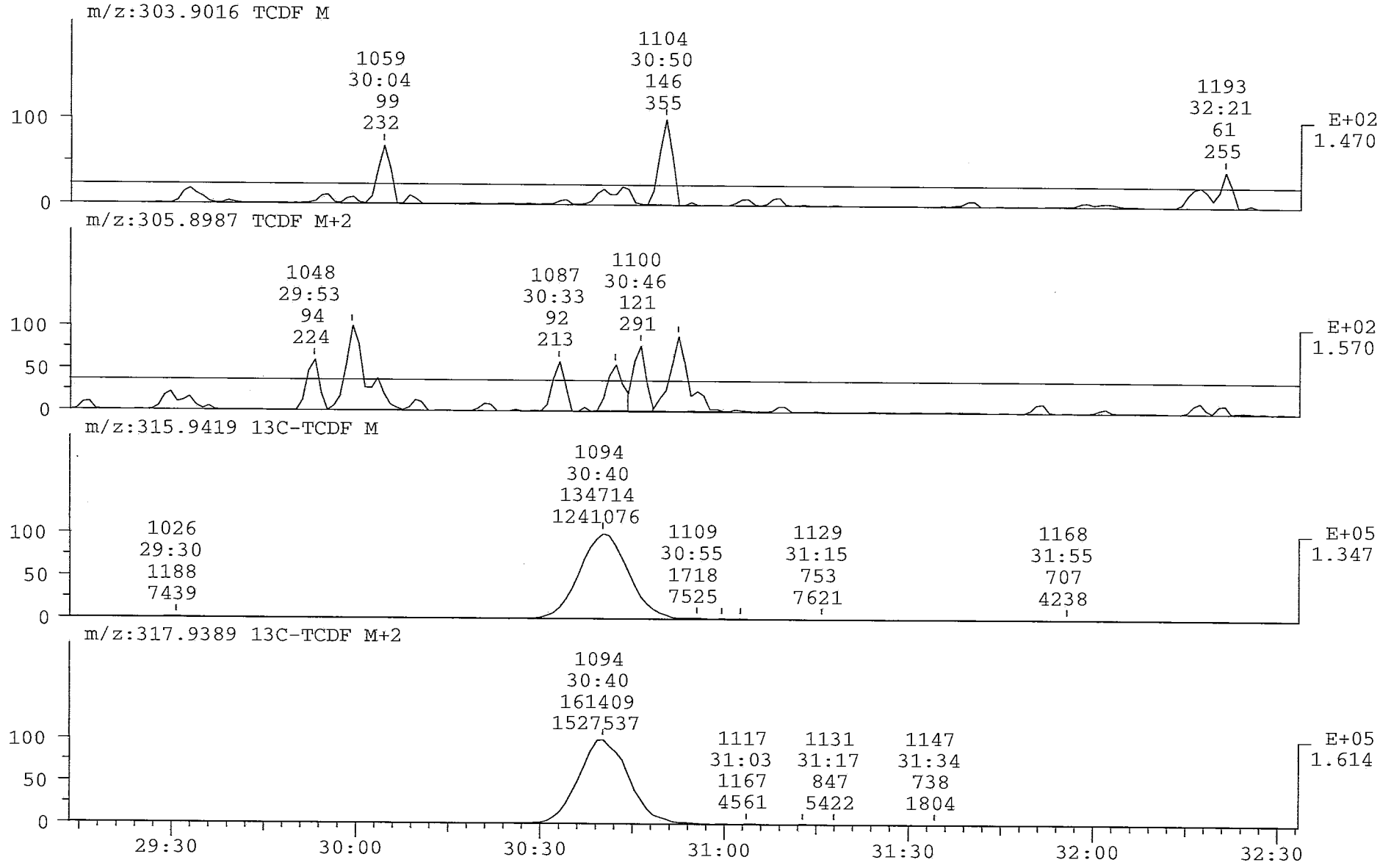
CHRO: d1tm82reb 17-Aug-16 Elapse: 32:45 1217
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1132 > 1304 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



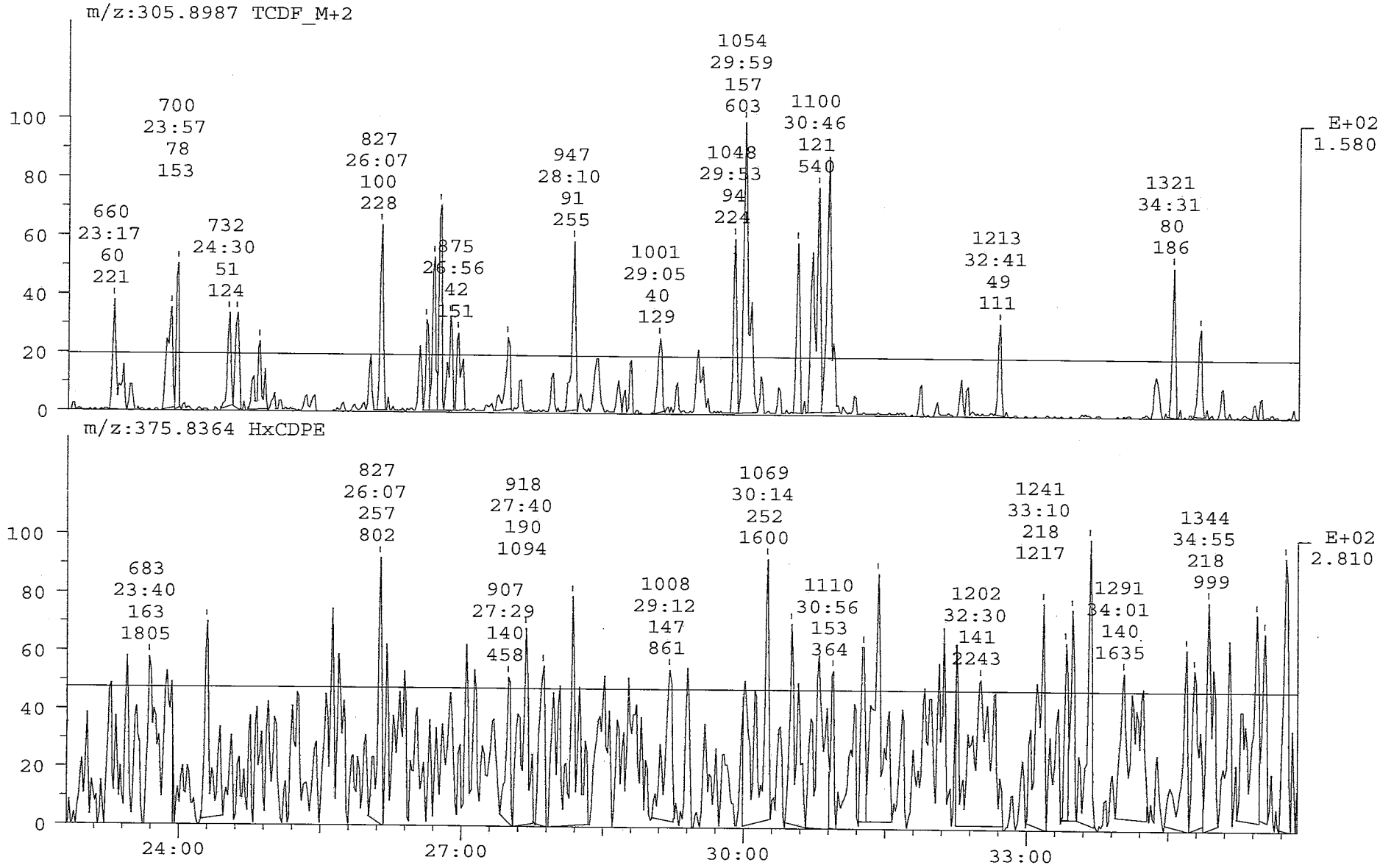
CHRO: d1tm82reb 17-Aug-16 Elapse: 30:50 1104
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1009 > 1205 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



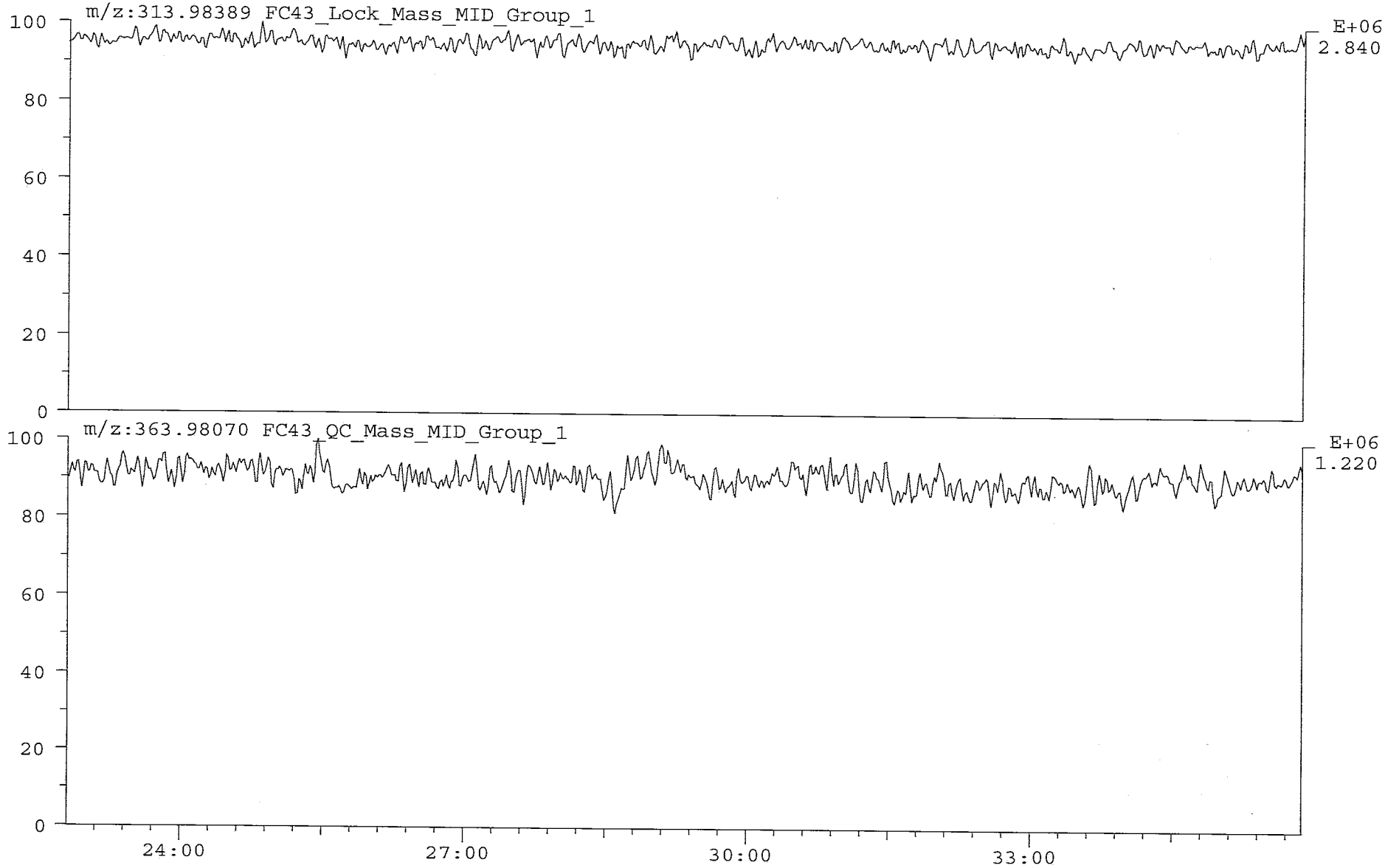
CHRO: d1tm82reb 17-Aug-16 Elapse: 54:53 2494
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1009 > 1205 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



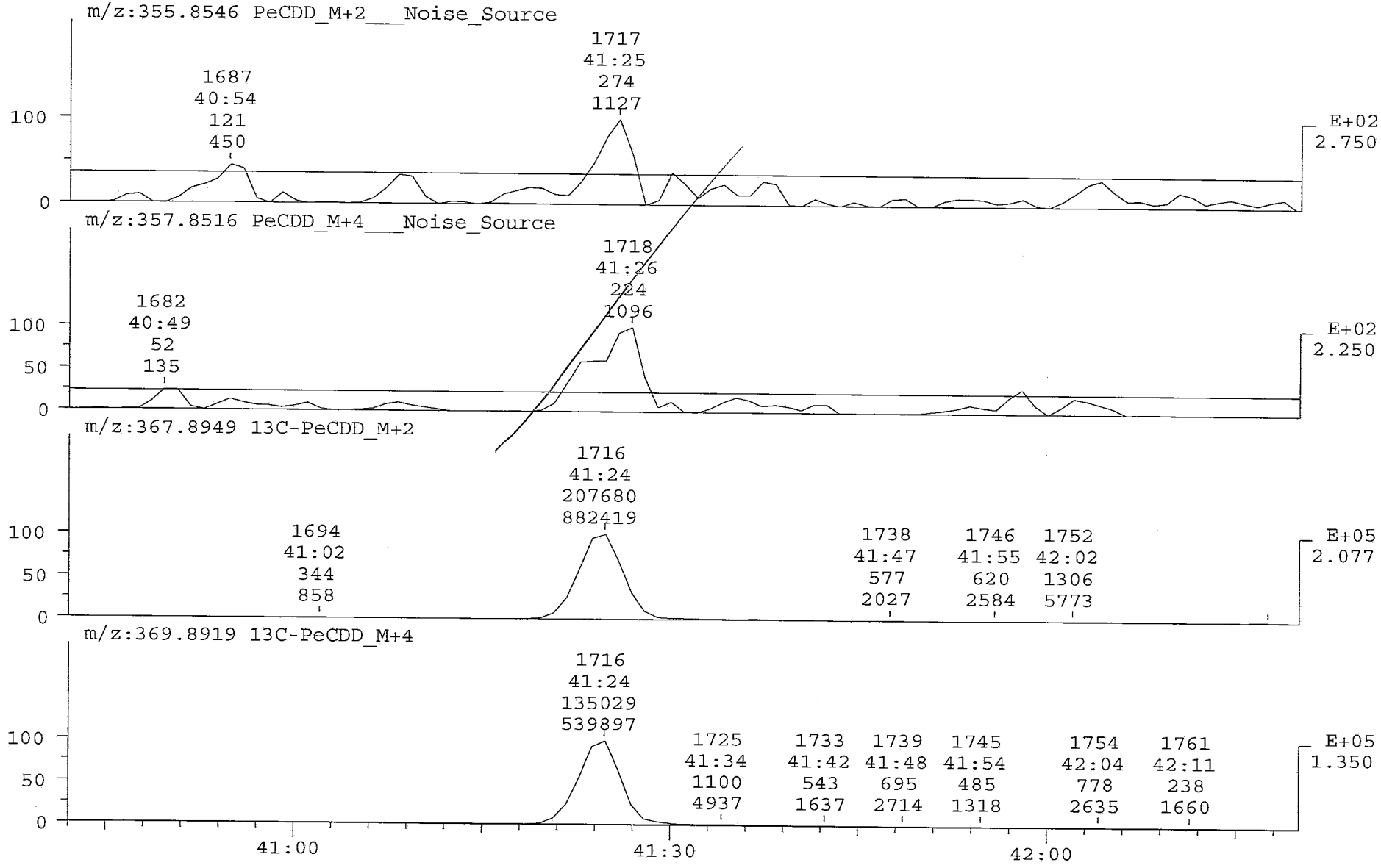
CHRO: d1tm82reb 17-Aug-16 Elapse: 30:50 1104
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 631 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



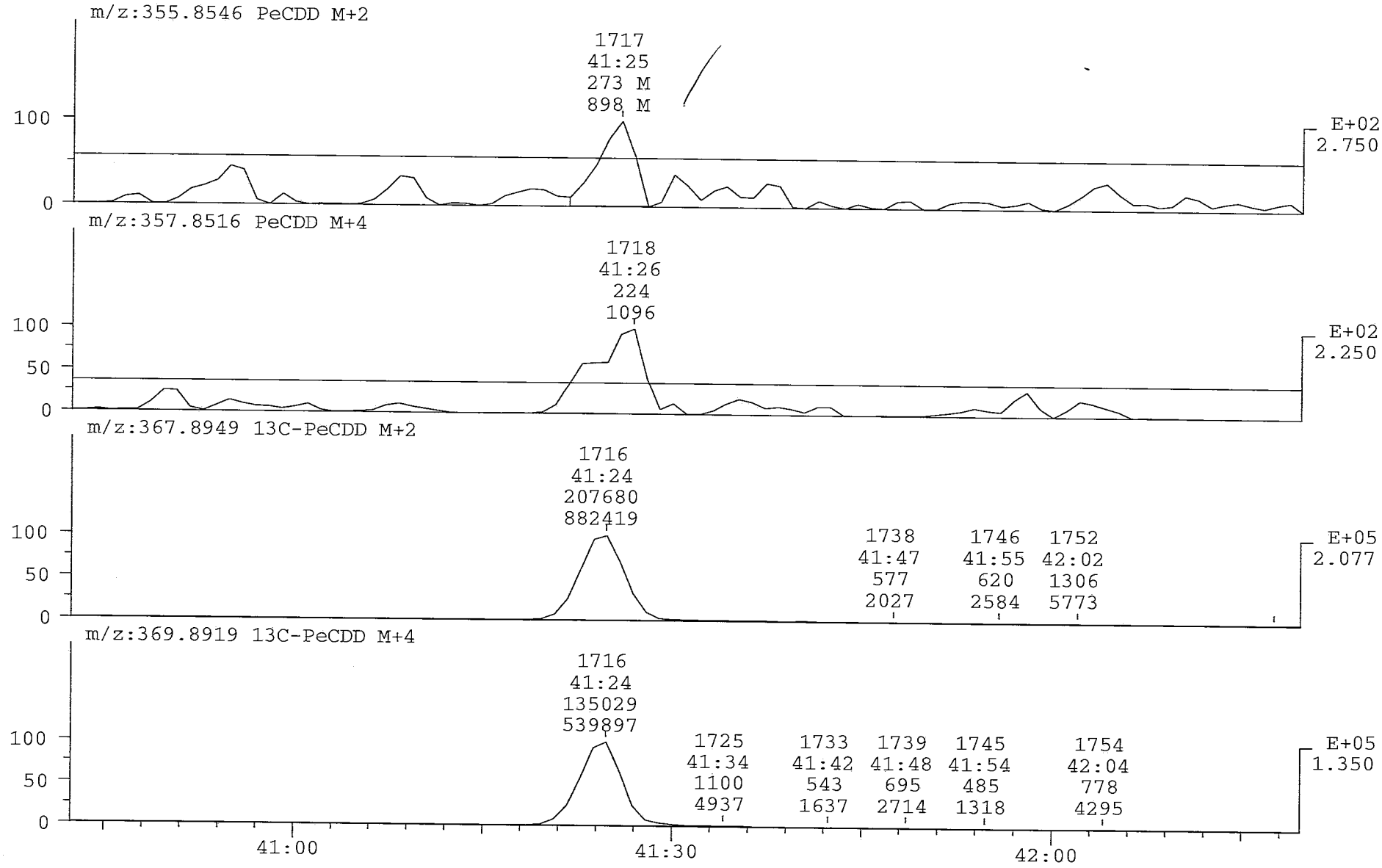
CHRO: d1tm82reb 17-Aug-16 Elapse: 30:50 1104
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 631 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



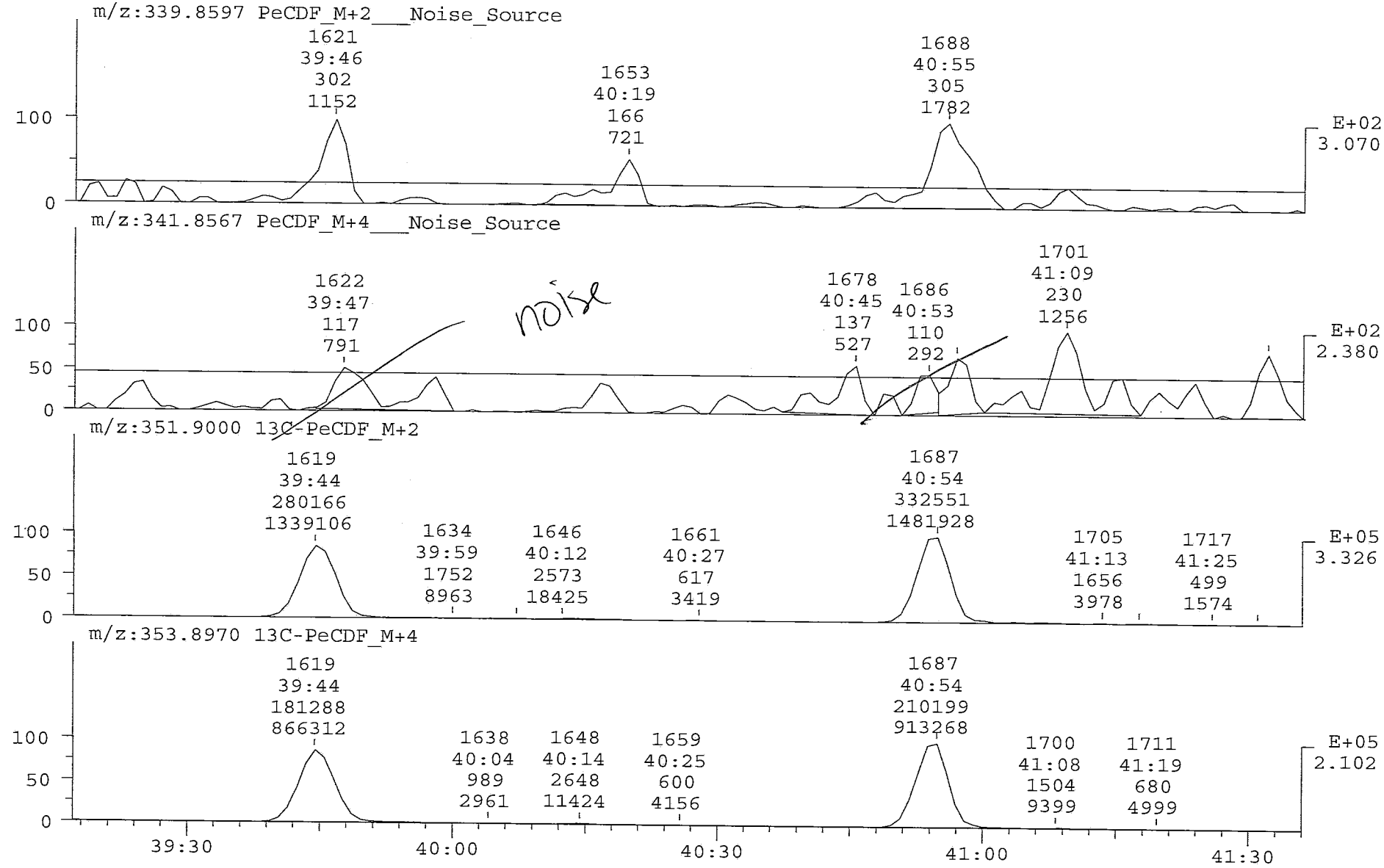
CHRO: d1tm82reb 17-Aug-16 Elapse: 41:27 1719
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1675 > 1769 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



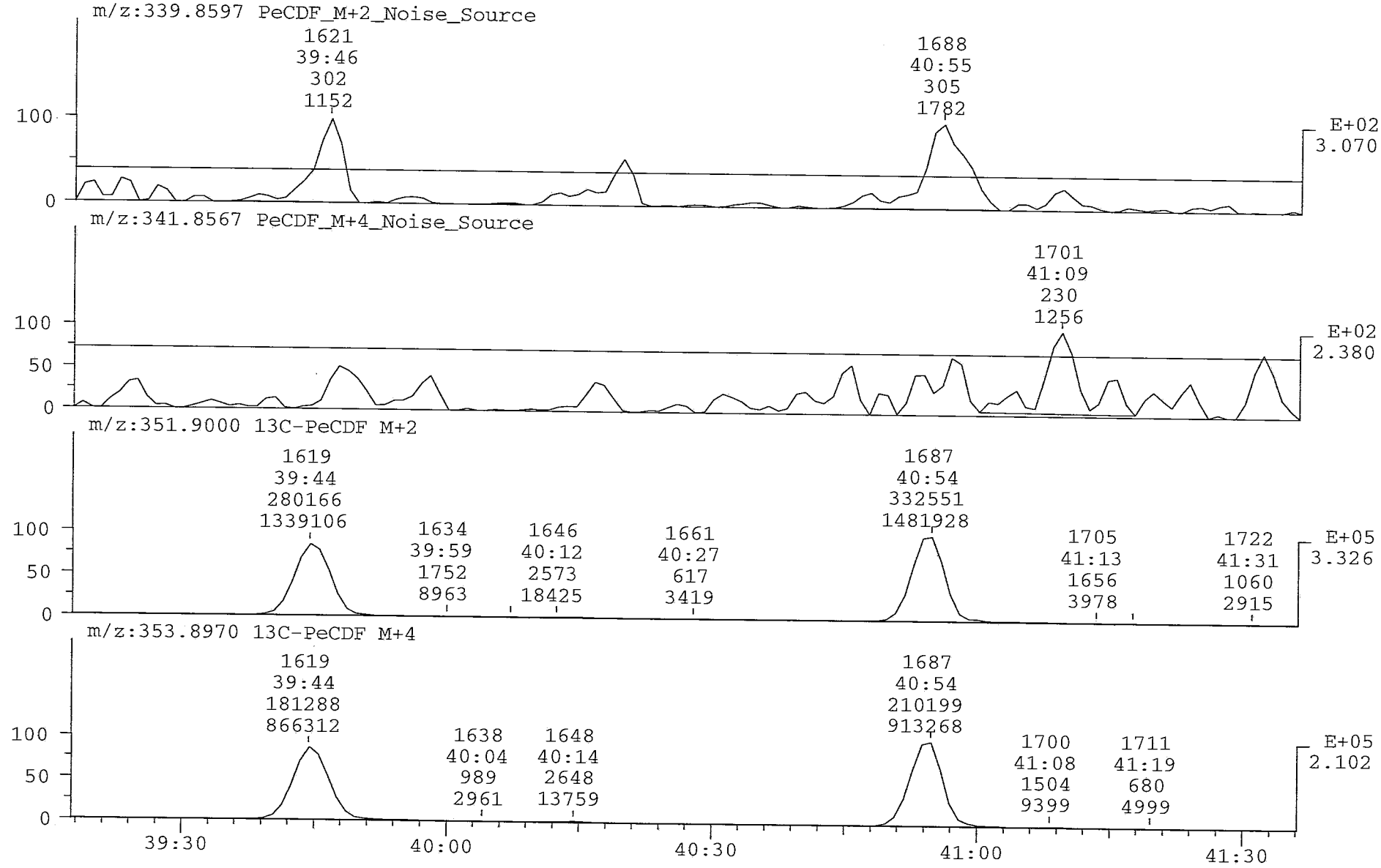
CHRO: d1tm82reb 17-Aug-16 Elapse: 54:53 2494
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1675 > 1769 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



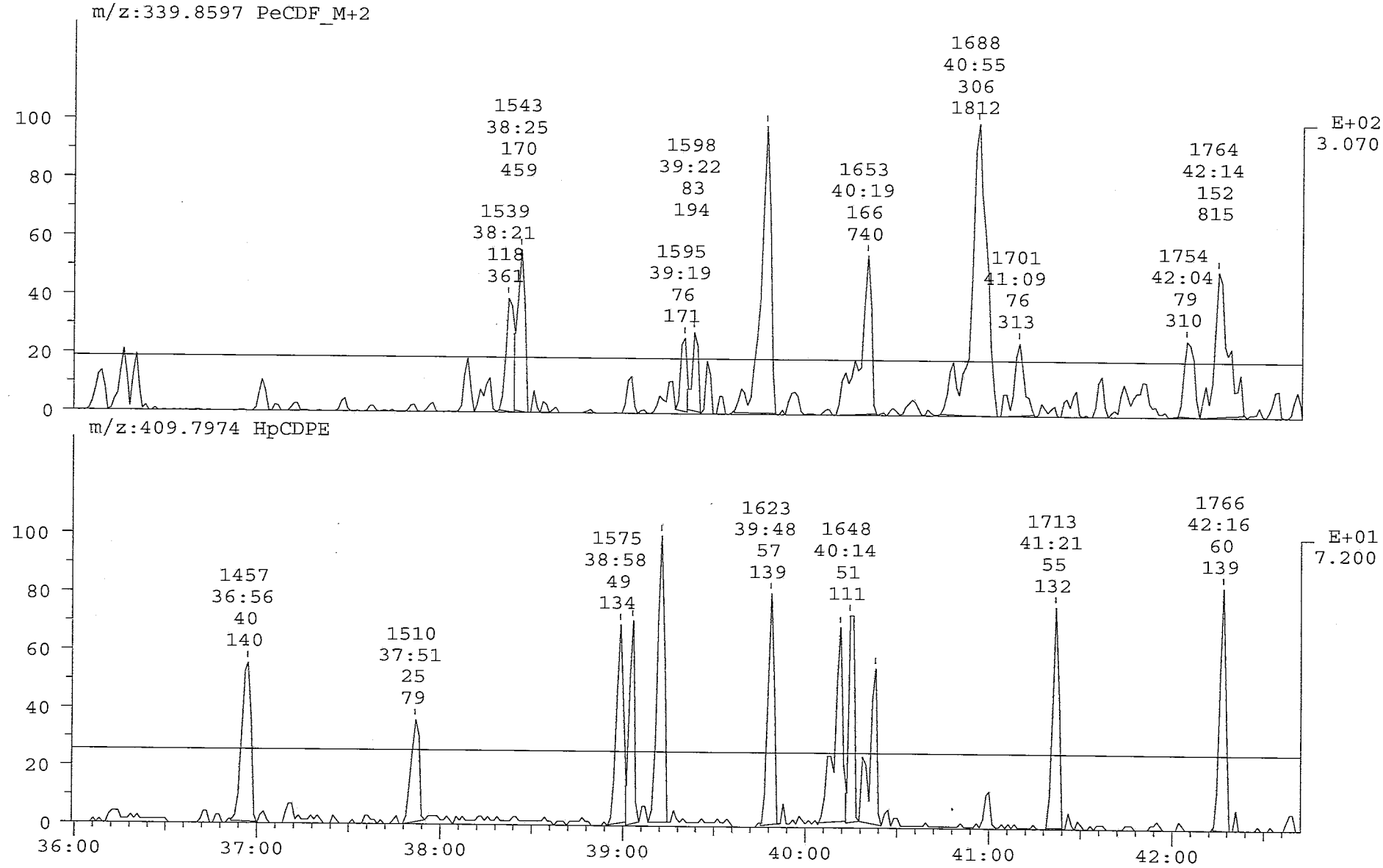
CHRO: d1tm82reb 17-Aug-16 Elapse: 40:25 1659
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1727 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



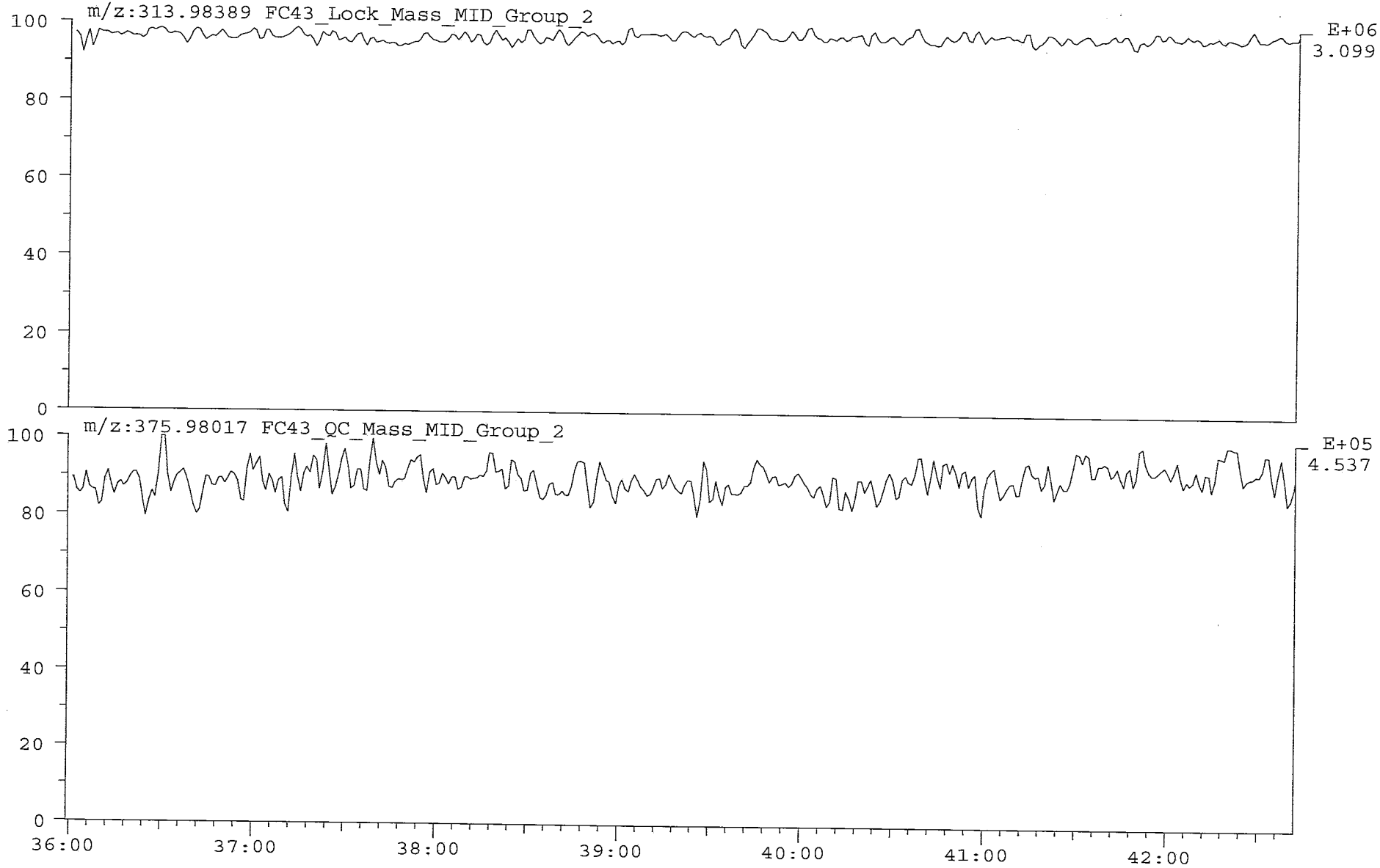
CHRO: d1tm82reb 17-Aug-16 Elapse: 54:53 2494
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1593 > 1727 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



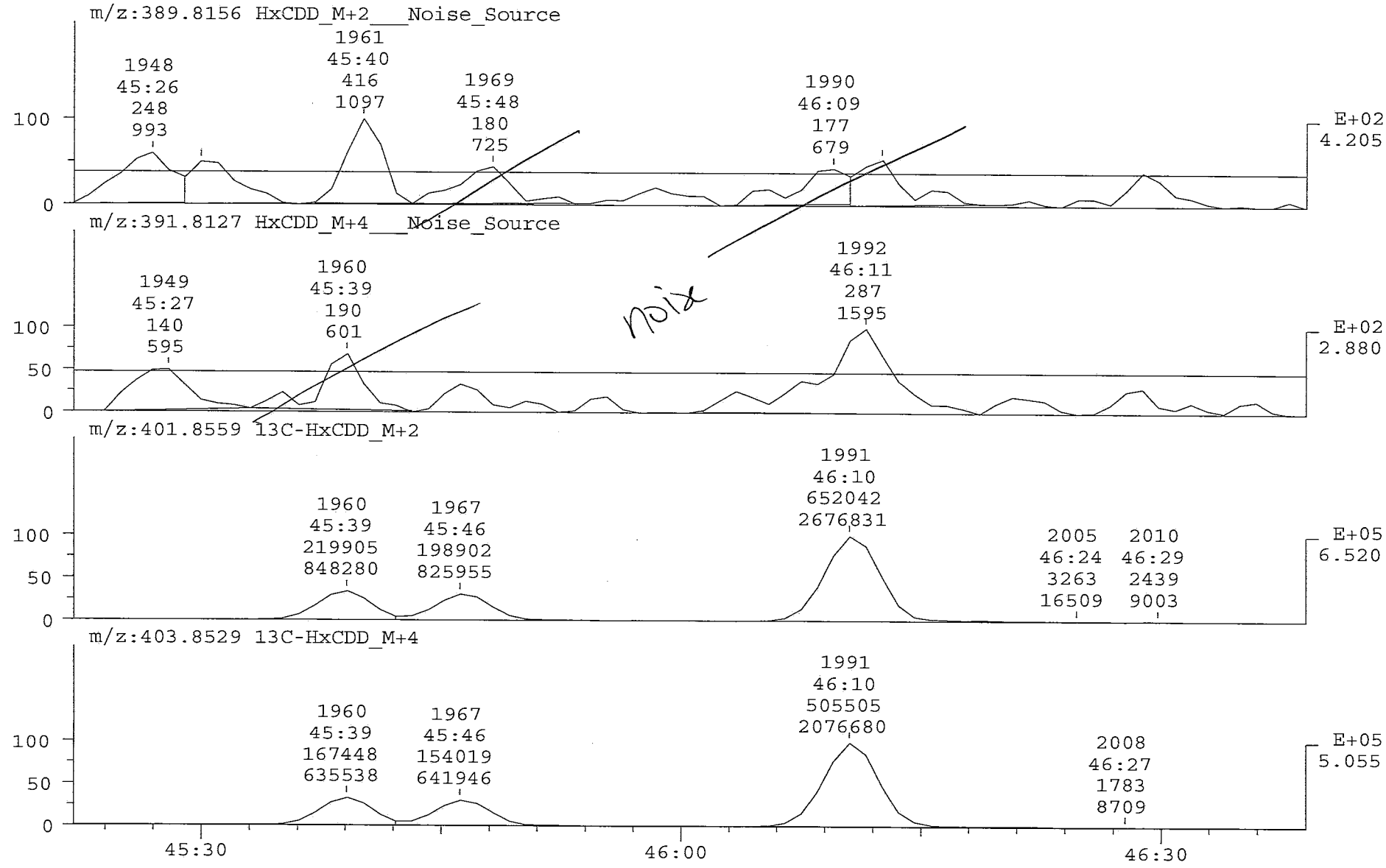
CHRO: d1tm82reb 17-Aug-16 Elapse: 40:25 1659
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



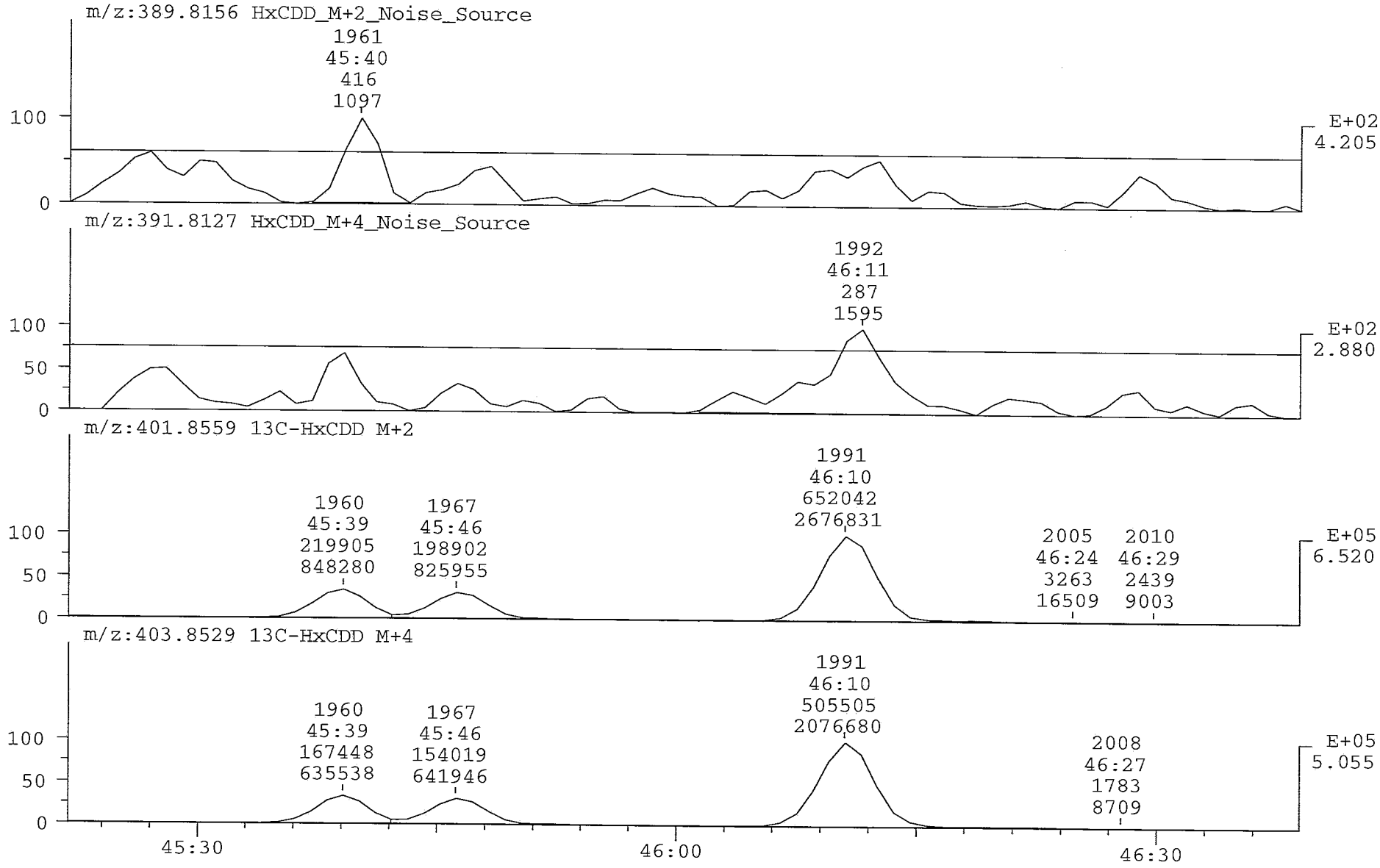
CHRO: d1tm82reb 17-Aug-16 Elapse: 40:25 1659
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



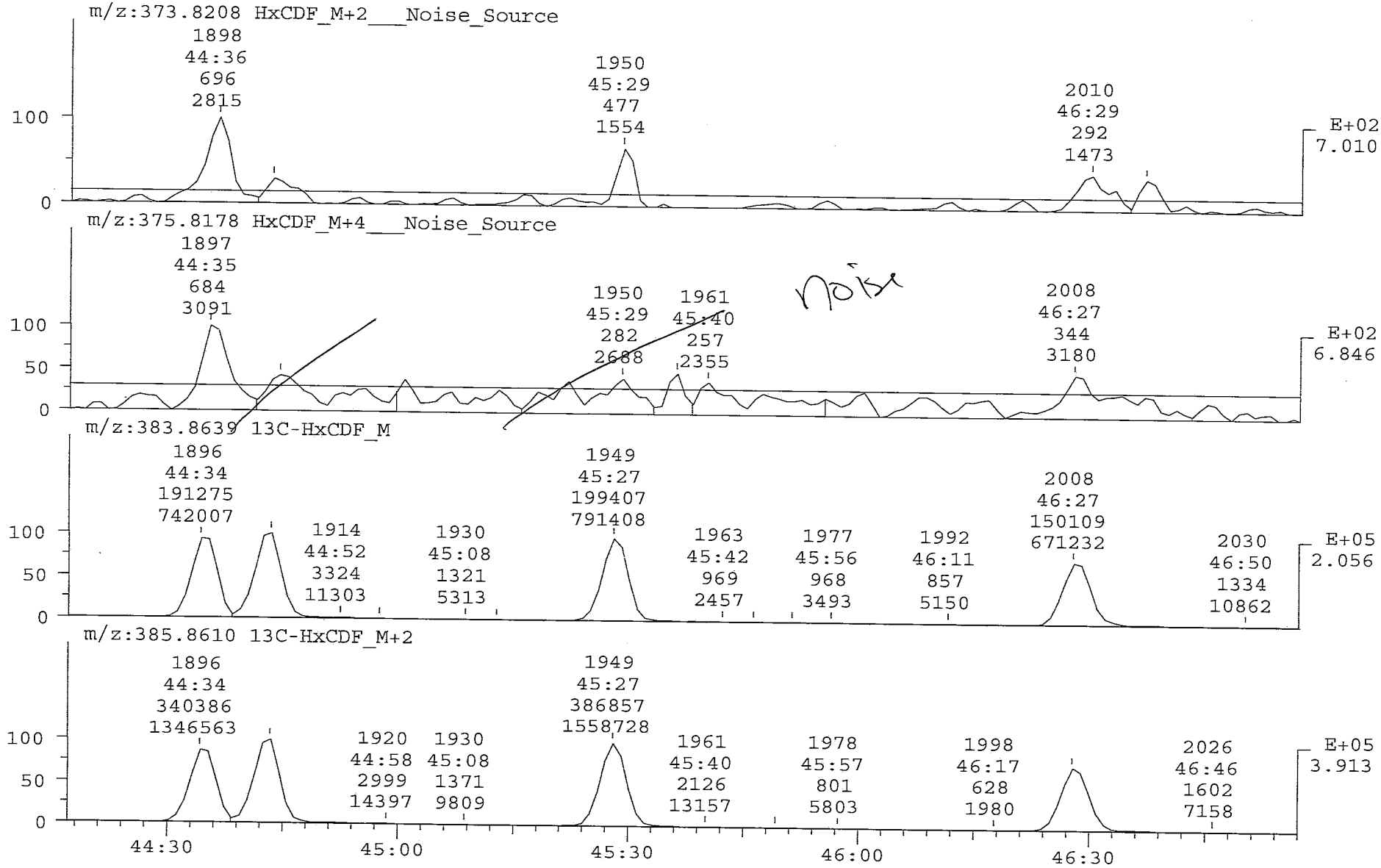
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:00 1981
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1943 > 2019 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



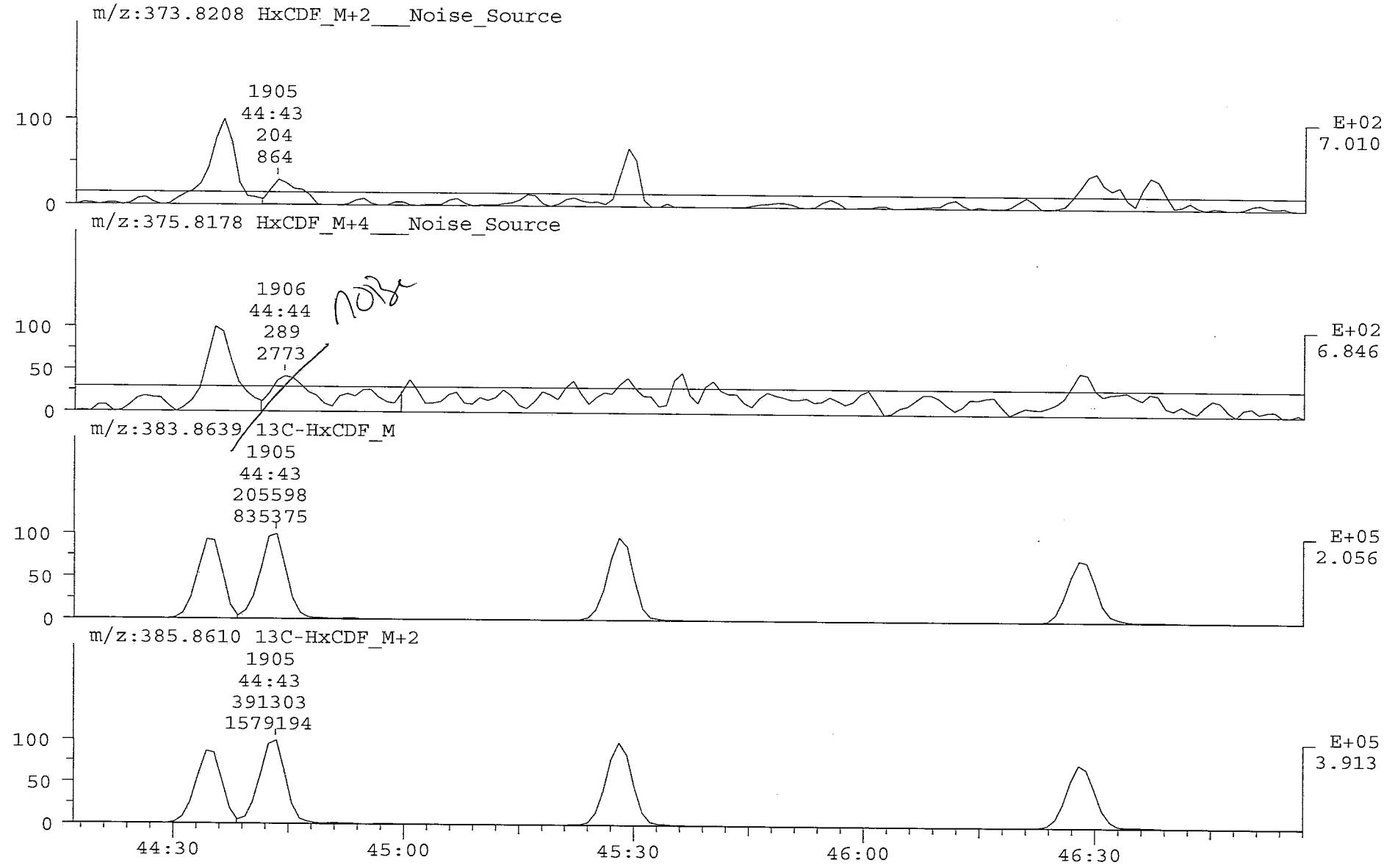
CHRO: d1tm82reb 17-Aug-16 Elapse: 54:53 2494
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1943 > 2019 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



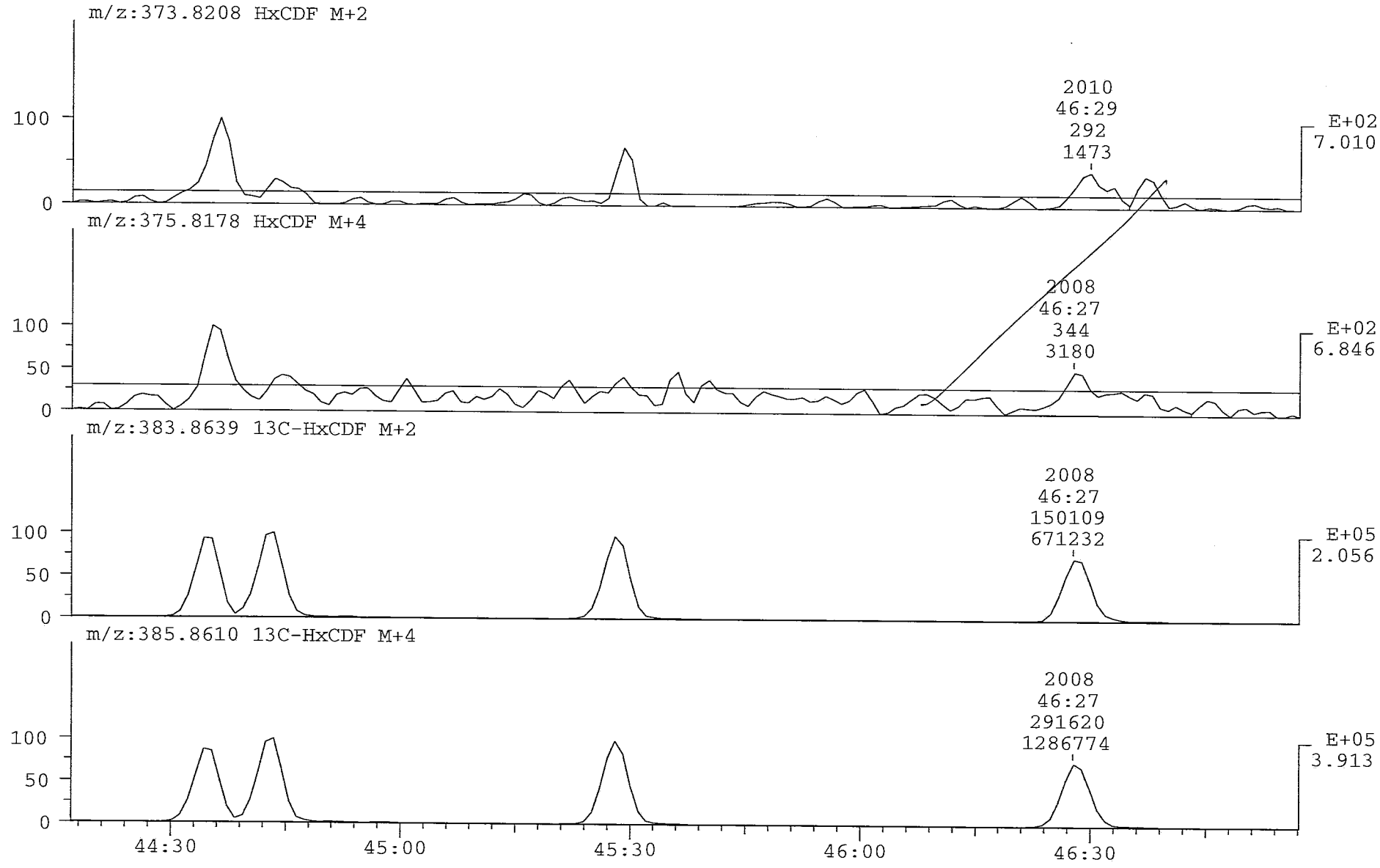
CHRO: d1tm82reb 17-Aug-16 Elapse: 45:37 1958
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1879 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



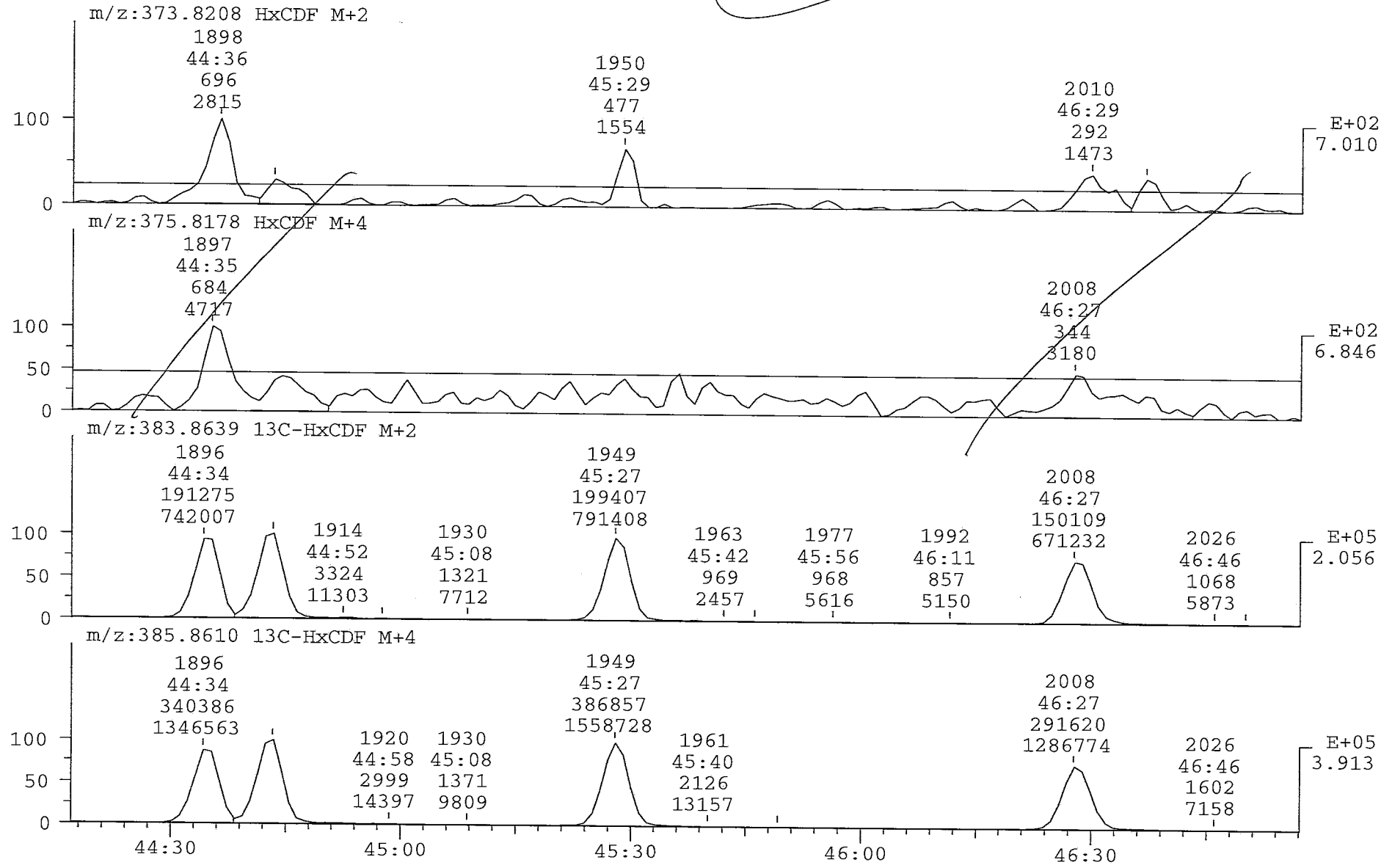
CHRO: d1tm82reb 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1903 > 1911 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



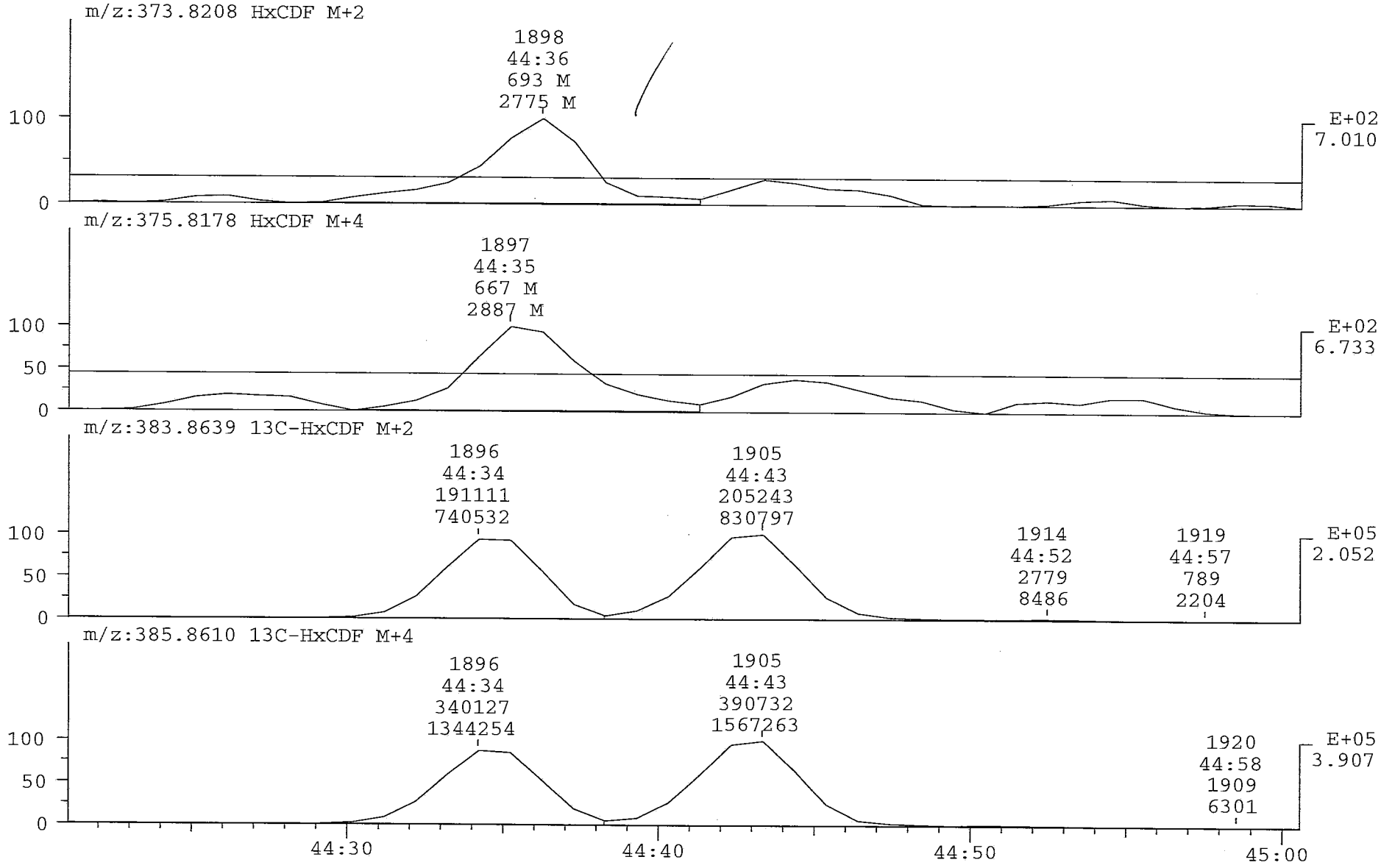
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:28 2009
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2006 > 2012 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



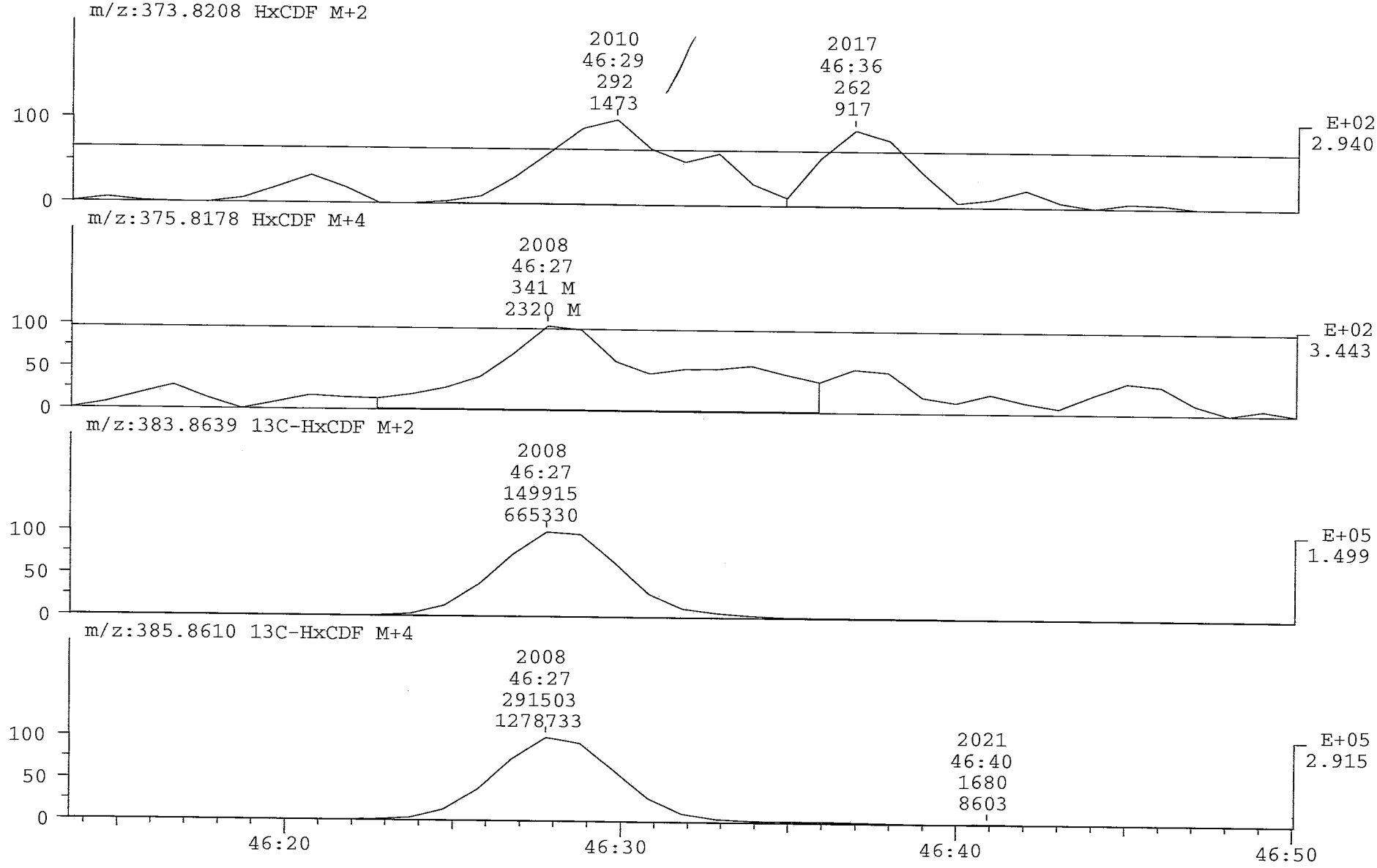
CHRO: d1tm82reb 17-Aug-16 Elapse: 54:53 2494
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1879 > 2037 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



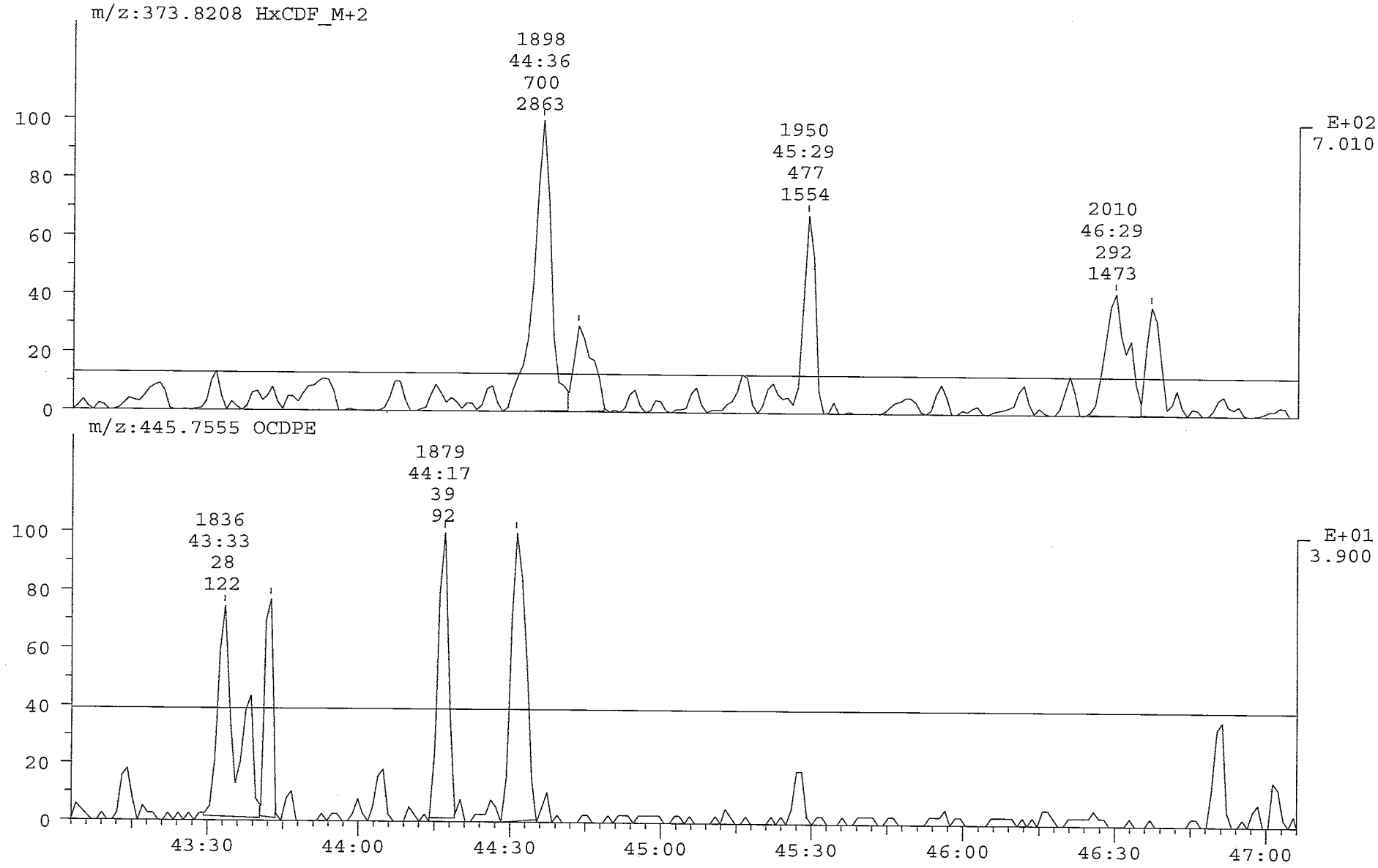
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:28 2009
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1883 > 1922 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



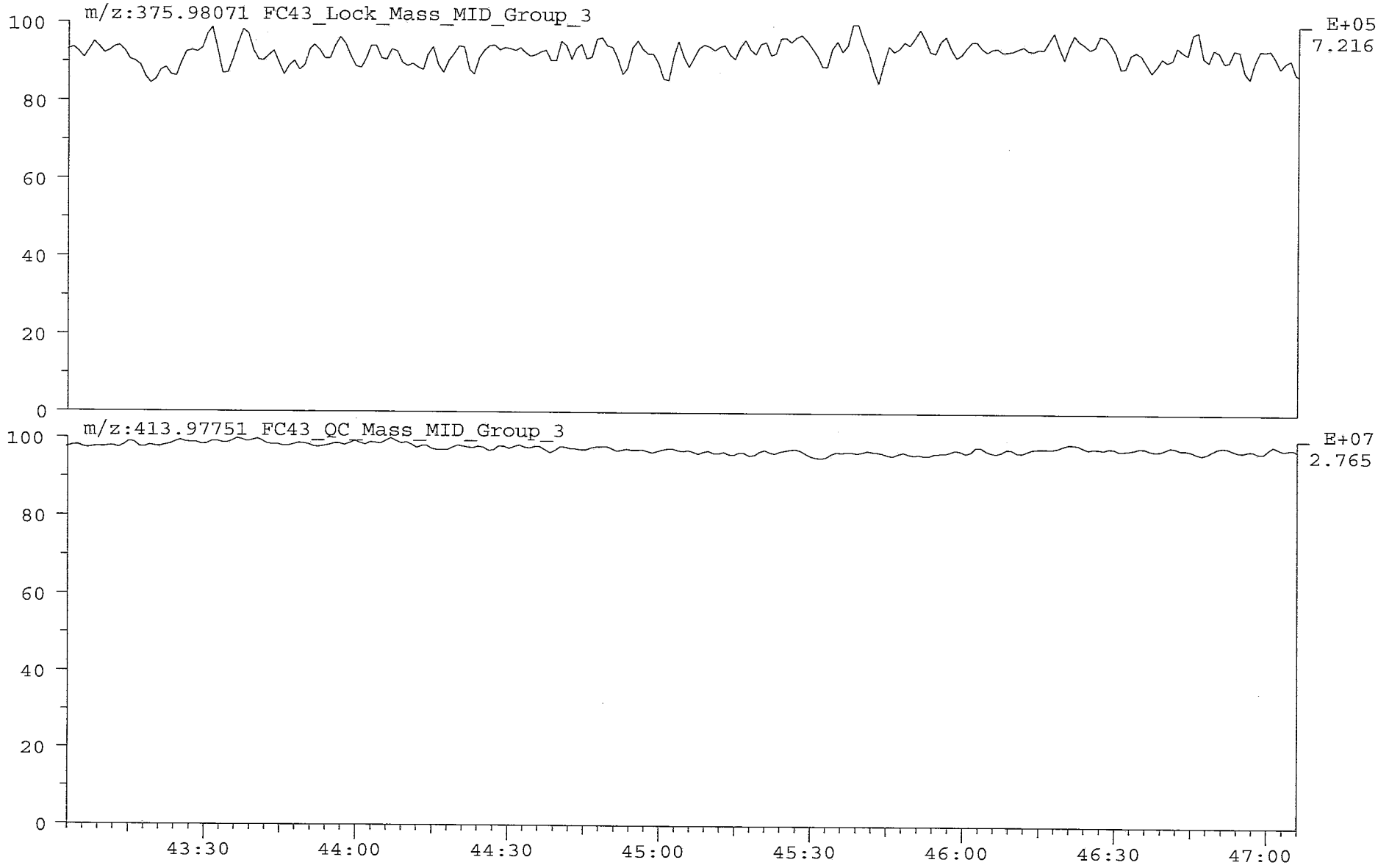
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:28 2009
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1994 > 2030 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



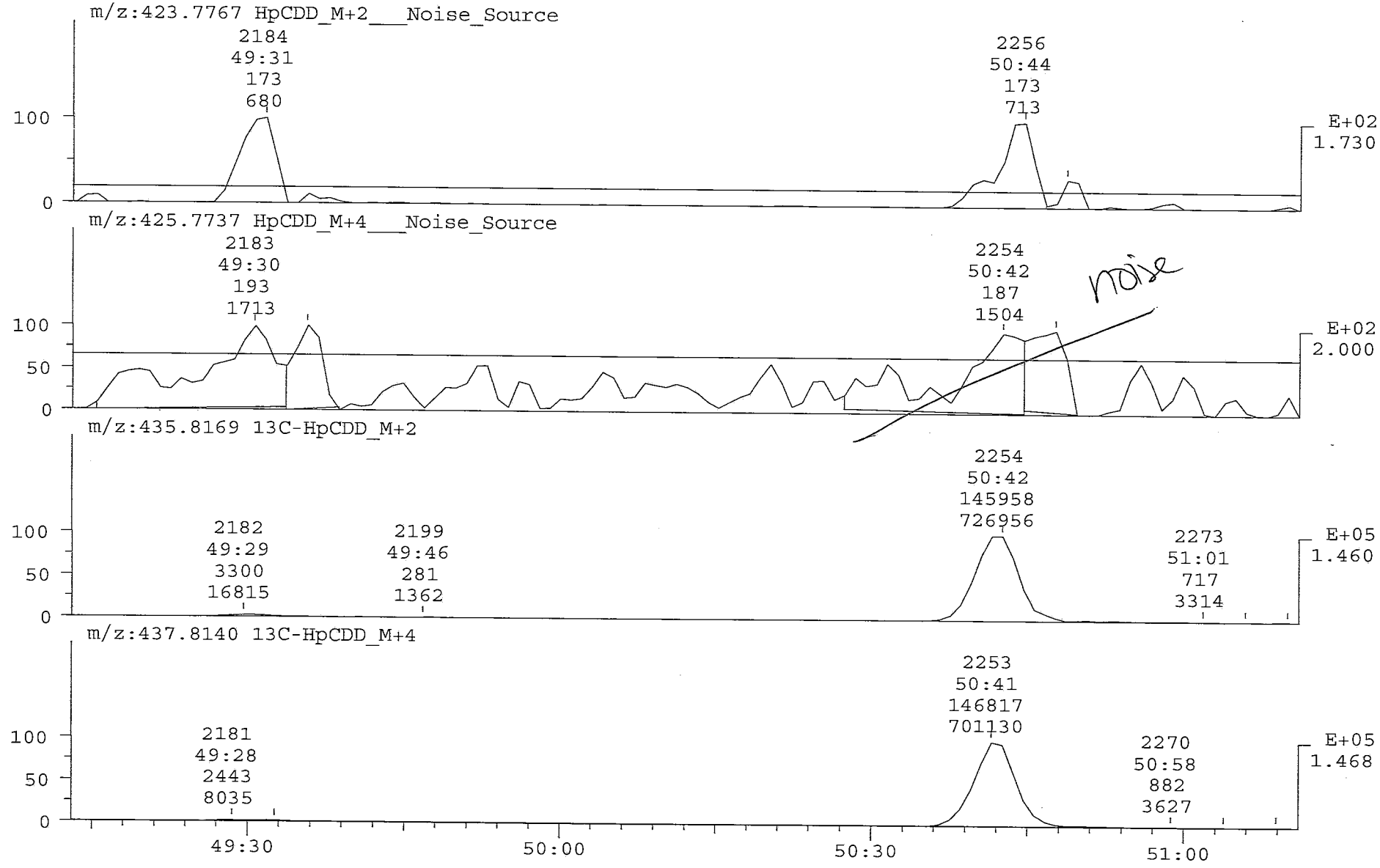
CHRO: d1tm82reb 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1806 > 2046 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



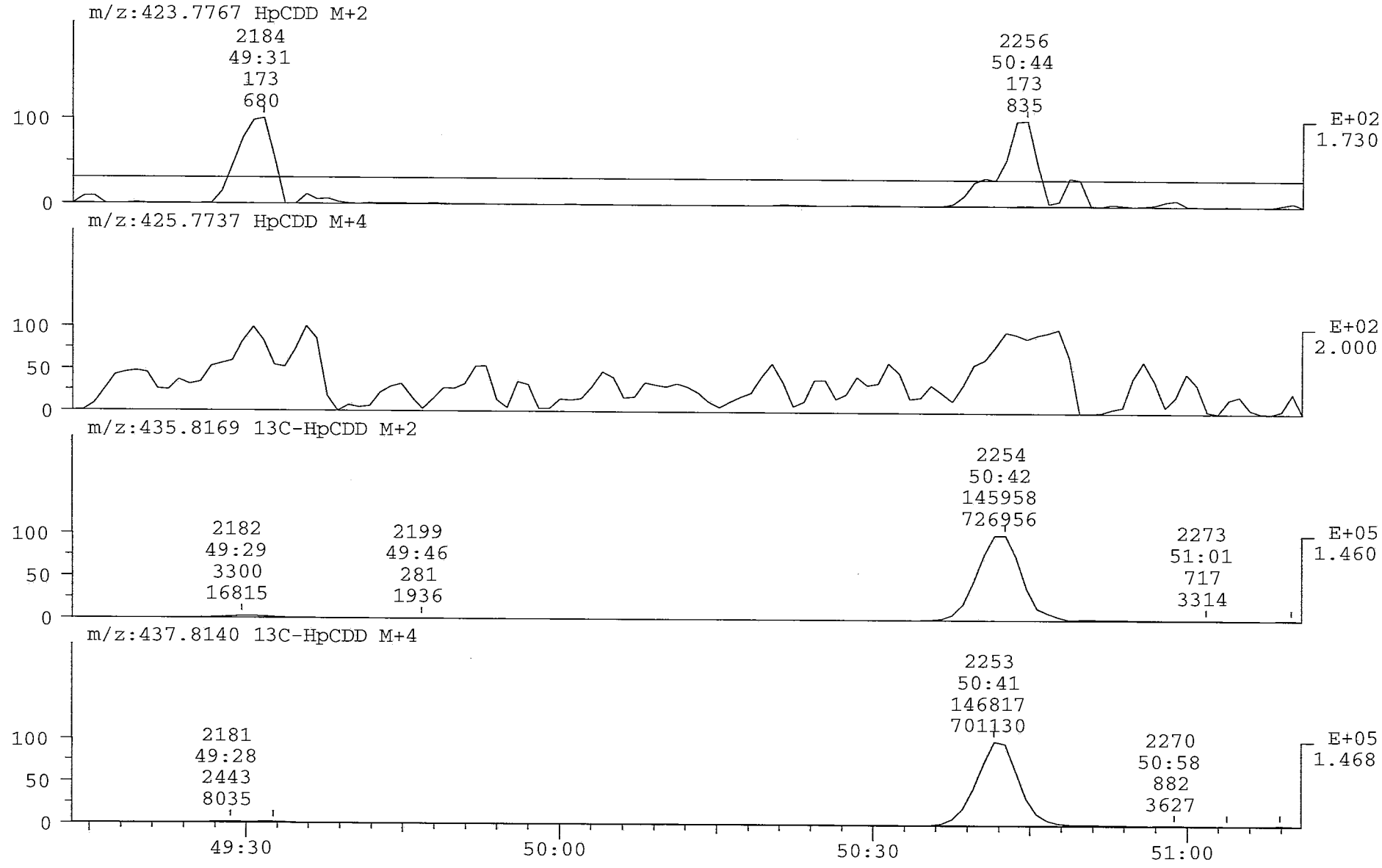
CHRO: d1tm82reb 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1806 > 2046 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



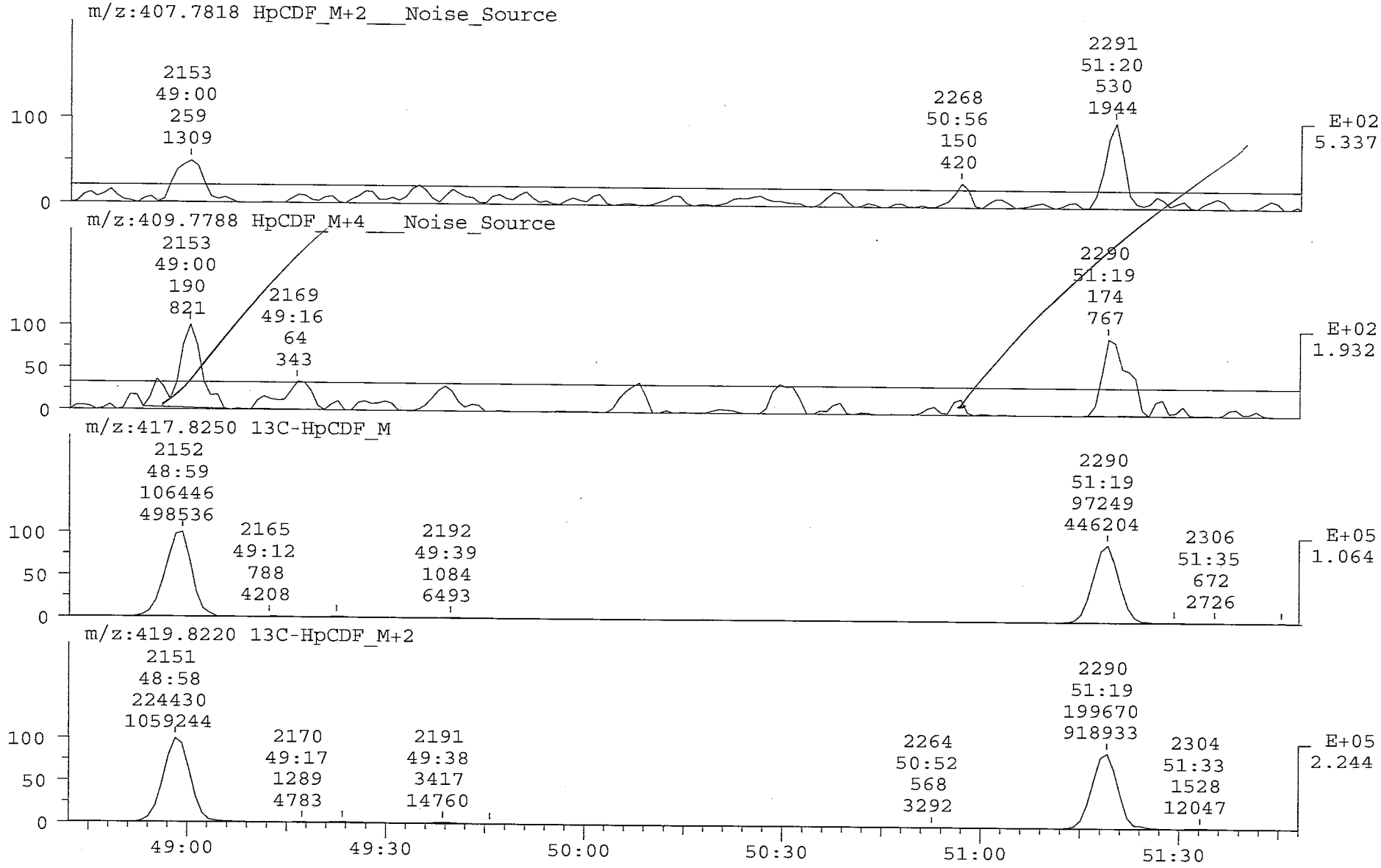
CHRO: d1tm82reb 17-Aug-16 Elapse: 44:45 1907
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2166 > 2282 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



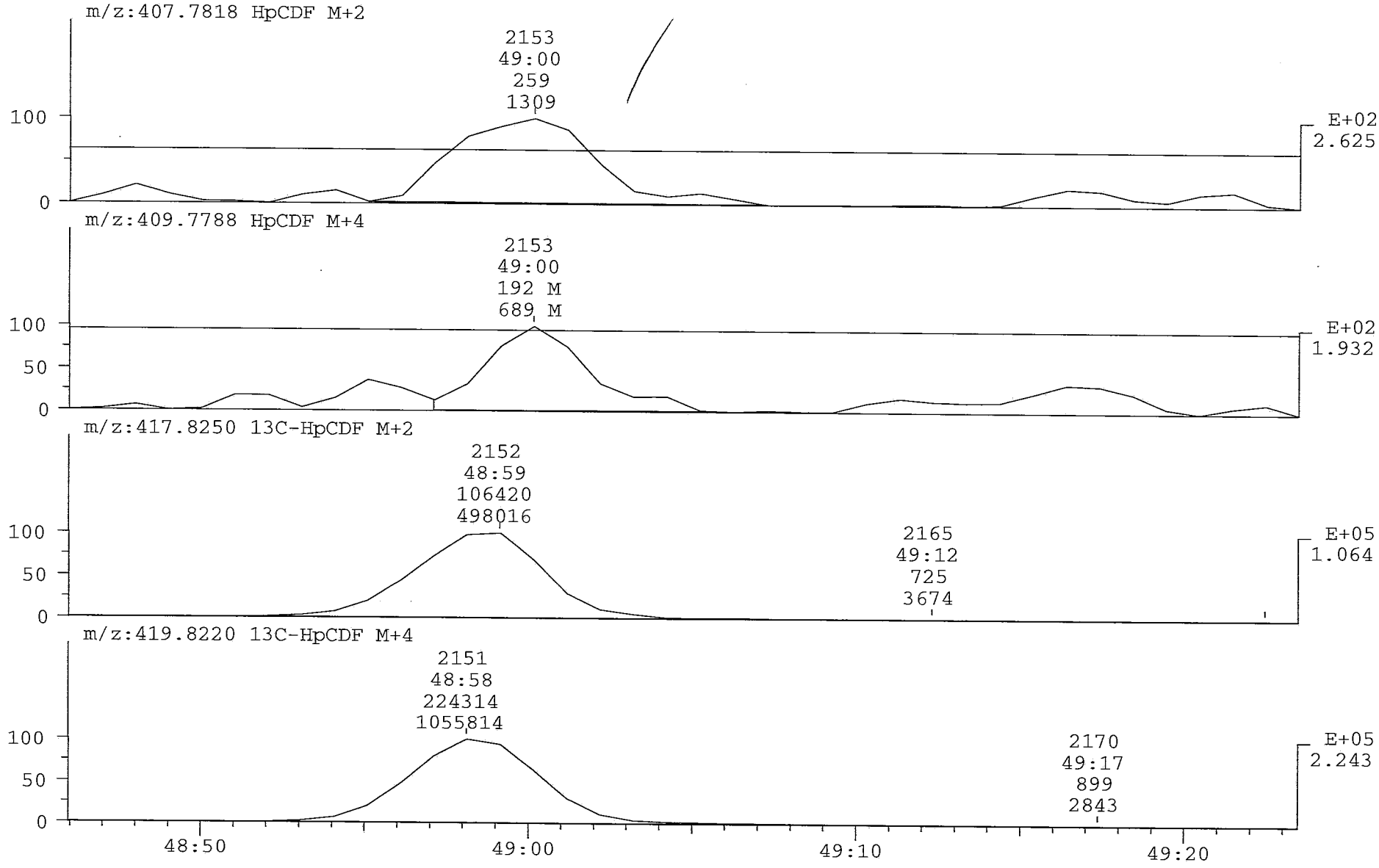
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:28 2009
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



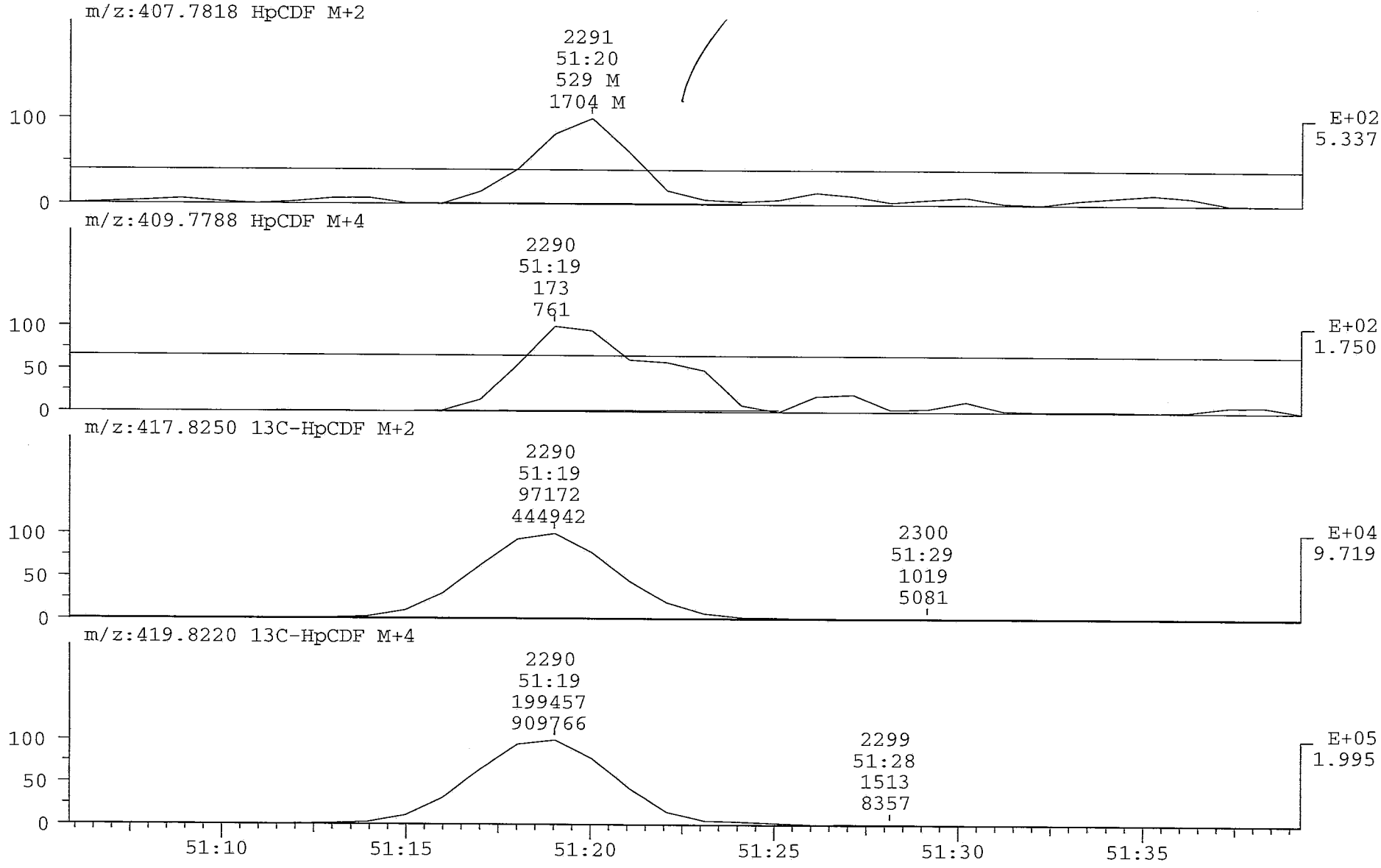
CHRO: d1tm82reb 17-Aug-16 Elapse: 50:15 2227
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



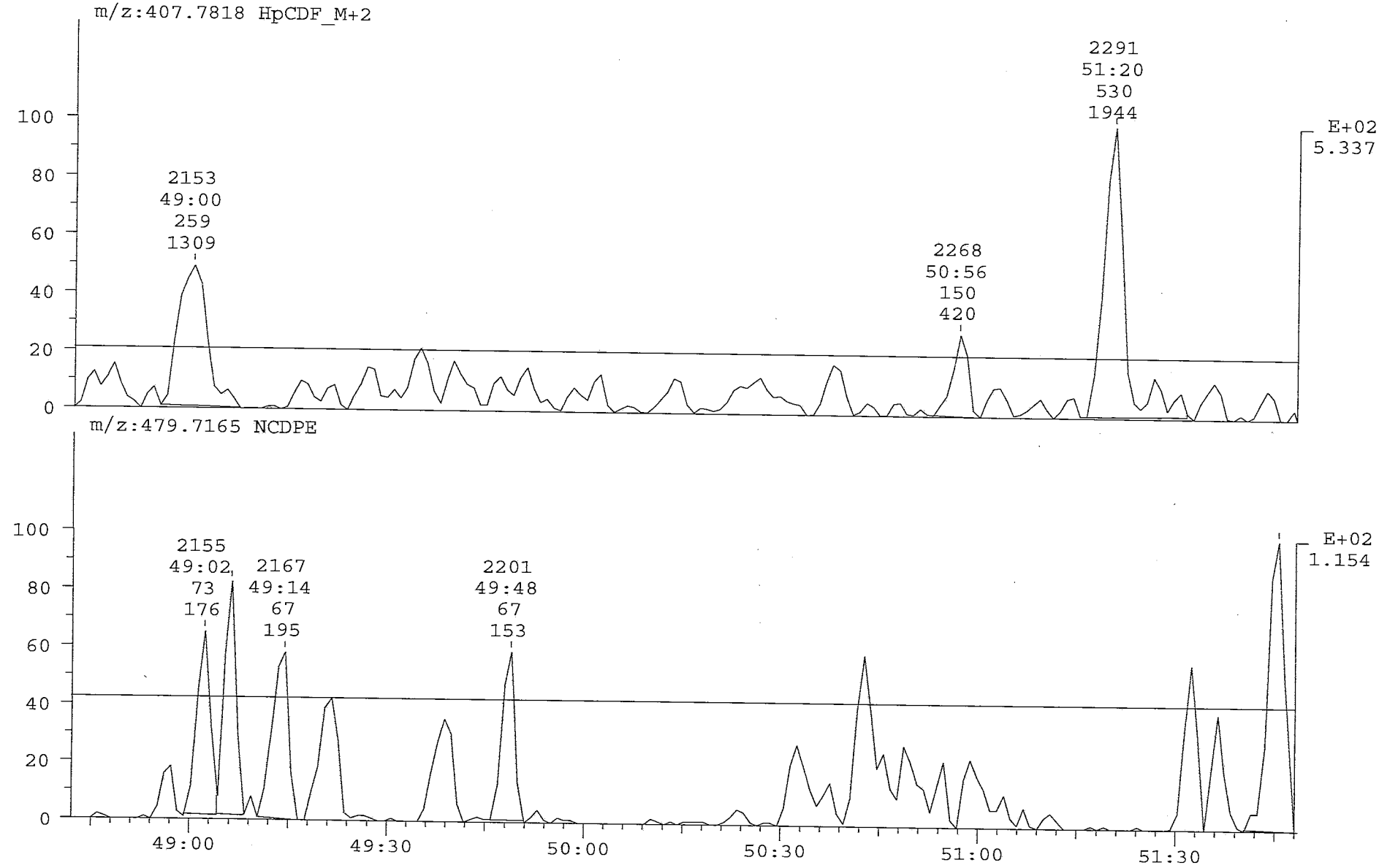
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:28 2009
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2139 > 2176 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 8.0
Disp: Height Area



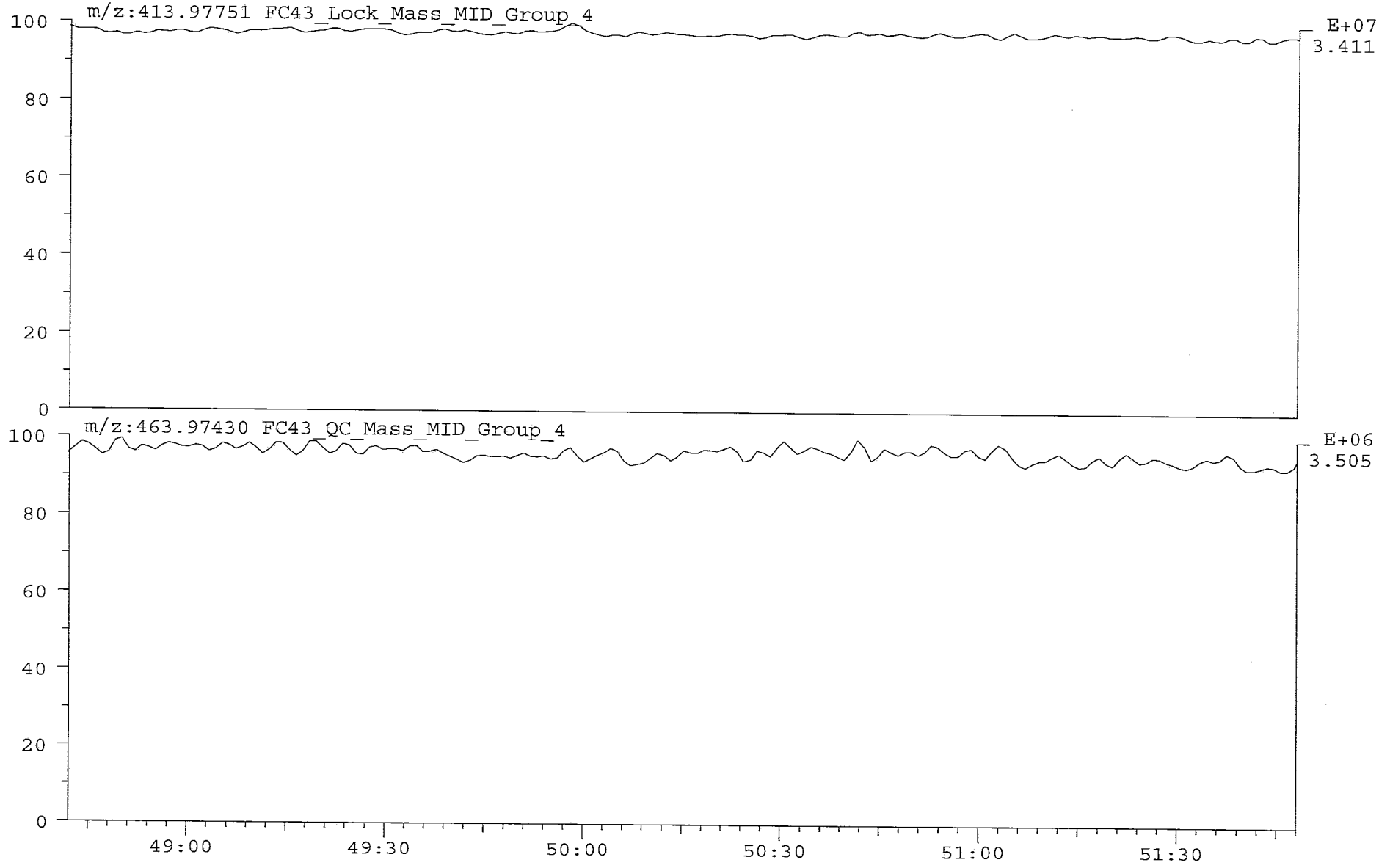
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:28 2009
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2277 > 2310 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 1 Label : -2, 8.0
Disp: Height Area



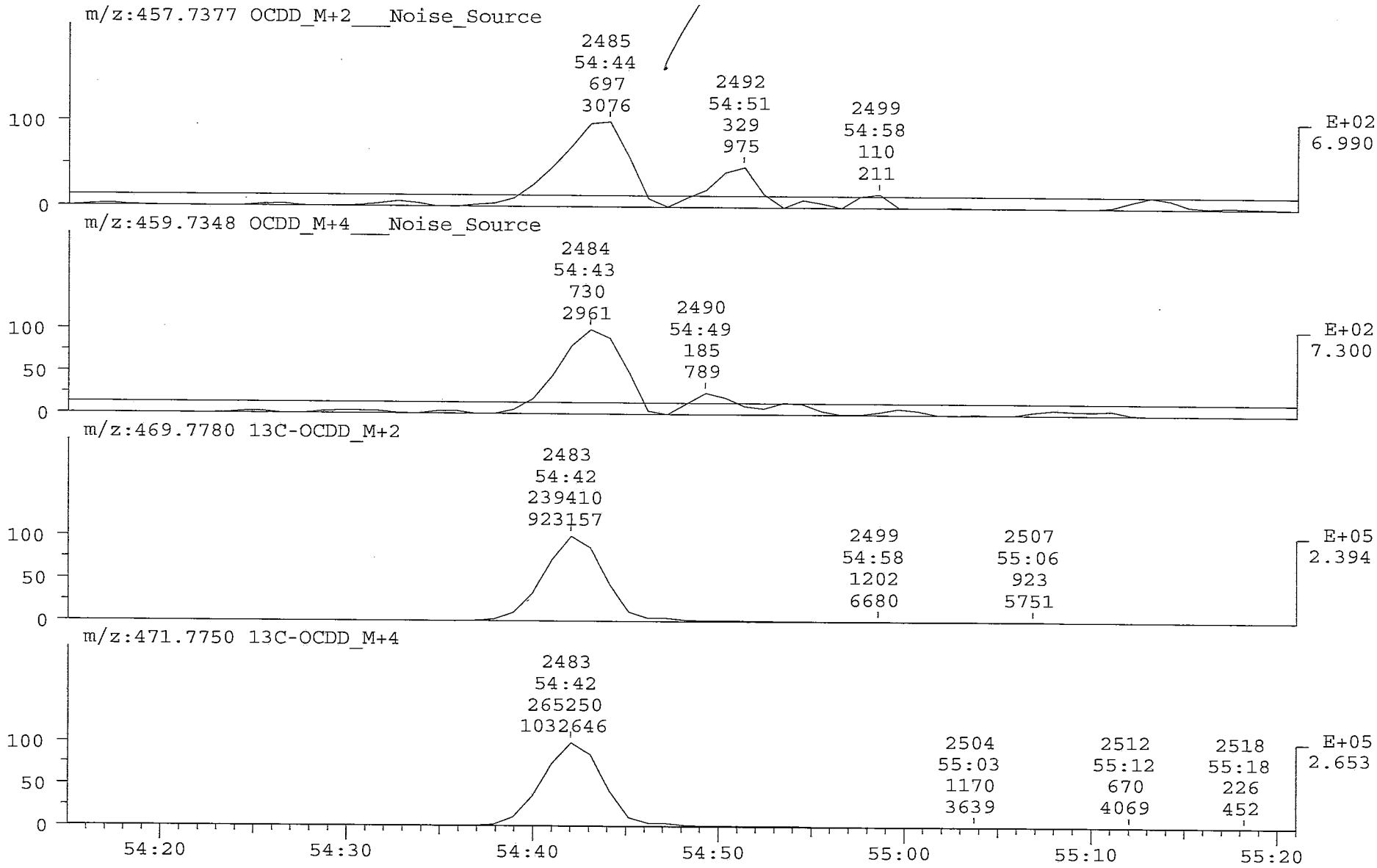
CHRO: d1tm82reb 17-Aug-16 Elapse: 50:15 2227
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



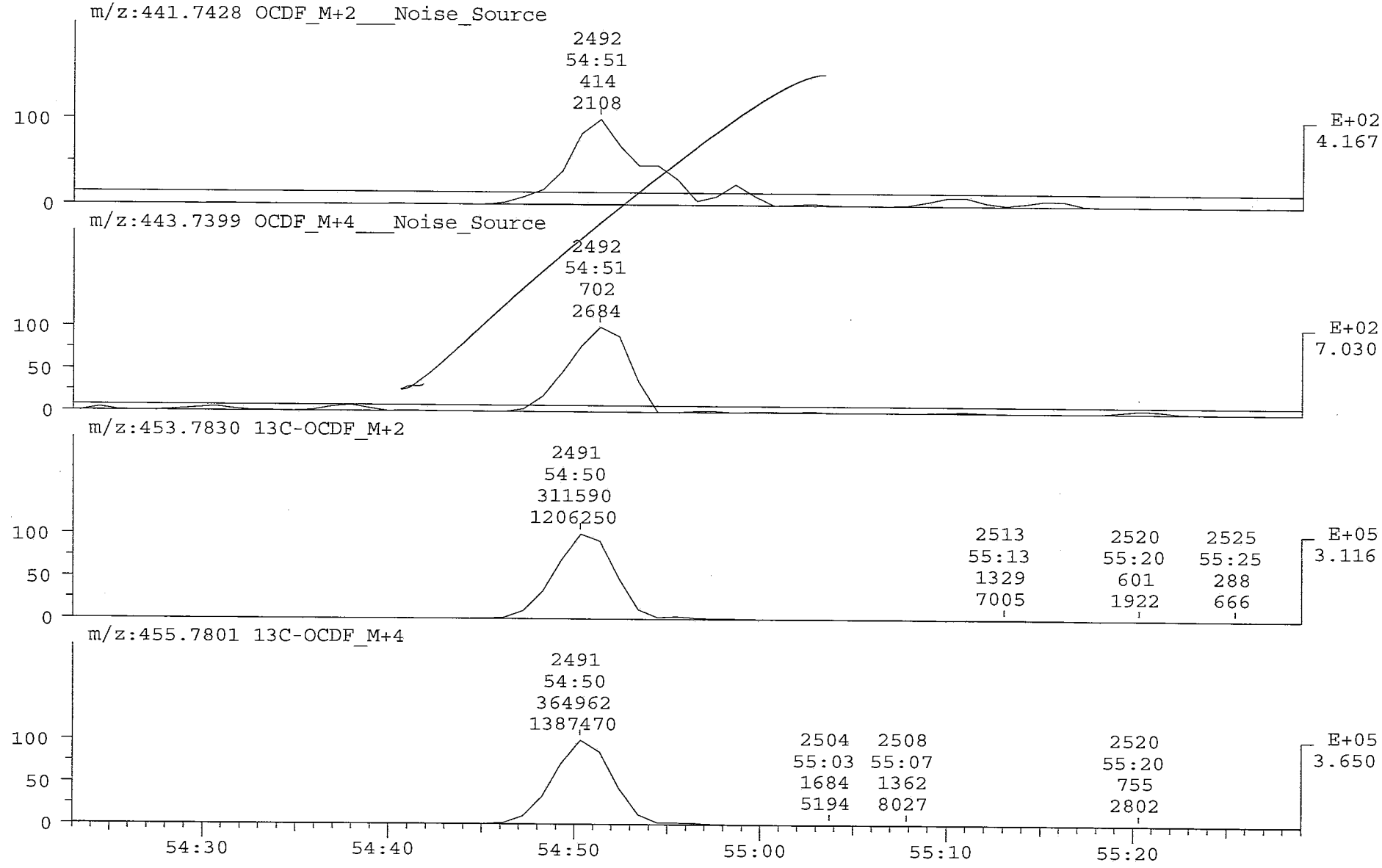
CHRO: d1tm82reb 17-Aug-16 Elapse: 50:15 2227
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2135 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



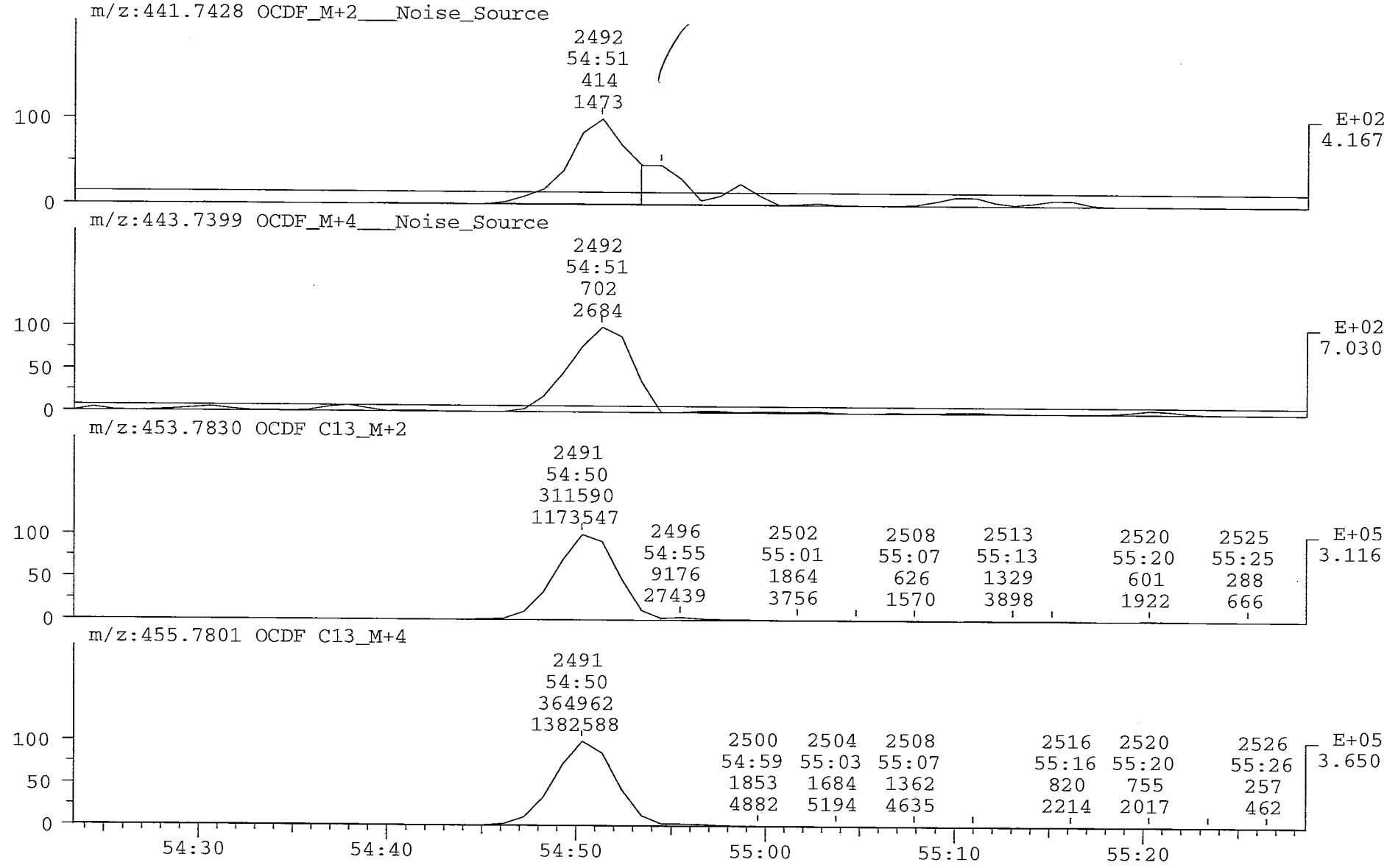
CHRO: d1tm82reb 17-Aug-16 Elapse: 54:45 2486
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2457 > 2521 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



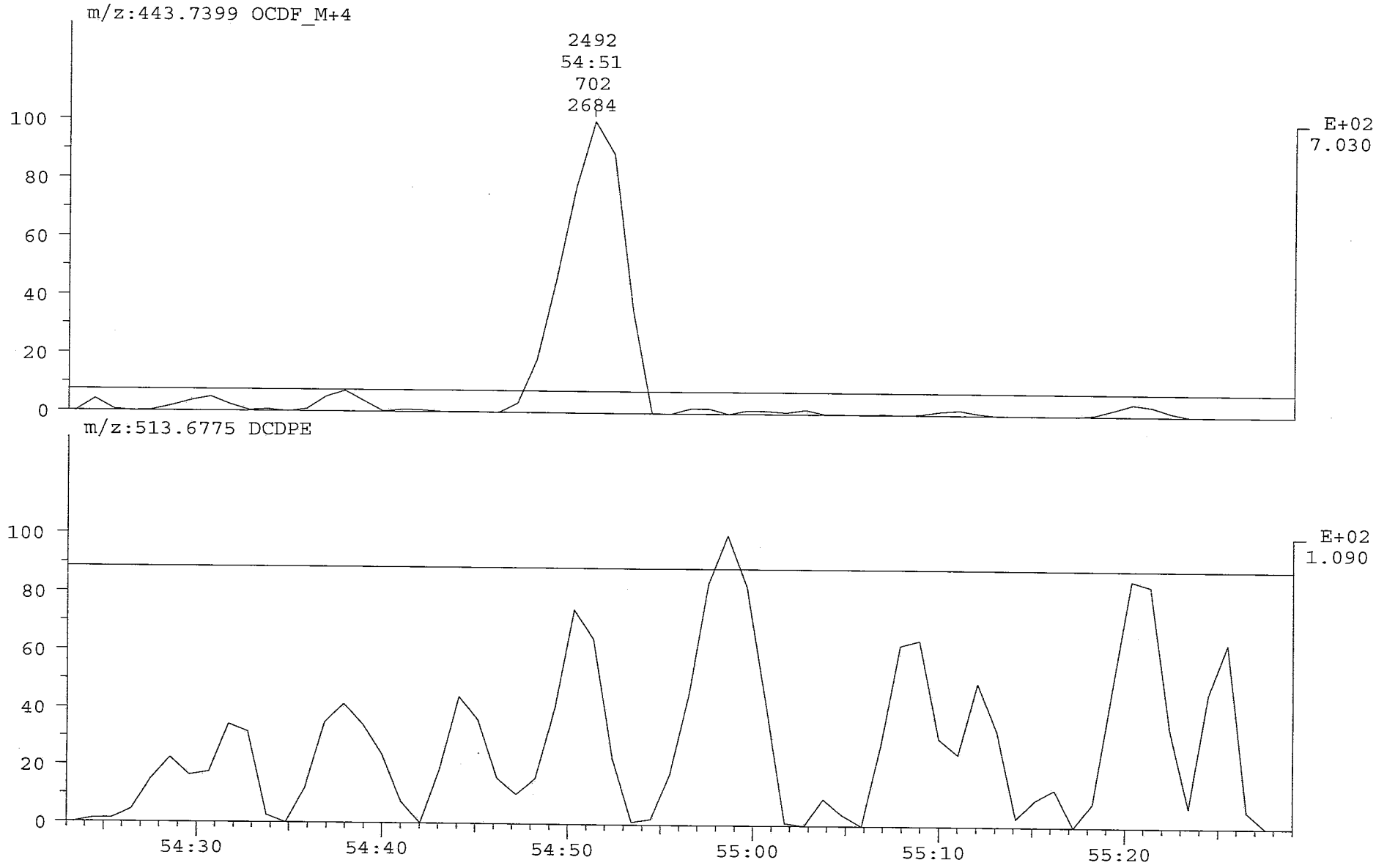
```
CHRO:  d1tm82reb                                  17-Aug-16   Elapse:  54:53      2494
Samp:  WO=m82re1aa Meth=9Ao Dil=1                             Start :  12:29:30   2628
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                    Study :  6217014 (10.0g)
Oper:  KLR                                                    Inlet :  LC
Peak:  100.00  ppm      Label wndw:   2465 > 2528             Masses:  303 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                  Label :  -2, 5.0
Disp:  Height  Area
```



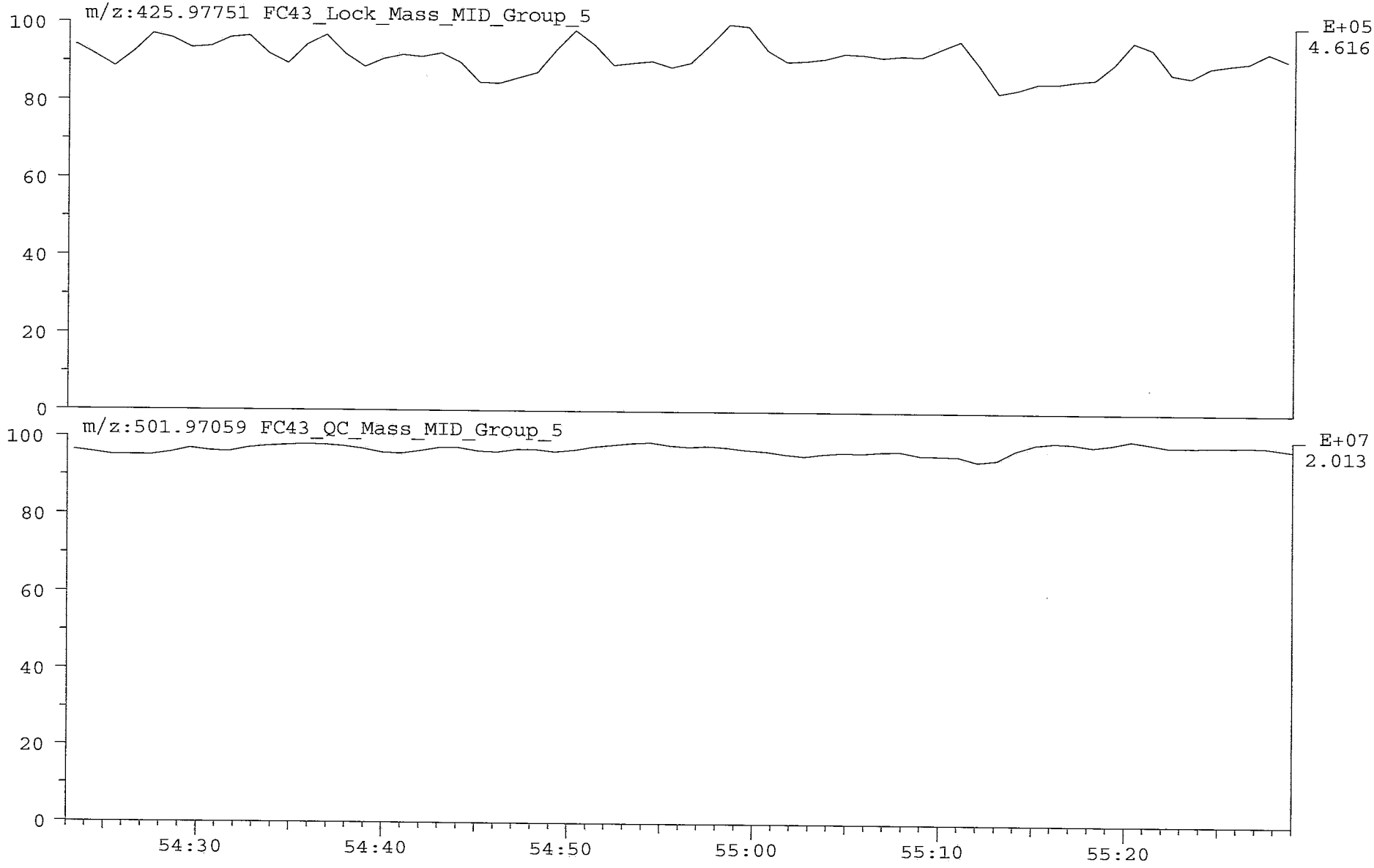
CHRO: d1tm82reb 17-Aug-16 Elapse: 46:28 2009
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 1 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm82reb 17-Aug-16 Elapse: 54:53 2494
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm82reb 17-Aug-16 Elapse: 54:53 2494
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2465 > 2528 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 17 12:34:17 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 17-Aug-16 12:34:16

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817110455

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	310.4834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0008	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	172.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	50.0000	FQUAD	6.4000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0474	FVSRC	0.0396
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	310.4834	LKM	425.9770	MASS	310.4834
MDAC	3567604.4324	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2649.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.9001	RELEN	0.0000
RES	11220.9330	RPUSHER	-1.9707	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	310.4834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:          2.6e-005 mbar
Analyzer Penning:      9.5e-008 mbar
Pirani Analyse:        4.4e-003 mbar
Pirani Source:         4.0e-002 mbar
Pirani Inlet System:   4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 11434.
MID Time Window 2: Resolution is 11733.
MID Time Window 3: Resolution is 11978.
MID Time Window 4: Resolution is 12351.
MID Time Window 5: Resolution is 11220.

Amplifier Offset: 87.


*** File closed Wed Aug 17 13:31:30 2016
  ***
```

QUAN: d1tm82reb.q0 Entries: 230

Data file(s) used
File: d1tm82reb 17-Aug-16
Samp: WO=m82re1aa Meth=9Ao Dil=1 Start : 12:29:30 2628
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:18	114.	33.	32:14	32:20	3.	2	5.0	ABV
319.8805	32:22	53.	27.	32:20	32:24	3.	2	5.0	AVB
319.8805	33:29	60.	26.	33:26	33:31	3.	2	5.0	ABB
321.8775	31:24	219.	67.	31:21	31:26	8.	2	5.0	ABV
321.8775	31:31	1153.	151.	31:26	31:45	8.	2	5.0	AVB
321.8775	32:26	249.	54.	32:19	32:28	8.	2	5.0	ABV
321.8775	32:30	245.	64.	32:28	32:36	8.	2	5.0	AVB
331.9202	32:16	2055165.	207346.	32:00	32:31	142.	2	5.0	AVV
331.9202	32:48	723167.	65689.	32:34	33:04	142.	2	5.0	AVV
331.9202	33:13	7825.	925.	33:05	33:28	142.	2	5.0	AVV
333.9171	32:16	2474885.	248811.	32:00	32:31	106.	2	5.0	ABV
333.9171	32:48	845933.	82385.	32:33	33:03	106.	2	5.0	AVV
333.9171	33:09	7898.	972.	33:03	33:13	106.	2	5.0	AVB
333.9171	33:55	4095.	667.	33:51	34:05	106.	2	5.0	ABB
303.8864	30:50	355.	146.	30:47	30:52	4.	1	1.0	ABB
305.8834	29:59	603.	157.	29:55	30:07	7.	1	1.0	ABB
303.8864	30:04	232.	99.	30:01	30:06	4.	2	5.0	ABB
303.8864	30:43	143.	30.	30:37	30:46	4.	2	5.0	ABB
303.8864	30:50	355.	146.	30:47	30:52	4.	2	5.0	ABB
303.8864	32:17	123.	34.	32:13	32:19	4.	2	5.0	ABV
303.8864	32:21	132.	61.	32:19	32:23	4.	2	5.0	AVB
305.8834	29:53	224.	94.	29:50	29:55	7.	2	5.0	ABB
305.8834	29:59	603.	157.	29:55	30:07	7.	2	5.0	ABB
305.8834	30:33	213.	92.	30:30	30:35	7.	2	5.0	ABB
305.8834	30:42	249.	86.	30:39	30:44	7.	2	5.0	ABV
305.8834	30:46	291.	121.	30:44	30:48	7.	2	5.0	AVV
305.8834	30:52	491.	138.	30:48	30:59	7.	2	5.0	AVB
315.9261	29:30	7439.	1188.	29:21	29:46	71.	2	5.0	ABV
315.9261	30:40	1241076.	134714.	30:24	30:52	71.	2	5.0	ABV
315.9261	30:55	7525.	1718.	30:52	30:57	71.	2	5.0	AVV
315.9261	31:02	8027.	974.	30:57	31:10	71.	2	5.0	AVV
315.9261	31:15	7621.	753.	31:10	31:31	71.	2	5.0	AVV
315.9261	31:42	3345.	609.	31:34	31:48	71.	2	5.0	ABB
315.9261	31:55	4238.	707.	31:48	32:00	71.	2	5.0	ABB
315.9261	32:12	1270.	380.	32:09	32:14	71.	2	5.0	ABV
315.9261	32:16	2361.	459.	32:14	32:21	71.	2	5.0	AVV
315.9261	32:23	2164.	565.	32:21	32:29	71.	2	5.0	AVB
317.9230	29:31	3022.	641.	29:24	29:33	73.	2	5.0	ABB
317.9230	30:40	1527537.	161409.	30:24	30:55	73.	2	5.0	ABV
317.9230	31:03	4561.	1167.	31:01	31:09	73.	2	5.0	AVB
317.9230	31:12	2503.	905.	31:09	31:14	73.	2	5.0	ABV
317.9230	31:17	2486.	847.	31:14	31:20	73.	2	5.0	AVV
317.9230	31:24	2936.	592.	31:20	31:31	73.	2	5.0	AVB
317.9230	31:34	1804.	738.	31:31	31:36	73.	2	5.0	ABB
317.9230	31:43	1810.	574.	31:40	31:48	73.	2	5.0	ABB
317.9230	32:18	3480.	532.	32:02	32:20	73.	2	5.0	AVB
355.8368	41:25	903.	274.	41:21	41:27	20.	1	1.0	AVB
357.8337	41:26	1096.	224.	41:19	41:31	10.	1	1.0	ABB
355.8368	40:54	450.	121.	40:49	40:57	20.	2	5.0	ABB
355.8368	41:25	1127.	413.	41:21	41:27	20.	2	5.0	ABB

357.8337	40:49	135.	52.	40:47	40:52	10.	2	5.0 ABB
357.8337	41:26	1096.	224.	41:19	41:31	10.	2	5.0 ABB
367.8765	41:02	858.	344.	40:58	41:04	42.	2	5.0 ABB
367.8765	41:24	882418.	207680.	41:15	41:40	42.	2	5.0 ABV
367.8765	41:47	2027.	577.	41:44	41:50	42.	2	5.0 AVB
367.8765	41:55	2584.	620.	41:50	41:59	42.	2	5.0 ABV
367.8765	42:02	5773.	1306.	41:59	42:13	42.	2	5.0 AVB
367.8765	42:17	1430.	601.	42:14	42:19	42.	2	5.0 ABB
369.8734	41:24	539897.	135029.	41:16	41:33	34.	2	5.0 ABV
369.8734	41:34	4937.	1100.	41:33	41:40	34.	2	5.0 AVV
369.8734	41:42	1637.	543.	41:40	41:44	34.	2	5.0 AVV
369.8734	41:48	2714.	695.	41:44	41:50	34.	2	5.0 AVV
369.8734	41:54	1318.	485.	41:50	41:56	34.	2	5.0 AVB
369.8734	42:04	2635.	778.	41:57	42:07	34.	2	5.0 ABV
369.8734	42:11	1660.	238.	42:07	42:19	34.	2	5.0 AVB
339.8427	40:55	1614.	305.	40:49	41:02	15.	1	1.0 AVB
341.8396	41:09	790.	230.	41:06	41:12	22.	1	1.0 AVV
339.8427	39:46	1152.	302.	39:36	39:49	15.	2	5.0 ABB
339.8427	40:19	721.	166.	40:09	40:22	15.	2	5.0 ABB
339.8427	40:55	1782.	305.	40:43	41:02	15.	2	5.0 ABB
341.8396	39:47	791.	117.	39:44	40:00	22.	2	5.0 ABB
341.8396	40:45	527.	137.	40:37	40:47	22.	2	5.0 ABB
341.8396	40:53	292.	110.	40:50	40:54	22.	2	5.0 ABV
341.8396	40:56	451.	156.	40:54	41:00	22.	2	5.0 AVB
341.8396	41:09	1256.	230.	41:00	41:17	22.	2	5.0 ABB
341.8396	41:32	562.	178.	41:28	41:36	22.	2	5.0 ABB
351.8824	39:44	1339106.	280166.	39:34	39:55	75.	2	5.0 ABV
351.8824	40:00	8963.	1752.	39:55	40:03	75.	2	5.0 AVV
351.8824	40:07	5234.	1209.	40:03	40:09	75.	2	5.0 AVV
351.8824	40:12	18425.	2573.	40:09	40:23	75.	2	5.0 AVV
351.8824	40:27	3419.	617.	40:23	40:34	75.	2	5.0 AVB
351.8824	40:54	1481928.	332551.	40:39	41:10	75.	2	5.0 AVV
351.8824	41:13	3978.	1656.	41:11	41:15	75.	2	5.0 AVV
351.8824	41:17	4483.	899.	41:15	41:23	75.	2	5.0 AVV
351.8824	41:25	1574.	499.	41:23	41:27	75.	2	5.0 AVV
351.8824	41:31	2915.	1060.	41:27	41:34	75.	2	5.0 AVB
353.8793	39:44	866312.	181288.	39:33	40:00	73.	2	5.0 ABV
353.8793	40:04	2961.	989.	40:02	40:07	73.	2	5.0 AVV
353.8793	40:14	11424.	2648.	40:07	40:20	73.	2	5.0 AVV
353.8793	40:25	4156.	600.	40:20	40:39	73.	2	5.0 AVB
353.8793	40:54	913268.	210199.	40:43	41:06	73.	2	5.0 ABV
353.8793	41:08	9399.	1504.	41:06	41:16	73.	2	5.0 AVV
353.8793	41:19	4999.	680.	41:16	41:30	73.	2	5.0 AVB
389.7961	45:27	1693.	248.	45:21	45:35	32.	1	1.0 ABB
391.7931	46:11	1413.	287.	46:05	46:18	27.	1	1.0 AVB
389.7961	45:27	993.	248.	45:21	45:29	32.	2	5.0 ABV
389.7961	45:30	700.	205.	45:29	45:35	32.	2	5.0 AVB
389.7961	45:40	1097.	416.	45:37	45:43	32.	2	5.0 ABB
389.7961	45:48	725.	180.	45:43	45:53	32.	2	5.0 ABB
389.7961	46:09	679.	177.	46:03	46:10	32.	2	5.0 ABV
389.7961	46:12	756.	219.	46:10	46:18	32.	2	5.0 AVB
391.7931	45:28	595.	140.	45:23	45:33	27.	2	5.0 ABB
391.7931	45:39	601.	190.	45:33	45:43	27.	2	5.0 ABB
391.7931	46:11	1595.	287.	46:01	46:18	27.	2	5.0 ABB
401.8358	45:39	848280.	219905.	45:32	45:42	132.	2	5.0 ABV
401.8358	45:46	825954.	198902.	45:42	46:01	132.	2	5.0 AVV
401.8358	46:10	2676831.	652042.	46:03	46:21	132.	2	5.0 AVV
401.8358	46:24	16509.	3263.	46:21	46:27	132.	2	5.0 AVV
401.8358	46:29	9003.	2439.	46:27	46:39	132.	2	5.0 AVB
403.8327	45:39	635538.	167448.	45:33	45:42	125.	2	5.0 ABV
403.8327	45:46	641946.	154019.	45:42	45:59	125.	2	5.0 AVV
403.8327	46:10	2076680.	505505.	45:59	46:25	125.	2	5.0 AVV
403.8327	46:27	8709.	1783.	46:25	46:32	125.	2	5.0 AVB
373.8021	44:36	2815.	696.	44:29	44:41	21.	1	1.0 ABV
375.7990	44:35	3091.	684.	44:30	44:41	40.	1	1.0 ABV
373.8021	44:36	2815.	696.	44:29	44:41	21.	2	5.0 ABV
373.8021	44:43	864.	2597.	44:38	44:48	21.	2	5.0 AVB

373.8021	45:29	1554.	477.	45:18	45:32	21.	2	5.0 ABB
373.8021	46:29	1473.	292.	46:24	46:34	21.	2	5.0 ABV
373.8021	46:36	917.	262.	46:34	46:44	21.	2	5.0 AVB
375.7990	44:35	3091.	684.	44:30	44:41	40.	2	5.0 ABV
375.7990	44:44	2773.	289.	44:41	44:59	40.	2	5.0 AVV
375.7990	45:29	2688.	282.	45:15	45:33	40.	2	5.0 AVV
375.7990	45:36	882.	328.	45:33	45:38	40.	2	5.0 AVV
375.7990	45:40	2355.	257.	45:38	45:55	40.	2	5.0 AVV
375.7990	46:27	3180.	344.	46:18	46:43	40.	2	5.0 ABV
373.8021	44:36	2815.	696.	44:29	44:41	21.	2	5.0 ABV
373.8021	44:43	864.	204.	44:41	44:48	21.	2	5.0 AVB
373.8021	45:29	1554.	477.	45:18	45:32	21.	2	5.0 ABB
373.8021	46:29	1473.	292.	46:24	46:34	21.	2	5.0 ABV
373.8021	46:36	917.	262.	46:34	46:44	21.	2	5.0 AVB
375.7990	44:35	3091.	684.	44:30	44:41	40.	2	5.0 ABV
375.7990	44:44	2773.	289.	44:41	44:59	40.	2	5.0 AVV
375.7990	45:29	2688.	282.	45:15	45:33	40.	2	5.0 AVV
375.7990	45:36	882.	328.	45:33	45:38	40.	2	5.0 AVV
375.7990	45:40	2355.	257.	45:38	45:55	40.	2	5.0 AVV
375.7990	46:27	3180.	344.	46:18	46:43	40.	2	5.0 ABV
383.8447	44:34	742007.	191275.	44:27	44:38	83.	2	5.0 ABV
383.8447	44:43	835375.	205598.	44:38	44:50	83.	2	5.0 AVV
383.8447	44:52	11303.	3324.	44:50	44:55	83.	2	5.0 AVV
383.8447	44:57	6704.	1440.	44:55	45:03	83.	2	5.0 AVV
383.8447	45:08	5313.	1321.	45:03	45:11	83.	2	5.0 AVV
383.8447	45:12	2399.	514.	45:11	45:18	83.	2	5.0 AVV
383.8447	45:28	791408.	199407.	45:18	45:40	83.	2	5.0 AVV
383.8447	45:42	2457.	969.	45:40	45:44	83.	2	5.0 AVV
383.8447	45:46	3044.	1049.	45:44	45:49	83.	2	5.0 AVV
383.8447	45:51	2124.	904.	45:49	45:53	83.	2	5.0 AVV
383.8447	45:56	3493.	968.	45:53	46:01	83.	2	5.0 AVV
383.8447	46:11	5150.	857.	46:01	46:16	83.	2	5.0 AVB
383.8447	46:27	671232.	150109.	46:17	46:41	83.	2	5.0 ABV
383.8447	46:50	10862.	1334.	46:41	46:57	83.	2	5.0 AVB
385.8417	44:34	1346563.	340386.	44:27	44:38	96.	2	5.0 ABV
385.8417	44:43	1579194.	391303.	44:38	44:55	96.	2	5.0 AVV
385.8417	44:58	14397.	2999.	44:55	45:03	96.	2	5.0 AVV
385.8417	45:08	9809.	1371.	45:03	45:14	96.	2	5.0 AVV
385.8417	45:28	1558728.	386857.	45:14	45:38	96.	2	5.0 AVV
385.8417	45:40	13157.	2126.	45:38	45:47	96.	2	5.0 AVV
385.8417	45:49	6175.	1341.	45:47	45:55	96.	2	5.0 AVV
385.8417	45:57	5803.	801.	45:55	46:12	96.	2	5.0 AVV
385.8417	46:17	1980.	628.	46:13	46:19	96.	2	5.0 ABB
385.8417	46:27	1286774.	291620.	46:19	46:43	96.	2	5.0 ABV
385.8417	46:46	7158.	1602.	46:44	46:53	96.	2	5.0 AVB
423.7555	50:44	713.	173.	50:36	50:46	7.	1	1.0 ABV
425.7524	49:30	1224.	193.	49:22	49:33	26.	1	1.0 AVV
423.7555	49:31	680.	173.	49:26	49:33	7.	2	5.0 ABB
423.7555	50:44	713.	173.	50:36	50:46	7.	2	5.0 ABV
425.7524	49:30	1713.	193.	49:15	49:33	26.	2	5.0 AVV
425.7524	50:42	1504.	187.	50:27	50:44	26.	2	5.0 AVV
435.7951	49:29	16815.	3300.	49:23	49:38	19.	2	5.0 ABV
435.7951	49:46	1362.	281.	49:42	49:52	19.	2	5.0 AVB
435.7951	50:42	726956.	145958.	50:34	50:56	19.	2	5.0 ABV
435.7951	51:01	3314.	717.	50:56	51:03	19.	2	5.0 AVB
435.7951	51:05	624.	407.	51:03	51:07	19.	2	5.0 ABB
435.7951	51:09	666.	335.	51:07	51:11	19.	2	5.0 ABB
437.7921	49:28	8035.	2443.	49:23	49:30	17.	2	5.0 ABV
437.7921	49:32	6472.	2170.	49:30	49:39	17.	2	5.0 AVB
437.7921	50:41	701130.	146817.	50:33	50:55	17.	2	5.0 ABV
437.7921	50:58	3627.	882.	50:55	51:01	17.	2	5.0 AVV
437.7921	51:03	1759.	555.	51:01	51:05	17.	2	5.0 AVV
437.7921	51:08	3160.	1279.	51:05	51:11	17.	2	5.0 AVB
407.7614	51:20	1705.	530.	51:16	51:24	22.	1	1.0 ABV
409.7583	51:19	767.	174.	51:16	51:25	12.	1	1.0 ABB
407.7614	49:00	1309.	259.	48:55	49:07	22.	2	5.0 ABB
407.7614	50:56	420.	159.	50:42	50:59	22.	2	5.0 ABB

407.7614	51:20	1944.	530.	51:16	51:31	22.	2	5.0	ABB
409.7583	49:00	821.	190.	48:53	49:05	12.	2	5.0	ABB
409.7583	49:16	343.	64.	49:09	49:20	12.	2	5.0	ABB
409.7583	51:19	767.	174.	51:16	51:25	12.	2	5.0	ABB
417.8041	48:59	498536.	106446.	48:50	49:09	48.	2	5.0	ABV
417.8041	49:12	4208.	788.	49:09	49:17	48.	2	5.0	AVV
417.8041	49:22	8714.	1630.	49:17	49:33	48.	2	5.0	AVV
417.8041	49:39	6493.	1084.	49:33	49:49	48.	2	5.0	AVB
417.8041	51:19	446204.	97249.	51:09	51:27	48.	2	5.0	ABV
417.8041	51:29	4301.	1167.	51:27	51:32	48.	2	5.0	AVV
417.8041	51:35	2726.	672.	51:32	51:38	48.	2	5.0	AVV
417.8041	51:45	4245.	760.	51:38	51:48	48.	2	5.0	AVB
419.8010	48:58	1059244.	224430.	48:50	49:13	63.	2	5.0	ABV
419.8010	49:17	4783.	1289.	49:14	49:19	63.	2	5.0	AVV
419.8010	49:23	17174.	2702.	49:19	49:34	63.	2	5.0	AVV
419.8010	49:38	14760.	3417.	49:34	49:43	63.	2	5.0	AVV
419.8010	49:45	3864.	869.	49:43	49:49	63.	2	5.0	AVB
419.8010	50:52	3292.	568.	50:38	50:58	63.	2	5.0	ABB
419.8010	51:19	918933.	199669.	51:11	51:30	63.	2	5.0	ABV
419.8010	51:33	12047.	1528.	51:30	51:44	63.	2	5.0	AVB
457.7148	54:44	3076.	697.	54:35	54:47	19.	1	1.0	ABB
459.7118	54:43	2961.	730.	54:37	54:47	20.	1	1.0	ABB
457.7148	54:44	3076.	697.	54:35	54:47	19.	2	5.0	ABB
457.7148	54:51	975.	329.	54:47	54:53	19.	2	5.0	ABB
457.7148	54:58	211.	110.	54:56	54:59	19.	2	5.0	ABB
459.7118	54:43	2961.	730.	54:37	54:47	20.	2	5.0	ABB
459.7118	54:49	789.	185.	54:47	54:56	20.	2	5.0	ABB
469.7545	54:42	923157.	239410.	54:35	54:56	32.	2	5.0	ABV
469.7545	54:58	6680.	1202.	54:56	55:03	32.	2	5.0	AVV
469.7545	55:06	5751.	923.	55:03	55:19	32.	2	5.0	AVB
471.7514	54:42	1032646.	265250.	54:34	54:57	26.	2	5.0	ABV
471.7514	55:03	3639.	1170.	55:01	55:06	26.	2	5.0	AVV
471.7514	55:12	4069.	670.	55:06	55:17	26.	2	5.0	AVB
471.7514	55:18	452.	226.	55:17	55:20	26.	2	5.0	ABB
441.7207	54:51	2108.	414.	54:45	55:00	12.	1	1.0	ABB
443.7177	54:51	2684.	702.	54:46	54:54	10.	1	1.0	ABB
441.7207	54:51	2108.	414.	54:45	55:00	12.	2	5.0	ABB
443.7177	54:51	2684.	702.	54:46	54:54	10.	2	5.0	ABB
453.7603	54:50	1206250.	311590.	54:41	55:05	20.	2	5.0	ABV
453.7603	55:13	7005.	1329.	55:10	55:18	20.	2	5.0	AVV
453.7603	55:20	1922.	601.	55:18	55:23	20.	2	5.0	AVV
453.7603	55:25	666.	288.	55:23	55:27	20.	2	5.0	AVB
455.7573	54:50	1387470.	364962.	54:41	55:01	22.	2	5.0	ABV
455.7573	55:03	5194.	1684.	55:01	55:05	22.	2	5.0	AVV
455.7573	55:07	8027.	1362.	55:05	55:14	22.	2	5.0	AVV
455.7573	55:20	2802.	755.	55:18	55:25	22.	2	5.0	AVV

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AC	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82rec.d	Prep Date	08/04/16	SDG No	
Analysis ID	180426	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	8/17/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	10:23	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:52	403696	39465	1.144	200.0	216.376859	108.19	21.637686		0.0883
Total TCDD		3211	417	1.144		218.097922		21.809792	Q	0.0883
2,3,7,8-TCDF	30:44	664393	69612	1.066	200.0	216.835298	108.42	21.683530		0.0706
Total TCDF				1.066		216.835298		21.683530		0.0706
1,2,3,7,8-PeCDD	41:25	1593463	383387	1.060	1000	1000.10623	100.01	100.010623	B	0.0738
Total PeCDD		13116	2472	1.060		1008.33823		100.833823	QB	0.0738
1,2,3,7,8-PeCDF	39:45	2642482	559738	1.179	1000	959.528101	95.95	95.952810		0.0742
2,3,4,7,8-PeCDF	40:55	2921369	688923	1.115	1000	1025.50225	102.55	102.550225		0.0651
Total PeCDF		112017	18543	1.147		2024.96673		202.496673	Q	0.0691
1,2,3,4,7,8-HxCDD	45:39	1885547	468526	1.131	1000	1040.16695	104.02	104.016695		0.167
1,2,3,6,7,8-HxCDD	45:46	1832164	446566	1.116	1000	1023.18954	102.32	102.318954		0.170
1,2,3,7,8,9-HxCDD	46:10	2156427	509994	1.205	1000	1115.84518	111.58	111.584518		0.157
Total HxCDD				1.151		3179.20166		317.920166		0.164
1,2,3,4,7,8-HxCDF	44:34	3150359	839078	1.350	1000	1040.11879	104.01	104.011879	B	0.0800
1,2,3,6,7,8-HxCDF	44:42	3364978	834594	1.242	1000	1023.90441	102.39	102.390441		0.0777
2,3,4,6,7,8-HxCDF	45:28	3272837	811593	1.241	1000	1023.83389	102.38	102.383389		0.0803
1,2,3,7,8,9-HxCDF	46:28	2723339	622399	1.262	1000	1003.14705	100.31	100.314705	B	0.104
Total HxCDF		16526	2563	1.274		4096.40056		409.640056	B	0.0843
1,2,3,4,6,7,8-HpCDD	50:41	1651455	345136	1.114	1000	973.578289	97.36	97.357829		0.0793
Total HpCDD		53327	9160	1.114		1005.01603		100.501603		0.0793
1,2,3,4,6,7,8-HpCDF	48:58	2634318	554328	1.461	1000	1037.40379	103.74	103.740379	B	0.0805
1,2,3,4,7,8,9-HpCDF	51:18	2000896	427222	1.370	1000	974.989819	97.50	97.498982	B	0.0963
Total HpCDF		82065	10170	1.416		2048.22470		204.822470	QB	0.0878
OCDD	54:41	2494915	640428	1.203	2000	1960.14353	98.01	196.014353	B	0.0918
OCDF	54:49	3015564	769746	1.134	2000	1878.03068	93.90	187.803068	B	0.0703
13C-2,3,7,8-TCDD	32:50	1631540	158518	1.093	1000	650.526886	65.05	65.052689		0.267
13C-2,3,7,8-TCDF	30:41	2875450	309033	1.794	1000	698.075445	69.81	69.807545		0.0808
13C-1,2,3,7,8-PeCDD	41:24	1503261	358123	0.800	1000	818.589351	81.86	81.858935		0.110
13C-1,2,3,7,8-PeCDF	39:44	2335557	491591	1.356	1000	750.067676	75.01	75.006768		0.127
13C-2,3,4,7,8-PeCDF	40:54	2555898	592900	1.343	1000	829.038649	82.90	82.903865		0.128
13C-1,2,3,4,7,8-HxCDD	45:38	1602619	392453	0.916	1000	700.635457	70.06	70.063546		0.106
13C-1,2,3,6,7,8-HxCDD	45:45	1604585	392466	0.906	1000	708.908028	70.89	70.890803		0.107
13C-1,2,3,4,7,8-HxCDF	44:33	2242866	603794	1.268	1000	708.017584	70.80	70.801758		0.0682
13C-1,2,3,6,7,8-HxCDF	44:41	2646883	675941	1.506	1000	703.932602	70.39	70.393260		0.0575
13C-2,3,4,6,7,8-HxCDF	45:27	2576127	654597	1.344	1000	767.495680	76.75	76.749568		0.0644
13C-1,2,3,7,8,9-HxCDF	46:27	2151098	497561	1.202	1000	716.504773	71.65	71.650477		0.0720
13C-1,2,3,4,6,7,8-HpCDD	50:40	1523069	319825	0.728	1000	837.213632	83.72	83.721363		0.0441
13C-1,2,3,4,6,7,8-HpCDF	48:57	1738063	361583	1.008	1000	690.353116	69.04	69.035312		0.0591
13C-1,2,3,4,7,8,9-HpCDF	51:17	1497594	322010	0.811	1000	739.585600	73.96	73.958560		0.0734
13C-OCDD	54:41	2116094	534165	0.597	2000	1418.33189	70.92	141.833189		0.0608
13C-1,2,3,4-TCDD	32:17	4591321	458567	1.000	2000	2000.00000	100.00	200.000000		0.292
13C-1,2,3,7,8,9-HxCDD	46:09	4995076	1184156	1.000	2000	2000.00000	100.00	200.000000		0.0967
13C-OCDF	54:49	2831070	721209	0.946	2000	1198.26340	59.91	119.826340		0.0424

KLR by LKh 8-18-16

QCd L 8-18-16

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AC	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82rec.	Prep Date	08/04/16	SDG No	
Analysis ID	180426	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	08/17/16 10:23	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	145	88	58	35	1.66 *	/	
	2,3,7,8-TCDF	30:44	30:44	0	289405	374988	30112	39500	0.77	AVV/AVV	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	190	143	76	57	1.33 *	/	
	13C-2,3,7,8-TCDF	30:41	30:41	0	1285851	1589599	138603	170430	0.81	ABV/ABV	
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	63	98	25	39	0.64 *	/	
	2,3,7,8-TCDD	32:52	32:54	-2	182340	221356	17991	21474	0.82	AVV/AVV	
	Unidentified	33:10	00:00	0	1130	2081	149	268	0.54 *	AVV/AVV	R
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	155	515	62	206	0.30 *	/	
	13C-1,2,3,4-TCDD	32:17	32:18	-1	2057927	2533394	202763	255804	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:50	32:51	-1	729086	902454	67779	90739	0.81	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	233	198	93	79	1.18 *	/	
	1,2,3,7,8-PeCDF	39:45	39:44	1	1619485	1022997	344348	215390	1.58	ABV/ABV	
	Unidentified	40:01	00:00	0	20707	9909	2851	2081	2.09 *	AVV/AVV	R
	Unidentified	40:14	00:00	0	26014	17647	4313	3279	1.47	AVV/AVV	
	2,3,4,7,8-PeCDF	40:55	40:53	2	1785858	1135511	425296	263627	1.57	ABV/ABV	
	Unidentified	41:06	00:00	0	21206	16534	3669	2350	1.28 *	AVV/AVV	R
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	193	203	77	81	0.95 *	/	
	13C-1,2,3,7,8-PeCDF	39:44	39:42	2	1421625	913932	298192	193399	1.56	ABV/ABV	
	Unidentified	39:59	00:00	0	16128	13472	2980	1841	1.20 *	AVV/AVV	R
	Unidentified	40:13	00:00	0	17434	10819	2936	1843	1.61	AVV/AVB	
	13C-2,3,4,7,8-PeCDF	40:54	40:52	2	1603809	952089	369399	223501	1.68	AVV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	158	123	63	49	1.29 *	/	
	1,2,3,7,8-PeCDD	41:25	41:23	2	970607	622856	234515	148872	1.56	ABV/ABV	
	Unidentified	41:46	00:00	0	2371	2154	566	375	1.10 *	AVV/AVV	R
	Unidentified	41:54	00:00	0	1901	6690	532	999	0.28 *	AVV/AVB	RT
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	110	93	44	37	1.19 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:22	2	895505	607756	212713	145410	1.47	ABV/ABV	
	Unidentified	41:43	00:00	0	1630	3256	746	613	0.50 *	AVV/AVB	RT
	Unidentified	42:02	00:00	0	5382	1497	1124	493	3.60 *	ABV/ABB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	335	318	134	127	1.06	/	
	1,2,3,4,7,8-HxCDF	44:34	44:33	1	1749186	1401173	464358	374720	1.25	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:42	44:41	1	1878922	1486056	462141	372453	1.26	AVV/AVV	
	Unidentified	45:10	00:00	0	8945	7581	1396	1167	1.18	AVV/AVV	
	2,3,4,6,7,8-HxCDF	45:28	45:27	1	1825689	1447148	455442	356151	1.26	AVV/AVV	M

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AC	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82rec.	Prep Date	08/04/16	SDG No	
Analysis ID	180426	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	08/17/16 10:23	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	1,2,3,7,8,9-HxCDF	46:28	46:27	1	1524697	1198642	348238	274161	1.27	ABV/ABV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	215	298	86	119	0.72 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:32	1	771247	1471619	212514	391280	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:41	44:40	1	906030	1740853	232318	443623	0.52	AVV/AVV	
	Unidentified	44:59	00:00	0	4255	22302	1279	3704	0.19 *	AVV/AVV	RT
	13C-2,3,4,6,7,8-HxCDF	45:27	45:26	1	898490	1677637	232127	422470	0.54	AVV/AVV	M
	Unidentified	45:42	00:00	0	2888	19629	1079	1951	0.15 *	AVV/AVV	R
	13C-1,2,3,7,8,9-HxCDF	46:27	46:26	1	740753	1410345	172386	325175	0.53	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	340	403	136	161	0.84 *	/	
	1,2,3,4,7,8-HxCDD	45:39	45:38	1	1056200	829347	264267	204259	1.27	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:46	45:45	1	1030736	801428	251421	195145	1.29	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:10	46:09	1	1199631	956796	285198	224796	1.25	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	365	208	146	83	1.76 *	/	
	13C-1,2,3,4,7,8-HxCDD	45:38	45:37	1	882616	720003	216481	175972	1.23	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:45	45:44	1	889408	715177	217761	174705	1.24	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:08	1	2815657	2179419	663996	520160	1.29	AVV/AVV	
	Unidentified	46:26	00:00	0	16097	6048	2751	2166	2.66 *	AVV/AVV	RT
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	250	175	100	70	1.43 *	/	
	1,2,3,4,6,7,8-HpCDF	48:58	48:58	0	1352751	1281567	284195	270133	1.06	ABV/ABV	
	Unidentified	49:22	00:00	0	22120	16038	2694	1953	1.38 *	AVV/AVV	R
	Unidentified	49:38	00:00	0	16647	17430	2614	1970	0.96	AVV/AVV	
	Unidentified	49:50	00:00	0	5405	4425	538	401	1.22 *	AVV/AVB	RT
	1,2,3,4,7,8,9-HpCDF	51:18	51:19	-1	1024737	976159	219852	207370	1.05	ABV/ABV	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	138	215	55	86	0.64 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:57	48:57	0	543137	1194926	116742	244841	0.45	ABV/ABV	
	Unidentified	49:24	00:00	0	5840	23698	864	2378	0.25 *	AVV/AVV	RT
	Unidentified	49:37	00:00	0	3158	13328	997	2274	0.24 *	ABV/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:17	51:18	-1	463233	1034361	97851	224159	0.45	ABV/ABV	M
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	135	148	54	59	0.92	/	
	Unidentified	49:29	00:00	0	26102	27225	4695	4465	0.96	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:42	-1	849019	802436	177310	167826	1.06	ABV/ABV	M
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	65	125	26	50	0.52 *	/	
	Unidentified	49:28	00:00	0	13441	10957	2864	1894	1.23 *	ABB/ABV	R
	Unidentified	49:36	00:00	0	895	1607	276	501	0.56 *	ABB/AVB	R
	Unidentified	49:56	00:00	0	1296	2115	409	547	0.61 *	ABB/ABB	R

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M82RE1AC	Prep Batch	6217014	Lot No	H6H040000-014
Data File	/20160817s1/d1tm82rec.	Prep Date	08/04/16	SDG No	
Analysis ID	180426	Prep Exp Date	08/24/16	Date Received	08/03/16
Analysis Date	08/17/16 10:23	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

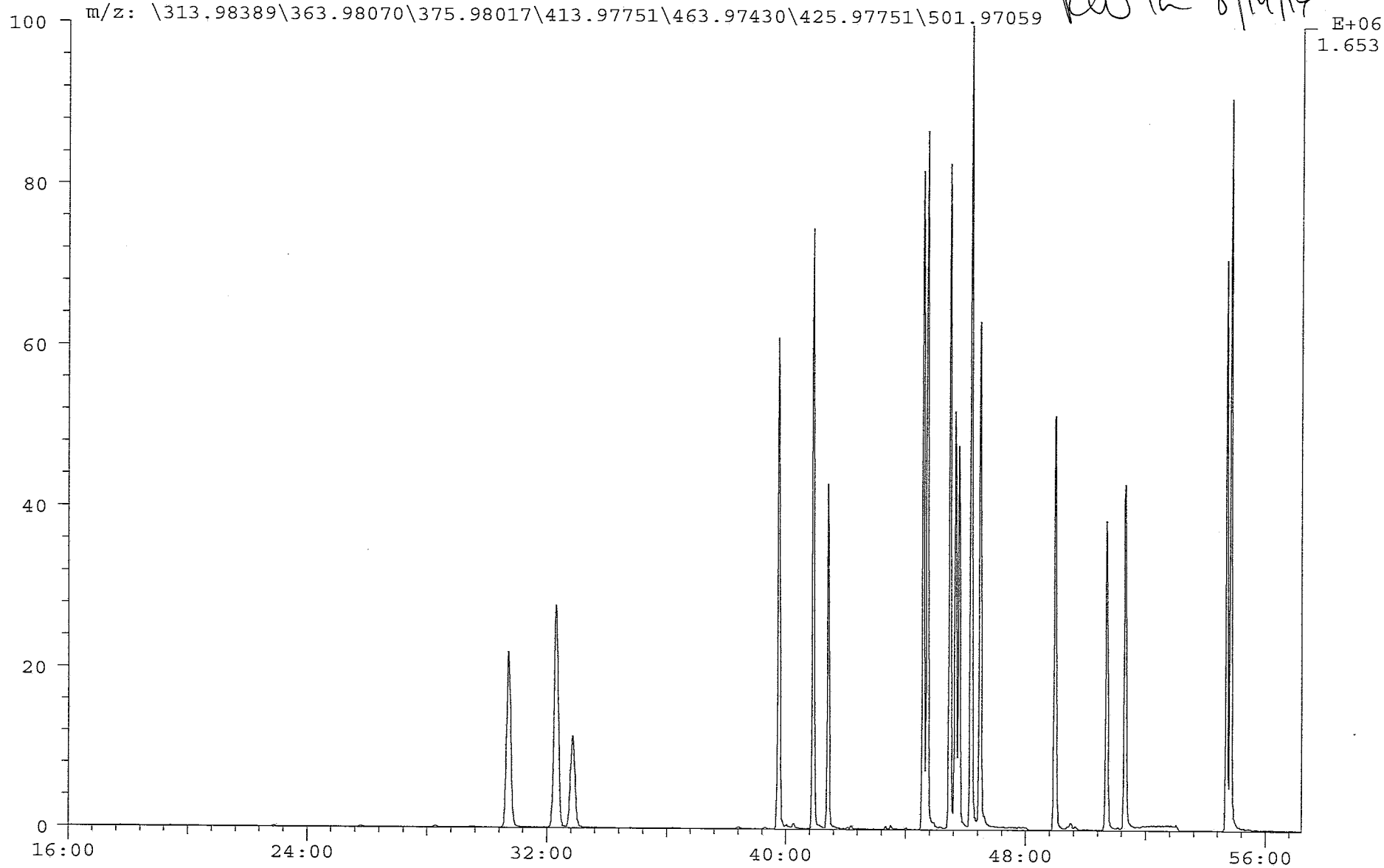
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:41	-1	774534	748535	165051	154774	1.03	ABV/ABV	
	Unidentified	51:03	00:00	0	9596	2672	1655	928	3.59 *	AVB/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	113	175	45	70	0.64 *	/	
	OCDF	54:49	54:51	-2	1441647	1573917	363906	405840	0.92	ABV/ABV	
	Unidentified	55:22	00:00	0	2258	2677	306	430	0.84	AVB/AVV	
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	93	145	37	58	0.64 *	/	
	13C-OCDF	54:49	54:50	-1	1363031	1468039	351035	370174	0.93	ABV/ABV	
	Unidentified	55:15	00:00	0	2284	4993	703	831	0.46 *	ABV/AVV	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	110	185	44	74	0.59 *	/	
	OCDD	54:41	54:43	-2	1169401	1325514	295989	344439	0.88	ABV/ABV	
	Unidentified	55:02	00:00	0	6672	3191	772	545	2.09 *	AVV/AVB	RT
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	98	118	39	47	0.83	/	
	13C-OCDD	54:41	54:42	-1	1016119	1099975	252859	281306	0.92	ABV/ABV	
	Unidentified	55:11	00:00	0	7162	7665	872	855	0.93	ABB/AVB	T

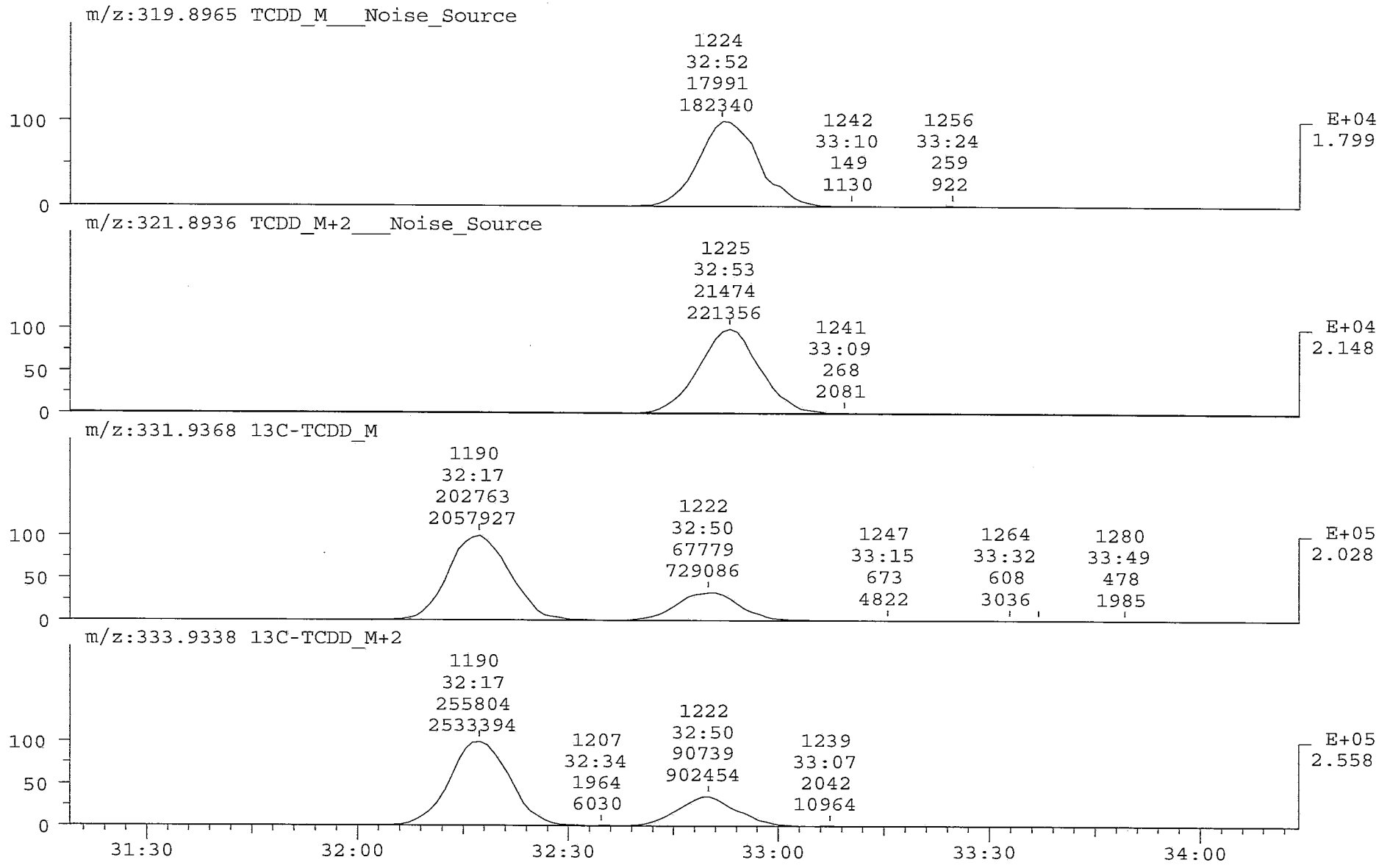
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. kr 8/17/16
& Calc
Qid L 8-18-16
Rev kr 8/19/16

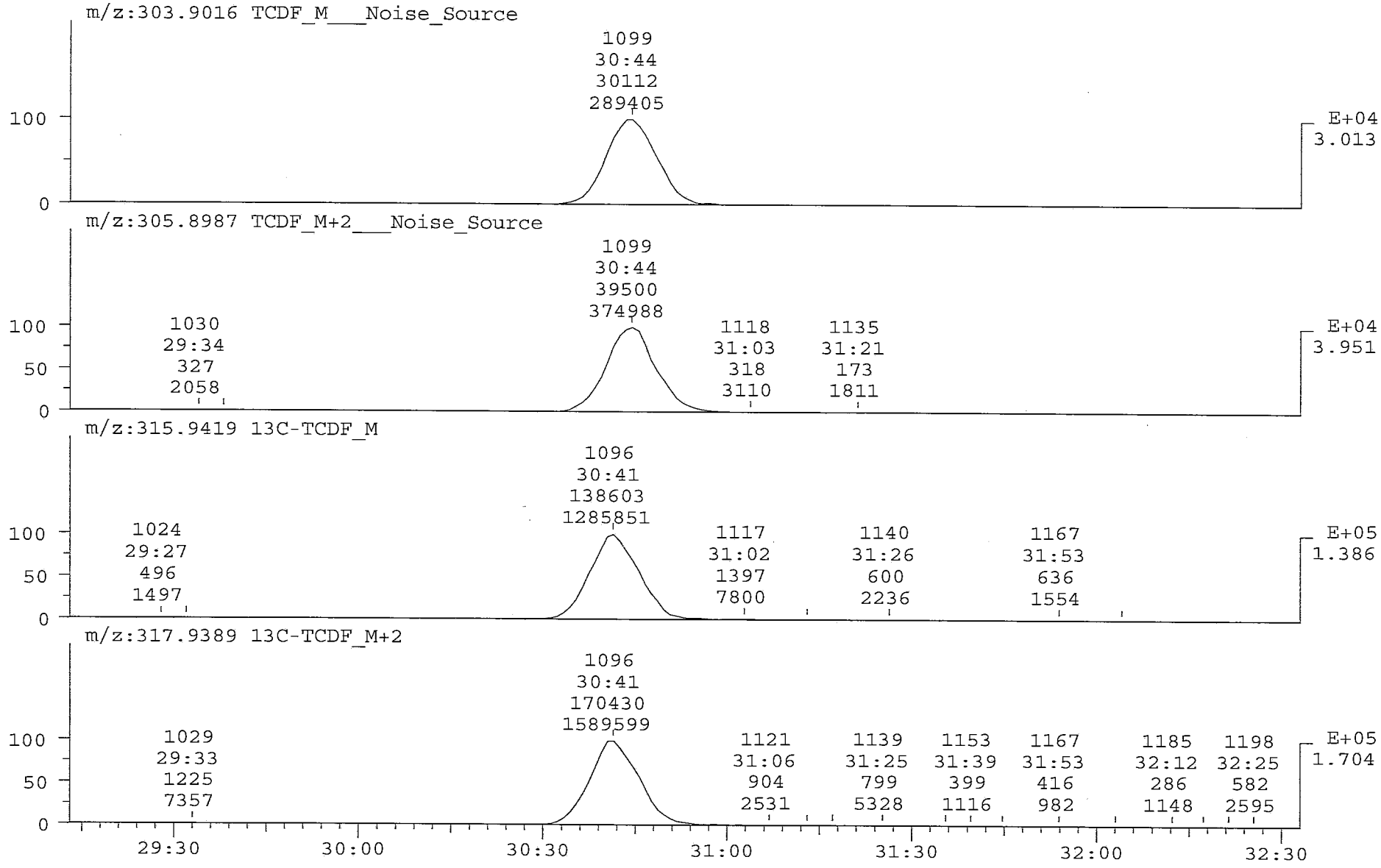
```
CHRO:  d1tm82rec                                  17-Aug-16  Elapse:  54:49      2491
Samp:  WO=m82re1ac Meth=9Ao Dil=1                            Start :  10:23:10   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                   Study :  6217014 (10.0g)
Oper:  KLR                                                   Inlet :  LC
Peak:  100.00  ppm     Label wndw:   233 > 2629              Masses:  303 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3                  Label :  0, 0.0
Disp:  Height  Area
```



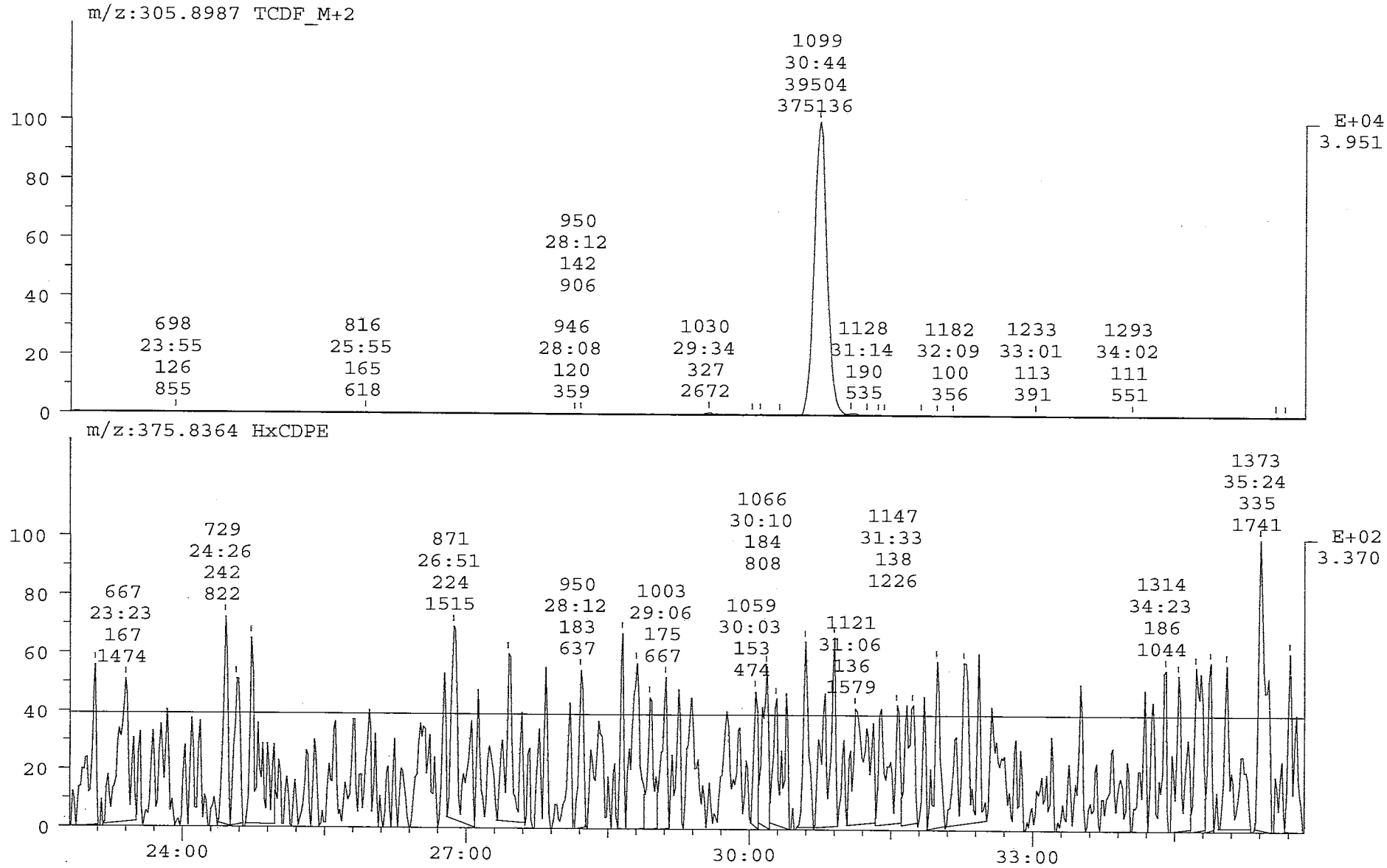
```
CHRO:  d1tm82rec                                17-Aug-16  Elapse:  32:45      1218
Samp:  WO=m82re1ac Meth=9Ao Dil=1                          Start :  10:23:10   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1133 > 1304           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



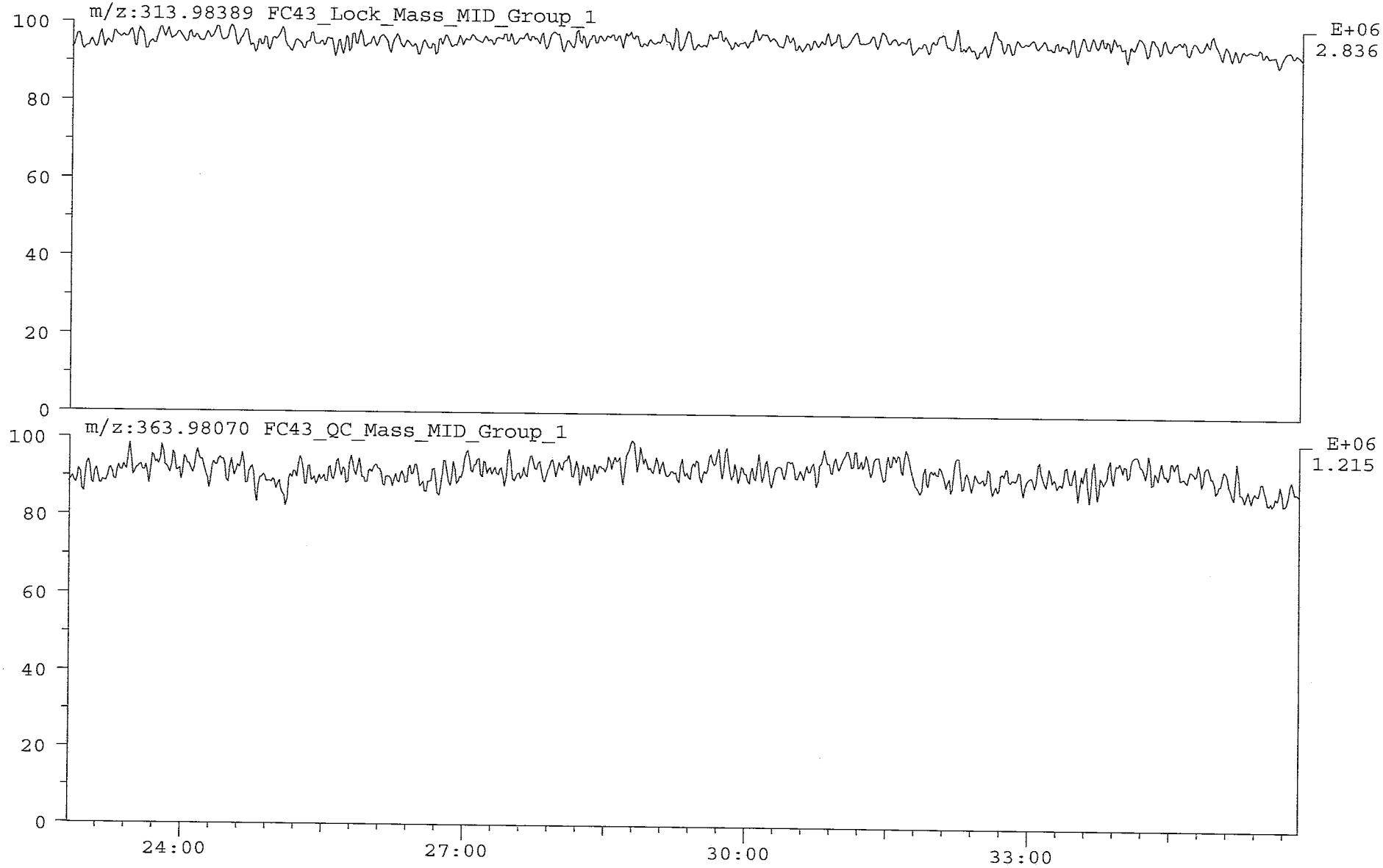
CHRO: d1tm82rec 17-Aug-16 Elapse: 30:49 1104
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1009 > 1205 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



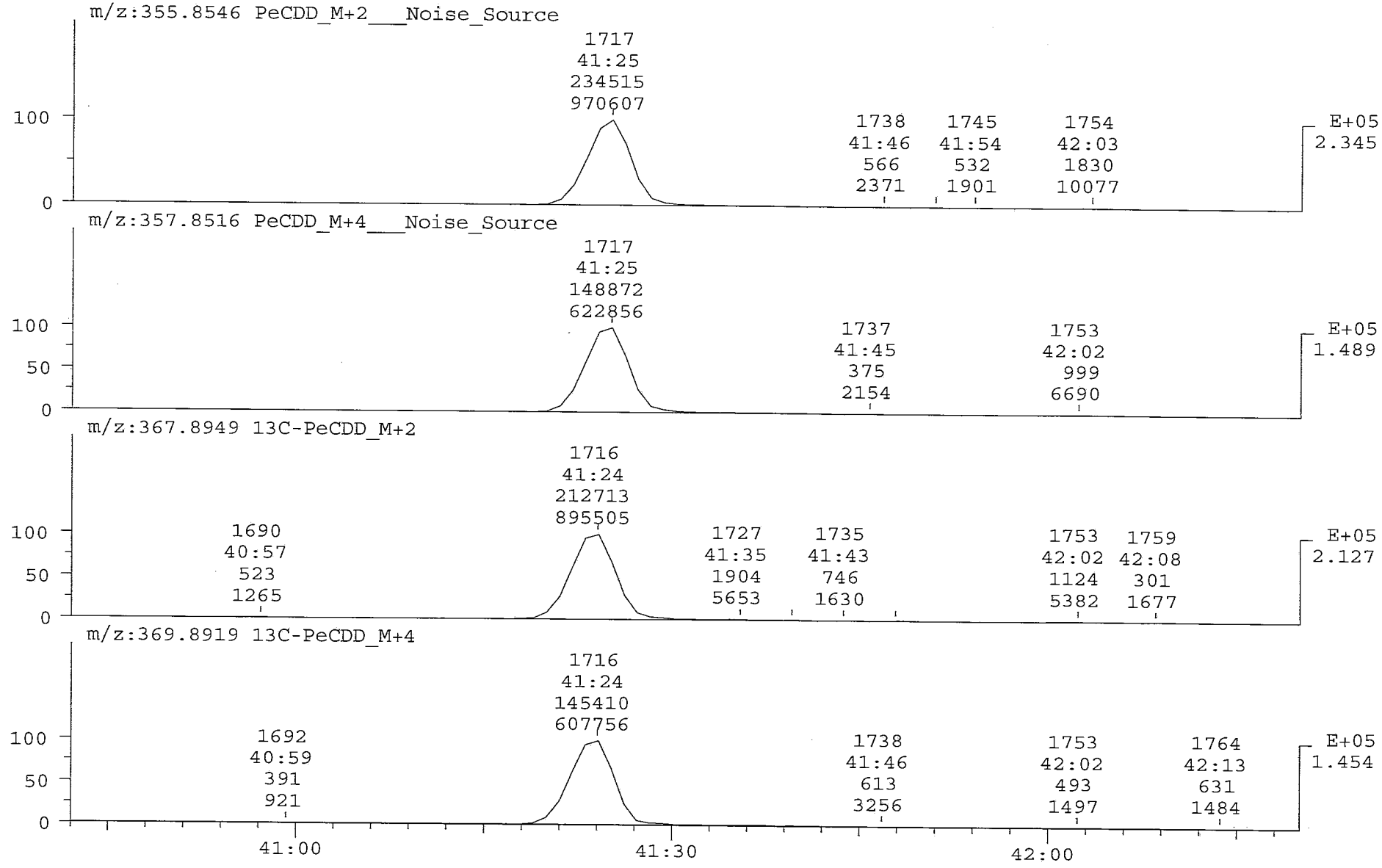
CHRO: d1tm82rec 17-Aug-16 Elapse: 30:49 1104
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 632 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



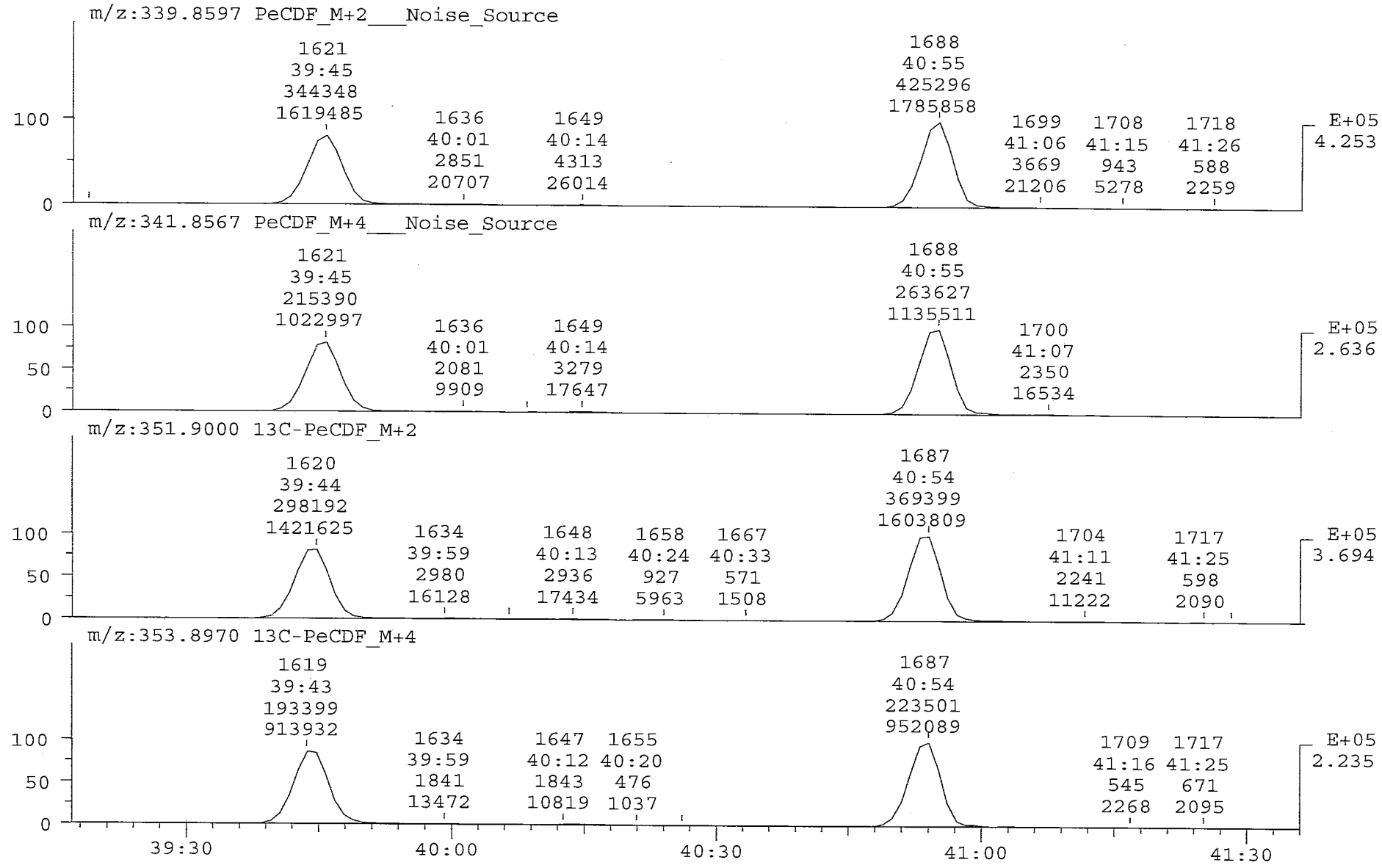
CHRO: d1tm82rec 17-Aug-16 Elapse: 30:49 1104
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 632 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



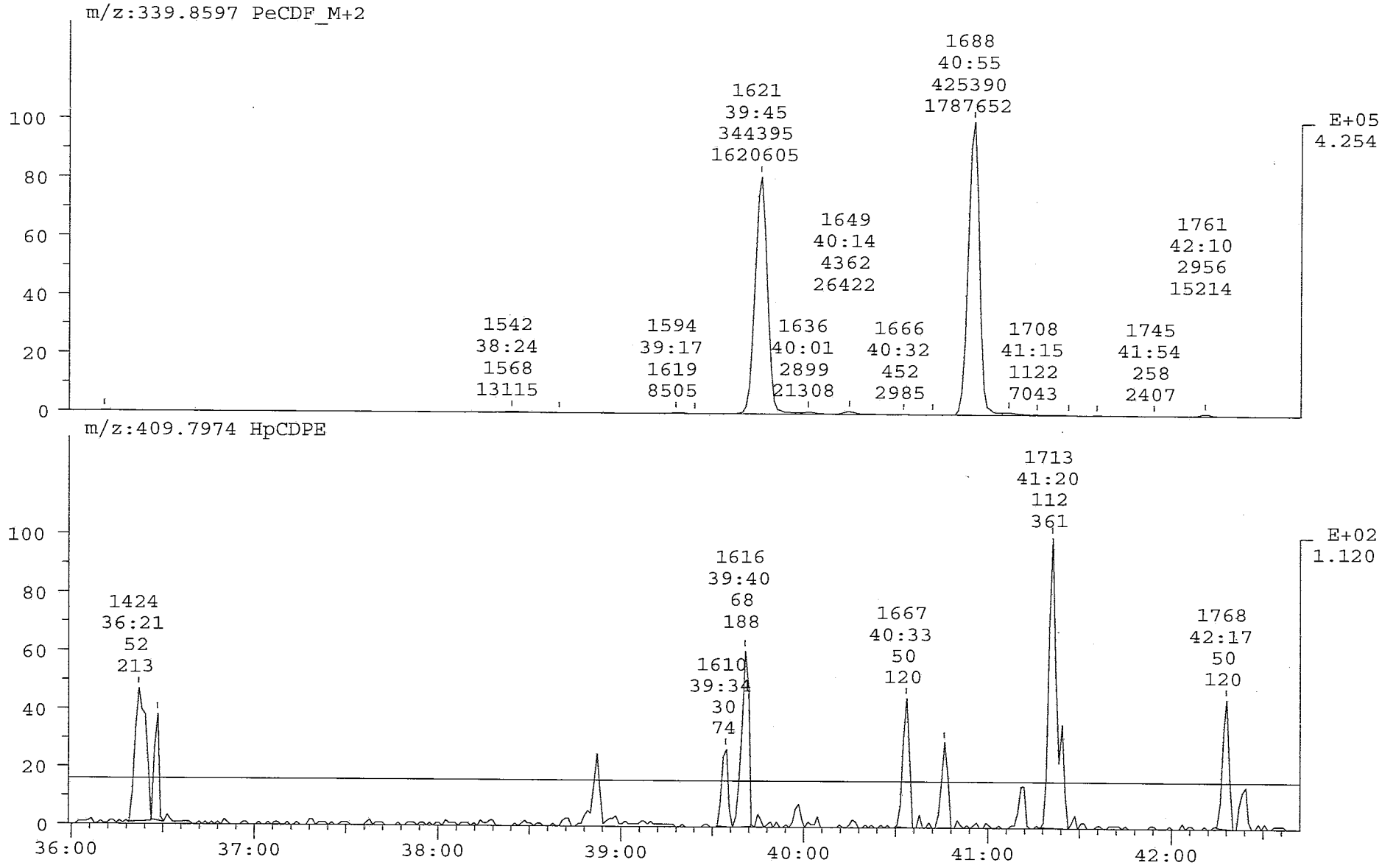
CHRO: d1tm82rec 17-Aug-16 Elapse: 41:28 1720
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1675 > 1770 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



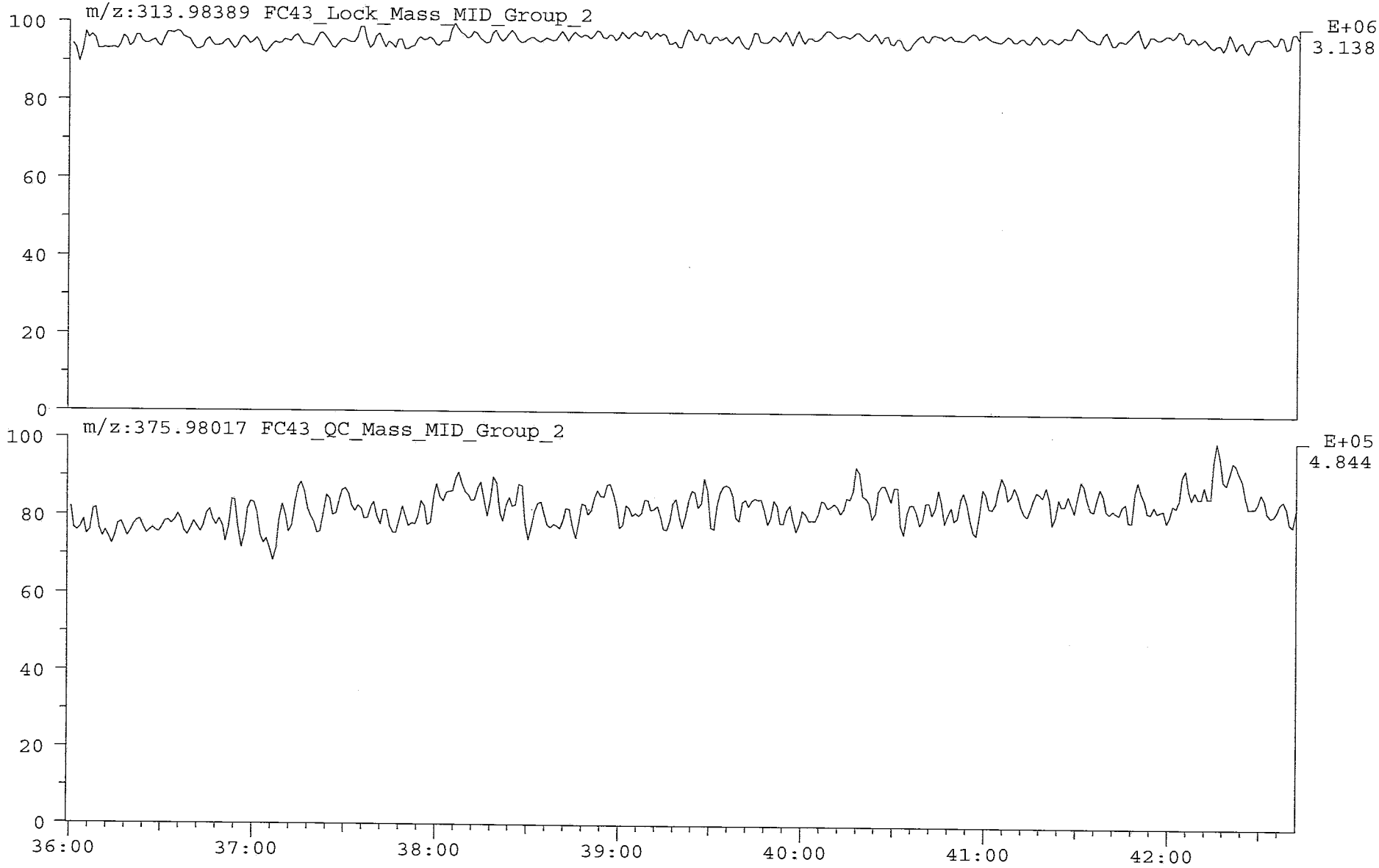
```
CHRO:  d1tm82rec                                  17-Aug-16   Elapse:  40:26      1660
Samp:  WO=m82re1ac Meth=9Ao Dil=1                             Start :  10:23:10   2629
Comm:  Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode:  EI ESI + Q1MS UP LR                                    Study :  6217014 (10.0g)
Oper:  KLR                                                    Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1593 > 1728              Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                   Label :  -2, 5.0
Disp:  Height  Area
```



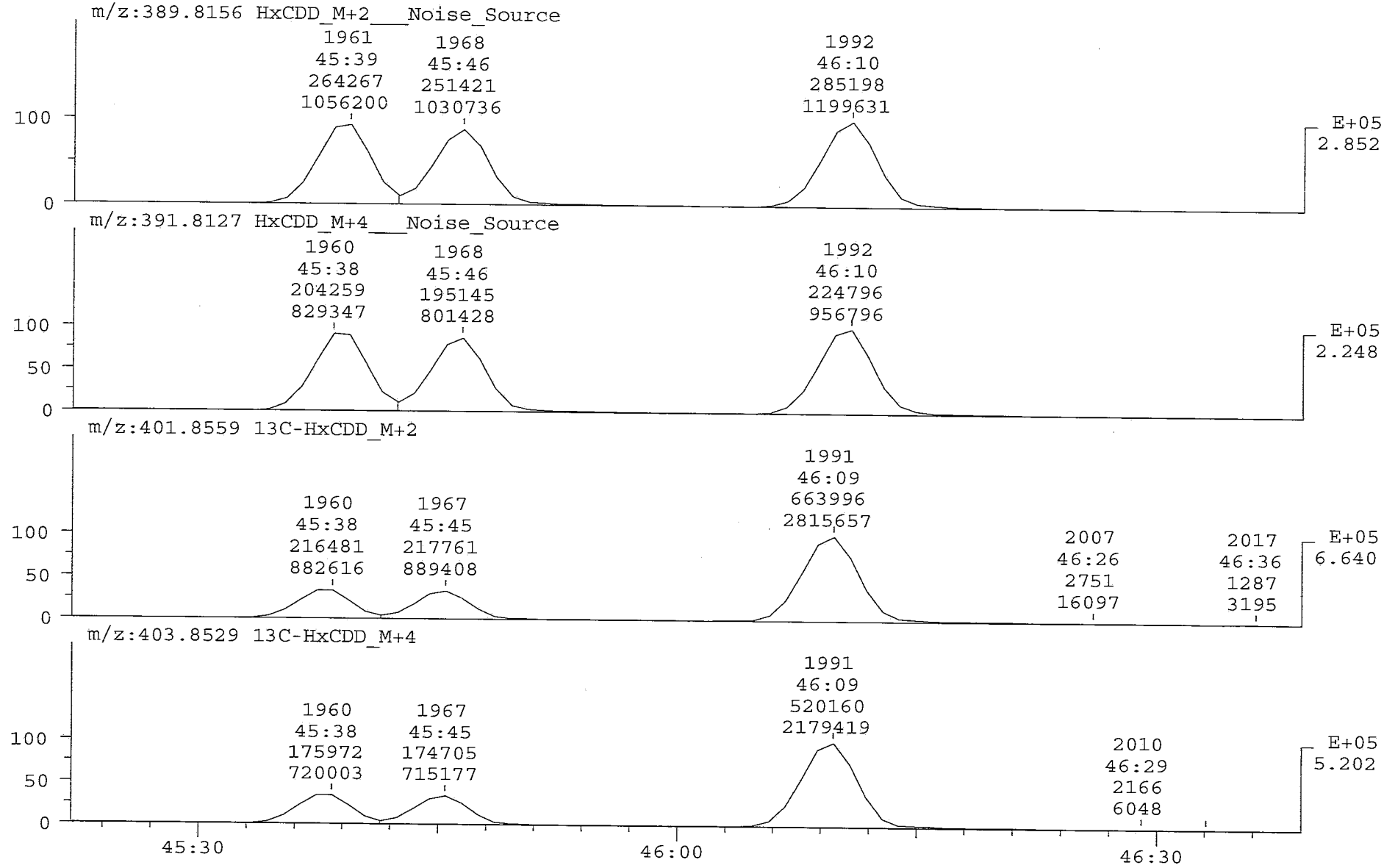
CHRO: d1tm82rec 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



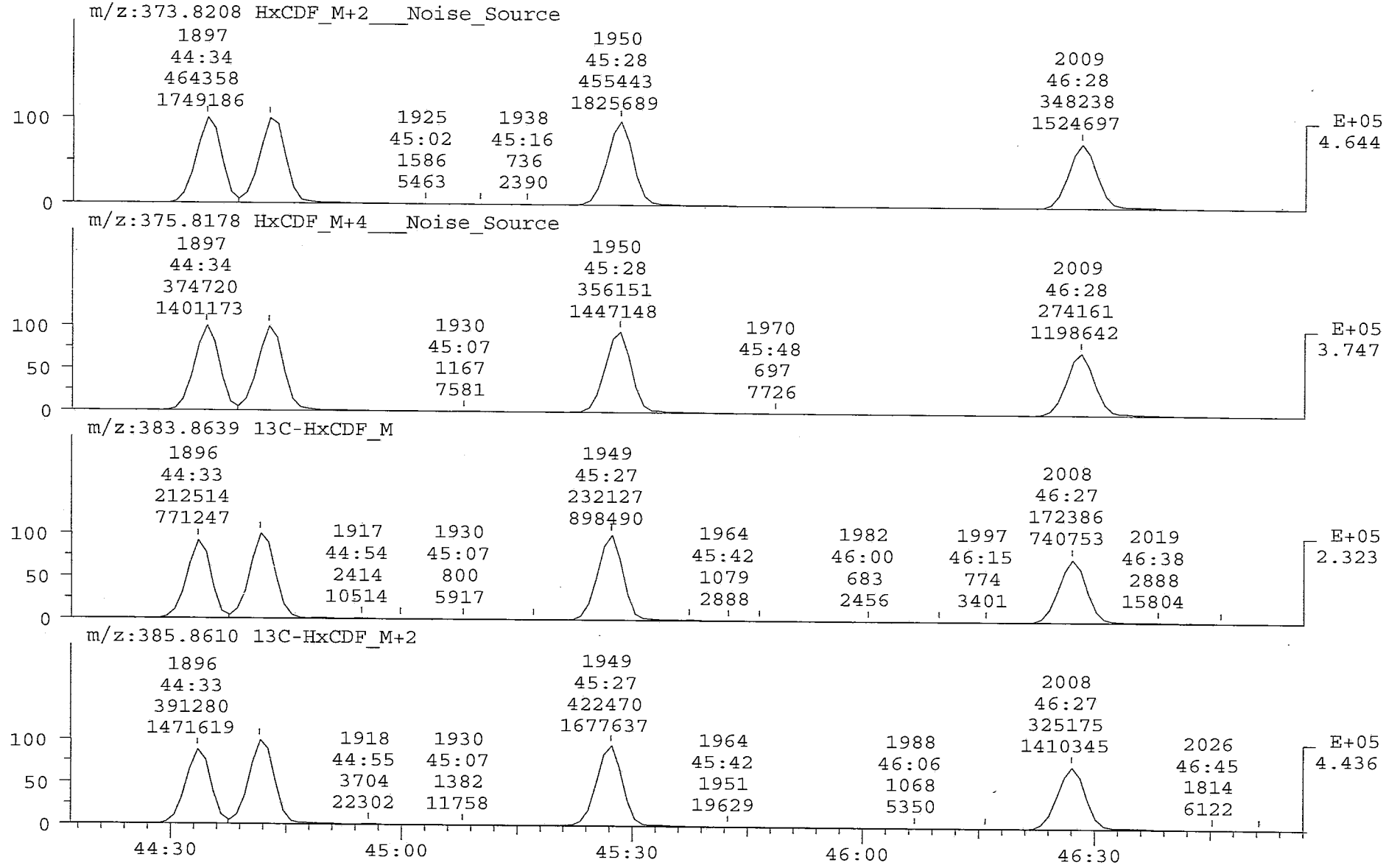
CHRO: d1tm82rec 17-Aug-16 Elapse: 40:26 1660
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1791 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



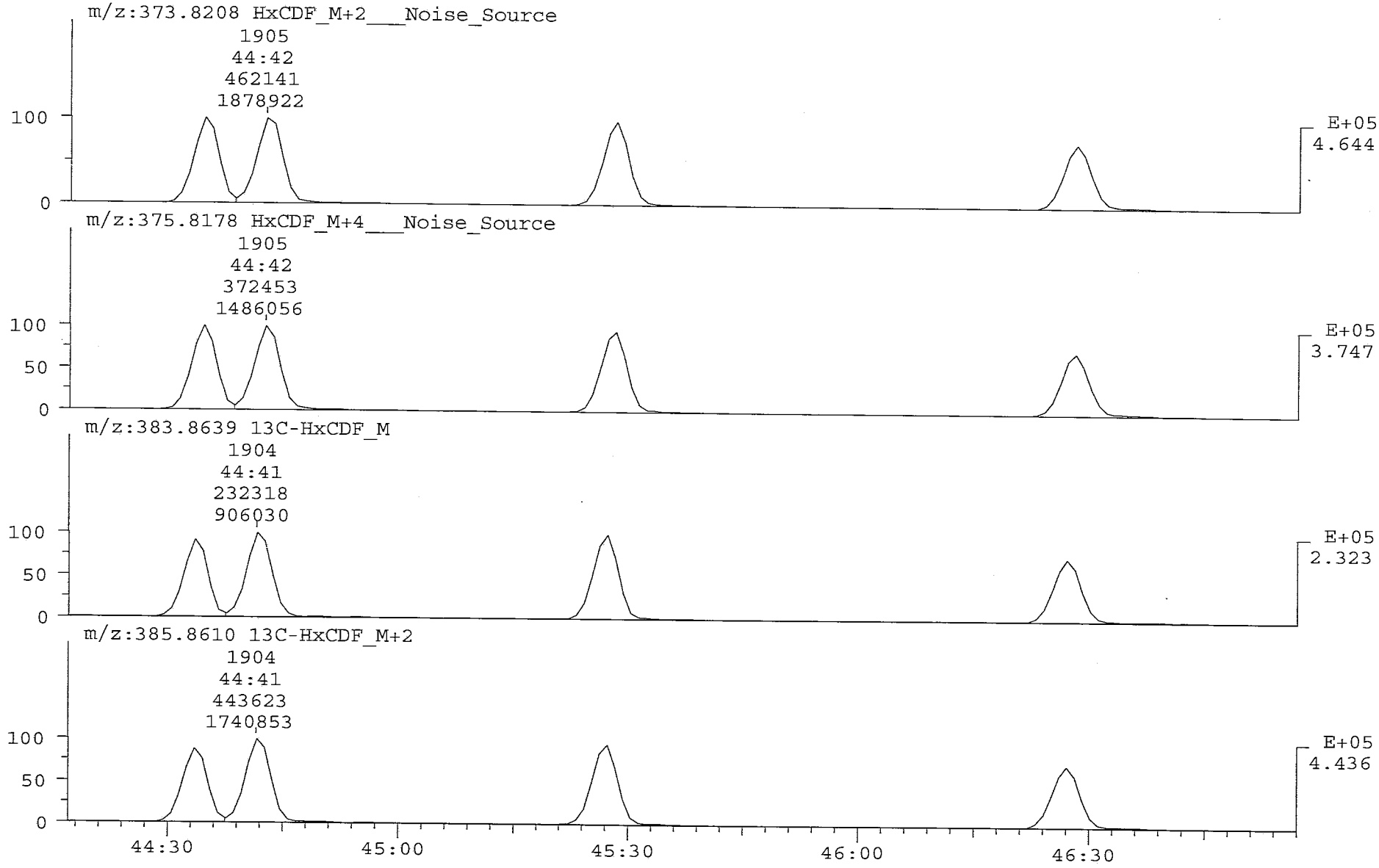
CHRO: d1tm82rec 17-Aug-16 Elapse: 45:59 1981
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1944 > 2020 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



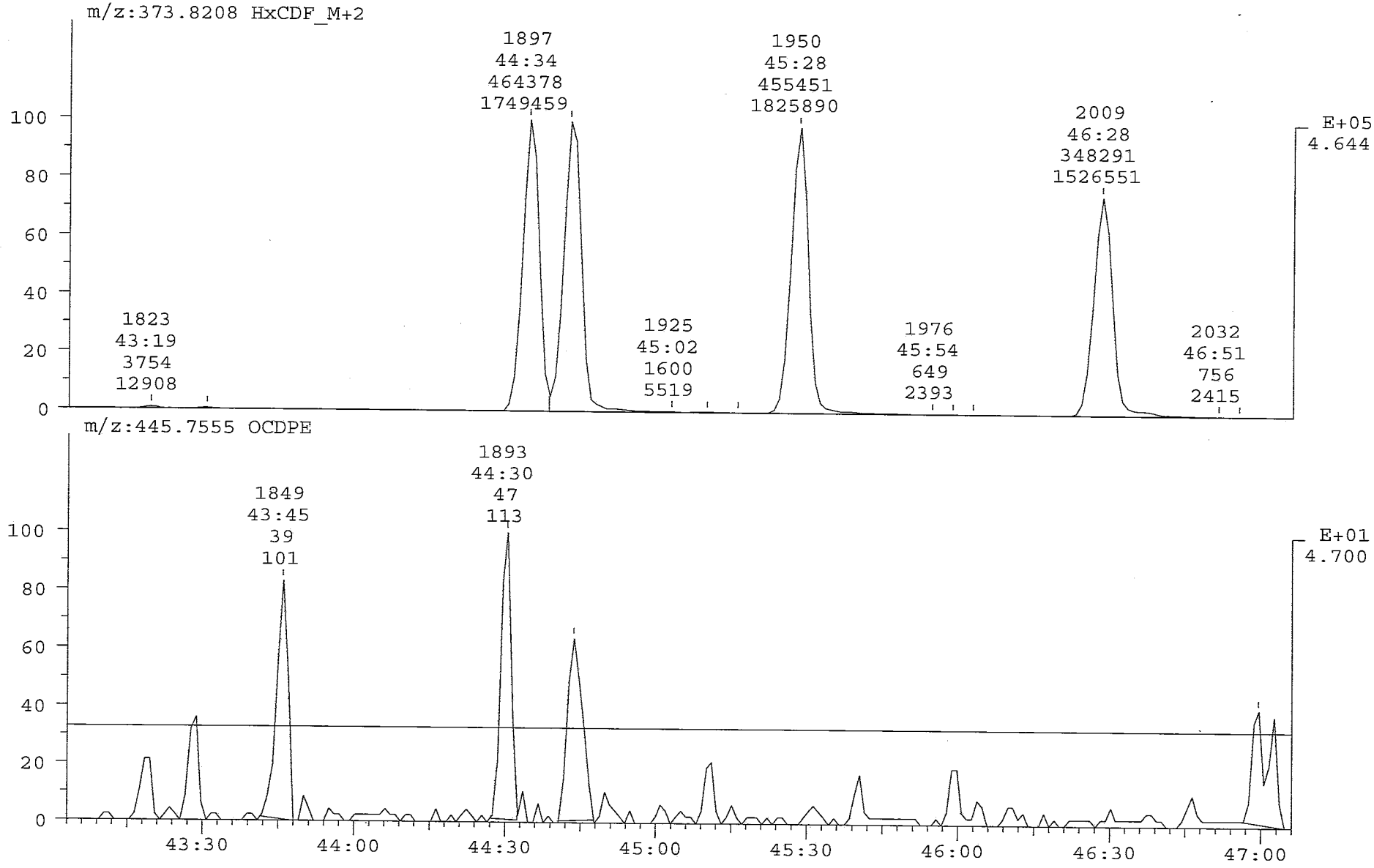
CHRO: d1tm82rec 17-Aug-16 Elapse: 45:37 1959
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1880 > 2038 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



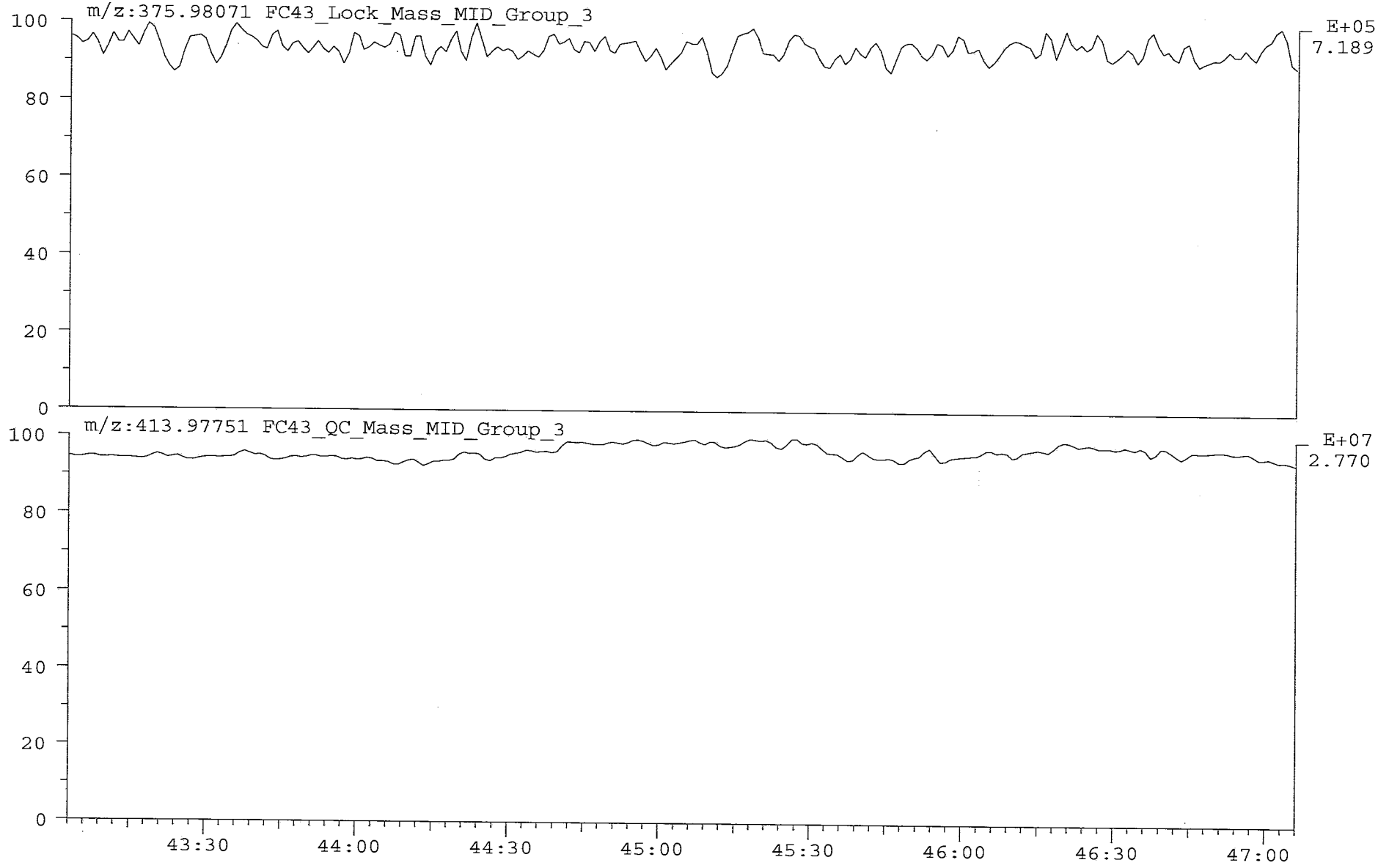
CHRO: d1tm82rec 17-Aug-16 Elapse: 44:44 1907
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1903 > 1911 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



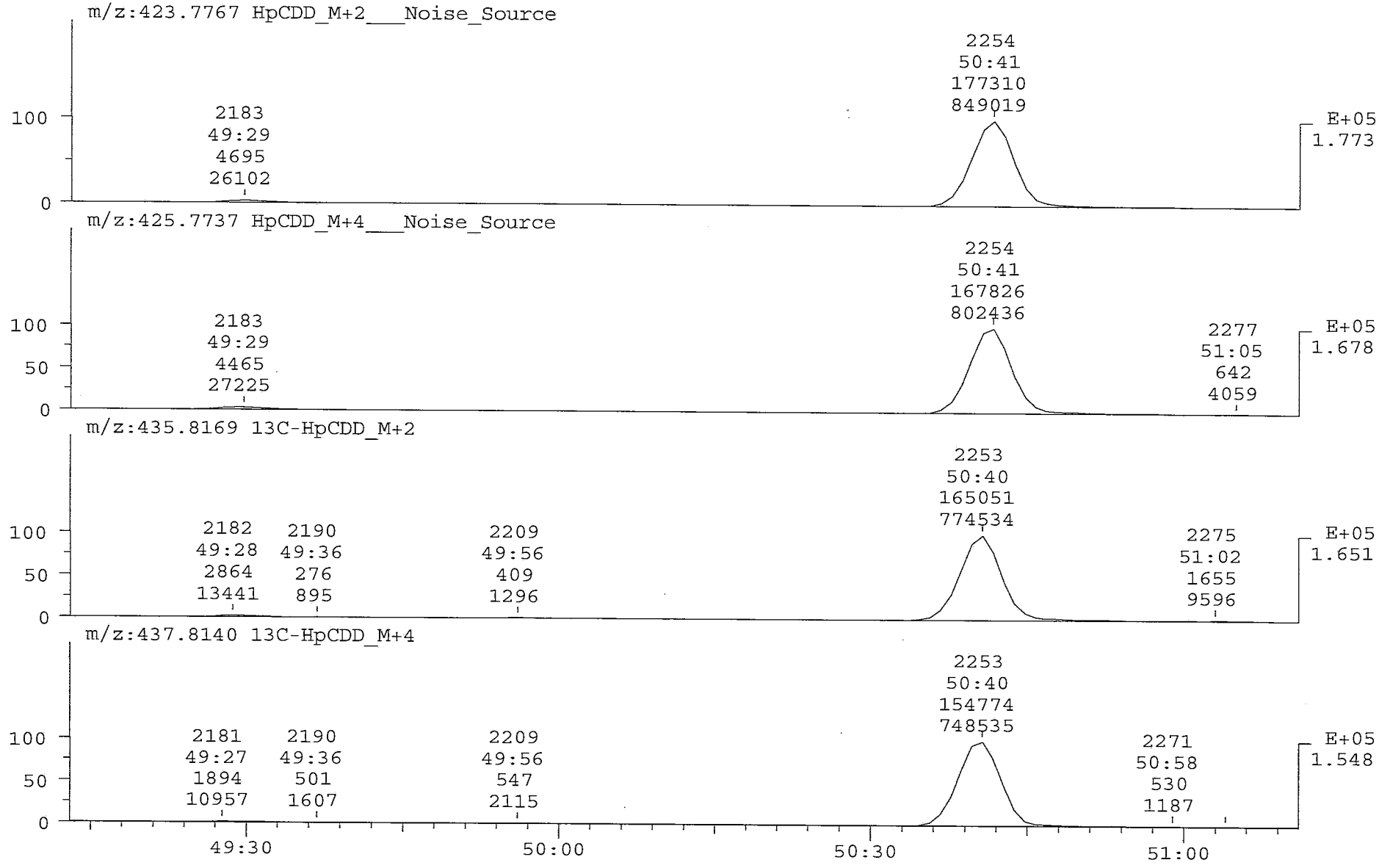
CHRO: d1tm82rec 17-Aug-16 Elapse: 44:44 1907
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1807 > 2046 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



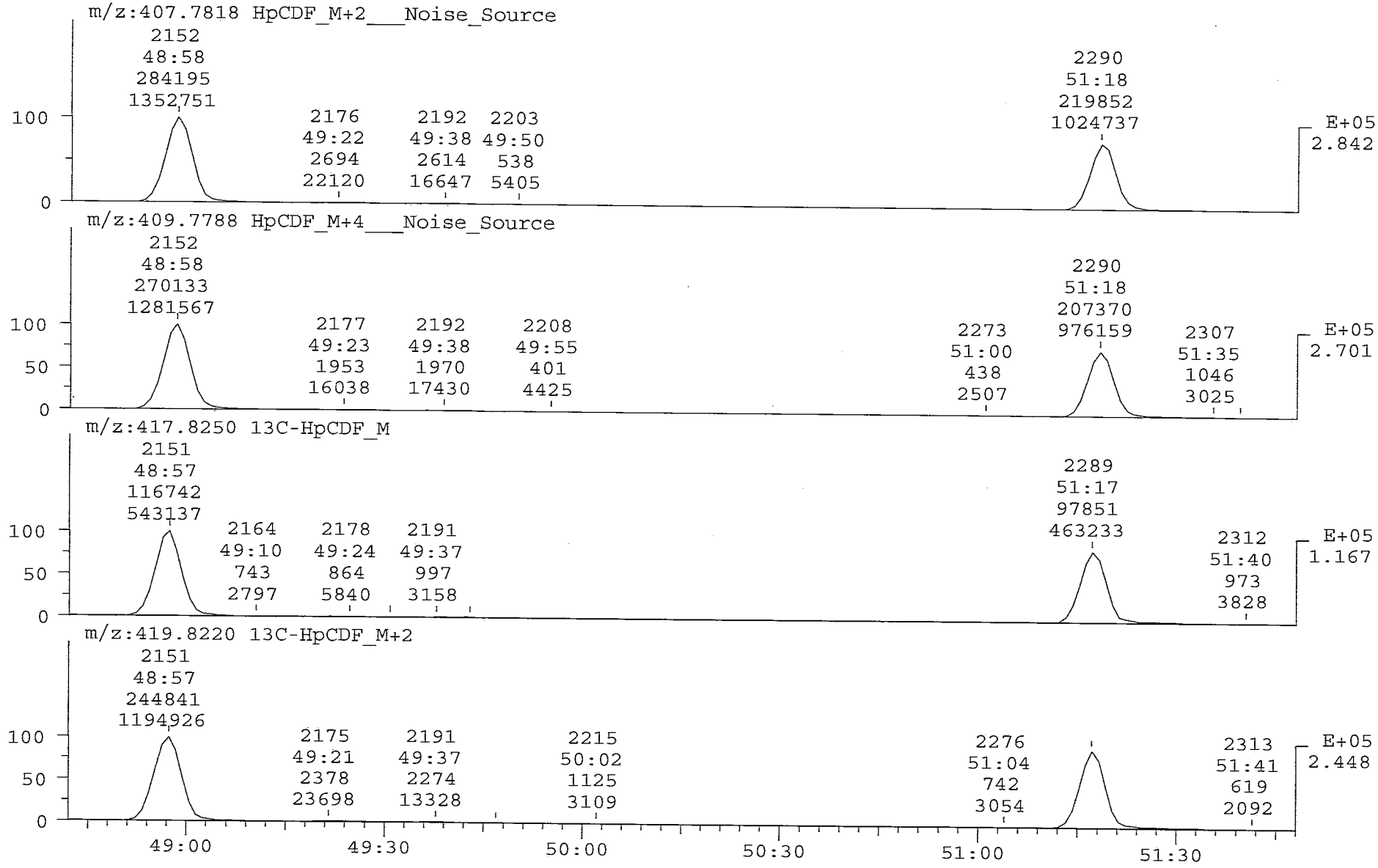
CHRO: d1tm82rec 17-Aug-16 Elapse: 44:44 1907
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1807 > 2046 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



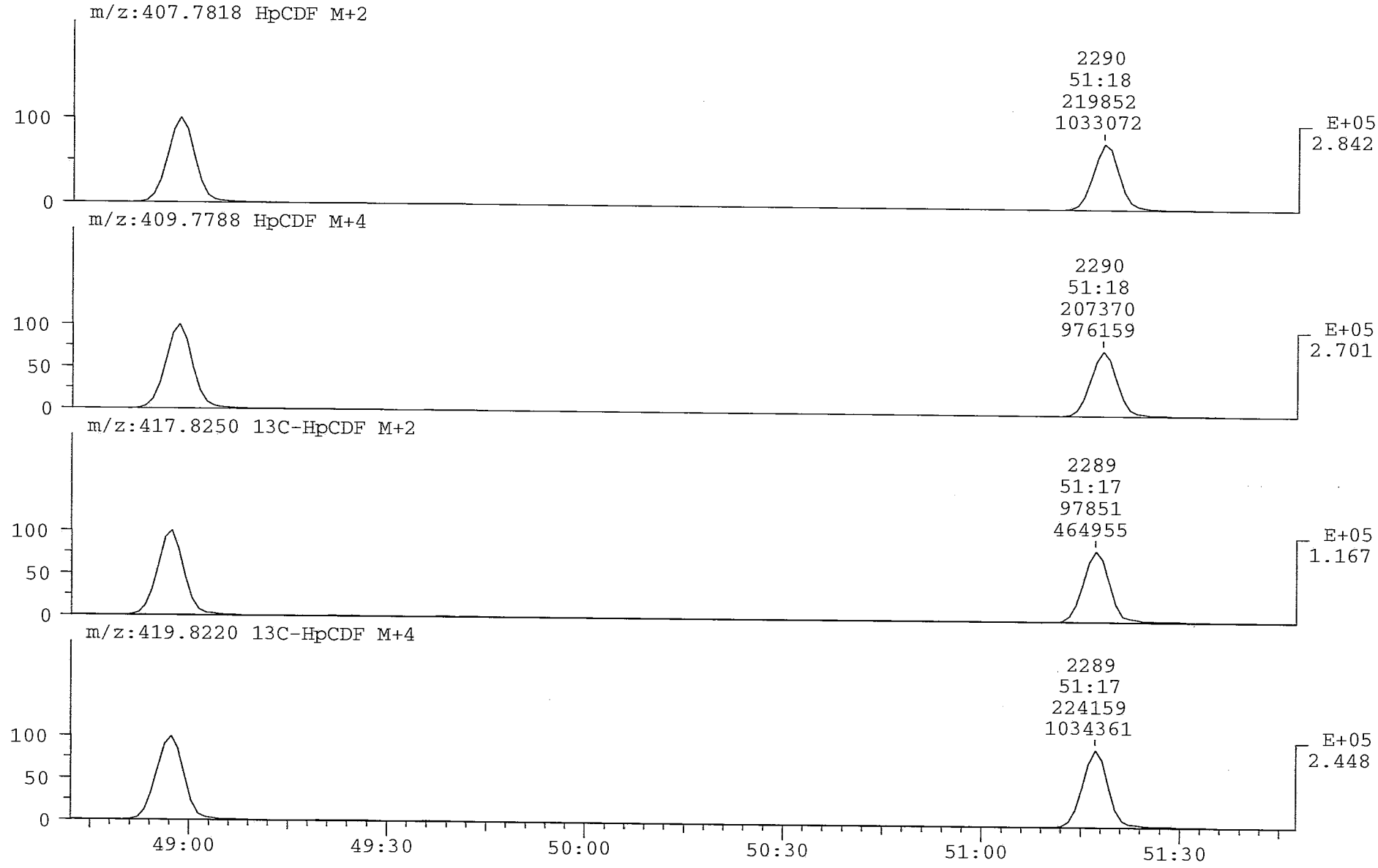
CHRO: d1tm82rec 17-Aug-16 Elapse: 44:44 1907
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2167 > 2283 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



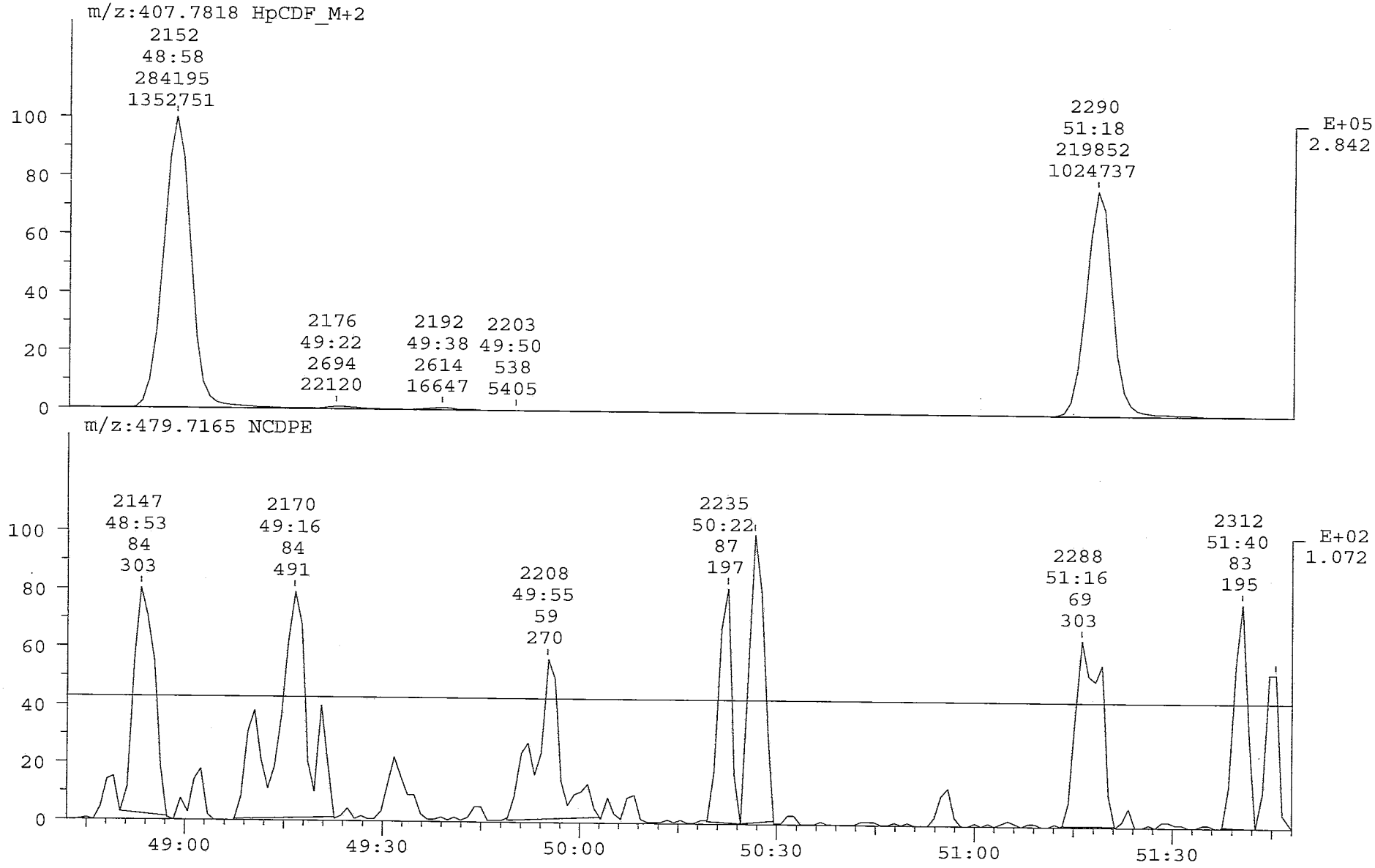
CHRO: d1tm82rec 17-Aug-16 Elapse: 50:15 2228
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



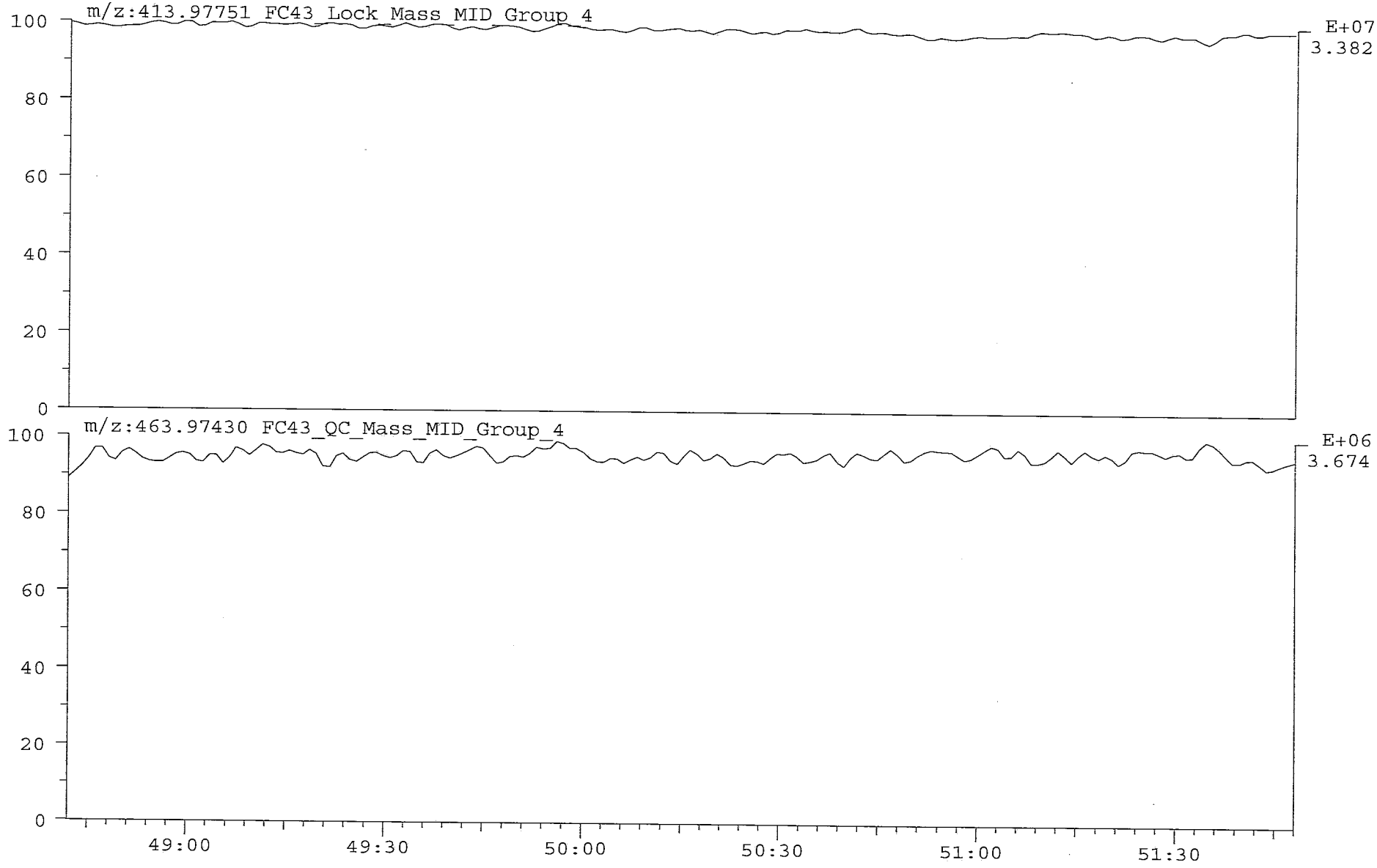
CHRO: d1tm82rec 17-Aug-16 Elapse: 51:18 2290
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2287 > 2293 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



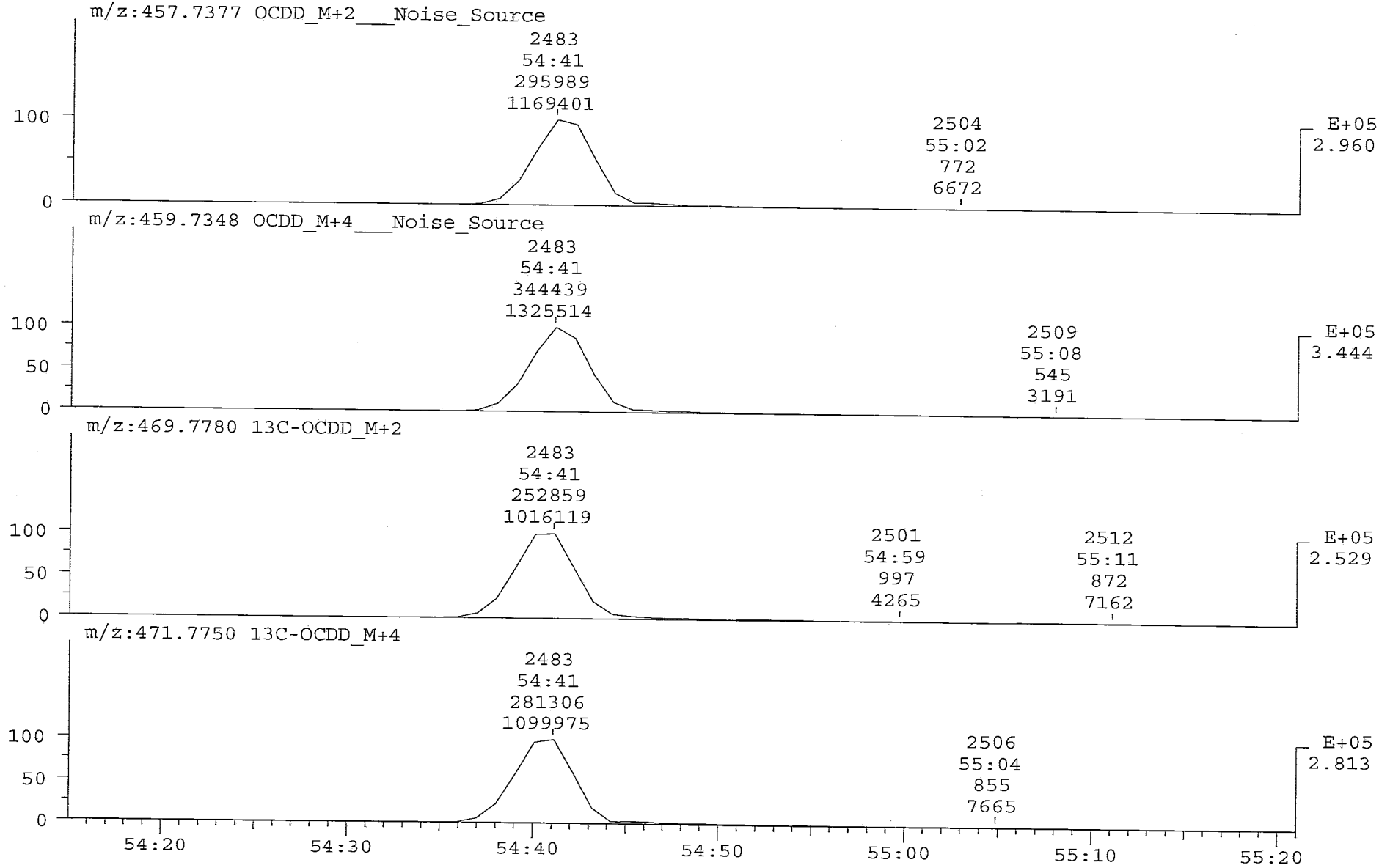
CHRO: d1tm82rec 17-Aug-16 Elapse: 50:15 2228
Samp: WO=m82relac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



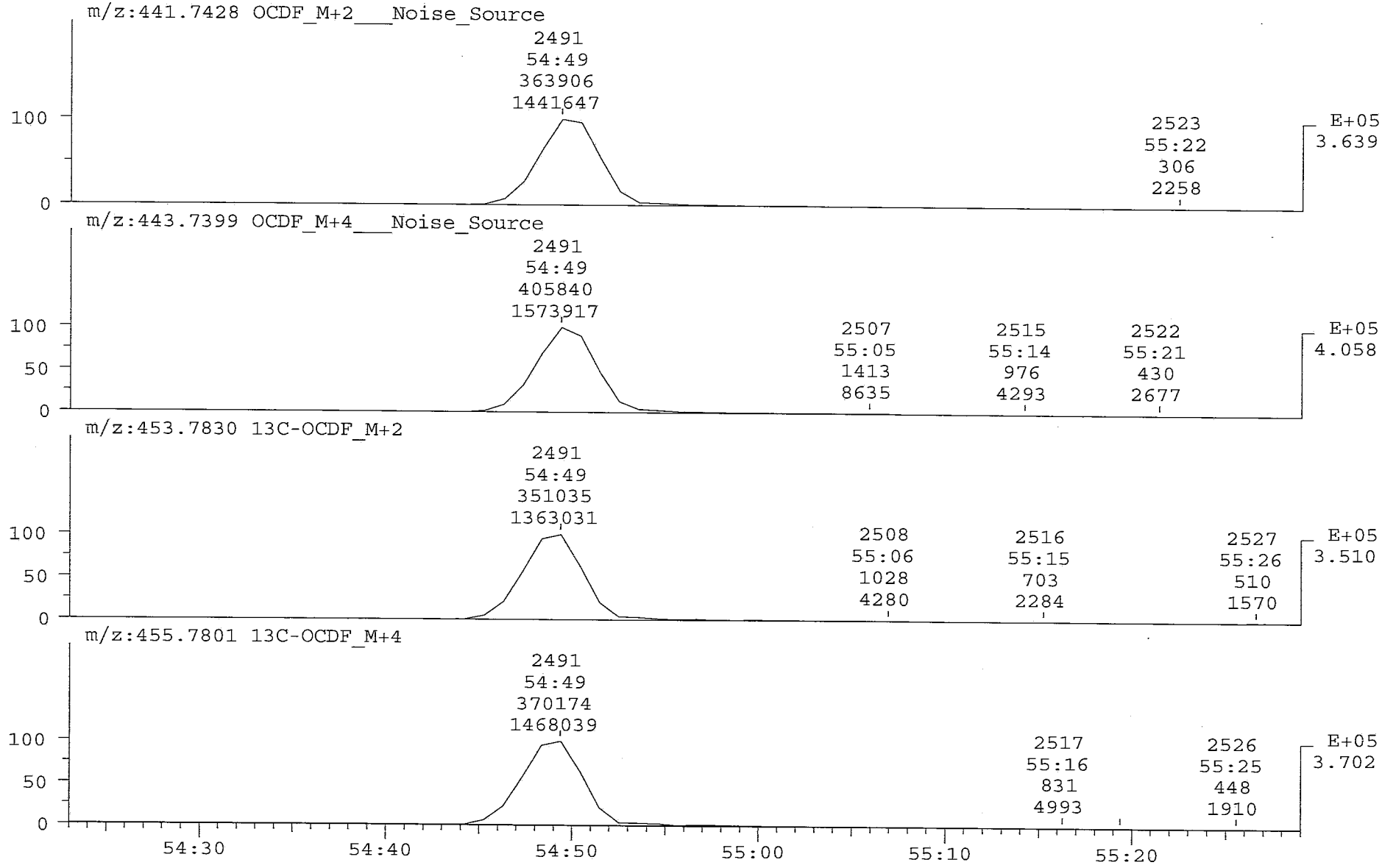
CHRO: d1tm82rec 17-Aug-16 Elapse: 50:15 2228
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2136 > 2319 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



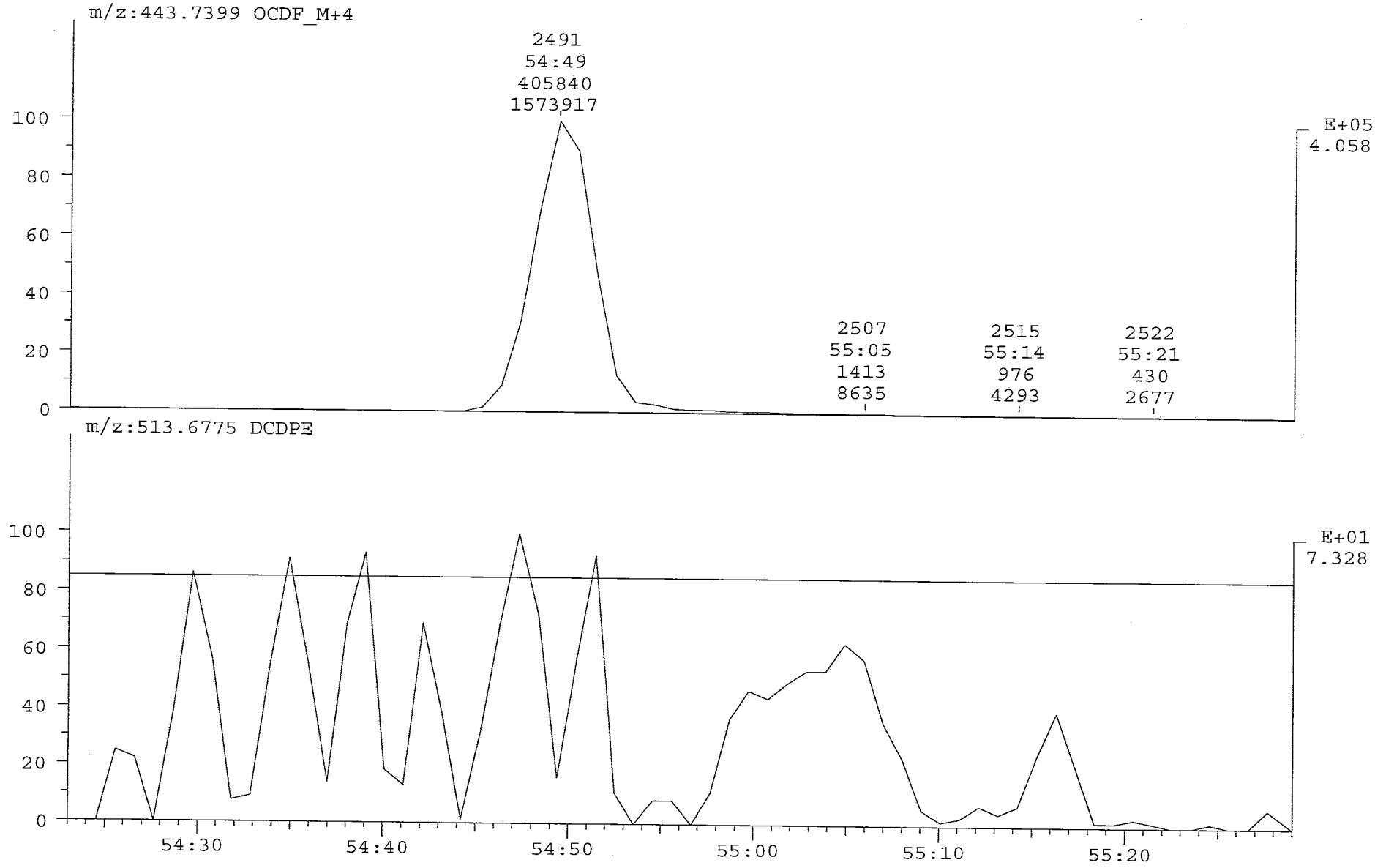
CHRO: d1tm82rec 17-Aug-16 Elapse: 54:45 2487
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2458 > 2522 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



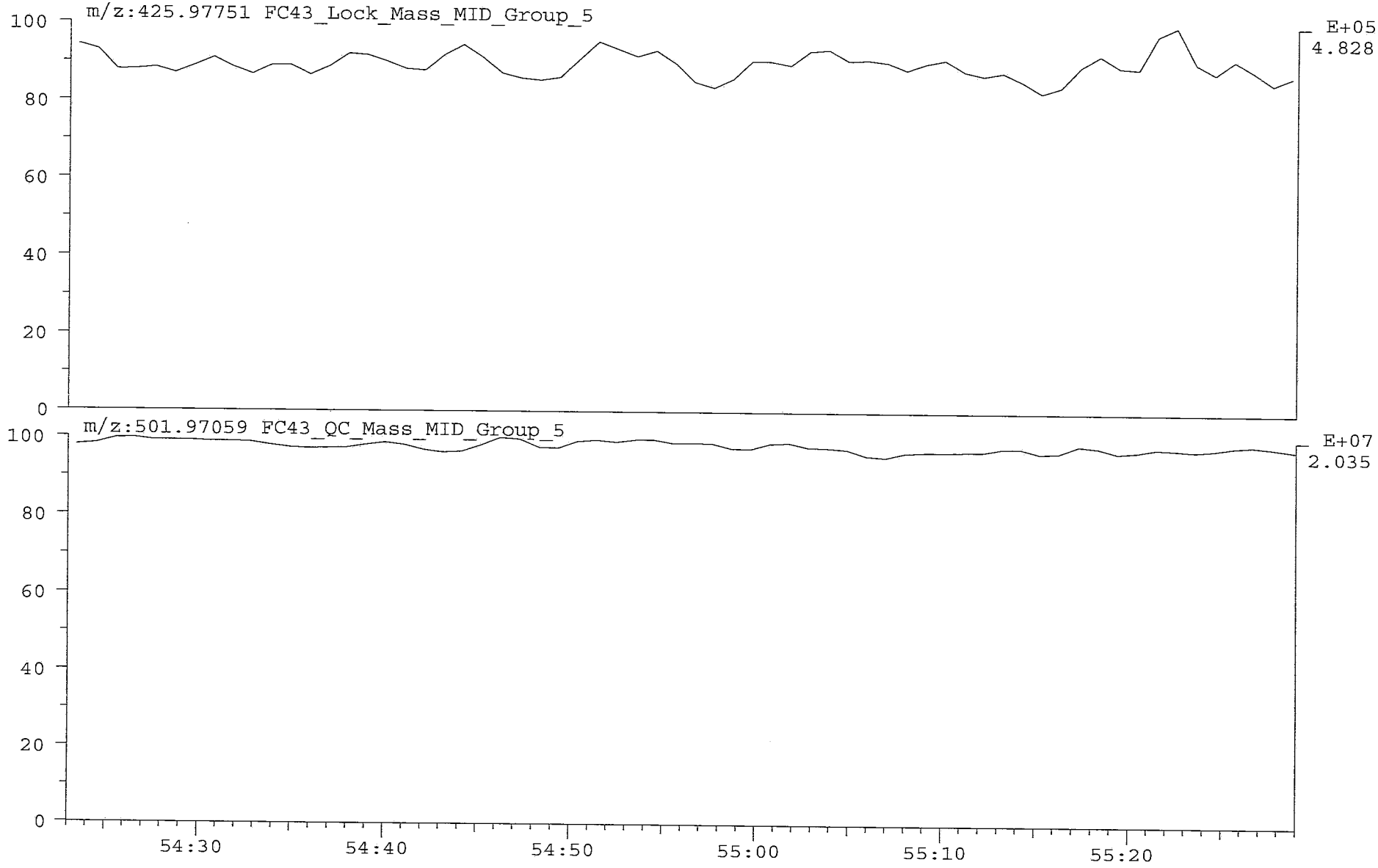
CHRO: d1tm82rec 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2466 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm82rec 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2466 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



CHRO: d1tm82rec 17-Aug-16 Elapse: 54:53 2495
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2466 > 2529 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Wed Aug 17 10:27:38 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 17-Aug-16 10:27:37

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160817095002

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

375.9802		20	1	7
383.8639		5	1	29
385.8610		5	1	29
389.8158		1	1	146
391.8127		1	1	146
401.8559		5	1	29
403.8529		5	1	29
413.9770	c	20	1	7
413.9770		20	1	7
445.7555		1	1	146

Window # 4

mass	F	int	gr	time (ms)
407.7817		1	1	146
409.7788		1	1	146
413.9770	l	20	1	7
413.9770		20	1	7
417.8250		5	1	29
419.8220		5	1	29
423.7767		1	1	146
425.7737		1	1	146
435.8169		5	1	29
437.8140		5	1	29
463.9738	c	20	1	7
463.9738		20	1	7
479.7165		1	1	146

Window # 5

mass	F	int	gr	time (ms)
425.9770	l	20	1	7
425.9770		20	1	7
441.7428		1	1	146
443.7399		1	1	146
453.7830		5	1	29
455.7801		5	1	29
457.7377		1	1	146
459.7348		1	1	146
469.7780		5	1	29
471.7750		5	1	29
501.9706	c	20	1	7
501.9706		20	1	7
513.6775		1	1	146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

ACCU	1000.0000	BCORRS	0.0169	BMASS	312.9834
BQUAD	2.4000	CAPIL	0.0000	CAPTSET	200.0000
CCURR	0.0000	COUNTING	0.0000	DELAY	0.0000
DRAW	-25.0000	DRAWC	0.0000	DRAWS	0.0000
DYNVOLTAGE	18.0000	ECORR	1.0008	ECURR	1.0000
EDAC	7969177.0000	EDACG	0.9997	EDACZ	2585.8226
ELEN	-45.0000	EMULT	1802.0000	ENS	210.0000
ENSBR	2.4000	ERATIO	1.0000	ESA	679.0600
ESIPAR	0.0000	EXS	172.0000	EXSBR	2.5000
FDMA	18000000.0000	FILTER	100.0000	FLENS	1.0000
FM	375.8364	FMII	28.0000	FQUAD	6.4000

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0469	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	642.0000
LENS_SYM	7.2500	LM	375.8364	LMII	500.0000
LMASS	312.9834	LKM	425.9770	MASS	312.9834
MDAC	3588134.2544	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-2.0000	RECURR	0.9001	RELEN	0.0000
RES	13376.1941	RPUSHER	-1.9414	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	684.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0994	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.9834	XLENS_POT	916.0000
XLENS_SYM	24.3000	YLENS_POT	856.0000	YLENS_SYM	15.0000

```
Source Gauge:          2.5e-005 mbar
Analyzer Penning:      9.4e-008 mbar
Pirani Analyse:        4.4e-003 mbar
Pirani Source:         4.0e-002 mbar
Pirani Inlet System:   4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12179.
MID Time Window 2: Resolution is 11454.
MID Time Window 3: Resolution is 12366.
MID Time Window 4: Resolution is 12043.
MID Time Window 5: Resolution is 13376.

Amplifier Offset: 89.


*** File closed Wed Aug 17 11:24:51 2016
  ***
```

QUAN: d1tm82rec.q0 Entries: 251

Data file(s) used
File: d1tm82rec 17-Aug-16
Samp: WO=m82re1ac Meth=9Ao Dil=1 Start : 10:23:10 2629
Comm: Inst=d11a/1379922 Batch=20160817s1 Ccal=D1160817S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:52	182340.	17991.	32:36	33:07	25.	2	5.0	AVV
319.8805	33:10	1130.	149.	33:09	33:21	25.	2	5.0	AVV
319.8805	33:24	922.	259.	33:21	33:35	25.	2	5.0	AVB
321.8775	32:53	221356.	21474.	32:37	33:07	39.	2	5.0	AVV
321.8775	33:09	2081.	268.	33:07	33:24	39.	2	5.0	AVV
331.9202	32:17	2057927.	202763.	32:02	32:32	62.	2	5.0	AVV
331.9202	32:50	729086.	67779.	32:34	33:05	62.	2	5.0	AVV
331.9202	33:15	4822.	673.	33:11	33:22	62.	2	5.0	AVB
331.9202	33:32	3036.	608.	33:22	33:35	62.	2	5.0	ABV
331.9202	33:37	2342.	751.	33:35	33:42	62.	2	5.0	AVB
331.9202	33:49	1985.	478.	33:45	33:56	62.	2	5.0	ABB
333.9171	32:17	2533394.	255804.	32:02	32:32	206.	2	5.0	AVV
333.9171	32:34	6030.	1964.	32:32	32:36	206.	2	5.0	AVV
333.9171	32:50	902454.	90739.	32:36	33:05	206.	2	5.0	AVV
333.9171	33:07	10964.	2042.	33:05	33:22	206.	2	5.0	AVV
303.8864	30:44	289361.	30112.	30:30	30:59	58.	1	1.0	AVV
305.8834	30:44	374988.	39500.	30:29	30:59	35.	1	1.0	AVV
303.8864	30:44	289405.	30112.	30:29	30:59	58.	2	5.0	AVV
305.8834	29:34	2058.	327.	29:25	29:37	35.	2	5.0	ABV
305.8834	29:38	613.	229.	29:37	29:43	35.	2	5.0	AVB
305.8834	30:44	374988.	39500.	30:29	30:59	35.	2	5.0	AVV
305.8834	31:03	3110.	318.	31:00	31:16	35.	2	5.0	AVV
305.8834	31:21	1811.	173.	31:16	31:36	35.	2	5.0	AVV
315.9261	29:27	1497.	496.	29:23	29:30	76.	2	5.0	ABV
315.9261	29:32	2289.	638.	29:30	29:40	76.	2	5.0	AVB
315.9261	30:41	1285851.	138603.	30:27	30:56	76.	2	5.0	ABV
315.9261	31:02	7800.	1397.	30:57	31:05	76.	2	5.0	AVV
315.9261	31:13	6507.	822.	31:05	31:19	76.	2	5.0	AVB
315.9261	31:26	2236.	600.	31:20	31:28	76.	2	5.0	ABB
315.9261	31:53	1554.	636.	31:50	31:56	76.	2	5.0	ABB
315.9261	32:04	4549.	522.	32:01	32:19	76.	2	5.0	ABV
317.9230	29:33	7357.	1225.	29:22	29:37	57.	2	5.0	ABB
317.9230	30:41	1589599.	170430.	30:26	30:56	57.	2	5.0	ABV
317.9230	31:07	2531.	904.	31:04	31:09	57.	2	5.0	AVV
317.9230	31:13	1905.	452.	31:09	31:15	57.	2	5.0	AVV
317.9230	31:17	1993.	706.	31:15	31:19	57.	2	5.0	AVV
317.9230	31:25	5328.	799.	31:19	31:30	57.	2	5.0	AVV
317.9230	31:35	2244.	517.	31:30	31:37	57.	2	5.0	AVV
317.9230	31:39	1116.	399.	31:37	31:42	57.	2	5.0	AVB
317.9230	31:44	867.	335.	31:42	31:47	57.	2	5.0	ABB
317.9230	31:53	982.	416.	31:50	31:56	57.	2	5.0	ABB
317.9230	32:03	1185.	479.	32:00	32:05	57.	2	5.0	ABB
317.9230	32:12	1148.	286.	32:07	32:14	57.	2	5.0	ABB
317.9230	32:17	2581.	1074.	32:14	32:19	57.	2	5.0	ABB
317.9230	32:21	1362.	730.	32:19	32:23	57.	2	5.0	ABV
317.9230	32:25	2595.	582.	32:23	32:32	57.	2	5.0	AVB
355.8368	41:25	970607.	234515.	41:14	41:40	63.	1	1.0	ABV
357.8337	41:25	622645.	148872.	41:16	41:40	49.	1	1.0	AVV
355.8368	41:25	970607.	234515.	41:14	41:40	63.	2	5.0	ABV
355.8368	41:46	2371.	563.	41:43	41:48	63.	2	5.0	AVV

355.8368	41:51	973.	329.	41:48	41:52	63.	2	5.0 AVV
355.8368	41:54	1901.	532.	41:52	41:57	63.	2	5.0 AVV
355.8368	42:03	10077.	1830.	41:57	42:18	63.	2	5.0 AVB
357.8337	41:25	622856.	148872.	41:11	41:40	49.	2	5.0 ABV
357.8337	41:45	2154.	375.	41:43	41:53	49.	2	5.0 AVV
357.8337	42:02	6690.	999.	41:53	42:12	49.	2	5.0 AVB
367.8765	40:57	1265.	523.	40:54	40:59	44.	2	5.0 ABB
367.8765	41:24	895505.	212713.	41:16	41:33	44.	2	5.0 ABV
367.8765	41:35	5653.	1904.	41:33	41:37	44.	2	5.0 AVV
367.8765	41:39	4295.	1603.	41:37	41:41	44.	2	5.0 AVV
367.8765	41:43	1630.	746.	41:41	41:45	44.	2	5.0 AVV
367.8765	41:47	1543.	599.	41:45	41:53	44.	2	5.0 AVB
367.8765	42:02	5382.	1124.	41:54	42:07	44.	2	5.0 ABV
367.8765	42:08	1677.	301.	42:07	42:15	44.	2	5.0 AVB
369.8734	40:59	921.	391.	40:56	41:01	37.	2	5.0 ABB
369.8734	41:24	607756.	145410.	41:16	41:39	37.	2	5.0 ABV
369.8734	41:46	3256.	613.	41:41	41:53	37.	2	5.0 AVB
369.8734	42:02	1497.	493.	41:59	42:05	37.	2	5.0 ABB
369.8734	42:13	1484.	631.	42:10	42:15	37.	2	5.0 ABB
339.8427	40:55	1785858.	425296.	40:44	41:04	93.	1	1.0 ABV
341.8396	40:55	1135511.	263627.	40:42	41:04	79.	1	1.0 ABV
339.8427	39:18	1909.	674.	39:16	39:22	93.	2	5.0 ABB
339.8427	39:45	1619485.	344348.	39:33	39:57	93.	2	5.0 ABV
339.8427	40:01	20707.	2851.	39:57	40:09	93.	2	5.0 AVV
339.8427	40:14	26014.	4313.	40:09	40:30	93.	2	5.0 AVV
339.8427	40:55	1785858.	425296.	40:44	41:04	93.	2	5.0 ABV
339.8427	41:06	21206.	3669.	41:04	41:13	93.	2	5.0 AVV
339.8427	41:15	5278.	943.	41:13	41:23	93.	2	5.0 AVV
339.8427	41:26	2259.	588.	41:23	41:29	93.	2	5.0 AVB
341.8396	39:45	1022997.	215390.	39:36	39:59	79.	2	5.0 ABV
341.8396	40:01	9909.	2081.	39:59	40:06	79.	2	5.0 AVV
341.8396	40:08	3075.	875.	40:06	40:10	79.	2	5.0 AVV
341.8396	40:14	17647.	3279.	40:10	40:30	79.	2	5.0 AVV
341.8396	40:55	1135511.	263627.	40:42	41:04	79.	2	5.0 ABV
341.8396	41:07	16534.	2350.	41:04	41:23	79.	2	5.0 AVV
351.8824	39:44	1421625.	298192.	39:34	39:56	77.	2	5.0 ABV
351.8824	39:59	16128.	2980.	39:56	40:04	77.	2	5.0 AVV
351.8824	40:06	5060.	1670.	40:04	40:08	77.	2	5.0 AVV
351.8824	40:13	17434.	2936.	40:08	40:18	77.	2	5.0 AVV
351.8824	40:24	5963.	927.	40:18	40:31	77.	2	5.0 AVV
351.8824	40:33	1508.	571.	40:31	40:35	77.	2	5.0 AVV
351.8824	40:54	1603809.	369399.	40:38	41:09	77.	2	5.0 AVV
351.8824	41:11	11222.	2241.	41:09	41:20	77.	2	5.0 AVV
351.8824	41:25	2090.	598.	41:20	41:26	77.	2	5.0 AVV
351.8824	41:28	3302.	705.	41:26	41:36	77.	2	5.0 AVB
353.8793	39:43	913932.	193399.	39:35	39:56	81.	2	5.0 ABV
353.8793	39:59	13472.	1841.	39:56	40:10	81.	2	5.0 AVV
353.8793	40:12	10819.	1843.	40:10	40:18	81.	2	5.0 AVB
353.8793	40:21	1037.	476.	40:18	40:22	81.	2	5.0 ABV
353.8793	40:26	2598.	546.	40:22	40:31	81.	2	5.0 AVB
353.8793	40:54	952089.	223501.	40:38	41:09	81.	2	5.0 ABV
353.8793	41:16	2268.	545.	41:15	41:23	81.	2	5.0 AVB
353.8793	41:25	2095.	671.	41:23	41:28	81.	2	5.0 ABB
389.7961	46:10	1199631.	285198.	46:02	46:26	136.	1	1.0 AVV
391.7931	46:10	956796.	224796.	46:01	46:26	161.	1	1.0 AVV
389.7961	45:39	1056200.	264267.	45:32	45:42	136.	2	5.0 ABV
389.7961	45:46	1030736.	251421.	45:42	46:01	136.	2	5.0 AVV
389.7961	46:10	1199631.	285198.	46:02	46:26	136.	2	5.0 AVV
391.7931	45:38	829347.	204259.	45:32	45:42	161.	2	5.0 ABV
391.7931	45:46	801428.	195145.	45:42	46:01	161.	2	5.0 AVV
391.7931	46:10	956796.	224796.	46:01	46:26	161.	2	5.0 AVV
401.8358	45:38	882616.	216481.	45:30	45:41	146.	2	5.0 ABV
401.8358	45:45	889408.	217761.	45:41	46:00	146.	2	5.0 AVV
401.8358	46:09	2815657.	663996.	46:01	46:24	146.	2	5.0 AVV
401.8358	46:26	16097.	2751.	46:24	46:34	146.	2	5.0 AVV
401.8358	46:36	3195.	1287.	46:34	46:38	146.	2	5.0 AVB
403.8327	45:38	720003.	175673.	45:40	45:41	83.	2	5.0 ABV

403.8327	45:45	715177.	174705.	45:41	46:00	83.	2	5.0 AVV
403.8327	46:09	2179419.	520160.	46:01	46:25	83.	2	5.0 AVV
403.8327	46:29	6048.	2166.	46:27	46:31	83.	2	5.0 AVV
403.8327	46:33	1442.	619.	46:31	46:35	83.	2	5.0 AVB
373.8021	44:42	1878922.	462141.	44:38	44:57	134.	1	1.0 AVV
375.7990	44:42	1486056.	372453.	44:38	44:57	127.	1	1.0 AVV
373.8021	44:34	1749186.	464358.	44:27	44:38	134.	2	5.0 ABV
373.8021	44:42	1878922.	462141.	44:38	44:57	134.	2	5.0 AVV
373.8021	45:02	5463.	1586.	45:01	45:05	134.	2	5.0 AVV
373.8021	45:10	8945.	1396.	45:05	45:14	134.	2	5.0 AVV
373.8021	45:16	2390.	736.	45:14	45:18	134.	2	5.0 AVV
373.8021	45:28	1825689.	455442.	45:18	45:43	134.	2	5.0 AVV
373.8021	46:28	1524697.	348238.	46:21	46:43	134.	2	5.0 ABV
375.7990	44:34	1401173.	374720.	44:25	44:38	127.	2	5.0 ABV
375.7990	44:42	1486056.	372453.	44:38	44:57	127.	2	5.0 AVV
375.7990	45:08	7581.	1167.	45:04	45:14	127.	2	5.0 AVV
375.7990	45:28	1447148.	356151.	45:14	45:43	127.	2	5.0 AVV
375.7990	45:48	7726.	697.	45:46	46:03	127.	2	5.0 AVV
375.7990	46:28	1198642.	274161.	46:21	46:43	127.	2	5.0 ABV
373.8021	44:34	1749186.	464358.	44:27	44:38	134.	2	5.0 ABV
373.8021	44:42	1878922.	462141.	44:38	44:57	134.	2	5.0 AVV
373.8021	45:02	5463.	1586.	45:01	45:05	134.	2	5.0 AVV
373.8021	45:10	8945.	1396.	45:05	45:14	134.	2	5.0 AVV
373.8021	45:16	2390.	736.	45:14	45:18	134.	2	5.0 AVV
373.8021	45:28	1825689.	455442.	45:18	45:43	134.	2	5.0 AVV
373.8021	46:28	1524697.	348238.	46:21	46:43	134.	2	5.0 ABV
375.7990	44:34	1401173.	374720.	44:25	44:38	127.	2	5.0 ABV
375.7990	44:42	1486056.	372453.	44:38	44:57	127.	2	5.0 AVV
375.7990	45:08	7581.	1167.	45:04	45:14	127.	2	5.0 AVV
375.7990	45:28	1447148.	356151.	45:14	45:43	127.	2	5.0 AVV
375.7990	45:48	7726.	697.	45:46	46:03	127.	2	5.0 AVV
375.7990	46:28	1198642.	274161.	46:21	46:43	127.	2	5.0 ABV
383.8447	44:33	771247.	212514.	44:25	44:37	86.	2	5.0 ABV
383.8447	44:41	906030.	232318.	44:37	44:51	86.	2	5.0 AVV
383.8447	44:54	10514.	2414.	44:51	44:57	86.	2	5.0 AVV
383.8447	44:59	4255.	1279.	44:57	45:03	86.	2	5.0 AVV
383.8447	45:08	5917.	800.	45:03	45:15	86.	2	5.0 AVV
383.8447	45:17	2069.	697.	45:15	45:19	86.	2	5.0 AVV
383.8447	45:27	898490.	232127.	45:19	45:35	86.	2	5.0 AVV
383.8447	45:37	10147.	2989.	45:35	45:40	86.	2	5.0 AVV
383.8447	45:42	2888.	1079.	45:40	45:44	86.	2	5.0 AVV
383.8447	45:46	5677.	714.	45:44	45:54	86.	2	5.0 AVV
383.8447	46:00	2456.	683.	45:58	46:03	86.	2	5.0 AVV
383.8447	46:09	3446.	678.	46:03	46:10	86.	2	5.0 AVV
383.8447	46:15	3401.	774.	46:10	46:17	86.	2	5.0 AVB
383.8447	46:27	740753.	172386.	46:18	46:36	86.	2	5.0 ABV
383.8447	46:38	15804.	2888.	46:36	46:45	86.	2	5.0 AVV
383.8447	46:46	2496.	491.	46:45	46:53	86.	2	5.0 AVB
385.8417	44:33	1471619.	391280.	44:26	44:37	119.	2	5.0 ABV
385.8417	44:41	1740853.	443623.	44:37	44:53	119.	2	5.0 AVV
385.8417	44:55	22302.	3704.	44:53	45:03	119.	2	5.0 AVV
385.8417	45:08	11758.	1382.	45:03	45:16	119.	2	5.0 AVV
385.8417	45:27	1677637.	422470.	45:16	45:38	119.	2	5.0 AVV
385.8417	45:42	19629.	1951.	45:38	45:57	119.	2	5.0 AVV
385.8417	46:06	5350.	1068.	46:02	46:12	119.	2	5.0 AVV
385.8417	46:15	3389.	941.	46:12	46:18	119.	2	5.0 AVB
385.8417	46:27	1410345.	325175.	46:18	46:42	119.	2	5.0 ABV
385.8417	46:45	6122.	1814.	46:42	46:47	119.	2	5.0 AVV
385.8417	46:51	6903.	1212.	46:47	46:57	119.	2	5.0 AVB
423.7555	50:41	849019.	177310.	50:33	50:56	54.	1	1.0 ABV
425.7524	50:41	802435.	167826.	50:33	50:56	59.	1	1.0 ABV
423.7555	49:29	26102.	4695.	49:22	49:44	54.	2	5.0 ABV
423.7555	50:41	849019.	177310.	50:33	50:56	54.	2	5.0 ABV
425.7524	49:29	27225.	4465.	49:20	49:44	59.	2	5.0 ABV
425.7524	50:41	802435.	167826.	50:33	50:56	59.	2	5.0 ABV
435.7951	49:28	13441.	2864.	49:21	49:33	26.	2	5.0 ABB
435.7951	49:36	895.	173.	49:31	49:40	26.	2	5.0 ABB

435.7951	49:56	1296.	409.	49:52	50:01	26.	2	5.0	ABB
435.7951	50:40	774534.	165051.	50:32	50:55	26.	2	5.0	ABV
435.7951	51:03	9596.	1655.	50:57	51:09	26.	2	5.0	AVB
437.7921	49:27	10957.	1894.	49:22	49:34	50.	2	5.0	ABV
437.7921	49:36	1607.	501.	49:34	49:42	50.	2	5.0	AVB
437.7921	49:56	2115.	547.	49:50	50:01	50.	2	5.0	ABB
437.7921	50:40	748535.	154774.	50:32	50:55	50.	2	5.0	ABV
437.7921	50:58	1187.	530.	50:56	51:01	50.	2	5.0	AVV
437.7921	51:04	2672.	928.	51:01	51:06	50.	2	5.0	AVB
407.7614	48:58	1352751.	284195.	48:49	49:13	100.	1	1.0	ABV
409.7583	48:58	1281567.	270133.	48:50	49:13	70.	1	1.0	ABV
407.7614	48:58	1352751.	284195.	48:49	49:13	100.	2	5.0	ABV
407.7614	49:22	22120.	2694.	49:15	49:32	100.	2	5.0	AVV
407.7614	49:38	16647.	2614.	49:32	49:45	100.	2	5.0	AVV
407.7614	49:50	5405.	538.	49:45	50:05	100.	2	5.0	AVV
407.7614	51:18	1024737.	219852.	51:08	51:33	100.	2	5.0	ABV
409.7583	48:58	1281567.	270133.	48:50	49:13	70.	2	5.0	ABV
409.7583	49:23	16038.	1953.	49:18	49:30	70.	2	5.0	AVV
409.7583	49:38	17430.	1970.	49:30	49:48	70.	2	5.0	AVV
409.7583	49:55	4425.	401.	49:48	50:07	70.	2	5.0	AVB
409.7583	51:01	2507.	438.	50:49	51:07	70.	2	5.0	ABB
409.7583	51:18	976159.	207370.	51:08	51:33	70.	2	5.0	ABV
409.7583	51:35	3025.	1046.	51:33	51:37	70.	2	5.0	AVV
409.7583	51:39	2374.	646.	51:37	51:43	70.	2	5.0	AVV
417.8041	48:57	543137.	116742.	48:49	49:08	55.	2	5.0	ABV
417.8041	49:10	2797.	743.	49:08	49:13	55.	2	5.0	AVV
417.8041	49:24	5840.	864.	49:17	49:27	55.	2	5.0	AVV
417.8041	49:30	1475.	607.	49:27	49:32	55.	2	5.0	AVB
417.8041	49:37	3158.	997.	49:33	49:39	55.	2	5.0	ABV
417.8041	49:42	3331.	1064.	49:39	49:44	55.	2	5.0	AVB
417.8041	51:17	463233.	97851.	51:09	51:32	55.	2	5.0	ABV
417.8041	51:40	3828.	973.	51:38	51:46	55.	2	5.0	AVB
419.8010	48:57	1194926.	244841.	48:49	49:12	86.	2	5.0	ABV
419.8010	49:21	23698.	2378.	49:12	49:32	86.	2	5.0	AVV
419.8010	49:37	13328.	2274.	49:32	49:44	86.	2	5.0	AVV
419.8010	49:47	3221.	478.	49:44	49:56	86.	2	5.0	AVV
419.8010	50:02	3109.	1125.	50:00	50:05	86.	2	5.0	AVB
419.8010	51:04	3054.	742.	50:58	51:06	86.	2	5.0	AVB
419.8010	51:17	1029236.	224159.	51:07	51:32	86.	2	5.0	ABV
419.8010	51:41	2092.	619.	51:39	51:47	86.	2	5.0	ABB
457.7148	54:41	1169401.	295989.	54:34	54:56	44.	1	1.0	ABV
459.7118	54:41	1325514.	344439.	54:33	54:56	74.	1	1.0	ABV
457.7148	54:41	1169401.	295989.	54:34	54:56	44.	2	5.0	ABV
457.7148	55:02	6672.	772.	55:00	55:18	44.	2	5.0	AVV
459.7118	54:41	1325514.	344439.	54:33	54:56	74.	2	5.0	ABV
459.7118	55:08	3191.	545.	55:06	55:17	74.	2	5.0	AVB
469.7545	54:41	1016119.	252859.	54:32	54:56	39.	2	5.0	ABV
469.7545	54:59	4265.	997.	54:57	55:03	39.	2	5.0	AVB
469.7545	55:11	7162.	872.	55:04	55:19	39.	2	5.0	ABB
471.7514	54:41	1099975.	281306.	54:33	54:56	47.	2	5.0	ABV
471.7514	55:04	7665.	855.	55:00	55:19	47.	2	5.0	AVB
441.7207	54:49	1441647.	363906.	54:39	55:04	45.	1	1.0	ABV
443.7177	54:49	1573917.	405840.	54:38	55:02	70.	1	1.0	ABV
441.7207	54:49	1441647.	363906.	54:39	55:04	45.	2	5.0	ABV
441.7207	55:22	2258.	306.	55:18	55:28	45.	2	5.0	AVB
443.7177	54:49	1573917.	405840.	54:38	55:02	70.	2	5.0	ABV
443.7177	55:06	8635.	1413.	55:02	55:11	70.	2	5.0	AVV
443.7177	55:14	4293.	976.	55:11	55:17	70.	2	5.0	AVV
443.7177	55:21	2677.	430.	55:17	55:24	70.	2	5.0	AVV
453.7603	54:49	1363031.	351035.	54:38	55:04	37.	2	5.0	ABV
453.7603	55:07	4280.	1028.	55:04	55:12	37.	2	5.0	AVB
453.7603	55:15	2284.	703.	55:12	55:18	37.	2	5.0	ABV
453.7603	55:26	1570.	510.	55:21	55:27	37.	2	5.0	ABB
455.7573	54:49	1468039.	370174.	54:39	55:04	58.	2	5.0	ABV
455.7573	55:16	4993.	831.	55:09	55:18	58.	2	5.0	AVV
455.7573	55:19	1386.	590.	55:18	55:22	58.	2	5.0	AVB
455.7573	55:25	1910.	1033.	55:22	55:28	58.	2	5.0	ABB

MATRIX/MATRIX SPIKE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	H6G290408	**Work Order # ...:**	M811X1AD-MS	**Matrix .....:**	SOLID
OS Lot-Sample# :	H6G290408 - 010		M811X1AE-MSD		
Prep Date .....:	08/04/16	**Analysis Date ..:**	08/18/16		
Prep Batch # ...:	6217014				
Dilution Factor :	1				
Analyst ID.....:	Kenneya L. Reynolds	**Instrument ID..:**	D11A	**Method.....:**	SW846 8290A
Initial Wgt/Vol:	10.1 g				

PARAMETER	SAMPLE AMOUNT	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
2,3,7,8-TCDD	0.15	24.3	25.0	pg/g	102	(79 - 129)		
	0.15	24.3	24.9	pg/g	102	(79 - 129)	0.54	(0 - 15)
1,2,3,7,8-PeCDD	0.61	121	123	pg/g	101 B	(79 - 129)		
	0.61	121	124	pg/g	102 B	(79 - 129)	0.58	(0 - 15)
1,2,3,4,7,8-HxCDD	0.54	121	114	pg/g	93	(73 - 123)		
	0.54	121	114	pg/g	93	(73 - 123)	0.080	(0 - 15)
1,2,3,6,7,8-HxCDD	1.4	121	112	pg/g	91	(73 - 127)		
	1.4	121	111	pg/g	90	(73 - 127)	0.51	(0 - 15)
1,2,3,7,8,9-HxCDD	1.6	121	118	pg/g	96	(65 - 141)		
	1.6	121	121	pg/g	99	(65 - 141)	3.1	(0 - 15)
1,2,3,4,6,7,8-HpCDD	22	121	122	pg/g	82	(54 - 138)		
	22	121	146	pg/g	102 p	(54 - 138)	18	(0 - 15)
OCDD	250	243	445	pg/g	81 B	(31 - 154)		
	250	243	789	pg/g	222 a p B	(31 - 154)	56	(0 - 15)
2,3,7,8-TCDF	0.86	24.3	24.6	pg/g	98 X	(75 - 125)		
	0.86	24.3	23.3	pg/g	92 X	(75 - 125)	5.5	(0 - 15)
1,2,3,7,8-PeCDF	0.27	121	111	pg/g	91	(74 - 124)		
	0.27	121	111	pg/g	91	(74 - 124)	0.41	(0 - 15)
2,3,4,7,8-PeCDF	0.46	121	119	pg/g	97	(75 - 125)		
	0.46	121	121	pg/g	99	(75 - 125)	1.6	(0 - 15)
1,2,3,4,7,8-HxCDF	0.88	121	110	pg/g	90 B	(75 - 125)		
	0.88	121	113	pg/g	92 B	(75 - 125)	2.4	(0 - 15)
1,2,3,6,7,8-HxCDF	0.42	121	111	pg/g	91	(73 - 131)		
	0.42	121	110	pg/g	91	(73 - 131)	0.43	(0 - 15)
2,3,4,6,7,8-HxCDF	0.26	121	111	pg/g	91	(76 - 129)		
	0.26	121	111	pg/g	91	(76 - 129)	0.060	(0 - 15)
1,2,3,7,8,9-HxCDF	ND	121	105	pg/g	87 B	(77 - 127)		
	ND	121	110	pg/g	91 B	(77 - 127)	4.7	(0 - 15)
1,2,3,4,6,7,8-HpCDF	4.1	121	115	pg/g	91 B	(72 - 134)		
	4.1	121	120	pg/g	95 B	(72 - 134)	4.3	(0 - 15)
1,2,3,4,7,8,9-HpCDF	0.48	121	109	pg/g	89 B	(73 - 124)		
	0.48	121	115	pg/g	94 B	(73 - 124)	5.4	(0 - 15)
OCDF	8.3	243	211	pg/g	83 B	(45 - 135)		
	8.3	243	223	pg/g	88 B	(45 - 135)	5.7	(0 - 15)

MATRIX/MATRIX SPIKE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...:	H6G290408	**Work Order # ...:**	M811X1AD-MS	**Matrix .....:**	SOLID
OS Lot-Sample# :	H6G290408 - 010		M811X1AE-MSD		
Prep Date .....:	08/04/16	**Analysis Date ..:**	08/18/16		
Prep Batch # ...:	6217014				
Dilution Factor :	1				
Analyst ID.....:	Kenneya L. Reynolds	**Instrument ID..:**	D11A	**Method.....:**	SW846 8290A
Initial Wgt/Vol:	10.1 g				

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	62	(40 - 135)
	66	(40 - 135)
13C-1,2,3,7,8-PeCDD	77	(40 - 135)
	85	(40 - 135)
13C-1,2,3,4,7,8-HxCDD	67	(40 - 135)
	68	(40 - 135)
13C-1,2,3,6,7,8-HxCDD	67	(40 - 135)
	67	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDD	75	(40 - 135)
	78	(40 - 135)
13C-OCDD	65	(40 - 135)
	70	(40 - 135)
13C-2,3,7,8-TCDF	63	(40 - 135)
	65	(40 - 135)
13C-1,2,3,7,8-PeCDF	73	(40 - 135)
	80	(40 - 135)
13C-2,3,4,7,8-PeCDF	78	(40 - 135)
	93	(40 - 135)
13C-1,2,3,4,7,8-HxCDF	59	(40 - 135)
	57	(40 - 135)
13C-1,2,3,6,7,8-HxCDF	56	(40 - 135)
	54	(40 - 135)
13C-2,3,4,6,7,8-HxCDF	63	(40 - 135)
	61	(40 - 135)
13C-1,2,3,7,8,9-HxCDF	61	(40 - 135)
	61	(40 - 135)
13C-1,2,3,4,6,7,8-HpCDF	54	(40 - 135)
	54	(40 - 135)
13C-1,2,3,4,7,8,9-HpCDF	59	(40 - 135)
	59	(40 - 135)
13C-OCDF	53	(40 - 135)
	56	(40 - 135)

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AD	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xs.d	Prep Date	08/04/16	SDG No	
Analysis ID	180616	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	09:12	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:57	659501	63779	1.144	200.0	205.701100	102.85	20.570110		0.0880
Total TCDD				1.144		205.701100		20.570110		0.0880
2,3,7,8-TCDF	30:48	1000811	104301	1.066	200.0	202.135931	101.07	20.213593	X	0.0681
Total TCDF		58432	7398	1.066		213.937566		21.393757	Q	0.0681
1,2,3,7,8-PeCDD	41:27	2745568	649507	1.060	1000	1014.89749	101.49	101.489749	B	0.0461
Total PeCDD		27643	5994	1.060		1025.11571		102.511571	QB	0.0461
1,2,3,7,8-PeCDF	39:47	4402043	942841	1.179	1000	916.967619	91.70	91.696762		0.0482
2,3,4,7,8-PeCDF	40:57	4723163	1094970	1.115	1000	977.127308	97.71	97.712731		0.0444
Total PeCDF		212393	37675	1.147		1938.14639		193.814639		0.0461
1,2,3,4,7,8-HxCDD	45:40	2689393	666951	1.131	1000	937.507226	93.75	93.750723		0.0800
1,2,3,6,7,8-HxCDD	45:48	2579167	640061	1.116	1000	921.005687	92.10	92.100569		0.0820
1,2,3,7,8,9-HxCDD	46:12	2945627	705848	1.205	1000	968.866184	96.89	96.886618		0.0755
Total HxCDD				1.151		2827.37910		282.737910		0.0791
1,2,3,4,7,8-HxCDF	44:36	3739495	991476	1.350	1000	904.558862	90.46	90.455886	B	0.0485
1,2,3,6,7,8-HxCDF	44:44	3918859	1013399	1.242	1000	912.810997	91.28	91.281100		0.0483
2,3,4,6,7,8-HxCDF	45:29	3941564	983620	1.241	1000	913.945783	91.39	91.394578		0.0498
1,2,3,7,8,9-HxCDF	46:29	3275516	749904	1.262	1000	865.760651	86.58	86.576065	B	0.0601
Total HxCDF		57708	12863	1.274		3611.02475		361.102475	QB	0.0512
1,2,3,4,6,7,8-HpCDD	50:43	2505050	531120	1.114	1000	1006.82103	100.68	100.682103		0.0561
Total HpCDD		382335	75048	1.114		1160.48779		116.048779		0.0561
1,2,3,4,6,7,8-HpCDF	49:00	3080955	638257	1.461	1000	945.392836	94.54	94.539284	B	0.0653
1,2,3,4,7,8,9-HpCDF	51:20	2402912	533956	1.370	1000	893.698963	89.37	89.369896	B	0.0730
Total HpCDF		224414	41024	1.416		1914.70975		191.470975	QB	0.0690
OCDD	54:43	6997365	1808156	1.203	2000	3665.95895	183.30	366.595895	B	0.0690
OCDF	54:51	4032576	1049845	1.134	2000	1734.17184	86.71	173.417184	B	0.0473
13C-2,3,7,8-TCDD	32:55	2803709	273306	1.093	1000	623.273905	62.33	62.327391		0.141
13C-2,3,7,8-TCDF	30:45	4646429	502971	1.794	1000	628.918443	62.89	62.891844		0.0347
13C-1,2,3,7,8-PeCDD	41:24	2552399	608691	0.800	1000	774.923355	77.49	77.492335		0.0493
13C-1,2,3,7,8-PeCDF	39:46	4071331	862301	1.356	1000	728.995546	72.90	72.899555		0.0736
13C-2,3,4,7,8-PeCDF	40:54	4336861	991203	1.343	1000	784.305473	78.43	78.430547		0.0744
13C-1,2,3,4,7,8-HxCDD	45:39	2536154	624248	0.916	1000	672.755489	67.28	67.275549		0.109
13C-1,2,3,6,7,8-HxCDD	45:47	2509410	617635	0.906	1000	672.695612	67.27	67.269561		0.110
13C-1,2,3,4,7,8-HxCDF	44:35	3061275	816072	1.268	1000	586.358014	58.64	58.635801		0.0453
13C-1,2,3,6,7,8-HxCDF	44:43	3457727	892331	1.506	1000	557.964850	55.80	55.796485		0.0382
13C-2,3,4,6,7,8-HxCDF	45:28	3475526	865348	1.344	1000	628.273896	62.83	62.827390		0.0428
13C-1,2,3,7,8,9-HxCDF	46:28	2997816	705921	1.202	1000	605.875887	60.59	60.587589		0.0478
13C-1,2,3,4,6,7,8-HpCDD	50:42	2234024	472284	0.728	1000	745.116792	74.51	74.511679		0.0181
13C-1,2,3,4,6,7,8-HpCDF	48:59	2230582	463564	1.008	1000	537.580828	53.76	53.758083		0.0244
13C-1,2,3,4,7,8,9-HpCDF	51:19	1962078	442054	0.811	1000	587.936507	58.79	58.793651		0.0303
13C-OCDD	54:42	3173321	855549	0.597	2000	1290.55561	64.53	129.055561		0.0466
13C-1,2,3,4-TCDD	32:21	8234916	811157	1.000	2000	2000.00000	100.00	200.000000		0.154
13C-1,2,3,7,8,9-HxCDD	46:11	8232321	1974081	1.000	2000	2000.00000	100.00	200.000000		0.100
13C-OCDF	54:50	4099918	1109911	0.946	2000	1052.92312	52.65	105.292312		0.0198

KLR 8/24/16

VM 8-24-16

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AD	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xs.	Prep Date	08/04/16	SDG No	
Analysis ID	180616	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 09:12	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	190	175	76	70	1.09 *	/	
	Unidentified	29:39	00:00	0	10875	14611	1550	1567	0.74	ABB/ABB	
	Unidentified	30:14	00:00	0	4447	10289	792	1006	0.43 *	ABV/AVB	RT
	2,3,7,8-TCDF	30:48	30:48	0	437365	563446	46156	58145	0.78	ABV/AVV	
	Unidentified	32:08	00:00	0	12532	5678	1203	1280	2.21 *	ABB/ABV	RT
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	95	158	38	63	0.60 *	/	
	Unidentified	29:32	00:00	0	3347	6674	841	682	0.50 *	ABV/ABB	R
	13C-2,3,7,8-TCDF	30:45	30:45	0	2067744	2578685	223621	279350	0.80	ABV/ABV	
	Unidentified	31:09	00:00	0	4066	8319	635	1212	0.49 *	ABV/ABV	RT
	Unidentified	32:22	00:00	0	2678	1774	877	814	1.51 *	AVB/AVB	R
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	110	165	44	66	0.67	/	
	2,3,7,8-TCDD	32:57	32:56	1	292747	366754	28769	35010	0.80	AVV/AVV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	465	160	186	64	2.91 *	/	
	13C-1,2,3,4-TCDD	32:21	32:21	0	3680423	4554493	364414	446743	0.81	ABV/AVV	
	13C-2,3,7,8-TCDD	32:55	32:53	2	1273349	1530360	128926	144380	0.83	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	285	205	114	82	1.39	/	
	Unidentified	39:19	00:00	0	15439	11702	2798	2024	1.32	ABB/ABB	
	1,2,3,7,8-PeCDF	39:47	39:48	-1	2676082	1725961	574039	368802	1.55	ABV/ABV	
	Unidentified	40:03	00:00	0	24672	17939	4952	3161	1.38	AVV/AVV	
	Unidentified	40:16	00:00	0	42456	27895	7961	4797	1.52	AVV/AVV	
	2,3,4,7,8-PeCDF	40:57	40:58	-1	2875428	1847735	668947	426023	1.56	AVV/ABV	
	Unidentified	41:08	00:00	0	37215	27516	6309	4369	1.35	AVV/AVV	
	Unidentified	41:27	00:00	0	4569	2990	772	532	1.53	AVB/AVB	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	270	135	108	54	2.00 *	/	
	Unidentified	39:18	00:00	0	9499	3778	1959	643	2.51 *	ABB/ABB	R
	13C-1,2,3,7,8-PeCDF	39:46	39:47	-1	2502568	1568763	535665	326636	1.60	ABV/ABV	
	Unidentified	40:02	00:00	0	18551	9781	2809	1698	1.90 *	AVV/AVB	R
	Unidentified	40:14	00:00	0	28586	17381	4713	2923	1.64	AVB/ABV	
	13C-2,3,4,7,8-PeCDF	40:54	40:57	-3	2664564	1672297	603658	387545	1.59	AVV/ABV	M
	Unidentified	41:18	00:00	0	5935	2141	1283	908	2.77 *	AVB/AVB	R
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	163	135	65	54	1.20 *	/	
	Unidentified	40:45	00:00	0	3442	1781	747	402	1.93 *	ABB/ABB	R
	Unidentified	41:02	00:00	0	2305	1490	429	420	1.55	ABB/ABB	
	1,2,3,7,8-PeCDD	41:27	41:28	-1	1707152	1038416	403808	245699	1.64	ABV/ABV	
	Unidentified	41:50	00:00	0	2909	1881	666	569	1.55	AVB/AVV	
	Unidentified	42:04	00:00	0	8268	5567	1729	1032	1.49	ABB/AVB	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AD	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xs.	Prep Date	08/04/16	SDG No	
Analysis ID	180616	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 09:12	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	70	90	28	36	0.78 *	/	
	13C-1,2,3,7,8-PeCDD	41:24	41:27	-3	1600312	952087	378145	230546	1.68	ABV/ABB	
	Unidentified	41:59	00:00	0	3632	1081	664	432	3.36 *	ABV/AVV	R
	Unidentified	42:06	00:00	0	1837	863	646	423	2.13 *	AVV/AVB	R
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	290	245	116	98	1.18	/	
	Unidentified	44:20	00:00	0	12626	11134	3450	3107	1.13	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:36	44:37	-1	2082924	1656571	555533	435943	1.26	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:44	44:45	-1	2185014	1733845	562544	450855	1.26	AVV/AVV	
	Unidentified	45:08	00:00	0	7749	3119	1067	917	2.48 *	AVV/AVV	R
	Unidentified	45:17	00:00	0	5319	5565	1250	1261	0.96 *	AVV/AVV	R
	2,3,4,6,7,8-HxCDF	45:29	45:31	-2	2183143	1758421	548170	435450	1.24	AVV/AVV	
	Unidentified	45:49	00:00	0	6881	5315	936	875	1.29	AVB/AVV	
	1,2,3,7,8,9-HxCDF	46:29	46:30	-1	1830495	1445021	420178	329726	1.27	ABV/ABV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	218	350	87	140	0.62 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:35	44:36	-1	1041547	2019728	282067	534005	0.52	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:43	44:44	-1	1193866	2263861	306702	585629	0.53	AVV/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:28	45:30	-2	1228668	2246858	309577	555771	0.55	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDF	46:28	46:29	-1	1042607	1955209	246392	459529	0.53	ABV/ABV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	163	403	65	161	0.40 *	/	
	1,2,3,4,7,8-HxCDD	45:40	45:41	-1	1471464	1217929	362848	304103	1.21	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:48	45:49	-1	1437886	1141281	360843	279218	1.26	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:12	46:13	-1	1631642	1313985	395403	310445	1.24	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	523	465	209	186	1.12	/	
	13C-1,2,3,4,7,8-HxCDD	45:39	45:40	-1	1418208	1117946	349552	274696	1.27	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:47	45:48	-1	1386543	1122867	341928	275707	1.23	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:11	46:12	-1	4553738	3678583	1087445	886636	1.24	AVV/AVV	
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	240	203	96	81	1.19	/	
	1,2,3,4,6,7,8-HpCDF	49:00	49:00	0	1564214	1516741	322864	315393	1.03	ABV/ABV	
	Unidentified	49:26	00:00	0	12795	12793	1962	1834	1.00	AVV/AVV	
	Unidentified	49:40	00:00	0	96818	88937	18050	17384	1.09	AVV/AVV	
	Unidentified	49:50	00:00	0	7543	5528	990	804	1.36 *	AVV/AVV	R
	1,2,3,4,7,8,9-HpCDF	51:20	51:19	1	1231040	1171872	272964	260992	1.05	AVV/ABV	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	113	130	45	52	0.87 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:59	48:58	1	708986	1521596	151488	312076	0.47	ABV/ABV	
	Unidentified	49:38	00:00	0	2905	9423	544	2228	0.31 *	AVV/AVV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:19	51:18	1	615544	1346534	135737	306317	0.46	AVV/AVV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica
Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AD	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xs.	Prep Date	08/04/16	SDG No	
Analysis ID	180616	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 09:12	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

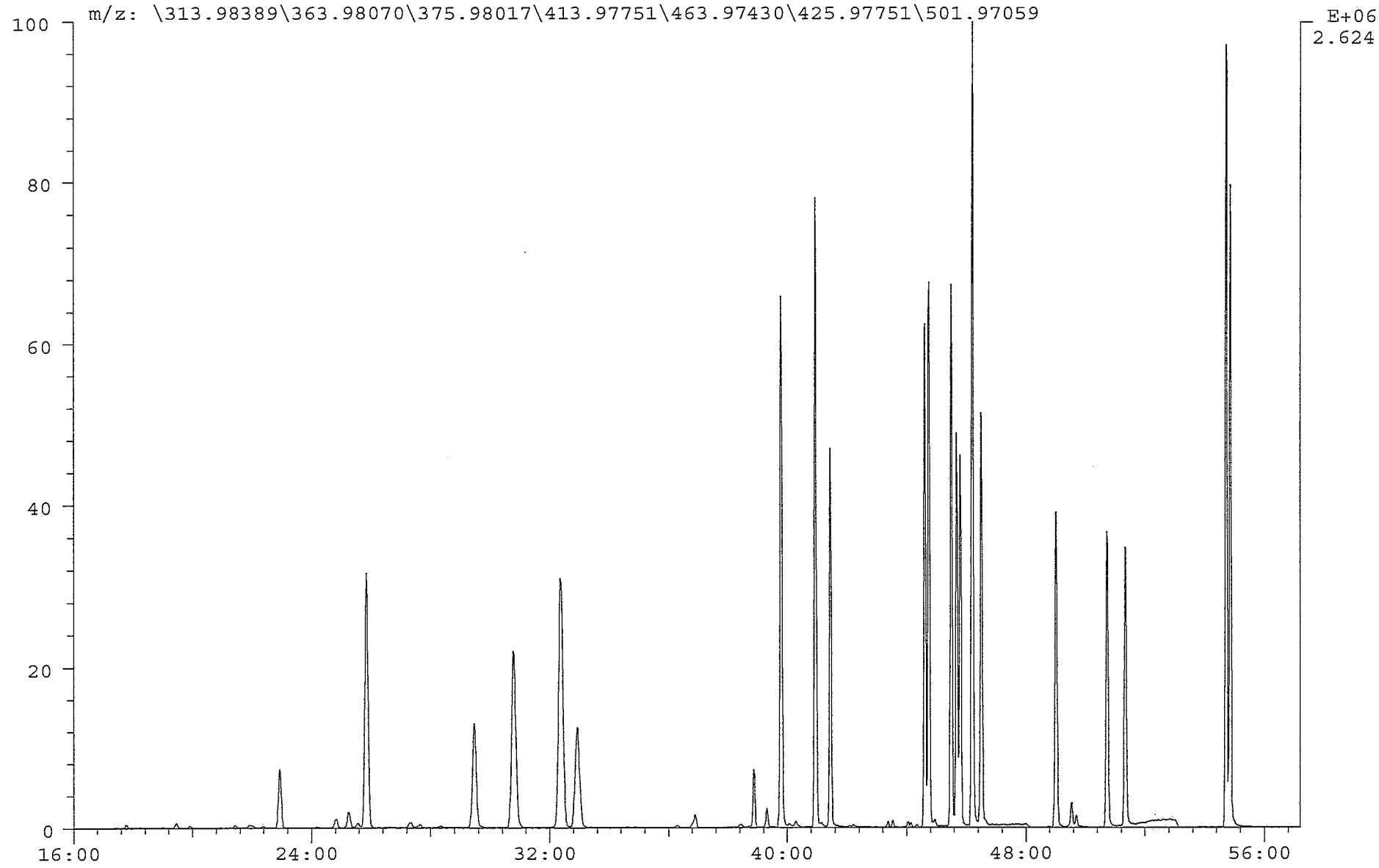
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Unidentified	51:39	00:00	0	1797	12664	646	2059	0.14 *	ABB/AVB	RT
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	140	155	56	62	0.90	/	
	Unidentified	49:31	00:00	0	188462	193873	38030	37018	0.97	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:43	50:41	2	1269813	1235237	269303	261817	1.03	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	83	48	33	19	1.74 *	/	
	Unidentified	49:30	00:00	0	11537	10415	2076	1797	1.11	ABB/ABV	
	13C-1,2,3,4,6,7,8-HpCDD	50:42	50:40	2	1153407	1080617	243191	229093	1.07	ABV/ABV	
	Unidentified	51:03	00:00	0	2651	1839	772	357	1.44 *	AVB/AVB	R
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	115	183	46	73	0.63 *	/	
	OCDF	54:51	54:50	1	1908891	2123685	501523	548322	0.90	ABV/ABV	
	Unidentified	55:14	00:00	0	3588	2264	444	400	1.58 *	AVB/AVB	RT
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	75	110	30	44	0.68 *	/	
	13C-OCDF	54:50	54:50	0	1930826	2169092	521638	588273	0.89	AVV/ABV	
	Unidentified	55:09	00:00	0	2548	4981	816	1218	0.51 *	AVV/AVV	R
	Unidentified	55:14	00:00	0	2920	1994	1064	560	1.46 *	AVB/AVV	R
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	158	198	63	79	0.80	/	
	OCDD	54:43	54:42	1	3304387	3692978	866050	942106	0.89	ABV/ABV	
	Unidentified	55:11	00:00	0	1995	2402	459	527	0.83	AVB/AVB	
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	165	110	66	44	1.50 *	/	
	13C-OCDD	54:42	54:42	0	1505571	1667750	405424	450125	0.90	AVV/ABV	

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  39:44      1620
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   233 > 2629            Masses:  303 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```

Int k 8/18/16
Calc KM 8-24-16
QC/Rev k 8/24/16



```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  32:34      1207
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1121 > 1294           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
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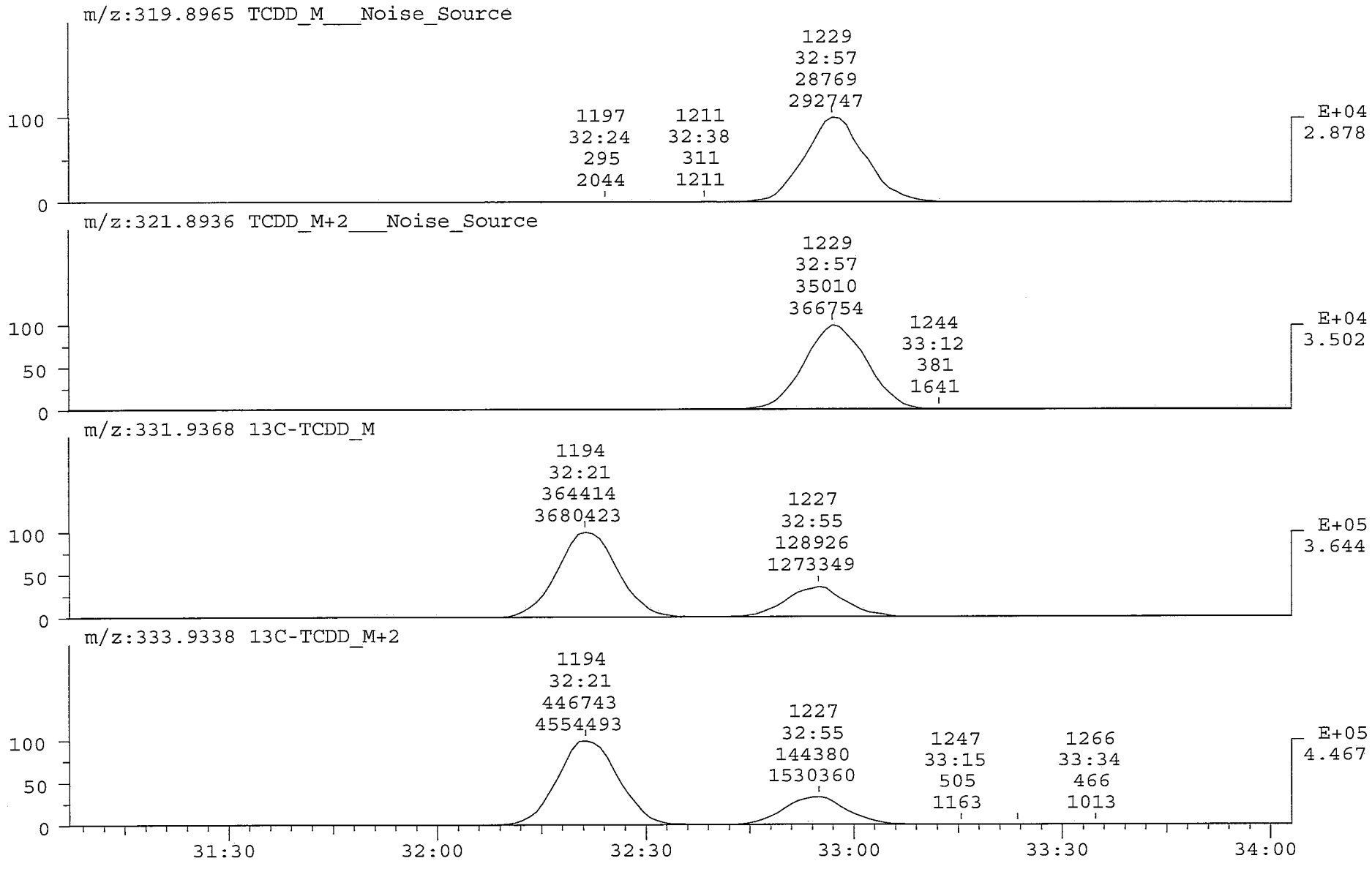
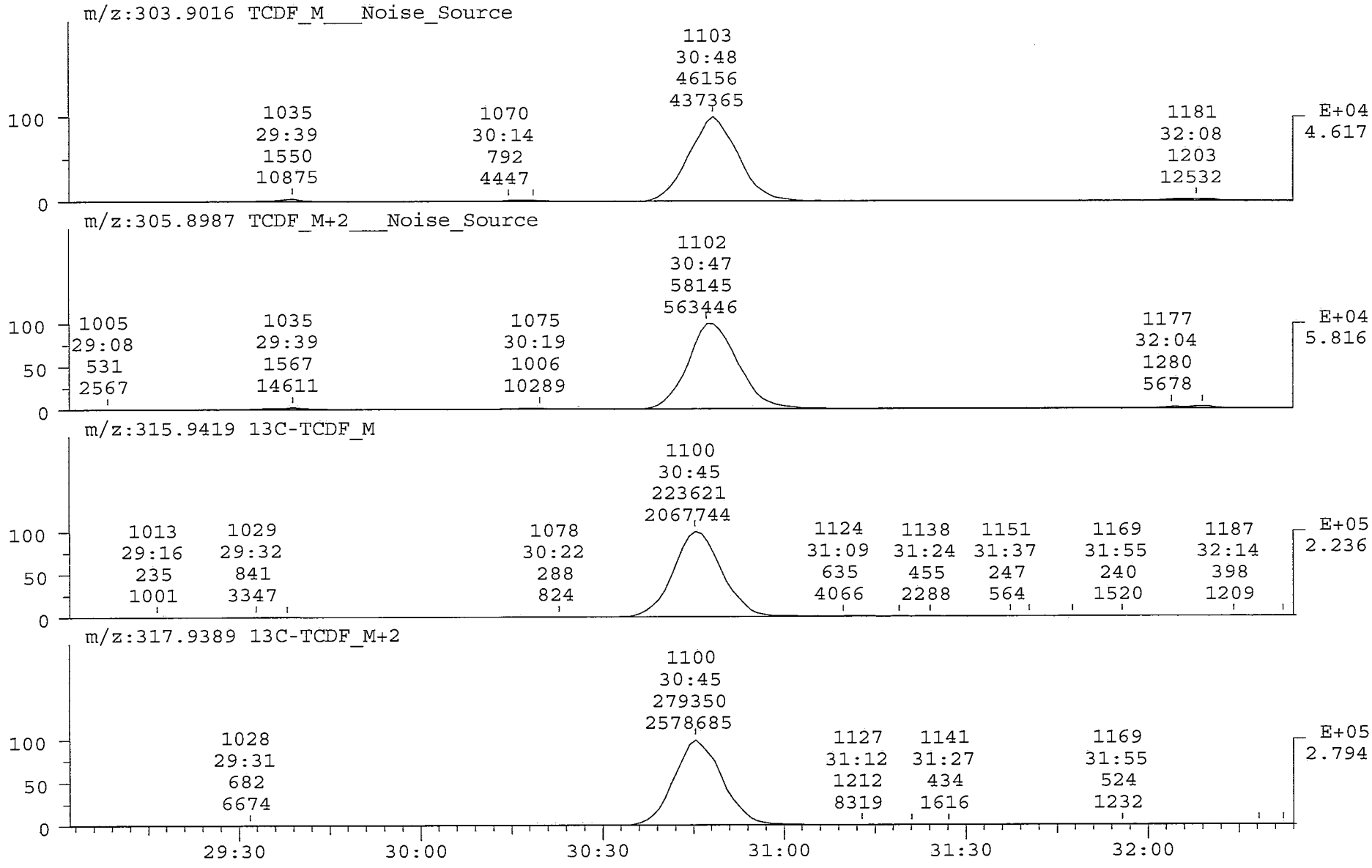
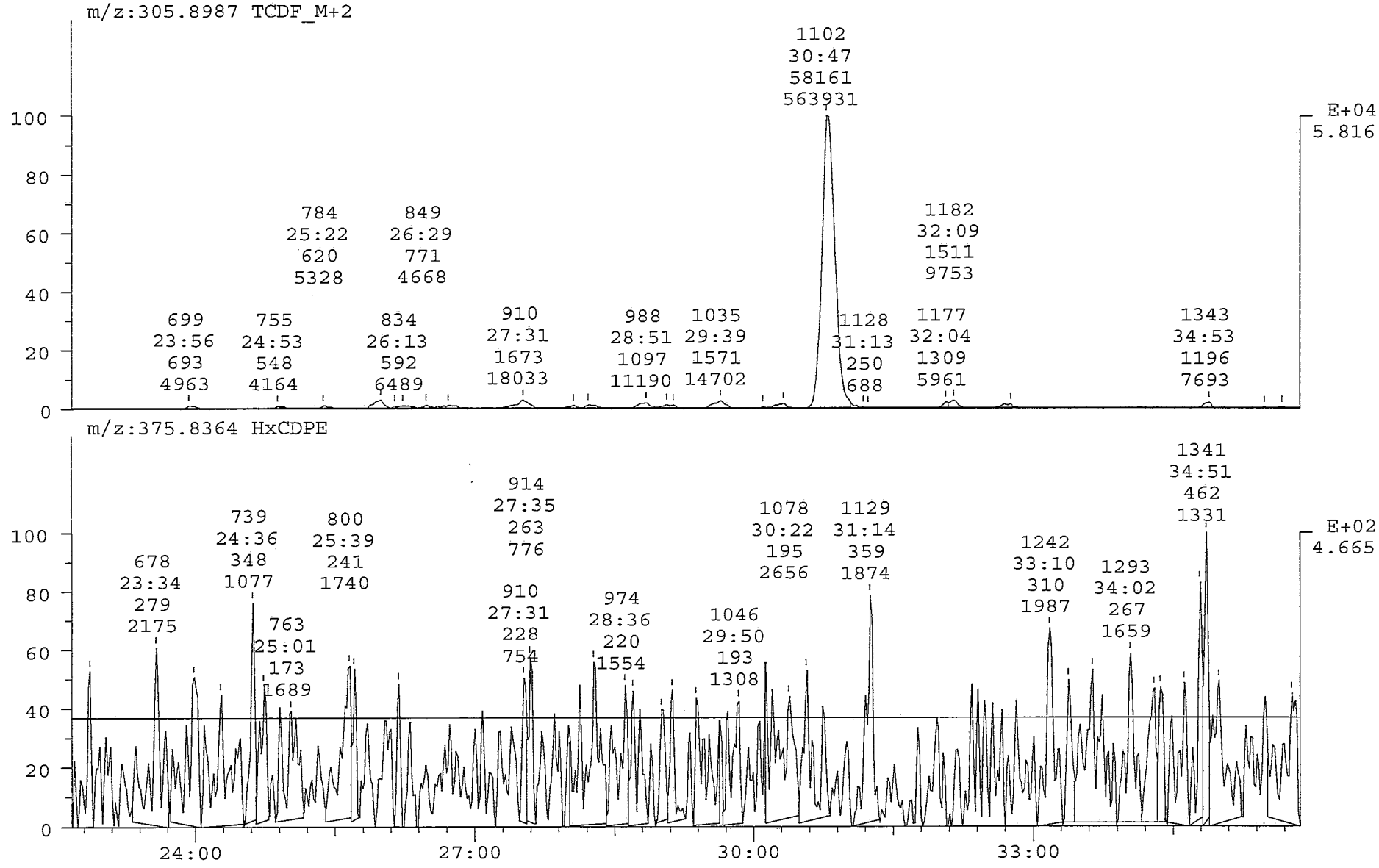


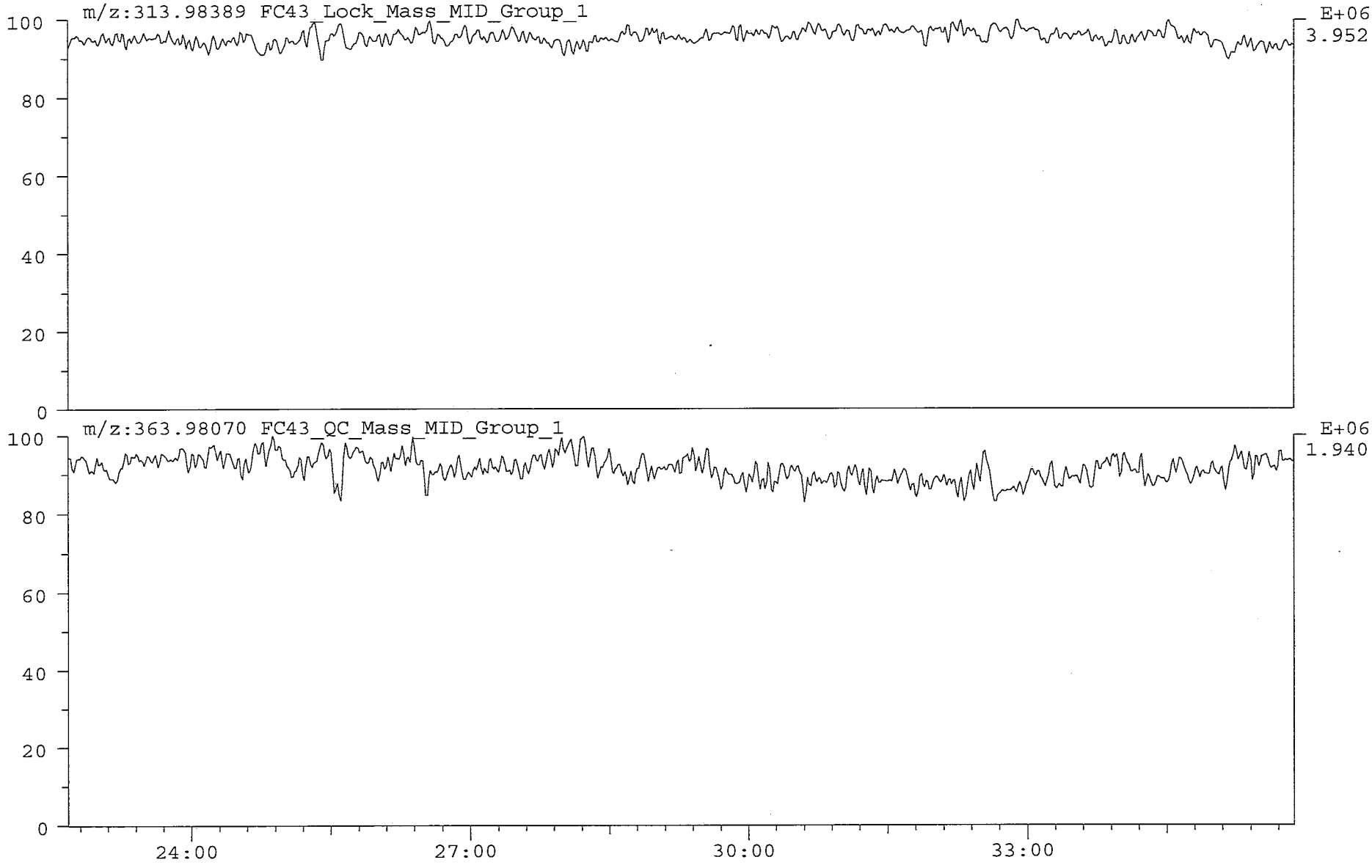
CHRO: d1tm811xs 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 999 > 1197 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



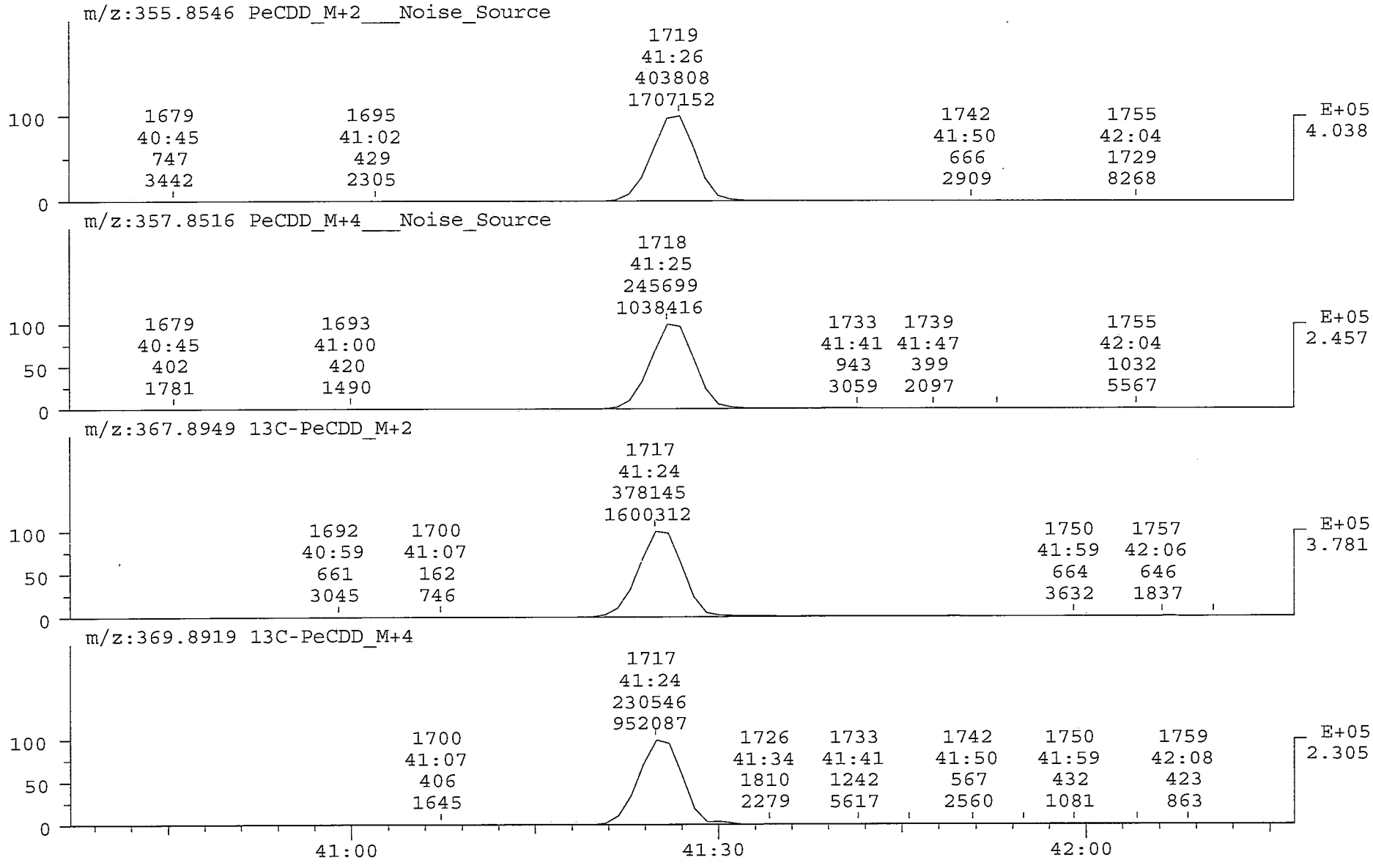
CHRO: d1tm811xs 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 625 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



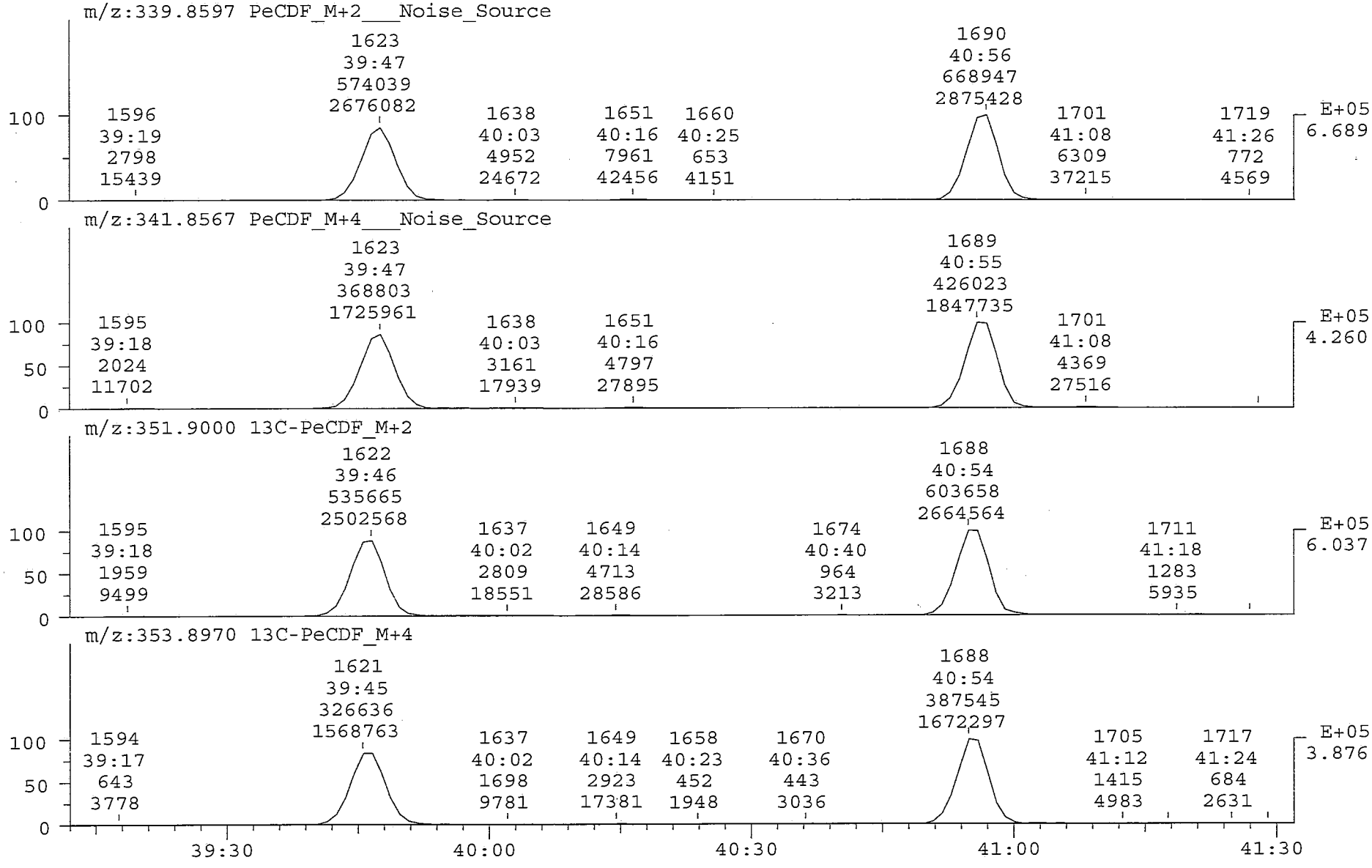
CHRO: d1tm811xs 18-Aug-16 Elapse: 30:40 1095
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 625 > 1400 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



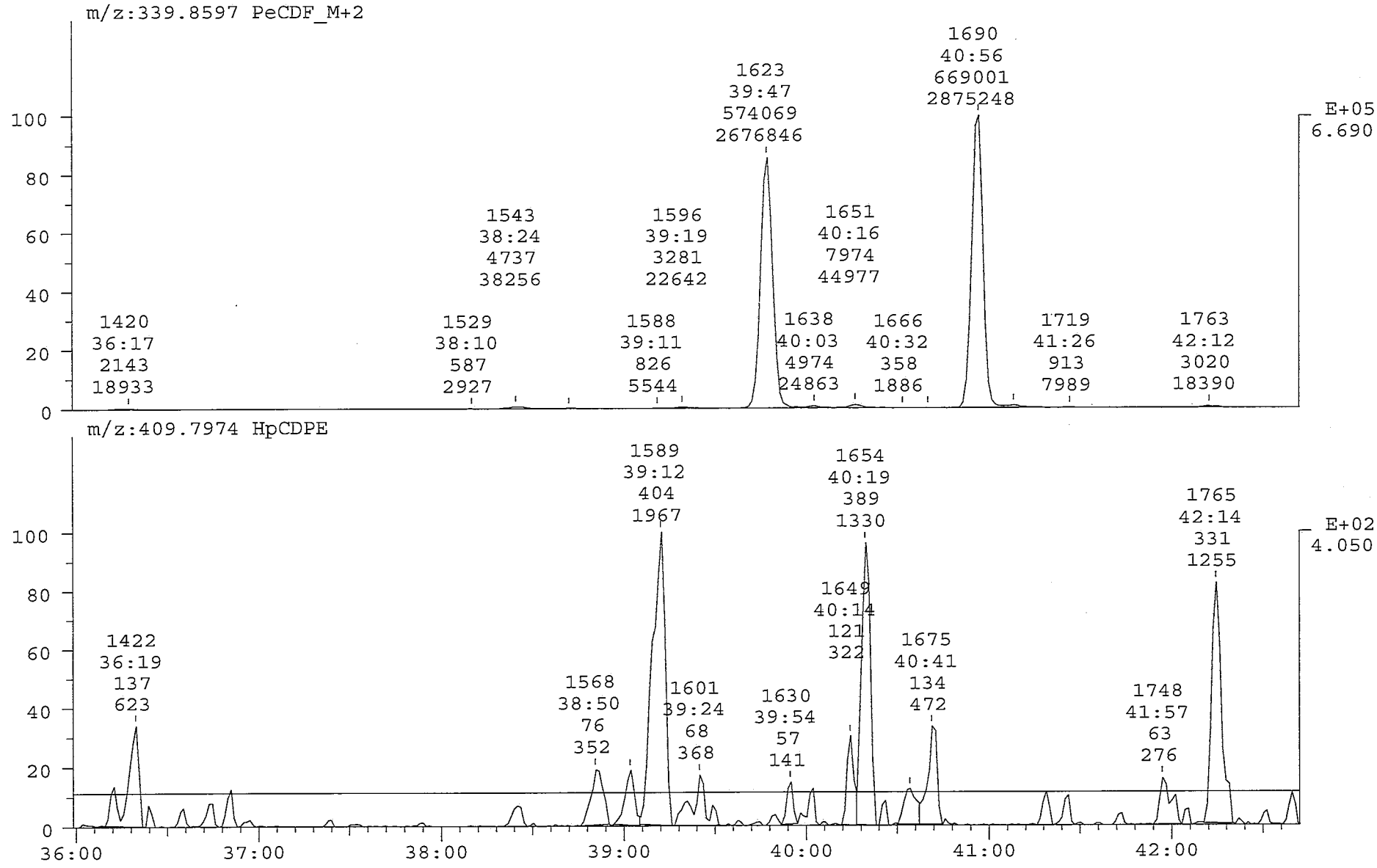
CHRO: d1tm811xs 18-Aug-16 Elapse: 41:23 1716
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1671 > 1767 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



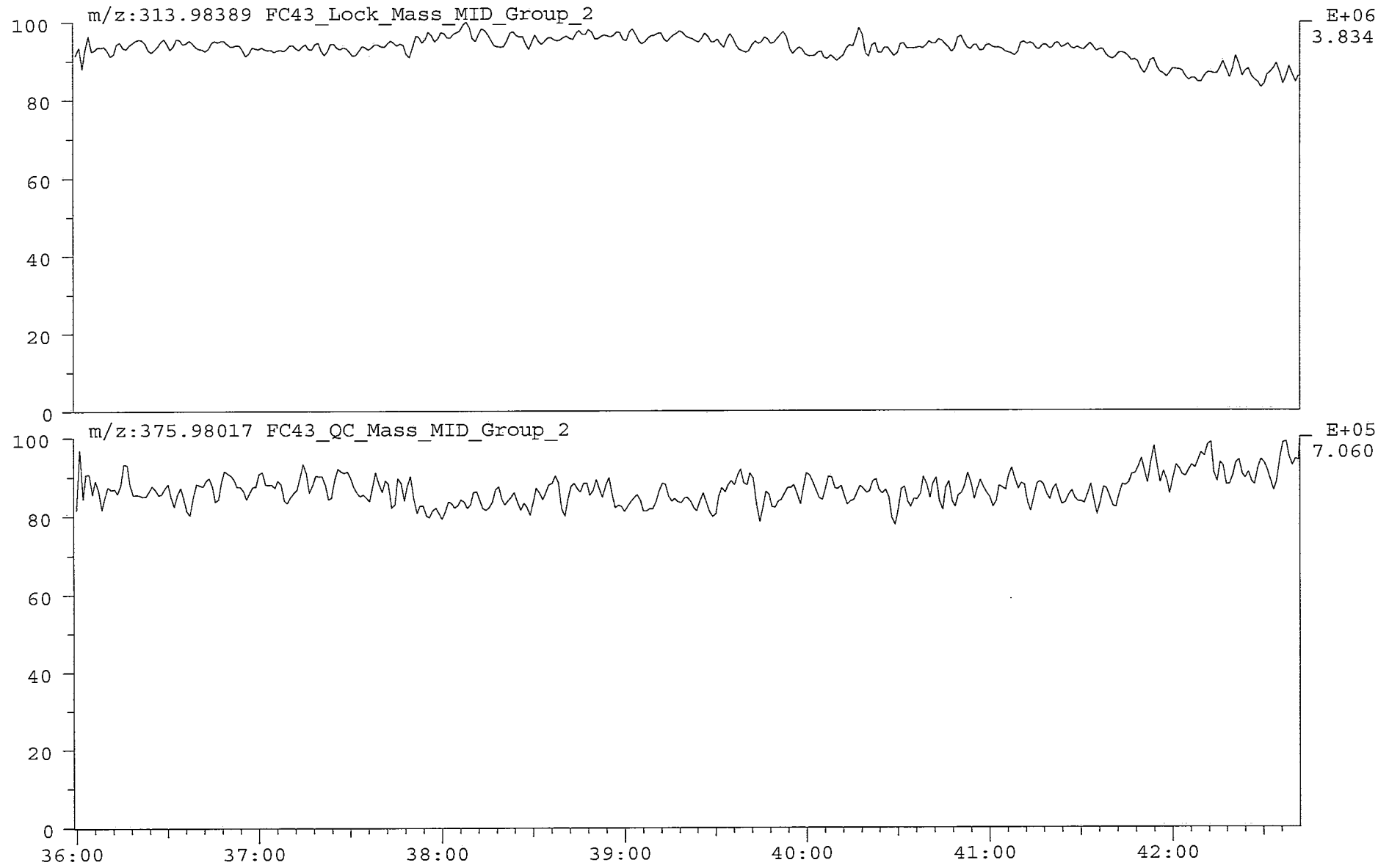
CHRO: d1tm811xs 18-Aug-16 Elapse: 40:21 1656
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1589 > 1724 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



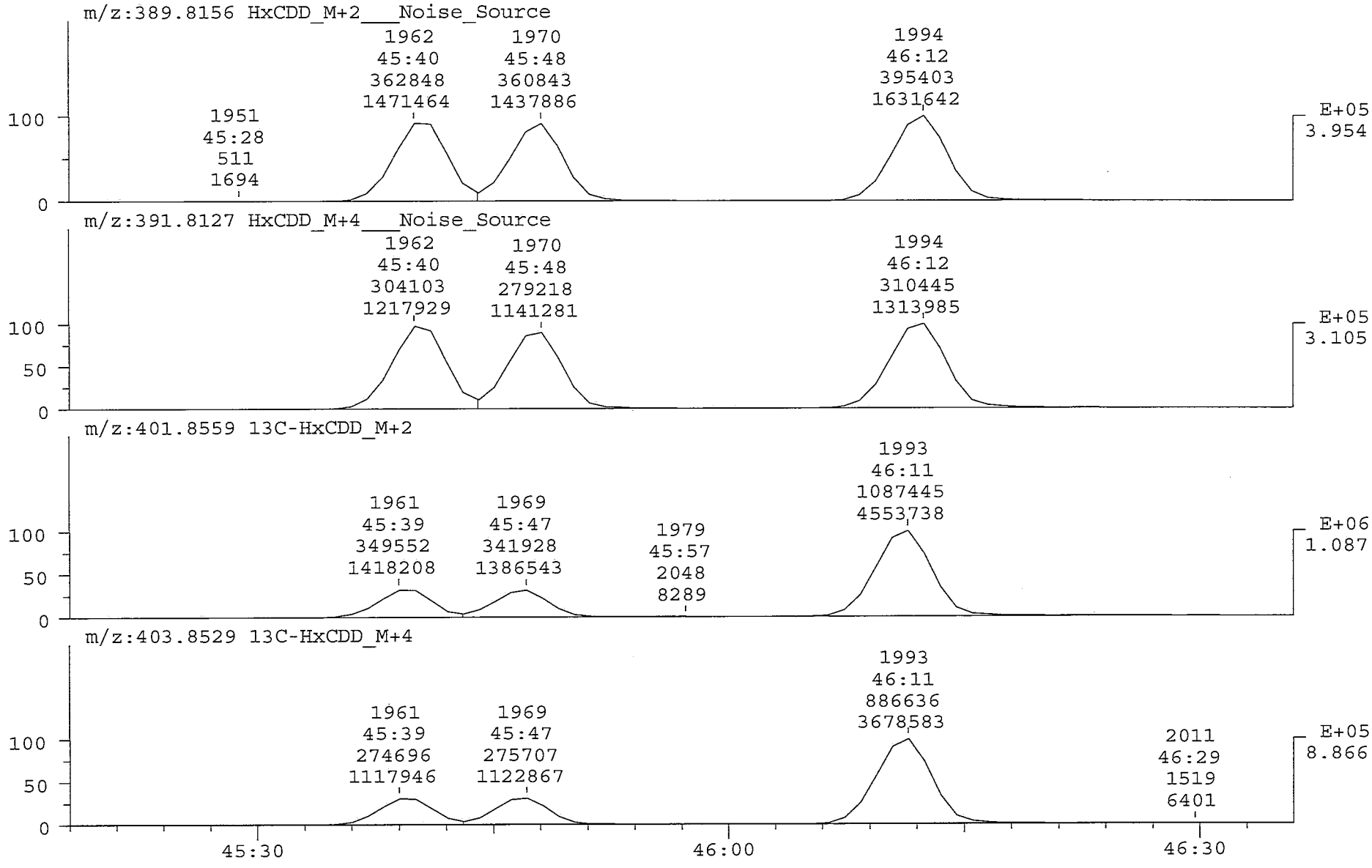
CHRO: d1tm811xs 18-Aug-16 Elapse: 40:21 1656
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1403 > 1792 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



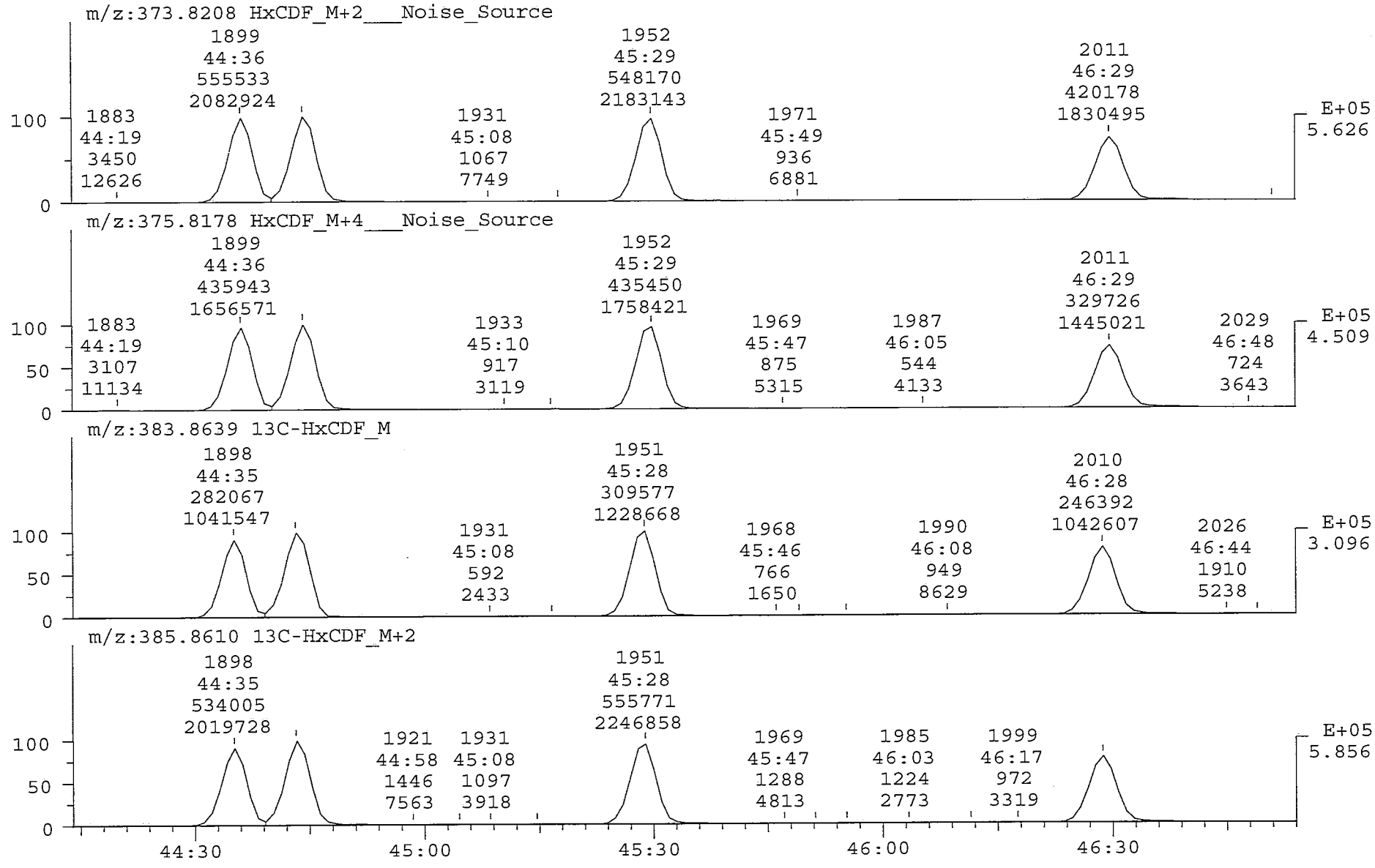
```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  40:21      1656
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1792           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```



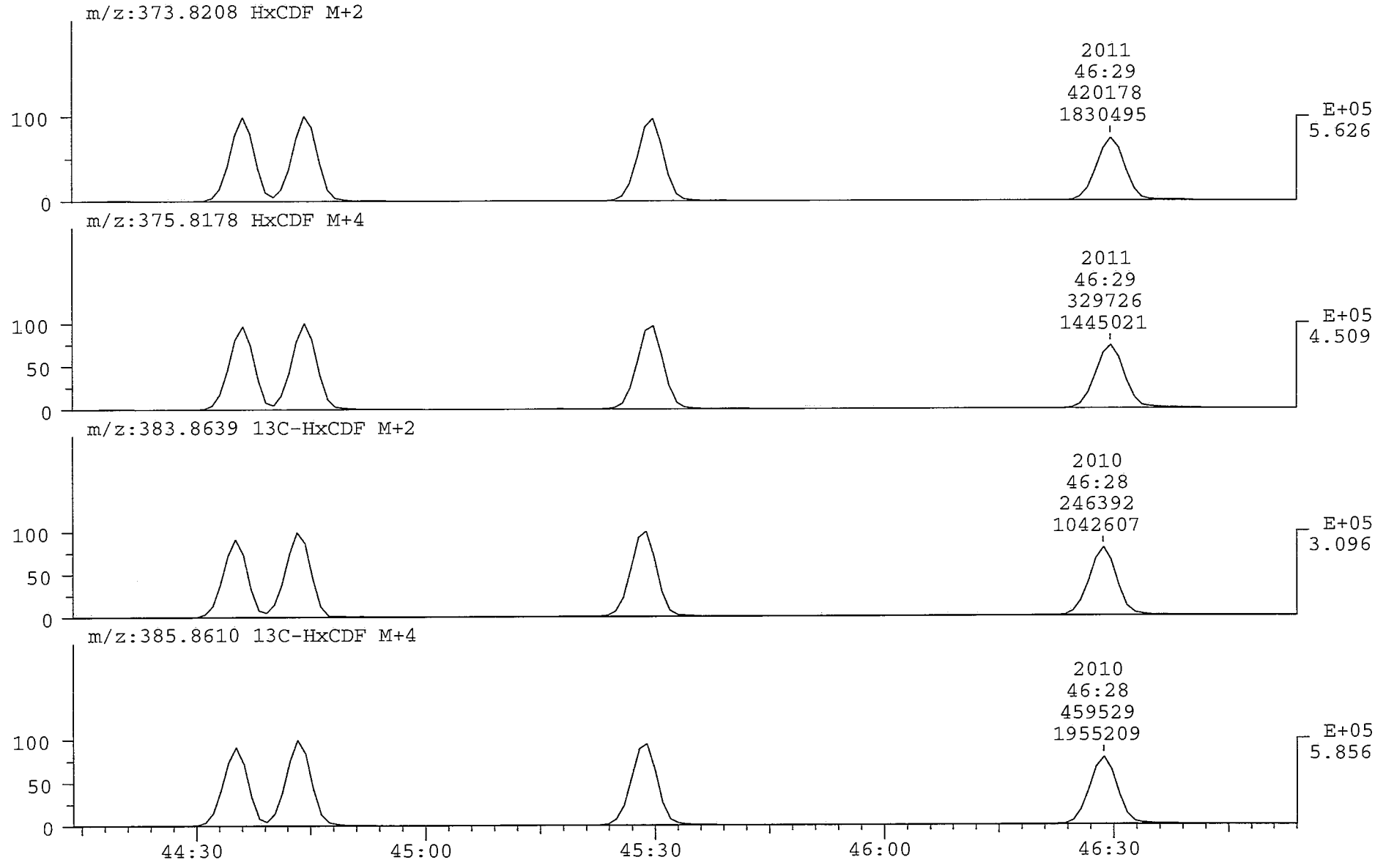
CHRO: d1tm811xs 18-Aug-16 Elapse: 45:57 1979
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



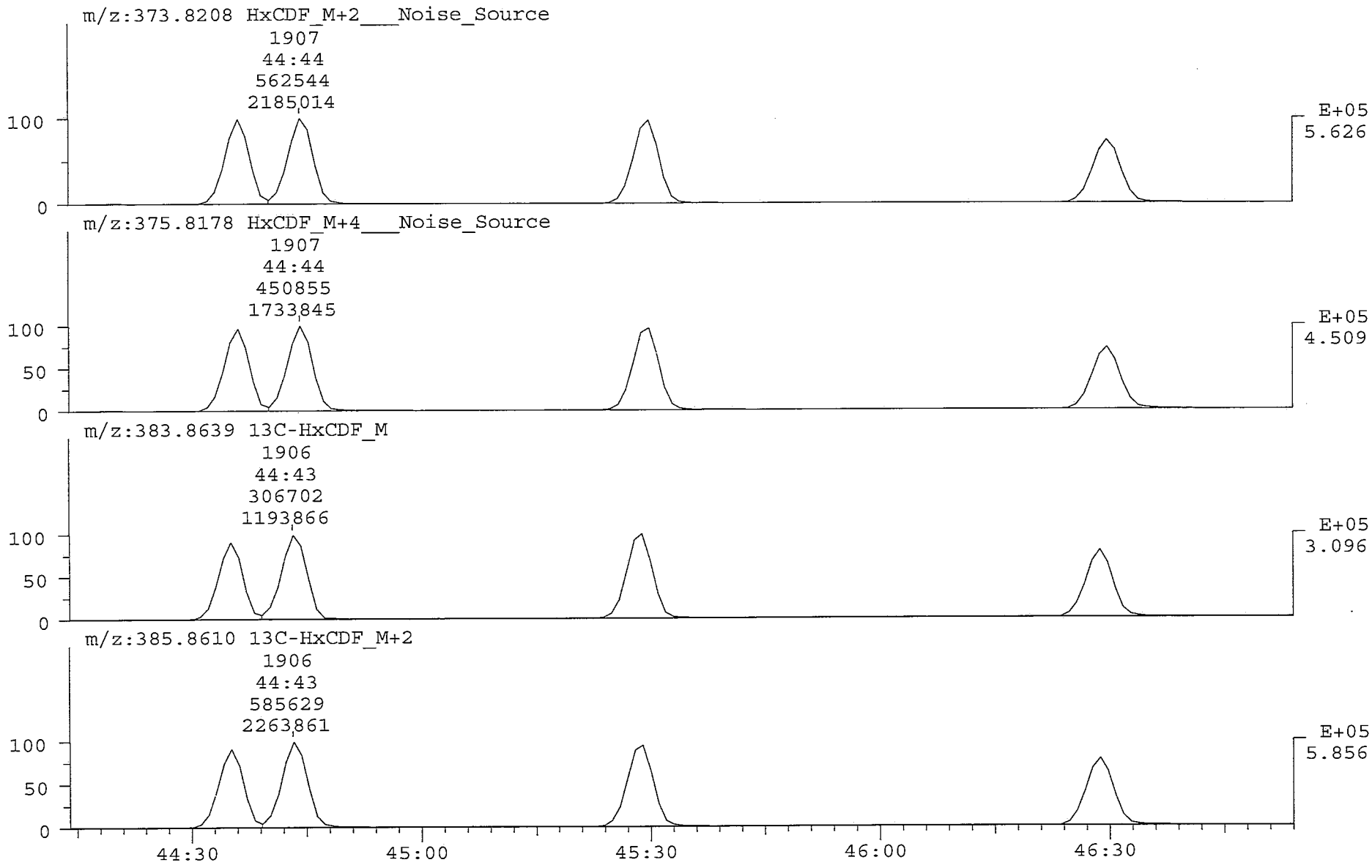
CHRO: d1tm811xs 18-Aug-16 Elapse: 45:34 1956
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1877 > 2035 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



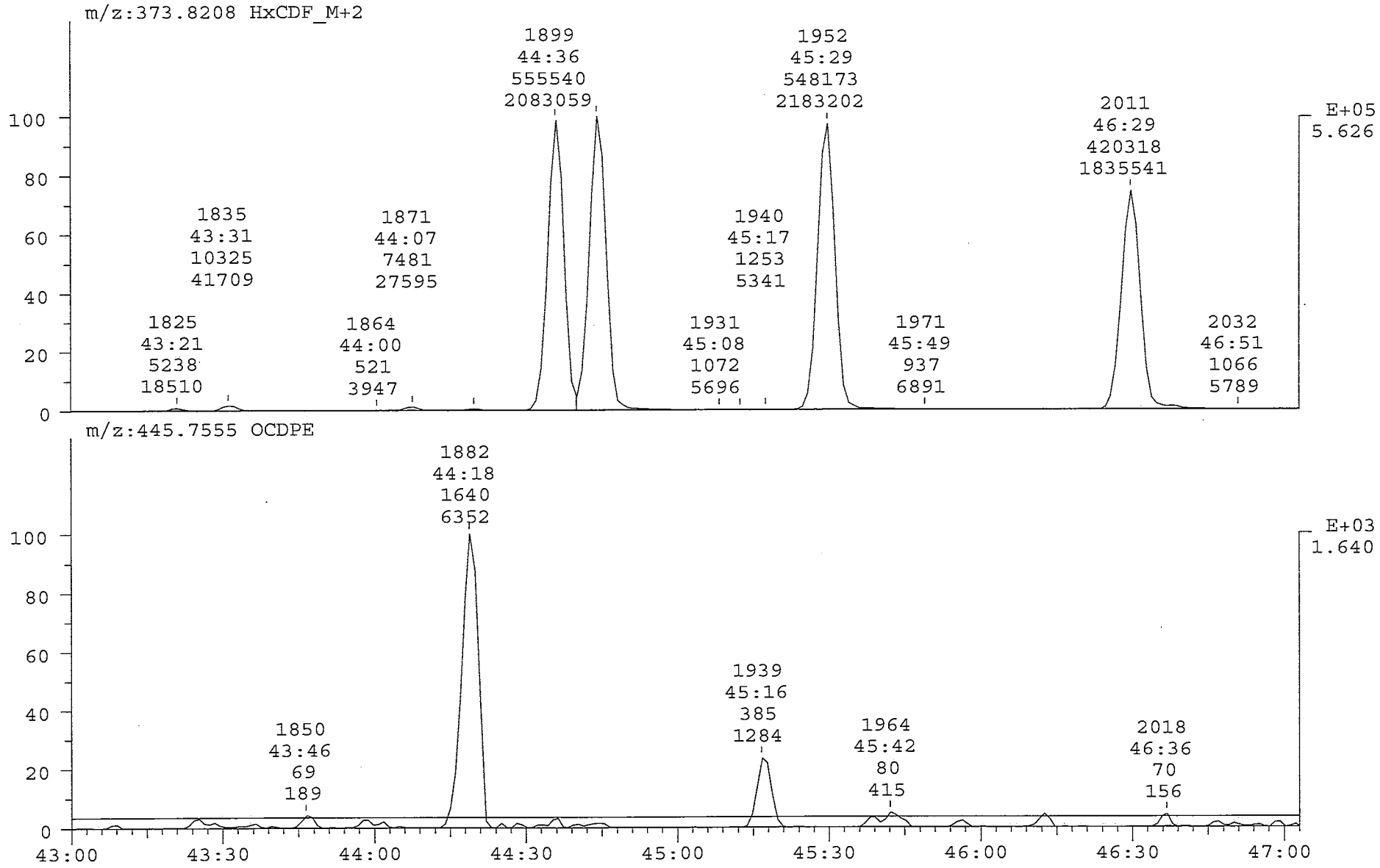
CHRO: d1tm811xs 18-Aug-16 Elapse: 46:29 2011
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2008 > 2014 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



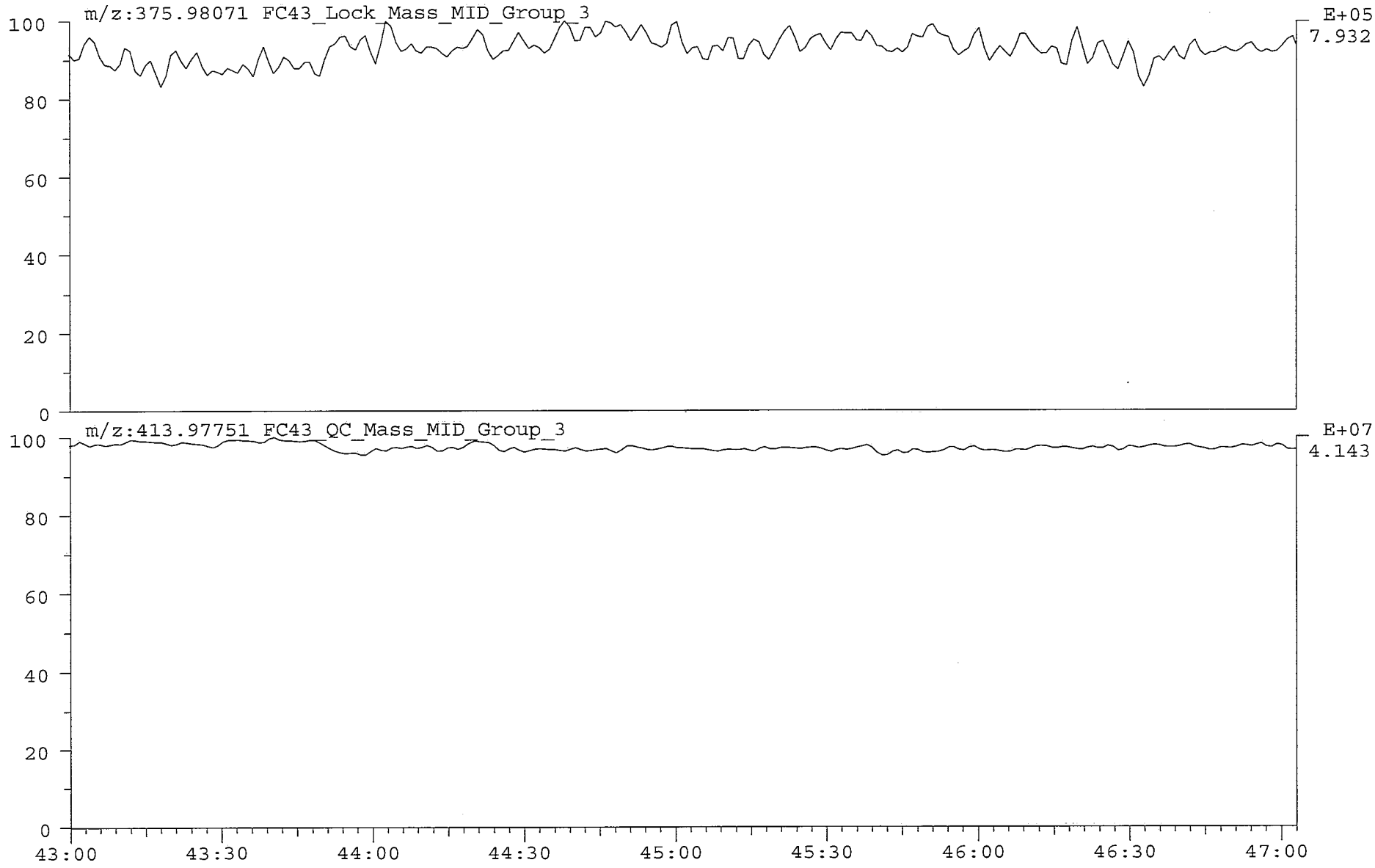
```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  44:42      1905
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1901 > 1909           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



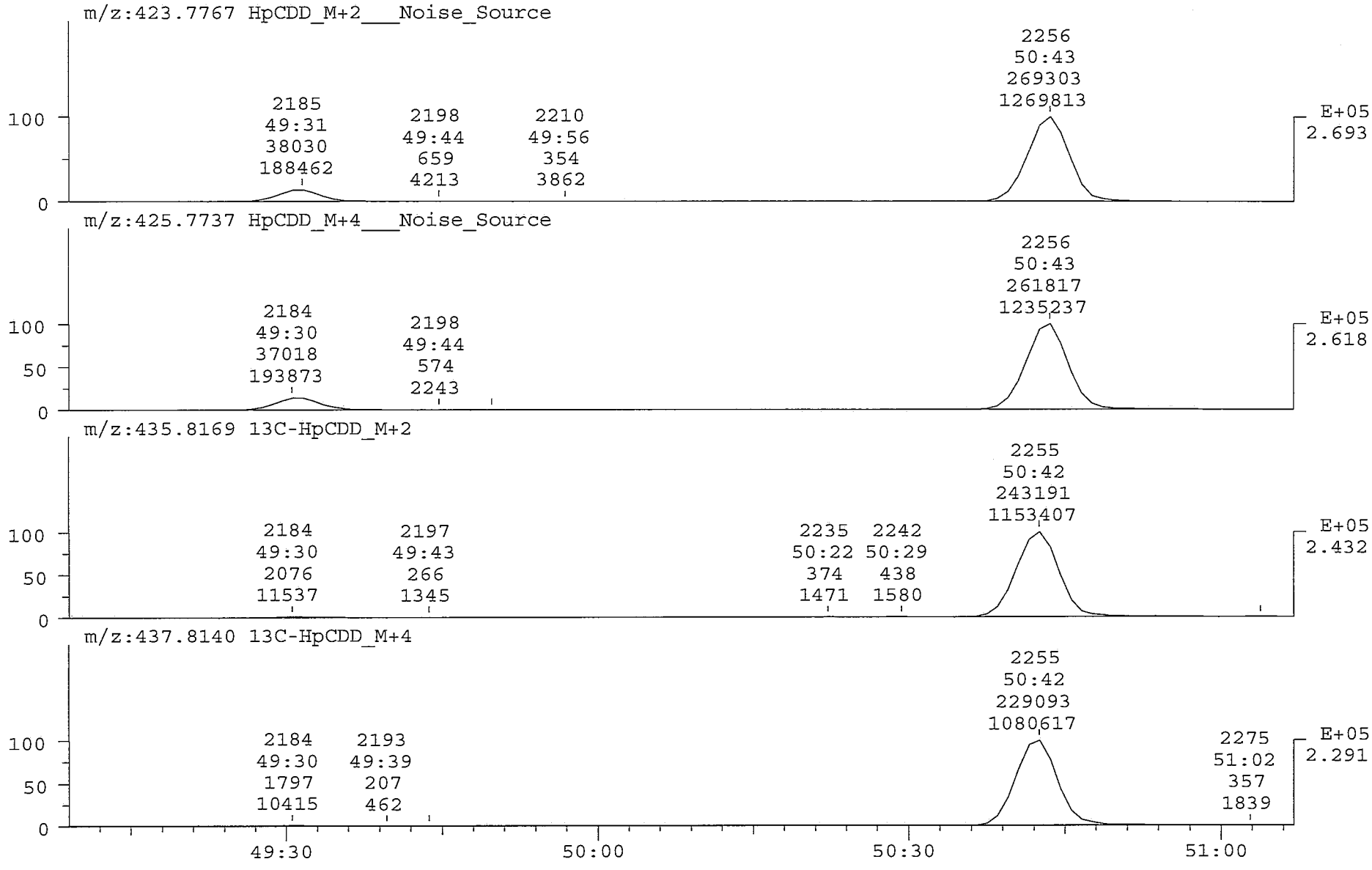
```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  44:42      1905
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1804 > 2044           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



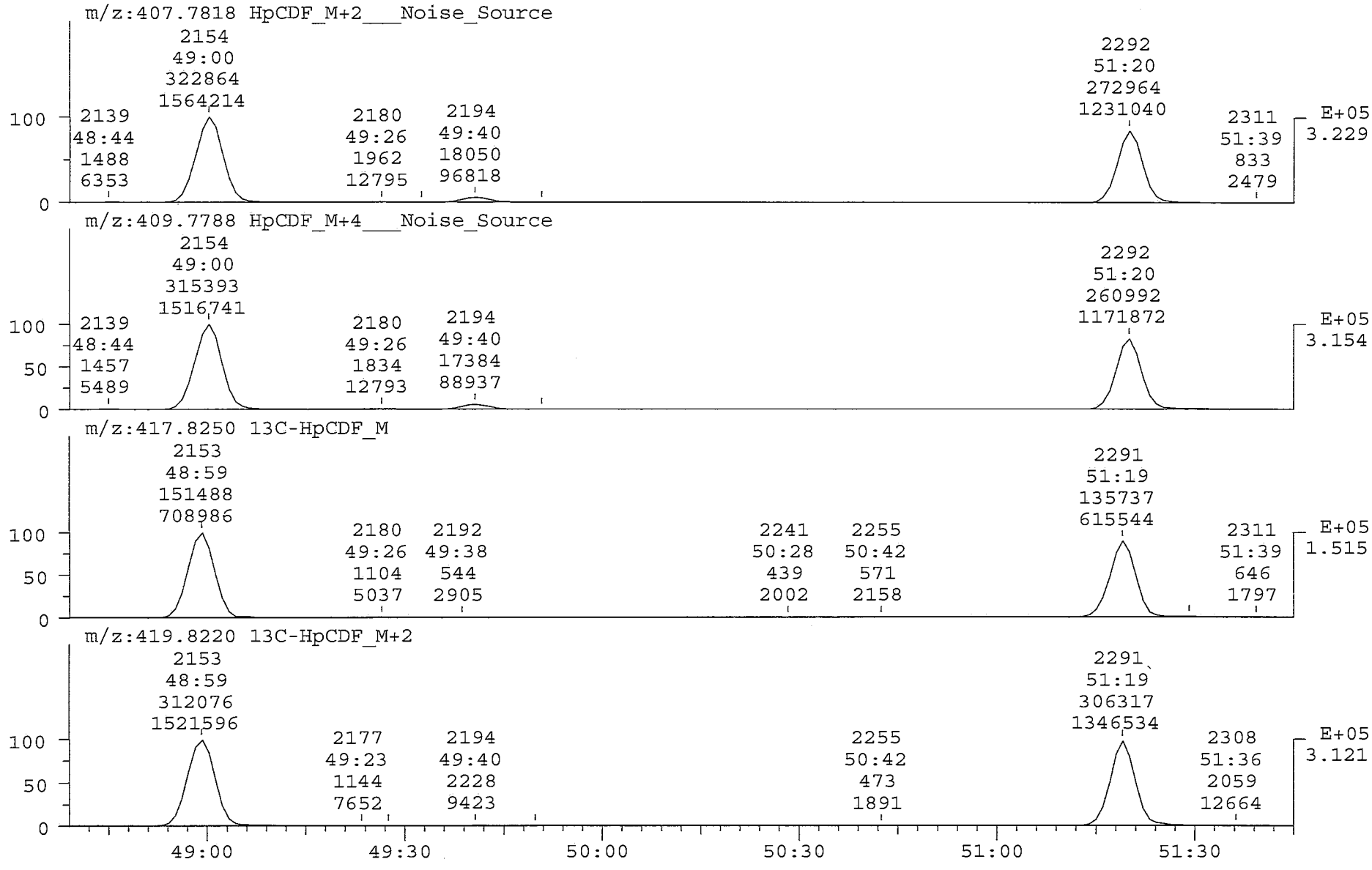
CHRO: d1tm811xs 18-Aug-16 Elapse: 44:42 1905
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1804 > 2044 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



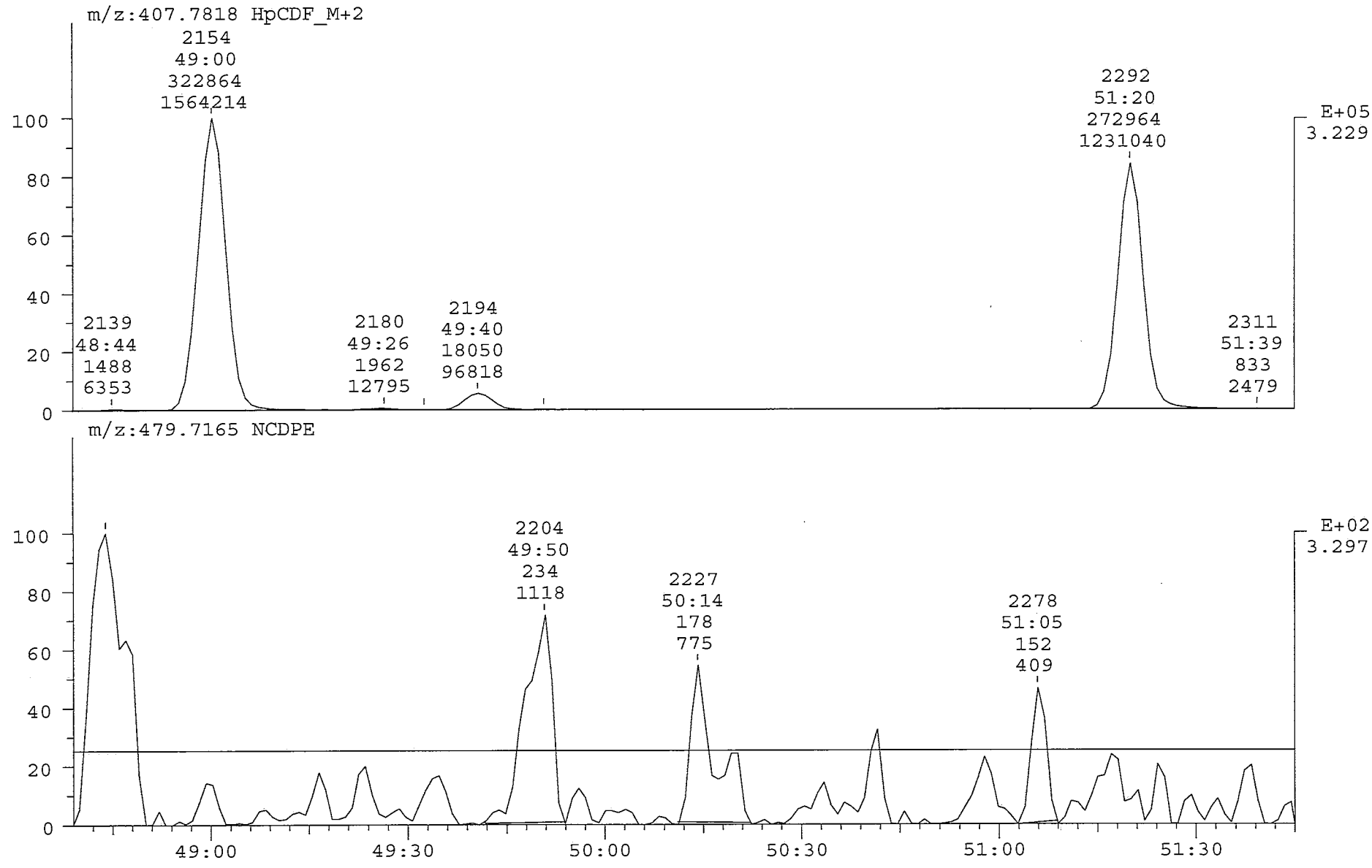
```
CHRO:  dltm811xs                                18-Aug-16  Elapse:  44:42      1905
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2163 > 2279           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



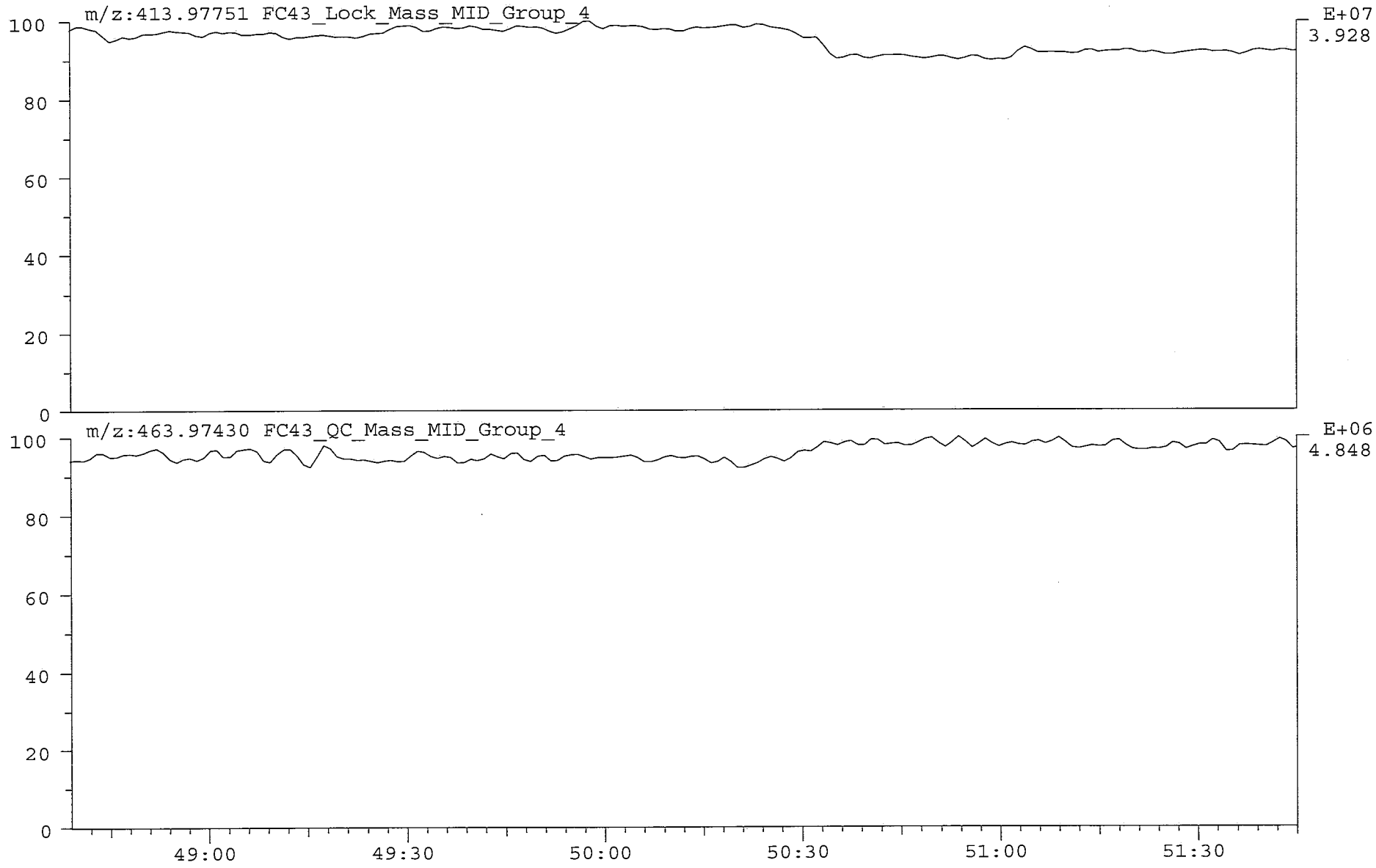
CHRO: d1tm811xs 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



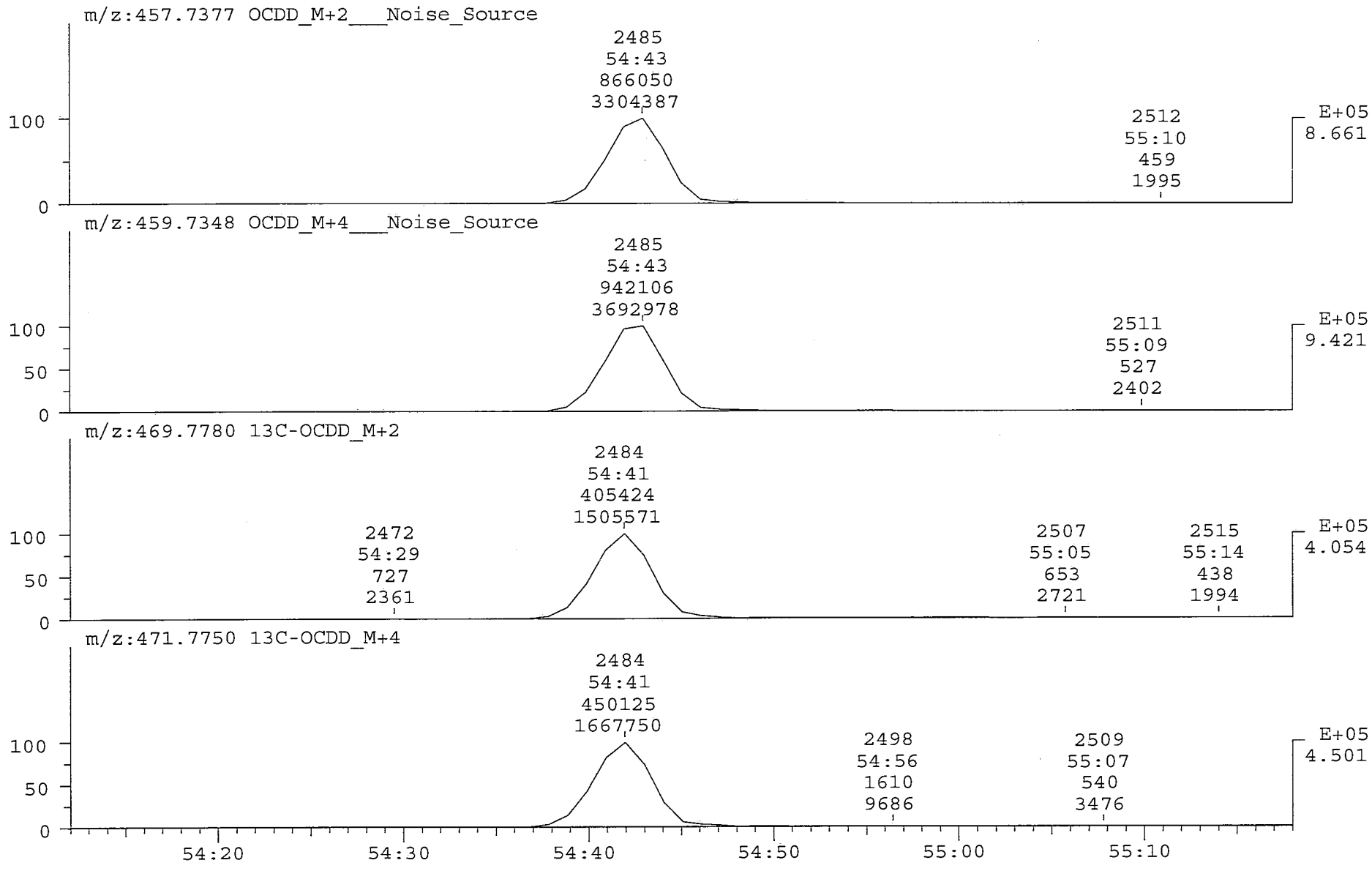
```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  50:12      2225
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2317           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



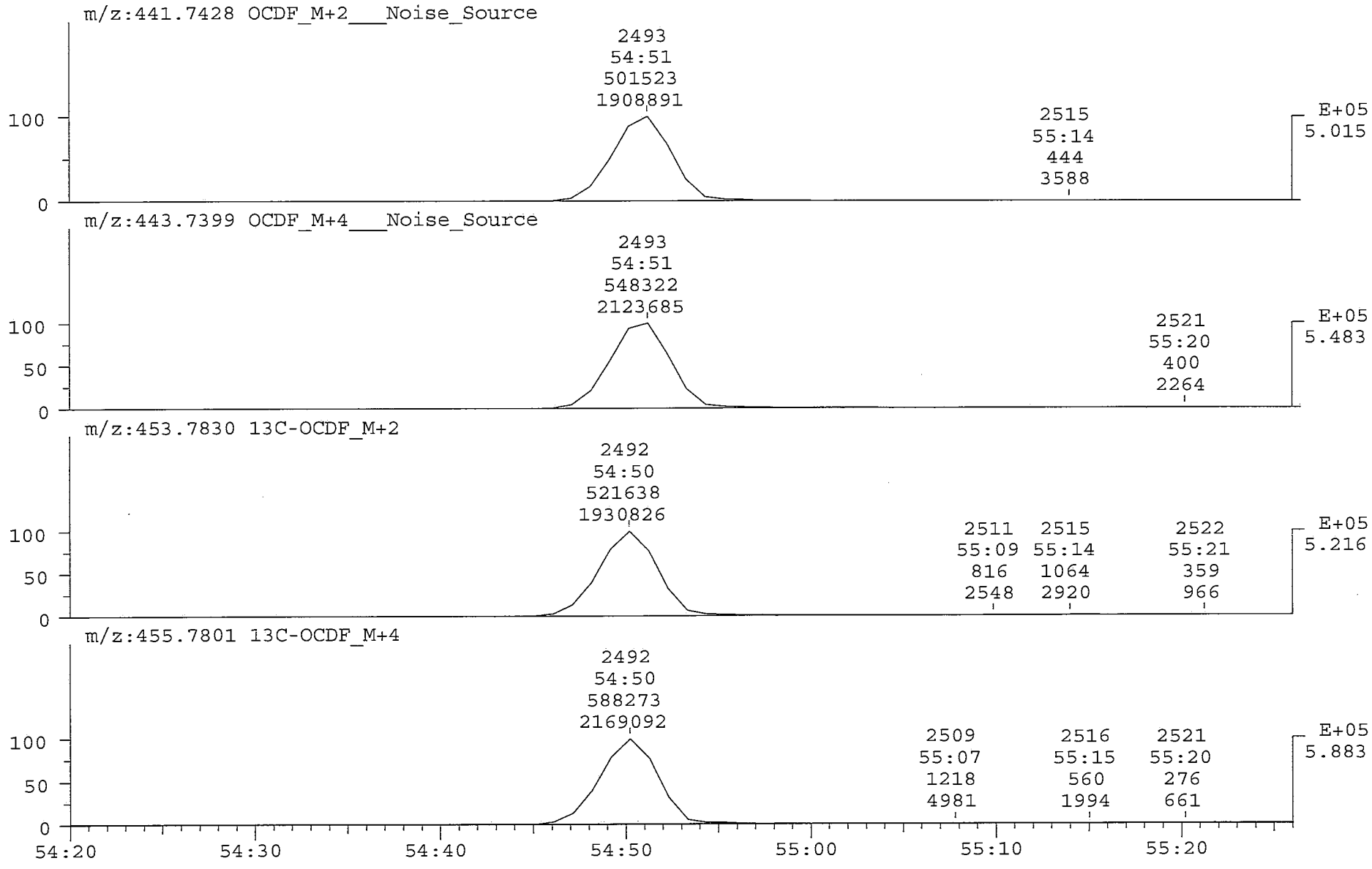
CHRO: d1tm811xs 18-Aug-16 Elapse: 50:12 2225
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2133 > 2317 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



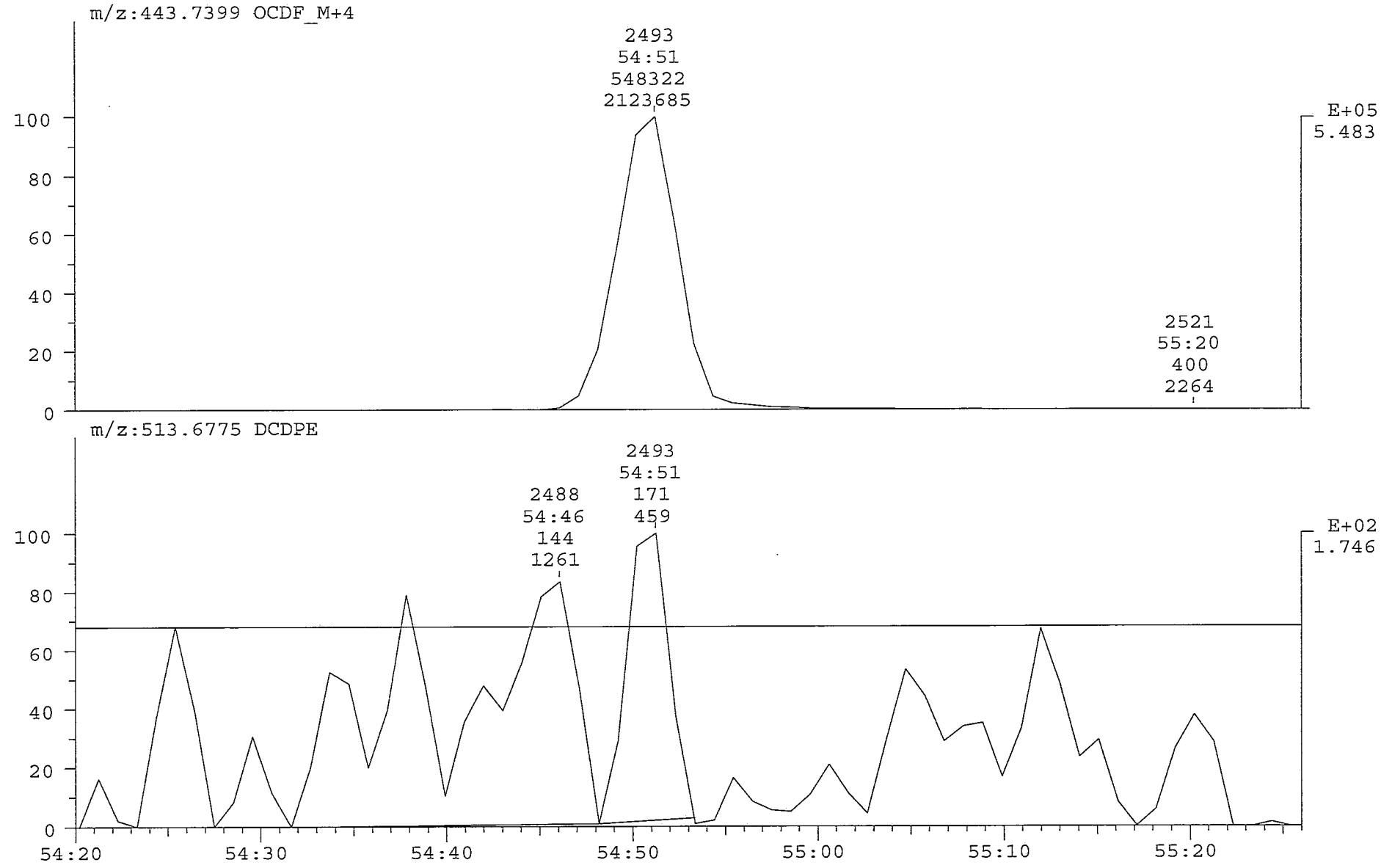
CHRO: d1tm811xs 18-Aug-16 Elapse: 54:41 2484
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2455 > 2519 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



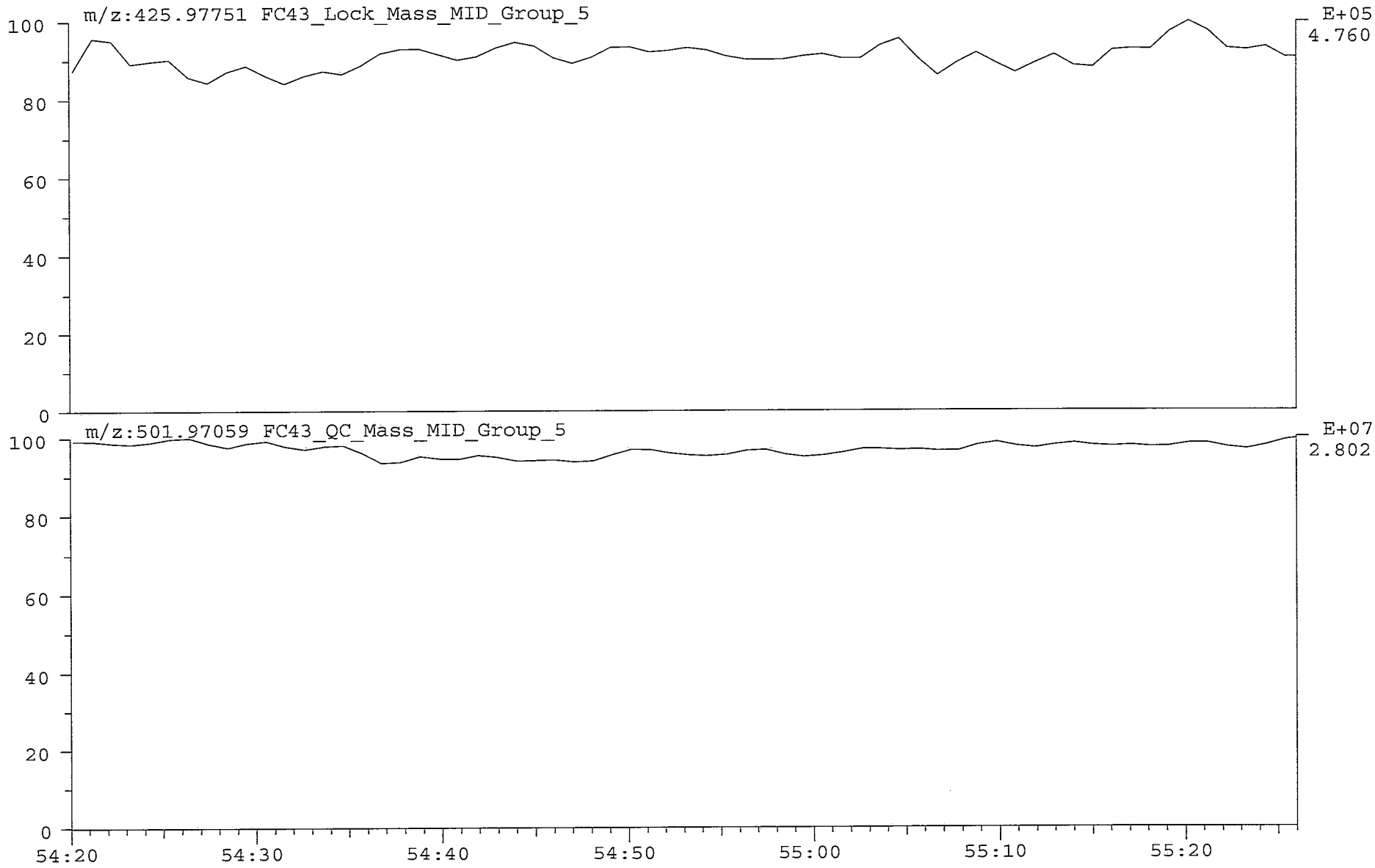
```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2527           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811xs                                18-Aug-16  Elapse:  54:50      2492
Samp:  WO=m811x1ad Meth=9Ao Dil=1                          Start :  09:12:42   2629
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2463 > 2527           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



CHRO: d1tm811xs 18-Aug-16 Elapse: 54:50 2492
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 2463 > 2527 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



*** file opened Thu Aug 18 09:15:49 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 09:15:49

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818091241

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS          313.4834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET        200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY            0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS            0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR            1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ         2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS            210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA            679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR            2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS            1.0000
 FM             375.8364   FMII          [illegible]   FQUAD            6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0479	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	313.4834	LKM	425.9770	MASS	313.4834
MDAC	3592224.0474	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2650.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8991	RELEN	0.0000
RES	12738.5486	RPUSHER	-6.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	313.4834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.4e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.7e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12463.
MID Time Window 2: Resolution is 12407.
MID Time Window 3: Resolution is 11926.
MID Time Window 4: Resolution is 11948.
MID Time Window 5: Resolution is 12738.

Amplifier Offset: 88.


*** File closed Thu Aug 18 10:13:03 2016
  ***
```

QUAN: d1tm811xs.q0 Entries: 274

Data file(s) used
File: d1tm811xs 18-Aug-16
Samp: WO=m811x1ad Meth=9Ao Dil=1 Start : 09:12:42 2629
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:57	292747.	28769.	32:41	33:12	44.	1	1.0	AVV
321.8775	32:57	367075.	35010.	32:41	33:12	66.	1	1.0	AVV
319.8805	32:24	2044.	295.	32:15	32:31	44.	2	5.0	ABB
319.8805	32:38	1211.	311.	32:32	32:41	44.	2	5.0	ABV
319.8805	32:57	292747.	28769.	32:41	33:12	44.	2	5.0	AVV
321.8775	32:57	366754.	35010.	32:41	33:11	66.	2	5.0	AVV
321.8775	33:12	1641.	381.	33:11	33:18	66.	2	5.0	AVB
331.9202	32:21	3680423.	364414.	32:06	32:36	186.	2	5.0	ABV
331.9202	32:55	1273349.	128926.	32:39	33:10	186.	2	5.0	AVV
333.9171	32:21	4554493.	446743.	32:06	32:36	64.	2	5.0	AVV
333.9171	32:55	1530360.	144380.	32:39	33:10	64.	2	5.0	AVV
333.9171	33:15	1163.	505.	33:14	33:17	64.	2	5.0	AVV
333.9171	33:23	6247.	769.	33:17	33:32	64.	2	5.0	AVV
333.9171	33:34	1013.	466.	33:32	33:36	64.	2	5.0	AVB
303.8864	30:48	437365.	46156.	30:35	31:03	76.	1	1.0	ABV
305.8834	30:47	563446.	58145.	30:32	31:02	70.	1	1.0	AVV
303.8864	29:39	10875.	1550.	29:26	29:48	76.	2	5.0	ABB
303.8864	30:14	4447.	792.	30:01	30:16	76.	2	5.0	ABV
303.8864	30:18	4048.	744.	30:16	30:27	76.	2	5.0	AVB
303.8864	30:48	437365.	46156.	30:35	31:03	76.	2	5.0	ABV
303.8864	32:08	12532.	1203.	31:54	32:16	76.	2	5.0	ABB
305.8834	29:08	2567.	531.	29:02	29:11	70.	2	5.0	ABB
305.8834	29:39	14611.	1567.	29:26	29:52	70.	2	5.0	ABB
305.8834	30:19	10289.	1006.	30:04	30:30	70.	2	5.0	AVB
305.8834	30:47	563446.	58145.	30:32	31:02	70.	2	5.0	AVV
305.8834	32:04	5678.	1280.	31:55	32:06	70.	2	5.0	ABV
305.8834	32:09	8795.	1475.	32:06	32:16	70.	2	5.0	AVB
315.9261	29:16	1001.	235.	29:13	29:23	38.	2	5.0	ABB
315.9261	29:32	3347.	841.	29:24	29:36	38.	2	5.0	ABV
315.9261	29:38	3341.	671.	29:36	29:44	38.	2	5.0	AVB
315.9261	30:22	824.	288.	30:17	30:26	38.	2	5.0	ABB
315.9261	30:45	2067744.	223621.	30:30	31:00	38.	2	5.0	ABV
315.9261	31:09	4066.	635.	31:07	31:17	38.	2	5.0	ABV
315.9261	31:19	1759.	651.	31:17	31:21	38.	2	5.0	AVV
315.9261	31:24	2288.	455.	31:21	31:30	38.	2	5.0	AVB
315.9261	31:37	564.	247.	31:34	31:38	38.	2	5.0	ABV
315.9261	31:40	1009.	262.	31:38	31:44	38.	2	5.0	AVV
315.9261	31:47	804.	288.	31:44	31:49	38.	2	5.0	AVB
315.9261	31:55	1520.	240.	31:49	32:05	38.	2	5.0	ABB
315.9261	32:14	1209.	398.	32:10	32:17	38.	2	5.0	ABV
315.9261	32:22	2678.	877.	32:17	32:24	38.	2	5.0	AVB
317.9230	29:31	6674.	682.	29:27	29:43	63.	2	5.0	ABB
317.9230	30:45	2578685.	279350.	30:30	31:00	63.	2	5.0	ABV
317.9230	31:13	8319.	1212.	31:05	31:16	63.	2	5.0	ABV
317.9230	31:21	2841.	511.	31:16	31:23	63.	2	5.0	AVV
317.9230	31:27	1616.	434.	31:23	31:29	63.	2	5.0	AVB
317.9230	31:55	1232.	524.	31:52	31:57	63.	2	5.0	ABB
317.9230	32:18	2433.	847.	32:15	32:20	63.	2	5.0	ABV
317.9230	32:22	1774.	814.	32:20	32:24	63.	2	5.0	AVB
355.8368	41:27	1706898.	403808.	41:18	41:42	65.	1	1.0	AVV

357.8337	41:26	1038416.	245699.	41:16	41:39	54.	1	1.0 ABV
355.8368	40:45	3442.	747.	40:40	40:50	65.	2	5.0 ABB
355.8368	41:02	2305.	429.	40:50	41:04	65.	2	5.0 ABB
355.8368	41:27	1707152.	403808.	41:14	41:42	65.	2	5.0 ABV
355.8368	41:50	2909.	666.	41:47	41:57	65.	2	5.0 AVB
355.8368	42:04	8268.	1729.	41:57	42:11	65.	2	5.0 ABB
357.8337	40:45	1781.	402.	40:41	40:48	54.	2	5.0 ABB
357.8337	41:00	1490.	420.	40:53	41:05	54.	2	5.0 ABB
357.8337	41:26	1038416.	245699.	41:16	41:39	54.	2	5.0 ABV
357.8337	41:41	3059.	943.	41:39	41:43	54.	2	5.0 AVV
357.8337	41:47	2097.	399.	41:43	41:49	54.	2	5.0 AVV
357.8337	41:52	1881.	569.	41:49	41:54	54.	2	5.0 AVV
357.8337	42:04	5567.	1032.	41:54	42:10	54.	2	5.0 AVB
367.8765	40:59	3045.	661.	40:55	41:05	28.	2	5.0 ABB
367.8765	41:07	746.	162.	41:06	41:15	28.	2	5.0 ABB
367.8765	41:24	1600312.	378145.	41:16	41:40	28.	2	5.0 ABV
367.8765	41:59	3632.	664.	41:54	42:04	28.	2	5.0 ABV
367.8765	42:06	1837.	646.	42:04	42:09	28.	2	5.0 AVV
367.8765	42:10	680.	332.	42:09	42:12	28.	2	5.0 AVB
369.8734	41:07	1645.	406.	41:04	41:11	36.	2	5.0 ABB
369.8734	41:24	952087.	230546.	41:17	41:32	36.	2	5.0 ABB
369.8734	41:34	2279.	1810.	41:32	41:35	36.	2	5.0 ABV
369.8734	41:41	5617.	1242.	41:35	41:43	36.	2	5.0 AVB
369.8734	41:45	1283.	600.	41:43	41:47	36.	2	5.0 ABV
369.8734	41:50	2560.	567.	41:47	41:53	36.	2	5.0 AVV
369.8734	41:54	922.	410.	41:53	41:57	36.	2	5.0 AVV
369.8734	41:59	1081.	432.	41:57	42:01	36.	2	5.0 AVV
369.8734	42:04	1812.	577.	42:01	42:06	36.	2	5.0 AVV
369.8734	42:08	863.	423.	42:06	42:10	36.	2	5.0 AVB
339.8427	40:57	2874301.	668947.	40:46	41:05	114.	1	1.0 AVV
341.8396	40:55	1847614.	426023.	40:48	41:03	82.	1	1.0 AVV
339.8427	39:19	15439.	2798.	39:14	39:26	114.	2	5.0 ABB
339.8427	39:47	2676082.	574039.	39:35	40:00	114.	2	5.0 ABV
339.8427	40:03	24672.	4952.	40:00	40:09	114.	2	5.0 AVV
339.8427	40:16	42456.	7961.	40:09	40:23	114.	2	5.0 AVV
339.8427	40:25	4151.	653.	40:23	40:38	114.	2	5.0 AVB
339.8427	40:57	2875428.	668947.	40:41	41:05	114.	2	5.0 AVV
339.8427	41:08	37215.	6309.	41:05	41:19	114.	2	5.0 AVV
339.8427	41:27	4569.	772.	41:19	41:32	114.	2	5.0 AVB
341.8396	39:18	11702.	2024.	39:14	39:28	82.	2	5.0 ABB
341.8396	39:47	1725961.	368802.	39:35	39:59	82.	2	5.0 ABV
341.8396	40:03	17939.	3161.	39:59	40:09	82.	2	5.0 AVV
341.8396	40:16	27895.	4797.	40:09	40:32	82.	2	5.0 AVV
341.8396	40:55	1847735.	426023.	40:46	41:03	82.	2	5.0 ABV
341.8396	41:08	27516.	4369.	41:03	41:18	82.	2	5.0 AVV
341.8396	41:28	2990.	532.	41:18	41:30	82.	2	5.0 AVB
351.8824	39:18	9499.	1959.	39:13	39:23	108.	2	5.0 ABB
351.8824	39:46	2502568.	535665.	39:31	39:58	108.	2	5.0 ABV
351.8824	40:02	18551.	2809.	39:58	40:08	108.	2	5.0 AVV
351.8824	40:14	28586.	4713.	40:08	40:27	108.	2	5.0 AVB
351.8824	40:40	3213.	964.	40:35	40:42	108.	2	5.0 ABV
351.8824	40:54	2664564.	603658.	40:42	41:10	108.	2	5.0 AVV
351.8824	41:18	5935.	1283.	41:16	41:23	108.	2	5.0 AVB
351.8824	41:27	1531.	650.	41:23	41:29	108.	2	5.0 ABB
353.8793	39:17	3778.	643.	39:12	39:25	54.	2	5.0 ABB
353.8793	39:45	1568763.	326636.	39:31	39:57	54.	2	5.0 ABV
353.8793	40:02	9781.	1698.	39:57	40:07	54.	2	5.0 AVB
353.8793	40:14	17381.	2923.	40:07	40:21	54.	2	5.0 ABV
353.8793	40:23	1948.	452.	40:21	40:31	54.	2	5.0 AVB
353.8793	40:36	3036.	443.	40:31	40:47	54.	2	5.0 ABB
353.8793	40:54	1672297.	387545.	40:47	41:10	54.	2	5.0 ABV
353.8793	41:12	4983.	1415.	41:10	41:15	54.	2	5.0 AVV
353.8793	41:17	2141.	908.	41:15	41:19	54.	2	5.0 AVB
353.8793	41:24	2631.	684.	41:20	41:27	54.	2	5.0 ABV
353.8793	41:29	813.	328.	41:27	41:31	54.	2	5.0 AVB
389.7961	46:12	1631642.	395403.	46:03	46:27	65.	1	1.0 AVV
391.7931	46:12	1313985.	310445.	46:04	46:27	161.	1	1.0 AVV

389.7961	45:28	1694.	511.	45:23	45:32	65.	2	5.0 ABB
389.7961	45:40	1471464.	362848.	45:32	45:44	65.	2	5.0 ABV
389.7961	45:48	1437886.	360843.	45:44	46:03	65.	2	5.0 AVV
389.7961	46:12	1631642.	395403.	46:03	46:27	65.	2	5.0 AVV
391.7931	45:40	1217929.	304103.	45:33	45:44	161.	2	5.0 ABV
391.7931	45:48	1141281.	279218.	45:44	46:03	161.	2	5.0 AVV
391.7931	46:12	1313985.	310445.	46:04	46:27	161.	2	5.0 AVV
401.8358	45:39	1418208.	349552.	45:26	45:43	209.	2	5.0 ABV
401.8358	45:47	1386543.	341928.	45:43	45:56	209.	2	5.0 AVV
401.8358	45:57	8289.	2048.	45:56	46:04	209.	2	5.0 AVV
401.8358	46:11	4553738.	1087445.	46:04	46:26	209.	2	5.0 AVV
403.8327	45:39	1117946.	274696.	45:32	45:43	186.	2	5.0 ABV
403.8327	45:47	1122867.	275707.	45:43	46:02	186.	2	5.0 AVV
403.8327	46:11	3678583.	886636.	46:02	46:26	186.	2	5.0 AVV
403.8327	46:29	6401.	1519.	46:27	46:34	186.	2	5.0 AVB
373.8021	44:44	2185014.	562544.	44:40	44:59	116.	1	1.0 AVV
375.7990	45:29	1758421.	435450.	45:20	45:45	98.	1	1.0 AVV
373.8021	44:20	12626.	3450.	44:14	44:23	116.	2	5.0 ABB
373.8021	44:36	2082924.	555533.	44:27	44:40	116.	2	5.0 ABV
373.8021	44:44	2185014.	562544.	44:40	44:59	116.	2	5.0 AVV
373.8021	45:08	7749.	1067.	45:03	45:14	116.	2	5.0 AVV
373.8021	45:17	5319.	1250.	45:14	45:20	116.	2	5.0 AVV
373.8021	45:29	2183143.	548170.	45:20	45:45	116.	2	5.0 AVV
373.8021	45:49	6881.	936.	45:47	46:03	116.	2	5.0 AVB
373.8021	46:29	1830495.	420178.	46:21	46:45	116.	2	5.0 ABV
373.8021	46:51	2425.	781.	46:49	46:54	116.	2	5.0 AVB
375.7990	44:20	11134.	3107.	44:14	44:23	98.	2	5.0 ABB
375.7990	44:36	1656571.	435943.	44:23	44:40	98.	2	5.0 ABV
375.7990	44:44	1733845.	450855.	44:40	44:59	98.	2	5.0 AVV
375.7990	45:10	3119.	917.	45:08	45:13	98.	2	5.0 AVV
375.7990	45:16	5565.	1261.	45:13	45:20	98.	2	5.0 AVV
375.7990	45:29	1758421.	435450.	45:20	45:45	98.	2	5.0 AVV
375.7990	45:47	5315.	875.	45:45	45:55	98.	2	5.0 AVV
375.7990	46:05	4133.	544.	45:55	46:14	98.	2	5.0 AVB
375.7990	46:29	1445021.	329726.	46:18	46:45	98.	2	5.0 ABV
375.7990	46:48	3643.	724.	46:46	46:54	98.	2	5.0 AVB
373.8021	44:20	12626.	3450.	44:14	44:23	116.	2	5.0 ABB
373.8021	44:36	2082924.	555533.	44:27	44:40	116.	2	5.0 ABV
373.8021	44:44	2185014.	562544.	44:40	44:59	116.	2	5.0 AVV
373.8021	45:08	7749.	1067.	45:03	45:14	116.	2	5.0 AVV
373.8021	45:17	5319.	1250.	45:14	45:20	116.	2	5.0 AVV
373.8021	45:29	2183143.	548170.	45:20	45:45	116.	2	5.0 AVV
373.8021	45:49	6881.	936.	45:47	46:03	116.	2	5.0 AVB
373.8021	46:29	1830495.	420178.	46:21	46:45	116.	2	5.0 ABV
373.8021	46:51	2425.	781.	46:49	46:54	116.	2	5.0 AVB
375.7990	44:20	11134.	3107.	44:14	44:23	98.	2	5.0 ABB
375.7990	44:36	1656571.	435943.	44:23	44:40	98.	2	5.0 ABV
375.7990	44:44	1733845.	450855.	44:40	44:59	98.	2	5.0 AVV
375.7990	45:10	3119.	917.	45:08	45:13	98.	2	5.0 AVV
375.7990	45:16	5565.	1261.	45:13	45:20	98.	2	5.0 AVV
375.7990	45:29	1758421.	435450.	45:20	45:45	98.	2	5.0 AVV
375.7990	45:47	5315.	875.	45:45	45:55	98.	2	5.0 AVV
375.7990	46:05	4133.	544.	45:55	46:14	98.	2	5.0 AVB
375.7990	46:29	1445021.	329726.	46:18	46:45	98.	2	5.0 ABV
375.7990	46:48	3643.	724.	46:46	46:54	98.	2	5.0 AVB
383.8447	44:35	1041547.	282067.	44:27	44:39	87.	2	5.0 ABV
383.8447	44:43	1193866.	306702.	44:39	44:58	87.	2	5.0 AVV
383.8447	45:08	2433.	592.	45:05	45:11	87.	2	5.0 ABV
383.8447	45:16	3298.	627.	45:11	45:19	87.	2	5.0 AVV
383.8447	45:28	1228668.	309577.	45:19	45:44	87.	2	5.0 AVV
383.8447	45:46	1650.	766.	45:45	45:48	87.	2	5.0 AVV
383.8447	45:49	1421.	521.	45:48	45:52	87.	2	5.0 AVV
383.8447	45:55	2009.	710.	45:52	45:57	87.	2	5.0 AVB
383.8447	46:08	8629.	949.	45:58	46:15	87.	2	5.0 ABB
383.8447	46:28	1042607.	246392.	46:15	46:42	87.	2	5.0 ABV
383.8447	46:45	5238.	1910.	46:42	46:48	87.	2	5.0 AVB
383.8447	46:49	1329.	504.	46:48	46:53	87.	2	5.0 ABB

385.8417	44:35	2019728.	534005.	44:28	44:39	140.	2	5.0 ABV
385.8417	44:43	2263861.	585629.	44:39	44:55	140.	2	5.0 AVV
385.8417	44:58	7563.	1446.	44:55	45:02	140.	2	5.0 AVV
385.8417	45:04	3310.	1232.	45:02	45:06	140.	2	5.0 AVV
385.8417	45:08	3918.	1097.	45:06	45:11	140.	2	5.0 AVV
385.8417	45:14	3701.	835.	45:11	45:17	140.	2	5.0 AVV
385.8417	45:28	2246858.	555771.	45:17	45:44	140.	2	5.0 AVV
385.8417	45:47	4813.	1288.	45:44	45:49	140.	2	5.0 AVV
385.8417	45:51	3636.	1304.	45:49	45:53	140.	2	5.0 AVV
385.8417	45:55	4303.	720.	45:53	46:01	140.	2	5.0 AVV
385.8417	46:03	2773.	1224.	46:01	46:05	140.	2	5.0 AVV
385.8417	46:11	4425.	896.	46:05	46:14	140.	2	5.0 AVV
385.8417	46:17	3319.	972.	46:14	46:20	140.	2	5.0 AVB
385.8417	46:28	1955209.	459529.	46:20	46:43	140.	2	5.0 ABV
423.7555	50:43	1269813.	269303.	50:33	50:58	56.	1	1.0 ABV
425.7524	50:43	1235237.	261817.	50:34	50:58	62.	1	1.0 ABV
423.7555	49:31	188462.	38030.	49:22	49:41	56.	2	5.0 ABV
423.7555	50:43	1269813.	269303.	50:33	50:58	56.	2	5.0 ABV
425.7524	49:30	193873.	37018.	49:22	49:42	62.	2	5.0 ABV
425.7524	50:43	1235237.	261817.	50:34	50:58	62.	2	5.0 ABV
435.7951	49:30	11537.	2076.	49:23	49:37	33.	2	5.0 ABB
435.7951	49:43	1345.	266.	49:39	49:48	33.	2	5.0 ABB
435.7951	50:22	1471.	374.	50:18	50:26	33.	2	5.0 ABV
435.7951	50:29	1580.	438.	50:26	50:33	33.	2	5.0 AVB
435.7951	50:42	1153407.	243191.	50:34	50:57	33.	2	5.0 ABV
435.7951	51:03	2651.	772.	50:59	51:06	33.	2	5.0 AVB
437.7921	49:30	10415.	1797.	49:24	49:38	19.	2	5.0 ABV
437.7921	49:39	462.	207.	49:38	49:41	19.	2	5.0 AVV
437.7921	49:43	507.	187.	49:41	49:46	19.	2	5.0 AVB
437.7921	50:42	1080617.	229093.	50:33	50:57	19.	2	5.0 ABV
437.7921	51:02	1839.	357.	50:58	51:06	19.	2	5.0 AVB
407.7614	49:00	1564214.	322864.	48:51	49:15	96.	1	1.0 ABV
409.7583	49:00	1516741.	315393.	48:51	49:15	81.	1	1.0 ABV
407.7614	48:45	6353.	1488.	48:39	48:51	96.	2	5.0 ABB
407.7614	49:00	1564214.	322864.	48:51	49:15	96.	2	5.0 ABV
407.7614	49:26	12795.	1962.	49:20	49:31	96.	2	5.0 AVV
407.7614	49:32	1533.	554.	49:31	49:34	96.	2	5.0 AVV
407.7614	49:40	96818.	18050.	49:34	49:48	96.	2	5.0 AVV
407.7614	49:50	7543.	990.	49:48	50:06	96.	2	5.0 AVV
407.7614	51:20	1231040.	272964.	51:04	51:35	96.	2	5.0 AVV
407.7614	51:39	2479.	833.	51:36	51:41	96.	2	5.0 AVB
409.7583	48:45	5489.	1457.	48:39	48:49	81.	2	5.0 ABB
409.7583	49:00	1516741.	315393.	48:51	49:15	81.	2	5.0 ABV
409.7583	49:26	12793.	1834.	49:19	49:32	81.	2	5.0 AVV
409.7583	49:40	88937.	17384.	49:32	49:48	81.	2	5.0 AVV
409.7583	49:50	5528.	804.	49:48	50:06	81.	2	5.0 AVV
409.7583	51:20	1171872.	260992.	51:08	51:35	81.	2	5.0 ABV
417.8041	48:59	708986.	151488.	48:51	49:14	45.	2	5.0 ABV
417.8041	49:26	5037.	1104.	49:20	49:29	45.	2	5.0 AVB
417.8041	49:38	2905.	544.	49:35	49:42	45.	2	5.0 AVV
417.8041	50:28	2002.	439.	50:21	50:31	45.	2	5.0 ABB
417.8041	50:42	2158.	571.	50:38	50:45	45.	2	5.0 ABB
417.8041	51:19	615544.	135737.	51:11	51:27	45.	2	5.0 AVV
417.8041	51:29	9356.	2076.	51:27	51:35	45.	2	5.0 AVB
417.8041	51:39	1797.	646.	51:35	51:41	45.	2	5.0 ABB
419.8010	48:59	1521596.	312076.	48:51	49:12	52.	2	5.0 ABV
419.8010	49:23	7652.	1144.	49:12	49:25	52.	2	5.0 AVV
419.8010	49:27	5353.	1177.	49:25	49:33	52.	2	5.0 AVV
419.8010	49:40	9423.	2228.	49:33	49:43	52.	2	5.0 AVV
419.8010	49:49	7102.	922.	49:43	49:56	52.	2	5.0 AVV
419.8010	50:42	1891.	473.	50:40	50:46	52.	2	5.0 AVB
419.8010	51:19	1346534.	306317.	51:07	51:30	52.	2	5.0 AVV
419.8010	51:36	12664.	2059.	51:30	51:42	52.	2	5.0 AVB
457.7148	54:43	3304387.	866050.	54:34	54:58	63.	1	1.0 ABV
459.7118	54:43	3692978.	942106.	54:35	54:58	79.	1	1.0 ABV
457.7148	54:43	3304387.	866050.	54:34	54:58	63.	2	5.0 ABV
457.7148	55:11	1995.	459.	55:08	55:16	63.	2	5.0 AVB

459.7118	54:43	3692978.	942106.	54:35	54:58	79.	2	5.0	ABV
459.7118	55:09	2402.	527.	55:07	55:15	79.	2	5.0	AVB
469.7545	54:29	2361.	727.	54:24	54:34	66.	2	5.0	ABV
469.7545	54:42	1505571.	405424.	54:34	54:57	66.	2	5.0	AVV
469.7545	55:05	2721.	653.	55:02	55:08	66.	2	5.0	AVB
469.7545	55:14	1994.	438.	55:08	55:17	66.	2	5.0	ABB
471.7514	54:42	1667750.	450125.	54:34	54:54	44.	2	5.0	ABV
471.7514	54:56	9686.	1610.	54:54	55:02	44.	2	5.0	AVV
471.7514	55:07	3476.	540.	55:02	55:13	44.	2	5.0	AVB
441.7207	54:51	1908891.	501523.	54:39	55:06	46.	1	1.0	ABV
443.7177	54:51	2123685.	548322.	54:38	55:06	73.	1	1.0	ABV
441.7207	54:51	1908891.	501523.	54:39	55:06	46.	2	5.0	ABV
441.7207	55:14	3588.	444.	55:11	55:26	46.	2	5.0	AVB
443.7177	54:51	2123685.	548322.	54:38	55:06	73.	2	5.0	ABV
443.7177	55:20	2264.	400.	55:18	55:26	73.	2	5.0	AVB
453.7603	54:50	1930826.	521638.	54:43	55:05	30.	2	5.0	AVV
453.7603	55:09	2548.	816.	55:07	55:12	30.	2	5.0	AVV
453.7603	55:14	2920.	1064.	55:12	55:17	30.	2	5.0	AVB
453.7603	55:21	966.	359.	55:17	55:23	30.	2	5.0	ABB
455.7573	54:50	2169092.	588273.	54:37	55:05	44.	2	5.0	ABV
455.7573	55:07	4981.	1218.	55:05	55:13	44.	2	5.0	AVV
455.7573	55:15	1994.	560.	55:13	55:18	44.	2	5.0	AVV
455.7573	55:20	661.	276.	55:18	55:22	44.	2	5.0	AVB

TestAmerica Knoxville

IsoCalc Preliminary Sample Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AE	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xd.d	Prep Date	08/04/16	SDG No	
Analysis ID	180615	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	8/18/2016	Matrix	SOLID	Date Sampled	07/25/16
Analysis Time	10:13	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Anal Exp Date	09/18/16	Extract Vol	20 uL	Method	DX8290A
Instrument	D11A	Dil Factor	1.00	Code	9Ao
Analyst	KLR				

Analyte	RT	Area	Height	RF	Std Amt	Amount	Rec	Conc (pg/g)		DL (pg/g)
2,3,7,8-TCDD	32:52	546027	54173	1.144	200.0	204.579166	102.29	20.457917		0.0923
Total TCDD		4323	671	1.144		206.198858		20.619886		0.0923
2,3,7,8-TCDF	30:44	776914	77345	1.066	200.0	191.380913	95.69	19.138091	X	0.0849
Total TCDF		94930	10279	1.066		214.765471		21.476547		0.0849
1,2,3,7,8-PeCDD	41:24	2387569	571437	1.060	1000	1020.86728	102.09	102.086728	B	0.0480
Total PeCDD		20110	3302	1.060		1029.46583		102.946583	QB	0.0480
1,2,3,7,8-PeCDF	39:45	3779707	815744	1.179	1000	913.180937	91.32	91.318094		0.0427
2,3,4,7,8-PeCDF	40:54	4492376	1096823	1.115	1000	992.736639	99.27	99.273664		0.0347
Total PeCDF		218417	38015	1.147		1956.23218		195.623218		0.0382
1,2,3,4,7,8-HxCDD	45:38	2284165	577039	1.131	1000	938.317684	93.83	93.831768		0.0698
1,2,3,6,7,8-HxCDD	45:45	2133122	526896	1.116	1000	916.283006	91.63	91.628301		0.0758
1,2,3,7,8,9-HxCDD	46:10	2552587	615712	1.205	1000	999.508683	99.95	99.950868		0.0678
Total HxCDD				1.151		2854.10937		285.410937		0.0710
1,2,3,4,7,8-HxCDF	44:34	3126492	834866	1.350	1000	926.942208	92.69	92.694221	B	0.0618
1,2,3,6,7,8-HxCDF	44:43	3163282	821073	1.242	1000	908.880431	90.89	90.888043		0.0610
2,3,4,6,7,8-HxCDF	45:28	3211643	786714	1.241	1000	914.577010	91.46	91.457701		0.0639
1,2,3,7,8,9-HxCDF	46:28	2893073	655196	1.262	1000	907.290082	90.73	90.729008	B	0.0772
Total HxCDF		55851	13003	1.274		3674.14709		367.414709	QB	0.0653
1,2,3,4,6,7,8-HpCDD	50:41	2630159	558705	1.114	1000	1203.13021	120.31	120.313021		0.0705
Total HpCDD		646316	127639	1.114		1498.77861		149.877861		0.0705
1,2,3,4,6,7,8-HpCDF	48:57	2716182	566618	1.461	1000	986.723456	98.67	98.672346	B	0.0628
1,2,3,4,7,8,9-HpCDF	51:17	2147800	460490	1.370	1000	943.026969	94.30	94.302697	B	0.0759
Total HpCDF		289663	57012	1.416		2045.14896		204.514896	QB	0.0688
OCDD	54:41	11331849	3015499	1.203	2000	6492.93549	324.65	649.293549	B	0.0984
OCDF	54:49	3824522	1020072	1.134	2000	1836.37645	91.82	183.637645	B	0.0507
13C-2,3,7,8-TCDD	32:49	2334032	229733	1.093	1000	656.887493	65.69	65.688749		0.170
13C-2,3,7,8-TCDF	30:40	3809650	400680	1.794	1000	652.827261	65.28	65.282726		0.0405
13C-1,2,3,7,8-PeCDD	41:23	2206608	530845	0.800	1000	848.151727	84.82	84.815173		0.145
13C-1,2,3,7,8-PeCDF	39:44	3510245	749428	1.356	1000	795.726956	79.57	79.572696		0.0716
13C-2,3,4,7,8-PeCDF	40:53	4060091	975776	1.343	1000	929.573402	92.96	92.957340		0.0723
13C-1,2,3,4,7,8-HxCDD	45:37	2152155	554381	0.916	1000	681.273969	68.13	68.127397		0.104
13C-1,2,3,6,7,8-HxCDD	45:44	2086126	517235	0.906	1000	667.350710	66.74	66.735071		0.105
13C-1,2,3,4,7,8-HxCDF	44:33	2497646	667824	1.268	1000	570.897347	57.09	57.089735		0.0366
13C-1,2,3,6,7,8-HxCDF	44:42	2803129	736325	1.506	1000	539.791255	53.98	53.979125		0.0308
13C-2,3,4,6,7,8-HxCDF	45:27	2829954	703490	1.344	1000	610.484260	61.05	61.048426		0.0346
13C-1,2,3,7,8,9-HxCDF	46:26	2526599	572286	1.202	1000	609.370794	60.94	60.937079		0.0386
13C-1,2,3,4,6,7,8-HpCDD	50:40	1962877	417265	0.728	1000	781.261140	78.13	78.126114		0.0286
13C-1,2,3,4,6,7,8-HpCDF	48:56	1884120	403485	1.008	1000	541.877051	54.19	54.187705		0.0302
13C-1,2,3,4,7,8,9-HpCDF	51:16	1662032	355845	0.811	1000	594.319748	59.43	59.431975		0.0376
13C-OCDD	54:40	2901528	764342	0.597	2000	1408.17329	70.41	140.817329		0.0515
13C-1,2,3,4-TCDD	32:16	6504606	653720	1.000	2000	2000.00000	100.00	200.000000		0.186
13C-1,2,3,7,8,9-HxCDD	46:09	6898516	1658071	1.000	2000	2000.00000	100.00	200.000000		0.0956
13C-OCDF	54:48	3671979	965104	0.946	2000	1125.35177	56.27	112.535177		0.0134

KLR 8/24/16

KM 8-24-16

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IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AE	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xd.	Prep Date	08/04/16	SDG No	
Analysis ID	180615	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 10:13	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao
		View Small Peaks?	False	View deleted peaks?	False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
304					303.9016	305.8987	303.9016	305.8987	0.65-0.89		
	Noise	00:00	00:00	0	158	205	63	82	0.77	/	
	Unidentified	29:34	00:00	0	14863	18860	1680	2258	0.79	ABV/ABB	
	Unidentified	30:11	00:00	0	11219	14094	1145	1436	0.80	ABB/AVB	
	2,3,7,8-TCDF	30:44	30:43	1	345051	431863	34614	42731	0.80	ABV/ABV	
	Unidentified	32:00	00:00	0	15880	20014	1767	1993	0.79	ABV/ABB	
316					315.9419	317.9389	315.9419	317.9389	0.65-0.89		
	Noise	00:00	00:00	0	155	83	62	33	1.88 *	/	
	Unidentified	29:32	00:00	0	6450	8631	764	1723	0.75	ABB/ABB	
	13C-2,3,7,8-TCDF	30:40	30:40	0	1695813	2113837	183191	217489	0.80	ABV/AVV	
	Unidentified	31:00	00:00	0	8355	5778	1071	892	1.45 *	AVB/AVV	R
	Unidentified	32:16	00:00	0	2027	3827	722	932	0.53 *	AVB/ABB	R
320					319.8965	321.8936	319.8965	321.8936	0.65-0.89		
	Noise	00:00	00:00	0	120	123	48	49	0.98 *	/	
	Unidentified	32:19	00:00	0	2023	2300	312	359	0.88	ABB/ABV	
	2,3,7,8-TCDD	32:52	32:51	1	244339	301688	23823	30350	0.81	AVV/AVV	
332					331.9368	333.9338	331.9368	333.9338	0.65-0.89		
	Noise	00:00	00:00	0	235	373	94	149	0.63 *	/	
	13C-1,2,3,4-TCDD	32:16	32:16	0	2914980	3589626	288184	365536	0.81	AVV/AVV	
	13C-2,3,7,8-TCDD	32:49	32:48	1	1034454	1299578	100127	129606	0.80	AVV/AVV	
340					339.8597	341.8567	339.8597	341.8567	1.32-1.78		
	Noise	00:00	00:00	0	215	163	86	65	1.32	/	
	Unidentified	39:17	00:00	0	21568	14570	4287	2136	1.48	ABB/ABB	
	1,2,3,7,8-PeCDF	39:45	39:45	0	2297280	1482427	494958	320786	1.55	AVV/ABV	
	Unidentified	40:01	00:00	0	28643	17093	5166	2597	1.68	AVV/AVV	
	Unidentified	40:15	00:00	0	39881	24383	7049	3943	1.64	AVB/AVV	
	2,3,4,7,8-PeCDF	40:54	40:54	0	2732845	1759531	662915	433908	1.55	ABV/ABV	
	Unidentified	41:06	00:00	0	41008	24453	6891	4747	1.68	AVV/AVV	
	Unidentified	41:25	00:00	0	4133	2685	574	625	1.54	AVB/AVB	
352					351.9000	353.8970	351.9000	353.8970	1.32-1.78		
	Noise	00:00	00:00	0	203	115	81	46	1.76	/	
	Unidentified	39:16	00:00	0	5109	1738	1404	473	2.94 *	ABB/ABB	R
	13C-1,2,3,7,8-PeCDF	39:44	39:44	0	2132699	1377546	455491	293937	1.55	AVV/ABV	
	Unidentified	40:00	00:00	0	7117	6366	2350	1520	1.12 *	AVV/AVV	R
	Unidentified	40:13	00:00	0	28163	13915	5078	2314	2.02 *	AVV/AVB	R
	13C-2,3,4,7,8-PeCDF	40:53	40:53	0	2485711	1574380	595070	380706	1.58	ABV/ABV	
356					355.8546	357.8516	355.8546	357.8516	1.32-1.78		
	Noise	00:00	00:00	0	135	135	54	54	1.00 *	/	
	Unidentified	40:43	00:00	0	3228	2646	484	507	1.22 *	ABB/ABB	R
	1,2,3,7,8-PeCDD	41:24	41:24	0	1459437	928132	345851	225586	1.57	ABV/ABV	
	Unidentified	41:47	00:00	0	2839	796	512	311	3.57 *	AVV/AVV	R
	Unidentified	42:03	00:00	0	7434	3167	965	523	2.35 *	AVB/ABB	R
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AE	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xd.	Prep Date	08/04/16	SDG No	
Analysis ID	180615	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 10:13	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
368					367.8949	369.8919	367.8949	369.8919	1.32-1.78		
	Noise	00:00	00:00	0	240	140	96	56	1.71	/	
	13C-1,2,3,7,8-PeCDD	41:23	41:23	0	1376020	830588	327208	203637	1.66	ABV/ABV	
374					373.8208	375.8178	373.8208	375.8178	1.05-1.43		
	Noise	00:00	00:00	0	278	280	111	112	0.99 *	/	
	Unidentified	44:18	00:00	0	11541	10975	3136	3002	1.05	ABB/ABB	
	1,2,3,4,7,8-HxCDF	44:34	44:34	0	1737015	1389477	466724	368142	1.25	ABV/ABV	
	1,2,3,6,7,8-HxCDF	44:43	44:42	1	1765604	1397678	457338	363735	1.26	AVV/AVV	
	Unidentified	45:01	00:00	0	3880	7509	867	1381	0.52 *	AVV/AVV	RT
	Unidentified	45:08	00:00	0	6333	5017	963	904	1.26	AVV/AVV	
	Unidentified	45:16	00:00	0	5792	4804	1326	1424	1.21	AVV/AVV	
	2,3,4,6,7,8-HxCDF	45:28	45:28	0	1794509	1417134	436418	350296	1.27	AVV/AVV	
	1,2,3,7,8,9-HxCDF	46:28	46:28	0	1617223	1275850	365368	289828	1.27	ABV/ABV	
384					383.8639	385.8610	383.8639	385.8610	0.43-0.59		
	Noise	00:00	00:00	0	170	215	68	86	0.79 *	/	
	13C-1,2,3,4,7,8-HxCDF	44:33	44:33	0	860740	1636906	231783	436041	0.53	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDF	44:42	44:41	1	963127	1840002	247610	488715	0.52	AVV/AVV	
	Unidentified	44:58	00:00	0	2634	3529	1088	1123	0.75 *	AVV/AVV	RT
	Unidentified	45:07	00:00	0	3785	7868	790	1575	0.48	AVB/AVV	
	13C-2,3,4,6,7,8-HxCDF	45:27	45:27	0	971398	1858556	240497	462993	0.52	ABV/AVV	
	Unidentified	46:08	00:00	0	3069	7448	745	1410	0.41 *	ABB/ABV	RT
	13C-1,2,3,7,8,9-HxCDF	46:26	46:27	-1	872622	1653977	195154	377132	0.53	ABV/AVV	
390					389.8156	391.8127	389.8156	391.8127	1.05-1.43		
	Noise	00:00	00:00	0	195	243	78	97	0.80 *	/	
	1,2,3,4,7,8-HxCDD	45:38	45:38	0	1263496	1020669	319674	257365	1.24	ABV/ABV	
	1,2,3,6,7,8-HxCDD	45:45	45:46	-1	1183627	949495	288401	238495	1.25	AVV/AVV	
	1,2,3,7,8,9-HxCDD	46:10	46:10	0	1408782	1143805	338039	277673	1.23	AVV/AVV	
402					401.8559	403.8529	401.8559	403.8529	1.05-1.43		
	Noise	00:00	00:00	0	465	328	186	131	1.42	/	
	13C-1,2,3,4,7,8-HxCDD	45:37	45:37	0	1188588	963567	306375	248006	1.23	ABV/ABV	
	13C-1,2,3,6,7,8-HxCDD	45:44	45:45	-1	1163587	922539	293198	224037	1.26	AVV/AVV	
	13C-1,2,3,7,8,9-HxCDD	46:09	46:09	0	3821280	3077236	913537	744534	1.24	ABV/AVV	
	Unidentified	46:26	00:00	0	10120	9945	2413	1455	1.02 *	AVB/AVB	R
408					407.7818	409.7788	407.7818	409.7788	0.88-1.20		
	Noise	00:00	00:00	0	208	163	83	65	1.28 *	/	
	1,2,3,4,6,7,8-HpCDF	48:57	48:58	-1	1386255	1329927	289124	277494	1.04	ABV/ABV	
	Unidentified	49:22	00:00	0	15677	11586	2066	1776	1.35 *	AVV/AVV	R
	Unidentified	49:38	00:00	0	129349	133051	27269	25901	0.97	AVV/AVV	
	1,2,3,4,7,8,9-HpCDF	51:17	51:18	-1	1089085	1058715	231819	228671	1.03	ABV/ABV	
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Noise	00:00	00:00	0	68	185	27	74	0.36 *	/	
	13C-1,2,3,4,6,7,8-HpCDF	48:56	48:56	0	591930	1292190	125205	278280	0.46	ABB/ABV	
	Unidentified	49:21	00:00	0	4948	9987	1187	1862	0.50	ABB/AVB	T

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

TestAmerica Knoxville

IsoCalc Preliminary Peak Report

PCDD/PCDF by EPA Method 8290A w/13C-OCDF

Workorder	M811X1AE	Prep Batch	6217014	Lot No	H6G290408-010
Data File	/20160818s1/d1tm811xd.	Prep Date	08/04/16	SDG No	
Analysis ID	180615	Prep Exp Date	08/24/16	Date Received	07/29/16
Analysis Date	08/18/16 10:13	Matrix	SOLID	Date Sampled	07/25/16
Anal Exp Date	09/18/16	Initial Wt/Vol	10.0 g	Lims Test Code	XXA11Q&01
Instrument	D11A	Extract Vol	20 uL	Method	DX8290A
Analyst	KLR	Diluton Factor	1.00	Code	9Ao

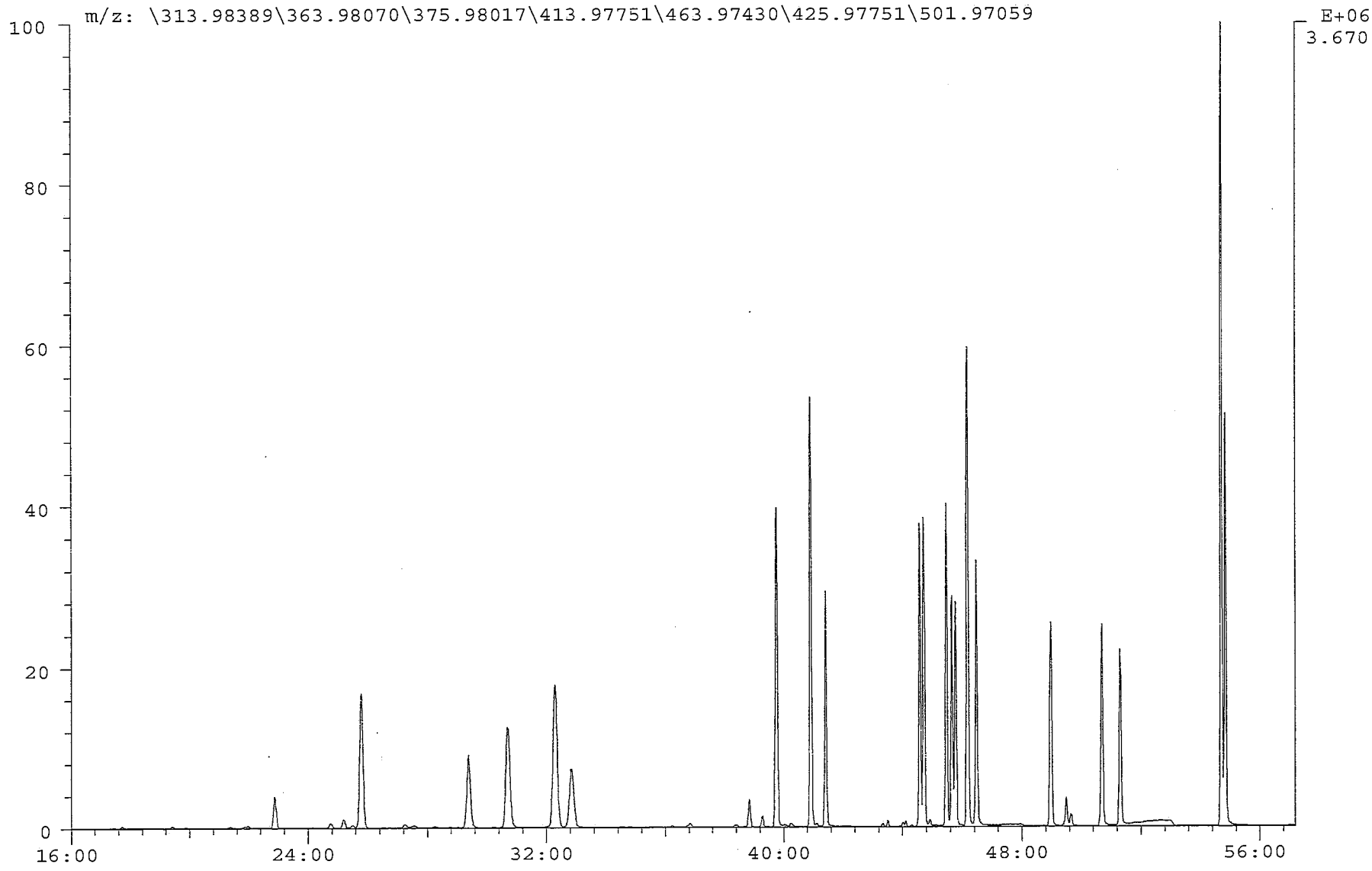
View Small Peaks? False View deleted peaks? False

Mass	Peak Name	RT	Pred RT	Δ	Area 1	Area 2	Height1	Height2	Ratio	Integration	Flags
418					417.8250	419.8220	417.8250	419.8220	0.37-0.51		
	Unidentified	49:37	00:00	0	2806	8276	722	1709	0.34 *	ABV/ABV	R
	13C-1,2,3,4,7,8,9-HpCDF	51:16	51:17	-1	508826	1153206	109613	246232	0.44	ABV/ABV	
424					423.7767	425.7737	423.7767	425.7737	0.88-1.20		
	Noise	00:00	00:00	0	170	158	68	63	1.08	/	
	Unidentified	49:29	00:00	0	329054	317262	65213	62426	1.04	ABV/ABV	
	1,2,3,4,6,7,8-HpCDD	50:41	50:40	1	1332369	1297790	282371	276334	1.03	ABV/ABV	
436					435.8169	437.8140	435.8169	437.8140	0.88-1.20		
	Noise	00:00	00:00	0	123	50	49	20	2.45 *	/	
	Unidentified	49:28	00:00	0	18361	14030	3476	2272	1.31 *	ABV/ABV	R
	13C-1,2,3,4,6,7,8-HpCDD	50:40	50:39	1	988181	974696	209358	207907	1.01	ABV/ABB	
442					441.7428	443.7399	441.7428	443.7399	0.76-1.02		
	Noise	00:00	00:00	0	128	150	51	60	0.85	/	
	OCDF	54:49	54:48	1	1825496	1999026	486087	533985	0.91	ABV/ABV	
	Unidentified	55:13	00:00	0	914	2880	333	499	0.32 *	AVV/AVB	R
454					453.7830	455.7801	453.7830	455.7801	0.76-1.02		
	Noise	00:00	00:00	0	68	38	27	15	1.80 *	/	
	13C-OCDF	54:48	54:48	0	1731136	1940843	454139	510965	0.89	ABV/ABV	
	Unidentified	55:12	00:00	0	6570	2973	969	542	2.21 *	AVB/ABB	RT
458					457.7377	459.7348	457.7377	459.7348	0.76-1.02		
	Noise	00:00	00:00	0	175	278	70	111	0.63 *	/	
	OCDD	54:41	54:40	1	5349848	5982001	1431517	1583982	0.89	ABV/ABV	
	Unidentified	55:09	00:00	0	1239	14405	383	2192	0.09 *	AVV/AVB	RT
470					469.7780	471.7750	469.7780	471.7750	0.76-1.02		
	Noise	00:00	00:00	0	170	85	68	34	2.00 *	/	
	13C-OCDD	54:40	54:40	0	1380491	1521037	358153	406189	0.91	AVV/ABV	
	Unidentified	55:00	00:00	0	2664	5735	802	1058	0.46 *	AVV/AVB	R

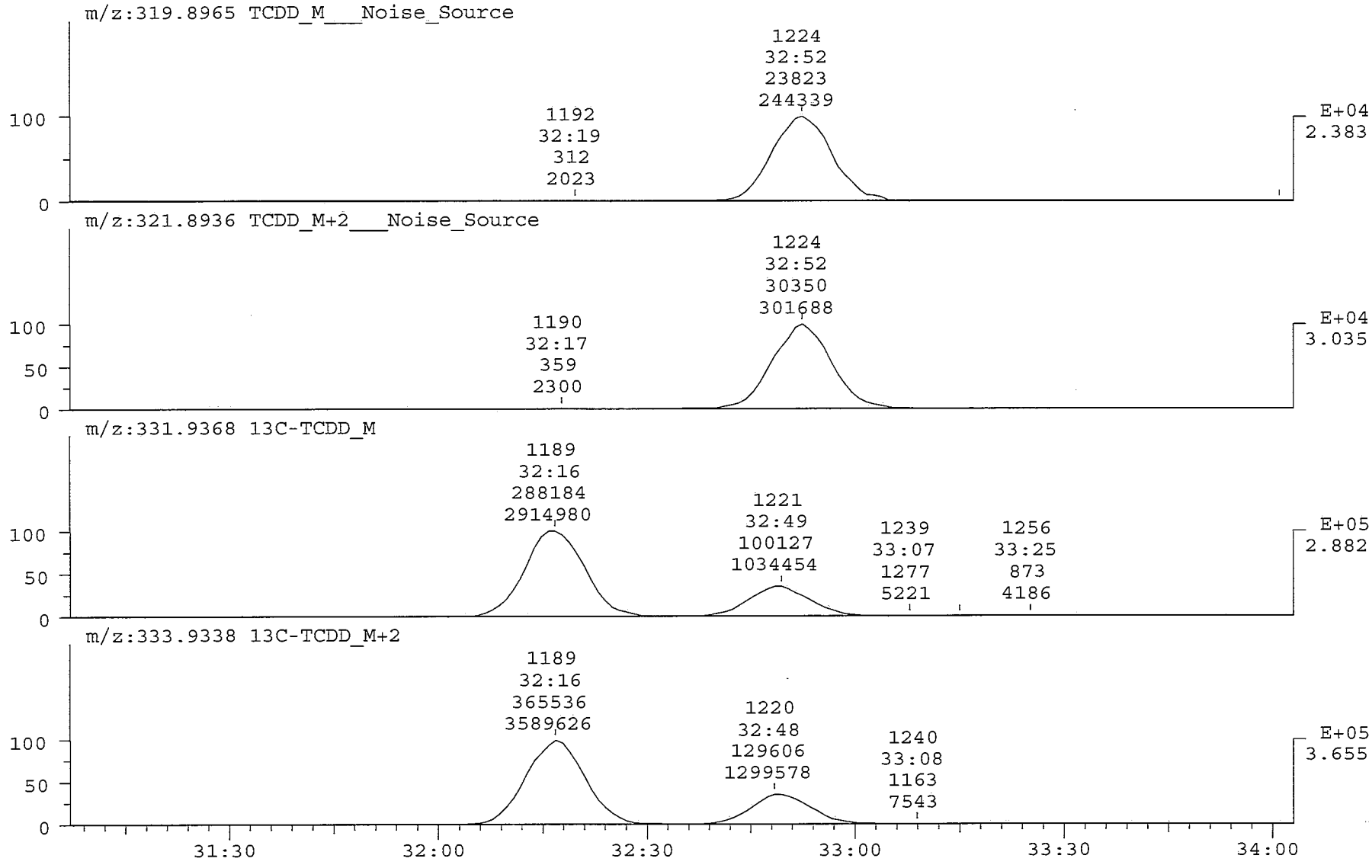
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peaks outside comax limit D = peak outside RT window W = peak outside first/last X = peak has dup match

Int. KL 8/18/16
Calc KM 8-24-16
QC Rev KL 8/24/16

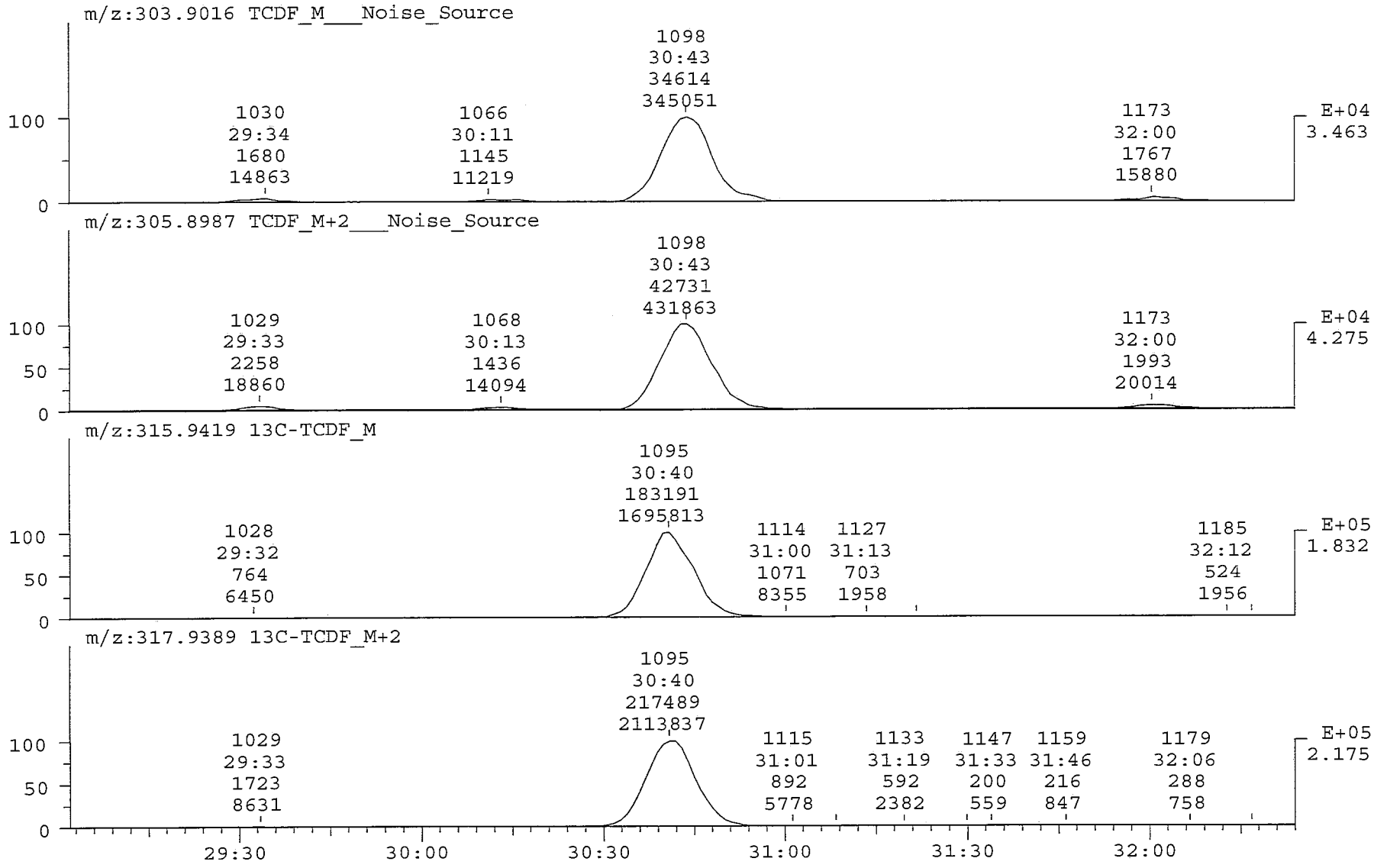
CHRO: d1tm811xd 18-Aug-16 Elapse: 54:49 2491
Samp: WO=m811x1ae Meth=9Ao Dil=1 Start : 10:13:04 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 232 > 2628 Masses: 303 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



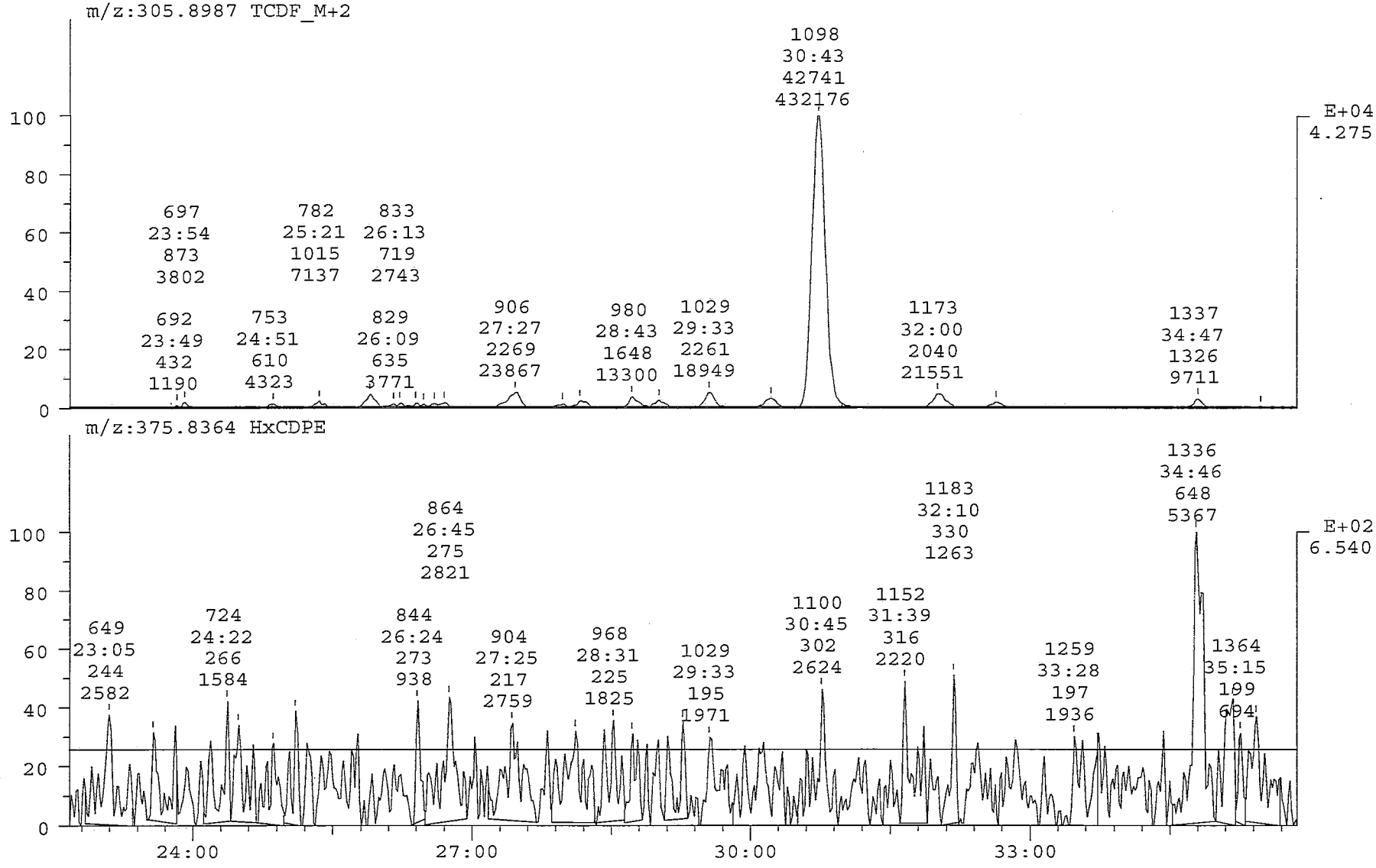
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  32:35      1207
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1121 > 1293           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



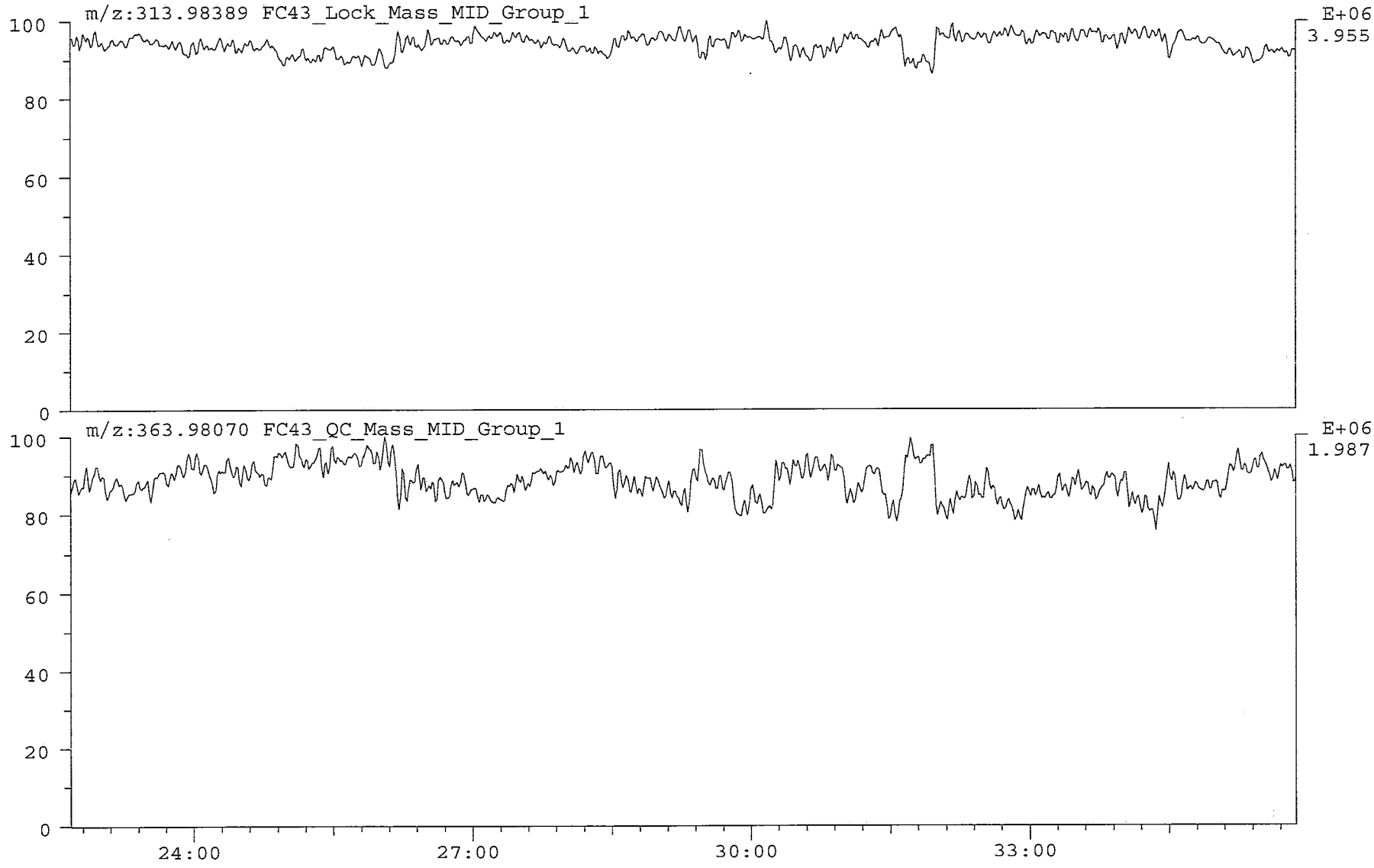
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  30:39      1094
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   998 > 1196            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



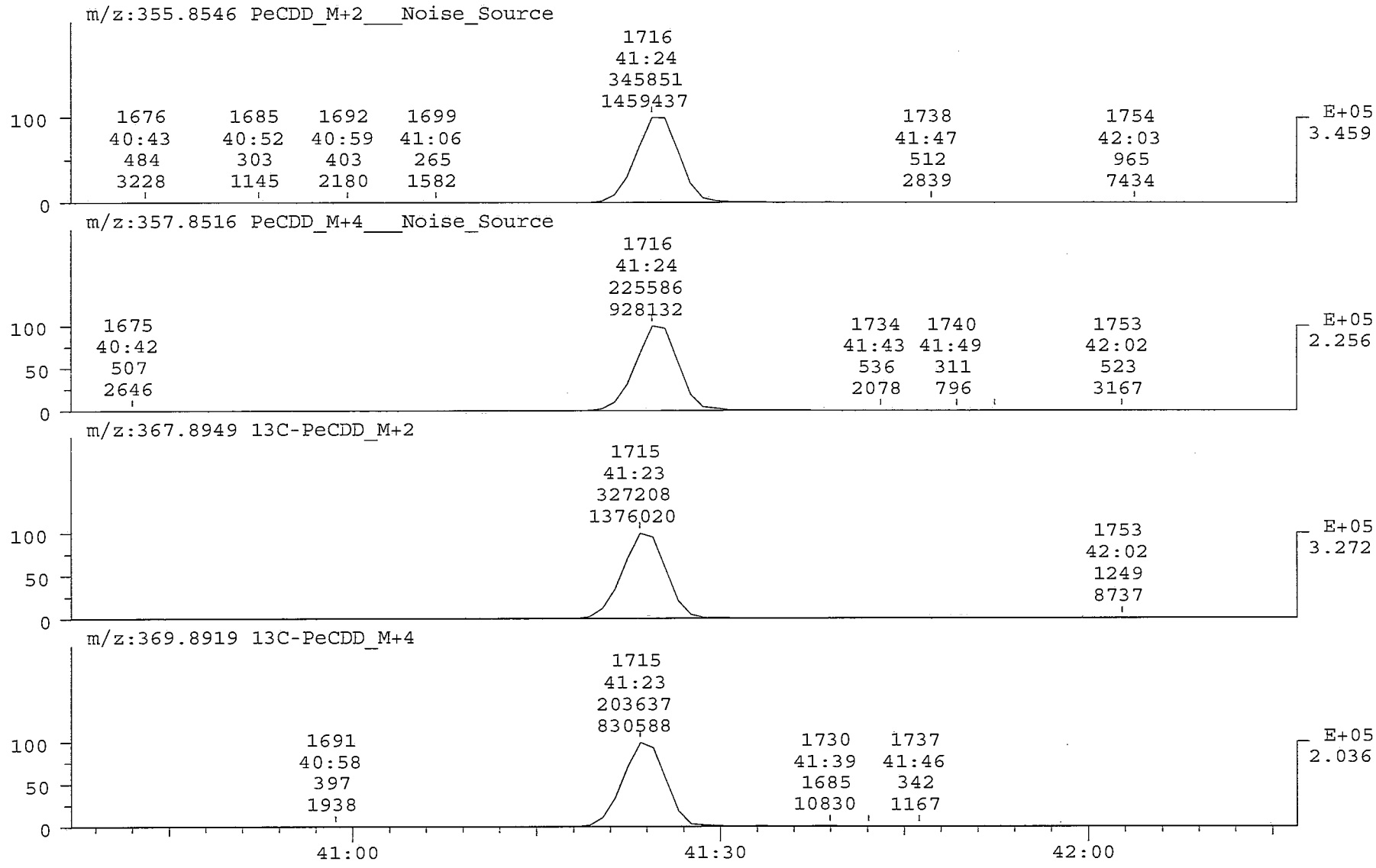
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  30:39      1094
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   624 > 1400            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



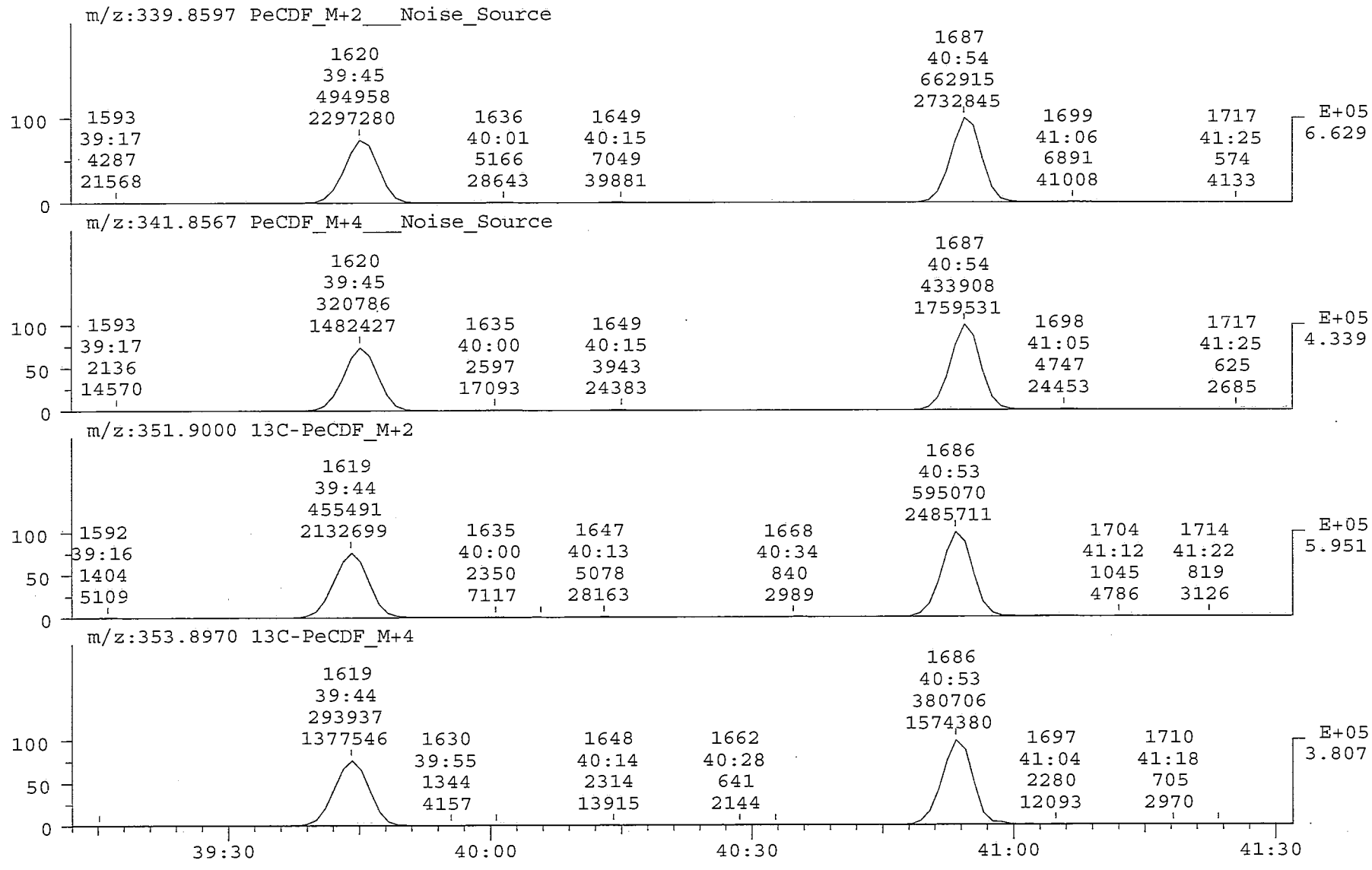
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  30:39      1094
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   624 > 1400            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```



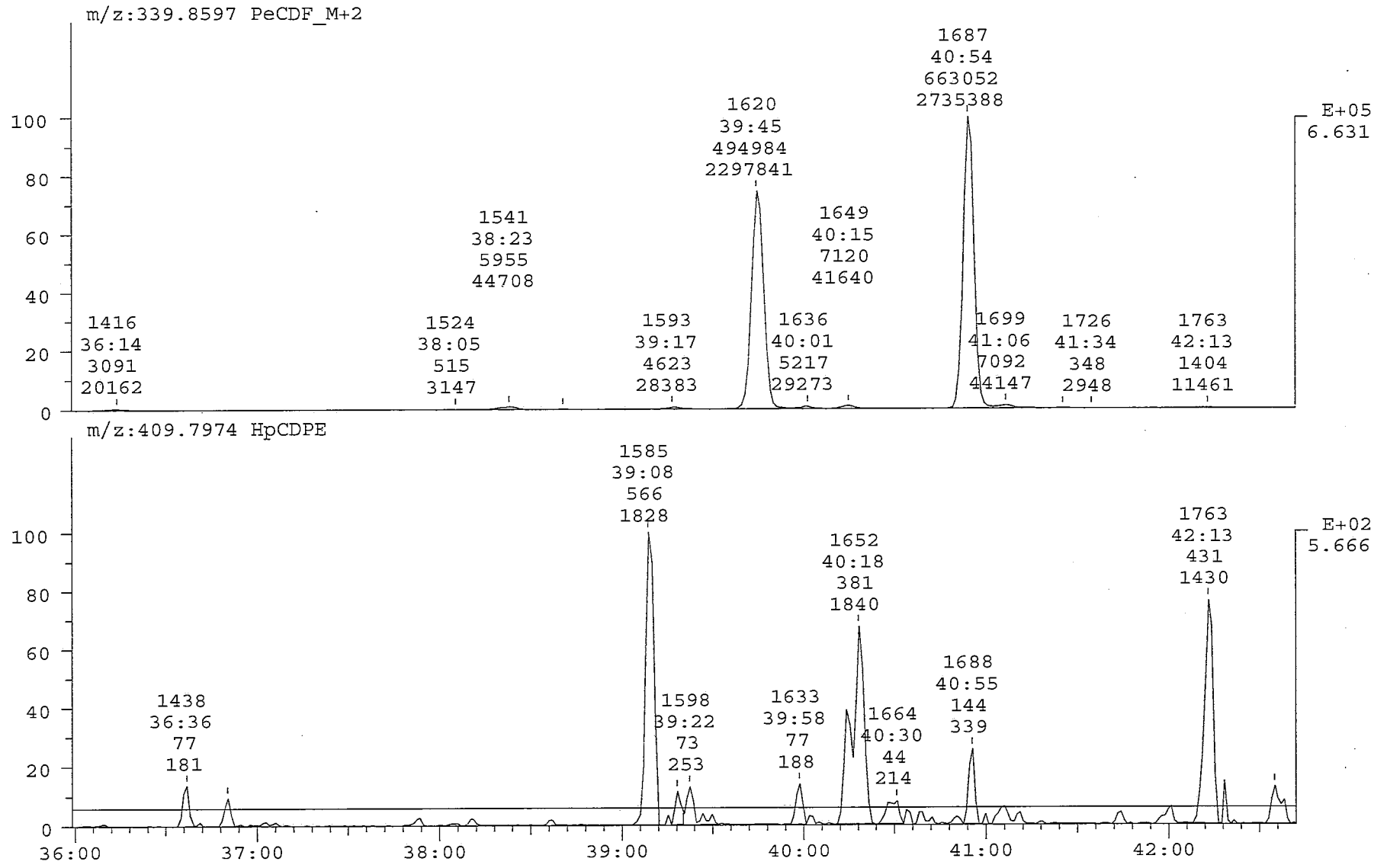
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  41:24      1716
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1670 > 1767           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



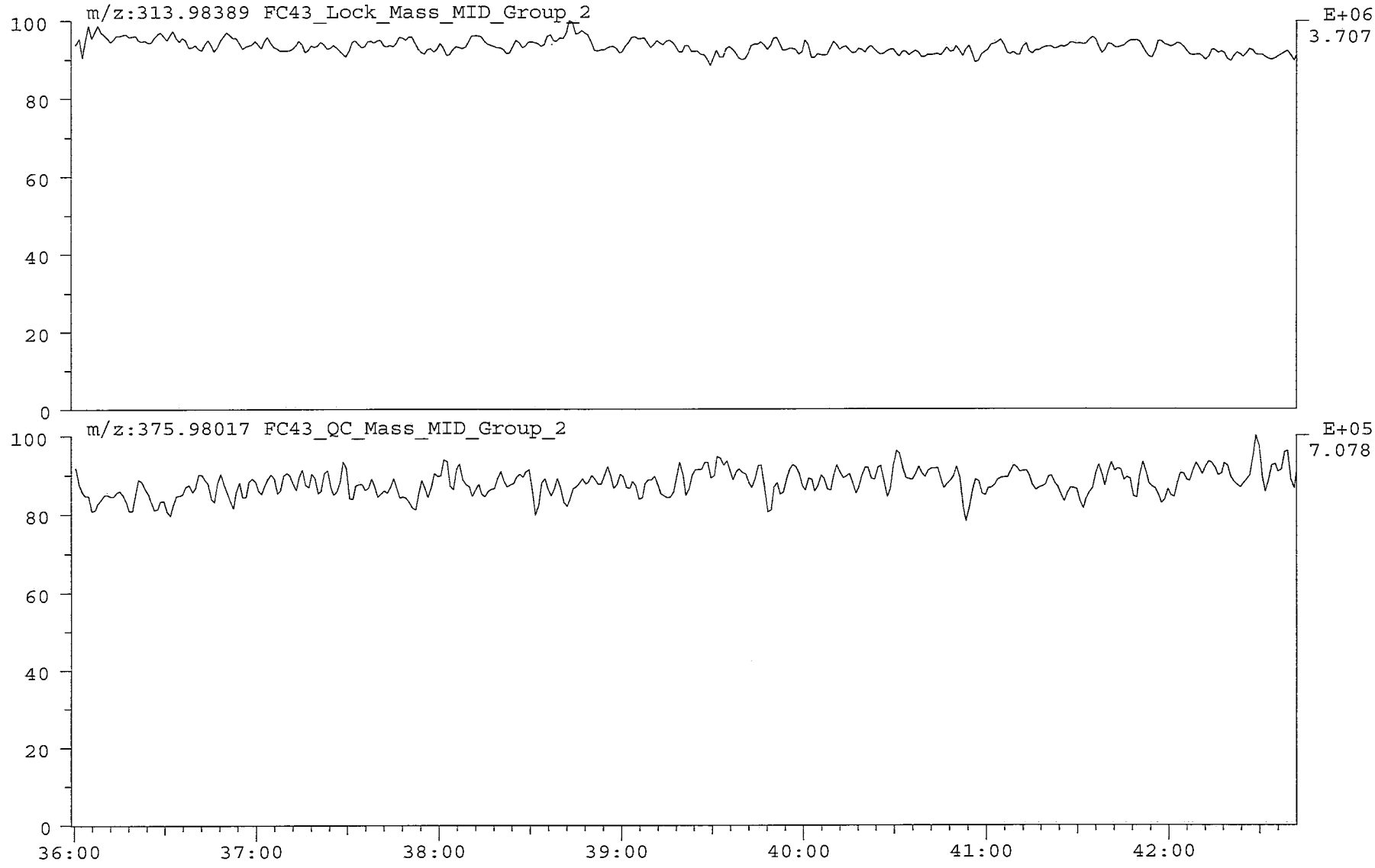
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1588 > 1723           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



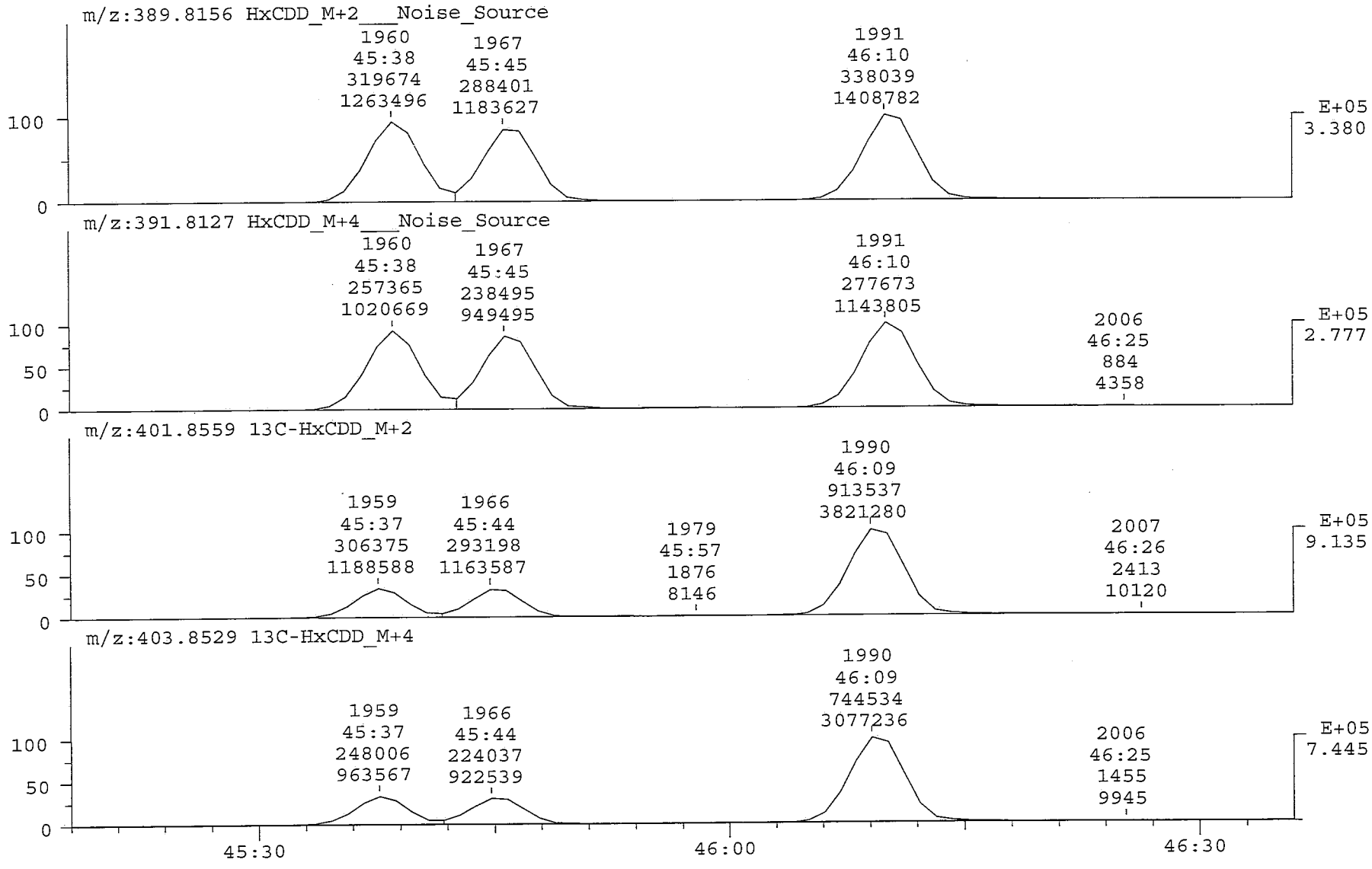
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



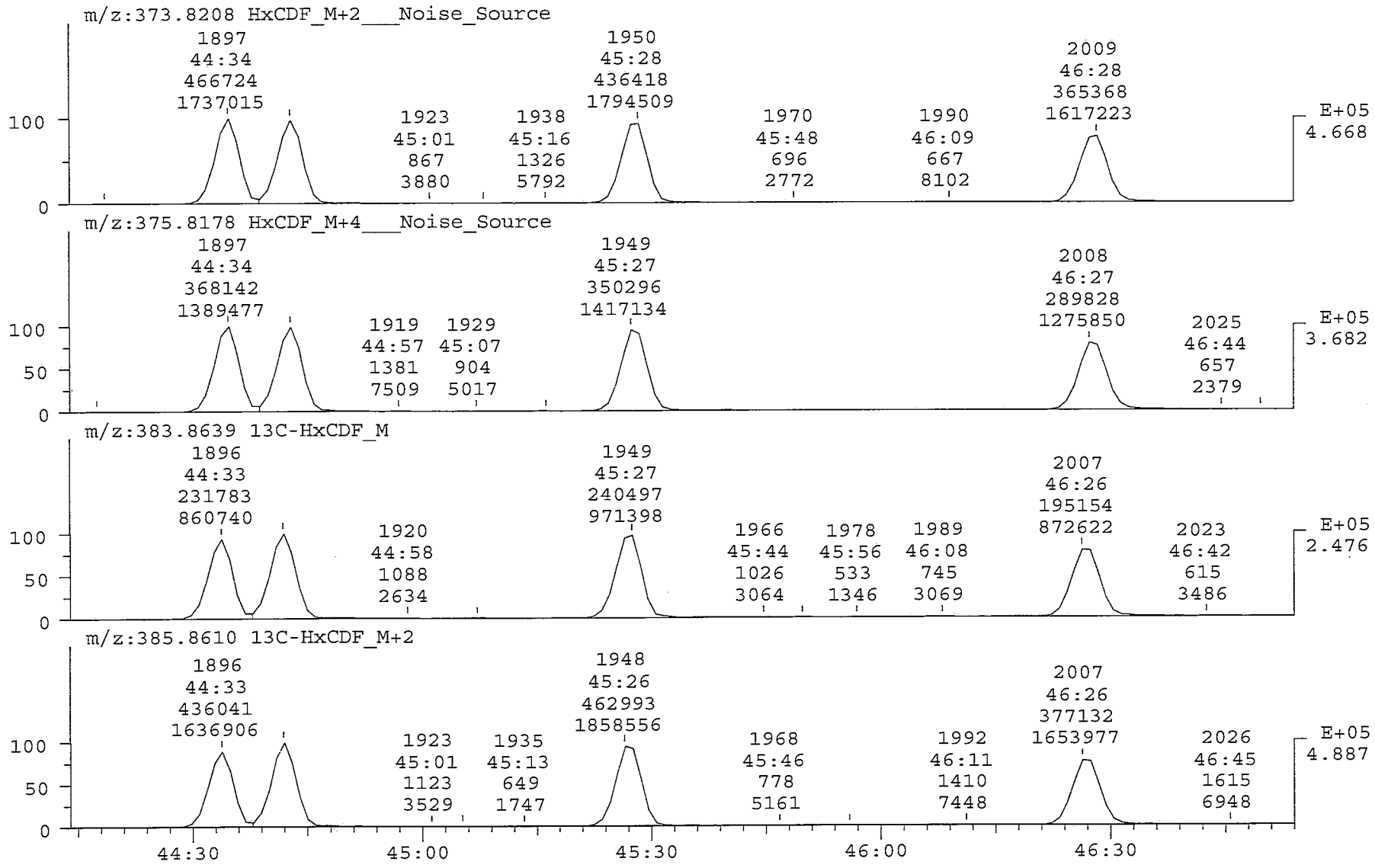
```
CHRO:  d1tm811xd                              18-Aug-16  Elapse:  40:22      1656
Samp:  WO=m811x1ae Meth=9Ao Dil=1                        Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                               Study :  6217014 (10.0g)
Oper:  KLR                                               Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1403 > 1791         Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



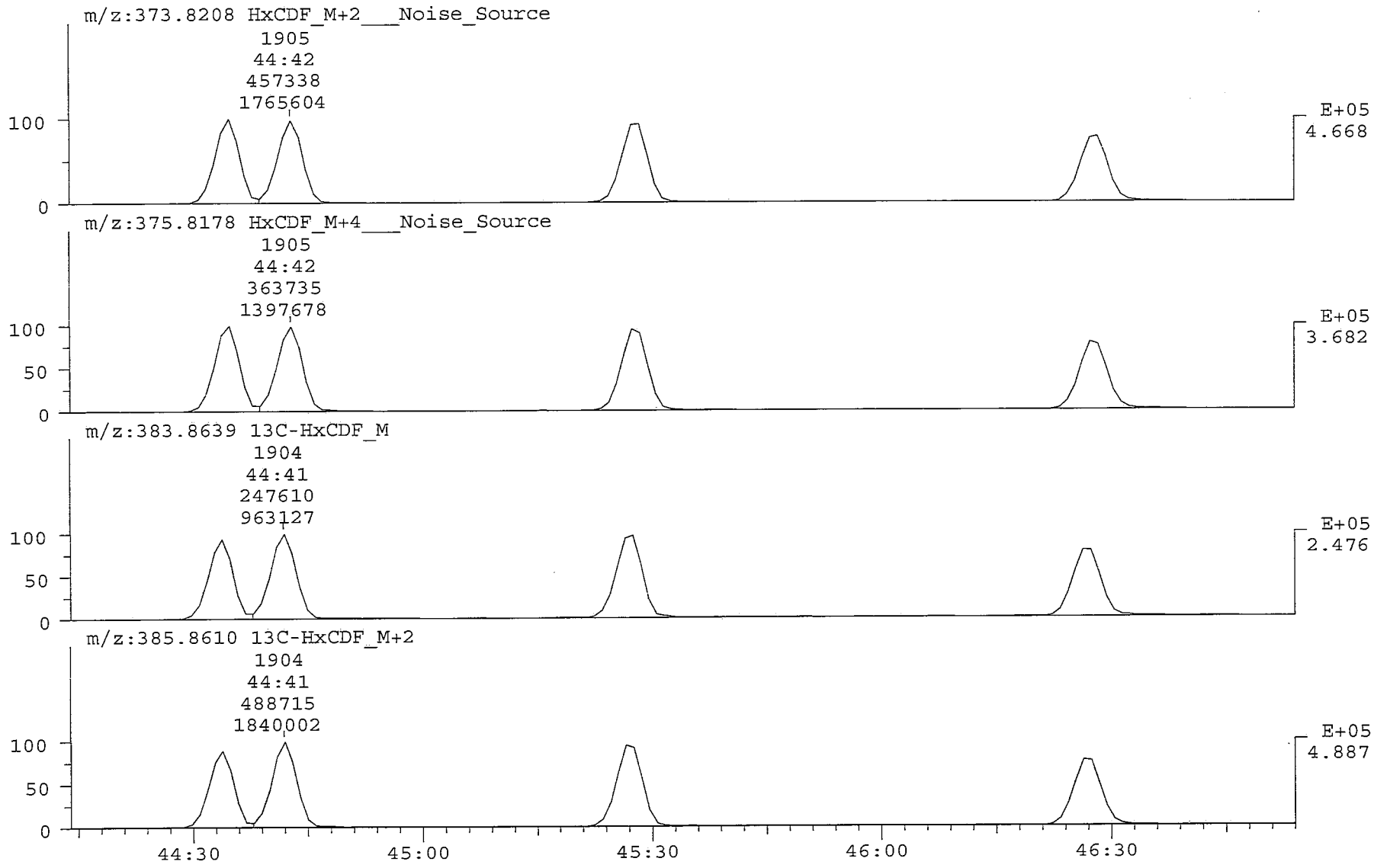
CHRO: d1tm811xd 18-Aug-16 Elapse: 45:56 1978
Samp: WO=m811x1ae Meth=9Ao Dil=1 Start : 10:13:04 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (10.0g)
Oper: KLR Inlet : LC
Peak: 100.00 ppm Label wndw: 1940 > 2017 Masses: 303 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 5.0
Disp: Height Area



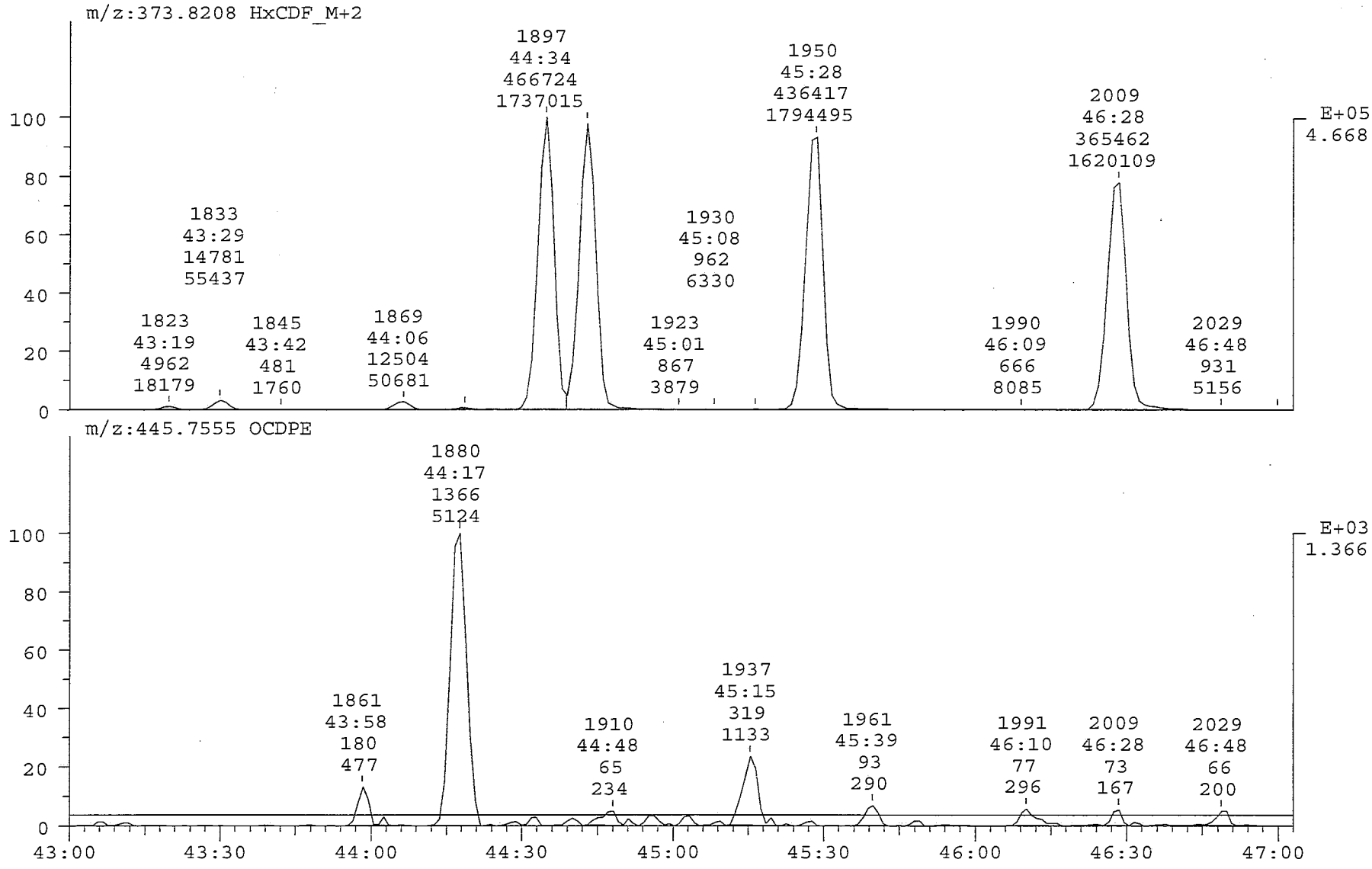
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  45:33      1955
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1876 > 2034           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



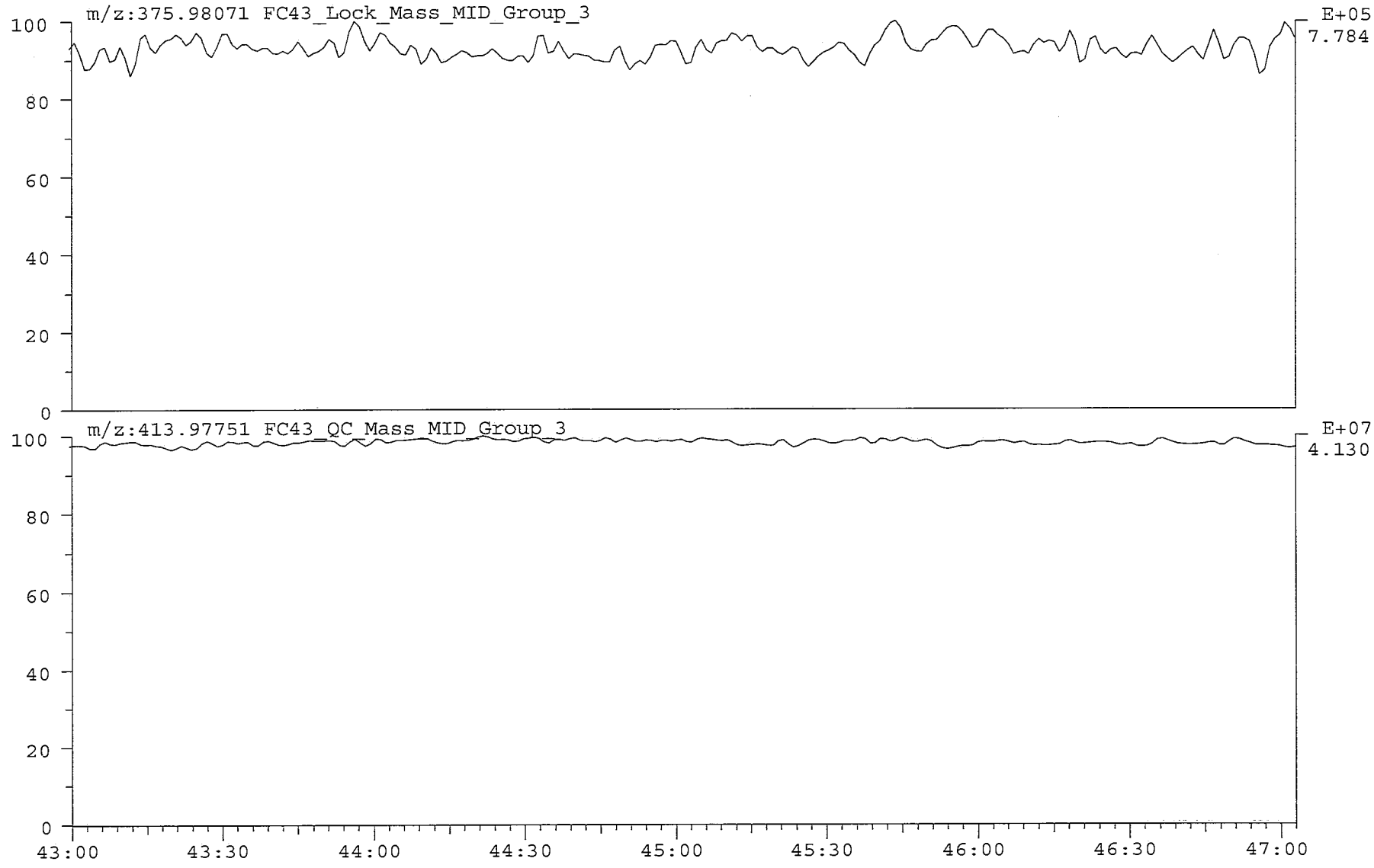
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  44:41      1904
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1900 > 1908           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



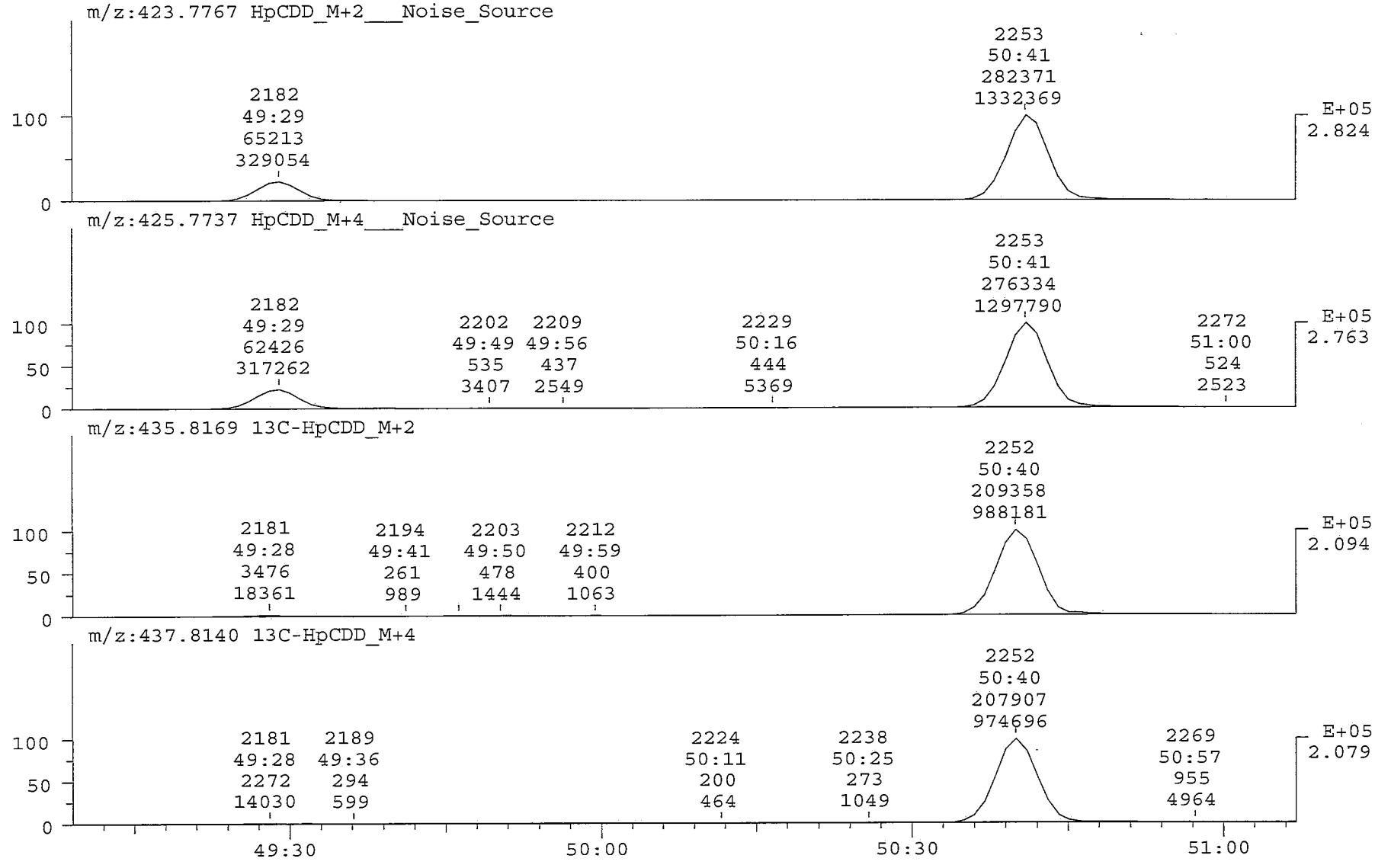
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  44:41      1904
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2043           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



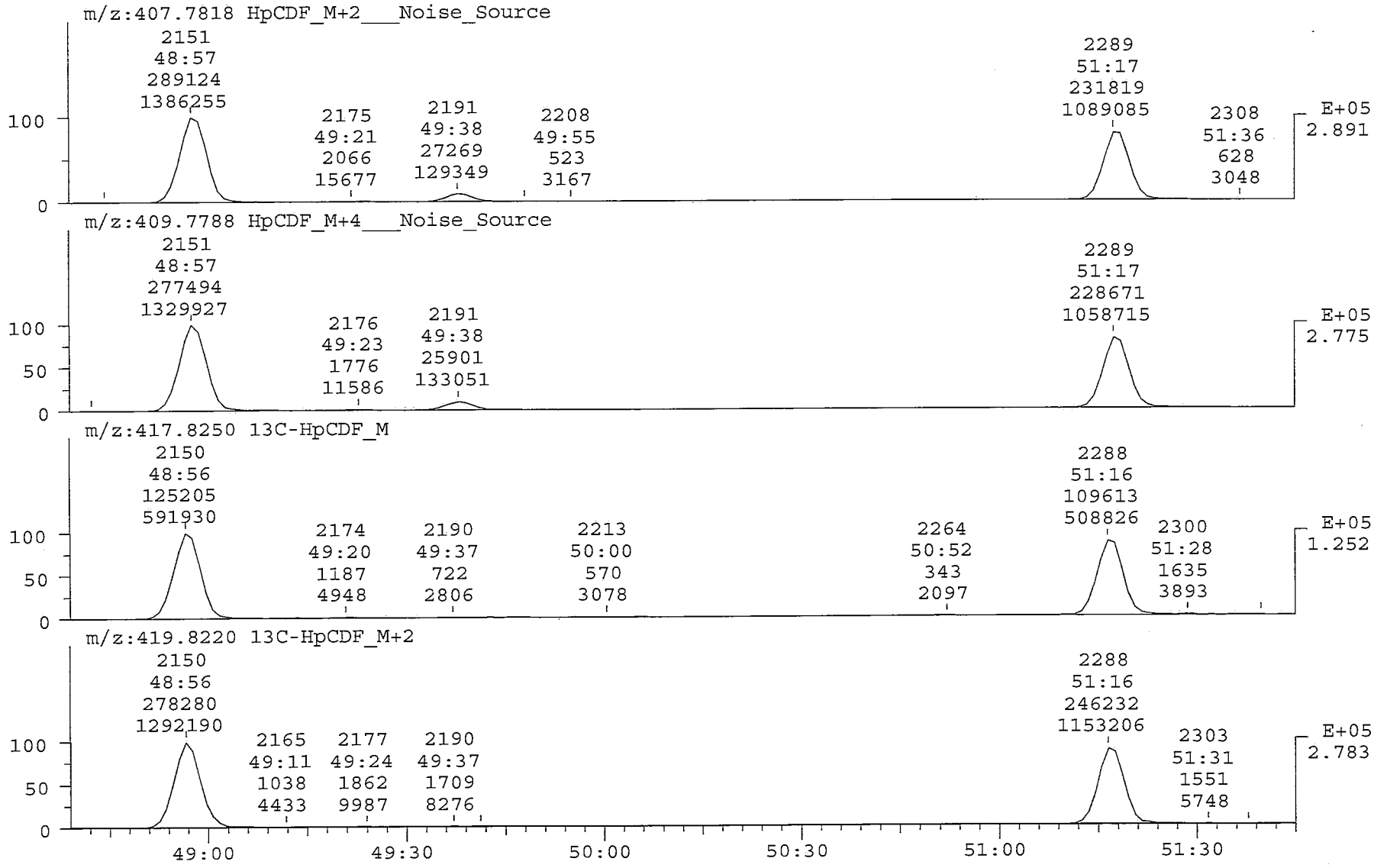
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  44:41      1904
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   1803 > 2043           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```



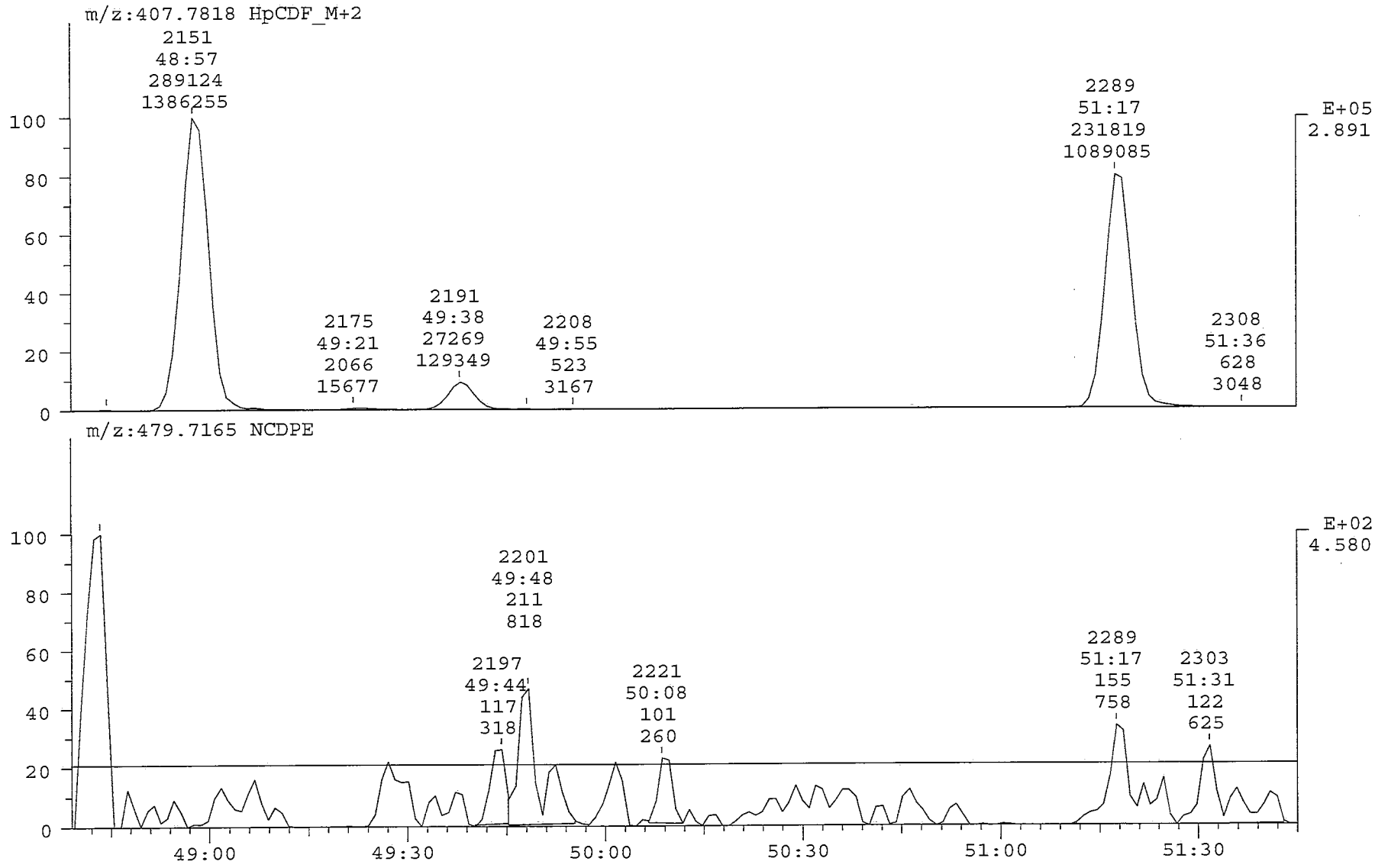
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  44:41      1904
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2162 > 2279           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



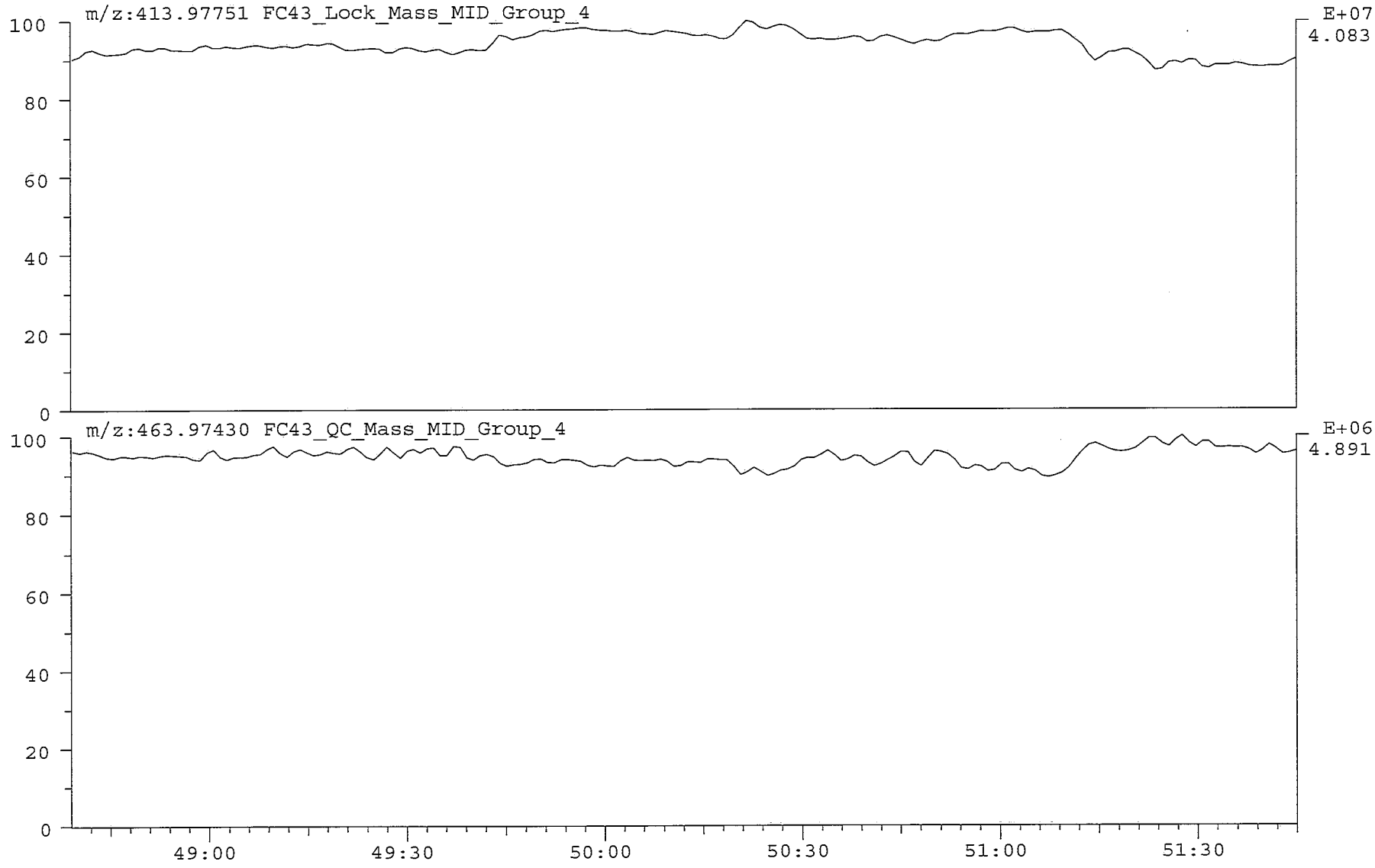
```
CHRO:  d1tm811xd                                18-Aug-16   Elapse:  50:11      2224
Samp:  WO=m811x1ae Meth=9Ao Dil=1                           Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.0g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2316            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



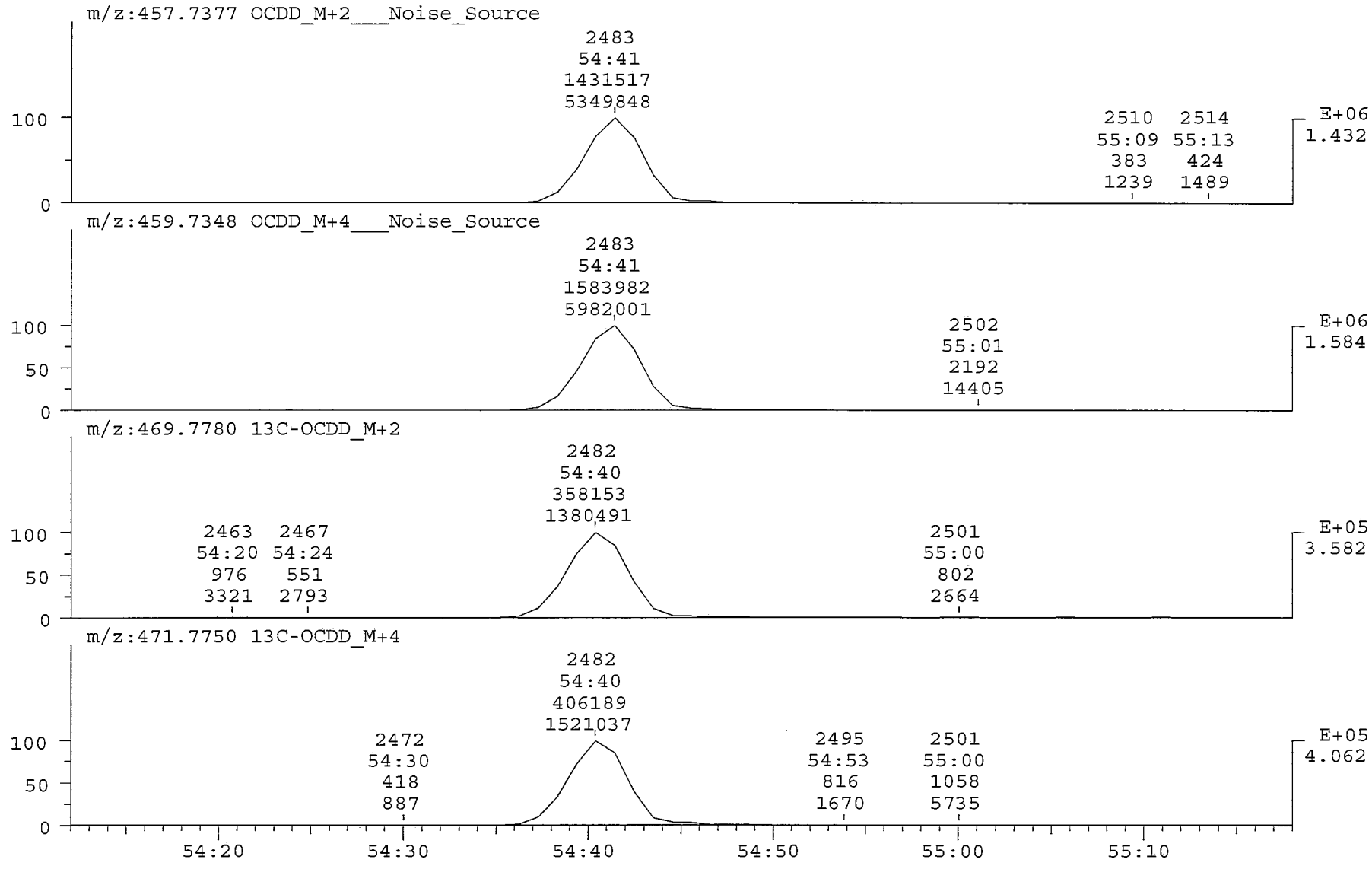
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  50:11      2224
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2133 > 2316           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



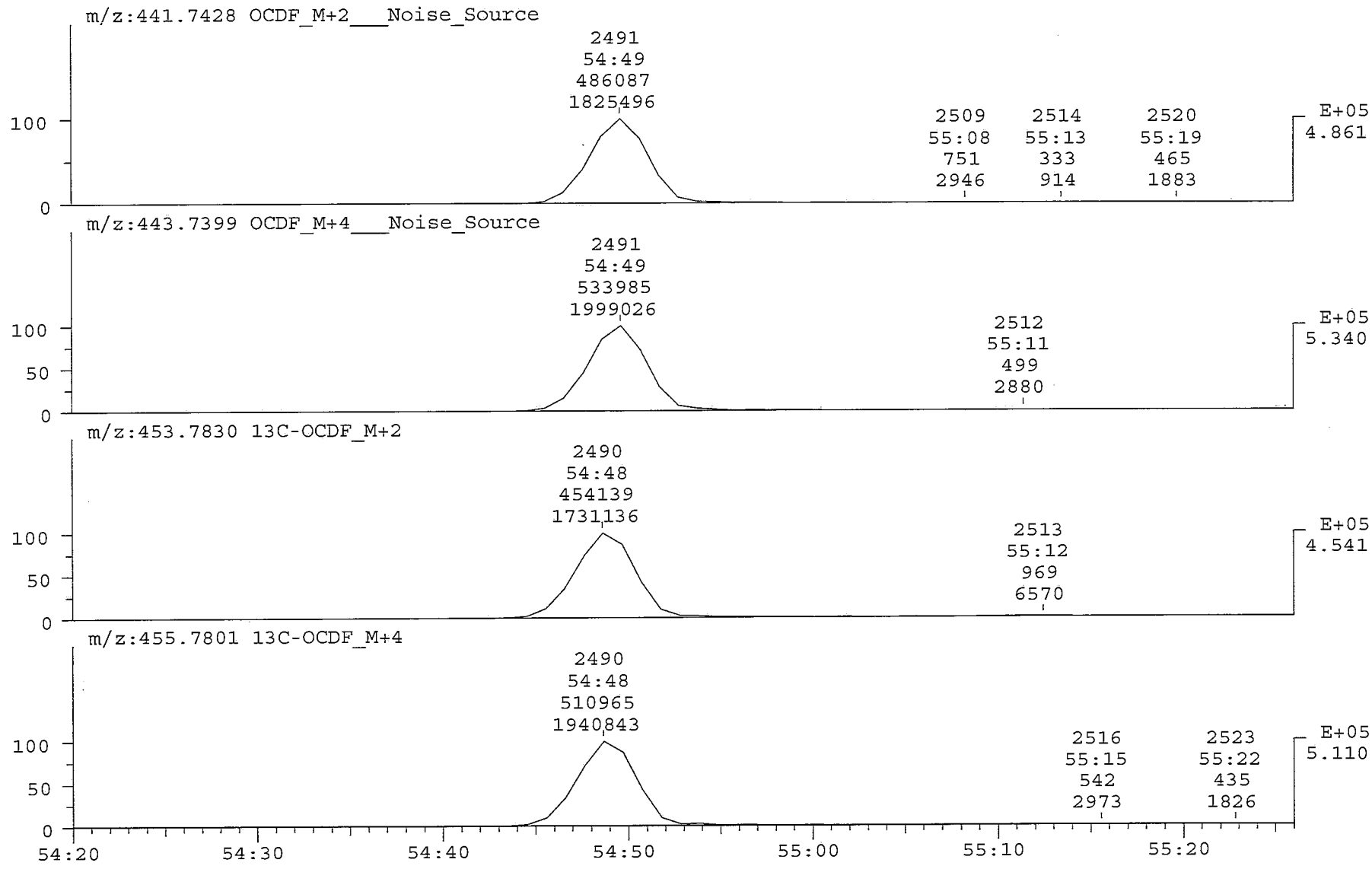
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  50:11      2224
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00 ppm     Label wndw:   2133 > 2316            Masses:  303 > 514
Area:  5, 0.50, 15    Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



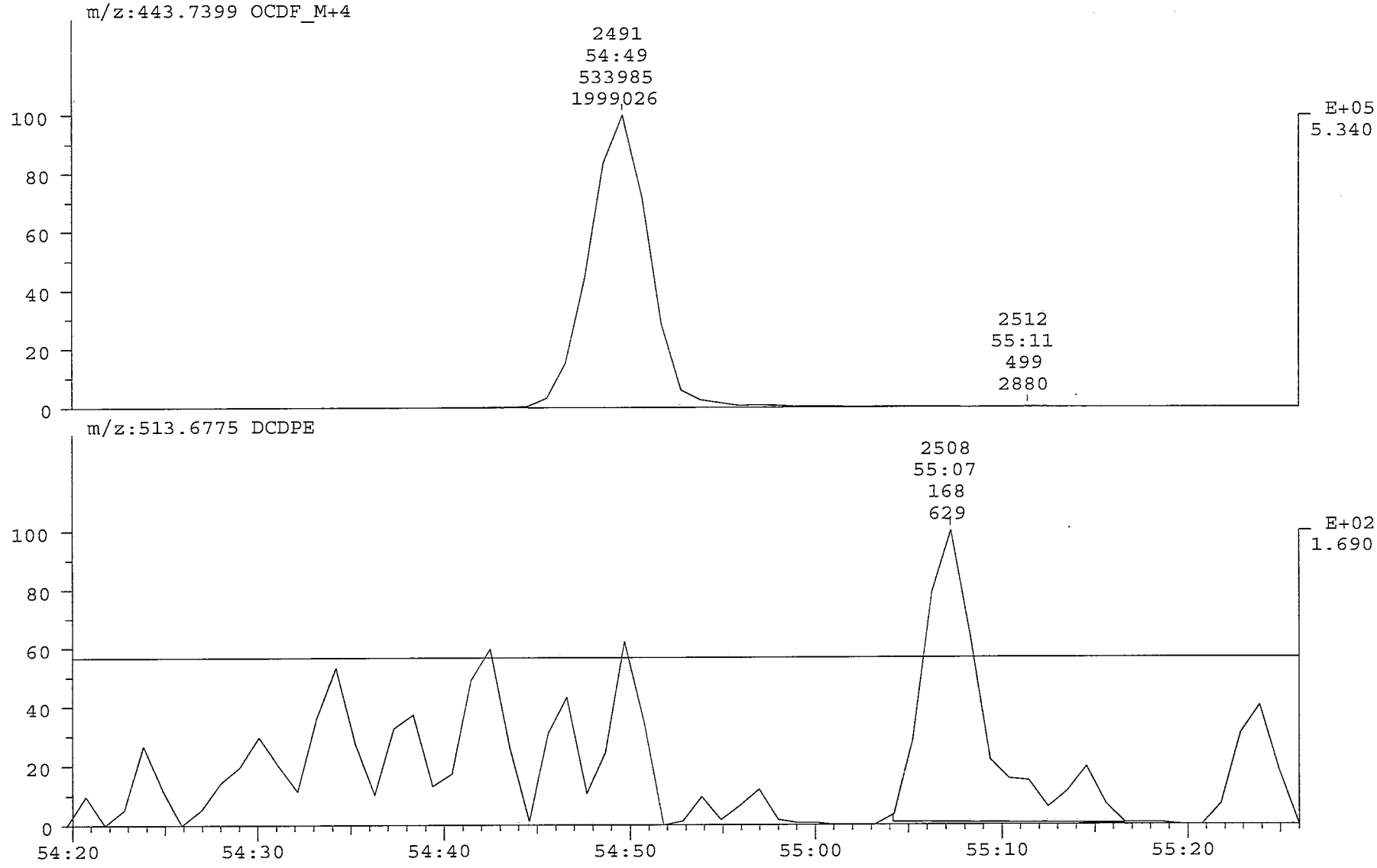
```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  54:42      2484
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2455 > 2518           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



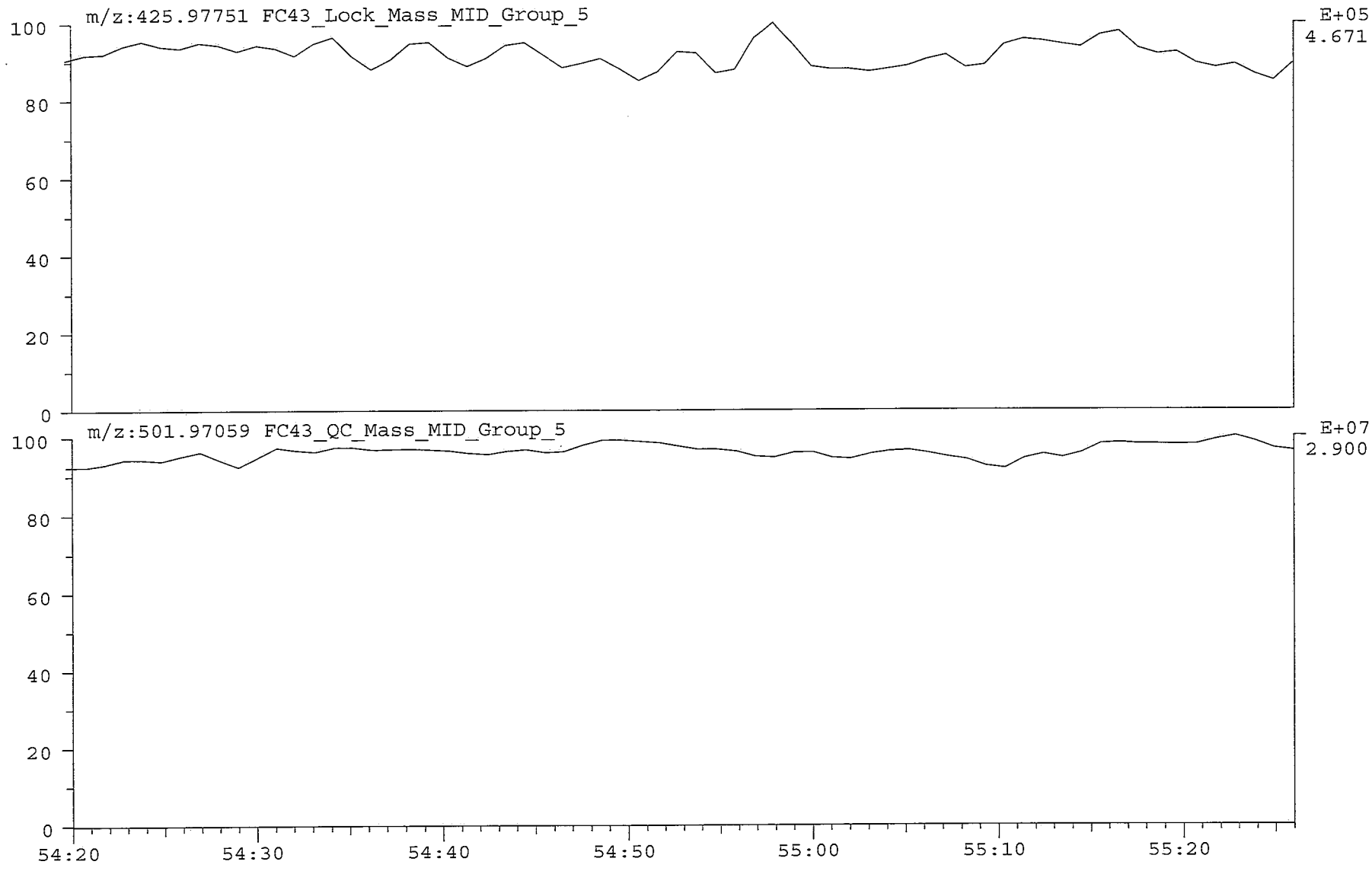
```
CHRO:  d1tm811xd                                18-Aug-16   Elapse:  54:49      2491
Samp:  WO=m811x1ae Meth=9Ao Dil=1                           Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                  Study :  6217014 (10.0g)
Oper:  KLR                                                  Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526            Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  -2, 5.0
Disp:  Height  Area
```



```
CHRO:  d1tm811xd                                18-Aug-16  Elapse:  54:49      2491
Samp:  WO=m811x1ae Meth=9Ao Dil=1                          Start :  10:13:04   2628
Comm:  Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode:  EI ESI + Q1MS UP LR                                 Study :  6217014 (10.0g)
Oper:  KLR                                                 Inlet :  LC
Peak:  100.00  ppm     Label wndw:   2462 > 2526           Masses:  303 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```



*** file opened Thu Aug 18 10:17:32 2016 ***

Started by - Xcalibur
Instrument Internet name - DFS MS
Instrument model - DFS MS
Instrument service number - 0000
Workstation internet name - KNXDXNDFS01

Analysis started at: 18-Aug-16 10:17:31

Analysis will stop at user request

Firmware Version: 1.03

MCAL file name: mcal1.cal

Sequence : 021716KLR_160818094321

MID procedure: 5W_DB5_FC43_SINGLEGC_OCDF

Mid Time Windows:

	Start	Measure	End	Cycletime
# 1	12:00 min	23:53 min	35:53 min	1.00 sec
# 2	35:53 min	6:50 min	42:43 min	1.00 sec
# 3	42:43 min	5:16 min	48:00 min	1.00 sec
# 4	48:00 min	5:00 min	53:00 min	1.00 sec
# 5	53:00 min	4:12 min	57:12 min	1.00 sec

Mid Masses:

Window # 1

mass	F	int	gr	time (ms)
303.9016		1	1	123
305.8987		1	1	123
313.9834	l	20	1	6
313.9834		20	1	6
315.9419		5	1	24
317.9389		5	1	24
319.8965		1	1	123
321.8936		1	1	123
327.8847		1	1	123
331.9368		5	1	24
333.9338		5	1	24
363.9802	c	20	1	6
363.9802	c	20	1	6
375.8364		1	1	123

Window # 2

mass	F	int	gr	time (ms)
313.9834	l	20	1	7
313.9834		20	1	7
339.8597		1	1	146
341.8567		1	1	146
351.9000		5	1	29
353.8970		5	1	29
355.8546		1	1	146
357.8516		1	1	146
367.8949		5	1	29
369.8919		5	1	29
375.9802	c	20	1	7
375.9802		20	1	7
409.7974		1	1	146

Window # 3

mass	F	int	gr	time (ms)
373.8208		1	1	146
375.8178		1	1	146
375.9802	l	20	1	7

```
  375.9802     20  1        7
  383.8639      5  1       29
  385.8610      5  1       29
  389.8158      1  1      146
  391.8127      1  1      146
  401.8559      5  1       29
  403.8529      5  1       29
  413.9770 c   20  1        7
  413.9770     20  1        7
  445.7555      1  1      146
 Window # 4
      mass F  int  gr  time (ms)
  407.7817      1  1      146
  409.7788      1  1      146
  413.9770 l   20  1        7
  413.9770     20  1        7
  417.8250      5  1       29
  419.8220      5  1       29
  423.7767      1  1      146
  425.7737      1  1      146
  435.8169      5  1       29
  437.8140      5  1       29
  463.9738 c   20  1        7
  463.9738     20  1        7
  479.7165      1  1      146
 Window # 5
      mass F  int  gr  time (ms)
  425.9770 l   20  1        7
  425.9770     20  1        7
  441.7428      1  1      146
  443.7399      1  1      146
  453.7830      5  1       29
  455.7801      5  1       29
  457.7377      1  1      146
  459.7348      1  1      146
  469.7780      5  1       29
  471.7750      5  1       29
  501.9706 c   20  1        7
  501.9706     20  1        7
  513.6775      1  1      146

MID Window terminated after 35.900000 minutes
MID Window end time was 35.890000 minutes
MID Window terminated after 42.733333 minutes
MID Window end time was 42.730000 minutes
MID Window terminated after 48.000000 minutes
MID Window end time was 48.000000 minutes
MID Window terminated after 53.000000 minutes
MID Window end time was 53.000000 minutes
MID Window terminated after 57.200000 minutes
MID Window end time was 57.200000 minutes

Tune file name: C:\Xcalibur\System\DFS\MSI\Tune2.DFSTune

DFS - Parameter

 ACCU          1000.0000   BCORRS          0.0169   BMASS         312.9834
 BQUAD            2.4000   CAPIL           0.0000   CAPTSET       200.0000
 CCURR            0.0000   COUNTING        0.0000   DELAY           0.0000
 DRAW           -25.0000   DRAWC           0.0000   DRAWS           0.0000
 DYNVOLTAGE       18.0000  ECORR           1.0008   ECURR           1.0000
 EDAC        7969177.0000  EDACG           0.9997   EDACZ        2585.8226
 ELEN           -45.0000   EMULT        1802.0000   ENS           210.0000
 ENSBR            2.4000   ERATIO          1.0000   ESA           679.0600
 ESIPAR           0.0000   EXS           172.0000   EXSBR           2.5000
 FDMA       18000000.0000  FILTER        100.0000   FLENS           1.0000
 FM             375.8364   FMII           50.0000   FQUAD           6.7000
```

FQUADGAIN	0.2000	FREQ	400.0000	FSLOPE	36000000.0000
FVANAL	0.0044	FVINLET	0.0479	FVSRC	0.0398
FWIN	0.7000	HCURR	0.0000	HVANAL	0.0000
HVSRC	0.0000	ICAL0	0.0011	ICAL1	0.4030
ICAL2	0.5865	IONEN	0.0000	IST	0.0000
ISTC	260.0000	ISTS	260.0000	LENS_POT	620.0000
LENS_SYM	-4.7500	LM	375.8364	LMII	500.0000
LMASS	312.9834	LKM	425.9770	MASS	312.9834
MDAC	3588134.2544	MRANGE	1241.7659	NSAM	200.0000
NSCAN	2649.0000	NSMAX	8.0000	NSMIN	66.0000
NPEAK	13.0000	MULT	-2.0000	PSAM	10.0000
PUSHER	-7.0000	RECURR	0.8982	RELEN	0.0000
RES	10997.1318	RPUSHER	-6.9670	RDRAW	0.0000
RDRAWC	0.0000	RWIN	2.0000	SCIDLE	0.0000
SHIELD_POT	672.0000	SHIELD_SYM	0.0000	SHIGH	180.0000
SKIM	7.0000	SLOW	60.0000	SS	2.0000
SW	0.0986	TANAL	0.0000	TCURR	0.0000
TD	1.0000	TS	0.0974	THRESH	2.0000
TIS	0.0010	TREF	80.0000	TSAM	200.0000
TSET	0.0000	TUBEL	0.0000	UROT	0.0000
USERVAR	0.0000	UTQ1	150.0000	UTQ2	190.0000
UTQ3	80.0000	VMASS	312.9834	XLENS_POT	926.0000
XLENS_SYM	23.2500	YLENS_POT	884.0000	YLENS_SYM	9.2500

```
Source Gauge:         2.6e-005 mbar
Analyzer Penning:     9.4e-008 mbar
Pirani Analyse:       4.4e-003 mbar
Pirani Source:        4.0e-002 mbar
Pirani Inlet System: 4.8e-002 mbar

Scantype is magnetic

Sourcemode is EI POS

MID Time Window 1: Resolution is 12181.
MID Time Window 2: Resolution is 12534.
MID Time Window 3: Resolution is 11887.
MID Time Window 4: Resolution is 11885.
MID Time Window 5: Resolution is 10997.

Amplifier Offset: 88.


*** File closed Thu Aug 18 11:14:45 2016
  ***
```

QUAN: d1tm811xd.q0 Entries: 259

Data file(s) used
File: d1tm811xd 18-Aug-16
Samp: WO=m811x1ae Meth=9Ao Dil=1 Start : 10:13:04 2628
Comm: Inst=d11a/1379922 Batch=20160818s1 Ccal=D1160818S1
Mode: EI ESI + Q1MS UP LR Study : 6217014 (1
Oper: KLR Inlet : LC

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

Quan Masses	Actual Time	Area	Height	Peak Beginn	Peak End	Noise Value	La Pe	Lab Fac	Integration Baseline
319.8805	32:52	244339.	23823.	32:37	33:07	48.	1	1.0	AVV
321.8775	32:52	301688.	30350.	32:37	33:07	49.	1	1.0	AVV
319.8805	32:19	2023.	312.	32:11	32:25	48.	2	5.0	ABB
319.8805	32:52	244339.	23823.	32:37	33:07	48.	2	5.0	AVV
319.8805	34:01	1064.	296.	33:54	34:03	48.	2	5.0	ABB
321.8775	32:17	2300.	359.	32:08	32:25	49.	2	5.0	ABV
321.8775	32:52	301688.	30350.	32:37	33:07	49.	2	5.0	AVV
331.9202	32:16	2914980.	288184.	32:01	32:32	94.	2	5.0	AVV
331.9202	32:49	1034454.	100127.	32:34	33:04	94.	2	5.0	AVV
331.9202	33:07	5221.	1277.	33:04	33:12	94.	2	5.0	AVV
331.9202	33:15	3437.	965.	33:12	33:18	94.	2	5.0	AVV
331.9202	33:25	4186.	873.	33:18	33:27	94.	2	5.0	AVB
333.9171	32:16	3589626.	365536.	32:01	32:32	149.	2	5.0	AVV
333.9171	32:48	1299578.	129606.	32:34	33:03	149.	2	5.0	AVV
333.9171	33:08	7543.	1163.	33:06	33:19	149.	2	5.0	AVB
303.8864	30:44	345051.	34614.	30:28	30:59	63.	1	1.0	ABV
305.8834	30:44	431863.	42731.	30:29	30:59	82.	1	1.0	ABV
303.8864	29:34	14863.	1680.	29:21	29:49	63.	2	5.0	ABV
303.8864	30:11	11219.	1145.	29:56	30:23	63.	2	5.0	ABB
303.8864	30:44	345051.	34614.	30:28	30:59	63.	2	5.0	ABV
303.8864	32:00	15880.	1767.	31:48	32:15	63.	2	5.0	ABV
305.8834	29:33	18860.	2258.	29:21	29:46	82.	2	5.0	ABB
305.8834	30:13	14094.	1436.	29:58	30:26	82.	2	5.0	AVB
305.8834	30:44	431863.	42731.	30:29	30:59	82.	2	5.0	ABV
305.8834	32:00	20014.	1993.	31:48	32:11	82.	2	5.0	ABB
315.9261	29:32	6450.	764.	29:22	29:40	62.	2	5.0	ABB
315.9261	30:40	1695813.	183191.	30:25	30:56	62.	2	5.0	ABV
315.9261	31:00	8355.	1071.	30:58	31:11	62.	2	5.0	AVB
315.9261	31:13	1958.	703.	31:11	31:16	62.	2	5.0	ABV
315.9261	31:21	2580.	587.	31:16	31:23	62.	2	5.0	AVB
315.9261	32:12	1956.	524.	32:07	32:14	62.	2	5.0	ABV
315.9261	32:16	2027.	722.	32:14	32:19	62.	2	5.0	AVB
317.9230	29:33	8631.	1723.	29:23	29:37	33.	2	5.0	ABB
317.9230	30:40	2113837.	217489.	30:25	30:56	33.	2	5.0	AVV
317.9230	31:01	5778.	892.	30:57	31:06	33.	2	5.0	AVV
317.9230	31:08	4739.	1158.	31:06	31:14	33.	2	5.0	AVV
317.9230	31:19	2382.	592.	31:14	31:22	33.	2	5.0	AVB
317.9230	31:29	1421.	295.	31:24	31:31	33.	2	5.0	ABV
317.9230	31:34	559.	200.	31:31	31:36	33.	2	5.0	AVB
317.9230	31:46	847.	216.	31:39	31:49	33.	2	5.0	ABB
317.9230	32:06	758.	288.	32:03	32:08	33.	2	5.0	ABB
317.9230	32:16	3827.	932.	32:09	32:18	33.	2	5.0	ABB
355.8368	41:24	1459437.	345851.	41:17	41:40	54.	1	1.0	ABV
357.8337	41:24	928132.	225586.	41:16	41:40	54.	1	1.0	ABV
355.8368	40:43	3228.	484.	40:36	40:49	54.	2	5.0	ABB
355.8368	40:52	1145.	303.	40:50	40:55	54.	2	5.0	ABV
355.8368	40:59	2180.	403.	40:55	41:03	54.	2	5.0	AVV
355.8368	41:06	1582.	265.	41:03	41:13	54.	2	5.0	AVB
355.8368	41:24	1459437.	345851.	41:17	41:40	54.	2	5.0	ABV
355.8368	41:47	2839.	512.	41:45	41:52	54.	2	5.0	AVV

355.8368	42:03	7434.	965.	41:52	42:16	54.	2	5.0 AVB
357.8337	40:42	2646.	507.	40:39	40:48	54.	2	5.0 ABB
357.8337	41:24	928132.	225586.	41:16	41:40	54.	2	5.0 ABV
357.8337	41:43	2078.	536.	41:41	41:47	54.	2	5.0 AVV
357.8337	41:49	796.	311.	41:47	41:50	54.	2	5.0 AVV
357.8337	41:52	1570.	389.	41:50	41:57	54.	2	5.0 AVB
357.8337	42:02	3167.	523.	41:57	42:11	54.	2	5.0 ABB
367.8765	41:23	1376020.	327208.	41:14	41:39	96.	2	5.0 ABV
367.8765	42:02	8737.	1249.	41:47	42:08	96.	2	5.0 AVB
369.8734	40:58	1938.	397.	40:50	41:01	56.	2	5.0 ABB
369.8734	41:23	830588.	203637.	41:12	41:30	56.	2	5.0 ABV
369.8734	41:39	10830.	1685.	41:30	41:41	56.	2	5.0 AVV
369.8734	41:42	909.	472.	41:41	41:44	56.	2	5.0 AVV
369.8734	41:46	1167.	342.	41:44	41:49	56.	2	5.0 AVB
339.8427	40:54	2732845.	662915.	40:46	41:02	86.	1	1.0 ABV
341.8396	40:54	1759531.	433908.	40:44	41:03	65.	1	1.0 ABV
339.8427	39:17	21568.	4287.	39:12	39:27	86.	2	5.0 ABB
339.8427	39:45	2297280.	494958.	39:29	39:55	86.	2	5.0 AVV
339.8427	40:01	28643.	5166.	39:55	40:07	86.	2	5.0 AVV
339.8427	40:15	39881.	7049.	40:07	40:30	86.	2	5.0 AVB
339.8427	40:54	2732845.	662915.	40:46	41:02	86.	2	5.0 ABV
339.8427	41:06	41008.	6891.	41:02	41:17	86.	2	5.0 AVV
339.8427	41:25	4133.	574.	41:17	41:31	86.	2	5.0 AVB
341.8396	39:17	14570.	2136.	39:12	39:25	65.	2	5.0 ABB
341.8396	39:45	1482427.	320786.	39:33	39:55	65.	2	5.0 ABV
341.8396	40:00	17093.	2597.	39:55	40:06	65.	2	5.0 AVV
341.8396	40:15	24383.	3943.	40:06	40:30	65.	2	5.0 AVV
341.8396	40:54	1759531.	433908.	40:44	41:03	65.	2	5.0 ABV
341.8396	41:05	24453.	4747.	41:03	41:21	65.	2	5.0 AVV
341.8396	41:25	2685.	625.	41:21	41:29	65.	2	5.0 AVB
351.8824	39:16	5109.	1404.	39:13	39:20	81.	2	5.0 ABB
351.8824	39:44	2132699.	455491.	39:28	39:58	81.	2	5.0 AVV
351.8824	40:00	7117.	2350.	39:58	40:02	81.	2	5.0 AVV
351.8824	40:05	4991.	1396.	40:02	40:07	81.	2	5.0 AVV
351.8824	40:13	28163.	5078.	40:07	40:28	81.	2	5.0 AVV
351.8824	40:34	2989.	840.	40:32	40:39	81.	2	5.0 AVB
351.8824	40:53	2485711.	595070.	40:44	41:09	81.	2	5.0 ABV
351.8824	41:12	4786.	1045.	41:10	41:18	81.	2	5.0 AVB
351.8824	41:22	3126.	819.	41:18	41:27	81.	2	5.0 ABB
353.8793	39:15	1738.	473.	39:12	39:21	46.	2	5.0 ABB
353.8793	39:44	1377546.	293937.	39:34	39:54	46.	2	5.0 ABV
353.8793	39:55	4157.	1344.	39:54	39:58	46.	2	5.0 AVV
353.8793	40:00	6366.	1520.	39:58	40:05	46.	2	5.0 AVV
353.8793	40:14	13915.	2314.	40:05	40:21	46.	2	5.0 AVB
353.8793	40:28	2144.	641.	40:23	40:30	46.	2	5.0 ABV
353.8793	40:32	1010.	498.	40:30	40:34	46.	2	5.0 AVB
353.8793	40:53	1574380.	380706.	40:46	41:02	46.	2	5.0 ABV
353.8793	41:04	12093.	2280.	41:02	41:15	46.	2	5.0 AVV
353.8793	41:18	2970.	705.	41:15	41:21	46.	2	5.0 AVV
353.8793	41:23	4283.	1025.	41:21	41:30	46.	2	5.0 AVB
389.7961	46:10	1408782.	338039.	46:02	46:25	78.	1	1.0 AVV
391.7931	46:10	1143805.	277673.	46:03	46:23	97.	1	1.0 AVV
389.7961	45:38	1263496.	319674.	45:31	45:42	78.	2	5.0 ABV
389.7961	45:45	1183627.	288401.	45:42	46:01	78.	2	5.0 AVV
389.7961	46:10	1408782.	338039.	46:02	46:25	78.	2	5.0 AVV
391.7931	45:38	1020669.	257365.	45:29	45:42	97.	2	5.0 ABV
391.7931	45:45	949495.	238495.	45:42	46:01	97.	2	5.0 AVV
391.7931	46:10	1143805.	277673.	46:03	46:23	97.	2	5.0 AVV
391.7931	46:25	4358.	884.	46:23	46:33	97.	2	5.0 AVB
401.8358	45:37	1188588.	306375.	45:28	45:41	186.	2	5.0 ABV
401.8358	45:44	1163587.	293198.	45:41	45:54	186.	2	5.0 AVV
401.8358	45:58	8146.	1876.	45:54	46:01	186.	2	5.0 AVB
401.8358	46:09	3821280.	913537.	46:01	46:24	186.	2	5.0 ABV
401.8358	46:26	10120.	2413.	46:24	46:31	186.	2	5.0 AVB
403.8327	45:37	963567.	248006.	45:30	45:41	131.	2	5.0 ABV
403.8327	45:44	922539.	224037.	45:41	46:00	131.	2	5.0 AVV
403.8327	46:09	3077236.	744534.	46:01	46:23	131.	2	5.0 AVV

403.8327	46:25	9945.	1455.	46:23	46:36	131.	2	5.0 AVB
373.8021	45:28	1794509.	436418.	45:19	45:43	111.	1	1.0 AVV
375.7990	45:27	1417134.	350296.	45:18	45:42	112.	1	1.0 AVV
373.8021	44:18	11541.	3136.	44:13	44:21	111.	2	5.0 ABB
373.8021	44:34	1737015.	466724.	44:24	44:38	111.	2	5.0 ABV
373.8021	44:43	1765604.	457338.	44:38	44:58	111.	2	5.0 AVV
373.8021	45:01	3880.	867.	44:59	45:04	111.	2	5.0 AVV
373.8021	45:08	6333.	963.	45:04	45:12	111.	2	5.0 AVV
373.8021	45:16	5792.	1326.	45:12	45:19	111.	2	5.0 AVV
373.8021	45:28	1794509.	436418.	45:19	45:43	111.	2	5.0 AVV
373.8021	45:48	2772.	696.	45:47	45:53	111.	2	5.0 AVV
373.8021	46:09	8102.	667.	45:53	46:15	111.	2	5.0 AVB
373.8021	46:28	1617223.	365368.	46:16	46:43	111.	2	5.0 ABV
375.7990	44:17	10975.	3002.	44:13	44:22	112.	2	5.0 ABB
375.7990	44:34	1389477.	368142.	44:23	44:38	112.	2	5.0 ABV
375.7990	44:43	1397678.	363735.	44:38	44:55	112.	2	5.0 AVV
375.7990	44:57	7509.	1381.	44:55	45:04	112.	2	5.0 AVV
375.7990	45:07	5017.	904.	45:04	45:12	112.	2	5.0 AVV
375.7990	45:16	4804.	1424.	45:12	45:18	112.	2	5.0 AVV
375.7990	45:27	1417134.	350296.	45:18	45:42	112.	2	5.0 AVV
375.7990	46:27	1275850.	289828.	46:16	46:42	112.	2	5.0 ABV
375.7990	46:44	2379.	657.	46:42	46:46	112.	2	5.0 AVV
375.7990	46:49	2683.	774.	46:46	46:51	112.	2	5.0 AVB
373.8021	44:18	11541.	3136.	44:13	44:21	111.	2	5.0 ABB
373.8021	44:34	1737015.	466724.	44:24	44:38	111.	2	5.0 ABV
373.8021	44:43	1765604.	457338.	44:38	44:58	111.	2	5.0 AVV
373.8021	45:01	3880.	867.	44:59	45:04	111.	2	5.0 AVV
373.8021	45:08	6333.	963.	45:04	45:12	111.	2	5.0 AVV
373.8021	45:16	5792.	1326.	45:12	45:19	111.	2	5.0 AVV
373.8021	45:28	1794509.	436418.	45:19	45:43	111.	2	5.0 AVV
373.8021	45:48	2772.	696.	45:47	45:53	111.	2	5.0 AVV
373.8021	46:09	8102.	667.	45:53	46:15	111.	2	5.0 AVB
373.8021	46:28	1617223.	365368.	46:16	46:43	111.	2	5.0 ABV
375.7990	44:17	10975.	3002.	44:13	44:22	112.	2	5.0 ABB
375.7990	44:34	1389477.	368142.	44:23	44:38	112.	2	5.0 ABV
375.7990	44:43	1397678.	363735.	44:38	44:55	112.	2	5.0 AVV
375.7990	44:57	7509.	1381.	44:55	45:04	112.	2	5.0 AVV
375.7990	45:07	5017.	904.	45:04	45:12	112.	2	5.0 AVV
375.7990	45:16	4804.	1424.	45:12	45:18	112.	2	5.0 AVV
375.7990	45:27	1417134.	350296.	45:18	45:42	112.	2	5.0 AVV
375.7990	46:27	1275850.	289828.	46:16	46:42	112.	2	5.0 ABV
375.7990	46:44	2379.	657.	46:42	46:46	112.	2	5.0 AVV
375.7990	46:49	2683.	774.	46:46	46:51	112.	2	5.0 AVB
383.8447	44:33	860740.	231783.	44:23	44:37	68.	2	5.0 ABV
383.8447	44:42	963127.	247610.	44:37	44:56	68.	2	5.0 AVV
383.8447	44:58	2634.	1088.	44:56	45:00	68.	2	5.0 AVV
383.8447	45:07	3785.	790.	45:00	45:12	68.	2	5.0 AVB
383.8447	45:27	971398.	240497.	45:15	45:42	68.	2	5.0 ABV
383.8447	45:44	3064.	1026.	45:42	45:47	68.	2	5.0 AVV
383.8447	45:49	2539.	750.	45:47	45:54	68.	2	5.0 AVV
383.8447	45:57	1346.	533.	45:54	46:00	68.	2	5.0 AVB
383.8447	46:08	3069.	745.	46:04	46:14	68.	2	5.0 ABB
383.8447	46:26	872622.	195154.	46:14	46:40	68.	2	5.0 ABV
383.8447	46:42	3486.	615.	46:40	46:48	68.	2	5.0 AVB
385.8417	44:33	1636906.	436041.	44:25	44:37	86.	2	5.0 ABV
385.8417	44:42	1840002.	488715.	44:37	44:57	86.	2	5.0 AVV
385.8417	45:01	3529.	1123.	44:57	45:03	86.	2	5.0 AVV
385.8417	45:05	7868.	1575.	45:03	45:11	86.	2	5.0 AVV
385.8417	45:13	1747.	649.	45:11	45:15	86.	2	5.0 AVV
385.8417	45:26	1858556.	462993.	45:15	45:41	86.	2	5.0 AVV
385.8417	45:46	5161.	778.	45:42	45:50	86.	2	5.0 AVV
385.8417	45:56	4078.	929.	45:50	45:59	86.	2	5.0 AVB
385.8417	46:11	7448.	1410.	45:59	46:16	86.	2	5.0 ABV
385.8417	46:26	1653977.	377132.	46:16	46:41	86.	2	5.0 AVV
385.8417	46:45	6948.	1615.	46:43	46:51	86.	2	5.0 AVB
423.7555	50:41	1332369.	282371.	50:32	50:56	68.	1	1.0 ABV
425.7524	50:41	1297790.	276334.	50:32	50:56	63.	1	1.0 ABV

423.7555	49:29	329054.	65213.	49:21	49:44	68.	2	5.0	ABV
423.7555	50:41	1332369.	282371.	50:32	50:56	68.	2	5.0	ABV
425.7524	49:29	317262.	62426.	49:20	49:44	63.	2	5.0	ABV
425.7524	50:41	1297790.	276334.	50:32	50:56	63.	2	5.0	ABV
435.7951	49:28	18361.	3476.	49:18	49:36	49.	2	5.0	ABV
435.7951	49:41	989.	261.	49:36	49:43	49.	2	5.0	AVV
435.7951	49:46	1115.	362.	49:43	49:48	49.	2	5.0	AVV
435.7951	49:50	1444.	478.	49:48	49:55	49.	2	5.0	AVB
435.7951	49:59	1063.	400.	49:56	50:01	49.	2	5.0	ABB
435.7951	50:40	988181.	209358.	50:28	50:55	49.	2	5.0	ABV
437.7921	49:28	14030.	2272.	49:22	49:35	20.	2	5.0	ABV
437.7921	49:36	599.	294.	49:35	49:38	20.	2	5.0	AVB
437.7921	50:11	464.	200.	50:08	50:13	20.	2	5.0	ABB
437.7921	50:25	1049.	273.	50:22	50:30	20.	2	5.0	ABB
437.7921	50:40	974696.	207907.	50:31	50:53	20.	2	5.0	ABB
437.7921	50:57	4964.	955.	50:53	51:05	20.	2	5.0	ABB
407.7614	48:57	1386255.	289124.	48:49	49:12	83.	1	1.0	ABV
409.7583	48:57	1329927.	277494.	48:48	49:12	65.	1	1.0	ABV
407.7614	48:44	4197.	1192.	48:39	48:47	83.	2	5.0	ABB
407.7614	48:57	1386255.	289124.	48:49	49:12	83.	2	5.0	ABV
407.7614	49:22	15677.	2066.	49:16	49:32	83.	2	5.0	AVV
407.7614	49:38	129349.	27269.	49:32	49:46	83.	2	5.0	AVV
407.7614	49:48	3921.	833.	49:46	49:53	83.	2	5.0	AVV
407.7614	49:55	3167.	523.	49:53	50:10	83.	2	5.0	AVV
407.7614	51:17	1089085.	231819.	51:08	51:32	83.	2	5.0	ABV
407.7614	51:36	3048.	628.	51:34	51:42	83.	2	5.0	AVB
409.7583	48:42	5129.	1167.	48:39	48:47	65.	2	5.0	ABB
409.7583	48:57	1329927.	277494.	48:48	49:12	65.	2	5.0	ABV
409.7583	49:23	11586.	1776.	49:17	49:30	65.	2	5.0	AVV
409.7583	49:38	133051.	25901.	49:30	49:53	65.	2	5.0	AVV
409.7583	51:17	1058715.	228671.	51:09	51:32	65.	2	5.0	ABV
417.8041	48:56	591930.	125205.	48:47	49:11	27.	2	5.0	ABB
417.8041	49:21	4948.	1187.	49:16	49:26	27.	2	5.0	ABB
417.8041	49:37	2806.	722.	49:32	49:40	27.	2	5.0	ABV
417.8041	50:00	3078.	570.	49:50	50:02	27.	2	5.0	AVB
417.8041	50:52	2097.	343.	50:37	50:57	27.	2	5.0	AVB
417.8041	51:16	508826.	109613.	51:07	51:26	27.	2	5.0	ABV
417.8041	51:28	3893.	1635.	51:26	51:30	27.	2	5.0	AVV
417.8041	51:39	2702.	752.	51:33	51:41	27.	2	5.0	AVB
419.8010	48:56	1292190.	278280.	48:49	49:09	74.	2	5.0	ABV
419.8010	49:11	4433.	1038.	49:09	49:16	74.	2	5.0	AVV
419.8010	49:24	9987.	1862.	49:16	49:27	74.	2	5.0	AVB
419.8010	49:37	8276.	1709.	49:28	49:39	74.	2	5.0	ABV
419.8010	49:41	4459.	1153.	49:39	49:44	74.	2	5.0	AVV
419.8010	51:16	1153206.	246232.	51:08	51:29	74.	2	5.0	ABV
419.8010	51:31	5748.	1551.	51:29	51:35	74.	2	5.0	AVV
419.8010	51:37	2514.	692.	51:35	51:40	74.	2	5.0	AVV
457.7148	54:41	5349848.	1431517.	54:34	54:57	70.	1	1.0	ABV
459.7118	54:41	5982001.	1583982.	54:34	54:57	111.	1	1.0	ABV
457.7148	54:41	5349848.	1431517.	54:34	54:57	70.	2	5.0	ABV
457.7148	55:09	1239.	383.	55:07	55:11	70.	2	5.0	AVV
457.7148	55:13	1489.	424.	55:11	55:17	70.	2	5.0	AVB
459.7118	54:41	5982001.	1583982.	54:34	54:57	111.	2	5.0	ABV
459.7118	55:01	14405.	2192.	54:59	55:15	111.	2	5.0	AVB
469.7545	54:20	3321.	976.	54:16	54:22	68.	2	5.0	ABV
469.7545	54:24	2793.	551.	54:22	54:32	68.	2	5.0	AVV
469.7545	54:40	1380491.	358153.	54:32	54:56	68.	2	5.0	AVV
469.7545	55:00	2664.	802.	54:58	55:03	68.	2	5.0	AVV
471.7514	54:30	887.	418.	54:28	54:32	34.	2	5.0	AVB
471.7514	54:40	1521037.	406189.	54:32	54:52	34.	2	5.0	ABV
471.7514	54:53	1670.	816.	54:52	54:56	34.	2	5.0	AVV
471.7514	55:00	5735.	1058.	54:56	55:08	34.	2	5.0	AVB
441.7207	54:49	1825496.	486087.	54:38	55:05	51.	1	1.0	ABV
443.7177	54:49	1999026.	533985.	54:37	55:05	60.	1	1.0	ABV
441.7207	54:49	1825496.	486087.	54:38	55:05	51.	2	5.0	ABV
441.7207	55:08	2946.	751.	55:06	55:11	51.	2	5.0	AVV
441.7207	55:13	914.	333.	55:11	55:15	51.	2	5.0	AVV

441.7207	55:19	1883.	465.	55:15	55:24	51.	2	5.0 AVB
443.7177	54:49	1999026.	533985.	54:37	55:05	60.	2	5.0 ABV
443.7177	55:11	2880.	499.	55:08	55:18	60.	2	5.0 AVB
453.7603	54:48	1731136.	454139.	54:34	55:04	27.	2	5.0 ABV
453.7603	55:12	6570.	969.	55:07	55:19	27.	2	5.0 AVB
455.7573	54:48	1940843.	510965.	54:36	55:04	15.	2	5.0 ABV
455.7573	55:15	2973.	542.	55:07	55:17	15.	2	5.0 ABB
455.7573	55:22	1826.	435.	55:17	55:24	15.	2	5.0 ABB

Miscellaneous Data

TestAmerica Knoxville Dioxin GC/MS Data Review / Narrative Checklist

LOT # H6G290408

Method: 1613B - KNOX-ID-0004-R16 **Page 1 of 1** **Batch#** 6211032

Review Items **A. Initial Calibration**	N/A	Yes	No	Why is data reportable?	2nd Level
1. Was the correct ICAL used for quantitation? (Check 1-2 compounds for batch by manually calculating concentration using the ICAL avg. RF.)		✓			✓
B. Continuing Calibration	N/A	Yes	No		2nd
1. Has a Continuing Calibration Checklist been completed for each analytical batch?		✓			✓
C. Client Sample AND QC Sample Results	N/A	Yes	No		2nd
1. Were all special project requirements met?		✓			✓
2. Were the header information, prep factors, and dilution factors verified?		✓			✓
3. Is logbook date/time of analysis correct?		✓			✓
4. Sample analyses done within preparation and analytical holding time (HT)? *If no, list samples:* _____		✓		☐ HT expired upon receipt. ☐* Client requested analysis after HT expired. ☐ Re-extraction done after HT expired.	✓
5. Are internal standards and cleanup standards within QC limits specified in Table 13? *If no, list samples and reason (e.g.,* **sur1***):* Sample / Reason / Sample / Reason B1C			✓	☐* **[sup]** Ion suppression due to matrix. ☒ **[low]** Low recovery. S/N >10 and EDL<ML. ☐ **[sam]** Not enough sample to re-extract. ☐ **[dil]** Dilution showed acceptable %R. ☐ **[mtx]** Obvious matrix interference. Further cleanup not possible. ☐* **[unk]** At client's request, data was flagged as estimated and released without further investigation.	✓
6. Were reported PCDD/Fs which did not meet the criteria below, properly calculated and reported as EMPCs?: • RT of 2378 isomers within SOP Table 3 limits. • RT of non-2378 isomers within established first/last windows. • Both native ions maximized within ±2 seconds. • Ion abundance ratios within the control limits specified in Table 22. • No corresponding peak at PCDPE mass.					✓
7. Were all 2378-TCDF hits ≥ ML confirmed by analysis on DB-225?	✓				✓
8. Are positive results > ML within calibration range? *If no, list samples:* _____		✓		☐ OCDD/F or non-2378 exceeded calibration range ☐ Sample extracted at lowest possible volume	✓
9. Are all manual integrations clearly identified and approved?		✓			✓
10. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
11. Were manual integrations documented properly?		✓			✓
12. Final report acceptable? (Results correct, DLs calculated correctly, units correct, IS %R correct, appropriate flags used, dilution factor correct, and extraction/ analysis dates correct.)		✓			✓
13. Was a narrative prepared and all deviations noted?		✓			✓
D. Preparation/Matrix QC	N/A	Yes	No	Why is data reportable?	2nd
1. LCS/LCSD done per prep batch and all analytes within the limits specified in QuantIMS reference data?		✓		☐* Reanalysis not possible-insufficient sample. ☐ LCS/LCSD %R high and affected analyte(s) were <ML in associated samples. ☐ See comment/narrative	✓
2. Method blank done per prep batch, method/instrument blank analyzed with each sequence and analytes present in the method blank ≤ ML? *If no, list blank ID:* _____		✓		☐ Sample results are > 10x higher than blank. ☐* There is no analyte > RL in the samples associated with method blank. ☐* Reanalysis not possible-insufficient sample	✓
3. MS/MSD recoveries and RPDs within laboratory generated QC limits? *If no, list MS/MSD* _____	✓			☐ LCS acceptable, indicating sample matrix effects. ☐ LCS acceptable, high analyte concentration. ☐ LCS acceptable, lack of sample homogeneity.	✓
E. Other	N/A	Yes	No		2nd
1. Are all nonconformances documented appropriately and copy included with deliverable?	✓				✓

Analyst:	Date: 8/9/16	Analyst:	Date: 8-25-16
Comments:		Comments:	

* Such action must be taken in consultation with client.

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TestAmerica Knoxville Prep Batch Review Checklist

Batch # 621032

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Were the samples extracted within the required holding times?		✓		If No, NCM #: _____	✓
2. Are the final extracts free of water, precipitates, multiple phases, and for HRMS - color?		✓			✓
3. Were all project specific requirements met as noted on the Lot Checklists (L40) and the Sample List report?		✓			✓
4. Were MS Run numbers assigned properly?	✓				✓
5. Were the correct weights and volumes entered into QuantIMS for all samples and QC?		✓			✓
6. Were the correct start and completion dates entered into QuantIMS?		✓			✓
7. Were the spike IDs and volumes entered correctly into QuantIMS?		✓			✓
8. Were all appropriate notes and observations recorded on the extraction benchsheet and in QuantIMS?		✓			✓
9. Was the extraction batch reviewed in QuantIMS using LIM L21?		✓			✓
10. Does the prep batch paperwork package contain all required documentation which has been properly and completely filled out, including: • Extraction Benchsheet • QuantIMS Benchsheet • Lot Checklists (L40) for all lots in batch • Sample List • Compound List Report • SOG Sample Tracking Sheet		✓			✓
11. Are all nonconformances documented appropriately and copy included with deliverable?	✓			If Yes, NCM#: _____	✓

Analyst : ALJ **Date:** 8/3/16

Comments:

2nd Level Reviewer: BKK **Date:** 8/3/16

Comments:

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RQC058

TestAmerica Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 8/03/16
Time: 9:07:35

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
_	_	MS/MSD	_	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets
					computer batch: correct & all match
			_	_	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalGroup
Y Bench Sheet Copied per COC

Extractionist: 007259 Syed I. Ahmed

Concentrationist: 400856 Alan Sudderth

Reviewer/Date: SUDDERTA / 8/03/16

QC BATCH: 6211032

PREP DATE: 7/31/16 15:00
COMP DATE: 8/03/16 11:00

Dioxins/Furans, HRGC/HRMS (8290A)
LIQ/LIQ, SEP FUNNEL (PAH,P/P,TPH,Dioxin) - Nominal

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJI	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
8/24/16	8/30/16	H6G290408-016 **M8115-1-AA**	D	09	Q&	WATER	**943mL** 20.00uL	NA	NA	NA	MECL2	200.0	HEXANE	10.0	DF0405 1.0ML HR 13C
COMMENTS:															
8/24/16	0/00/00	H6G290000-032 **M812E-1-AAB**		09	Q&	WATER	**1000mL** 20.00uL	NA	NA	NA	MECL2	200.0	HEXANE	10.0	DF0405 1.0ML HR 13C
COMMENTS:															
8/24/16	0/00/00	H6G290000-032 **M812E-1-ACC**		09	Q&	WATER	**1000mL** 20.00uL	NA	NA	NA	MECL2	200.0	HEXANE	10.0	DF0415 1.0ML NATIVE DF0405 1.0ML HR 13C
COMMENTS:															

QC SHARED WITH 6211030 AND 6211031.

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD
↕

NUMBER OF WORK ORDERS IN BATCH: 3

TestAmerica Knoxville

Specialty Organics Group - Sample Tracking Sheet - GC/MS Analysis Group

QC Batch No: 6211032

2385

Work Order #		Column: RTX-5				Column: RTX-5				Column: DB-225			
		Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code
M812E 1AA	B	8-3-16	D7A	MD	OK						—		
M812E 1AC	C	↓	↓	↓	ok						—		
M8115 1AA		8-9-16	D7A	MSD	ok						—		

Comments: Shared QC

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TestAmerica Knoxville Extraction Sheet
1613B/8290/8290A Aqueous by Separatory Funnel Extraction - KNOX-OP-0001

Batch Number: 6211032 | 1613B-L1 ☐ | Native Spike (0.2/ 1 /2 ng/mL) ID: DF0415 | Spiked by: SA | Witness: SA | Date: 7-31-16 | Delivered: ALS 8/3/16 (Initials/Date/Time)

Soxhlet Start Date/Time: N/A | 1613B-F8 ☐ | Internal Std (1.0/2.0 ng/mL) ID: DF0405 | Spiked by: SA | Witness: SA | Date: 7-31-16

Soxhlet Stop Date/Time: 1 | 8290 ☐ | Cleanup Std (0.20 ng/mL) ID: NA | Spiked by: NA | Witness: NA | Date: NA | Received: ULSD 8/3/16 1130 (Initials/Date/Time)

Balance ID: D3 | 8290A ☒ | Recovery Std (100 ng/mL) ID: DF0409 | Spiked by: ALS | Witness: ALS | Date: 8/3/16

Lot Sample Number	Work Order Number	Suf	Visible solids present? (≤1%, >1%, or No)	Sample Filtered? (Y or N) Soxhlet extract filter with toluene.	Record volume of sample added to sep funnel (mL).	Add IS to all samples & QC. Record volume (mL).	Add native spike to LCS, MS, MSD. Record volume (mL).	Perform sep funnel extraction with methylene chloride.	Concentrate sep funnel extract.	Solvent exchange to appropriate volume of hexane.	Filter sep funnel extract thru Na_2SO_4.	Conc filter extract. Add 100 µL tetradecane to 40 mL vial.	Exchange filter extract to appropriate volume of hexane. Combine filter extract and sep funnel extract.	Add cleanup std to all 1613B extracts. Record volume (mL).	Acid/Base wash extracts if needed.	Concentrate to ~2 to 4 mL on N-EVAP for dual column cleanup.	Perform silica gel/alumina column cleanup.	Concentrate to ~2 mL on N-EVAP for carbon cleanup.	Perform carbon cleanup. Add 100 µL nonane to 40 mL vial.	Concentrate to 50 µL on N-EVAP. Adjust volume to 5 mL MeCl2.	Perform GPC cleanup.	Concentrate/solvent exchange to hexane to appropriate volume.	Concentrate to <1 mL.	Add recovery std to mini-vial. Record volume added (µL). Transfer extract to vial.	Conc to delivery volume in nonane. Record delivery vol (µL).
HGG290408 - 016	M81151AA		U	N/A	943	1.0	N/A	✓	✓	✓	N	NA	NA	NA	NA	✓	✓	✓	NA	NA	NA	NA	✓	20	20
HGG290000 - 032	M812E1AA	B	↓	↓	1000	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
HGG290000 - 032	M812E1AC	C	↓	↓	1000	↓	1.0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
			SA 7/31									BKK 8/2					ES 8/2		ALS 8/3/16						

ALS 8/3/16

ALS 8/3/16

Extr $MeCl_2$ Lot #:	138764	20% KOH ID:	NA	Alumina ID:	4840-5E	95/5 Hex/$MeCl_2$ ID:	48204	Carbon ID:	NA
Na_2SO_4 ID:	51492	5% NaCl ID:	↓	Deact Silica ID:	52087, 50920	65/35 $MeCl_2$/Hex ID:	51227	50/50 $MeCl_2$/Cyclo ID:	
Soxhlet Toluene Lot #:	N/A	H_2SO_4 Lot #:	↓	Acid Silica ID:	50921	SG/A Col Na_2SO_4 ID:	51492	75/20/5 $MeCl_2$/MeOH/Benz ID:	↓
Tetradecane Lot #:	1	A/B Na_2SO_4 ID:	↓	Hexane Lot #:	140376	SG/A Col Hex Lot #:	140376	Carbon Col Toluene Lot #:	

Comments: QC shared with 6211030 and 6211031.

TestAmerica Knoxville Dioxin GC/MS Data Review / Narrative Checklist LOT # H6G290408
Method: 8290/8290A- KNOX-ID-0004-R16 **Page 1 of 1** Batch# 6217014

Review Items **A. Initial Calibration**	N/A	Yes	No	Why is data reportable?	2nd Level
1. Was the correct ICAL used for quantitation? (Check 1-2 compounds for batch by manually calculating concentration using the ICAL avg. RF.)		✓			✓
B. Continuing Calibration	N/A	Yes	No		2nd
1. Has a Continuing Calibration Checklist been completed for each analytical batch?		✓			✓
C. Client Sample AND QC Sample Results	N/A	Yes	No		2nd
1. Were all special project requirements met?		✓			✓
2. Were the header information, prep factors, and dilution factors verified?		✓			✓
3. Is logbook date/time of analysis correct?		✓			✓
4. Sample analyses done within preparation and analytical holding time (HT)? *If no, list samples:* _____		✓		☐ HT expired upon receipt. ☐* Client requested analysis after HT expired. ☐ Re-extraction done after HT expired.	✓
5. Are internal standards within QC limits specified in Table 13? *If no, list samples and reason (e.g.,* **sur1***):* Sample Reason Sample Reason _____		✓		☐* **[sup]** Ion suppression due to matrix. ☐* **[low]** Low recovery. S/N >10 and EDL<ML. ☐ **[sam]** Not enough sample to re-extract. ☐ **[dil]** Dilution showed acceptable %R. ☐ **[mtx]** Obvious matrix interference. Further cleanup not possible. ☐* **[unk]** At client's request, data was flagged as estimated and released without further investigation.	✓
6. Were reported PCDD/Fs which did not meet the criteria below, properly calculated and reported as EMPCs?: • RT of 2378 isomers within -1 to +3 seconds of associated labeled isomer. • RT of non-2378 isomers within established first/last windows. • Both native ions maximized within ±2 seconds. • Ion abundance ratios within the control limits specified in Table 22. • No corresponding peak at PCDPE mass. • 8290A areas not adjusted based on theoretical ion ratios.		✓			✓
7. Were all 2378-TCDF hits ≥ ML confirmed by analysis on DB-225?		✓			✓
8. Are positive results > ML within calibration range? *If no, list samples:* _____		✓		☐ OCDD/F or non-2378 exceeded calibration range ☐ Sample extracted at lowest possible volume	✓
9. Are all manual integrations performed properly and clearly identified and approved?		✓			✓
10. Were before/after chromatograms reviewed to determine whether the software and manual integrations were appropriate?		✓			✓
11. Final report acceptable? (Results correct, DLs calculated correctly, units correct, IS %R correct, appropriate flags used, dilution factor correct, and extraction/ analysis dates correct.)		✓			✓
12. Was a narrative prepared and all deviations noted?		✓			✓
D. Preparation/Matrix QC	N/A	Yes	No	Why is data reportable?	2nd
1. LCS/LCSD done per prep batch and all analytes within the limits specified in QuantIMS reference data?		✓		☐* Reanalysis not possible-insufficient sample. ☐LCS/LCSD %R high and affected analyte(s) were <ML in associated samples. ☐ See comment/narrative	✓
2. Method blank done per prep batch, method/instrument blank analyzed with each sequence and analytes present in the method blank ≤ ML? *If no, list blank ID:* _____		✓		☐ Sample results are > 20x higher than blank. ☐* There is no analyte > RL in the samples associated with method blank. ☐* Reanalysis not possible-insufficient sample	✓
3. MS/MSD recoveries and RPDs within laboratory generated QC limits? ~~*If no, list MS/MSD*~~ _____ M811X - MS/MSD			✓	☑ LCS acceptable, indicating sample matrix effects. ☐ LCS acceptable, high analyte concentration. ☐ LCS acceptable, lack of sample homogeneity.	✓
E. Other	N/A	Yes	No		2nd
1. Are all nonconformances documented appropriately and copy included with deliverable?	✓				✓

Analyst: KM	Date: 8/24/16	Analyst: KM	Date: 8-25-16
Comments:		Comments:	

* Such action must be taken in consultation with client.

TestAmerica Knoxville Prep Batch Review Checklist

Batch # 6217014

Review Items	N/A	Yes	No	If No, why is data reportable?	2nd Level
1. Were the samples extracted within the required holding times?		✓		If No, NCM #: _____	✓
2. Are the final extracts free of water, precipitates, multiple phases, and for HRMS - color?		✓			✓
3. Were all project specific requirements met as noted on the Lot Checklists (L40) and the Sample List report?		✓			✓
4. Were MS Run numbers assigned properly?		✓			✓
5. Were the correct weights and volumes entered into QuantIMS for all samples and QC?		✓			✓
6. Were the correct start and completion dates entered into QuantIMS?		✓			✓
7. Were the spike IDs and volumes entered correctly into QuantIMS?		✓			✓
8. Were all appropriate notes and observations recorded on the extraction benchsheet and in QuantIMS?		✓			✓
9. Was the extraction batch reviewed in QuantIMS using LIM L21?		✓			✓
10. Does the prep batch paperwork package contain all required documentation which has been properly and completely filled out, including: • Extraction Benchsheet • QuantIMS Benchsheet • Lot Checklists (L40) for all lots in batch • Sample List • Compound List Report • SOG Sample Tracking Sheet		✓			✓
11. Are all nonconformances documented appropriately and copy included with deliverable?	✓			If Yes, NCM#: _____	✓

Analyst : BKK **Date:** 8/11/16

Comments:

2nd Level Reviewer: AW **Date:** 8/11/16

Comments:

ID025R15.doc 062113

RQC058

TestAmerica Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

FM

Run Date: 8/11/16
Time: 13:54:25

LEV 1	LEV 2		LEV 1	LEV 2	
Y	Y	Blank	Y	Y	Weights/Volumes
Y	Y	Check	Y	Y	Spike & Surrogate Worksheet
Y	Y	MS/MSD	_	Y	Vial contains correct volume
			Y	Y	Labels, greenbars, worksheets computer batch: correct & all match
			_	_	Anomalies to Extraction Method

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalGroup
Y Bench Sheet Copied per COC

Extractionist: 431073 Samuel Stockton
432218 Amani A. Royce

Concentrationist: 432103 Benjamin Knight

QC BATCH: 6217014

PREP DATE: 8/04/16 14:30
COMP DATE: 8/11/16 16:00

Reviewer/Date: KNIGHTB / 8/11/16

Dioxins/Furans, HRGC/HRMS (8290A)
SOXHLET (NONE,Na2SO4)

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJ1	PH"S ADJ2	SOLVENTS EXTRACTION	VOL	SOLVENTS EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
8/24/16	8/30/16	H6G290408-001 **M811L-1-AC** 6	D	11	Q&	SOLID	**10.1g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-002 **M811M-1-AC** 7	D	11	Q&	SOLID	**9.6g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-003 **M811N-1-AC** 8	D	11	Q&	SOLID	**9.8g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-004 **M811P-1-AC** 9	D	11	Q&	SOLID	**10.1g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-005 **M811Q-1-AC** 10	D	11	Q&	SOLID	**10.2g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-006 **M811R-1-AC**	D	11	Q&	SOLID	**9.8g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-007 **M811T-1-AC**	D	11	Q&	SOLID	**10.5g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															

RQC058

TestAmerica Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 8/11/16
Time: 13:54:25

QC BATCH: 6217014

PREP DATE: 8/04/16 14:30
COMP DATE: 8/11/16 16:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	PH"S INIT	PH"S ADJI	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
8/24/16	8/30/16	H6G290408-008 **M811V-1-AC**	D	11	Q&	SOLID	**9.8g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-009 **M811W-1-AC**	D	11	Q&	SOLID	**10.3g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-010 **M811X-1-AC**	D	11	Q&	SOLID	**10.1g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-010 **M811X-1-ADS**	D	11	Q&	SOLID	**10.0g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0415 1.0ML NATIVE DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-010 **M811X-1-AED**	D	11	Q&	SOLID	**10.0g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0415 1.0ML NATIVE DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-011 **M8110-1-AC**	D	11	Q&	SOLID	**10.2g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-012 **M8111-1-AC**	D	11	Q&	SOLID	**9.7g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-013 **M8112-1-AC**	D	11	Q&	SOLID	**9.6g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-014 **M8113-1-AC**	D	11	Q&	SOLID	**9.7g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	8/30/16	H6G290408-015 **M8114-1-AC**	D	11	Q&	SOLID	**9.7g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															

RQC058

TestAmerica Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 8/11/16
Time: 13:54:25

QC BATCH: 6217014

PREP DATE: 8/04/16 14:30
COMP DATE: 8/11/16 16:00

EXTR EXPR	ANL DUE	LOT#,MSRUN#/ WORK ORDER	TEST FLGS	EXT	MTH	MATRIX	INIT/FIN WT/VOL	INIT	PH"S ADJI	ADJ2	SOLVENTS EXTRACTION	VOL	EXCHANGE	VOL	SPIKE STANDARD/ SURROGATE ID
8/24/16	0/00/00	H6H040000-014 **M82RE-1-AAB**		11	Q&	SOLID	**10.0g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0410 1.0ML HR 13C
COMMENTS:															
8/24/16	0/00/00	H6H040000-014 **M82RE-1-ACC**		11	Q&	SOLID	**10.0g** 20.00uL	NA	NA	NA	TOLUENE	350.0	HEXANE	10.0	DF0415 1.0ML NATIVE DF0410 1.0ML HR 13C
COMMENTS:															

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD

NUMBER OF WORK ORDERS IN BATCH: 19

1613B ☐ 8290 8290A ☒

TestAmerica Knoxville Extraction Sheet

1613B/8290/8290A Sediment/Soil/Wipes by Soxhlet - KNOX-OP-0001

Batch Number: 6217014
Soxhlet Start Date/Time: 8/4/16 14:30
Soxhlet Stop Date/Time: 8/5/16 6:45
Soil ☒ Sediment ☐

Native Spike (0.20/1.0/2.0 ng/mL) ID: DFO 415 Spiked by: SS Witness: AR Date: 8/4/16
Internal Std (1.0/2.0 ng/mL) ID: DFO 410 Spiked by: SS Witness: AR Date: 8/4/16
Cleanup Std (0.20 ng/mL) ID: NA Spiked by: NA Witness: NA Date: NA
Recovery Std (100 ng/mL) ID: DFO 409 Spiked by: BKK Witness: BKK Date: 8/11/16

Delivered: ALS 8/11/16 (Initials/Date/Time)
Received: UCD 8/11/16 1639 (Initials/Date/Time)

Lot Sample Number	Work Order Number	Suf	Add sample to Soxhlet thimble. Record weight (g).	Water layer decanted? (Y/N/NA)	Add IS to all samples & QC. Record volume (mL).	Add native spike to LCS, MS, MSD. Record volume (mL).	Extract for a minimum of 16 hr in toluene.	Concentrate extracts on heating mantles.	Add 100 µL tetradecane to rinsed 40 mL vials.	Concentrate/exchange to hexane on N-EVAP.	Add cleanup std to all 1613B extracts. Record volume (mL).	Acid/Base wash extracts if needed.	Concentrate to ~2 to 4 mL on N-EVAP for dual column cleanup.	Perform dual (silica gel/alumina) column cleanup.	Concentrate to ~2 mL on N-EVAP for carbon cleanup.	Perform carbon cleanup.	Add 100 µL nonane to GPC vial. Concentrate to 50 µL on N-EVAP. Adjust volume to 10 mL MeCl2.	Perform GPC cleanup.	Concentrate/solvent exchange to hexane to appropriate volume.	Concentrate to <1mL on N-EVAP.	Add recovery std to mini-vial. Record volume added (µL). Transfer extract to vial.	Conc to delivery volume in nonane. Record volume (µL).
H6G290408 - 001	M811L1AC		10.1	N	1.0	Na	✓	✓	✓	✓	NA	NA	✓	✓	✓	✓	✓	✓	✓	✓	20	20
H6G290408 - 002	M811M1AC		9.6	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 003	M811N1AC		9.8	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 004	M811P1AC		10.1	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 005	M811Q1AC		10.2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 006	M811R1AC		9.8	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 007	M811T1AC		10.5	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 008	M811V1AC		9.8	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 009	M811W1AC		10.3	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 010	M811X1AC		10.1	Y	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 010	M811X1AE	D	10.0	↓	↓	1.0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 010	M811X1AD	S	10.0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 011	M81101AC		10.2	N	↓	Na	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 012	M81111AC		9.7	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 013	M81121AC		9.6	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 014	M81131AC		9.7	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6G290408 - 015	M81141AC		9.7	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6H040000 - 014	M82RE1AA	B	10.0	Na	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
H6H040000 - 014	M82RE1AC	C	10.0	↓	↓	1.0	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
			SS	→	→	→	→	SS	→	BKK/SA	BKK	→	→	→	→	ES	ES/AR	AR	BKK	→	→	→
			8/4	→	→	→	→	8/5	→	8/5/8/7	8/8	→	→	→	→	8/9	8/9	8/10	8/11	→	→	→

ES 8/9/16

Extr Toluene Lot #: 131201
Tetradecane Lot #: 46819
Conc Hexane Lot #: 140376
Extr Na_2SO_4 ID: 53426
$MeCl_2$ Lot #: 138764
Nonane Lot #: 46926
Balance ID: D2

20% KOH ID: NA
5% NaCl ID: ↓
H_2SO_4 Lot #: ↓
A/B Na_2SO_4 ID: ↓

Alumina ID: 48892
Deact Silica ID: 52087
Acid Silica ID: 52411
SG/A Col Na_2SO_4 ID: 50763
SG/A Col Hex Lot #: 140376

95/5 Hex/$MeCl_2$ ID: 52912
65/35 $MeCl_2$/Hex ID: 52913
Carbon ID: 48891
50/50 $MeCl_2$/Cyclo ID: 49137

75/20/5 $MeCl_2$/MeOH/Benz ID: 49138
Carbon Col Toluene Lot #: 135679
Benzene Lot #: NA

Comments:

OP064r4, 2/19/16

TestAmerica Knoxville

Specialty Organics Group - Sample Tracking Sheet - GC/MS Analysis Group

QC Batch No: 6217014

Work Order #		Column: RTX-5				Column: RTX-5				Column: DB-225				
		Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code	Date	Instrument	Analyst	Code	
M811L 1AC		8-17-16	D11A	KLR	ok					8/23/14	D12C	LKM	ok	1AD
M811M 1AC					ok						D12C		ok	1AE
M811N 1AC					ok						J level			
M811P 1AC					BI	8/18/14	D11A	LKM	ok	8/23/14	D12C	LKM	ok	1AD
M811Q 1AC					ok						J level			
M811R 1AC		8/18/14	D11A	LKM	ok						J level			
M811T 1AC					ok						J-level			
M811V 1AC					ok						J-level			
M811W 1AC					ok						J-level			
M811X 1AC					ok						J-level			
M811X 1AD	S	8-18-16	D11A	KLR	ok						—			
M811X 1AE	D				ok						—			
M8110 1AC					ok						J-level			
M8111 1AC					ok					8/23/14	D12C	LKM	ok	1AD
M8112 1AC					ok						J level			
M8113 1AC					ok						J level			
M8114 1AC					ok						J level			
M82RE 1AA	B	8-17-16	D11A	KLR	ok						—			
M82RE 1AC	C				ok						—			

Comments:

ID035R3.doc 12/05/07

Percent Moisture

TestAmerica Knoxville
Sample Moisture Worksheet

Batch Number: 6215013 Balance ID
Initiated By: BKD S1
Final Weight By: BKD W2
Entered By: MDR
QuantIMS Code: 432089

Date Into Oven: 08/01/2016 (mmddyyyy)
Time Into Oven: 01:54 (hhmm)
Date Out of Oven: 08/02/2016 (mmddyyyy)
Time Out of Oven: 09:30 (hhmm)

Reviewer Initials: RES
Reviewer Date: 8/4/16
Oven #: O23

	LOT #	WORK ORDER #	SUF	PAN WT (g)	GROSS WET WT (g)	GROSS DRY WT (g)	SAMPLE WET WT (g)	SAMPLE DRY WT (g)	DRYNESS FACTOR	PERCENT MOISTURE	PERCENT SOLIDS	ANALYSIS DATE (mmddyy)	ANALYSIS TIME (hhmm)	DECANT?	RPD	DIFFERENCE
1	H6G290408	M811L1AA		1.06	6.57	5.63	5.51	4.57	0.8294	17.06	82.94	080216	1058	N		
2	H6G290408	M811M1AA		1.09	9.06	8.22	7.97	7.13	0.8949	10.51	89.49	080216	1058	N		
3	H6G290408	M811M1AD	X	1.05	9.43	8.48	8.38	7.43	0.8863	11.37	88.63	080216	1058	N	7.84	
4	H6G290408	M811N1AA		1.08	6.58	5.30	5.50	4.22	0.7680	23.20	76.80	080216	1058	N		
5	H6G290408	M811P1AA		1.08	7.08	5.89	6.00	4.81	0.8018	19.82	80.18	080216	1059	N		
6	H6G290408	M811Q1AA		1.06	8.05	7.58	6.99	6.52	0.9322	6.78	93.22	080216	1059	N		
7	H6G290408	M811R1AA		1.07	8.19	7.98	7.12	6.91	0.9711	2.89	97.11	080216	1059	N		
8	H6G290408	M811T1AA		1.09	8.02	7.92	6.93	6.83	0.9854	1.46	98.54	080216	1059	N		
9	H6G290408	M811V1AA		1.09	7.49	7.23	6.40	6.14	0.9598	4.02	95.98	080216	1100	N		
10	H6G290408	M811W1AA		1.10	8.22	7.35	7.12	6.25	0.8777	12.23	87.77	080216	1100	N		
11	H6G290408	M811X1AA		1.06	8.85	7.47	7.79	6.41	0.8231	17.69	82.31	080216	1100	Y		
12	H6G290408	M81101AA		1.08	8.03	7.83	6.95	6.75	0.9708	2.92	97.08	080216	1100	N		
13	H6G290408	M81111AA		1.04	7.49	7.04	6.45	6.00	0.9305	6.95	93.05	080216	1101	N		
14	H6G290408	M81121AA		1.04	6.38	6.19	5.34	5.15	0.9648	3.52	96.48	080216	1101	N		
15	H6G290408	M81131AA		1.05	7.37	7.23	6.32	6.18	0.9778	2.22	97.78	080216	1101	N		
16	H6G290408	M81141AA		1.07	8.53	7.89	7.46	6.82	0.9137	8.63	91.37	080216	1101	N		
17																
18																
19																
20																
21																
22																
23																
24																
25																

NOTES:
Sample Wet Weight, g = Gross Wet Weight (g) - Pan Weight (g)
Sample Dry Weight, g = Gross Dry Weight (g) - Pan Weight (g)
Dryness Factor = Dry Weight (g) / Wet Weight (g)
Percent Moisture = ((Wet Weight (g) - Dry Weight (g)) / Wet Weight (g)) x 100
Percent Solids = (Dry Weight (g) / Wet Weight (g)) x 100

General Chemistry Worksheet

Batch Number: 140-6097
Method: Moisture
Analyst: Dameron, Bryan K

Date Open: Aug 01 2016 1:54PM
Batch End: Aug 02 2016 11:01AM

Lab ID	Client ID	Method Chain	Basis	Empty Dish Weight	Mass of wet Sample	Mass of Dry Sample
140-5479-A-1	NB-1	Moisture	T	1.06 g	6.57 g	5.630 g
140-5479-A-2	NB-2	Moisture	T	1.09 g	9.06 g	8.222 g
140-5479-A-2~DU		Moisture	T	1.05 g	9.43 g	8.477 g
140-5479-A-3	SB-1	Moisture	T	1.08 g	6.58 g	5.304 g
140-5479-A-4	SB-2	Moisture	T	1.08 g	7.08 g	5.891 g
140-5479-A-5	BERM-1	Moisture	T	1.06 g	8.05 g	7.576 g
140-5479-A-6	POND-1	Moisture	T	1.07 g	8.19 g	7.984 g
140-5479-A-7	PAD-1	Moisture	T	1.09 g	8.02 g	7.919 g
140-5479-A-8	PAD-2	Moisture	T	1.09 g	7.49 g	7.233 g
140-5479-A-9	PAD-3	Moisture	T	1.10 g	8.22 g	7.349 g
140-5479-A-10	PAD-4	Moisture	T	1.06 g	8.85 g	7.472 g
140-5479-A-11	PAD-5	Moisture	T	1.08 g	8.03 g	7.827 g
140-5479-A-12	PAD-6	Moisture	T	1.04 g	7.49 g	7.042 g
140-5479-A-13	PAD-7	Moisture	T	1.04 g	6.38 g	6.192 g
140-5479-A-14	PAD-8	Moisture	T	1.05 g	7.37 g	7.230 g
140-5479-A-15	PAD-XX	Moisture	T	1.07 g	8.53 g	7.886 g

Balance ID:	S1 No Unit
Date samples were placed in the oven:	8//1/16
Time samples were place in the oven:	14:30
Oven Temp In:	105 Degrees C
Date samples were removed from oven:	8/2/16
Time Samples were removed from oven:	09:30
Oven Temp Out:	105 Degrees C
Oven ID:	023
Thermometer ID:	023
Date and Time Samples in Desiccator:	8/2/16 09:30
Date and Time Samples out of Desiccator:	08/02/16 10:58

General Chemistry Worksheet

Batch Number: 140-6097
Method: Moisture
Analyst: Dameron, Bryan K

Date Open: Aug 01 2016 1:54PM
Batch End: Aug 02 2016 11:01AM

Comments

Lab ID	Client ID	Method Chain	Basis	Analysis comment
140-5479-A-1	NB-1	Moisture	T	
140-5479-A-2	NB-2	Moisture	T	
140-5479-A-2~DU		Moisture	T	
140-5479-A-3	SB-1	Moisture	T	
140-5479-A-4	SB-2	Moisture	T	
140-5479-A-5	BERM-1	Moisture	T	
140-5479-A-6	POND-1	Moisture	T	
140-5479-A-7	PAD-1	Moisture	T	
140-5479-A-8	PAD-2	Moisture	T	
140-5479-A-9	PAD-3	Moisture	T	
140-5479-A-10	PAD-4	Moisture	T	DECANTED
140-5479-A-11	PAD-5	Moisture	T	
140-5479-A-12	PAD-6	Moisture	T	
140-5479-A-13	PAD-7	Moisture	T	
140-5479-A-14	PAD-8	Moisture	T	
140-5479-A-15	PAD-XX	Moisture	T	

Sample Receipt Documentation

TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone (330) 497-9396 Fax (330) 497-0772

H66290408

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Opal	Carrier Tracking No(s):	COC No: 240-59405.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: opal.johnson@testamericainc.com		Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 240-67631-1 67642 67646
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/31/2016			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: RVAAP, HWMU-13 (Open Burning Ground)	Project #: 24008575			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8290A, Dioxins/Furans,)/ 8290A, Dioxins/Furans,	SUB (160.3 MOD, Moisture, Percent Knoxville)/ 160.3 MOD, Moisture, Percent Knoxville	SUB (Dioxin/Furans - 8290A)/ 8290A	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
NB-1 (240-67631-1)	7/25/16	14:20 Eastern		Solid			X	X		1	
NB-2 (240-67631-2)	7/25/16	14:30 Eastern		Solid			X	X		1	NO CUSTODY SEALS
SB-1 (240-67631-3)	7/25/16	16:00 Eastern		Solid			X	X		1	RECEIVED AT RT 0.1, 0.1
SB-2 (240-67631-4)	7/25/16	16:15 Eastern		Solid			X	X		1	CY 0.1, 0.1 C
BERM-1 (240-67631-5)	7/25/16	14:00 Eastern		Solid			X	X		1	BKD 7-29-13
POND-1 (240-67631-6)	7/25/16	14:10 Eastern		Solid			X	X		1	2 COOLERS FEDX #
PAD-1 (240-67642-1)	7/25/16	15:00 Eastern		Solid			X			2	6825 0100 1404
PAD-2 (240-67642-2)	7/25/16	15:20 Eastern		Solid			X			2	6825 0100 1415
PAD-3 (240-67642-3)	7/25/16	15:40 Eastern		Solid			X			2	
PAD-4 (240-67642-4)	7/25/16	16:30 Eastern		Solid			X			6	
PAD-5 (240-67642-5)	7/25/16	17:00 Eastern		Solid			X			2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Robison	7-28-2016		[signature]	7-29-16 10:00	TA KNOX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone (330) 497-9396 Fax (330) 497-0772

HG290408

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Opal	Carrier Tracking No(s):	COC No: 240-59405.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: opal.johnson@testamericainc.com		Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.				Job #: 240-67631-1
Address: 5815 Middlebrook Pike, ,	Due Date Requested: 8/31/2016			
City: Knoxville	TAT Requested (days):			
State, Zip: TN, 37921				
Phone: 865-291-3000(Tel) 865-584-4315(Fax)	PO #:			
Email:	WO #:			
Project Name: RVAAP, HWMU-13 (Open Burning Ground)	Project #: 24008575			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (8290A, Dioxins/Furans,)/ 8290A, Dioxins/Furans,	SUB (160.3 MOD, Moisture, Percent Knoxville)/ 160.3 MOD, Moisture, Percent Knoxville	SUB (Dioxin/Furans - 8290A)/ 8290A	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
PAD-6 (240-67642-6)	7/25/16	17:20 Eastern		Solid			X			2	
PAD-7 (240-67642-7)	7/25/16	17:35 Eastern		Solid			X			2	
PAD-8 (240-67642-8)	7/25/16	18:00 Eastern		Solid			X			2	
PAD-XX (240-67642-10)	7/25/16	15:10 Eastern		Solid			X	X		2	
EB (240-67646-1)	7/25/16	13:00 Eastern		Water					X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 7-28-2016	Company	Received by:	Date/Time: 7-29-16 10:01	Company TA NOR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: 1766290408

Review Items	Yes	No	NA	If No, what was the problem?
1. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ 1a Do not match COC ☐ 1b Incomplete information ☐ 1c Marking smeared ☐ 1d Label torn ☐ 1e No label ☐ 1f COC not received ☐ 1g Other:
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID: SC61 Correction factor: 0.0	✓			☐ 2a Temp Blank = _____ ☐ 2b Cooler Temp = _____ ☐ 2c Cooling initiated for recently collected samples, ice present.
3. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ 3a See box 3A for pH Preservation ☐ 3b Other:
4. Were custody seals present/intact on cooler and/or containers?		✓	✓	☑ 4a Not present ☐ 4b Not intact ☐ 4c Other:
5. Were all of the samples listed on the COC received?	✓			☐ 5a Samples received-not on COC ☐ 5b Samples not received-on COC
6. Were all of the sample containers received intact?	✓			☐ 6a Leaking ☐ 6b Broken
7. Were VOA samples received without headspace?	✓		✓	☐ 7a Headspace (VOA only)
8. Were samples received in appropriate containers?	✓			☐ 8a Improper container
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:	✓		✓	☐ 9a Could not be determined due to matrix interference
10. Were samples received within holding time?	✓			☐ 10a Holding time expired
11. For rad samples, was sample activity info. provided?			✓	☐ Incomplete information
12. For 1613B water samples is pH<9?			✓	If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____
13. Are the shipping containers intact?	✓			☐ 13a Leaking ☐ 13b Other:
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ 14a Not relinquished
15. Are tests/parameters listed for each sample?	✓			☐ 15a Incomplete information
16. Is the matrix of the samples noted?	✓			☐ 15a Incomplete information
17. Is the date/time of sample collection noted?	✓			☐ 15a Incomplete information
18. Is the client and project name/# identified?	✓			☐ 15a Incomplete information
19. Was the sampler identified on the COC?		✓		☐ 19a Other

Comments/Actions Taken

44

Labeling Verified by: _____ **Date:** _____

pH test strip lot number: _____

	Box 3A: pH Preservation	Box 9A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Quote #: 91315 PM Instructions: NA

Sample Receiving Associate: [signature] Date: 7-29-16

QA026R29.doc, 041115

Subcontract Data

Shipping and Receiving Documents

3.0 | C4.0 3.8 | C4.8
3.6 | C4.6

CHAIN OF CUSTODY RECORD

Laboratory: Test America, 4101 Shuffel Drive NW, North Canton, OH, 44720 / Opal Johnson, Manager/1-330-966-9279

Client: Draper Aden Associates **Attn:** **Address:** **Phone:** **Fax:** **Fax:**	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street, Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RFAAP. Radford, Virginia **Location:** HWMU-13 (Open Burning Ground) **Event:** ~~August~~ July 2016 - Annual Soil Monitoring **DAA JN:** B03204-216 **Lab JN:**			**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** YES UPS: 12-237-301-01-9187-3830 **Carrier:** **Tracking Number:** ~~12-237-301-01-9292-1624~~ **Invoice** 12-237-301-01-9502-0646 **Copy to Consultant:** YES **Bill:** CLIENT OTHER **Preserved and shipped on ice:** YES

Box 1: Matrix
SW Surface Water, GW Groundwater, L Leachate, S Soil, T Trip Blank, E Equipment Blank, P Product, O Other

Box 2: Preservative
A HCL, B HNO_3, C H_2SO_4, D $Na_2S_2O_3$, E NaOH, F ZnAc, G Other (<4 deg C), H None

Box 3: Filtered/Unfiltered
F Filtered, U Unfiltered

Box 5: Sample Container Type
P Plastic, V VOA, AG Amber Glass, CG Clear Glass

Box 4: Sample Type
G Grab, C Composite

Box 4 - Sample Type	G	G
Box 3 - Filtered/Unfiltered	-	-
Required pH of Sample	-	-
Box 2 - Preservative	H	H
Box 5 - Sample Container Type	1-4 oz CG	2-4 oz AG

Sample ID	Date: 2016	Time	Box 1: Matrix	Number of Bottles	RCRA Metals: 6010C	Dioxins/Furans 8290A	DRY WEIGHT (aliquot from method container)
NB-1	7-25	1420	S	3	X	X	X
NB-2	7-25	1430	S	3	X	X	X
SB-1	7-25	1600	S	3	X	X	X
SB-2	7-25	1615	S	3	X	X	X
BERM-1	7-25	1400	S	3	X	X	X
POND-1	7-25	1410	S	3	X	X	X

GENERAL NOTES:
1. Estimated results required.
2. Report results on a DRY WEIGHT BASIS.
3. VELAP required. Dioxin/Furans to TA Knoxville. All other methods TA North Canton.
4. Report results in mg/kg except for dioxins.
5. VELAP Accreditation required.

240-67631 Chain of Custody

Clients Special Instructions: Level 4 with edd.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

Sampler Name (Print): Ken Caddington	Date: 7/25/16	#1 Relinquished by (Signature):	Date: 7-26-16	#2 Relinquished by (Signature):	Date:
Sampler Signature:	Time: 0700	Company Name: DAA	Time: 1700	Company Name:	Time:
Sampler Name (Print): Will Mason Deese	Date: 7/25/16	#1 Received by (Signature):	Date: 7/27/16	#2 Received by (Signature):	Date:
Sampler Signature:	Time: 0700	Company Name:	Time: 1030	Company Name:	Time:

Sample Storage Time Requested: 30 DYS ORG/6 MTHS INORG

2/4

TestAmerica Canton Sample Receipt Form/Narrative Login # : 67631
Canton Facility

Client Draper Aden Site Name _____ Cooler unpacked by: DSO

Cooler Received on 07/27/16 Opened on 07/27/16

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form
   IR GUN# IR-8 (CF +1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
   ~~IR GUN #36 (CF +1.0°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C~~
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC574756**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
15. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____.

TestAmerica Multiple Cooler Receipt Form/Narrative Login # :
Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Client	36	3.0	4.0	Ice
↓	↓	3.6	4.6	↓
		3.8	4.8	

3.0 | C4.0 3.8 | C4.8
3.6 | C4.6

CHAIN OF CUSTODY RECORD

Laboratory: Test America, 4101 Shuffel Drive NW, North Canton, OH, 44720 / Opal Johnson, Manager/1-330-966-9279

XT 6/28/2016

Client: Draper Aden Associates **Attn:** **Address:** **Phone:** **Fax:** **Fax:**	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street, Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RFAAP, Radford, Virginia **Location:** HWMU-13 (Open Burning Ground) **Event:** July ~~August~~ 2016 - Annual Soil Monitoring **DAA JN:** B03204-216 **Lab JN:** 7-15-16	**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** YES UPS: **Carrier:** 12.237.301.01.9187.3830 **Tracking Number:** ~~12.237.301.01.9292.1624~~ **Invoice** 12.237.301.01.9502.0646 **Copy to Consultant:** YES **Bill:** CLIENT OTHER **Preserved and shipped on ice:** YES

Box 1: Matrix
SW Surface Water, GW Groundwater, L Leachate, S Soil, T Trip Blank, E Equipment Blank, P Product, O Other

Box 2: Preservative
A HCL, B HNO_3, C H_2SO_4, D $Na_2S_2O_3$, E NaOH, F ZnAc, G Other (<4 deg C), H None

Box 3: Filtered/Unfiltered
F Filtered, U Unfiltered

Box 4: Sample Type
G Grab, C Composite

Box 5: Sample Container Type
P Plastic, V VOA, AG Amber Glass, CG Clear Glass

Sample ID	Date: 2016	Time	Box 1: Matrix	Number of Bottles	Hexavalent Chromium 7196A/3060A	TPH-DRO 8015C/3540C	RCRA Metals 6010C/7471A	Dioxins/Furans 8290A	DRY WEIGHT (aliquot from method container)	
Box 4 - Sample Type					G	G	G	G		
Box 3 - Filtered/Unfiltered					-	-	-	-		
Required pH of Sample					-	-	-	-		
Box 2 - Preservative					G	H	H	H		
Box 5 - Sample Container Type					1-4 oz CG	1-4 oz CG	1-4 oz CG	2-4 oz AG		
PAD-1	7-25	1500	S	5	X	X	X	X	X	
PAD-2	7-25	1520	S	4	X		X	X	X	
PAD-3	7-25	1540	S	4	X		X	X	X	
PAD-4	7-25	1630	S	5	X	X	X	X	X	
PAD-4ms	7-25	1630	S	5	X	X	X	X	X	
PAD-4msd	7-25	1630	S	5	X	X	X	X	X	
PAD-5	7-25	1700	S	4	X		X	X	X	
PAD-6	7-25	1720	S	4	X		X	X	X	
PAD-7	7-25	1735	S	5	X	X	X	X	X	
PAD-8	7-25	1800	S	4	X		X	X	X	
PAD-X	7-25	1745	S	3	X	X	X		X	
PAD-XX	7-25	1510	S	2				X	X	

GENERAL NOTES:
1. Estimated results required.
2. Report results on a DRY WEIGHT BASIS.
3. VELAP required. Dioxin/Furans to TA Knoxville. All other methods TA North Canton
4. Report results in mg/kg except for dioxin.
5. VELAP Accreditation required.

240-67642 Chain of Custody

use for MS / MSD...

PAD-XX used for dioxin blind field duplicate only

Clients Special instructions: Level 4 with edd.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

Sampler Name (Print): Ken Coddington	Date: 7/25/16	#1 Relinquished by (Signature):	Date: 7-26-16	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature:	Time: 0700	Company Name: DAA	Time: 1200	Company Name:	Time:	
Sampler Name (Print): Will Mason-Deese	Date: 7/25/16	#1 Received by (Signature):	Date: 7/27/16	#2 Received by (Signature):	Date:	30 DYS ORG/6 MTHS INORG
Sampler Signature:	Time: 0700	Company Name:	Time: 1030	Company Name:	Time:	

OK
6/29/16

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ANALYTICAL METHOD: 6010C/7471A (Soil)
TYPE METHOD: Inorganics

Analyte List for: All PAD Samples

No	Constituent	CASRN	SW-846 Method
1	Arsenic	7440-38-2	6010C
2	Barium	7440-39-3	6010C
3	Cadmium	7440-43-9	6010C
4	Chromium, Total	7740-47-3	6010C
5	Lead	7439-92-1	6010C
6	Silver	7440-22-4	6010C
7	Selenium	7782-49-2	6010C
8	Mercury	7439-97-6	7471A

Analyte List for: All PAD Samples

Constituent	CASRN	SW-846 Method
Chromium, Hexavalent	18540-29-9	7196A

Analyte List for SB-1, SB-2, NB-1, NB-2, Berm-1 and Pond-1 ONLY

Method SW 846-6010C

No.	ANALYTE	CAS RN
1.	Arsenic	7440-38-2
2.	Barium	7440-39-3
3.	Cadmium	7440-43-9
4.	Chromium	7440-47-3
5.	Lead	7440-92-1
6.	Selenium	7782-49-2

ANALYTICAL METHOD: 8015C/3540C
TYPE METHOD: TPH- DRO

Analyte List for: PAD-1, PAD-4 and PAD-7, PAD-X

Constituent	CASRN	SW-846 Method
Total Petroleum Hydrocarbons - DRO		8015C

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 607642
Canton Facility

Client Draper Aden Site Name _____ Cooler unpacked by: DSO
Cooler Received on 07/27/16 Opened on 07/27/16
FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # _____ Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form
   IR GUN# IR-8 (CF +1.3 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #36 (CF +1.0°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC574756**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ Yes No
15. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____.

TestAmerica Multiple Cooler Receipt Form/Narrative **Login # :** 607642
Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Client	36	3.0	4.0	Ice
↓	↓	3.6	4.6	↓
		3.8	4.8	

3.0/C4.0 3.8/C4.8
3.6/C4.6

CHAIN OF CUSTODY RECORD

Laboratory: Test America, 4101 Shuffel Drive NW, North Canton, OH, 44720 / Opal Johnson, Manager/1-330-966-9279

6/28/2016

Client: Draper Aden Associates Attn: Address: Phone: Fax: Fax:	Consultant: Draper Aden Associates Attn: Janet C. Frazier Address: 2206 South Main Street Blacksburg, Virginia 24060 Phone: (540) 552-0444 Fax: (540) 552-0291	Sample Site: RFAAP. Radford, Virginia Location: HWMU-13 (Open Burning Ground) Event: August 2016 - Annual Soil Monitoring DAA JN: B03204-216 Lab JN:	Project Specific (PS) or Batch (B) QC: Sample Collection for Project Complete? YES UPS: Carrier: 12-237-301-01-9187-3830 Tracking Number: 12-237-301-01-9292-1624 Invoice 12-237-301-01-9502-0646

Box 1: Matrix
SW Surface Wate T Trip Blank
GW Groundwater E Equipment E
L Leachate P Product
S Soil O Other

Box 2: Preservative
A HCL
B HNO_3
C H_2SO_4
D $Na_2S_2O_3$
E NaOH
F ZnAc
G Other (<4 de
H None

Box 3: Filtered/Unfiltered
F Filtered
U Unfiltered

Box 4: Sample Type
G Grab
C Composite

Box 5: Sample Container Type
P Plastic V VOA
AG Amber Glas CG Clear Glass

Copy to Consultant: YES
Bill: CLIENT OTHER
Preserved and shipped on ice: YES

Box 4 - Sample Type	G	G	G
Box 3 - Filtered/Unfiltered	U	U	U
Required pH of Sample	<2	-	-
Box 2 - Preservative	B	-	-
Box 5 - Sample Container Type	1-500 mL P	4-1L AG	2-1L AG

Sample ID	Date: 2016	Time	Box 1: Matrix	Number of Bottles	RCRA Metals: 6010C/7470A	Dioxins/Furans 8290A	TPH-DRO 8015C
EB	7/25	1300	W	7	X	X	X

GENERAL NOTES:
1. Estimated results required.
2. VELAP required. Dioxin/Furans to TA Knoxville. All other methods TA North Canton.
4. VELAP Accreditation required.
5. See attached analyte list.

pre-sampling EQ Blank

240-67646 Chain of Custody

Clients Special Instructions: Level 4 with edd.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No
Describe problems, if any:

Sampler Name (Print): Ken Coddington	Date: 7/25/16	#1 Relinquished by (Signature):	Date: 7/26/16	#2 Relinquished by (Signature):	Date:	Sample Time
Sampler Signature:	Time: 1200	Company Name: DAA	Time: 1200	Company Name:	Time:	
Sampler Name (Print): Will Mason	Date: 7/25/16	#1 Received by (Signature):	Date: 7/27/16	#2 Received by (Signature):	Date:	30 DYS ORG/6 MTHS INORG
Sampler Signature:	Time: 1200	Company Name:	Time: 1030	Company Name:	Time:	

*OK to report w/soil event.
JWC 6/29/16

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TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 67646
Canton Facility

Client Draper Aden Site Name

Cooler unpacked by: DSD

Cooler Received on 07/27/16 Opened on 07/27/16

FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form
   IR GUN# IR-8 (CF +1.3 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
   ~~IR GUN #36 (CF +1.0°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C~~
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC574756**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes No
15. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM Date by via Verbal Voice Mail Other

Concerning

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

TestAmerica Multiple Cooler Receipt Form/Narrative Login # :
Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Client	36	3.0	4.0	Ice
↓	↓	3.6	4.6	↓
↓	↓	3.8	4.8	↓

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EQUIPMENT BLANK ONLY- WATER -

Open Burning Ground (OBG) – Unit 13
Radford Army Ammunition Plant
Annual Soil Monitoring Event

Based on revised permit effective June 12, 2014

ANALYTICAL METHOD: 6010C/7470A
TYPE METHOD: Inorganics

No	Constituent	CASRN	SW-846 Method
1	Arsenic	7440-38-2	6010C
2	Barium	7440-39-3	6010C
3	Cadmium	7440-43-9	6010C
4	Chromium, Total	7740-47-3	6010C
5	Lead	7439-92-1	6010C
6	Silver	7440-22-4	6010C
7	Selenium	7782-49-2	6010C
8	Mercury	7439-97-6	7470A

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
EB	240-67646-A-1	Plastic 500ml - with Nitric Acid	<2	_____	_____