

Appendix C - Index

Appendix C Piezometers Stratigraphic Logs
 Piezometers Slug Testing Data
 Groundwater Data Validation Memo
 Groundwater Analytical Laboratory Reports



STRATIGRAPHIC LOG

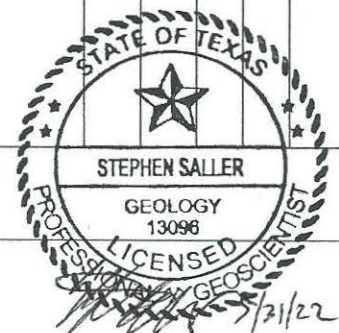
PROJECT NAME: Southern Impoundment
 PROJECT NUMBER: 11215131
 CLIENT: International Paper Company
 LOCATION: Harris County, Texas
 DRILLING COMPANY: TWE

HOLE DESIGNATION: PZ-NE
 DATE COMPLETED: 15 December 2021
 DRILLING METHOD: Direct Push and Hollow Stem Auger
 FIELD PERSONNEL: Stephen Saller
 DRILLING COMPANY SUPERVISOR: Fadhel Peters

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Monitor Well	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' Value
2	Brown clayey SAND (SC), moist, slight gravel	2.25	<p>WELL DETAILS Screened interval: 0.50 to 10.50ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.00 to 0.50ft BGS Material: Bentonite Chips Sand Pack: 0.50 to 10.50ft BGS Material: 16/30 Sand</p>				
	- gravel	2.50					
4	Brown sandy CLAY (CL), moist	3.50					
	Gray silty SAND (SM), moist	4.00					
	- saturated	4.50					
	- white sand	5.00					
	- black/dark gray color shift	6.50					
	- wood/debris	7.00					
10	Black clayey SILT to silty CLAY (CL-ML), wet, soft	9.00					
	Dark gray silty CLAY (CL), with sand, wet to saturated, interbedded sand	10.00					
	END OF BOREHOLE @ 10.0ft BGS						

OVERBURDEN LOG 11215131 - PZS - DECEMBER 2021.GPJ CRA_CORP.GDT 6/5/22

NOTES: THIS BORING LOG NOT TO BE USED SEPARATELY FROM THIS REPORT.
 WATER FOUND ∇





STRATIGRAPHIC LOG

PROJECT NAME: Southern Impoundment

HOLE DESIGNATION: PZ-NC

PROJECT NUMBER: 11215131

DATE COMPLETED: 14 December 2021

CLIENT: International Paper Company

DRILLING METHOD: Direct Push and Hollow Stem Auger

LOCATION: Harris County, Texas

FIELD PERSONNEL: Stephen Saller

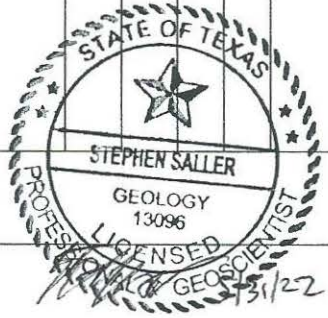
DRILLING COMPANY: TWE

DRILLING COMPANY SUPERVISOR: Fadhel Peters

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Monitor Well	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' Value
0.50	Brown clayey SAND (SC) with grass and gravel, moist	0.50	<p>WELL DETAILS Screened interval: 0.50 to 10.50ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.00 to 0.50ft BGS Material: Bentonite Chips Sand Pack: 0.50 to 10.50ft BGS Material: 16/30 Sand</p>				
2.00	Reddish brown silty CLAY (CL) with slight sand, moist	4.00					
4.00	- wet	7.00					
6.00		8.00					
8.00	Black clayey SAND (SC), saturated	8.50					
8.50	- clayey zone from 8 to 8.5	10.00					
10.00	Gray SAND (SP), saturated						
10.00	END OF BOREHOLE @ 10.0ft BGS						
12.00							
14.00							
16.00							
18.00							
20.00							
22.00							
24.00							
26.00							
28.00							
30.00							
32.00							
34.00							
36.00							
38.00							
40.00							
42.00							
44.00							

OVERBURDEN LOG 11215131 - PZS - DECEMBER 2021.GPJ CRA_CORP.GDT 6/5/22

NOTES: THIS BORING LOG NOT TO BE USED SEPARATELY FROM THIS REPORT.
WATER FOUND ∇





STRATIGRAPHIC LOG

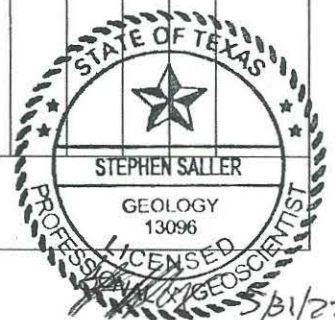
PROJECT NAME: Southern Impoundment
 PROJECT NUMBER: 11215131
 CLIENT: International Paper Company
 LOCATION: Harris County, Texas
 DRILLING COMPANY: TWE

HOLE DESIGNATION: PZ-SC
 DATE COMPLETED: 14 December 2021
 DRILLING METHOD: Direct Push and Hollow Stem Auger
 FIELD PERSONNEL: Stephen Saller
 DRILLING COMPANY SUPERVISOR: Fadhel Peters

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Monitor Well	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' Value
0.50	TOPSOIL (Brown clayey sand with gravel)	0.50	<p>WELL DETAILS Screened interval: 0.50 to 10.50ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.00 to 0.50ft BGS Material: Bentonite Chips Sand Pack: 0.50 to 10.50ft BGS Material: 16/30 Sand</p>				
2	Brown silty CLAY (CL)						
4	- wood	4.00					
4.50	Gray silty SAND (SM), wet	4.50					
5.00	- saturated	5.00					
6	- wood	7.50					
8	Gray silty CLAY (CL) with slight sand, wet to saturated.	8.00					
10	END OF BOREHOLE @ 10.0ft BGS	10.00					
12							
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							
36							
38							
40							
42							
44							

OVERBURDEN LOG 11215131 - PZS - DECEMBER 2021.GPJ CRA_CORP.GDT 6/5/22

NOTES: THIS BORING LOG NOT TO BE USED SEPARATELY FROM THIS REPORT.
 WATER FOUND ∇





STRATIGRAPHIC LOG

PROJECT NAME: Southern Impoundment

HOLE DESIGNATION: PZ-SW

PROJECT NUMBER: 11215131

DATE COMPLETED: 15 December 2021

CLIENT: International Paper Company

DRILLING METHOD: Direct Push and Hollow Stem Auger

LOCATION: Harris County, Texas

FIELD PERSONNEL: Stephen Saller

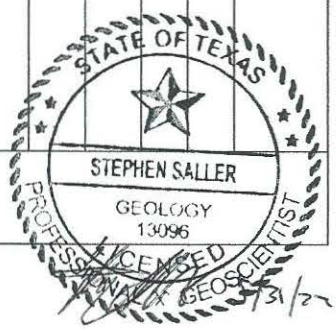
DRILLING COMPANY: TWE

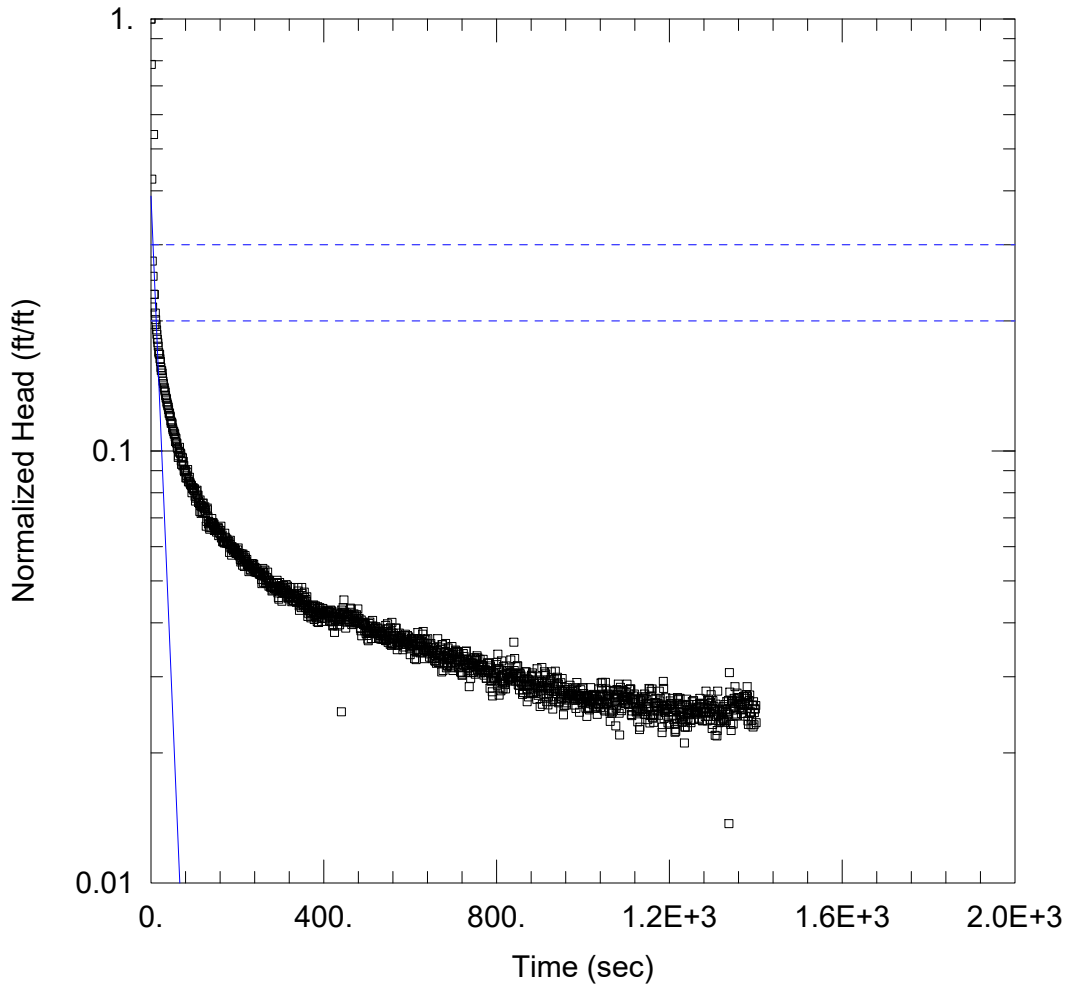
DRILLING COMPANY SUPERVISOR: Fadhel Peters

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Monitor Well	SAMPLE			
				NUMBER	INTERVAL	REC (%)	'N' Value
2	Brown sandy CLAY (CL), moist		<p>WELL DETAILS Screened interval: 0.50 to 10.50ft BGS Length: 10ft Diameter: 2in Slot Size: 0.010 Material: PVC Seal: 0.00 to 0.50ft BGS Material: Bentonite Chips Sand Pack: 0.50 to 10.50ft BGS Material: 16/30 Sand</p>				
4	- gray	3.00					
4	Gray clayey SAND (SC), wet	4.00					
6	Wood debris (FILL), wet	6.00					
8	Gray clayey SAND (SC), saturated	7.50					
8	Gray SAND (SP), with slight clay, saturated	8.50					
10	END OF BOREHOLE @ 10.0ft BGS	10.00					
12							
14							
16							
18							
20							
22							
24							
26							
28							
30							
32							
34							
36							
38							
40							
42							
44							

OVERBURDEN LOG 11215131 - PZS - DECEMBER 2021.GPJ CRA_CORP.GDT 6/5/22

NOTES: THIS BORING LOG NOT TO BE USED SEPARATELY FROM THIS REPORT.
WATER FOUND ∇





WELL TEST ANALYSIS

Data Set: C:\...\PZNC slug in.aqt
 Date: 03/08/22

Time: 14:48:18

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Well: PZ-NC
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 6.92 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-NC)

Initial Displacement: 1.23 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 6.92 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 5.883 ft/day

Solution Method: Bower-Rice
 y0 = 0.4785 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZNC slug in.aq
 Date: 04/26/22
 Time: 09:12:05

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-NC

AQUIFER DATA

Saturated Thickness: 6.92 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-NC

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 1.23 ft
 Static Water Column Height: 6.92 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 1402

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	1.228	701.	0.04161
1.	0.9649	702.	0.03873
2.	0.5235	703.	0.03953
3.	0.3382	704.	0.04044
4.	0.2648	705.	0.04255
5.	0.312	706.	0.04237
6.	0.6643	707.	0.0399
7.	0.2835	708.	0.04224
8.	0.283	709.	0.04106
9.	0.2409	710.	0.04203
10.	0.2564	711.	0.03994
11.	0.2476	712.	0.03873
12.	0.2415	713.	0.04161
13.	0.2346	714.	0.0408
14.	0.229	715.	0.0401
15.	0.223	716.	0.0403
16.	0.219	717.	0.03782
17.	0.215	718.	0.0401
18.	0.208	719.	0.03774
19.	0.2061	720.	0.0372
20.	0.2058	721.	0.0374
21.	0.2011	722.	0.04051
22.	0.1981	723.	0.04178
23.	0.1919	724.	0.0392
24.	0.1888	725.	0.04112
25.	0.1886	726.	0.04044
26.	0.1862	727.	0.03967
27.	0.1823	728.	0.03953
28.	0.1784	729.	0.04224
29.	0.1761	730.	0.04235

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
30.	0.1727	731.	0.0392
31.	0.1719	732.	0.03774
32.	0.1698	733.	0.0403
33.	0.1683	734.	0.03865
34.	0.1652	735.	0.0399
35.	0.1631	736.	0.03873
36.	0.1623	737.	0.03501
37.	0.1595	738.	0.03967
38.	0.158	739.	0.03976
39.	0.1565	740.	0.0366
40.	0.1552	741.	0.04051
41.	0.1532	742.	0.03976
42.	0.1503	743.	0.03774
43.	0.1506	744.	0.03967
44.	0.1486	745.	0.03953
45.	0.1477	746.	0.03908
46.	0.1443	747.	0.03782
47.	0.1425	748.	0.0408
48.	0.1434	749.	0.0408
49.	0.1423	750.	0.04023
50.	0.1392	751.	0.0374
51.	0.1378	752.	0.03891
52.	0.1366	753.	0.0403
53.	0.1362	754.	0.04083
54.	0.1345	755.	0.04125
55.	0.1348	756.	0.0383
56.	0.1326	757.	0.04083
57.	0.1293	758.	0.03891
58.	0.1315	759.	0.03803
59.	0.1284	760.	0.03907
60.	0.1282	761.	0.0383
61.	0.125	762.	0.04051
62.	0.1245	763.	0.0383
63.	0.1188	764.	0.03769
64.	0.1198	765.	0.03939
65.	0.1227	766.	0.0392
66.	0.1254	767.	0.0383
67.	0.1219	768.	0.03816
68.	0.1216	769.	0.04051
69.	0.1212	770.	0.03908
70.	0.1165	771.	0.03722
71.	0.1144	772.	0.03782
72.	0.1189	773.	0.03774
73.	0.1185	774.	0.0383
74.	0.1136	775.	0.0383
75.	0.1163	776.	0.0366
76.	0.1138	777.	0.03665
77.	0.1107	778.	0.03803
78.	0.1101	779.	0.03967
79.	0.1111	780.	0.03976
80.	0.1105	781.	0.03803
81.	0.1066	782.	0.03782
82.	0.1065	783.	0.03967
83.	0.1077	784.	0.03873
84.	0.1099	785.	0.03472
85.	0.1113	786.	0.0391
86.	0.1059	787.	0.0361
87.	0.1042	788.	0.03607
88.	0.1045	789.	0.0362
89.	0.1069	790.	0.03408
90.	0.1041	791.	0.03331
91.	0.1033	792.	0.03665
92.	0.1028	793.	0.03651
93.	0.1024	794.	0.03761
94.	0.1022	795.	0.03683
95.	0.0984	796.	0.03651

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
96.	0.1006	797.	0.03782
97.	0.101	798.	0.0374
98.	0.101	799.	0.03707
99.	0.09984	800.	0.03939
100.	0.09963	801.	0.03981
101.	0.1006	802.	0.03528
102.	0.09655	803.	0.04161
103.	0.09411	804.	0.0383
104.	0.09563	805.	0.03859
105.	0.09914	806.	0.03345
106.	0.09627	807.	0.0383
107.	0.09977	808.	0.03459
108.	0.09714	809.	0.03651
109.	0.09714	810.	0.03425
110.	0.09343	811.	0.03607
111.	0.09411	812.	0.04017
112.	0.09322	813.	0.03722
113.	0.08903	814.	0.03566
114.	0.09473	815.	0.03459
115.	0.09179	816.	0.03607
116.	0.08819	817.	0.03894
117.	0.09193	818.	0.03709
118.	0.0913	819.	0.0354
119.	0.08862	820.	0.03577
120.	0.09289	821.	0.03459
121.	0.09322	822.	0.0391
122.	0.09104	823.	0.0376
123.	0.08849	824.	0.0376
124.	0.09045	825.	0.03816
125.	0.0913	826.	0.03627
126.	0.08961	827.	0.03679
127.	0.08859	828.	0.03647
128.	0.08232	829.	0.03802
129.	0.08446	830.	0.03651
130.	0.09068	831.	0.0374
131.	0.08987	832.	0.03774
132.	0.08658	833.	0.04038
133.	0.0833	834.	0.03693
134.	0.08446	835.	0.03627
135.	0.08169	836.	0.03607
136.	0.08102	837.	0.03669
137.	0.08367	838.	0.0376
138.	0.08388	839.	0.03722
139.	0.08172	840.	0.04436
140.	0.08391	841.	0.03816
141.	0.08581	842.	0.04066
142.	0.08377	843.	0.03748
143.	0.08377	844.	0.03607
144.	0.08388	845.	0.03894
145.	0.08268	846.	0.03693
146.	0.08325	847.	0.0376
147.	0.08049	848.	0.0391
148.	0.08217	849.	0.0391
149.	0.08054	850.	0.03533
150.	0.08125	851.	0.03607
151.	0.08097	852.	0.0352
152.	0.07979	853.	0.03441
153.	0.08054	854.	0.03769
154.	0.08049	855.	0.03748
155.	0.08136	856.	0.03693
156.	0.08169	857.	0.03709
157.	0.0783	858.	0.03566
158.	0.08054	859.	0.03607
159.	0.07952	860.	0.0336
160.	0.07895	861.	0.03441
161.	0.08054	862.	0.03394

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
162.	0.08233	863.	0.03515
163.	0.07732	864.	0.03515
164.	0.07804	865.	0.03651
165.	0.07856	866.	0.03627
166.	0.0758	867.	0.03789
167.	0.0758	868.	0.03515
168.	0.07607	869.	0.03789
169.	0.07562	870.	0.03441
170.	0.07528	871.	0.03232
171.	0.07929	872.	0.03647
172.	0.07763	873.	0.0352
173.	0.07732	874.	0.03316
174.	0.07528	875.	0.03515
175.	0.07528	876.	0.0354
176.	0.07682	877.	0.03607
177.	0.07607	878.	0.03389
178.	0.07515	879.	0.03381
179.	0.07505	880.	0.03693
180.	0.07581	881.	0.03709
181.	0.07581	882.	0.03727
182.	0.07158	883.	0.03769
183.	0.0747	884.	0.03389
184.	0.07639	885.	0.03459
185.	0.07332	886.	0.03389
186.	0.07383	887.	0.03607
187.	0.07056	888.	0.03566
188.	0.07383	889.	0.03375
189.	0.07302	890.	0.03515
190.	0.07273	891.	0.03488
191.	0.07215	892.	0.03627
192.	0.07258	893.	0.03273
193.	0.0733	894.	0.03851
194.	0.07316	895.	0.03459
195.	0.07183	896.	0.03342
196.	0.07244	897.	0.03566
197.	0.07123	898.	0.03496
198.	0.07158	899.	0.03607
199.	0.07144	900.	0.03566
200.	0.07136	901.	0.03151
201.	0.07258	902.	0.03425
202.	0.07332	903.	0.03459
203.	0.07067	904.	0.03596
204.	0.07042	905.	0.03877
205.	0.07028	906.	0.03187
206.	0.07123	907.	0.0352
207.	0.06895	908.	0.03496
208.	0.06801	909.	0.0336
209.	0.06868	910.	0.03496
210.	0.07102	911.	0.03789
211.	0.06954	912.	0.03577
212.	0.0669	913.	0.03714
213.	0.07102	914.	0.03747
214.	0.06998	915.	0.03291
215.	0.06829	916.	0.03232
216.	0.06642	917.	0.03614
217.	0.06895	918.	0.03474
218.	0.07042	919.	0.03176
219.	0.06953	920.	0.03329
220.	0.06808	921.	0.03496
221.	0.06826	922.	0.03376
222.	0.06895	923.	0.03459
223.	0.06712	924.	0.03427
224.	0.06698	925.	0.03607
225.	0.0669	926.	0.03633
226.	0.06642	927.	0.03789
227.	0.06461	928.	0.03679

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
228.	0.06744	929.	0.03231
229.	0.06677	930.	0.03107
230.	0.06516	931.	0.03273
231.	0.06531	932.	0.03412
232.	0.06675	933.	0.03496
233.	0.06743	934.	0.03563
234.	0.06589	935.	0.03459
235.	0.06743	936.	0.03802
236.	0.0669	937.	0.03376
237.	0.06576	938.	0.03318
238.	0.0673	939.	0.03655
239.	0.06462	940.	0.03412
240.	0.06554	941.	0.0368
241.	0.06613	942.	0.03553
242.	0.0645	943.	0.03553
243.	0.06462	944.	0.03212
244.	0.06448	945.	0.03232
245.	0.06568	946.	0.03412
246.	0.06448	947.	0.03445
247.	0.0643	948.	0.03329
248.	0.0643	949.	0.03577
249.	0.06448	950.	0.03277
250.	0.0643	951.	0.03281
251.	0.06378	952.	0.03655
252.	0.06396	953.	0.03412
253.	0.06437	954.	0.03381
254.	0.06361	955.	0.03013
255.	0.06396	956.	0.03162
256.	0.06198	957.	0.03162
257.	0.06061	958.	0.03482
258.	0.06486	959.	0.03445
259.	0.06576	960.	0.03346
260.	0.06104	961.	0.03173
261.	0.06437	962.	0.03212
262.	0.0631	963.	0.03259
263.	0.06336	964.	0.03281
264.	0.06517	965.	0.03445
265.	0.06091	966.	0.03375
266.	0.06069	967.	0.03329
267.	0.06173	968.	0.03412
268.	0.06268	969.	0.03346
269.	0.06061	970.	0.03527
270.	0.06448	971.	0.03412
271.	0.06212	972.	0.03346
272.	0.06173	973.	0.03381
273.	0.0598	974.	0.03362
274.	0.06061	975.	0.03445
275.	0.06129	976.	0.03329
276.	0.0598	977.	0.03412
277.	0.05952	978.	0.03277
278.	0.0607	979.	0.03482
279.	0.05952	980.	0.03281
280.	0.05829	981.	0.03173
281.	0.05952	982.	0.03461
282.	0.0586	983.	0.03277
283.	0.05952	984.	0.03119
284.	0.06101	985.	0.03346
285.	0.059	986.	0.03579
286.	0.05931	987.	0.03277
287.	0.05934	988.	0.03346
288.	0.05965	989.	0.03346
289.	0.0586	990.	0.03318
290.	0.059	991.	0.03289
291.	0.0607	992.	0.03053
292.	0.06173	993.	0.03281
293.	0.06101	994.	0.03277

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
294.	0.0577	995.	0.03445
295.	0.05629	996.	0.03329
296.	0.05584	997.	0.03277
297.	0.05965	998.	0.03217
298.	0.06101	999.	0.03482
299.	0.05829	1000.	0.03474
300.	0.05934	1001.	0.03277
301.	0.06001	1002.	0.03375
302.	0.05829	1003.	0.03346
303.	0.05519	1004.	0.03318
304.	0.05845	1005.	0.03231
305.	0.05779	1006.	0.03199
306.	0.05934	1007.	0.03124
307.	0.06001	1008.	0.03289
308.	0.059	1009.	0.02987
309.	0.05758	1010.	0.03259
310.	0.05847	1011.	0.03329
311.	0.05894	1012.	0.03302
312.	0.0586	1013.	0.03137
313.	0.0603	1014.	0.03119
314.	0.05793	1015.	0.03093
315.	0.05793	1016.	0.03231
316.	0.05987	1017.	0.03212
317.	0.05629	1018.	0.03482
318.	0.05637	1019.	0.03329
319.	0.05593	1020.	0.03349
320.	0.0574	1021.	0.03259
321.	0.05651	1022.	0.03333
322.	0.05627	1023.	0.03289
323.	0.05629	1024.	0.0318
324.	0.05938	1025.	0.03362
325.	0.05727	1026.	0.03281
326.	0.05505	1027.	0.03346
327.	0.05593	1028.	0.03124
328.	0.05542	1029.	0.03124
329.	0.05651	1030.	0.03318
330.	0.0553	1031.	0.03346
331.	0.05667	1032.	0.03124
332.	0.05727	1033.	0.0302
333.	0.05756	1034.	0.03267
334.	0.05656	1035.	0.03245
335.	0.05516	1036.	0.03199
336.	0.05643	1037.	0.03461
337.	0.05489	1038.	0.0318
338.	0.0574	1039.	0.03349
339.	0.05614	1040.	0.03199
340.	0.05938	1041.	0.03137
341.	0.05832	1042.	0.03569
342.	0.05593	1043.	0.03468
343.	0.05387	1044.	0.03362
344.	0.05257	1045.	0.03582
345.	0.05411	1046.	0.03231
346.	0.05586	1047.	0.03346
347.	0.05457	1048.	0.03129
348.	0.05337	1049.	0.03093
349.	0.05938	1050.	0.0318
350.	0.05756	1051.	0.03075
351.	0.05489	1052.	0.03582
352.	0.05426	1053.	0.03461
353.	0.05387	1054.	0.03318
354.	0.05542	1055.	0.03199
355.	0.05796	1056.	0.03333
356.	0.05629	1057.	0.03267
357.	0.05468	1058.	0.03367
358.	0.05337	1059.	0.03349
359.	0.0557	1060.	0.03289

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
360.	0.05516	1061.	0.03245
361.	0.05656	1062.	0.0306
362.	0.05411	1063.	0.02909
363.	0.05092	1064.	0.03431
364.	0.0518	1065.	0.03217
365.	0.05243	1066.	0.03079
366.	0.05387	1067.	0.0304
367.	0.0526	1068.	0.0306
368.	0.05324	1069.	0.03105
369.	0.05131	1070.	0.03414
370.	0.05053	1071.	0.03349
371.	0.0518	1072.	0.03315
372.	0.05298	1073.	0.03305
373.	0.05194	1074.	0.03427
374.	0.05373	1075.	0.03231
375.	0.05387	1076.	0.02841
376.	0.05223	1077.	0.03124
377.	0.05412	1078.	0.0316
378.	0.05008	1079.	0.03447
379.	0.05324	1080.	0.03362
380.	0.05118	1081.	0.03333
381.	0.05387	1082.	0.0355
382.	0.05194	1083.	0.03431
383.	0.0505	1084.	0.0304
384.	0.05092	1085.	0.02706
385.	0.04946	1086.	0.03431
386.	0.05362	1087.	0.03487
387.	0.05312	1088.	0.03245
388.	0.04929	1089.	0.03079
389.	0.0505	1090.	0.03115
390.	0.05246	1091.	0.03267
391.	0.05337	1092.	0.03302
392.	0.05131	1093.	0.03305
393.	0.0518	1094.	0.03267
394.	0.05152	1095.	0.03414
395.	0.04956	1096.	0.03315
396.	0.05036	1097.	0.03245
397.	0.05172	1098.	0.03199
398.	0.05312	1099.	0.03204
399.	0.05269	1100.	0.03398
400.	0.05194	1101.	0.03305
401.	0.05209	1102.	0.0355
402.	0.0505	1103.	0.03245
403.	0.05222	1104.	0.03318
404.	0.05153	1105.	0.03185
405.	0.05217	1106.	0.03204
406.	0.05222	1107.	0.03367
407.	0.05104	1108.	0.03447
408.	0.05203	1109.	0.03289
409.	0.05243	1110.	0.03461
410.	0.05203	1111.	0.03461
411.	0.05243	1112.	0.03019
412.	0.05104	1113.	0.02999
413.	0.05203	1114.	0.03075
414.	0.05209	1115.	0.03245
415.	0.04956	1116.	0.03267
416.	0.05269	1117.	0.03333
417.	0.04971	1118.	0.03264
418.	0.05246	1119.	0.03367
419.	0.04945	1120.	0.03289
420.	0.05078	1121.	0.03217
421.	0.04835	1122.	0.03217
422.	0.04853	1123.	0.0306
423.	0.0507	1124.	0.03075
424.	0.0507	1125.	0.0306
425.	0.04673	1126.	0.03079

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
426.	0.04971	1127.	0.02902
427.	0.05008	1128.	0.03105
428.	0.05092	1129.	0.03264
429.	0.05209	1130.	0.03115
430.	0.05092	1131.	0.02785
431.	0.04956	1132.	0.02822
432.	0.04835	1133.	0.03251
433.	0.05172	1134.	0.03079
434.	0.05008	1135.	0.03264
435.	0.04997	1136.	0.03105
436.	0.05039	1137.	0.03315
437.	0.04868	1138.	0.03105
438.	0.0507	1139.	0.03289
439.	0.05138	1140.	0.03289
440.	0.04997	1141.	0.03066
441.	0.03061	1142.	0.03026
442.	0.05269	1143.	0.03367
443.	0.05138	1144.	0.03315
444.	0.05203	1145.	0.03019
445.	0.05337	1146.	0.03199
446.	0.05153	1147.	0.03149
447.	0.05557	1148.	0.03264
448.	0.05172	1149.	0.03105
449.	0.05203	1150.	0.02937
450.	0.04945	1151.	0.03204
451.	0.04783	1152.	0.03124
452.	0.05078	1153.	0.03468
453.	0.04943	1154.	0.03461
454.	0.05138	1155.	0.02884
455.	0.05092	1156.	0.03006
456.	0.05153	1157.	0.03006
457.	0.05008	1158.	0.03414
458.	0.05008	1159.	0.03333
459.	0.05125	1160.	0.03461
460.	0.04957	1161.	0.02973
461.	0.04945	1162.	0.0296
462.	0.05323	1163.	0.03019
463.	0.05203	1164.	0.02895
464.	0.05298	1165.	0.03006
465.	0.04876	1166.	0.03075
466.	0.05104	1167.	0.03217
467.	0.05039	1168.	0.03217
468.	0.04932	1169.	0.03291
469.	0.04889	1170.	0.03149
470.	0.05158	1171.	0.03204
471.	0.05104	1172.	0.03075
472.	0.04984	1173.	0.0316
473.	0.04957	1174.	0.03204
474.	0.04933	1175.	0.03005
475.	0.05104	1176.	0.03146
476.	0.0514	1177.	0.03418
477.	0.04922	1178.	0.03245
478.	0.04994	1179.	0.03289
479.	0.05298	1180.	0.03115
480.	0.05036	1181.	0.0316
481.	0.04943	1182.	0.0318
482.	0.05039	1183.	0.02741
483.	0.04933	1184.	0.02822
484.	0.04919	1185.	0.03105
485.	0.04772	1186.	0.036
486.	0.04713	1187.	0.03468
487.	0.04994	1188.	0.02955
488.	0.04591	1189.	0.0306
489.	0.04932	1190.	0.03105
490.	0.04902	1191.	0.03046
491.	0.04889	1192.	0.03301

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
492.	0.04876	1193.	0.03115
493.	0.04919	1194.	0.03167
494.	0.04908	1195.	0.03115
495.	0.04713	1196.	0.03115
496.	0.04919	1197.	0.02884
497.	0.0484	1198.	0.02973
498.	0.04652	1199.	0.03066
499.	0.04713	1200.	0.02863
500.	0.04598	1201.	0.03167
501.	0.047	1202.	0.03245
502.	0.04508	1203.	0.03199
503.	0.04471	1204.	0.03204
504.	0.04683	1205.	0.0318
505.	0.04902	1206.	0.03105
506.	0.04654	1207.	0.03136
507.	0.04943	1208.	0.03289
508.	0.04783	1209.	0.0306
509.	0.04654	1210.	0.02937
510.	0.04524	1211.	0.03102
511.	0.04713	1212.	0.02871
512.	0.04818	1213.	0.02746
513.	0.04984	1214.	0.02787
514.	0.0484	1215.	0.0276
515.	0.04654	1216.	0.02955
516.	0.04759	1217.	0.03005
517.	0.047	1218.	0.03204
518.	0.04776	1219.	0.03305
519.	0.04646	1220.	0.03191
520.	0.0479	1221.	0.03267
521.	0.04821	1222.	0.03062
522.	0.047	1223.	0.02973
523.	0.04638	1224.	0.03102
524.	0.04654	1225.	0.03291
525.	0.04783	1226.	0.03005
526.	0.04764	1227.	0.03124
527.	0.04537	1228.	0.02942
528.	0.04524	1229.	0.02895
529.	0.04713	1230.	0.03185
530.	0.04659	1231.	0.03046
531.	0.04598	1232.	0.02902
532.	0.04508	1233.	0.03026
533.	0.04654	1234.	0.02986
534.	0.04638	1235.	0.02593
535.	0.04508	1236.	0.02824
536.	0.04659	1237.	0.02822
537.	0.04578	1238.	0.02916
538.	0.04508	1239.	0.03167
539.	0.04508	1240.	0.03275
540.	0.0461	1241.	0.03091
541.	0.047	1242.	0.02822
542.	0.04537	1243.	0.0296
543.	0.04477	1244.	0.0304
544.	0.04855	1245.	0.03185
545.	0.04477	1246.	0.03091
546.	0.047	1247.	0.03091
547.	0.04764	1248.	0.03026
548.	0.04895	1249.	0.02924
549.	0.04435	1250.	0.02889
550.	0.04764	1251.	0.03102
551.	0.04659	1252.	0.03105
552.	0.04508	1253.	0.03232
553.	0.04508	1254.	0.03136
554.	0.04389	1255.	0.03066
555.	0.0479	1256.	0.03251
556.	0.04686	1257.	0.02942
557.	0.04364	1258.	0.03046

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
558.	0.04932	1259.	0.03062
559.	0.04406	1260.	0.03091
560.	0.04524	1261.	0.0306
561.	0.04654	1262.	0.03026
562.	0.04598	1263.	0.03046
563.	0.04392	1264.	0.03185
564.	0.04537	1265.	0.03026
565.	0.04598	1266.	0.03066
566.	0.04783	1267.	0.03136
567.	0.04598	1268.	0.0296
568.	0.04783	1269.	0.02942
569.	0.04435	1270.	0.03204
570.	0.04262	1271.	0.03291
571.	0.04363	1272.	0.03204
572.	0.04494	1273.	0.03062
573.	0.04378	1274.	0.03119
574.	0.04598	1275.	0.03066
575.	0.04659	1276.	0.02924
576.	0.04537	1277.	0.02916
577.	0.04537	1278.	0.03185
578.	0.04435	1279.	0.03062
579.	0.04537	1280.	0.03191
580.	0.04564	1281.	0.03096
581.	0.04471	1282.	0.03136
582.	0.04389	1283.	0.02986
583.	0.04262	1284.	0.03066
584.	0.04422	1285.	0.03418
585.	0.04325	1286.	0.03046
586.	0.04389	1287.	0.03046
587.	0.04598	1288.	0.02916
588.	0.04458	1289.	0.03251
589.	0.04632	1290.	0.02992
590.	0.04471	1291.	0.03275
591.	0.04393	1292.	0.03066
592.	0.0451	1293.	0.03251
593.	0.04494	1294.	0.03046
594.	0.04598	1295.	0.02942
595.	0.04422	1296.	0.03204
596.	0.04422	1297.	0.03354
597.	0.04564	1298.	0.03167
598.	0.04406	1299.	0.02801
599.	0.04304	1300.	0.02863
600.	0.04153	1301.	0.03251
601.	0.04282	1302.	0.03026
602.	0.04457	1303.	0.03102
603.	0.04524	1304.	0.03146
604.	0.04363	1305.	0.03066
605.	0.04457	1306.	0.02702
606.	0.04349	1307.	0.03091
607.	0.04378	1308.	0.03191
608.	0.0451	1309.	0.02986
609.	0.04463	1310.	0.02693
610.	0.04065	1311.	0.02772
611.	0.04237	1312.	0.03418
612.	0.04408	1313.	0.03005
613.	0.04408	1314.	0.02992
614.	0.04044	1315.	0.02889
615.	0.04209	1316.	0.03091
616.	0.04269	1317.	0.03091
617.	0.04524	1318.	0.02916
618.	0.04669	1319.	0.02916
619.	0.04523	1320.	0.02916
620.	0.04237	1321.	0.03026
621.	0.04445	1322.	0.0311
622.	0.0451	1323.	0.03066
623.	0.04192	1324.	0.0296

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
624.	0.04408	1325.	0.02942
625.	0.04445	1326.	0.03146
626.	0.0435	1327.	0.02924
627.	0.04463	1328.	0.02895
628.	0.04196	1329.	0.03185
629.	0.04632	1330.	0.03102
630.	0.04698	1331.	0.03091
631.	0.04269	1332.	0.02916
632.	0.04422	1333.	0.03232
633.	0.04065	1334.	0.03066
634.	0.04494	1335.	0.03026
635.	0.04237	1336.	0.03026
636.	0.04304	1337.	0.03253
637.	0.04497	1338.	0.01687
638.	0.04269	1339.	0.03775
639.	0.04216	1340.	0.034
640.	0.04408	1341.	0.0311
641.	0.04523	1342.	0.02863
642.	0.04311	1343.	0.02772
643.	0.04216	1344.	0.03232
644.	0.0417	1345.	0.03251
645.	0.04097	1346.	0.03251
646.	0.04249	1347.	0.03204
647.	0.04375	1348.	0.02871
648.	0.04408	1349.	0.03091
649.	0.04249	1350.	0.03291
650.	0.04304	1351.	0.03136
651.	0.04065	1352.	0.03499
652.	0.04249	1353.	0.03005
653.	0.04175	1354.	0.03204
654.	0.04311	1355.	0.03026
655.	0.04065	1356.	0.02992
656.	0.04068	1357.	0.03385
657.	0.04021	1358.	0.03261
658.	0.04008	1359.	0.03301
659.	0.04126	1360.	0.03191
660.	0.04237	1361.	0.03301
661.	0.03966	1362.	0.03301
662.	0.04192	1363.	0.03136
663.	0.04249	1364.	0.03102
664.	0.04523	1365.	0.03232
665.	0.03981	1366.	0.03185
666.	0.04139	1367.	0.03033
667.	0.0408	1368.	0.03096
668.	0.0417	1369.	0.03204
669.	0.0399	1370.	0.03102
670.	0.04139	1371.	0.03096
671.	0.04269	1372.	0.03322
672.	0.04304	1373.	0.03191
673.	0.03787	1374.	0.03319
674.	0.04378	1375.	0.03177
675.	0.04379	1376.	0.02992
676.	0.03816	1377.	0.03291
677.	0.04112	1378.	0.03348
678.	0.03966	1379.	0.03354
679.	0.03981	1380.	0.03499
680.	0.04054	1381.	0.03319
681.	0.04216	1382.	0.02916
682.	0.04408	1383.	0.02863
683.	0.04051	1384.	0.03191
684.	0.03873	1385.	0.03251
685.	0.04093	1386.	0.03348
686.	0.0392	1387.	0.03033
687.	0.03905	1388.	0.03062
688.	0.04304	1389.	0.02857
689.	0.04044	1390.	0.02986

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
690.	0.04178	1391.	0.02924
691.	0.04068	1392.	0.03167
692.	0.04125	1393.	0.03177
693.	0.03924	1394.	0.02824
694.	0.03966	1395.	0.03232
695.	0.04196	1396.	0.02857
696.	0.03887	1397.	0.03049
697.	0.04336	1398.	0.0311
698.	0.04139	1399.	0.0311
699.	0.03816	1400.	0.03167
700.	0.04203	1401.	0.02889

SOLUTION

Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.472

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	5.883	ft/day
y0	0.4785	ft

K = 0.002076 cm/sec
 T = K*b = 40.71 ft²/day (0.4378 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	5.883	4.172	+/- 9.437	1.41	ft/day
y0	0.4785	0.1578	+/- 0.3569	3.032	ft

C.I. is approximate 95% confidence interval for parameter
 t-ratio = estimate/std. error
 Estimation window: 4 to 14 sec

K = 0.002076 cm/sec
 T = K*b = 40.71 ft²/day (0.4378 sq. cm/sec)

Parameter Correlations

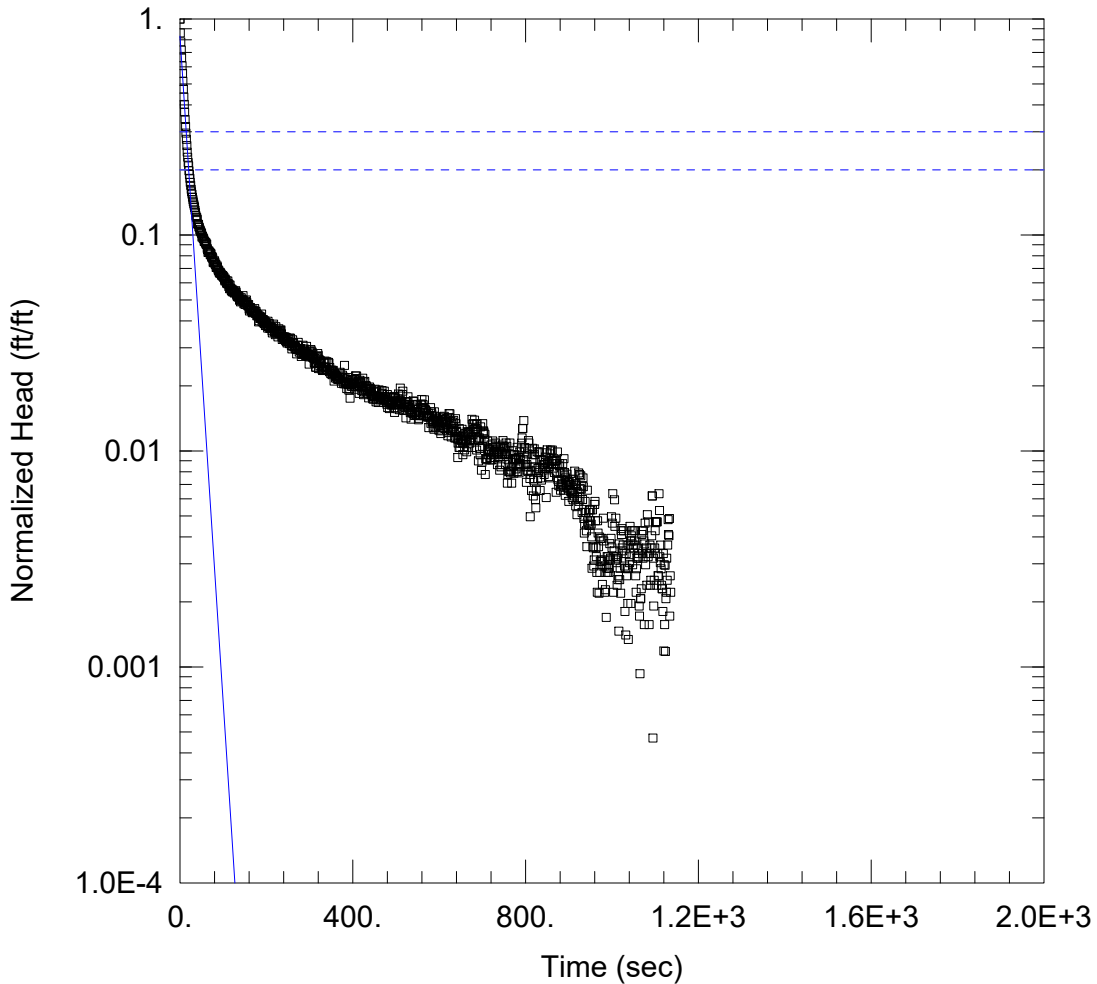
	K	y0
K	1.00	0.93
y0	0.93	1.00

Residual Statistics

for weighted residuals

Sum of Squares 0.1251 ft²
 Variance 0.0139 ft²
 Std. Deviation 0.1179 ft
 Mean -0.0002087 ft
 No. of Residuals 11
 No. of Estimates 2

Estimation window from 4 to 14 sec.



WELL TEST ANALYSIS

Data Set: C:\...\PZNC slug out.aqt
 Date: 03/08/22

Time: 14:49:15

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Well: PZ-NC
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 6.92 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-NC)

Initial Displacement: 1.255 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 6.92 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 7.611 ft/day

Solution Method: Bower-Rice
 y0 = 1.045 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZNC slug out.a
 Date: 04/26/22
 Time: 09:12:38

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-NC

AQUIFER DATA

Saturated Thickness: 6.92 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-NC

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 1.255 ft
 Static Water Column Height: 6.92 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 1137

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	1.251	569.	0.01931
1.	1.08	570.	0.01859
2.	0.9822	571.	0.01829
3.	0.901	572.	0.01818
4.	0.8297	573.	0.01818
5.	0.7623	574.	0.01797
6.	0.7021	575.	0.01875
7.	0.6462	576.	0.01608
8.	0.5929	577.	0.01818
9.	0.5462	578.	0.01829
10.	0.5046	579.	0.01784
11.	0.4651	580.	0.01992
12.	0.4296	581.	0.01684
13.	0.3986	582.	0.01905
14.	0.3717	583.	0.01867
15.	0.3479	584.	0.01705
16.	0.3255	585.	0.01717
17.	0.3035	586.	0.01608
18.	0.2875	587.	0.01731
19.	0.2717	588.	0.01581
20.	0.2619	589.	0.01905
21.	0.2484	590.	0.01818
22.	0.2389	591.	0.0162
23.	0.2293	592.	0.01804
24.	0.2198	593.	0.0177
25.	0.2128	594.	0.01735
26.	0.2039	595.	0.01731
27.	0.1987	596.	0.0167
28.	0.1936	597.	0.01707
29.	0.1875	598.	0.01637

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
30.	0.1827	599.	0.01567
31.	0.1786	600.	0.01731
32.	0.1747	601.	0.0167
33.	0.171	602.	0.01555
34.	0.1681	603.	0.01804
35.	0.1634	604.	0.0151
36.	0.1592	605.	0.01717
37.	0.1543	606.	0.01693
38.	0.1519	607.	0.01606
39.	0.1507	608.	0.01747
40.	0.1481	609.	0.01761
41.	0.141	610.	0.01606
42.	0.1408	611.	0.01783
43.	0.1403	612.	0.01815
44.	0.1367	613.	0.01595
45.	0.1357	614.	0.01717
46.	0.1327	615.	0.01747
47.	0.1321	616.	0.01717
48.	0.1302	617.	0.01693
49.	0.1289	618.	0.0177
50.	0.1274	619.	0.01606
51.	0.1227	620.	0.01474
52.	0.1241	621.	0.01526
53.	0.1225	622.	0.01555
54.	0.1209	623.	0.01864
55.	0.1203	624.	0.01791
56.	0.1171	625.	0.01864
57.	0.1178	626.	0.01567
58.	0.1168	627.	0.01721
59.	0.1149	628.	0.01456
60.	0.1154	629.	0.0167
61.	0.1132	630.	0.01595
62.	0.114	631.	0.01554
63.	0.1087	632.	0.01704
64.	0.1072	633.	0.01623
65.	0.1041	634.	0.01734
66.	0.1054	635.	0.01554
67.	0.106	636.	0.01442
68.	0.104	637.	0.01442
69.	0.1046	638.	0.0177
70.	0.1015	639.	0.01678
71.	0.1032	640.	0.01526
72.	0.1026	641.	0.01542
73.	0.0997	642.	0.01428
74.	0.09855	643.	0.01169
75.	0.09931	644.	0.01362
76.	0.09738	645.	0.01428
77.	0.09365	646.	0.01303
78.	0.09424	647.	0.01592
79.	0.0931	648.	0.01304
80.	0.09535	649.	0.01365
81.	0.09365	650.	0.01424
82.	0.09131	651.	0.0146
83.	0.09195	652.	0.014
84.	0.08865	653.	0.01581
85.	0.08909	654.	0.01365
86.	0.09027	655.	0.01206
87.	0.08896	656.	0.01362
88.	0.08706	657.	0.01484
89.	0.08552	658.	0.01397
90.	0.08575	659.	0.01269
91.	0.08418	660.	0.0146
92.	0.08345	661.	0.01428
93.	0.08423	662.	0.01512
94.	0.08361	663.	0.01397
95.	0.08304	664.	0.01244

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
96.	0.08185	665.	0.0154
97.	0.08185	666.	0.01525
98.	0.08101	667.	0.01303
99.	0.08148	668.	0.01525
100.	0.08063	669.	0.01497
101.	0.07995	670.	0.01397
102.	0.07995	671.	0.01362
103.	0.07823	672.	0.014
104.	0.07681	673.	0.01542
105.	0.07846	674.	0.01442
106.	0.07687	675.	0.01303
107.	0.07721	676.	0.01757
108.	0.07521	677.	0.01666
109.	0.0746	678.	0.01498
110.	0.07462	679.	0.01678
111.	0.07689	680.	0.01567
112.	0.07462	681.	0.01581
113.	0.07242	682.	0.01743
114.	0.07375	683.	0.01581
115.	0.07075	684.	0.01415
116.	0.07352	685.	0.01594
117.	0.07118	686.	0.01664
118.	0.07061	687.	0.01268
119.	0.06926	688.	0.01678
120.	0.07038	689.	0.01567
121.	0.0684	690.	0.01428
122.	0.06935	691.	0.01128
123.	0.06966	692.	0.0141
124.	0.06831	693.	0.01442
125.	0.06828	694.	0.01289
126.	0.06753	695.	0.01203
127.	0.06818	696.	0.01623
128.	0.06831	697.	0.014
129.	0.06921	698.	0.01021
130.	0.06805	699.	0.0111
131.	0.06658	700.	0.01318
132.	0.06542	701.	0.01678
133.	0.06489	702.	0.01512
134.	0.06556	703.	0.01554
135.	0.06542	704.	0.01525
136.	0.06443	705.	0.01424
137.	0.06499	706.	0.01497
138.	0.06257	707.	0.009758
139.	0.06313	708.	0.01155
140.	0.06144	709.	0.01142
141.	0.06336	710.	0.01153
142.	0.06429	711.	0.01153
143.	0.06186	712.	0.01397
144.	0.06299	713.	0.01206
145.	0.06277	714.	0.01269
146.	0.06566	715.	0.01244
147.	0.06236	716.	0.01268
148.	0.06024	717.	0.01282
149.	0.06109	718.	0.01169
150.	0.06151	719.	0.0114
151.	0.05985	720.	0.01336
152.	0.06186	721.	0.01206
153.	0.05973	722.	0.01142
154.	0.06277	723.	0.01352
155.	0.06095	724.	0.01397
156.	0.05937	725.	0.01303
157.	0.05959	726.	0.01216
158.	0.05884	727.	0.01206
159.	0.05973	728.	0.01242
160.	0.05688	729.	0.01169
161.	0.05573	730.	0.01318

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
162.	0.05747	731.	0.01365
163.	0.05791	732.	0.01244
164.	0.05704	733.	0.01269
165.	0.0561	734.	0.01242
166.	0.0561	735.	0.01084
167.	0.05503	736.	0.01216
168.	0.05474	737.	0.01206
169.	0.05644	738.	0.01174
170.	0.05535	739.	0.01244
171.	0.05517	740.	0.01021
172.	0.05591	741.	0.01244
173.	0.05721	742.	0.01304
174.	0.05571	743.	0.01058
175.	0.05433	744.	0.01244
176.	0.05557	745.	0.01084
177.	0.05458	746.	0.01336
178.	0.05301	747.	0.01216
179.	0.05367	748.	0.014
180.	0.053	749.	0.01318
181.	0.05354	750.	0.01282
182.	0.04964	751.	0.01206
183.	0.05022	752.	0.01304
184.	0.05277	753.	0.01206
185.	0.05148	754.	0.01084
186.	0.05192	755.	0.01365
187.	0.05211	756.	0.01216
188.	0.05233	757.	0.01317
189.	0.05399	758.	0.008903
190.	0.04977	759.	0.009758
191.	0.05088	760.	0.01142
192.	0.05088	761.	0.01006
193.	0.05089	762.	0.01216
194.	0.0493	763.	0.01011
195.	0.04878	764.	0.01365
196.	0.04977	765.	0.009923
197.	0.05028	766.	0.01206
198.	0.04773	767.	0.01024
199.	0.04922	768.	0.008903
200.	0.04922	769.	0.01058
201.	0.0478	770.	0.01142
202.	0.0475	771.	0.01142
203.	0.04648	772.	0.01258
204.	0.04998	773.	0.009894
205.	0.04718	774.	0.01153
206.	0.04878	775.	0.01206
207.	0.04878	776.	0.01156
208.	0.04633	777.	0.01142
209.	0.04647	778.	0.01035
210.	0.04707	779.	0.01153
211.	0.04668	780.	0.01006
212.	0.04668	781.	0.01304
213.	0.04515	782.	0.01006
214.	0.04412	783.	0.01084
215.	0.0462	784.	0.01169
216.	0.04759	785.	0.009923
217.	0.04847	786.	0.01098
218.	0.04502	787.	0.01242
219.	0.0445	788.	0.01142
220.	0.04476	789.	0.01058
221.	0.04333	790.	0.01282
222.	0.04717	791.	0.01362
223.	0.04533	792.	0.01442
224.	0.04376	793.	0.01595
225.	0.0445	794.	0.01592
226.	0.04475	795.	0.01142
227.	0.0423	796.	0.01735

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
228.	0.0443	797.	0.01242
229.	0.04619	798.	0.01303
230.	0.04393	799.	0.01174
231.	0.04475	800.	0.01084
232.	0.04533	801.	0.01058
233.	0.04533	802.	0.008982
234.	0.04562	803.	0.01084
235.	0.04376	804.	0.01021
236.	0.0423	805.	0.01216
237.	0.04117	806.	0.01006
238.	0.04237	807.	0.014
239.	0.0421	808.	0.01365
240.	0.04156	809.	0.01282
241.	0.0423	810.	0.009354
242.	0.04164	811.	0.006225
243.	0.0423	812.	0.009758
244.	0.0409	813.	0.01011
245.	0.04054	814.	0.008235
246.	0.0421	815.	0.01055
247.	0.04016	816.	0.0129
248.	0.03965	817.	0.01206
249.	0.04045	818.	0.007769
250.	0.04137	819.	0.009191
251.	0.04016	820.	0.01282
252.	0.04137	821.	0.01206
253.	0.0394	822.	0.01058
254.	0.03955	823.	0.007484
255.	0.04182	824.	0.006844
256.	0.04164	825.	0.008347
257.	0.03993	826.	0.01021
258.	0.03856	827.	0.01244
259.	0.03724	828.	0.009354
260.	0.03839	829.	0.01041
261.	0.04104	830.	0.00997
262.	0.03951	831.	0.0123
263.	0.03993	832.	0.01244
264.	0.03804	833.	0.0114
265.	0.03839	834.	0.008235
266.	0.03871	835.	0.009412
267.	0.03735	836.	0.01142
268.	0.03789	837.	0.009191
269.	0.03699	838.	0.0114
270.	0.03534	839.	0.01041
271.	0.03714	840.	0.01045
272.	0.03872	841.	0.01084
273.	0.03856	842.	0.01142
274.	0.03993	843.	0.009758
275.	0.03714	844.	0.01084
276.	0.036	845.	0.01045
277.	0.03735	846.	0.01174
278.	0.03661	847.	0.0111
279.	0.03737	848.	0.007633
280.	0.03714	849.	0.0123
281.	0.03436	850.	0.01269
282.	0.03527	851.	0.01097
283.	0.03513	852.	0.01058
284.	0.03669	853.	0.009548
285.	0.03871	854.	0.01041
286.	0.03524	855.	0.01058
287.	0.03576	856.	0.009412
288.	0.03721	857.	0.01216
289.	0.03618	858.	0.01268
290.	0.03605	859.	0.01255
291.	0.03471	860.	0.01097
292.	0.03534	861.	0.01128
293.	0.03826	862.	0.01268

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
294.	0.03531	863.	0.01128
295.	0.03527	864.	0.01129
296.	0.03484	865.	0.01045
297.	0.0345	866.	0.01155
298.	0.03534	867.	0.00997
299.	0.03168	868.	0.01129
300.	0.0342	869.	0.01097
301.	0.03618	870.	0.01128
302.	0.03486	871.	0.008074
303.	0.03698	872.	0.0114
304.	0.03647	873.	0.01097
305.	0.03471	874.	0.01242
306.	0.036	875.	0.009218
307.	0.03405	876.	0.009055
308.	0.03527	877.	0.00866
309.	0.03376	878.	0.0107
310.	0.03376	879.	0.01097
311.	0.03213	880.	0.009928
312.	0.03189	881.	0.008256
313.	0.03362	882.	0.008566
314.	0.03066	883.	0.008766
315.	0.0306	884.	0.009218
316.	0.03203	885.	0.008845
317.	0.0339	886.	0.01097
318.	0.03437	887.	0.009928
319.	0.03545	888.	0.008256
320.	0.03458	889.	0.01155
321.	0.0302	890.	0.00997
322.	0.03334	891.	0.009621
323.	0.0323	892.	0.007818
324.	0.0311	893.	0.009412
325.	0.03284	894.	0.00866
326.	0.03199	895.	0.00866
327.	0.03182	896.	0.009786
328.	0.03092	897.	0.009218
329.	0.02988	898.	0.008429
330.	0.02955	899.	0.008982
331.	0.02974	900.	0.007322
332.	0.03066	901.	0.009055
333.	0.0323	902.	0.008766
334.	0.03199	903.	0.008235
335.	0.03053	904.	0.008766
336.	0.03271	905.	0.008098
337.	0.03066	906.	0.008098
338.	0.03066	907.	0.009055
339.	0.02955	908.	0.007633
340.	0.03248	909.	0.007955
341.	0.02974	910.	0.007459
342.	0.02963	911.	0.009218
343.	0.02955	912.	0.008098
344.	0.03226	913.	0.007769
345.	0.03199	914.	0.01011
346.	0.02915	915.	0.008845
347.	0.03053	916.	0.00698
348.	0.02947	917.	0.008845
349.	0.02865	918.	0.00866
350.	0.02955	919.	0.006361
351.	0.02974	920.	0.007633
352.	0.02829	921.	0.008098
353.	0.02884	922.	0.007001
354.	0.02933	923.	0.009928
355.	0.02963	924.	0.007322
356.	0.02865	925.	0.009758
357.	0.02641	926.	0.007484
358.	0.02868	927.	0.008393
359.	0.02865	928.	0.009621

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
360.	0.02728	929.	0.008347
361.	0.02805	930.	0.00866
362.	0.02776	931.	0.006509
363.	0.02755	932.	0.007484
364.	0.02703	933.	0.009412
365.	0.02715	934.	0.008566
366.	0.02688	935.	0.006101
367.	0.02703	936.	0.005226
368.	0.02688	937.	0.005755
369.	0.02762	938.	0.007322
370.	0.02851	939.	0.006509
371.	0.02902	940.	0.006509
372.	0.02737	941.	0.005356
373.	0.02641	942.	0.004519
374.	0.02582	943.	0.008256
375.	0.02741	944.	0.005894
376.	0.02815	945.	0.005755
377.	0.02723	946.	0.006509
378.	0.02762	947.	0.005676
379.	0.02568	948.	0.006692
380.	0.02576	949.	0.005676
381.	0.0312	950.	0.005965
382.	0.02737	951.	0.006692
383.	0.02568	952.	0.005755
384.	0.02607	953.	0.005015
385.	0.02607	954.	0.003593
386.	0.02437	955.	0.006692
387.	0.02621	956.	0.004519
388.	0.02741	957.	0.004466
389.	0.02551	958.	0.003676
390.	0.02551	959.	0.003924
391.	0.024	960.	0.007089
392.	0.02576	961.	0.007322
393.	0.02433	962.	0.005965
394.	0.02202	963.	0.004466
395.	0.02551	964.	0.004069
396.	0.02688	965.	0.003436
397.	0.02502	966.	0.002779
398.	0.02502	967.	0.005965
399.	0.02576	968.	0.005226
400.	0.02664	969.	0.004519
401.	0.02568	970.	0.002751
402.	0.02607	971.	0.005015
403.	0.02489	972.	0.003436
404.	0.02688	973.	0.003866
405.	0.0242	974.	0.004942
406.	0.02489	975.	0.003924
407.	0.02791	976.	0.003866
408.	0.02715	977.	0.004942
409.	0.02791	978.	0.003024
410.	0.02576	979.	0.003676
411.	0.02489	980.	0.006121
412.	0.02628	981.	0.004805
413.	0.02607	982.	0.003924
414.	0.02533	983.	0.002779
415.	0.02316	984.	0.003676
416.	0.02607	985.	0.002859
417.	0.02664	986.	0.003436
418.	0.02607	987.	0.002129
419.	0.02586	988.	0.003593
420.	0.02481	989.	0.004069
421.	0.02386	990.	0.003436
422.	0.02489	991.	0.00406
423.	0.02723	992.	0.003593
424.	0.02489	993.	0.003436
425.	0.02287	994.	0.003593

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
426.	0.02614	995.	0.004669
427.	0.02354	996.	0.003924
428.	0.02633	997.	0.004002
429.	0.02423	998.	0.004942
430.	0.02372	999.	0.006225
431.	0.02519	1000.	0.004466
432.	0.02489	1001.	0.005812
433.	0.02406	1002.	0.007955
434.	0.02316	1003.	0.004069
435.	0.0242	1004.	0.002779
436.	0.02449	1005.	0.004324
437.	0.02207	1006.	0.007459
438.	0.0244	1007.	0.00562
439.	0.02481	1008.	0.003924
440.	0.02372	1009.	0.006121
441.	0.0244	1010.	0.003815
442.	0.02302	1011.	0.004069
443.	0.02354	1012.	0.002997
444.	0.02301	1013.	0.004002
445.	0.02244	1014.	0.003181
446.	0.02188	1015.	0.003317
447.	0.02257	1016.	0.001836
448.	0.02179	1017.	0.004655
449.	0.02373	1018.	0.003181
450.	0.02244	1019.	0.003593
451.	0.02258	1020.	0.002751
452.	0.02423	1021.	0.005363
453.	0.02354	1022.	0.005151
454.	0.02118	1023.	0.005484
455.	0.02165	1024.	0.004463
456.	0.02354	1025.	0.004324
457.	0.02244	1026.	0.004602
458.	0.02207	1027.	0.005356
459.	0.02104	1028.	0.004205
460.	0.02244	1029.	0.003676
461.	0.02406	1030.	0.002265
462.	0.02244	1031.	0.003593
463.	0.02165	1032.	0.001765
464.	0.02207	1033.	0.004205
465.	0.02207	1034.	0.003317
466.	0.02244	1035.	0.003593
467.	0.02321	1036.	0.003572
468.	0.02391	1037.	0.002467
469.	0.02303	1038.	0.001681
470.	0.02157	1039.	0.004602
471.	0.02188	1040.	0.00406
472.	0.02188	1041.	0.003815
473.	0.02372	1042.	0.00562
474.	0.02165	1043.	0.004805
475.	0.02244	1044.	0.002467
476.	0.02222	1045.	0.005078
477.	0.02157	1046.	0.004805
478.	0.02104	1047.	0.005363
479.	0.02065	1048.	0.003731
480.	0.02289	1049.	0.004602
481.	0.01992	1050.	0.004466
482.	0.02104	1051.	0.005363
483.	0.02138	1052.	0.004805
484.	0.02104	1053.	0.005363
485.	0.0197	1054.	0.004602
486.	0.02104	1055.	0.003317
487.	0.02126	1056.	0.002779
488.	0.02065	1057.	0.003572
489.	0.02047	1058.	0.004002
490.	0.02076	1059.	0.004463
491.	0.0222	1060.	0.004002

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
492.	0.02089	1061.	0.00406
493.	0.02047	1062.	0.004205
494.	0.02222	1063.	0.0024
495.	0.01992	1064.	0.002157
496.	0.02244	1065.	0.001168
497.	0.01892	1066.	0.002598
498.	0.02207	1067.	0.002598
499.	0.02188	1068.	0.002887
500.	0.02138	1069.	0.005151
501.	0.02104	1070.	0.005356
502.	0.02065	1071.	0.004205
503.	0.01969	1072.	0.004002
504.	0.02138	1073.	0.005363
505.	0.02188	1074.	0.004805
506.	0.02301	1075.	0.001972
507.	0.02104	1076.	0.004655
508.	0.01947	1077.	0.005812
509.	0.02138	1078.	0.003731
510.	0.02449	1079.	0.004205
511.	0.02139	1080.	0.004463
512.	0.02047	1081.	0.002997
513.	0.02076	1082.	0.006361
514.	0.02079	1083.	0.004205
515.	0.02289	1084.	0.00406
516.	0.02373	1085.	0.005894
517.	0.02071	1086.	0.001972
518.	0.01931	1087.	0.004205
519.	0.02005	1088.	0.004602
520.	0.0206	1089.	0.002997
521.	0.01992	1090.	0.00316
522.	0.02126	1091.	0.004463
523.	0.01784	1092.	0.005078
524.	0.01983	1093.	0.007769
525.	0.02118	1094.	0.007769
526.	0.02112	1095.	0.0005885
527.	0.02005	1096.	0.004002
528.	0.02236	1097.	0.0024
529.	0.02005	1098.	0.00316
530.	0.0206	1099.	0.004463
531.	0.02047	1100.	0.005363
532.	0.01955	1101.	0.005894
533.	0.01889	1102.	0.005894
534.	0.01945	1103.	0.005894
535.	0.01762	1104.	0.002997
536.	0.01905	1105.	0.005894
537.	0.01905	1106.	0.004205
538.	0.02005	1107.	0.003317
539.	0.01873	1108.	0.003317
540.	0.02139	1109.	0.007955
541.	0.02125	1110.	0.006646
542.	0.0206	1111.	0.00406
543.	0.01832	1112.	0.003815
544.	0.01889	1113.	0.004602
545.	0.02047	1114.	0.003572
546.	0.01843	1115.	0.002997
547.	0.01843	1116.	0.002887
548.	0.01905	1117.	0.002887
549.	0.0196	1118.	0.002265
550.	0.0206	1119.	0.004199
551.	0.01843	1120.	0.001487
552.	0.01748	1121.	0.003731
553.	0.01775	1122.	0.001972
554.	0.01829	1123.	0.003708
555.	0.01895	1124.	0.001479
556.	0.01829	1125.	0.002598
557.	0.01881	1126.	0.002779

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
558.	0.02047	1127.	0.004002
559.	0.02071	1128.	0.00316
560.	0.0217	1129.	0.004602
561.	0.0197	1130.	0.00603
562.	0.01984	1131.	0.005151
563.	0.02057	1132.	0.005078
564.	0.01829	1133.	0.006101
565.	0.01992	1134.	0.002157
566.	0.02165	1135.	0.003317
567.	0.0196	1136.	0.002779
568.	0.01947		

SOLUTION

Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.472

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	7.611	ft/day
y0	1.045	ft

K = 0.002685 cm/sec
 T = K*b = 52.67 ft²/day (0.5663 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	7.611	0.2985	+/- 0.665	25.5	ft/day
y0	1.045	0.02751	+/- 0.0613	37.99	ft

C.I. is approximate 95% confidence interval for parameter
 t-ratio = estimate/std. error
 Estimation window: 5 to 16 sec

K = 0.002685 cm/sec
 T = K*b = 52.67 ft²/day (0.5663 sq. cm/sec)

Parameter Correlations

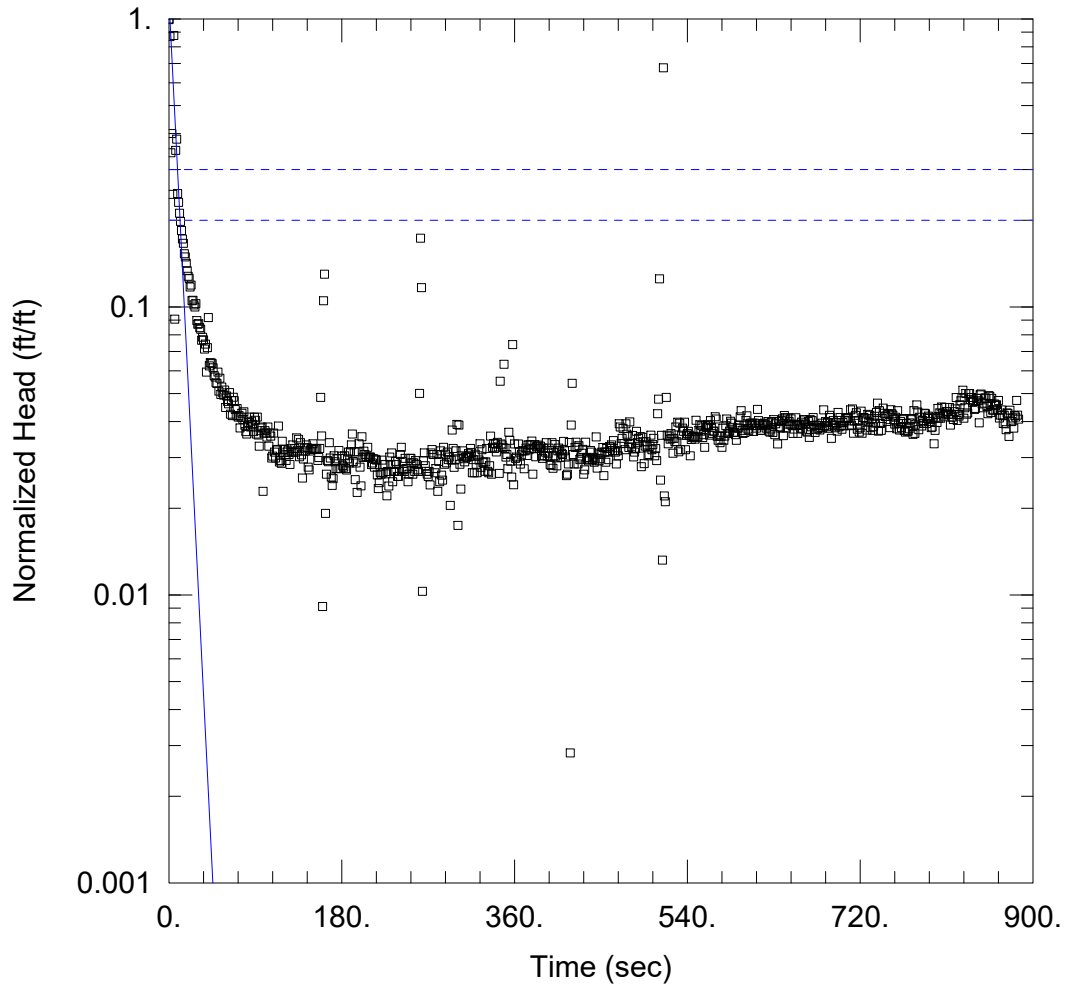
	K	y0
K	1.00	0.94
y0	0.94	1.00

Residual Statistics

for weighted residuals

Sum of Squares 0.002666 ft²
 Variance 0.0002666 ft²
 Std. Deviation 0.01633 ft
 Mean -0.003217 ft
 No. of Residuals 12
 No. of Estimates 2

Estimation window from 5 to 16 sec.



WELL TEST ANALYSIS

Data Set: C:\...\PZNE slug in.aqt
 Date: 03/08/22

Time: 14:49:45

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215702
 Location: Channelview, TX
 Test Well: PZ-NE
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 7.79 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-NE)

Initial Displacement: 0.47 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 7.79 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 14.97 ft/day

Solution Method: Bower-Rice
 y0 = 0.5602 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZNE slug in.aq
 Date: 04/26/22
 Time: 09:13:09

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215702
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-NE

AQUIFER DATA

Saturated Thickness: 7.79 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-NE

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 0.47 ft
 Static Water Column Height: 7.79 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 886

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	0.4676	443.	0.01357
1.	0.4081	444.	0.01402
2.	0.1613	445.	0.01661
3.	0.188	446.	0.01295
4.	0.1156	447.	0.01458
5.	0.4118	448.	0.01373
6.	0.04262	449.	0.01397
7.	0.1643	450.	0.01444
8.	0.1797	451.	0.01473
9.	0.1164	452.	0.01529
10.	0.1084	453.	0.01219
11.	0.09942	454.	0.01473
12.	0.09308	455.	0.01357
13.	0.08656	456.	0.01516
14.	0.0809	457.	0.01473
15.	0.07812	458.	0.01387
16.	0.07194	459.	0.01535
17.	0.07007	460.	0.01535
18.	0.06661	461.	0.01559
19.	0.06277	462.	0.0149
20.	0.06003	463.	0.01614
21.	0.05902	464.	0.0149
22.	0.05509	465.	0.01473
23.	0.05599	466.	0.0134
24.	0.04939	467.	0.01487
25.	0.04957	468.	0.0143
26.	0.04776	469.	0.01846
27.	0.047	470.	0.01799
28.	0.04823	471.	0.01575
29.	0.04213	472.	0.01644

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
30.	0.04088	473.	0.0178
31.	0.04113	474.	0.01578
32.	0.03982	475.	0.01501
33.	0.03931	476.	0.01846
34.	0.03598	477.	0.01699
35.	0.03688	478.	0.01667
36.	0.03613	479.	0.01529
37.	0.03356	480.	0.01876
38.	0.03493	481.	0.01575
39.	0.02789	482.	0.01535
40.	0.03393	483.	0.01682
41.	0.04315	484.	0.01416
42.	0.02932	485.	0.01473
43.	0.03004	486.	0.01514
44.	0.03004	487.	0.01739
45.	0.02988	488.	0.01588
46.	0.02888	489.	0.01644
47.	0.02715	490.	0.01521
48.	0.02683	491.	0.01667
49.	0.02561	492.	0.01311
50.	0.02547	493.	0.01658
51.	0.02792	494.	0.01601
52.	0.02398	495.	0.01343
53.	0.02658	496.	0.01545
54.	0.02334	497.	0.01601
55.	0.02476	498.	0.0156
56.	0.02365	499.	0.0143
57.	0.02321	500.	0.01444
58.	0.02417	501.	0.01545
59.	0.02104	502.	0.01686
60.	0.02307	503.	0.01501
61.	0.02209	504.	0.01564
62.	0.02165	505.	0.01644
63.	0.02369	506.	0.0143
64.	0.01994	507.	0.01514
65.	0.02223	508.	0.01376
66.	0.0197	509.	0.02002
67.	0.02283	510.	0.02248
68.	0.02223	511.	0.0588
69.	0.02068	512.	0.01177
70.	0.0197	513.	0.01684
71.	0.02084	514.	0.006211
72.	0.01948	515.	0.3181
73.	0.0197	516.	0.01037
74.	0.01786	517.	0.009896
75.	0.01948	518.	0.02279
76.	0.02008	519.	0.01686
77.	0.01909	520.	0.01574
78.	0.02032	521.	0.01672
79.	0.01824	522.	0.01633
80.	0.01733	523.	0.01707
81.	0.017	524.	0.01644
82.	0.01807	525.	0.01458
83.	0.01866	526.	0.01644
84.	0.01948	527.	0.01601
85.	0.01799	528.	0.01798
86.	0.01884	529.	0.01601
87.	0.01838	530.	0.0187
88.	0.01733	531.	0.01477
89.	0.01946	532.	0.01856
90.	0.01899	533.	0.015
91.	0.01701	534.	0.01686
92.	0.01948	535.	0.01785
93.	0.01688	536.	0.01738
94.	0.01544	537.	0.0187
95.	0.01748	538.	0.015

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
96.	0.01786	539.	0.01684
97.	0.01799	540.	0.01707
98.	0.01076	541.	0.01738
99.	0.01714	542.	0.01686
100.	0.01748	543.	0.0143
101.	0.01714	544.	0.01629
102.	0.01659	545.	0.01653
103.	0.01799	546.	0.01667
104.	0.01544	547.	0.01667
105.	0.01714	548.	0.01633
106.	0.01674	549.	0.01899
107.	0.01405	550.	0.01653
108.	0.01425	551.	0.0167
109.	0.01714	552.	0.01751
110.	0.01473	553.	0.01831
111.	0.01405	554.	0.01741
112.	0.01497	555.	0.01817
113.	0.01505	556.	0.01653
114.	0.01813	557.	0.01693
115.	0.01361	558.	0.01531
116.	0.01377	559.	0.01817
117.	0.01346	560.	0.01796
118.	0.01605	561.	0.01833
119.	0.01505	562.	0.01817
120.	0.01505	563.	0.01686
121.	0.0144	564.	0.01894
122.	0.01377	565.	0.01796
123.	0.01472	566.	0.0171
124.	0.01487	567.	0.01741
125.	0.01444	568.	0.01741
126.	0.01334	569.	0.01954
127.	0.01511	570.	0.01917
128.	0.01472	571.	0.0167
129.	0.01559	572.	0.01619
130.	0.01472	573.	0.01672
131.	0.01516	574.	0.01586
132.	0.01472	575.	0.0167
133.	0.0165	576.	0.01531
134.	0.01487	577.	0.01781
135.	0.0163	578.	0.01619
136.	0.01418	579.	0.01672
137.	0.01587	580.	0.01817
138.	0.0144	581.	0.01917
139.	0.01196	582.	0.0171
140.	0.01393	583.	0.0171
141.	0.01519	584.	0.01741
142.	0.01486	585.	0.01885
143.	0.01559	586.	0.01856
144.	0.01526	587.	0.01796
145.	0.01305	588.	0.01724
146.	0.01277	589.	0.01724
147.	0.01486	590.	0.01693
148.	0.01505	591.	0.01619
149.	0.01516	592.	0.01784
150.	0.01573	593.	0.01784
151.	0.01505	594.	0.01819
152.	0.01516	595.	0.01951
153.	0.01511	596.	0.02051
154.	0.01516	597.	0.01751
155.	0.01377	598.	0.0171
156.	0.0141	599.	0.01817
157.	0.01516	600.	0.01724
158.	0.02279	601.	0.01894
159.	0.01675	602.	0.01969
160.	0.004286	603.	0.0177
161.	0.04939	604.	0.01751

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
162.	0.06103	605.	0.01833
163.	0.009016	606.	0.01856
164.	0.01234	607.	0.01819
165.	0.01377	608.	0.01856
166.	0.01363	609.	0.01737
167.	0.01587	610.	0.01856
168.	0.01405	611.	0.01817
169.	0.01205	612.	0.01784
170.	0.01128	613.	0.02072
171.	0.01191	614.	0.01894
172.	0.0143	615.	0.01847
173.	0.01363	616.	0.01751
174.	0.0129	617.	0.01751
175.	0.01395	618.	0.01817
176.	0.0129	619.	0.01847
177.	0.01491	620.	0.01856
178.	0.01292	621.	0.01833
179.	0.0129	622.	0.01784
180.	0.01425	623.	0.01817
181.	0.0132	624.	0.0188
182.	0.01306	625.	0.01741
183.	0.0143	626.	0.01726
184.	0.0129	627.	0.0177
185.	0.01276	628.	0.01871
186.	0.01395	629.	0.01724
187.	0.01473	630.	0.01908
188.	0.01349	631.	0.01693
189.	0.01476	632.	0.01847
190.	0.01558	633.	0.0188
191.	0.017	634.	0.01571
192.	0.01365	635.	0.0188
193.	0.01476	636.	0.01803
194.	0.01181	637.	0.01784
195.	0.01349	638.	0.01894
196.	0.01067	639.	0.01917
197.	0.01476	640.	0.01678
198.	0.01573	641.	0.01973
199.	0.01305	642.	0.01937
200.	0.01124	643.	0.01784
201.	0.01664	644.	0.01937
202.	0.01411	645.	0.01841
203.	0.01483	646.	0.0188
204.	0.01443	647.	0.01841
205.	0.01415	648.	0.01922
206.	0.01415	649.	0.01817
207.	0.0153	650.	0.01709
208.	0.01411	651.	0.0177
209.	0.01415	652.	0.01832
210.	0.01415	653.	0.01939
211.	0.01332	654.	0.01819
212.	0.01349	655.	0.01709
213.	0.01397	656.	0.01841
214.	0.01305	657.	0.01832
215.	0.0139	658.	0.01781
216.	0.01381	659.	0.01871
217.	0.01226	660.	0.0177
218.	0.01099	661.	0.01908
219.	0.01153	662.	0.01903
220.	0.01252	663.	0.01841
221.	0.01235	664.	0.01742
222.	0.01381	665.	0.01726
223.	0.01249	666.	0.0188
224.	0.01332	667.	0.01656
225.	0.01334	668.	0.01908
226.	0.01237	669.	0.01803
227.	0.01039	670.	0.01893

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
228.	0.01261	671.	0.01941
229.	0.01122	672.	0.01819
230.	0.01415	673.	0.01723
231.	0.01334	674.	0.01827
232.	0.01462	675.	0.01767
233.	0.01162	676.	0.01781
234.	0.01263	677.	0.01819
235.	0.01263	678.	0.01756
236.	0.01366	679.	0.01789
237.	0.01334	680.	0.01856
238.	0.01212	681.	0.01789
239.	0.01212	682.	0.02064
240.	0.01263	683.	0.01819
241.	0.01444	684.	0.0188
242.	0.0153	685.	0.01805
243.	0.01366	686.	0.01865
244.	0.01277	687.	0.01781
245.	0.01261	688.	0.01975
246.	0.01401	689.	0.01941
247.	0.01291	690.	0.01643
248.	0.01291	691.	0.01832
249.	0.01162	692.	0.01893
250.	0.01235	693.	0.01818
251.	0.01401	694.	0.01789
252.	0.01401	695.	0.01865
253.	0.01351	696.	0.01742
254.	0.01235	697.	0.02022
255.	0.01351	698.	0.01803
256.	0.01261	699.	0.01941
257.	0.01376	700.	0.01818
258.	0.01334	701.	0.01767
259.	0.01277	702.	0.01865
260.	0.01261	703.	0.01818
261.	0.02355	704.	0.01893
262.	0.08146	705.	0.01923
263.	0.05481	706.	0.01941
264.	0.004836	707.	0.01923
265.	0.01376	708.	0.01889
266.	0.01462	709.	0.01818
267.	0.0132	710.	0.02064
268.	0.01263	711.	0.01827
269.	0.01235	712.	0.0208
270.	0.01212	713.	0.01712
271.	0.01261	714.	0.01889
272.	0.01132	715.	0.01975
273.	0.01462	716.	0.02016
274.	0.01502	717.	0.01767
275.	0.01444	718.	0.01893
276.	0.01444	719.	0.01727
277.	0.01247	720.	0.01789
278.	0.01291	721.	0.02043
279.	0.01444	722.	0.01712
280.	0.01075	723.	0.01941
281.	0.01366	724.	0.01941
282.	0.01162	725.	0.01923
283.	0.01487	726.	0.01889
284.	0.01224	727.	0.01756
285.	0.01177	728.	0.01991
286.	0.0153	729.	0.01875
287.	0.01336	730.	0.01975
288.	0.01448	731.	0.01791
289.	0.01351	732.	0.01923
290.	0.01473	733.	0.01753
291.	0.01387	734.	0.01804
292.	0.01415	735.	0.01961
293.	0.009611	736.	0.01856

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
294.	0.01382	737.	0.02022
295.	0.01756	738.	0.02178
296.	0.01516	739.	0.01741
297.	0.01303	740.	0.02049
298.	0.01382	741.	0.01851
299.	0.01487	742.	0.01753
300.	0.01838	743.	0.01926
301.	0.008196	744.	0.02093
302.	0.01827	745.	0.02008
303.	0.01336	746.	0.01959
304.	0.01096	747.	0.01961
305.	0.0143	748.	0.01879
306.	0.01487	749.	0.02001
307.	0.01397	750.	0.01991
308.	0.01361	751.	0.01791
309.	0.01415	752.	0.02065
310.	0.01415	753.	0.02001
311.	0.01415	754.	0.01977
312.	0.01454	755.	0.01909
313.	0.0143	756.	0.01842
314.	0.01515	757.	0.01944
315.	0.01469	758.	0.01774
316.	0.01247	759.	0.02051
317.	0.01387	760.	0.01851
318.	0.01249	761.	0.01756
319.	0.01448	762.	0.01879
320.	0.01336	763.	0.01791
321.	0.01249	764.	0.01909
322.	0.0143	765.	0.01926
323.	0.01382	766.	0.01753
324.	0.01573	767.	0.01727
325.	0.01303	768.	0.01851
326.	0.01501	769.	0.01741
327.	0.01352	770.	0.01741
328.	0.01361	771.	0.01774
329.	0.01263	772.	0.0186
330.	0.01361	773.	0.01909
331.	0.01515	774.	0.01926
332.	0.01263	775.	0.01698
333.	0.01249	776.	0.02049
334.	0.0132	777.	0.01709
335.	0.01672	778.	0.01842
336.	0.01234	779.	0.02148
337.	0.0153	780.	0.02029
338.	0.01578	781.	0.0176
339.	0.01515	782.	0.01944
340.	0.01573	783.	0.01875
341.	0.01473	784.	0.01813
342.	0.01592	785.	0.01896
343.	0.01533	786.	0.01851
344.	0.01242	787.	0.02008
345.	0.02593	788.	0.02001
346.	0.01572	789.	0.01851
347.	0.01559	790.	0.01926
348.	0.0153	791.	0.01963
349.	0.02973	792.	0.01944
350.	0.01515	793.	0.01879
351.	0.01415	794.	0.01791
352.	0.01444	795.	0.01799
353.	0.01289	796.	0.0193
354.	0.01725	797.	0.01572
355.	0.01617	798.	0.01753
356.	0.01368	799.	0.01944
357.	0.01206	800.	0.01865
358.	0.03475	801.	0.02086
359.	0.01134	802.	0.0193

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
360.	0.01572	803.	0.02014
361.	0.014	804.	0.0193
362.	0.01415	805.	0.02112
363.	0.01372	806.	0.02008
364.	0.01572	807.	0.01963
365.	0.01473	808.	0.02103
366.	0.01338	809.	0.01994
367.	0.0144	810.	0.02035
368.	0.01487	811.	0.02035
369.	0.01487	812.	0.01994
370.	0.01289	813.	0.02103
371.	0.01487	814.	0.01828
372.	0.01519	815.	0.01994
373.	0.01434	816.	0.01947
374.	0.01559	817.	0.01912
375.	0.01501	818.	0.02035
376.	0.01559	819.	0.02078
377.	0.01564	820.	0.02276
378.	0.01607	821.	0.01896
379.	0.01234	822.	0.01987
380.	0.01515	823.	0.01963
381.	0.01564	824.	0.02149
382.	0.01419	825.	0.02219
383.	0.01533	826.	0.02276
384.	0.01544	827.	0.02416
385.	0.01557	828.	0.0193
386.	0.01515	829.	0.02097
387.	0.01544	830.	0.0235
388.	0.0143	831.	0.01994
389.	0.01401	832.	0.02014
390.	0.01519	833.	0.0235
391.	0.0143	834.	0.0235
392.	0.01472	835.	0.02241
393.	0.01588	836.	0.02276
394.	0.01426	837.	0.02193
395.	0.01459	838.	0.02219
396.	0.01519	839.	0.02072
397.	0.01332	840.	0.02088
398.	0.01324	841.	0.02262
399.	0.01588	842.	0.02262
400.	0.01293	843.	0.02219
401.	0.0143	844.	0.0186
402.	0.01564	845.	0.02327
403.	0.01426	846.	0.02342
404.	0.01318	847.	0.02162
405.	0.01487	848.	0.02097
406.	0.01519	849.	0.02178
407.	0.01487	850.	0.0227
408.	0.01411	851.	0.0227
409.	0.01458	852.	0.02119
410.	0.01444	853.	0.02
411.	0.01603	854.	0.02313
412.	0.01487	855.	0.02302
413.	0.01416	856.	0.02021
414.	0.0122	857.	0.02262
415.	0.01234	858.	0.02058
416.	0.0134	859.	0.02064
417.	0.01589	860.	0.02162
418.	0.001329	861.	0.02135
419.	0.01827	862.	0.0215
420.	0.0255	863.	0.02064
421.	0.01444	864.	0.02226
422.	0.0134	865.	0.01932
423.	0.0153	866.	0.01979
424.	0.01593	867.	0.02064
425.	0.0153	868.	0.01979

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
426.	0.0134	869.	0.0185
427.	0.01549	870.	0.01979
428.	0.01387	871.	0.01846
429.	0.01405	872.	0.01762
430.	0.01458	873.	0.02014
431.	0.01505	874.	0.02006
432.	0.01234	875.	0.01669
433.	0.01277	876.	0.02058
434.	0.01593	877.	0.0188
435.	0.01411	878.	0.0188
436.	0.01405	879.	0.01932
437.	0.01373	880.	0.01784
438.	0.01387	881.	0.01973
439.	0.0149	882.	0.01949
440.	0.01472	883.	0.02226
441.	0.01387	884.	0.01979
442.	0.01411	885.	0.01915

SOLUTION

Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.507

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	14.97	ft/day
y0	0.5602	ft

K = 0.005281 cm/sec
 T = K*b = 116.6 ft²/day (1.254 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	14.97	5.42	+/- 11.93	2.762	ft/day
y0	0.5602	0.2491	+/- 0.5483	2.249	ft

C.I. is approximate 95% confidence interval for parameter
 t-ratio = estimate/std. error
 Estimation window: 5 to 17 sec

K = 0.005281 cm/sec
 T = K*b = 116.6 ft²/day (1.254 sq. cm/sec)

Parameter Correlations

	K	y0
K	1.00	0.94
y0	0.94	1.00

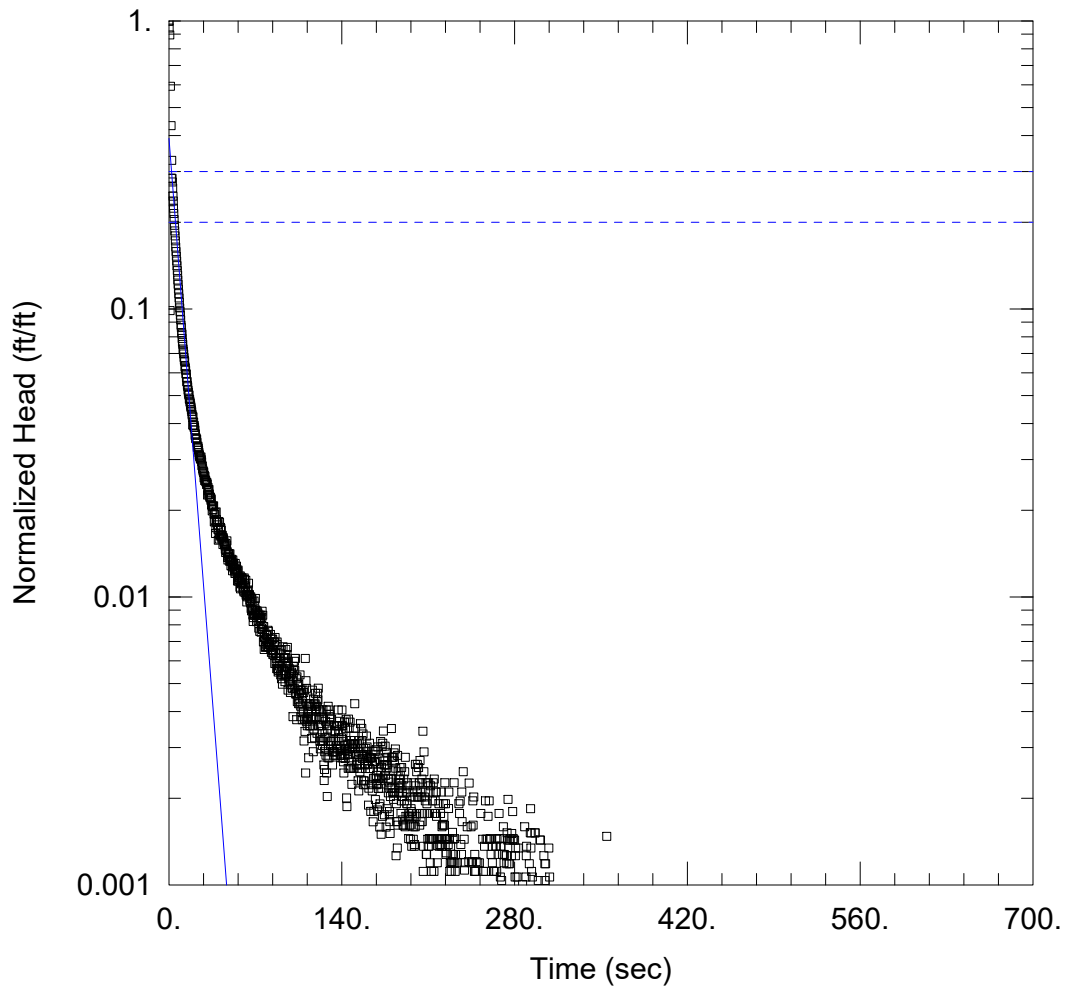
Residual Statistics

for weighted residuals

Sum of Squares 0.05953 ft²
 Variance 0.005412 ft²
 Std. Deviation 0.07357 ft
 Mean 0.003564 ft
 No. of Residuals 13

No. of Estimates. 2

Estimation window from 5 to 17 sec.



WELL TEST ANALYSIS

Data Set: C:\...\PZNE slug out.aqt
 Date: 03/08/22

Time: 14:50:33

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215702
 Location: Channelview, TX
 Test Well: PZ-NE
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 7.79 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-NE)

Initial Displacement: 2.06 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 7.79 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 12.32 ft/day

Solution Method: Bower-Rice
 y0 = 0.8049 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZNE slug out.a
 Date: 04/26/22
 Time: 09:13:39

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215702
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-NE

AQUIFER DATA

Saturated Thickness: 7.79 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-NE

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 2.06 ft
 Static Water Column Height: 7.79 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 2573

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	2.053	322.	0.0005945
0.25	1.946	322.3	-0.0006694
0.75	1.842	322.5	-0.0001426
1.	0.2032	322.8	-0.001347
1.25	1.222	323.	0.001206
1.5	0.4849	323.3	0.001206
1.75	0.8914	323.5	-0.0002642
2.	0.5859	323.8	-0.0004795
2.25	0.6752	324.	0.0008125
2.5	0.5846	324.3	0.001851
2.75	0.5681	324.5	-5.23E-5
3.	0.5415	324.8	0.0008979
3.25	0.5071	325.	0.001578
3.5	0.4884	325.3	-0.0001426
3.75	0.4609	325.5	-0.0001426
4.	0.4417	325.8	0.0008125
4.25	0.4211	326.	0.0005945
4.5	0.4018	326.3	0.0008979
4.75	0.3843	326.5	0.001411
5.	0.3692	326.8	0.0001453
5.25	0.355	327.	0.0008125
5.5	0.3378	327.3	-0.0002642
5.75	0.3258	327.5	-5.23E-5
6.	0.3139	327.8	-0.001719
6.25	0.3021	328.	0.0001453
6.5	0.291	328.3	0.0001591
6.75	0.2798	328.5	0.001002
7.	0.27	328.8	-5.23E-5
7.25	0.2594	329.	-0.0006694
7.5	0.2506	329.3	-0.0002642

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
7.75	0.2416	329.5	-0.001236
8.	0.2327	329.8	-0.001776
8.25	0.2249	330.	-0.0004795
8.5	0.2172	330.3	-0.001719
8.75	0.2078	330.5	1.76E-5
9.	0.2019	330.8	-0.0001426
9.25	0.1958	331.	0.0004531
9.5	0.1887	331.3	-0.001056
9.75	0.1809	331.5	0.0004531
10.	0.1774	331.8	-0.000621
10.25	0.1705	332.	0.0005945
10.5	0.1684	332.3	-0.0009755
10.75	0.1627	332.5	-0.0004052
11.	0.1579	332.8	-0.0004795
11.25	0.1552	333.	-0.001056
11.5	0.1494	333.3	1.76E-5
11.75	0.147	333.5	-0.0009755
12.	0.1437	333.8	-0.00126
12.25	0.1397	334.	-0.0009755
12.5	0.1367	334.3	-0.0008098
12.75	0.1353	334.5	-0.0002885
13.	0.1298	334.8	0.00127
13.25	0.1284	335.	-0.001377
13.5	0.1262	335.3	-0.001377
13.75	0.1227	335.5	0.0002863
14.	0.1224	335.8	1.76E-5
14.25	0.1189	336.	0.001061
14.5	0.115	336.3	-0.0004052
14.75	0.1154	336.5	-0.001056
15.	0.1118	336.8	0.001851
15.25	0.1106	337.	-0.0001938
15.5	0.1077	337.3	-0.0007641
15.75	0.1059	337.5	-0.001377
16.	0.1041	337.8	0.0004531
16.25	0.1034	338.	-0.00149
16.5	0.1002	338.3	-0.0002885
16.75	0.09994	338.5	-0.0009755
17.	0.09816	338.8	-0.000621
17.25	0.09699	339.	-0.001377
17.5	0.09561	339.3	-0.0005527
17.75	0.0945	339.5	0.0004531
18.	0.09355	339.8	0.0002879
18.25	0.0919	340.	0.00127
18.5	0.09068	340.3	0.0007575
18.75	0.08866	340.5	0.001061
19.	0.08748	340.8	0.001002
19.25	0.08147	341.	0.001413
19.5	0.08696	341.3	-0.0001938
19.75	0.08116	341.5	-0.0008098
20.	0.08349	341.8	0.001413
20.25	0.07999	342.	-0.001197
20.5	0.08116	342.3	-0.0002885
20.75	0.07988	342.5	0.00127
21.	0.07827	342.8	0.0008555
21.25	0.07493	343.	-0.0004052
21.5	0.07588	343.3	0.001061
21.75	0.07305	343.5	-0.0007641
22.	0.07355	343.8	-0.0009755
22.25	0.07274	344.	-0.001917
22.5	0.07268	344.3	-0.0001283
22.75	0.07081	344.5	-0.001917
23.	0.06814	344.8	0.0002879
23.25	0.06804	345.	0.0003083
23.5	0.0688	345.3	-0.0003391
23.75	0.06764	345.5	0.001124
24.	0.0666	345.8	0.0008555

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
24.25	0.06535	346.	0.0002879
24.5	0.0639	346.3	0.0008555
24.75	0.06418	346.5	0.0001453
25.	0.06316	346.8	-0.0009557
25.25	0.06304	347.	0.001705
25.5	0.06212	347.3	0.00127
25.75	0.06206	347.5	-0.001056
26.	0.06304	347.8	0.0003083
26.25	0.06168	348.	-0.0004294
26.5	0.0607	348.3	-0.0003391
26.75	0.05884	348.5	0.001002
27.	0.05862	348.8	1.76E-5
27.25	0.05739	349.	-0.0004294
27.5	0.05671	349.3	0.0005235
27.75	0.05612	349.5	0.001705
28.	0.05559	349.8	0.001124
28.25	0.05597	350.	0.001292
28.5	0.05335	350.3	-0.0007641
28.75	0.0545	350.5	-0.001377
29.	0.05224	350.8	0.000147
29.25	0.05398	351.	-0.0009557
29.5	0.05205	351.3	0.
29.75	0.05242	351.5	-0.001917
30.	0.05181	351.8	-0.0005527
30.25	0.05147	352.	0.001124
30.5	0.05062	352.3	-0.001121
30.75	0.05141	352.5	0.0005235
31.	0.05076	352.8	0.001292
31.25	0.04653	353.	-0.001519
31.5	0.04823	353.3	0.001272
31.75	0.04944	353.5	0.0009832
32.	0.04863	353.8	-0.0007641
32.25	0.04674	354.	0.0003083
32.5	0.04863	354.3	0.0003083
32.75	0.0469	354.5	0.002009
33.	0.04608	354.8	0.003037
33.25	0.04562	355.	-0.0005527
33.5	0.04574	355.3	-0.001664
33.75	0.04548	355.5	-0.00048
34.	0.04456	355.8	-0.0001283
34.25	0.04512	356.	-0.001664
34.5	0.04299	356.3	0.0008555
34.75	0.04285	356.5	-0.001121
35.	0.04095	356.8	0.0008555
35.25	0.04242	357.	-0.0003391
35.5	0.0425	357.3	0.0007145
35.75	0.04145	357.5	0.000147
36.	0.04237	357.8	-0.001519
36.25	0.04266	358.	-0.001546
36.5	0.04001	358.3	-0.001262
36.75	0.03753	358.5	-0.001262
37.	0.03992	358.8	-0.001262
37.25	0.03783	359.	-0.001343
37.5	0.04045	359.3	-0.002662
37.75	0.03419	359.5	-0.0009094
38.	0.03582	359.8	-0.002652
38.25	0.04065	360.	0.0007784
38.5	0.03826	360.3	-0.001546
38.75	0.03735	360.5	0.0001668
39.	0.03736	360.8	-0.001546
39.25	0.03765	361.	0.0004701
39.5	0.03665	361.3	-0.000267
39.75	0.03525	361.5	-0.0009094
40.	0.03243	361.8	0.0001668
40.25	0.03511	362.	-0.001664
40.5	0.03767	362.3	0.0007784

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
40.75	0.0327	362.5	0.0007784
41.	0.03736	362.8	-0.001262
41.25	0.03371	363.	0.0007784
41.5	0.03386	363.3	-0.0005709
41.75	0.03591	363.5	-0.000267
42.	0.0357	363.8	-0.00048
42.25	0.03325	364.	-0.001097
42.5	0.03509	364.3	-0.0006942
42.75	0.03357	364.5	1.65E-6
43.	0.0327	364.8	-0.0001415
43.25	0.03371	365.	-0.00048
43.5	0.03319	365.3	-0.000267
43.75	0.03134	365.5	-0.0001415
44.	0.03308	365.8	0.0002373
44.25	0.0327	366.	-0.0008307
44.5	0.0321	366.3	0.0001668
44.75	0.03173	366.5	-0.0005709
45.	0.03134	366.8	-0.002652
45.25	0.03119	367.	-0.002008
45.5	0.03093	367.3	0.0005736
45.75	0.03015	367.5	-0.0005709
46.	0.02939	367.8	0.0003826
46.25	0.03159	368.	-0.001097
46.5	0.02978	368.3	-0.00048
46.75	0.03119	368.5	-0.001262
47.	0.03224	368.8	-0.001546
47.25	0.02957	369.	-0.00048
47.5	0.02824	369.3	-0.001918
47.75	0.02765	369.5	2.37E-5
48.	0.02854	369.8	-0.0001398
48.25	0.02907	370.	2.37E-5
48.5	0.02916	370.3	-0.0001398
48.75	0.0289	370.5	0.0008417
49.	0.02835	370.8	0.0003292
49.25	0.02739	371.	-0.001688
49.5	0.02907	371.3	0.001212
49.75	0.02765	371.5	-0.0001398
50.	0.02751	371.8	-0.0008307
50.25	0.02641	372.	-0.001405
50.5	0.02739	372.3	-0.000621
50.75	0.02783	372.5	-0.000621
51.	0.02739	372.8	-0.001918
51.25	0.02626	373.	0.0005736
51.5	0.02538	373.3	0.0003292
51.75	0.02769	373.5	2.37E-5
52.	0.02671	373.8	-0.0007162
52.25	0.02701	374.	2.37E-5
52.5	0.0265	374.3	-0.00105
52.75	0.02597	374.5	-0.0004277
53.	0.02564	374.8	-0.000621
53.25	0.02534	375.	-0.002149
53.5	0.02486	375.3	-0.0009782
53.75	0.02693	375.5	-0.0007162
54.	0.02578	375.8	0.001418
54.25	0.02486	376.	-0.0002868
54.5	0.02566	376.3	-0.0007162
54.75	0.02636	376.5	0.000987
55.	0.02564	376.8	0.001581
55.25	0.025	377.	-0.0004079
55.5	0.0234	377.3	-0.0004277
55.75	0.02524	377.5	-0.0004079
56.	0.02553	377.8	-0.001625
56.25	0.02398	378.	-0.001918
56.5	0.0234	378.3	-0.0004079
56.75	0.0237	378.5	-0.000769
57.	0.02412	378.8	-0.0008307

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
57.25	0.02397	379.	0.0001817
57.5	0.02225	379.3	-0.0005538
57.75	0.02436	379.5	-0.000769
58.	0.02199	379.8	-0.001405
58.25	0.02415	380.	-0.00315
58.5	0.02311	380.3	0.0006353
58.75	0.02285	380.5	-0.0008593
59.	0.02397	380.8	-0.0005538
59.25	0.02397	381.	-0.001625
59.5	0.02365	381.3	0.0006353
59.75	0.023	381.5	0.001483
60.	0.02199	381.8	-0.002693
60.25	0.02231	382.	-0.0001398
60.5	0.02172	382.3	-0.0001217
60.75	0.02145	382.5	-0.001625
61.	0.02398	382.8	-0.0007162
61.25	0.02365	383.	-0.0005538
61.5	0.02285	383.3	9.58E-5
61.75	0.02131	383.5	-0.0001217
62.	0.02246	383.8	0.0004943
62.25	0.02355	384.	-0.002294
62.5	0.02088	384.3	0.0003292
62.75	0.02088	384.5	-0.002347
63.	0.01979	384.8	-0.002693
63.25	0.02061	385.	-0.002693
63.5	0.02147	385.3	-0.0004277
63.75	0.02098	385.5	-0.001834
64.	0.02163	385.8	-0.001834
64.25	0.02177	386.	-0.0008593
64.5	0.02297	386.3	-0.0001217
64.75	0.02088	386.5	-0.0008307
65.	0.02061	386.8	-0.0002852
65.25	0.02098	387.	-0.001834
65.5	0.02008	387.3	-0.001918
65.75	0.01987	387.5	-0.001383
66.	0.01963	387.8	-0.001192
66.25	0.02061	388.	-0.001238
66.5	0.01877	388.3	-0.0008593
66.75	0.02036	388.5	0.0003292
67.	0.01841	388.8	0.0001817
67.25	0.02023	389.	-0.001192
67.5	0.01987	389.3	-0.0008593
67.75	0.01857	389.5	-0.001949
68.	0.01781	389.8	-0.0009782
68.25	0.01693	390.	-0.002347
68.5	0.01745	390.3	-0.0005538
68.75	0.01847	390.5	-0.0004079
69.	0.01993	390.8	-0.0005538
69.25	0.01779	391.	-0.001918
69.5	0.01918	391.3	-0.001918
69.75	0.01781	391.5	-0.0009782
70.	0.02036	391.8	-0.0005538
70.25	0.01855	392.	-0.001551
70.5	0.01847	392.3	-0.001192
70.75	0.01815	392.5	-0.0001217
71.	0.0169	392.8	-0.001834
71.25	0.01745	393.	-0.001807
71.5	0.01841	393.3	-0.0007162
71.75	0.01781	393.5	-0.0009782
72.	0.01815	393.8	0.0004943
72.25	0.0169	394.	-0.002794
72.5	0.01781	394.3	-0.0008307
72.75	0.01605	394.5	0.0006964
73.	0.01693	394.8	-0.0004277
73.25	0.01781	395.	-0.000621
73.5	0.01563	395.3	9.58E-5

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
73.75	0.01745	395.5	-0.001834
74.	0.01715	395.8	-0.001625
74.25	0.01734	396.	-0.0002852
74.5	0.01779	396.3	0.000987
74.75	0.01554	396.5	-0.001551
75.	0.01605	396.8	0.0008461
75.25	0.01747	397.	0.002054
75.5	0.01838	397.3	-0.001405
75.75	0.01588	397.5	-0.001484
76.	0.01779	397.8	-0.002827
76.25	0.01624	398.	0.0003292
76.5	0.01437	398.3	-0.001383
76.75	0.01624	398.5	-0.002149
77.	0.0149	398.8	-0.002204
77.25	0.01354	399.	0.0003292
77.5	0.0149	399.3	-0.003249
77.75	0.01547	399.5	-0.000769
78.	0.01446	399.8	-0.0004277
78.25	0.01375	400.	-0.0004277
78.5	0.01414	400.3	-0.0001217
78.75	0.01383	400.5	-0.001807
79.	0.01516	400.8	-0.002934
79.25	0.01526	401.	-0.001383
79.5	0.01516	401.3	-0.002934
79.75	0.01383	401.5	0.0004277
80.	0.01437	401.8	-0.002204
80.25	0.01578	402.	-0.000621
80.5	0.01563	402.3	-0.001238
80.75	0.01383	402.5	-0.0007162
81.	0.01437	402.8	-0.001625
81.25	0.0141	403.	-0.002063
81.5	0.01437	403.3	-0.000769
81.75	0.01414	403.5	-0.0004277
82.	0.01375	403.8	-0.0005538
82.25	0.01526	404.	-0.001383
82.5	0.01354	404.3	-0.002294
82.75	0.01437	404.5	-0.001688
83.	0.01323	404.8	-0.0004277
83.25	0.0147	405.	-0.0005538
83.5	0.01346	405.3	-0.001551
83.75	0.01346	405.5	-0.0002852
84.	0.0147	405.8	-0.001625
84.25	0.01299	406.	-0.003291
84.5	0.01312	406.3	-0.0009782
84.75	0.01354	406.5	-0.001949
85.	0.01337	406.8	-0.0005538
85.25	0.01437	407.	-0.001625
85.5	0.01437	407.3	-0.002943
85.75	0.0121	407.5	-0.001949
86.	0.0149	407.8	-0.001688
86.25	0.01312	408.	-0.002681
86.5	0.01312	408.3	-0.0002852
86.75	0.0121	408.5	0.0001817
87.	0.0126	408.8	-0.001625
87.25	0.0116	409.	-0.001551
87.5	0.0141	409.3	-0.0009782
87.75	0.01437	409.5	-0.000769
88.	0.01159	409.8	-0.001192
88.25	0.01231	410.	-0.0002852
88.5	0.0113	410.3	-0.000769
88.75	0.01144	410.5	-0.001949
89.	0.0116	410.8	-0.001383
89.25	0.0126	411.	-0.001383
89.5	0.01187	411.3	-0.001625
89.75	0.01268	411.5	-0.003249
90.	0.01346	411.8	-0.001192

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
90.25	0.01312	412.	-0.001383
90.5	0.01104	412.3	-0.001834
90.75	0.01231	412.5	-0.0005538
91.	0.01346	412.8	-0.0001217
91.25	0.01071	413.	9.58E-5
91.5	0.0113	413.3	-0.002493
91.75	0.01184	413.5	-0.001383
92.	0.01025	413.8	-0.001192
92.25	0.01104	414.	-0.001834
92.5	0.01383	414.3	-0.001625
92.75	0.01268	414.5	-0.002831
93.	0.01268	414.8	-0.001949
93.25	0.01104	415.	-0.0004261
93.5	0.01144	415.3	-0.002204
93.75	0.01268	415.5	-0.002693
94.	0.01046	415.8	-0.002204
94.25	0.01104	416.	-4.29E-5
94.5	0.0126	416.3	-0.0005538
94.75	0.01354	416.5	-0.001383
95.	0.0121	416.8	-0.0005692
95.25	0.01104	417.	-0.0009782
95.5	0.01184	417.3	-0.001383
95.75	0.01299	417.5	-0.002204
96.	0.01375	417.8	-0.001526
96.25	0.01184	418.	-0.001383
96.5	0.009776	418.3	-0.001625
96.75	0.01231	418.5	-0.001119
97.	0.01071	418.8	0.0003523
97.25	0.01046	419.	-0.001337
97.5	0.0116	419.3	-0.001192
97.75	0.0113	419.5	-0.002204
98.	0.01046	419.8	-0.001526
98.25	0.01025	420.	-0.001001
98.5	0.009596	420.3	-0.00091
98.75	0.01104	420.5	-0.002204
99.	0.01021	420.8	-0.001119
99.25	0.0113	421.	-0.0006969
99.5	0.01118	421.3	-0.001337
99.75	0.009923	421.5	4.02E-5
100.	0.009923	421.8	-0.002094
100.3	0.01055	422.	-0.001526
100.5	0.007911	422.3	-0.002435
100.8	0.01184	422.5	-0.001001
101.	0.01087	422.8	-0.001975
101.3	0.01144	423.	-0.001773
101.5	0.009923	423.3	-0.00091
101.8	0.01231	423.5	-0.001337
102.	0.01144	423.8	-0.0005692
102.3	0.0126	424.	-0.001773
102.5	0.0126	424.3	-0.001975
102.8	0.009486	424.5	-0.001773
103.	0.009486	424.8	-0.002094
103.3	0.01071	425.	-0.0004085
103.5	0.007717	425.3	-0.002094
103.8	0.01087	425.5	-0.002347
104.	0.008915	425.8	-0.002831
104.3	0.01021	426.	-0.001526
104.5	0.009776	426.3	-0.002493
104.8	0.009058	426.5	0.0002868
105.	0.008774	426.8	-0.002204
105.3	0.01025	427.	-0.0002637
105.5	0.009486	427.3	-0.001773
105.8	0.00953	427.5	-0.00091
106.	0.008774	427.8	-0.002831
106.3	0.01104	428.	-0.001337
106.5	0.009776	428.3	-0.0005692

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
106.8	0.008592	428.5	-0.002094
107.	0.007911	428.8	-0.001691
107.3	0.009776	429.	-0.0005692
107.5	0.009486	429.3	4.02E-5
107.8	0.008346	429.5	-0.001001
108.	0.007717	429.8	-0.001975
108.3	0.009197	430.	4.02E-5
108.5	0.008774	430.3	-0.00091
108.8	0.009776	430.5	-0.001691
109.	0.008149	430.8	-0.003088
109.3	0.009596	431.	-0.001526
109.5	0.006511	431.3	-0.001001
109.8	0.007717	431.5	-0.001119
110.	0.007753	431.8	-0.001001
110.3	0.007028	432.	-0.002204
110.5	0.0126	432.3	-0.001119
110.8	0.005043	432.5	-0.002435
111.	0.01055	432.8	-0.0005692
111.3	0.007619	433.	-0.001001
111.5	0.009917	433.3	-0.001337
111.8	0.007753	433.5	-0.001526
112.	0.007348	433.8	-0.0006969
112.3	0.007911	434.	-0.001526
112.5	0.008346	434.3	-0.0002637
112.8	0.007717	434.5	-0.0005692
113.	0.008149	434.8	-4.29E-5
113.3	0.005694	435.	-0.001526
113.5	0.008592	435.3	-0.0004261
113.8	0.007359	435.5	-0.0002637
114.	0.008774	435.8	-4.29E-5
114.3	0.008774	436.	-0.002493
114.5	0.007348	436.3	-0.001001
114.8	0.008592	436.5	-0.001773
115.	0.007911	436.8	-0.001773
115.3	0.007753	437.	-0.001773
115.5	0.007753	437.3	-0.001975
115.8	0.006635	437.5	-0.002493
116.	0.008592	437.8	-0.0004261
116.3	0.009776	438.	-0.002493
116.5	0.007348	438.3	-0.001834
116.8	0.007911	438.5	-0.001691
117.	0.005979	438.8	-0.001691
117.3	0.009058	439.	-0.002831
117.5	0.007166	439.3	-0.003672
117.8	0.008738	439.5	-0.001975
118.	0.006679	439.8	-0.002204
118.3	0.008592	440.	-0.001001
118.5	0.008774	440.3	-0.002968
118.8	0.00953	440.5	-0.002435
119.	0.008346	440.8	-0.001119
119.3	0.008346	441.	-0.00091
119.5	0.007911	441.3	-0.002063
119.8	0.008592	441.5	-0.001119
120.	0.006919	441.8	-0.001526
120.3	0.008915	442.	0.0007201
120.5	0.00953	442.3	-0.001949
120.8	0.009058	442.5	-0.001119
121.	0.009923	442.8	-0.001773
121.3	0.007359	443.	-0.0005692
121.5	0.007359	443.3	-0.00091
121.8	0.007717	443.5	-0.001773
122.	0.008346	443.8	-0.0009782
122.3	0.006496	444.	-0.0005692
122.5	0.008215	444.3	-0.001949
122.8	0.006115	444.5	-0.001975
123.	0.006679	444.8	-0.002204

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
123.3	0.007348	445.	-0.001192
123.5	0.006511	445.3	-0.003088
123.8	0.007359	445.5	-0.002347
124.	0.007899	445.8	-0.002094
124.3	0.007028	446.	-0.0002637
124.5	0.006282	446.3	-0.002204
124.8	0.008357	446.5	-0.001119
125.	0.007753	446.8	-0.001337
125.3	0.006496	447.	-0.001773
125.5	0.005373	447.3	-0.002094
125.8	0.004745	447.5	-0.002435
126.	0.005184	447.8	-0.001526
126.3	0.005979	448.	-0.001949
126.5	0.006679	448.3	-0.0005692
126.8	0.006115	448.5	-0.001383
127.	0.007619	448.8	-0.001001
127.3	0.005807	449.	-0.00091
127.5	0.008346	449.3	-0.00308
127.8	0.005043	449.5	-0.002693
128.	0.006679	449.8	-0.0004261
128.3	0.004178	450.	-0.002094
128.5	0.007166	450.3	4.02E-5
128.8	0.005694	450.5	-0.003392
129.	0.008592	450.8	-0.001146
129.3	0.006282	451.	-0.0008593
129.5	0.007359	451.3	-0.001773
129.8	0.005694	451.5	-0.001975
130.	0.008346	451.8	-0.002831
130.3	0.007911	452.	-0.001975
130.5	0.008049	452.3	-0.002204
130.8	0.007753	452.5	-0.00308
131.	0.006496	452.8	-0.003672
131.3	0.006282	453.	-0.00308
131.5	0.006496	453.3	-0.002968
131.8	0.007753	453.5	-0.001119
132.	0.00706	453.8	-0.0005692
132.3	0.005979	454.	-0.001119
132.5	0.005373	454.3	-0.003439
132.8	0.005979	454.5	-0.0006969
133.	0.005979	454.8	-0.001691
133.3	0.006511	455.	-0.001691
133.5	0.005807	455.3	-0.002968
133.8	0.005979	455.5	-0.001526
134.	0.005979	455.8	-0.002094
134.3	0.007348	456.	-0.0004261
134.5	0.007028	456.3	-0.001526
134.8	0.00706	456.5	-0.001146
135.	0.005807	456.8	-0.002116
135.3	0.006496	457.	-0.002493
135.5	0.006115	457.3	-0.002831
135.8	0.007348	457.5	-0.001526
136.	0.006282	457.8	-0.001975
136.3	0.005979	458.	-0.001773
136.5	0.006115	458.3	-0.002493
136.8	0.007359	458.5	-0.001672
137.	0.006496	458.8	-0.001526
137.3	0.008346	459.	-0.001119
137.5	0.007028	459.3	-0.002968
137.8	0.006679	459.5	-0.001337
138.	0.007348	459.8	-0.0004085
138.3	0.007619	460.	-0.001773
138.5	0.006282	460.3	-0.003109
138.8	0.005807	460.5	0.0007201
139.	0.006141	460.8	-0.003579
139.3	0.005694	461.	-0.00091
139.5	0.005807	461.3	-4.29E-5

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
139.8	0.006679	461.5	-0.001119
140.	0.007348	461.8	-0.001001
140.3	0.008346	462.	-0.002831
140.5	0.005694	462.3	-0.003088
140.8	0.007348	462.5	-0.004446
141.	0.007028	462.8	-0.001478
141.3	0.006496	463.	-0.002435
141.5	0.005514	463.3	-0.00323
141.8	0.005043	463.5	-0.002116
142.	0.006282	463.8	-0.004332
142.3	0.007572	464.	-0.0001883
142.5	0.005807	464.3	-0.003817
142.8	0.005666	464.5	0.0005747
143.	0.007206	464.8	-0.00323
143.3	0.006141	465.	-0.0007123
143.5	0.007717	465.3	-0.001672
143.8	0.006115	465.5	-0.00091
144.	0.004129	465.8	-0.002347
144.3	0.003852	466.	-0.002204
144.5	0.005972	466.3	-0.002977
144.8	0.005837	466.5	-0.001832
145.	0.006354	466.8	-0.002116
145.3	0.005232	467.	-0.002235
145.5	0.007753	467.3	-0.002977
145.8	0.005694	467.5	-0.0008379
146.	0.007218	467.8	-0.002204
146.3	0.006141	468.	-0.002347
146.5	0.005232	468.3	-0.003817
146.8	0.007572	468.5	-0.003534
147.	0.005232	468.8	-0.002116
147.3	0.006537	469.	-0.002977
147.5	0.006141	469.3	-0.004792
147.8	0.006354	469.5	-0.003947
148.	0.005514	469.8	-0.002347
148.3	0.0046	470.	-0.002493
148.5	0.00637	470.3	-0.001672
148.8	0.006115	470.5	-0.001914
149.	0.006141	470.8	-0.001832
149.3	0.005232	471.	-0.001832
149.5	0.006354	471.3	-0.002235
149.8	0.006777	471.5	-0.002977
150.	0.005232	471.8	-0.002347
150.3	0.006537	472.	-0.002116
150.5	0.008776	472.3	-0.001055
150.8	0.006141	472.5	-0.003109
151.	0.006354	472.8	-0.001261
151.3	0.007206	473.	-0.004534
151.5	0.005837	473.3	-0.002116
151.8	0.005837	473.5	-0.002977
152.	0.005372	473.8	-0.002347
152.3	0.005372	474.	-0.003223
152.5	0.00637	474.3	-0.003439
152.8	0.00637	474.5	-0.002579
153.	0.005553	474.8	-0.0005692
153.3	0.004737	475.	-0.003947
153.5	0.005837	475.3	-0.003534
153.8	0.004368	475.5	-0.002235
154.	0.005972	475.8	0.0001393
154.3	0.006537	476.	-0.002579
154.5	0.005232	476.3	-0.001261
154.8	0.005086	476.5	-0.003947
155.	0.005412	476.8	-0.001055
155.3	0.007479	477.	-0.00479
155.5	0.006141	477.3	-0.003947
155.8	0.005837	477.5	-0.002977
156.	0.004756	477.8	-0.004087

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
156.3	0.007206	478.	-0.003534
156.5	0.006537	478.3	-0.004446
156.8	0.005666	478.5	-0.0001007
157.	0.005837	478.8	-0.00323
157.3	0.006883	479.	-0.004222
157.5	0.004591	479.3	-0.001287
157.8	0.006141	479.5	-0.005095
158.	0.004737	479.8	-0.001832
158.3	0.004737	480.	-0.003109
158.5	0.005372	480.3	-0.0002637
158.8	0.005412	480.5	-0.002977
159.	0.004591	480.8	-0.002977
159.3	0.005226	481.	-0.006069
159.5	0.006141	481.3	-0.002977
159.8	0.005972	481.5	-0.003817
160.	0.006777	481.8	-0.002347
160.3	0.00583	482.	-0.001055
160.5	0.006209	482.3	-0.002347
160.8	0.005666	482.5	-0.002579
161.	0.005412	482.8	-0.003947
161.3	0.005412	483.	-0.003109
161.5	0.005553	483.3	-0.004446
161.8	0.003898	483.5	-0.007952
162.	0.004461	483.8	-0.001261
162.3	0.005226	484.	-0.004222
162.5	0.006391	484.3	-0.001832
162.8	0.005692	484.5	-0.002633
163.	0.005226	484.8	-0.004534
163.3	0.005692	485.	-0.003534
163.5	0.003706	485.3	-0.004534
163.8	0.004591	485.5	-0.002347
164.	0.005684	485.8	-0.003947
164.3	0.005692	486.	-0.002235
164.5	0.00552	486.3	-0.005095
164.8	0.004368	486.5	-0.0007123
165.	0.005412	486.8	-0.002579
165.3	0.005995	487.	-0.001261
165.5	0.003413	487.3	-0.00323
165.8	0.004835	487.5	-0.001146
166.	0.003706	487.8	-0.002235
166.3	0.00583	488.	-0.0001883
166.5	0.00552	488.3	-0.001626
166.8	0.00552	488.5	-0.002977
167.	0.004835	488.8	-0.002262
167.3	0.004078	489.	-0.002633
167.5	0.005995	489.3	-0.002235
167.8	0.006067	489.5	-0.002579
168.	0.004614	489.8	-0.002579
168.3	0.004945	490.	-0.003534
168.5	0.004591	490.3	-0.001977
168.8	0.004614	490.5	-0.00323
169.	0.003752	490.8	-0.002055
169.3	0.006209	491.	-0.002347
169.5	0.005086	491.3	-0.0007151
169.8	0.00445	491.5	-0.001261
170.	0.004835	491.8	-0.002633
170.3	0.004835	492.	-0.002579
170.5	0.003851	492.3	-0.001146
170.8	0.003272	492.5	-0.001478
171.	0.003937	492.8	-0.001478
171.3	0.004614	493.	-0.004087
171.5	0.006489	493.3	-0.002493
171.8	0.005086	493.5	-0.002262
172.	0.003089	493.8	-0.001405
172.3	0.00527	494.	-0.003579
172.5	0.004461	494.3	-0.001813

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
172.8	0.006228	494.5	-0.001914
173.	0.003564	494.8	-0.0008379
173.3	0.006391	495.	-0.001832
173.5	0.004835	495.3	-0.001672
173.8	0.007051	495.5	-0.003534
174.	0.005542	495.8	-0.002774
174.3	0.005378	496.	-0.001832
174.5	0.00361	496.3	-0.003534
174.8	0.005378	496.5	-0.001146
175.	0.005684	496.8	-0.002055
175.3	0.00625	497.	-0.001055
175.5	0.004945	497.3	-0.002116
175.8	0.005378	497.5	-0.002347
176.	0.003272	497.8	-0.003223
176.3	0.005942	498.	-0.00323
176.5	0.005235	498.3	-0.003373
176.8	0.003789	498.5	-0.001478
177.	0.005378	498.8	-0.004363
177.3	0.005713	499.	-0.001813
177.5	0.004799	499.3	-0.001832
177.8	0.004303	499.5	-0.002633
178.	0.004835	499.8	-0.00372
178.3	0.004689	500.	-0.002493
178.5	0.00361	500.3	-0.001813
178.8	0.003705	500.5	-0.001914
179.	0.003419	500.8	-0.003256
179.3	0.003106	501.	0.000414
179.5	0.004174	501.3	-0.002235
179.8	0.004799	501.5	-0.002633
180.	0.004469	501.8	-0.002633
180.3	0.007192	502.	-0.002262
180.5	0.005713	502.3	-0.001146
180.8	0.004469	502.5	-0.004588
181.	0.005713	502.8	-0.002493
181.3	0.004303	503.	-0.003947
181.5	0.005129	503.3	-0.001813
181.8	0.005713	503.5	-0.003817
182.	0.004081	503.8	-0.00323
182.3	0.004303	504.	-0.00323
182.5	0.005921	504.3	-0.001055
182.8	0.005542	504.5	-0.001914
183.	0.004303	504.8	-0.002493
183.3	0.004469	505.	-0.001672
183.5	0.006108	505.3	-0.001055
183.8	0.005235	505.5	-0.002633
184.	0.002602	505.8	-0.003373
184.3	0.00394	506.	-0.001478
184.5	0.003419	506.3	-0.002724
184.8	0.003419	506.5	-0.003579
185.	0.002765	506.8	-0.003534
185.3	0.0058	507.	-0.002977
185.5	0.003323	507.3	-0.003947
185.8	0.005093	507.5	-0.004222
186.	0.004469	507.8	-0.004446
186.3	0.004662	508.	-0.00567
186.5	0.004662	508.3	-0.002262
186.8	0.004799	508.5	-0.003109
187.	0.004303	508.8	-0.002116
187.3	0.005263	509.	-0.005932
187.5	0.00494	509.3	-0.004363
187.8	0.004662	509.5	-0.002977
188.	0.003647	509.8	-0.003534
188.3	0.004032	510.	-0.006257
188.5	0.005263	510.3	-0.003109
188.8	0.004548	510.5	-0.002116
189.	0.004327	510.8	-0.006069

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
189.3	0.004174	511.	-0.001146
189.5	0.003465	511.3	-0.005419
189.8	0.003323	511.5	-0.002116
190.	0.003323	511.8	-0.004446
190.3	0.004799	512.	-0.003534
190.5	0.002053	512.3	-0.004446
190.8	0.004032	512.5	-0.001261
191.	0.005093	512.8	-0.004534
191.3	0.003278	513.	-0.001914
191.5	0.005713	513.3	-0.002977
191.8	0.002053	513.5	-0.003223
192.	0.003563	513.8	-0.00479
192.3	0.004327	514.	-0.003579
192.5	0.004303	514.3	-0.005791
192.8	0.00394	514.5	-0.0008379
193.	0.00394	514.8	-0.004087
193.3	0.004662	515.	-0.001478
193.5	0.004548	515.3	-0.003534
193.8	0.003563	515.5	-0.003439
194.	0.003563	515.8	-0.003109
194.3	0.002985	516.	-0.0008379
194.5	0.003647	516.3	-0.001914
194.8	0.003323	516.5	-0.003534
195.	0.003563	516.8	-0.003109
195.3	0.003563	517.	-0.001672
195.5	0.003323	517.3	-0.003109
195.8	0.002967	517.5	-0.003817
196.	0.004162	517.8	-0.002579
196.3	0.003789	518.	-0.002347
196.5	0.003705	518.3	-0.003534
196.8	0.002806	518.5	-0.003223
197.	0.003563	518.8	-0.003223
197.3	0.003647	519.	-0.001832
197.5	0.003647	519.3	-0.001914
197.8	0.004327	519.5	-0.002977
198.	0.002967	519.8	-0.002977
198.3	0.003278	520.	-0.00323
198.5	0.004662	520.3	-0.003109
198.8	0.002806	520.5	-0.002579
199.	0.002844	520.8	-0.001146
199.3	0.004162	521.	-0.005095
199.5	0.003278	521.3	-0.001261
199.8	0.005402	521.5	-0.004792
200.	0.004548	521.8	-0.003534
200.3	0.003563	522.	-0.004792
200.5	0.003647	522.3	-0.004792
200.8	0.005093	522.5	-0.001478
201.	0.004327	522.8	-0.004792
201.3	0.005402	523.	-0.0007123
201.5	0.004162	523.3	-0.004332
201.8	0.002053	523.5	-0.00323
202.	0.001992	523.8	-0.004446
202.3	0.005263	524.	-0.002347
202.5	0.004162	524.3	-0.002235
202.8	0.004662	524.5	-0.005529
203.	0.004662	524.8	-0.0005692
203.3	0.003323	525.	-0.00479
203.5	0.005571	525.3	-0.0002637
203.8	0.004327	525.5	-0.002204
204.	0.0008125	525.8	-0.001261
204.3	0.003418	526.	-0.00308
204.5	0.004162	526.3	-0.00479
204.8	0.001206	526.5	-0.00308
205.	0.004799	526.8	-0.0007123
205.3	0.003418	527.	-0.003223
205.5	0.003647	527.3	-0.003579

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
205.8	0.007041	527.5	-0.002968
206.	0.002296	527.8	-0.005095
206.3	0.002806	528.	-0.002968
206.5	0.005093	528.3	-0.001055
206.8	0.005967	528.5	-0.004079
207.	0.004162	528.8	-0.002968
207.3	0.003647	529.	-0.002493
207.5	0.001992	529.3	-0.003534
207.8	0.004032	529.5	-0.002831
208.	0.004327	529.8	-0.00323
208.3	0.004662	530.	-0.002347
208.5	0.002628	530.3	-0.002493
208.8	0.002628	530.5	-0.0006969
209.	0.00394	530.8	-0.001119
209.3	0.003647	531.	-0.003392
209.5	0.004662	531.3	-0.004222
209.8	0.002967	531.5	-0.002493
210.	0.002806	531.8	-0.002633
210.3	0.002053	532.	-0.003817
210.5	0.004662	532.3	-0.002435
210.8	0.002806	532.5	-0.003392
211.	0.003647	532.8	-0.002235
211.3	0.002985	533.	-0.002094
211.5	0.004327	533.3	-0.003817
211.8	0.002461	533.5	-0.00308
212.	0.004548	533.8	-0.001691
212.3	0.002985	534.	-0.003579
212.5	0.002985	534.3	-0.003223
212.8	0.002296	534.5	-0.004079
213.	0.002985	534.8	-0.002579
213.3	0.0002879	535.	-0.003534
213.5	0.004032	535.3	-0.003439
213.8	0.002985	535.5	-0.003439
214.	0.002053	535.8	-0.003947
214.3	0.004662	536.	-0.002347
214.5	0.002967	536.3	-0.002579
214.8	0.002296	536.5	-0.002094
215.	0.004799	536.8	-0.002116
215.3	0.003647	537.	-0.003439
215.5	0.001785	537.3	-0.003947
215.8	0.004032	537.5	-0.003109
216.	0.003647	537.8	-0.002116
216.3	0.004327	538.	-0.002116
216.5	0.004327	538.3	-0.002831
216.8	0.003563	538.5	-0.003817
217.	0.002053	538.8	-0.004222
217.3	0.002967	539.	-0.004534
217.5	0.002461	539.3	-0.001832
217.8	0.002821	539.5	-0.003223
218.	0.001992	539.8	-0.002347
218.3	0.001785	540.	-0.001914
218.5	0.001558	540.3	-0.002493
218.8	0.00394	540.5	-0.002235
219.	0.002806	540.8	-0.001672
219.3	0.001785	541.	-0.00308
219.5	-0.0001426	541.3	-0.002347
219.8	0.002844	541.5	-0.00323
220.	0.003647	541.8	-0.003223
220.3	0.001206	542.	-0.003439
220.5	0.002985	542.3	-0.003579
220.8	0.004327	542.5	-0.003534
221.	0.002806	542.8	-0.001672
221.3	0.003278	543.	-0.001914
221.5	0.002985	543.3	-0.003534
221.8	0.003323	543.5	-0.002116
222.	0.001992	543.8	-0.002633

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
222.3	0.003323	544.	-0.00323
222.5	0.00394	544.3	-0.002235
222.8	0.003563	544.5	-0.001055
223.	0.002967	544.8	-0.001832
223.3	0.003323	545.	-0.002977
223.5	0.004662	545.3	-0.002633
223.8	0.002806	545.5	-0.003109
224.	0.00394	545.8	-0.001672
224.3	0.002967	546.	-0.002235
224.5	0.002628	546.3	-0.001914
224.8	0.002661	546.5	-0.003109
225.	0.002985	546.8	-0.00396
225.3	0.001578	547.	-0.003109
225.5	0.002985	547.3	-0.002347
225.8	0.001785	547.5	-0.001626
226.	0.002985	547.8	-0.004087
226.3	0.002844	548.	-0.004534
226.5	0.003794	548.3	-0.002347
226.8	0.004327	548.5	-0.003534
227.	0.001992	548.8	-0.001832
227.3	0.002985	549.	-0.003817
227.5	0.002296	549.3	-0.002235
227.8	0.002053	549.5	-0.003373
228.	0.002461	549.8	-0.002055
228.3	0.002806	550.	-0.002235
228.5	0.002628	550.3	-0.002235
228.8	0.002296	550.5	-0.00323
229.	0.002461	550.8	-0.003579
229.3	0.001578	551.	-0.001626
229.5	0.002482	551.3	-0.003373
229.8	0.003136	551.5	-0.002376
230.	0.002628	551.8	-0.002493
230.3	0.002967	552.	-0.001832
230.5	0.001992	552.3	-0.002774
230.8	0.002461	552.5	-0.002376
231.	0.004662	552.8	-0.003117
231.3	0.002053	553.	-0.002493
231.5	0.002985	553.3	-0.003223
231.8	0.002461	553.5	-0.002977
232.	0.002296	553.8	-0.003117
232.3	0.002628	554.	-0.001672
232.5	0.001558	554.3	-0.003679
232.8	0.0008125	554.5	-0.003373
233.	0.001558	554.8	-0.001813
233.3	0.001558	555.	-0.00372
233.5	0.002461	555.3	-0.002262
233.8	0.00191	555.5	-0.001672
234.	0.002053	555.8	-0.001832
234.3	0.001578	556.	-0.001626
234.5	0.0008979	556.3	-0.001832
234.8	0.001206	556.5	-0.003679
235.	0.00394	556.8	-0.003256
235.3	0.001411	557.	-0.001977
235.5	0.003647	557.3	-0.0009832
235.8	0.001558	557.5	-0.003819
236.	0.004023	557.8	-0.003256
236.3	0.002053	558.	-0.002524
236.5	0.002844	558.3	-0.002262
236.8	-0.000621	558.5	-0.003373
237.	0.002628	558.8	-0.002262
237.3	0.004327	559.	-0.002262
237.5	0.003418	559.3	-0.00372
237.8	0.0002879	559.5	-0.0002461
238.	0.001558	559.8	-0.001336
238.3	0.001851	560.	-0.001813
238.5	0.005093	560.3	-0.00372

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
238.8	0.0001453	560.5	-0.004935
239.	0.001639	560.8	-0.002774
239.3	0.002967	561.	-0.003364
239.5	0.002319	561.3	-0.002493
239.8	0.001639	561.5	-0.002117
240.	0.002461	561.8	-0.002634
240.3	0.001061	562.	-0.003819
240.5	0.002053	562.3	-0.0022
240.8	0.00191	562.5	-0.003256
241.	0.001992	562.8	-0.003397
241.3	0.001411	563.	-0.002634
241.5	0.001785	563.3	-0.003819
241.8	0.003278	563.5	-0.003117
242.	0.001206	563.8	-0.003117
242.3	0.001142	564.	-0.002864
242.5	0.001785	564.3	-0.005076
242.8	0.001558	564.5	-0.0022
243.	0.002482	564.8	-0.004675
243.3	0.004652	565.	-0.0007151
243.5	0.001411	565.3	-0.003509
243.8	0.001411	565.5	-0.002864
244.	0.0005945	565.8	-0.002524
244.3	0.0006716	566.	-0.001287
244.5	0.002053	566.3	-0.001124
244.8	0.003278	566.5	-0.001546
245.	0.002461	566.8	-0.003258
245.3	0.001206	567.	-0.0022
245.5	0.0004294	567.3	-0.002117
245.8	0.001851	567.5	-0.003518
246.	0.002482	567.8	-0.003819
246.3	0.004032	568.	-0.002055
246.5	0.003323	568.3	-0.003819
246.8	-0.001118	568.5	-0.002405
247.	0.004162	568.8	-0.002864
247.3	0.001411	569.	-0.002634
247.5	0.002296	569.3	-0.003406
247.8	0.002628	569.5	-0.00396
248.	0.002296	569.8	-0.002864
248.3	0.00127	570.	-0.002774
248.5	0.001142	570.3	-0.0004707
248.8	0.002296	570.5	-0.0022
249.	0.002482	570.8	-0.000856
249.3	0.001639	571.	-0.003509
249.5	0.001411	571.3	-0.003509
249.8	0.001002	571.5	-0.00292
250.	0.001578	571.8	-0.002405
250.3	0.002461	572.	-0.003659
250.5	0.00191	572.3	-0.002405
250.8	0.0004531	572.5	-0.003258
251.	0.001558	572.8	-0.002099
251.3	0.002053	573.	-0.001546
251.5	0.002461	573.3	-0.0009964
251.8	0.00191	573.5	-0.002117
252.	0.0008979	573.8	-0.00292
252.3	-0.0004052	574.	-0.002634
252.5	0.001411	574.3	-0.003509
252.8	0.003647	574.5	-0.003063
253.	0.001411	574.8	-0.003819
253.3	0.001992	575.	-0.003397
253.5	0.0005945	575.3	-0.003509
253.8	0.001206	575.5	-0.002634
254.	0.001206	575.8	-0.001767
254.3	0.002967	576.	-0.002257
254.5	0.001142	576.3	-0.0022
254.8	0.002296	576.5	-0.002864
255.	0.0004294	576.8	-0.003866

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
255.3	0.001851	577.	-0.003866
255.5	0.001785	577.3	-0.001124
255.8	0.002806	577.5	-0.003819
256.	0.0004531	577.8	-0.002405
256.3	0.001992	578.	-0.003866
256.5	0.004032	578.3	-0.002634
256.8	0.002296	578.5	-0.003819
257.	0.002967	578.8	-0.003866
257.3	0.001578	579.	-0.003258
257.5	0.001206	579.3	-0.002864
257.8	0.001206	579.5	-0.002117
258.	0.002967	579.8	-0.004508
258.3	0.001558	580.	-0.003819
258.5	0.003563	580.3	-0.001767
258.8	0.001992	580.5	-0.001767
259.	0.002053	580.8	-0.003397
259.3	0.0008125	581.	-0.002117
259.5	0.004032	581.3	-0.003819
259.8	0.002967	581.5	-0.001954
260.	0.001992	581.8	-0.004613
260.3	0.001411	582.	-0.002099
260.5	0.001558	582.3	-0.001336
260.8	0.002985	582.5	-0.001767
261.	0.002628	582.8	-0.002405
261.3	0.001206	583.	-0.002524
261.5	0.002053	583.3	-0.00292
261.8	0.002806	583.5	-0.001767
262.	0.002461	583.8	-0.004735
262.3	0.001578	584.	-0.0022
262.5	0.001578	584.3	-0.001907
262.8	0.001206	584.5	-0.001336
263.	0.002296	584.8	-0.003819
263.3	0.001785	585.	-0.003518
263.5	0.001558	585.3	-0.002634
263.8	0.001206	585.5	-0.002634
264.	0.002296	585.8	-0.003406
264.3	0.0008979	586.	-0.002524
264.5	0.001578	586.3	-0.001142
264.8	0.002806	586.5	0.001173
265.	0.0008979	586.8	-1.82E-5
265.3	0.002806	587.	0.0007657
265.5	0.002296	587.3	-0.0004707
265.8	0.002967	587.5	-0.002257
266.	0.001558	587.8	-0.0006909
266.3	0.00172	588.	-0.001767
266.5	0.001992	588.3	-0.002117
266.8	0.002628	588.5	-0.00292
267.	0.001411	588.8	-0.003006
267.3	0.001411	589.	-0.000856
267.5	0.003647	589.3	-0.002117
267.8	0.002985	589.5	-0.001546
268.	0.002985	589.8	-0.001954
268.3	0.001992	590.	-0.002117
268.5	0.002195	590.3	-0.003258
268.8	0.002806	590.5	-0.0022
269.	0.002806	590.8	-0.003406
269.3	0.001206	591.	-0.003819
269.5	0.002133	591.3	-0.003819
269.8	0.001992	591.5	-0.003866
270.	0.001044	591.8	-0.003518
270.3	0.002628	592.	-0.001767
270.5	0.0017	592.3	-0.001546
270.8	0.0017	592.5	-0.002634
271.	0.003278	592.8	-0.003397
271.3	0.002985	593.	-0.003258
271.5	0.002461	593.3	-0.002405

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
271.8	0.002628	593.5	-0.002864
272.	0.001348	593.8	-0.001336
272.3	0.0004299	594.	-0.002634
272.5	0.0008979	594.3	-0.0022
272.8	0.001206	594.5	-0.003258
273.	-0.0003342	594.8	-0.003518
273.3	0.001578	595.	-0.004876
273.5	0.002602	595.3	-0.002117
273.8	0.002441	595.5	-0.002117
274.	0.003126	595.8	-0.002664
274.3	0.0017	596.	-0.003509
274.5	0.002948	596.3	-0.002524
274.8	0.004081	596.5	-0.003518
275.	0.001558	596.8	-0.003819
275.3	0.001284	597.	-0.001546
275.5	0.002441	597.3	-0.002117
275.8	0.002441	597.5	-0.005379
276.	0.002948	597.8	-0.003509
276.3	0.001044	598.	-0.00292
276.5	0.002985	598.3	-0.004235
276.8	0.00172	598.5	-0.0022
277.	0.00172	598.8	-0.002634
277.3	0.0005775	599.	-0.002257
277.5	0.002602	599.3	-0.000856
277.8	0.003106	599.5	-0.001767
278.	0.001558	599.8	-0.003397
278.3	-0.0009155	600.	-0.001954
278.5	0.003705	600.3	-0.003866
278.8	0.002948	600.5	-0.003538
279.	0.002985	600.8	-0.001907
279.3	0.0008979	601.	0.001338
279.5	0.001558	601.3	-0.005076
279.8	0.001558	601.5	-0.001576
280.	0.002948	601.8	-0.00537
280.3	-0.0005257	602.	-0.0003876
280.5	0.002195	602.3	-0.003538
280.8	0.002602	602.5	-0.0022
281.	0.002765	602.8	-0.003397
281.3	0.0005775	603.	-0.002405
281.5	0.0002995	603.3	-0.004761
281.8	-2.2E-6	603.5	-0.003659
282.	0.002195	603.8	-0.003819
282.3	0.0004299	604.	-0.003819
282.5	0.0004299	604.3	-0.00365
282.8	0.001558	604.5	-0.002864
283.	0.002765	604.8	-0.003538
283.3	0.0017	605.	-0.002343
283.5	0.0007333	605.3	-0.004376
283.8	0.00172	605.5	-0.005076
284.	0.0017	605.8	-0.004508
284.3	0.0017	606.	-0.001767
284.5	-0.0007696	606.3	-0.003963
284.8	0.001284	606.5	-0.003819
285.	0.001348	606.8	-0.003518
285.3	-2.2E-6	607.	-0.005217
285.5	0.001044	607.3	-0.002524
285.8	0.001284	607.5	-0.003538
286.	0.0009535	607.8	-0.003518
286.3	0.001558	608.	-0.004818
286.5	0.002068	608.3	-0.003006
286.8	0.001558	608.5	-0.004101
287.	0.001348	608.8	-0.003509
287.3	0.0017	609.	-0.003509
287.5	0.001558	609.3	-0.003538
287.8	0.001284	609.5	-0.002524
288.	0.00172	609.8	-0.002405

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
288.3	0.003278	610.	-0.003509
288.5	0.0004299	610.3	-0.006073
288.8	0.001348	610.5	-0.002634
289.	0.00172	610.8	-0.002257
289.3	0.002195	611.	-0.00292
289.5	0.002602	611.3	-0.004009
289.8	0.002806	611.5	-0.002634
290.	0.001284	611.8	-0.002343
290.3	0.001927	612.	-0.004613
290.5	0.001348	612.3	-0.0022
290.8	-0.0001184	612.5	-0.003963
291.	0.0004299	612.8	-0.001546
291.3	0.0007333	613.	-0.004613
291.5	0.0008979	613.3	-0.001546
291.8	0.001927	613.5	-0.004735
292.	0.002441	613.8	-0.003659
292.3	0.0017	614.	-0.003006
292.5	0.001044	614.3	-0.001907
292.8	0.003126	614.5	-0.005076
293.	0.003789	614.8	-0.00365
293.3	0.002765	615.	-0.004964
293.5	0.003126	615.3	-0.002664
293.8	0.002296	615.5	-0.003538
294.	0.0004299	615.8	-0.00148
294.3	0.00172	616.	-0.003063
294.5	0.002195	616.3	-0.002117
294.8	0.001044	616.5	-0.003538
295.	-0.0001184	616.8	-0.003538
295.3	-0.0002642	617.	-0.002405
295.5	0.0009535	617.3	-0.004009
295.8	-0.0003342	617.5	-0.002774
296.	0.0009535	617.8	-0.002376
296.3	-0.0001184	618.	-0.003397
296.5	0.003126	618.3	-0.003406
296.8	0.003126	618.5	-0.003509
297.	0.0009535	618.8	-0.004818
297.3	-0.0006881	619.	-0.002257
297.5	-2.2E-6	619.3	-0.003006
297.8	0.0005775	619.5	-0.003006
298.	-2.2E-6	619.8	-0.005076
298.3	0.0004299	620.	-0.002864
298.5	0.001558	620.3	-0.003406
298.8	-0.0009766	620.5	-0.004613
299.	-0.0005257	620.8	-0.002634
299.3	0.002133	621.	-0.003659
299.5	0.001284	621.3	-0.003866
299.8	0.001558	621.5	-0.003538
300.	-0.0007696	621.8	-0.005076
300.3	0.0005775	622.	-0.003509
300.5	0.002948	622.3	-0.003538
300.8	0.001348	622.5	-0.0001431
301.	0.002948	622.8	-0.004613
301.3	0.001044	623.	-0.005683
301.5	0.001927	623.3	-0.002864
301.8	0.001558	623.5	-0.004247
302.	0.00172	623.8	-0.004235
302.3	-2.2E-6	624.	-0.00292
302.5	0.0017	624.3	-0.003258
302.8	0.001411	624.5	-0.002774
303.	0.0004299	624.8	-0.003518
303.3	0.00172	625.	-0.0057
303.5	-0.0003342	625.3	-0.003406
303.8	0.002602	625.5	-0.002864
304.	0.001284	625.8	-0.004735
304.3	0.0002995	626.	-0.002257
304.5	0.002441	626.3	-0.005221

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
304.8	0.002133	626.5	-0.002524
305.	0.0017	626.8	-0.004247
305.3	0.002441	627.	-0.003063
305.5	0.001284	627.3	-0.004376
305.8	0.001348	627.5	-0.003063
306.	0.0005775	627.8	-0.00365
306.3	0.0004294	628.	-0.002099
306.5	0.0005775	628.3	-0.003406
306.8	-0.0001184	628.5	-0.002546
307.	0.001558	628.8	-0.002405
307.3	0.0009535	629.	-0.003509
307.5	0.001348	629.3	-0.004247
307.8	0.002765	629.5	-0.002099
308.	0.001044	629.8	-0.002117
308.3	-0.0001426	630.	-0.001124
308.5	0.002195	630.3	-0.004247
308.8	0.0005945	630.5	-0.003819
309.	0.0005775	630.8	-0.004508
309.3	0.0004299	631.	-0.0022
309.5	0.001284	631.3	0.001197
309.8	0.0008979	631.5	-0.003063
310.	-5.23E-5	631.8	-0.006497
310.3	-0.0001184	632.	-0.002546
310.5	0.001992	632.3	-0.002546
310.8	0.0001591	632.5	-0.004235
311.	-0.0004795	632.8	-0.0057
311.3	0.001284	633.	-0.006073
311.5	-5.23E-5	633.3	-0.001954
311.8	-0.0009155	633.5	-0.00292
312.	0.00172	633.8	-0.005379
312.3	0.0002863	634.	-0.004235
312.5	0.0009535	634.3	-0.003819
312.8	-0.0003342	634.5	-0.002405
313.	0.0002863	634.8	-0.005959
313.3	-0.0003342	635.	-0.003518
313.5	-0.0001426	635.3	-0.002405
313.8	-0.0006694	635.5	-0.000856
314.	-0.001347	635.8	-0.003659
314.3	-0.001236	636.	-0.001767
314.5	-0.0004795	636.3	-0.005217
314.8	-0.0001184	636.5	-0.003819
315.	-0.001635	636.8	-0.003006
315.3	-0.0009766	637.	-0.003509
315.5	-0.001977	637.3	-0.005217
315.8	-0.001437	637.5	-0.004613
316.	-0.001437	637.8	-0.004508
316.3	8.86E-5	638.	-0.002117
316.5	-0.0005257	638.3	-0.002524
316.8	-0.001118	638.5	-0.004649
317.	-0.001347	638.8	-0.006365
317.3	-0.002533	639.	-0.002546
317.5	-0.0002642	639.3	-0.0022
317.8	-0.003222	639.5	-0.004735
318.	-0.001118	639.8	-0.003819
318.3	-0.0006694	640.	-0.005076
318.5	-0.00258	640.3	-0.004964
318.8	-0.0009155	640.5	-0.00537
319.	-0.001347	640.8	-0.00292
319.3	-0.001977	641.	-0.006354
319.5	-0.0009766	641.3	-0.004235
319.8	-0.0001426	641.5	-0.003397
320.	0.0008979	641.8	-0.003518
320.3	0.0008125	642.	-0.003006
320.5	0.002053	642.3	-0.003819
320.8	-0.0009155	642.5	-0.004613
321.	0.0001591	642.8	-0.004613

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
321.3	0.001558	643.	-0.002524
321.5	-0.002223	643.3	-0.004761
321.8	-0.0002642		

SOLUTION

Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.507

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	12.32	ft/day
y0	0.8049	ft

K = 0.004348 cm/sec
 T = K*b = 96. ft²/day (1.032 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	12.32	11.94	+/- 26.27	1.032	ft/day
y0	0.8049	0.2441	+/- 0.5373	3.297	ft

C.I. is approximate 95% confidence interval for parameter
 t-ratio = estimate/std. error
 Estimation window: 1 to 4 sec

K = 0.004348 cm/sec
 T = K*b = 96. ft²/day (1.032 sq. cm/sec)

Parameter Correlations

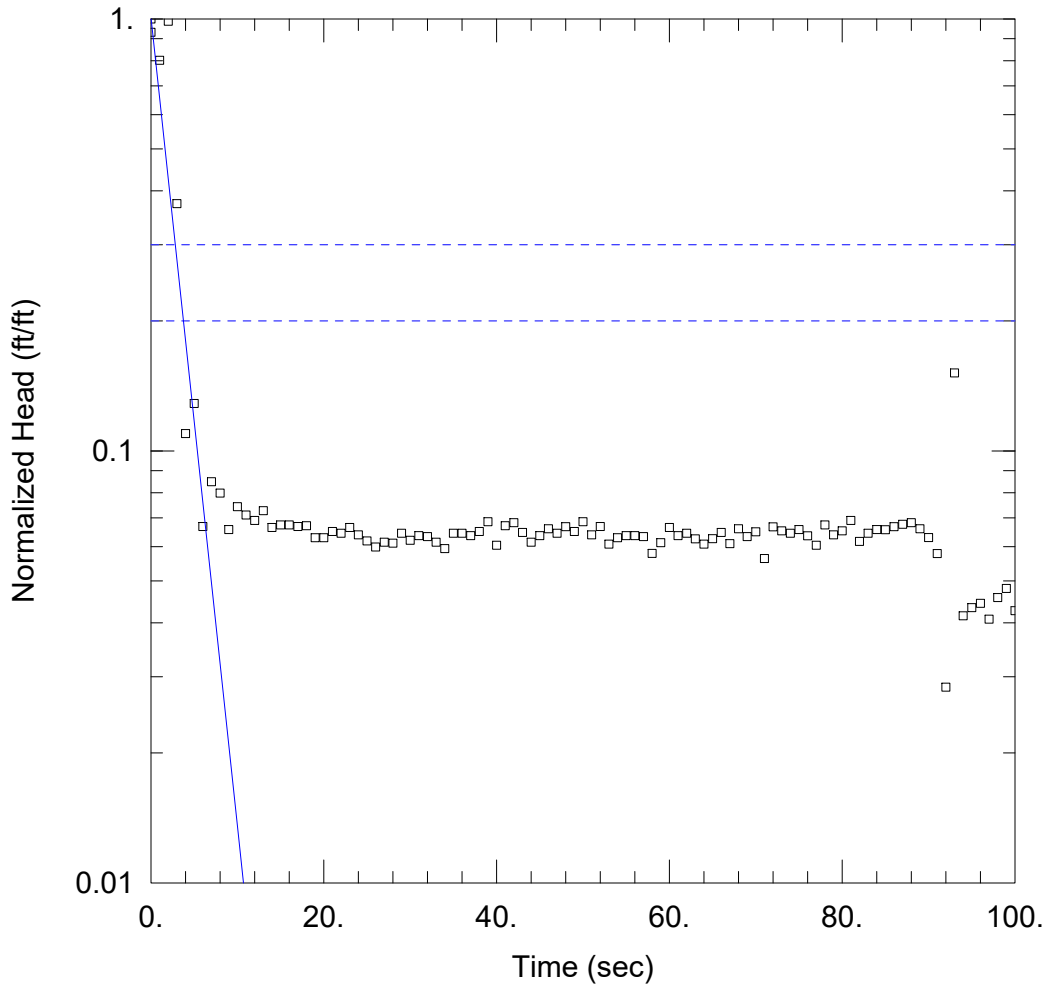
	K	y0
K	1.00	0.93
y0	0.93	1.00

Residual Statistics

for weighted residuals

Sum of Squares 0.6467 ft²
 Variance 0.05879 ft²
 Std. Deviation 0.2425 ft
 Mean -0.0003726 ft
 No. of Residuals 13
 No. of Estimates 2

Estimation window from 1 to 4 sec.



WELL TEST ANALYSIS

Data Set: C:\...\PZSC slug in.aqt
 Date: 03/08/22

Time: 14:50:56

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Well: PZ-SC
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 6.65 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-SC)

Initial Displacement: 0.45 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 6.65 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 47.8 ft/day

Solution Method: Bowser-Rice
 y0 = 0.454 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZSC slug in.aq
 Date: 04/26/22
 Time: 09:14:09

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-SC

AQUIFER DATA

Saturated Thickness: 6.65 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-SC

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 0.45 ft
 Static Water Column Height: 6.65 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 497

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	0.4191	249.	0.02189
1.	0.3609	250.	0.02099
2.	0.4446	251.	0.02203
3.	0.1681	252.	0.02322
4.	0.04936	253.	0.02247
5.	0.05793	254.	0.02448
6.	0.03008	255.	0.02454
7.	0.03819	256.	0.02336
8.	0.03595	257.	0.02415
9.	0.02959	258.	0.02369
10.	0.03342	259.	0.02395
11.	0.03197	260.	0.02307
12.	0.03106	261.	0.02607
13.	0.03272	262.	0.02533
14.	0.02991	263.	0.02533
15.	0.03034	264.	0.02548
16.	0.03034	265.	0.02448
17.	0.03008	266.	0.02439
18.	0.0302	267.	0.0247
19.	0.02834	268.	0.02658
20.	0.02834	269.	0.02299
21.	0.02929	270.	0.02495
22.	0.02902	271.	0.02352
23.	0.02991	272.	0.02464
24.	0.02877	273.	0.02433
25.	0.02786	274.	0.02448
26.	0.02697	275.	0.02454
27.	0.02767	276.	0.0247
28.	0.02751	277.	0.02411
29.	0.02901	278.	0.02423

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
30.	0.02794	279.	0.02254
31.	0.02865	280.	0.02448
32.	0.02851	281.	0.02519
33.	0.02767	282.	0.02504
34.	0.02674	283.	0.02337
35.	0.02902	284.	0.02536
36.	0.02901	285.	0.0259
37.	0.02865	286.	0.02336
38.	0.02929	287.	0.02573
39.	0.03085	288.	0.02558
40.	0.02722	289.	0.02519
41.	0.0302	290.	0.02474
42.	0.03071	291.	0.02605
43.	0.02913	292.	0.02454
44.	0.02767	293.	0.02558
45.	0.02865	294.	0.02607
46.	0.02971	295.	0.0259
47.	0.02902	296.	0.02635
48.	0.03005	297.	0.02464
49.	0.02929	298.	0.02591
50.	0.03085	299.	0.02683
51.	0.02877	300.	0.0262
52.	0.03008	301.	0.02698
53.	0.02739	302.	0.02619
54.	0.02834	303.	0.02591
55.	0.02865	304.	0.02533
56.	0.02865	305.	0.02666
57.	0.02851	306.	0.02635
58.	0.02607	307.	0.02548
59.	0.0276	308.	0.02533
60.	0.02991	309.	0.02573
61.	0.02865	310.	0.02533
62.	0.02901	311.	0.02411
63.	0.02815	312.	0.02658
64.	0.02739	313.	0.02369
65.	0.02818	314.	0.02533
66.	0.02913	315.	0.02367
67.	0.02745	316.	0.02367
68.	0.02971	317.	0.02433
69.	0.02851	318.	0.0247
70.	0.02924	319.	0.02504
71.	0.02536	320.	0.02367
72.	0.03003	321.	0.02214
73.	0.02939	322.	0.02369
74.	0.02902	323.	0.02213
75.	0.02959	324.	0.02367
76.	0.02862	325.	0.02336
77.	0.02722	326.	0.02336
78.	0.03034	327.	0.02369
79.	0.02877	328.	0.02247
80.	0.02939	329.	0.02322
81.	0.03106	330.	0.02198
82.	0.02779	331.	0.02383
83.	0.02901	332.	0.02247
84.	0.02959	333.	0.02254
85.	0.02956	334.	0.02213
86.	0.03005	335.	0.02423
87.	0.03043	336.	0.02336
88.	0.03069	337.	0.02351
89.	0.02971	338.	0.02352
90.	0.02835	339.	0.02411
91.	0.02604	340.	0.02433
92.	0.01278	341.	0.02439
93.	0.06822	342.	0.02495
94.	0.01869	343.	0.02433
95.	0.01952	344.	0.02474

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
96.	0.01997	345.	0.0247
97.	0.01836	346.	0.02423
98.	0.0206	347.	0.02367
99.	0.02161	348.	0.02495
100.	0.01921	349.	0.02367
101.	0.01921	350.	0.024
102.	0.01968	351.	0.02187
103.	0.01807	352.	0.024
104.	0.01929	353.	0.02369
105.	0.01936	354.	0.02336
106.	0.01968	355.	0.02269
107.	0.01944	356.	0.02307
108.	0.02044	357.	0.02536
109.	0.01952	358.	0.01937
110.	0.02299	359.	0.04036
111.	0.02058	360.	0.03358
112.	0.0184	361.	0.03301
113.	0.02089	362.	0.03427
114.	0.01968	363.	0.03364
115.	0.02011	364.	0.03286
116.	0.02114	365.	0.03411
117.	0.02058	366.	0.03196
118.	0.02269	367.	0.03358
119.	0.02214	368.	0.03479
120.	0.02228	369.	0.03494
121.	0.02058	370.	0.03406
122.	0.02228	371.	0.03479
123.	0.02099	372.	0.0349
124.	0.02099	373.	0.03358
125.	0.02114	374.	0.03479
126.	0.01999	375.	0.03445
127.	0.01889	376.	0.0349
128.	0.01997	377.	0.03327
129.	0.01889	378.	0.03494
130.	0.02025	379.	0.0358
131.	0.02262	380.	0.03386
132.	0.02203	381.	0.03379
133.	0.0213	382.	0.03255
134.	0.02146	383.	0.03379
135.	0.02269	384.	0.03286
136.	0.02214	385.	0.03226
137.	0.01997	386.	0.03552
138.	0.02161	387.	0.03537
139.	0.0184	388.	0.03615
140.	0.02099	389.	0.03508
141.	0.02198	390.	0.03537
142.	0.02189	391.	0.03445
143.	0.02044	392.	0.03395
144.	0.02089	393.	0.03565
145.	0.01997	394.	0.03635
146.	0.02161	395.	0.03508
147.	0.02189	396.	0.03647
148.	0.0206	397.	0.03379
149.	0.02099	398.	0.03524
150.	0.02214	399.	0.03631
151.	0.02162	400.	0.03445
152.	0.02011	401.	0.03451
153.	0.01968	402.	0.03594
154.	0.01984	403.	0.03565
155.	0.02025	404.	0.03631
156.	0.02099	405.	0.03635
157.	0.02044	406.	0.03543
158.	0.02228	407.	0.0381
159.	0.02099	408.	0.03631
160.	0.02011	409.	0.03683
161.	0.02089	410.	0.03537

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
162.	0.02025	411.	0.03371
163.	0.02099	412.	0.03663
164.	0.02149	413.	0.03519
165.	0.02189	414.	0.03694
166.	0.02149	415.	0.03615
167.	0.02214	416.	0.03631
168.	0.02074	417.	0.03778
169.	0.02074	418.	0.03575
170.	0.02262	419.	0.03594
171.	0.02089	420.	0.03451
172.	0.02074	421.	0.03655
173.	0.01929	422.	0.03594
174.	0.02149	423.	0.03594
175.	0.02025	424.	0.03479
176.	0.02189	425.	0.03631
177.	0.02114	426.	0.03445
178.	0.02178	427.	0.03635
179.	0.02074	428.	0.03694
180.	0.02025	429.	0.03754
181.	0.02025	430.	0.03788
182.	0.0213	431.	0.03711
183.	0.02149	432.	0.0361
184.	0.02189	433.	0.03406
185.	0.02243	434.	0.03793
186.	0.02149	435.	0.03874
187.	0.02089	436.	0.03874
188.	0.01984	437.	0.03886
189.	0.02149	438.	0.03694
190.	0.02149	439.	0.03694
191.	0.02074	440.	0.0358
192.	0.02189	441.	0.03631
193.	0.01984	442.	0.03683
194.	0.01968	443.	0.0381
195.	0.02058	444.	0.03874
196.	0.02074	445.	0.03763
197.	0.01968	446.	0.03874
198.	0.02025	447.	0.03874
199.	0.01968	448.	0.039
200.	0.02099	449.	0.03941
201.	0.01889	450.	0.03916
202.	0.01929	451.	0.03763
203.	0.02044	452.	0.03961
204.	0.01984	453.	0.03916
205.	0.02189	454.	0.03655
206.	0.02189	455.	0.03866
207.	0.02178	456.	0.03886
208.	0.02203	457.	0.03968
209.	0.02044	458.	0.03886
210.	0.02189	459.	0.03886
211.	0.02228	460.	0.0381
212.	0.02099	461.	0.03874
213.	0.02262	462.	0.0384
214.	0.02146	463.	0.03886
215.	0.02214	464.	0.03916
216.	0.02099	465.	0.03793
217.	0.02162	466.	0.04061
218.	0.02099	467.	0.03886
219.	0.02089	468.	0.0384
220.	0.02173	469.	0.03886
221.	0.02058	470.	0.03916
222.	0.02099	471.	0.03947
223.	0.02114	472.	0.03711
224.	0.02236	473.	0.03788
225.	0.02114	474.	0.03968
226.	0.02299	475.	0.03733
227.	0.02262	476.	0.03763

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
228.	0.02114	477.	0.03711
229.	0.02262	478.	0.03851
230.	0.02666	479.	0.03565
231.	0.02415	480.	0.03558
232.	0.02336	481.	0.03947
233.	0.02299	482.	0.0381
234.	0.02369	483.	0.03711
235.	0.02395	484.	0.03788
236.	0.02221	485.	0.03694
237.	0.02352	486.	0.03828
238.	0.02415	487.	0.03961
239.	0.02411	488.	0.03711
240.	0.023	489.	0.03631
241.	0.02214	490.	0.03828
242.	0.02269	491.	0.03754
243.	0.0213	492.	0.03663
244.	0.02083	493.	0.03694
245.	0.02187	494.	0.03793
246.	0.02214	495.	0.03788
247.	0.02214	496.	0.03683
248.	0.02269		

SOLUTION

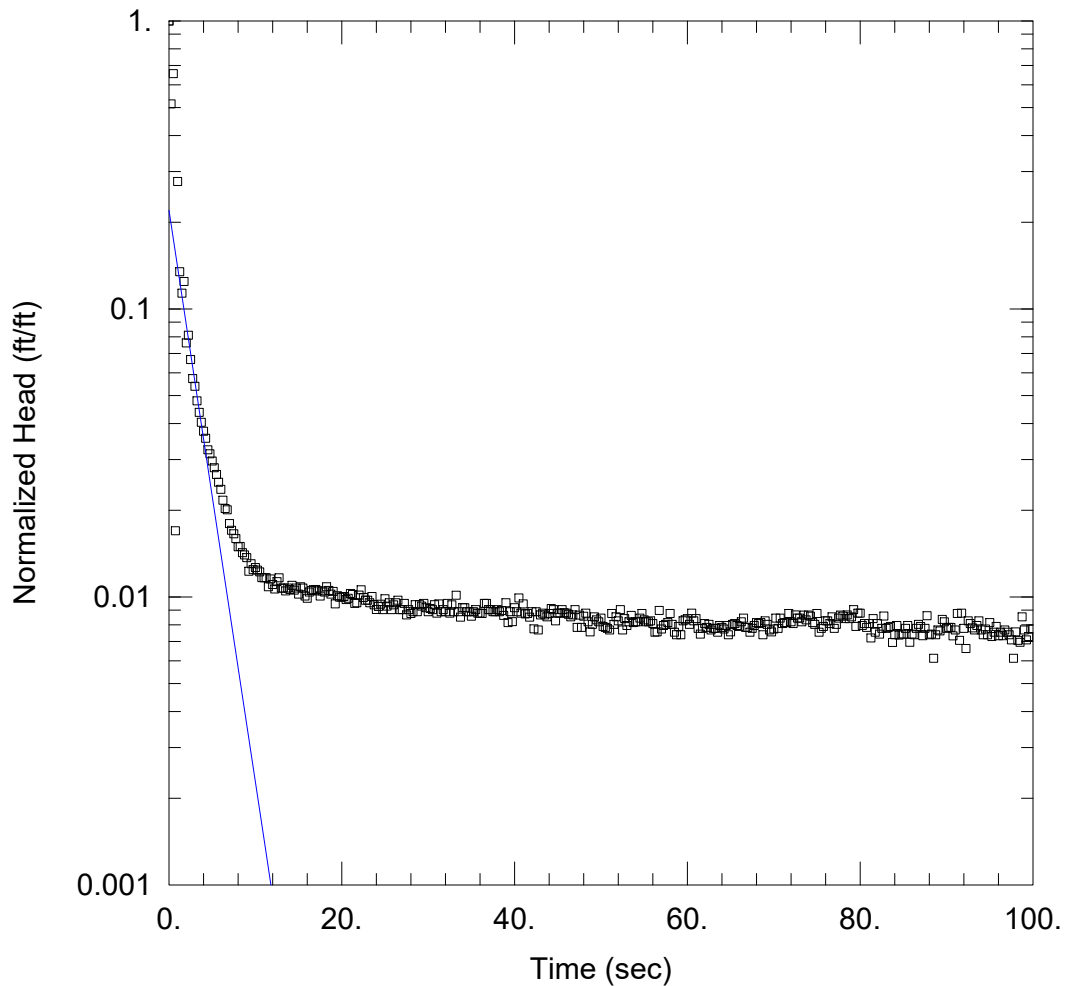
Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.46

VISUAL ESTIMATION RESULTS

Estimated Parameters

<u>Parameter</u>	<u>Estimate</u>	
K	47.8	ft/day
y0	0.454	ft

K = 0.01686 cm/sec
 T = K*b = 317.9 ft²/day (3.418 sq. cm/sec)



WELL TEST ANALYSIS

Data Set: C:\...\PZSC slug out.aqt
 Date: 03/08/22

Time: 14:52:07

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Well: PZ-SC
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 6.65 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-SC)

Initial Displacement: 2.54 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 6.65 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 50.71 ft/day

Solution Method: Bower-Rice
 y0 = 0.5588 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZSC slug out.a
 Date: 04/26/22
 Time: 09:14:48

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-SC

AQUIFER DATA

Saturated Thickness: 6.65 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-SC

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 2.54 ft
 Static Water Column Height: 6.65 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 2348

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	2.538	293.5	0.02075
0.25	1.308	293.8	0.02041
0.5	1.667	294.	0.01942
0.75	0.04312	294.3	0.01982
1.	0.7037	294.5	0.01958
1.25	0.342	294.8	0.01942
1.5	0.2881	295.	0.01989
1.75	0.3165	295.3	0.01982
2.	0.1936	295.5	0.01927
2.25	0.2059	295.8	0.02046
2.5	0.1695	296.	0.01885
2.75	0.1455	296.3	0.0203
3.	0.1369	296.5	0.02088
3.25	0.1219	296.8	0.01966
3.5	0.1111	297.	0.01996
3.75	0.1027	297.3	0.01996
4.	0.09554	297.5	0.02189
4.25	0.09025	297.8	0.02144
4.5	0.08236	298.	0.02175
4.75	0.07974	298.3	0.01884
5.	0.0753	298.5	0.02377
5.25	0.07131	298.8	0.02026
5.5	0.06766	299.	0.01851
5.75	0.06354	299.3	0.0206
6.	0.06005	299.5	0.01996
6.25	0.05506	299.8	0.01982
6.5	0.0515	300.	0.01821
6.75	0.05098	300.3	0.01898
7.	0.04569	300.5	0.01943
7.25	0.04327	300.8	0.02123

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
7.5	0.04205	301.	0.02085
7.75	0.04051	301.3	0.01966
8.	0.03793	301.5	0.0203
8.25	0.03805	301.8	0.01796
8.5	0.03618	302.	0.01884
8.75	0.03553	302.3	0.01837
9.	0.03475	302.5	0.0187
9.25	0.03119	302.8	0.01884
9.5	0.03311	303.	0.01927
9.75	0.0316	303.3	0.01821
10.	0.03212	303.5	0.01707
10.25	0.03148	303.8	0.01868
10.5	0.03103	304.	0.01806
10.75	0.02965	304.3	0.01717
11.	0.0296	304.5	0.01717
11.25	0.02965	304.8	0.01837
11.5	0.02755	305.	0.01837
11.75	0.02932	305.3	0.01855
12.	0.02804	305.5	0.01717
12.25	0.02707	305.8	0.01791
12.5	0.0287	306.	0.01821
12.75	0.0296	306.3	0.01806
13.	0.02722	306.5	0.01765
13.25	0.02726	306.8	0.01734
13.5	0.02664	307.	0.01717
13.75	0.02726	307.3	0.0173
14.	0.02696	307.5	0.01791
14.25	0.02787	307.8	0.01884
14.5	0.0268	308.	0.01855
14.75	0.02726	308.3	0.01835
15.	0.02596	308.5	0.01806
15.25	0.02755	308.8	0.01707
15.5	0.02726	309.	0.01822
15.75	0.02559	309.3	0.01868
16.	0.02513	309.5	0.01806
16.25	0.02641	309.8	0.01959
16.5	0.02675	310.	0.01715
16.75	0.02688	310.3	0.01868
17.	0.02696	310.5	0.01791
17.25	0.02664	310.8	0.0173
17.5	0.02559	311.	0.01765
17.75	0.02664	311.3	0.0173
18.	0.02641	311.5	0.01882
18.25	0.02753	311.8	0.01806
18.5	0.02675	312.	0.01911
18.75	0.02596	312.3	0.01835
19.	0.02656	312.5	0.0195
19.25	0.02401	312.8	0.01835
19.5	0.02563	313.	0.01822
19.75	0.02535	313.3	0.01806
20.	0.02535	313.5	0.01855
20.25	0.02547	313.8	0.01822
20.5	0.02487	314.	0.01959
20.75	0.02513	314.3	0.01765
21.	0.02612	314.5	0.01791
21.25	0.02591	314.8	0.01935
21.5	0.02411	315.	0.02
21.75	0.02425	315.3	0.01927
22.	0.02578	315.5	0.01935
22.25	0.02688	315.8	0.01911
22.5	0.02528	316.	0.01927
22.75	0.02473	316.3	0.0184
23.	0.02473	316.5	0.01927
23.25	0.02425	316.8	0.01881
23.5	0.02547	317.	0.01943
23.75	0.02384	317.3	0.01927

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
24.	0.02299	317.5	0.01896
24.25	0.02353	317.8	0.0179
24.5	0.02395	318.	0.01867
24.75	0.02295	318.3	0.02057
25.	0.02502	318.5	0.01881
25.25	0.02359	318.8	0.0182
25.5	0.02425	319.	0.01975
25.75	0.02295	319.3	0.01991
26.	0.02384	319.5	0.01975
26.25	0.02425	319.8	0.01975
26.5	0.02473	320.	0.02057
26.75	0.02294	320.3	0.01912
27.	0.02295	320.5	0.01881
27.25	0.02411	320.8	0.01895
27.5	0.02201	321.	0.02057
27.75	0.02294	321.3	0.02024
28.	0.02225	321.5	0.01881
28.25	0.02255	321.8	0.01912
28.5	0.02386	322.	0.01943
28.75	0.02258	322.3	0.01943
29.	0.02386	322.5	0.02142
29.25	0.02359	322.8	0.02077
29.5	0.02411	323.	0.01881
29.75	0.02329	323.3	0.02028
30.	0.02255	323.5	0.02
30.25	0.02314	323.8	0.01851
30.5	0.02295	324.	0.01867
30.75	0.02386	324.3	0.01791
31.	0.0223	324.5	0.01823
31.25	0.02401	324.8	0.01775
31.5	0.02258	325.	0.01791
31.75	0.02294	325.3	0.0192
32.	0.02258	325.5	0.01928
32.25	0.02411	325.8	0.0188
32.5	0.0223	326.	0.01823
32.75	0.02384	326.3	0.01928
33.	0.02258	326.5	0.0188
33.25	0.02575	326.8	0.01851
33.5	0.02255	327.	0.01865
33.75	0.0216	327.3	0.01791
34.	0.02329	327.5	0.01865
34.25	0.02329	327.8	0.01851
34.5	0.02258	328.	0.0175
34.75	0.02258	328.3	0.01805
35.	0.02177	328.5	0.01928
35.25	0.02255	328.8	0.01823
35.5	0.02295	329.	0.01837
35.75	0.0223	329.3	0.01949
36.	0.0223	329.5	0.01823
36.25	0.02225	329.8	0.01759
36.5	0.02411	330.	0.01791
36.75	0.02411	330.3	0.0166
37.	0.02295	330.5	0.01789
37.25	0.02294	330.8	0.0188
37.5	0.02258	331.	0.01949
37.75	0.02255	331.3	0.01808
38.	0.02295	331.5	0.01775
38.25	0.02255	331.8	0.01928
38.5	0.02278	332.	0.01823
38.75	0.02192	332.3	0.0192
39.	0.02425	332.5	0.01823
39.25	0.0207	332.8	0.01791
39.5	0.02258	333.	0.01805
39.75	0.02084	333.3	0.01597
40.	0.02329	333.5	0.01775
40.25	0.02255	333.8	0.01808

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
40.5	0.02518	334.	0.01851
40.75	0.0223	334.3	0.01865
41.	0.02401	334.5	0.01912
41.25	0.02216	334.8	0.01836
41.5	0.02225	335.	0.01881
41.75	0.0216	335.3	0.01683
42.	0.02258	335.5	0.017
42.25	0.01967	335.8	0.01822
42.5	0.02258	336.	0.01836
42.75	0.01951	336.3	0.01775
43.	0.02201	336.5	0.01836
43.25	0.0223	336.8	0.01934
43.5	0.02201	337.	0.0185
43.75	0.02166	337.3	0.01808
44.	0.02225	337.5	0.01775
44.25	0.02314	337.8	0.01881
44.5	0.02295	338.	0.01683
44.75	0.02097	338.3	0.01789
45.	0.0223	338.5	0.01934
45.25	0.0223	338.8	0.01912
45.5	0.02294	339.	0.01994
45.75	0.0224	339.3	0.0176
46.	0.0223	339.5	0.0185
46.25	0.0221	339.8	0.01969
46.5	0.02166	340.	0.01945
46.75	0.02201	340.3	0.01864
47.	0.02294	340.5	0.01964
47.25	0.01991	340.8	0.01918
47.5	0.02196	341.	0.0182
47.75	0.01991	341.3	0.01889
48.	0.02177	341.5	0.02046
48.25	0.0223	341.8	0.0182
48.5	0.02081	342.	0.0182
48.75	0.0192	342.3	0.01918
49.	0.0204	342.5	0.01953
49.25	0.02166	342.8	0.01953
49.5	0.02113	343.	0.01889
49.75	0.02081	343.3	0.01953
50.	0.02144	343.5	0.01806
50.25	0.02007	343.8	0.01948
50.5	0.01991	344.	0.0182
50.75	0.01976	344.3	0.01849
51.	0.01951	344.5	0.01948
51.25	0.02225	344.8	0.01953
51.5	0.0204	345.	0.01793
51.75	0.02166	345.3	0.01773
52.	0.02097	345.5	0.01866
52.25	0.02295	345.8	0.01929
52.5	0.01951	346.	0.01953
52.75	0.02136	346.3	0.01889
53.	0.02021	346.5	0.01897
53.25	0.02081	346.8	0.01849
53.5	0.02192	347.	0.01819
53.75	0.02068	347.3	0.01728
54.	0.02081	347.5	0.01982
54.25	0.02081	347.8	0.01773
54.5	0.02144	348.	0.01866
54.75	0.02225	348.3	0.01806
55.	0.02113	348.5	0.01902
55.25	0.02081	348.8	0.01929
55.5	0.02081	349.	0.01866
55.75	0.02097	349.3	0.01948
56.	0.02054	349.5	0.01866
56.25	0.01916	349.8	0.02047
56.5	0.0192	350.	0.01819
56.75	0.0228	350.3	0.01834

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
57.	0.01966	350.5	0.01758
57.25	0.02021	350.8	0.01902
57.5	0.0204	351.	0.01938
57.75	0.02068	351.3	0.02011
58.	0.02225	351.5	0.01948
58.25	0.0204	351.8	0.01938
58.5	0.01916	352.	0.01992
58.75	0.01877	352.3	0.01966
59.	0.02007	352.5	0.01914
59.25	0.01877	352.8	0.01819
59.5	0.02097	353.	0.01914
59.75	0.02113	353.3	0.01834
60.	0.02136	353.5	0.02032
60.25	0.0204	353.8	0.01819
60.5	0.0223	354.	0.01966
60.75	0.02097	354.3	0.01947
61.	0.02136	354.5	0.01744
61.25	0.01976	354.8	0.01966
61.5	0.01887	355.	0.01902
61.75	0.01976	355.3	0.01938
62.	0.02054	355.5	0.01992
62.25	0.01991	355.8	0.01951
62.5	0.0204	356.	0.0208
62.75	0.01951	356.3	0.01992
63.	0.01976	356.5	0.01914
63.25	0.01976	356.8	0.02075
63.5	0.01916	357.	0.01858
63.75	0.02021	357.3	0.02015
64.	0.01991	357.5	0.01933
64.25	0.01966	357.8	0.01947
64.5	0.02021	358.	0.01977
64.75	0.01877	358.3	0.01834
65.	0.0192	358.5	0.02051
65.25	0.0204	358.8	0.02035
65.5	0.02054	359.	0.0198
65.75	0.02021	359.3	0.01951
66.	0.02007	359.5	0.01947
66.25	0.02081	359.8	0.0209
66.5	0.02144	360.	0.01977
66.75	0.01991	360.3	0.01951
67.	0.01991	360.5	0.02035
67.25	0.01916	360.8	0.01964
67.5	0.01976	361.	0.02015
67.75	0.02021	361.3	0.01922
68.	0.02068	361.5	0.02016
68.25	0.02054	361.8	0.02051
68.5	0.02068	362.	0.01977
68.75	0.01877	362.3	0.02106
69.	0.02097	362.5	0.02016
69.25	0.0204	362.8	0.02075
69.5	0.01951	363.	0.0202
69.75	0.0192	363.3	0.02015
70.	0.01966	363.5	0.02035
70.25	0.02144	363.8	0.01917
70.5	0.01976	364.	0.01961
70.75	0.02144	364.3	0.02
71.	0.02054	364.5	0.01932
71.25	0.02068	364.8	0.02219
71.5	0.02068	365.	0.01922
71.75	0.02225	365.3	0.01788
72.	0.02081	365.5	0.02
72.25	0.02054	365.8	0.02059
72.5	0.02201	366.	0.01932
72.75	0.02144	366.3	0.02116
73.	0.02144	366.5	0.01964
73.25	0.02081	366.8	0.02

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
73.5	0.02196	367.	0.02059
73.75	0.02113	367.3	0.02
74.	0.02196	367.5	0.02131
74.25	0.02177	367.8	0.02156
74.5	0.02068	368.	0.02065
74.75	0.0204	368.3	0.02116
75.	0.02225	368.5	0.02208
75.25	0.01916	368.8	0.02059
75.5	0.01976	369.	0.02156
75.75	0.02007	369.3	0.02
76.	0.02097	369.5	0.02035
76.25	0.02097	369.8	0.01945
76.5	0.02054	370.	0.0209
76.75	0.02166	370.3	0.02116
77.	0.01976	370.5	0.02
77.25	0.0204	370.8	0.02075
77.5	0.02144	371.	0.01964
77.75	0.02196	371.3	0.0202
78.	0.02177	371.5	0.02208
78.25	0.02136	371.8	0.02075
78.5	0.02201	372.	0.02164
78.75	0.02136	372.3	0.01961
79.	0.02166	372.5	0.02134
79.25	0.02295	372.8	0.02101
79.5	0.02007	373.	0.02203
79.75	0.0223	373.3	0.02178
80.	0.0223	373.5	0.02192
80.25	0.02021	373.8	0.0202
80.5	0.02054	374.	0.0192
80.75	0.01991	374.3	0.01985
81.	0.02054	374.5	0.01985
81.25	0.01829	374.8	0.01948
81.5	0.02136	375.	0.0205
81.75	0.01916	375.3	0.01985
82.	0.02054	375.5	0.0214
82.25	0.01887	375.8	0.02101
82.5	0.01976	376.	0.02076
82.75	0.0218	376.3	0.02101
83.	0.01976	376.5	0.0205
83.25	0.01991	376.8	0.01984
83.5	0.02007	377.	0.02061
83.75	0.01766	377.3	0.02163
84.	0.01877	377.5	0.02061
84.25	0.02021	377.8	0.01984
84.5	0.01872	378.	0.02061
84.75	0.01887	378.3	0.0214
85.	0.01887	378.5	0.01985
85.25	0.01976	378.8	0.02101
85.5	0.02021	379.	0.02005
85.75	0.01767	379.3	0.02061
86.	0.01887	379.5	0.02086
86.25	0.01877	379.8	0.0205
86.5	0.01976	380.	0.02119
86.75	0.0204	380.3	0.02034
87.	0.02007	380.5	0.02028
87.25	0.01862	380.8	0.01985
87.5	0.01976	381.	0.02119
87.75	0.02185	381.3	0.02004
88.	0.01877	381.5	0.02059
88.25	0.01887	381.8	0.01812
88.5	0.01555	382.	0.02034
88.75	0.01877	382.3	0.02034
89.	0.01951	382.5	0.0197
89.25	0.01935	382.8	0.02028
89.5	0.02121	383.	0.01989
89.75	0.02081	383.3	0.02004

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
90.	0.01976	383.5	0.01989
90.25	0.01991	383.8	0.01841
90.5	0.01991	384.	0.01841
90.75	0.01861	384.3	0.01855
91.	0.01951	384.5	0.01871
91.25	0.02225	384.8	0.01917
91.5	0.01796	385.	0.01756
91.75	0.0223	385.3	0.01917
92.	0.01976	385.5	0.02004
92.25	0.01681	385.8	0.02044
92.5	0.02097	386.	0.01955
92.75	0.02054	386.3	0.01836
93.	0.01982	386.5	0.0186
93.25	0.01951	386.8	0.01885
93.5	0.02021	387.	0.0186
93.75	0.02097	387.3	0.01914
94.	0.01951	387.5	0.01914
94.25	0.01877	387.8	0.0197
94.5	0.01966	388.	0.01796
94.75	0.01877	388.3	0.02034
95.	0.02068	388.5	0.01914
95.25	0.01851	388.8	0.01756
95.5	0.01916	389.	0.01773
95.75	0.02005	389.3	0.01889
96.	0.01862	389.5	0.0186
96.25	0.01916	389.8	0.01825
96.5	0.01862	390.	0.01914
96.75	0.01951	390.3	0.01917
97.	0.01916	390.5	0.01889
97.25	0.01877	390.8	0.01974
97.5	0.01803	391.	0.01955
97.75	0.01555	391.3	0.0187
98.	0.0192	391.5	0.01773
98.25	0.01796	391.8	0.01955
98.5	0.01767	392.	0.01989
98.75	0.02166	392.3	0.01974
99.	0.01951	392.5	0.01885
99.25	0.01803	392.8	0.01796
99.5	0.01851	393.	0.01914
99.75	0.01966	393.3	0.01953
100.	0.01966	393.5	0.0207
100.3	0.01803	393.8	0.01973
100.5	0.01767	394.	0.0181
100.8	0.01916	394.3	0.01885
101.	0.01877	394.5	0.01914
101.3	0.01878	394.8	0.01989
101.5	0.01829	395.	0.01958
101.8	0.01803	395.3	0.02093
102.	0.01951	395.5	0.01788
102.3	0.01837	395.8	0.01917
102.5	0.01877	396.	0.01874
102.8	0.01916	396.3	0.02003
103.	0.01766	396.5	0.02028
103.3	0.01796	396.8	0.01726
103.5	0.01877	397.	0.0181
103.8	0.01829	397.3	0.01728
104.	0.01887	397.5	0.01902
104.3	0.01803	397.8	0.01874
104.5	0.02007	398.	0.01788
104.8	0.01803	398.3	0.01741
105.	0.01991	398.5	0.01874
105.3	0.01803	398.8	0.01844
105.5	0.01877	399.	0.01522
105.8	0.01991	399.3	0.01537
106.	0.01991	399.5	0.01796
106.3	0.01862	399.8	0.02088

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
106.5	0.02007	400.	0.01885
106.8	0.01916	400.3	0.01726
107.	0.01877	400.5	0.01844
107.3	0.01887	400.8	0.01855
107.5	0.01916	401.	0.0184
107.8	0.01877	401.3	0.01939
108.	0.0192	401.5	0.01741
108.3	0.01766	401.8	0.0184
108.5	0.01714	402.	0.01757
108.8	0.01877	402.3	0.01958
109.	0.01991	402.5	0.01821
109.3	0.01872	402.8	0.01917
109.5	0.0192	403.	0.01899
109.8	0.02021	403.3	0.01874
110.	0.01837	403.5	0.01902
110.3	0.01744	403.8	0.0187
110.5	0.01851	404.	0.01821
110.8	0.01872	404.3	0.01855
111.	0.01681	404.5	0.01899
111.3	0.01767	404.8	0.0203
111.5	0.01976	405.	0.01974
111.8	0.01916	405.3	0.01874
112.	0.02021	405.5	0.01757
112.3	0.01766	405.8	0.01917
112.5	0.01976	406.	0.01939
112.8	0.01951	406.3	0.01914
113.	0.01877	406.5	0.01902
113.3	0.01951	406.8	0.01973
113.5	0.01991	407.	0.01938
113.8	0.0192	407.3	0.01874
114.	0.01803	407.5	0.01914
114.3	0.01829	407.8	0.01741
114.5	0.01951	408.	0.01914
114.8	0.0192	408.3	0.01902
115.	0.01862	408.5	0.01955
115.3	0.01877	408.8	0.01885
115.5	0.01862	409.	0.01902
115.8	0.0192	409.3	0.01997
116.	0.01862	409.5	0.02028
116.3	0.01916	409.8	0.01974
116.5	0.01877	410.	0.0184
116.8	0.01851	410.3	0.01917
117.	0.0192	410.5	0.01958
117.3	0.01751	410.8	0.01958
117.5	0.01916	411.	0.01917
117.8	0.01803	411.3	0.02055
118.	0.01847	411.5	0.02013
118.3	0.02144	411.8	0.01939
118.5	0.01951	412.	0.01953
118.8	0.01851	412.3	0.01902
119.	0.01767	412.5	0.02019
119.3	0.01951	412.8	0.01914
119.5	0.02007	413.	0.02088
119.8	0.02081	413.3	0.02206
120.	0.0204	413.5	0.02088
120.3	0.01935	413.8	0.0207
120.5	0.02081	414.	0.02161
120.8	0.01966	414.3	0.0203
121.	0.02007	414.5	0.0186
121.3	0.02097	414.8	0.02003
121.5	0.01991	415.	0.01997
121.8	0.01751	415.3	0.0207
122.	0.01714	415.5	0.02103
122.3	0.01976	415.8	0.01974
122.5	0.0204	416.	0.01973
122.8	0.01847	416.3	0.01973

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
123.	0.02097	416.5	0.01974
123.3	0.01951	416.8	0.02173
123.5	0.02068	417.	0.02103
123.8	0.01976	417.3	0.0186
124.	0.01966	417.5	0.01955
124.3	0.01851	417.8	0.01939
124.5	0.01877	418.	0.02055
124.8	0.01916	418.3	0.02109
125.	0.01916	418.5	0.0187
125.3	0.01904	418.8	0.01938
125.5	0.01976	419.	0.0203
125.8	0.01851	419.3	0.02103
126.	0.01872	419.5	0.02103
126.3	0.01916	419.8	0.01974
126.5	0.01837	420.	0.02103
126.8	0.01976	420.3	0.02161
127.	0.01862	420.5	0.02044
127.3	0.02039	420.8	0.01953
127.5	0.01829	421.	0.01914
127.8	0.01847	421.3	0.01974
128.	0.01887	421.5	0.01955
128.3	0.01916	421.8	0.02055
128.5	0.01766	422.	0.02013
128.8	0.01991	422.3	0.01955
129.	0.01861	422.5	0.02045
129.3	0.01861	422.8	0.01889
129.5	0.01681	423.	0.01969
129.8	0.01781	423.3	0.01955
130.	0.02007	423.5	0.02103
130.3	0.01951	423.8	0.01917
130.5	0.01813	424.	0.02085
130.8	0.01635	424.3	0.02045
131.	0.01766	424.5	0.0207
131.3	0.01951	424.8	0.02085
131.5	0.01951	425.	0.02086
131.8	0.01796	425.3	0.02109
132.	0.01728	425.5	0.02019
132.3	0.01961	425.8	0.02109
132.5	0.01916	426.	0.02125
132.8	0.0192	426.3	0.02109
133.	0.01796	426.5	0.01917
133.3	0.01872	426.8	0.02103
133.5	0.01744	427.	0.02045
133.8	0.01976	427.3	0.02109
134.	0.01951	427.5	0.02085
134.3	0.01822	427.8	0.02194
134.5	0.01787	428.	0.02173
134.8	0.01877	428.3	0.02044
135.	0.01951	428.5	0.02028
135.3	0.01862	428.8	0.02109
135.5	0.02068	429.	0.02188
135.8	0.01935	429.3	0.02173
136.	0.01872	429.5	0.02194
136.3	0.02113	429.8	0.02109
136.5	0.01976	430.	0.02085
136.8	0.01861	430.3	0.02044
137.	0.01901	430.5	0.02194
137.3	0.01904	430.8	0.02133
137.5	0.01991	431.	0.02103
137.8	0.02039	431.3	0.02148
138.	0.01916	431.5	0.02004
138.3	0.02039	431.8	0.02173
138.5	0.0204	432.	0.02119
138.8	0.02066	432.3	0.02219
139.	0.0204	432.5	0.021
139.3	0.01935	432.8	0.0207

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
139.5	0.01935	433.	0.02044
139.8	0.02144	433.3	0.0221
140.	0.0192	433.5	0.0207
140.3	0.02007	433.8	0.02161
140.5	0.02005	434.	0.01989
140.8	0.02098	434.3	0.02013
141.	0.01992	434.5	0.02161
141.3	0.01976	434.8	0.02206
141.5	0.01935	435.	0.0197
141.8	0.02068	435.3	0.02234
142.	0.01961	435.5	0.02004
142.3	0.01961	435.8	0.0207
142.5	0.02097	436.	0.021
142.8	0.02121	436.3	0.01953
143.	0.02021	436.5	0.02019
143.3	0.02278	436.8	0.02133
143.5	0.01961	437.	0.02085
143.8	0.01951	437.3	0.02271
144.	0.01976	437.5	0.0207
144.3	0.01951	437.8	0.0207
144.5	0.01916	438.	0.02133
144.8	0.01862	438.3	0.02045
145.	0.01992	438.5	0.0207
145.3	0.01872	438.8	0.0207
145.5	0.01951	439.	0.02109
145.8	0.01904	439.3	0.02177
146.	0.01935	439.5	0.02133
146.3	0.02177	439.8	0.01989
146.5	0.02166	440.	0.01914
146.8	0.02025	440.3	0.02133
147.	0.02098	440.5	0.02085
147.3	0.01976	440.8	0.02019
147.5	0.02201	441.	0.02085
147.8	0.02005	441.3	0.02161
148.	0.0218	441.5	0.02013
148.3	0.02097	441.8	0.0207
148.5	0.01951	442.	0.02265
148.8	0.01976	442.3	0.02161
149.	0.01847	442.5	0.02148
149.3	0.01951	442.8	0.02271
149.5	0.01861	443.	0.02148
149.8	0.01901	443.3	0.02103
150.	0.01951	443.5	0.02125
150.3	0.01976	443.8	0.02013
150.5	0.01992	444.	0.02148
150.8	0.02068	444.3	0.02019
151.	0.01822	444.5	0.02148
151.3	0.02081	444.8	0.02085
151.5	0.02066	445.	0.01989
151.8	0.02052	445.3	0.02103
152.	0.01872	445.5	0.02044
152.3	0.01961	445.8	0.02044
152.5	0.02054	446.	0.02148
152.8	0.02098	446.3	0.02173
153.	0.02052	446.5	0.02044
153.3	0.01851	446.8	0.02161
153.5	0.02136	447.	0.02133
153.8	0.01991	447.3	0.02044
154.	0.01904	447.5	0.02133
154.3	0.02121	447.8	0.02173
154.5	0.01877	448.	0.02234
154.8	0.01847	448.3	0.02206
155.	0.01861	448.5	0.02059
155.3	0.01992	448.8	0.02103
155.5	0.01951	449.	0.02019
155.8	0.01904	449.3	0.02133

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
156.	0.01872	449.5	0.02013
156.3	0.01992	449.8	0.02103
156.5	0.01951	450.	0.02013
156.8	0.01961	450.3	0.02161
157.	0.01976	450.5	0.02044
157.3	0.02005	450.8	0.02103
157.5	0.01951	451.	0.02194
157.8	0.01901	451.3	0.02161
158.	0.01951	451.5	0.02044
158.3	0.01787	451.8	0.02045
158.5	0.02005	452.	0.02045
158.8	0.01901	452.3	0.02103
159.	0.01976	452.5	0.02133
159.3	0.01961	452.8	0.02044
159.5	0.01861	453.	0.02206
159.8	0.01992	453.3	0.02161
160.	0.02081	453.5	0.02173
160.3	0.02052	453.8	0.02132
160.5	0.02066	454.	0.02271
160.8	0.01951	454.3	0.02133
161.	0.01961	454.5	0.02161
161.3	0.02005	454.8	0.02109
161.5	0.02128	455.	0.01989
161.8	0.02066	455.3	0.02132
162.	0.02052	455.5	0.02148
162.3	0.02098	455.8	0.02133
162.5	0.01992	456.	0.02161
162.8	0.01992	456.3	0.02146
163.	0.02052	456.5	0.02161
163.3	0.02052	456.8	0.02256
163.5	0.01976	457.	0.02238
163.8	0.02005	457.3	0.02241
164.	0.01951	457.5	0.02085
164.3	0.0218	457.8	0.02044
164.5	0.02121	458.	0.02132
164.8	0.01872	458.3	0.02238
165.	0.02039	458.5	0.023
165.3	0.02066	458.8	0.02206
165.5	0.02121	459.	0.02334
165.8	0.02039	459.3	0.02146
166.	0.0215	459.5	0.02256
166.3	0.01976	459.8	0.02194
166.5	0.01951	460.	0.02347
166.8	0.02039	460.3	0.02241
167.	0.02025	460.5	0.02238
167.3	0.02128	460.8	0.02256
167.5	0.02052	461.	0.02235
167.8	0.02098	461.3	0.02323
168.	0.02136	461.5	0.02323
168.3	0.02121	461.8	0.0225
168.5	0.01976	462.	0.02019
168.8	0.02128	462.3	0.02088
169.	0.02066	462.5	0.02241
169.3	0.02052	462.8	0.02179
169.5	0.01951	463.	0.023
169.8	0.02037	463.3	0.02385
170.	0.02098	463.5	0.0225
170.3	0.01904	463.8	0.02109
170.5	0.02128	464.	0.0225
170.8	0.02128	464.3	0.02235
171.	0.02052	464.5	0.02179
171.3	0.01976	464.8	0.02255
171.5	0.02039	465.	0.02045
171.8	0.02081	465.3	0.02241
172.	0.01961	465.5	0.02148
172.3	0.0218	465.8	0.02203

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
172.5	0.02161	466.	0.02241
172.8	0.01951	466.3	0.02456
173.	0.01992	466.5	0.02285
173.3	0.02066	466.8	0.02241
173.5	0.0218	467.	0.0207
173.8	0.02098	467.3	0.02222
174.	0.02005	467.5	0.02256
174.3	0.02025	467.8	0.02238
174.5	0.02121	468.	0.02219
174.8	0.0215	468.3	0.02222
175.	0.01901	468.5	0.02235
175.3	0.02081	468.8	0.02478
175.5	0.0218	469.	0.02235
175.8	0.02161	469.3	0.02307
176.	0.01992	469.5	0.02382
176.3	0.02214	469.8	0.02366
176.5	0.0221	470.	0.02323
176.8	0.02185	470.3	0.02385
177.	0.02081	470.5	0.02323
177.3	0.01935	470.8	0.02256
177.5	0.02039	471.	0.02194
177.8	0.02098	471.3	0.02271
178.	0.02121	471.5	0.02161
178.3	0.0224	471.8	0.02109
178.5	0.02121	472.	0.02323
178.8	0.0218	472.3	0.02323
179.	0.02081	472.5	0.02238
179.3	0.0221	472.8	0.02219
179.5	0.02039	473.	0.02173
179.8	0.02338	473.3	0.02173
180.	0.02005	473.5	0.023
180.3	0.02052	473.8	0.02382
180.5	0.0218	474.	0.02148
180.8	0.02039	474.3	0.02355
181.	0.02242	474.5	0.02177
181.3	0.02278	474.8	0.02194
181.5	0.0221	475.	0.02161
181.8	0.02214	475.3	0.02173
182.	0.0205	475.5	0.02045
182.3	0.02298	475.8	0.02103
182.5	0.02121	476.	0.02148
182.8	0.02344	476.3	0.02109
183.	0.02199	476.5	0.02103
183.3	0.02161	476.8	0.01917
183.5	0.02081	477.	0.01917
183.8	0.02105	477.3	0.0221
184.	0.02165	477.5	0.01969
184.3	0.02195	477.8	0.02148
184.5	0.02025	478.	0.02028
184.8	0.02146	478.3	0.02219
185.	0.02185	478.5	0.02045
185.3	0.02146	478.8	0.02148
185.5	0.02263	479.	0.02109
185.8	0.02146	479.3	0.02161
186.	0.0221	479.5	0.0221
186.3	0.0205	479.8	0.02206
186.5	0.0217	480.	0.02163
186.8	0.02135	480.3	0.02234
187.	0.02214	480.5	0.02188
187.3	0.02322	480.8	0.0221
187.5	0.02263	481.	0.02133
187.8	0.02224	481.3	0.02219
188.	0.02264	481.5	0.02148
188.3	0.02146	481.8	0.02253
188.5	0.0205	482.	0.02188
188.8	0.02146	482.3	0.0221

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
189.	0.02009	482.5	0.021
189.3	0.02098	482.8	0.02206
189.5	0.02121	483.	0.02125
189.8	0.02227	483.3	0.02234
190.	0.0217	483.5	0.02234
190.3	0.02298	483.8	0.02234
190.5	0.02113	484.	0.02177
190.8	0.02165	484.3	0.02163
191.	0.02082	484.5	0.02234
191.3	0.02224	484.8	0.0221
191.5	0.02113	485.	0.021
191.8	0.0205	485.3	0.02125
192.	0.02146	485.5	0.0221
192.3	0.02037	485.8	0.02188
192.5	0.02037	486.	0.02148
192.8	0.02146	486.3	0.02287
193.	0.02135	486.5	0.02163
193.3	0.0199	486.8	0.02253
193.5	0.02113	487.	0.02125
193.8	0.01976	487.3	0.021
194.	0.02023	487.5	0.02163
194.3	0.0217	487.8	0.02164
194.5	0.02105	488.	0.02061
194.8	0.02212	488.3	0.02222
195.	0.0217	488.5	0.02287
195.3	0.02227	488.8	0.02316
195.5	0.02098	489.	0.02271
195.8	0.0199	489.3	0.02222
196.	0.02224	489.5	0.02339
196.3	0.02165	489.8	0.02354
196.5	0.02199	490.	0.02116
196.8	0.02165	490.3	0.02253
197.	0.02082	490.5	0.02269
197.3	0.0217	490.8	0.02386
197.5	0.0217	491.	0.02265
197.8	0.02209	491.3	0.02265
198.	0.02179	491.5	0.02269
198.3	0.02268	491.8	0.02125
198.5	0.02113	492.	0.0214
198.8	0.02395	492.3	0.02238
199.	0.02154	492.5	0.02119
199.3	0.02195	492.8	0.02075
199.5	0.02179	493.	0.02076
199.8	0.02035	493.3	0.0214
200.	0.0217	493.5	0.02249
200.3	0.02212	493.8	0.02249
200.5	0.0213	494.	0.02178
200.8	0.0217	494.3	0.0205
201.	0.02098	494.5	0.02203
201.3	0.02379	494.8	0.02134
201.5	0.02264	495.	0.02287
201.8	0.02227	495.3	0.02188
202.	0.02183	495.5	0.02156
202.3	0.02263	495.8	0.02044
202.5	0.02212	496.	0.02075
202.8	0.02082	496.3	0.02164
203.	0.0213	496.5	0.02134
203.3	0.0215	496.8	0.02192
203.5	0.02209	497.	0.02238
203.8	0.0213	497.3	0.02164
204.	0.02067	497.5	0.02044
204.3	0.02119	497.8	0.01948
204.5	0.02248	498.	0.02076
204.8	0.02307	498.3	0.01985
205.	0.02179	498.5	0.02178
205.3	0.0215	498.8	0.02269

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
205.5	0.02224	499.	0.02035
205.8	0.02248	499.3	0.02287
206.	0.02082	499.5	0.02178
206.3	0.02154	499.8	0.02249
206.5	0.02098	500.	0.02241
206.8	0.02098	500.3	0.02238
207.	0.02179	500.5	0.02116
207.3	0.02209	500.8	0.02134
207.5	0.02164	501.	0.0202
207.8	0.02119	501.3	0.02116
208.	0.02154	501.5	0.02065
208.3	0.02074	501.8	0.0205
208.5	0.0209	502.	0.01984
208.8	0.02268	502.3	0.01945
209.	0.0215	502.5	0.02116
209.3	0.02268	502.8	0.02131
209.5	0.02212	503.	0.0202
209.8	0.02313	503.3	0.02116
210.	0.0215	503.5	0.02116
210.3	0.02183	503.8	0.02101
210.5	0.02139	504.	0.02156
210.8	0.02193	504.3	0.02179
211.	0.02098	504.5	0.02179
211.3	0.02154	504.8	0.0209
211.5	0.02247	505.	0.02134
211.8	0.02119	505.3	0.0202
212.	0.02098	505.5	0.02044
212.3	0.02098	505.8	0.02149
212.5	0.02035	506.	0.02
212.8	0.02248	506.3	0.02065
213.	0.02209	506.5	0.02131
213.3	0.02247	506.8	0.02225
213.5	0.0215	507.	0.02116
213.8	0.02247	507.3	0.02156
214.	0.02313	507.5	0.02116
214.3	0.02193	507.8	0.02241
214.5	0.02098	508.	0.02131
214.8	0.02154	508.3	0.02134
215.	0.02168	508.5	0.02131
215.3	0.02083	508.8	0.0205
215.5	0.02212	509.	0.02005
215.8	0.02083	509.3	0.02075
216.	0.02183	509.5	0.02238
216.3	0.02119	509.8	0.0202
216.5	0.02283	510.	0.0209
216.8	0.02168	510.3	0.0202
217.	0.02232	510.5	0.02156
217.3	0.02168	510.8	0.02
217.5	0.02139	511.	0.02116
217.8	0.02183	511.3	0.0209
218.	0.02248	511.5	0.02179
218.3	0.02119	511.8	0.0202
218.5	0.02183	512.	0.01945
218.8	0.02115	512.3	0.0202
219.	0.02209	512.5	0.02156
219.3	0.02283	512.8	0.02131
219.5	0.02051	513.	0.02092
219.8	0.02134	513.3	0.02156
220.	0.02115	513.5	0.0202
220.3	0.02035	513.8	0.01935
220.5	0.02164	514.	0.0202
220.8	0.0215	514.3	0.02101
221.	0.02115	514.5	0.02241
221.3	0.02051	514.8	0.0202
221.5	0.02098	515.	0.01935
221.8	0.02164	515.3	0.02101

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
222.	0.02164	515.5	0.02116
222.3	0.02168	515.8	0.02149
222.5	0.02183	516.	0.02208
222.8	0.02134	516.3	0.0209
223.	0.02115	516.5	0.0202
223.3	0.01978	516.8	0.02059
223.5	0.02164	517.	0.0202
223.8	0.02098	517.3	0.02101
224.	0.02139	517.5	0.02044
224.3	0.02134	517.8	0.02194
224.5	0.02035	518.	0.02092
224.8	0.02083	518.3	0.02101
225.	0.02104	518.5	0.01984
225.3	0.02134	518.8	0.02065
225.5	0.02074	519.	0.02192
225.8	0.02104	519.3	0.02035
226.	0.02134	519.5	0.02044
226.3	0.02253	519.8	0.02075
226.5	0.02134	520.	0.02241
226.8	0.02139	520.3	0.02249
227.	0.02139	520.5	0.0205
227.3	0.02168	520.8	0.01945
227.5	0.02134	521.	0.02059
227.8	0.02134	521.3	0.0214
228.	0.02164	521.5	0.0214
228.3	0.02134	521.8	0.02076
228.5	0.02074	522.	0.02075
228.8	0.02193	522.3	0.0202
229.	0.01978	522.5	0.02134
229.3	0.02104	522.8	0.02192
229.5	0.02051	523.	0.0202
229.8	0.02115	523.3	0.02134
230.	0.02253	523.5	0.02269
230.3	0.02115	523.8	0.02225
230.5	0.02164	524.	0.02116
230.8	0.02074	524.3	0.01916
231.	0.02104	524.5	0.02044
231.3	0.02115	524.8	0.02076
231.5	0.02083	525.	0.02101
231.8	0.02196	525.3	0.02269
232.	0.02168	525.5	0.02238
232.3	0.02115	525.8	0.02116
232.5	0.01992	526.	0.02188
232.8	0.02051	526.3	0.02188
233.	0.02139	526.5	0.02354
233.3	0.02193	526.8	0.02116
233.5	0.02196	527.	0.02157
233.8	0.02193	527.3	0.02101
234.	0.02134	527.5	0.02149
234.3	0.02134	527.8	0.02016
234.5	0.02134	528.	0.02132
234.8	0.0202	528.3	0.02051
235.	0.02074	528.5	0.02163
235.3	0.02083	528.8	0.01992
235.5	0.02196	529.	0.02148
235.8	0.02104	529.3	0.0202
236.	0.02059	529.5	0.0205
236.3	0.02139	529.8	0.02116
236.5	0.02104	530.	0.02225
236.8	0.02134	530.3	0.02134
237.	0.02164	530.5	0.02076
237.3	0.02067	530.8	0.02134
237.5	0.02134	531.	0.02061
237.8	0.02268	531.3	0.02119
238.	0.02152	531.5	0.02188
238.3	0.02178	531.8	0.02101

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
238.5	0.02168	532.	0.02059
238.8	0.01977	532.3	0.0221
239.	0.02168	532.5	0.02238
239.3	0.02074	532.8	0.02004
239.5	0.02164	533.	0.02061
239.8	0.02123	533.3	0.02059
240.	0.02196	533.5	0.02177
240.3	0.0202	533.8	0.02125
240.5	0.02168	534.	0.02028
240.8	0.02019	534.3	0.01905
241.	0.02123	534.5	0.02271
241.3	0.02148	534.8	0.02163
241.5	0.02168	535.	0.02163
241.8	0.02035	535.3	0.02339
242.	0.02152	535.5	0.02192
242.3	0.02059	535.8	0.02148
242.5	0.0193	536.	0.02148
242.8	0.02074	536.3	0.02125
243.	0.02123	536.5	0.02188
243.3	0.02067	536.8	0.02119
243.5	0.02168	537.	0.02177
243.8	0.02083	537.3	0.02125
244.	0.02134	537.5	0.02125
244.3	0.02152	537.8	0.02148
244.5	0.02193	538.	0.02163
244.8	0.02181	538.3	0.0221
245.	0.02148	538.5	0.02397
245.3	0.02148	538.8	0.02125
245.5	0.02152	539.	0.02163
245.8	0.02168	539.3	0.02177
246.	0.02216	539.5	0.02125
246.3	0.02088	539.8	0.02177
246.5	0.02181	540.	0.021
246.8	0.02019	540.3	0.02177
247.	0.02148	540.5	0.02177
247.3	0.02237	540.8	0.021
247.5	0.02237	541.	0.02249
247.8	0.02276	541.3	0.02061
248.	0.02309	541.5	0.02188
248.3	0.02334	541.8	0.02086
248.5	0.02152	542.	0.01989
248.8	0.02108	542.3	0.02125
249.	0.02148	542.5	0.02225
249.3	0.02181	542.8	0.02238
249.5	0.02099	543.	0.02163
249.8	0.02148	543.3	0.02188
250.	0.02178	543.5	0.02163
250.3	0.02123	543.8	0.02177
250.5	0.02162	544.	0.021
250.8	0.02067	544.3	0.02116
251.	0.02178	544.5	0.01933
251.3	0.02237	544.8	0.02119
251.5	0.02088	545.	0.0214
251.8	0.02036	545.3	0.02163
252.	0.02118	545.5	0.02225
252.3	0.02237	545.8	0.02086
252.5	0.02099	546.	0.02188
252.8	0.01991	546.3	0.02125
253.	0.02004	546.5	0.02028
253.3	0.02216	546.8	0.0197
253.5	0.02165	547.	0.0202
253.8	0.02084	547.3	0.02119
254.	0.01944	547.5	0.02249
254.3	0.02084	547.8	0.02116
254.5	0.01989	548.	0.02086
254.8	0.02165	548.3	0.02119

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
255.	0.01744	548.5	0.02163
255.3	0.01977	548.8	0.02188
255.5	0.02162	549.	0.0235
255.8	0.02052	549.3	0.02125
256.	0.02202	549.5	0.02148
256.3	0.01784	549.8	0.02125
256.5	0.02052	550.	0.02271
256.8	0.02084	550.3	0.02125
257.	0.0202	550.5	0.02163
257.3	0.02108	550.8	0.02119
257.5	0.02084	551.	0.0237
257.8	0.01948	551.3	0.02177
258.	0.02165	551.5	0.02253
258.3	0.0177	551.8	0.02287
258.5	0.02202	552.	0.02177
258.8	0.01858	552.3	0.02119
259.	0.02132	552.5	0.02339
259.3	0.01915	552.8	0.02163
259.5	0.01975	553.	0.02188
259.8	0.01858	553.3	0.02222
260.	0.01899	553.5	0.02238
260.3	0.01948	553.8	0.02188
260.5	0.01989	554.	0.02316
260.8	0.0202	554.3	0.02253
261.	0.01874	554.5	0.02253
261.3	0.01946	554.8	0.02265
261.5	0.01874	555.	0.02222
261.8	0.02084	555.3	0.02265
262.	0.01759	555.5	0.02125
262.3	0.01858	555.8	0.02188
262.5	0.01975	556.	0.02222
262.8	0.01975	556.3	0.021
263.	0.01915	556.5	0.02164
263.3	0.01989	556.8	0.02163
263.5	0.01962	557.	0.02004
263.8	0.01989	557.3	0.02119
264.	0.02084	557.5	0.02177
264.3	0.01874	557.8	0.0221
264.5	0.01858	558.	0.02086
264.8	0.01913	558.3	0.02177
265.	0.01948	558.5	0.0221
265.3	0.01928	558.8	0.02163
265.5	0.01962	559.	0.021
265.8	0.01946	559.3	0.02148
266.	0.01932	559.5	0.02013
266.3	0.0177	559.8	0.02028
266.5	0.01899	560.	0.02061
266.8	0.01948	560.3	0.01969
267.	0.01808	560.5	0.02487
267.3	0.01948	560.8	0.02034
267.5	0.01959	561.	0.02125
267.8	0.01883	561.3	0.01933
268.	0.01899	561.5	0.021
268.3	0.01843	561.8	0.01969
268.5	0.01913	562.	0.02034
268.8	0.01913	562.3	0.02061
269.	0.01883	562.5	0.02034
269.3	0.01946	562.8	0.01989
269.5	0.01899	563.	0.02061
269.8	0.01883	563.3	0.02034
270.	0.02044	563.5	0.02034
270.3	0.01973	563.8	0.02125
270.5	0.02005	564.	0.0221
270.8	0.01899	564.3	0.02125
271.	0.02121	564.5	0.02125
271.3	0.01973	564.8	0.02028

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
271.5	0.01867	565.	0.02119
271.8	0.02093	565.3	0.02059
272.	0.01867	565.5	0.02125
272.3	0.02036	565.8	0.02061
272.5	0.01959	566.	0.02222
272.8	0.01962	566.3	0.02086
273.	0.01958	566.5	0.02028
273.3	0.02005	566.8	0.02086
273.5	0.02005	567.	0.01969
273.8	0.02068	567.3	0.02004
274.	0.02093	567.5	0.02253
274.3	0.02005	567.8	0.0221
274.5	0.02005	568.	0.02188
274.8	0.01932	568.3	0.021
275.	0.02036	568.5	0.02086
275.3	0.01989	568.8	0.02163
275.5	0.02005	569.	0.02119
275.8	0.02036	569.3	0.02086
276.	0.02005	569.5	0.02177
276.3	0.01959	569.8	0.02222
276.5	0.02072	570.	0.02253
276.8	0.02121	570.3	0.02206
277.	0.01973	570.5	0.02086
277.3	0.02088	570.8	0.02061
277.5	0.02093	571.	0.01969
277.8	0.01973	571.3	0.02059
278.	0.01932	571.5	0.02119
278.3	0.02146	571.8	0.02119
278.5	0.0193	572.	0.0221
278.8	0.01973	572.3	0.02222
279.	0.01852	572.5	0.02028
279.3	0.01897	572.8	0.02119
279.5	0.01944	573.	0.019
279.8	0.01958	573.3	0.02028
280.	0.01827	573.5	0.01933
280.3	0.01852	573.8	0.0207
280.5	0.01728	574.	0.02005
280.8	0.01884	574.3	0.01969
281.	0.01897	574.5	0.01889
281.3	0.01958	574.8	0.0197
281.5	0.01843	575.	0.02148
281.8	0.01764	575.3	0.01933
282.	0.0193	575.5	0.02188
282.3	0.01836	575.8	0.0221
282.5	0.01917	576.	0.01905
282.8	0.01884	576.3	0.02061
283.	0.01827	576.5	0.02177
283.3	0.01852	576.8	0.02161
283.5	0.01852	577.	0.02061
283.8	0.0193	577.3	0.02075
284.	0.01957	577.5	0.02188
284.3	0.01764	577.8	0.02059
284.5	0.01792	578.	0.01955
284.8	0.01884	578.3	0.02086
285.	0.01917	578.5	0.02148
285.3	0.01812	578.8	0.02133
285.5	0.01852	579.	0.02148
285.8	0.01868	579.3	0.01969
286.	0.01868	579.5	0.01953
286.3	0.01868	579.8	0.02045
286.5	0.01929	580.	0.02028
286.8	0.01852	580.3	0.02045
287.	0.01852	580.5	0.01917
287.3	0.01812	580.8	0.02028
287.5	0.01929	581.	0.0207
287.8	0.01836	581.3	0.01969

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
288.	0.01777	581.5	0.01955
288.3	0.01868	581.8	0.01989
288.5	0.01997	582.	0.02109
288.8	0.01836	582.3	0.02161
289.	0.01708	582.5	0.02013
289.3	0.01866	582.8	0.01914
289.5	0.01974	583.	0.02133
289.8	0.01868	583.3	0.02103
290.	0.02027	583.5	0.01974
290.3	0.01853	583.8	0.02044
290.5	0.01913	584.	0.02045
290.8	0.01927	584.3	0.02148
291.	0.01866	584.5	0.0207
291.3	0.02139	584.8	0.01974
291.5	0.02022	585.	0.02085
291.8	0.01982	585.3	0.01939
292.	0.01982	585.5	0.02085
292.3	0.01942	585.8	0.02109
292.5	0.01958	586.	0.0207
292.8	0.01837	586.3	0.02085
293.	0.01885	586.5	0.02045
293.3	0.02022	586.8	0.02019

SOLUTION

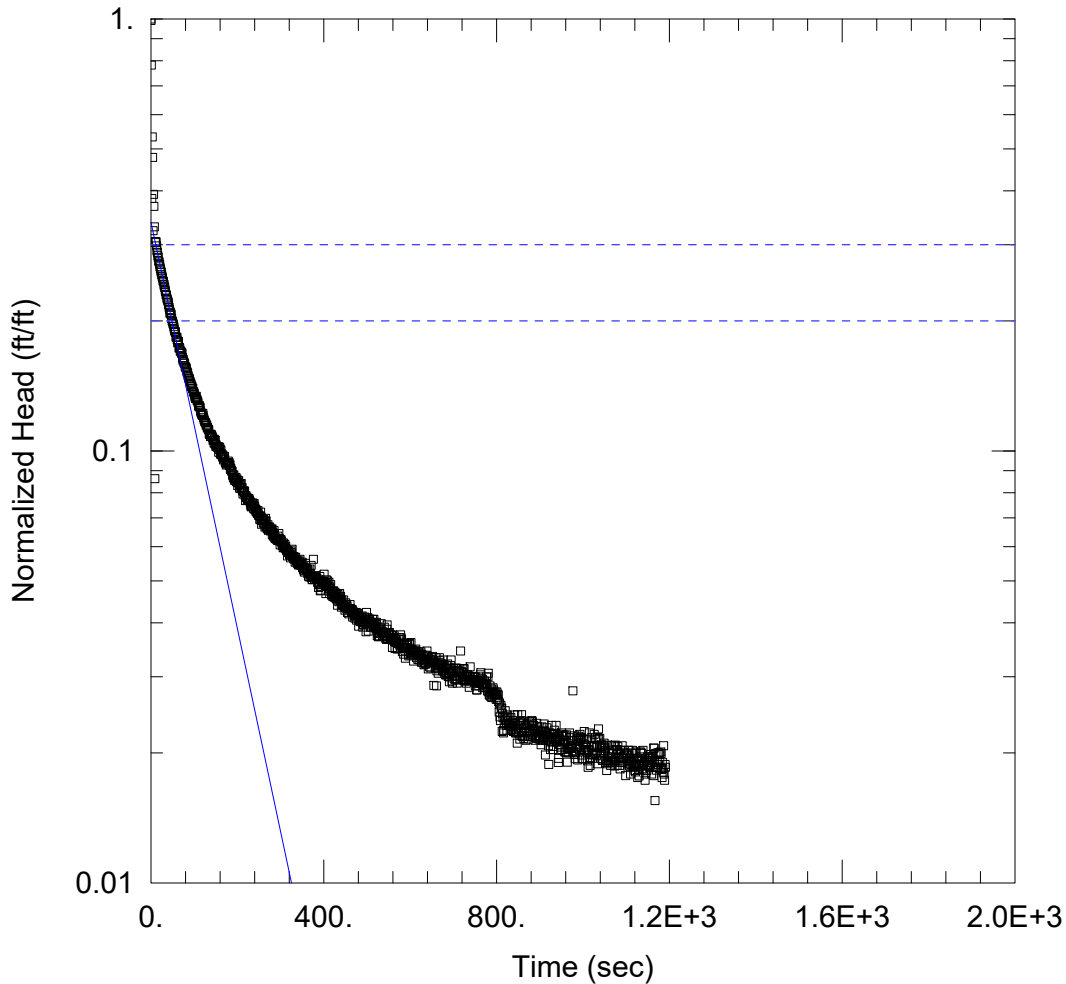
Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.46

VISUAL ESTIMATION RESULTS

Estimated Parameters

<u>Parameter</u>	<u>Estimate</u>	
K	50.71	ft/day
y0	0.5588	ft

K = 0.01789 cm/sec
 T = K*b = 337.2 ft²/day (3.626 sq. cm/sec)



WELL TEST ANALYSIS

Data Set: C:\...\PZSW slug in.aqt
 Date: 03/08/22

Time: 14:52:39

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Well: PZ-SW
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 5.04 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-SW)

Initial Displacement: 0.96 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 5.04 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 1.524 ft/day

Solution Method: Bouwer-Rice
 y0 = 0.3246 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZSW slug in.a
 Date: 04/26/22
 Time: 09:15:26

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-SW

AQUIFER DATA

Saturated Thickness: 5.04 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-SW

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 0.96 ft
 Static Water Column Height: 5.04 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 1192

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	0.9522	596.	0.0325
1.	0.7505	597.	0.03219
2.	0.3687	598.	0.03419
3.	0.512	599.	0.0344
4.	0.4587	600.	0.03337
5.	0.3105	601.	0.03233
6.	0.377	602.	0.03457
7.	0.3534	603.	0.03275
8.	0.3169	604.	0.03306
9.	0.08277	605.	0.03327
10.	0.2918	606.	0.0325
11.	0.293	607.	0.03278
12.	0.2926	608.	0.03133
13.	0.2863	609.	0.03288
14.	0.2792	610.	0.03306
15.	0.2765	611.	0.03306
16.	0.2719	612.	0.03305
17.	0.2692	613.	0.03337
18.	0.264	614.	0.0325
19.	0.2627	615.	0.03187
20.	0.2594	616.	0.03294
21.	0.2561	617.	0.03226
22.	0.2534	618.	0.03155
23.	0.2505	619.	0.03288
24.	0.2485	620.	0.03233
25.	0.2454	621.	0.03155
26.	0.2428	622.	0.0325
27.	0.241	623.	0.03187
28.	0.2375	624.	0.0325
29.	0.2369	625.	0.03289

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
30.	0.2332	626.	0.03113
31.	0.231	627.	0.0325
32.	0.2292	628.	0.03113
33.	0.2257	629.	0.0315
34.	0.2242	630.	0.03219
35.	0.221	631.	0.03149
36.	0.2202	632.	0.03071
37.	0.2169	633.	0.0315
38.	0.2152	634.	0.03097
39.	0.2136	635.	0.03085
40.	0.2119	636.	0.03085
41.	0.209	637.	0.03233
42.	0.2064	638.	0.03181
43.	0.2039	639.	0.03305
44.	0.2	640.	0.03219
45.	0.2013	641.	0.03155
46.	0.1995	642.	0.03004
47.	0.1985	643.	0.03113
48.	0.1944	644.	0.0315
49.	0.1922	645.	0.03037
50.	0.1912	646.	0.03106
51.	0.1894	647.	0.03155
52.	0.1883	648.	0.0302
53.	0.1862	649.	0.03187
54.	0.1841	650.	0.03106
55.	0.1819	651.	0.0315
56.	0.1816	652.	0.0321
57.	0.1806	653.	0.03132
58.	0.1762	654.	0.03149
59.	0.1759	655.	0.02752
60.	0.176	656.	0.03106
61.	0.1734	657.	0.03113
62.	0.1708	658.	0.0302
63.	0.1714	659.	0.0302
64.	0.172	660.	0.03187
65.	0.1662	661.	0.02744
66.	0.1666	662.	0.02972
67.	0.1657	663.	0.03071
68.	0.1634	664.	0.03085
69.	0.1636	665.	0.02936
70.	0.1624	666.	0.03106
71.	0.1615	667.	0.03004
72.	0.1617	668.	0.03187
73.	0.1579	669.	0.03138
74.	0.1557	670.	0.03071
75.	0.1563	671.	0.03037
76.	0.1544	672.	0.03054
77.	0.1535	673.	0.03085
78.	0.1531	674.	0.0302
79.	0.1508	675.	0.02972
80.	0.1499	676.	0.0315
81.	0.15	677.	0.02972
82.	0.1489	678.	0.03008
83.	0.1468	679.	0.03071
84.	0.1459	680.	0.02943
85.	0.1453	681.	0.02936
86.	0.1434	682.	0.02909
87.	0.1423	683.	0.02909
88.	0.1414	684.	0.03058
89.	0.1411	685.	0.02943
90.	0.1394	686.	0.03008
91.	0.1385	687.	0.03085
92.	0.1378	688.	0.02884
93.	0.1368	689.	0.02943
94.	0.1353	690.	0.02879
95.	0.1355	691.	0.02806

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
96.	0.1339	692.	0.02936
97.	0.1341	693.	0.03058
98.	0.1315	694.	0.03004
99.	0.1316	695.	0.0315
100.	0.1306	696.	0.02958
101.	0.1293	697.	0.02818
102.	0.1278	698.	0.02784
103.	0.1269	699.	0.02936
104.	0.1276	700.	0.02972
105.	0.1285	701.	0.03008
106.	0.1266	702.	0.02846
107.	0.1256	703.	0.02884
108.	0.1253	704.	0.02846
109.	0.1243	705.	0.02846
110.	0.1222	706.	0.02829
111.	0.1216	707.	0.0302
112.	0.1224	708.	0.02846
113.	0.1212	709.	0.02784
114.	0.121	710.	0.02972
115.	0.1187	711.	0.03008
116.	0.1177	712.	0.02972
117.	0.1172	713.	0.02958
118.	0.1165	714.	0.02958
119.	0.1159	715.	0.03008
120.	0.1172	716.	0.02878
121.	0.116	717.	0.03306
122.	0.1146	718.	0.02958
123.	0.1134	719.	0.02958
124.	0.1127	720.	0.02846
125.	0.1121	721.	0.02878
126.	0.1115	722.	0.02943
127.	0.1115	723.	0.03004
128.	0.1101	724.	0.02834
129.	0.1103	725.	0.03008
130.	0.1088	726.	0.02818
131.	0.1088	727.	0.02879
132.	0.108	728.	0.02829
133.	0.1076	729.	0.02818
134.	0.1073	730.	0.02784
135.	0.105	731.	0.02829
136.	0.1048	732.	0.02909
137.	0.1046	733.	0.02909
138.	0.1036	734.	0.02909
139.	0.105	735.	0.02846
140.	0.1045	736.	0.02818
141.	0.1041	737.	0.02724
142.	0.1034	738.	0.02878
143.	0.1028	739.	0.03037
144.	0.1015	740.	0.02829
145.	0.1015	741.	0.02829
146.	0.1001	742.	0.02829
147.	0.1021	743.	0.02829
148.	0.0997	744.	0.02884
149.	0.1016	745.	0.02884
150.	0.09832	746.	0.02829
151.	0.09924	747.	0.02834
152.	0.09821	748.	0.02878
153.	0.09832	749.	0.02879
154.	0.09795	750.	0.02806
155.	0.09795	751.	0.02744
156.	0.09821	752.	0.02878
157.	0.0953	753.	0.02784
158.	0.09671	754.	0.02685
159.	0.09795	755.	0.02683
160.	0.09695	756.	0.02806
161.	0.09436	757.	0.02818

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
162.	0.09643	758.	0.02879
163.	0.09454	759.	0.02744
164.	0.0939	760.	0.02784
165.	0.09419	761.	0.02784
166.	0.09282	762.	0.02818
167.	0.09356	763.	0.02909
168.	0.09151	764.	0.02943
169.	0.09251	765.	0.02784
170.	0.0933	766.	0.02846
171.	0.09185	767.	0.02846
172.	0.09047	768.	0.02715
173.	0.09007	769.	0.02767
174.	0.08944	770.	0.0276
175.	0.08899	771.	0.02724
176.	0.08995	772.	0.02818
177.	0.09007	773.	0.02767
178.	0.09009	774.	0.02784
179.	0.09096	775.	0.02784
180.	0.09009	776.	0.02767
181.	0.09023	777.	0.02879
182.	0.0888	778.	0.02724
183.	0.0892	779.	0.02671
184.	0.08691	780.	0.02879
185.	0.08748	781.	0.02936
186.	0.08659	782.	0.02656
187.	0.08624	783.	0.02611
188.	0.0861	784.	0.02625
189.	0.08427	785.	0.02744
190.	0.0846	786.	0.02654
191.	0.08318	787.	0.02592
192.	0.08444	788.	0.02699
193.	0.08302	789.	0.02578
194.	0.08205	790.	0.02625
195.	0.08271	791.	0.02654
196.	0.08205	792.	0.02715
197.	0.08334	793.	0.02683
198.	0.0815	794.	0.02625
199.	0.08263	795.	0.02611
200.	0.0811	796.	0.02625
201.	0.07981	797.	0.02656
202.	0.0819	798.	0.02625
203.	0.08189	799.	0.02553
204.	0.08036	800.	0.02625
205.	0.07876	801.	0.02656
206.	0.08036	802.	0.02553
207.	0.08049	803.	0.02625
208.	0.07854	804.	0.02611
209.	0.08068	805.	0.02522
210.	0.07867	806.	0.02388
211.	0.079	807.	0.02504
212.	0.07754	808.	0.02325
213.	0.07628	809.	0.02281
214.	0.07751	810.	0.02475
215.	0.07754	811.	0.02436
216.	0.07678	812.	0.02436
217.	0.07751	813.	0.02151
218.	0.07577	814.	0.02365
219.	0.07369	815.	0.02318
220.	0.07559	816.	0.02136
221.	0.07493	817.	0.02165
222.	0.07502	818.	0.02248
223.	0.07391	819.	0.02325
224.	0.07442	820.	0.02404
225.	0.07391	821.	0.02286
226.	0.07407	822.	0.02286
227.	0.07454	823.	0.02222

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
228.	0.07387	824.	0.02165
229.	0.07345	825.	0.02349
230.	0.07294	826.	0.02281
231.	0.07194	827.	0.02325
232.	0.07128	828.	0.02224
233.	0.07179	829.	0.02248
234.	0.07141	830.	0.02224
235.	0.07277	831.	0.02222
236.	0.07128	832.	0.02222
237.	0.07223	833.	0.02318
238.	0.07054	834.	0.02165
239.	0.0725	835.	0.02205
240.	0.07145	836.	0.02178
241.	0.07011	837.	0.02248
242.	0.07044	838.	0.02205
243.	0.06955	839.	0.02151
244.	0.07011	840.	0.02248
245.	0.06929	841.	0.02238
246.	0.06886	842.	0.02349
247.	0.06886	843.	0.02279
248.	0.0698	844.	0.02135
249.	0.06818	845.	0.02178
250.	0.06798	846.	0.02136
251.	0.06798	847.	0.02151
252.	0.06666	848.	0.02021
253.	0.0665	849.	0.02354
254.	0.06929	850.	0.02135
255.	0.06756	851.	0.02151
256.	0.06491	852.	0.02224
257.	0.06658	853.	0.02224
258.	0.06619	854.	0.02066
259.	0.0665	855.	0.0227
260.	0.06534	856.	0.02224
261.	0.06678	857.	0.02103
262.	0.06534	858.	0.02354
263.	0.06612	859.	0.02279
264.	0.06398	860.	0.02097
265.	0.06702	861.	0.02151
266.	0.06411	862.	0.02248
267.	0.06612	863.	0.02075
268.	0.06409	864.	0.02224
269.	0.06341	865.	0.02097
270.	0.06411	866.	0.02195
271.	0.06474	867.	0.02222
272.	0.06287	868.	0.02054
273.	0.06378	869.	0.02151
274.	0.06325	870.	0.02222
275.	0.06398	871.	0.02238
276.	0.06332	872.	0.02097
277.	0.06266	873.	0.02136
278.	0.06304	874.	0.02066
279.	0.06332	875.	0.02151
280.	0.06332	876.	0.02265
281.	0.06144	877.	0.02165
282.	0.06231	878.	0.02097
283.	0.06099	879.	0.02165
284.	0.06131	880.	0.0227
285.	0.06282	881.	0.0224
286.	0.0616	882.	0.02281
287.	0.0604	883.	0.02265
288.	0.06016	884.	0.0212
289.	0.06032	885.	0.02224
290.	0.06032	886.	0.02222
291.	0.05999	887.	0.02151
292.	0.05985	888.	0.02151
293.	0.05958	889.	0.02054

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
294.	0.06097	890.	0.02082
295.	0.06016	891.	0.02165
296.	0.06179	892.	0.02075
297.	0.05944	893.	0.02248
298.	0.06016	894.	0.02097
299.	0.05818	895.	0.02205
300.	0.05944	896.	0.02136
301.	0.05985	897.	0.02103
302.	0.05944	898.	0.0207
303.	0.0589	899.	0.02103
304.	0.05807	900.	0.02066
305.	0.05807	901.	0.02097
306.	0.05728	902.	0.02151
307.	0.05874	903.	0.02005
308.	0.05745	904.	0.02152
309.	0.05752	905.	0.02205
310.	0.05835	906.	0.02054
311.	0.05716	907.	0.02118
312.	0.05769	908.	0.02167
313.	0.05683	909.	0.02054
314.	0.05656	910.	0.0224
315.	0.05634	911.	0.02082
316.	0.05485	912.	0.02151
317.	0.05641	913.	0.01898
318.	0.05586	914.	0.02054
319.	0.05618	915.	0.02114
320.	0.05559	916.	0.02136
321.	0.05509	917.	0.02195
322.	0.05512	918.	0.02066
323.	0.05431	919.	0.02097
324.	0.0559	920.	0.01995
325.	0.05634	921.	0.01805
326.	0.05524	922.	0.02054
327.	0.05683	923.	0.02136
328.	0.05464	924.	0.02082
329.	0.05463	925.	0.01954
330.	0.05464	926.	0.02066
331.	0.05396	927.	0.02035
332.	0.05396	928.	0.02222
333.	0.05445	929.	0.02114
334.	0.05305	930.	0.01954
335.	0.05445	931.	0.0212
336.	0.05368	932.	0.01986
337.	0.05341	933.	0.02118
338.	0.05322	934.	0.02167
339.	0.05273	935.	0.02066
340.	0.05341	936.	0.02091
341.	0.05245	937.	0.02075
342.	0.05224	938.	0.02224
343.	0.05341	939.	0.02035
344.	0.05241	940.	0.02075
345.	0.05385	941.	0.02051
346.	0.05262	942.	0.02091
347.	0.05214	943.	0.01823
348.	0.05273	944.	0.01865
349.	0.05262	945.	0.02103
350.	0.05305	946.	0.02005
351.	0.05147	947.	0.02066
352.	0.05161	948.	0.02005
353.	0.05092	949.	0.01979
354.	0.05147	950.	0.02135
355.	0.05034	951.	0.01954
356.	0.05065	952.	0.02103
357.	0.05135	953.	0.02035
358.	0.05273	954.	0.02118
359.	0.05161	955.	0.02054

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
360.	0.05092	956.	0.02097
361.	0.05092	957.	0.02051
362.	0.05114	958.	0.0193
363.	0.04988	959.	0.02103
364.	0.05081	960.	0.01929
365.	0.04921	961.	0.02021
366.	0.04905	962.	0.02114
367.	0.05002	963.	0.01929
368.	0.05114	964.	0.01828
369.	0.04978	965.	0.01954
370.	0.04905	966.	0.01919
371.	0.05214	967.	0.0197
372.	0.04886	968.	0.01967
373.	0.0484	969.	0.02135
374.	0.0483	970.	0.02051
375.	0.04919	971.	0.01967
376.	0.05385	972.	0.02082
377.	0.04905	973.	0.01979
378.	0.04905	974.	0.01967
379.	0.0485	975.	0.01984
380.	0.04886	976.	0.02002
381.	0.04886	977.	0.02672
382.	0.0494	978.	0.0193
383.	0.04856	979.	0.0193
384.	0.0484	980.	0.02103
385.	0.04856	981.	0.01902
386.	0.04761	982.	0.01861
387.	0.04763	983.	0.01919
388.	0.04634	984.	0.01967
389.	0.04777	985.	0.02054
390.	0.04707	986.	0.0207
391.	0.04919	987.	0.01979
392.	0.04553	988.	0.01849
393.	0.0457	989.	0.02051
394.	0.04664	990.	0.02097
395.	0.04707	991.	0.02051
396.	0.04761	992.	0.01954
397.	0.04794	993.	0.02118
398.	0.0472	994.	0.02054
399.	0.04794	995.	0.02082
400.	0.04707	996.	0.02075
401.	0.04978	997.	0.01898
402.	0.04731	998.	0.01861
403.	0.04748	999.	0.01861
404.	0.04763	1000.	0.02002
405.	0.04488	1001.	0.02021
406.	0.0483	1002.	0.02066
407.	0.04687	1003.	0.02152
408.	0.04664	1004.	0.01954
409.	0.04801	1005.	0.02005
410.	0.04664	1006.	0.01979
411.	0.04553	1007.	0.01945
412.	0.04763	1008.	0.02066
413.	0.04614	1009.	0.01929
414.	0.04487	1010.	0.0193
415.	0.04648	1011.	0.0184
416.	0.04707	1012.	0.01778
417.	0.04543	1013.	0.01954
418.	0.04449	1014.	0.01946
419.	0.04468	1015.	0.02135
420.	0.04531	1016.	0.01861
421.	0.0442	1017.	0.01796
422.	0.04543	1018.	0.01865
423.	0.04553	1019.	0.01902
424.	0.04403	1020.	0.01986
425.	0.0442	1021.	0.02082

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
426.	0.04521	1022.	0.01865
427.	0.04389	1023.	0.01898
428.	0.04468	1024.	0.01902
429.	0.04372	1025.	0.01929
430.	0.04449	1026.	0.0212
431.	0.04338	1027.	0.01986
432.	0.04216	1028.	0.01915
433.	0.04465	1029.	0.02082
434.	0.04384	1030.	0.02066
435.	0.04298	1031.	0.01995
436.	0.04386	1032.	0.01898
437.	0.04488	1033.	0.01979
438.	0.04322	1034.	0.01812
439.	0.04419	1035.	0.02082
440.	0.04347	1036.	0.02181
441.	0.04174	1037.	0.02066
442.	0.04322	1038.	0.01984
443.	0.04232	1039.	0.02075
444.	0.04213	1040.	0.01984
445.	0.04242	1041.	0.01919
446.	0.04338	1042.	0.01863
447.	0.04213	1043.	0.02005
448.	0.04191	1044.	0.0197
449.	0.04106	1045.	0.01844
450.	0.04174	1046.	0.01849
451.	0.04272	1047.	0.01995
452.	0.0415	1048.	0.01919
453.	0.04232	1049.	0.02021
454.	0.04198	1050.	0.0197
455.	0.0406	1051.	0.01979
456.	0.04148	1052.	0.01946
457.	0.04139	1053.	0.0184
458.	0.04027	1054.	0.01844
459.	0.04132	1055.	0.01748
460.	0.04139	1056.	0.01812
461.	0.04232	1057.	0.01879
462.	0.04139	1058.	0.02002
463.	0.04132	1059.	0.0184
464.	0.04077	1060.	0.01823
465.	0.041	1061.	0.01929
466.	0.04122	1062.	0.01919
467.	0.0396	1063.	0.01844
468.	0.04077	1064.	0.01796
469.	0.0406	1065.	0.01879
470.	0.03983	1066.	0.01995
471.	0.04057	1067.	0.01828
472.	0.03935	1068.	0.01823
473.	0.03983	1069.	0.01915
474.	0.03999	1070.	0.01844
475.	0.0406	1071.	0.01946
476.	0.03897	1072.	0.01995
477.	0.04041	1073.	0.0184
478.	0.04005	1074.	0.01789
479.	0.04041	1075.	0.02002
480.	0.03999	1076.	0.01844
481.	0.03771	1077.	0.01879
482.	0.03935	1078.	0.01954
483.	0.03897	1079.	0.01796
484.	0.03867	1080.	0.01954
485.	0.03866	1081.	0.01984
486.	0.03867	1082.	0.01861
487.	0.0396	1083.	0.01865
488.	0.03866	1084.	0.01902
489.	0.03983	1085.	0.01796
490.	0.03751	1086.	0.01762
491.	0.03845	1087.	0.01945

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
492.	0.03796	1088.	0.01823
493.	0.03805	1089.	0.01865
494.	0.03913	1090.	0.01861
495.	0.0396	1091.	0.01995
496.	0.03848	1092.	0.01828
497.	0.03829	1093.	0.01879
498.	0.03661	1094.	0.01863
499.	0.04057	1095.	0.01945
500.	0.03917	1096.	0.01946
501.	0.03845	1097.	0.01919
502.	0.03948	1098.	0.01863
503.	0.03673	1099.	0.017
504.	0.03917	1100.	0.01915
505.	0.03845	1101.	0.01898
506.	0.03917	1102.	0.01844
507.	0.03866	1103.	0.01812
508.	0.03749	1104.	0.01898
509.	0.03799	1105.	0.01946
510.	0.03829	1106.	0.0184
511.	0.03755	1107.	0.01945
512.	0.03829	1108.	0.01789
513.	0.03913	1109.	0.01865
514.	0.03848	1110.	0.01715
515.	0.03751	1111.	0.01805
516.	0.03913	1112.	0.01919
517.	0.03782	1113.	0.01828
518.	0.03813	1114.	0.01844
519.	0.03751	1115.	0.01945
520.	0.03733	1116.	0.01789
521.	0.03805	1117.	0.01778
522.	0.03848	1118.	0.01865
523.	0.03771	1119.	0.01789
524.	0.03585	1120.	0.01748
525.	0.03627	1121.	0.01915
526.	0.03642	1122.	0.01734
527.	0.03565	1123.	0.0193
528.	0.03711	1124.	0.01812
529.	0.03568	1125.	0.01805
530.	0.03696	1126.	0.01865
531.	0.0363	1127.	0.01684
532.	0.03733	1128.	0.01863
533.	0.03822	1129.	0.01789
534.	0.03658	1130.	0.01698
535.	0.03646	1131.	0.01789
536.	0.03585	1132.	0.01789
537.	0.03661	1133.	0.01929
538.	0.03584	1134.	0.01929
539.	0.0363	1135.	0.01879
540.	0.03751	1136.	0.01915
541.	0.03568	1137.	0.01863
542.	0.03642	1138.	0.01764
543.	0.03627	1139.	0.01946
544.	0.03531	1140.	0.01805
545.	0.03515	1141.	0.0175
546.	0.03712	1142.	0.01823
547.	0.03799	1143.	0.01844
548.	0.03517	1144.	0.01659
549.	0.03515	1145.	0.0175
550.	0.03627	1146.	0.01715
551.	0.03646	1147.	0.0184
552.	0.03646	1148.	0.01748
553.	0.03531	1149.	0.01844
554.	0.03548	1150.	0.01879
555.	0.03548	1151.	0.01796
556.	0.03601	1152.	0.01879
557.	0.036	1153.	0.01805

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
558.	0.03531	1154.	0.01778
559.	0.03368	1155.	0.01865
560.	0.03548	1156.	0.01861
561.	0.03531	1157.	0.01902
562.	0.03496	1158.	0.01844
563.	0.03585	1159.	0.01715
564.	0.03475	1160.	0.01879
565.	0.03351	1161.	0.01879
566.	0.03517	1162.	0.01861
567.	0.03457	1163.	0.017
568.	0.03479	1164.	0.0197
569.	0.03515	1165.	0.0197
570.	0.03337	1166.	0.01828
571.	0.03356	1167.	0.01489
572.	0.03441	1168.	0.01778
573.	0.0344	1169.	0.01915
574.	0.03515	1170.	0.0175
575.	0.03548	1171.	0.01778
576.	0.03408	1172.	0.0184
577.	0.03424	1173.	0.01778
578.	0.03601	1174.	0.01919
579.	0.03548	1175.	0.01805
580.	0.03515	1176.	0.01902
581.	0.03351	1177.	0.01919
582.	0.03294	1178.	0.01823
583.	0.03368	1179.	0.01764
584.	0.03408	1180.	0.0193
585.	0.0325	1181.	0.01915
586.	0.03351	1182.	0.01764
587.	0.03435	1183.	0.01684
588.	0.03368	1184.	0.01828
589.	0.03181	1185.	0.01764
590.	0.03368	1186.	0.01732
591.	0.03354	1187.	0.01995
592.	0.03435	1188.	0.01715
593.	0.03435	1189.	0.01659
594.	0.03408	1190.	0.01805
595.	0.03368	1191.	0.01778

SOLUTION

Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.365

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	1.524	ft/day
y0	0.3246	ft

K = 0.0005376 cm/sec
 T = K*b = 7.681 ft²/day (0.08259 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio	
K	1.524	0.01789	+/- 0.03619	85.19	ft/day
y0	0.3246	0.00121	+/- 0.002448	268.2	ft

C.I. is approximate 95% confidence interval for parameter

t-ratio = estimate/std. error
Estimation window: 10 to 50 sec

K = 0.0005376 cm/sec
T = K*b = 7.681 ft²/day (0.08259 sq. cm/sec)

Parameter Correlations

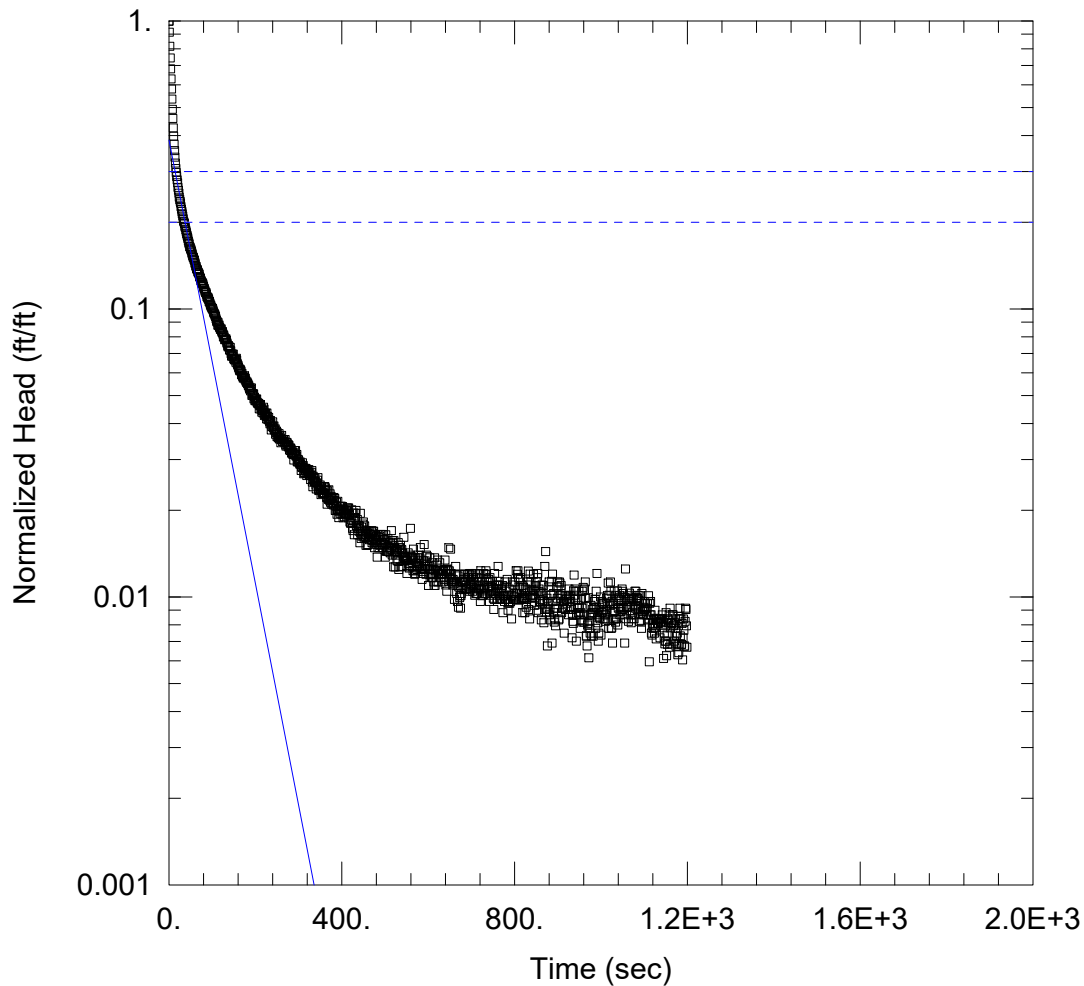
	K	y0
K	1.00	0.92
y0	0.92	1.00

Residual Statistics

for weighted residuals

Sum of Squares 0.0001964 ft²
Variance 5.036E-6 ft²
Std. Deviation 0.002244 ft
Mean 1.154E-5 ft
No. of Residuals 41
No. of Estimates 2

Estimation window from 10 to 50 sec.



WELL TEST ANALYSIS

Data Set: C:\...\PZSW slug out.aqt
 Date: 03/08/22

Time: 14:53:00

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Well: PZ-SW
 Test Date: 12/17/21

AQUIFER DATA

Saturated Thickness: 5.04 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-SW)

Initial Displacement: 1.05 ft
 Total Well Penetration Depth: 10. ft
 Casing Radius: 0.08333 ft

Static Water Column Height: 5.04 ft
 Screen Length: 10. ft
 Well Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined
 K = 2.495 ft/day

Solution Method: Bower-Rice
 y0 = 0.4051 ft

Data Set: C:\Users\ssaller\OneDrive - GHD\Desktop\san jac borings\AQTESOLV Slug testing files\PZSW slug out.a
 Date: 04/26/22
 Time: 09:16:00

PROJECT INFORMATION

Company: GHD
 Client: IPC
 Project: 11215131
 Location: Channelview, TX
 Test Date: 12/17/21
 Test Well: PZ-SW

AQUIFER DATA

Saturated Thickness: 5.04 ft
 Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: PZ-SW

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 1.05 ft
 Static Water Column Height: 5.04 ft
 Casing Radius: 0.08333 ft
 Well Radius: 0.3333 ft
 Well Skin Radius: 0.3333 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft

No. of Observations: 1200

Time (sec)	Observation Data		Displacement (ft)
	Displacement (ft)	Time (sec)	
0.01	1.046	600.	0.01308
1.	0.96	601.	0.0115
2.	0.8568	602.	0.0126
3.	0.7808	603.	0.01312
4.	0.7161	604.	0.01436
5.	0.6602	605.	0.01312
6.	0.609	606.	0.0126
7.	0.5624	607.	0.01258
8.	0.5179	608.	0.01224
9.	0.4814	609.	0.0126
10.	0.4466	610.	0.01224
11.	0.4175	611.	0.0138
12.	0.392	612.	0.01308
13.	0.3722	613.	0.01183
14.	0.3534	614.	0.0115
15.	0.3371	615.	0.01435
16.	0.3225	616.	0.0115
17.	0.3123	617.	0.01293
18.	0.3026	618.	0.01224
19.	0.2945	619.	0.01189
20.	0.2881	620.	0.01355
21.	0.2775	621.	0.0131
22.	0.271	622.	0.0141
23.	0.2649	623.	0.01183
24.	0.2566	624.	0.0126
25.	0.2519	625.	0.01258
26.	0.248	626.	0.01293
27.	0.2449	627.	0.0138
28.	0.238	628.	0.01293
29.	0.2332	629.	0.01258

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
30.	0.2288	630.	0.0126
31.	0.2248	631.	0.0126
32.	0.2206	632.	0.01183
33.	0.216	633.	0.01267
34.	0.2117	634.	0.01293
35.	0.21	635.	0.01293
36.	0.2077	636.	0.01293
37.	0.2034	637.	0.01208
38.	0.2012	638.	0.01224
39.	0.1974	639.	0.0141
40.	0.1943	640.	0.01308
41.	0.1916	641.	0.01154
42.	0.1891	642.	0.01267
43.	0.1865	643.	0.01099
44.	0.1842	644.	0.01308
45.	0.1808	645.	0.01312
46.	0.1781	646.	0.01293
47.	0.1765	647.	0.01189
48.	0.1728	648.	0.01555
49.	0.172	649.	0.01293
50.	0.1699	650.	0.01224
51.	0.1688	651.	0.01258
52.	0.1669	652.	0.01539
53.	0.1644	653.	0.01267
54.	0.1628	654.	0.01189
55.	0.1604	655.	0.01208
56.	0.1587	656.	0.01183
57.	0.1583	657.	0.01154
58.	0.156	658.	0.01208
59.	0.1549	659.	0.01183
60.	0.152	660.	0.01166
61.	0.1506	661.	0.0103
62.	0.148	662.	0.01189
63.	0.1473	663.	0.0126
64.	0.1448	664.	0.01339
65.	0.1441	665.	0.01183
66.	0.1433	666.	0.01079
67.	0.1414	667.	0.01151
68.	0.1404	668.	0.01013
69.	0.1395	669.	0.01242
70.	0.1383	670.	0.009666
71.	0.1361	671.	0.01138
72.	0.135	672.	0.01258
73.	0.134	673.	0.01044
74.	0.1318	674.	0.01061
75.	0.1312	675.	0.009599
76.	0.1296	676.	0.01061
77.	0.1287	677.	0.01079
78.	0.1293	678.	0.01183
79.	0.1274	679.	0.01183
80.	0.1257	680.	0.01183
81.	0.1241	681.	0.01118
82.	0.1234	682.	0.01208
83.	0.1218	683.	0.01258
84.	0.1206	684.	0.01183
85.	0.1196	685.	0.0126
86.	0.1196	686.	0.01118
87.	0.1181	687.	0.01189
88.	0.1159	688.	0.01154
89.	0.1153	689.	0.01118
90.	0.1144	690.	0.01118
91.	0.1147	691.	0.01224
92.	0.1132	692.	0.01258
93.	0.1111	693.	0.01224
94.	0.1116	694.	0.01138
95.	0.11	695.	0.01258

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
96.	0.1082	696.	0.01099
97.	0.1084	697.	0.01267
98.	0.1067	698.	0.01118
99.	0.1063	699.	0.01189
100.	0.105	700.	0.01242
101.	0.1053	701.	0.01154
102.	0.1041	702.	0.0126
103.	0.1027	703.	0.01099
104.	0.1019	704.	0.01208
105.	0.1011	705.	0.01224
106.	0.1006	706.	0.01154
107.	0.09957	707.	0.01183
108.	0.09875	708.	0.01065
109.	0.09706	709.	0.01267
110.	0.09586	710.	0.01079
111.	0.09472	711.	0.01154
112.	0.09472	712.	0.01079
113.	0.09223	713.	0.01224
114.	0.09407	714.	0.01183
115.	0.09196	715.	0.01079
116.	0.09235	716.	0.01183
117.	0.09078	717.	0.01138
118.	0.09038	718.	0.01118
119.	0.08917	719.	0.0126
120.	0.08919	720.	0.01121
121.	0.0895	721.	0.01013
122.	0.08788	722.	0.01293
123.	0.0869	723.	0.01118
124.	0.08758	724.	0.01061
125.	0.08583	725.	0.01102
126.	0.08385	726.	0.01065
127.	0.0852	727.	0.01065
128.	0.08385	728.	0.01267
129.	0.08203	729.	0.01118
130.	0.08255	730.	0.01154
131.	0.08229	731.	0.01079
132.	0.08267	732.	0.0126
133.	0.08181	733.	0.01079
134.	0.08028	734.	0.01293
135.	0.07951	735.	0.01258
136.	0.07833	736.	0.01189
137.	0.07746	737.	0.01079
138.	0.07832	738.	0.0115
139.	0.07769	739.	0.01183
140.	0.07565	740.	0.01208
141.	0.07565	741.	0.01138
142.	0.07715	742.	0.01013
143.	0.07517	743.	0.01224
144.	0.07343	744.	0.01189
145.	0.07198	745.	0.01079
146.	0.07247	746.	0.01065
147.	0.07312	747.	0.01138
148.	0.07182	748.	0.01099
149.	0.07312	749.	0.01189
150.	0.07043	750.	0.01118
151.	0.07043	751.	0.01039
152.	0.06986	752.	0.009501
153.	0.06986	753.	0.0103
154.	0.07026	754.	0.01267
155.	0.0685	755.	0.01079
156.	0.07077	756.	0.01079
157.	0.06981	757.	0.01118
158.	0.06796	758.	0.0115
159.	0.06723	759.	0.0103
160.	0.06675	760.	0.01099
161.	0.06586	761.	0.01154

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
162.	0.06539	762.	0.01339
163.	0.06456	763.	0.01154
164.	0.06406	764.	0.01189
165.	0.06475	765.	0.01061
166.	0.06423	766.	0.0103
167.	0.06381	767.	0.0103
168.	0.06205	768.	0.01039
169.	0.06271	769.	0.01118
170.	0.06159	770.	0.01118
171.	0.06107	771.	0.01079
172.	0.06035	772.	0.0115
173.	0.06103	773.	0.009258
174.	0.06054	774.	0.01061
175.	0.06159	775.	0.01061
176.	0.05981	776.	0.01061
177.	0.06035	777.	0.01013
178.	0.05927	778.	0.01183
179.	0.05856	779.	0.0103
180.	0.05836	780.	0.01099
181.	0.05856	781.	0.0103
182.	0.05778	782.	0.01138
183.	0.05758	783.	0.01208
184.	0.05677	784.	0.0103
185.	0.05677	785.	0.009434
186.	0.05583	786.	0.009982
187.	0.0553	787.	0.01013
188.	0.05583	788.	0.01118
189.	0.05448	789.	0.009982
190.	0.05524	790.	0.0103
191.	0.05585	791.	0.01013
192.	0.05261	792.	0.01061
193.	0.05321	793.	0.008806
194.	0.05277	794.	0.01061
195.	0.05335	795.	0.01183
196.	0.05321	796.	0.01154
197.	0.05111	797.	0.0103
198.	0.05189	798.	0.0103
199.	0.05043	799.	0.0103
200.	0.05111	800.	0.01049
201.	0.05043	801.	0.01183
202.	0.05064	802.	0.0103
203.	0.05114	803.	0.01079
204.	0.04986	804.	0.01293
205.	0.04945	805.	0.01079
206.	0.04948	806.	0.01079
207.	0.04916	807.	0.01258
208.	0.04932	808.	0.01293
209.	0.04726	809.	0.01224
210.	0.04845	810.	0.01138
211.	0.04867	811.	0.01022
212.	0.04889	812.	0.01118
213.	0.04711	813.	0.01208
214.	0.04755	814.	0.01224
215.	0.04595	815.	0.0103
216.	0.04661	816.	0.01079
217.	0.04667	817.	0.01039
218.	0.04571	818.	0.0115
219.	0.04782	819.	0.009258
220.	0.04711	820.	0.01044
221.	0.04485	821.	0.01134
222.	0.04517	822.	0.0103
223.	0.04571	823.	0.01039
224.	0.04547	824.	0.009258
225.	0.04447	825.	0.01118
226.	0.04357	826.	0.0103
227.	0.04571	827.	0.009666

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
228.	0.04447	828.	0.009982
229.	0.04343	829.	0.01061
230.	0.04343	830.	0.01183
231.	0.04413	831.	0.01061
232.	0.04304	832.	0.01291
233.	0.04258	833.	0.009501
234.	0.04186	834.	0.01154
235.	0.04301	835.	0.008806
236.	0.04228	836.	0.0126
237.	0.0399	837.	0.01065
238.	0.04099	838.	0.01189
239.	0.04099	839.	0.009982
240.	0.04258	840.	0.01044
241.	0.04113	841.	0.01102
242.	0.04056	842.	0.01049
243.	0.04117	843.	0.01065
244.	0.0399	844.	0.01258
245.	0.0399	845.	0.01102
246.	0.04027	846.	0.009819
247.	0.03856	847.	0.01039
248.	0.03912	848.	0.0115
249.	0.03956	849.	0.01138
250.	0.03781	850.	0.01183
251.	0.03902	851.	0.009434
252.	0.03781	852.	0.01099
253.	0.03755	853.	0.01224
254.	0.03743	854.	0.01267
255.	0.03875	855.	0.009258
256.	0.03707	856.	0.01099
257.	0.03799	857.	0.01118
258.	0.03741	858.	0.01013
259.	0.03604	859.	0.0103
260.	0.03695	860.	0.01013
261.	0.03818	861.	0.01079
262.	0.03695	862.	0.008741
263.	0.03636	863.	0.01061
264.	0.03627	864.	0.01154
265.	0.03693	865.	0.009982
266.	0.03693	866.	0.01022
267.	0.0363	867.	0.0115
268.	0.03613	868.	0.008543
269.	0.03693	869.	0.01013
270.	0.03541	870.	0.01339
271.	0.03507	871.	0.009501
272.	0.03613	872.	0.01509
273.	0.03541	873.	0.009599
274.	0.03604	874.	0.009258
275.	0.03541	875.	0.01039
276.	0.03483	876.	0.007098
277.	0.03541	877.	0.009503
278.	0.03524	878.	0.009982
279.	0.03399	879.	0.01138
280.	0.03452	880.	0.01183
281.	0.03382	881.	0.009099
282.	0.03452	882.	0.009501
283.	0.0341	883.	0.008741
284.	0.03315	884.	0.01065
285.	0.03382	885.	0.01065
286.	0.03315	886.	0.01189
287.	0.03278	887.	0.007258
288.	0.03332	888.	0.0126
289.	0.03136	889.	0.01013
290.	0.03278	890.	0.009258
291.	0.03382	891.	0.01079
292.	0.03279	892.	0.00858
293.	0.03382	893.	0.008806

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
294.	0.03242	894.	0.009599
295.	0.03237	895.	0.008332
296.	0.03278	896.	0.01013
297.	0.03096	897.	0.009599
298.	0.03089	898.	0.01138
299.	0.03152	899.	0.01039
300.	0.03133	900.	0.01183
301.	0.03089	901.	0.01138
302.	0.03061	902.	0.008741
303.	0.03035	903.	0.008806
304.	0.03089	904.	0.01183
305.	0.03036	905.	0.01173
306.	0.02885	906.	0.01061
307.	0.02973	907.	0.01039
308.	0.02953	908.	0.0115
309.	0.0307	909.	0.009258
310.	0.02974	910.	0.01065
311.	0.03002	911.	0.009599
312.	0.02809	912.	0.009599
313.	0.02844	913.	0.01013
314.	0.02936	914.	0.01013
315.	0.02825	915.	0.007855
316.	0.02885	916.	0.01013
317.	0.02936	917.	0.01061
318.	0.02922	918.	0.009501
319.	0.0277	919.	0.01061
320.	0.02817	920.	0.0103
321.	0.02905	921.	0.009982
322.	0.02858	922.	0.009501
323.	0.02844	923.	0.01013
324.	0.02905	924.	0.01065
325.	0.02785	925.	0.009099
326.	0.0277	926.	0.01118
327.	0.02809	927.	0.01013
328.	0.02685	928.	0.01039
329.	0.0277	929.	0.01061
330.	0.02844	930.	0.01013
331.	0.02882	931.	0.009666
332.	0.02629	932.	0.009501
333.	0.02533	933.	0.007575
334.	0.02757	934.	0.009099
335.	0.02668	935.	0.008642
336.	0.02703	936.	0.008496
337.	0.02629	937.	0.01102
338.	0.02722	938.	0.0125
339.	0.02643	939.	0.01065
340.	0.02569	940.	0.01118
341.	0.02489	941.	0.0103
342.	0.0261	942.	0.01099
343.	0.0261	943.	0.007373
344.	0.02668	944.	0.009099
345.	0.02726	945.	0.009599
346.	0.02487	946.	0.009666
347.	0.02455	947.	0.009819
348.	0.02473	948.	0.009258
349.	0.02533	949.	0.01099
350.	0.02569	950.	0.009599
351.	0.02487	951.	0.009099
352.	0.02378	952.	0.008171
353.	0.02533	953.	0.009258
354.	0.02491	954.	0.008741
355.	0.02405	955.	0.0103
356.	0.02416	956.	0.009599
357.	0.02405	957.	0.01099
358.	0.02414	958.	0.00858
359.	0.02533	959.	0.01134

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
360.	0.02405	960.	0.009099
361.	0.02537	961.	0.00858
362.	0.02511	962.	0.01118
363.	0.02473	963.	0.01039
364.	0.02452	964.	0.01183
365.	0.02326	965.	0.01039
366.	0.02205	966.	0.00767
367.	0.02455	967.	0.007691
368.	0.02307	968.	0.007098
369.	0.02289	969.	0.008384
370.	0.02473	970.	0.008496
371.	0.02323	971.	0.01044
372.	0.02273	972.	0.006452
373.	0.02395	973.	0.008642
374.	0.02239	974.	0.008171
375.	0.02345	975.	0.007855
376.	0.02307	976.	0.009095
377.	0.02205	977.	0.009819
378.	0.02326	978.	0.007691
379.	0.02217	979.	0.009099
380.	0.02273	980.	0.009258
381.	0.02191	981.	0.009501
382.	0.02326	982.	0.00767
383.	0.02273	983.	0.009666
384.	0.02307	984.	0.009258
385.	0.02097	985.	0.01013
386.	0.02174	986.	0.009599
387.	0.02097	987.	0.0103
388.	0.02239	988.	0.008171
389.	0.02033	989.	0.01099
390.	0.02097	990.	0.009666
391.	0.02254	991.	0.01267
392.	0.02106	992.	0.008933
393.	0.0198	993.	0.008543
394.	0.02083	994.	0.007373
395.	0.02123	995.	0.007855
396.	0.02049	996.	0.009666
397.	0.02097	997.	0.008933
398.	0.02168	998.	0.008815
399.	0.02106	999.	0.01049
400.	0.02168	1000.	0.007739
401.	0.02033	1001.	0.009258
402.	0.02161	1002.	0.01013
403.	0.01977	1003.	0.009258
404.	0.02106	1004.	0.009982
405.	0.02053	1005.	0.008806
406.	0.01993	1006.	0.009501
407.	0.02097	1007.	0.009982
408.	0.02049	1008.	0.008806
409.	0.02026	1009.	0.009099
410.	0.02053	1010.	0.008642
411.	0.02097	1011.	0.009095
412.	0.02083	1012.	0.009501
413.	0.02139	1013.	0.01039
414.	0.02123	1014.	0.009501
415.	0.01977	1015.	0.01061
416.	0.0214	1016.	0.009982
417.	0.02018	1017.	0.01173
418.	0.02033	1018.	0.008171
419.	0.01912	1019.	0.01065
420.	0.01896	1020.	0.009982
421.	0.01896	1021.	0.009819
422.	0.01943	1022.	0.01183
423.	0.02106	1023.	0.01099
424.	0.01889	1024.	0.008171
425.	0.01816	1025.	0.008202

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
426.	0.01785	1026.	0.01013
427.	0.01936	1027.	0.007258
428.	0.02053	1028.	0.009258
429.	0.01727	1029.	0.009961
430.	0.01977	1030.	0.008806
431.	0.0198	1031.	0.01102
432.	0.02049	1032.	0.009336
433.	0.02097	1033.	0.008815
434.	0.01853	1034.	0.00858
435.	0.01858	1035.	0.01013
436.	0.01953	1036.	0.008806
437.	0.01727	1037.	0.01061
438.	0.01816	1038.	0.01102
439.	0.01858	1039.	0.008384
440.	0.01775	1040.	0.009599
441.	0.01853	1041.	0.0103
442.	0.0162	1042.	0.01044
443.	0.02049	1043.	0.01063
444.	0.01751	1044.	0.009099
445.	0.01676	1045.	0.009666
446.	0.01834	1046.	0.009336
447.	0.01706	1047.	0.01022
448.	0.01775	1048.	0.009501
449.	0.01879	1049.	0.01118
450.	0.01912	1050.	0.01099
451.	0.01706	1051.	0.009501
452.	0.01676	1052.	0.01079
453.	0.01853	1053.	0.009599
454.	0.0173	1054.	0.009099
455.	0.01706	1055.	0.007258
456.	0.01587	1056.	0.01044
457.	0.0173	1057.	0.01312
458.	0.01785	1058.	0.008815
459.	0.01587	1059.	0.009666
460.	0.01751	1060.	0.0103
461.	0.01597	1061.	0.009666
462.	0.0169	1062.	0.009666
463.	0.01775	1063.	0.01013
464.	0.01659	1064.	0.008642
465.	0.01734	1065.	0.01061
466.	0.01727	1066.	0.01083
467.	0.01727	1067.	0.01013
468.	0.01659	1068.	0.01013
469.	0.01785	1069.	0.009099
470.	0.0162	1070.	0.008543
471.	0.01751	1071.	0.01039
472.	0.01645	1072.	0.008815
473.	0.01775	1073.	0.009258
474.	0.01775	1074.	0.0103
475.	0.01674	1075.	0.01039
476.	0.01555	1076.	0.009819
477.	0.01727	1077.	0.008815
478.	0.01645	1078.	0.009099
479.	0.0162	1079.	0.01099
480.	0.01706	1080.	0.009599
481.	0.01597	1081.	0.01099
482.	0.01443	1082.	0.01044
483.	0.0162	1083.	0.01039
484.	0.01555	1084.	0.009503
485.	0.0169	1085.	0.01039
486.	0.01597	1086.	0.01063
487.	0.01555	1087.	0.009599
488.	0.01706	1088.	0.01022
489.	0.01587	1089.	0.008642
490.	0.0173	1090.	0.01061
491.	0.01597	1091.	0.009501

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
492.	0.0162	1092.	0.009501
493.	0.0173	1093.	0.00858
494.	0.01555	1094.	0.008171
495.	0.0166	1095.	0.01079
496.	0.01555	1096.	0.009336
497.	0.01727	1097.	0.009099
498.	0.01621	1098.	0.009666
499.	0.01659	1099.	0.009099
500.	0.01597	1100.	0.01013
501.	0.01443	1101.	0.009434
502.	0.01727	1102.	0.009501
503.	0.01515	1103.	0.009982
504.	0.01511	1104.	0.009599
505.	0.01555	1105.	0.009099
506.	0.01515	1106.	0.009099
507.	0.01676	1107.	0.009599
508.	0.01509	1108.	0.009961
509.	0.01621	1109.	0.008741
510.	0.01555	1110.	0.01061
511.	0.01558	1111.	0.008806
512.	0.01495	1112.	0.006254
513.	0.0162	1113.	0.009982
514.	0.01539	1114.	0.009095
515.	0.01785	1115.	0.01013
516.	0.01587	1116.	0.009099
517.	0.01467	1117.	0.007855
518.	0.01645	1118.	0.007739
519.	0.01613	1119.	0.008384
520.	0.01335	1120.	0.008496
521.	0.01645	1121.	0.008171
522.	0.01558	1122.	0.008741
523.	0.01509	1123.	0.008202
524.	0.01335	1124.	0.007855
525.	0.01467	1125.	0.009434
526.	0.01539	1126.	0.008202
527.	0.01509	1127.	0.008806
528.	0.01401	1128.	0.007506
529.	0.01509	1129.	0.008815
530.	0.01401	1130.	0.008806
531.	0.01621	1131.	0.008496
532.	0.01308	1132.	0.008496
533.	0.01515	1133.	0.008496
534.	0.01558	1134.	0.008815
535.	0.01335	1135.	0.008815
536.	0.01587	1136.	0.008806
537.	0.01539	1137.	0.007575
538.	0.01495	1138.	0.008642
539.	0.01532	1139.	0.00858
540.	0.01339	1140.	0.008815
541.	0.01495	1141.	0.008543
542.	0.0141	1142.	0.009095
543.	0.01443	1143.	0.008806
544.	0.0169	1144.	0.008384
545.	0.01436	1145.	0.006421
546.	0.01401	1146.	0.008202
547.	0.01452	1147.	0.007855
548.	0.01435	1148.	0.007209
549.	0.0141	1149.	0.007373
550.	0.0141	1150.	0.007373
551.	0.01267	1151.	0.009258
552.	0.01401	1152.	0.006564
553.	0.01435	1153.	0.007739
554.	0.01495	1154.	0.00719
555.	0.0137	1155.	0.008815
556.	0.01323	1156.	0.008741
557.	0.01335	1157.	0.008543

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
558.	0.01467	1158.	0.009095
559.	0.01816	1159.	0.007024
560.	0.01453	1160.	0.009599
561.	0.0141	1161.	0.008202
562.	0.01436	1162.	0.007209
563.	0.01339	1163.	0.008543
564.	0.01436	1164.	0.008543
565.	0.01293	1165.	0.008496
566.	0.01539	1166.	0.009099
567.	0.01436	1167.	0.009099
568.	0.01293	1168.	0.008332
569.	0.01258	1169.	0.008384
570.	0.01435	1170.	0.007373
571.	0.01267	1171.	0.008543
572.	0.01335	1172.	0.008806
573.	0.0137	1173.	0.008171
574.	0.01308	1174.	0.007074
575.	0.01335	1175.	0.00767
576.	0.01435	1176.	0.007258
577.	0.01467	1177.	0.007855
578.	0.0137	1178.	0.006612
579.	0.01308	1179.	0.00898
580.	0.01339	1180.	0.006727
581.	0.01435	1181.	0.007209
582.	0.01558	1182.	0.008815
583.	0.01267	1183.	0.009599
584.	0.01312	1184.	0.007691
585.	0.0141	1185.	0.008806
586.	0.01208	1186.	0.00719
587.	0.01308	1187.	0.00719
588.	0.01312	1188.	0.008496
589.	0.01401	1189.	0.006351
590.	0.01312	1190.	0.007575
591.	0.01597	1191.	0.008806
592.	0.01312	1192.	0.008038
593.	0.01401	1193.	0.007074
594.	0.01339	1194.	0.007098
595.	0.01258	1195.	0.008642
596.	0.01467	1196.	0.009599
597.	0.01339	1197.	0.009501
598.	0.01452	1198.	0.008332
599.	0.01339	1199.	0.007024

SOLUTION

Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 2.365

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.495	ft/day
y0	0.4051	ft

K = 0.0008803 cm/sec
 T = K*b = 12.58 ft²/day (0.1352 sq. cm/sec)

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	Approx. C.I.	t-Ratio
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AQTESOLV for Windows

K	2.495	0.06554	+/- 0.1321	38.07	ft/day
y0	0.4051	0.006367	+/- 0.01283	63.63	ft

C.I. is approximate 95% confidence interval for parameter
t-ratio = estimate/std. error
Estimation window: 15 to 60 sec

K = 0.0008803 cm/sec
T = K*b = 12.58 ft²/day (0.1352 sq. cm/sec)

Parameter Correlations

	K	y0
K	1.00	0.93
y0	0.93	1.00

Residual Statistics

for weighted residuals

Sum of Squares 0.003252 ft²
Variance 7.391E-5 ft²
Std. Deviation 0.008597 ft
Mean 0.000195 ft
No. of Residuals 46
No. of Estimates 2

Estimation window from 15 to 60 sec.

Technical Memorandum

April 18, 2022

To	Meagan Willis	Tel	860 747-8298
From	Kathy Shaw/Marisa Oriaku/eew/2-NF	Ref. No.	11215131
Subject	Analytical Results and Reduced Validation Groundwater Sampling San Jacinto Supplemental Design Investigation Channelview, Harris County, Texas December 2021 – January 2022		

1. Introduction

This document details a reduced validation of analytical results for water samples collected in support of the Groundwater Sampling at the San Jacinto Supplemental Design Investigation site during December 2021 through January 2022. Samples were submitted to SGS Laboratory located in Dayton, New Jersey and Wilmington, North Carolina. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, duplicate data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) and field quality assurance/quality control (QA/QC) samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- i) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", United States Environmental Protection Agency (USEPA) 540-R-2016-001, September 2016
- ii) "National Functional Guidelines for High Resolution Superfund Methods Data Review", OLEM 9200.3 115, EPA 542 B 16 001, April 2016
- iii) Quality Assurance Project Plan, Final Second Phase Pre-Design Investigation", San Jacinto River Waste Pits Site, Harris County, Texas, Report No 6, June 3, 2019

These items will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria and sample preservation requirements for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. The samples summarized in Table 4 were qualified due to sample holding time period exceedances. The remaining samples were prepared and/or analyzed within the specified holding time periods.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Spiked C 13 Labeled Polychlorinated Dibenzodioxins/Polychlorinated Dibenzop-furans (PCDDs/PCDFs) - Organic Analyses

In accordance with the method employed, all samples, blanks, and QC samples analyzed for PCDDs/PCDFs are spiked with labeled congeners prior to extraction. The labeled congeners are an internal standard for the quantitation of native congeners and serve as surrogates for the assessment of method performance in the sample matrix.

All samples submitted for PCDD/PCDF determinations were spiked with the appropriate number of labeled compounds prior to sample extraction and analysis.

Labeled congener recoveries were assessed against method control limits. All labeled PCDD/PCDF recoveries were within the method acceptance ranges.

5. Laboratory Control Sample Analyses

LCS and/or laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference [RPD] of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". Most percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

Samples associated with outlying recoveries were qualified in Table 5 as follows:

- i) Non-detect results associated with high MS/MSD recoveries or RPDs were not qualified. The indicated high bias would not impact the data
- ii) Positive sample results associated with low outlying recoveries were qualified as estimated biased low
- iii) Non-detect results associated with low MS/MSD recoveries greater than ten percent were qualified as estimated biased low

7. Matrix Spike Analyses

To evaluate the effects of sample matrices on the preparation, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS samples. For this study, MS samples were prepared and analyzed by the laboratory as specified in Table 1.

The MS results were evaluated per the "Guidelines". In accordance with the "Guidelines", MS recoveries for samples with analyte concentrations significantly greater than the spike concentrations could not be assessed.

A very low percent recovery value was reported for bromide. Associated sample results were qualified as estimated biased low in Table 6.

8. Duplicate Sample Analyses – Inorganic Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for inorganic analyses as specified in Table 1. The duplicate results were evaluated per the "Guidelines". All duplicate analyses performed were acceptable, demonstrating acceptable analytical precision.

9. Field QA/QC Samples

The field QA/QC consisted of one rinse blank sample, and two field duplicate sample sets.

Rinse Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, a rinse blank was submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, two field duplicate sample sets (total/dissolved) were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is the RL value for water samples.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

10. Target Compound Identification

To minimize erroneous compound identification during PCDD/PCDF analyses, qualitative criteria including compound retention time, ion abundance ratio, and chromatography were evaluated by the laboratory according to the identification criteria established by the methods.

Most compounds reported adhered to the method-specified identification criteria. Some sample results were reported as positive hits although the ion abundance ratio was not met. The associated results were qualified as the estimated maximum possible concentration. A summary of these qualified data is presented in Table 7.

11. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were reported as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the MDL in Table 2.

12. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Regards,



Kathleen Shaw

Digital Intelligence-Data Management-Chemist



Marisa Oriaku

Digital Intelligence-Data Management-Chemist

Table 1

Sample Collection and Analysis Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters														Comments	
						Phosphours	Alkalinity	TDS/TSS	Nitrate	Sulfide	Ammonia-N	COD/TOC	Metals T/D	pH	Anions	Nitrate/Nitrite/Nitrate+Nitrite	BOD	PCDDs/PCDFs (total)	PCDDs/PCDFs (dissolved)		
JD35489	11215131-121621-GW-SS-PZ-NC	PZ-NC	Water	12/16/2021	11:50	X	X	X	X	X	X	X	X	X	X	X	X	X			
JD35489	11215131-121621-GW-SS-PZ-SC	PZ-SC	Water	12/16/2021	14:10	X	X	X	X	X	X	X	X	X	X	X	X	X			MS/MSD
JD35489	11215131-121621-GW-SS-PZ-SW	PZ-SW	Water	12/16/2021	15:40	X	X	X	X	X	X	X	X	X	X	X	X	X			
JD35489	11215131-121721-GW-SS-DUP-1	PZ-NE	Water	12/17/2021	00:00	X	X	X	X	X	X	X	X	X	X	X	X	X			Field Duplicate (PZ-NE), MS/DUP
JD35489	11215131-121721-GW-SS-PZ-NE	PZ-NE	Water	12/17/2021	08:20	X	X	X	X	X	X	X	X	X	X	X	X	X			MS/DUP
JD35489	11215131-121721-GW-SS-RB-1	--	Water	12/17/2021	08:50	X	X	X	X	X	X	X	X	X	X	X	X	X			Rinse Blank,MS/DUP
B6237	11215131-012022-GW-BN-PZ-NC	PZ-NC	Water	01/20/2022	14:40																X
B6237	11215131-012022-GW-BN-PZ-NE	PZ-NE	Water	01/20/2022	15:20																X
B6237	11215131-012022-GW-BN-DUP-1	PZ-NE	Water	01/20/2022	--																X
B6237	11215131-012022-GW-BN-PZ-SC	PZ-SC	Water	01/20/2022	12:40																X
B6237	11215131-012022-GW-BN-PZ-SW	PZ-SW	Water	01/20/2022	13:55																X
B6238	11215131-012022-GW-BN-PZ-NC	PZ-NC	Water	01/20/2022	14:40																X
B6238	11215131-012022-GW-BN-PZ-NE	PZ-NE	Water	01/20/2022	15:20																X

Table 2

Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

Location ID:	PZ-SW	PZ-SC	PZ-NC	PZ-NE
Sample Name:	11215131-121621-GW-SS-PZ-SW	11215131-121621-GW-SS-PZ-SC	11215131-121621-GW-SS-PZ-NC	11215131-121721-GW-SS-PZ-NE
Sample Date:	12/16/2021	12/16/2021	12/16/2021	12/17/2021

Parameters	Unit				
Metals					
Aluminum	µg/L	150 U	150 U	191 J	150 U
Antimony	µg/L	4.7 U	4.7 U	6.4	4.7 U
Arsenic	µg/L	5.4	2.8 U	2.8 U	3.0
Barium	µg/L	686	420	115 J	425
Beryllium	µg/L	0.70 J	0.50 U	2.6	0.50 U
Boron	µg/L	759	816	628	418
Cadmium	µg/L	2.3 J	2.5 J	1.2 J	2.1 J
Calcium	µg/L	163000 J-	285000 J-	250000	125000 J-
Chromium	µg/L	2.0 U	2.9 J	2.4 J	2.0 J
Cobalt	µg/L	2.6 U	2.6 U	2.6 U	2.6 U
Copper	µg/L	5.9 U	5.9 U	5.9 U	5.9 U
Iron	µg/L	2330	1000	10700	20000
Lead	µg/L	1.8 U	1.9 J	2.4 J	1.8 U
Magnesium	µg/L	186000	55100	141000	52400
Manganese	µg/L	2360	1290	731	676
Mercury	µg/L	0.095 U	0.095 U	0.095 U	0.095 U
Molybdenum	µg/L	3.6 U	3.6 U	5.4 J	3.6 U
Nickel	µg/L	1.7 U	1.7 U	1.7 U	1.7 U
Potassium	µg/L	63400	128000	75800	35800
Selenium	µg/L	4.9 U	4.9 U	5.9 J	4.9 U
Silver	µg/L	6.1 U	6.7 J	6.1 U	6.1 U
Sodium	µg/L	1270000	156000	421000	154000
Strontium	µg/L	1890	1200	1800	894
Thallium	µg/L	1.8 U	1.8 U	5.5 J	1.8 U
Tin	µg/L	3.7 U	3.7 U	3.7 U	3.7 U
Titanium	µg/L	2.5 U	2.5 U	2.5 U	2.5 U
Vanadium	µg/L	2.8 J	2.6 J	2.5 J	1.8 U
Zinc	µg/L	13.9 J	13.5 J	22.8	13.7 J

Table 2

Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

	Location ID:	PZ-SW	PZ-SC	PZ-NC	PZ-NE
	Sample Name:	11215131-121621-GW-SS-PZ-SW	11215131-121621-GW-SS-PZ-SC	11215131-121621-GW-SS-PZ-NC	11215131-121721-GW-SS-PZ-NE
	Sample Date:	12/16/2021	12/16/2021	12/16/2021	12/17/2021
Parameters	Unit				
Metals (Dissolved)					
Aluminum (dissolved)	µg/L	150 U	150 U	150 U	150 U
Antimony (dissolved)	µg/L	4.7 U	4.7 U	6.8	4.7 U
Arsenic (dissolved)	µg/L	5.1	3.4	3.3	4.2
Barium (dissolved)	µg/L	681	426	117 J	439
Beryllium (dissolved)	µg/L	0.80 J	0.50 U	2.6	0.50 U
Boron (dissolved)	µg/L	757	837	643	426
Cadmium (dissolved)	µg/L	2.2 J	2.4 J	1.3 J	2.2 J
Calcium (dissolved)	µg/L	164000 J-	289000 J-	249000	128000 J-
Chromium (dissolved)	µg/L	2.0 U	2.7 J	2.4 J	2.0 U
Cobalt (dissolved)	µg/L	2.6 U	2.6 U	2.6 U	2.6 U
Copper (dissolved)	µg/L	5.9 U	5.9 U	5.9 U	5.9 U
Iron (dissolved)	µg/L	6270	1220	10500	21100
Lead (dissolved)	µg/L	1.8 U	1.8 U	1.8 U	1.8 U
Magnesium (dissolved)	µg/L	188000	56600	143000	53600
Manganese (dissolved)	µg/L	2310	1360	743	631
Mercury (dissolved)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U
Molybdenum (dissolved)	µg/L	3.6 U	3.6 U	5.6 J	3.6 U
Nickel (dissolved)	µg/L	2.0 J	1.7 U	1.7 U	1.7 U
Potassium (dissolved)	µg/L	64000	130000	77300	36500
Selenium (dissolved)	µg/L	4.9 U	4.9 U	5.8 J	4.9 U
Silver (dissolved)	µg/L	6.1 U	6.2 J	6.1 U	6.1 U
Sodium (dissolved)	µg/L	1270000	163000	425000	155000
Strontium (dissolved)	µg/L	1910	1220	1820	909
Thallium (dissolved)	µg/L	1.8 J	1.8 J	5.8 J	1.8 U
Tin (dissolved)	µg/L	3.7 U	3.7 U	3.7 U	3.7 U
Titanium (dissolved)	µg/L	2.5 U	2.5 U	2.5 U	2.5 U
Vanadium (dissolved)	µg/L	3.7 J	2.3 J	1.8 J	1.8 U
Zinc (dissolved)	µg/L	18.7 J	6.9 U	7.9 J	10.6 J

Table 2

Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

	Location ID:	PZ-SW	PZ-SC	PZ-NC	PZ-NE
	Sample Name:	11215131-121621-GW-SS-PZ-SW	11215131-121621-GW-SS-PZ-SC	11215131-121621-GW-SS-PZ-NC	11215131-121721-GW-SS-PZ-NE
	Sample Date:	12/16/2021	12/16/2021	12/16/2021	12/17/2021
Parameters	Unit				
General Chemistry					
Alkalinity, total (as CaCO ₃)	mg/L	717	1120	1140	598
Ammonia-N	mg/L	0.11 J	7.1	5.6	3.5
Biochemical oxygen demand (BOD)	mg/L	6.0 U	1.0 U	6.0 U	1.0 U
Bromide	mg/L	8.3 J-	3.4 J-	1.0 J-	2.6 J-
Chemical oxygen demand (COD)	mg/L	200	133	66.7	37.5
Chloride	mg/L	2680	133	185	209
Fluoride	mg/L	0.75	0.61	0.61	2.3
Nitrate	mg/L	0.045 U Dup 0.045 U	0.045 U Dup 0.045 U	0.045 U Dup 0.045 U	0.045 U Dup 0.045 U
Nitrite	mg/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Nitrite/Nitrate	mg/L	0.040 U	0.040 U	0.040 U	0.040 U
pH	s.u.	7.05 J	6.08 J	6.89 J	8.15 J
Phosphorus	mg/L	0.74	0.97	0.34	0.24
Sulfate	mg/L	241	32.1	714	6.9
Sulfide	mg/L	0.48 U	4.3	0.48 U	0.48 U
Total dissolved solids (TDS)	mg/L	4730	1500	2130	340
Total organic carbon (TOC)	mg/L	16.8	37.0	17.3	12.0
Total suspended solids (TSS)	mg/L	16.0	1.5 U	16.0	28.0
Dioxins/Furans (Total)					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/L	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--	--	--

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

	Location ID:	PZ-SW	PZ-SC	PZ-NC	PZ-NE
	Sample Name:	11215131-121621-GW-SS-PZ-SW	11215131-121621-GW-SS-PZ-SC	11215131-121621-GW-SS-PZ-NC	11215131-121721-GW-SS-PZ-NE
	Sample Date:	12/16/2021	12/16/2021	12/16/2021	12/17/2021
Parameters	Unit				
Dioxins/Furans (Total) (Continued)					
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	--	--	--
Total heptachlorodibenzofuran (HpCDF)	pg/L	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	--	--	--
Total hexachlorodibenzofuran (HxCDF)	pg/L	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	--	--	--
Total pentachlorodibenzofuran (PeCDF)	pg/L	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	--	--	--
Total tetrachlorodibenzofuran (TCDF)	pg/L	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	--	--	--
TEQ					
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	--	--	--	--
Dioxins/Furans (Dissolved)					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	pg/L	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

Location ID:	PZ-SW	PZ-SC	PZ-NC	PZ-NE
Sample Name:	11215131-121621-GW-SS-PZ-SW	11215131-121621-GW-SS-PZ-SC	11215131-121621-GW-SS-PZ-NC	11215131-121721-GW-SS-PZ-NE
Sample Date:	12/16/2021	12/16/2021	12/16/2021	12/17/2021

Parameters	Unit	PZ-SW	PZ-SC	PZ-NC	PZ-NE
Dioxins/Furans (Dissolved) (Continued)					
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	--	--	--
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	--	--	--
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	--	--	--
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	--	--	--
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	--	--	--
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	--	--	--
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	--	--	--
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	--	--	--
TEQ					
Total WHO Dioxin TEQ(Human/Mammal)(ND=0) (dissolved)	pg/L	--	--	--	--
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5) (dissolved)	pg/L	--	--	--	--

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

Location ID:	PZ-NE	PZ-SW	PZ-NC
Sample Name:	11215131-121721-GW-SS-DUP-1	11215131-012022-GW-BN-PZ-SW	11215131-012022-GW-BN-PZ-NC
Sample Date:	12/17/2021 Duplicate	01/20/2022	01/20/2022

Parameters	Unit			
Metals				
Aluminum	µg/L	150 U	--	--
Antimony	µg/L	4.7 U	--	--
Arsenic	µg/L	4.6	--	--
Barium	µg/L	432	--	--
Beryllium	µg/L	0.50 U	--	--
Boron	µg/L	420	--	--
Cadmium	µg/L	2.1 J	--	--
Calcium	µg/L	126000 J-	--	--
Chromium	µg/L	2.7 J	--	--
Cobalt	µg/L	2.6 U	--	--
Copper	µg/L	5.9 U	--	--
Iron	µg/L	20600	--	--
Lead	µg/L	1.8 U	--	--
Magnesium	µg/L	52700	--	--
Manganese	µg/L	649	--	--
Mercury	µg/L	0.095 U	--	--
Molybdenum	µg/L	3.6 U	--	--
Nickel	µg/L	1.7 U	--	--
Potassium	µg/L	35900	--	--
Selenium	µg/L	4.9 U	--	--
Silver	µg/L	6.1 U	--	--
Sodium	µg/L	155000	--	--
Strontium	µg/L	896	--	--
Thallium	µg/L	1.8 U	--	--
Tin	µg/L	3.7 U	--	--
Titanium	µg/L	2.5 U	--	--
Vanadium	µg/L	1.8 U	--	--
Zinc	µg/L	13.7 J	--	--

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

Location ID:	PZ-NE	PZ-SW	PZ-NC
Sample Name:	11215131-121721-GW-SS-DUP-1	11215131-012022-GW-BN-PZ-SW	11215131-012022-GW-BN-PZ-NC
Sample Date:	12/17/2021 Duplicate	01/20/2022	01/20/2022

Parameters	Unit			
Metals (Dissolved)				
Aluminum (dissolved)	µg/L	--	--	--
Antimony (dissolved)	µg/L	--	--	--
Arsenic (dissolved)	µg/L	--	--	--
Barium (dissolved)	µg/L	--	--	--
Beryllium (dissolved)	µg/L	--	--	--
Boron (dissolved)	µg/L	--	--	--
Cadmium (dissolved)	µg/L	--	--	--
Calcium (dissolved)	µg/L	--	--	--
Chromium (dissolved)	µg/L	--	--	--
Cobalt (dissolved)	µg/L	--	--	--
Copper (dissolved)	µg/L	--	--	--
Iron (dissolved)	µg/L	--	--	--
Lead (dissolved)	µg/L	--	--	--
Magnesium (dissolved)	µg/L	--	--	--
Manganese (dissolved)	µg/L	--	--	--
Mercury (dissolved)	µg/L	--	--	--
Molybdenum (dissolved)	µg/L	--	--	--
Nickel (dissolved)	µg/L	--	--	--
Potassium (dissolved)	µg/L	--	--	--
Selenium (dissolved)	µg/L	--	--	--
Silver (dissolved)	µg/L	--	--	--
Sodium (dissolved)	µg/L	--	--	--
Strontium (dissolved)	µg/L	--	--	--
Thallium (dissolved)	µg/L	--	--	--
Tin (dissolved)	µg/L	--	--	--
Titanium (dissolved)	µg/L	--	--	--
Vanadium (dissolved)	µg/L	--	--	--
Zinc (dissolved)	µg/L	--	--	--

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

	Location ID:	PZ-NE	PZ-SW	PZ-NC
	Sample Name:	11215131-121721-GW-SS-DUP-1	11215131-012022-GW-BN-PZ-SW	11215131-012022-GW-BN-PZ-NC
	Sample Date:	12/17/2021 Duplicate	01/20/2022	01/20/2022
Parameters	Unit			
General Chemistry				
Alkalinity, total (as CaCO ₃)	mg/L	607	--	--
Ammonia-N	mg/L	3.3	--	--
Biochemical oxygen demand (BOD)	mg/L	6.0 U	--	--
Bromide	mg/L	4.1 J-	--	--
Chemical oxygen demand (COD)	mg/L	32.5	--	--
Chloride	mg/L	205	--	--
Fluoride	mg/L	2.3	--	--
Nitrate	mg/L	0.045 U Dup 0.045 U	--	--
Nitrite	mg/L	0.0050 U	--	--
Nitrite/Nitrate	mg/L	0.040 U	--	--
pH	s.u.	7.04 J	--	--
Phosphorus	mg/L	0.25	--	--
Sulfate	mg/L	9.0	--	--
Sulfide	mg/L	0.48 U	--	--
Total dissolved solids (TDS)	mg/L	540	--	--
Total organic carbon (TOC)	mg/L	12.1	--	--
Total suspended solids (TSS)	mg/L	30.0	--	--
Dioxins/Furans (Total)				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	--	4 U	2.32 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	--	9.47 J	16.5 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	--	1.71 J	0.964 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	1.66 U	1.72 U
1,2,3,4,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	--	1.83 U	1.39 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	1.31 U	1.19 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	1.62 U	1.58 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	1.27 U	1.21 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	1.44 U	1.34 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	--	1.36 U	1.38 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	1.56 U	1.36 U

Table 2

Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

	Location ID:	PZ-NE	PZ-SW	PZ-NC
	Sample Name:	11215131-121721-GW-SS-DUP-1	11215131-012022-GW-BN-PZ-SW	11215131-012022-GW-BN-PZ-NC
	Sample Date:	12/17/2021 Duplicate	01/20/2022	01/20/2022
Parameters	Unit			
Dioxins/Furans (Total) (Continued)				
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	1.1 U	1.1 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	1.6 U	1.87 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	--	1.17 U	0.979 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	--	1 U	1.17 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	--	1.05 U	4.02 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	2.19 U	1.84 U
Total heptachlorodibenzofuran (HpCDF)	pg/L	--	1.71 J	1.15 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	--	1.66 U	1.72 U
Total hexachlorodibenzofuran (HxCDF)	pg/L	--	1.27 U	1.17 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	--	1.54 U	1.42 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	--	1.05 U	1.14 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	--	1.6 U	1.87 U
Total tetrachlorodibenzofuran (TCDF)	pg/L	--	1.05 U	6.81 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	--	2.19 U	1.84 U
TEQ				
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	--	0.02 J	0.407 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	--	2.64 J	2.93 J
Dioxins/Furans (Dissolved)				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	--	3.37 U	3.27 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	pg/L	--	15.1 U	5.83 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	2.63 J	1.19 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	1.95 U	2.61 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	1.9 U	1.85 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	1.43 U	1.27 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	1.55 U	1.54 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	1.44 U	1.24 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	1.54 U	1.36 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	1.68 U	1.48 U

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

	Location ID:	PZ-NE	PZ-SW	PZ-NC
	Sample Name:	11215131-121721-GW-SS-DUP-1	11215131-012022-GW-BN-PZ-SW	11215131-012022-GW-BN-PZ-NC
	Sample Date:	12/17/2021 Duplicate	01/20/2022	01/20/2022
Parameters				
	Unit			
Dioxins/Furans (Dissolved) (Continued)				
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	1.56 U	1.36 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	1.34 U	1.26 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	1.86 U	2 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	1.37 U	1.3 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	1.24 U	1.22 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	1.2 U	1.15 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	2.13 U	2.37 U
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	--	2.63 J	1.48 U
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	--	1.95 U	2.61 U
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	--	3.55 J	1.31 U
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	--	1.55 U	1.42 U
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	--	1.29 U	1.24 U
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	--	1.86 U	2 U
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	--	1.2 U	1.15 U
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	--	2.13 U	2.37 U
TEQ				
Total WHO Dioxin TEQ(Human/Mammal)(ND=0) (dissolved)	pg/L	--	0.0263 J	0
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5) (dissolved)	pg/L	--	2.84 J	2.95

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

Location ID:	PZ-NE	PZ-NE	PZ-SC
Sample Name:	11215131-012022-GW-BN-PZ-NE	11215131-012022-GW-BN-DUP-1	11215131-012022-GW-BN-PZ-SC
Sample Date:	01/20/2022	01/20/2022 Duplicate	01/20/2022

Parameters	Unit			
Metals				
Aluminum	µg/L	--	--	--
Antimony	µg/L	--	--	--
Arsenic	µg/L	--	--	--
Barium	µg/L	--	--	--
Beryllium	µg/L	--	--	--
Boron	µg/L	--	--	--
Cadmium	µg/L	--	--	--
Calcium	µg/L	--	--	--
Chromium	µg/L	--	--	--
Cobalt	µg/L	--	--	--
Copper	µg/L	--	--	--
Iron	µg/L	--	--	--
Lead	µg/L	--	--	--
Magnesium	µg/L	--	--	--
Manganese	µg/L	--	--	--
Mercury	µg/L	--	--	--
Molybdenum	µg/L	--	--	--
Nickel	µg/L	--	--	--
Potassium	µg/L	--	--	--
Selenium	µg/L	--	--	--
Silver	µg/L	--	--	--
Sodium	µg/L	--	--	--
Strontium	µg/L	--	--	--
Thallium	µg/L	--	--	--
Tin	µg/L	--	--	--
Titanium	µg/L	--	--	--
Vanadium	µg/L	--	--	--
Zinc	µg/L	--	--	--

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

	Location ID:	PZ-NE	PZ-NE	PZ-SC
	Sample Name:	11215131-012022-GW-BN-PZ-NE	11215131-012022-GW-BN-DUP-1	11215131-012022-GW-BN-PZ-SC
	Sample Date:	01/20/2022	01/20/2022 Duplicate	01/20/2022
Parameters	Unit			
Metals (Dissolved)				
Aluminum (dissolved)	µg/L	--	--	--
Antimony (dissolved)	µg/L	--	--	--
Arsenic (dissolved)	µg/L	--	--	--
Barium (dissolved)	µg/L	--	--	--
Beryllium (dissolved)	µg/L	--	--	--
Boron (dissolved)	µg/L	--	--	--
Cadmium (dissolved)	µg/L	--	--	--
Calcium (dissolved)	µg/L	--	--	--
Chromium (dissolved)	µg/L	--	--	--
Cobalt (dissolved)	µg/L	--	--	--
Copper (dissolved)	µg/L	--	--	--
Iron (dissolved)	µg/L	--	--	--
Lead (dissolved)	µg/L	--	--	--
Magnesium (dissolved)	µg/L	--	--	--
Manganese (dissolved)	µg/L	--	--	--
Mercury (dissolved)	µg/L	--	--	--
Molybdenum (dissolved)	µg/L	--	--	--
Nickel (dissolved)	µg/L	--	--	--
Potassium (dissolved)	µg/L	--	--	--
Selenium (dissolved)	µg/L	--	--	--
Silver (dissolved)	µg/L	--	--	--
Sodium (dissolved)	µg/L	--	--	--
Strontium (dissolved)	µg/L	--	--	--
Thallium (dissolved)	µg/L	--	--	--
Tin (dissolved)	µg/L	--	--	--
Titanium (dissolved)	µg/L	--	--	--
Vanadium (dissolved)	µg/L	--	--	--
Zinc (dissolved)	µg/L	--	--	--

Table 2

Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

	Location ID:	PZ-NE	PZ-NE	PZ-SC
	Sample Name:	11215131-012022-GW-BN-PZ-NE	11215131-012022-GW-BN-DUP-1	11215131-012022-GW-BN-PZ-SC
	Sample Date:	01/20/2022	01/20/2022 Duplicate	01/20/2022
Parameters	Unit			
General Chemistry				
Alkalinity, total (as CaCO ₃)	mg/L	--	--	--
Ammonia-N	mg/L	--	--	--
Biochemical oxygen demand (BOD)	mg/L	--	--	--
Bromide	mg/L	--	--	--
Chemical oxygen demand (COD)	mg/L	--	--	--
Chloride	mg/L	--	--	--
Fluoride	mg/L	--	--	--
Nitrate	mg/L	--	--	--
Nitrite	mg/L	--	--	--
Nitrite/Nitrate	mg/L	--	--	--
pH	s.u.	--	--	--
Phosphorus	mg/L	--	--	--
Sulfate	mg/L	--	--	--
Sulfide	mg/L	--	--	--
Total dissolved solids (TDS)	mg/L	--	--	--
Total organic carbon (TOC)	mg/L	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--
Dioxins/Furans (Total)				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/L	3.44 U	2.77 U	4.11 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/L	14.4 J	14.7 J	15.7 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	0.795 U	1.13 U	0.817 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	1.84 U	1.49 U	1.53 U
1,2,3,4,7,8-Heptachlorodibenzofuran (HpCDF)	pg/L	1.17 U	1.67 U	1.21 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.989 U	1.34 U	0.791 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.94 U	1.37 U	1.56 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.979 U	1.18 U	0.799 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.77 U	1.25 U	1.44 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/L	1.23 U	1.51 U	0.904 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.82 U	1.27 U	1.51 U

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

	Location ID:	PZ-NE	PZ-NE	PZ-SC
	Sample Name:	11215131-012022-GW-BN-PZ-NE	11215131-012022-GW-BN-DUP-1	11215131-012022-GW-BN-PZ-SC
	Sample Date:	01/20/2022	01/20/2022 Duplicate	01/20/2022
Parameters	Unit			
Dioxins/Furans (Total) (Continued)				
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	1.13 U	0.827 U	0.829 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.97 U	2 U	1.4 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/L	0.854 U	1.13 U	0.742 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/L	1.03 U	0.787 U	0.784 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/L	4.11 J	4.65 J	16.6
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	1.95 U	2.11 U	3.52 J
Total heptachlorodibenzofuran (HpCDF)	pg/L	0.961 U	1.37 U	0.995 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/L	1.84 U	1.49 U	2.92 J
Total hexachlorodibenzofuran (HxCDF)	pg/L	0.998 U	1.27 U	0.802 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/L	1.84 U	1.3 U	1.5 U
Total pentachlorodibenzofuran (PeCDF)	pg/L	1.08 U	0.807 U	0.806 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/L	1.97 U	2 U	1.4 U
Total tetrachlorodibenzofuran (TCDF)	pg/L	4.11 J	7.15 J	32.2 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	1.95 U	2.11 U	3.52 J
TEQ				
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/L	0.415 J	0.469 J	5.16 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/L	3.05	3.13 J	6.42 J
Dioxins/Furans (Dissolved)				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF) (dissolved)	pg/L	3.33 U	2.89 U	2.77 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	pg/L	14.2 U	7.96 J	10.9 U
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	1.21 U	1.34 U	0.95 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	2.17 U	2.08 U	3.69 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	1.91 U	1.91 U	1.41 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	1.04 U	1.15 U	1.14 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	1.64 U	1.84 U	1.78 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	0.902 U	1.13 U	1.18 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	1.52 U	1.71 U	1.48 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	1.11 U	1.22 U	1.36 U

Table 2

**Analytical Results Summary
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

	Location ID:	PZ-NE	PZ-NE	PZ-SC
	Sample Name:	11215131-012022-GW-BN-PZ-NE	11215131-012022-GW-BN-DUP-1	11215131-012022-GW-BN-PZ-SC
	Sample Date:	01/20/2022	01/20/2022 Duplicate	01/20/2022
Parameters	Unit			
Dioxins/Furans (Dissolved) (Continued)				
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	1.53 U	1.7 U	1.68 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	1.02 U	1.28 U	1.43 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	1.67 U	1.58 U	1.65 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	0.896 U	1.11 U	1.17 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	0.991 U	1.23 U	1.43 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	1.32 U	1.16 U	3.12 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	2.27 U	1.73 U	2.09 U
Total heptachlorodibenzofuran (HpCDF) (dissolved)	pg/L	1.51 U	1.59 U	1.15 U
Total heptachlorodibenzo-p-dioxin (HpCDD) (dissolved)	pg/L	2.17 U	2.08 U	3.98 J
Total hexachlorodibenzofuran (HxCDF) (dissolved)	pg/L	0.979 U	1.15 U	1.2 U
Total hexachlorodibenzo-p-dioxin (HxCDD) (dissolved)	pg/L	1.56 U	1.75 U	1.64 U
Total pentachlorodibenzofuran (PeCDF) (dissolved)	pg/L	1.01 U	1.25 U	1.43 U
Total pentachlorodibenzo-p-dioxin (PeCDD) (dissolved)	pg/L	1.67 U	1.58 U	1.65 U
Total tetrachlorodibenzofuran (TCDF) (dissolved)	pg/L	1.32 U	1.16 U	3.12 J
Total tetrachlorodibenzo-p-dioxin (TCDD) (dissolved)	pg/L	2.27 U	1.73 U	2.09 U
TEQ				
Total WHO Dioxin TEQ(Human/Mammal)(ND=0) (dissolved)	pg/L	0	0.00239 J	0.312 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5) (dissolved)	pg/L	2.66	2.44 J	2.94 J

Notes:

"--" - Not analyzed

J - Estimated concentration

"J-" - Estimated concentration; implied low bias

U - Not detected at the associated reporting limit

WHO - World Health Organization

TEQ - Toxic Equivalent

Table 3

Analytical Methods
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

Parameter	Method	Matrix	Preservation	Holding Time	
				Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Metals T/D	SW-846 6010B	Water	pH < 2 and Iced, 0-6° C	-	180
Mercury T/D	SW-846 7470A	Water	pH < 2 and Iced, 0-6° C	-	28
Alkalinity	SM 2320 B	Water	Iced, 0-6° C	-	14
Anions - Bromide, Chloride, Fluoride, Sulfate	SW-846 9056	Water	Iced, 0-6° C	-	28
Phosphorus	SM 4500 P E	Water	pH < 2 and Iced, 0-6° C	-	28
Total Organic Carbon	SM 5310 B	Water	pH < 2 and Iced, 0-6° C	-	28
Chemical Oxygen Demand	SW-846 5220C	Water	pH < 2 and Iced, 0-6° C	-	28
Biochemical Oxygen Demand	SM 5210 B	Water	Iced, 0-6° C	-	24 hours
Total Suspended Solids	SM 2540 D	Water	Iced, 0-6° C	-	7
Total Dissolved Solids	SM 2540 C	Water	Iced, 0-6° C	-	7
pH corrosivity	SW-846 9045	Water	Iced, 0-6° C	-	15 minutes
Nitrate	EPA 353.2	Water	Iced, 0-6° C	-	48 Hrs
Nitrite	EPA 353.2	Water	Iced, 0-6° C	-	48 Hrs
Nitrite/Nitrate	EPA 353.2	Water	pH < 2 and Iced, 0-6° C	-	28
Ammonia Nitrogen	SM 4500H	Water	Iced, 0-6° C	-	28
Sulfide	SM4500-S2-F	Water	pH > 9 and Iced, 0-6° C	-	7

Table 3

Analytical Methods
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

Parameter	Method	Matrix	Preservation	Holding Time	
				Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
PCDDs/PCDFs	EPA 1613B	Water	Iced, 0-6° C	365	365

Notes:

- PCDDs - Polychlorinated Dibenzodioxins
PCDFs - Polychlorinated Dibenzofurans

Method References:

- EPA - U.S. Environmental Protection Agency. Analytical Methodology (October 2007 and October 1994)
SM - "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions
SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 4

**Qualified Sample Results Due to Holding Time Exceedance
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

Parameter	Sample ID	Holding Time (days)	Holding Time Criteria (days)	Analyte	Qualified Sample Results	Units
General Chemistry	11215131-121721-GW-SS-PZ-NE	10	15 minutes	pH	8.15 J	s.u.
	11215131-121721-GW-SS-DUP-1	10	15 minutes		7.04 J	s.u.
	11215131-121721-GW-SS-RB-1	10	15 minutes		7.12 J	s.u.
	11215131-121621-GW-SS-PZ-SW	11	15 minutes		7.05 J	s.u.
	11215131-121621-GW-SS-PZ-SC	11	15 minutes		6.08 J	s.u.
	11215131-121621-GW-SS-PZ-NC	11	15 minutes		6.89 J	s.u.

Notes:

J - Estimated concentration

Table 5

Qualified Sample Results Due to Outlying MS/MSD Results
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

Parameter	Sample ID	Analyte	MS	MSD	RPD	Control Limits		Qualified Result	Units
			% Recovery	% Recovery		% Recovery	RPD		
Metals	11215131-121721-GW-SS-PZ-NE	Calcium	54	48	1	75-125	20	125000 J-	µg/L
	11215131-121721-GW-SS-DUP-1							126000 J-	µg/L
	11215131-121721-GW-SS-RB-1							99 UJ	µg/L
	11215131-121621-GW-SS-PZ-SW							163000 J-	µg/L
	11215131-121621-GW-SS-PZ-SC							285000 J-	µg/L
Metals	11215131-121721-GW-SS-PZ-NE	Calcium (dissolved)	54	48	1	75-125	20	128000 J-	µg/L
	11215131-121621-GW-SS-PZ-SW							164000 J-	µg/L
	11215131-121621-GW-SS-PZ-SC							289000 J-	µg/L

Notes:

- MS - Matrix Spike
- MSD - Matrix Spike Duplicate
- RPD - Relative Percent Difference
- J- - Estimated concentration; implied low bias
- UJ - Not detected; associated reporting limit is estimated

Table 6

**Qualified Sample Data Due to Outlying Matrix Spike Recoveries
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022**

Parameter	Spiked Sample ID	Analyte	MS	<u>Control Limits</u>	Associated Sample IDs	Qualified	Units
			% Recovery	% Recovery		Result	
General Chemistry	11215131-121621-GW-SS-PZ-SC	Bromide	-25	80-120	11215131-121621-GW-SS-PZ-SC	3.4 J-	mg/L
					11215131-121721-GW-SS-PZ-NE	2.6 J-	mg/L
					11215131-121721-GW-SS-DUP-1	4.1 J-	mg/L
					11215131-121621-GW-SS-PZ-SW	8.3 J-	mg/L
					11215131-121621-GW-SS-PZ-NC	1.0 J-	mg/L

Notes:

- MS - Matrix Spike
- J- - Estimated concentration; implied low bias

Table 7

Qualified Sample Results Due to Outlying Identification Criteria
Groundwater Sampling
San Jacinto Supplemental Design Investigation
Channelview, Harris County, Texas
December 2021 - January 2022

Parameter	Sample ID	Analyte		Units
Dioxins/Furans	11215131-012022-GW-BN-PZ-SC	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3.52 J	pg/L
	11215131-012022-GW-BN-PZ-SW	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9.47 J	pg/L
	11215131-012022-GW-BN-PZ-NC	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	16.5 J	pg/L
	11215131-012022-GW-BN-DUP-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	14.7 J	pg/L
	11215131-012022-GW-BN-PZ-SC	2,3,7,8-Tetrachlorodibenzofuran (TCDF) (dissolved)	3.12 J	pg/L
	11215131-012022-GW-BN-DUP-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) (dissolved)	7.96 J	pg/L

Notes:

J - Estimated concentration



FINAL LAB REPORT

Prepared by

SGS NORTH AMERICA

Prepared for

This report is approved by

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PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project
SGS Project #
Analytical Protocol(s)
No. Samples Submitted
Additional QC Sample(s)
No. Laboratory Method Blanks
No. OPRs / Batch CS3
Date Received
Condition Received
Temperature upon Receipt (°C)
Extraction within Holding Time
Analysis within Holding Time



QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.



APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.



SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-012022-GW-BN-PZ-SC

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	Lab Sample ID:	B6237_18888_DF_001	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18888	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	21:41:24
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		3.52	J	ES 2378-TCDD	85.7	
12378-PeCDD	ND	1.4			ES 12378-PeCDD	93.3	
123478-HxCDD	ND	1.56			ES 123478-HxCDD	95.1	
123678-HxCDD	ND	1.44			ES 123678-HxCDD	106	
123789-HxCDD	ND	1.51			ES 123789-HxCDD	92.7	
1234678-HpCDD	ND	1.53			ES 1234678-HpCDD	96.1	
OCDD	15.7			J	ES OCDD	94.1	
2378-TCDF	16.6				ES 2378-TCDF	88.2	
12378-PeCDF	ND	0.829			ES 12378-PeCDF	88.4	
23478-PeCDF	ND	0.784			ES 23478-PeCDF	91.6	
123478-HxCDF	ND	0.791			ES 123478-HxCDF	92.1	
123678-HxCDF	ND	0.799			ES 123678-HxCDF	97.8	
234678-HxCDF	ND	0.742			ES 234678-HxCDF	115	
123789-HxCDF	ND	0.904			ES 123789-HxCDF	94.5	
1234678-HpCDF	ND	0.817			ES 1234678-HpCDF	99.3	
1234789-HpCDF	ND	1.21			ES 1234789-HpCDF	97.2	
OCDF	4.11			J	ES OCDF	101	
Totals					Standard	CS Recoveries	
Total TCDD	ND		3.52		CS 37Cl-2378-TCDD	92.6	
Total PeCDD	ND	1.4	ND		CS 12347-PeCDD	112	
Total HxCDD	ND	1.5	ND		CS 12346-PeCDF	99.5	
Total HpCDD	ND		2.92		CS 123469-HxCDF	119	
					CS 1234689-HpCDF	117	
Total TCDF	30.1		32.2				
Total PeCDF	ND	0.806	ND				
Total HxCDF	ND	0.802	ND				
Total HpCDF	ND	0.995	ND				
Total PCDD/Fs	50		58.4				
WHO-2005 TEQs							
TEQ: ND=0	1.67		5.19				
TEQ: ND=DL/2	2.91	2.2	6.42				
TEQ: ND=DL	4.14	4.4	7.66				



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Sample ID: 11215131-012022-GW-BN-PZ-SC

Method 1613B

Client Data			Sample Data			Laboratory Data						
Name:	GHD Services Inc.		Matrix:	Aqueous		Lab Project ID:	B6237		Date Received:	26-Jan-2022		
Project ID:	11215131-SJRWP-PCFSE		Weight/Volume:	1.00 L		Lab Sample ID:	B6237_18888_DF_001		Date Extracted:	02-Feb-2022		
Date Collected:	20-Jan-2022		pH:	6		QC Batch No.:	18888		Date Analyzed:	09-Feb-2022		
			Split:	-		Dilution:	-		Time Analyzed:	21:41:24		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(1.84)		12479/12468D	(1.4)		124679/124689D	(1.5)		1234679D	[2.92]	J
1379D	(1.84)		12469D	(1.4)		123468D	(1.5)		1234678D	(1.53)	
1369D	(1.84)		12368D	(1.4)		123679/123689D	(1.5)				
1469D	(1.84)		12478D	(1.4)		123469D	(1.5)				
1247D...[4]	(1.84)		12379D	(1.4)		123478D	(1.56)				
1378D	(1.84)		12369D...[3]	(1.4)		123678D	(1.44)				
1268D	(1.84)		12346/12347D	(1.4)		123467D	(1.5)				
1478D	(1.84)		12378D	(1.4)		123789D	(1.51)		Conc.	0	
1279D	(1.84)		12367D	(1.4)					EMPC	2.92	
1234/1269D	(1.84)		12389D	(1.4)							
1236D	(1.84)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(1.84)									(pg/L)	
1239D	(1.84)								OCDD	15.7	J
2378D	[3.52]	J									
1278D	(1.84)										
1267D	(1.84)										
1289D	(1.84)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	3.52		EMPC	0		EMPC	0				



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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	1.67	5.19
TEQ: ND=DL/2	2.91	6.42
TEQ: ND=DL	4.14	7.66
	Conc.	EMPC
Total PCDD/Fs	50	58.4

Checkcode: 543-255-MYM

Report Created: 10-Feb-2022 10:27 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SC

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: 26-Jan-2022		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6237			Date Extracted: 02-Feb-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.00 L			Lab Sample ID: B6237_18888_DF_001			Date Analyzed: 09-Feb-2022		
Date Collected: 20-Jan-2022			pH: 6			QC Batch No.: 18888			Time Analyzed: 21:41:24		
Split: -			Dilution: -								
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(0.936)		13468/12468F	(0.817)		123468F	(0.802)		1234678F	(0.817)	
1468F	(0.936)		13678F...[3]	(0.806)		124678/134678F	(0.802)		1234679F	(0.995)	
2468F	(0.936)		12368F...[3]	(0.806)		134679F	(0.802)		1234689F	(0.995)	
1346/1246F	(0.936)		14678F	(0.806)		124679F	(0.802)		1234789F	(1.21)	
1347F...[3]	(0.936)		13479F	(0.806)		124689F	(0.802)				
1348F	(0.936)		13469/12479F	(0.806)		123467F	(0.802)				
1248F...[3]	(0.936)		12346F	(0.806)		123478F	(0.791)				
1268F	(0.936)		23468/12469F	(0.806)		123678F	(0.799)				
1467F	(0.936)		12347F	(0.806)		123479F	(0.802)				
1478F	(0.936)		12348F	(0.806)		123469F	(0.802)				
1369/1237F	(0.936)		12378F	(0.829)		123679F	(0.802)				
2467F	(0.936)		12678/12367F	(0.806)		234678F	(0.742)		Conc.	0	
2368F	(0.936)		12379F	(0.806)		234678/123689F	0		EMPC	0	
1238F...[5]	(0.936)		12679F	(0.806)		123689F	(0.802)				
1278F	9.22		23467/12369F	(0.806)		123789F	(0.904)		Octa-Furan	Conc	Qualifiers
1349F	(0.936)		23478F	(0.784)		123789/123489F	0			(pg/L)	
1267F	(0.936)		23478/12489F	0		123489F	(0.802)		OCDF	4.11	J
2346/1249F	(0.936)		12489F	(0.806)							
2347/1279F	(0.936)		12349F	(0.806)							
2348F	1.87	J	12389F	(0.806)							
2378F	16.6										
2367/3467F	2.4	J									
1269F	(0.936)										
1239F	(0.936)										
1289F	[2.02]	J									
Conc.	30.1		Conc.	0		Conc.	0				
EMPC	32.2		EMPC	0		EMPC	0				


Checkcode: 543-255-MYM

Report Created: 10-Feb-2022 10:27 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SC TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6237_18888_DF_001
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	QC Batch No.:	18888
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	02-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	09-Feb-2022 21:41
Lab Project No:	B6237	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[3.52]	J	1.84	[3.52]	[3.52]	[3.52]
12378-PeCDD	(1.4)		1.4	(0.699)	(1.4)	(1.4)
123478-HxCDD	(1.56)		1.56	(0.156)	(0.156)	(0.156)
123678-HxCDD	(1.44)		1.44	(0.144)	(0.144)	(0.144)
123789-HxCDD	(1.51)		1.51	(0.151)	(0.151)	(0.151)
1234678-HpCDD	(1.53)		1.53	(0.0153)	(0.0153)	(0.0153)
OCDD	15.7	J	3.44	0.0157	0.00157	0.00472
2378-TCDF	16.6		0.936	1.66	1.66	1.66
12378-PeCDF	(0.829)		0.829	(0.0414)	(0.0414)	(0.0249)
23478-PeCDF	(0.784)		0.784	(0.392)	(0.392)	(0.235)
123478-HxCDF	(0.791)		0.791	(0.0791)	(0.0791)	(0.0791)
123678-HxCDF	(0.799)		0.799	(0.0799)	(0.0799)	(0.0799)
234678-HxCDF	(0.742)		0.742	(0.0742)	(0.0742)	(0.0742)
123789-HxCDF	(0.904)		0.904	(0.0904)	(0.0904)	(0.0904)
1234678-HpCDF	(0.817)		0.817	(0.00817)	(0.00817)	(0.00817)
1234789-HpCDF	(1.21)		1.21	(0.0121)	(0.0121)	(0.0121)
OCDF	4.11	J	2.37	0.00411	0.000411	0.00123

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	EMPC = 0, ND = 0	1.68	1.67	1.67
	EMPC = 0, ND = DL / 2	2.66	2.99	2.91
	EMPC = 0, ND = DL	3.63	4.31	4.14
	EMPC = 0, < J-level = 0	1.66	1.66	1.66
	EMPC = EMPC, ND = 0	5.2	5.19	5.19
	EMPC = EMPC, ND = DL / 2	6.18	6.51	6.42
	EMPC = EMPC, ND = DL	7.15	7.83	7.66
	EMPC = EMPC, < J-level = 0	1.66	1.66	1.66

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	Lab Sample ID:	B6237_18888_DF_001MS	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18888	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	22:27:43
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	258				ES 2378-TCDD	80.1	
12378-PeCDD	1,120				ES 12378-PeCDD	82.9	
123478-HxCDD	1,260				ES 123478-HxCDD	82.8	
123678-HxCDD	1,240				ES 123678-HxCDD	93.1	
123789-HxCDD	1,190				ES 123789-HxCDD	80.2	
1234678-HpCDD	1,200				ES 1234678-HpCDD	81.9	
OCDD	2,410				ES OCDD	80.1	
2378-TCDF	258				ES 2378-TCDF	75.4	
12378-PeCDF	1,110				ES 12378-PeCDF	81.4	
23478-PeCDF	1,240				ES 23478-PeCDF	80	
123478-HxCDF	1,170				ES 123478-HxCDF	81.5	
123678-HxCDF	1,180				ES 123678-HxCDF	84.7	
234678-HxCDF	1,160				ES 234678-HxCDF	99	
123789-HxCDF	1,100				ES 123789-HxCDF	84	
1234678-HpCDF	1,180				ES 1234678-HpCDF	85.7	
1234789-HpCDF	1,120				ES 1234789-HpCDF	84.7	
OCDF	2,330				ES OCDF	84.2	
Totals					Standard	CS Recoveries	
Total TCDD	1,190		1,190		CS 37Cl-2378-TCDD	93.8	
Total PeCDD	1,680		1,680		CS 12347-PeCDD	109	
Total HxCDD	4,000		4,000		CS 12346-PeCDF	101	
Total HpCDD	1,480		1,480		CS 123469-HxCDF	112	
Total TCDF	1,440		1,440		CS 1234689-HpCDF	109	
Total PeCDF	4,700		4,700				
Total HxCDF	7,280		7,280				
Total HpCDF	2,300		2,300				
Total PCDD/Fs	28,800		28,800				
WHO-2005 TEQs							
TEQ: ND=0	2670		2670				
TEQ: ND=DL/2	2670	4.52	2670				
TEQ: ND=DL	2670	9.05	2670				



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Sample ID: 11215131-012022-GW-BN-PZ-SC-MSD

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	Lab Sample ID:	B6237_18888_DF_001MSD	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18888	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	23:14:03
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	229				ES 2378-TCDD	86.3	
12378-PeCDD	998				ES 12378-PeCDD	91.2	
123478-HxCDD	1,080				ES 123478-HxCDD	95.8	
123678-HxCDD	1,110				ES 123678-HxCDD	106	
123789-HxCDD	1,040				ES 123789-HxCDD	93.2	
1234678-HpCDD	1,050				ES 1234678-HpCDD	93	
OCDD	2,230				ES OCDD	88.3	
2378-TCDF	238				ES 2378-TCDF	84	
12378-PeCDF	962				ES 12378-PeCDF	88.5	
23478-PeCDF	1,050				ES 23478-PeCDF	88.9	
123478-HxCDF	1,030				ES 123478-HxCDF	92	
123678-HxCDF	1,060				ES 123678-HxCDF	96.6	
234678-HxCDF	1,010				ES 234678-HxCDF	115	
123789-HxCDF	987				ES 123789-HxCDF	93.5	
1234678-HpCDF	1,020				ES 1234678-HpCDF	99	
1234789-HpCDF	1,030				ES 1234789-HpCDF	93.5	
OCDF	2,090				ES OCDF	96.6	
Totals					Standard	CS Recoveries	
Total TCDD	1,070		1,070		CS 37Cl-2378-TCDD	87	
Total PeCDD	1,480		1,480		CS 12347-PeCDD	103	
Total HxCDD	3,490		3,490		CS 12346-PeCDF	91.6	
Total HpCDD	1,290		1,290		CS 123469-HxCDF	114	
Total TCDF	1,290		1,290		CS 1234689-HpCDF	107	
Total PeCDF	4,110		4,110				
Total HxCDF	6,420		6,420				
Total HpCDF	2,050		2,050				
Total PCDD/Fs	25,500		25,500				
WHO-2005 TEQs							
TEQ: ND=0	2360		2360				
TEQ: ND=DL/2	2360	3.79	2360				
TEQ: ND=DL	2360	7.59	2360				



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MS/MSD Comparison



Method 1613B

Sample ID: 11215131-012022-GW-BN-PZ-SC

Analyte	Native Conc.	MS Spike	MS Conc.	MS Rec.	MSD Spike	MSD Conc.	MSD Rec.	RPD
	(pg/L)	(pg/L)	(pg/L)	%	(pg/L)	(pg/L)	%	
2,3,7,8-TCDD	3.52	200	258	127	200	229	113	12%
1,2,3,7,8-PeCDD	0	1000	1120	112	1000	998	99.8	12%
1,2,3,4,7,8-HxCDD	0	1000	1260	126	1000	1080	108	15%
1,2,3,6,7,8-HxCDD	0	1000	1240	124	1000	1110	111	11%
1,2,3,7,8,9-HxCDD	0	1000	1190	119	1000	1040	104	13%
1,2,3,4,6,7,8-HpCDD	0	1000	1200	120	1000	1050	105	13%
OCDD	15.7	2000	2410	120	2000	2230	111	8%
2,3,7,8-TCDF	16.6	200	258	121	200	238	111	9%
1,2,3,7,8-PeCDF	0	1000	1110	111	1000	962	96.2	14%
2,3,4,7,8-PeCDF	0	1000	1240	124	1000	1050	105	17%
1,2,3,4,7,8-HxCDF	0	1000	1170	117	1000	1030	103	13%
1,2,3,6,7,8-HxCDF	0	1000	1180	118	1000	1060	106	11%
2,3,4,6,7,8-HxCDF	0	1000	1160	116	1000	1010	101	14%
1,2,3,7,8,9-HxCDF	0	1000	1100	110	1000	987	98.7	11%
1,2,3,4,6,7,8-HpCDF	0	1000	1180	118	1000	1020	102	15%
1,2,3,4,7,8,9-HpCDF	0	1000	1120	112	1000	1030	103	8%
OCDF	4.11	2000	2330	116	2000	2090	104	11%


* % Recovery limits for MS and MSD: 70-130% of expected value, if native < RL

* RPD limit for MS vs. MSD recoveries: +/- 20%, if native < RL

Sample ID: 11215131-012022-GW-BN-PZ-SW

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	Lab Sample ID:	B6237_18888_DF_002	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18888	Date Analyzed:	10-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	0:00:24
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	2.19			ES 2378-TCDD	86.8	
12378-PeCDD	ND	1.6			ES 12378-PeCDD	90.5	
123478-HxCDD	ND	1.62			ES 123478-HxCDD	95.8	
123678-HxCDD	ND	1.44			ES 123678-HxCDD	103	
123789-HxCDD	ND	1.56			ES 123789-HxCDD	91.1	
1234678-HpCDD	ND	1.66			ES 1234678-HpCDD	89.8	
OCDD	EMPC		9.47	J	ES OCDD	91.2	
2378-TCDF	ND	1.05			ES 2378-TCDF	83.8	
12378-PeCDF	ND	1.1			ES 12378-PeCDF	82.3	
23478-PeCDF	ND	1			ES 23478-PeCDF	84.7	
123478-HxCDF	ND	1.31			ES 123478-HxCDF	88.9	
123678-HxCDF	ND	1.27			ES 123678-HxCDF	97.4	
234678-HxCDF	ND	1.17			ES 234678-HxCDF	114	
123789-HxCDF	ND	1.36			ES 123789-HxCDF	95	
1234678-HpCDF	1.71			J	ES 1234678-HpCDF	99	
1234789-HpCDF	ND	1.83			ES 1234789-HpCDF	89.8	
OCDF	ND	4			ES OCDF	91.4	
Totals					Standard	CS Recoveries	
Total TCDD	ND	2.19	ND		CS 37Cl-2378-TCDD	91.4	
Total PeCDD	ND	1.6	ND		CS 12347-PeCDD	102	
Total HxCDD	ND	1.54	ND		CS 12346-PeCDF	86.8	
Total HpCDD	ND	1.66	ND		CS 123469-HxCDF	112	
					CS 1234689-HpCDF	106	
Total TCDF	ND	1.05	ND				
Total PeCDF	ND	1.05	ND				
Total HxCDF	ND	1.27	ND				
Total HpCDF	1.71		1.71				
Total PCDD/Fs	1.71		11.2				
WHO-2005 TEQs							
TEQ: ND=0	0.0171		0.02				
TEQ: ND=DL/2	2.64	2.63	2.64				
TEQ: ND=DL	5.25	5.25	5.26				



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Sample ID: 11215131-012022-GW-BN-PZ-SW **Method 1613B**

Client Data			Sample Data			Laboratory Data					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6237			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.02 L			Lab Sample ID: B6237_18888_DF_002			Date Extracted: 02-Feb-2022		
Date Collected: 20-Jan-2022			pH: 6			QC Batch No.: 18888			Date Analyzed: 10-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 0:00:24		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(2.19)		12479/12468D	(1.6)		124679/124689D	(1.54)		1234679D	(1.66)	
1379D	(2.19)		12469D	(1.6)		123468D	(1.54)		1234678D	(1.66)	
1369D	(2.19)		12368D	(1.6)		123679/123689D	(1.54)				
1469D	(2.19)		12478D	(1.6)		123469D	(1.54)				
1247D...[4]	(2.19)		12379D	(1.6)		123478D	(1.62)				
1378D	(2.19)		12369D...[3]	(1.6)		123678D	(1.44)				
1268D	(2.19)		12346/12347D	(1.6)		123467D	(1.54)				
1478D	(2.19)		12378D	(1.6)		123789D	(1.56)		Conc.	0	
1279D	(2.19)		12367D	(1.6)					EMPC	0	
1234/1269D	(2.19)		12389D	(1.6)							
1236D	(2.19)								Octa-Dioxin	Conc	Qualifiers
	(2.19)									(pg/L)	
	(2.19)								OCDD	[9.47]	J
	(2.19)										
	(2.19)										
	(2.19)										
	(2.19)										
	(2.19)										
	(2.19)										
	(2.19)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				



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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0.0171	0.02
TEQ: ND=DL/2	2.64	2.64
TEQ: ND=DL	5.25	5.26
Total PCDD/Fs	Conc.	EMPC
	1.71	11.2

Checkcode: 769-829-KJV

Report Created: 10-Feb-2022 10:27 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SW **Method 1613B**

<u>Client Data</u>			<u>Sample Data</u>			<u>Laboratory Data</u>					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6237			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.02 L			Lab Sample ID: B6237_18888_DF_002			Date Extracted: 02-Feb-2022		
Date Collected: 20-Jan-2022			pH: 6			QC Batch No.: 18888			Date Analyzed: 10-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 0:00:24		
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(1.05)		13468/12468F	(1.05)		123468F	(1.27)		1234678F	1.71	J
1468F	(1.05)		13678F...[3]	(1.05)		124678/134678F	(1.27)		1234679F	(1.54)	
2468F	(1.05)		12368F...[3]	(1.05)		134679F	(1.27)		1234689F	(1.54)	
1346/1246F	(1.05)		14678F	(1.05)		124679F	(1.27)		1234789F	(1.83)	
1347F...[3]	(1.05)		13479F	(1.05)		124689F	(1.27)				
1348F	(1.05)		13469/12479F	(1.05)		123467F	(1.27)				
1248F...[3]	(1.05)		12346F	(1.05)		123478F	(1.31)				
1268F	(1.05)		23468/12469F	(1.05)		123678F	(1.27)				
1467F	(1.05)		12347F	(1.05)		123479F	(1.27)				
1478F	(1.05)		12348F	(1.05)		123469F	(1.27)				
1369/1237F	(1.05)		12378F	(1.1)		123679F	(1.27)				
2467F	(1.05)		12678/12367F	(1.05)		234678F	(1.17)		Conc.	1.71	
2368F	(1.05)		12379F	(1.05)		234678/123689F	0		EMPC	1.71	
1238F...[5]	(1.05)		12679F	(1.05)		123689F	(1.27)				
1278F	(1.05)		23467/12369F	(1.05)		123789F	(1.36)		Octa-Furan	Conc	Qualifiers
1349F	(1.05)		23478F	(1)		123789/123489F	0			(pg/L)	
1267F	(1.05)		23478/12489F	0		123489F	(1.27)		OCDF	(4)	
2346/1249F	(1.05)		12489F	(1.05)							
2347/1279F	(1.05)		12349F	(1.05)							
2348F	(1.05)		12389F	(1.05)							
2378F	(1.05)										
2367/3467F	(1.05)										
1269F	(1.05)										
1239F	(1.05)										
1289F	(1.05)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				


Checkcode: 769-829-KJV

Report Created: 10-Feb-2022 10:27 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SW TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6237_18888_DF_002
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	QC Batch No.:	18888
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	02-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	10-Feb-2022 00:00
Lab Project No:	B6237	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(2.19)		2.19	(2.19)	(2.19)	(2.19)
12378-PeCDD	(1.6)		1.6	(0.8)	(1.6)	(1.6)
123478-HxCDD	(1.62)		1.62	(0.162)	(0.162)	(0.162)
123678-HxCDD	(1.44)		1.44	(0.144)	(0.144)	(0.144)
123789-HxCDD	(1.56)		1.56	(0.156)	(0.156)	(0.156)
1234678-HpCDD	(1.66)		1.66	(0.0166)	(0.0166)	(0.0166)
OCDD	[9.47]	J	5.86	[0.00947]	[0.000947]	[0.00284]
2378-TCDF	(1.05)		1.05	(0.105)	(0.105)	(0.105)
12378-PeCDF	(1.1)		1.1	(0.0551)	(0.0551)	(0.0331)
23478-PeCDF	(1)		1	(0.501)	(0.501)	(0.301)
123478-HxCDF	(1.31)		1.31	(0.131)	(0.131)	(0.131)
123678-HxCDF	(1.27)		1.27	(0.127)	(0.127)	(0.127)
234678-HxCDF	(1.17)		1.17	(0.117)	(0.117)	(0.117)
123789-HxCDF	(1.36)		1.36	(0.136)	(0.136)	(0.136)
1234678-HpCDF	1.71	J	1.32	0.0171	0.0171	0.0171
1234789-HpCDF	(1.83)		1.83	(0.0183)	(0.0183)	(0.0183)
OCDF	(4)		4	(0.004)	(0.0004)	(0.0012)

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	EMPC = 0, ND = 0	0.0171	0.0171	0.0171
	EMPC = 0, ND = DL / 2	2.35	2.75	2.64
	EMPC = 0, ND = DL	4.68	5.48	5.25
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0.0266	0.0181	0.02
	EMPC = EMPC, ND = DL / 2	2.36	2.75	2.64
	EMPC = EMPC, ND = DL	4.69	5.48	5.26
	EMPC = EMPC, < J-level = 0	0	0	0

Sample ID: 11215131-012022-GW-BN-PZ-NC

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.01 L	Lab Sample ID:	B6237_18888_DF_003	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	7	QC Batch No:	18888	Date Analyzed:	10-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	0:46:43
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.84			ES 2378-TCDD	87	
12378-PeCDD	ND	1.87			ES 12378-PeCDD	92.3	
123478-HxCDD	ND	1.58			ES 123478-HxCDD	89.6	
123678-HxCDD	ND	1.34			ES 123678-HxCDD	100	
123789-HxCDD	ND	1.36			ES 123789-HxCDD	85.3	
1234678-HpCDD	ND	1.72			ES 1234678-HpCDD	88.1	
OCDD	EMPC		16.5	J	ES OCDD	83.2	
2378-TCDF	4.02			J	ES 2378-TCDF	84	
12378-PeCDF	ND	1.1			ES 12378-PeCDF	87.3	
23478-PeCDF	ND	1.17			ES 23478-PeCDF	86.5	
123478-HxCDF	ND	1.19			ES 123478-HxCDF	88.6	
123678-HxCDF	ND	1.21			ES 123678-HxCDF	96	
234678-HxCDF	ND	0.979			ES 234678-HxCDF	109	
123789-HxCDF	ND	1.38			ES 123789-HxCDF	87.1	
1234678-HpCDF	ND	0.964			ES 1234678-HpCDF	92	
1234789-HpCDF	ND	1.39			ES 1234789-HpCDF	85.8	
OCDF	ND	2.32			ES OCDF	86	
Totals					Standard	CS Recoveries	
Total TCDD	ND	1.84	ND		CS 37Cl-2378-TCDD	93.1	
Total PeCDD	ND	1.87	ND		CS 12347-PeCDD	107	
Total HxCDD	ND	1.42	ND		CS 12346-PeCDF	95.7	
Total HpCDD	ND	1.72	ND		CS 123469-HxCDF	111	
					CS 1234689-HpCDF	104	
Total TCDF	6.81		6.81				
Total PeCDF	ND	1.14	ND				
Total HxCDF	ND	1.17	ND				
Total HpCDF	ND	1.15	ND				
Total PCDD/Fs	6.81		23.3				
WHO-2005 TEQs							
TEQ: ND=0	0.402		0.407				
TEQ: ND=DL/2	2.92	2.57	2.93				
TEQ: ND=DL	5.44	5.13	5.44				



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Sample ID: 11215131-012022-GW-BN-PZ-NC

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.01 L	Lab Sample ID:	B6237_18888_DF_003	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	7	QC Batch No.:	18888	Date Analyzed:	10-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	0:46:43

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(1.84)		12479/12468D	(1.87)		124679/124689D	(1.42)		1234679D	(1.72)	
1379D	(1.84)		12469D	(1.87)		123468D	(1.42)		1234678D	(1.72)	
1369D	(1.84)		12368D	(1.87)		123679/123689D	(1.42)				
1469D	(1.84)		12478D	(1.87)		123469D	(1.42)				
1247D...[4]	(1.84)		12379D	(1.87)		123478D	(1.58)				
1378D	(1.84)		12369D...[3]	(1.87)		123678D	(1.34)				
1268D	(1.84)		12346/12347D	(1.87)		123467D	(1.42)				
1478D	(1.84)		12378D	(1.87)		123789D	(1.36)		Conc.	0	
1279D	(1.84)		12367D	(1.87)					EMPC	0	
1234/1269D	(1.84)		12389D	(1.87)							
1236D	(1.84)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(1.84)									(pg/L)	
1239D	(1.84)								OCDD	[16.5]	J
2378D	(1.84)										
1278D	(1.84)										
1267D	(1.84)										
1289D	(1.84)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				



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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0.402	0.407
TEQ: ND=DL/2	2.92	2.93
TEQ: ND=DL	5.44	5.44
	Conc.	EMPC
Total PCDD/Fs	6.81	23.3

Checkcode: 156-756-KGC

Report Created: 10-Feb-2022 10:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-NC

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: 26-Jan-2022		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6237			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.01 L			Lab Sample ID: B6237_18888_DF_003			Date Extracted: 02-Feb-2022		
Date Collected: 20-Jan-2022			pH: 7			QC Batch No.: 18888			Date Analyzed: 10-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 0:46:43		
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(0.947)		13468/12468F	(1.12)		123468F	(1.17)		1234678F	(0.964)	
1468F	(0.947)		13678F...[3]	(1.14)		124678/134678F	(1.17)		1234679F	(1.15)	
2468F	(0.947)		12368F...[3]	(1.14)		134679F	(1.17)		1234689F	(1.15)	
1346/1246F	(0.947)		14678F	(1.14)		124679F	(1.17)		1234789F	(1.39)	
1347F...[3]	(0.947)		13479F	(1.14)		124689F	(1.17)				
1348F	(0.947)		13469/12479F	(1.14)		123467F	(1.17)				
1248F...[3]	(0.947)		12346F	(1.14)		123478F	(1.19)				
1268F	(0.947)		23468/12469F	(1.14)		123678F	(1.21)				
1467F	(0.947)		12347F	(1.14)		123479F	(1.17)				
1478F	(0.947)		12348F	(1.14)		123469F	(1.17)				
1369/1237F	(0.947)		12378F	(1.1)		123679F	(1.17)				
2467F	(0.947)		12678/12367F	(1.14)		234678F	(0.979)		Conc.	0	
2368F	(0.947)		12379F	(1.14)		234678/123689F	0		EMPC	0	
1238F...[5]	(0.947)		12679F	(1.14)		123689F	(1.17)				
1278F	2.79	J	23467/12369F	(1.14)		123789F	(1.38)		Octa-Furan	Conc	Qualifiers
1349F	(0.947)		23478F	(1.17)		123789/123489F	0			(pg/L)	
1267F	(0.947)		23478/12489F	0		123489F	(1.17)		OCDF	(2.32)	
2346/1249F	(0.947)		12489F	(1.14)							
2347/1279F	(0.947)		12349F	(1.14)							
2348F	(0.947)		12389F	(1.14)							
2378F	4.02	J									
2367/3467F	(0.947)										
1269F	(0.947)										
1239F	(0.947)										
1289F	(0.947)										
Conc.	6.81		Conc.	0		Conc.	0				
EMPC	6.81		EMPC	0		EMPC	0				


Checkcode: 156-756-KGC

Report Created: 10-Feb-2022 10:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-NC TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6237_18888_DF_003
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.01 L	QC Batch No.:	18888
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	02-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	10-Feb-2022 00:46
Lab Project No:	B6237	Units	pg/L		


Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(1.84)		1.84	(1.84)	(1.84)	(1.84)
12378-PeCDD	(1.87)		1.87	(0.934)	(1.87)	(1.87)
123478-HxCDD	(1.58)		1.58	(0.158)	(0.158)	(0.158)
123678-HxCDD	(1.34)		1.34	(0.134)	(0.134)	(0.134)
123789-HxCDD	(1.36)		1.36	(0.136)	(0.136)	(0.136)
1234678-HpCDD	(1.72)		1.72	(0.0172)	(0.0172)	(0.0172)
OCDD	[16.5]	J	4.63	[0.0165]	[0.00165]	[0.00495]
2378-TCDF	4.02	J	0.947	0.402	0.402	0.402
12378-PeCDF	(1.1)		1.1	(0.055)	(0.055)	(0.033)
23478-PeCDF	(1.17)		1.17	(0.587)	(0.587)	(0.352)
123478-HxCDF	(1.19)		1.19	(0.119)	(0.119)	(0.119)
123678-HxCDF	(1.21)		1.21	(0.121)	(0.121)	(0.121)
234678-HxCDF	(0.979)		0.979	(0.0979)	(0.0979)	(0.0979)
123789-HxCDF	(1.38)		1.38	(0.138)	(0.138)	(0.138)
1234678-HpCDF	(0.964)		0.964	(0.00964)	(0.00964)	(0.00964)
1234789-HpCDF	(1.39)		1.39	(0.0139)	(0.0139)	(0.0139)
OCDF	(2.32)		2.32	(0.00232)	(0.000232)	(0.000695)

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	EMPC = 0, ND = 0	0.402	0.402	0.402
	EMPC = 0, ND = DL / 2	2.58	3.05	2.92
	EMPC = 0, ND = DL	4.76	5.69	5.44
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0.418	0.404	0.407
	EMPC = EMPC, ND = DL / 2	2.6	3.05	2.93
	EMPC = EMPC, ND = DL	4.78	5.7	5.44
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: 11215131-012022-GW-BN-PZ-NE

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	Lab Sample ID:	B6237_18888_DF_004	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18888	Date Analyzed:	10-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	1:33:04
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.95			ES 2378-TCDD	85.6	
12378-PeCDD	ND	1.97			ES 12378-PeCDD	88.3	
123478-HxCDD	ND	1.94			ES 123478-HxCDD	92.7	
123678-HxCDD	ND	1.77			ES 123678-HxCDD	104	
123789-HxCDD	ND	1.82			ES 123789-HxCDD	89.1	
1234678-HpCDD	ND	1.84			ES 1234678-HpCDD	89.7	
OCDD	14.4			J	ES OCDD	82.5	
2378-TCDF	4.11			J	ES 2378-TCDF	83.6	
12378-PeCDF	ND	1.13			ES 12378-PeCDF	86	
23478-PeCDF	ND	1.03			ES 23478-PeCDF	86	
123478-HxCDF	ND	0.989			ES 123478-HxCDF	89.3	
123678-HxCDF	ND	0.979			ES 123678-HxCDF	94.4	
234678-HxCDF	ND	0.854			ES 234678-HxCDF	113	
123789-HxCDF	ND	1.23			ES 123789-HxCDF	90.8	
1234678-HpCDF	ND	0.795			ES 1234678-HpCDF	94.9	
1234789-HpCDF	ND	1.17			ES 1234789-HpCDF	87.6	
OCDF	ND	3.44			ES OCDF	88.3	
Totals					Standard	CS Recoveries	
Total TCDD	ND	1.95	ND		CS 37Cl-2378-TCDD	89.1	
Total PeCDD	ND	1.97	ND		CS 12347-PeCDD	106	
Total HxCDD	ND	1.84	ND		CS 12346-PeCDF	96.4	
Total HpCDD	ND	1.84	ND		CS 123469-HxCDF	117	
					CS 1234689-HpCDF	111	
Total TCDF	4.11		4.11				
Total PeCDF	ND	1.08	ND				
Total HxCDF	ND	0.998	ND				
Total HpCDF	ND	0.961	ND				
Total PCDD/Fs	18.5		18.5				
WHO-2005 TEQs							
TEQ: ND=0	0.415		0.415				
TEQ: ND=DL/2	3.05	2.68	3.05				
TEQ: ND=DL	5.68	5.36	5.68				



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Sample ID: 11215131-012022-GW-BN-PZ-NE **Method 1613B**

<u>Client Data</u>			<u>Sample Data</u>			<u>Laboratory Data</u>					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6237			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.02 L			Lab Sample ID: B6237_18888_DF_004			Date Extracted: 02-Feb-2022		
Date Collected: 20-Jan-2022			pH: 6			QC Batch No.: 18888			Date Analyzed: 10-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 1:33:04		
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(0.999)		13468/12468F	(1.14)		123468F	(0.998)		1234678F	(0.795)	
1468F	(0.999)		13678F...[3]	(1.08)		124678/134678F	(0.998)		1234679F	(0.961)	
2468F	(0.999)		12368F...[3]	(1.08)		134679F	(0.998)		1234689F	(0.961)	
1346/1246F	(0.999)		14678F	(1.08)		124679F	(0.998)		1234789F	(1.17)	
1347F...[3]	(0.999)		13479F	(1.08)		124689F	(0.998)				
1348F	(0.999)		13469/12479F	(1.08)		123467F	(0.998)				
1248F...[3]	(0.999)		12346F	(1.08)		123478F	(0.989)				
1268F	(0.999)		23468/12469F	(1.08)		123678F	(0.979)				
1467F	(0.999)		12347F	(1.08)		123479F	(0.998)				
1478F	(0.999)		12348F	(1.08)		123469F	(0.998)				
1369/1237F	(0.999)		12378F	(1.13)		123679F	(0.998)				
2467F	(0.999)		12678/12367F	(1.08)		234678F	(0.854)		Conc.	0	
2368F	(0.999)		12379F	(1.08)		234678/123689F	0		EMPC	0	
1238F...[5]	(0.999)		12679F	(1.08)		123689F	(0.998)				
1278F	(0.999)		23467/12369F	(1.08)		123789F	(1.23)		Octa-Furan	Conc	Qualifiers
1349F	(0.999)		23478F	(1.03)		123789/123489F	0			(pg/L)	
1267F	(0.999)		23478/12489F	0		123489F	(0.998)		OCDF	(3.44)	
2346/1249F	(0.999)		12489F	(1.08)							
2347/1279F	(0.999)		12349F	(1.08)							
2348F	(0.999)		12389F	(1.08)							
2378F	4.11	J									
2367/3467F	(0.999)										
1269F	(0.999)										
1239F	(0.999)										
1289F	(0.999)										
Conc.	4.11		Conc.	0		Conc.	0				
EMPC	4.11		EMPC	0		EMPC	0				


Checkcode: 938-617-BQJ

Report Created: 10-Feb-2022 10:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-NE TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6237_18888_DF_004
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	QC Batch No.:	18888
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	02-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	10-Feb-2022 01:33
Lab Project No:	B6237	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(1.95)		1.95	(1.95)	(1.95)	(1.95)
12378-PeCDD	(1.97)		1.97	(0.987)	(1.97)	(1.97)
123478-HxCDD	(1.94)		1.94	(0.194)	(0.194)	(0.194)
123678-HxCDD	(1.77)		1.77	(0.177)	(0.177)	(0.177)
123789-HxCDD	(1.82)		1.82	(0.182)	(0.182)	(0.182)
1234678-HpCDD	(1.84)		1.84	(0.0184)	(0.0184)	(0.0184)
OCDD	14.4	J	4.06	0.0144	0.00144	0.00431
2378-TCDF	4.11	J	0.999	0.411	0.411	0.411
12378-PeCDF	(1.13)		1.13	(0.0564)	(0.0564)	(0.0338)
23478-PeCDF	(1.03)		1.03	(0.513)	(0.513)	(0.308)
123478-HxCDF	(0.989)		0.989	(0.0989)	(0.0989)	(0.0989)
123678-HxCDF	(0.979)		0.979	(0.0979)	(0.0979)	(0.0979)
234678-HxCDF	(0.854)		0.854	(0.0854)	(0.0854)	(0.0854)
123789-HxCDF	(1.23)		1.23	(0.123)	(0.123)	(0.123)
1234678-HpCDF	(0.795)		0.795	(0.00795)	(0.00795)	(0.00795)
1234789-HpCDF	(1.17)		1.17	(0.0117)	(0.0117)	(0.0117)
OCDF	(3.44)		3.44	(0.00344)	(0.000344)	(0.00103)

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	EMPC = 0, ND = 0	0.425	0.412	0.415
	EMPC = 0, ND = DL / 2	2.68	3.16	3.05
	EMPC = 0, ND = DL	4.93	5.9	5.68
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0.425	0.412	0.415
	EMPC = EMPC, ND = DL / 2	2.68	3.16	3.05
	EMPC = EMPC, ND = DL	4.93	5.9	5.68
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: 11215131-012022-GW-BN-DUP-1

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	Lab Sample ID:	B6237_18888_DF_005	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18888	Date Analyzed:	10-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	2:19:25
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	2.11			ES 2378-TCDD	89.3	
12378-PeCDD	ND	2			ES 12378-PeCDD	92.8	
123478-HxCDD	ND	1.37			ES 123478-HxCDD	92.5	
123678-HxCDD	ND	1.25			ES 123678-HxCDD	99.7	
123789-HxCDD	ND	1.27			ES 123789-HxCDD	87.3	
1234678-HpCDD	ND	1.49			ES 1234678-HpCDD	88	
OCDD	EMPC		14.7	J	ES OCDD	83.9	
2378-TCDF	4.65			J	ES 2378-TCDF	85.1	
12378-PeCDF	ND	0.827			ES 12378-PeCDF	88.5	
23478-PeCDF	ND	0.787			ES 23478-PeCDF	89.7	
123478-HxCDF	ND	1.34			ES 123478-HxCDF	88.3	
123678-HxCDF	ND	1.18			ES 123678-HxCDF	95.9	
234678-HxCDF	ND	1.13			ES 234678-HxCDF	109	
123789-HxCDF	ND	1.51			ES 123789-HxCDF	87.9	
1234678-HpCDF	ND	1.13			ES 1234678-HpCDF	91.6	
1234789-HpCDF	ND	1.67			ES 1234789-HpCDF	85.9	
OCDF	ND	2.77			ES OCDF	88.4	
Totals					Standard	CS Recoveries	
Total TCDD	ND	2.11	ND		CS 37Cl-2378-TCDD	89	
Total PeCDD	ND	2	ND		CS 12347-PeCDD	105	
Total HxCDD	ND	1.3	ND		CS 12346-PeCDF	94.5	
Total HpCDD	ND	1.49	ND		CS 123469-HxCDF	108	
					CS 1234689-HpCDF	103	
Total TCDF	4.65		7.15				
Total PeCDF	ND	0.807	ND				
Total HxCDF	ND	1.27	ND				
Total HpCDF	ND	1.37	ND				
Total PCDD/Fs	4.65		21.9				
WHO-2005 TEQs							
TEQ: ND=0	0.465		0.47				
TEQ: ND=DL/2	3.12	2.71	3.13				
TEQ: ND=DL	5.78	5.43	5.78				



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Sample ID: 11215131-012022-GW-BN-DUP-1

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	Lab Sample ID:	B6237_18888_DF_005	Date Extracted:	02-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No.:	18888	Date Analyzed:	10-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	2:19:25

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(2.11)		12479/12468D	(2)		124679/124689D	(1.3)		1234679D	(1.49)	
1379D	(2.11)		12469D	(2)		123468D	(1.3)		1234678D	(1.49)	
1369D	(2.11)		12368D	(2)		123679/123689D	(1.3)				
1469D	(2.11)		12478D	(2)		123469D	(1.3)				
1247D...[4]	(2.11)		12379D	(2)		123478D	(1.37)				
1378D	(2.11)		12369D...[3]	(2)		123678D	(1.25)				
1268D	(2.11)		12346/12347D	(2)		123467D	(1.3)				
1478D	(2.11)		12378D	(2)		123789D	(1.27)		Conc.	0	
1279D	(2.11)		12367D	(2)					EMPC	0	
1234/1269D	(2.11)		12389D	(2)							
1236D	(2.11)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(2.11)									(pg/L)	
1239D	(2.11)								OCDD	[14.7]	J
2378D	(2.11)										
1278D	(2.11)										
1267D	(2.11)										
1289D	(2.11)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				



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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0.465	0.47
TEQ: ND=DL/2	3.12	3.13
TEQ: ND=DL	5.78	5.78
	Conc.	EMPC
Total PCDD/Fs	4.65	21.9

Checkcode: 790-719-FNF

Report Created: 10-Feb-2022 10:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-DUP-1

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: 26-Jan-2022		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6237			Date Extracted: 02-Feb-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.02 L			Lab Sample ID: B6237_18888_DF_005			Date Analyzed: 10-Feb-2022		
Date Collected: 20-Jan-2022			pH: 6			QC Batch No.: 18888			Time Analyzed: 2:19:25		
Split: -			Dilution: -								
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(1.1)		13468/12468F	(1.19)		123468F	(1.27)		1234678F	(1.13)	
1468F	(1.1)		13678F...[3]	(0.807)		124678/134678F	(1.27)		1234679F	(1.37)	
2468F	(1.1)		12368F...[3]	(0.807)		134679F	(1.27)		1234689F	(1.37)	
1346/1246F	(1.1)		14678F	(0.807)		124679F	(1.27)		1234789F	(1.67)	
1347F...[3]	(1.1)		13479F	(0.807)		124689F	(1.27)				
1348F	(1.1)		13469/12479F	(0.807)		123467F	(1.27)				
1248F...[3]	(1.1)		12346F	(0.807)		123478F	(1.34)				
1268F	(1.1)		23468/12469F	(0.807)		123678F	(1.18)				
1467F	(1.1)		12347F	(0.807)		123479F	(1.27)				
1478F	(1.1)		12348F	(0.807)		123469F	(1.27)				
1369/1237F	(1.1)		12378F	(0.827)		123679F	(1.27)				
2467F	(1.1)		12678/12367F	(0.807)		234678F	(1.13)		Conc.	0	
2368F	(1.1)		12379F	(0.807)		234678/123689F	0		EMPC	0	
1238F...[5]	(1.1)		12679F	(0.807)		123689F	(1.27)				
1278F	[2.49]	J	23467/12369F	(0.807)		123789F	(1.51)		Octa-Furan	Conc	Qualifiers
1349F	(1.1)		23478F	(0.787)		123789/123489F	0			(pg/L)	
1267F	(1.1)		23478/12489F	0		123489F	(1.27)		OCDF	(2.77)	
2346/1249F	(1.1)		12489F	(0.807)							
2347/1279F	(1.1)		12349F	(0.807)							
2348F	(1.1)		12389F	(0.807)							
2378F	4.65	J									
2367/3467F	(1.1)										
1269F	(1.1)										
1239F	(1.1)										
1289F	(1.1)										
Conc.	4.65		Conc.	0		Conc.	0				
EMPC	7.15		EMPC	0		EMPC	0				


Checkcode: 790-719-FNF

Report Created: 10-Feb-2022 10:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-DUP-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6237_18888_DF_005
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	QC Batch No.:	18888
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	02-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	10-Feb-2022 02:19
Lab Project No:	B6237	Units	pg/L		


Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(2.11)		2.11	(2.11)	(2.11)	(2.11)
12378-PeCDD	(2)		2	(0.999)	(2)	(2)
123478-HxCDD	(1.37)		1.37	(0.137)	(0.137)	(0.137)
123678-HxCDD	(1.25)		1.25	(0.125)	(0.125)	(0.125)
123789-HxCDD	(1.27)		1.27	(0.127)	(0.127)	(0.127)
1234678-HpCDD	(1.49)		1.49	(0.0149)	(0.0149)	(0.0149)
OCDD	[14.7]	J	5.21	[0.0147]	[0.00147]	[0.00442]
2378-TCDF	4.65	J	1.1	0.465	0.465	0.465
12378-PeCDF	(0.827)		0.827	(0.0414)	(0.0414)	(0.0248)
23478-PeCDF	(0.787)		0.787	(0.394)	(0.394)	(0.236)
123478-HxCDF	(1.34)		1.34	(0.134)	(0.134)	(0.134)
123678-HxCDF	(1.18)		1.18	(0.118)	(0.118)	(0.118)
234678-HxCDF	(1.13)		1.13	(0.113)	(0.113)	(0.113)
123789-HxCDF	(1.51)		1.51	(0.151)	(0.151)	(0.151)
1234678-HpCDF	(1.13)		1.13	(0.0113)	(0.0113)	(0.0113)
1234789-HpCDF	(1.67)		1.67	(0.0167)	(0.0167)	(0.0167)
OCDF	(2.77)		2.77	(0.00277)	(0.000277)	(0.00083)

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	EMPC = 0, ND = 0	0.465	0.465	0.465
	EMPC = 0, ND = DL / 2	2.71	3.21	3.12
	EMPC = 0, ND = DL	4.96	5.95	5.78
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0.48	0.467	0.47
	EMPC = EMPC, ND = DL / 2	2.73	3.21	3.13
	EMPC = EMPC, ND = DL	4.97	5.95	5.78
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: Method Blank B6237_18888

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	Lab Sample ID	MB1_18888_DF_TLX	Date Extracted:	02-Feb-2022
Date Collected:	n/a	pH:	n/a	QC Batch No:	18888	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:22:22
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	2.01			ES 2378-TCDD	84.4	
12378-PeCDD	ND	1.83			ES 12378-PeCDD	86.6	
123478-HxCDD	ND	2.03			ES 123478-HxCDD	91	
123678-HxCDD	ND	1.8			ES 123678-HxCDD	100	
123789-HxCDD	ND	1.91			ES 123789-HxCDD	88.1	
1234678-HpCDD	ND	2.3			ES 1234678-HpCDD	86.2	
OCDD	ND	12.2			ES OCDD	81.5	
2378-TCDF	ND	0.949			ES 2378-TCDF	81.5	
12378-PeCDF	ND	1.29			ES 12378-PeCDF	83.2	
23478-PeCDF	ND	1.19			ES 23478-PeCDF	83.8	
123478-HxCDF	ND	1.64			ES 123478-HxCDF	84.8	
123678-HxCDF	ND	1.61			ES 123678-HxCDF	89.6	
234678-HxCDF	ND	1.42			ES 234678-HxCDF	105	
123789-HxCDF	ND	1.81			ES 123789-HxCDF	82.4	
1234678-HpCDF	ND	1.03			ES 1234678-HpCDF	89.3	
1234789-HpCDF	ND	1.43			ES 1234789-HpCDF	82.8	
OCDF	ND	3.32			ES OCDF	82.4	
Totals					Standard	CS Recoveries	
Total TCDD	ND	2.01	ND		CS 37Cl-2378-TCDD	89.2	
Total PeCDD	ND	1.83	ND		CS 12347-PeCDD	104	
Total HxCDD	ND	1.91	ND		CS 12346-PeCDF	92.5	
Total HpCDD	ND	2.3	ND		CS 123469-HxCDF	115	
					CS 1234689-HpCDF	105	
Total TCDF	ND	0.949	ND				
Total PeCDF	ND	1.24	ND				
Total HxCDF	ND	1.6	ND				
Total HpCDF	ND	1.21	ND				
Total PCDD/Fs	ND		ND				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	2.8	2.8	2.8				
TEQ: ND=DL	5.6	5.6	5.6				



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Sample ID: Method Blank B6237_18888

Method 1613B

Client Data		Sample Data			Laboratory Data						
Name:	GHD Services Inc.	Matrix:	Aqueous		Lab Project ID:	B6237		Date Received:	n/a		
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L		Lab Sample ID:	MB1_18888_DF_TLX		Date Extracted:	02-Feb-2022		
Date Collected:	n/a	pH:	n/a		QC Batch No.:	18888		Date Analyzed:	09-Feb-2022		
		Split:	-		Dilution:	-		Time Analyzed:	19:22:22		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(2.01)		12479/12468D	(1.83)		124679/124689D	(1.91)		1234679D	(2.3)	
1379D	(2.01)		12469D	(1.83)		123468D	(1.91)		1234678D	(2.3)	
1369D	(2.01)		12368D	(1.83)		123679/123689D	(1.91)				
1469D	(2.01)		12478D	(1.83)		123469D	(1.91)				
1247D...[4]	(2.01)		12379D	(1.83)		123478D	(2.03)				
1378D	(2.01)		12369D...[3]	(1.83)		123678D	(1.8)				
1268D	(2.01)		12346/12347D	(1.83)		123467D	(1.91)				
1478D	(2.01)		12378D	(1.83)		123789D	(1.91)		Conc.	0	
1279D	(2.01)		12367D	(1.83)					EMPC	0	
1234/1269D	(2.01)		12389D	(1.83)							
1236D	(2.01)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(2.01)									(pg/L)	
1239D	(2.01)								OCDD	(12.2)	
2378D	(2.01)										
1278D	(2.01)										
1267D	(2.01)										
1289D	(2.01)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				



5500 Business Drive
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 Tel: +1 910 794-1613
 www.us.sgs.com

WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	2.8	2.8
TEQ: ND=DL	5.6	5.6
	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 476-076-ZXN

Report Created: 10-Feb-2022 10:27 Analyst: TF

Sample ID: Method Blank B6237_18888

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: n/a		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6237			Date Received: n/a		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.00 L			Lab Sample ID: MB1_18888_DF_TLX			Date Extracted: 02-Feb-2022		
Date Collected: n/a			pH: n/a			QC Batch No.: 18888			Date Analyzed: 09-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 19:22:22		
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(0.949)		13468/12468F	(1.34)		123468F	(1.6)		1234678F	(1.03)	
1468F	(0.949)		13678F...[3]	(1.24)		124678/134678F	(1.6)		1234679F	(1.21)	
2468F	(0.949)		12368F...[3]	(1.24)		134679F	(1.6)		1234689F	(1.21)	
1346/1246F	(0.949)		14678F	(1.24)		124679F	(1.6)		1234789F	(1.43)	
1347F...[3]	(0.949)		13479F	(1.24)		124689F	(1.6)				
1348F	(0.949)		13469/12479F	(1.24)		123467F	(1.6)				
1248F...[3]	(0.949)		12346F	(1.24)		123478F	(1.64)				
1268F	(0.949)		23468/12469F	(1.24)		123678F	(1.61)				
1467F	(0.949)		12347F	(1.24)		123479F	(1.6)				
1478F	(0.949)		12348F	(1.24)		123469F	(1.6)				
1369/1237F	(0.949)		12378F	(1.29)		123679F	(1.6)				
2467F	(0.949)		12678/12367F	(1.24)		234678F	(1.42)		Conc.	0	
2368F	(0.949)		12379F	(1.24)		234678/123689F	0		EMPC	0	
1238F...[5]	(0.949)		12679F	(1.24)		123689F	(1.6)				
1278F	(0.949)		23467/12369F	(1.24)		123789F	(1.81)		Octa-Furan	Conc	Qualifiers
1349F	(0.949)		23478F	(1.19)		123789/123489F	0			(pg/L)	
1267F	(0.949)		23478/12489F	0		123489F	(1.6)		OCDF	(3.32)	
2346/1249F	(0.949)		12489F	(1.24)							
2347/1279F	(0.949)		12349F	(1.24)							
2348F	(0.949)		12389F	(1.24)							
2378F	(0.949)										
2367/3467F	(0.949)										
1269F	(0.949)										
1239F	(0.949)										
1289F	(0.949)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				


Checkcode: 476-076-ZXN

Report Created: 10-Feb-2022 10:27 Analyst: TF

Sample ID: Method Blank B6237_18888 **TEQ Summary** **Method 1613B**

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	MB1_18888_DF_TLX
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	QC Batch No.:	18888
Date Collected:	n/a	Split:	-	Date Extracted:	02-Feb-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	09-Feb-2022 19:22
Lab Project No:	B6237	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(2.01)		2.01	(2.01)	(2.01)	(2.01)
12378-PeCDD	(1.83)		1.83	(0.913)	(1.83)	(1.83)
123478-HxCDD	(2.03)		2.03	(0.203)	(0.203)	(0.203)
123678-HxCDD	(1.8)		1.8	(0.18)	(0.18)	(0.18)
123789-HxCDD	(1.91)		1.91	(0.191)	(0.191)	(0.191)
1234678-HpCDD	(2.3)		2.3	(0.023)	(0.023)	(0.023)
OCDD	(12.2)		12.2	(0.0122)	(0.00122)	(0.00365)
2378-TCDF	(0.949)		0.949	(0.0949)	(0.0949)	(0.0949)
12378-PeCDF	(1.29)		1.29	(0.0643)	(0.0643)	(0.0386)
23478-PeCDF	(1.19)		1.19	(0.595)	(0.595)	(0.357)
123478-HxCDF	(1.64)		1.64	(0.164)	(0.164)	(0.164)
123678-HxCDF	(1.61)		1.61	(0.161)	(0.161)	(0.161)
234678-HxCDF	(1.42)		1.42	(0.142)	(0.142)	(0.142)
123789-HxCDF	(1.81)		1.81	(0.181)	(0.181)	(0.181)
1234678-HpCDF	(1.03)		1.03	(0.0103)	(0.0103)	(0.0103)
1234789-HpCDF	(1.43)		1.43	(0.0143)	(0.0143)	(0.0143)
OCDF	(3.32)		3.32	(0.00332)	(0.000332)	(0.000995)

5500 Business Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 www.us.sgs.com 	TEQ Summaries			
	EMPC = 0, ND = 0	0	0	0
	EMPC = 0, ND = DL / 2	2.48	2.93	2.8
	EMPC = 0, ND = DL	4.96	5.86	5.6
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0	0	0
	EMPC = EMPC, ND = DL / 2	2.48	2.93	2.8
	EMPC = EMPC, ND = DL	4.96	5.86	5.6
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: 0_18888_OPR001

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6237	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18888_DF	Date Extracted:	02-Feb-2022
Date Collected:	n/a	pH:	n/a	QC Batch No:	18888	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:17:00
Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11				ES 2378-TCDD	91.1	
12378-PeCDD	48.3				ES 12378-PeCDD	96.9	
123478-HxCDD	53.9				ES 123478-HxCDD	93.2	
123678-HxCDD	53.7				ES 123678-HxCDD	106	
123789-HxCDD	52.8				ES 123789-HxCDD	88.9	
1234678-HpCDD	53.4				ES 1234678-HpCDD	90.8	
OCDD	107				ES OCDD	91	
2378-TCDF	10.6				ES 2378-TCDF	86.7	
12378-PeCDF	49.1				ES 12378-PeCDF	93.2	
23478-PeCDF	53.6				ES 23478-PeCDF	91.3	
123478-HxCDF	50.6				ES 123478-HxCDF	87.6	
123678-HxCDF	53.1				ES 123678-HxCDF	93.9	
234678-HxCDF	50				ES 234678-HxCDF	102	
123789-HxCDF	49.1				ES 123789-HxCDF	87.7	
1234678-HpCDF	51.3				ES 1234678-HpCDF	94.3	
1234789-HpCDF	51.2				ES 1234789-HpCDF	89.9	
OCDF	102				ES OCDF	92.7	
Totals					Standard	CS Recoveries	
Total TCDD	50.9		50.9		CS 37Cl-2378-TCDD	91.9	
Total PeCDD	73.2		73.2		CS 12347-PeCDD	111	
Total HxCDD	174		174		CS 12346-PeCDF	100	
Total HpCDD	65.3		65.3		CS 123469-HxCDF	107	
Total TCDF	60		60		CS 1234689-HpCDF	105	
Total PeCDF	211		211				
Total HxCDF	320		320				
Total HpCDF	102		102				
Total PCDD/Fs	1,270		1,270				
WHO-2005 TEQs							
TEQ: ND=0	116		116				
TEQ: ND=DL/2	116	0.161	116				
TEQ: ND=DL	116	0.323	116				



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CHAIN OF CUSTODY

Cooler 2 of 2

7077934

To: Wilmington Lab
Attn: Tamara Burkemper
(910) 794-2527

(F)

B0237 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

PO. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME:

REPORT LEVEL: Level I Level II Level IV

SPECIAL DELIVERABLES:

DoD EDD/Version: GHD EQUIS 4-file
 State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400, Houston,

PHONE: 713-907-3710 EMAIL: Meagan.Willis@

INVOICE TO CHECK IF SAME

COMPANY:

CONTACT:

ADDRESS:

PHONE:

EMAIL:

QC

PRESERVATIVE

None

ANALYSIS & METHOD

M1613B	M8290A	M1688A	M1688C	HR-PAH	M1689
			<input checked="" type="checkbox"/>		

MS MSD DUP QTY REMARKS

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B	M8290A	M1688A	M1688C	HR-PAH	M1689	MS	MSD	DUP	QTY	REMARKS
2 11215131-012022-GW-BN-PZ-SW	1-20-22	1355		W	1L	X									2	Total D/F and dissolved
3 11215131-012022-GW-BN-PZ-NC		1440		↓	↓	X									2	D/F (lab filterd 0.45 microns)
4 11215131-012022-GW-BN-PZ-NE		1520		↓	↓	X									2	1 Liter amber - Total
5 11215131-012022-GW-BN-DVR-1				↓	↓	X								X	2	1 Liter amber - Dissolved

Cooler 2 of 2!

COLLECTED/RELINQUISHED BY (1):

Breanna North

DATE:

1-20-22

TIME:

1245

RECEIVED BY:

Eddie Costa

RECEIVED BY LABORATORY:

ANALYSTS 1/20/22 11:48

RELINQUISHED BY (2):

Eddie Costa

DATE:

1-21-22

TIME:

1350

RECEIVED BY:

WJ St 1/21/22 1350

COOLER SEAL:

INTACT BROKEN ABSENT

CONTAINER SEALS:

INTACT BROKEN ABSENT

RELINQUISHED BY (3):

DATE:

TIME:

RECEIVED BY:

CARRIER: FedEx

TEMP: °C

2.2 0.8 ± 0.0

TRACKING #:

BU237

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 24JAN22
ACTWGT: 45.00 LB MAN
CAD: 0917555/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

1/26/2022

11:48

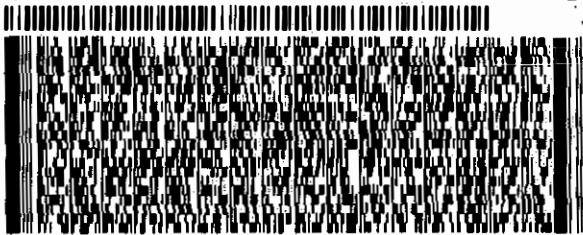
WILMINGTON NC 28405

0.0°

(910) 360-1903

REF: GHD SAMPLES

56554/F289/0582



FedEx
Express



J18121908200147

3 of 3

MPS# 4905 2704 4720
0263

Mstr# 4905 2704 4708

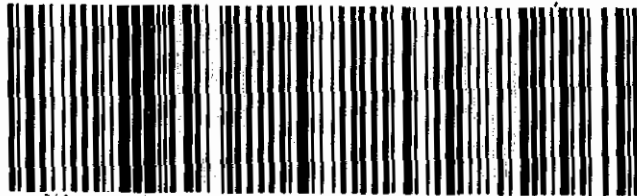
0201

TUE - 25 JAN 10:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 158148-434MTW EXP 07/22 *





Project Initiation Form

Project Number: B6237

Initiation Date: 28-Jan-22

Client Name: GHD Services Inc.

Sample Matrix: Aqueous

Analysis Method: 1613 PCDD/F

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ ●PR

IL extraction

Sample 001 is MS/MSD

Read and understood, initial and date:

Prep Lab:

JRM
2/3/22

RS
2/4/22

HRMS Lab: _____

Reporting Instructions

M1613B

Full Report

Sample 001 is MS/MSD summary

W1102005 TEQ

GHD EQuS 4-file EDD

Read and understood, initial and date:

HRMS Lab: _____

PM Initials: akomegay

Date: 28-Jan-2022

Batch# 18888 Split: T2 T4 Extract Initial/Date: JRM 2/10/22 Clean-up Initial/Date: JRS 2/4/22 Transfer Init/Date: JRS 2/7/22

Lab Sample ID	Extraction Position Solvent: DCM	Extraction Weight/Volume		(Td)	ASECS #	Ch. Cl-	Observations	Supply IDs	
		g	mL						
B6237_18888_001	3	995.6		JRS 2/10/22	6	0	pale cloudy, yellow	Toluene	N/A
B6237_18888_001MS	4	996.6			6	0	cloudy, pale yellow	MeCHL	SL2-147
B6237_18888_001MSD	5	999.9			6	0	cloudy, pale yellow	Florisil	SP25-77
B6237_18888_002	6	1016.5			6	0	sewage smell, cloudy	Hexane	STL-4.22
B6237_18888_003	7	1010.7			7	0	cloudy, yellow	Silica	SP25-69
B6237_18888_004	8	1022.0			6	0	sewage smell, DM, cloudy, amber	S Nitrate	N/A
B6237_18888_005	9	1022.1			6	0	DM, cloudy, amber	Base Silica	N/A
MBI_18888	1	1000.0			5	0	Distilled H ₂ O	HydroMatrix	N/A
OPRI_18888	2	1000.0			5	0	Distilled H ₂ O	Tetradecane	SP25-75D
<div style="font-size: 4em; opacity: 0.5;">/</div>								H ₂ SO ₄	N/A
								Λ Silica	SP25-82
								Sodium Sulfate	SP25-80B
								Additional Cleanup	
								Acid Partition Date/Initial:	<div style="font-size: 4em; opacity: 0.5;">/</div>
Mini-Acid Date/Initial:									
Carbon Column Date/Initial:									
GPC Date/Initial:									
Bond-Elute Date/Initial:									
Cycle Time									
TOL	Start:	<div style="font-size: 4em; opacity: 0.5;">/</div>							
	Stop:								
HEX	Start:								
	Stop:								
DCM	Start: 1430								
	Stop: 1425								

SGS

Methods: PCB PCDD/F QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Aqueous

Batch# 18888

Inter-Department Communication Sheet

TPS at 10/23

SGS

Methods:

PCB
PAH

PCDD/F
WHO-2

QUANTICS
USV

DoD PCDD/F
PEST

Aqueous

Batch# 18888

Spiker Initials/Date: ^{JRW} 2/12/22 ^{JRW} 2/12/22 ^{JRW} 2/12/22 ^{JRW} 2/4/22 ^{JRW} 2/7/22

Lab Sample ID	D/E A-A	D/E A-B	D/E E2	D/E CS	D/E JS	Amount:	Amount:
	Amount: 20 _μ L	Amount: 20 _μ L	Amount: 20 _μ L	Amount: 20 _μ L	Amount: 20 _μ L	Observer Initials	Observer Initials
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B6237_18888_001	—	—	KE	KE	KE		
B6237_18888_001MS	KE	KE	KE	KE	KE		
B6237_18888_001MSD	KE	KE	KE	KE	KE		
B6237_18888_002	—	—	KE	KE	KE		
B6237_18888_003	—	—	KE	KE	KE		
B6237_18888_004	—	—	KE	KE	KE		
B6237_18888_005	—	—	KE	KE	KE		
MBI_18888	—	—	KE	KE	KE		
OPRI_18888	KE	KE	KE	KE	KE		

~~888~~
2/8/22

Standard Information

Pipette ID						
Spike ID	D/E A-A	D/E A-B	D/E E2	D/E CS	D/E JS	
SII.#	20-2-8	25-157-2	26-2-9	25-338-1	25-384-1	
Concentration	10 P _μ /μL	10 P _μ /μL	100 P _μ /μL	100 P _μ /μL	100 P _μ /μL	
Expiration Date	7/9/22	6/22/22	2/22/22	2/16/22	1/28/23	

888
2/10/22

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
13	220209C13	3	CS3_220209_DF_CB	1.00	25-347-1	DTF	483-759	09-Feb-2022	15:26:13
14	220209C14	7	OPR1_18888_DF	1.00	0_18888_OPR001	DTF	357-810	09-Feb-2022	16:17:00
16	220209C16	2	SBS_220209_DF_CC	1.00	30-61-1	DTF	217-503	09-Feb-2022	18:36:03
17	220209C17	6	MB1_18888_DF_TLX	1.00	Method Blank	DTF	476-076	09-Feb-2022	19:22:22
20	220209C20	8	B6237_18888_DF_001	1.00	11215131-012022-GW-BN-PZ-SC	DTF	543-255	09-Feb-2022	21:41:24
21	220209C21	9	B6237_18888_DF_001MS	1.00	11215131-012022-GW-BN-PZ-SC-MS	DTF	368-796	09-Feb-2022	22:27:43
22	220209C22	10	B6237_18888_DF_001MSD	1.00	11215131-012022-GW-BN-PZ-SC-MSD	DTF	324-318	09-Feb-2022	23:14:03
23	220209C23	11	B6237_18888_DF_002	1.02	11215131-012022-GW-BN-PZ-SW	DTF	769-829	10-Feb-2022	00:00:24
24	220209C24	12	B6237_18888_DF_003	1.01	11215131-012022-GW-BN-PZ-NC	DTF	156-756	10-Feb-2022	00:46:43
25	220209C25	13	B6237_18888_DF_004	1.02	11215131-012022-GW-BN-PZ-NE	DTF	938-617	10-Feb-2022	01:33:04
26	220209C26	14	B6237_18888_DF_005	1.02	11215131-012022-GW-BN-DUP-1	DTF	790-719	10-Feb-2022	02:19:25

REVIEWED
Tyler_Fritz , 2/10/2022, 10:39:22 AM

REVIEWED
Amber_Kornegay , 2/10/2022, 1:51:20 PM

Lab ID: MB1_18888_DF_TLX

Acq'd: 09 Feb 2022 19:22 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B6237_18888

UTP: 10-Feb-2022 10:22:26 DTF

J-level: 5 pg/L Split: 1

Checkcode: 476-076-ZXN

Datafile: 220209C17

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3195.844	2.01
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2503.841	1.83
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2933.883	2.03
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2933.883	1.8
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2933.883	1.91
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	3035.383	2.3
OCDD	NotFnd		1.0004	-		-	-	-	1.13	-	8381.278	12.2

2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	1904.4755	0.949
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2518.538	1.29
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2518.538	1.19
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	3089.563	1.64
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	3089.563	1.61
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	3089.563	1.42
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3089.563	1.81
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2087.9078	1.03
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2087.9078	1.43
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2745.615	3.32

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.45		1.0236	1.0239	+0.5	2.75E+07	0.82	Y	1.05	84.4
ES 12378-PeCDD	33.79		1.2144	1.2162	+3.6	2.38E+07	1.62	Y	0.88	86.6
ES 123478-HxCDD	37.71		0.9920	0.9919	-0.2	2.26E+07	1.29	Y	0.97	91
ES 123678-HxCDD	37.83		0.9951	0.9950	-0.2	2.42E+07	1.29	Y	0.94	100
ES 123789-HxCDD	38.13		1.0027	1.0027	0	2.46E+07	1.26	Y	1.09	88.1
ES 1234678-HpCDD	40.80		1.0724	1.0730	+1.5	2.01E+07	1.06	Y	0.91	86.2
ES OCDD	43.48		1.1428	1.1435	+1.8	2.60E+07	0.93	Y	0.62	81.5

ES 2378-TCDF	27.59		1.0516	1.0520	+0.7	4.23E+07	0.78	Y	1.06	81.5
ES 12378-PeCDF	32.35		1.2312	1.2333	+4.1	3.71E+07	1.56	Y	0.91	83.2
ES 23478-PeCDF	33.46		1.2733	1.2757	+4.8	3.63E+07	1.53	Y	0.88	83.8
ES 123478-HxCDF	36.70		0.9655	0.9653	-0.4	2.59E+07	0.54	Y	1.20	84.8
ES 123678-HxCDF	36.85		0.9692	0.9691	-0.2	3.09E+07	0.53	Y	1.35	89.6
ES 234678-HxCDF	37.53		0.9871	0.9870	-0.2	3.32E+07	0.53	Y	1.24	105
ES 123789-HxCDF	38.48		1.0121	1.0121	0	2.43E+07	0.53	Y	1.16	82.4
ES 1234678-HpCDF	39.87		1.0479	1.0485	+1.4	2.21E+07	0.49	Y	0.97	89.3
ES 1234789-HpCDF	41.26		1.0845	1.0851	+1.5	1.80E+07	0.45	Y	0.85	82.8
ES OCDF	43.66		1.1477	1.1481	+1.0	3.40E+07	0.90	Y	0.81	82.4

Lab ID: MB1_18888_DF_TLX

Acq'd: 09 Feb 2022 19:22 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B6237_18888

UTP: 10-Feb-2022 10:22:26 DTF

J-level: 5 pg/L Split: 1

Checkcode: 476-076-ZXN

Datafile: 220209C17

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.12E+07	0.79	Y	-	-
JS 1234-TCDF	26.23		-	-	-	4.90E+07	0.79	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.28E+07	1.32	Y	-	-
CS 37C1-2378-TCDD	28.47		1.0244	1.0247	+0.5	1.34E+07	n/a	-	1.20	89.2
CS 12347-PeCDD	33.29		1.1964	1.1981	+3.4	2.44E+07	1.57	Y	0.75	104
CS 12346-PeCDF	31.82		1.2112	1.2131	+3.6	3.86E+07	1.57	Y	0.85	92.5
CS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.27E+07	0.56	Y	1.12	115
CS 1234689-HpCDF	40.27		1.0584	1.0591	+1.7	2.39E+07	0.46	Y	0.89	105
SS 37C1-2378-TCDD	28.47		1.0244	1.0247	+0.5	1.34E+07	n/a	-	1.15	106
SS 12347-PeCDD	33.29		1.1964	1.1981	+3.4	2.44E+07	1.57	Y	0.86	120
SS 12346-PeCDF	31.82		1.2112	1.2131	+3.6	3.86E+07	1.57	Y	0.94	111
SS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.27E+07	0.56	Y	0.83	128
SS 1234689-HpCDF	40.27		1.0584	1.0591	+1.7	2.39E+07	0.46	Y	0.92	118

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18888_DF_TLX

Acq'd: 09 Feb 2022 19:22 DTF

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ICAL: HRMS3_DF_10272021 10NOV2021

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J-level: 5 pg/L Split: 1

Checkcode: 476-076-ZXN

Datafile: 220209C17

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3195.844	2.01
1379-TCDD	NotFnd		0.8860						1.18		3195.844	2.01
1369-TCDD	NotFnd		0.9009						1.18		3195.844	2.01
1469-TCDD	NotFnd		0.9281						1.18		3195.844	2.01
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3195.844	2.01
1378-TCDD	NotFnd		0.9432						1.18		3195.844	2.01
1268-TCDD	NotFnd		0.9500						1.18		3195.844	2.01
1478-TCDD	NotFnd		0.9586						1.18		3195.844	2.01
1279-TCDD	NotFnd		0.9645						1.18		3195.844	2.01
1234/1269-TCDD	NotFnd		0.9770						1.18		3195.844	2.01
1236-TCDD	NotFnd		0.9817						1.18		3195.844	2.01
1237/1238-TCDD	NotFnd		0.9905						1.18		3195.844	2.01
1239-TCDD	NotFnd		0.9952						1.18		3195.844	2.01
2378-TCDD	NotFnd		1.0008						1.18		3195.844	2.01
1278-TCDD	NotFnd		1.0121						1.18		3195.844	2.01
1267-TCDD	NotFnd		1.0167						1.18		3195.844	2.01
1289-TCDD	NotFnd		1.0345						1.18		3195.844	2.01
12479/12468-PeCDD	NotFnd		0.9267						1.04		2503.841	1.83
12469-PeCDD	NotFnd		0.9425						1.04		2503.841	1.83
12368-PeCDD	NotFnd		0.9588						1.04		2503.841	1.83
12478-PeCDD	NotFnd		0.9643						1.04		2503.841	1.83
12379-PeCDD	NotFnd		0.9673						1.04		2503.841	1.83
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2503.841	1.83
12346/12347-PeCDD	NotFnd		0.9858						1.04		2503.841	1.83
12378-PeCDD	NotFnd		1.0006						1.04		2503.841	1.83
12367-PeCDD	NotFnd		1.0033						1.04		2503.841	1.83
12389-PeCDD	NotFnd		1.0134						1.04		2503.841	1.83
124679/124689-HxCDD	NotFnd		0.9542						1.10		2933.883	1.91
123468-HxCDD	NotFnd		0.9715						1.10		2933.883	1.91
123679/123689-HxCDD	NotFnd		0.9793						1.10		2933.883	1.91
123469-HxCDD	NotFnd		0.9828						1.10		2933.883	1.91
123478-HxCDD	NotFnd		1.0004						1.09		2933.883	2.03
123678-HxCDD	NotFnd		1.0035						1.15		2933.883	1.8
123467-HxCDD	NotFnd		1.0085						1.10		2933.883	1.91
123789-HxCDD	NotFnd		1.0112						1.05		2933.883	1.91

Lab ID: MB1_18888_DF_TLX

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ICAL: HRMS3_DF_10272021 10NOV2021

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UTP: 10-Feb-2022 10:22:26 DTF

J-level: 5 pg/L Split: 1

Checkcode: 476-076-ZXN

Datafile: 220209C17

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		3035.383	2.3
1234678-HpCDD	NotFnd		1.0003						1.06		3035.383	2.3
OCDD	NotFnd		1.0004						1.13		8381.278	12.2
OCDD-a	NotFnd		1.0003						0.07		2955.731	67.1
1368-TCDF	NotFnd		0.8251						1.08		1904.4755	0.949
1468-TCDF	NotFnd		0.8458						1.08		1904.4755	0.949
2468-TCDF	NotFnd		0.8686						1.08		1904.4755	0.949
1346/1246-TCDF	NotFnd		0.8814						1.08		1904.4755	0.949
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		1904.4755	0.949
1348-TCDF	NotFnd		0.8962						1.08		1904.4755	0.949
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		1904.4755	0.949
1268-TCDF	NotFnd		0.9145						1.08		1904.4755	0.949
1467-TCDF	NotFnd		0.9193						1.08		1904.4755	0.949
1478-TCDF	NotFnd		0.9254						1.08		1904.4755	0.949
1369/1237-TCDF	NotFnd		0.9387						1.08		1904.4755	0.949
2467-TCDF	NotFnd		0.9433						1.08		1904.4755	0.949
2368-TCDF	NotFnd		0.9489						1.08		1904.4755	0.949
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		1904.4755	0.949
1278-TCDF	NotFnd		0.9683						1.08		1904.4755	0.949
1349-TCDF	NotFnd		0.9722						1.08		1904.4755	0.949
1267-TCDF	NotFnd		0.9783						1.08		1904.4755	0.949
2346/1249-TCDF	NotFnd		0.9850						1.08		1904.4755	0.949
2347/1279-TCDF	NotFnd		0.9926						1.08		1904.4755	0.949
2348-TCDF	NotFnd		0.9967						1.08		1904.4755	0.949
2378-TCDF	NotFnd		1.0008						1.08		1904.4755	0.949
2367/3467-TCDF	NotFnd		1.0137						1.08		1904.4755	0.949
1269-TCDF	NotFnd		1.0223						1.08		1904.4755	0.949
1239-TCDF	NotFnd		1.0321						1.08		1904.4755	0.949
1289-TCDF	NotFnd		1.0722						1.08		1904.4755	0.949
13468/12468-PeCDF	NotFnd		0.9139						1.02		2716.639	1.34
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2518.538	1.24
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2518.538	1.24
14678-PeCDF	NotFnd		0.9692						1.02		2518.538	1.24
13479-PeCDF	NotFnd		0.9723						1.02		2518.538	1.24
13469/12479-PeCDF	NotFnd		0.9797						1.02		2518.538	1.24
12346-PeCDF	NotFnd		0.9840						1.02		2518.538	1.24

Lab ID: MB1_18888_DF_TLX

Acq'd: 09 Feb 2022 19:22 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B6237_18888

UTP: 10-Feb-2022 10:22:26 DTF

J-level: 5 pg/L Split: 1

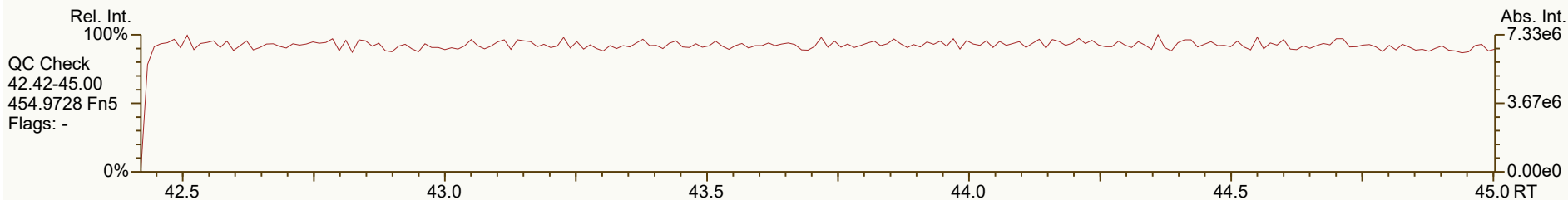
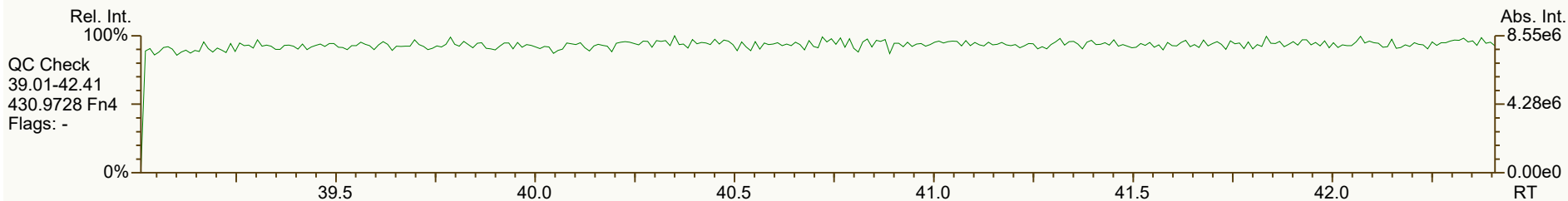
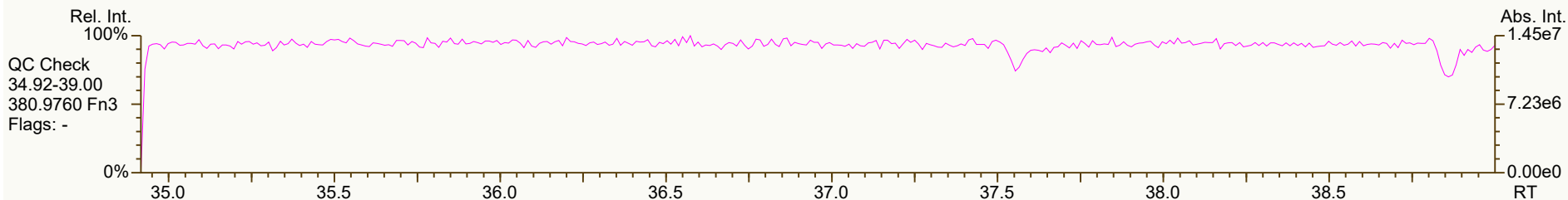
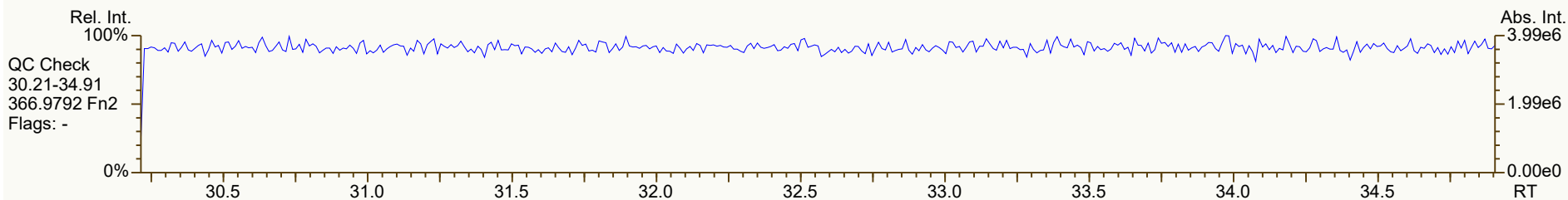
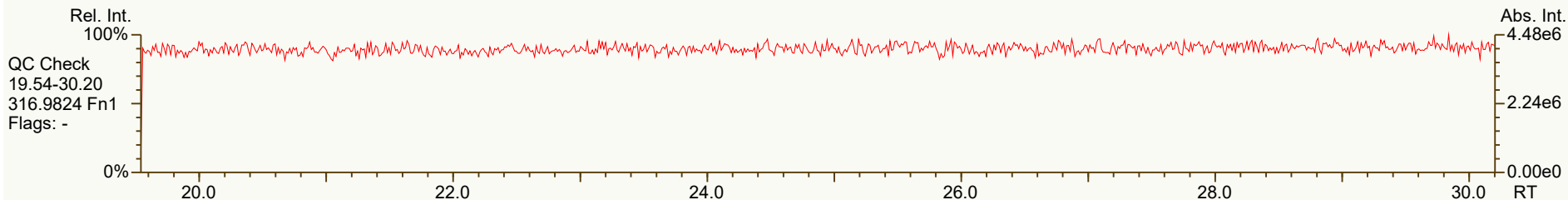
Checkcode: 476-076-ZXN

Datafile: 220209C17

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

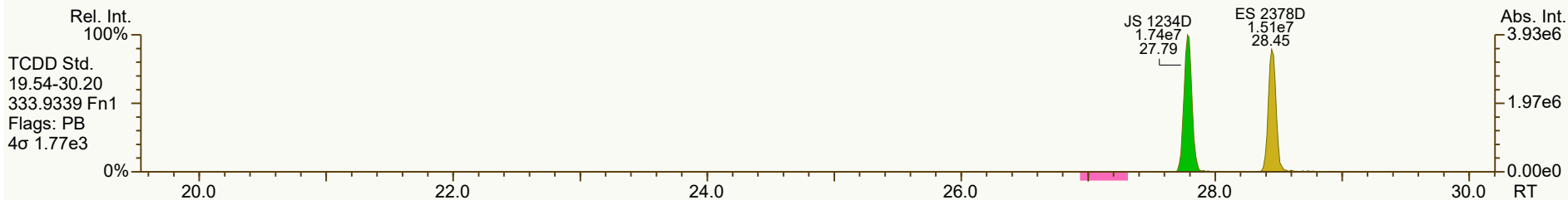
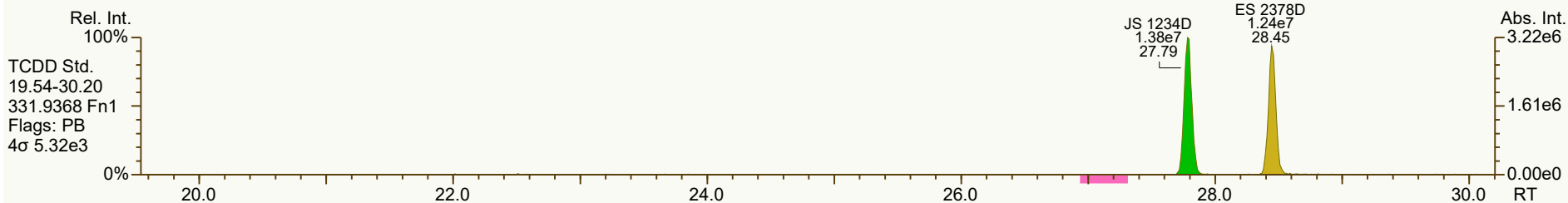
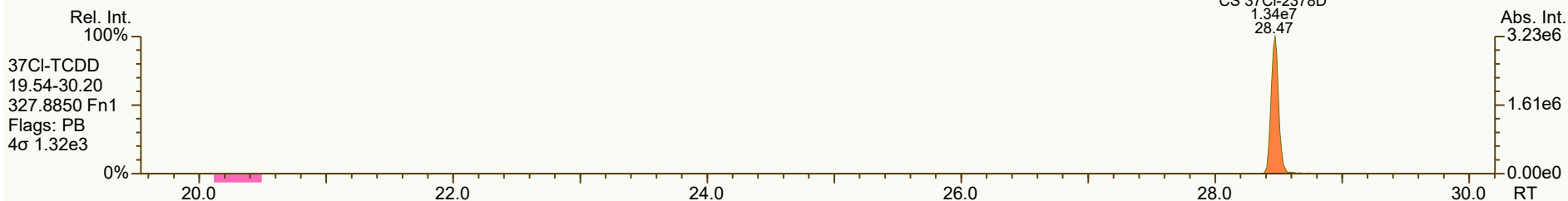
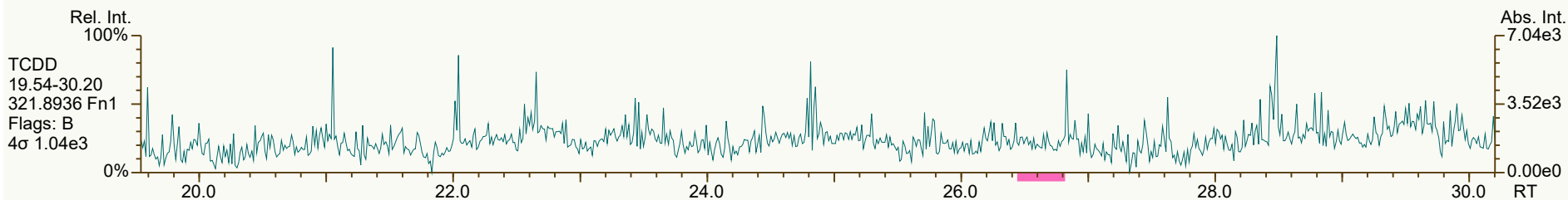
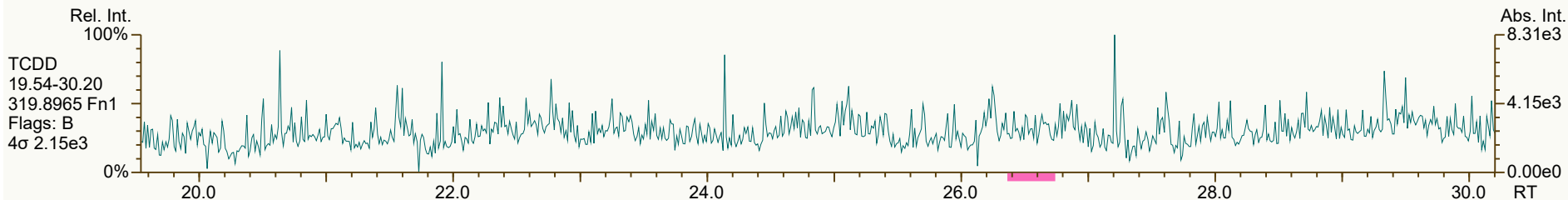
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
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12347-PeCDF	NotFnd		0.9894						1.02		2518.538	1.24
12348-PeCDF	NotFnd		0.9940						1.02		2518.538	1.24
12378-PeCDF	NotFnd		1.0005						1.02		2518.538	1.29
12678/12367-PeCDF	NotFnd		1.0089						1.02		2518.538	1.24
12379-PeCDF	NotFnd		1.0142						1.02		2518.538	1.24
12679-PeCDF	NotFnd		0.9929						1.02		2518.538	1.24
23467/12369-PeCDF	NotFnd		0.9967						1.02		2518.538	1.24
23478-PeCDF	NotFnd		1.0005						1.02		2518.538	1.19
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2518.538	1.24
12349-PeCDF	NotFnd		1.0100						1.02		2518.538	1.24
12389-PeCDF	NotFnd		1.0324						1.02		2518.538	1.24
123468-HxCDF	NotFnd		0.9627						1.19		3089.563	1.6
124678/134678-HxCDF	NotFnd		0.9682						1.19		3089.563	1.6
134679-HxCDF	NotFnd		0.9744						1.19		3089.563	1.6
124679-HxCDF	NotFnd		0.9798						1.19		3089.563	1.6
124689-HxCDF	NotFnd		0.9858						1.19		3089.563	1.6
123467-HxCDF	NotFnd		0.9972						1.19		3089.563	1.6
123478-HxCDF	NotFnd		1.0004						1.27		3089.563	1.64
123678-HxCDF	NotFnd		1.0004						1.15		3089.563	1.61
123479-HxCDF	NotFnd		1.0049						1.19		3089.563	1.6
123469-HxCDF	NotFnd		1.0090						1.19		3089.563	1.6
123679-HxCDF	NotFnd		0.9942						1.19		3089.563	1.6
234678-HxCDF	NotFnd		1.0005						1.19		3089.563	1.42
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3089.563	1.6
123789-HxCDF	NotFnd		1.0004						1.16		3089.563	1.81
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		3089.563	1.6
1234678-HpCDF	NotFnd		1.0003						1.37		2087.9078	1.03
1234679-HpCDF	NotFnd		1.0068						1.34		2087.9078	1.21
1234689-HpCDF	NotFnd		1.0103						1.34		2087.9078	1.21
1234789-HpCDF	NotFnd		1.0002						1.31		2087.9078	1.43
OCDF	NotFnd		1.0003						1.07		2745.615	3.32
OCDF-a	NotFnd		1.0002						0.07		3210.98	62.6



SGS ID: MB1_18888_DF_TLX
Instr: [ILM] AutoSpec-Ultima HRMS3

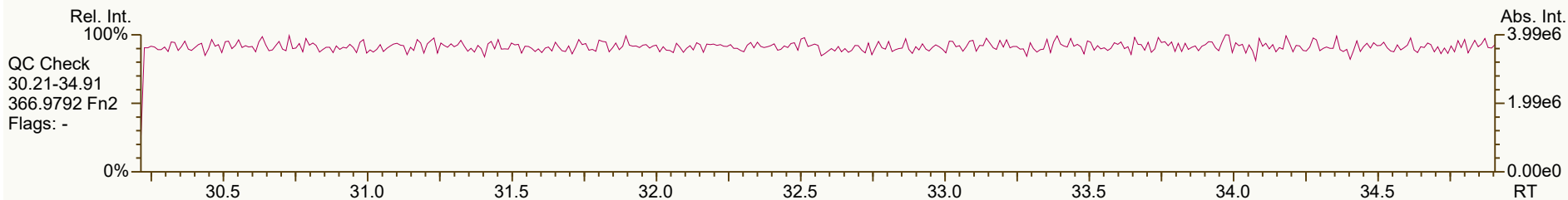
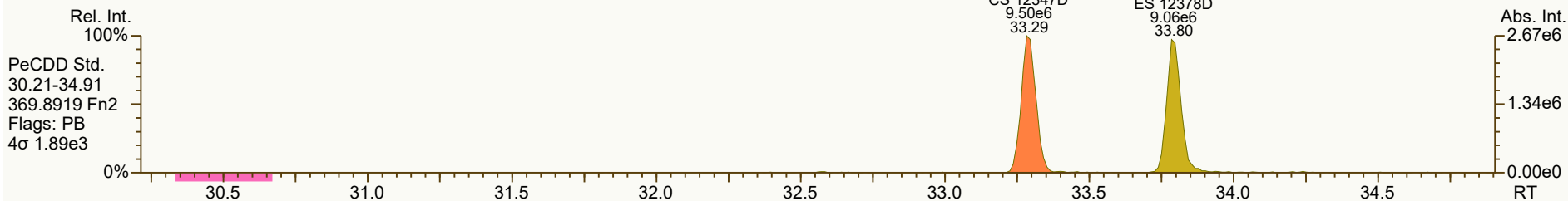
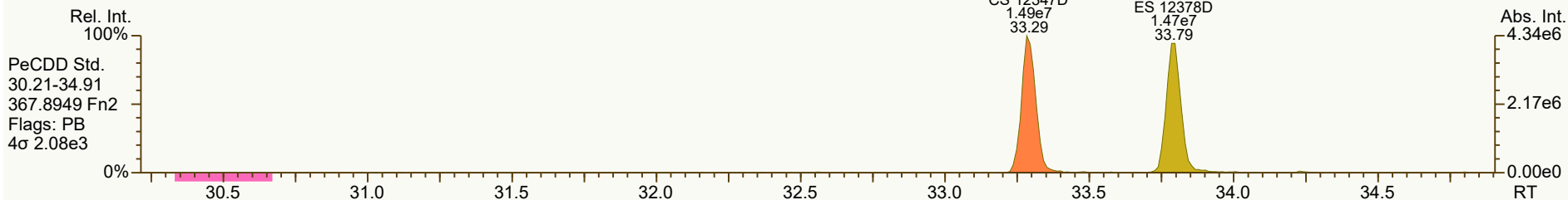
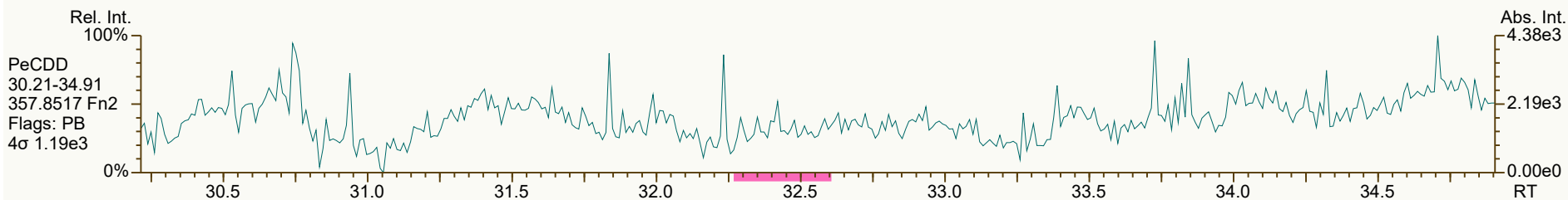
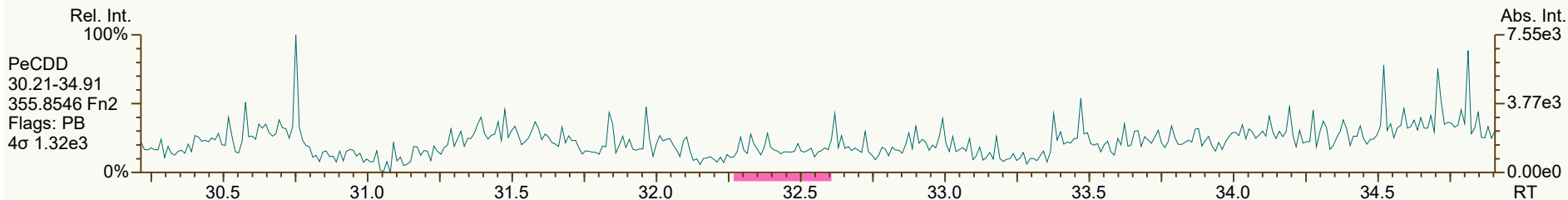
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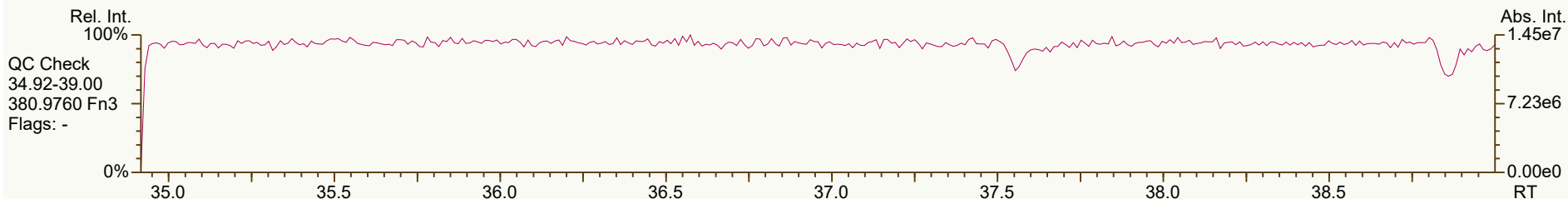
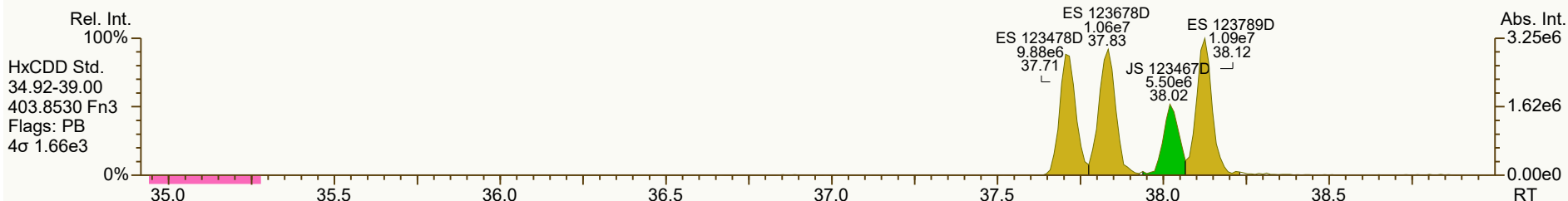
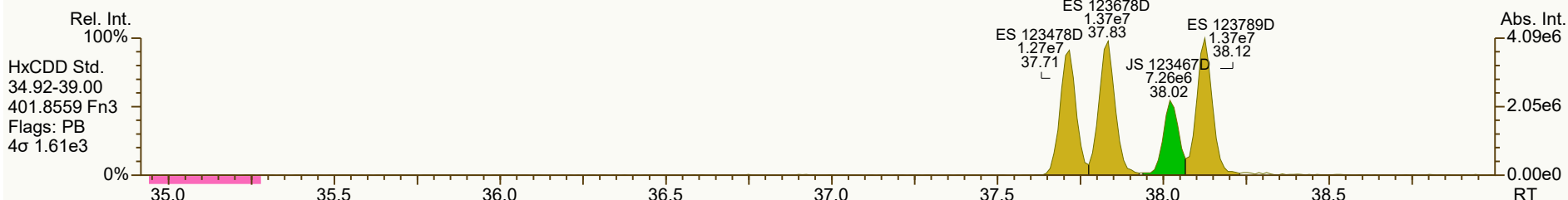
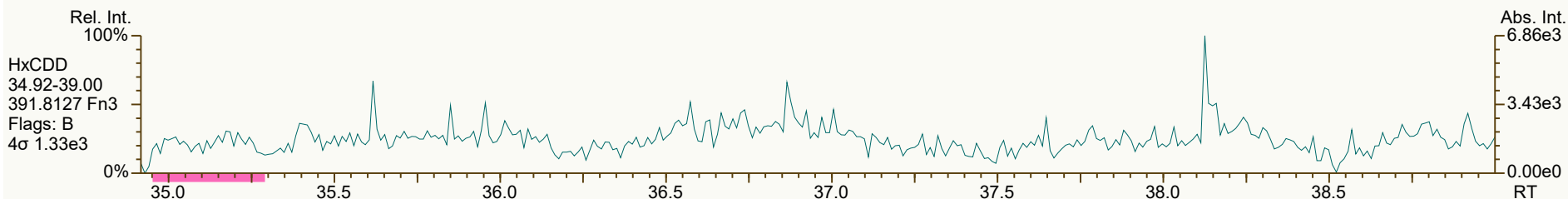
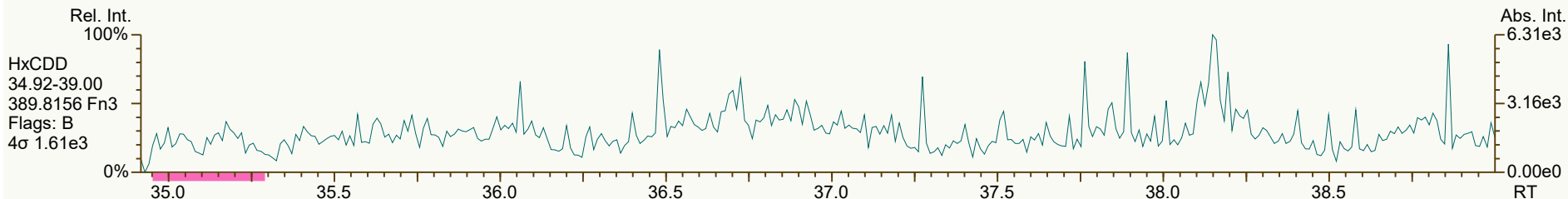
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Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 09:57 Printed: 10-Feb-2022 10:33 Page 2 of 12

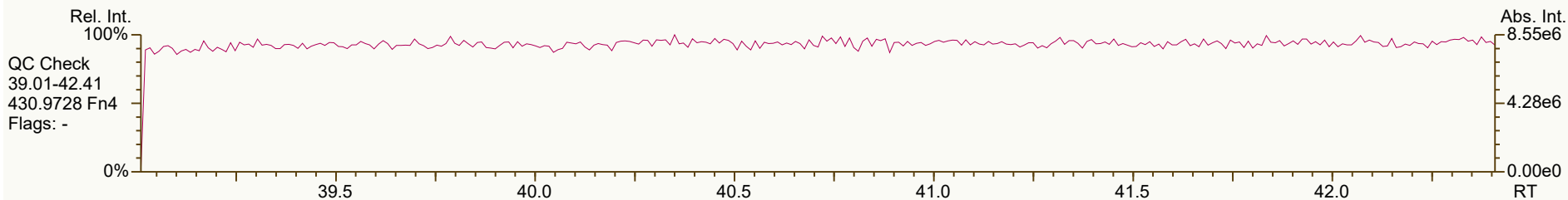
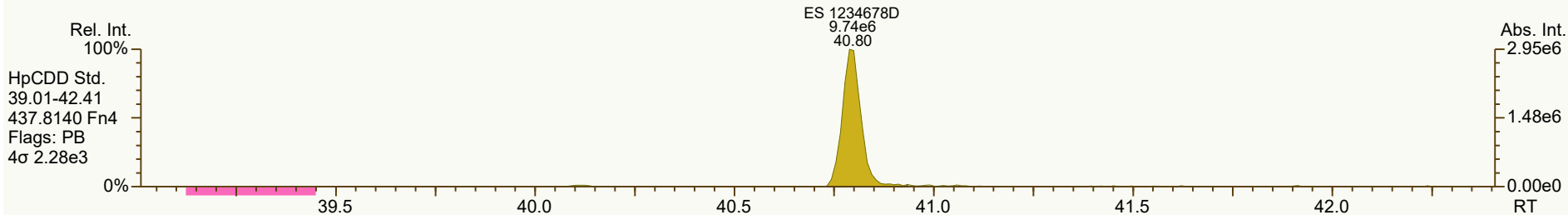
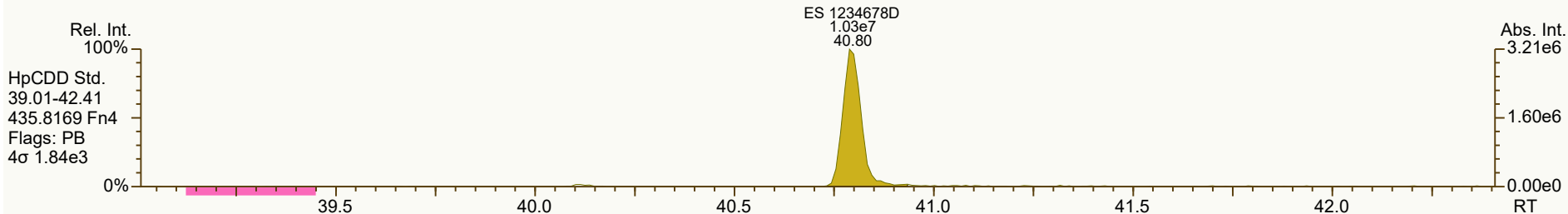
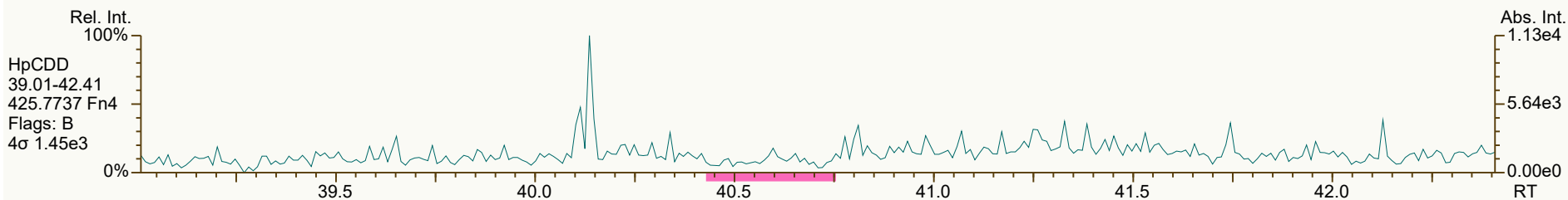
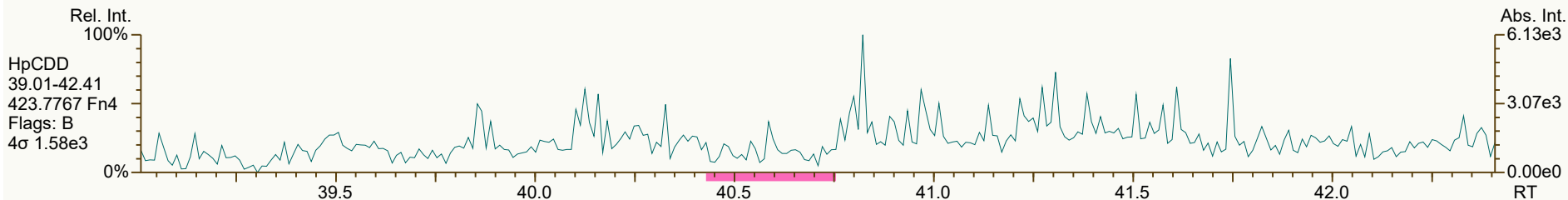


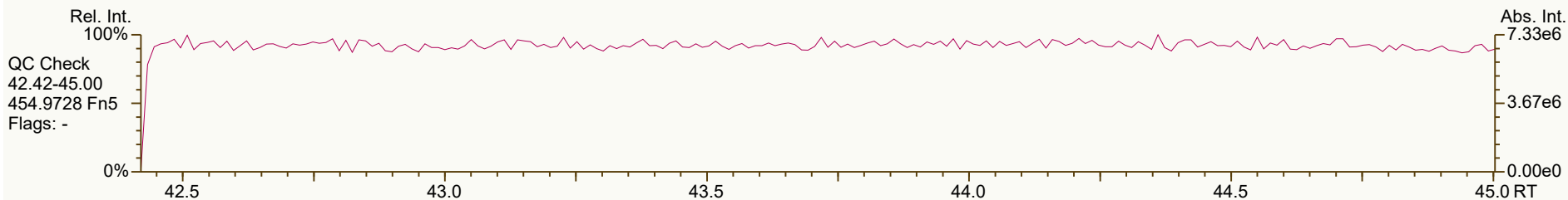
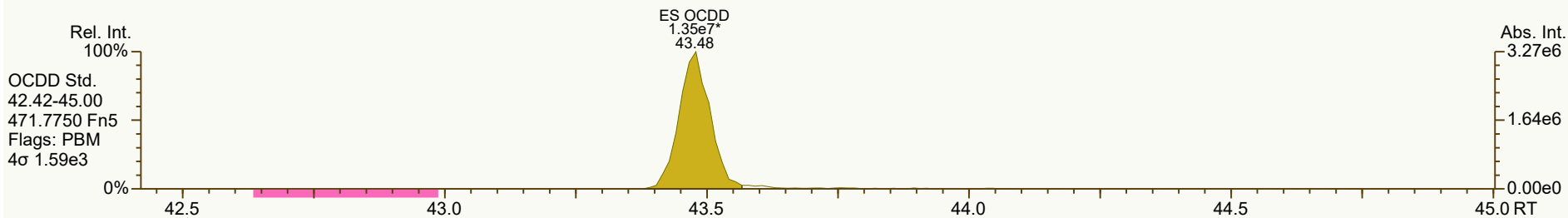
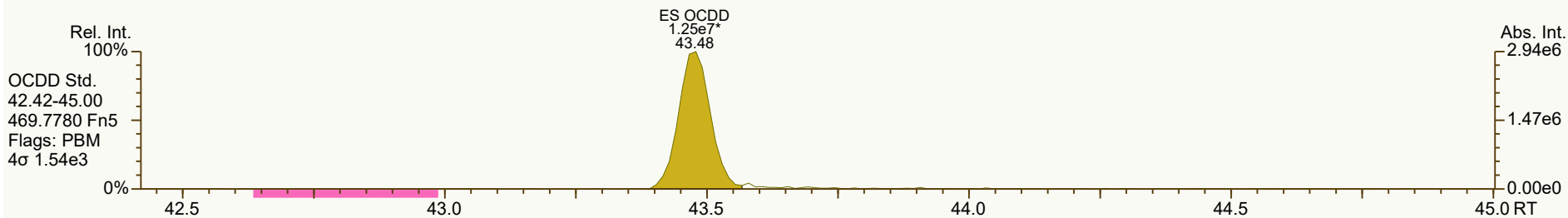
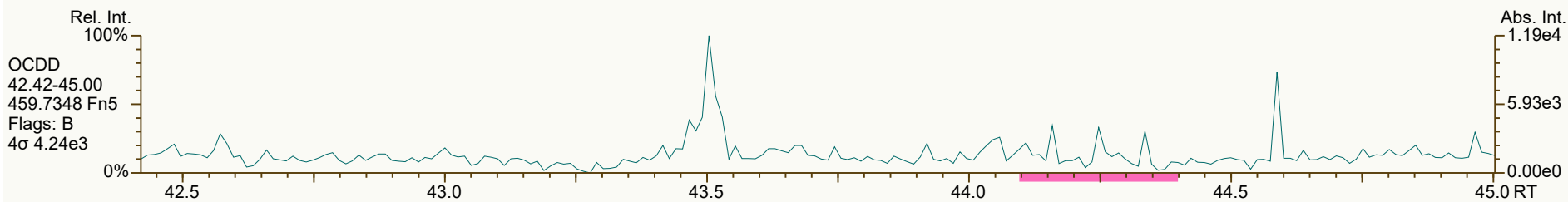
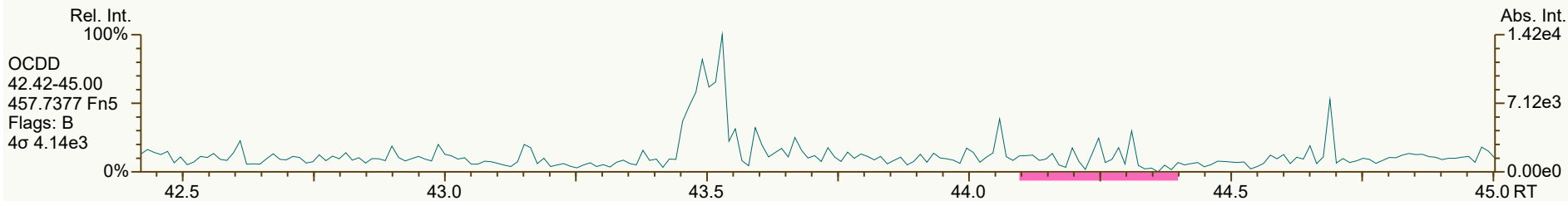


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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 6

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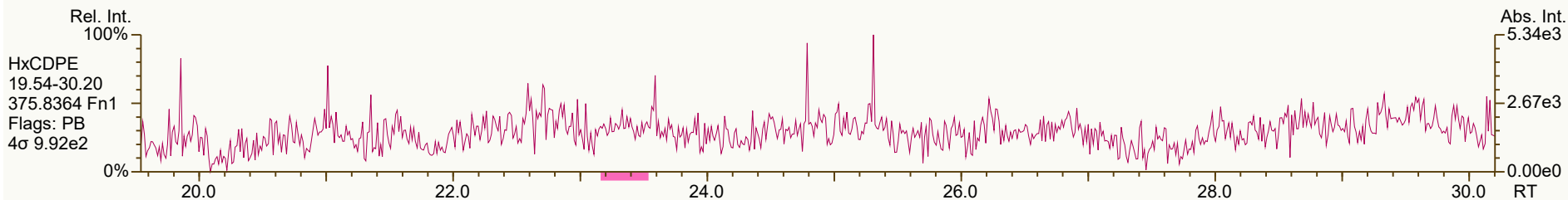
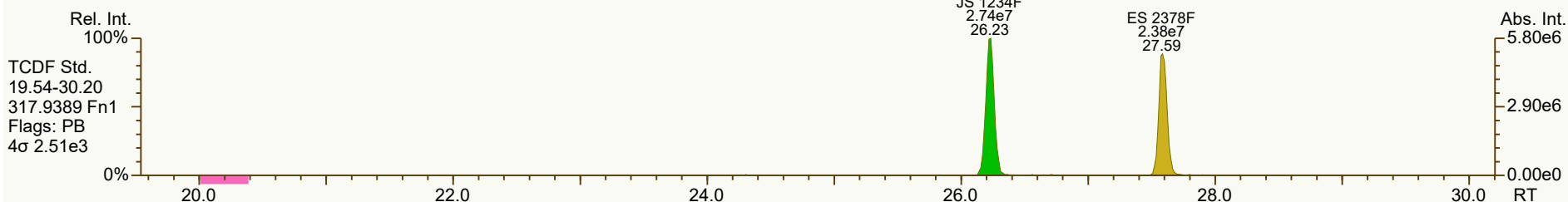
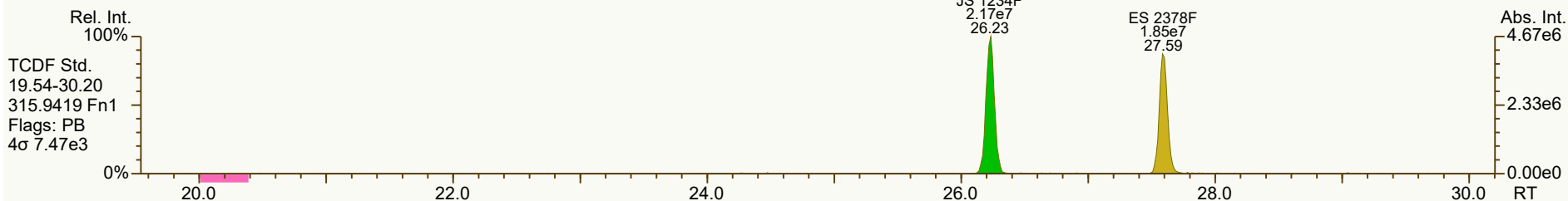
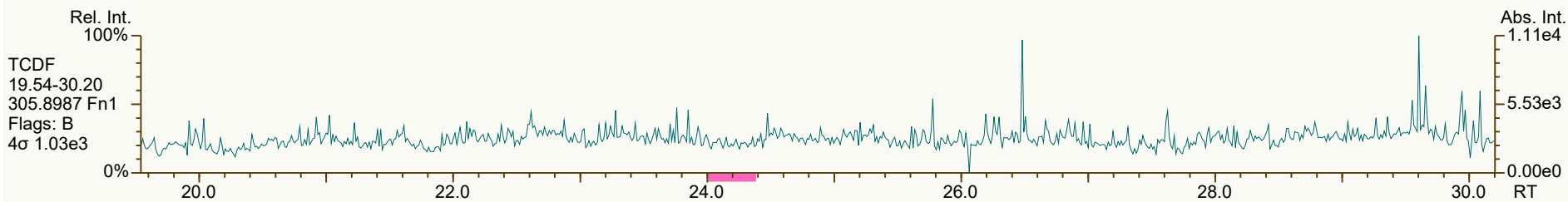
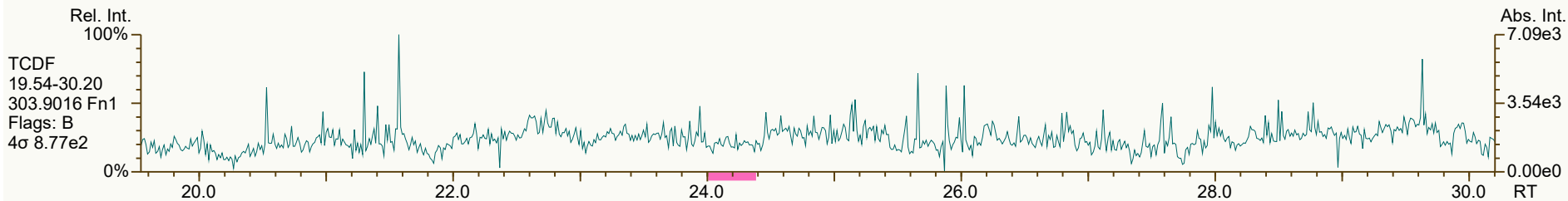


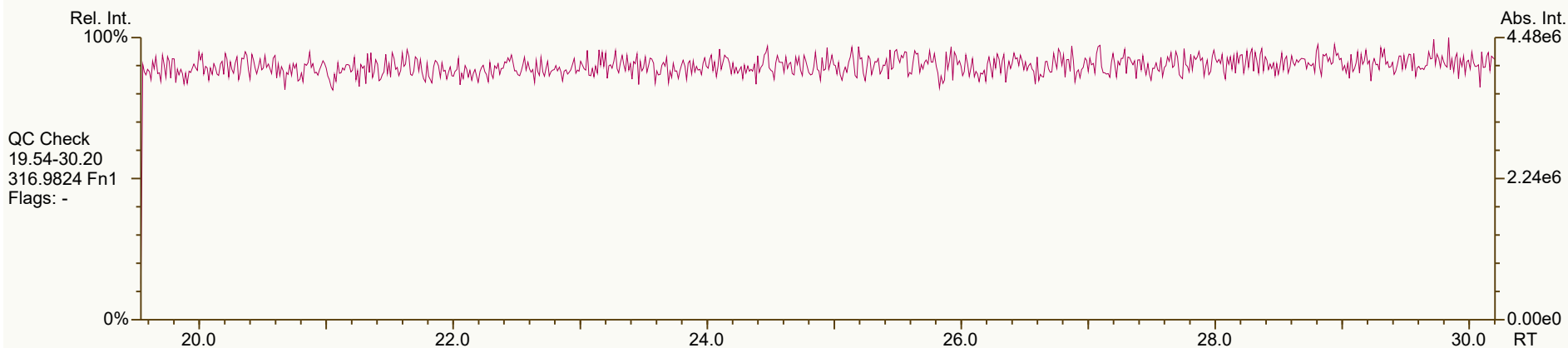
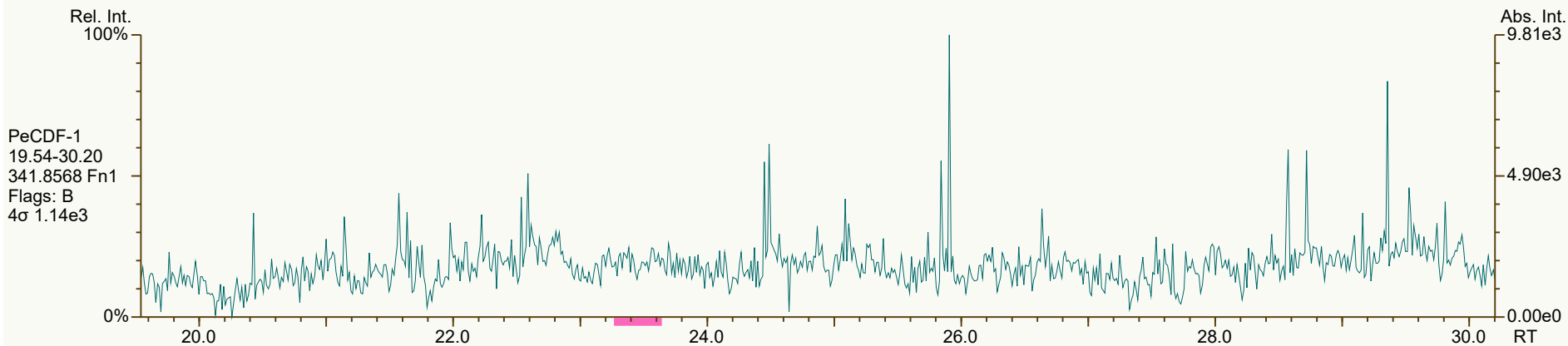
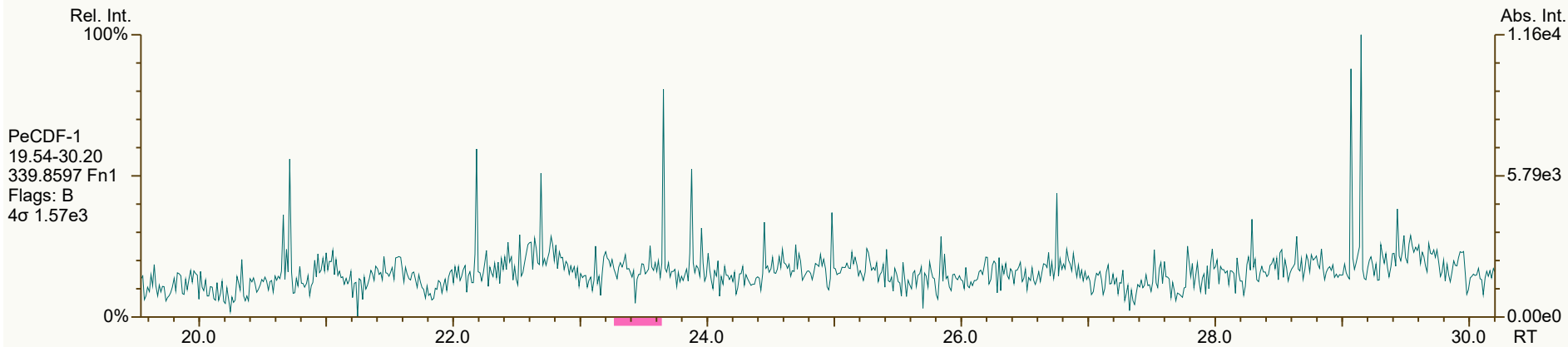


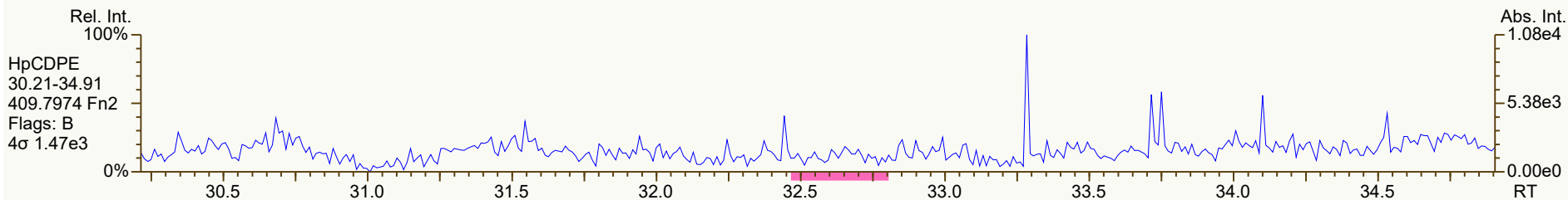
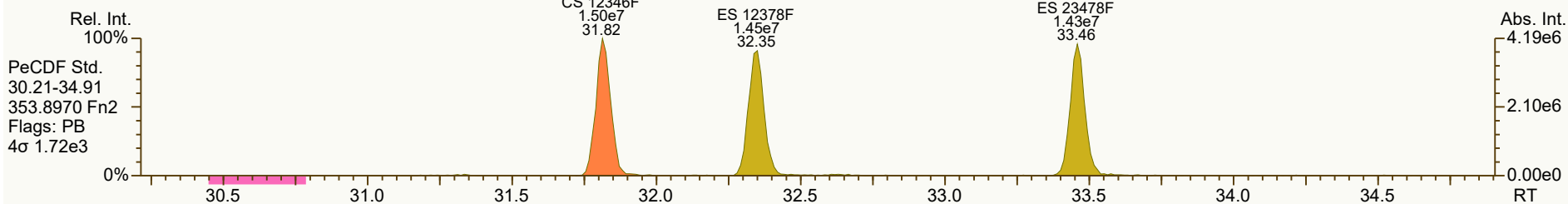
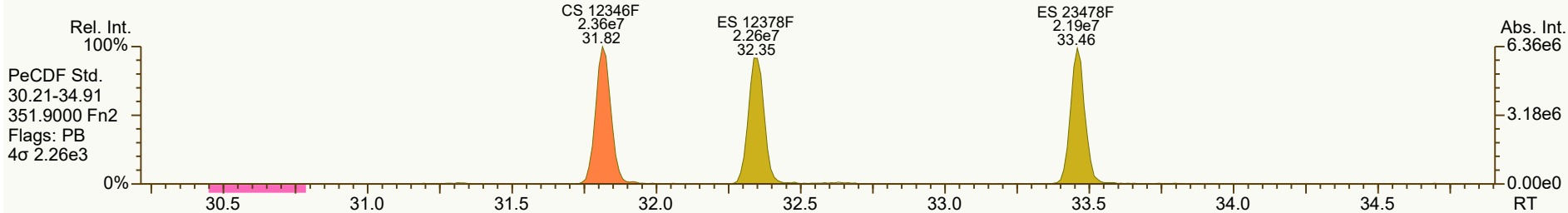
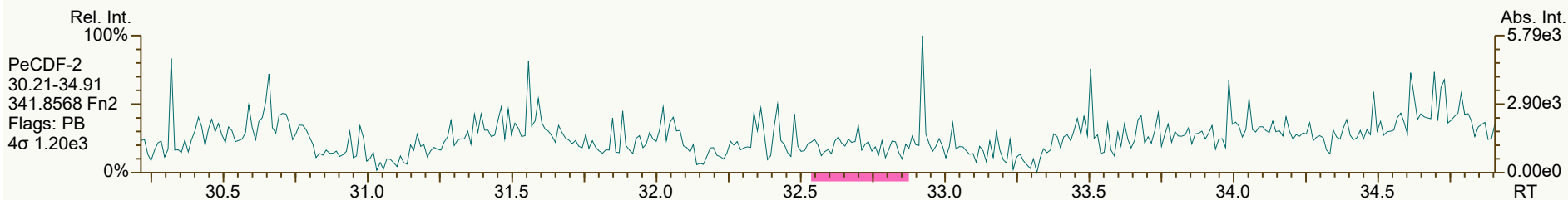
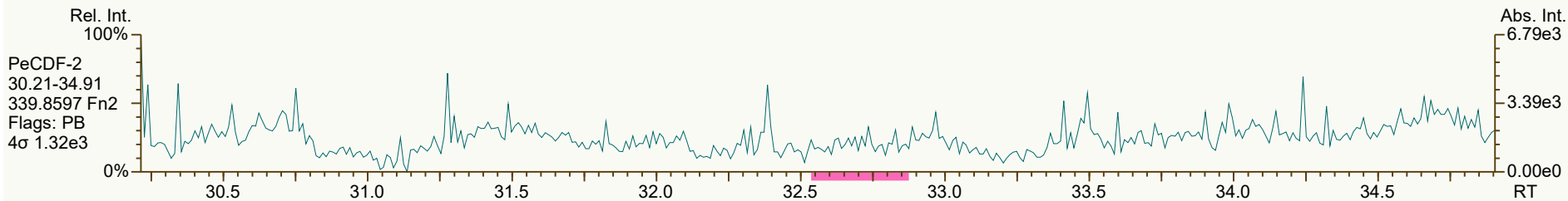
SGS ID: MB1_18888_DF_TLX
Instr: [ILM] AutoSpec-Ultima HRMS3

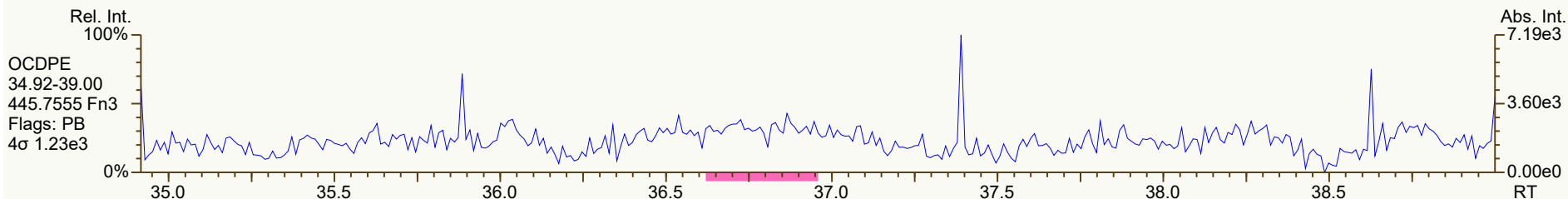
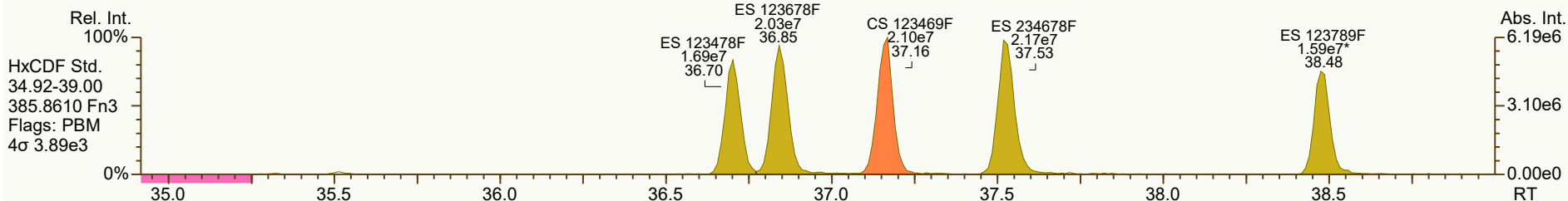
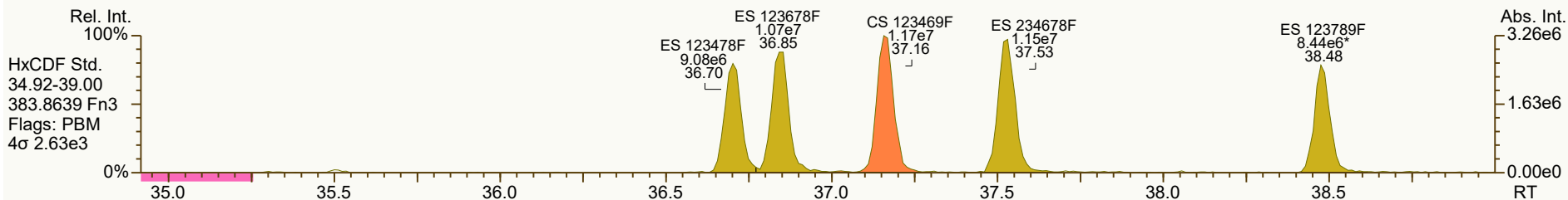
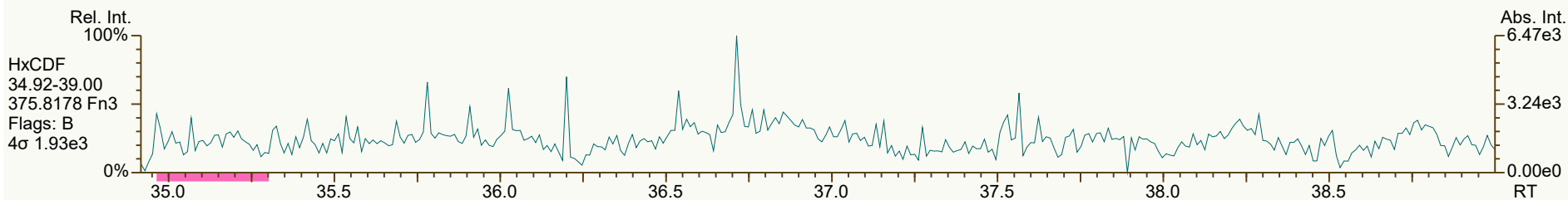
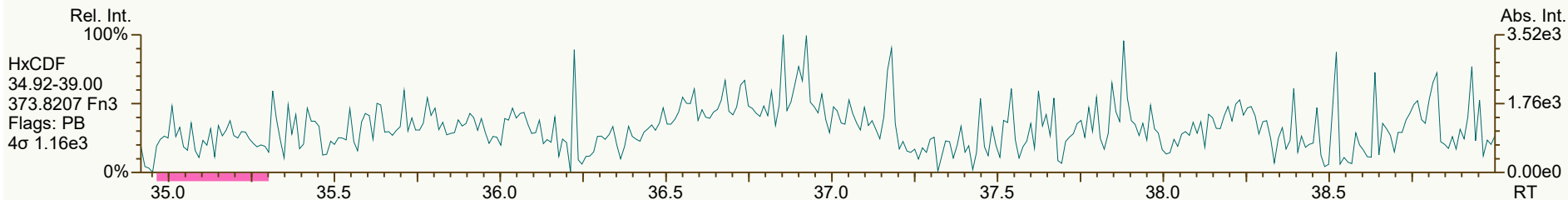
Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 6

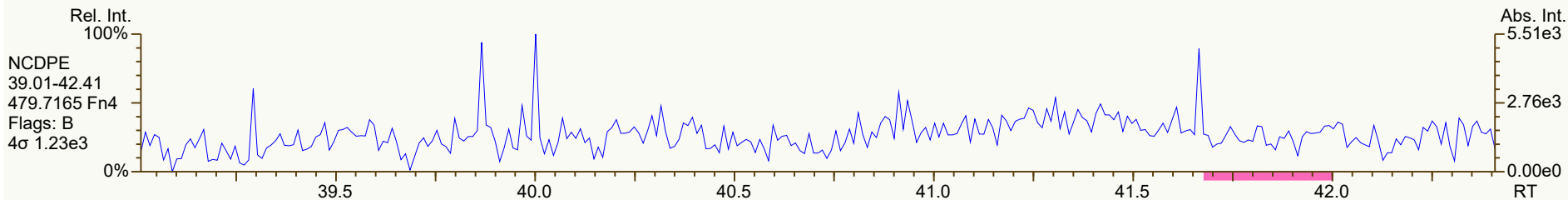
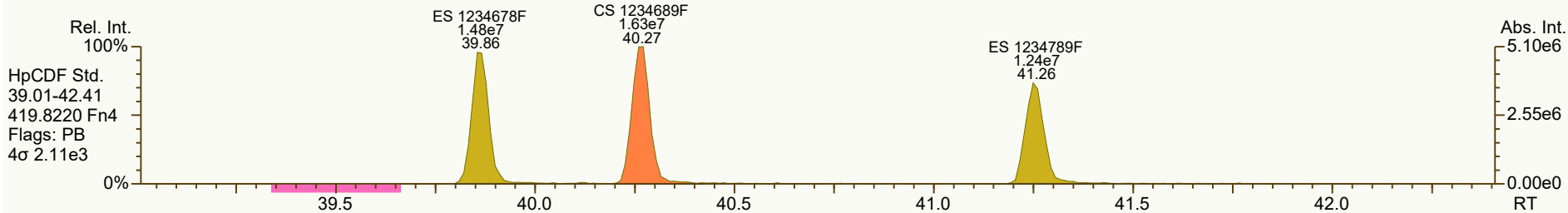
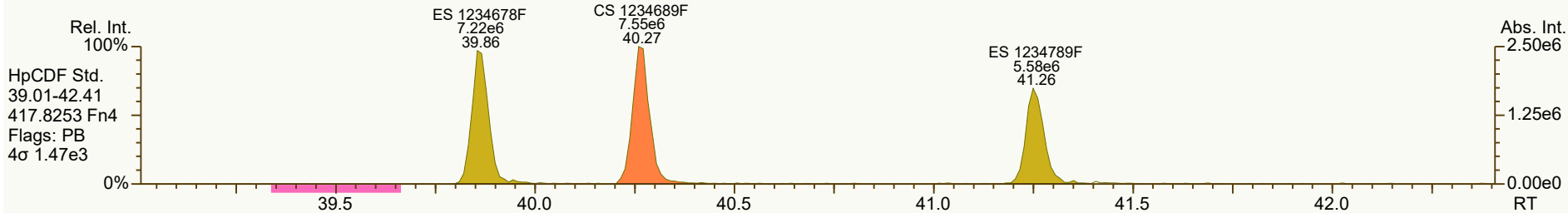
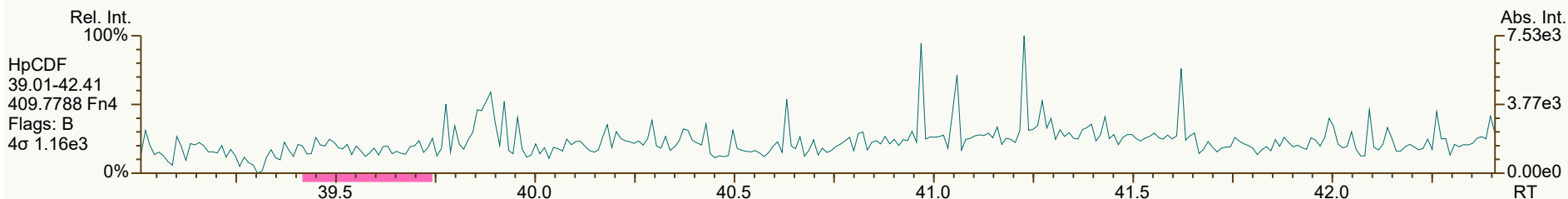
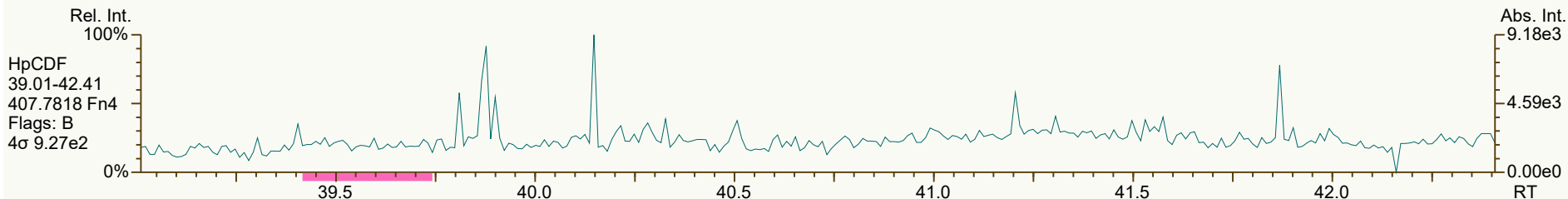
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User: DTF Datafile: 220209C17

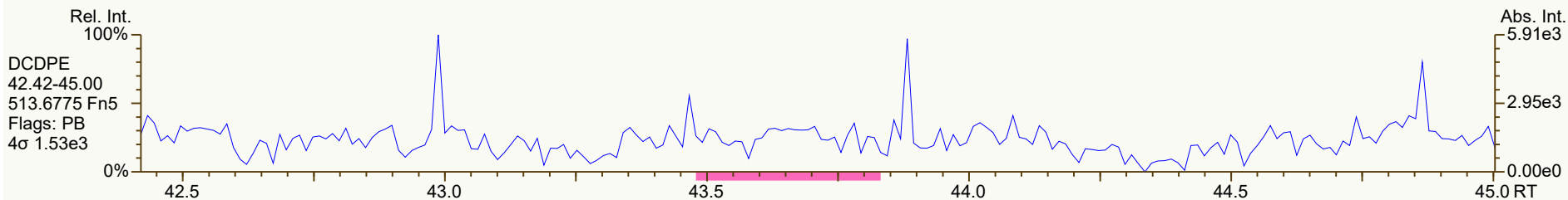
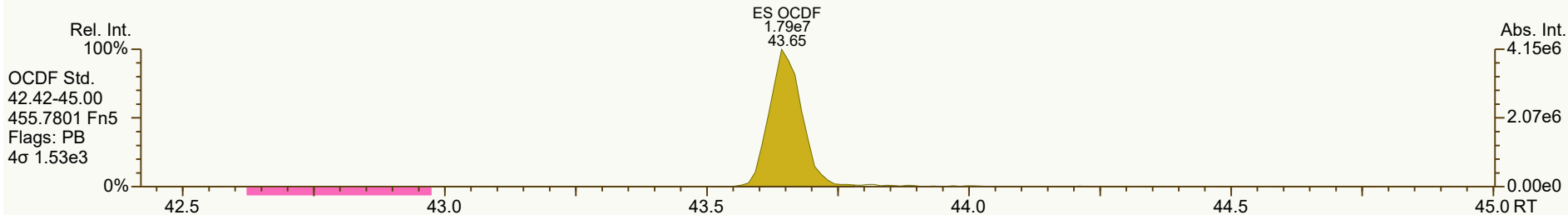
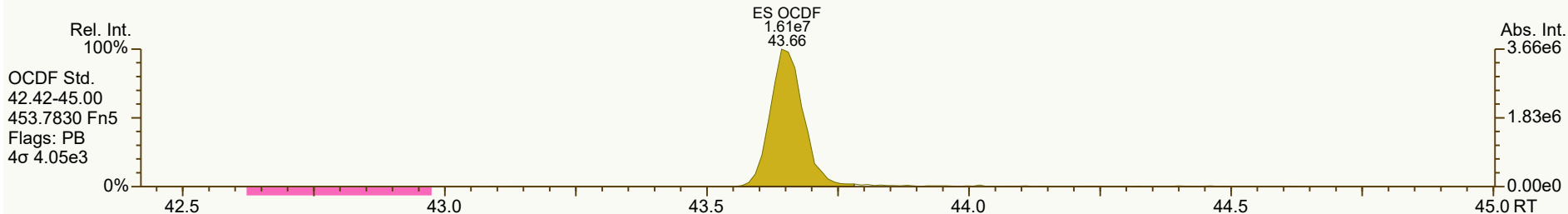
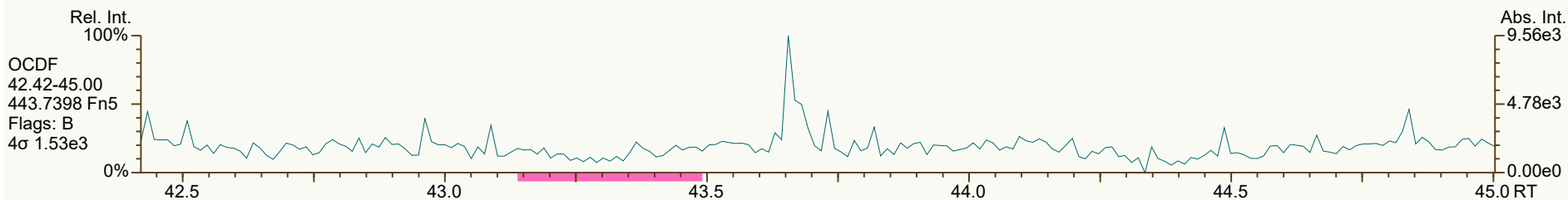
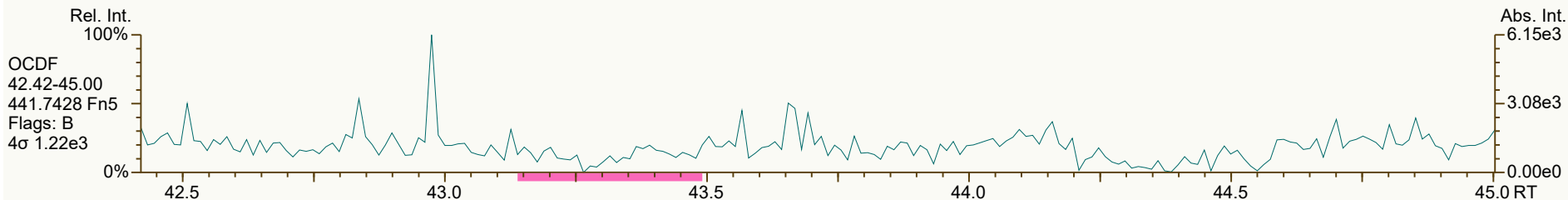












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UTP: 10-Feb-2022 10:22:27 DTF

J-level: 5 pg/L Split: 1

Checkcode: 543-255-MYM

Datafile: 220209C20

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.48	J EMPC	1.0008	1.0009	+0.2	7.18E+04	1.25	N	1.18	3.52	3457.763	1.84
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2708.671	1.4
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2957.792	1.56
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2957.792	1.44
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2957.792	1.51
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2722.205	1.53
OCDD	43.51	J	1.0004	1.0005	+0.3	1.64E+05	0.89	Y	1.13	15.7	3121.293	3.44
2378-TCDF	27.62		1.0008	1.0006	-0.3	4.94E+05	0.75	Y	1.08	16.6	2571.928	0.936
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2256.461	0.829
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2256.461	0.784
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2213.9858	0.791
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2213.9858	0.799
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2213.9858	0.742
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2213.9858	0.904
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2399.608	0.817
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2399.608	1.21
OCDF	43.67	J	1.0003	1.0002	-0.3	5.68E+04	0.78	Y	1.07	4.11	3007.848	2.37

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.45		1.0236	1.0238	+0.3	3.45E+07	0.83	Y	1.05	85.7
ES 12378-PeCDD	33.80		1.2144	1.2161	+3.4	3.15E+07	1.59	Y	0.88	93.3
ES 123478-HxCDD	37.72		0.9920	0.9919	-0.2	2.91E+07	1.27	Y	0.97	95.1
ES 123678-HxCDD	37.83		0.9951	0.9950	-0.2	3.17E+07	1.26	Y	0.94	106
ES 123789-HxCDD	38.13		1.0027	1.0027	0	3.19E+07	1.26	Y	1.09	92.7
ES 1234678-HpCDD	40.80		1.0724	1.0730	+1.5	2.76E+07	1.08	Y	0.91	96.1
ES OCDD	43.49		1.1428	1.1436	+2.1	3.70E+07	0.94	Y	0.62	94.1
ES 2378-TCDF	27.60		1.0516	1.0520	+0.7	5.50E+07	0.80	Y	1.06	88.2
ES 12378-PeCDF	32.35		1.2312	1.2331	+3.7	4.74E+07	1.54	Y	0.91	88.4
ES 23478-PeCDF	33.46		1.2733	1.2755	+4.4	4.76E+07	1.56	Y	0.88	91.6
ES 123478-HxCDF	36.71		0.9655	0.9653	-0.4	3.48E+07	0.53	Y	1.20	92.1
ES 123678-HxCDF	36.85		0.9692	0.9691	-0.2	4.17E+07	0.55	Y	1.35	97.8
ES 234678-HxCDF	37.53		0.9871	0.9870	-0.2	4.49E+07	0.54	Y	1.24	115
ES 123789-HxCDF	38.48		1.0121	1.0121	0	3.44E+07	0.55	Y	1.16	94.5
ES 1234678-HpCDF	39.87		1.0479	1.0485	+1.4	3.03E+07	0.46	Y	0.97	99.3
ES 1234789-HpCDF	41.26		1.0845	1.0852	+1.7	2.61E+07	0.48	Y	0.85	97.2
ES OCDF	43.67		1.1477	1.1484	+1.8	5.16E+07	0.91	Y	0.81	101

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J-level: 5 pg/L Split: 1

Checkcode: 543-255-MYM

Datafile: 220209C20

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.85E+07	0.84	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.89E+07	0.79	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.57E+07	1.28	Y	-	-
CS 37Cl-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.71E+07	n/a	-	1.20	92.6
CS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	3.23E+07	1.62	Y	0.75	112
CS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.98E+07	1.58	Y	0.85	99.5
CS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	4.19E+07	0.53	Y	1.12	119
CS 1234689-HpCDF	40.27		1.0584	1.0591	+1.7	3.28E+07	0.45	Y	0.89	117
SS 37Cl-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.71E+07	n/a		1.15	108
SS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	3.23E+07	1.62	Y	0.86	119
SS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.98E+07	1.58	Y	0.94	112
SS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	4.19E+07	0.53	Y	0.83	121
SS 1234689-HpCDF	40.27		1.0584	1.0591	+1.7	3.28E+07	0.45	Y	0.92	118

Totals	Conc	EMPC			
Total TCDD	0	3.52	* 37Cl correction has been applied to 2378-TCDD		
Total PeCDD	0	0	Original Values		Corrected Values
Total HxCDD	0	0	Ratio	1	1.25
Total HpCDD	0	2.92	Response	1.02E+05	9.15E+04
Total Tetra-Octa Dioxins	15.7	22.2			
Total TCDF	30.1	32.2			
Total PeCDF	0	0			
Total HxCDF	0	0			
Total HpCDF	0	0			
Total Tetra-Octa Furans	34.2	36.3			
Total Tetra-Octa Dioxins & Furans	50	58.4			

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Checkcode: 543-255-MYM

Datafile: 220209C20

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3457.763	1.84
1379-TCDD	NotFnd		0.8860						1.18		3457.763	1.84
1369-TCDD	NotFnd		0.9009						1.18		3457.763	1.84
1469-TCDD	NotFnd		0.9281						1.18		3457.763	1.84
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3457.763	1.84
1378-TCDD	NotFnd		0.9432						1.18		3457.763	1.84
1268-TCDD	NotFnd		0.9500						1.18		3457.763	1.84
1478-TCDD	NotFnd		0.9586						1.18		3457.763	1.84
1279-TCDD	NotFnd		0.9645						1.18		3457.763	1.84
1234/1269-TCDD	NotFnd		0.9770						1.18		3457.763	1.84
1236-TCDD	NotFnd		0.9817						1.18		3457.763	1.84
1237/1238-TCDD	NotFnd		0.9905						1.18		3457.763	1.84
1239-TCDD	NotFnd		0.9952						1.18		3457.763	1.84
2378-TCDD	28.48	J EMPC	1.0008	1.0009	+0.2	7.18E+04	1.25	N	1.18	3.52	3457.763	1.84
1278-TCDD	NotFnd		1.0121						1.18		3457.763	1.84
1267-TCDD	NotFnd		1.0167						1.18		3457.763	1.84
1289-TCDD	NotFnd		1.0345						1.18		3457.763	1.84
12479/12468-PeCDD	NotFnd		0.9267						1.04		2708.671	1.4
12469-PeCDD	NotFnd		0.9425						1.04		2708.671	1.4
12368-PeCDD	NotFnd		0.9588						1.04		2708.671	1.4
12478-PeCDD	NotFnd		0.9643						1.04		2708.671	1.4
12379-PeCDD	NotFnd		0.9673						1.04		2708.671	1.4
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2708.671	1.4
12346/12347-PeCDD	NotFnd		0.9858						1.04		2708.671	1.4
12378-PeCDD	NotFnd		1.0006						1.04		2708.671	1.4
12367-PeCDD	NotFnd		1.0033						1.04		2708.671	1.4
12389-PeCDD	NotFnd		1.0134						1.04		2708.671	1.4
124679/124689-HxCDD	NotFnd		0.9542						1.10		2957.792	1.5
123468-HxCDD	NotFnd		0.9715						1.10		2957.792	1.5
123679/123689-HxCDD	NotFnd		0.9793						1.10		2957.792	1.5
123469-HxCDD	NotFnd		0.9828						1.10		2957.792	1.5
123478-HxCDD	NotFnd		1.0004						1.09		2957.792	1.56
123678-HxCDD	NotFnd		1.0035						1.15		2957.792	1.44
123467-HxCDD	NotFnd		1.0085						1.10		2957.792	1.5
123789-HxCDD	NotFnd		1.0112						1.05		2957.792	1.51

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.14	J EMPC	0.9837	0.9838	+0.2	4.27E+04	1.27	N	1.06	2.92	2722.205	1.53
1234678-HpCDD	NotFnd		1.0003						1.06		2722.205	1.53
OCDD	43.51	J	1.0004	1.0005	+0.3	1.64E+05	0.89	Y	1.13	15.7	3121.293	3.44
OCDD-a	NotFnd		1.0003						0.07		3246.321	56
1368-TCDF	NotFnd		0.8251						1.08		2571.928	0.936
1468-TCDF	NotFnd		0.8458						1.08		2571.928	0.936
2468-TCDF	NotFnd		0.8686						1.08		2571.928	0.936
1346/1246-TCDF	NotFnd		0.8814						1.08		2571.928	0.936
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2571.928	0.936
1348-TCDF	NotFnd		0.8962						1.08		2571.928	0.936
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2571.928	0.936
1268-TCDF	NotFnd		0.9145						1.08		2571.928	0.936
1467-TCDF	NotFnd		0.9193						1.08		2571.928	0.936
1478-TCDF	NotFnd		0.9254						1.08		2571.928	0.936
1369/1237-TCDF	NotFnd		0.9387						1.08		2571.928	0.936
2467-TCDF	NotFnd		0.9433						1.08		2571.928	0.936
2368-TCDF	NotFnd		0.9489						1.08		2571.928	0.936
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2571.928	0.936
1278-TCDF	26.72		0.9683	0.9683	0	2.74E+05	0.82	Y	1.08	9.22	2571.928	0.936
1349-TCDF	NotFnd		0.9722						1.08		2571.928	0.936
1267-TCDF	NotFnd		0.9783						1.08		2571.928	0.936
2346/1249-TCDF	NotFnd		0.9850						1.08		2571.928	0.936
2347/1279-TCDF	NotFnd		0.9926						1.08		2571.928	0.936
2348-TCDF	27.50	J	0.9967	0.9965	-0.3	5.55E+04	0.86	Y	1.08	1.87	2571.928	0.936
2378-TCDF	27.62		1.0008	1.0006	-0.3	4.94E+05	0.75	Y	1.08	16.6	2571.928	0.936
2367/3467-TCDF	27.98	J	1.0137	1.0138	+0.2	7.14E+04	0.88	Y	1.08	2.4	2571.928	0.936
1269-TCDF	NotFnd		1.0223						1.08		2571.928	0.936
1239-TCDF	NotFnd		1.0321						1.08		2571.928	0.936
1289-TCDF	29.62	J EMPC	1.0722	1.0732	+1.8	5.99E+04	0.61	N	1.08	2.02	2571.928	0.936
13468/12468-PeCDF	NotFnd		0.9139						1.02		2287.612	0.817
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2256.461	0.806
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2256.461	0.806
14678-PeCDF	NotFnd		0.9692						1.02		2256.461	0.806
13479-PeCDF	NotFnd		0.9723						1.02		2256.461	0.806
13469/12479-PeCDF	NotFnd		0.9797						1.02		2256.461	0.806
12346-PeCDF	NotFnd		0.9840						1.02		2256.461	0.806

Lab ID: B6237_18888_DF_001

Acq'd: 09 Feb 2022 21:41 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC

UTP: 10-Feb-2022 10:22:27 DTF

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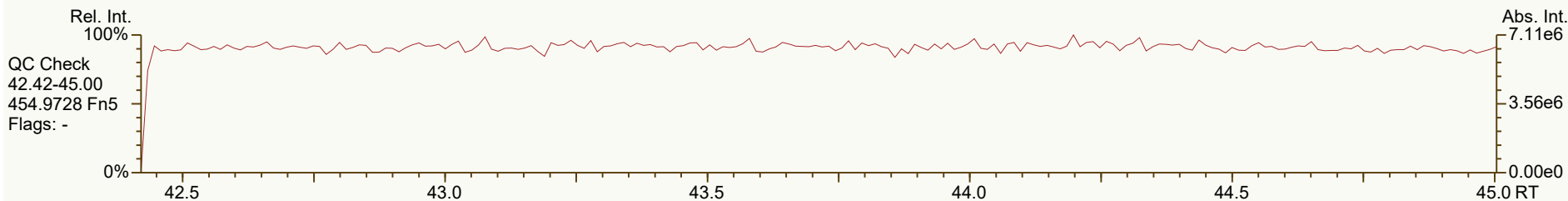
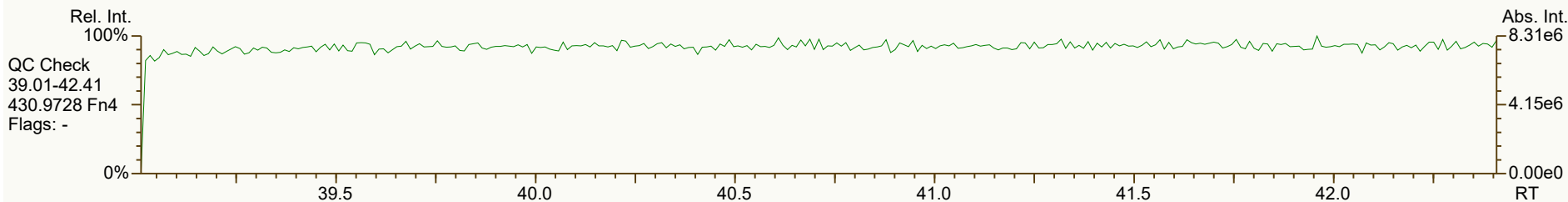
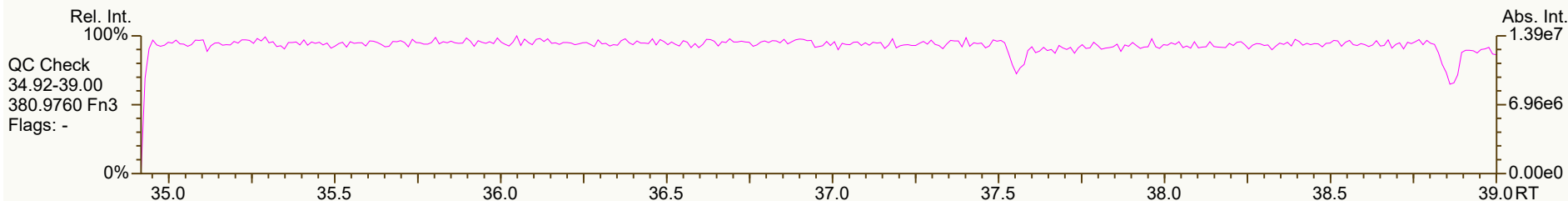
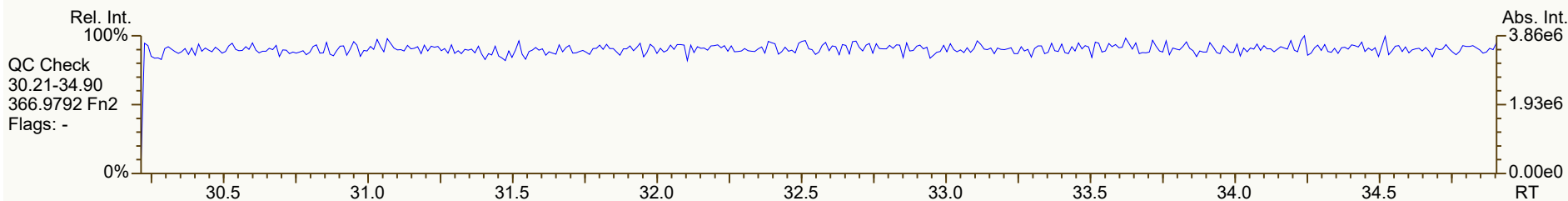
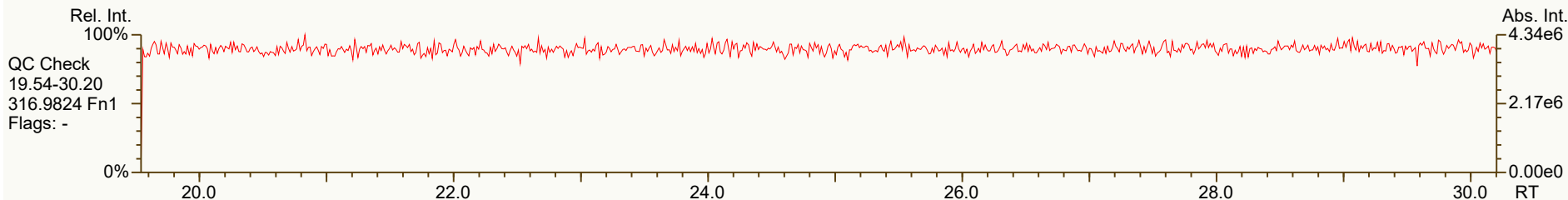
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Report: 10 Feb 2022 10:27 TF

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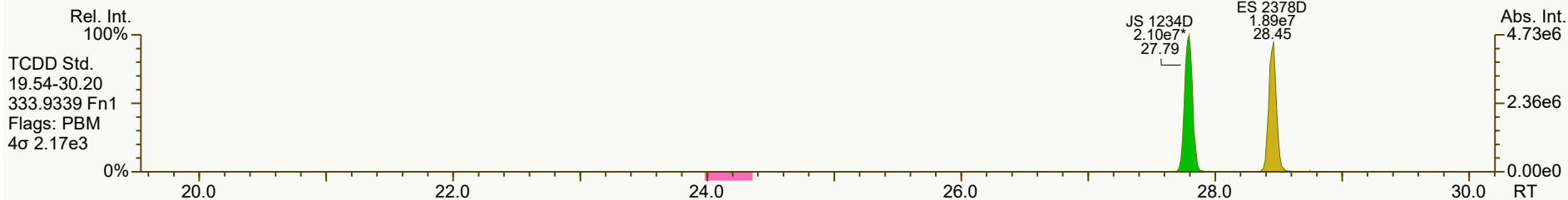
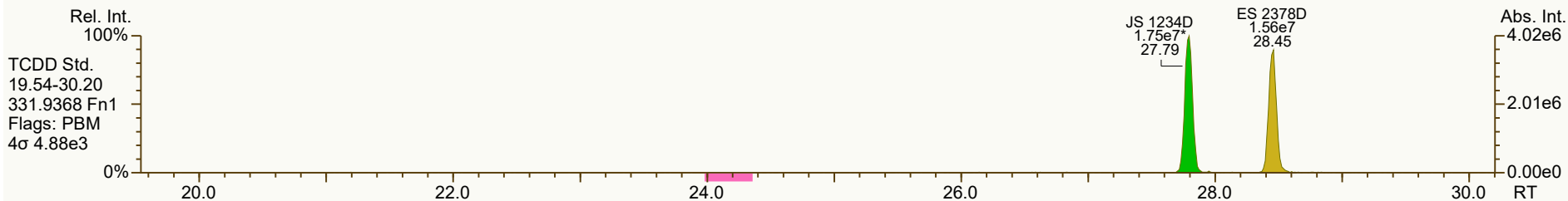
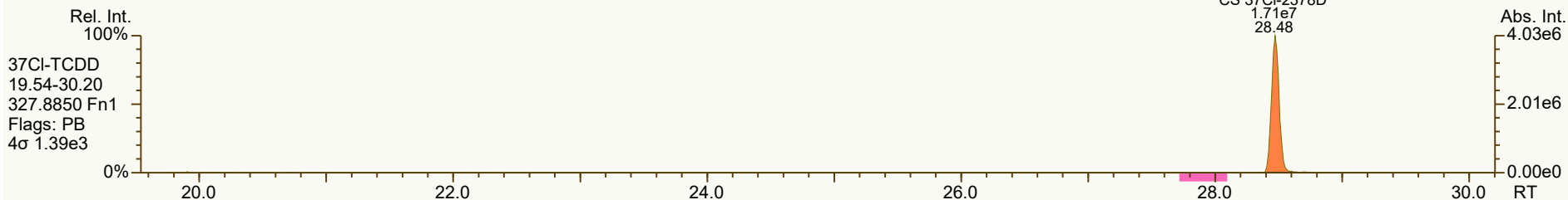
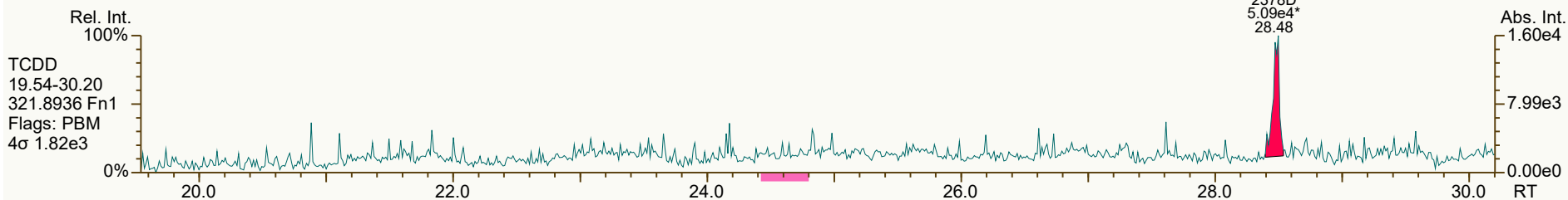
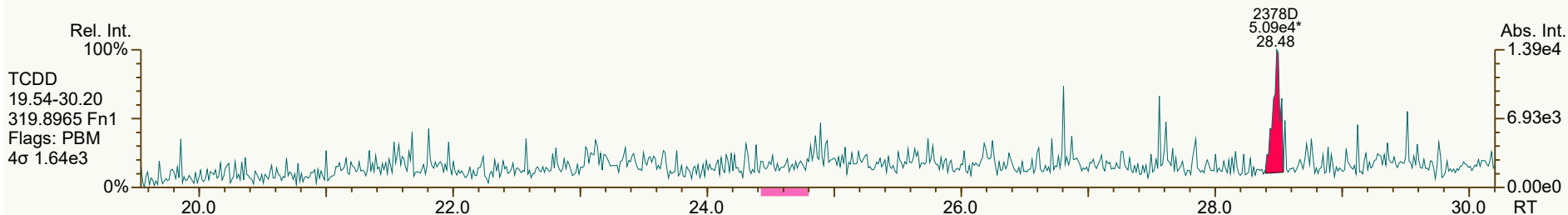
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12347-PeCDF	NotFnd		0.9894						1.02		2256.461	0.806
12348-PeCDF	NotFnd		0.9940						1.02		2256.461	0.806
12378-PeCDF	NotFnd		1.0005						1.02		2256.461	0.829
12678/12367-PeCDF	NotFnd		1.0089						1.02		2256.461	0.806
12379-PeCDF	NotFnd		1.0142						1.02		2256.461	0.806
12679-PeCDF	NotFnd		0.9929						1.02		2256.461	0.806
23467/12369-PeCDF	NotFnd		0.9967						1.02		2256.461	0.806
23478-PeCDF	NotFnd		1.0005						1.02		2256.461	0.784
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2256.461	0.806
12349-PeCDF	NotFnd		1.0100						1.02		2256.461	0.806
12389-PeCDF	NotFnd		1.0324						1.02		2256.461	0.806
123468-HxCDF	NotFnd		0.9627						1.19		2213.9858	0.802
124678/134678-HxCDF	NotFnd		0.9682						1.19		2213.9858	0.802
134679-HxCDF	NotFnd		0.9744						1.19		2213.9858	0.802
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124689-HxCDF	NotFnd		0.9858						1.19		2213.9858	0.802
123467-HxCDF	NotFnd		0.9972						1.19		2213.9858	0.802
123478-HxCDF	NotFnd		1.0004						1.27		2213.9858	0.791
123678-HxCDF	NotFnd		1.0004						1.15		2213.9858	0.799
123479-HxCDF	NotFnd		1.0049						1.19		2213.9858	0.802
123469-HxCDF	NotFnd		1.0090						1.19		2213.9858	0.802
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234678-HxCDF	NotFnd		1.0005						1.19		2213.9858	0.742
234678/123689-HxCDF	NotFnd		0.0000						1.19			
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123789-HxCDF	NotFnd		1.0004						1.16		2213.9858	0.904
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2213.9858	0.802
1234678-HpCDF	NotFnd		1.0003						1.37		2399.608	0.817
1234679-HpCDF	NotFnd		1.0068						1.34		2399.608	0.995
1234689-HpCDF	NotFnd		1.0103						1.34		2399.608	0.995
1234789-HpCDF	NotFnd		1.0002						1.31		2399.608	1.21
OCDF	43.67	J	1.0003	1.0002	-0.3	5.68E+04	0.78	Y	1.07	4.11	3007.848	2.37
OCDF-a	NotFnd		1.0002						0.07		3452.929	44

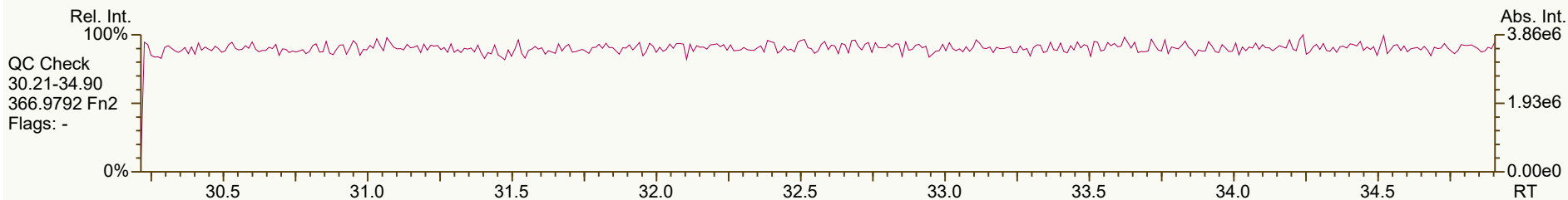
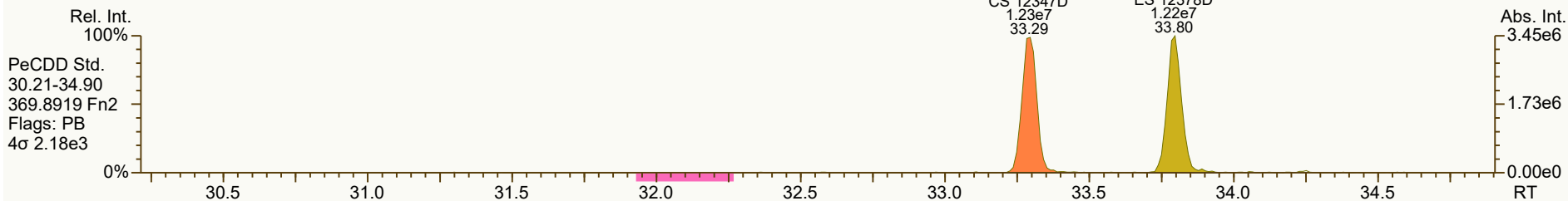
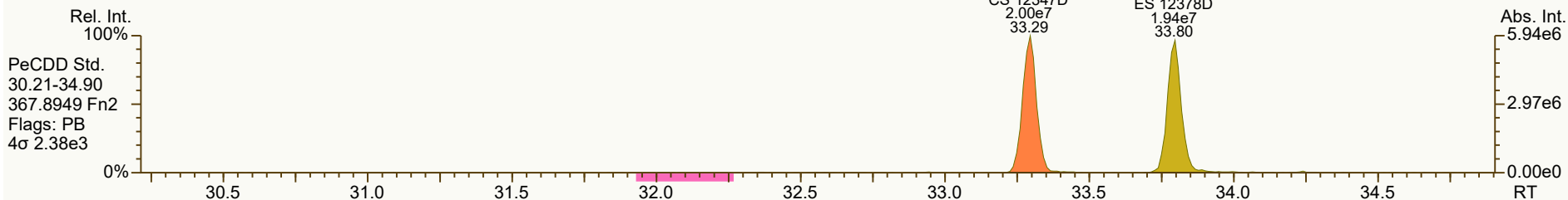
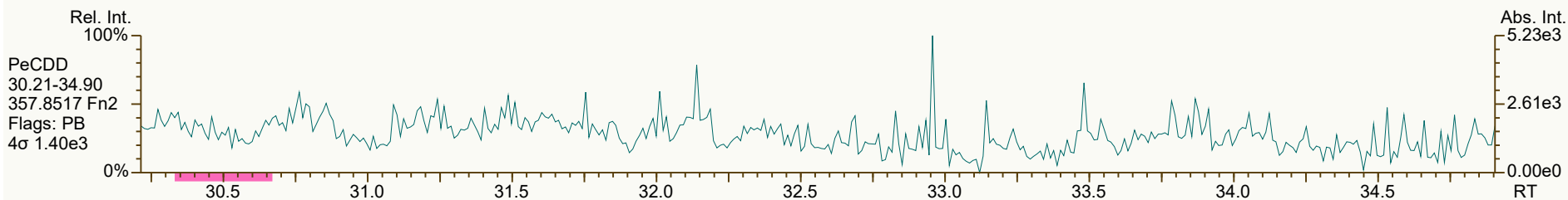
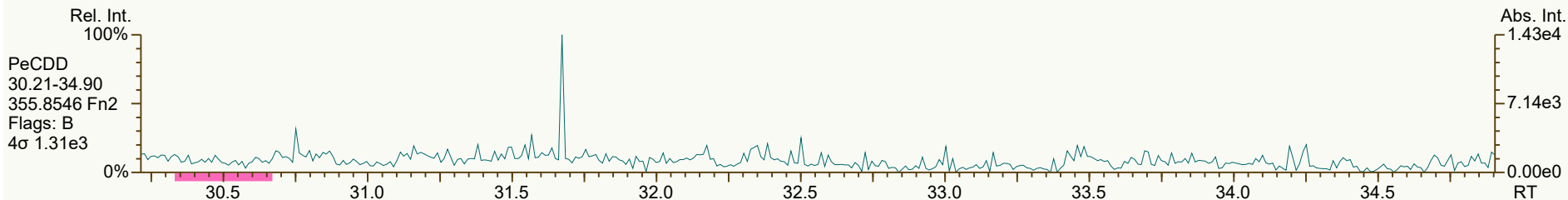


SGS ID: B6237_18888_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 8

Acq: 09-Feb-2022 21:41:24
User: DTF Datafile: 220209C20

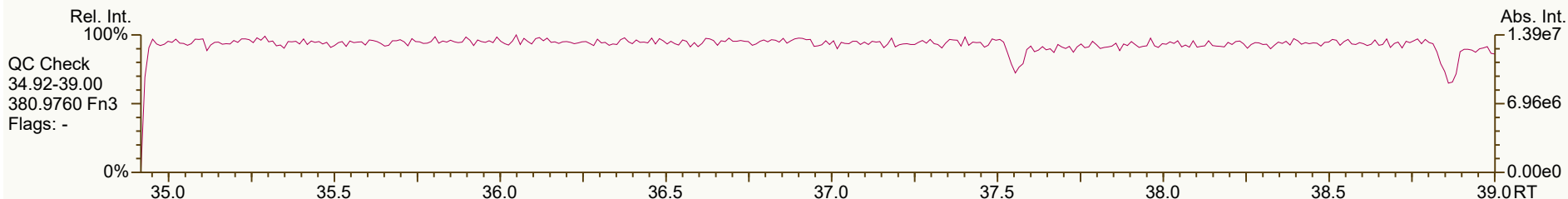
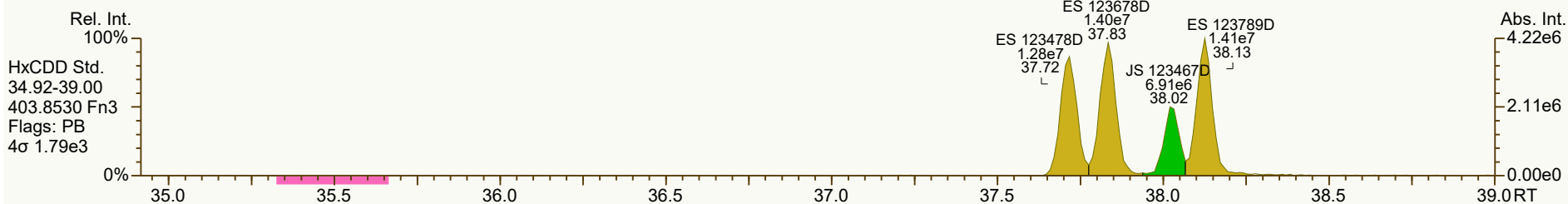
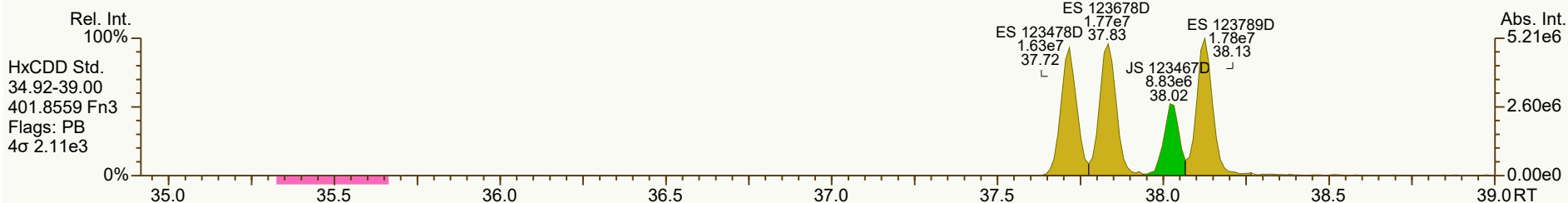
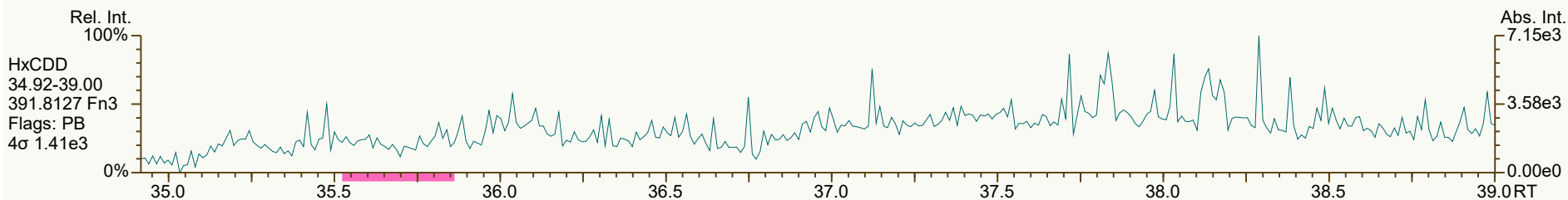
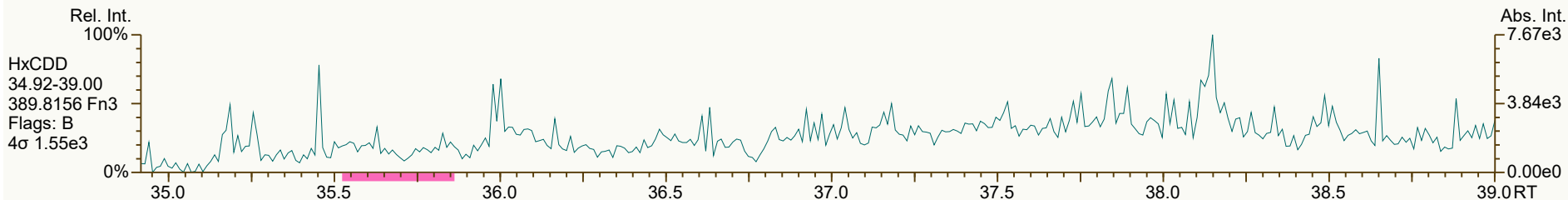




SGS ID: B6237_18888_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

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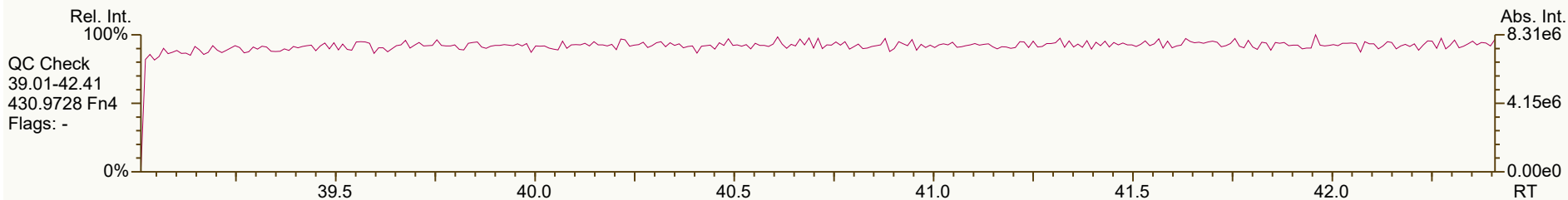
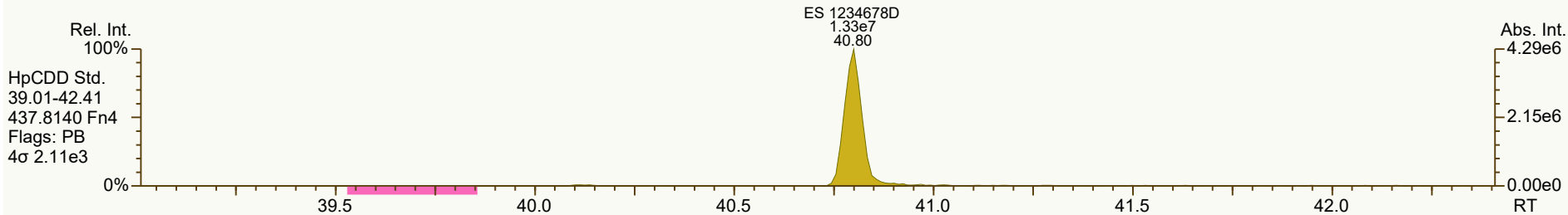
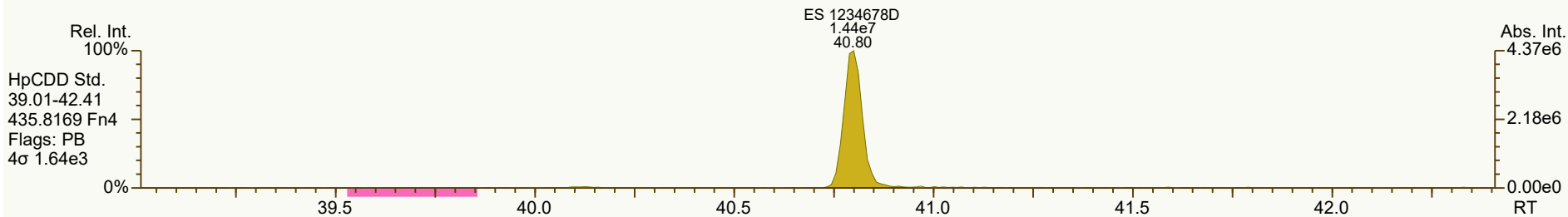
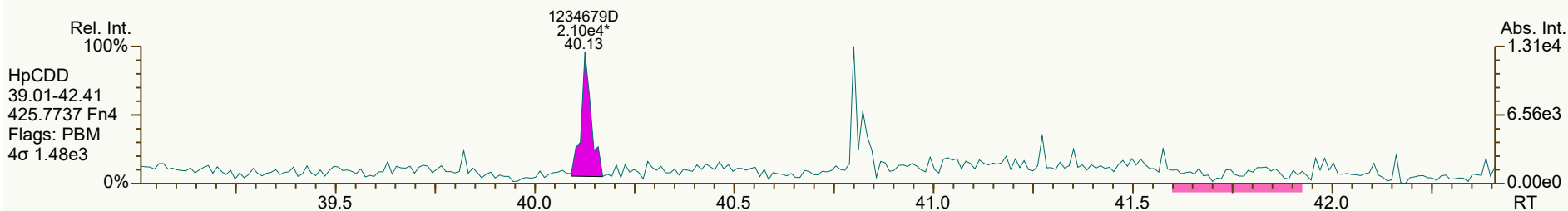
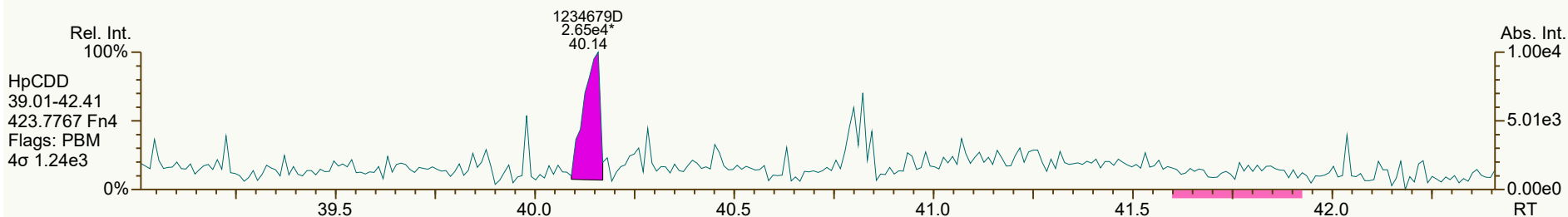
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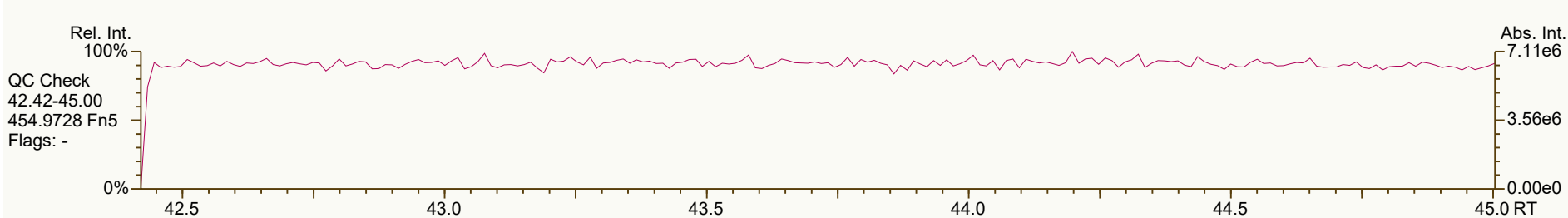
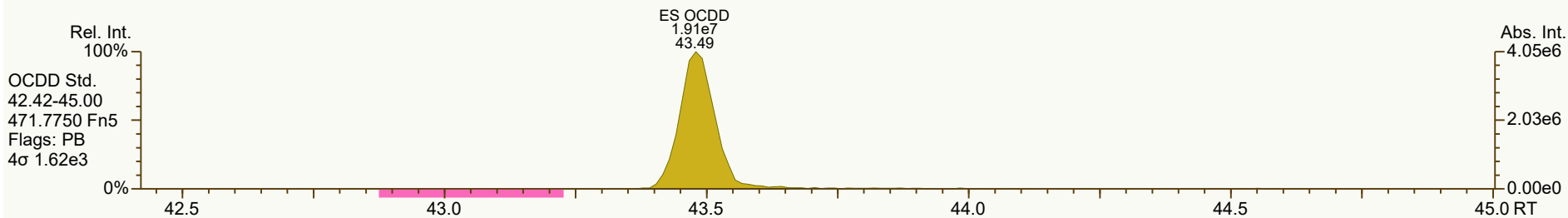
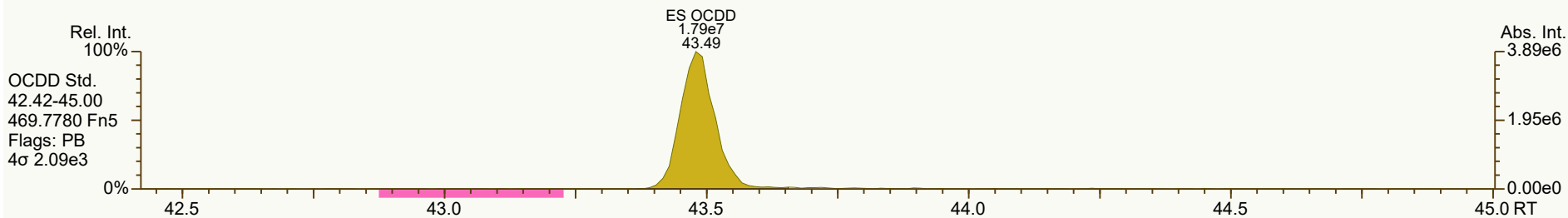
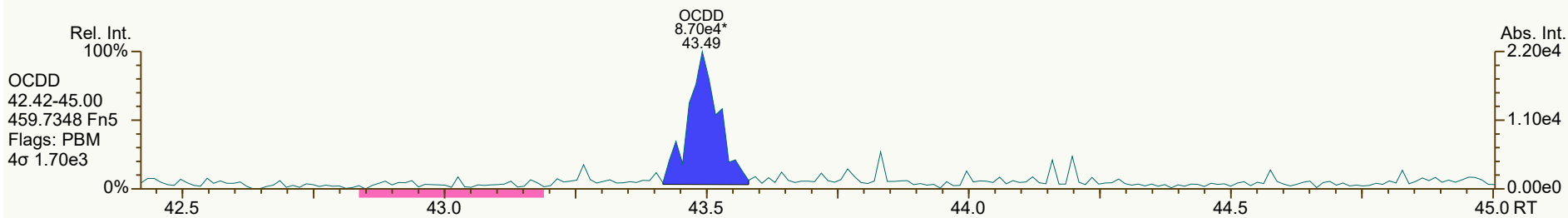
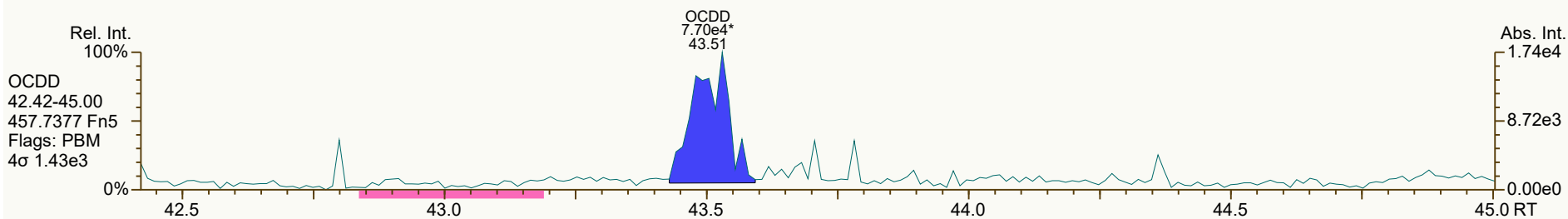


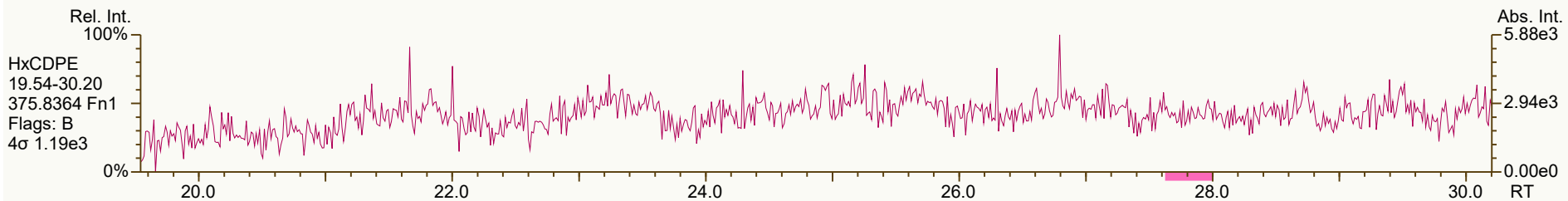
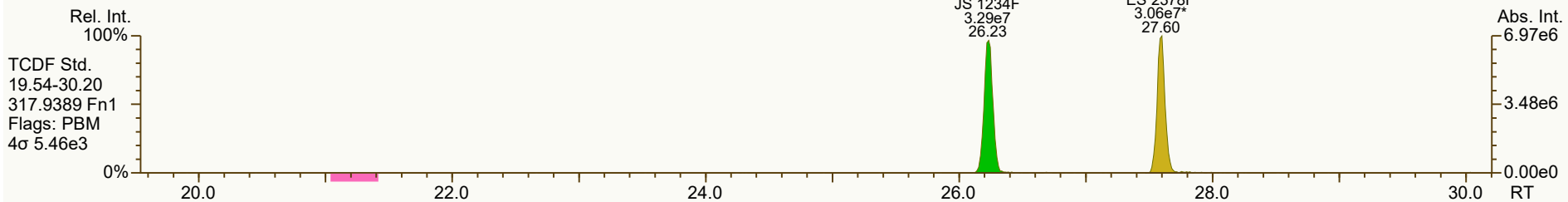
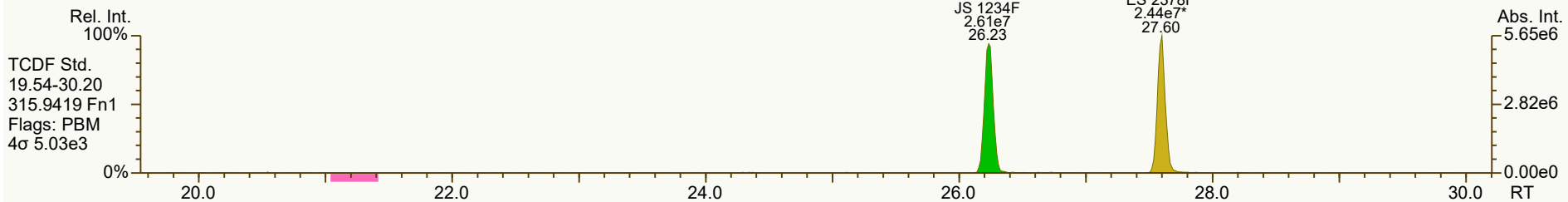
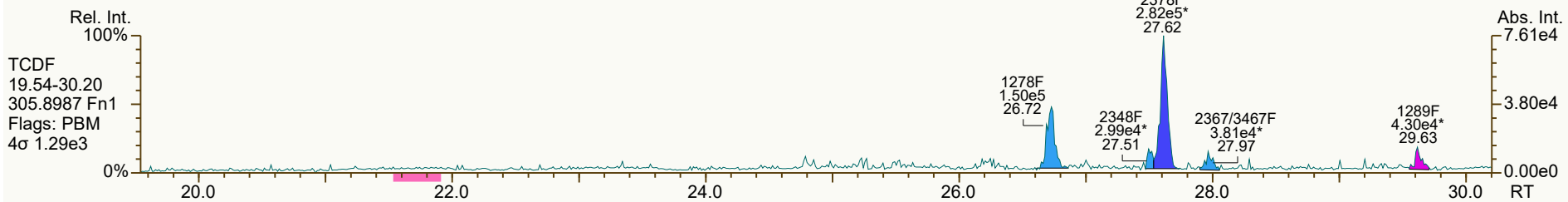
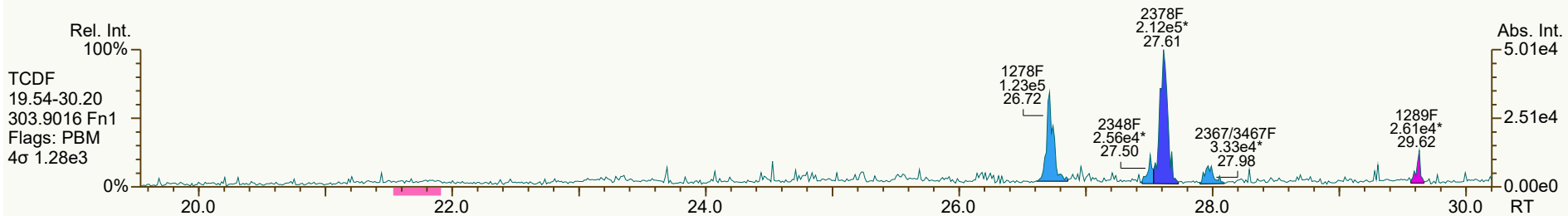
SGS ID: B6237_18888_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

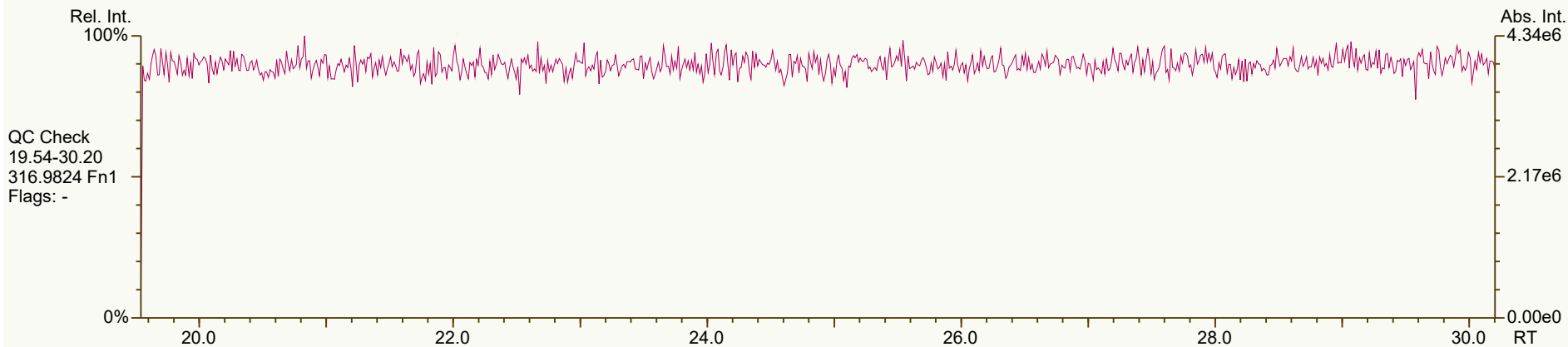
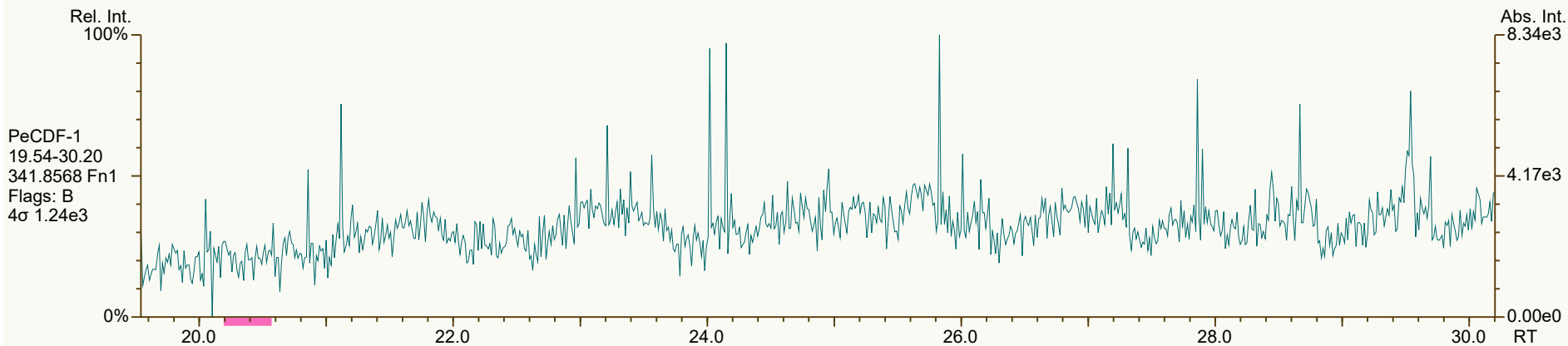
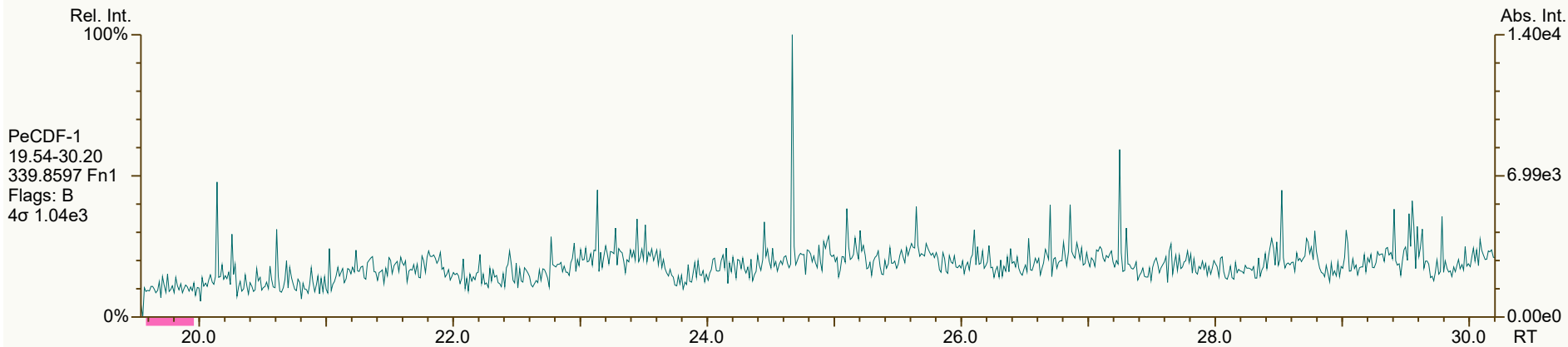
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 8

Acq: 09-Feb-2022 21:41:24
User: DTF Datafile: 220209C20





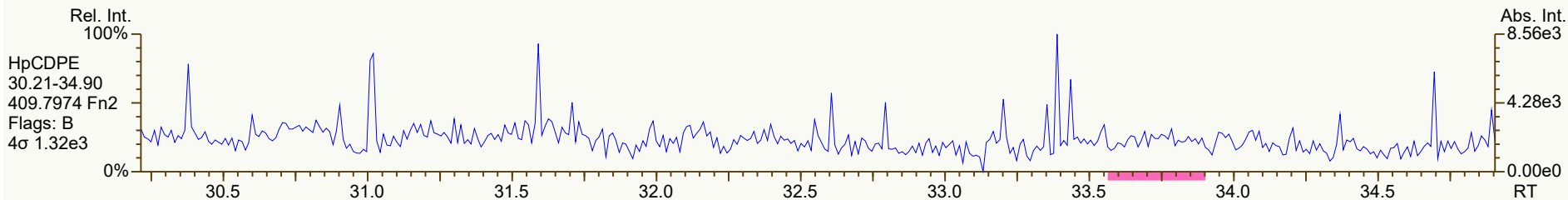
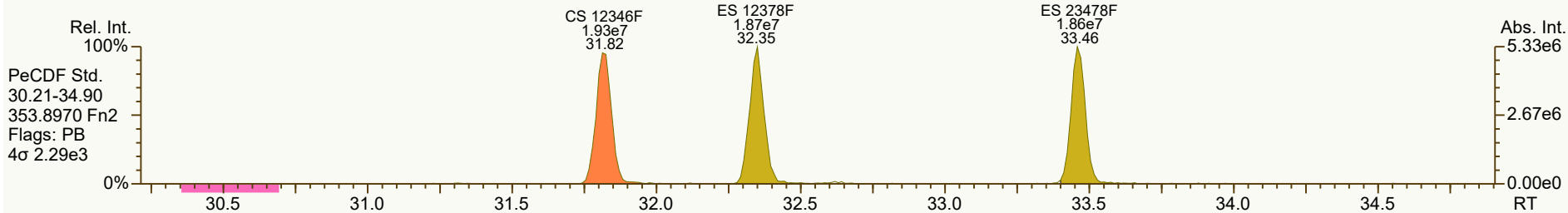
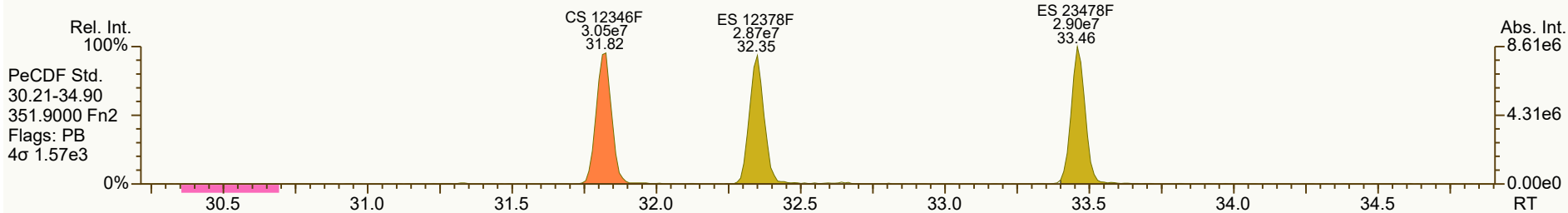
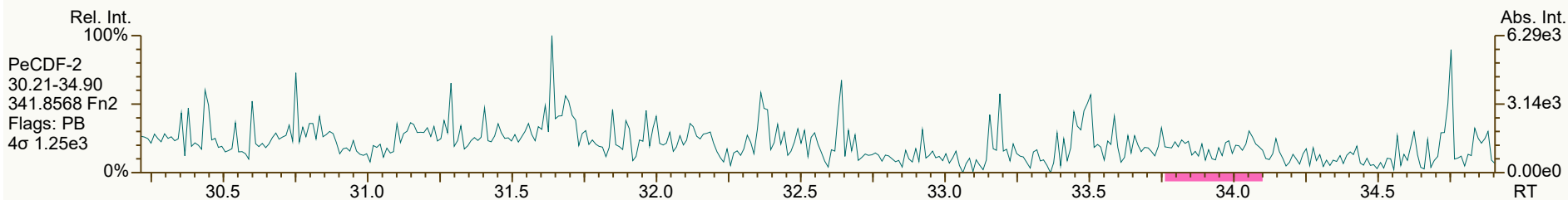
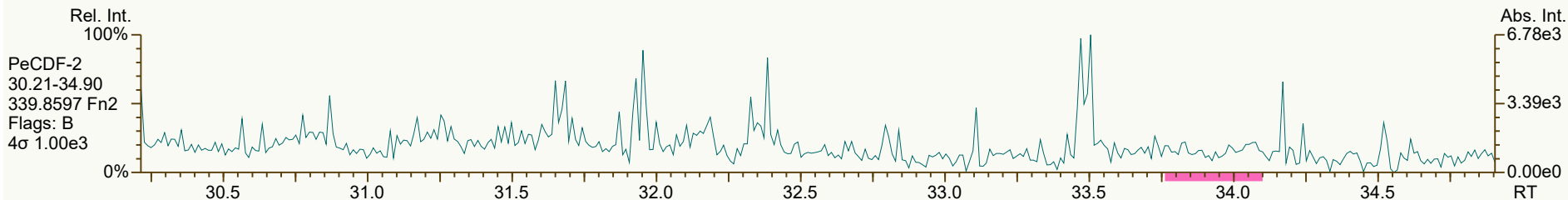




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Instr: [ILM] AutoSpec-Ultima HRMS3

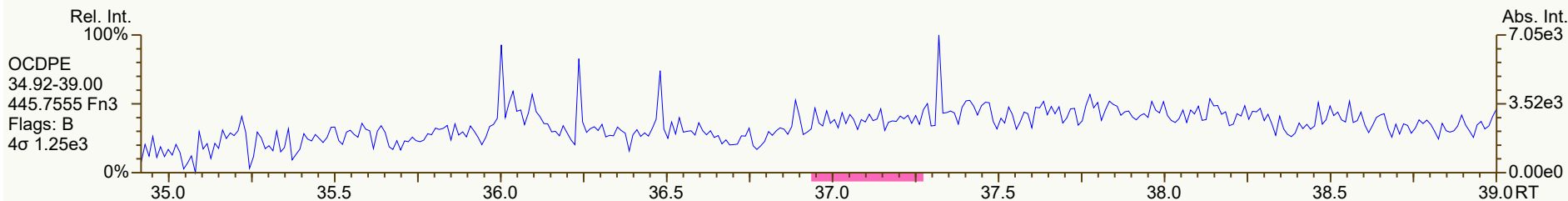
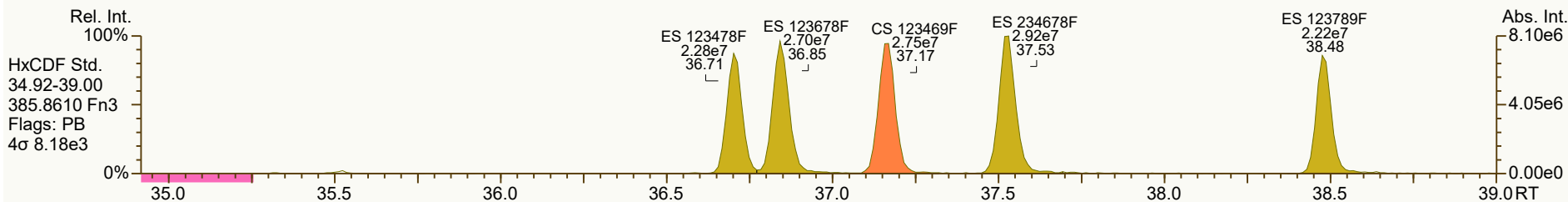
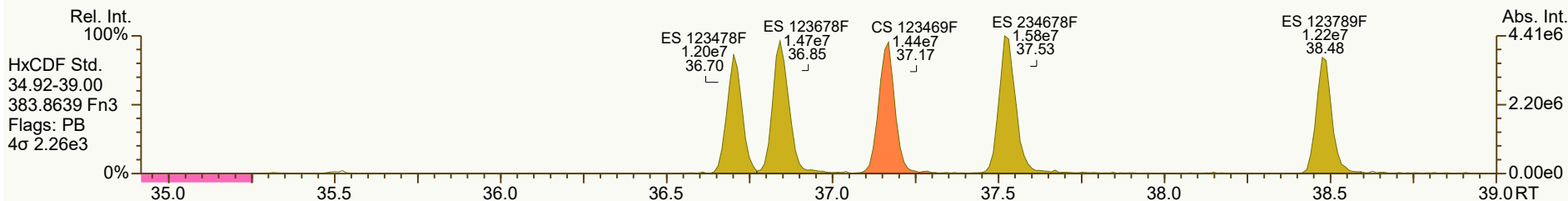
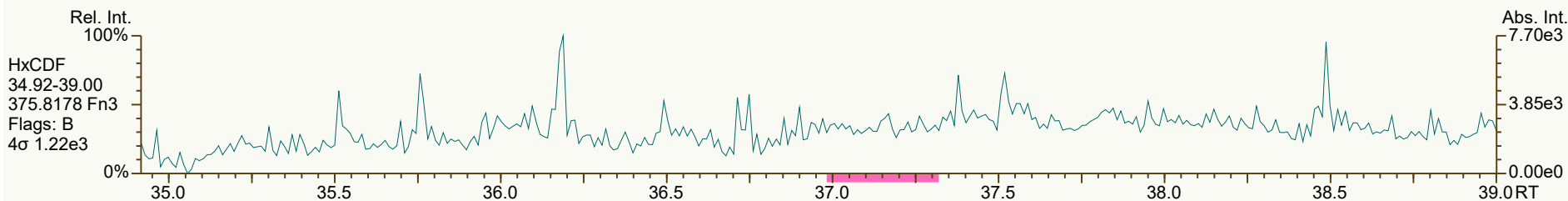
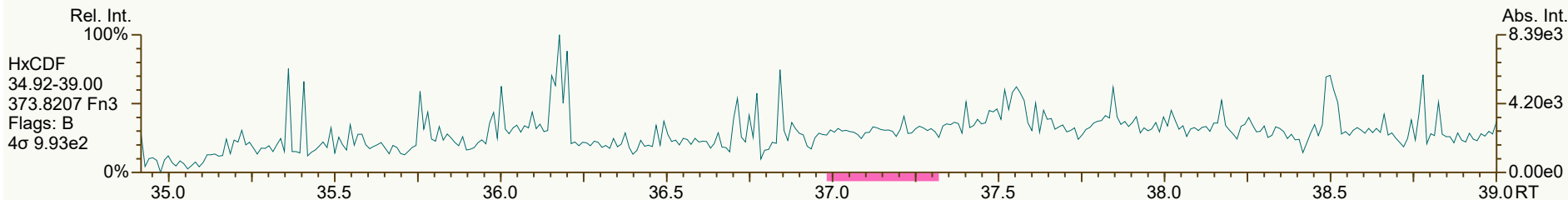
Sample ID: 11215131-012022-GW-BN-PZ-SC
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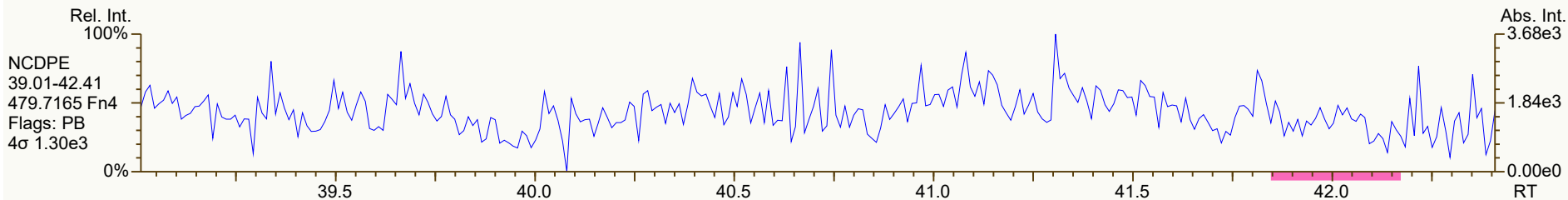
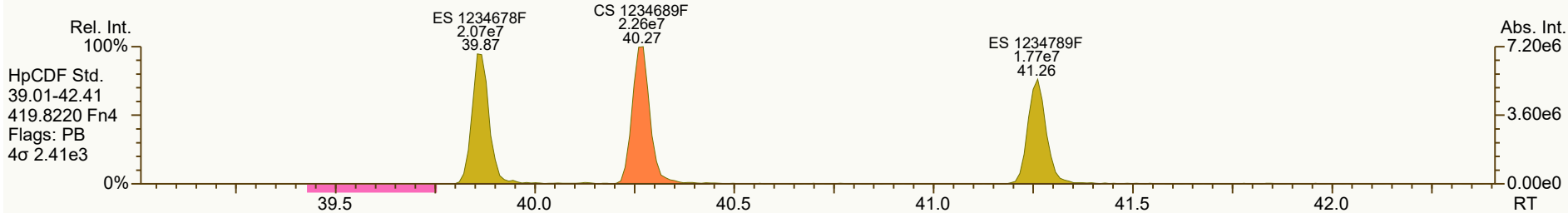
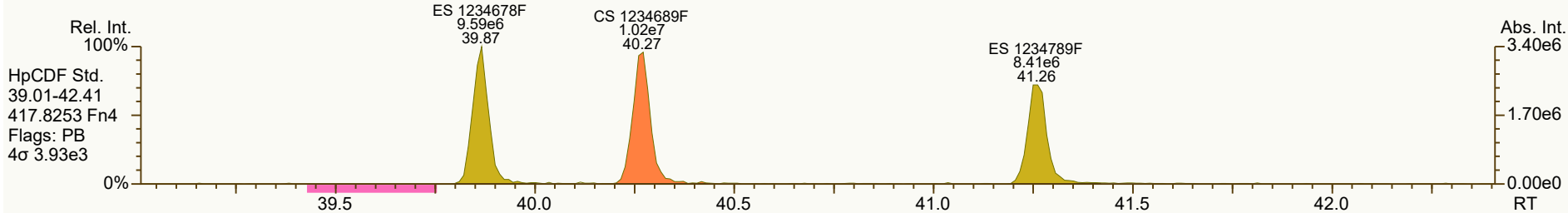
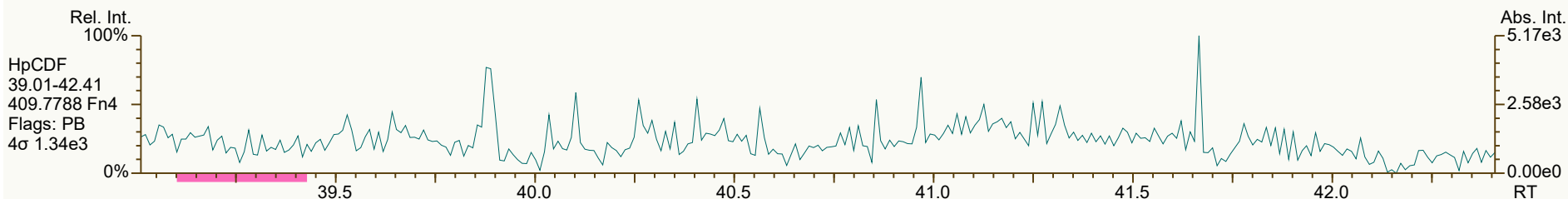
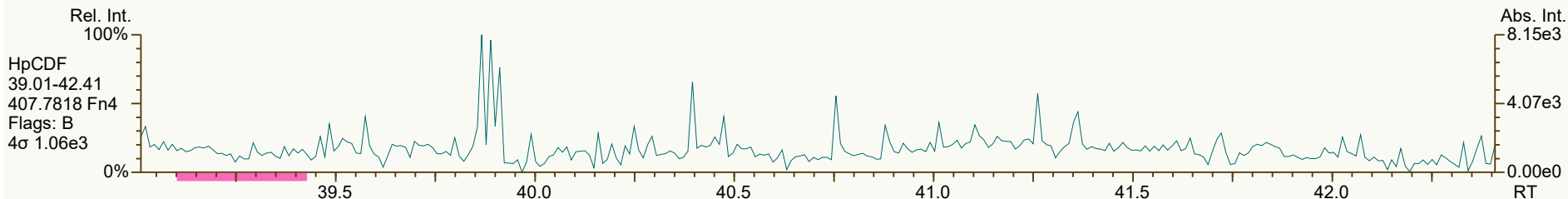
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SGS ID: B6237_18888_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

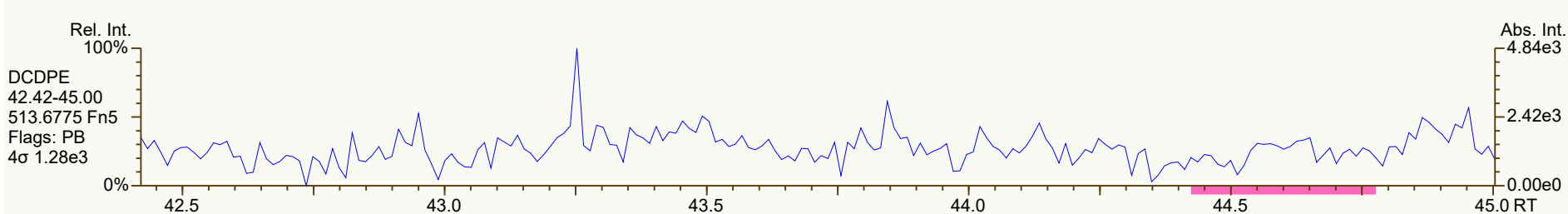
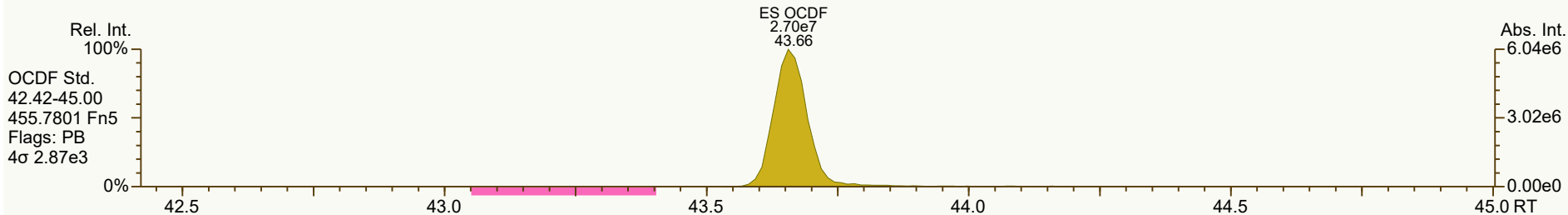
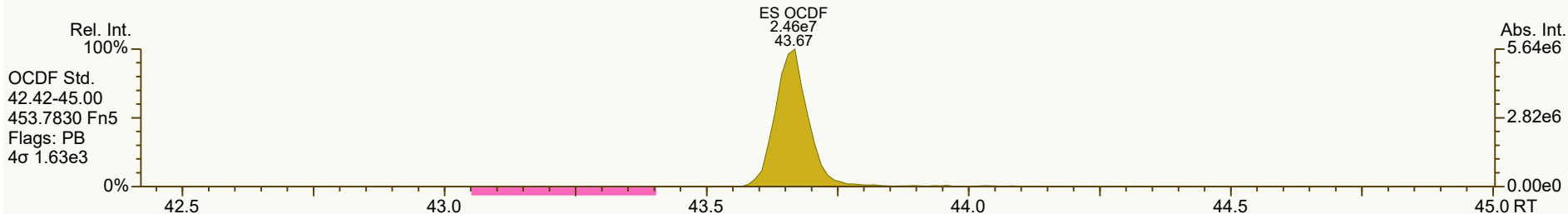
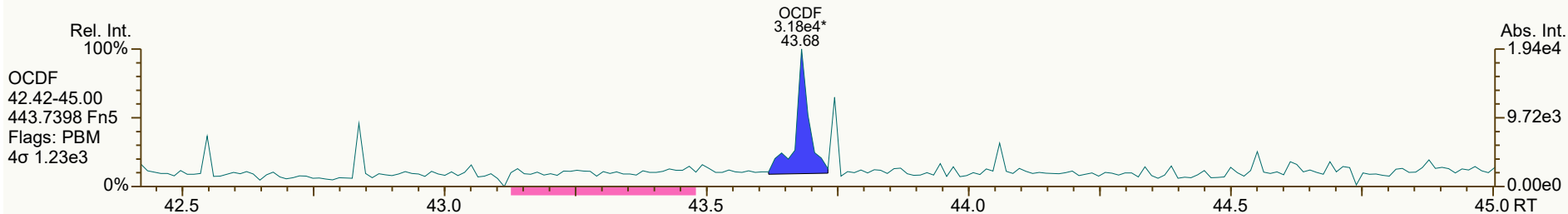
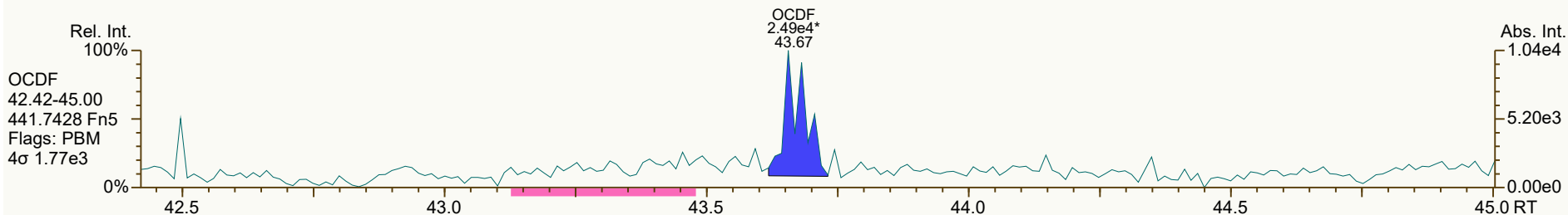
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 8

Acq: 09-Feb-2022 21:41:24
User: DTF Datafile: 220209C20



Results: P:\B6200_B6299\B6237\B6237_18888_DF\Resources\B6237_18888_DF_001.utp_res, saved 10-Feb-2022 10:22 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8373, 3183, 3876 scc: 543-255

Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 09:59 Printed: 10-Feb-2022 10:33 Page 11 of 12



Lab ID: B6237_18888_DF_001MS

Acq'd: 09 Feb 2022 22:27 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC-MS

UTP: 10-Feb-2022 10:22:28 DTF

J-level: 5 pg/L Split: 1

Checkcode: 368-796-HFS

Datafile: 220209C21

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.48		1.0008	1.0008	0	3.86E+06	0.80	Y	1.18	258	4132.194	2.96
12378-PeCDD	33.82		1.0006	1.0006	0	1.28E+07	1.56	Y	1.04	1,120	3563.089	2.67
123478-HxCDD	37.74		1.0004	1.0004	0	1.41E+07	1.28	Y	1.09	1,260	2648.352	2.02
123678-HxCDD	37.86		1.0035	1.0036	+0.2	1.59E+07	1.27	Y	1.15	1,240	2648.352	1.76
123789-HxCDD	38.14		1.0112	1.0113	+0.2	1.39E+07	1.24	Y	1.05	1,190	2648.352	1.99
1234678-HpCDD	40.82		1.0003	1.0003	0	1.21E+07	1.04	Y	1.06	1,200	2839.144	2.26
OCDD	43.50		1.0004	1.0003	-0.3	1.72E+07	0.90	Y	1.13	2,410	3326.673	5.37

2378-TCDF	27.62		1.0008	1.0007	-0.2	5.23E+06	0.84	Y	1.08	258	2768.712	1.53
12378-PeCDF	32.37		1.0005	1.0006	+0.2	1.99E+07	1.55	Y	1.02	1,110	6201.382	3.13
23478-PeCDF	33.48		1.0005	1.0005	0	2.11E+07	1.50	Y	1.02	1,240	6201.382	3.26
123478-HxCDF	36.73		1.0004	1.0004	0	1.84E+07	1.23	Y	1.27	1,170	7394.06	3.92
123678-HxCDF	36.87		1.0004	1.0005	+0.2	1.98E+07	1.24	Y	1.15	1,180	7394.06	3.88
234678-HxCDF	37.55		1.0005	1.0005	0	2.16E+07	1.25	Y	1.19	1,160	7394.06	3.42
123789-HxCDF	38.50		1.0004	1.0004	0	1.58E+07	1.22	Y	1.16	1,100	7394.06	4.39
1234678-HpCDF	39.88		1.0003	1.0003	0	1.71E+07	1.03	Y	1.37	1,180	2869.25	1.36
1234789-HpCDF	41.28		1.0002	1.0002	0	1.34E+07	1.01	Y	1.31	1,120	2869.25	1.82
OCDF	43.68		1.0003	1.0002	-0.3	2.16E+07	0.91	Y	1.07	2,330	3173.386	3.91

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0238	+0.3	2.53E+07	0.80	Y	1.05	80.1
ES 12378-PeCDD	33.80		1.2144	1.2161	+3.4	2.20E+07	1.63	Y	0.88	82.9
ES 123478-HxCDD	37.72		0.9920	0.9918	-0.5	2.04E+07	1.28	Y	0.97	82.8
ES 123678-HxCDD	37.84		0.9951	0.9949	-0.5	2.23E+07	1.26	Y	0.94	93.1
ES 123789-HxCDD	38.13		1.0027	1.0026	-0.2	2.22E+07	1.31	Y	1.09	80.2
ES 1234678-HpCDD	40.81		1.0724	1.0730	+1.5	1.90E+07	1.06	Y	0.91	81.9
ES OCDD	43.48		1.1428	1.1434	+1.6	2.54E+07	0.93	Y	0.62	80.1

ES 2378-TCDF	27.60		1.0516	1.0520	+0.7	3.76E+07	0.82	Y	1.06	75.4
ES 12378-PeCDF	32.35		1.2312	1.2332	+3.9	3.49E+07	1.56	Y	0.91	81.4
ES 23478-PeCDF	33.47		1.2733	1.2756	+4.6	3.33E+07	1.57	Y	0.88	80
ES 123478-HxCDF	36.71		0.9655	0.9653	-0.4	2.48E+07	0.54	Y	1.20	81.5
ES 123678-HxCDF	36.85		0.9692	0.9690	-0.4	2.91E+07	0.53	Y	1.35	84.7
ES 234678-HxCDF	37.53		0.9871	0.9869	-0.5	3.13E+07	0.56	Y	1.24	99
ES 123789-HxCDF	38.49		1.0121	1.0120	-0.2	2.47E+07	0.52	Y	1.16	84
ES 1234678-HpCDF	39.87		1.0479	1.0483	+1.0	2.11E+07	0.46	Y	0.97	85.7
ES 1234789-HpCDF	41.27		1.0845	1.0851	+1.5	1.83E+07	0.43	Y	0.85	84.7
ES OCDF	43.67		1.1477	1.1483	+1.6	3.46E+07	0.91	Y	0.81	84.2

Lab ID: B6237_18888_DF_001MS

Acq'd: 09 Feb 2022 22:27 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC-MS

UTP: 10-Feb-2022 10:22:28 DTF

J-level: 5 pg/L Split: 1

Checkcode: 368-796-HFS

Datafile: 220209C21

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.02E+07	0.79	Y	-	-
JS 1234-TCDF	26.23		-	-	-	4.71E+07	0.82	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.27E+07	1.30	Y	-	-
CS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.36E+07	n/a	-	1.20	93.8
CS 12347-PeCDD	33.30		1.1964	1.1981	+3.4	2.49E+07	1.60	Y	0.75	109
CS 12346-PeCDF	31.82		1.2112	1.2131	+3.6	4.04E+07	1.54	Y	0.85	101
CS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	3.19E+07	0.54	Y	1.12	112
CS 1234689-HpCDF	40.27		1.0584	1.0589	+1.2	2.46E+07	0.47	Y	0.89	109
SS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.36E+07	n/a		1.15	117
SS 12347-PeCDD	33.30	▼	1.1964	1.1981	+3.4	2.49E+07	1.60	Y	0.86	132
SS 12346-PeCDF	31.82		1.2112	1.2131	+3.6	4.04E+07	1.54	Y	0.94	124
SS 123469-HxCDF	37.17	▼	0.9775	0.9773	-0.4	3.19E+07	0.54	Y	0.83	132
SS 1234689-HpCDF	40.27		1.0584	1.0589	+1.2	2.46E+07	0.47	Y	0.92	127

Totals	Conc	EMPC		
Total TCDD	1190	1190	* 37Cl correction has been applied to 2378-TCDD	
Total PeCDD	1680	1680	Original Values	Corrected Values
Total HxCDD	4000	4000	Ratio 0.796	0.80
Total HpCDD	1480	1480	Response 3.87E+06	3.86E+06
Total Tetra-Octa Dioxins	10800	10800		
Total TCDF	1,440	1440		
Total PeCDF	4,700	4700		
Total HxCDF	7,280	7280		
Total HpCDF	2,300	2300		
Total Tetra-Octa Furans	18,100	18100		
Total Tetra-Octa Dioxins & Furans	28800	28800		

Lab ID: B6237_18888_DF_001MS

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ICAL: HRMS3_DF_10272021 10NOV2021

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UTP: 10-Feb-2022 10:22:28 DTF

J-level: 5 pg/L Split: 1

Checkcode: 368-796-HFS

Datafile: 220209C21

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.83		0.8737	0.8726	-1.6	5.27E+06	0.76	Y	1.18	352	4132.194	2.96
1379-TCDD	NotFnd		0.8860						1.18		4132.194	2.96
1369-TCDD	NotFnd		0.9009						1.18		4132.194	2.96
1469-TCDD	NotFnd		0.9281						1.18		4132.194	2.96
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		4132.194	2.96
1378-TCDD	NotFnd		0.9432						1.18		4132.194	2.96
1268-TCDD	NotFnd		0.9500						1.18		4132.194	2.96
1478-TCDD	NotFnd		0.9586						1.18		4132.194	2.96
1279-TCDD	NotFnd		0.9645						1.18		4132.194	2.96
1234/1269-TCDD	NotFnd		0.9770						1.18		4132.194	2.96
1236-TCDD	NotFnd		0.9817						1.18		4132.194	2.96
1237/1238-TCDD	NotFnd		0.9905						1.18		4132.194	2.96
1239-TCDD	28.32		0.9952	0.9951	-0.2	3.53E+06	0.80	Y	1.18	236	4132.194	2.96
2378-TCDD	28.48		1.0008	1.0008	0	3.86E+06	0.80	Y	1.18	258	4132.194	2.96
1278-TCDD	NotFnd		1.0121						1.18		4132.194	2.96
1267-TCDD	NotFnd		1.0167						1.18		4132.194	2.96
1289-TCDD	29.45		1.0345	1.0349	+0.7	5.10E+06	0.83	Y	1.18	341	4132.194	2.96
12479/12468-PeCDD	31.32		0.9267	0.9265	-0.4	3.18E+06	1.53	Y	1.04	279	3563.089	2.67
12469-PeCDD	NotFnd		0.9425						1.04		3563.089	2.67
12368-PeCDD	NotFnd		0.9588						1.04		3563.089	2.67
12478-PeCDD	NotFnd		0.9643						1.04		3563.089	2.67
12379-PeCDD	NotFnd		0.9673						1.04		3563.089	2.67
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		3563.089	2.67
12346/12347-PeCDD	NotFnd		0.9858						1.04		3563.089	2.67
12378-PeCDD	33.82		1.0006	1.0006	0	1.28E+07	1.56	Y	1.04	1,120	3563.089	2.67
12367-PeCDD	NotFnd		1.0033						1.04		3563.089	2.67
12389-PeCDD	34.26		1.0134	1.0135	+0.2	3.28E+06	1.52	Y	1.04	287	3563.089	2.67
124679/124689-HxCDD	35.99		0.9542	0.9540	-0.4	3.61E+06	1.19	Y	1.10	304	2648.352	1.92
123468-HxCDD	NotFnd		0.9715						1.10		2648.352	1.92
123679/123689-HxCDD	NotFnd		0.9793						1.10		2648.352	1.92
123469-HxCDD	NotFnd		0.9828						1.10		2648.352	1.92
123478-HxCDD	37.74		1.0004	1.0004	0	1.41E+07	1.28	Y	1.09	1,260	2648.352	2.02
123678-HxCDD	37.86		1.0035	1.0036	+0.2	1.59E+07	1.27	Y	1.15	1,240	2648.352	1.76
123467-HxCDD	NotFnd		1.0085						1.10		2648.352	1.92
123789-HxCDD	38.14		1.0112	1.0113	+0.2	1.39E+07	1.24	Y	1.05	1,190	2648.352	1.99

Lab ID: B6237_18888_DF_001MS

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ICAL: HRMS3_DF_10272021 10NOV2021

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UTP: 10-Feb-2022 10:22:28 DTF

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Checkcode: 368-796-HFS

Datafile: 220209C21

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.14		0.9837	0.9836	-0.2	2.82E+06	1.02	Y	1.06	280	2839.144	2.26
1234678-HpCDD	40.82		1.0003	1.0003	0	1.21E+07	1.04	Y	1.06	1,200	2839.144	2.26
OCDD	43.50		1.0004	1.0003	-0.3	1.72E+07	0.90	Y	1.13	2,410	3326.673	5.37
OCDD-a	43.49	EMPC	1.0003	1.0002	-0.3	1.09E+06	1.97	N	0.07	2,370	3219.309	81.2
1368-TCDF	22.72		0.8251	0.8232	-2.6	7.00E+06	0.80	Y	1.08	345	2768.712	1.53
1468-TCDF	NotFnd		0.8458						1.08		2768.712	1.53
2468-TCDF	23.94		0.8686	0.8673	-1.9	1.69E+06	0.80	Y	1.08	83.2	2768.712	1.53
1346/1246-TCDF	NotFnd		0.8814						1.08		2768.712	1.53
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2768.712	1.53
1348-TCDF	NotFnd		0.8962						1.08		2768.712	1.53
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2768.712	1.53
1268-TCDF	NotFnd		0.9145						1.08		2768.712	1.53
1467-TCDF	NotFnd		0.9193						1.08		2768.712	1.53
1478-TCDF	NotFnd		0.9254						1.08		2768.712	1.53
1369/1237-TCDF	NotFnd		0.9387						1.08		2768.712	1.53
2467-TCDF	NotFnd		0.9433						1.08		2768.712	1.53
2368-TCDF	NotFnd		0.9489						1.08		2768.712	1.53
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2768.712	1.53
1278-TCDF	26.72		0.9683	0.9682	-0.2	2.98E+05	0.82	Y	1.08	14.7	2768.712	1.53
1349-TCDF	NotFnd		0.9722						1.08		2768.712	1.53
1267-TCDF	NotFnd		0.9783						1.08		2768.712	1.53
2346/1249-TCDF	NotFnd		0.9850						1.08		2768.712	1.53
2347/1279-TCDF	NotFnd		0.9926						1.08		2768.712	1.53
2348-TCDF	27.51		0.9967	0.9967	0	6.95E+06	0.74	Y	1.08	343	2768.712	1.53
2378-TCDF	27.62		1.0008	1.0007	-0.2	5.23E+06	0.84	Y	1.08	258	2768.712	1.53
2367/3467-TCDF	NotFnd		1.0137						1.08		2768.712	1.53
1269-TCDF	NotFnd		1.0223						1.08		2768.712	1.53
1239-TCDF	NotFnd		1.0321						1.08		2768.712	1.53
1289-TCDF	29.62		1.0722	1.0732	+1.8	7.99E+06	0.79	Y	1.08	394	2768.712	1.53
13468/12468-PeCDF	29.54		0.9139	0.9129	-1.8	3.66E+07	1.55	Y	1.02	2,100	2700.12	1.39
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		6201.382	3.19
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		6201.382	3.19
14678-PeCDF	NotFnd		0.9692						1.02		6201.382	3.19
13479-PeCDF	NotFnd		0.9723						1.02		6201.382	3.19
13469/12479-PeCDF	NotFnd		0.9797						1.02		6201.382	3.19
12346-PeCDF	NotFnd		0.9840						1.02		6201.382	3.19

Lab ID: B6237_18888_DF_001MS

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ICAL: HRMS3_DF_10272021 10NOV2021

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UTP: 10-Feb-2022 10:22:28 DTF

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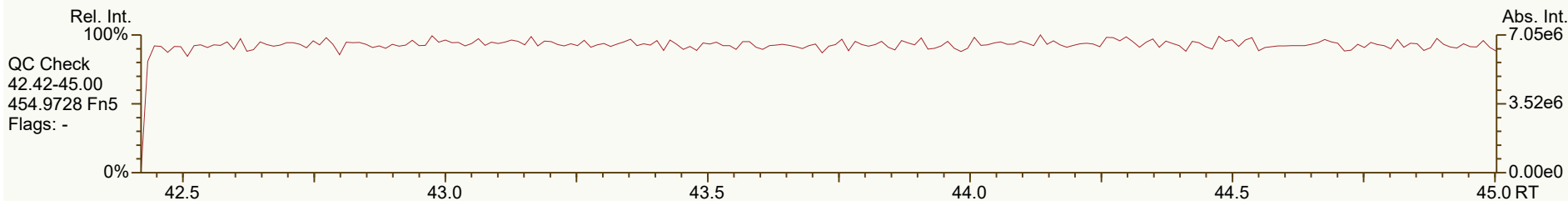
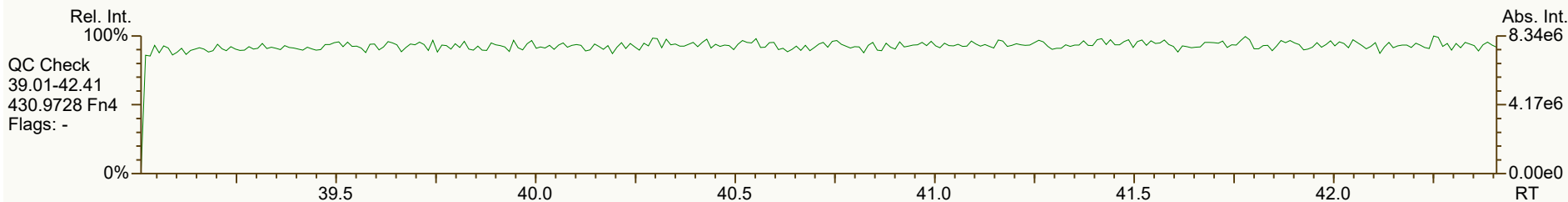
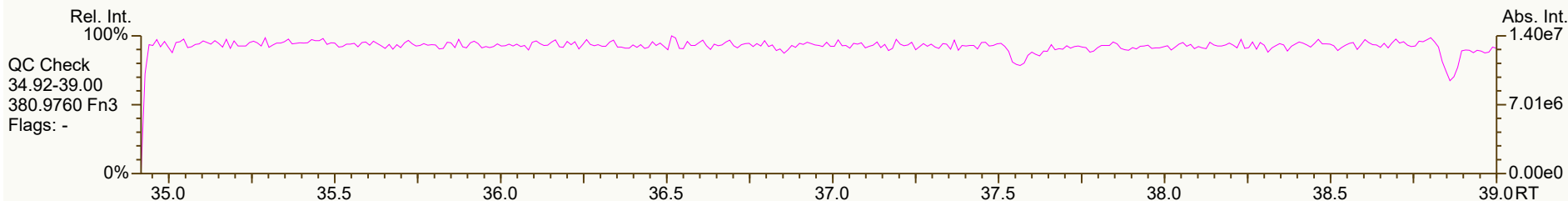
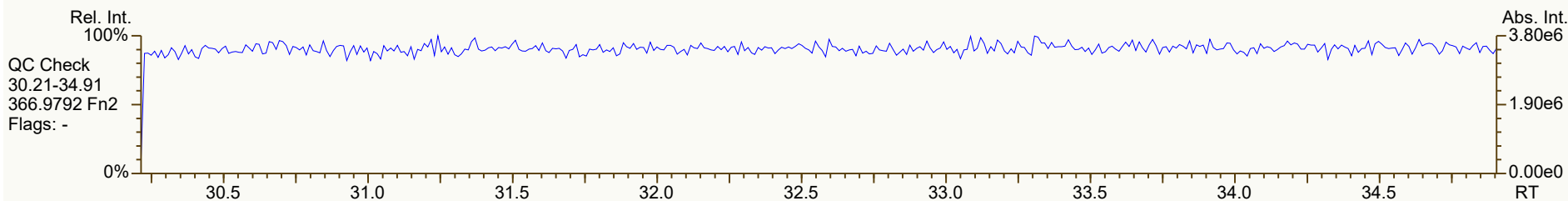
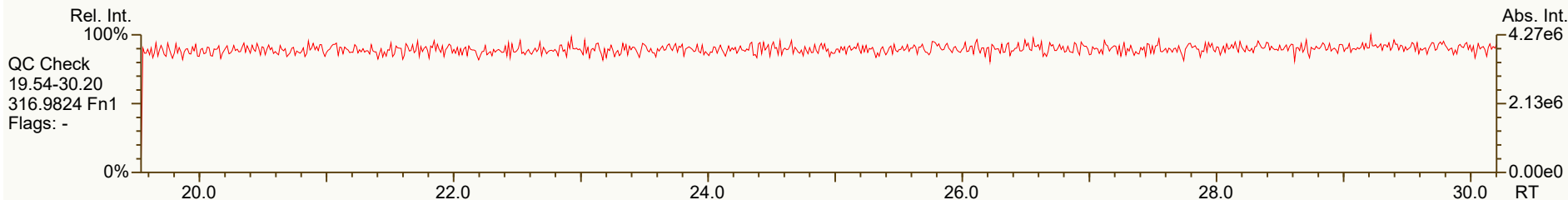
Checkcode: 368-796-HFS

Datafile: 220209C21

Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

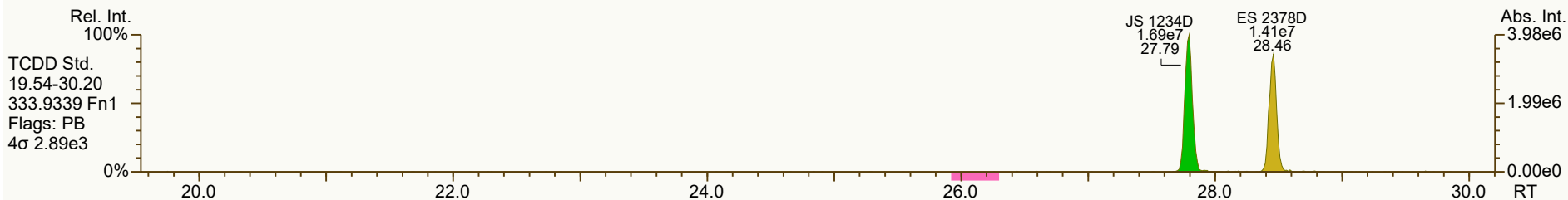
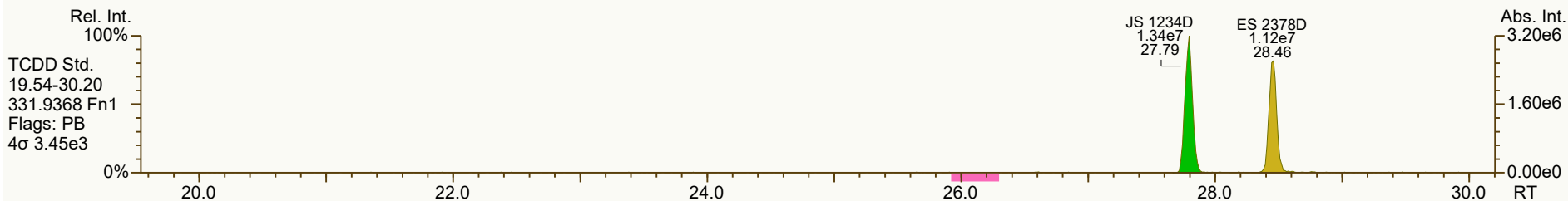
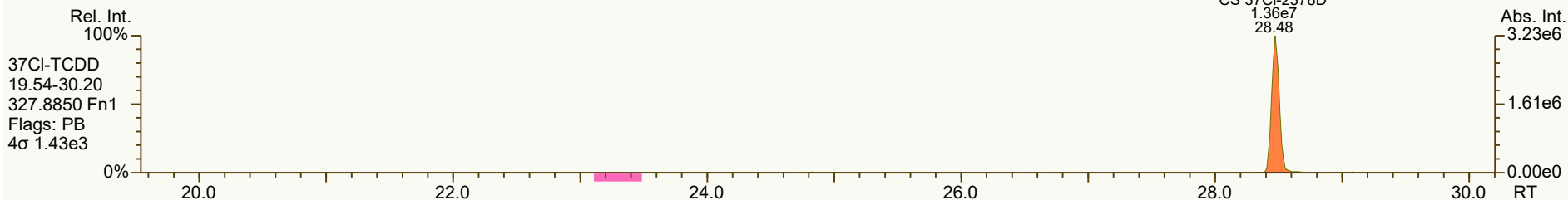
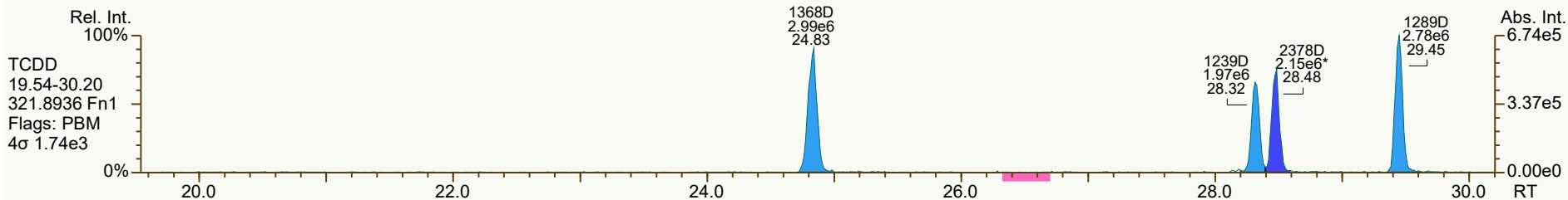
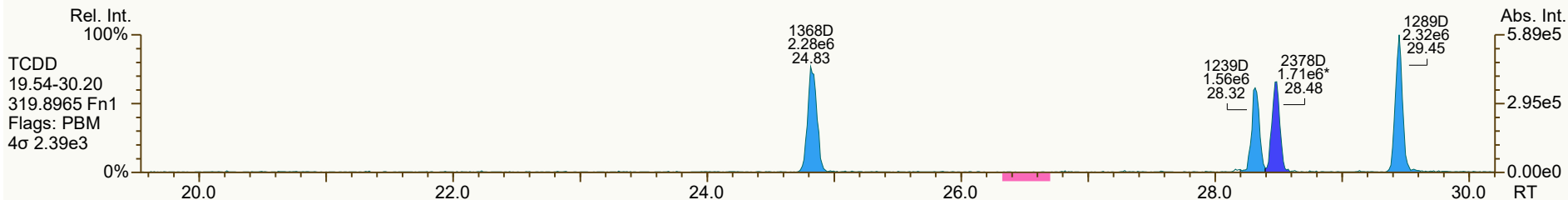
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6201.382	3.19
12347-PeCDF	NotFnd		0.9894						1.02		6201.382	3.19
12348-PeCDF	NotFnd		0.9940						1.02		6201.382	3.19
12378-PeCDF	32.37		1.0005	1.0006	+0.2	1.99E+07	1.55	Y	1.02	1,110	6201.382	3.13
12678/12367-PeCDF	NotFnd		1.0089						1.02		6201.382	3.19
12379-PeCDF	NotFnd		1.0142						1.02		6201.382	3.19
12679-PeCDF	NotFnd		0.9929						1.02		6201.382	3.19
23467/12369-PeCDF	NotFnd		0.9967						1.02		6201.382	3.19
23478-PeCDF	33.48		1.0005	1.0005	0	2.11E+07	1.50	Y	1.02	1,240	6201.382	3.26
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6201.382	3.19
12349-PeCDF	NotFnd		1.0100						1.02		6201.382	3.19
12389-PeCDF	34.56		1.0324	1.0326	+0.4	4.25E+06	1.53	Y	1.02	244	6201.382	3.19
123468-HxCDF	35.34		0.9627	0.9626	-0.2	4.38E+07	1.24	Y	1.19	2,670	7394.06	3.87
124678/134678-HxCDF	NotFnd		0.9682						1.19		7394.06	3.87
134679-HxCDF	NotFnd		0.9744						1.19		7394.06	3.87
124679-HxCDF	NotFnd		0.9798						1.19		7394.06	3.87
124689-HxCDF	NotFnd		0.9858						1.19		7394.06	3.87
123467-HxCDF	NotFnd		0.9972						1.19		7394.06	3.87
123478-HxCDF	36.73		1.0004	1.0004	0	1.84E+07	1.23	Y	1.27	1,170	7394.06	3.92
123678-HxCDF	36.87		1.0004	1.0005	+0.2	1.98E+07	1.24	Y	1.15	1,180	7394.06	3.88
123479-HxCDF	NotFnd		1.0049						1.19		7394.06	3.87
123469-HxCDF	NotFnd		1.0090						1.19		7394.06	3.87
123679-HxCDF	NotFnd		0.9942						1.19		7394.06	3.87
234678-HxCDF	37.55		1.0005	1.0005	0	2.16E+07	1.25	Y	1.19	1,160	7394.06	3.42
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		7394.06	3.87
123789-HxCDF	38.50		1.0004	1.0004	0	1.58E+07	1.22	Y	1.16	1,100	7394.06	4.39
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		7394.06	3.87
1234678-HpCDF	39.88		1.0003	1.0003	0	1.71E+07	1.03	Y	1.37	1,180	2869.25	1.36
1234679-HpCDF	NotFnd		1.0068						1.34		2869.25	1.57
1234689-HpCDF	NotFnd		1.0103						1.34		2869.25	1.57
1234789-HpCDF	41.28		1.0002	1.0002	0	1.34E+07	1.01	Y	1.31	1,120	2869.25	1.82
OCDF	43.68		1.0003	1.0002	-0.3	2.16E+07	0.91	Y	1.07	2,330	3173.386	3.91
OCDF-a	43.68		1.0002	1.0002	0	1.44E+06	2.70	Y	0.07	2,510	3126.766	62.2



SGS ID: B6237_18888_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9

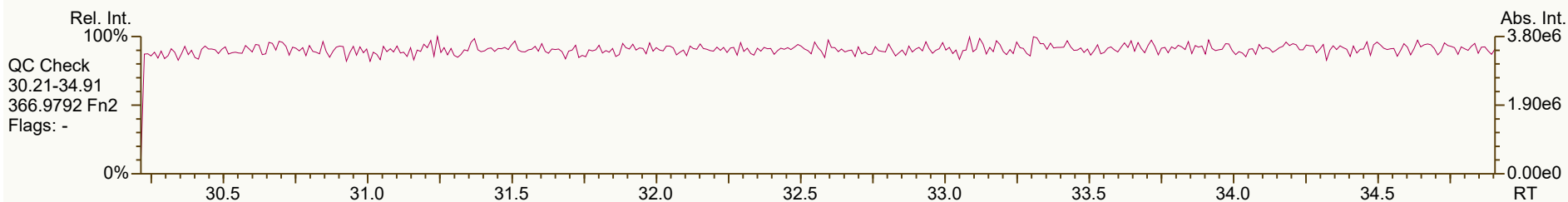
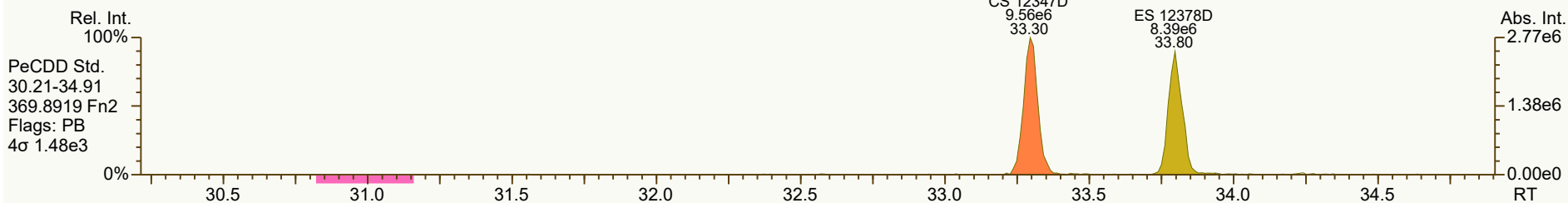
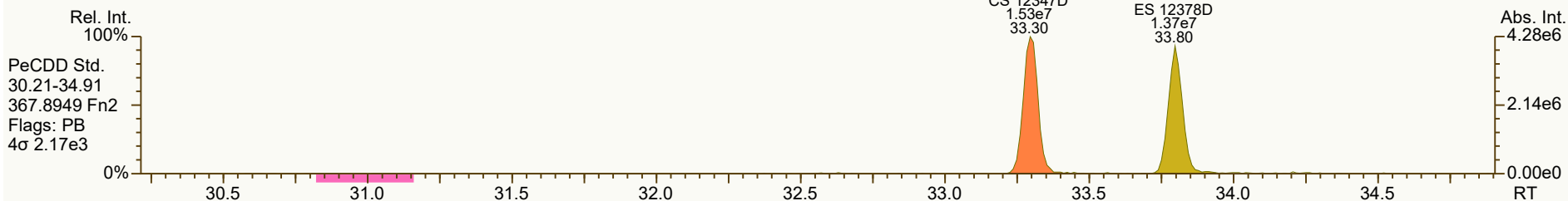
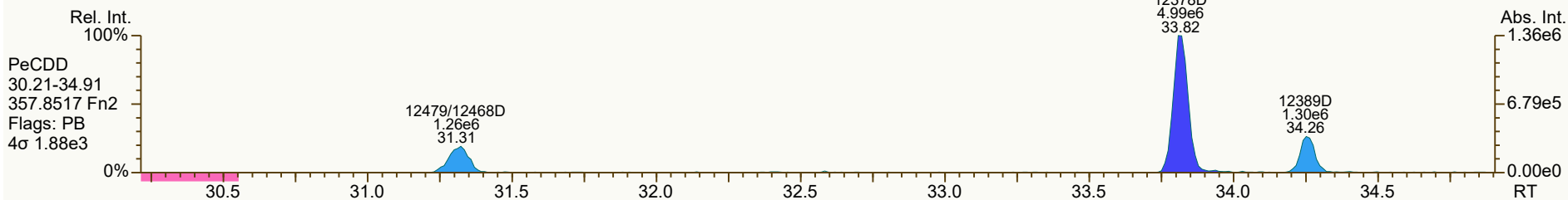
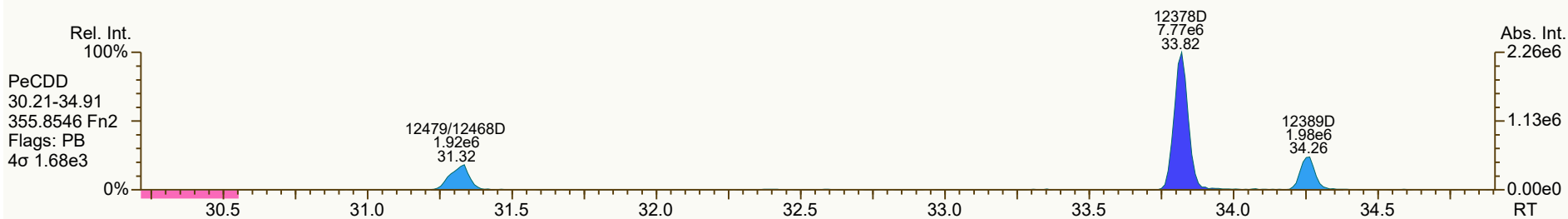
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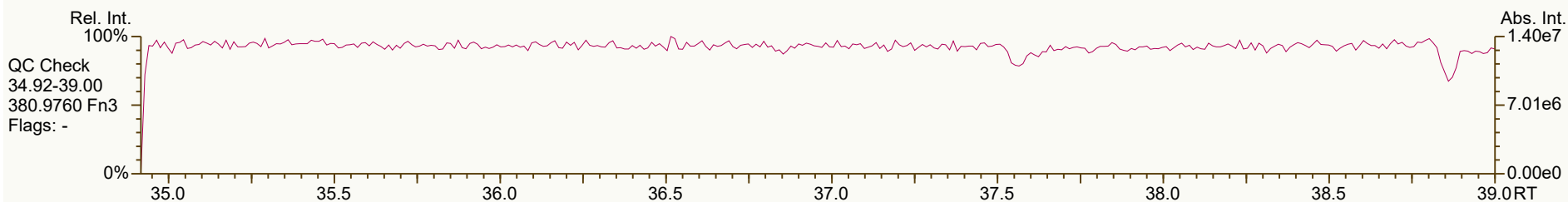
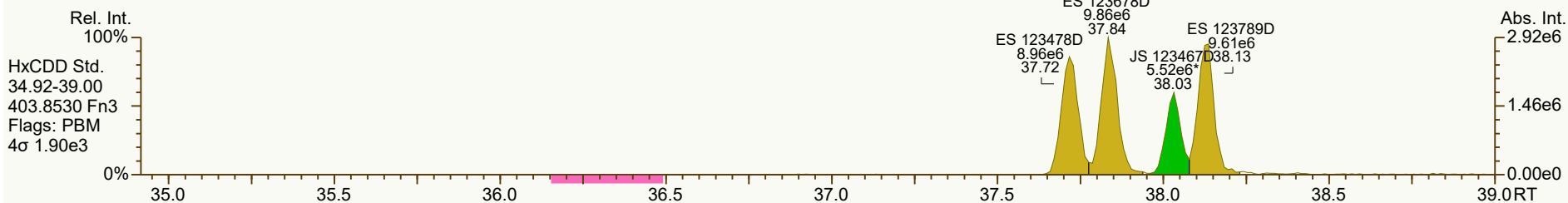
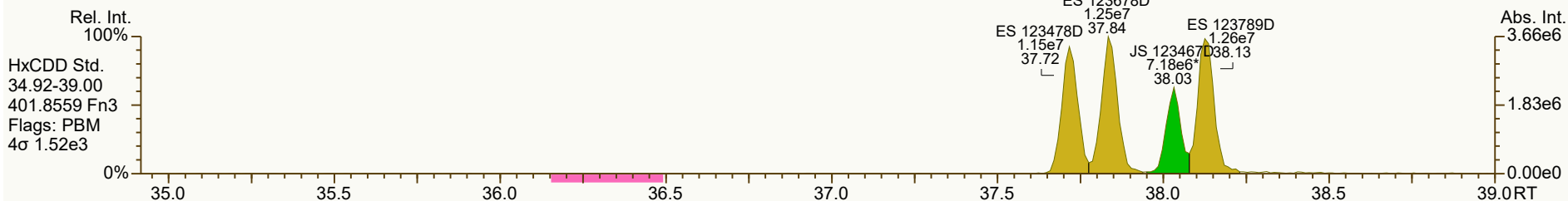
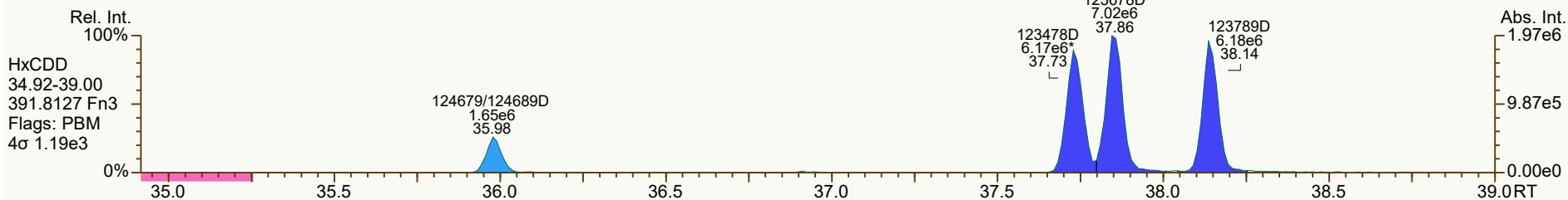
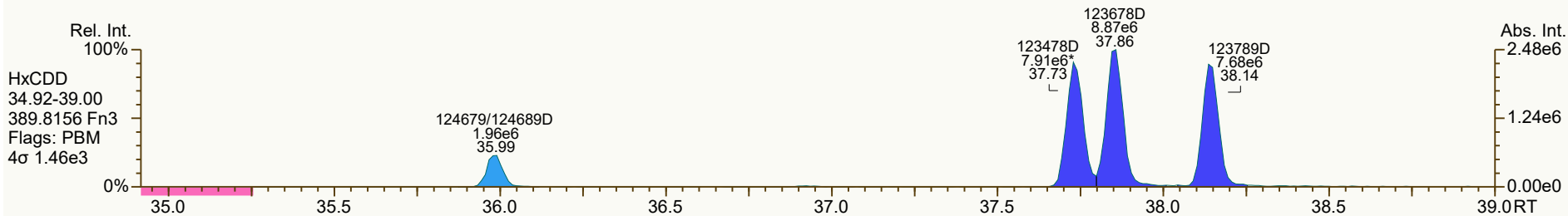


SGS ID: B6237_18888_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9

Acq: 09-Feb-2022 22:27:43
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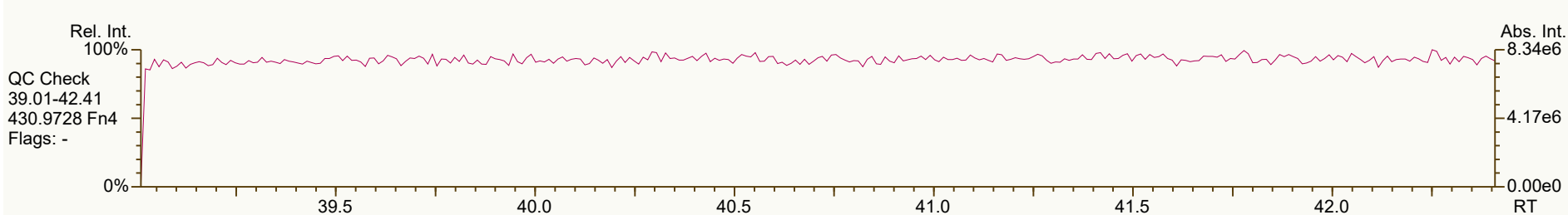
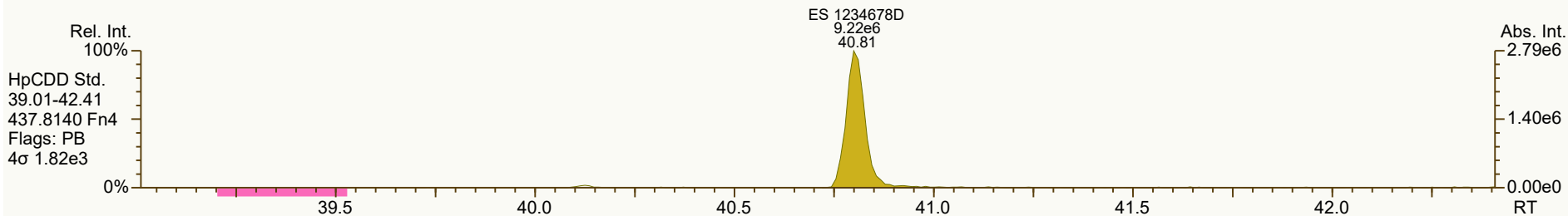
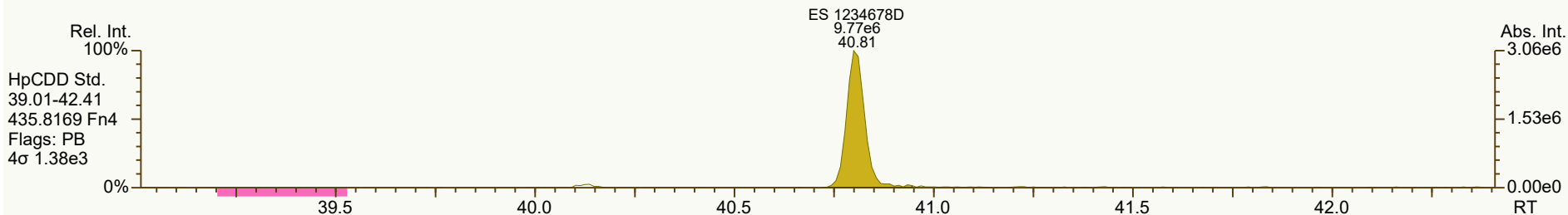
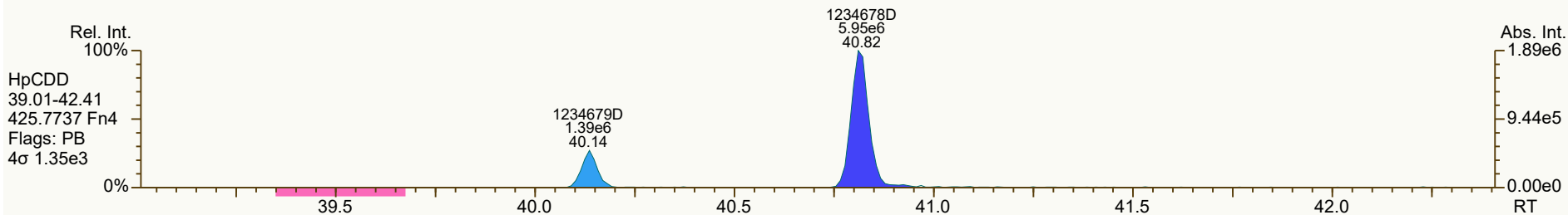
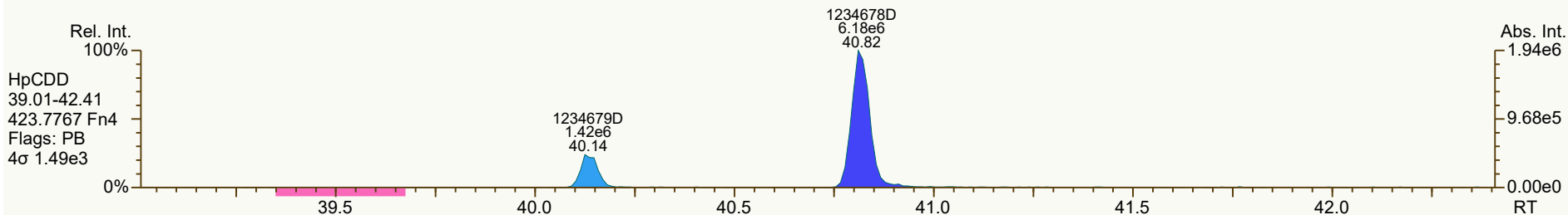




SGS ID: B6237_18888_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9

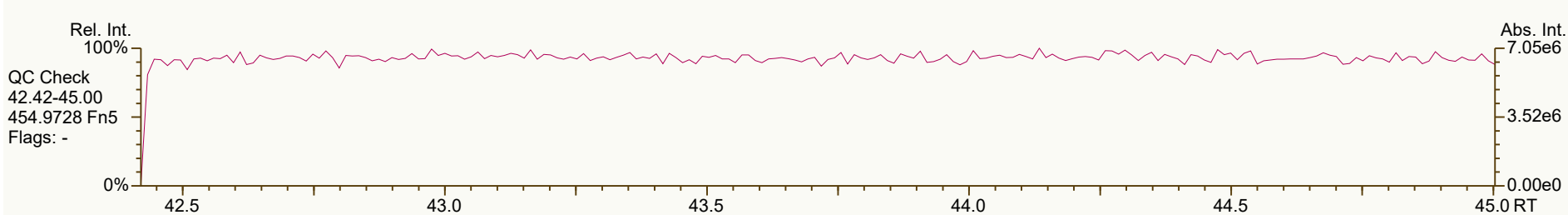
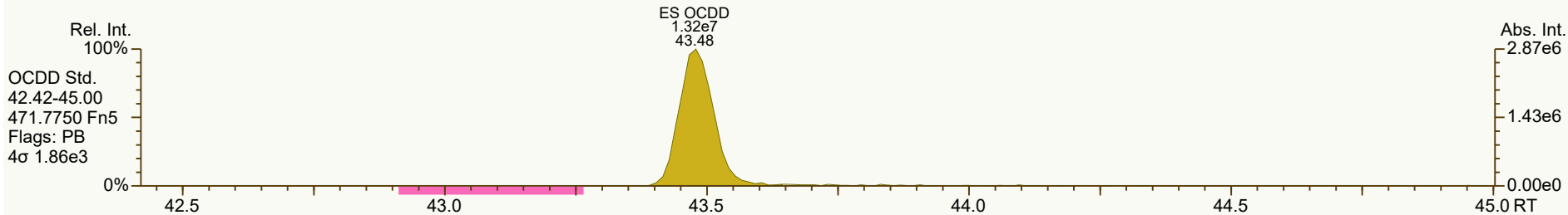
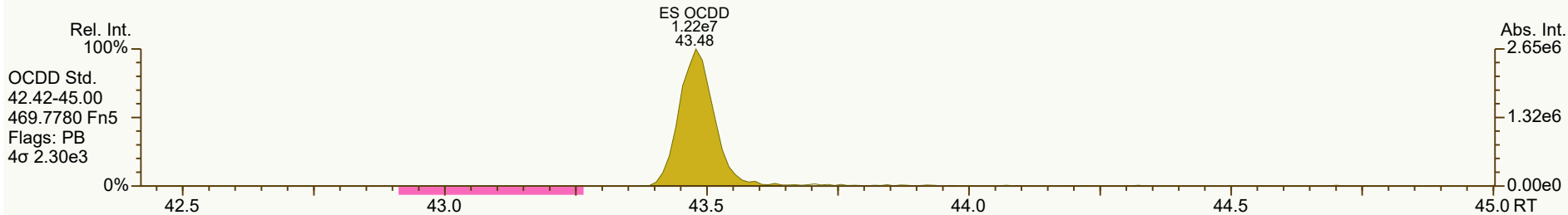
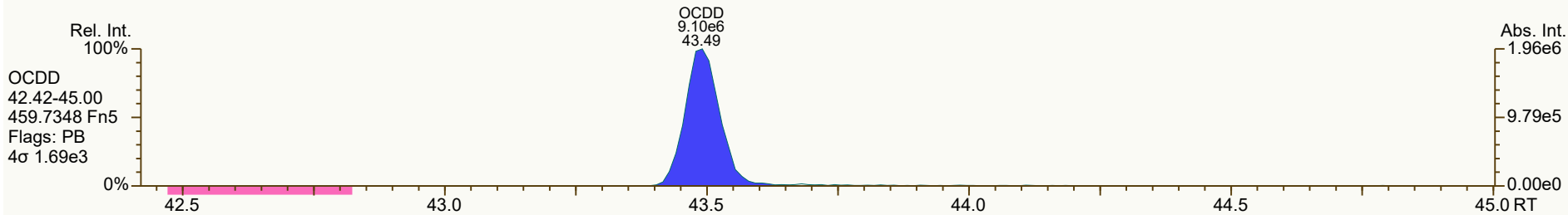
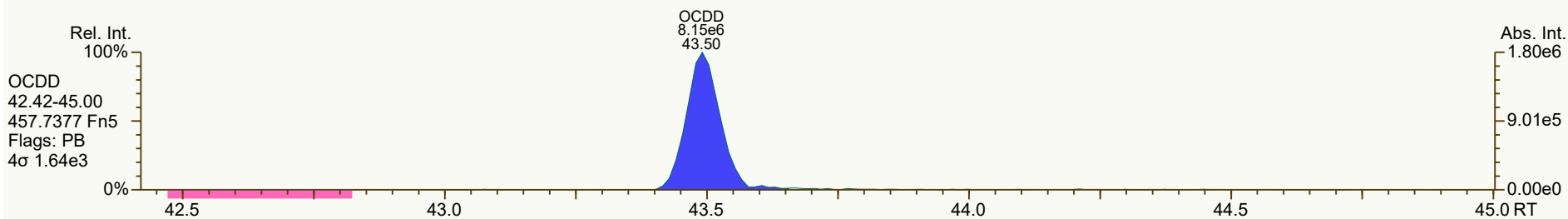
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SGS ID: B6237_18888_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9

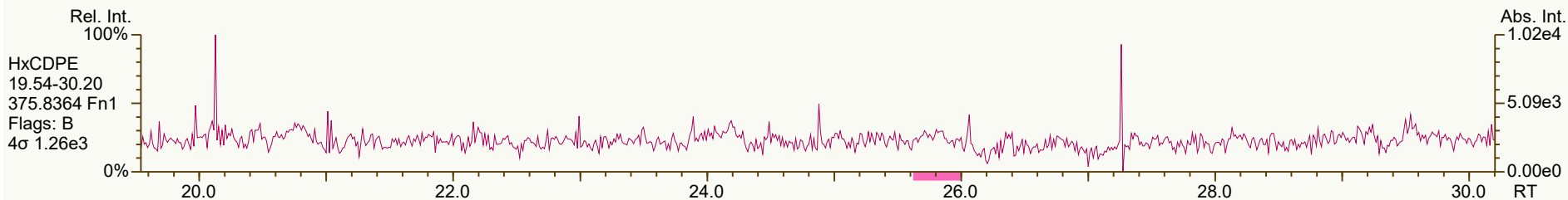
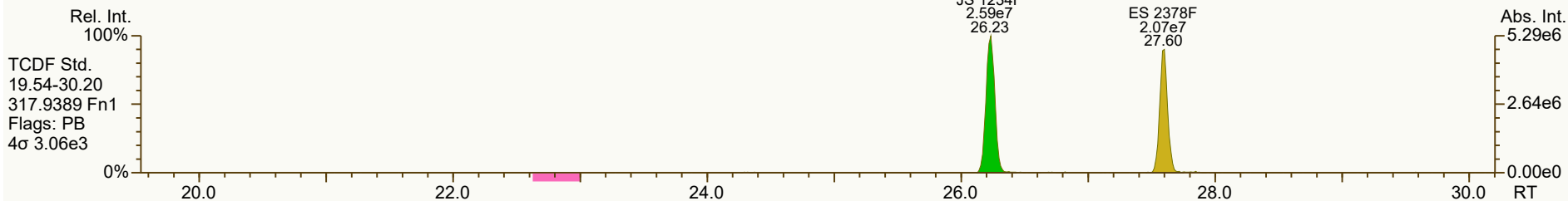
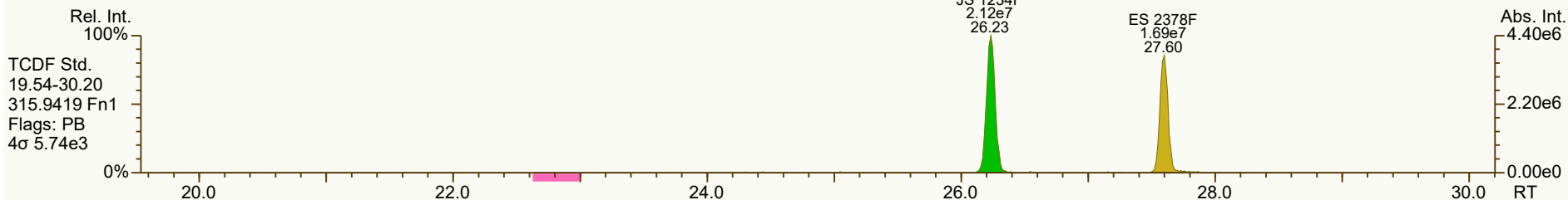
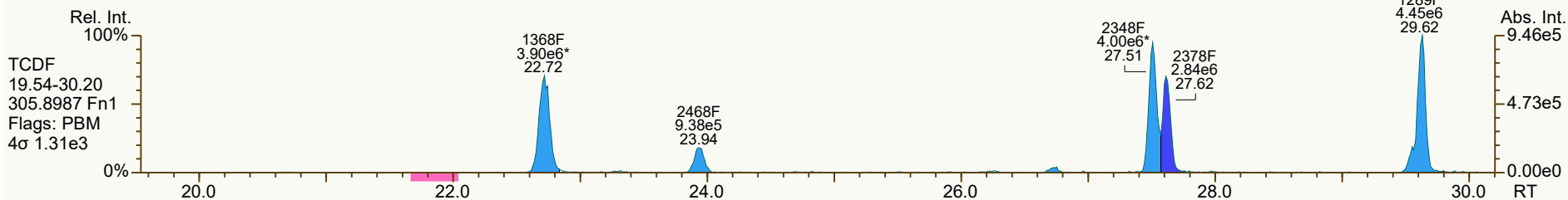
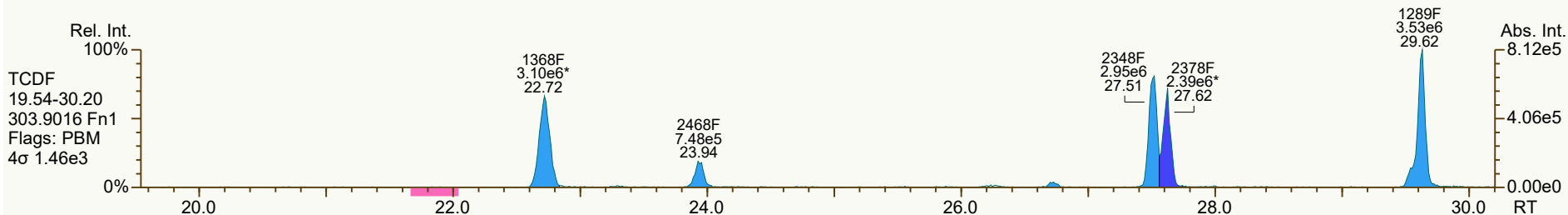
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SGS ID: B6237_18888_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9

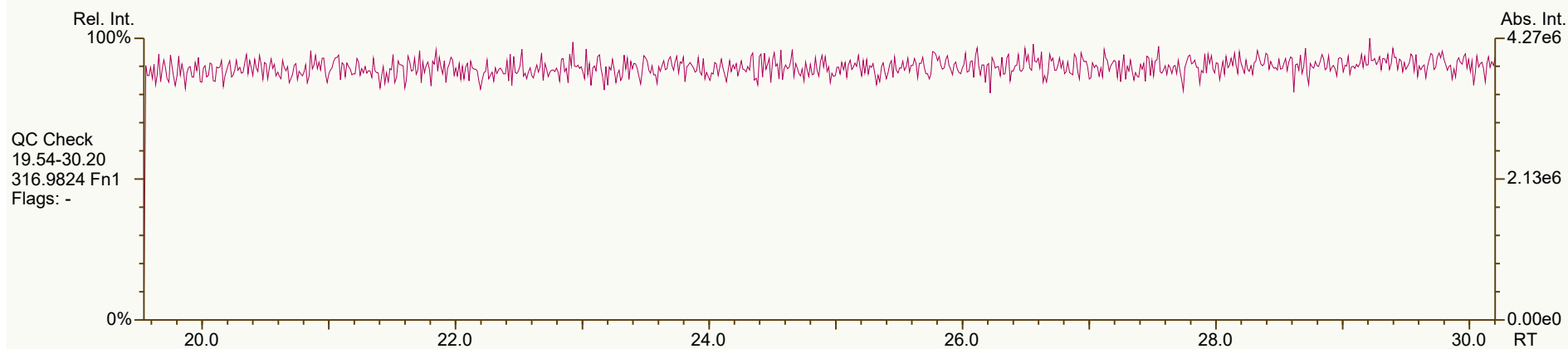
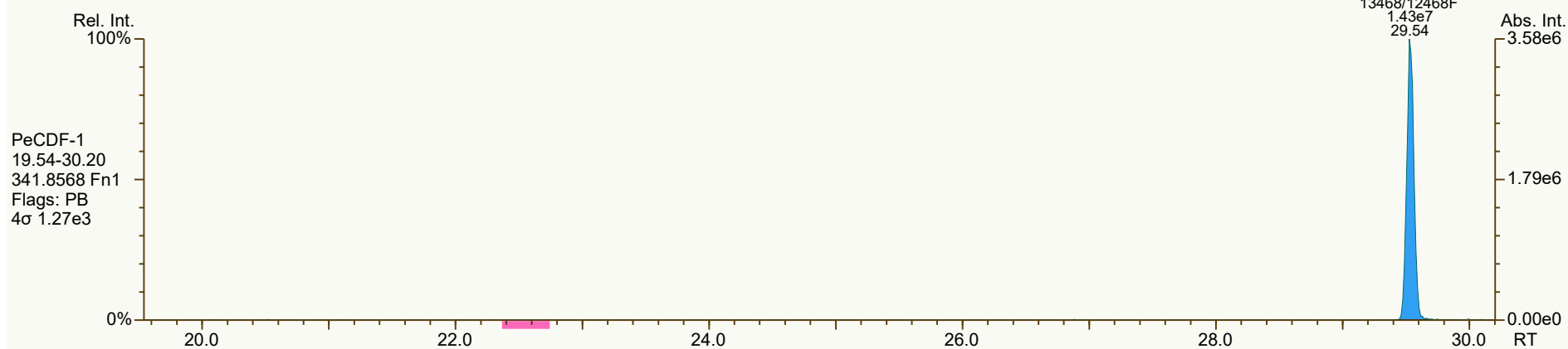
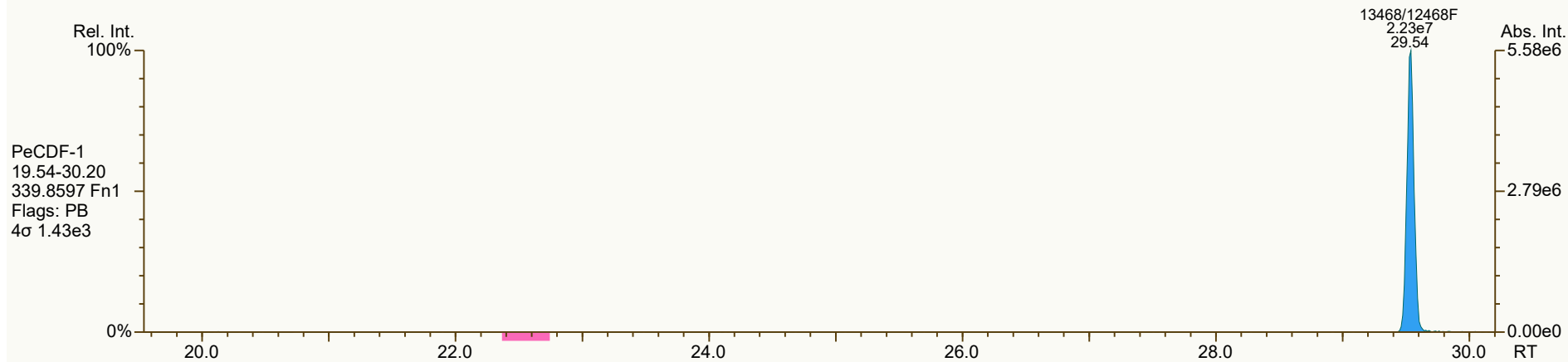
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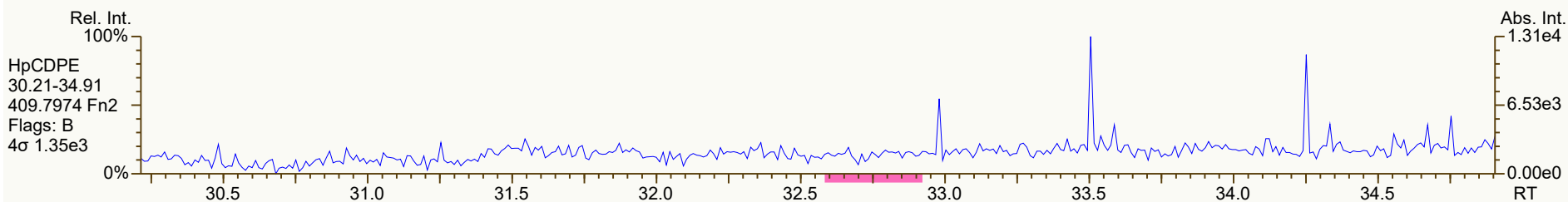
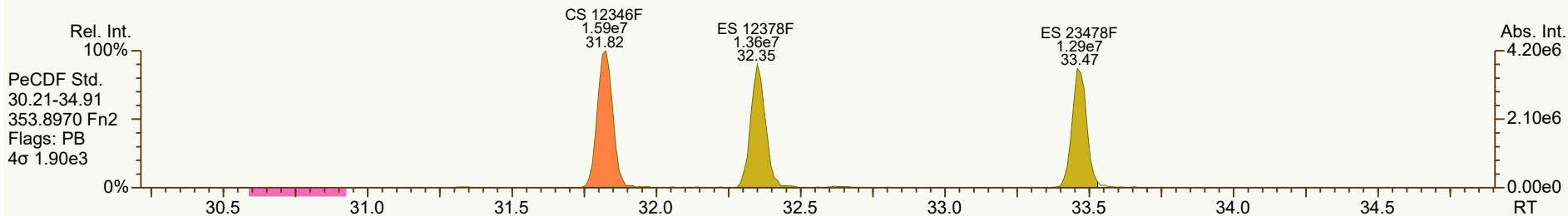
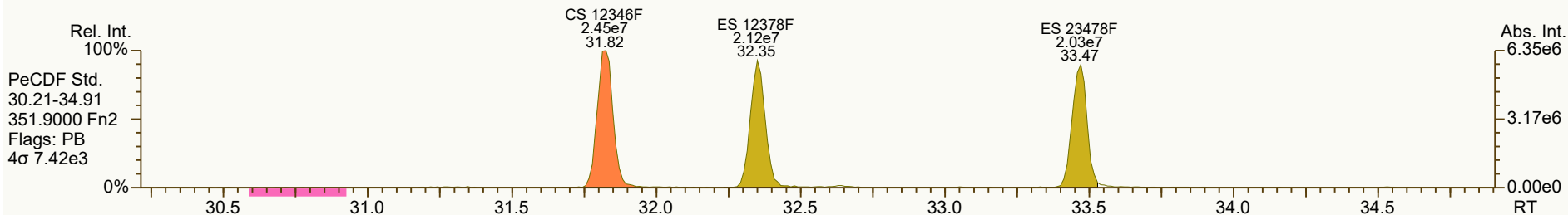
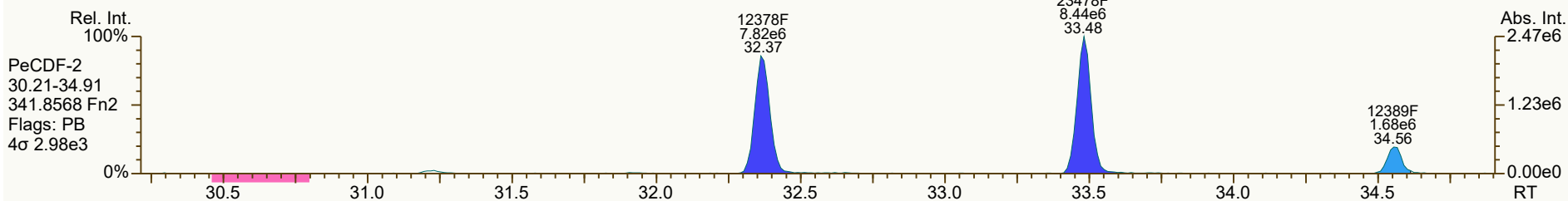
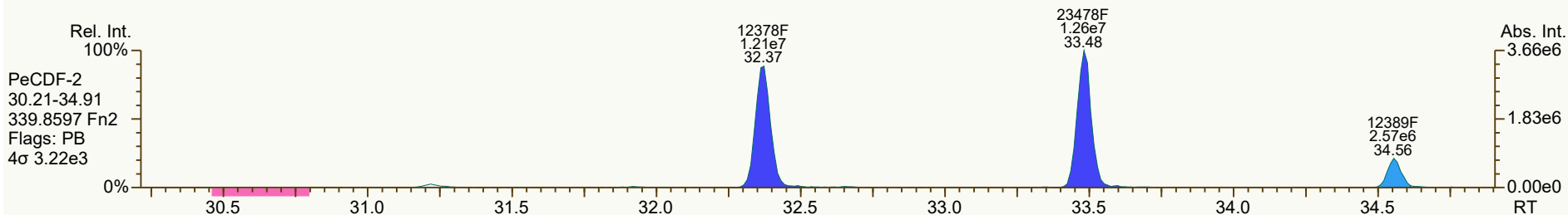


SGS ID: B6237_18888_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9

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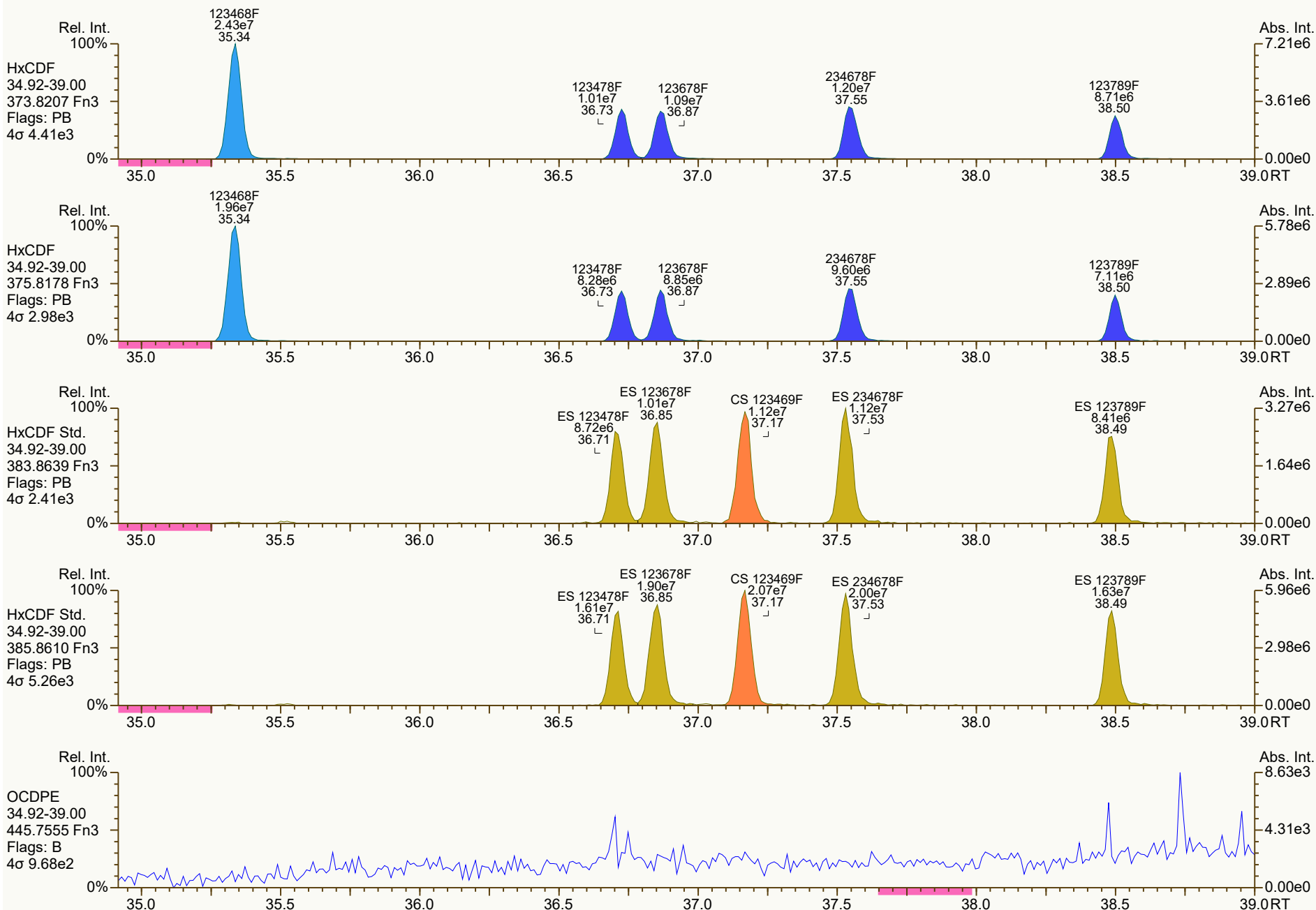




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Instr: [ILM] AutoSpec-Ultima HRMS3

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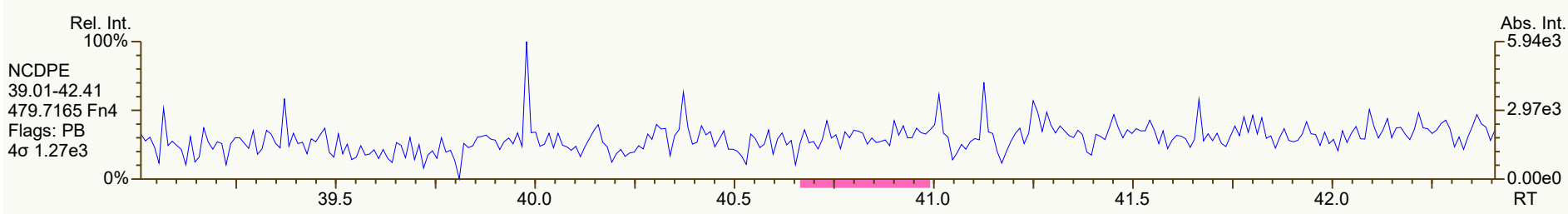
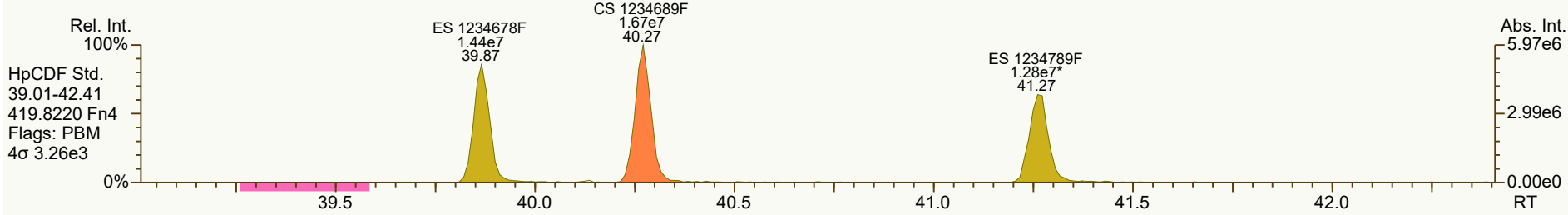
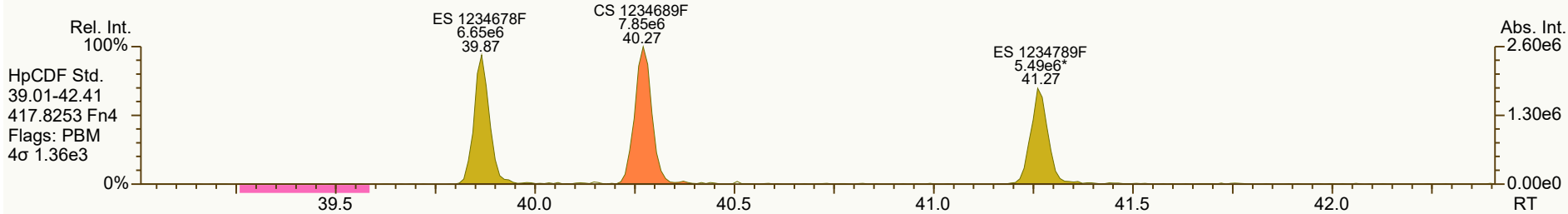
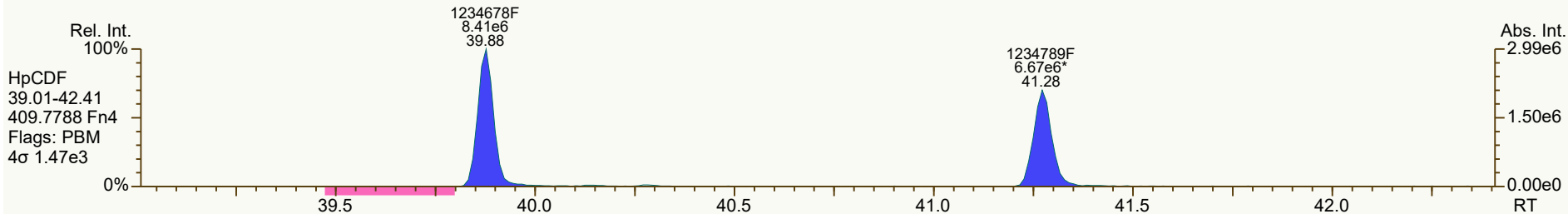
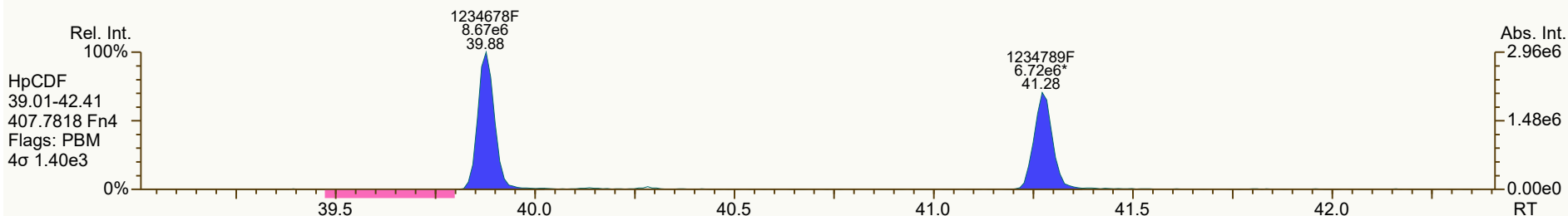
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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4784, 8489, 9720 scc: 368-796

Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:02 Printed: 10-Feb-2022 10:34 Page 10 of 12

SGS ID: B6237_18888_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9

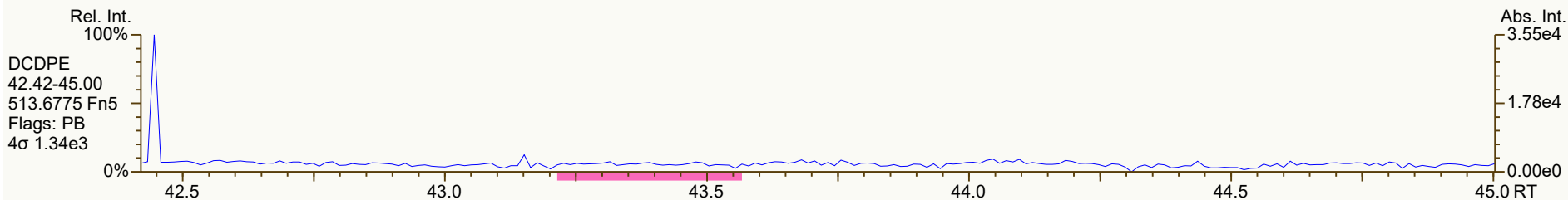
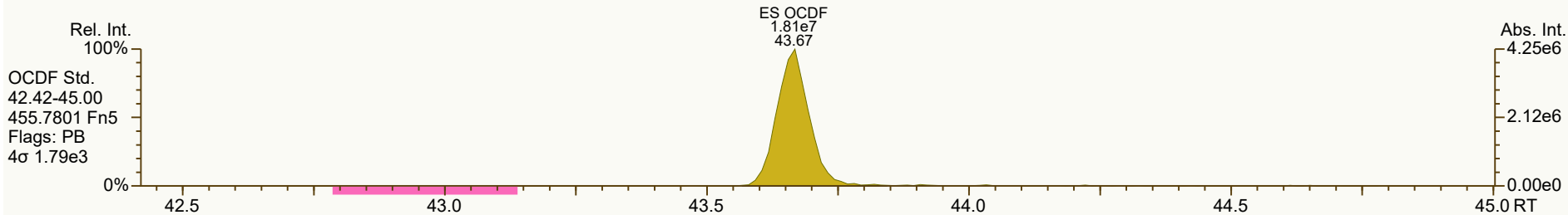
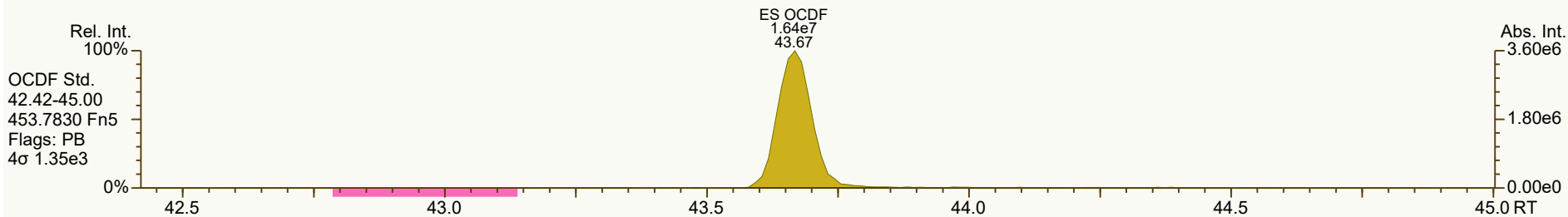
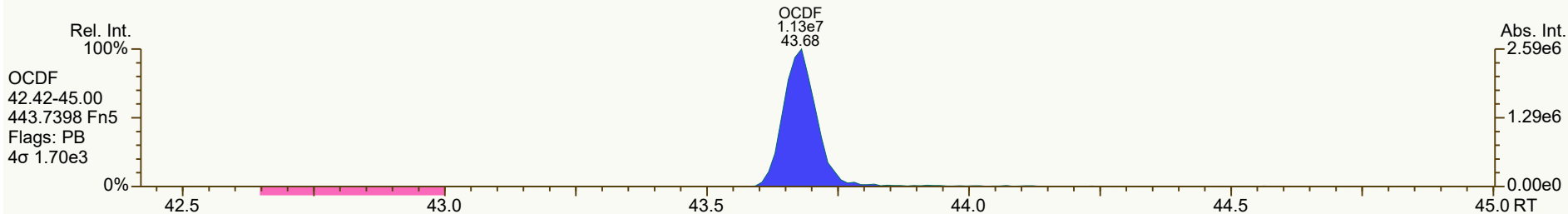
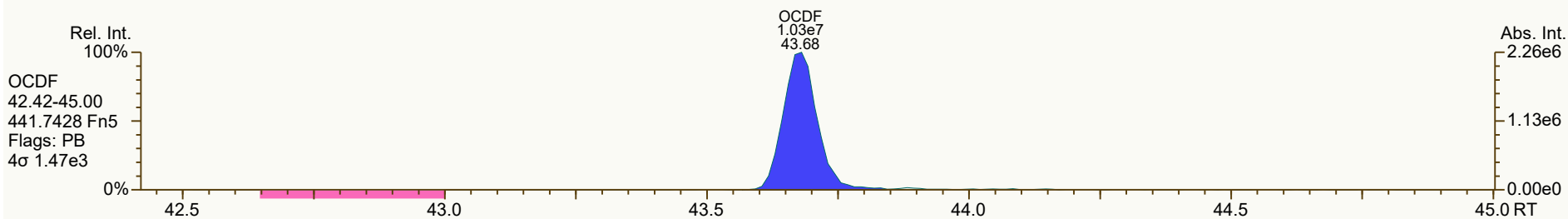
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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6883, 1738, 1742 scc: 368-796

Peak annotation: Areas, Centroids
Revised: 10-Feb-2022 10:01 (DTF) Printed: 10-Feb-2022 10:34 Page 11 of 12



Lab ID: B6237_18888_DF_001MSD

Acq'd: 09 Feb 2022 23:14 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

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Report: 10 Feb 2022 10:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.48		1.0008	1.0007	-0.2	3.98E+06	0.80	Y	1.18	229	3713.335	2.35
12378-PeCDD	33.83		1.0006	1.0005	-0.2	1.35E+07	1.56	Y	1.04	998	3688.091	2.44
123478-HxCDD	37.74		1.0004	1.0004	0	1.43E+07	1.27	Y	1.09	1,080	2673.1562	1.83
123678-HxCDD	37.86		1.0035	1.0036	+0.2	1.66E+07	1.26	Y	1.15	1,110	2673.1562	1.58
123789-HxCDD	38.15		1.0112	1.0113	+0.2	1.44E+07	1.30	Y	1.05	1,040	2673.1562	1.65
1234678-HpCDD	40.83		1.0003	1.0003	0	1.23E+07	1.05	Y	1.06	1,050	2842.233	2.01
OCDD	43.50		1.0004	1.0002	-0.5	1.80E+07	0.91	Y	1.13	2,230	3530.259	4.99

2378-TCDF	27.63		1.0008	1.0007	-0.2	5.80E+06	0.80	Y	1.08	238	2737.649	1.23
12378-PeCDF	32.38		1.0005	1.0005	0	2.02E+07	1.56	Y	1.02	962	6917.075	2.98
23478-PeCDF	33.49		1.0005	1.0005	0	2.14E+07	1.54	Y	1.02	1,050	6917.075	2.93
123478-HxCDF	36.73		1.0004	1.0005	+0.2	1.88E+07	1.26	Y	1.27	1,030	6549.013	2.84
123678-HxCDF	36.88		1.0004	1.0005	+0.2	2.07E+07	1.24	Y	1.15	1,060	6549.013	3.01
234678-HxCDF	37.56		1.0005	1.0004	-0.2	2.22E+07	1.21	Y	1.19	1,010	6549.013	2.57
123789-HxCDF	38.51		1.0004	1.0004	0	1.61E+07	1.25	Y	1.16	987	6549.013	3.18
1234678-HpCDF	39.89		1.0003	1.0003	0	1.75E+07	1.03	Y	1.37	1,020	1950.0909	0.831
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	1.40E+07	1.03	Y	1.31	1,030	1950.0909	1.18
OCDF	43.69		1.0003	1.0002	-0.3	2.27E+07	0.92	Y	1.07	2,090	2860.069	2.97

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0239	+0.5	2.93E+07	0.79	Y	1.05	86.3
ES 12378-PeCDD	33.81		1.2144	1.2161	+3.4	2.61E+07	1.57	Y	0.88	91.2
ES 123478-HxCDD	37.72		0.9920	0.9918	-0.5	2.43E+07	1.25	Y	0.97	95.8
ES 123678-HxCDD	37.84		0.9951	0.9950	-0.2	2.61E+07	1.30	Y	0.94	106
ES 123789-HxCDD	38.14		1.0027	1.0027	0	2.65E+07	1.26	Y	1.09	93.2
ES 1234678-HpCDD	40.81		1.0724	1.0730	+1.5	2.21E+07	1.06	Y	0.91	93
ES OCDD	43.49		1.1428	1.1435	+1.8	2.87E+07	0.89	Y	0.62	88.3

ES 2378-TCDF	27.61		1.0516	1.0519	+0.5	4.52E+07	0.79	Y	1.06	84
ES 12378-PeCDF	32.36		1.2312	1.2331	+3.7	4.09E+07	1.61	Y	0.91	88.5
ES 23478-PeCDF	33.47		1.2733	1.2755	+4.4	3.99E+07	1.63	Y	0.88	88.9
ES 123478-HxCDF	36.71		0.9655	0.9653	-0.4	2.87E+07	0.55	Y	1.20	92
ES 123678-HxCDF	36.86		0.9692	0.9690	-0.4	3.40E+07	0.56	Y	1.35	96.6
ES 234678-HxCDF	37.54		0.9871	0.9870	-0.2	3.72E+07	0.54	Y	1.24	115
ES 123789-HxCDF	38.49		1.0121	1.0121	0	2.81E+07	0.53	Y	1.16	93.5
ES 1234678-HpCDF	39.88		1.0479	1.0484	+1.2	2.50E+07	0.47	Y	0.97	99
ES 1234789-HpCDF	41.27		1.0845	1.0850	+1.2	2.07E+07	0.47	Y	0.85	93.5
ES OCDF	43.68		1.1477	1.1483	+1.6	4.06E+07	0.91	Y	0.81	96.6

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Datafile: 220209C22

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	3.25E+07	0.81	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.08E+07	0.81	Y	-	-
JS 123467-HxCDD	38.04		-	-	-	1.30E+07	1.23	Y	-	-
CS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.36E+07	n/a	-	1.20	87
CS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.53E+07	1.54	Y	0.75	103
CS 12346-PeCDF	31.83		1.2112	1.2128	+3.1	3.96E+07	1.57	Y	0.85	91.6
CS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	3.31E+07	0.53	Y	1.12	114
CS 1234689-HpCDF	40.28		1.0584	1.0590	+1.5	2.48E+07	0.45	Y	0.89	107
SS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.36E+07	n/a		1.15	101
SS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.53E+07	1.54	Y	0.86	113
SS 12346-PeCDF	31.83		1.2112	1.2128	+3.1	3.96E+07	1.57	Y	0.94	103
SS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	3.31E+07	0.53	Y	0.83	118
SS 1234689-HpCDF	40.28		1.0584	1.0590	+1.5	2.48E+07	0.45	Y	0.92	108

Totals	Conc	EMPC		
Total TCDD	1070	1070	* 37Cl correction has been applied to 2378-TCDD	
Total PeCDD	1480	1480	Original Values	Corrected Values
Total HxCDD	3490	3490	Ratio 0.794	0.80
Total HpCDD	1290	1290	Response 3.99E+06	3.98E+06
Total Tetra-Octa Dioxins	9570	9570		
Total TCDF	1,290	1290		
Total PeCDF	4,110	4110		
Total HxCDF	6,420	6420		
Total HpCDF	2,050	2050		
Total Tetra-Octa Furans	16,000	16000		
Total Tetra-Octa Dioxins & Furans	25500	25500		

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.84		0.8737	0.8728	-1.3	5.40E+06	0.79	Y	1.18	311	3713.335	2.35
1379-TCDD	NotFnd		0.8860						1.18		3713.335	2.35
1369-TCDD	NotFnd		0.9009						1.18		3713.335	2.35
1469-TCDD	NotFnd		0.9281						1.18		3713.335	2.35
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3713.335	2.35
1378-TCDD	NotFnd		0.9432						1.18		3713.335	2.35
1268-TCDD	NotFnd		0.9500						1.18		3713.335	2.35
1478-TCDD	NotFnd		0.9586						1.18		3713.335	2.35
1279-TCDD	NotFnd		0.9645						1.18		3713.335	2.35
1234/1269-TCDD	NotFnd		0.9770						1.18		3713.335	2.35
1236-TCDD	NotFnd		0.9817						1.18		3713.335	2.35
1237/1238-TCDD	NotFnd		0.9905						1.18		3713.335	2.35
1239-TCDD	28.33		0.9952	0.9952	0	3.71E+06	0.85	Y	1.18	214	3713.335	2.35
2378-TCDD	28.48		1.0008	1.0007	-0.2	3.98E+06	0.80	Y	1.18	229	3713.335	2.35
1278-TCDD	NotFnd		1.0121						1.18		3713.335	2.35
1267-TCDD	NotFnd		1.0167						1.18		3713.335	2.35
1289-TCDD	29.46		1.0345	1.0349	+0.7	5.42E+06	0.79	Y	1.18	312	3713.335	2.35
12479/12468-PeCDD	31.32		0.9267	0.9265	-0.4	3.13E+06	1.59	Y	1.04	232	3688.091	2.44
12469-PeCDD	NotFnd		0.9425						1.04		3688.091	2.44
12368-PeCDD	NotFnd		0.9588						1.04		3688.091	2.44
12478-PeCDD	NotFnd		0.9643						1.04		3688.091	2.44
12379-PeCDD	NotFnd		0.9673						1.04		3688.091	2.44
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		3688.091	2.44
12346/12347-PeCDD	NotFnd		0.9858						1.04		3688.091	2.44
12378-PeCDD	33.83		1.0006	1.0005	-0.2	1.35E+07	1.56	Y	1.04	998	3688.091	2.44
12367-PeCDD	NotFnd		1.0033						1.04		3688.091	2.44
12389-PeCDD	34.26		1.0134	1.0135	+0.2	3.40E+06	1.54	Y	1.04	252	3688.091	2.44
124679/124689-HxCDD	35.99		0.9542	0.9540	-0.4	3.72E+06	1.25	Y	1.10	266	2673.1562	1.68
123468-HxCDD	NotFnd		0.9715						1.10		2673.1562	1.68
123679/123689-HxCDD	NotFnd		0.9793						1.10		2673.1562	1.68
123469-HxCDD	NotFnd		0.9828						1.10		2673.1562	1.68
123478-HxCDD	37.74		1.0004	1.0004	0	1.43E+07	1.27	Y	1.09	1,080	2673.1562	1.83
123678-HxCDD	37.86		1.0035	1.0036	+0.2	1.66E+07	1.26	Y	1.15	1,110	2673.1562	1.58
123467-HxCDD	NotFnd		1.0085						1.10		2673.1562	1.68
123789-HxCDD	38.15		1.0112	1.0113	+0.2	1.44E+07	1.30	Y	1.05	1,040	2673.1562	1.65

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.14		0.9837	0.9836	-0.2	2.81E+06	1.07	Y	1.06	240	2842.233	2.01
1234678-HpCDD	40.83		1.0003	1.0003	0	1.23E+07	1.05	Y	1.06	1,050	2842.233	2.01
OCDD	43.50		1.0004	1.0002	-0.5	1.80E+07	0.91	Y	1.13	2,230	3530.259	4.99
OCDD-a	43.50	EMPC	1.0003	1.0002	-0.3	1.03E+06	2.01	N	0.07	2,000	3182.956	70.4
1368-TCDF	22.74		0.8251	0.8235	-2.2	7.69E+06	0.75	Y	1.08	315	2737.649	1.23
1468-TCDF	NotFnd		0.8458						1.08		2737.649	1.23
2468-TCDF	23.95		0.8686	0.8675	-1.6	1.92E+06	0.84	Y	1.08	78.6	2737.649	1.23
1346/1246-TCDF	NotFnd		0.8814						1.08		2737.649	1.23
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2737.649	1.23
1348-TCDF	NotFnd		0.8962						1.08		2737.649	1.23
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2737.649	1.23
1268-TCDF	NotFnd		0.9145						1.08		2737.649	1.23
1467-TCDF	NotFnd		0.9193						1.08		2737.649	1.23
1478-TCDF	NotFnd		0.9254						1.08		2737.649	1.23
1369/1237-TCDF	NotFnd		0.9387						1.08		2737.649	1.23
2467-TCDF	NotFnd		0.9433						1.08		2737.649	1.23
2368-TCDF	NotFnd		0.9489						1.08		2737.649	1.23
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2737.649	1.23
1278-TCDF	26.72		0.9683	0.9680	-0.5	3.45E+05	0.79	Y	1.08	14.2	2737.649	1.23
1349-TCDF	NotFnd		0.9722						1.08		2737.649	1.23
1267-TCDF	NotFnd		0.9783						1.08		2737.649	1.23
2346/1249-TCDF	NotFnd		0.9850						1.08		2737.649	1.23
2347/1279-TCDF	NotFnd		0.9926						1.08		2737.649	1.23
2348-TCDF	27.52		0.9967	0.9967	0	7.40E+06	0.77	Y	1.08	303	2737.649	1.23
2378-TCDF	27.63		1.0008	1.0007	-0.2	5.80E+06	0.80	Y	1.08	238	2737.649	1.23
2367/3467-TCDF	NotFnd		1.0137						1.08		2737.649	1.23
1269-TCDF	NotFnd		1.0223						1.08		2737.649	1.23
1239-TCDF	NotFnd		1.0321						1.08		2737.649	1.23
1289-TCDF	29.62		1.0722	1.0731	+1.6	8.21E+06	0.79	Y	1.08	337	2737.649	1.23
13468/12468-PeCDF	29.54		0.9139	0.9129	-1.8	3.89E+07	1.56	Y	1.02	1,890	2743.38	1.17
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		6917.075	2.95
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		6917.075	2.95
14678-PeCDF	NotFnd		0.9692						1.02		6917.075	2.95
13479-PeCDF	NotFnd		0.9723						1.02		6917.075	2.95
13469/12479-PeCDF	NotFnd		0.9797						1.02		6917.075	2.95
12346-PeCDF	NotFnd		0.9840						1.02		6917.075	2.95

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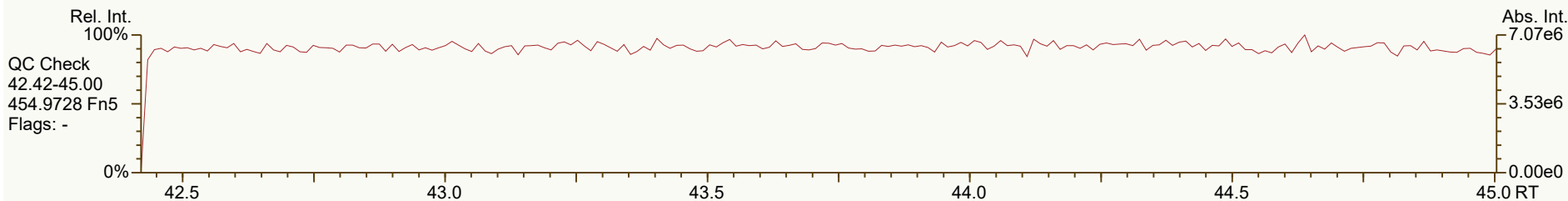
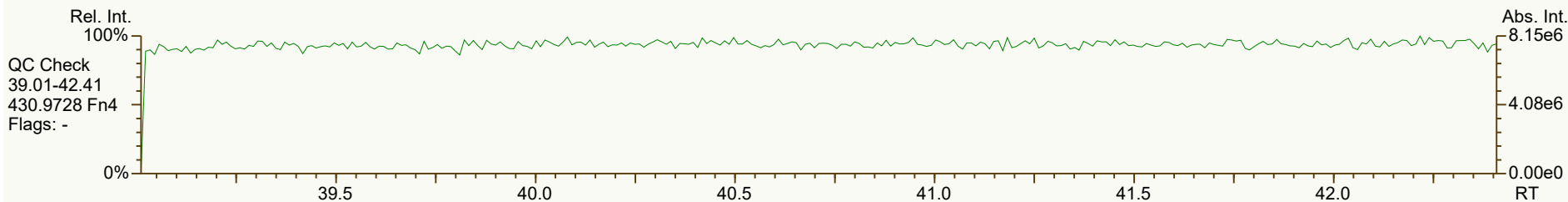
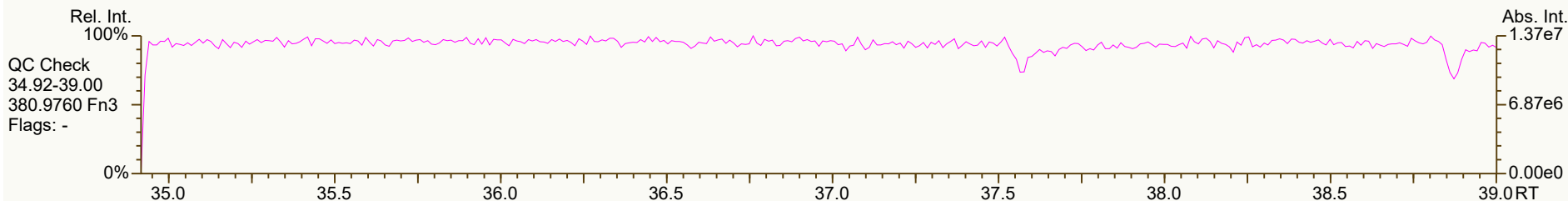
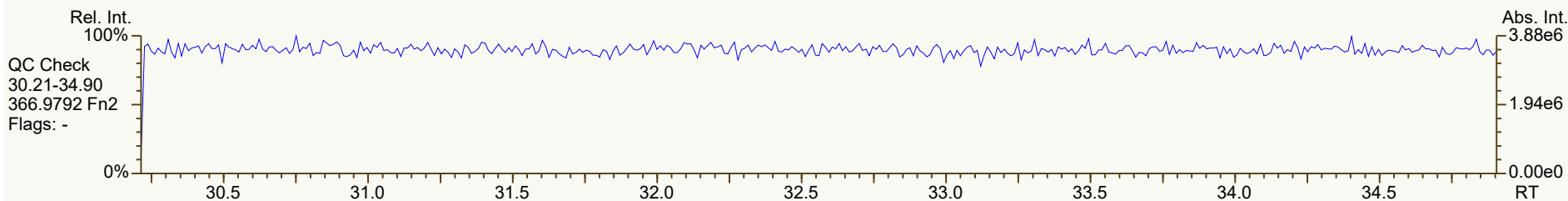
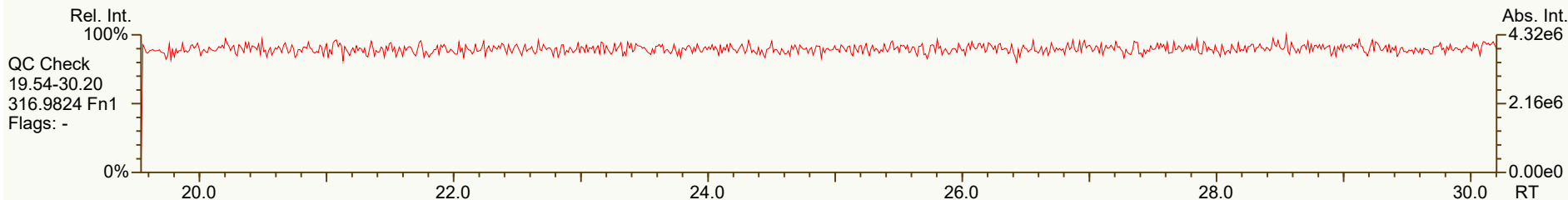
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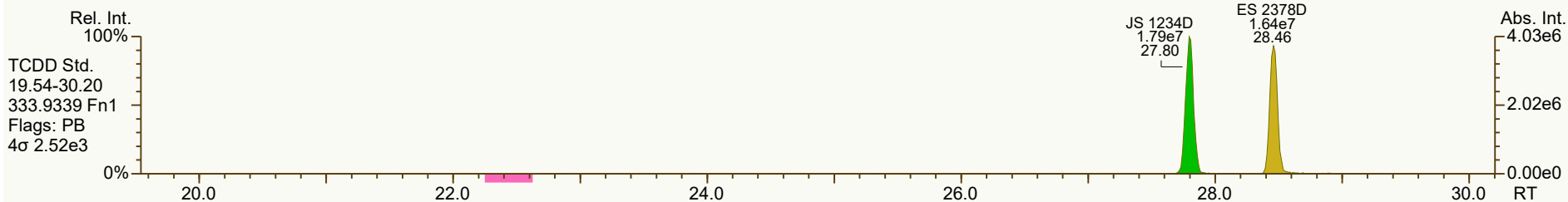
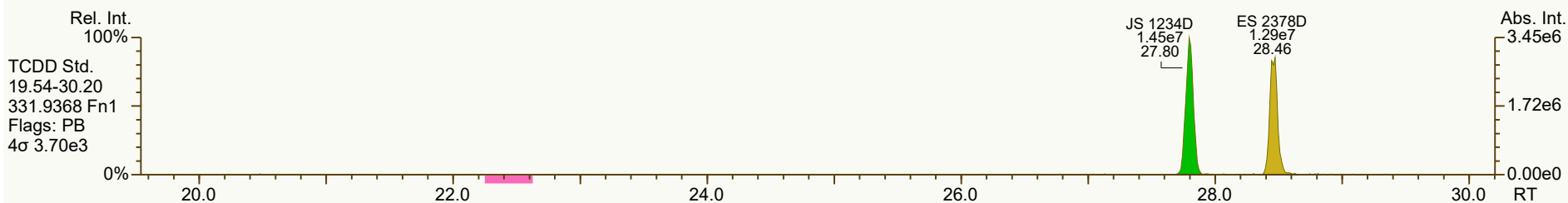
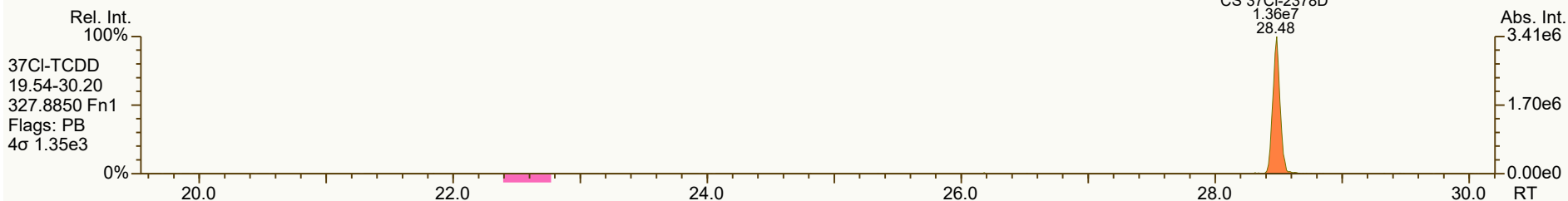
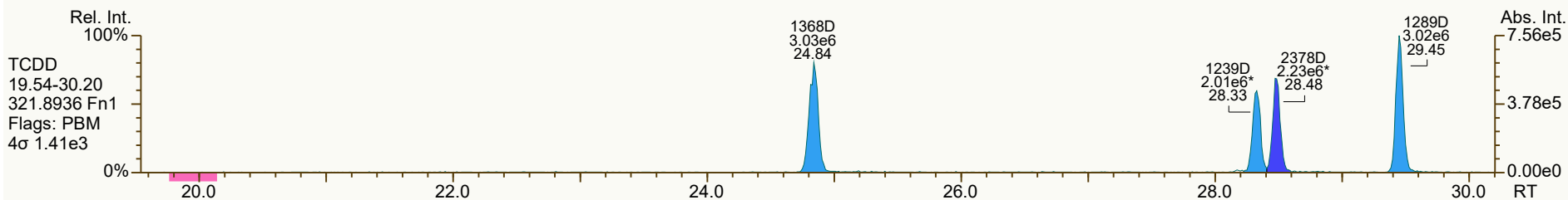
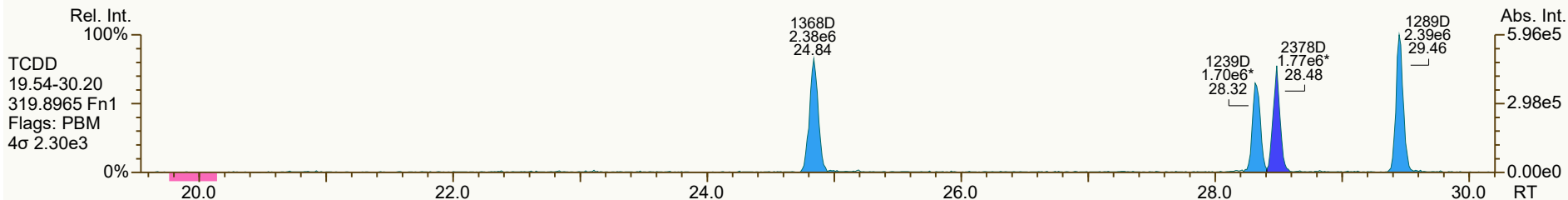
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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

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23468/12469-PeCDF	NotFnd		0.9868						1.02		6917.075	2.95
12347-PeCDF	NotFnd		0.9894						1.02		6917.075	2.95
12348-PeCDF	NotFnd		0.9940						1.02		6917.075	2.95
12378-PeCDF	32.38		1.0005	1.0005	0	2.02E+07	1.56	Y	1.02	962	6917.075	2.98
12678/12367-PeCDF	NotFnd		1.0089						1.02		6917.075	2.95
12379-PeCDF	NotFnd		1.0142						1.02		6917.075	2.95
12679-PeCDF	NotFnd		0.9929						1.02		6917.075	2.95
23467/12369-PeCDF	NotFnd		0.9967						1.02		6917.075	2.95
23478-PeCDF	33.49		1.0005	1.0005	0	2.14E+07	1.54	Y	1.02	1,050	6917.075	2.93
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6917.075	2.95
12349-PeCDF	NotFnd		1.0100						1.02		6917.075	2.95
12389-PeCDF	34.57		1.0324	1.0327	+0.6	4.39E+06	1.58	Y	1.02	213	6917.075	2.95
123468-HxCDF	35.34		0.9627	0.9626	-0.2	4.46E+07	1.24	Y	1.19	2,340	6549.013	2.87
124678/134678-HxCDF	NotFnd		0.9682						1.19		6549.013	2.87
134679-HxCDF	NotFnd		0.9744						1.19		6549.013	2.87
124679-HxCDF	NotFnd		0.9798						1.19		6549.013	2.87
124689-HxCDF	NotFnd		0.9858						1.19		6549.013	2.87
123467-HxCDF	NotFnd		0.9972						1.19		6549.013	2.87
123478-HxCDF	36.73		1.0004	1.0005	+0.2	1.88E+07	1.26	Y	1.27	1,030	6549.013	2.84
123678-HxCDF	36.88		1.0004	1.0005	+0.2	2.07E+07	1.24	Y	1.15	1,060	6549.013	3.01
123479-HxCDF	NotFnd		1.0049						1.19		6549.013	2.87
123469-HxCDF	NotFnd		1.0090						1.19		6549.013	2.87
123679-HxCDF	NotFnd		0.9942						1.19		6549.013	2.87
234678-HxCDF	37.56		1.0005	1.0004	-0.2	2.22E+07	1.21	Y	1.19	1,010	6549.013	2.57
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6549.013	2.87
123789-HxCDF	38.51		1.0004	1.0004	0	1.61E+07	1.25	Y	1.16	987	6549.013	3.18
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		6549.013	2.87
1234678-HpCDF	39.89		1.0003	1.0003	0	1.75E+07	1.03	Y	1.37	1,020	1950.0909	0.831
1234679-HpCDF	NotFnd		1.0068						1.34		1950.0909	0.987
1234689-HpCDF	NotFnd		1.0103						1.34		1950.0909	0.987
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	1.40E+07	1.03	Y	1.31	1,030	1950.0909	1.18
OCDF	43.69		1.0003	1.0002	-0.3	2.27E+07	0.92	Y	1.07	2,090	2860.069	2.97
OCDF-a	43.69		1.0002	1.0002	0	1.19E+06	2.56	Y	0.07	1,760	3116.378	52.3

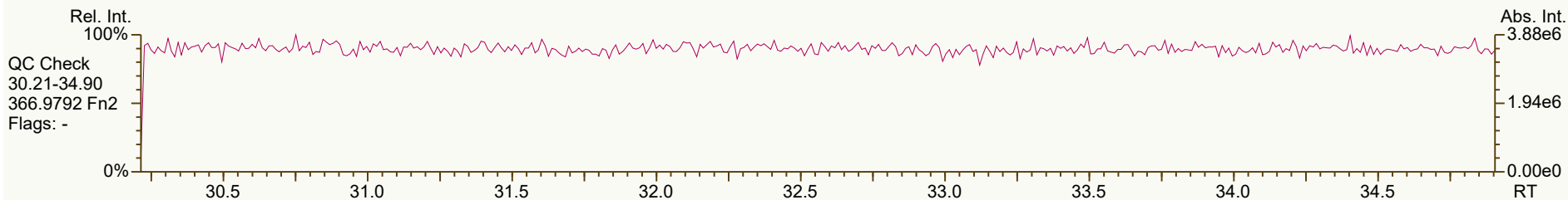
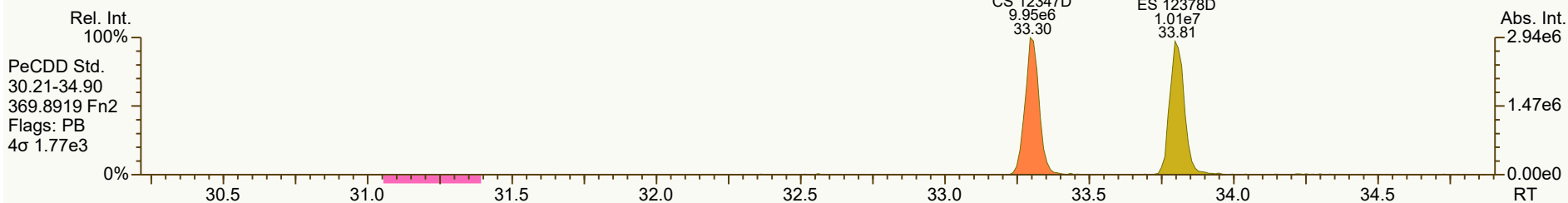
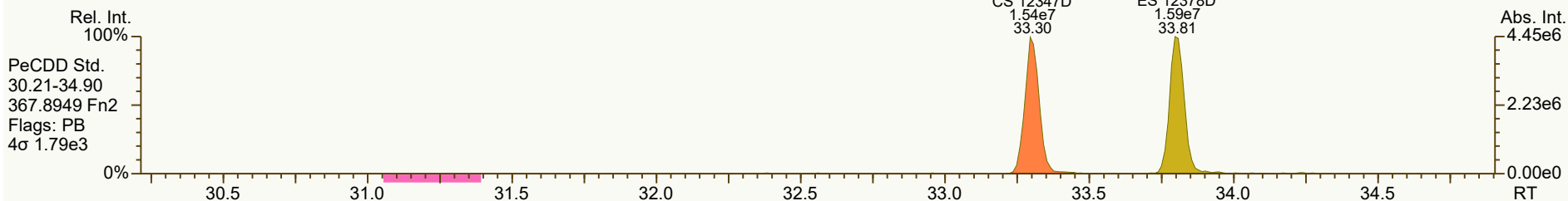
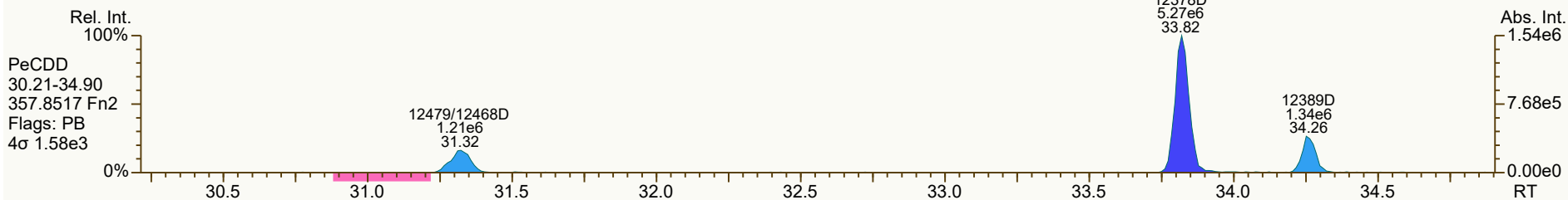
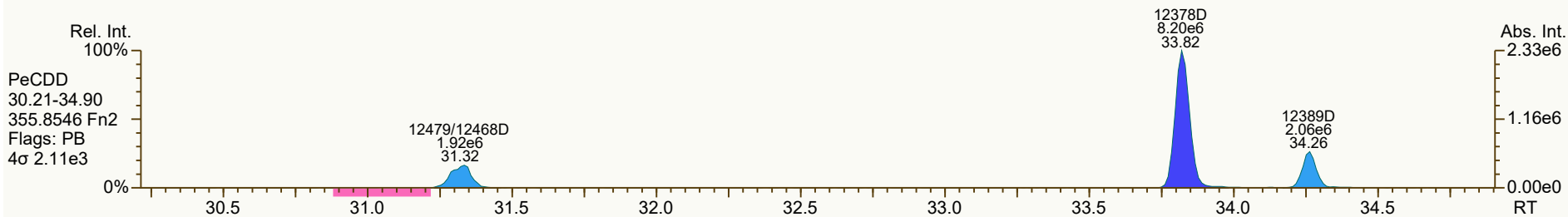


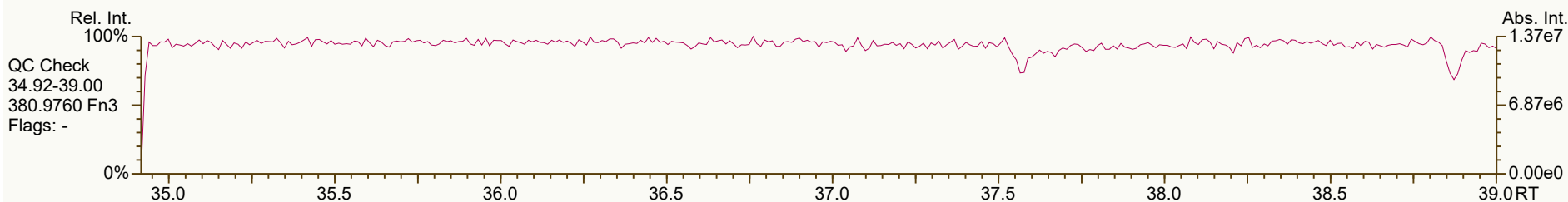
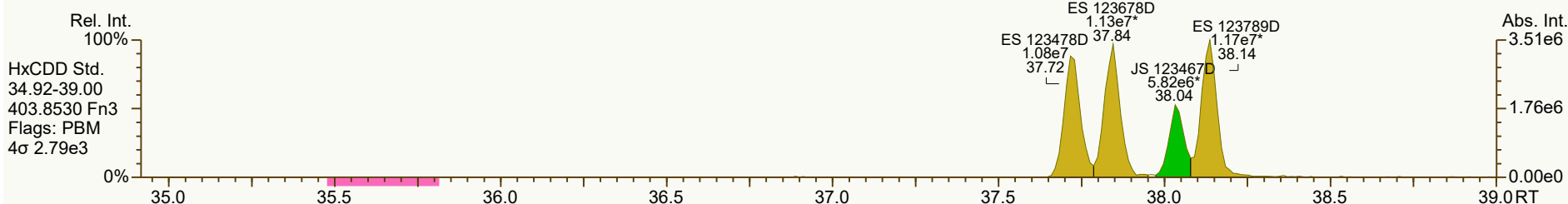
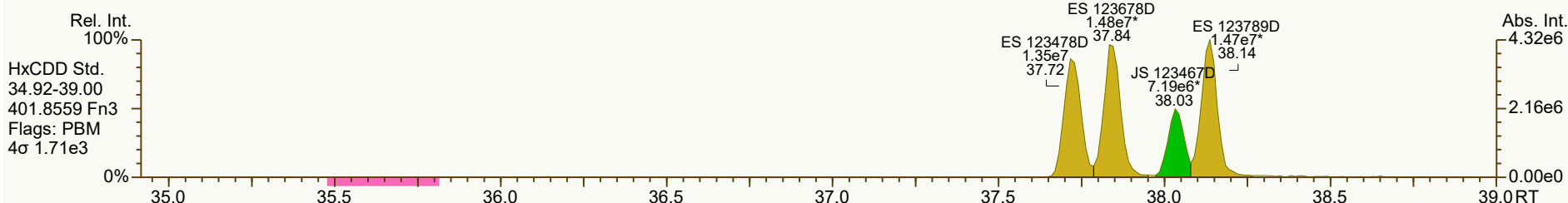
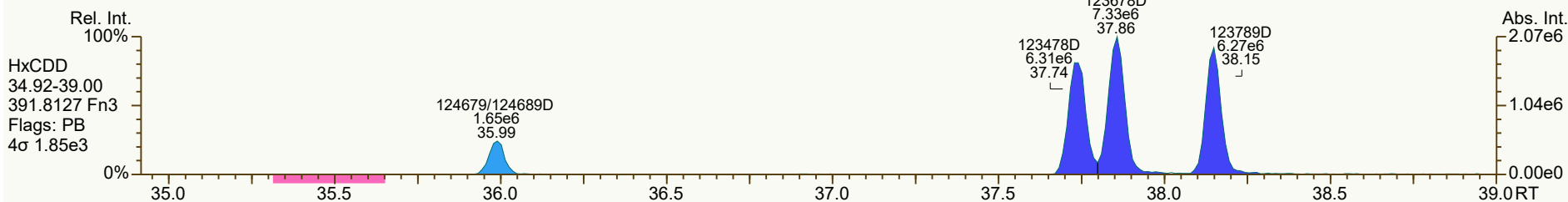
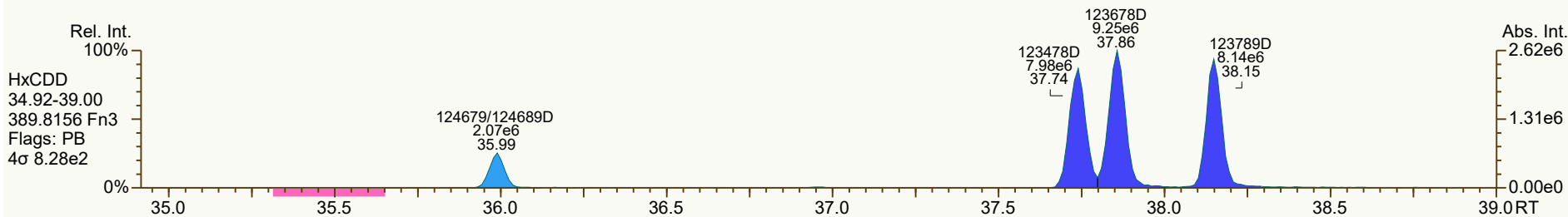


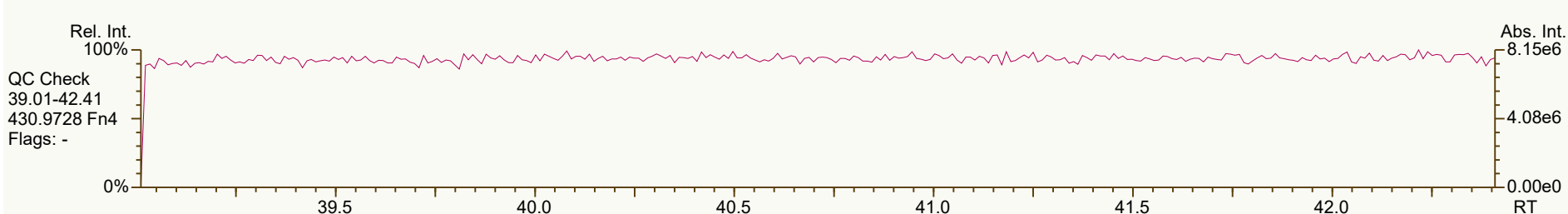
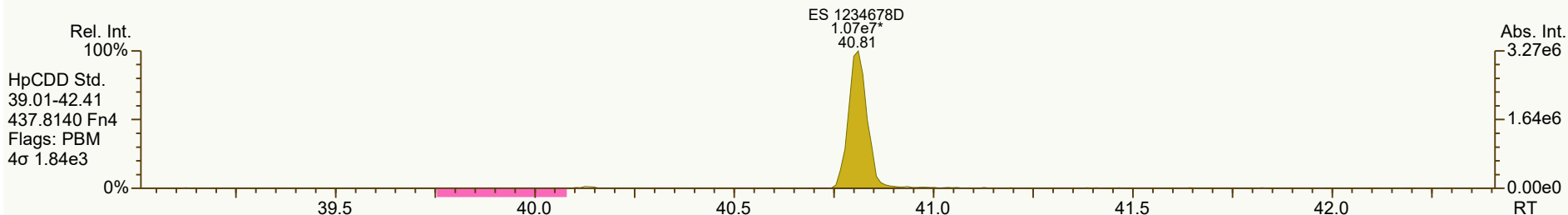
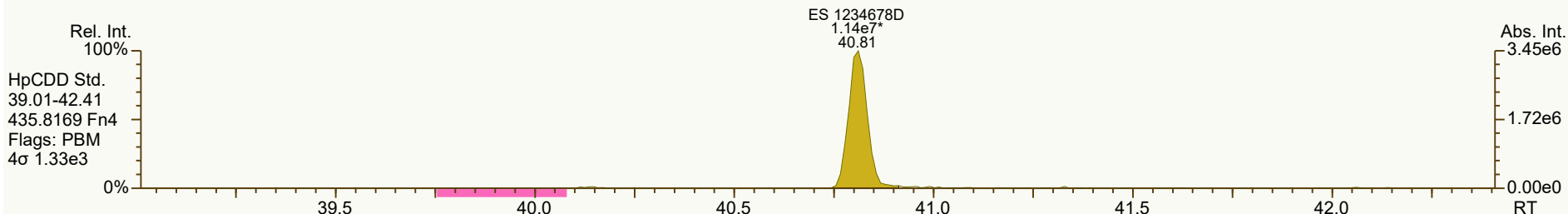
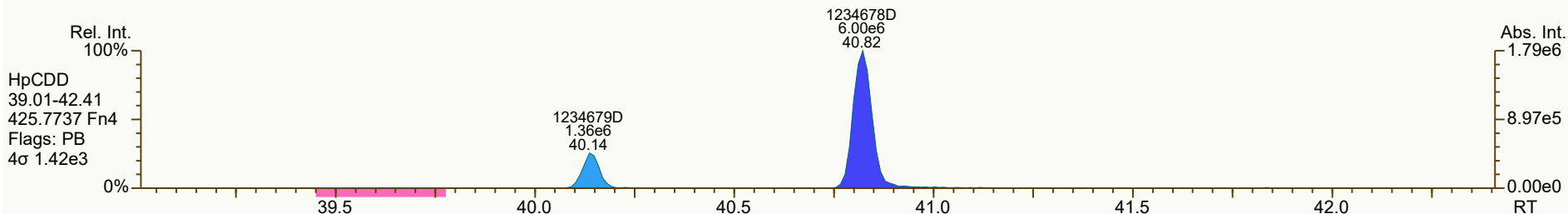
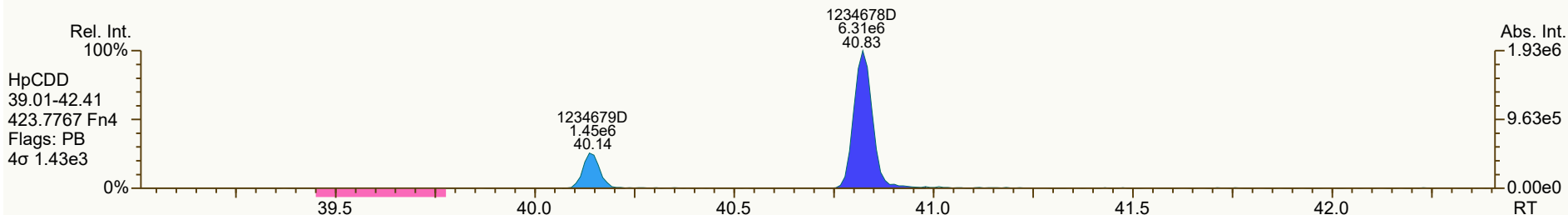
SGS ID: B6237_18888_DF_001MSD
Instr: [ILM] AutoSpec-Ultima HRMS2

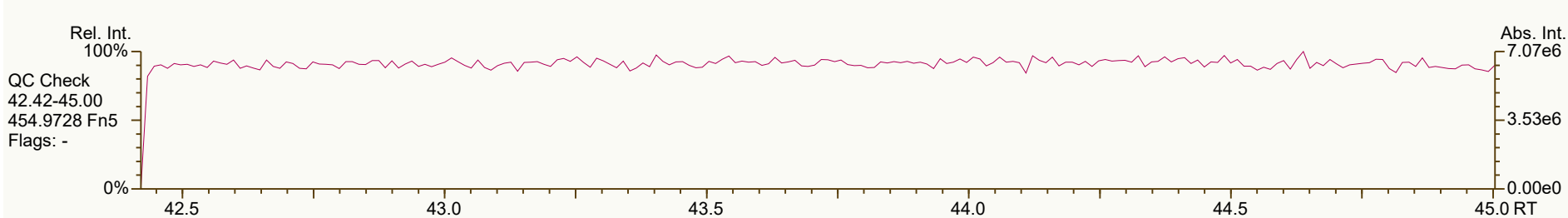
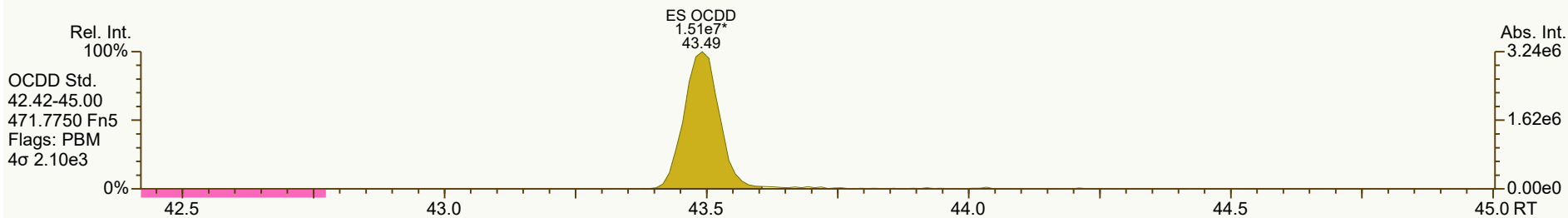
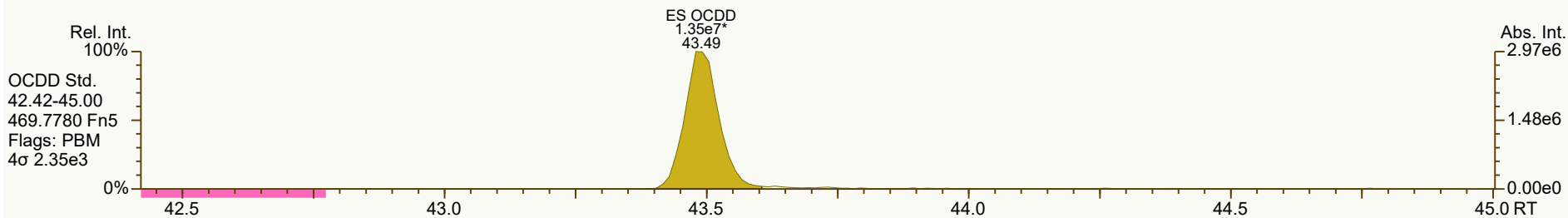
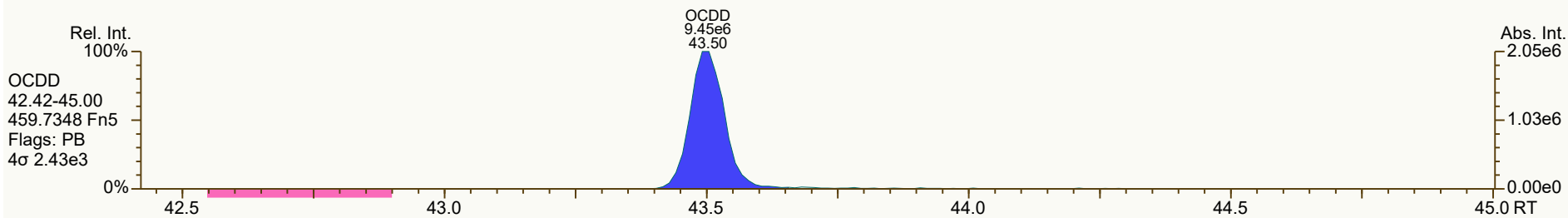
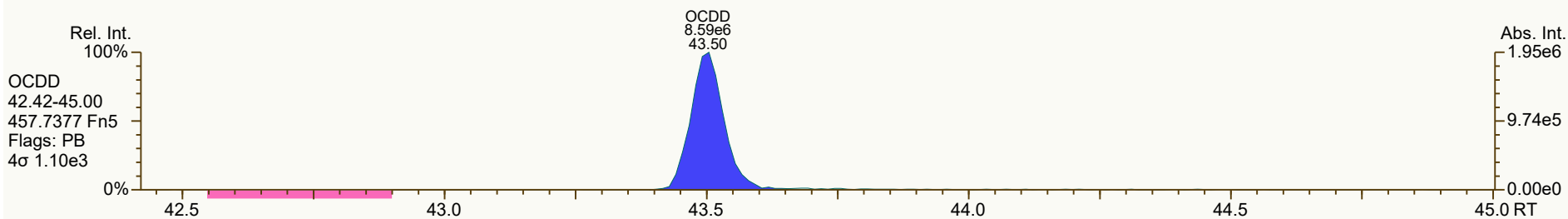
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 10

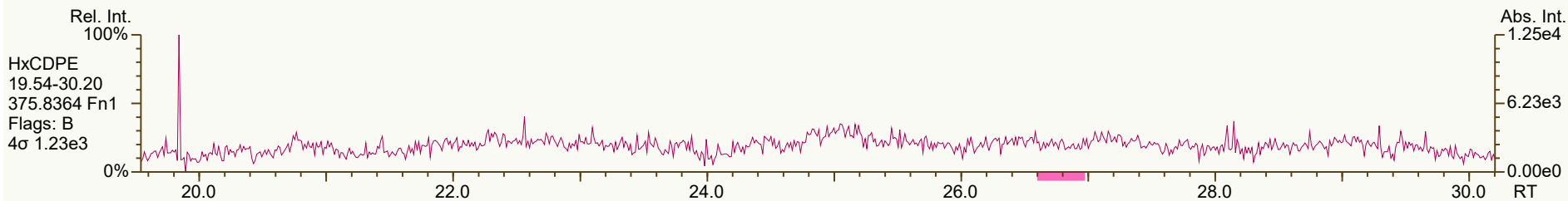
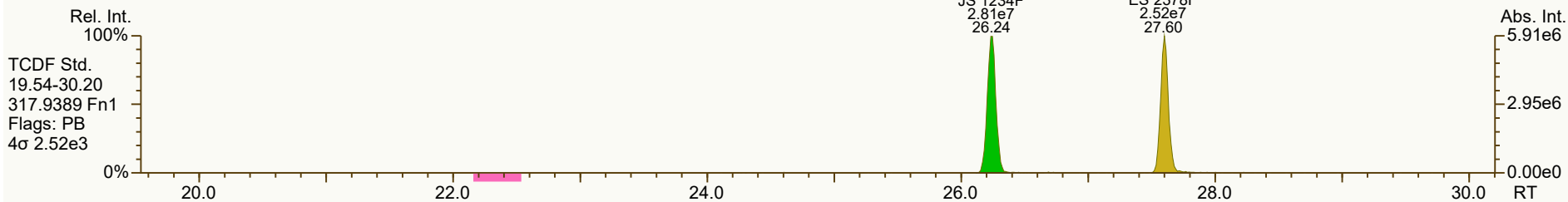
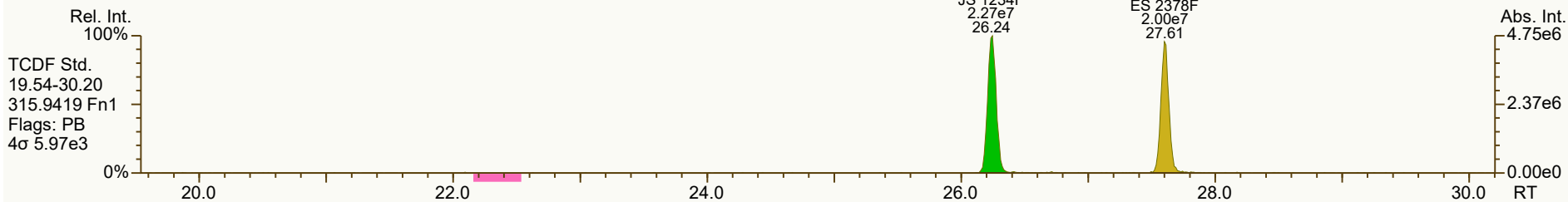
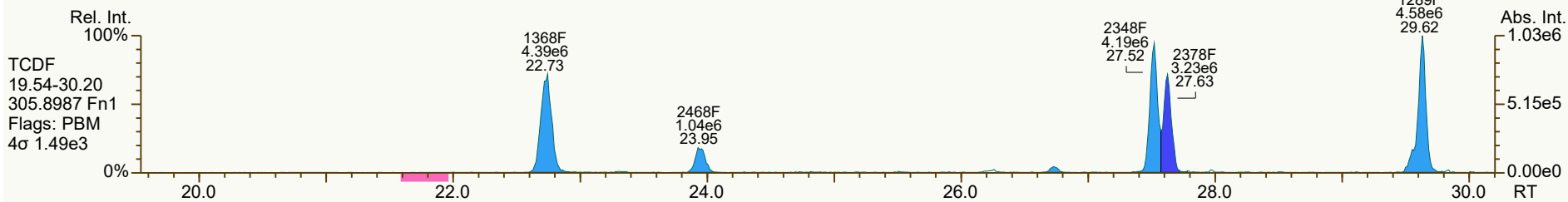
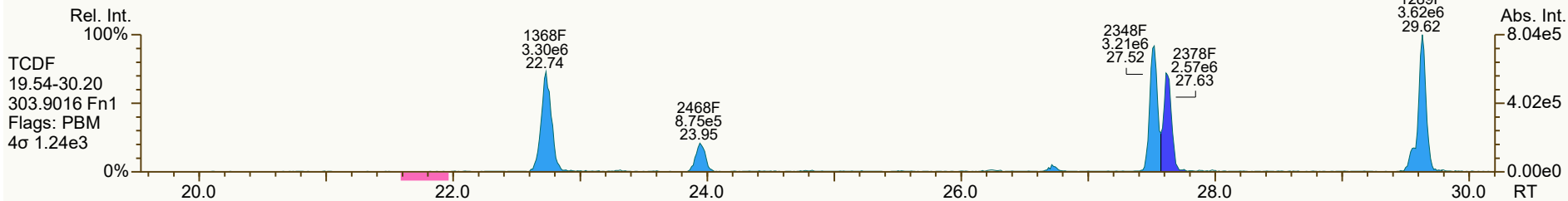
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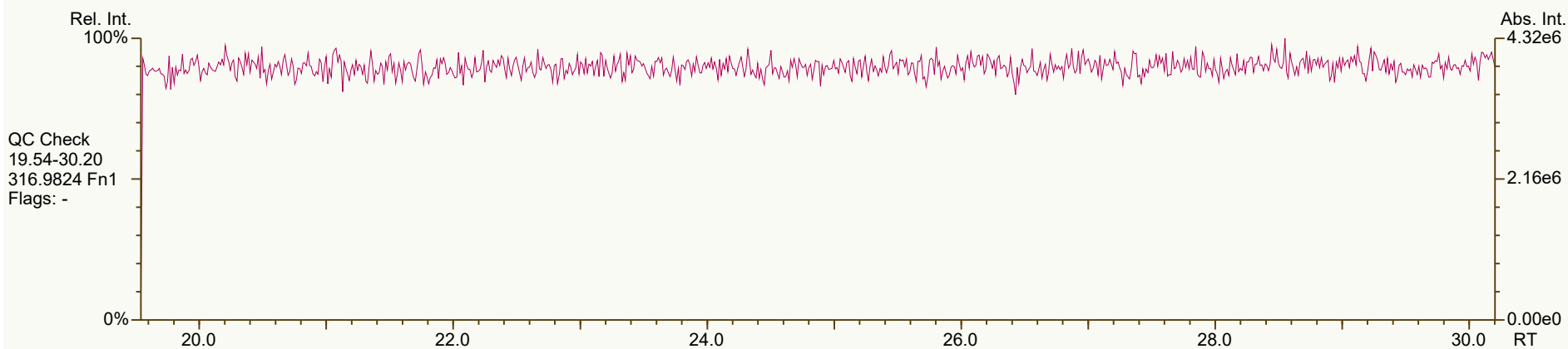
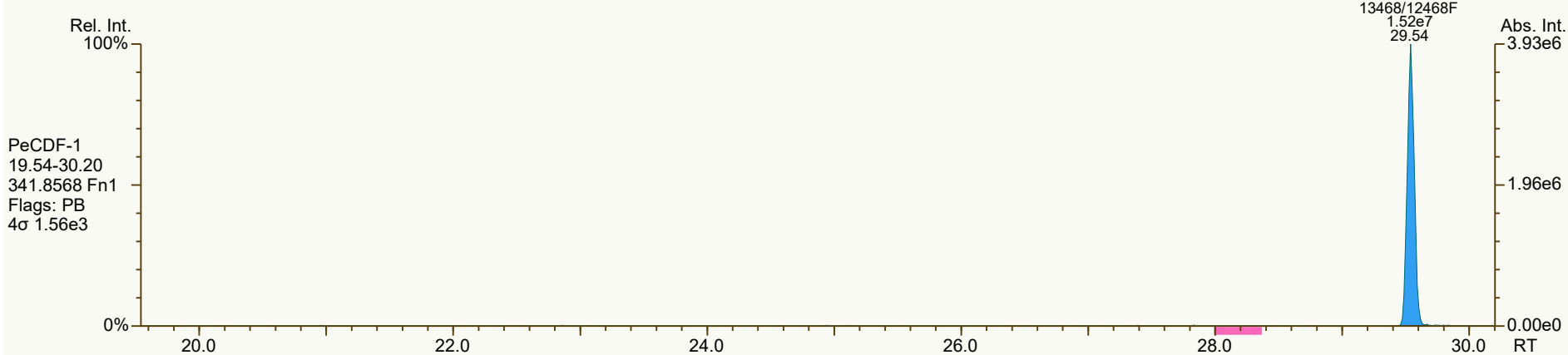
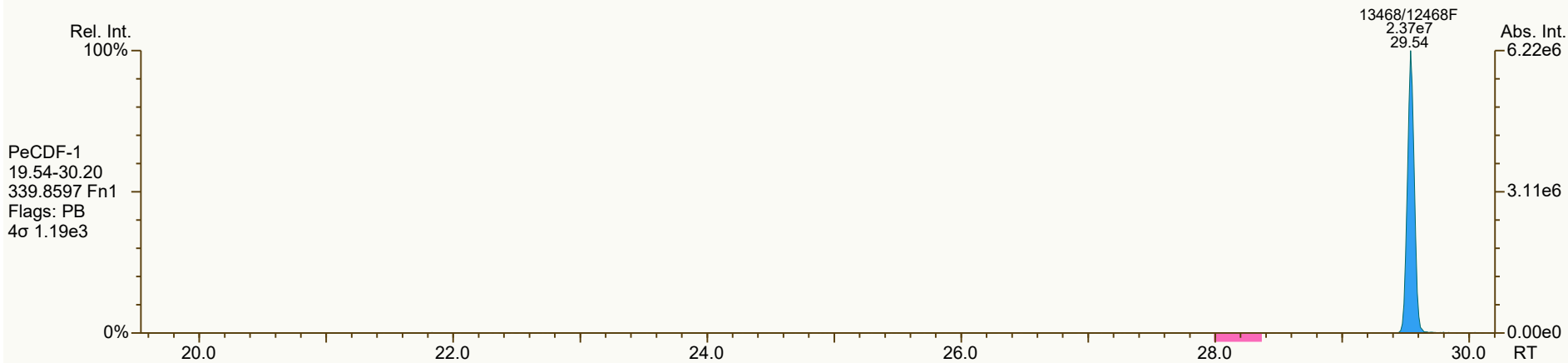


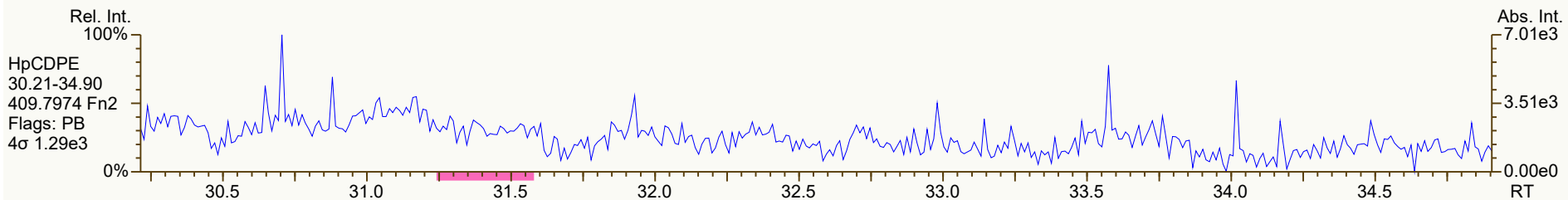
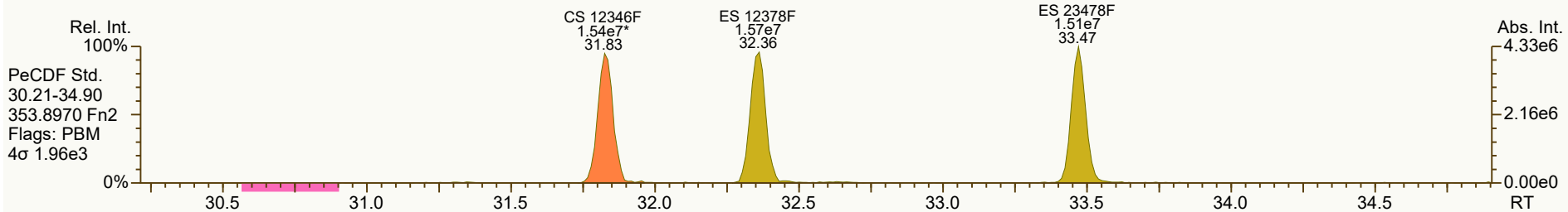
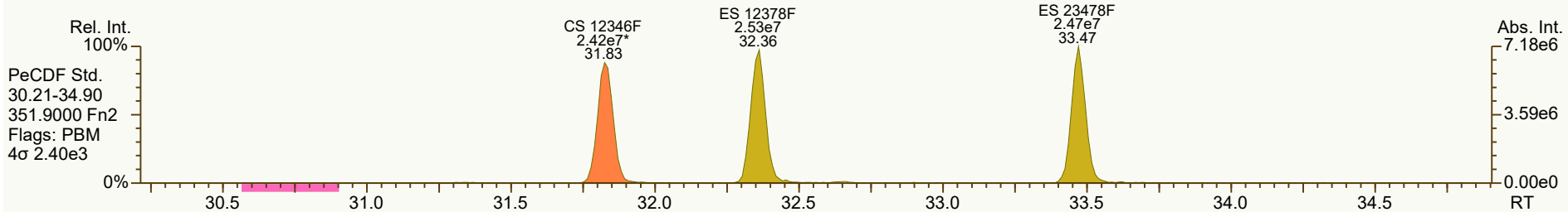
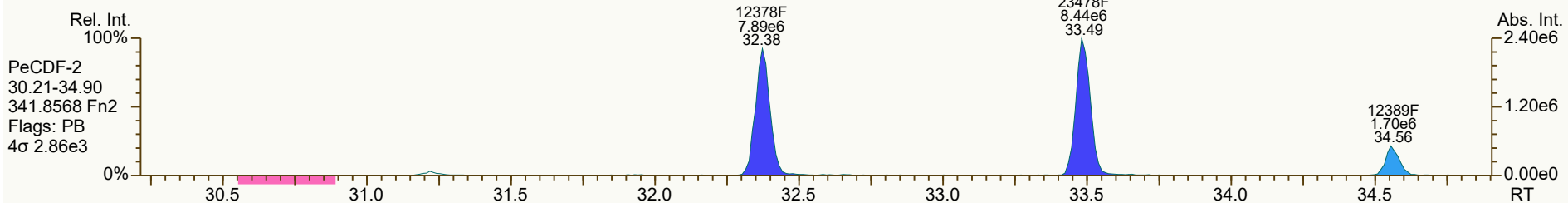
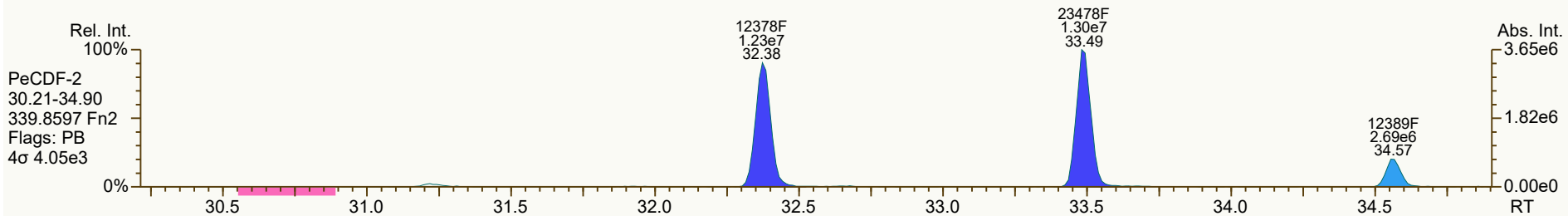


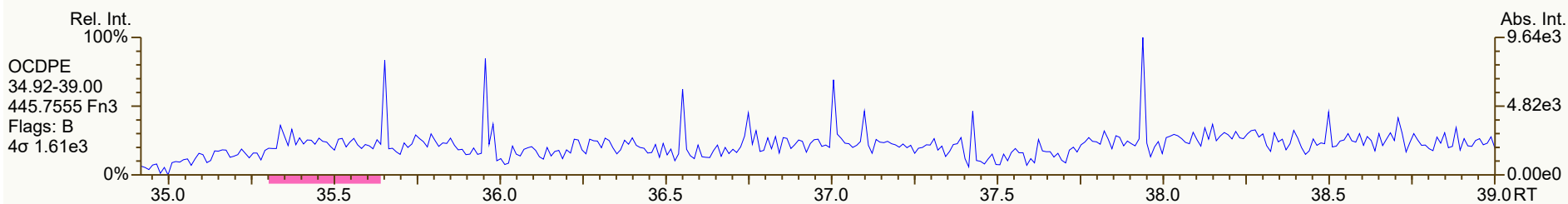
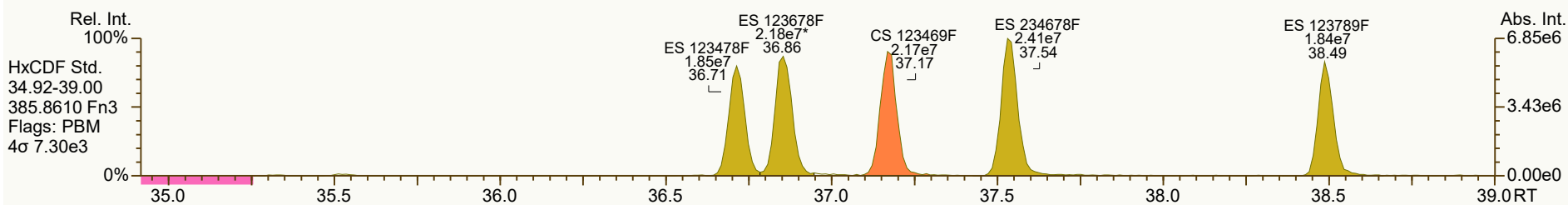
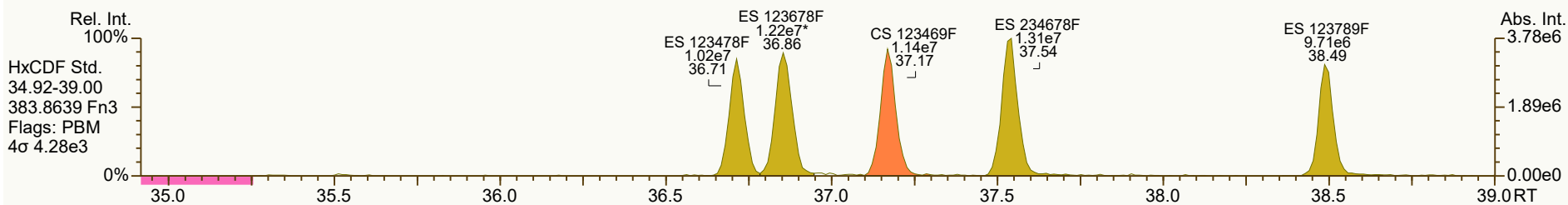
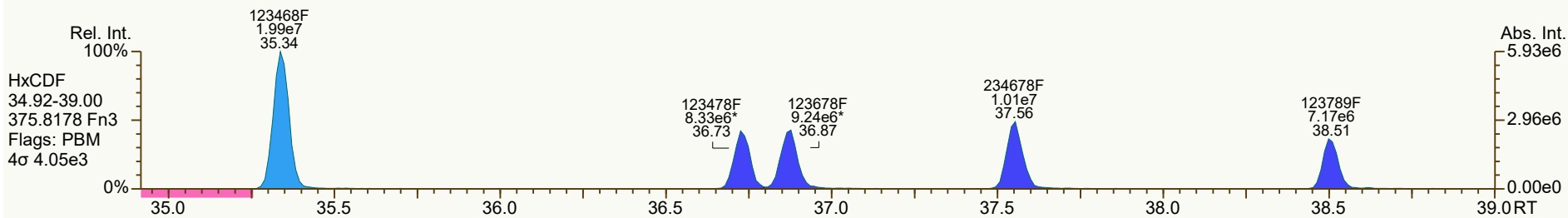
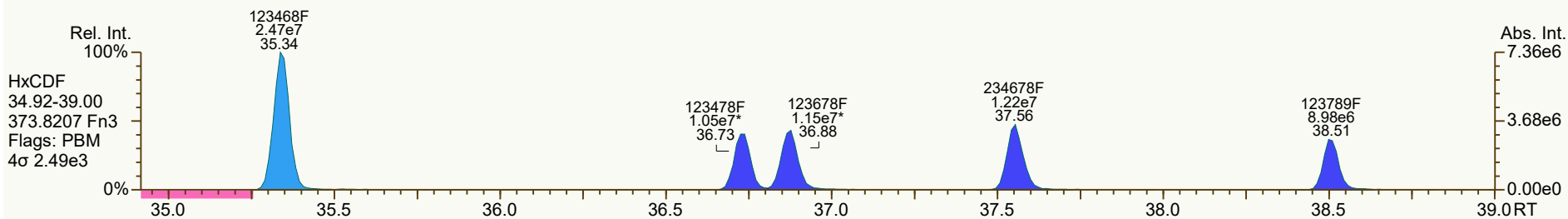


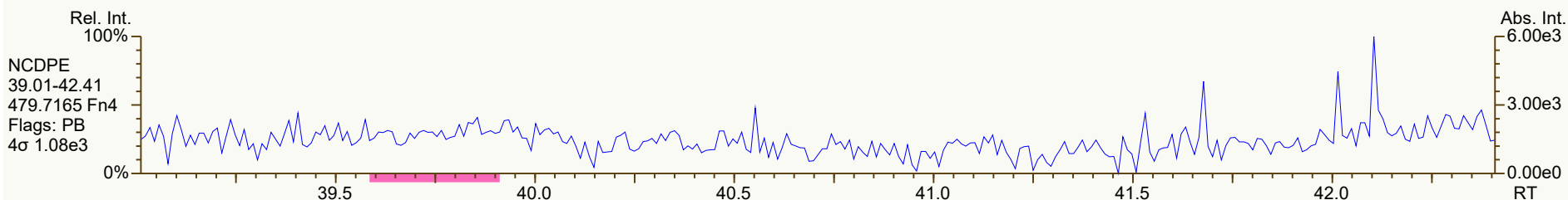
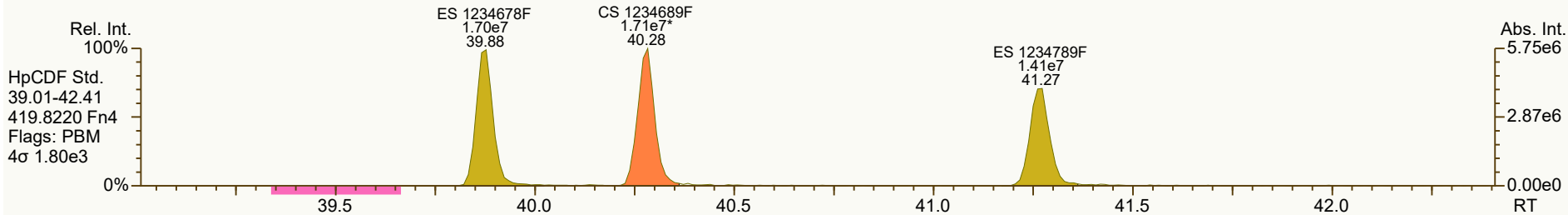
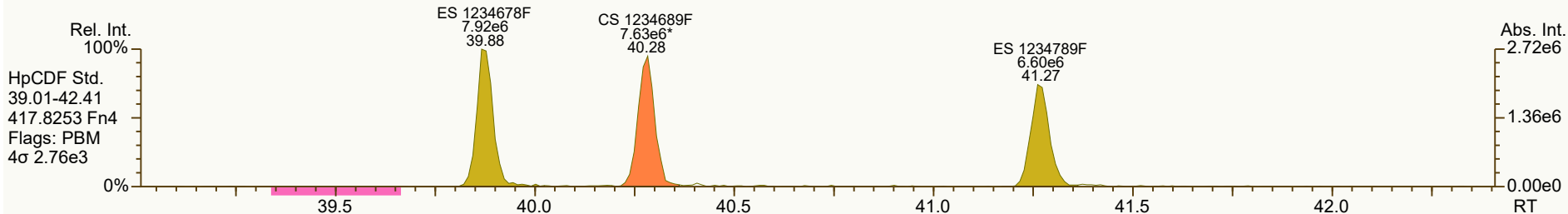
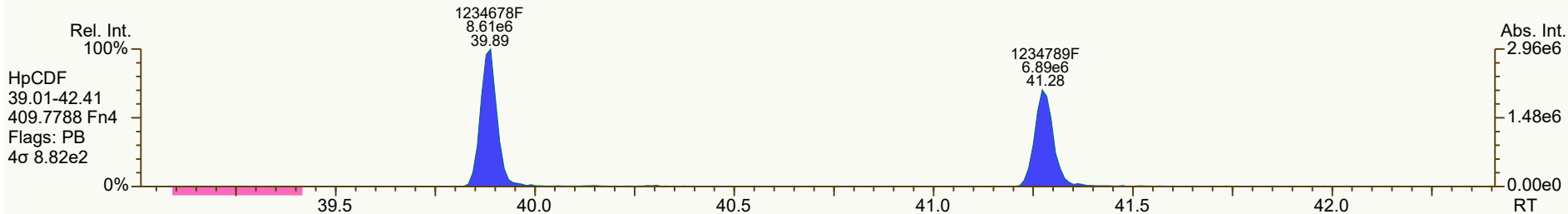
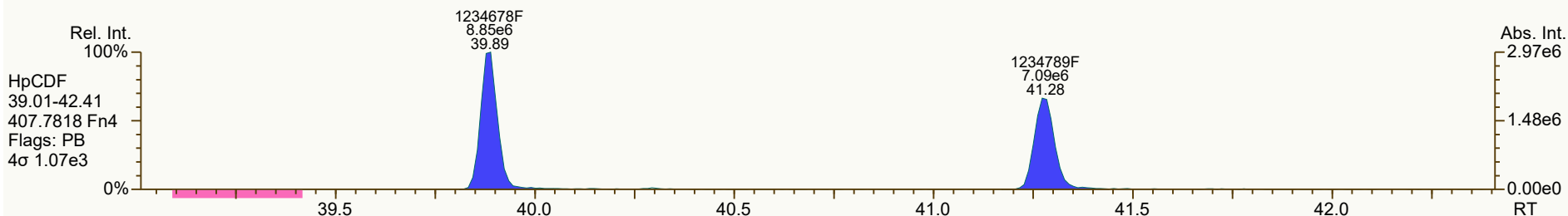


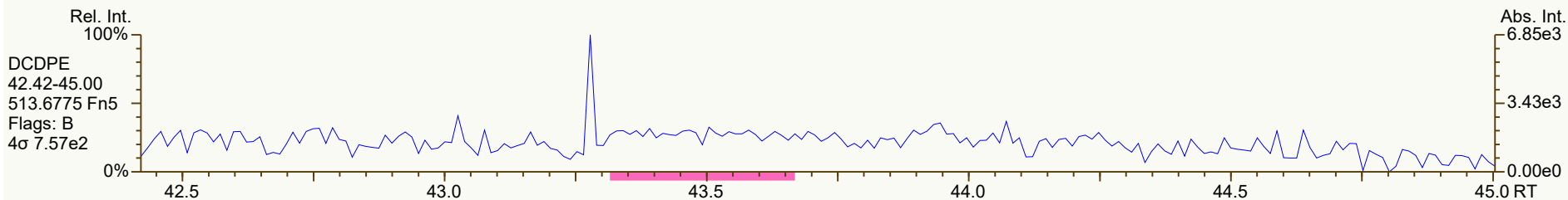
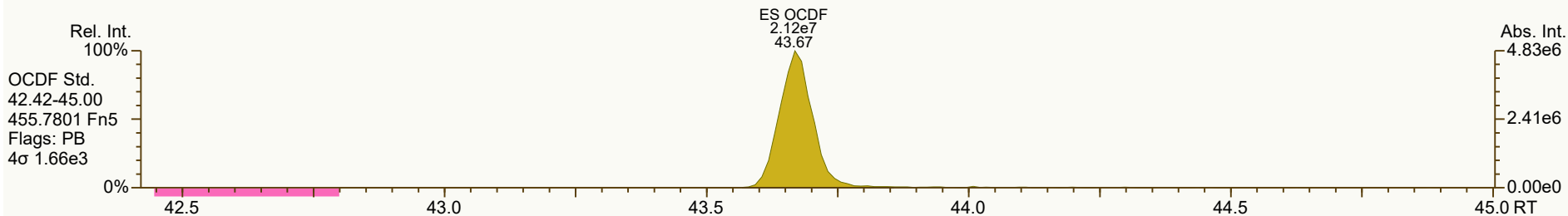
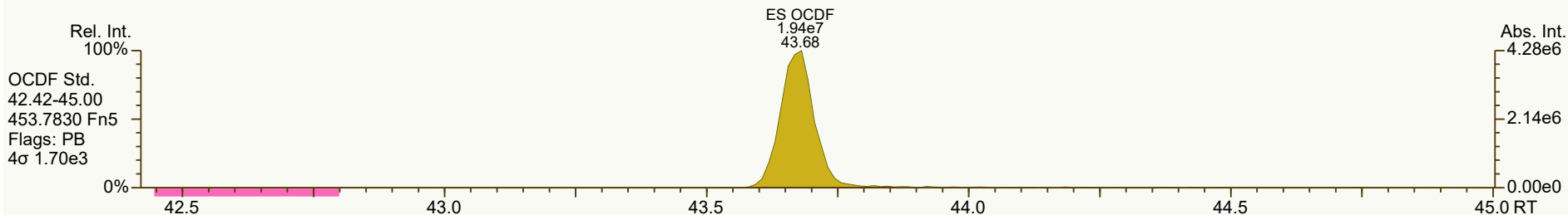
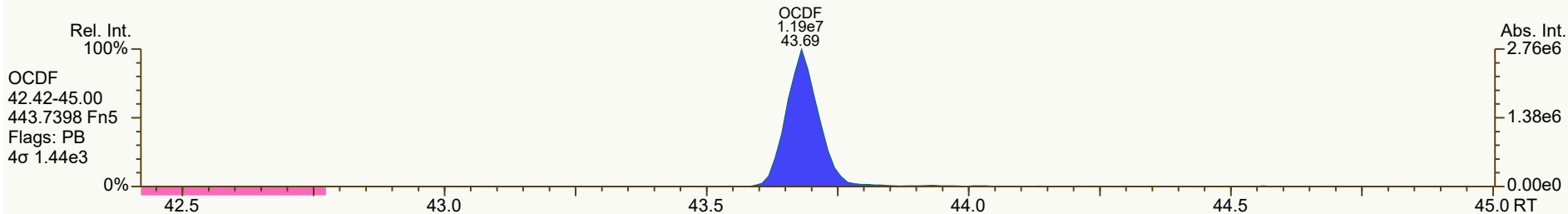
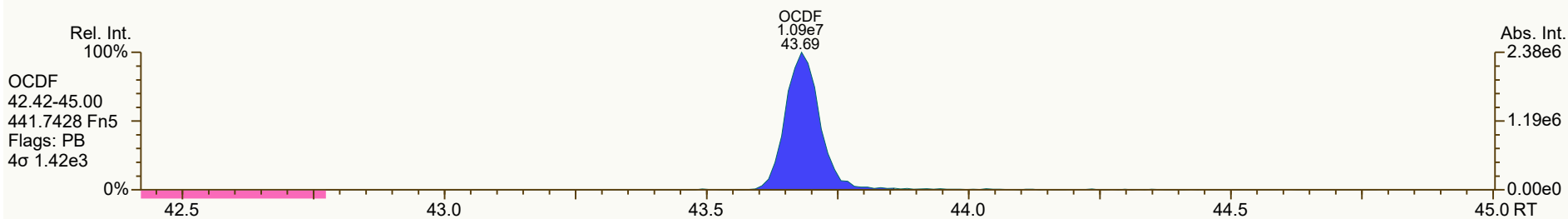












Lab ID: B6237_18888_DF_002

Acq'd: 10 Feb 2022 00:00 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SW

UTP: 10-Feb-2022 10:22:29 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 769-829-KJV

Datafile: 220209C23

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3737.676	2.19
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2709.911	1.6
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2654.842	1.62
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2654.842	1.44
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2654.842	1.56
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2460.432	1.66
OCDD	43.50	J EMPC	1.0004	1.0003	-0.3	8.39E+04	0.55	N	1.13	9.47	4666.244	5.86
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	2555.912	1.05
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2469.194	1.1
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2469.194	1
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2994.179	1.31
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2994.179	1.27
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2994.179	1.17
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2994.179	1.36
1234678-HpCDF	39.87	J	1.0003	1.0002	-0.2	3.10E+04	0.96	Y	1.37	1.71	3193.351	1.32
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	3193.351	1.83
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	3993.02	4

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0239	+0.5	3.04E+07	0.80	Y	1.05	86.8
ES 12378-PeCDD	33.80		1.2144	1.2161	+3.4	2.66E+07	1.58	Y	0.88	90.5
ES 123478-HxCDD	37.72		0.9920	0.9920	0	2.52E+07	1.24	Y	0.97	95.8
ES 123678-HxCDD	37.83		0.9951	0.9950	-0.2	2.62E+07	1.34	Y	0.94	103
ES 123789-HxCDD	38.13		1.0027	1.0028	+0.2	2.69E+07	1.26	Y	1.09	91.1
ES 1234678-HpCDD	40.80		1.0724	1.0730	+1.5	2.22E+07	1.04	Y	0.91	89.8
ES OCDD	43.48		1.1428	1.1436	+2.1	3.08E+07	0.91	Y	0.62	91.2
ES 2378-TCDF	27.60		1.0516	1.0520	+0.7	4.75E+07	0.79	Y	1.06	83.8
ES 12378-PeCDF	32.35		1.2312	1.2331	+3.7	4.01E+07	1.59	Y	0.91	82.3
ES 23478-PeCDF	33.46		1.2733	1.2755	+4.4	4.01E+07	1.64	Y	0.88	84.7
ES 123478-HxCDF	36.71		0.9655	0.9653	-0.4	2.89E+07	0.53	Y	1.20	88.9
ES 123678-HxCDF	36.85		0.9692	0.9692	0	3.57E+07	0.53	Y	1.35	97.4
ES 234678-HxCDF	37.53		0.9871	0.9870	-0.2	3.83E+07	0.54	Y	1.24	114
ES 123789-HxCDF	38.48		1.0121	1.0121	0	2.97E+07	0.54	Y	1.16	95
ES 1234678-HpCDF	39.87		1.0479	1.0485	+1.4	2.59E+07	0.45	Y	0.97	99
ES 1234789-HpCDF	41.26		1.0845	1.0851	+1.5	2.07E+07	0.46	Y	0.85	89.8
ES OCDF	43.66		1.1477	1.1483	+1.6	4.00E+07	0.90	Y	0.81	91.4

Lab ID: B6237_18888_DF_002

Acq'd: 10 Feb 2022 00:00 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SW

UTP: 10-Feb-2022 10:22:29 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 769-829-KJV

Datafile: 220209C23

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.35E+07	0.81	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.35E+07	0.79	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.35E+07	1.26	Y	-	-
CS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.47E+07	n/a	-	1.20	91.4
CS 12347-PeCDD	33.29		1.1964	1.1979	+3.0	2.56E+07	1.59	Y	0.75	102
CS 12346-PeCDF	31.82		1.2112	1.2128	+3.1	3.95E+07	1.55	Y	0.85	86.8
CS 123469-HxCDF	37.17		0.9775	0.9775	0	3.38E+07	0.54	Y	1.12	112
CS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.54E+07	0.44	Y	0.89	106
SS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.47E+07	n/a		1.15	106
SS 12347-PeCDD	33.29		1.1964	1.1979	+3.0	2.56E+07	1.59	Y	0.86	112
SS 12346-PeCDF	31.82		1.2112	1.2128	+3.1	3.95E+07	1.55	Y	0.94	105
SS 123469-HxCDF	37.17		0.9775	0.9775	0	3.38E+07	0.54	Y	0.83	114
SS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.54E+07	0.44	Y	0.92	107

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	9.47
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	1.71	1.71
Total Tetra-Octa Furans	1.71	1.71
Total Tetra-Octa Dioxins & Furans	1.71	11.2

Lab ID: B6237_18888_DF_002

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ICAL: HRMS3_DF_10272021 10NOV2021

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Checkcode: 769-829-KJV

Datafile: 220209C23

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3737.676	2.19
1379-TCDD	NotFnd		0.8860						1.18		3737.676	2.19
1369-TCDD	NotFnd		0.9009						1.18		3737.676	2.19
1469-TCDD	NotFnd		0.9281						1.18		3737.676	2.19
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3737.676	2.19
1378-TCDD	NotFnd		0.9432						1.18		3737.676	2.19
1268-TCDD	NotFnd		0.9500						1.18		3737.676	2.19
1478-TCDD	NotFnd		0.9586						1.18		3737.676	2.19
1279-TCDD	NotFnd		0.9645						1.18		3737.676	2.19
1234/1269-TCDD	NotFnd		0.9770						1.18		3737.676	2.19
1236-TCDD	NotFnd		0.9817						1.18		3737.676	2.19
1237/1238-TCDD	NotFnd		0.9905						1.18		3737.676	2.19
1239-TCDD	NotFnd		0.9952						1.18		3737.676	2.19
2378-TCDD	NotFnd		1.0008						1.18		3737.676	2.19
1278-TCDD	NotFnd		1.0121						1.18		3737.676	2.19
1267-TCDD	NotFnd		1.0167						1.18		3737.676	2.19
1289-TCDD	NotFnd		1.0345						1.18		3737.676	2.19
12479/12468-PeCDD	NotFnd		0.9267						1.04		2709.911	1.6
12469-PeCDD	NotFnd		0.9425						1.04		2709.911	1.6
12368-PeCDD	NotFnd		0.9588						1.04		2709.911	1.6
12478-PeCDD	NotFnd		0.9643						1.04		2709.911	1.6
12379-PeCDD	NotFnd		0.9673						1.04		2709.911	1.6
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2709.911	1.6
12346/12347-PeCDD	NotFnd		0.9858						1.04		2709.911	1.6
12378-PeCDD	NotFnd		1.0006						1.04		2709.911	1.6
12367-PeCDD	NotFnd		1.0033						1.04		2709.911	1.6
12389-PeCDD	NotFnd		1.0134						1.04		2709.911	1.6
124679/124689-HxCDD	NotFnd		0.9542						1.10		2654.842	1.54
123468-HxCDD	NotFnd		0.9715						1.10		2654.842	1.54
123679/123689-HxCDD	NotFnd		0.9793						1.10		2654.842	1.54
123469-HxCDD	NotFnd		0.9828						1.10		2654.842	1.54
123478-HxCDD	NotFnd		1.0004						1.09		2654.842	1.62
123678-HxCDD	NotFnd		1.0035						1.15		2654.842	1.44
123467-HxCDD	NotFnd		1.0085						1.10		2654.842	1.54
123789-HxCDD	NotFnd		1.0112						1.05		2654.842	1.56

Lab ID: B6237_18888_DF_002

Acq'd: 10 Feb 2022 00:00 DTF

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ICAL: HRMS3_DF_10272021 10NOV2021

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J-level: 4.9 pg/L Split: 1

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Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		2460.432	1.66
1234678-HpCDD	NotFnd		1.0003						1.06		2460.432	1.66
OCDD	43.50	J EMPC	1.0004	1.0003	-0.3	8.39E+04	0.55	N	1.13	9.47	4666.244	5.86
OCDD-a	NotFnd		1.0003						0.07		2807.402	55.1
1368-TCDF	NotFnd		0.8251						1.08		2555.912	1.05
1468-TCDF	NotFnd		0.8458						1.08		2555.912	1.05
2468-TCDF	NotFnd		0.8686						1.08		2555.912	1.05
1346/1246-TCDF	NotFnd		0.8814						1.08		2555.912	1.05
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2555.912	1.05
1348-TCDF	NotFnd		0.8962						1.08		2555.912	1.05
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2555.912	1.05
1268-TCDF	NotFnd		0.9145						1.08		2555.912	1.05
1467-TCDF	NotFnd		0.9193						1.08		2555.912	1.05
1478-TCDF	NotFnd		0.9254						1.08		2555.912	1.05
1369/1237-TCDF	NotFnd		0.9387						1.08		2555.912	1.05
2467-TCDF	NotFnd		0.9433						1.08		2555.912	1.05
2368-TCDF	NotFnd		0.9489						1.08		2555.912	1.05
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2555.912	1.05
1278-TCDF	NotFnd		0.9683						1.08		2555.912	1.05
1349-TCDF	NotFnd		0.9722						1.08		2555.912	1.05
1267-TCDF	NotFnd		0.9783						1.08		2555.912	1.05
2346/1249-TCDF	NotFnd		0.9850						1.08		2555.912	1.05
2347/1279-TCDF	NotFnd		0.9926						1.08		2555.912	1.05
2348-TCDF	NotFnd		0.9967						1.08		2555.912	1.05
2378-TCDF	NotFnd		1.0008						1.08		2555.912	1.05
2367/3467-TCDF	NotFnd		1.0137						1.08		2555.912	1.05
1269-TCDF	NotFnd		1.0223						1.08		2555.912	1.05
1239-TCDF	NotFnd		1.0321						1.08		2555.912	1.05
1289-TCDF	NotFnd		1.0722						1.08		2555.912	1.05
13468/12468-PeCDF	NotFnd		0.9139						1.02		2452.22	1.05
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2469.194	1.05
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2469.194	1.05
14678-PeCDF	NotFnd		0.9692						1.02		2469.194	1.05
13479-PeCDF	NotFnd		0.9723						1.02		2469.194	1.05
13469/12479-PeCDF	NotFnd		0.9797						1.02		2469.194	1.05
12346-PeCDF	NotFnd		0.9840						1.02		2469.194	1.05

Lab ID: B6237_18888_DF_002

Acq'd: 10 Feb 2022 00:00 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SW

UTP: 10-Feb-2022 10:22:29 DTF

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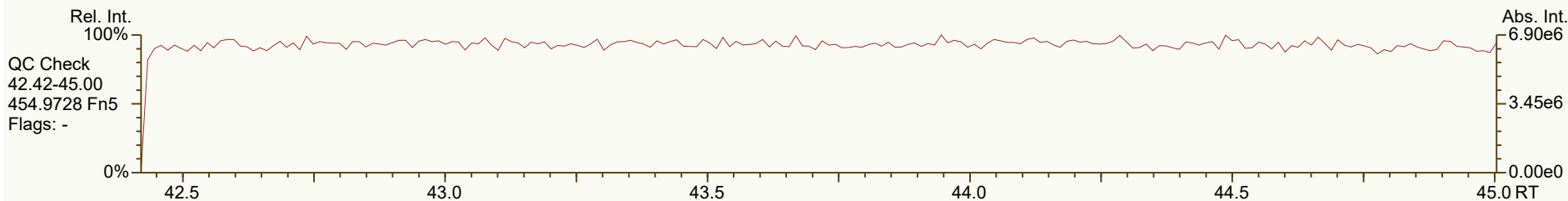
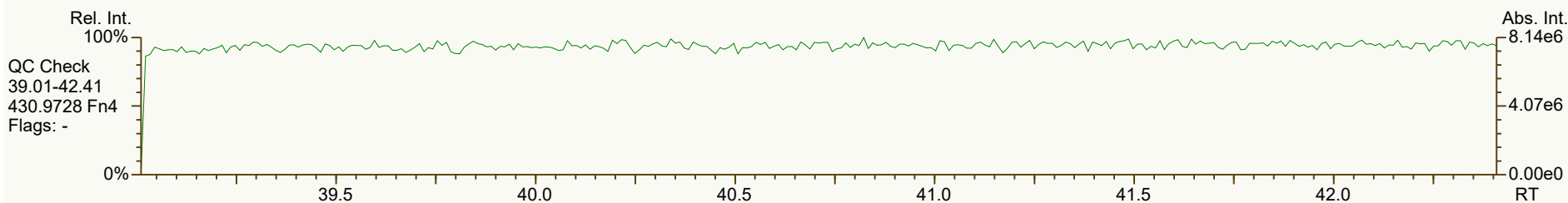
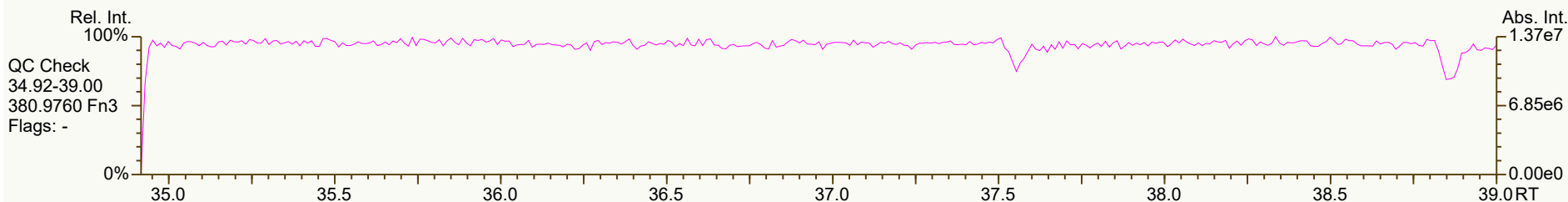
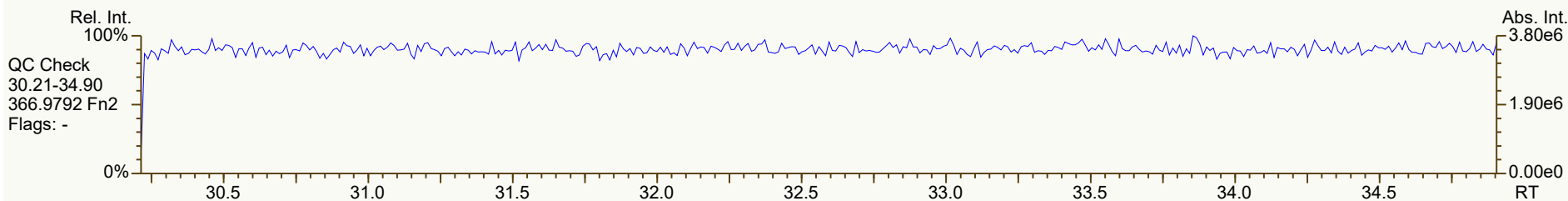
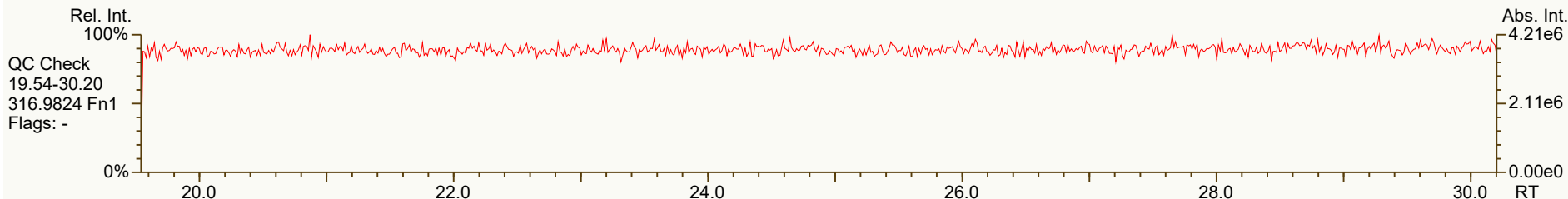
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Report: 10 Feb 2022 10:28 TF

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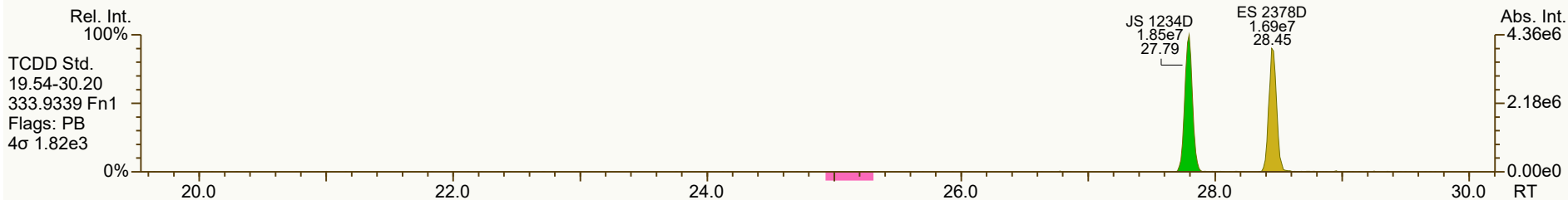
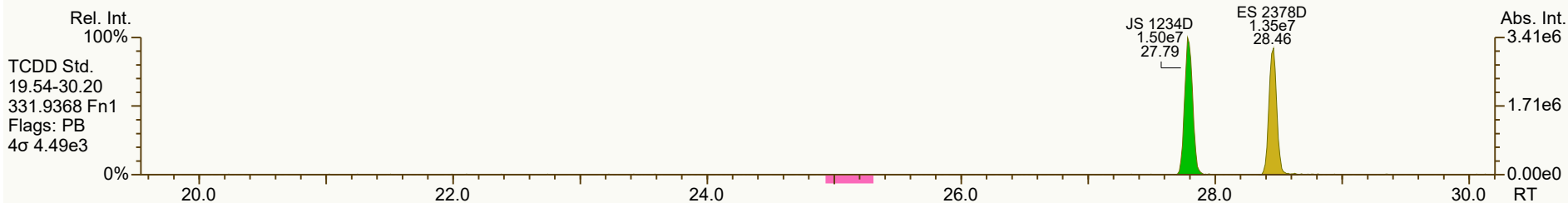
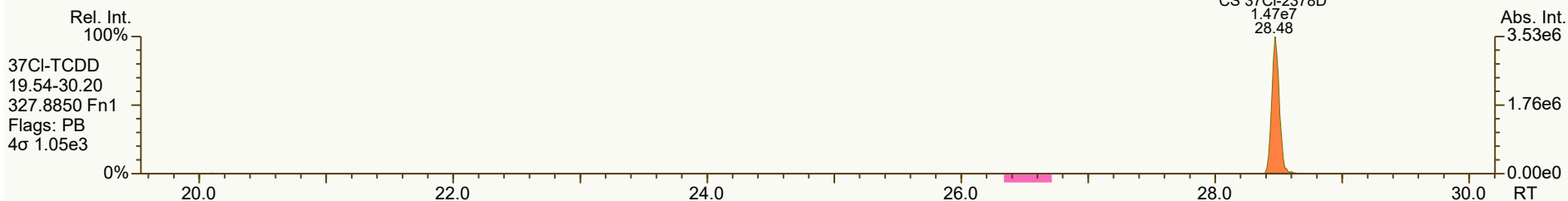
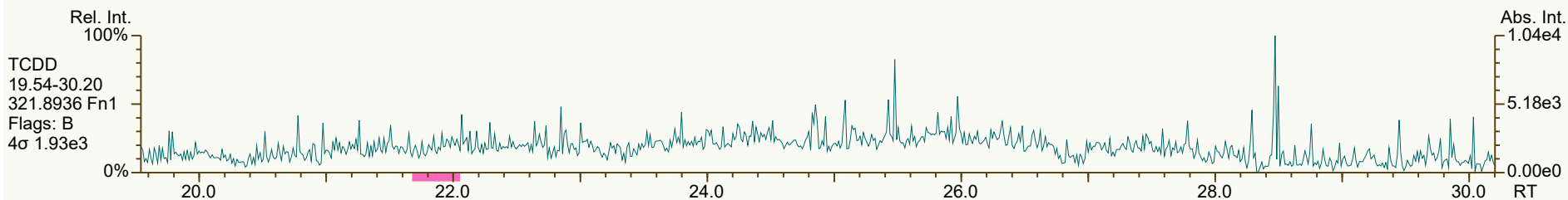
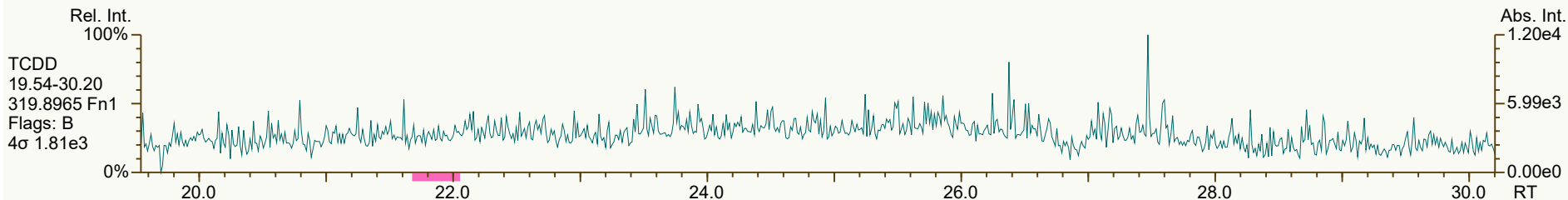
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12347-PeCDF	NotFnd		0.9894						1.02		2469.194	1.05
12348-PeCDF	NotFnd		0.9940						1.02		2469.194	1.05
12378-PeCDF	NotFnd		1.0005						1.02		2469.194	1.1
12678/12367-PeCDF	NotFnd		1.0089						1.02		2469.194	1.05
12379-PeCDF	NotFnd		1.0142						1.02		2469.194	1.05
12679-PeCDF	NotFnd		0.9929						1.02		2469.194	1.05
23467/12369-PeCDF	NotFnd		0.9967						1.02		2469.194	1.05
23478-PeCDF	NotFnd		1.0005						1.02		2469.194	1
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2469.194	1.05
12349-PeCDF	NotFnd		1.0100						1.02		2469.194	1.05
12389-PeCDF	NotFnd		1.0324						1.02		2469.194	1.05
123468-HxCDF	NotFnd		0.9627						1.19		2994.179	1.27
124678/134678-HxCDF	NotFnd		0.9682						1.19		2994.179	1.27
134679-HxCDF	NotFnd		0.9744						1.19		2994.179	1.27
124679-HxCDF	NotFnd		0.9798						1.19		2994.179	1.27
124689-HxCDF	NotFnd		0.9858						1.19		2994.179	1.27
123467-HxCDF	NotFnd		0.9972						1.19		2994.179	1.27
123478-HxCDF	NotFnd		1.0004						1.27		2994.179	1.31
123678-HxCDF	NotFnd		1.0004						1.15		2994.179	1.27
123479-HxCDF	NotFnd		1.0049						1.19		2994.179	1.27
123469-HxCDF	NotFnd		1.0090						1.19		2994.179	1.27
123679-HxCDF	NotFnd		0.9942						1.19		2994.179	1.27
234678-HxCDF	NotFnd		1.0005						1.19		2994.179	1.17
234678/123689-HxCDF	NotFnd		0.0000						1.19			
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123789-HxCDF	NotFnd		1.0004						1.16		2994.179	1.36
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2994.179	1.27
1234678-HpCDF	39.87	J	1.0003	1.0002	-0.2	3.10E+04	0.96	Y	1.37	1.71	3193.351	1.32
1234679-HpCDF	NotFnd		1.0068						1.34		3193.351	1.54
1234689-HpCDF	NotFnd		1.0103						1.34		3193.351	1.54
1234789-HpCDF	NotFnd		1.0002						1.31		3193.351	1.83
OCDF	NotFnd		1.0003						1.07		3993.02	4
OCDF-a	NotFnd		1.0002						0.07		2811.586	45.4



SGS ID: B6237_18888_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11

Acq: 10-Feb-2022 00:00:24
User: DTF Datafile: 220209C23



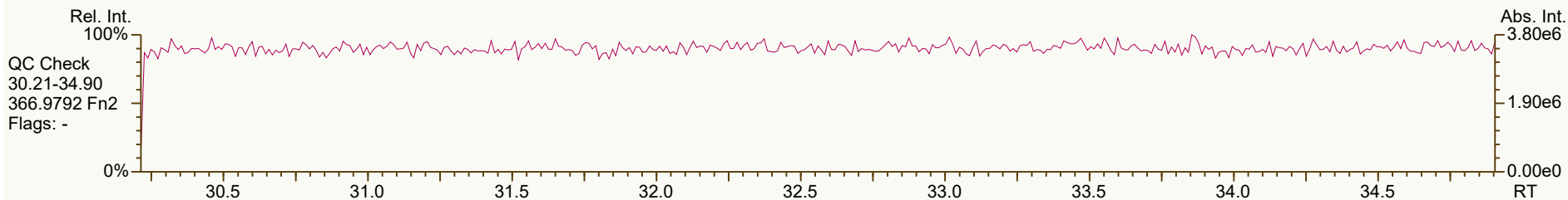
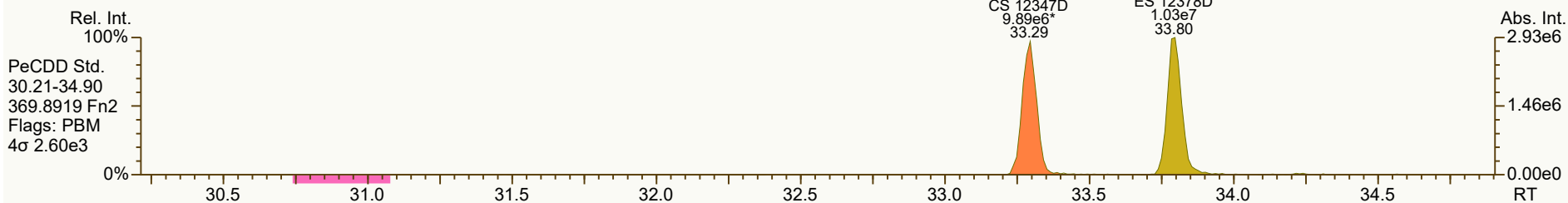
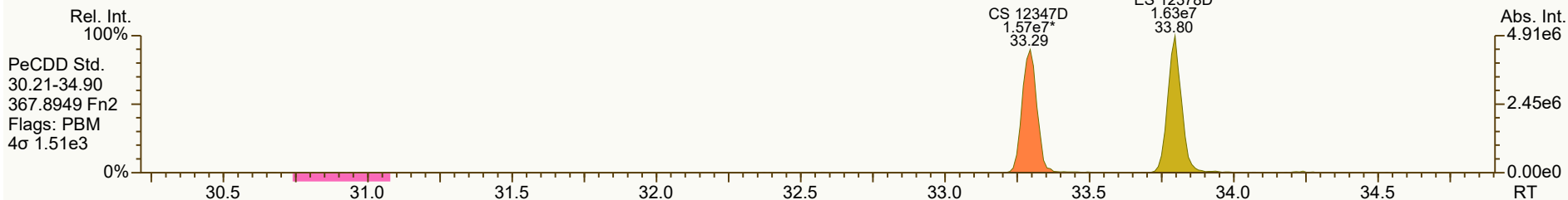
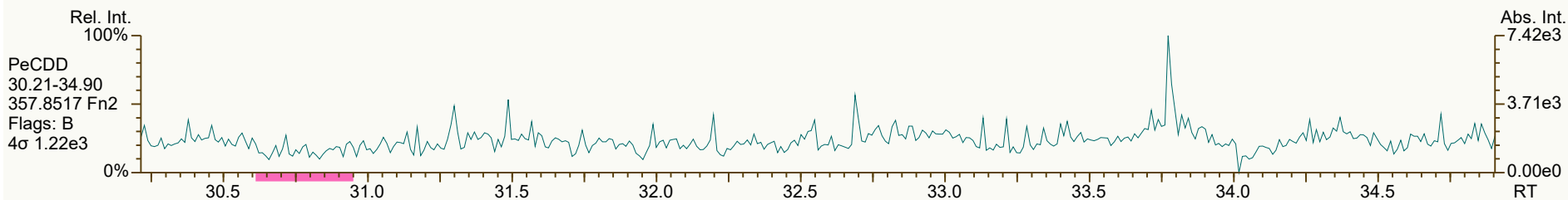
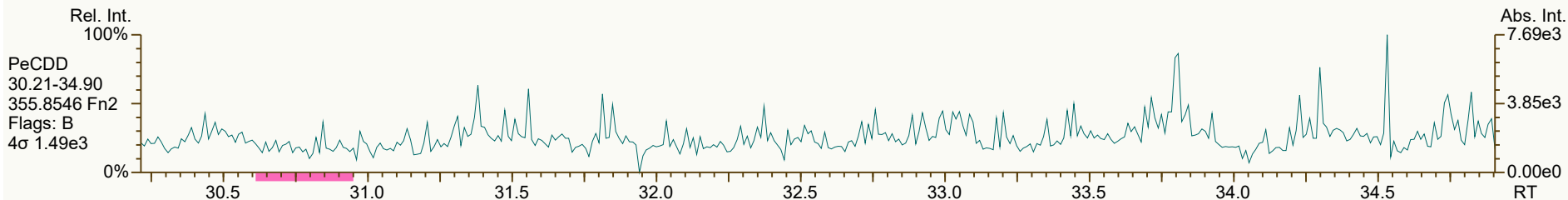
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Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:08 Printed: 10-Feb-2022 10:34 Page 2 of 12

SGS ID: B6237_18888_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11

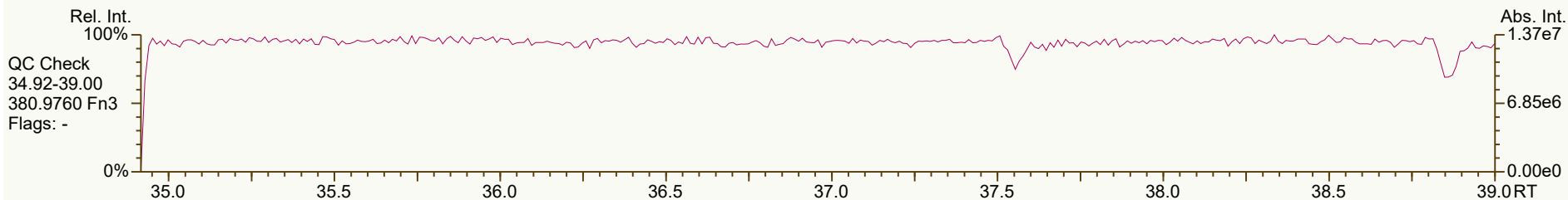
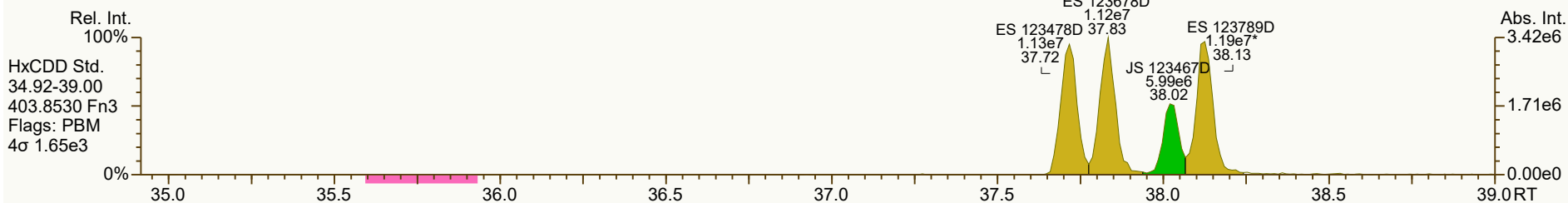
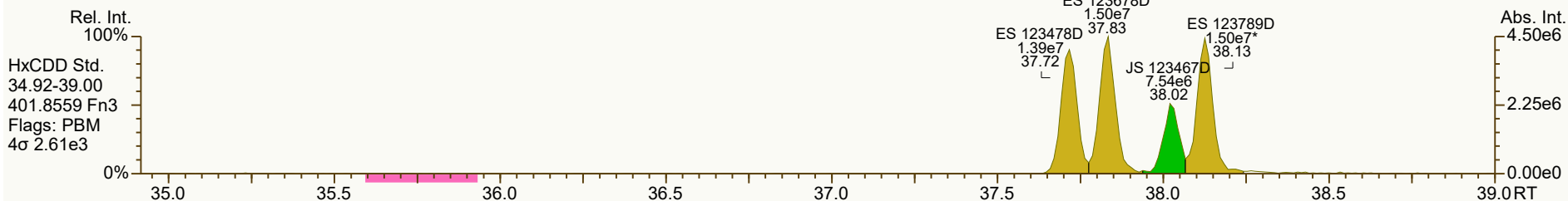
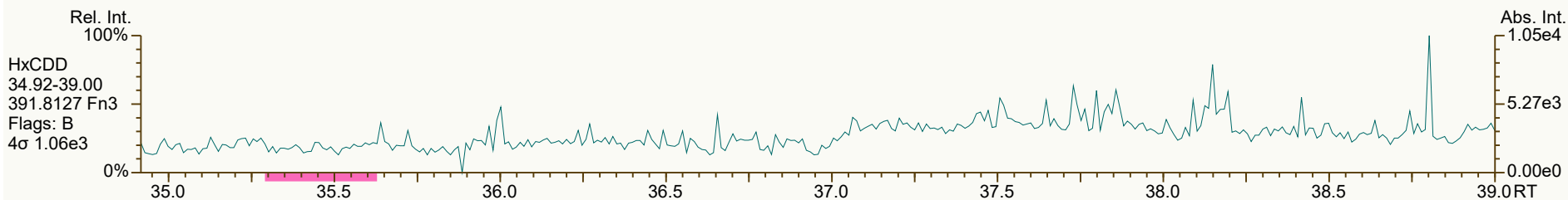
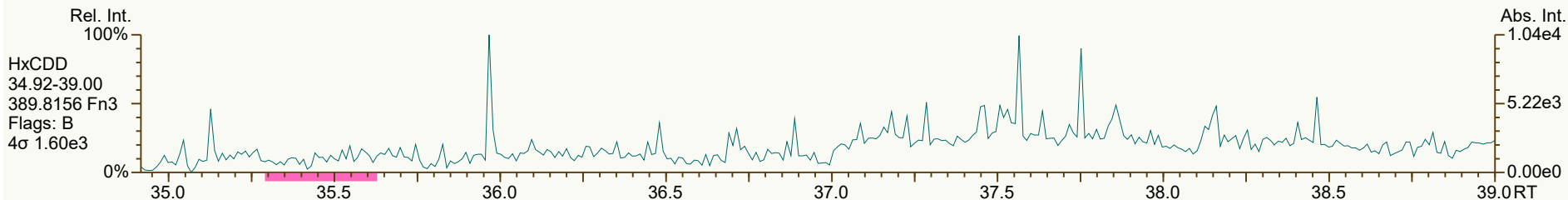
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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
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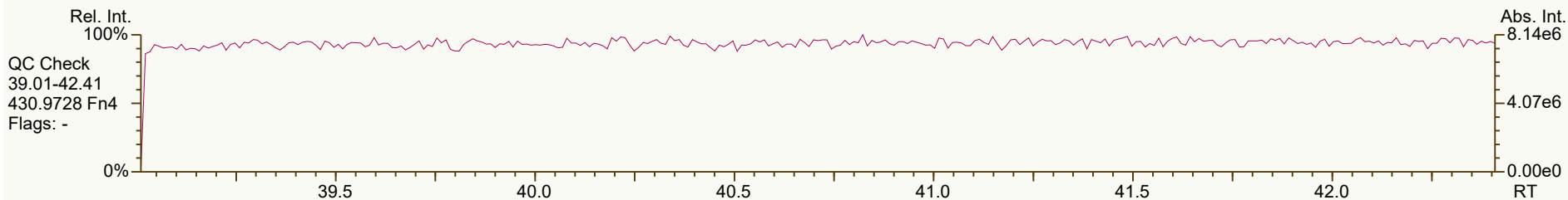
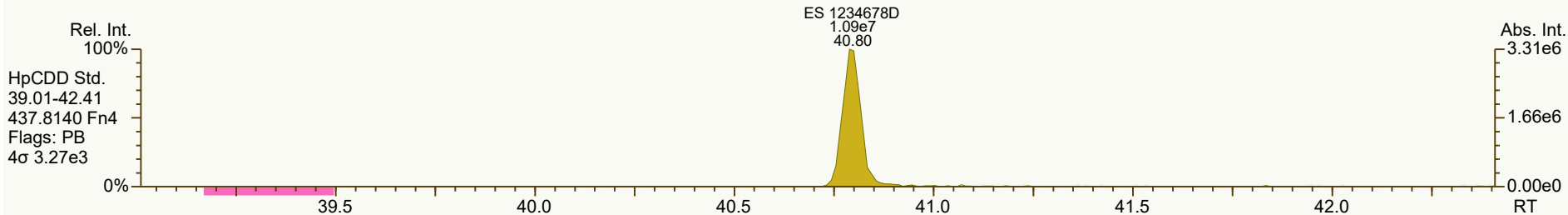
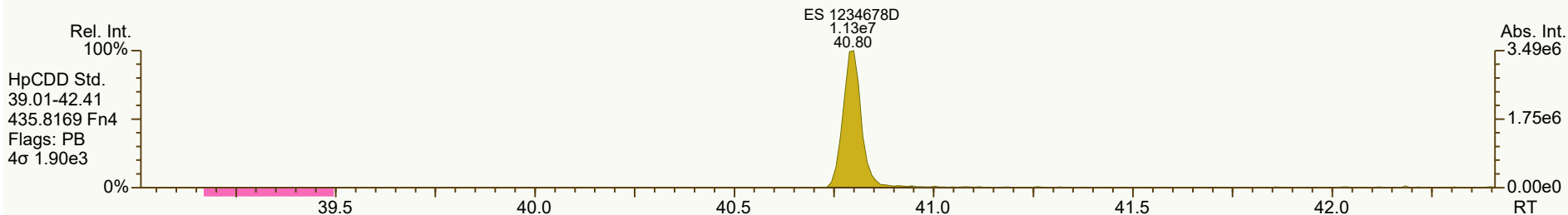
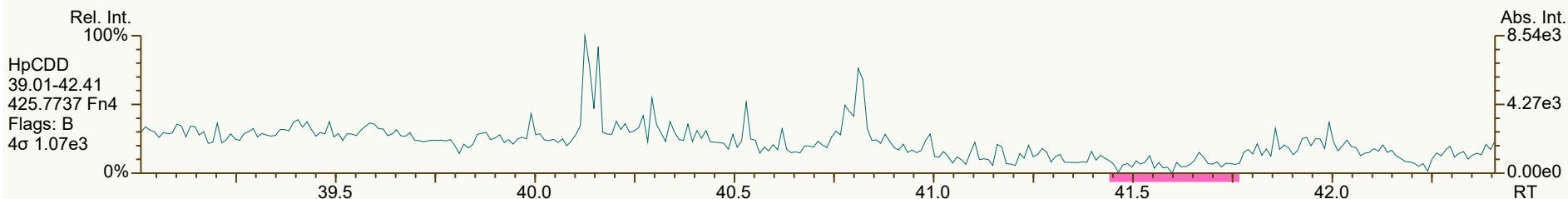
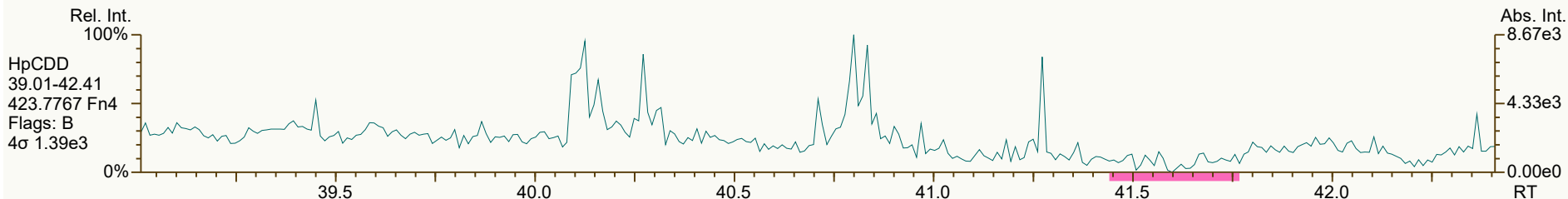
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SGS ID: B6237_18888_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11

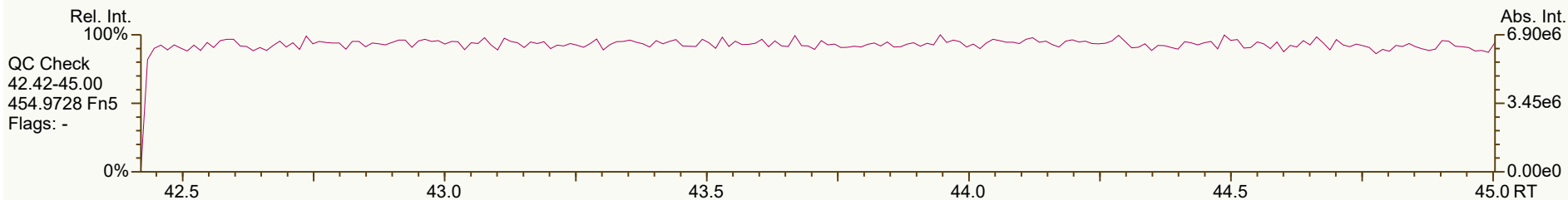
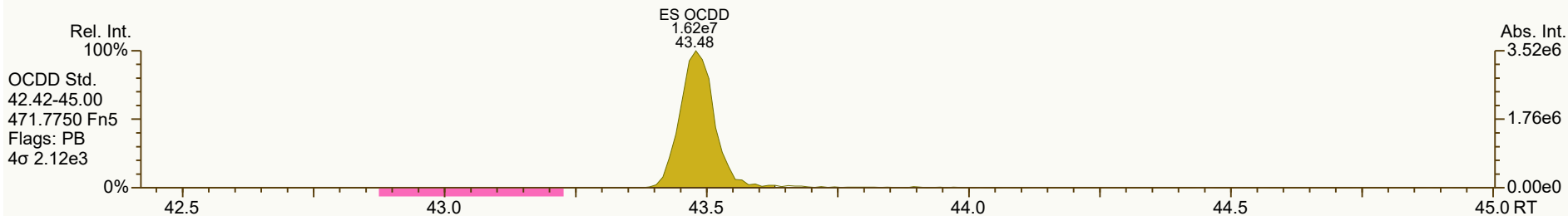
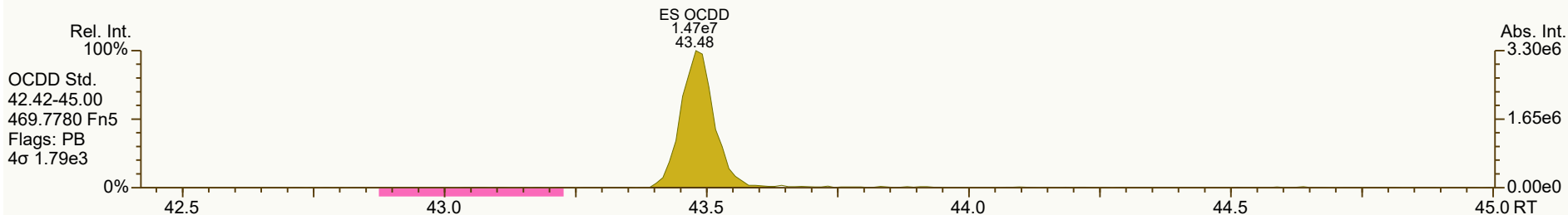
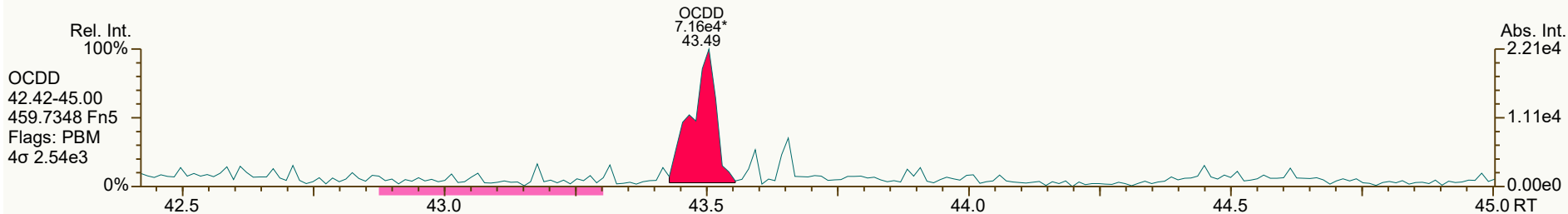
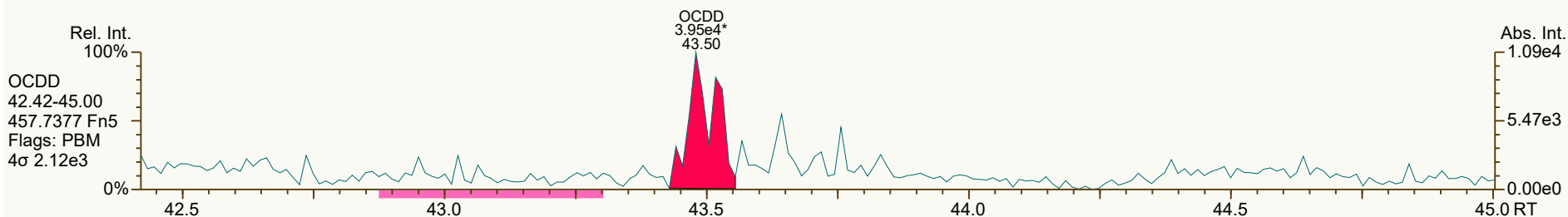
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SGS ID: B6237_18888_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11

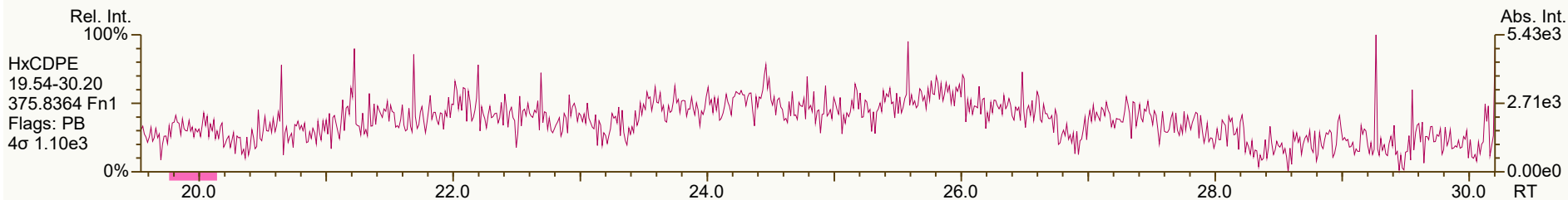
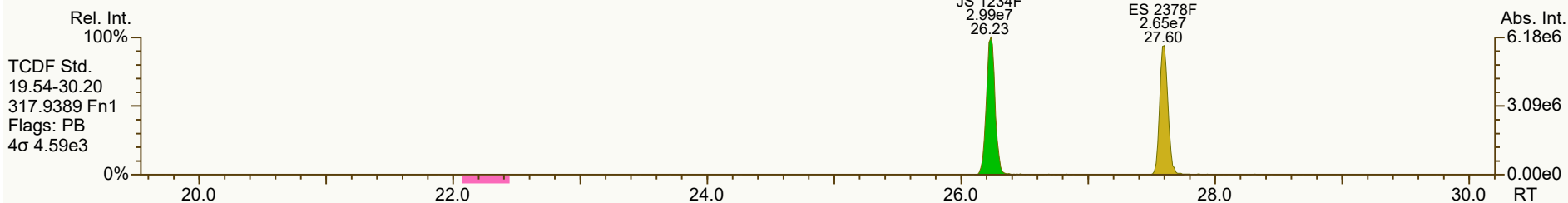
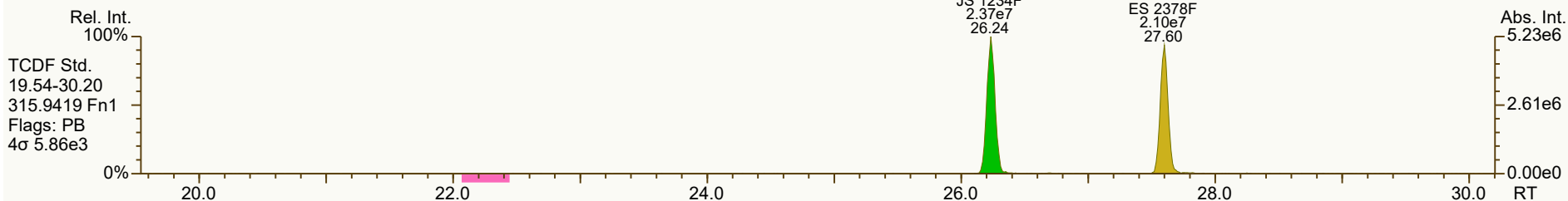
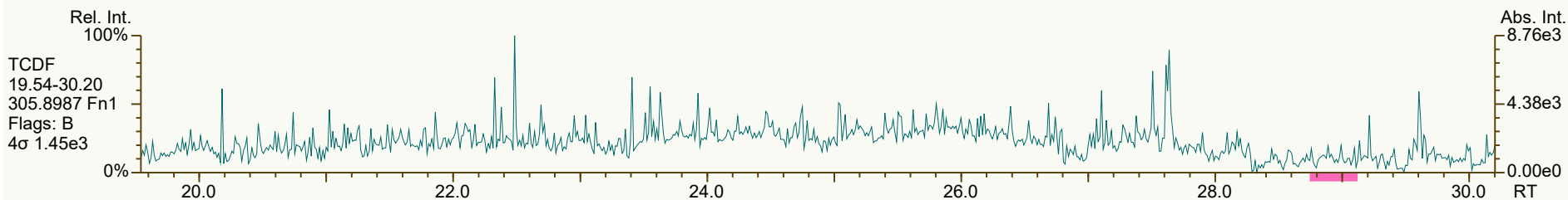
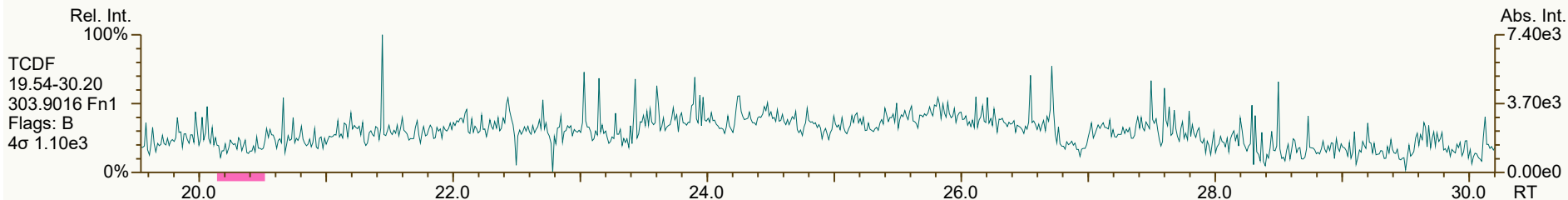
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SGS ID: B6237_18888_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

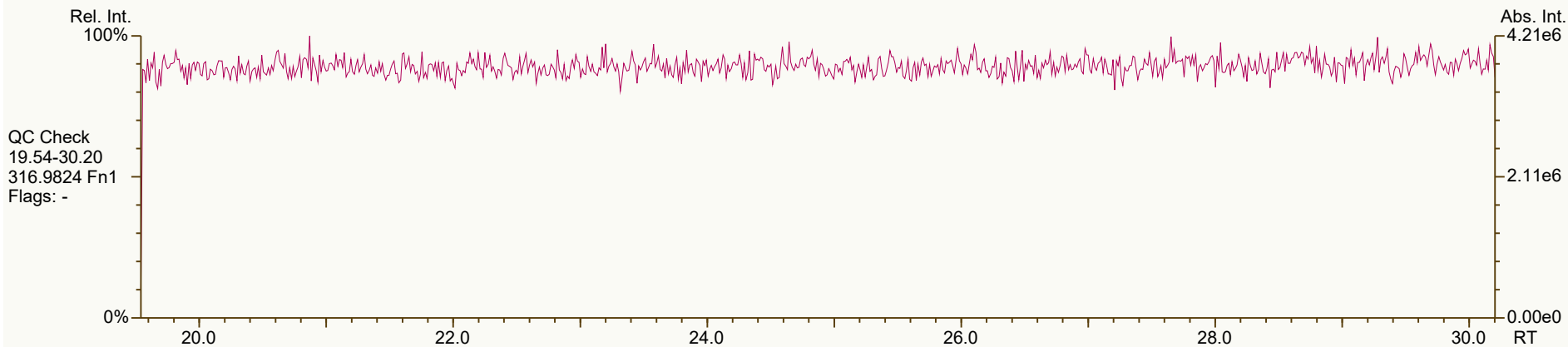
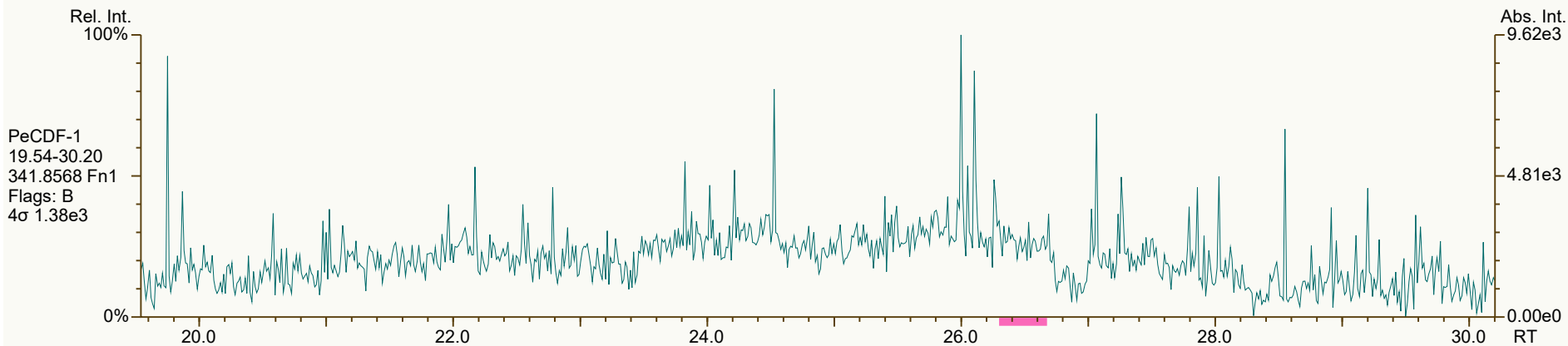
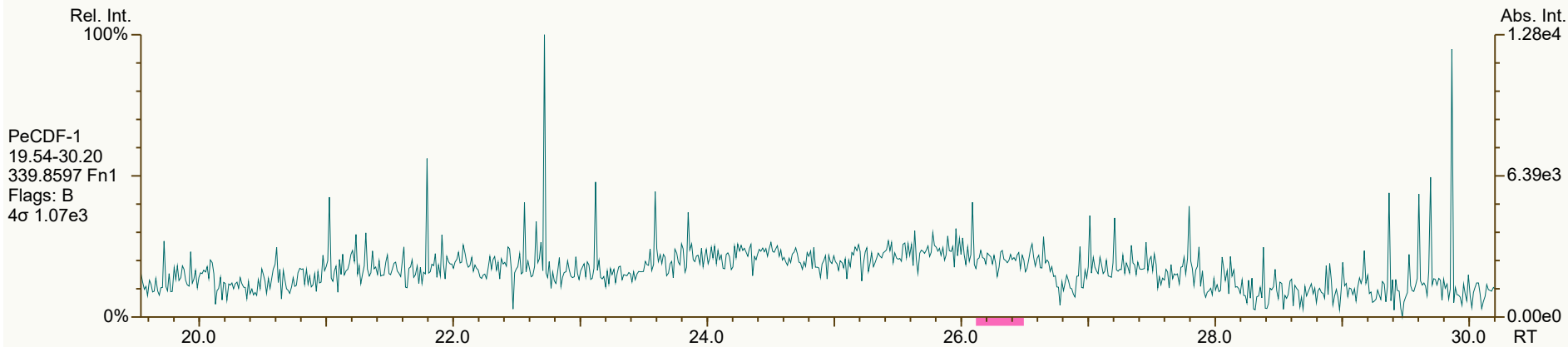
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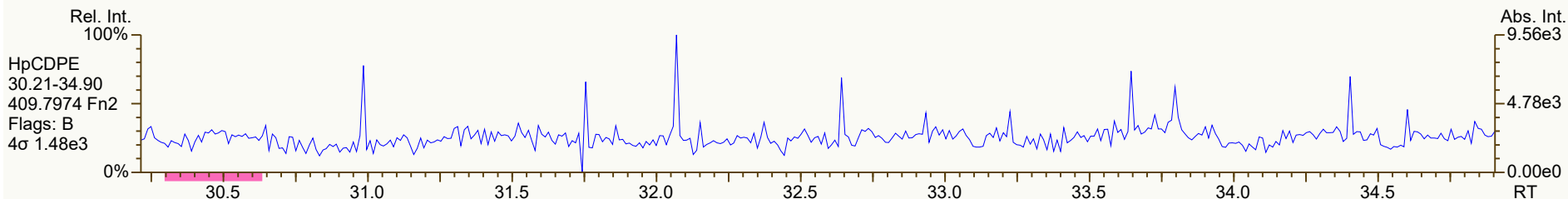
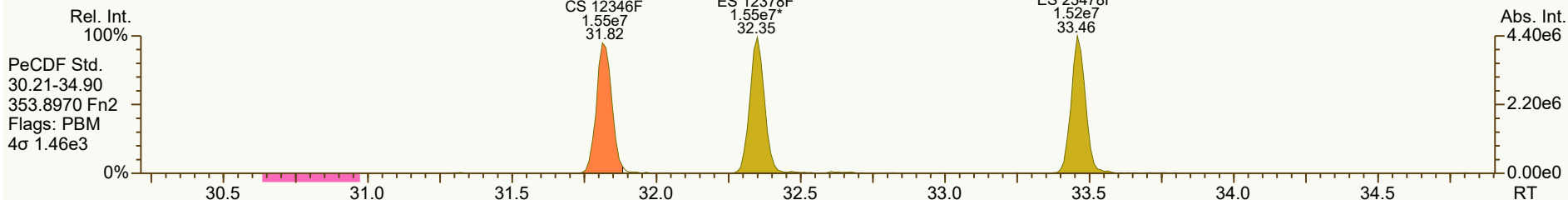
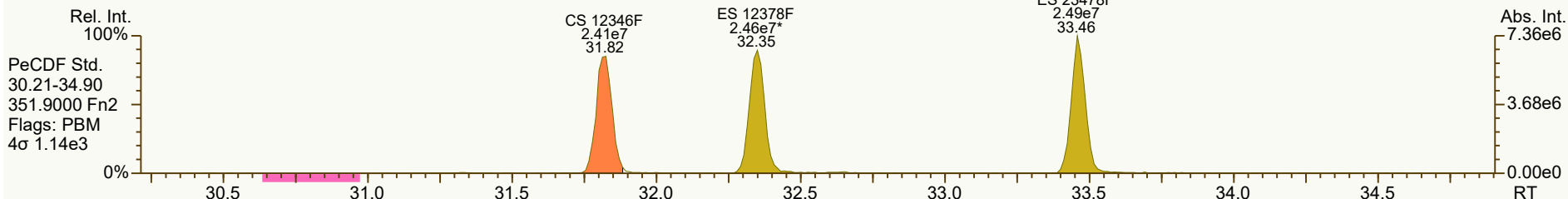
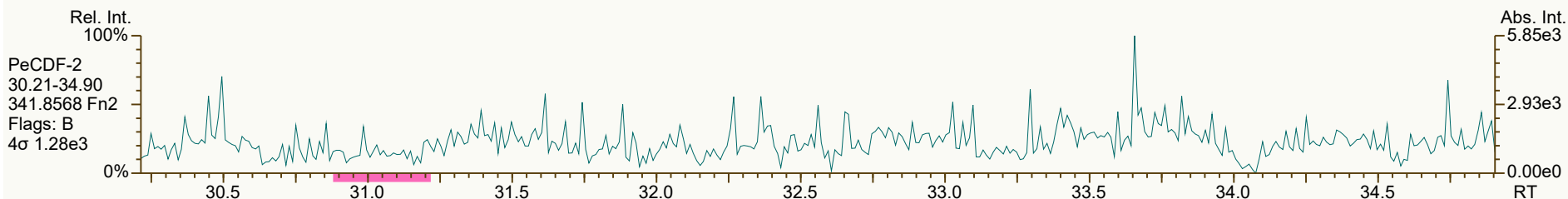
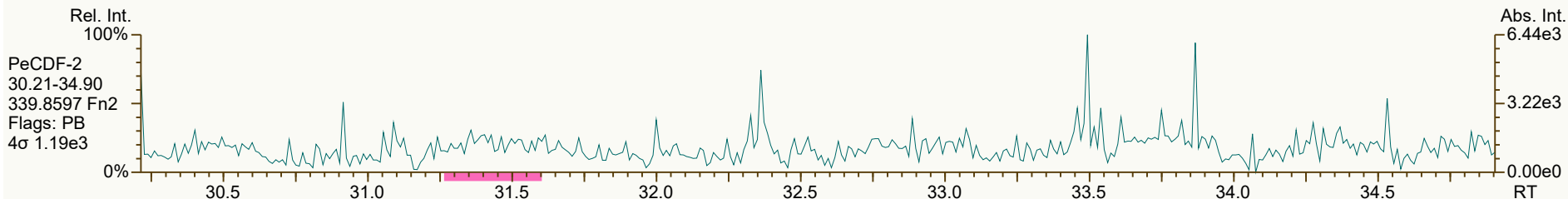
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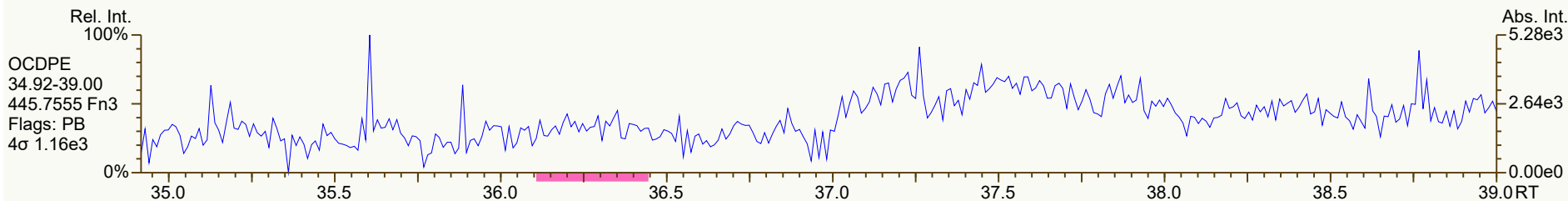
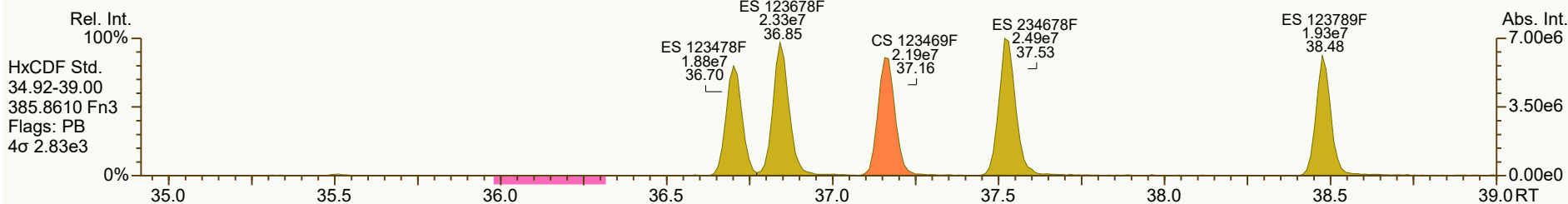
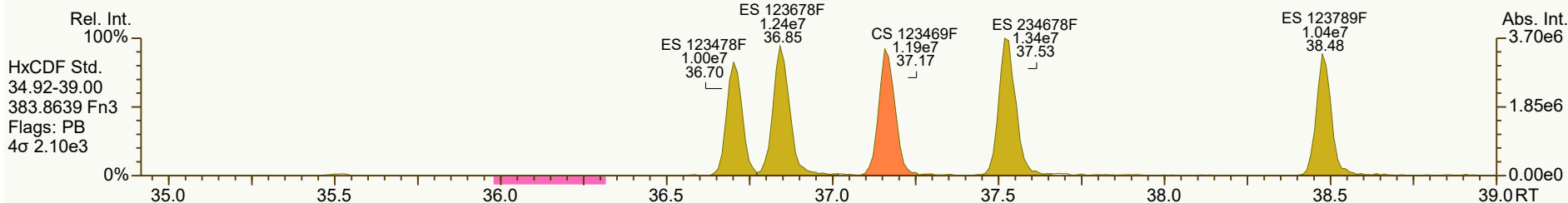
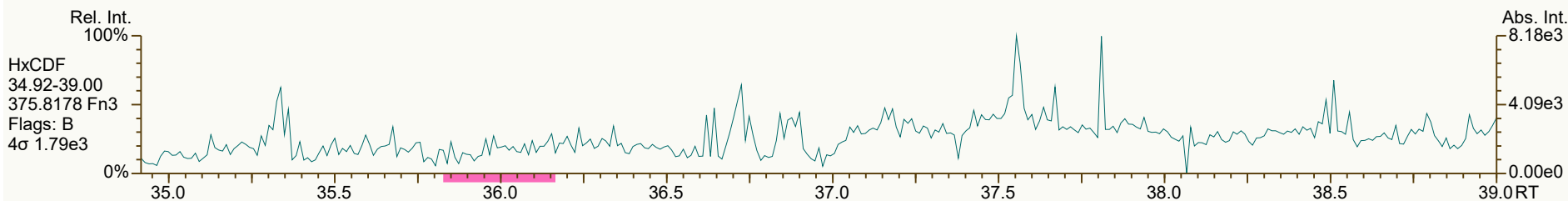
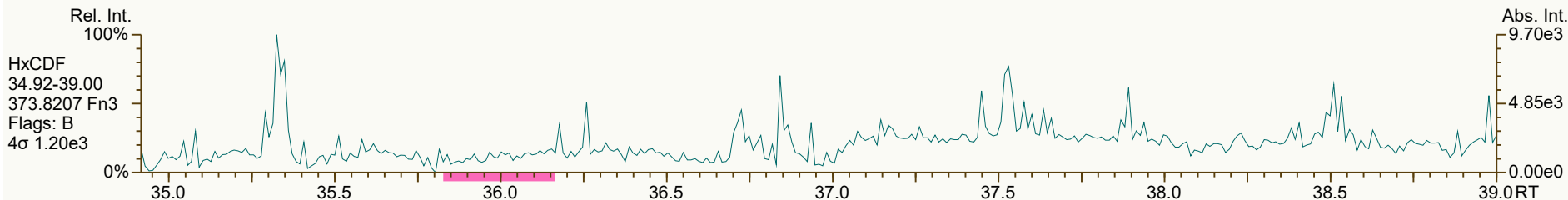


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Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:08 Printed: 10-Feb-2022 10:34 Page 7 of 12



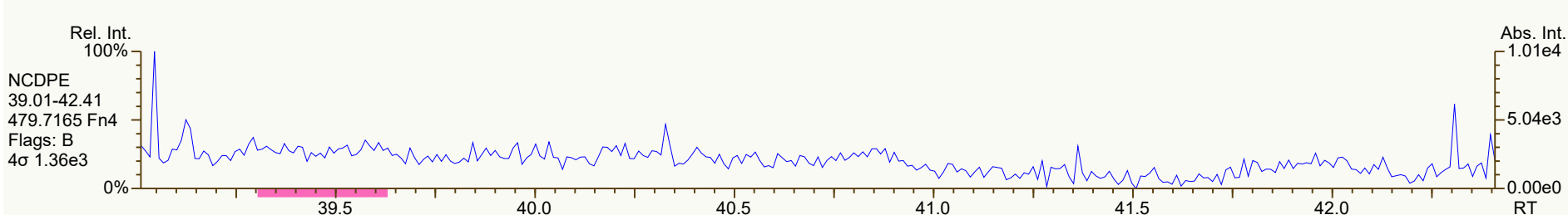
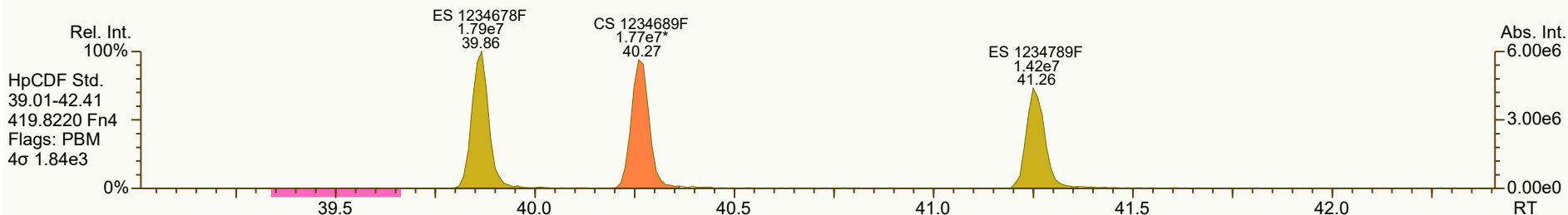
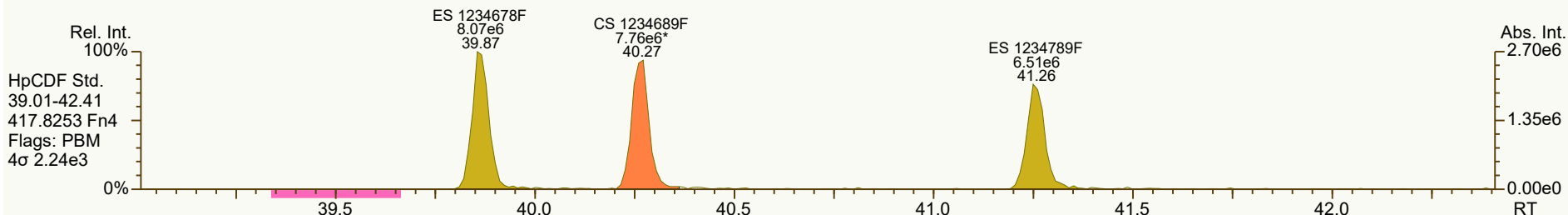
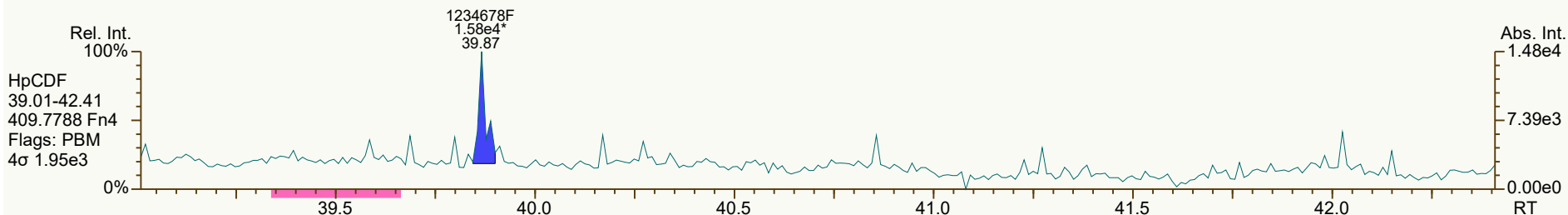
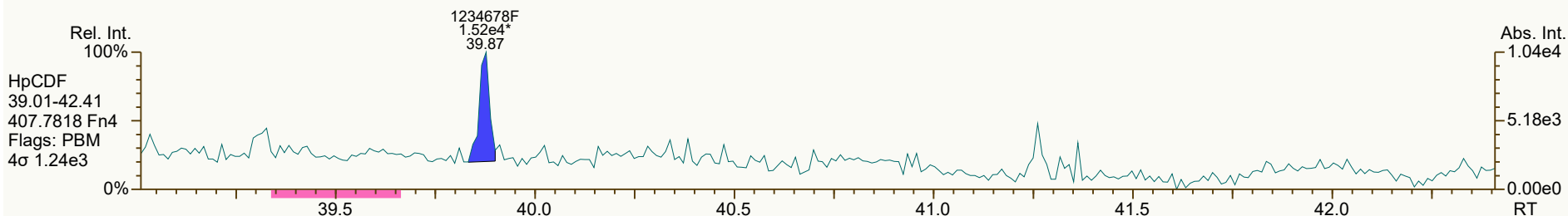


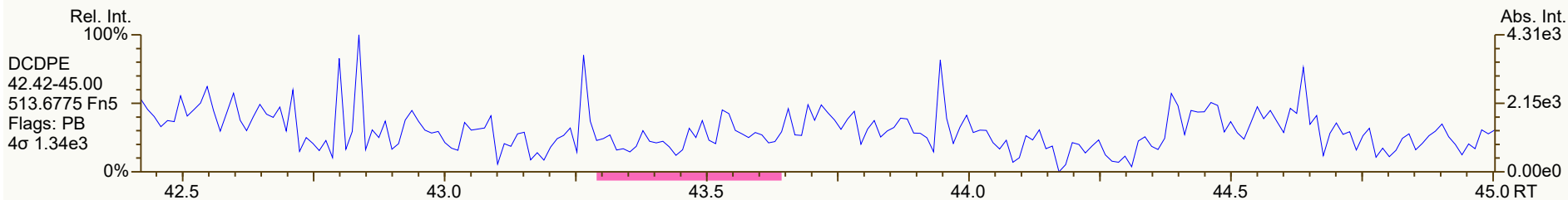
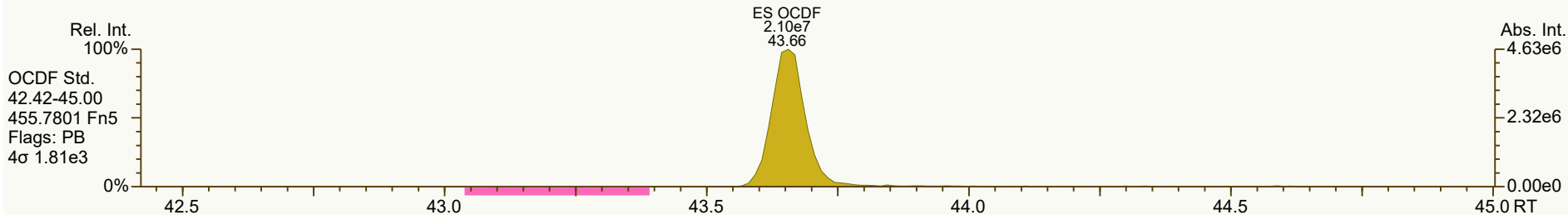
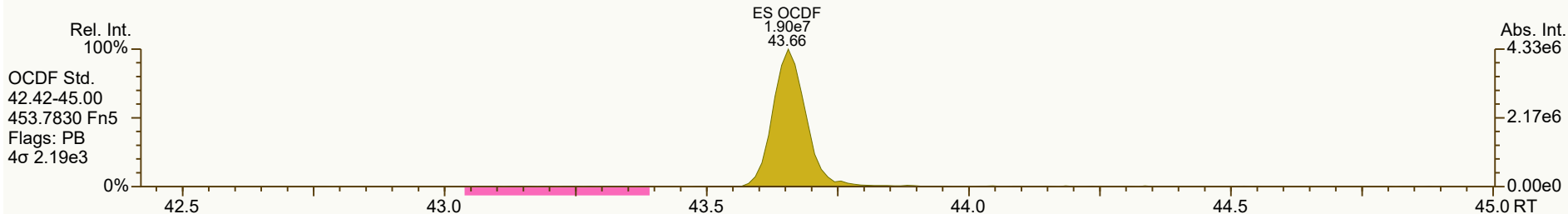
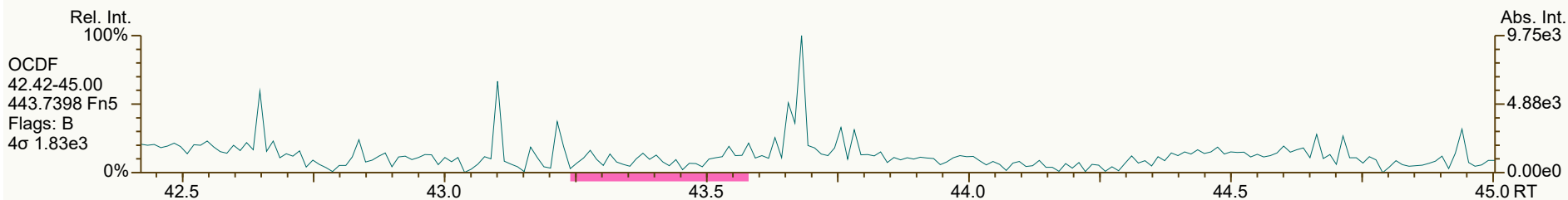
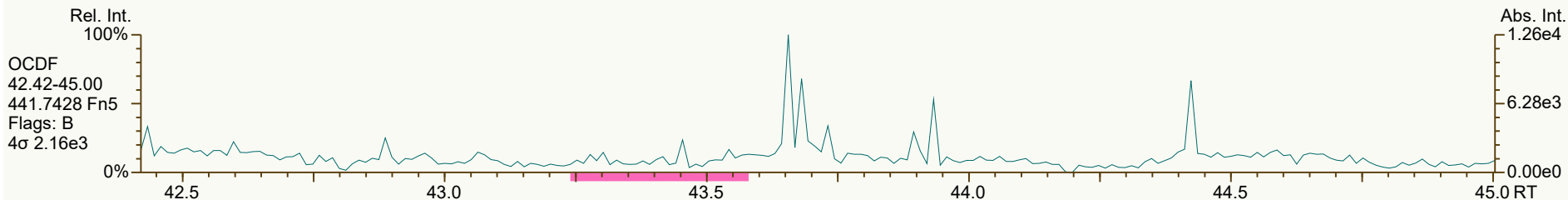


SGS ID: B6237_18888_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11

Acq: 10-Feb-2022 00:00:24
User: DTF Datafile: 220209C23





Lab ID: B6237_18888_DF_003

Acq'd: 10 Feb 2022 00:46 DTF

Wt/Vol: 1.01 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NC

UTP: 10-Feb-2022 10:22:30 DTF

J-level: 4.95 pg/L Split: 1

Checkcode: 156-756-KGC

Datafile: 220209C24

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3578.656	1.84
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	3288.86	1.87
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2479.037	1.58
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2479.037	1.34
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2479.037	1.36
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2807.839	1.72
OCDD	43.49	J EMPC	1.0004	1.0001	-0.8	1.43E+05	1.34	N	1.13	16.5	3791.737	4.63
2378-TCDF	27.61	J	1.0008	1.0004	-0.7	1.08E+05	0.76	Y	1.08	4.02	2263.051	0.947
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2806.003	1.1
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2806.003	1.17
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2851.082	1.19
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2851.082	1.21
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2851.082	0.979
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2851.082	1.38
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2331.21	0.964
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2331.21	1.39
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2242.8393	2.32

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46	1.0236	1.0238	+0.3	3.18E+07	0.82	Y	1.05	87
ES 12378-PeCDD	33.80	1.2144	1.2161	+3.4	2.84E+07	1.54	Y	0.88	92.3
ES 123478-HxCDD	37.72	0.9920	0.9918	-0.5	2.56E+07	1.25	Y	0.97	89.6
ES 123678-HxCDD	37.84	0.9951	0.9950	-0.2	2.77E+07	1.23	Y	0.94	100
ES 123789-HxCDD	38.13	1.0027	1.0027	0	2.73E+07	1.31	Y	1.09	85.3
ES 1234678-HpCDD	40.81	1.0724	1.0730	+1.5	2.36E+07	1.01	Y	0.91	88.1
ES OCDD	43.49	1.1428	1.1435	+1.8	3.05E+07	0.91	Y	0.62	83.2
ES 2378-TCDF	27.60	1.0516	1.0520	+0.7	4.94E+07	0.80	Y	1.06	84
ES 12378-PeCDF	32.35	1.2312	1.2331	+3.7	4.41E+07	1.51	Y	0.91	87.3
ES 23478-PeCDF	33.47	1.2733	1.2755	+4.4	4.24E+07	1.57	Y	0.88	86.5
ES 123478-HxCDF	36.71	0.9655	0.9653	-0.4	3.12E+07	0.52	Y	1.20	88.6
ES 123678-HxCDF	36.85	0.9692	0.9690	-0.4	3.81E+07	0.52	Y	1.35	96
ES 234678-HxCDF	37.53	0.9871	0.9869	-0.5	3.98E+07	0.53	Y	1.24	109
ES 123789-HxCDF	38.49	1.0121	1.0120	-0.2	2.95E+07	0.54	Y	1.16	87.1
ES 1234678-HpCDF	39.87	1.0479	1.0484	+1.2	2.61E+07	0.45	Y	0.97	92
ES 1234789-HpCDF	41.27	1.0845	1.0851	+1.5	2.14E+07	0.43	Y	0.85	85.8
ES OCDF	43.67	1.1477	1.1483	+1.6	4.08E+07	0.90	Y	0.81	86

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	3.50E+07	0.81	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.55E+07	0.81	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.47E+07	1.29	Y	-	-
CS 37C1-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.57E+07	n/a	-	1.20	93.1
CS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.82E+07	1.58	Y	0.75	107
CS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.52E+07	1.59	Y	0.85	95.7
CS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	3.64E+07	0.53	Y	1.12	111
CS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.72E+07	0.46	Y	0.89	104
SS 37C1-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.57E+07	n/a		1.15	107
SS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.82E+07	1.58	Y	0.86	116
SS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.52E+07	1.59	Y	0.94	109
SS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	3.64E+07	0.53	Y	0.83	116
SS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.72E+07	0.46	Y	0.92	113

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	16.5
Total TCDF	6.81	6.81
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	6.81	6.81
Total Tetra-Octa Dioxins & Furans	6.81	23.3

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3578.656	1.84
1379-TCDD	NotFnd		0.8860						1.18		3578.656	1.84
1369-TCDD	NotFnd		0.9009						1.18		3578.656	1.84
1469-TCDD	NotFnd		0.9281						1.18		3578.656	1.84
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3578.656	1.84
1378-TCDD	NotFnd		0.9432						1.18		3578.656	1.84
1268-TCDD	NotFnd		0.9500						1.18		3578.656	1.84
1478-TCDD	NotFnd		0.9586						1.18		3578.656	1.84
1279-TCDD	NotFnd		0.9645						1.18		3578.656	1.84
1234/1269-TCDD	NotFnd		0.9770						1.18		3578.656	1.84
1236-TCDD	NotFnd		0.9817						1.18		3578.656	1.84
1237/1238-TCDD	NotFnd		0.9905						1.18		3578.656	1.84
1239-TCDD	NotFnd		0.9952						1.18		3578.656	1.84
2378-TCDD	NotFnd		1.0008						1.18		3578.656	1.84
1278-TCDD	NotFnd		1.0121						1.18		3578.656	1.84
1267-TCDD	NotFnd		1.0167						1.18		3578.656	1.84
1289-TCDD	NotFnd		1.0345						1.18		3578.656	1.84
12479/12468-PeCDD	NotFnd		0.9267						1.04		3288.86	1.87
12469-PeCDD	NotFnd		0.9425						1.04		3288.86	1.87
12368-PeCDD	NotFnd		0.9588						1.04		3288.86	1.87
12478-PeCDD	NotFnd		0.9643						1.04		3288.86	1.87
12379-PeCDD	NotFnd		0.9673						1.04		3288.86	1.87
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		3288.86	1.87
12346/12347-PeCDD	NotFnd		0.9858						1.04		3288.86	1.87
12378-PeCDD	NotFnd		1.0006						1.04		3288.86	1.87
12367-PeCDD	NotFnd		1.0033						1.04		3288.86	1.87
12389-PeCDD	NotFnd		1.0134						1.04		3288.86	1.87
124679/124689-HxCDD	NotFnd		0.9542						1.10		2479.037	1.42
123468-HxCDD	NotFnd		0.9715						1.10		2479.037	1.42
123679/123689-HxCDD	NotFnd		0.9793						1.10		2479.037	1.42
123469-HxCDD	NotFnd		0.9828						1.10		2479.037	1.42
123478-HxCDD	NotFnd		1.0004						1.09		2479.037	1.58
123678-HxCDD	NotFnd		1.0035						1.15		2479.037	1.34
123467-HxCDD	NotFnd		1.0085						1.10		2479.037	1.42
123789-HxCDD	NotFnd		1.0112						1.05		2479.037	1.36

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Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		2807.839	1.72
1234678-HpCDD	NotFnd		1.0003						1.06		2807.839	1.72
OCDD	43.49	J EMPC	1.0004	1.0001	-0.8	1.43E+05	1.34	N	1.13	16.5	3791.737	4.63
OCDD-a	NotFnd		1.0003						0.07		2925.78	55.9
1368-TCDF	NotFnd		0.8251						1.08		2263.051	0.947
1468-TCDF	NotFnd		0.8458						1.08		2263.051	0.947
2468-TCDF	NotFnd		0.8686						1.08		2263.051	0.947
1346/1246-TCDF	NotFnd		0.8814						1.08		2263.051	0.947
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2263.051	0.947
1348-TCDF	NotFnd		0.8962						1.08		2263.051	0.947
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2263.051	0.947
1268-TCDF	NotFnd		0.9145						1.08		2263.051	0.947
1467-TCDF	NotFnd		0.9193						1.08		2263.051	0.947
1478-TCDF	NotFnd		0.9254						1.08		2263.051	0.947
1369/1237-TCDF	NotFnd		0.9387						1.08		2263.051	0.947
2467-TCDF	NotFnd		0.9433						1.08		2263.051	0.947
2368-TCDF	NotFnd		0.9489						1.08		2263.051	0.947
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2263.051	0.947
1278-TCDF	26.72	J	0.9683	0.9680	-0.5	7.51E+04	0.66	Y	1.08	2.79	2263.051	0.947
1349-TCDF	NotFnd		0.9722						1.08		2263.051	0.947
1267-TCDF	NotFnd		0.9783						1.08		2263.051	0.947
2346/1249-TCDF	NotFnd		0.9850						1.08		2263.051	0.947
2347/1279-TCDF	NotFnd		0.9926						1.08		2263.051	0.947
2348-TCDF	NotFnd		0.9967						1.08		2263.051	0.947
2378-TCDF	27.61	J	1.0008	1.0004	-0.7	1.08E+05	0.76	Y	1.08	4.02	2263.051	0.947
2367/3467-TCDF	NotFnd		1.0137						1.08		2263.051	0.947
1269-TCDF	NotFnd		1.0223						1.08		2263.051	0.947
1239-TCDF	NotFnd		1.0321						1.08		2263.051	0.947
1289-TCDF	NotFnd		1.0722						1.08		2263.051	0.947
13468/12468-PeCDF	NotFnd		0.9139						1.02		2755.72	1.12
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2806.003	1.14
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2806.003	1.14
14678-PeCDF	NotFnd		0.9692						1.02		2806.003	1.14
13479-PeCDF	NotFnd		0.9723						1.02		2806.003	1.14
13469/12479-PeCDF	NotFnd		0.9797						1.02		2806.003	1.14
12346-PeCDF	NotFnd		0.9840						1.02		2806.003	1.14

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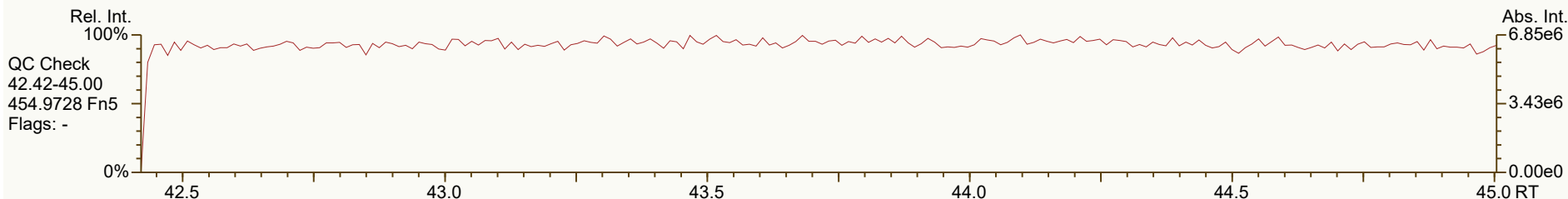
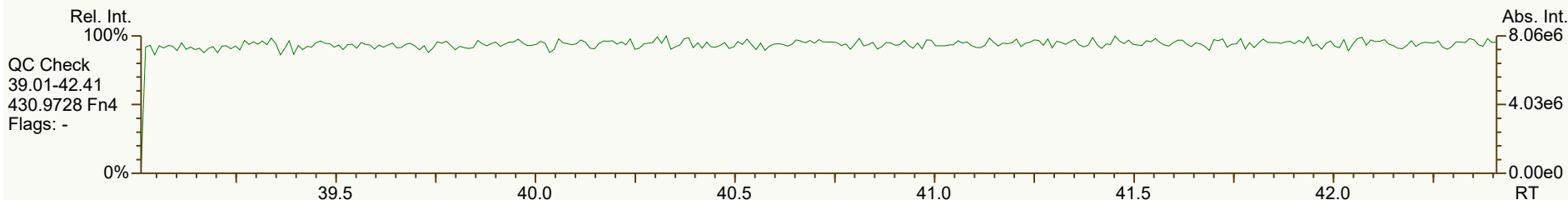
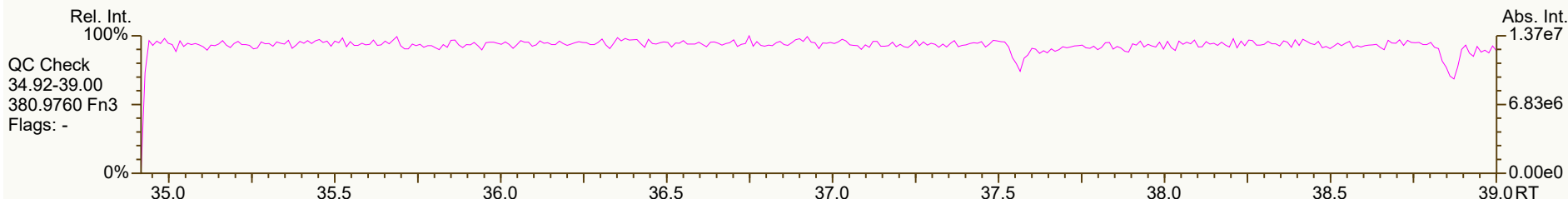
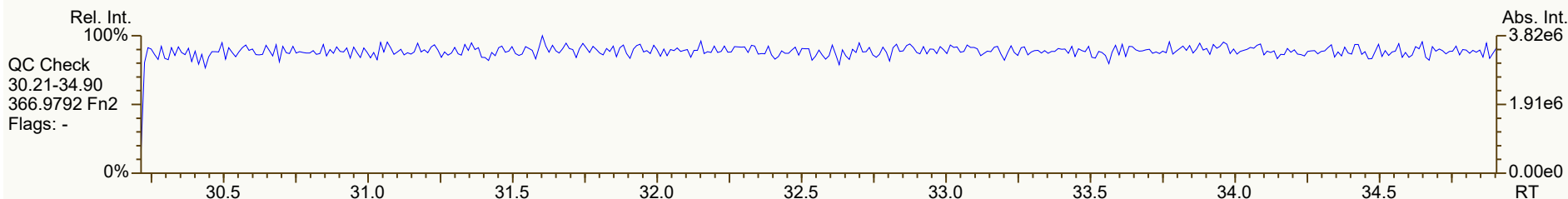
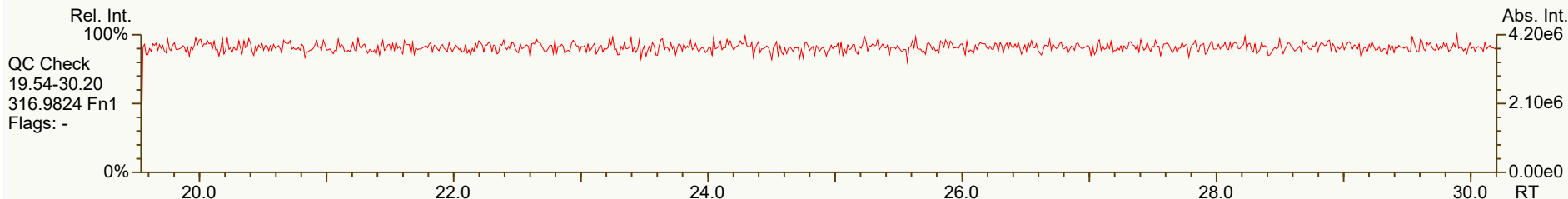
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Datafile: 220209C24

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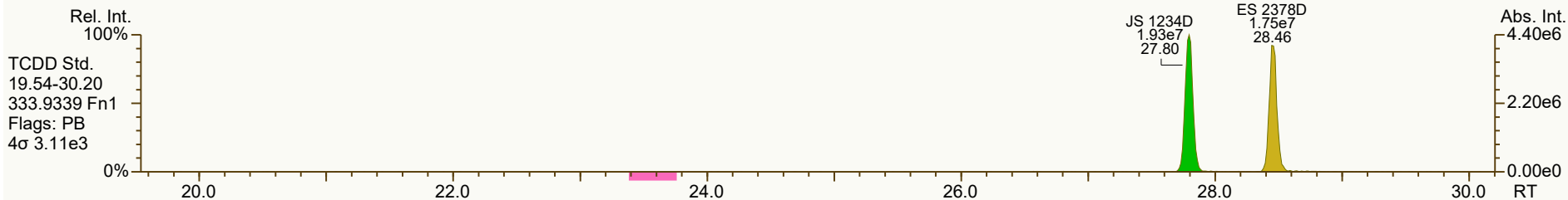
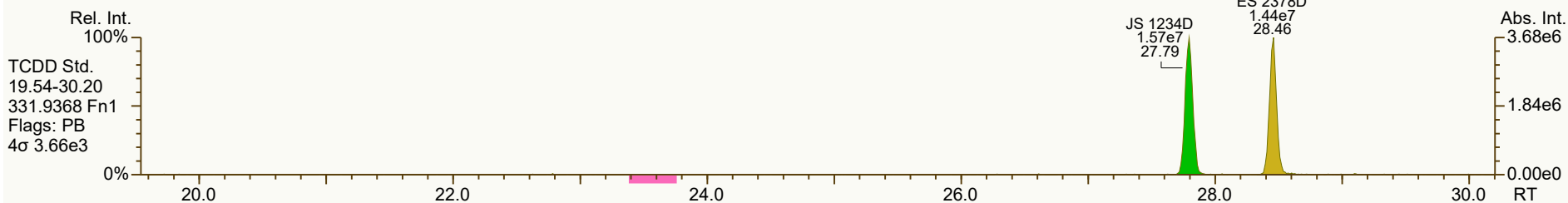
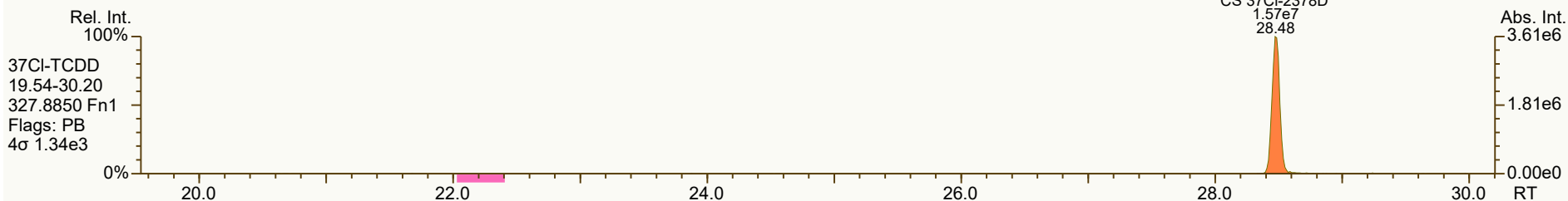
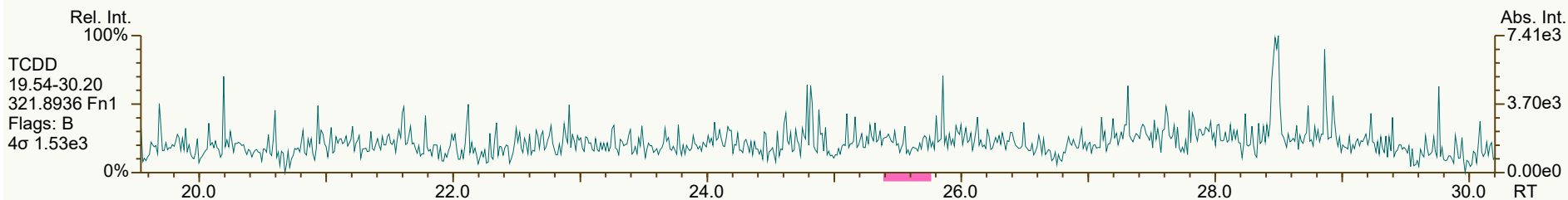
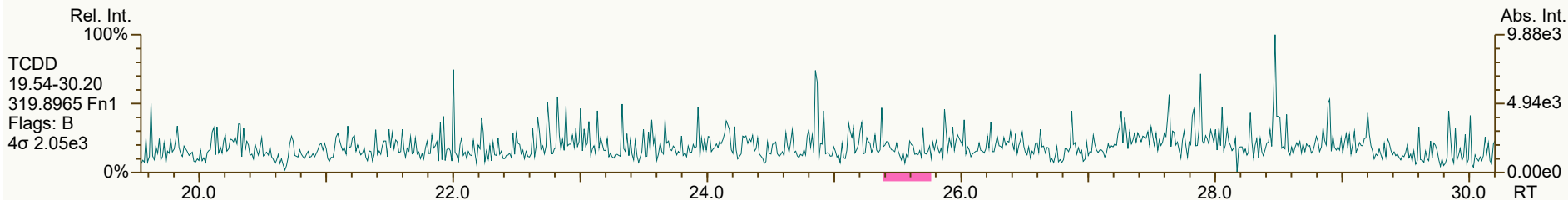
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		2806.003	1.14
12347-PeCDF	NotFnd		0.9894						1.02		2806.003	1.14
12348-PeCDF	NotFnd		0.9940						1.02		2806.003	1.14
12378-PeCDF	NotFnd		1.0005						1.02		2806.003	1.1
12678/12367-PeCDF	NotFnd		1.0089						1.02		2806.003	1.14
12379-PeCDF	NotFnd		1.0142						1.02		2806.003	1.14
12679-PeCDF	NotFnd		0.9929						1.02		2806.003	1.14
23467/12369-PeCDF	NotFnd		0.9967						1.02		2806.003	1.14
23478-PeCDF	NotFnd		1.0005						1.02		2806.003	1.17
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2806.003	1.14
12349-PeCDF	NotFnd		1.0100						1.02		2806.003	1.14
12389-PeCDF	NotFnd		1.0324						1.02		2806.003	1.14
123468-HxCDF	NotFnd		0.9627						1.19		2851.082	1.17
124678/134678-HxCDF	NotFnd		0.9682						1.19		2851.082	1.17
134679-HxCDF	NotFnd		0.9744						1.19		2851.082	1.17
124679-HxCDF	NotFnd		0.9798						1.19		2851.082	1.17
124689-HxCDF	NotFnd		0.9858						1.19		2851.082	1.17
123467-HxCDF	NotFnd		0.9972						1.19		2851.082	1.17
123478-HxCDF	NotFnd		1.0004						1.27		2851.082	1.19
123678-HxCDF	NotFnd		1.0004						1.15		2851.082	1.21
123479-HxCDF	NotFnd		1.0049						1.19		2851.082	1.17
123469-HxCDF	NotFnd		1.0090						1.19		2851.082	1.17
123679-HxCDF	NotFnd		0.9942						1.19		2851.082	1.17
234678-HxCDF	NotFnd		1.0005						1.19		2851.082	0.979
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2851.082	1.17
123789-HxCDF	NotFnd		1.0004						1.16		2851.082	1.38
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2851.082	1.17
1234678-HpCDF	NotFnd		1.0003						1.37		2331.21	0.964
1234679-HpCDF	NotFnd		1.0068						1.34		2331.21	1.15
1234689-HpCDF	NotFnd		1.0103						1.34		2331.21	1.15
1234789-HpCDF	NotFnd		1.0002						1.31		2331.21	1.39
OCDF	NotFnd		1.0003						1.07		2242.8393	2.32
OCDF-a	NotFnd		1.0002						0.07		2708.447	45.2



SGS ID: B6237_18888_DF_003
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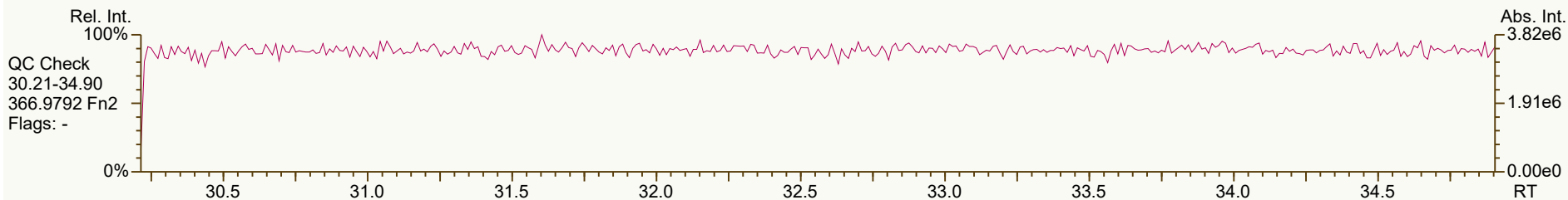
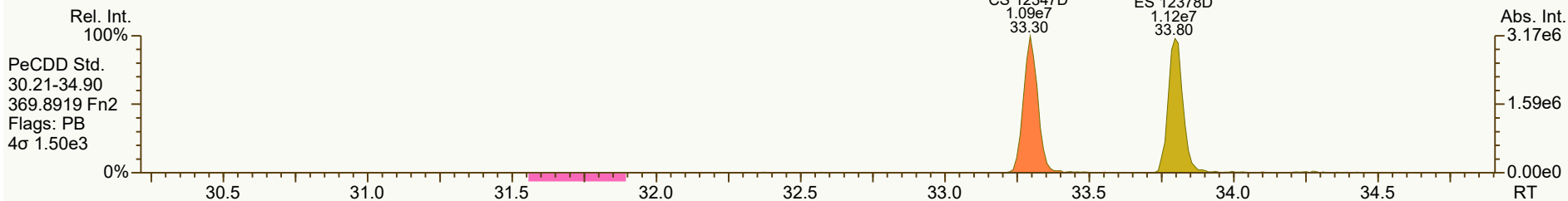
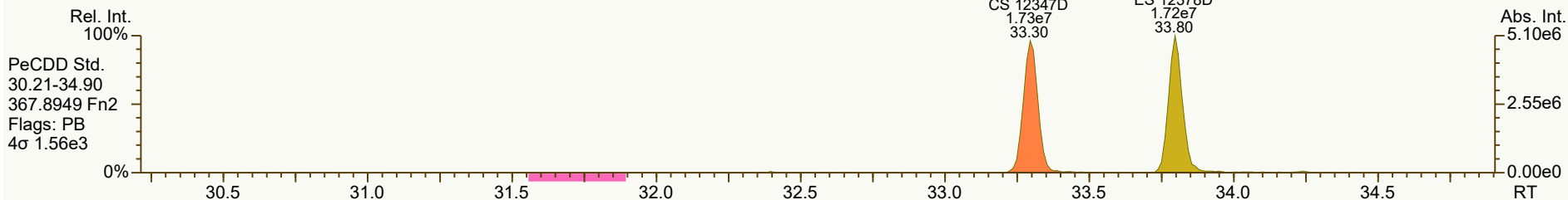
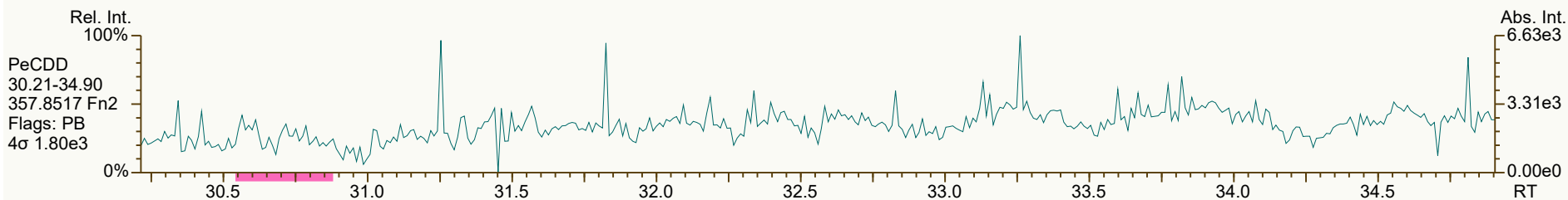
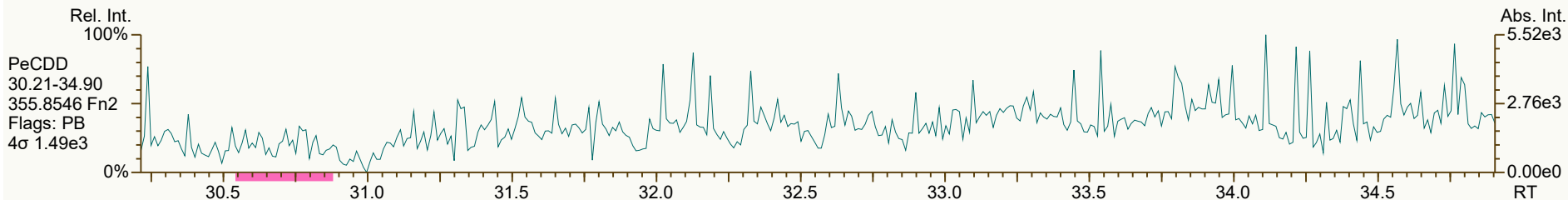
Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

Acq: 10-Feb-2022 00:46:43
User: DTF Datafile: 220209C24



Results: P:\B6200_B6299\B6237\B6237_18888_DF\Resources\B6237_18888_DF_003.utp_res, saved 10-Feb-2022 10:22 (DTF)
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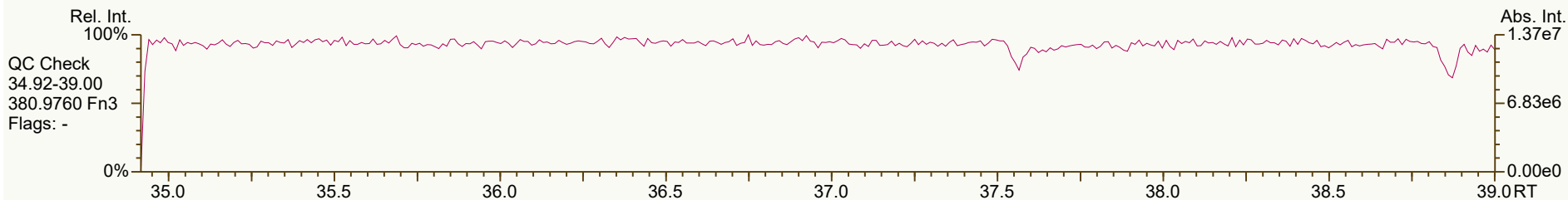
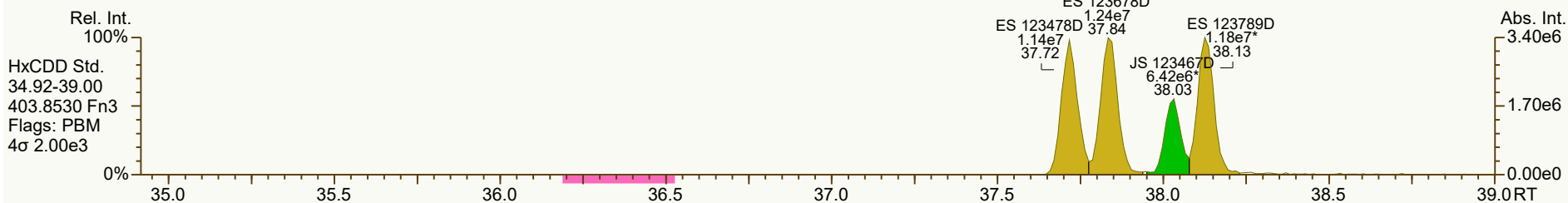
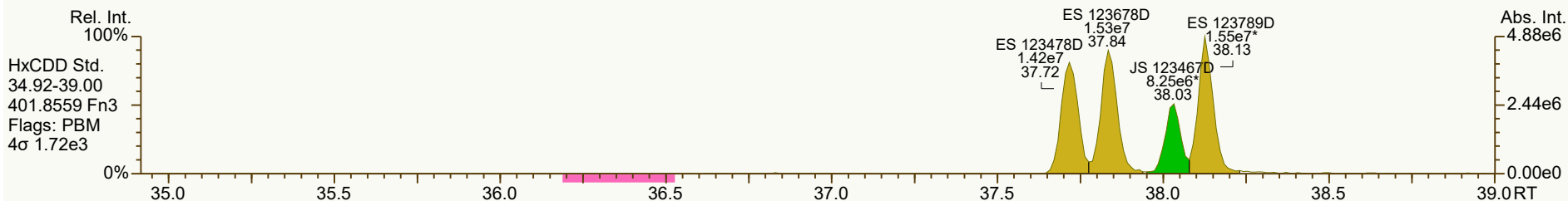
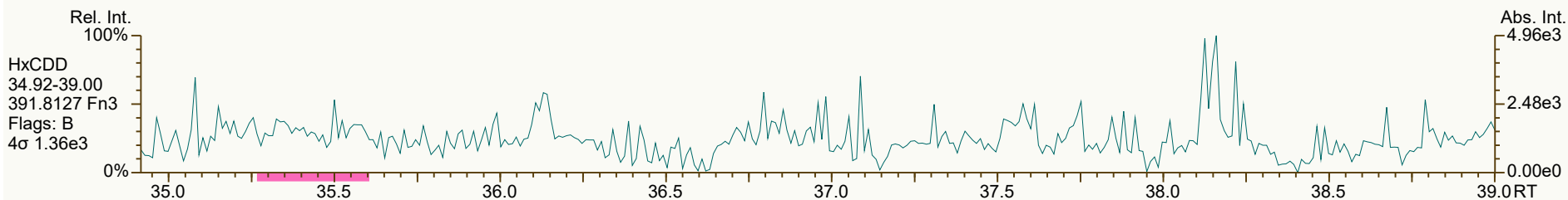
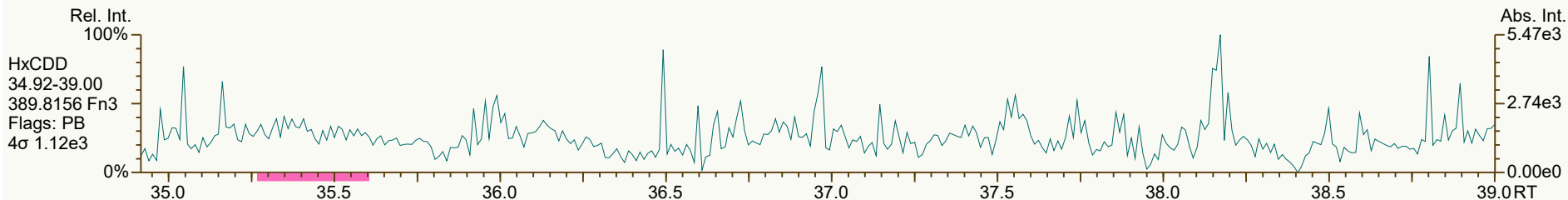
Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:17 Printed: 10-Feb-2022 10:34 Page 2 of 12



SGS ID: B6237_18888_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

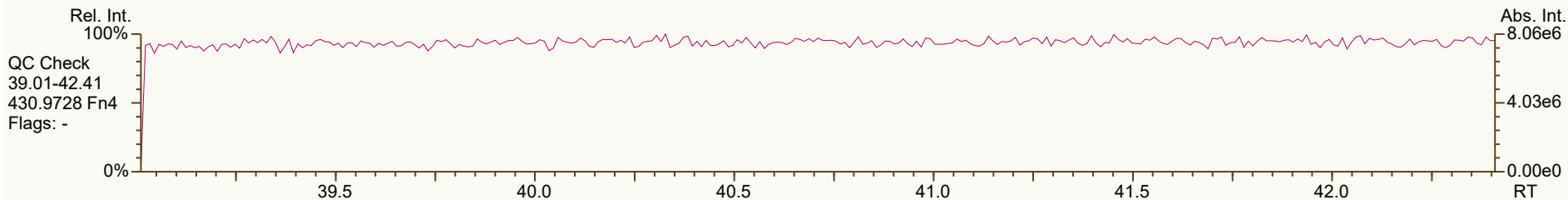
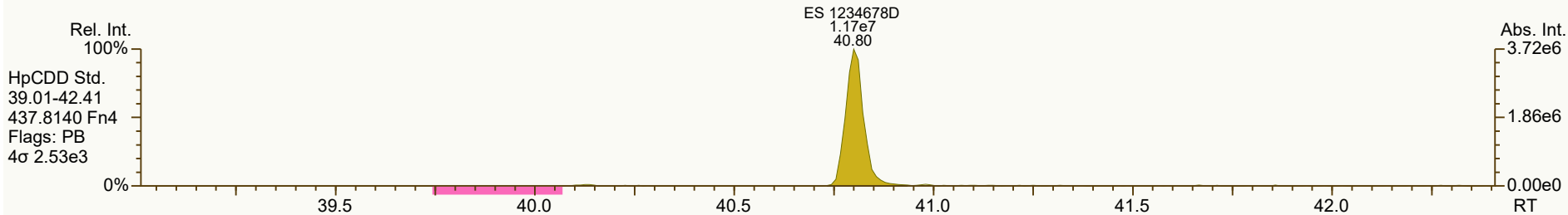
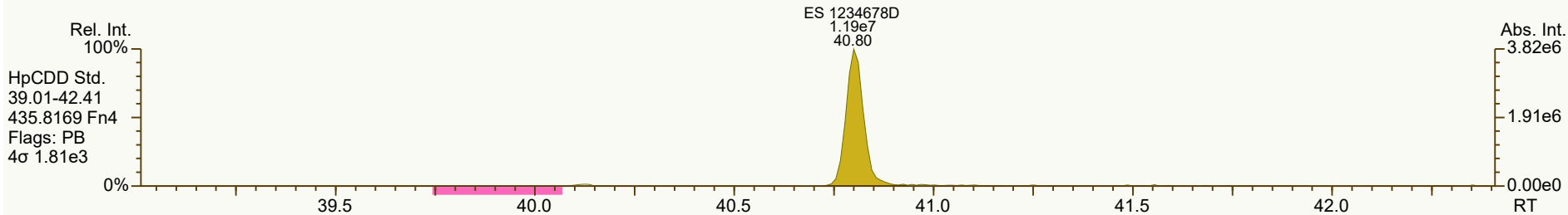
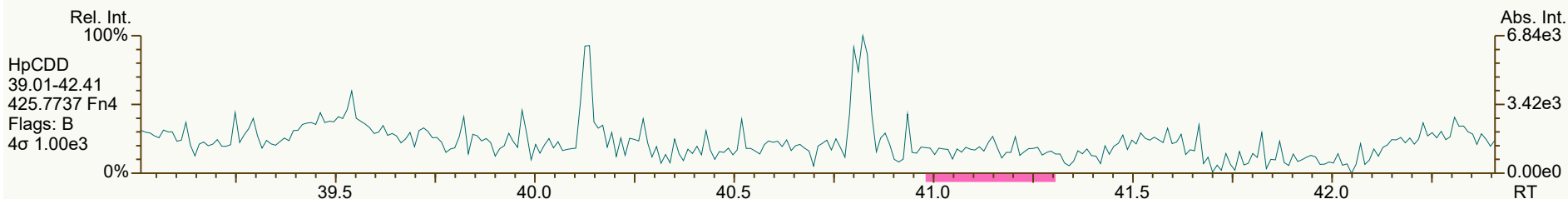
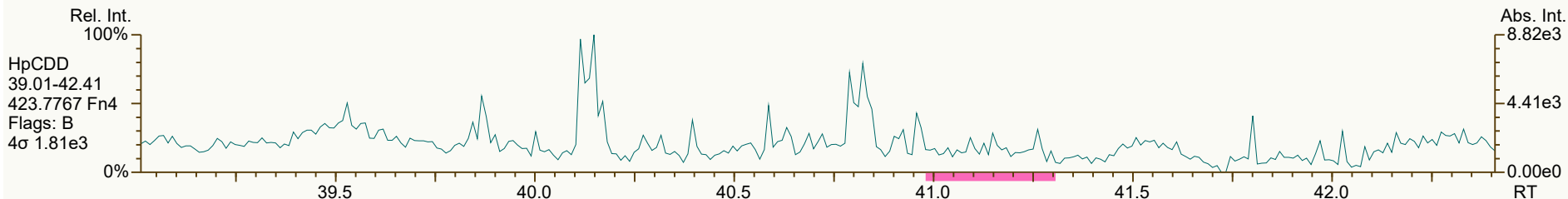
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User: DTF Datafile: 220209C24



SGS ID: B6237_18888_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

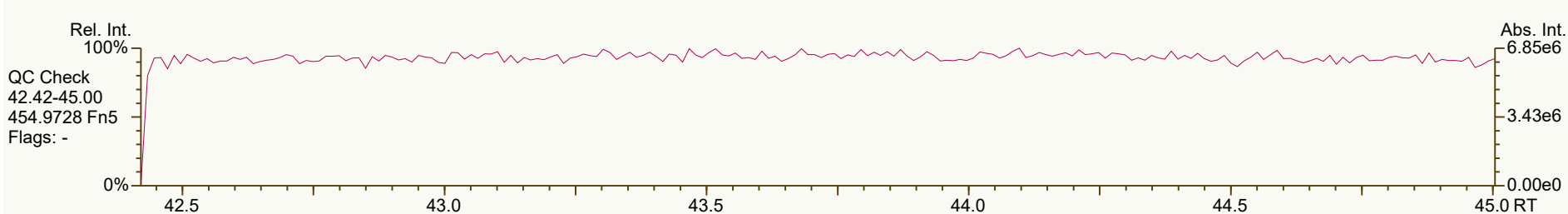
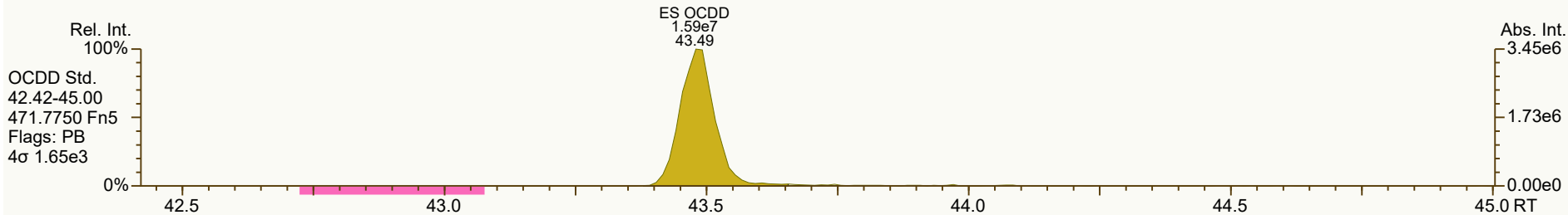
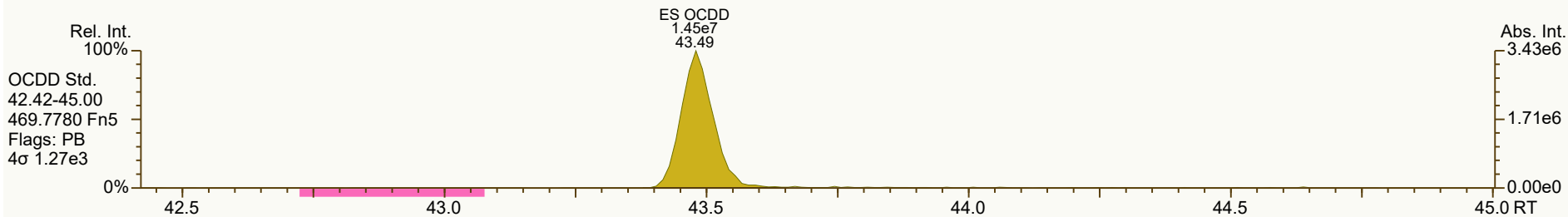
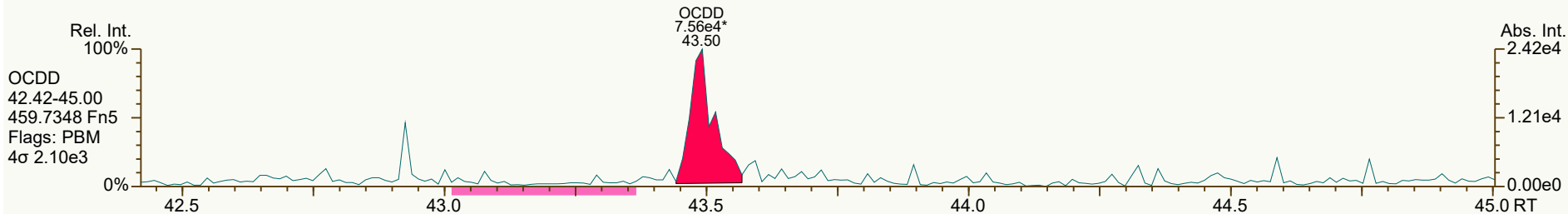
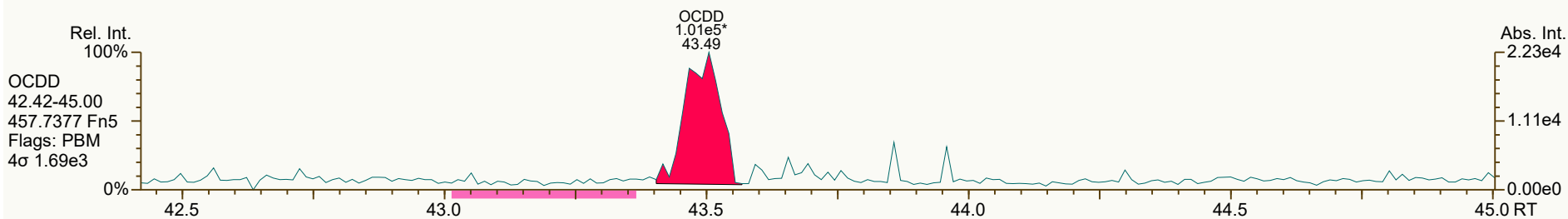
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User: DTF Datafile: 220209C24



SGS ID: B6237_18888_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

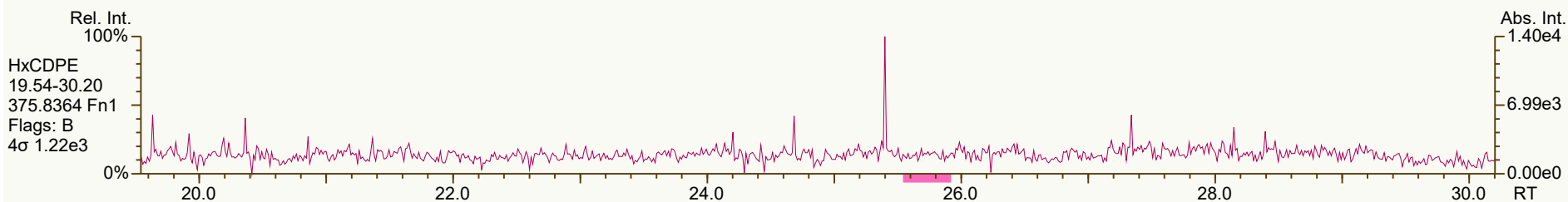
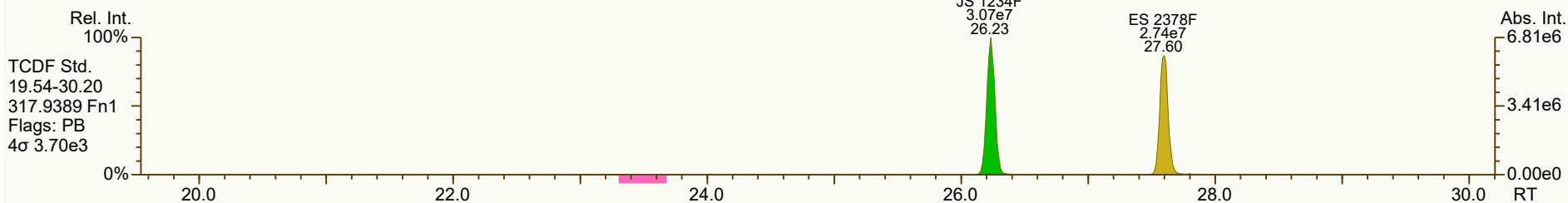
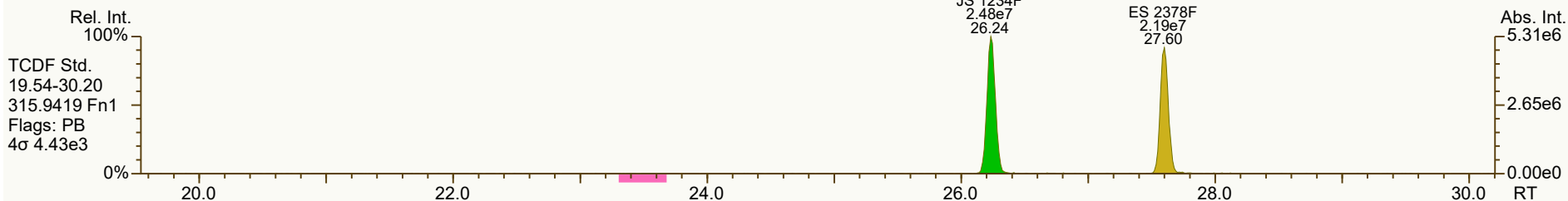
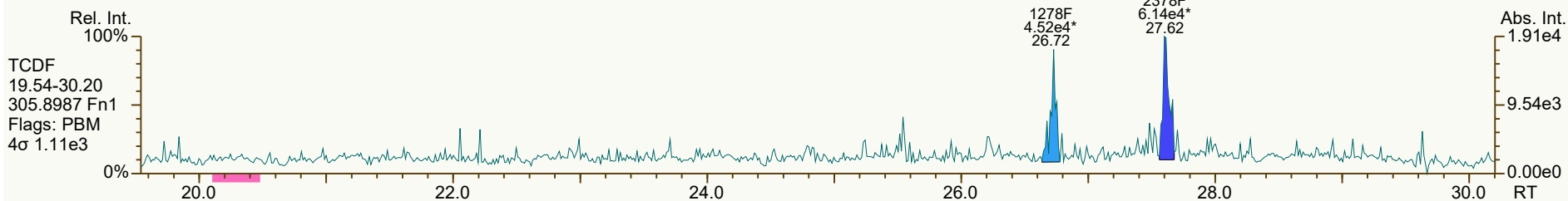
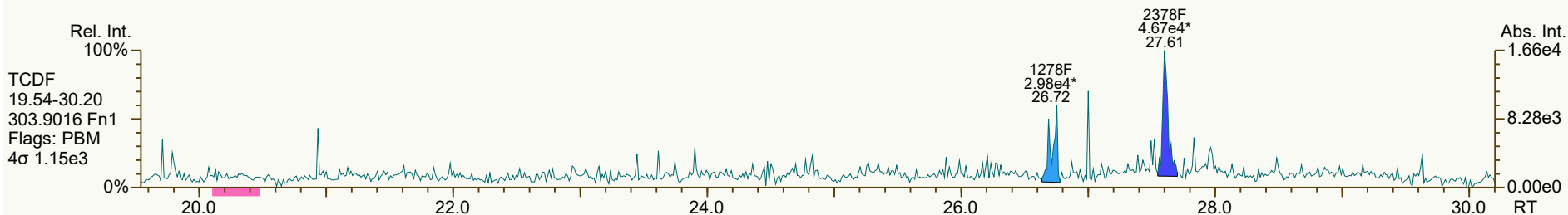
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User: DTF Datafile: 220209C24



SGS ID: B6237_18888_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

Acq: 10-Feb-2022 00:46:43
User: DTF Datafile: 220209C24



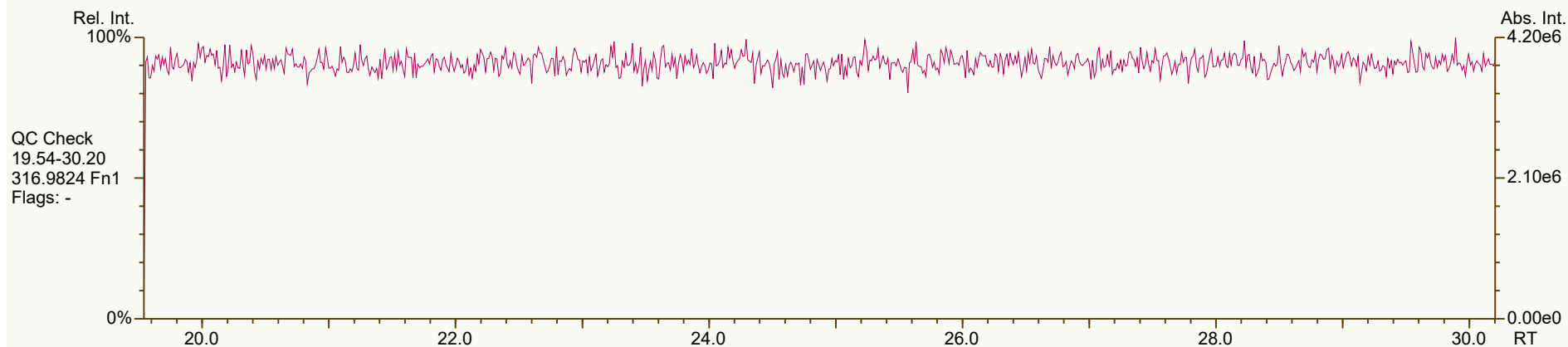
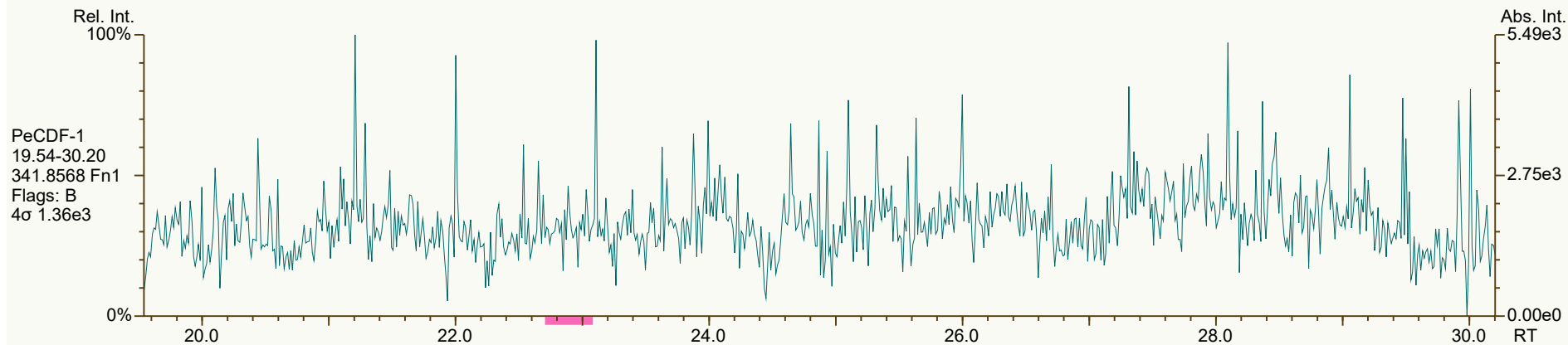
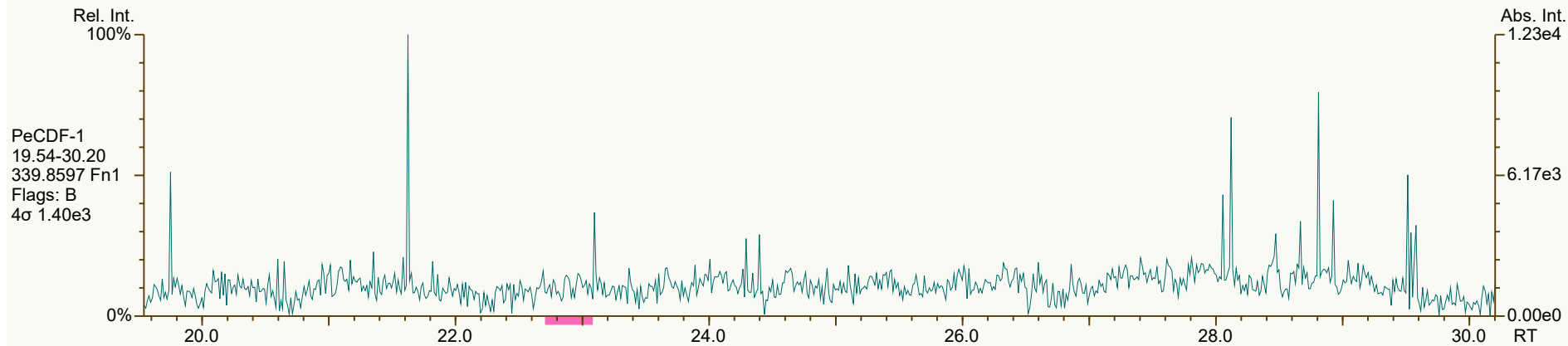
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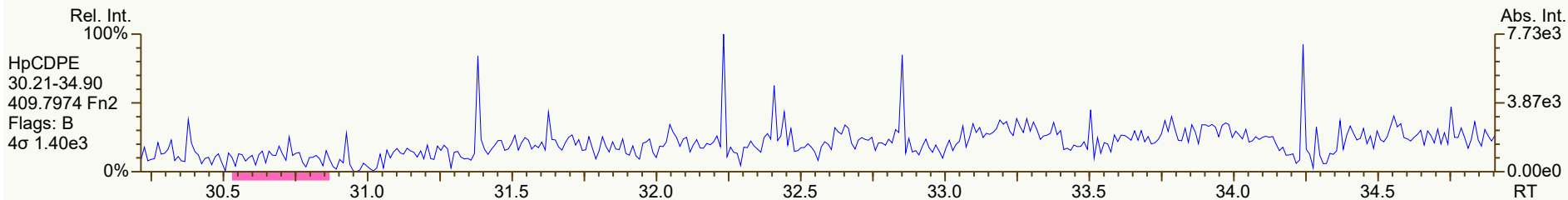
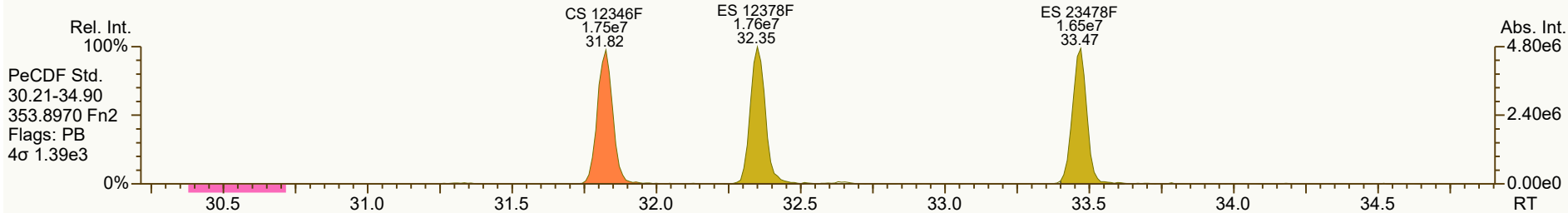
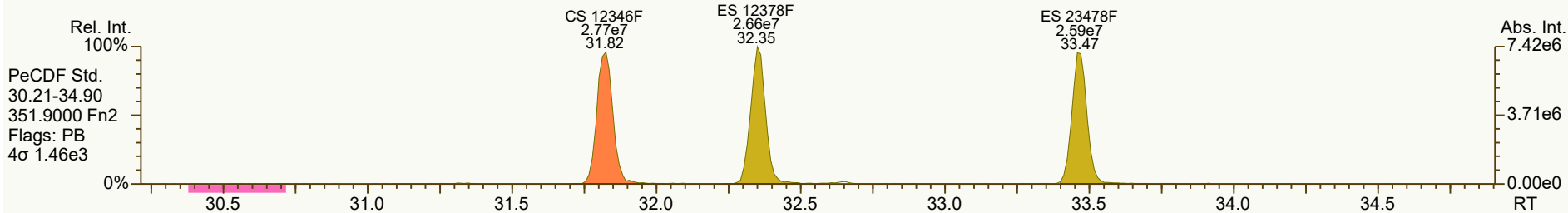
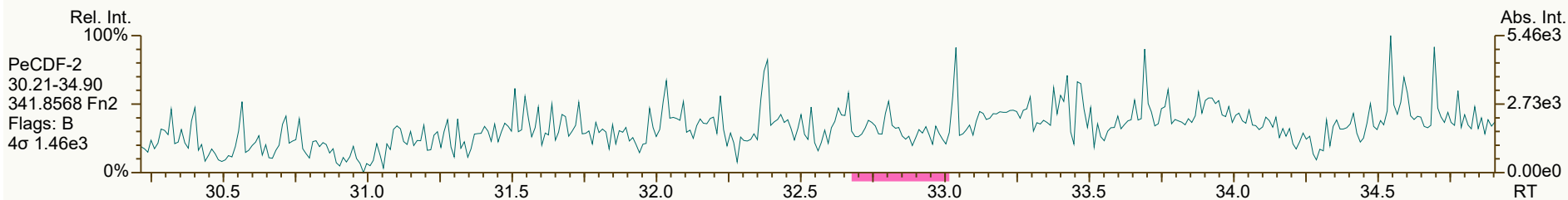
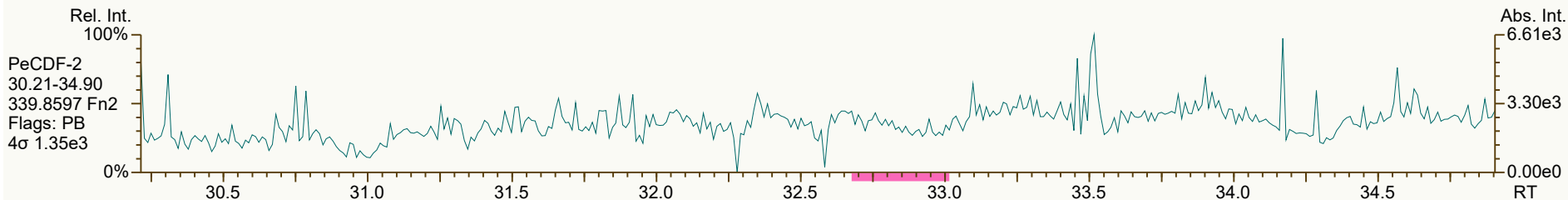
Peak annotation: Areas, Centroids
Revised: 10-Feb-2022 10:18 (DTF) Printed: 10-Feb-2022 10:34 Page 7 of 12

SGS ID: B6237_18888_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

Acq: 10-Feb-2022 00:46:43
User: DTF Datafile: 220209C24

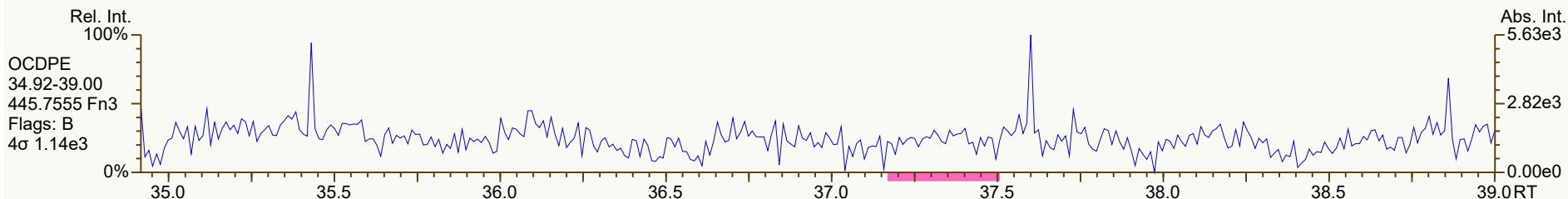
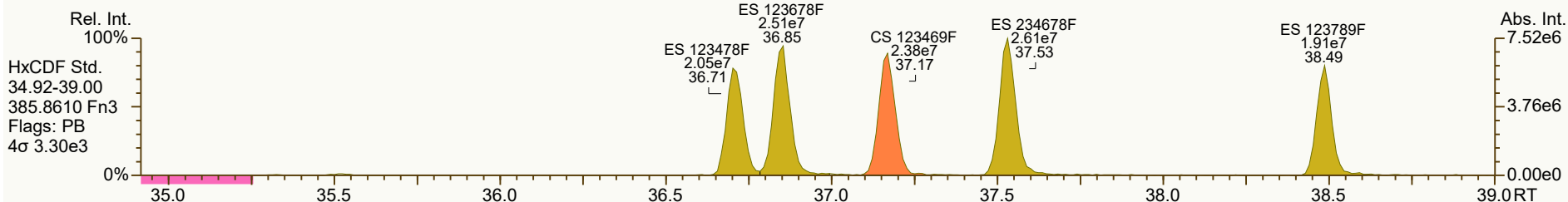
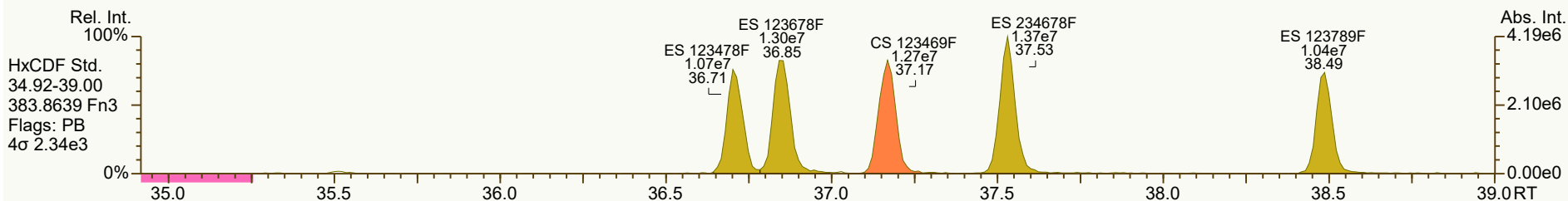
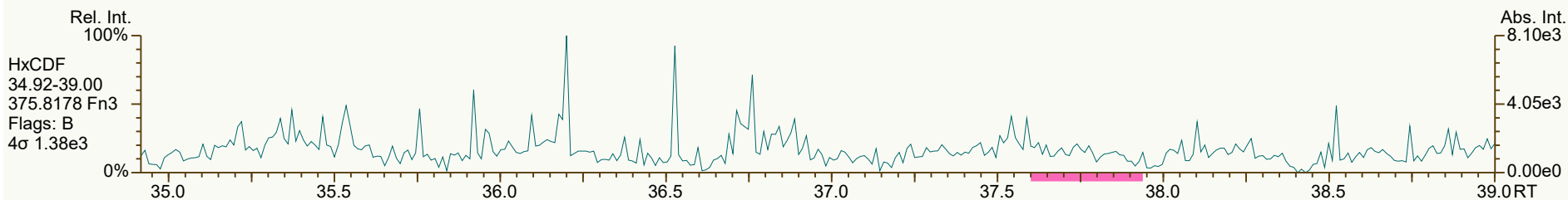
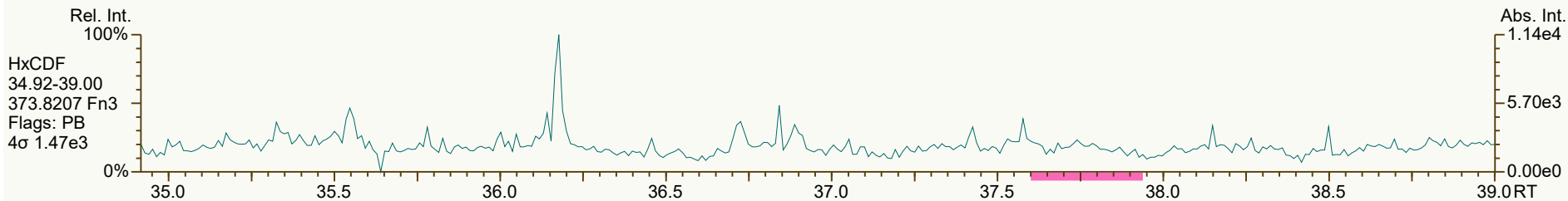




SGS ID: B6237_18888_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

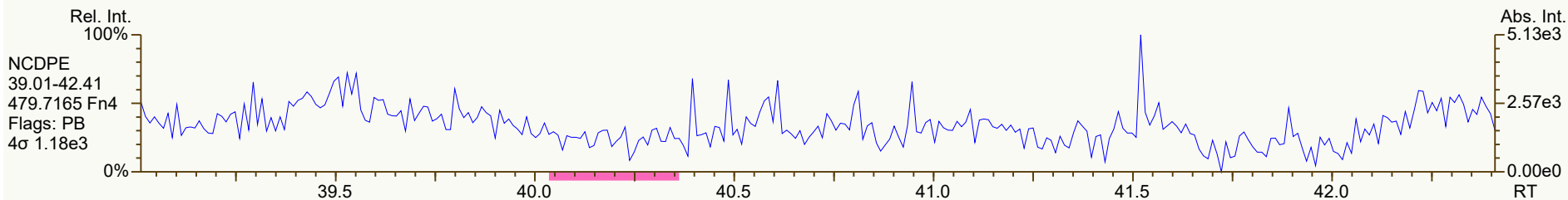
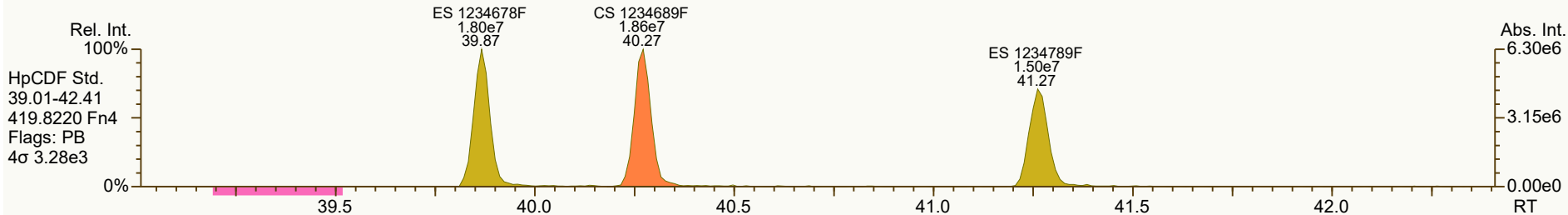
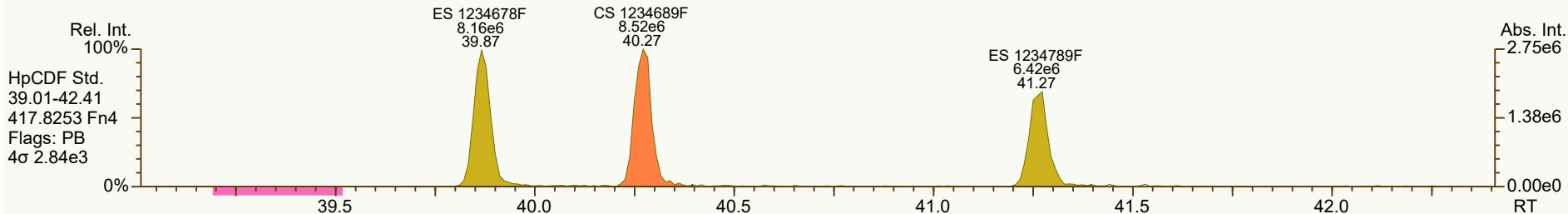
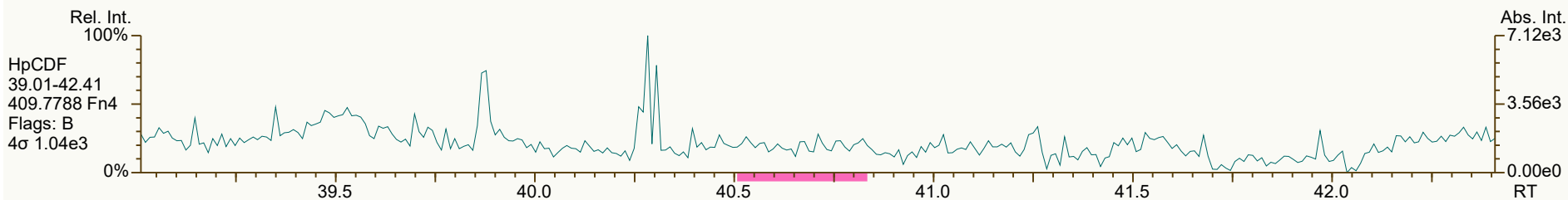
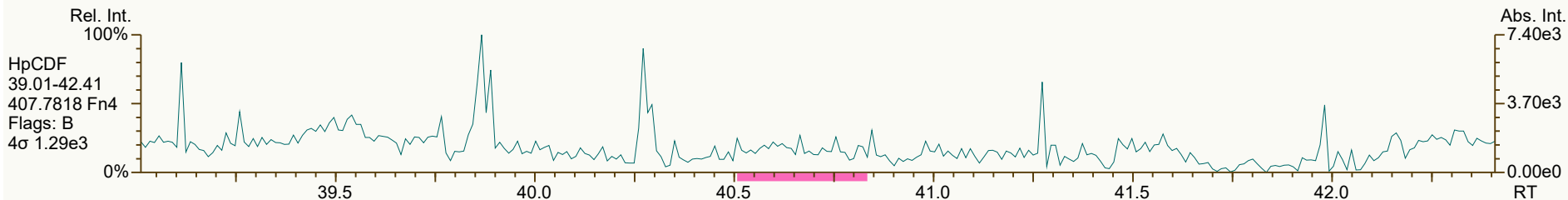
Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

Acq: 10-Feb-2022 00:46:43
User: DTF Datafile: 220209C24



Results: P:\B6200_B6299\B6237\B6237_18888_DF\Resources\B6237_18888_DF_003.utp_res, saved 10-Feb-2022 10:22 (DTF)
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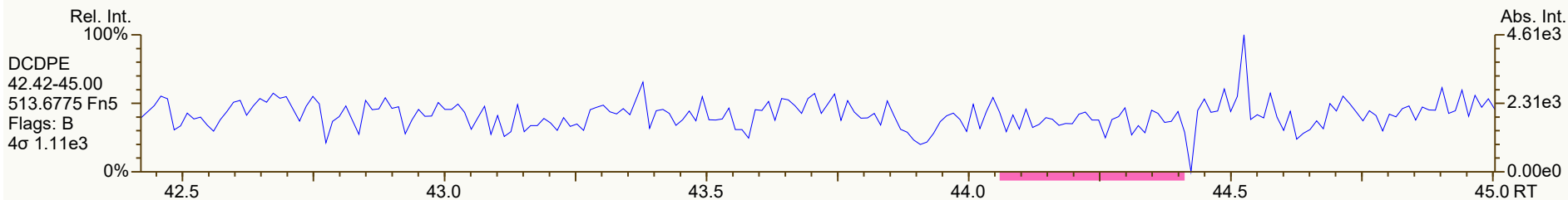
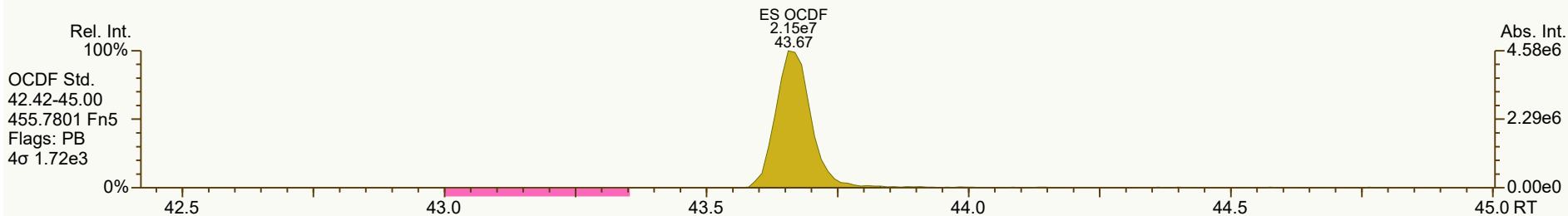
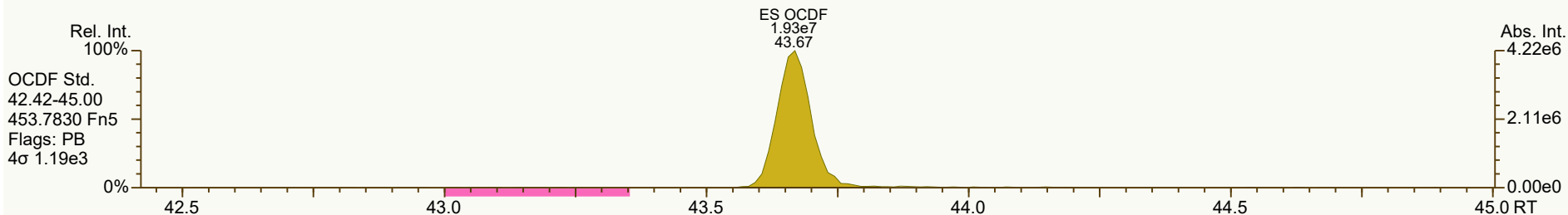
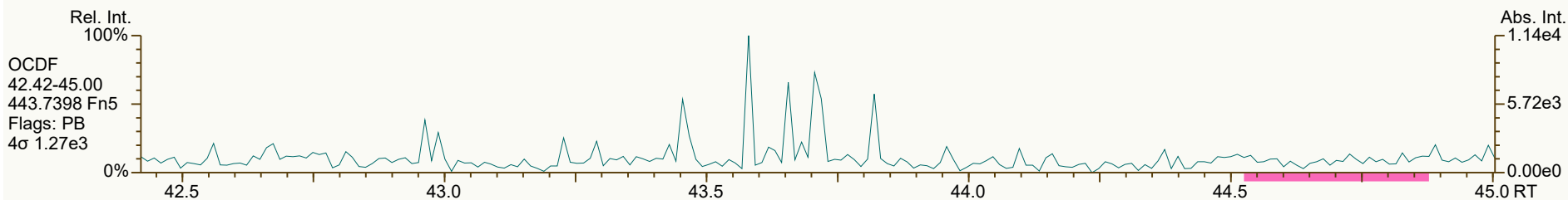
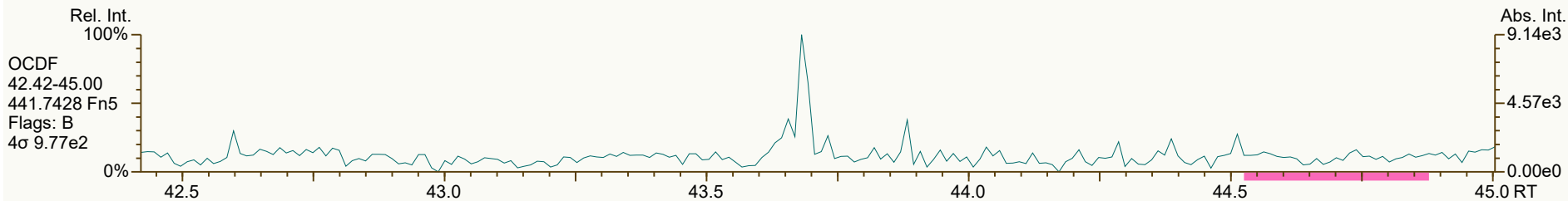
Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:17 Printed: 10-Feb-2022 10:34 Page 10 of 12



SGS ID: B6237_18888_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

Acq: 10-Feb-2022 00:46:43
User: DTF Datafile: 220209C24



Results: P:\B6200_B6299\B6237\B6237_18888_DF\Resources\B6237_18888_DF_003.utp_res, saved 10-Feb-2022 10:22 (DTF)
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Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:17 Printed: 10-Feb-2022 10:35 Page 12 of 12

Lab ID: B6237_18888_DF_004

Acq'd: 10 Feb 2022 01:33 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 938-617-BQJ

Datafile: 220209C25

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3502.318	1.95
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2909.877	1.97
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2899.8224	1.94
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2899.8224	1.77
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2899.8224	1.82
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2731.961	1.84
OCDD	43.49	J	1.0004	1.0001	-0.8	1.10E+05	0.78	Y	1.13	14.4	2665.196	4.06
2378-TCDF	27.62	J	1.0008	1.0005	-0.5	1.00E+05	0.67	Y	1.08	4.11	2194.6055	0.999
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2492.072	1.13
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2492.072	1.03
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2258.279	0.989
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2258.279	0.979
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2258.279	0.854
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2258.279	1.23
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	1873.3521	0.795
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	1873.3521	1.17
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	3050.495	3.44

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46	1.0236	1.0239	+0.5	2.88E+07	0.77	Y	1.05	85.6
ES 12378-PeCDD	33.80	1.2144	1.2162	+3.7	2.50E+07	1.60	Y	0.88	88.3
ES 123478-HxCDD	37.72	0.9920	0.9919	-0.2	2.34E+07	1.31	Y	0.97	92.7
ES 123678-HxCDD	37.85	0.9951	0.9950	-0.2	2.54E+07	1.29	Y	0.94	104
ES 123789-HxCDD	38.14	1.0027	1.0027	0	2.53E+07	1.28	Y	1.09	89.1
ES 1234678-HpCDD	40.81	1.0724	1.0730	+1.5	2.13E+07	1.07	Y	0.91	89.7
ES OCDD	43.49	1.1428	1.1434	+1.6	2.67E+07	0.87	Y	0.62	82.5
ES 2378-TCDF	27.60	1.0516	1.0520	+0.7	4.44E+07	0.80	Y	1.06	83.6
ES 12378-PeCDF	32.36	1.2312	1.2331	+3.7	3.93E+07	1.61	Y	0.91	86
ES 23478-PeCDF	33.47	1.2733	1.2756	+4.6	3.81E+07	1.59	Y	0.88	86
ES 123478-HxCDF	36.71	0.9655	0.9653	-0.4	2.78E+07	0.52	Y	1.20	89.3
ES 123678-HxCDF	36.86	0.9692	0.9690	-0.4	3.32E+07	0.54	Y	1.35	94.4
ES 234678-HxCDF	37.54	0.9871	0.9870	-0.2	3.64E+07	0.53	Y	1.24	113
ES 123789-HxCDF	38.49	1.0121	1.0121	0	2.73E+07	0.56	Y	1.16	90.8
ES 1234678-HpCDF	39.88	1.0479	1.0484	+1.2	2.39E+07	0.44	Y	0.97	94.9
ES 1234789-HpCDF	41.27	1.0845	1.0851	+1.5	1.94E+07	0.44	Y	0.85	87.6
ES OCDF	43.68	1.1477	1.1483	+1.6	3.70E+07	0.89	Y	0.81	88.3

Lab ID: B6237_18888_DF_004

Acq'd: 10 Feb 2022 01:33 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 938-617-BQJ

Datafile: 220209C25

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	3.22E+07	0.80	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.02E+07	0.81	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.30E+07	1.20	Y	-	-
CS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.38E+07	n/a	-	1.20	89.1
CS 12347-PeCDD	33.30		1.1964	1.1981	+3.4	2.58E+07	1.57	Y	0.75	106
CS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	4.11E+07	1.54	Y	0.85	96.4
CS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	3.39E+07	0.53	Y	1.12	117
CS 1234689-HpCDF	40.28		1.0584	1.0591	+1.7	2.57E+07	0.46	Y	0.89	111
SS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.38E+07	n/a		1.15	104
SS 12347-PeCDD	33.30		1.1964	1.1981	+3.4	2.58E+07	1.57	Y	0.86	120
SS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	4.11E+07	1.54	Y	0.94	112
SS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	3.39E+07	0.53	Y	0.83	123
SS 1234689-HpCDF	40.28		1.0584	1.0591	+1.7	2.57E+07	0.46	Y	0.92	117

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	14.4	14.4
Total TCDF	4.11	4.11
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	4.11	4.11
Total Tetra-Octa Dioxins & Furans	18.5	18.5

Lab ID: B6237_18888_DF_004

Acq'd: 10 Feb 2022 01:33 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 938-617-BQJ

Datafile: 220209C25

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3502.318	1.95
1379-TCDD	NotFnd		0.8860						1.18		3502.318	1.95
1369-TCDD	NotFnd		0.9009						1.18		3502.318	1.95
1469-TCDD	NotFnd		0.9281						1.18		3502.318	1.95
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3502.318	1.95
1378-TCDD	NotFnd		0.9432						1.18		3502.318	1.95
1268-TCDD	NotFnd		0.9500						1.18		3502.318	1.95
1478-TCDD	NotFnd		0.9586						1.18		3502.318	1.95
1279-TCDD	NotFnd		0.9645						1.18		3502.318	1.95
1234/1269-TCDD	NotFnd		0.9770						1.18		3502.318	1.95
1236-TCDD	NotFnd		0.9817						1.18		3502.318	1.95
1237/1238-TCDD	NotFnd		0.9905						1.18		3502.318	1.95
1239-TCDD	NotFnd		0.9952						1.18		3502.318	1.95
2378-TCDD	NotFnd		1.0008						1.18		3502.318	1.95
1278-TCDD	NotFnd		1.0121						1.18		3502.318	1.95
1267-TCDD	NotFnd		1.0167						1.18		3502.318	1.95
1289-TCDD	NotFnd		1.0345						1.18		3502.318	1.95
12479/12468-PeCDD	NotFnd		0.9267						1.04		2909.877	1.97
12469-PeCDD	NotFnd		0.9425						1.04		2909.877	1.97
12368-PeCDD	NotFnd		0.9588						1.04		2909.877	1.97
12478-PeCDD	NotFnd		0.9643						1.04		2909.877	1.97
12379-PeCDD	NotFnd		0.9673						1.04		2909.877	1.97
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2909.877	1.97
12346/12347-PeCDD	NotFnd		0.9858						1.04		2909.877	1.97
12378-PeCDD	NotFnd		1.0006						1.04		2909.877	1.97
12367-PeCDD	NotFnd		1.0033						1.04		2909.877	1.97
12389-PeCDD	NotFnd		1.0134						1.04		2909.877	1.97
124679/124689-HxCDD	NotFnd		0.9542						1.10		2899.8224	1.84
123468-HxCDD	NotFnd		0.9715						1.10		2899.8224	1.84
123679/123689-HxCDD	NotFnd		0.9793						1.10		2899.8224	1.84
123469-HxCDD	NotFnd		0.9828						1.10		2899.8224	1.84
123478-HxCDD	NotFnd		1.0004						1.09		2899.8224	1.94
123678-HxCDD	NotFnd		1.0035						1.15		2899.8224	1.77
123467-HxCDD	NotFnd		1.0085						1.10		2899.8224	1.84
123789-HxCDD	NotFnd		1.0112						1.05		2899.8224	1.82

Lab ID: B6237_18888_DF_004

Acq'd: 10 Feb 2022 01:33 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 938-617-BQJ

Datafile: 220209C25

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		2731.961	1.84
1234678-HpCDD	NotFnd		1.0003						1.06		2731.961	1.84
OCDD	43.49	J	1.0004	1.0001	-0.8	1.10E+05	0.78	Y	1.13	14.4	2665.196	4.06
OCDD-a	NotFnd		1.0003						0.07		3024.253	72.1
1368-TCDF	NotFnd		0.8251						1.08		2194.6055	0.999
1468-TCDF	NotFnd		0.8458						1.08		2194.6055	0.999
2468-TCDF	NotFnd		0.8686						1.08		2194.6055	0.999
1346/1246-TCDF	NotFnd		0.8814						1.08		2194.6055	0.999
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2194.6055	0.999
1348-TCDF	NotFnd		0.8962						1.08		2194.6055	0.999
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2194.6055	0.999
1268-TCDF	NotFnd		0.9145						1.08		2194.6055	0.999
1467-TCDF	NotFnd		0.9193						1.08		2194.6055	0.999
1478-TCDF	NotFnd		0.9254						1.08		2194.6055	0.999
1369/1237-TCDF	NotFnd		0.9387						1.08		2194.6055	0.999
2467-TCDF	NotFnd		0.9433						1.08		2194.6055	0.999
2368-TCDF	NotFnd		0.9489						1.08		2194.6055	0.999
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2194.6055	0.999
1278-TCDF	NotFnd		0.9683						1.08		2194.6055	0.999
1349-TCDF	NotFnd		0.9722						1.08		2194.6055	0.999
1267-TCDF	NotFnd		0.9783						1.08		2194.6055	0.999
2346/1249-TCDF	NotFnd		0.9850						1.08		2194.6055	0.999
2347/1279-TCDF	NotFnd		0.9926						1.08		2194.6055	0.999
2348-TCDF	NotFnd		0.9967						1.08		2194.6055	0.999
2378-TCDF	27.62	J	1.0008	1.0005	-0.5	1.00E+05	0.67	Y	1.08	4.11	2194.6055	0.999
2367/3467-TCDF	NotFnd		1.0137						1.08		2194.6055	0.999
1269-TCDF	NotFnd		1.0223						1.08		2194.6055	0.999
1239-TCDF	NotFnd		1.0321						1.08		2194.6055	0.999
1289-TCDF	NotFnd		1.0722						1.08		2194.6055	0.999
13468/12468-PeCDF	NotFnd		0.9139						1.02		2630.901	1.14
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2492.072	1.08
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2492.072	1.08
14678-PeCDF	NotFnd		0.9692						1.02		2492.072	1.08
13479-PeCDF	NotFnd		0.9723						1.02		2492.072	1.08
13469/12479-PeCDF	NotFnd		0.9797						1.02		2492.072	1.08
12346-PeCDF	NotFnd		0.9840						1.02		2492.072	1.08

Lab ID: B6237_18888_DF_004

Acq'd: 10 Feb 2022 01:33 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

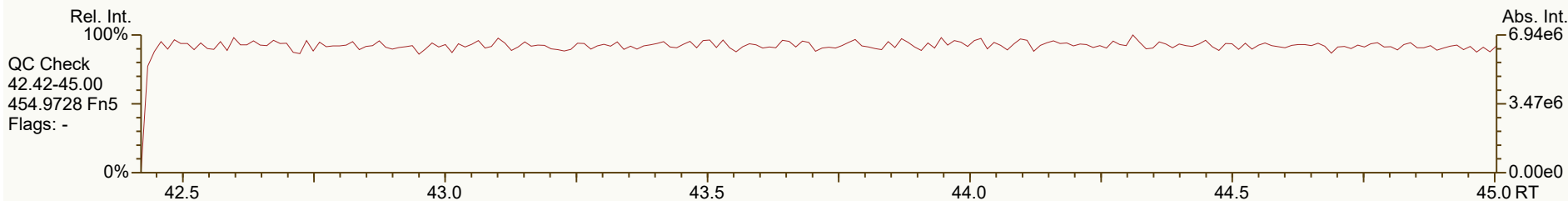
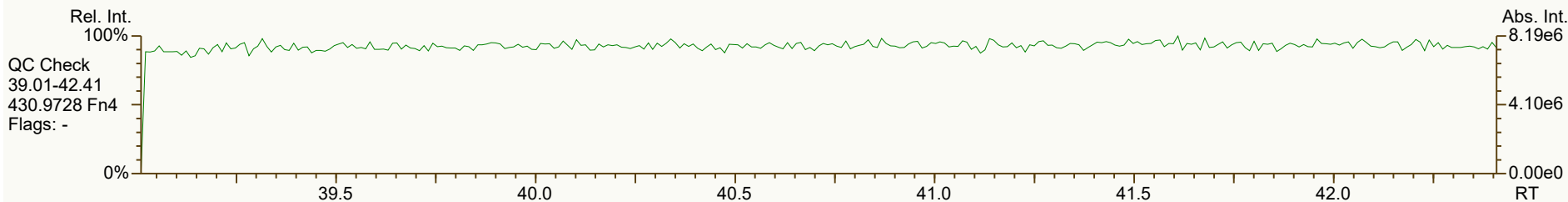
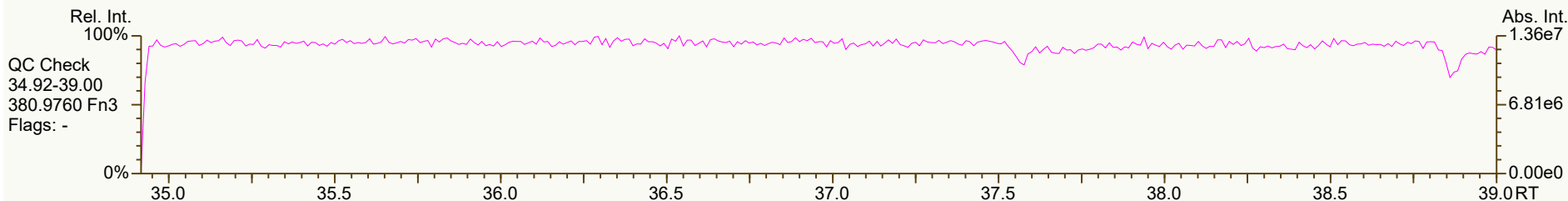
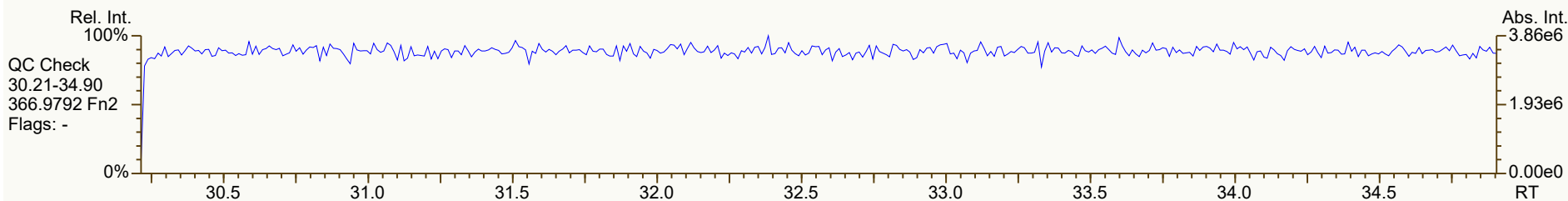
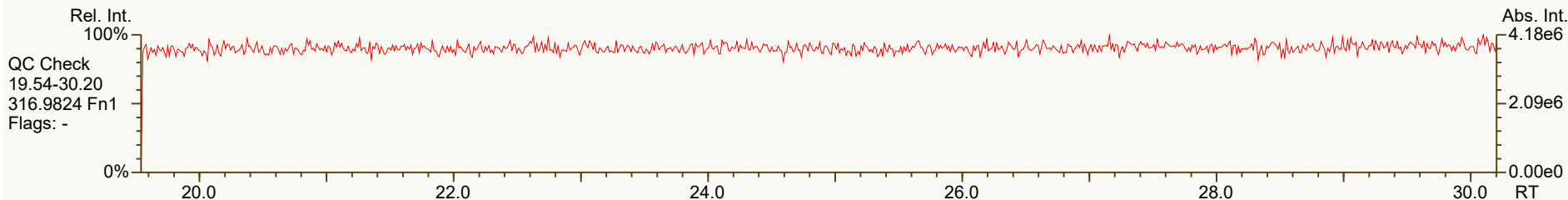
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Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

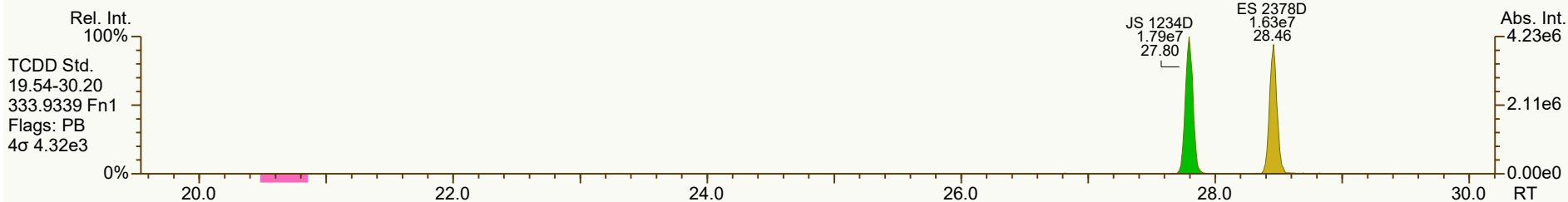
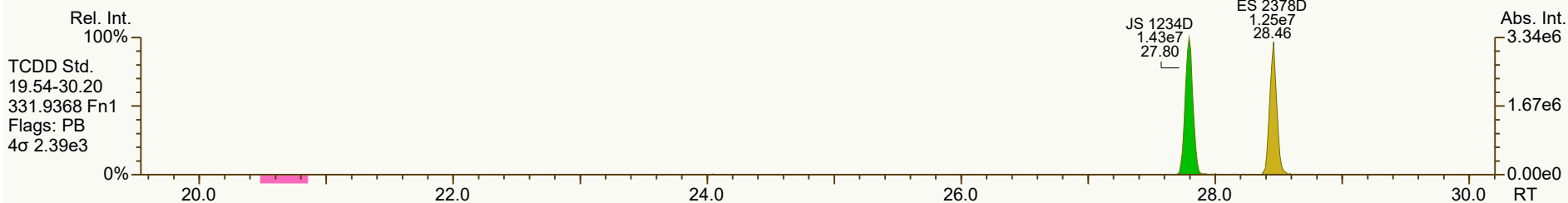
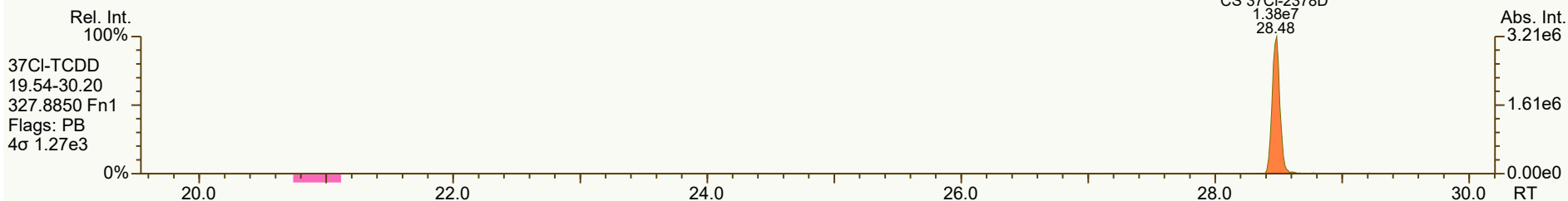
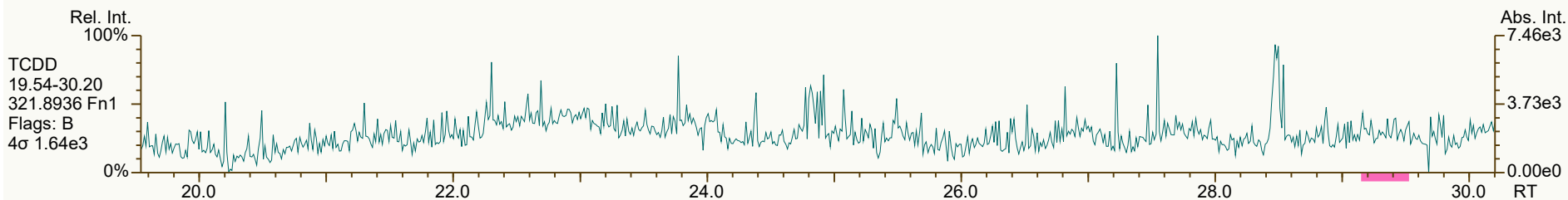
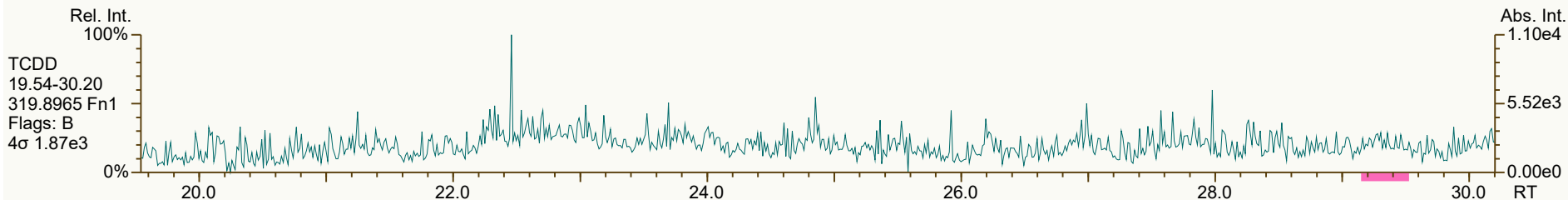
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
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12347-PeCDF	NotFnd		0.9894						1.02		2492.072	1.08
12348-PeCDF	NotFnd		0.9940						1.02		2492.072	1.08
12378-PeCDF	NotFnd		1.0005						1.02		2492.072	1.13
12678/12367-PeCDF	NotFnd		1.0089						1.02		2492.072	1.08
12379-PeCDF	NotFnd		1.0142						1.02		2492.072	1.08
12679-PeCDF	NotFnd		0.9929						1.02		2492.072	1.08
23467/12369-PeCDF	NotFnd		0.9967						1.02		2492.072	1.08
23478-PeCDF	NotFnd		1.0005						1.02		2492.072	1.03
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2492.072	1.08
12349-PeCDF	NotFnd		1.0100						1.02		2492.072	1.08
12389-PeCDF	NotFnd		1.0324						1.02		2492.072	1.08
123468-HxCDF	NotFnd		0.9627						1.19		2258.279	0.998
124678/134678-HxCDF	NotFnd		0.9682						1.19		2258.279	0.998
134679-HxCDF	NotFnd		0.9744						1.19		2258.279	0.998
124679-HxCDF	NotFnd		0.9798						1.19		2258.279	0.998
124689-HxCDF	NotFnd		0.9858						1.19		2258.279	0.998
123467-HxCDF	NotFnd		0.9972						1.19		2258.279	0.998
123478-HxCDF	NotFnd		1.0004						1.27		2258.279	0.989
123678-HxCDF	NotFnd		1.0004						1.15		2258.279	0.979
123479-HxCDF	NotFnd		1.0049						1.19		2258.279	0.998
123469-HxCDF	NotFnd		1.0090						1.19		2258.279	0.998
123679-HxCDF	NotFnd		0.9942						1.19		2258.279	0.998
234678-HxCDF	NotFnd		1.0005						1.19		2258.279	0.854
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2258.279	0.998
123789-HxCDF	NotFnd		1.0004						1.16		2258.279	1.23
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2258.279	0.998
1234678-HpCDF	NotFnd		1.0003						1.37		1873.3521	0.795
1234679-HpCDF	NotFnd		1.0068						1.34		1873.3521	0.961
1234689-HpCDF	NotFnd		1.0103						1.34		1873.3521	0.961
1234789-HpCDF	NotFnd		1.0002						1.31		1873.3521	1.17
OCDF	NotFnd		1.0003						1.07		3050.495	3.44
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SGS ID: B6237_18888_DF_004
Instr: [ILM] AutoSpec-Ultima HRMS3

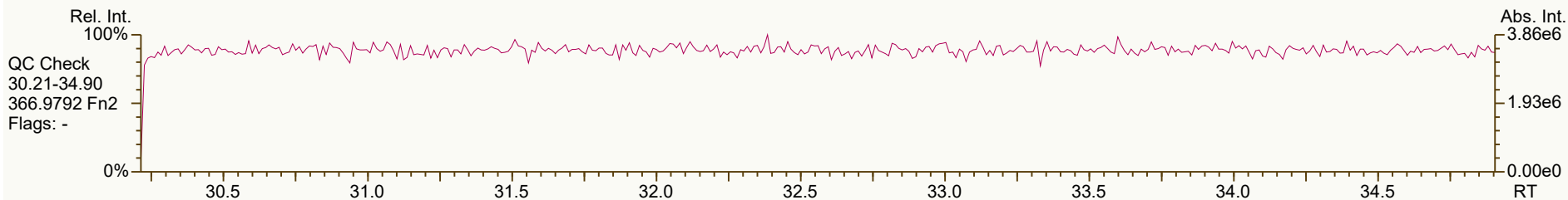
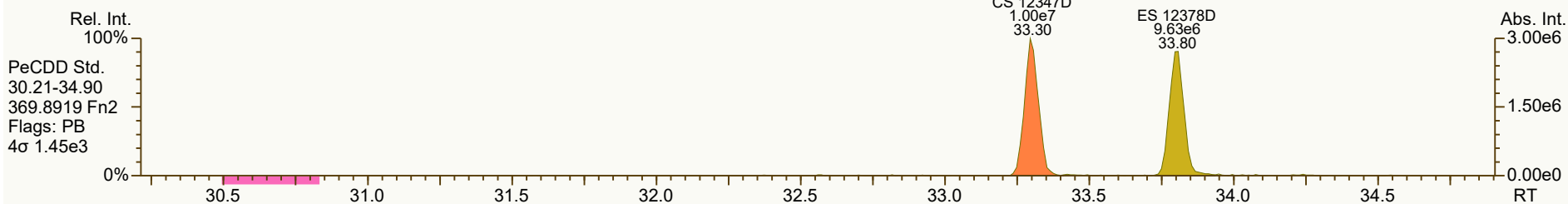
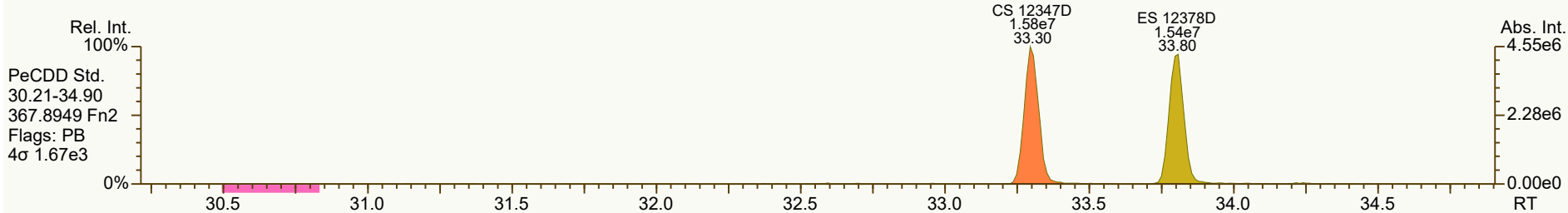
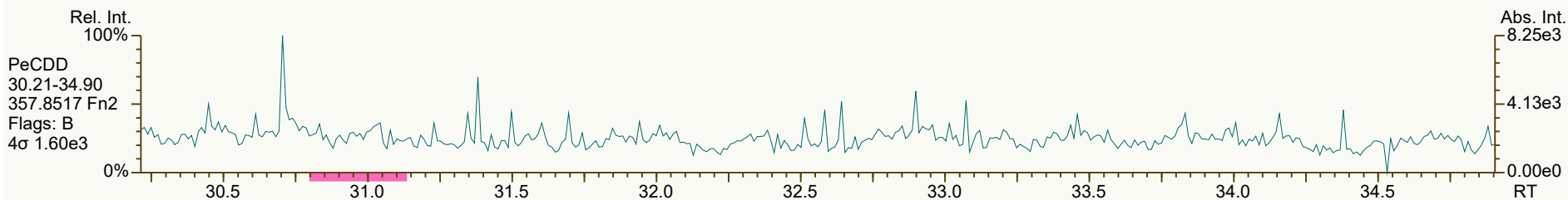
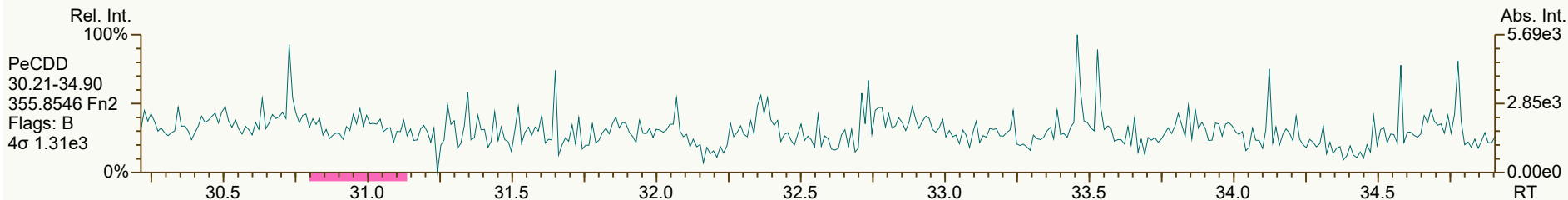
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Acq: 10-Feb-2022 01:33:04
User: DTF Datafile: 220209C25



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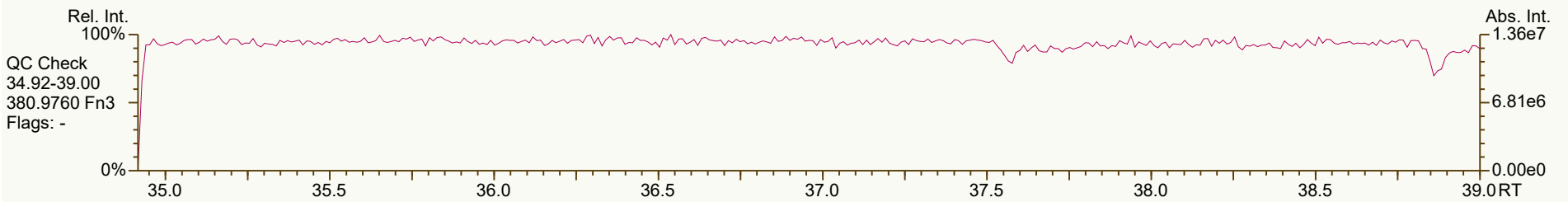
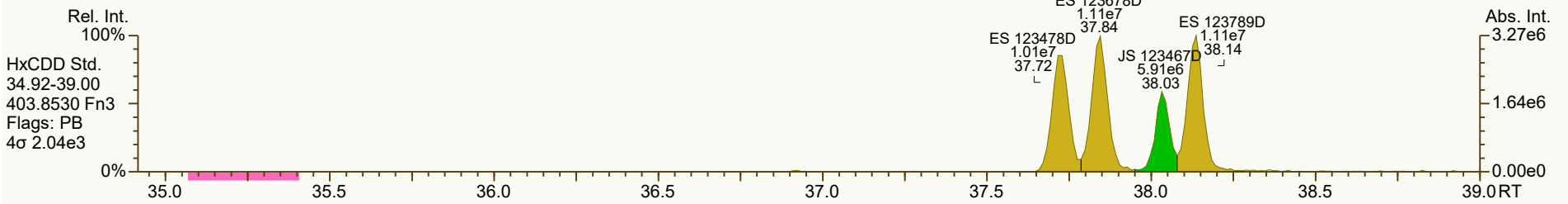
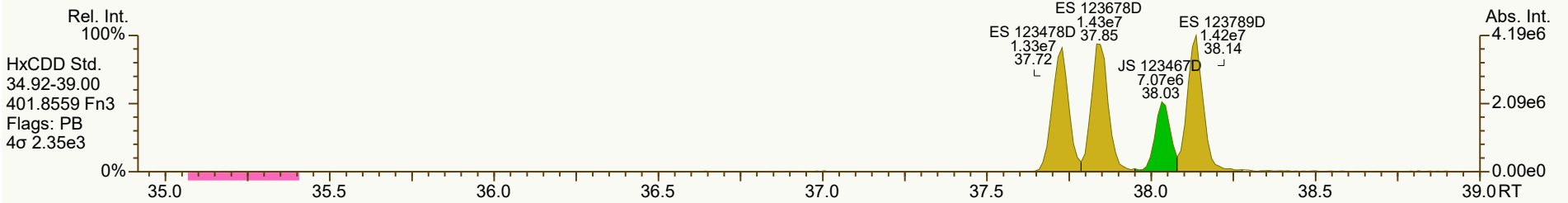
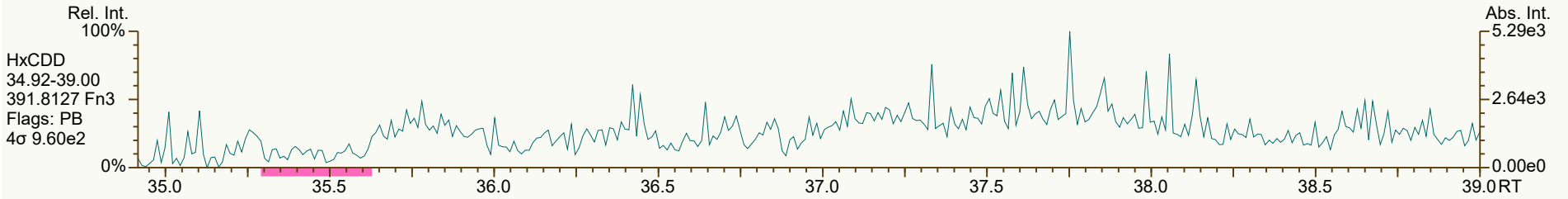
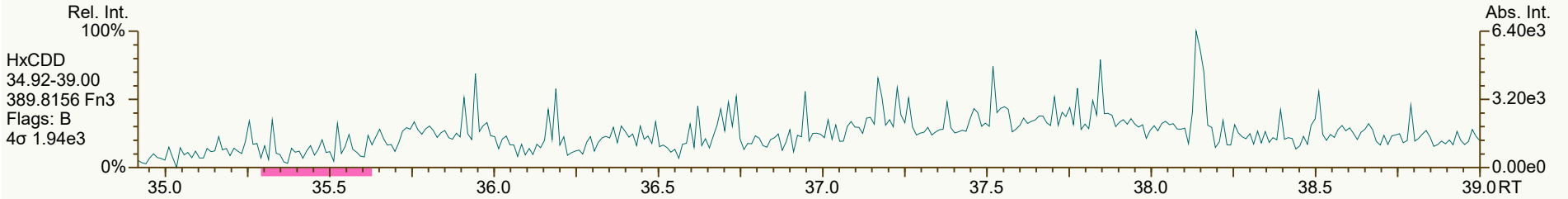
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PKD: 10-Feb-2022 10:19 Printed: 10-Feb-2022 10:35 Page 2 of 12



SGS ID: B6237_18888_DF_004
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NE
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13

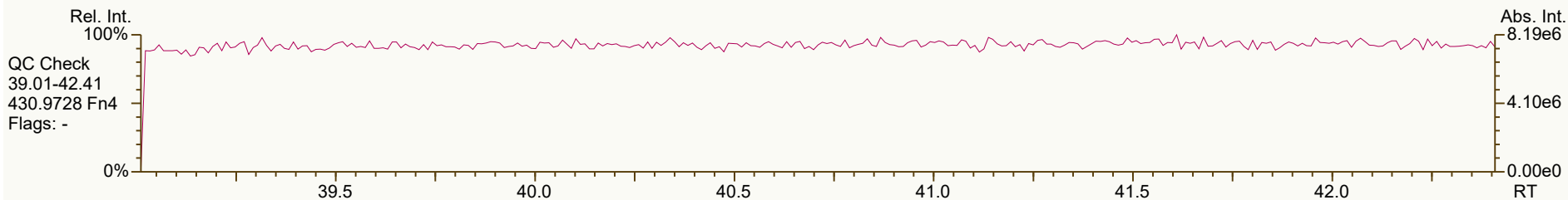
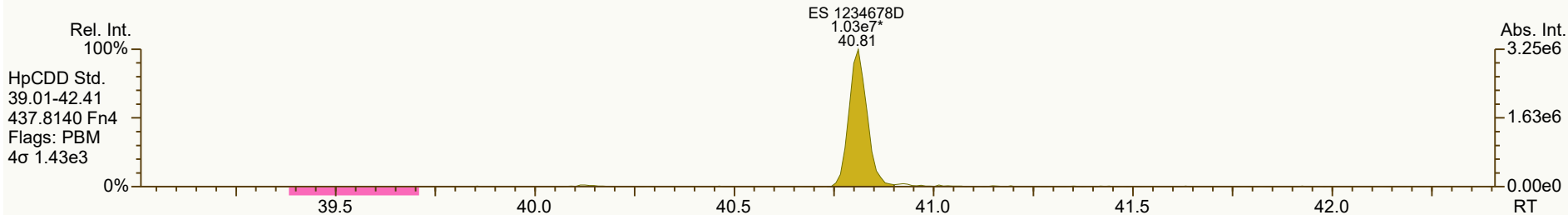
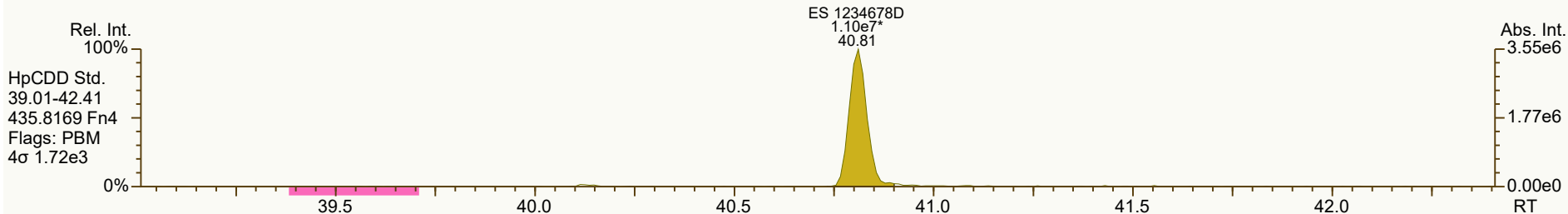
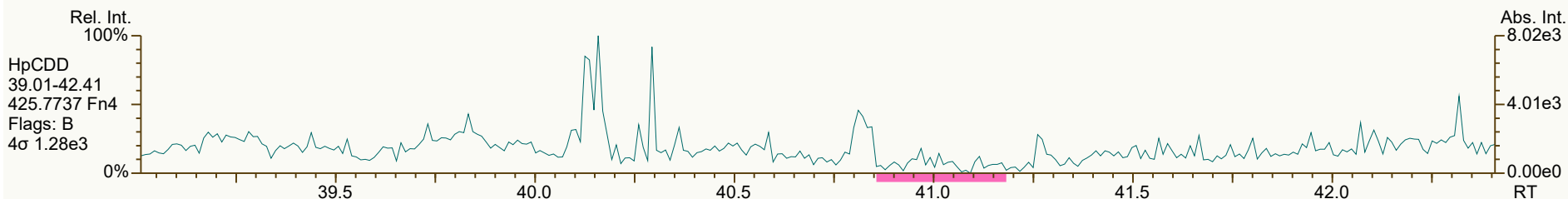
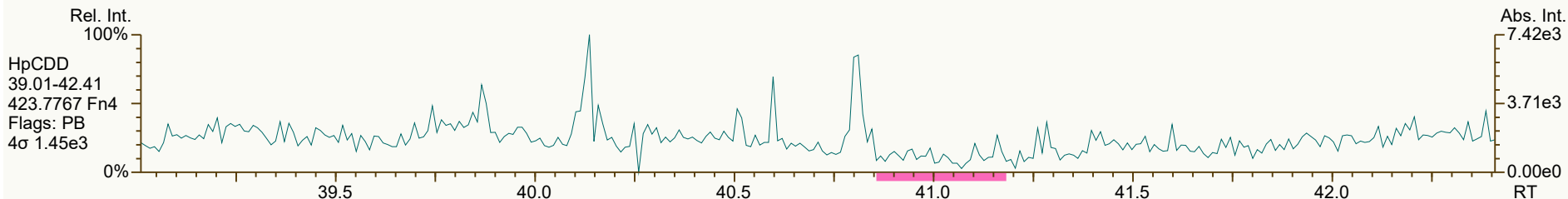
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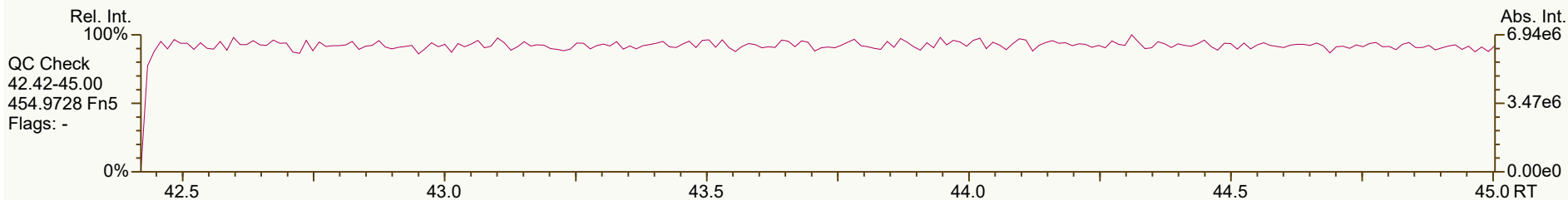
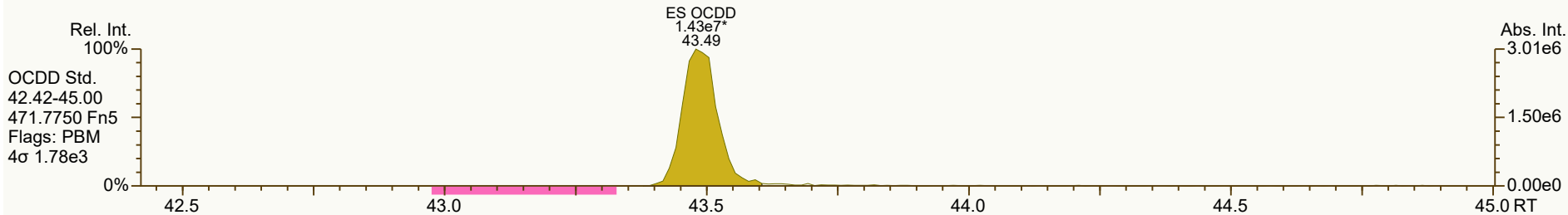
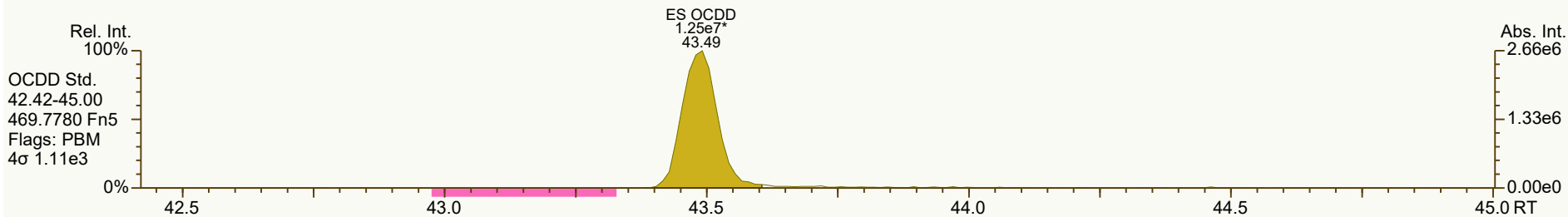
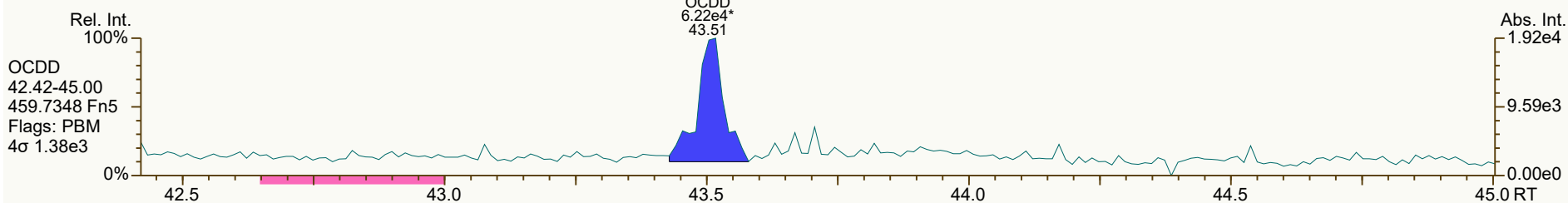
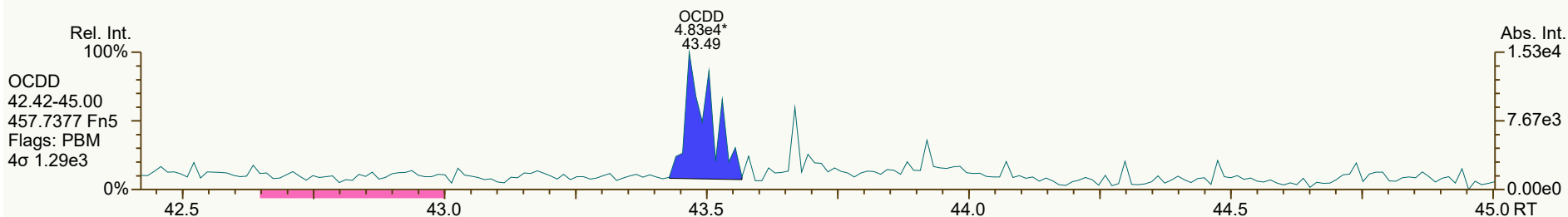


SGS ID: B6237_18888_DF_004
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NE
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13

Acq: 10-Feb-2022 01:33:04
User: DTF Datafile: 220209C25

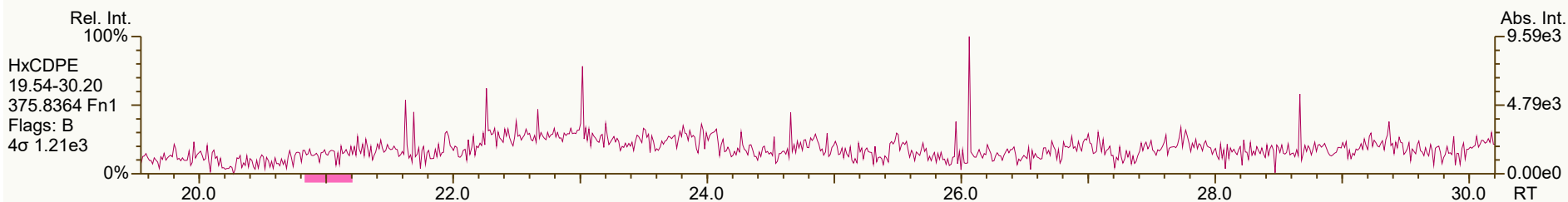
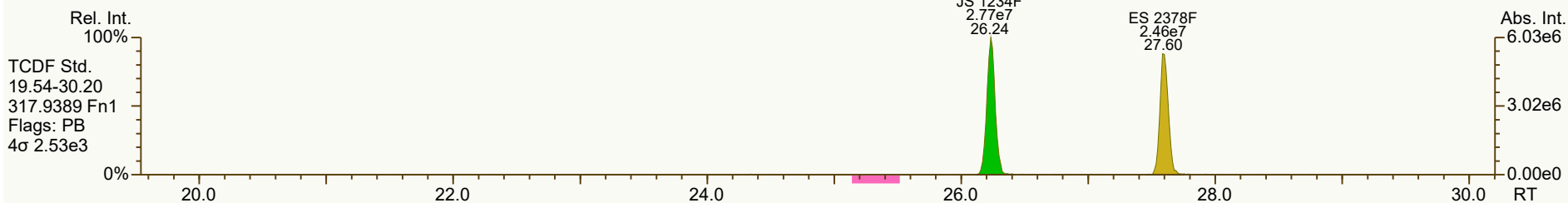
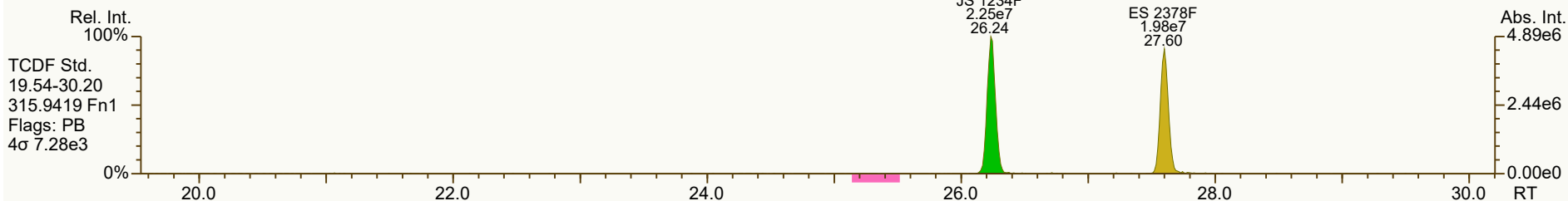
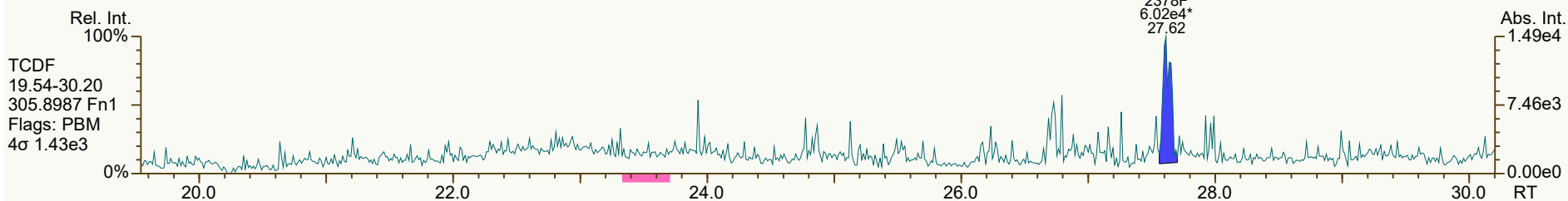
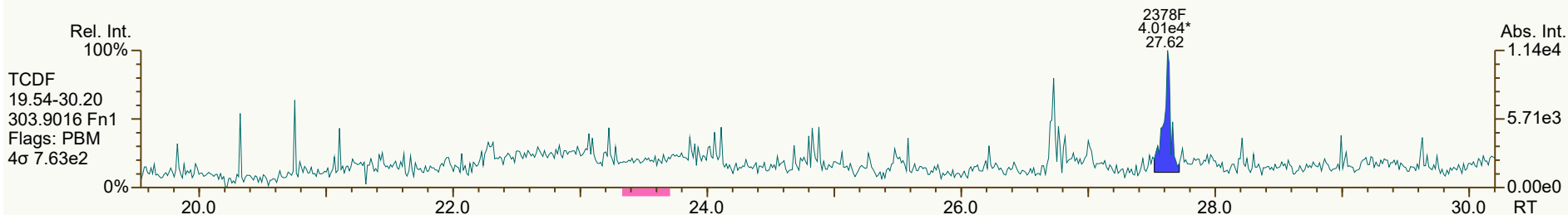




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Instr: [ILM] AutoSpec-Ultima HRMS3

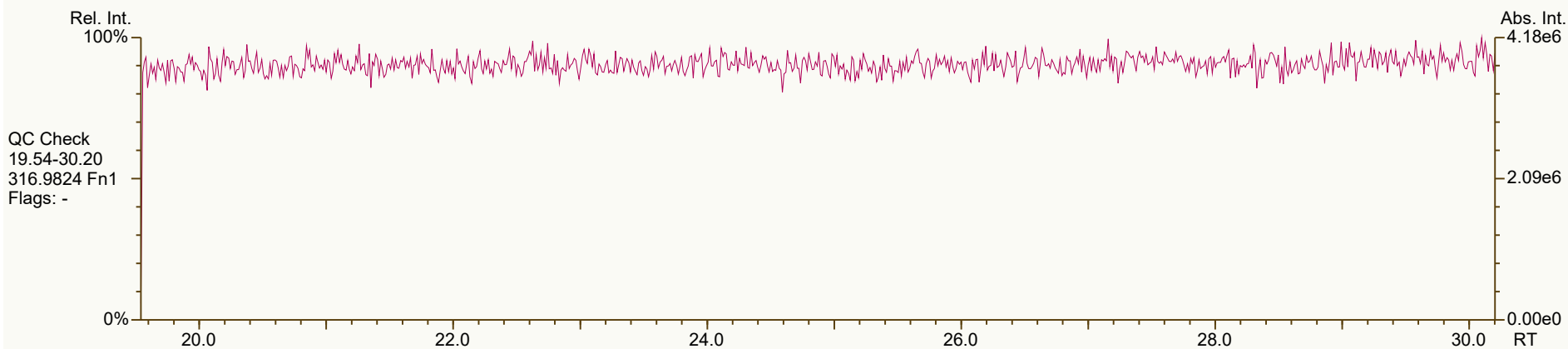
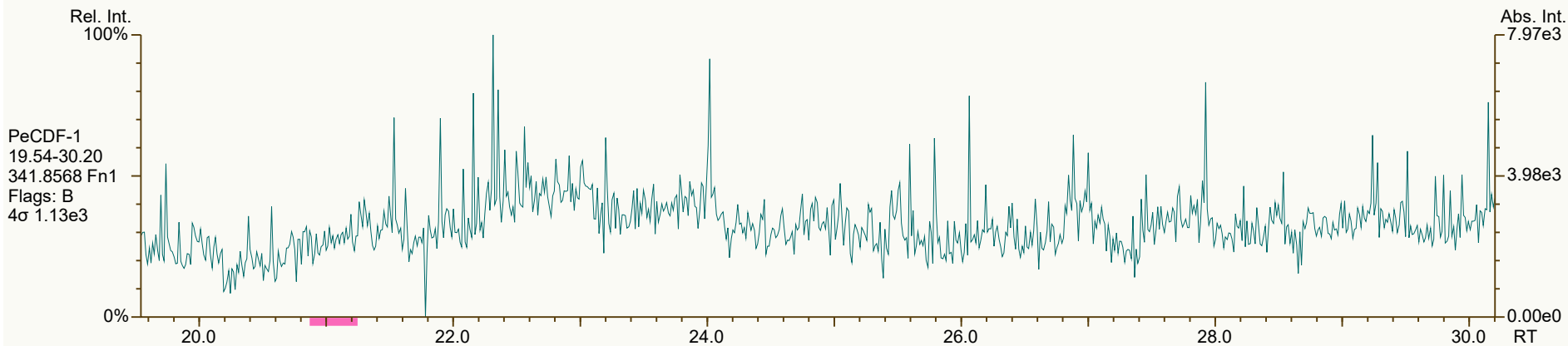
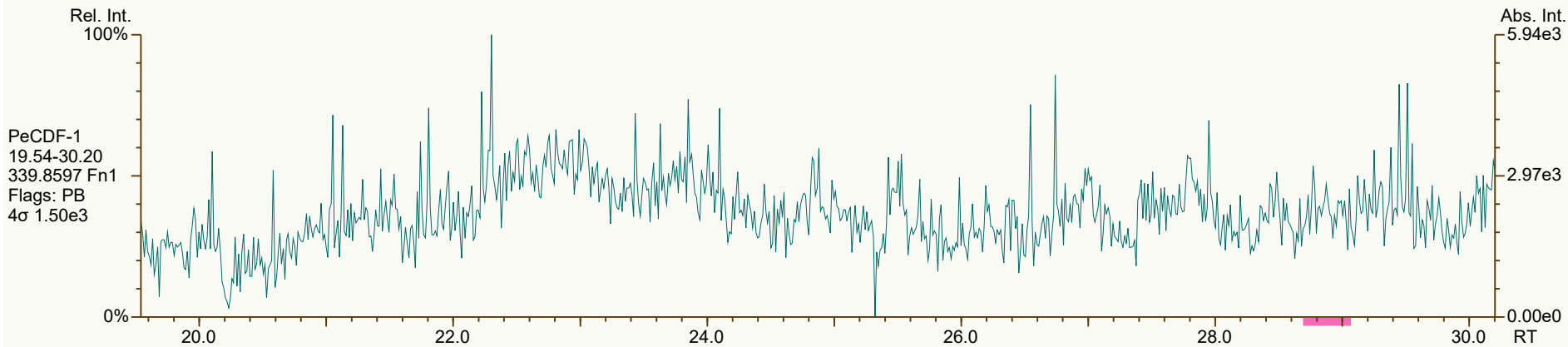
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13

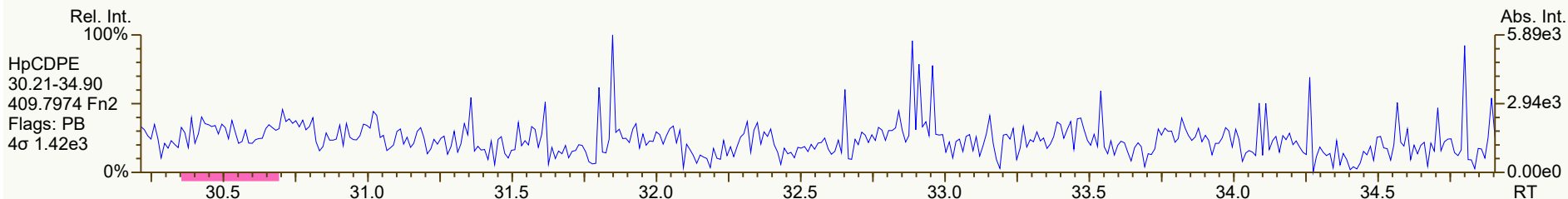
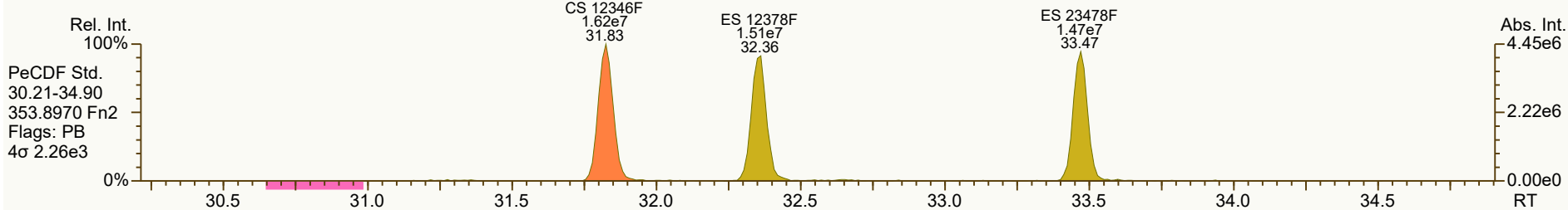
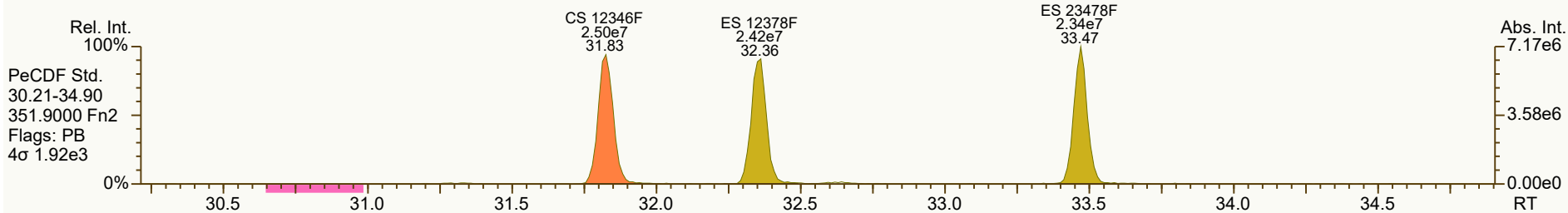
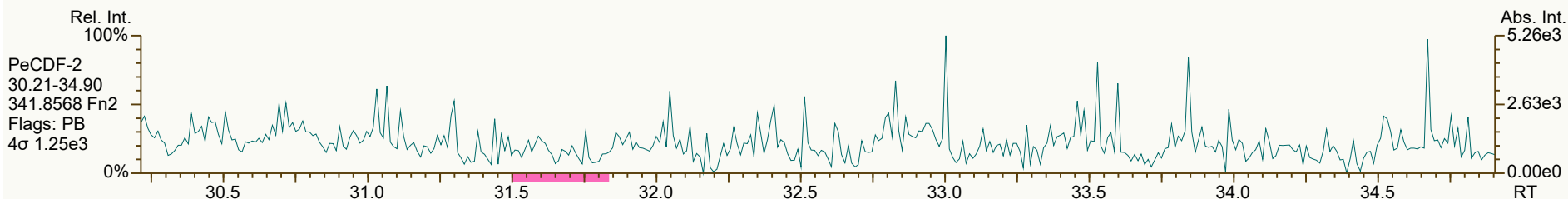
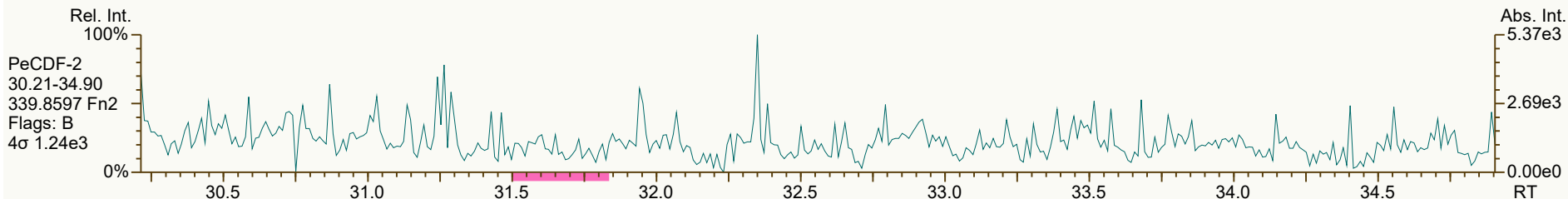
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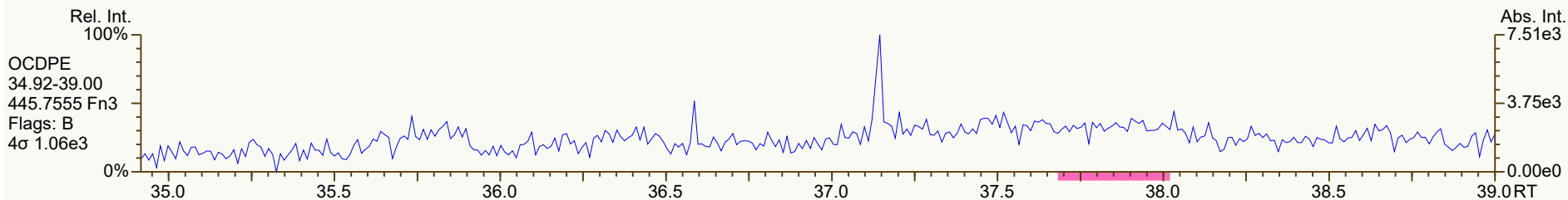
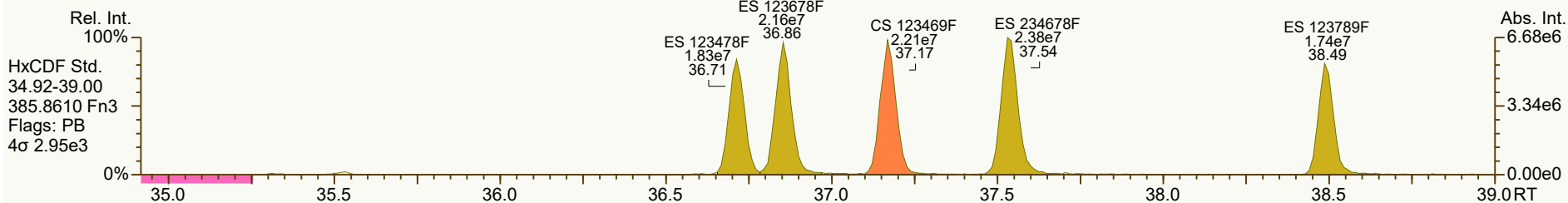
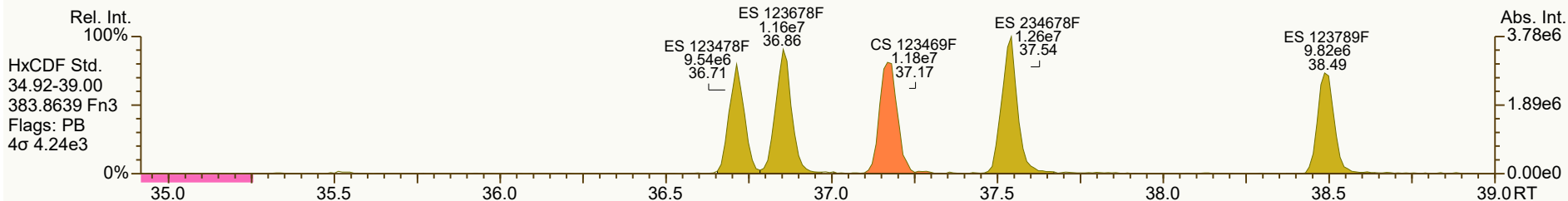
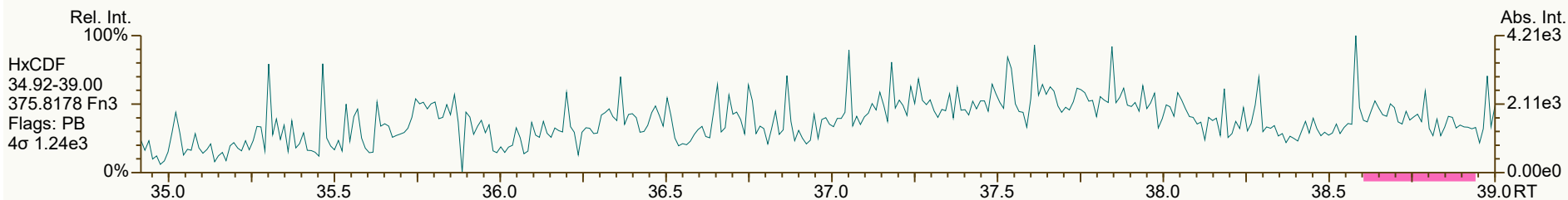
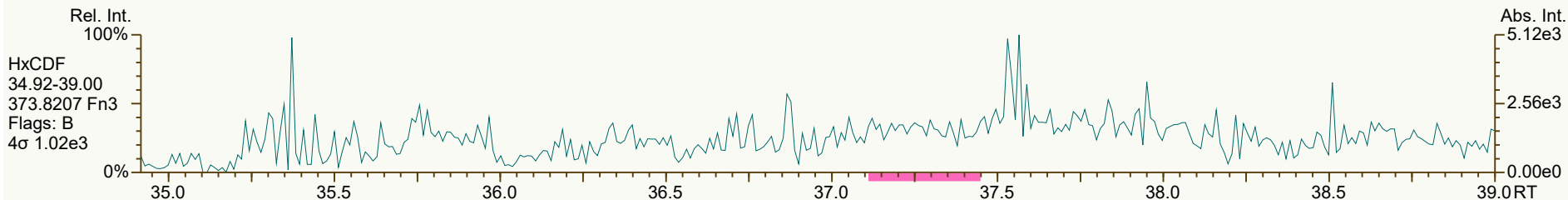


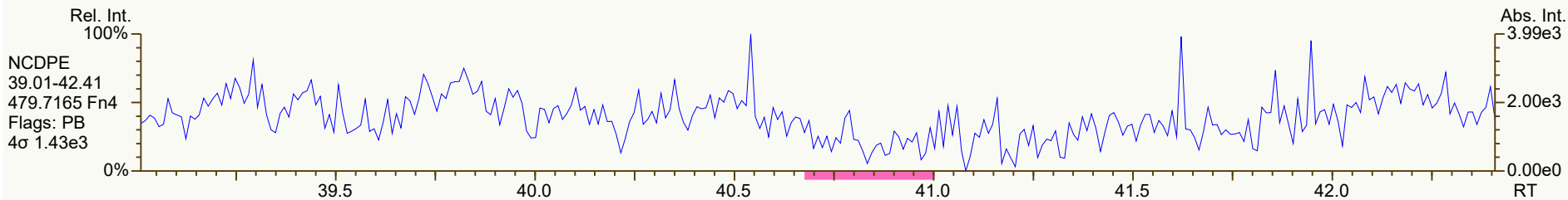
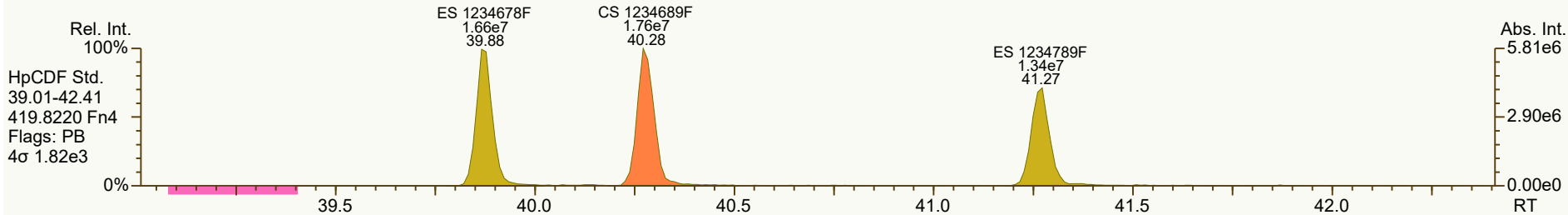
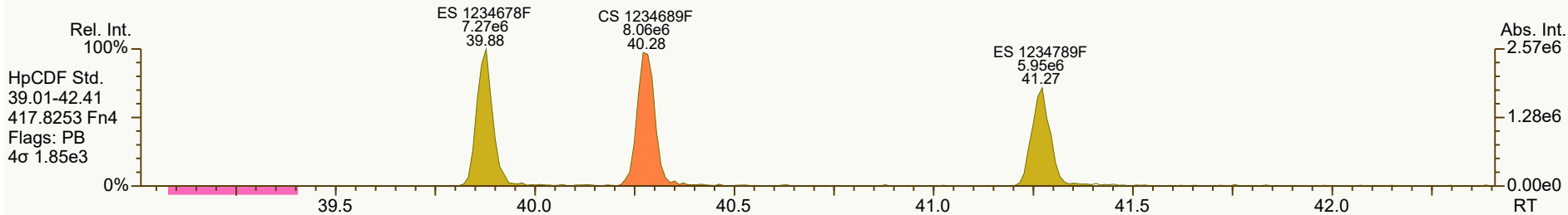
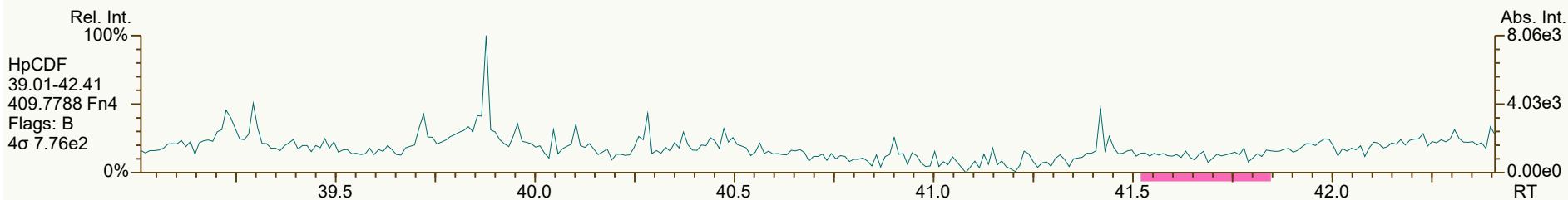
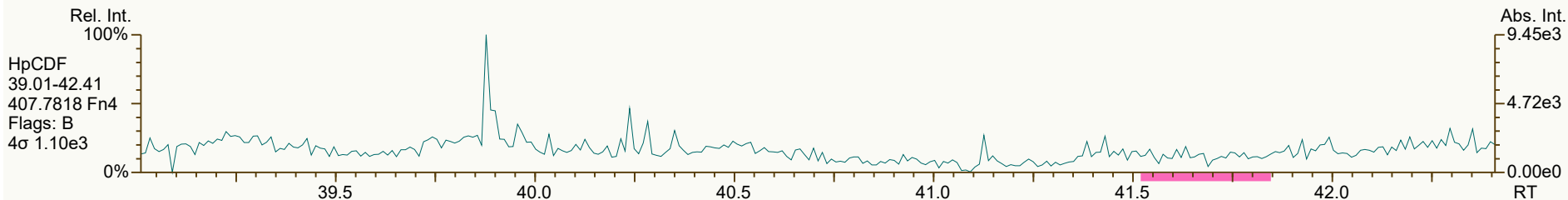
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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5968, 9568, 4659 scc: 938-617

Peak annotation: Areas, Centroids
Revised: 10-Feb-2022 10:19 (DTF) Printed: 10-Feb-2022 10:35 Page 7 of 12





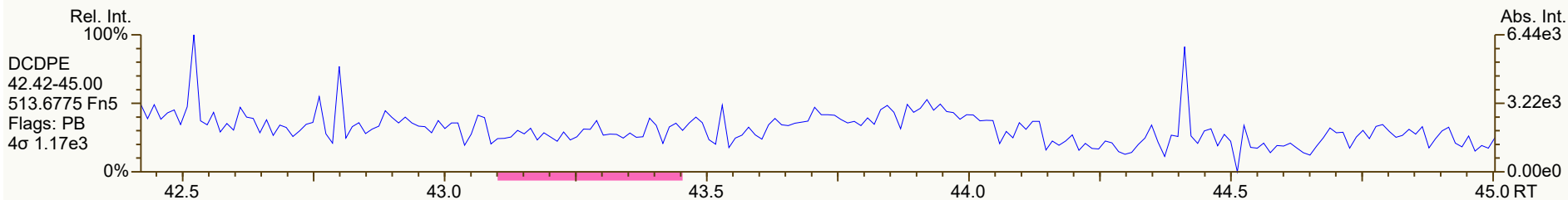
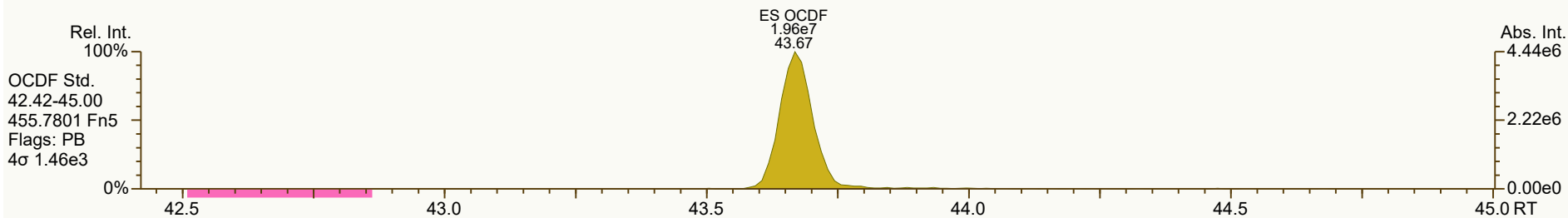
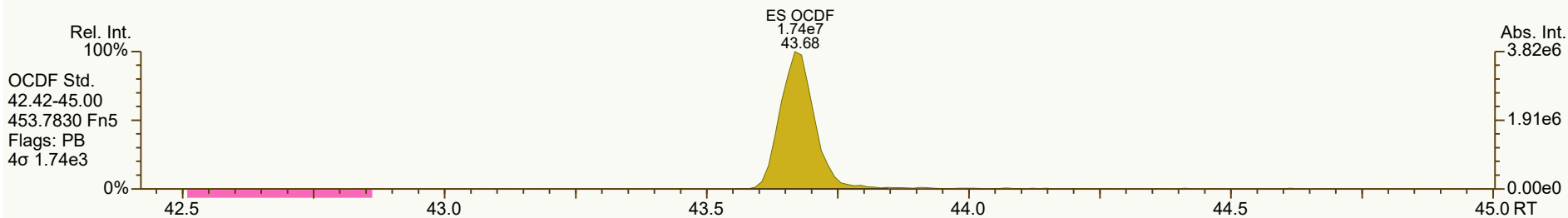
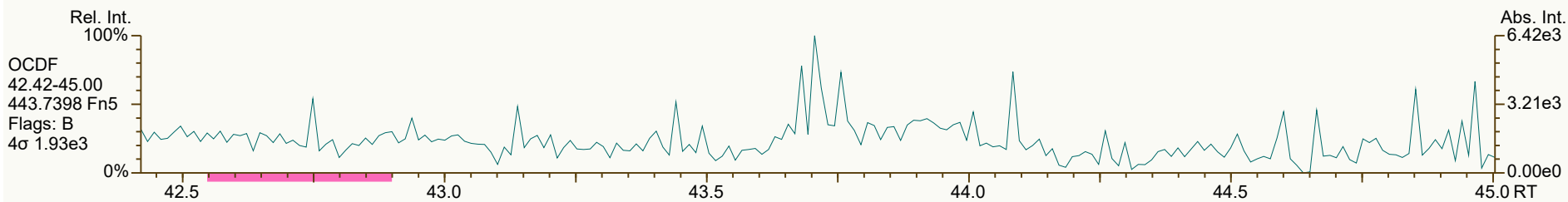
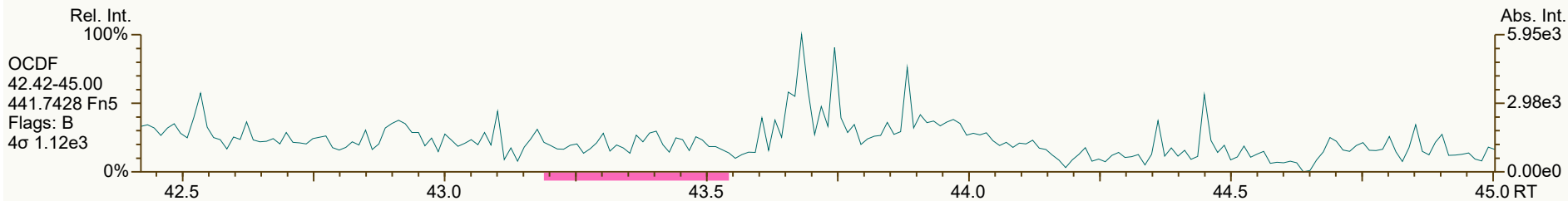




SGS ID: B6237_18888_DF_004
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NE
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13

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User: DTF Datafile: 220209C25



Results: P:\B6200_B6299\B6237\B6237_18888_DF\Resources\B6237_18888_DF_004.utp_res, saved 10-Feb-2022 10:22 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7999, 4963, 7901 scc: 938-617

Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:19 Printed: 10-Feb-2022 10:35 Page 12 of 12

Lab ID: B6237_18888_DF_005

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Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-DUP-1

UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 790-719-FNF

Datafile: 220209C26

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3388.054	2.11
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	3027.904	2
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2048.2207	1.37
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2048.2207	1.25
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2048.2207	1.27
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2094.1905	1.49
OCDD	43.49	J EMPC	1.0004	1.0002	-0.5	1.14E+05	1.26	N	1.13	14.7	3648.163	5.21
2378-TCDF	27.62	J	1.0008	1.0009	+0.2	1.15E+05	0.83	Y	1.08	4.65	2418.831	1.1
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	1871.7472	0.827
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	1871.7472	0.787
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2818.468	1.34
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2818.468	1.18
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2818.468	1.13
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2818.468	1.51
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2486.138	1.13
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2486.138	1.67
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2410.634	2.77

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.45	1.0236	1.0238	+0.3	2.89E+07	0.81	Y	1.05	89.3
ES 12378-PeCDD	33.80	1.2144	1.2161	+3.4	2.52E+07	1.59	Y	0.88	92.8
ES 123478-HxCDD	37.72	0.9920	0.9919	-0.2	2.32E+07	1.31	Y	0.97	92.5
ES 123678-HxCDD	37.83	0.9951	0.9950	-0.2	2.42E+07	1.24	Y	0.94	99.7
ES 123789-HxCDD	38.13	1.0027	1.0027	0	2.45E+07	1.33	Y	1.09	87.3
ES 1234678-HpCDD	40.80	1.0724	1.0730	+1.5	2.07E+07	1.06	Y	0.91	88
ES OCDD	43.49	1.1428	1.1436	+2.1	2.69E+07	0.92	Y	0.62	83.9
ES 2378-TCDF	27.60	1.0516	1.0520	+0.7	4.48E+07	0.81	Y	1.06	85.1
ES 12378-PeCDF	32.35	1.2312	1.2332	+3.9	4.00E+07	1.57	Y	0.91	88.5
ES 23478-PeCDF	33.46	1.2733	1.2756	+4.6	3.93E+07	1.56	Y	0.88	89.7
ES 123478-HxCDF	36.70	0.9655	0.9653	-0.4	2.72E+07	0.52	Y	1.20	88.3
ES 123678-HxCDF	36.85	0.9692	0.9690	-0.4	3.34E+07	0.53	Y	1.35	95.9
ES 234678-HxCDF	37.53	0.9871	0.9870	-0.2	3.49E+07	0.56	Y	1.24	109
ES 123789-HxCDF	38.48	1.0121	1.0121	0	2.61E+07	0.55	Y	1.16	87.9
ES 1234678-HpCDF	39.87	1.0479	1.0485	+1.4	2.28E+07	0.49	Y	0.97	91.6
ES 1234789-HpCDF	41.26	1.0845	1.0851	+1.5	1.88E+07	0.46	Y	0.85	85.9
ES OCDF	43.66	1.1477	1.1483	+1.6	3.68E+07	0.95	Y	0.81	88.4

Lab ID: B6237_18888_DF_005

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Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-DUP-1

UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 790-719-FNF

Datafile: 220209C26

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.09E+07	0.81	Y	-	-
JS 1234-TCDF	26.23		-	-	-	4.97E+07	0.78	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.29E+07	1.22	Y	-	-
CS 37C1-2378-TCDD	28.47		1.0244	1.0246	+0.3	1.32E+07	n/a	-	1.20	89
CS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	2.45E+07	1.67	Y	0.75	105
CS 12346-PeCDF	31.82		1.2112	1.2130	+3.4	3.99E+07	1.61	Y	0.85	94.5
CS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.10E+07	0.54	Y	1.12	108
CS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.36E+07	0.47	Y	0.89	103
SS 37C1-2378-TCDD	28.47		1.0244	1.0246	+0.3	1.32E+07	n/a		1.15	99.8
SS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	2.45E+07	1.67	Y	0.86	113
SS 12346-PeCDF	31.82		1.2112	1.2130	+3.4	3.99E+07	1.61	Y	0.94	107
SS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.10E+07	0.54	Y	0.83	112
SS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.36E+07	0.47	Y	0.92	113

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	14.7
Total TCDF	4.65	7.15
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	4.65	7.15
Total Tetra-Octa Dioxins & Furans	4.65	21.9

Lab ID: B6237_18888_DF_005

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Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-DUP-1

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Checkcode: 790-719-FNF

Datafile: 220209C26

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3388.054	2.11
1379-TCDD	NotFnd		0.8860						1.18		3388.054	2.11
1369-TCDD	NotFnd		0.9009						1.18		3388.054	2.11
1469-TCDD	NotFnd		0.9281						1.18		3388.054	2.11
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3388.054	2.11
1378-TCDD	NotFnd		0.9432						1.18		3388.054	2.11
1268-TCDD	NotFnd		0.9500						1.18		3388.054	2.11
1478-TCDD	NotFnd		0.9586						1.18		3388.054	2.11
1279-TCDD	NotFnd		0.9645						1.18		3388.054	2.11
1234/1269-TCDD	NotFnd		0.9770						1.18		3388.054	2.11
1236-TCDD	NotFnd		0.9817						1.18		3388.054	2.11
1237/1238-TCDD	NotFnd		0.9905						1.18		3388.054	2.11
1239-TCDD	NotFnd		0.9952						1.18		3388.054	2.11
2378-TCDD	NotFnd		1.0008						1.18		3388.054	2.11
1278-TCDD	NotFnd		1.0121						1.18		3388.054	2.11
1267-TCDD	NotFnd		1.0167						1.18		3388.054	2.11
1289-TCDD	NotFnd		1.0345						1.18		3388.054	2.11
12479/12468-PeCDD	NotFnd		0.9267						1.04		3027.904	2
12469-PeCDD	NotFnd		0.9425						1.04		3027.904	2
12368-PeCDD	NotFnd		0.9588						1.04		3027.904	2
12478-PeCDD	NotFnd		0.9643						1.04		3027.904	2
12379-PeCDD	NotFnd		0.9673						1.04		3027.904	2
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		3027.904	2
12346/12347-PeCDD	NotFnd		0.9858						1.04		3027.904	2
12378-PeCDD	NotFnd		1.0006						1.04		3027.904	2
12367-PeCDD	NotFnd		1.0033						1.04		3027.904	2
12389-PeCDD	NotFnd		1.0134						1.04		3027.904	2
124679/124689-HxCDD	NotFnd		0.9542						1.10		2048.2207	1.3
123468-HxCDD	NotFnd		0.9715						1.10		2048.2207	1.3
123679/123689-HxCDD	NotFnd		0.9793						1.10		2048.2207	1.3
123469-HxCDD	NotFnd		0.9828						1.10		2048.2207	1.3
123478-HxCDD	NotFnd		1.0004						1.09		2048.2207	1.37
123678-HxCDD	NotFnd		1.0035						1.15		2048.2207	1.25
123467-HxCDD	NotFnd		1.0085						1.10		2048.2207	1.3
123789-HxCDD	NotFnd		1.0112						1.05		2048.2207	1.27

Lab ID: B6237_18888_DF_005

Acq'd: 10 Feb 2022 02:19 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-DUP-1

UTP: 10-Feb-2022 10:22:31 DTF

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Checkcode: 790-719-FNF

Datafile: 220209C26

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		2094.1905	1.49
1234678-HpCDD	NotFnd		1.0003						1.06		2094.1905	1.49
OCDD	43.49	J EMPC	1.0004	1.0002	-0.5	1.14E+05	1.26	N	1.13	14.7	3648.163	5.21
OCDD-a	NotFnd		1.0003						0.07		3126.95	69.8
1368-TCDF	NotFnd		0.8251						1.08		2418.831	1.1
1468-TCDF	NotFnd		0.8458						1.08		2418.831	1.1
2468-TCDF	NotFnd		0.8686						1.08		2418.831	1.1
1346/1246-TCDF	NotFnd		0.8814						1.08		2418.831	1.1
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2418.831	1.1
1348-TCDF	NotFnd		0.8962						1.08		2418.831	1.1
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2418.831	1.1
1268-TCDF	NotFnd		0.9145						1.08		2418.831	1.1
1467-TCDF	NotFnd		0.9193						1.08		2418.831	1.1
1478-TCDF	NotFnd		0.9254						1.08		2418.831	1.1
1369/1237-TCDF	NotFnd		0.9387						1.08		2418.831	1.1
2467-TCDF	NotFnd		0.9433						1.08		2418.831	1.1
2368-TCDF	NotFnd		0.9489						1.08		2418.831	1.1
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2418.831	1.1
1278-TCDF	26.73	J EMPC	0.9683	0.9686	+0.5	6.14E+04	0.65	N	1.08	2.49	2418.831	1.1
1349-TCDF	NotFnd		0.9722						1.08		2418.831	1.1
1267-TCDF	NotFnd		0.9783						1.08		2418.831	1.1
2346/1249-TCDF	NotFnd		0.9850						1.08		2418.831	1.1
2347/1279-TCDF	NotFnd		0.9926						1.08		2418.831	1.1
2348-TCDF	NotFnd		0.9967						1.08		2418.831	1.1
2378-TCDF	27.62	J	1.0008	1.0009	+0.2	1.15E+05	0.83	Y	1.08	4.65	2418.831	1.1
2367/3467-TCDF	NotFnd		1.0137						1.08		2418.831	1.1
1269-TCDF	NotFnd		1.0223						1.08		2418.831	1.1
1239-TCDF	NotFnd		1.0321						1.08		2418.831	1.1
1289-TCDF	NotFnd		1.0722						1.08		2418.831	1.1
13468/12468-PeCDF	NotFnd		0.9139						1.02		2752.642	1.19
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		1871.7472	0.807
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		1871.7472	0.807
14678-PeCDF	NotFnd		0.9692						1.02		1871.7472	0.807
13479-PeCDF	NotFnd		0.9723						1.02		1871.7472	0.807
13469/12479-PeCDF	NotFnd		0.9797						1.02		1871.7472	0.807
12346-PeCDF	NotFnd		0.9840						1.02		1871.7472	0.807

Lab ID: B6237_18888_DF_005

Acq'd: 10 Feb 2022 02:19 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

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UTP: 10-Feb-2022 10:22:31 DTF

J-level: 4.9 pg/L Split: 1

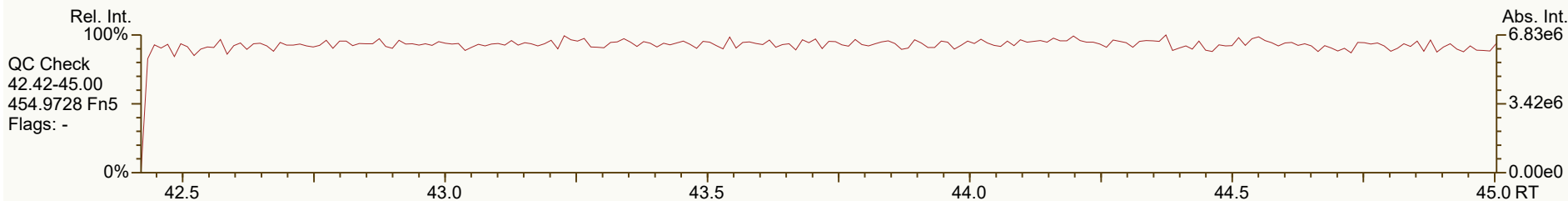
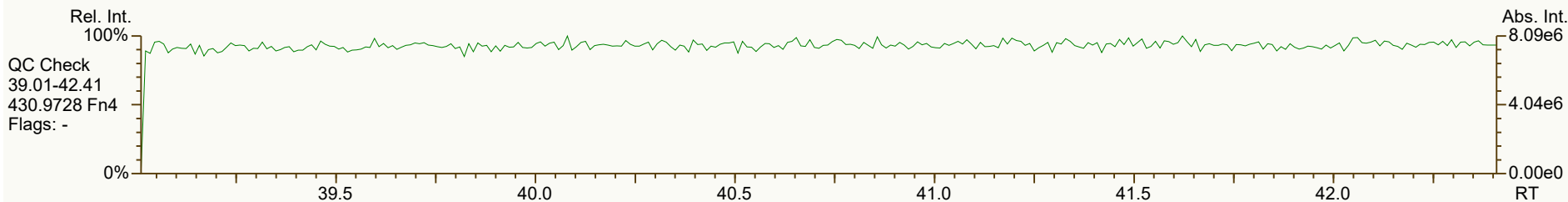
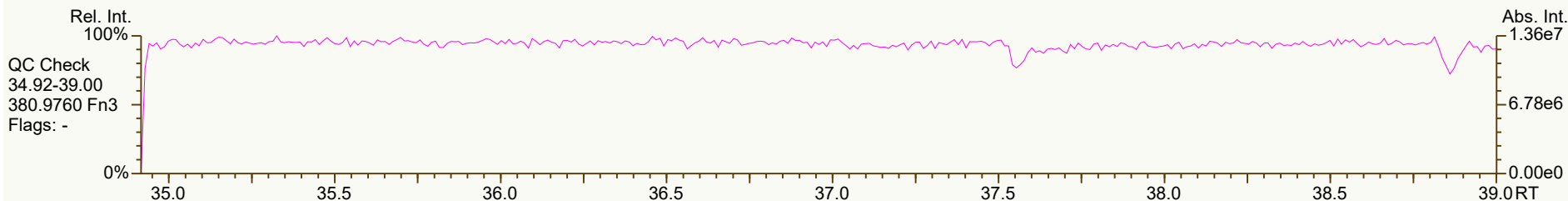
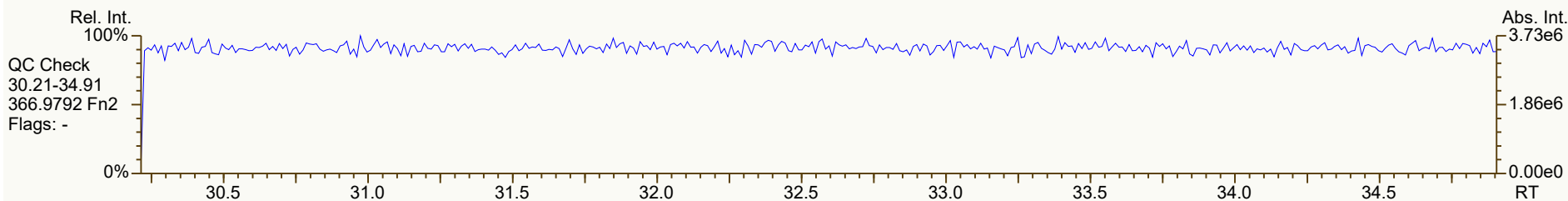
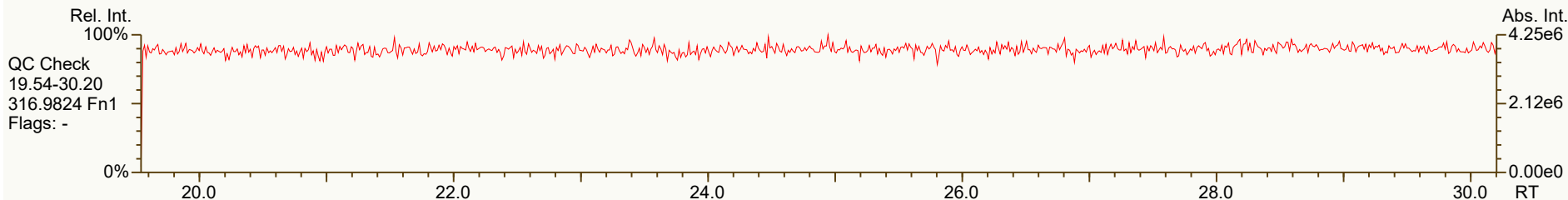
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Datafile: 220209C26

Report: 10 Feb 2022 10:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

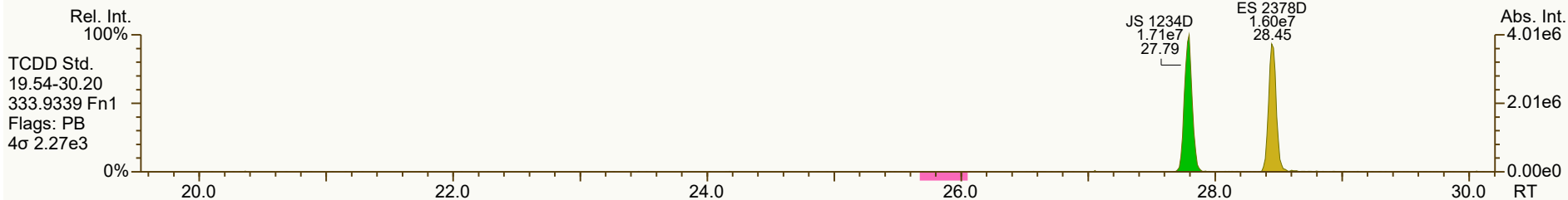
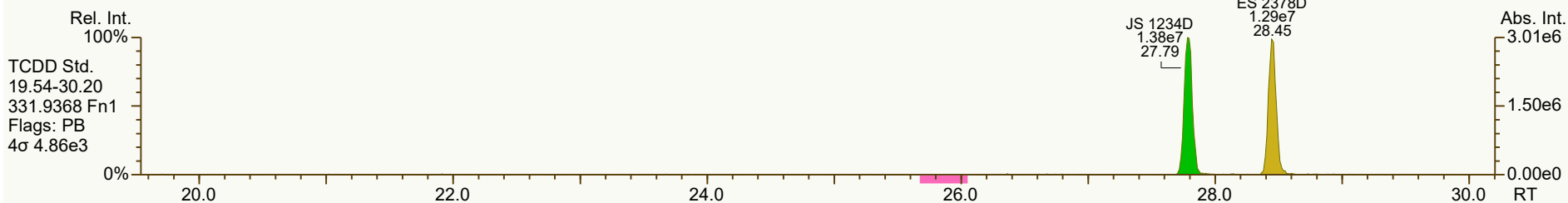
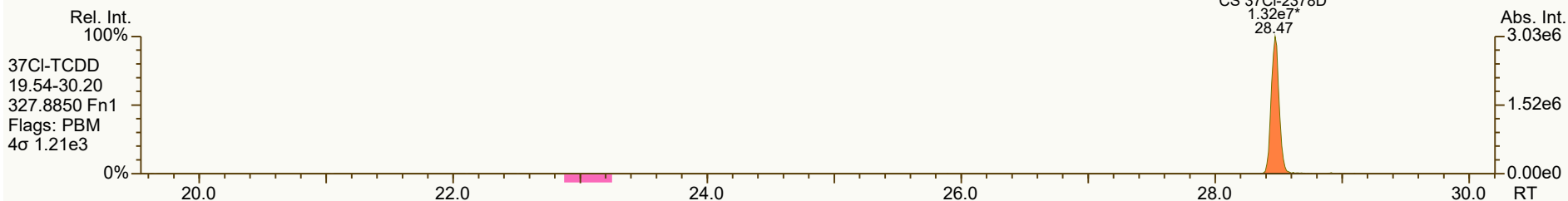
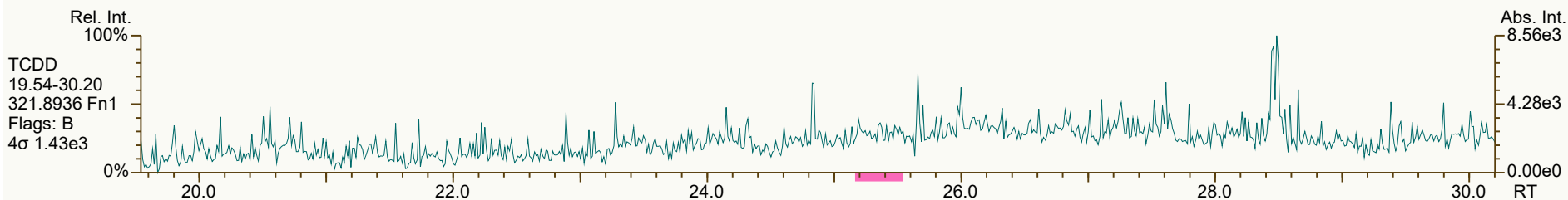
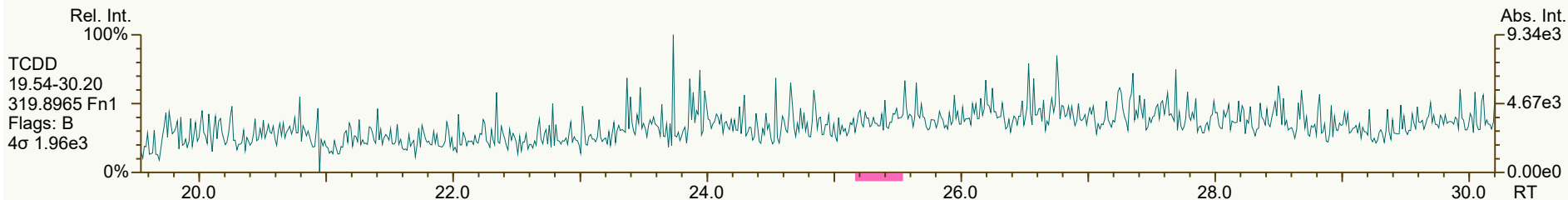
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12347-PeCDF	NotFnd		0.9894						1.02		1871.7472	0.807
12348-PeCDF	NotFnd		0.9940						1.02		1871.7472	0.807
12378-PeCDF	NotFnd		1.0005						1.02		1871.7472	0.827
12678/12367-PeCDF	NotFnd		1.0089						1.02		1871.7472	0.807
12379-PeCDF	NotFnd		1.0142						1.02		1871.7472	0.807
12679-PeCDF	NotFnd		0.9929						1.02		1871.7472	0.807
23467/12369-PeCDF	NotFnd		0.9967						1.02		1871.7472	0.807
23478-PeCDF	NotFnd		1.0005						1.02		1871.7472	0.787
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		1871.7472	0.807
12349-PeCDF	NotFnd		1.0100						1.02		1871.7472	0.807
12389-PeCDF	NotFnd		1.0324						1.02		1871.7472	0.807
123468-HxCDF	NotFnd		0.9627						1.19		2818.468	1.27
124678/134678-HxCDF	NotFnd		0.9682						1.19		2818.468	1.27
134679-HxCDF	NotFnd		0.9744						1.19		2818.468	1.27
124679-HxCDF	NotFnd		0.9798						1.19		2818.468	1.27
124689-HxCDF	NotFnd		0.9858						1.19		2818.468	1.27
123467-HxCDF	NotFnd		0.9972						1.19		2818.468	1.27
123478-HxCDF	NotFnd		1.0004						1.27		2818.468	1.34
123678-HxCDF	NotFnd		1.0004						1.15		2818.468	1.18
123479-HxCDF	NotFnd		1.0049						1.19		2818.468	1.27
123469-HxCDF	NotFnd		1.0090						1.19		2818.468	1.27
123679-HxCDF	NotFnd		0.9942						1.19		2818.468	1.27
234678-HxCDF	NotFnd		1.0005						1.19		2818.468	1.13
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2818.468	1.27
123789-HxCDF	NotFnd		1.0004						1.16		2818.468	1.51
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2818.468	1.27
1234678-HpCDF	NotFnd		1.0003						1.37		2486.138	1.13
1234679-HpCDF	NotFnd		1.0068						1.34		2486.138	1.37
1234689-HpCDF	NotFnd		1.0103						1.34		2486.138	1.37
1234789-HpCDF	NotFnd		1.0002						1.31		2486.138	1.67
OCDF	NotFnd		1.0003						1.07		2410.634	2.77
OCDF-a	NotFnd		1.0002						0.07		3452.333	63.9



SGS ID: B6237_18888_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14

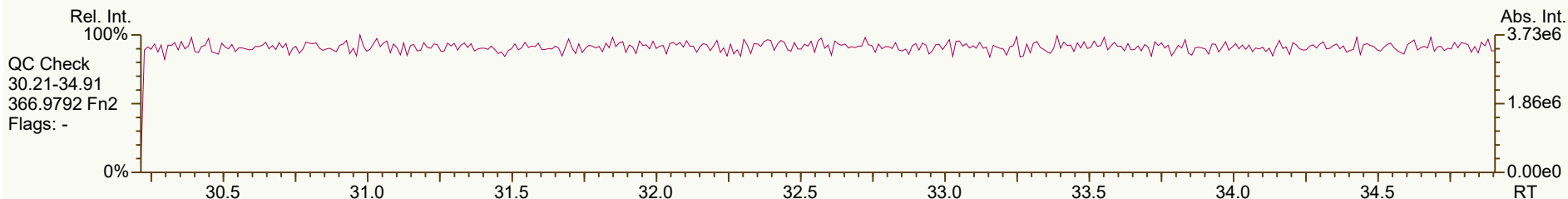
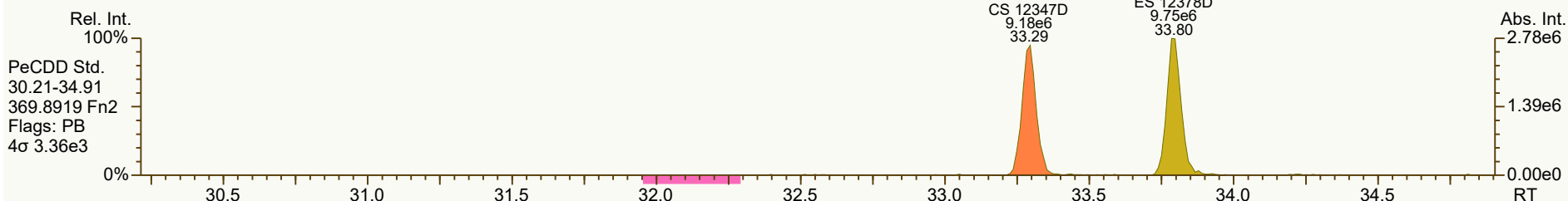
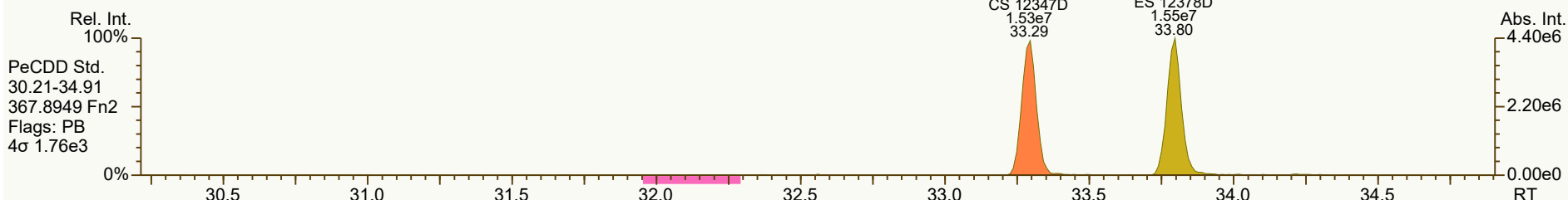
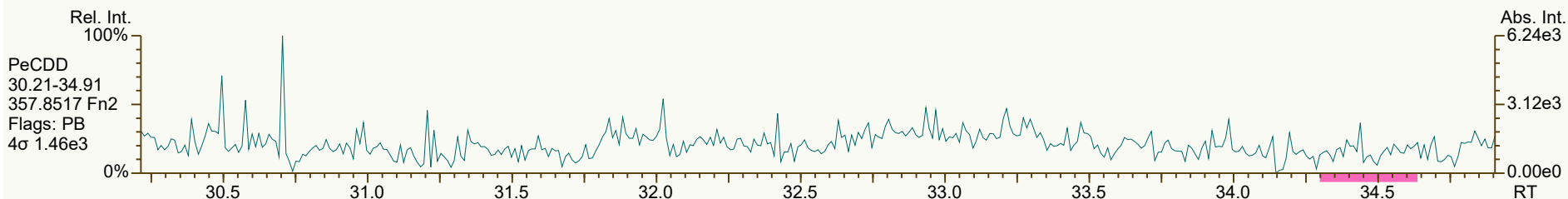
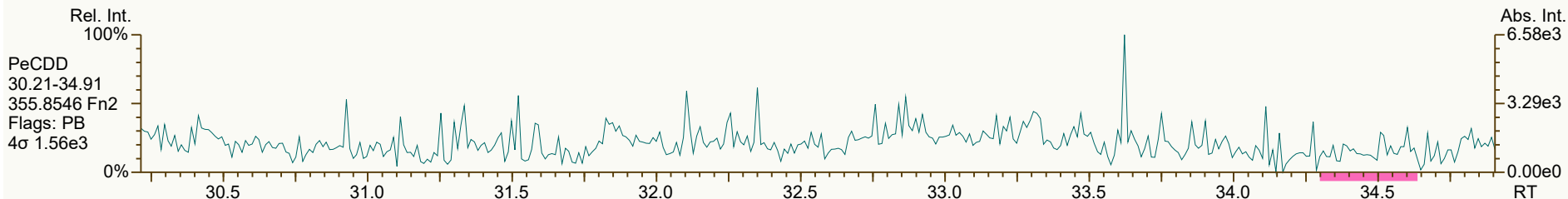
Acq: 10-Feb-2022 02:19:25
User: DTF Datafile: 220209C26

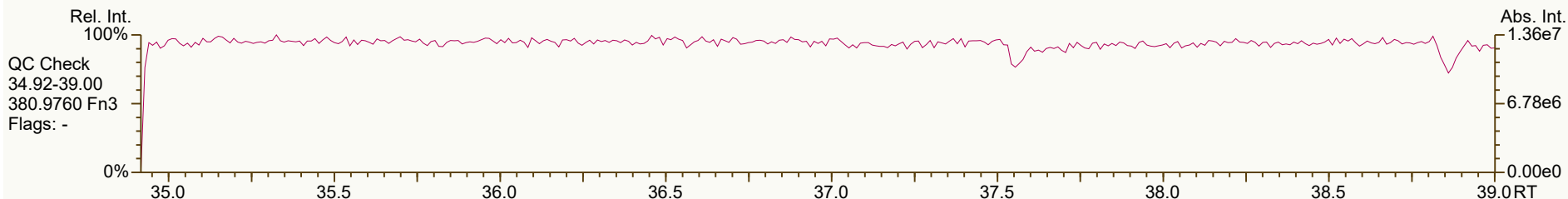
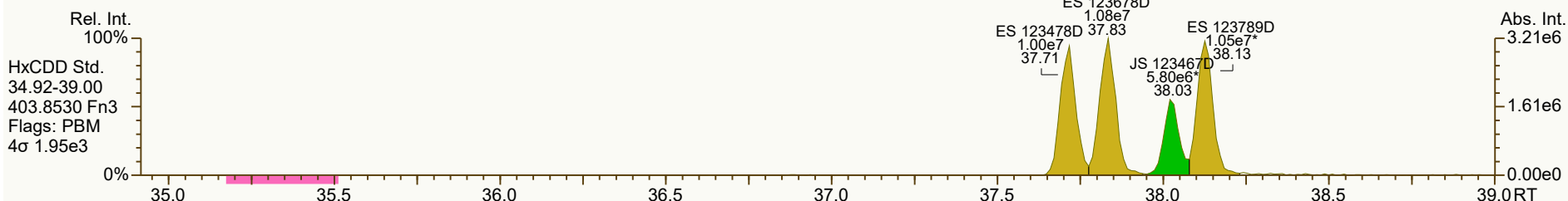
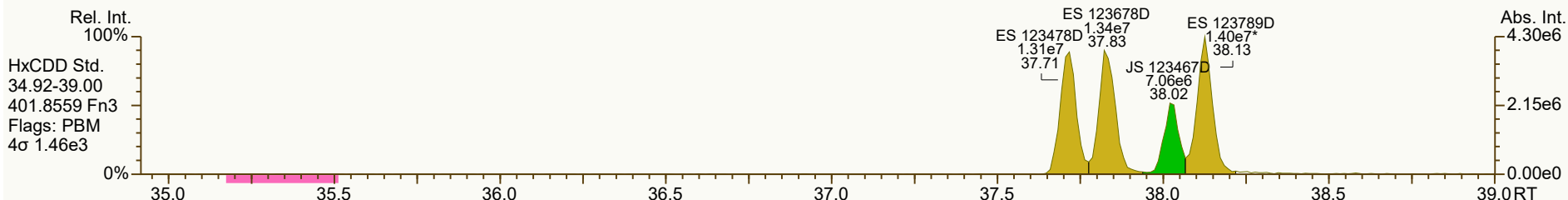
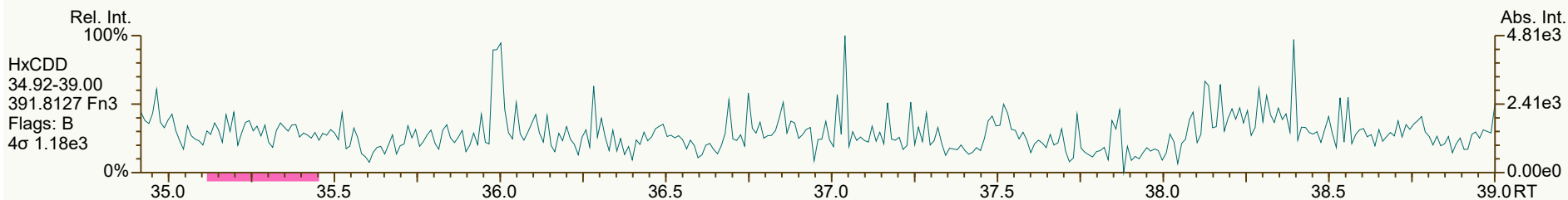
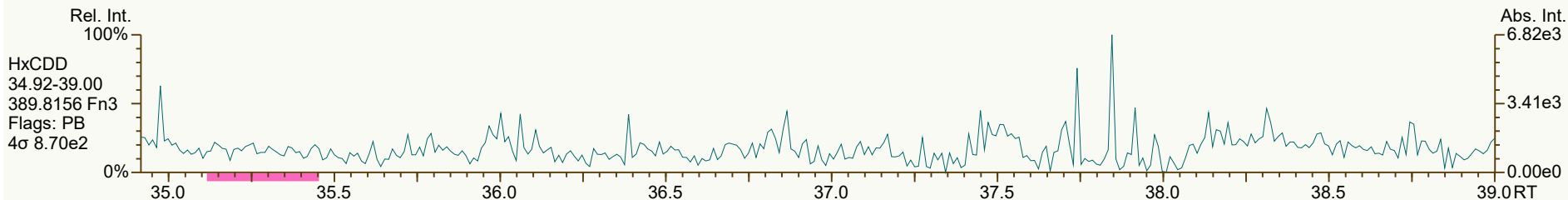


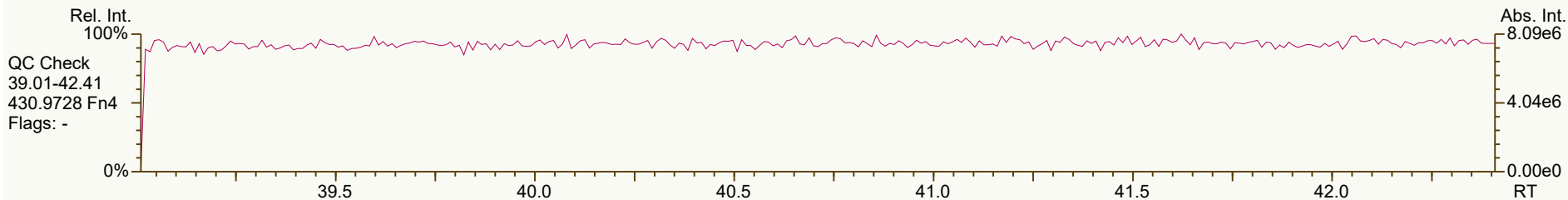
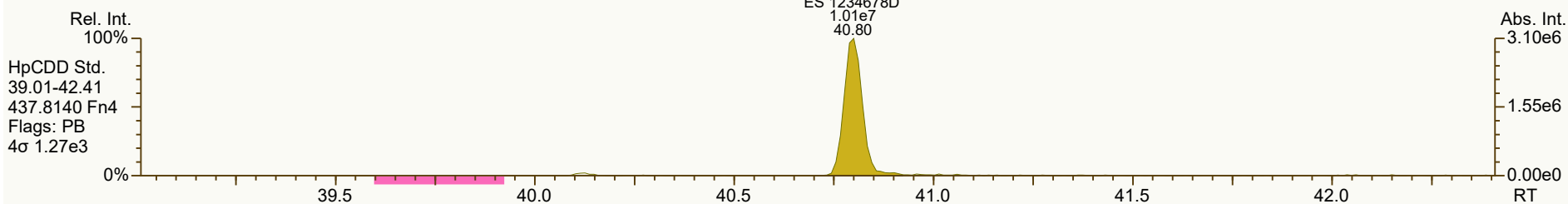
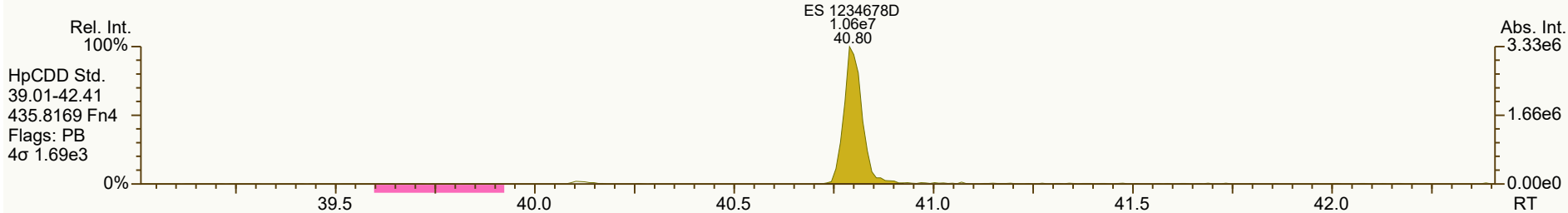
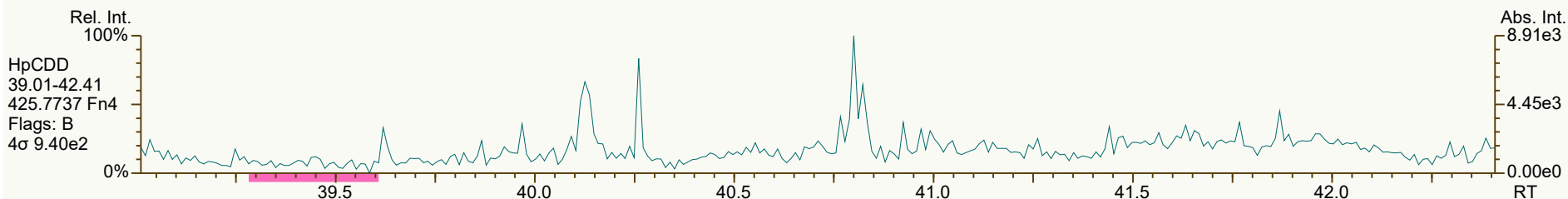
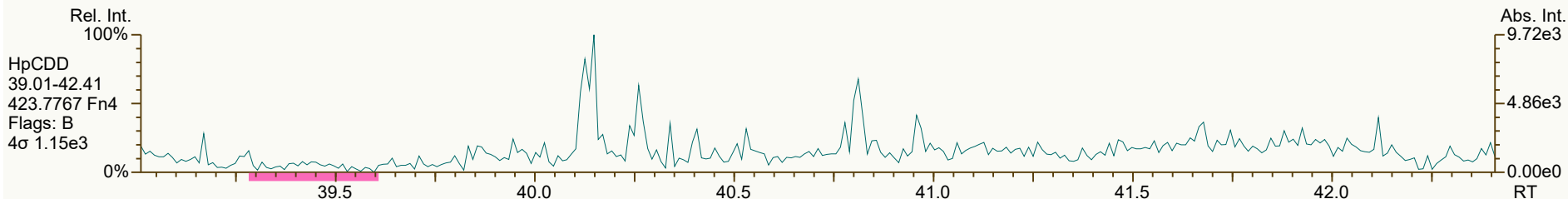
SGS ID: B6237_18888_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

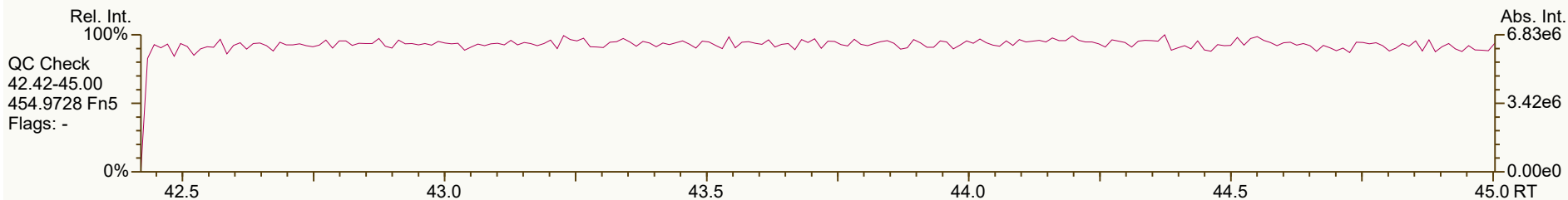
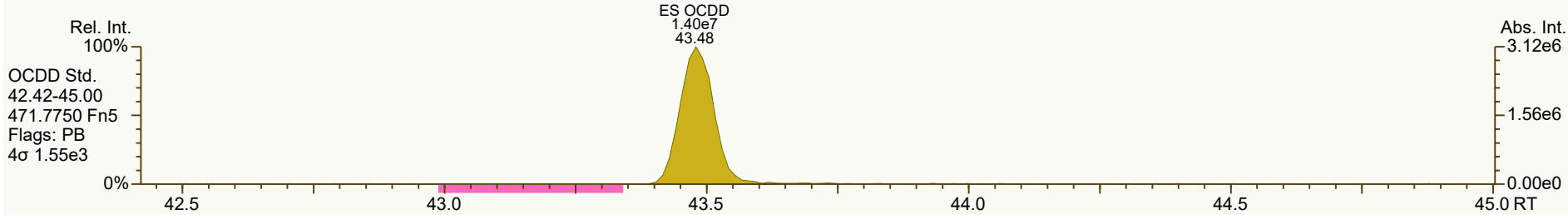
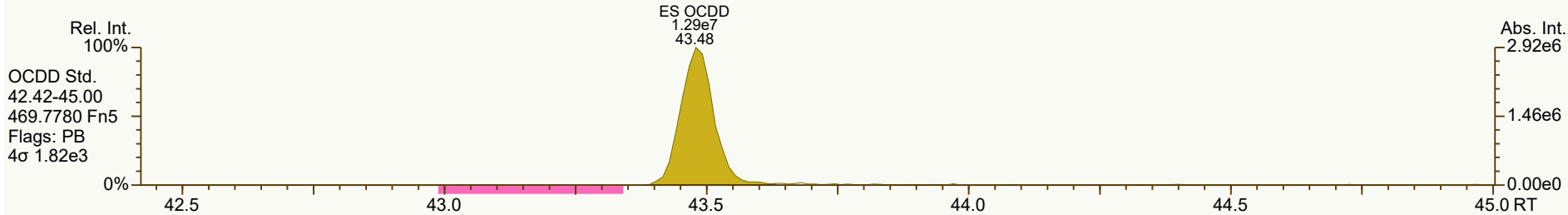
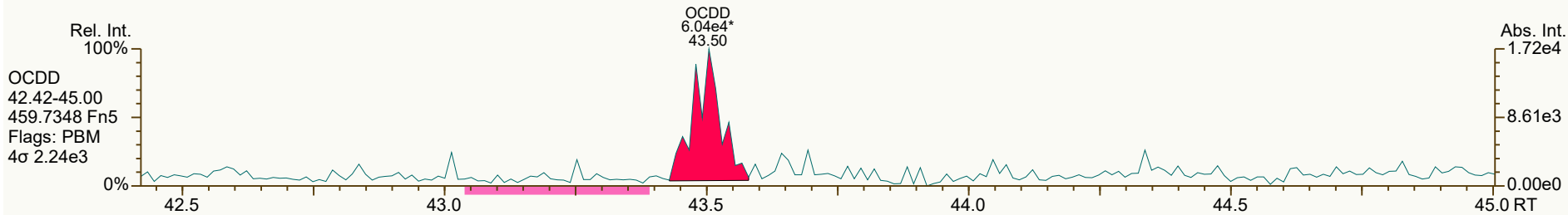
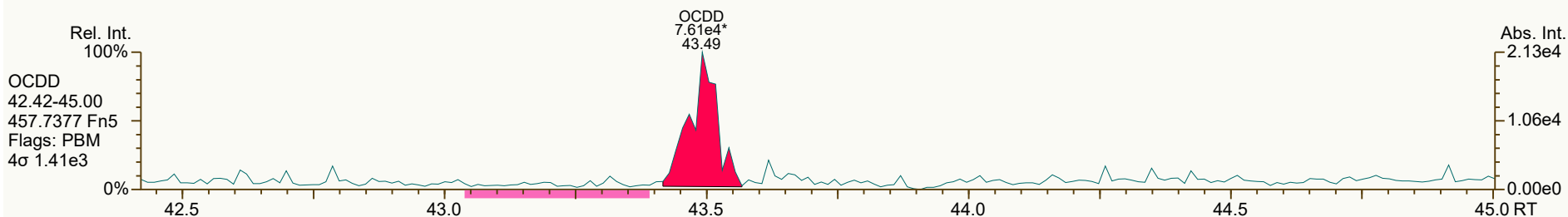
Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14

Acq: 10-Feb-2022 02:19:25
User: DTF Datafile: 220209C26





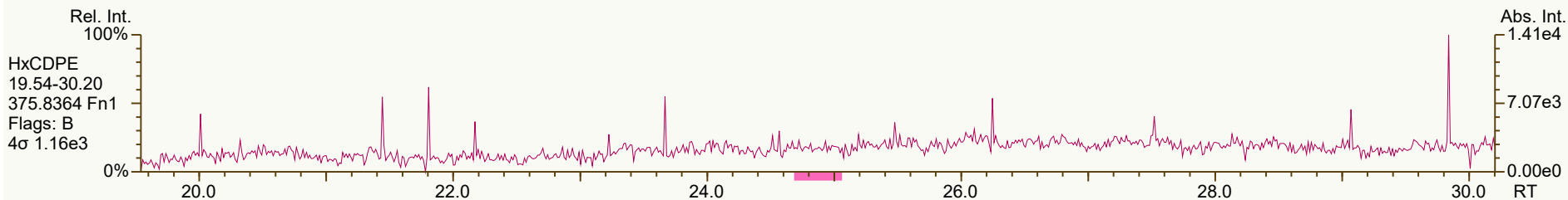
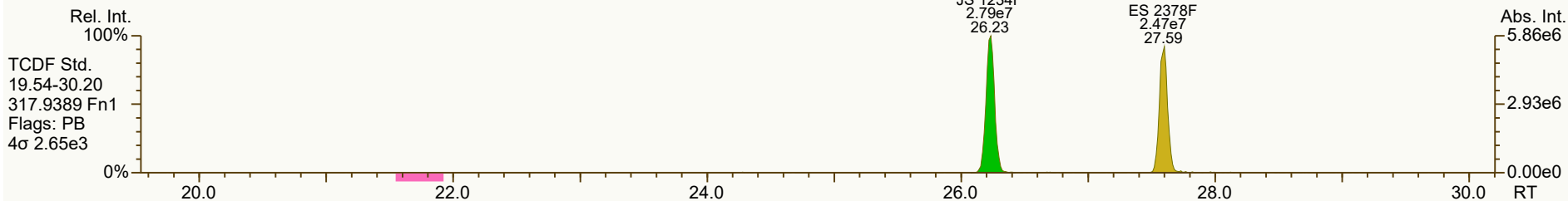
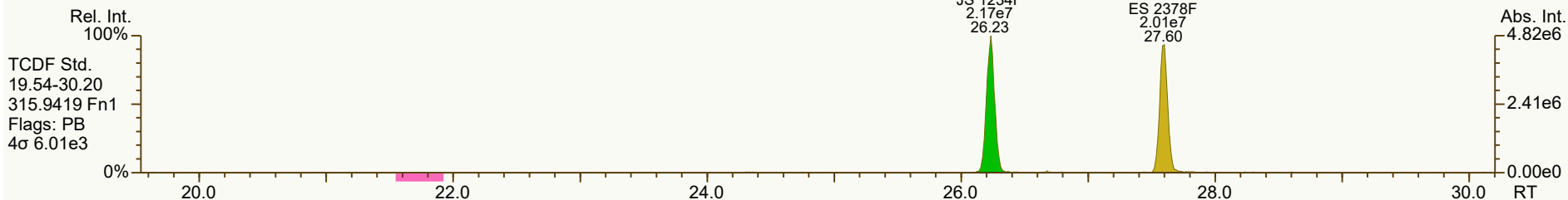
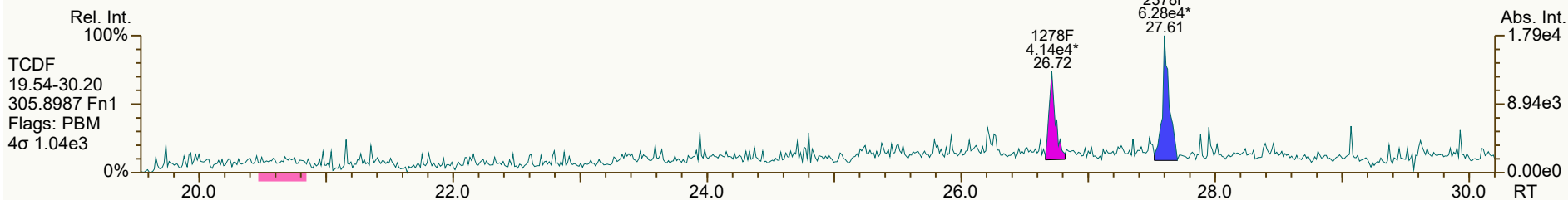
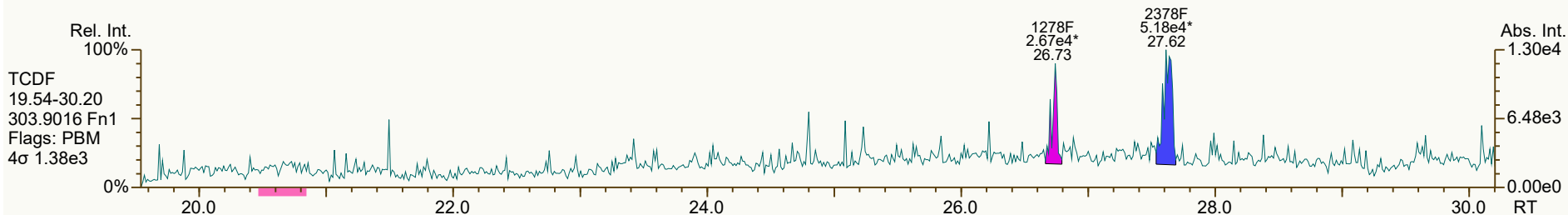




SGS ID: B6237_18888_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

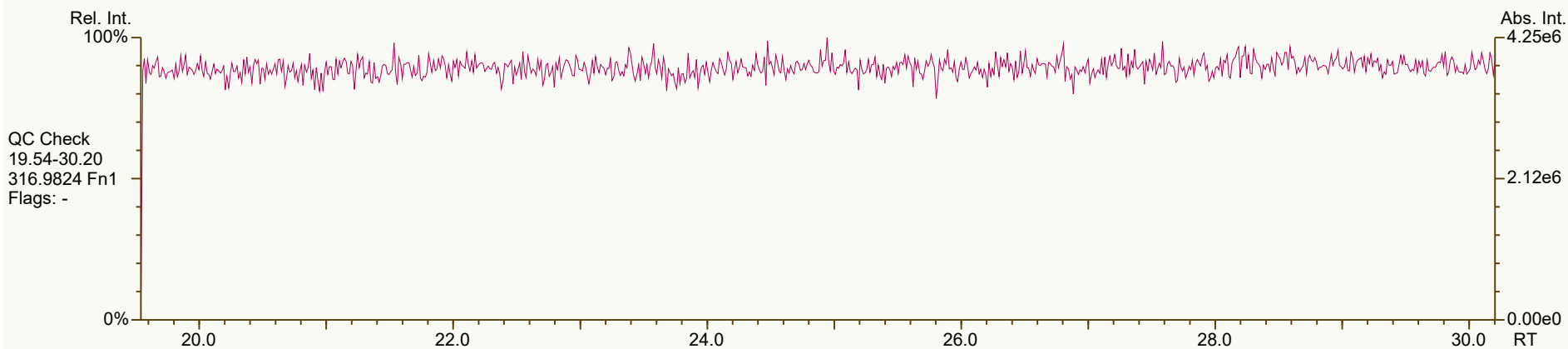
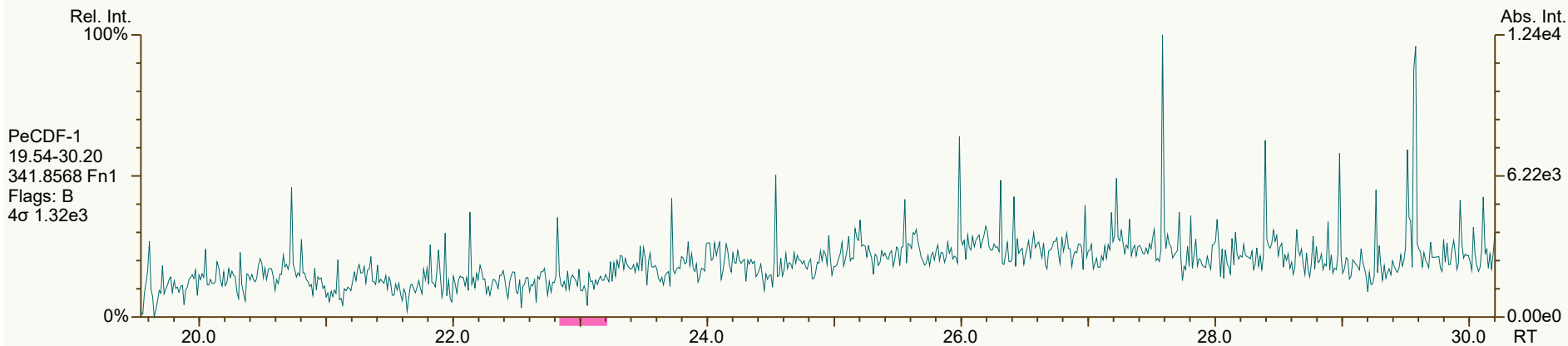
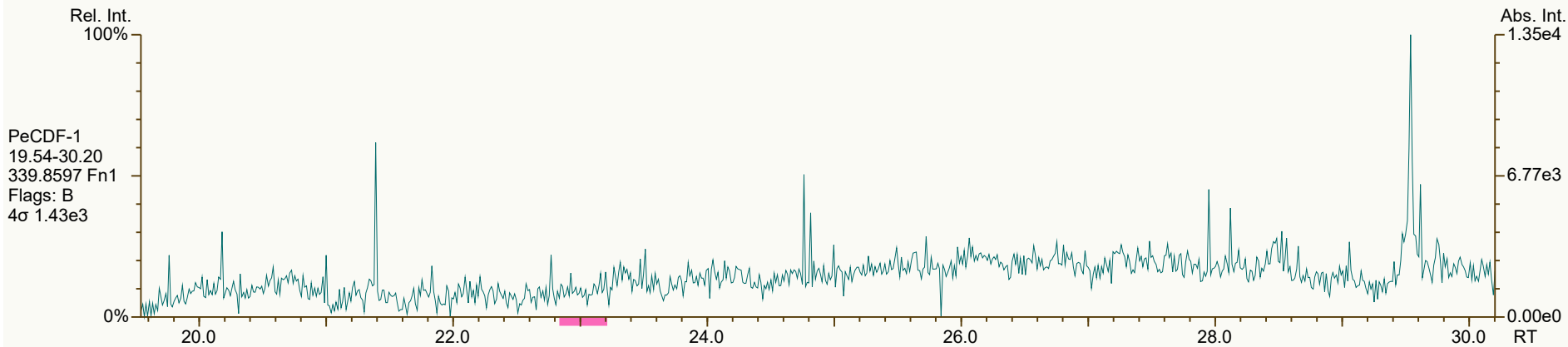
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14

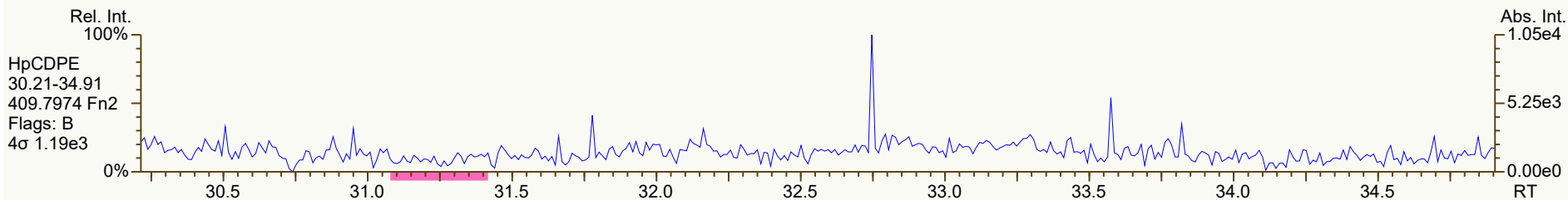
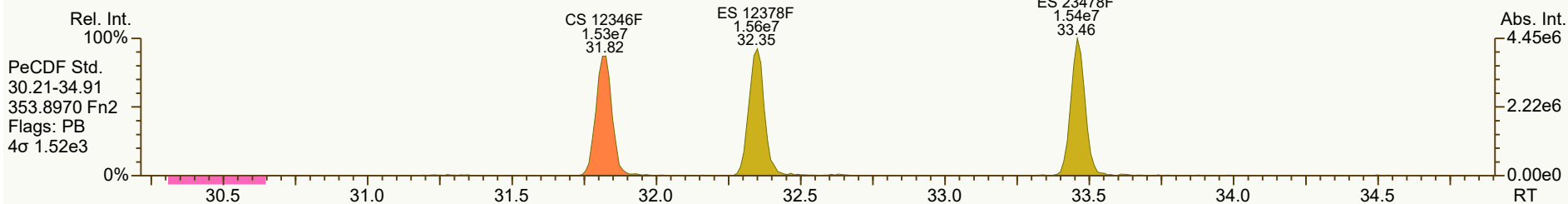
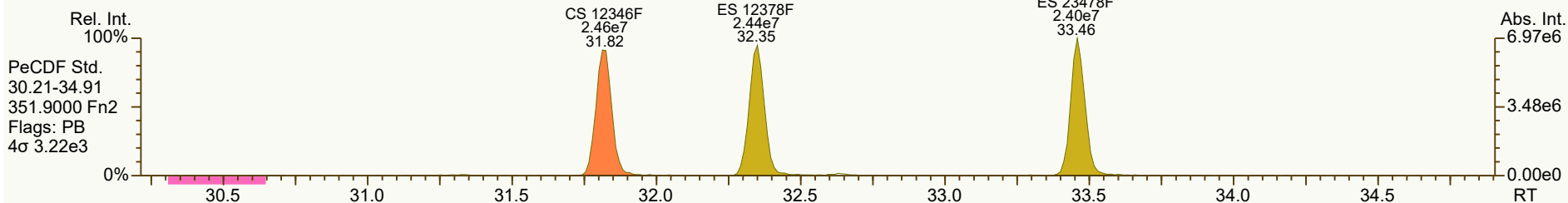
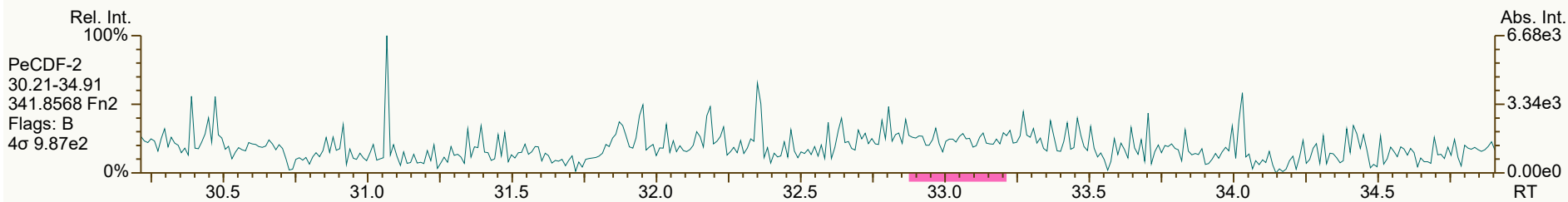
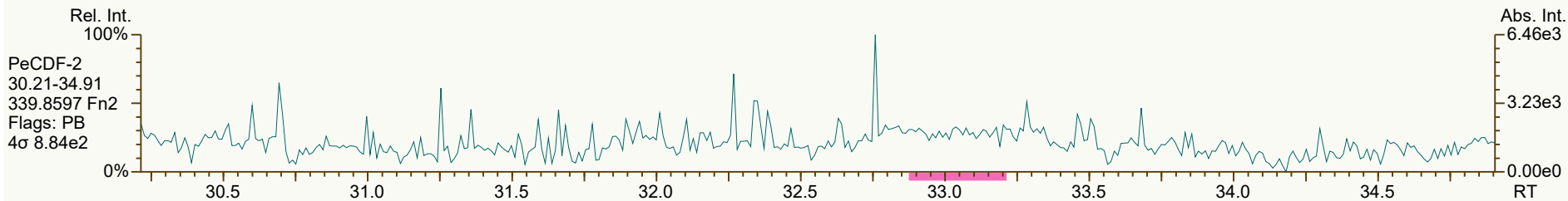
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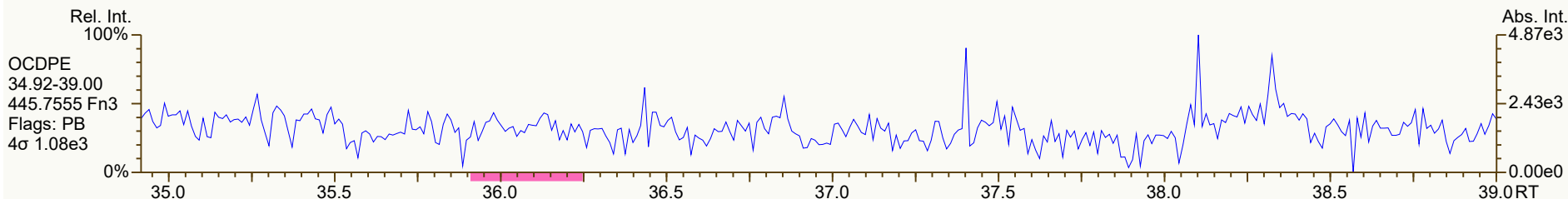
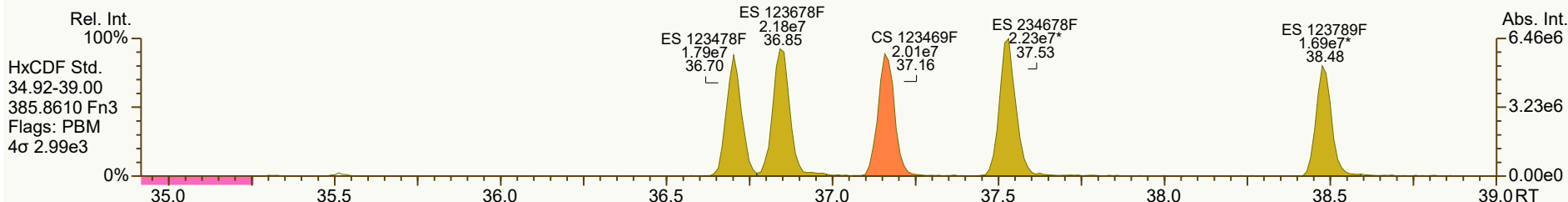
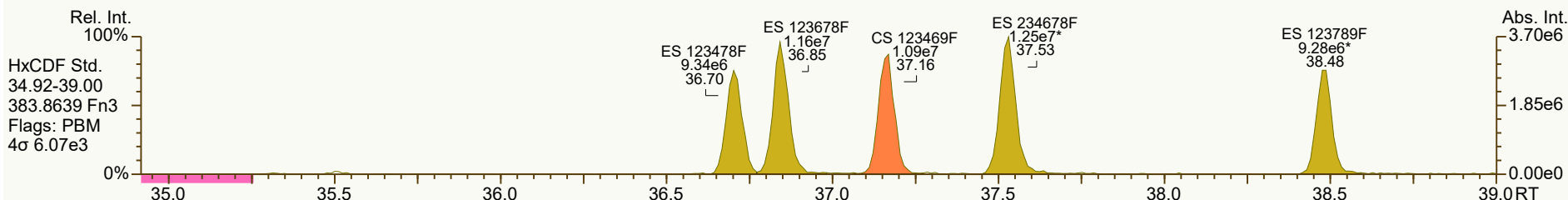
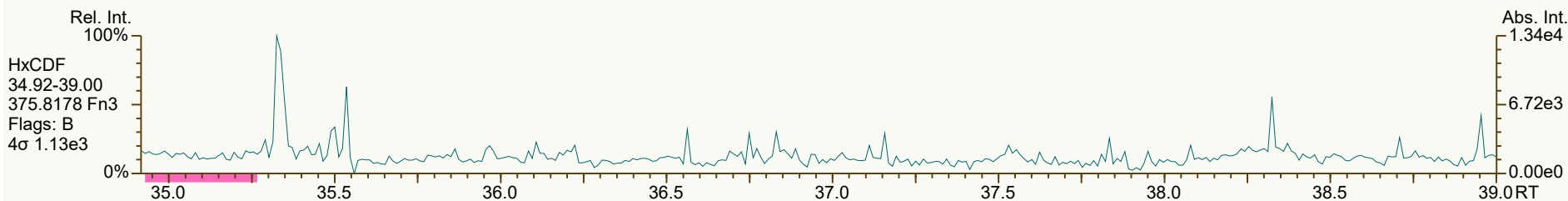
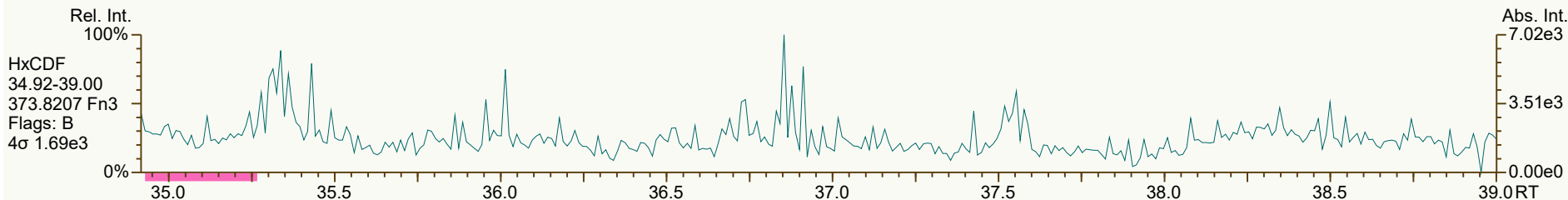


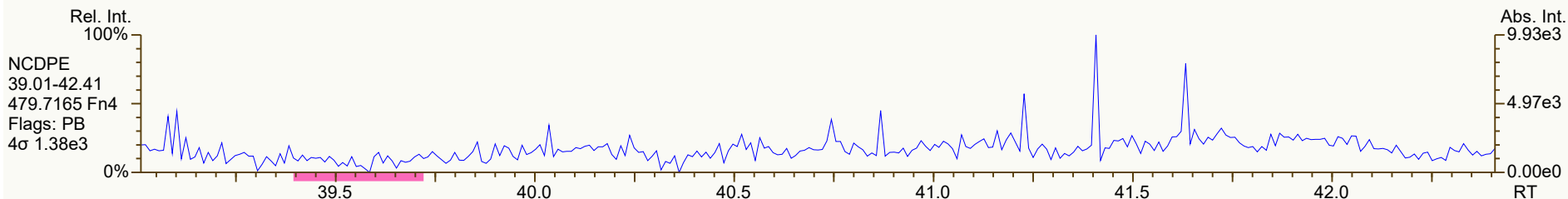
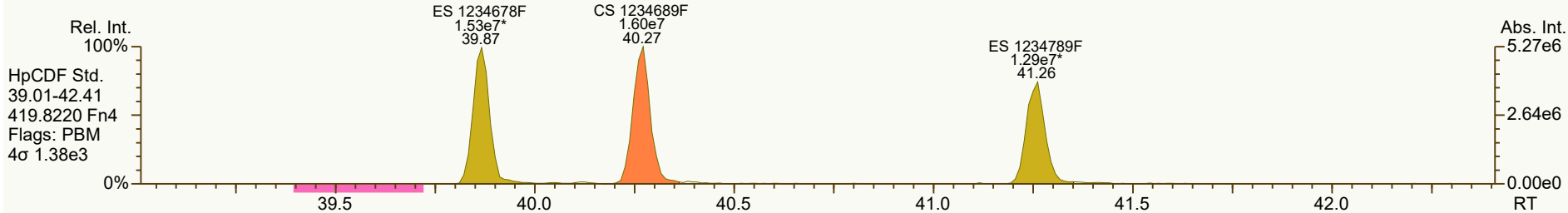
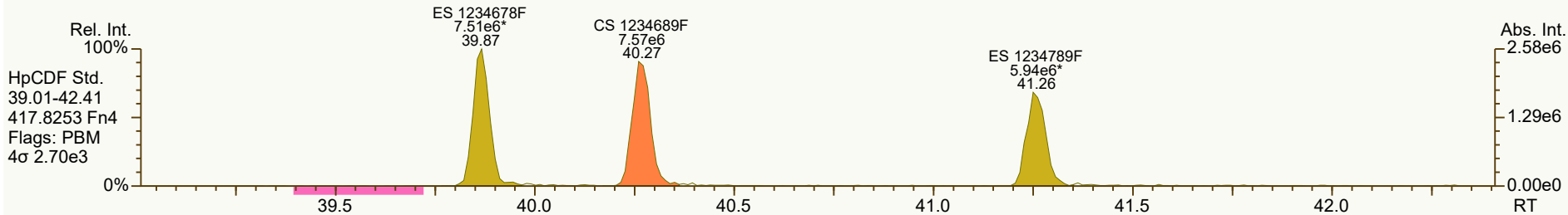
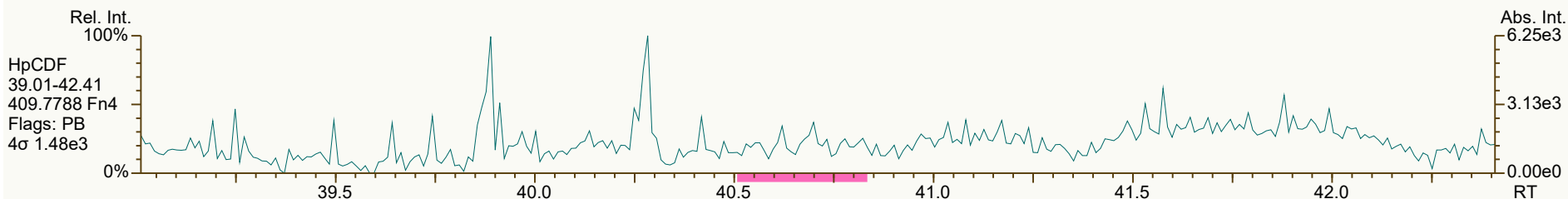
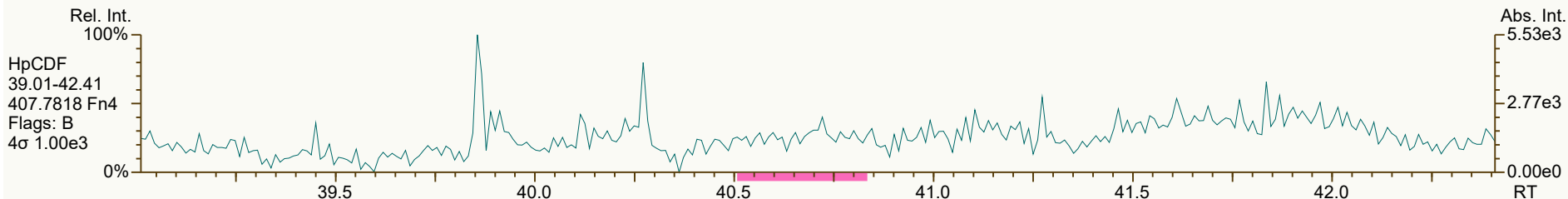
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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1084, 2458, 7037 scc: 790-719

Peak annotation: Areas, Centroids
Revised: 10-Feb-2022 10:22 (DTF) Printed: 10-Feb-2022 10:35 Page 7 of 12





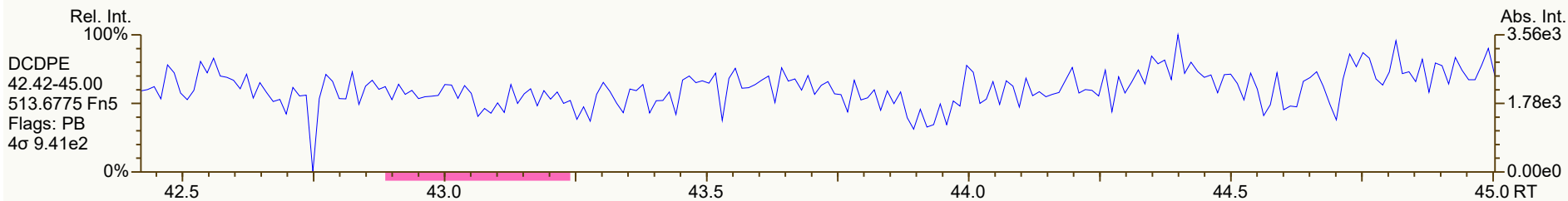
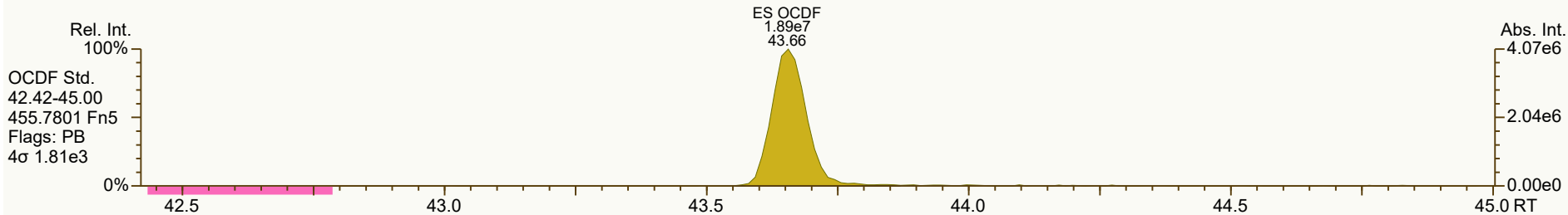
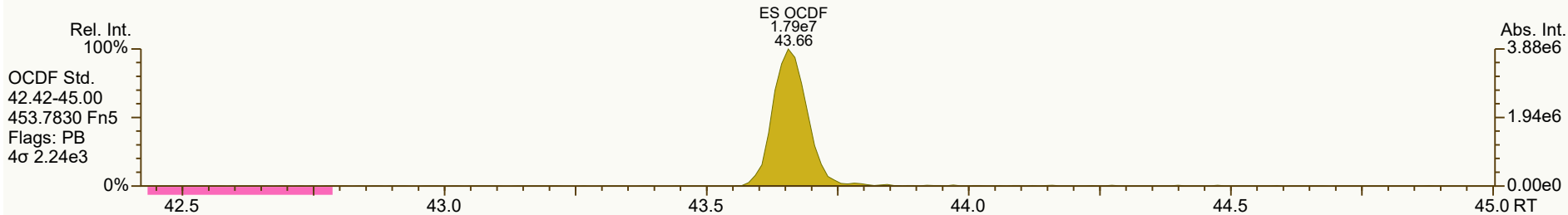
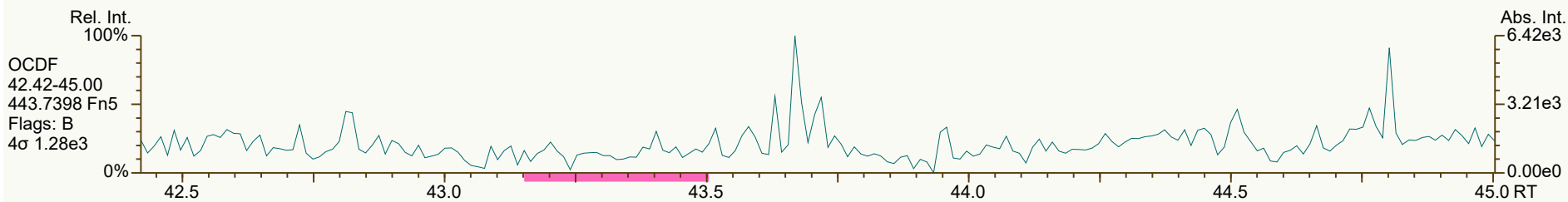
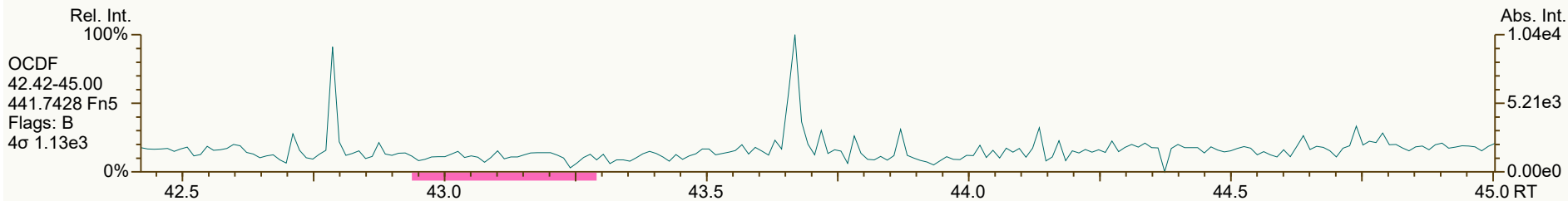




SGS ID: B6237_18888_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14

Acq: 10-Feb-2022 02:19:25
User: DTF Datafile: 220209C26



Results: P:\B6200_B6299\B6237\B6237_18888_DF\Resources\B6237_18888_DF_005.utp_res, saved 10-Feb-2022 10:22 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8749, 2954, 8705 scc: 790-719

Peak annotation: Areas, Centroids
PKD: 10-Feb-2022 10:20 Printed: 10-Feb-2022 10:35 Page 12 of 12

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
13	220209C13	3	CS3_220209_DF_CB	1.00	25-347-1	DTF	483-759	09-Feb-2022	15:26:13
14	220209C14	7	OPR1_18888_DF	1.00	0_18888_OPR001	DTF	357-810	09-Feb-2022	16:17:00
16	220209C16	2	SBS_220209_DF_CC	1.00	30-61-1	DTF	217-503	09-Feb-2022	18:36:03
17	220209C17	6	MB1_18888_DF_TLX	1.00	Method Blank	DTF	476-076	09-Feb-2022	19:22:22
20	220209C20	8	B6237_18888_DF_001	1.00	11215131-012022-GW-BN-PZ-SC	DTF	543-255	09-Feb-2022	21:41:24
21	220209C21	9	B6237_18888_DF_001MS	1.00	11215131-012022-GW-BN-PZ-SC-MS	DTF	368-796	09-Feb-2022	22:27:43
22	220209C22	10	B6237_18888_DF_001MSD	1.00	11215131-012022-GW-BN-PZ-SC-MSD	DTF	324-318	09-Feb-2022	23:14:03
23	220209C23	11	B6237_18888_DF_002	1.02	11215131-012022-GW-BN-PZ-SW	DTF	769-829	10-Feb-2022	00:00:24
24	220209C24	12	B6237_18888_DF_003	1.01	11215131-012022-GW-BN-PZ-NC	DTF	156-756	10-Feb-2022	00:46:43
25	220209C25	13	B6237_18888_DF_004	1.02	11215131-012022-GW-BN-PZ-NE	DTF	938-617	10-Feb-2022	01:33:04
26	220209C26	14	B6237_18888_DF_005	1.02	11215131-012022-GW-BN-DUP-1	DTF	790-719	10-Feb-2022	02:19:25

REVIEWED
Tyler_Fritz , 2/10/2022, 10:39:22 AM

REVIEWED
Amber_Kornegay , 2/10/2022, 1:35:18 PM

Dioxin/Furan QC Summary		Acq'd: 09 Feb 2022 15:26 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS3_220209_DF_CB		UTP: 10-Feb-2022 10:22:25 DTF			Checkcode: 483-759-WBG		
Sample ID: 25-347-1		Report: 10 Feb 2022 10:26 TF			Datafile: 220209C13		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.48	5.66E+06	0.76	Y	1.18	1.16	-2%
12378-PeCDD	33.82	2.09E+07	1.56	Y	1.04	1.04	0%
123478-HxCDD	37.73	1.90E+07	1.28	Y	1.09	1.07	-2%
123678-HxCDD	37.85	1.94E+07	1.22	Y	1.15	1.14	0%
123789-HxCDD	38.14	2.08E+07	1.27	Y	1.05	1.03	-2%
1234678-HpCDD	40.81	1.76E+07	1.04	Y	1.06	1.04	-2%
OCDD	43.49	2.93E+07	0.90	Y	1.13	1.15	2%
2378-TCDF	27.63	7.82E+06	0.80	Y	1.08	1.08	0%
12378-PeCDF	32.37	3.19E+07	1.56	Y	1.02	0.98	-4%
23478-PeCDF	33.48	2.91E+07	1.50	Y	1.02	0.96	-6%
123478-HxCDF	36.72	2.80E+07	1.19	Y	1.27	1.22	-4%
123678-HxCDF	36.86	3.04E+07	1.23	Y	1.15	1.09	-6%
234678-HxCDF	37.54	2.71E+07	1.22	Y	1.19	1.13	-5%
123789-HxCDF	38.50	2.44E+07	1.25	Y	1.16	1.12	-4%
1234678-HpCDF	39.87	2.47E+07	1.03	Y	1.37	1.30	-5%
1234789-HpCDF	41.27	2.08E+07	1.02	Y	1.31	1.25	-5%
OCDF	43.67	3.52E+07	0.91	Y	1.07	1.07	0%
ES 2378-TCDD	28.46	4.89E+07	0.80	Y	1.05	1.02	-2%
ES 12378-PeCDD	33.798	4.02E+07	1.59	Y	0.88	0.84	-5%
ES 123478-HxCDD	37.713	3.57E+07	1.27	Y	0.97	0.99	2%
ES 123678-HxCDD	37.832	3.39E+07	1.28	Y	0.94	0.94	0%
ES 123789-HxCDD	38.125	4.05E+07	1.25	Y	1.09	1.12	3%
ES 1234678-HpCDD	40.795	3.38E+07	1.09	Y	0.91	0.94	3%
ES OCDD	43.472	5.12E+07	0.90	Y	0.62	0.71	14%
ES 2378-TCDF	27.605	7.24E+07	0.80	Y	1.06	1.01	-4%
ES 12378-PeCDF	32.354	6.50E+07	1.55	Y	0.91	0.91	0%
ES 23478-PeCDF	33.465	6.05E+07	1.59	Y	0.88	0.84	-4%
ES 123478-HxCDF	36.705	4.56E+07	0.54	Y	1.20	1.27	6%
ES 123678-HxCDF	36.847	5.58E+07	0.54	Y	1.35	1.55	15%
ES 234678-HxCDF	37.526	4.82E+07	0.52	Y	1.24	1.34	8%
ES 123789-HxCDF	38.482	4.35E+07	0.53	Y	1.16	1.21	5%
ES 1234678-HpCDF	39.86	3.78E+07	0.47	Y	0.97	1.05	8%
ES 1234789-HpCDF	41.255	3.33E+07	0.46	Y	0.85	0.93	9%
ES OCDF	43.655	6.57E+07	0.88	Y	0.81	0.91	13%

Dioxin/Furan QC Summary		Acq'd: 09 Feb 2022 15:26 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS3_220209_DF_CB		UTP: 10-Feb-2022 10:22:25 DTF			Checkcode: 483-759-WBG		
Sample ID: 25-347-1		Report: 10 Feb 2022 10:26 TF			Datafile: 220209C13		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.80	4.79E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.24	7.16E+07	0.78	Y	-	-	-
JS 123467-HxCDD	38.02	1.80E+07	1.22	Y	-	-	-
CS 37C1-2378-TCDD	28.48	6.24E+06	n/a	-	1.20	1.30	8%
CS 12347-PeCDD	33.30	3.74E+07	1.61	Y	0.75	0.78	4%
CS 12346-PeCDF	31.82	5.96E+07	1.62	Y	0.85	0.83	-2%
CS 123469-HxCDF	37.16	4.70E+07	0.55	Y	1.12	1.31	17%
CS 1234689-HpCDF	40.26	3.83E+07	0.44	Y	0.89	1.06	20%
SS 37C1-2378-TCDD	28.48	6.24E+06	n/a	-	1.15	1.28	11%
SS 12347-PeCDD	33.30	3.74E+07	1.61	Y	0.86	0.93	9%
SS 12346-PeCDF	31.82	5.96E+07	1.62	Y	0.94	0.92	-2%
SS 123469-HxCDF	37.16	4.70E+07	0.55	Y	0.83	0.84	2%
SS 1234689-HpCDF	40.26	3.83E+07	0.44	Y	0.92	1.01	10%
OCDD-a	43.48	1.81E+06	2.56	Y	0.07	0.07	-2%
OCDF-a	43.66	2.19E+06	2.30	Y	0.07	0.07	0%

METHOD 1613B

PCDD/F CALIBRATION VERIFICATION

FORM 4A

Lab Name: SGS North America
 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C13 Analysis Date: 09-FEB-2022 15:26:13

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.76	0.65 - 0.89	Y	9.77	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	50.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	49	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.22	1.05 - 1.43	Y	49.8	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	49	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	102	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	47.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.50	1.32 - 1.78	Y	47.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.19	1.05 - 1.43	Y	48.2	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	47.2	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	47.4	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.2	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	47.6	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	47.6	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	100	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 10 Feb 2022 10:26 Analyst: TF

METHOD 1613B

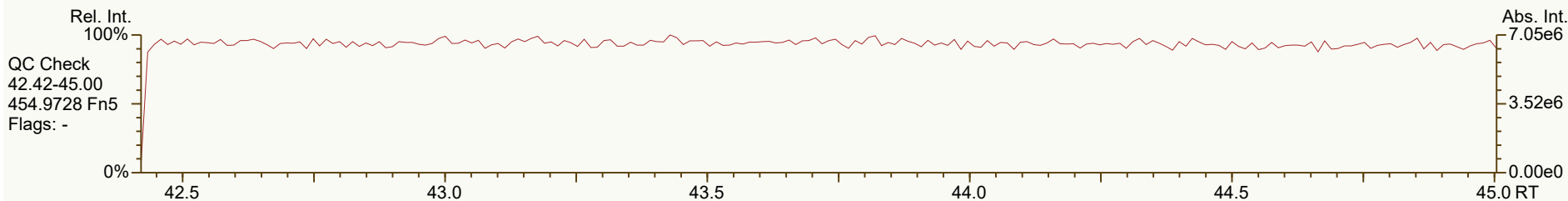
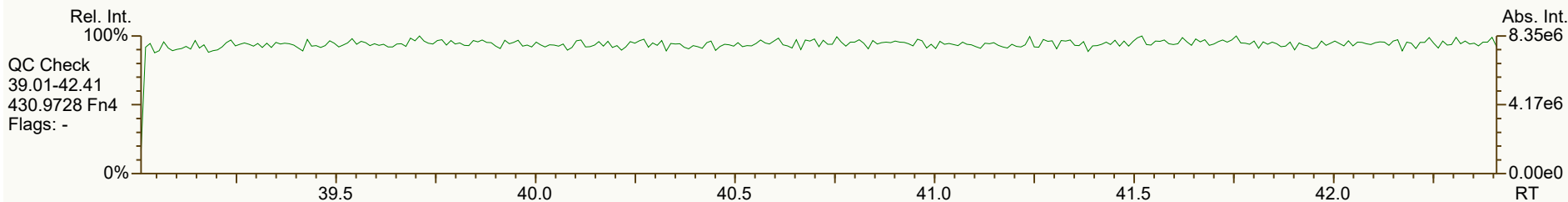
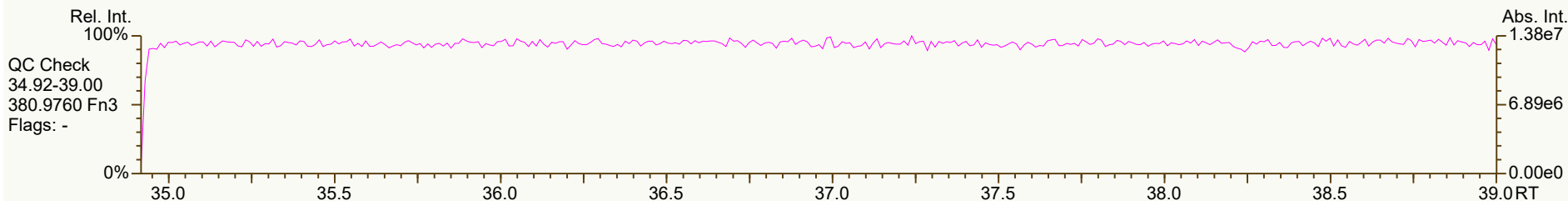
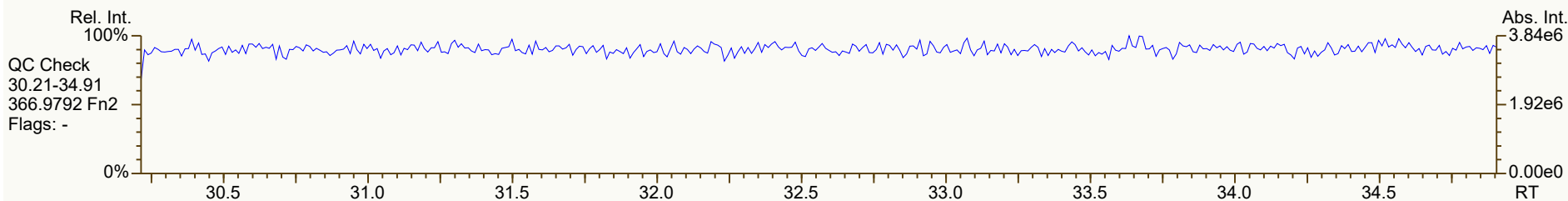
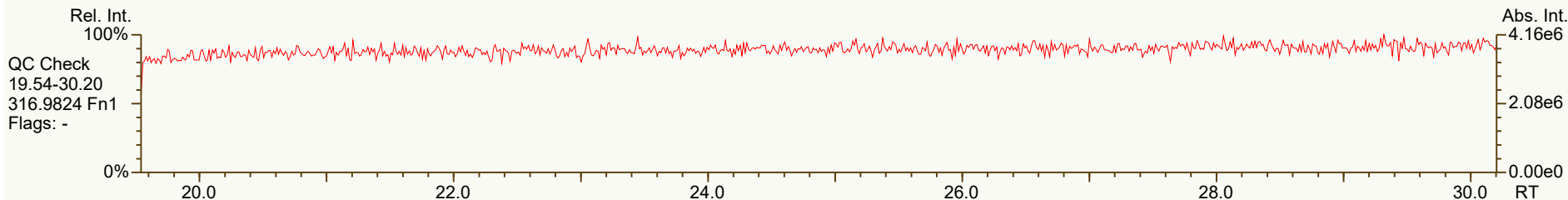
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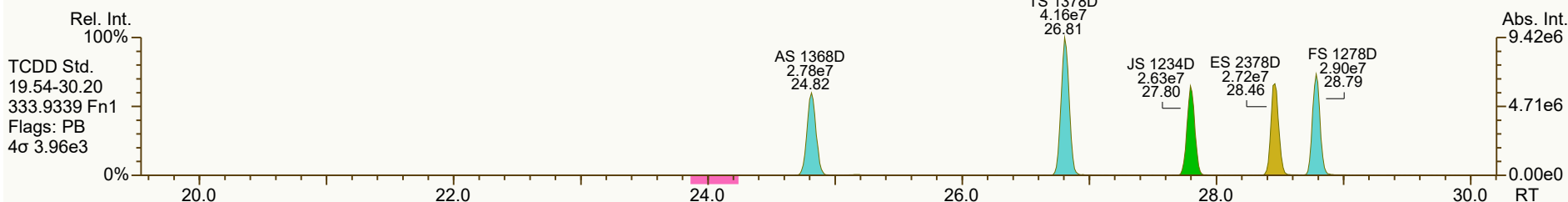
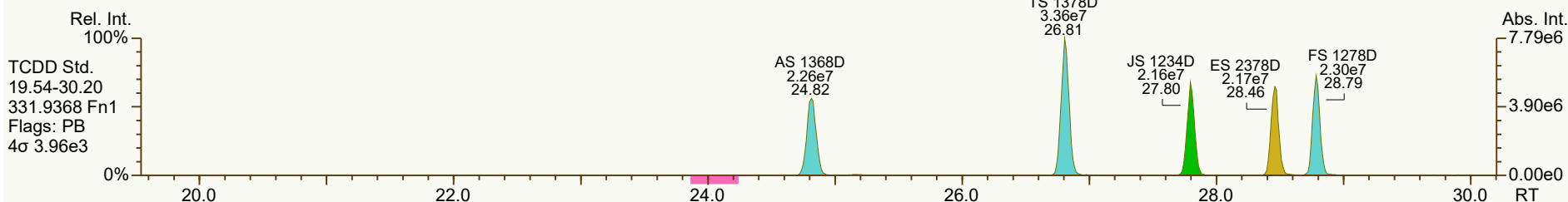
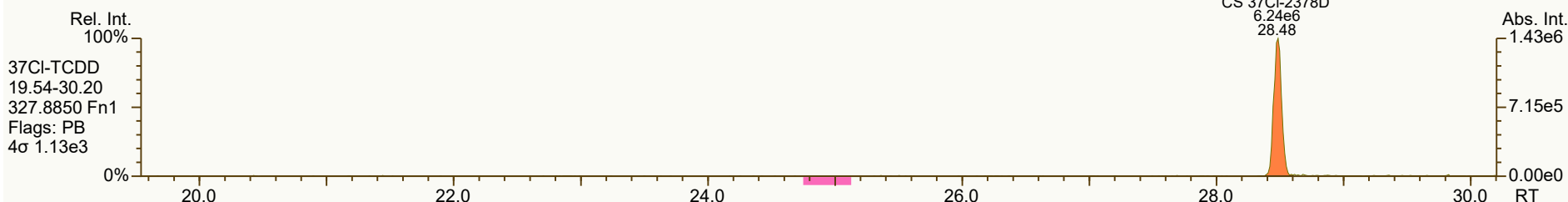
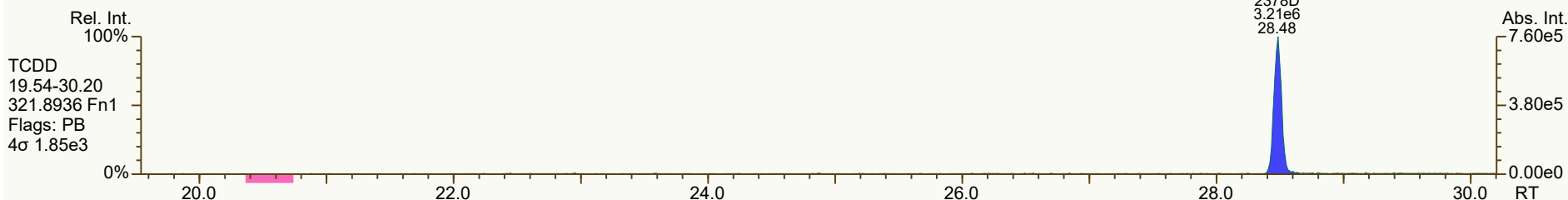
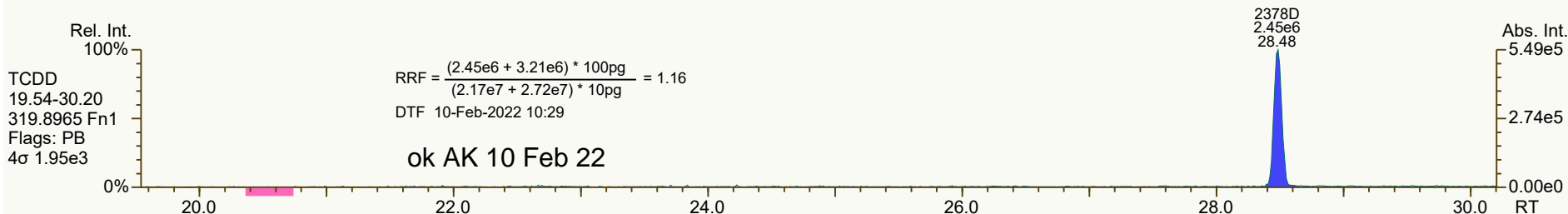
FORM 4B

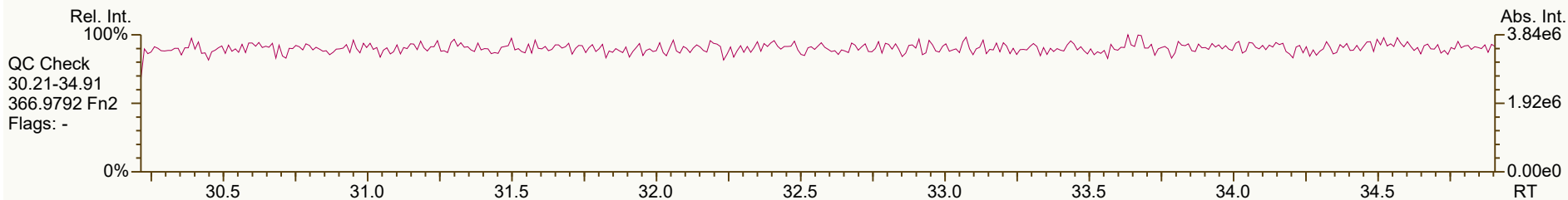
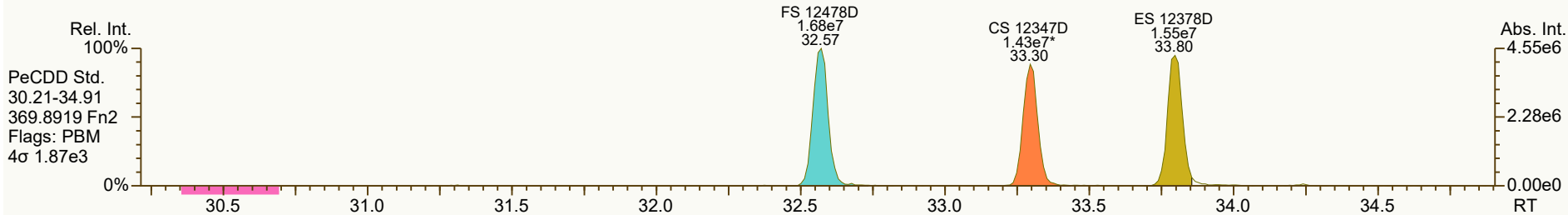
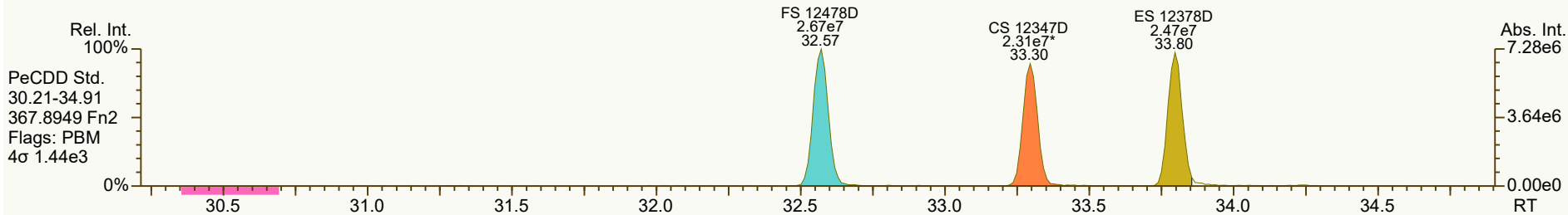
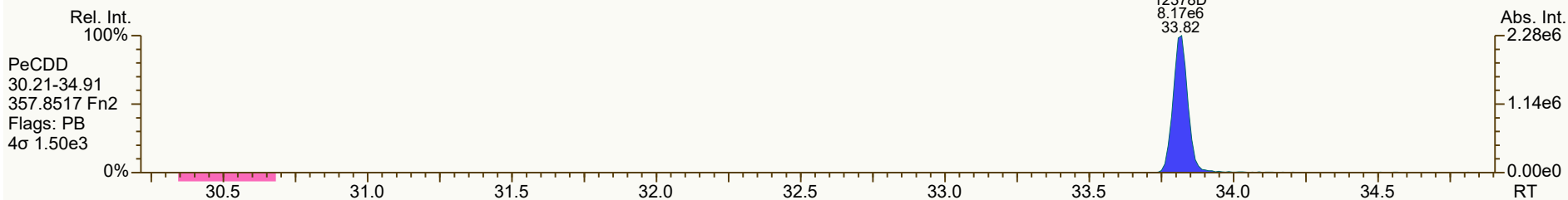
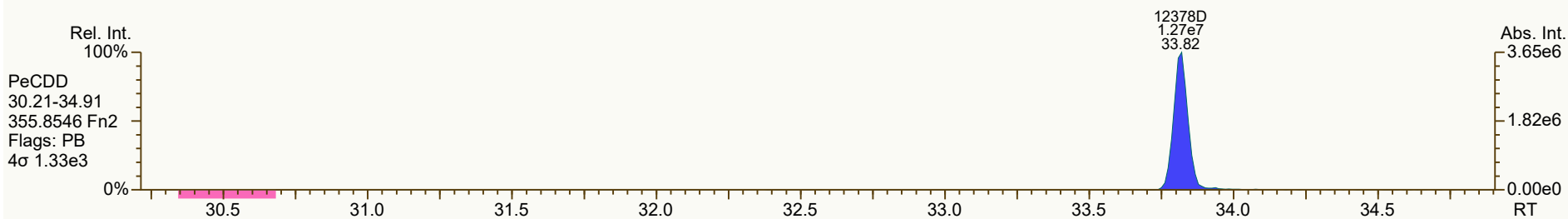
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 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C13 Analysis Date: 09-FEB-2022 15:26:13

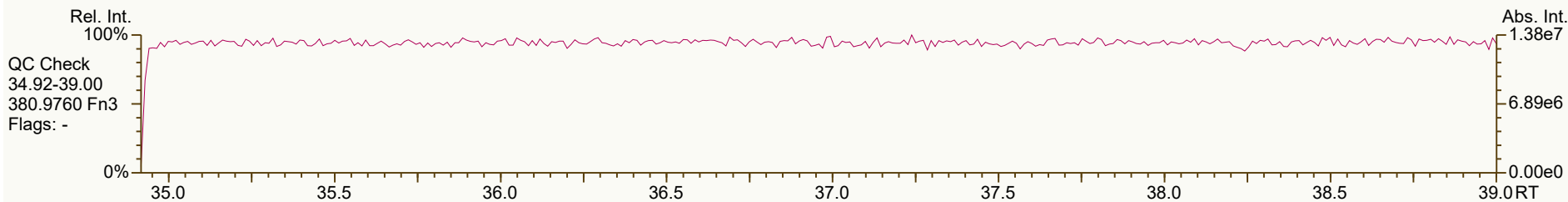
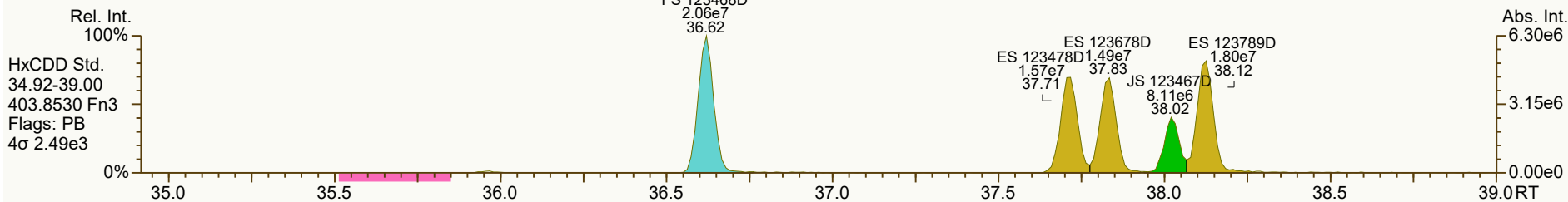
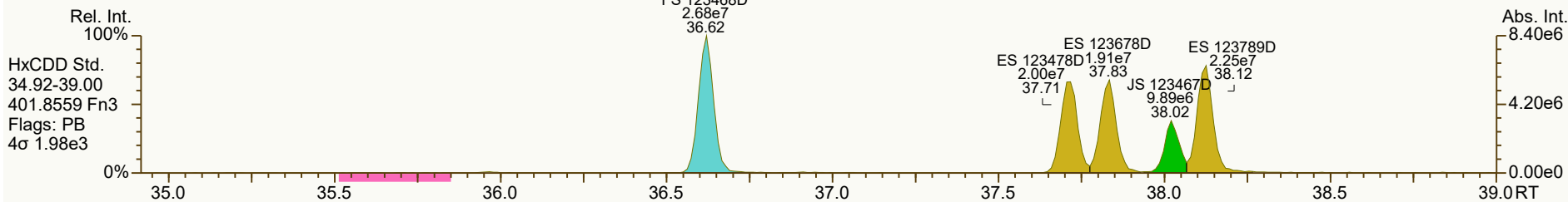
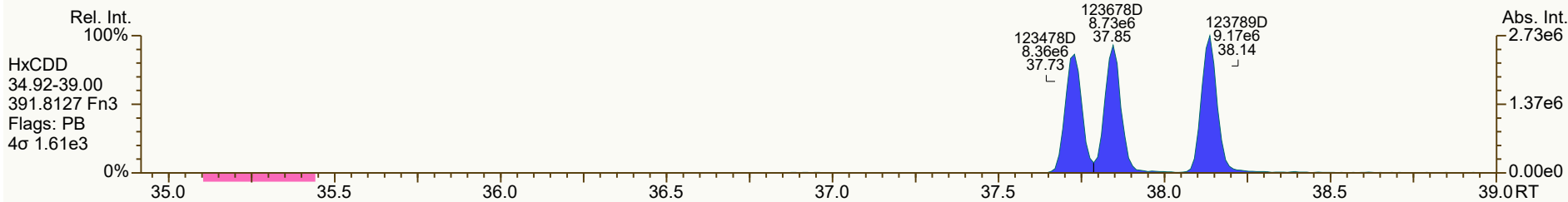
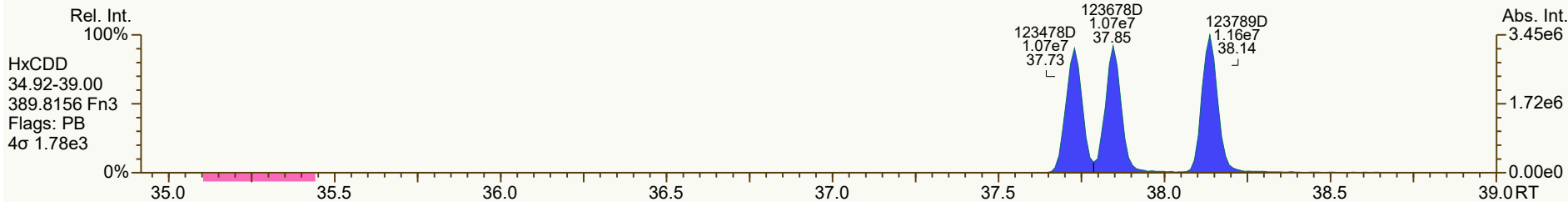
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65 - 0.89	Y	97.7	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32 - 1.78	Y	95.4	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	102	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	99.8	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	103	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.09	0.88 - 1.20	Y	103	72 - 138	Y
13C-OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	228	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	95.5	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	99.8	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32 - 1.78	Y	95.7	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	106	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	115	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	108	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	105	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	108	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	109	77 - 129	Y
13C-OCDF	M+2/M+4	0.88	0.76 - 1.02	Y	226	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				10.8	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.61	1.32 - 1.78	Y	104	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.62	1.32 - 1.78	Y	97.8	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.55	0.43 - 0.59	Y	117	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37 - 0.51	Y	120	70 - 130	Y

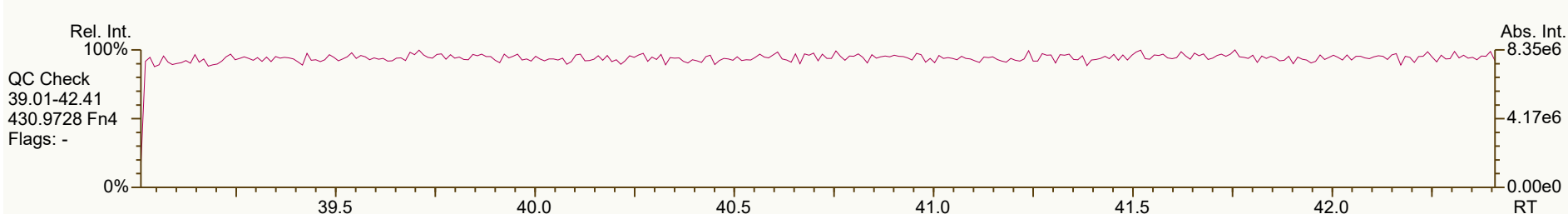
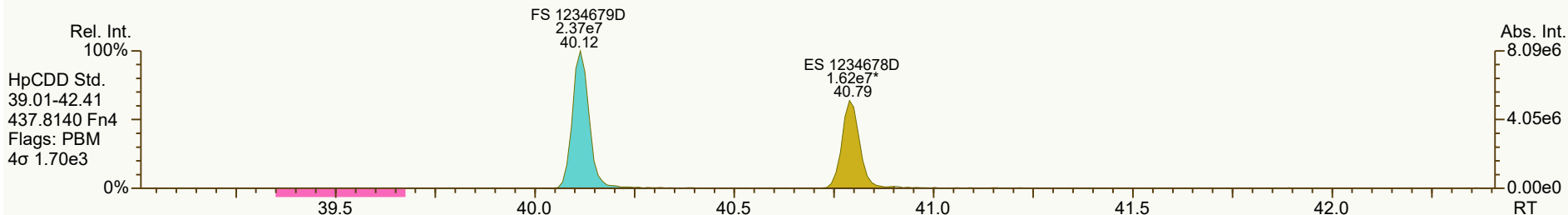
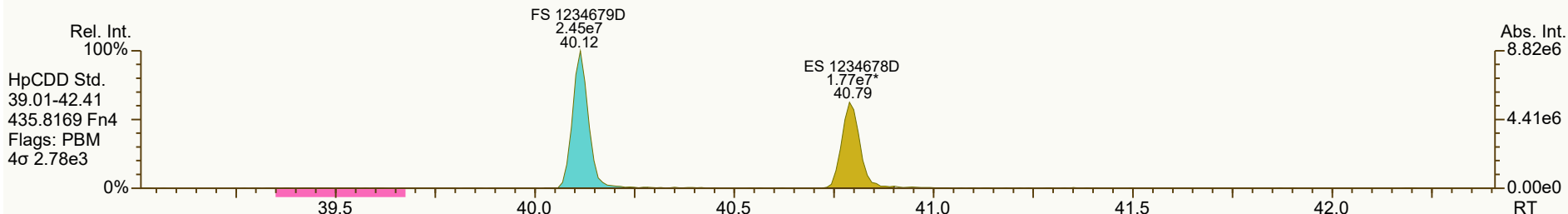
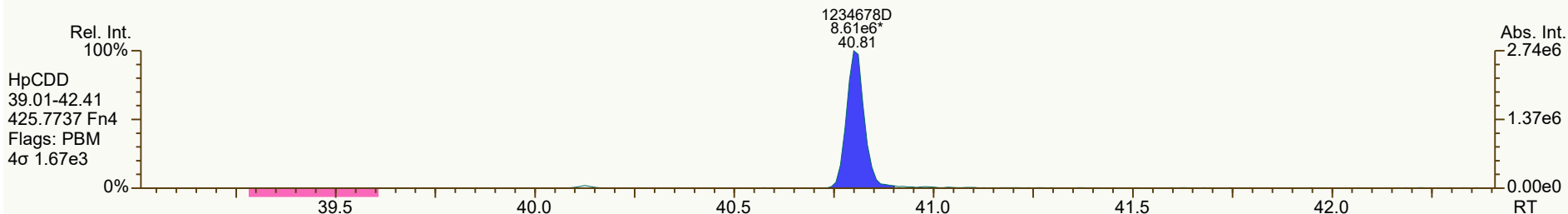
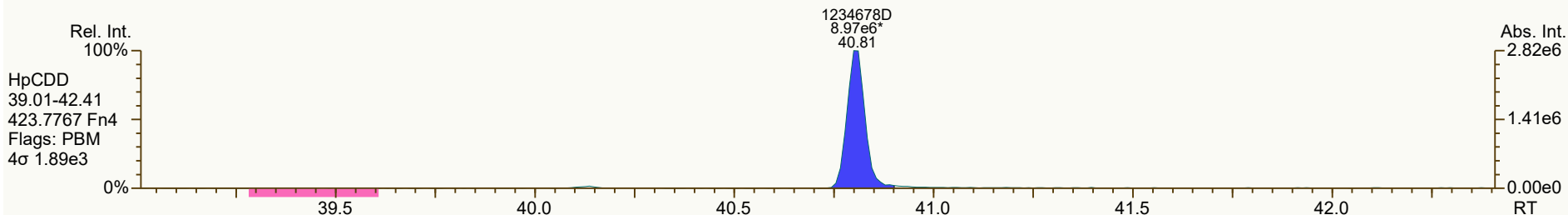
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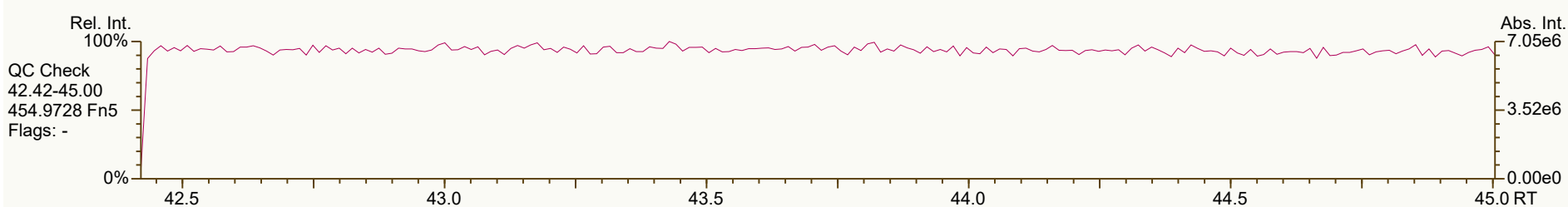
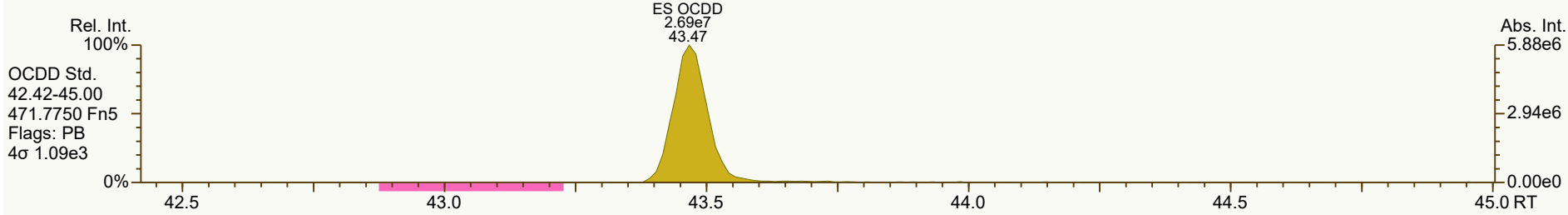
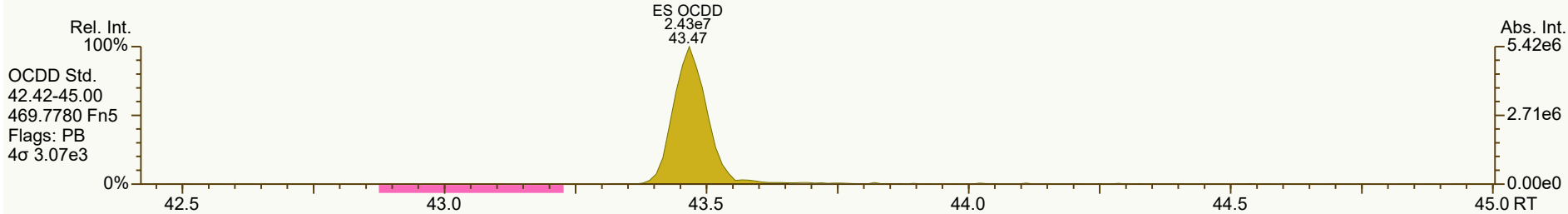
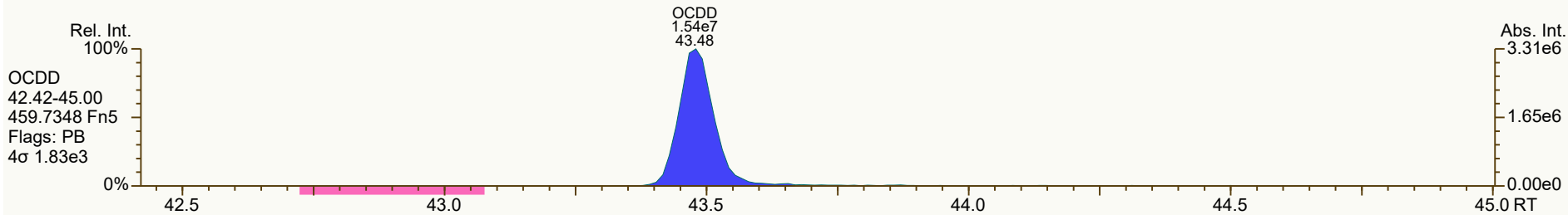
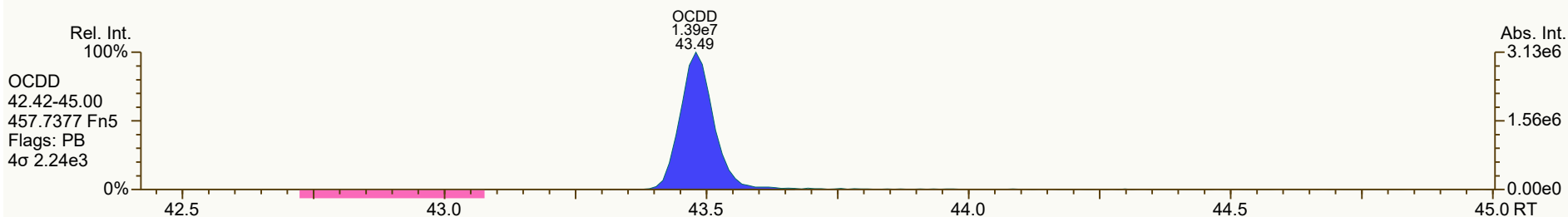


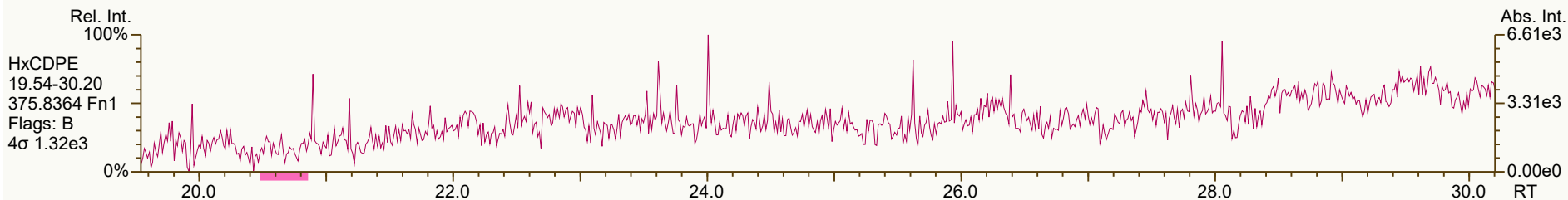
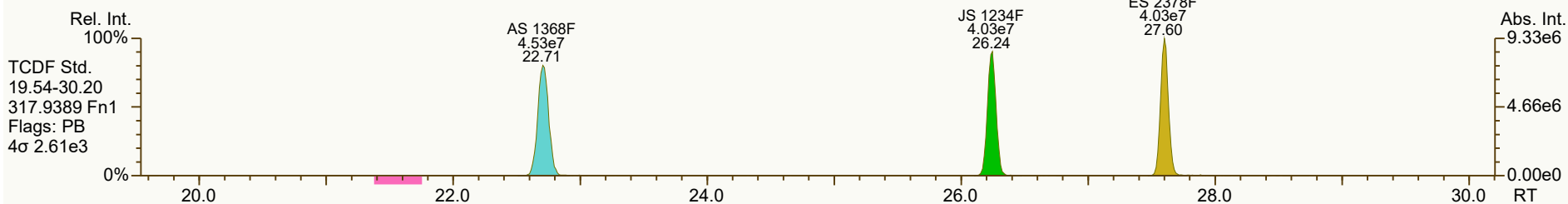
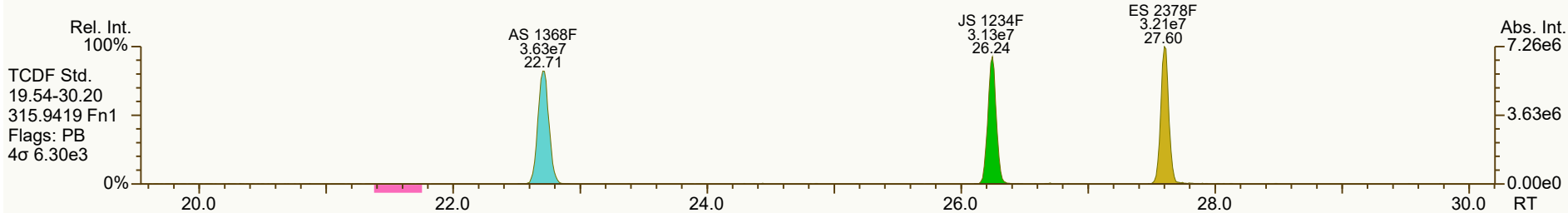
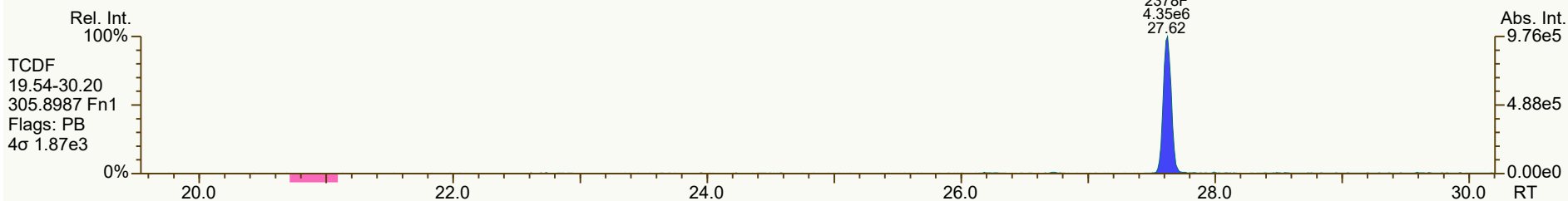
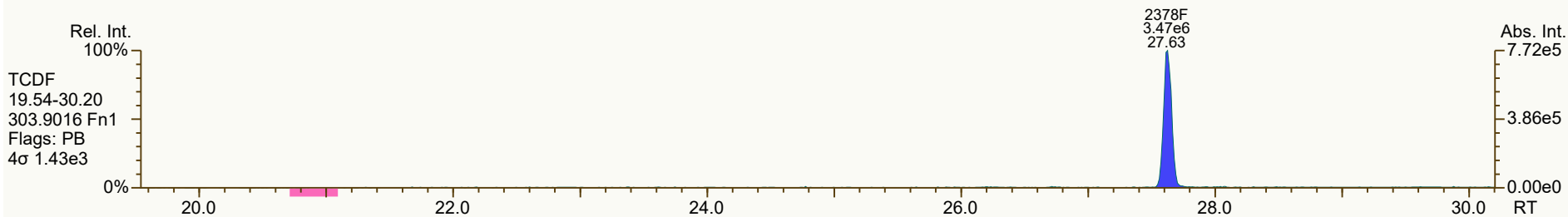


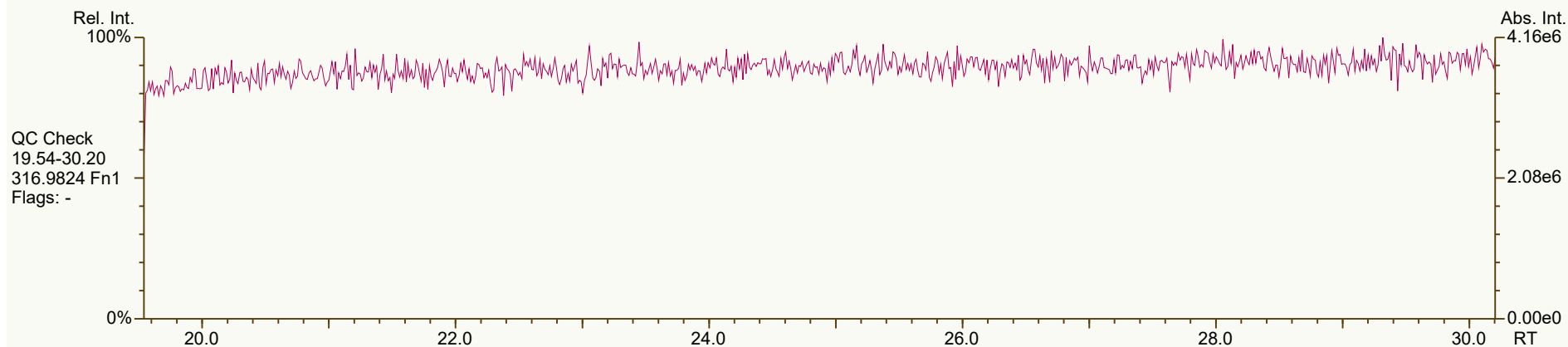
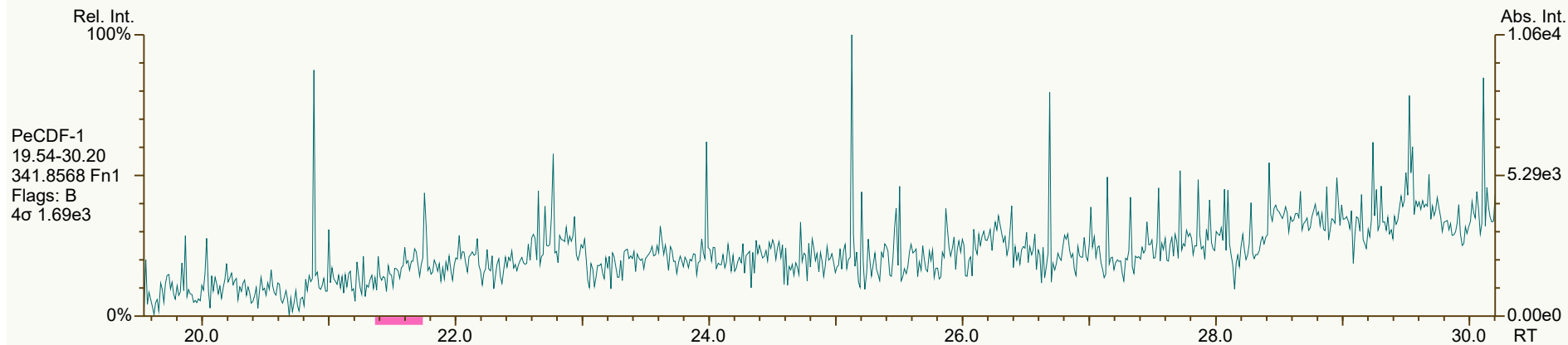
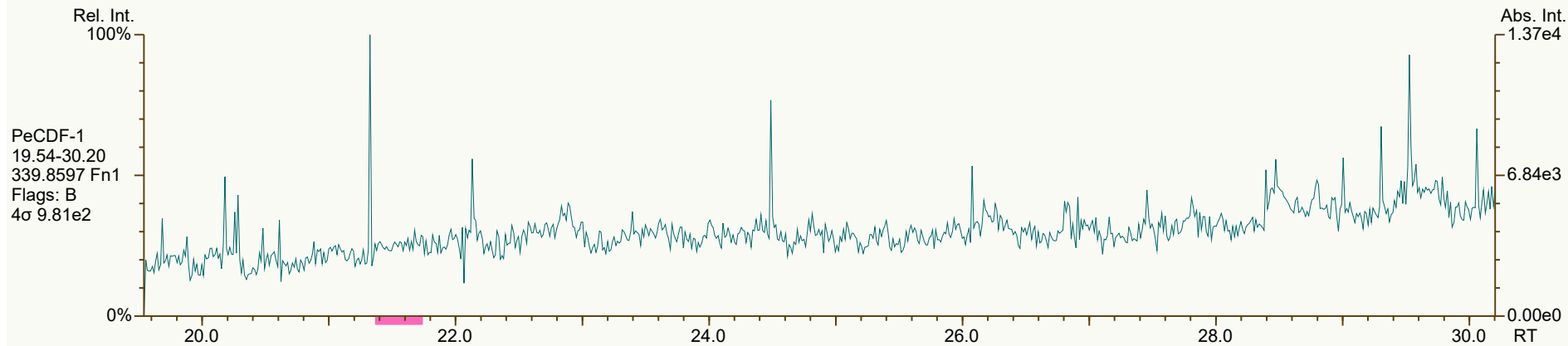


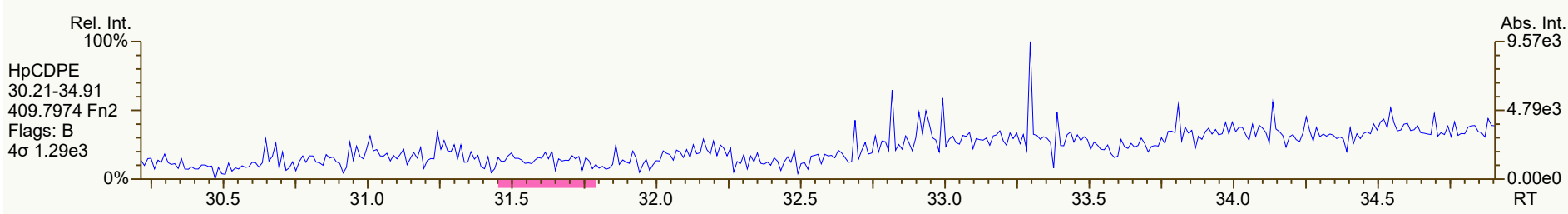
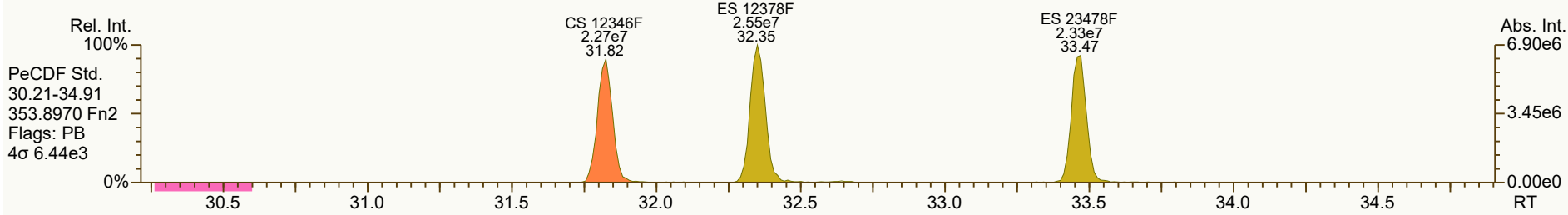
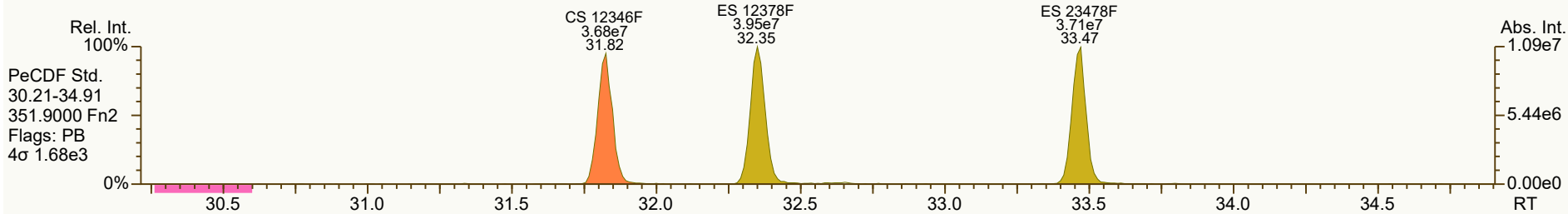
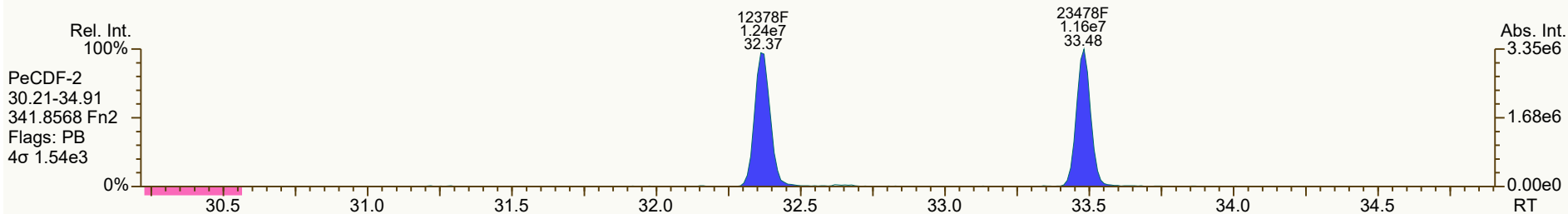
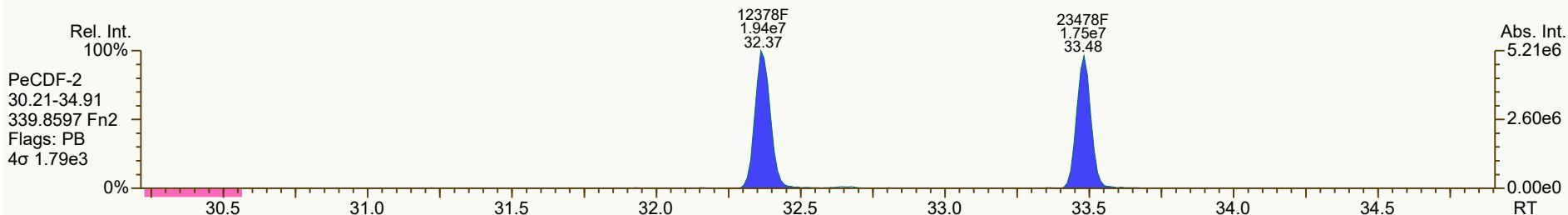








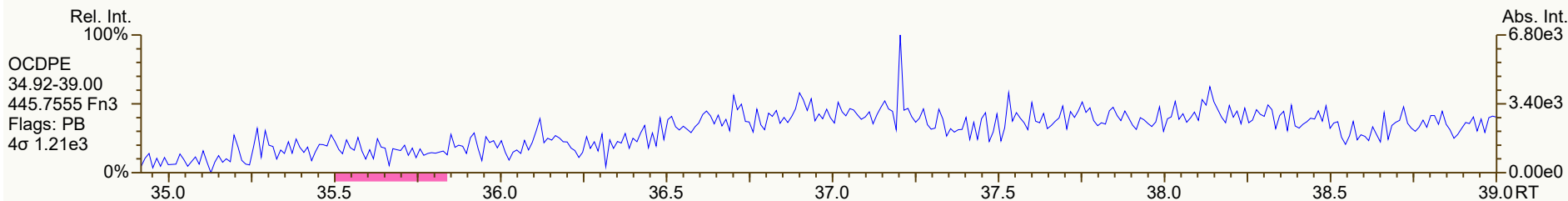
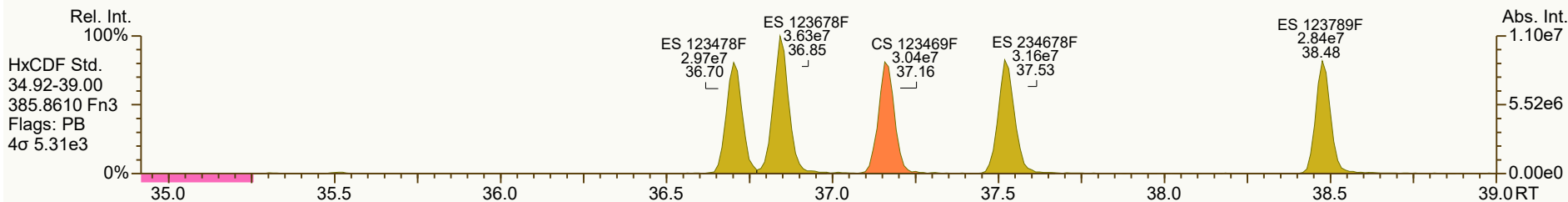
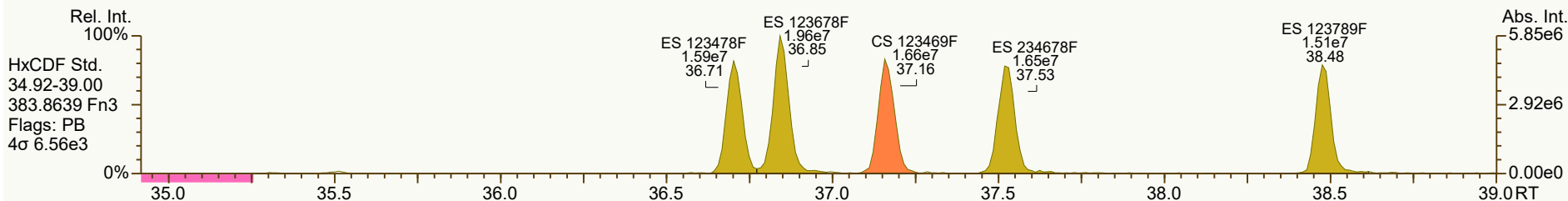
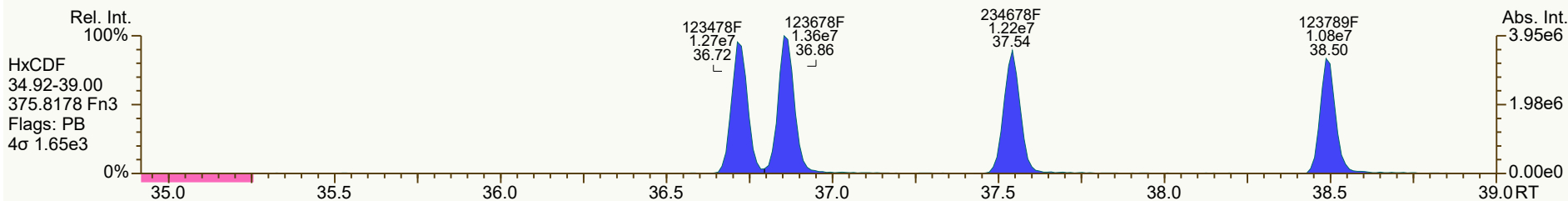
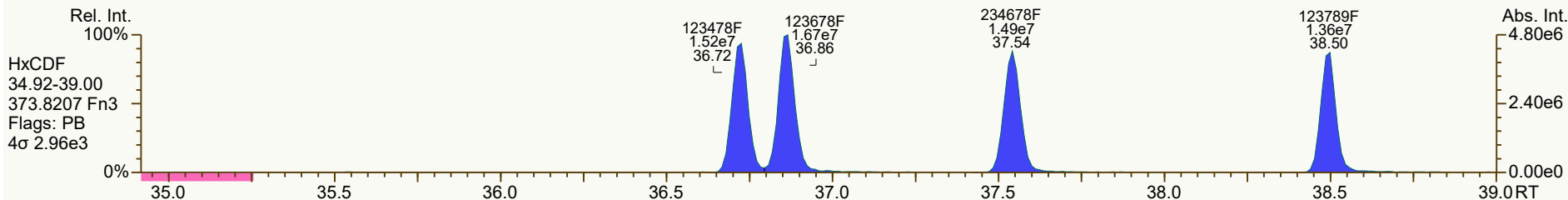


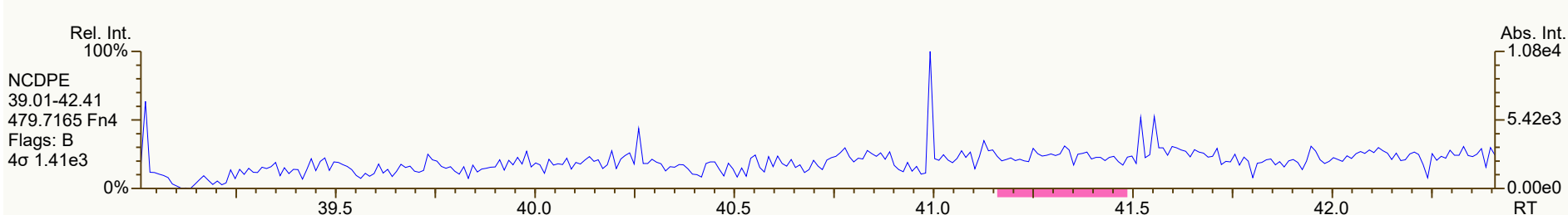
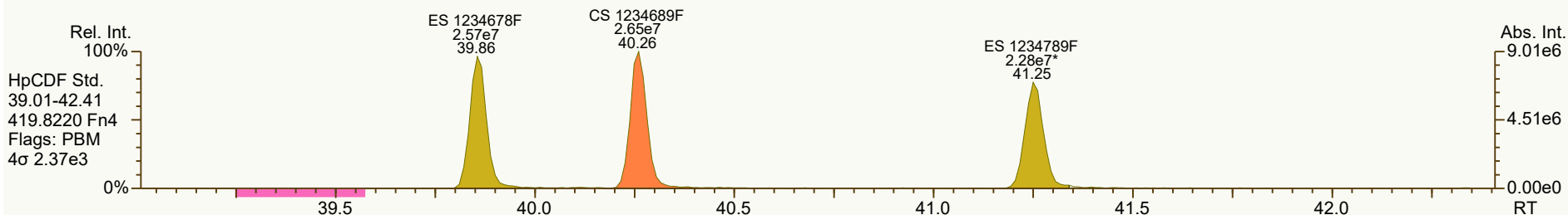
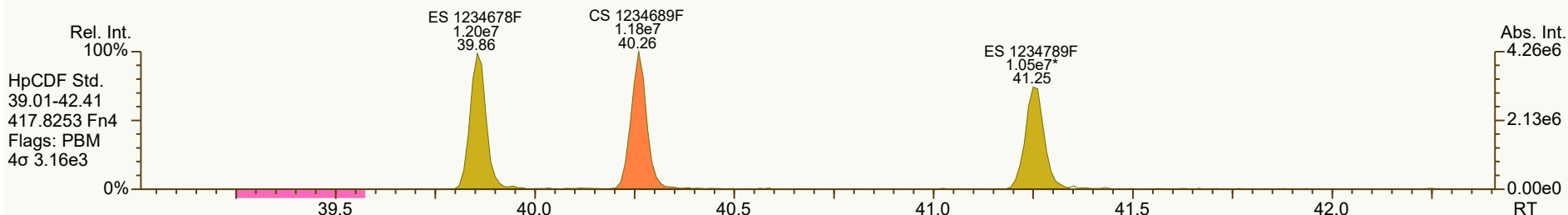
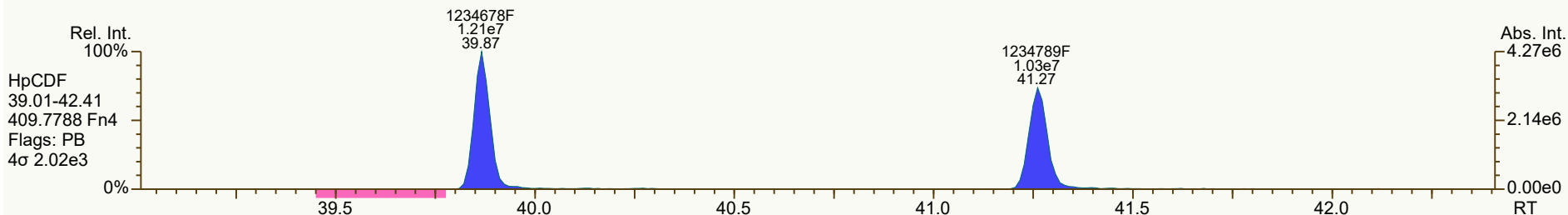
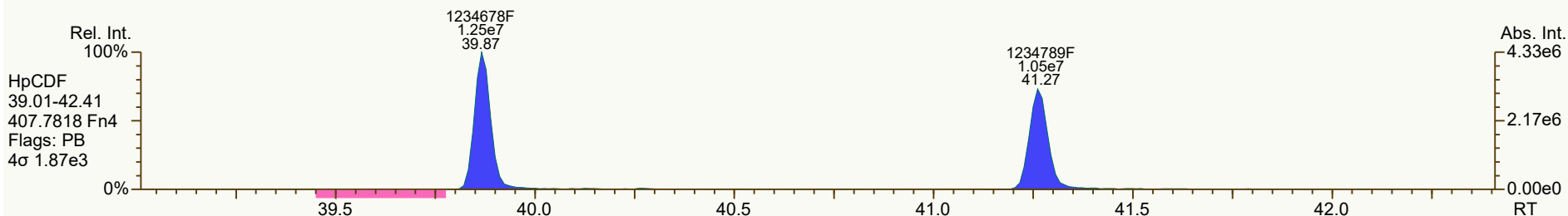


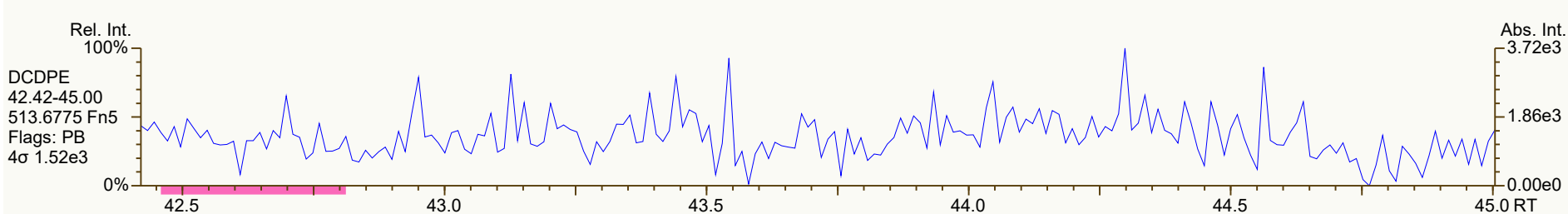
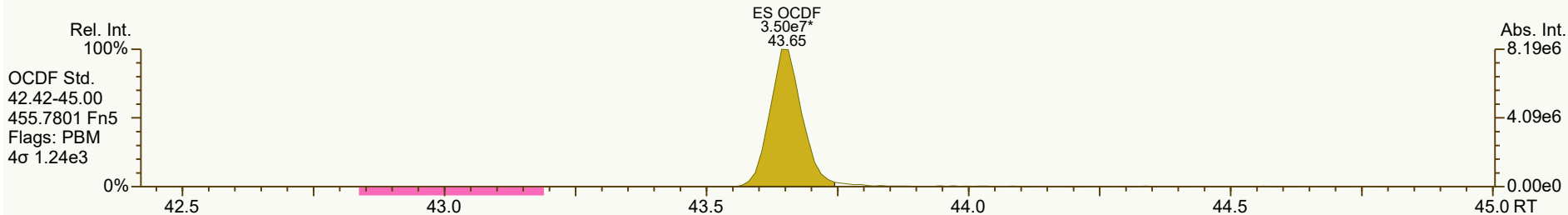
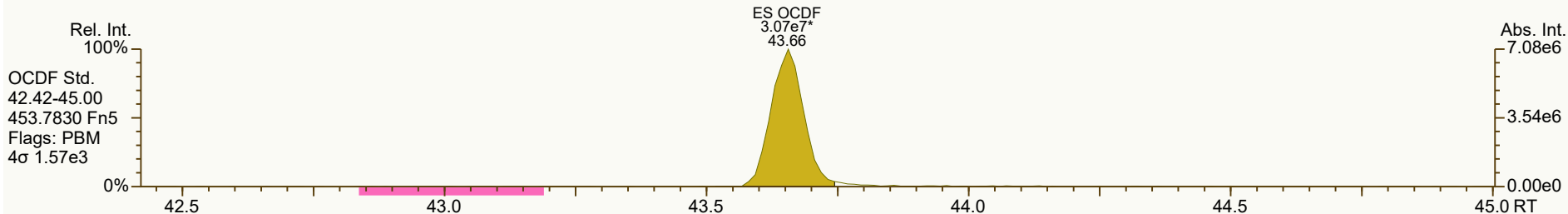
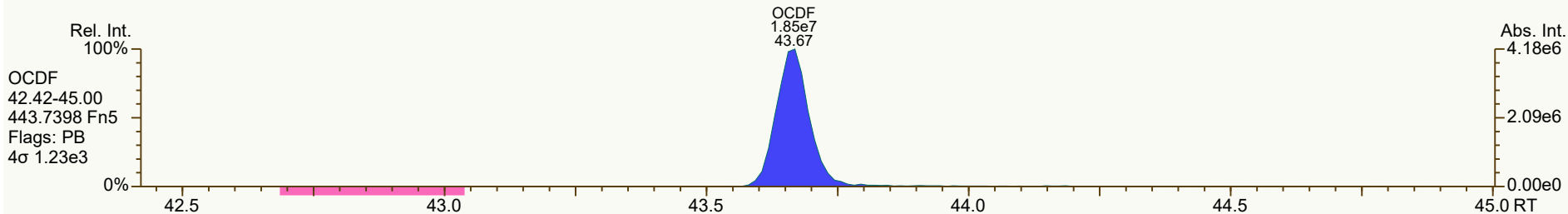
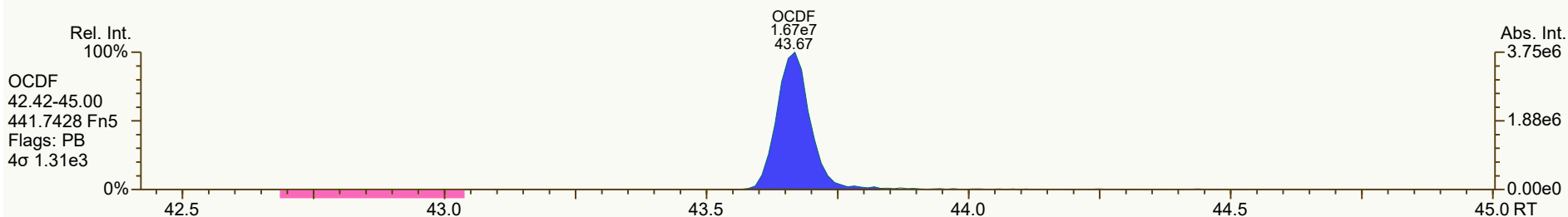
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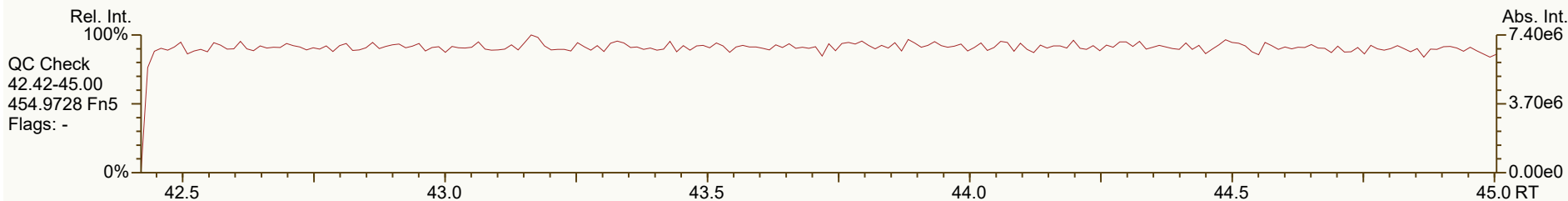
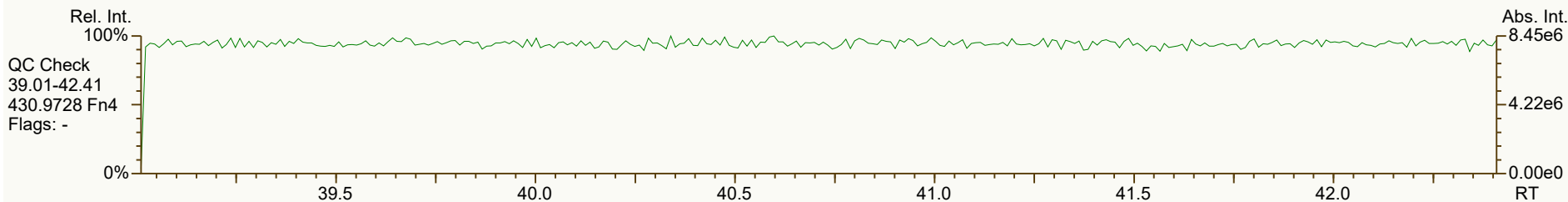
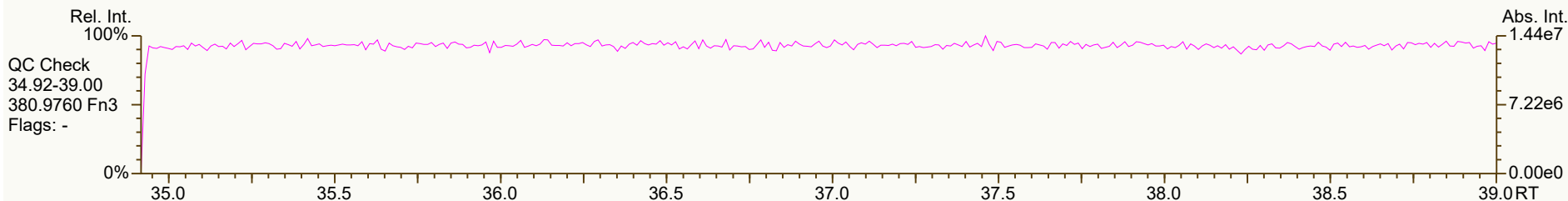
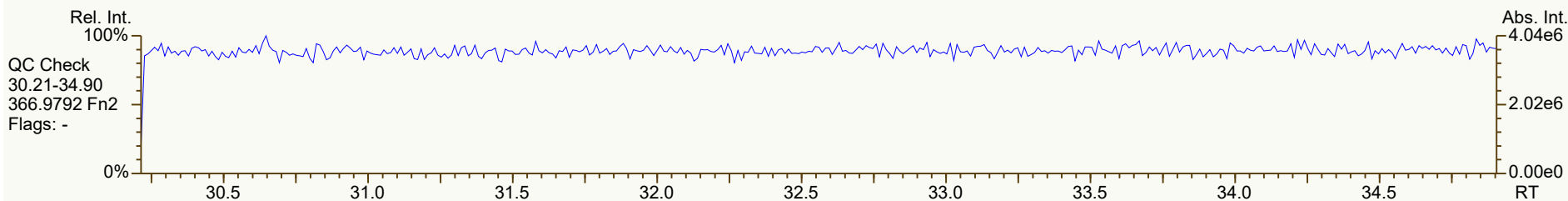
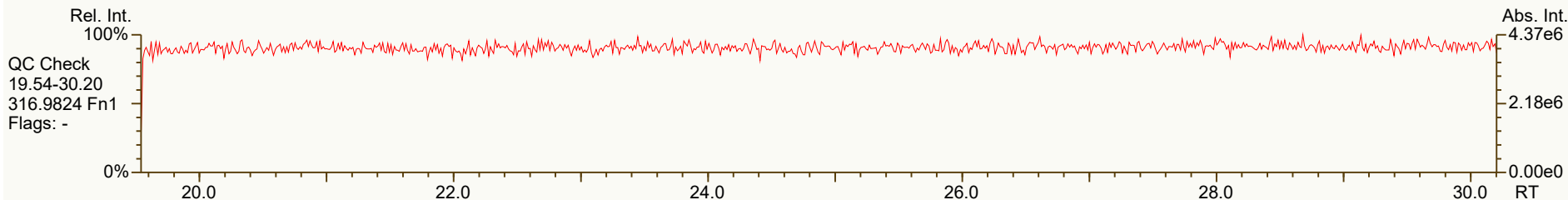
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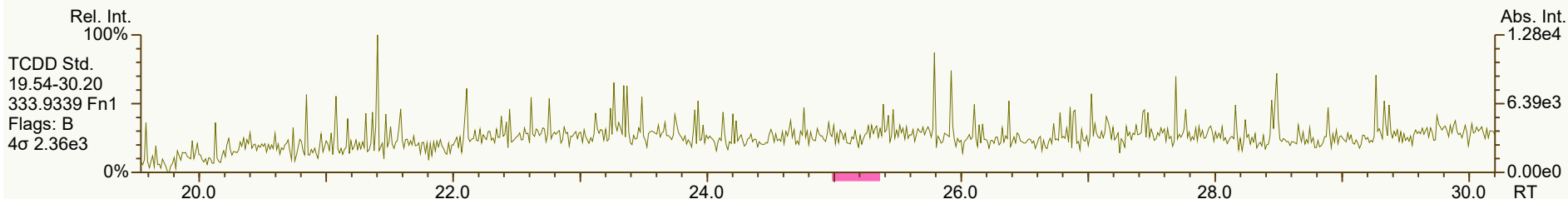
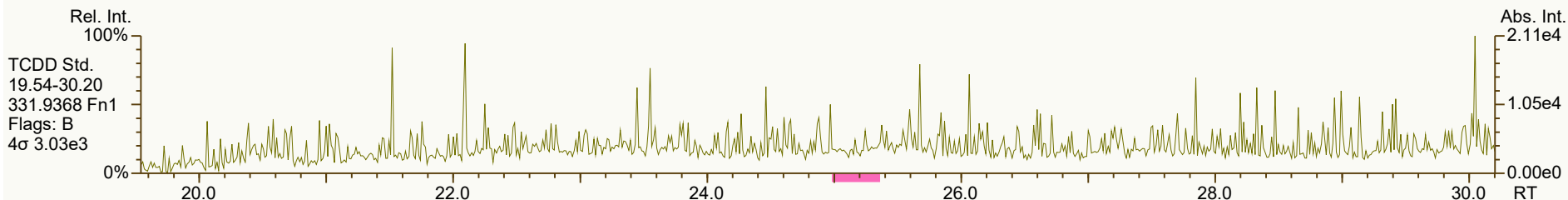
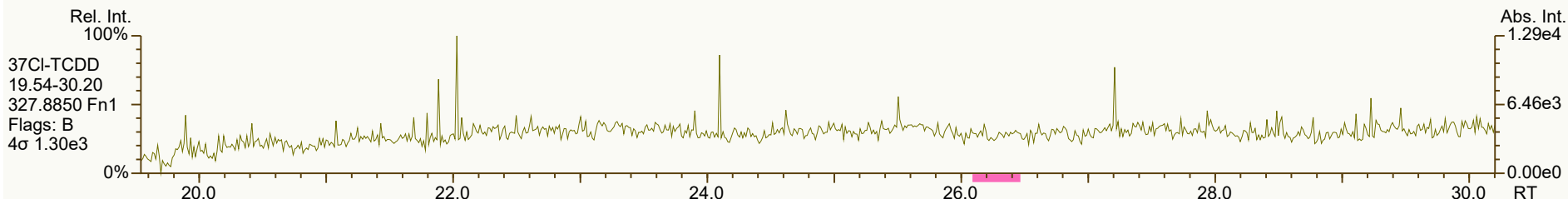
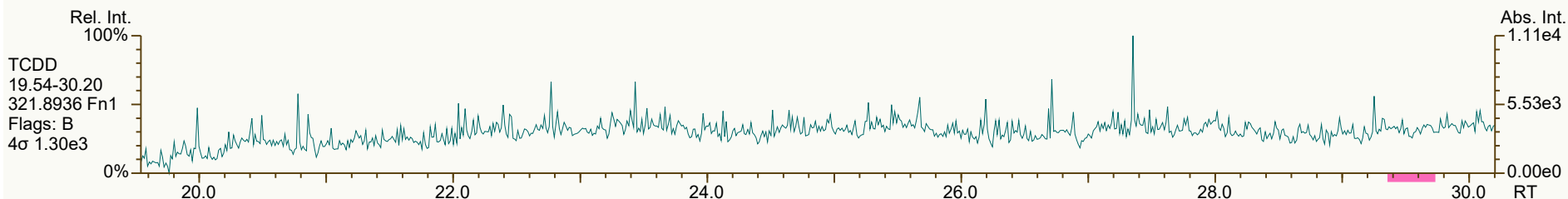
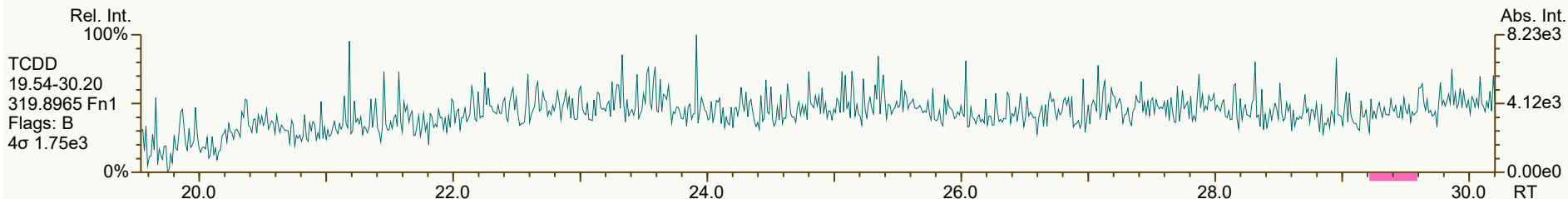
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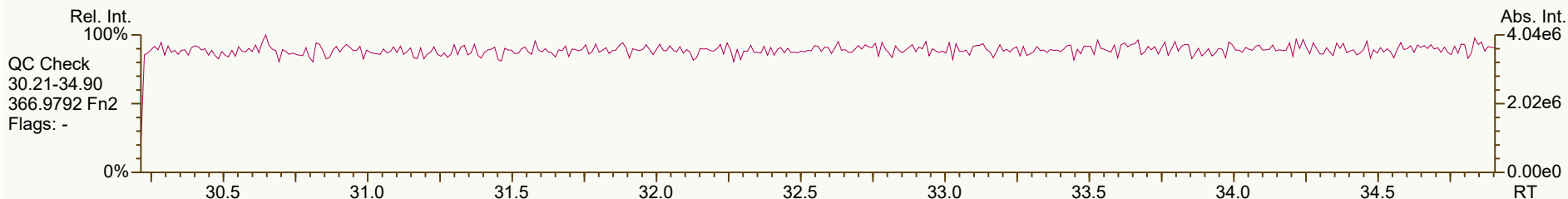
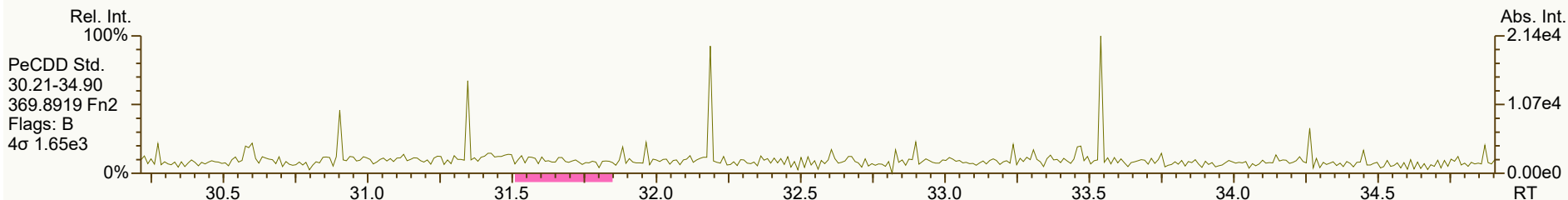
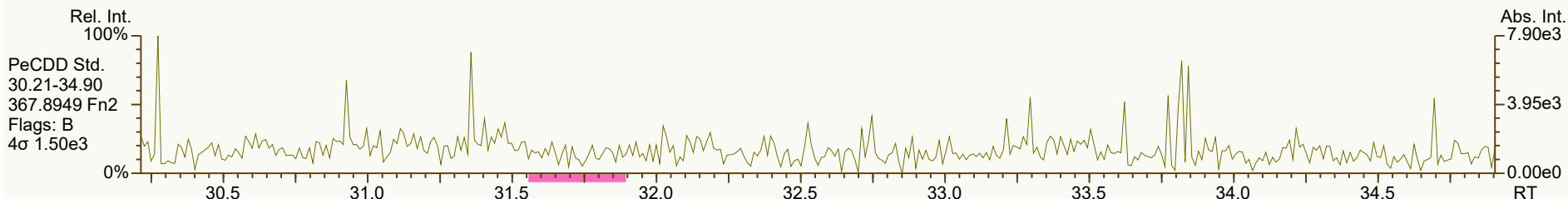
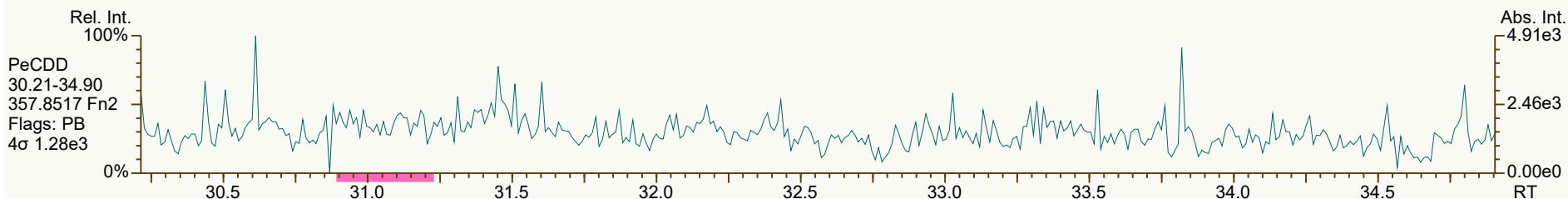
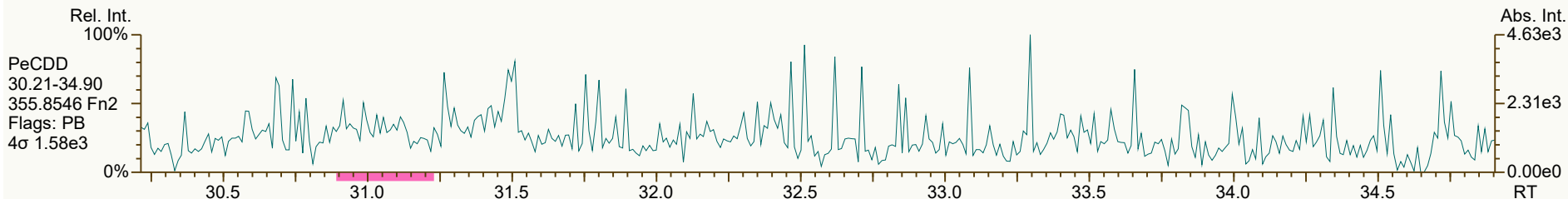


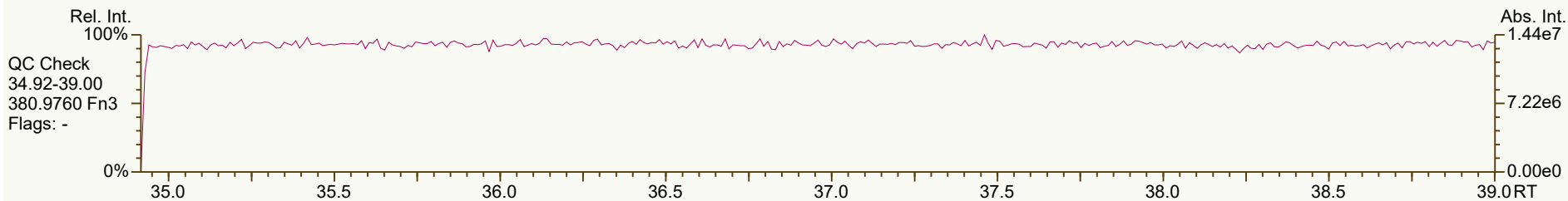
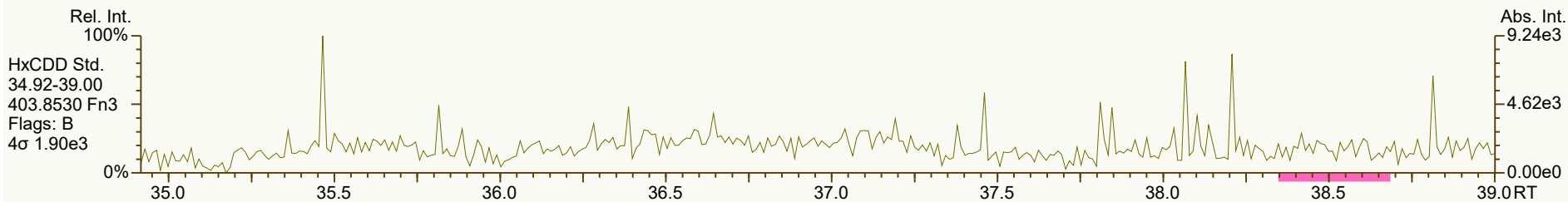
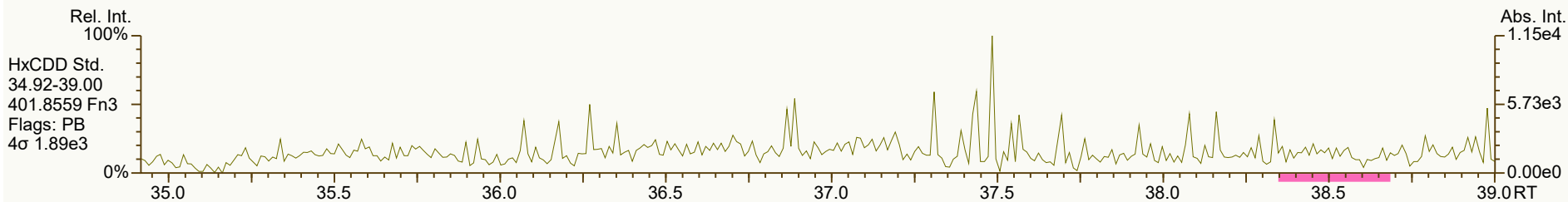
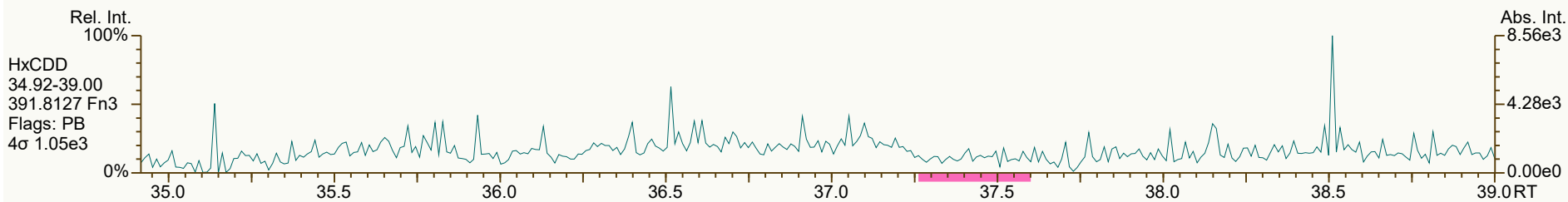
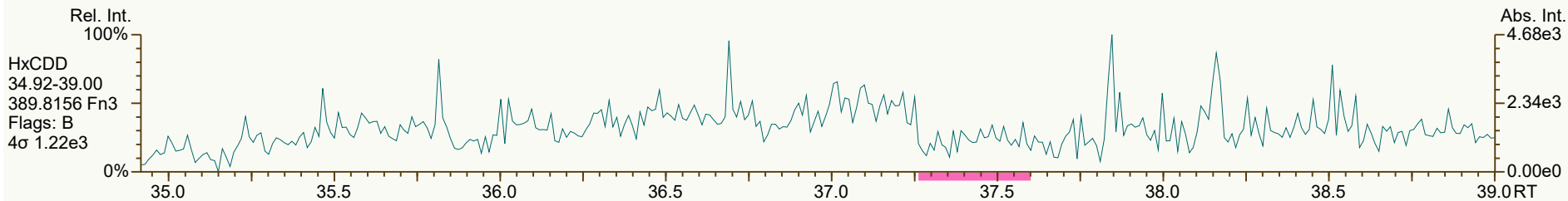


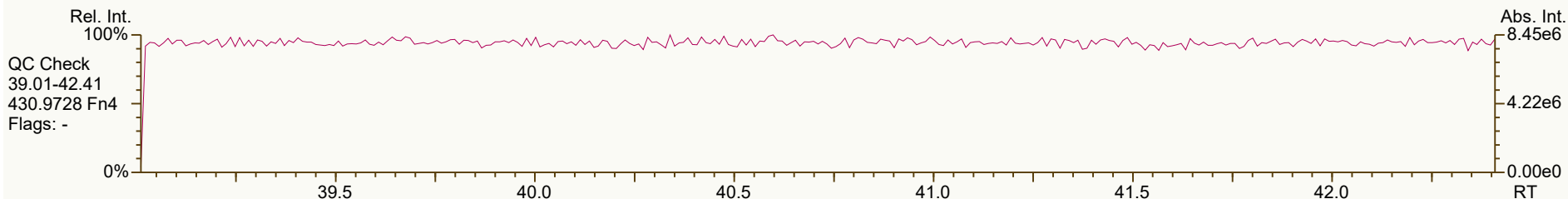
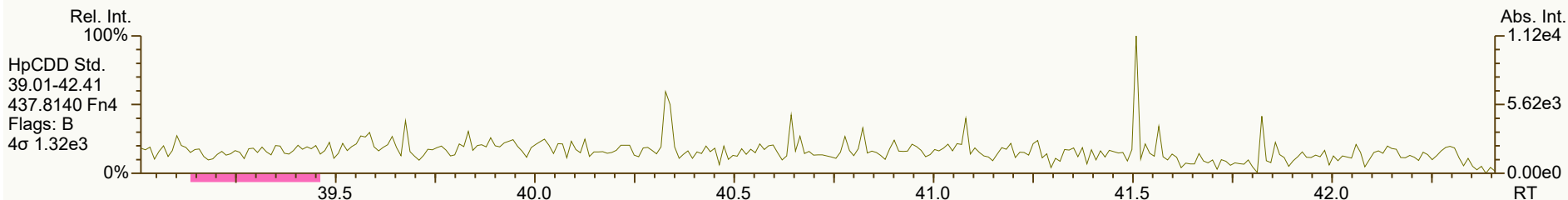
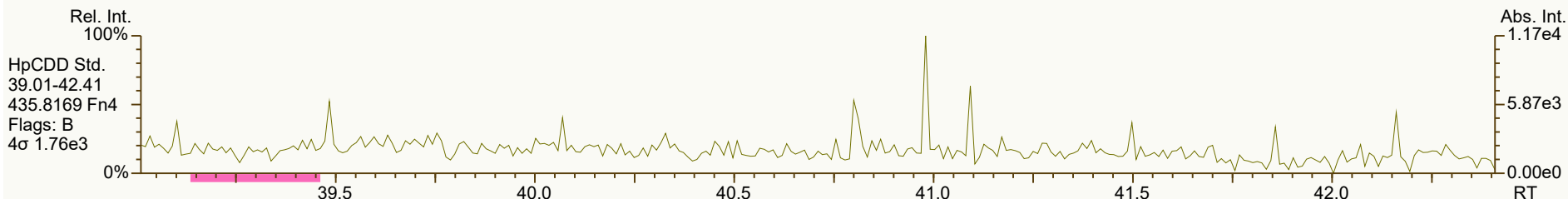
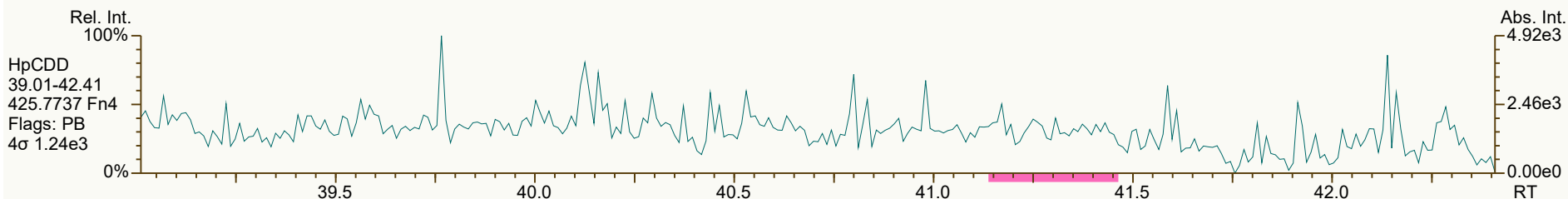
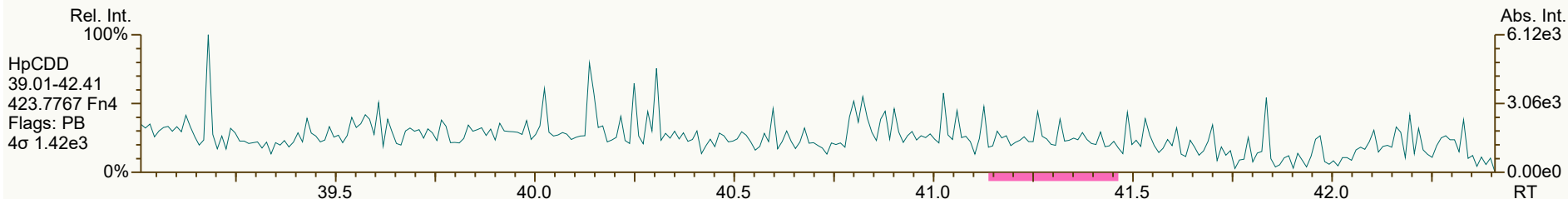


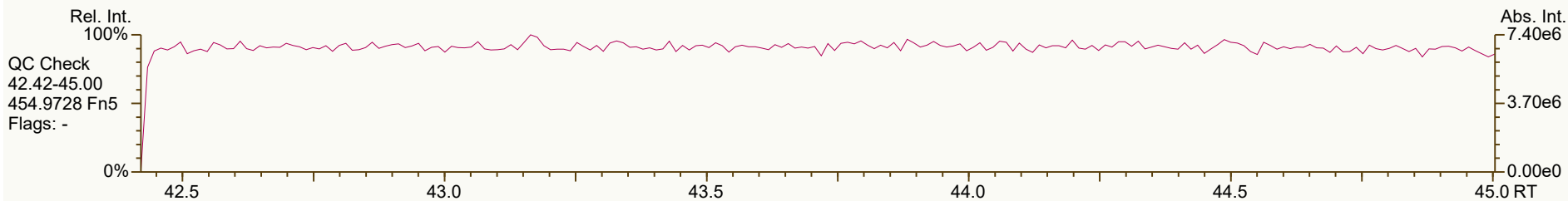
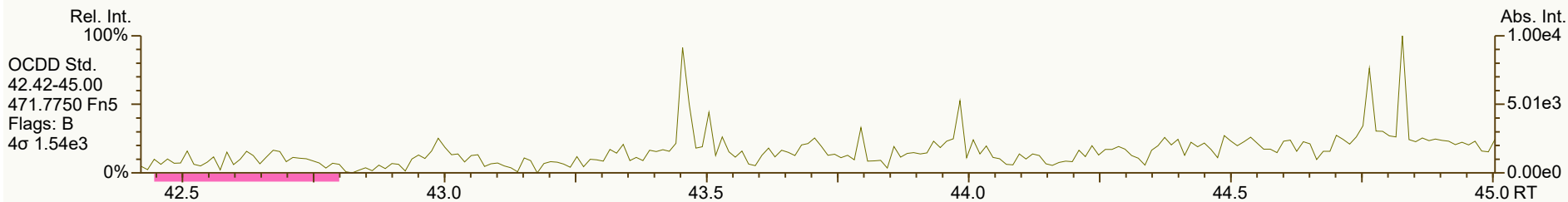
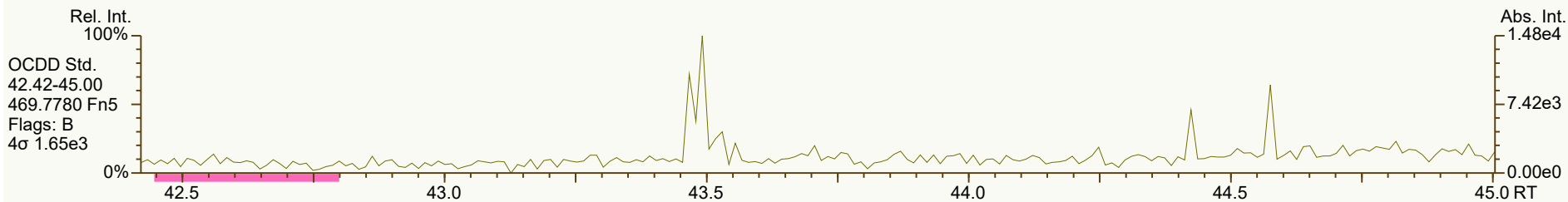
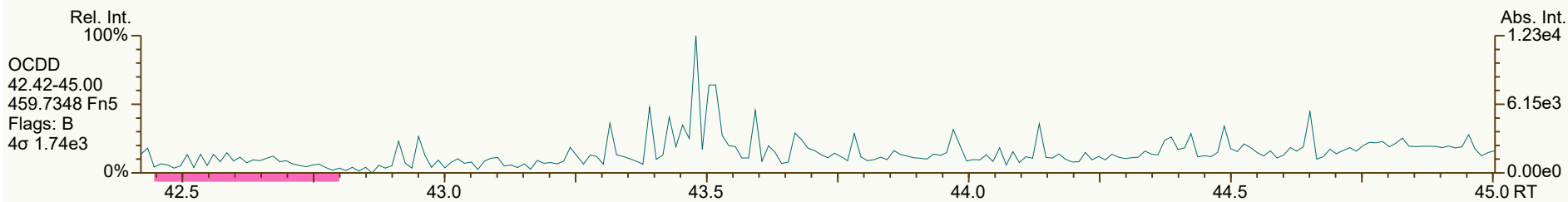
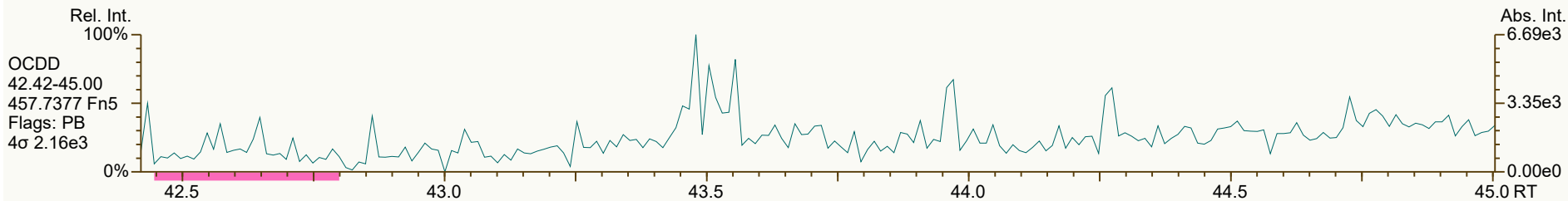


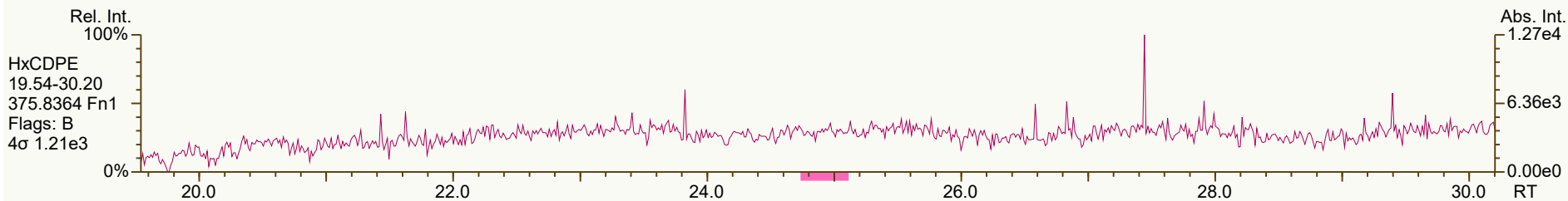
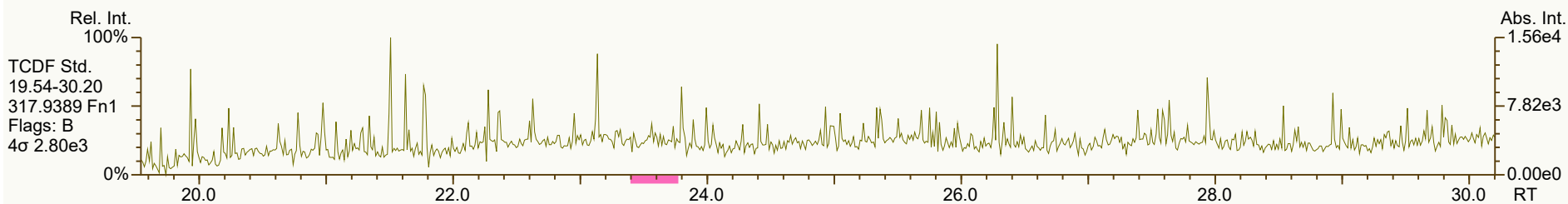
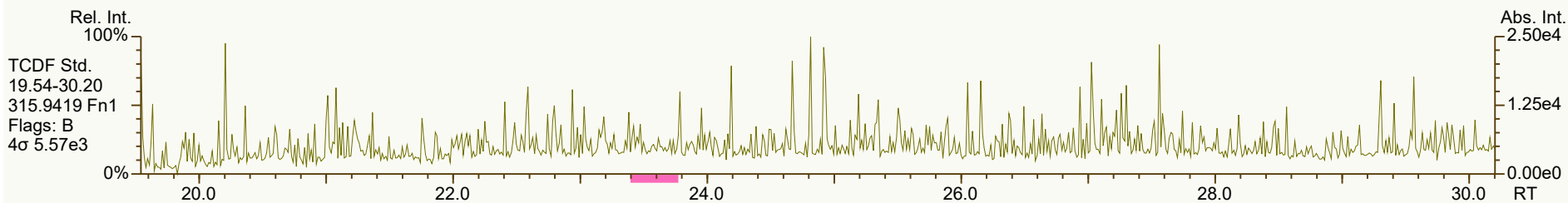
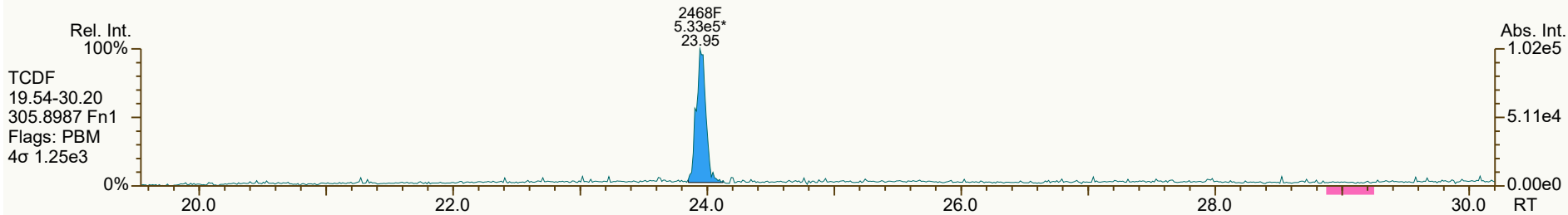
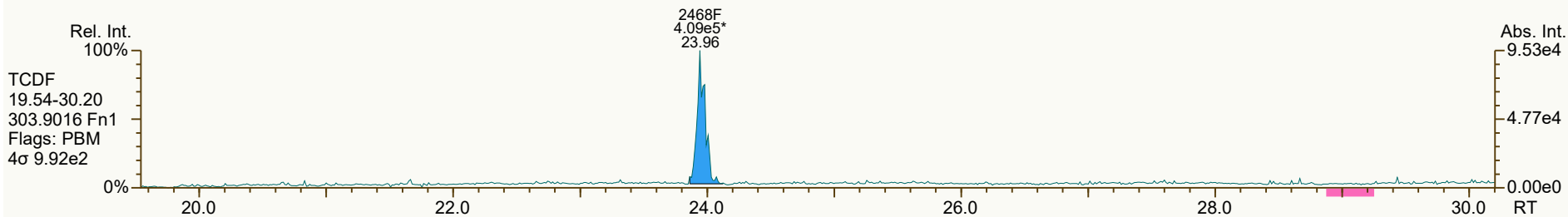


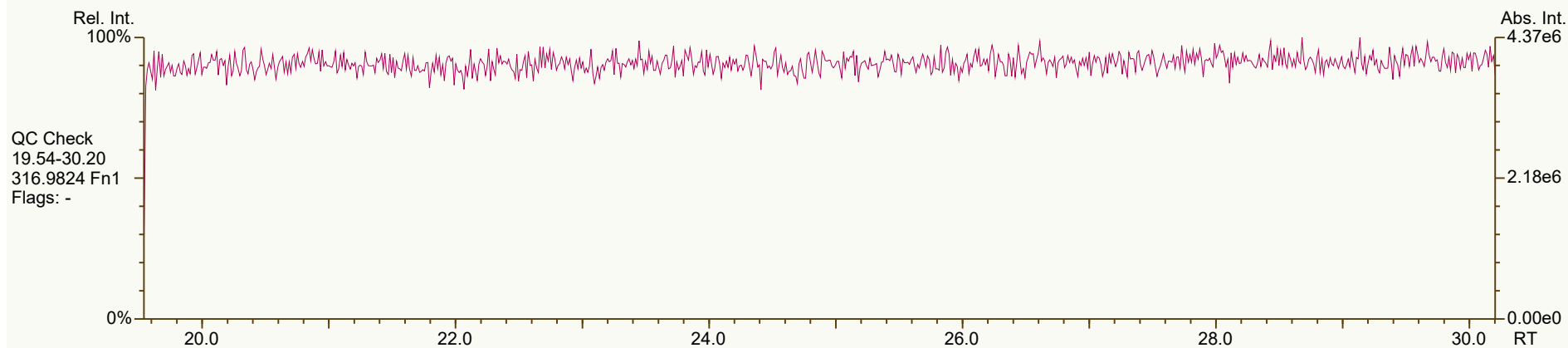
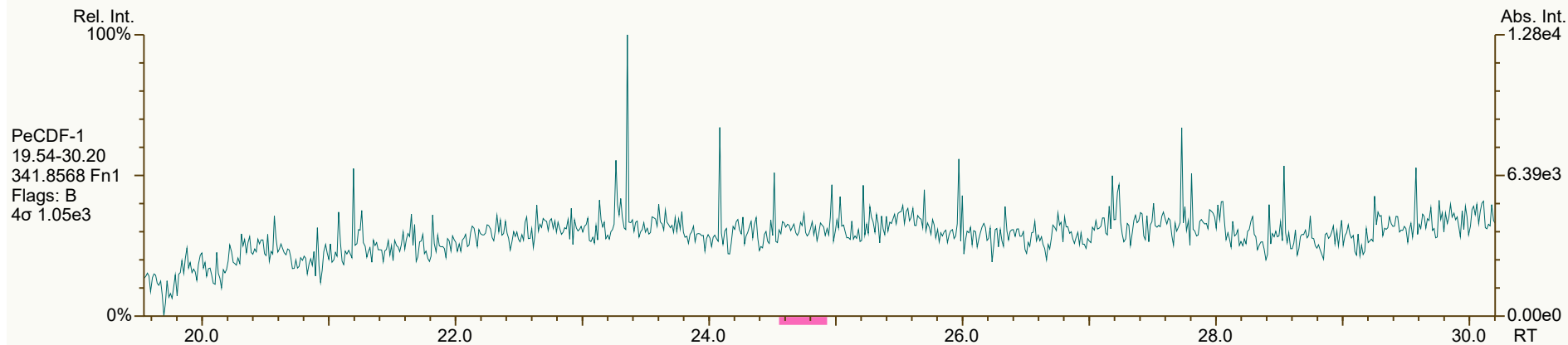
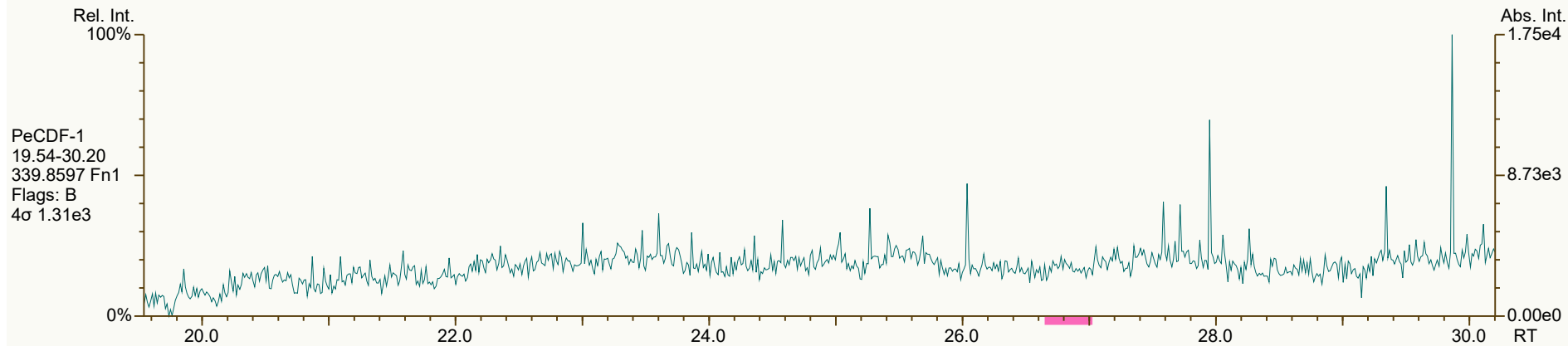


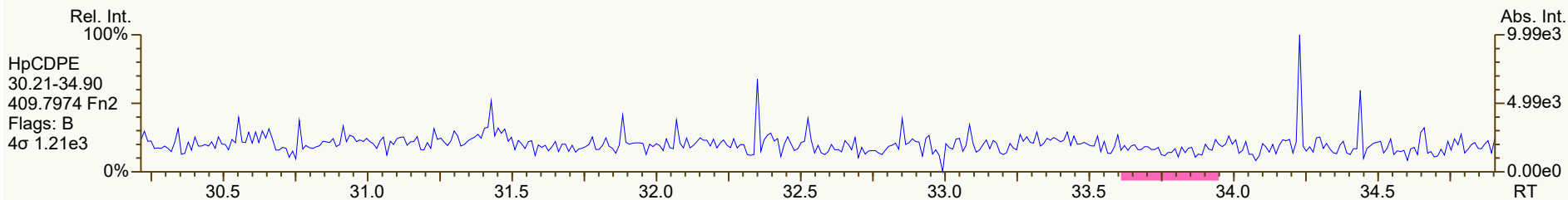
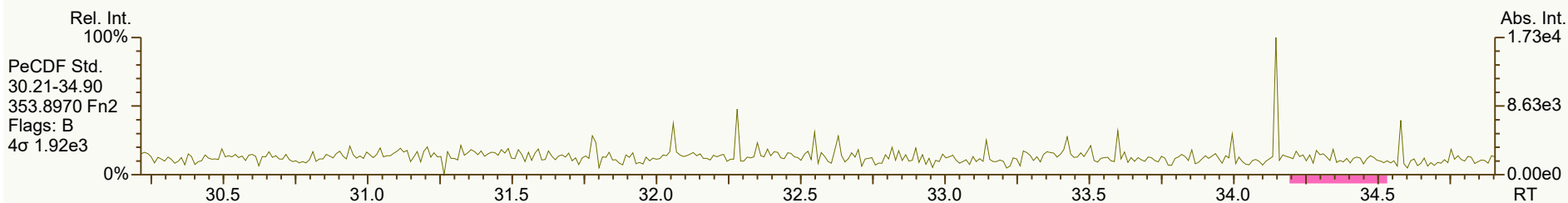
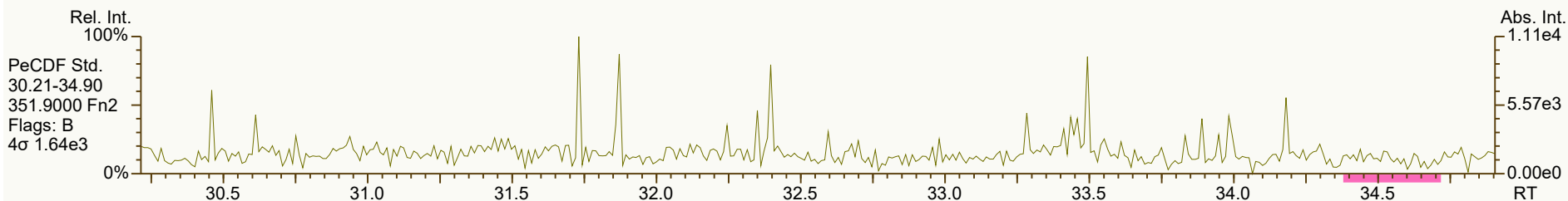
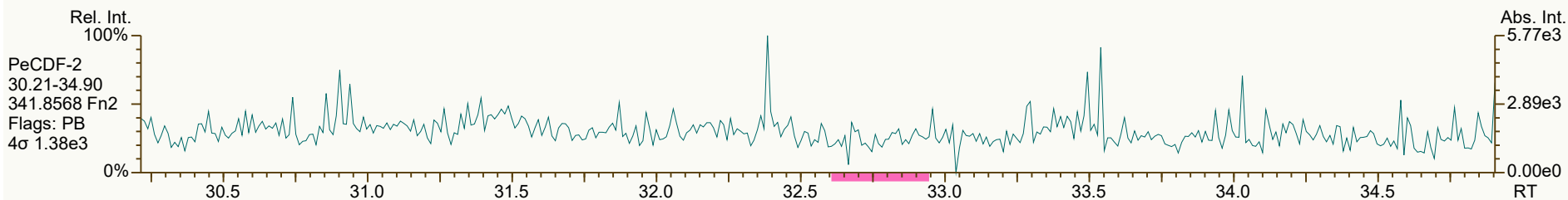
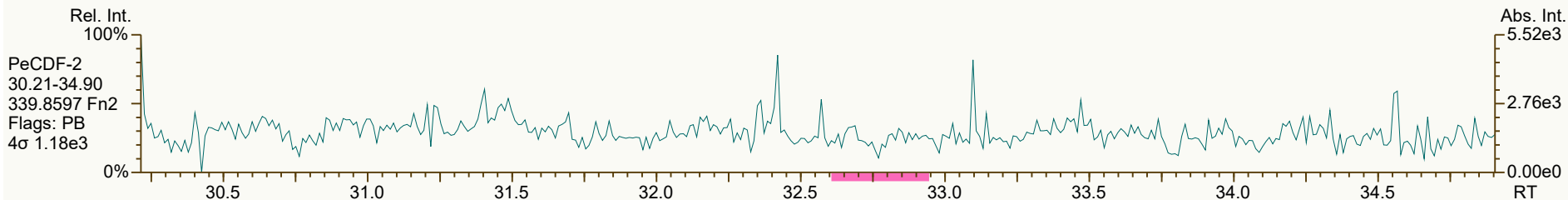


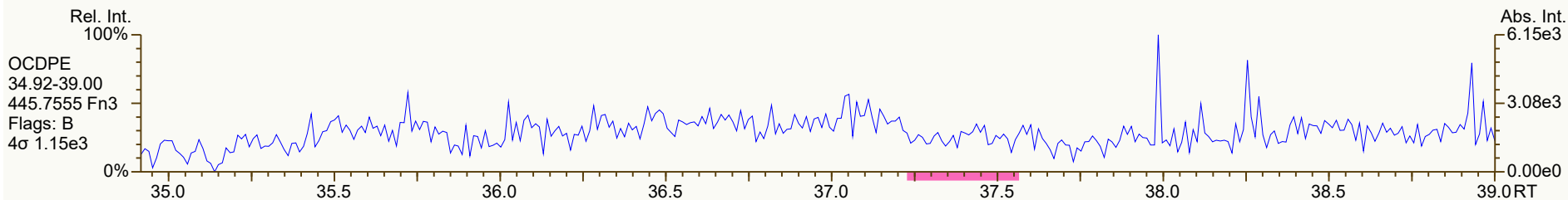
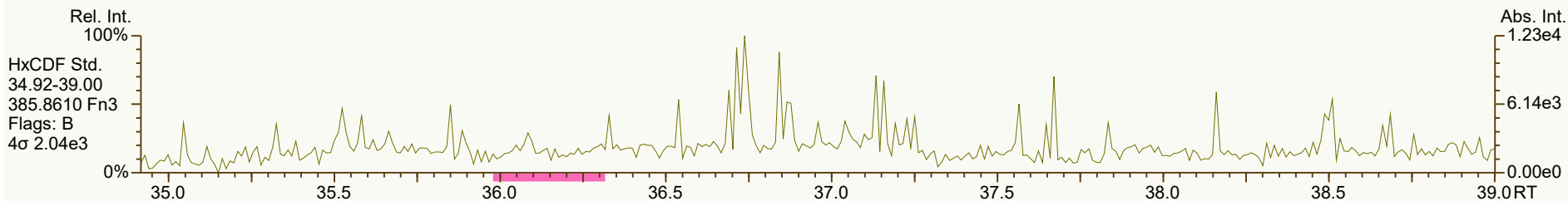
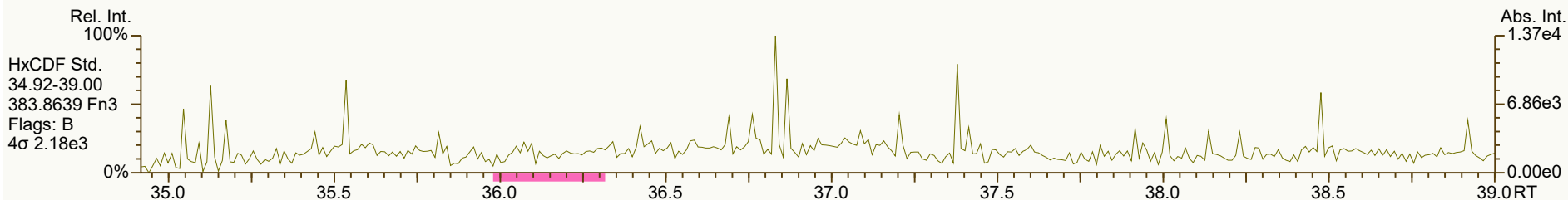
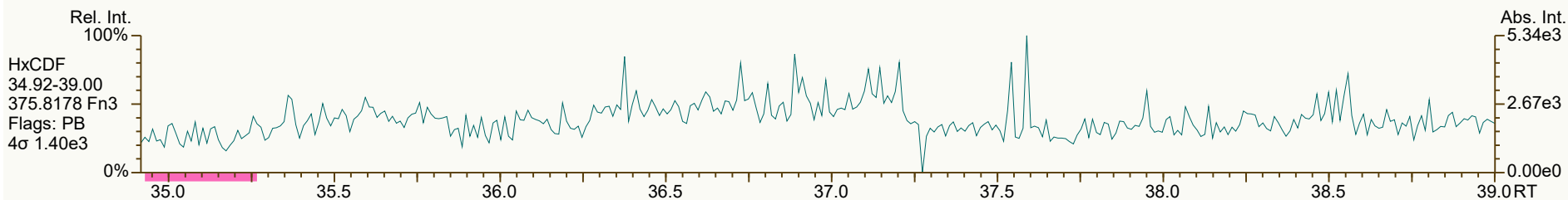
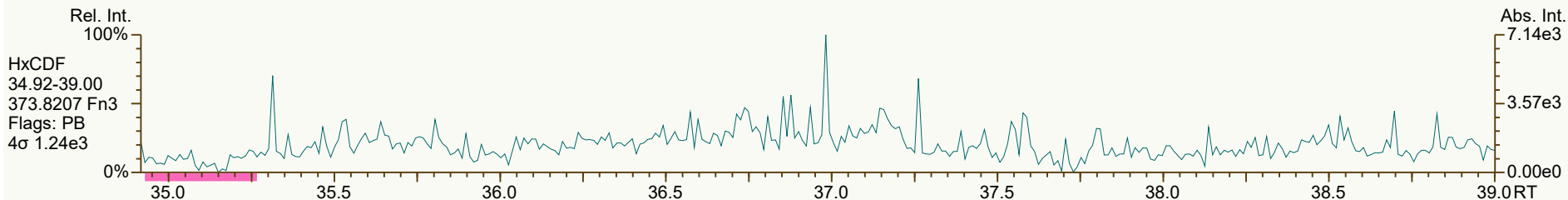


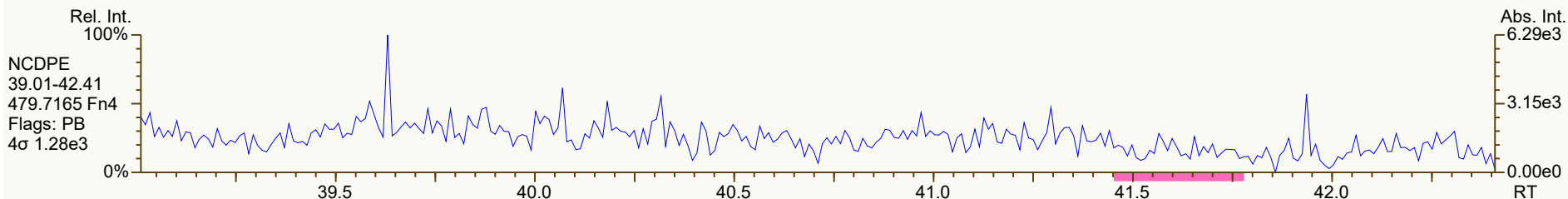
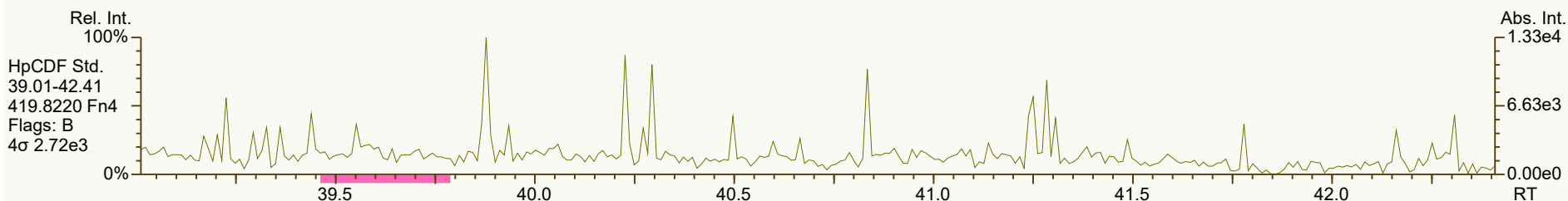
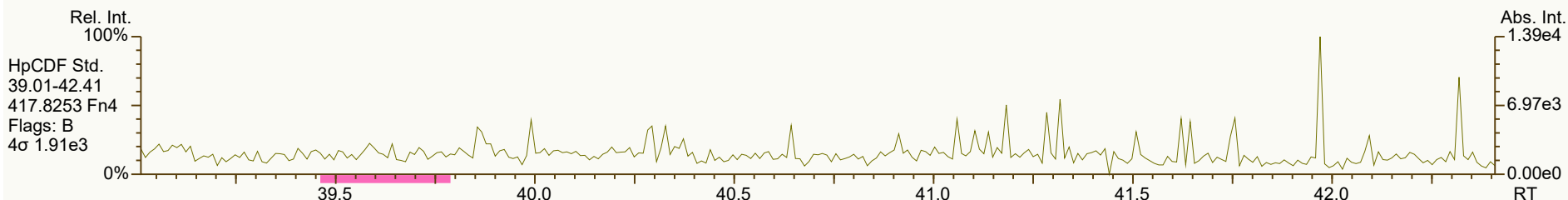
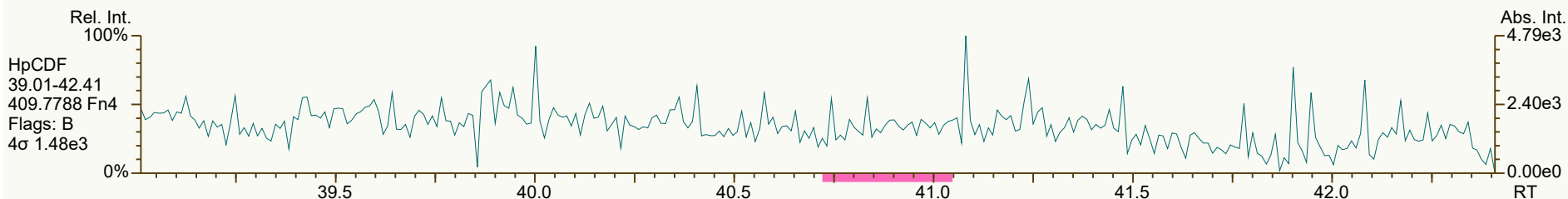
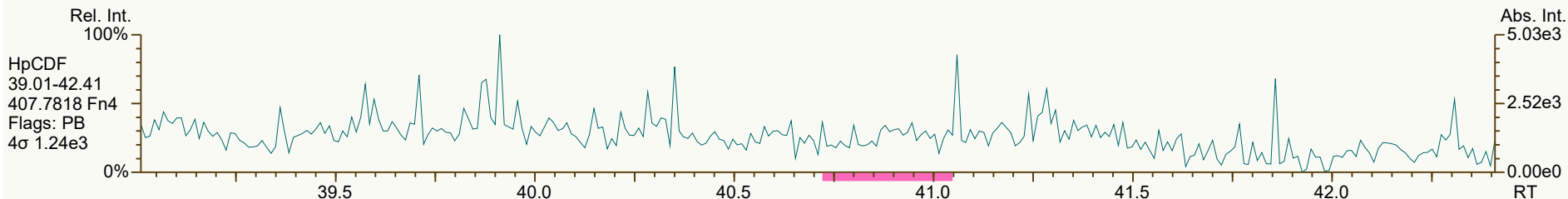


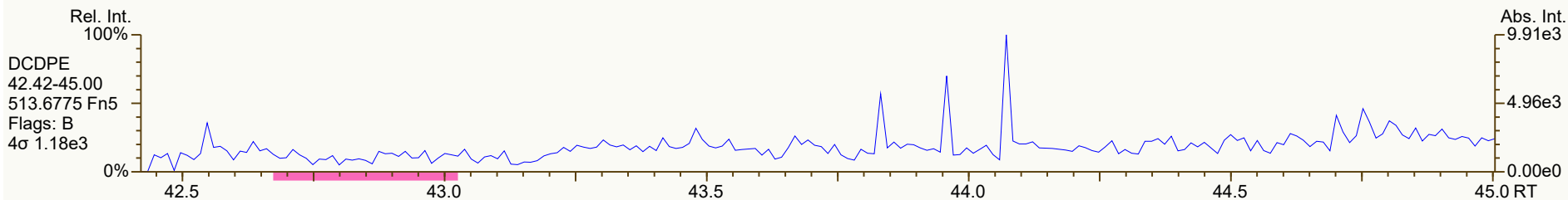
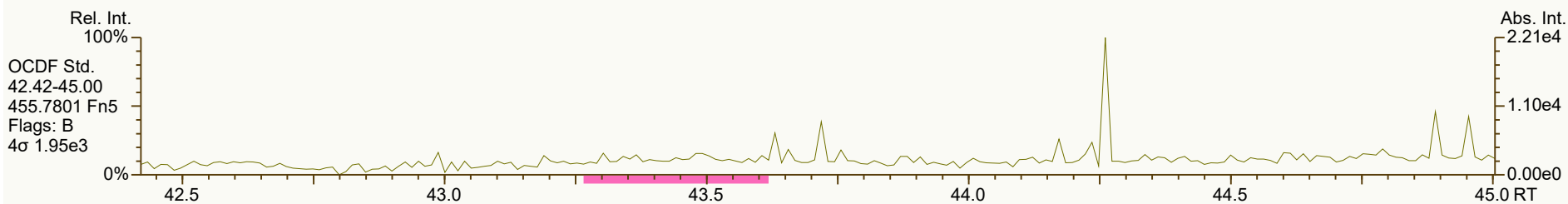
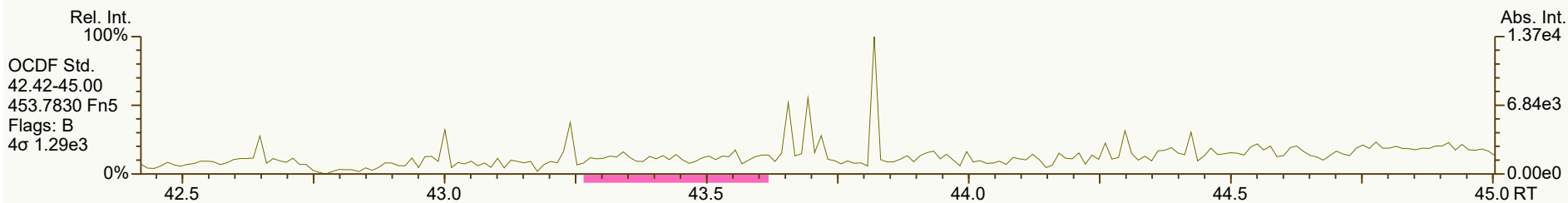
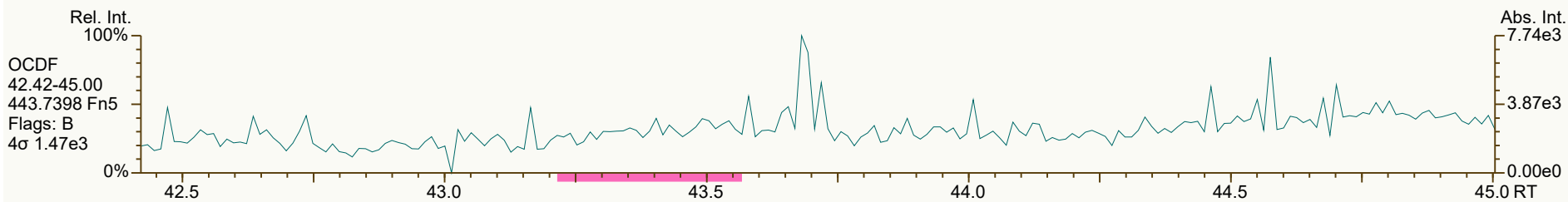
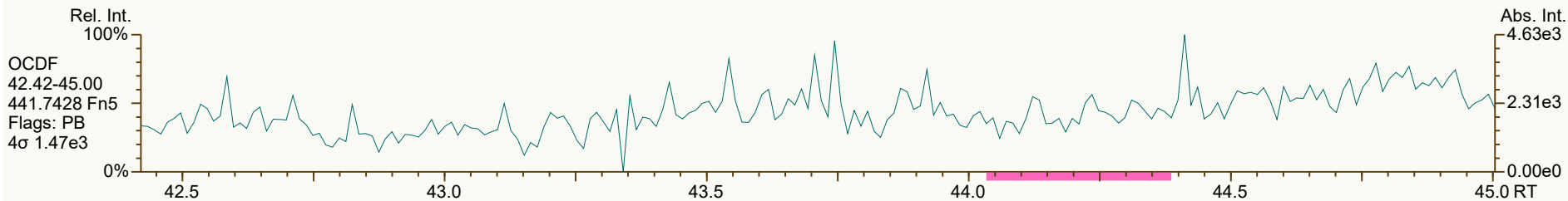






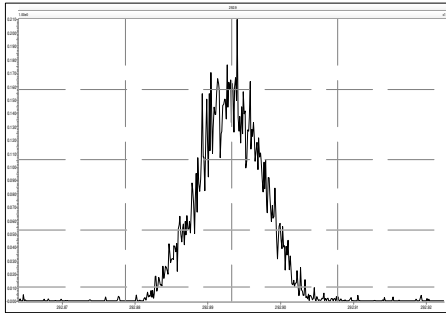




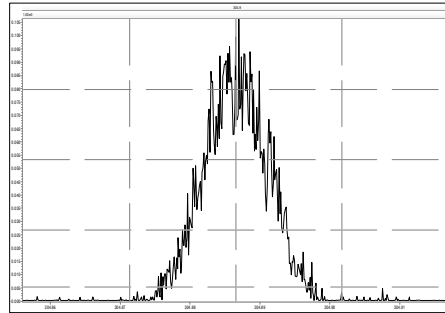


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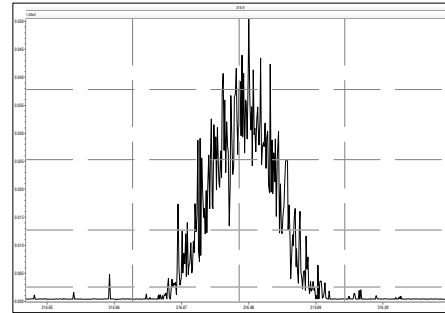
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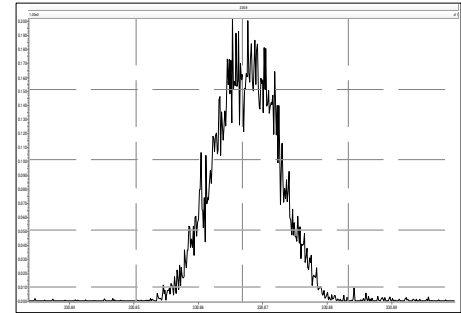
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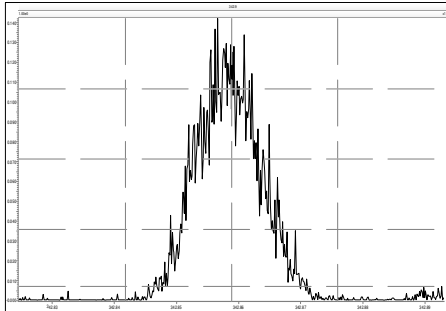
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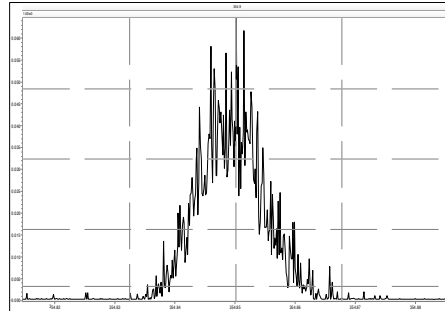
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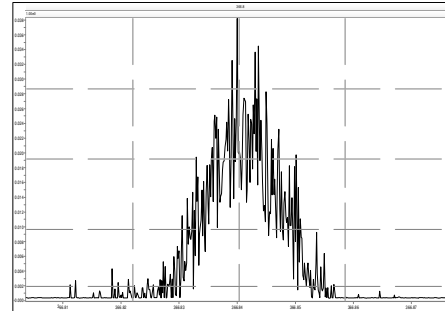
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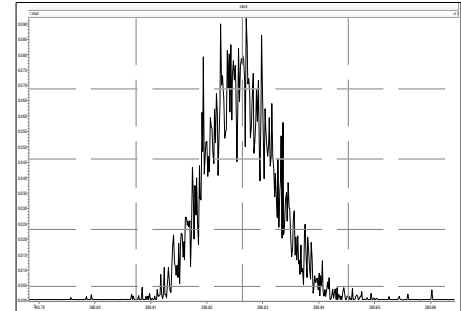
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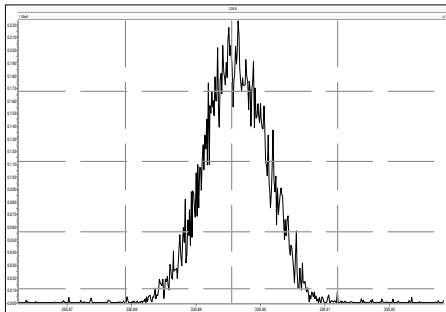
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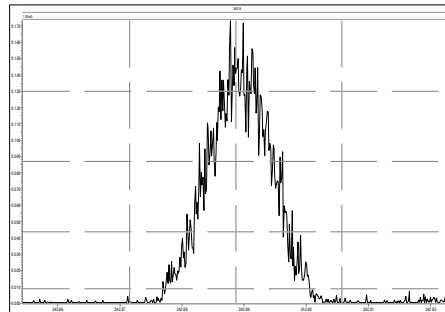
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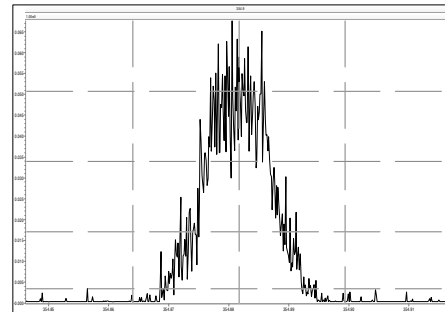
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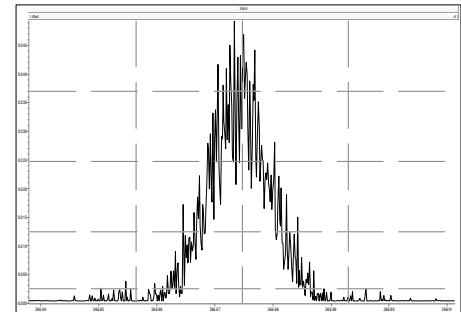
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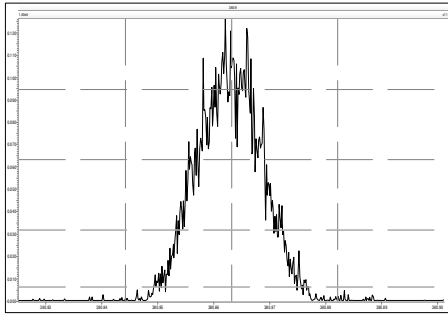


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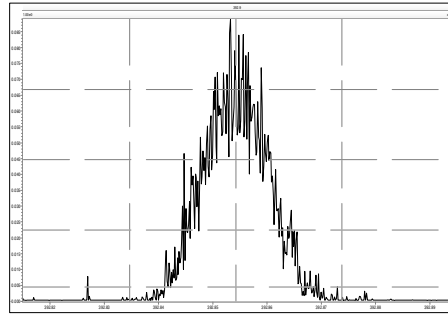


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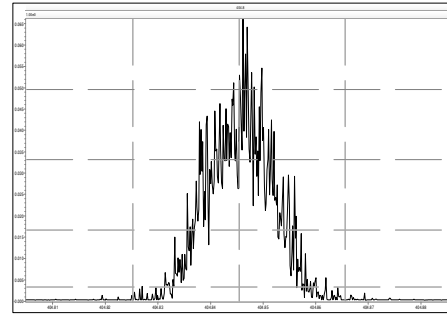
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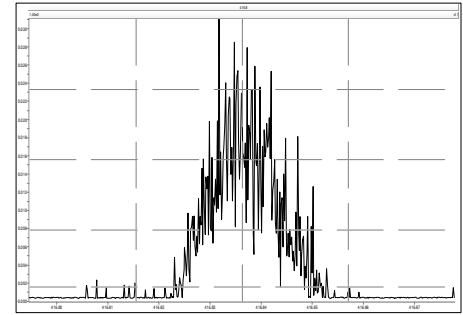
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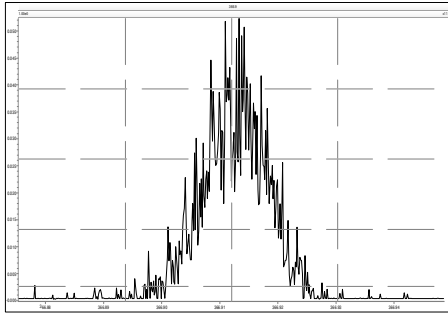
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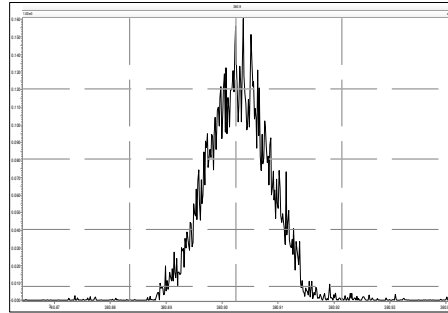
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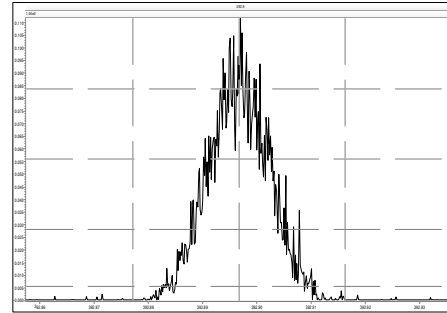
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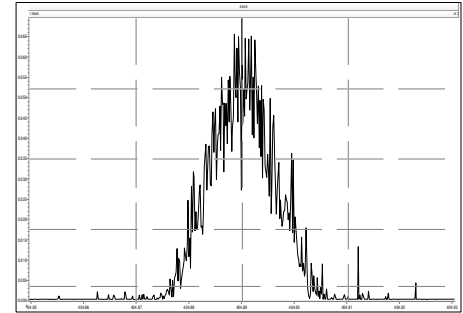
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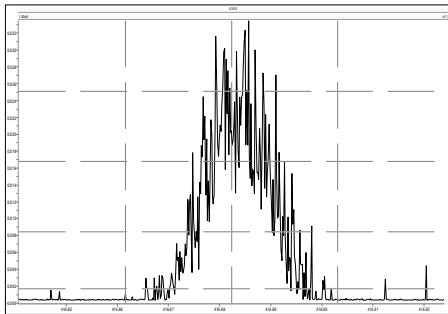
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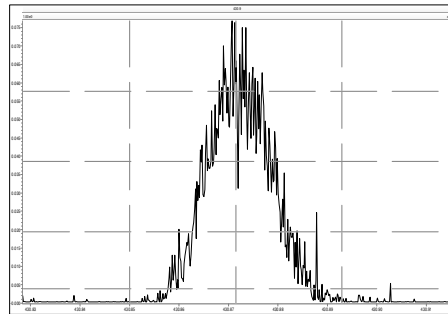
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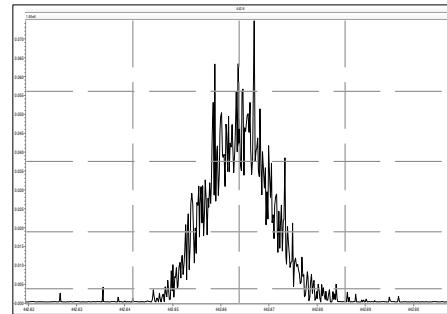
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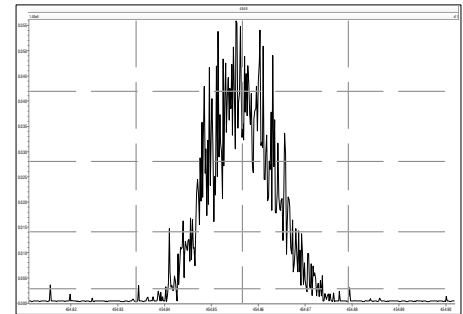
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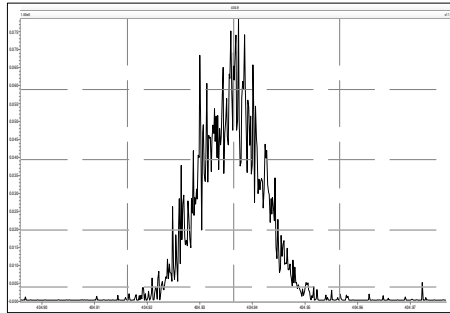


M 454.9728 R 15799

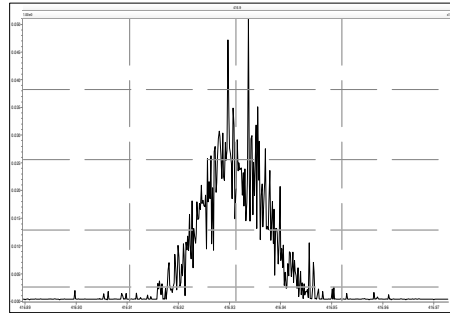


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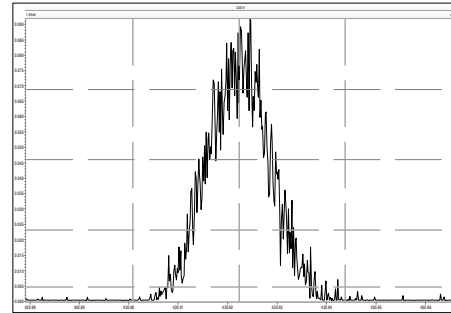
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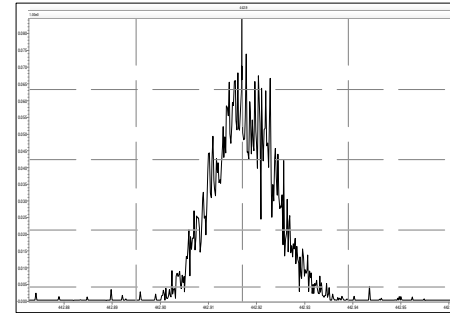
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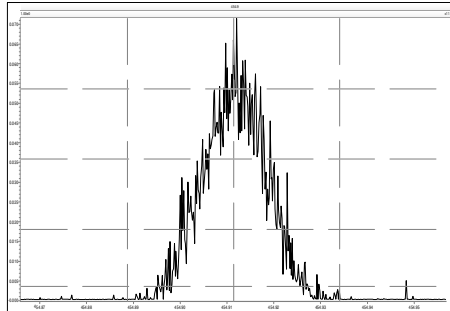
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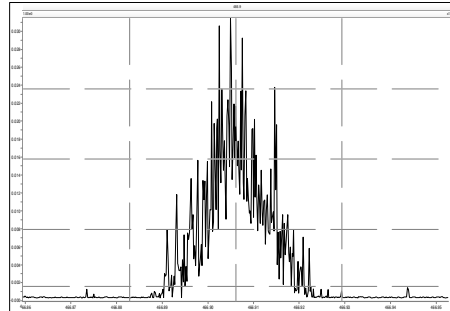
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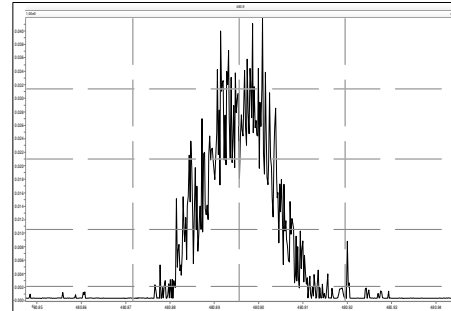
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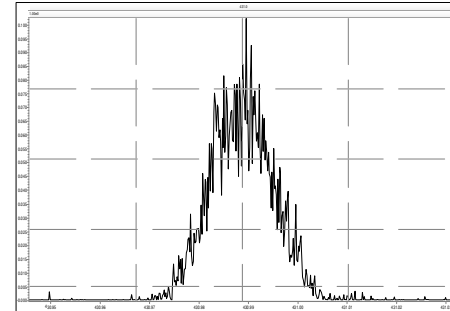
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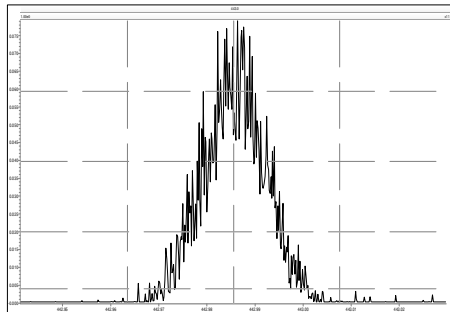
M 480.9696 R 15351



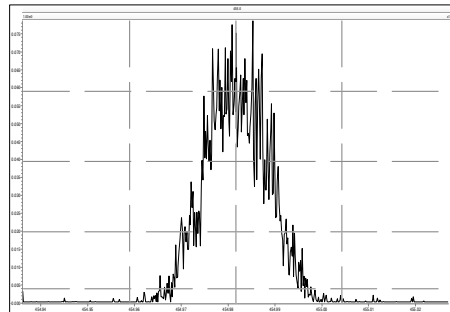
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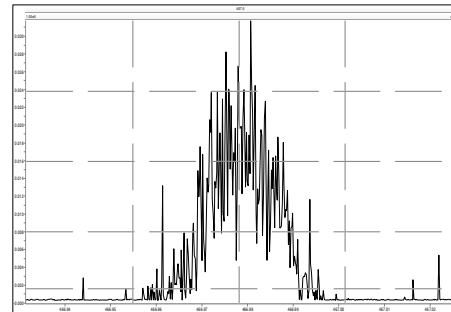
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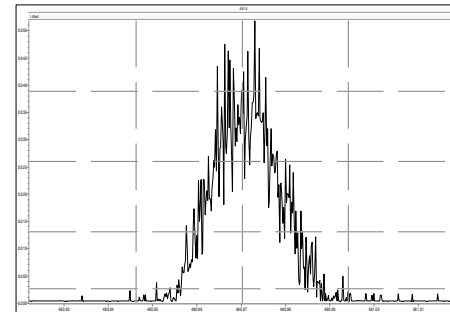
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M 466.9728 R 19319

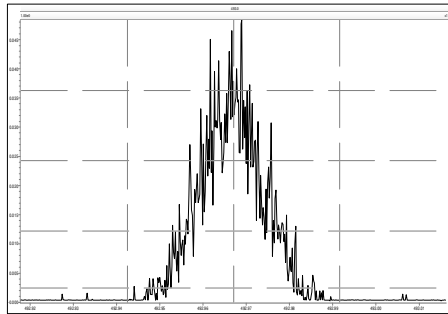


M 480.9696 R 16250

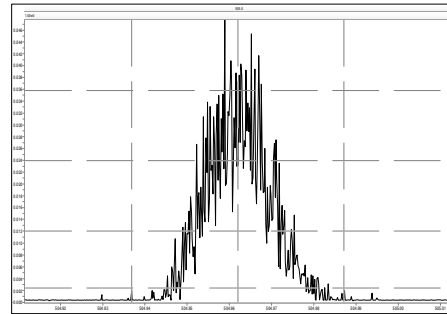


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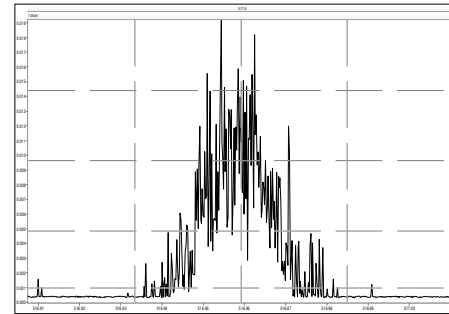
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M 504.9696 R 16356

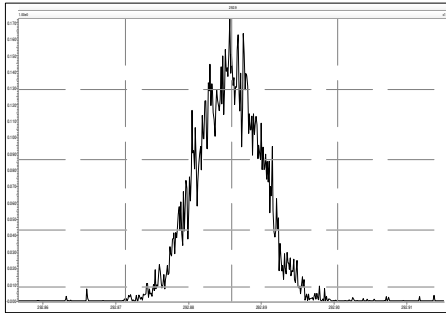


M 516.9697 R 20576

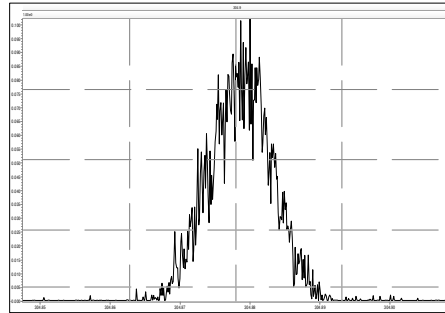


Printed: Thursday, February 10, 2022 04:46:25 Eastern Standard Time

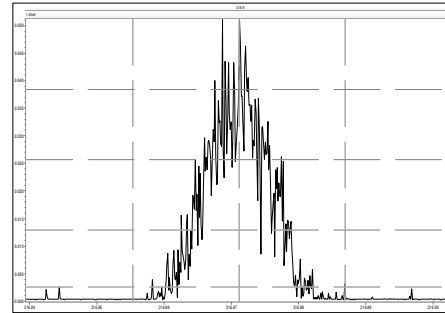
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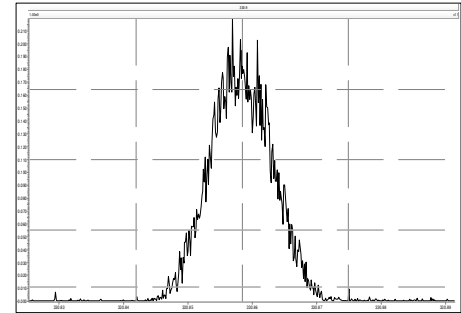
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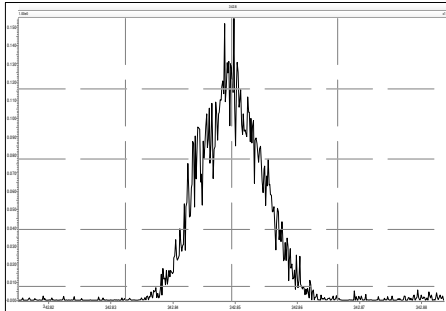
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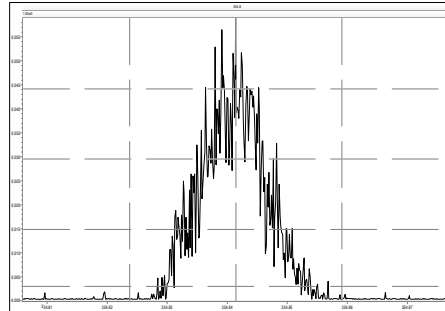
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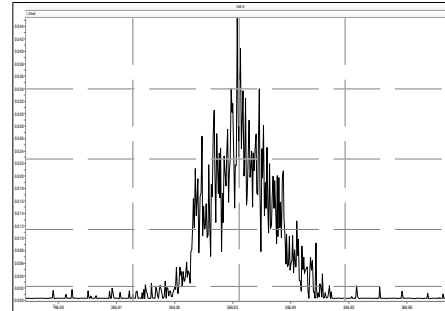
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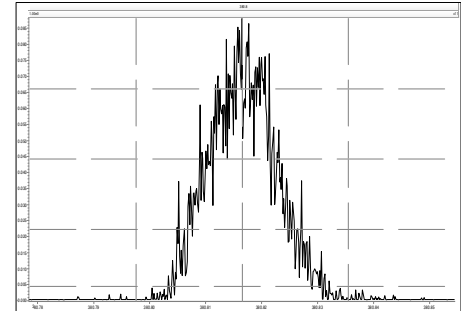
M 354.9792 R 15441



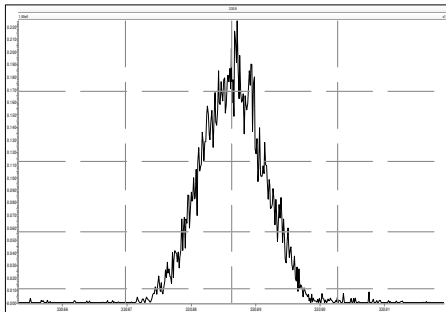
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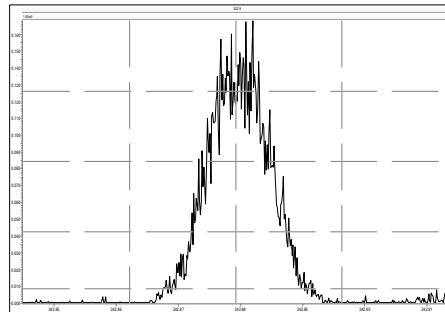
M 380.9760 R 15558



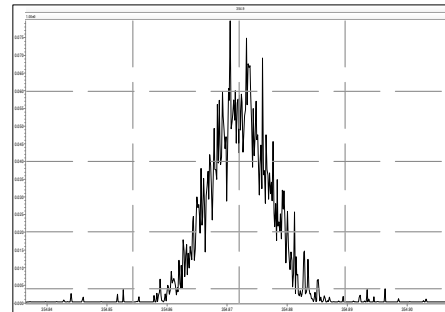
M 330.9792 R 15583



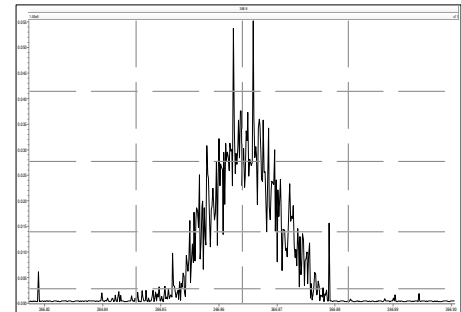
M 342.9792 R 15577



M 354.9792 R 17795

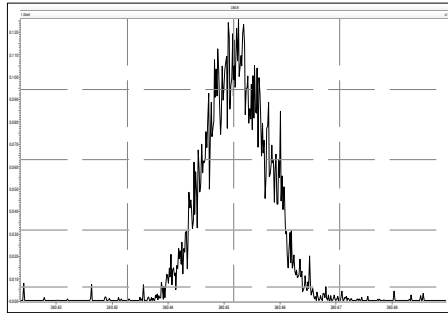


M 366.9792 R 16839

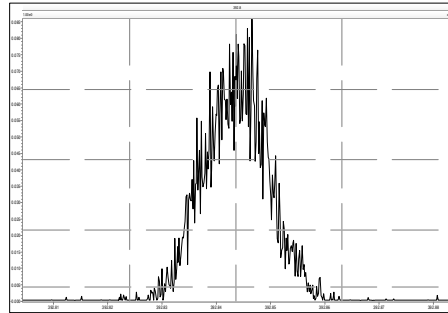


Printed: Thursday, February 10, 2022 04:46:25 Eastern Standard Time

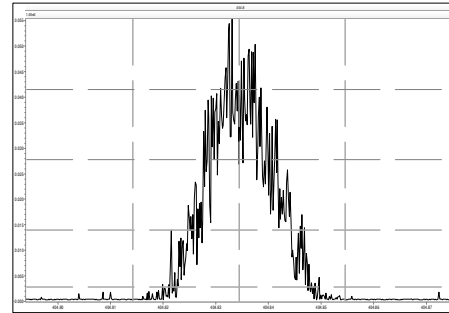
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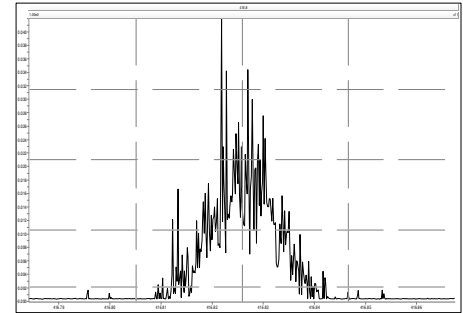
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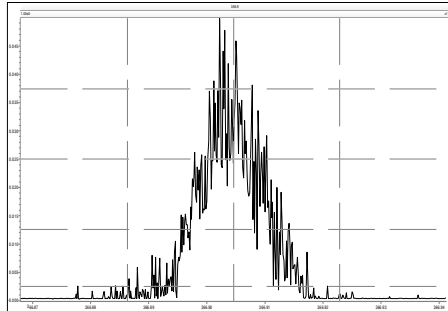
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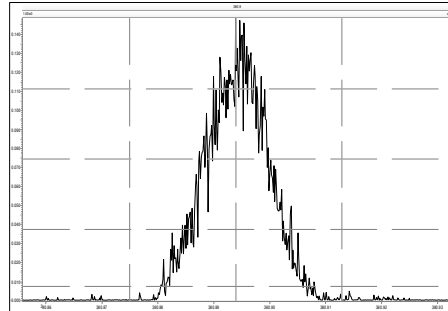
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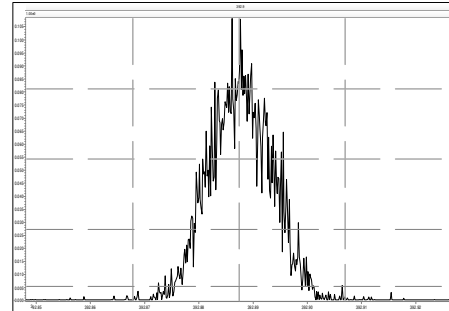
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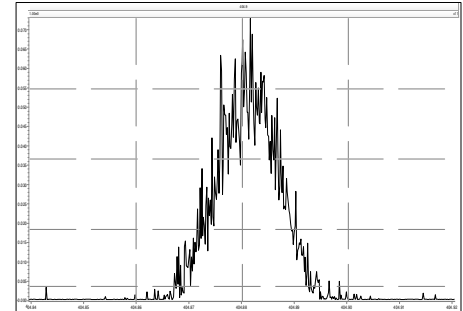
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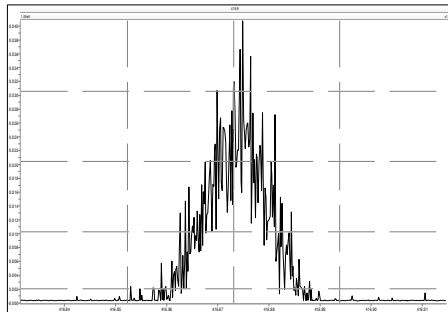
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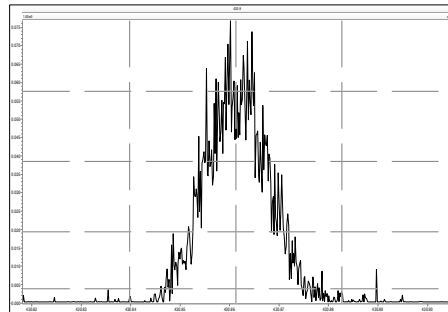
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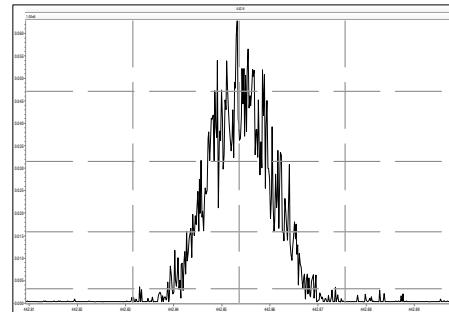
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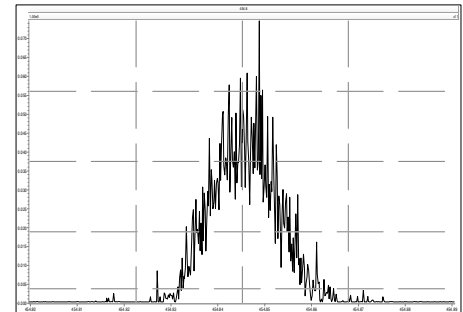
M 430.9728 R 16290



M 442.9728 R 16626

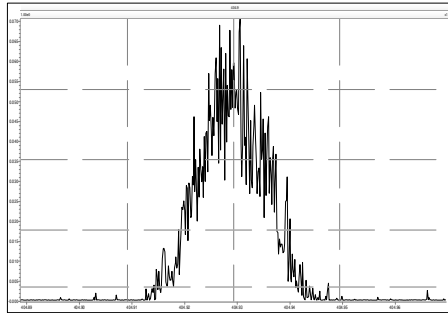


M 454.9728 R 15841

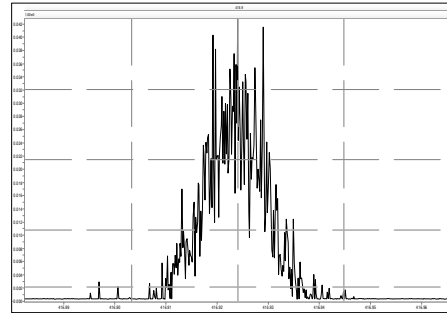


Printed: Thursday, February 10, 2022 04:46:25 Eastern Standard Time

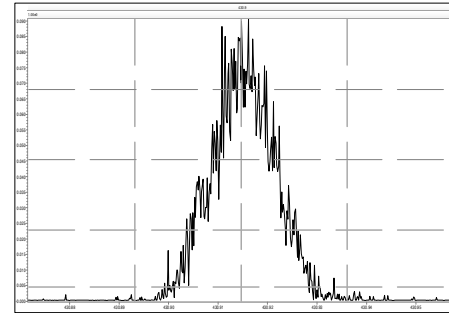
M 404.9760 R 15987



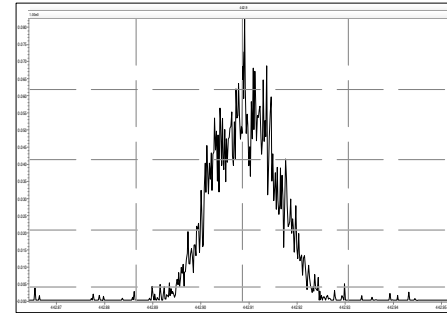
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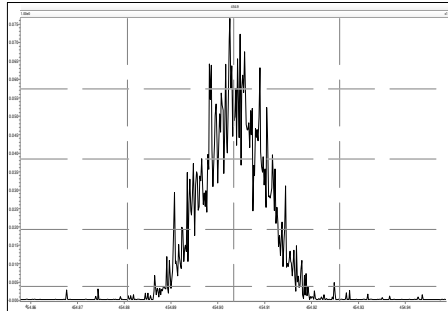
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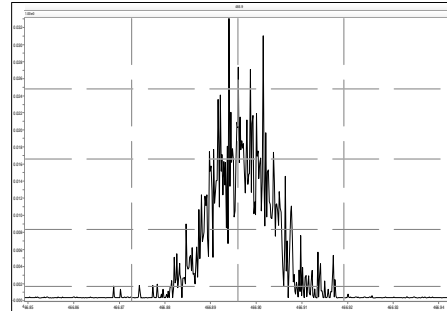
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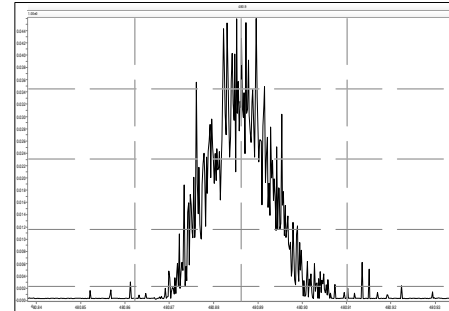
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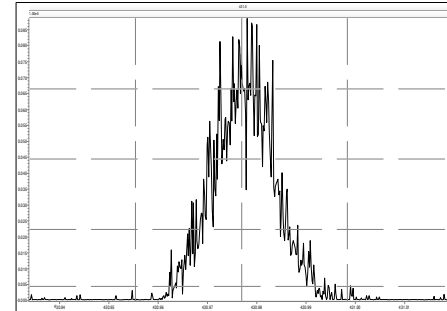
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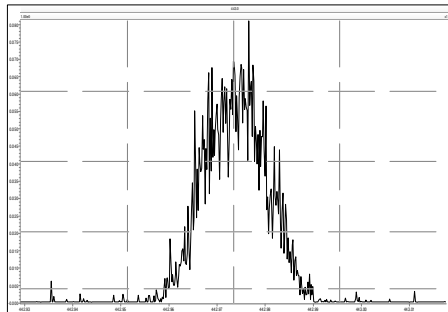
M 480.9696 R 17648



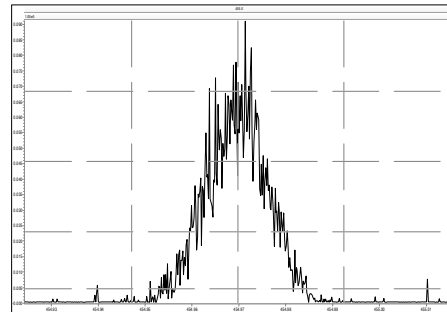
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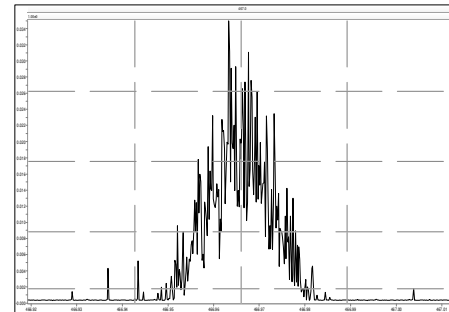
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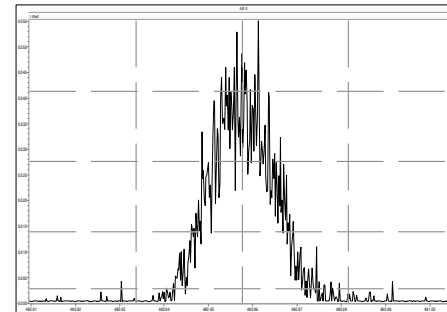
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M 466.9728 R 16877

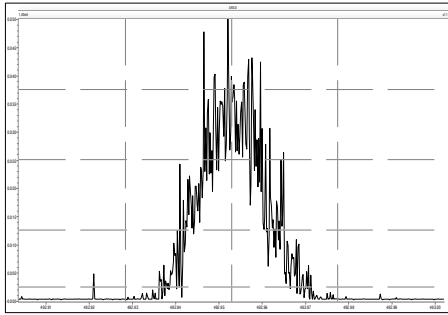


M 480.9696 R 16890

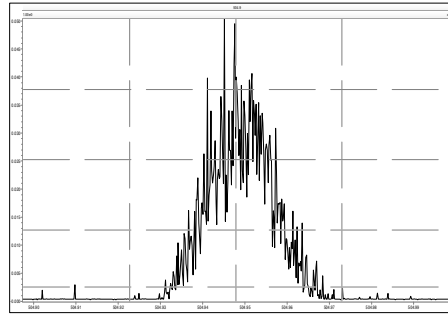


Printed: Thursday, February 10, 2022 04:46:25 Eastern Standard Time

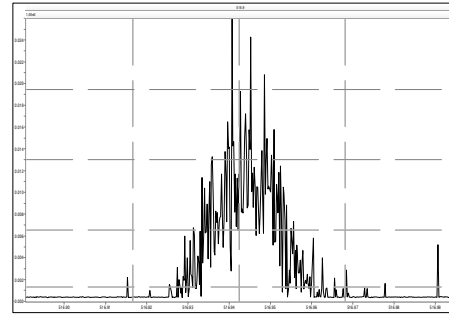
M 492.9696 R 17482



M 504.9696 R 15853



M 516.9697 R 22923



Dioxin/Furan ICAL Summary

SGS North America

Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021

Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04	211110C05	211110C06	211110C07	211110C08	211110C09	211110C10
			0.25 pg/uL CS0	0.5 pg/uL CS1	2 pg/uL CS2	10 pg/uL CS3	40 pg/uL CS4	200 pg/uL CS5	500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34 ✓	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98 ✓
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84 ✓	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

Dioxin/Furan ICAL Summary

SGS North America

Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021

Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04	211110C05	211110C06	211110C07	211110C08	211110C09	211110C10	
			0.25 pg/uL CS0	0.5 pg/uL CS1	2 pg/uL CS2	10 pg/uL CS3	40 pg/uL CS4	200 pg/uL CS5	500 pg/uL CS6	
CS 37C1-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-	
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75	
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85	
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11	
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87	
SS 37C1-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-	
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79	
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87	
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77	
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84	
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07	
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13	
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07	
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06	
Totals										
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11	
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98	
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04	
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00	
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00	
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97	
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14	
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28	
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05	
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98	
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16	
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26	
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33	

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

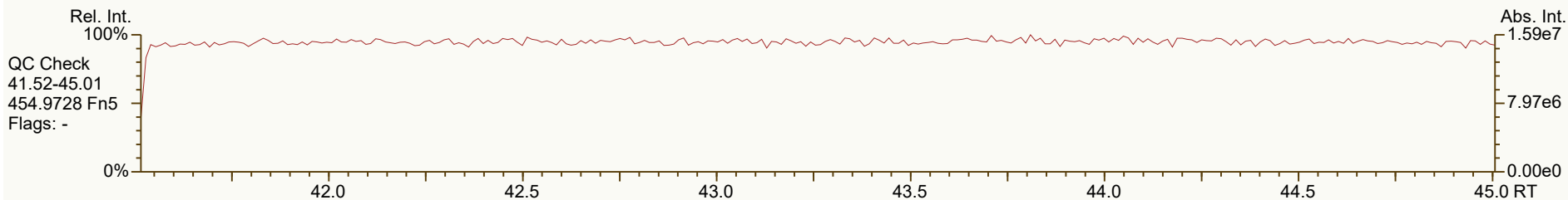
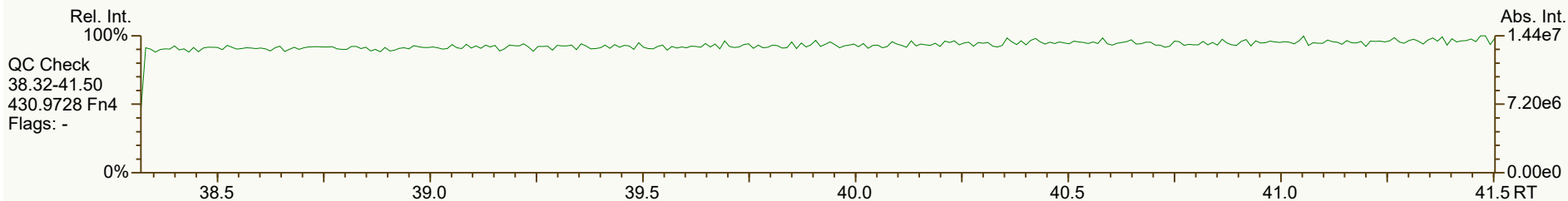
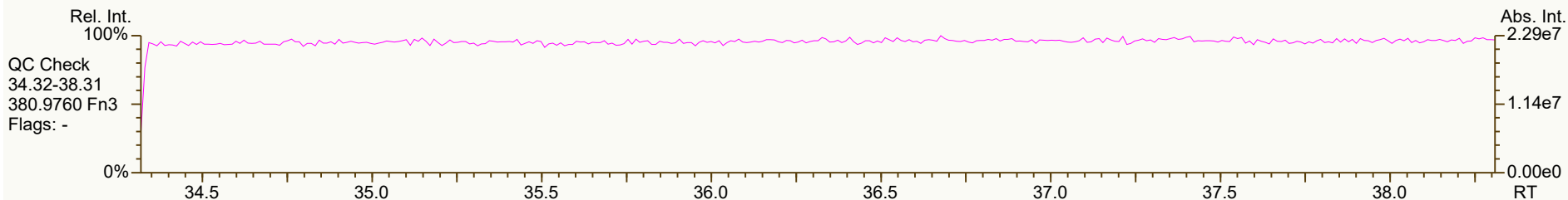
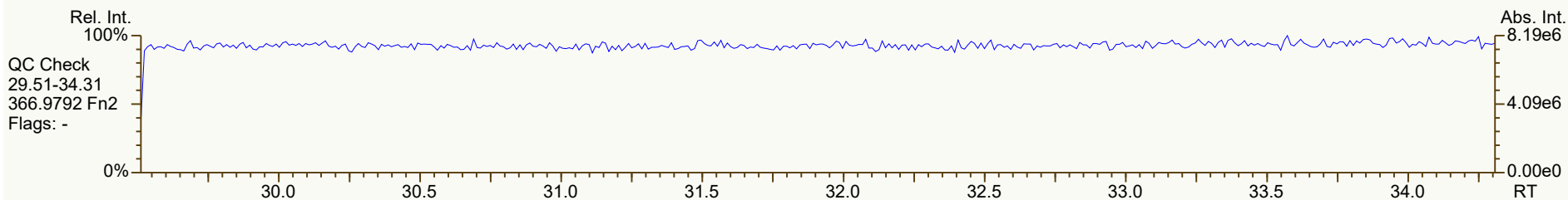
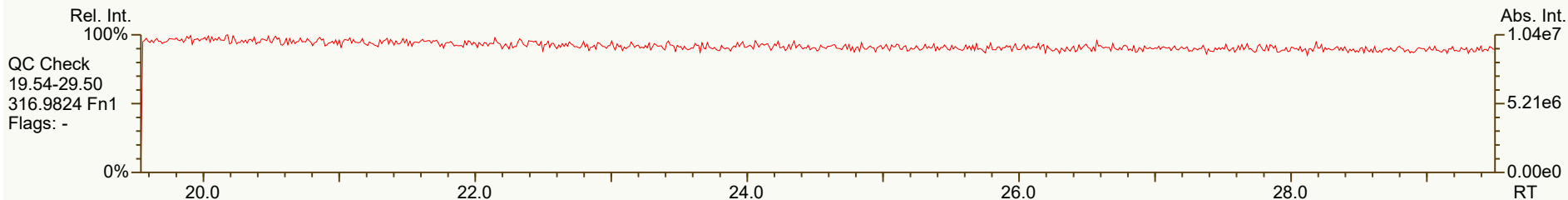
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Tyler_Fritz , 11/11/2021, 4:44:03 PM

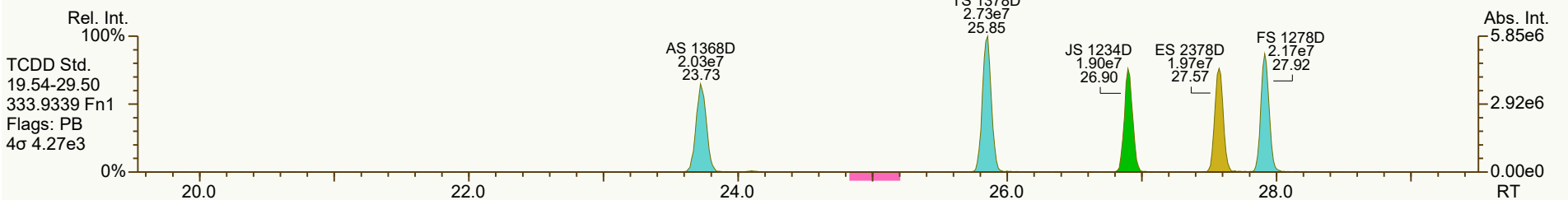
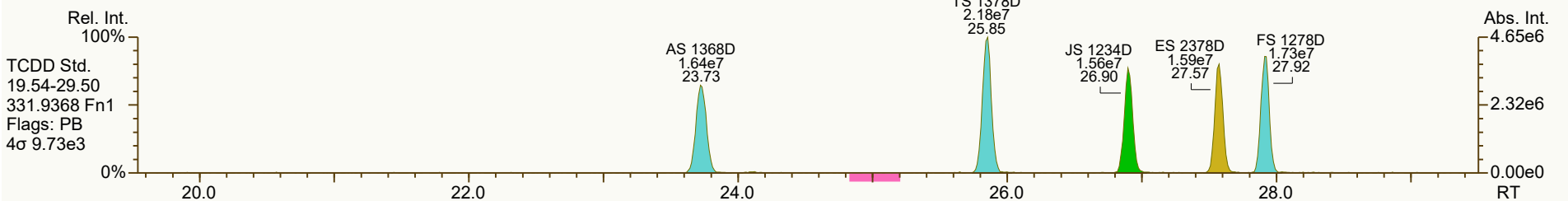
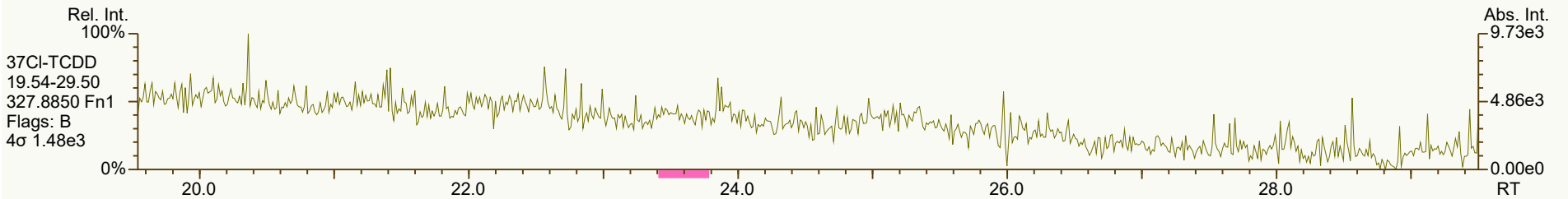
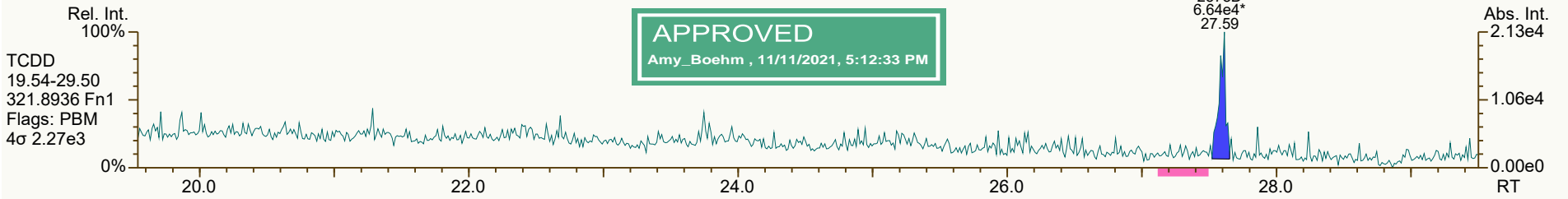
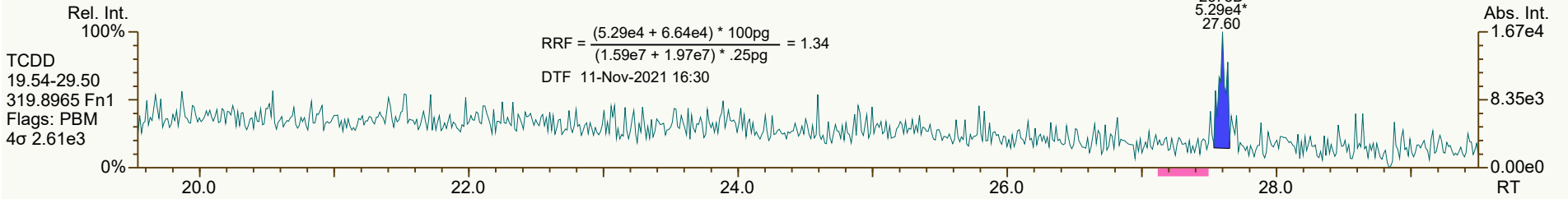
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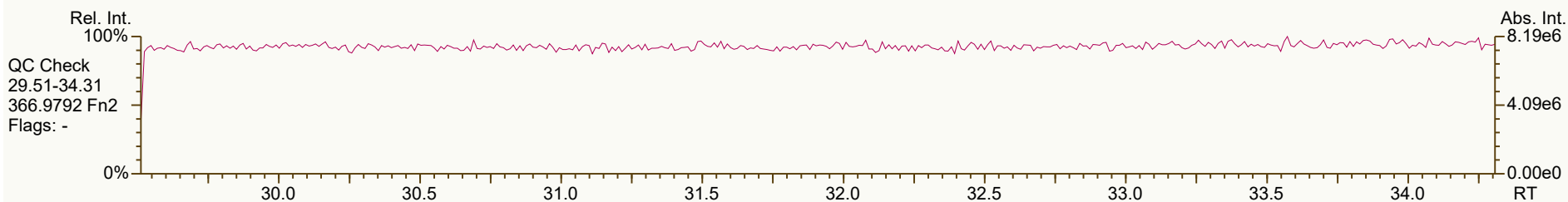
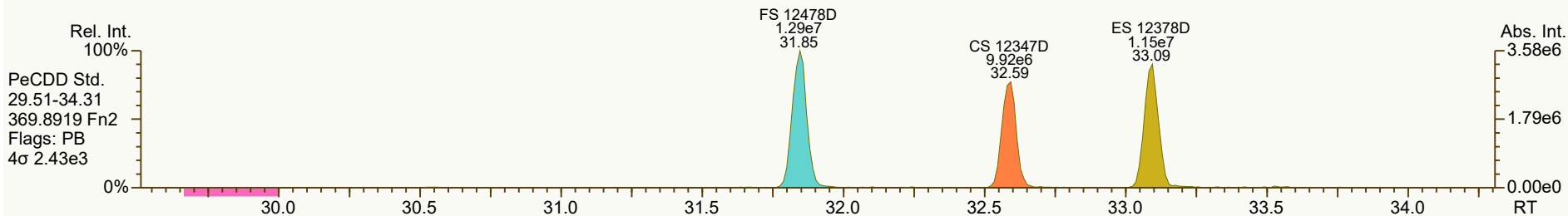
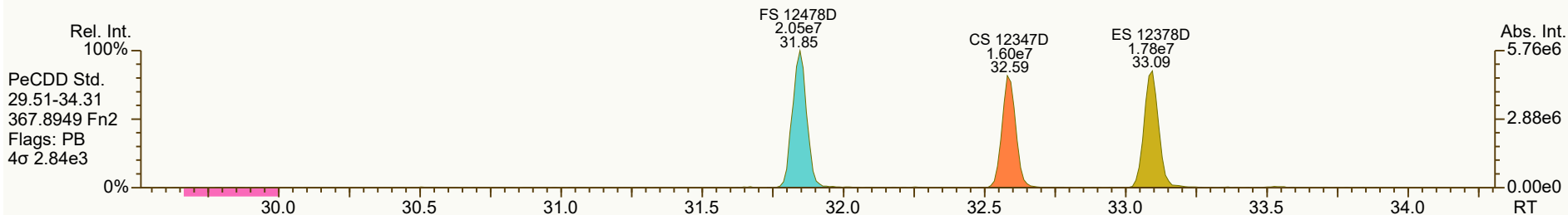
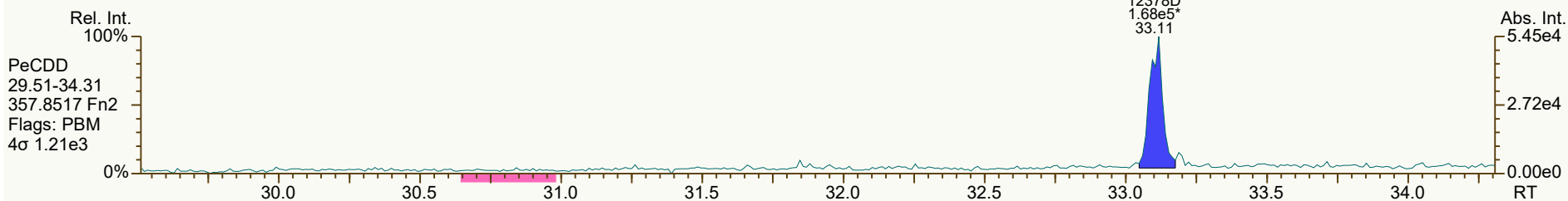
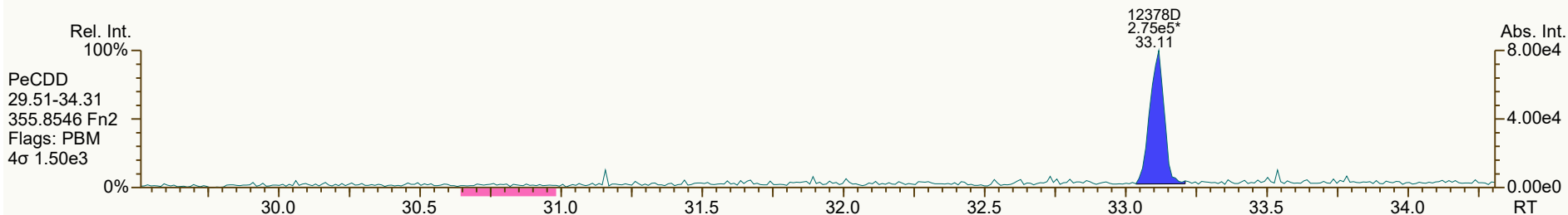
Dioxin/Furan ICAL Concentrations SGS Environmental Services								
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37C1-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

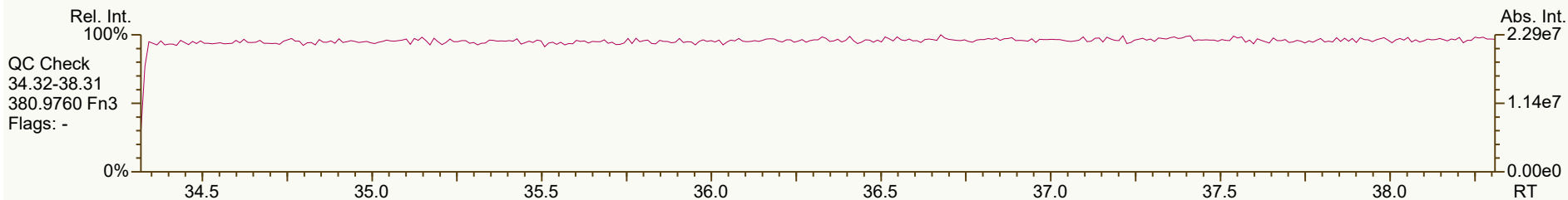
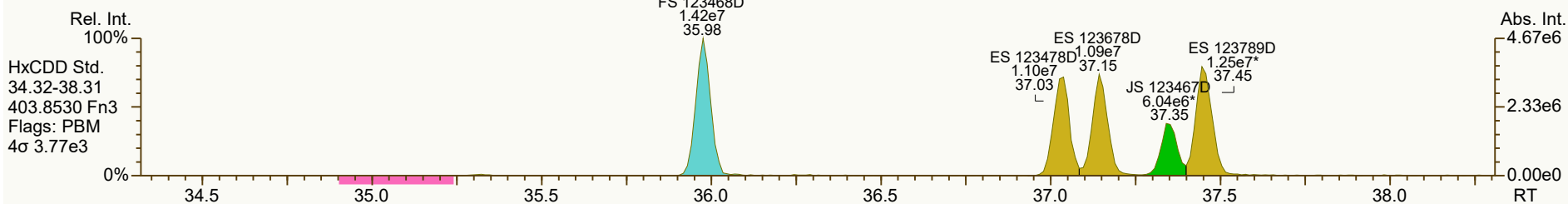
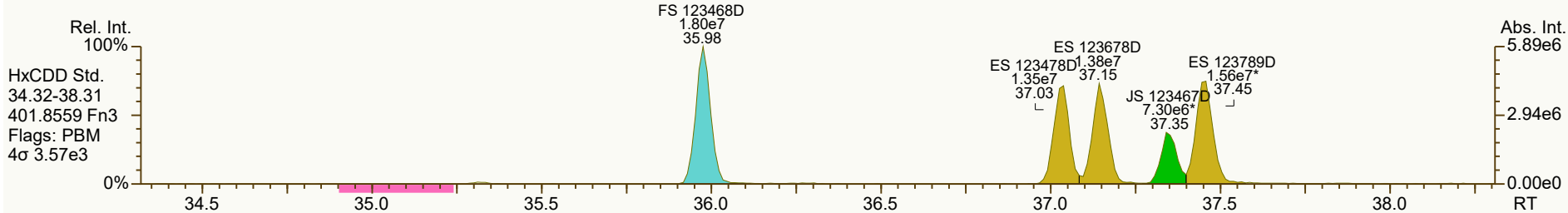
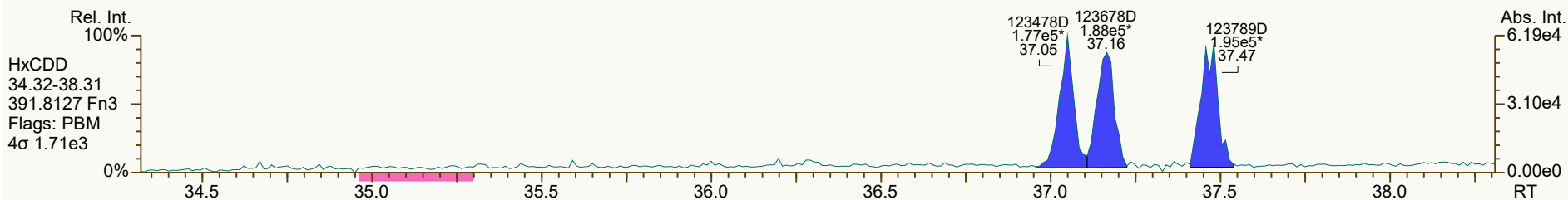
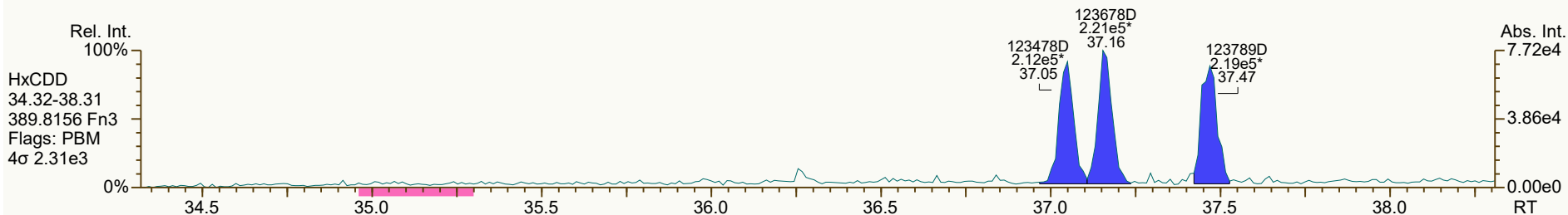
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF			Checkcode: 245-007-QLD		
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C04		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

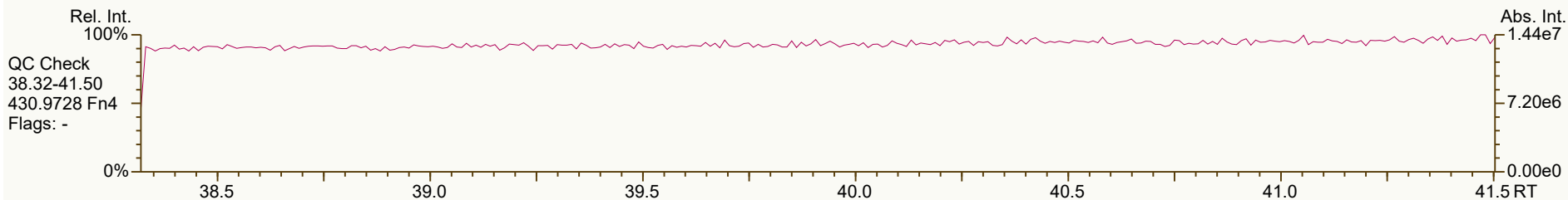
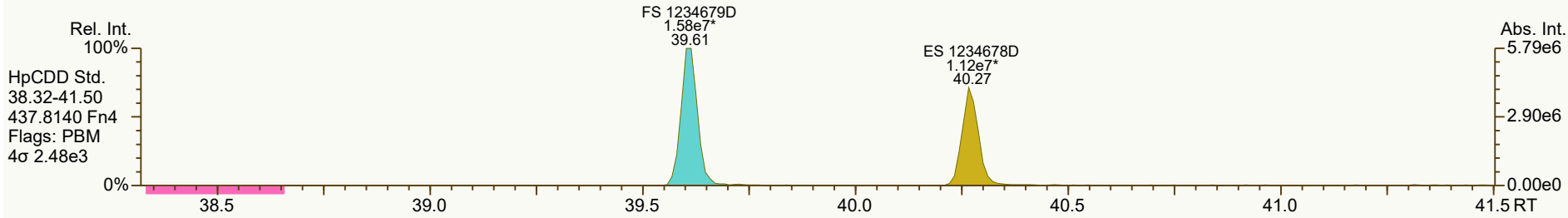
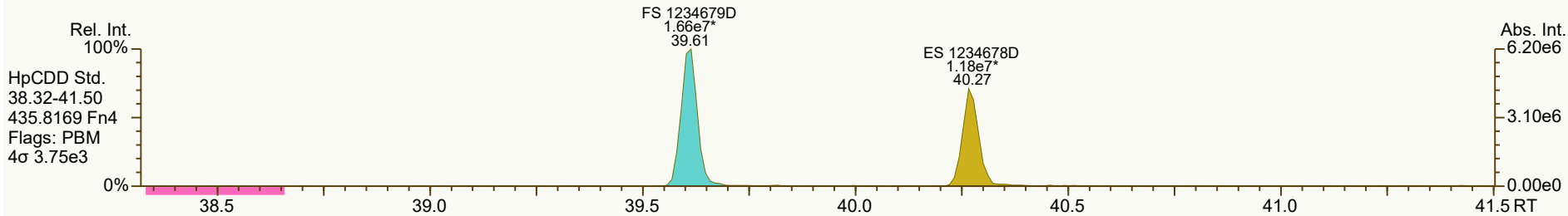
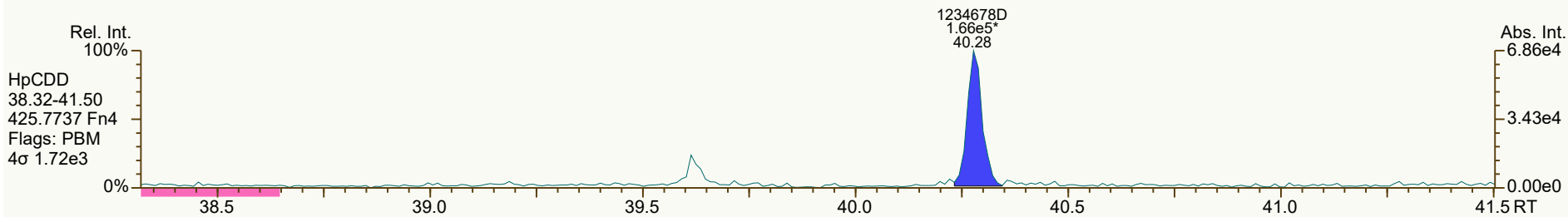
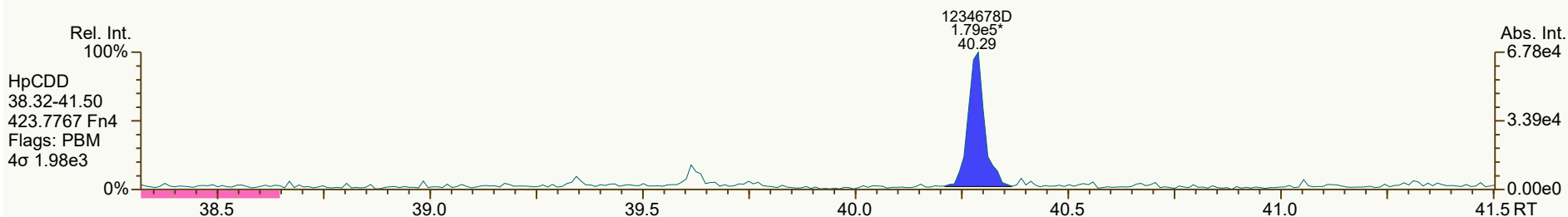
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF			Checkcode: 245-007-QLD		
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C04		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37C1-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37C1-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%







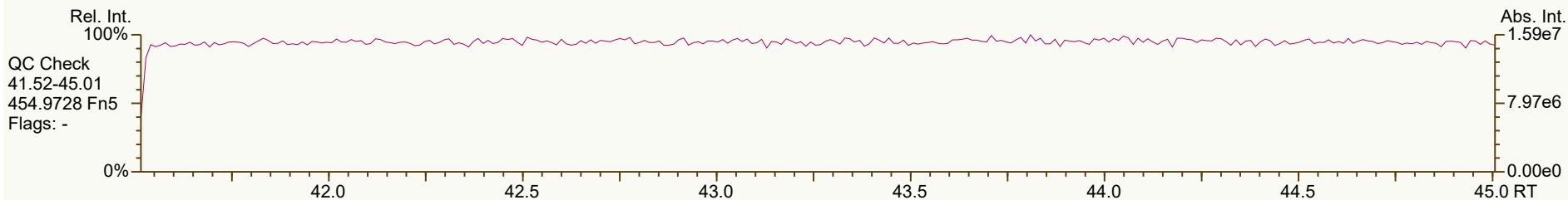
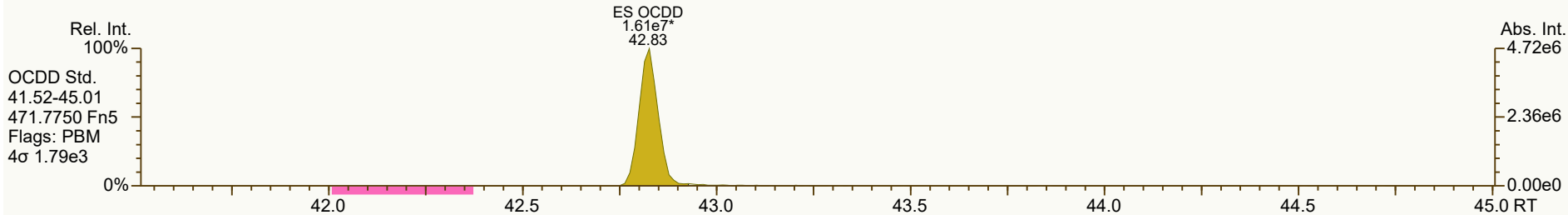
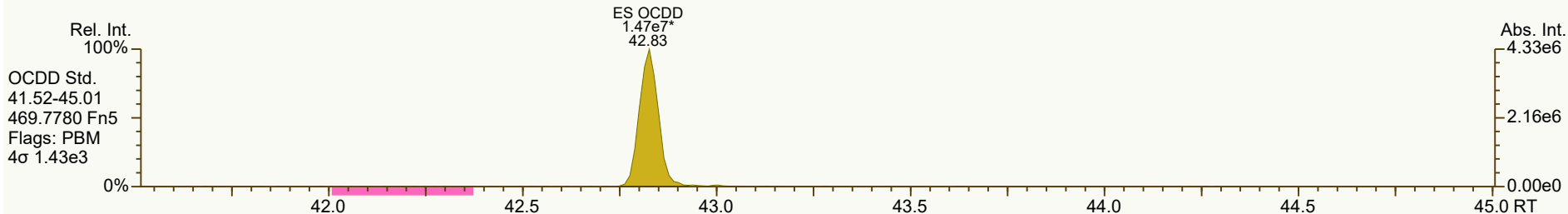
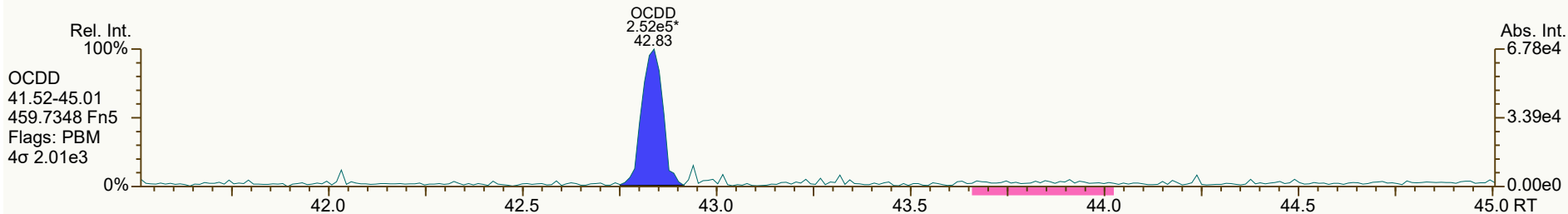
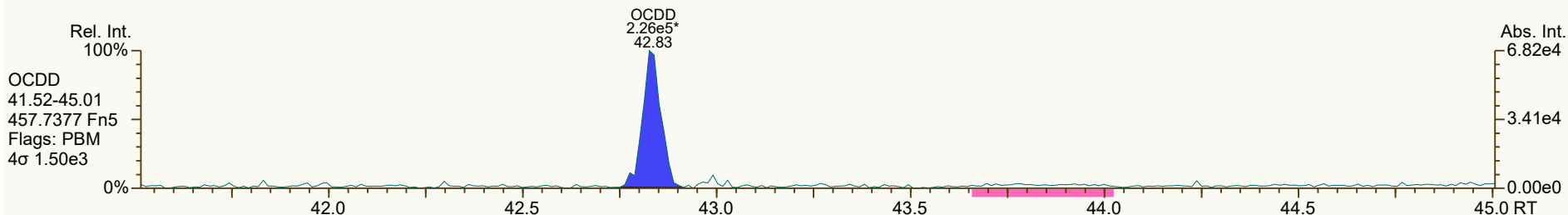


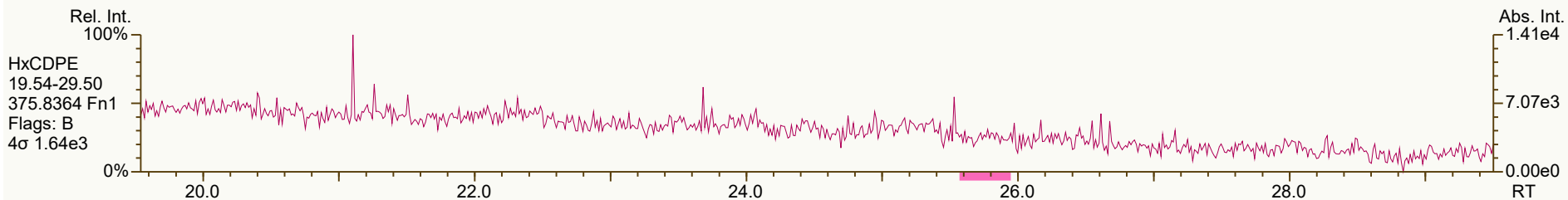
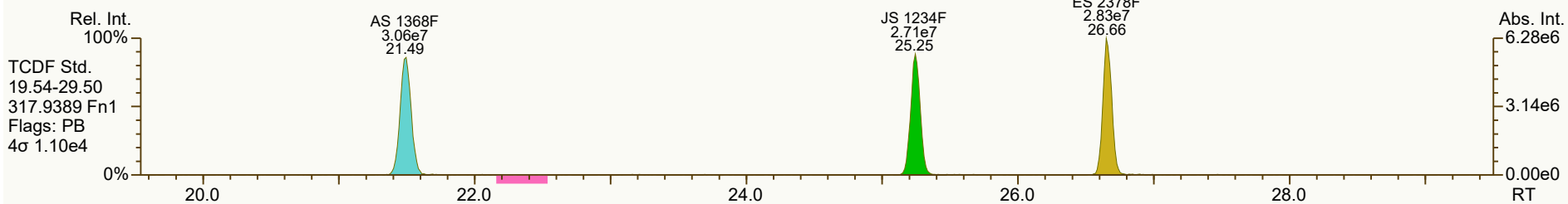
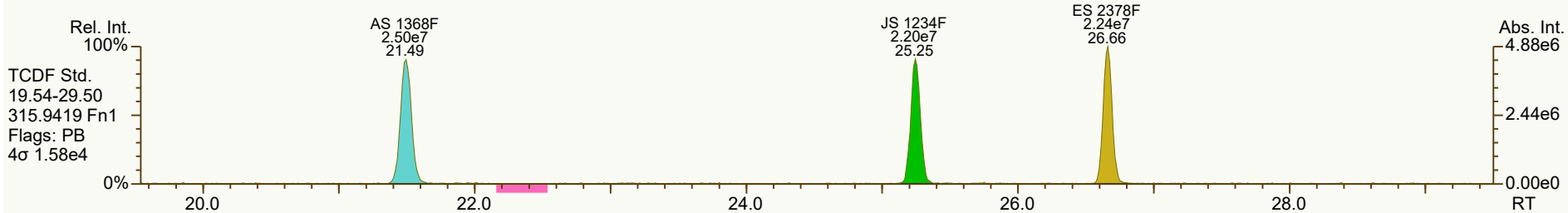
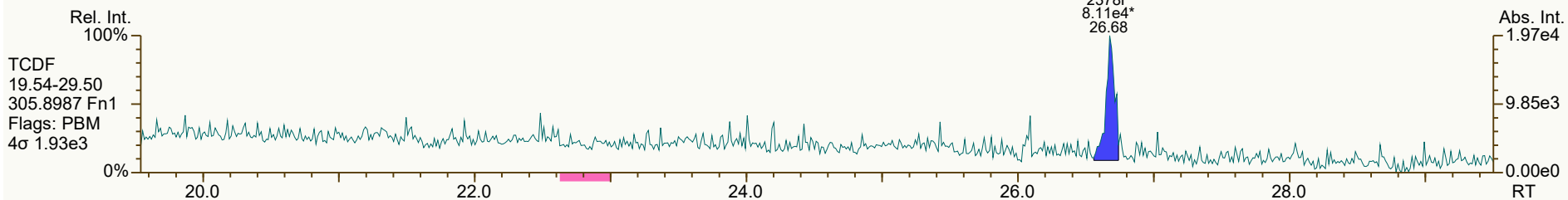
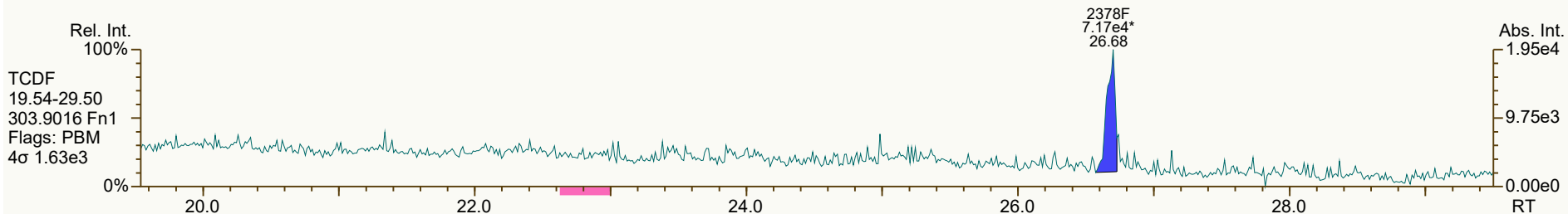


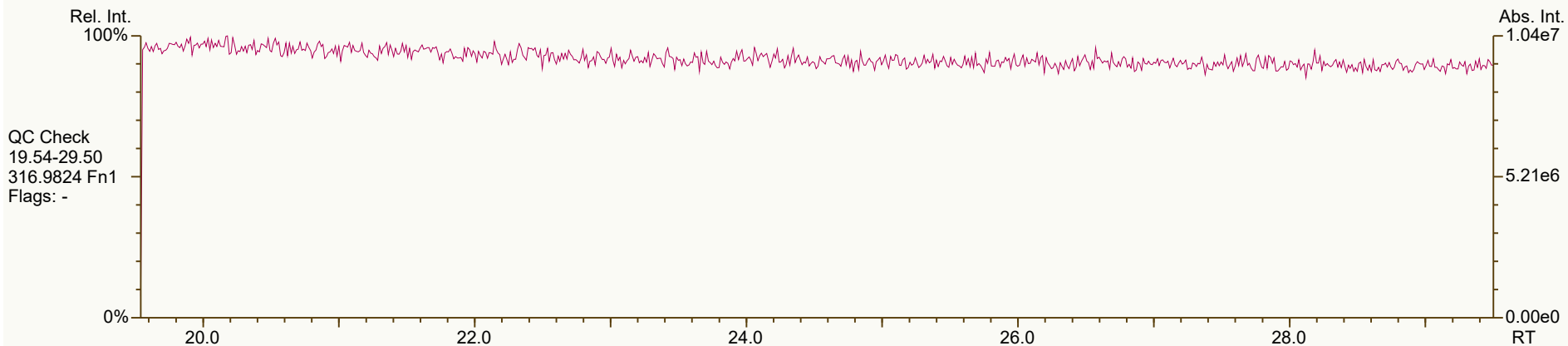
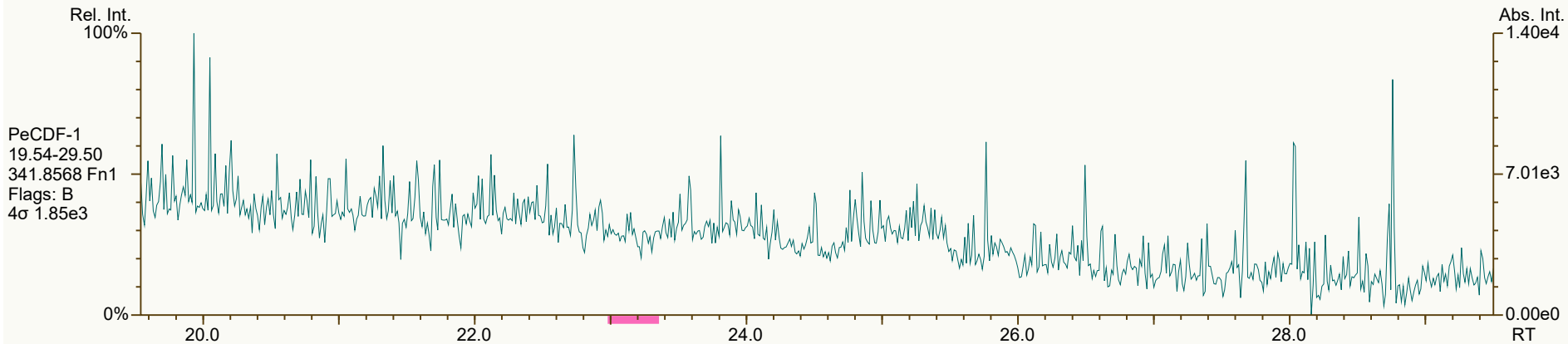
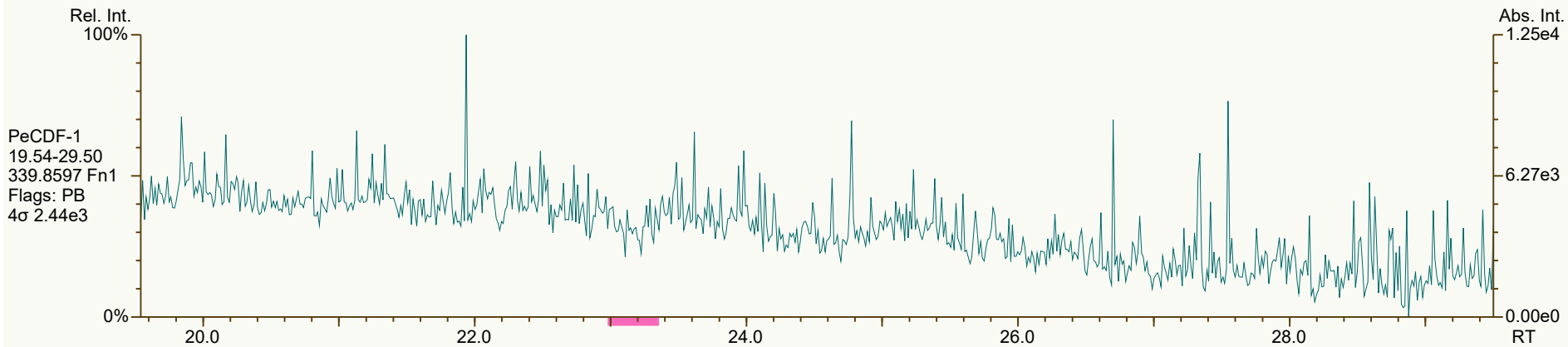
SGS ID: CS0_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

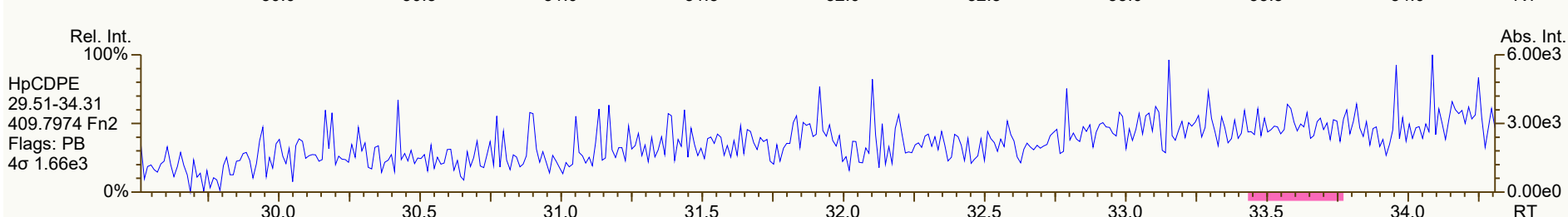
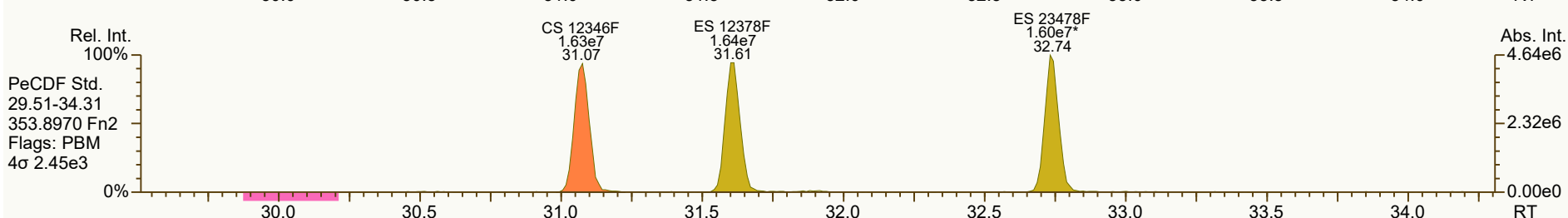
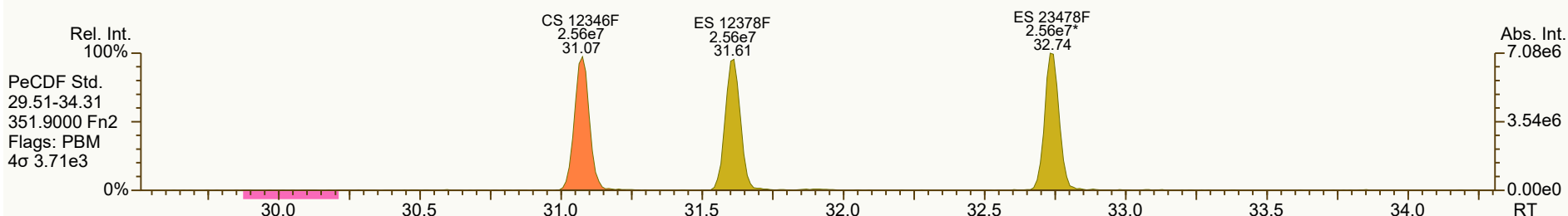
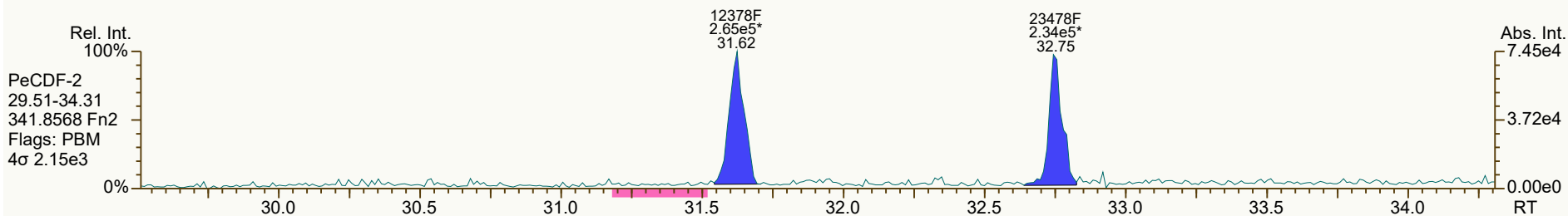
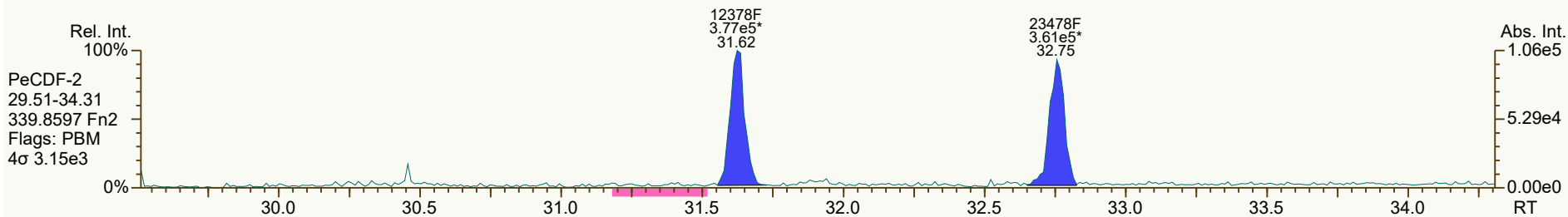
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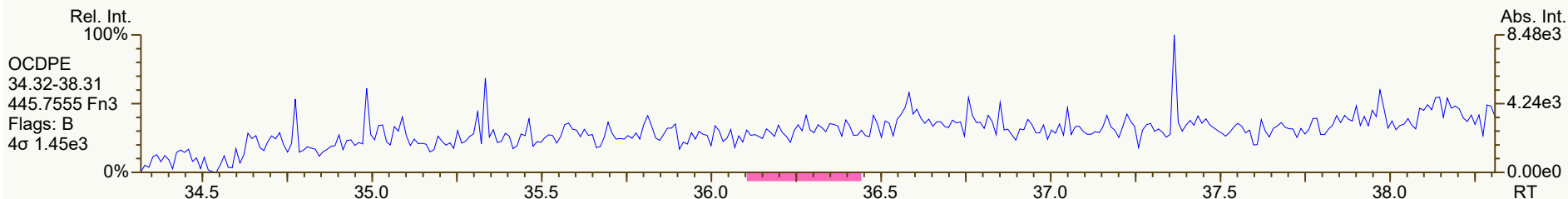
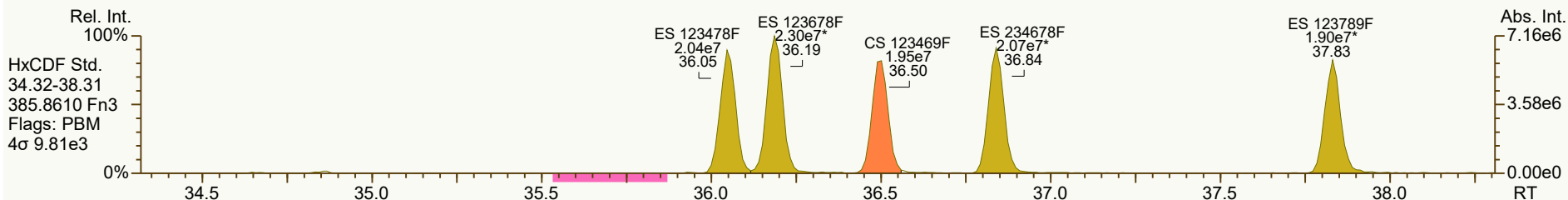
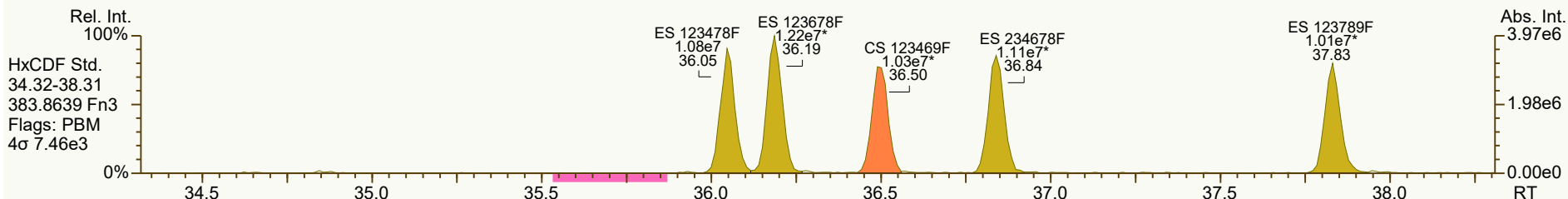
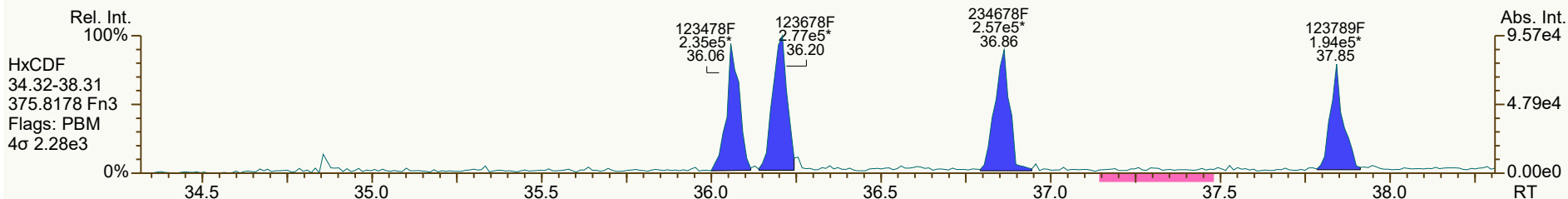
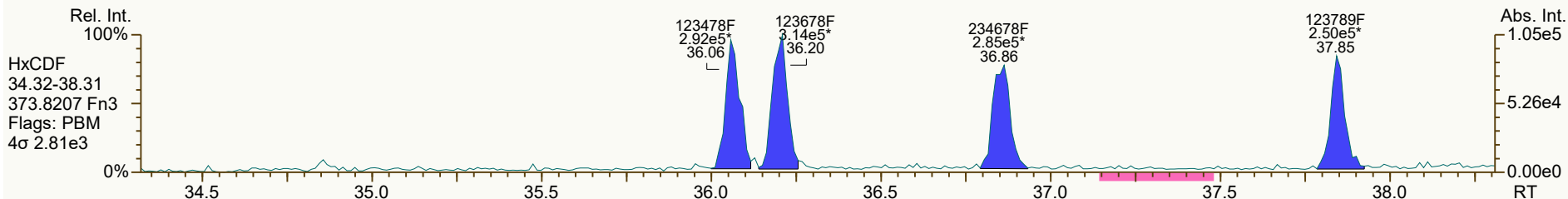
Acq: 10-Nov-2021 11:02:13
User: DTF Datafile: 211110C04

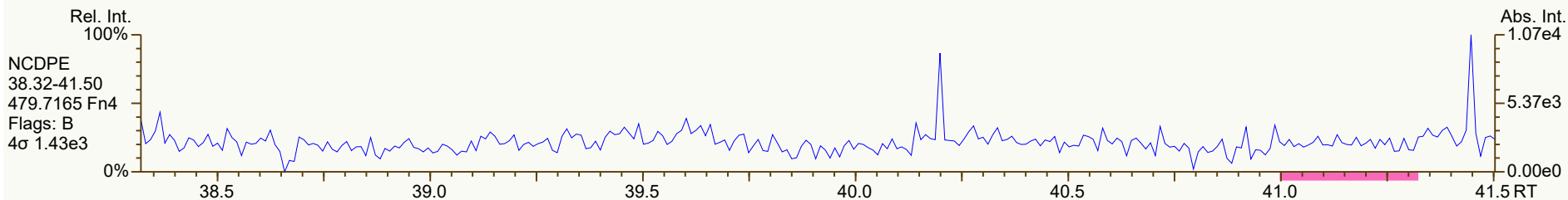
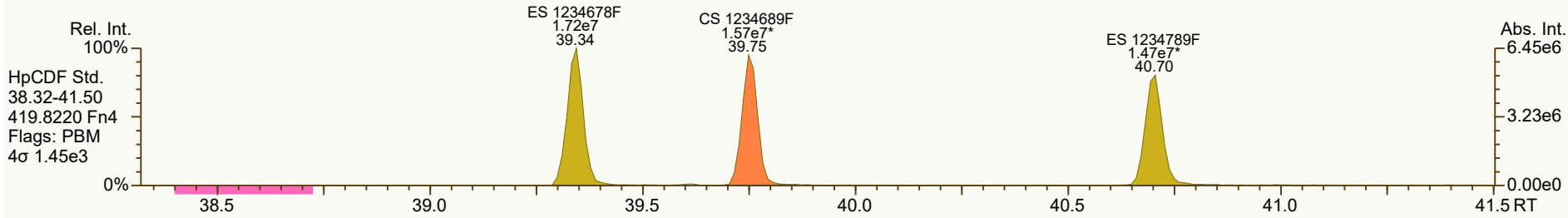
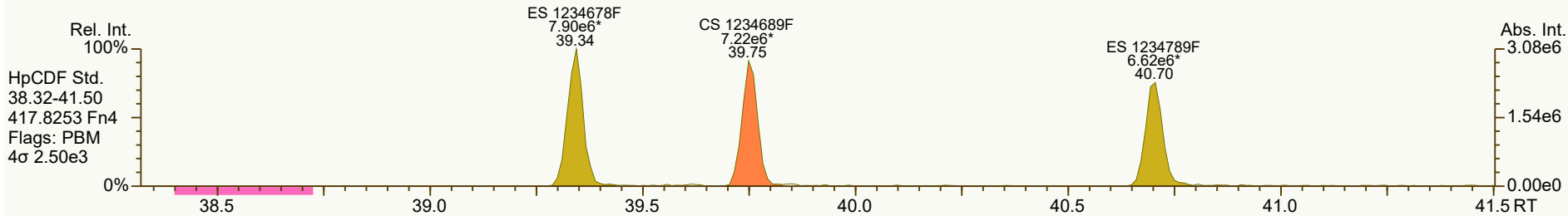
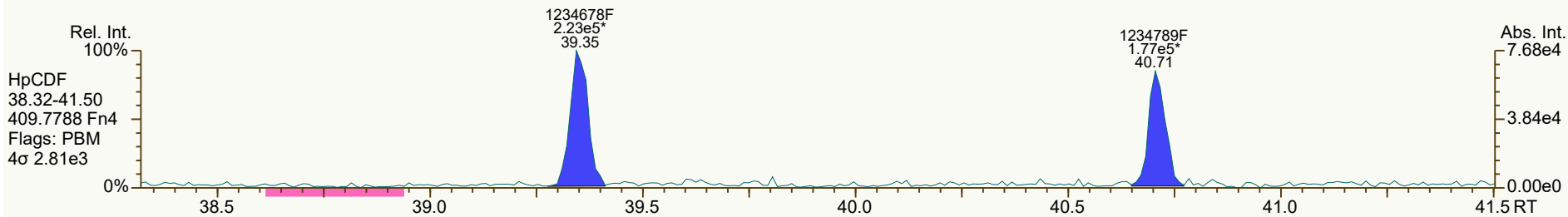
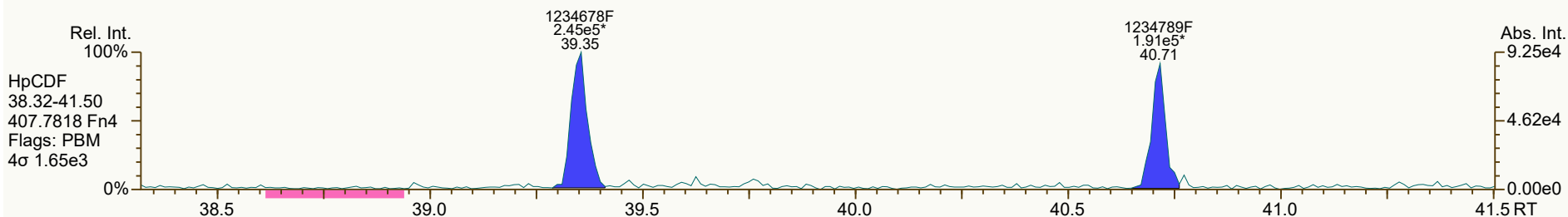


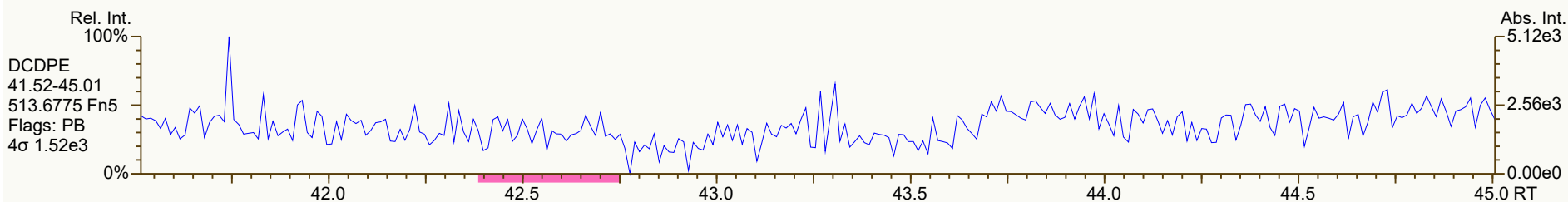
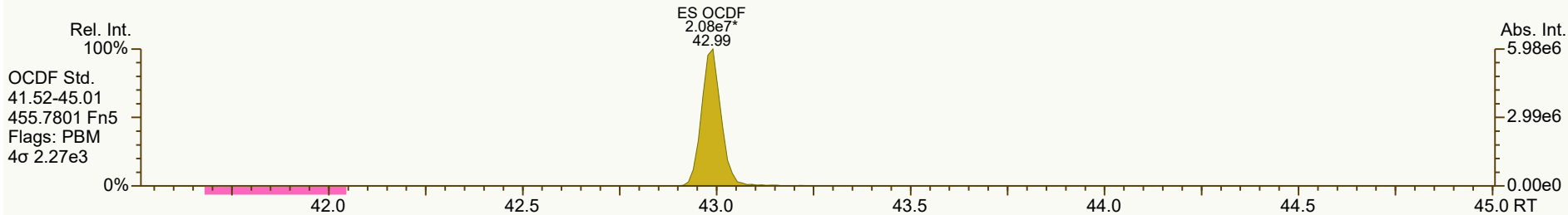
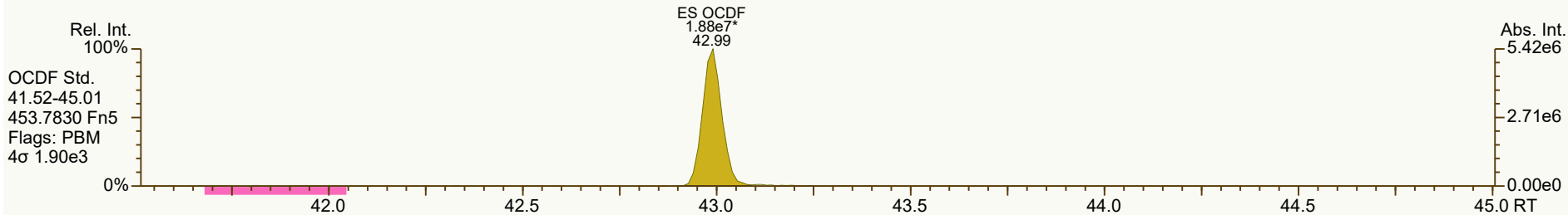
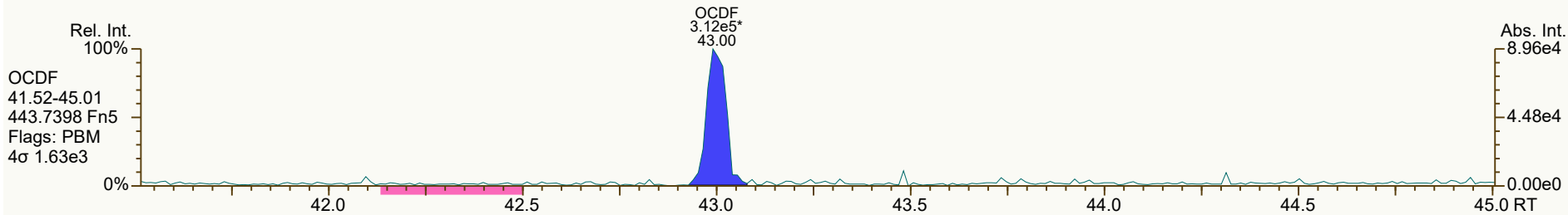
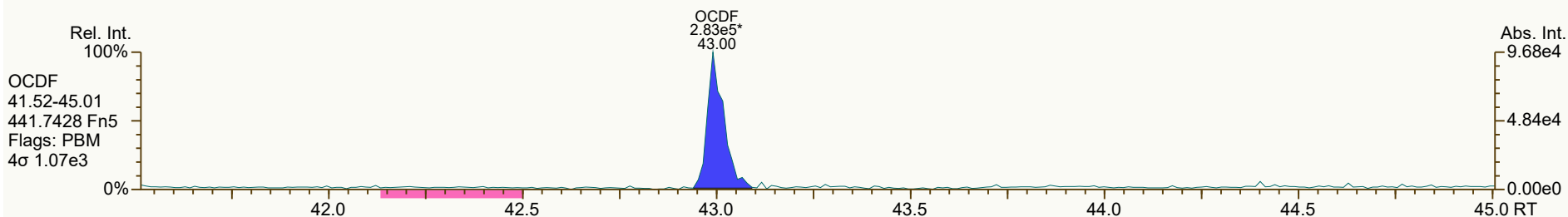






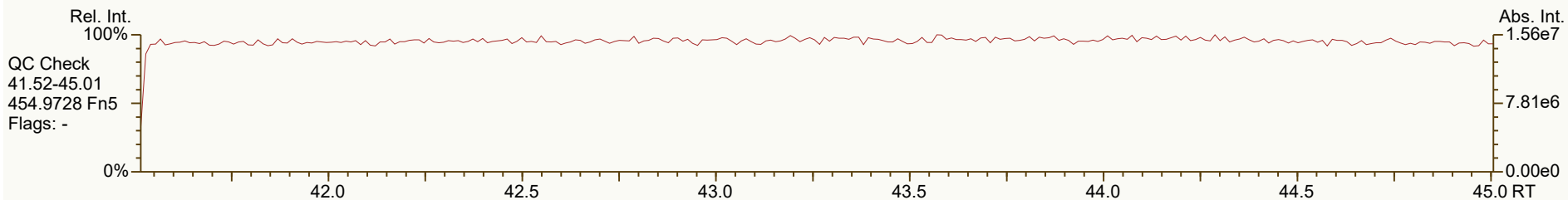
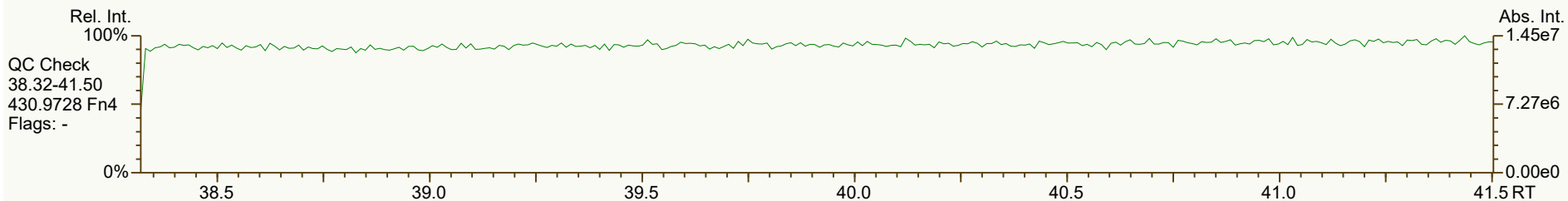
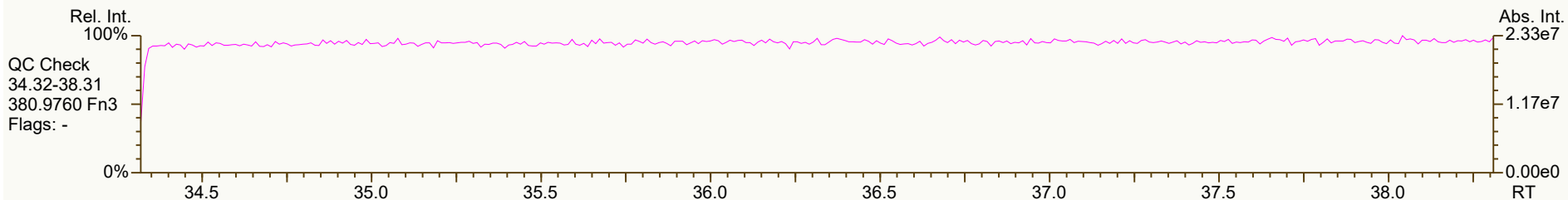
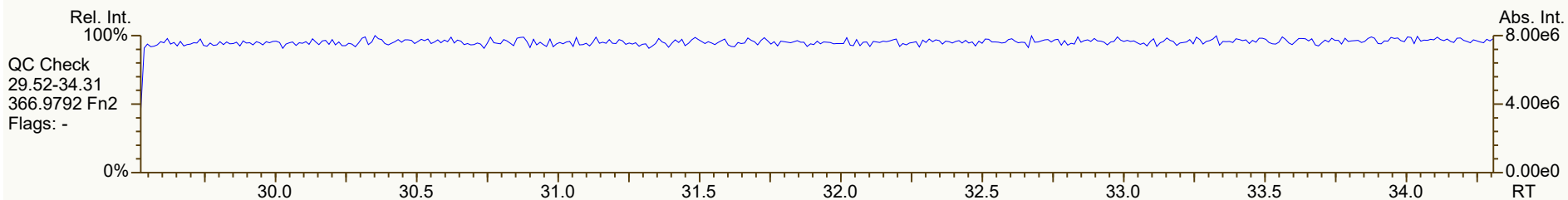
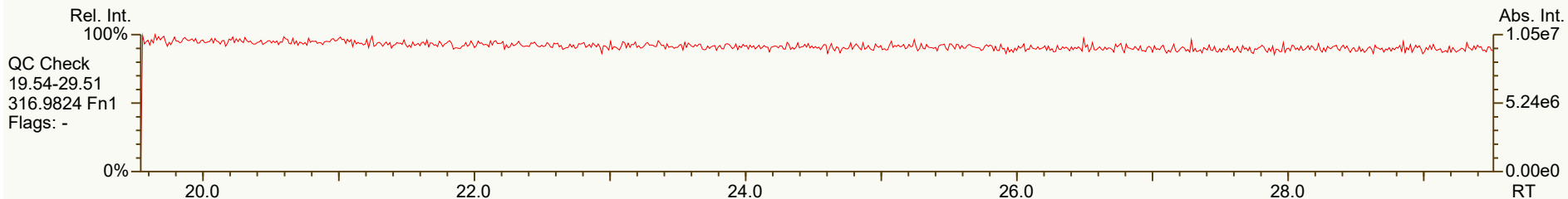


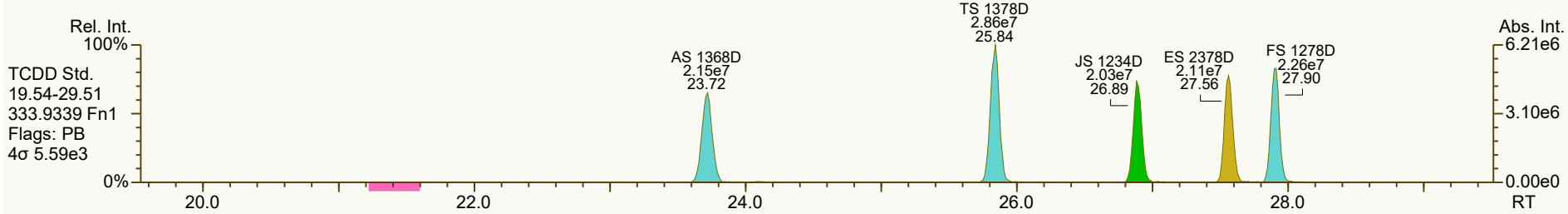
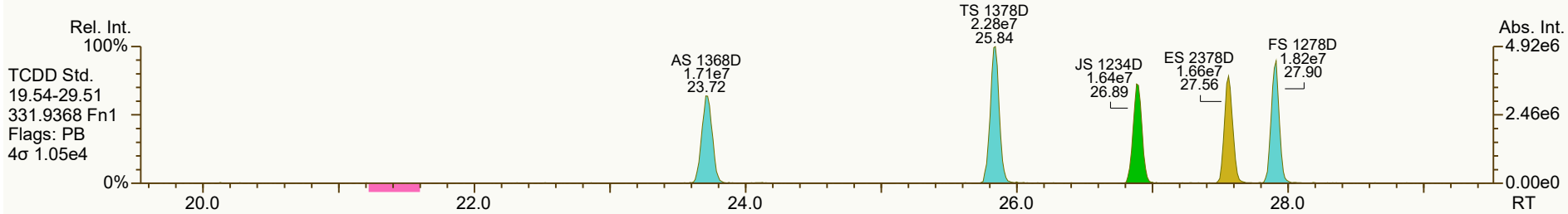
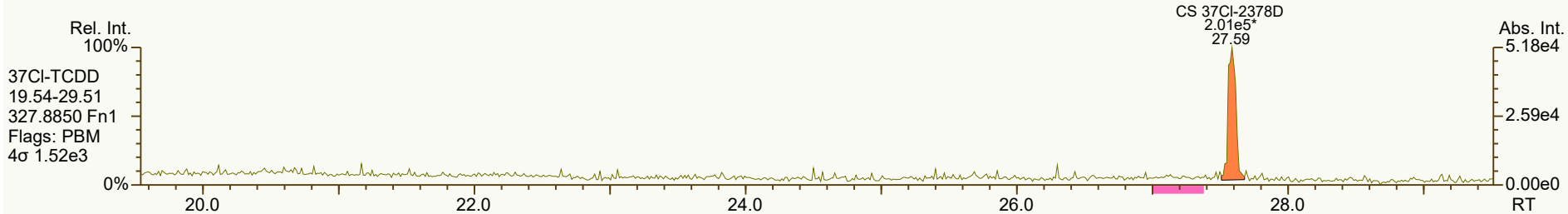
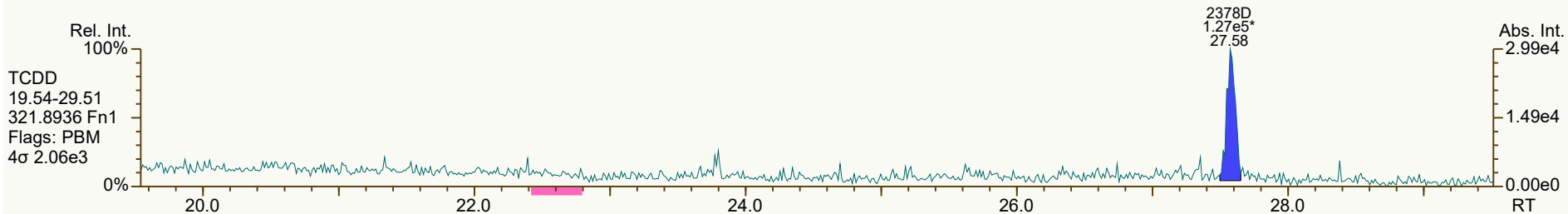
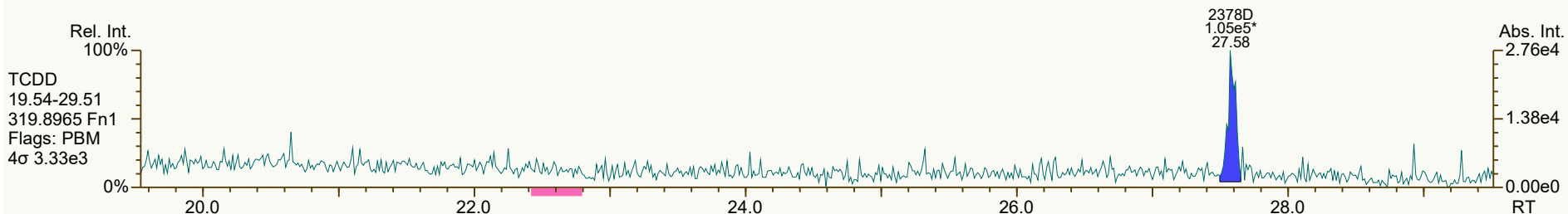


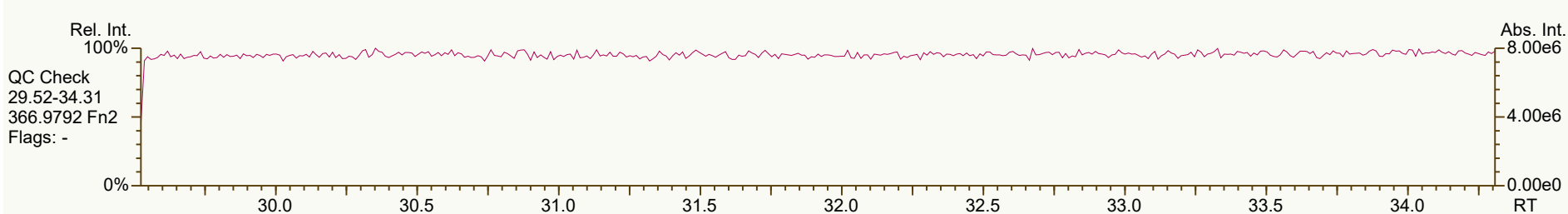
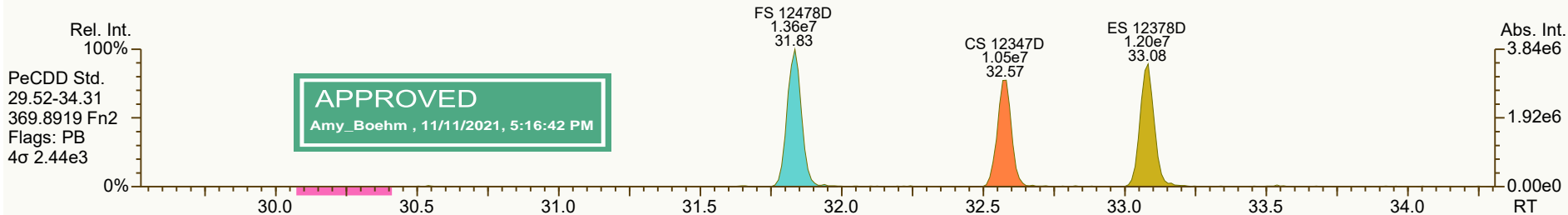
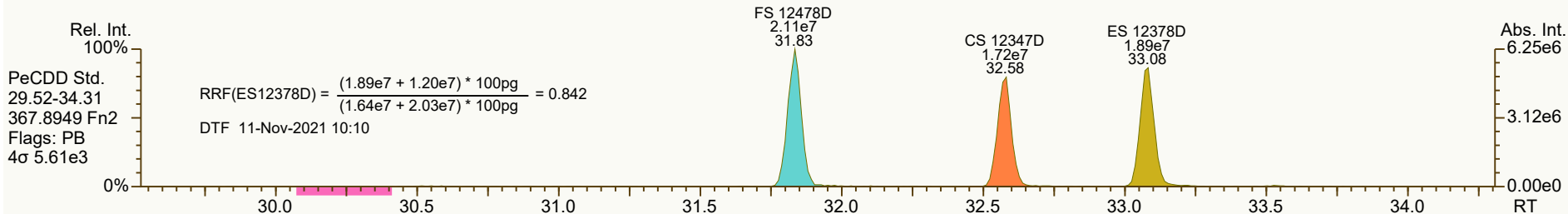
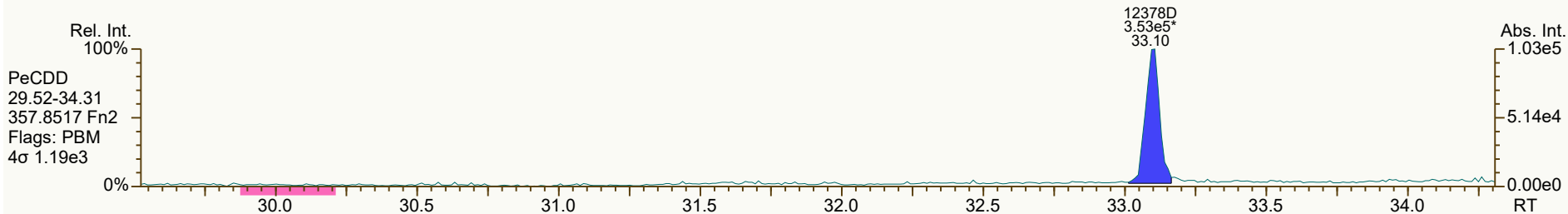
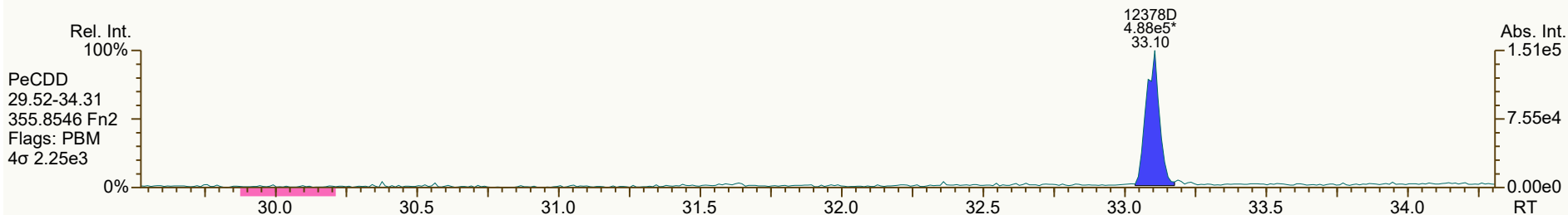


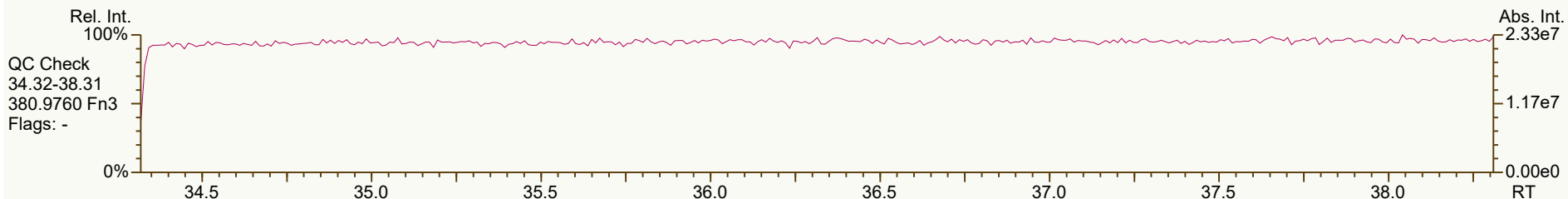
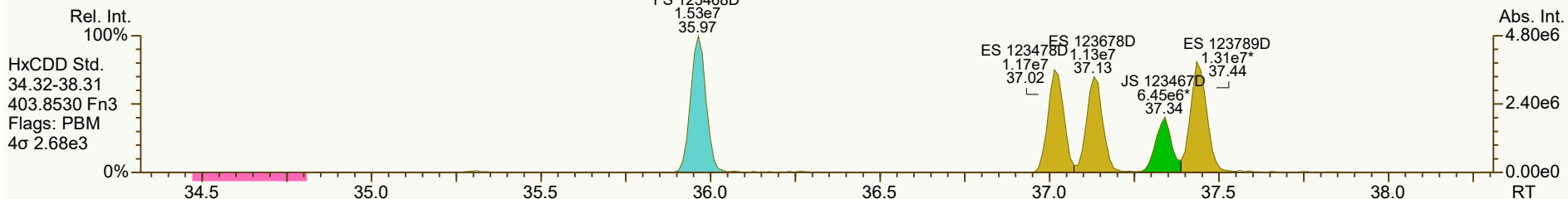
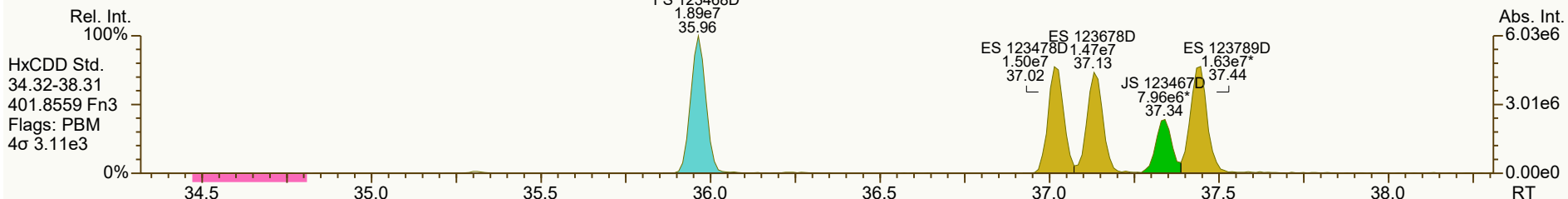
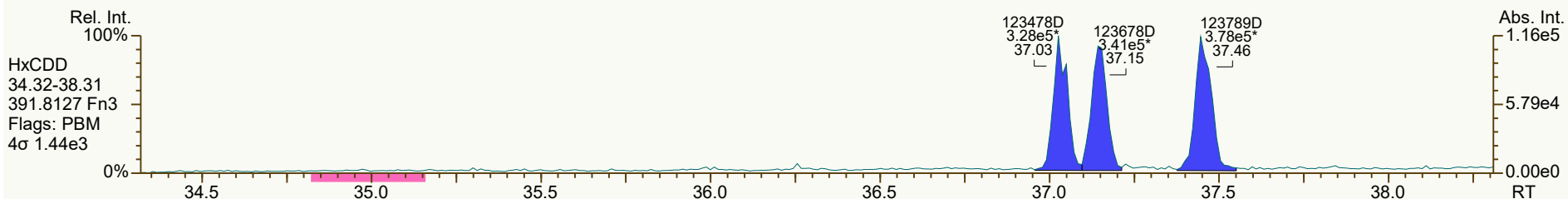
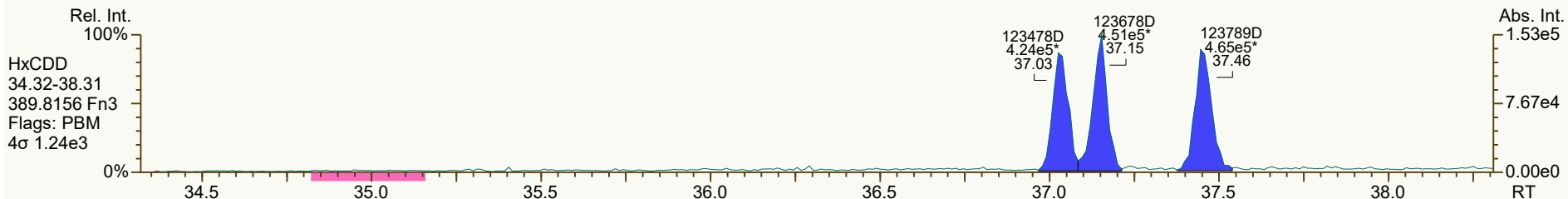
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF			Checkcode: 419-111-CRN		
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C05		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

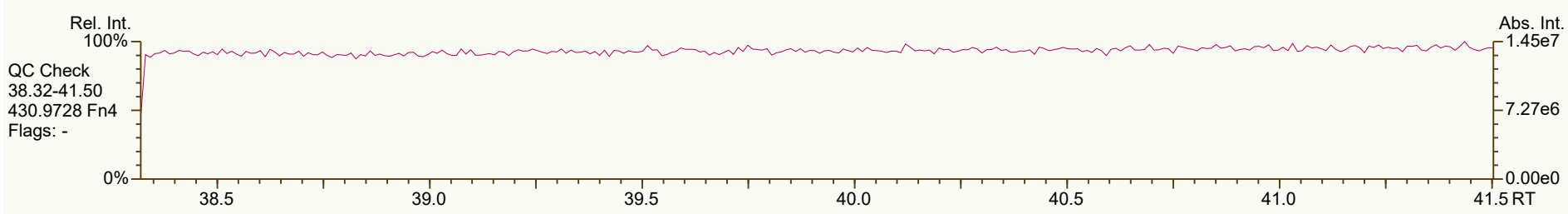
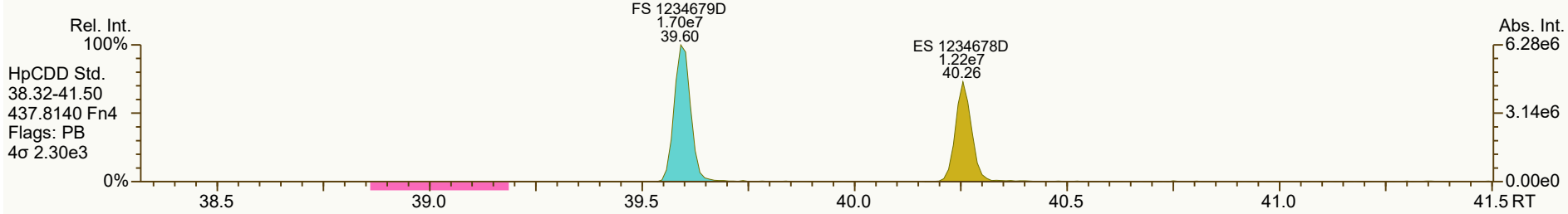
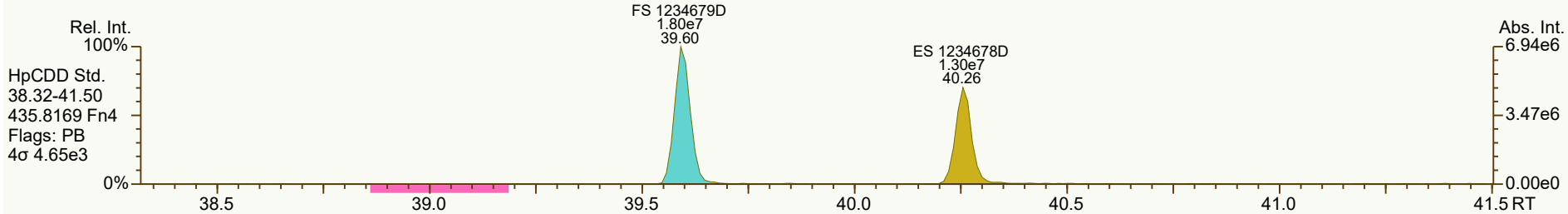
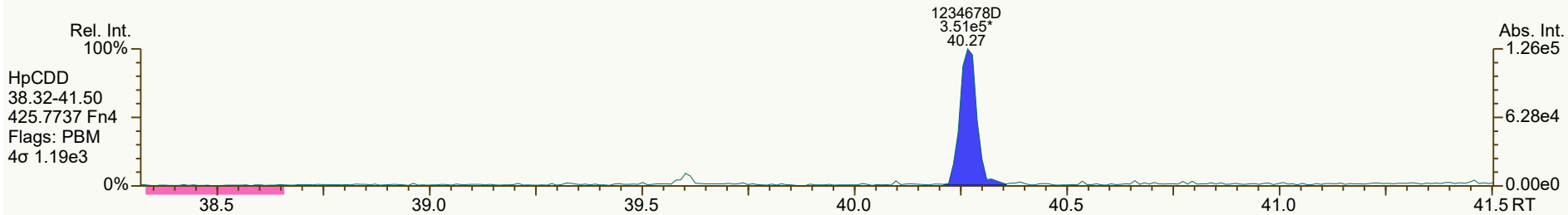
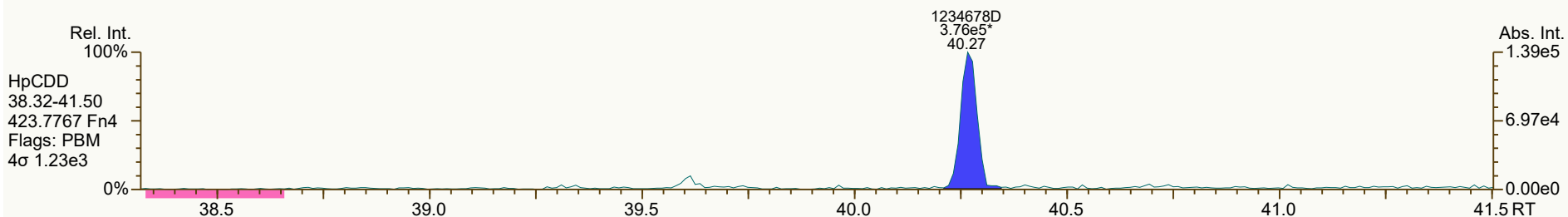
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF			Checkcode: 419-111-CRN		
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C05		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37C1-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37C1-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

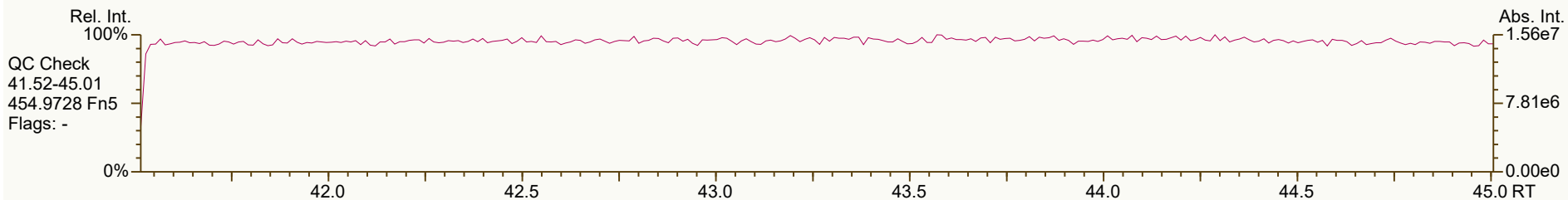
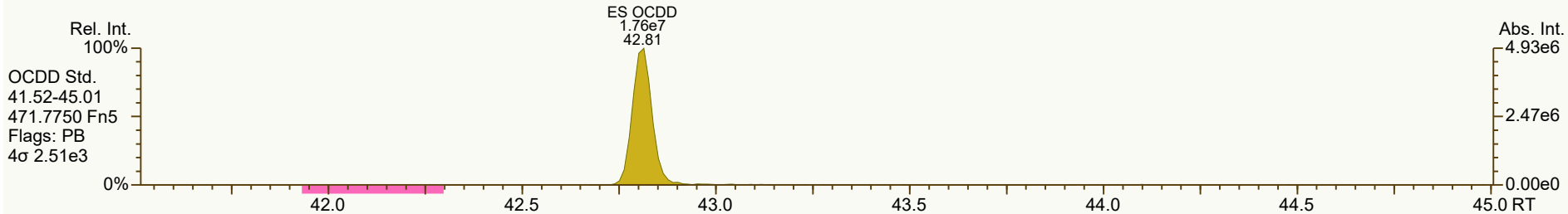
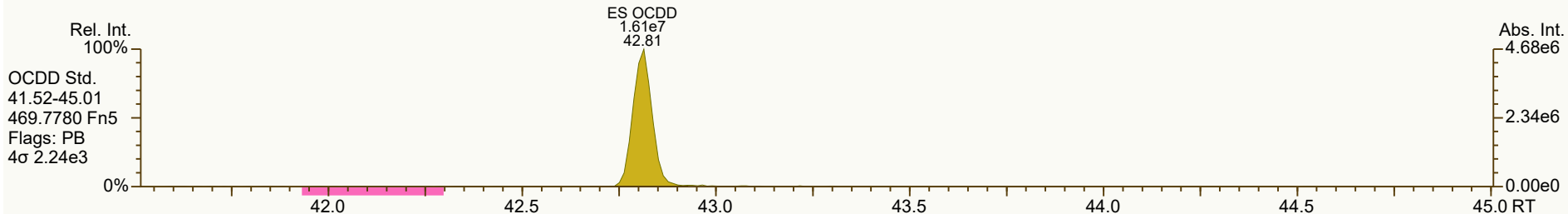
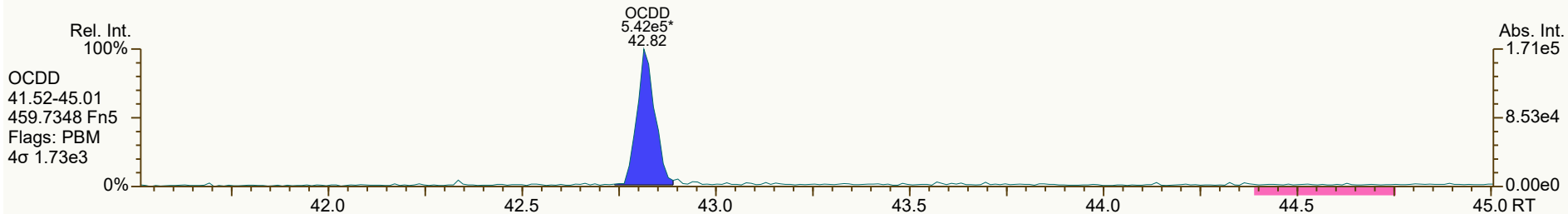
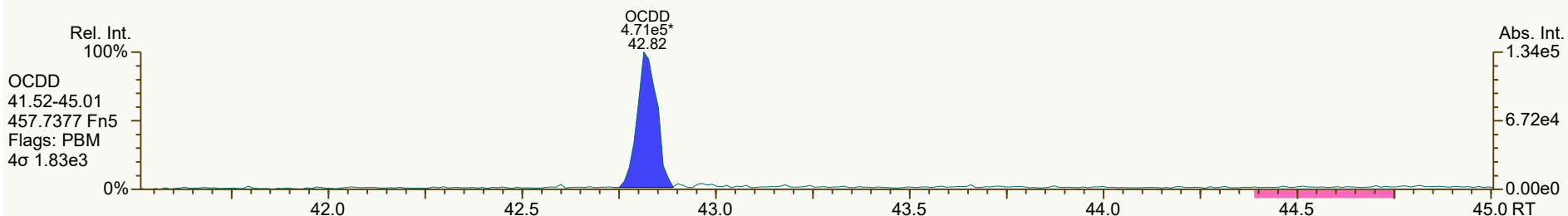


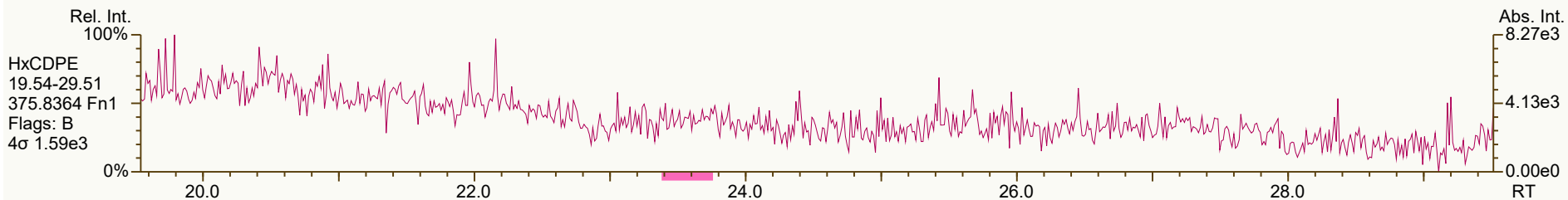
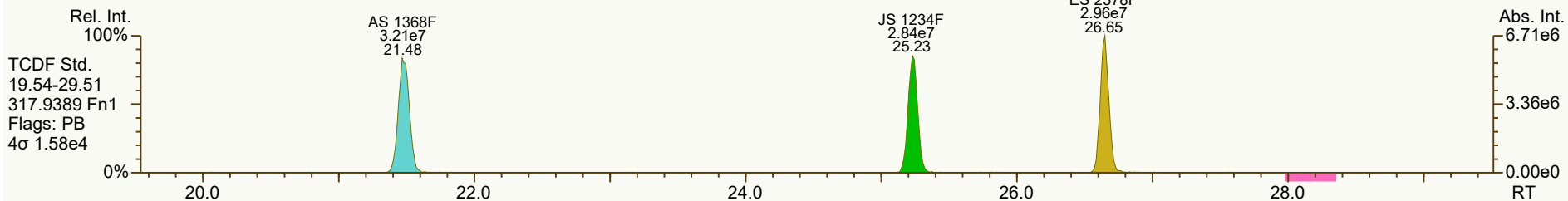
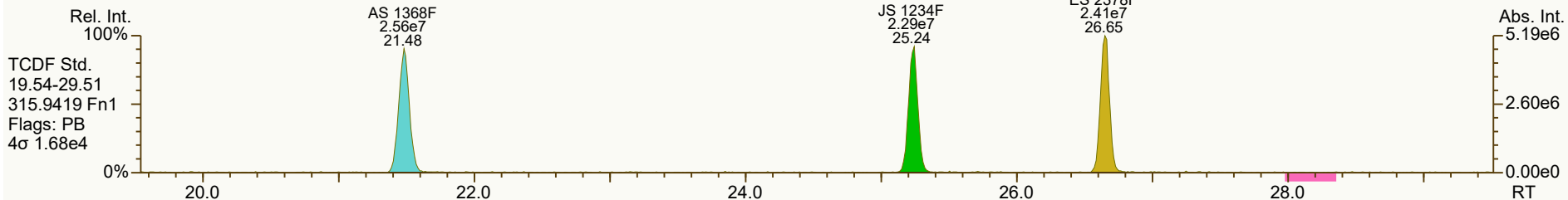
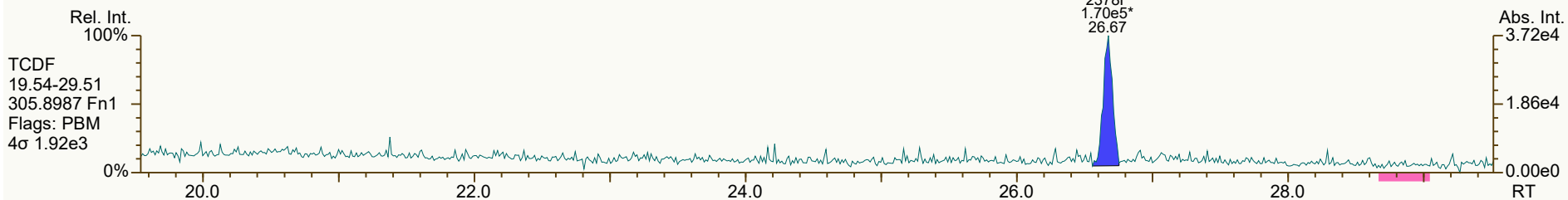
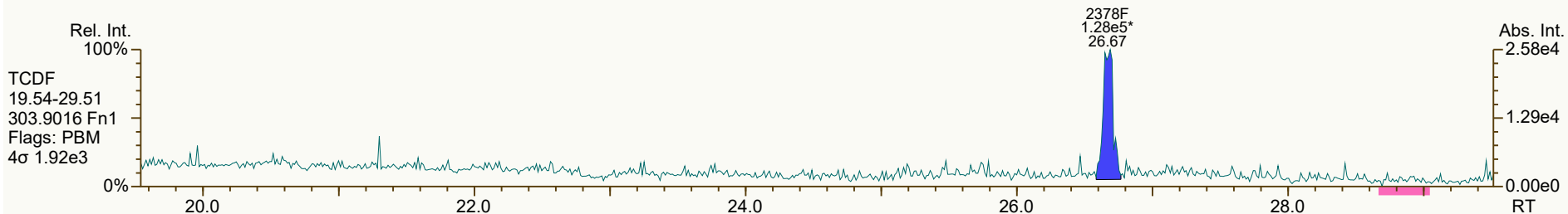


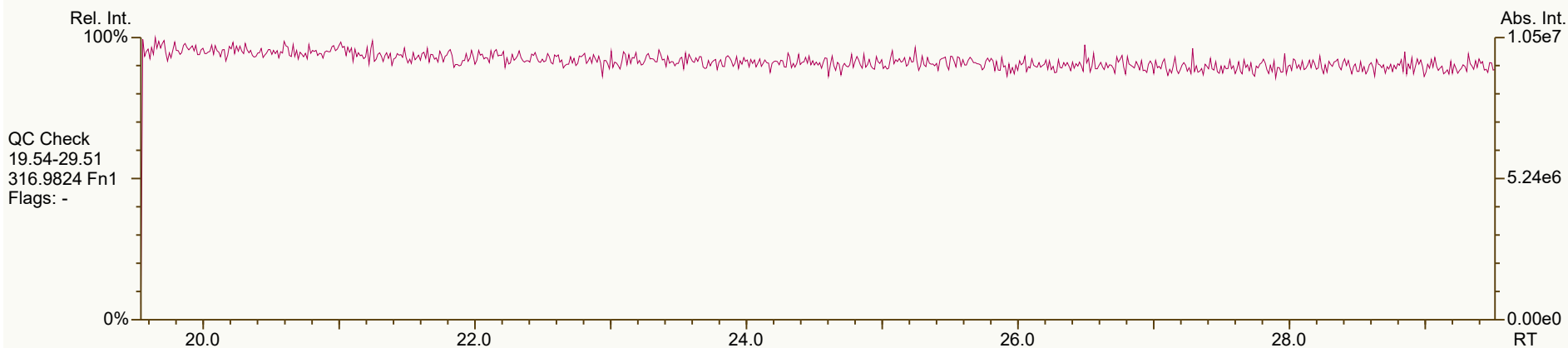
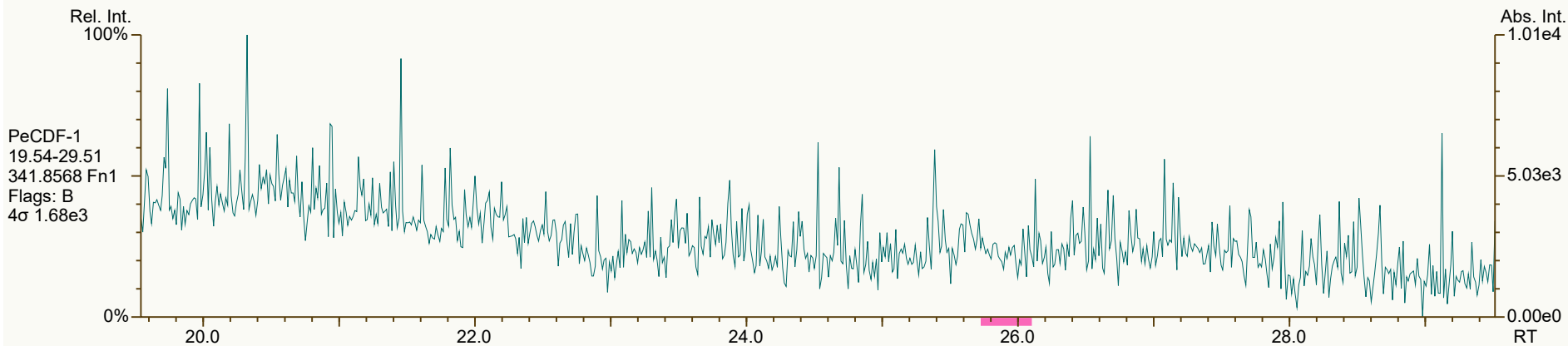
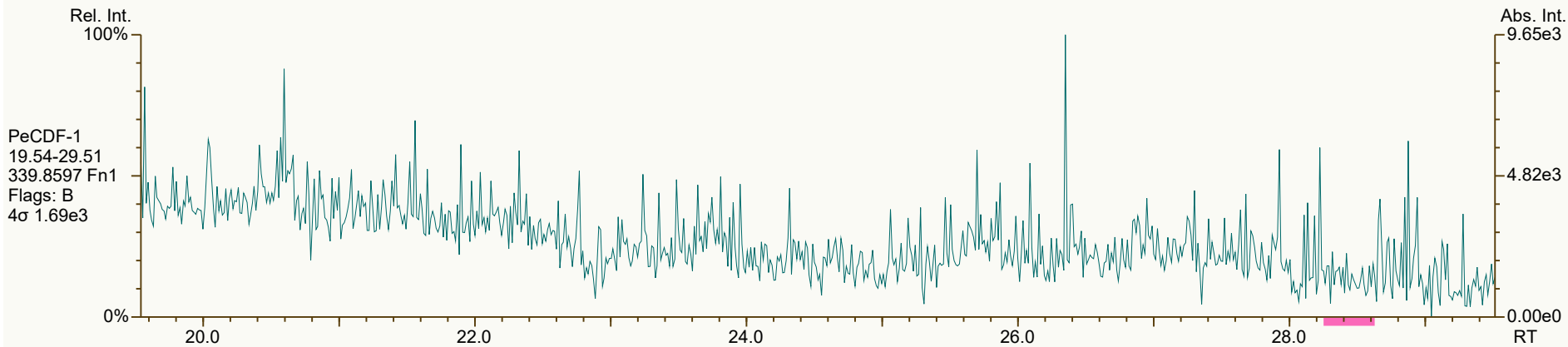


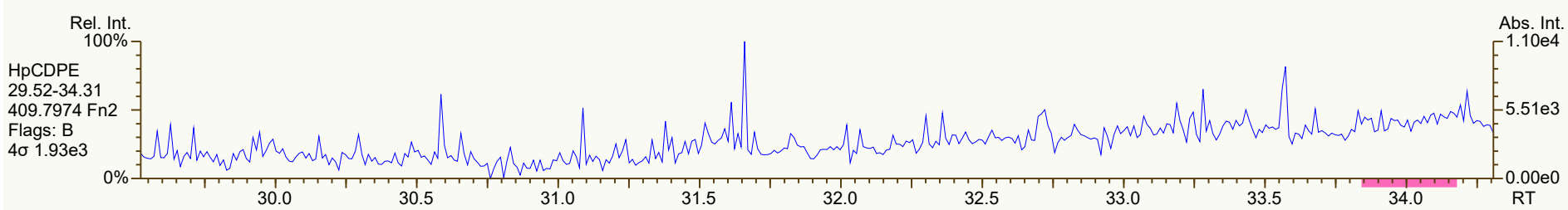
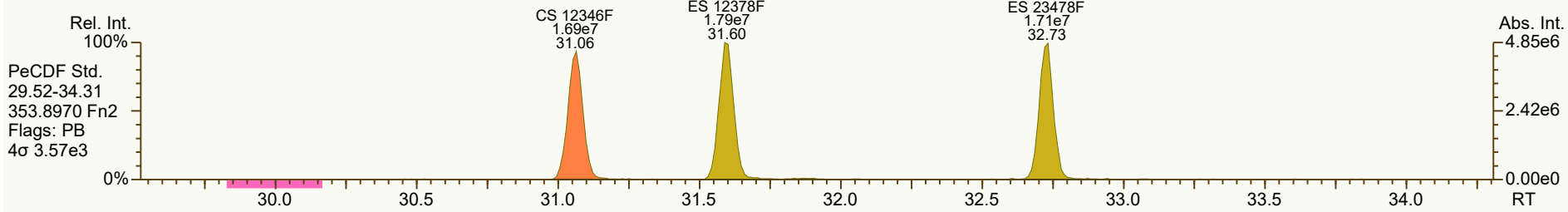
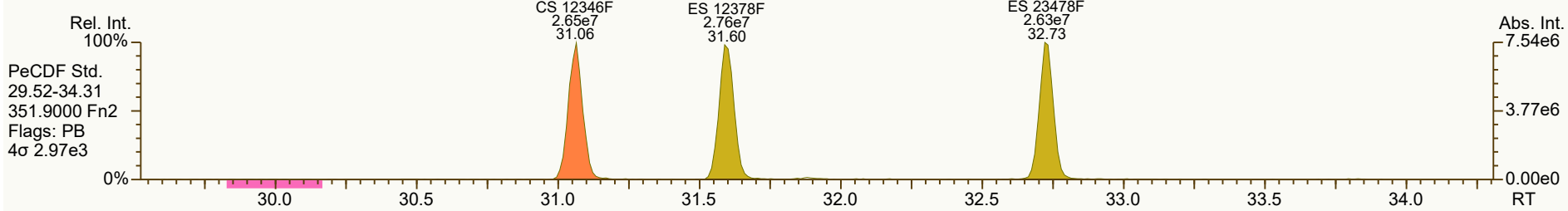
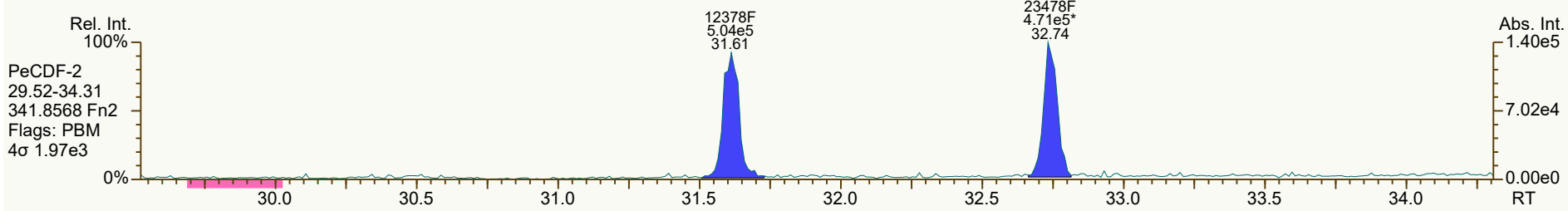
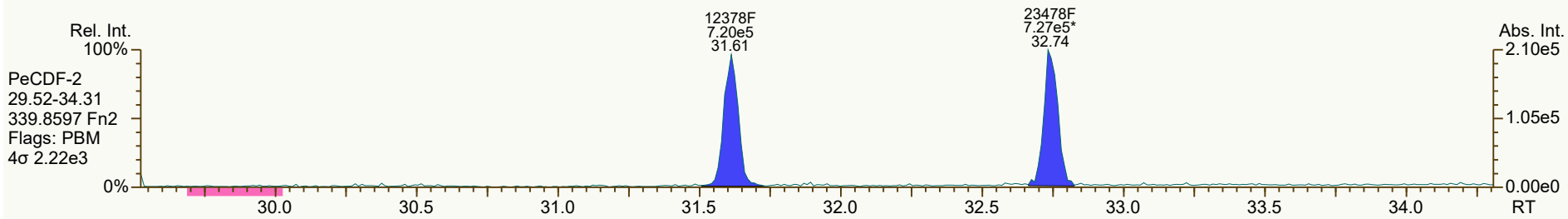


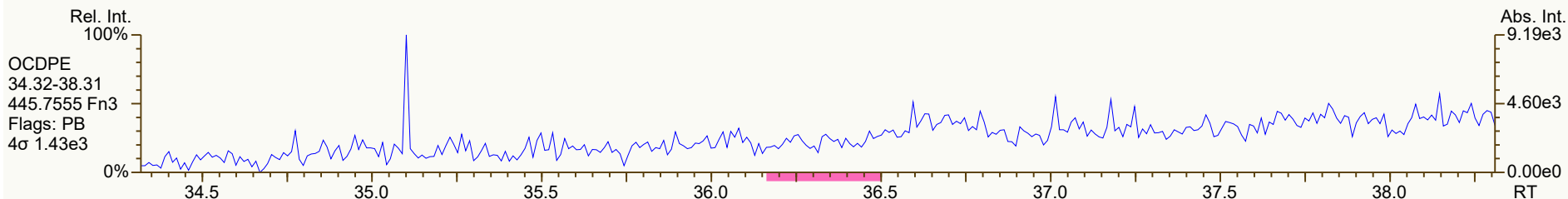
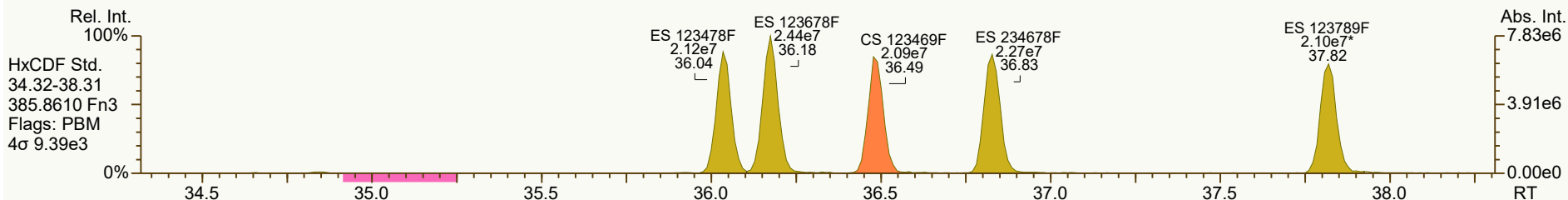
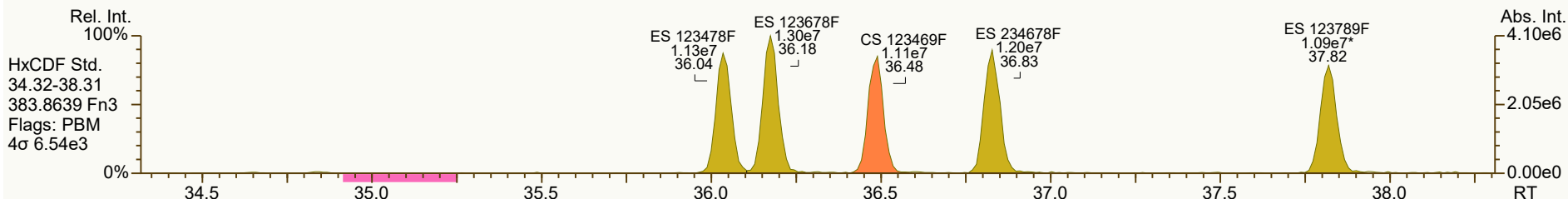
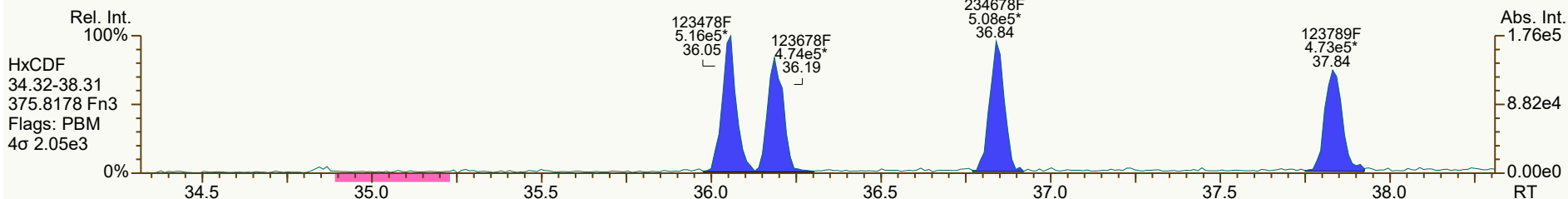
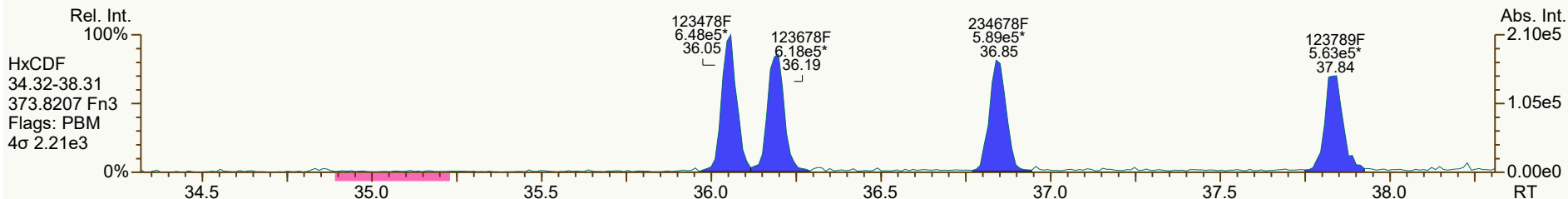


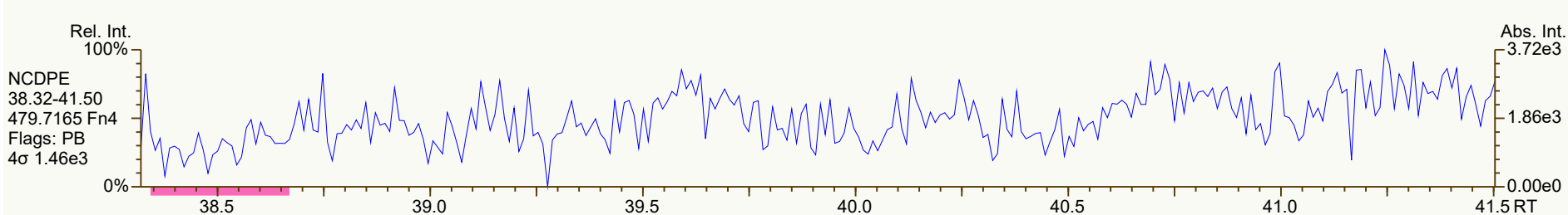
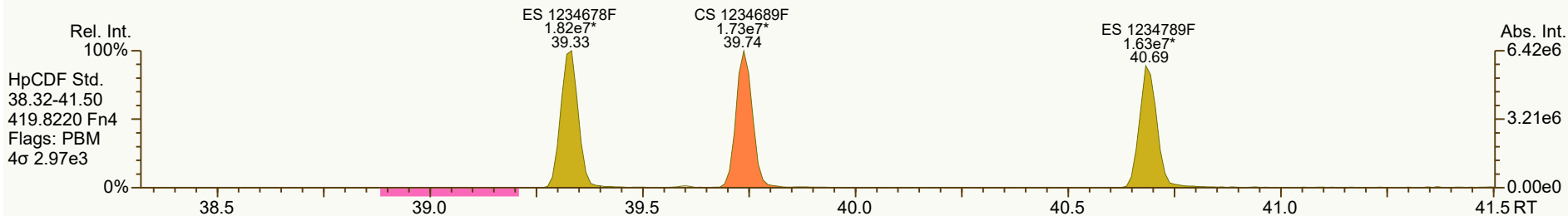
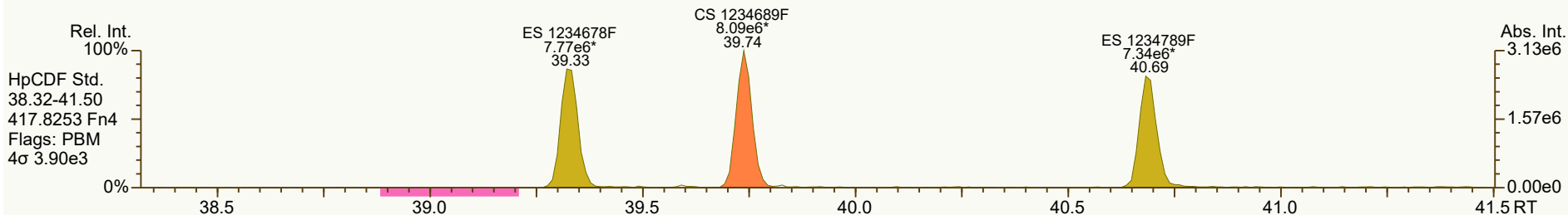
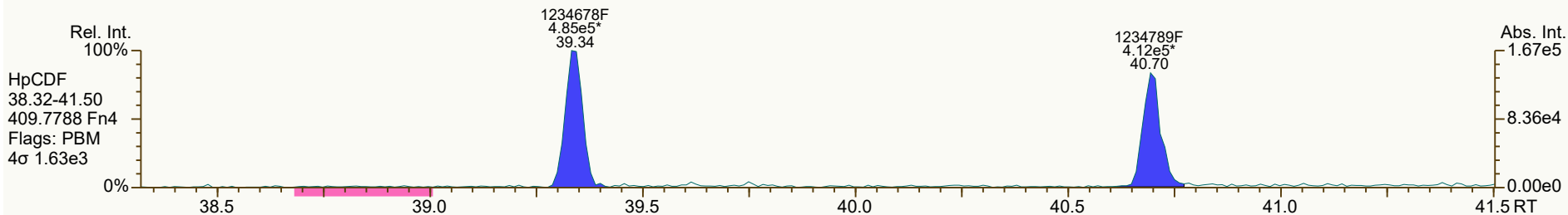
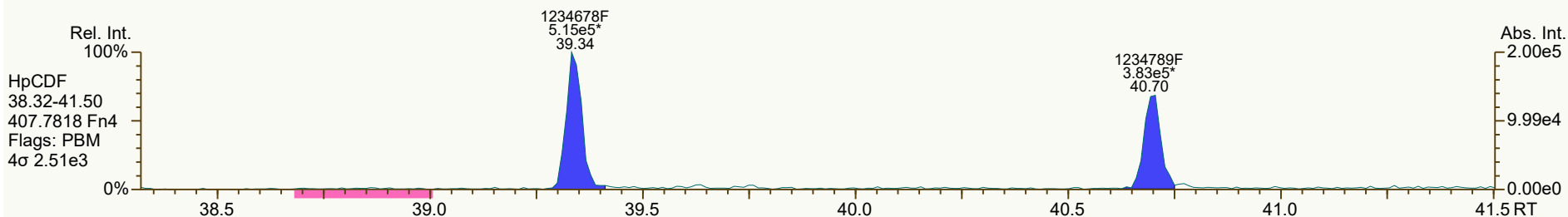


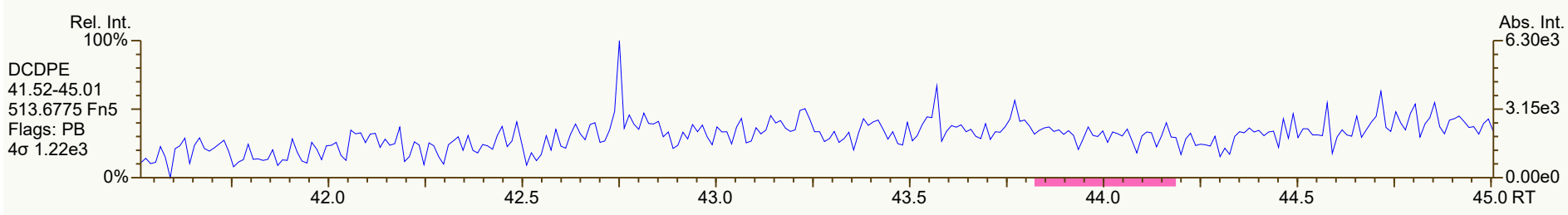
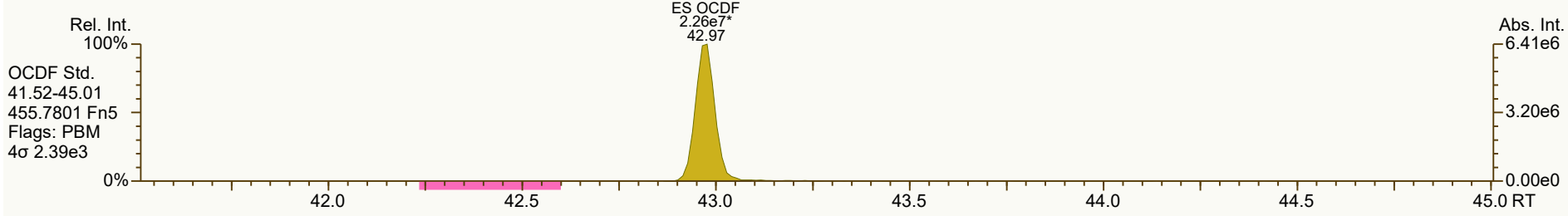
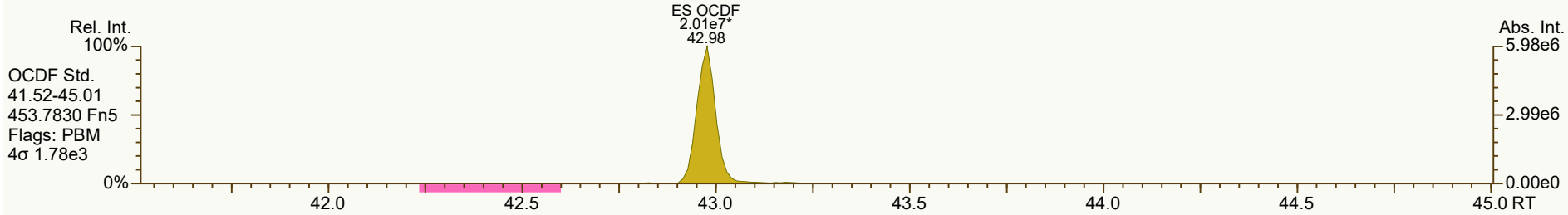
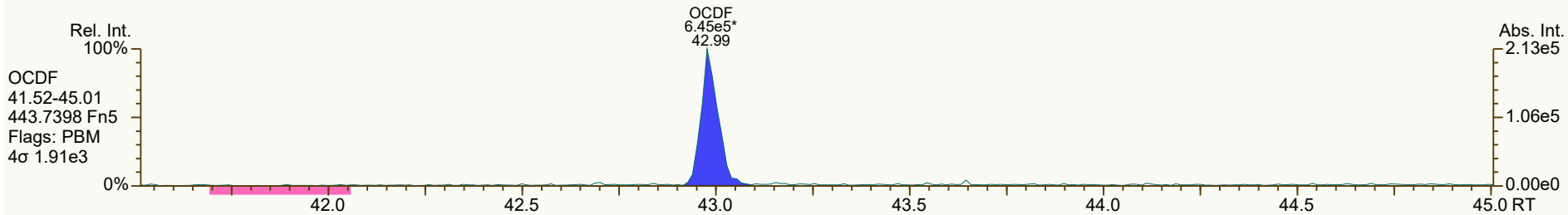
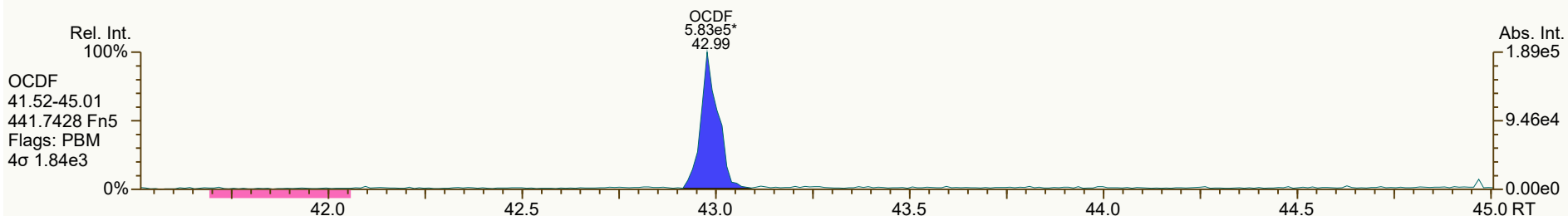




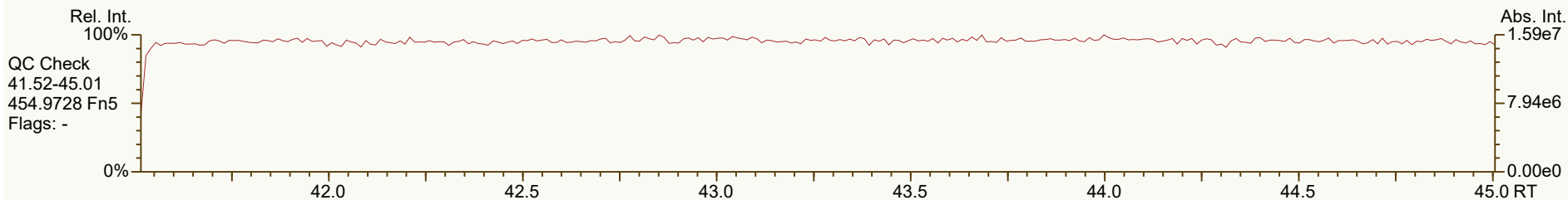
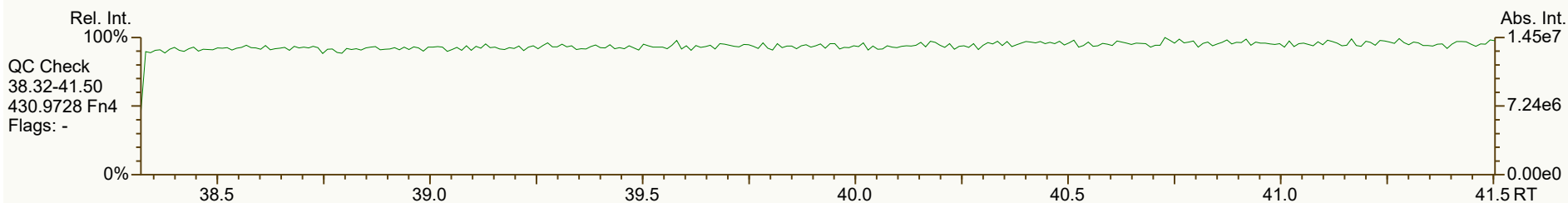
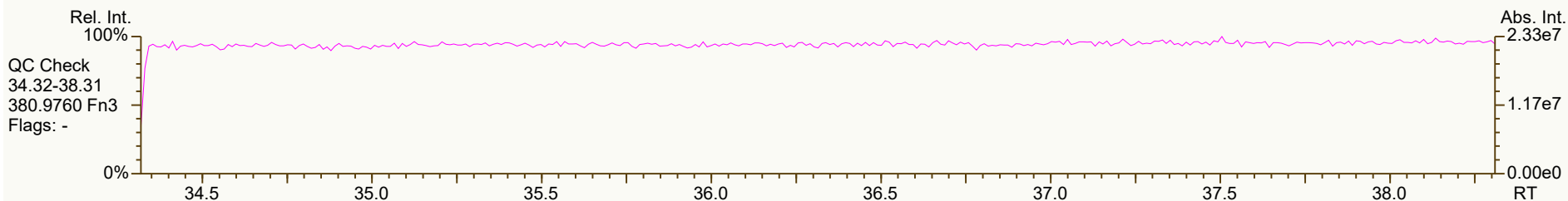
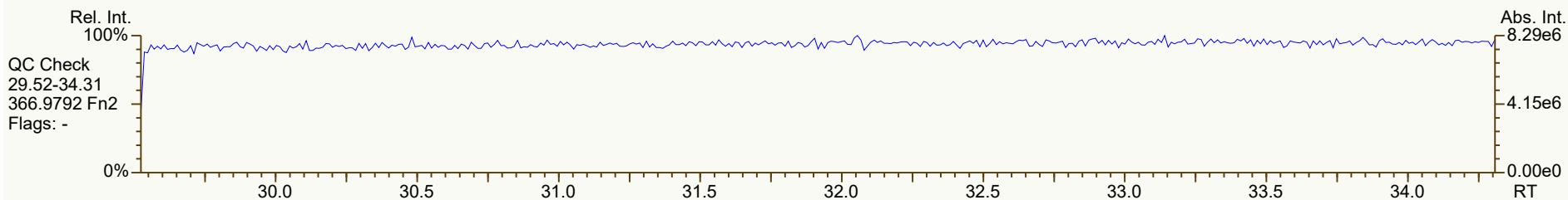
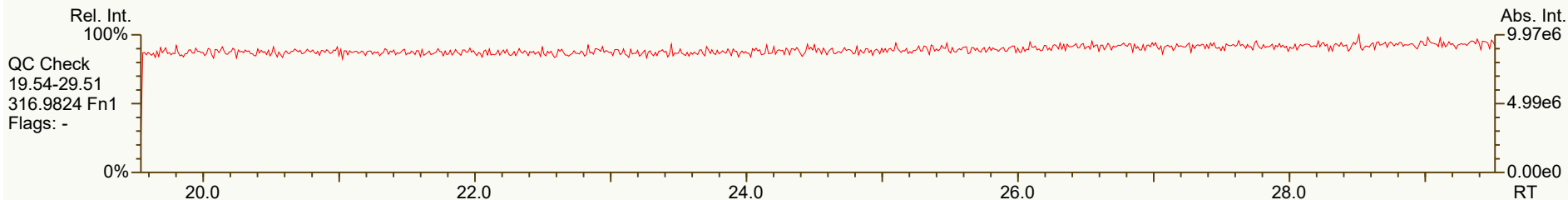


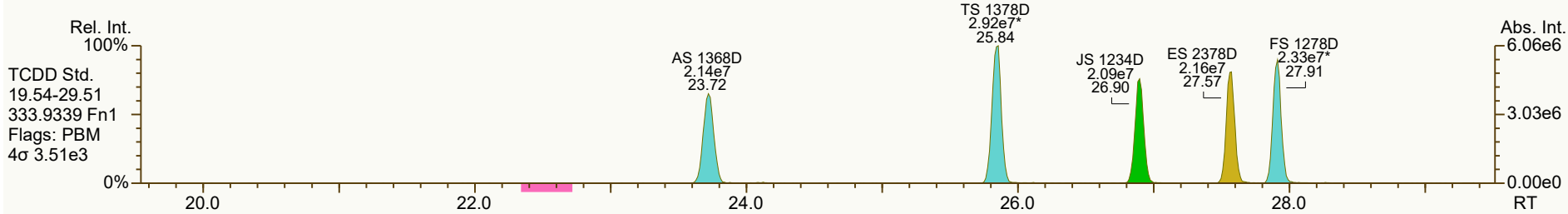
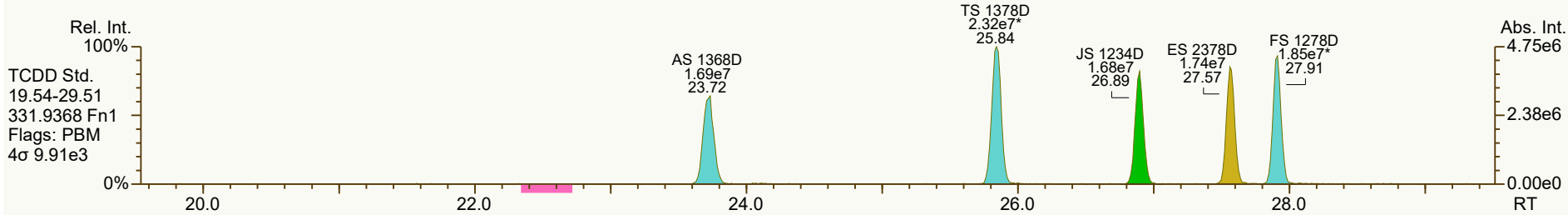
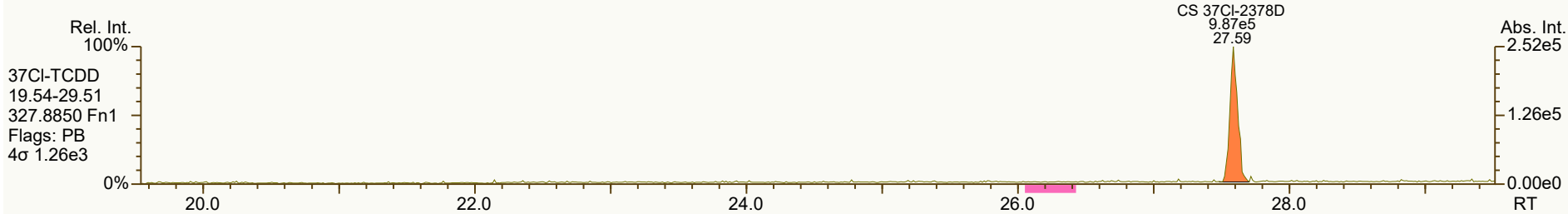
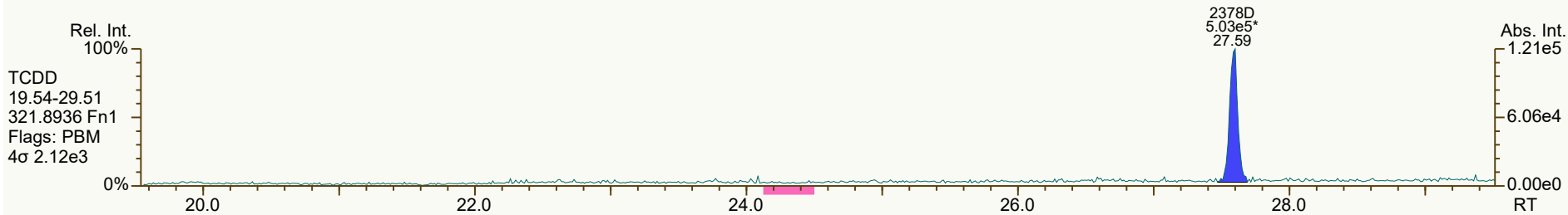
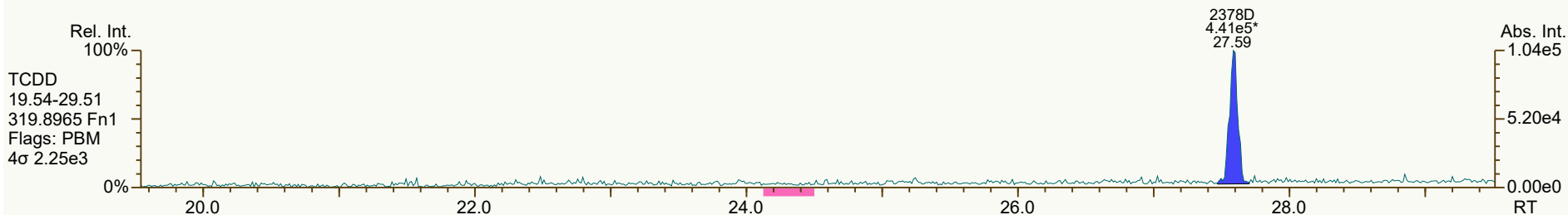


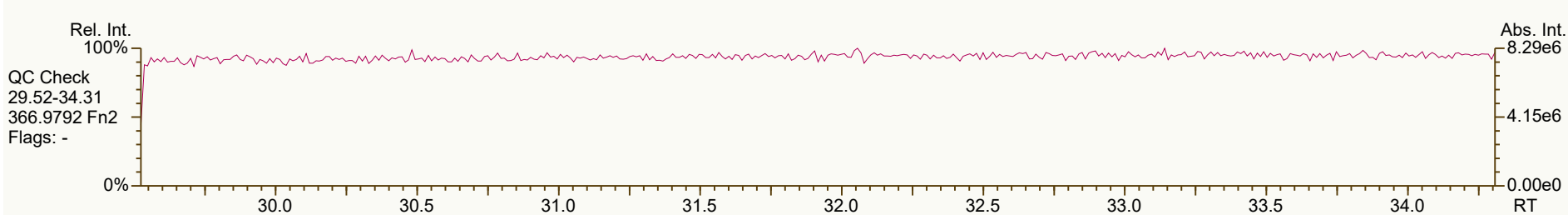
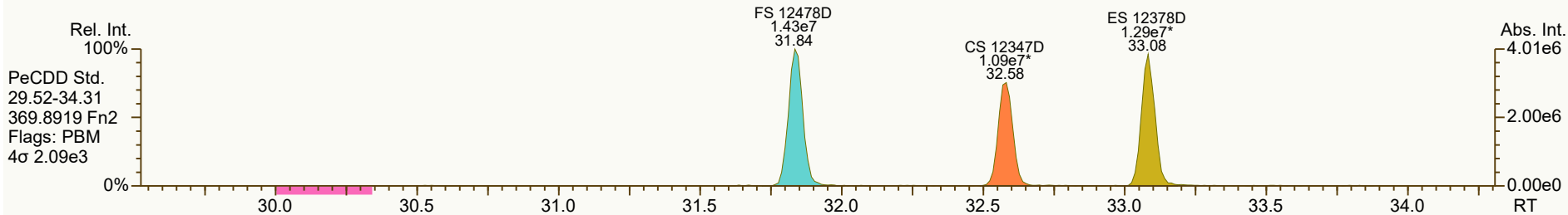
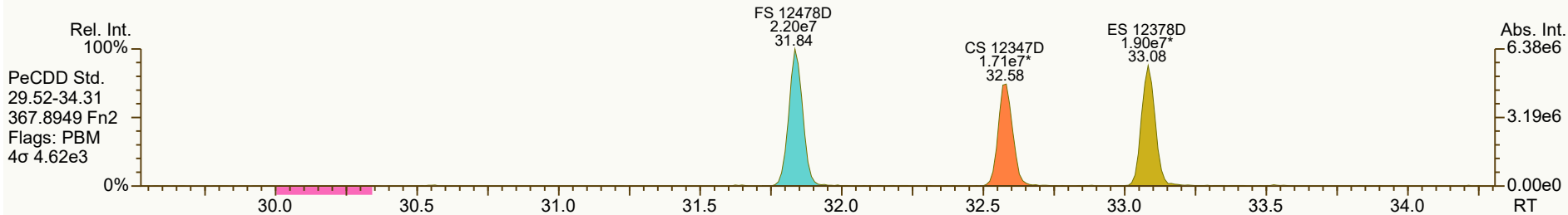
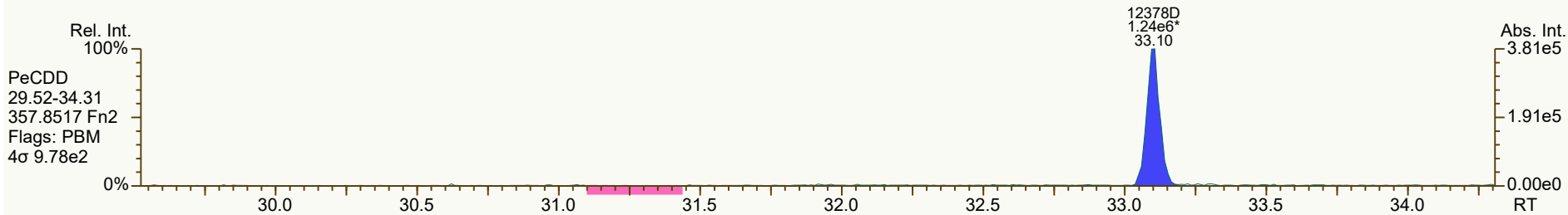
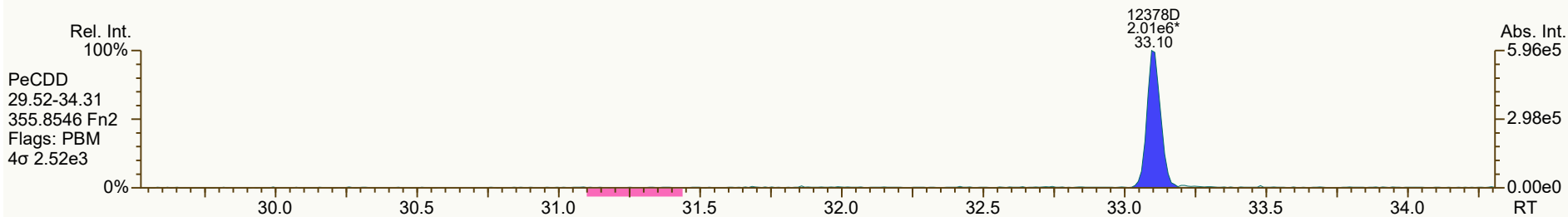


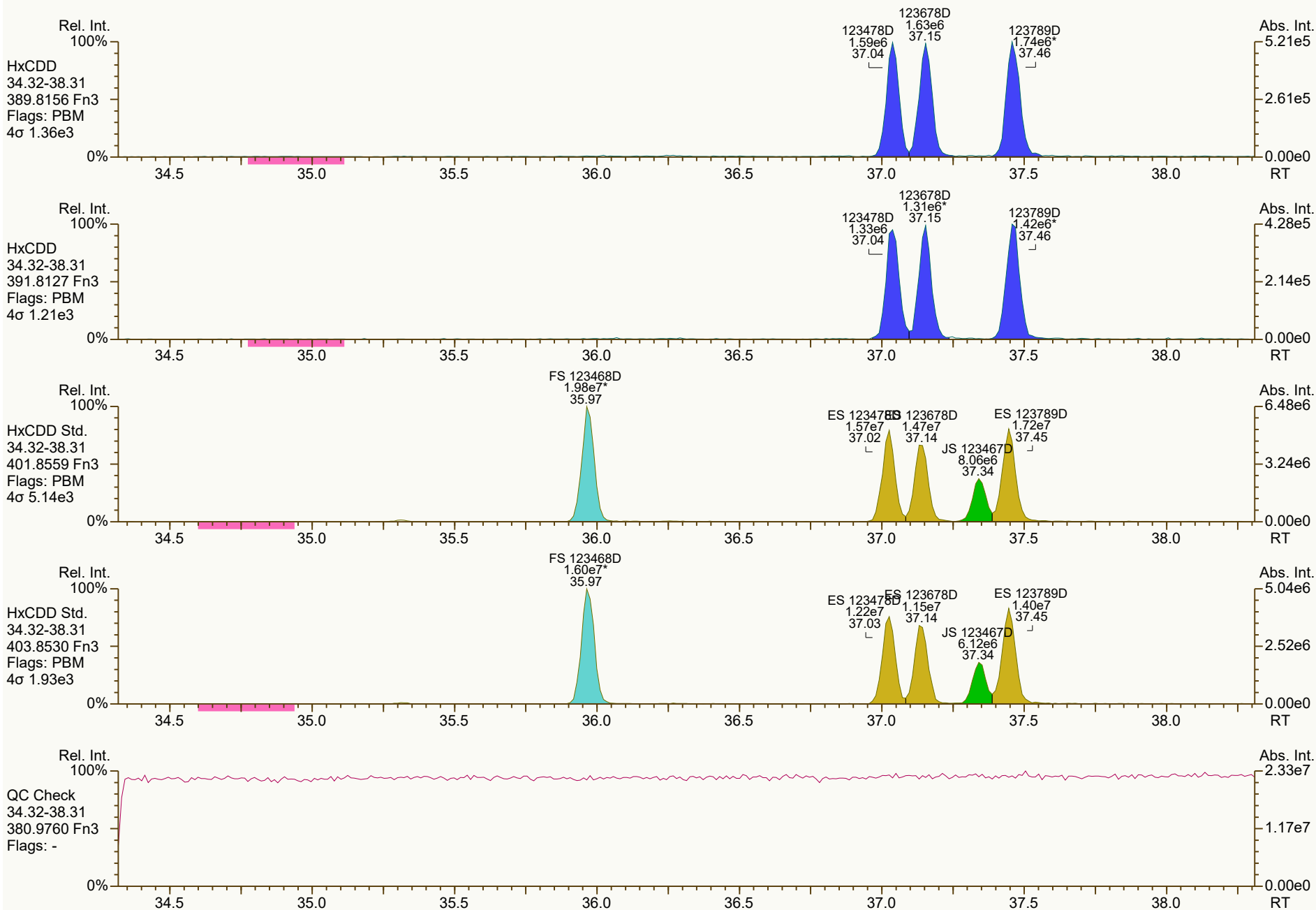


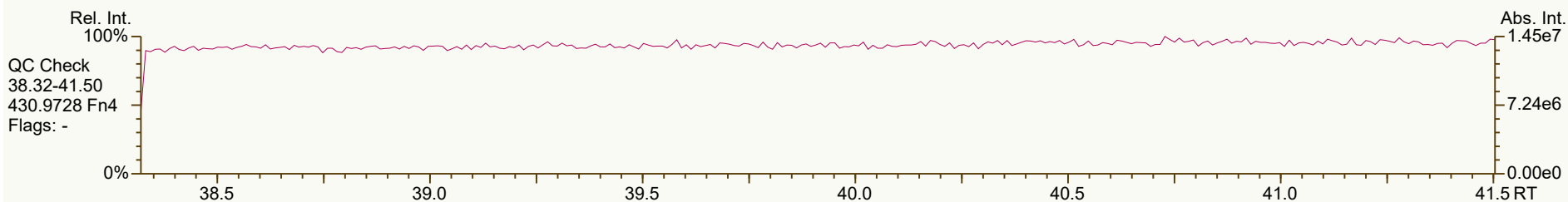
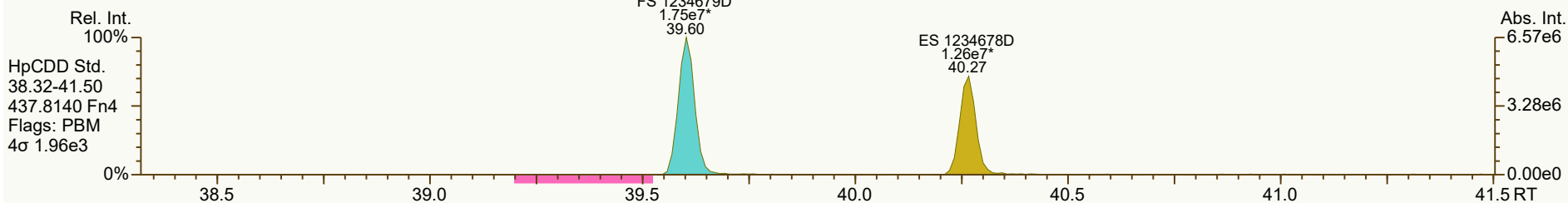
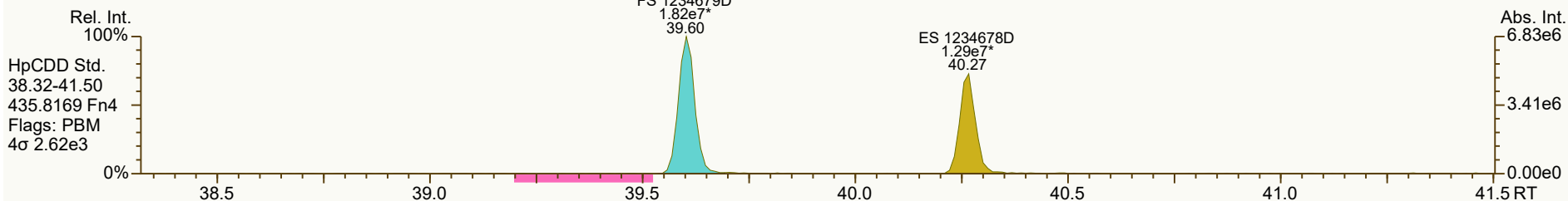
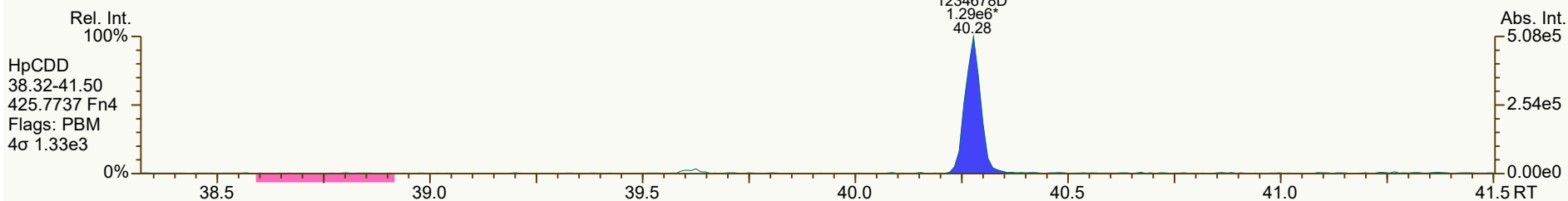
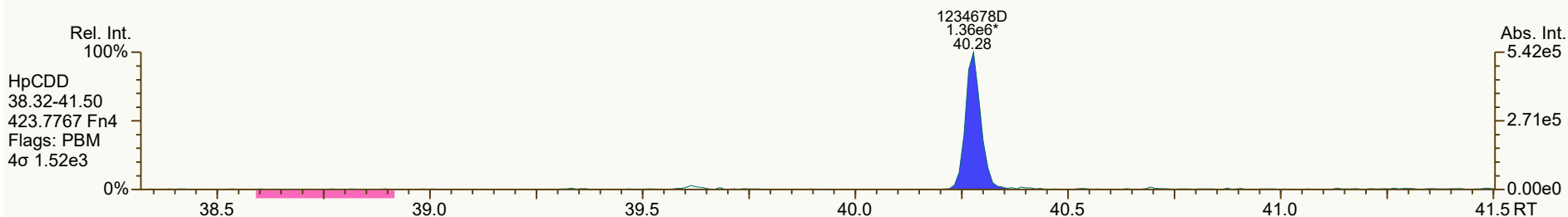
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Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF			Checkcode: 385-758-WQN		
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C06		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

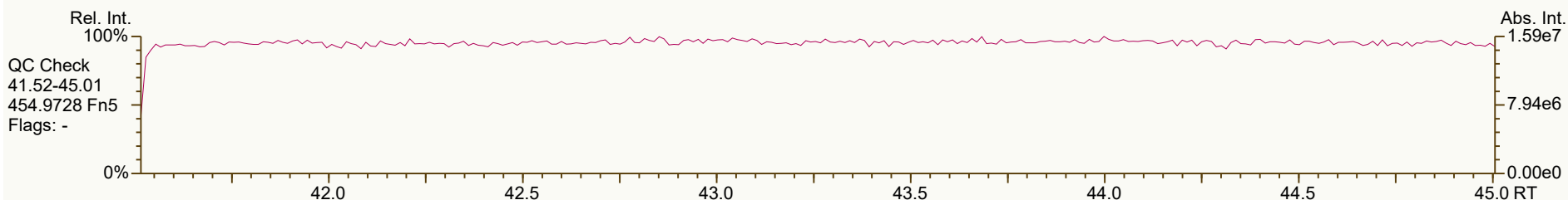
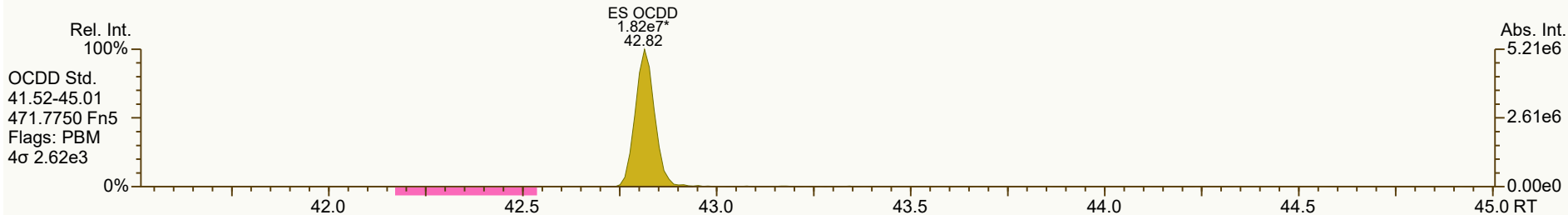
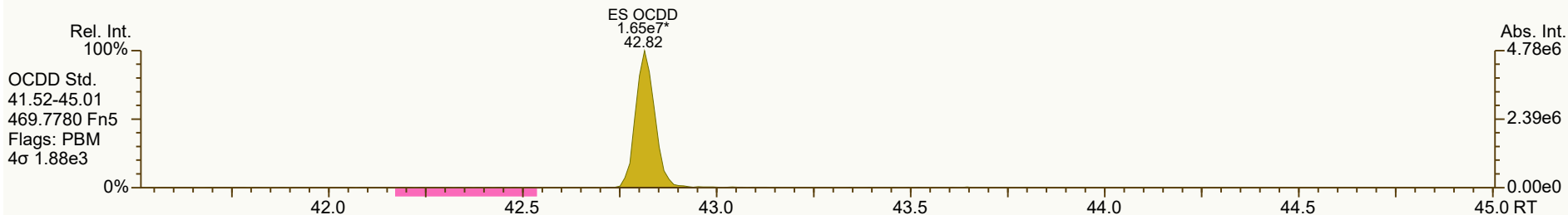
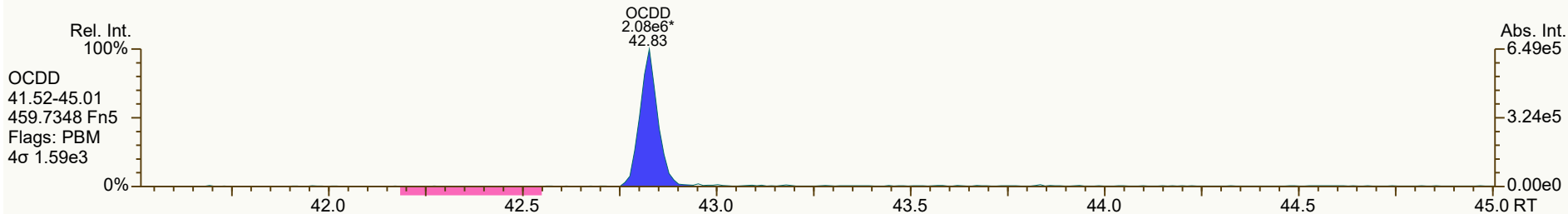
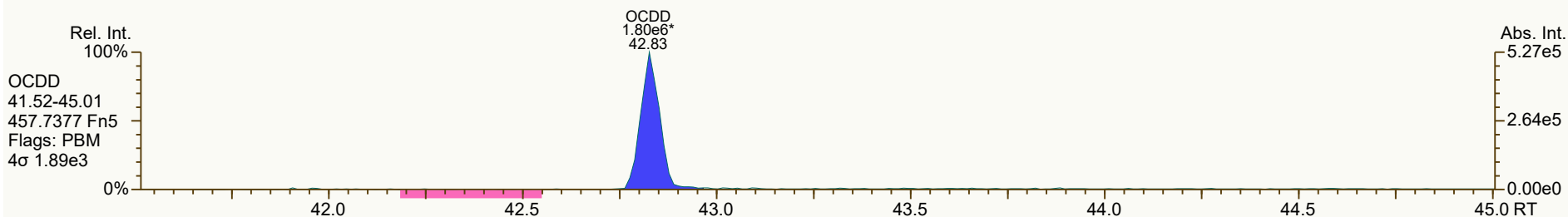


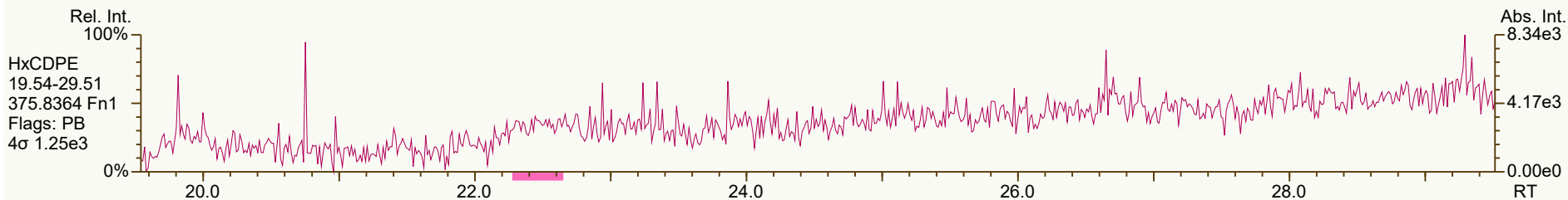
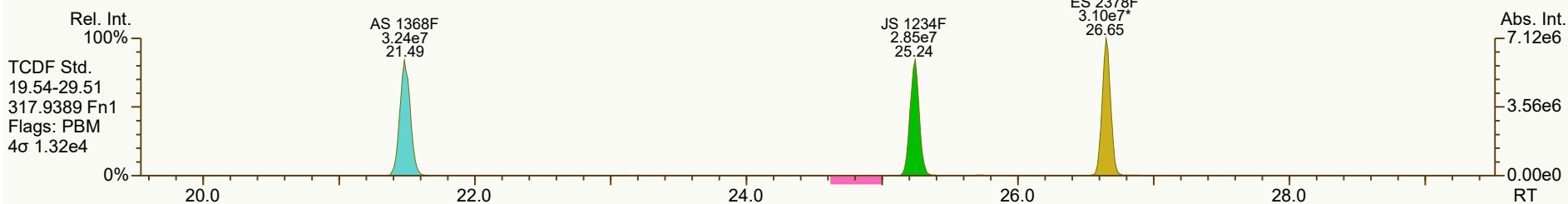
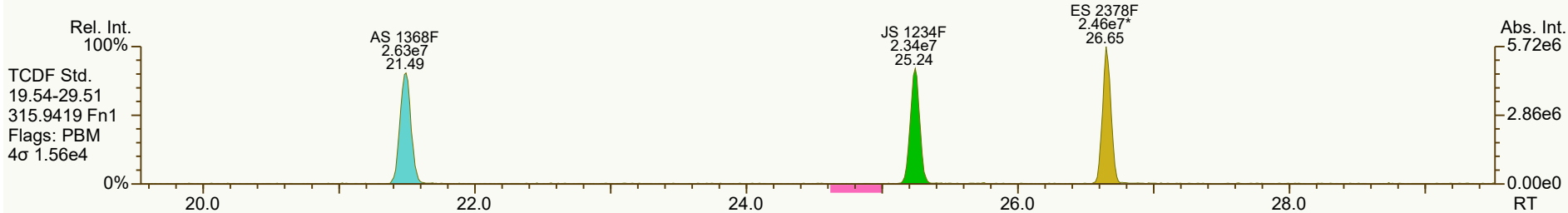
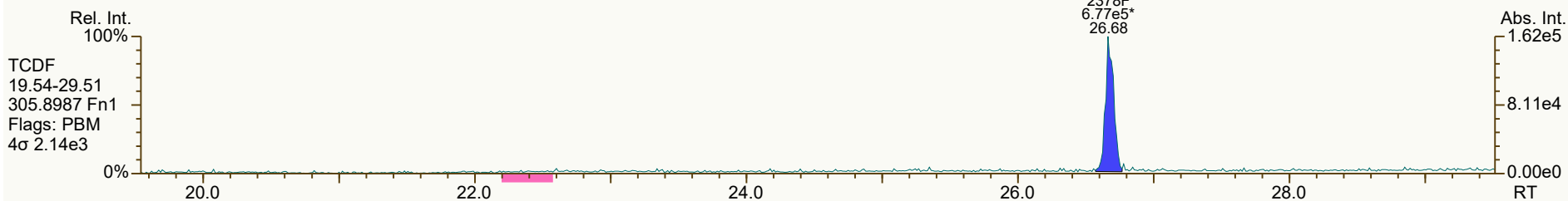
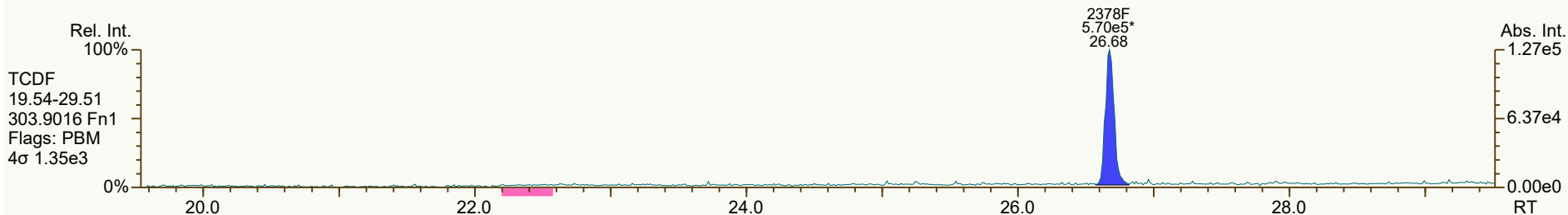


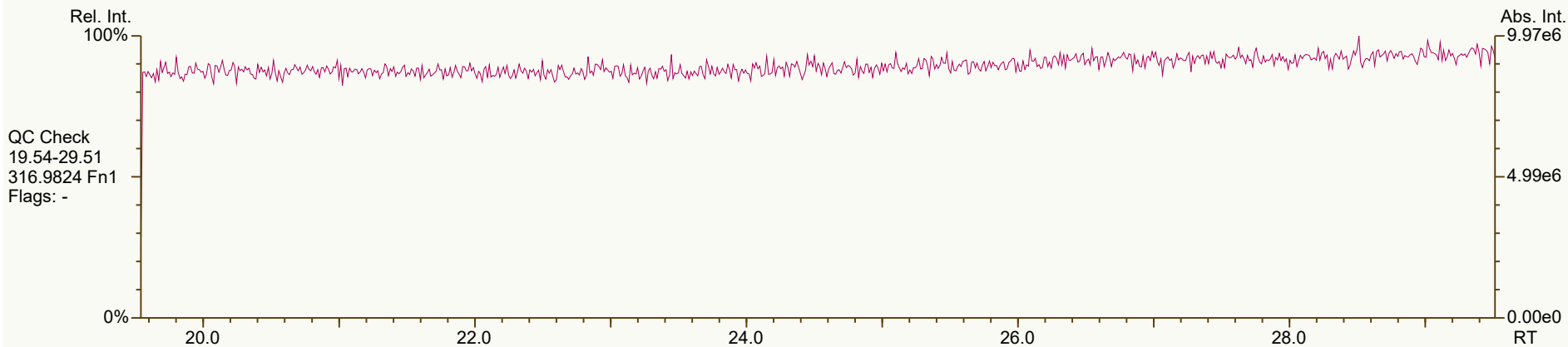
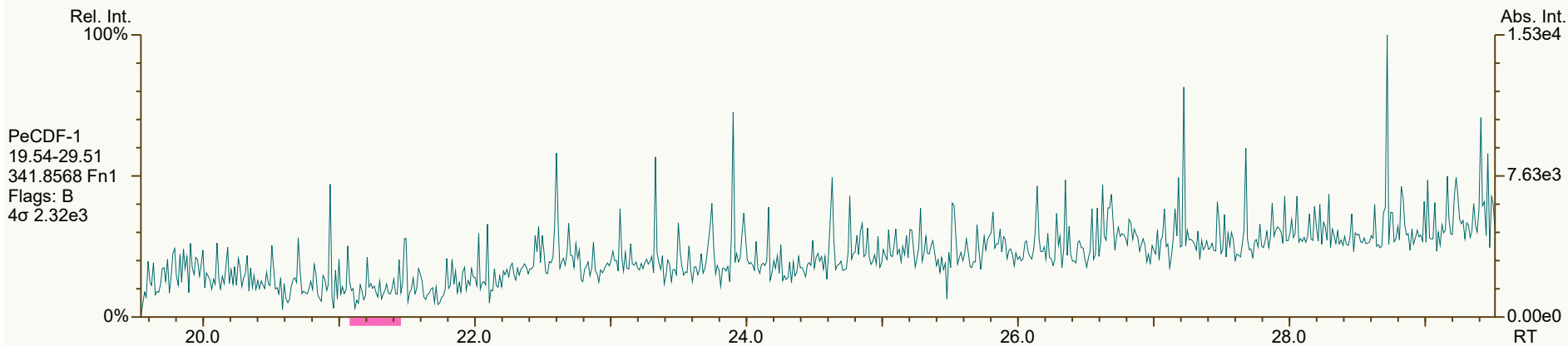
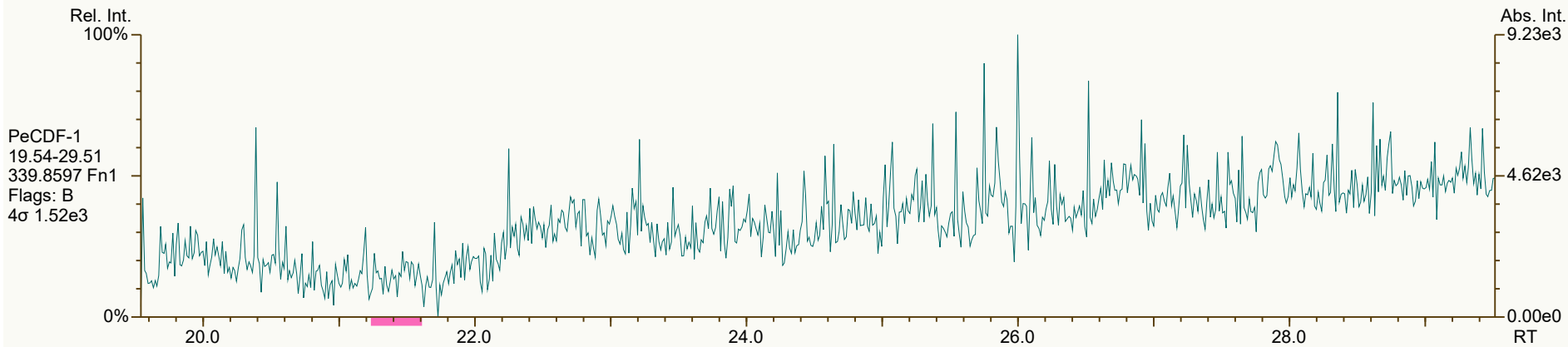


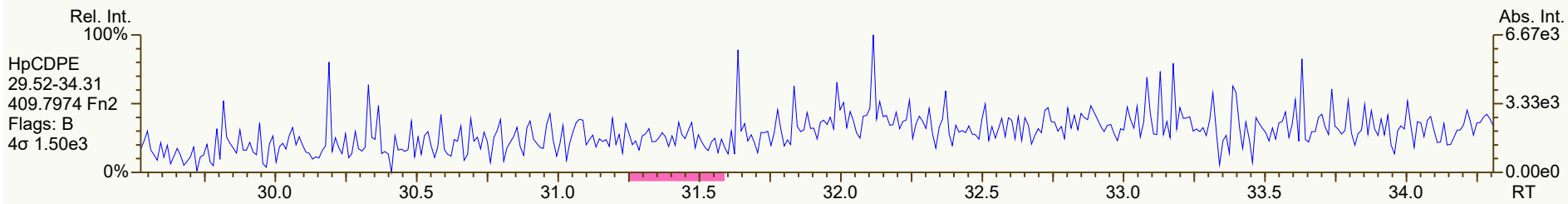
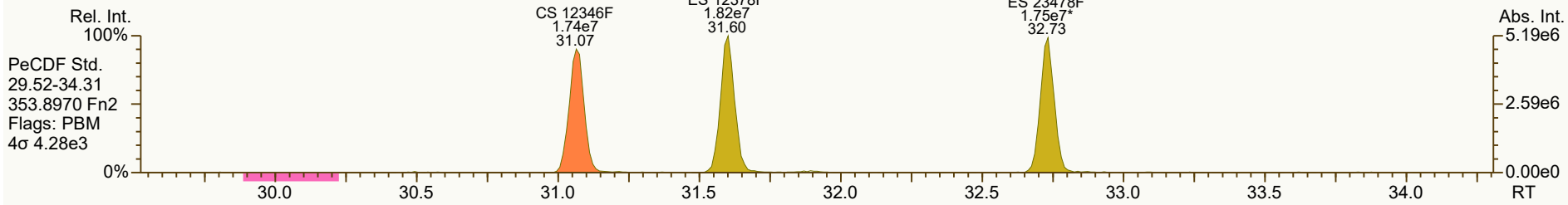
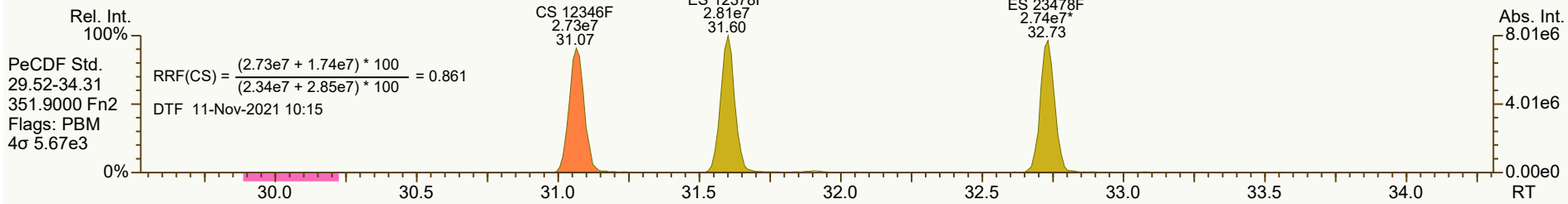
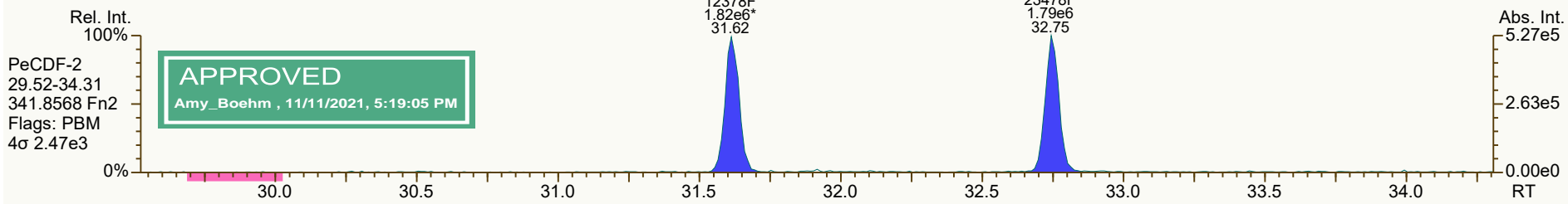
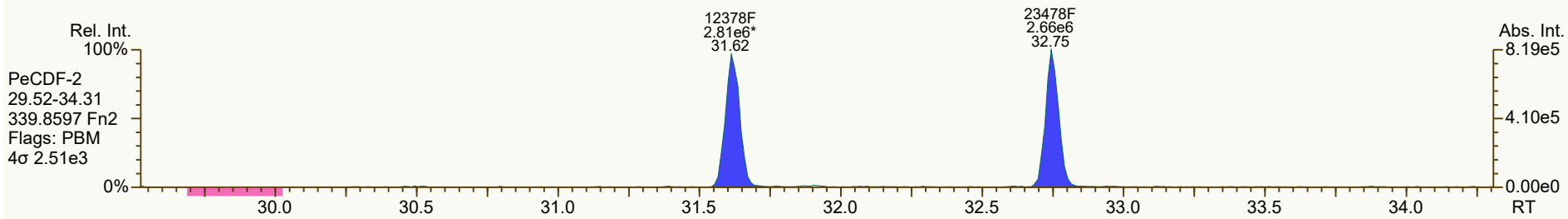








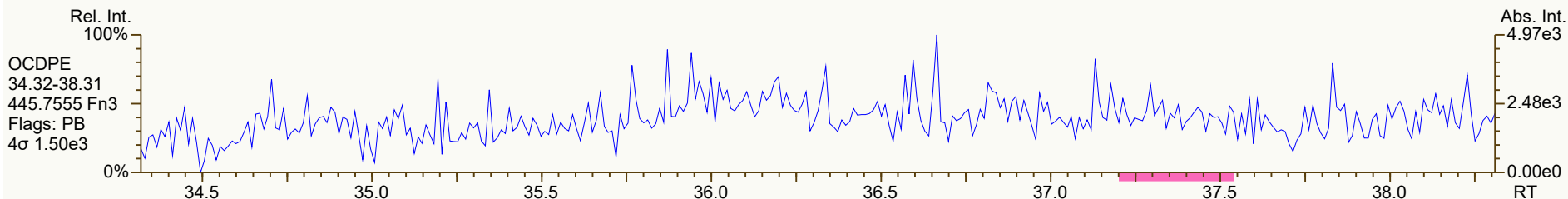
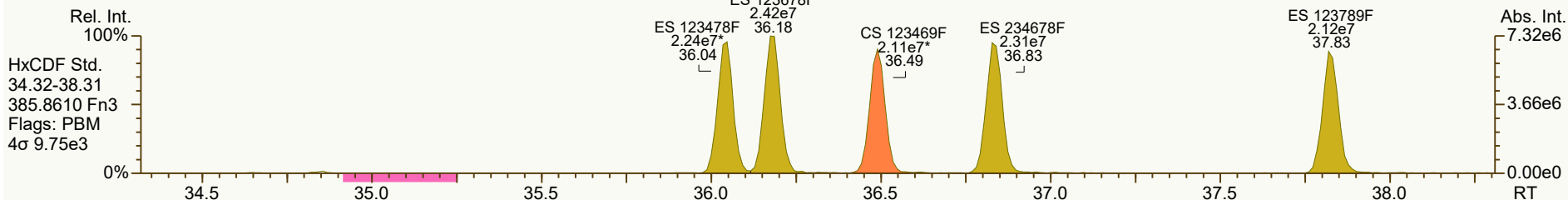
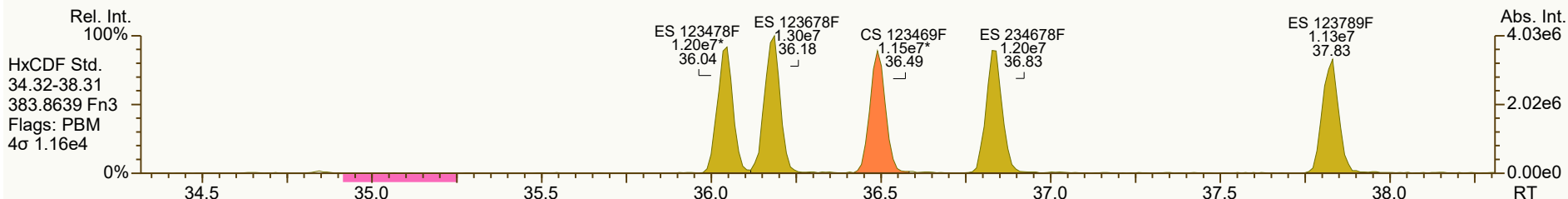
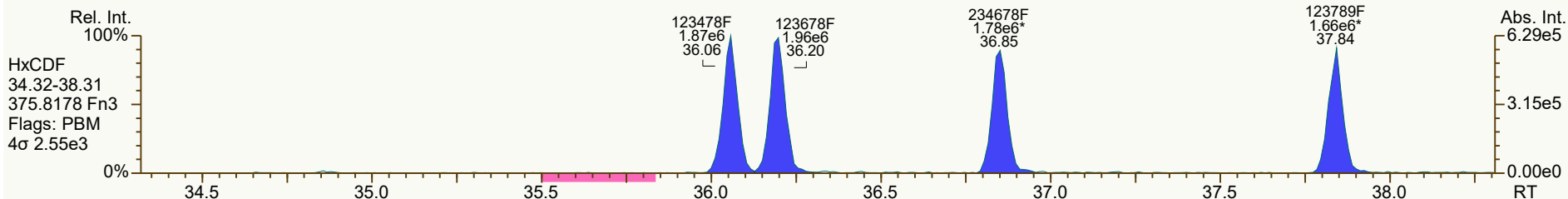
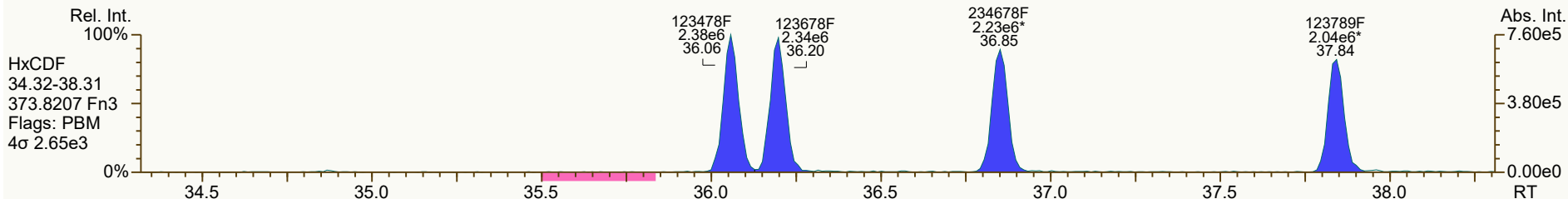


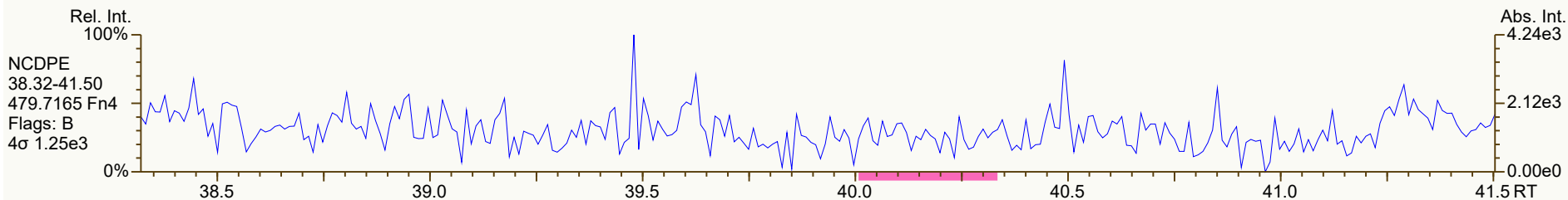
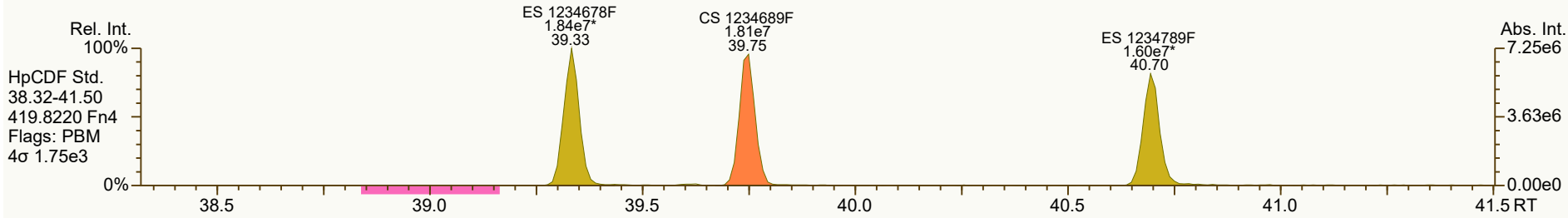
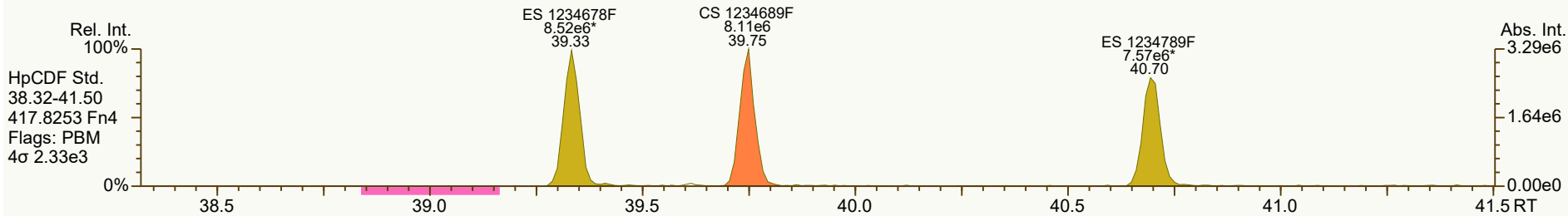
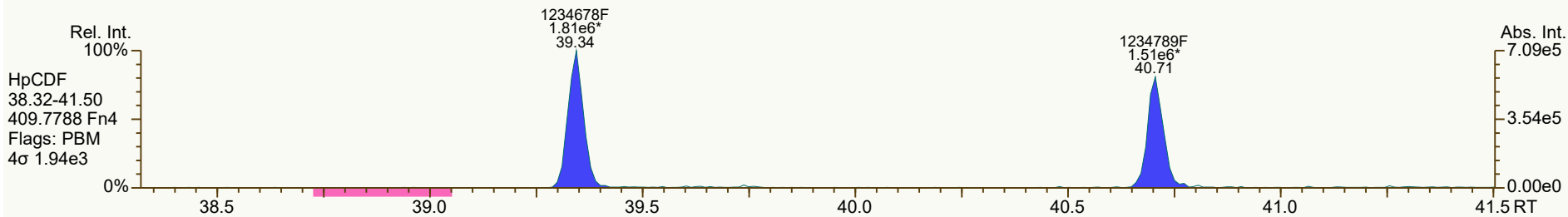
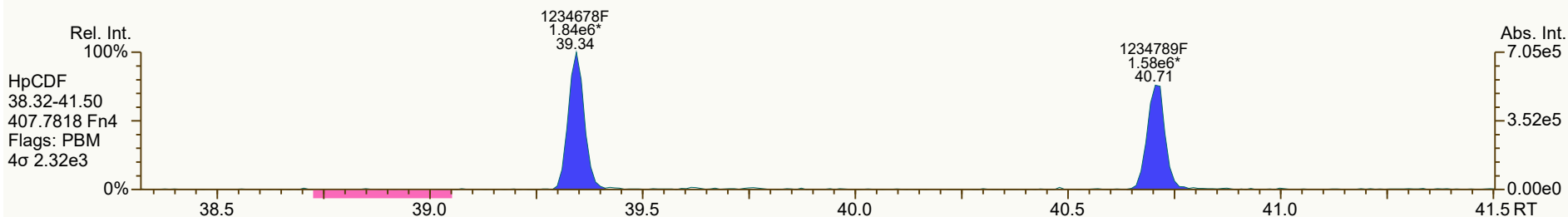


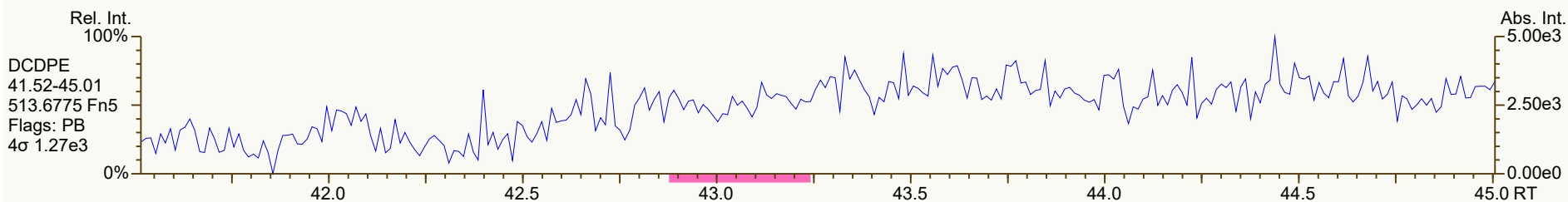
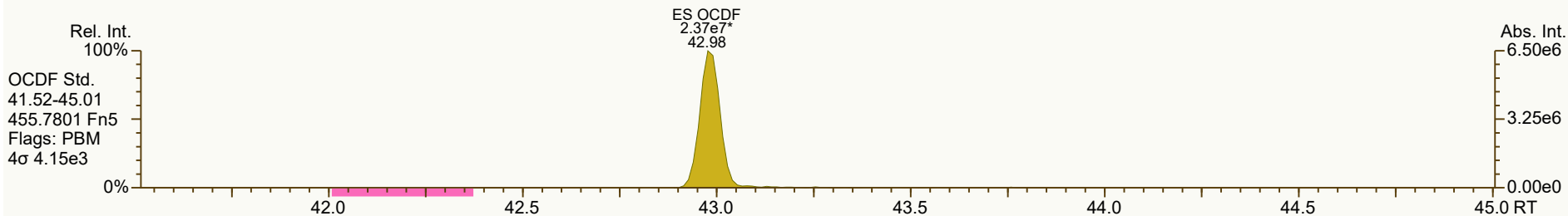
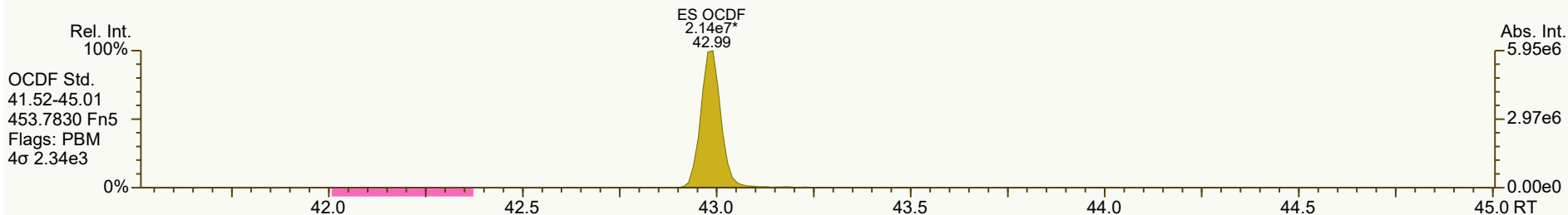
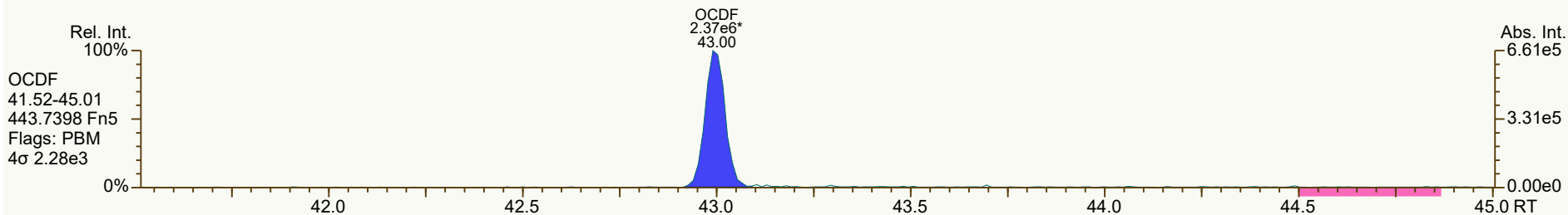
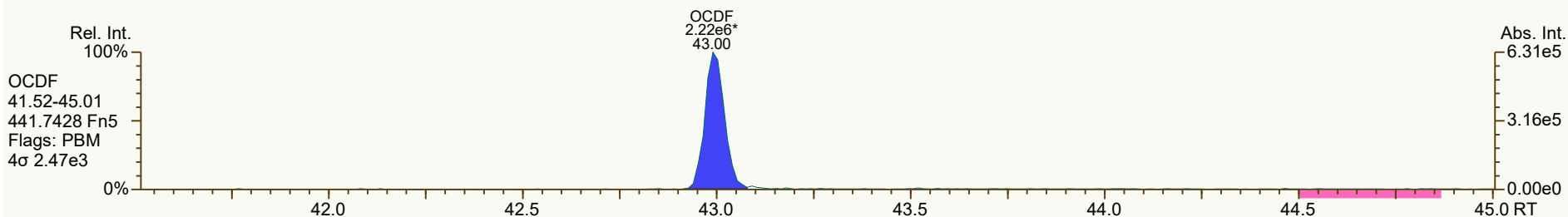
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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67

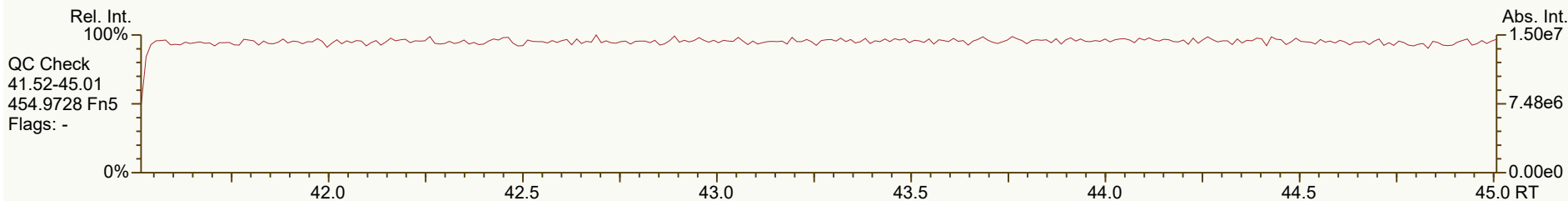
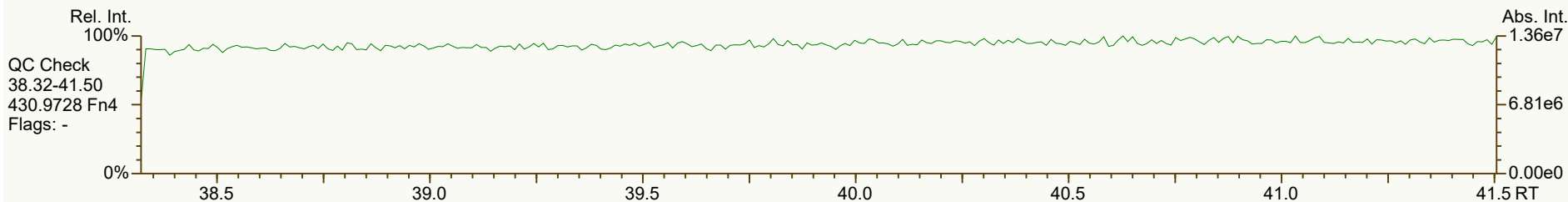
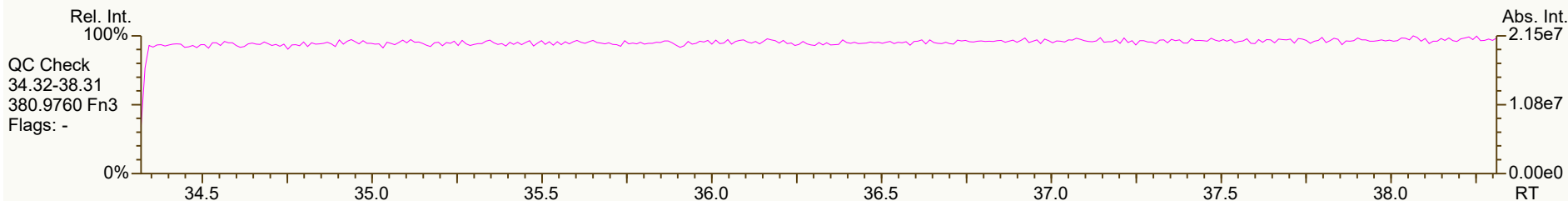
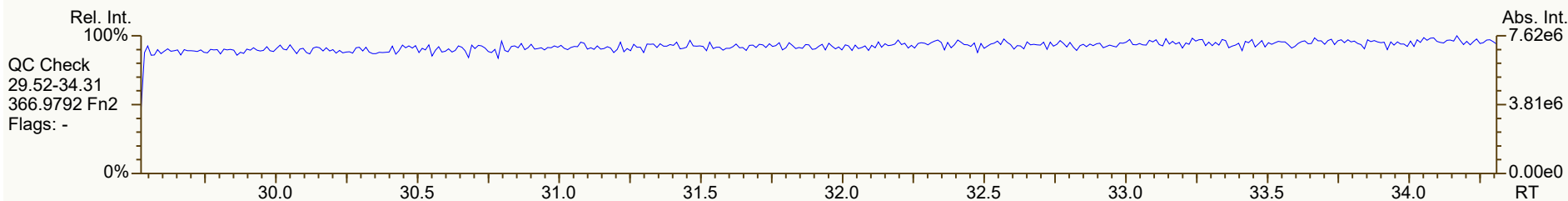
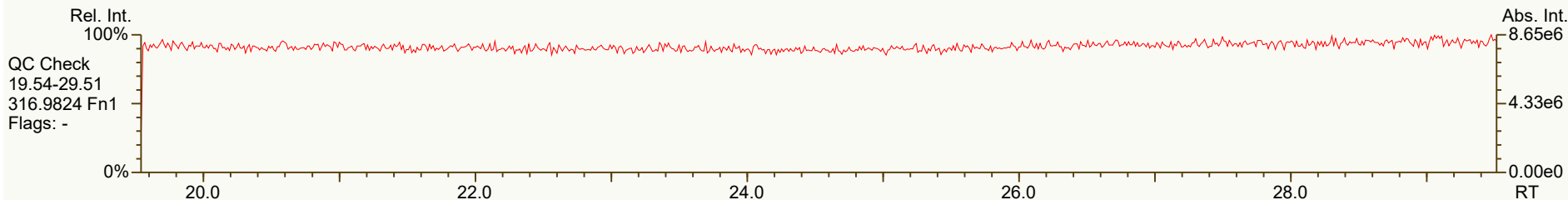
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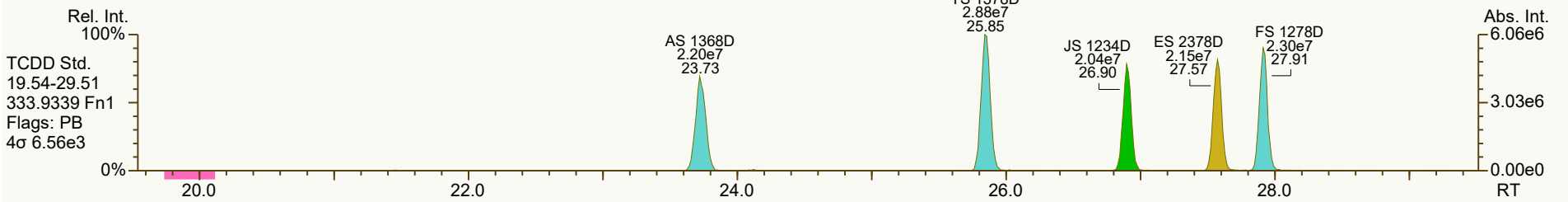
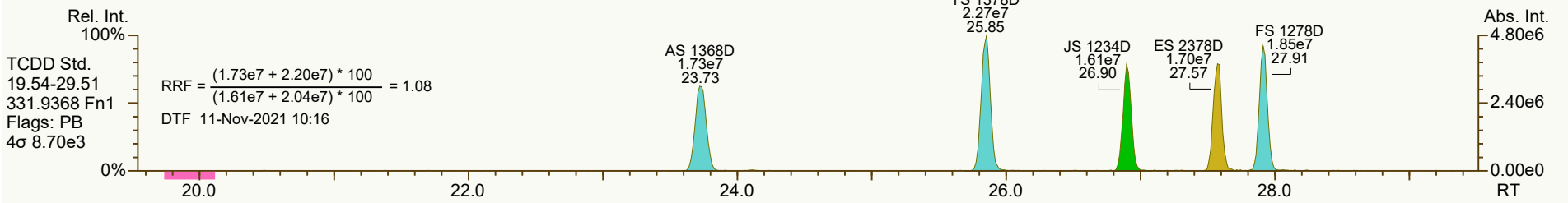
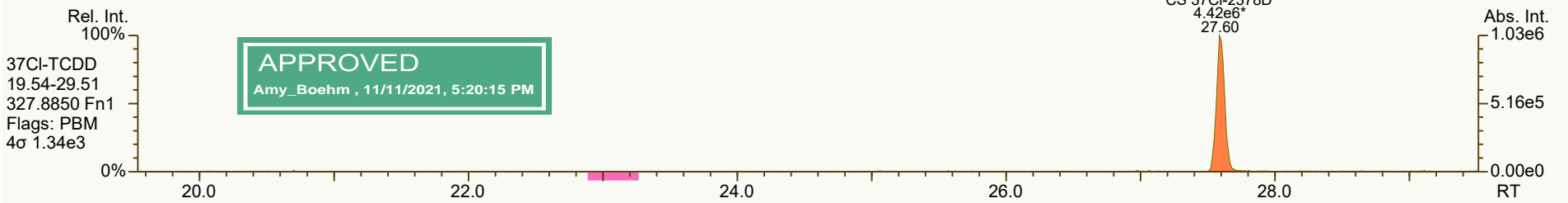
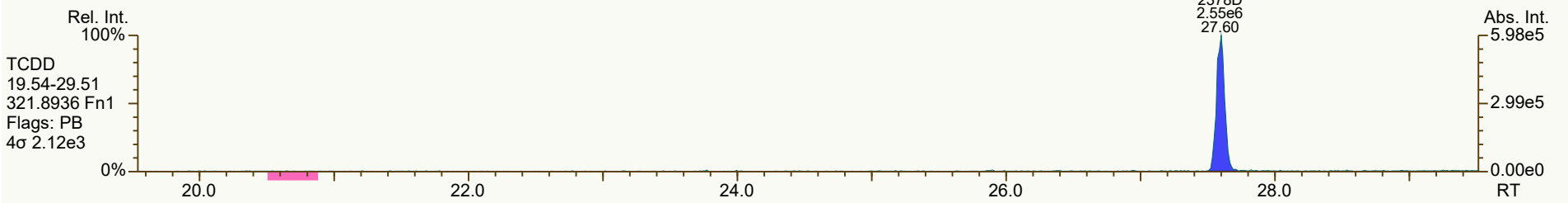
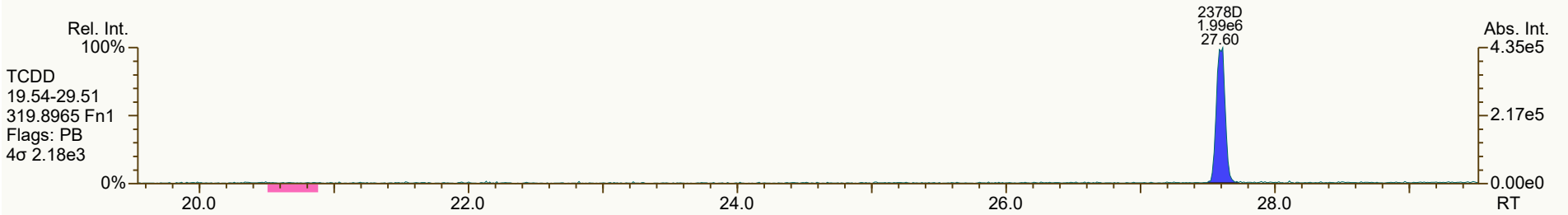


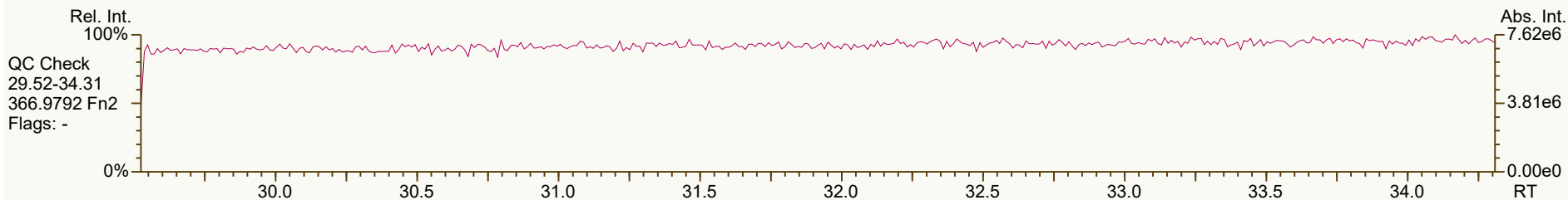
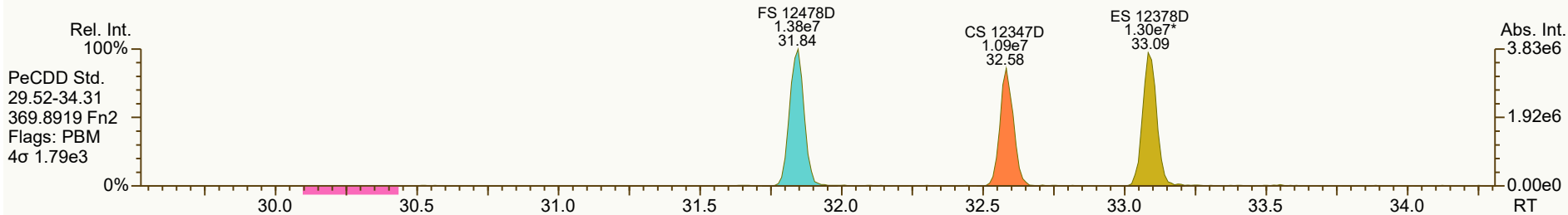
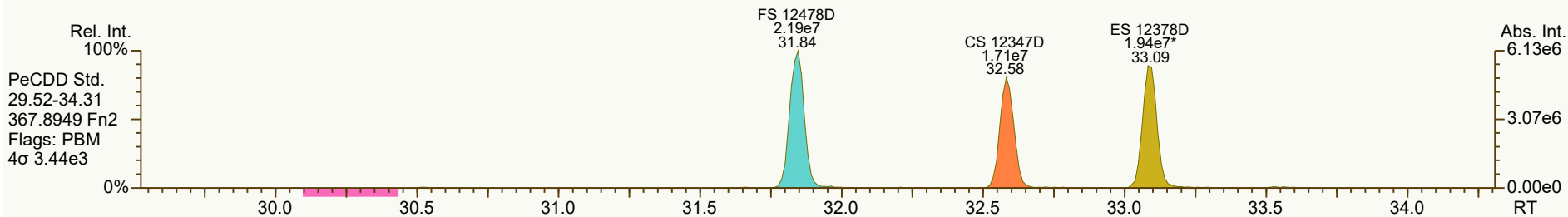
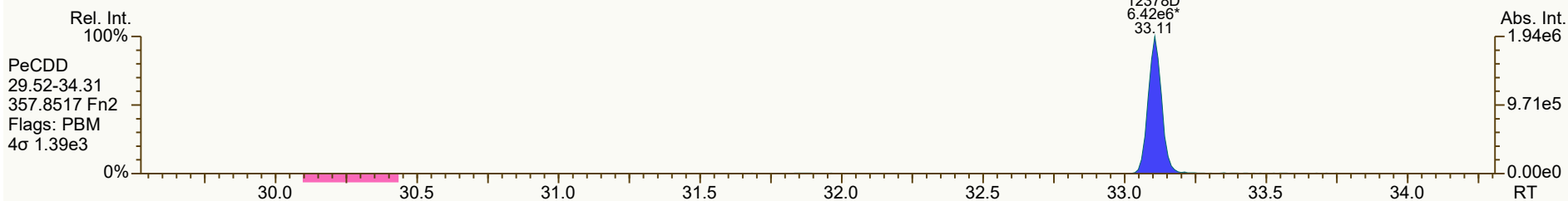
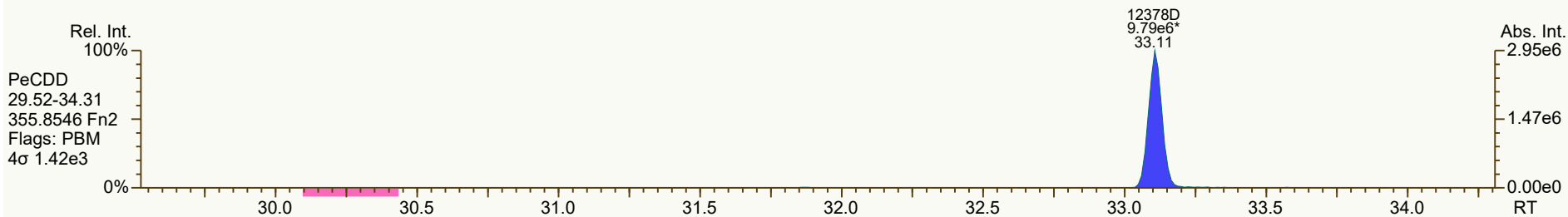


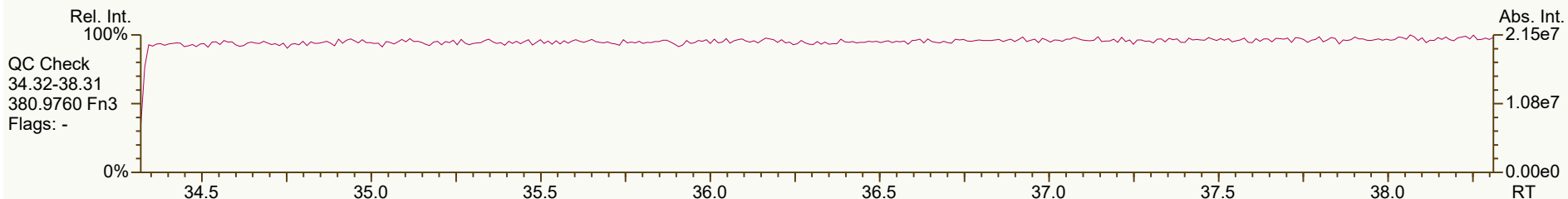
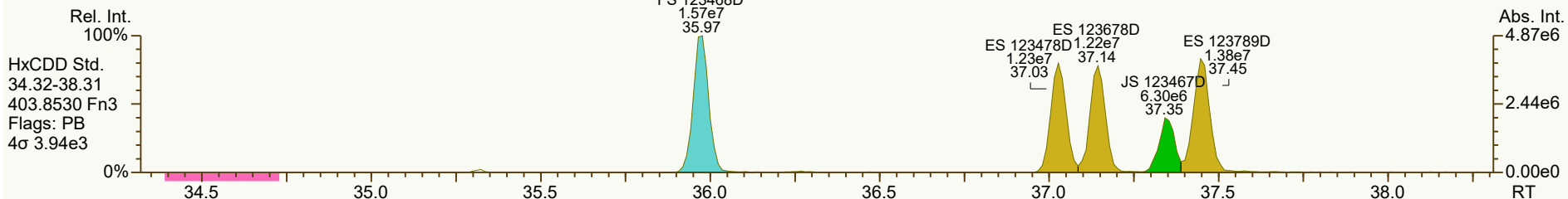
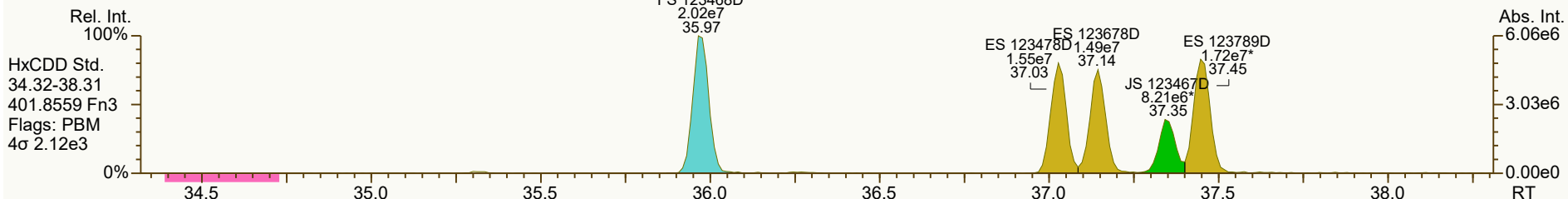
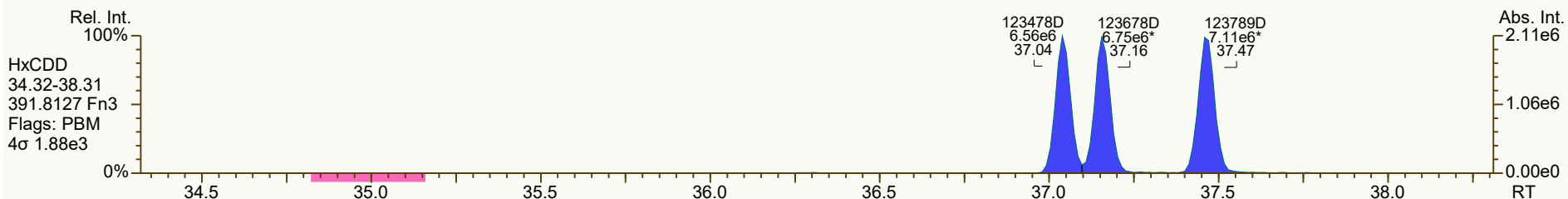
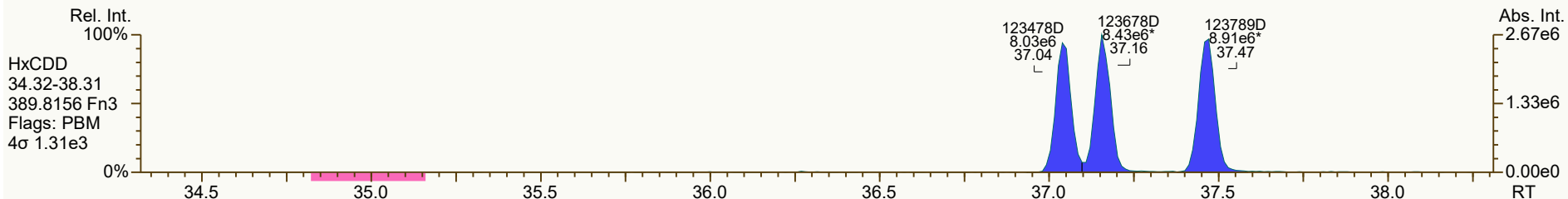


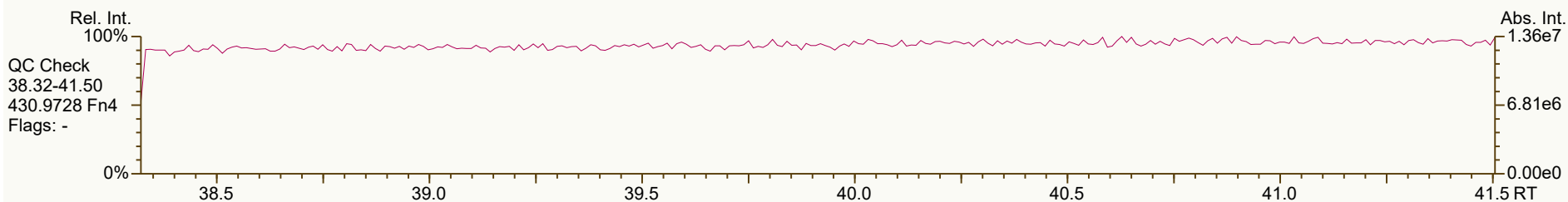
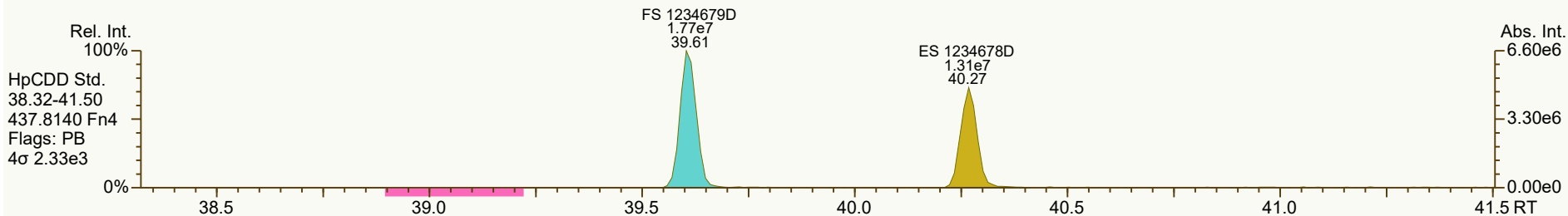
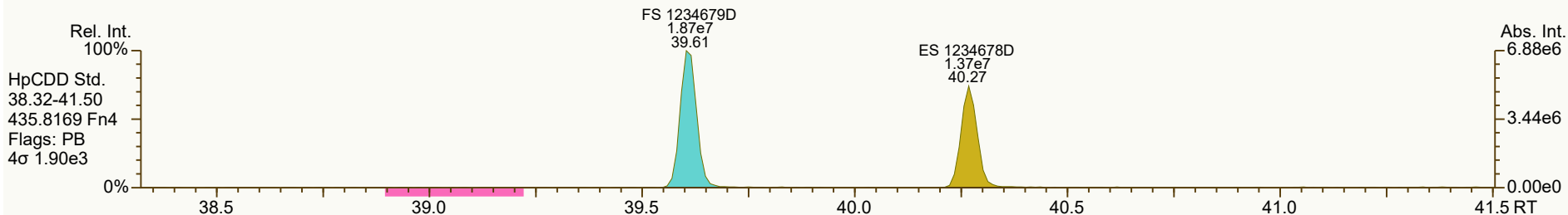
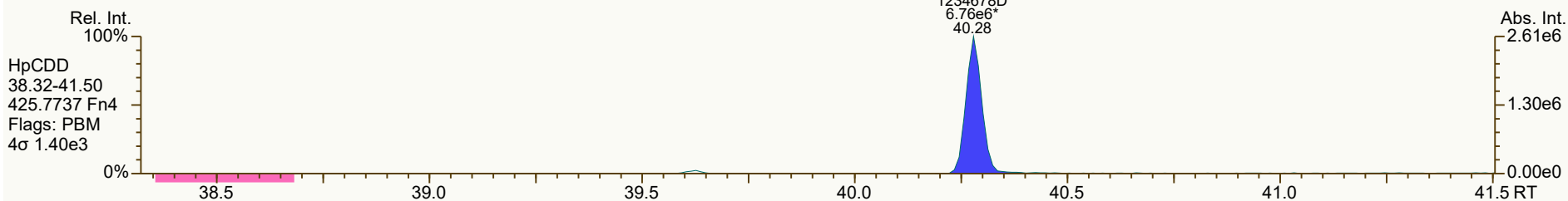
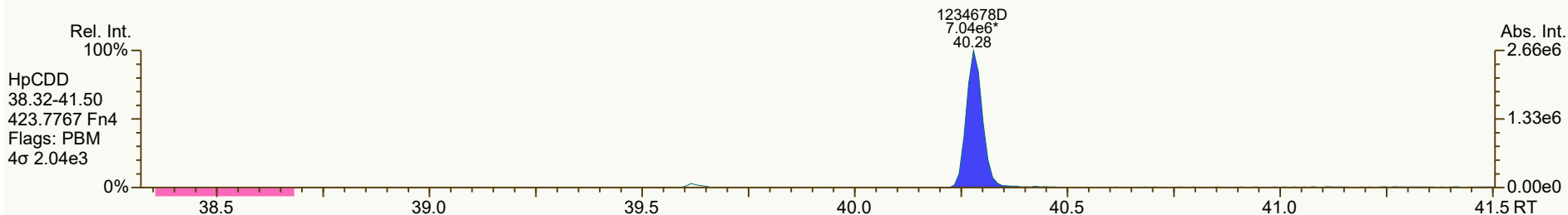
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF			Checkcode: 507-474-MKW		
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C07		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%







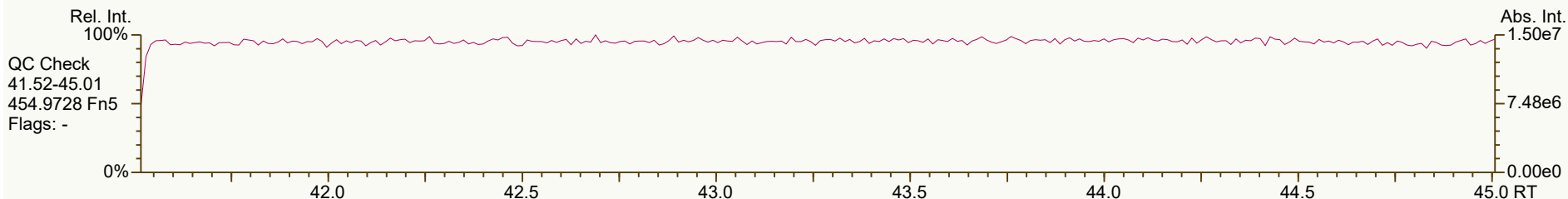
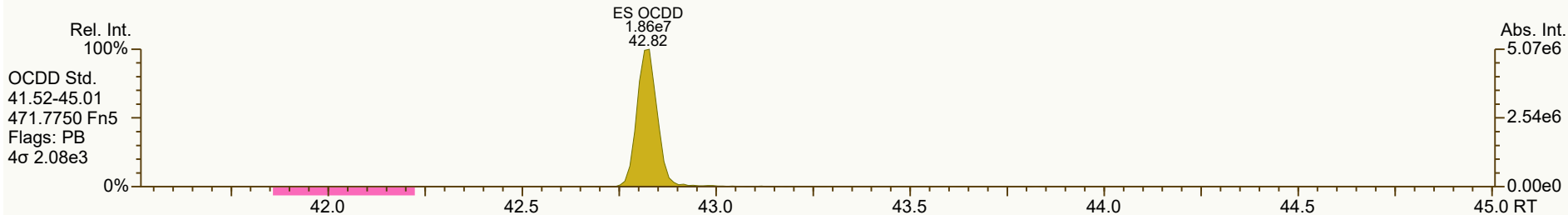
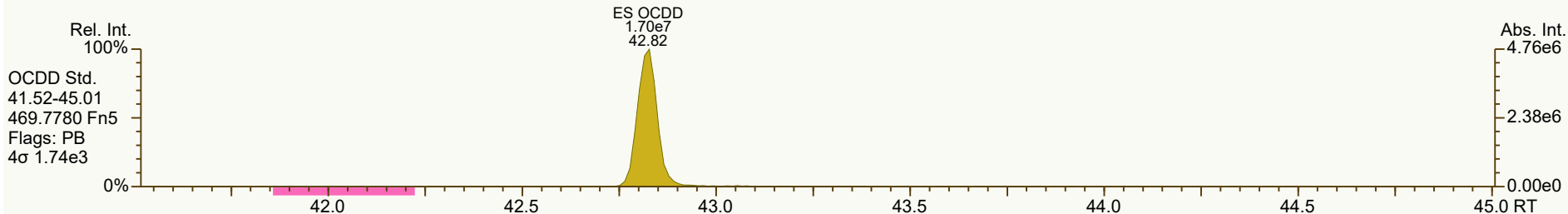
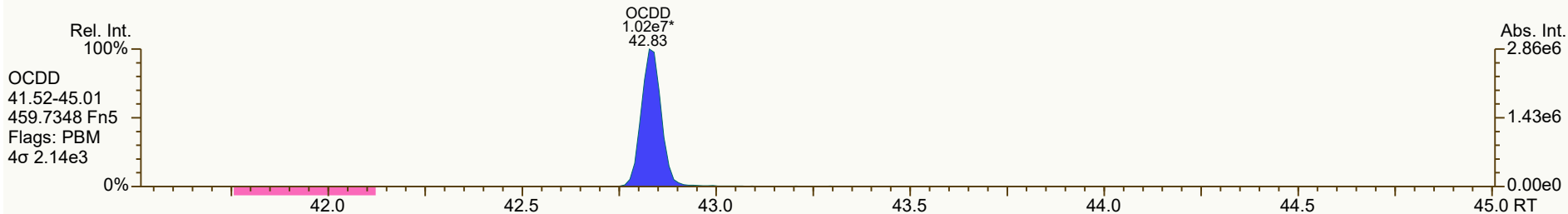
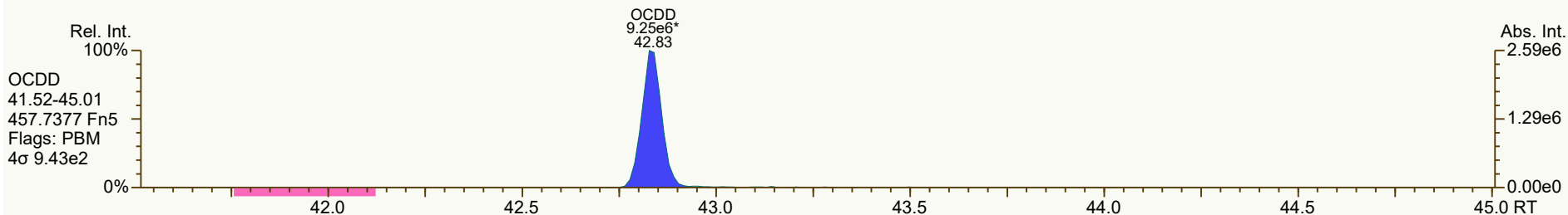


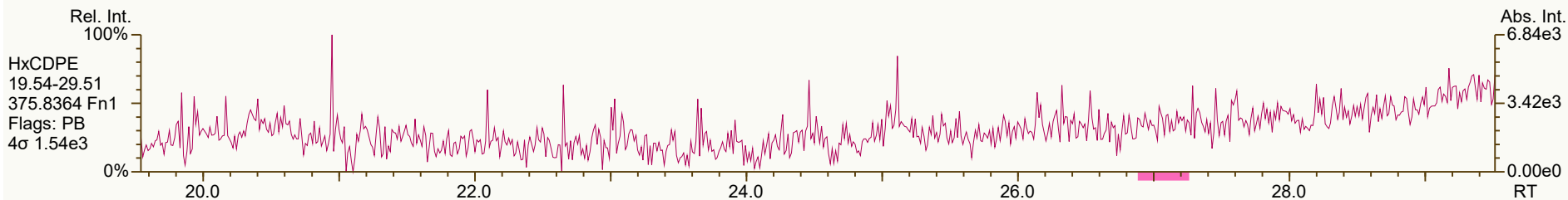
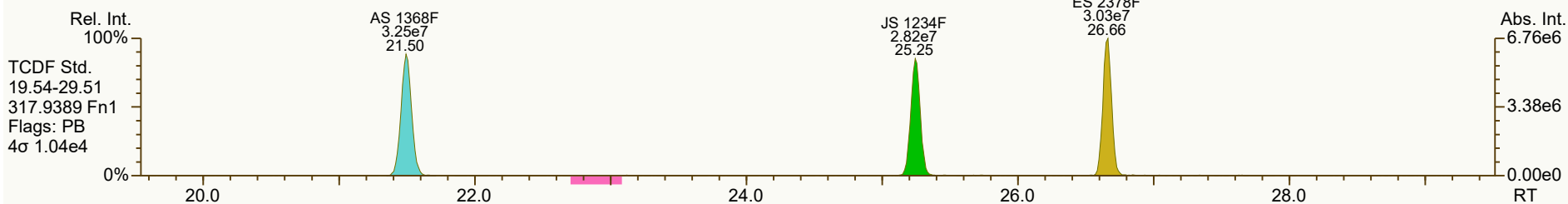
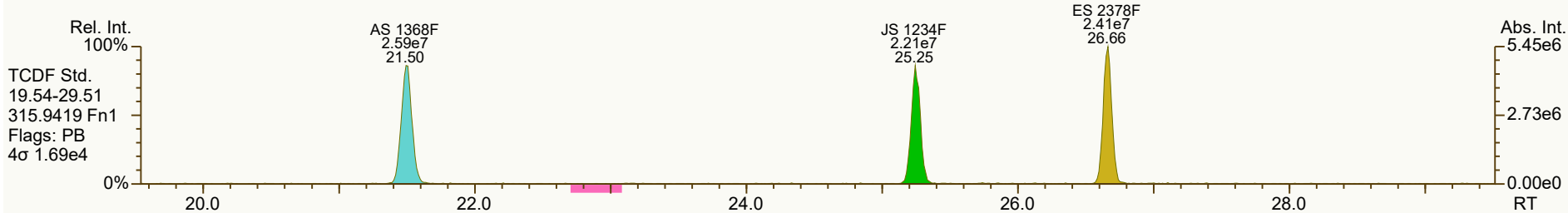
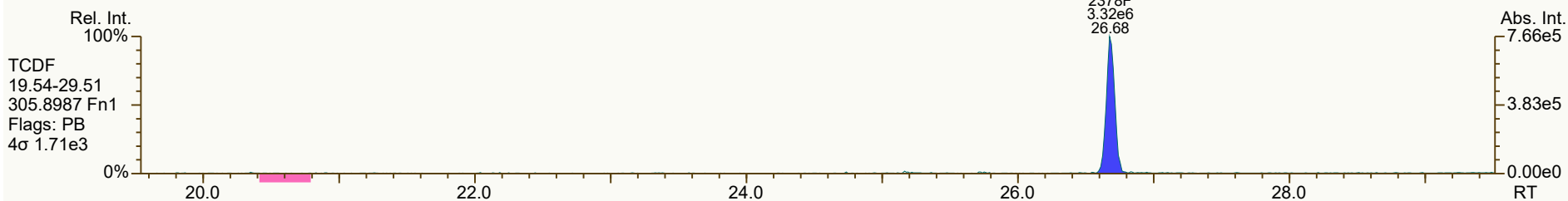
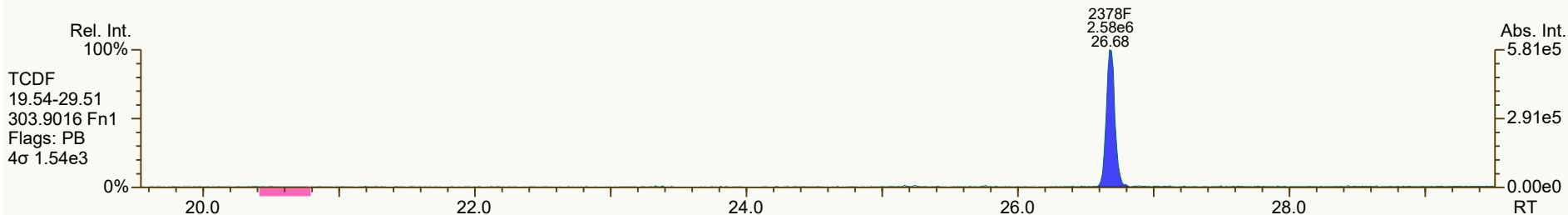


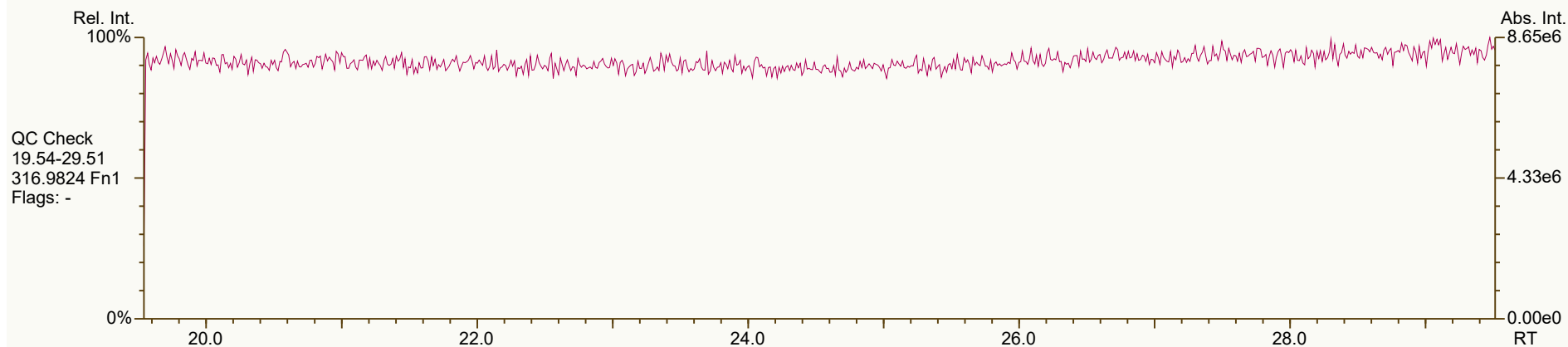
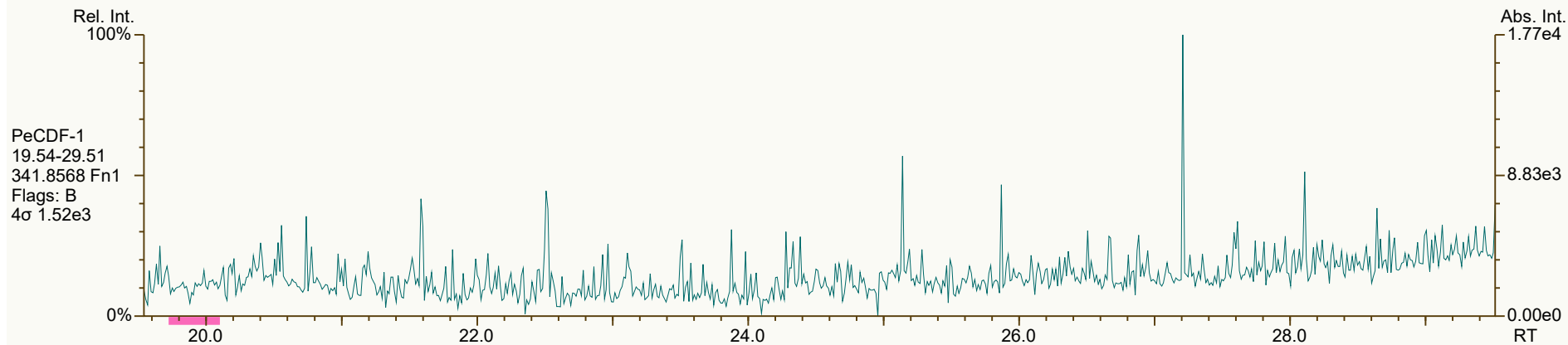
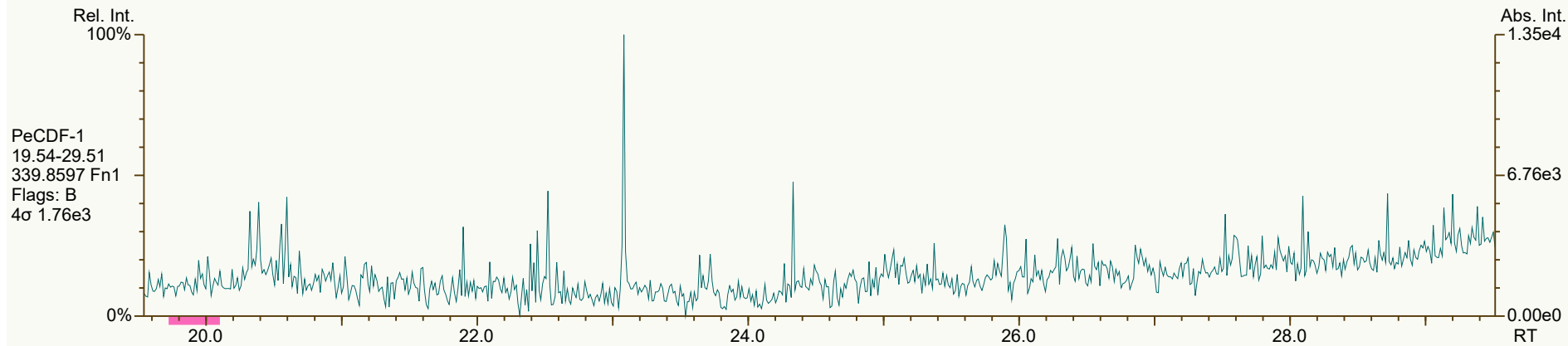
SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

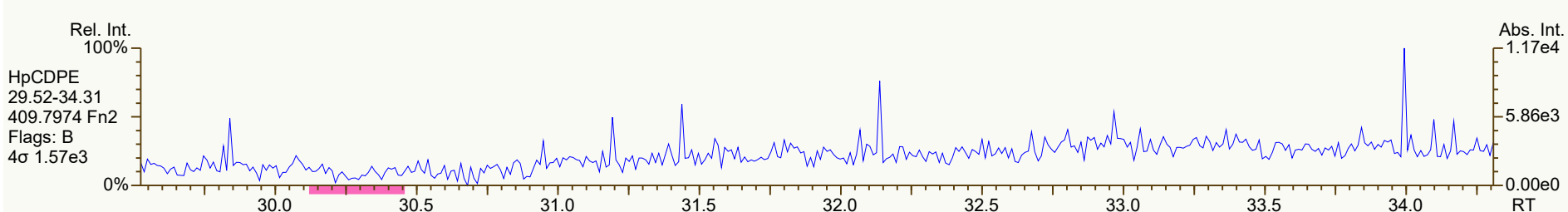
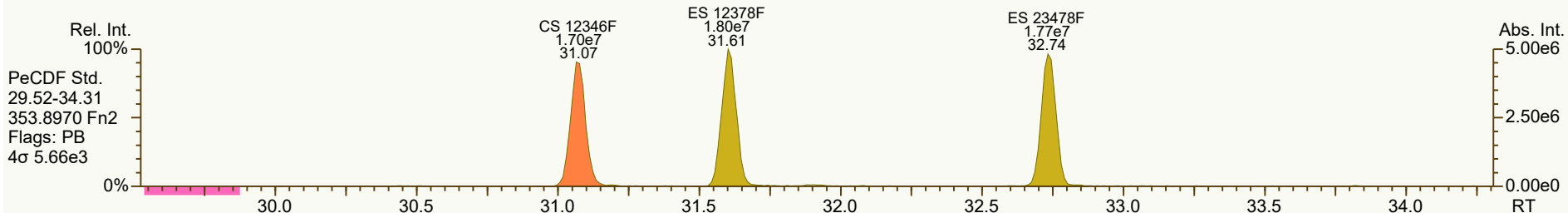
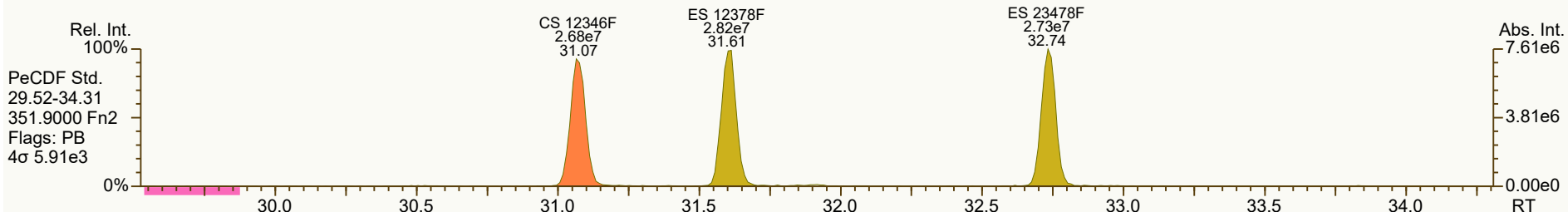
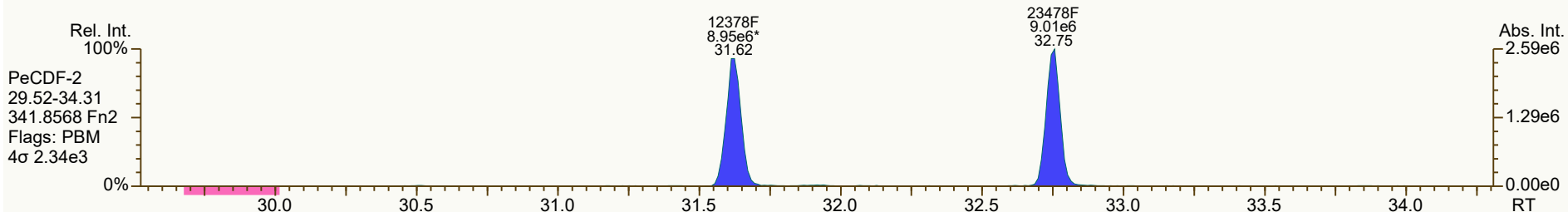
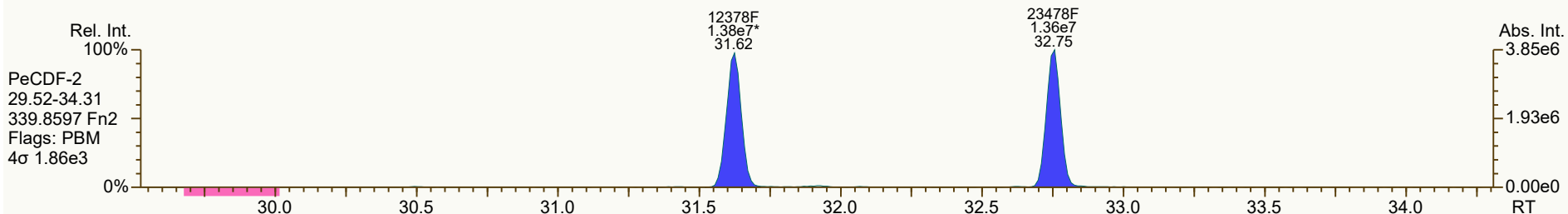
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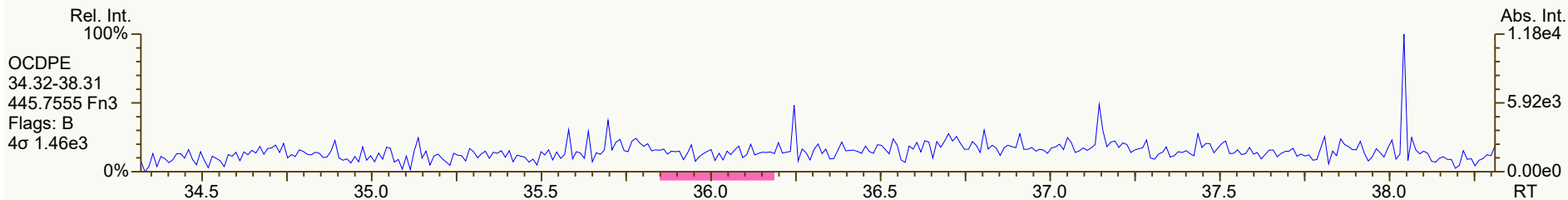
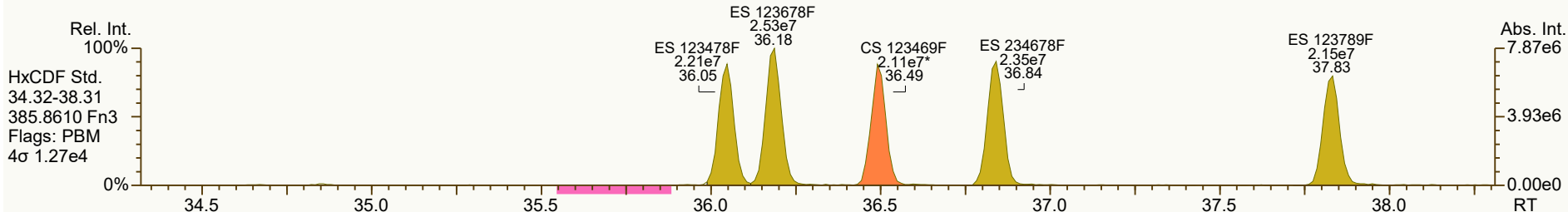
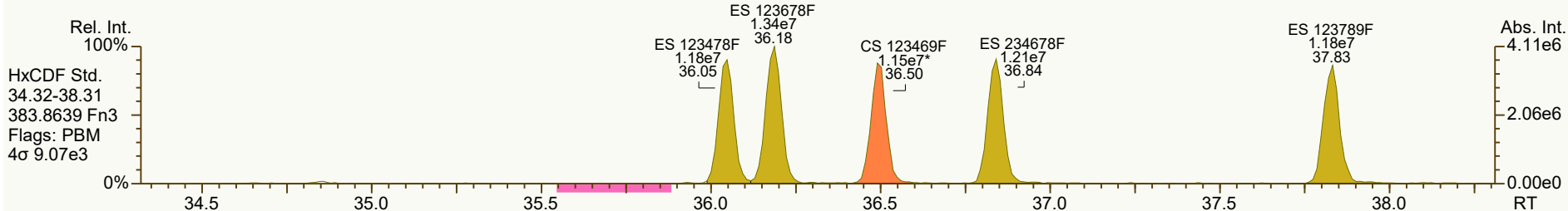
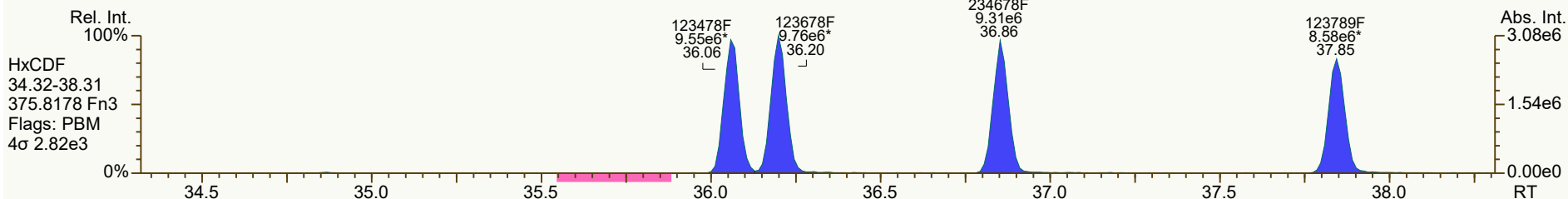
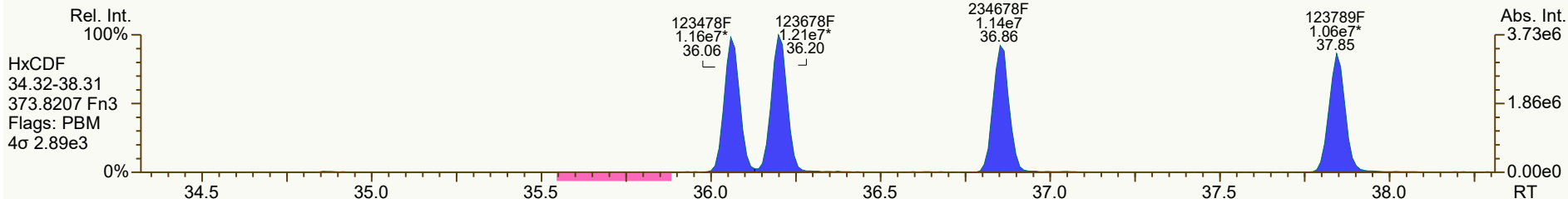
Acq: 10-Nov-2021 13:21:13
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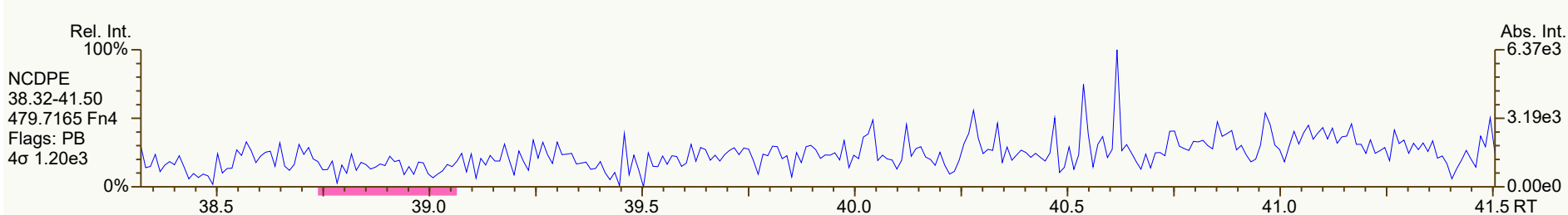
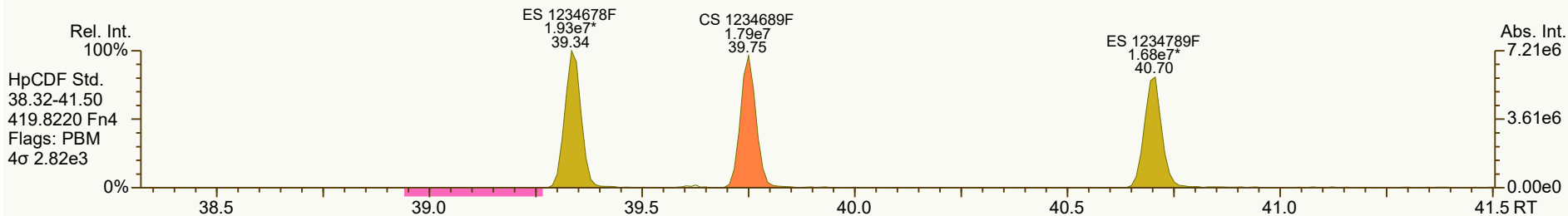
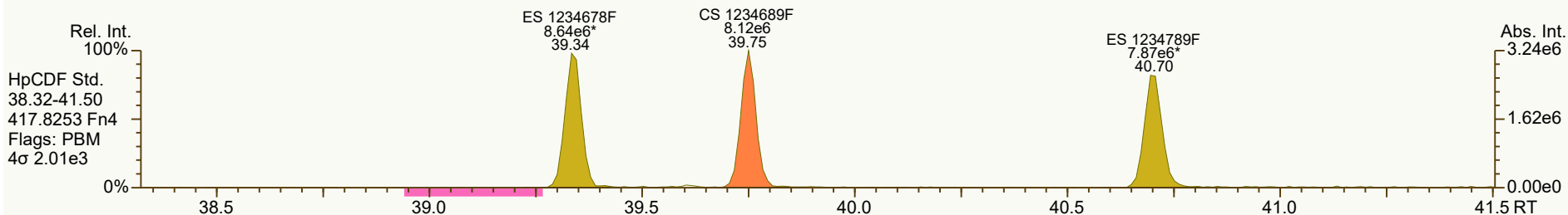
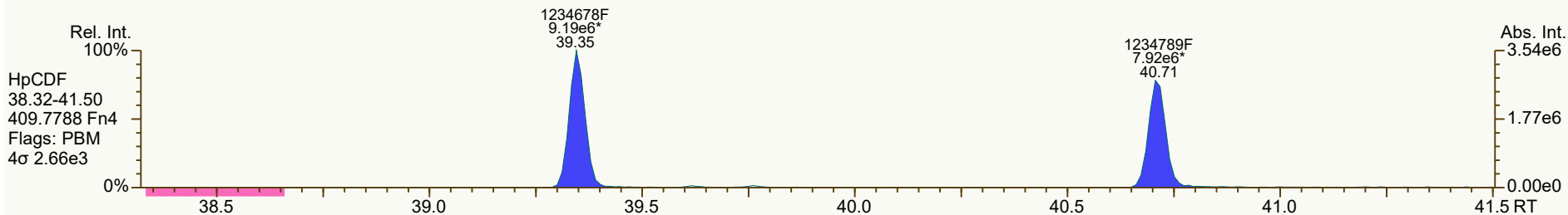
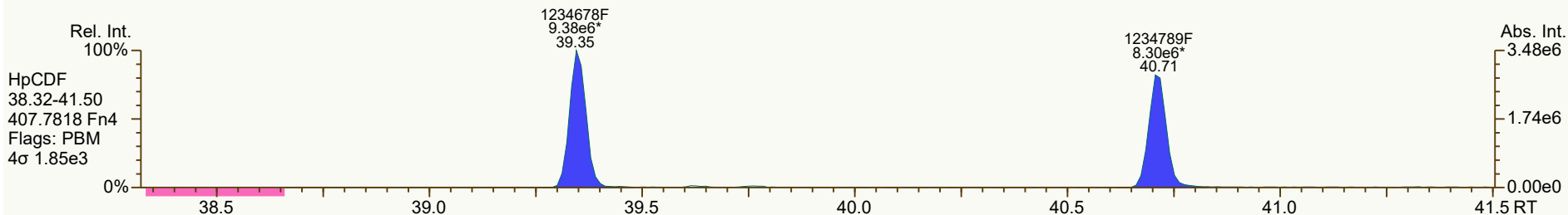


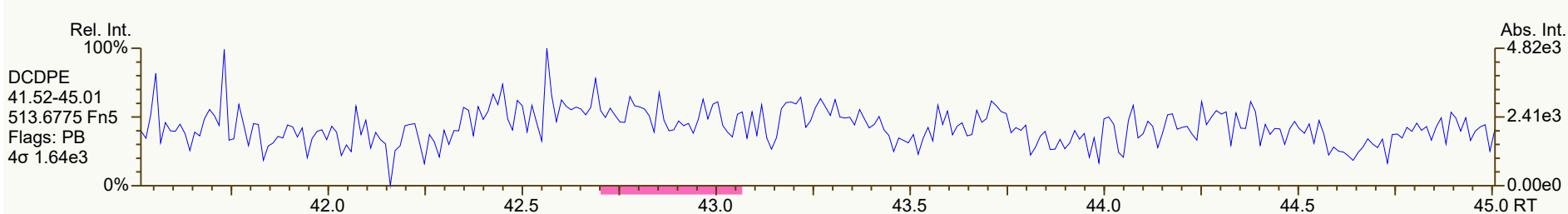
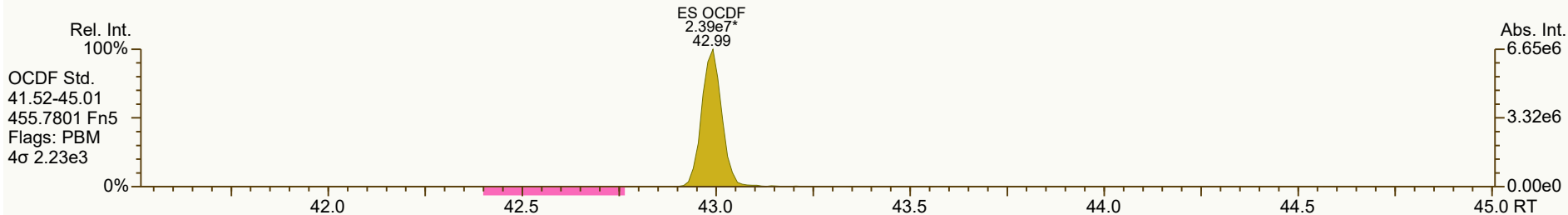
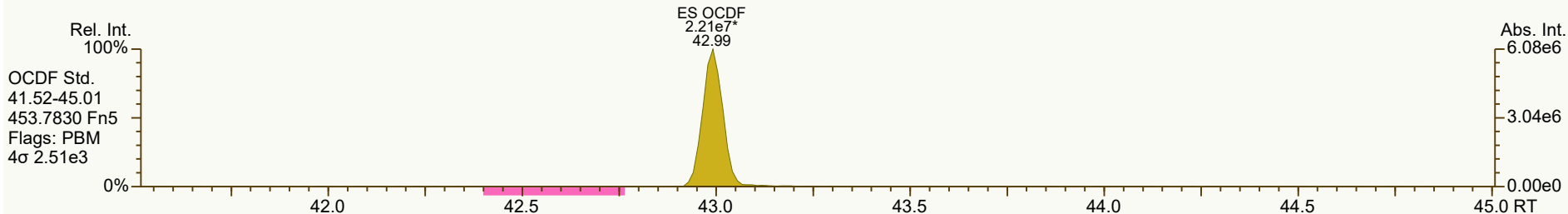
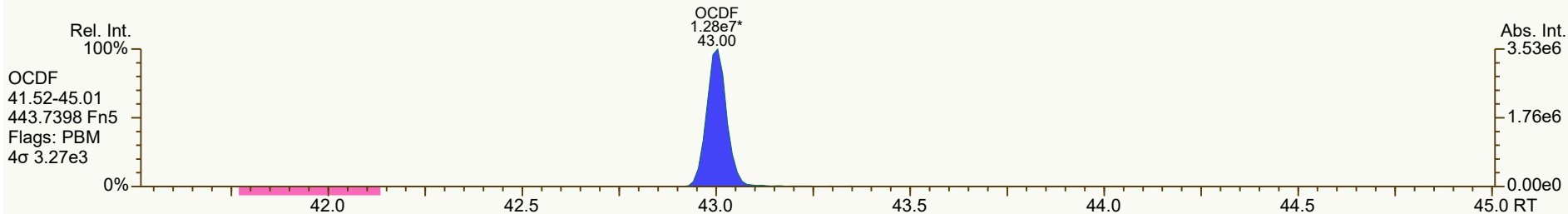
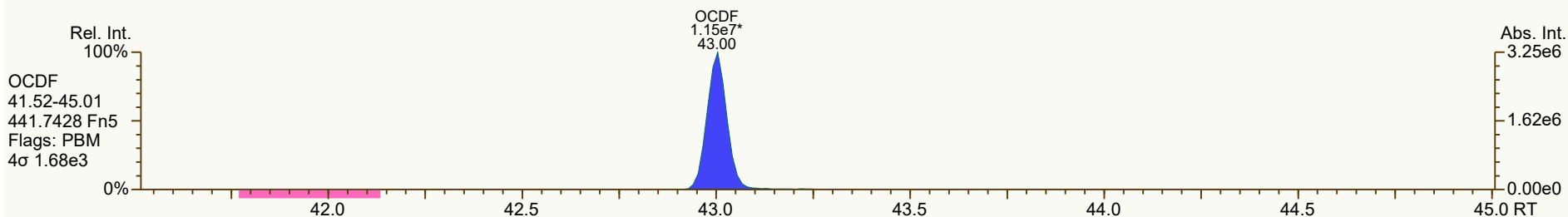




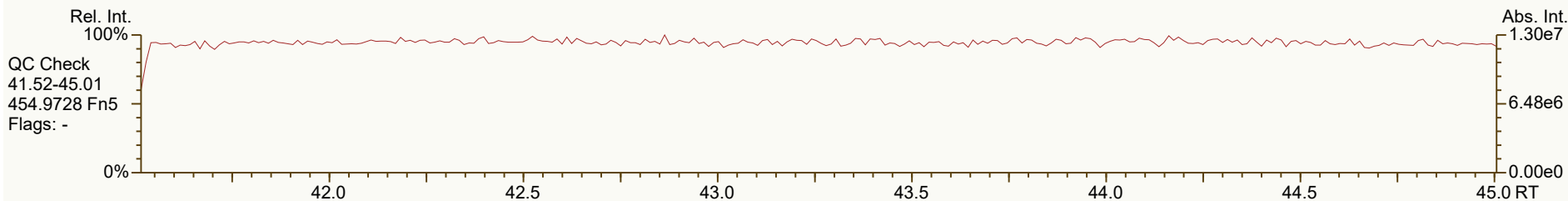
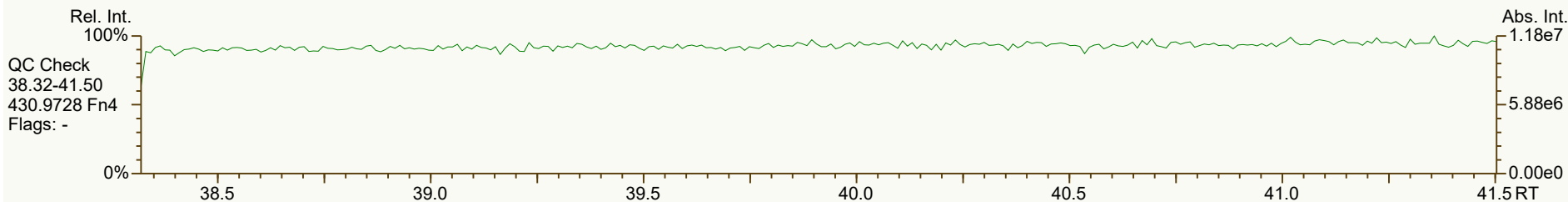
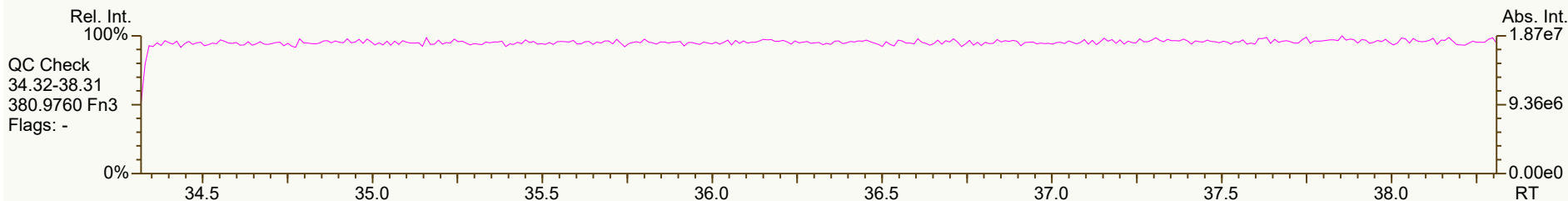
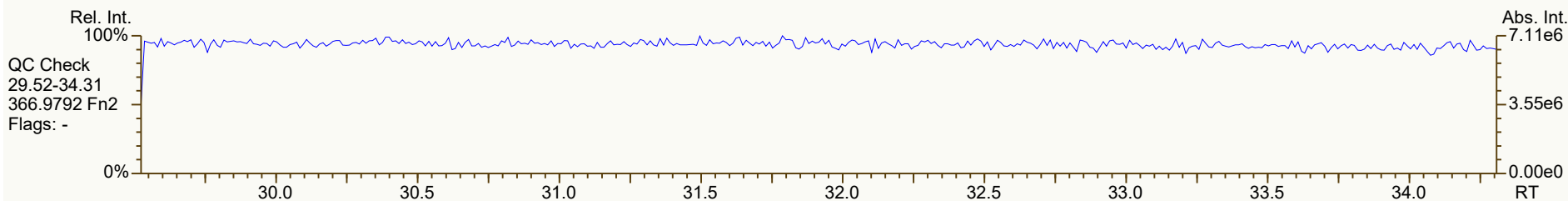
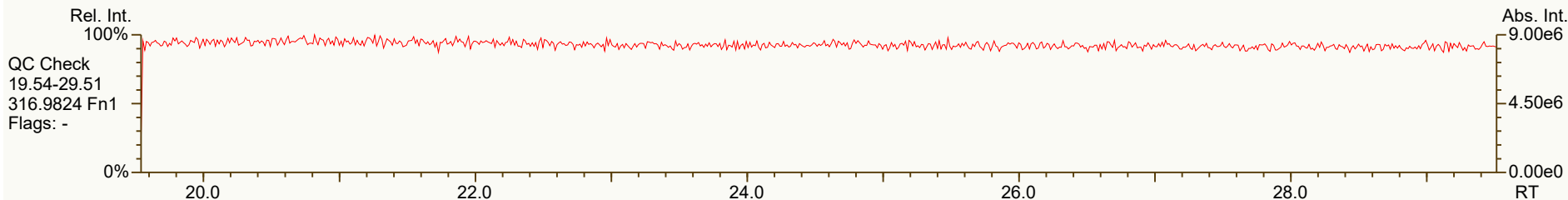


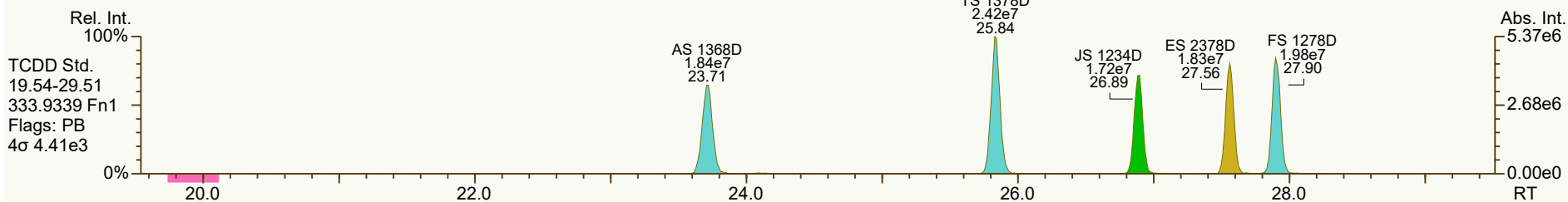
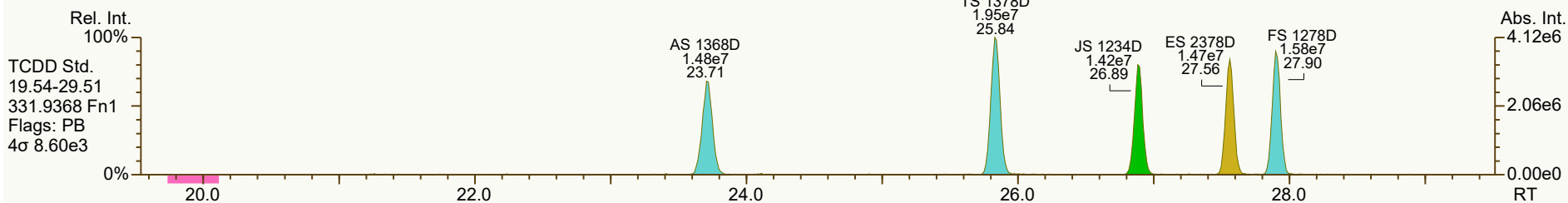
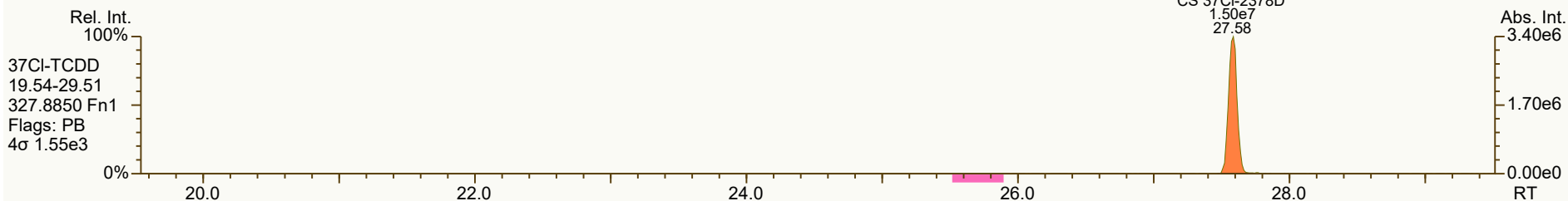
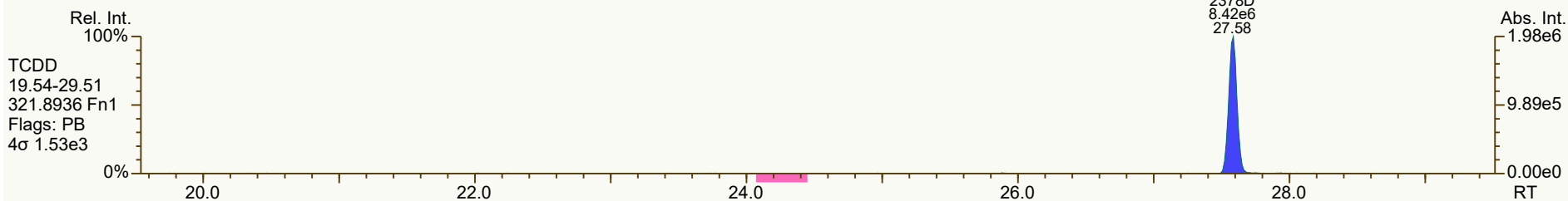
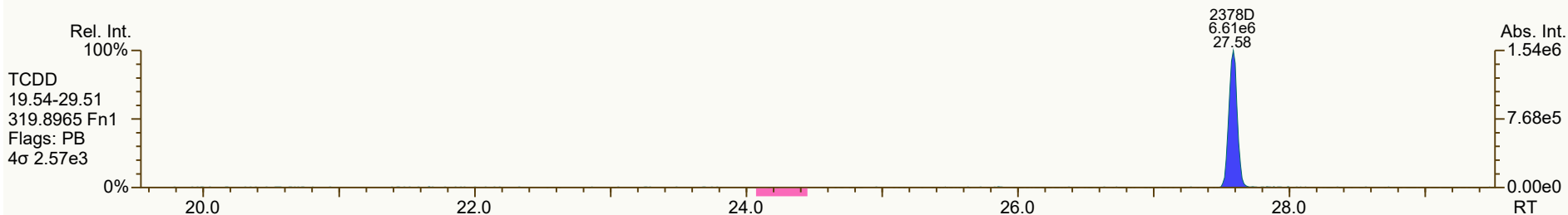


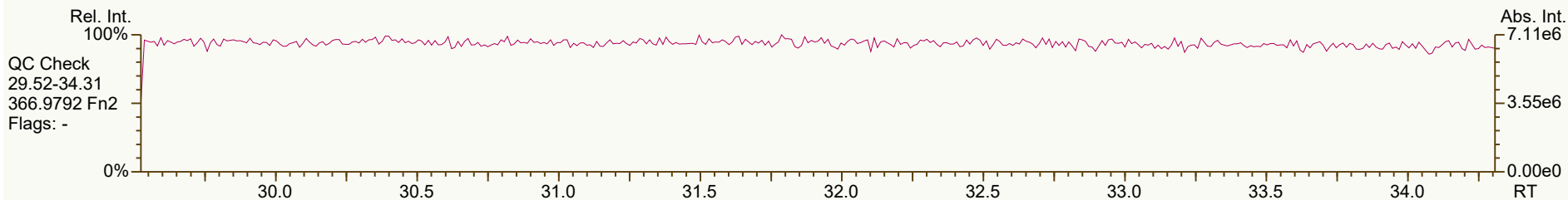
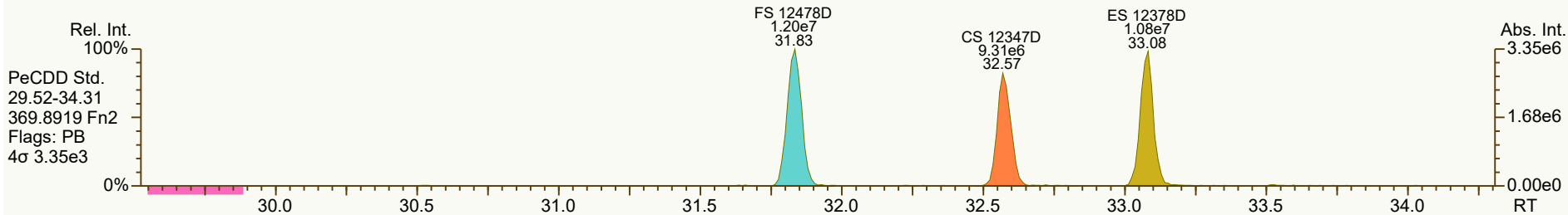
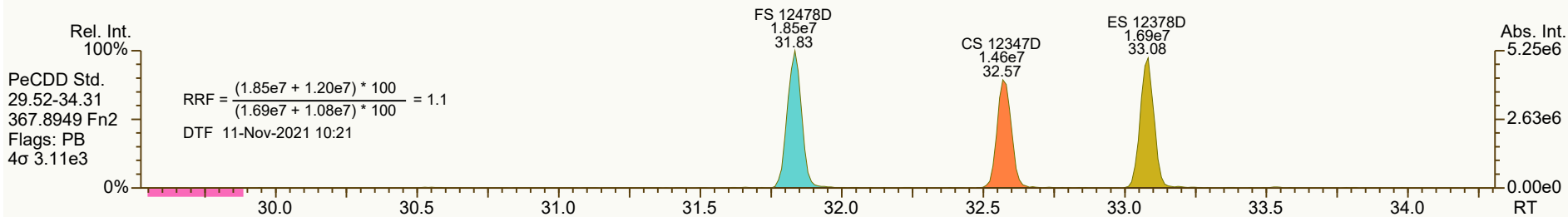
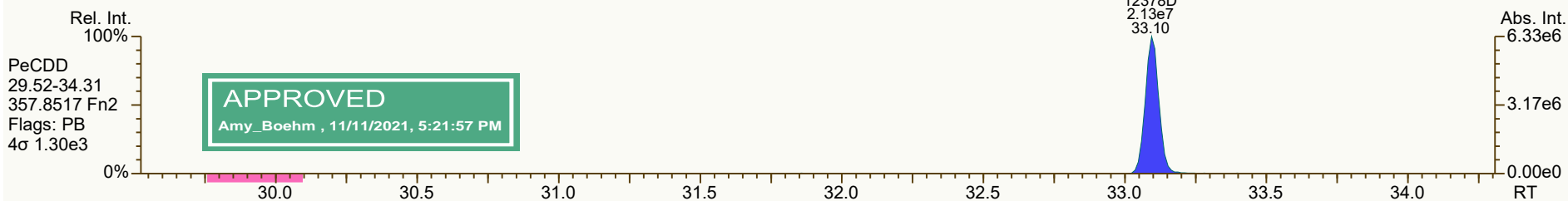
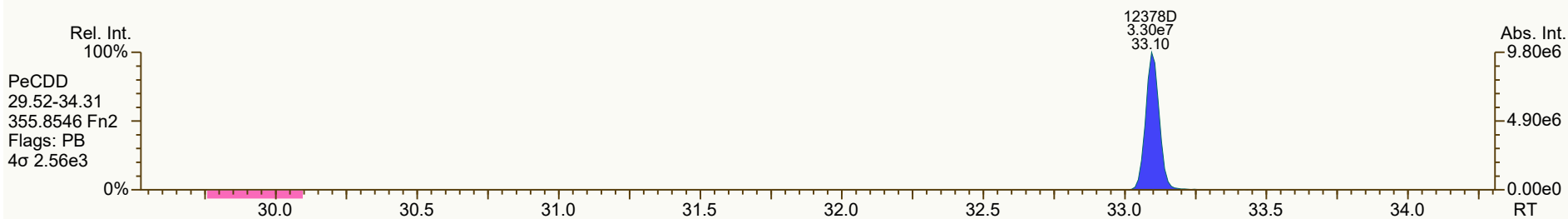


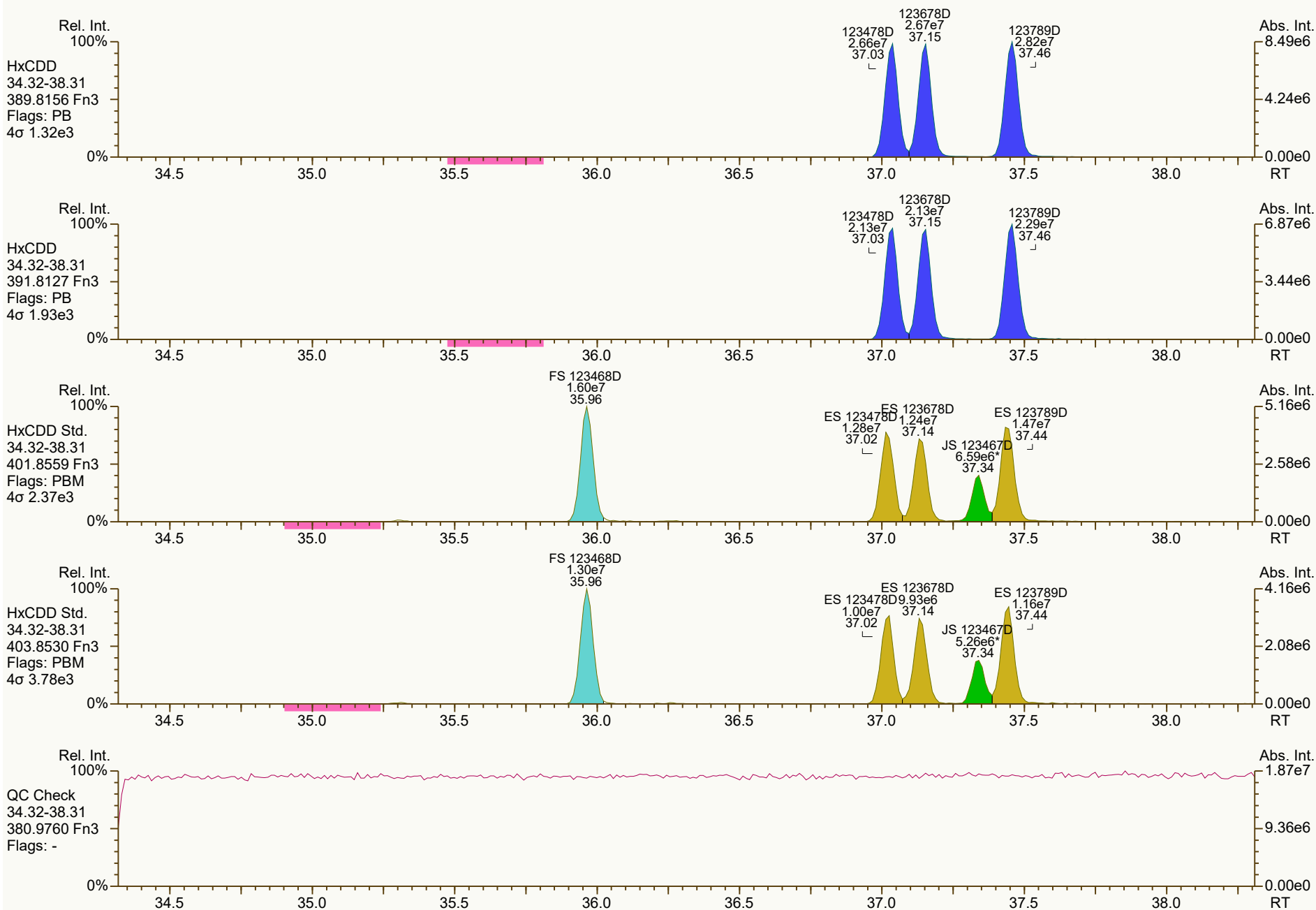


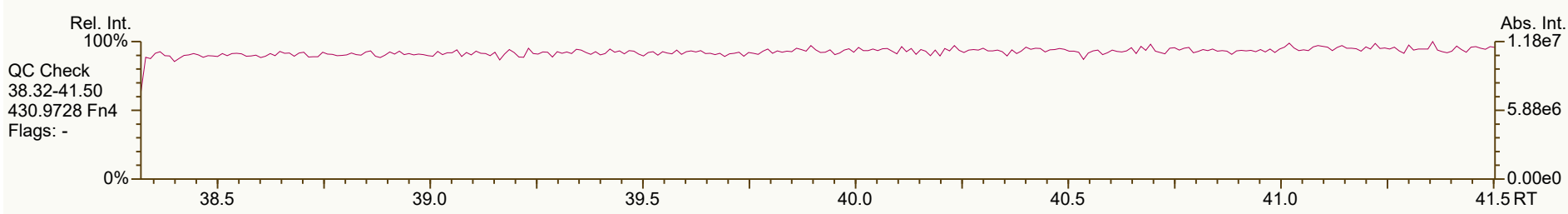
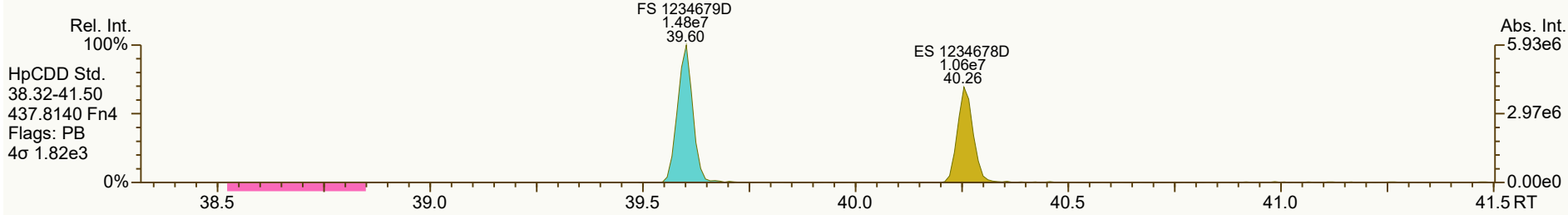
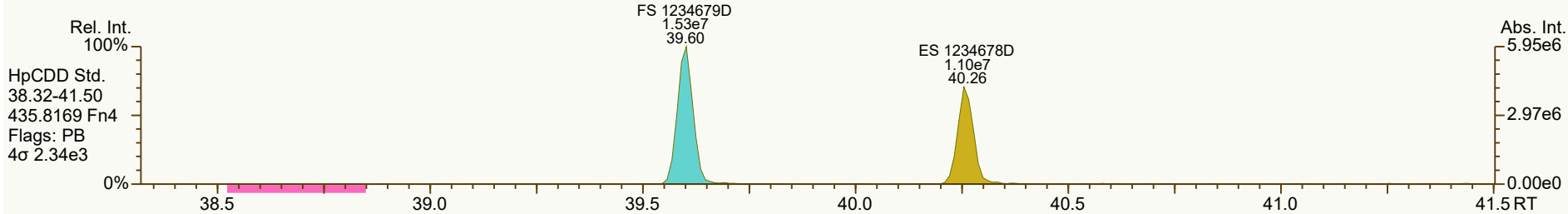
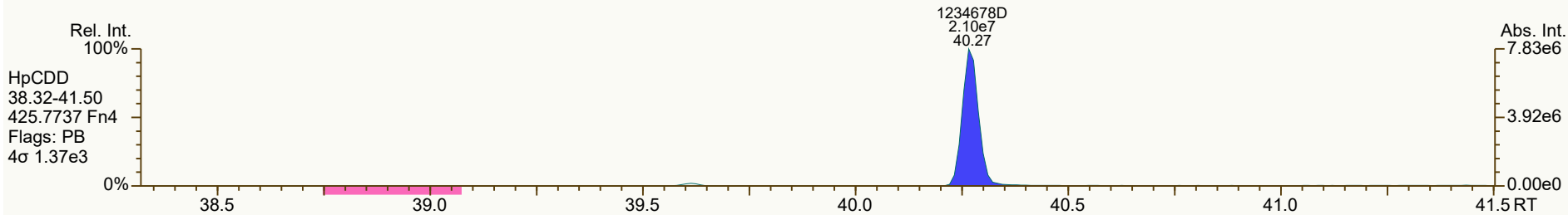
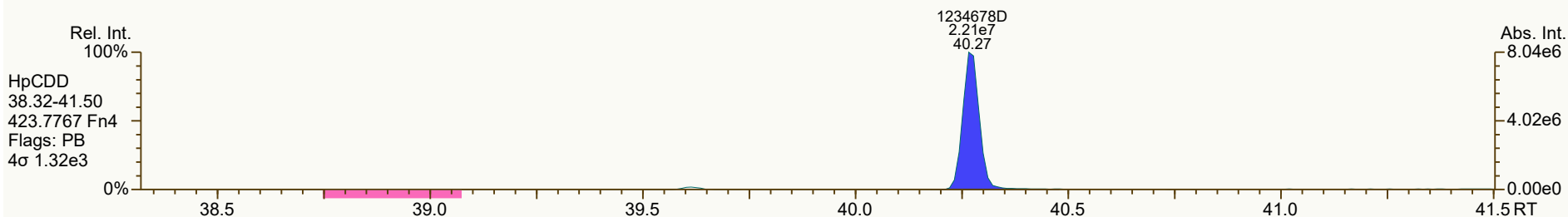
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF			Checkcode: 855-576-PGM		
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C08		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

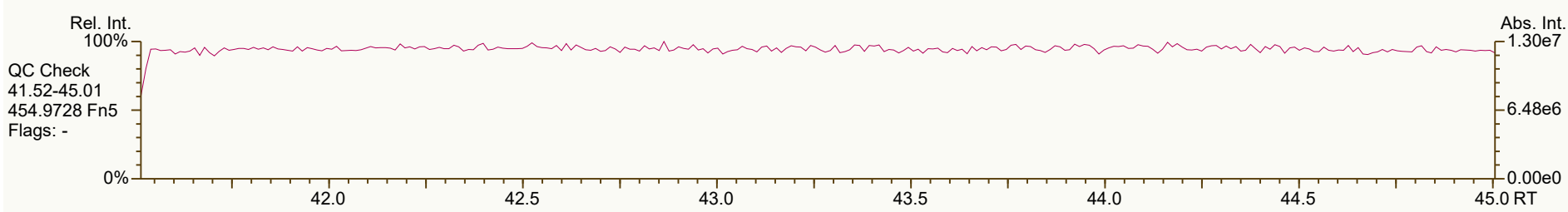
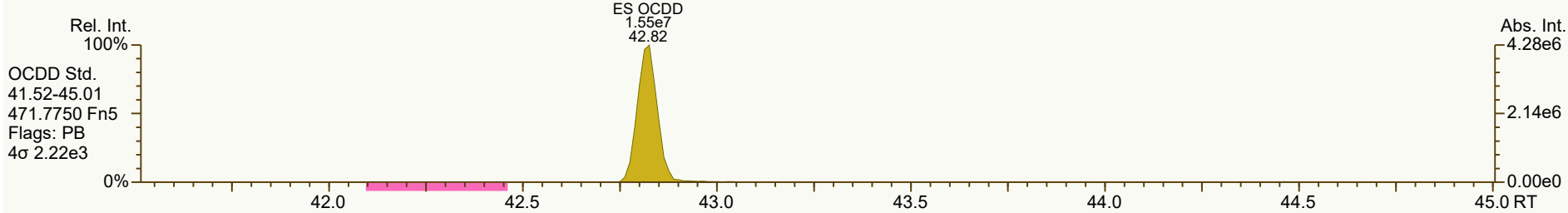
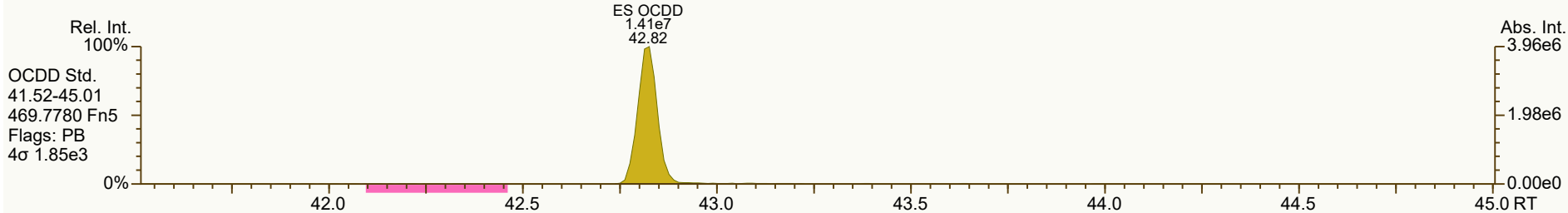
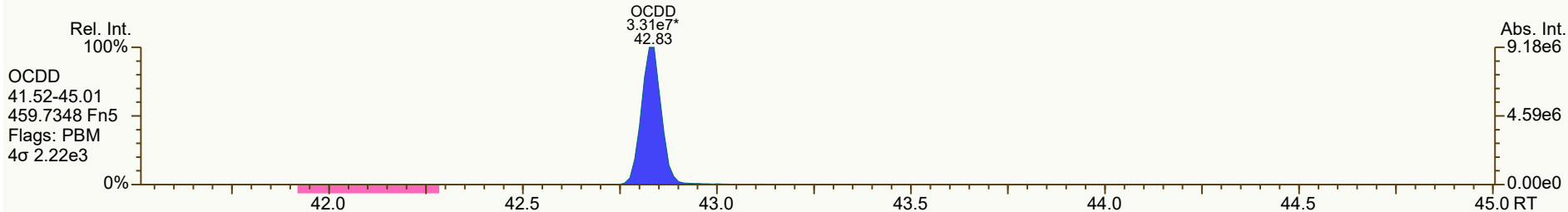
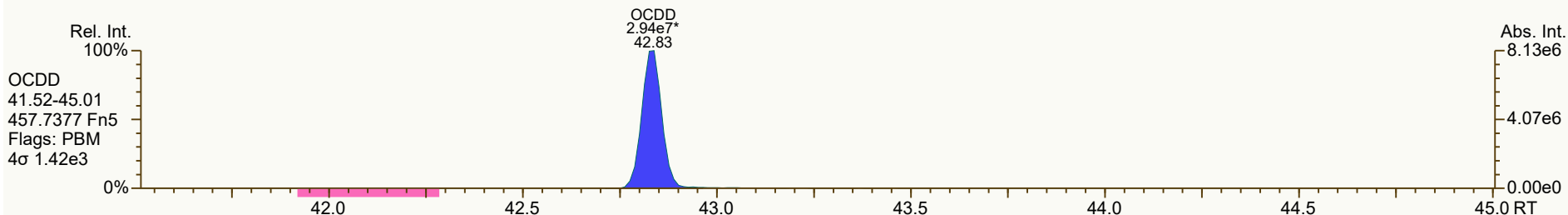


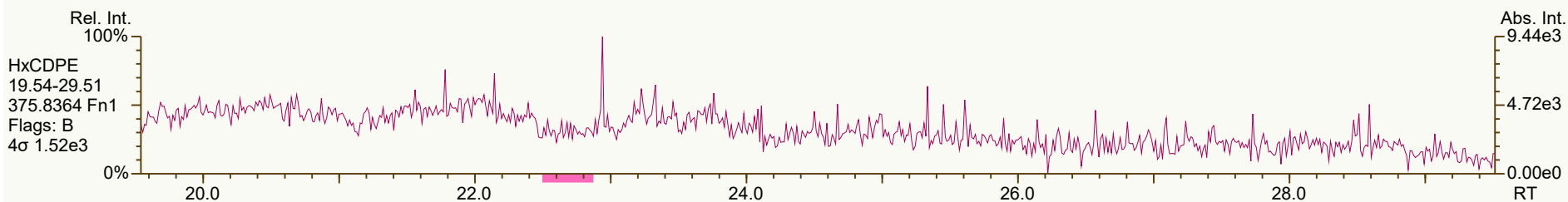
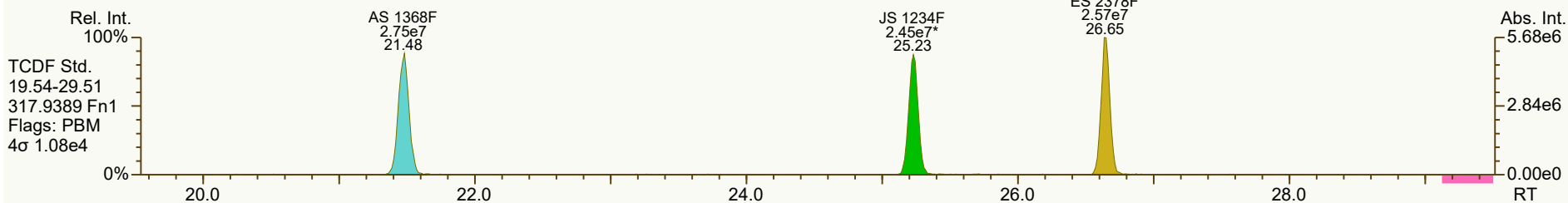
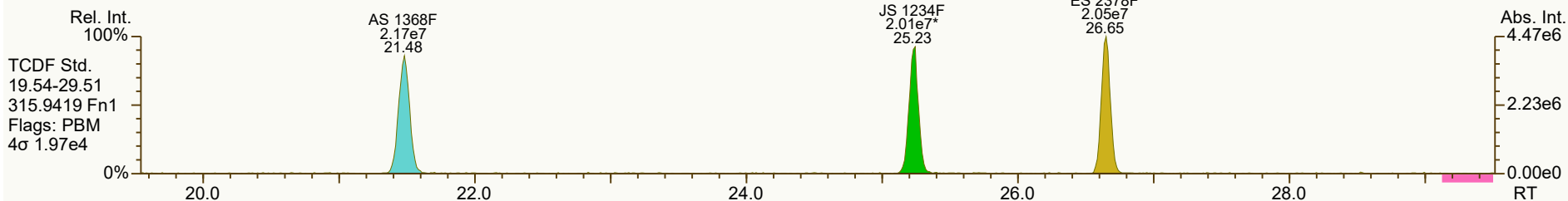
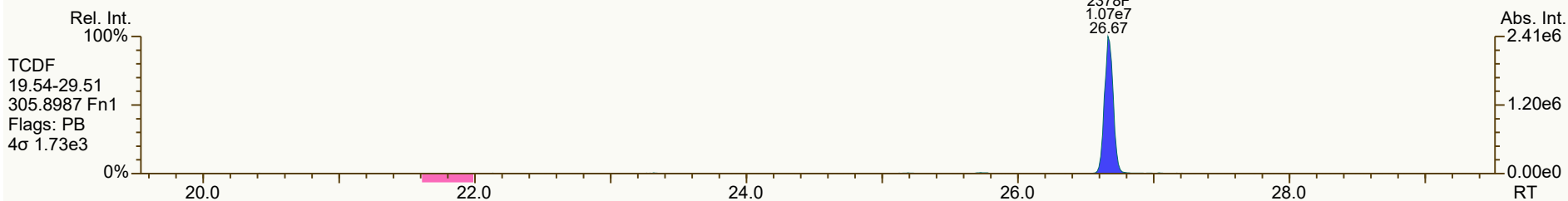
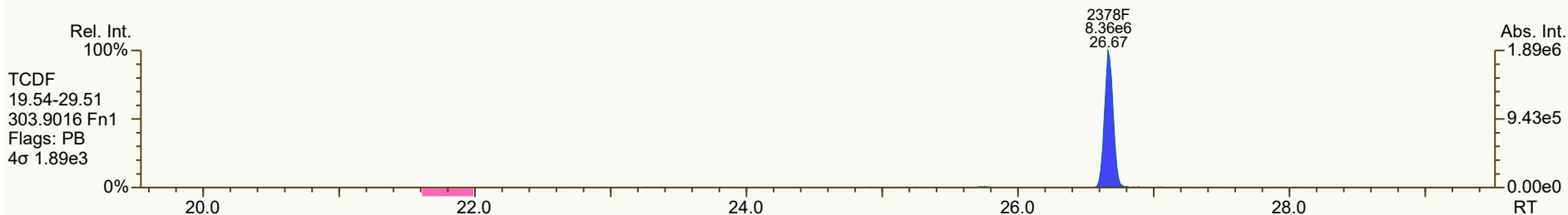


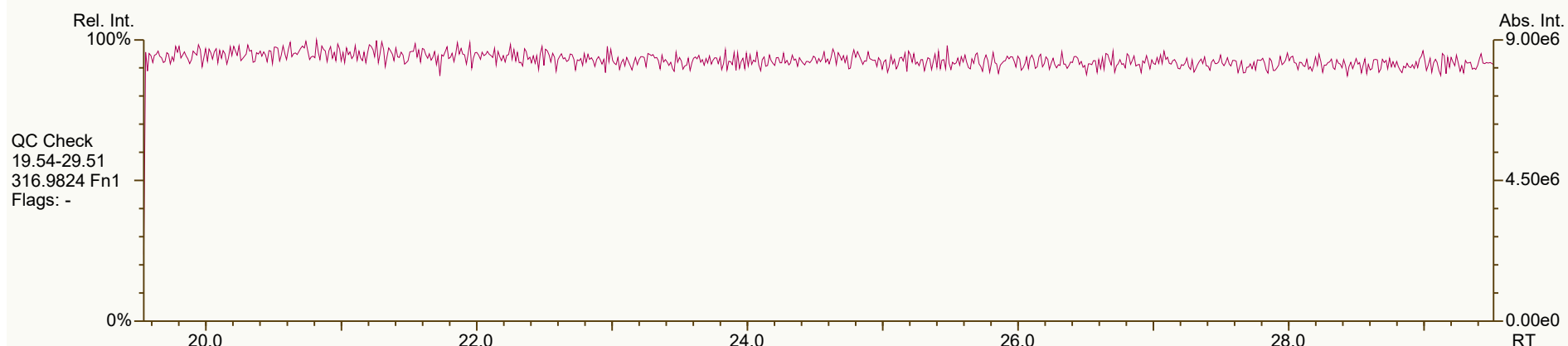
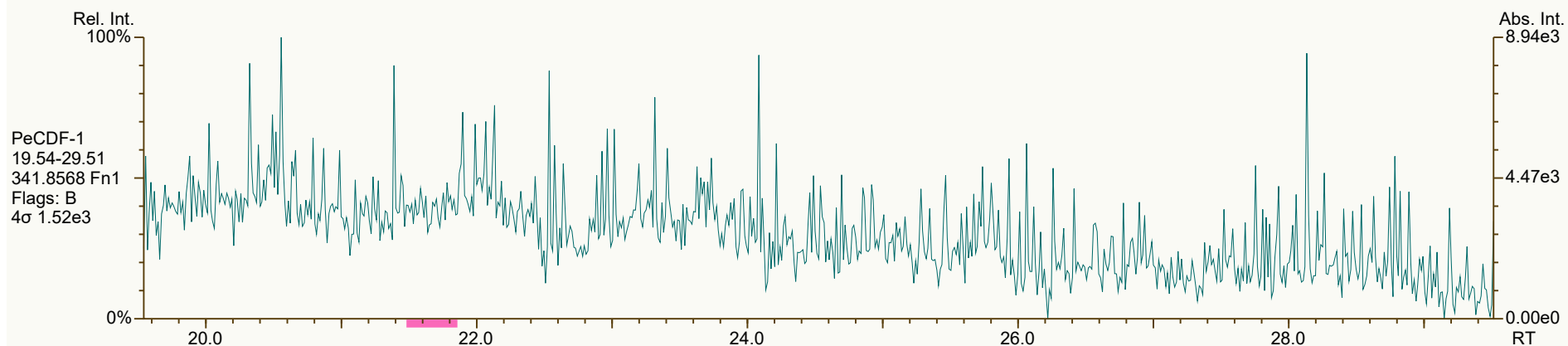
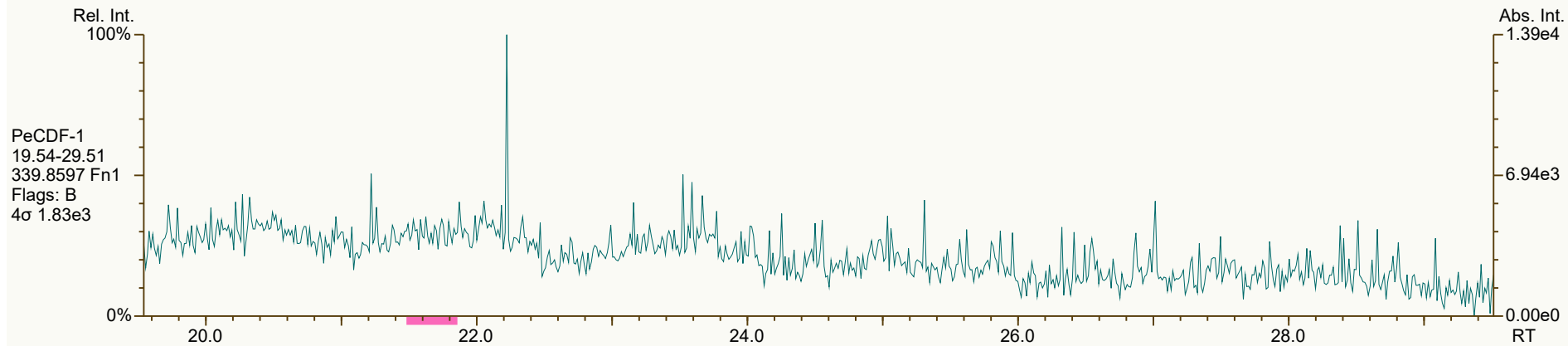








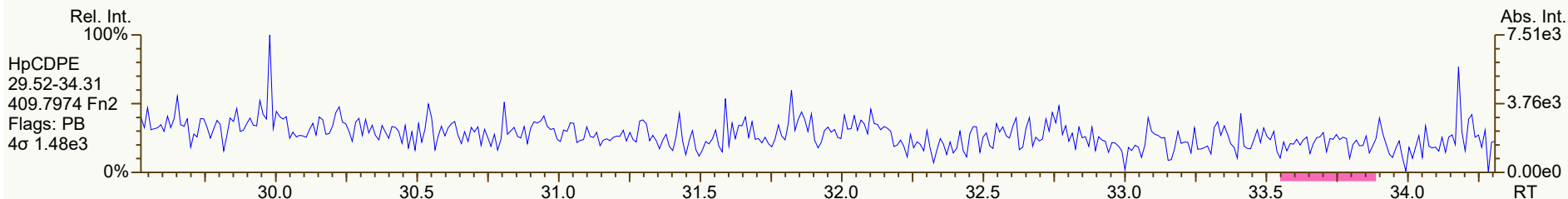
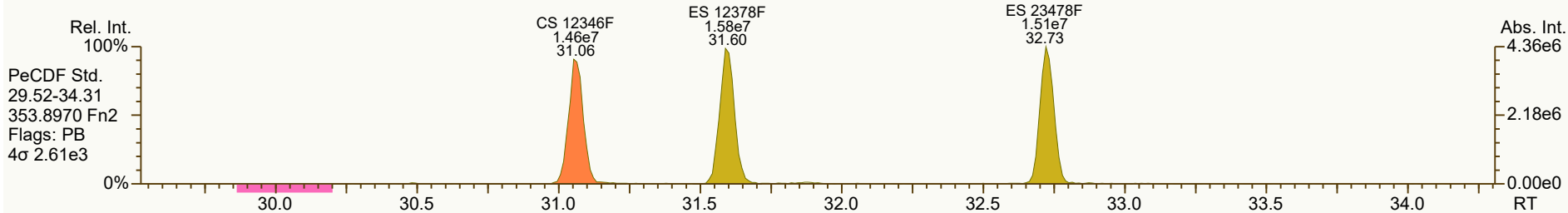
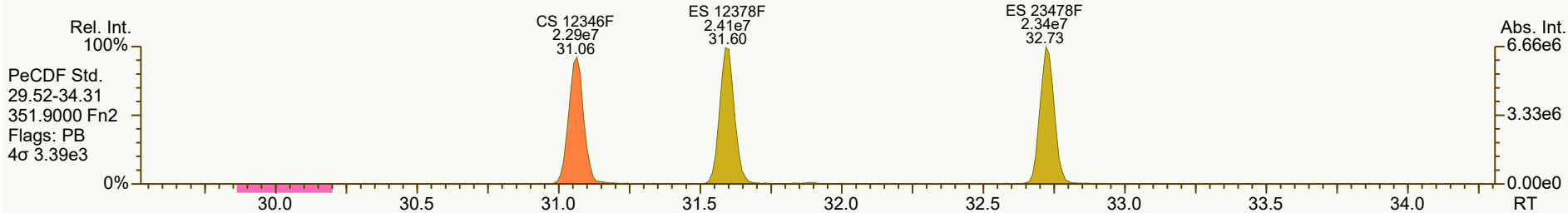
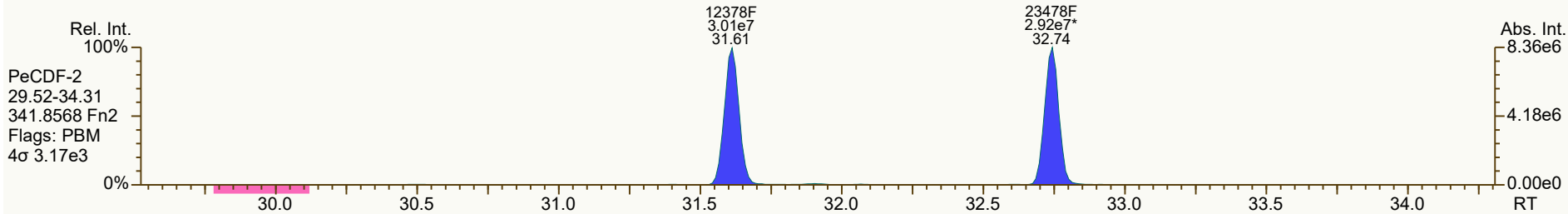
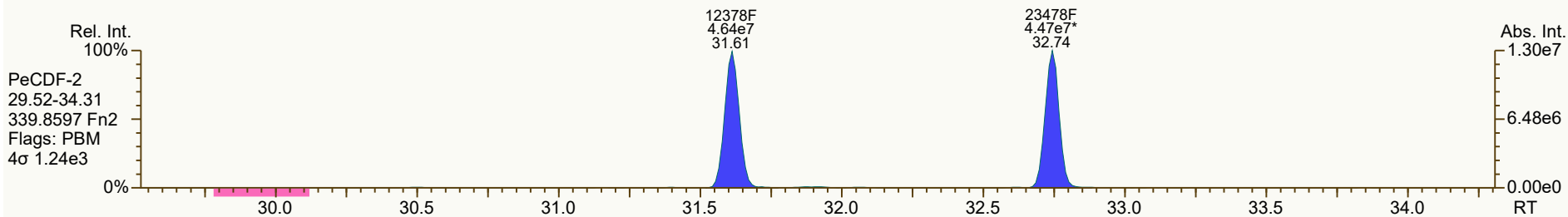


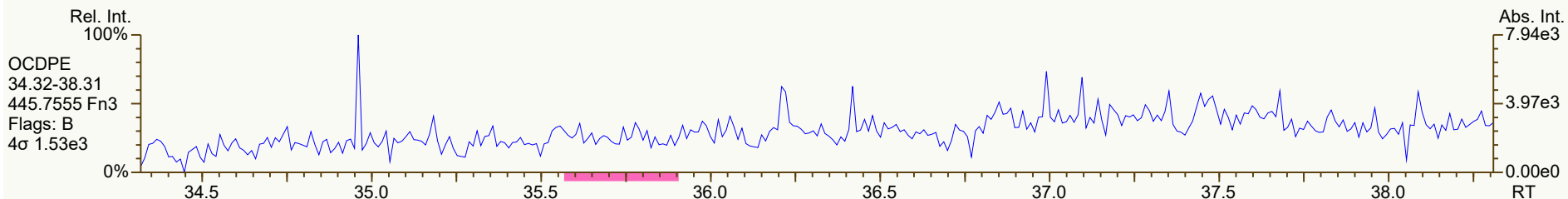
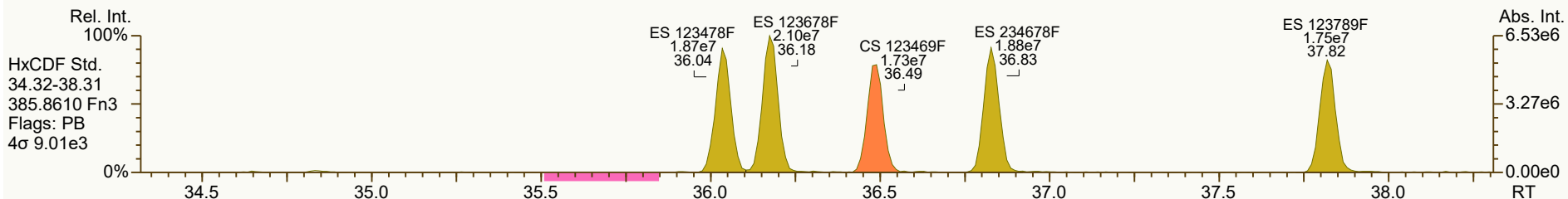
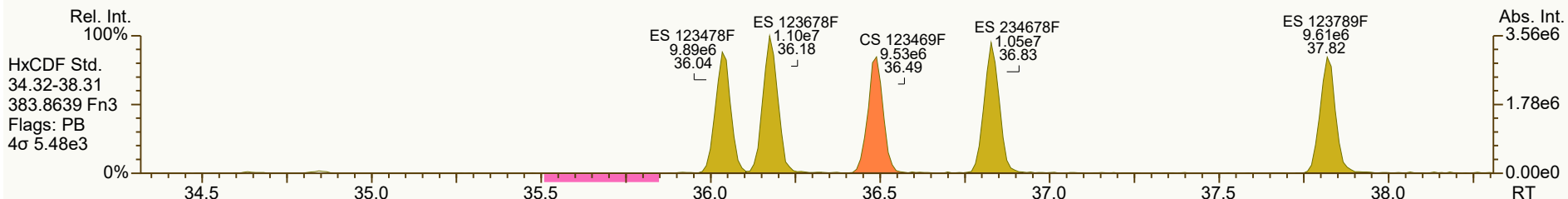
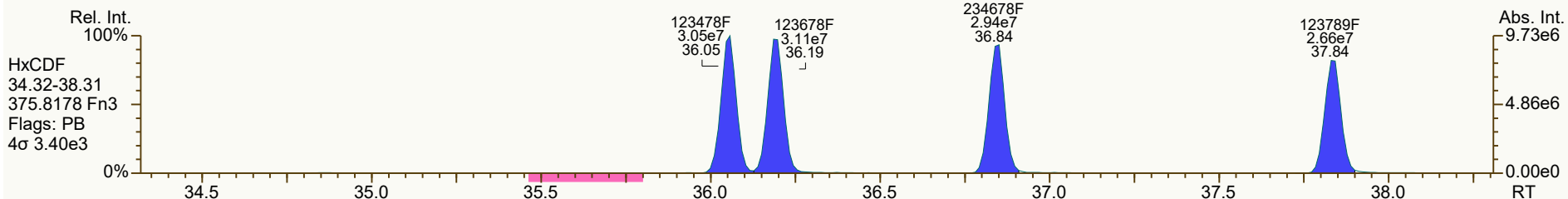
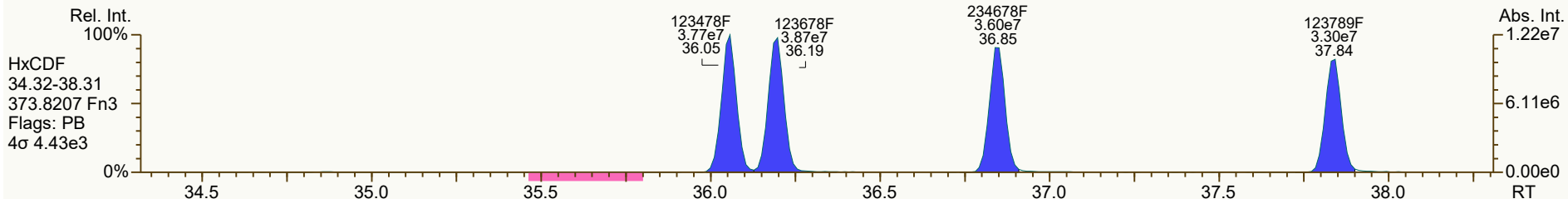


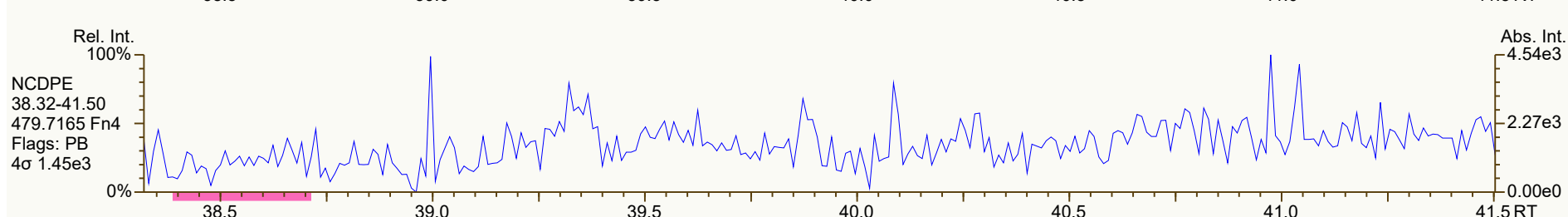
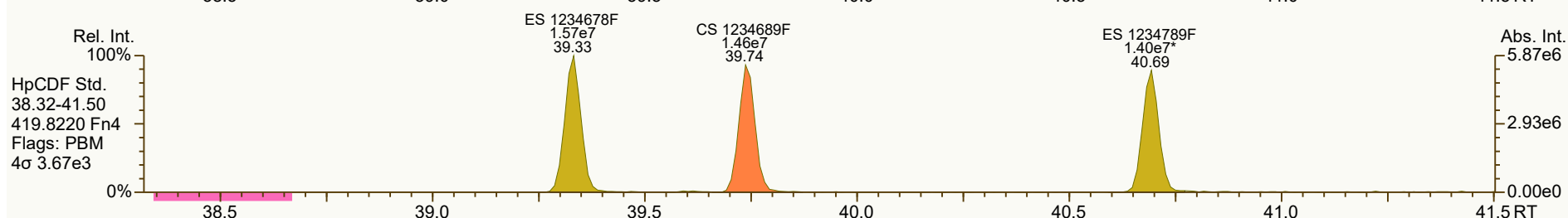
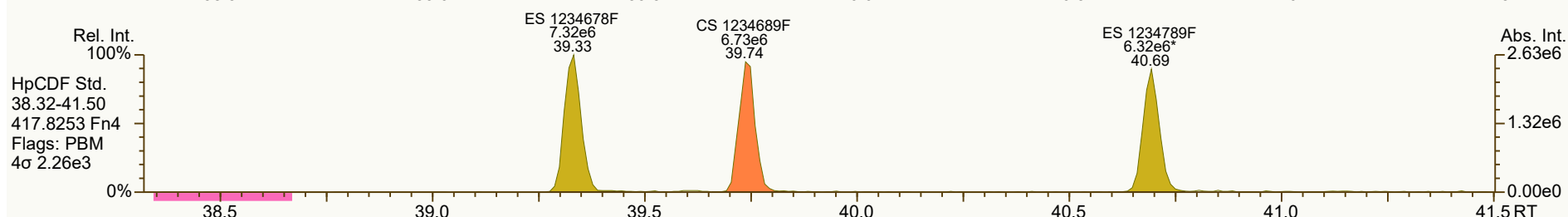
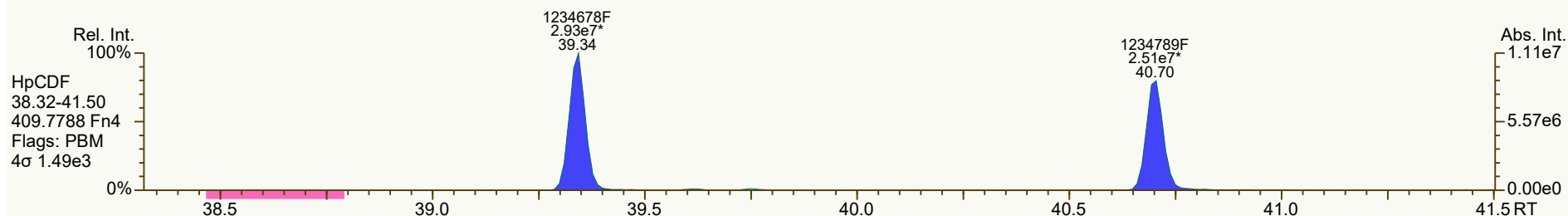
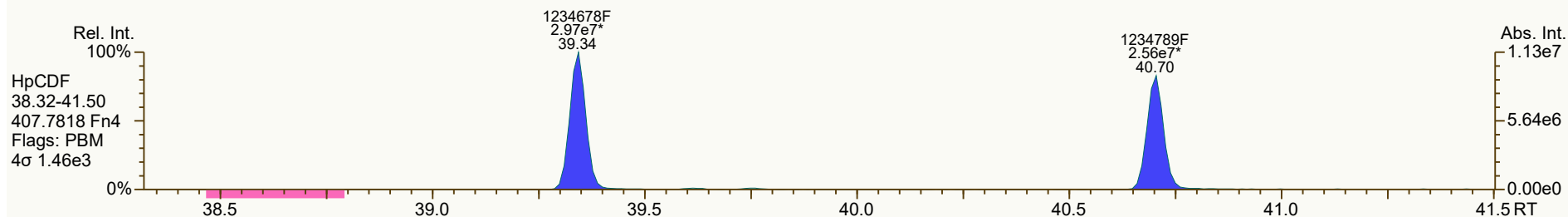
SGS ID: CS4_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

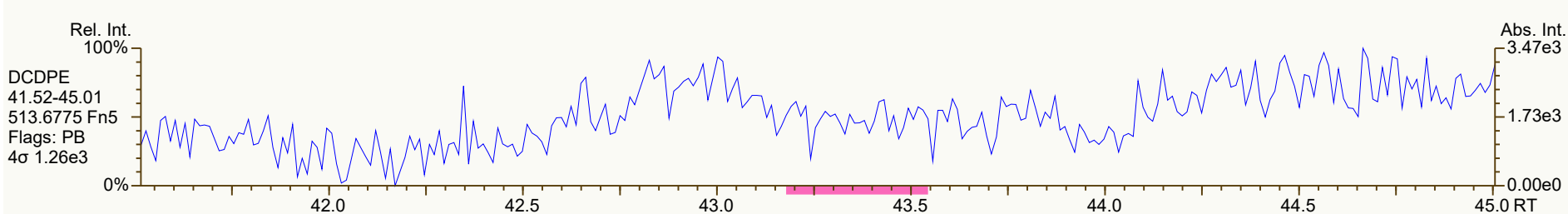
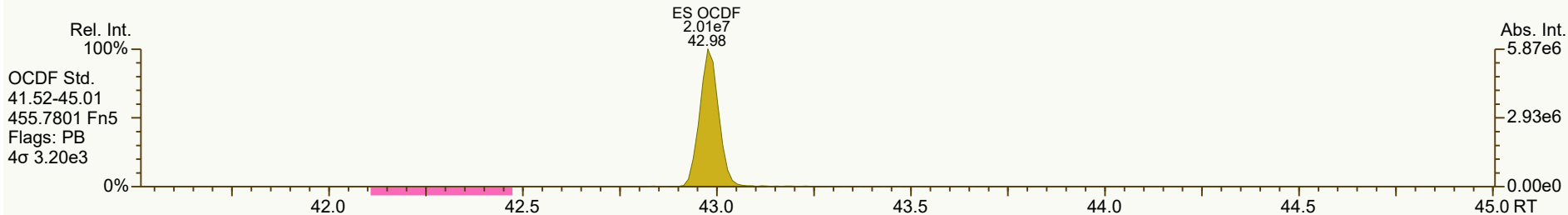
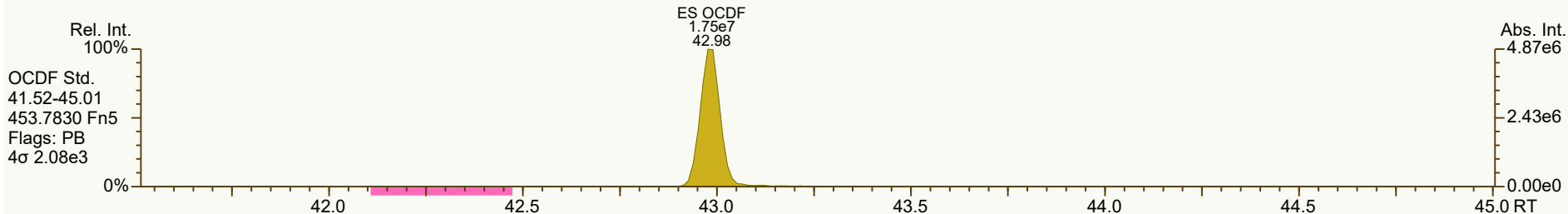
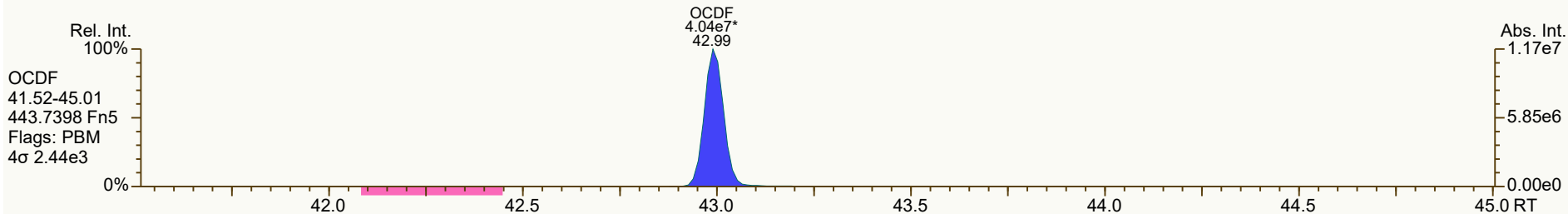
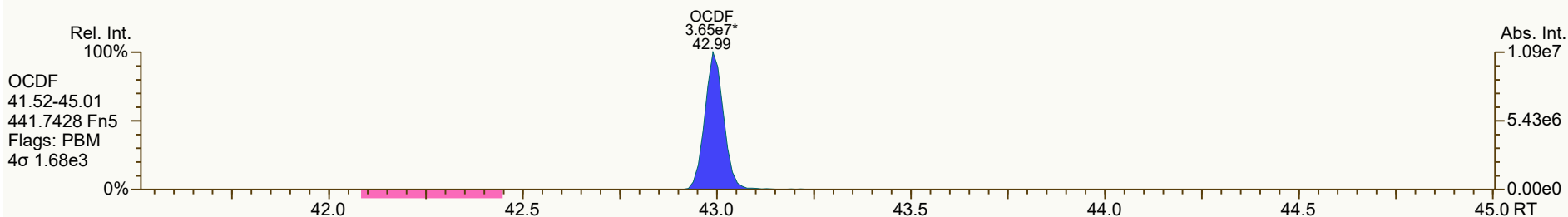
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Acq: 10-Nov-2021 14:07:32
User: DTF Datafile: 211110C08



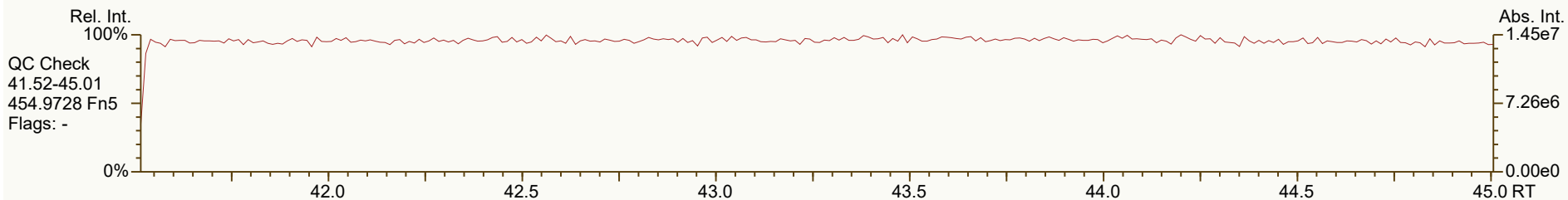
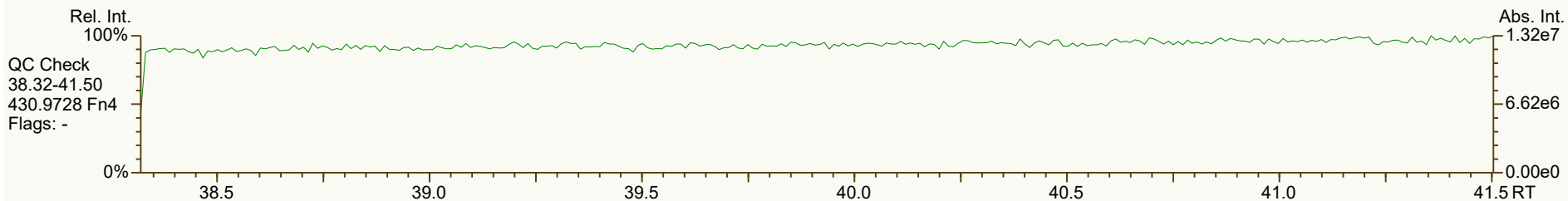
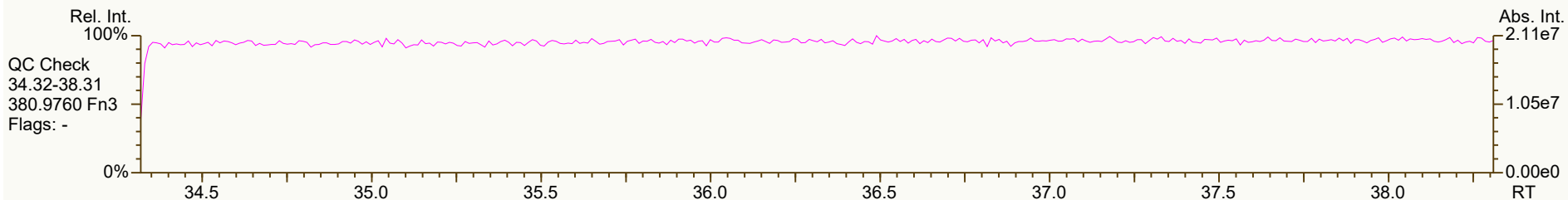
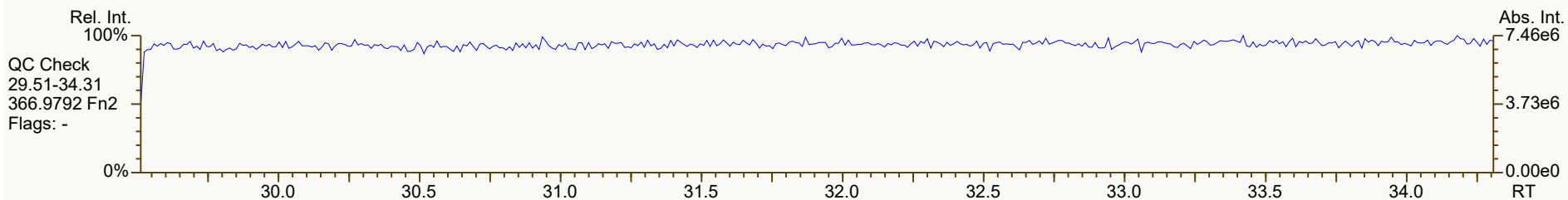
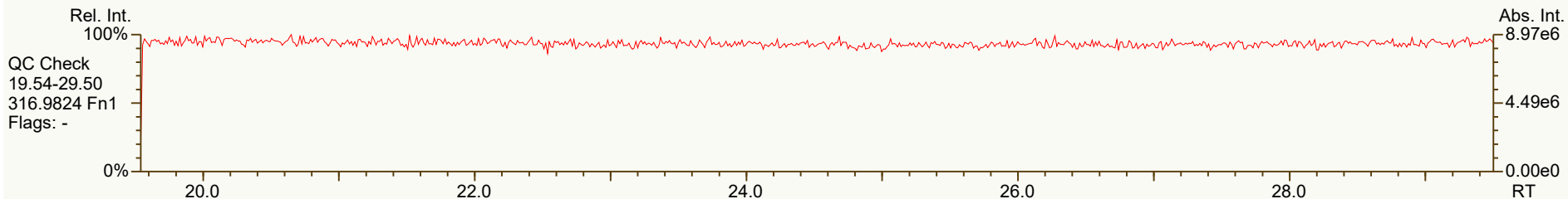


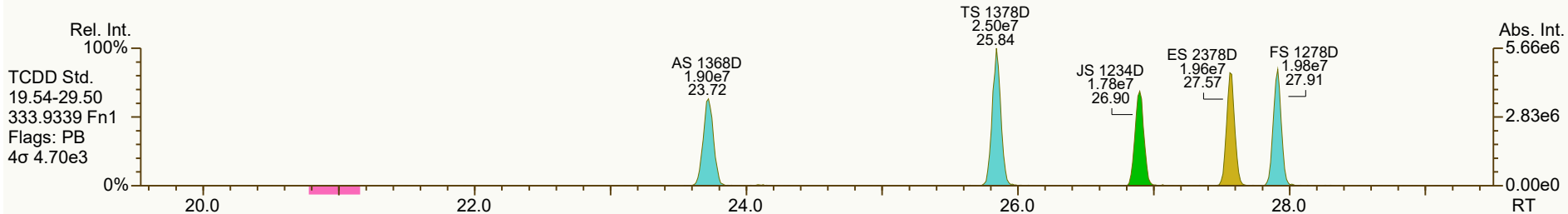
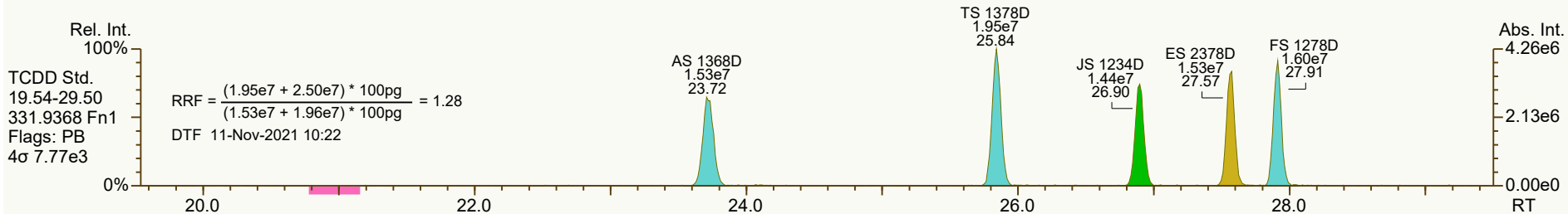
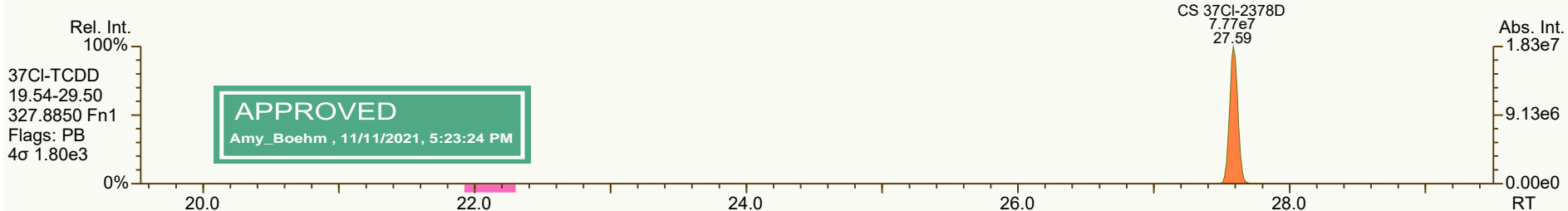
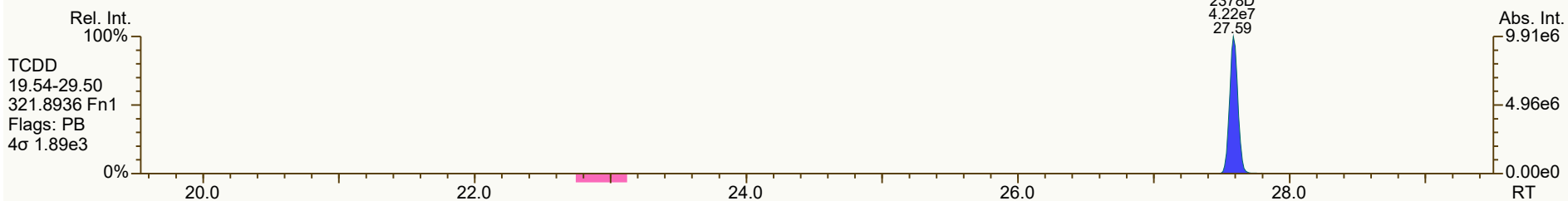
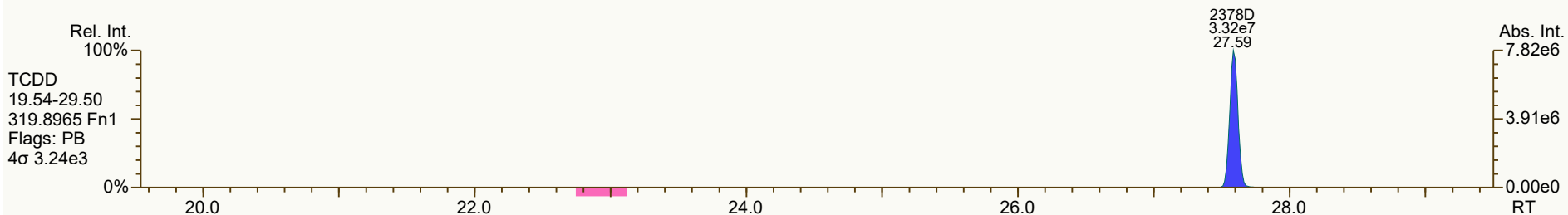


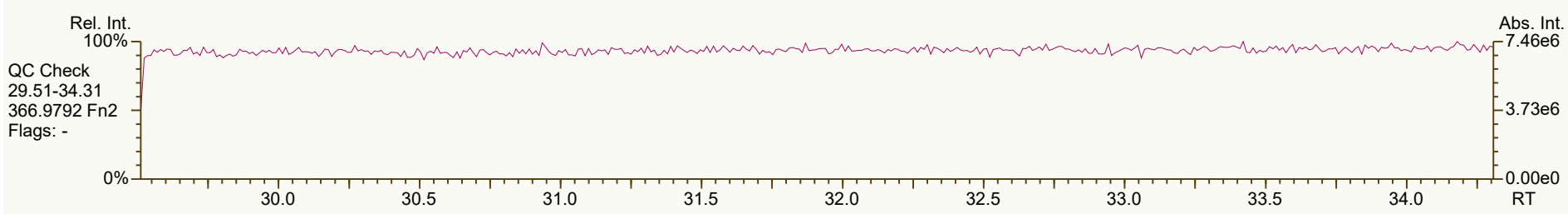
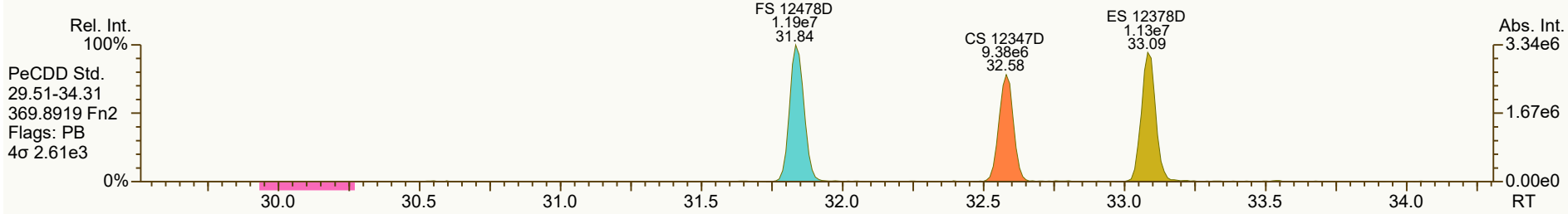
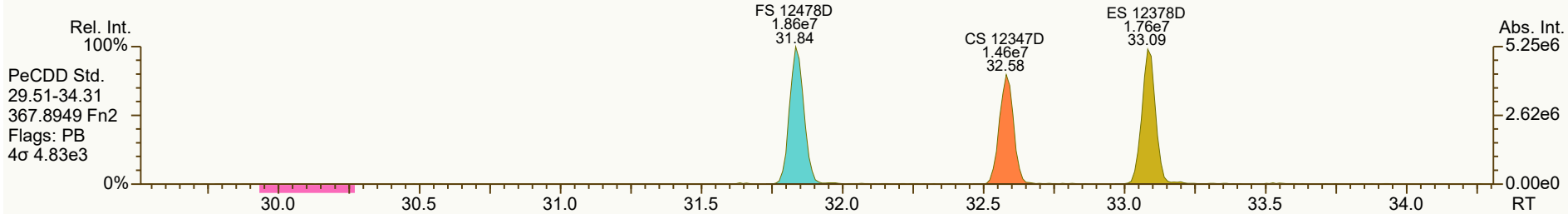
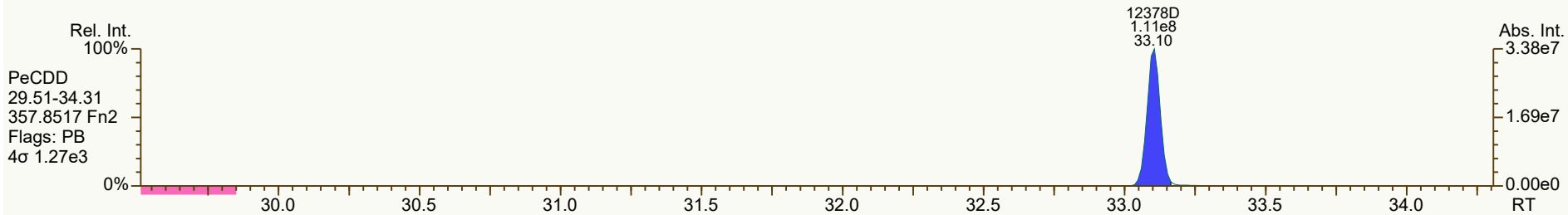
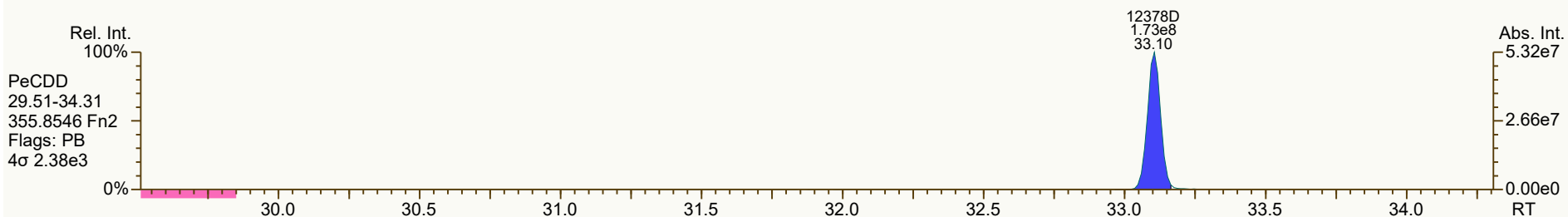


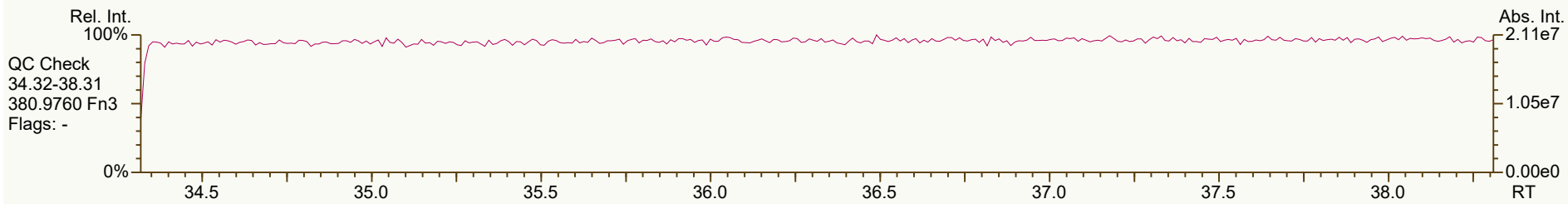
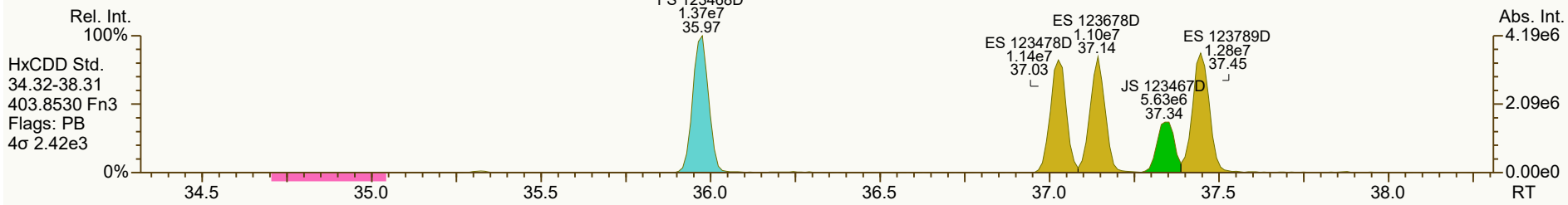
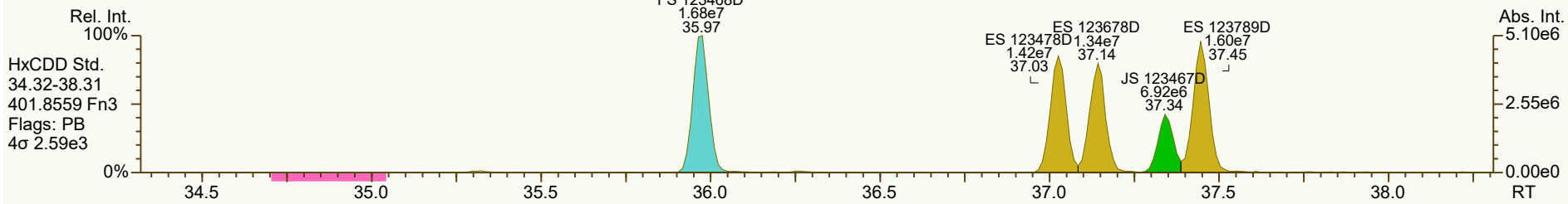
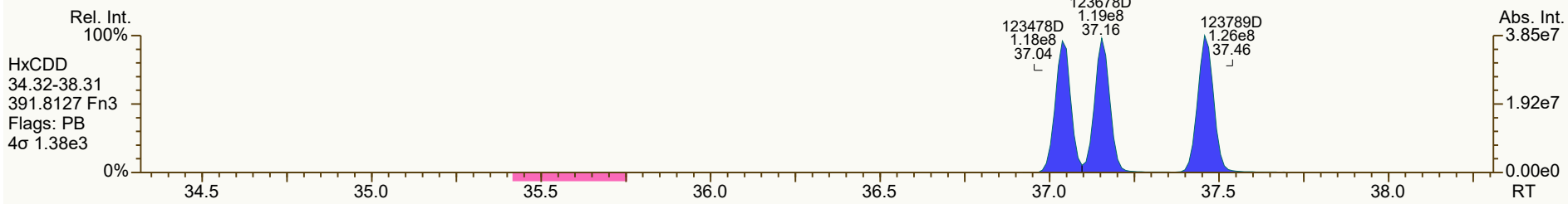
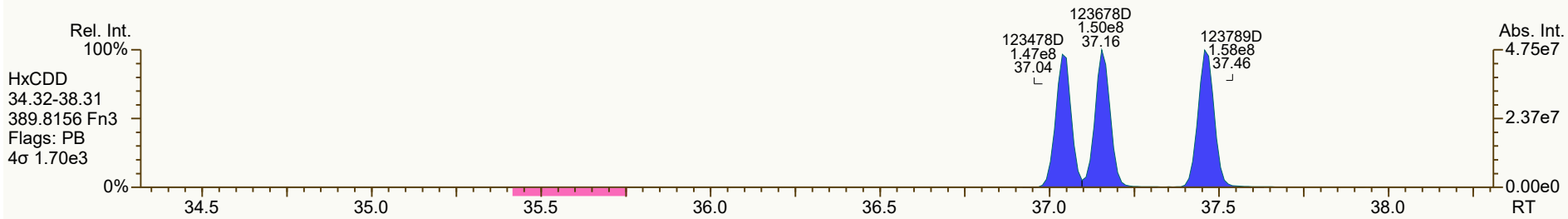
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF			Checkcode: 573-489-BMZ		
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C09		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

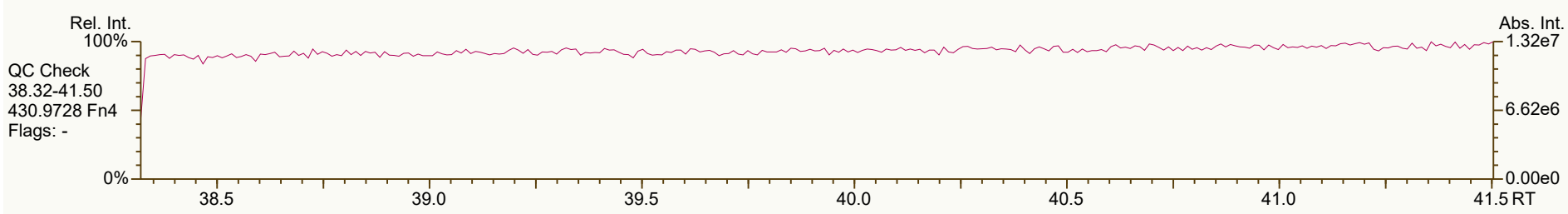
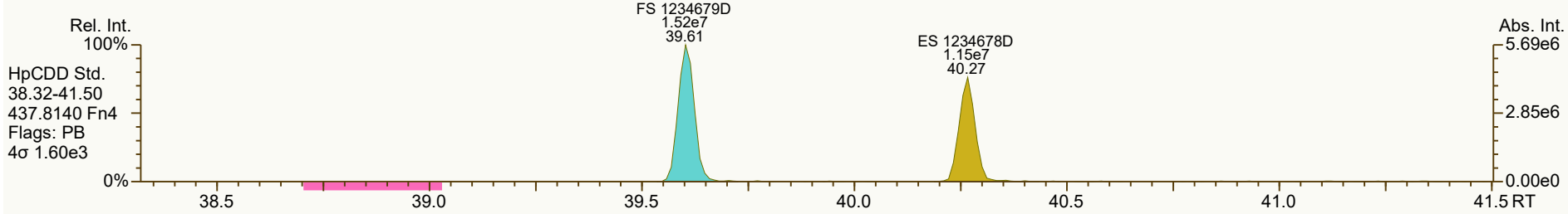
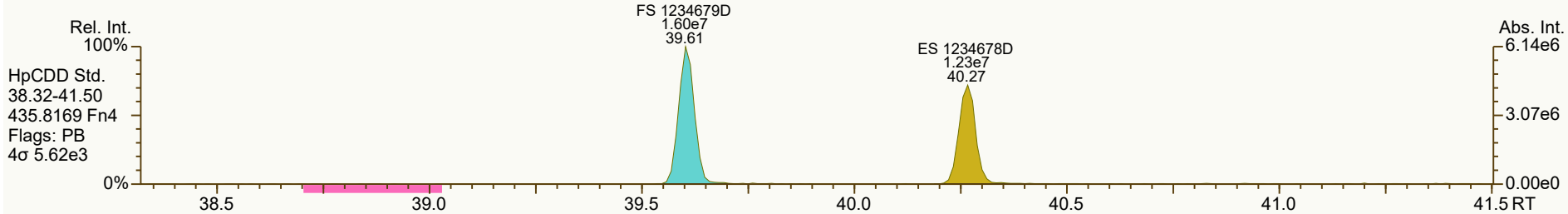
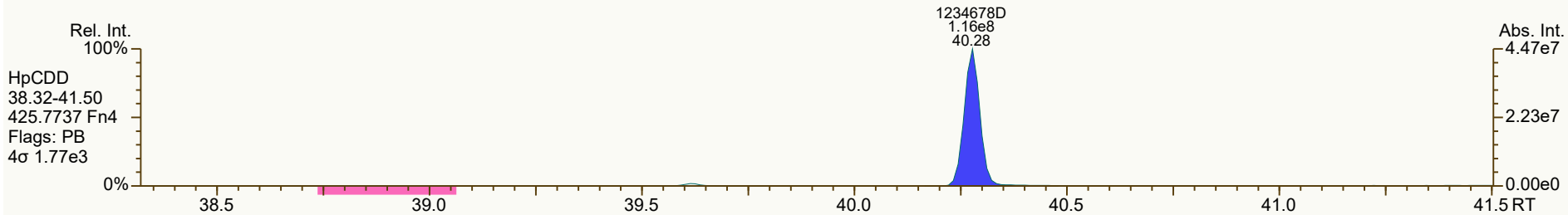
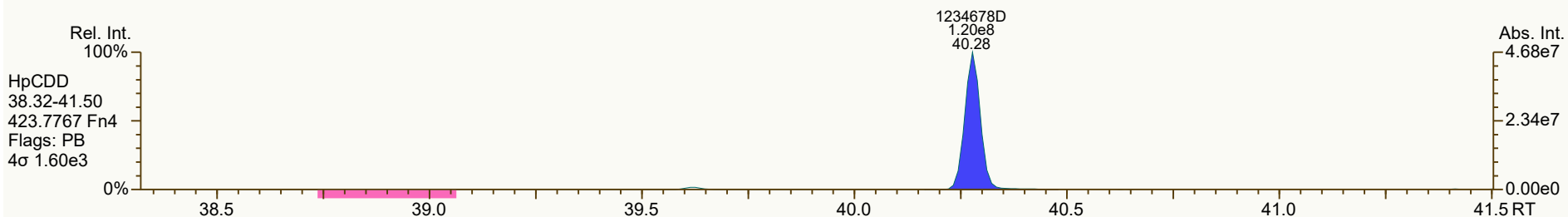
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF			Checkcode: 573-489-BMZ		
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C09		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37C1-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37C1-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

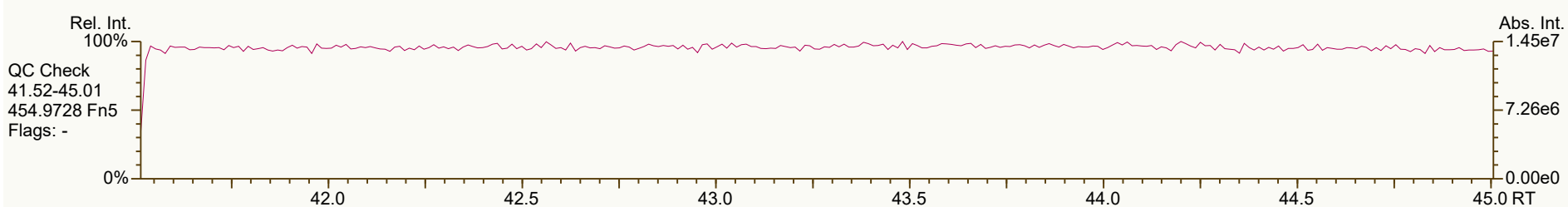
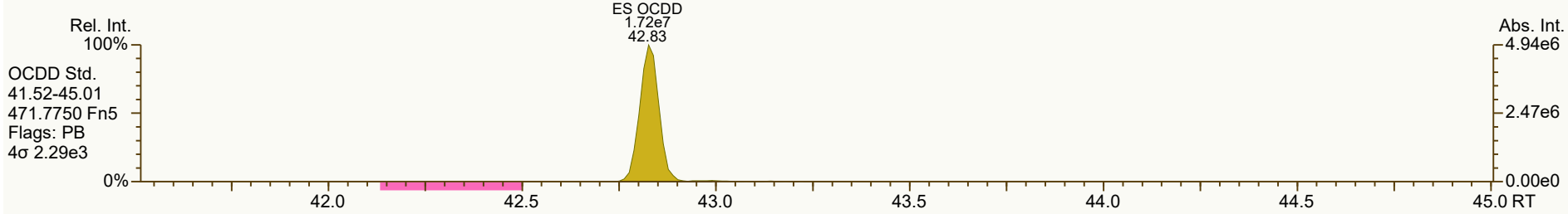
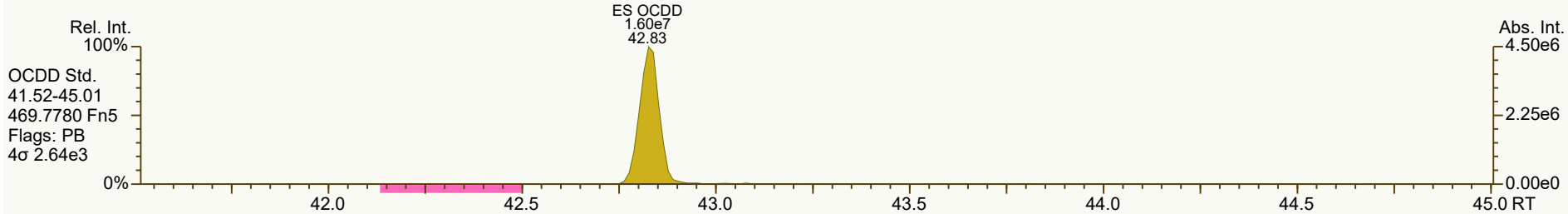
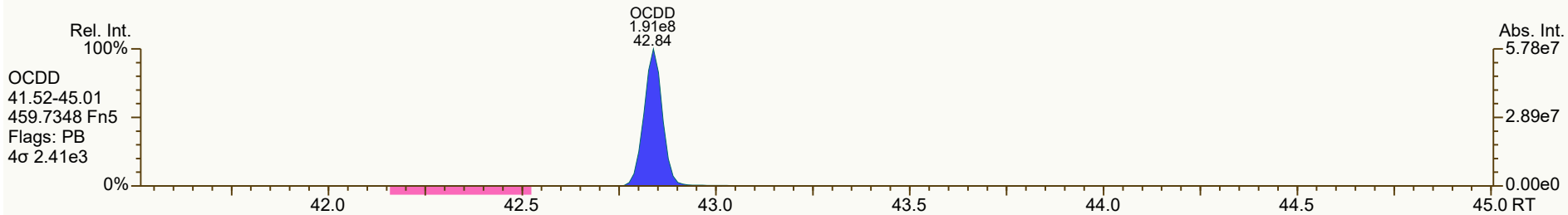
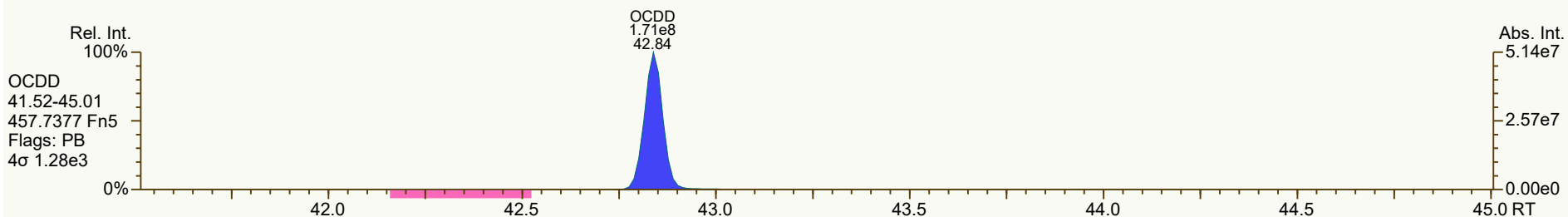


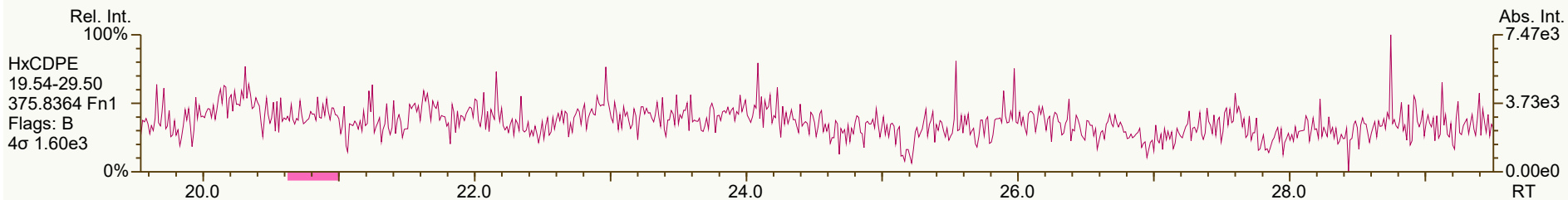
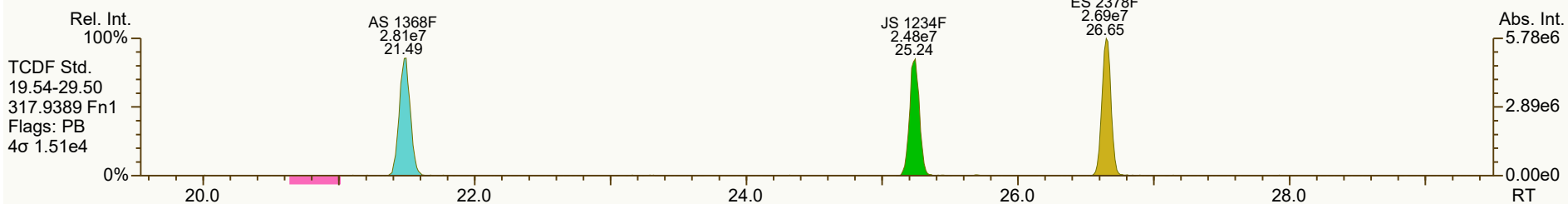
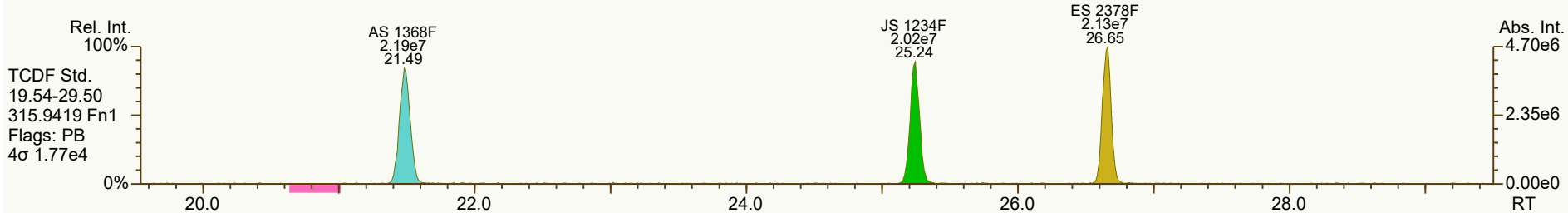
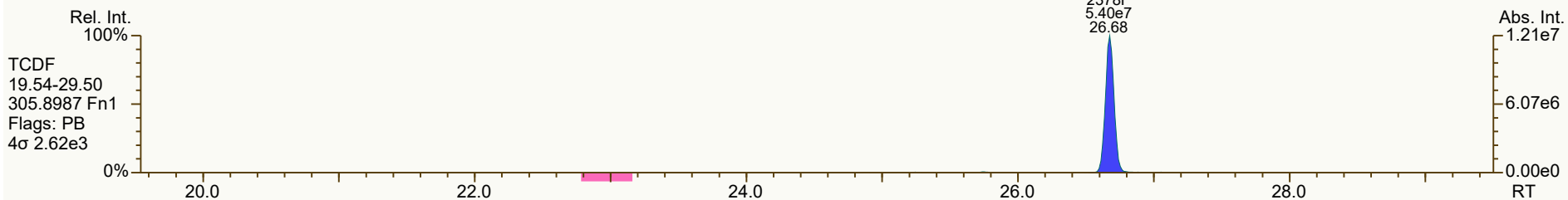
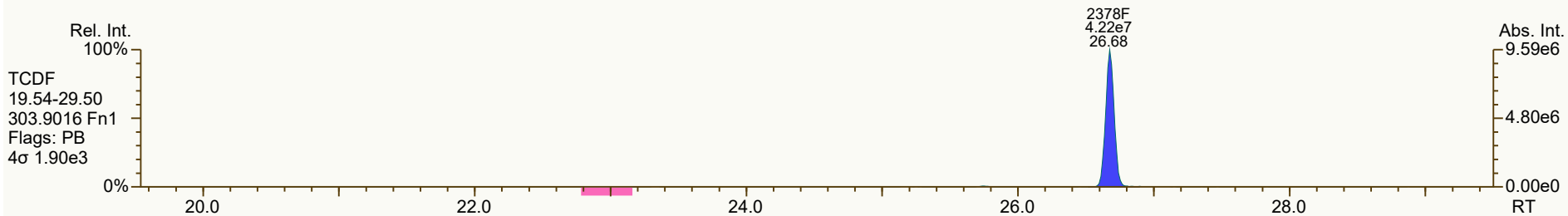


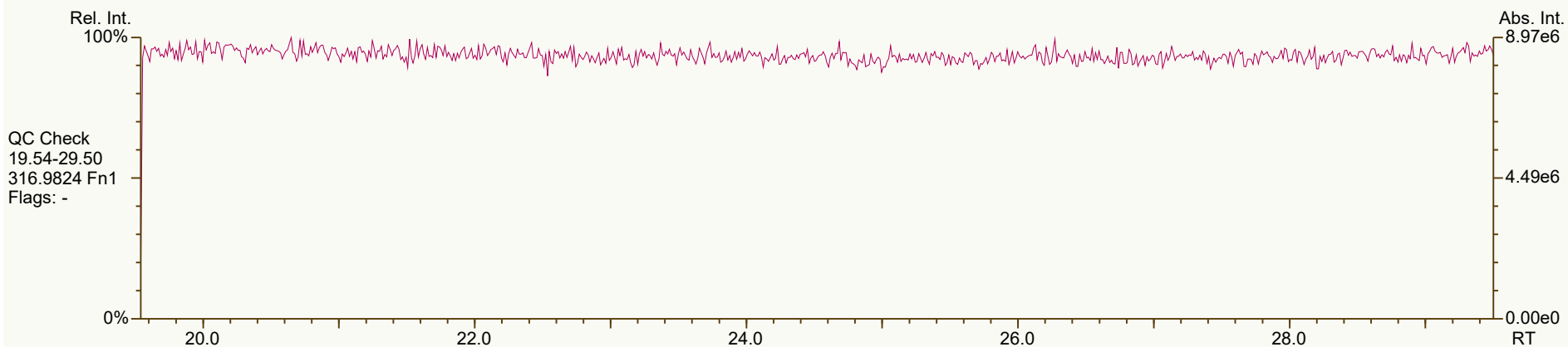
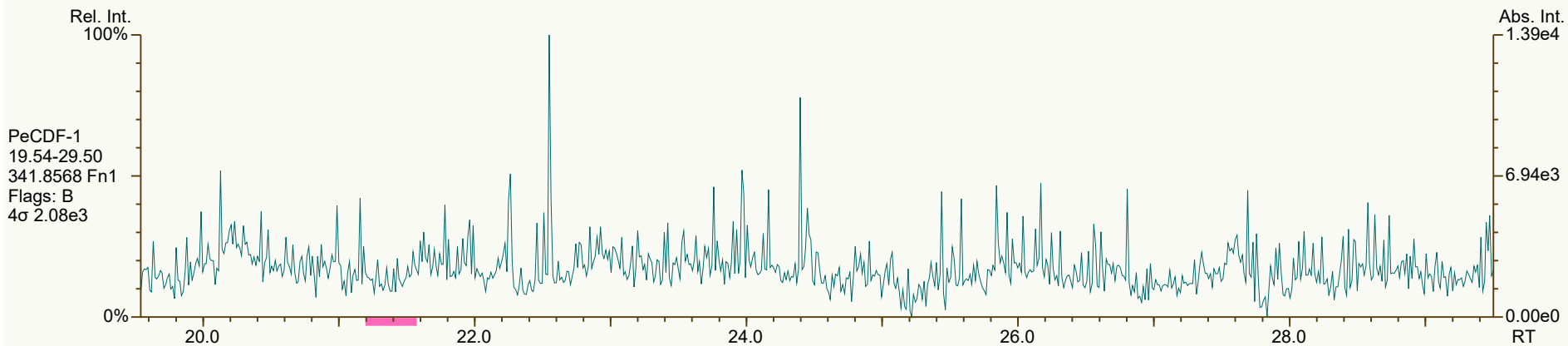
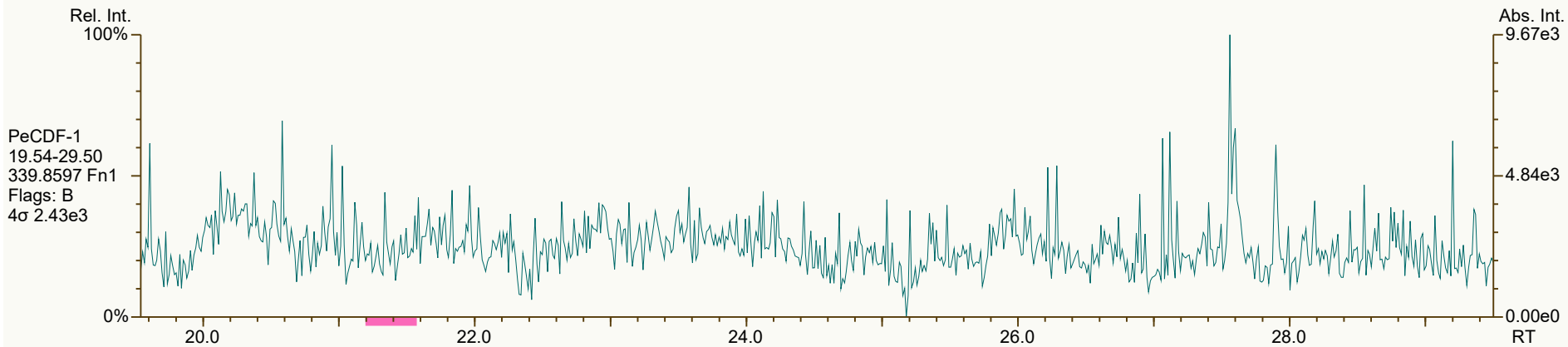


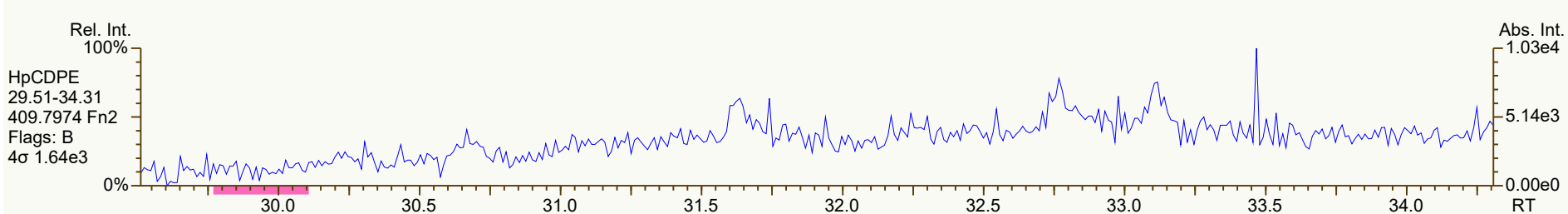
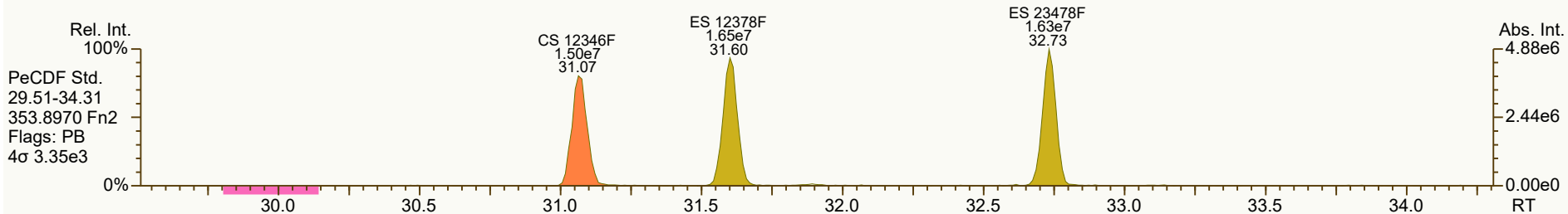
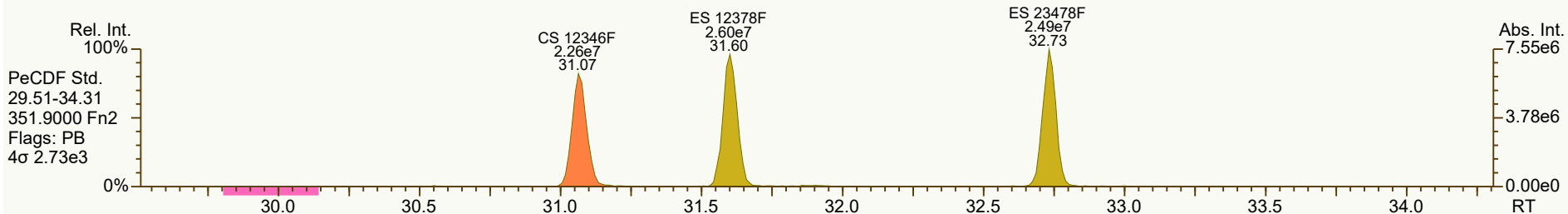
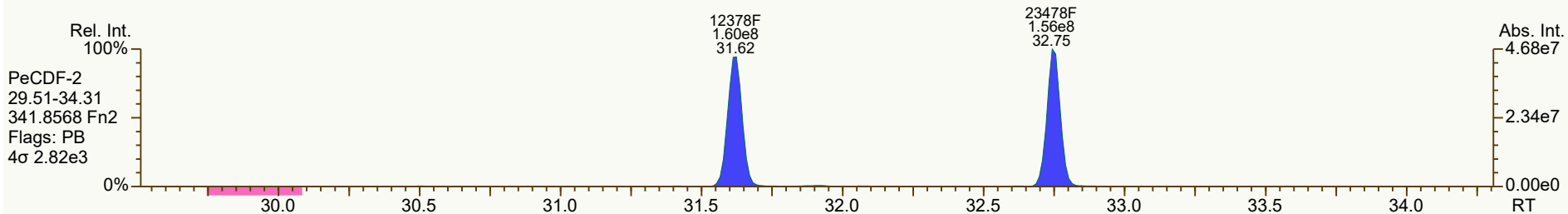
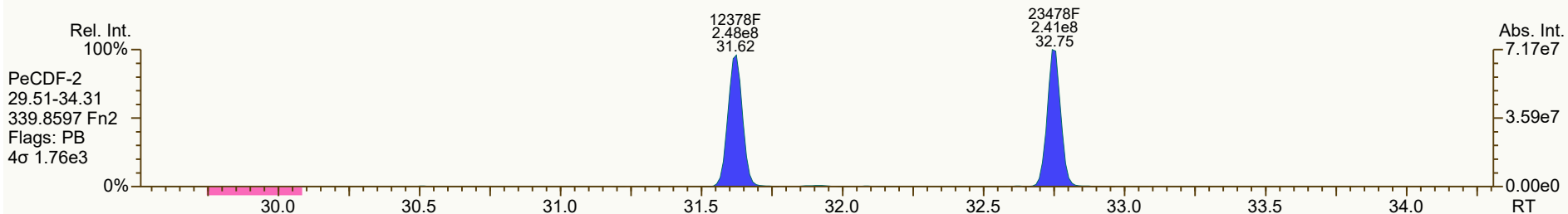








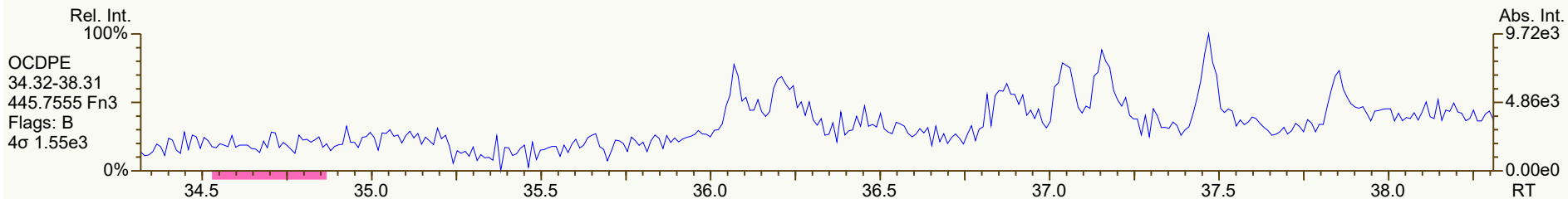
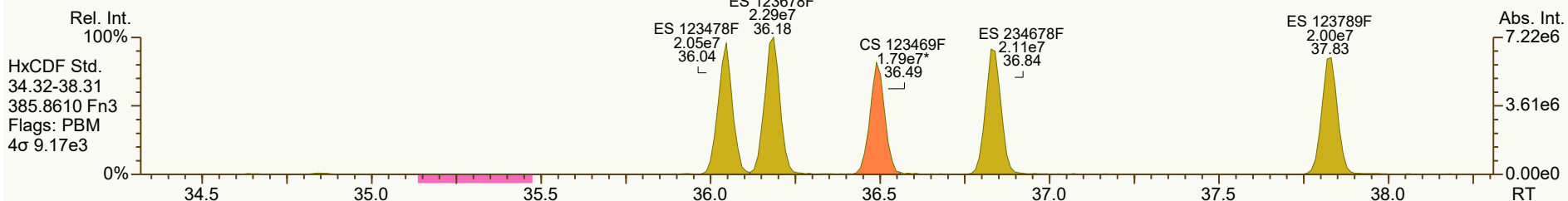
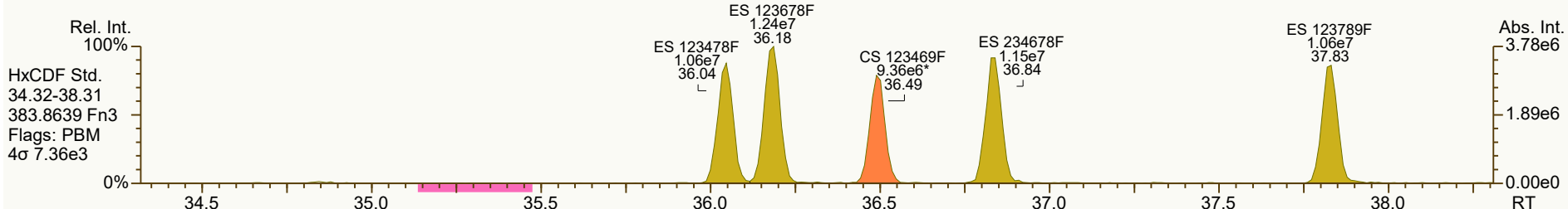
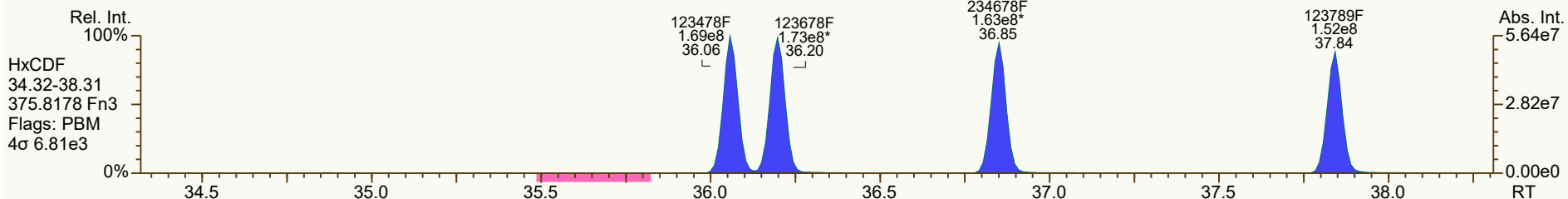
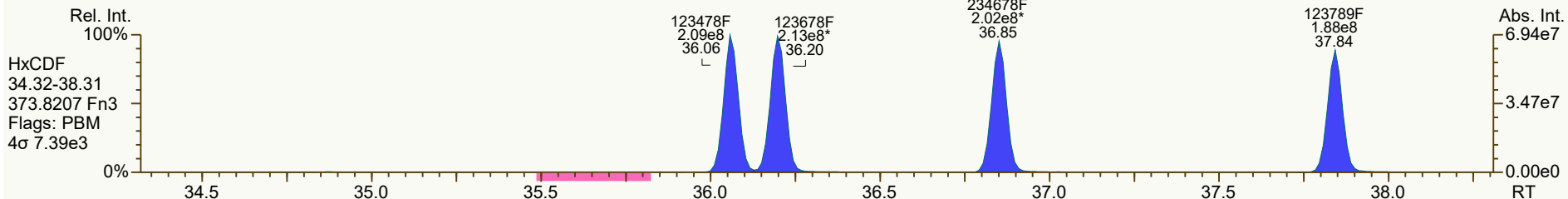


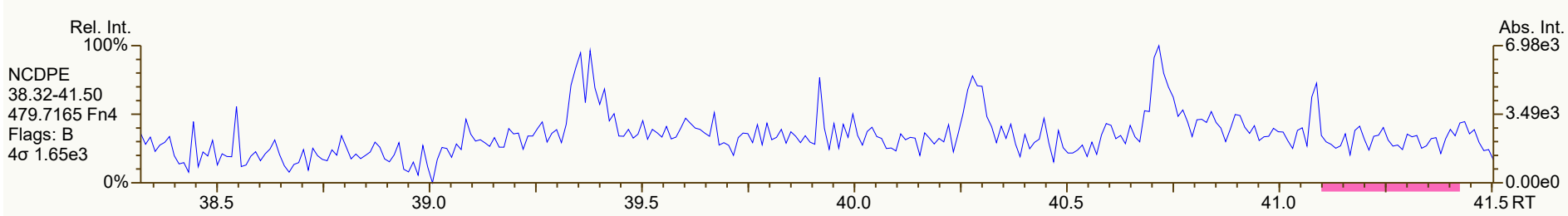
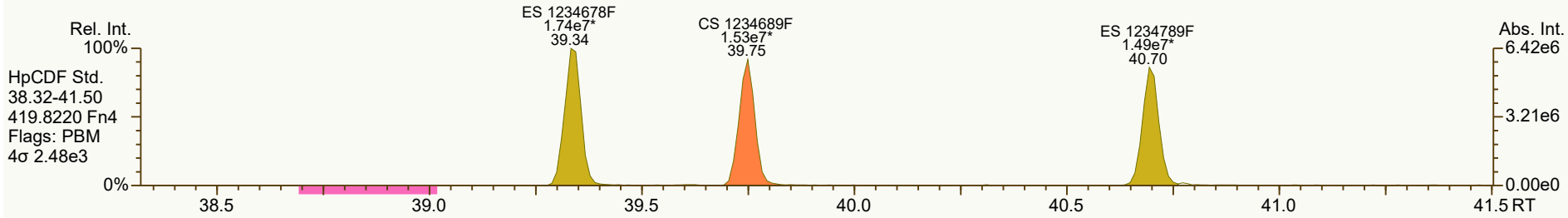
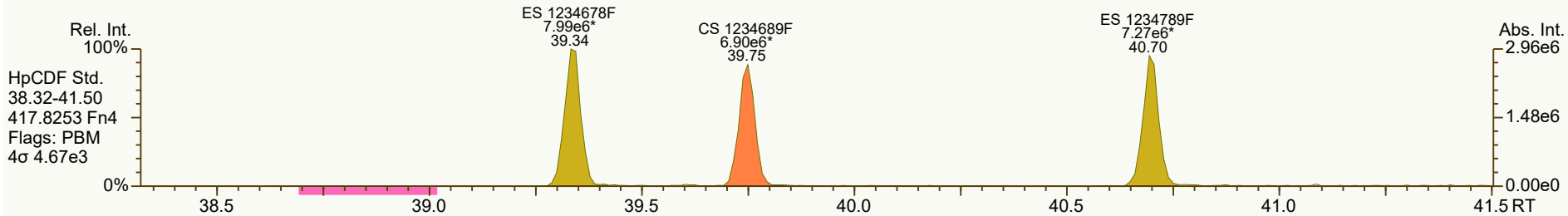
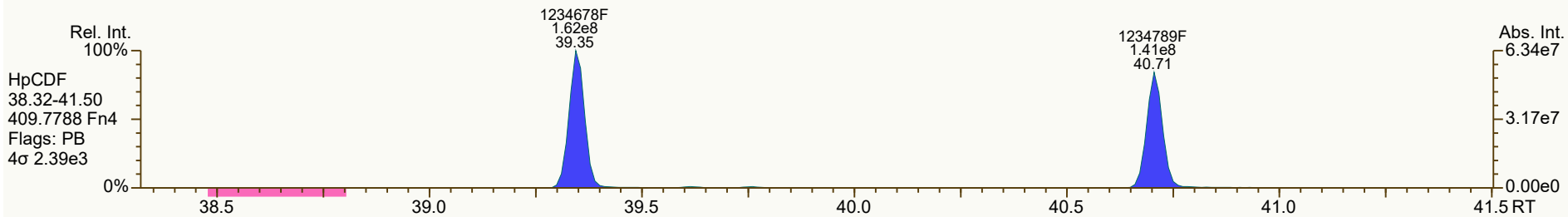
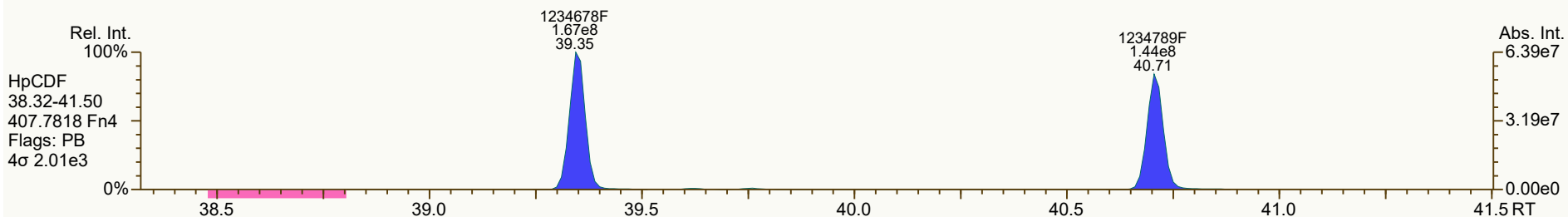


SGS ID: CS5_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70

Acq: 10-Nov-2021 14:53:51
User: DTF Datafile: 211110C09

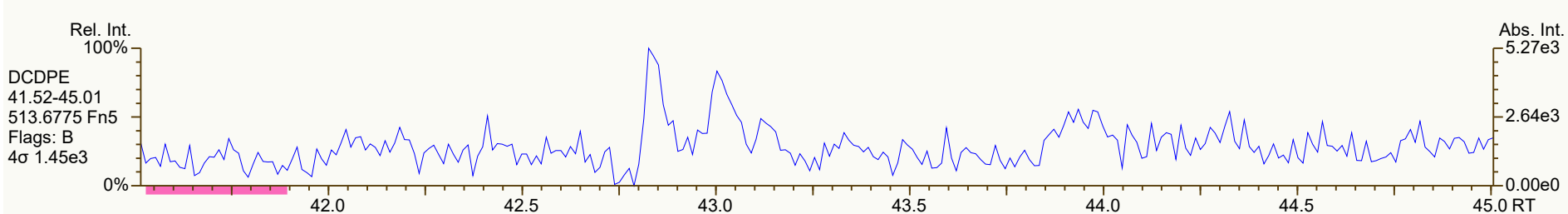
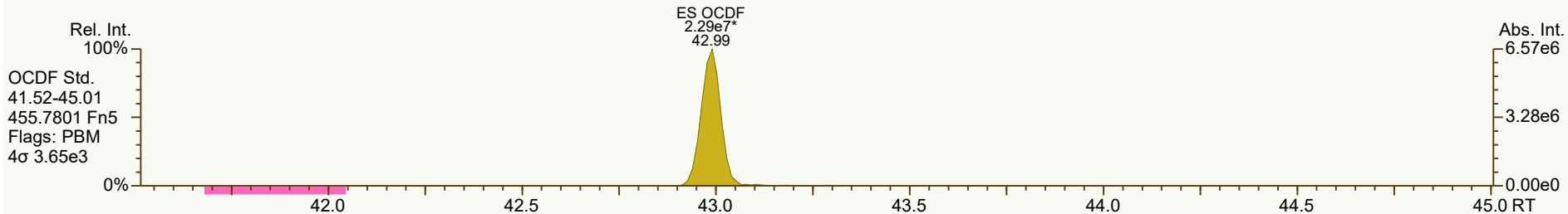
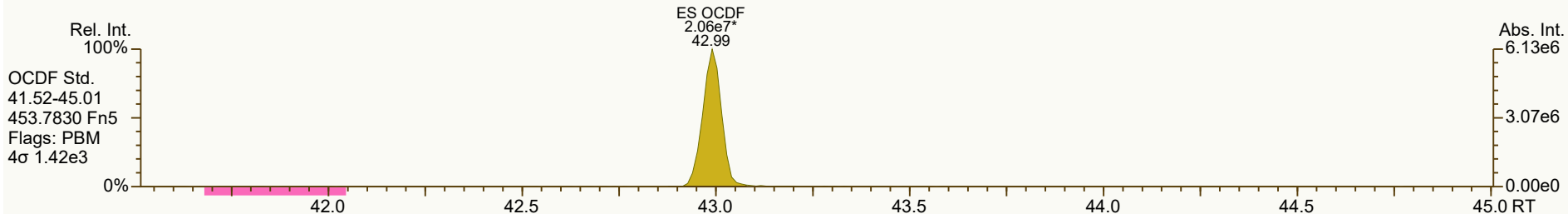
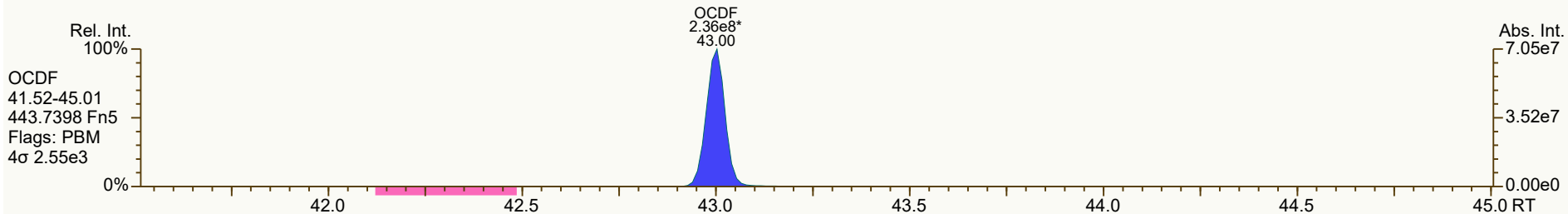
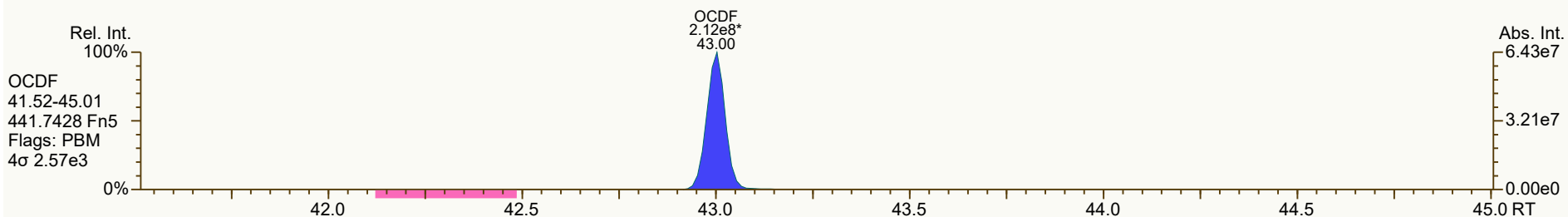




SGS ID: CS5_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

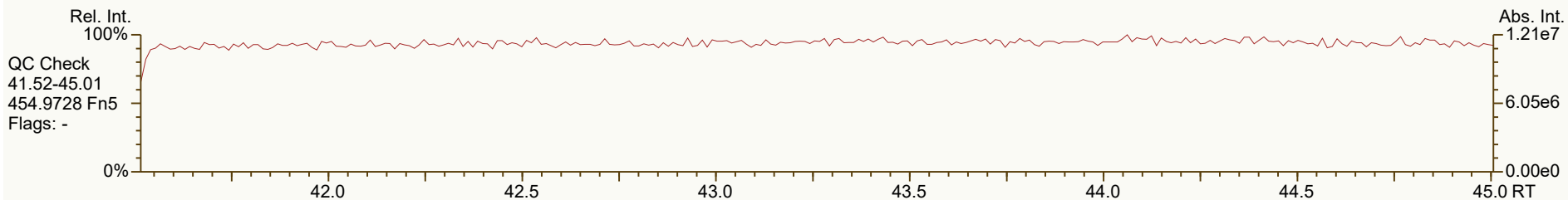
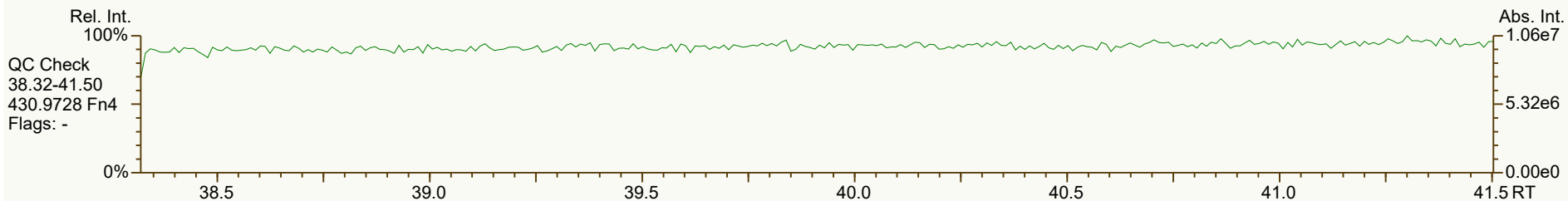
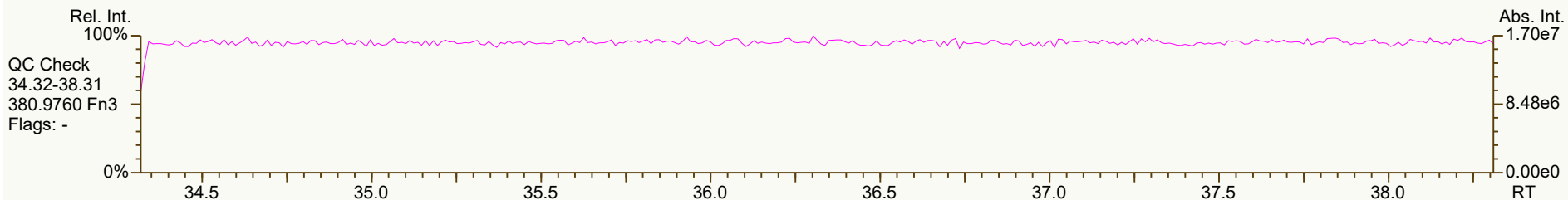
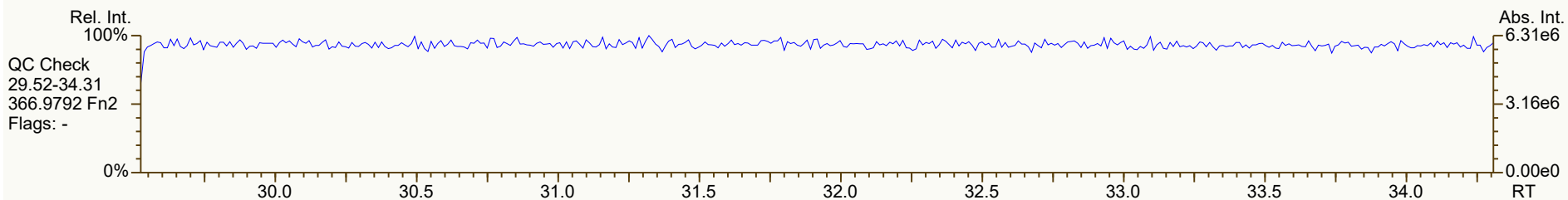
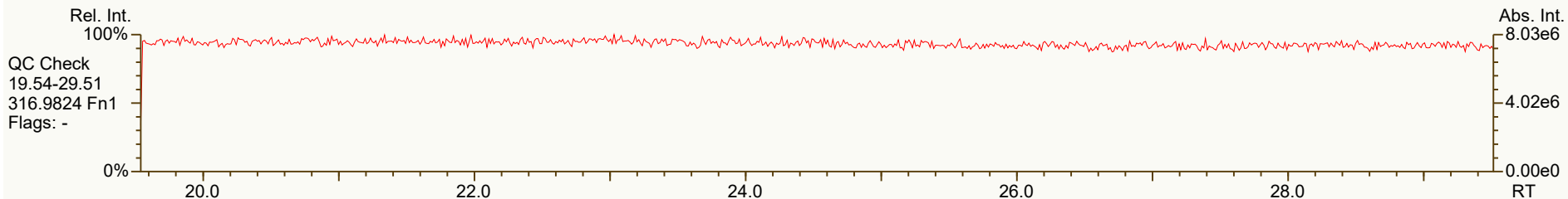
Sample ID: 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70

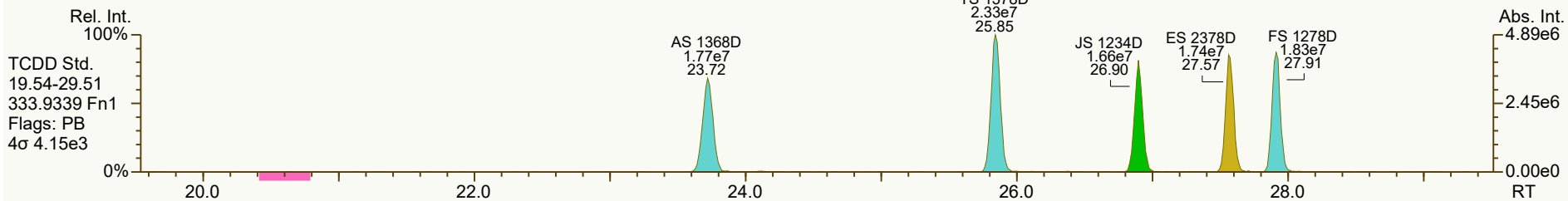
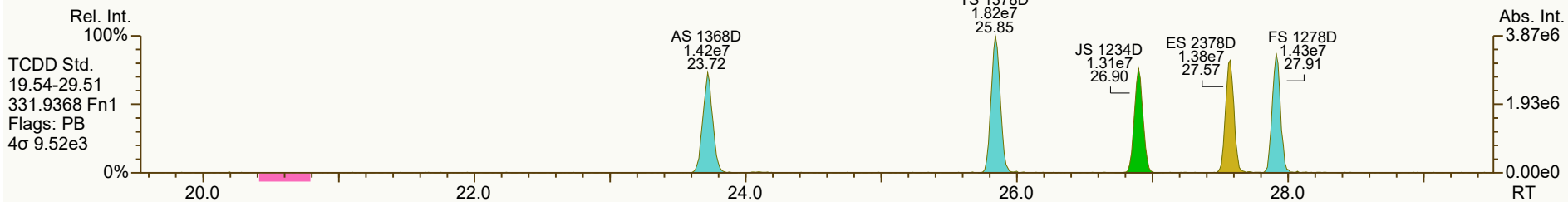
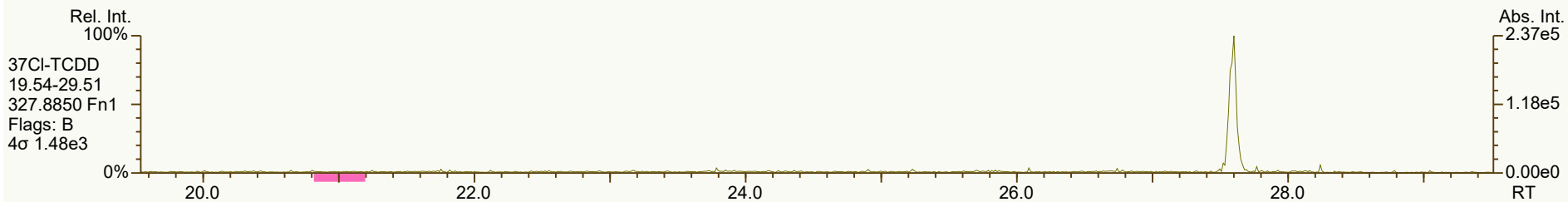
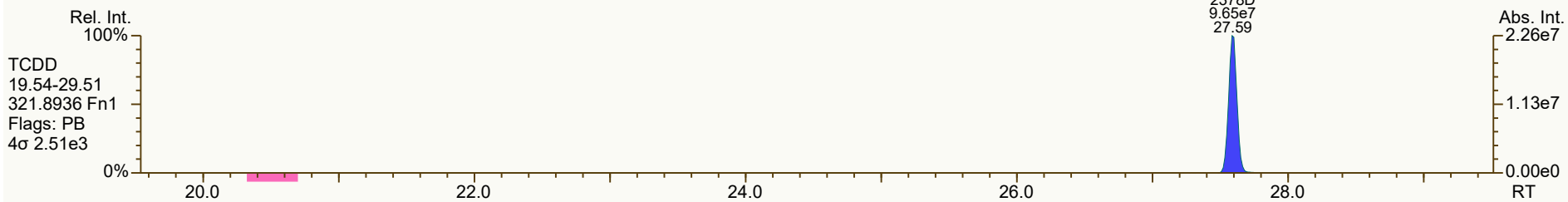
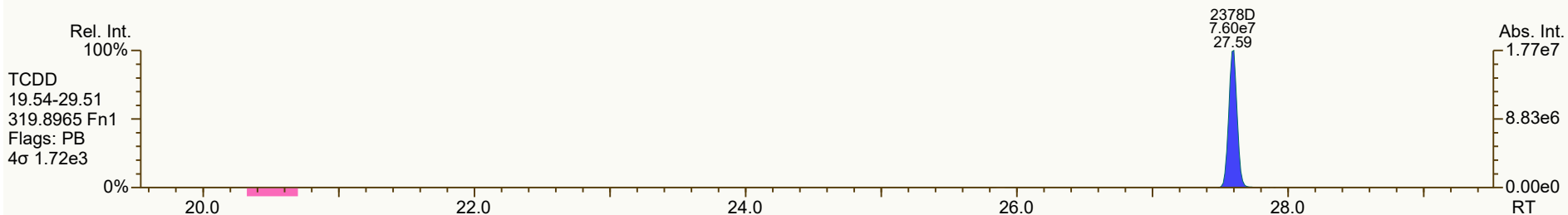
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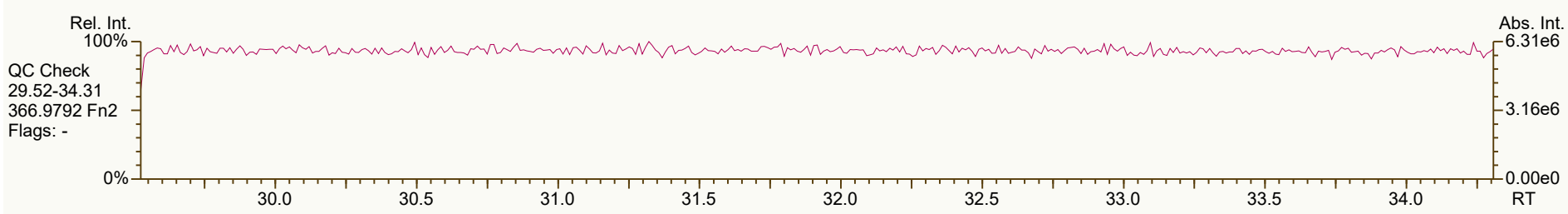
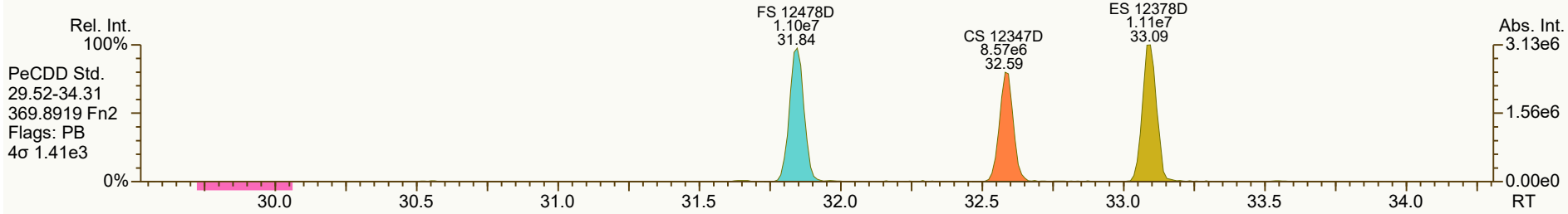
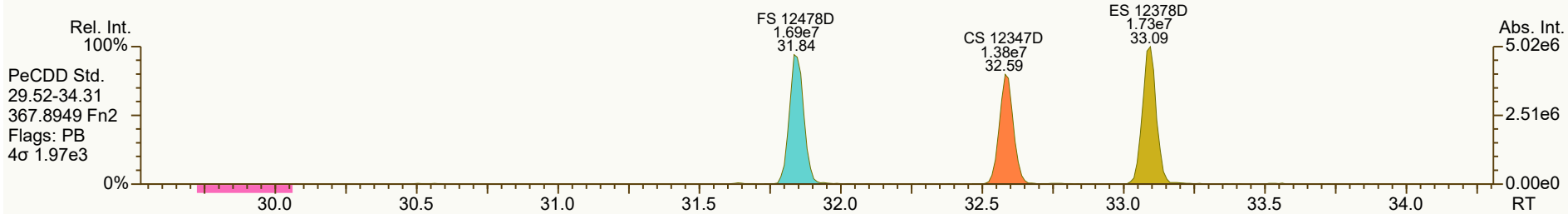
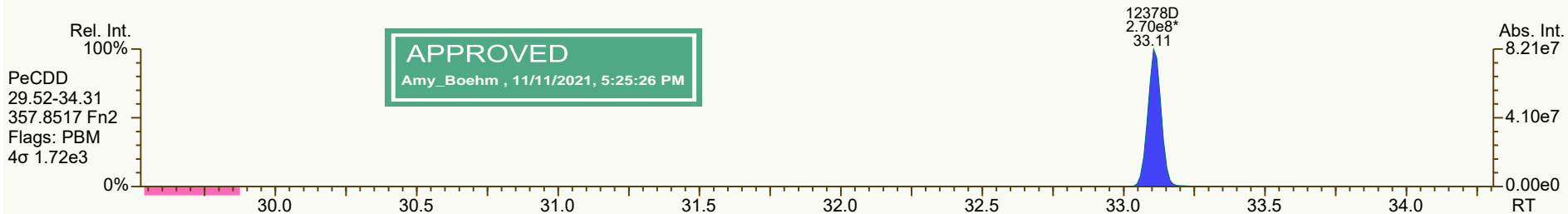
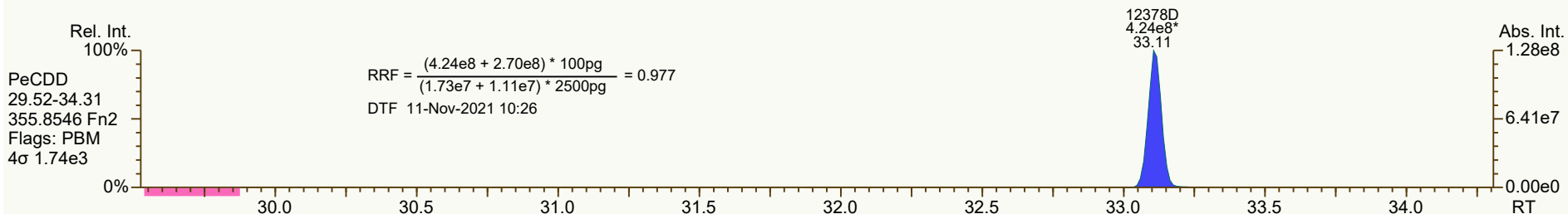


Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF			Checkcode: 172-736-WQL		
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C10		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF			Checkcode: 172-736-WQL		
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C10		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37C1-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37C1-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%



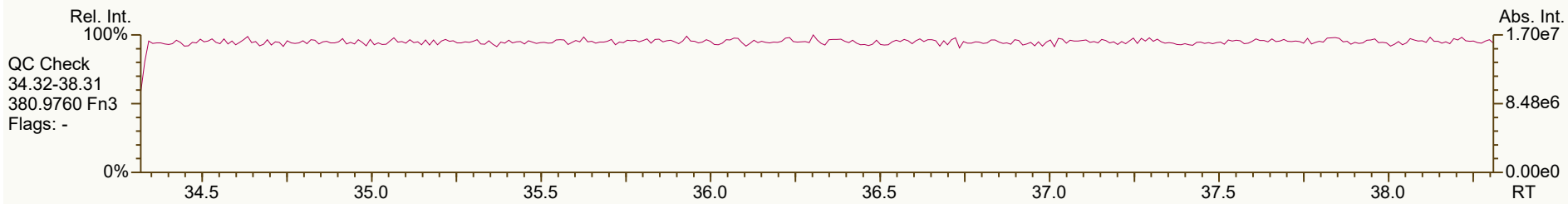
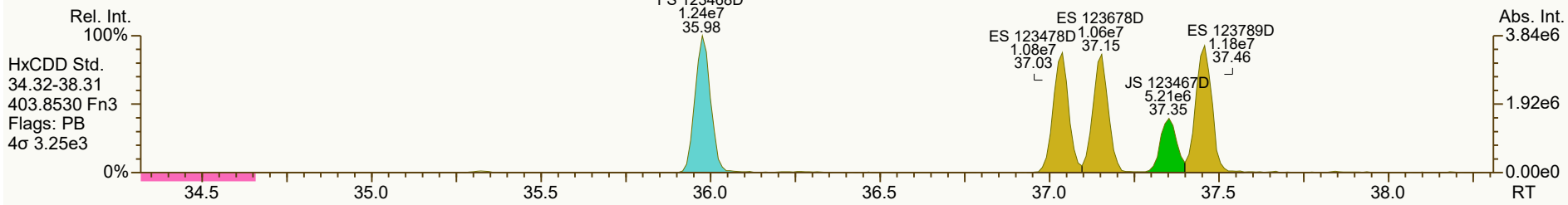
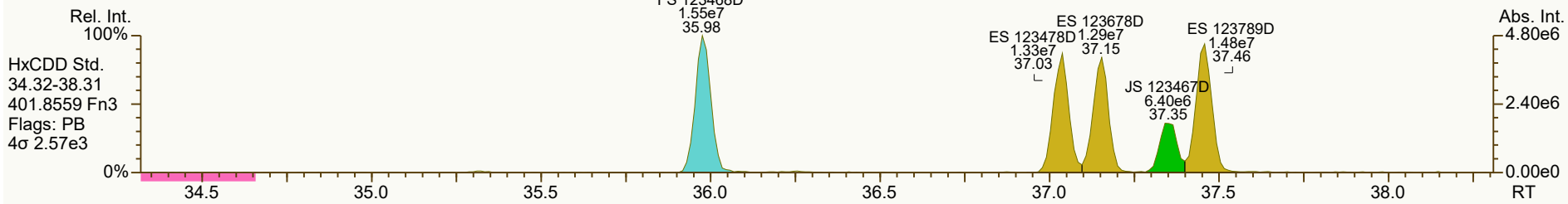
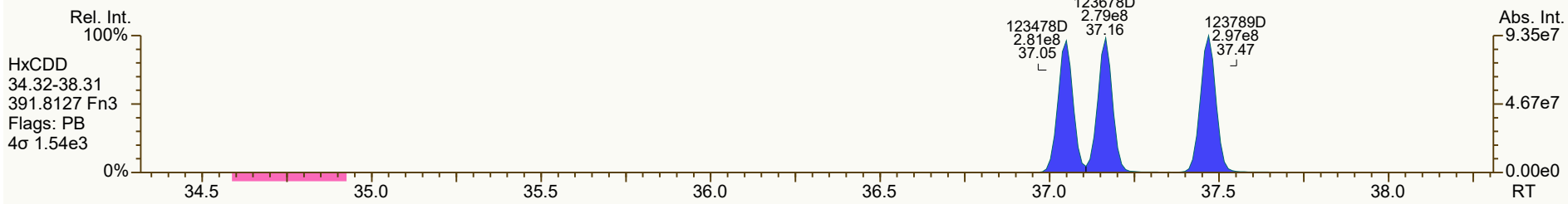
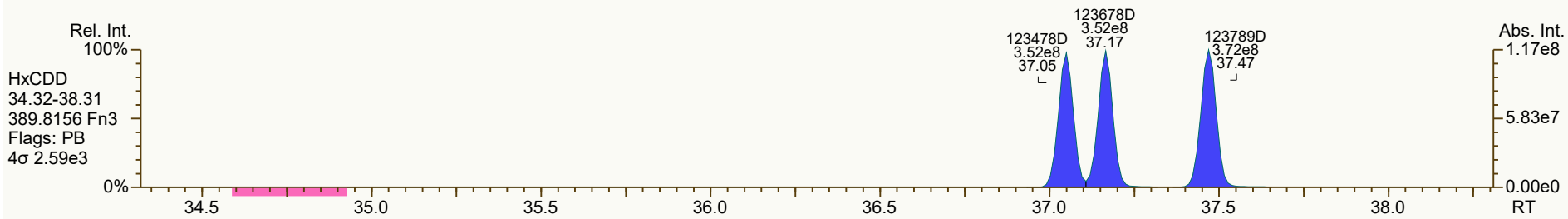


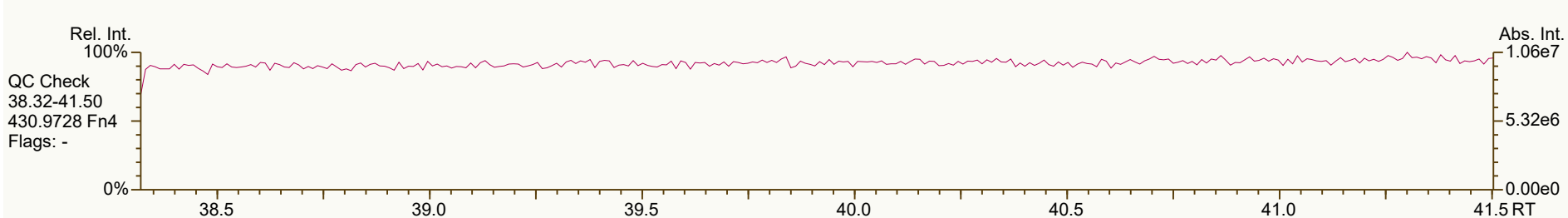
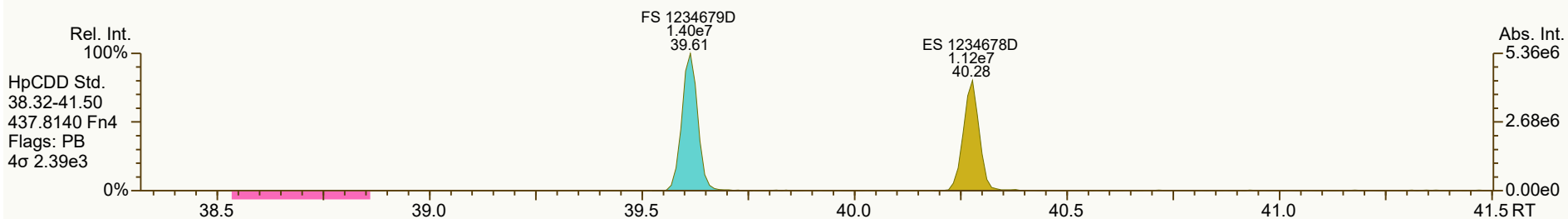
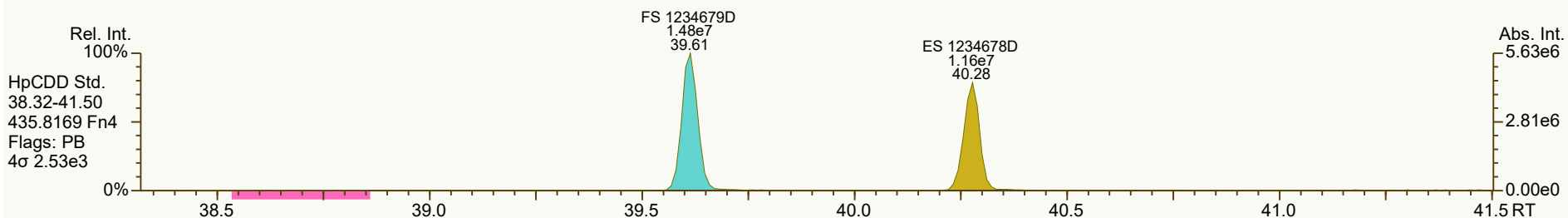
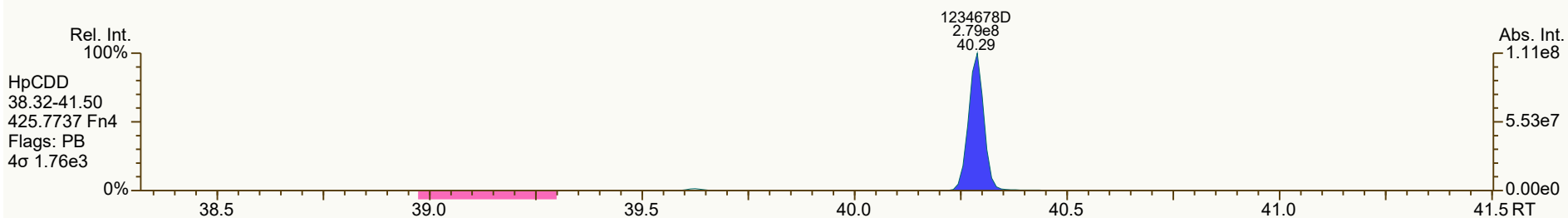
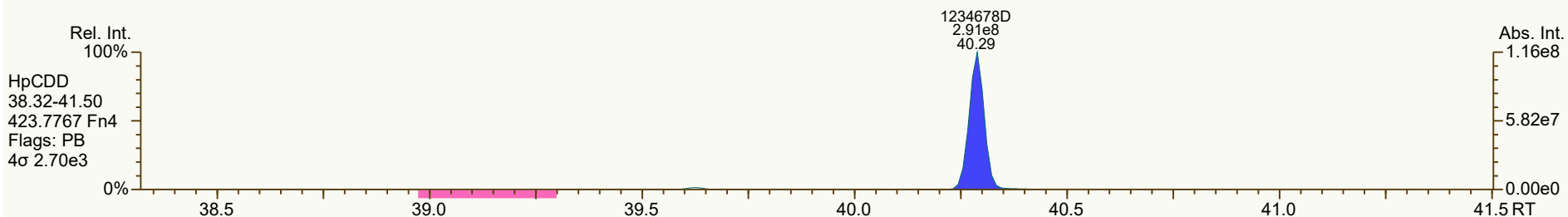


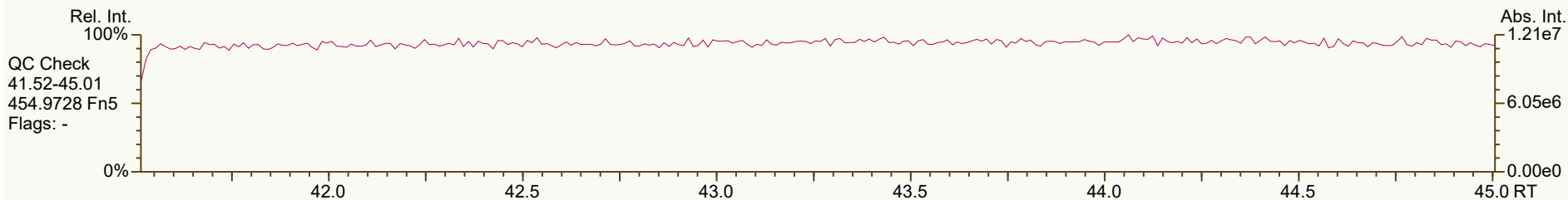
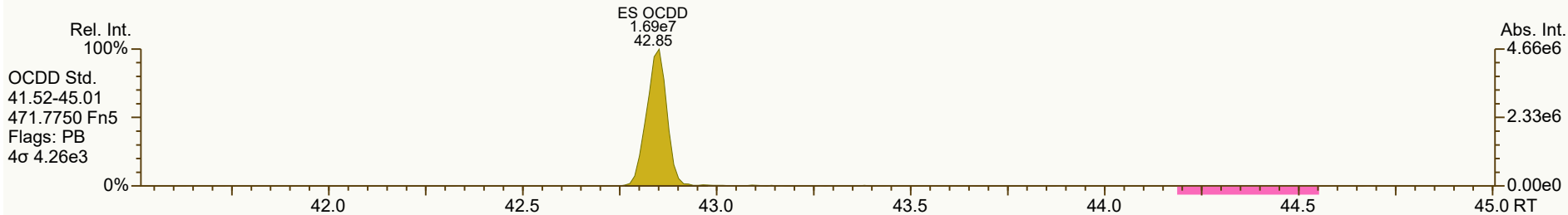
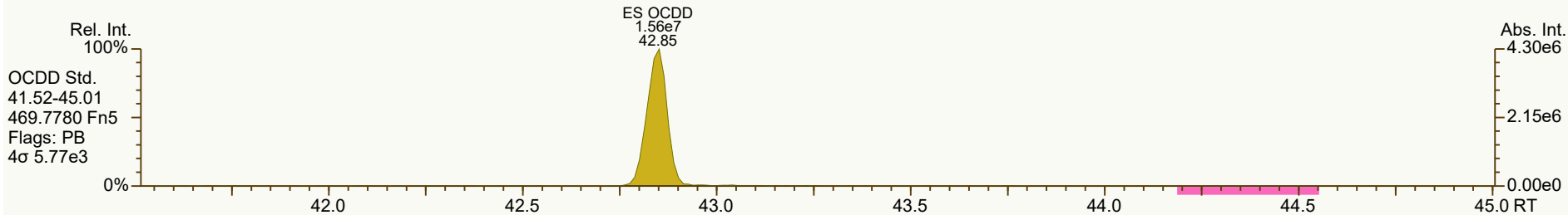
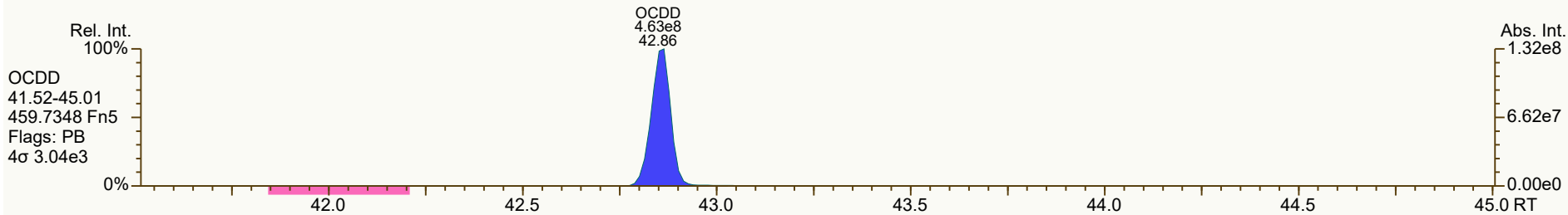
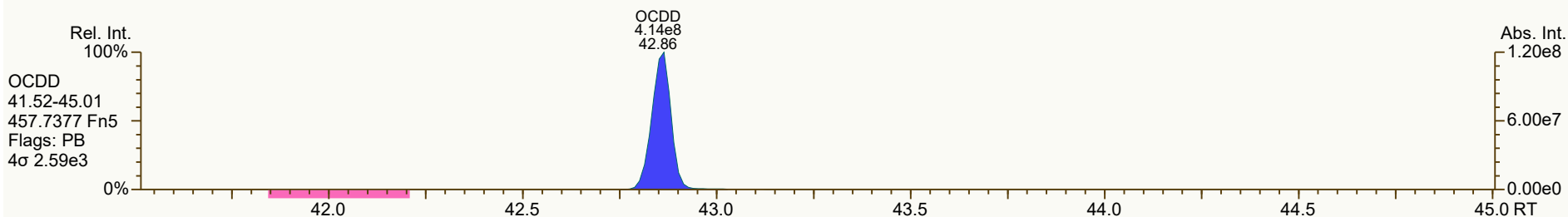
SGS ID: CS6_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

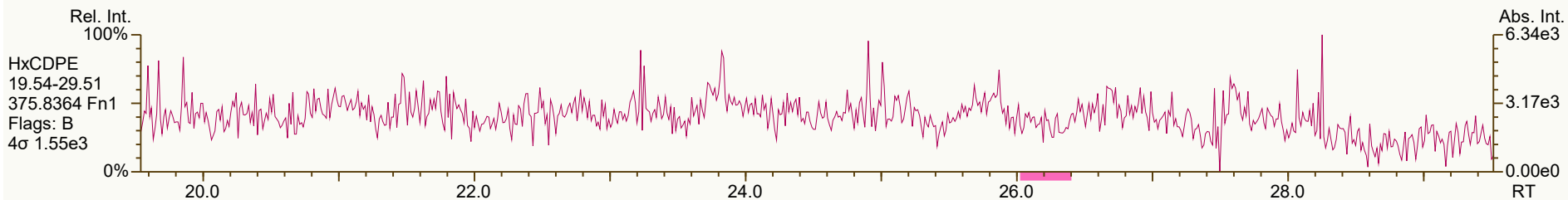
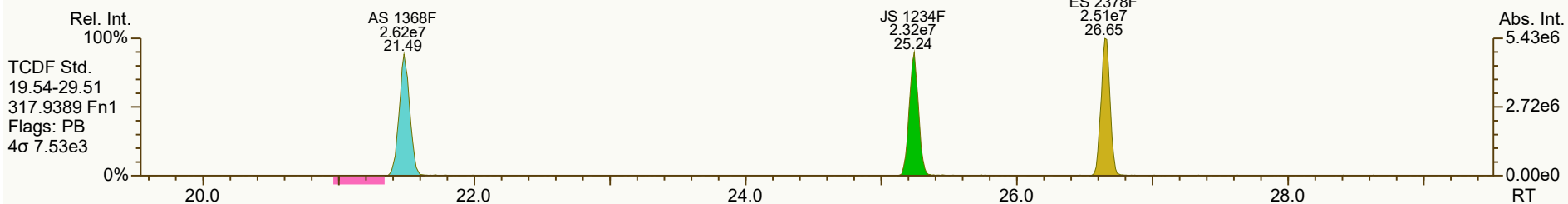
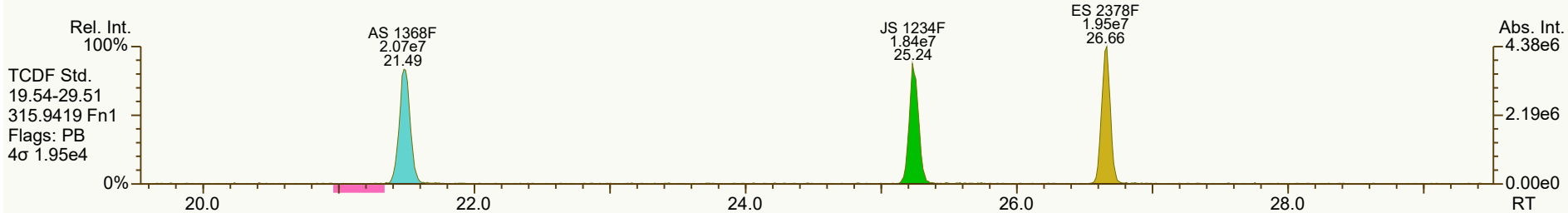
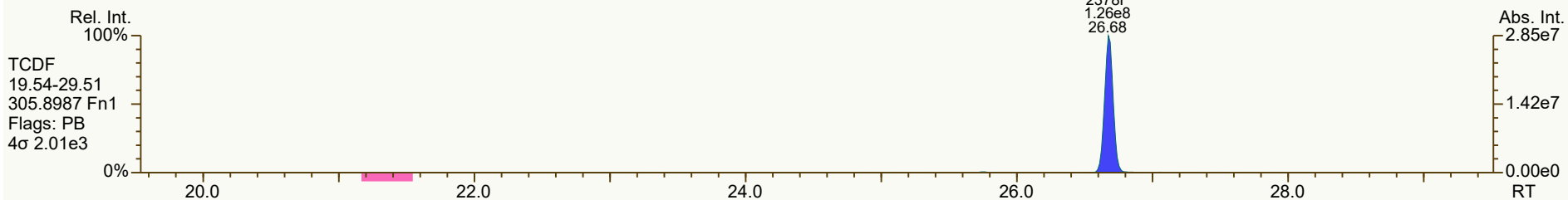
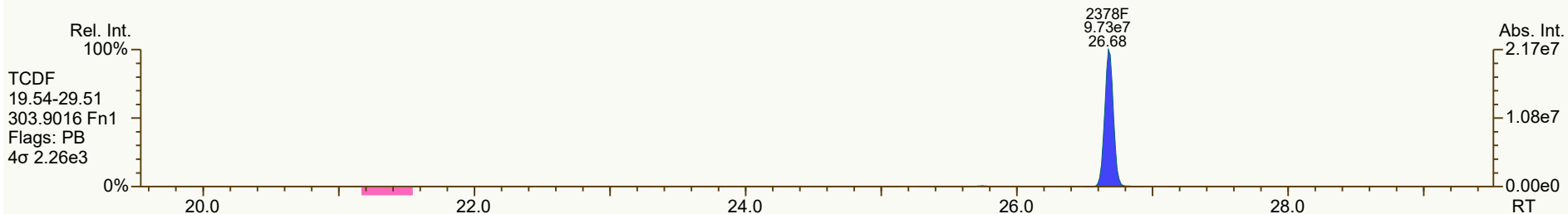
Sample ID: 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71

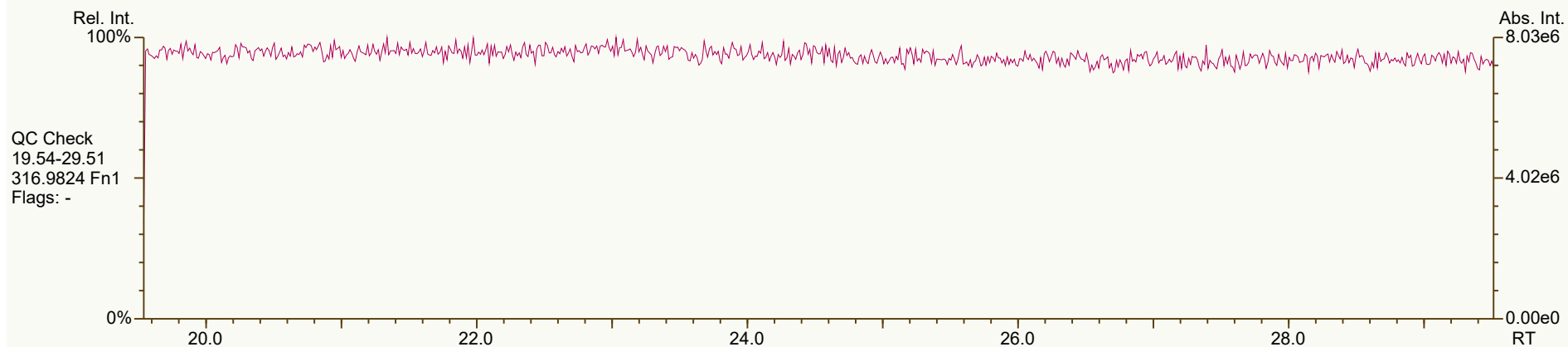
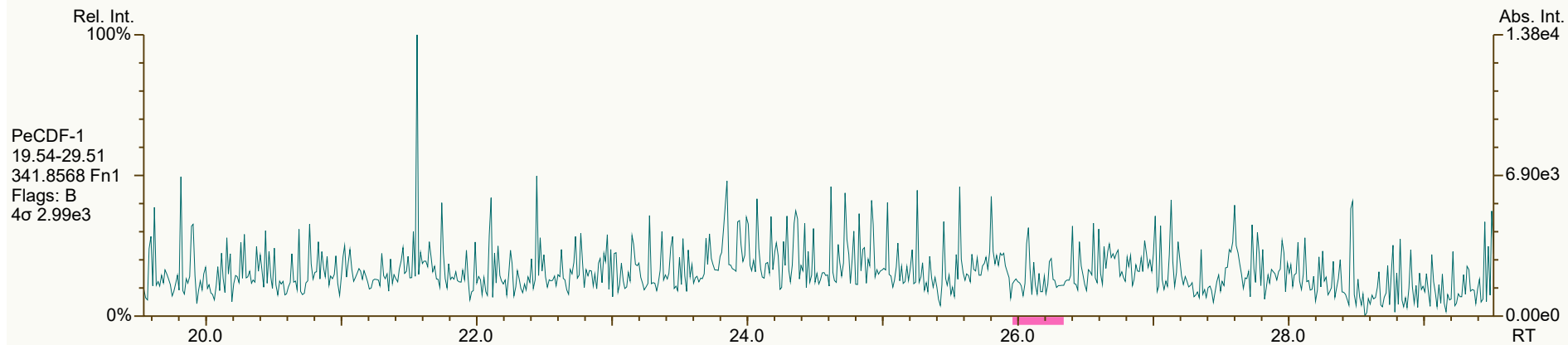
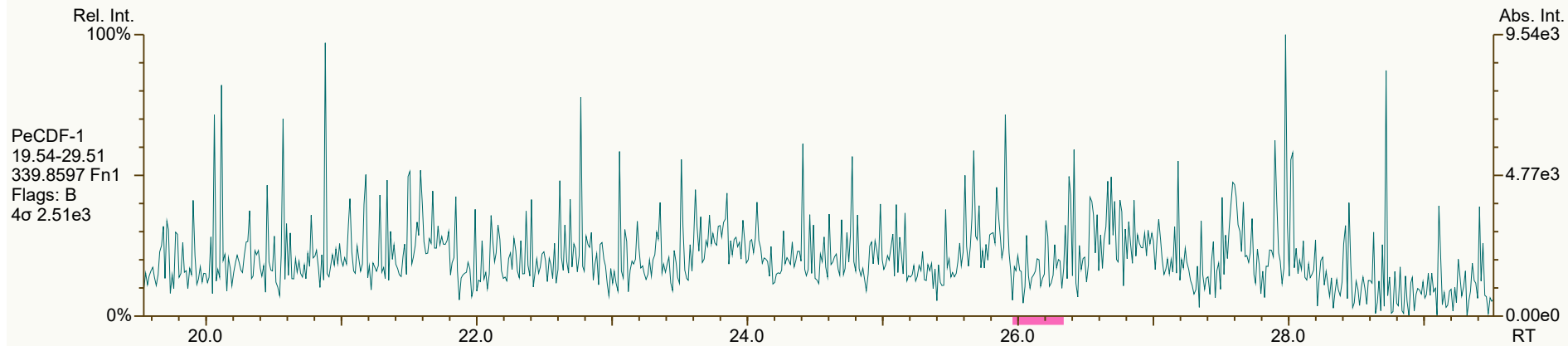
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User: DTF Datafile: 211110C10

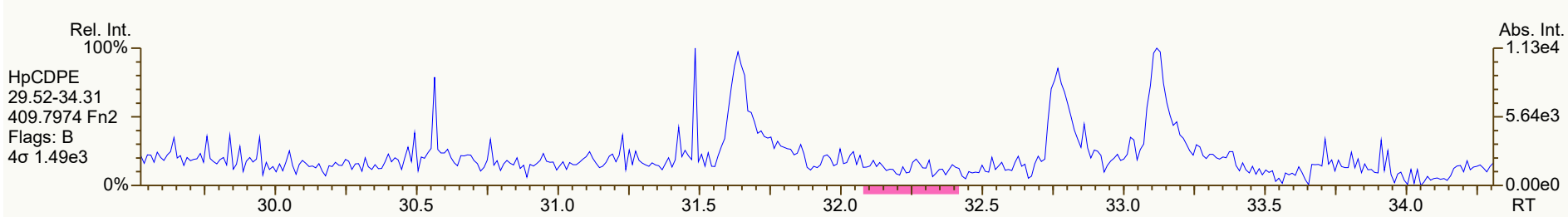
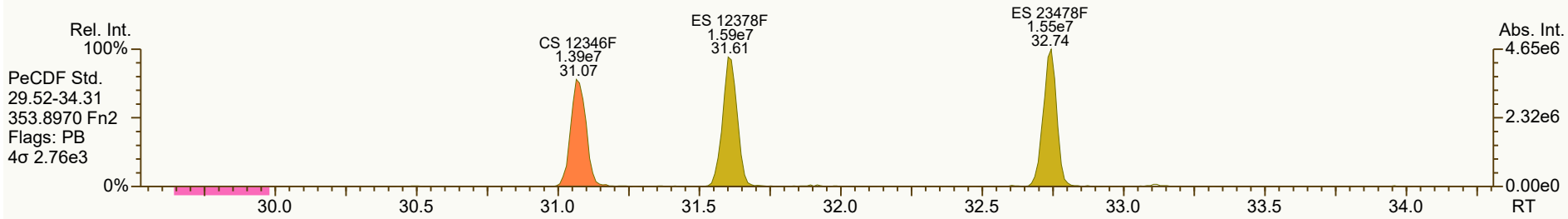
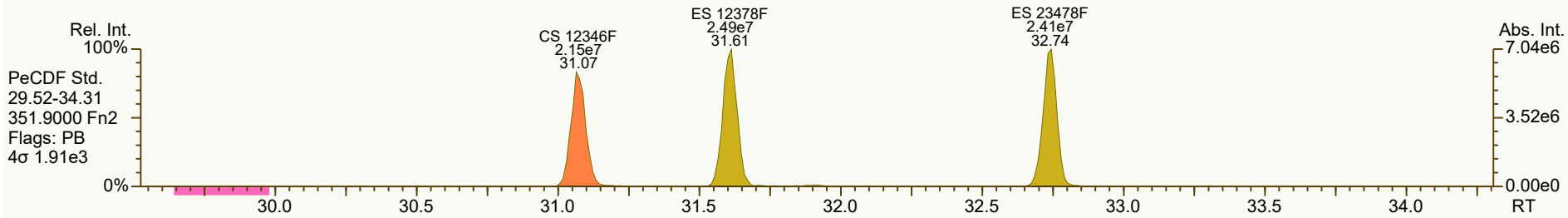
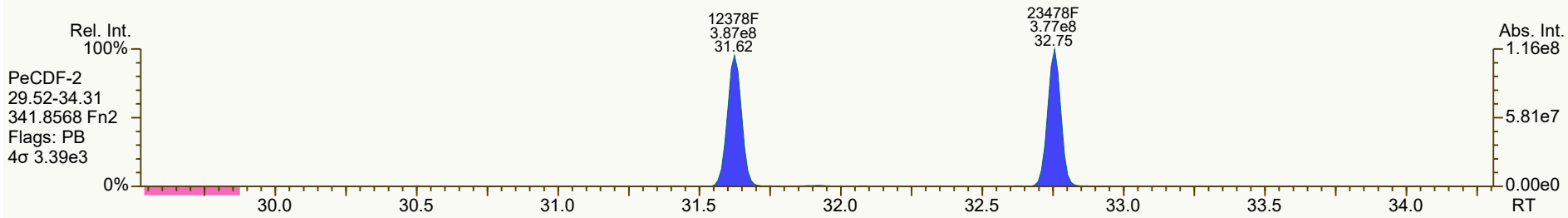
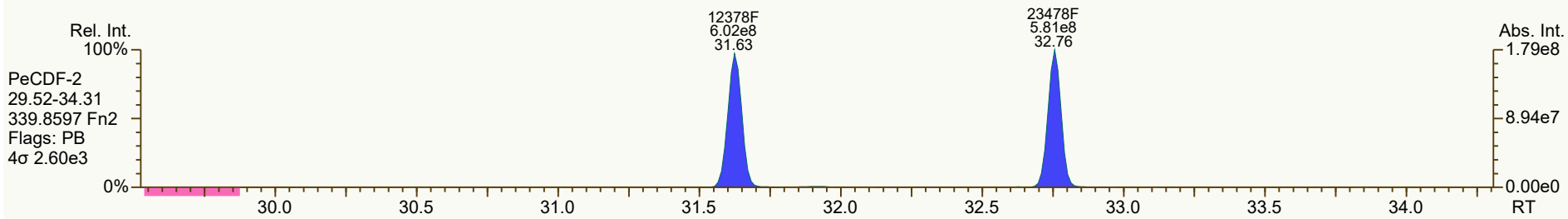








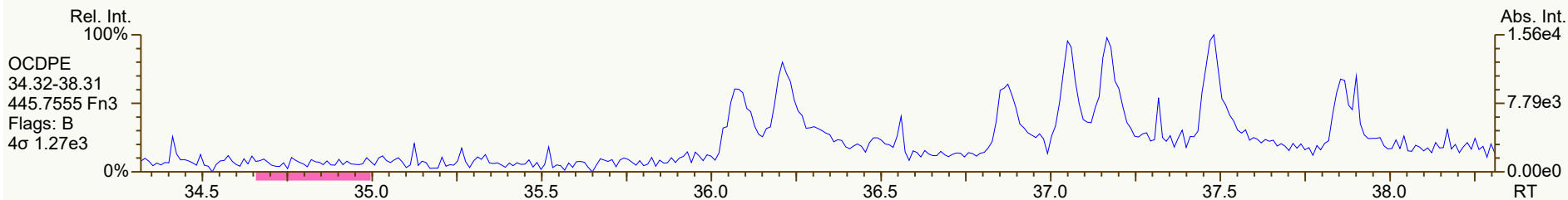
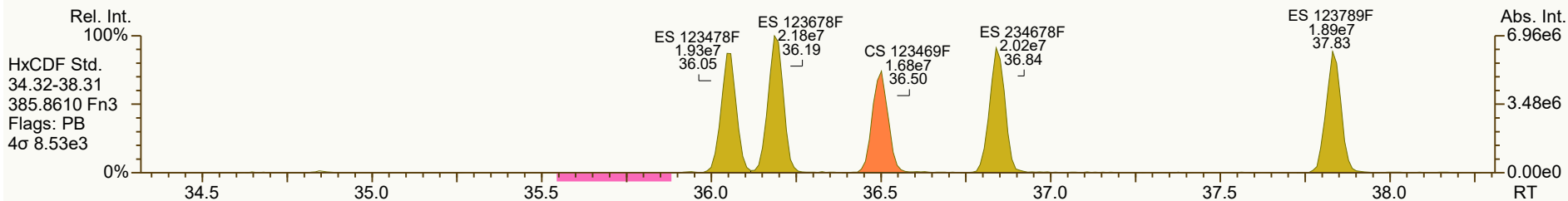
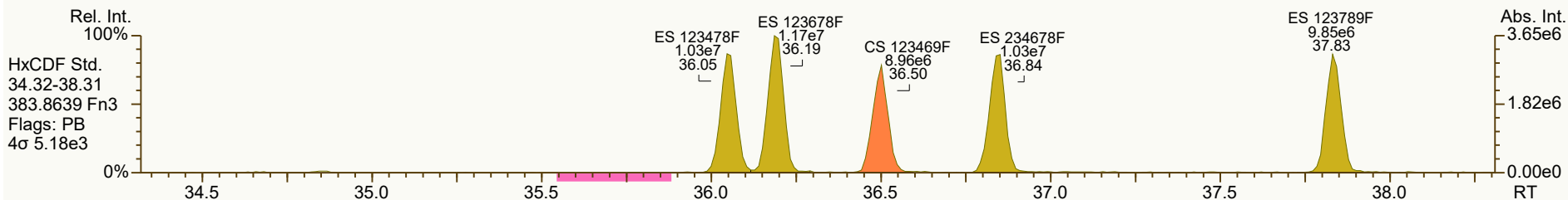
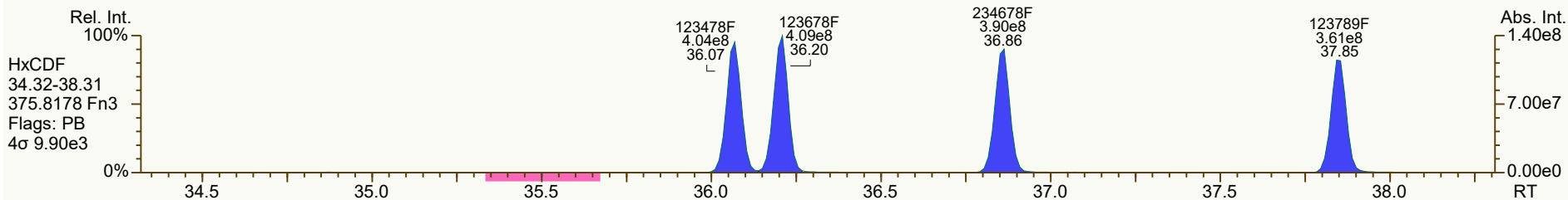
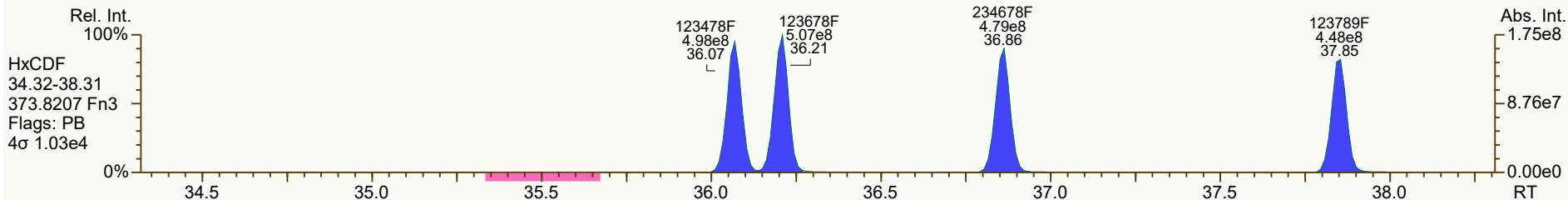




SGS ID: CS6_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71

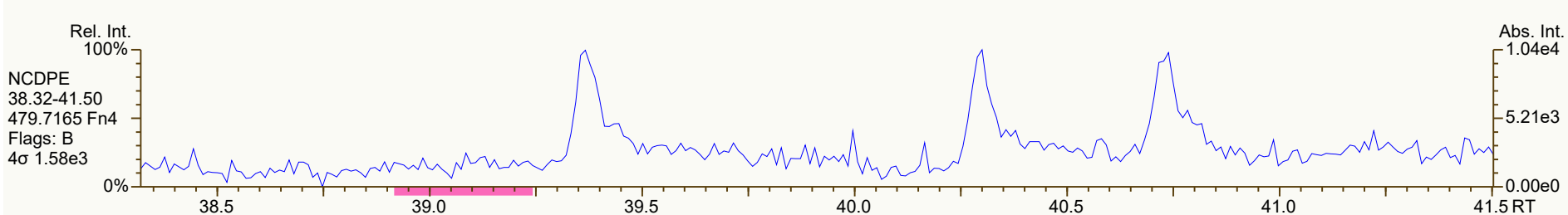
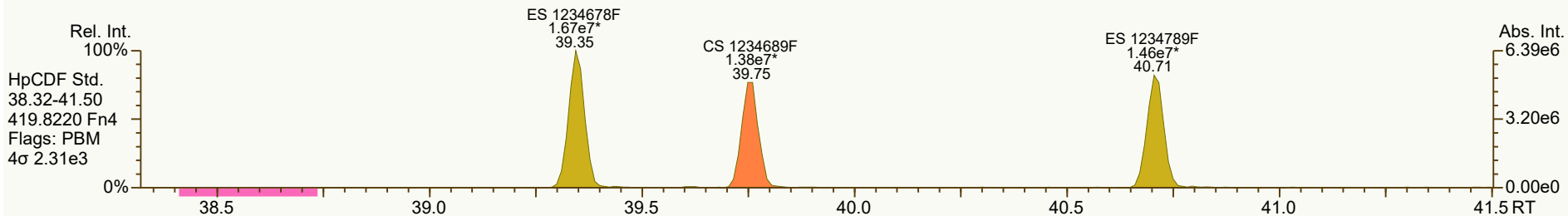
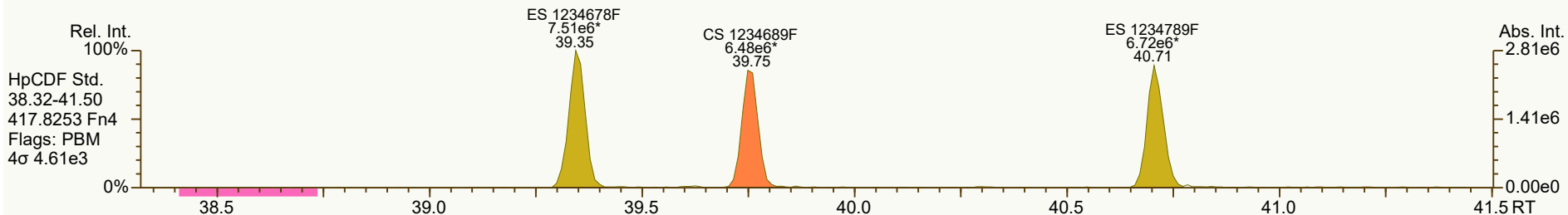
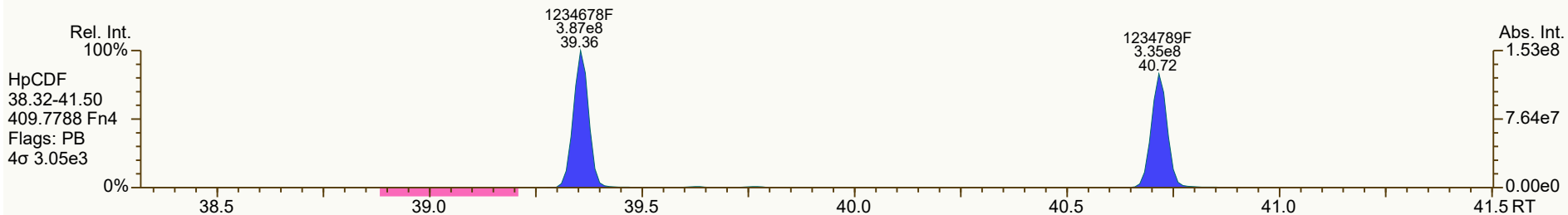
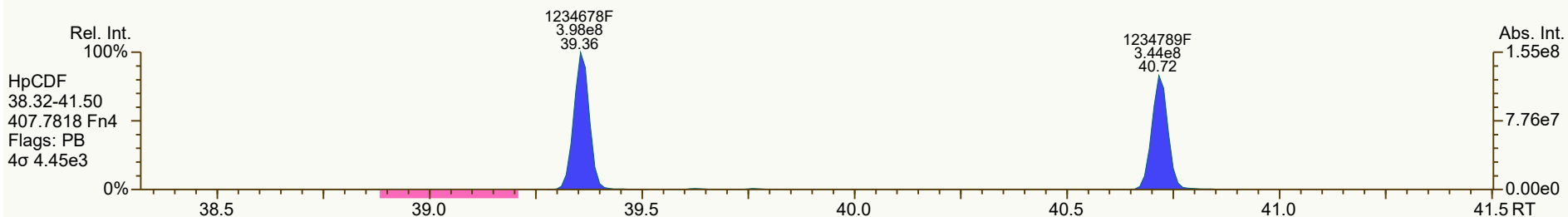
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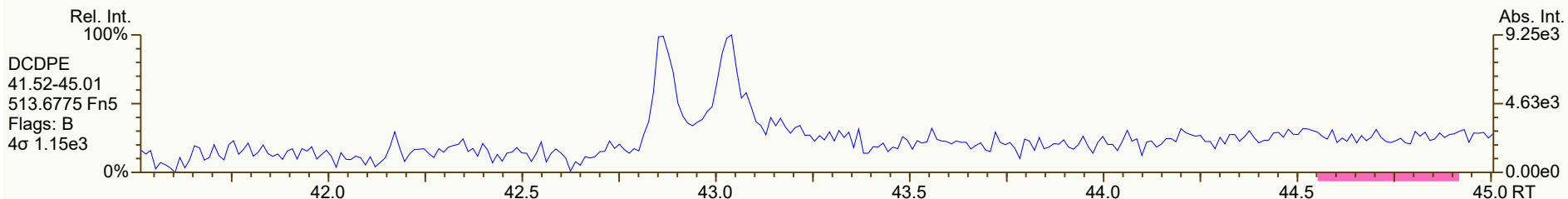
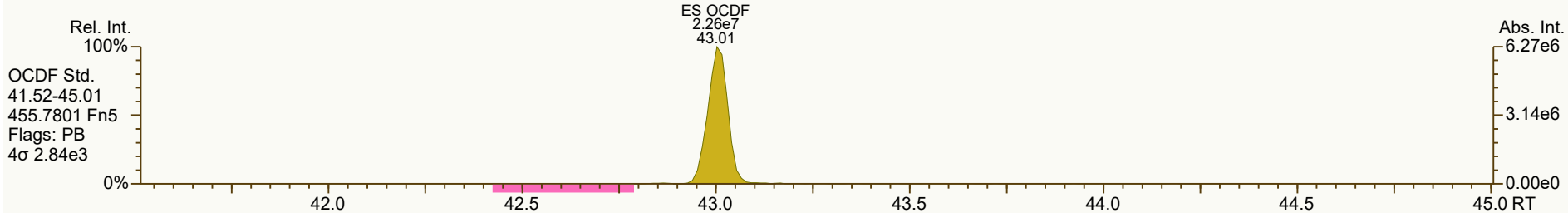
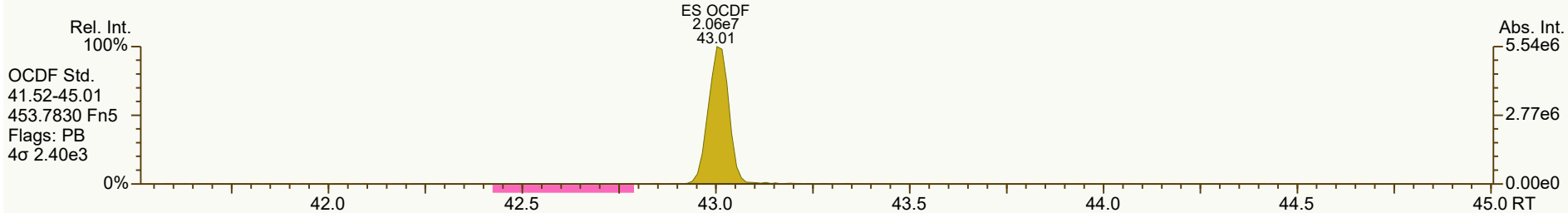
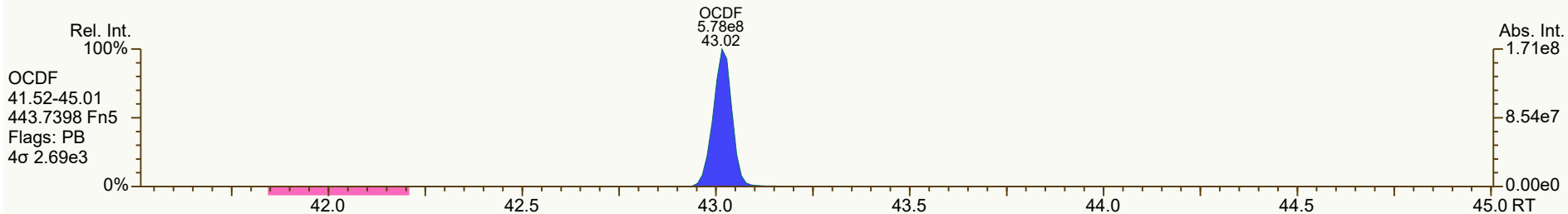
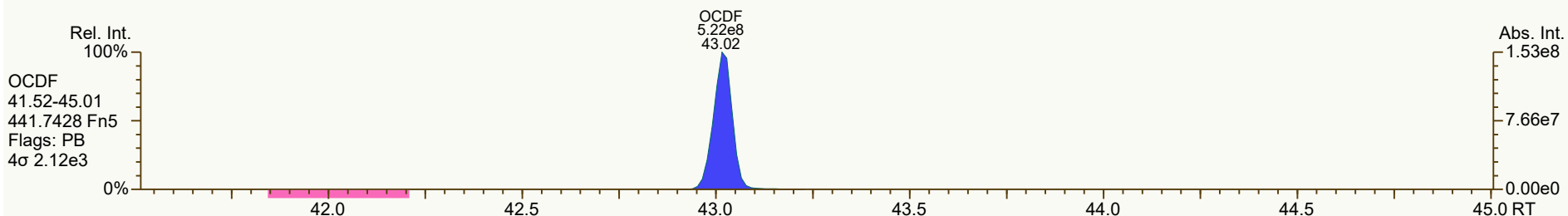


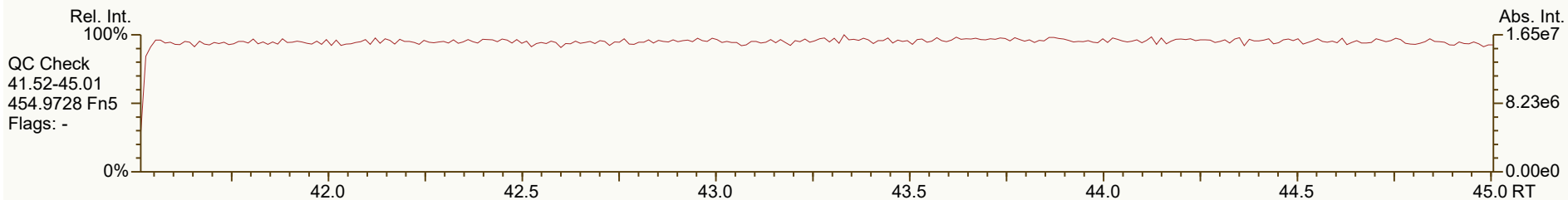
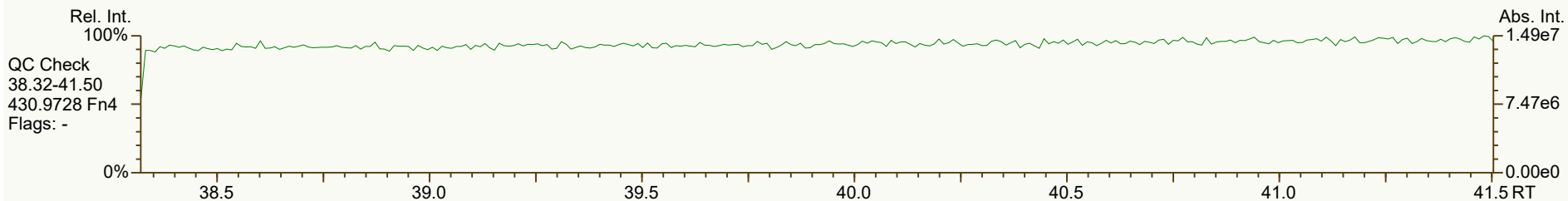
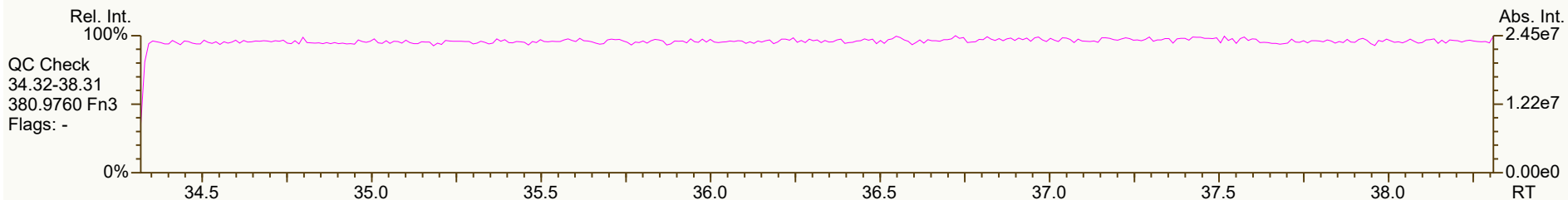
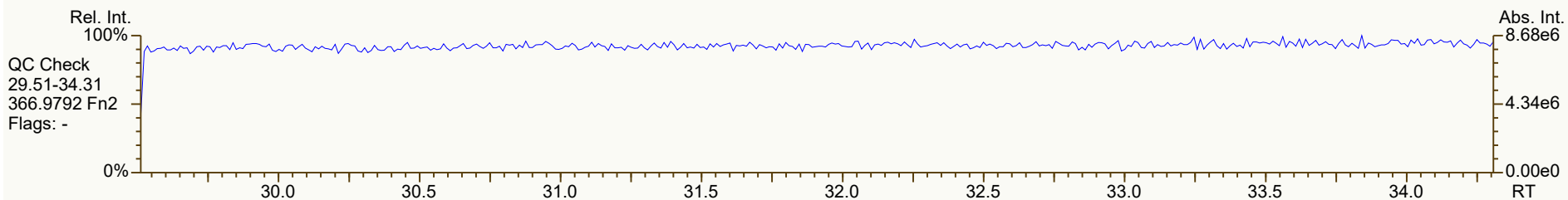
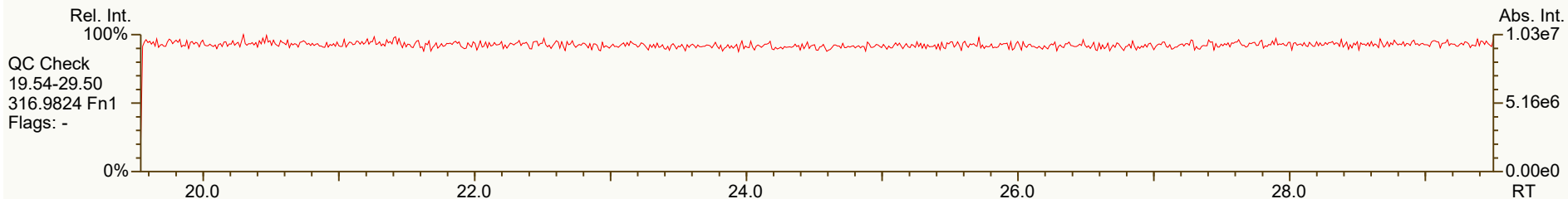
SGS ID: CS6_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

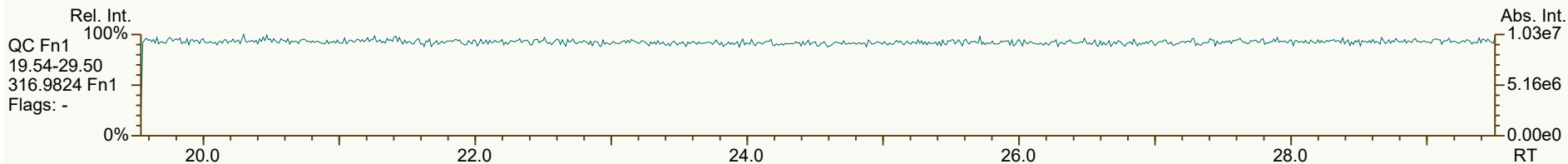
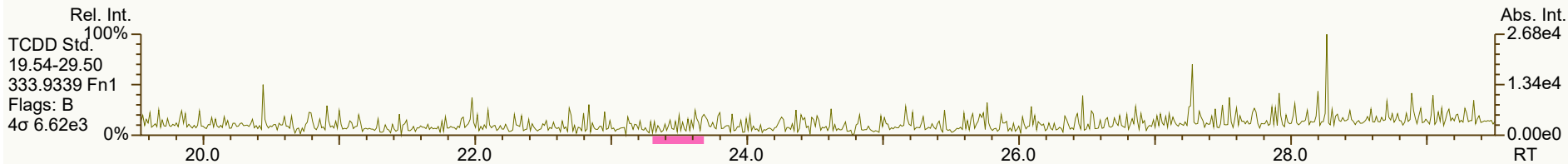
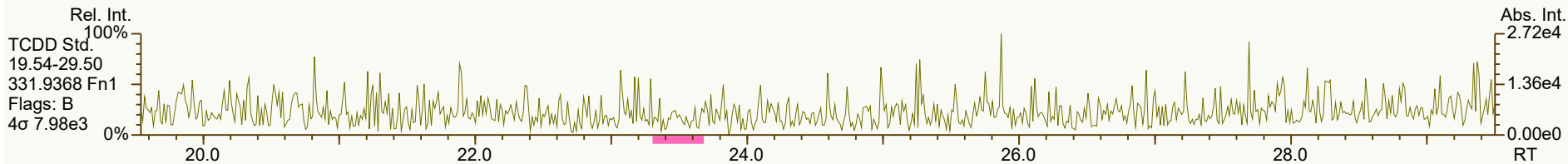
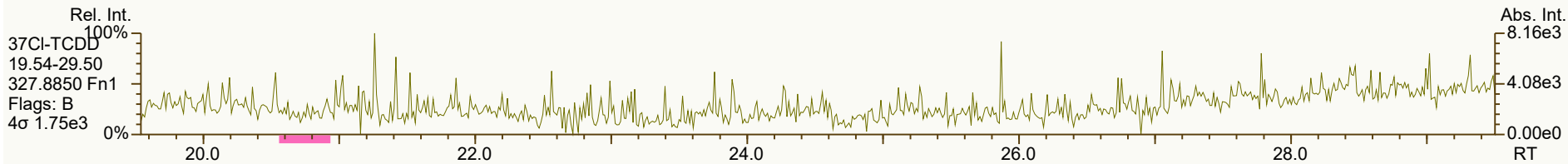
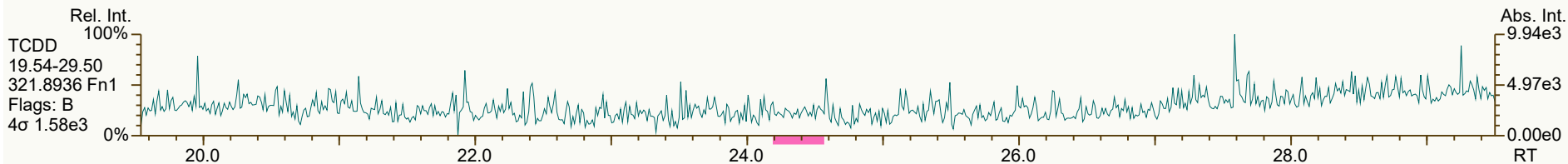
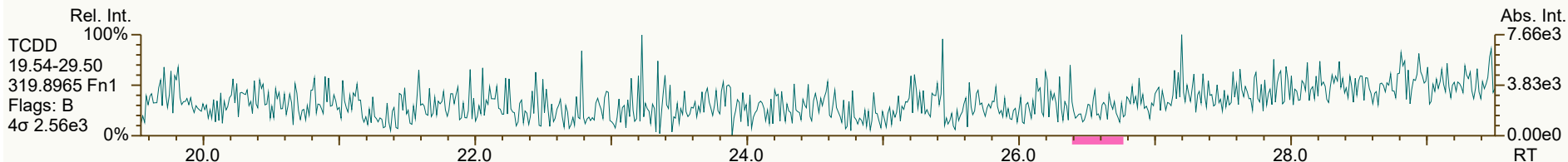
Sample ID: 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71

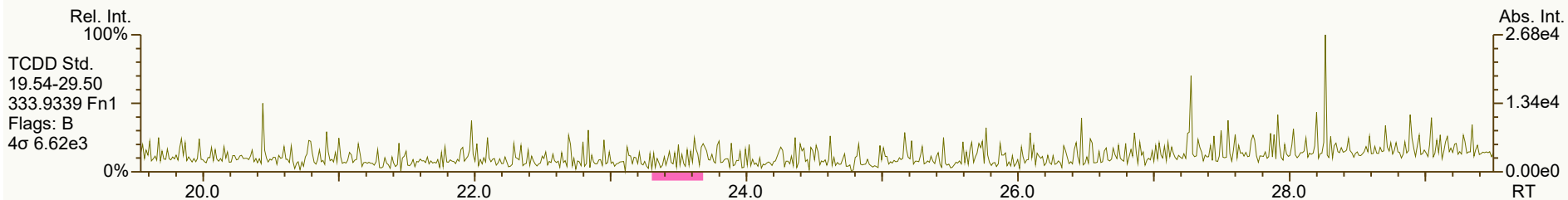
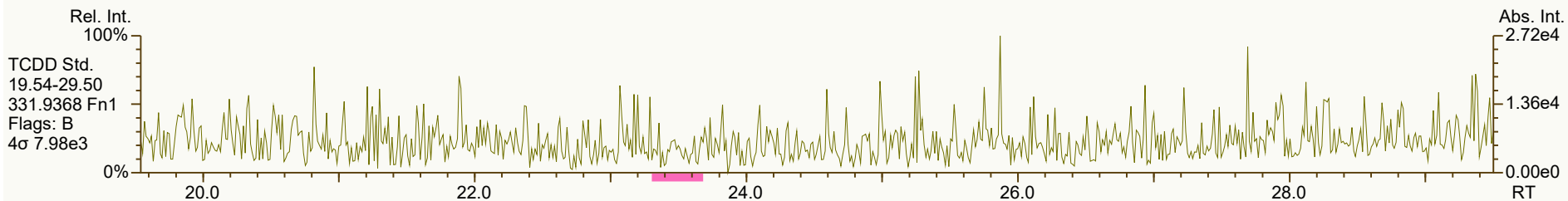
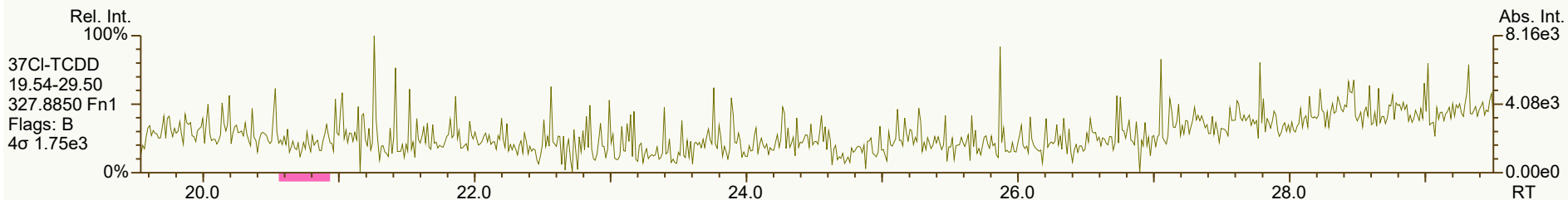
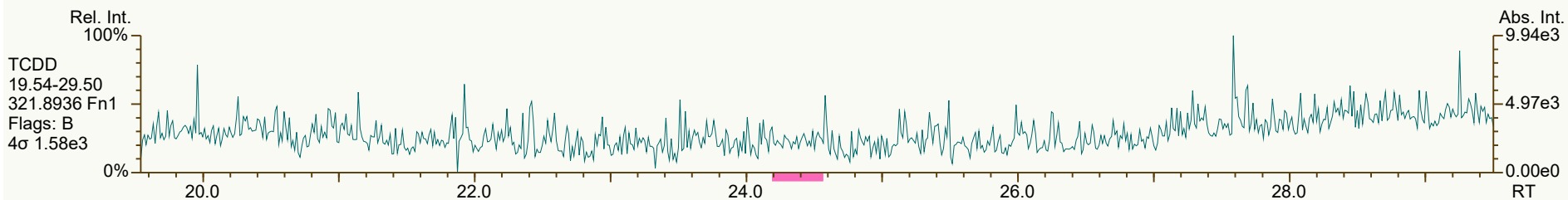
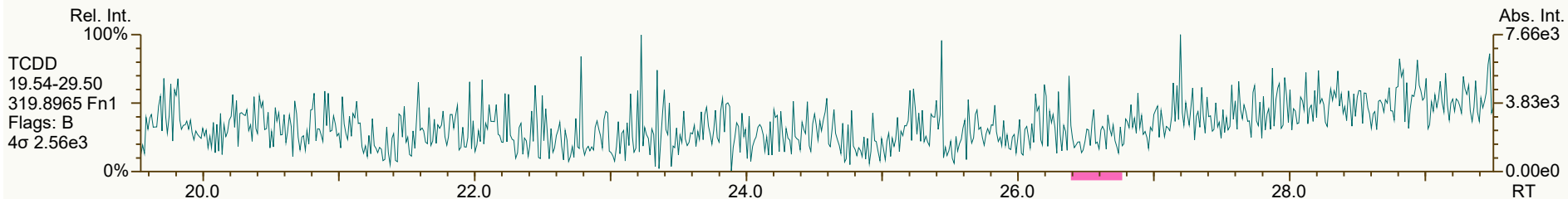
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User: DTF Datafile: 211110C10

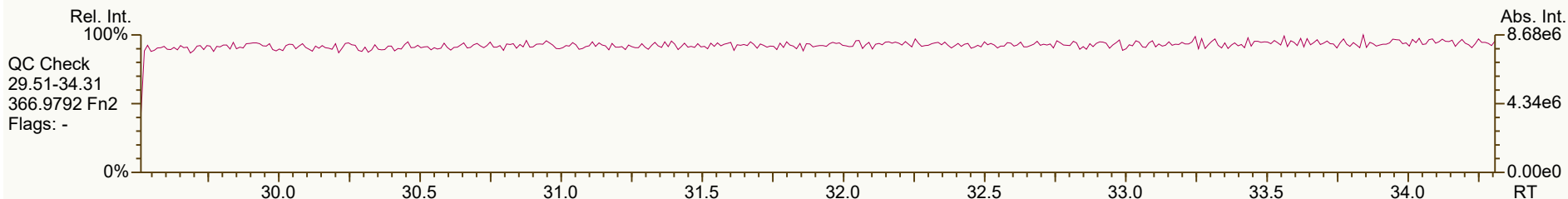
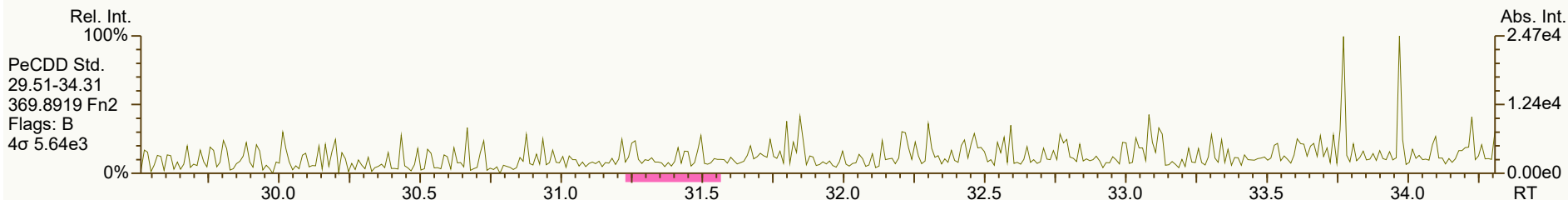
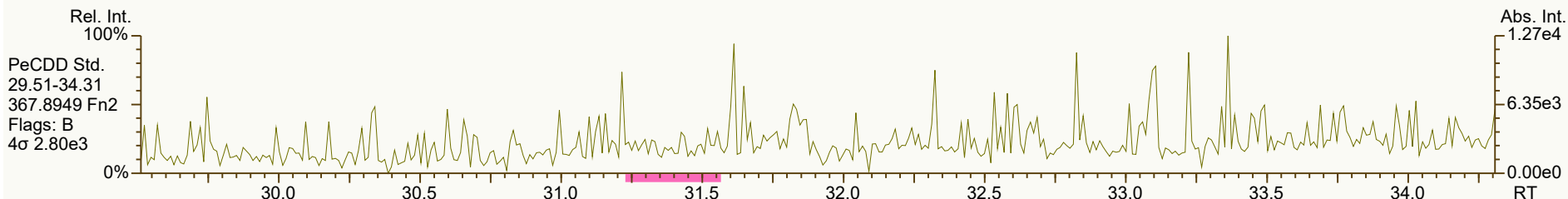
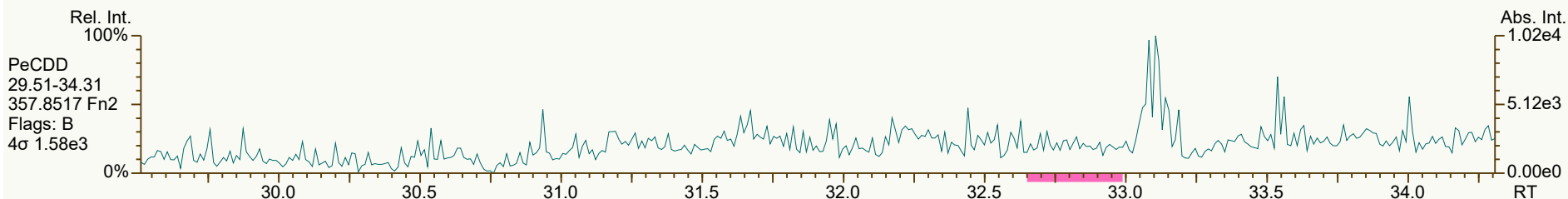
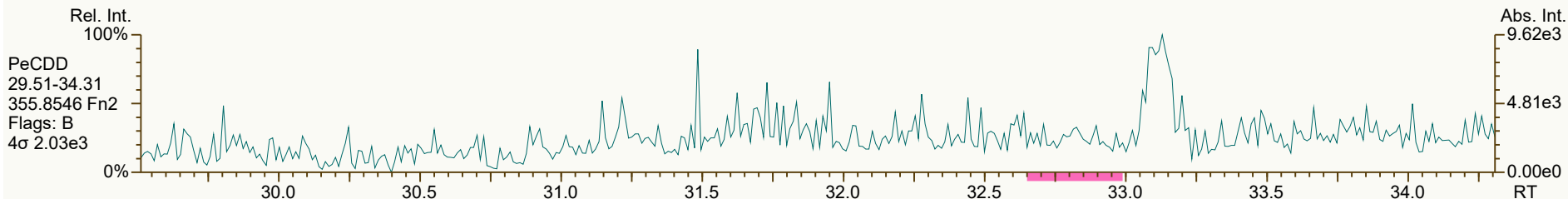


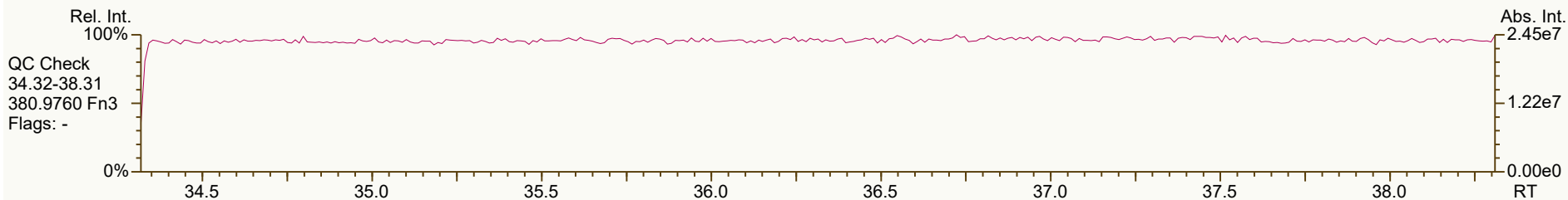
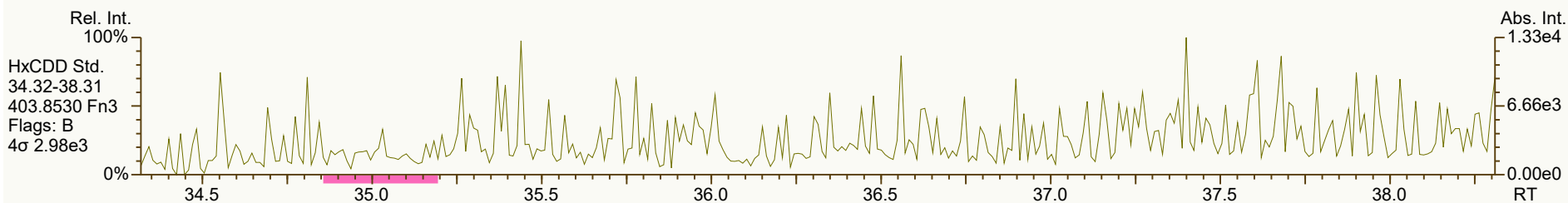
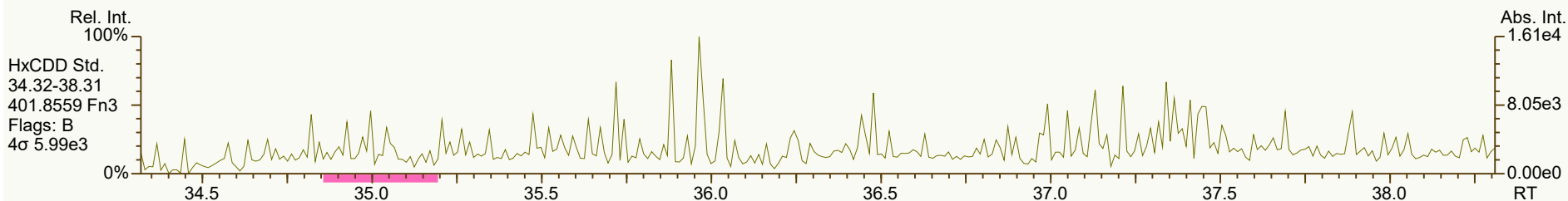
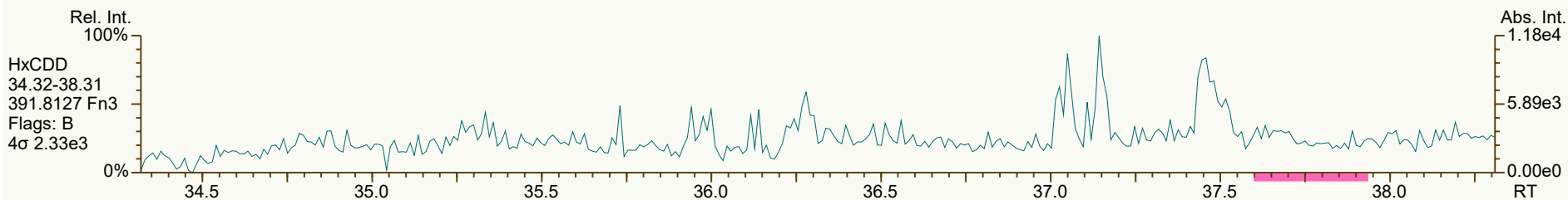
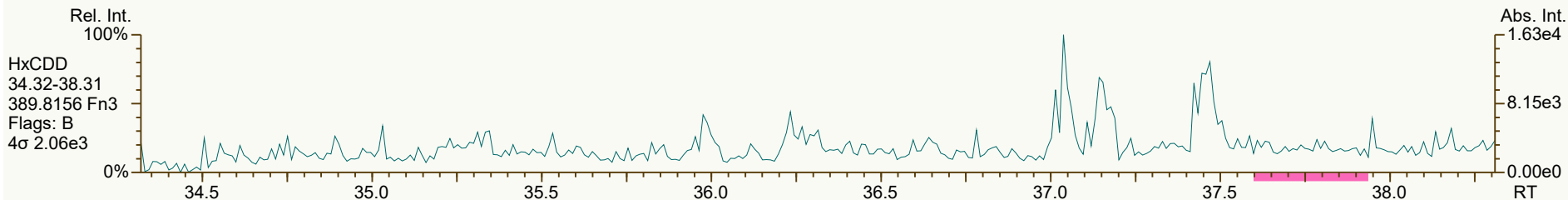


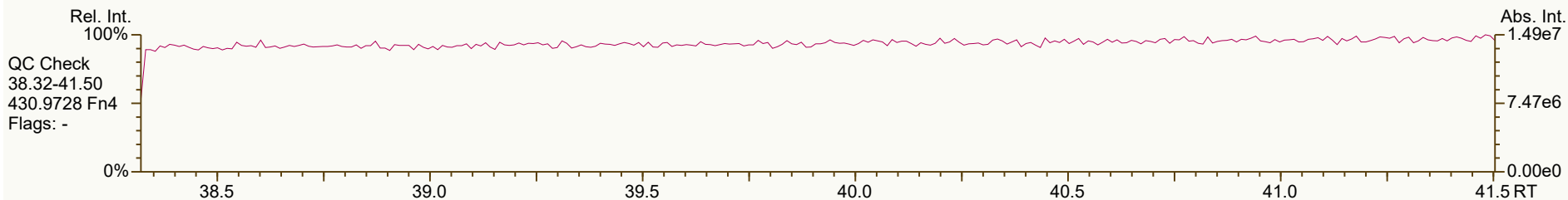
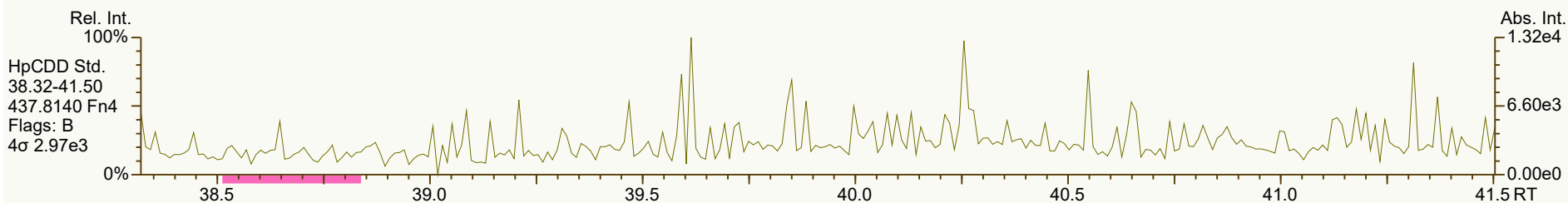
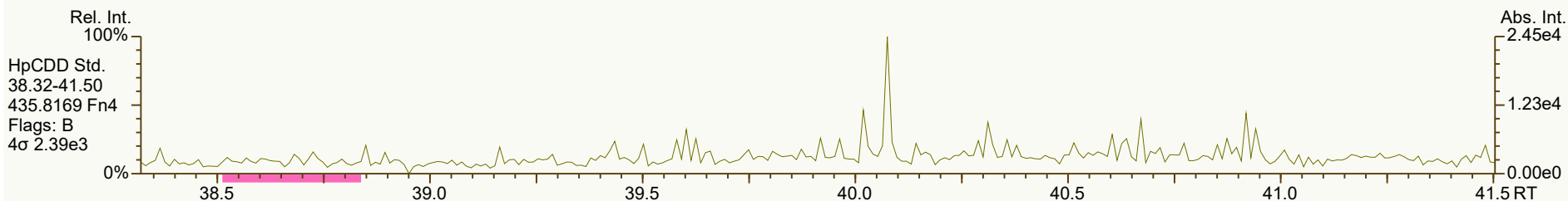
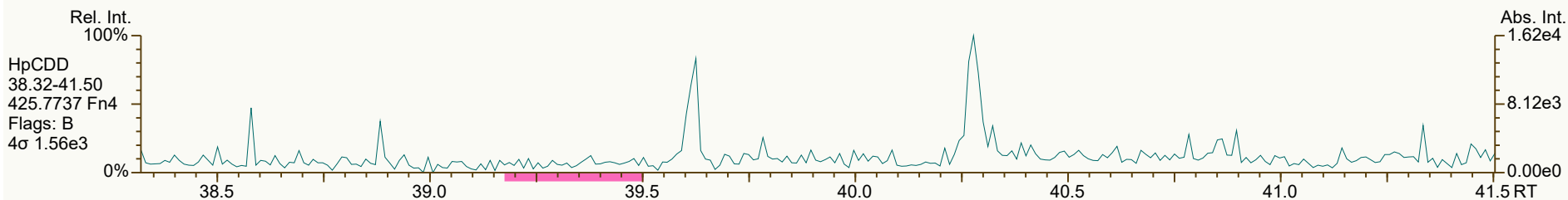
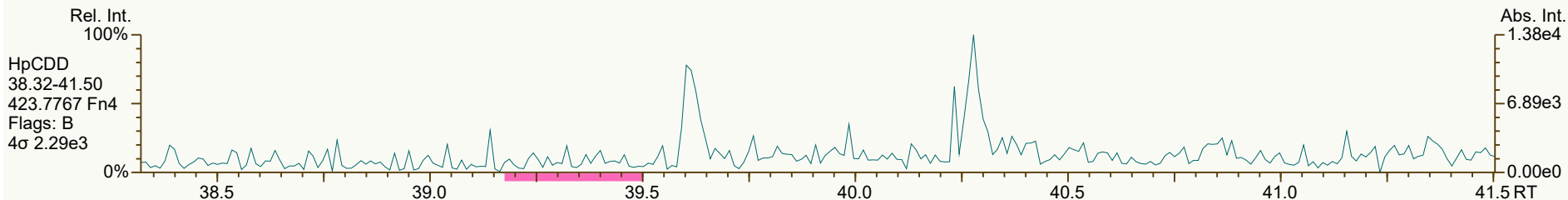


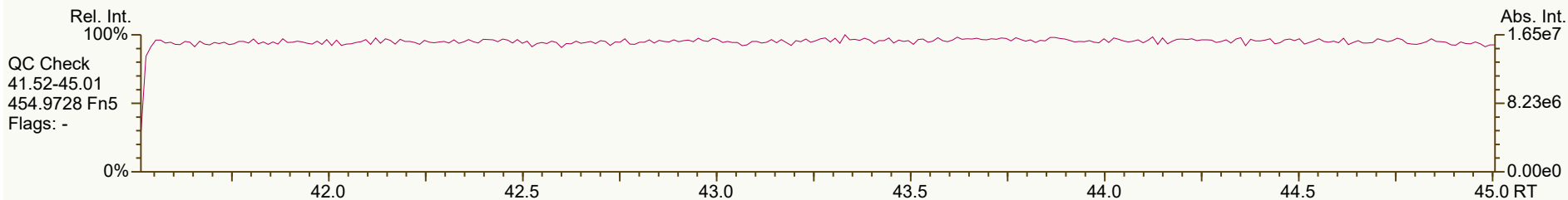
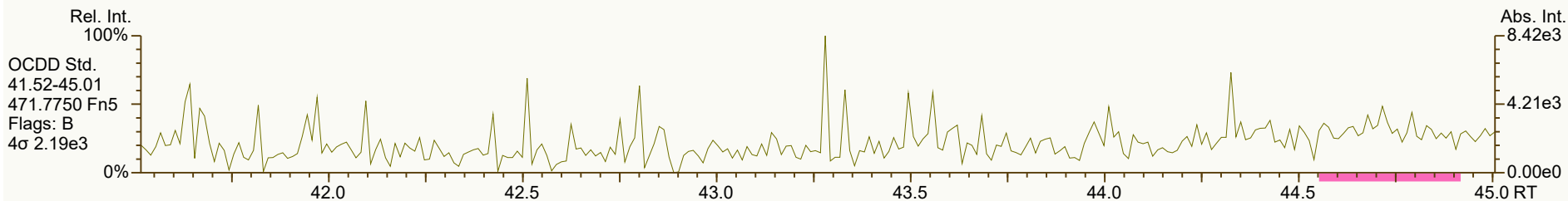
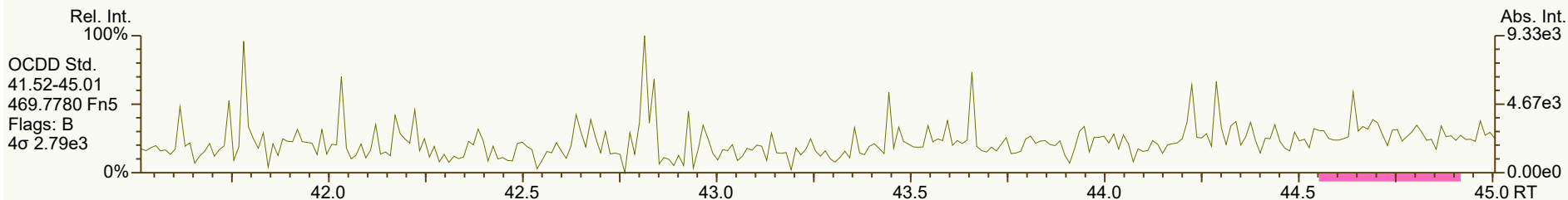
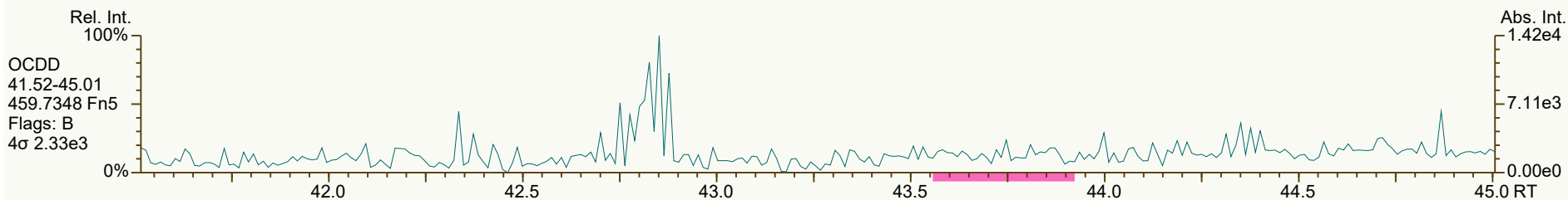
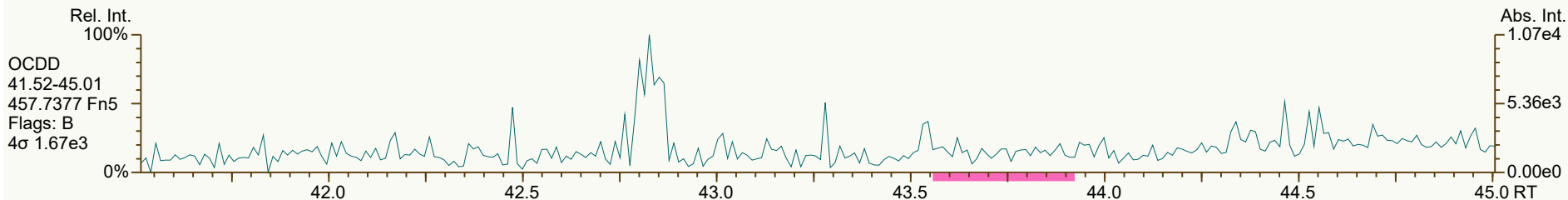


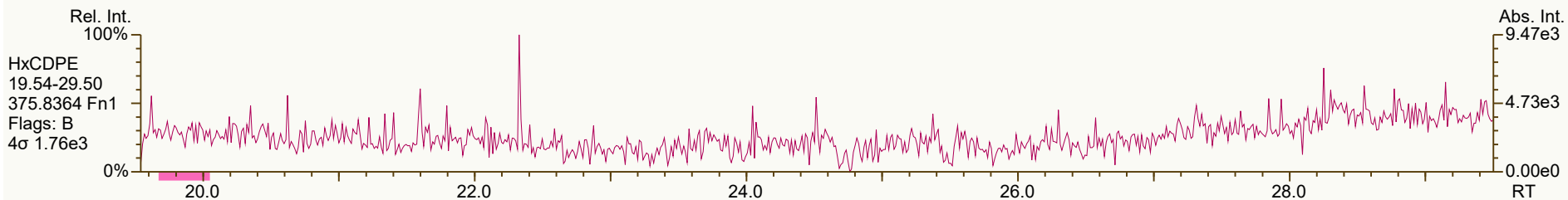
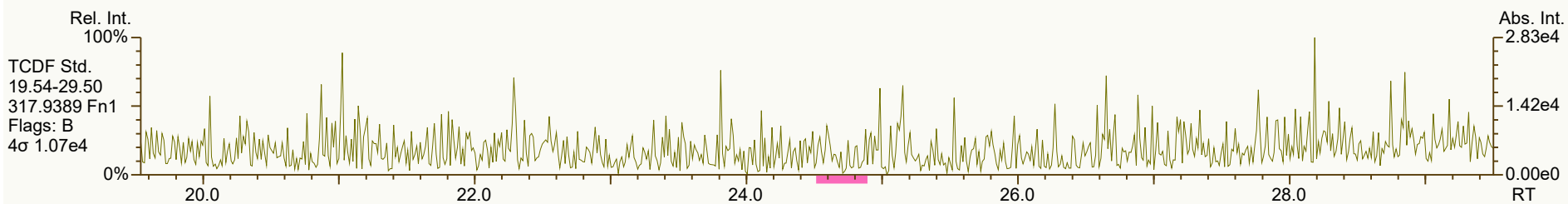
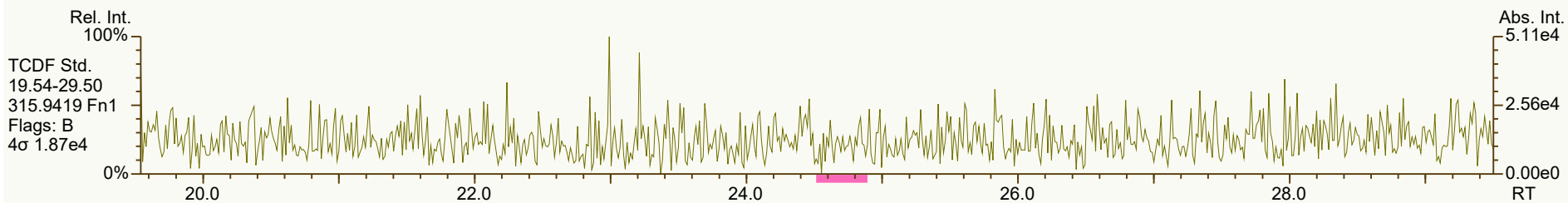
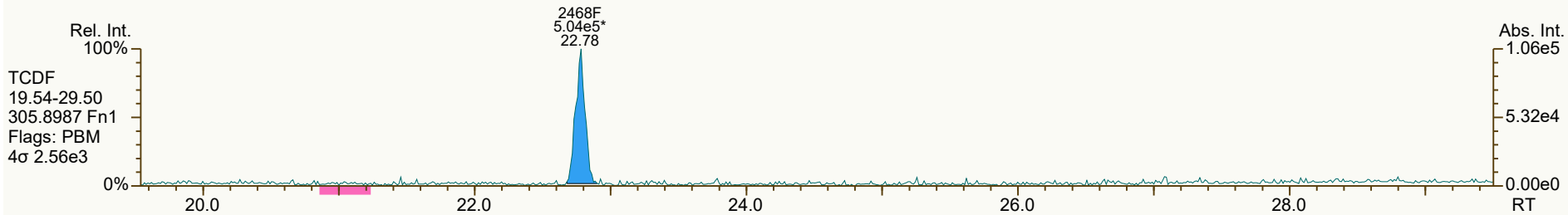
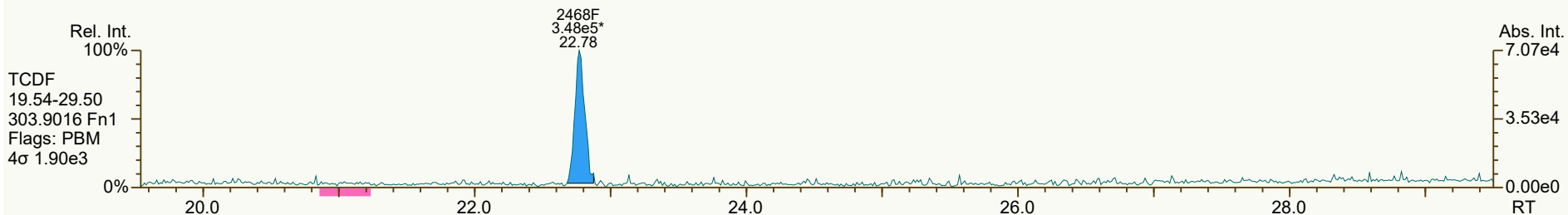


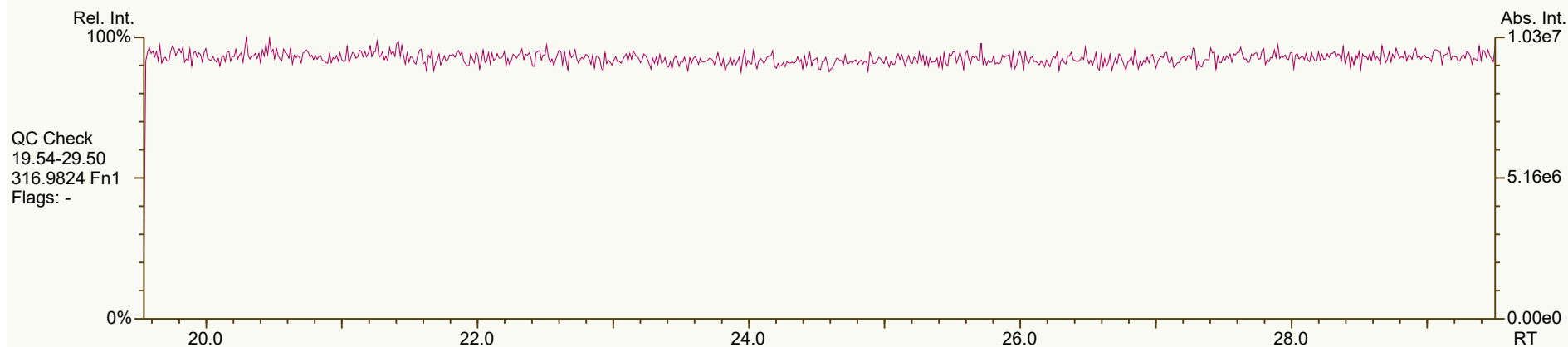
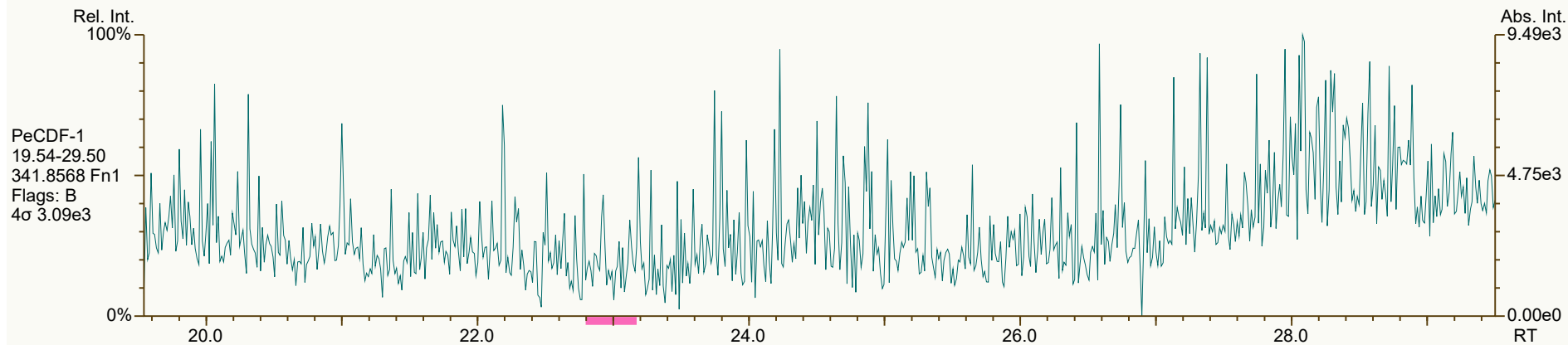
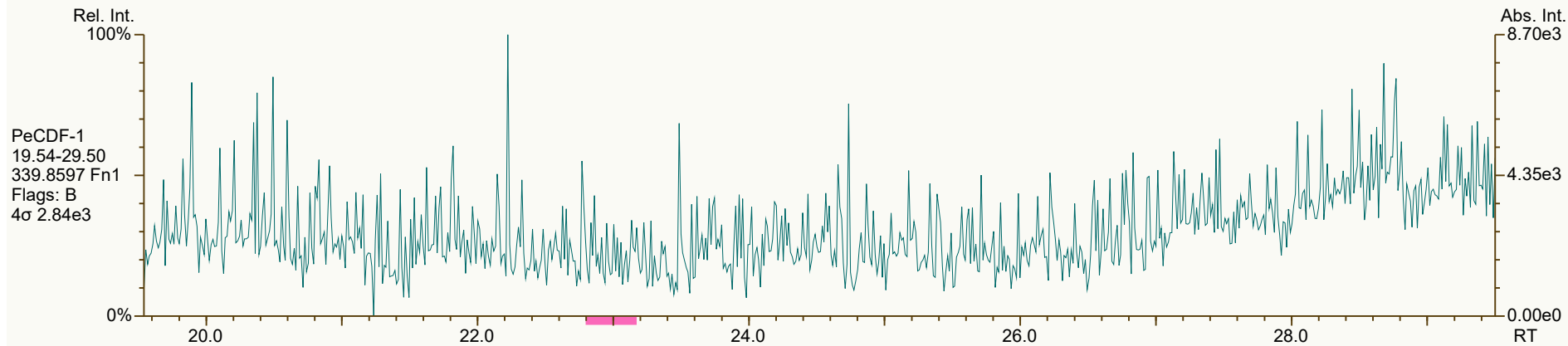


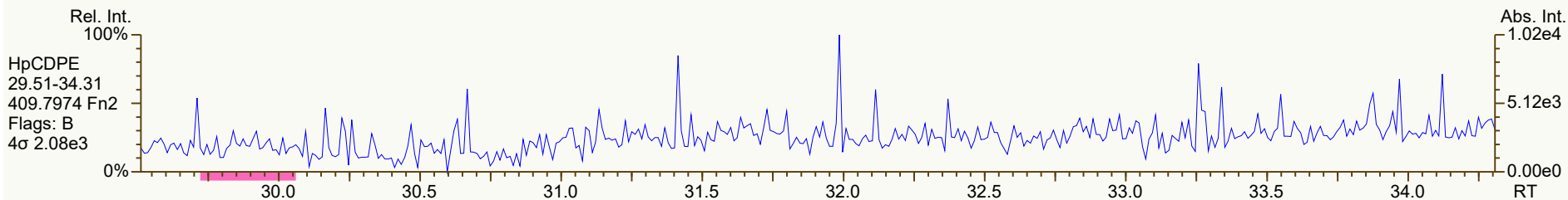
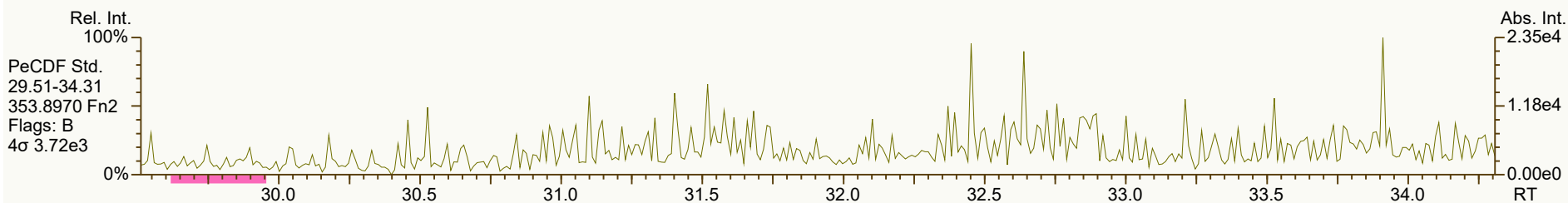
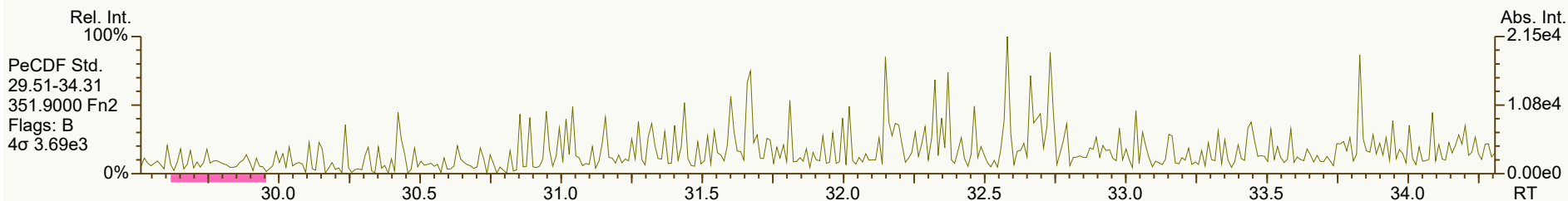
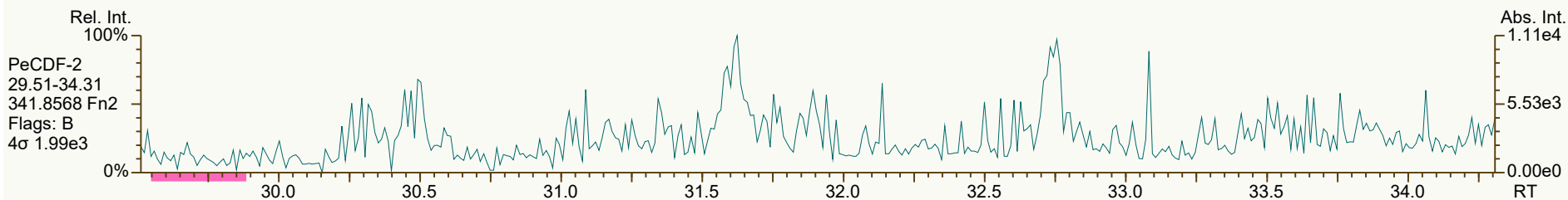
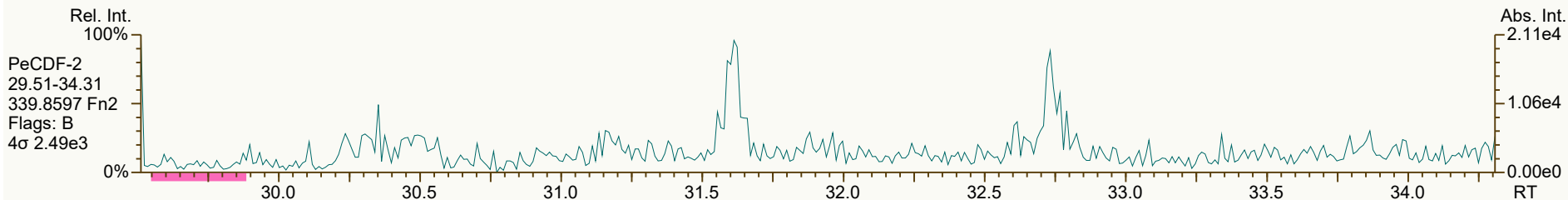


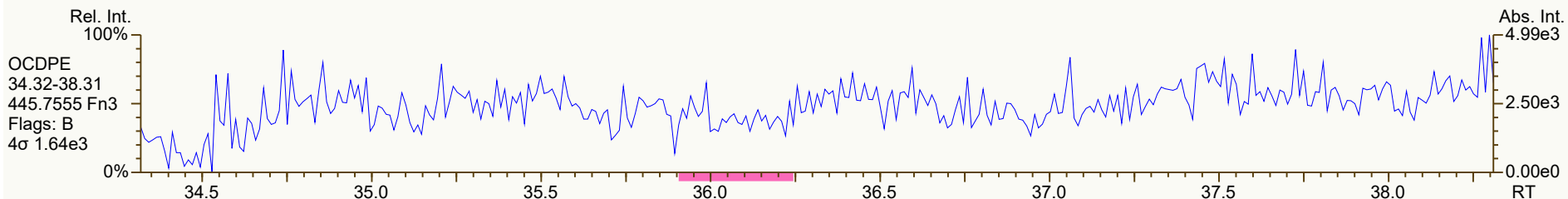
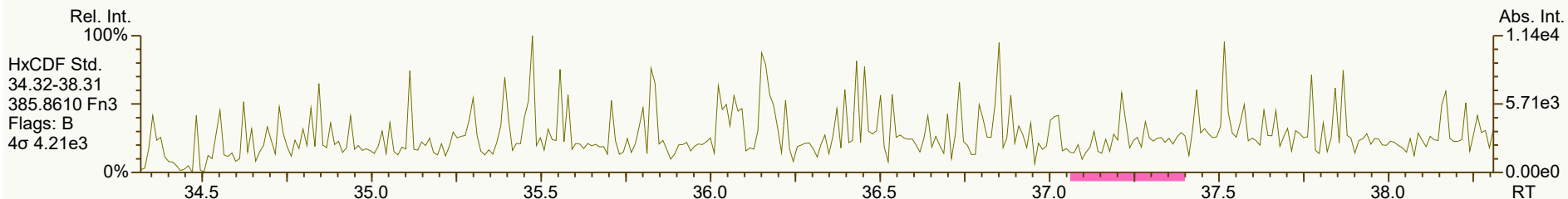
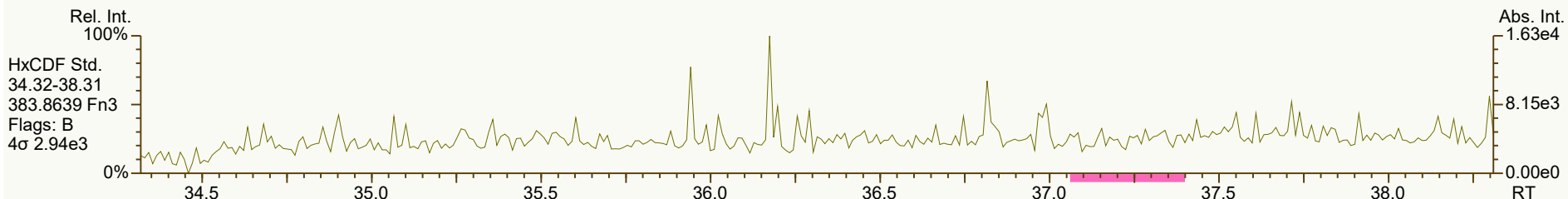
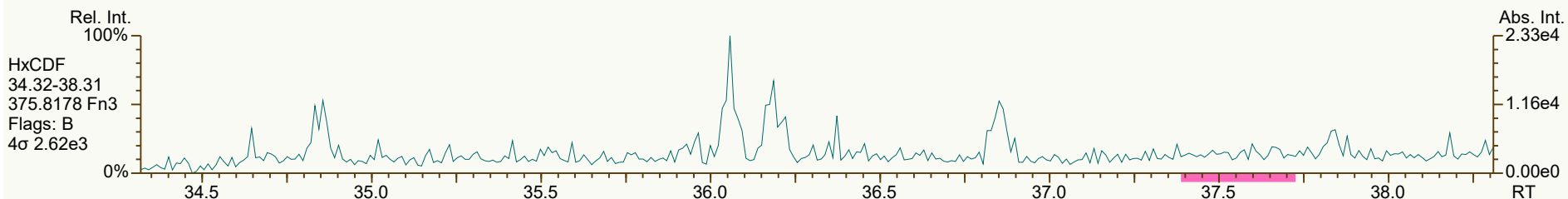
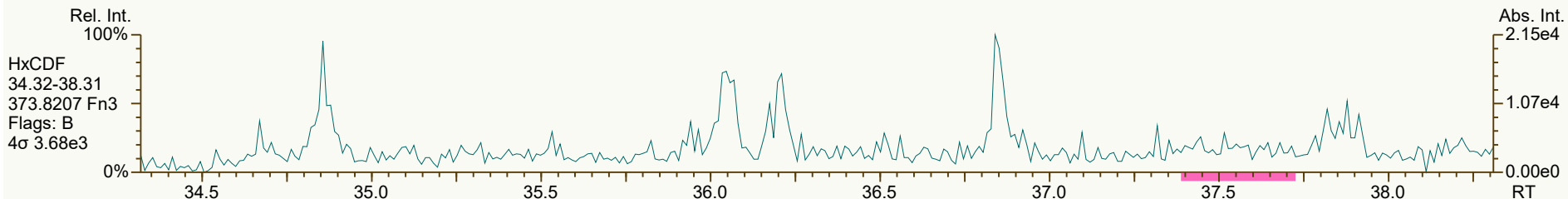


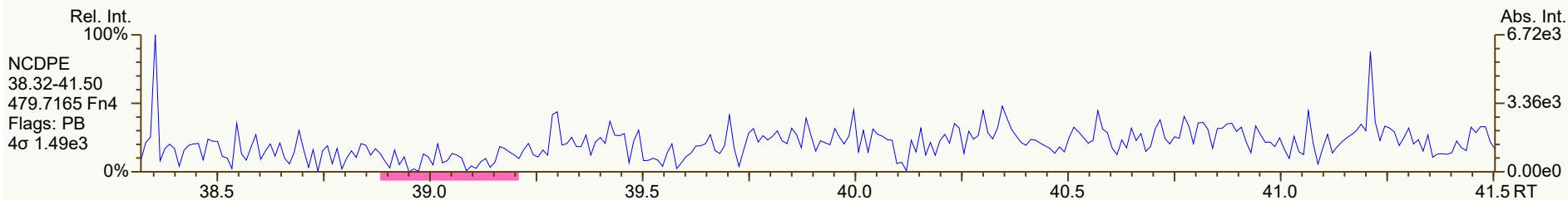
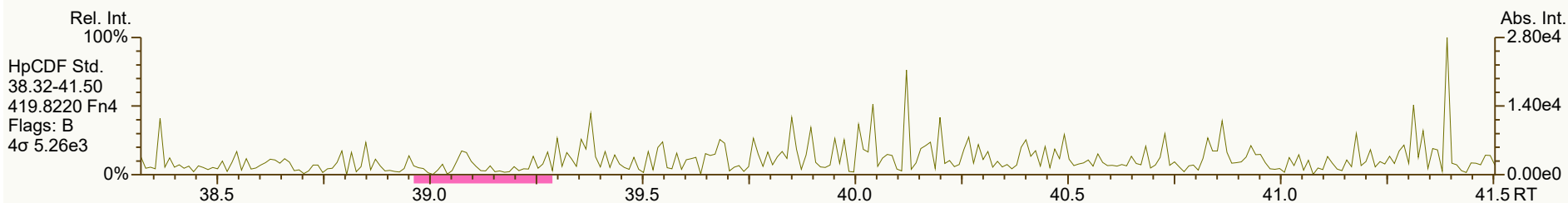
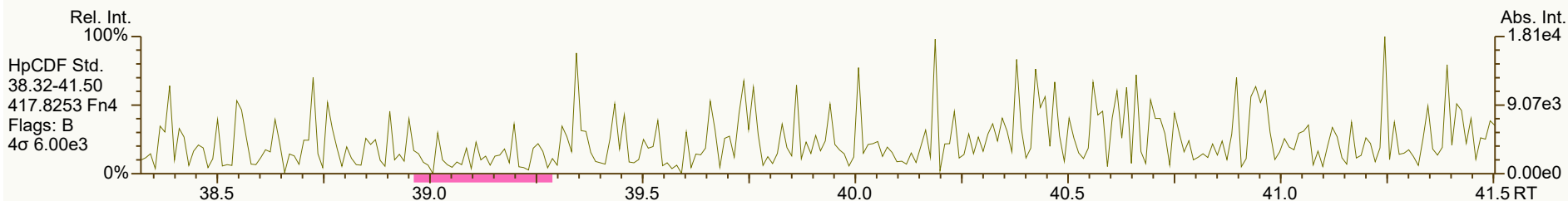
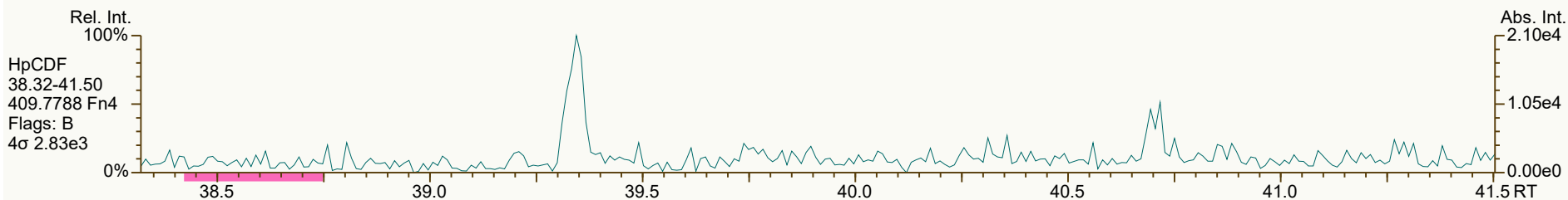
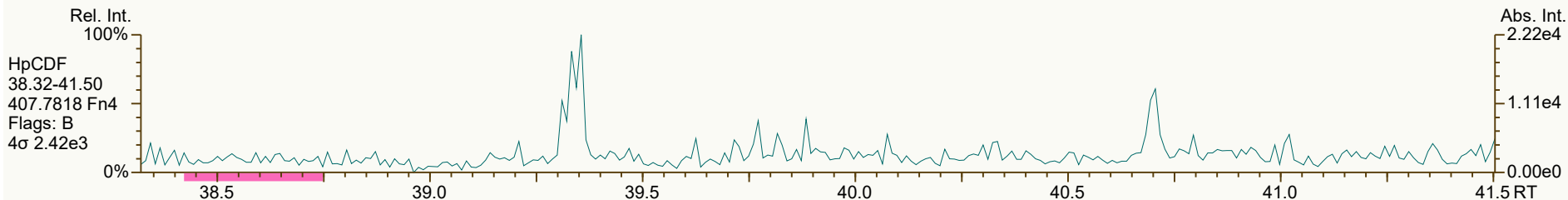


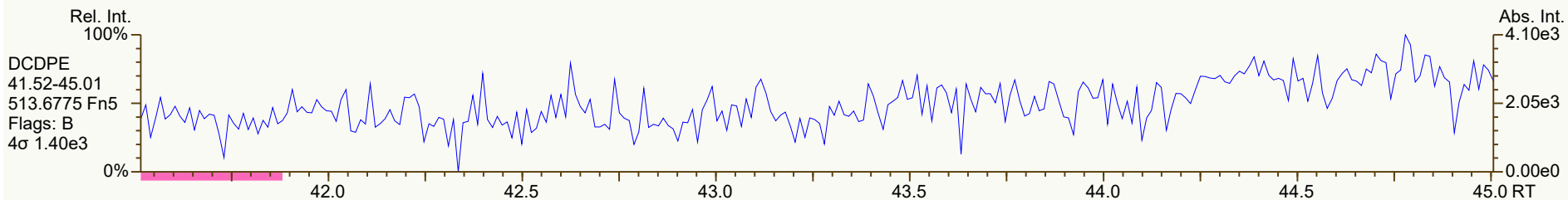
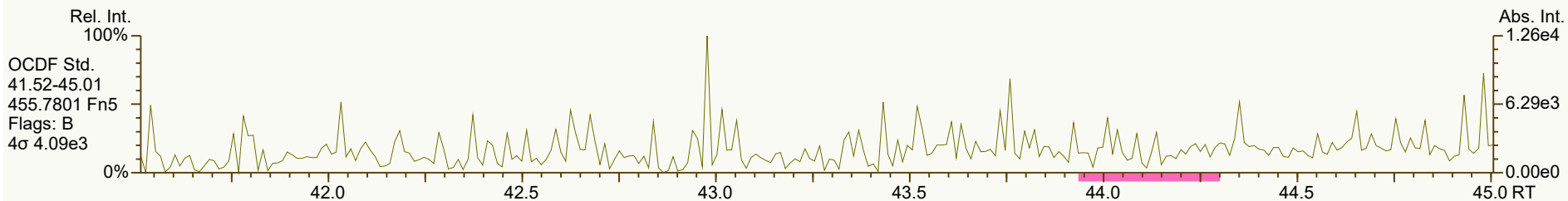
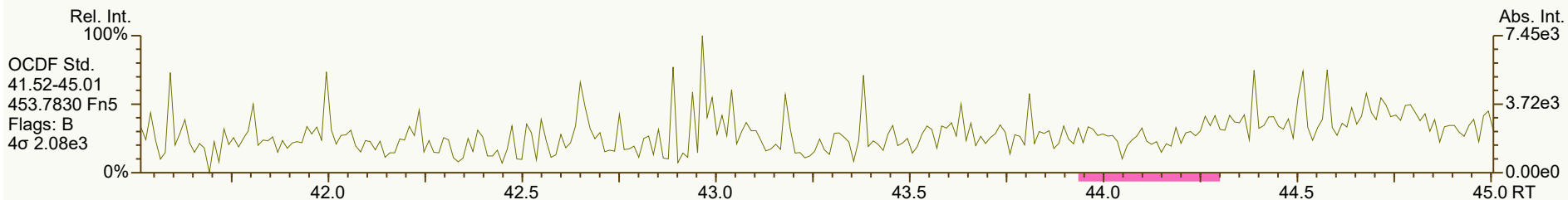
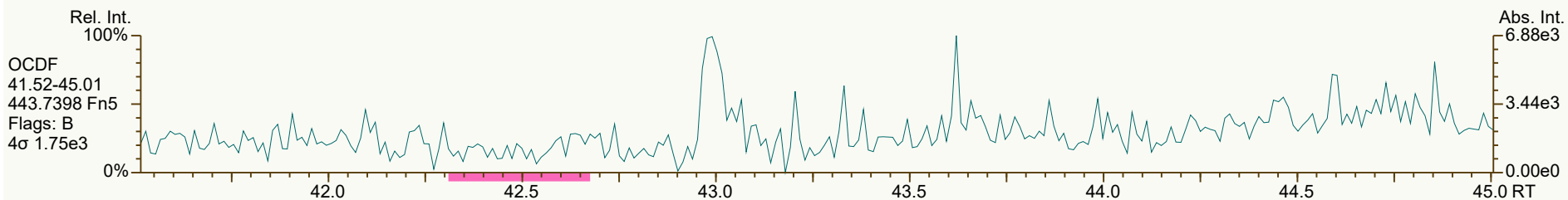
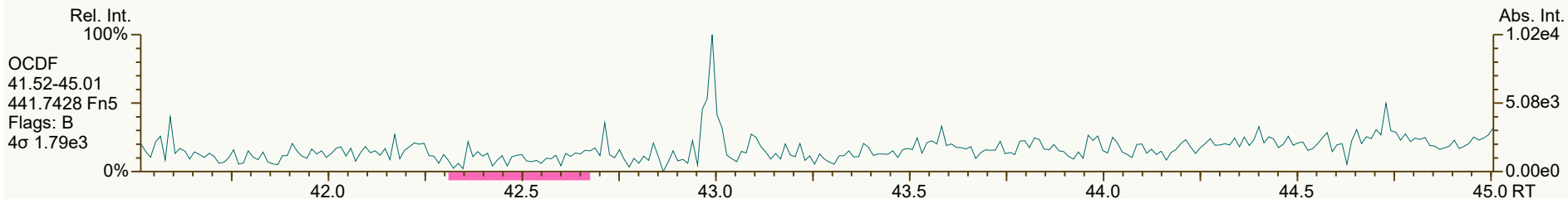








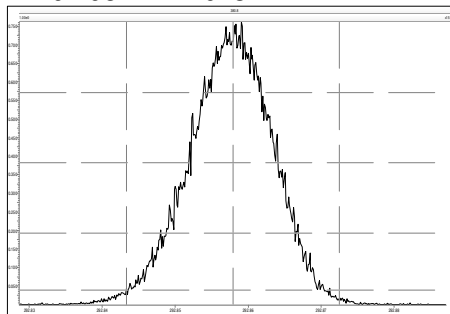




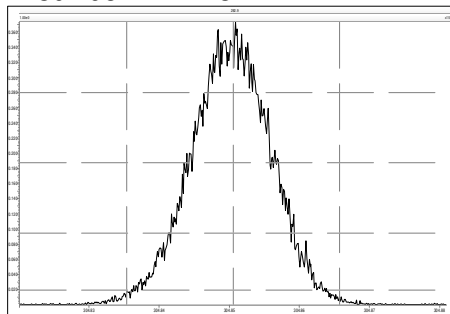
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Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

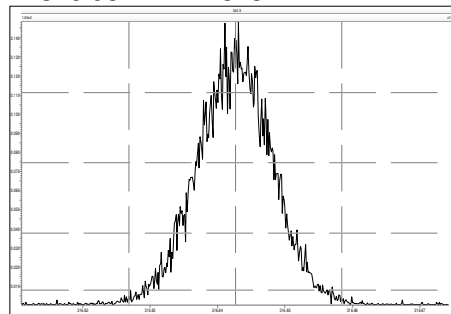
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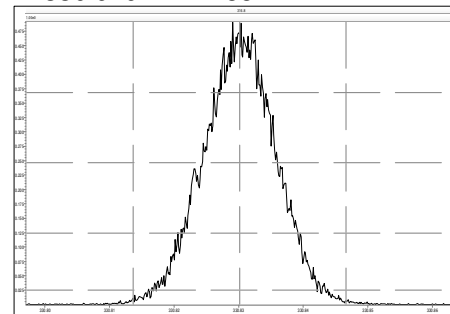
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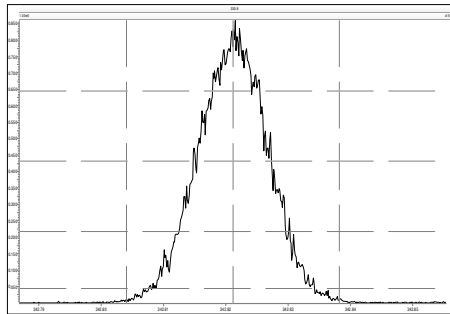
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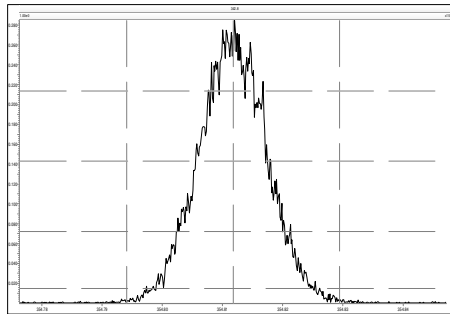
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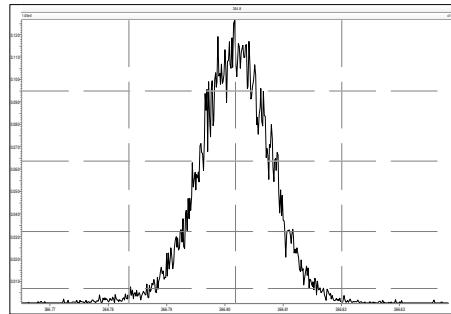
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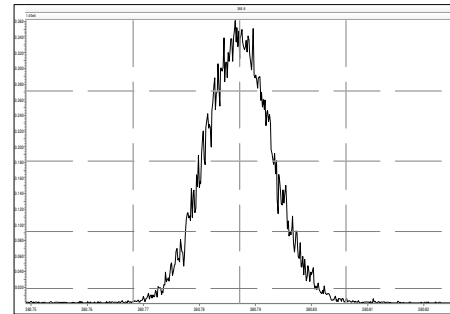
M 354.9792 R 12882



M 366.9792 R 13368



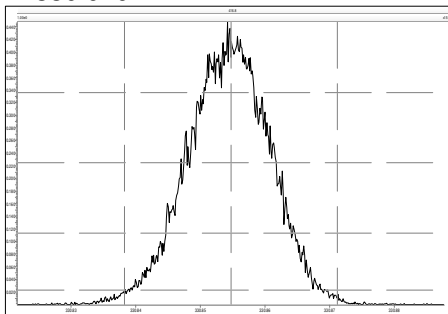
M 380.9760 R 13658



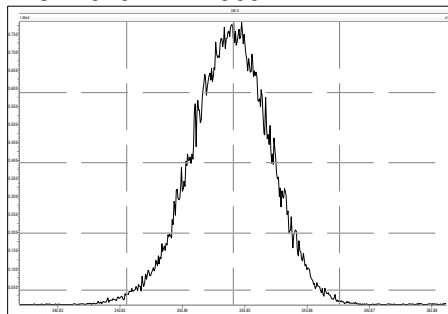
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Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

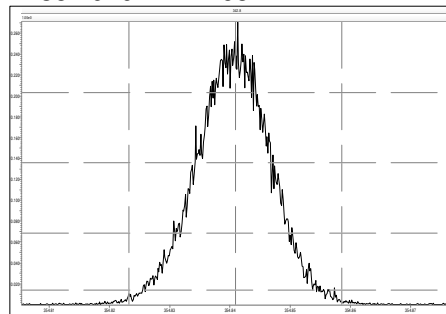
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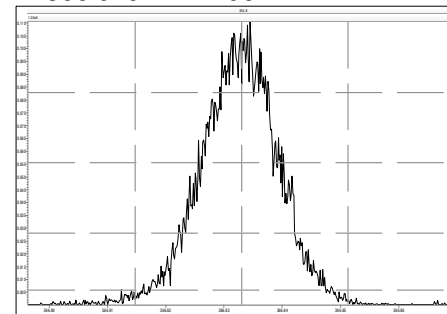
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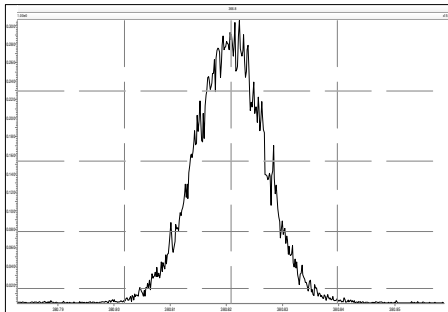
M 354.9792 R 11684



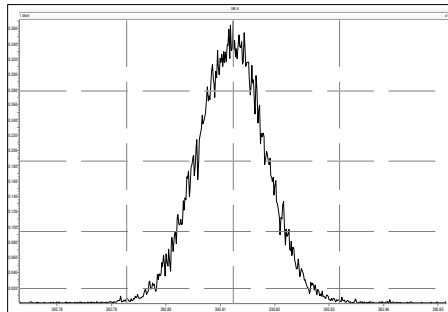
M 366.9792 R 11962



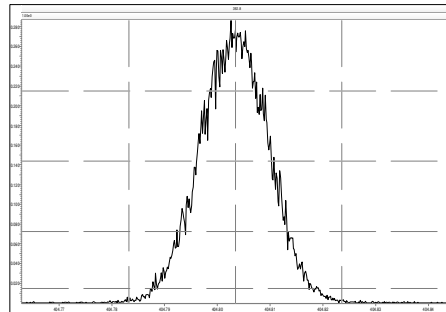
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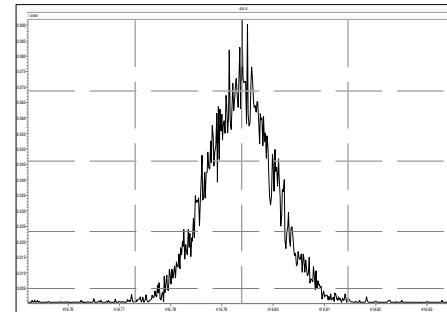
M 392.9760 R 13968



M 404.9760 R 13227



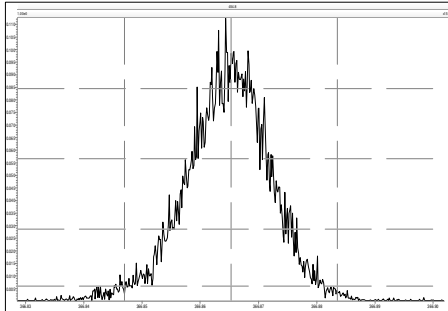
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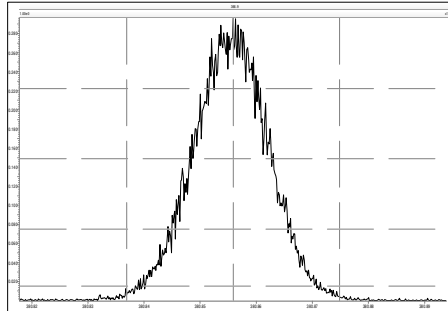
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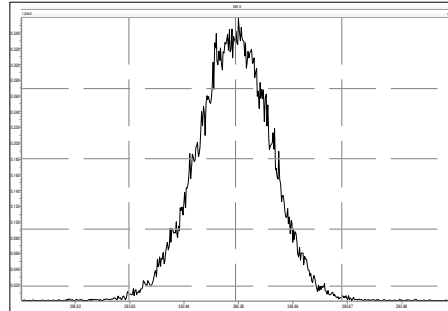
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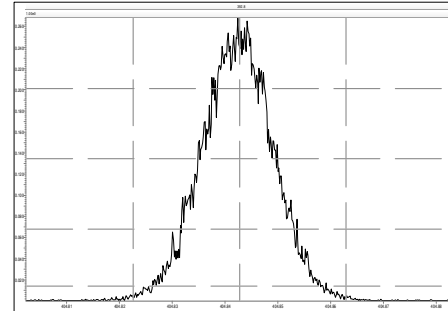
M 380.9760 R 12315



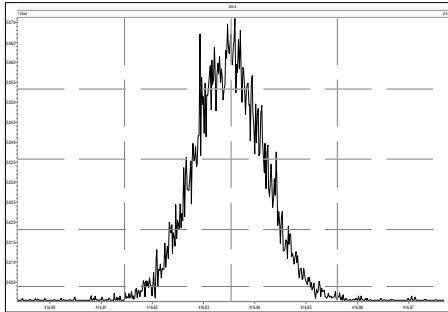
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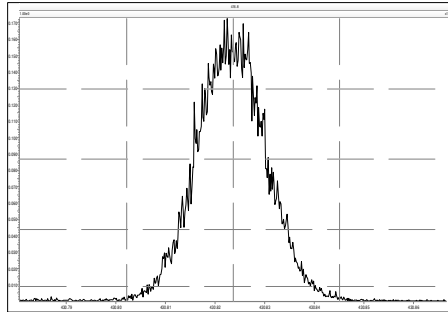
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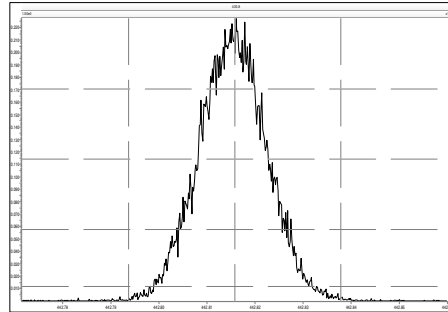
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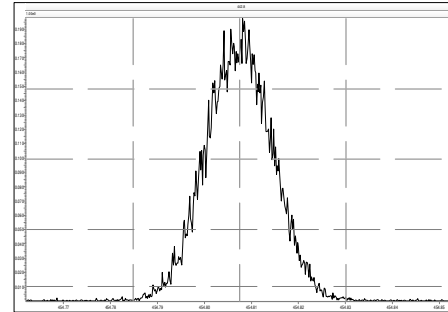
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M 442.9728 R 13364



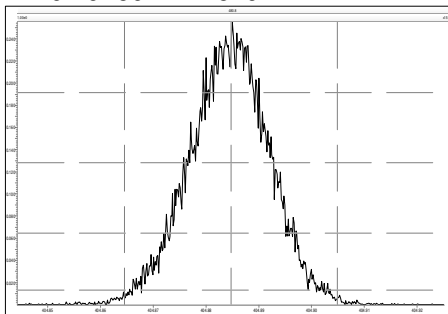
M 454.9728 R 13810



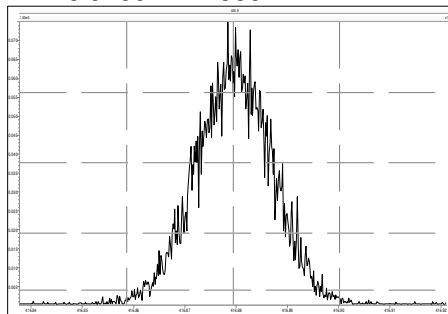
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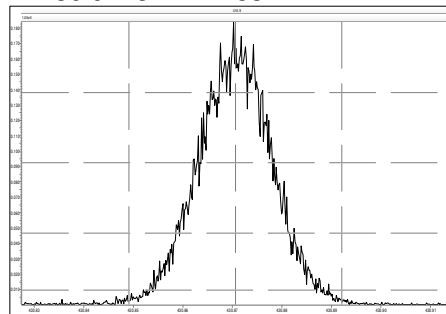
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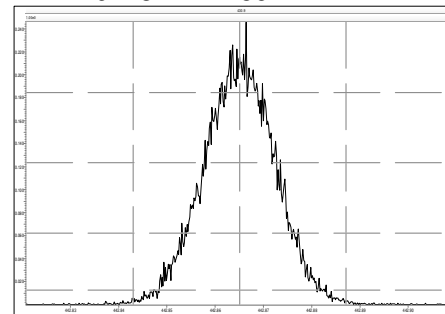
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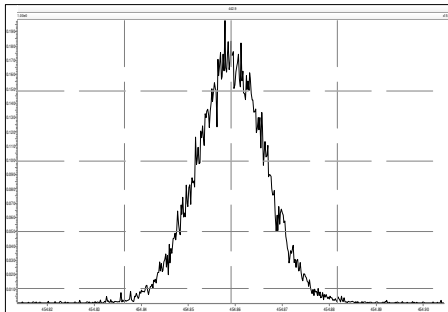
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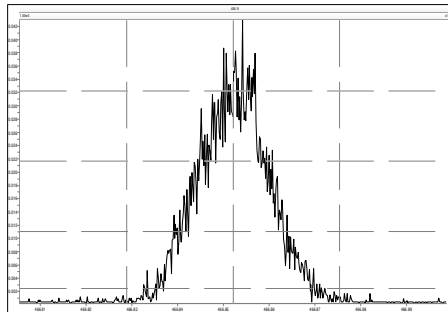
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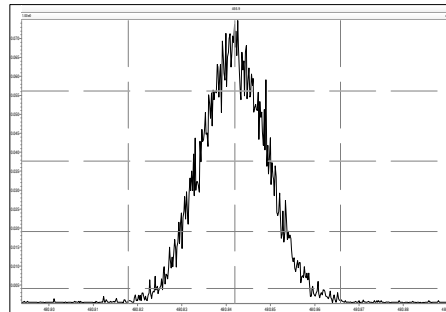
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M 466.9728 R 13810



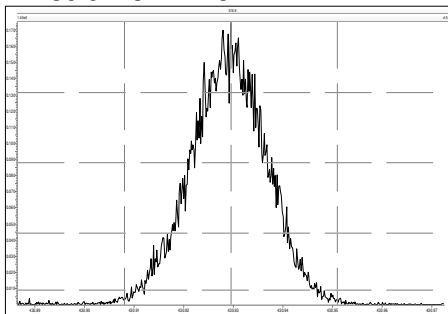
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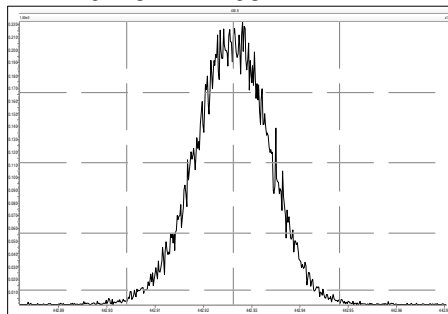
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Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

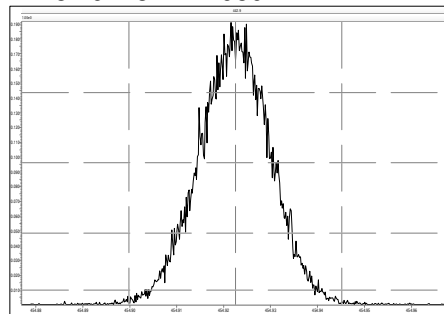
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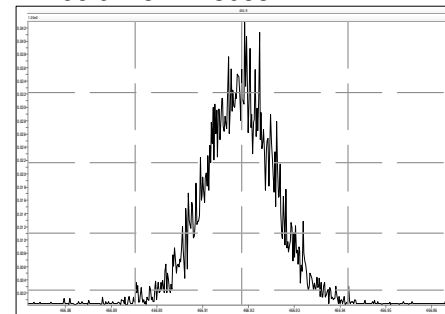
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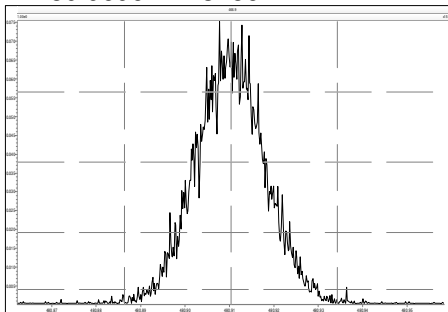
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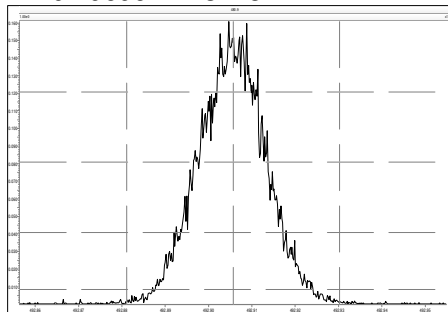
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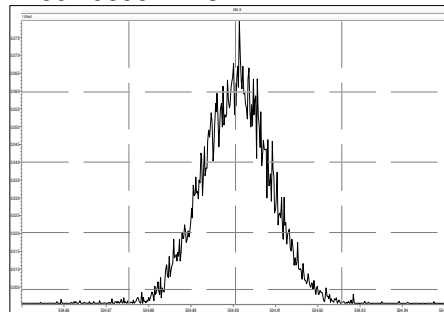
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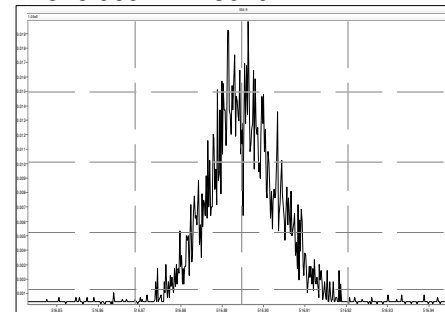
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M 504.9696 R 13227



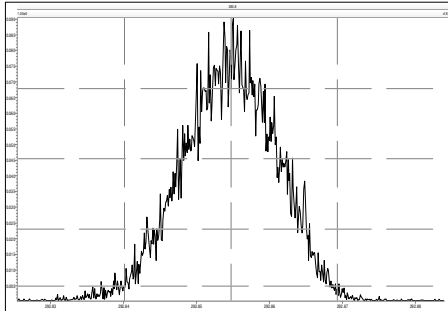
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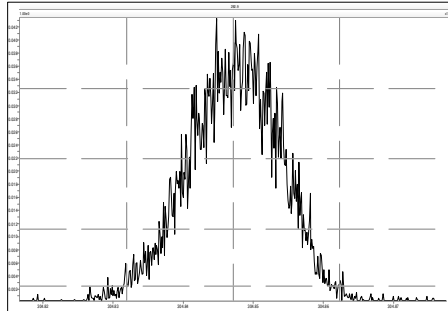
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Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

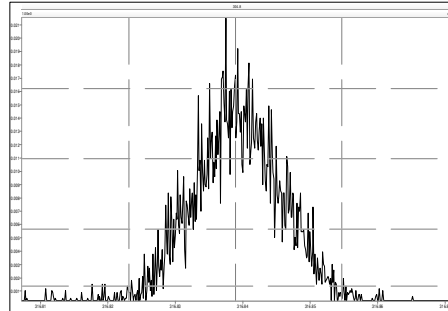
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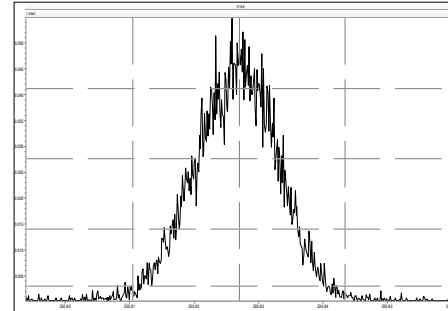
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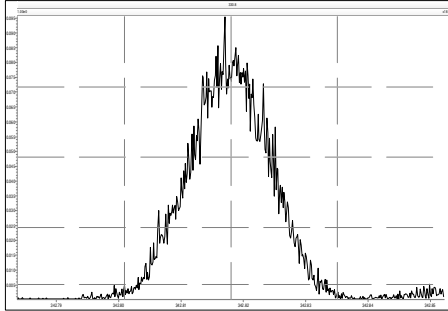
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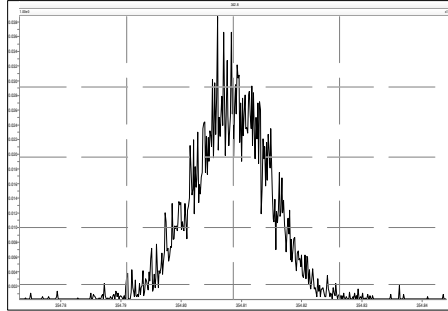
M 330.9792 R 11062



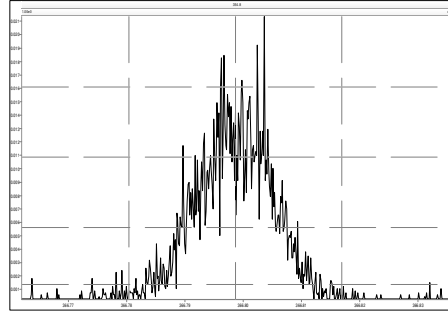
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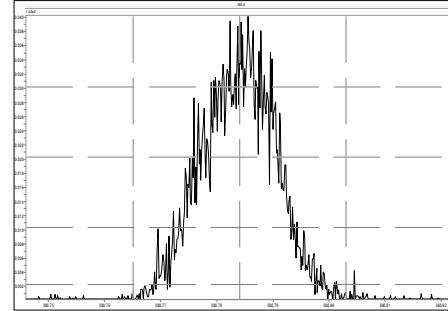
M 354.9792 R 12439



M 366.9792 R 12694



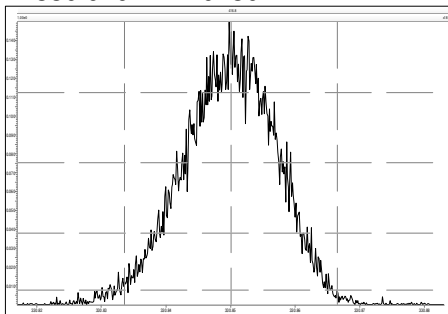
M 380.9760 R 13224



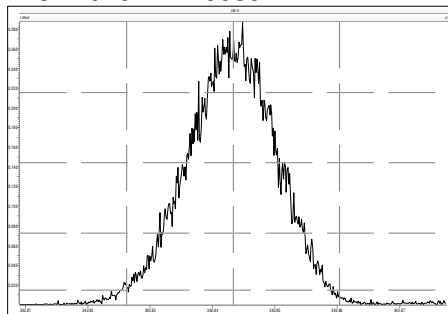
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Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

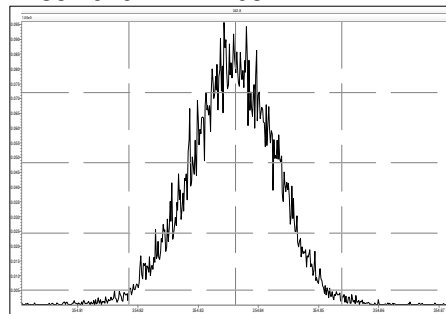
M 330.9792 R 10730



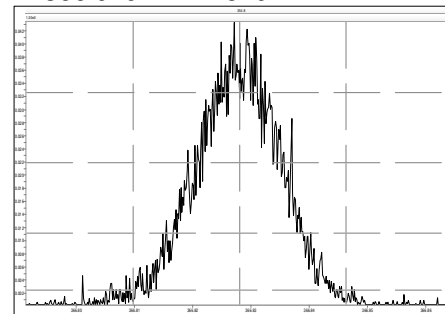
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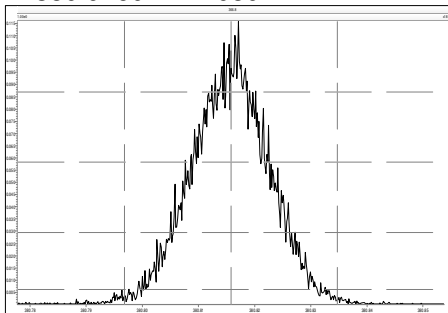
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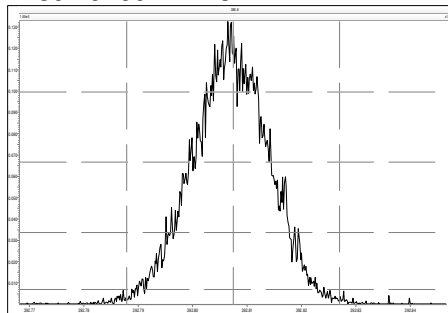
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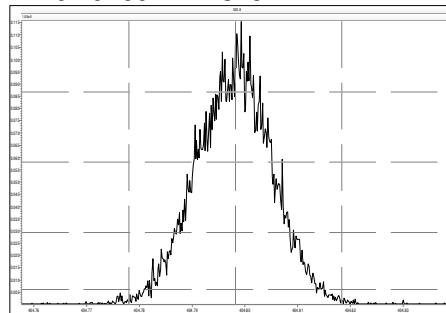
M 380.9760 R 12080



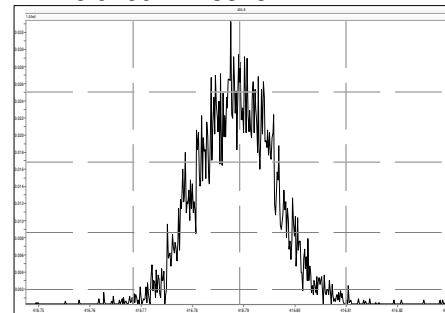
M 392.9760 R 12377



M 404.9760 R 12375



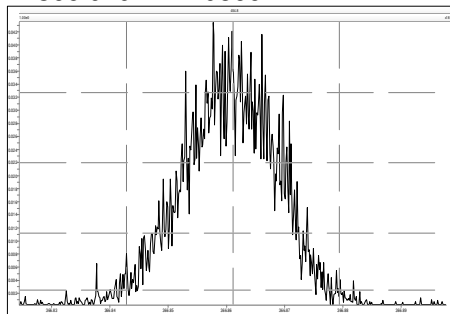
M 416.9760 R 13515



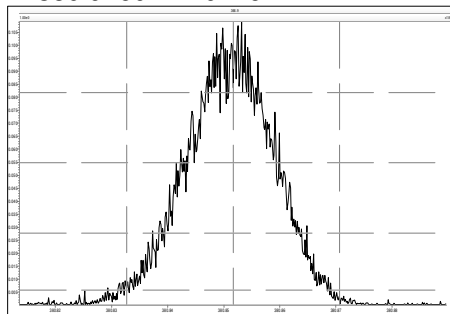
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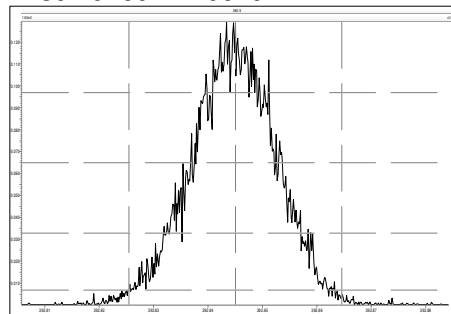
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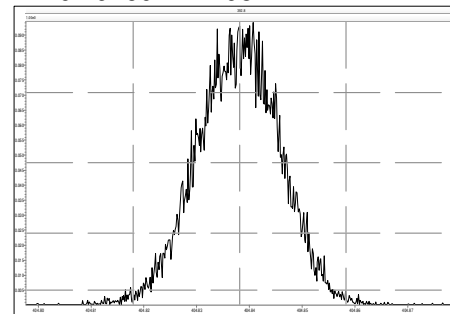
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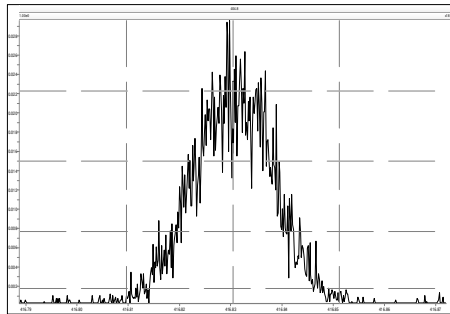
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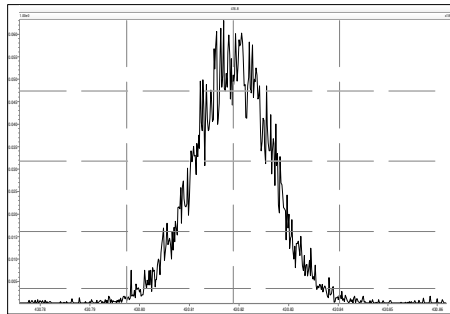
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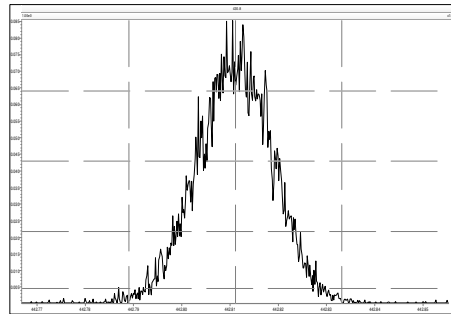
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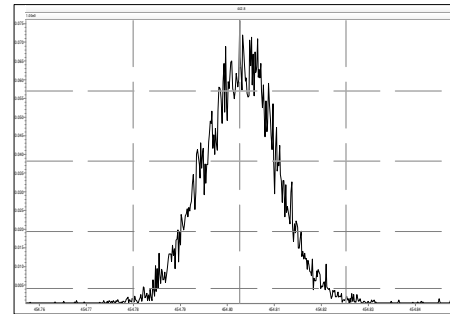
M 430.9728 R 11629



M 442.9728 R 12820



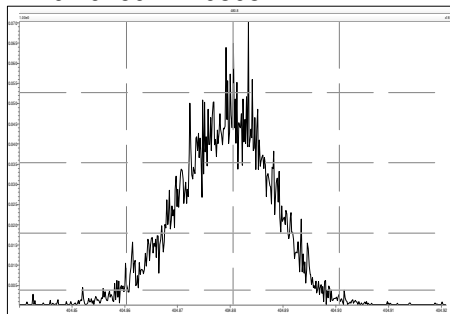
M 454.9728 R 12317



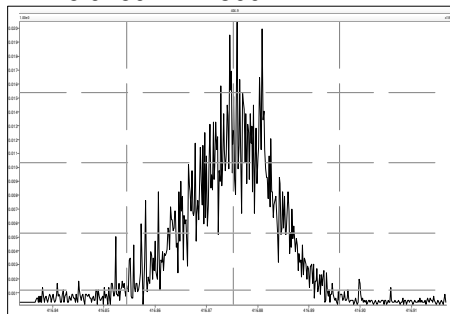
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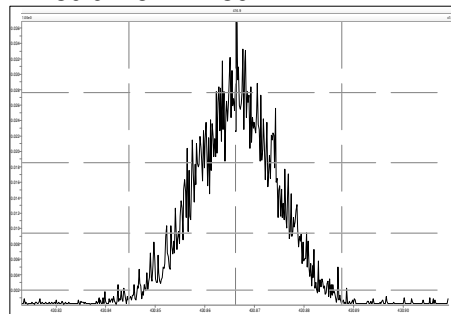
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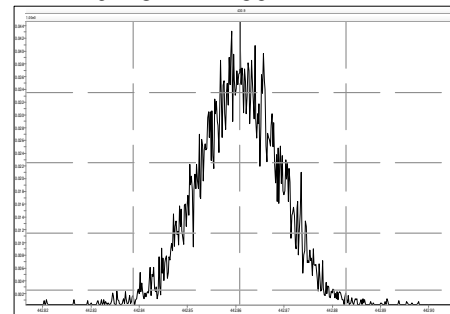
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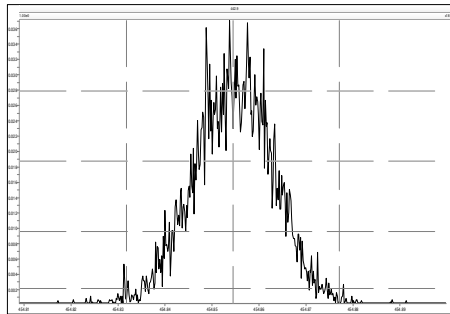
M 430.9728 R 11362



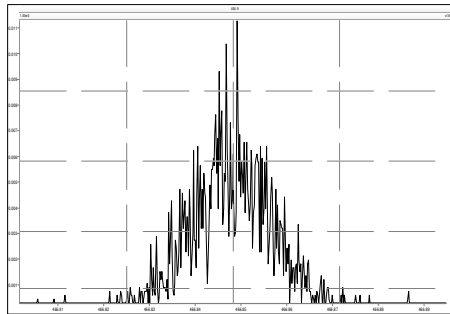
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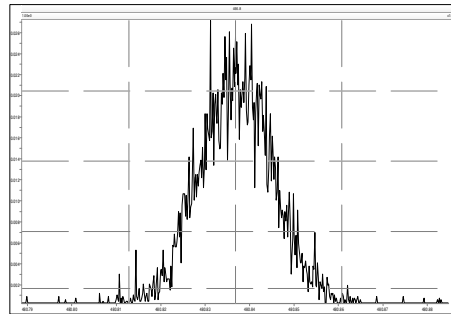
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M 466.9728 R 12313



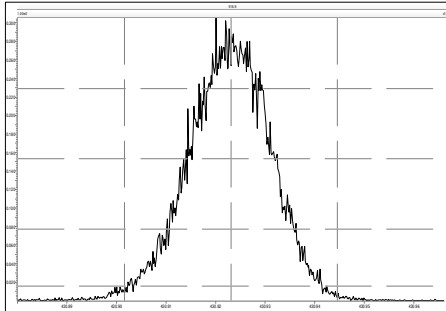
M 480.9696 R 13294



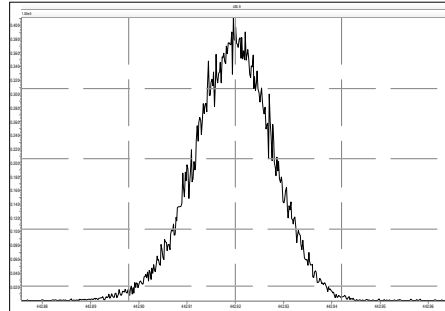
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Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

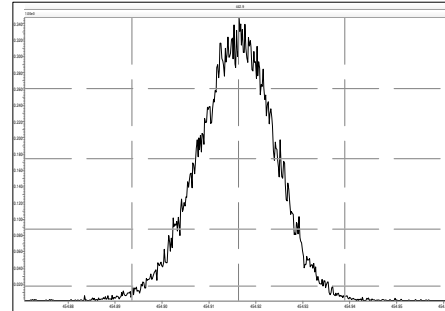
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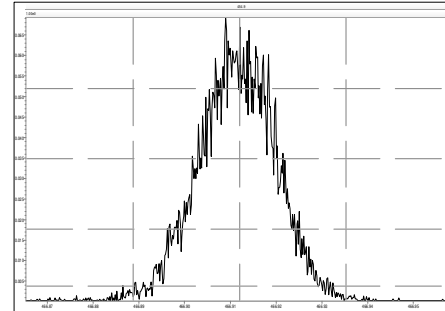
M 442.9728 R 11110



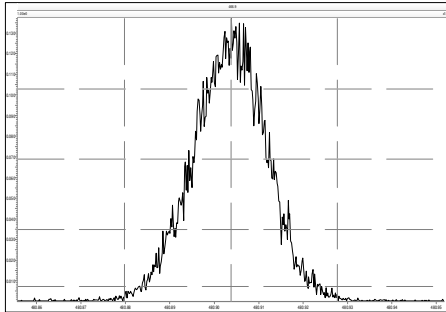
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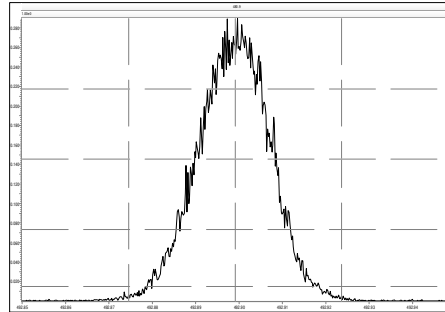
M 466.9728 R 12562



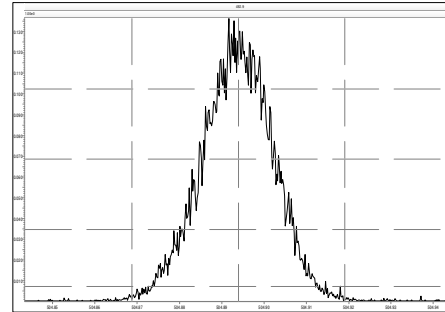
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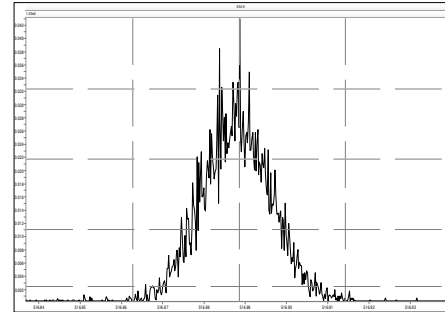
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18888_DF
 Client ID: 0_18888_OPR001
 Datafile: 220209C14



Acq'd: 09 Feb 2022 16:17 DTF
 UTP: 10-Feb-2022 10:30:44 DTF
 Report: 10 Feb 2022 10:31 TF

Wt/Vol: 1 uL
 J-level: 0.25 pg/uL Split: 1
 Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)
 ICAL: HRMS3_DF_10272021 10NOV2021
 Checkcode: 357-810-YWY

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.48		1.0008	1.0008	0	4.77E+06	0.80	Y	1.18	11	4112.822	0.0976
12378-PeCDD	33.82		1.0006	1.0006	0	1.65E+07	1.54	Y	1.04	48.3	3152.422	0.081
123478-HxCDD	37.74		1.0004	1.0004	0	1.78E+07	1.25	Y	1.09	53.9	3251.873	0.0867
123678-HxCDD	37.85		1.0035	1.0035	0	2.07E+07	1.26	Y	1.15	53.7	3251.873	0.0742
123789-HxCDD	38.15		1.0112	1.0113	+0.2	1.80E+07	1.26	Y	1.05	52.8	3251.873	0.0816
1234678-HpCDD	40.82		1.0003	1.0003	0	1.57E+07	1.04	Y	1.06	53.4	3287.748	0.0877
OCDD	43.50		1.0004	1.0003	-0.3	2.30E+07	0.90	Y	1.13	107	4366.458	0.232

2378-TCDF	27.62		1.0008	1.0008	0	6.26E+06	0.78	Y	1.08	10.6	2601.9148	0.0469
12378-PeCDF	32.37		1.0005	1.0006	+0.2	2.54E+07	1.48	Y	1.02	49.1	7028.441	0.119
23478-PeCDF	33.49		1.0005	1.0006	+0.2	2.62E+07	1.54	Y	1.02	53.6	7028.441	0.121
123478-HxCDF	36.73		1.0004	1.0004	0	2.27E+07	1.24	Y	1.27	50.6	9774.718	0.181
123678-HxCDF	36.87		1.0004	1.0005	+0.2	2.61E+07	1.21	Y	1.15	53.1	9774.718	0.178
234678-HxCDF	37.55		1.0005	1.0005	0	2.52E+07	1.22	Y	1.19	50	9774.718	0.168
123789-HxCDF	38.50		1.0004	1.0004	0	1.94E+07	1.20	Y	1.16	49.1	9774.718	0.205
1234678-HpCDF	39.88		1.0003	1.0003	0	2.15E+07	1.03	Y	1.37	51.3	3049.848	0.0547
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	1.72E+07	1.03	Y	1.31	51.2	3049.848	0.0697
OCDF	43.68		1.0003	1.0002	-0.3	2.76E+07	0.89	Y	1.07	102	4133.558	0.171

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0238	+0.3	3.67E+07	0.79	Y	1.05	91.1
ES 12378-PeCDD	33.80		1.2144	1.2161	+3.4	3.29E+07	1.56	Y	0.88	96.9
ES 123478-HxCDD	37.72		0.9920	0.9918	-0.5	3.04E+07	1.26	Y	0.97	93.2
ES 123678-HxCDD	37.84		0.9951	0.9949	-0.5	3.36E+07	1.27	Y	0.94	106
ES 123789-HxCDD	38.13		1.0027	1.0027	0	3.26E+07	1.29	Y	1.09	88.9
ES 1234678-HpCDD	40.80		1.0724	1.0729	+1.2	2.78E+07	1.05	Y	0.91	90.8
ES OCDD	43.49		1.1428	1.1435	+1.8	3.81E+07	0.91	Y	0.62	91

ES 2378-TCDF	27.60		1.0516	1.0520	+0.7	5.45E+07	0.80	Y	1.06	86.7
ES 12378-PeCDF	32.36		1.2312	1.2331	+3.7	5.04E+07	1.57	Y	0.91	93.2
ES 23478-PeCDF	33.47		1.2733	1.2755	+4.4	4.79E+07	1.54	Y	0.88	91.3
ES 123478-HxCDF	36.71		0.9655	0.9653	-0.4	3.52E+07	0.53	Y	1.20	87.6
ES 123678-HxCDF	36.85		0.9692	0.9690	-0.4	4.26E+07	0.55	Y	1.35	93.9
ES 234678-HxCDF	37.53		0.9871	0.9869	-0.5	4.25E+07	0.53	Y	1.24	102
ES 123789-HxCDF	38.49		1.0121	1.0120	-0.2	3.40E+07	0.52	Y	1.16	87.7
ES 1234678-HpCDF	39.87		1.0479	1.0484	+1.2	3.06E+07	0.48	Y	0.97	94.3
ES 1234789-HpCDF	41.27		1.0845	1.0850	+1.2	2.57E+07	0.47	Y	0.85	89.9
ES OCDF	43.67		1.1477	1.1481	+1.0	5.02E+07	0.89	Y	0.81	92.7

Lab ID: OPR1_18888_DF
 Client ID: 0_18888_OPR001
 Datafile: 220209C14

Acq'd: 09 Feb 2022 16:17 DTF
 UTP: 10-Feb-2022 10:30:44 DTF
 Report: 10 Feb 2022 10:31 TF

Wt/Vol: 1 uL
 J-level: 0.25 pg/uL Split: 1
 Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)
 ICAL: HRMS3_DF_10272021 10NOV2021
 Checkcode: 357-810-YWY

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	3.86E+07	0.82	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.94E+07	0.79	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.68E+07	1.22	Y	-	-
CS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.70E+07	n/a	-	1.20	91.9
CS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	3.22E+07	1.59	Y	0.75	111
CS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	5.06E+07	1.58	Y	0.85	100
CS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	4.01E+07	0.52	Y	1.12	107
CS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	3.11E+07	0.47	Y	0.89	105
SS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.70E+07	n/a		1.15	101
SS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	3.22E+07	1.59	Y	0.86	114
SS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	5.06E+07	1.58	Y	0.94	107
SS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	4.01E+07	0.52	Y	0.83	114
SS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	3.11E+07	0.47	Y	0.92	111

Totals	Conc	EMPC		
Total TCDD	50.9	50.9	* 37Cl correction has been applied to 2378-TCDD	
Total PeCDD	73.2	73.2	Original Values	Corrected Values
Total HxCDD	174	174	Ratio 0.799	0.80
Total HpCDD	65.3	65.3	Response 4.78E+06	4.77E+06
Total Tetra-Octa Dioxins	471	471		
Total TCDF	60	60		
Total PeCDF	211	211		
Total HxCDF	320	320		
Total HpCDF	102	102		
Total Tetra-Octa Furans	796	796		
Total Tetra-Octa Dioxins & Furans	1270	1270		

Lab ID: OPR1_18888_DF
 Client ID: 0_18888_OPR001
 Datafile: 220209C14

Acq'd: 09 Feb 2022 16:17 DTF
 UTP: 10-Feb-2022 10:30:44 DTF
 Report: 10 Feb 2022 10:31 TF

Wt/Vol: 1 uL
 J-level: 0.25 pg/uL Split: 1
 Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)
 ICAL: HRMS3_DF_10272021 10NOV2021
 Checkcode: 357-810-YWY

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.84		0.8737	0.8727	-1.5	6.41E+06	0.79	Y	1.18	14.7	4112.822	0.0976
1379-TCDD	NotFnd		0.8860						1.18		4112.822	0.0976
1369-TCDD	NotFnd		0.9009						1.18		4112.822	0.0976
1469-TCDD	NotFnd		0.9281						1.18		4112.822	0.0976
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		4112.822	0.0976
1378-TCDD	NotFnd		0.9432						1.18		4112.822	0.0976
1268-TCDD	NotFnd		0.9500						1.18		4112.822	0.0976
1478-TCDD	NotFnd		0.9586						1.18		4112.822	0.0976
1279-TCDD	NotFnd		0.9645						1.18		4112.822	0.0976
1234/1269-TCDD	NotFnd		0.9770						1.18		4112.822	0.0976
1236-TCDD	NotFnd		0.9817						1.18		4112.822	0.0976
1237/1238-TCDD	NotFnd		0.9905						1.18		4112.822	0.0976
1239-TCDD	28.32		0.9952	0.9953	+0.2	4.37E+06	0.78	Y	1.18	10	4112.822	0.0976
2378-TCDD	28.48		1.0008	1.0008	0	4.77E+06	0.80	Y	1.18	11	4112.822	0.0976
1278-TCDD	NotFnd		1.0121						1.18		4112.822	0.0976
1267-TCDD	NotFnd		1.0167						1.18		4112.822	0.0976
1289-TCDD	29.45		1.0345	1.0349	+0.7	6.61E+06	0.79	Y	1.18	15.2	4112.822	0.0976
12479/12468-PeCDD	31.32		0.9267	0.9265	-0.4	4.09E+06	1.59	Y	1.04	12	3152.422	0.081
12469-PeCDD	NotFnd		0.9425						1.04		3152.422	0.081
12368-PeCDD	NotFnd		0.9588						1.04		3152.422	0.081
12478-PeCDD	NotFnd		0.9643						1.04		3152.422	0.081
12379-PeCDD	NotFnd		0.9673						1.04		3152.422	0.081
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		3152.422	0.081
12346/12347-PeCDD	NotFnd		0.9858						1.04		3152.422	0.081
12378-PeCDD	33.82		1.0006	1.0006	0	1.65E+07	1.54	Y	1.04	48.3	3152.422	0.081
12367-PeCDD	NotFnd		1.0033						1.04		3152.422	0.081
12389-PeCDD	34.26		1.0134	1.0135	+0.2	4.41E+06	1.59	Y	1.04	12.9	3152.422	0.081
124679/124689-HxCDD	35.99		0.9542	0.9540	-0.4	4.79E+06	1.27	Y	1.10	13.6	3251.873	0.0805
123468-HxCDD	NotFnd		0.9715						1.10		3251.873	0.0805
123679/123689-HxCDD	NotFnd		0.9793						1.10		3251.873	0.0805
123469-HxCDD	NotFnd		0.9828						1.10		3251.873	0.0805
123478-HxCDD	37.74		1.0004	1.0004	0	1.78E+07	1.25	Y	1.09	53.9	3251.873	0.0867
123678-HxCDD	37.85		1.0035	1.0035	0	2.07E+07	1.26	Y	1.15	53.7	3251.873	0.0742
123467-HxCDD	NotFnd		1.0085						1.10		3251.873	0.0805
123789-HxCDD	38.15		1.0112	1.0113	+0.2	1.80E+07	1.26	Y	1.05	52.8	3251.873	0.0816

Lab ID: OPR1_18888_DF

Acq'd: 09 Feb 2022 16:17 DTF

Wt/Vol: 1 uL

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18888_OPR001

UTP: 10-Feb-2022 10:30:44 DTF

J-level: 0.25 pg/uL

Split: 1

Checkcode: 357-810-YWY

Datafile: 220209C14

Report: 10 Feb 2022 10:31 TF

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.14		0.9837	0.9838	+0.2	3.52E+06	0.97	Y	1.06	11.9	3287.748	0.0877
1234678-HpCDD	40.82		1.0003	1.0003	0	1.57E+07	1.04	Y	1.06	53.4	3287.748	0.0877
OCDD	43.50		1.0004	1.0003	-0.3	2.30E+07	0.90	Y	1.13	107	4366.458	0.232
OCDD-a	43.50		1.0003	1.0001	-0.5	1.27E+06	2.84	Y	0.07	92.6	3162.317	2.63
1368-TCDF	22.73		0.8251	0.8234	-2.3	8.66E+06	0.77	Y	1.08	14.7	2601.9148	0.0469
1468-TCDF	NotFnd		0.8458						1.08		2601.9148	0.0469
2468-TCDF	23.94		0.8686	0.8675	-1.6	2.20E+06	0.75	Y	1.08	3.74	2601.9148	0.0469
1346/1246-TCDF	NotFnd		0.8814						1.08		2601.9148	0.0469
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2601.9148	0.0469
1348-TCDF	NotFnd		0.8962						1.08		2601.9148	0.0469
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2601.9148	0.0469
1268-TCDF	NotFnd		0.9145						1.08		2601.9148	0.0469
1467-TCDF	NotFnd		0.9193						1.08		2601.9148	0.0469
1478-TCDF	NotFnd		0.9254						1.08		2601.9148	0.0469
1369/1237-TCDF	NotFnd		0.9387						1.08		2601.9148	0.0469
2467-TCDF	NotFnd		0.9433						1.08		2601.9148	0.0469
2368-TCDF	NotFnd		0.9489						1.08		2601.9148	0.0469
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2601.9148	0.0469
1278-TCDF	NotFnd		0.9683						1.08		2601.9148	0.0469
1349-TCDF	NotFnd		0.9722						1.08		2601.9148	0.0469
1267-TCDF	NotFnd		0.9783						1.08		2601.9148	0.0469
2346/1249-TCDF	NotFnd		0.9850						1.08		2601.9148	0.0469
2347/1279-TCDF	NotFnd		0.9926						1.08		2601.9148	0.0469
2348-TCDF	27.52		0.9967	0.9968	+0.2	8.63E+06	0.78	Y	1.08	14.7	2601.9148	0.0469
2378-TCDF	27.62		1.0008	1.0008	0	6.26E+06	0.78	Y	1.08	10.6	2601.9148	0.0469
2367/3467-TCDF	NotFnd		1.0137						1.08		2601.9148	0.0469
1269-TCDF	NotFnd		1.0223						1.08		2601.9148	0.0469
1239-TCDF	NotFnd		1.0321						1.08		2601.9148	0.0469
1289-TCDF	29.62		1.0722	1.0731	+1.6	9.56E+06	0.78	Y	1.08	16.2	2601.9148	0.0469
13468/12468-PeCDF	29.54		0.9139	0.9129	-1.8	4.91E+07	1.57	Y	1.02	97.6	2479.683	0.0423
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		7028.441	0.12
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		7028.441	0.12
14678-PeCDF	NotFnd		0.9692						1.02		7028.441	0.12
13479-PeCDF	NotFnd		0.9723						1.02		7028.441	0.12
13469/12479-PeCDF	NotFnd		0.9797						1.02		7028.441	0.12
12346-PeCDF	NotFnd		0.9840						1.02		7028.441	0.12

Lab ID: OPR1_18888_DF
 Client ID: 0_18888_OPR001
 Datafile: 220209C14

Acq'd: 09 Feb 2022 16:17 DTF
 UTP: 10-Feb-2022 10:30:44 DTF
 Report: 10 Feb 2022 10:31 TF

Wt/Vol: 1 uL
 J-level: 0.25 pg/uL Split: 1
 Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)
 ICAL: HRMS3_DF_10272021 10NOV2021
 Checkcode: 357-810-YWY

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		7028.441	0.12
12347-PeCDF	NotFnd		0.9894						1.02		7028.441	0.12
12348-PeCDF	NotFnd		0.9940						1.02		7028.441	0.12
12378-PeCDF	32.37		1.0005	1.0006	+0.2	2.54E+07	1.48	Y	1.02	49.1	7028.441	0.119
12678/12367-PeCDF	NotFnd		1.0089						1.02		7028.441	0.12
12379-PeCDF	NotFnd		1.0142						1.02		7028.441	0.12
12679-PeCDF	NotFnd		0.9929						1.02		7028.441	0.12
23467/12369-PeCDF	NotFnd		0.9967						1.02		7028.441	0.12
23478-PeCDF	33.49		1.0005	1.0006	+0.2	2.62E+07	1.54	Y	1.02	53.6	7028.441	0.121
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		7028.441	0.12
12349-PeCDF	NotFnd		1.0100						1.02		7028.441	0.12
12389-PeCDF	34.56		1.0324	1.0326	+0.4	5.35E+06	1.53	Y	1.02	10.6	7028.441	0.12
123468-HxCDF	35.34		0.9627	0.9626	-0.2	5.38E+07	1.24	Y	1.19	117	9774.718	0.182
124678/134678-HxCDF	NotFnd		0.9682						1.19		9774.718	0.182
134679-HxCDF	NotFnd		0.9744						1.19		9774.718	0.182
124679-HxCDF	NotFnd		0.9798						1.19		9774.718	0.182
124689-HxCDF	NotFnd		0.9858						1.19		9774.718	0.182
123467-HxCDF	NotFnd		0.9972						1.19		9774.718	0.182
123478-HxCDF	36.73		1.0004	1.0004	0	2.27E+07	1.24	Y	1.27	50.6	9774.718	0.181
123678-HxCDF	36.87		1.0004	1.0005	+0.2	2.61E+07	1.21	Y	1.15	53.1	9774.718	0.178
123479-HxCDF	NotFnd		1.0049						1.19		9774.718	0.182
123469-HxCDF	NotFnd		1.0090						1.19		9774.718	0.182
123679-HxCDF	NotFnd		0.9942						1.19		9774.718	0.182
234678-HxCDF	37.55		1.0005	1.0005	0	2.52E+07	1.22	Y	1.19	50	9774.718	0.168
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		9774.718	0.182
123789-HxCDF	38.50		1.0004	1.0004	0	1.94E+07	1.20	Y	1.16	49.1	9774.718	0.205
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		9774.718	0.182
1234678-HpCDF	39.88		1.0003	1.0003	0	2.15E+07	1.03	Y	1.37	51.3	3049.848	0.0547
1234679-HpCDF	NotFnd		1.0068						1.34		3049.848	0.0615
1234689-HpCDF	NotFnd		1.0103						1.34		3049.848	0.0615
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	1.72E+07	1.03	Y	1.31	51.2	3049.848	0.0697
OCDF	43.68		1.0003	1.0002	-0.3	2.76E+07	0.89	Y	1.07	102	4133.558	0.171
OCDF-a	43.67		1.0002	1.0002	0	1.67E+06	2.26	Y	0.07	100	3444.841	2.3

METHOD 1613B**PCDD/F ONGOING PRECISION AND RECOVERY (OPR)****FORM 8A**

Lab Name: SGS North America
 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C14 Analysis Date: 09-FEB-2022 16:17:00
 Lab ID: OPR1_18888_DF

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	48.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.9	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	53.7	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	52.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	53.4	35	-	70	Y
OCDD	100	107	78	-	144	Y
2,3,7,8-TCDF	10	10.6	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	49.1	40	-	67	Y
2,3,4,7,8-PeCDF	50	53.6	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	50.6	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.1	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	50	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	49.1	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	51.3	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	51.2	39	-	69	Y
OCDF	100	102	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
 Method 1613. 10/94

Processed: 10 Feb 2022 10:31 Analyst: TF

METHOD 1613B**PCDD/F ONGOING PRECISION AND RECOVERY (OPR)****FORM 8B**

Lab Name: SGS North America
 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C14 Analysis Date: 09-FEB-2022 16:17:00
 Lab ID: OPR1_18888_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	91.1	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	96.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	93.2	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	106	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	88.9	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	90.8	26	-	166	Y
13C-OCDD	200	182	26	-	397	Y
13C-2,3,7,8-TCDF	100	86.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	93.2	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	91.3	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	87.6	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	93.9	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	102	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	87.7	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	94.3	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	89.9	20	-	186	Y
13C-OCDF	200	185	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	36.8	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
 Method 1613. 10/94

Processed: 10 Feb 2022 10:31 Analyst: TF

METHOD 1613B**COLUMN PERFORMANCE AND RETENTION TIME WINDOWS****FORM CPSM**

Lab Name: SGS North America
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
Instrument ID: HRMS3 GC Column ID: ZB-5ms
CPSM Data Filename: 220209C14 Analysis Date: 09-FEB-2022 16:17:00
Lab ID: OPR1_18888_DF

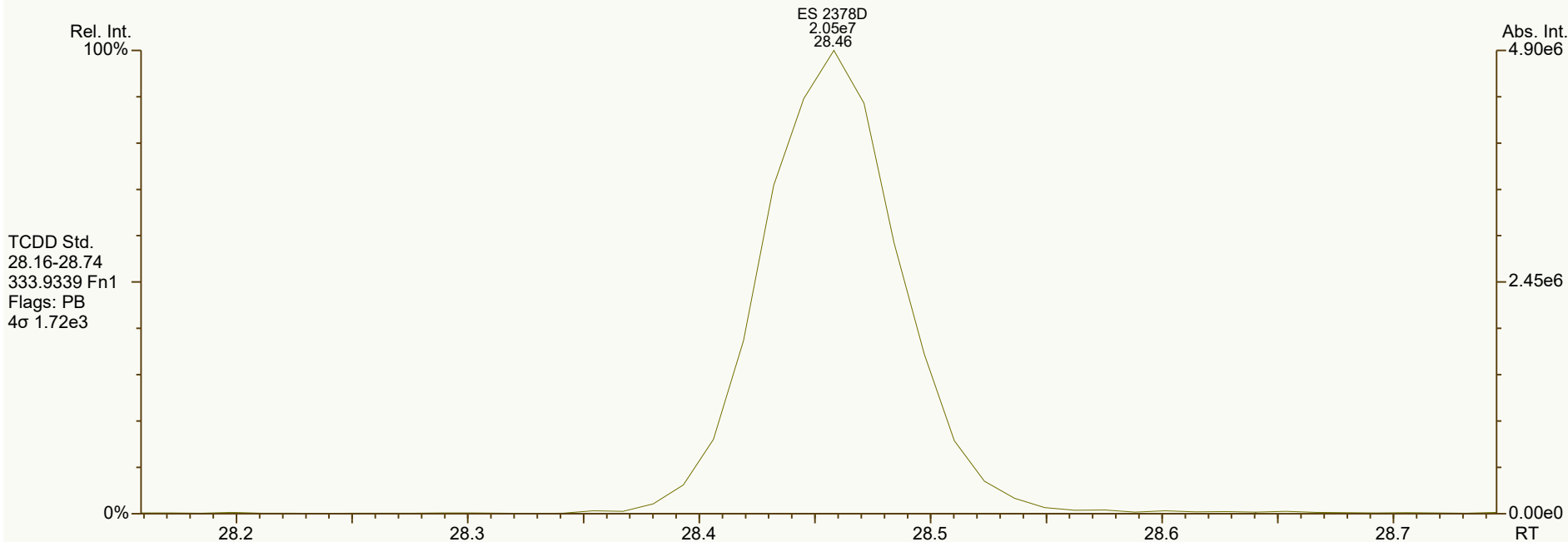
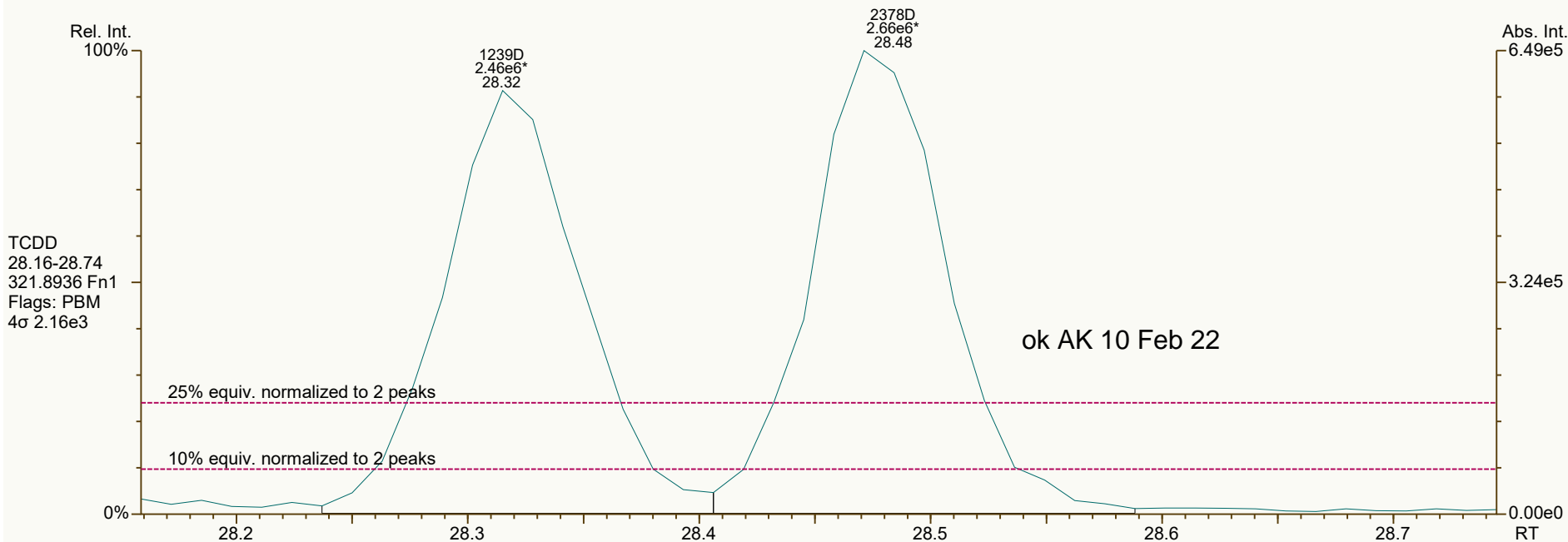
Window Defining Standards Results

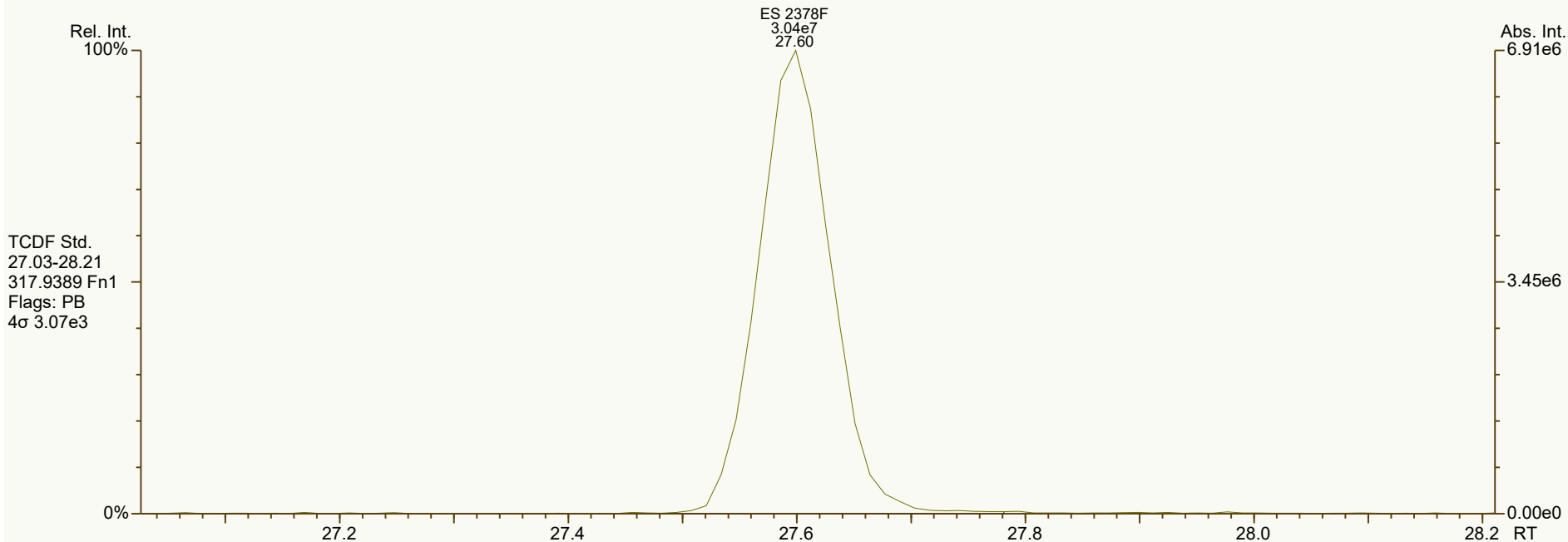
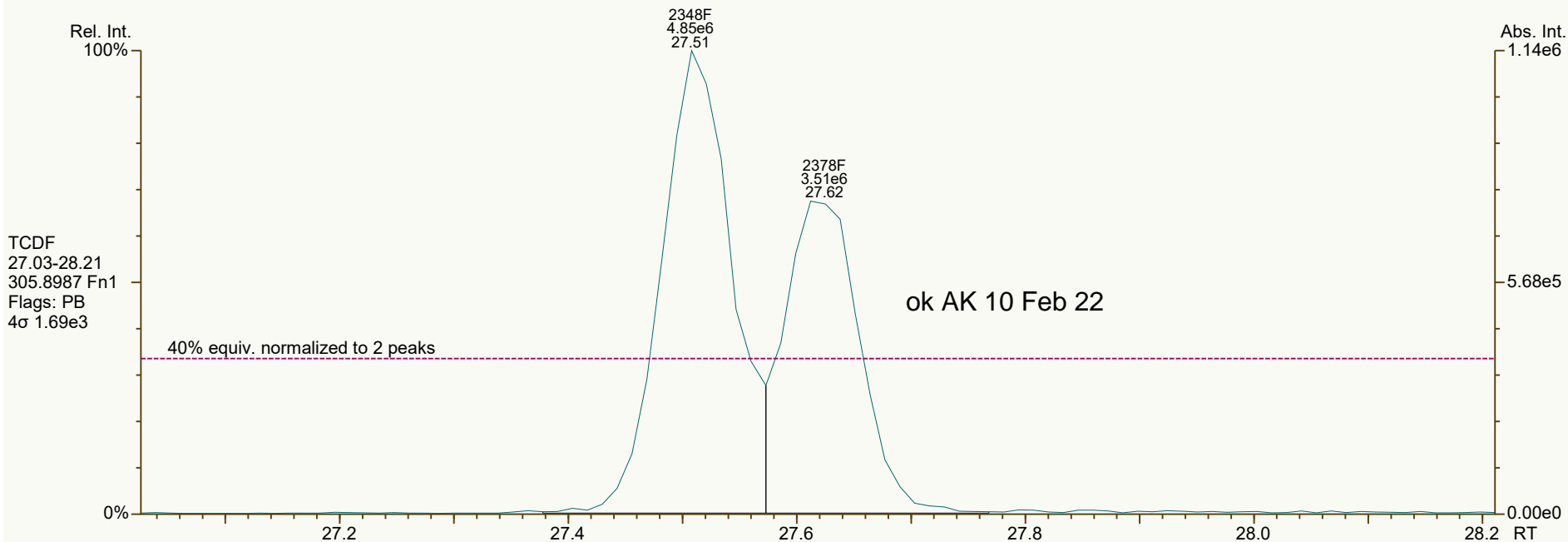
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.84	1289-TCDD	29.45
12479/12468-PeCDD	31.32	12389-PeCDD	34.26
124679/124689-HxCDD	35.99	123789-HxCDD	38.15
1234679-HpCDD	40.14	1234678-HpCDD	40.82
1368-TCDF	22.73	1289-TCDF	29.62
13468/12468-PeCDF	29.54	12389-PeCDF	34.56
123468-HxCDF	35.34	123789-HxCDF	38.50
1234678-HpCDF	39.88	1234789-HpCDF	41.28

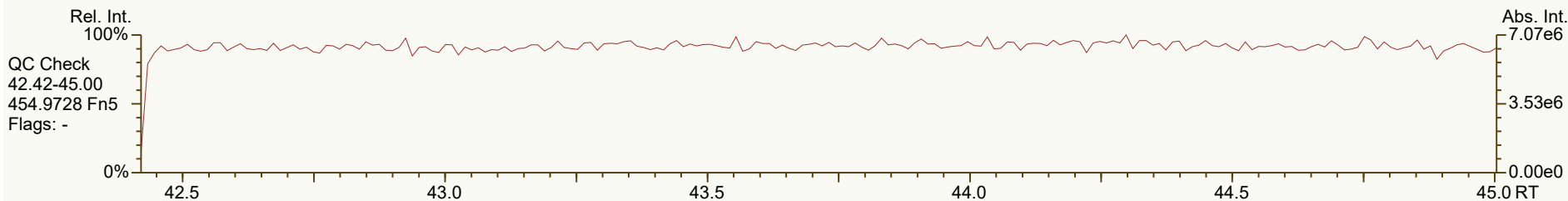
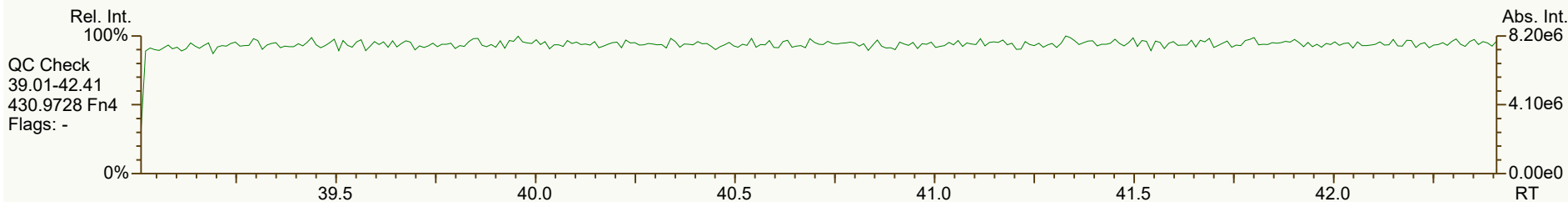
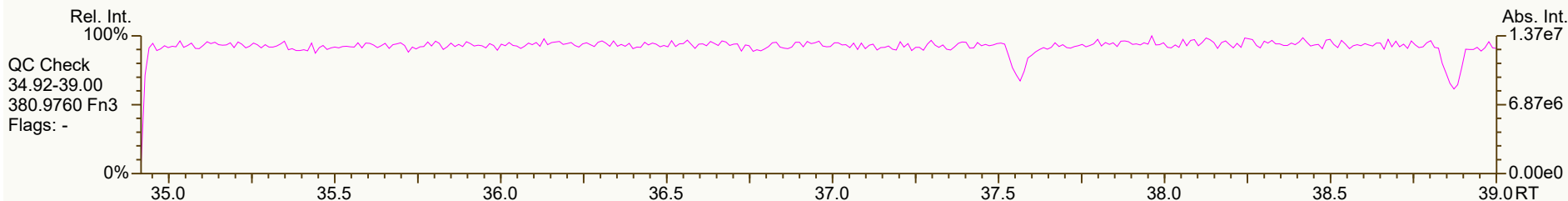
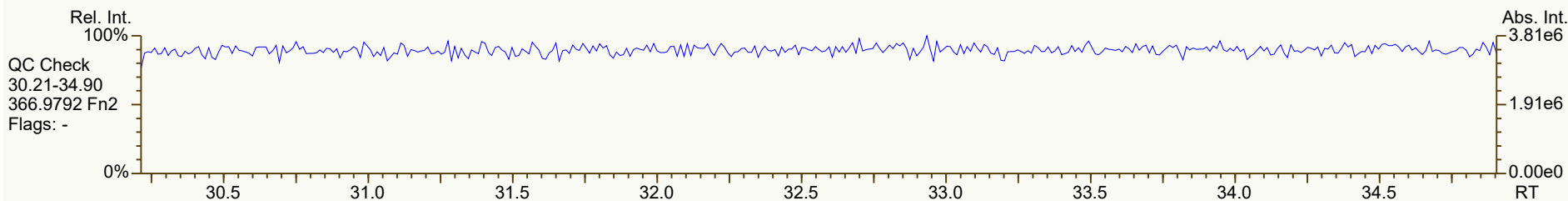
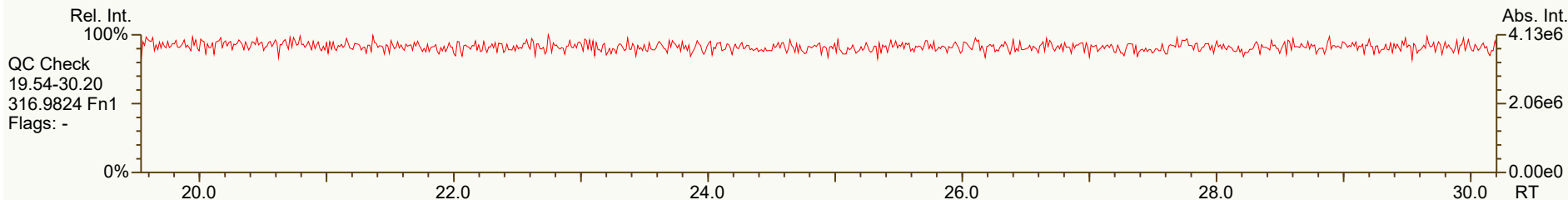
Isomer Specificity Test Standard Results

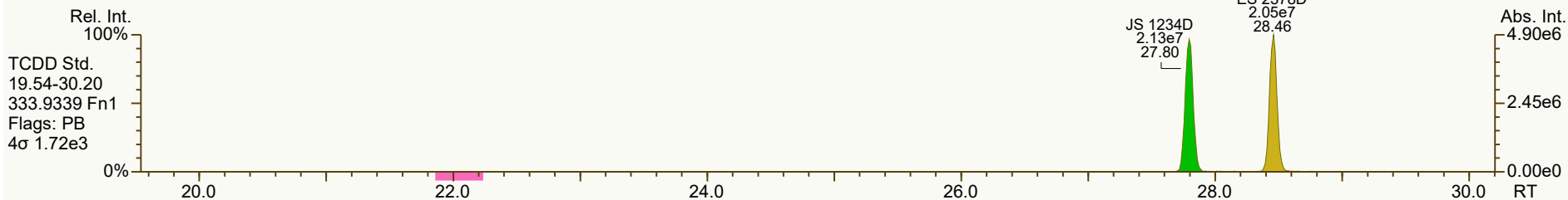
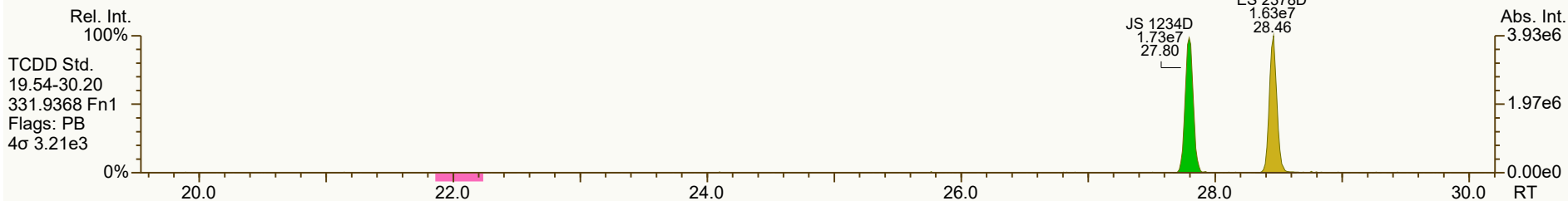
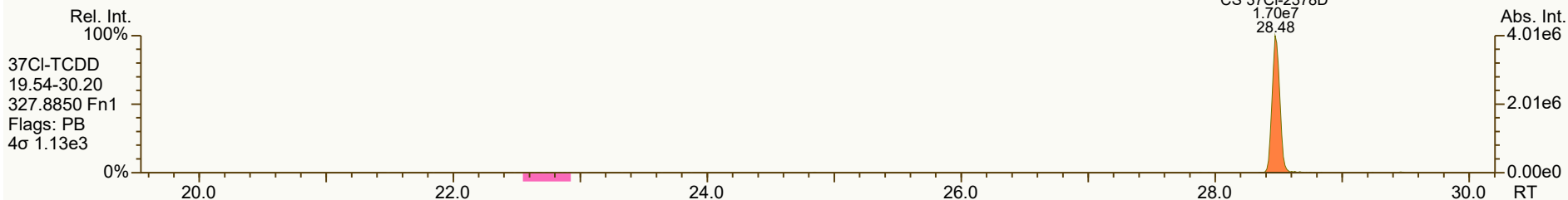
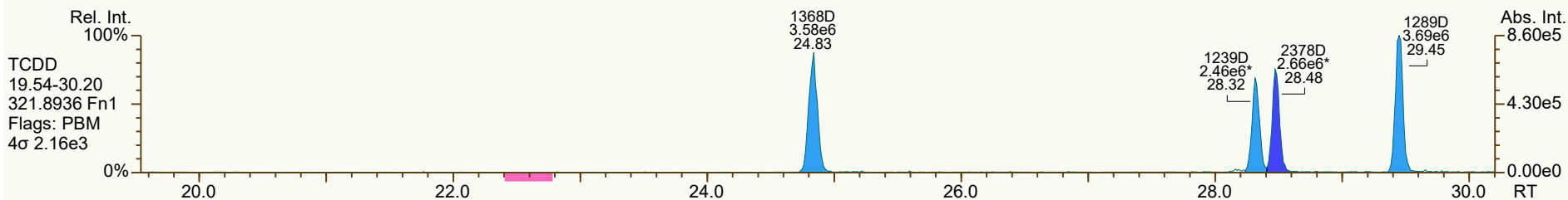
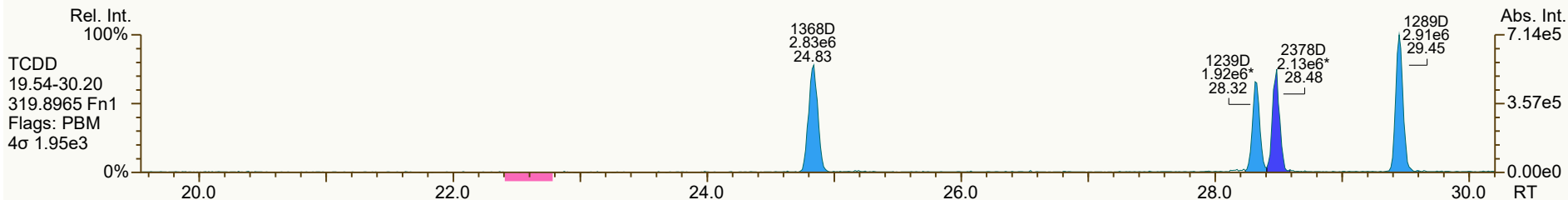
Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.32	2378-TCDD	28.48
2348-TCDF	27.52	2378-TCDF	27.62

Processed: 10 Feb 2022 10:31 Analyst: TF





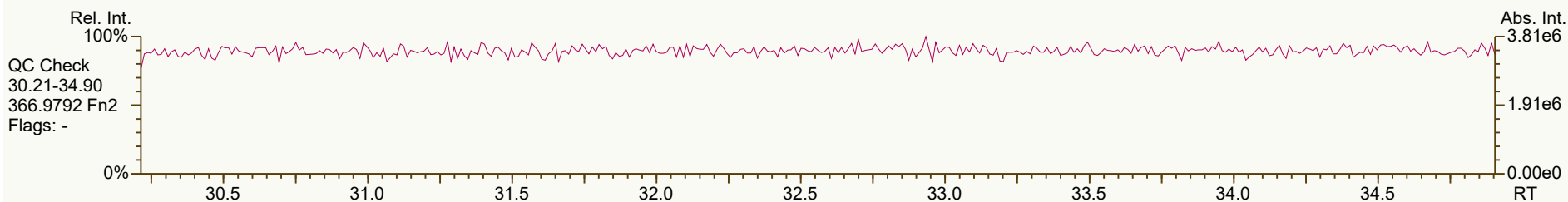
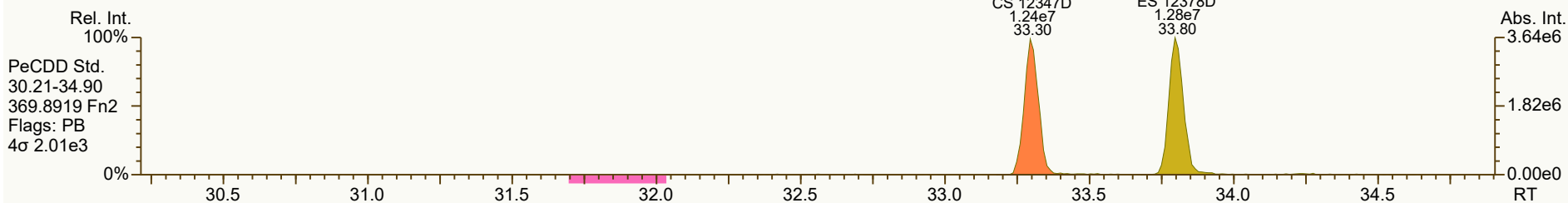
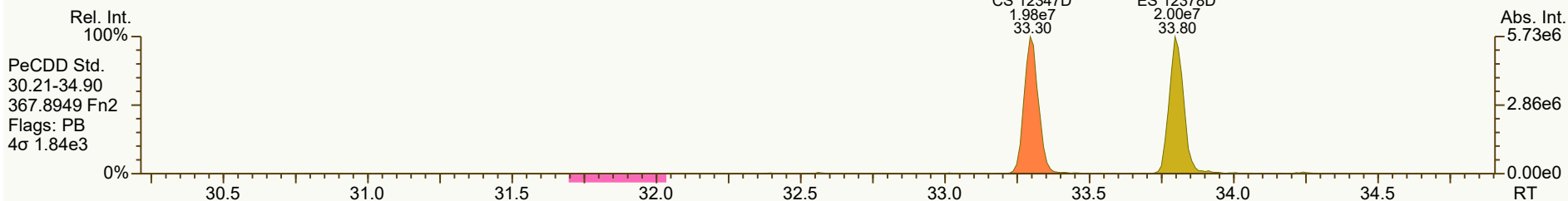
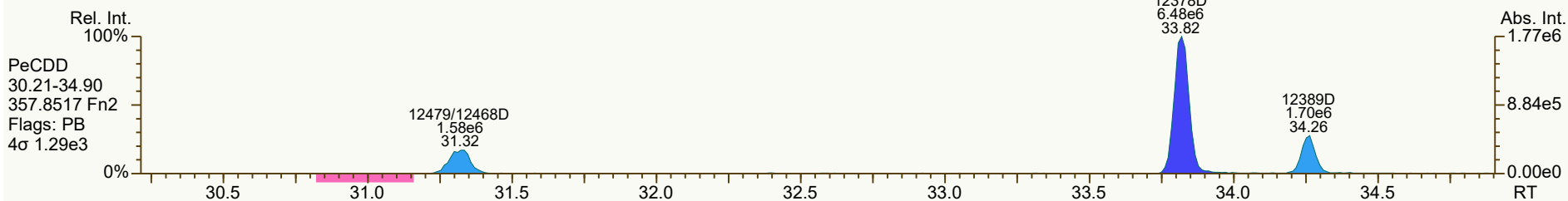
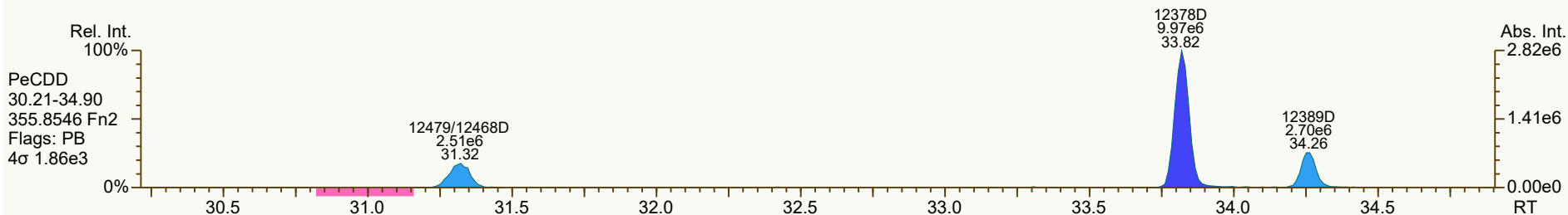


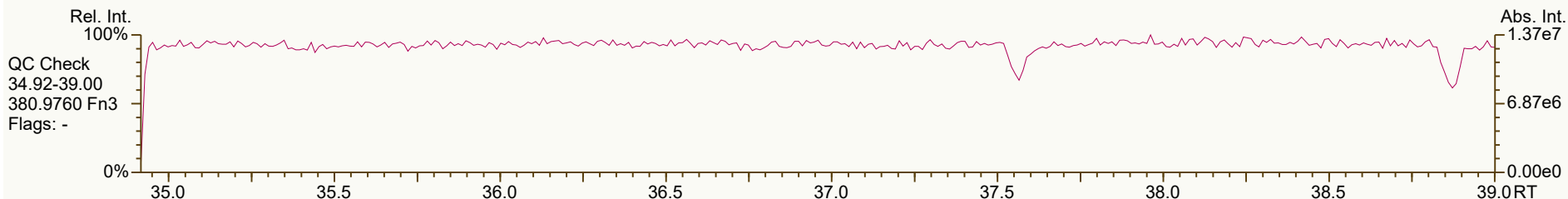
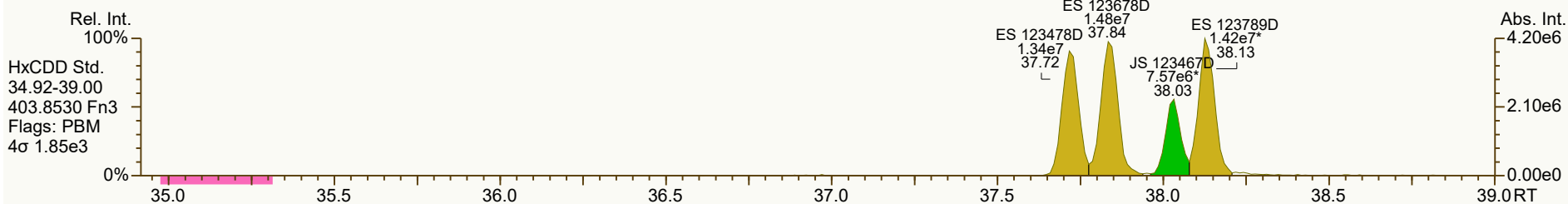
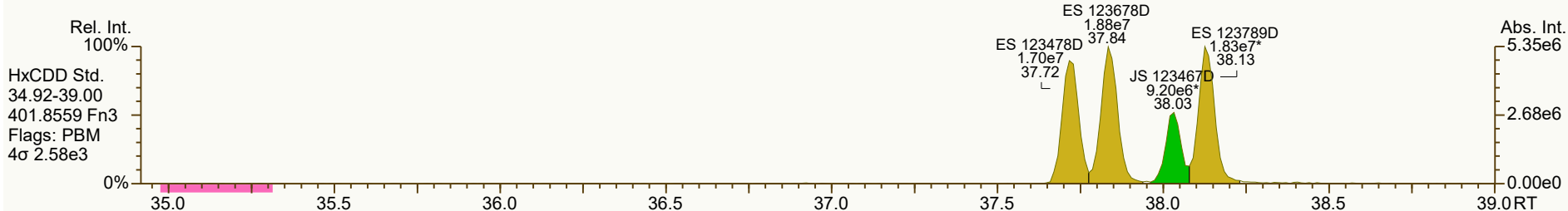
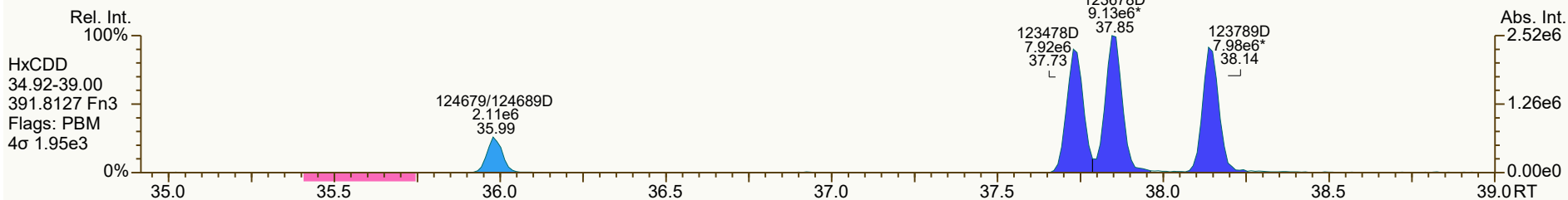
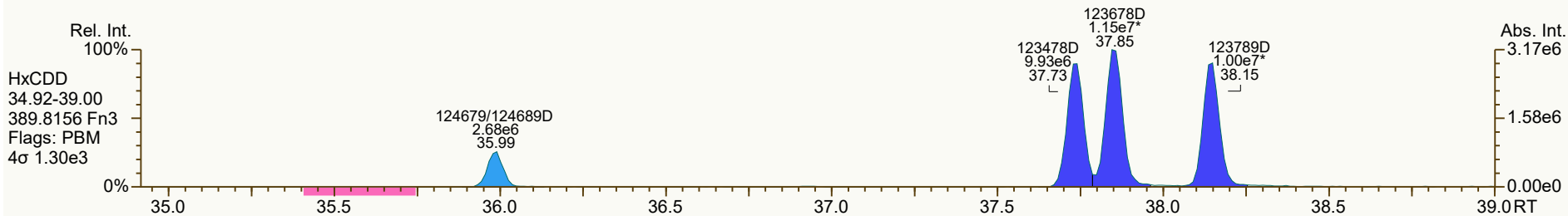


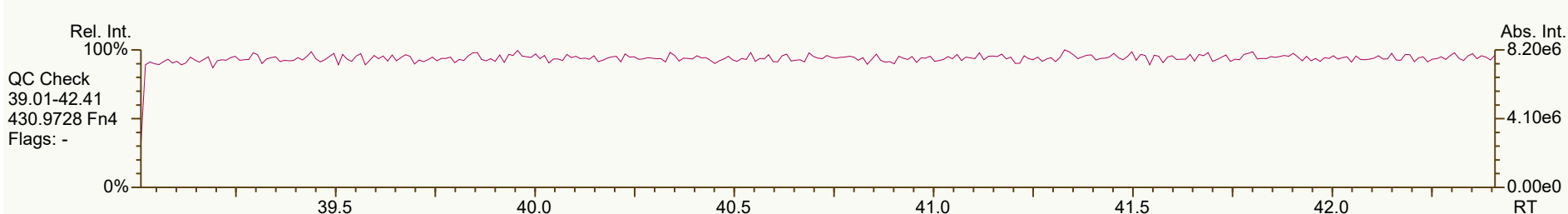
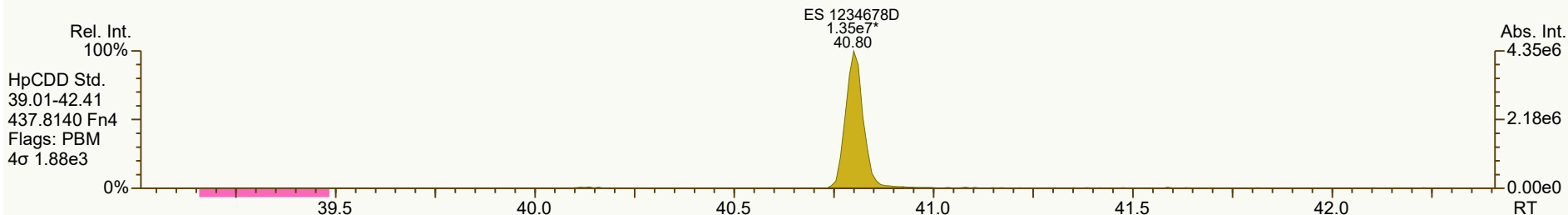
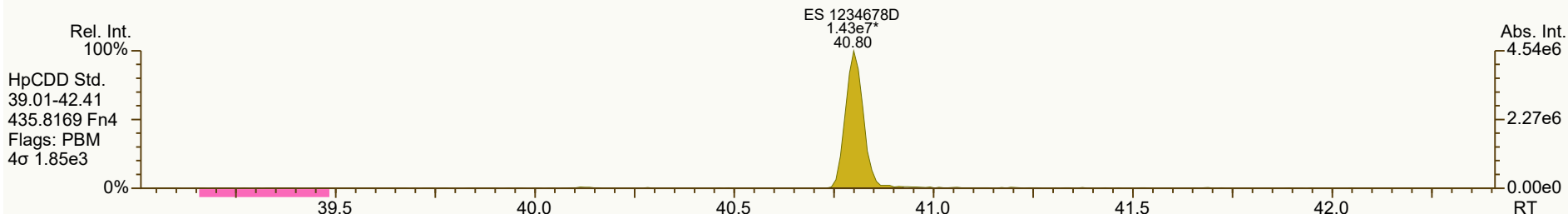
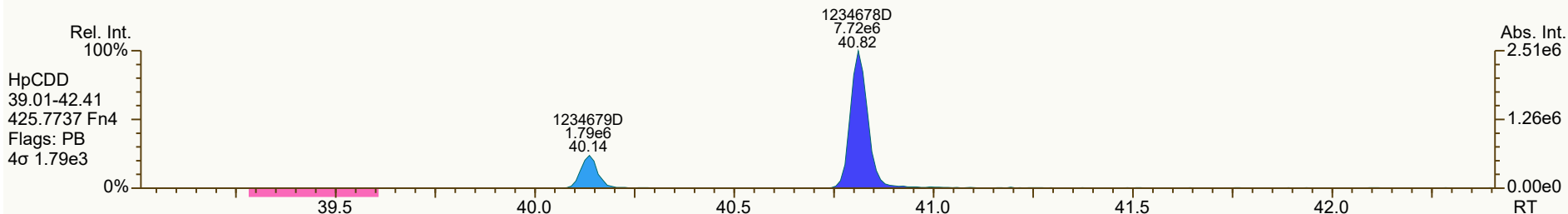
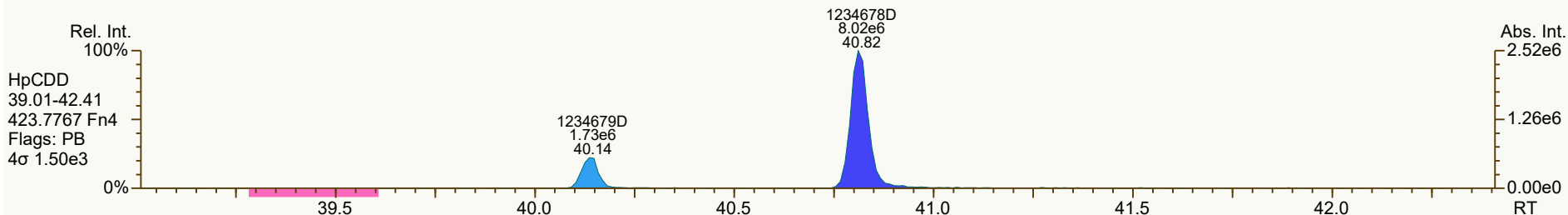
SGS ID: OPR1_18888_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

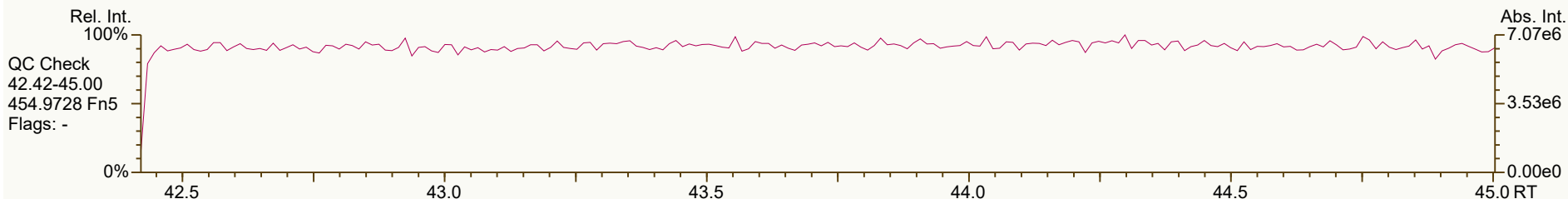
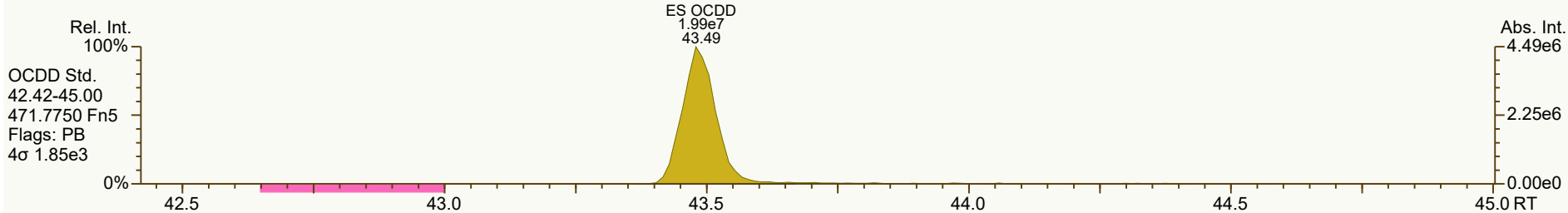
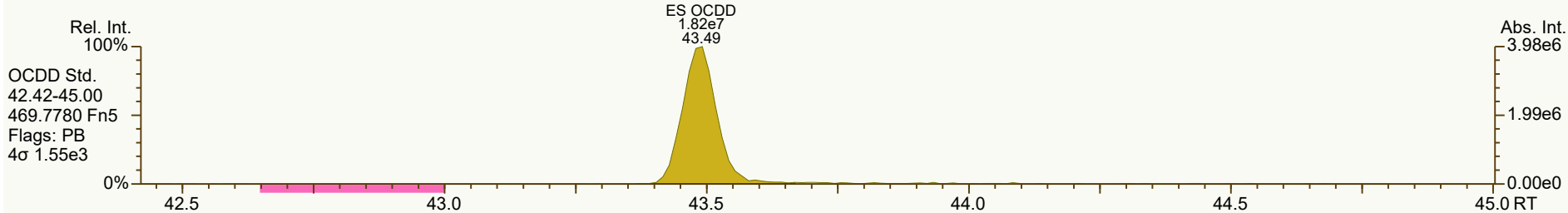
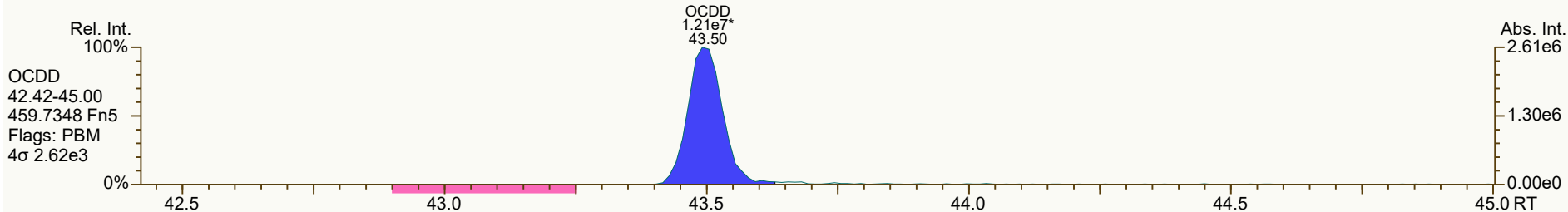
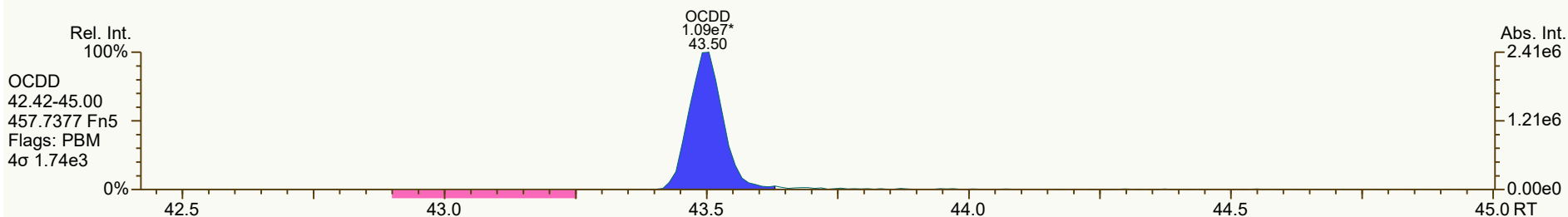
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 7

Acq: 09-Feb-2022 16:17:00
User: DTF Datafile: 220209C14





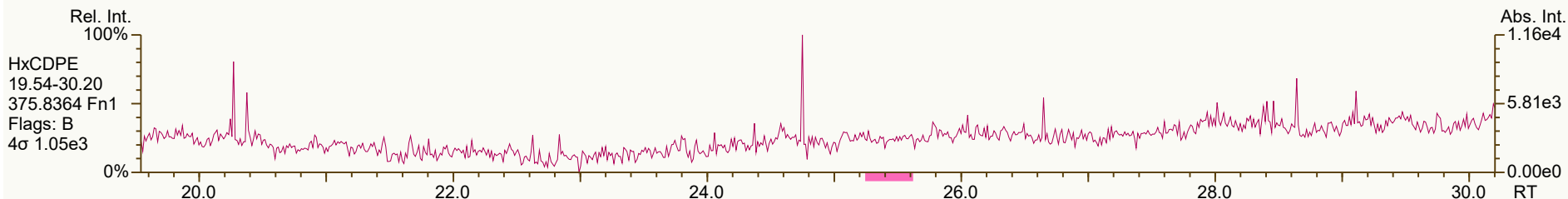
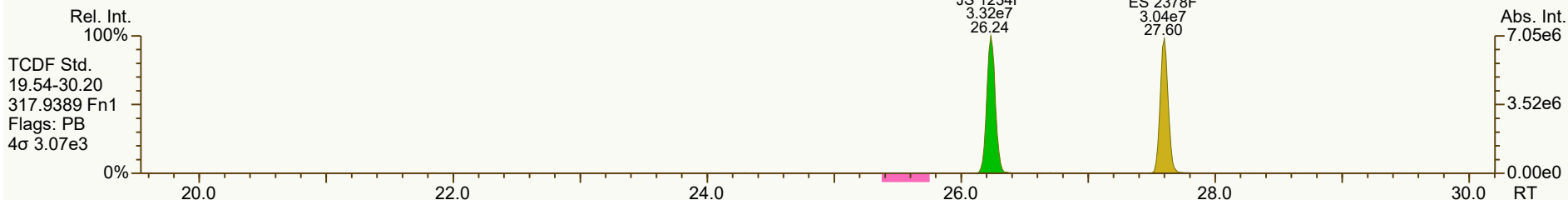
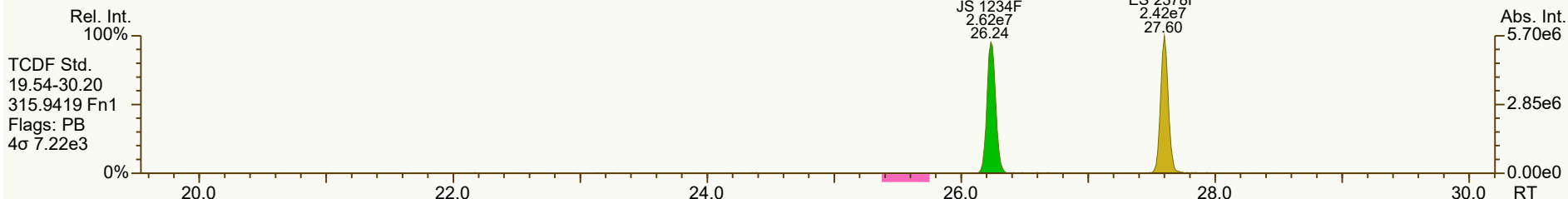
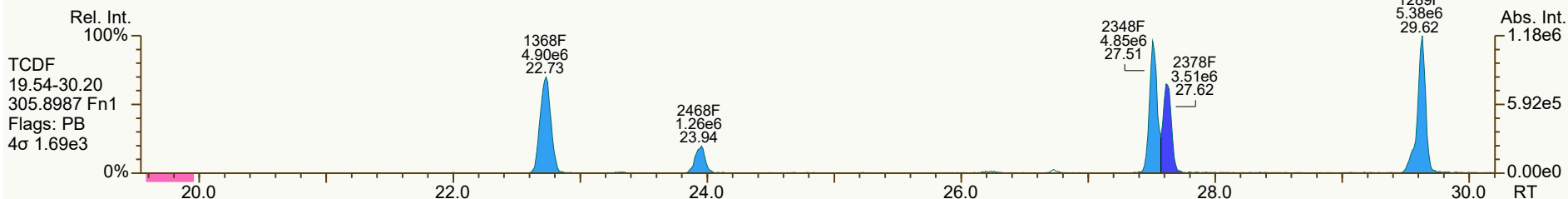
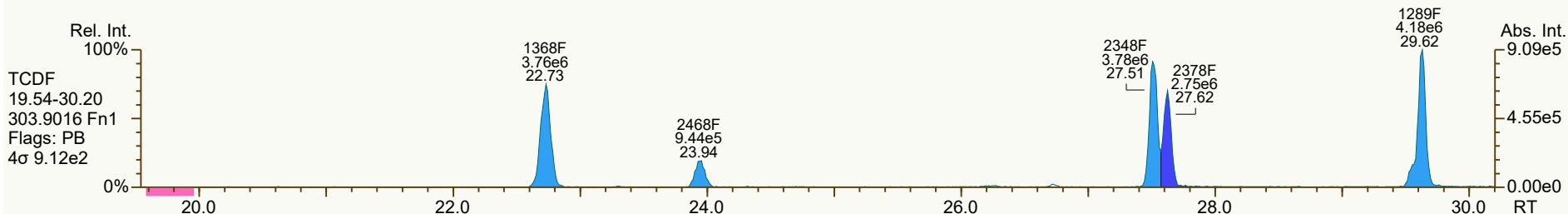




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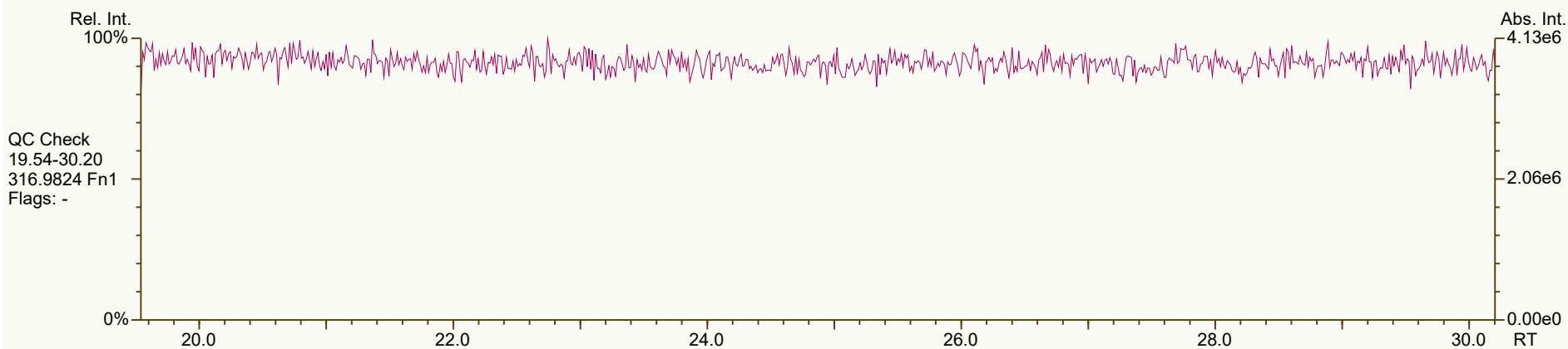
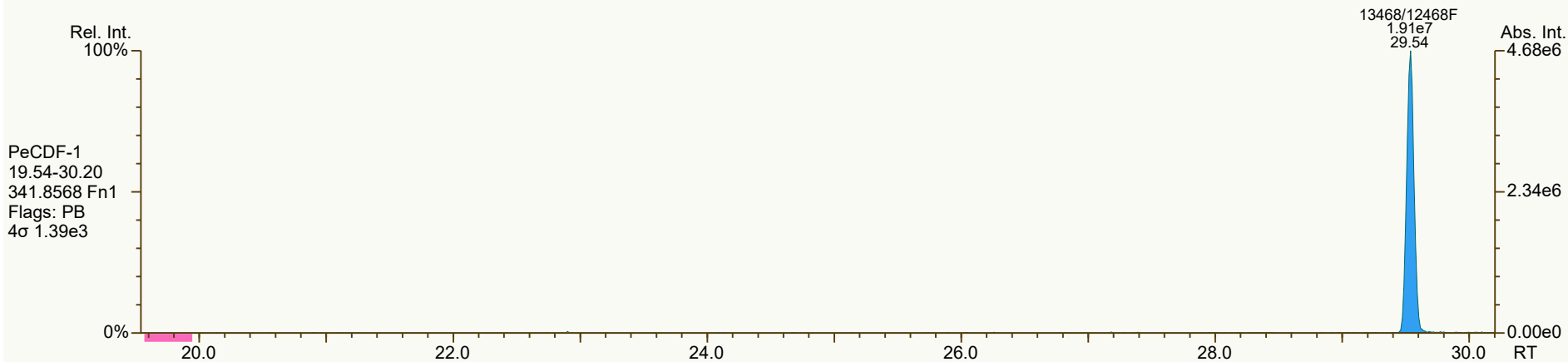
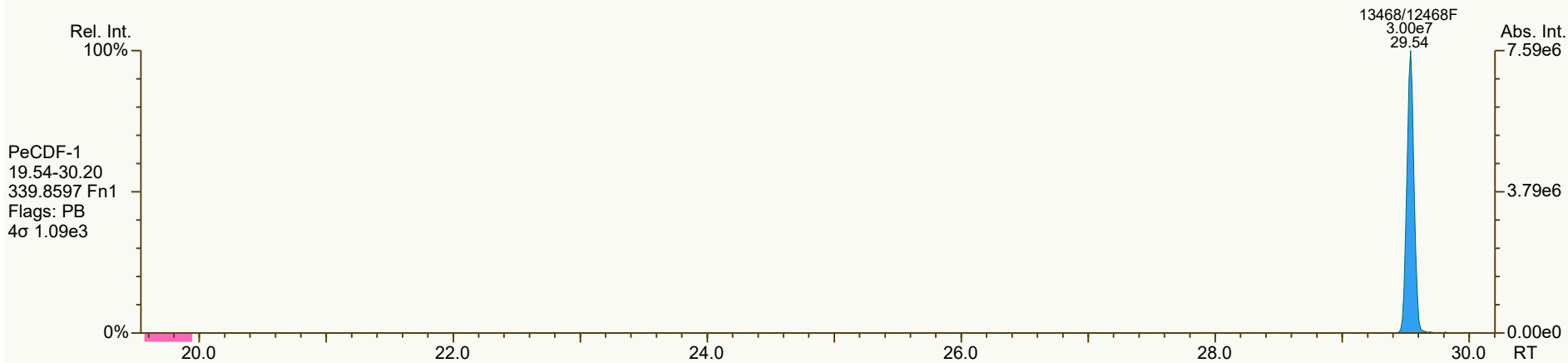
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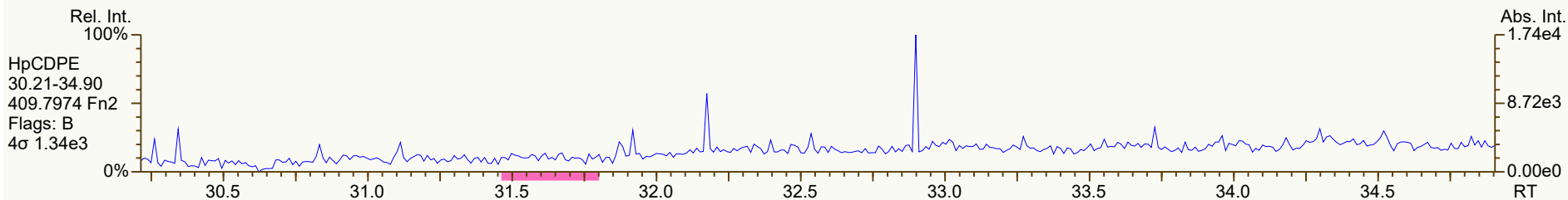
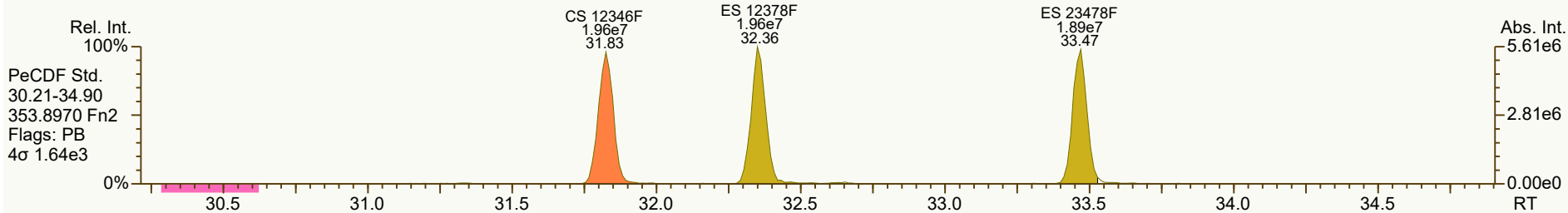
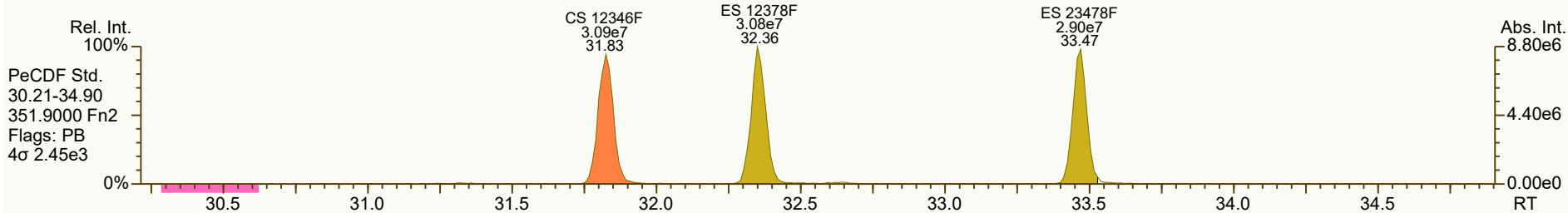
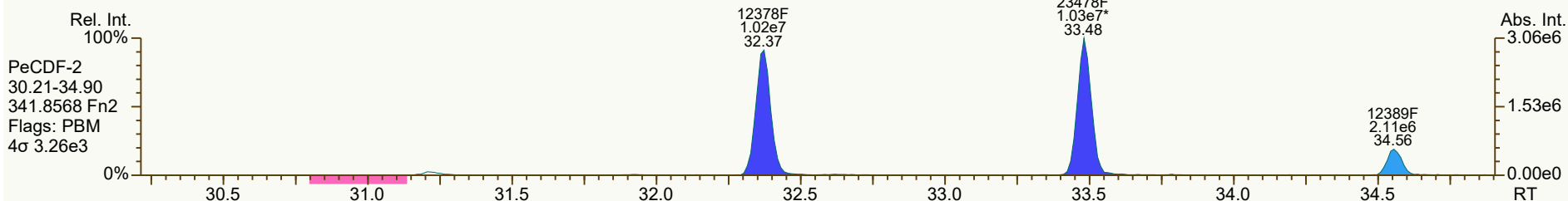
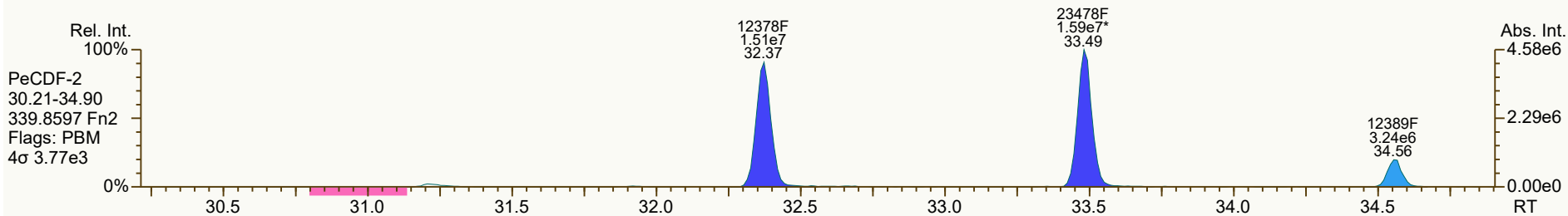


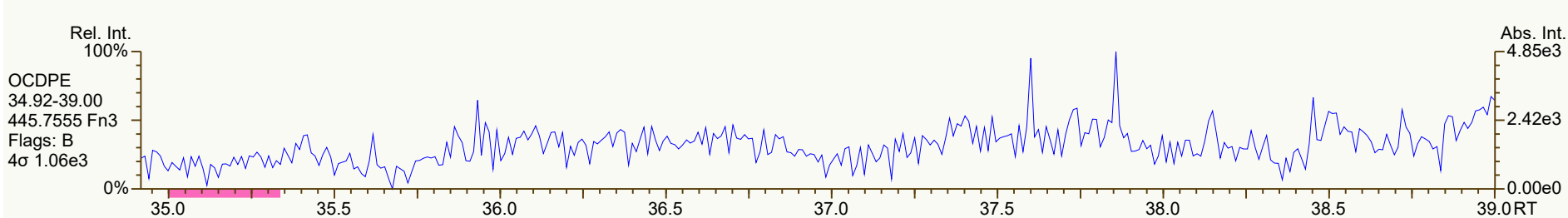
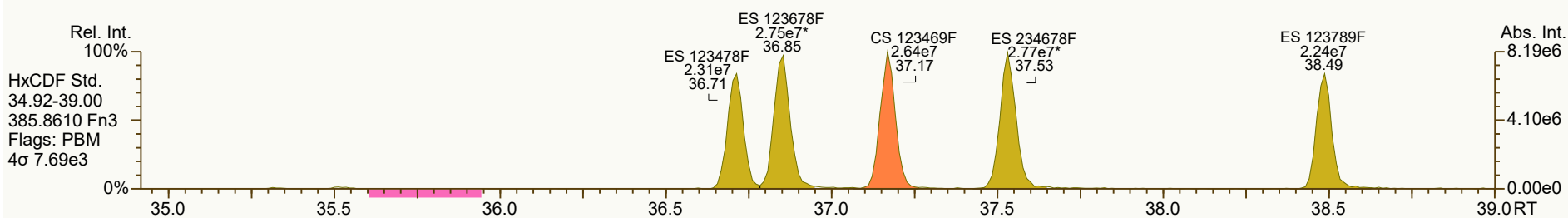
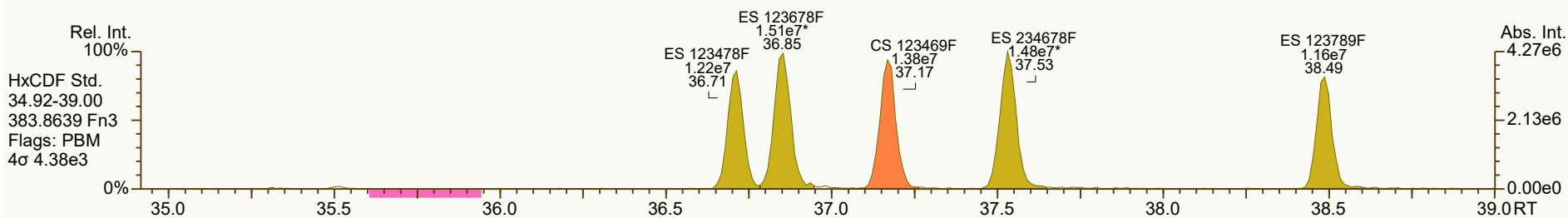
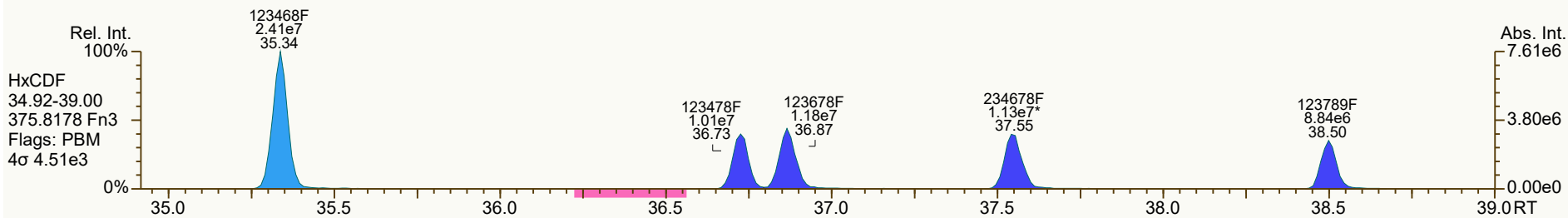
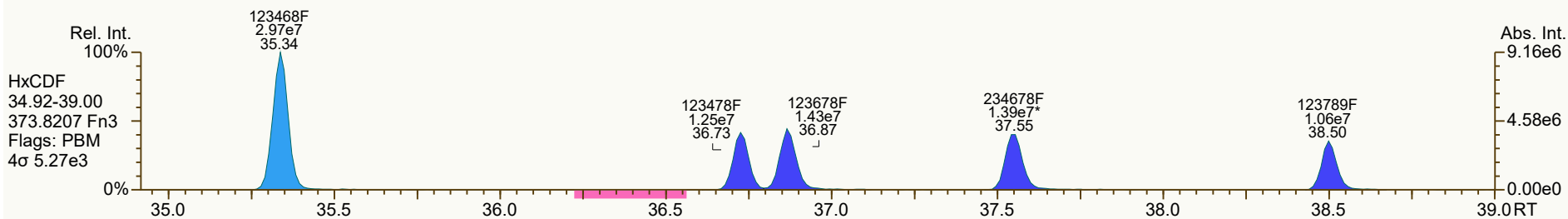
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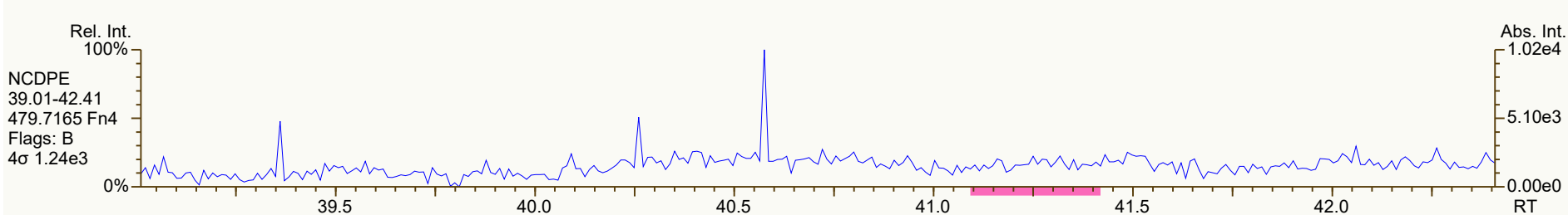
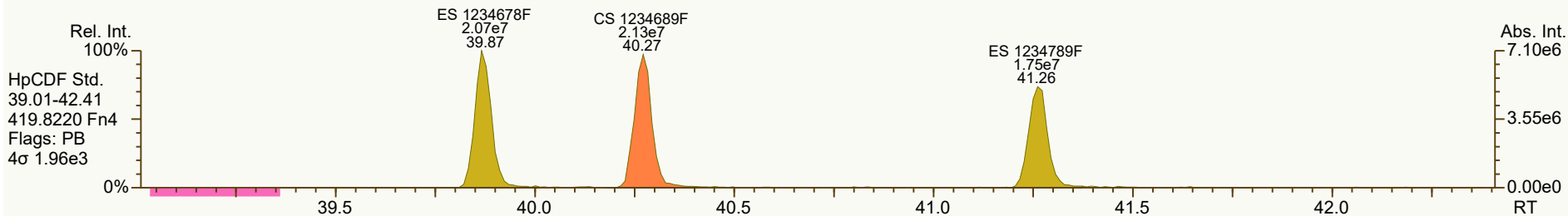
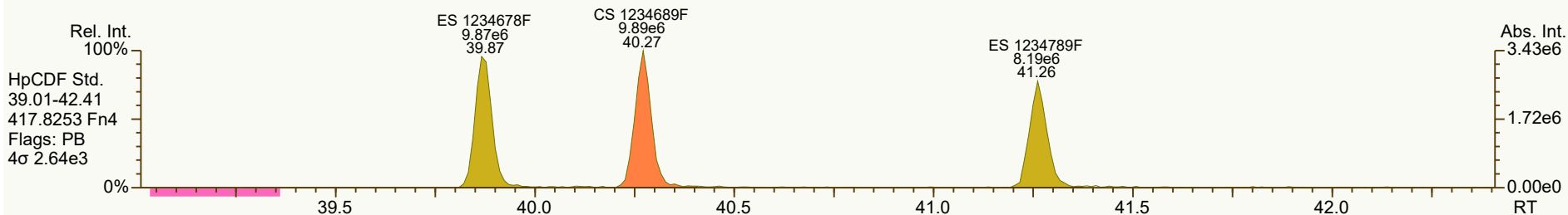
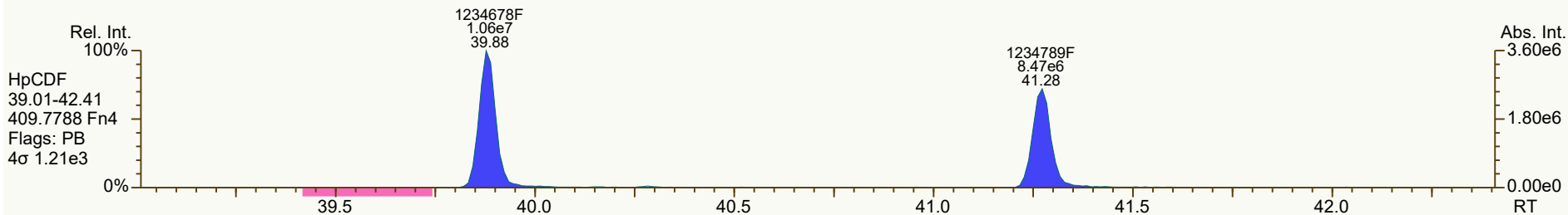
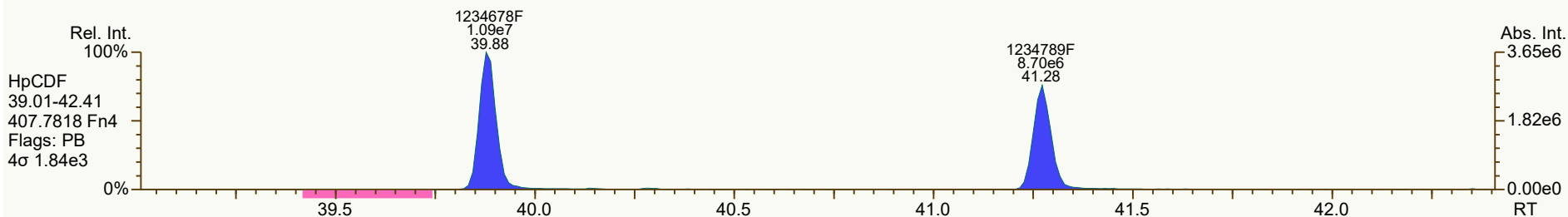
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 7

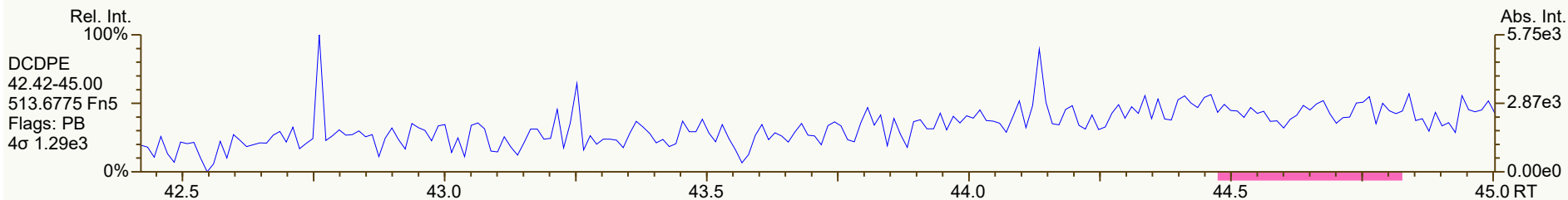
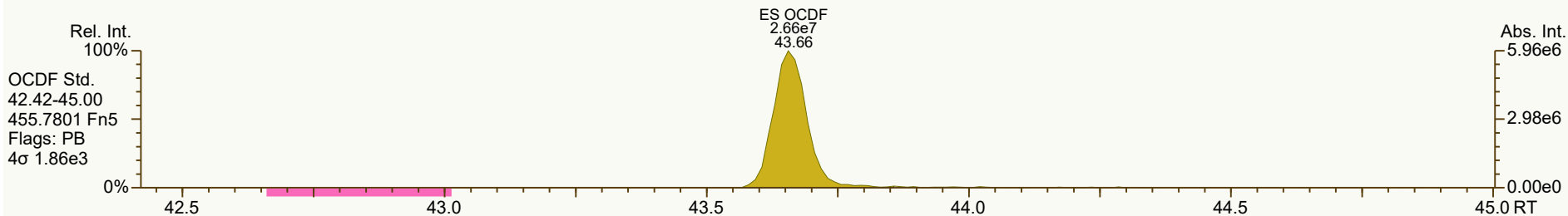
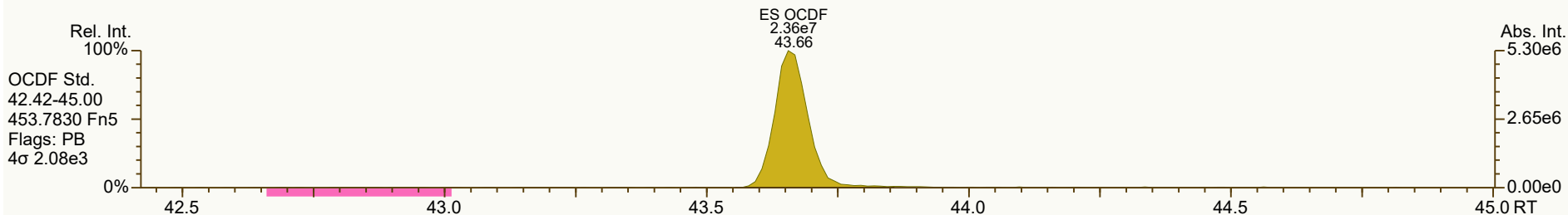
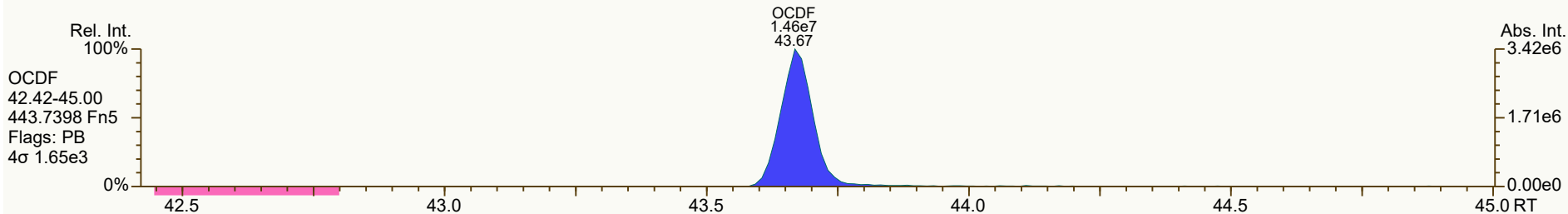
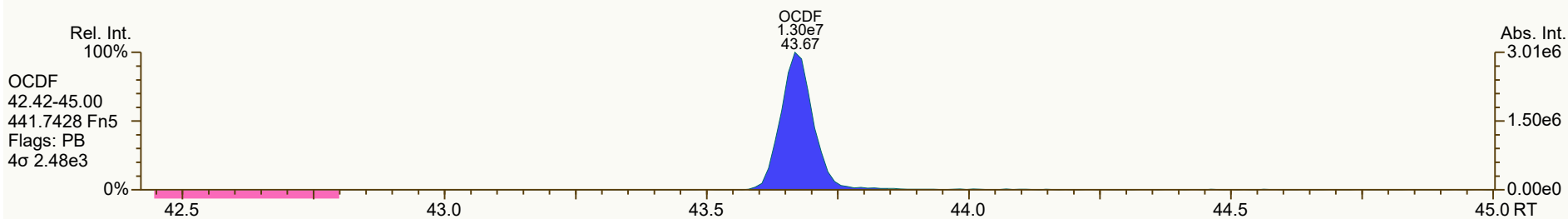
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User: DTF Datafile: 220209C14













FINAL LAB REPORT

Prepared by

SGS NORTH AMERICA

Prepared for

This report is approved by

This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/en/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

SGS remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact us.

The management and staff of SGS welcomes customer feedback, both positive and negative, as we continually improve our services. Please visit our web site at www.sgs.com/ultratrace and click on the 'Email Us' link or go to our survey [here](#). Thank you for choosing SGS.

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PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project
SGS Project #
Analytical Protocol(s)
No. Samples Submitted
Additional QC Sample(s)
No. Laboratory Method Blanks
No. OPRs / Batch CS3
Date Received
Condition Received
Temperature upon Receipt (°C)
Extraction within Holding Time
Analysis within Holding Time



QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.



APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.



SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-012022-GW-BN-PZ-SC

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.03 L	Lab Sample ID:	B6238_18887_DF_001	Date Extracted:	03-Feb-2022
Date Collected:	20-Jan-2022	pH:	7	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	8:06:31
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	2.09			ES 2378-TCDD	85.9	
12378-PeCDD	ND	1.65			ES 12378-PeCDD	94.2	
123478-HxCDD	ND	1.78			ES 123478-HxCDD	94.4	
123678-HxCDD	ND	1.48			ES 123678-HxCDD	105	
123789-HxCDD	ND	1.68			ES 123789-HxCDD	88.5	
1234678-HpCDD	ND	3.69			ES 1234678-HpCDD	85.8	
OCDD	ND	10.9			ES OCDD	80.3	
2378-TCDF	EMPC		3.12	J	ES 2378-TCDF	86.3	
12378-PeCDF	ND	1.43			ES 12378-PeCDF	89.4	
23478-PeCDF	ND	1.43			ES 23478-PeCDF	91	
123478-HxCDF	ND	1.14			ES 123478-HxCDF	95.2	
123678-HxCDF	ND	1.18			ES 123678-HxCDF	97.9	
234678-HxCDF	ND	1.17			ES 234678-HxCDF	103	
123789-HxCDF	ND	1.36			ES 123789-HxCDF	91.9	
1234678-HpCDF	ND	0.95			ES 1234678-HpCDF	97.5	
1234789-HpCDF	ND	1.41			ES 1234789-HpCDF	85.5	
OCDF	ND	2.77			ES OCDF	83.3	
Totals					Standard	CS Recoveries	
Total TCDD	ND	2.09	ND		CS 37Cl-2378-TCDD	93	
Total PeCDD	ND	1.65	ND		CS 12347-PeCDD	113	
Total HxCDD	ND	1.64	ND		CS 12346-PeCDF	101	
Total HpCDD	3.98		3.98		CS 123469-HxCDF	119	
					CS 1234689-HpCDF	111	
Total TCDF	ND		3.12				
Total PeCDF	ND	1.43	ND				
Total HxCDF	ND	1.2	ND				
Total HpCDF	ND	1.15	ND				
Total PCDD/Fs	3.98		7.09				
WHO-2005 TEQs							
TEQ: ND=0	0		0.312				
TEQ: ND=DL/2	2.63	2.75	2.94				
TEQ: ND=DL	5.25	5.49	5.56				



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Sample ID: 11215131-012022-GW-BN-PZ-SC

Method 1613B

Client Data			Sample Data			Laboratory Data						
Name:	GHD Services Inc.		Matrix:	Aqueous		Lab Project ID:	B6238		Date Received:	26-Jan-2022		
Project ID:	11215131-SJRWP-PCFSE		Weight/Volume:	1.03 L		Lab Sample ID:	B6238_18887_DF_001		Date Extracted:	03-Feb-2022		
Date Collected:	20-Jan-2022		pH:	7		QC Batch No.:	18887		Date Analyzed:	09-Feb-2022		
			Split:	-		Dilution:	-		Time Analyzed:	8:06:31		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(2.09)		12479/12468D	(1.65)		124679/124689D	(1.64)		1234679D	3.98	J
1379D	(2.09)		12469D	(1.65)		123468D	(1.64)		1234678D	(3.69)	
1369D	(2.09)		12368D	(1.65)		123679/123689D	(1.64)				
1469D	(2.09)		12478D	(1.65)		123469D	(1.64)				
1247D...[4]	(2.09)		12379D	(1.65)		123478D	(1.78)				
1378D	(2.09)		12369D...[3]	(1.65)		123678D	(1.48)				
1268D	(2.09)		12346/12347D	(1.65)		123467D	(1.64)				
1478D	(2.09)		12378D	(1.65)		123789D	(1.68)		Conc.	3.98	
1279D	(2.09)		12367D	(1.65)					EMPC	3.98	
1234/1269D	(2.09)		12389D	(1.65)							
1236D	(2.09)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(2.09)									(pg/L)	
1239D	(2.09)								OCDD	(10.9)	
2378D	(2.09)										
1278D	(2.09)										
1267D	(2.09)										
1289D	(2.09)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				



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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0.312
TEQ: ND=DL/2	2.63	2.94
TEQ: ND=DL	5.25	5.56
	Conc.	EMPC
Total PCDD/Fs	3.98	7.09

Checkcode: 226-844-BXS

Report Created: 09-Feb-2022 17:27 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SC

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: 26-Jan-2022		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Extracted: 03-Feb-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.03 L			Lab Sample ID: B6238_18887_DF_001			Date Analyzed: 09-Feb-2022		
Date Collected: 20-Jan-2022			pH: 7			QC Batch No.: 18887			Time Analyzed: 8:06:31		
Split: -			Dilution: -								
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(2.4)		13468/12468F	(1.24)		123468F	(1.2)		1234678F	(0.95)	
1468F	(2.4)		13678F...[3]	(1.43)		124678/134678F	(1.2)		1234679F	(1.15)	
2468F	(2.4)		12368F...[3]	(1.43)		134679F	(1.2)		1234689F	(1.15)	
1346/1246F	(2.4)		14678F	(1.43)		124679F	(1.2)		1234789F	(1.41)	
1347F...[3]	(2.4)		13479F	(1.43)		124689F	(1.2)				
1348F	(2.4)		13469/12479F	(1.43)		123467F	(1.2)				
1248F...[3]	(2.4)		12346F	(1.43)		123478F	(1.14)				
1268F	(2.4)		23468/12469F	(1.43)		123678F	(1.18)				
1467F	(2.4)		12347F	(1.43)		123479F	(1.2)				
1478F	(2.4)		12348F	(1.43)		123469F	(1.2)				
1369/1237F	(2.4)		12378F	(1.43)		123679F	(1.2)				
2467F	(2.4)		12678/12367F	(1.43)		234678F	(1.17)		Conc.	0	
2368F	(2.4)		12379F	(1.43)		234678/123689F	0		EMPC	0	
1238F...[5]	(2.4)		12679F	(1.43)		123689F	(1.2)				
1278F	(2.4)		23467/12369F	(1.43)		123789F	(1.36)		Octa-Furan	Conc	Qualifiers
1349F	(2.4)		23478F	(1.43)		123789/123489F	0			(pg/L)	
1267F	(2.4)		23478/12489F	0		123489F	(1.2)		OCDF	(2.77)	
2346/1249F	(2.4)		12489F	(1.43)							
2347/1279F	(2.4)		12349F	(1.43)							
2348F	(2.4)		12389F	(1.43)							
2378F	[3.12]	J									
2367/3467F	(2.4)										
1269F	(2.4)										
1239F	(2.4)										
1289F	(2.4)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	3.12		EMPC	0		EMPC	0				


Checkcode: 226-844-BXS

Report Created: 09-Feb-2022 17:27 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SC TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6238_18887_DF_001
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.03 L	QC Batch No.:	18887
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	03-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	09-Feb-2022 08:06
Lab Project No:	B6238	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(2.09)		2.09	(2.09)	(2.09)	(2.09)
12378-PeCDD	(1.65)		1.65	(0.825)	(1.65)	(1.65)
123478-HxCDD	(1.78)		1.78	(0.178)	(0.178)	(0.178)
123678-HxCDD	(1.48)		1.48	(0.148)	(0.148)	(0.148)
123789-HxCDD	(1.68)		1.68	(0.168)	(0.168)	(0.168)
1234678-HpCDD	(3.69)		3.69	(0.0369)	(0.0369)	(0.0369)
OCDD	(10.9)		10.9	(0.0109)	(0.00109)	(0.00328)
2378-TCDF	[3.12]	J	2.4	[0.312]	[0.312]	[0.312]
12378-PeCDF	(1.43)		1.43	(0.0717)	(0.0717)	(0.043)
23478-PeCDF	(1.43)		1.43	(0.717)	(0.717)	(0.43)
123478-HxCDF	(1.14)		1.14	(0.114)	(0.114)	(0.114)
123678-HxCDF	(1.18)		1.18	(0.118)	(0.118)	(0.118)
234678-HxCDF	(1.17)		1.17	(0.117)	(0.117)	(0.117)
123789-HxCDF	(1.36)		1.36	(0.136)	(0.136)	(0.136)
1234678-HpCDF	(0.95)		0.95	(0.0095)	(0.0095)	(0.0095)
1234789-HpCDF	(1.41)		1.41	(0.0141)	(0.0141)	(0.0141)
OCDF	(2.77)		2.77	(0.00277)	(0.000277)	(0.00083)

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	EMPC = 0, ND = 0	0	0	0
	EMPC = 0, ND = DL / 2	2.38	2.78	2.63
	EMPC = 0, ND = DL	4.75	5.56	5.25
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0.312	0.312	0.312
	EMPC = EMPC, ND = DL / 2	2.69	3.09	2.94
	EMPC = EMPC, ND = DL	5.06	5.88	5.56
	EMPC = EMPC, < J-level = 0	0	0	0

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	Lab Sample ID:	B6238_18887_DF_001MS	Date Extracted:	03-Feb-2022
Date Collected:	20-Jan-2022	pH:	7	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	8:52:50
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	234				ES 2378-TCDD	83.8	
12378-PeCDD	1,040				ES 12378-PeCDD	88.4	
123478-HxCDD	1,090				ES 123478-HxCDD	89.9	
123678-HxCDD	1,160				ES 123678-HxCDD	96.8	
123789-HxCDD	1,110				ES 123789-HxCDD	80.8	
1234678-HpCDD	1,100				ES 1234678-HpCDD	81	
OCDD	2,310				ES OCDD	70.9	
2378-TCDF	218				ES 2378-TCDF	85	
12378-PeCDF	1,040				ES 12378-PeCDF	87.4	
23478-PeCDF	1,100				ES 23478-PeCDF	90.2	
123478-HxCDF	1,070				ES 123478-HxCDF	88.2	
123678-HxCDF	1,110				ES 123678-HxCDF	92.7	
234678-HxCDF	1,060				ES 234678-HxCDF	102	
123789-HxCDF	1,020				ES 123789-HxCDF	84.2	
1234678-HpCDF	1,080				ES 1234678-HpCDF	88.2	
1234789-HpCDF	1,080				ES 1234789-HpCDF	76.9	
OCDF	2,170				ES OCDF	75.6	
Totals					Standard	CS Recoveries	
Total TCDD	1,100		1,100		CS 37Cl-2378-TCDD	92.6	
Total PeCDD	1,570		1,570		CS 12347-PeCDD	107	
Total HxCDD	3,650		3,650		CS 12346-PeCDF	102	
Total HpCDD	1,370		1,370		CS 123469-HxCDF	112	
Total TCDF	1,290		1,290		CS 1234689-HpCDF	106	
Total PeCDF	4,240		4,240				
Total HxCDF	6,920		6,920				
Total HpCDF	2,160		2,160				
Total PCDD/Fs	26,800		26,800				
WHO-2005 TEQs							
TEQ: ND=0	2450		2450				
TEQ: ND=DL/2	2450	5.16	2450				
TEQ: ND=DL	2450	10.3	2450				



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Sample ID: 11215131-012022-GW-BN-PZ-SC-MSD

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.01 L	Lab Sample ID:	B6238_18887_DF_001MSD	Date Extracted:	03-Feb-2022
Date Collected:	20-Jan-2022	pH:	7	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	9:39:11
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	230				ES 2378-TCDD	88.7	
12378-PeCDD	983				ES 12378-PeCDD	96.5	
123478-HxCDD	1,120				ES 123478-HxCDD	88.8	
123678-HxCDD	1,100				ES 123678-HxCDD	98.8	
123789-HxCDD	1,060				ES 123789-HxCDD	88.1	
1234678-HpCDD	1,100				ES 1234678-HpCDD	85.3	
OCDD	2,220				ES OCDD	82.5	
2378-TCDF	232				ES 2378-TCDF	84.8	
12378-PeCDF	993				ES 12378-PeCDF	90.4	
23478-PeCDF	1,090				ES 23478-PeCDF	94.3	
123478-HxCDF	1,030				ES 123478-HxCDF	92.6	
123678-HxCDF	1,060				ES 123678-HxCDF	96.6	
234678-HxCDF	1,040				ES 234678-HxCDF	98.7	
123789-HxCDF	972				ES 123789-HxCDF	90.1	
1234678-HpCDF	1,030				ES 1234678-HpCDF	94	
1234789-HpCDF	1,040				ES 1234789-HpCDF	86.2	
OCDF	2,070				ES OCDF	89	
Totals					Standard	CS Recoveries	
Total TCDD	1,100		1,100		CS 37Cl-2378-TCDD	95.9	
Total PeCDD	1,490		1,490		CS 12347-PeCDD	114	
Total HxCDD	3,580		3,580		CS 12346-PeCDF	107	
Total HpCDD	1,360		1,360		CS 123469-HxCDF	115	
					CS 1234689-HpCDF	111	
Total TCDF	1,340		1,340				
Total PeCDF	4,210		4,210				
Total HxCDF	6,860		6,860				
Total HpCDF	2,070		2,070				
Total PCDD/Fs	26,300		26,300				
WHO-2005 TEQs							
TEQ: ND=0	2360		2360				
TEQ: ND=DL/2	2360	3.26	2360				
TEQ: ND=DL	2360	6.53	2360				



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MS/MSD Comparison



Method 1613B

Sample ID: 11215131-012022-GW-BN-PZ-SC

Analyte	Native Conc.	MS Spike	MS Conc.	MS Rec.	MSD Spike	MSD Conc.	MSD Rec.	RPD
	(pg/L)	(pg/L)	(pg/L)	%	(pg/L)	(pg/L)	%	
2,3,7,8-TCDD	0	200	234	117	198	230	116	1%
1,2,3,7,8-PeCDD	0	1000	1040	104	988	983	99.4	5%
1,2,3,4,7,8-HxCDD	0	1000	1090	109	988	1120	114	4%
1,2,3,6,7,8-HxCDD	0	1000	1160	116	988	1100	111	4%
1,2,3,7,8,9-HxCDD	0	1000	1110	111	988	1060	108	3%
1,2,3,4,6,7,8-HpCDD	0	1000	1100	110	988	1100	111	1%
OCDD	0	2000	2310	116	1980	2220	112	4%
2,3,7,8-TCDF	3.12	200	218	107	198	232	116	8%
1,2,3,7,8-PeCDF	0	1000	1040	104	988	993	101	3%
2,3,4,7,8-PeCDF	0	1000	1100	110	988	1090	110	0%
1,2,3,4,7,8-HxCDF	0	1000	1070	107	988	1030	104	3%
1,2,3,6,7,8-HxCDF	0	1000	1110	111	988	1060	107	4%
2,3,4,6,7,8-HxCDF	0	1000	1060	106	988	1040	106	0%
1,2,3,7,8,9-HxCDF	0	1000	1020	102	988	972	98.4	4%
1,2,3,4,6,7,8-HpCDF	0	1000	1080	108	988	1030	104	4%
1,2,3,4,7,8,9-HpCDF	0	1000	1080	108	988	1040	105	3%
OCDF	0	2000	2170	108	1980	2070	105	3%

* % Recovery limits for MS and MSD: 70-130% of expected value, if native < RL

* RPD limit for MS vs. MSD recoveries: +/- 20%, if native < RL

Sample ID: 11215131-012022-GW-BN-PZ-SW

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	Lab Sample ID:	B6238_18887_DF_002	Date Extracted:	03-Feb-2022
Date Collected:	20-Jan-2022	pH:	7	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	10:25:30
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	2.13			ES 2378-TCDD	90.8	
12378-PeCDD	ND	1.86			ES 12378-PeCDD	99.7	
123478-HxCDD	ND	1.55			ES 123478-HxCDD	97.6	
123678-HxCDD	ND	1.54			ES 123678-HxCDD	103	
123789-HxCDD	ND	1.56			ES 123789-HxCDD	91.8	
1234678-HpCDD	ND	1.95			ES 1234678-HpCDD	86.3	
OCDD	ND	15.1			ES OCDD	81	
2378-TCDF	ND	1.2			ES 2378-TCDF	90.4	
12378-PeCDF	ND	1.34			ES 12378-PeCDF	89.4	
23478-PeCDF	ND	1.24			ES 23478-PeCDF	91.3	
123478-HxCDF	ND	1.43			ES 123478-HxCDF	98.2	
123678-HxCDF	ND	1.44			ES 123678-HxCDF	103	
234678-HxCDF	ND	1.37			ES 234678-HxCDF	106	
123789-HxCDF	ND	1.68			ES 123789-HxCDF	90.3	
1234678-HpCDF	2.63			J	ES 1234678-HpCDF	95.7	
1234789-HpCDF	ND	1.9			ES 1234789-HpCDF	85.5	
OCDF	ND	3.37			ES OCDF	79.8	
Totals					Standard	CS Recoveries	
Total TCDD	ND	2.13	ND		CS 37Cl-2378-TCDD	91.9	
Total PeCDD	ND	1.86	ND		CS 12347-PeCDD	109	
Total HxCDD	ND	1.55	ND		CS 12346-PeCDF	99.3	
Total HpCDD	ND	1.95	ND		CS 123469-HxCDF	113	
					CS 1234689-HpCDF	103	
Total TCDF	ND	1.2	ND				
Total PeCDF	ND	1.29	ND				
Total HxCDF	3.55		3.55				
Total HpCDF	2.63		2.63				
Total PCDD/Fs	6.17		6.17				
WHO-2005 TEQs							
TEQ: ND=0	0.0263		0.0263				
TEQ: ND=DL/2	2.84	2.82	2.84				
TEQ: ND=DL	5.64	5.63	5.64				



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Sample ID: 11215131-012022-GW-BN-PZ-SW **Method 1613B**

Client Data			Sample Data			Laboratory Data					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.00 L			Lab Sample ID: B6238_18887_DF_002			Date Extracted: 03-Feb-2022		
Date Collected: 20-Jan-2022			pH: 7			QC Batch No.: 18887			Date Analyzed: 09-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 10:25:30		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(2.13)		12479/12468D	(1.86)		124679/124689D	(1.55)		1234679D	(1.95)	
1379D	(2.13)		12469D	(1.86)		123468D	(1.55)		1234678D	(1.95)	
1369D	(2.13)		12368D	(1.86)		123679/123689D	(1.55)				
1469D	(2.13)		12478D	(1.86)		123469D	(1.55)				
1247D...[4]	(2.13)		12379D	(1.86)		123478D	(1.55)				
1378D	(2.13)		12369D...[3]	(1.86)		123678D	(1.54)				
1268D	(2.13)		12346/12347D	(1.86)		123467D	(1.55)				
1478D	(2.13)		12378D	(1.86)		123789D	(1.56)		Conc.	0	
1279D	(2.13)		12367D	(1.86)					EMPC	0	
1234/1269D	(2.13)		12389D	(1.86)							
Conc.	0		Conc.	0		Conc.	0		Conc.	0	
EMPC	0		EMPC	0		EMPC	0		EMPC	0	

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	TEQ: ND=0		0.0263	0.0263
	TEQ: ND=DL/2		2.84	2.84
	TEQ: ND=DL		5.64	5.64
	Total PCDD/Fs		Conc.	EMPC
		6.17	6.17	

Checkcode: 245-743-FNJ

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SW Method 1613B

<u>Client Data</u>			<u>Sample Data</u>			<u>Laboratory Data</u>					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.00 L			Lab Sample ID: B6238_18887_DF_002			Date Extracted: 03-Feb-2022		
Date Collected: 20-Jan-2022			pH: 7			QC Batch No.: 18887			Date Analyzed: 09-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 10:25:30		
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(1.2)		13468/12468F	(1.24)		123468F	3.55	J	1234678F	2.63	J
1468F	(1.2)		13678F...[3]	(1.29)		124678/134678F	(1.47)		1234679F	(1.55)	
2468F	(1.2)		12368F...[3]	(1.29)		134679F	(1.47)		1234689F	(1.55)	
1346/1246F	(1.2)		14678F	(1.29)		124679F	(1.47)		1234789F	(1.9)	
1347F...[3]	(1.2)		13479F	(1.29)		124689F	(1.47)				
1348F	(1.2)		13469/12479F	(1.29)		123467F	(1.47)				
1248F...[3]	(1.2)		12346F	(1.29)		123478F	(1.43)				
1268F	(1.2)		23468/12469F	(1.29)		123678F	(1.44)				
1467F	(1.2)		12347F	(1.29)		123479F	(1.47)				
1478F	(1.2)		12348F	(1.29)		123469F	(1.47)				
1369/1237F	(1.2)		12378F	(1.34)		123679F	(1.47)				
2467F	(1.2)		12678/12367F	(1.29)		234678F	(1.37)		Conc.	2.63	
2368F	(1.2)		12379F	(1.29)		234678/123689F	0		EMPC	2.63	
1238F...[5]	(1.2)		12679F	(1.29)		123689F	(1.47)				
1278F	(1.2)		23467/12369F	(1.29)		123789F	(1.68)		Octa-Furan	Conc	Qualifiers
1349F	(1.2)		23478F	(1.24)		123789/123489F	0			(pg/L)	
1267F	(1.2)		23478/12489F	0		123489F	(1.47)		OCDF	(3.37)	
2346/1249F	(1.2)		12489F	(1.29)							
2347/1279F	(1.2)		12349F	(1.29)							
2348F	(1.2)		12389F	(1.29)							
2378F	(1.2)										
2367/3467F	(1.2)										
1269F	(1.2)										
1239F	(1.2)										
1289F	(1.2)										
Conc.	0		Conc.	0		Conc.	3.55				
EMPC	0		EMPC	0		EMPC	3.55				


Checkcode: 245-743-FNJ

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-SW TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6238_18887_DF_002
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	QC Batch No.:	18887
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	03-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	09-Feb-2022 10:25
Lab Project No:	B6238	Units	pg/L		


Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(2.13)		2.13	(2.13)	(2.13)	(2.13)
12378-PeCDD	(1.86)		1.86	(0.93)	(1.86)	(1.86)
123478-HxCDD	(1.55)		1.55	(0.155)	(0.155)	(0.155)
123678-HxCDD	(1.54)		1.54	(0.154)	(0.154)	(0.154)
123789-HxCDD	(1.56)		1.56	(0.156)	(0.156)	(0.156)
1234678-HpCDD	(1.95)		1.95	(0.0195)	(0.0195)	(0.0195)
OCDD	(15.1)		15.1	(0.0151)	(0.00151)	(0.00454)
2378-TCDF	(1.2)		1.2	(0.12)	(0.12)	(0.12)
12378-PeCDF	(1.34)		1.34	(0.0672)	(0.0672)	(0.0403)
23478-PeCDF	(1.24)		1.24	(0.618)	(0.618)	(0.371)
123478-HxCDF	(1.43)		1.43	(0.143)	(0.143)	(0.143)
123678-HxCDF	(1.44)		1.44	(0.144)	(0.144)	(0.144)
234678-HxCDF	(1.37)		1.37	(0.137)	(0.137)	(0.137)
123789-HxCDF	(1.68)		1.68	(0.168)	(0.168)	(0.168)
1234678-HpCDF	2.63	J	1.28	0.0263	0.0263	0.0263
1234789-HpCDF	(1.9)		1.9	(0.019)	(0.019)	(0.019)
OCDF	(3.37)		3.37	(0.00337)	(0.000337)	(0.00101)

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	EMPC = 0, ND = 0	0.0263	0.0263	0.0263
	EMPC = 0, ND = DL / 2	2.51	2.97	2.84
	EMPC = 0, ND = DL	5	5.92	5.64
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0.0263	0.0263	0.0263
	EMPC = EMPC, ND = DL / 2	2.51	2.97	2.84
	EMPC = EMPC, ND = DL	5	5.92	5.64
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: 11215131-012022-GW-BN-PZ-NC

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	0.99 L	Lab Sample ID:	B6238_18887_DF_003	Date Extracted:	03-Feb-2022
Date Collected:	20-Jan-2022	pH:	7	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	11:11:51
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	2.37			ES 2378-TCDD	84.6	
12378-PeCDD	ND	2			ES 12378-PeCDD	90.8	
123478-HxCDD	ND	1.54			ES 123478-HxCDD	89.5	
123678-HxCDD	ND	1.36			ES 123678-HxCDD	97.6	
123789-HxCDD	ND	1.36			ES 123789-HxCDD	90.3	
1234678-HpCDD	ND	2.61			ES 1234678-HpCDD	84	
OCDD	ND	5.83			ES OCDD	76.8	
2378-TCDF	ND	1.15			ES 2378-TCDF	82.4	
12378-PeCDF	ND	1.26			ES 12378-PeCDF	86.5	
23478-PeCDF	ND	1.22			ES 23478-PeCDF	90	
123478-HxCDF	ND	1.27			ES 123478-HxCDF	90.1	
123678-HxCDF	ND	1.24			ES 123678-HxCDF	95.8	
234678-HxCDF	ND	1.3			ES 234678-HxCDF	98.7	
123789-HxCDF	ND	1.48			ES 123789-HxCDF	84.8	
1234678-HpCDF	ND	1.19			ES 1234678-HpCDF	89.5	
1234789-HpCDF	ND	1.85			ES 1234789-HpCDF	81.4	
OCDF	ND	3.27			ES OCDF	74.9	
Totals					Standard	CS Recoveries	
Total TCDD	ND	2.37	ND		CS 37Cl-2378-TCDD	93.2	
Total PeCDD	ND	2	ND		CS 12347-PeCDD	114	
Total HxCDD	ND	1.42	ND		CS 12346-PeCDF	105	
Total HpCDD	ND	2.61	ND		CS 123469-HxCDF	119	
					CS 1234689-HpCDF	111	
Total TCDF	ND	1.15	ND				
Total PeCDF	ND	1.24	ND				
Total HxCDF	ND	1.31	ND				
Total HpCDF	ND	1.48	ND				
Total PCDD/Fs	ND		ND				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	2.95	2.95	2.95				
TEQ: ND=DL	5.9	5.9	5.9				



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Sample ID: 11215131-012022-GW-BN-PZ-NC Method 1613B

Client Data			Sample Data			Laboratory Data					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 0.99 L			Lab Sample ID: B6238_18887_DF_003			Date Extracted: 03-Feb-2022		
Date Collected: 20-Jan-2022			pH: 7			QC Batch No.: 18887			Date Analyzed: 09-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 11:11:51		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(2.37)		12479/12468D	(2)		124679/124689D	(1.42)		1234679D	(2.61)	
1379D	(2.37)		12469D	(2)		123468D	(1.42)		1234678D	(2.61)	
1369D	(2.37)		12368D	(2)		123679/123689D	(1.42)				
1469D	(2.37)		12478D	(2)		123469D	(1.42)				
1247D...[4]	(2.37)		12379D	(2)		123478D	(1.54)				
1378D	(2.37)		12369D...[3]	(2)		123678D	(1.36)				
1268D	(2.37)		12346/12347D	(2)		123467D	(1.42)				
1478D	(2.37)		12378D	(2)		123789D	(1.36)		Conc.	0	
1279D	(2.37)		12367D	(2)					EMPC	0	
1234/1269D	(2.37)		12389D	(2)							
Conc.	0		Conc.	0		Conc.	0		Conc.	0	
EMPC	0		EMPC	0		EMPC	0		EMPC	0	

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	TEQ: ND=0		0	0
	TEQ: ND=DL/2		2.95	2.95
	TEQ: ND=DL		5.9	5.9
	Total PCDD/Fs		Conc.	EMPC
		0	0	

Checkcode: 216-586-JHG

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-NC

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: 26-Jan-2022		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Extracted: 03-Feb-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 0.99 L			Lab Sample ID: B6238_18887_DF_003			Date Analyzed: 09-Feb-2022		
Date Collected: 20-Jan-2022			pH: 7			QC Batch No.: 18887			Time Analyzed: 11:11:51		
Split: -			Dilution: -								
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(1.15)		13468/12468F	(1.4)		123468F	(1.31)		1234678F	(1.19)	
1468F	(1.15)		13678F...[3]	(1.24)		124678/134678F	(1.31)		1234679F	(1.48)	
2468F	(1.15)		12368F...[3]	(1.24)		134679F	(1.31)		1234689F	(1.48)	
1346/1246F	(1.15)		14678F	(1.24)		124679F	(1.31)		1234789F	(1.85)	
1347F...[3]	(1.15)		13479F	(1.24)		124689F	(1.31)				
1348F	(1.15)		13469/12479F	(1.24)		123467F	(1.31)				
1248F...[3]	(1.15)		12346F	(1.24)		123478F	(1.27)				
1268F	(1.15)		23468/12469F	(1.24)		123678F	(1.24)				
1467F	(1.15)		12347F	(1.24)		123479F	(1.31)				
1478F	(1.15)		12348F	(1.24)		123469F	(1.31)				
1369/1237F	(1.15)		12378F	(1.26)		123679F	(1.31)				
2467F	(1.15)		12678/12367F	(1.24)		234678F	(1.3)		Conc.	0	
2368F	(1.15)		12379F	(1.24)		234678/123689F	0		EMPC	0	
1238F...[5]	(1.15)		12679F	(1.24)		123689F	(1.31)				
1278F	(1.15)		23467/12369F	(1.24)		123789F	(1.48)		Octa-Furan	Conc	Qualifiers
1349F	(1.15)		23478F	(1.22)		123789/123489F	0			(pg/L)	
1267F	(1.15)		23478/12489F	0		123489F	(1.31)		OCDF	(3.27)	
2346/1249F	(1.15)		12489F	(1.24)							
2347/1279F	(1.15)		12349F	(1.24)							
2348F	(1.15)		12389F	(1.24)							
2378F	(1.15)										
2367/3467F	(1.15)										
1269F	(1.15)										
1239F	(1.15)										
1289F	(1.15)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				


Checkcode: 216-586-JHG

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-NC TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6238_18887_DF_003
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	0.99 L	QC Batch No.:	18887
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	03-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	09-Feb-2022 11:11
Lab Project No:	B6238	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(2.37)		2.37	(2.37)	(2.37)	(2.37)
12378-PeCDD	(2)		2	(1)	(2)	(2)
123478-HxCDD	(1.54)		1.54	(0.154)	(0.154)	(0.154)
123678-HxCDD	(1.36)		1.36	(0.136)	(0.136)	(0.136)
123789-HxCDD	(1.36)		1.36	(0.136)	(0.136)	(0.136)
1234678-HpCDD	(2.61)		2.61	(0.0261)	(0.0261)	(0.0261)
OCDD	(5.83)		5.83	(0.00583)	(0.000583)	(0.00175)
2378-TCDF	(1.15)		1.15	(0.115)	(0.115)	(0.115)
12378-PeCDF	(1.26)		1.26	(0.0629)	(0.0629)	(0.0377)
23478-PeCDF	(1.22)		1.22	(0.612)	(0.612)	(0.367)
123478-HxCDF	(1.27)		1.27	(0.127)	(0.127)	(0.127)
123678-HxCDF	(1.24)		1.24	(0.124)	(0.124)	(0.124)
234678-HxCDF	(1.3)		1.3	(0.13)	(0.13)	(0.13)
123789-HxCDF	(1.48)		1.48	(0.148)	(0.148)	(0.148)
1234678-HpCDF	(1.19)		1.19	(0.0119)	(0.0119)	(0.0119)
1234789-HpCDF	(1.85)		1.85	(0.0185)	(0.0185)	(0.0185)
OCDF	(3.27)		3.27	(0.00327)	(0.000327)	(0.00098)

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	EMPC = 0, ND = 0	0	0	0
	EMPC = 0, ND = DL / 2	2.59	3.08	2.95
	EMPC = 0, ND = DL	5.18	6.17	5.9
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0	0	0
	EMPC = EMPC, ND = DL / 2	2.59	3.08	2.95
	EMPC = EMPC, ND = DL	5.18	6.17	5.9
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: 11215131-012022-GW-BN-PZ-NE

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.03 L	Lab Sample ID:	B6238_18887_DF_004	Date Extracted:	03-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	11:58:12
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	2.27			ES 2378-TCDD	88.8	
12378-PeCDD	ND	1.67			ES 12378-PeCDD	96.2	
123478-HxCDD	ND	1.64			ES 123478-HxCDD	95	
123678-HxCDD	ND	1.52			ES 123678-HxCDD	102	
123789-HxCDD	ND	1.53			ES 123789-HxCDD	91.4	
1234678-HpCDD	ND	2.17			ES 1234678-HpCDD	88.9	
OCDD	ND	14.2			ES OCDD	79	
2378-TCDF	ND	1.32			ES 2378-TCDF	88.5	
12378-PeCDF	ND	1.02			ES 12378-PeCDF	91.5	
23478-PeCDF	ND	0.991			ES 23478-PeCDF	90.8	
123478-HxCDF	ND	1.04			ES 123478-HxCDF	91.1	
123678-HxCDF	ND	0.902			ES 123678-HxCDF	95.8	
234678-HxCDF	ND	0.896			ES 234678-HxCDF	107	
123789-HxCDF	ND	1.11			ES 123789-HxCDF	88.1	
1234678-HpCDF	ND	1.21			ES 1234678-HpCDF	95	
1234789-HpCDF	ND	1.91			ES 1234789-HpCDF	84.4	
OCDF	ND	3.33			ES OCDF	81	
Totals					Standard	CS Recoveries	
Total TCDD	ND	2.27	ND		CS 37Cl-2378-TCDD	97	
Total PeCDD	ND	1.67	ND		CS 12347-PeCDD	112	
Total HxCDD	ND	1.56	ND		CS 12346-PeCDF	103	
Total HpCDD	ND	2.17	ND		CS 123469-HxCDF	116	
					CS 1234689-HpCDF	107	
Total TCDF	ND	1.32	ND				
Total PeCDF	ND	1.01	ND				
Total HxCDF	ND	0.979	ND				
Total HpCDF	ND	1.51	ND				
Total PCDD/Fs	ND		ND				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	2.66	2.66	2.66				
TEQ: ND=DL	5.32	5.32	5.32				



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Sample ID: 11215131-012022-GW-BN-PZ-NE

Method 1613B

Client Data			Sample Data			Laboratory Data						
Name:	GHD Services Inc.		Matrix:	Aqueous		Lab Project ID:	B6238		Date Received:	26-Jan-2022		
Project ID:	11215131-SJRWP-PCFSE		Weight/Volume:	1.03 L		Lab Sample ID:	B6238_18887_DF_004		Date Extracted:	03-Feb-2022		
Date Collected:	20-Jan-2022		pH:	6		QC Batch No.:	18887		Date Analyzed:	09-Feb-2022		
			Split:	-		Dilution:	-		Time Analyzed:	11:58:12		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(2.27)		12479/12468D	(1.67)		124679/124689D	(1.56)		1234679D	(2.17)	
1379D	(2.27)		12469D	(1.67)		123468D	(1.56)		1234678D	(2.17)	
1369D	(2.27)		12368D	(1.67)		123679/123689D	(1.56)				
1469D	(2.27)		12478D	(1.67)		123469D	(1.56)				
1247D...[4]	(2.27)		12379D	(1.67)		123478D	(1.64)				
1378D	(2.27)		12369D...[3]	(1.67)		123678D	(1.52)				
1268D	(2.27)		12346/12347D	(1.67)		123467D	(1.56)				
1478D	(2.27)		12378D	(1.67)		123789D	(1.53)		Conc.	0	
1279D	(2.27)		12367D	(1.67)					EMPC	0	
1234/1269D	(2.27)		12389D	(1.67)							
1236D	(2.27)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(2.27)									(pg/L)	
1239D	(2.27)								OCDD	(14.2)	
2378D	(2.27)										
1278D	(2.27)										
1267D	(2.27)										
1289D	(2.27)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				



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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	2.66	2.66
TEQ: ND=DL	5.32	5.32
	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 151-857-SLQ

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-NE **Method 1613B**

<u>Client Data</u>			<u>Sample Data</u>			<u>Laboratory Data</u>					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Received: 26-Jan-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.03 L			Lab Sample ID: B6238_18887_DF_004			Date Extracted: 03-Feb-2022		
Date Collected: 20-Jan-2022			pH: 6			QC Batch No.: 18887			Date Analyzed: 09-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 11:58:12		
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(1.32)		13468/12468F	(1.01)		123468F	(0.979)		1234678F	(1.21)	
1468F	(1.32)		13678F...[3]	(1.01)		124678/134678F	(0.979)		1234679F	(1.51)	
2468F	(1.32)		12368F...[3]	(1.01)		134679F	(0.979)		1234689F	(1.51)	
1346/1246F	(1.32)		14678F	(1.01)		124679F	(0.979)		1234789F	(1.91)	
1347F...[3]	(1.32)		13479F	(1.01)		124689F	(0.979)				
1348F	(1.32)		13469/12479F	(1.01)		123467F	(0.979)				
1248F...[3]	(1.32)		12346F	(1.01)		123478F	(1.04)				
1268F	(1.32)		23468/12469F	(1.01)		123678F	(0.902)				
1467F	(1.32)		12347F	(1.01)		123479F	(0.979)				
1478F	(1.32)		12348F	(1.01)		123469F	(0.979)				
1369/1237F	(1.32)		12378F	(1.02)		123679F	(0.979)				
2467F	(1.32)		12678/12367F	(1.01)		234678F	(0.896)		Conc.	0	
2368F	(1.32)		12379F	(1.01)		234678/123689F	0		EMPC	0	
1238F...[5]	(1.32)		12679F	(1.01)		123689F	(0.979)				
1278F	(1.32)		23467/12369F	(1.01)		123789F	(1.11)		Octa-Furan	Conc	Qualifiers
1349F	(1.32)		23478F	(0.991)		123789/123489F	0			(pg/L)	
1267F	(1.32)		23478/12489F	0		123489F	(0.979)		OCDF	(3.33)	
2346/1249F	(1.32)		12489F	(1.01)							
2347/1279F	(1.32)		12349F	(1.01)							
2348F	(1.32)		12389F	(1.01)							
2378F	(1.32)										
2367/3467F	(1.32)										
1269F	(1.32)										
1239F	(1.32)										
1289F	(1.32)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				


Checkcode: 151-857-SLQ

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-PZ-NE TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6238_18887_DF_004
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.03 L	QC Batch No.:	18887
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	03-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	09-Feb-2022 11:58
Lab Project No:	B6238	Units	pg/L		


Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(2.27)		2.27	(2.27)	(2.27)	(2.27)
12378-PeCDD	(1.67)		1.67	(0.834)	(1.67)	(1.67)
123478-HxCDD	(1.64)		1.64	(0.164)	(0.164)	(0.164)
123678-HxCDD	(1.52)		1.52	(0.152)	(0.152)	(0.152)
123789-HxCDD	(1.53)		1.53	(0.153)	(0.153)	(0.153)
1234678-HpCDD	(2.17)		2.17	(0.0217)	(0.0217)	(0.0217)
OCDD	(14.2)		14.2	(0.0142)	(0.00142)	(0.00427)
2378-TCDF	(1.32)		1.32	(0.132)	(0.132)	(0.132)
12378-PeCDF	(1.02)		1.02	(0.0511)	(0.0511)	(0.0306)
23478-PeCDF	(0.991)		0.991	(0.495)	(0.495)	(0.297)
123478-HxCDF	(1.04)		1.04	(0.104)	(0.104)	(0.104)
123678-HxCDF	(0.902)		0.902	(0.0902)	(0.0902)	(0.0902)
234678-HxCDF	(0.896)		0.896	(0.0896)	(0.0896)	(0.0896)
123789-HxCDF	(1.11)		1.11	(0.111)	(0.111)	(0.111)
1234678-HpCDF	(1.21)		1.21	(0.0121)	(0.0121)	(0.0121)
1234789-HpCDF	(1.91)		1.91	(0.0191)	(0.0191)	(0.0191)
OCDF	(3.33)		3.33	(0.00333)	(0.000333)	(0.001)

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	EMPC = 0, ND = 0	0	0	0
	EMPC = 0, ND = DL / 2	2.36	2.77	2.66
	EMPC = 0, ND = DL	4.72	5.54	5.32
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0	0	0
	EMPC = EMPC, ND = DL / 2	2.36	2.77	2.66
	EMPC = EMPC, ND = DL	4.72	5.54	5.32
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: 11215131-012022-GW-BN-DUP-1

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	26-Jan-2022
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	Lab Sample ID:	B6238_18887_DF_005	Date Extracted:	03-Feb-2022
Date Collected:	20-Jan-2022	pH:	6	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	12:44:33
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.73			ES 2378-TCDD	85	
12378-PeCDD	ND	1.58			ES 12378-PeCDD	96.9	
123478-HxCDD	ND	1.84			ES 123478-HxCDD	90.3	
123678-HxCDD	ND	1.71			ES 123678-HxCDD	99.2	
123789-HxCDD	ND	1.7			ES 123789-HxCDD	87.1	
1234678-HpCDD	ND	2.08			ES 1234678-HpCDD	86.4	
OCDD	EMPC		7.96	J	ES OCDD	82.2	
2378-TCDF	ND	1.16			ES 2378-TCDF	86.3	
12378-PeCDF	ND	1.28			ES 12378-PeCDF	92.1	
23478-PeCDF	ND	1.23			ES 23478-PeCDF	93.4	
123478-HxCDF	ND	1.15			ES 123478-HxCDF	88.9	
123678-HxCDF	ND	1.13			ES 123678-HxCDF	95	
234678-HxCDF	ND	1.11			ES 234678-HxCDF	98.7	
123789-HxCDF	ND	1.22			ES 123789-HxCDF	87.7	
1234678-HpCDF	ND	1.34			ES 1234678-HpCDF	93	
1234789-HpCDF	ND	1.91			ES 1234789-HpCDF	82.9	
OCDF	ND	2.89			ES OCDF	84	
Totals					Standard	CS Recoveries	
Total TCDD	ND	1.73	ND		CS 37Cl-2378-TCDD	90.4	
Total PeCDD	ND	1.58	ND		CS 12347-PeCDD	110	
Total HxCDD	ND	1.75	ND		CS 12346-PeCDF	102	
Total HpCDD	ND	2.08	ND		CS 123469-HxCDF	112	
					CS 1234689-HpCDF	108	
Total TCDF	ND	1.16	ND				
Total PeCDF	ND	1.25	ND				
Total HxCDF	ND	1.15	ND				
Total HpCDF	ND	1.59	ND				
Total PCDD/Fs	ND		7.96				
WHO-2005 TEQs							
TEQ: ND=0	0		0.00239				
TEQ: ND=DL/2	2.44	2.44	2.44				
TEQ: ND=DL	4.87	4.87	4.87				



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Sample ID: 11215131-012022-GW-BN-DUP-1

Method 1613B

Client Data			Sample Data			Laboratory Data						
Name:	GHD Services Inc.		Matrix:	Aqueous		Lab Project ID:	B6238		Date Received:	26-Jan-2022		
Project ID:	11215131-SJRWP-PCFSE		Weight/Volume:	1.02 L		Lab Sample ID:	B6238_18887_DF_005		Date Extracted:	03-Feb-2022		
Date Collected:	20-Jan-2022		pH:	6		QC Batch No.:	18887		Date Analyzed:	09-Feb-2022		
			Split:	-		Dilution:	-		Time Analyzed:	12:44:33		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(1.73)		12479/12468D	(1.58)		124679/124689D	(1.75)		1234679D	(2.08)	
1379D	(1.73)		12469D	(1.58)		123468D	(1.75)		1234678D	(2.08)	
1369D	(1.73)		12368D	(1.58)		123679/123689D	(1.75)				
1469D	(1.73)		12478D	(1.58)		123469D	(1.75)				
1247D...[4]	(1.73)		12379D	(1.58)		123478D	(1.84)				
1378D	(1.73)		12369D...[3]	(1.58)		123678D	(1.71)				
1268D	(1.73)		12346/12347D	(1.58)		123467D	(1.75)				
1478D	(1.73)		12378D	(1.58)		123789D	(1.7)		Conc.	0	
1279D	(1.73)		12367D	(1.58)					EMPC	0	
1234/1269D	(1.73)		12389D	(1.58)							
1236D	(1.73)								Octa-Dioxin	Conc	Qualifiers
1237/1238D	(1.73)									(pg/L)	
1239D	(1.73)								OCDD	[7.96]	J
2378D	(1.73)										
1278D	(1.73)										
1267D	(1.73)										
1289D	(1.73)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				



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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0.00239
TEQ: ND=DL/2	2.44	2.44
TEQ: ND=DL	4.87	4.87
	Conc.	EMPC
Total PCDD/Fs	0	7.96

Checkcode: 170-231-FWV

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-DUP-1

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: 26-Jan-2022		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Extracted: 03-Feb-2022		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.02 L			Lab Sample ID: B6238_18887_DF_005			Date Analyzed: 09-Feb-2022		
Date Collected: 20-Jan-2022			pH: 6			QC Batch No.: 18887			Time Analyzed: 12:44:33		
Split: -			Dilution: -								
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(1.16)		13468/12468F	(1.07)		123468F	(1.15)		1234678F	(1.34)	
1468F	(1.16)		13678F...[3]	(1.25)		124678/134678F	(1.15)		1234679F	(1.59)	
2468F	(1.16)		12368F...[3]	(1.25)		134679F	(1.15)		1234689F	(1.59)	
1346/1246F	(1.16)		14678F	(1.25)		124679F	(1.15)		1234789F	(1.91)	
1347F...[3]	(1.16)		13479F	(1.25)		124689F	(1.15)				
1348F	(1.16)		13469/12479F	(1.25)		123467F	(1.15)				
1248F...[3]	(1.16)		12346F	(1.25)		123478F	(1.15)				
1268F	(1.16)		23468/12469F	(1.25)		123678F	(1.13)				
1467F	(1.16)		12347F	(1.25)		123479F	(1.15)				
1478F	(1.16)		12348F	(1.25)		123469F	(1.15)				
1369/1237F	(1.16)		12378F	(1.28)		123679F	(1.15)				
2467F	(1.16)		12678/12367F	(1.25)		234678F	(1.11)		Conc.	0	
2368F	(1.16)		12379F	(1.25)		234678/123689F	0		EMPC	0	
1238F...[5]	(1.16)		12679F	(1.25)		123689F	(1.15)				
1278F	(1.16)		23467/12369F	(1.25)		123789F	(1.22)		Octa-Furan	Conc	Qualifiers
1349F	(1.16)		23478F	(1.23)		123789/123489F	0			(pg/L)	
1267F	(1.16)		23478/12489F	0		123489F	(1.15)		OCDF	(2.89)	
2346/1249F	(1.16)		12489F	(1.25)							
2347/1279F	(1.16)		12349F	(1.25)							
2348F	(1.16)		12389F	(1.25)							
2378F	(1.16)										
2367/3467F	(1.16)										
1269F	(1.16)										
1239F	(1.16)										
1289F	(1.16)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				


Checkcode: 170-231-FWV

Report Created: 09-Feb-2022 17:28 Analyst: TF

Sample ID: 11215131-012022-GW-BN-DUP-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	B6238_18887_DF_005
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.02 L	QC Batch No.:	18887
Date Collected:	20-Jan-2022	Split:	-	Date Extracted:	03-Feb-2022
Date Received:	26-Jan-2022	Dilution:	-	Date Analyzed:	09-Feb-2022 12:44
Lab Project No:	B6238	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(1.73)		1.73	(1.73)	(1.73)	(1.73)
12378-PeCDD	(1.58)		1.58	(0.789)	(1.58)	(1.58)
123478-HxCDD	(1.84)		1.84	(0.184)	(0.184)	(0.184)
123678-HxCDD	(1.71)		1.71	(0.171)	(0.171)	(0.171)
123789-HxCDD	(1.7)		1.7	(0.17)	(0.17)	(0.17)
1234678-HpCDD	(2.08)		2.08	(0.0208)	(0.0208)	(0.0208)
OCDD	[7.96]	J	5.44	[0.00796]	[0.000796]	[0.00239]
2378-TCDF	(1.16)		1.16	(0.116)	(0.116)	(0.116)
12378-PeCDF	(1.28)		1.28	(0.0638)	(0.0638)	(0.0383)
23478-PeCDF	(1.23)		1.23	(0.613)	(0.613)	(0.368)
123478-HxCDF	(1.15)		1.15	(0.115)	(0.115)	(0.115)
123678-HxCDF	(1.13)		1.13	(0.113)	(0.113)	(0.113)
234678-HxCDF	(1.11)		1.11	(0.111)	(0.111)	(0.111)
123789-HxCDF	(1.22)		1.22	(0.122)	(0.122)	(0.122)
1234678-HpCDF	(1.34)		1.34	(0.0134)	(0.0134)	(0.0134)
1234789-HpCDF	(1.91)		1.91	(0.0191)	(0.0191)	(0.0191)
OCDF	(2.89)		2.89	(0.00289)	(0.000289)	(0.000866)

5500 Business Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613; Toll-Free 866 846-8290 www.us.sgs.com 	TEQ Summaries			
	EMPC = 0, ND = 0	0	0	0
	EMPC = 0, ND = DL / 2	2.18	2.57	2.44
	EMPC = 0, ND = DL	4.36	5.14	4.87
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0.00796	0.000796	0.00239
	EMPC = EMPC, ND = DL / 2	2.19	2.57	2.44
	EMPC = EMPC, ND = DL	4.36	5.14	4.87
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: Method Blank B6238_18887

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	Lab Sample ID	MB1_18887_DF_TLX	Date Extracted:	03-Feb-2022
Date Collected:	n/a	pH:	n/a	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	7:20:11
Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.96			ES 2378-TCDD	86.4	
12378-PeCDD	ND	1.16			ES 12378-PeCDD	96	
123478-HxCDD	ND	1.83			ES 123478-HxCDD	93.9	
123678-HxCDD	ND	1.81			ES 123678-HxCDD	104	
123789-HxCDD	ND	2.06			ES 123789-HxCDD	87.2	
1234678-HpCDD	ND	2.47			ES 1234678-HpCDD	88.6	
OCDD	ND	12.2			ES OCDD	81.4	
2378-TCDF	ND	1.06			ES 2378-TCDF	89.4	
12378-PeCDF	ND	1.11			ES 12378-PeCDF	92.6	
23478-PeCDF	ND	1.09			ES 23478-PeCDF	92.2	
123478-HxCDF	ND	0.944			ES 123478-HxCDF	91.5	
123678-HxCDF	ND	0.875			ES 123678-HxCDF	100	
234678-HxCDF	ND	0.844			ES 234678-HxCDF	106	
123789-HxCDF	ND	1.04			ES 123789-HxCDF	88.2	
1234678-HpCDF	ND	1.09			ES 1234678-HpCDF	93.9	
1234789-HpCDF	ND	1.56			ES 1234789-HpCDF	85.4	
OCDF	ND	3.14			ES OCDF	83.7	
Totals					Standard	CS Recoveries	
Total TCDD	ND	1.96	ND		CS 37Cl-2378-TCDD	93.1	
Total PeCDD	ND	1.16	ND		CS 12347-PeCDD	110	
Total HxCDD	ND	1.9	ND		CS 12346-PeCDF	103	
Total HpCDD	ND	2.47	ND		CS 123469-HxCDF	118	
					CS 1234689-HpCDF	110	
Total TCDF	ND	1.06	ND				
Total PeCDF	ND	1.1	ND				
Total HxCDF	ND	0.917	ND				
Total HpCDF	ND	1.3	ND				
Total PCDD/Fs	ND		ND				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	2.29	2.29	2.29				
TEQ: ND=DL	4.59	4.59	4.59				



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Sample ID: Method Blank B6238_18887 **Method 1613B**

Client Data			Sample Data			Laboratory Data					
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Received: n/a		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.00 L			Lab Sample ID: MB1_18887_DF_TLX			Date Extracted: 03-Feb-2022		
Date Collected: n/a			pH: n/a			QC Batch No.: 18887			Date Analyzed: 09-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 7:20:11		

Tetra-Dioxins	Conc. (pg/L)	Qualifiers	Penta-Dioxins	Conc. (pg/L)	Qualifiers	Hexa-Dioxins	Conc. (pg/L)	Qualifiers	Hepta-Dioxins	Conc. (pg/L)	Qualifiers
1368D	(1.96)		12479/12468D	(1.16)		124679/124689D	(1.9)		1234679D	(2.47)	
1379D	(1.96)		12469D	(1.16)		123468D	(1.9)		1234678D	(2.47)	
1369D	(1.96)		12368D	(1.16)		123679/123689D	(1.9)				
1469D	(1.96)		12478D	(1.16)		123469D	(1.9)				
1247D...[4]	(1.96)		12379D	(1.16)		123478D	(1.83)				
1378D	(1.96)		12369D...[3]	(1.16)		123678D	(1.81)				
1268D	(1.96)		12346/12347D	(1.16)		123467D	(1.9)				
1478D	(1.96)		12378D	(1.16)		123789D	(2.06)		Conc.	0	
1279D	(1.96)		12367D	(1.16)					EMPC	0	
1234/1269D	(1.96)		12389D	(1.16)							
Conc.	0		Conc.	0		Conc.	0		Conc.	0	
EMPC	0		EMPC	0		EMPC	0		EMPC	0	

<p>5500 Business Drive Wilmington, NC 28405, USA Tel: +1 910 794-1613 www.us.sgs.com</p>	WHO-2005 TEQs		Conc.	EMPC
	TEQ: ND=0		0	0
	TEQ: ND=DL/2		2.29	2.29
	TEQ: ND=DL		4.59	4.59
	Total PCDD/Fs		Conc.	EMPC
		0	0	

Checkcode: 545-493-LLD

Report Created: 09-Feb-2022 17:27 Analyst: TF

Sample ID: Method Blank B6238_18887

Method 1613B

Client Data			Sample Data			Laboratory Data			Date Received: n/a		
Name: GHD Services Inc.			Matrix: Aqueous			Lab Project ID: B6238			Date Received: n/a		
Project ID: 11215131-SJRWP-PCFSE			Weight/Volume: 1.00 L			Lab Sample ID: MB1_18887_DF_TLX			Date Extracted: 03-Feb-2022		
Date Collected: n/a			pH: n/a			QC Batch No.: 18887			Date Analyzed: 09-Feb-2022		
			Split: -			Dilution: -			Time Analyzed: 7:20:11		
Tetra-Furans	Conc. (pg/L)	Qualifiers	Penta-Furans	Conc. (pg/L)	Qualifiers	Hexa-Furans	Conc (pg/L)	Qualifiers	Hepta-Furans	Conc (pg/L)	Qualifiers
1368F	(1.06)		13468/12468F	(1.07)		123468F	(0.917)		1234678F	(1.09)	
1468F	(1.06)		13678F...[3]	(1.1)		124678/134678F	(0.917)		1234679F	(1.3)	
2468F	(1.06)		12368F...[3]	(1.1)		134679F	(0.917)		1234689F	(1.3)	
1346/1246F	(1.06)		14678F	(1.1)		124679F	(0.917)		1234789F	(1.56)	
1347F...[3]	(1.06)		13479F	(1.1)		124689F	(0.917)				
1348F	(1.06)		13469/12479F	(1.1)		123467F	(0.917)				
1248F...[3]	(1.06)		12346F	(1.1)		123478F	(0.944)				
1268F	(1.06)		23468/12469F	(1.1)		123678F	(0.875)				
1467F	(1.06)		12347F	(1.1)		123479F	(0.917)				
1478F	(1.06)		12348F	(1.1)		123469F	(0.917)				
1369/1237F	(1.06)		12378F	(1.11)		123679F	(0.917)				
2467F	(1.06)		12678/12367F	(1.1)		234678F	(0.844)		Conc.	0	
2368F	(1.06)		12379F	(1.1)		234678/123689F	0		EMPC	0	
1238F...[5]	(1.06)		12679F	(1.1)		123689F	(0.917)				
1278F	(1.06)		23467/12369F	(1.1)		123789F	(1.04)		Octa-Furan	Conc	Qualifiers
1349F	(1.06)		23478F	(1.09)		123789/123489F	0			(pg/L)	
1267F	(1.06)		23478/12489F	0		123489F	(0.917)		OCDF	(3.14)	
2346/1249F	(1.06)		12489F	(1.1)							
2347/1279F	(1.06)		12349F	(1.1)							
2348F	(1.06)		12389F	(1.1)							
2378F	(1.06)										
2367/3467F	(1.06)										
1269F	(1.06)										
1239F	(1.06)										
1289F	(1.06)										
Conc.	0		Conc.	0		Conc.	0				
EMPC	0		EMPC	0		EMPC	0				


Checkcode: 545-493-LLD

Report Created: 09-Feb-2022 17:27 Analyst: TF

Sample ID: Method Blank B6238_18887 **TEQ Summary** **Method 1613B**

Client Project Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Sample ID:	MB1_18887_DF_TLX
Client Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1.00 L	QC Batch No.:	18887
Date Collected:	n/a	Split:	-	Date Extracted:	03-Feb-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	09-Feb-2022 07:20
Lab Project No:	B6238	Units	pg/L		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(1.96)		1.96	(1.96)	(1.96)	(1.96)
12378-PeCDD	(1.16)		1.16	(0.582)	(1.16)	(1.16)
123478-HxCDD	(1.83)		1.83	(0.183)	(0.183)	(0.183)
123678-HxCDD	(1.81)		1.81	(0.181)	(0.181)	(0.181)
123789-HxCDD	(2.06)		2.06	(0.206)	(0.206)	(0.206)
1234678-HpCDD	(2.47)		2.47	(0.0247)	(0.0247)	(0.0247)
OCDD	(12.2)		12.2	(0.0122)	(0.00122)	(0.00365)
2378-TCDF	(1.06)		1.06	(0.106)	(0.106)	(0.106)
12378-PeCDF	(1.11)		1.11	(0.0557)	(0.0557)	(0.0334)
23478-PeCDF	(1.09)		1.09	(0.543)	(0.543)	(0.326)
123478-HxCDF	(0.944)		0.944	(0.0944)	(0.0944)	(0.0944)
123678-HxCDF	(0.875)		0.875	(0.0875)	(0.0875)	(0.0875)
234678-HxCDF	(0.844)		0.844	(0.0844)	(0.0844)	(0.0844)
123789-HxCDF	(1.04)		1.04	(0.104)	(0.104)	(0.104)
1234678-HpCDF	(1.09)		1.09	(0.0109)	(0.0109)	(0.0109)
1234789-HpCDF	(1.56)		1.56	(0.0156)	(0.0156)	(0.0156)
OCDF	(3.14)		3.14	(0.00314)	(0.000314)	(0.000941)

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	EMPC = 0, ND = 0	0	0	0
	EMPC = 0, ND = DL / 2	2.13	2.41	2.29
	EMPC = 0, ND = DL	4.26	4.83	4.59
	EMPC = 0, < J-level = 0	0	0	0
	EMPC = EMPC, ND = 0	0	0	0
	EMPC = EMPC, ND = DL / 2	2.13	2.41	2.29
	EMPC = EMPC, ND = DL	4.26	4.83	4.59
EMPC = EMPC, < J-level = 0	0	0	0	

Sample ID: 0_18887_OPR001

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Aqueous	Lab Project ID:	B6238	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18887_DF	Date Extracted:	03-Feb-2022
Date Collected:	n/a	pH:	n/a	QC Batch No:	18887	Date Analyzed:	09-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	5:47:32
Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11.3				ES 2378-TCDD	90.2	
12378-PeCDD	49.1				ES 12378-PeCDD	99.3	
123478-HxCDD	52.6				ES 123478-HxCDD	96.1	
123678-HxCDD	53.4				ES 123678-HxCDD	107	
123789-HxCDD	50.9				ES 123789-HxCDD	91.3	
1234678-HpCDD	51.2				ES 1234678-HpCDD	91.9	
OCDD	109				ES OCDD	83.7	
2378-TCDF	11.1				ES 2378-TCDF	88.3	
12378-PeCDF	48.2				ES 12378-PeCDF	91.7	
23478-PeCDF	52.2				ES 23478-PeCDF	92.4	
123478-HxCDF	51.3				ES 123478-HxCDF	89.7	
123678-HxCDF	52.4				ES 123678-HxCDF	96.6	
234678-HxCDF	49.9				ES 234678-HxCDF	103	
123789-HxCDF	49.6				ES 123789-HxCDF	87.1	
1234678-HpCDF	50.3				ES 1234678-HpCDF	96.1	
1234789-HpCDF	50.4				ES 1234789-HpCDF	85.1	
OCDF	102				ES OCDF	85.1	
Totals					Standard	CS Recoveries	
Total TCDD	52		52		CS 37Cl-2378-TCDD	92.2	
Total PeCDD	73.1		73.1		CS 12347-PeCDD	111	
Total HxCDD	170		170		CS 12346-PeCDF	99.8	
Total HpCDD	63.5		63.5		CS 123469-HxCDF	114	
					CS 1234689-HpCDF	111	
Total TCDF	60.6		60.6				
Total PeCDF	200		200				
Total HxCDF	327		327				
Total HpCDF	101		101				
Total PCDD/Fs	1,260		1,260				
WHO-2005 TEQs							
TEQ: ND=0	116		116				
TEQ: ND=DL/2	116	0.177	116				
TEQ: ND=DL	116	0.355	116				



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CHAIN OF CUSTODY

Cooler 2 of 2

TD77934

To: Wilmington Lab
Attn: Tamara Burkemper
(910) 794-2527

(P)

B6238 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME:

REPORT LEVEL: Level I Level II Level IV

SPECIAL DELIVERABLES:

- DoD
- EDD/Version: GHD EQUIS 4-file
- State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

PRESERVATIVE									
none									

ANALYSIS & METHOD					
M1613B	M8290A	M1668A	M1668C	M1668D	M1668E

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.
 CONTACT: Meagan Willis
 ADDRESS: 11451 Katy Fwy #400, Houston,
 PHONE: 713-907-3710 EMAIL: Meagan.Willis@

INVOICE TO CHECK IF SAME

COMPANY:
 CONTACT:
 ADDRESS:
 PHONE: EMAIL:

	SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C. G.)	MATRIX	CONT	M1613B	M8290A	M1668A	M1668C	M1668D	M1668E	QC			QTY	REMARKS
													MS	MSD	DUP		
2	11215131-012022-GW-BN-PZ-SW	1-20-22	1355		W	IL	X									2	Total D/E and dissolved
3	11215131-012022-GW-BN-PZ-NC		1440				X									2	D/E (lab filtered 0.45 micron)
4	11215131-012022-GW-BN-PZ-NE		1520				X									2	1 liter amber - Total
5	11215131-012022-GW-BN-DUP-1						X							X		2	1 liter amber - Dissolved

Cooler 2 of 2!

COLLECTED/RELINQUISHED BY (1): <i>Breanna North</i>	DATE: 1-20-22	TIME: 12:45	RECEIVED BY: <i>Tamara Burkemper</i>	RECEIVED BY LABORATORY:	DATE: 1/20/22	TIME: 11:48
RELINQUISHED BY (2): <i>Edna Costa</i>	DATE: 1-21-22	TIME: 13:50	RECEIVED BY: <i>Edna Costa</i>	COOLER SEAL: <input checked="" type="checkbox"/> INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT		
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:	CONTAINER SEALS: <input type="checkbox"/> INTACT <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> ABSENT		
				CARRIER: FedEx	TEMP: °C	2.2 D.S. = 0.0
TRACKING #:						

B6238 212

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 24JAN22
ACTWGT: 45.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

1/26/2022

11:48

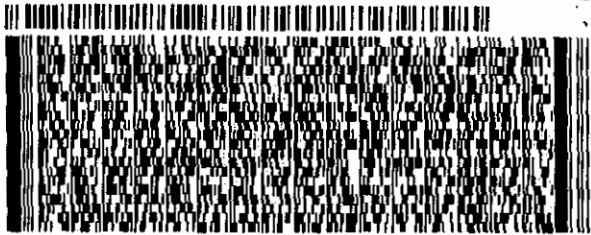
WILMINGTON NC 28405

0.0°

(910) 850-1908

REF: GHD SAMPLES

565C4/F289/0512



FedEx
Express



J191219082011111

3 of 3

MP# 4905 2704 4720

Mstr# 4905 2704 4708

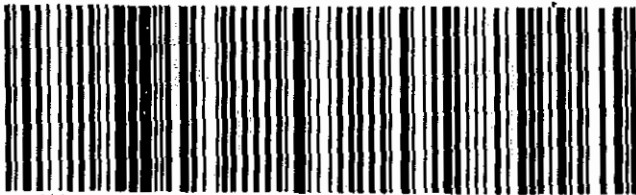
0201

TUE - 25 JAN 10:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Print # 153148-431 NITW EXP 07/22





Project Initiation Form

Project Number: B6238

Initiation Date: 28-Jan-22

Client Name: GHD Services Inc.

Sample Matrix: Aqueous

Analysis Method: 1613 PCDD/F

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR

IL extraction

Sample 001 is MS/MSD

Samples must be filtered through 0.45 uM prior to extraction, only extracting water.
Please save each filter in 8oz jar, label and refrigerate.

Read and understood, initial and date:

Prep Lab:

JRH
2/7/22

[Signature]
2/7/22

HRMS Lab:

Reporting Instructions

M1613B

Full Report

Sample 001 is MS/MSD summary

WHO2005 TEQ

GHD EQUIS 4-file EDD

Read and understood, initial and date:

HRMS Lab:

PM Initials: akornegay

Date: 28-Jan-2022

Lab Sample ID	Extraction Position Solvent: <u>DCM</u>	Extraction Weight/Volume		(Td)	ASECS #	pH	Cl ⁻	Observations	Supply IDs	
		g	mL							
B6238_18887_001	3	1025.0		<u>TB</u> <u>2/10/22</u>	7	0	clear, pale yellow	Toluene	<u>N/A</u>	
B6238_18887_001MS	4	997.1			7	0	clear, pale yellow	MeCHL	<u>STU 1477</u>	
B6238_18887_001MSD	5	1011.9			7	0	clear, pale yellow	Florisil	<u>SLS-77</u>	
B6238_18887_002	6	999.9			7	0	strong smell, off-white	Hexane	<u>STU 4.22</u>	
B6238_18887_003	7	994.4			7	0	clear, off-white	Silica	<u>SLS-69</u>	
B6238_18887_004	8	1031.4			6	0	cloudy, yellow tint	S Nitrate	<u>N/A</u>	
B6238_18887_005	9	1021.9			6	0	cloudy, yellow tint	Base Silica	<u>N/A</u>	
MB1_18887	1	1000.0			5	0	Distilled H ₂ O	HydroMatrix	<u>N/A</u>	
OPRI_18887	2	1000.0			5	0	Distilled H ₂ O	Tetradecane	<u>SLS-73B</u>	
 <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;"> <p><u>TB</u> <u>2/8/22</u></p> </div> 									H ₂ SO ₄	<u>N/A</u>
									A Silica	<u>SLS-82</u>
									Sodium Sulfate	<u>SPLS-80D</u>
									Additional Cleanup	
									Acid Partition Date/Initial:	
									Mini-Acid Date/Initial:	
									Carbon Column Date/Initial:	<u>TB</u> <u>2/10/22</u>
									GPC Date/Initial:	
									Bond-Elute Date/Initial:	
									Cycle Time	
TOL	Start: <u>1545</u> Stop: <u>TB</u> <u>2/10/22</u>									
HEX	Start: Stop:									
DCM	Start: <u>1545</u> Stop: <u>1930</u>									



Methods: PCB ~~PCDD/F~~ QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

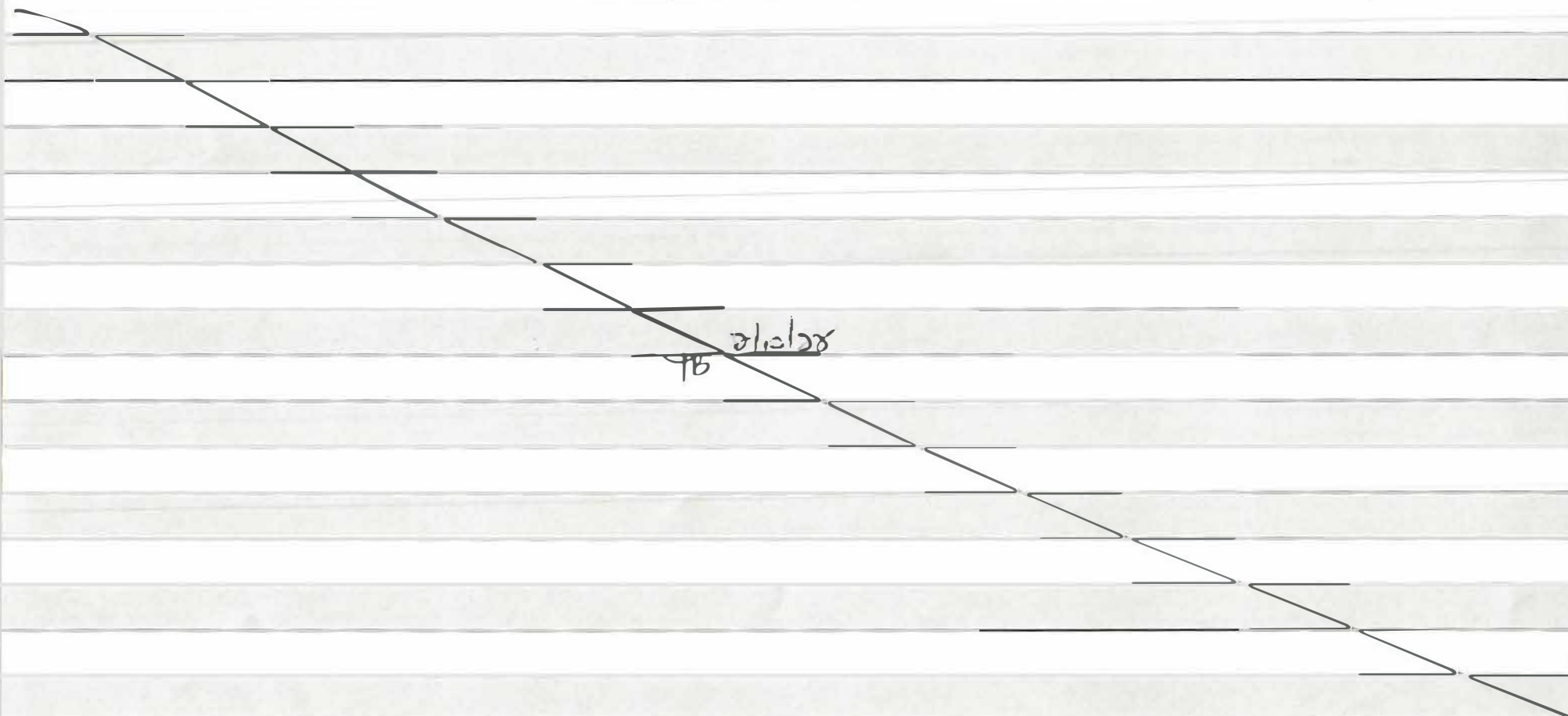
Aqueous

Batch# 18887

Inter-Department Communication Sheet

Filtered samples B6238-001, B6238-004, B6238-005 filtered through 1 micron and 0.45 micron filter due to PM content and consistency.

Filtered sample B6238-001MS, B6238-001MSD, B6238-002, B6238-003 with 0.45 micron. JRH 2/9/28



Batch # 18887

Lab Sample ID	Spiker Initials/Date: ^{JRW} 2/3/22		^{JRW} 2/3/22		^{JRW} 2/3/22		^{JRW} 2/7/22		^{JRW} 2/7/22	
	D/F A-A	D/F A-D	D/F ES	D/F CS	D/F JS	Amount:	Amount:	Amount:	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	20 _μ L	20 _μ L	20 _μ L	20 _μ L	20 _μ L
B6238_18887_001	-	-	KE	KE	KE					
B6238_18887_001MS	KE	KE	KE	KE	KE					
B6238_18887_001MSD	KE	KE	KE	KE	KE					
B6238_18887_002	-	-	KE	KE	KE					
B6238_18887_003	-	-	KE	KE	KE					
B6238_18887_004	-	-	KE	KE	KE					
B6238_18887_005	-	-	KE	KE	KE					
MB1_18887	-	-	KE	KE	KE					
OPR1_18887	KE	KE	KE	KE	KE					

~~FA3~~
2/8/22

Standard Information

Pipette ID						FA3
Spike ID	D/F A-A	D/F A-B	D/F ES	D/F CS	D/F JS	2/8/22
SIL#	26-2-8	25-18-2	26-2-9	25-338-1	25-394-1	
Concentration	10 P _g /μL	10 P _g /μL	100 P _g /μL	100 P _g /μL	100 P _g /μL	
Expiration Date	7/4/23	6/22/22	2/3/22	11/16/22	1/28/23	

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
0	220209C01	3	CS3_220209_DF_CA	1.00	25-347-1	DTF	139-031	09-Feb-2022	05:01:12
1	220209C02	17	OPR1_18887_DF	1.00	0_18887_OPR001	DTF	724-032	09-Feb-2022	05:47:32
2	220209C03	2	SBS_220209_DF_CA	1.00	30-61-1	DTF	856-152	09-Feb-2022	06:33:51
4	220209C04	16	MB1_18887_DF_TLX	1.00	Method Blank	DTF	545-493	09-Feb-2022	07:20:11
5	220209C05	18	B6238_18887_DF_001	1.03	11215131-012022-GW-BN-PZ-SC	DTF	226-844	09-Feb-2022	08:06:31
6	220209C06	19	B6238_18887_DF_001MS	1.00	11215131-012022-GW-BN-PZ-SC-MS	DTF	817-064	09-Feb-2022	08:52:50
7	220209C07	20	B6238_18887_DF_001MSD	1.01	11215131-012022-GW-BN-PZ-SC-MSD	DTF	547-243	09-Feb-2022	09:39:11
8	220209C08	21	B6238_18887_DF_002	1.00	11215131-012022-GW-BN-PZ-SW	DTF	245-743	09-Feb-2022	10:25:30
9	220209C09	22	B6238_18887_DF_003	0.99	11215131-012022-GW-BN-PZ-NC	DTF	216-586	09-Feb-2022	11:11:51
10	220209C10	23	B6238_18887_DF_004	1.03	11215131-012022-GW-BN-PZ-NE	DTF	151-857	09-Feb-2022	11:58:12
11	220209C11	24	B6238_18887_DF_005	1.02	11215131-012022-GW-BN-DUP-1	DTF	170-231	09-Feb-2022	12:44:33

REVIEWED
Tyler_Fritz , 2/9/2022, 3:12:24 PM

REVIEWED
Amber_Kornegay , 2/10/2022, 8:37:50 AM

Lab ID: MB1_18887_DF_TLX

Acq'd: 09 Feb 2022 07:20 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B6238_18887

UTP: 09-Feb-2022 14:37:51 DTF

J-level: 5 pg/L Split: 1

Checkcode: 545-493-LLD

Datafile: 220209C04

Report: 09 Feb 2022 17:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3234.944	1.96
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	1763.2106	1.16
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3003.266	1.83
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	3003.266	1.81
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	3003.266	2.06
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	3348.81	2.47
OCDD	NotFnd		1.0004	-		-	-	-	1.13	-	8472.777	12.2
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	2405.456	1.06
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2549.477	1.11
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2549.477	1.09
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	1933.2085	0.944
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	1933.2085	0.875
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	1933.2085	0.844
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	1933.2085	1.04
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2342.869	1.09
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2342.869	1.56
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2610.949	3.14

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0238	+0.3	2.92E+07	0.84	Y	1.05	86.4
ES 12378-PeCDD	33.80		1.2144	1.2160	+3.2	2.73E+07	1.59	Y	0.88	96
ES 123478-HxCDD	37.72		0.9920	0.9918	-0.5	2.34E+07	1.27	Y	0.97	93.9
ES 123678-HxCDD	37.84		0.9951	0.9949	-0.5	2.51E+07	1.29	Y	0.94	104
ES 123789-HxCDD	38.13		1.0027	1.0027	0	2.45E+07	1.31	Y	1.09	87.2
ES 1234678-HpCDD	40.80		1.0724	1.0728	+1.0	2.08E+07	1.01	Y	0.91	88.6
ES OCDD	43.48		1.1428	1.1433	+1.3	2.61E+07	0.90	Y	0.62	81.4
ES 2378-TCDF	27.61		1.0516	1.0520	+0.7	4.69E+07	0.79	Y	1.06	89.4
ES 12378-PeCDF	32.36		1.2312	1.2330	+3.5	4.18E+07	1.58	Y	0.91	92.6
ES 23478-PeCDF	33.47		1.2733	1.2754	+4.2	4.03E+07	1.58	Y	0.88	92.2
ES 123478-HxCDF	36.71		0.9655	0.9653	-0.4	2.82E+07	0.53	Y	1.20	91.5
ES 123678-HxCDF	36.85		0.9692	0.9690	-0.4	3.48E+07	0.54	Y	1.35	100
ES 234678-HxCDF	37.53		0.9871	0.9870	-0.2	3.38E+07	0.55	Y	1.24	106
ES 123789-HxCDF	38.49		1.0121	1.0120	-0.2	2.62E+07	0.53	Y	1.16	88.2
ES 1234678-HpCDF	39.87		1.0479	1.0484	+1.2	2.34E+07	0.45	Y	0.97	93.9
ES 1234789-HpCDF	41.26		1.0845	1.0849	+1.0	1.87E+07	0.47	Y	0.85	85.4
ES OCDF	43.65		1.1477	1.1478	+0.3	3.47E+07	0.92	Y	0.81	83.7

Lab ID: MB1_18887_DF_TLX

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UTP: 09-Feb-2022 14:37:51 DTF

J-level: 5 pg/L Split: 1

Checkcode: 545-493-LLD

Datafile: 220209C04

Report: 09 Feb 2022 17:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	3.23E+07	0.80	Y	-	-
JS 1234-TCDF	26.24		-	-	-	4.96E+07	0.78	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.28E+07	1.22	Y	-	-
CS 37C1-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.45E+07	n/a	-	1.20	93.1
CS 12347-PeCDD	33.30		1.1964	1.1979	+3.0	2.67E+07	1.55	Y	0.75	110
CS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	4.33E+07	1.57	Y	0.85	103
CS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	3.38E+07	0.52	Y	1.12	118
CS 1234689-HpCDF	40.27		1.0584	1.0589	+1.2	2.51E+07	0.44	Y	0.89	110
SS 37C1-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.45E+07	n/a		1.15	108
SS 12347-PeCDD	33.30		1.1964	1.1979	+3.0	2.67E+07	1.55	Y	0.86	114
SS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	4.33E+07	1.57	Y	0.94	111
SS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	3.38E+07	0.52	Y	0.83	117
SS 1234689-HpCDF	40.27		1.0584	1.0589	+1.2	2.51E+07	0.44	Y	0.92	117

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18887_DF_TLX

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Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

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J-level: 5 pg/L Split: 1

Checkcode: 545-493-LLD

Datafile: 220209C04

Report: 09 Feb 2022 17:27 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3234.944	1.96
1379-TCDD	NotFnd		0.8860						1.18		3234.944	1.96
1369-TCDD	NotFnd		0.9009						1.18		3234.944	1.96
1469-TCDD	NotFnd		0.9281						1.18		3234.944	1.96
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3234.944	1.96
1378-TCDD	NotFnd		0.9432						1.18		3234.944	1.96
1268-TCDD	NotFnd		0.9500						1.18		3234.944	1.96
1478-TCDD	NotFnd		0.9586						1.18		3234.944	1.96
1279-TCDD	NotFnd		0.9645						1.18		3234.944	1.96
1234/1269-TCDD	NotFnd		0.9770						1.18		3234.944	1.96
1236-TCDD	NotFnd		0.9817						1.18		3234.944	1.96
1237/1238-TCDD	NotFnd		0.9905						1.18		3234.944	1.96
1239-TCDD	NotFnd		0.9952						1.18		3234.944	1.96
2378-TCDD	NotFnd		1.0008						1.18		3234.944	1.96
1278-TCDD	NotFnd		1.0121						1.18		3234.944	1.96
1267-TCDD	NotFnd		1.0167						1.18		3234.944	1.96
1289-TCDD	NotFnd		1.0345						1.18		3234.944	1.96
12479/12468-PeCDD	NotFnd		0.9267						1.04		1763.2106	1.16
12469-PeCDD	NotFnd		0.9425						1.04		1763.2106	1.16
12368-PeCDD	NotFnd		0.9588						1.04		1763.2106	1.16
12478-PeCDD	NotFnd		0.9643						1.04		1763.2106	1.16
12379-PeCDD	NotFnd		0.9673						1.04		1763.2106	1.16
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		1763.2106	1.16
12346/12347-PeCDD	NotFnd		0.9858						1.04		1763.2106	1.16
12378-PeCDD	NotFnd		1.0006						1.04		1763.2106	1.16
12367-PeCDD	NotFnd		1.0033						1.04		1763.2106	1.16
12389-PeCDD	NotFnd		1.0134						1.04		1763.2106	1.16
124679/124689-HxCDD	NotFnd		0.9542						1.10		3003.266	1.9
123468-HxCDD	NotFnd		0.9715						1.10		3003.266	1.9
123679/123689-HxCDD	NotFnd		0.9793						1.10		3003.266	1.9
123469-HxCDD	NotFnd		0.9828						1.10		3003.266	1.9
123478-HxCDD	NotFnd		1.0004						1.09		3003.266	1.83
123678-HxCDD	NotFnd		1.0035						1.15		3003.266	1.81
123467-HxCDD	NotFnd		1.0085						1.10		3003.266	1.9
123789-HxCDD	NotFnd		1.0112						1.05		3003.266	2.06

Lab ID: MB1_18887_DF_TLX

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ICAL: HRMS3_DF_10272021 10NOV2021

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UTP: 09-Feb-2022 14:37:51 DTF

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Checkcode: 545-493-LLD

Datafile: 220209C04

Report: 09 Feb 2022 17:27 TF

StdS (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		3348.81	2.47
1234678-HpCDD	NotFnd		1.0003						1.06		3348.81	2.47
OCDD	NotFnd		1.0004						1.13		8472.777	12.2
OCDD-a	NotFnd		1.0003						0.07		3551.356	79.8
1368-TCDF	NotFnd		0.8251						1.08		2405.456	1.06
1468-TCDF	NotFnd		0.8458						1.08		2405.456	1.06
2468-TCDF	NotFnd		0.8686						1.08		2405.456	1.06
1346/1246-TCDF	NotFnd		0.8814						1.08		2405.456	1.06
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2405.456	1.06
1348-TCDF	NotFnd		0.8962						1.08		2405.456	1.06
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2405.456	1.06
1268-TCDF	NotFnd		0.9145						1.08		2405.456	1.06
1467-TCDF	NotFnd		0.9193						1.08		2405.456	1.06
1478-TCDF	NotFnd		0.9254						1.08		2405.456	1.06
1369/1237-TCDF	NotFnd		0.9387						1.08		2405.456	1.06
2467-TCDF	NotFnd		0.9433						1.08		2405.456	1.06
2368-TCDF	NotFnd		0.9489						1.08		2405.456	1.06
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2405.456	1.06
1278-TCDF	NotFnd		0.9683						1.08		2405.456	1.06
1349-TCDF	NotFnd		0.9722						1.08		2405.456	1.06
1267-TCDF	NotFnd		0.9783						1.08		2405.456	1.06
2346/1249-TCDF	NotFnd		0.9850						1.08		2405.456	1.06
2347/1279-TCDF	NotFnd		0.9926						1.08		2405.456	1.06
2348-TCDF	NotFnd		0.9967						1.08		2405.456	1.06
2378-TCDF	NotFnd		1.0008						1.08		2405.456	1.06
2367/3467-TCDF	NotFnd		1.0137						1.08		2405.456	1.06
1269-TCDF	NotFnd		1.0223						1.08		2405.456	1.06
1239-TCDF	NotFnd		1.0321						1.08		2405.456	1.06
1289-TCDF	NotFnd		1.0722						1.08		2405.456	1.06
13468/12468-PeCDF	NotFnd		0.9139						1.02		2469.009	1.07
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2549.477	1.1
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2549.477	1.1
14678-PeCDF	NotFnd		0.9692						1.02		2549.477	1.1
13479-PeCDF	NotFnd		0.9723						1.02		2549.477	1.1
13469/12479-PeCDF	NotFnd		0.9797						1.02		2549.477	1.1
12346-PeCDF	NotFnd		0.9840						1.02		2549.477	1.1

Lab ID: MB1_18887_DF_TLX

Acq'd: 09 Feb 2022 07:20 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B6238_18887

UTP: 09-Feb-2022 14:37:51 DTF

J-level: 5 pg/L Split: 1

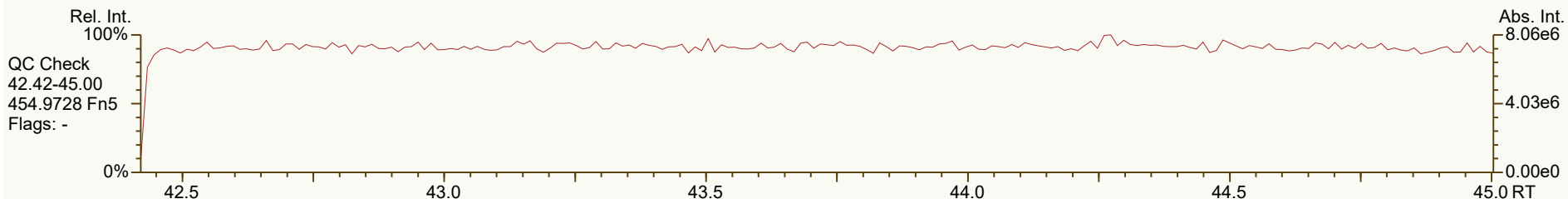
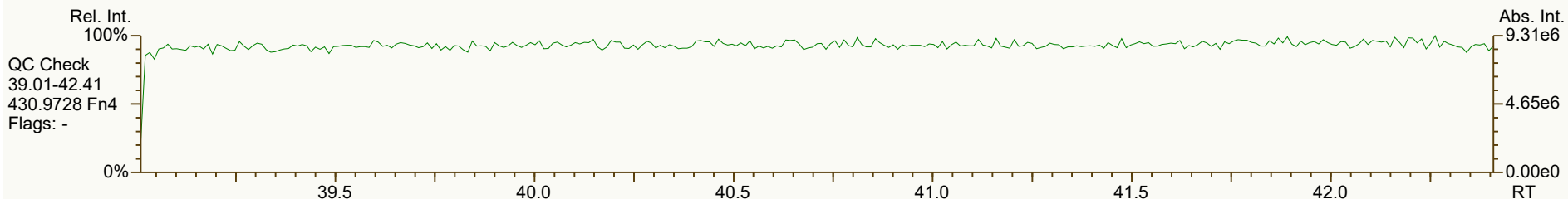
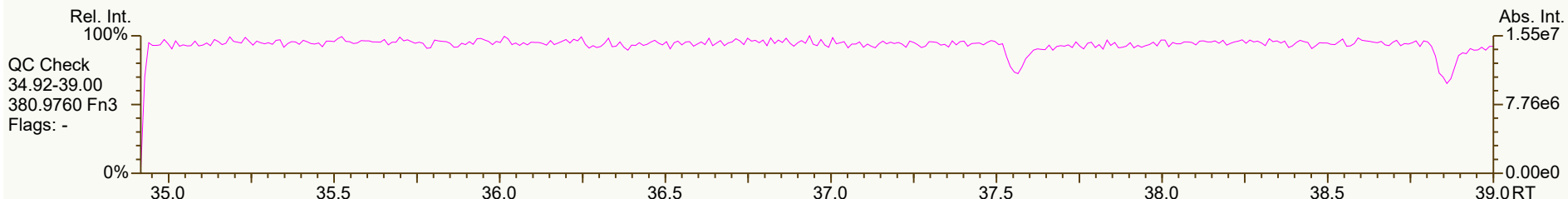
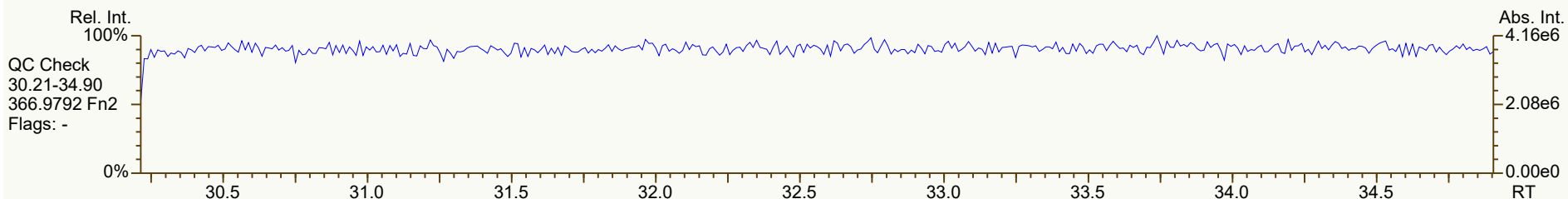
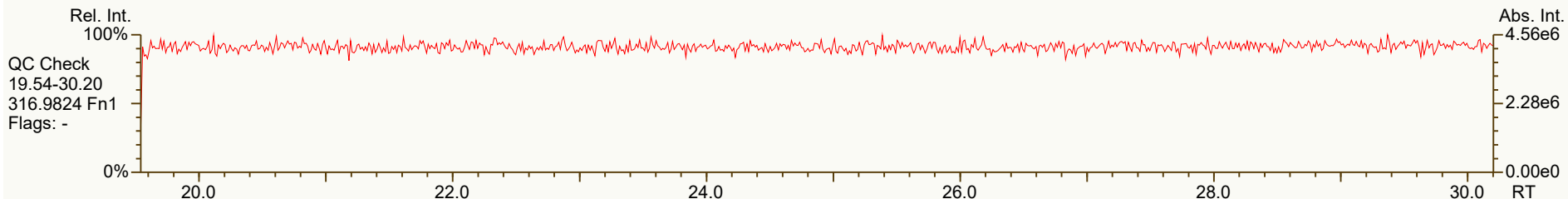
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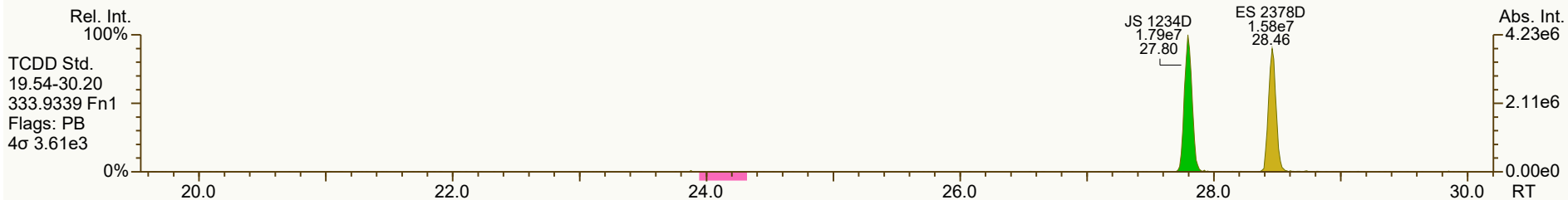
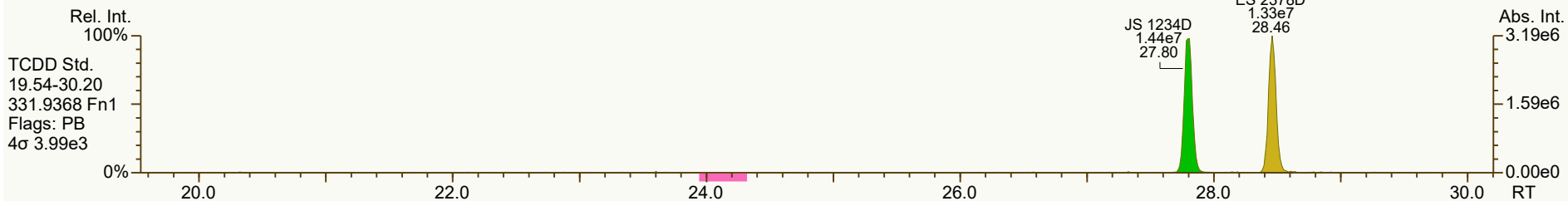
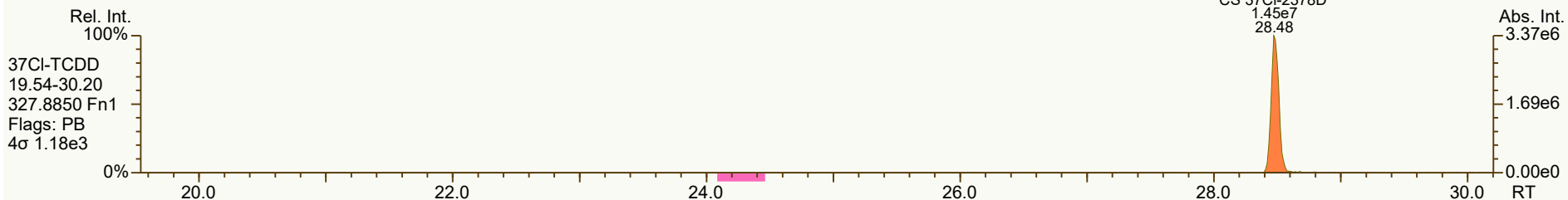
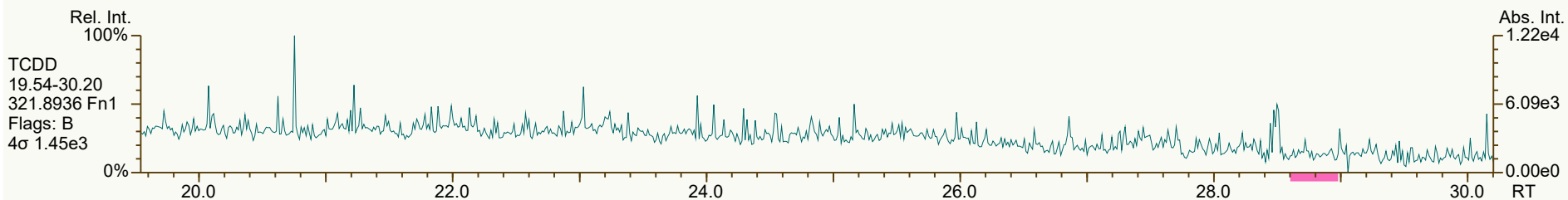
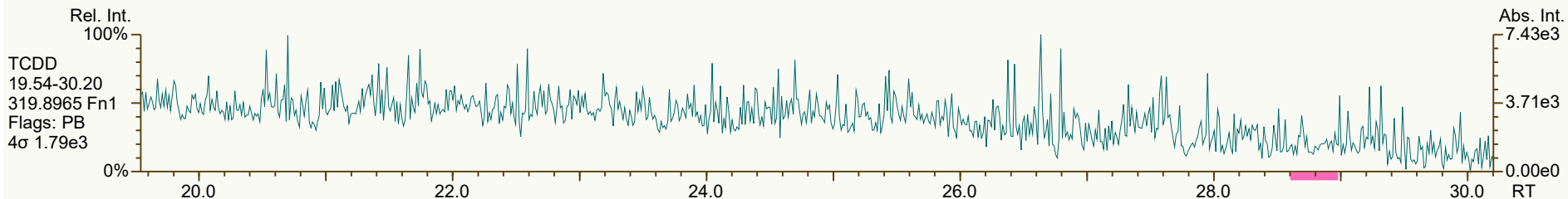
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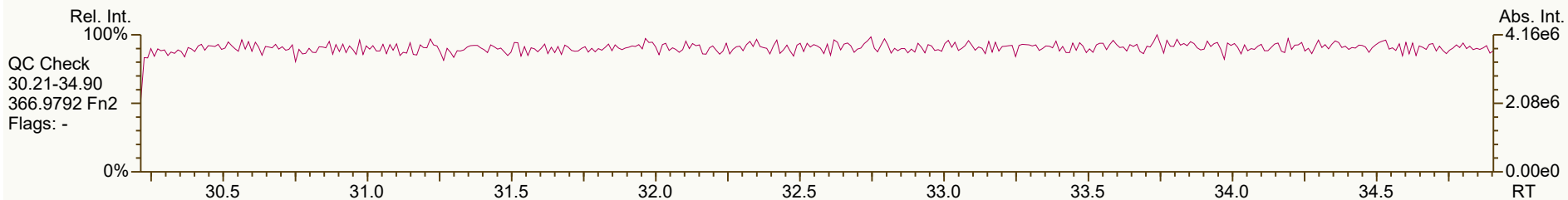
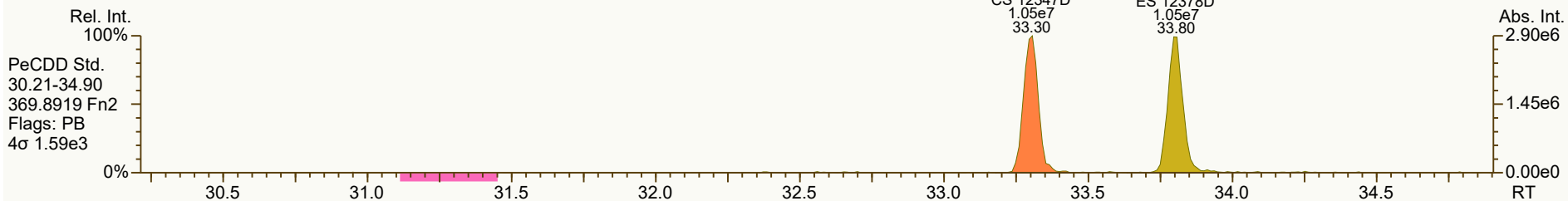
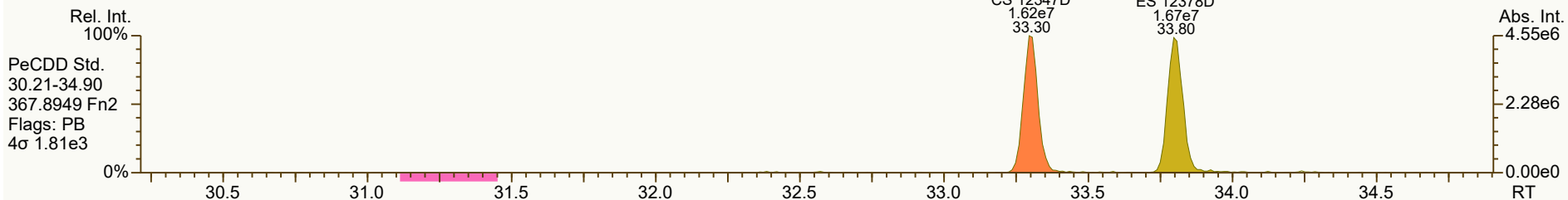
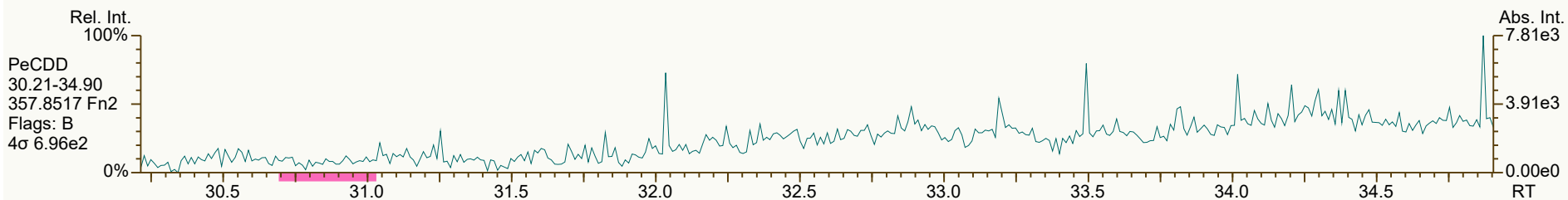
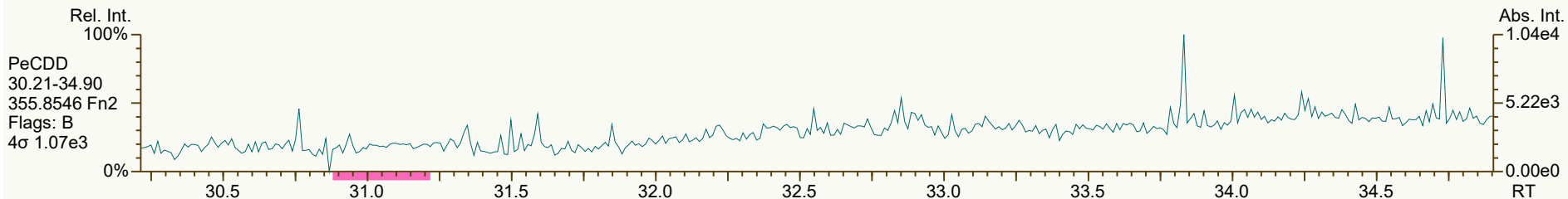
Report: 09 Feb 2022 17:27 TF

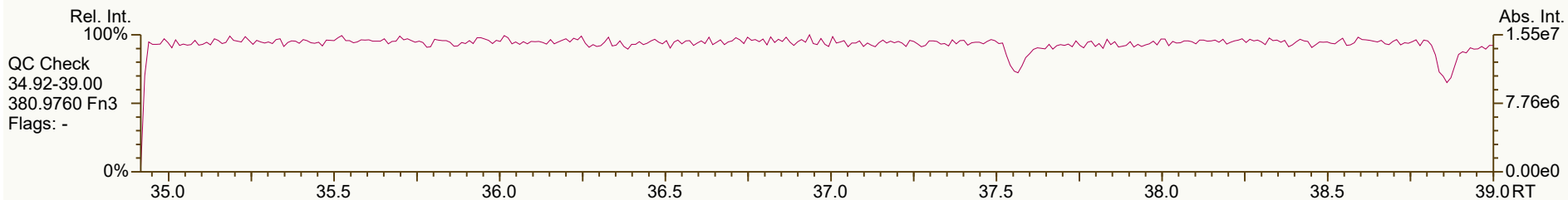
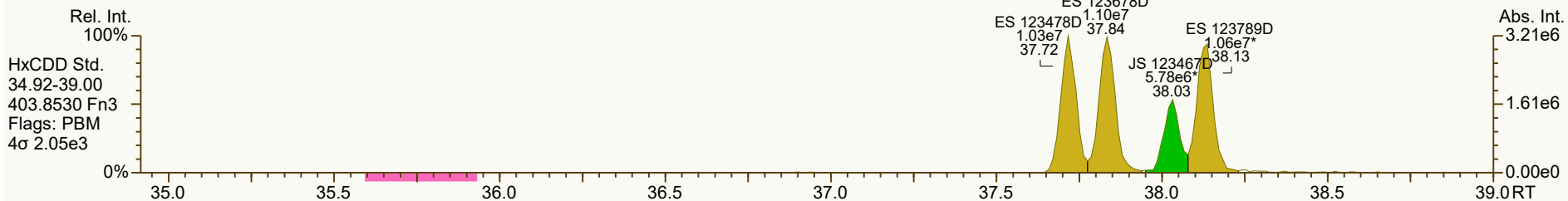
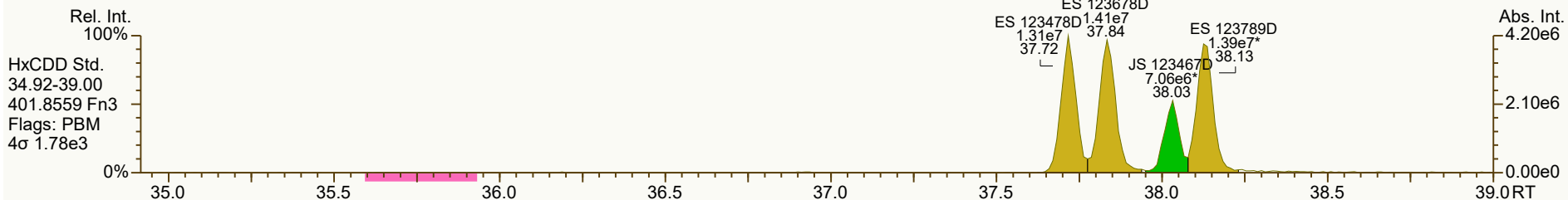
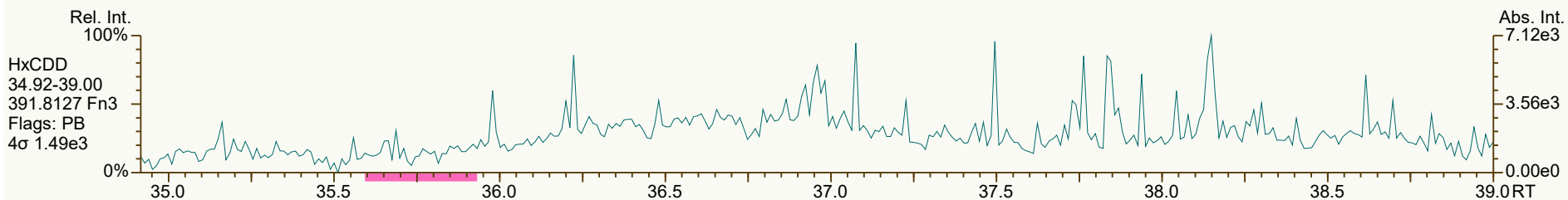
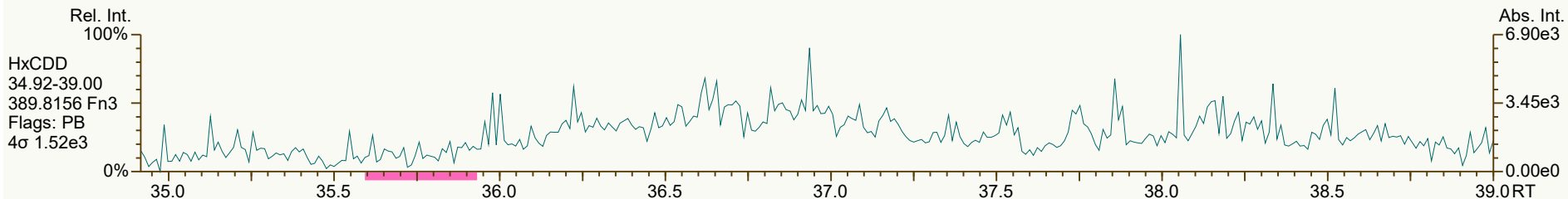
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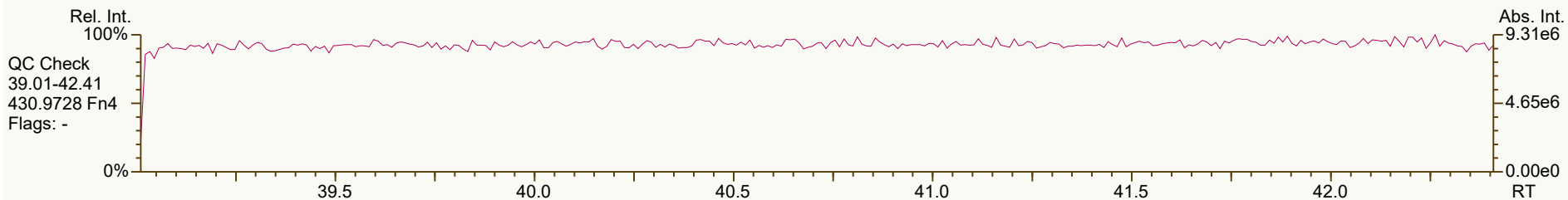
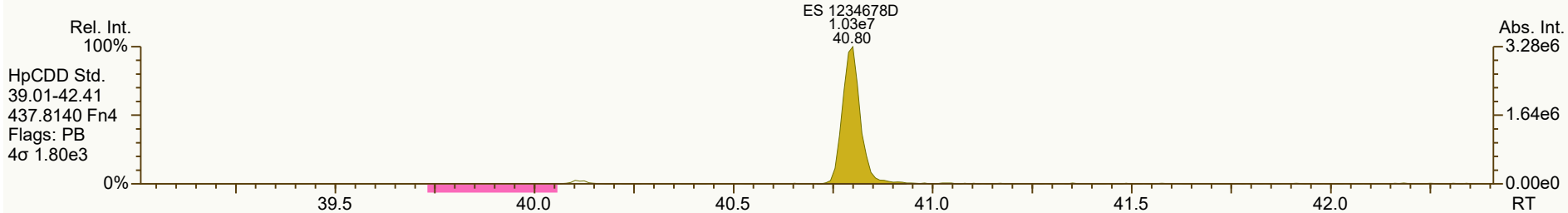
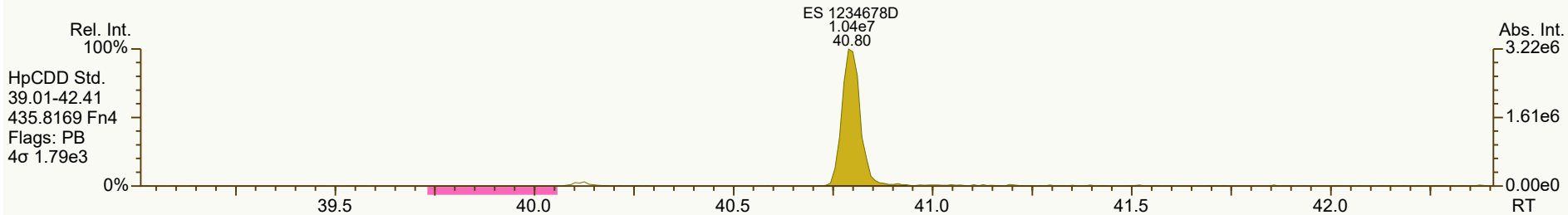
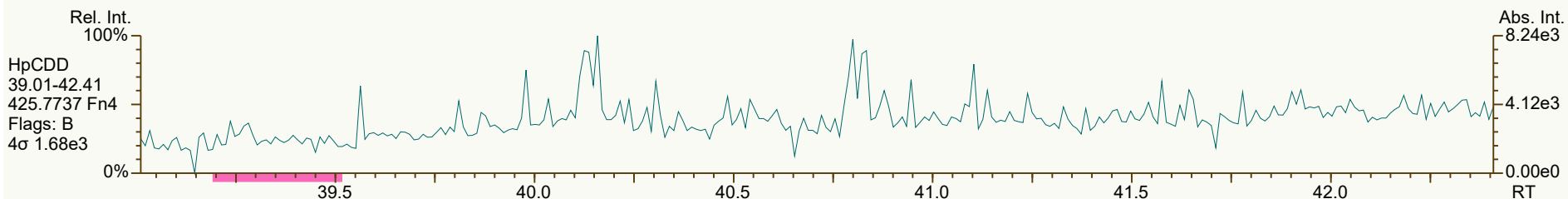
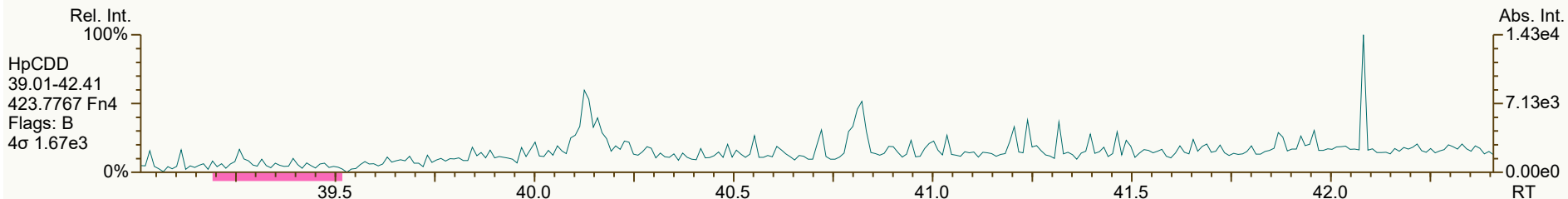
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		2549.477	1.1
12347-PeCDF	NotFnd		0.9894						1.02		2549.477	1.1
12348-PeCDF	NotFnd		0.9940						1.02		2549.477	1.1
12378-PeCDF	NotFnd		1.0005						1.02		2549.477	1.11
12678/12367-PeCDF	NotFnd		1.0089						1.02		2549.477	1.1
12379-PeCDF	NotFnd		1.0142						1.02		2549.477	1.1
12679-PeCDF	NotFnd		0.9929						1.02		2549.477	1.1
23467/12369-PeCDF	NotFnd		0.9967						1.02		2549.477	1.1
23478-PeCDF	NotFnd		1.0005						1.02		2549.477	1.09
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2549.477	1.1
12349-PeCDF	NotFnd		1.0100						1.02		2549.477	1.1
12389-PeCDF	NotFnd		1.0324						1.02		2549.477	1.1
123468-HxCDF	NotFnd		0.9627						1.19		1933.2085	0.917
124678/134678-HxCDF	NotFnd		0.9682						1.19		1933.2085	0.917
134679-HxCDF	NotFnd		0.9744						1.19		1933.2085	0.917
124679-HxCDF	NotFnd		0.9798						1.19		1933.2085	0.917
124689-HxCDF	NotFnd		0.9858						1.19		1933.2085	0.917
123467-HxCDF	NotFnd		0.9972						1.19		1933.2085	0.917
123478-HxCDF	NotFnd		1.0004						1.27		1933.2085	0.944
123678-HxCDF	NotFnd		1.0004						1.15		1933.2085	0.875
123479-HxCDF	NotFnd		1.0049						1.19		1933.2085	0.917
123469-HxCDF	NotFnd		1.0090						1.19		1933.2085	0.917
123679-HxCDF	NotFnd		0.9942						1.19		1933.2085	0.917
234678-HxCDF	NotFnd		1.0005						1.19		1933.2085	0.844
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		1933.2085	0.917
123789-HxCDF	NotFnd		1.0004						1.16		1933.2085	1.04
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		1933.2085	0.917
1234678-HpCDF	NotFnd		1.0003						1.37		2342.869	1.09
1234679-HpCDF	NotFnd		1.0068						1.34		2342.869	1.3
1234689-HpCDF	NotFnd		1.0103						1.34		2342.869	1.3
1234789-HpCDF	NotFnd		1.0002						1.31		2342.869	1.56
OCDF	NotFnd		1.0003						1.07		2610.949	3.14
OCDF-a	NotFnd		1.0002						0.07		3223.431	62.5

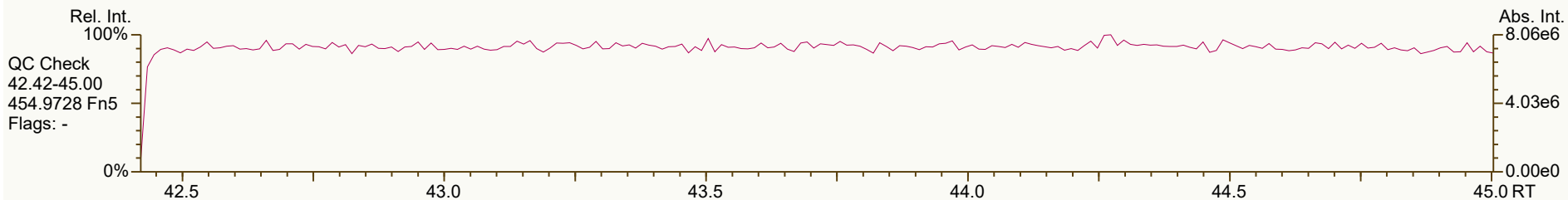
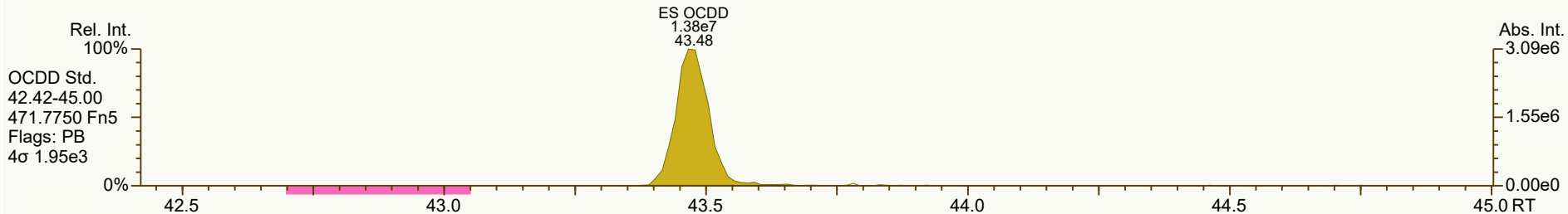
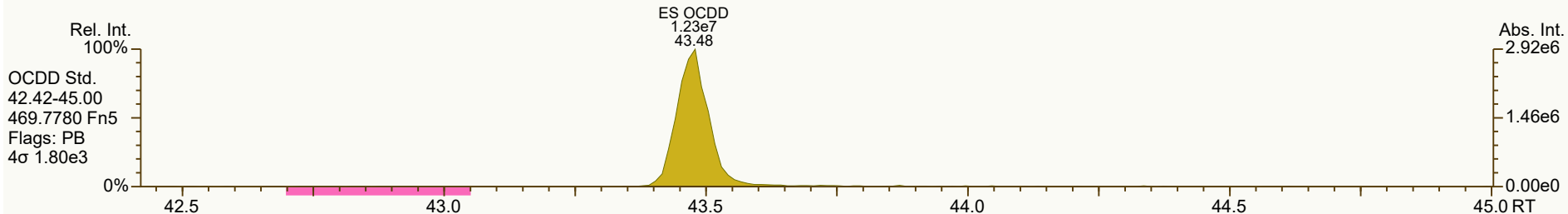
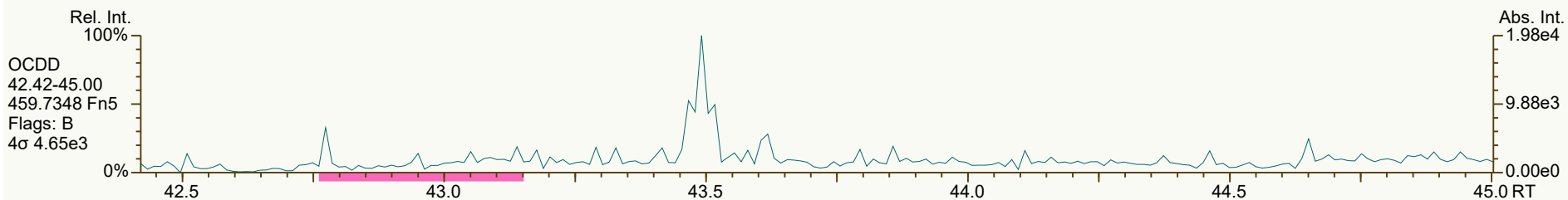
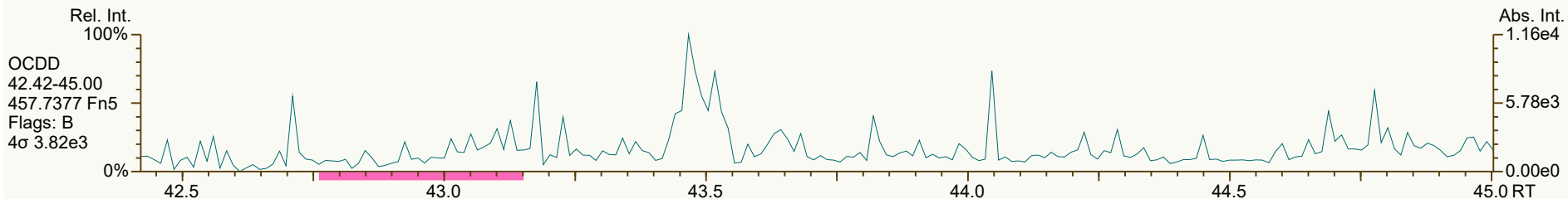








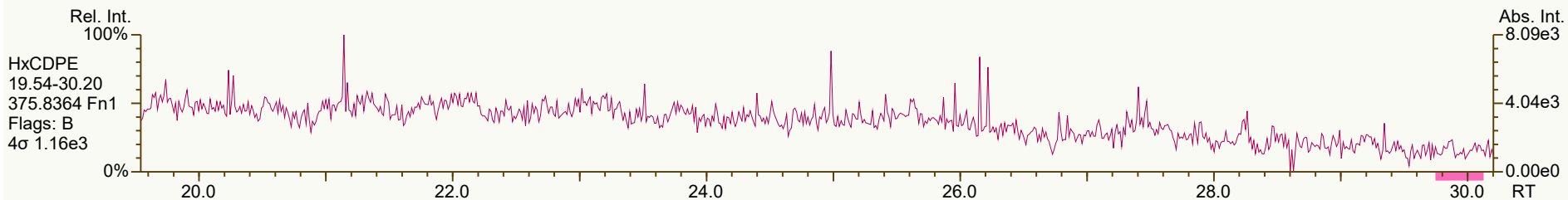
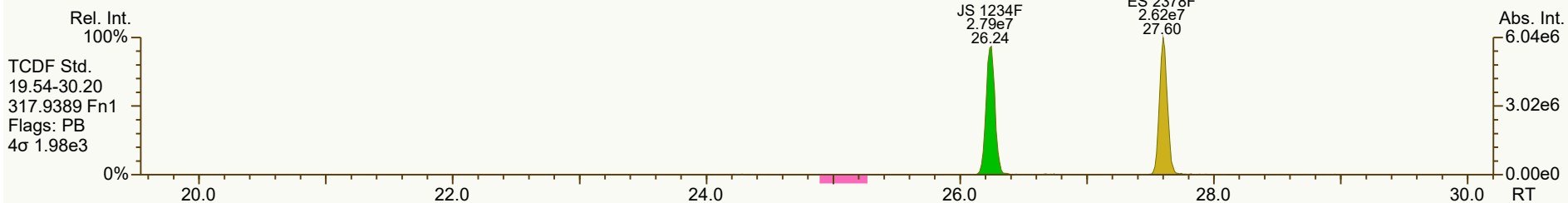
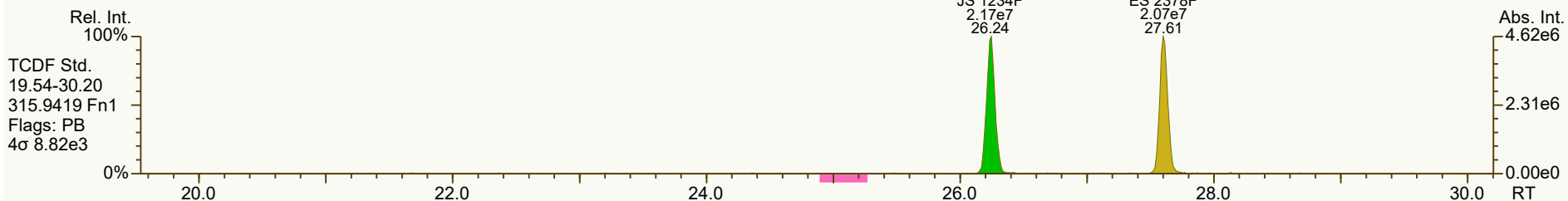
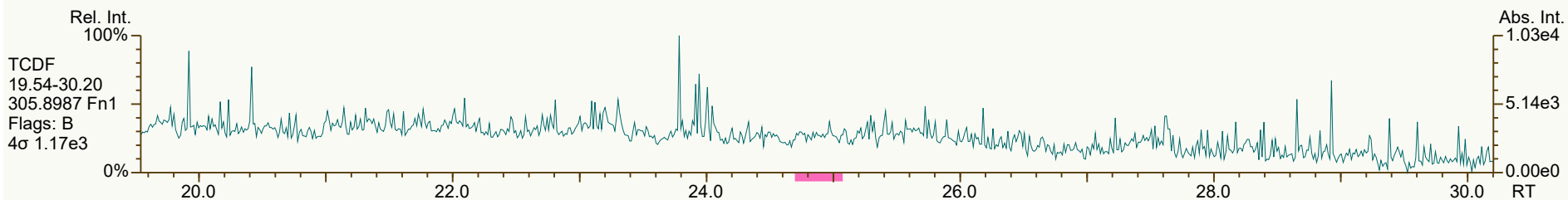
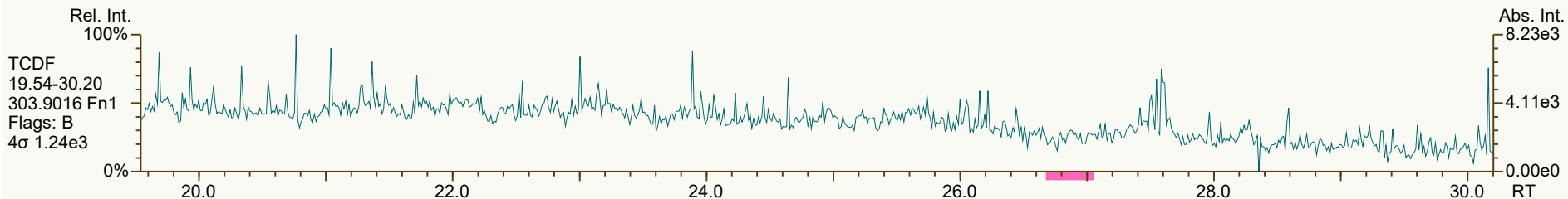


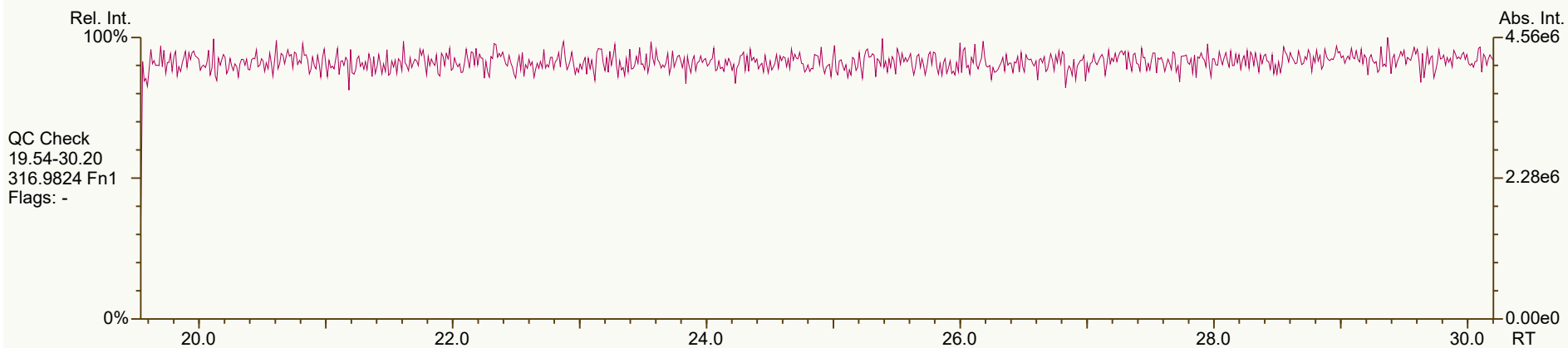
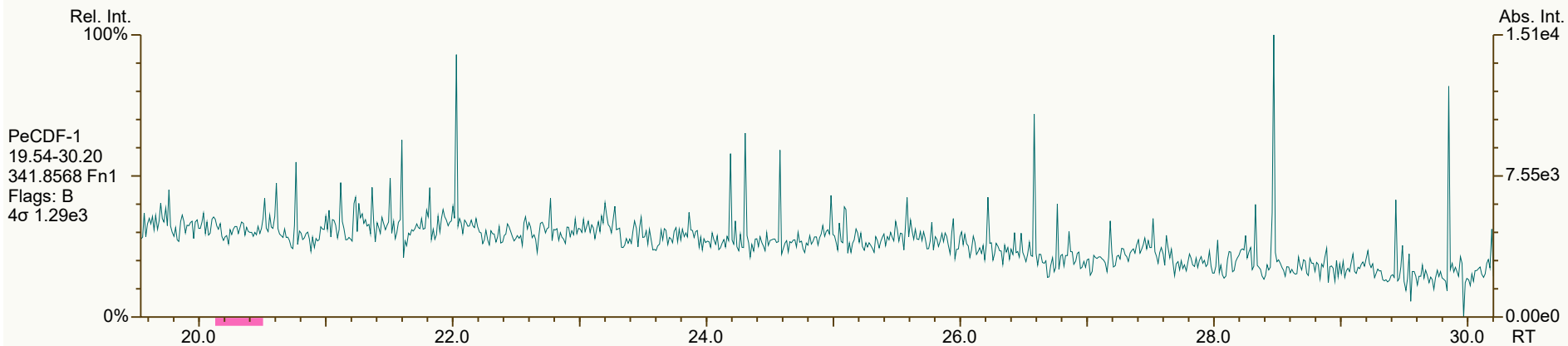
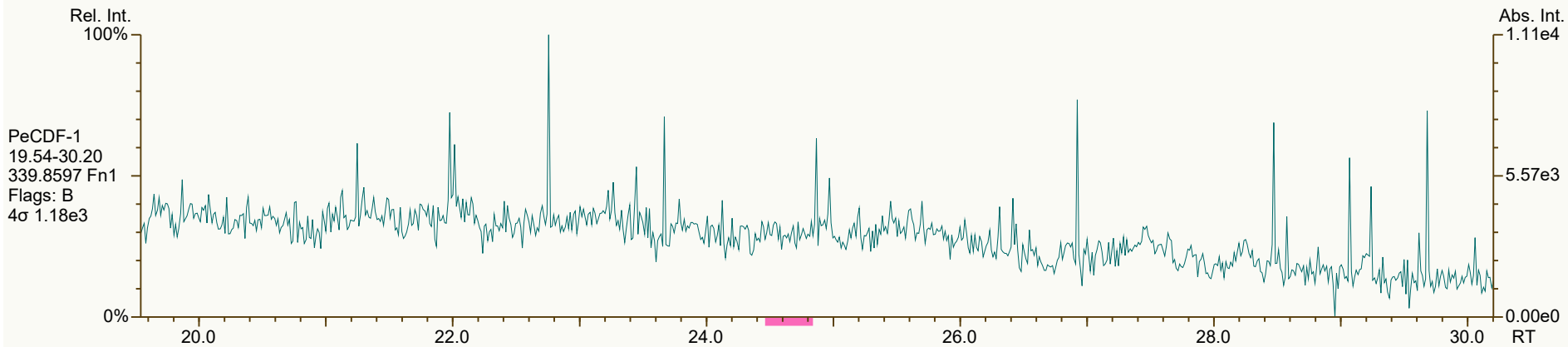


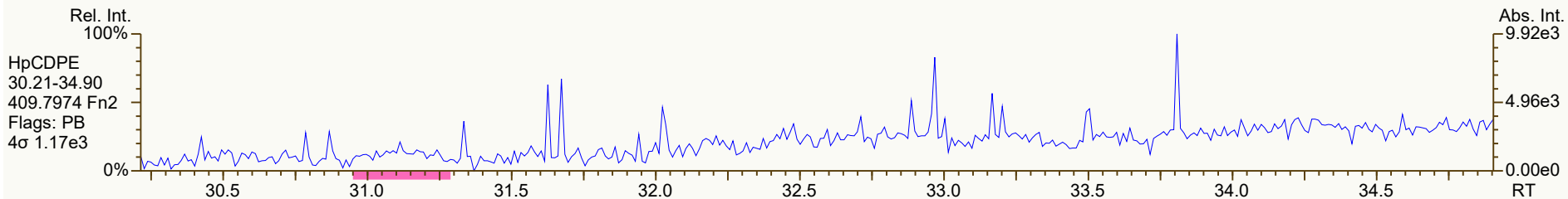
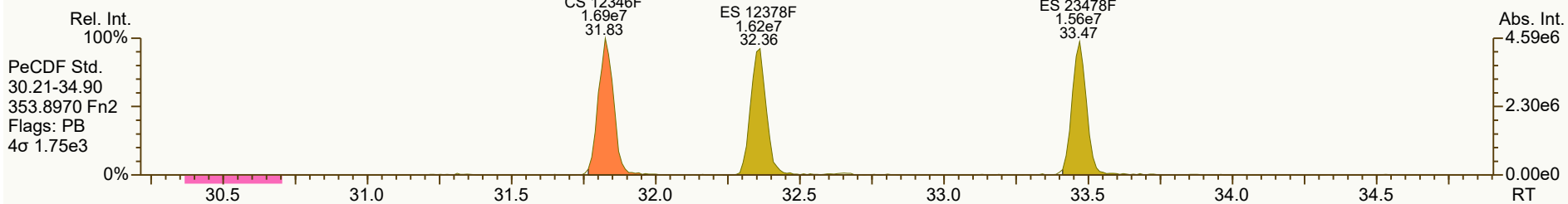
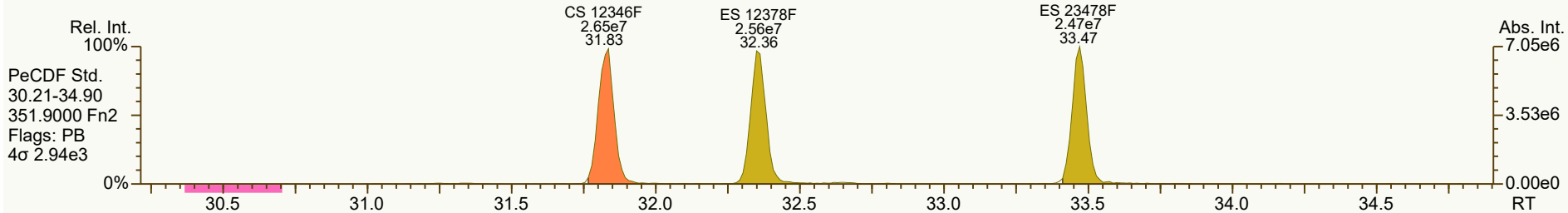
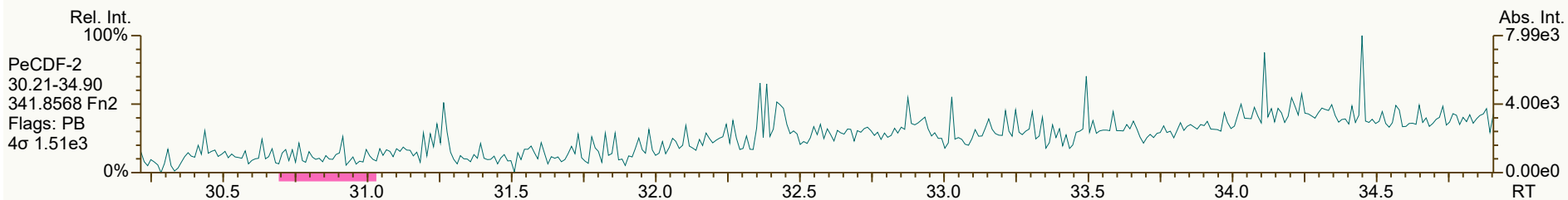
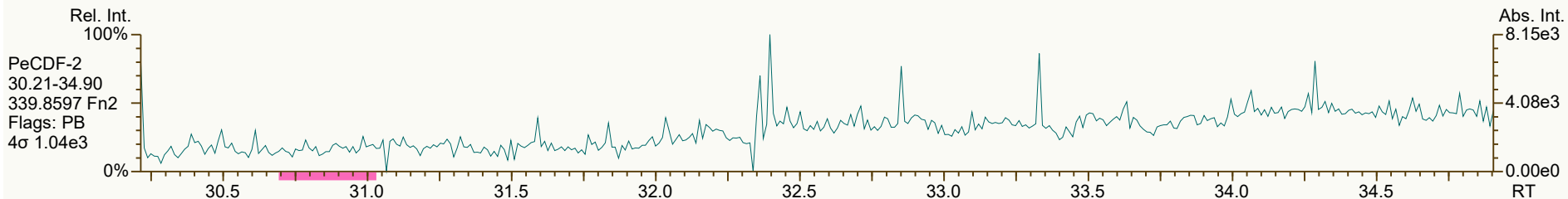
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Instr: [ILM] AutoSpec-Ultima HRMS3

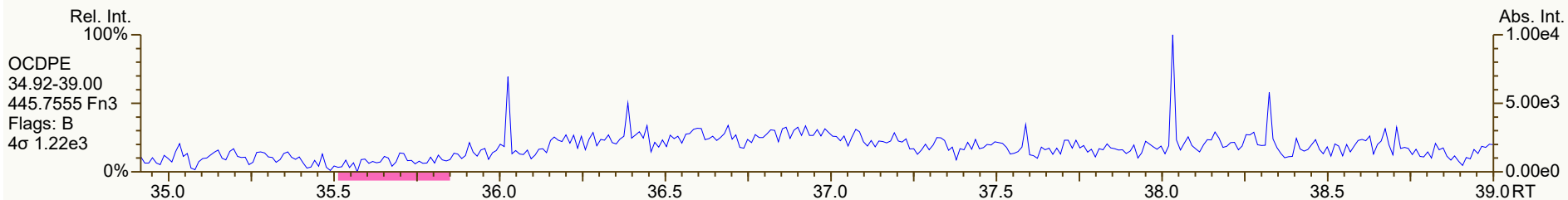
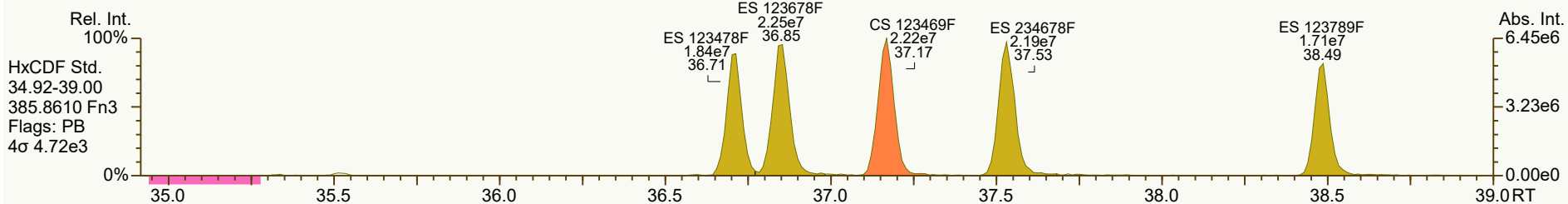
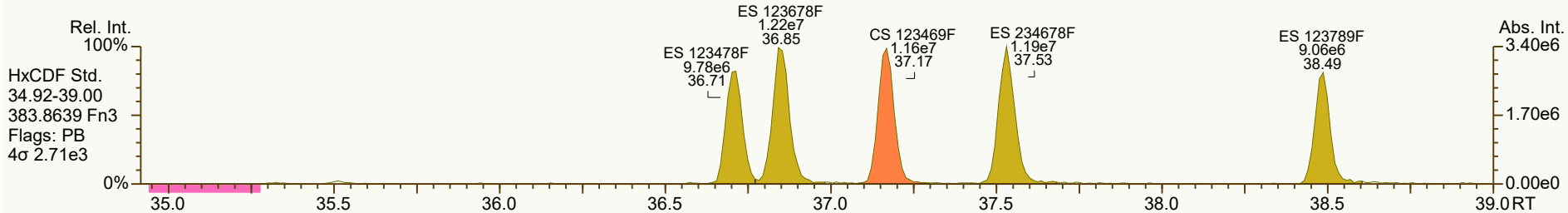
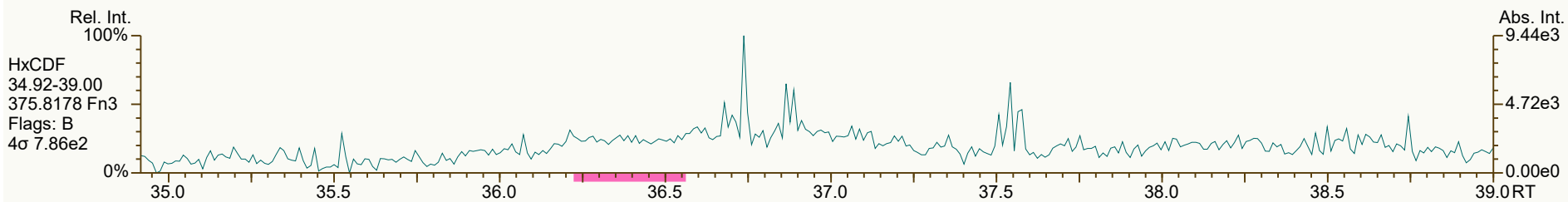
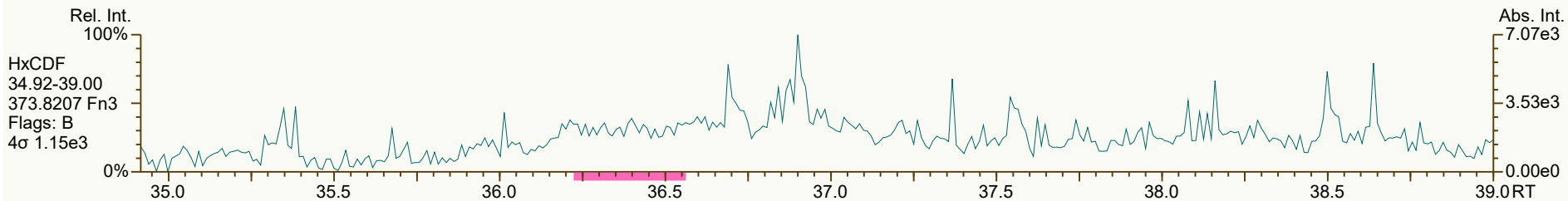
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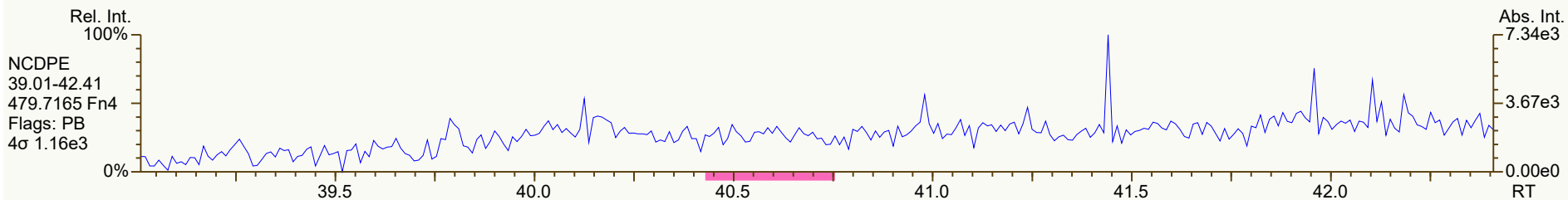
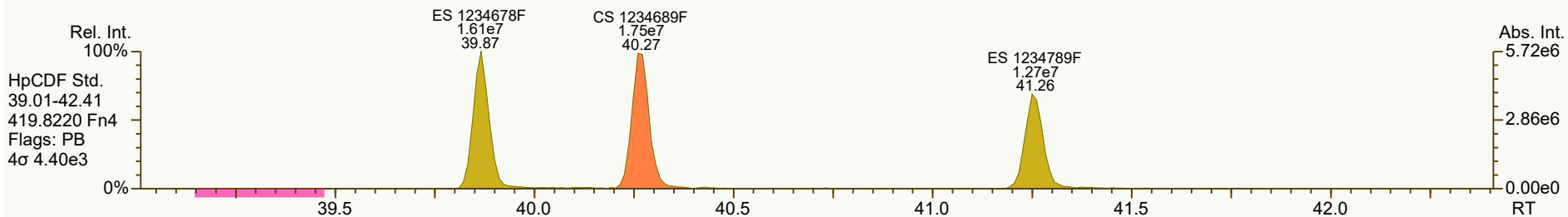
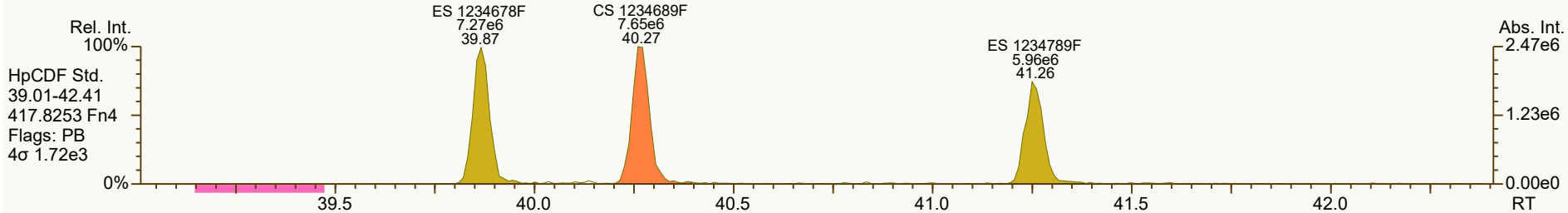
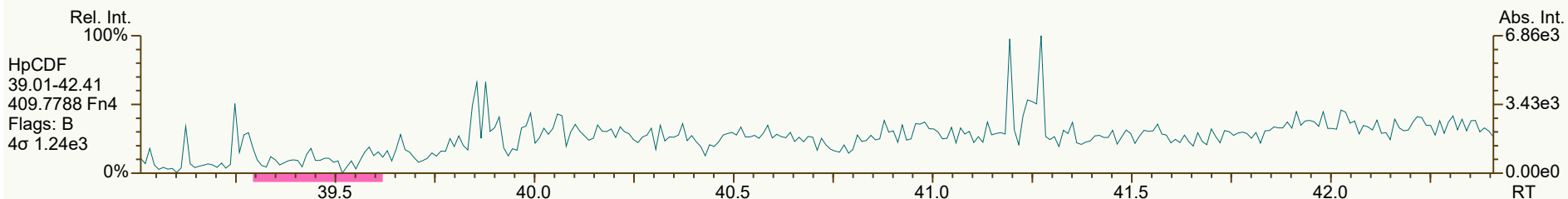
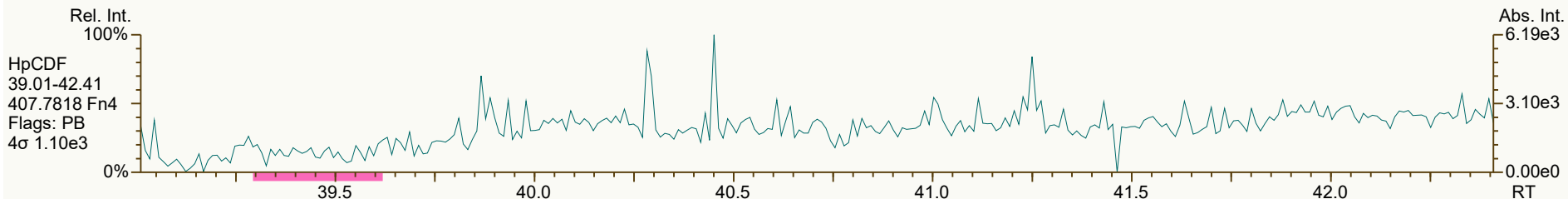
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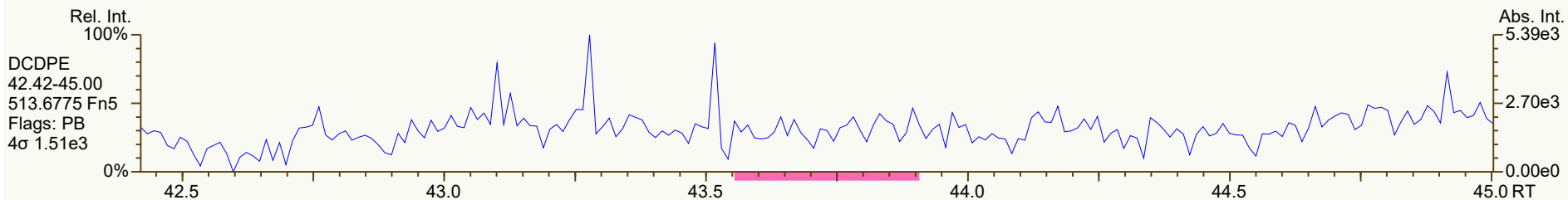
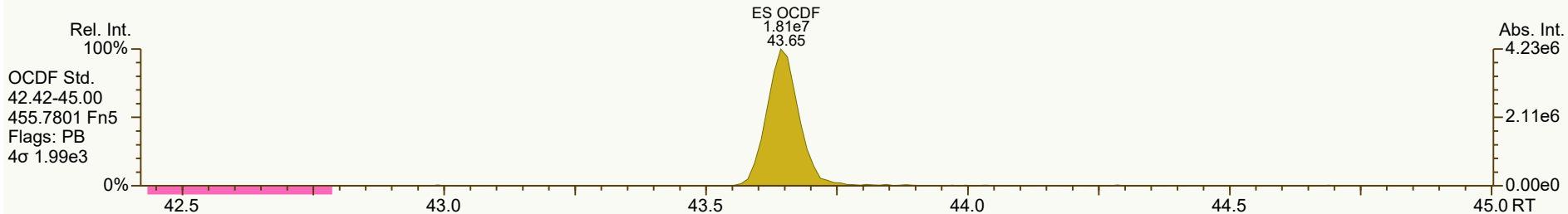
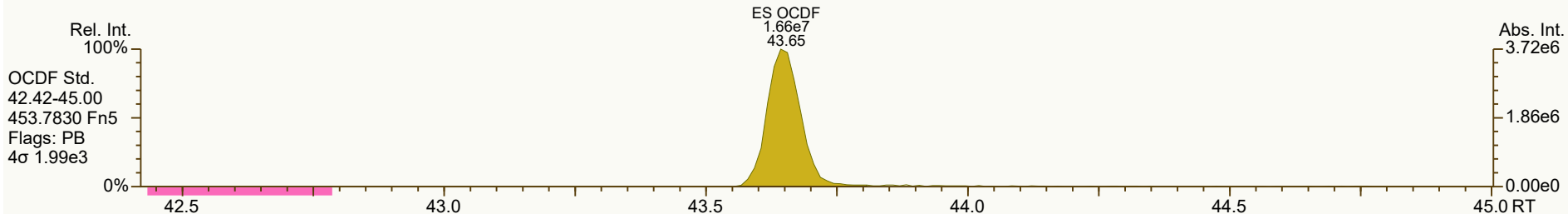
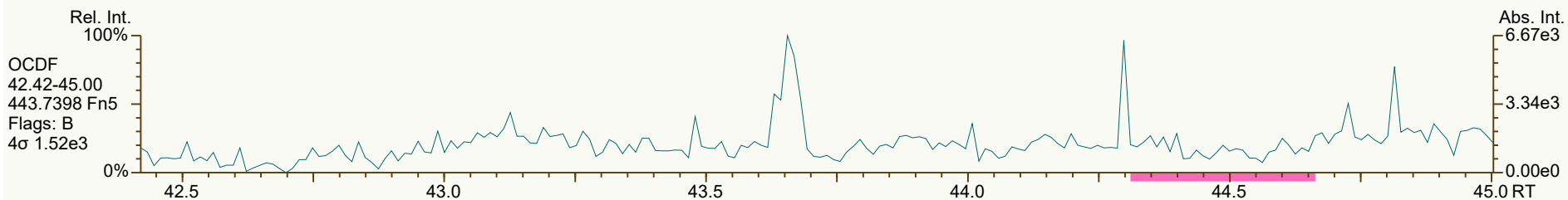
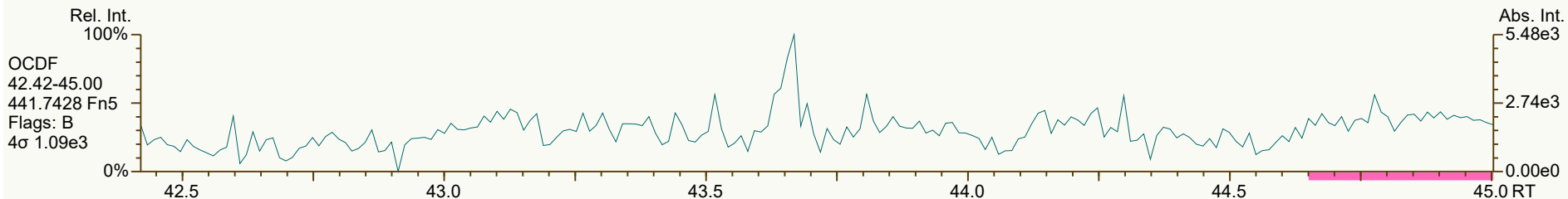












Lab ID: B6238_18887_DF_001

Acq'd: 09 Feb 2022 08:06 DTF

Wt/Vol: 1.03 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC

UTP: 09-Feb-2022 14:37:52 DTF

J-level: 4.85 pg/L Split: 1

Checkcode: 226-844-BXS

Datafile: 220209C05

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3521.107	2.09
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2524.394	1.65
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2532.759	1.78
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2532.759	1.48
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2532.759	1.68
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	4999.867	3.69
OCDD	NotFnd		1.0004	-		-	-	-	1.13	-	7074.353	10.9

2378-TCDF	27.61	J EMPC	1.0008	1.0003	-0.8	7.77E+04	0.93	N	1.08	3.12	5573.294	2.4
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3288.223	1.43
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3288.223	1.43
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2559.251	1.14
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2559.251	1.18
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2559.251	1.17
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2559.251	1.36
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2108.067	0.95
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2108.067	1.41
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2286.679	2.77

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0239	+0.5	2.76E+07	0.79	Y	1.05	85.9
ES 12378-PeCDD	33.80		1.2144	1.2161	+3.4	2.55E+07	1.58	Y	0.88	94.2
ES 123478-HxCDD	37.71		0.9920	0.9918	-0.5	2.24E+07	1.23	Y	0.97	94.4
ES 123678-HxCDD	37.83		0.9951	0.9949	-0.5	2.41E+07	1.24	Y	0.94	105
ES 123789-HxCDD	38.12		1.0027	1.0026	-0.2	2.36E+07	1.28	Y	1.09	88.5
ES 1234678-HpCDD	40.79		1.0724	1.0728	+1.0	1.91E+07	1.06	Y	0.91	85.8
ES OCDD	43.47		1.1428	1.1432	+1.0	2.44E+07	0.92	Y	0.62	80.3

ES 2378-TCDF	27.60		1.0516	1.0520	+0.7	4.49E+07	0.78	Y	1.06	86.3
ES 12378-PeCDF	32.35		1.2312	1.2331	+3.7	3.99E+07	1.57	Y	0.91	89.4
ES 23478-PeCDF	33.46		1.2733	1.2755	+4.4	3.94E+07	1.56	Y	0.88	91
ES 123478-HxCDF	36.70		0.9655	0.9653	-0.4	2.78E+07	0.55	Y	1.20	95.2
ES 123678-HxCDF	36.84		0.9692	0.9690	-0.4	3.23E+07	0.54	Y	1.35	97.9
ES 234678-HxCDF	37.53		0.9871	0.9870	-0.2	3.12E+07	0.54	Y	1.24	103
ES 123789-HxCDF	38.48		1.0121	1.0121	0	2.59E+07	0.53	Y	1.16	91.9
ES 1234678-HpCDF	39.86		1.0479	1.0483	+1.0	2.30E+07	0.44	Y	0.97	97.5
ES 1234789-HpCDF	41.25		1.0845	1.0850	+1.2	1.78E+07	0.46	Y	0.85	85.5
ES OCDF	43.65		1.1477	1.1480	+0.8	3.28E+07	0.91	Y	0.81	83.3

Lab ID: B6238_18887_DF_001

Acq'd: 09 Feb 2022 08:06 DTF

Wt/Vol: 1.03 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC

UTP: 09-Feb-2022 14:37:52 DTF

J-level: 4.85 pg/L Split: 1

Checkcode: 226-844-BXS

Datafile: 220209C05

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.08E+07	0.81	Y	-	-
JS 1234-TCDF	26.23		-	-	-	4.91E+07	0.79	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.22E+07	1.32	Y	-	-
CS 37C1-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.38E+07	n/a	-	1.20	93
CS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	2.61E+07	1.62	Y	0.75	113
CS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.23E+07	1.56	Y	0.85	101
CS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.23E+07	0.53	Y	1.12	119
CS 1234689-HpCDF	40.26		1.0584	1.0589	+1.2	2.40E+07	0.45	Y	0.89	111
SS 37C1-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.38E+07	n/a		1.15	108
SS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	2.61E+07	1.62	Y	0.86	119
SS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.23E+07	1.56	Y	0.94	113
SS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.23E+07	0.53	Y	0.83	121
SS 1234689-HpCDF	40.26		1.0584	1.0589	+1.2	2.40E+07	0.45	Y	0.92	114

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	3.98	3.98
Total Tetra-Octa Dioxins	3.98	3.98
Total TCDF	0	3.12
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	3.12
Total Tetra-Octa Dioxins & Furans	3.98	7.09

Lab ID: B6238_18887_DF_001

Acq'd: 09 Feb 2022 08:06 DTF

Wt/Vol: 1.03 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC

UTP: 09-Feb-2022 14:37:52 DTF

J-level: 4.85 pg/L Split: 1

Checkcode: 226-844-BXS

Datafile: 220209C05

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3521.107	2.09
1379-TCDD	NotFnd		0.8860						1.18		3521.107	2.09
1369-TCDD	NotFnd		0.9009						1.18		3521.107	2.09
1469-TCDD	NotFnd		0.9281						1.18		3521.107	2.09
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3521.107	2.09
1378-TCDD	NotFnd		0.9432						1.18		3521.107	2.09
1268-TCDD	NotFnd		0.9500						1.18		3521.107	2.09
1478-TCDD	NotFnd		0.9586						1.18		3521.107	2.09
1279-TCDD	NotFnd		0.9645						1.18		3521.107	2.09
1234/1269-TCDD	NotFnd		0.9770						1.18		3521.107	2.09
1236-TCDD	NotFnd		0.9817						1.18		3521.107	2.09
1237/1238-TCDD	NotFnd		0.9905						1.18		3521.107	2.09
1239-TCDD	NotFnd		0.9952						1.18		3521.107	2.09
2378-TCDD	NotFnd		1.0008						1.18		3521.107	2.09
1278-TCDD	NotFnd		1.0121						1.18		3521.107	2.09
1267-TCDD	NotFnd		1.0167						1.18		3521.107	2.09
1289-TCDD	NotFnd		1.0345						1.18		3521.107	2.09
12479/12468-PeCDD	NotFnd		0.9267						1.04		2524.394	1.65
12469-PeCDD	NotFnd		0.9425						1.04		2524.394	1.65
12368-PeCDD	NotFnd		0.9588						1.04		2524.394	1.65
12478-PeCDD	NotFnd		0.9643						1.04		2524.394	1.65
12379-PeCDD	NotFnd		0.9673						1.04		2524.394	1.65
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2524.394	1.65
12346/12347-PeCDD	NotFnd		0.9858						1.04		2524.394	1.65
12378-PeCDD	NotFnd		1.0006						1.04		2524.394	1.65
12367-PeCDD	NotFnd		1.0033						1.04		2524.394	1.65
12389-PeCDD	NotFnd		1.0134						1.04		2524.394	1.65
124679/124689-HxCDD	NotFnd		0.9542						1.10		2532.759	1.64
123468-HxCDD	NotFnd		0.9715						1.10		2532.759	1.64
123679/123689-HxCDD	NotFnd		0.9793						1.10		2532.759	1.64
123469-HxCDD	NotFnd		0.9828						1.10		2532.759	1.64
123478-HxCDD	NotFnd		1.0004						1.09		2532.759	1.78
123678-HxCDD	NotFnd		1.0035						1.15		2532.759	1.48
123467-HxCDD	NotFnd		1.0085						1.10		2532.759	1.64
123789-HxCDD	NotFnd		1.0112						1.05		2532.759	1.68

Lab ID: B6238_18887_DF_001

Acq'd: 09 Feb 2022 08:06 DTF

Wt/Vol: 1.03 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC

UTP: 09-Feb-2022 14:37:52 DTF

J-level: 4.85 pg/L Split: 1

Checkcode: 226-844-BXS

Datafile: 220209C05

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

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1234679-HpCDD	40.12	J	0.9837	0.9837	0	4.15E+04	1.19	Y	1.06	3.98	4999.867	3.69
1234678-HpCDD	NotFnd		1.0003						1.06		4999.867	3.69
OCDD	NotFnd		1.0004						1.13		7074.353	10.9
OCDD-a	NotFnd		1.0003						0.07		3224.804	78
1368-TCDF	NotFnd		0.8251						1.08		5573.294	2.4
1468-TCDF	NotFnd		0.8458						1.08		5573.294	2.4
2468-TCDF	NotFnd		0.8686						1.08		5573.294	2.4
1346/1246-TCDF	NotFnd		0.8814						1.08		5573.294	2.4
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		5573.294	2.4
1348-TCDF	NotFnd		0.8962						1.08		5573.294	2.4
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		5573.294	2.4
1268-TCDF	NotFnd		0.9145						1.08		5573.294	2.4
1467-TCDF	NotFnd		0.9193						1.08		5573.294	2.4
1478-TCDF	NotFnd		0.9254						1.08		5573.294	2.4
1369/1237-TCDF	NotFnd		0.9387						1.08		5573.294	2.4
2467-TCDF	NotFnd		0.9433						1.08		5573.294	2.4
2368-TCDF	NotFnd		0.9489						1.08		5573.294	2.4
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		5573.294	2.4
1278-TCDF	NotFnd		0.9683						1.08		5573.294	2.4
1349-TCDF	NotFnd		0.9722						1.08		5573.294	2.4
1267-TCDF	NotFnd		0.9783						1.08		5573.294	2.4
2346/1249-TCDF	NotFnd		0.9850						1.08		5573.294	2.4
2347/1279-TCDF	NotFnd		0.9926						1.08		5573.294	2.4
2348-TCDF	NotFnd		0.9967						1.08		5573.294	2.4
2378-TCDF	27.61	J EMPC	1.0008	1.0003	-0.8	7.77E+04	0.93	N	1.08	3.12	5573.294	2.4
2367/3467-TCDF	NotFnd		1.0137						1.08		5573.294	2.4
1269-TCDF	NotFnd		1.0223						1.08		5573.294	2.4
1239-TCDF	NotFnd		1.0321						1.08		5573.294	2.4
1289-TCDF	NotFnd		1.0722						1.08		5573.294	2.4
13468/12468-PeCDF	NotFnd		0.9139						1.02		2832.798	1.24
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		3288.223	1.43
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		3288.223	1.43
14678-PeCDF	NotFnd		0.9692						1.02		3288.223	1.43
13479-PeCDF	NotFnd		0.9723						1.02		3288.223	1.43
13469/12479-PeCDF	NotFnd		0.9797						1.02		3288.223	1.43
12346-PeCDF	NotFnd		0.9840						1.02		3288.223	1.43

Lab ID: B6238_18887_DF_001

Acq'd: 09 Feb 2022 08:06 DTF

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ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC

UTP: 09-Feb-2022 14:37:52 DTF

J-level: 4.85 pg/L Split: 1

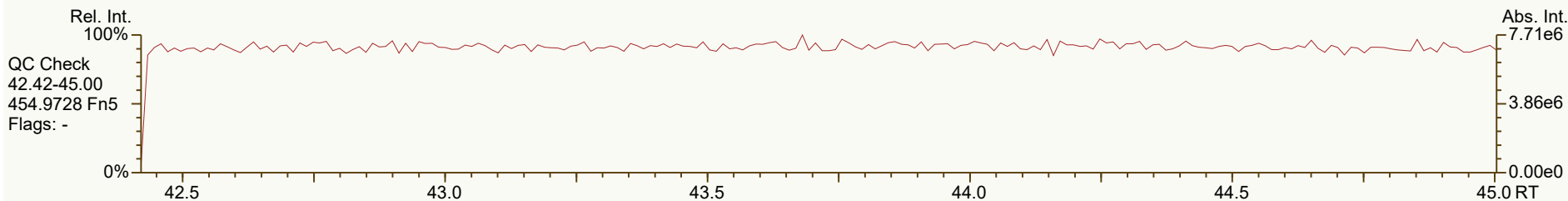
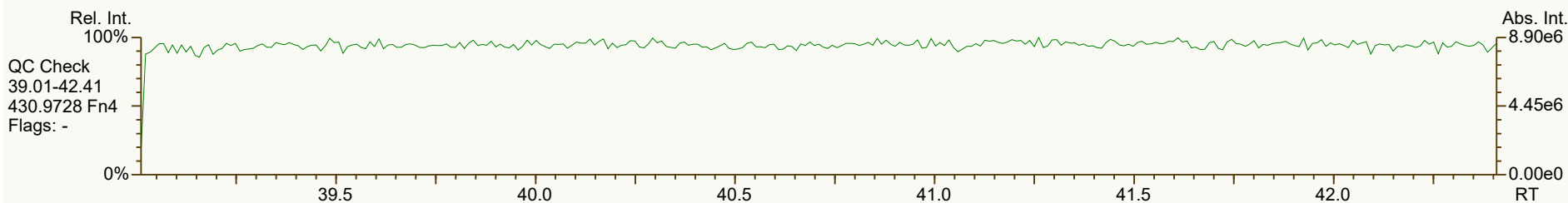
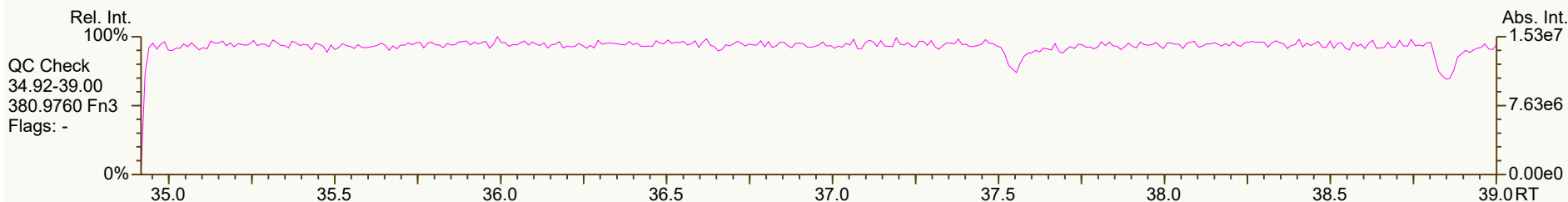
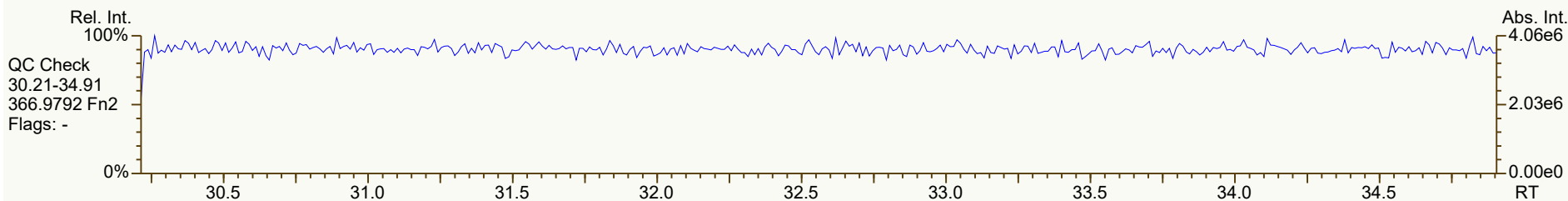
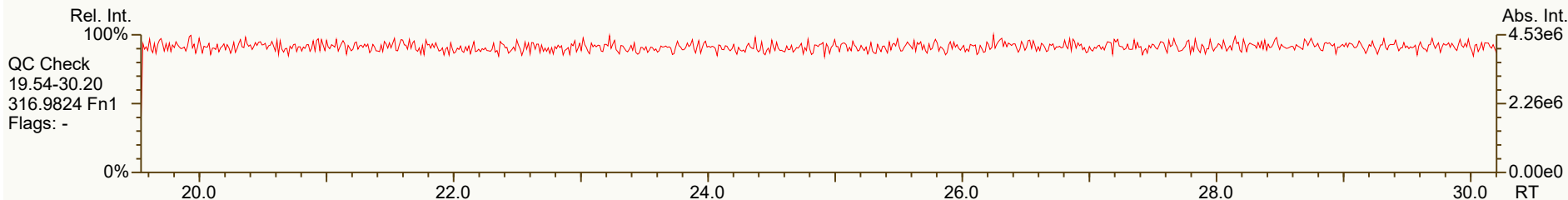
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Report: 09 Feb 2022 17:28 TF

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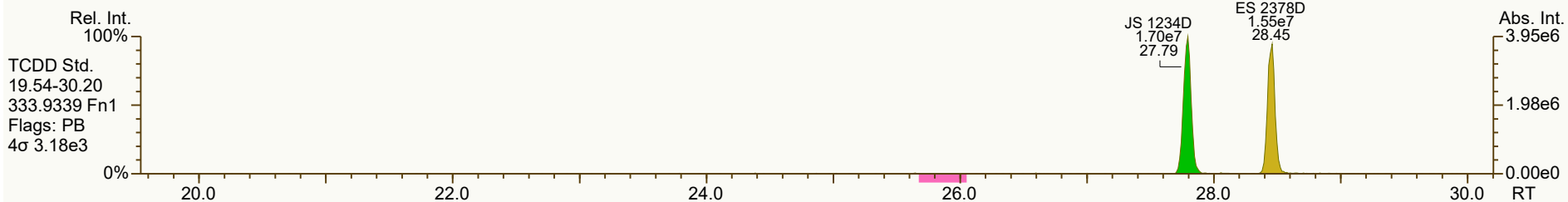
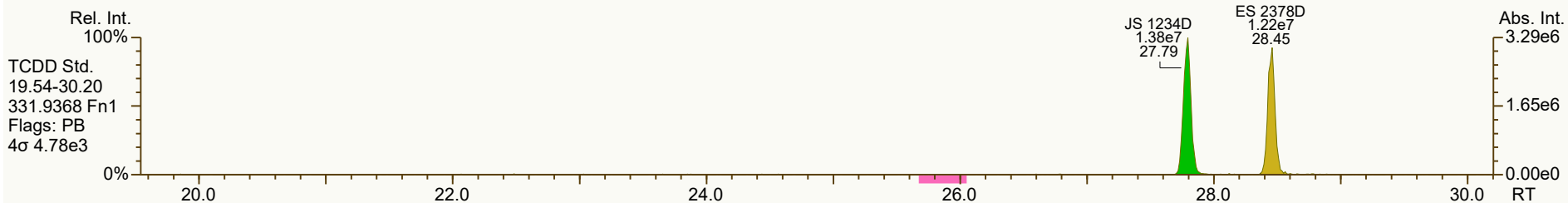
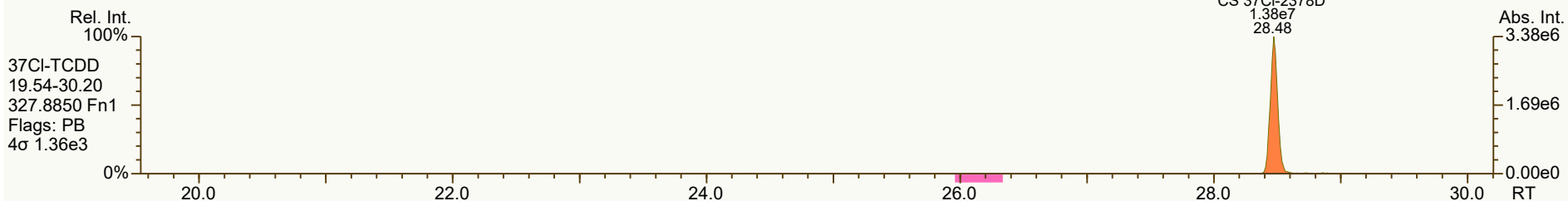
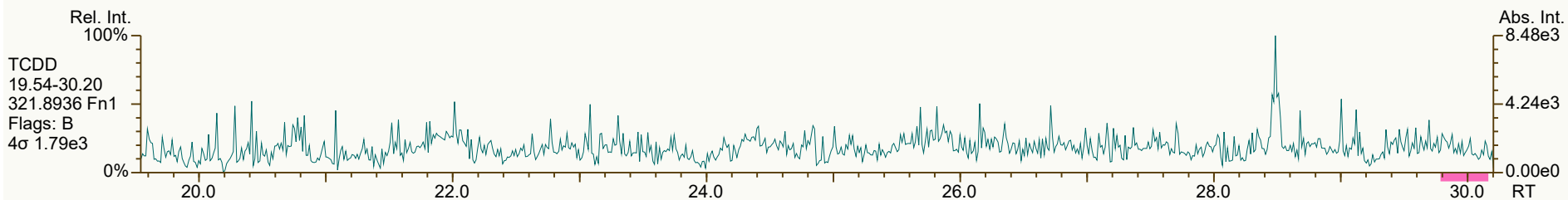
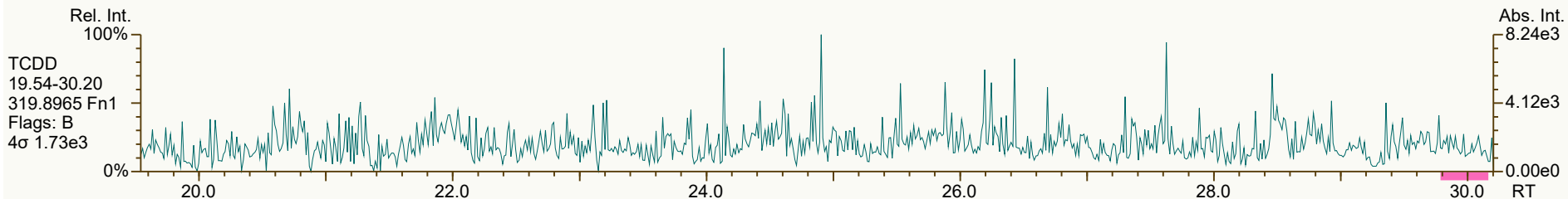
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12347-PeCDF	NotFnd		0.9894						1.02		3288.223	1.43
12348-PeCDF	NotFnd		0.9940						1.02		3288.223	1.43
12378-PeCDF	NotFnd		1.0005						1.02		3288.223	1.43
12678/12367-PeCDF	NotFnd		1.0089						1.02		3288.223	1.43
12379-PeCDF	NotFnd		1.0142						1.02		3288.223	1.43
12679-PeCDF	NotFnd		0.9929						1.02		3288.223	1.43
23467/12369-PeCDF	NotFnd		0.9967						1.02		3288.223	1.43
23478-PeCDF	NotFnd		1.0005						1.02		3288.223	1.43
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3288.223	1.43
12349-PeCDF	NotFnd		1.0100						1.02		3288.223	1.43
12389-PeCDF	NotFnd		1.0324						1.02		3288.223	1.43
123468-HxCDF	NotFnd		0.9627						1.19		2559.251	1.2
124678/134678-HxCDF	NotFnd		0.9682						1.19		2559.251	1.2
134679-HxCDF	NotFnd		0.9744						1.19		2559.251	1.2
124679-HxCDF	NotFnd		0.9798						1.19		2559.251	1.2
124689-HxCDF	NotFnd		0.9858						1.19		2559.251	1.2
123467-HxCDF	NotFnd		0.9972						1.19		2559.251	1.2
123478-HxCDF	NotFnd		1.0004						1.27		2559.251	1.14
123678-HxCDF	NotFnd		1.0004						1.15		2559.251	1.18
123479-HxCDF	NotFnd		1.0049						1.19		2559.251	1.2
123469-HxCDF	NotFnd		1.0090						1.19		2559.251	1.2
123679-HxCDF	NotFnd		0.9942						1.19		2559.251	1.2
234678-HxCDF	NotFnd		1.0005						1.19		2559.251	1.17
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2559.251	1.2
123789-HxCDF	NotFnd		1.0004						1.16		2559.251	1.36
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2559.251	1.2
1234678-HpCDF	NotFnd		1.0003						1.37		2108.067	0.95
1234679-HpCDF	NotFnd		1.0068						1.34		2108.067	1.15
1234689-HpCDF	NotFnd		1.0103						1.34		2108.067	1.15
1234789-HpCDF	NotFnd		1.0002						1.31		2108.067	1.41
OCDF	NotFnd		1.0003						1.07		2286.679	2.77
OCDF-a	NotFnd		1.0002						0.07		3049.059	59.5



SGS ID: B6238_18887_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

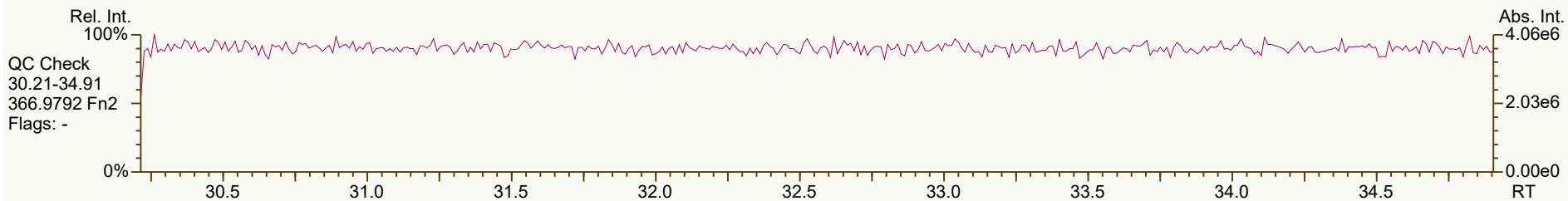
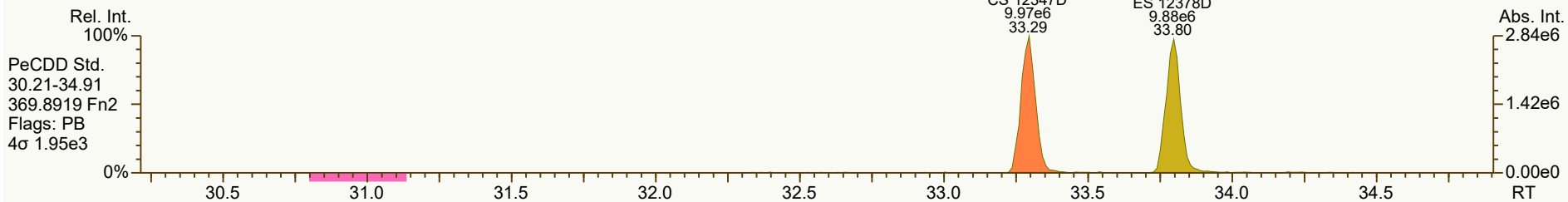
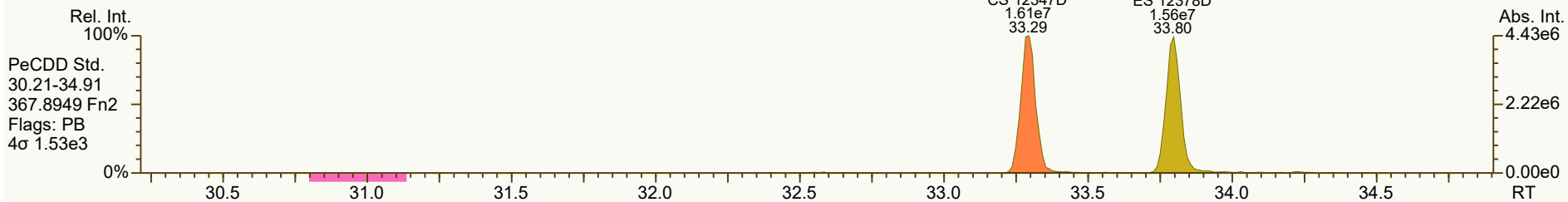
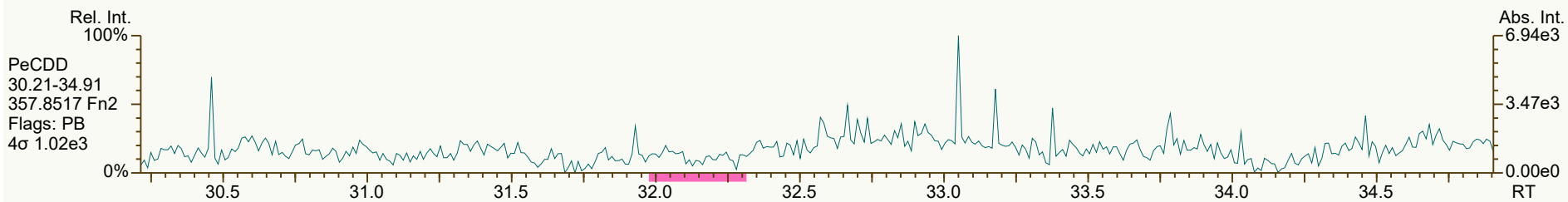
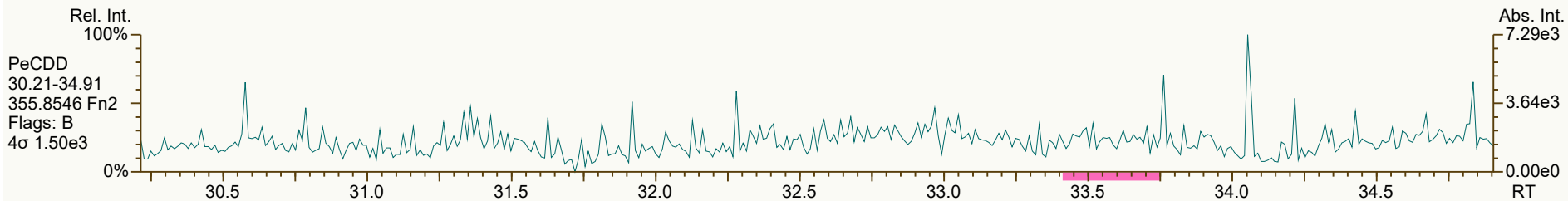
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SGS ID: B6238_18887_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

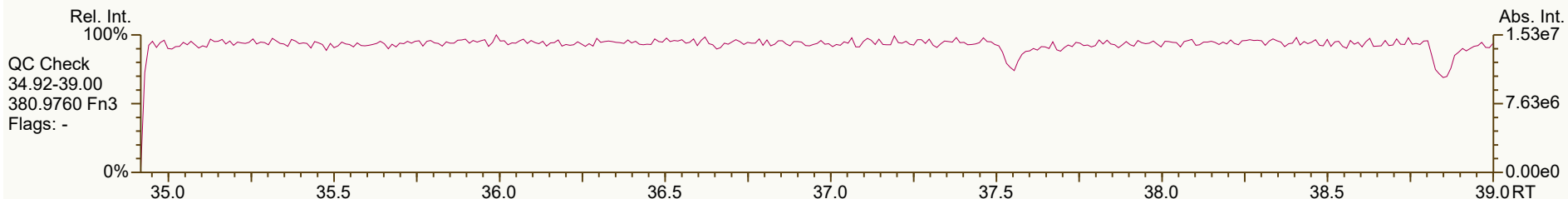
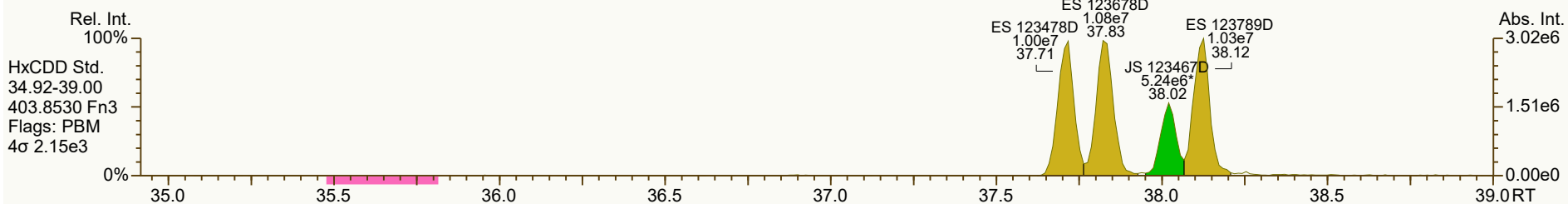
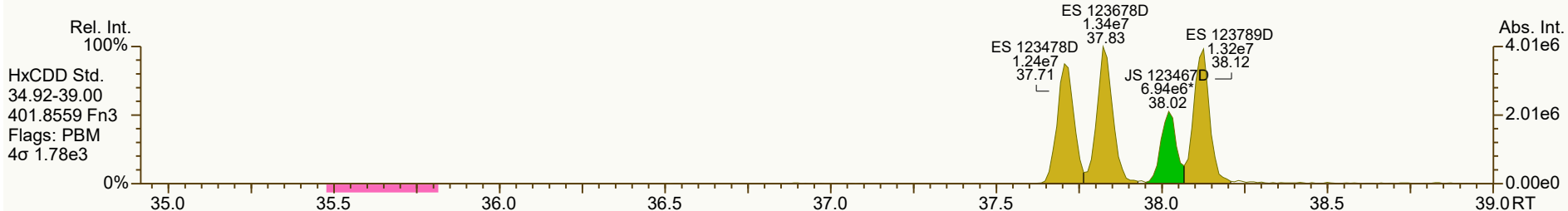
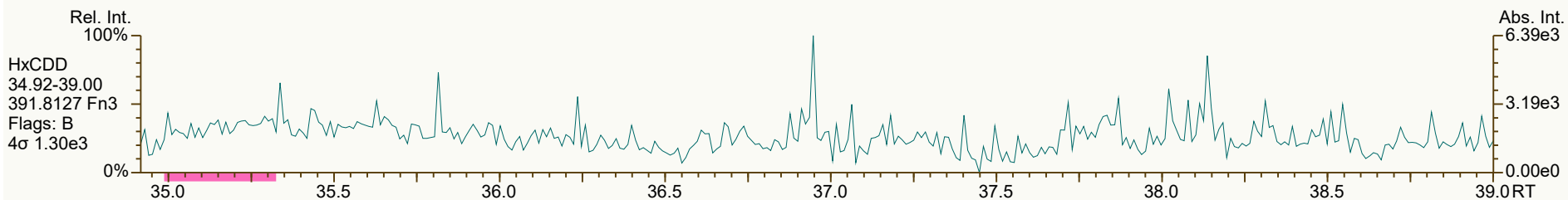
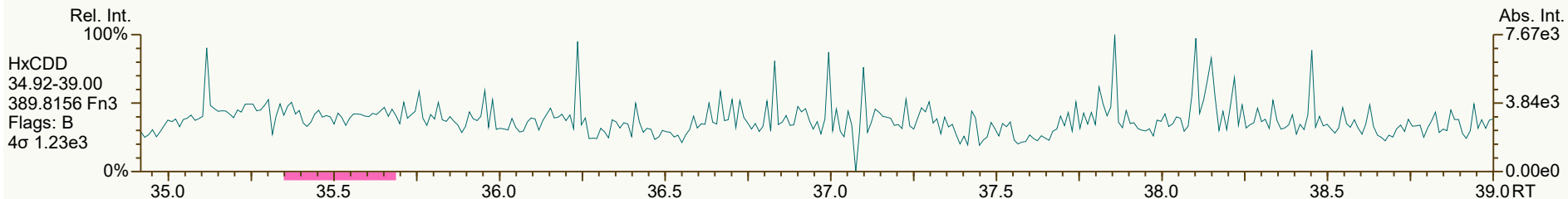
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SGS ID: B6238_18887_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
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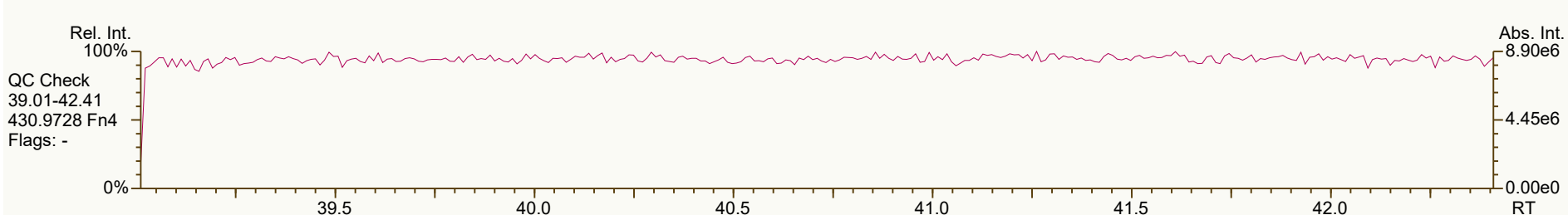
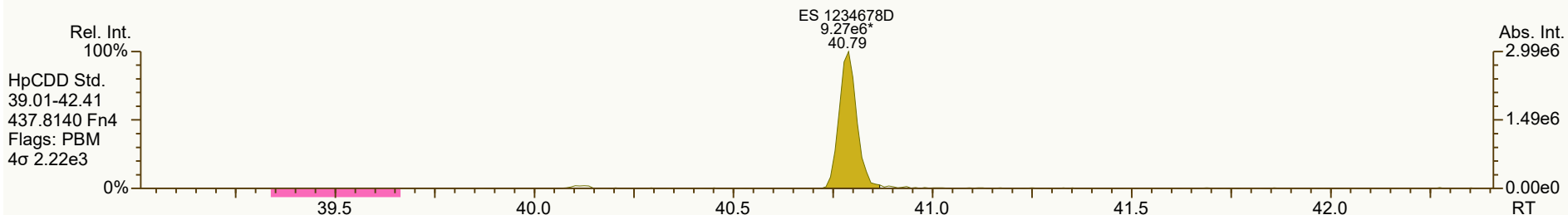
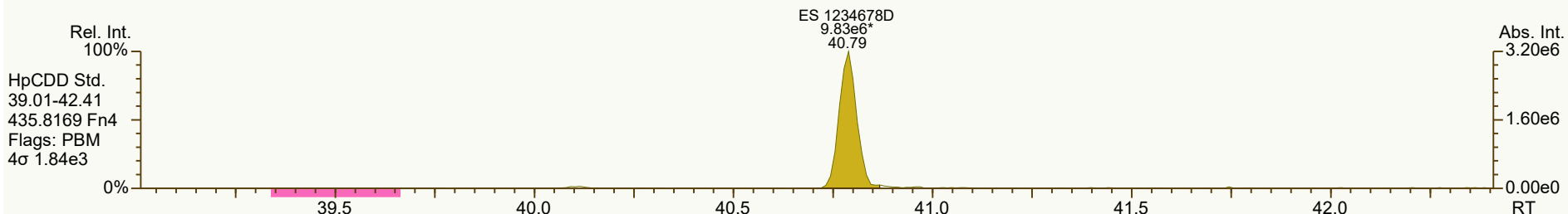
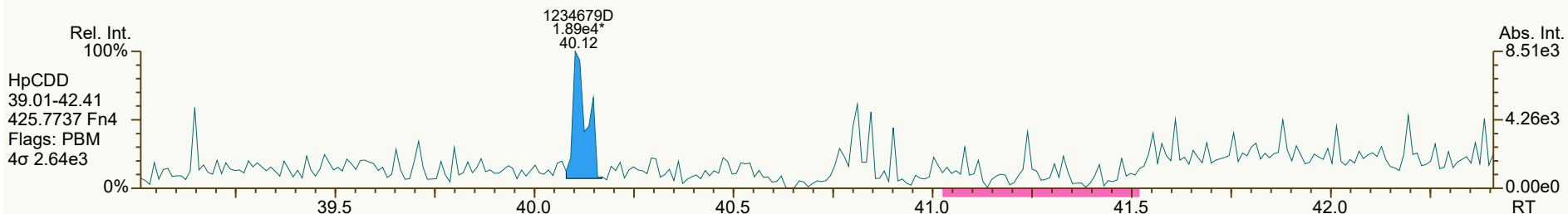
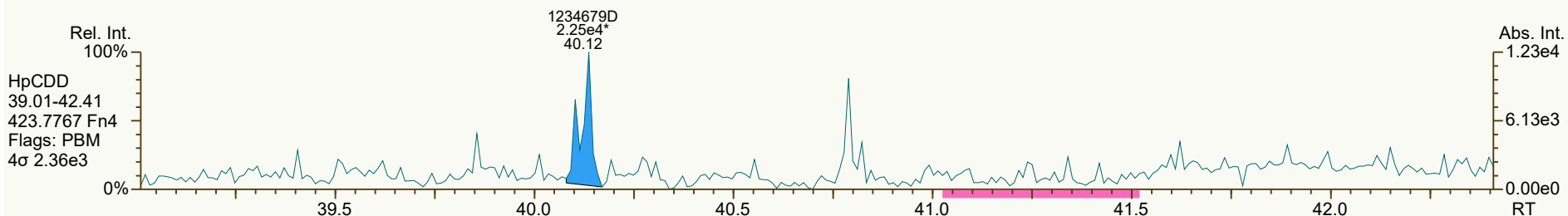
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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

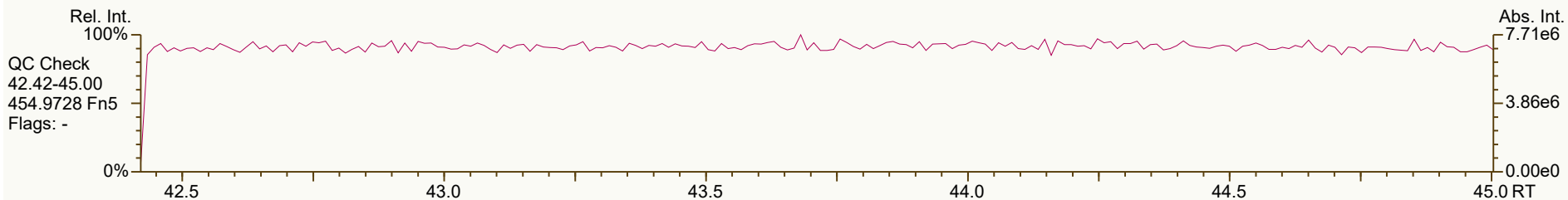
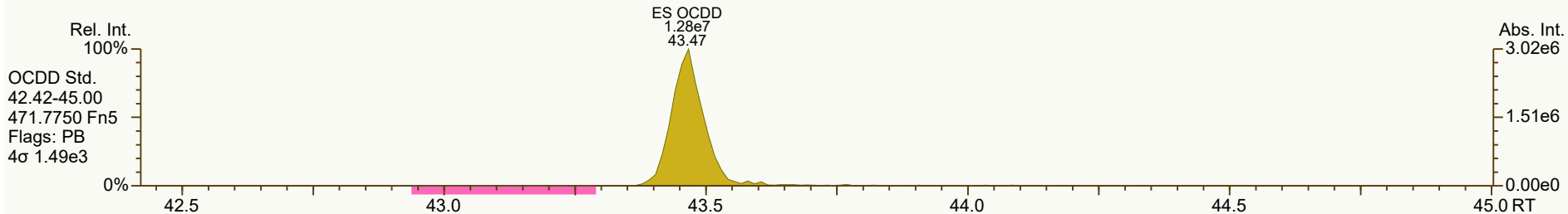
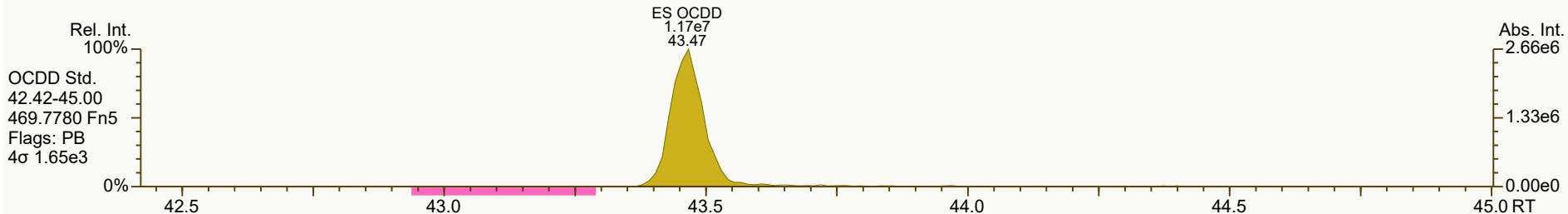
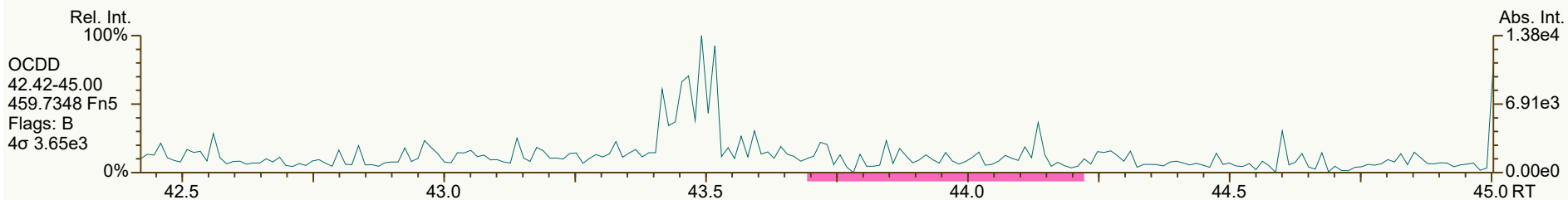
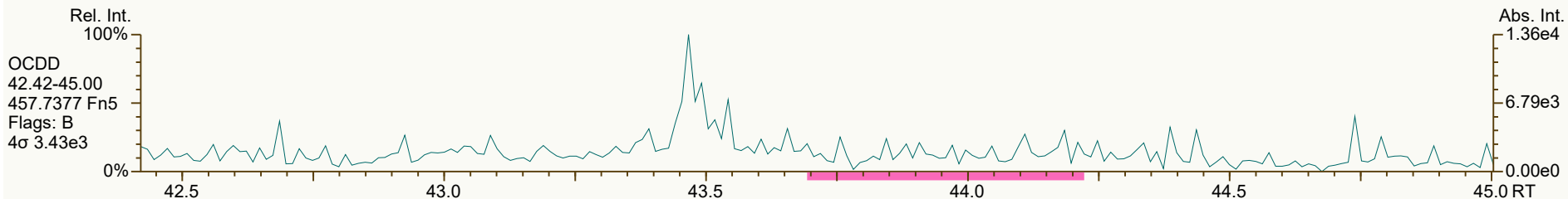
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SGS ID: B6238_18887_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

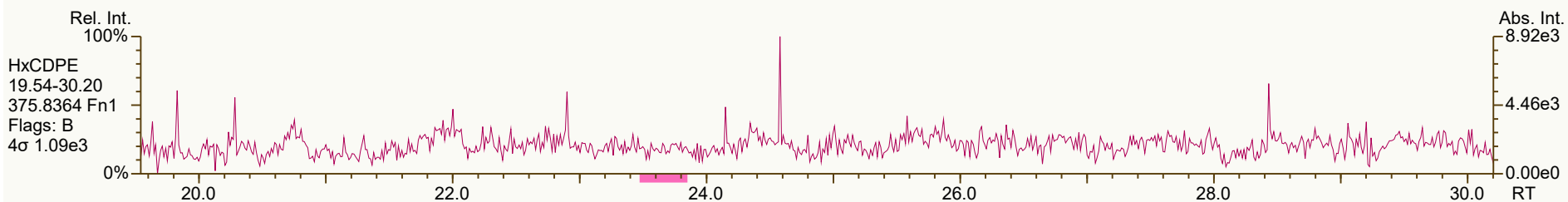
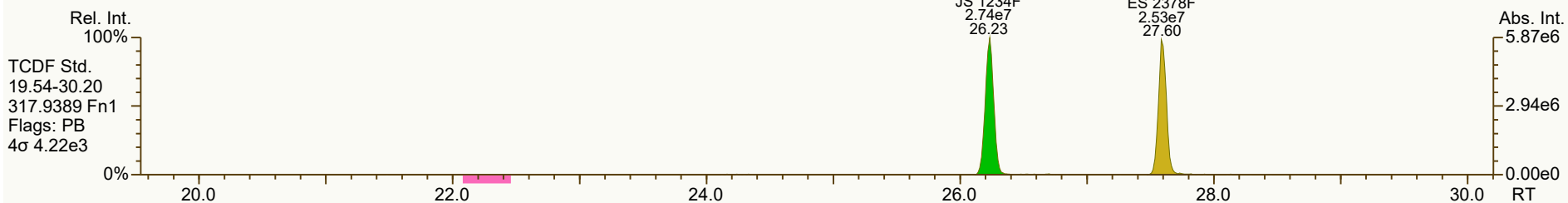
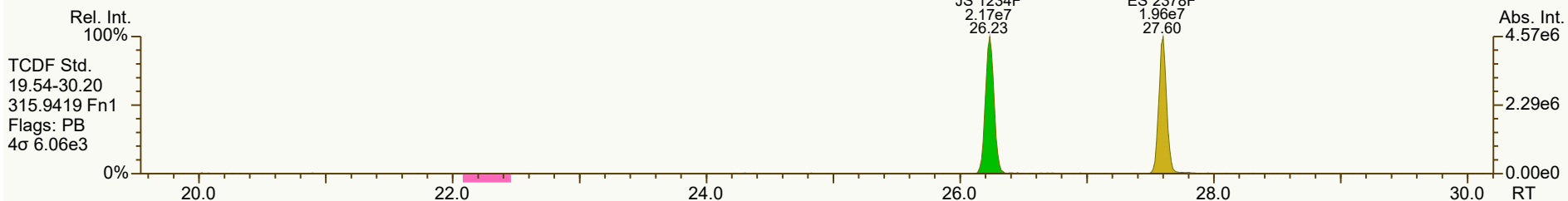
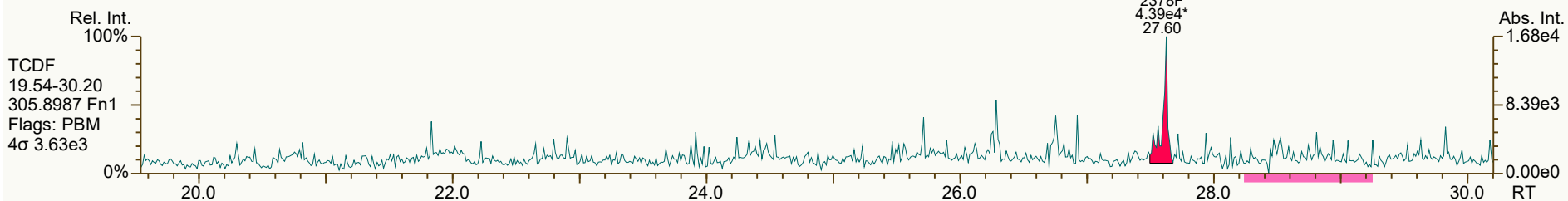
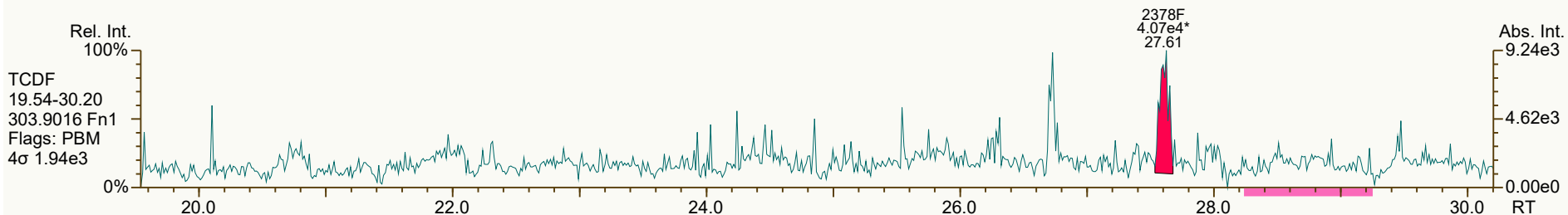
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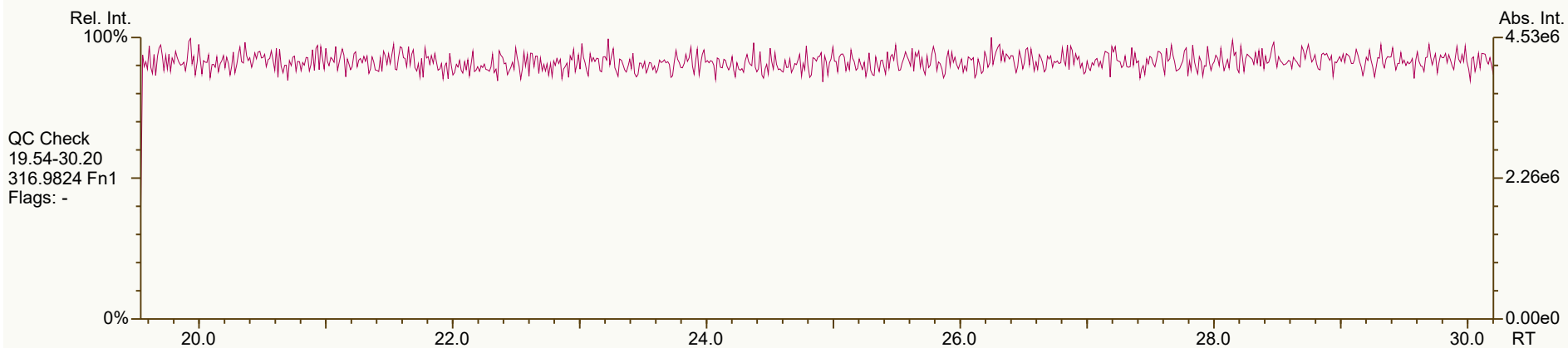
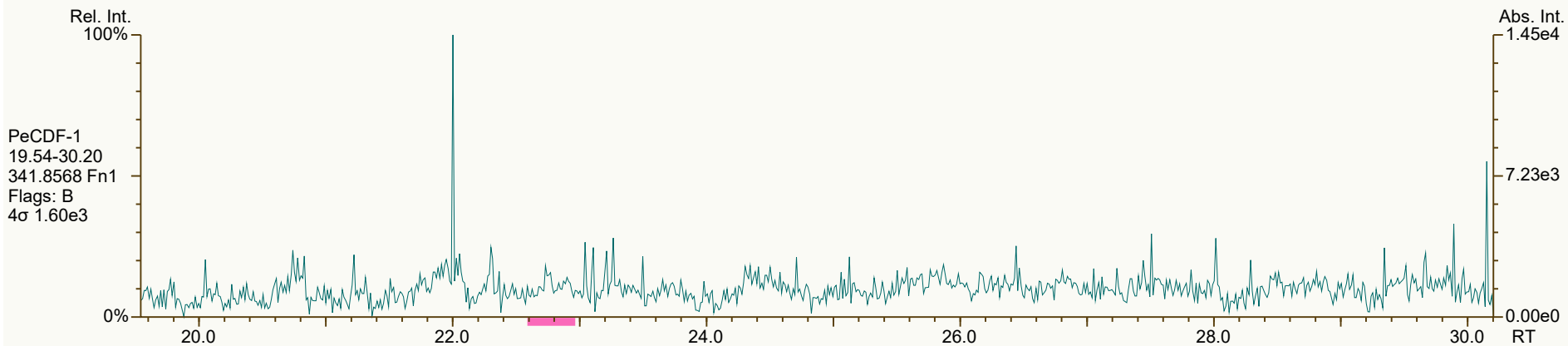
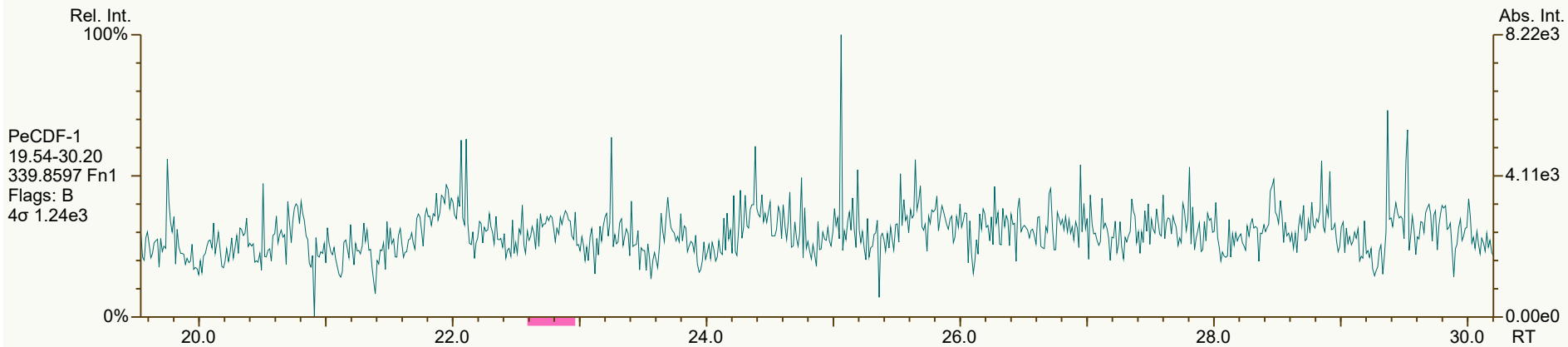


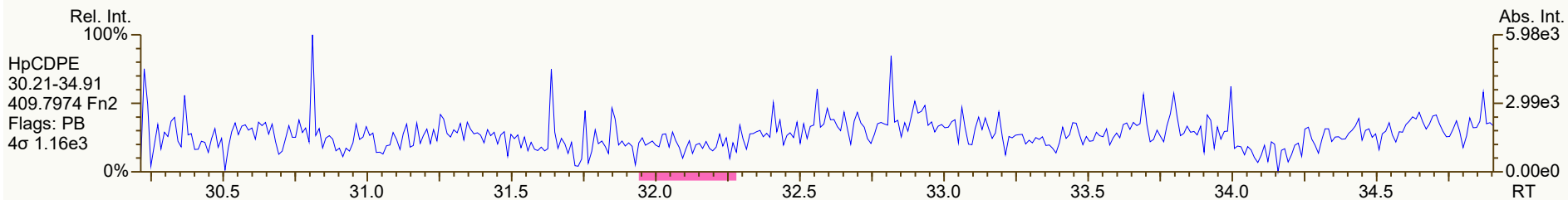
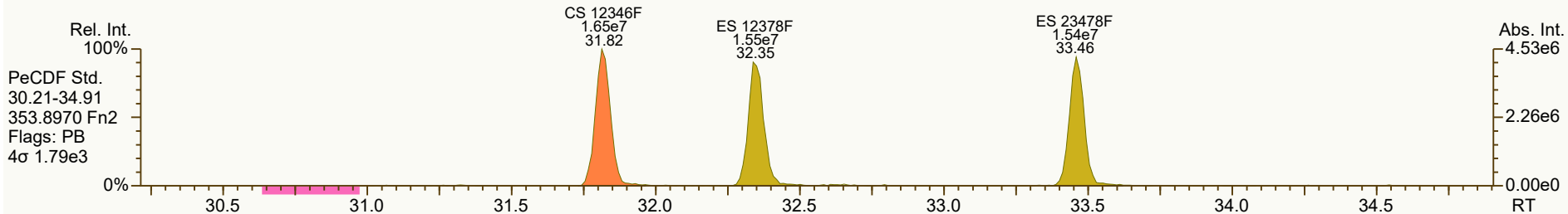
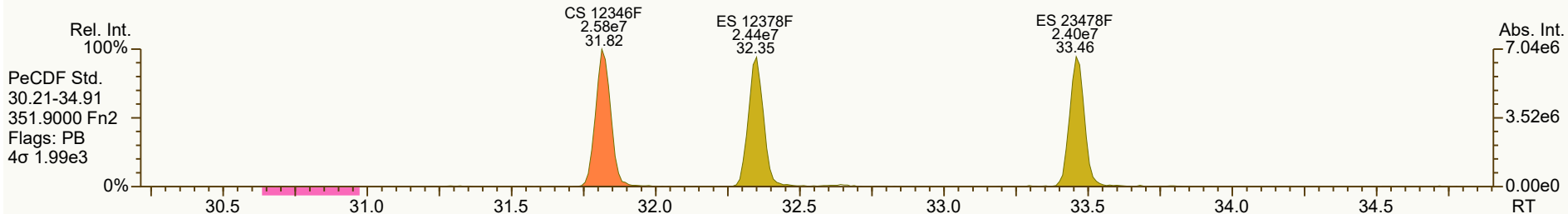
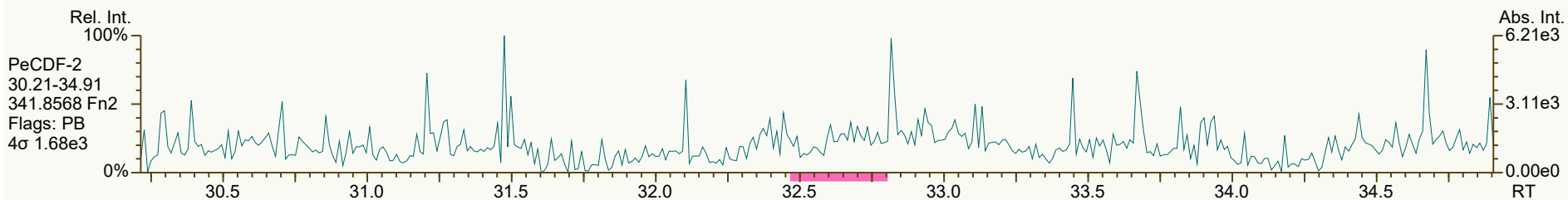
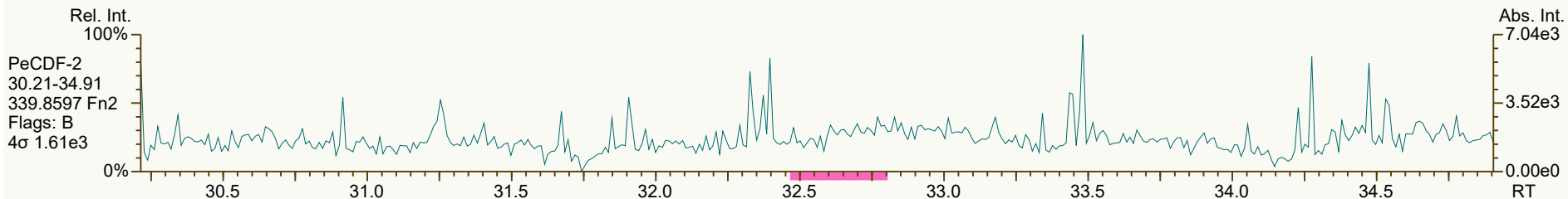
SGS ID: B6238_18887_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

Acq: 09-Feb-2022 08:06:31
User: DTF Datafile: 220209C05



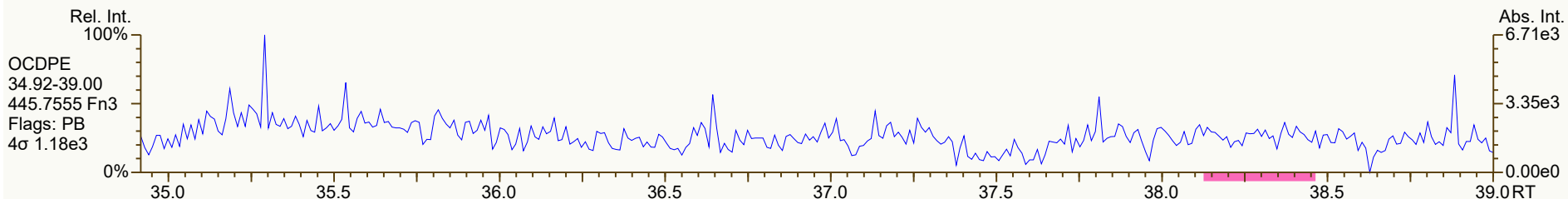
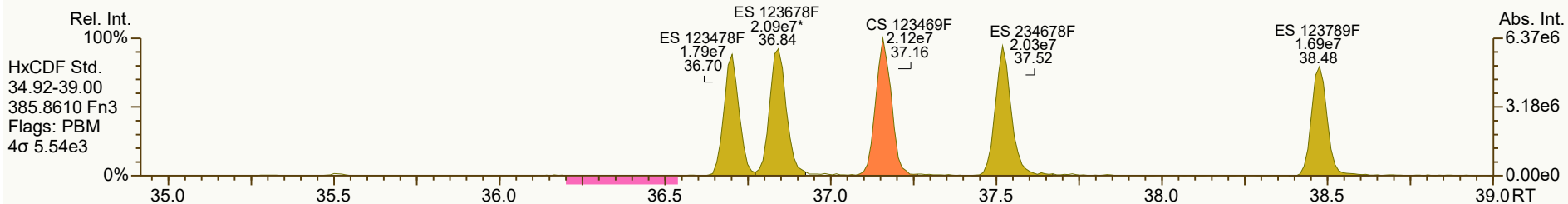
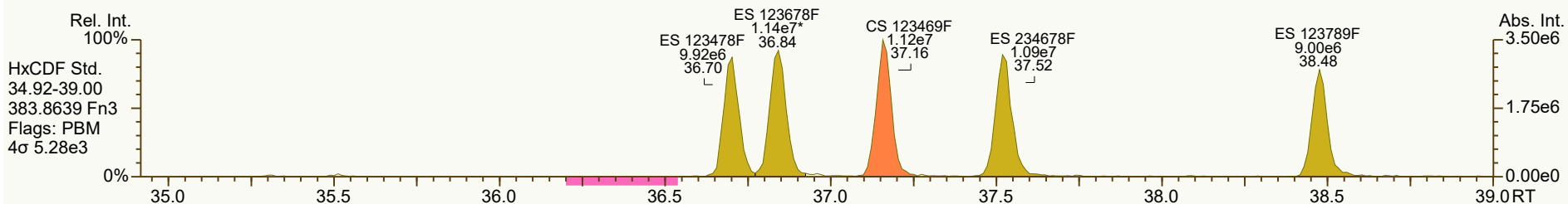
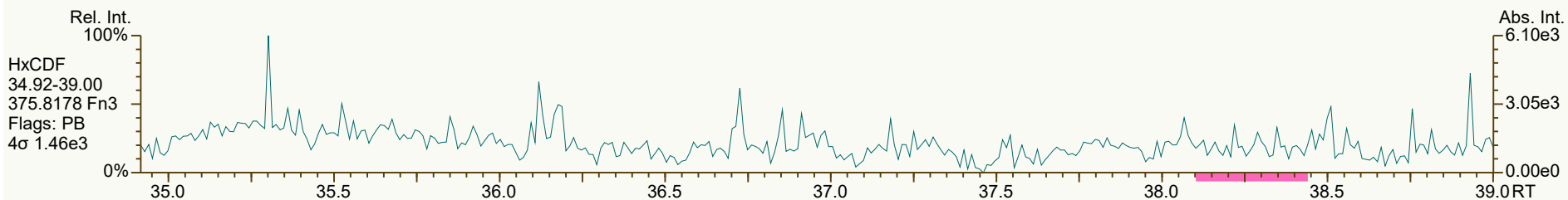
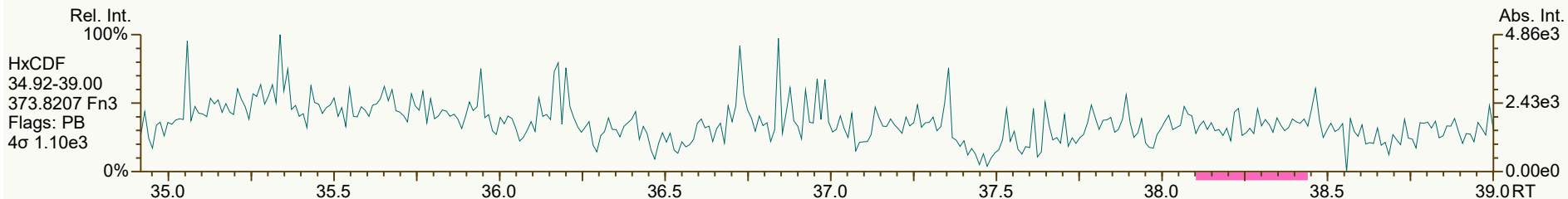




SGS ID: B6238_18887_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

Acq: 09-Feb-2022 08:06:31
User: DTF Datafile: 220209C05



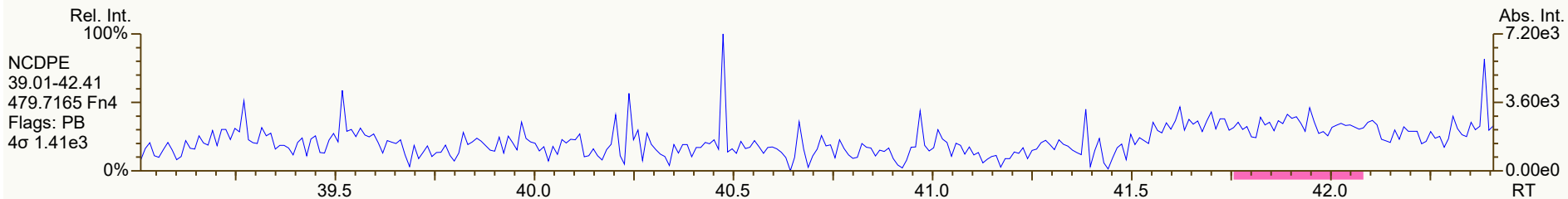
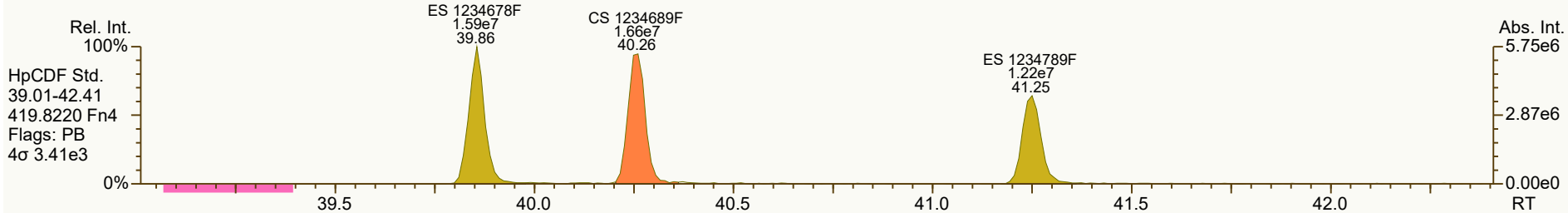
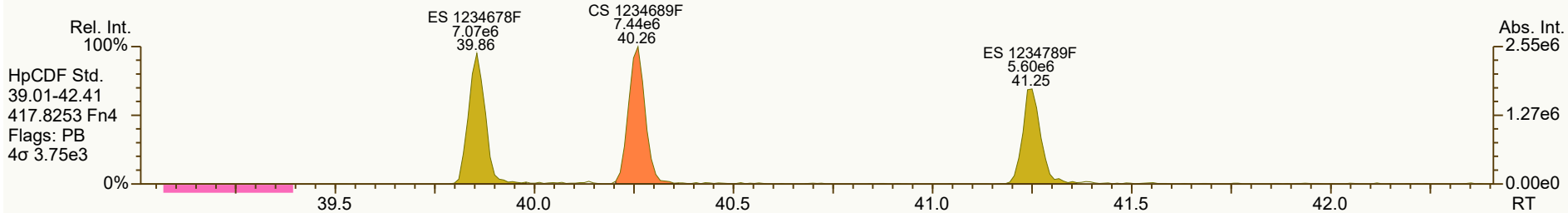
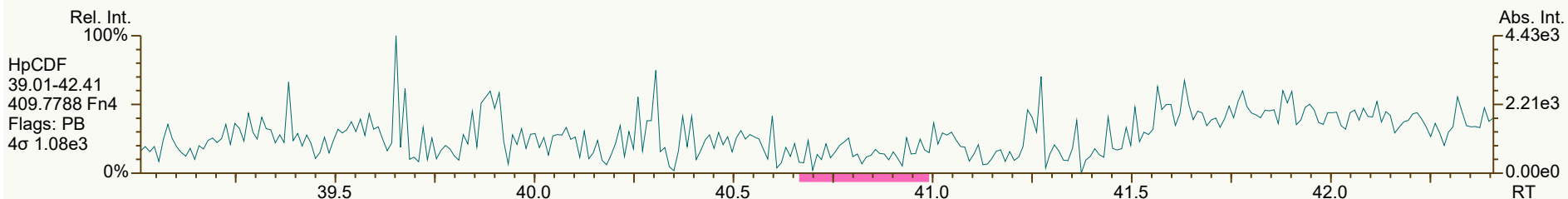
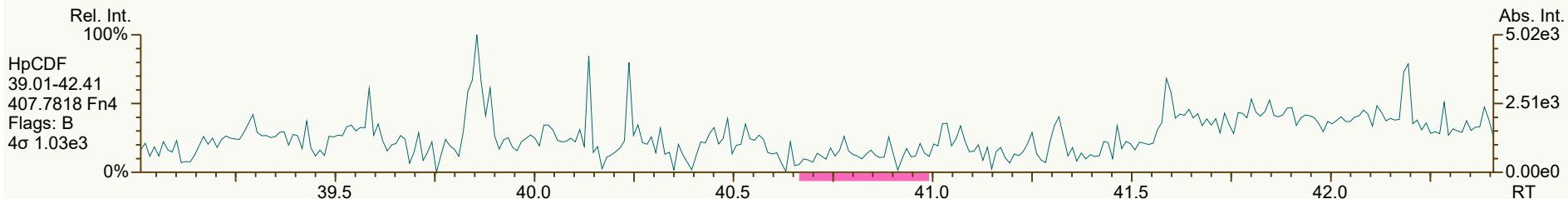
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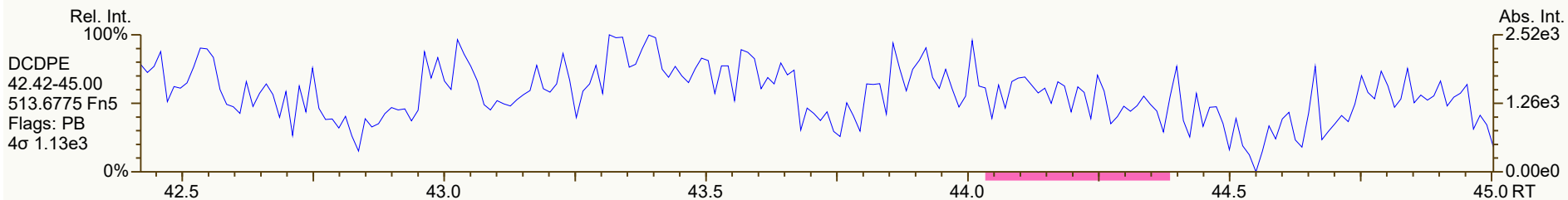
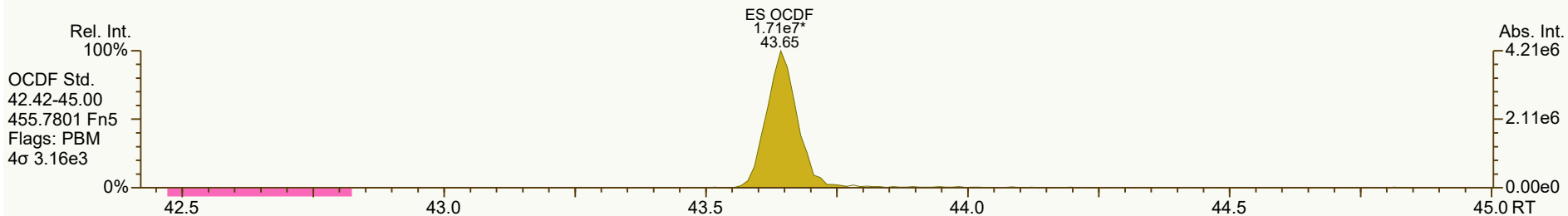
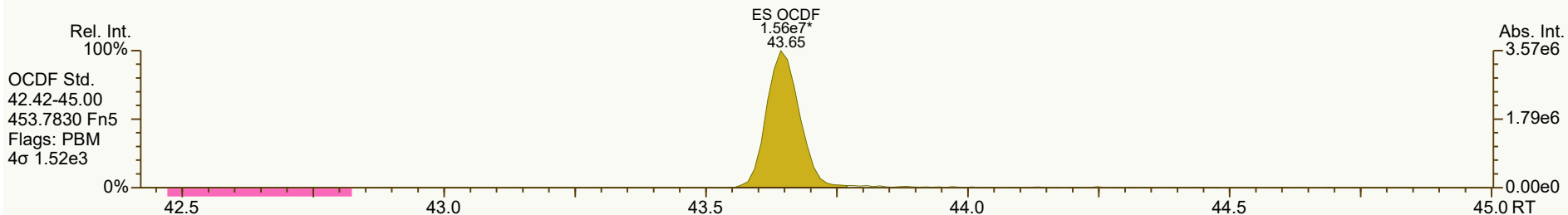
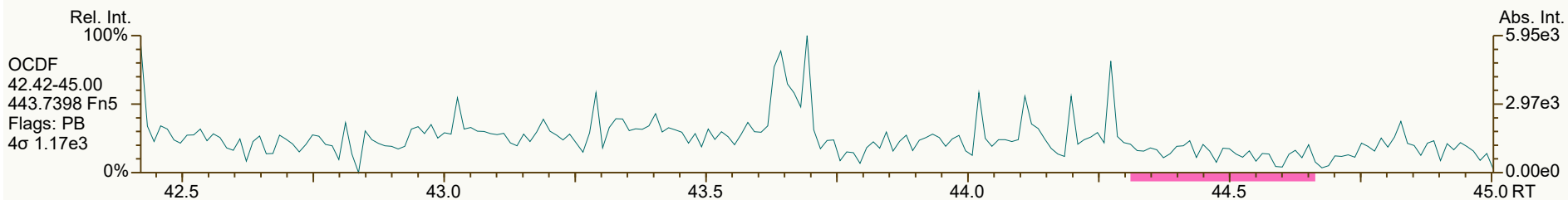
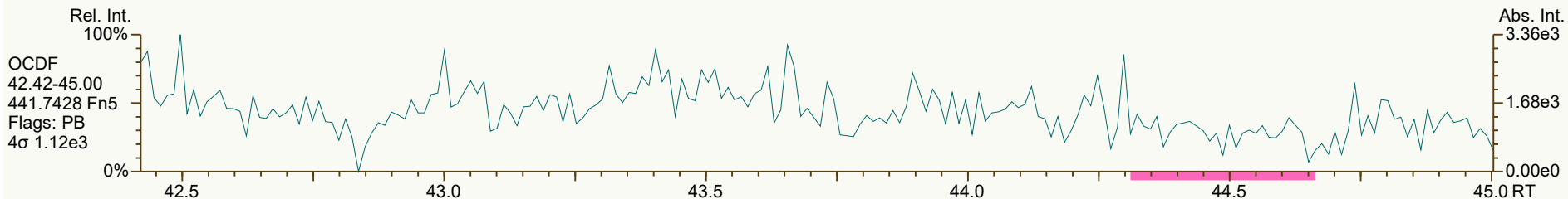
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Revised: 09-Feb-2022 14:21 (DTF) Printed: 09-Feb-2022 14:50 Page 10 of 12

SGS ID: B6238_18887_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

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User: DTF Datafile: 220209C05





Lab ID: B6238_18887_DF_001MS

Acq'd: 09 Feb 2022 08:52 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC-MS

UTP: 09-Feb-2022 14:37:53 DTF

J-level: 5 pg/L Split: 1

Checkcode: 817-064-LSB

Datafile: 220209C06

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.48		1.0008	1.0008	0	2.90E+06	0.79	Y	1.18	234	3628.133	3.15
12378-PeCDD	33.83		1.0006	1.0006	0	1.00E+07	1.52	Y	1.04	1,040	3651.313	3.42
123478-HxCDD	37.73		1.0004	1.0004	0	9.92E+06	1.24	Y	1.09	1,090	3024.944	2.79
123678-HxCDD	37.85		1.0035	1.0036	+0.2	1.16E+07	1.28	Y	1.15	1,160	3024.944	2.5
123789-HxCDD	38.14		1.0112	1.0112	0	9.81E+06	1.21	Y	1.05	1,110	3024.944	2.94
1234678-HpCDD	40.81		1.0003	1.0003	0	8.29E+06	1.04	Y	1.06	1,100	2812.005	2.8
OCDD	43.49		1.0004	1.0003	-0.3	1.10E+07	0.90	Y	1.13	2,310	4496.372	10.1

2378-TCDF	27.62		1.0008	1.0008	0	3.89E+06	0.81	Y	1.08	218	2929.824	1.89
12378-PeCDF	32.38		1.0005	1.0005	0	1.57E+07	1.46	Y	1.02	1,040	5182.581	3.27
23478-PeCDF	33.49		1.0005	1.0005	0	1.64E+07	1.52	Y	1.02	1,100	5182.581	3.03
123478-HxCDF	36.73		1.0004	1.0004	0	1.37E+07	1.23	Y	1.27	1,070	6545.291	4.05
123678-HxCDF	36.87		1.0004	1.0005	+0.2	1.54E+07	1.23	Y	1.15	1,110	6545.291	4.12
234678-HxCDF	37.55		1.0005	1.0005	0	1.53E+07	1.23	Y	1.19	1,060	6545.291	3.88
123789-HxCDF	38.50		1.0004	1.0004	0	1.11E+07	1.27	Y	1.16	1,020	6545.291	4.72
1234678-HpCDF	39.88		1.0003	1.0003	0	1.20E+07	1.02	Y	1.37	1,080	2280.493	1.45
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	8.84E+06	1.01	Y	1.31	1,080	2280.493	2.05
OCDF	43.67		1.0003	1.0003	0	1.36E+07	0.96	Y	1.07	2,170	3511.769	5.96

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0239	+0.5	2.10E+07	0.80	Y	1.05	83.8
ES 12378-PeCDD	33.81		1.2144	1.2162	+3.7	1.86E+07	1.60	Y	0.88	88.4
ES 123478-HxCDD	37.72		0.9920	0.9918	-0.5	1.67E+07	1.29	Y	0.97	89.9
ES 123678-HxCDD	37.84		0.9951	0.9950	-0.2	1.75E+07	1.22	Y	0.94	96.8
ES 123789-HxCDD	38.13		1.0027	1.0026	-0.2	1.69E+07	1.33	Y	1.09	80.8
ES 1234678-HpCDD	40.80		1.0724	1.0729	+1.2	1.42E+07	1.09	Y	0.91	81
ES OCDD	43.48		1.1428	1.1433	+1.3	1.69E+07	0.96	Y	0.62	70.9

ES 2378-TCDF	27.60		1.0516	1.0521	+0.8	3.31E+07	0.81	Y	1.06	85
ES 12378-PeCDF	32.36		1.2312	1.2334	+4.3	2.93E+07	1.58	Y	0.91	87.4
ES 23478-PeCDF	33.47		1.2733	1.2758	+5.0	2.93E+07	1.61	Y	0.88	90.2
ES 123478-HxCDF	36.71		0.9655	0.9654	-0.2	2.02E+07	0.56	Y	1.20	88.2
ES 123678-HxCDF	36.85		0.9692	0.9691	-0.2	2.40E+07	0.53	Y	1.35	92.7
ES 234678-HxCDF	37.53		0.9871	0.9870	-0.2	2.43E+07	0.54	Y	1.24	102
ES 123789-HxCDF	38.49		1.0121	1.0120	-0.2	1.86E+07	0.55	Y	1.16	84.2
ES 1234678-HpCDF	39.87		1.0479	1.0483	+1.0	1.63E+07	0.47	Y	0.97	88.2
ES 1234789-HpCDF	41.26		1.0845	1.0850	+1.2	1.25E+07	0.43	Y	0.85	76.9
ES OCDF	43.66		1.1477	1.1481	+1.0	2.34E+07	0.92	Y	0.81	75.6

Lab ID: B6238_18887_DF_001MS

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Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC-MS

UTP: 09-Feb-2022 14:37:53 DTF

J-level: 5 pg/L Split: 1

Checkcode: 817-064-LSB

Datafile: 220209C06

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	2.40E+07	0.80	Y	-	-
JS 1234-TCDF	26.24		-	-	-	3.68E+07	0.81	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	9.57E+06	1.21	Y	-	-
CS 37Cl-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.07E+07	n/a	-	1.20	92.6
CS 12347-PeCDD	33.30		1.1964	1.1981	+3.4	1.94E+07	1.60	Y	0.75	107
CS 12346-PeCDF	31.83		1.2112	1.2132	+3.8	3.19E+07	1.60	Y	0.85	102
CS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	2.40E+07	0.52	Y	1.12	112
CS 1234689-HpCDF	40.27		1.0584	1.0589	+1.2	1.80E+07	0.46	Y	0.89	106
SS 37Cl-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.07E+07	n/a		1.15	111
SS 12347-PeCDD	33.30		1.1964	1.1981	+3.4	1.94E+07	1.60	Y	0.86	121
SS 12346-PeCDF	31.83		1.2112	1.2132	+3.8	3.19E+07	1.60	Y	0.94	116
SS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	2.40E+07	0.52	Y	0.83	121
SS 1234689-HpCDF	40.27		1.0584	1.0589	+1.2	1.80E+07	0.46	Y	0.92	120

Totals	Conc	EMPC		
Total TCDD	1100	1100	* 37Cl correction has been applied to 2378-TCDD	
Total PeCDD	1570	1570	Original Values	Corrected Values
Total HxCDD	3650	3650	Ratio 0.784	0.79
Total HpCDD	1370	1370	Response 2.91E+06	2.90E+06
Total Tetra-Octa Dioxins	9990	9990		
Total TCDF	1,290	1290		
Total PeCDF	4,240	4240		
Total HxCDF	6,920	6920		
Total HpCDF	2,160	2160		
Total Tetra-Octa Furans	16,800	16800		
Total Tetra-Octa Dioxins & Furans	26800	26800		

Lab ID: B6238_18887_DF_001MS

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Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

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UTP: 09-Feb-2022 14:37:53 DTF

J-level: 5 pg/L Split: 1

Checkcode: 817-064-LSB

Datafile: 220209C06

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.83		0.8737	0.8725	-1.8	4.04E+06	0.77	Y	1.18	325	3628.133	3.15
1379-TCDD	NotFnd		0.8860						1.18		3628.133	3.15
1369-TCDD	NotFnd		0.9009						1.18		3628.133	3.15
1469-TCDD	NotFnd		0.9281						1.18		3628.133	3.15
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3628.133	3.15
1378-TCDD	NotFnd		0.9432						1.18		3628.133	3.15
1268-TCDD	NotFnd		0.9500						1.18		3628.133	3.15
1478-TCDD	NotFnd		0.9586						1.18		3628.133	3.15
1279-TCDD	NotFnd		0.9645						1.18		3628.133	3.15
1234/1269-TCDD	NotFnd		0.9770						1.18		3628.133	3.15
1236-TCDD	NotFnd		0.9817						1.18		3628.133	3.15
1237/1238-TCDD	NotFnd		0.9905						1.18		3628.133	3.15
1239-TCDD	28.32		0.9952	0.9952	0	2.74E+06	0.80	Y	1.18	220	3628.133	3.15
2378-TCDD	28.48		1.0008	1.0008	0	2.90E+06	0.79	Y	1.18	234	3628.133	3.15
1278-TCDD	NotFnd		1.0121						1.18		3628.133	3.15
1267-TCDD	NotFnd		1.0167						1.18		3628.133	3.15
1289-TCDD	29.45		1.0345	1.0349	+0.7	3.96E+06	0.75	Y	1.18	319	3628.133	3.15
12479/12468-PeCDD	31.32		0.9267	0.9265	-0.4	2.45E+06	1.59	Y	1.04	254	3651.313	3.42
12469-PeCDD	NotFnd		0.9425						1.04		3651.313	3.42
12368-PeCDD	NotFnd		0.9588						1.04		3651.313	3.42
12478-PeCDD	NotFnd		0.9643						1.04		3651.313	3.42
12379-PeCDD	NotFnd		0.9673						1.04		3651.313	3.42
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		3651.313	3.42
12346/12347-PeCDD	NotFnd		0.9858						1.04		3651.313	3.42
12378-PeCDD	33.83		1.0006	1.0006	0	1.00E+07	1.52	Y	1.04	1,040	3651.313	3.42
12367-PeCDD	NotFnd		1.0033						1.04		3651.313	3.42
12389-PeCDD	34.26		1.0134	1.0135	+0.2	2.65E+06	1.62	Y	1.04	275	3651.313	3.42
124679/124689-HxCDD	35.99		0.9542	0.9540	-0.4	2.71E+06	1.28	Y	1.10	291	3024.944	2.73
123468-HxCDD	NotFnd		0.9715						1.10		3024.944	2.73
123679/123689-HxCDD	NotFnd		0.9793						1.10		3024.944	2.73
123469-HxCDD	NotFnd		0.9828						1.10		3024.944	2.73
123478-HxCDD	37.73		1.0004	1.0004	0	9.92E+06	1.24	Y	1.09	1,090	3024.944	2.79
123678-HxCDD	37.85		1.0035	1.0036	+0.2	1.16E+07	1.28	Y	1.15	1,160	3024.944	2.5
123467-HxCDD	NotFnd		1.0085						1.10		3024.944	2.73
123789-HxCDD	38.14		1.0112	1.0112	0	9.81E+06	1.21	Y	1.05	1,110	3024.944	2.94

Lab ID: B6238_18887_DF_001MS

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Checkcode: 817-064-LSB

Datafile: 220209C06

Report: 09 Feb 2022 17:28 TF

StdS (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.14		0.9837	0.9837	0	2.01E+06	1.12	Y	1.06	267	2812.005	2.8
1234678-HpCDD	40.81		1.0003	1.0003	0	8.29E+06	1.04	Y	1.06	1,100	2812.005	2.8
OCDD	43.49		1.0004	1.0003	-0.3	1.10E+07	0.90	Y	1.13	2,310	4496.372	10.1
OCDD-a	43.49		1.0003	1.0002	-0.3	7.32E+05	2.83	Y	0.07	2,400	3354.459	118
1368-TCDF	22.72		0.8251	0.8231	-2.7	5.57E+06	0.78	Y	1.08	311	2929.824	1.89
1468-TCDF	NotFnd		0.8458						1.08		2929.824	1.89
2468-TCDF	23.94		0.8686	0.8673	-1.9	1.44E+06	0.74	Y	1.08	80.4	2929.824	1.89
1346/1246-TCDF	NotFnd		0.8814						1.08		2929.824	1.89
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2929.824	1.89
1348-TCDF	NotFnd		0.8962						1.08		2929.824	1.89
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2929.824	1.89
1268-TCDF	NotFnd		0.9145						1.08		2929.824	1.89
1467-TCDF	NotFnd		0.9193						1.08		2929.824	1.89
1478-TCDF	NotFnd		0.9254						1.08		2929.824	1.89
1369/1237-TCDF	NotFnd		0.9387						1.08		2929.824	1.89
2467-TCDF	NotFnd		0.9433						1.08		2929.824	1.89
2368-TCDF	NotFnd		0.9489						1.08		2929.824	1.89
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2929.824	1.89
1278-TCDF	NotFnd		0.9683						1.08		2929.824	1.89
1349-TCDF	NotFnd		0.9722						1.08		2929.824	1.89
1267-TCDF	NotFnd		0.9783						1.08		2929.824	1.89
2346/1249-TCDF	NotFnd		0.9850						1.08		2929.824	1.89
2347/1279-TCDF	NotFnd		0.9926						1.08		2929.824	1.89
2348-TCDF	27.51		0.9967	0.9968	+0.2	5.61E+06	0.77	Y	1.08	314	2929.824	1.89
2378-TCDF	27.62		1.0008	1.0008	0	3.89E+06	0.81	Y	1.08	218	2929.824	1.89
2367/3467-TCDF	NotFnd		1.0137						1.08		2929.824	1.89
1269-TCDF	NotFnd		1.0223						1.08		2929.824	1.89
1239-TCDF	NotFnd		1.0321						1.08		2929.824	1.89
1289-TCDF	29.62		1.0722	1.0732	+1.8	6.50E+06	0.79	Y	1.08	363	2929.824	1.89
13468/12468-PeCDF	29.54		0.9139	0.9129	-1.8	2.79E+07	1.58	Y	1.02	1,860	2807.434	1.71
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		5182.581	3.15
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		5182.581	3.15
14678-PeCDF	NotFnd		0.9692						1.02		5182.581	3.15
13479-PeCDF	NotFnd		0.9723						1.02		5182.581	3.15
13469/12479-PeCDF	NotFnd		0.9797						1.02		5182.581	3.15
12346-PeCDF	NotFnd		0.9840						1.02		5182.581	3.15

Lab ID: B6238_18887_DF_001MS

Acq'd: 09 Feb 2022 08:52 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC-MS

UTP: 09-Feb-2022 14:37:53 DTF

J-level: 5 pg/L Split: 1

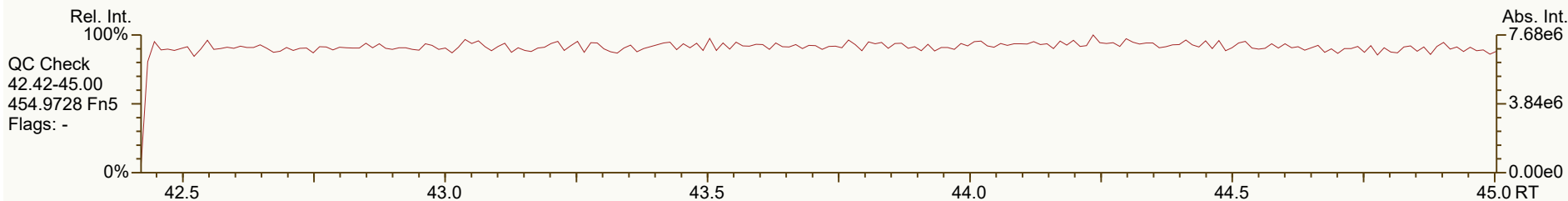
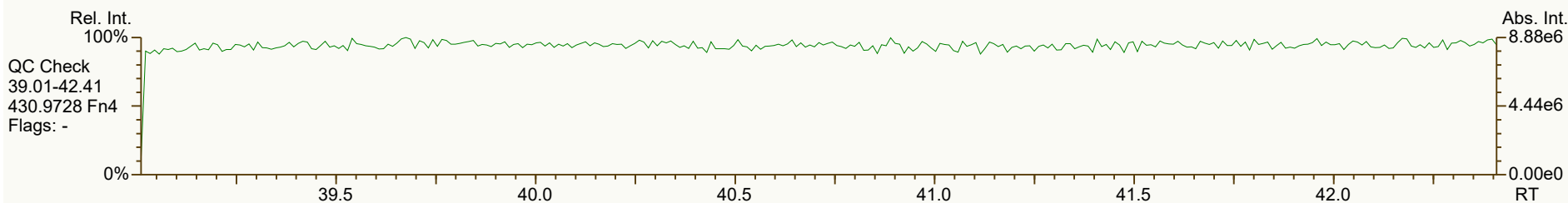
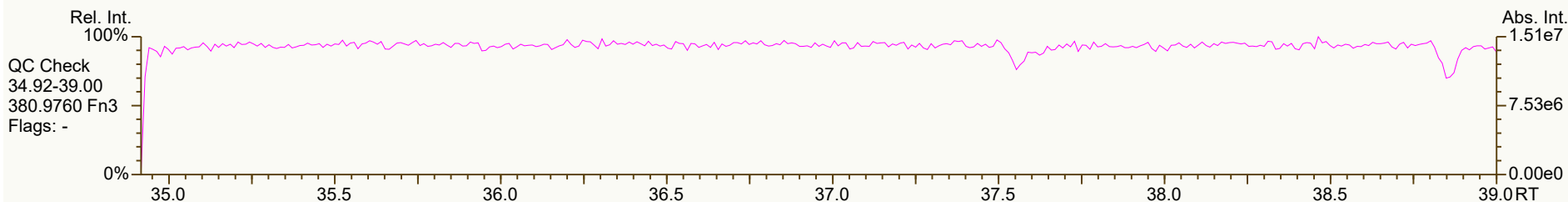
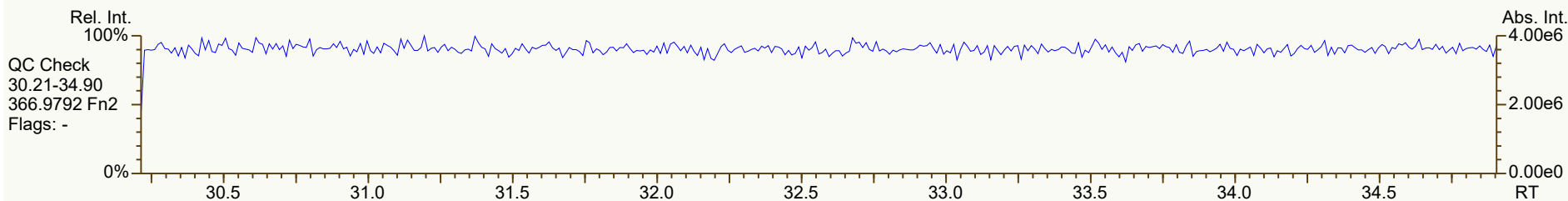
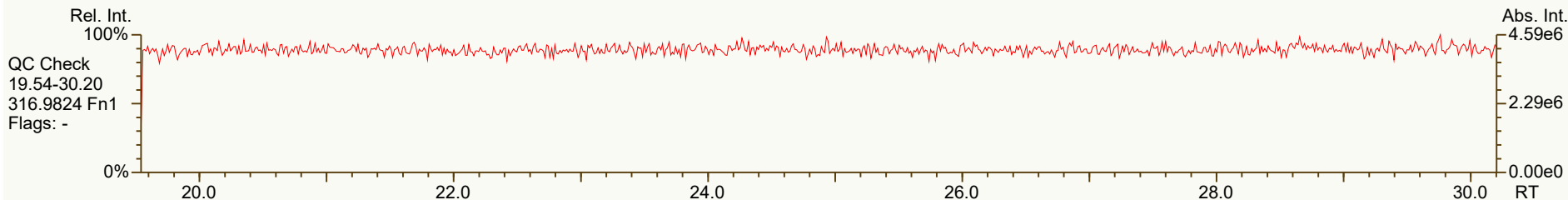
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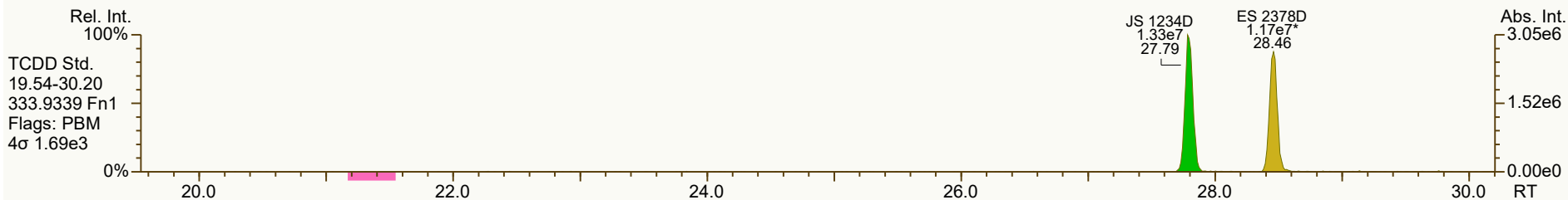
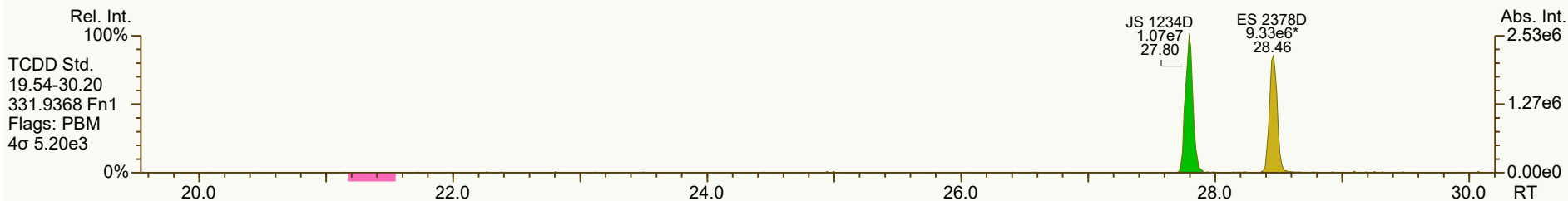
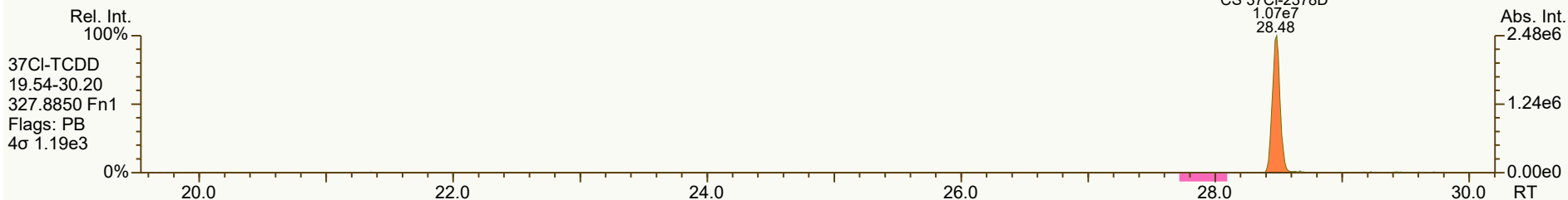
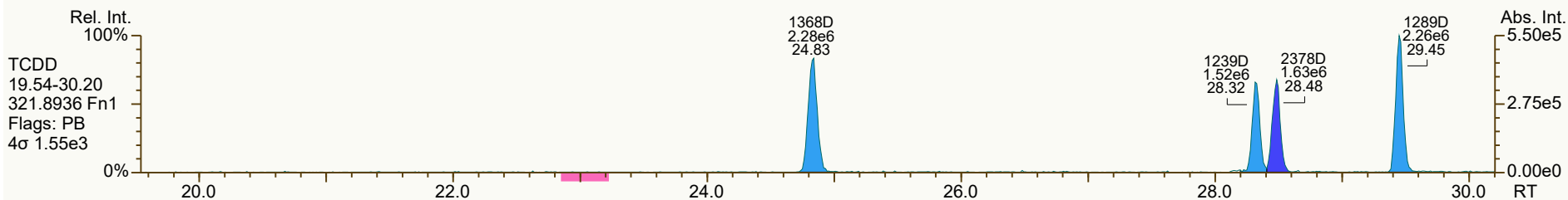
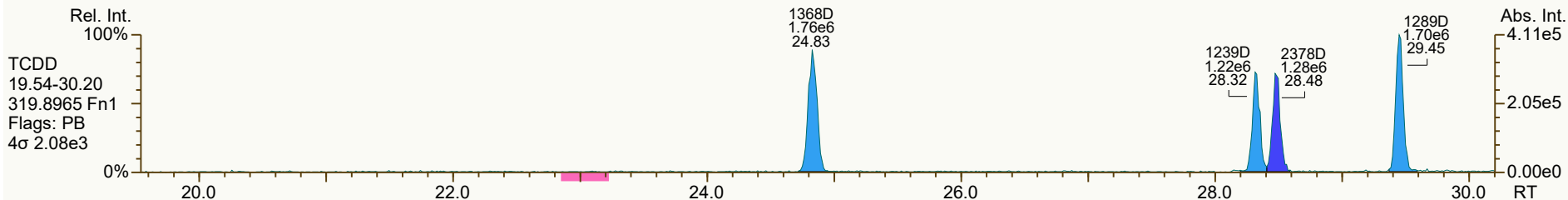
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12347-PeCDF	NotFnd		0.9894						1.02		5182.581	3.15
12348-PeCDF	NotFnd		0.9940						1.02		5182.581	3.15
12378-PeCDF	32.38		1.0005	1.0005	0	1.57E+07	1.46	Y	1.02	1,040	5182.581	3.27
12678/12367-PeCDF	NotFnd		1.0089						1.02		5182.581	3.15
12379-PeCDF	NotFnd		1.0142						1.02		5182.581	3.15
12679-PeCDF	NotFnd		0.9929						1.02		5182.581	3.15
23467/12369-PeCDF	NotFnd		0.9967						1.02		5182.581	3.15
23478-PeCDF	33.49		1.0005	1.0005	0	1.64E+07	1.52	Y	1.02	1,100	5182.581	3.03
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5182.581	3.15
12349-PeCDF	NotFnd		1.0100						1.02		5182.581	3.15
12389-PeCDF	34.56		1.0324	1.0326	+0.4	3.43E+06	1.62	Y	1.02	229	5182.581	3.15
123468-HxCDF	35.34		0.9627	0.9626	-0.2	3.46E+07	1.22	Y	1.19	2,670	6545.291	4.16
124678/134678-HxCDF	NotFnd		0.9682						1.19		6545.291	4.16
134679-HxCDF	NotFnd		0.9744						1.19		6545.291	4.16
124679-HxCDF	NotFnd		0.9798						1.19		6545.291	4.16
124689-HxCDF	NotFnd		0.9858						1.19		6545.291	4.16
123467-HxCDF	NotFnd		0.9972						1.19		6545.291	4.16
123478-HxCDF	36.73		1.0004	1.0004	0	1.37E+07	1.23	Y	1.27	1,070	6545.291	4.05
123678-HxCDF	36.87		1.0004	1.0005	+0.2	1.54E+07	1.23	Y	1.15	1,110	6545.291	4.12
123479-HxCDF	NotFnd		1.0049						1.19		6545.291	4.16
123469-HxCDF	NotFnd		1.0090						1.19		6545.291	4.16
123679-HxCDF	NotFnd		0.9942						1.19		6545.291	4.16
234678-HxCDF	37.55		1.0005	1.0005	0	1.53E+07	1.23	Y	1.19	1,060	6545.291	3.88
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6545.291	4.16
123789-HxCDF	38.50		1.0004	1.0004	0	1.11E+07	1.27	Y	1.16	1,020	6545.291	4.72
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		6545.291	4.16
1234678-HpCDF	39.88		1.0003	1.0003	0	1.20E+07	1.02	Y	1.37	1,080	2280.493	1.45
1234679-HpCDF	NotFnd		1.0068						1.34		2280.493	1.71
1234689-HpCDF	NotFnd		1.0103						1.34		2280.493	1.71
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	8.84E+06	1.01	Y	1.31	1,080	2280.493	2.05
OCDF	43.67		1.0003	1.0003	0	1.36E+07	0.96	Y	1.07	2,170	3511.769	5.96
OCDF-a	43.67		1.0002	1.0002	0	8.33E+05	2.14	Y	0.07	2,150	3743.94	103



SGS ID: B6238_18887_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19

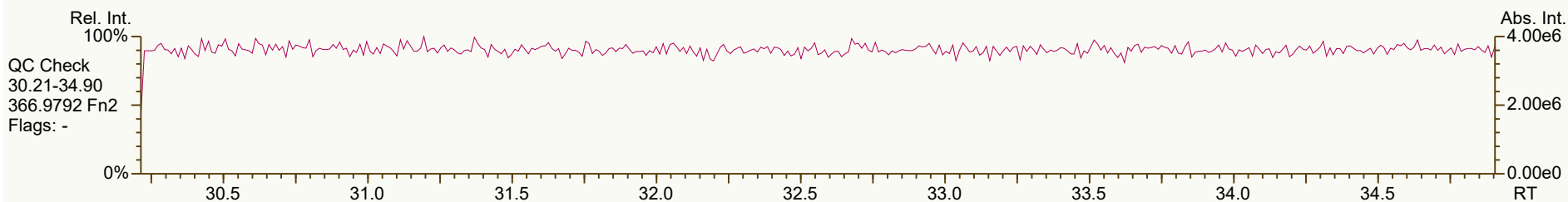
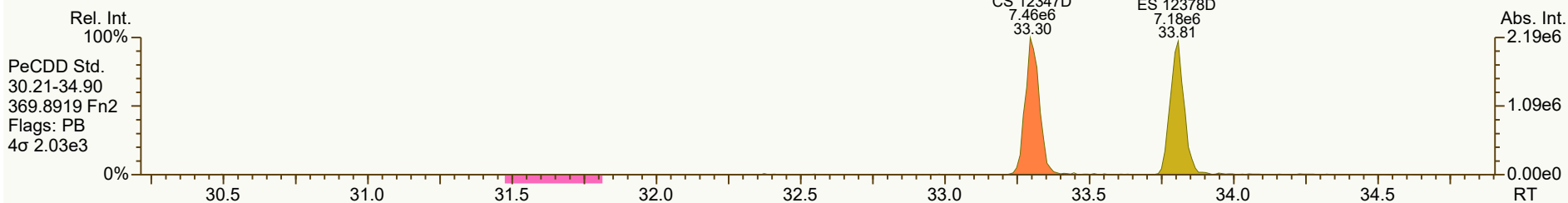
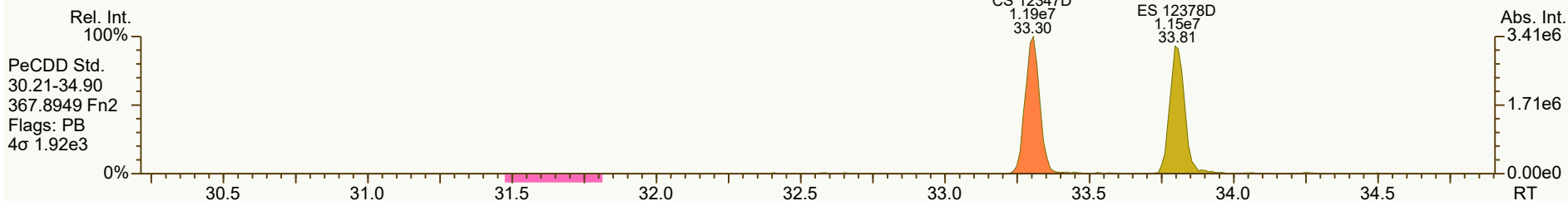
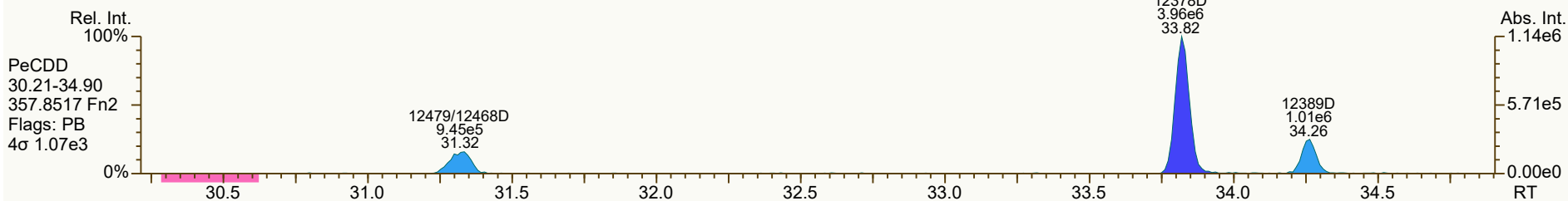
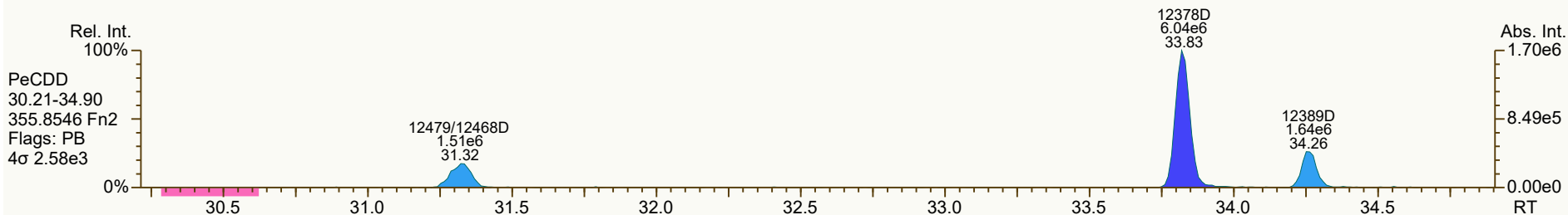
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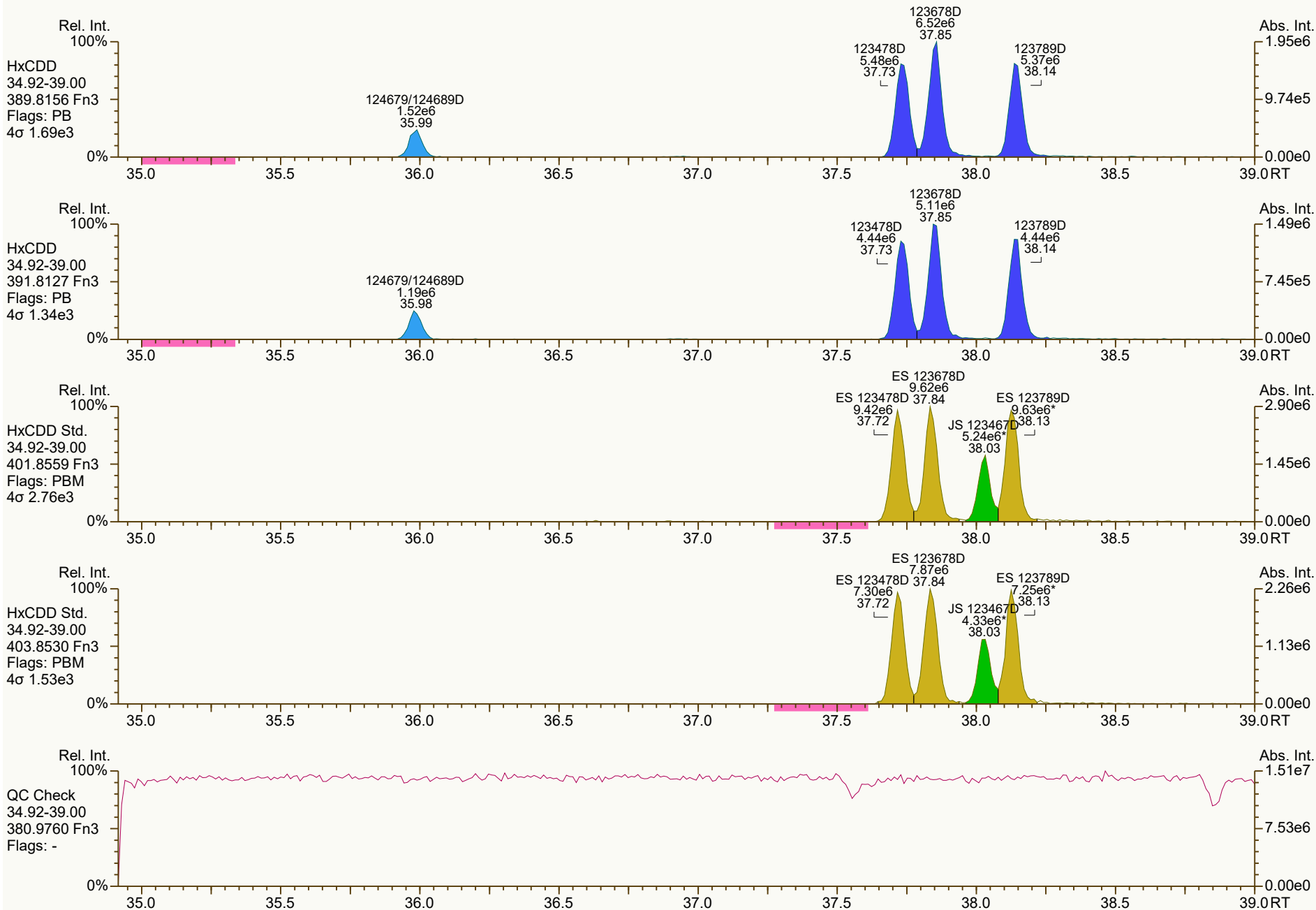


SGS ID: B6238_18887_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19

Acq: 09-Feb-2022 08:52:50
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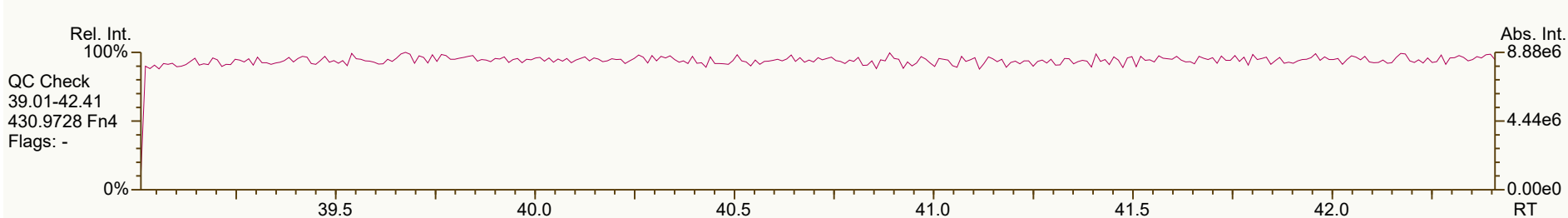
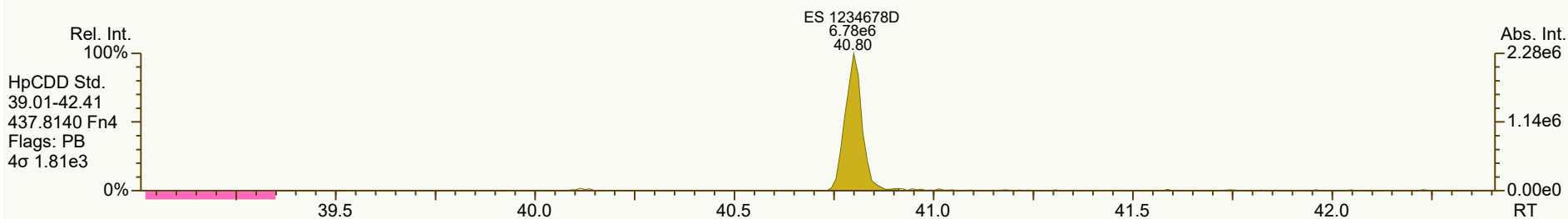
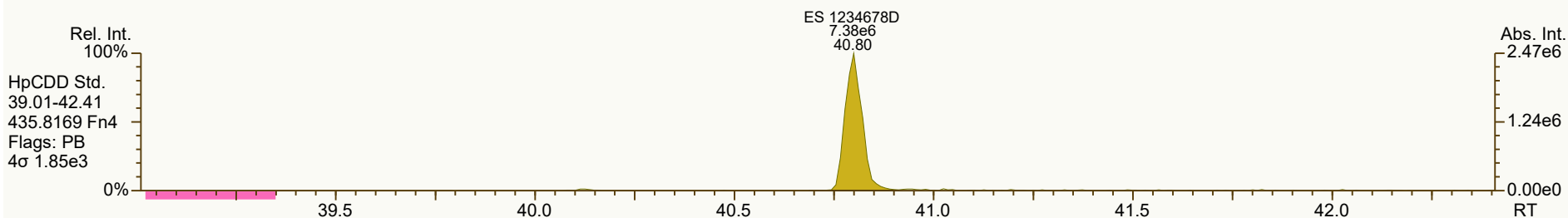
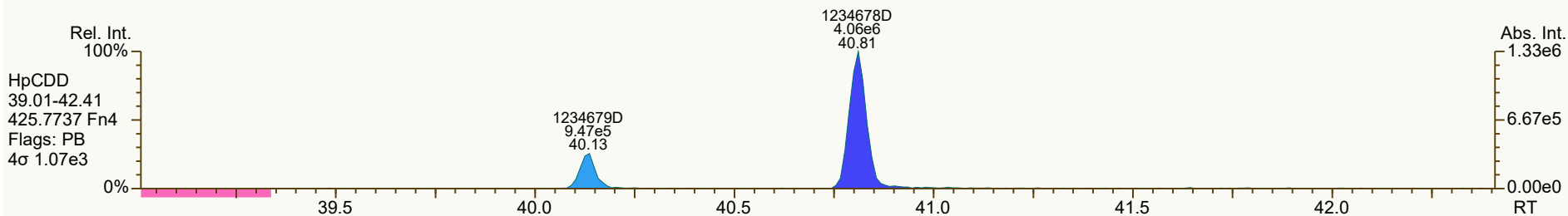
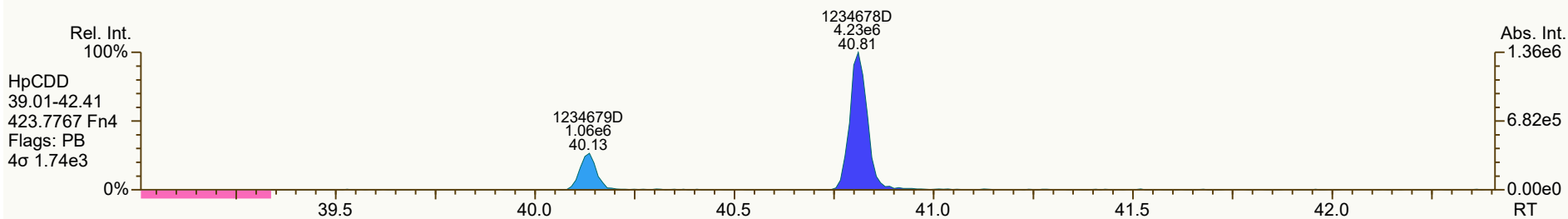




SGS ID: B6238_18887_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS2

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19

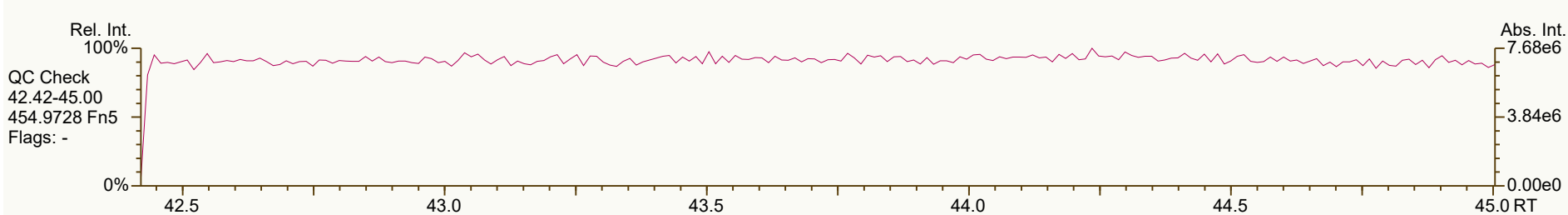
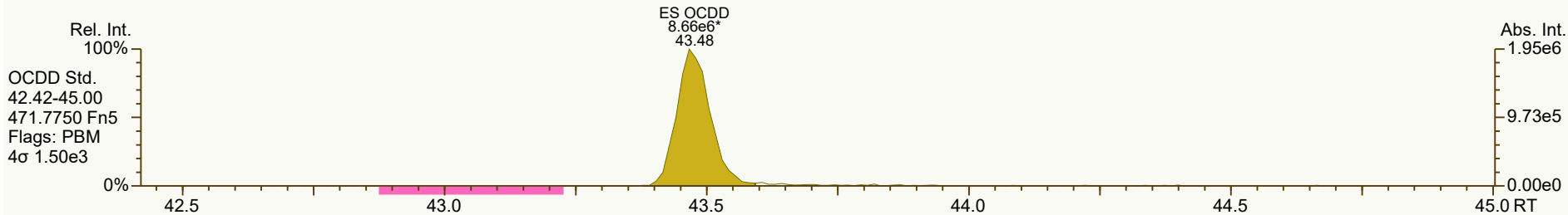
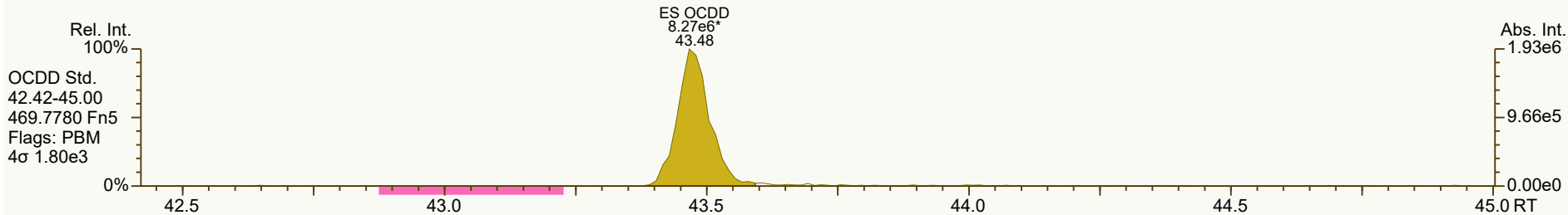
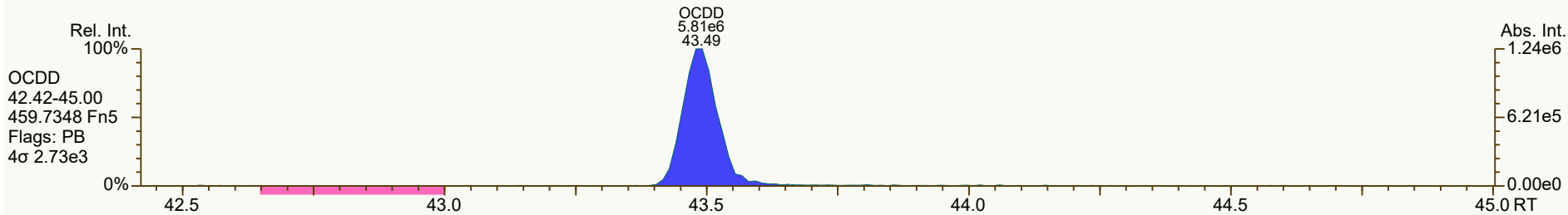
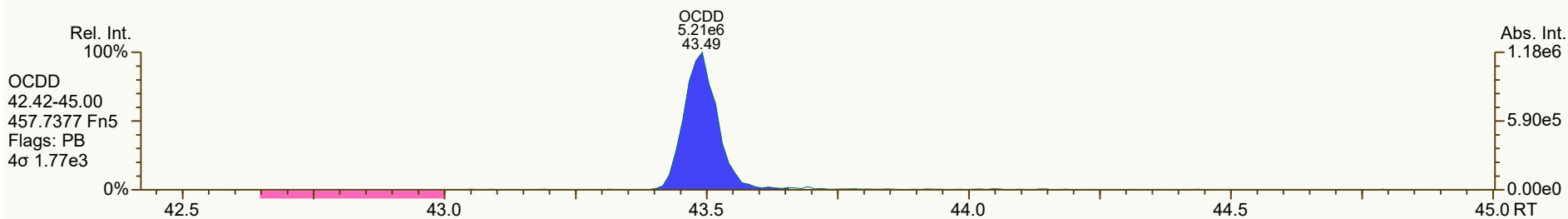
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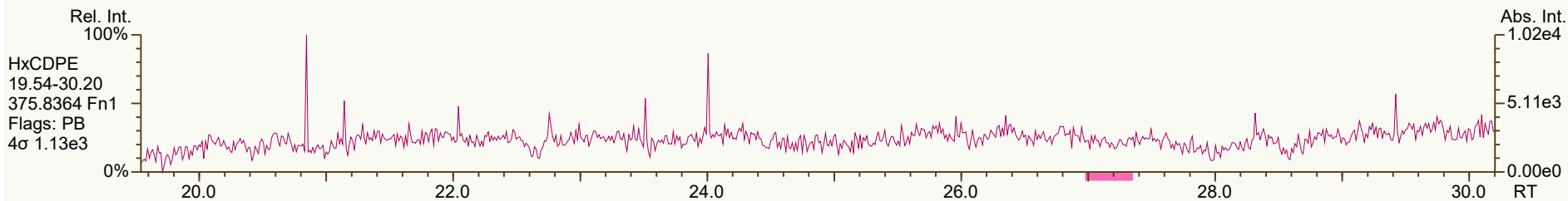
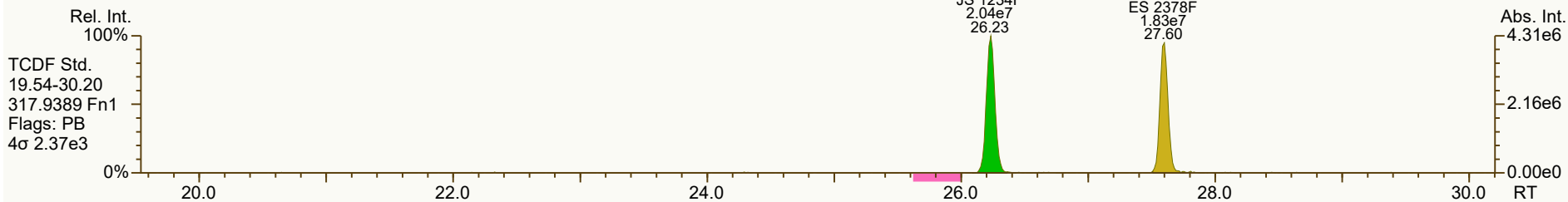
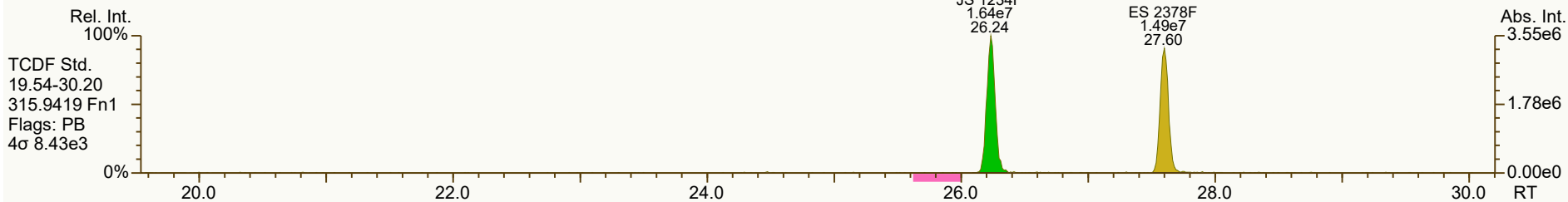
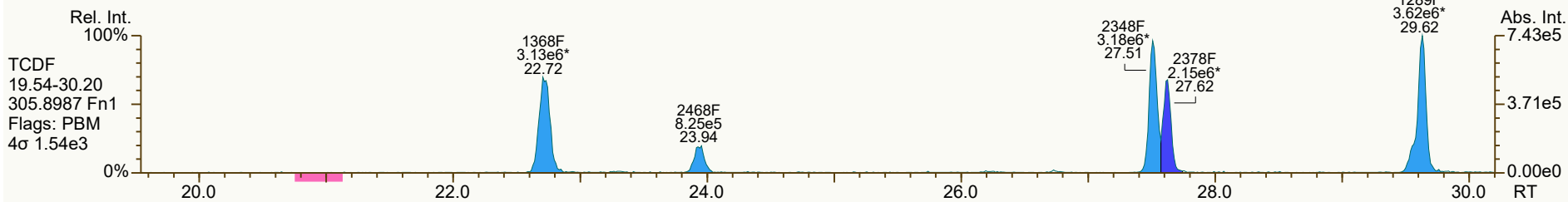
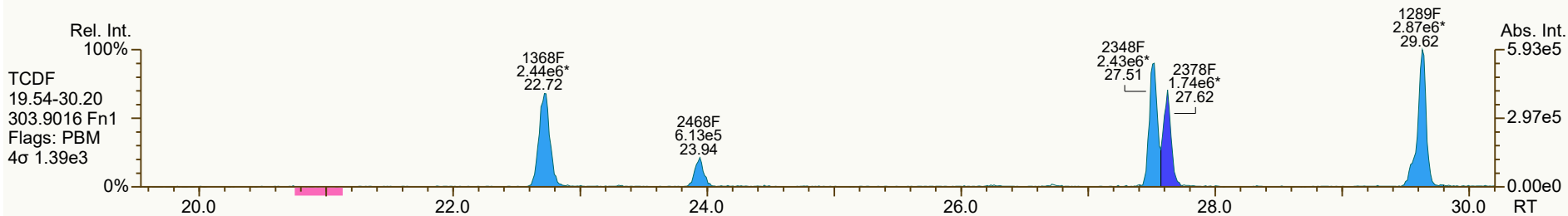


SGS ID: B6238_18887_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19

Acq: 09-Feb-2022 08:52:50
User: DTF Datafile: 220209C06

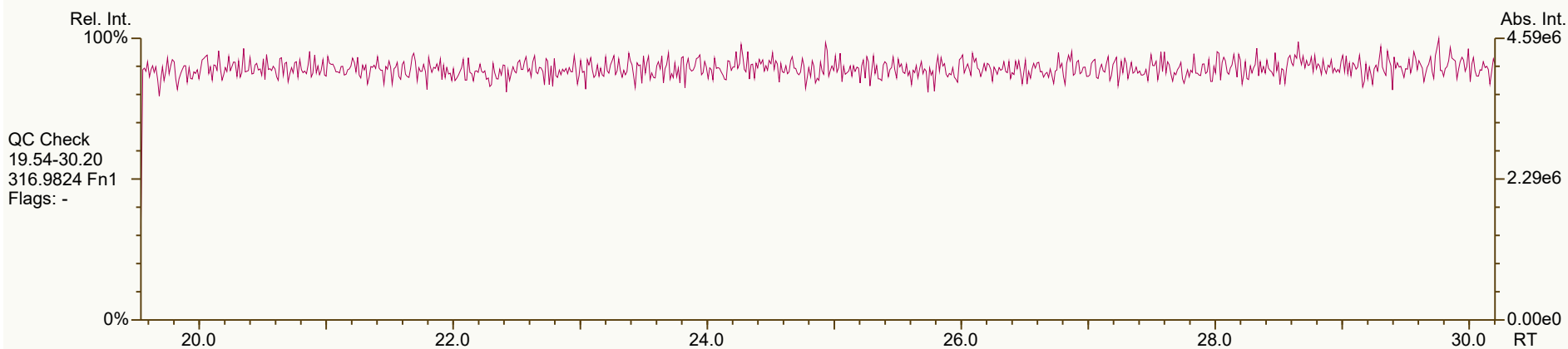
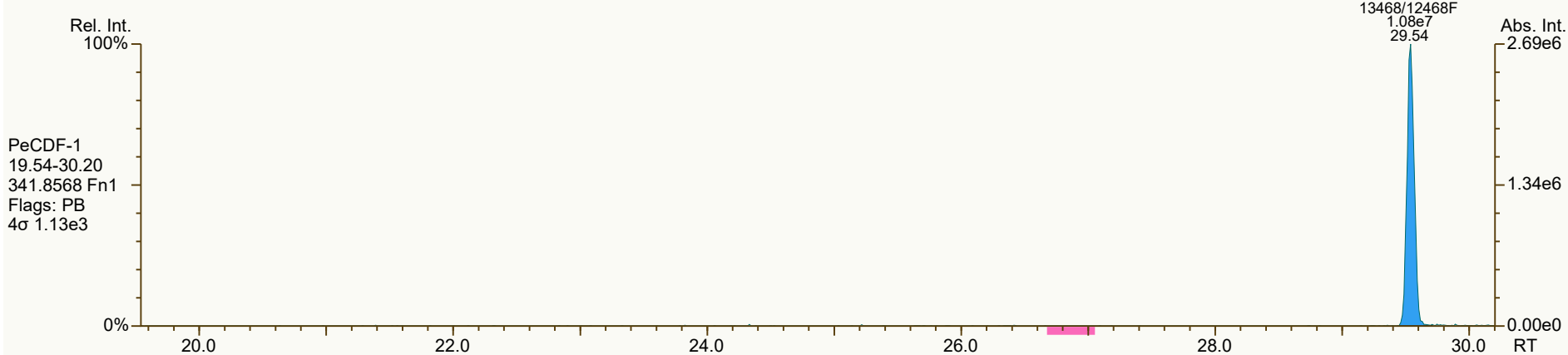
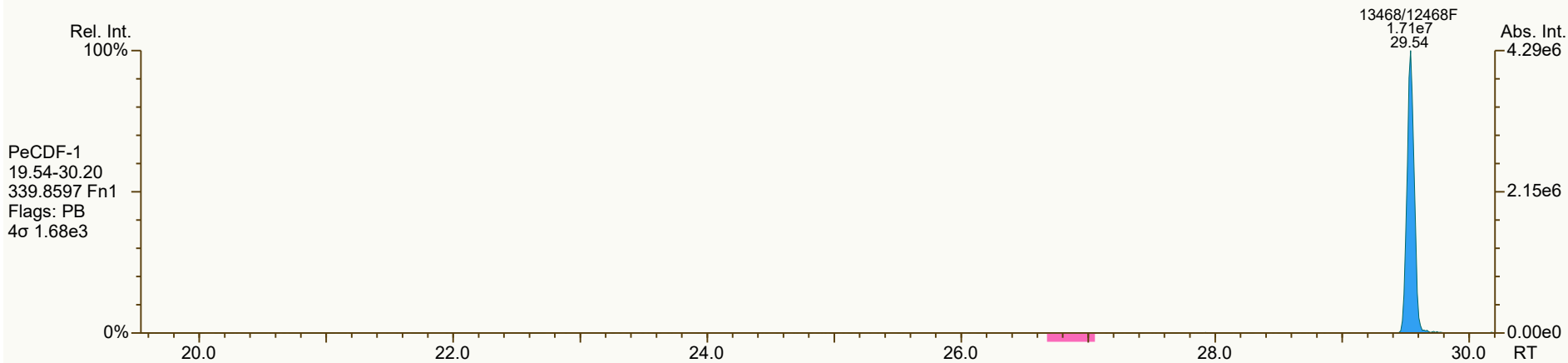


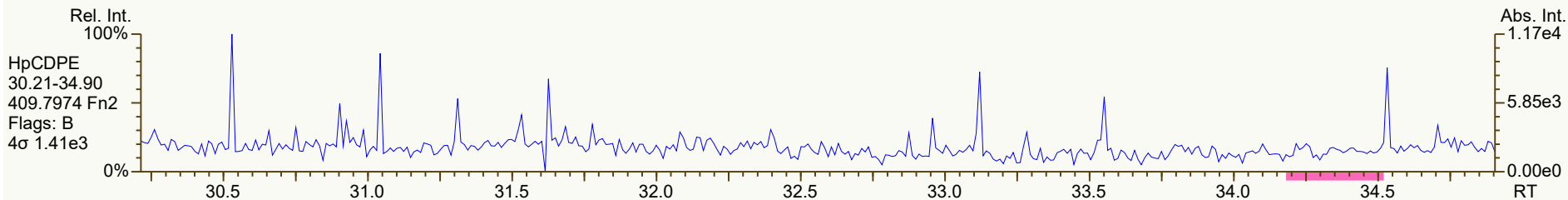
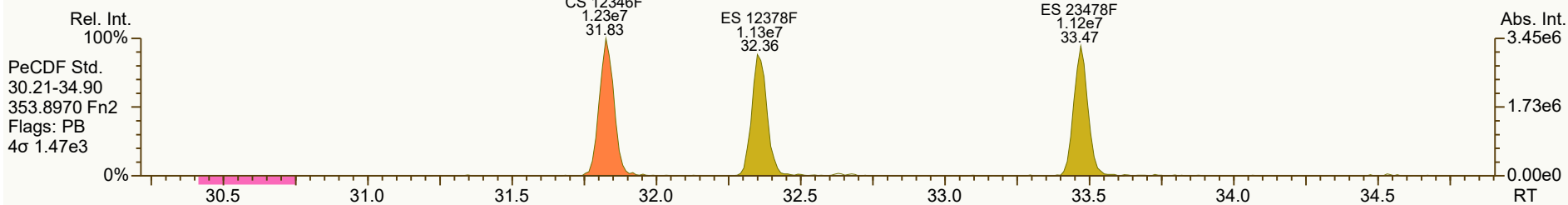
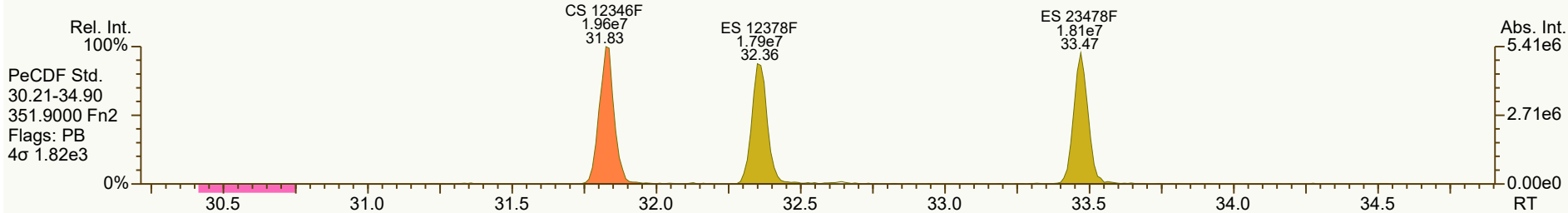
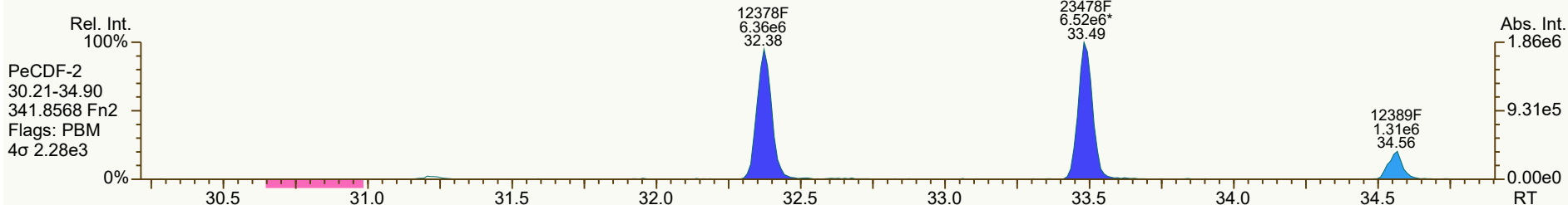
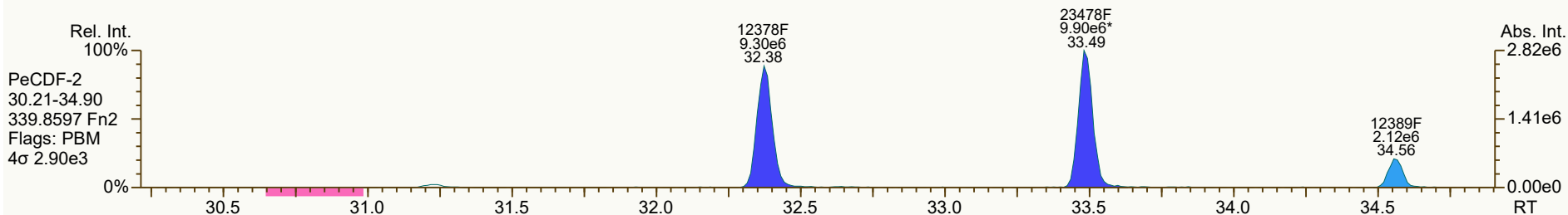


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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19

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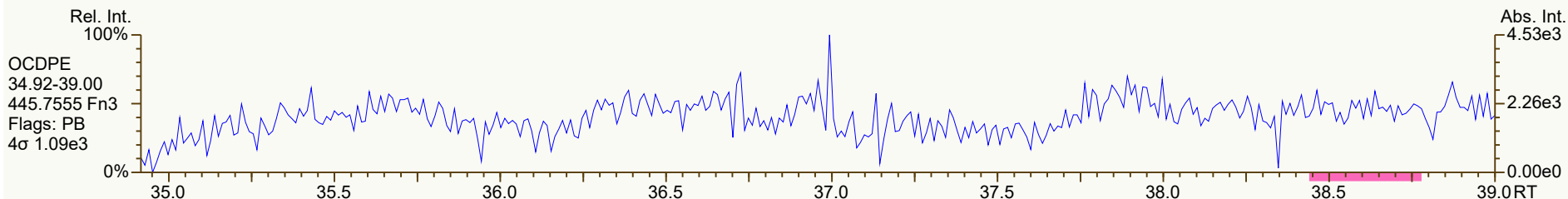
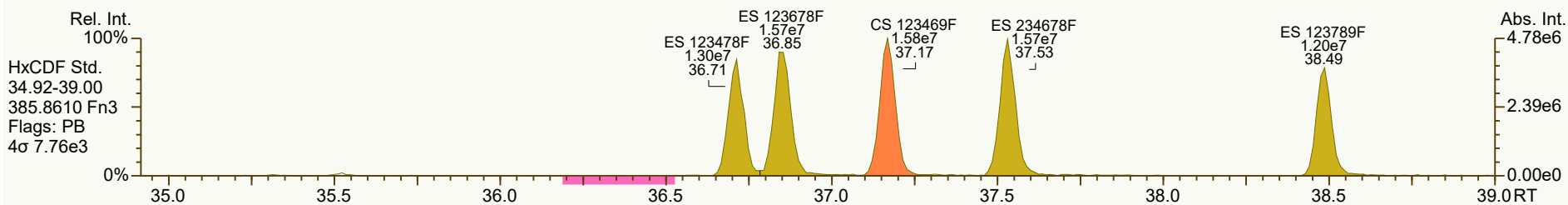
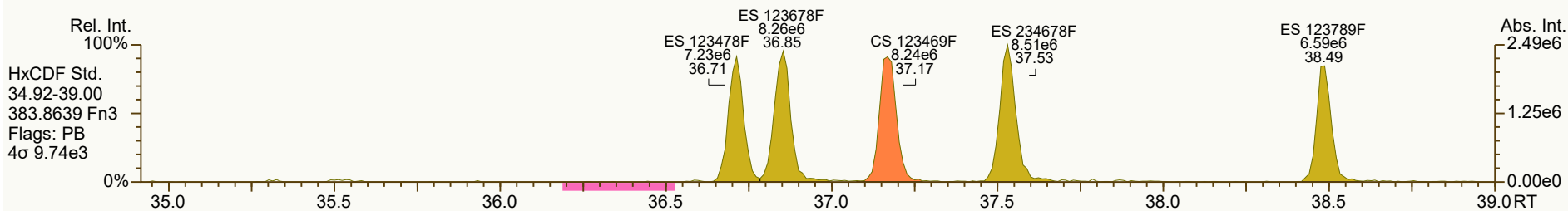
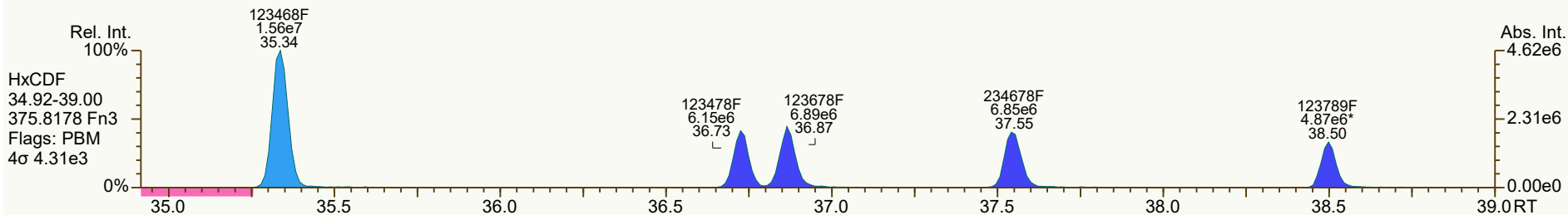
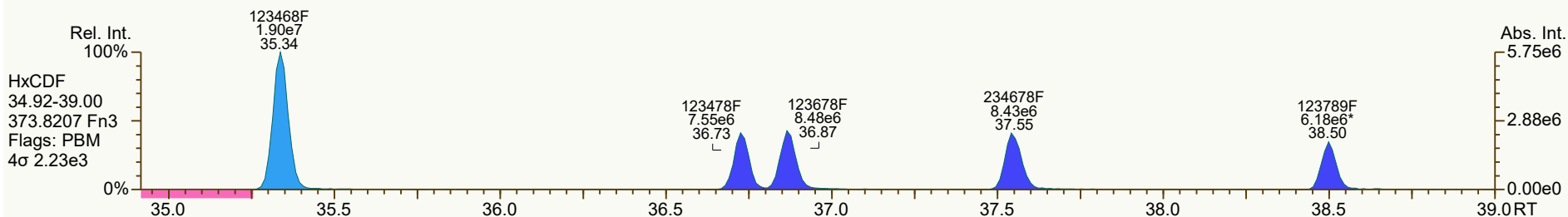


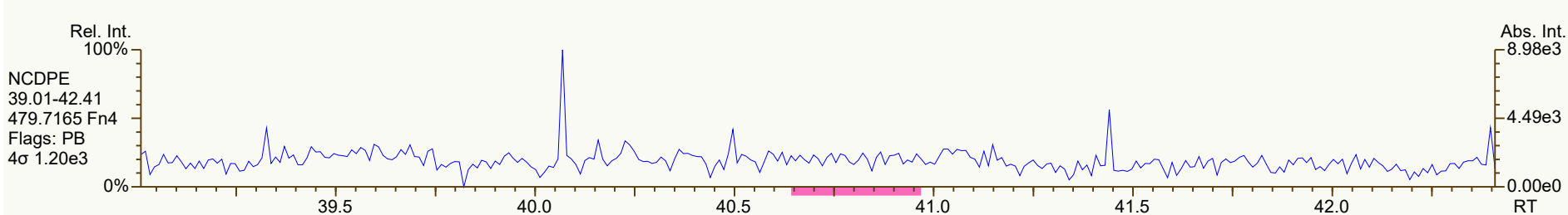
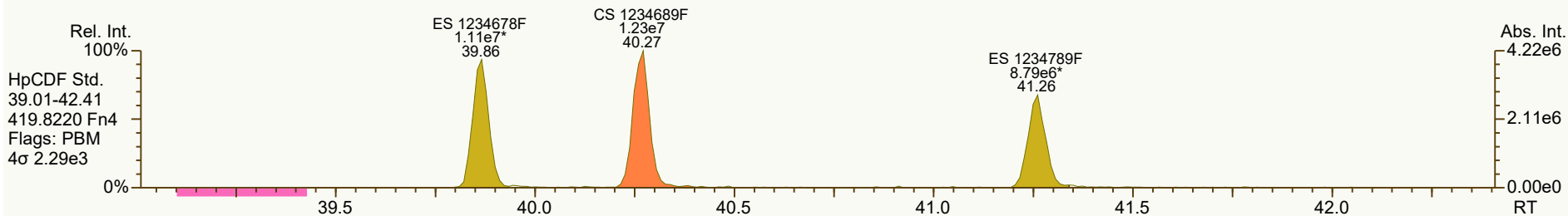
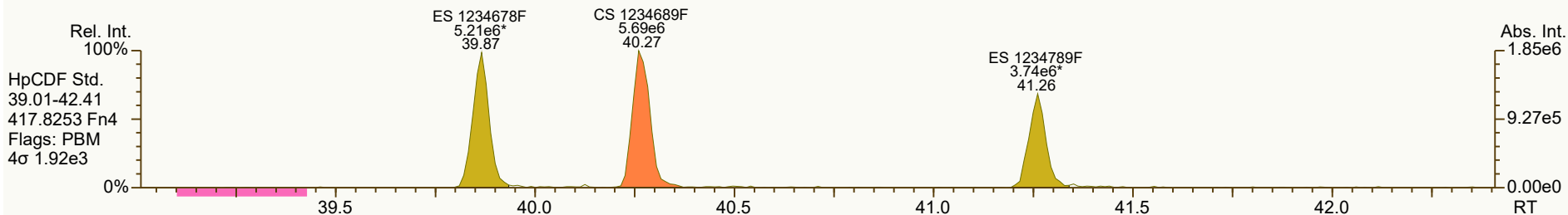
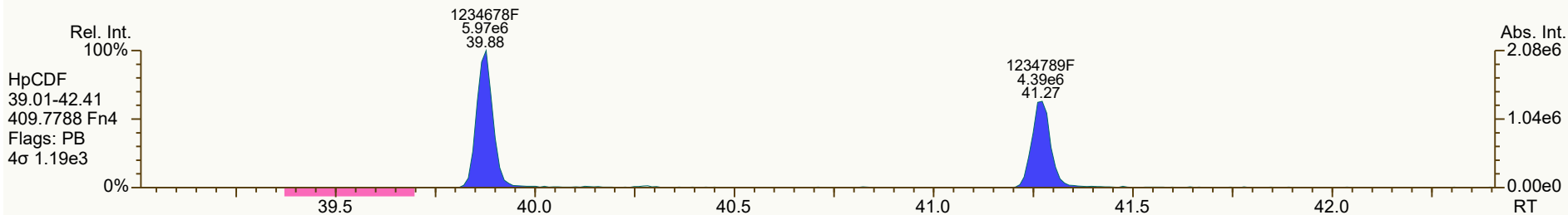
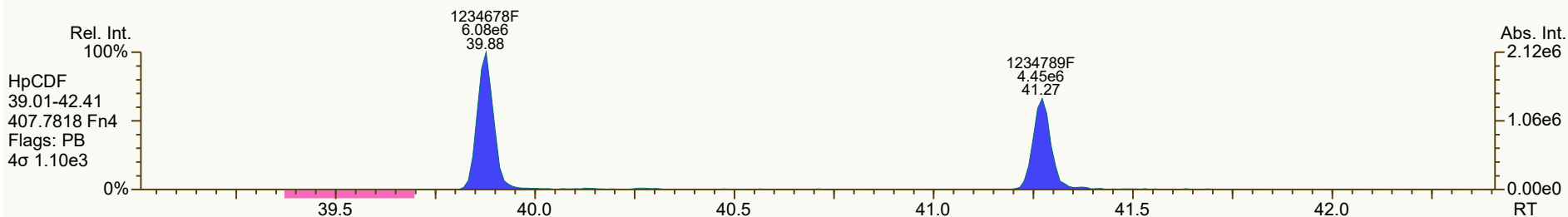


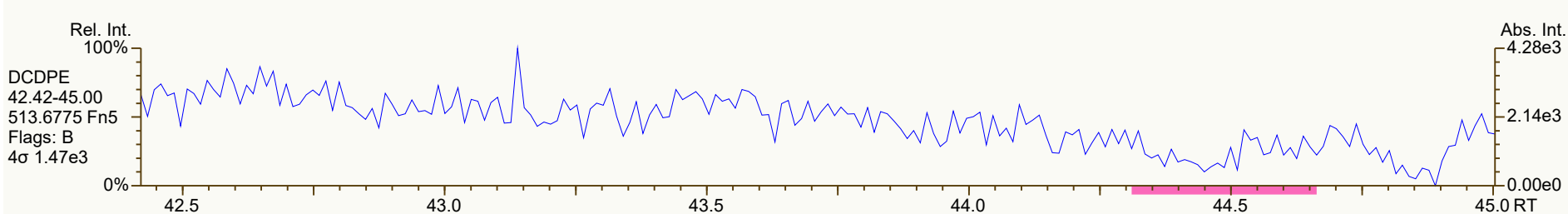
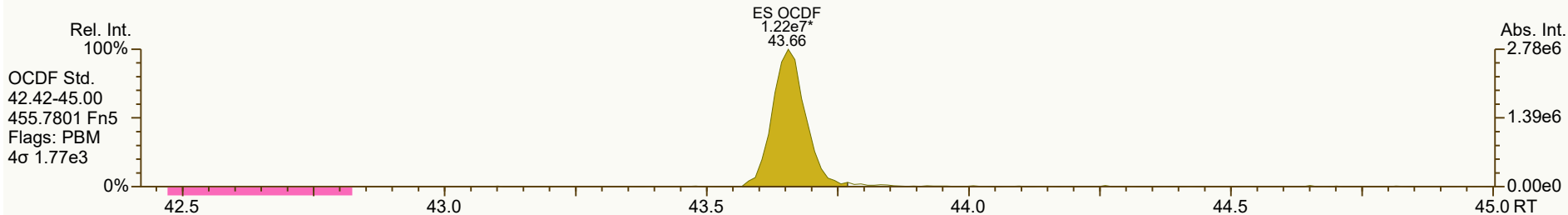
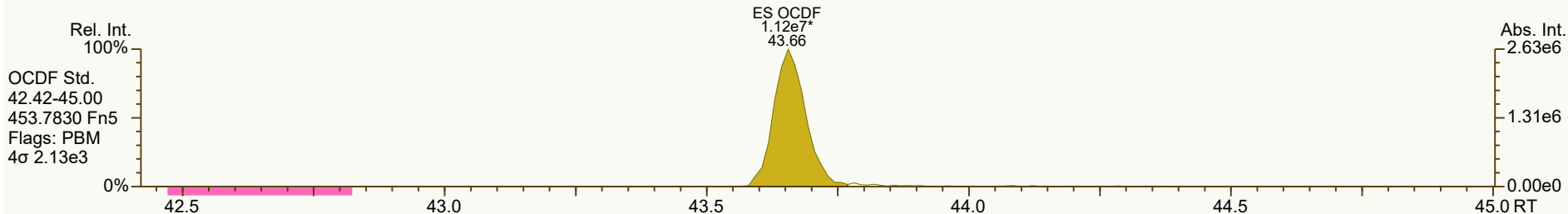
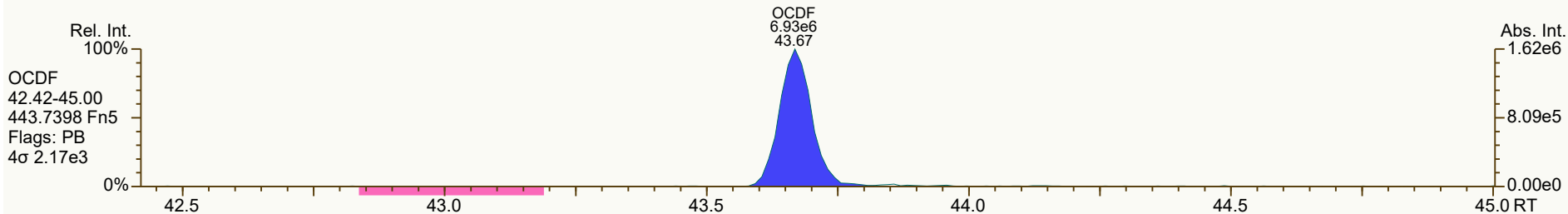
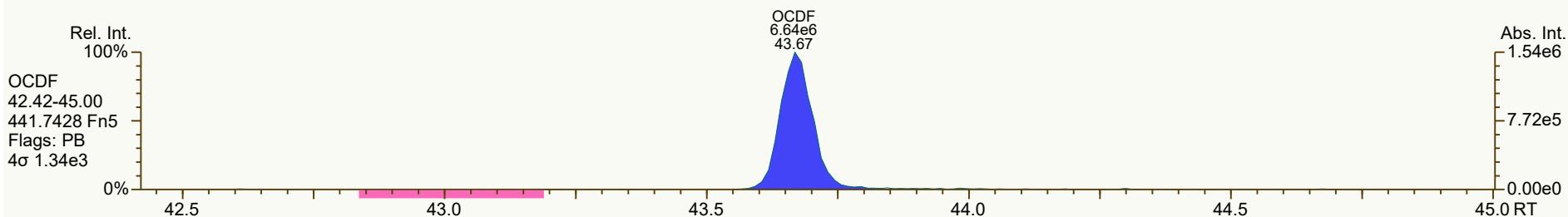
SGS ID: B6238_18887_DF_001MS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19

Acq: 09-Feb-2022 08:52:50
User: DTF Datafile: 220209C06







Lab ID: B6238_18887_DF_001MSD

Acq'd: 09 Feb 2022 09:39 DTF

Wt/Vol: 1.01 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SC-MSD

UTP: 09-Feb-2022 14:37:53 DTF

J-level: 4.94 pg/L Split: 1

Checkcode: 547-243-FWD

Datafile: 220209C07

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

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2378-TCDD	28.49		1.0008	1.0008	0	4.23E+06	0.78	Y	1.18	230	3687.887	2.23
12378-PeCDD	33.83		1.0006	1.0005	-0.2	1.45E+07	1.53	Y	1.04	983	2868.065	1.76
123478-HxCDD	37.74		1.0004	1.0004	0	1.42E+07	1.31	Y	1.09	1,120	3460.113	2.32
123678-HxCDD	37.85		1.0035	1.0035	0	1.58E+07	1.24	Y	1.15	1,100	3460.113	2.1
123789-HxCDD	38.15		1.0112	1.0113	+0.2	1.44E+07	1.25	Y	1.05	1,060	3460.113	2.17
1234678-HpCDD	40.82		1.0003	1.0003	0	1.22E+07	1.05	Y	1.06	1,100	3528.337	2.48
OCDD	43.50		1.0004	1.0003	-0.3	1.73E+07	0.92	Y	1.13	2,220	4486.008	6.11

2378-TCDF	27.63		1.0008	1.0008	0	5.82E+06	0.79	Y	1.08	232	2949.392	1.34
12378-PeCDF	32.38		1.0005	1.0006	+0.2	2.17E+07	1.56	Y	1.02	993	6247.765	2.71
23478-PeCDF	33.49		1.0005	1.0005	0	2.40E+07	1.52	Y	1.02	1,090	6247.765	2.55
123478-HxCDF	36.73		1.0004	1.0004	0	1.95E+07	1.22	Y	1.27	1,030	4524.44	1.98
123678-HxCDF	36.87		1.0004	1.0005	+0.2	2.15E+07	1.24	Y	1.15	1,060	4524.44	1.95
234678-HxCDF	37.55		1.0005	1.0005	0	2.04E+07	1.25	Y	1.19	1,040	4524.44	2.06
123789-HxCDF	38.50		1.0004	1.0003	-0.2	1.59E+07	1.22	Y	1.16	972	4524.44	2.29
1234678-HpCDF	39.88		1.0003	1.0003	0	1.72E+07	1.02	Y	1.37	1,030	3306.862	1.38
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	1.34E+07	1.03	Y	1.31	1,040	3306.862	2.12
OCDF	43.67		1.0003	1.0002	-0.3	2.15E+07	0.90	Y	1.07	2,070	3041.905	3.41

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0238	+0.3	3.07E+07	0.81	Y	1.05	88.7
ES 12378-PeCDD	33.81		1.2144	1.2161	+3.4	2.81E+07	1.57	Y	0.88	96.5
ES 123478-HxCDD	37.72		0.9920	0.9918	-0.5	2.30E+07	1.24	Y	0.97	88.8
ES 123678-HxCDD	37.84		0.9951	0.9949	-0.5	2.48E+07	1.29	Y	0.94	98.8
ES 123789-HxCDD	38.13		1.0027	1.0026	-0.2	2.56E+07	1.23	Y	1.09	88.1
ES 1234678-HpCDD	40.80		1.0724	1.0729	+1.2	2.07E+07	1.08	Y	0.91	85.3
ES OCDD	43.49		1.1428	1.1435	+1.8	2.74E+07	0.91	Y	0.62	82.5

ES 2378-TCDF	27.61		1.0516	1.0519	+0.5	4.60E+07	0.80	Y	1.06	84.8
ES 12378-PeCDF	32.36		1.2312	1.2330	+3.5	4.21E+07	1.58	Y	0.91	90.4
ES 23478-PeCDF	33.47		1.2733	1.2754	+4.2	4.26E+07	1.57	Y	0.88	94.3
ES 123478-HxCDF	36.71		0.9655	0.9653	-0.4	2.95E+07	0.53	Y	1.20	92.6
ES 123678-HxCDF	36.85		0.9692	0.9690	-0.4	3.48E+07	0.52	Y	1.35	96.6
ES 234678-HxCDF	37.54		0.9871	0.9870	-0.2	3.26E+07	0.56	Y	1.24	98.7
ES 123789-HxCDF	38.49		1.0121	1.0120	-0.2	2.77E+07	0.53	Y	1.16	90.1
ES 1234678-HpCDF	39.87		1.0479	1.0483	+1.0	2.42E+07	0.46	Y	0.97	94
ES 1234789-HpCDF	41.26		1.0845	1.0850	+1.2	1.95E+07	0.46	Y	0.85	86.2
ES OCDF	43.66		1.1477	1.1481	+1.0	3.82E+07	0.90	Y	0.81	89

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Checkcode: 547-243-FWD

Datafile: 220209C07

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	3.31E+07	0.82	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.12E+07	0.81	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.33E+07	1.25	Y	-	-
CS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.53E+07	n/a	-	1.20	95.9
CS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.85E+07	1.56	Y	0.75	114
CS 12346-PeCDF	31.83		1.2112	1.2128	+3.1	4.68E+07	1.56	Y	0.85	107
CS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	3.41E+07	0.52	Y	1.12	115
CS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.63E+07	0.44	Y	0.89	111
SS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.53E+07	n/a		1.15	108
SS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.85E+07	1.56	Y	0.86	118
SS 12346-PeCDF	31.83		1.2112	1.2128	+3.1	4.68E+07	1.56	Y	0.94	118
SS 123469-HxCDF	37.17		0.9775	0.9774	-0.2	3.41E+07	0.52	Y	0.83	119
SS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.63E+07	0.44	Y	0.92	118

Totals	Conc	EMPC		
Total TCDD	1100	1100	* 37Cl correction has been applied to 2378-TCDD	
Total PeCDD	1490	1490	Original Values	Corrected Values
Total HxCDD	3580	3580	Ratio 0.781	0.78
Total HpCDD	1360	1360	Response 4.24E+06	4.23E+06
Total Tetra-Octa Dioxins	9750	9750		
Total TCDF	1,340	1340		
Total PeCDF	4,210	4210		
Total HxCDF	6,860	6860		
Total HpCDF	2,070	2070		
Total Tetra-Octa Furans	16,600	16600		
Total Tetra-Octa Dioxins & Furans	26300	26300		

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.84		0.8737	0.8728	-1.3	5.90E+06	0.80	Y	1.18	321	3687.887	2.23
1379-TCDD	NotFnd		0.8860						1.18		3687.887	2.23
1369-TCDD	NotFnd		0.9009						1.18		3687.887	2.23
1469-TCDD	NotFnd		0.9281						1.18		3687.887	2.23
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3687.887	2.23
1378-TCDD	NotFnd		0.9432						1.18		3687.887	2.23
1268-TCDD	NotFnd		0.9500						1.18		3687.887	2.23
1478-TCDD	NotFnd		0.9586						1.18		3687.887	2.23
1279-TCDD	NotFnd		0.9645						1.18		3687.887	2.23
1234/1269-TCDD	NotFnd		0.9770						1.18		3687.887	2.23
1236-TCDD	NotFnd		0.9817						1.18		3687.887	2.23
1237/1238-TCDD	NotFnd		0.9905						1.18		3687.887	2.23
1239-TCDD	28.33		0.9952	0.9952	0	4.11E+06	0.79	Y	1.18	223	3687.887	2.23
2378-TCDD	28.49		1.0008	1.0008	0	4.23E+06	0.78	Y	1.18	230	3687.887	2.23
1278-TCDD	NotFnd		1.0121						1.18		3687.887	2.23
1267-TCDD	NotFnd		1.0167						1.18		3687.887	2.23
1289-TCDD	29.46		1.0345	1.0349	+0.7	5.93E+06	0.80	Y	1.18	322	3687.887	2.23
12479/12468-PeCDD	31.32		0.9267	0.9264	-0.6	3.64E+06	1.54	Y	1.04	247	2868.065	1.76
12469-PeCDD	NotFnd		0.9425						1.04		2868.065	1.76
12368-PeCDD	NotFnd		0.9588						1.04		2868.065	1.76
12478-PeCDD	NotFnd		0.9643						1.04		2868.065	1.76
12379-PeCDD	NotFnd		0.9673						1.04		2868.065	1.76
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2868.065	1.76
12346/12347-PeCDD	NotFnd		0.9858						1.04		2868.065	1.76
12378-PeCDD	33.83		1.0006	1.0005	-0.2	1.45E+07	1.53	Y	1.04	983	2868.065	1.76
12367-PeCDD	NotFnd		1.0033						1.04		2868.065	1.76
12389-PeCDD	34.26		1.0134	1.0135	+0.2	3.86E+06	1.53	Y	1.04	262	2868.065	1.76
124679/124689-HxCDD	35.99		0.9542	0.9541	-0.2	4.03E+06	1.20	Y	1.10	297	3460.113	2.19
123468-HxCDD	NotFnd		0.9715						1.10		3460.113	2.19
123679/123689-HxCDD	NotFnd		0.9793						1.10		3460.113	2.19
123469-HxCDD	NotFnd		0.9828						1.10		3460.113	2.19
123478-HxCDD	37.74		1.0004	1.0004	0	1.42E+07	1.31	Y	1.09	1,120	3460.113	2.32
123678-HxCDD	37.85		1.0035	1.0035	0	1.58E+07	1.24	Y	1.15	1,100	3460.113	2.1
123467-HxCDD	NotFnd		1.0085						1.10		3460.113	2.19
123789-HxCDD	38.15		1.0112	1.0113	+0.2	1.44E+07	1.25	Y	1.05	1,060	3460.113	2.17

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Std's (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.14		0.9837	0.9836	-0.2	2.91E+06	1.03	Y	1.06	261	3528.337	2.48
1234678-HpCDD	40.82		1.0003	1.0003	0	1.22E+07	1.05	Y	1.06	1,100	3528.337	2.48
OCDD	43.50		1.0004	1.0003	-0.3	1.73E+07	0.92	Y	1.13	2,220	4486.008	6.11
OCDD-a	43.50		1.0003	1.0002	-0.3	1.03E+06	2.26	Y	0.07	2,060	3733.714	79.6
1368-TCDF	22.74		0.8251	0.8237	-1.9	8.18E+06	0.79	Y	1.08	326	2949.392	1.34
1468-TCDF	NotFnd		0.8458						1.08		2949.392	1.34
2468-TCDF	23.95		0.8686	0.8675	-1.6	2.10E+06	0.78	Y	1.08	83.8	2949.392	1.34
1346/1246-TCDF	NotFnd		0.8814						1.08		2949.392	1.34
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2949.392	1.34
1348-TCDF	NotFnd		0.8962						1.08		2949.392	1.34
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2949.392	1.34
1268-TCDF	NotFnd		0.9145						1.08		2949.392	1.34
1467-TCDF	NotFnd		0.9193						1.08		2949.392	1.34
1478-TCDF	NotFnd		0.9254						1.08		2949.392	1.34
1369/1237-TCDF	NotFnd		0.9387						1.08		2949.392	1.34
2467-TCDF	NotFnd		0.9433						1.08		2949.392	1.34
2368-TCDF	NotFnd		0.9489						1.08		2949.392	1.34
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2949.392	1.34
1278-TCDF	NotFnd		0.9683						1.08		2949.392	1.34
1349-TCDF	NotFnd		0.9722						1.08		2949.392	1.34
1267-TCDF	NotFnd		0.9783						1.08		2949.392	1.34
2346/1249-TCDF	NotFnd		0.9850						1.08		2949.392	1.34
2347/1279-TCDF	NotFnd		0.9926						1.08		2949.392	1.34
2348-TCDF	27.52		0.9967	0.9967	0	8.14E+06	0.77	Y	1.08	325	2949.392	1.34
2378-TCDF	27.63		1.0008	1.0008	0	5.82E+06	0.79	Y	1.08	232	2949.392	1.34
2367/3467-TCDF	NotFnd		1.0137						1.08		2949.392	1.34
1269-TCDF	NotFnd		1.0223						1.08		2949.392	1.34
1239-TCDF	NotFnd		1.0321						1.08		2949.392	1.34
1289-TCDF	29.63		1.0722	1.0731	+1.6	9.37E+06	0.78	Y	1.08	373	2949.392	1.34
13468/12468-PeCDF	29.54		0.9139	0.9129	-1.8	4.18E+07	1.60	Y	1.02	1,900	2673.599	1.13
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		6247.765	2.63
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		6247.765	2.63
14678-PeCDF	NotFnd		0.9692						1.02		6247.765	2.63
13479-PeCDF	NotFnd		0.9723						1.02		6247.765	2.63
13469/12479-PeCDF	NotFnd		0.9797						1.02		6247.765	2.63
12346-PeCDF	NotFnd		0.9840						1.02		6247.765	2.63

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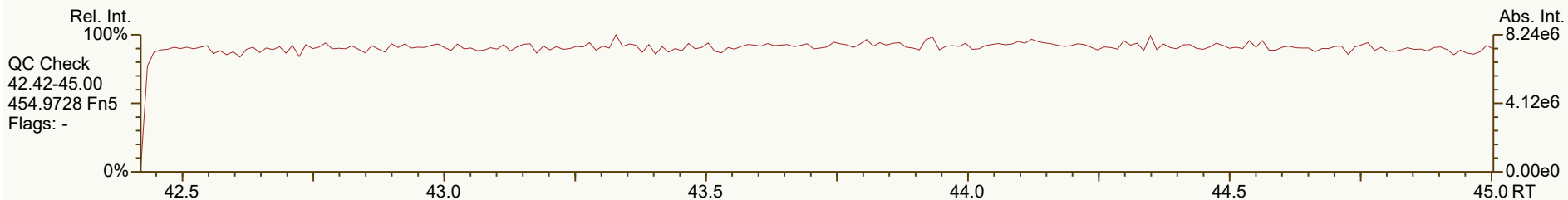
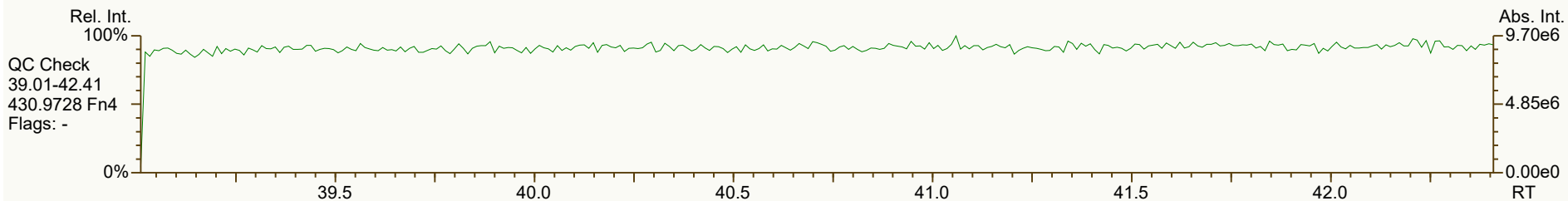
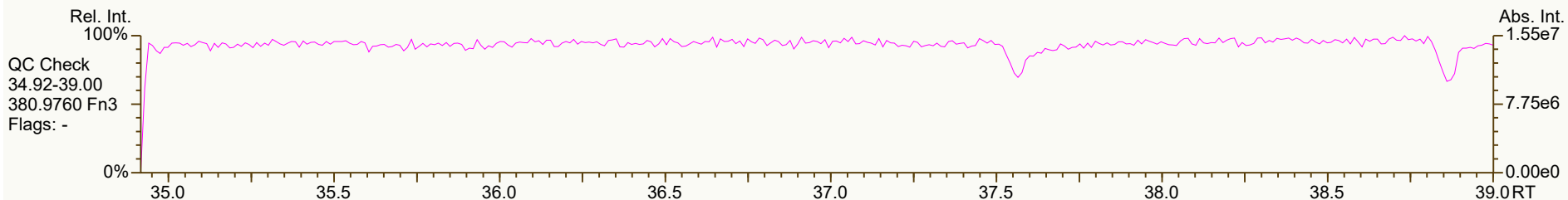
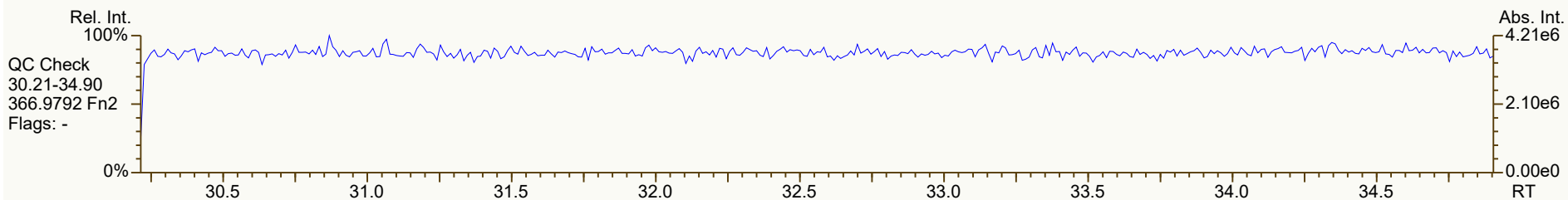
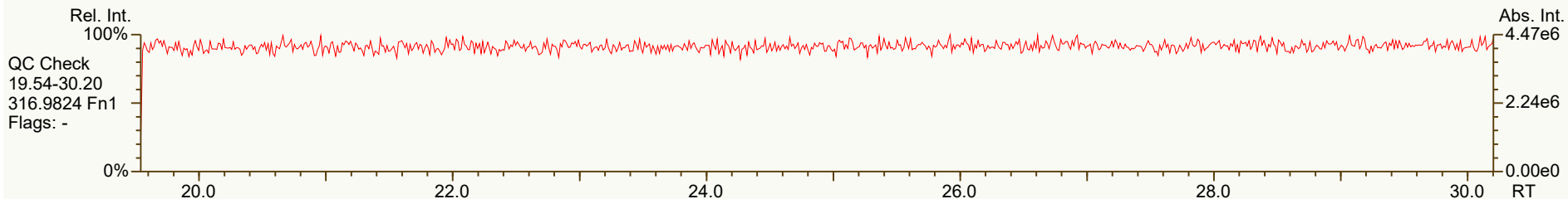
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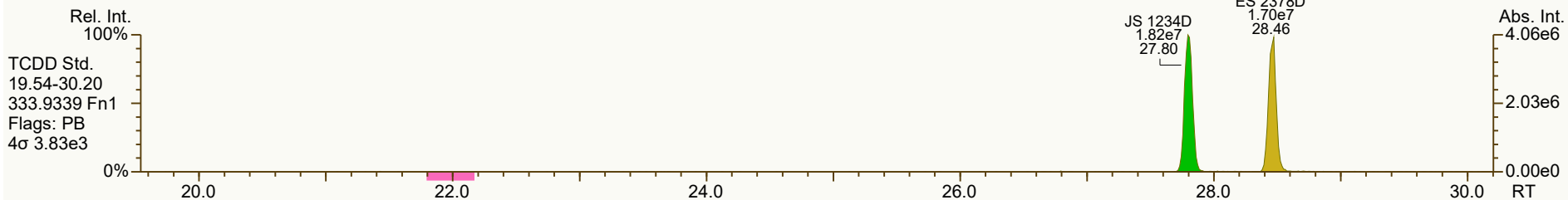
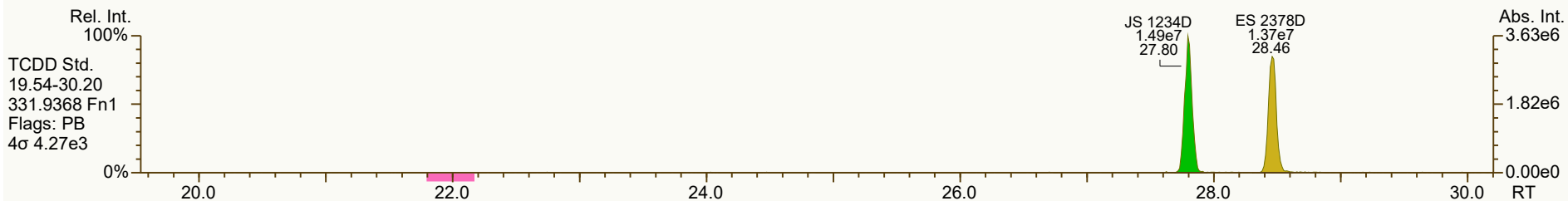
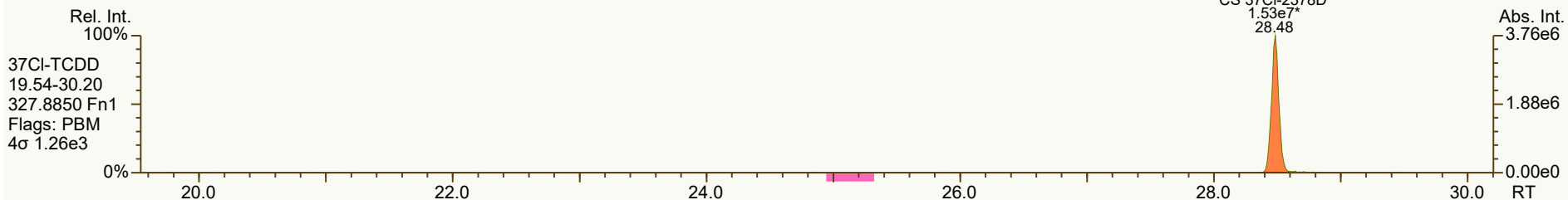
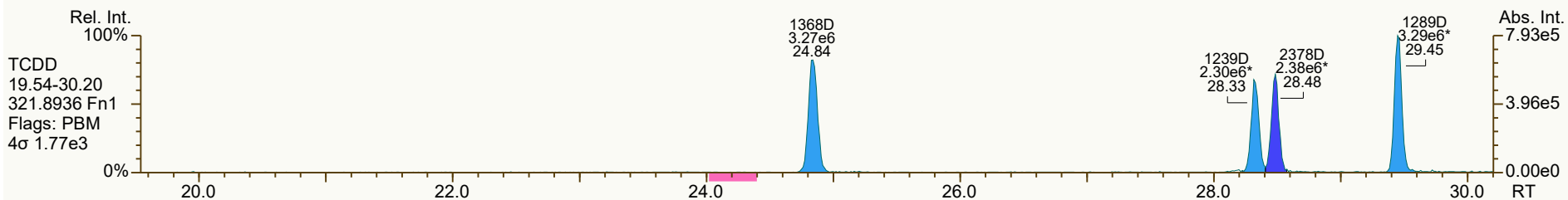
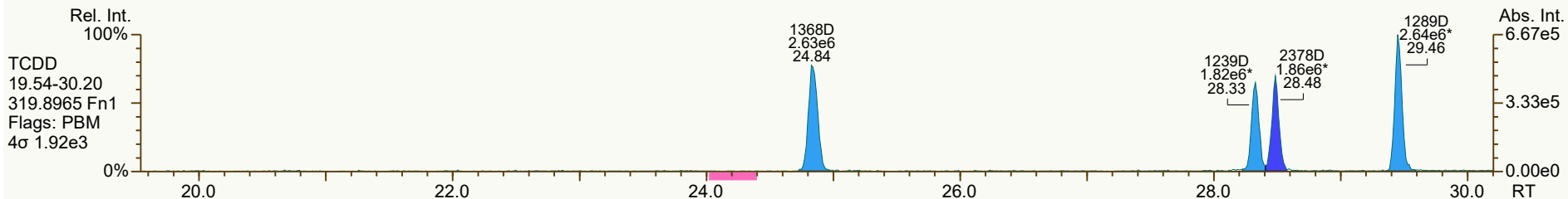
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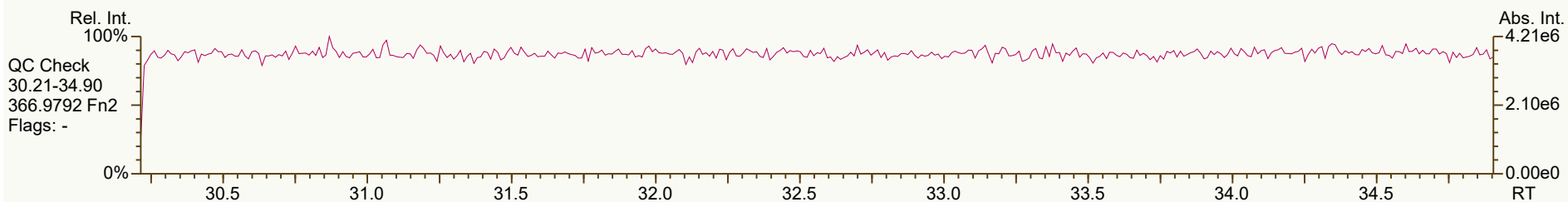
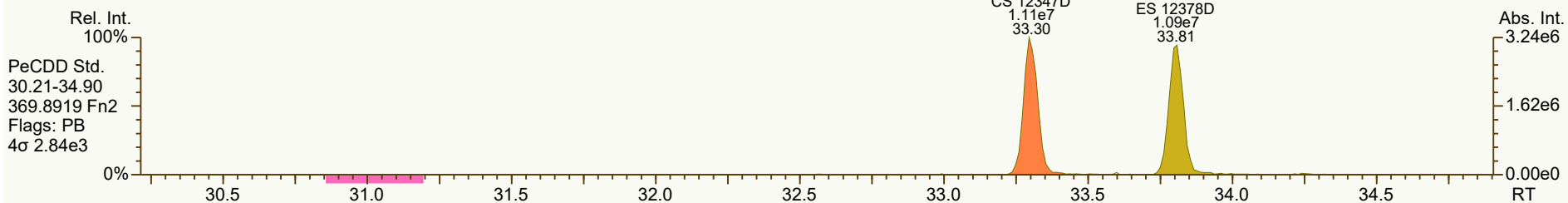
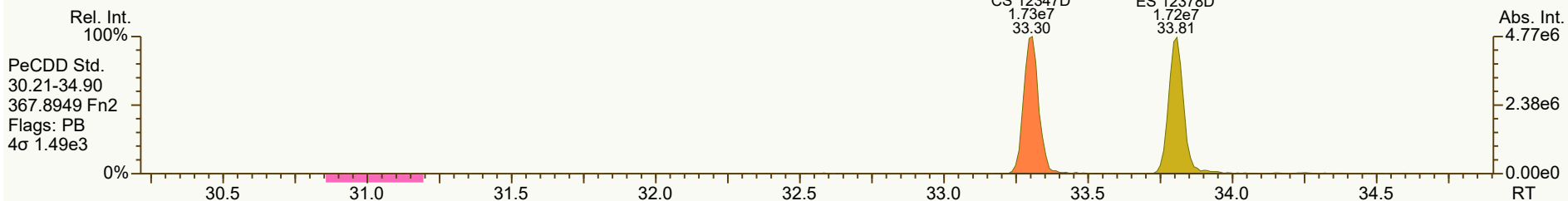
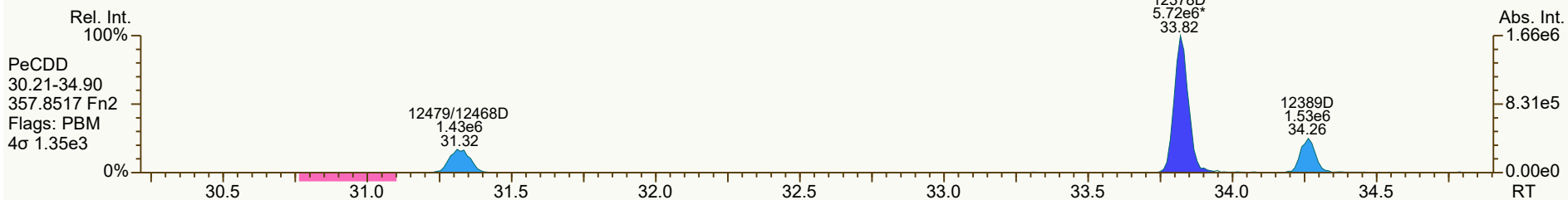
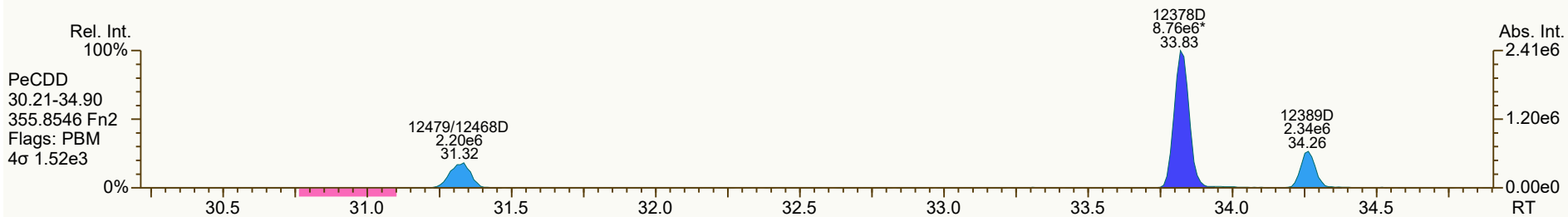
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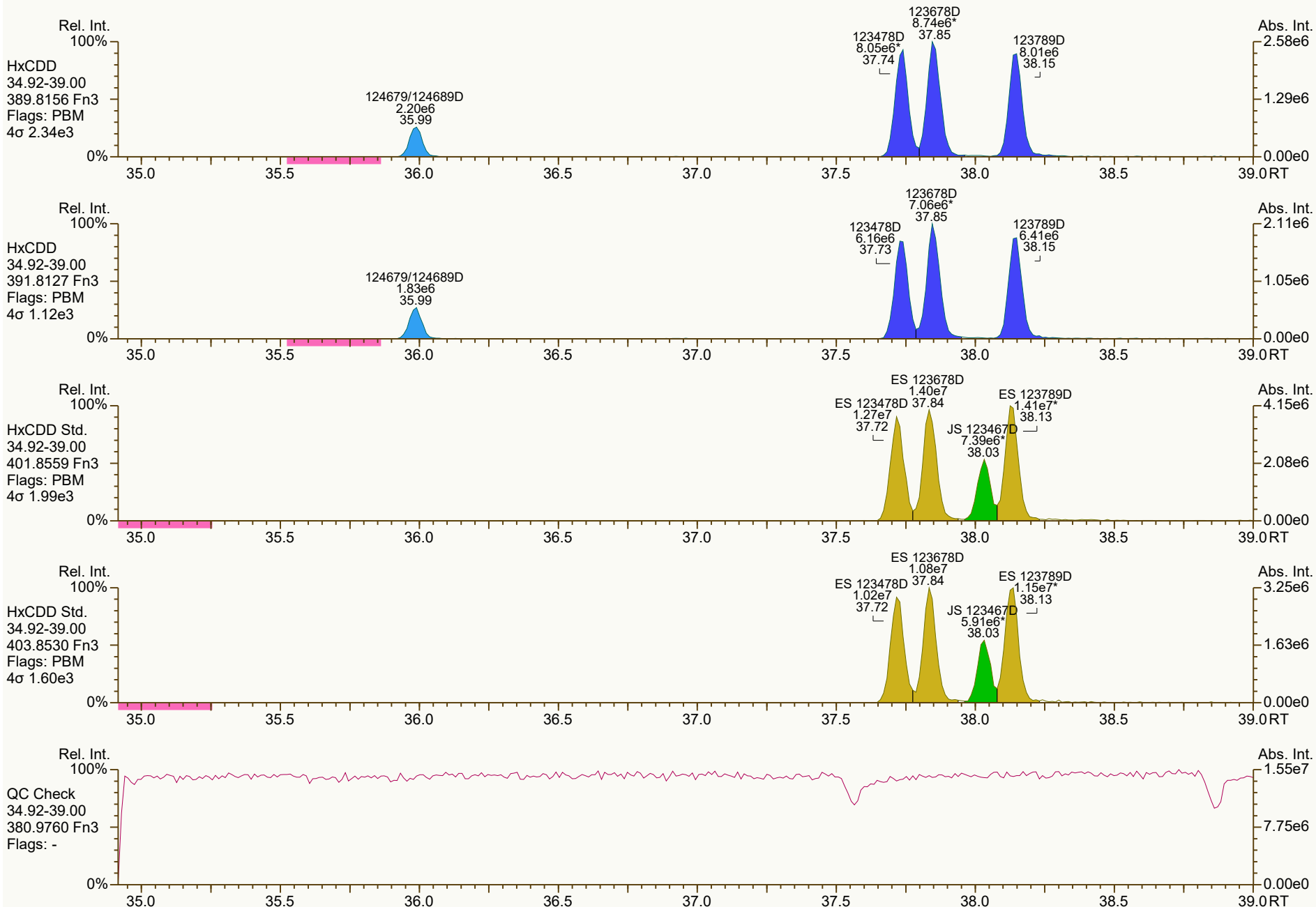
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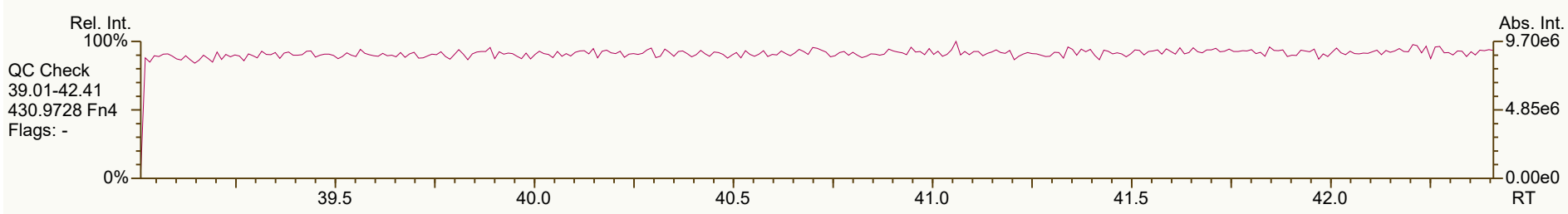
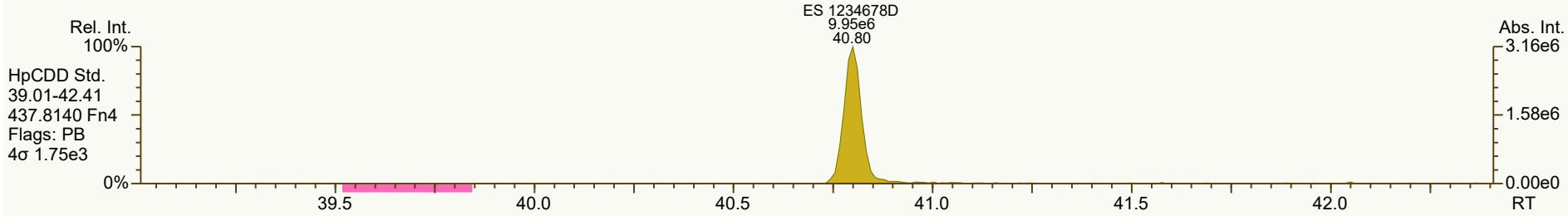
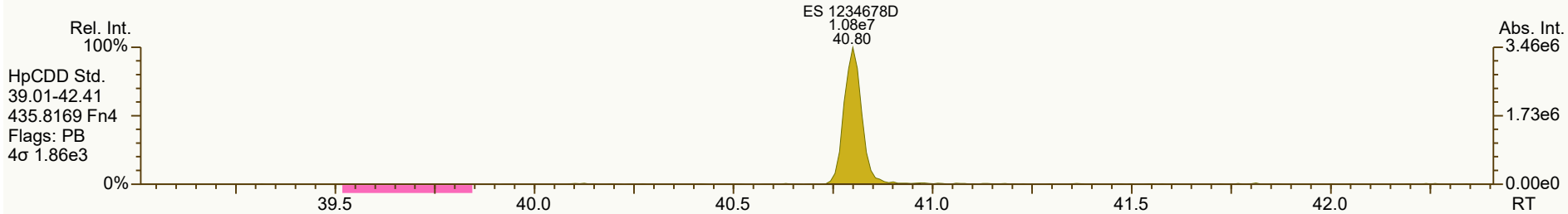
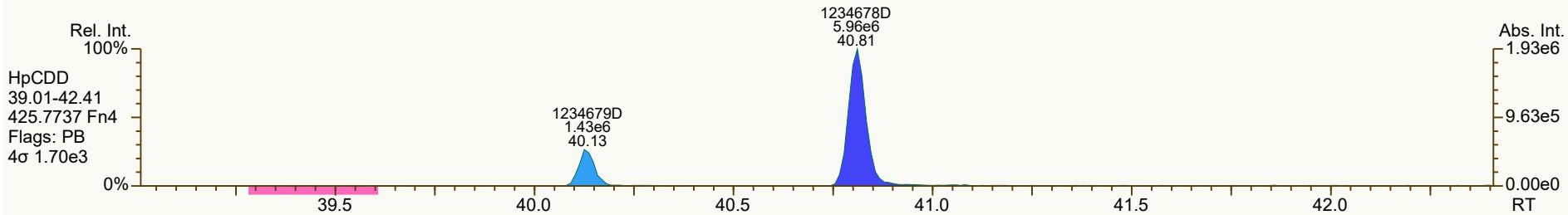
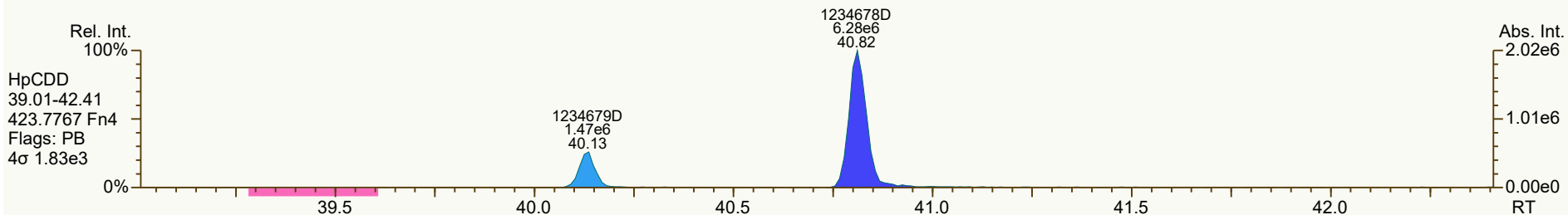
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6247.765	2.63
12347-PeCDF	NotFnd		0.9894						1.02		6247.765	2.63
12348-PeCDF	NotFnd		0.9940						1.02		6247.765	2.63
12378-PeCDF	32.38		1.0005	1.0006	+0.2	2.17E+07	1.56	Y	1.02	993	6247.765	2.71
12678/12367-PeCDF	NotFnd		1.0089						1.02		6247.765	2.63
12379-PeCDF	NotFnd		1.0142						1.02		6247.765	2.63
12679-PeCDF	NotFnd		0.9929						1.02		6247.765	2.63
23467/12369-PeCDF	NotFnd		0.9967						1.02		6247.765	2.63
23478-PeCDF	33.49		1.0005	1.0005	0	2.40E+07	1.52	Y	1.02	1,090	6247.765	2.55
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6247.765	2.63
12349-PeCDF	NotFnd		1.0100						1.02		6247.765	2.63
12389-PeCDF	34.56		1.0324	1.0326	+0.4	4.94E+06	1.55	Y	1.02	226	6247.765	2.63
123468-HxCDF	35.34		0.9627	0.9627	0	5.18E+07	1.24	Y	1.19	2,750	4524.44	2.06
124678/134678-HxCDF	NotFnd		0.9682						1.19		4524.44	2.06
134679-HxCDF	NotFnd		0.9744						1.19		4524.44	2.06
124679-HxCDF	NotFnd		0.9798						1.19		4524.44	2.06
124689-HxCDF	NotFnd		0.9858						1.19		4524.44	2.06
123467-HxCDF	NotFnd		0.9972						1.19		4524.44	2.06
123478-HxCDF	36.73		1.0004	1.0004	0	1.95E+07	1.22	Y	1.27	1,030	4524.44	1.98
123678-HxCDF	36.87		1.0004	1.0005	+0.2	2.15E+07	1.24	Y	1.15	1,060	4524.44	1.95
123479-HxCDF	NotFnd		1.0049						1.19		4524.44	2.06
123469-HxCDF	NotFnd		1.0090						1.19		4524.44	2.06
123679-HxCDF	NotFnd		0.9942						1.19		4524.44	2.06
234678-HxCDF	37.55		1.0005	1.0005	0	2.04E+07	1.25	Y	1.19	1,040	4524.44	2.06
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4524.44	2.06
123789-HxCDF	38.50		1.0004	1.0003	-0.2	1.59E+07	1.22	Y	1.16	972	4524.44	2.29
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		4524.44	2.06
1234678-HpCDF	39.88		1.0003	1.0003	0	1.72E+07	1.02	Y	1.37	1,030	3306.862	1.38
1234679-HpCDF	NotFnd		1.0068						1.34		3306.862	1.71
1234689-HpCDF	NotFnd		1.0103						1.34		3306.862	1.71
1234789-HpCDF	41.28		1.0002	1.0003	+0.2	1.34E+07	1.03	Y	1.31	1,040	3306.862	2.12
OCDF	43.67		1.0003	1.0002	-0.3	2.15E+07	0.90	Y	1.07	2,070	3041.905	3.41
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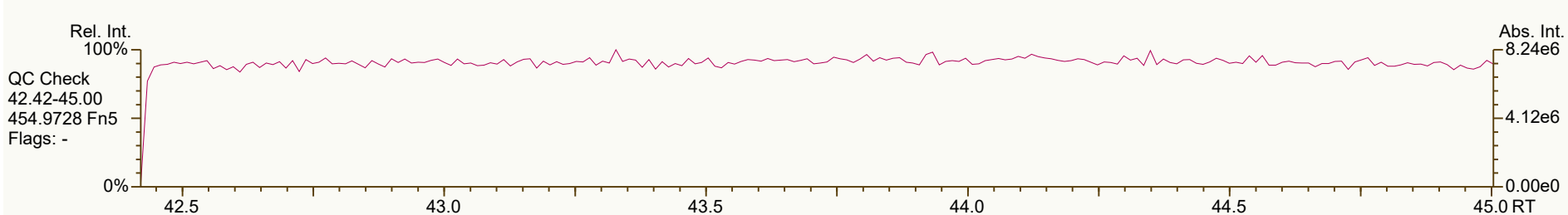
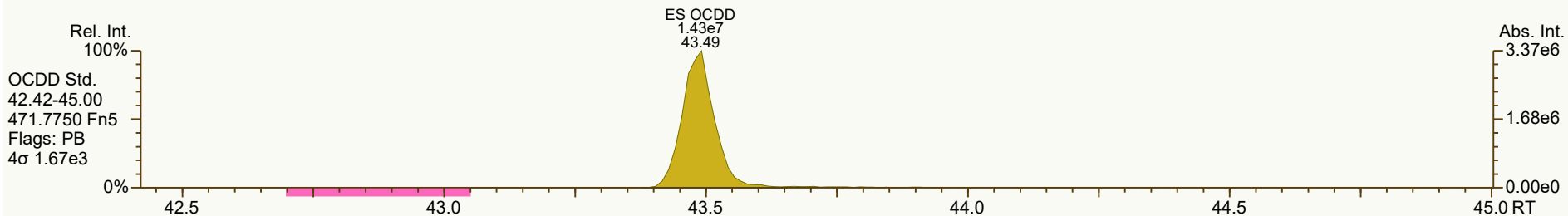
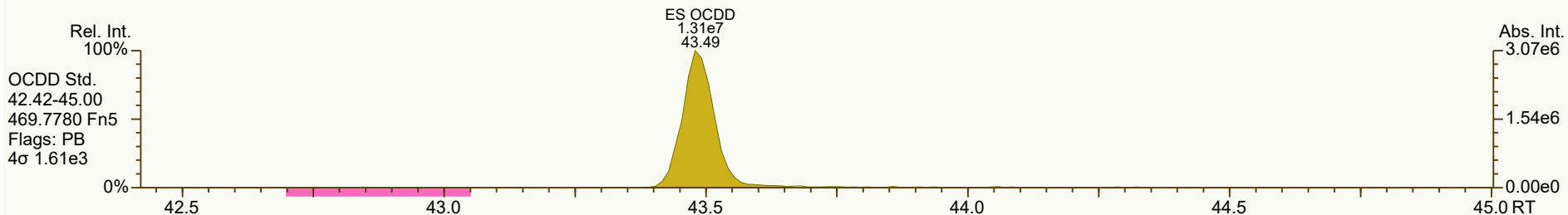
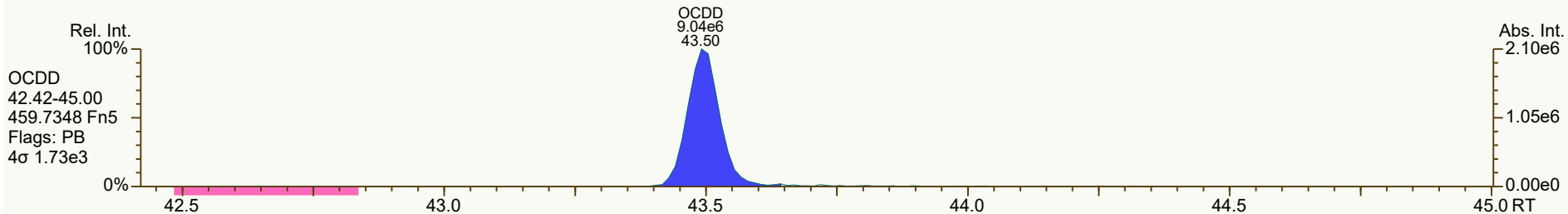
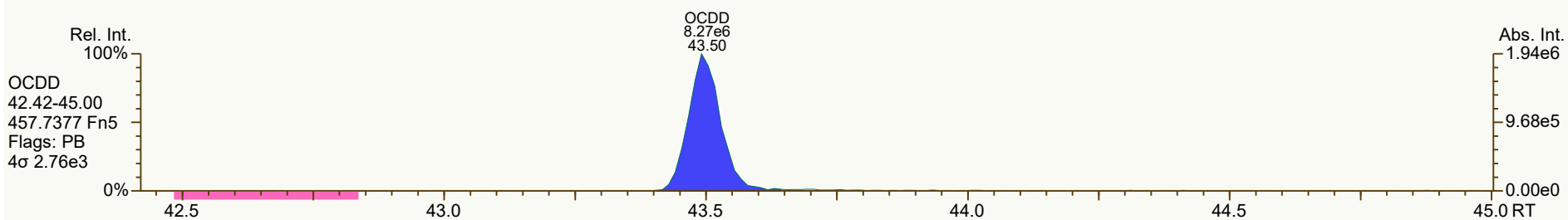








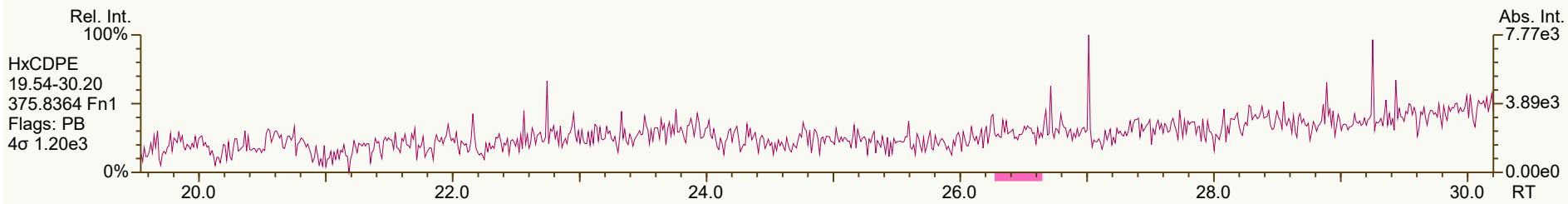
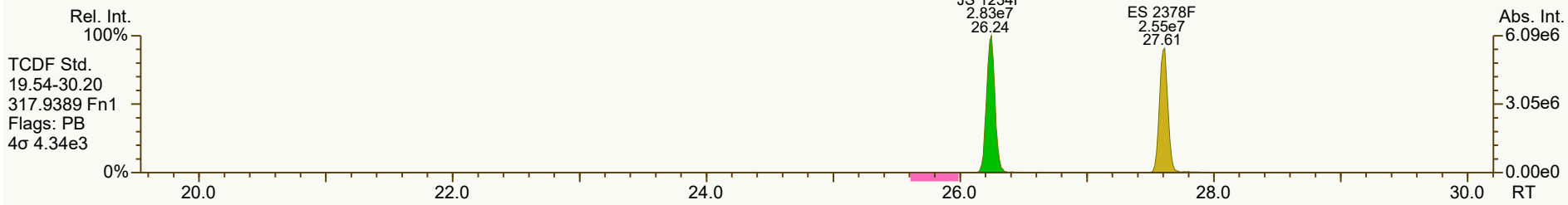
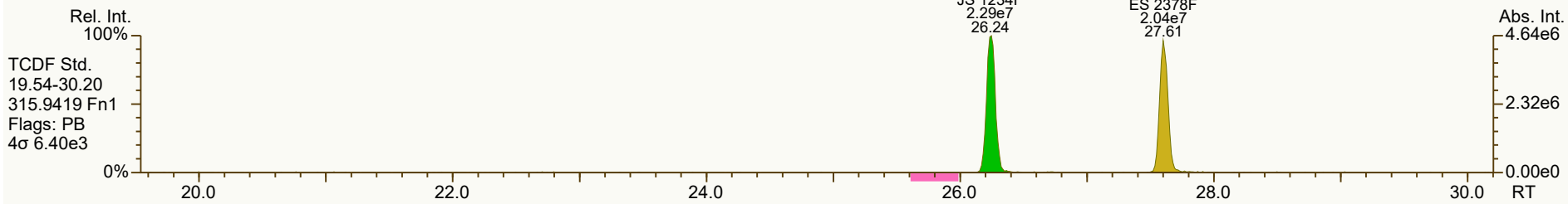
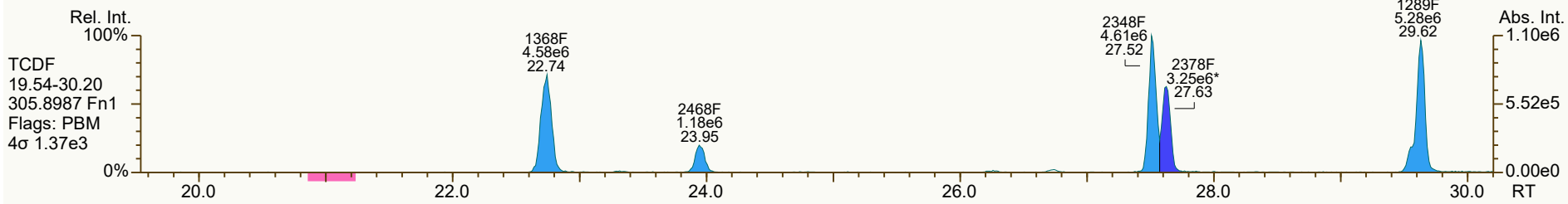
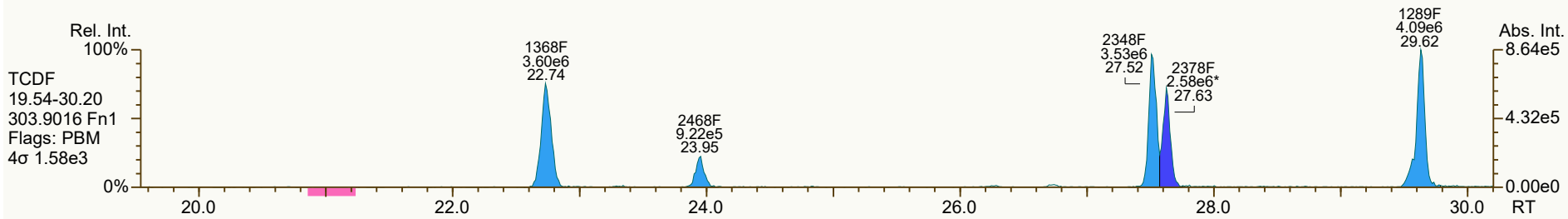




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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SC-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 20

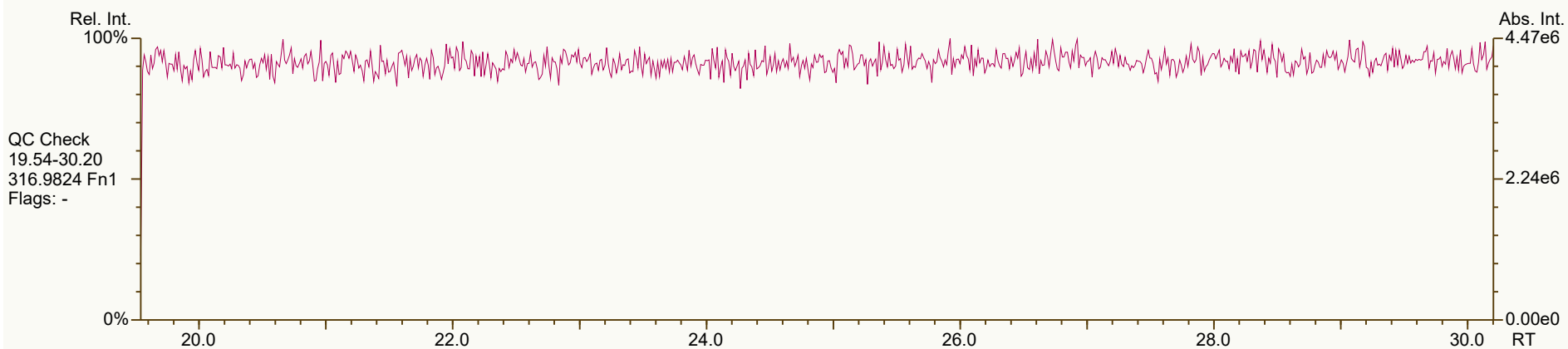
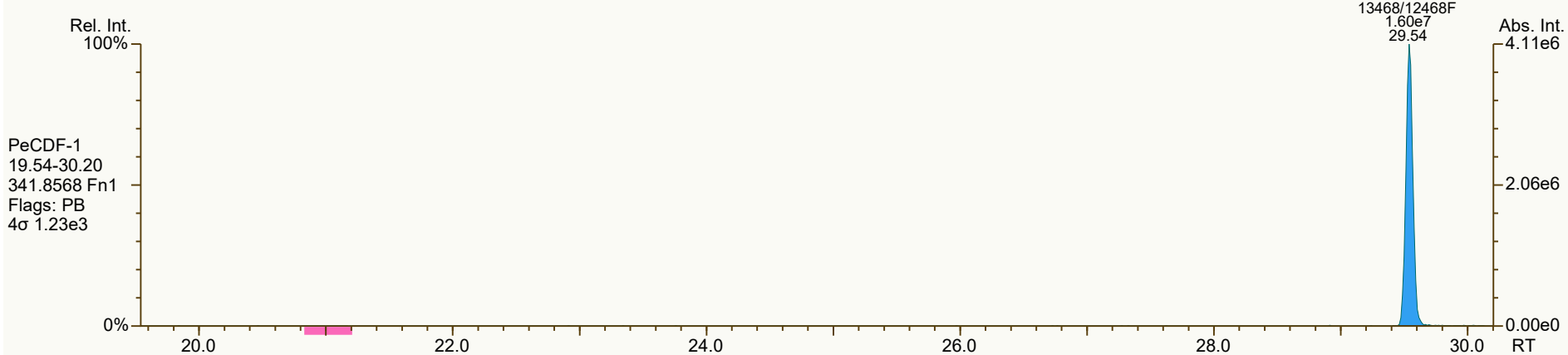
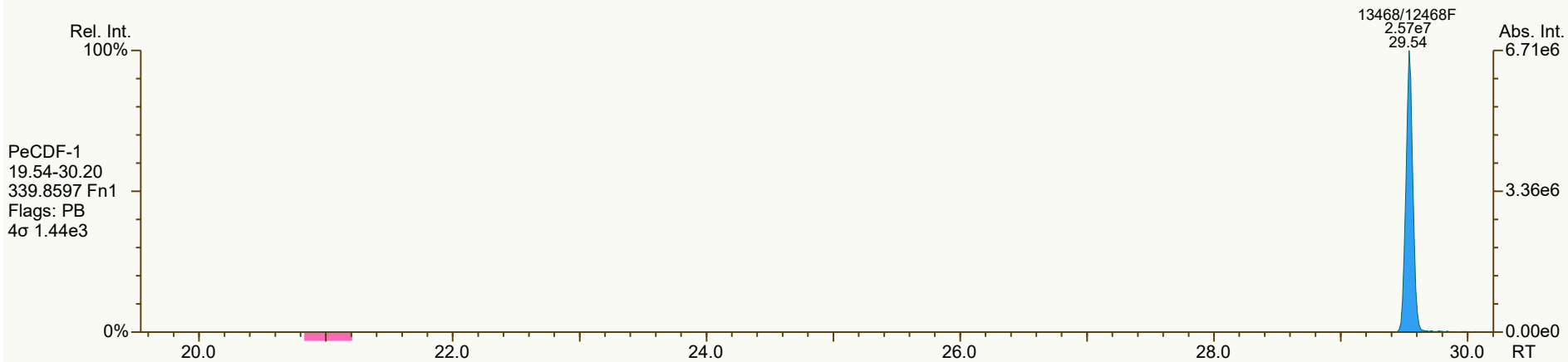
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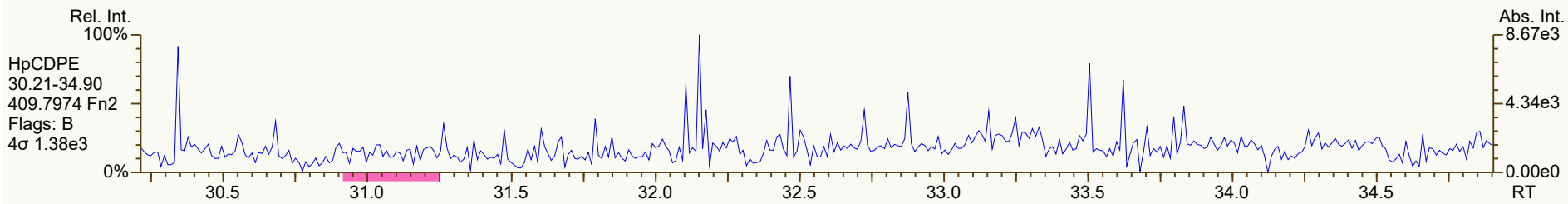
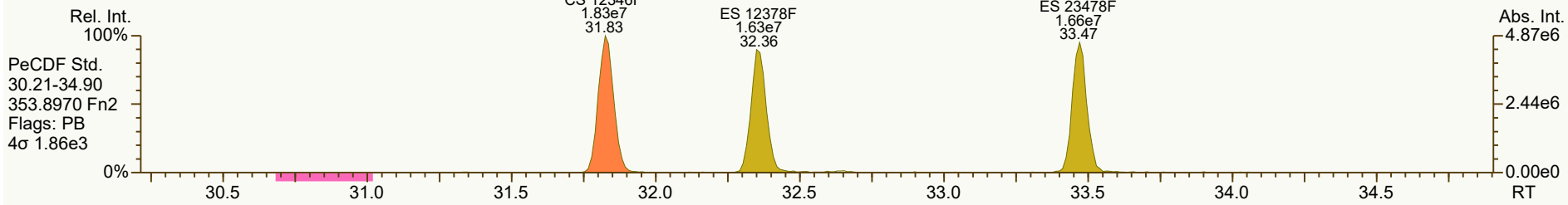
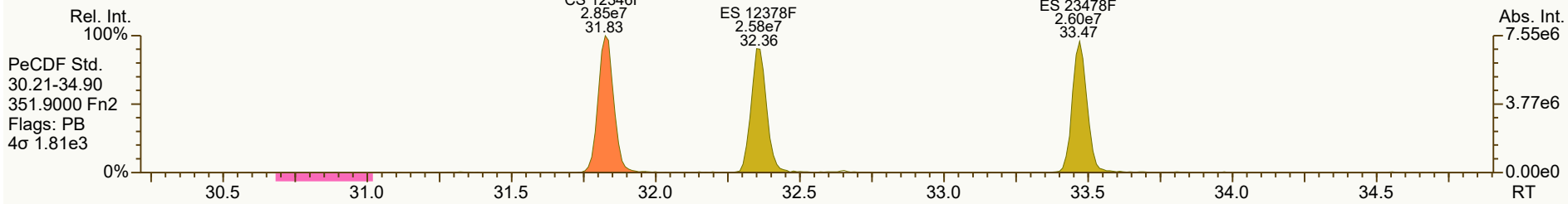
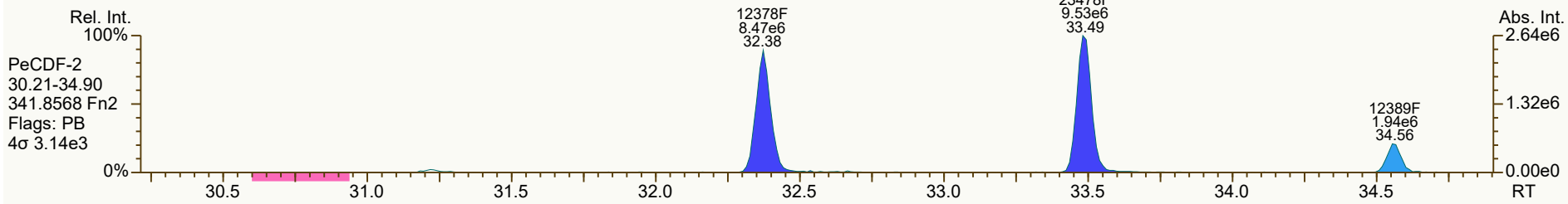
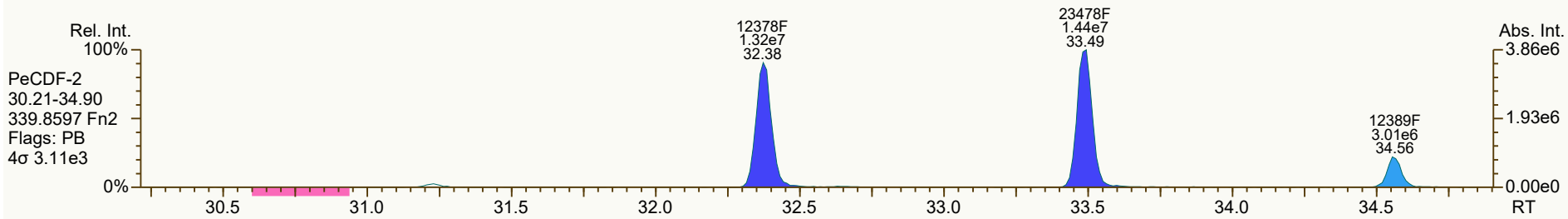


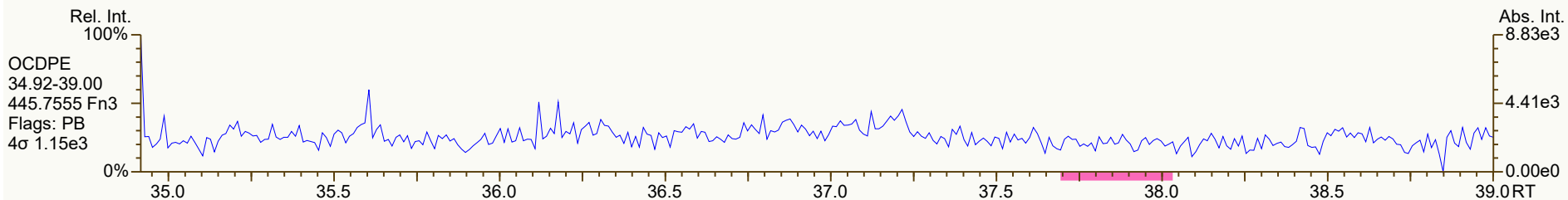
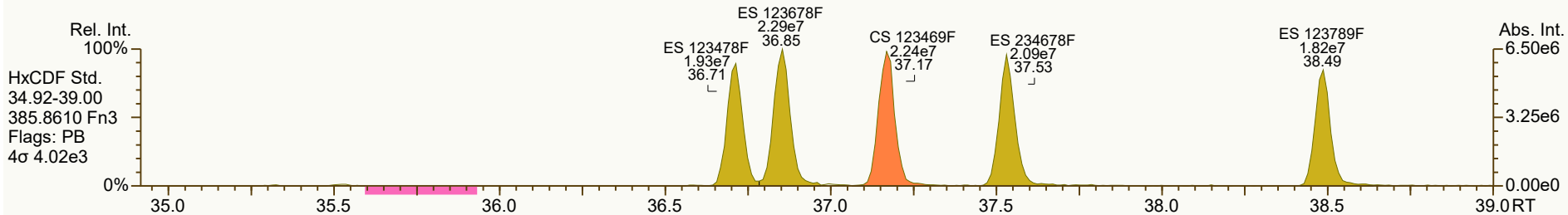
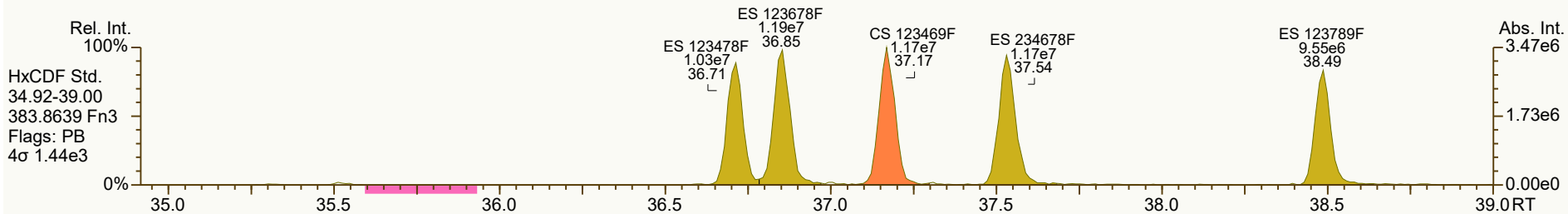
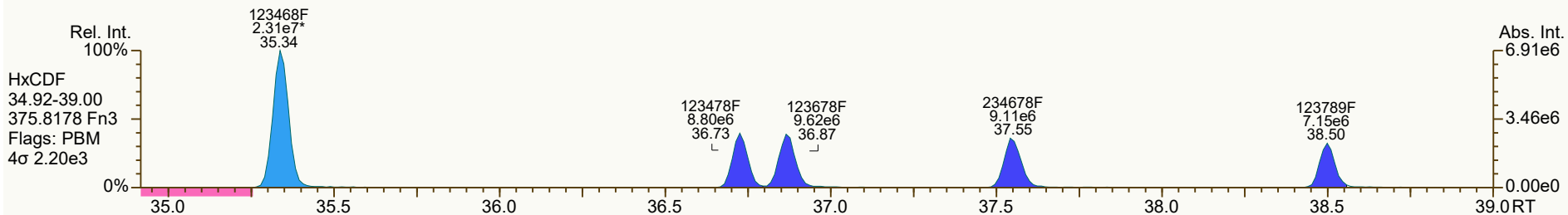
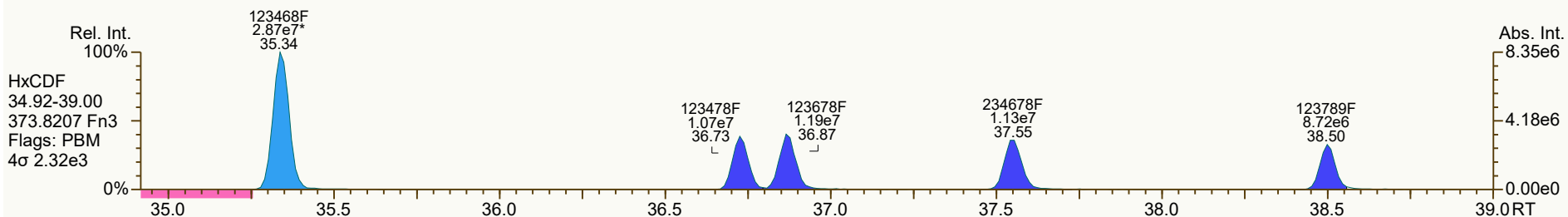
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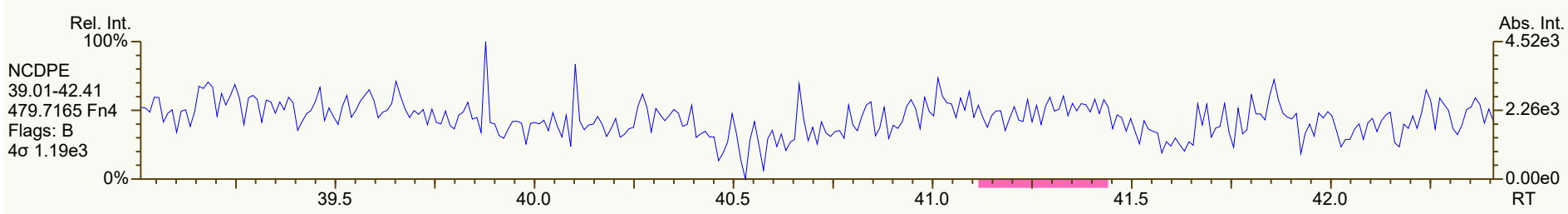
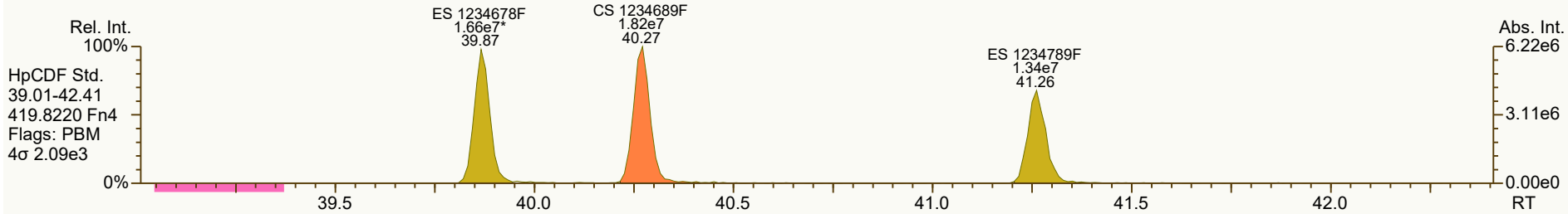
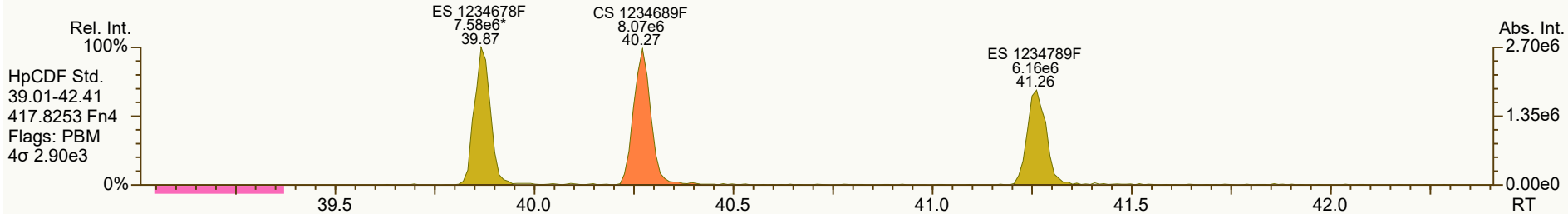
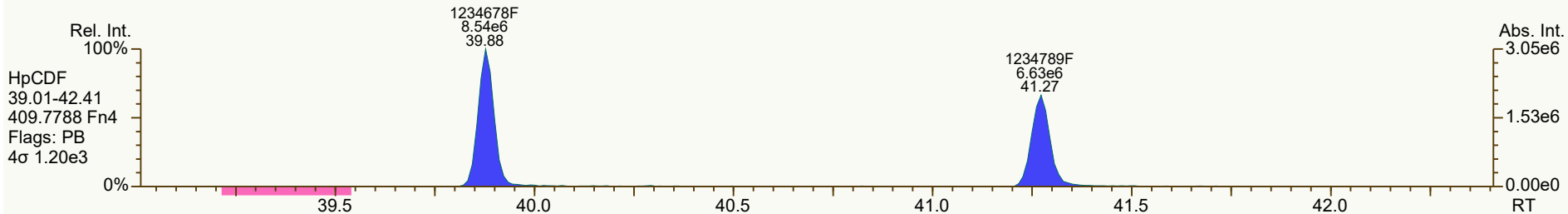
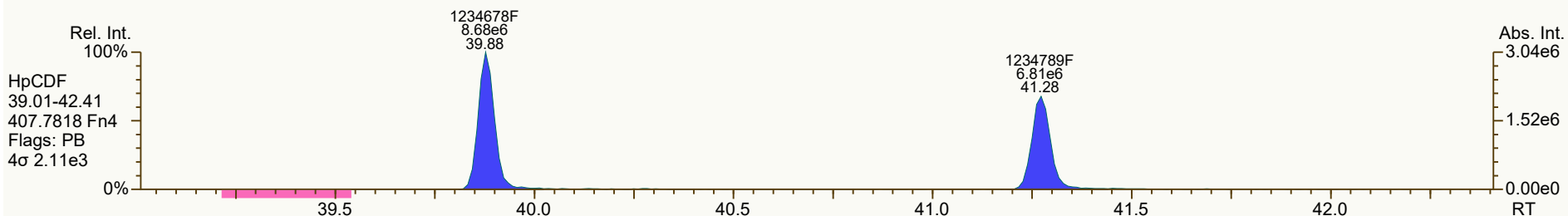
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 20

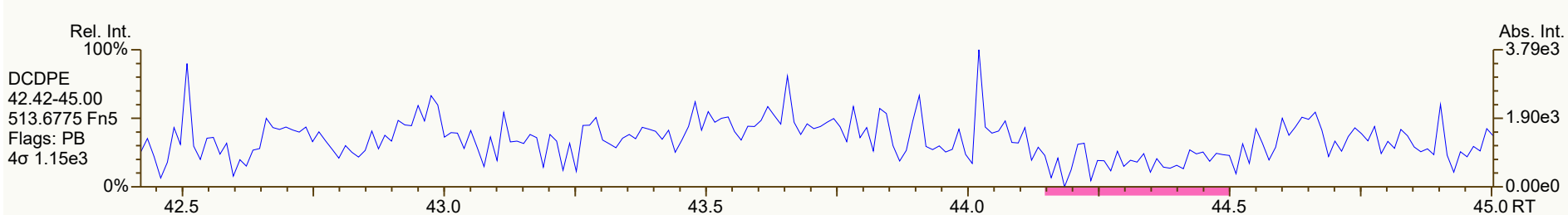
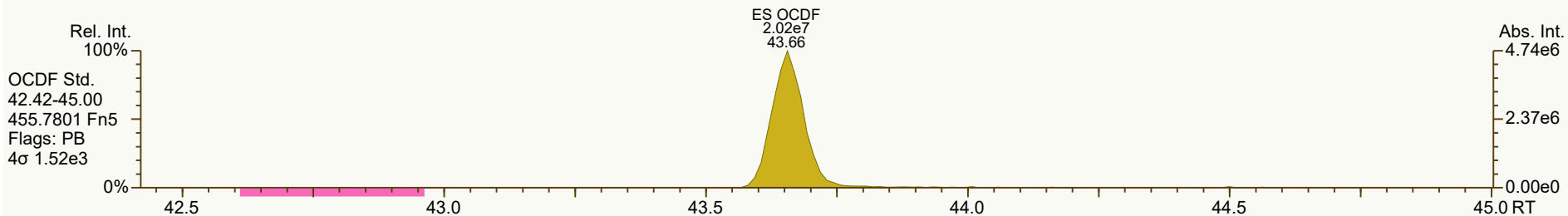
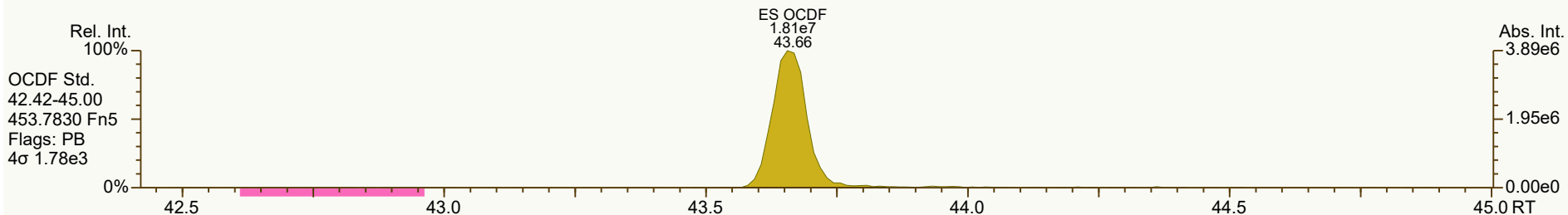
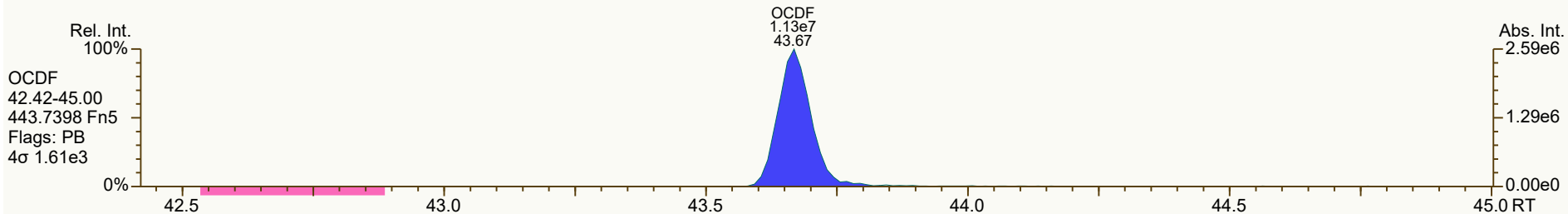
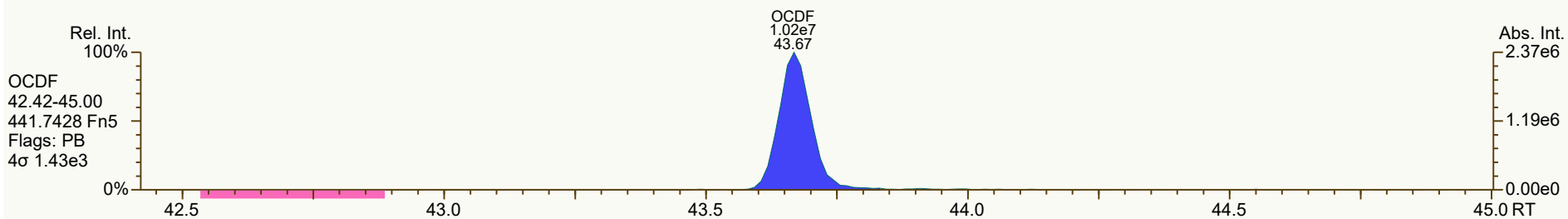
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Lab ID: B6238_18887_DF_002

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ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SW

UTP: 09-Feb-2022 14:37:54 DTF

J-level: 5 pg/L Split: 1

Checkcode: 245-743-FNJ

Datafile: 220209C08

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3459.224	2.13
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2719.29	1.86
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2369.797	1.55
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2369.797	1.54
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2369.797	1.56
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2302.062	1.95
OCDD	NotFnd		1.0004	-		-	-	-	1.13	-	9150.41	15.1

2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	2752.557	1.2
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2866.18	1.34
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2866.18	1.24
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	3134.851	1.43
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	3134.851	1.44
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	3134.851	1.37
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3134.851	1.68
1234678-HpCDF	39.86	J	1.0003	1.0001	-0.5	3.96E+04	1.04	Y	1.37	2.63	2713.731	1.28
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2713.731	1.9
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2435.506	3.37

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.45		1.0236	1.0239	+0.5	2.87E+07	0.82	Y	1.05	90.8
ES 12378-PeCDD	33.80		1.2144	1.2162	+3.7	2.65E+07	1.55	Y	0.88	99.7
ES 123478-HxCDD	37.71		0.9920	0.9918	-0.5	2.25E+07	1.26	Y	0.97	97.6
ES 123678-HxCDD	37.83		0.9951	0.9949	-0.5	2.31E+07	1.24	Y	0.94	103
ES 123789-HxCDD	38.12		1.0027	1.0027	0	2.38E+07	1.24	Y	1.09	91.8
ES 1234678-HpCDD	40.79		1.0724	1.0729	+1.2	1.87E+07	1.02	Y	0.91	86.3
ES OCDD	43.47		1.1428	1.1434	+1.6	2.40E+07	0.90	Y	0.62	81

ES 2378-TCDF	27.60		1.0516	1.0520	+0.7	4.61E+07	0.80	Y	1.06	90.4
ES 12378-PeCDF	32.35		1.2312	1.2332	+3.9	3.92E+07	1.53	Y	0.91	89.4
ES 23478-PeCDF	33.46		1.2733	1.2755	+4.4	3.88E+07	1.54	Y	0.88	91.3
ES 123478-HxCDF	36.70		0.9655	0.9653	-0.4	2.80E+07	0.53	Y	1.20	98.2
ES 123678-HxCDF	36.84		0.9692	0.9691	-0.2	3.31E+07	0.54	Y	1.35	103
ES 234678-HxCDF	37.53		0.9871	0.9870	-0.2	3.14E+07	0.53	Y	1.24	106
ES 123789-HxCDF	38.48		1.0121	1.0120	-0.2	2.48E+07	0.52	Y	1.16	90.3
ES 1234678-HpCDF	39.86		1.0479	1.0483	+1.0	2.20E+07	0.45	Y	0.97	95.7
ES 1234789-HpCDF	41.25		1.0845	1.0850	+1.2	1.73E+07	0.46	Y	0.85	85.5
ES OCDF	43.65		1.1477	1.1481	+1.0	3.06E+07	0.90	Y	0.81	79.8

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UTP: 09-Feb-2022 14:37:54 DTF

J-level: 5 pg/L Split: 1

Checkcode: 245-743-FNJ

Datafile: 220209C08

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.03E+07	0.81	Y	-	-
JS 1234-TCDF	26.23		-	-	-	4.82E+07	0.78	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.19E+07	1.27	Y	-	-
CS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.34E+07	n/a	-	1.20	91.9
CS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	2.50E+07	1.57	Y	0.75	109
CS 12346-PeCDF	31.82		1.2112	1.2130	+3.4	4.07E+07	1.57	Y	0.85	99.3
CS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.01E+07	0.55	Y	1.12	113
CS 1234689-HpCDF	40.26		1.0584	1.0590	+1.4	2.16E+07	0.44	Y	0.89	103
SS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.34E+07	n/a	-	1.15	101
SS 12347-PeCDD	33.29		1.1964	1.1980	+3.2	2.50E+07	1.57	Y	0.86	110
SS 12346-PeCDF	31.82		1.2112	1.2130	+3.4	4.07E+07	1.57	Y	0.94	111
SS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.01E+07	0.55	Y	0.83	110
SS 1234689-HpCDF	40.26		1.0584	1.0590	+1.4	2.16E+07	0.44	Y	0.92	107

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	3.55	3.55
Total HpCDF	2.63	2.63
Total Tetra-Octa Furans	6.17	6.17
Total Tetra-Octa Dioxins & Furans	6.17	6.17

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Checkcode: 245-743-FNJ

Datafile: 220209C08

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3459.224	2.13
1379-TCDD	NotFnd		0.8860						1.18		3459.224	2.13
1369-TCDD	NotFnd		0.9009						1.18		3459.224	2.13
1469-TCDD	NotFnd		0.9281						1.18		3459.224	2.13
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3459.224	2.13
1378-TCDD	NotFnd		0.9432						1.18		3459.224	2.13
1268-TCDD	NotFnd		0.9500						1.18		3459.224	2.13
1478-TCDD	NotFnd		0.9586						1.18		3459.224	2.13
1279-TCDD	NotFnd		0.9645						1.18		3459.224	2.13
1234/1269-TCDD	NotFnd		0.9770						1.18		3459.224	2.13
1236-TCDD	NotFnd		0.9817						1.18		3459.224	2.13
1237/1238-TCDD	NotFnd		0.9905						1.18		3459.224	2.13
1239-TCDD	NotFnd		0.9952						1.18		3459.224	2.13
2378-TCDD	NotFnd		1.0008						1.18		3459.224	2.13
1278-TCDD	NotFnd		1.0121						1.18		3459.224	2.13
1267-TCDD	NotFnd		1.0167						1.18		3459.224	2.13
1289-TCDD	NotFnd		1.0345						1.18		3459.224	2.13
12479/12468-PeCDD	NotFnd		0.9267						1.04		2719.29	1.86
12469-PeCDD	NotFnd		0.9425						1.04		2719.29	1.86
12368-PeCDD	NotFnd		0.9588						1.04		2719.29	1.86
12478-PeCDD	NotFnd		0.9643						1.04		2719.29	1.86
12379-PeCDD	NotFnd		0.9673						1.04		2719.29	1.86
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2719.29	1.86
12346/12347-PeCDD	NotFnd		0.9858						1.04		2719.29	1.86
12378-PeCDD	NotFnd		1.0006						1.04		2719.29	1.86
12367-PeCDD	NotFnd		1.0033						1.04		2719.29	1.86
12389-PeCDD	NotFnd		1.0134						1.04		2719.29	1.86
124679/124689-HxCDD	NotFnd		0.9542						1.10		2369.797	1.55
123468-HxCDD	NotFnd		0.9715						1.10		2369.797	1.55
123679/123689-HxCDD	NotFnd		0.9793						1.10		2369.797	1.55
123469-HxCDD	NotFnd		0.9828						1.10		2369.797	1.55
123478-HxCDD	NotFnd		1.0004						1.09		2369.797	1.55
123678-HxCDD	NotFnd		1.0035						1.15		2369.797	1.54
123467-HxCDD	NotFnd		1.0085						1.10		2369.797	1.55
123789-HxCDD	NotFnd		1.0112						1.05		2369.797	1.56

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ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SW

UTP: 09-Feb-2022 14:37:54 DTF

J-level: 5 pg/L Split: 1

Checkcode: 245-743-FNJ

Datafile: 220209C08

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

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1234679-HpCDD	NotFnd		0.9837						1.06		2302.062	1.95
1234678-HpCDD	NotFnd		1.0003						1.06		2302.062	1.95
OCDD	NotFnd		1.0004						1.13		9150.41	15.1
OCDD-a	NotFnd		1.0003						0.07		3439.39	89
1368-TCDF	NotFnd		0.8251						1.08		2752.557	1.2
1468-TCDF	NotFnd		0.8458						1.08		2752.557	1.2
2468-TCDF	NotFnd		0.8686						1.08		2752.557	1.2
1346/1246-TCDF	NotFnd		0.8814						1.08		2752.557	1.2
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2752.557	1.2
1348-TCDF	NotFnd		0.8962						1.08		2752.557	1.2
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2752.557	1.2
1268-TCDF	NotFnd		0.9145						1.08		2752.557	1.2
1467-TCDF	NotFnd		0.9193						1.08		2752.557	1.2
1478-TCDF	NotFnd		0.9254						1.08		2752.557	1.2
1369/1237-TCDF	NotFnd		0.9387						1.08		2752.557	1.2
2467-TCDF	NotFnd		0.9433						1.08		2752.557	1.2
2368-TCDF	NotFnd		0.9489						1.08		2752.557	1.2
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2752.557	1.2
1278-TCDF	NotFnd		0.9683						1.08		2752.557	1.2
1349-TCDF	NotFnd		0.9722						1.08		2752.557	1.2
1267-TCDF	NotFnd		0.9783						1.08		2752.557	1.2
2346/1249-TCDF	NotFnd		0.9850						1.08		2752.557	1.2
2347/1279-TCDF	NotFnd		0.9926						1.08		2752.557	1.2
2348-TCDF	NotFnd		0.9967						1.08		2752.557	1.2
2378-TCDF	NotFnd		1.0008						1.08		2752.557	1.2
2367/3467-TCDF	NotFnd		1.0137						1.08		2752.557	1.2
1269-TCDF	NotFnd		1.0223						1.08		2752.557	1.2
1239-TCDF	NotFnd		1.0321						1.08		2752.557	1.2
1289-TCDF	NotFnd		1.0722						1.08		2752.557	1.2
13468/12468-PeCDF	NotFnd		0.9139						1.02		2749.802	1.24
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2866.18	1.29
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2866.18	1.29
14678-PeCDF	NotFnd		0.9692						1.02		2866.18	1.29
13479-PeCDF	NotFnd		0.9723						1.02		2866.18	1.29
13469/12479-PeCDF	NotFnd		0.9797						1.02		2866.18	1.29
12346-PeCDF	NotFnd		0.9840						1.02		2866.18	1.29

Lab ID: B6238_18887_DF_002

Acq'd: 09 Feb 2022 10:25 DTF

Wt/Vol: 1.00 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-SW

UTP: 09-Feb-2022 14:37:54 DTF

J-level: 5 pg/L Split: 1

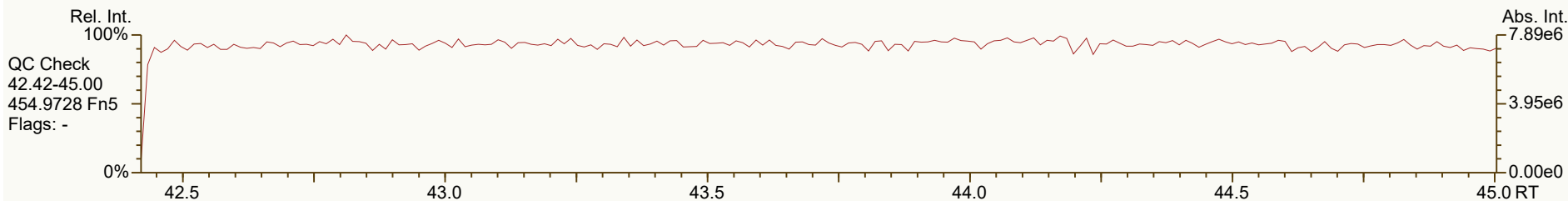
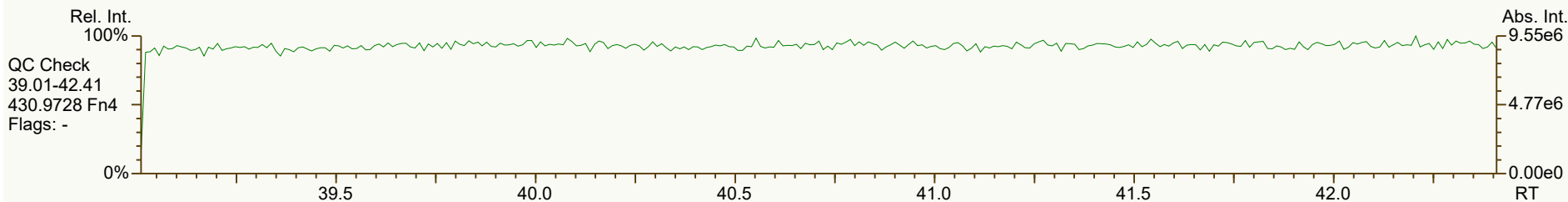
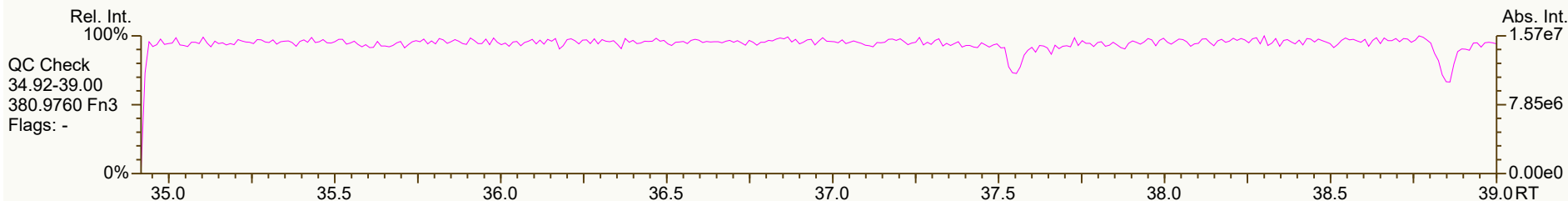
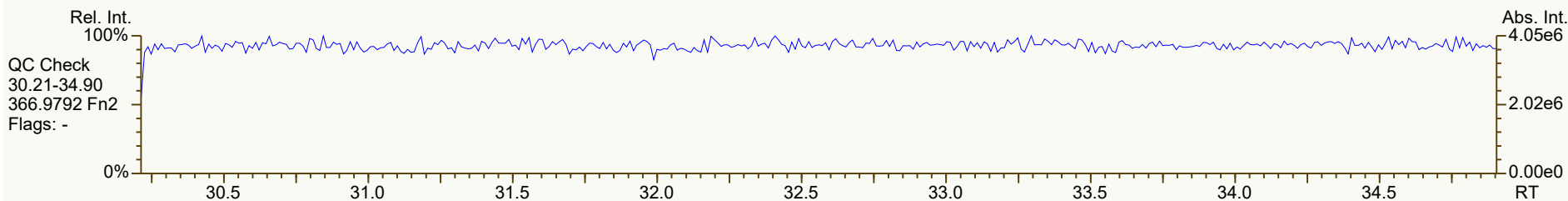
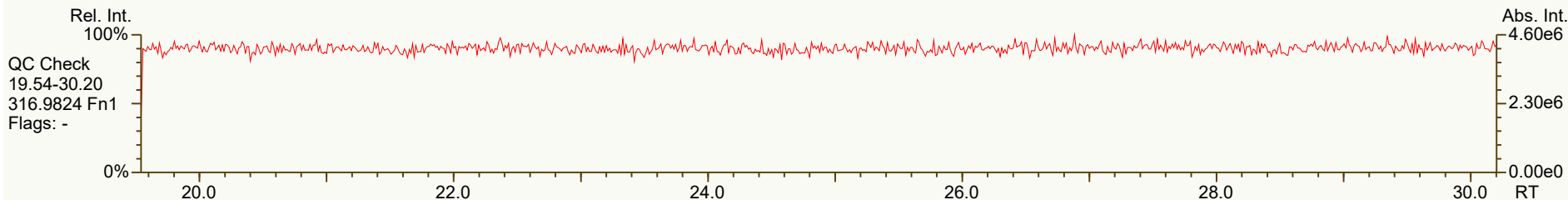
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Datafile: 220209C08

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

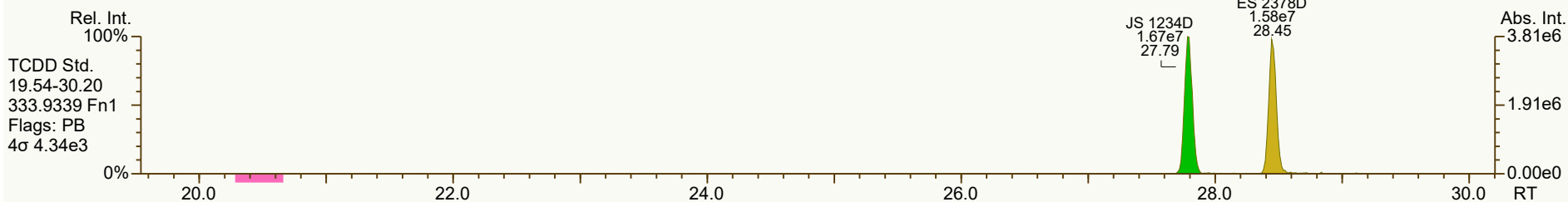
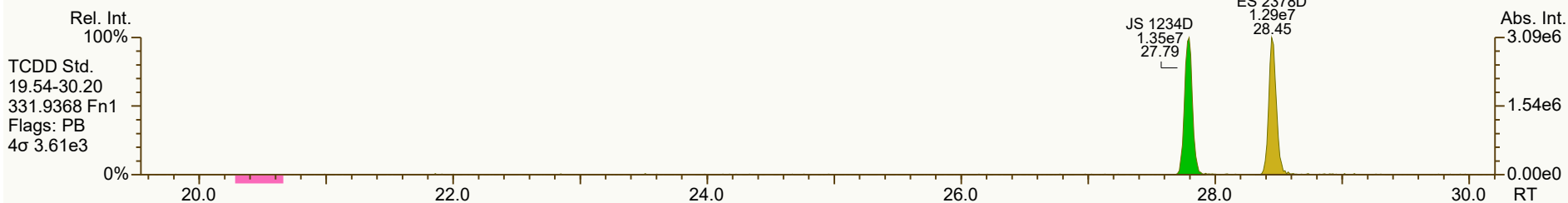
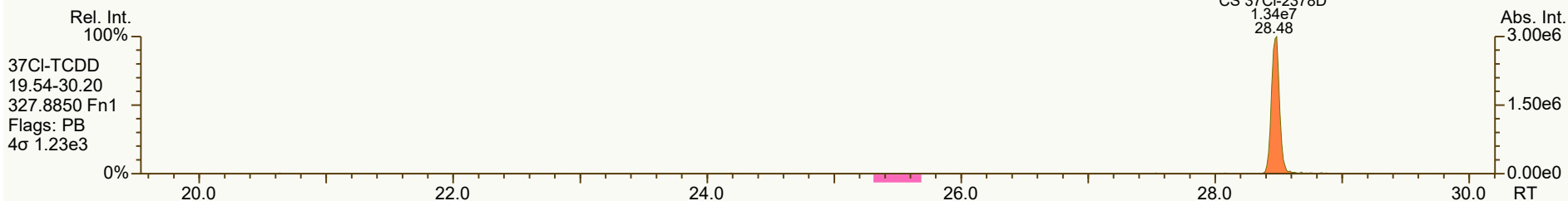
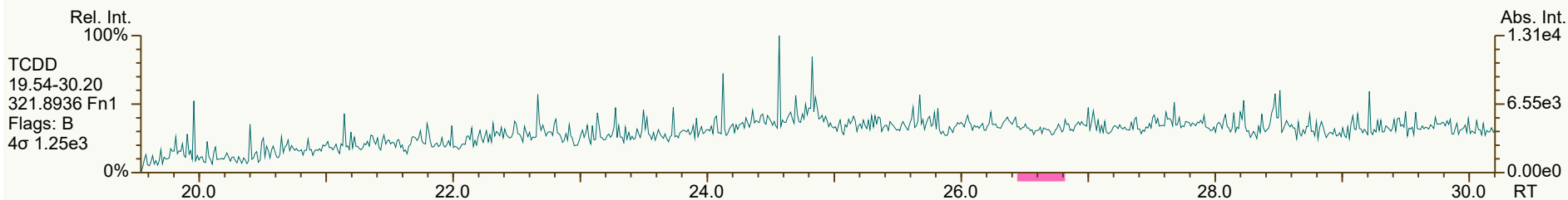
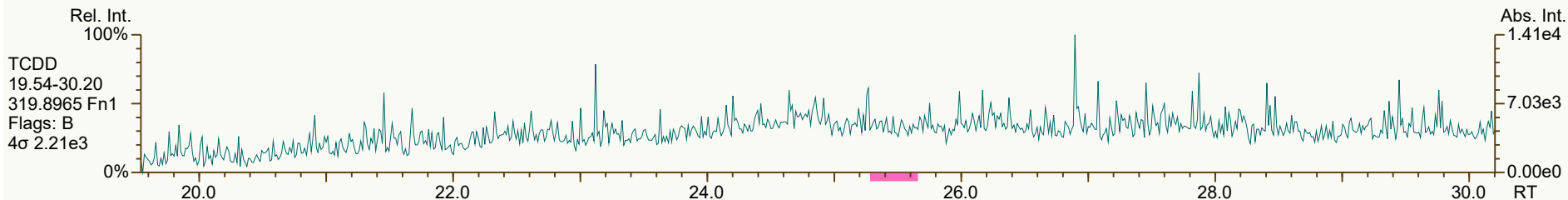
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12347-PeCDF	NotFnd		0.9894						1.02		2866.18	1.29
12348-PeCDF	NotFnd		0.9940						1.02		2866.18	1.29
12378-PeCDF	NotFnd		1.0005						1.02		2866.18	1.34
12678/12367-PeCDF	NotFnd		1.0089						1.02		2866.18	1.29
12379-PeCDF	NotFnd		1.0142						1.02		2866.18	1.29
12679-PeCDF	NotFnd		0.9929						1.02		2866.18	1.29
23467/12369-PeCDF	NotFnd		0.9967						1.02		2866.18	1.29
23478-PeCDF	NotFnd		1.0005						1.02		2866.18	1.24
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2866.18	1.29
12349-PeCDF	NotFnd		1.0100						1.02		2866.18	1.29
12389-PeCDF	NotFnd		1.0324						1.02		2866.18	1.29
123468-HxCDF	35.33	J	0.9627	0.9627	0	6.20E+04	1.34	Y	1.19	3.55	3134.851	1.47
124678/134678-HxCDF	NotFnd		0.9682						1.19		3134.851	1.47
134679-HxCDF	NotFnd		0.9744						1.19		3134.851	1.47
124679-HxCDF	NotFnd		0.9798						1.19		3134.851	1.47
124689-HxCDF	NotFnd		0.9858						1.19		3134.851	1.47
123467-HxCDF	NotFnd		0.9972						1.19		3134.851	1.47
123478-HxCDF	NotFnd		1.0004						1.27		3134.851	1.43
123678-HxCDF	NotFnd		1.0004						1.15		3134.851	1.44
123479-HxCDF	NotFnd		1.0049						1.19		3134.851	1.47
123469-HxCDF	NotFnd		1.0090						1.19		3134.851	1.47
123679-HxCDF	NotFnd		0.9942						1.19		3134.851	1.47
234678-HxCDF	NotFnd		1.0005						1.19		3134.851	1.37
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3134.851	1.47
123789-HxCDF	NotFnd		1.0004						1.16		3134.851	1.68
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		3134.851	1.47
1234678-HpCDF	39.86	J	1.0003	1.0001	-0.5	3.96E+04	1.04	Y	1.37	2.63	2713.731	1.28
1234679-HpCDF	NotFnd		1.0068						1.34		2713.731	1.55
1234689-HpCDF	NotFnd		1.0103						1.34		2713.731	1.55
1234789-HpCDF	NotFnd		1.0002						1.31		2713.731	1.9
OCDF	NotFnd		1.0003						1.07		2435.506	3.37
OCDF-a	NotFnd		1.0002						0.07		3295.427	73.7



SGS ID: B6238_18887_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21

Acq: 09-Feb-2022 10:25:30
User: DTF Datafile: 220209C08



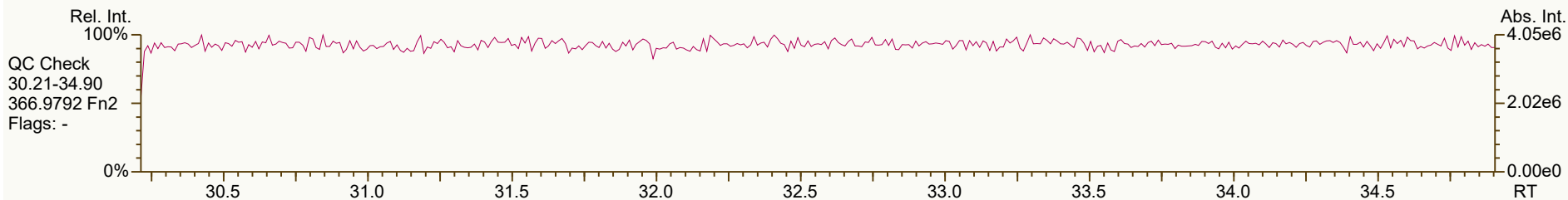
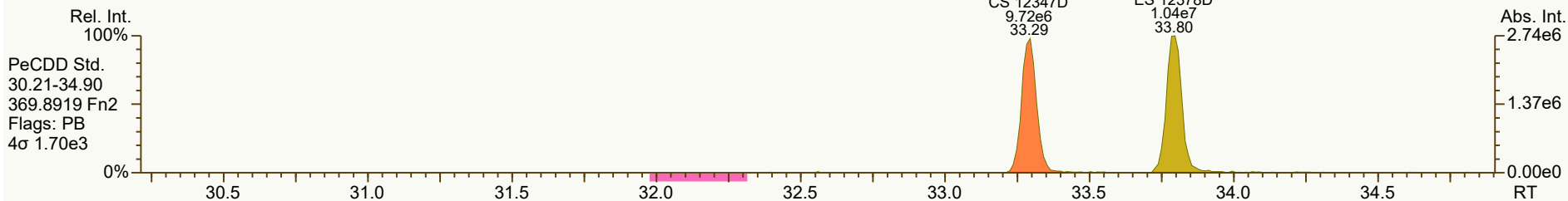
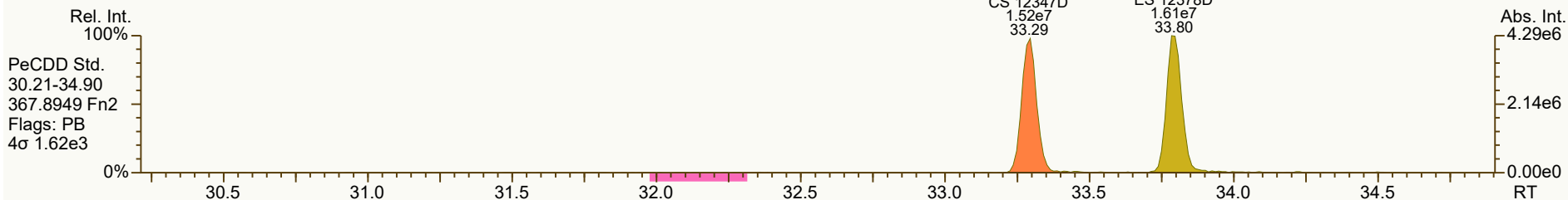
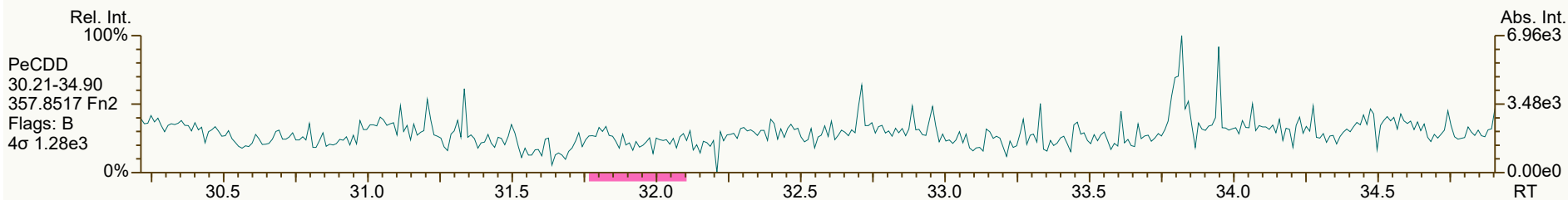
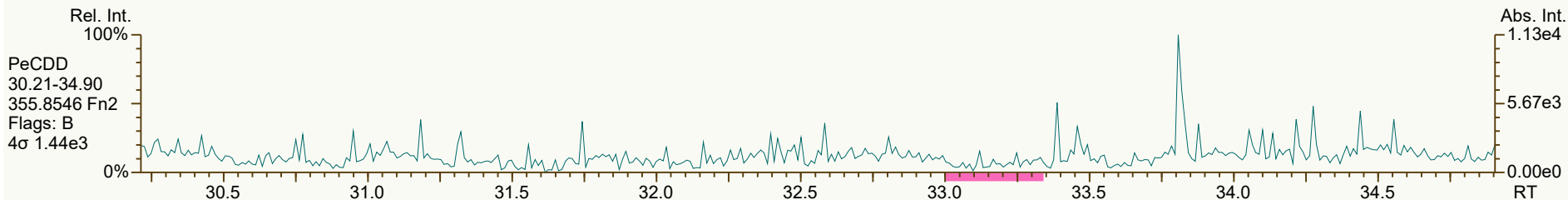
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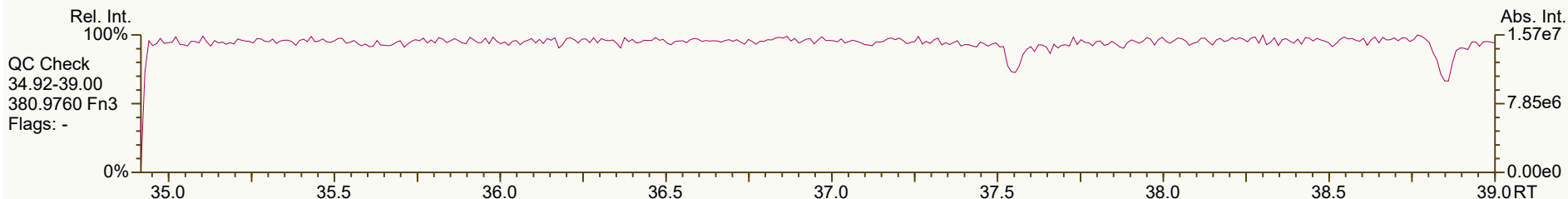
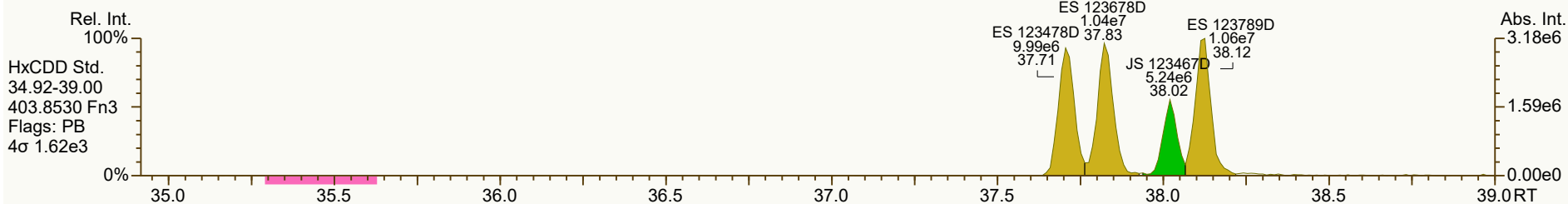
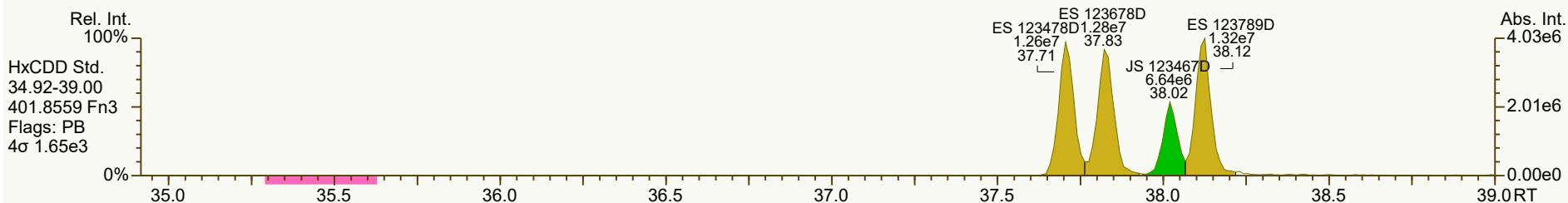
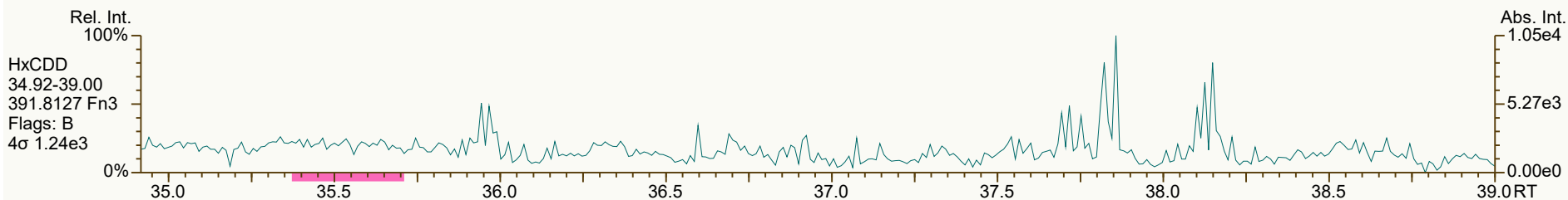
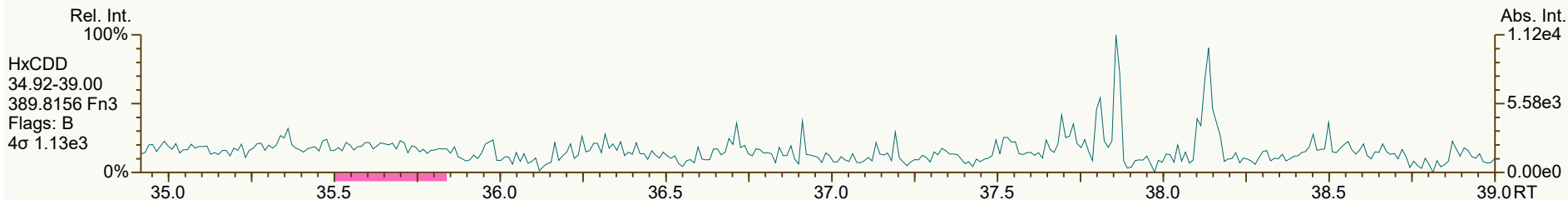
Peak annotation: Areas, Centroids
PKD: 09-Feb-2022 14:29 Printed: 09-Feb-2022 14:50 Page 2 of 12

SGS ID: B6238_18887_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21

Acq: 09-Feb-2022 10:25:30
User: DTF Datafile: 220209C08

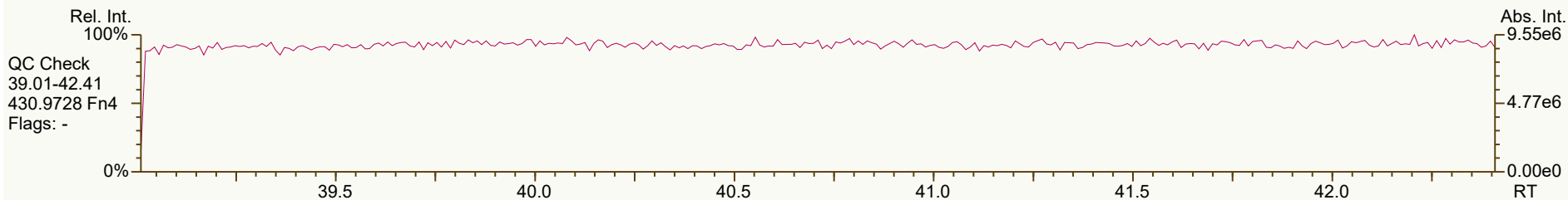
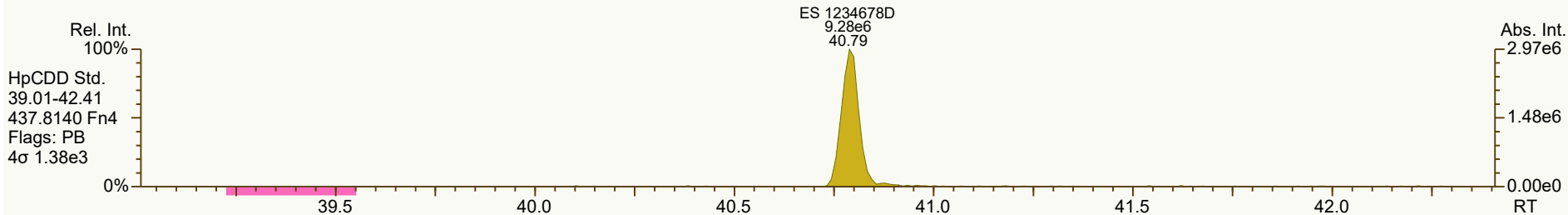
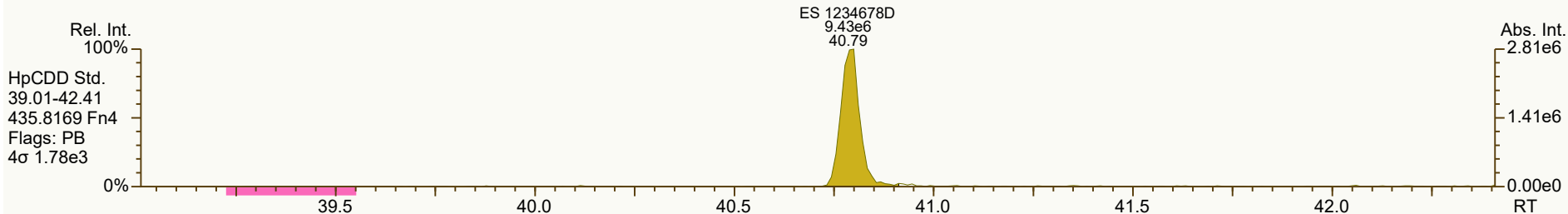
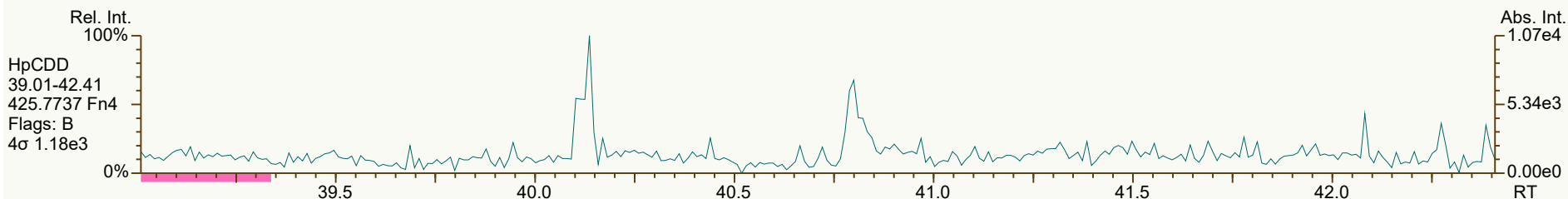
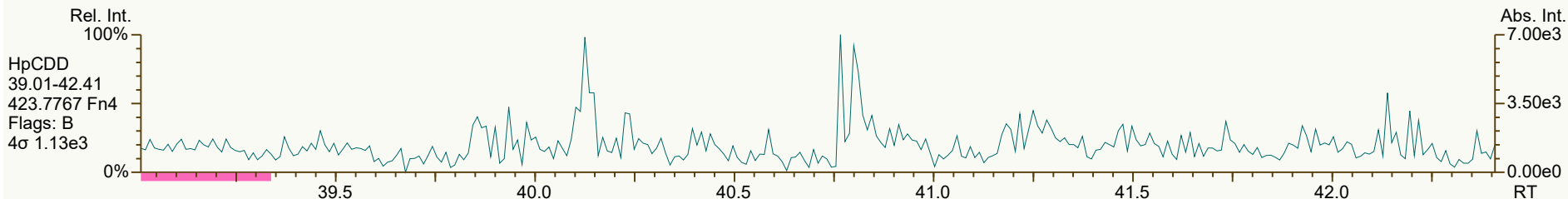


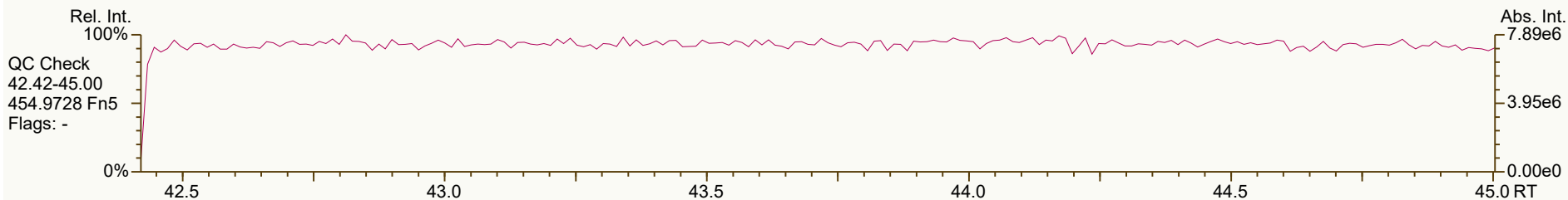
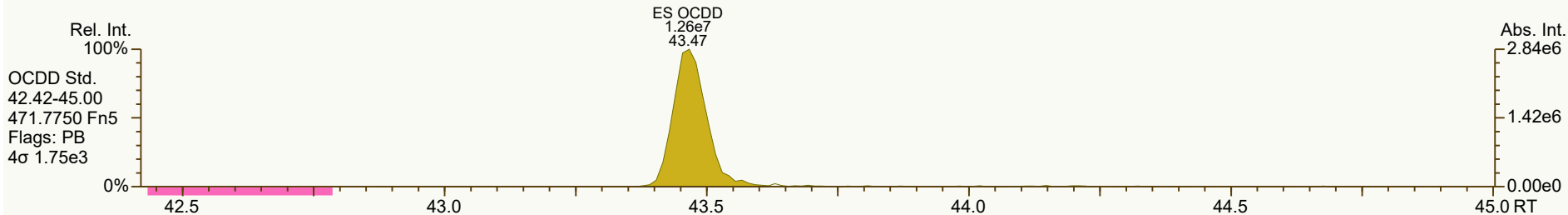
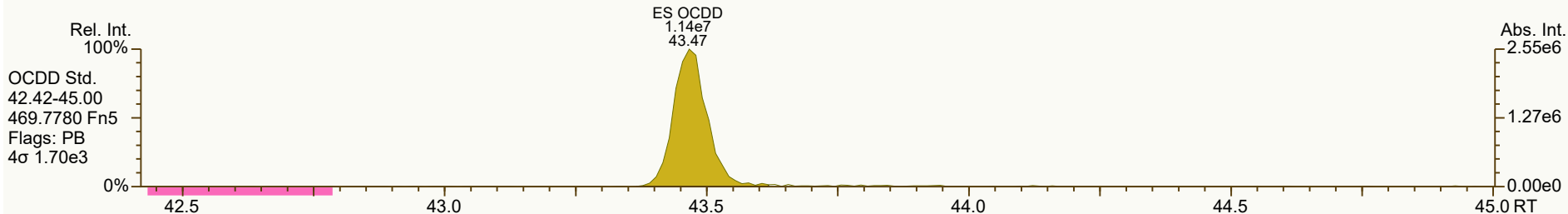
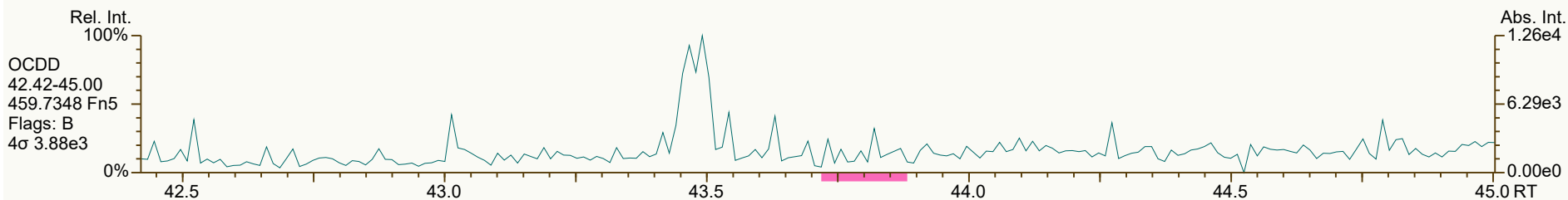
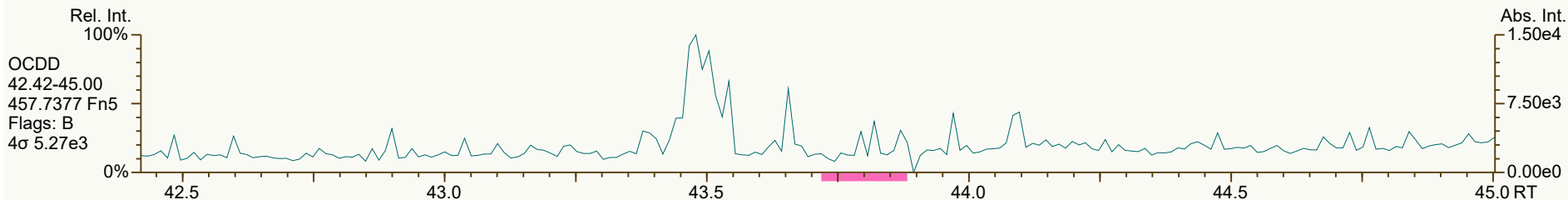


SGS ID: B6238_18887_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21

Acq: 09-Feb-2022 10:25:30
User: DTF Datafile: 220209C08

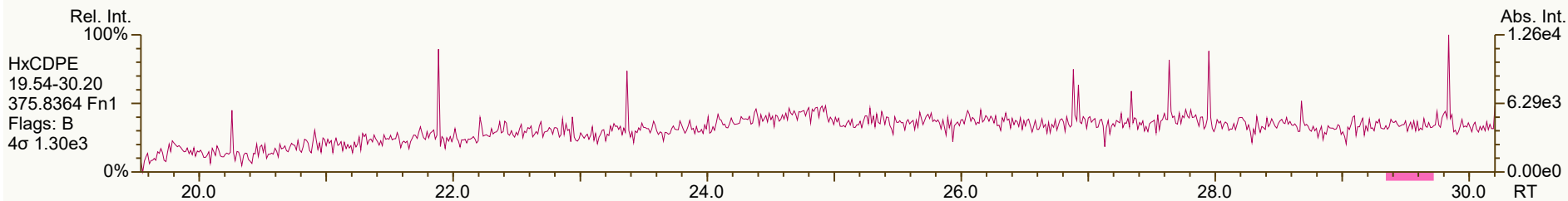
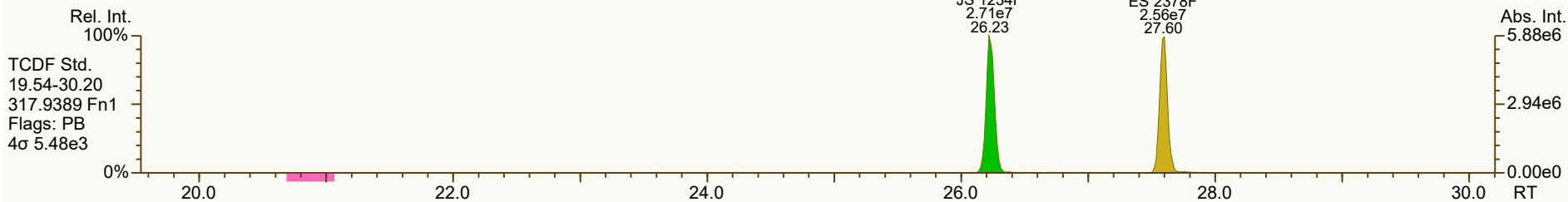
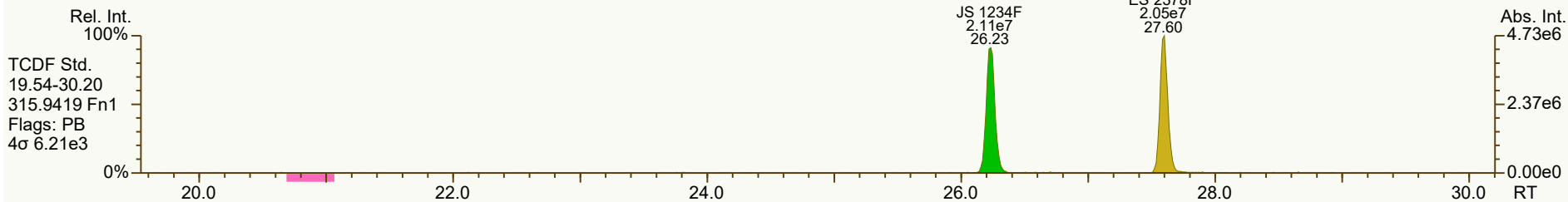
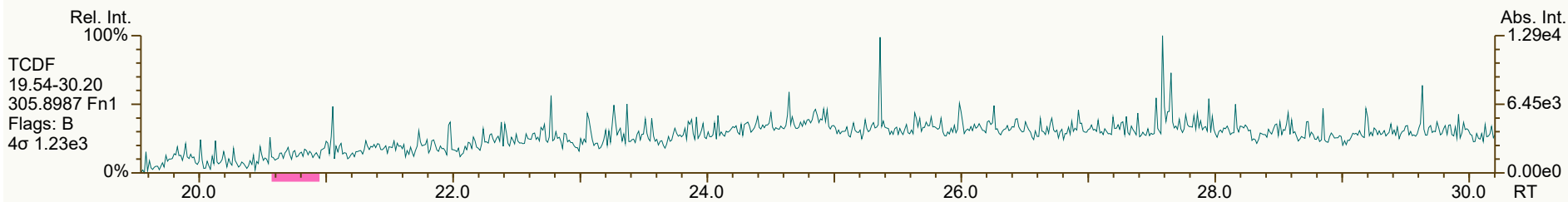
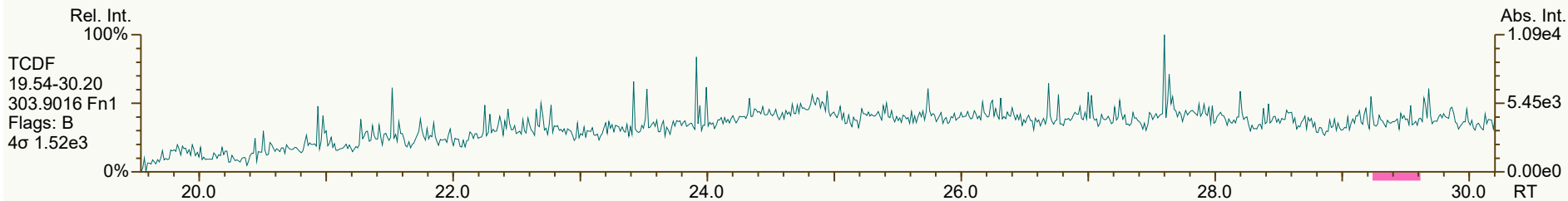




SGS ID: B6238_18887_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

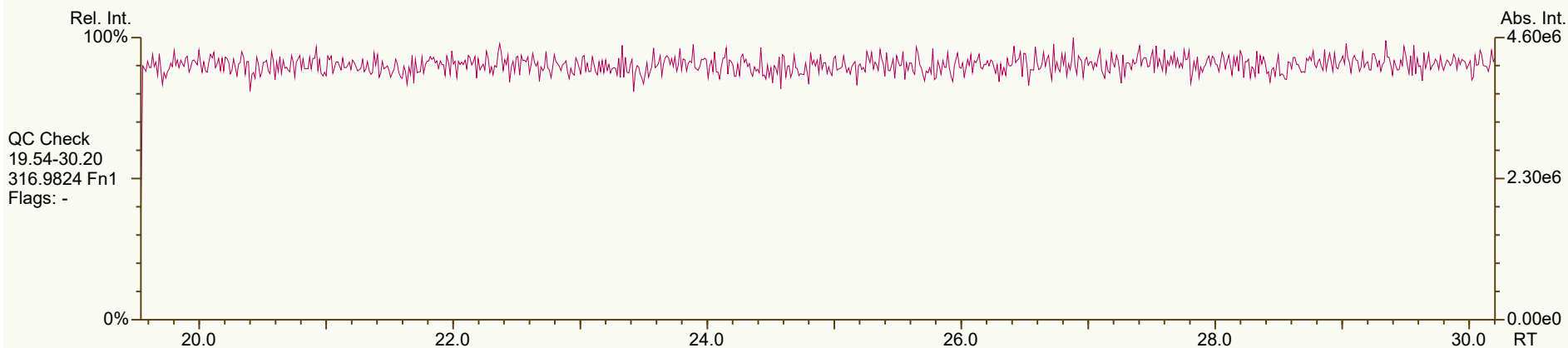
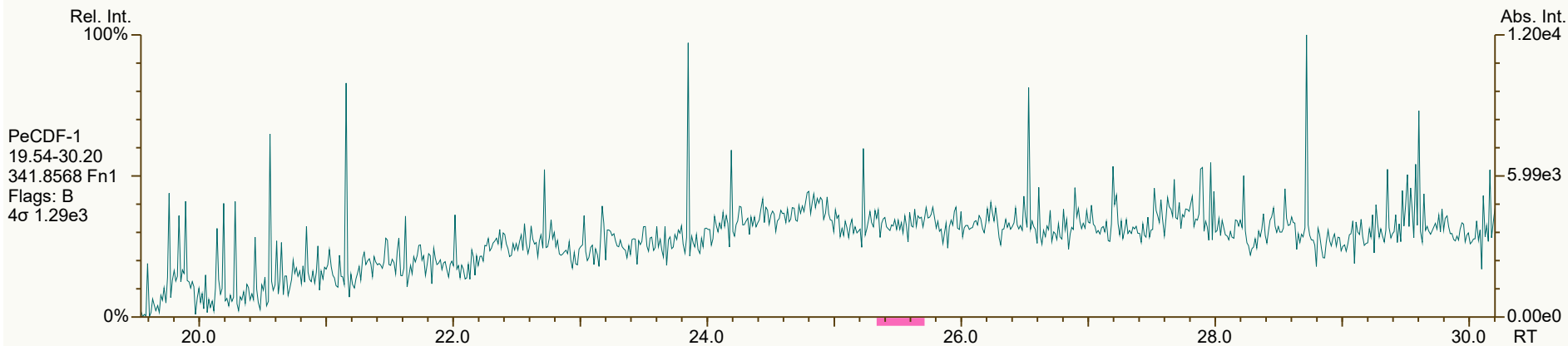
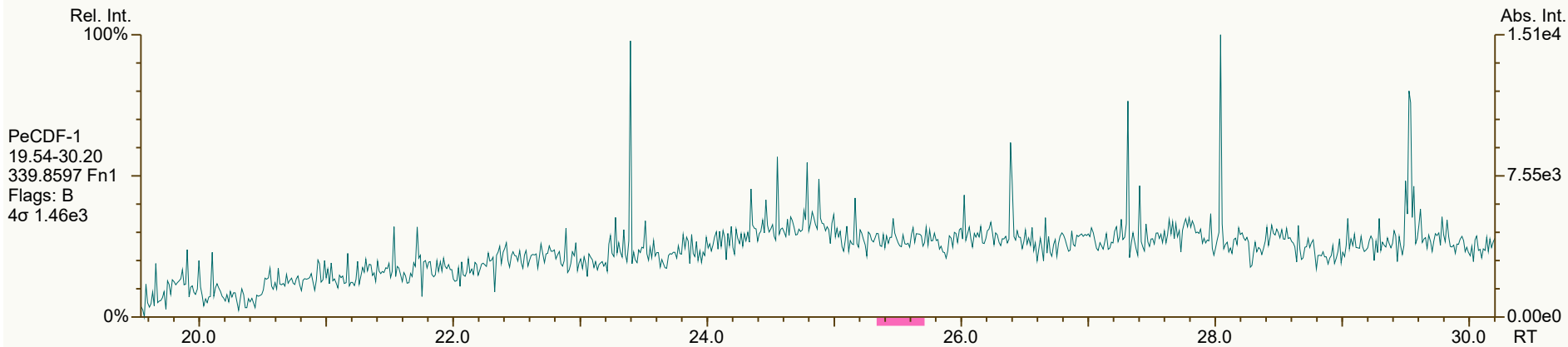
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21

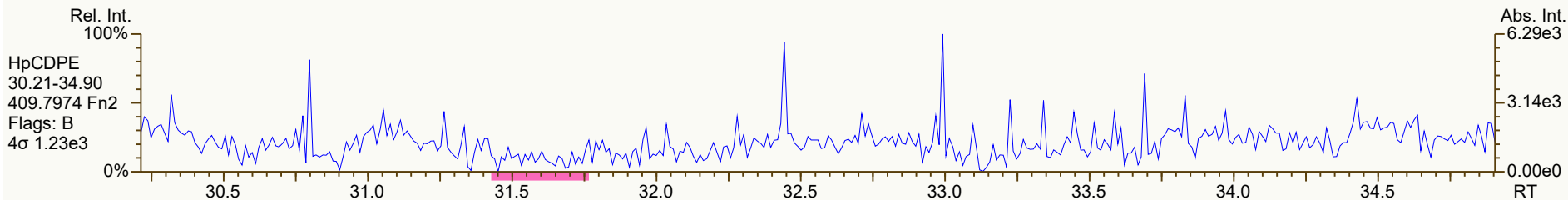
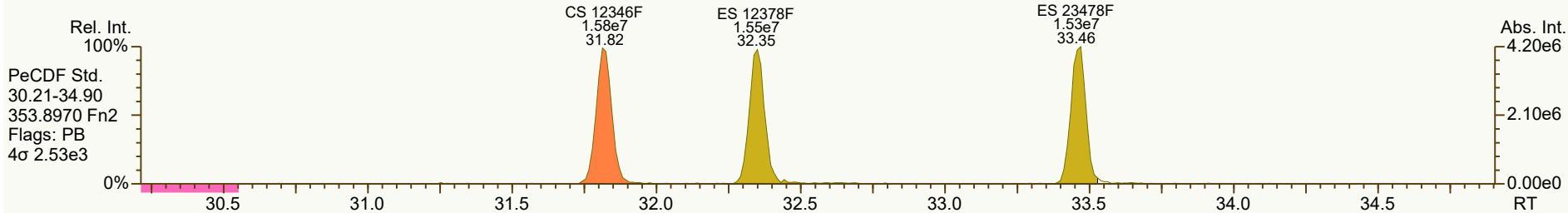
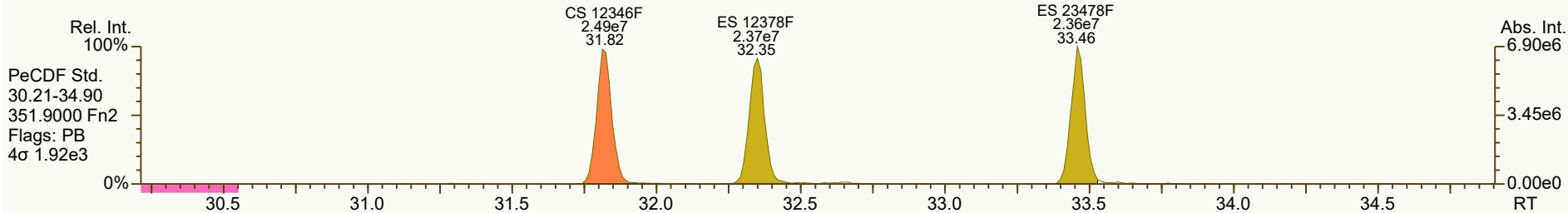
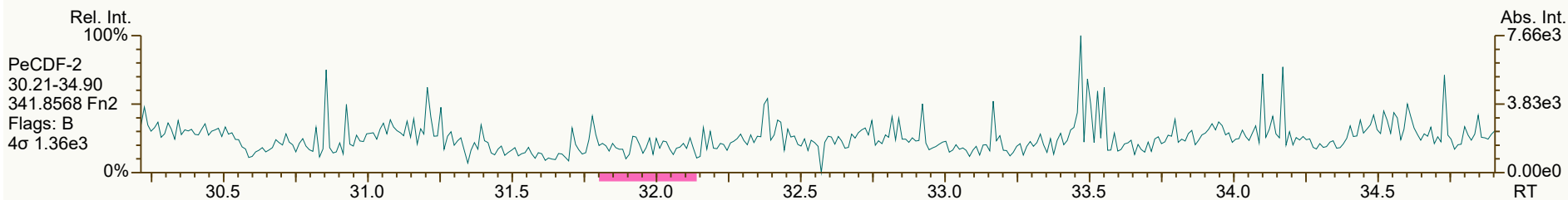
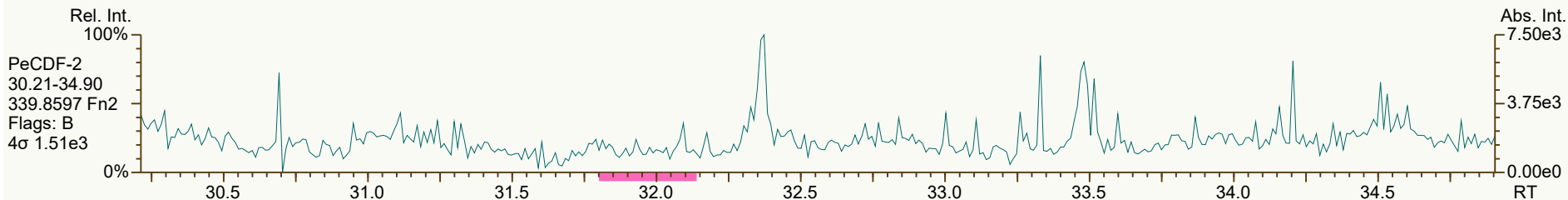
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Peak annotation: Areas, Centroids
Revised: 09-Feb-2022 14:29 (DTF) Printed: 09-Feb-2022 14:50 Page 7 of 12

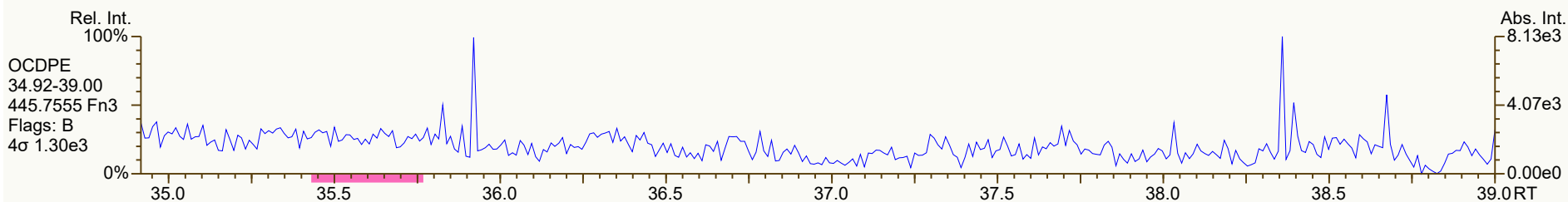
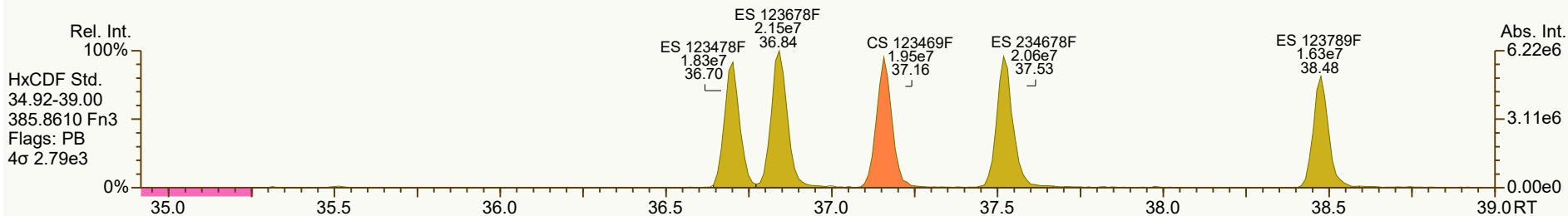
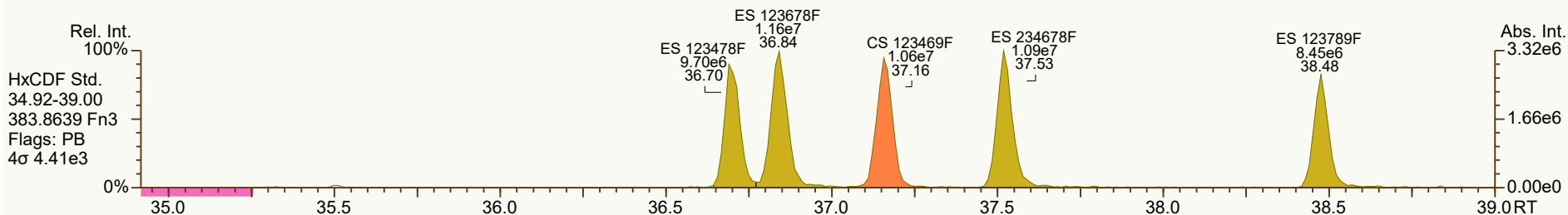
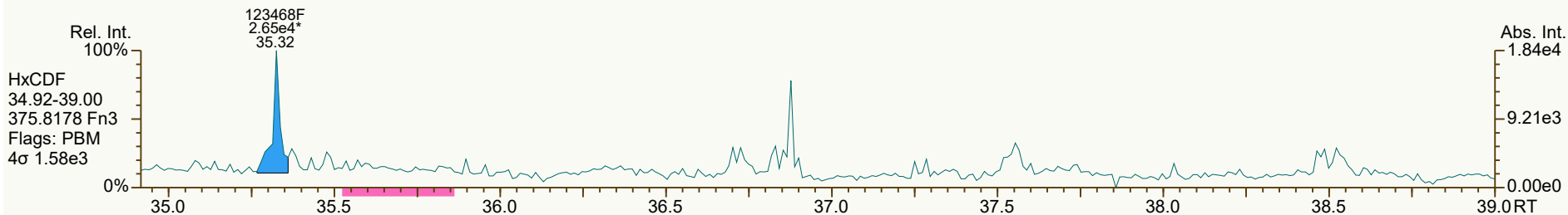
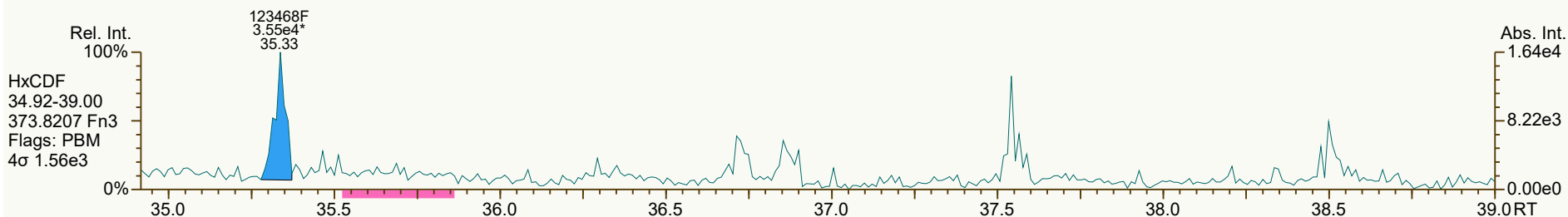




SGS ID: B6238_18887_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21

Acq: 09-Feb-2022 10:25:30
User: DTF Datafile: 220209C08



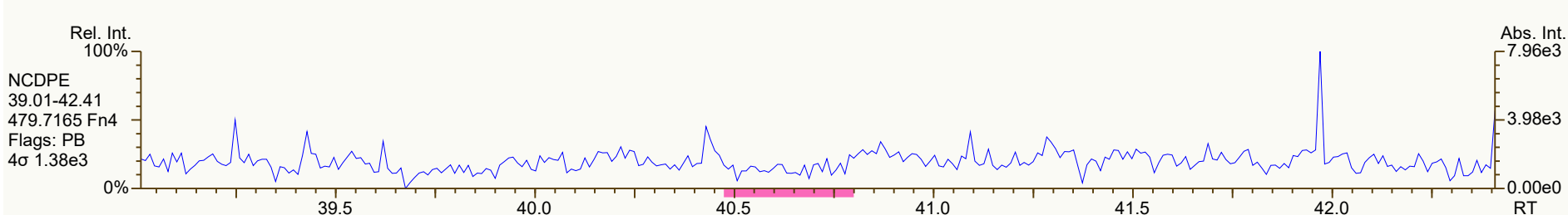
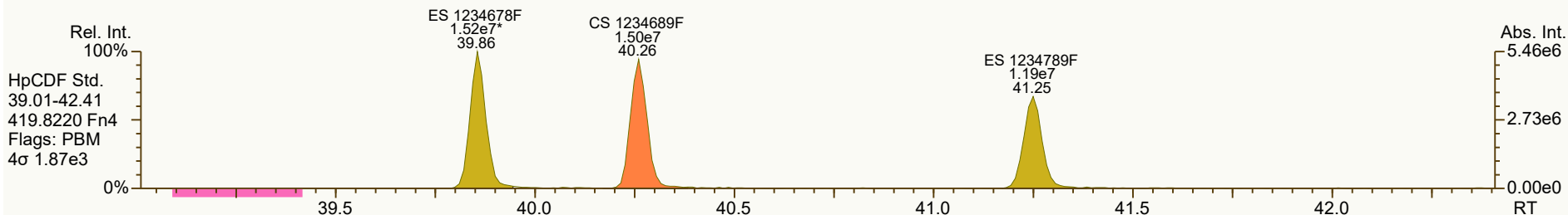
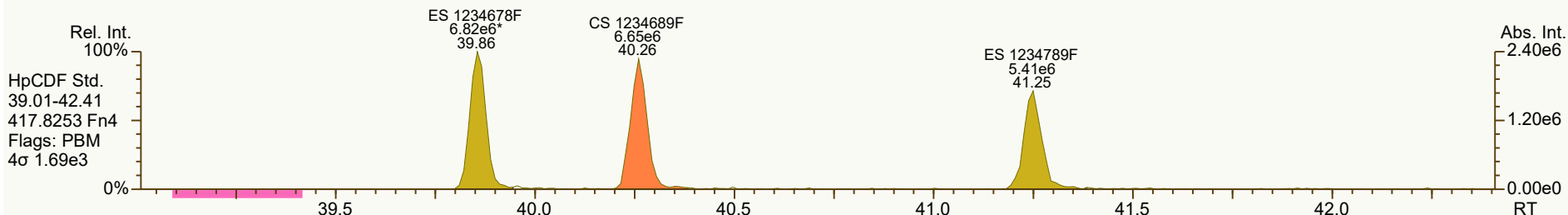
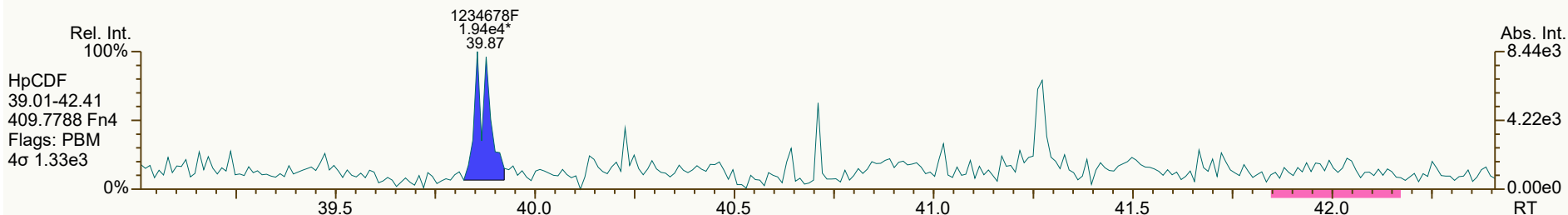
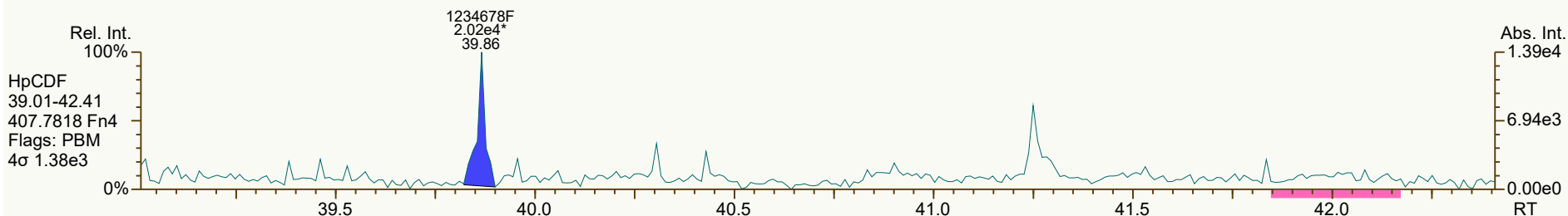
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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8059, 0298, 2604 scc: 245-743

Peak annotation: Areas, Centroids
PKD: 09-Feb-2022 14:30 Printed: 09-Feb-2022 14:50 Page 10 of 12

SGS ID: B6238_18887_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21

Acq: 09-Feb-2022 10:25:30
User: DTF Datafile: 220209C08



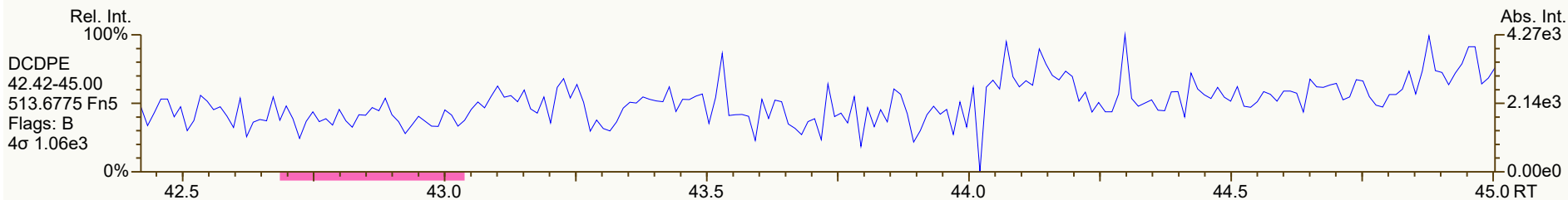
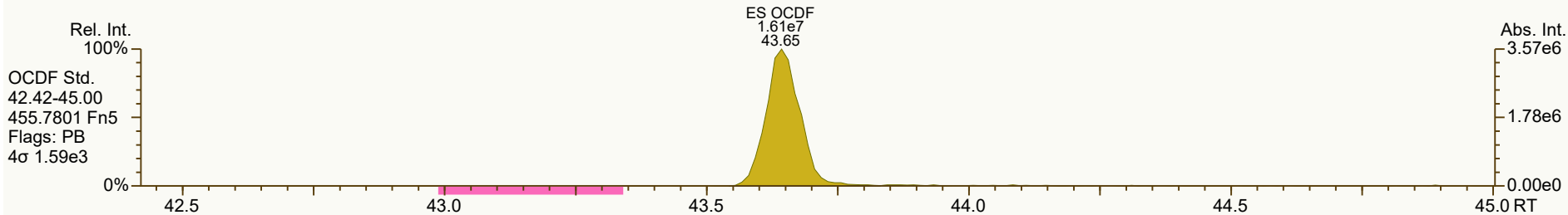
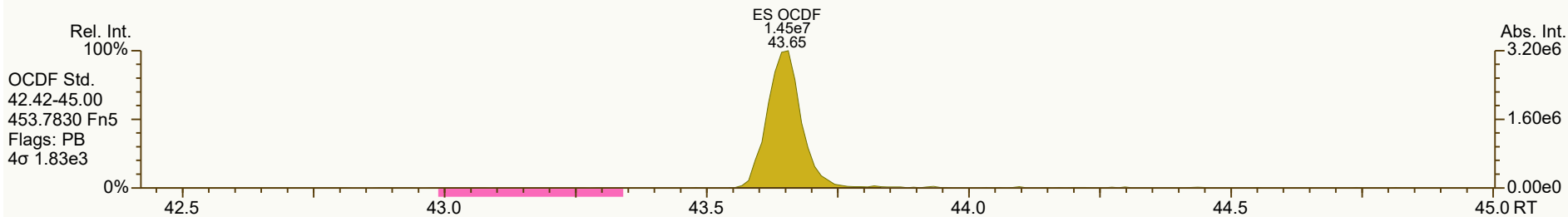
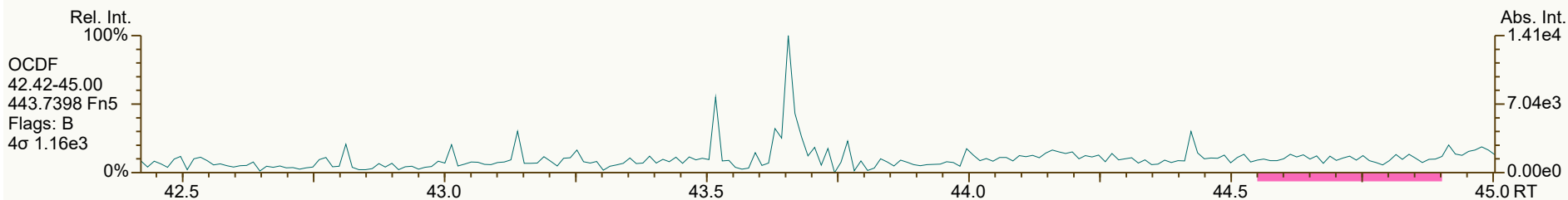
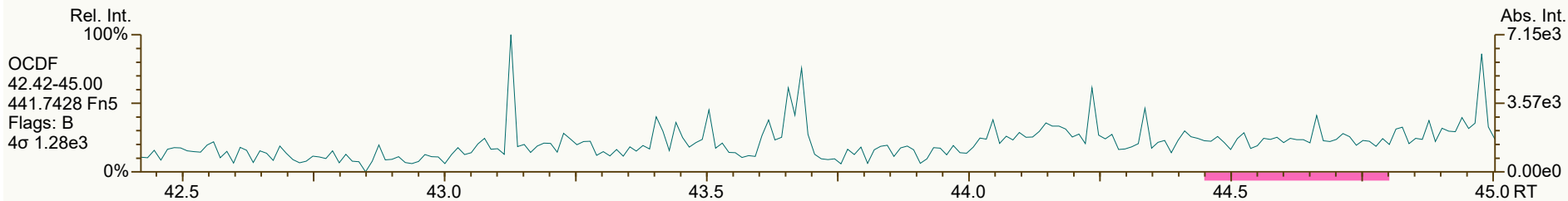
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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5718, 9733, 8825 scc: 245-743

Peak annotation: Areas, Centroids
Revised: 09-Feb-2022 14:30 (DTF) Printed: 09-Feb-2022 14:50 Page 11 of 12

SGS ID: B6238_18887_DF_002
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-SW
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21

Acq: 09-Feb-2022 10:25:30
User: DTF Datafile: 220209C08



Results: P:\B6200_B6299\B6238\B6238_18887_DF\Resources\B6238_18887_DF_002.utp_res, saved 09-Feb-2022 14:37 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7491, 1764, 5178 scc: 245-743

Peak annotation: Areas, Centroids
PKD: 09-Feb-2022 14:29 Printed: 09-Feb-2022 14:50 Page 12 of 12

Lab ID: B6238_18887_DF_003

Acq'd: 09 Feb 2022 11:11 DTF

Wt/Vol: 0.99 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NC

UTP: 09-Feb-2022 14:37:55 DTF

J-level: 5.05 pg/L Split: 1

Checkcode: 216-586-JHG

Datafile: 220209C09

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3531.481	2.37
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2594.507	2
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	1926.6151	1.54
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	1926.6151	1.36
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	1926.6151	1.36
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	3232.851	2.61
OCDD	NotFnd		1.0004	-		-	-	-	1.13	-	3308.876	5.83

2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	2328.975	1.15
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2564.5367	1.26
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2564.5367	1.22
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2412.8841	1.27
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2412.8841	1.24
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2412.8841	1.3
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2412.8841	1.48
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2319.879	1.19
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2319.879	1.85
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2305.553	3.27

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46	1.0236	1.0239	+0.5	2.63E+07	0.81	Y	1.05	84.6
ES 12378-PeCDD	33.80	1.2144	1.2160	+3.2	2.37E+07	1.60	Y	0.88	90.8
ES 123478-HxCDD	37.72	0.9920	0.9919	-0.2	2.05E+07	1.29	Y	0.97	89.5
ES 123678-HxCDD	37.84	0.9951	0.9950	-0.2	2.17E+07	1.21	Y	0.94	97.6
ES 123789-HxCDD	38.13	1.0027	1.0027	0	2.32E+07	1.28	Y	1.09	90.3
ES 1234678-HpCDD	40.80	1.0724	1.0730	+1.5	1.80E+07	1.05	Y	0.91	84
ES OCDD	43.48	1.1428	1.1433	+1.3	2.25E+07	0.90	Y	0.62	76.8

ES 2378-TCDF	27.60	1.0516	1.0520	+0.7	4.10E+07	0.81	Y	1.06	82.4
ES 12378-PeCDF	32.36	1.2312	1.2331	+3.7	3.70E+07	1.57	Y	0.91	86.5
ES 23478-PeCDF	33.47	1.2733	1.2756	+4.6	3.73E+07	1.56	Y	0.88	90
ES 123478-HxCDF	36.71	0.9655	0.9654	-0.2	2.54E+07	0.55	Y	1.20	90.1
ES 123678-HxCDF	36.85	0.9692	0.9691	-0.2	3.04E+07	0.52	Y	1.35	95.8
ES 234678-HxCDF	37.53	0.9871	0.9870	-0.2	2.88E+07	0.55	Y	1.24	98.7
ES 123789-HxCDF	38.48	1.0121	1.0121	0	2.30E+07	0.54	Y	1.16	84.8
ES 1234678-HpCDF	39.86	1.0479	1.0483	+1.0	2.04E+07	0.45	Y	0.97	89.5
ES 1234789-HpCDF	41.26	1.0845	1.0850	+1.2	1.63E+07	0.48	Y	0.85	81.4
ES OCDF	43.66	1.1477	1.1482	+1.3	2.85E+07	0.90	Y	0.81	74.9

Lab ID: B6238_18887_DF_003

Acq'd: 09 Feb 2022 11:11 DTF

Wt/Vol: 0.99 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NC

UTP: 09-Feb-2022 14:37:55 DTF

J-level: 5.05 pg/L Split: 1

Checkcode: 216-586-JHG

Datafile: 220209C09

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	2.97E+07	0.84	Y	-	-
JS 1234-TCDF	26.24		-	-	-	4.70E+07	0.78	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.18E+07	1.21	Y	-	-
CS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.33E+07	n/a	-	1.20	93.2
CS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.55E+07	1.62	Y	0.75	114
CS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	4.19E+07	1.56	Y	0.85	105
CS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.14E+07	0.53	Y	1.12	119
CS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.31E+07	0.44	Y	0.89	111
SS 37C1-2378-TCDD	28.48		1.0244	1.0247	+0.5	1.33E+07	n/a		1.15	110
SS 12347-PeCDD	33.30		1.1964	1.1980	+3.2	2.55E+07	1.62	Y	0.86	126
SS 12346-PeCDF	31.83		1.2112	1.2129	+3.2	4.19E+07	1.56	Y	0.94	121
SS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.14E+07	0.53	Y	0.83	124
SS 1234689-HpCDF	40.27		1.0584	1.0590	+1.4	2.31E+07	0.44	Y	0.92	124

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: B6238_18887_DF_003

Acq'd: 09 Feb 2022 11:11 DTF

Wt/Vol: 0.99 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NC

UTP: 09-Feb-2022 14:37:55 DTF

J-level: 5.05 pg/L Split: 1

Checkcode: 216-586-JHG

Datafile: 220209C09

Report: 09 Feb 2022 17:28 TF

StdS (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3531.481	2.37
1379-TCDD	NotFnd		0.8860						1.18		3531.481	2.37
1369-TCDD	NotFnd		0.9009						1.18		3531.481	2.37
1469-TCDD	NotFnd		0.9281						1.18		3531.481	2.37
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3531.481	2.37
1378-TCDD	NotFnd		0.9432						1.18		3531.481	2.37
1268-TCDD	NotFnd		0.9500						1.18		3531.481	2.37
1478-TCDD	NotFnd		0.9586						1.18		3531.481	2.37
1279-TCDD	NotFnd		0.9645						1.18		3531.481	2.37
1234/1269-TCDD	NotFnd		0.9770						1.18		3531.481	2.37
1236-TCDD	NotFnd		0.9817						1.18		3531.481	2.37
1237/1238-TCDD	NotFnd		0.9905						1.18		3531.481	2.37
1239-TCDD	NotFnd		0.9952						1.18		3531.481	2.37
2378-TCDD	NotFnd		1.0008						1.18		3531.481	2.37
1278-TCDD	NotFnd		1.0121						1.18		3531.481	2.37
1267-TCDD	NotFnd		1.0167						1.18		3531.481	2.37
1289-TCDD	NotFnd		1.0345						1.18		3531.481	2.37
12479/12468-PeCDD	NotFnd		0.9267						1.04		2594.507	2
12469-PeCDD	NotFnd		0.9425						1.04		2594.507	2
12368-PeCDD	NotFnd		0.9588						1.04		2594.507	2
12478-PeCDD	NotFnd		0.9643						1.04		2594.507	2
12379-PeCDD	NotFnd		0.9673						1.04		2594.507	2
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2594.507	2
12346/12347-PeCDD	NotFnd		0.9858						1.04		2594.507	2
12378-PeCDD	NotFnd		1.0006						1.04		2594.507	2
12367-PeCDD	NotFnd		1.0033						1.04		2594.507	2
12389-PeCDD	NotFnd		1.0134						1.04		2594.507	2
124679/124689-HxCDD	NotFnd		0.9542						1.10		1926.6151	1.42
123468-HxCDD	NotFnd		0.9715						1.10		1926.6151	1.42
123679/123689-HxCDD	NotFnd		0.9793						1.10		1926.6151	1.42
123469-HxCDD	NotFnd		0.9828						1.10		1926.6151	1.42
123478-HxCDD	NotFnd		1.0004						1.09		1926.6151	1.54
123678-HxCDD	NotFnd		1.0035						1.15		1926.6151	1.36
123467-HxCDD	NotFnd		1.0085						1.10		1926.6151	1.42
123789-HxCDD	NotFnd		1.0112						1.05		1926.6151	1.36

Lab ID: B6238_18887_DF_003

Acq'd: 09 Feb 2022 11:11 DTF

Wt/Vol: 0.99 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NC

UTP: 09-Feb-2022 14:37:55 DTF

J-level: 5.05 pg/L Split: 1

Checkcode: 216-586-JHG

Datafile: 220209C09

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		3232.851	2.61
1234678-HpCDD	NotFnd		1.0003						1.06		3232.851	2.61
OCDD	NotFnd		1.0004						1.13		3308.876	5.83
OCDD-a	NotFnd		1.0003						0.07		3387.454	93.4
1368-TCDF	NotFnd		0.8251						1.08		2328.975	1.15
1468-TCDF	NotFnd		0.8458						1.08		2328.975	1.15
2468-TCDF	NotFnd		0.8686						1.08		2328.975	1.15
1346/1246-TCDF	NotFnd		0.8814						1.08		2328.975	1.15
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2328.975	1.15
1348-TCDF	NotFnd		0.8962						1.08		2328.975	1.15
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2328.975	1.15
1268-TCDF	NotFnd		0.9145						1.08		2328.975	1.15
1467-TCDF	NotFnd		0.9193						1.08		2328.975	1.15
1478-TCDF	NotFnd		0.9254						1.08		2328.975	1.15
1369/1237-TCDF	NotFnd		0.9387						1.08		2328.975	1.15
2467-TCDF	NotFnd		0.9433						1.08		2328.975	1.15
2368-TCDF	NotFnd		0.9489						1.08		2328.975	1.15
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2328.975	1.15
1278-TCDF	NotFnd		0.9683						1.08		2328.975	1.15
1349-TCDF	NotFnd		0.9722						1.08		2328.975	1.15
1267-TCDF	NotFnd		0.9783						1.08		2328.975	1.15
2346/1249-TCDF	NotFnd		0.9850						1.08		2328.975	1.15
2347/1279-TCDF	NotFnd		0.9926						1.08		2328.975	1.15
2348-TCDF	NotFnd		0.9967						1.08		2328.975	1.15
2378-TCDF	NotFnd		1.0008						1.08		2328.975	1.15
2367/3467-TCDF	NotFnd		1.0137						1.08		2328.975	1.15
1269-TCDF	NotFnd		1.0223						1.08		2328.975	1.15
1239-TCDF	NotFnd		1.0321						1.08		2328.975	1.15
1289-TCDF	NotFnd		1.0722						1.08		2328.975	1.15
13468/12468-PeCDF	NotFnd		0.9139						1.02		2900.709	1.4
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2564.5367	1.24
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2564.5367	1.24
14678-PeCDF	NotFnd		0.9692						1.02		2564.5367	1.24
13479-PeCDF	NotFnd		0.9723						1.02		2564.5367	1.24
13469/12479-PeCDF	NotFnd		0.9797						1.02		2564.5367	1.24
12346-PeCDF	NotFnd		0.9840						1.02		2564.5367	1.24

Lab ID: B6238_18887_DF_003

Acq'd: 09 Feb 2022 11:11 DTF

Wt/Vol: 0.99 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NC

UTP: 09-Feb-2022 14:37:55 DTF

J-level: 5.05 pg/L Split: 1

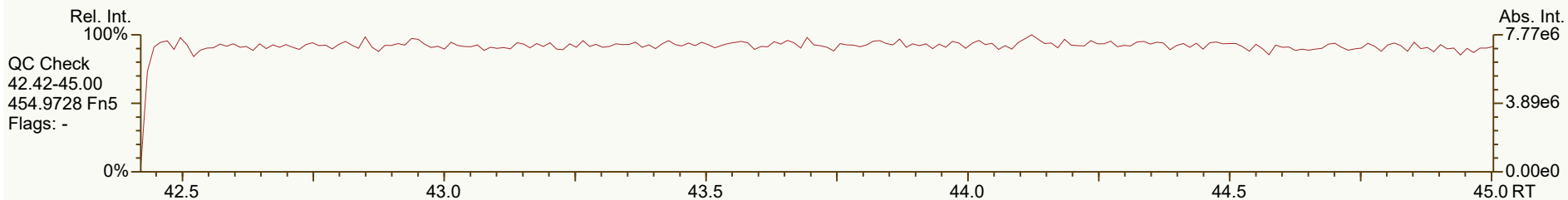
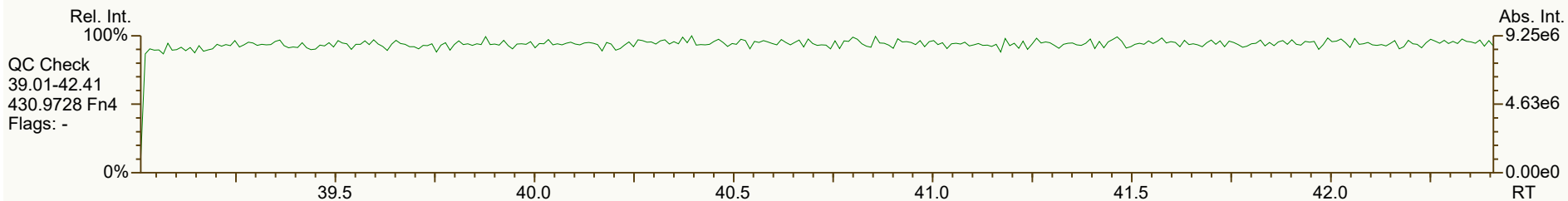
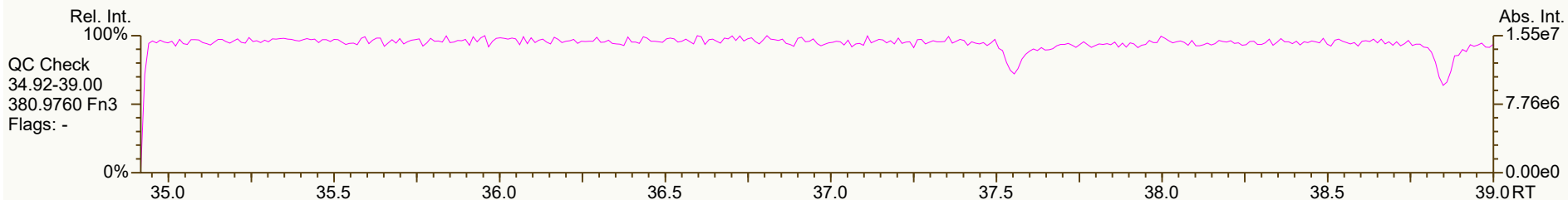
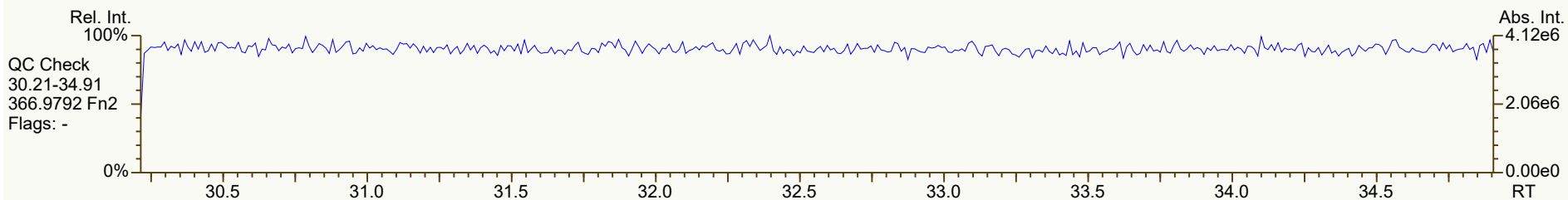
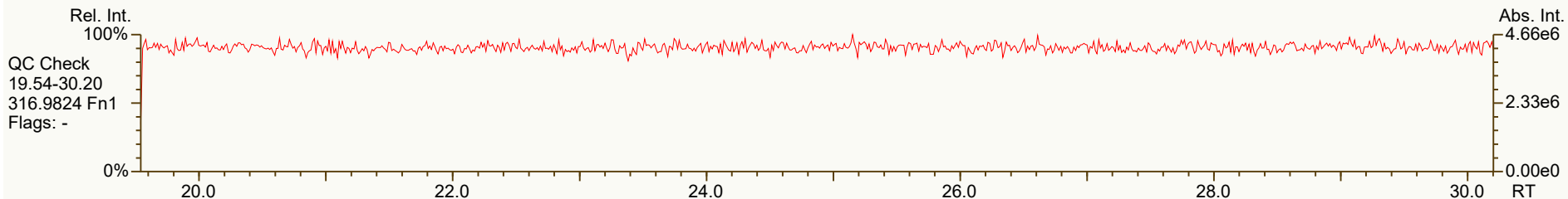
Checkcode: 216-586-JHG

Datafile: 220209C09

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

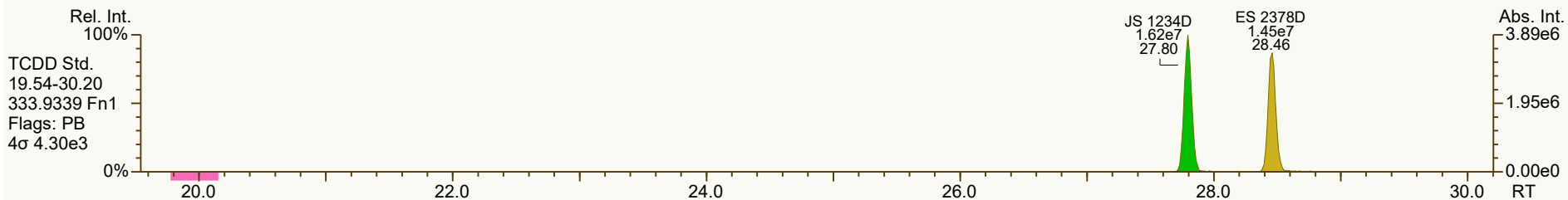
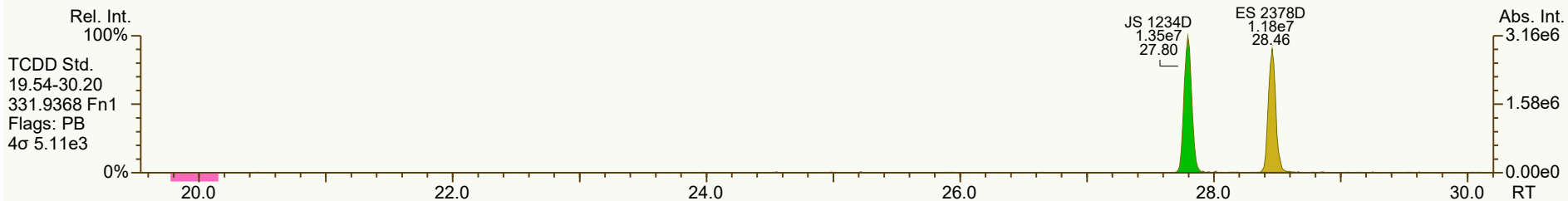
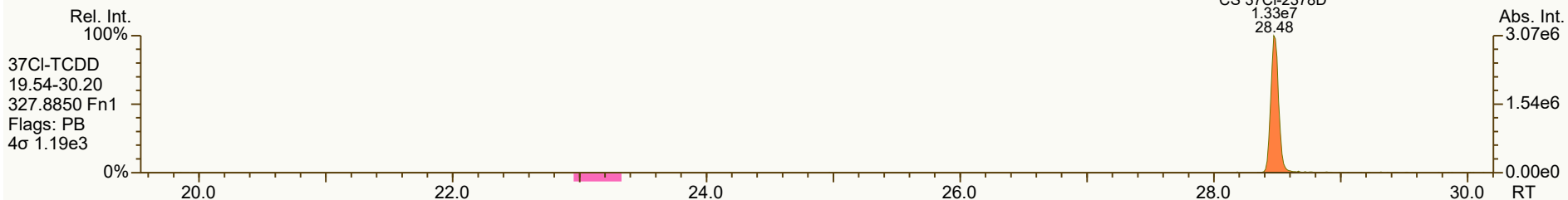
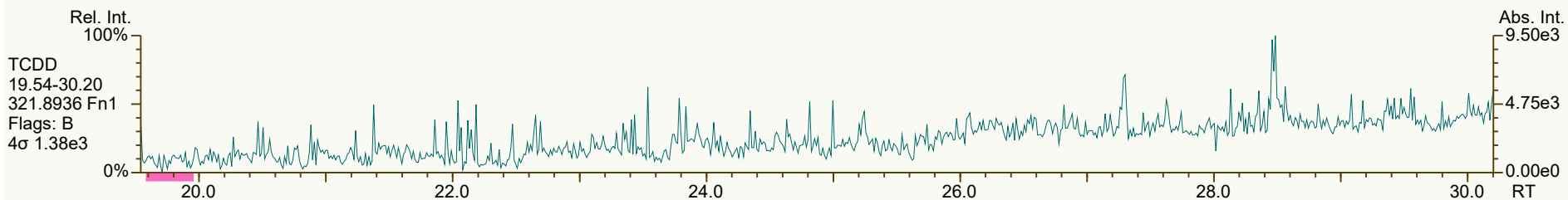
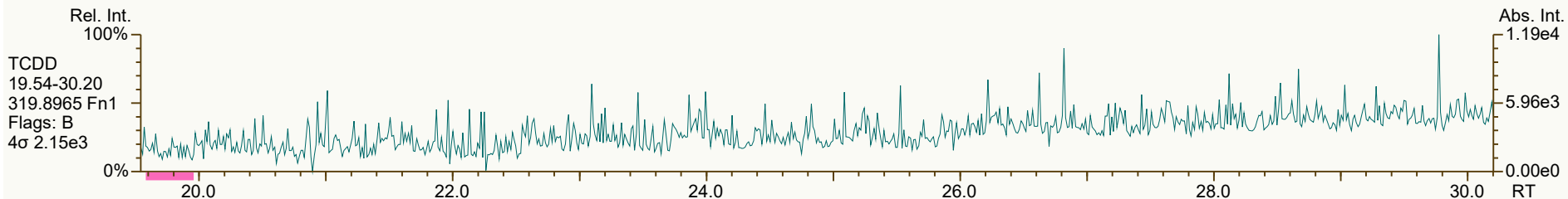
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		2564.5367	1.24
12347-PeCDF	NotFnd		0.9894						1.02		2564.5367	1.24
12348-PeCDF	NotFnd		0.9940						1.02		2564.5367	1.24
12378-PeCDF	NotFnd		1.0005						1.02		2564.5367	1.26
12678/12367-PeCDF	NotFnd		1.0089						1.02		2564.5367	1.24
12379-PeCDF	NotFnd		1.0142						1.02		2564.5367	1.24
12679-PeCDF	NotFnd		0.9929						1.02		2564.5367	1.24
23467/12369-PeCDF	NotFnd		0.9967						1.02		2564.5367	1.24
23478-PeCDF	NotFnd		1.0005						1.02		2564.5367	1.22
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2564.5367	1.24
12349-PeCDF	NotFnd		1.0100						1.02		2564.5367	1.24
12389-PeCDF	NotFnd		1.0324						1.02		2564.5367	1.24
123468-HxCDF	NotFnd		0.9627						1.19		2412.8841	1.31
124678/134678-HxCDF	NotFnd		0.9682						1.19		2412.8841	1.31
134679-HxCDF	NotFnd		0.9744						1.19		2412.8841	1.31
124679-HxCDF	NotFnd		0.9798						1.19		2412.8841	1.31
124689-HxCDF	NotFnd		0.9858						1.19		2412.8841	1.31
123467-HxCDF	NotFnd		0.9972						1.19		2412.8841	1.31
123478-HxCDF	NotFnd		1.0004						1.27		2412.8841	1.27
123678-HxCDF	NotFnd		1.0004						1.15		2412.8841	1.24
123479-HxCDF	NotFnd		1.0049						1.19		2412.8841	1.31
123469-HxCDF	NotFnd		1.0090						1.19		2412.8841	1.31
123679-HxCDF	NotFnd		0.9942						1.19		2412.8841	1.31
234678-HxCDF	NotFnd		1.0005						1.19		2412.8841	1.3
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123689-HxCDF	NotFnd		1.0054						1.19		2412.8841	1.31
123789-HxCDF	NotFnd		1.0004						1.16		2412.8841	1.48
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1234678-HpCDF	NotFnd		1.0003						1.37		2319.879	1.19
1234679-HpCDF	NotFnd		1.0068						1.34		2319.879	1.48
1234689-HpCDF	NotFnd		1.0103						1.34		2319.879	1.48
1234789-HpCDF	NotFnd		1.0002						1.31		2319.879	1.85
OCDF	NotFnd		1.0003						1.07		2305.553	3.27
OCDF-a	NotFnd		1.0002						0.07		2855.985	65.3



SGS ID: B6238_18887_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22

Acq: 09-Feb-2022 11:11:51
User: DTF Datafile: 220209C09



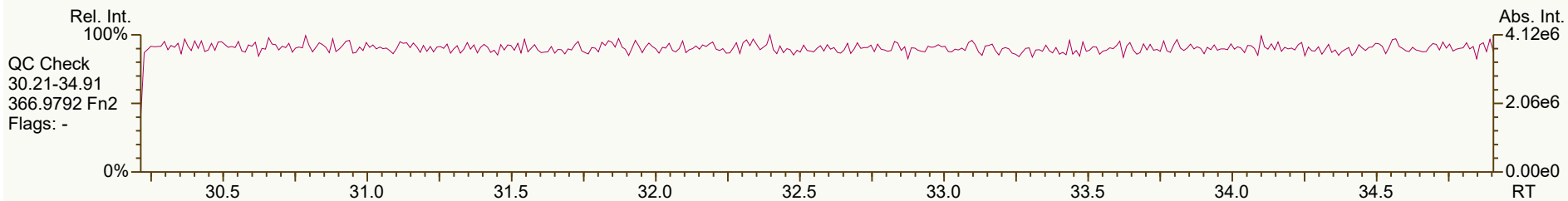
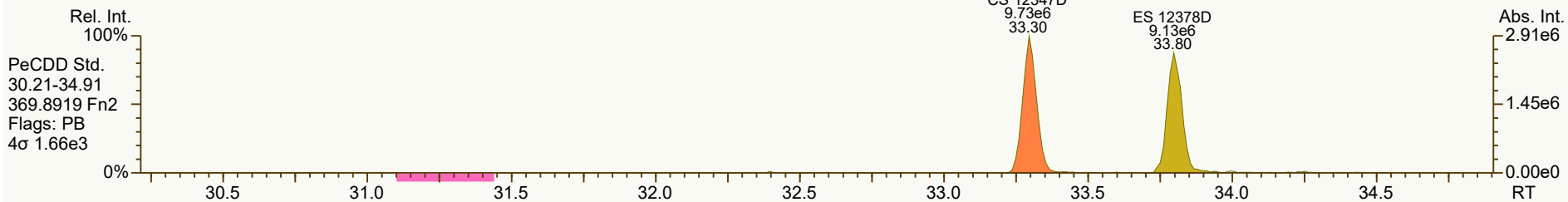
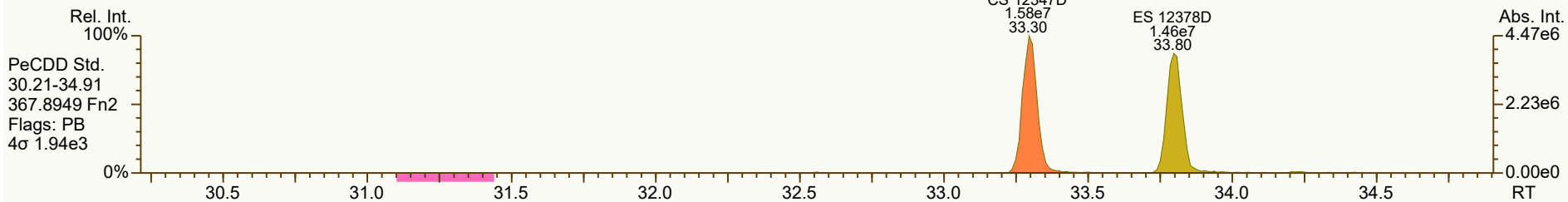
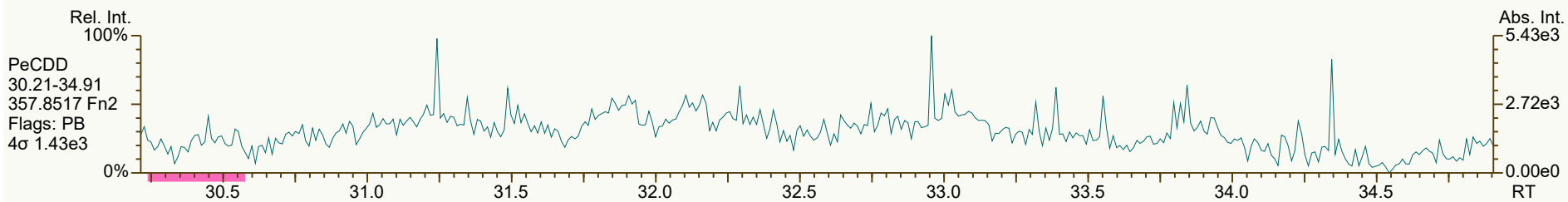
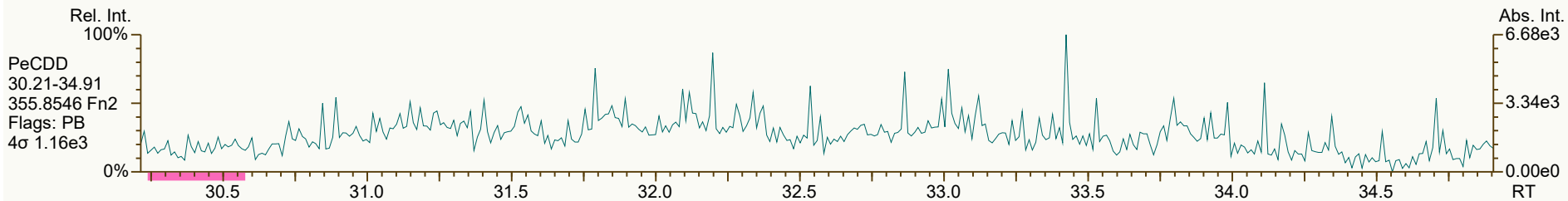
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Peak annotation: Areas, Centroids
PKD: 09-Feb-2022 14:31 Printed: 09-Feb-2022 14:50 Page 2 of 12

SGS ID: B6238_18887_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22

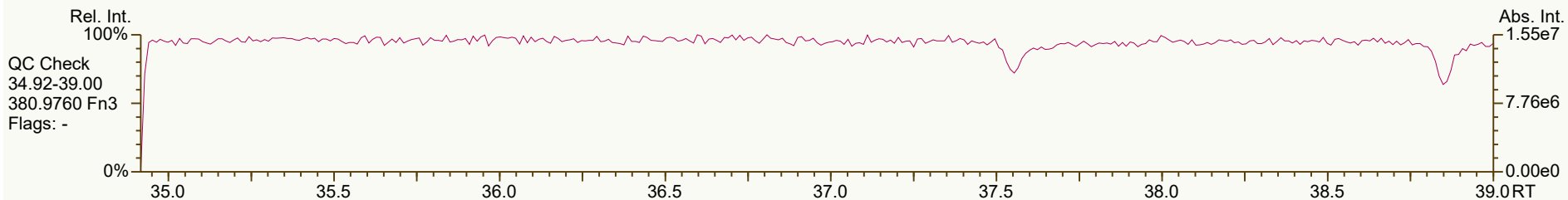
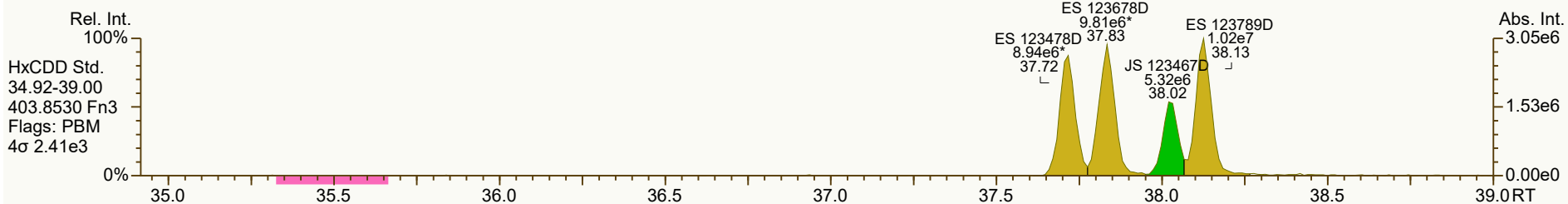
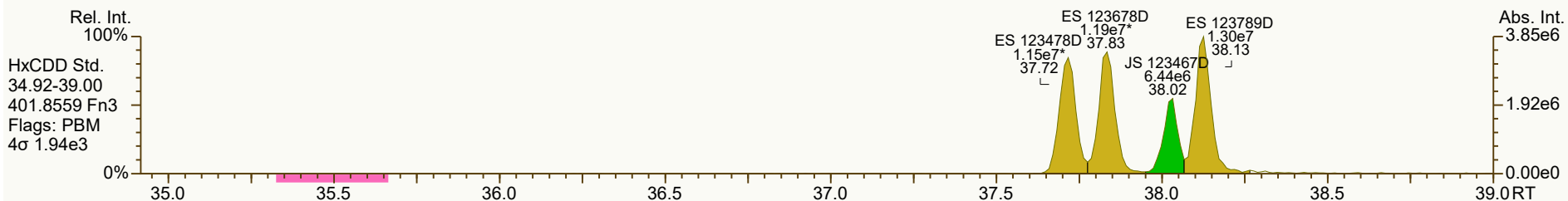
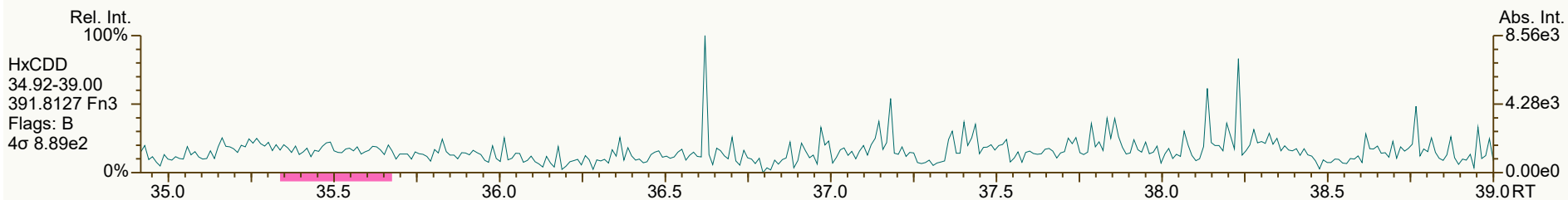
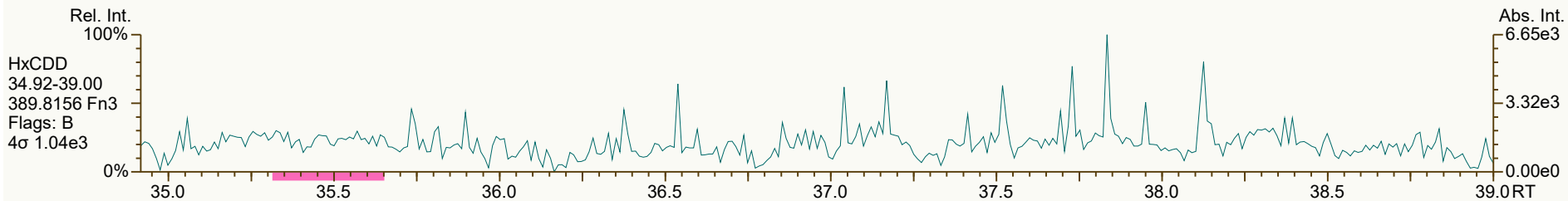
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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22

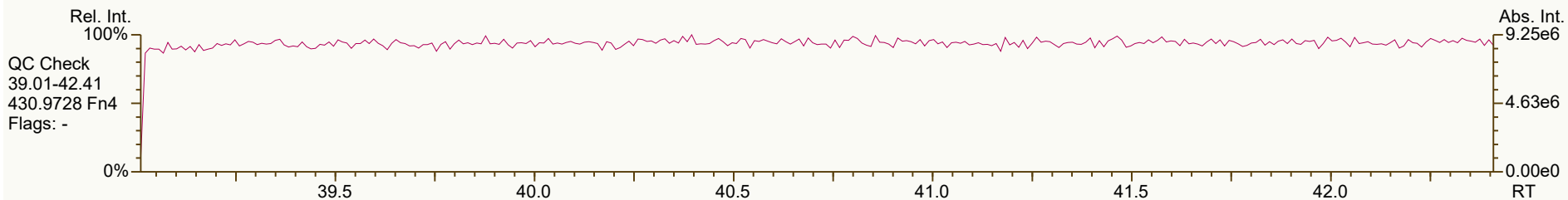
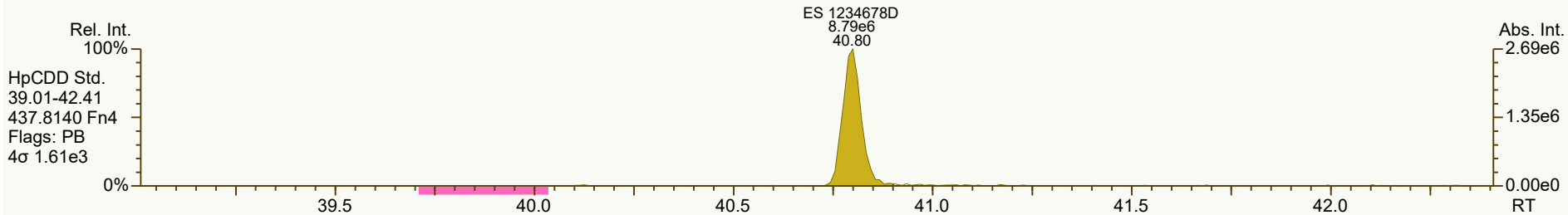
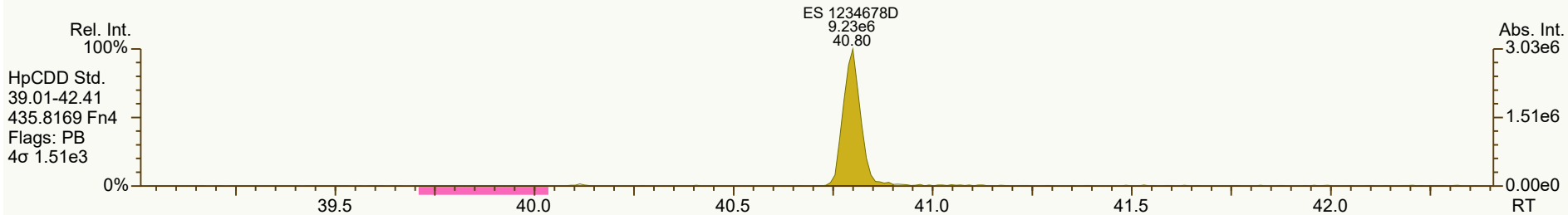
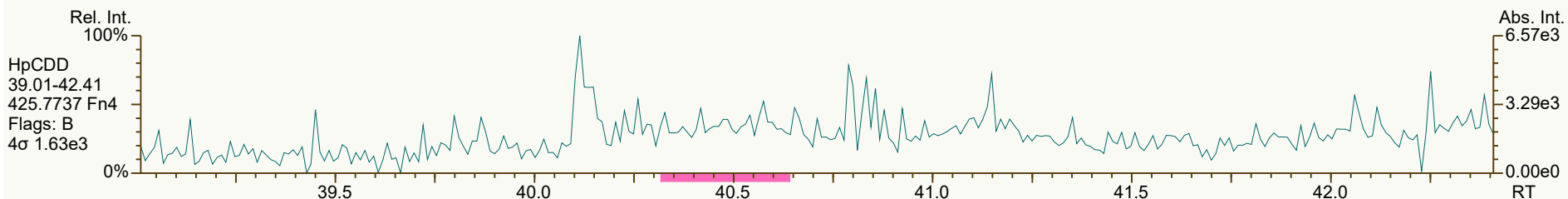
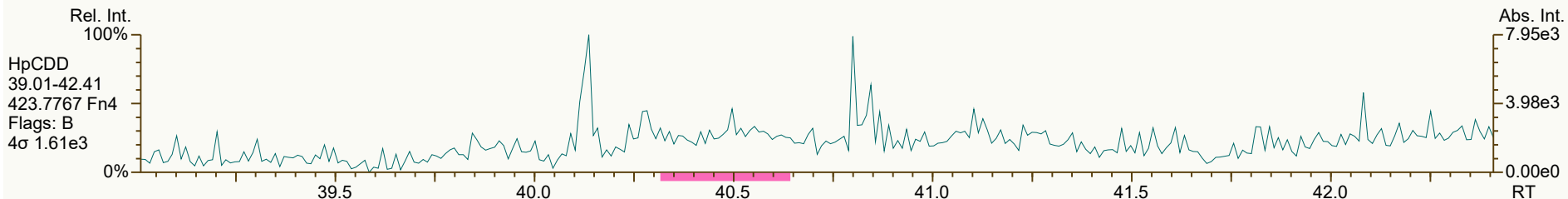
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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
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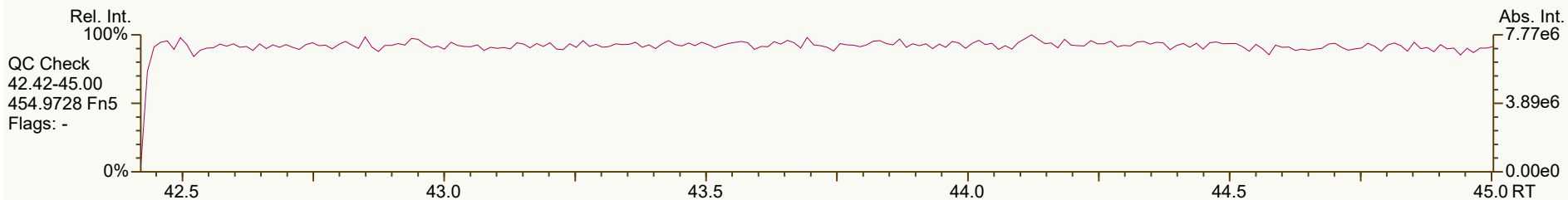
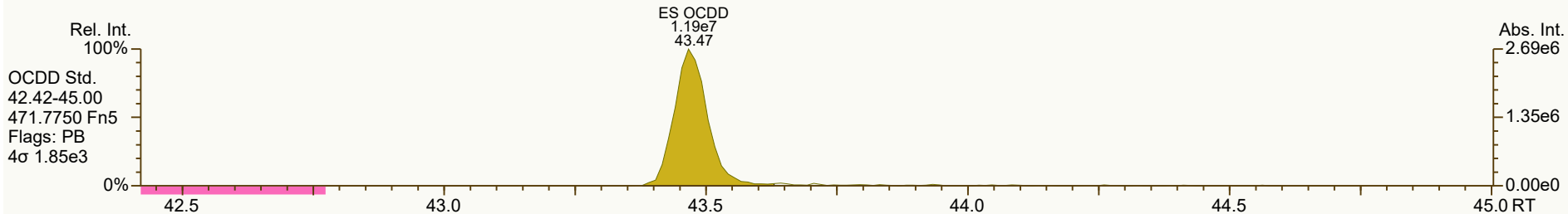
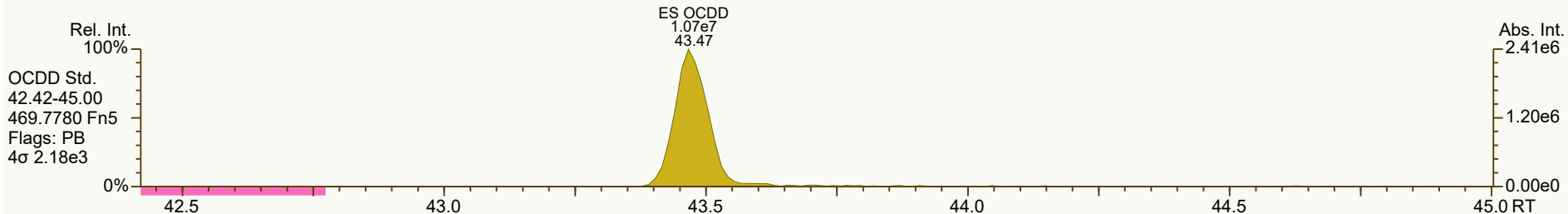
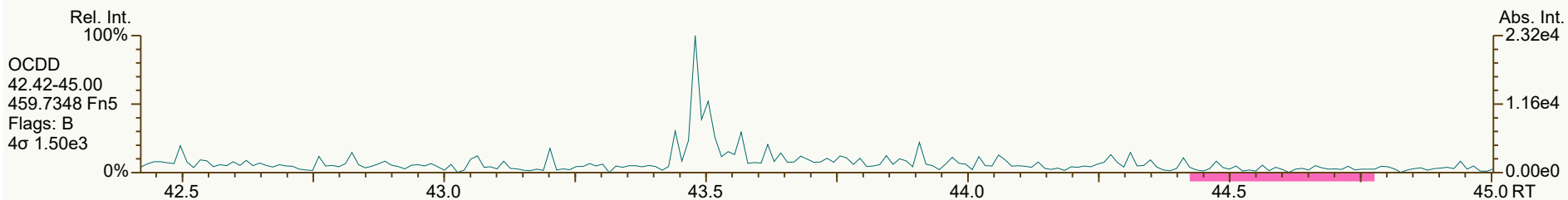
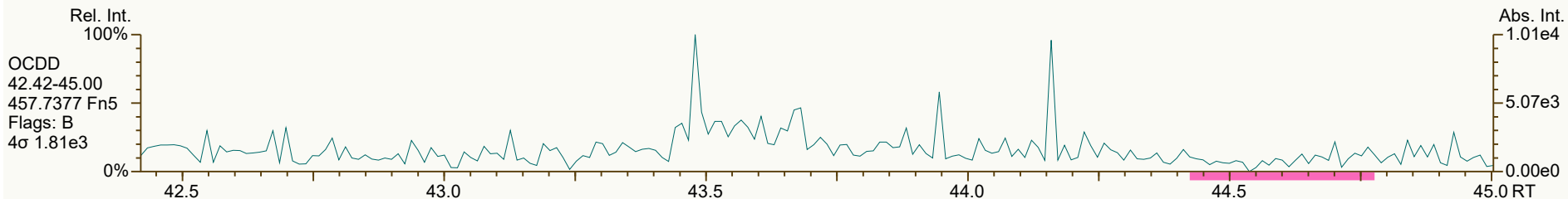
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SGS ID: B6238_18887_DF_003
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
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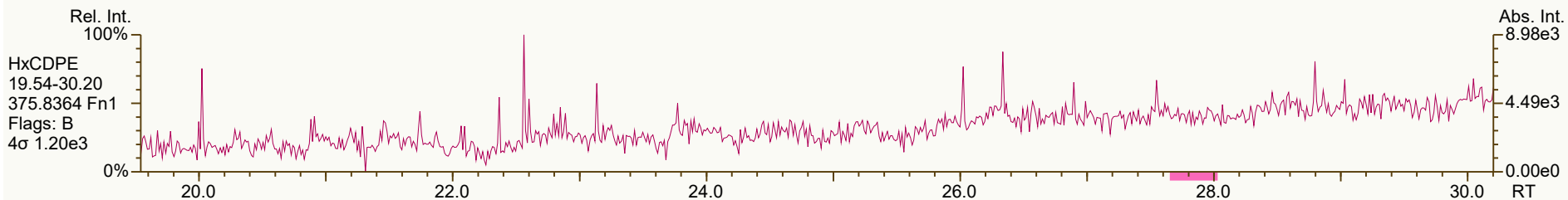
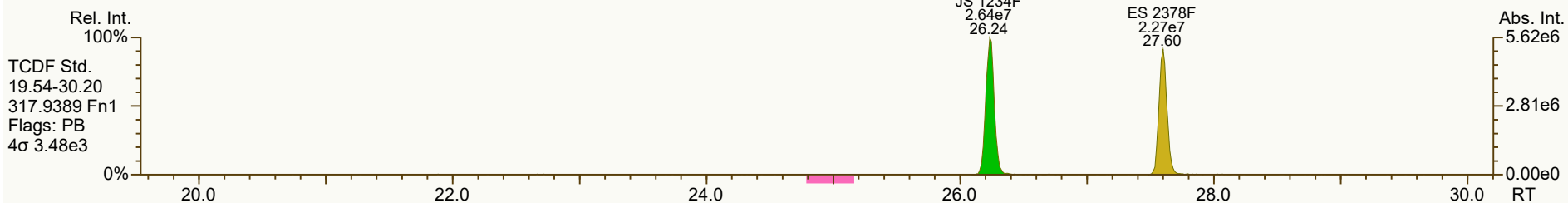
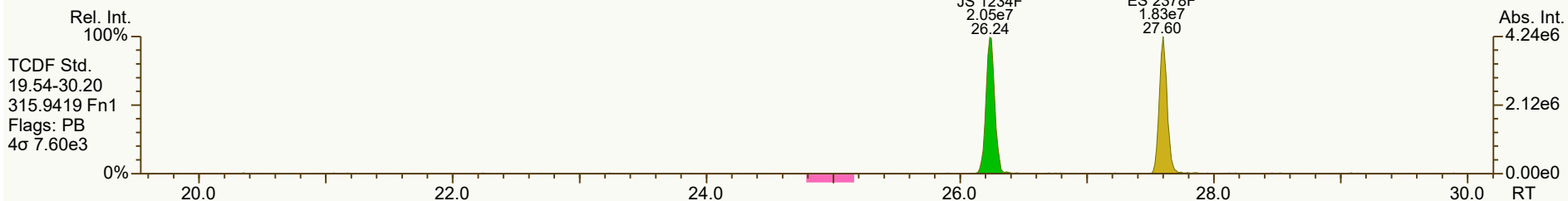
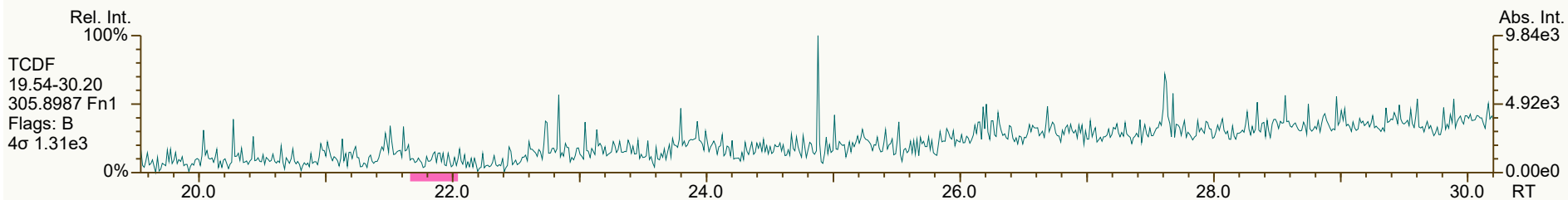
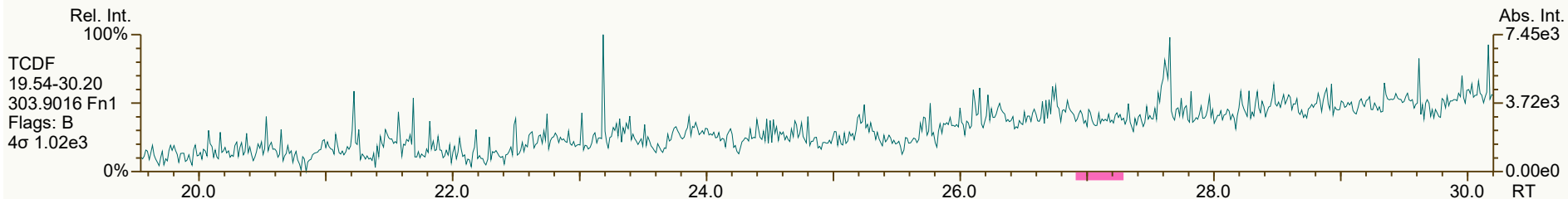
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Instr: [ILM] AutoSpec-Ultima HRMS3

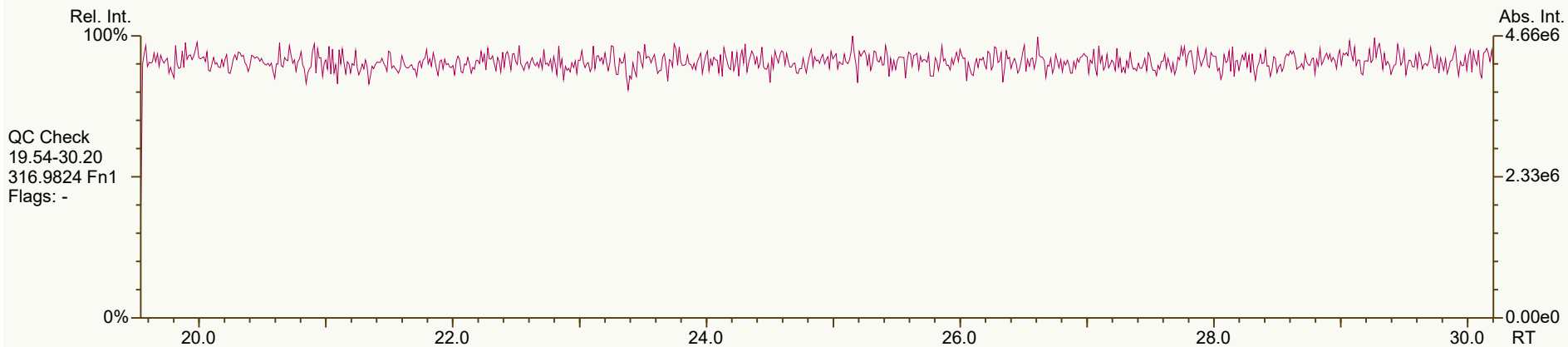
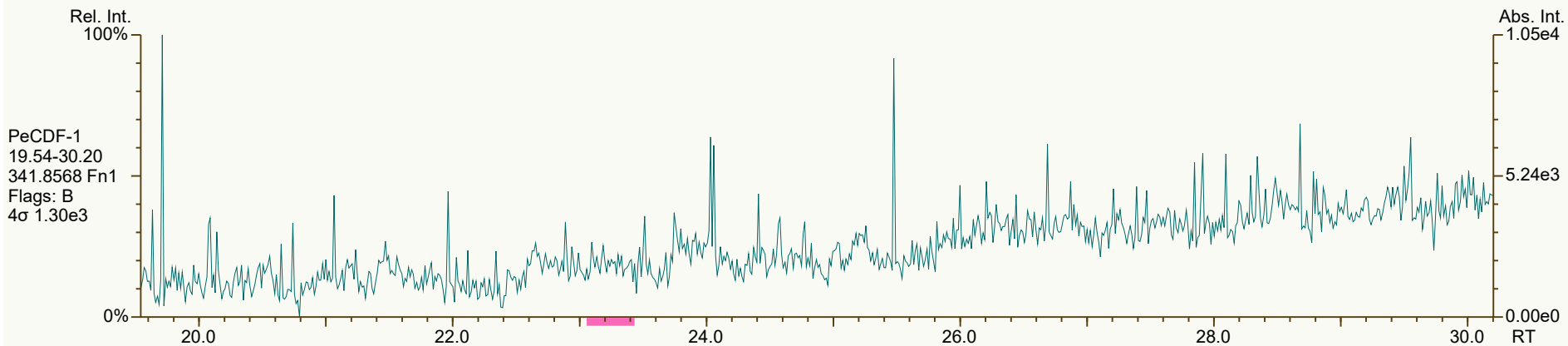
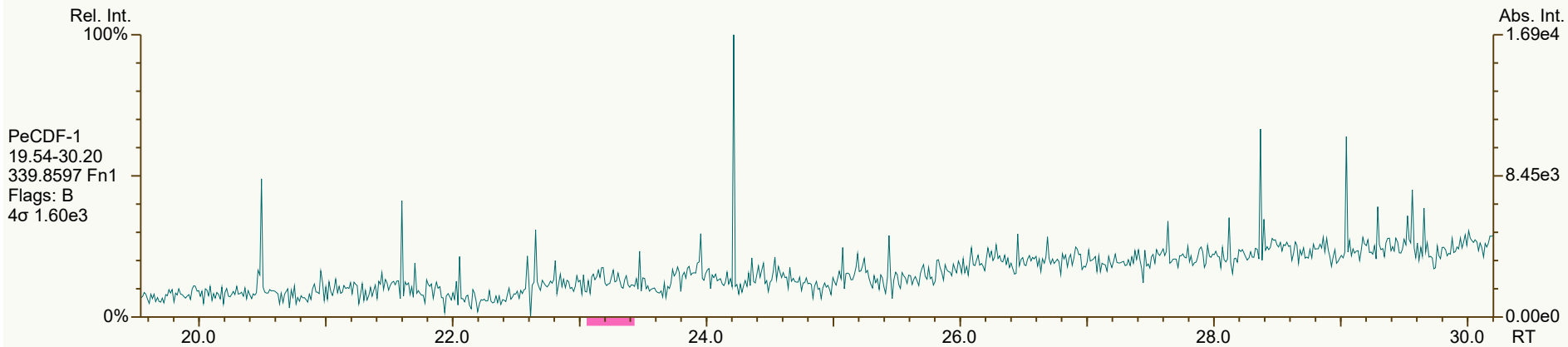
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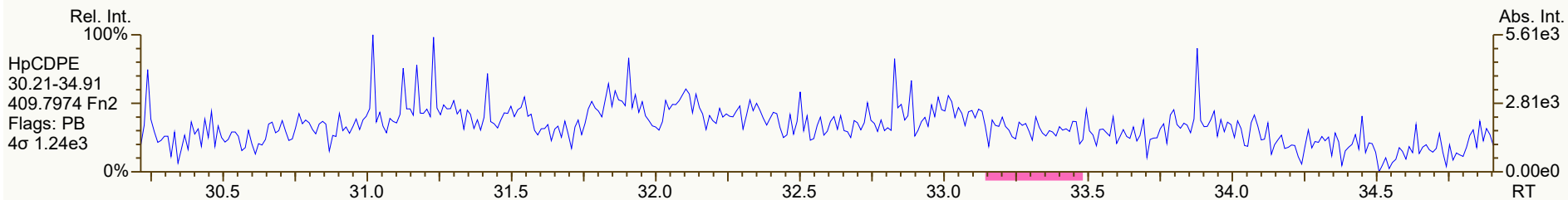
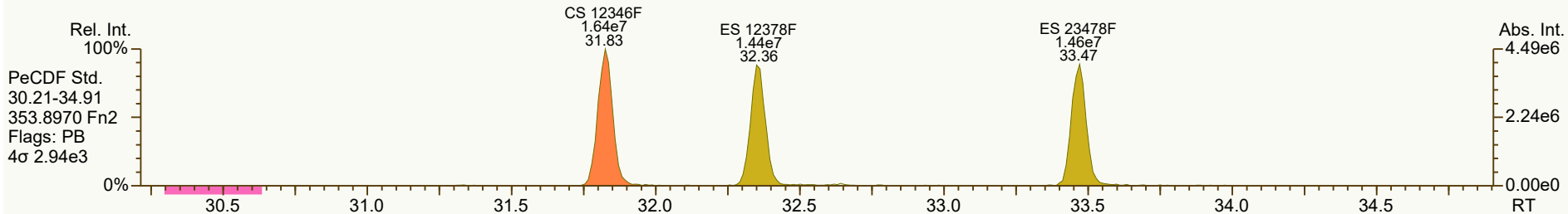
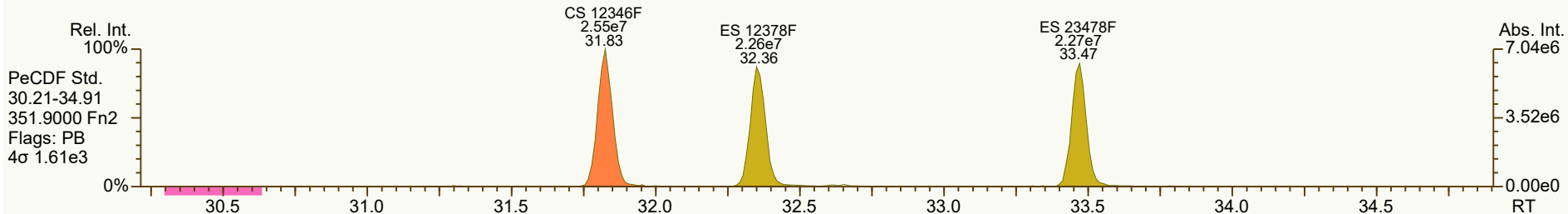
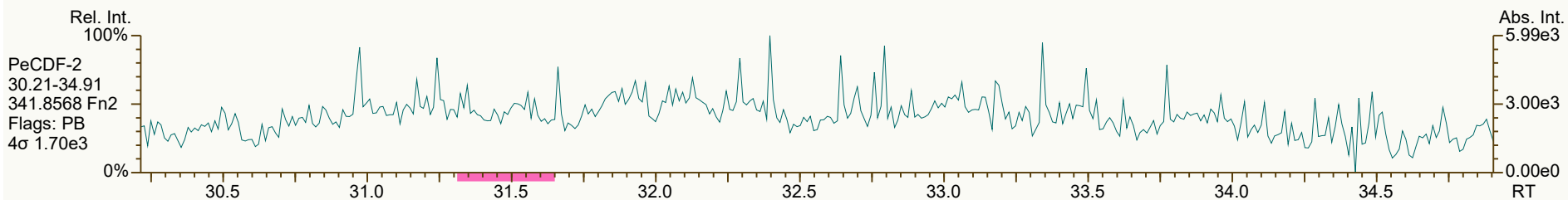
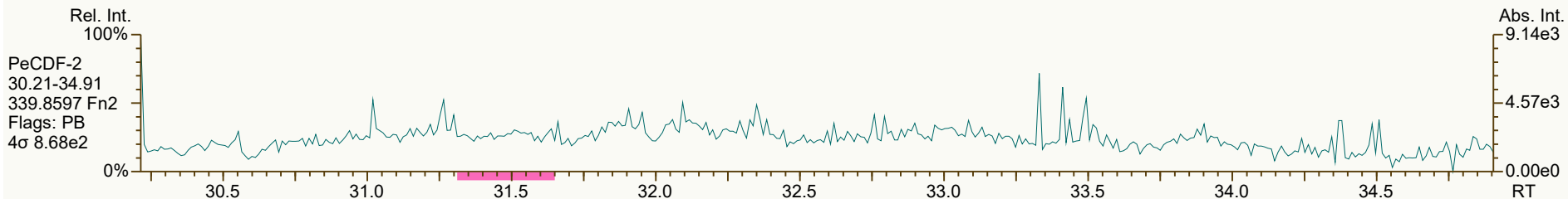
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Peak annotation: Areas, Centroids
PKD: 09-Feb-2022 14:31 Printed: 09-Feb-2022 14:51 Page 7 of 12

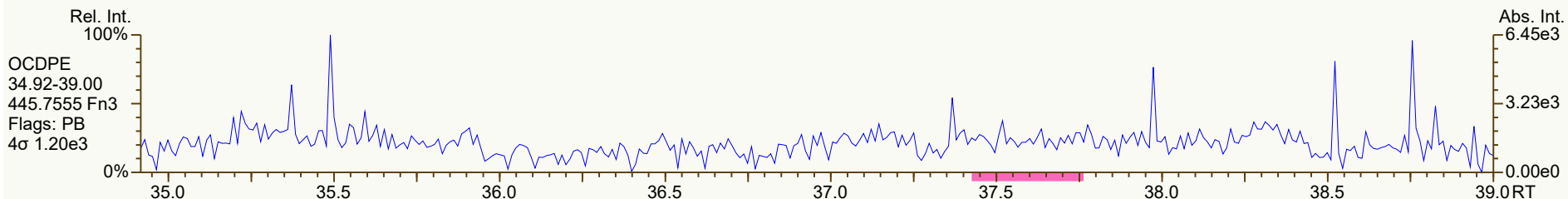
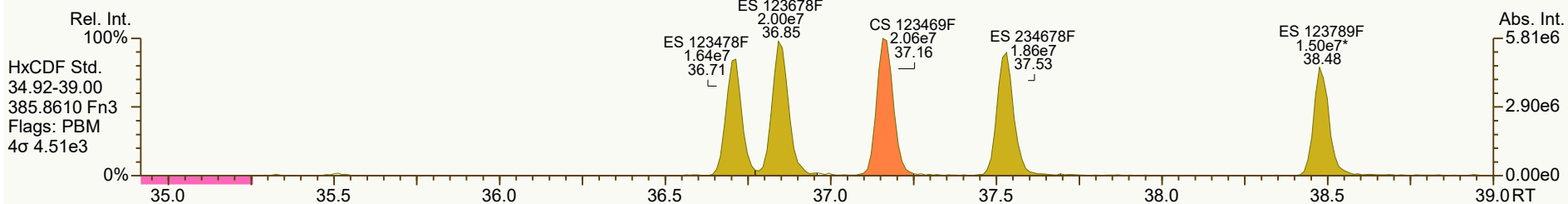
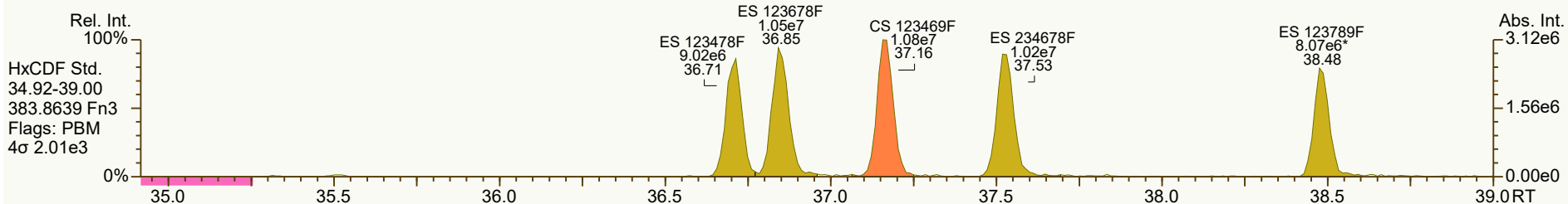
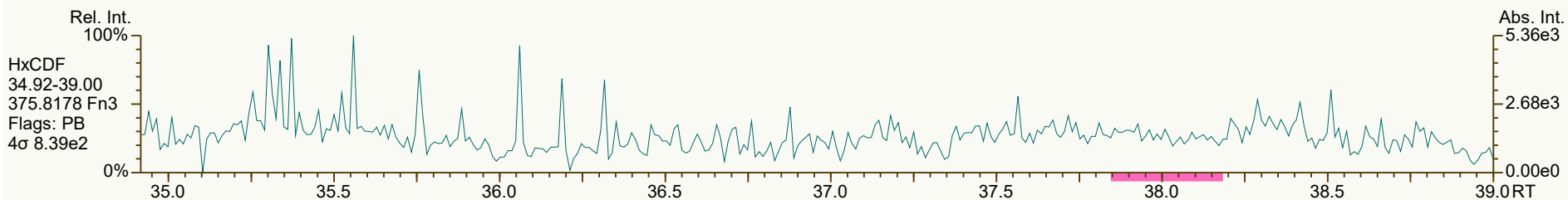
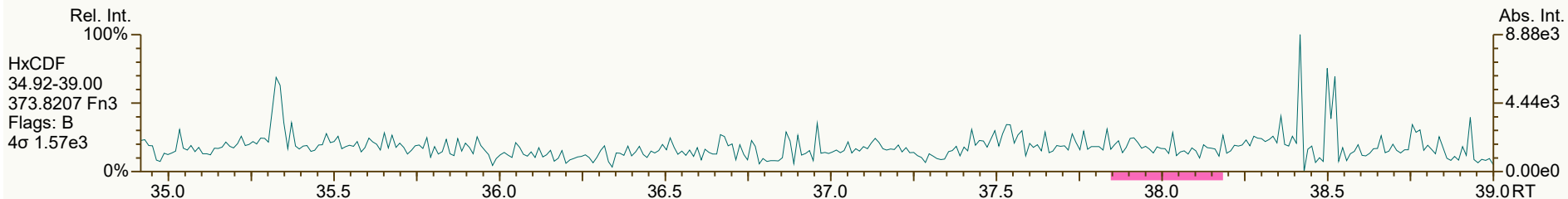


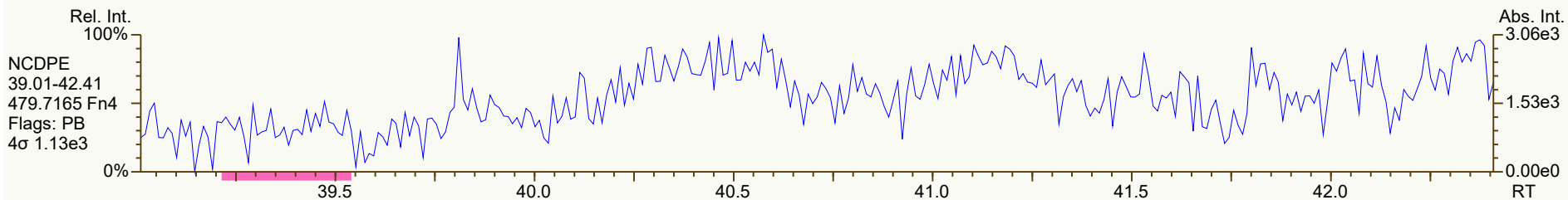
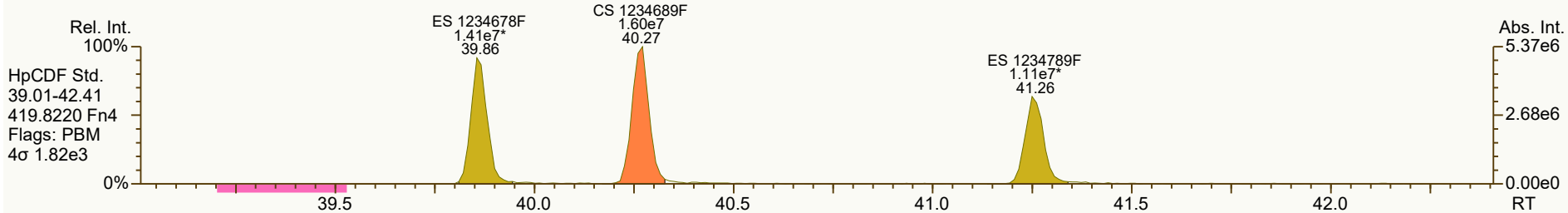
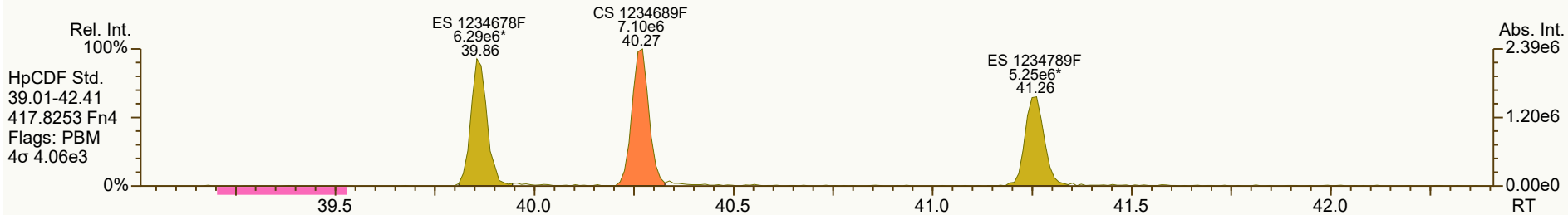
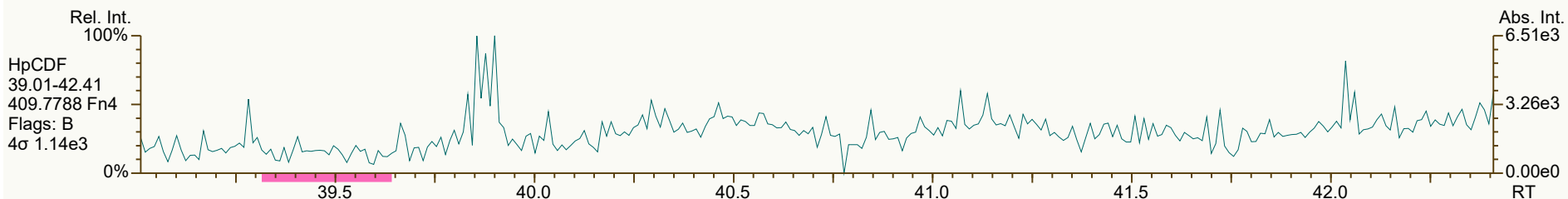
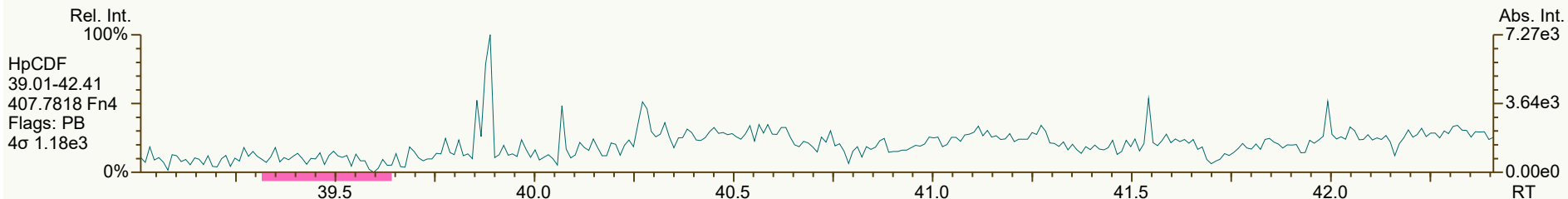


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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22

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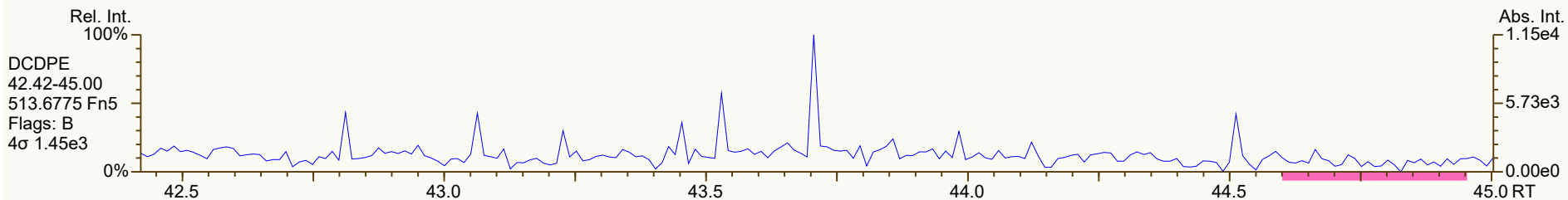
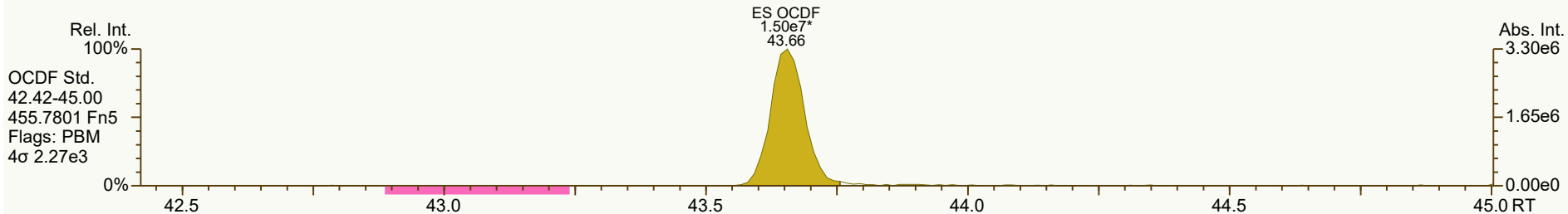
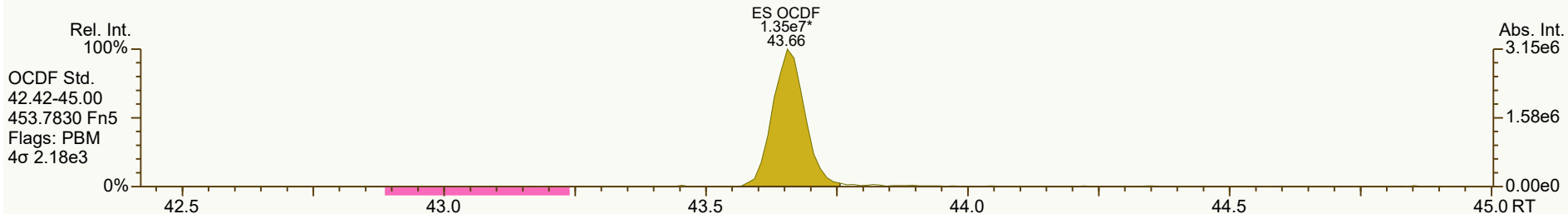
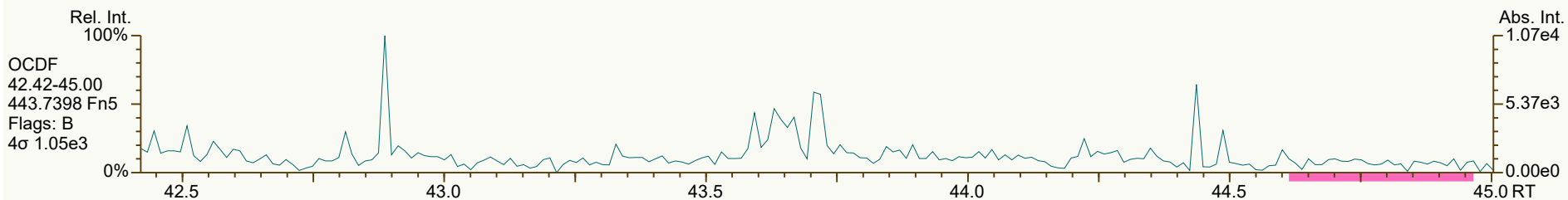
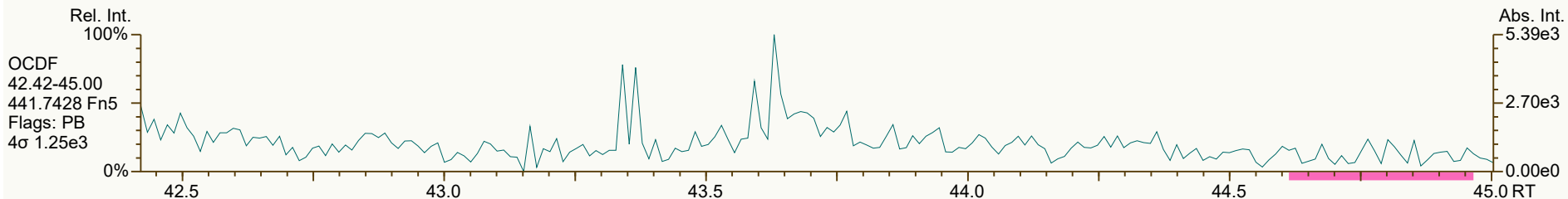




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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-PZ-NC
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22

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Lab ID: B6238_18887_DF_004

Acq'd: 09 Feb 2022 11:58 DTF

Wt/Vol: 1.03 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

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Datafile: 220209C10

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

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2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3414.056	2.27
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2369.088	1.67
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2352.3551	1.64
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2352.3551	1.52
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2352.3551	1.53
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2999.695	2.17
OCDD	NotFnd		1.0004	-		-	-	-	1.13	-	8871.49	14.2

2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	2892.086	1.32
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2275.424	1.02
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	2275.424	0.991
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2071.2777	1.04
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2071.2777	0.902
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2071.2777	0.896
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2071.2777	1.11
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2632.002	1.21
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2632.002	1.91
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2643.956	3.33

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.47	1.0236	1.0238	+0.3	2.74E+07	0.81	Y	1.05	88.8
ES 12378-PeCDD	33.81	1.2144	1.2160	+3.2	2.49E+07	1.57	Y	0.88	96.2
ES 123478-HxCDD	37.72	0.9920	0.9918	-0.5	2.23E+07	1.25	Y	0.97	95
ES 123678-HxCDD	37.84	0.9951	0.9949	-0.5	2.34E+07	1.26	Y	0.94	102
ES 123789-HxCDD	38.14	1.0027	1.0026	-0.2	2.41E+07	1.31	Y	1.09	91.4
ES 1234678-HpCDD	40.81	1.0724	1.0730	+1.5	1.96E+07	1.11	Y	0.91	88.9
ES OCDD	43.49	1.1428	1.1434	+1.6	2.38E+07	0.89	Y	0.62	79

ES 2378-TCDF	27.61	1.0516	1.0520	+0.7	4.38E+07	0.78	Y	1.06	88.5
ES 12378-PeCDF	32.36	1.2312	1.2331	+3.7	3.89E+07	1.61	Y	0.91	91.5
ES 23478-PeCDF	33.47	1.2733	1.2754	+4.2	3.75E+07	1.57	Y	0.88	90.8
ES 123478-HxCDF	36.72	0.9655	0.9653	-0.4	2.64E+07	0.54	Y	1.20	91.1
ES 123678-HxCDF	36.86	0.9692	0.9690	-0.4	3.13E+07	0.54	Y	1.35	95.8
ES 234678-HxCDF	37.54	0.9871	0.9869	-0.5	3.23E+07	0.53	Y	1.24	107
ES 123789-HxCDF	38.49	1.0121	1.0121	0	2.46E+07	0.53	Y	1.16	88.1
ES 1234678-HpCDF	39.87	1.0479	1.0483	+1.0	2.22E+07	0.45	Y	0.97	95
ES 1234789-HpCDF	41.27	1.0845	1.0851	+1.5	1.74E+07	0.45	Y	0.85	84.4
ES OCDF	43.68	1.1477	1.1483	+1.6	3.16E+07	0.89	Y	0.81	81

Lab ID: B6238_18887_DF_004

Acq'd: 09 Feb 2022 11:58 DTF

Wt/Vol: 1.03 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

UTP: 09-Feb-2022 14:37:56 DTF

J-level: 4.85 pg/L Split: 1

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Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.80		-	-	-	2.95E+07	0.80	Y	-	-
JS 1234-TCDF	26.25		-	-	-	4.67E+07	0.79	Y	-	-
JS 123467-HxCDD	38.04		-	-	-	1.21E+07	1.26	Y	-	-
CS 37C1-2378-TCDD	28.49		1.0244	1.0247	+0.5	1.37E+07	n/a	-	1.20	97
CS 12347-PeCDD	33.31		1.1964	1.1979	+3.0	2.49E+07	1.60	Y	0.75	112
CS 12346-PeCDF	31.83		1.2112	1.2128	+3.1	4.10E+07	1.59	Y	0.85	103
CS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	3.14E+07	0.53	Y	1.12	116
CS 1234689-HpCDF	40.28		1.0584	1.0590	+1.5	2.31E+07	0.45	Y	0.89	107
SS 37C1-2378-TCDD	28.49		1.0244	1.0247	+0.5	1.37E+07	n/a	-	1.15	109
SS 12347-PeCDD	33.31		1.1964	1.1979	+3.0	2.49E+07	1.60	Y	0.86	116
SS 12346-PeCDF	31.83		1.2112	1.2128	+3.1	4.10E+07	1.59	Y	0.94	112
SS 123469-HxCDF	37.17		0.9775	0.9773	-0.4	3.14E+07	0.53	Y	0.83	121
SS 1234689-HpCDF	40.28		1.0584	1.0590	+1.5	2.31E+07	0.45	Y	0.92	113

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: B6238_18887_DF_004

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ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-PZ-NE

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J-level: 4.85 pg/L Split: 1

Checkcode: 151-857-SLQ

Datafile: 220209C10

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Std's (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3414.056	2.27
1379-TCDD	NotFnd		0.8860						1.18		3414.056	2.27
1369-TCDD	NotFnd		0.9009						1.18		3414.056	2.27
1469-TCDD	NotFnd		0.9281						1.18		3414.056	2.27
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3414.056	2.27
1378-TCDD	NotFnd		0.9432						1.18		3414.056	2.27
1268-TCDD	NotFnd		0.9500						1.18		3414.056	2.27
1478-TCDD	NotFnd		0.9586						1.18		3414.056	2.27
1279-TCDD	NotFnd		0.9645						1.18		3414.056	2.27
1234/1269-TCDD	NotFnd		0.9770						1.18		3414.056	2.27
1236-TCDD	NotFnd		0.9817						1.18		3414.056	2.27
1237/1238-TCDD	NotFnd		0.9905						1.18		3414.056	2.27
1239-TCDD	NotFnd		0.9952						1.18		3414.056	2.27
2378-TCDD	NotFnd		1.0008						1.18		3414.056	2.27
1278-TCDD	NotFnd		1.0121						1.18		3414.056	2.27
1267-TCDD	NotFnd		1.0167						1.18		3414.056	2.27
1289-TCDD	NotFnd		1.0345						1.18		3414.056	2.27
12479/12468-PeCDD	NotFnd		0.9267						1.04		2369.088	1.67
12469-PeCDD	NotFnd		0.9425						1.04		2369.088	1.67
12368-PeCDD	NotFnd		0.9588						1.04		2369.088	1.67
12478-PeCDD	NotFnd		0.9643						1.04		2369.088	1.67
12379-PeCDD	NotFnd		0.9673						1.04		2369.088	1.67
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2369.088	1.67
12346/12347-PeCDD	NotFnd		0.9858						1.04		2369.088	1.67
12378-PeCDD	NotFnd		1.0006						1.04		2369.088	1.67
12367-PeCDD	NotFnd		1.0033						1.04		2369.088	1.67
12389-PeCDD	NotFnd		1.0134						1.04		2369.088	1.67
124679/124689-HxCDD	NotFnd		0.9542						1.10		2352.3551	1.56
123468-HxCDD	NotFnd		0.9715						1.10		2352.3551	1.56
123679/123689-HxCDD	NotFnd		0.9793						1.10		2352.3551	1.56
123469-HxCDD	NotFnd		0.9828						1.10		2352.3551	1.56
123478-HxCDD	NotFnd		1.0004						1.09		2352.3551	1.64
123678-HxCDD	NotFnd		1.0035						1.15		2352.3551	1.52
123467-HxCDD	NotFnd		1.0085						1.10		2352.3551	1.56
123789-HxCDD	NotFnd		1.0112						1.05		2352.3551	1.53

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ICAL: HRMS3_DF_10272021 10NOV2021

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Checkcode: 151-857-SLQ

Datafile: 220209C10

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Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		2999.695	2.17
1234678-HpCDD	NotFnd		1.0003						1.06		2999.695	2.17
OCDD	NotFnd		1.0004						1.13		8871.49	14.2
OCDD-a	NotFnd		1.0003						0.07		3023.052	75.8
1368-TCDF	NotFnd		0.8251						1.08		2892.086	1.32
1468-TCDF	NotFnd		0.8458						1.08		2892.086	1.32
2468-TCDF	NotFnd		0.8686						1.08		2892.086	1.32
1346/1246-TCDF	NotFnd		0.8814						1.08		2892.086	1.32
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2892.086	1.32
1348-TCDF	NotFnd		0.8962						1.08		2892.086	1.32
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2892.086	1.32
1268-TCDF	NotFnd		0.9145						1.08		2892.086	1.32
1467-TCDF	NotFnd		0.9193						1.08		2892.086	1.32
1478-TCDF	NotFnd		0.9254						1.08		2892.086	1.32
1369/1237-TCDF	NotFnd		0.9387						1.08		2892.086	1.32
2467-TCDF	NotFnd		0.9433						1.08		2892.086	1.32
2368-TCDF	NotFnd		0.9489						1.08		2892.086	1.32
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2892.086	1.32
1278-TCDF	NotFnd		0.9683						1.08		2892.086	1.32
1349-TCDF	NotFnd		0.9722						1.08		2892.086	1.32
1267-TCDF	NotFnd		0.9783						1.08		2892.086	1.32
2346/1249-TCDF	NotFnd		0.9850						1.08		2892.086	1.32
2347/1279-TCDF	NotFnd		0.9926						1.08		2892.086	1.32
2348-TCDF	NotFnd		0.9967						1.08		2892.086	1.32
2378-TCDF	NotFnd		1.0008						1.08		2892.086	1.32
2367/3467-TCDF	NotFnd		1.0137						1.08		2892.086	1.32
1269-TCDF	NotFnd		1.0223						1.08		2892.086	1.32
1239-TCDF	NotFnd		1.0321						1.08		2892.086	1.32
1289-TCDF	NotFnd		1.0722						1.08		2892.086	1.32
13468/12468-PeCDF	NotFnd		0.9139						1.02		2288.244	1.01
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		2275.424	1.01
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		2275.424	1.01
14678-PeCDF	NotFnd		0.9692						1.02		2275.424	1.01
13479-PeCDF	NotFnd		0.9723						1.02		2275.424	1.01
13469/12479-PeCDF	NotFnd		0.9797						1.02		2275.424	1.01
12346-PeCDF	NotFnd		0.9840						1.02		2275.424	1.01

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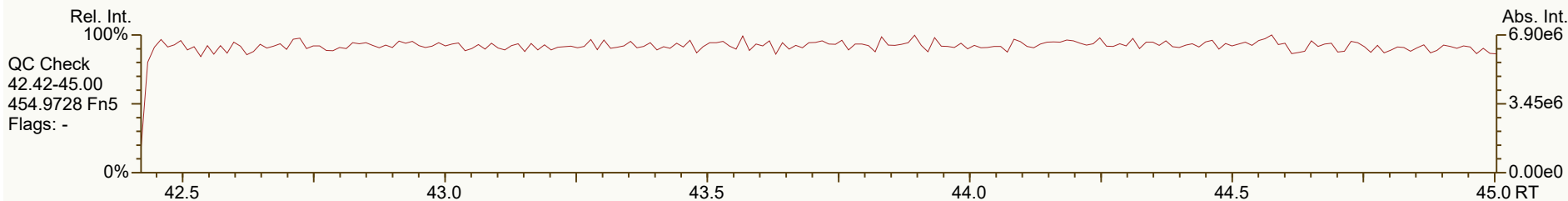
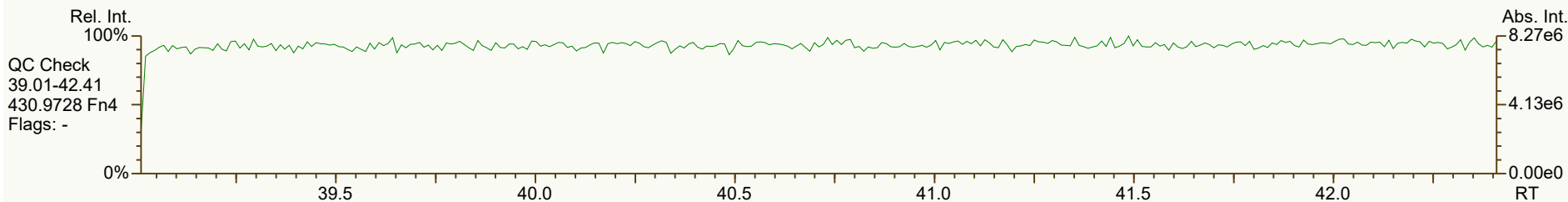
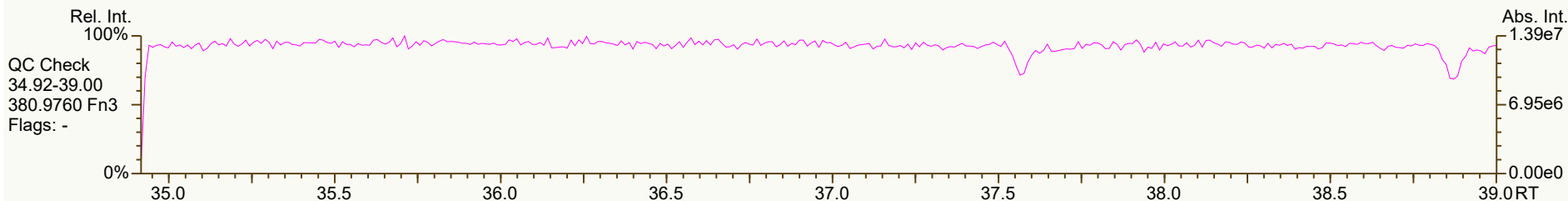
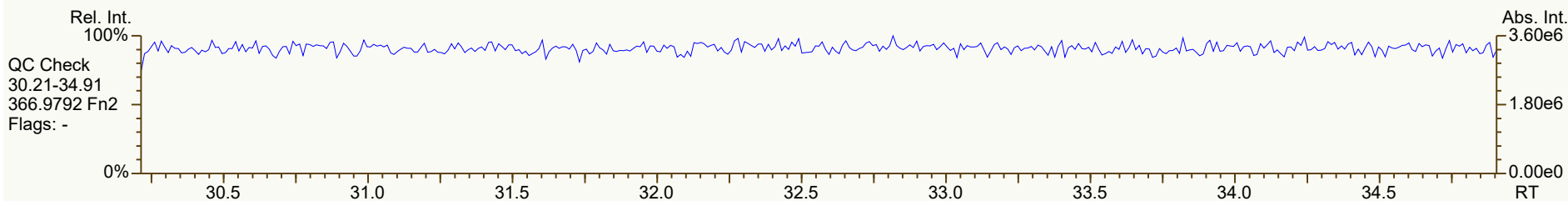
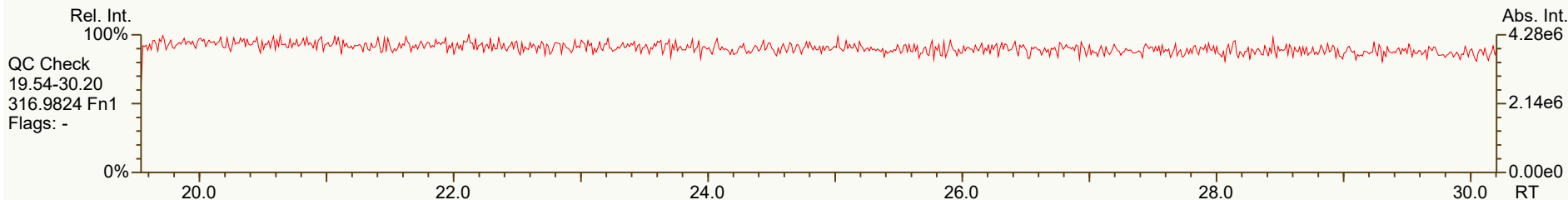
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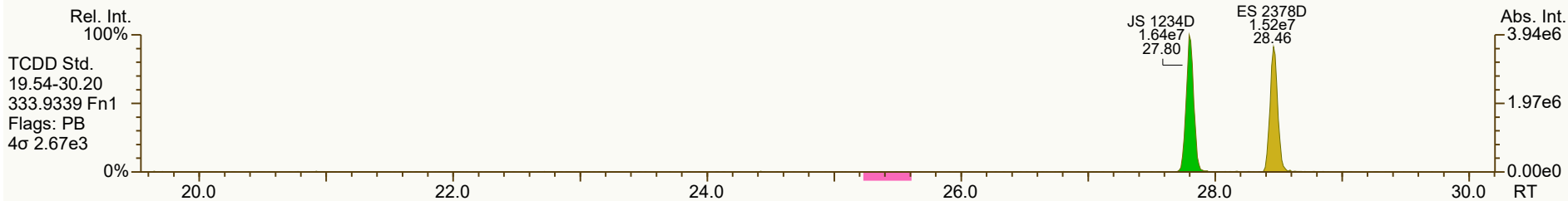
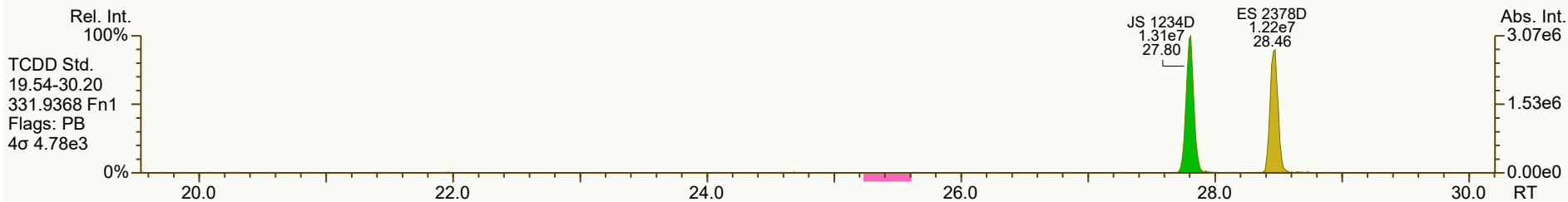
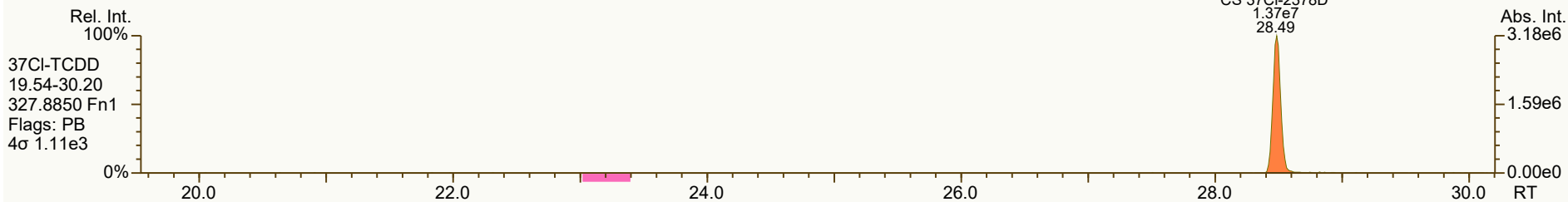
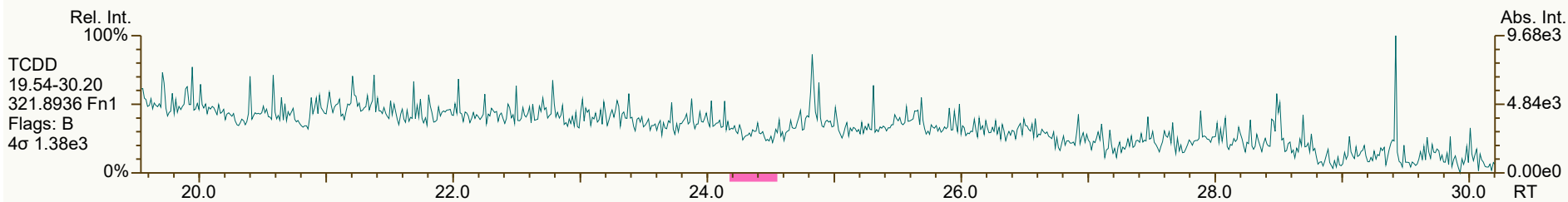
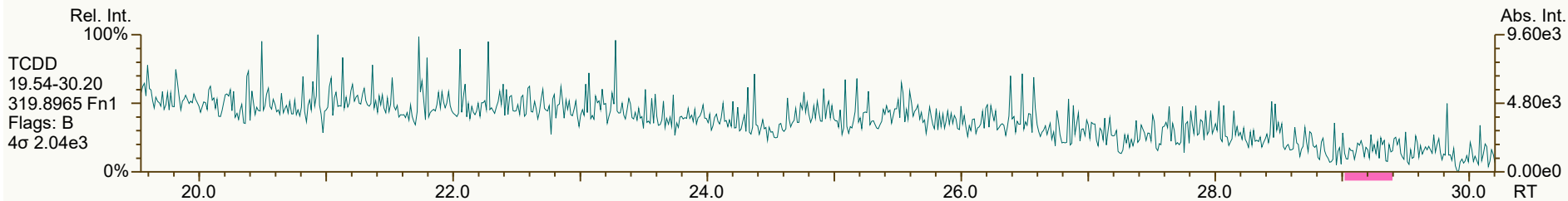
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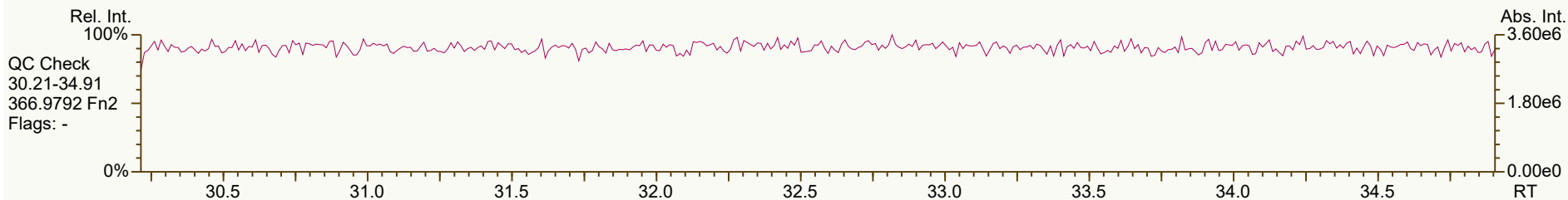
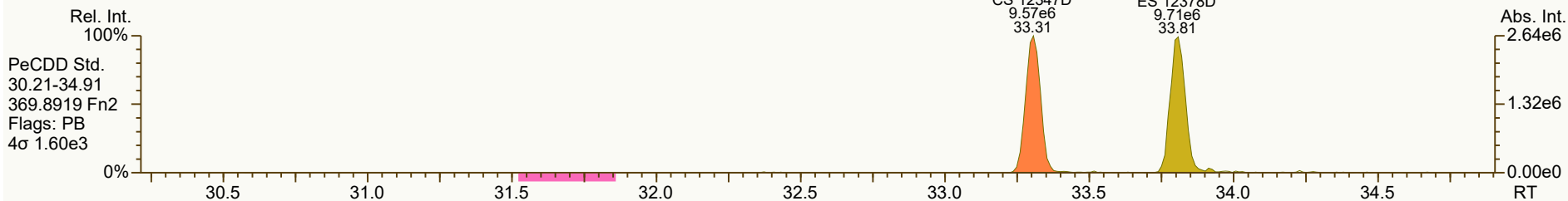
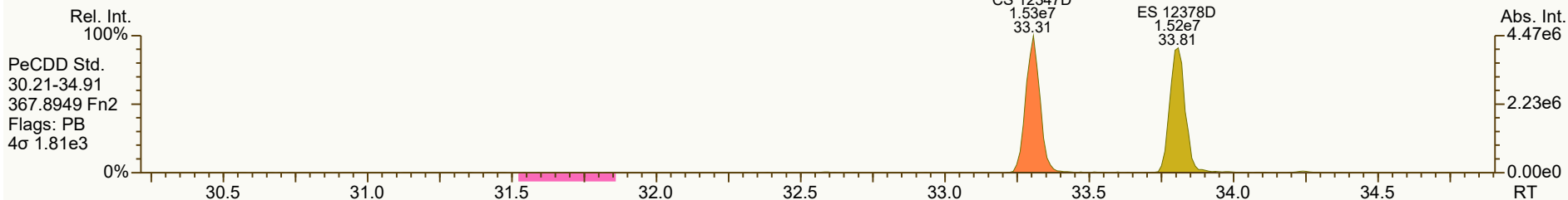
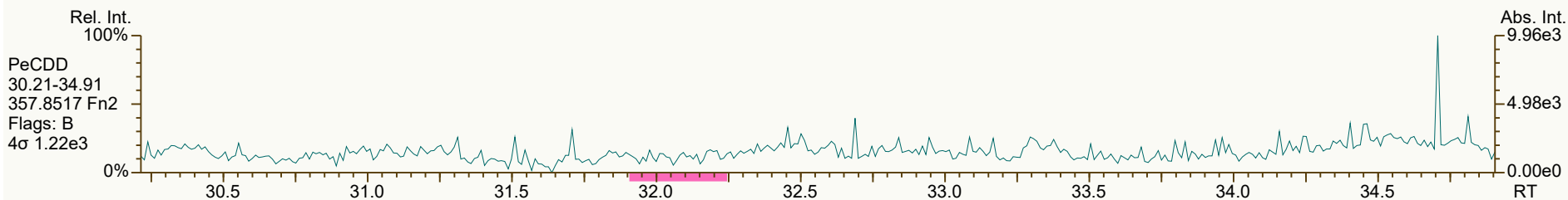
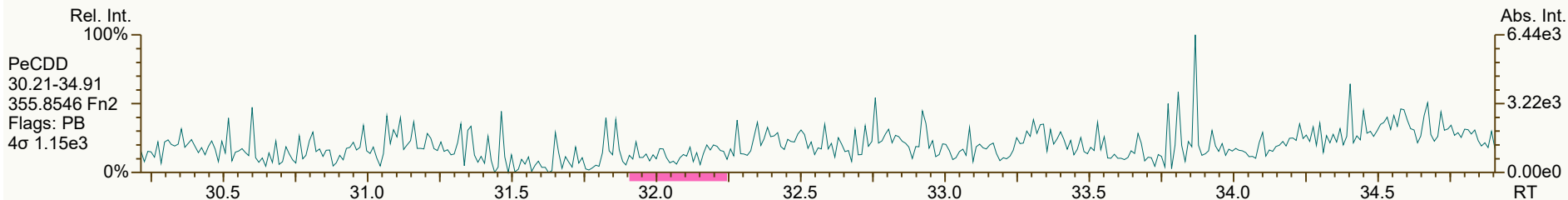
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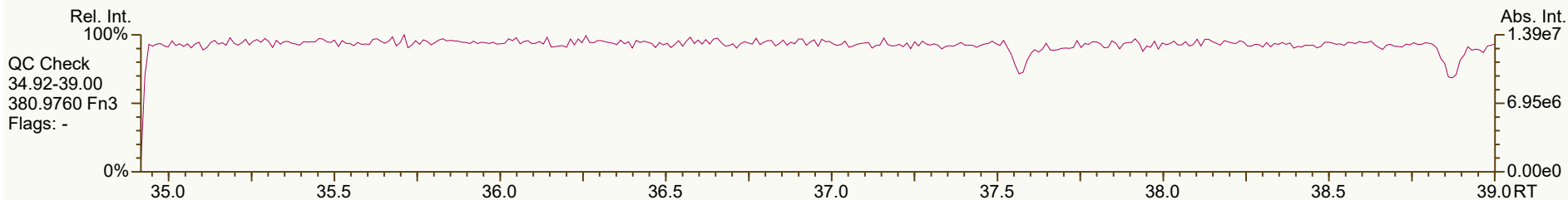
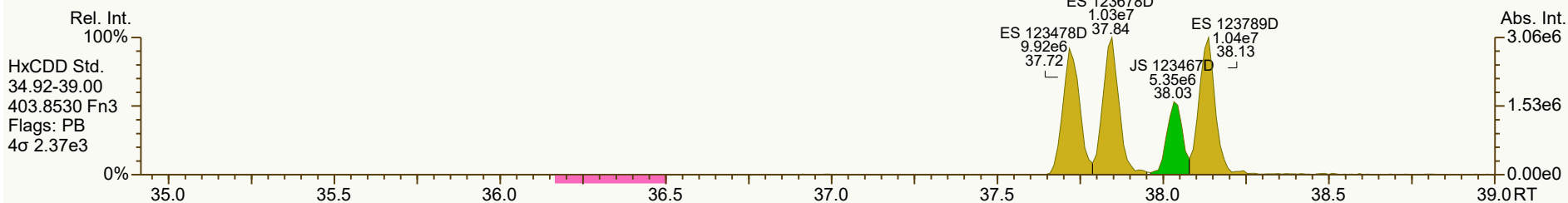
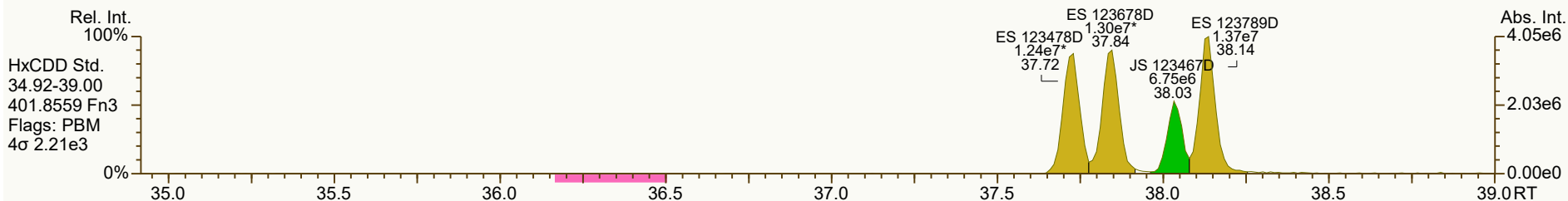
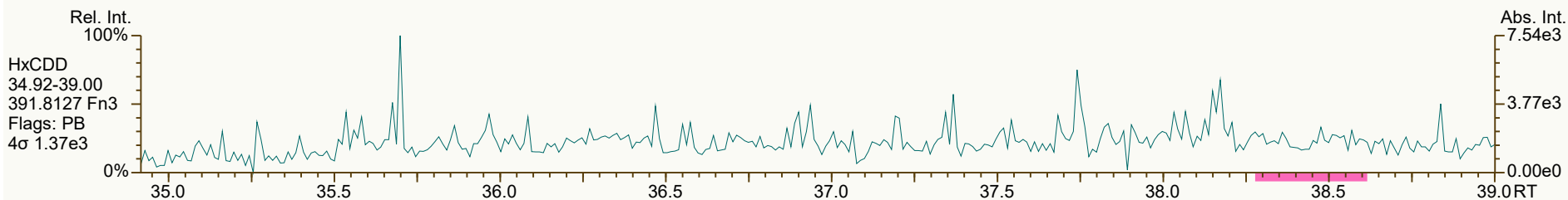
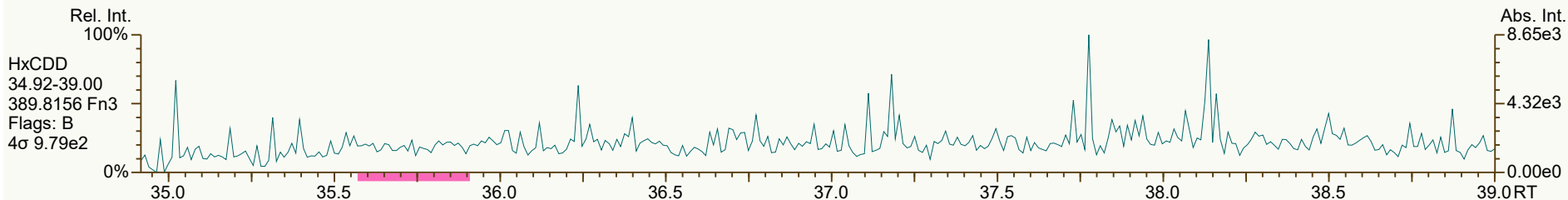
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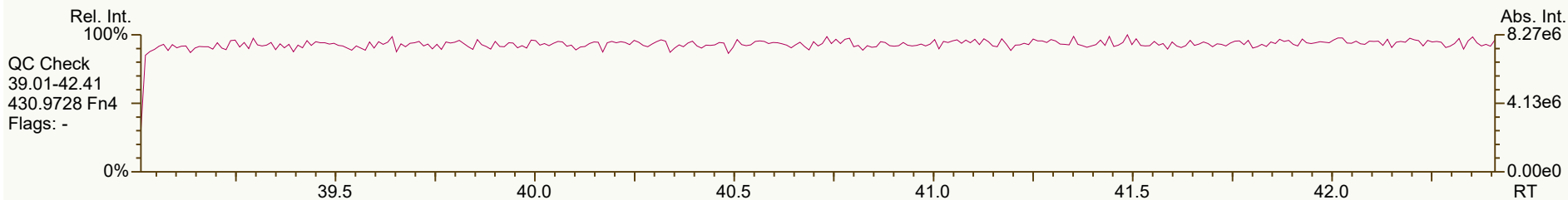
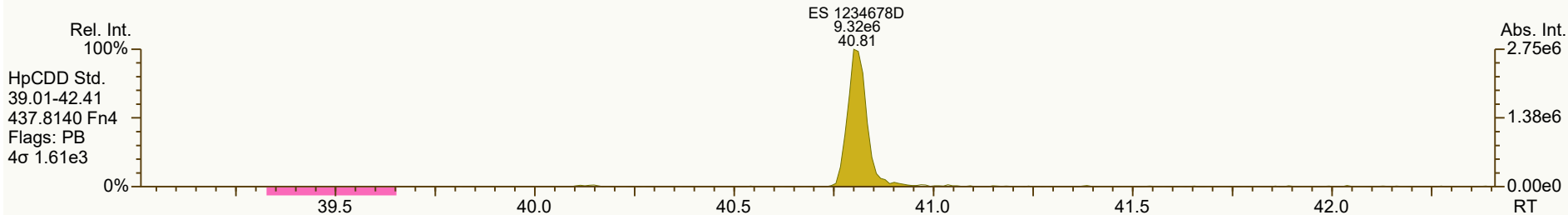
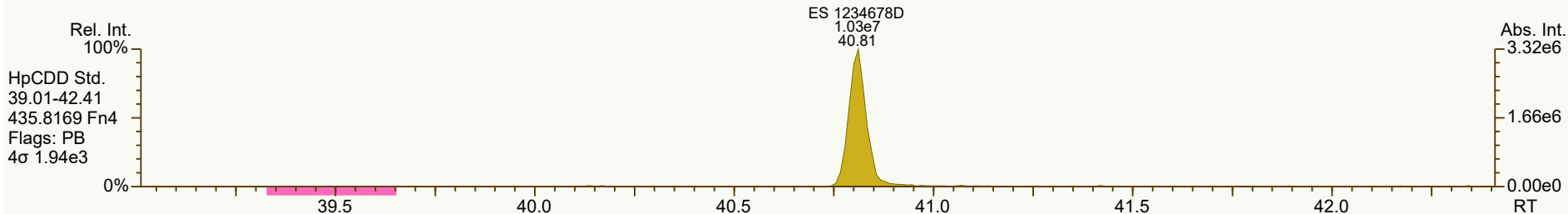
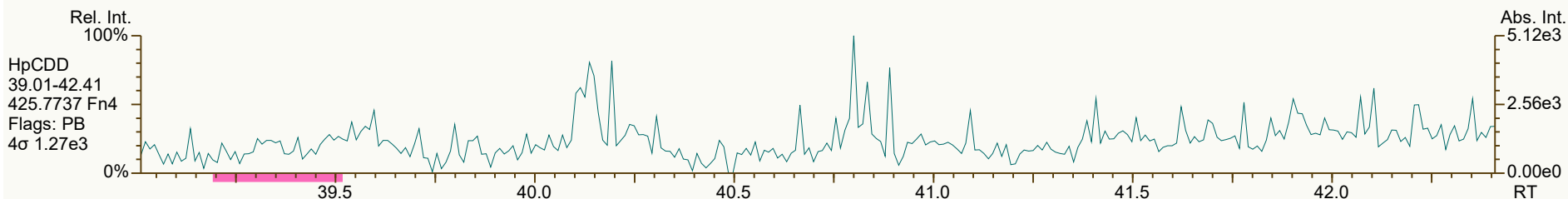
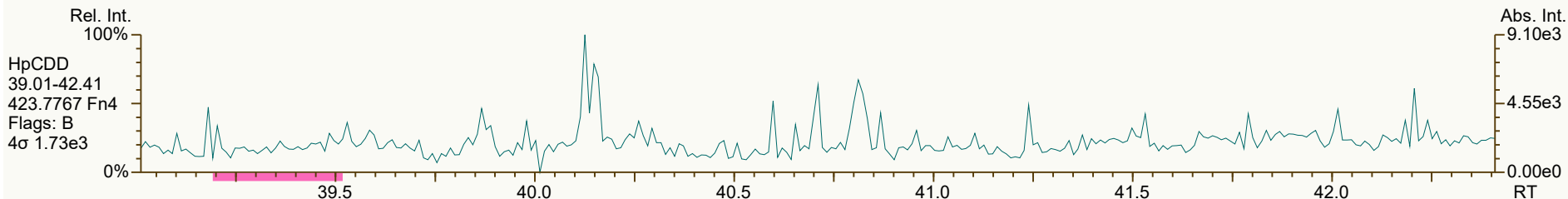
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		2275.424	1.01
12347-PeCDF	NotFnd		0.9894						1.02		2275.424	1.01
12348-PeCDF	NotFnd		0.9940						1.02		2275.424	1.01
12378-PeCDF	NotFnd		1.0005						1.02		2275.424	1.02
12678/12367-PeCDF	NotFnd		1.0089						1.02		2275.424	1.01
12379-PeCDF	NotFnd		1.0142						1.02		2275.424	1.01
12679-PeCDF	NotFnd		0.9929						1.02		2275.424	1.01
23467/12369-PeCDF	NotFnd		0.9967						1.02		2275.424	1.01
23478-PeCDF	NotFnd		1.0005						1.02		2275.424	0.991
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		2275.424	1.01
12349-PeCDF	NotFnd		1.0100						1.02		2275.424	1.01
12389-PeCDF	NotFnd		1.0324						1.02		2275.424	1.01
123468-HxCDF	NotFnd		0.9627						1.19		2071.2777	0.979
124678/134678-HxCDF	NotFnd		0.9682						1.19		2071.2777	0.979
134679-HxCDF	NotFnd		0.9744						1.19		2071.2777	0.979
124679-HxCDF	NotFnd		0.9798						1.19		2071.2777	0.979
124689-HxCDF	NotFnd		0.9858						1.19		2071.2777	0.979
123467-HxCDF	NotFnd		0.9972						1.19		2071.2777	0.979
123478-HxCDF	NotFnd		1.0004						1.27		2071.2777	1.04
123678-HxCDF	NotFnd		1.0004						1.15		2071.2777	0.902
123479-HxCDF	NotFnd		1.0049						1.19		2071.2777	0.979
123469-HxCDF	NotFnd		1.0090						1.19		2071.2777	0.979
123679-HxCDF	NotFnd		0.9942						1.19		2071.2777	0.979
234678-HxCDF	NotFnd		1.0005						1.19		2071.2777	0.896
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2071.2777	0.979
123789-HxCDF	NotFnd		1.0004						1.16		2071.2777	1.11
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2071.2777	0.979
1234678-HpCDF	NotFnd		1.0003						1.37		2632.002	1.21
1234679-HpCDF	NotFnd		1.0068						1.34		2632.002	1.51
1234689-HpCDF	NotFnd		1.0103						1.34		2632.002	1.51
1234789-HpCDF	NotFnd		1.0002						1.31		2632.002	1.91
OCDF	NotFnd		1.0003						1.07		2643.956	3.33
OCDF-a	NotFnd		1.0002						0.07		2929.702	59.6







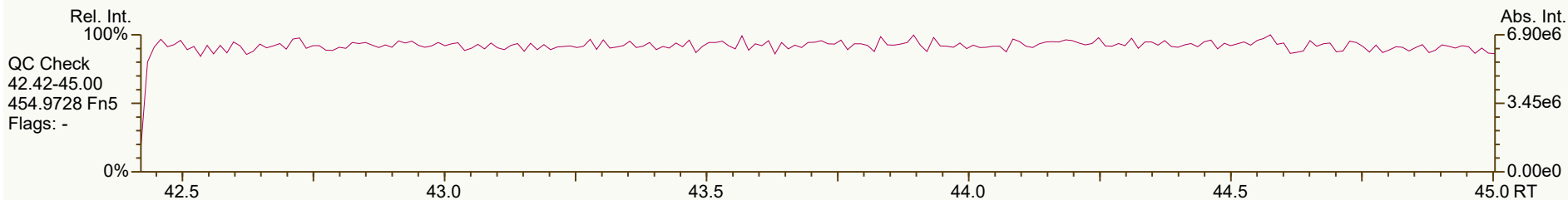
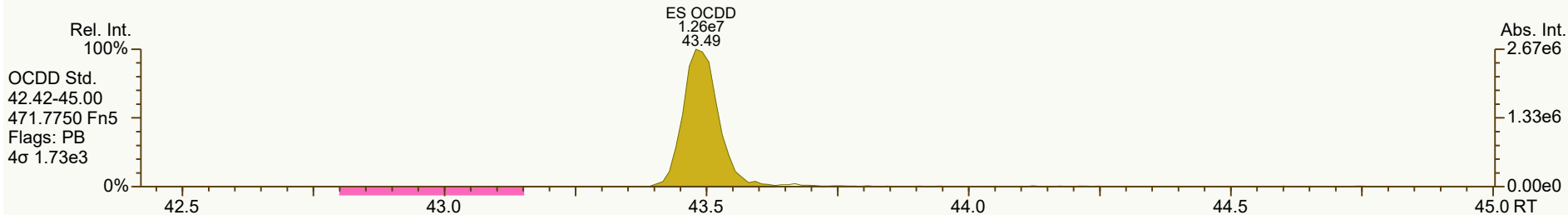
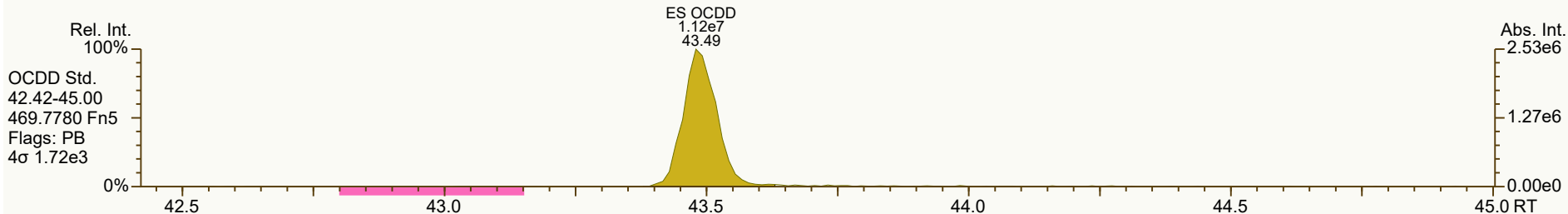
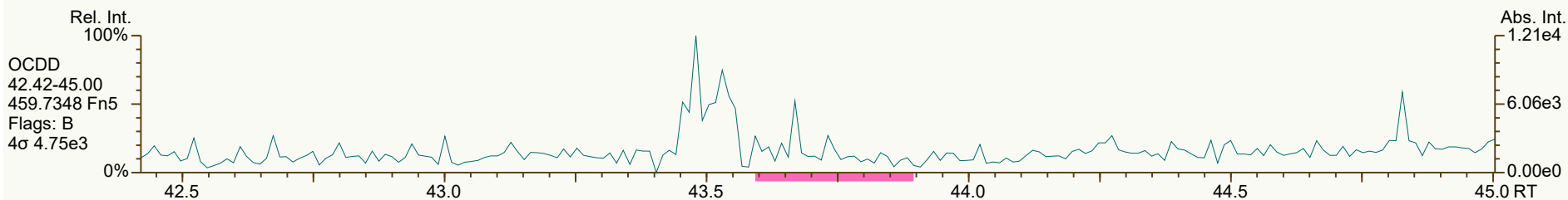
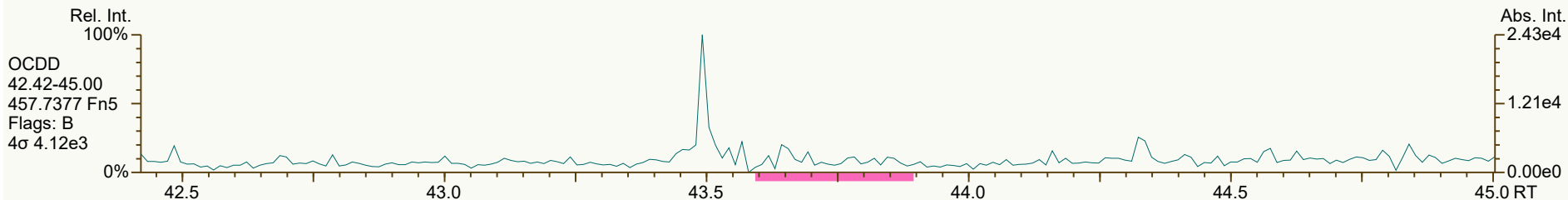




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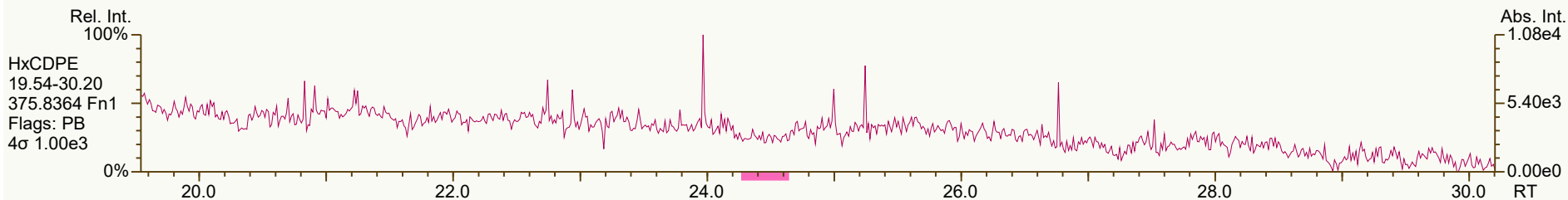
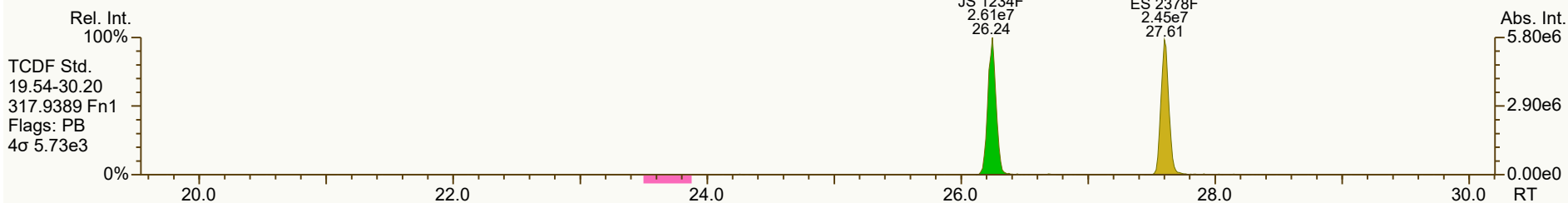
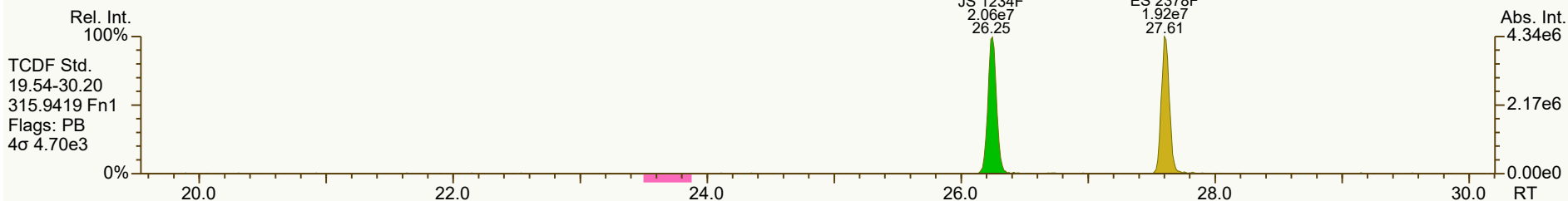
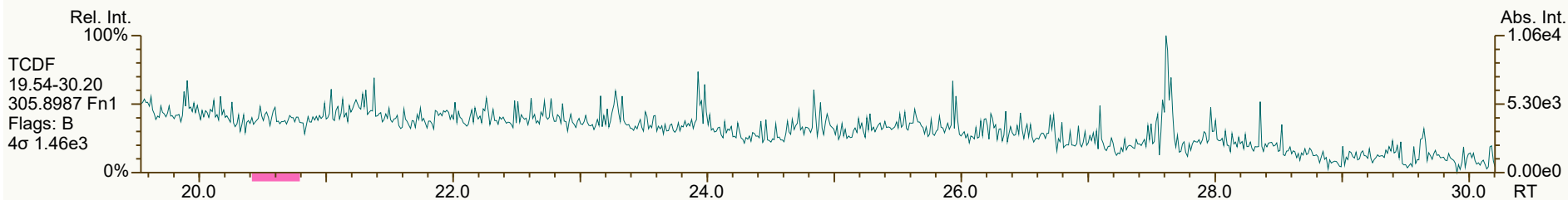
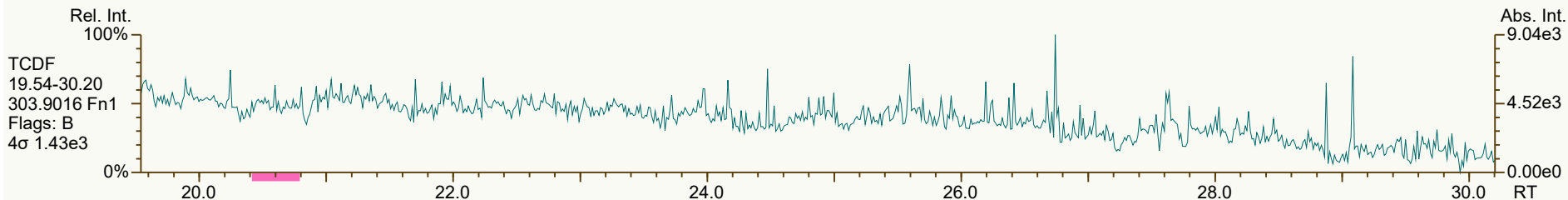
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SGS ID: B6238_18887_DF_004
Instr: [ILM] AutoSpec-Ultima HRMS3

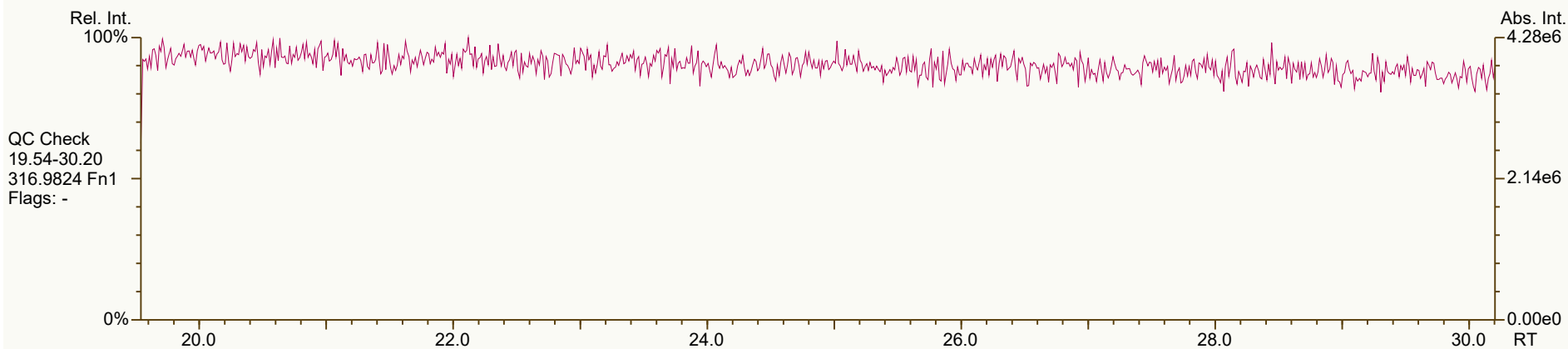
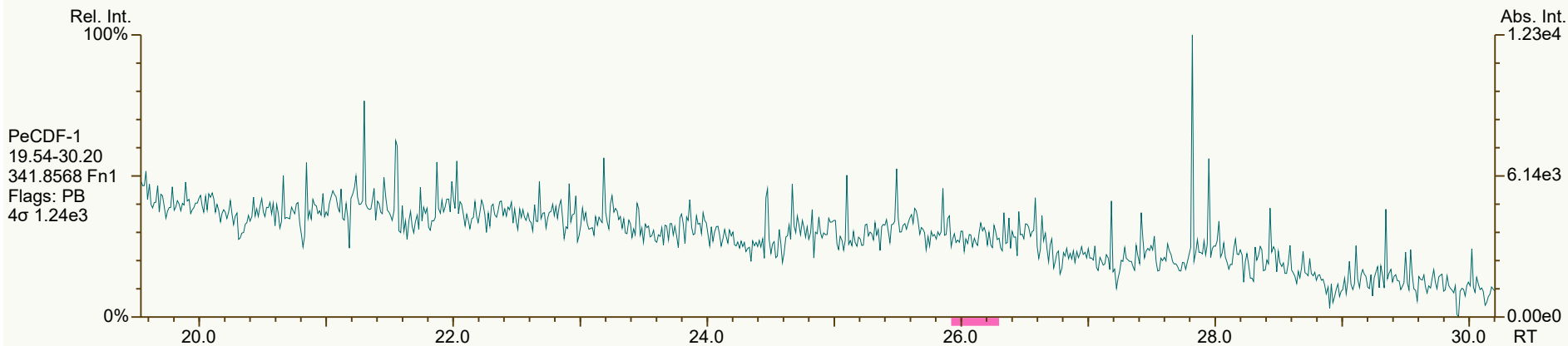
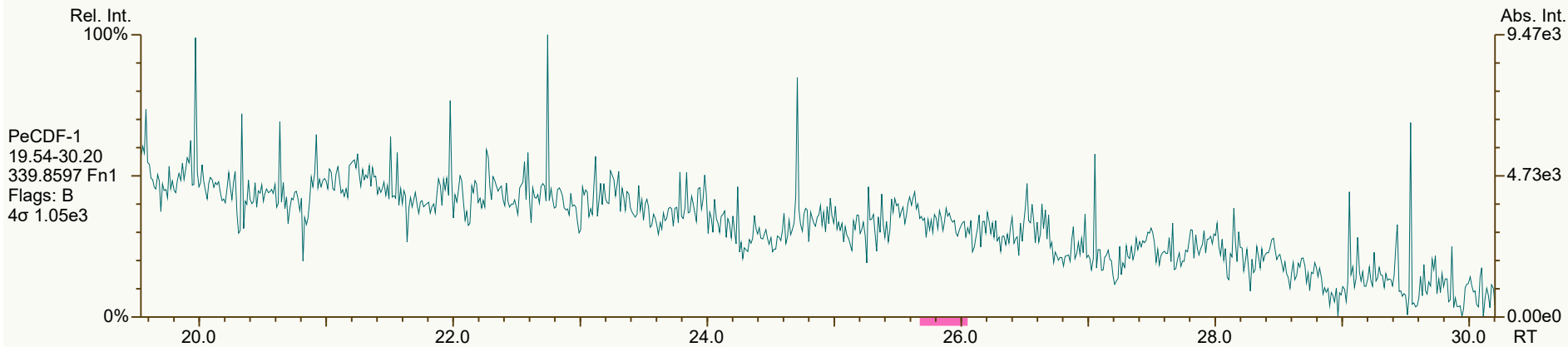
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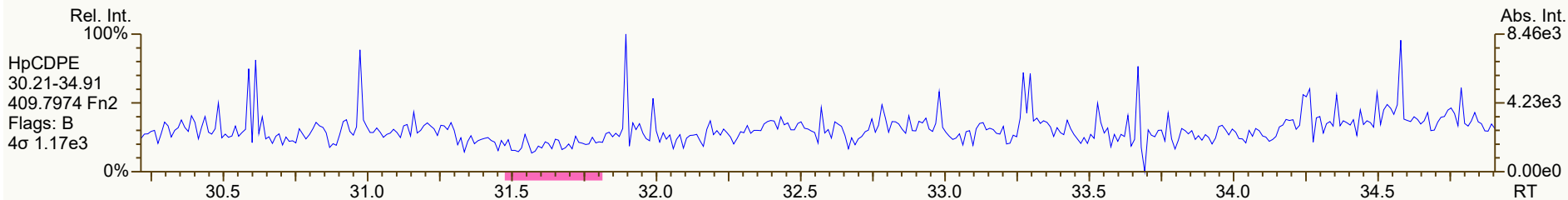
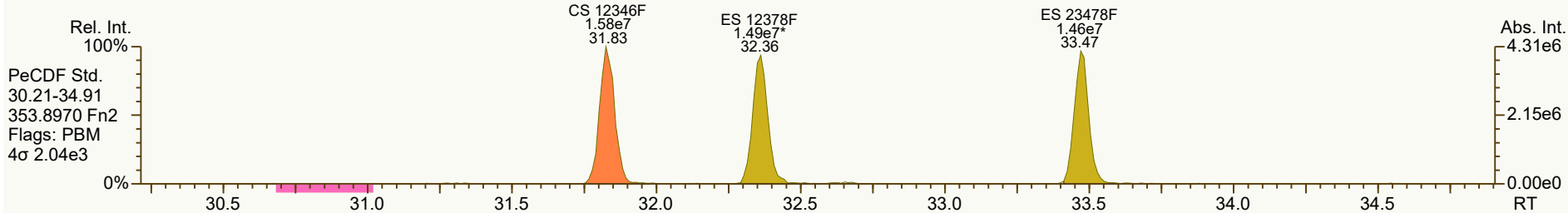
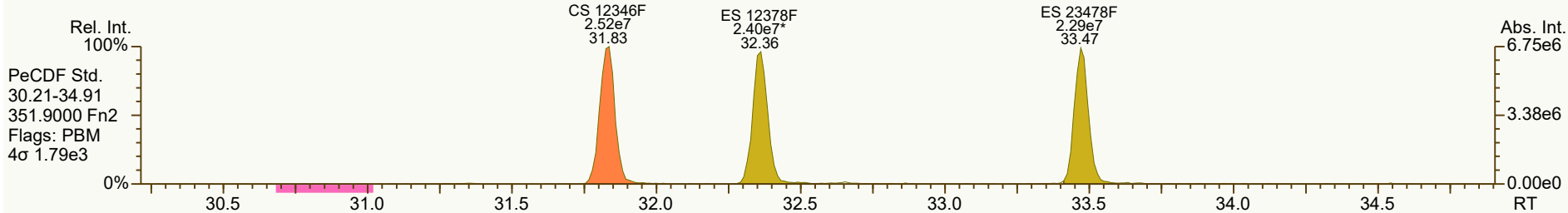
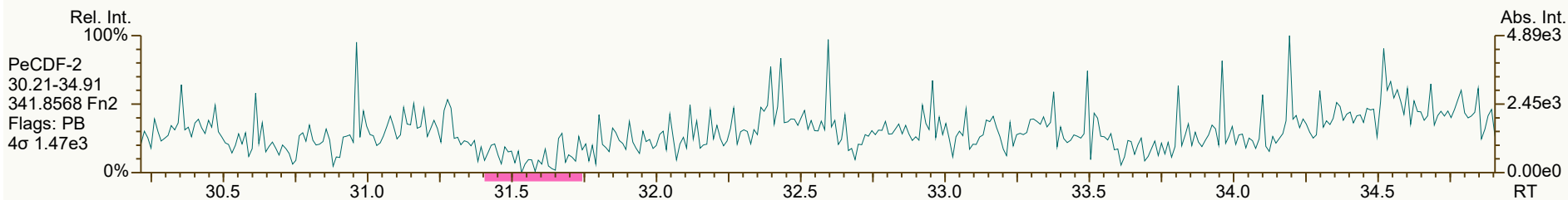
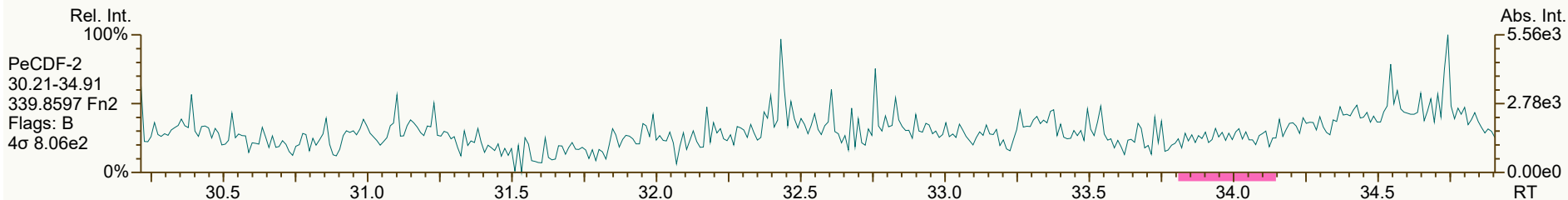
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User: DTF Datafile: 220209C10

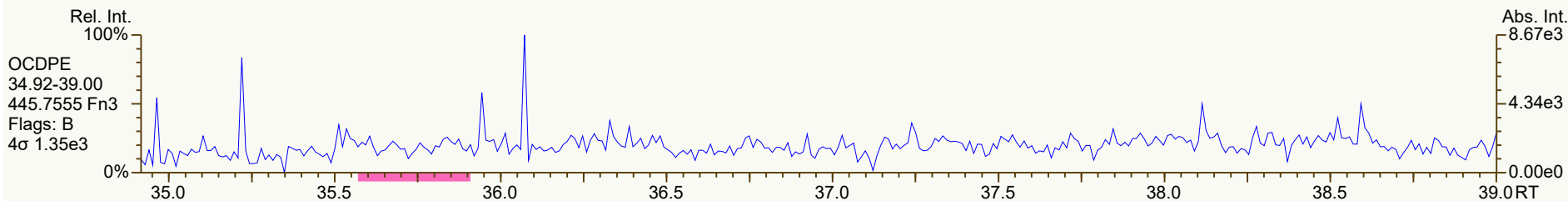
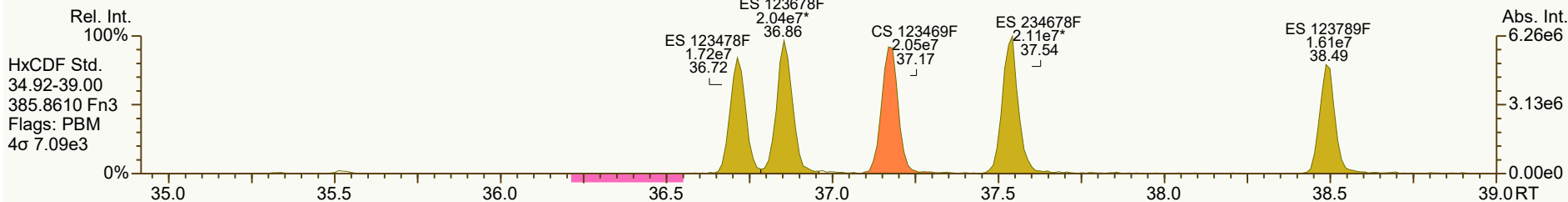
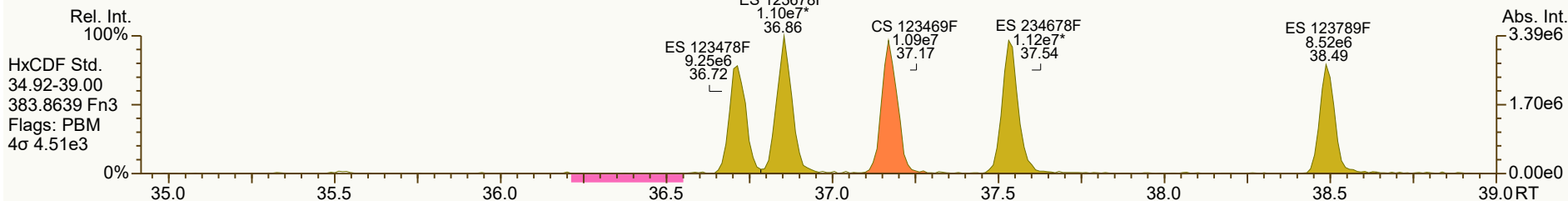
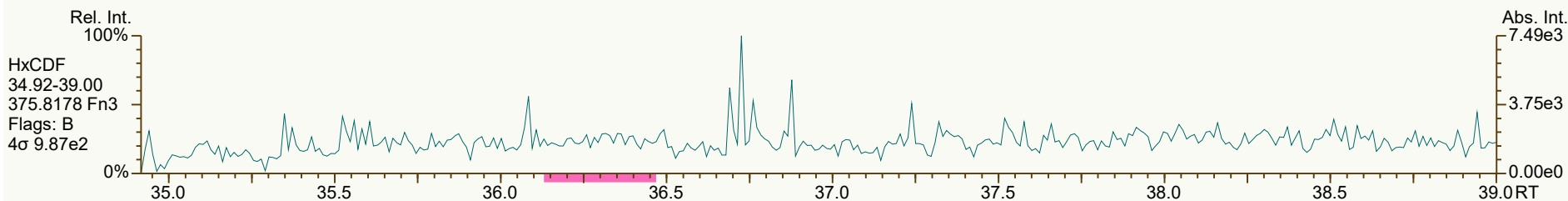
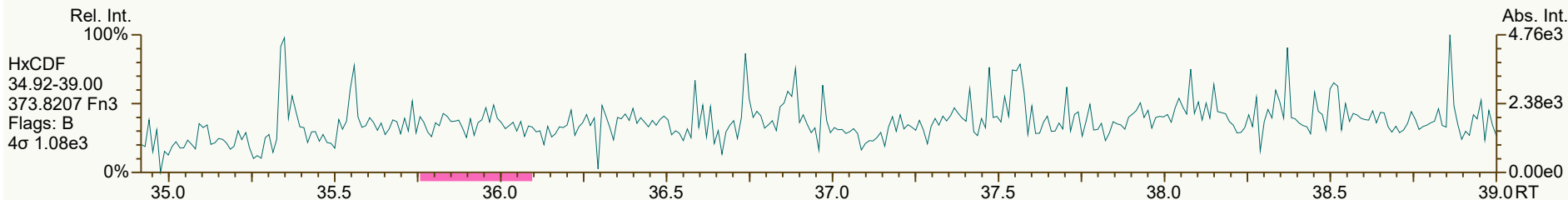


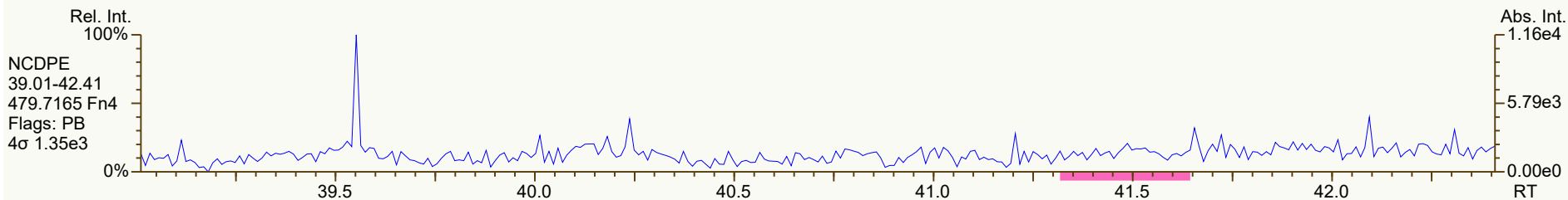
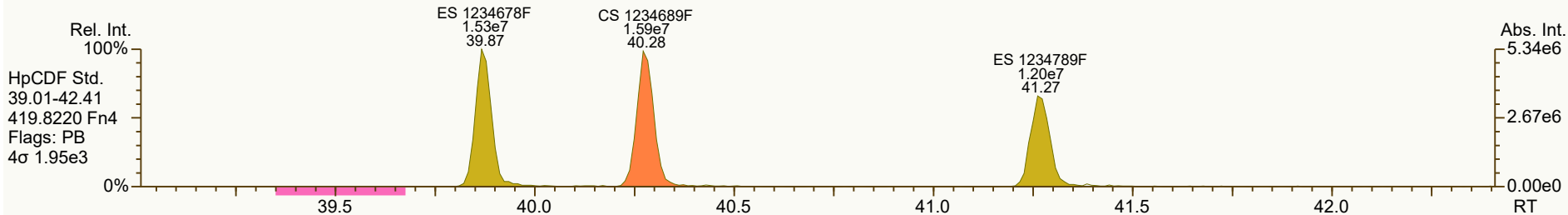
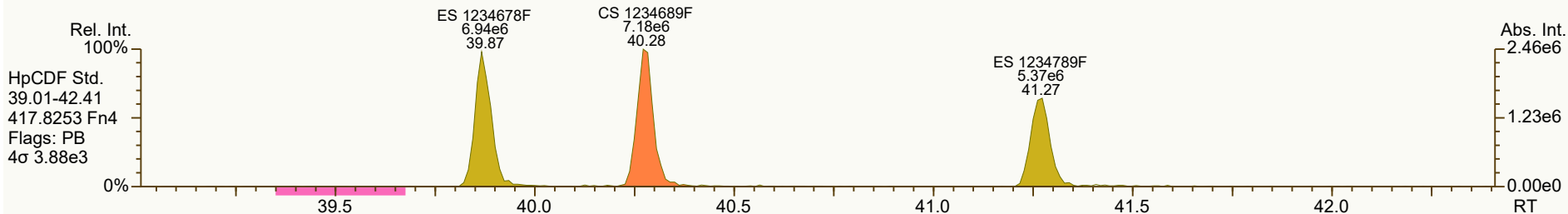
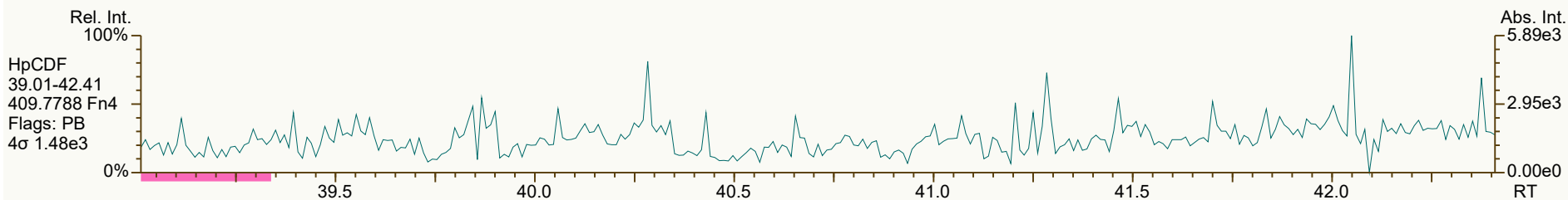
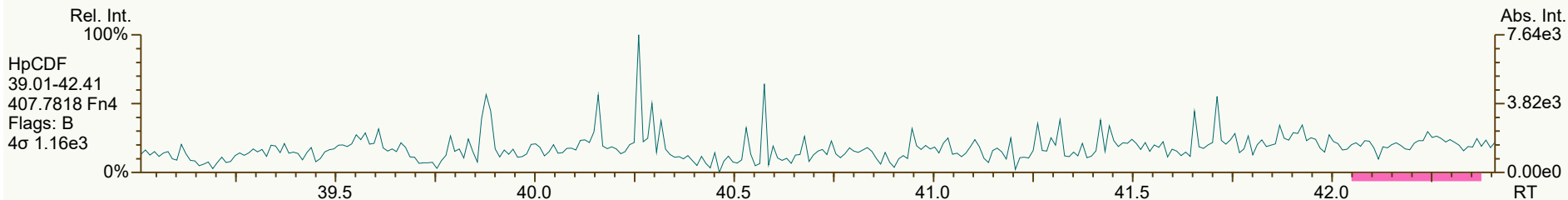
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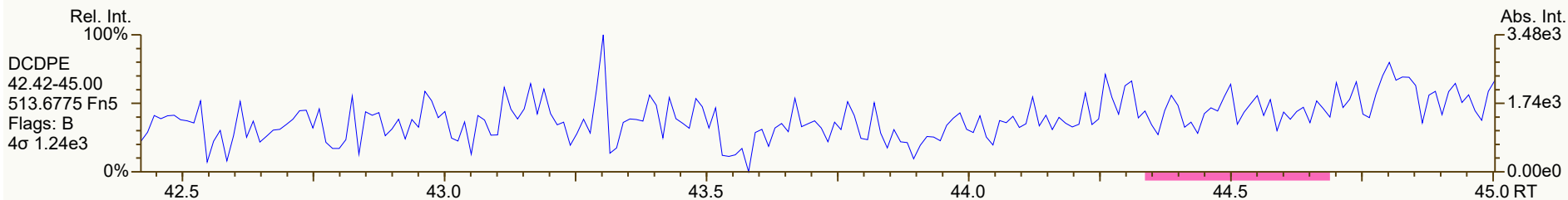
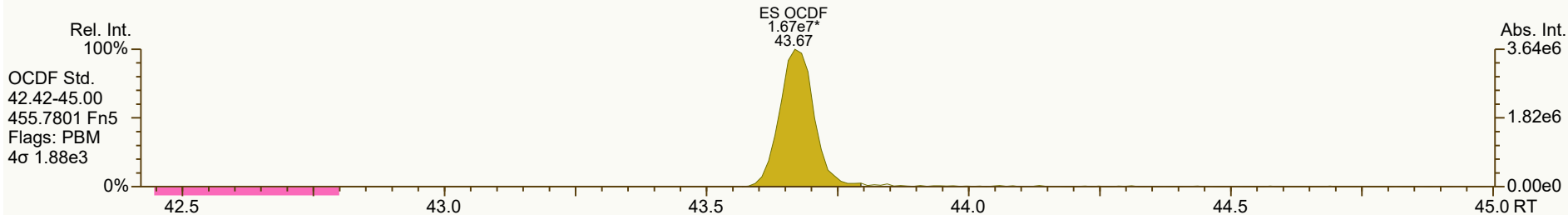
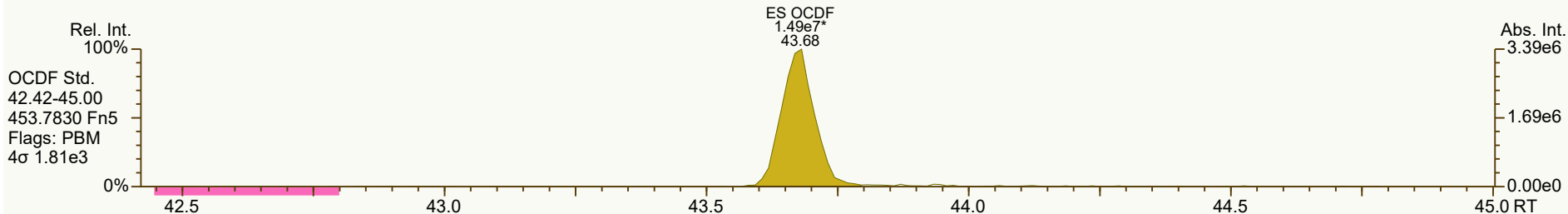
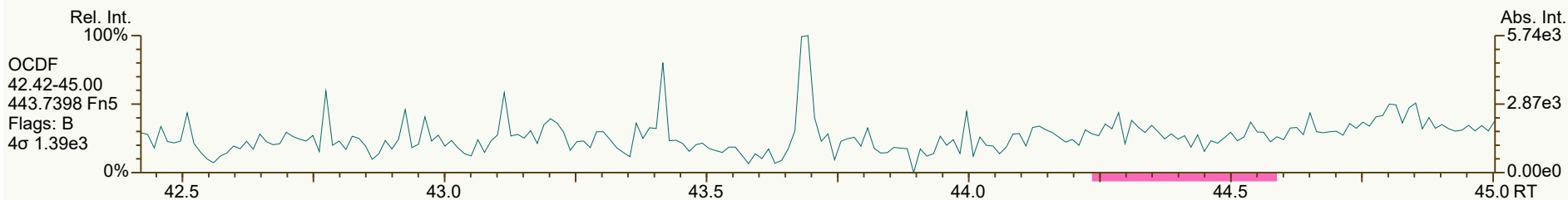
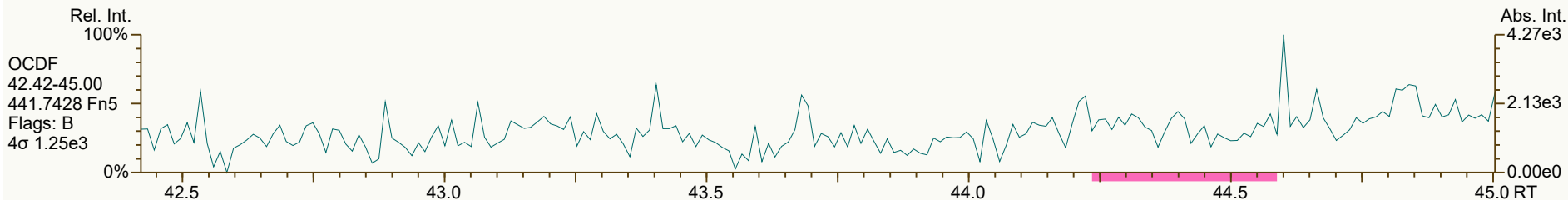
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Revised: 09-Feb-2022 14:33 (DTF) Printed: 09-Feb-2022 14:51 Page 7 of 12











Lab ID: B6238_18887_DF_005

Acq'd: 09 Feb 2022 12:44 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-DUP-1

UTP: 09-Feb-2022 14:37:57 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 170-231-FWV

Datafile: 220209C11

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3040.833	1.73
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2555.082	1.58
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2757.52	1.84
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2757.52	1.71
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2757.52	1.7
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2979.332	2.08
OCDD	43.50	J EMPC	1.0004	1.0006	+0.5	6.25E+04	0.70	N	1.13	7.96	3717.267	5.44

2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	2855.736	1.16
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3024.9636	1.28
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3024.9636	1.23
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2595.09	1.15
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2595.09	1.13
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2595.09	1.11
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2595.09	1.22
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2978.63	1.34
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	2978.63	1.91
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2646.207	2.89

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.45	1.0236	1.0238	+0.3	2.93E+07	0.80	Y	1.05	85
ES 12378-PeCDD	33.79	1.2144	1.2162	+3.6	2.80E+07	1.61	Y	0.88	96.9
ES 123478-HxCDD	37.71	0.9920	0.9919	-0.2	2.34E+07	1.29	Y	0.97	90.3
ES 123678-HxCDD	37.83	0.9951	0.9950	-0.2	2.49E+07	1.27	Y	0.94	99.2
ES 123789-HxCDD	38.12	1.0027	1.0027	0	2.53E+07	1.29	Y	1.09	87.1
ES 1234678-HpCDD	40.79	1.0724	1.0730	+1.5	2.10E+07	1.08	Y	0.91	86.4
ES OCDD	43.47	1.1428	1.1434	+1.6	2.73E+07	0.92	Y	0.62	82.2

ES 2378-TCDF	27.59	1.0516	1.0519	+0.5	4.63E+07	0.78	Y	1.06	86.3
ES 12378-PeCDF	32.35	1.2312	1.2331	+3.7	4.24E+07	1.58	Y	0.91	92.1
ES 23478-PeCDF	33.46	1.2733	1.2756	+4.6	4.17E+07	1.59	Y	0.88	93.4
ES 123478-HxCDF	36.70	0.9655	0.9653	-0.4	2.84E+07	0.54	Y	1.20	88.9
ES 123678-HxCDF	36.84	0.9692	0.9690	-0.4	3.42E+07	0.55	Y	1.35	95
ES 234678-HxCDF	37.52	0.9871	0.9869	-0.5	3.26E+07	0.55	Y	1.24	98.7
ES 123789-HxCDF	38.48	1.0121	1.0120	-0.2	2.70E+07	0.51	Y	1.16	87.7
ES 1234678-HpCDF	39.86	1.0479	1.0484	+1.2	2.40E+07	0.46	Y	0.97	93
ES 1234789-HpCDF	41.25	1.0845	1.0850	+1.2	1.88E+07	0.45	Y	0.85	82.9
ES OCDF	43.65	1.1477	1.1482	+1.3	3.61E+07	0.93	Y	0.81	84

Lab ID: B6238_18887_DF_005

Acq'd: 09 Feb 2022 12:44 DTF

Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-DUP-1

UTP: 09-Feb-2022 14:37:57 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 170-231-FWV

Datafile: 220209C11

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.29E+07	0.82	Y	-	-
JS 1234-TCDF	26.23		-	-	-	5.06E+07	0.78	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.33E+07	1.23	Y	-	-
CS 37C1-2378-TCDD	28.47		1.0244	1.0247	+0.5	1.43E+07	n/a	-	1.20	90.4
CS 12347-PeCDD	33.29		1.1964	1.1981	+3.4	2.73E+07	1.59	Y	0.75	110
CS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.39E+07	1.60	Y	0.85	102
CS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.32E+07	0.54	Y	1.12	112
CS 1234689-HpCDF	40.26		1.0584	1.0590	+1.4	2.55E+07	0.45	Y	0.89	108
SS 37C1-2378-TCDD	28.47		1.0244	1.0247	+0.5	1.43E+07	n/a	-	1.15	107
SS 12347-PeCDD	33.29		1.1964	1.1981	+3.4	2.73E+07	1.59	Y	0.86	113
SS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.39E+07	1.60	Y	0.94	110
SS 123469-HxCDF	37.16		0.9775	0.9774	-0.2	3.32E+07	0.54	Y	0.83	117
SS 1234689-HpCDF	40.26		1.0584	1.0590	+1.4	2.55E+07	0.45	Y	0.92	116

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	7.96
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	7.96

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Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-012022-GW-BN-DUP-1

UTP: 09-Feb-2022 14:37:57 DTF

J-level: 4.9 pg/L Split: 1

Checkcode: 170-231-FWV

Datafile: 220209C11

Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		3040.833	1.73
1379-TCDD	NotFnd		0.8860						1.18		3040.833	1.73
1369-TCDD	NotFnd		0.9009						1.18		3040.833	1.73
1469-TCDD	NotFnd		0.9281						1.18		3040.833	1.73
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3040.833	1.73
1378-TCDD	NotFnd		0.9432						1.18		3040.833	1.73
1268-TCDD	NotFnd		0.9500						1.18		3040.833	1.73
1478-TCDD	NotFnd		0.9586						1.18		3040.833	1.73
1279-TCDD	NotFnd		0.9645						1.18		3040.833	1.73
1234/1269-TCDD	NotFnd		0.9770						1.18		3040.833	1.73
1236-TCDD	NotFnd		0.9817						1.18		3040.833	1.73
1237/1238-TCDD	NotFnd		0.9905						1.18		3040.833	1.73
1239-TCDD	NotFnd		0.9952						1.18		3040.833	1.73
2378-TCDD	NotFnd		1.0008						1.18		3040.833	1.73
1278-TCDD	NotFnd		1.0121						1.18		3040.833	1.73
1267-TCDD	NotFnd		1.0167						1.18		3040.833	1.73
1289-TCDD	NotFnd		1.0345						1.18		3040.833	1.73
12479/12468-PeCDD	NotFnd		0.9267						1.04		2555.082	1.58
12469-PeCDD	NotFnd		0.9425						1.04		2555.082	1.58
12368-PeCDD	NotFnd		0.9588						1.04		2555.082	1.58
12478-PeCDD	NotFnd		0.9643						1.04		2555.082	1.58
12379-PeCDD	NotFnd		0.9673						1.04		2555.082	1.58
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2555.082	1.58
12346/12347-PeCDD	NotFnd		0.9858						1.04		2555.082	1.58
12378-PeCDD	NotFnd		1.0006						1.04		2555.082	1.58
12367-PeCDD	NotFnd		1.0033						1.04		2555.082	1.58
12389-PeCDD	NotFnd		1.0134						1.04		2555.082	1.58
124679/124689-HxCDD	NotFnd		0.9542						1.10		2757.52	1.75
123468-HxCDD	NotFnd		0.9715						1.10		2757.52	1.75
123679/123689-HxCDD	NotFnd		0.9793						1.10		2757.52	1.75
123469-HxCDD	NotFnd		0.9828						1.10		2757.52	1.75
123478-HxCDD	NotFnd		1.0004						1.09		2757.52	1.84
123678-HxCDD	NotFnd		1.0035						1.15		2757.52	1.71
123467-HxCDD	NotFnd		1.0085						1.10		2757.52	1.75
123789-HxCDD	NotFnd		1.0112						1.05		2757.52	1.7

Lab ID: B6238_18887_DF_005

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Wt/Vol: 1.02 L

ICAL: HRMS3_DF_10272021 10NOV2021

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Report: 09 Feb 2022 17:28 TF

Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		2979.332	2.08
1234678-HpCDD	NotFnd		1.0003						1.06		2979.332	2.08
OCDD	43.50	J EMPC	1.0004	1.0006	+0.5	6.25E+04	0.70	N	1.13	7.96	3717.267	5.44
OCDD-a	NotFnd		1.0003						0.07		3585.915	82.1
1368-TCDF	NotFnd		0.8251						1.08		2855.736	1.16
1468-TCDF	NotFnd		0.8458						1.08		2855.736	1.16
2468-TCDF	NotFnd		0.8686						1.08		2855.736	1.16
1346/1246-TCDF	NotFnd		0.8814						1.08		2855.736	1.16
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2855.736	1.16
1348-TCDF	NotFnd		0.8962						1.08		2855.736	1.16
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2855.736	1.16
1268-TCDF	NotFnd		0.9145						1.08		2855.736	1.16
1467-TCDF	NotFnd		0.9193						1.08		2855.736	1.16
1478-TCDF	NotFnd		0.9254						1.08		2855.736	1.16
1369/1237-TCDF	NotFnd		0.9387						1.08		2855.736	1.16
2467-TCDF	NotFnd		0.9433						1.08		2855.736	1.16
2368-TCDF	NotFnd		0.9489						1.08		2855.736	1.16
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2855.736	1.16
1278-TCDF	NotFnd		0.9683						1.08		2855.736	1.16
1349-TCDF	NotFnd		0.9722						1.08		2855.736	1.16
1267-TCDF	NotFnd		0.9783						1.08		2855.736	1.16
2346/1249-TCDF	NotFnd		0.9850						1.08		2855.736	1.16
2347/1279-TCDF	NotFnd		0.9926						1.08		2855.736	1.16
2348-TCDF	NotFnd		0.9967						1.08		2855.736	1.16
2378-TCDF	NotFnd		1.0008						1.08		2855.736	1.16
2367/3467-TCDF	NotFnd		1.0137						1.08		2855.736	1.16
1269-TCDF	NotFnd		1.0223						1.08		2855.736	1.16
1239-TCDF	NotFnd		1.0321						1.08		2855.736	1.16
1289-TCDF	NotFnd		1.0722						1.08		2855.736	1.16
13468/12468-PeCDF	NotFnd		0.9139						1.02		2582.428	1.07
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		3024.9636	1.25
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		3024.9636	1.25
14678-PeCDF	NotFnd		0.9692						1.02		3024.9636	1.25
13479-PeCDF	NotFnd		0.9723						1.02		3024.9636	1.25
13469/12479-PeCDF	NotFnd		0.9797						1.02		3024.9636	1.25
12346-PeCDF	NotFnd		0.9840						1.02		3024.9636	1.25

Lab ID: B6238_18887_DF_005

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Wt/Vol: 1.02 L

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UTP: 09-Feb-2022 14:37:57 DTF

J-level: 4.9 pg/L Split: 1

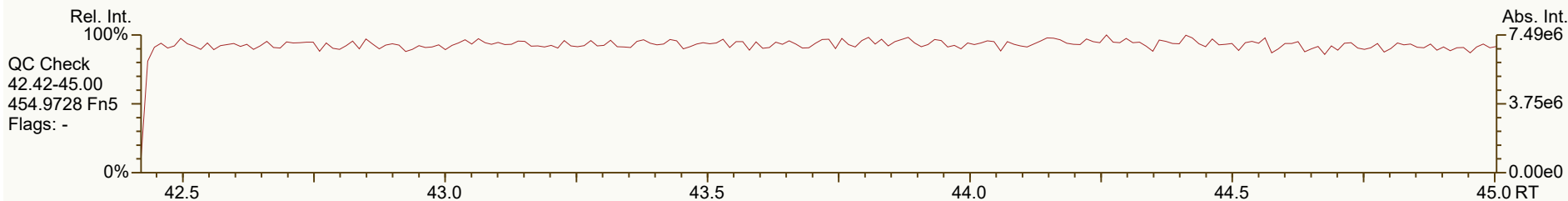
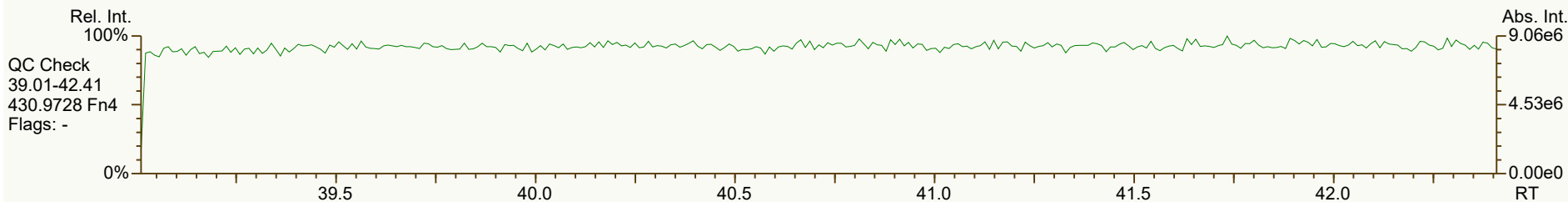
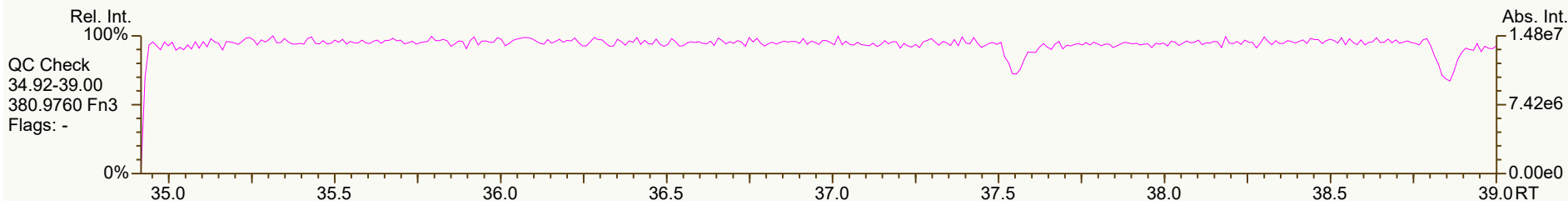
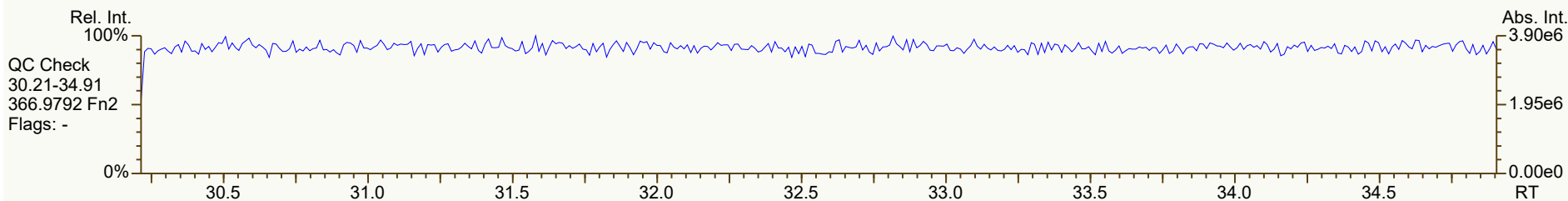
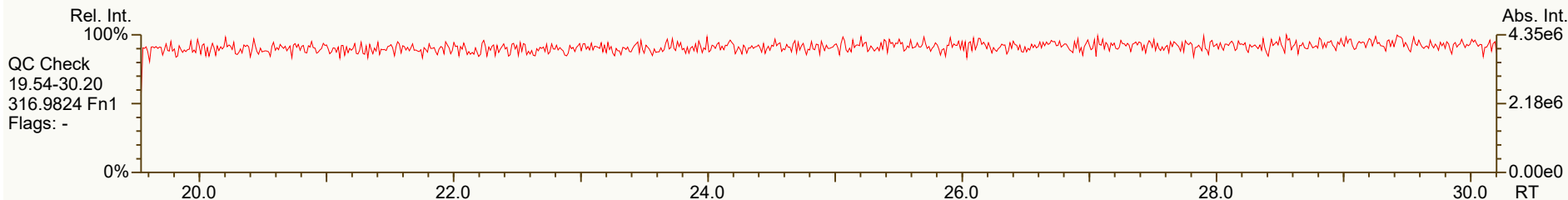
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Report: 09 Feb 2022 17:28 TF

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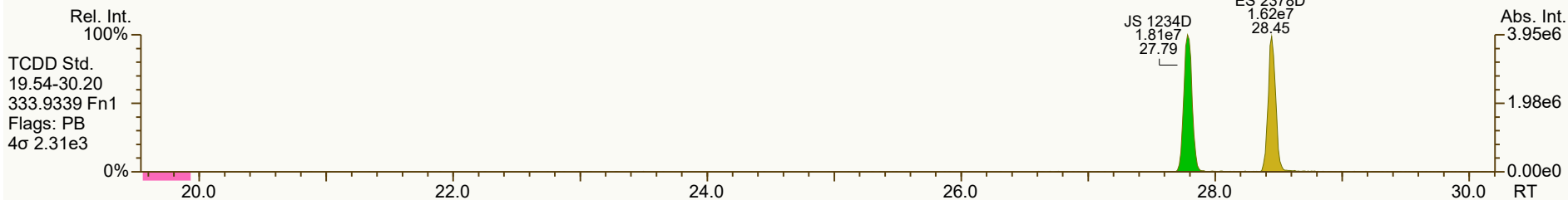
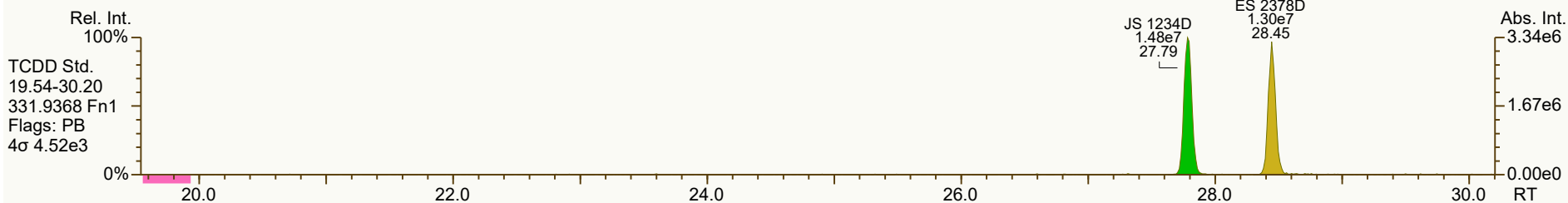
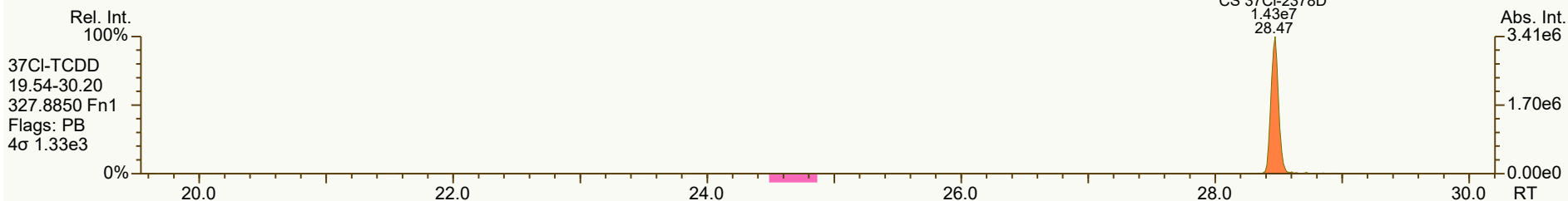
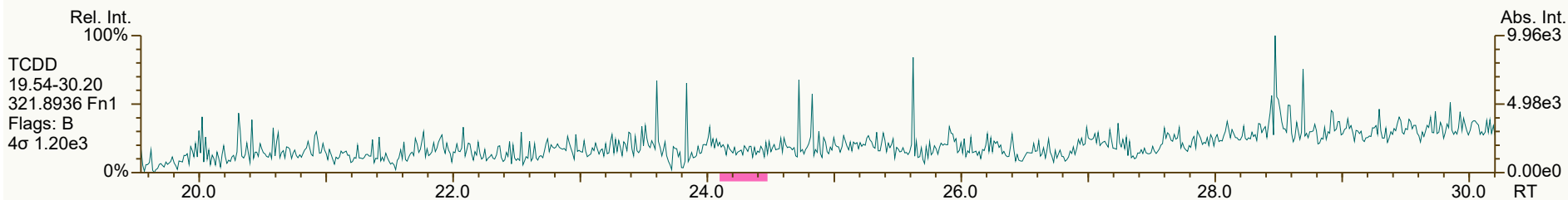
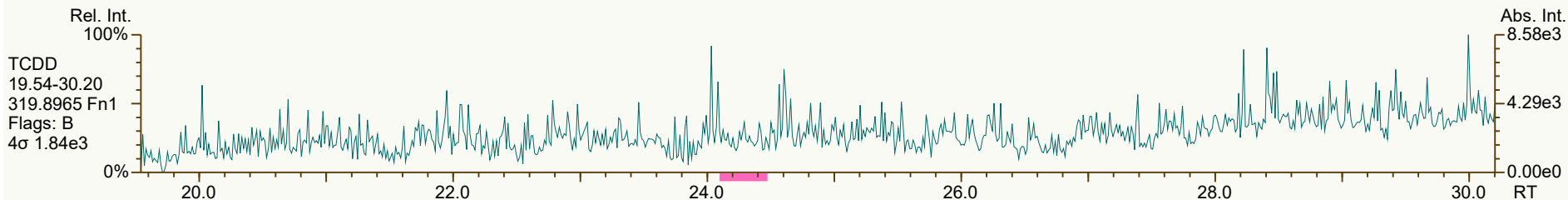
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12347-PeCDF	NotFnd		0.9894						1.02		3024.9636	1.25
12348-PeCDF	NotFnd		0.9940						1.02		3024.9636	1.25
12378-PeCDF	NotFnd		1.0005						1.02		3024.9636	1.28
12678/12367-PeCDF	NotFnd		1.0089						1.02		3024.9636	1.25
12379-PeCDF	NotFnd		1.0142						1.02		3024.9636	1.25
12679-PeCDF	NotFnd		0.9929						1.02		3024.9636	1.25
23467/12369-PeCDF	NotFnd		0.9967						1.02		3024.9636	1.25
23478-PeCDF	NotFnd		1.0005						1.02		3024.9636	1.23
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3024.9636	1.25
12349-PeCDF	NotFnd		1.0100						1.02		3024.9636	1.25
12389-PeCDF	NotFnd		1.0324						1.02		3024.9636	1.25
123468-HxCDF	NotFnd		0.9627						1.19		2595.09	1.15
124678/134678-HxCDF	NotFnd		0.9682						1.19		2595.09	1.15
134679-HxCDF	NotFnd		0.9744						1.19		2595.09	1.15
124679-HxCDF	NotFnd		0.9798						1.19		2595.09	1.15
124689-HxCDF	NotFnd		0.9858						1.19		2595.09	1.15
123467-HxCDF	NotFnd		0.9972						1.19		2595.09	1.15
123478-HxCDF	NotFnd		1.0004						1.27		2595.09	1.15
123678-HxCDF	NotFnd		1.0004						1.15		2595.09	1.13
123479-HxCDF	NotFnd		1.0049						1.19		2595.09	1.15
123469-HxCDF	NotFnd		1.0090						1.19		2595.09	1.15
123679-HxCDF	NotFnd		0.9942						1.19		2595.09	1.15
234678-HxCDF	NotFnd		1.0005						1.19		2595.09	1.11
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2595.09	1.15
123789-HxCDF	NotFnd		1.0004						1.16		2595.09	1.22
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2595.09	1.15
1234678-HpCDF	NotFnd		1.0003						1.37		2978.63	1.34
1234679-HpCDF	NotFnd		1.0068						1.34		2978.63	1.59
1234689-HpCDF	NotFnd		1.0103						1.34		2978.63	1.59
1234789-HpCDF	NotFnd		1.0002						1.31		2978.63	1.91
OCDF	NotFnd		1.0003						1.07		2646.207	2.89
OCDF-a	NotFnd		1.0002						0.07		2890.865	50.9



SGS ID: B6238_18887_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

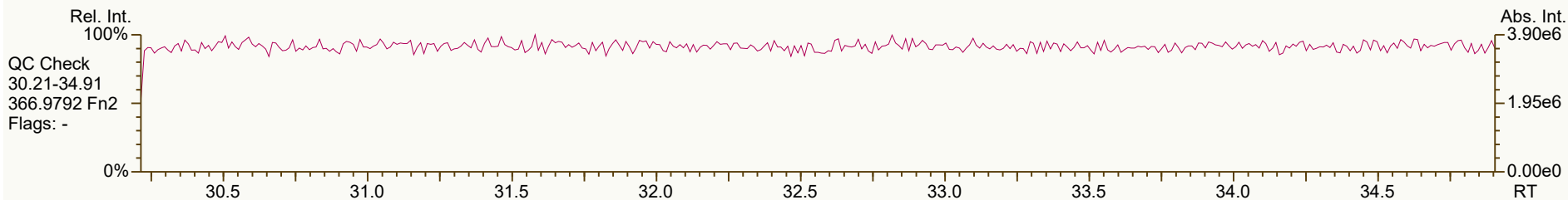
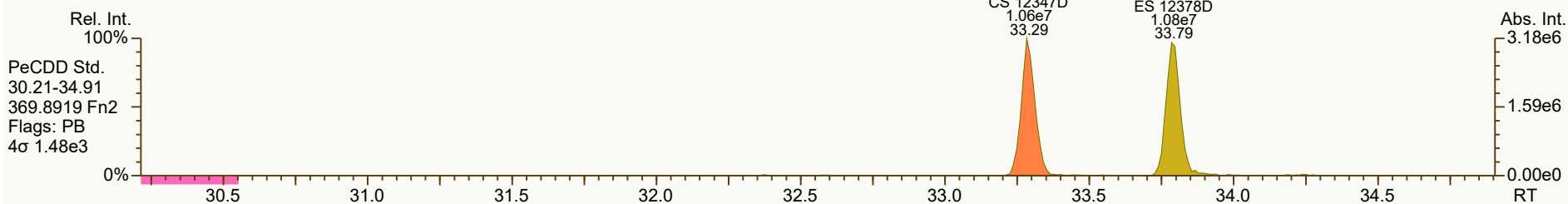
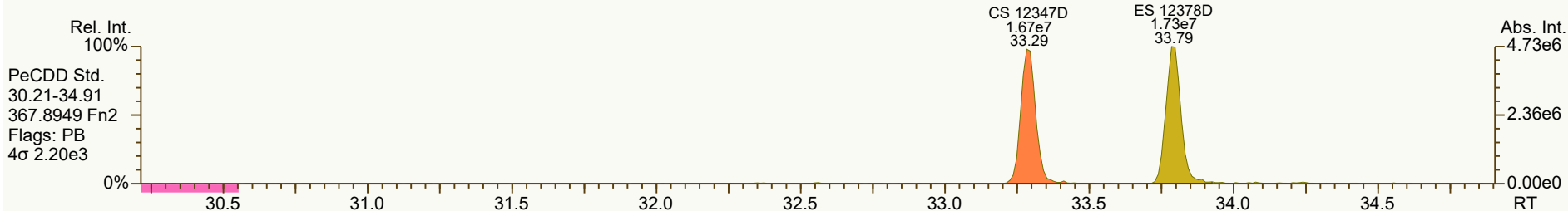
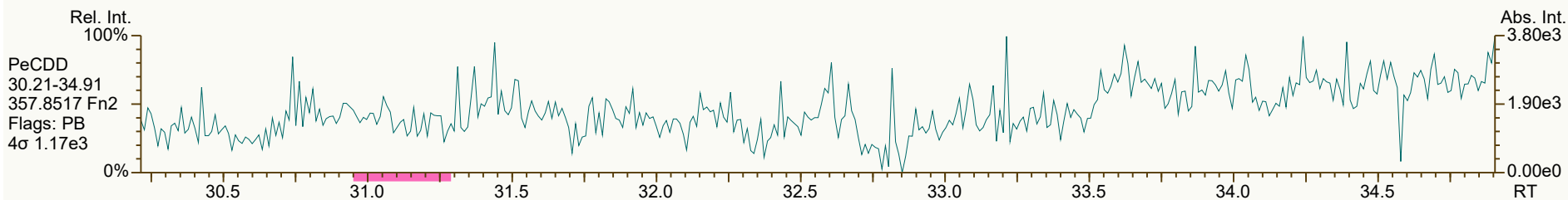
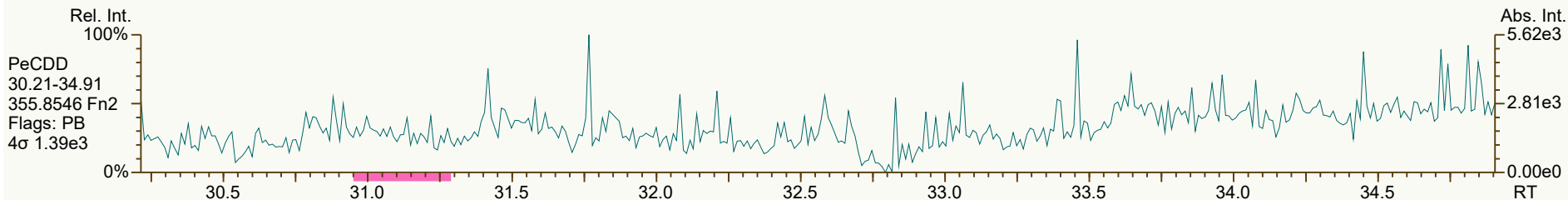
Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24

Acq: 09-Feb-2022 12:44:33
User: DTF Datafile: 220209C11



Results: P:\B6200_B6299\B6238\B6238_18887_DF\Resources\B6238_18887_DF_005.utp_res, saved 09-Feb-2022 14:37 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1364, 7809, 9380 scc: 170-231

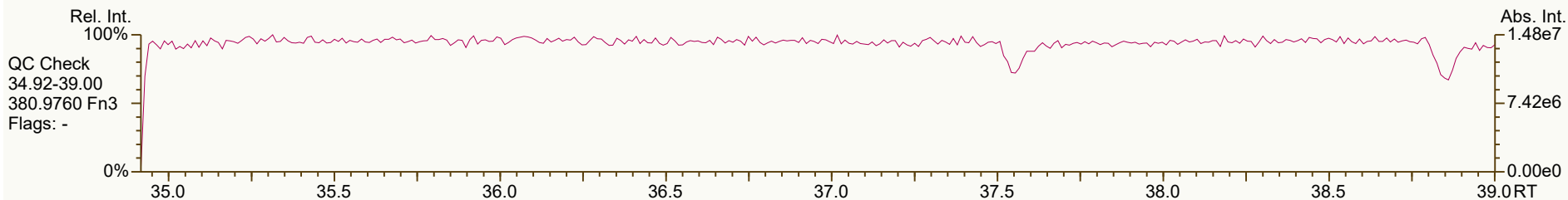
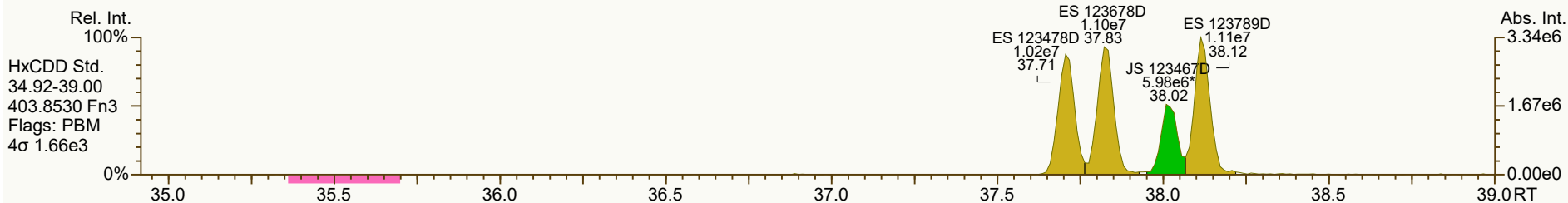
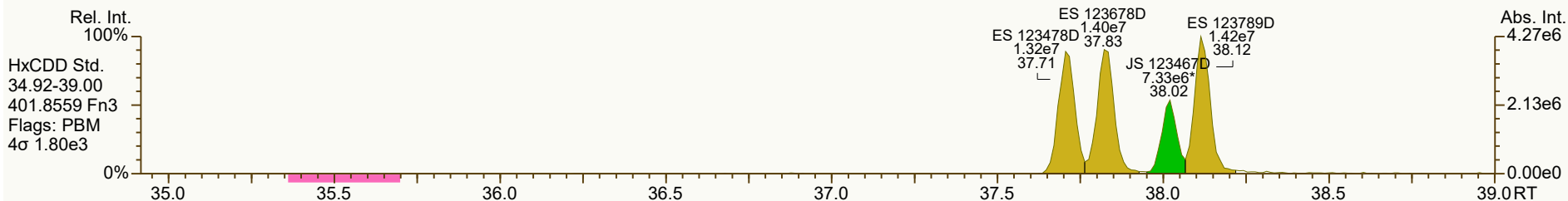
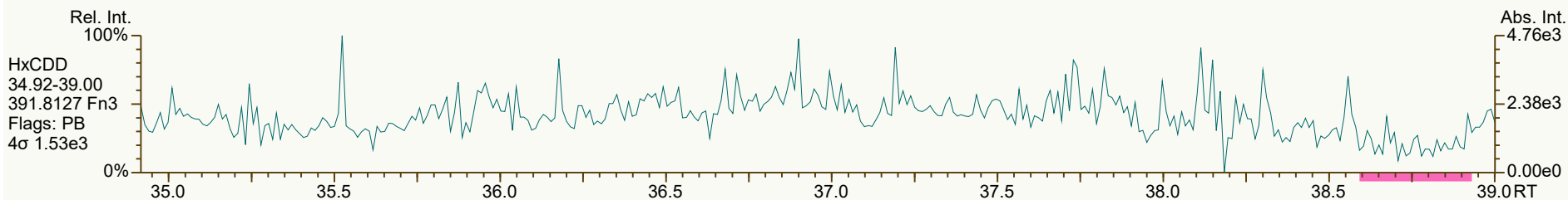
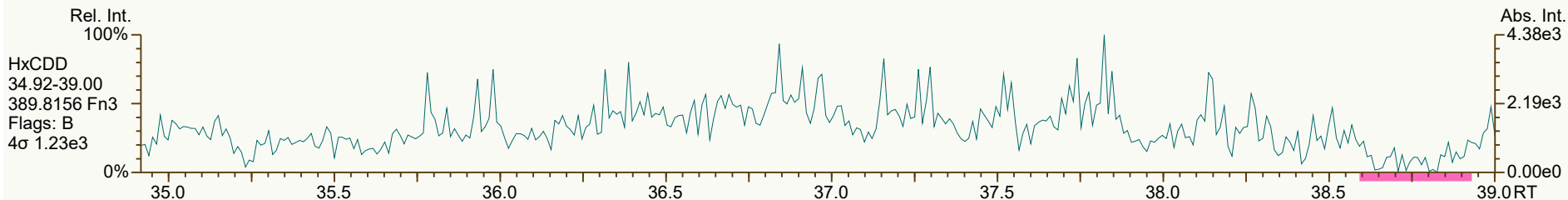
Peak annotation: Areas, Centroids
PKD: 09-Feb-2022 14:34 Printed: 09-Feb-2022 14:51 Page 2 of 12



SGS ID: B6238_18887_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24

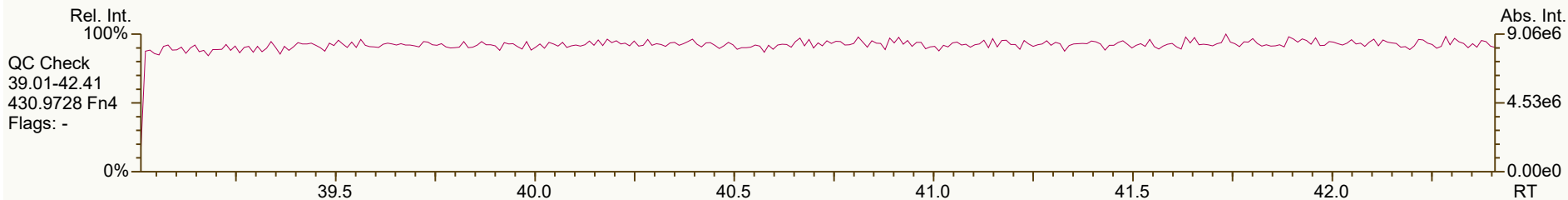
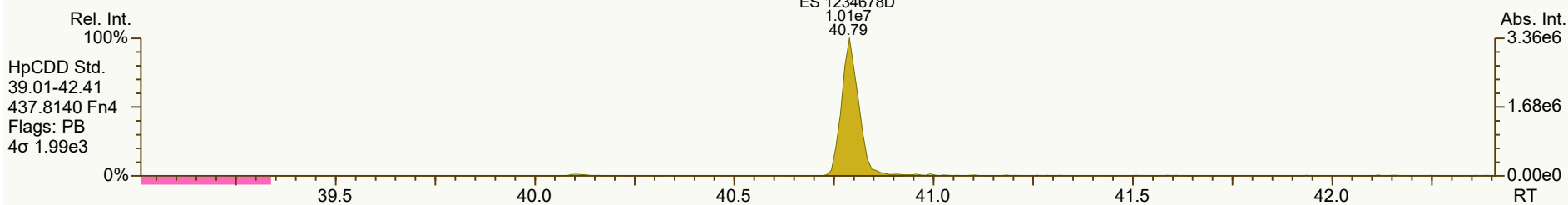
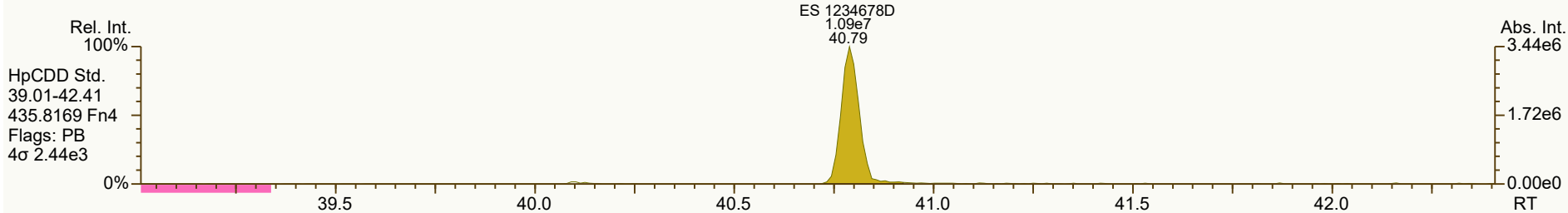
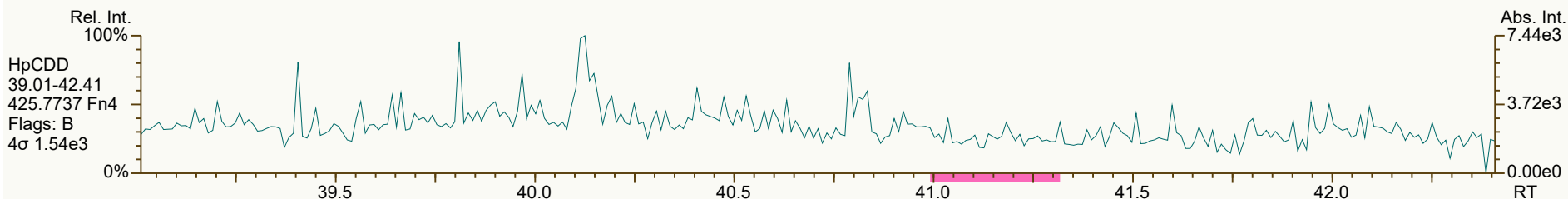
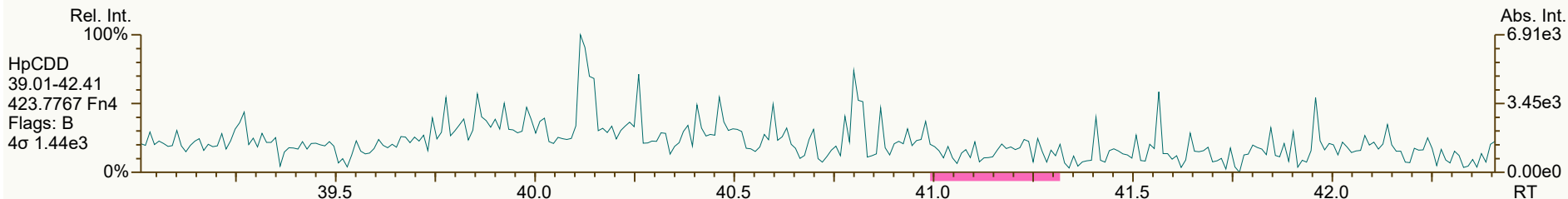
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SGS ID: B6238_18887_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24

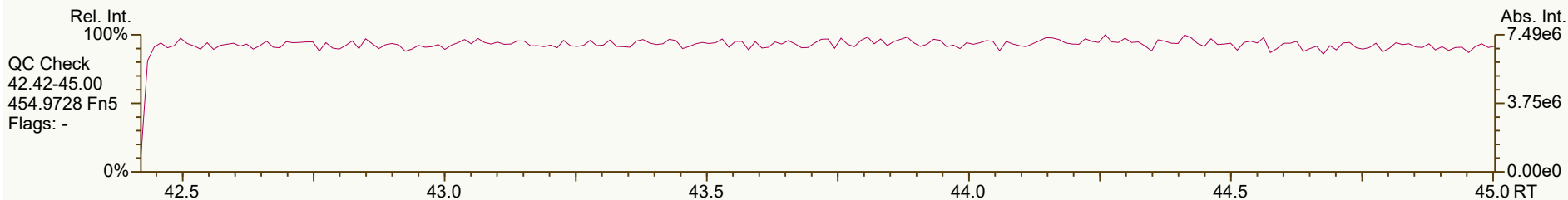
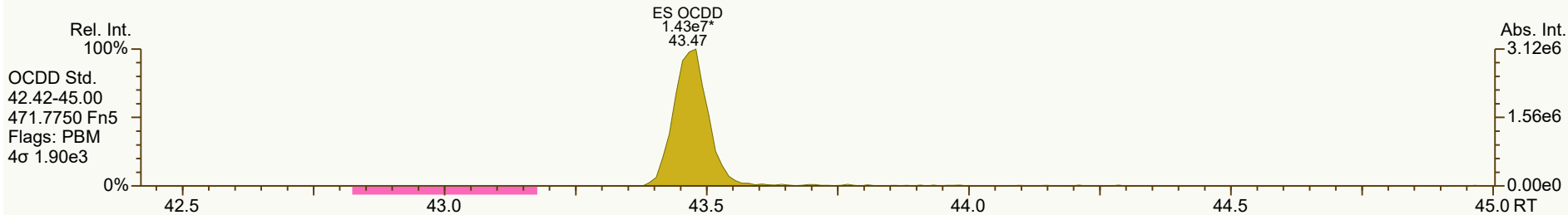
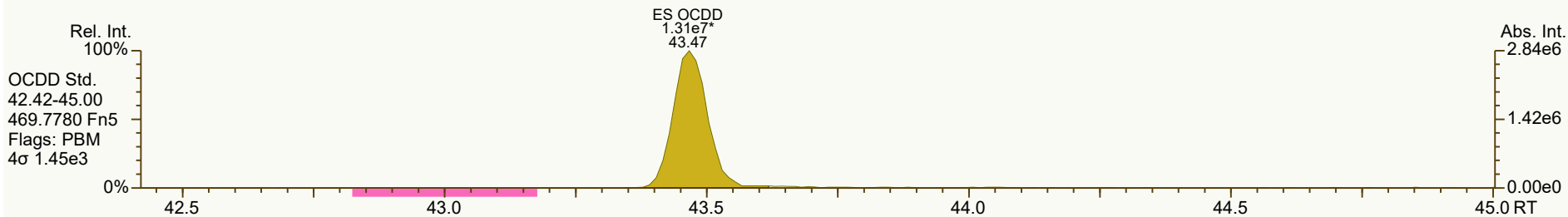
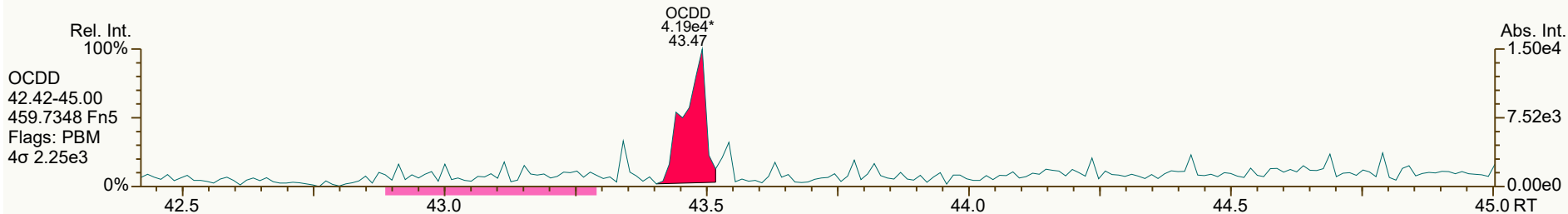
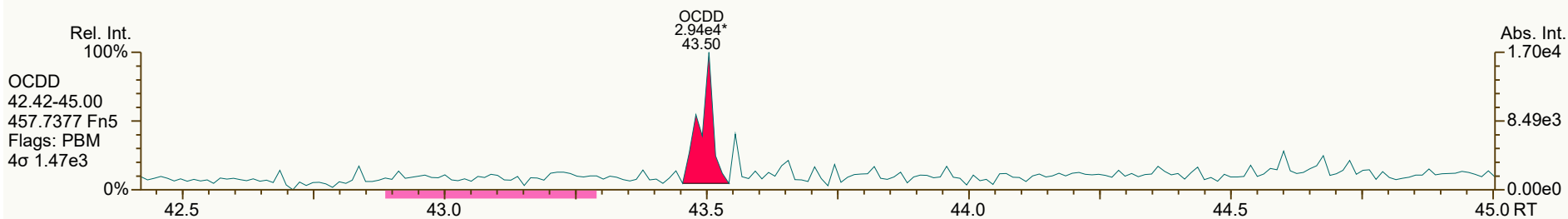
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SGS ID: B6238_18887_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24

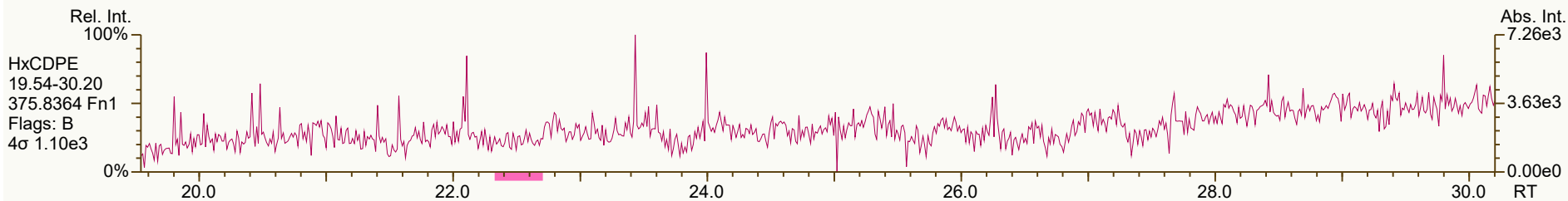
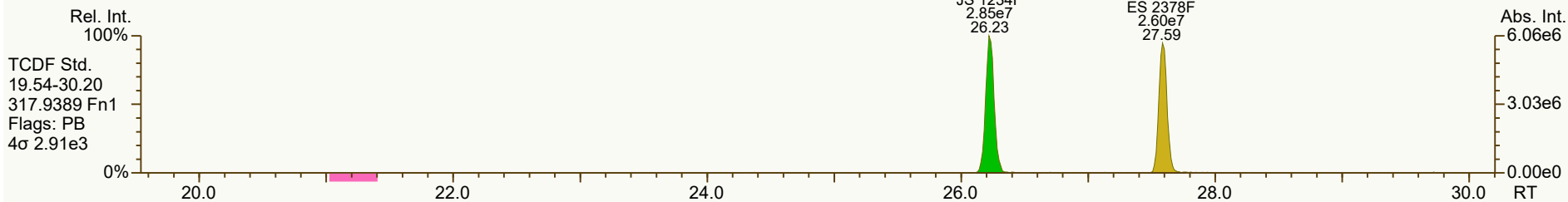
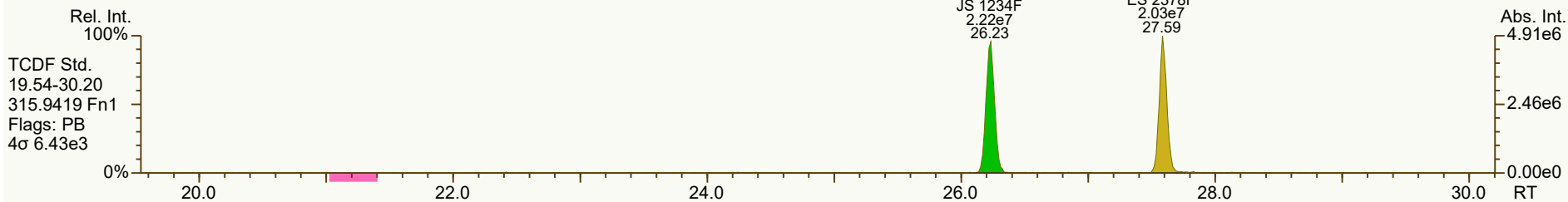
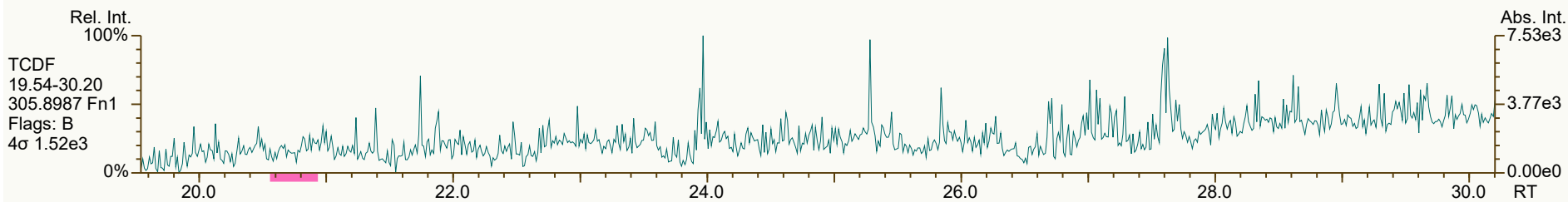
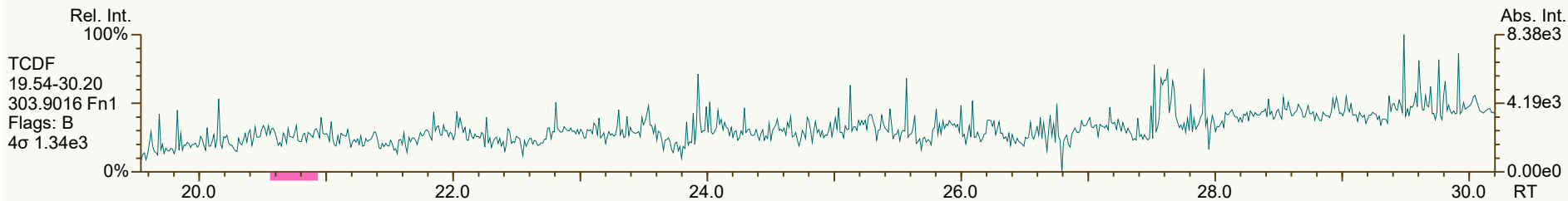
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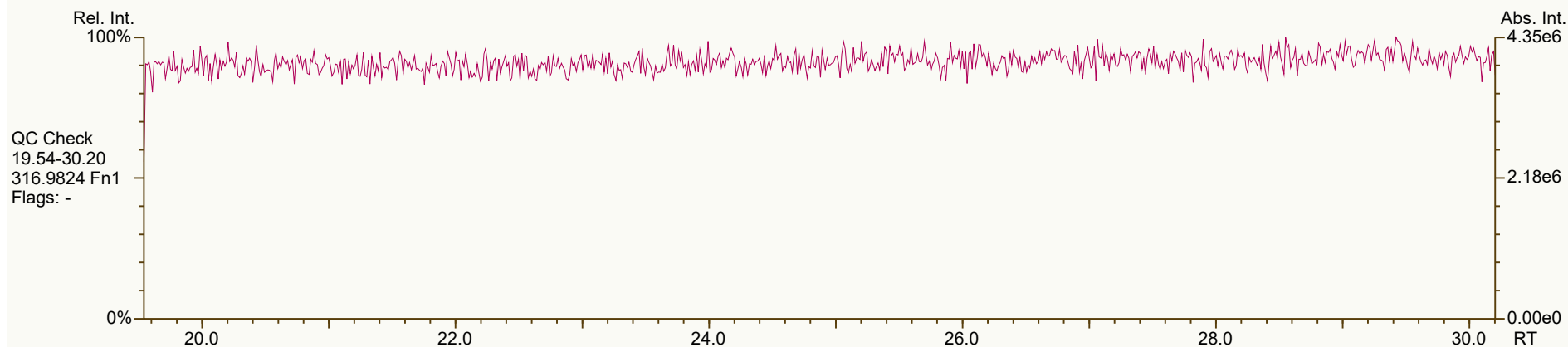
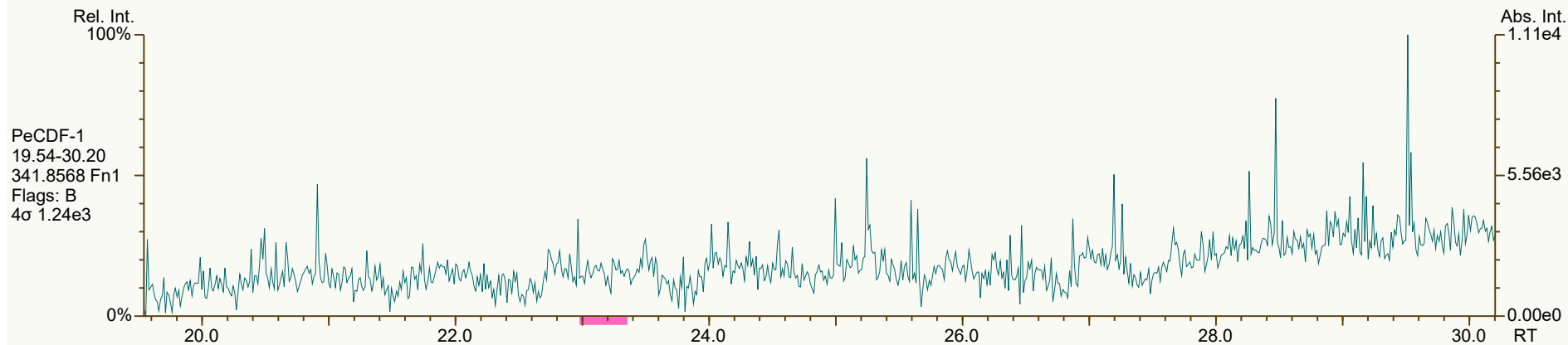
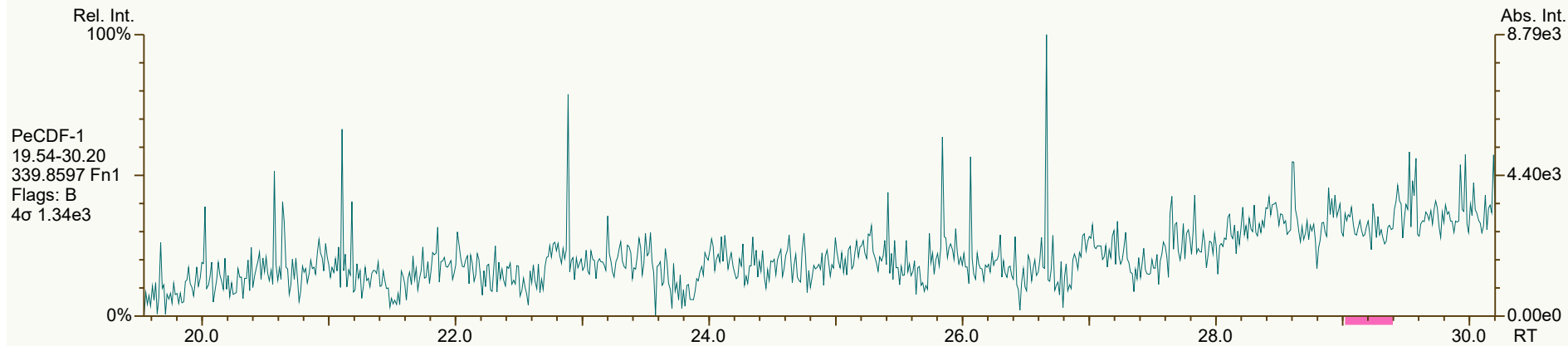


SGS ID: B6238_18887_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-DUP-1
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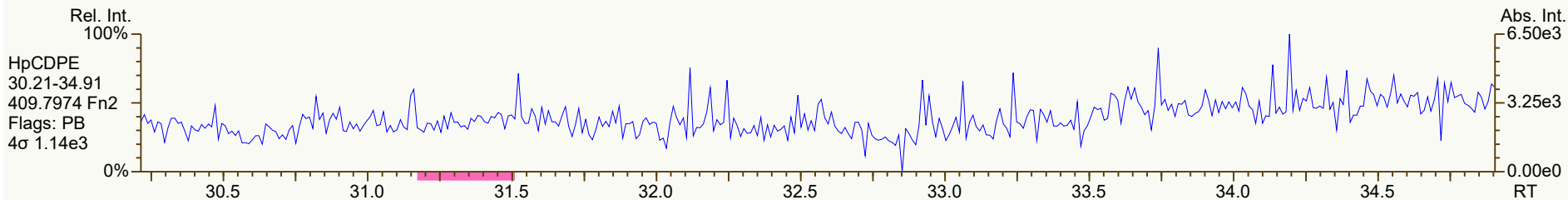
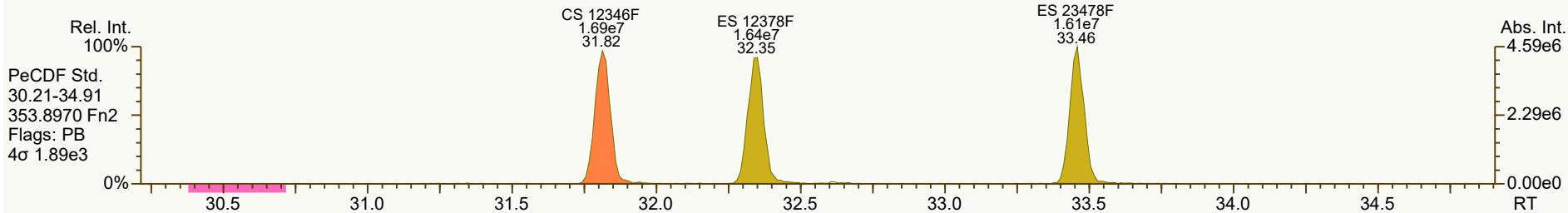
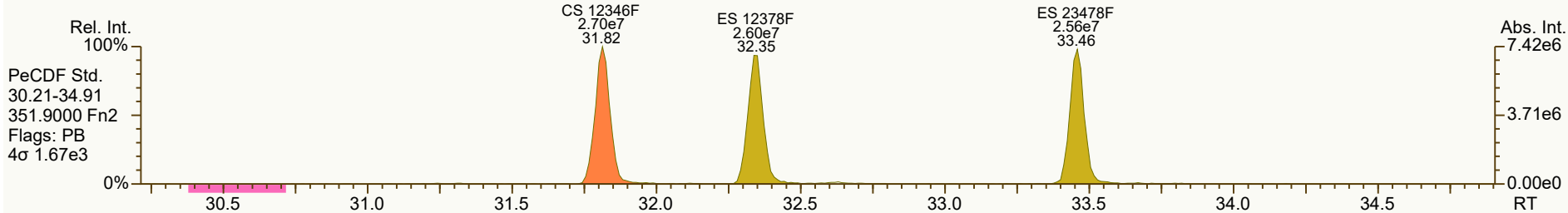
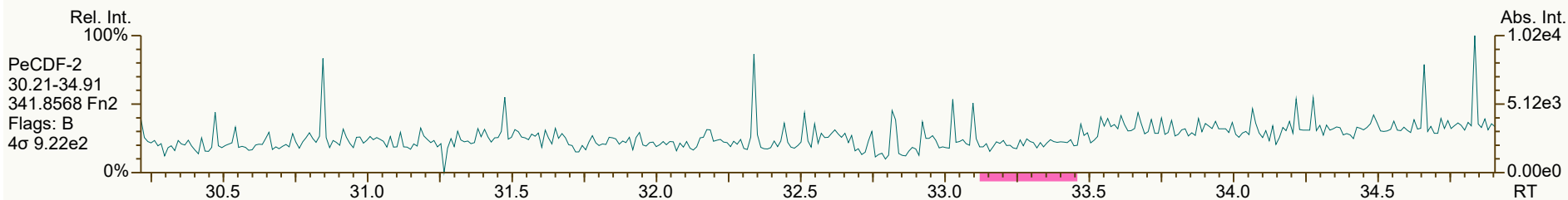
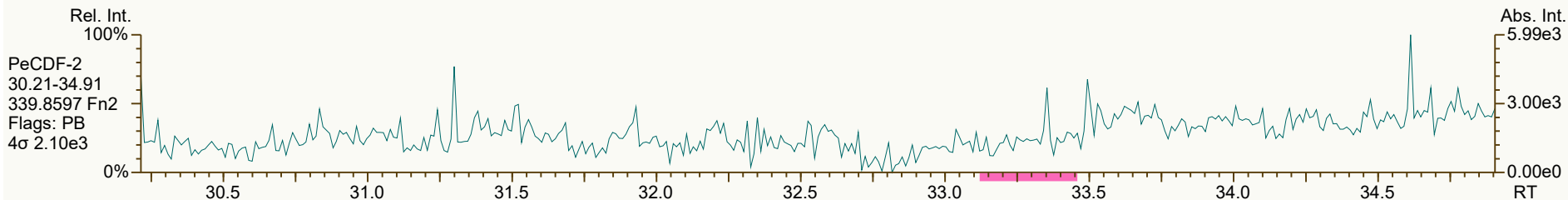




SGS ID: B6238_18887_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

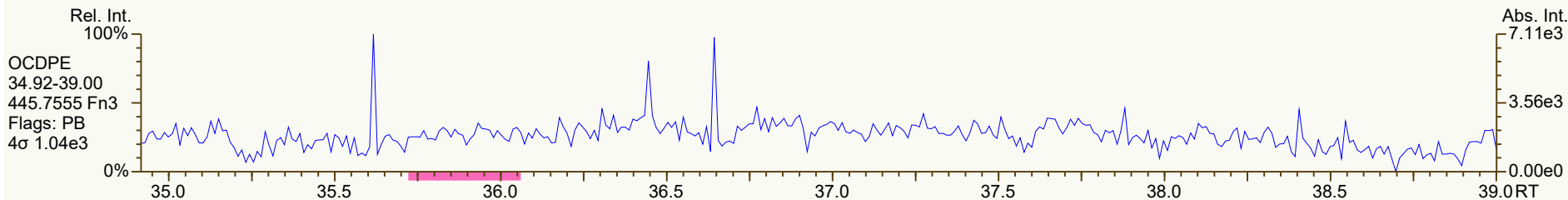
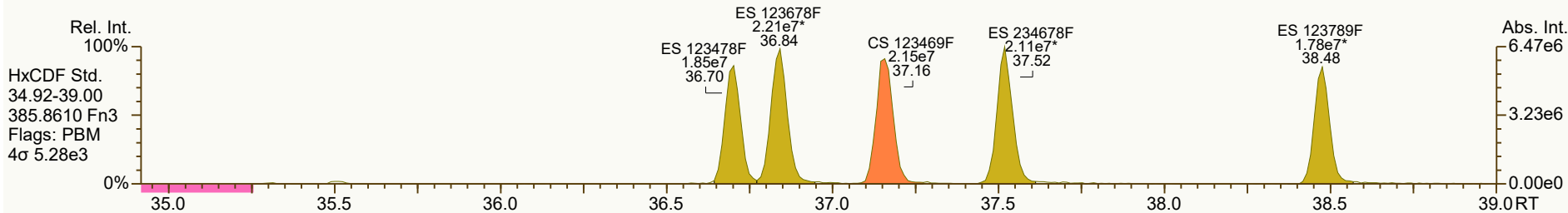
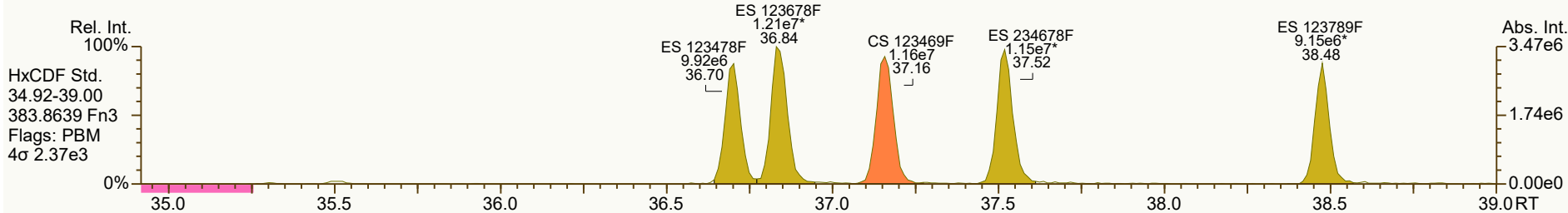
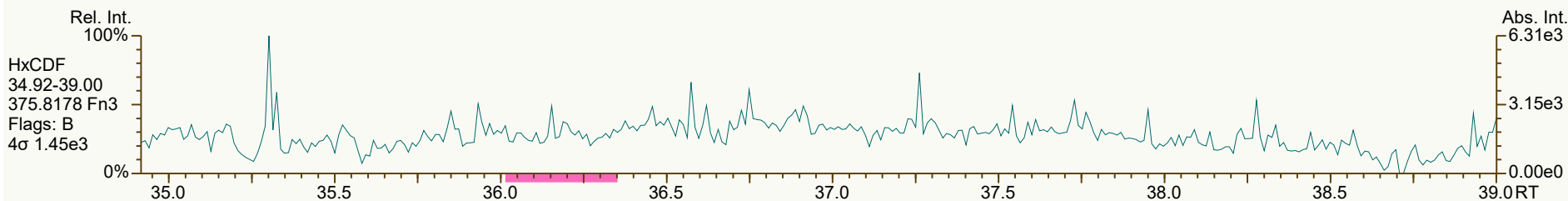
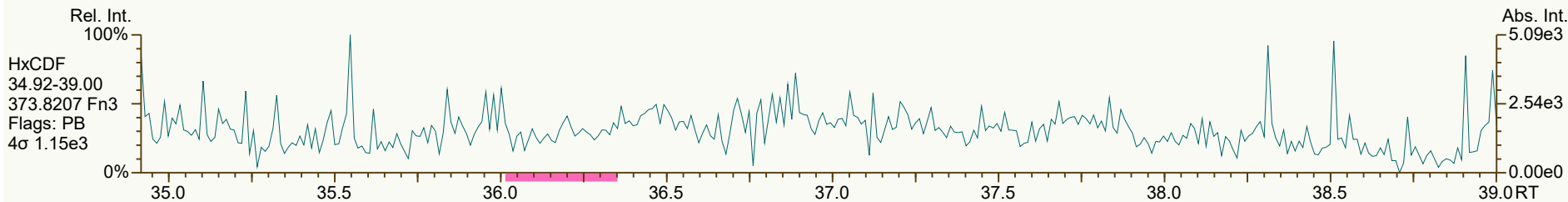
Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24

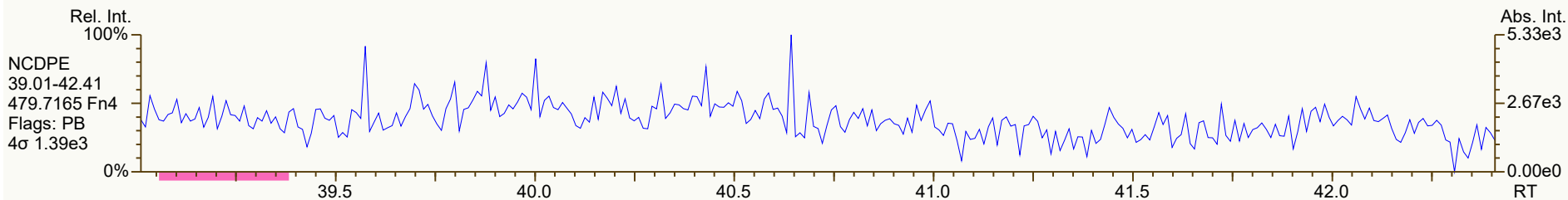
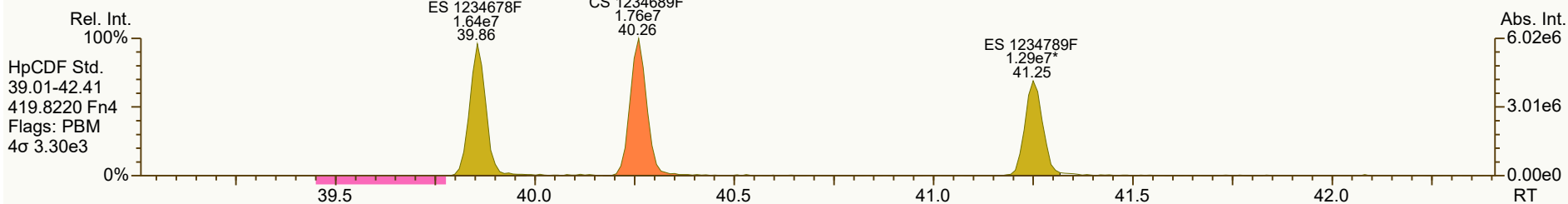
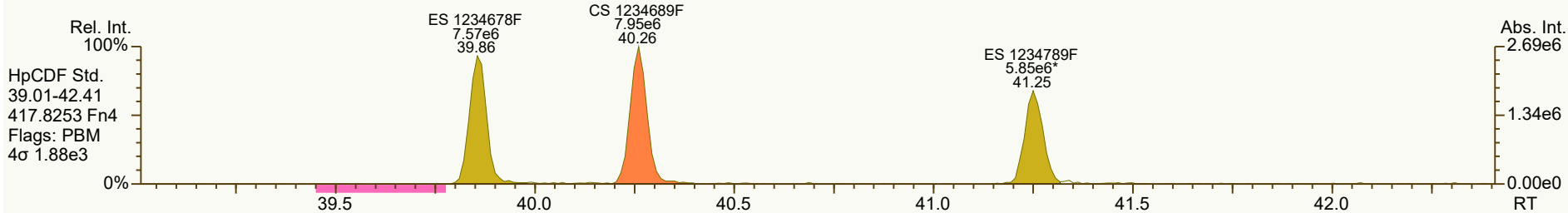
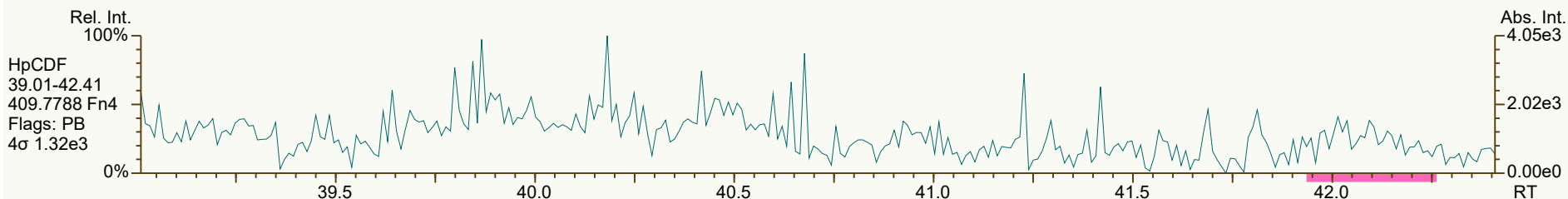
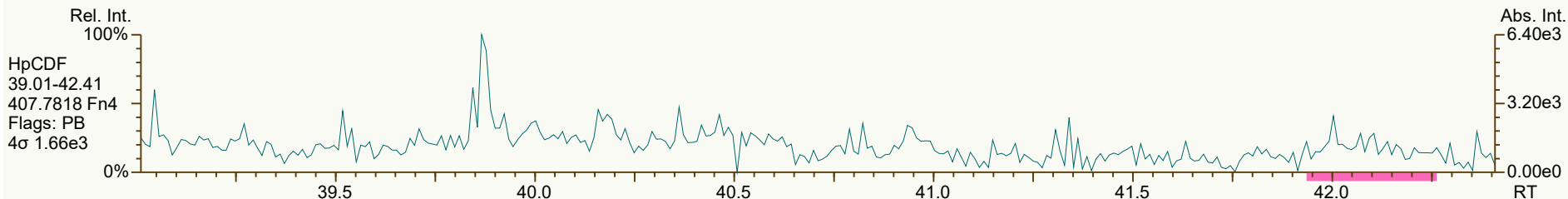
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Results: P:\B6200_B6299\B6238\B6238_18887_DF\Resources\B6238_18887_DF_005.utp_res, saved 09-Feb-2022 14:37 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2651, 8117, 9524 scc: 170-231

Peak annotation: Areas, Centroids
PKD: 09-Feb-2022 14:34 Printed: 09-Feb-2022 14:51 Page 9 of 12

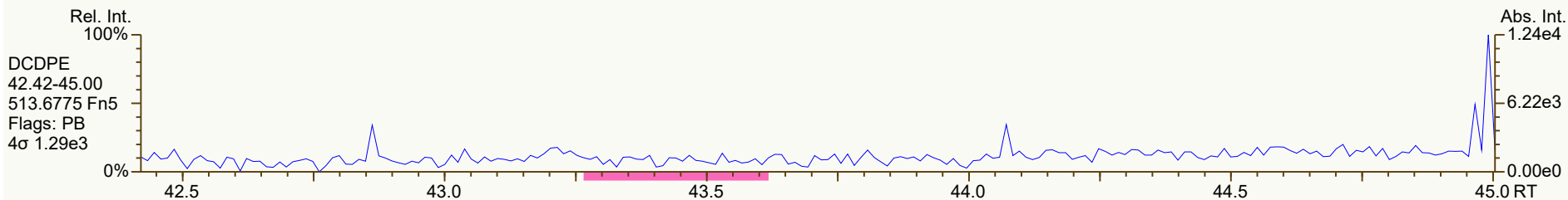
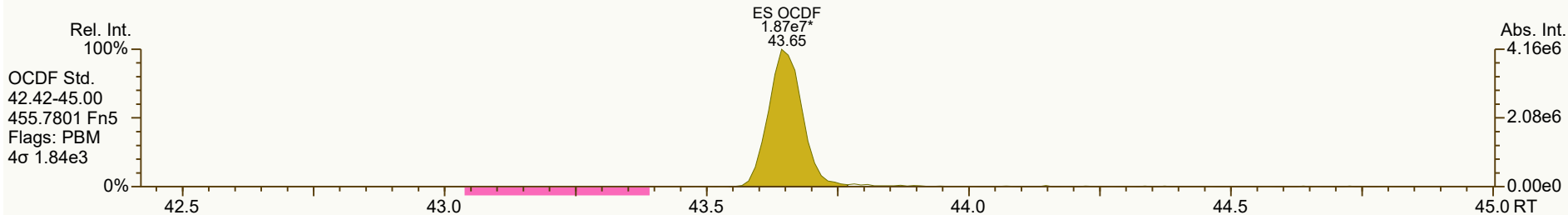
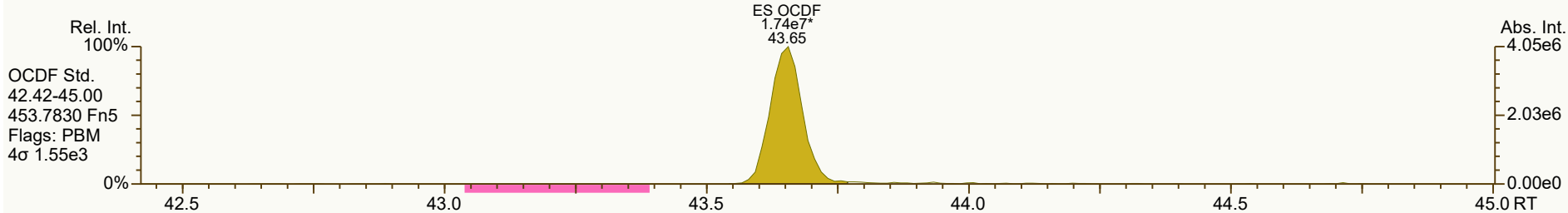
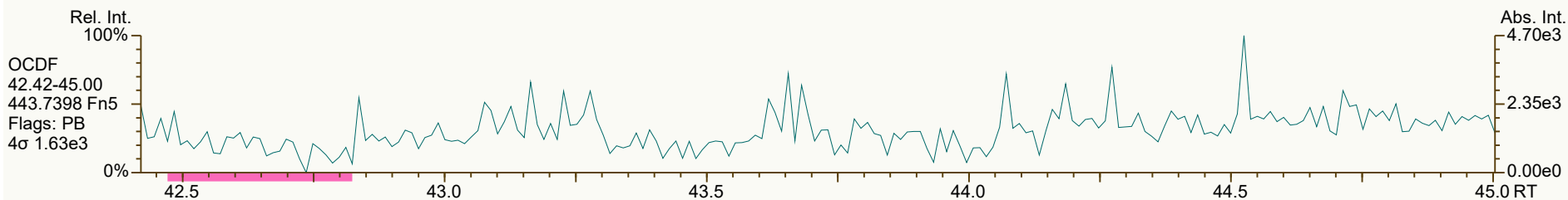
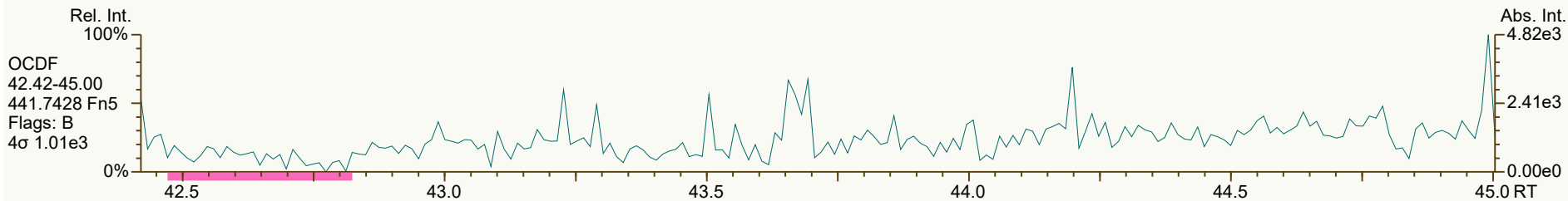




SGS ID: B6238_18887_DF_005
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-012022-GW-BN-DUP-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24

Acq: 09-Feb-2022 12:44:33
User: DTF Datafile: 220209C11



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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4619, 8562, 5103 scc: 170-231

Peak annotation: Areas, Centroids
Revised: 09-Feb-2022 14:34 (DTF) Printed: 09-Feb-2022 14:51 Page 12 of 12

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
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2	220209C03	2	SBS_220209_DF_CA	1.00	30-61-1	DTF	856-152	09-Feb-2022	06:33:51
4	220209C04	16	MB1_18887_DF_TLX	1.00	Method Blank	DTF	545-493	09-Feb-2022	07:20:11
5	220209C05	18	B6238_18887_DF_001	1.03	11215131-012022-GW-BN-PZ-SC	DTF	226-844	09-Feb-2022	08:06:31
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11	220209C11	24	B6238_18887_DF_005	1.02	11215131-012022-GW-BN-DUP-1	DTF	170-231	09-Feb-2022	12:44:33

REVIEWED
Tyler_Fritz , 2/9/2022, 3:12:24 PM

REVIEWED
Amber_Kornegay , 2/9/2022, 4:22:35 PM

Dioxin/Furan QC Summary		Acq'd: 09 Feb 2022 05:01 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS3_220209_DF_CA		UTP: 09-Feb-2022 14:37:49 DTF			Checkcode: 139-031-WCQ		
Sample ID: 25-347-1		Report: 09 Feb 2022 14:40 TF			Datafile: 220209C01		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.49	4.85E+06	0.79	Y	1.18	1.20	2%
12378-PeCDD	33.82	1.81E+07	1.57	Y	1.04	1.06	2%
123478-HxCDD	37.73	1.60E+07	1.26	Y	1.09	1.07	-2%
123678-HxCDD	37.85	1.68E+07	1.25	Y	1.15	1.15	1%
123789-HxCDD	38.14	1.70E+07	1.26	Y	1.05	1.06	2%
1234678-HpCDD	40.81	1.43E+07	1.04	Y	1.06	1.08	2%
OCDD	43.48	2.33E+07	0.92	Y	1.13	1.14	1%
2378-TCDF	27.63	7.03E+06	0.77	Y	1.08	1.11	3%
12378-PeCDF	32.38	2.70E+07	1.54	Y	1.02	0.99	-3%
23478-PeCDF	33.49	2.65E+07	1.51	Y	1.02	0.99	-3%
123478-HxCDF	36.73	2.40E+07	1.24	Y	1.27	1.22	-4%
123678-HxCDF	36.87	2.50E+07	1.22	Y	1.15	1.12	-3%
234678-HxCDF	37.55	2.35E+07	1.23	Y	1.19	1.14	-4%
123789-HxCDF	38.50	2.03E+07	1.23	Y	1.16	1.13	-3%
1234678-HpCDF	39.88	2.10E+07	1.02	Y	1.37	1.32	-3%
1234789-HpCDF	41.27	1.75E+07	1.04	Y	1.31	1.27	-3%
OCDF	43.67	2.90E+07	0.92	Y	1.07	1.05	-2%
ES 2378-TCDD	28.47	4.03E+07	0.83	Y	1.05	1.00	-4%
ES 12378-PeCDD	33.803	3.41E+07	1.56	Y	0.88	0.85	-3%
ES 123478-HxCDD	37.716	3.00E+07	1.29	Y	0.97	0.97	0%
ES 123678-HxCDD	37.835	2.90E+07	1.29	Y	0.94	0.94	0%
ES 123789-HxCDD	38.128	3.20E+07	1.29	Y	1.09	1.04	-5%
ES 1234678-HpCDD	40.796	2.66E+07	1.06	Y	0.91	0.86	-5%
ES OCDD	43.471	4.10E+07	0.92	Y	0.62	0.67	7%
ES 2378-TCDF	27.609	6.31E+07	0.80	Y	1.06	0.99	-6%
ES 12378-PeCDF	32.358	5.43E+07	1.55	Y	0.91	0.86	-6%
ES 23478-PeCDF	33.471	5.34E+07	1.55	Y	0.88	0.84	-5%
ES 123478-HxCDF	36.709	3.95E+07	0.52	Y	1.20	1.28	7%
ES 123678-HxCDF	36.851	4.47E+07	0.54	Y	1.35	1.45	7%
ES 234678-HxCDF	37.531	4.12E+07	0.55	Y	1.24	1.34	8%
ES 123789-HxCDF	38.485	3.58E+07	0.53	Y	1.16	1.16	1%
ES 1234678-HpCDF	39.864	3.17E+07	0.46	Y	0.97	1.03	6%
ES 1234789-HpCDF	41.258	2.75E+07	0.46	Y	0.85	0.89	5%
ES OCDF	43.656	5.51E+07	0.91	Y	0.81	0.90	11%

Dioxin/Furan QC Summary		Acq'd: 09 Feb 2022 05:01 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS3_220209_DF_CA		UTP: 09-Feb-2022 14:37:49 DTF			Checkcode: 139-031-WCQ		
Sample ID: 25-347-1		Report: 09 Feb 2022 14:40 TF			Datafile: 220209C01		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.80	4.01E+07	0.84	Y	-	-	-
JS 1234-TCDF	26.25	6.34E+07	0.78	Y	-	-	-
JS 123467-HxCDD	38.03	1.54E+07	1.20	Y	-	-	-
CS 37C1-2378-TCDD	28.49	5.26E+06	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	33.30	3.12E+07	1.60	Y	0.75	0.78	4%
CS 12346-PeCDF	31.83	5.29E+07	1.58	Y	0.85	0.83	-2%
CS 123469-HxCDF	37.17	4.02E+07	0.55	Y	1.12	1.31	17%
CS 1234689-HpCDF	40.27	3.14E+07	0.46	Y	0.89	1.02	15%
SS 37C1-2378-TCDD	28.49	5.26E+06	n/a	-	1.15	1.31	14%
SS 12347-PeCDD	33.30	3.12E+07	1.60	Y	0.86	0.92	7%
SS 12346-PeCDF	31.83	5.29E+07	1.58	Y	0.94	0.97	4%
SS 123469-HxCDF	37.17	4.02E+07	0.55	Y	0.83	0.90	9%
SS 1234689-HpCDF	40.27	3.14E+07	0.46	Y	0.92	0.99	8%
OCDD-a	43.48	1.38E+06	2.24	Y	0.07	0.07	-6%
OCDF-a	43.67	1.79E+06	2.61	Y	0.07	0.07	-2%

METHOD 1613B

PCDD/F CALIBRATION VERIFICATION

FORM 4A

Lab Name: SGS North America
 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C01 Analysis Date: 09-FEB-2022 05:01:12

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	10.2	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	49	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.8	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.8	43 - 58	Y
OCDD	M+2/M+4	0.92	0.76 - 1.02	Y	101	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.77	0.65 - 0.89	Y	10.3	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32 - 1.78	Y	48.5	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.51	1.32 - 1.78	Y	48.6	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	47.9	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	48.4	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	48	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	48.7	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	48.4	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	48.6	43 - 58	Y
OCDF	M+2/M+4	0.92	0.76 - 1.02	Y	98.4	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 09 Feb 2022 15:06 Analyst: TF

METHOD 1613B

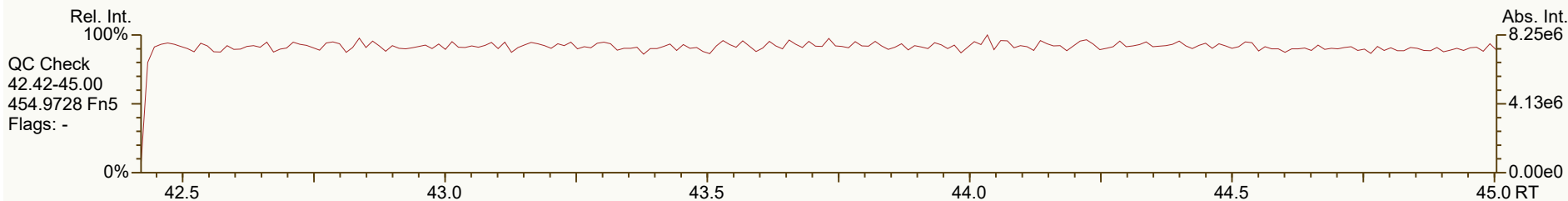
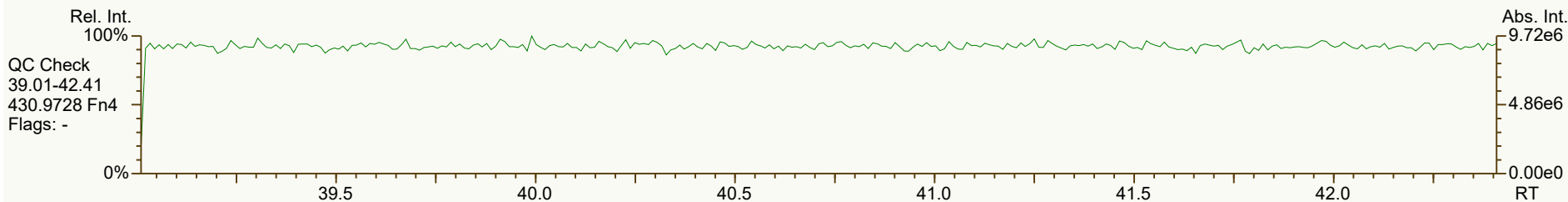
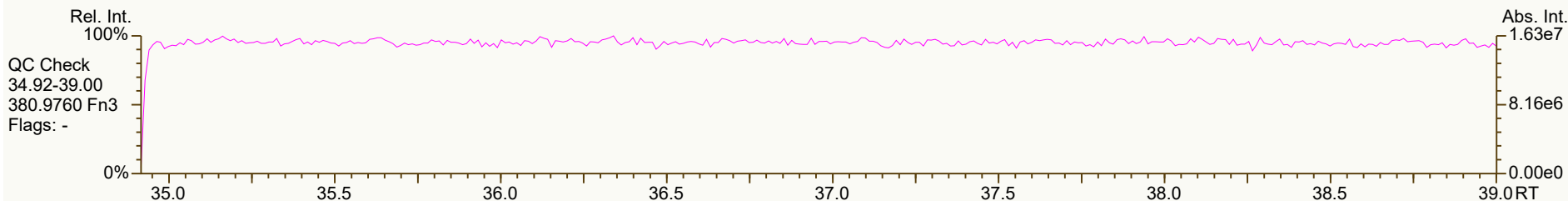
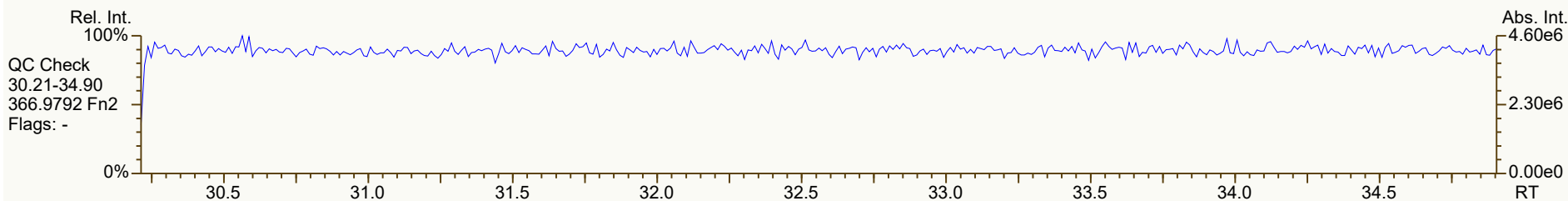
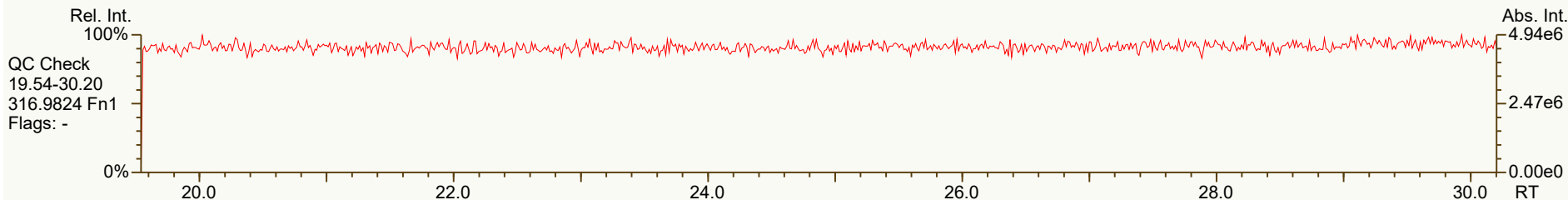
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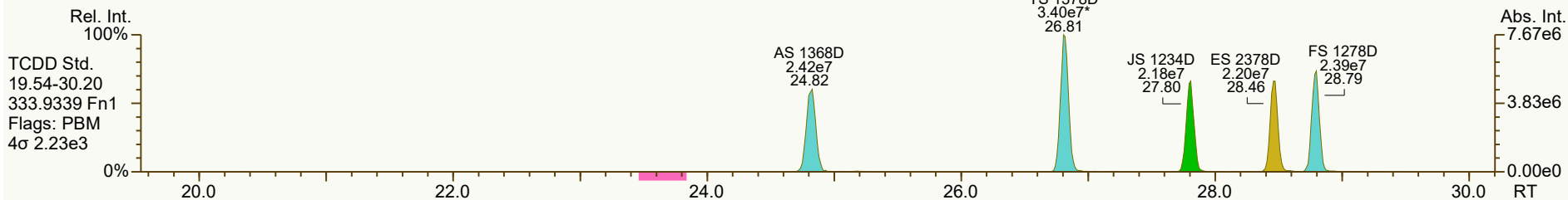
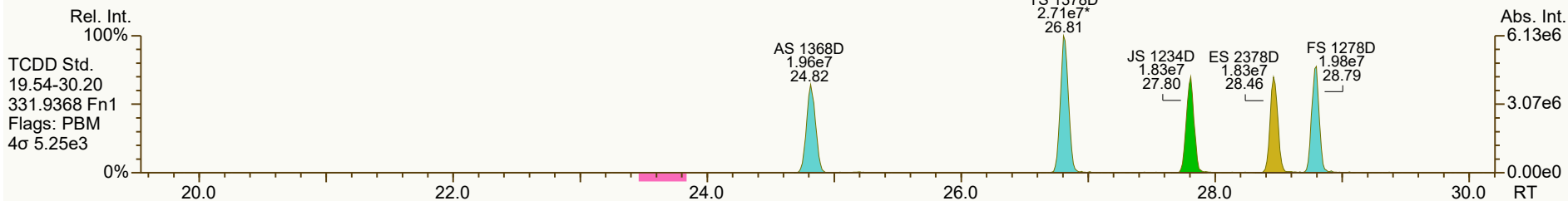
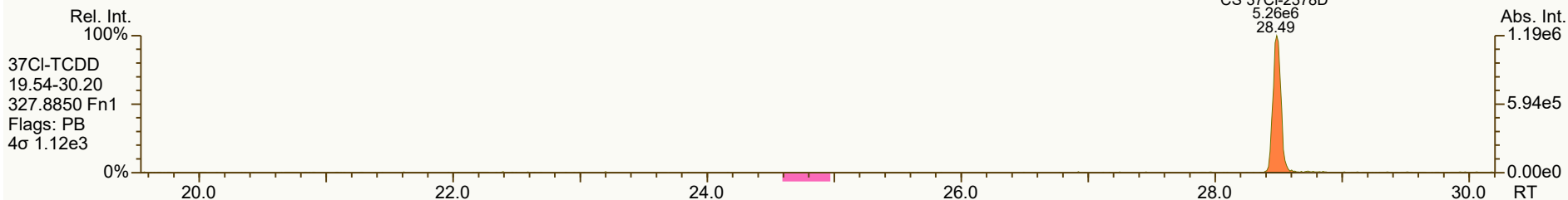
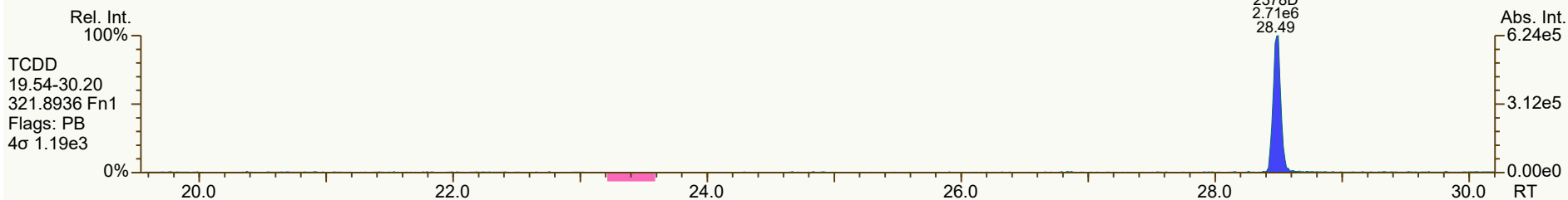
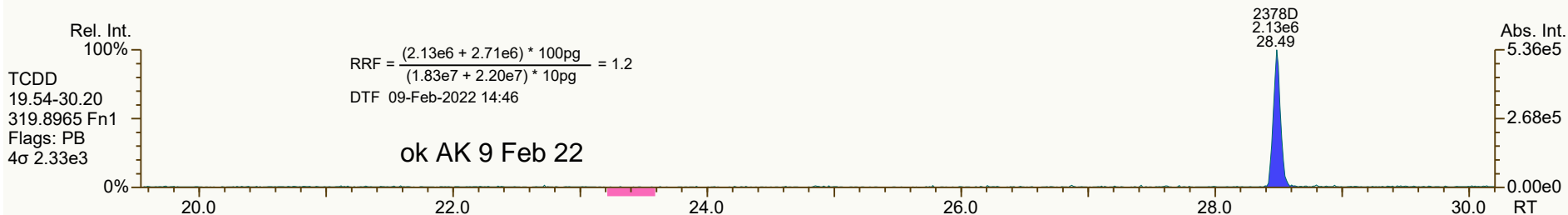
FORM 4B

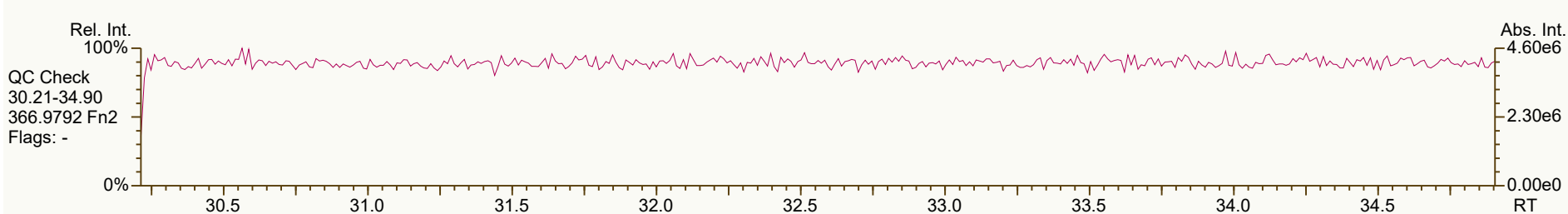
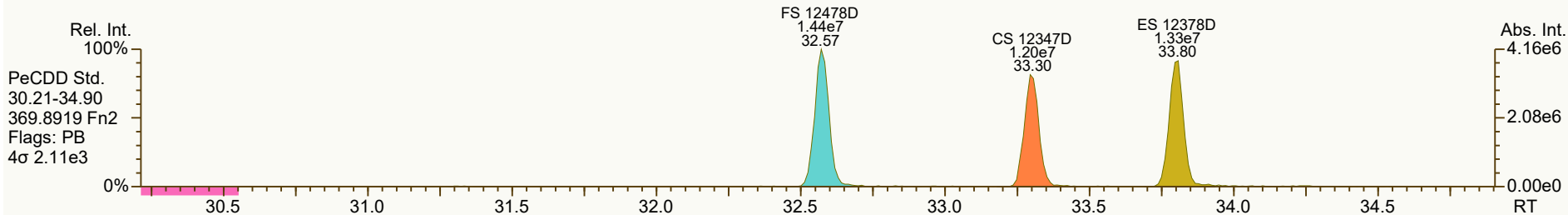
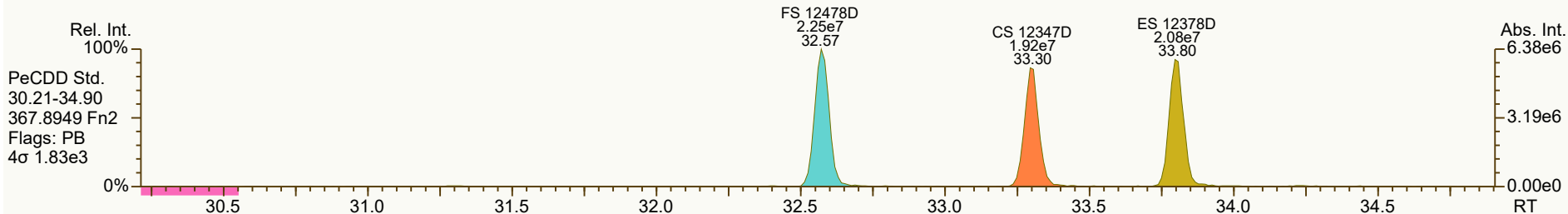
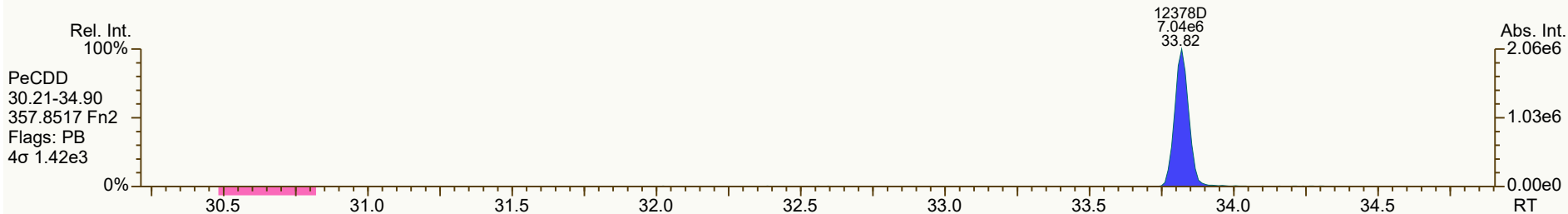
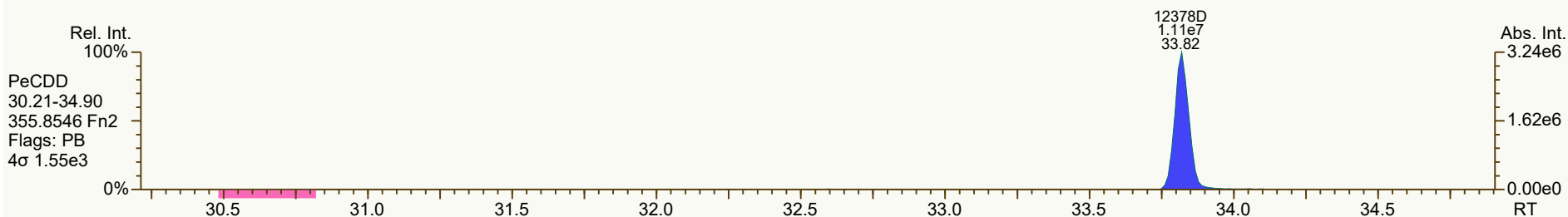
Lab Name: SGS North America
 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C01 Analysis Date: 09-FEB-2022 05:01:12

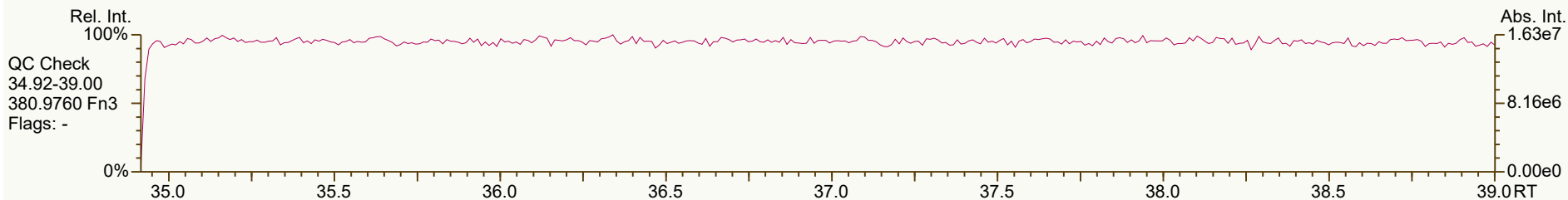
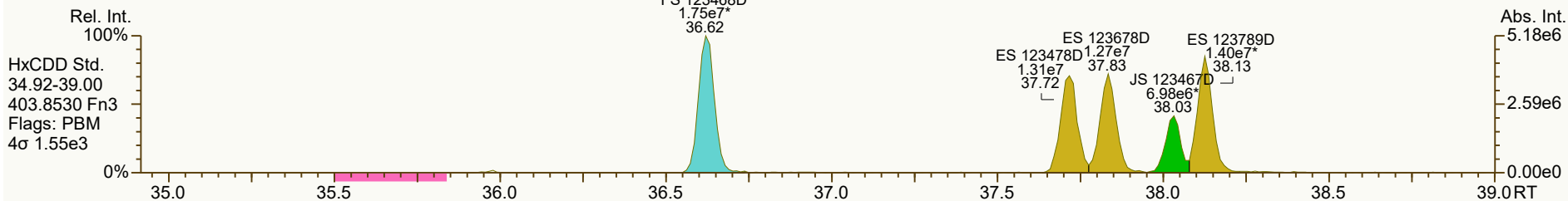
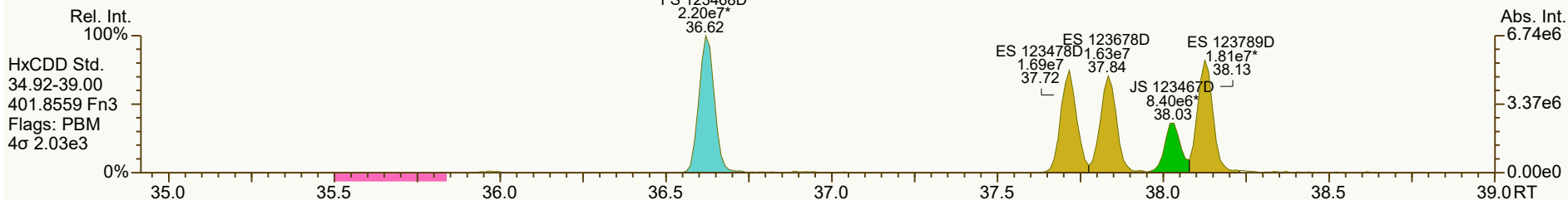
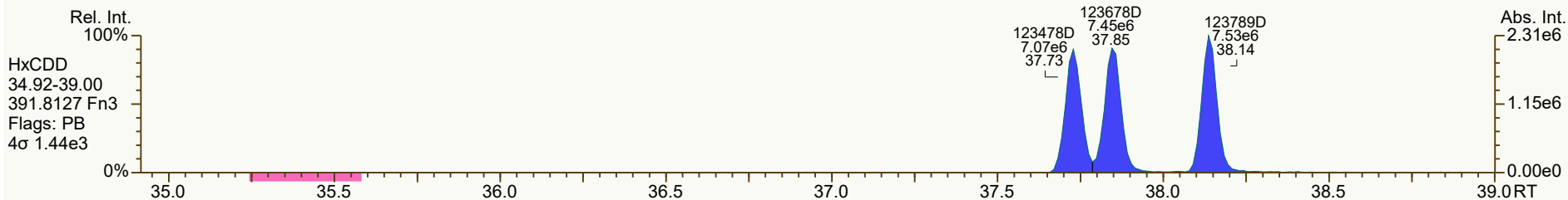
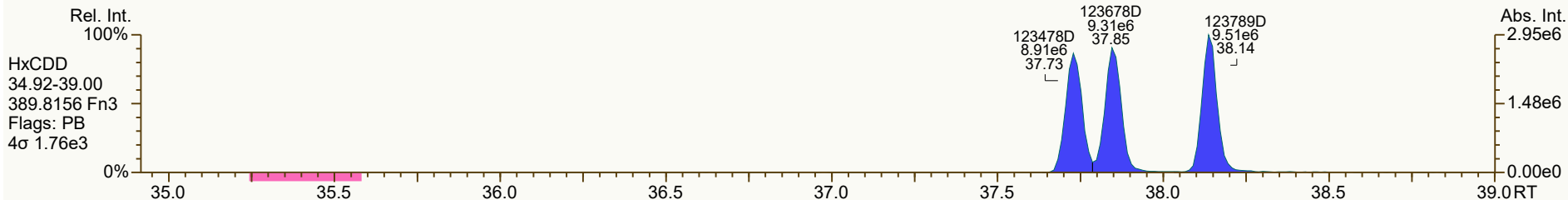
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.83	0.65 - 0.89	Y	96.1	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	96.8	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	100	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	99.9	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	95.4	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88 - 1.20	Y	94.5	72 - 138	Y
13C-OCDD	M+2/M+4	0.92	0.76 - 1.02	Y	213	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	93.9	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	94.1	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	95.4	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	107	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	107	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43 - 0.59	Y	108	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	101	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	106	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	105	77 - 129	Y
13C-OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	222	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				10.9	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.60	1.32 - 1.78	Y	104	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	98	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.55	0.43 - 0.59	Y	117	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	115	70 - 130	Y

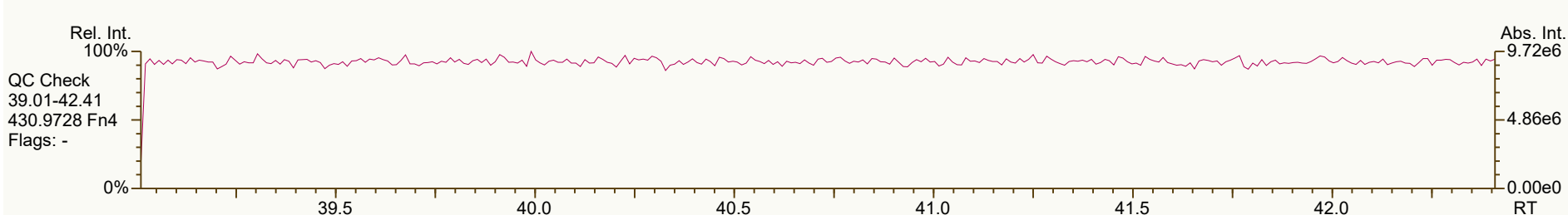
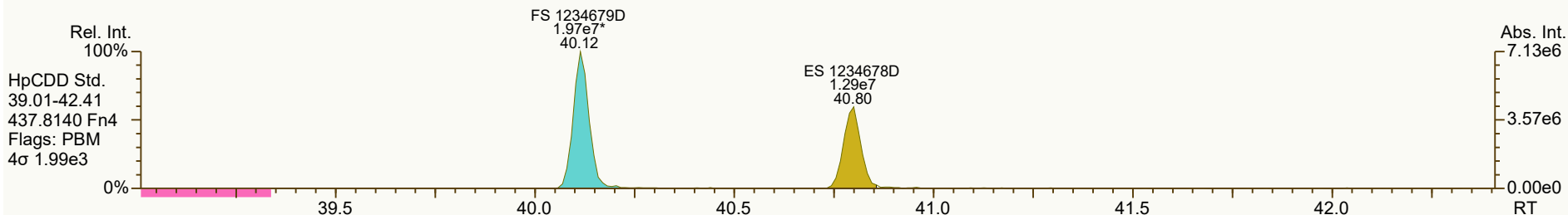
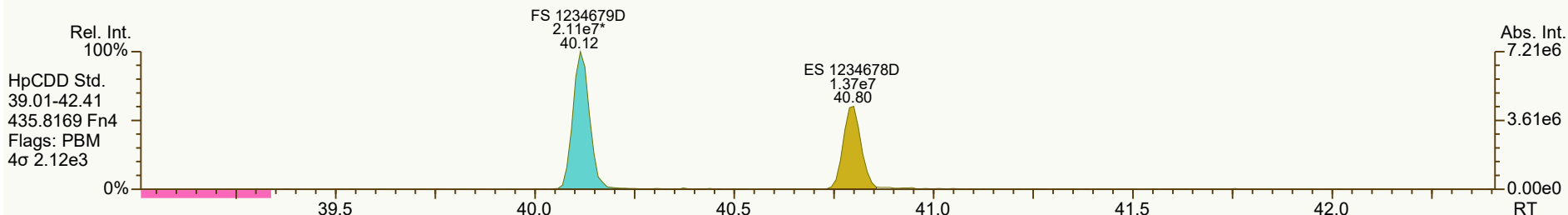
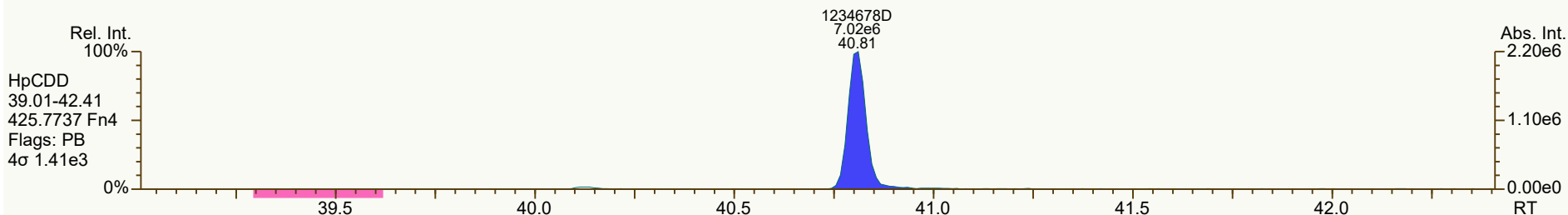
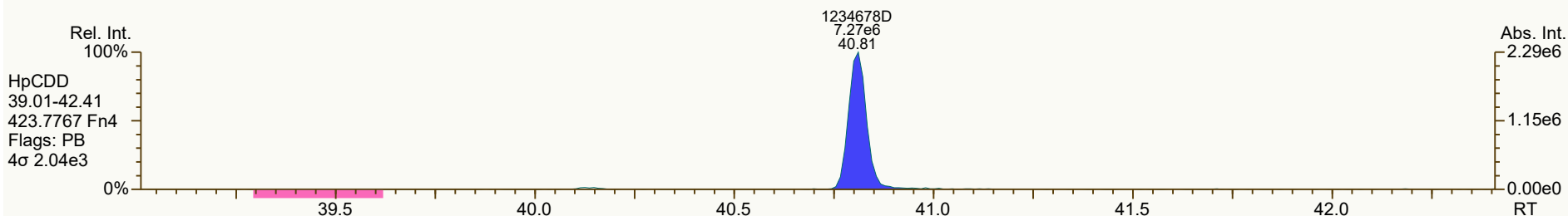
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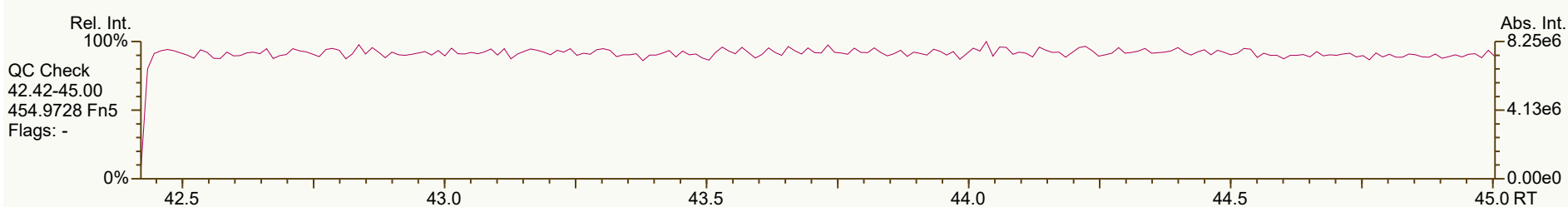
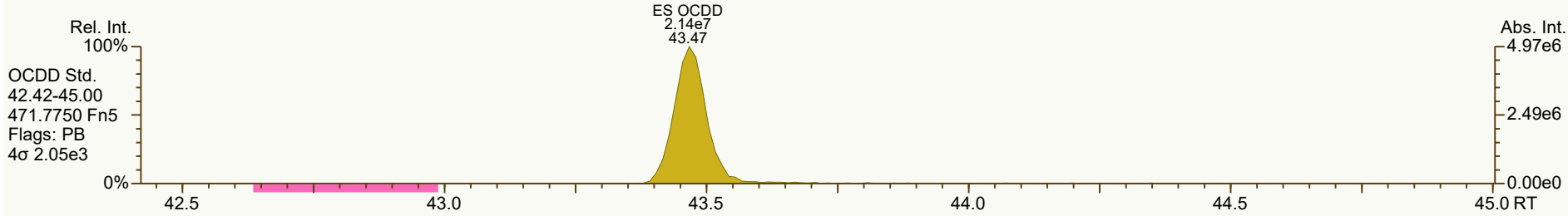
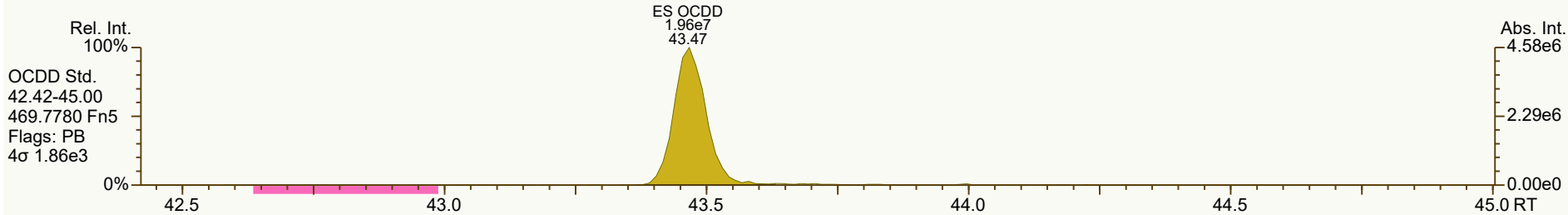
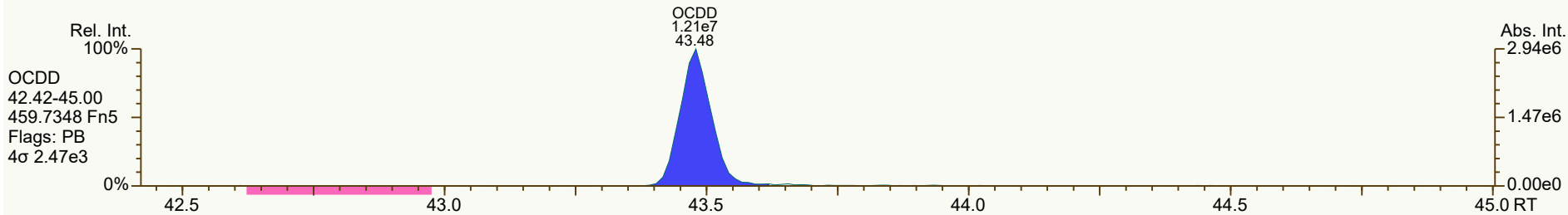
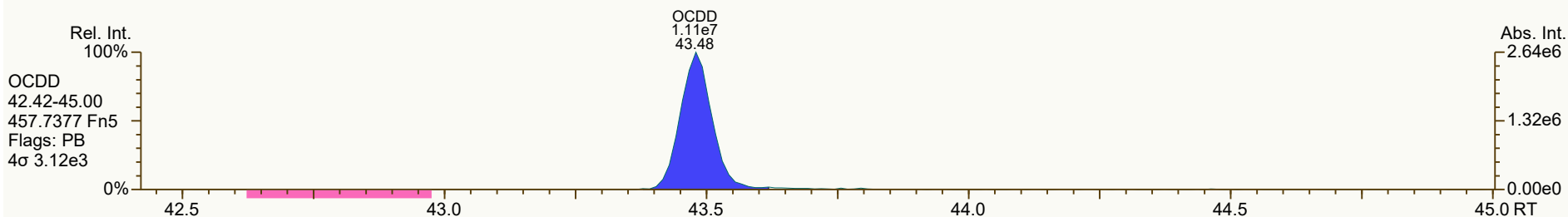


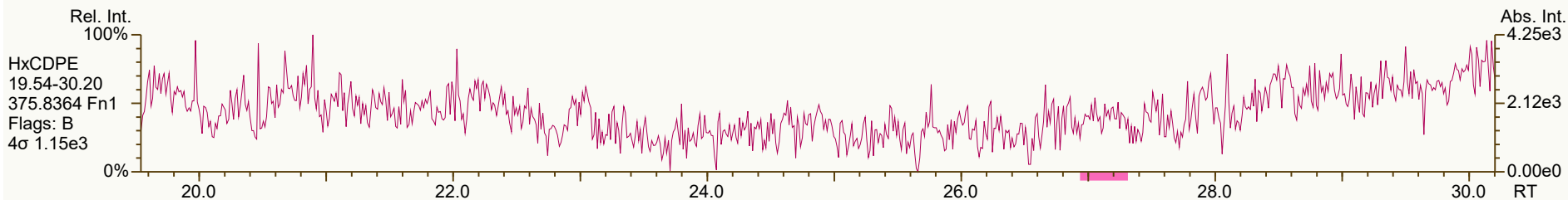
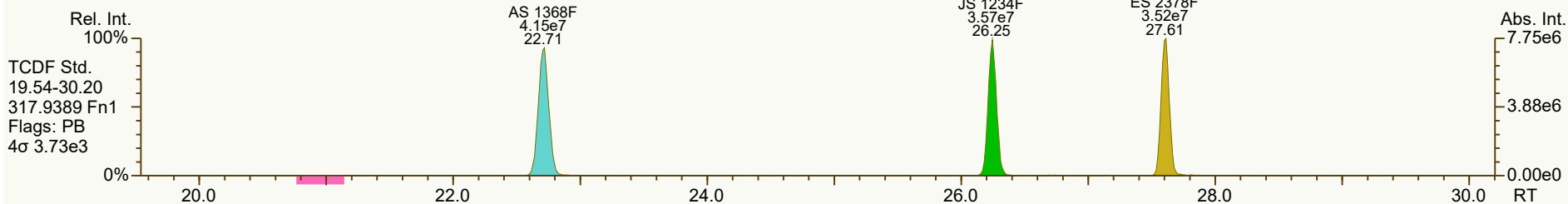
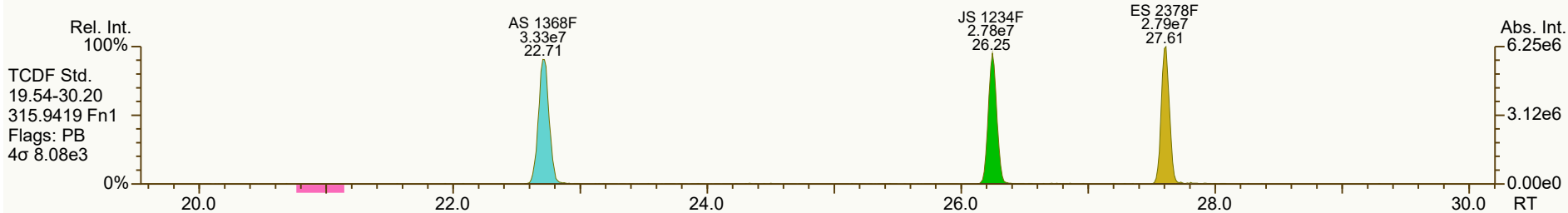
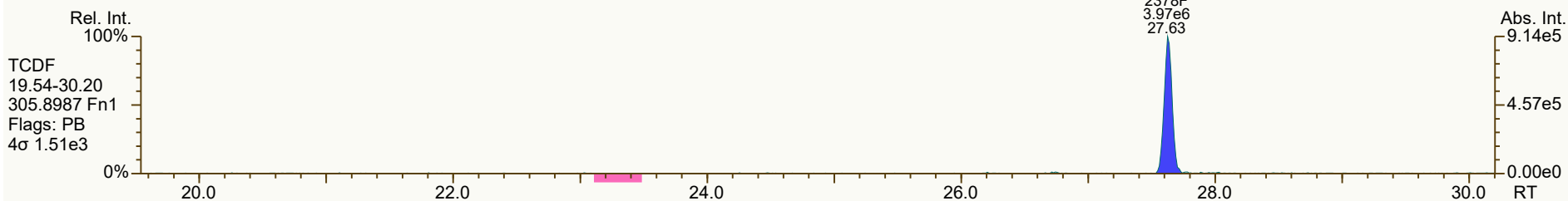
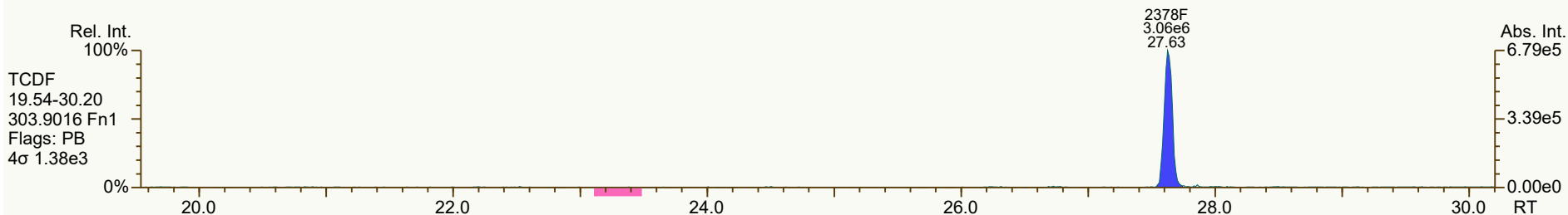


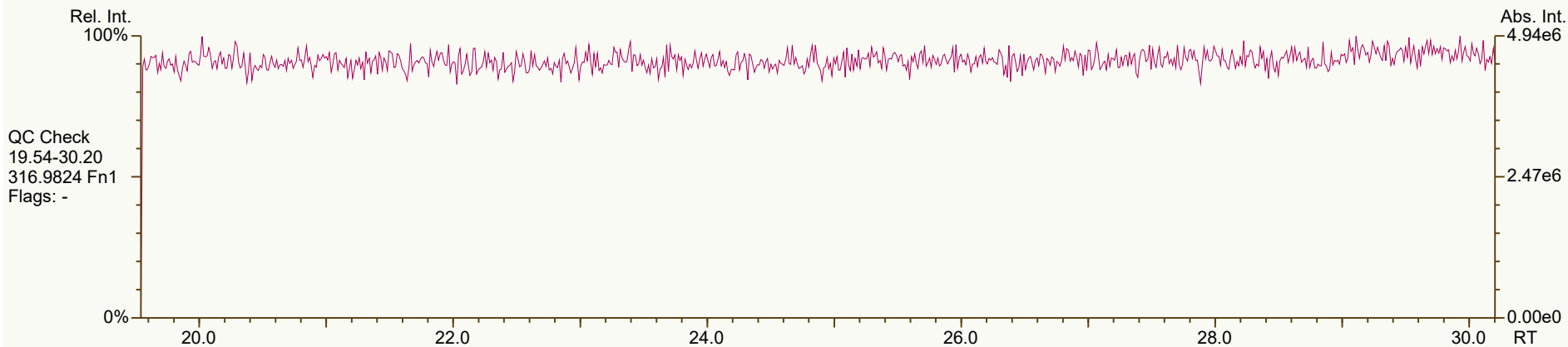
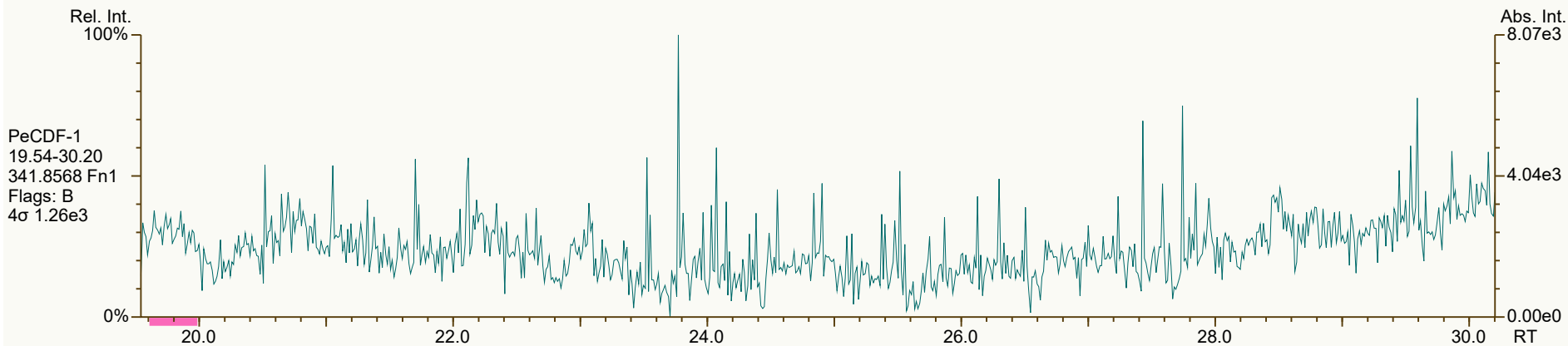
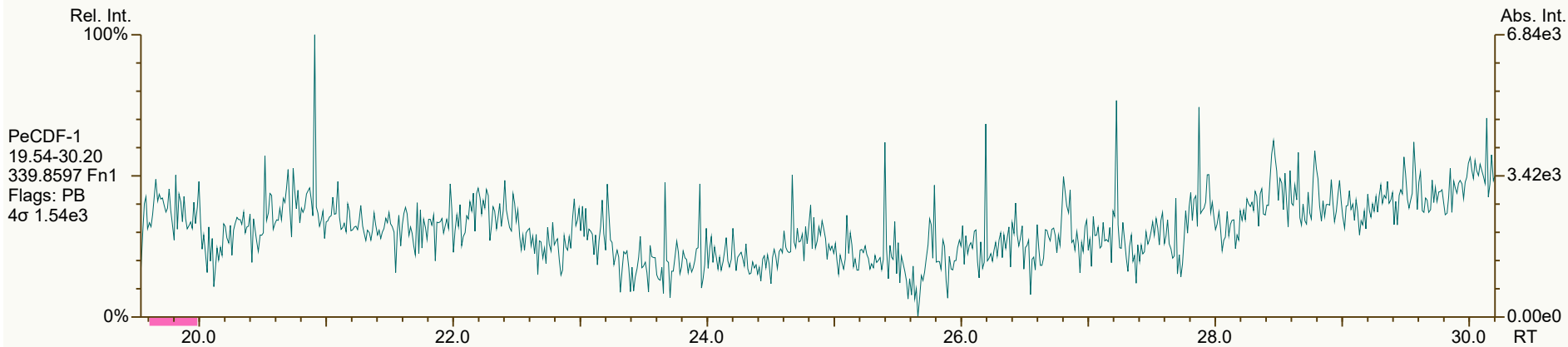


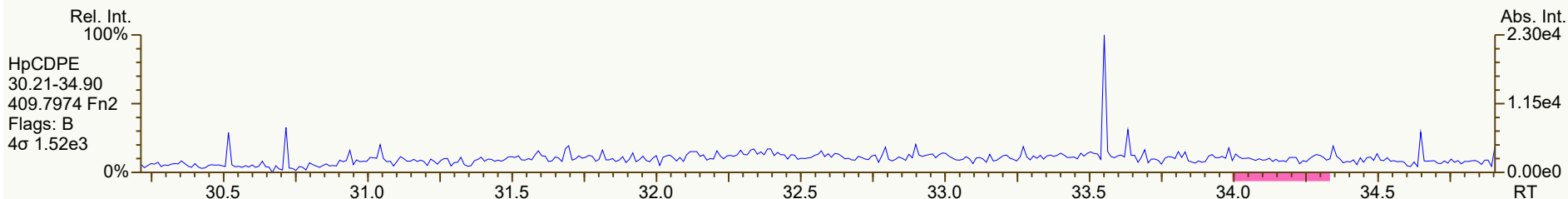
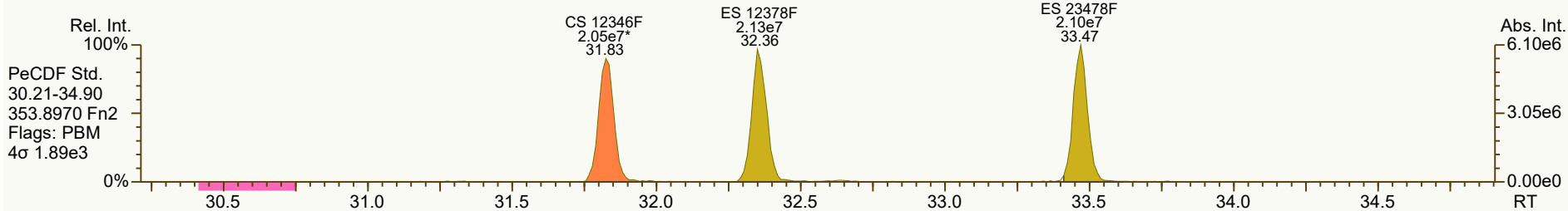
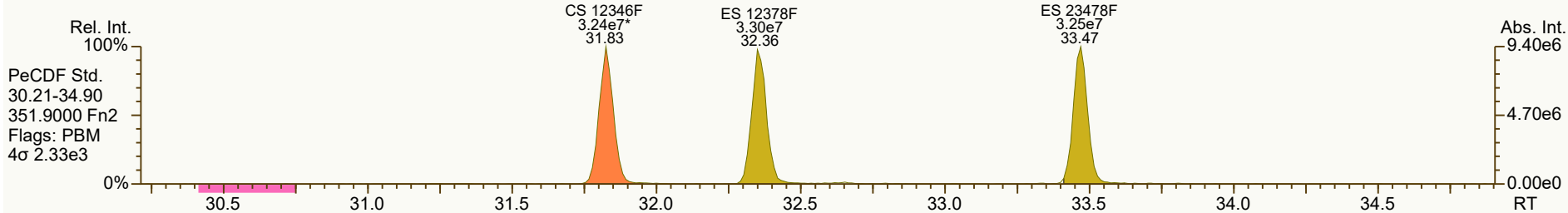
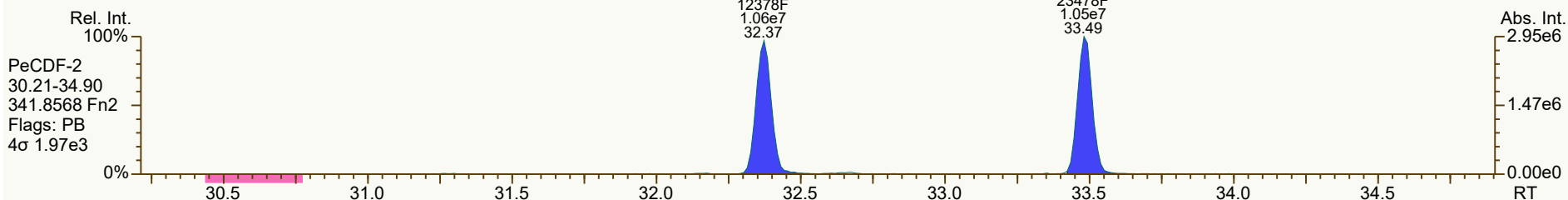
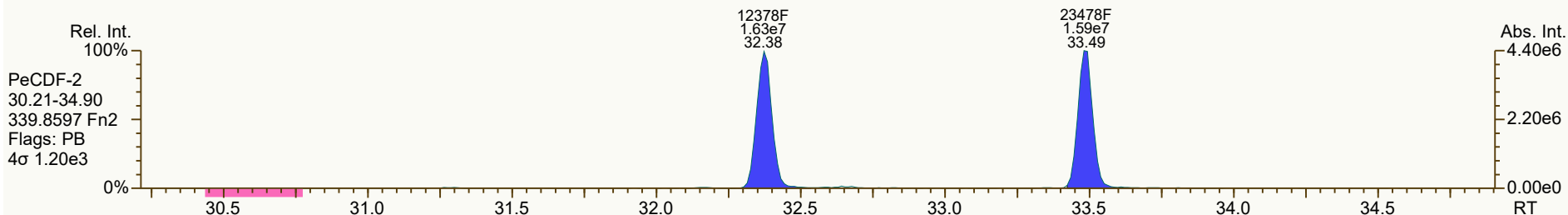


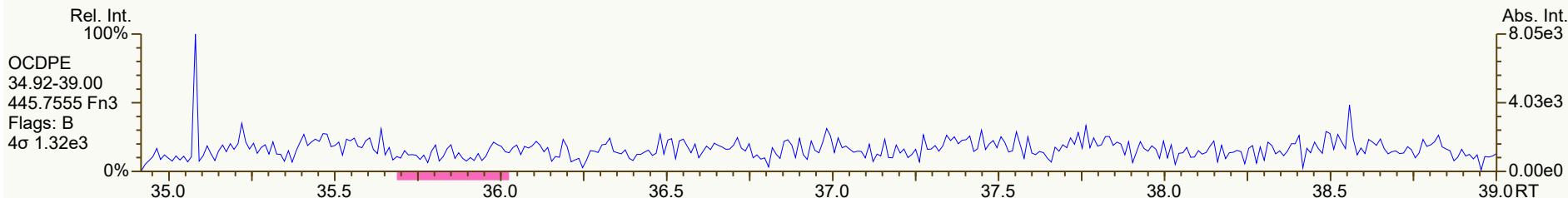
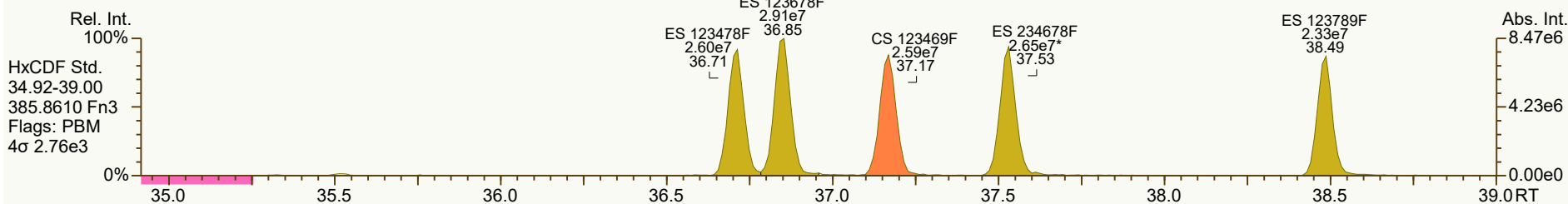
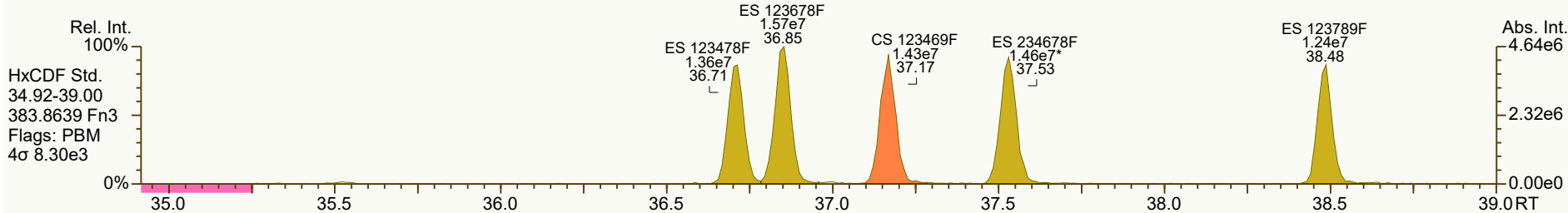
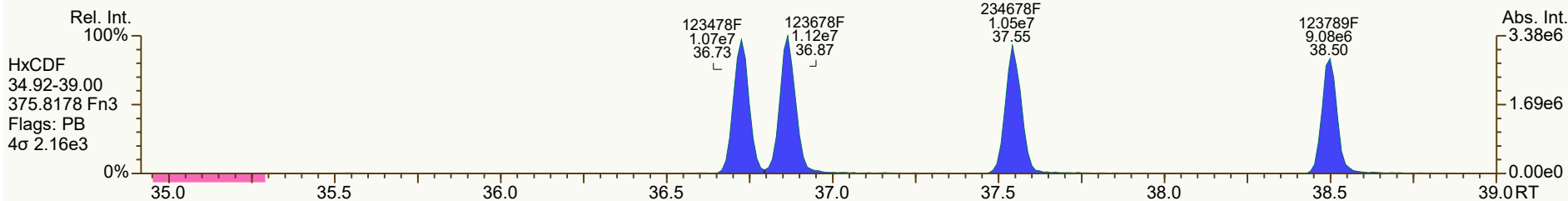
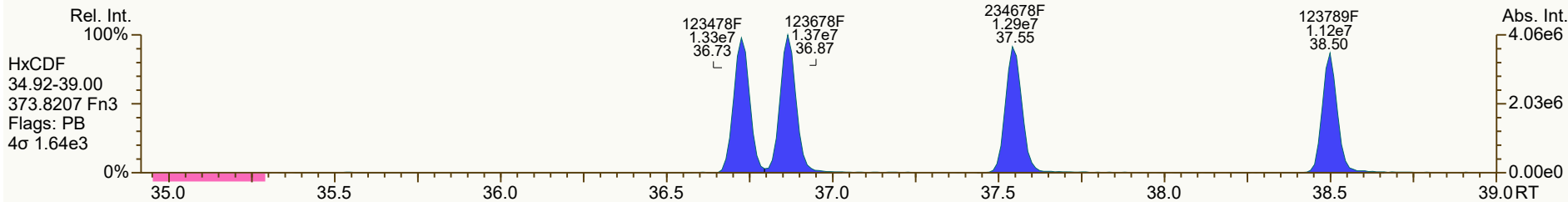


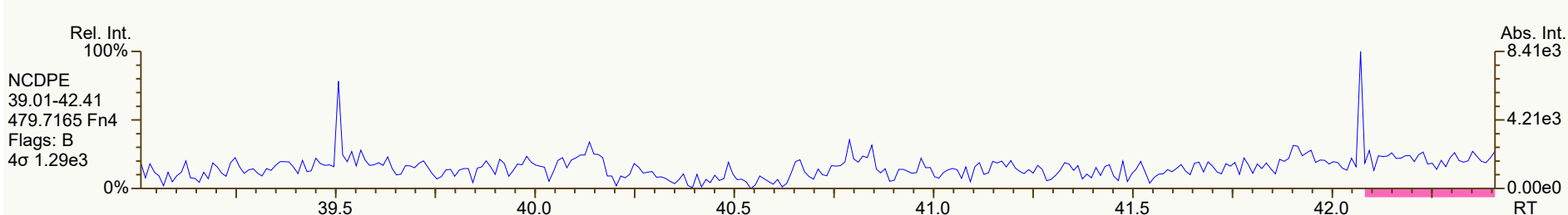
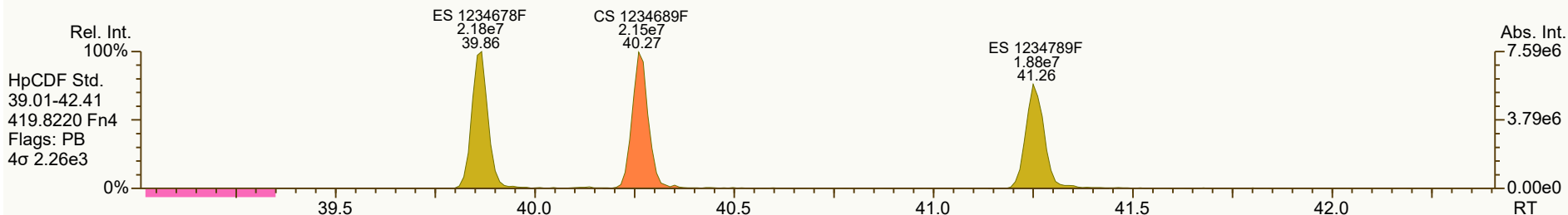
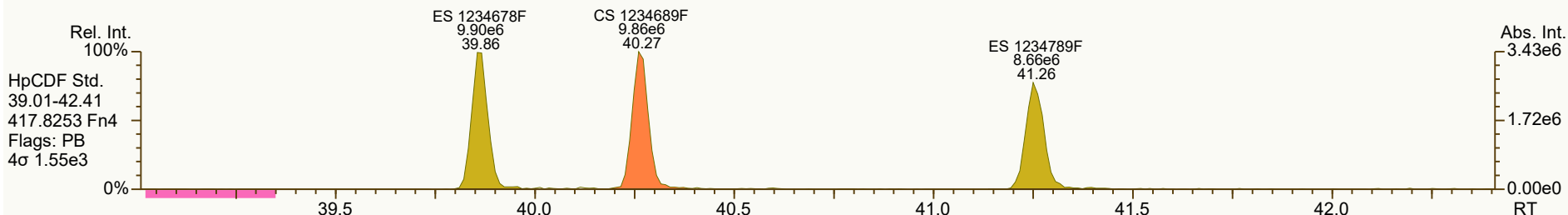
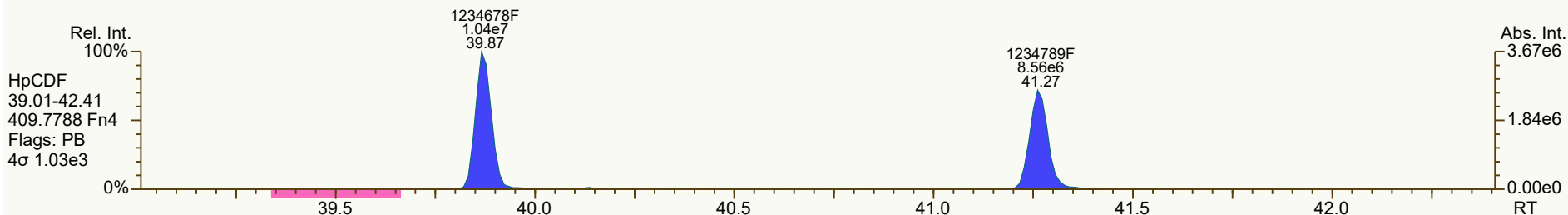
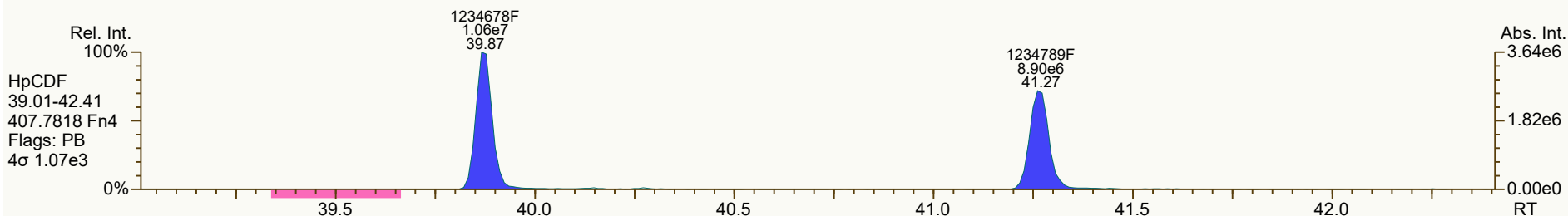


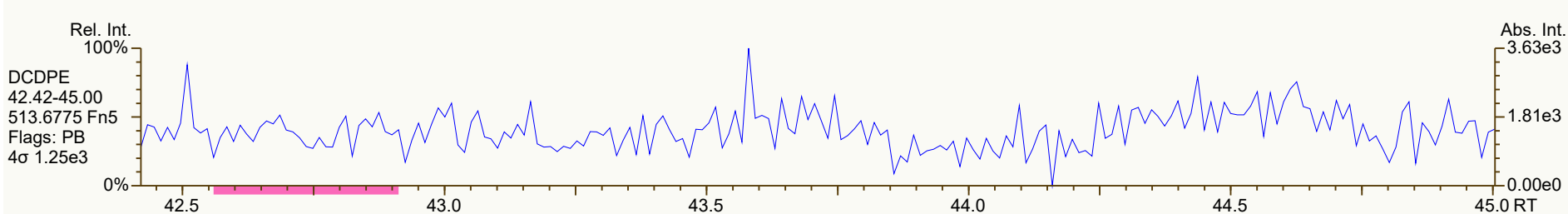
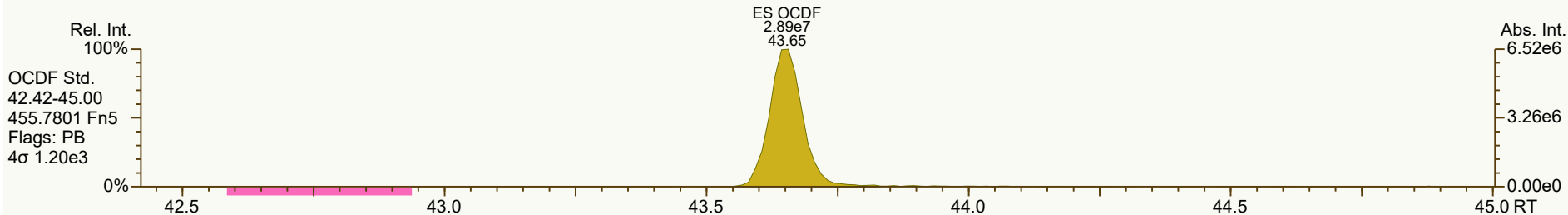
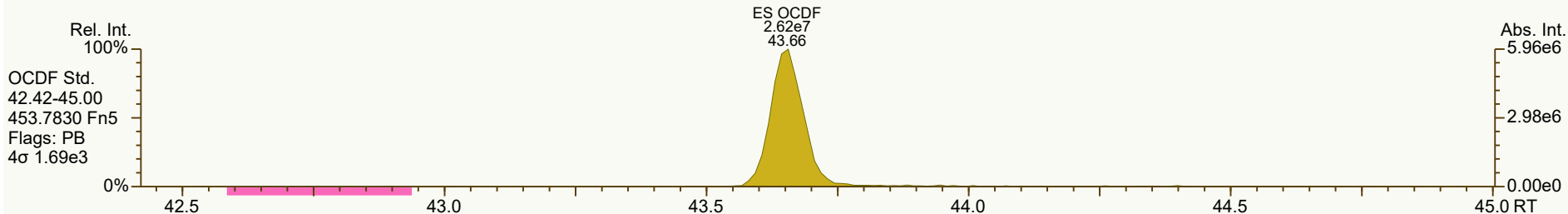
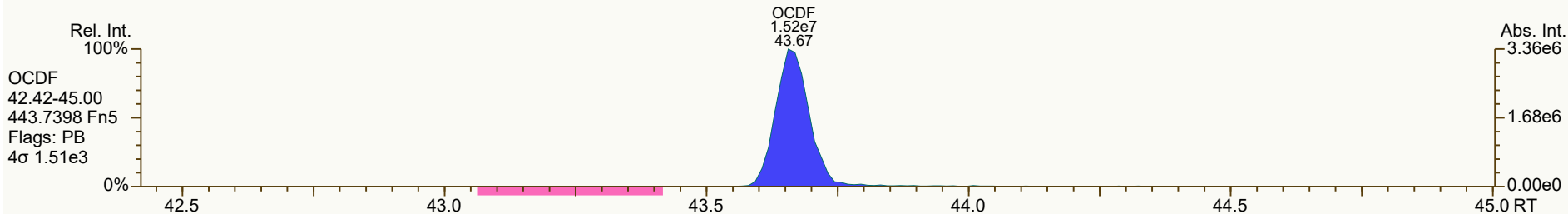
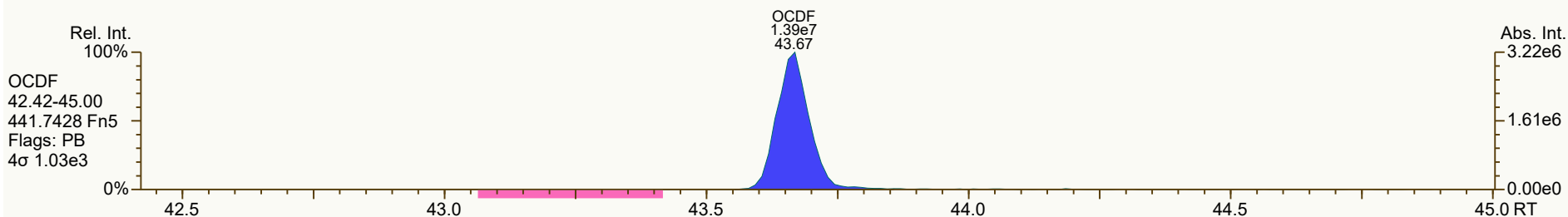


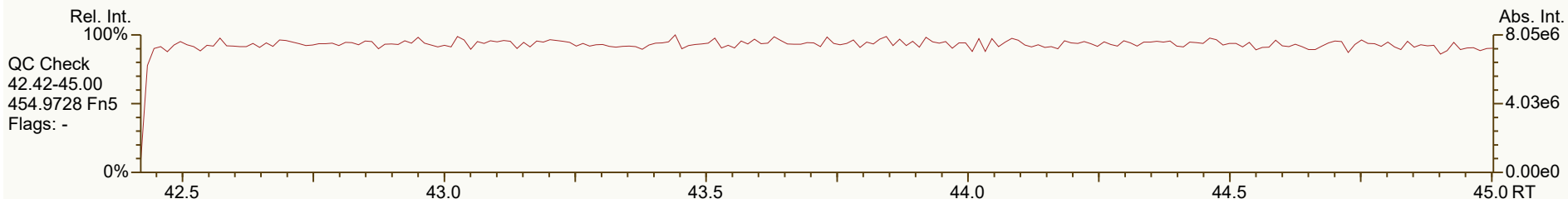
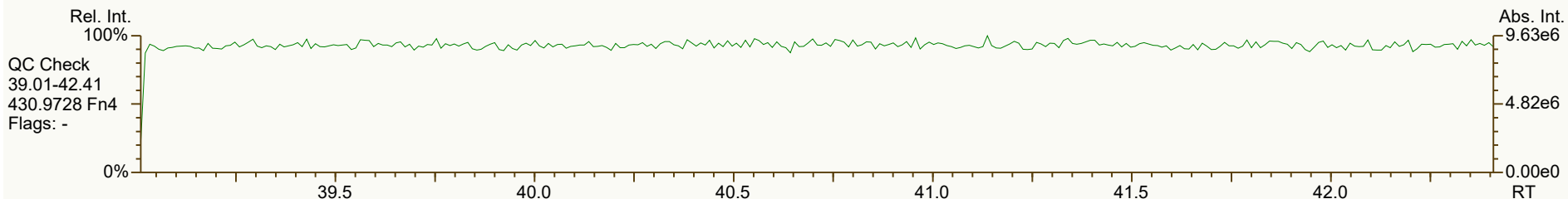
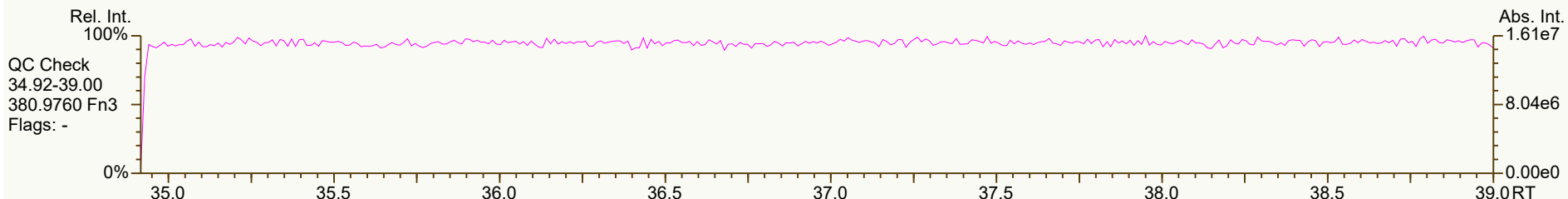
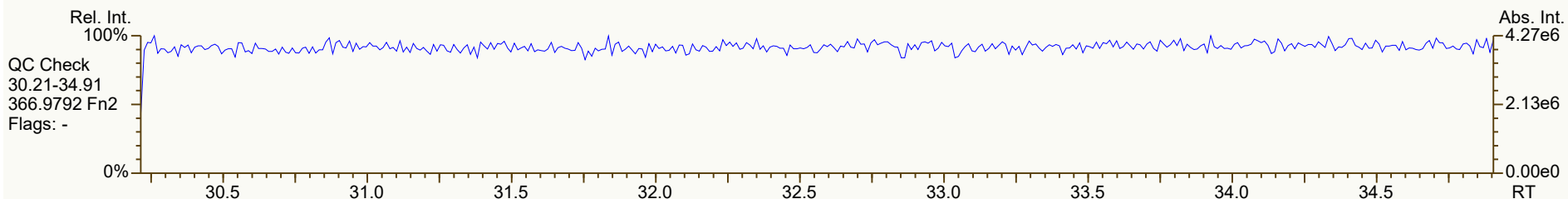
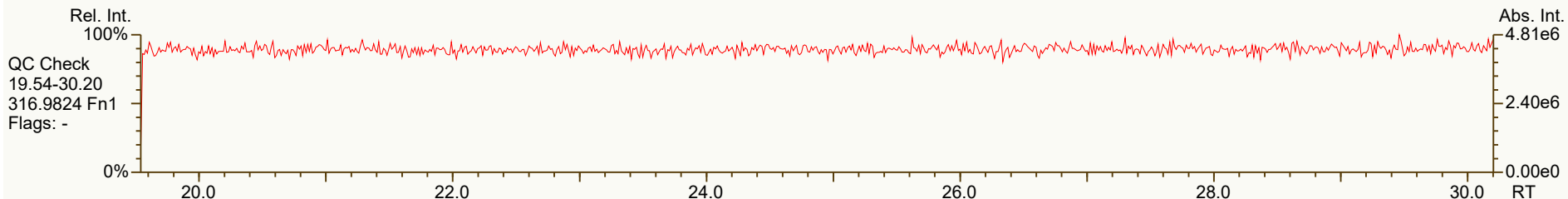


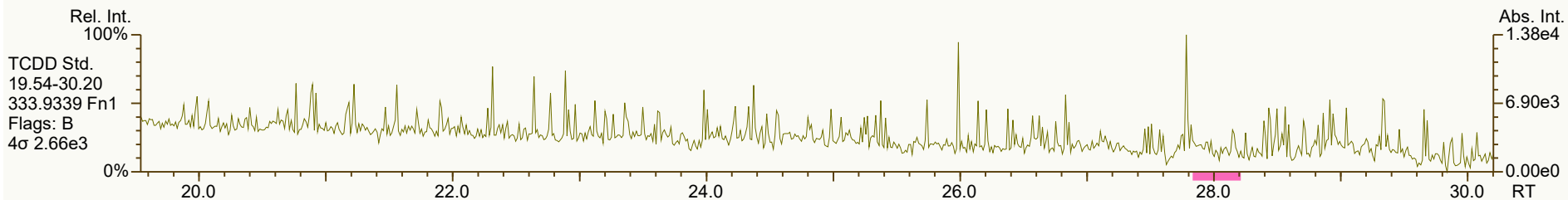
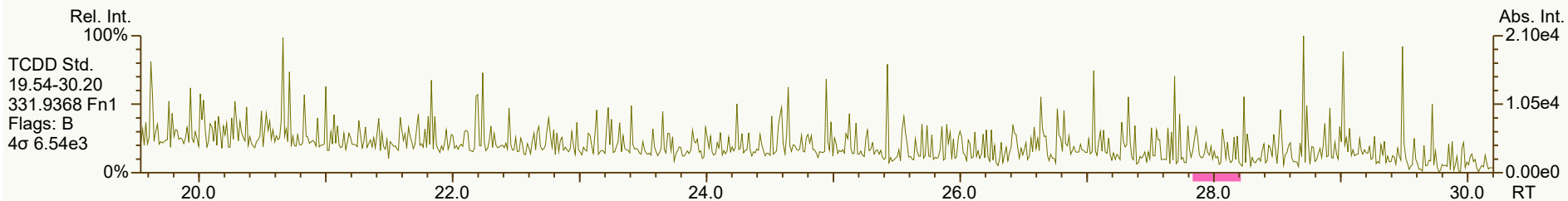
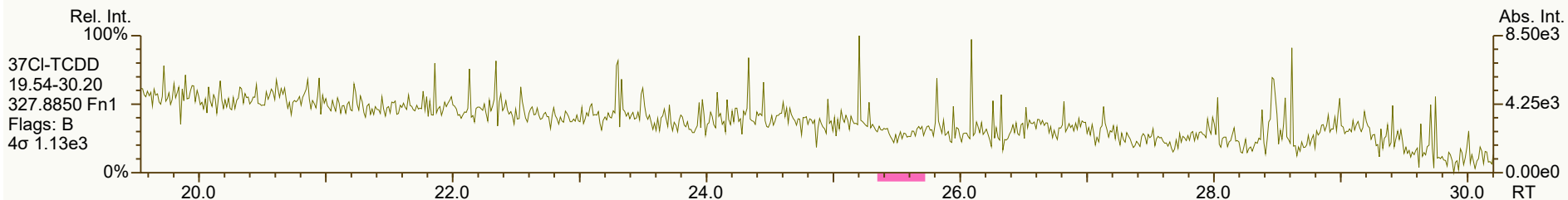
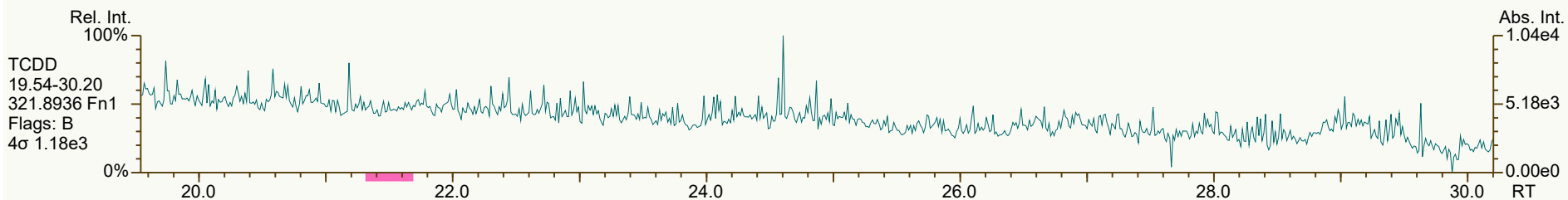
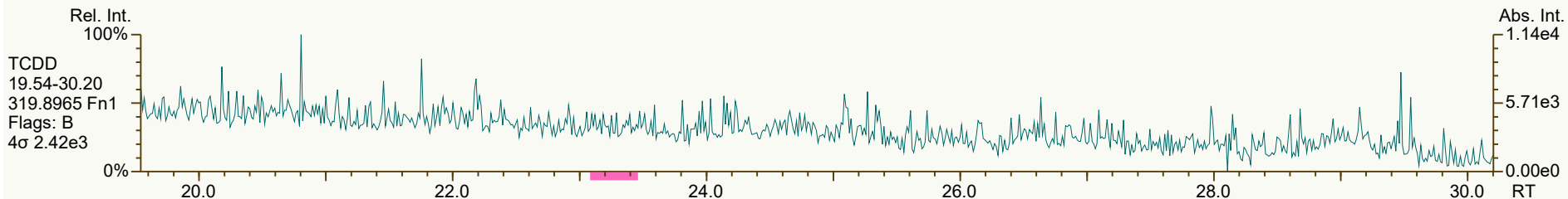


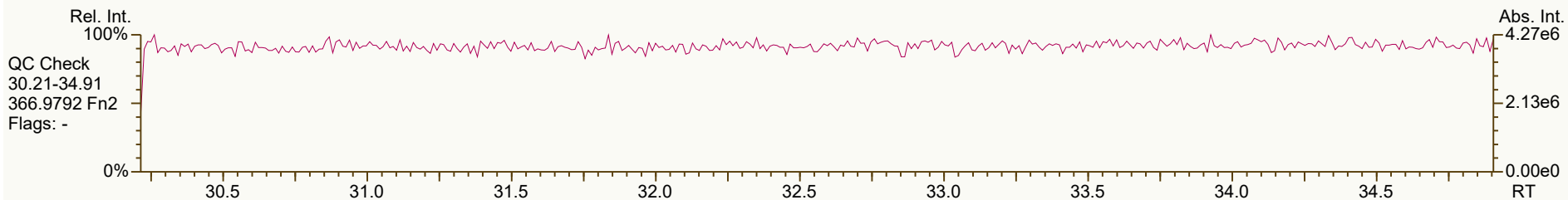
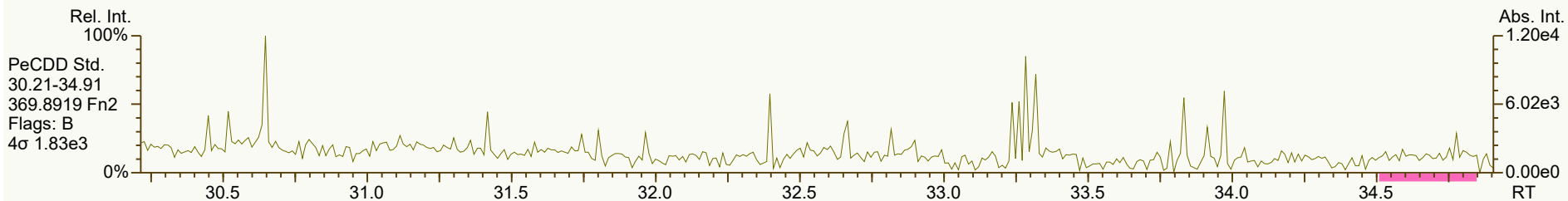
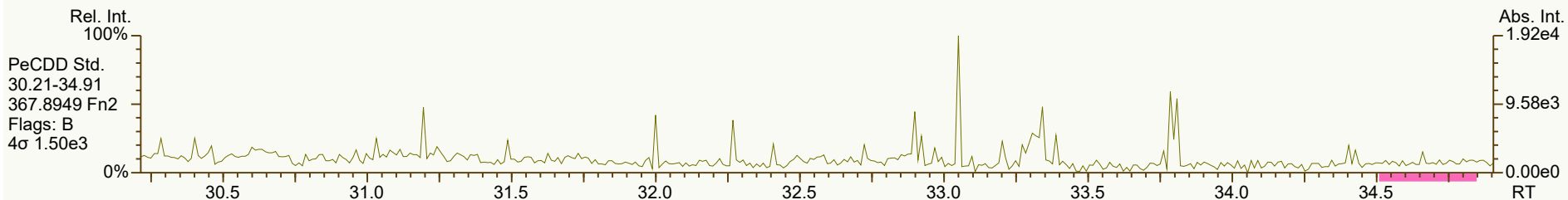
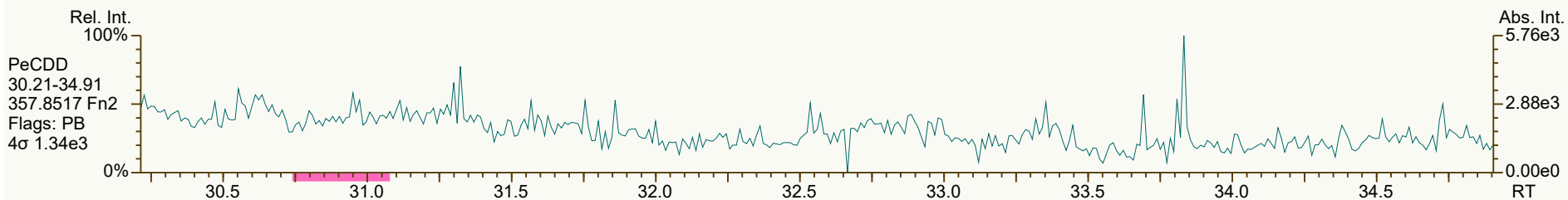
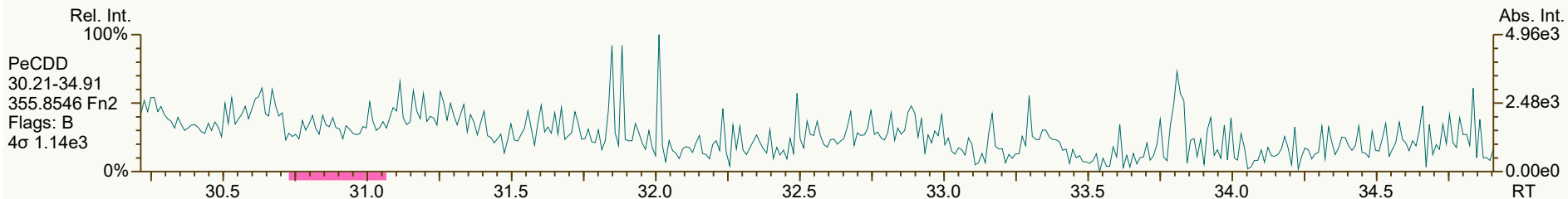


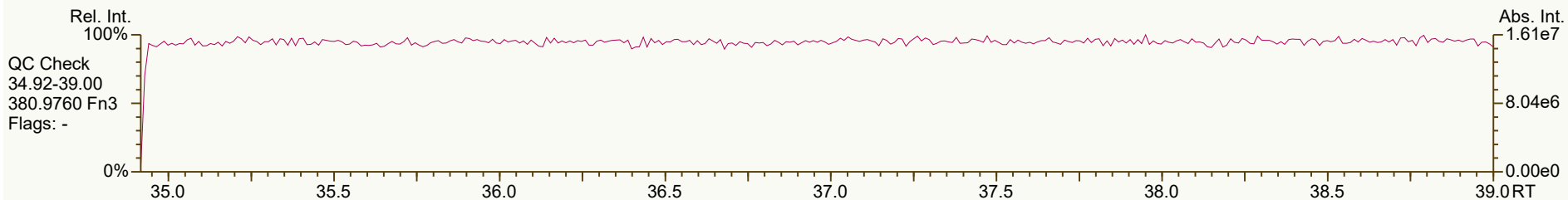
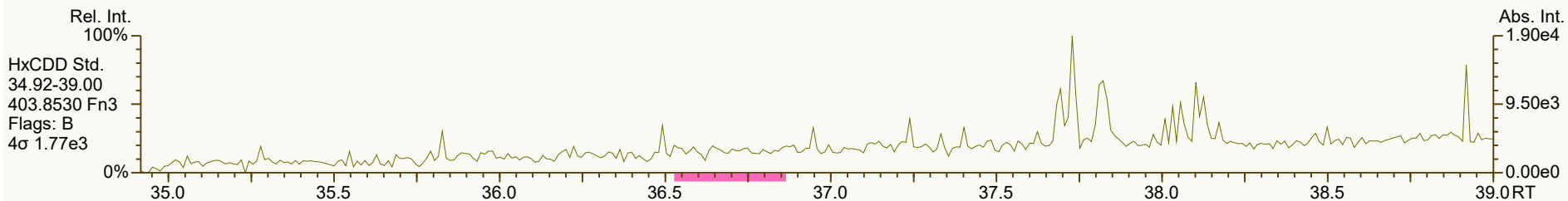
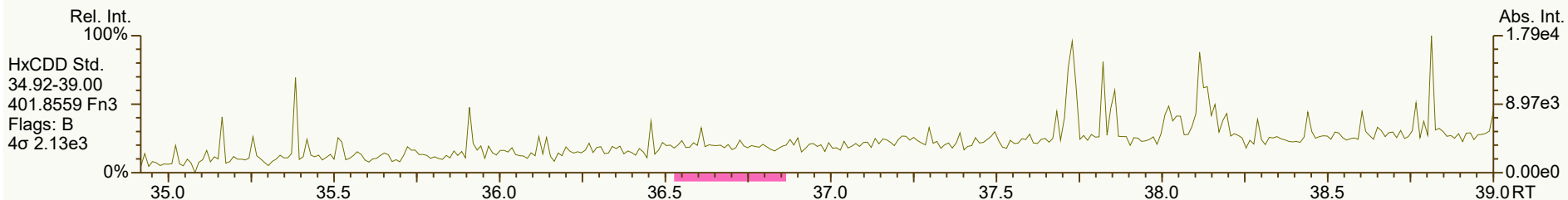
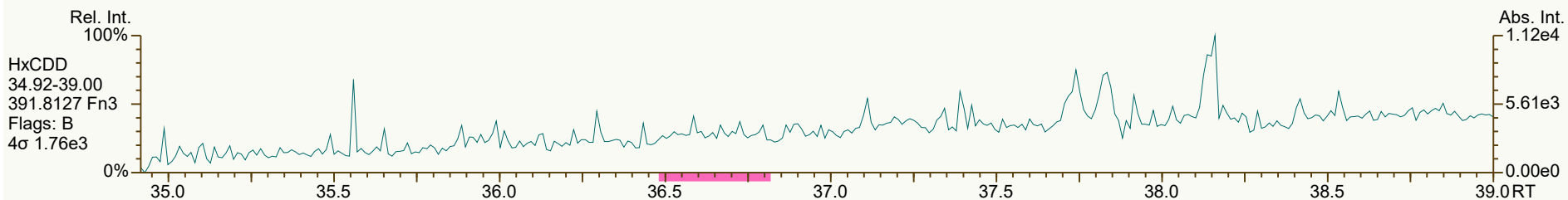
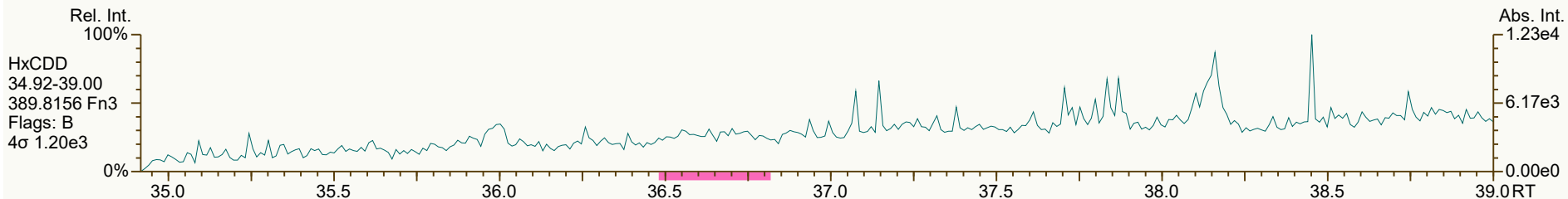


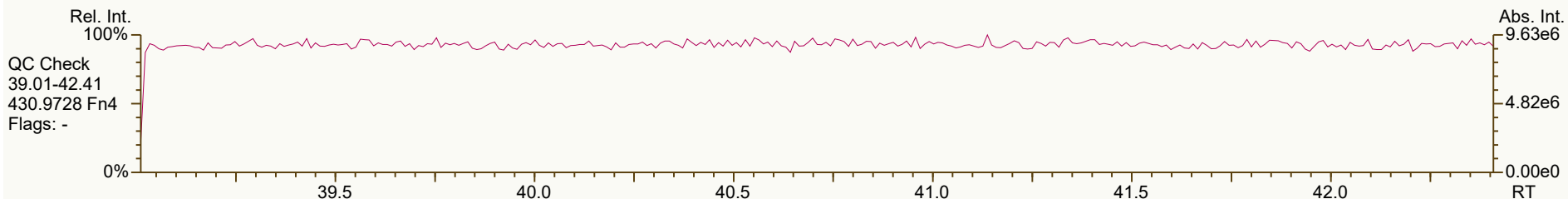
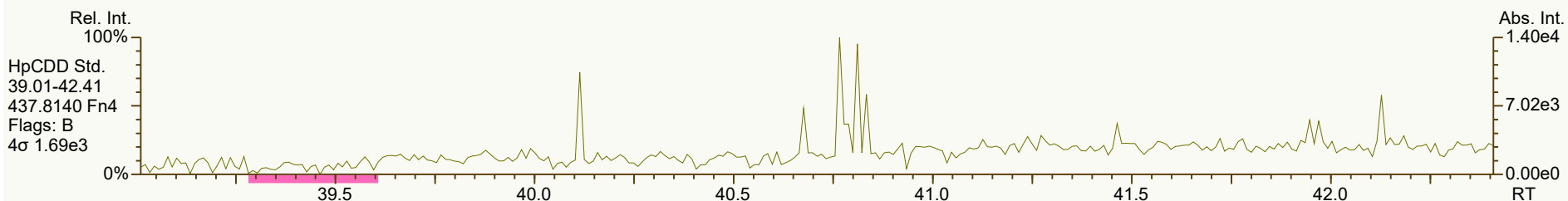
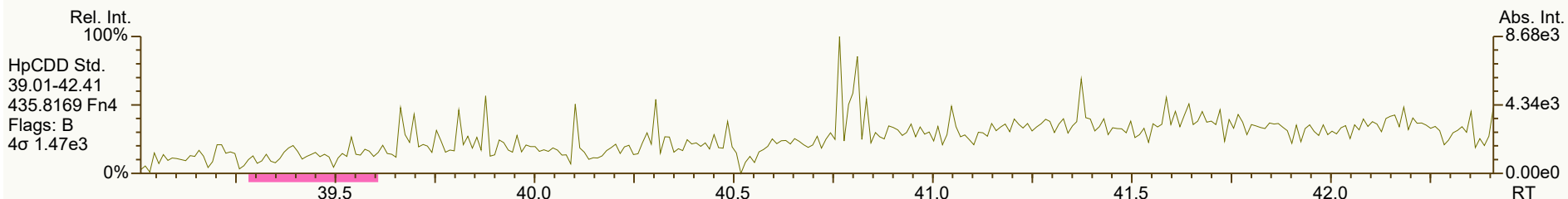
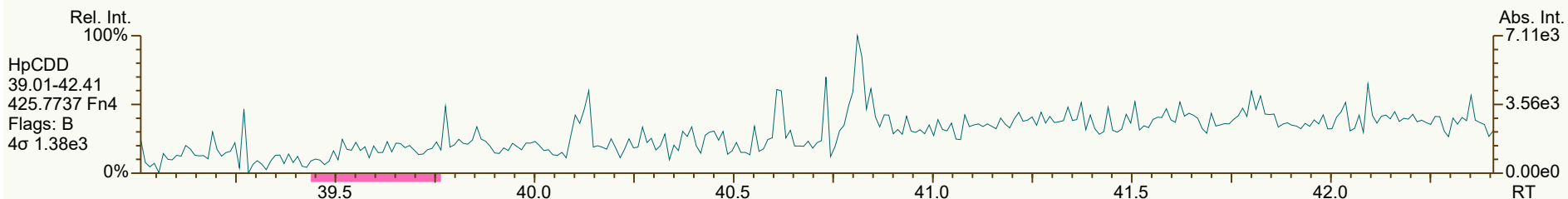
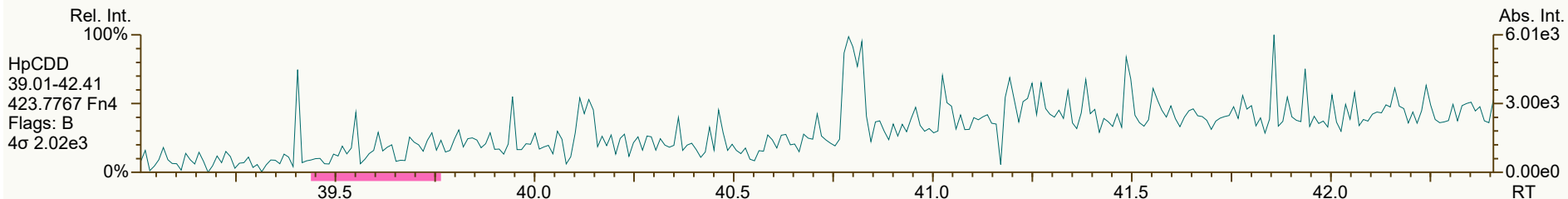


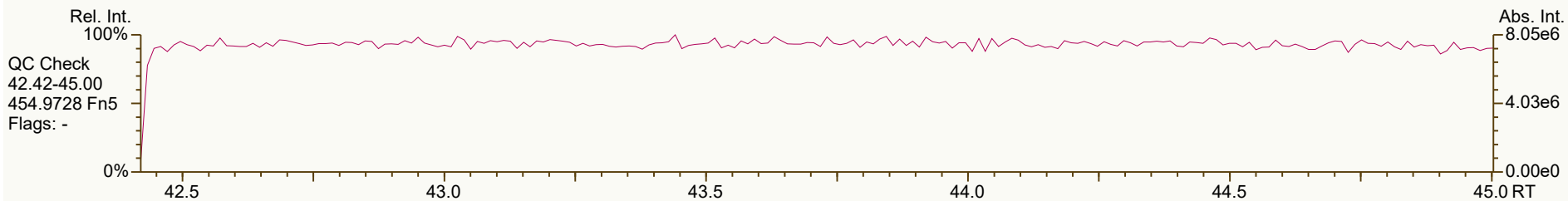
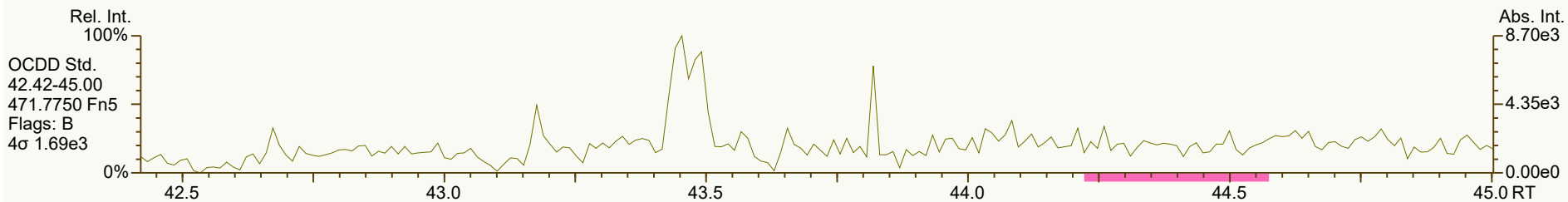
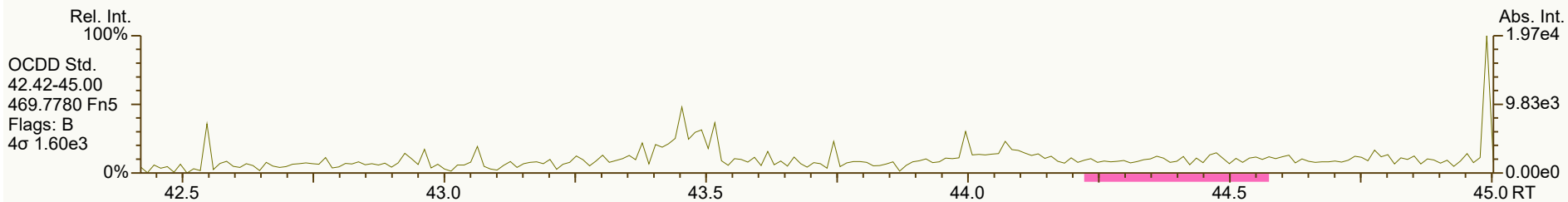
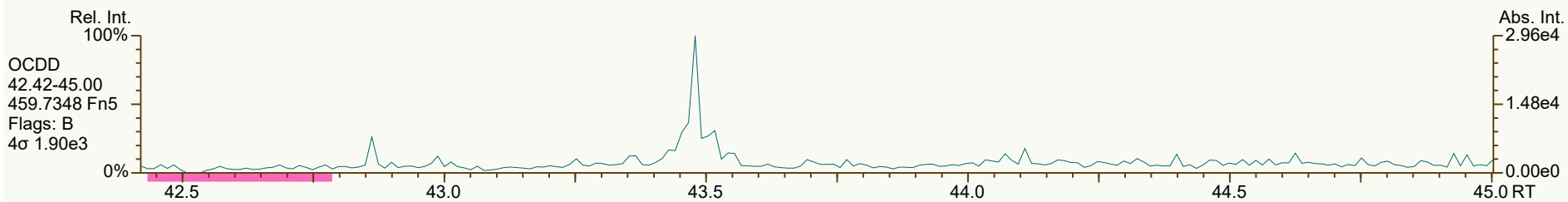
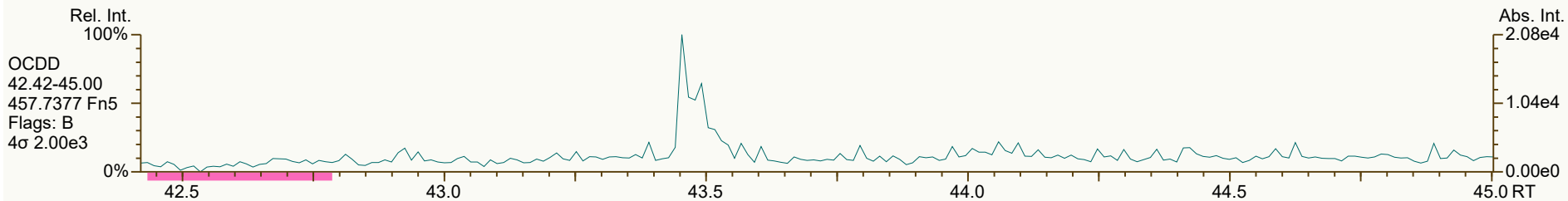








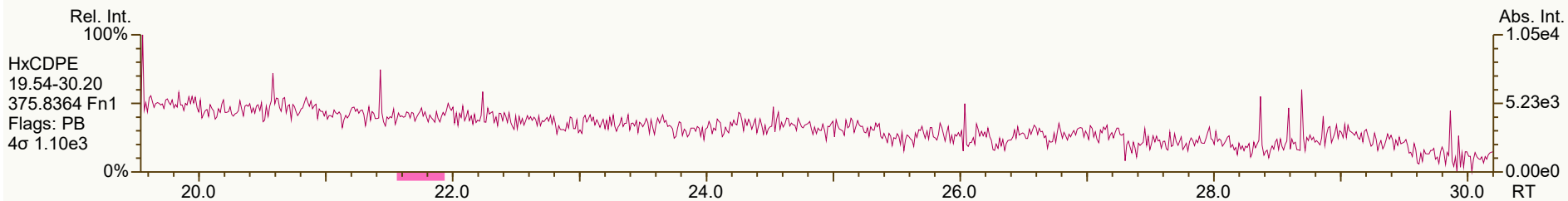
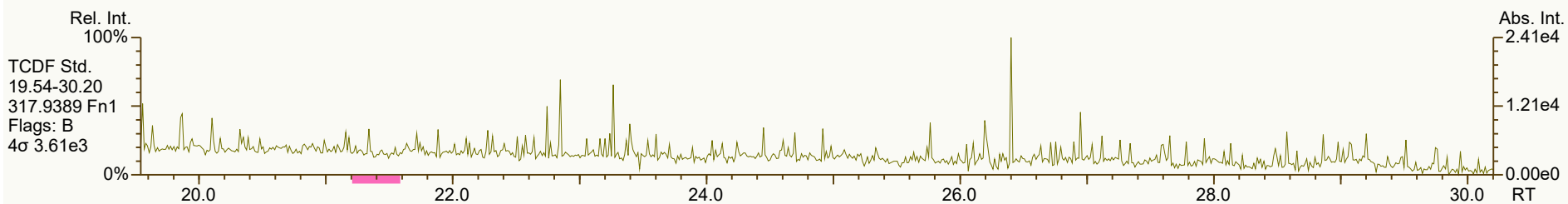
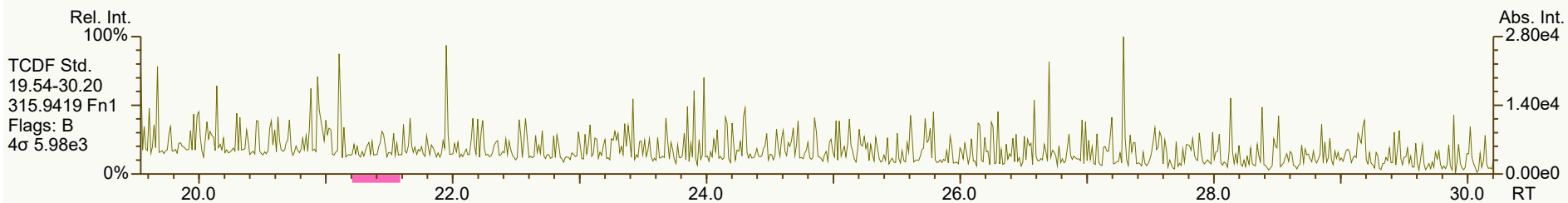
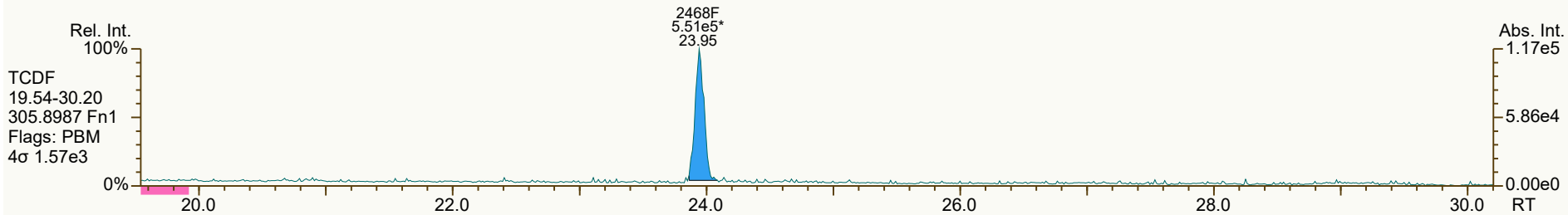
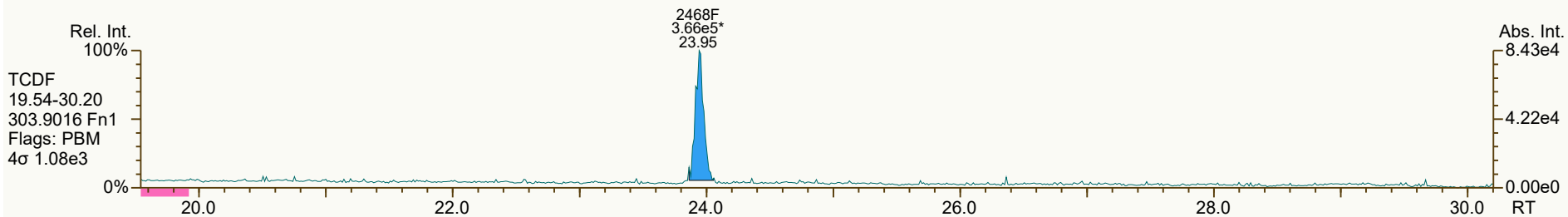


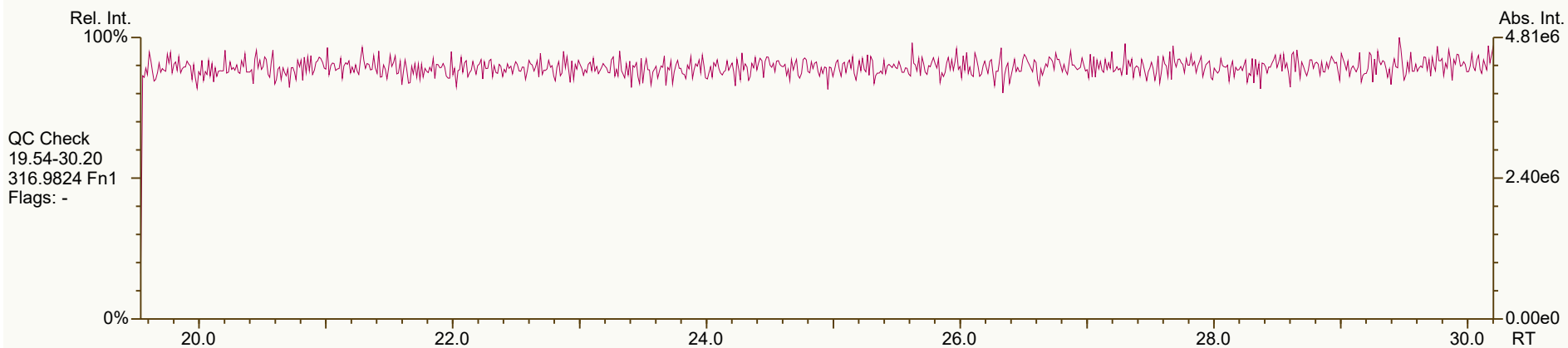
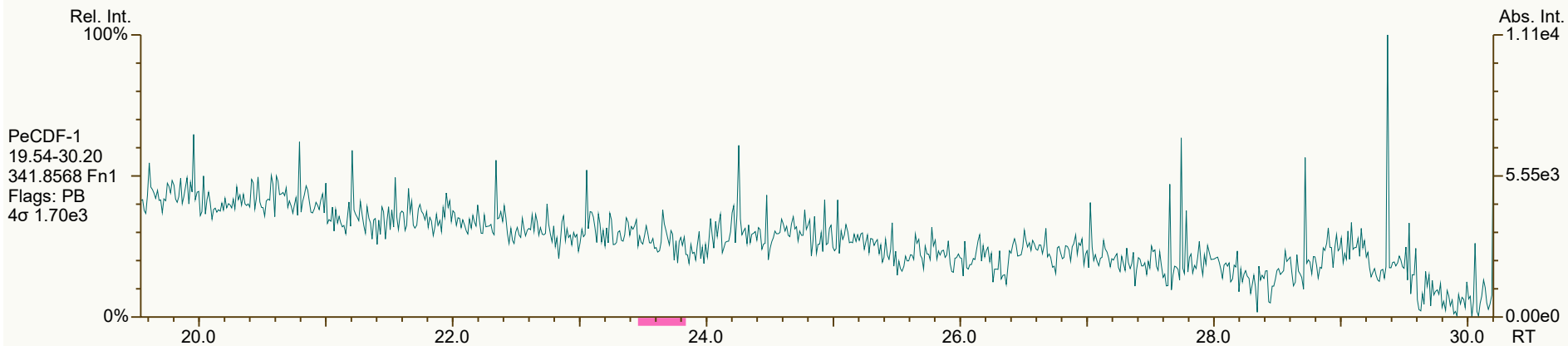
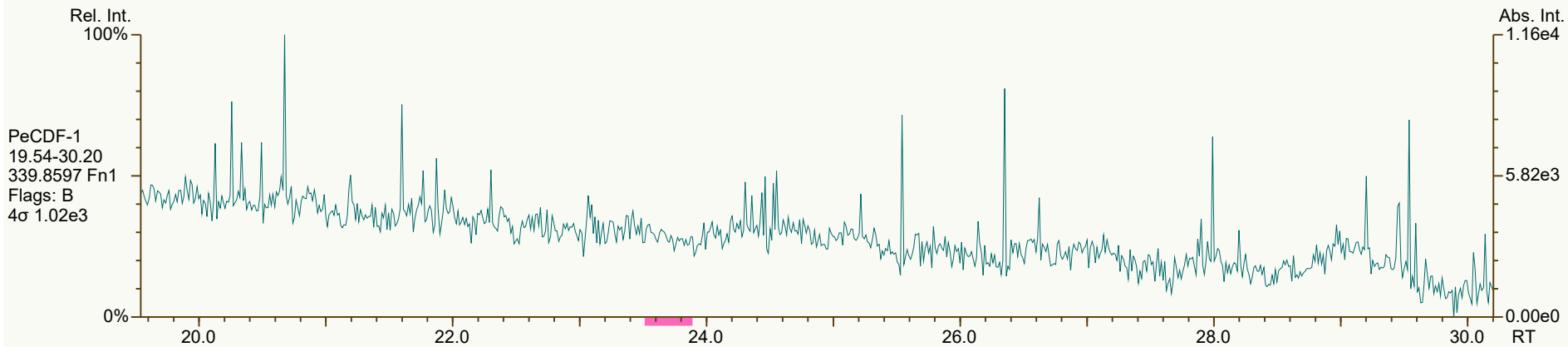


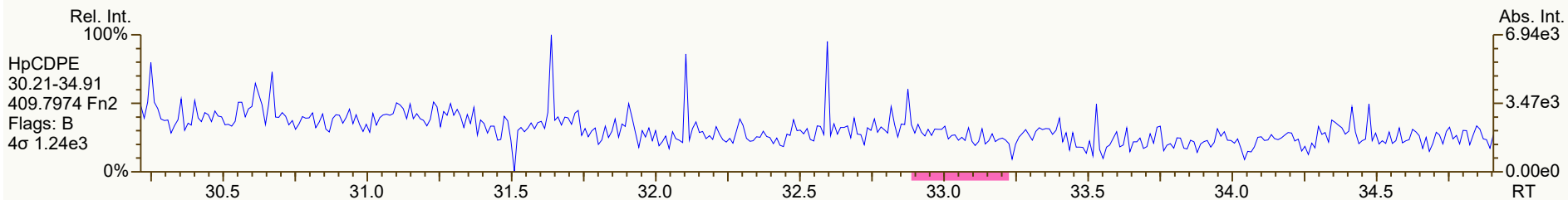
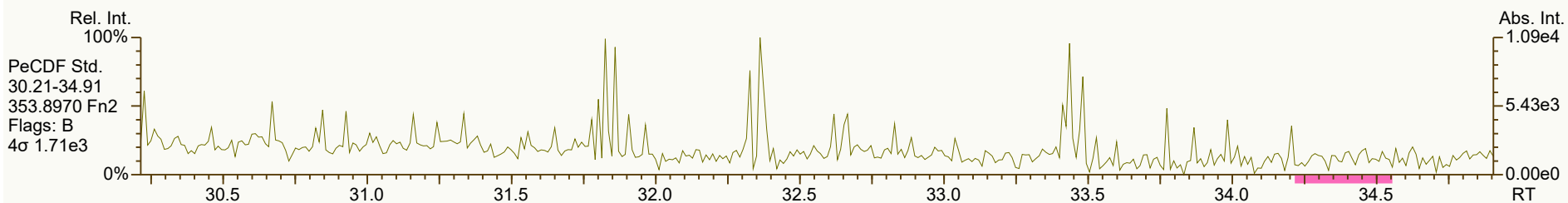
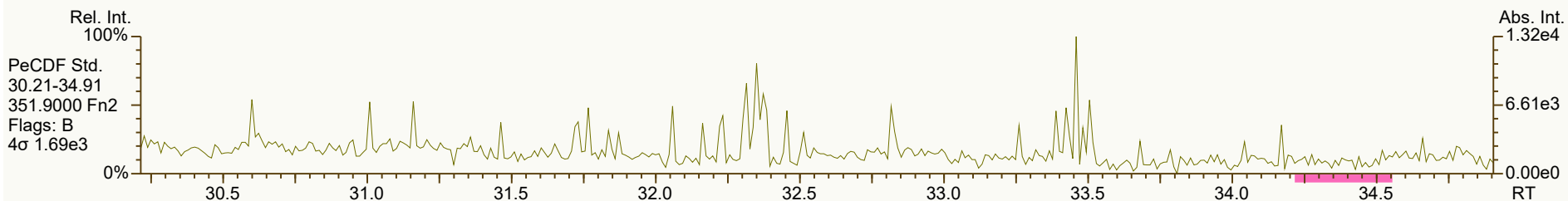
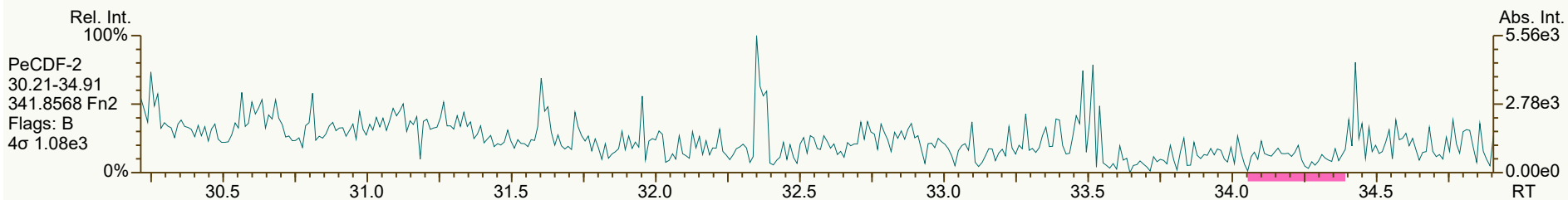
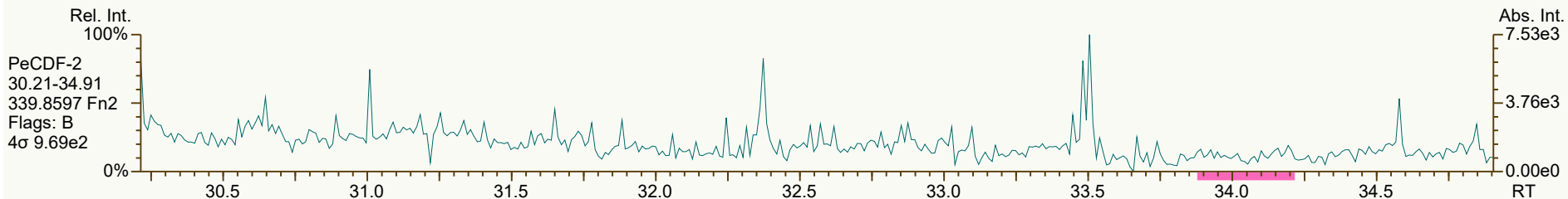
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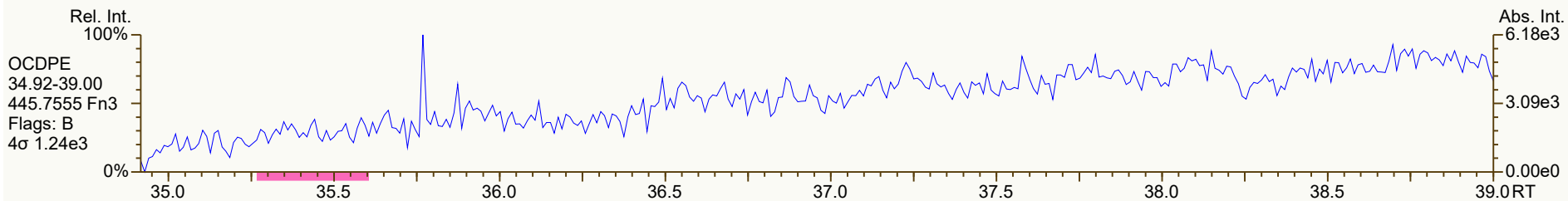
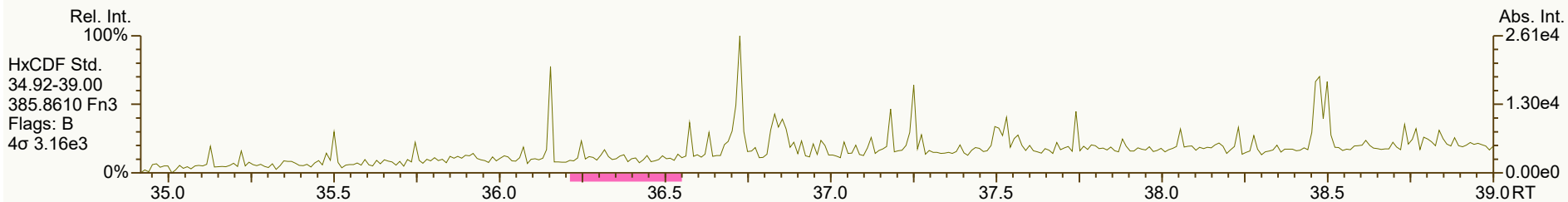
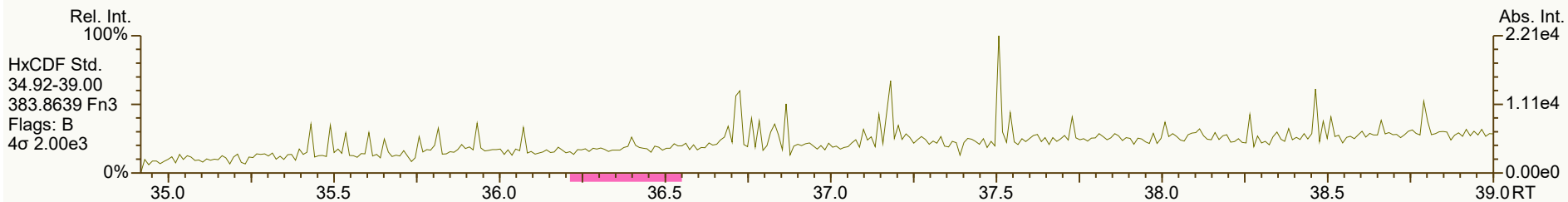
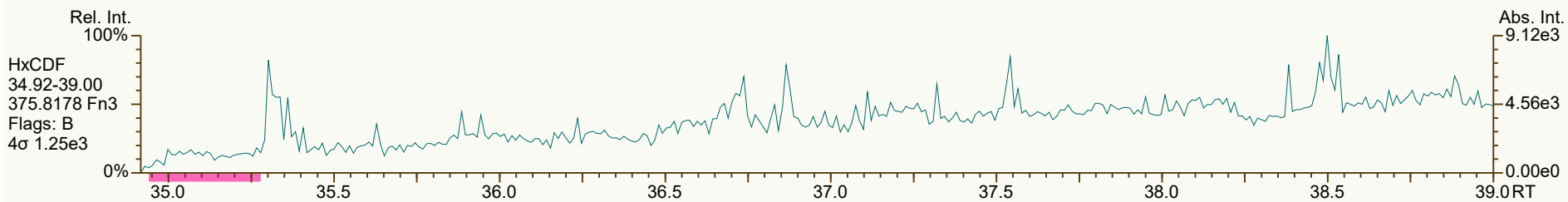
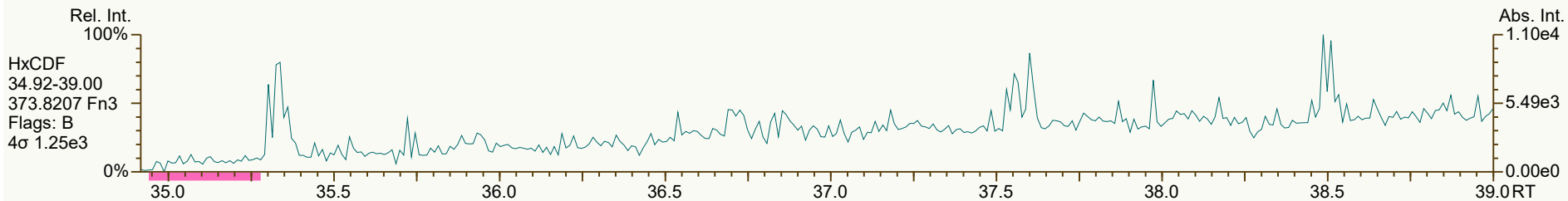
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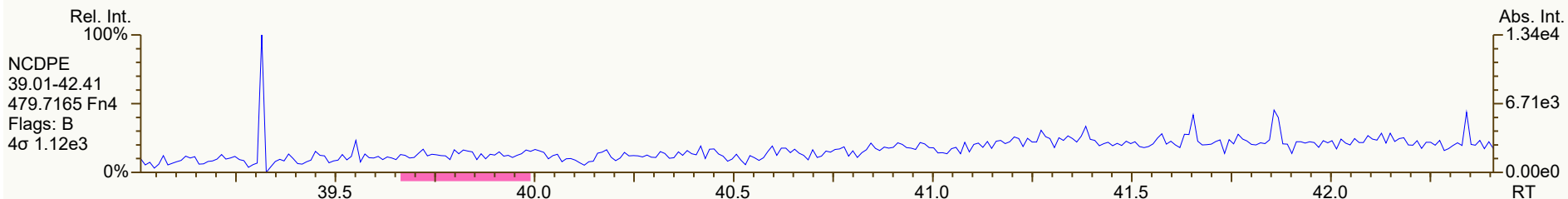
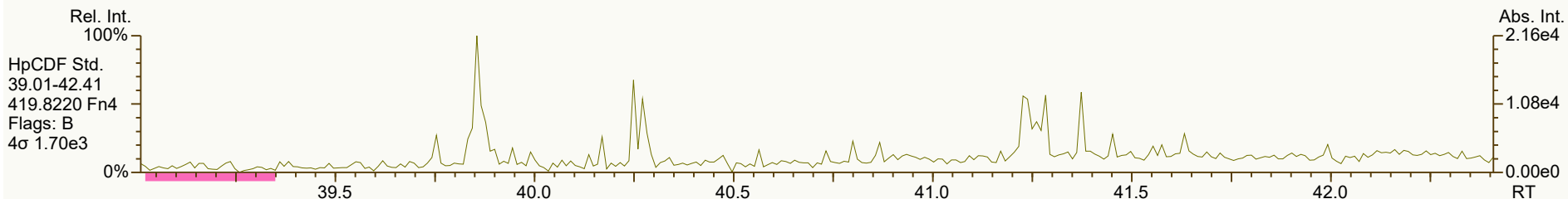
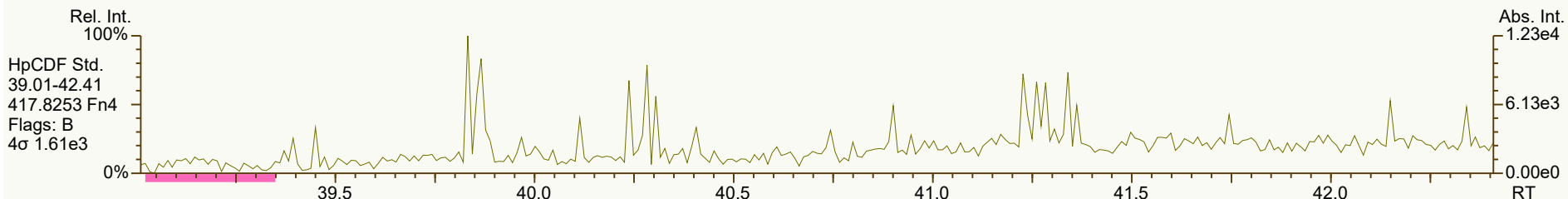
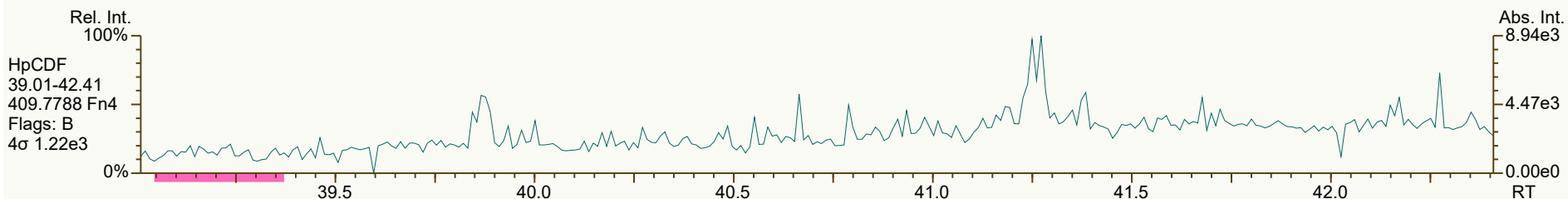
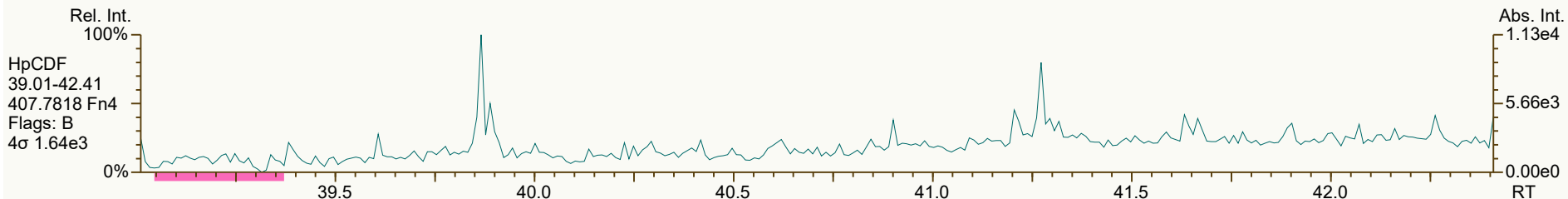
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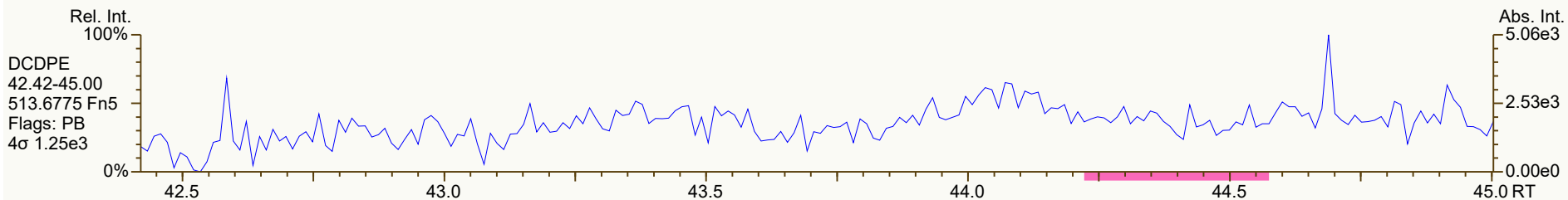
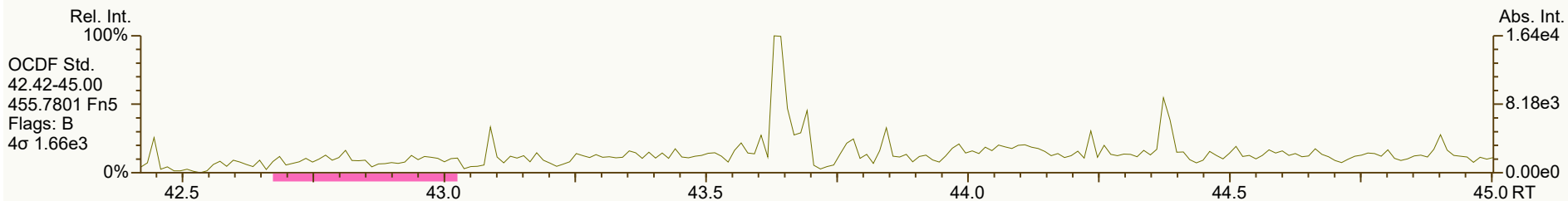
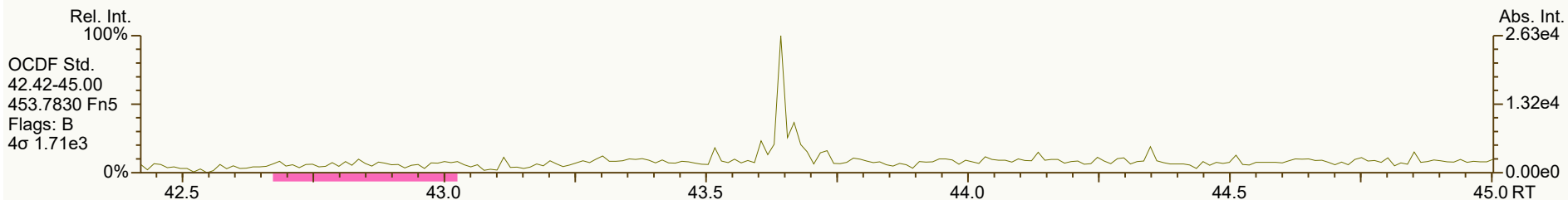
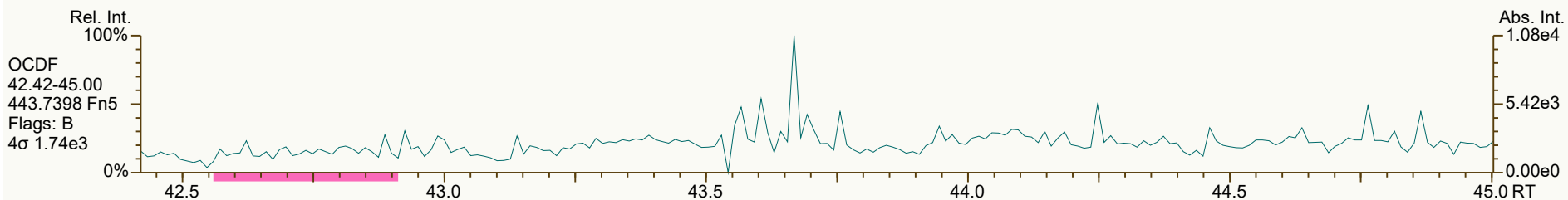
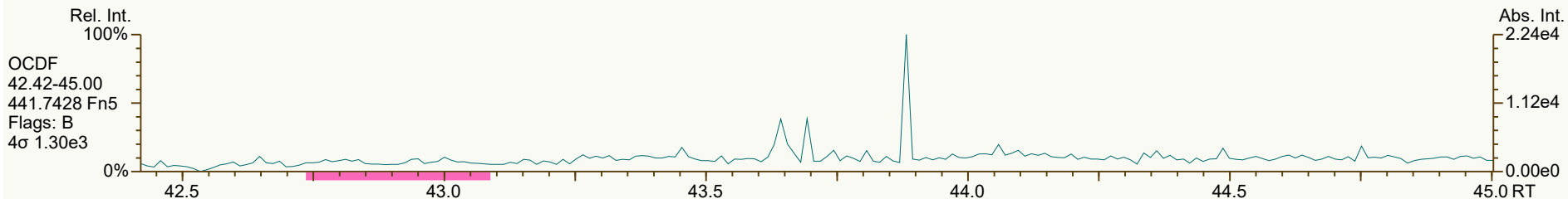






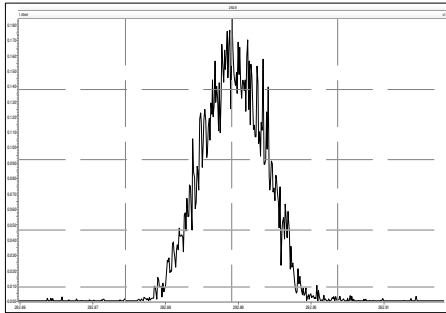




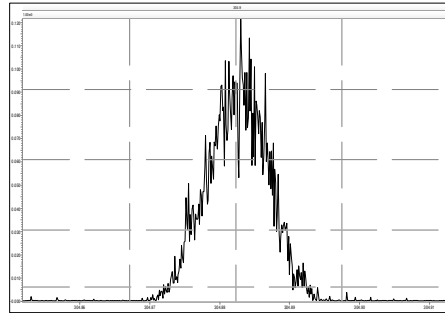


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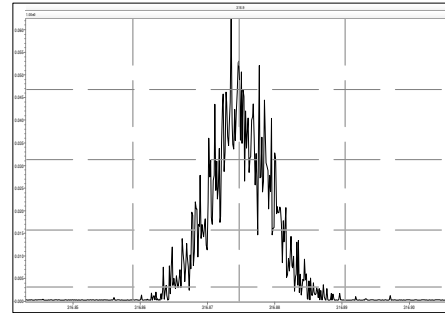
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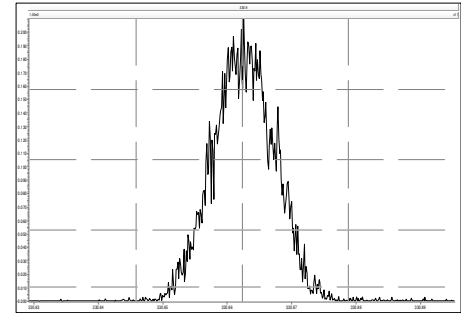
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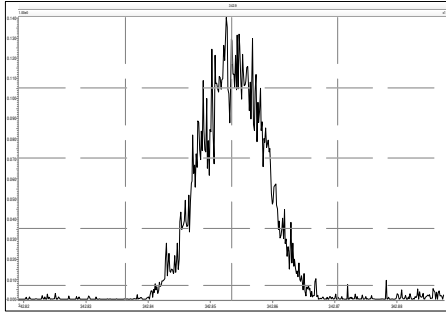
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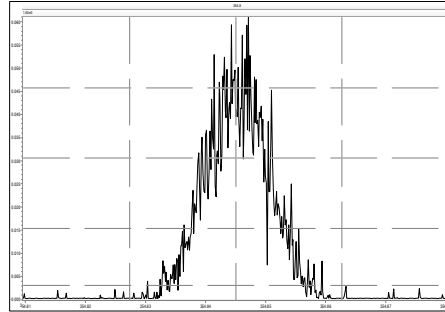
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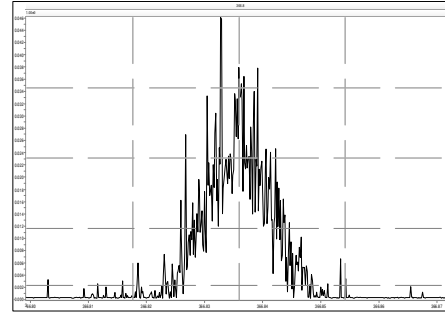
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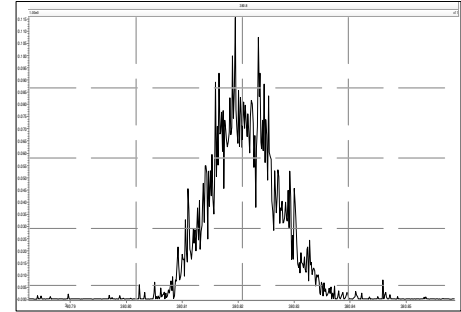
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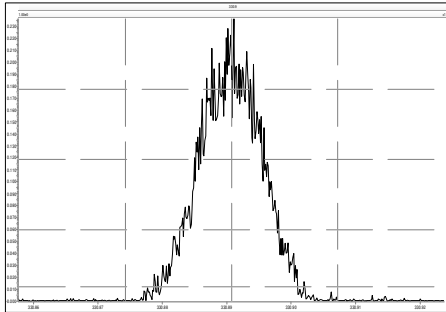
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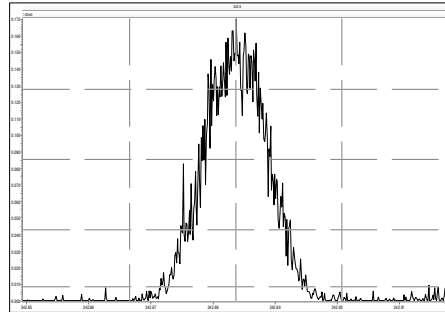
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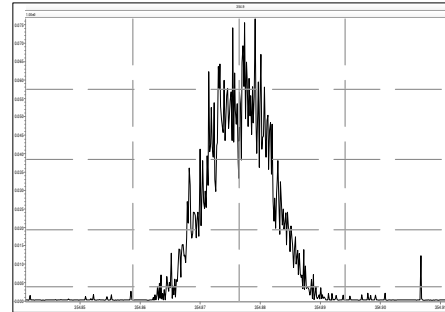
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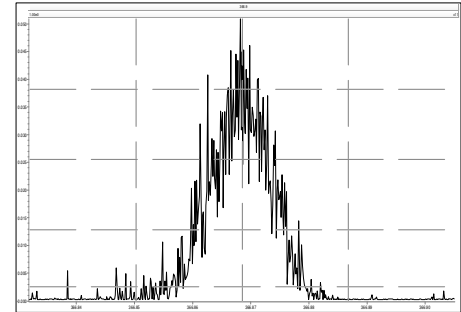
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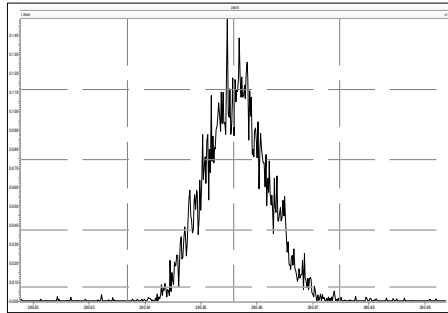


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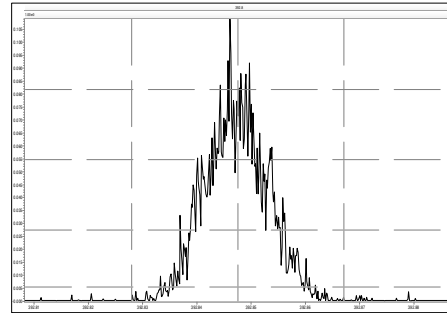


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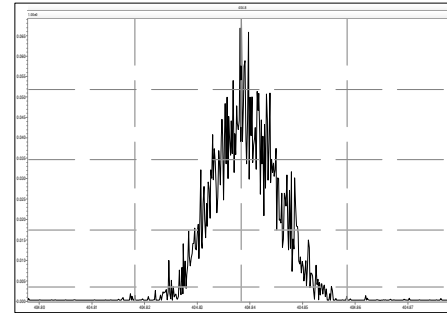
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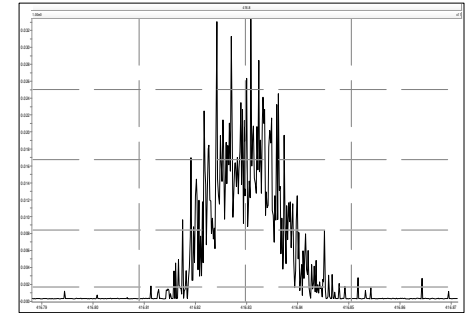
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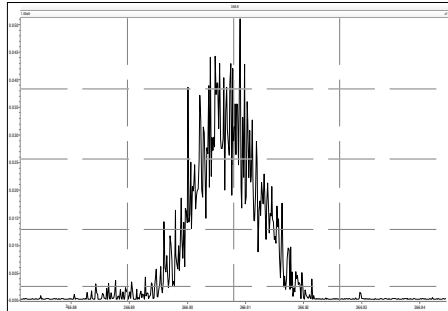
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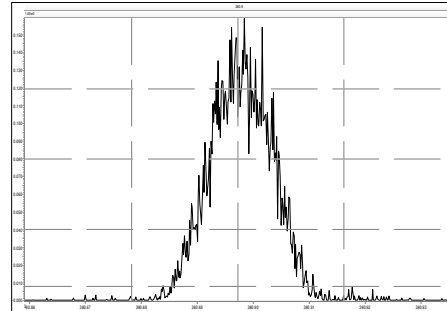
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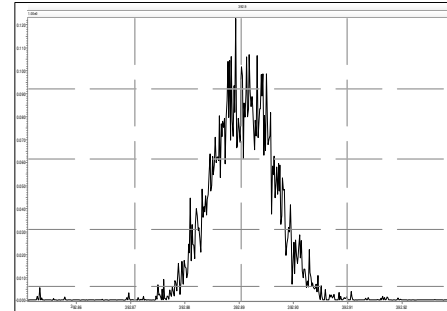
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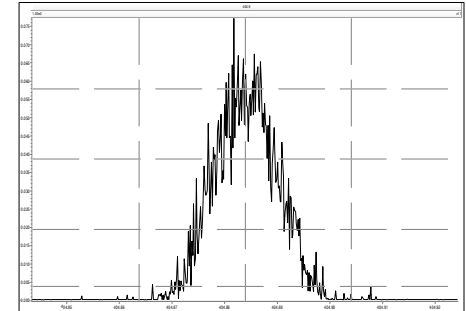
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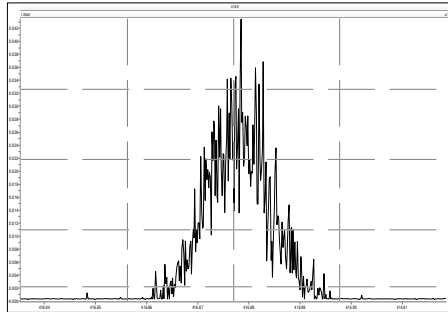
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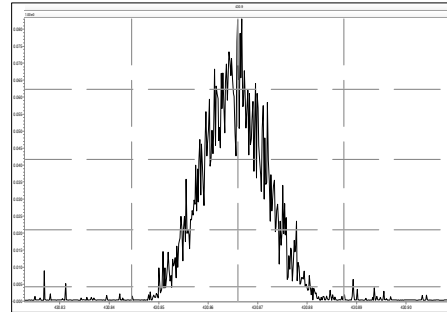
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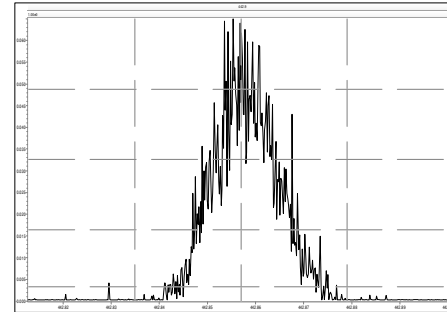
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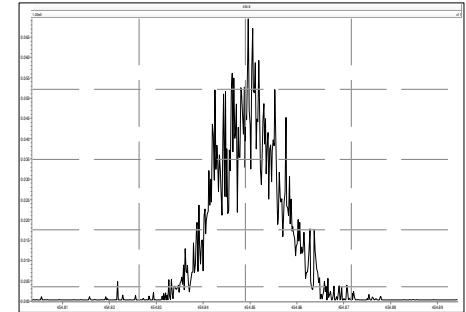
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M 442.9728 R 16181

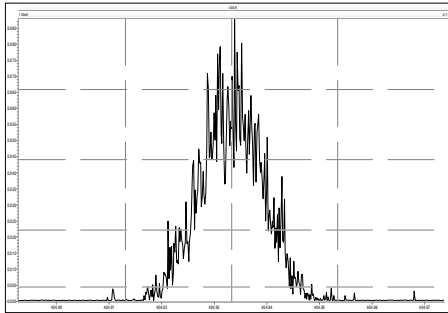


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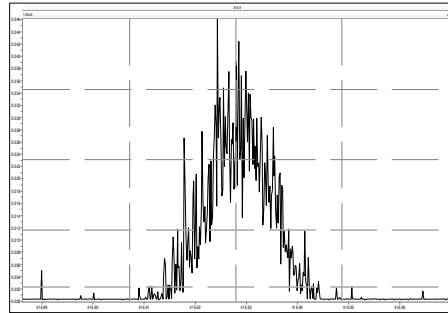


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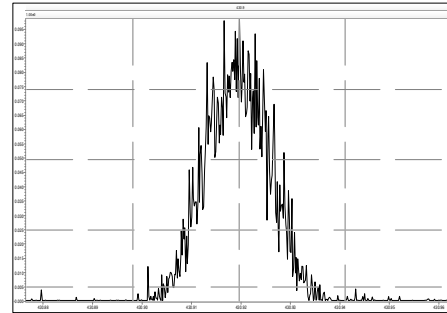
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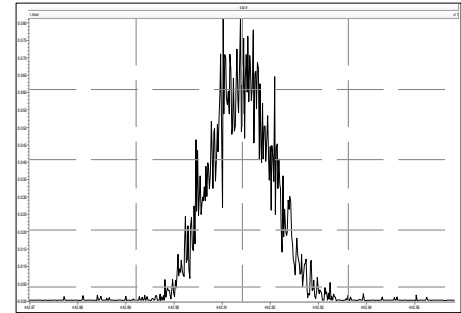
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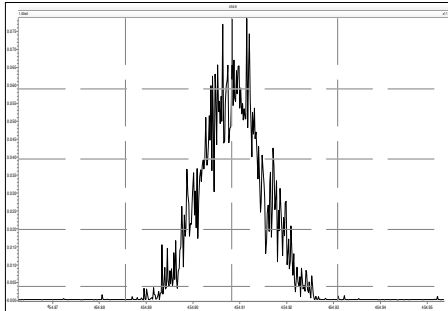
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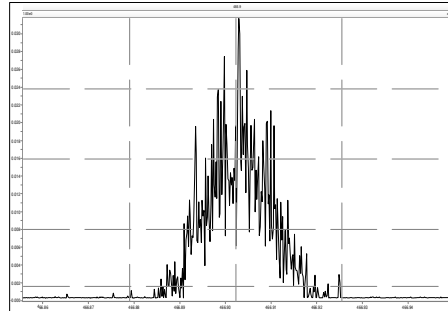
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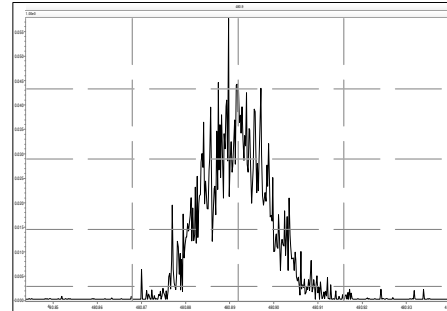
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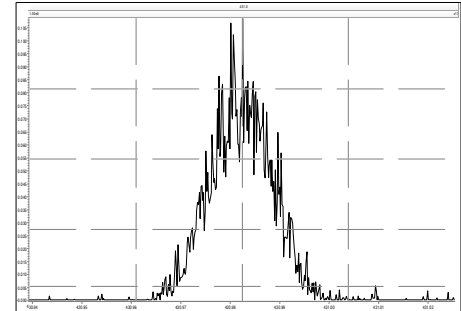
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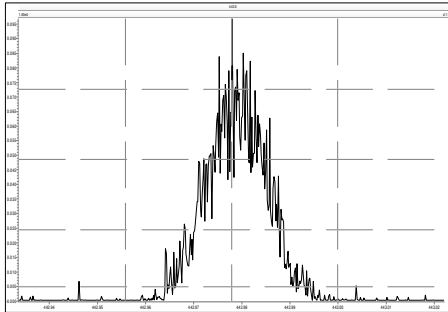
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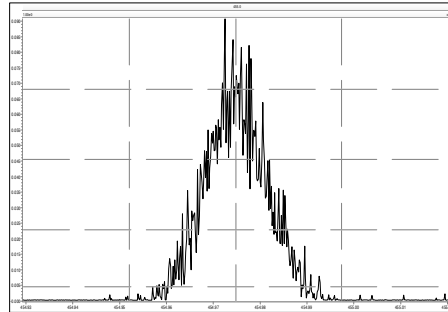
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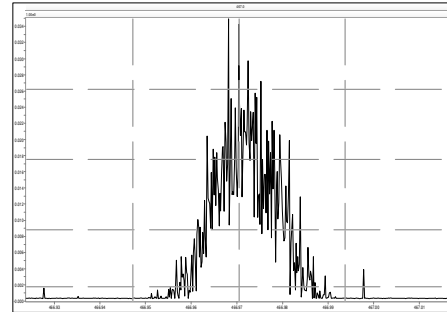
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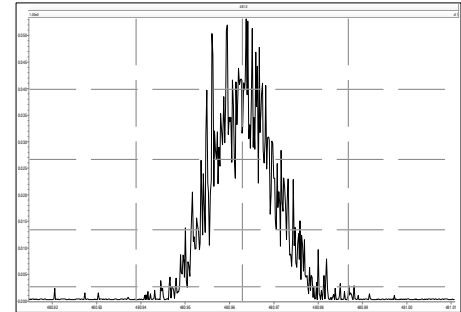
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M 466.9728 R 18874

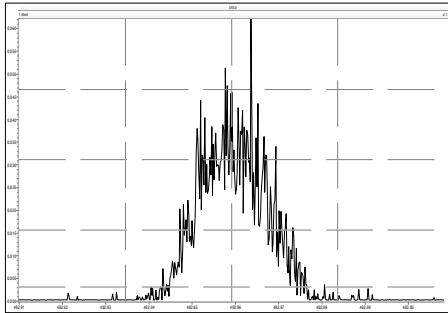


M 480.9696 R 16562

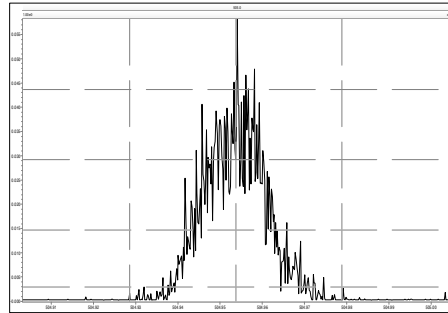


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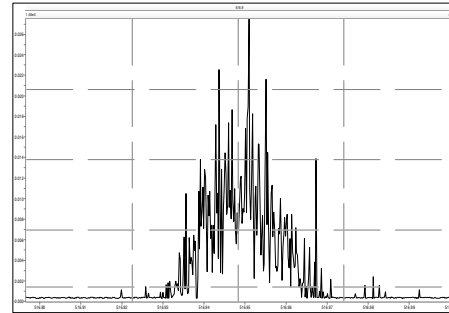
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M 504.9696 R 18469

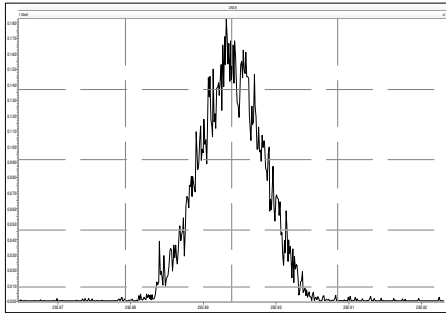


M 516.9697 R 20083

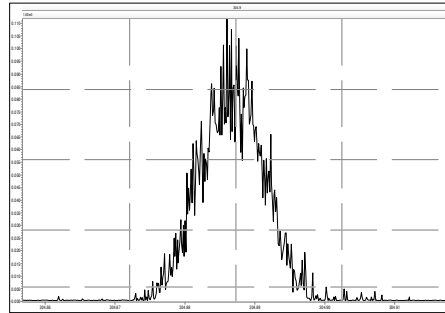


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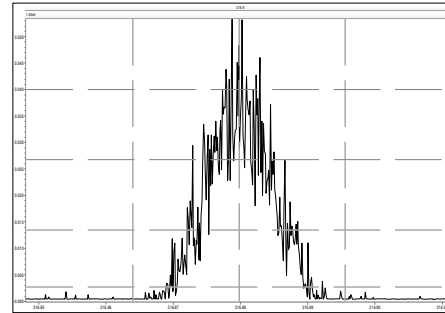
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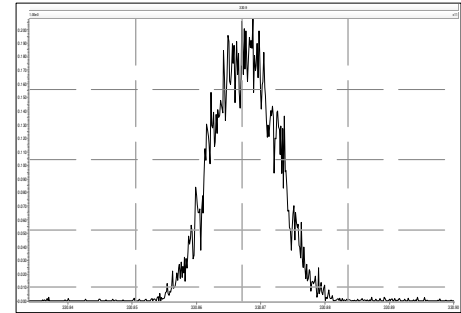
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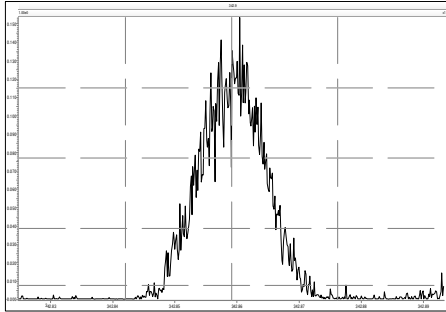
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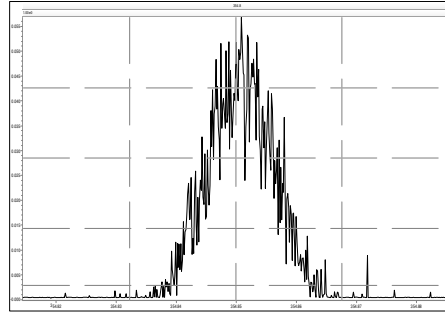
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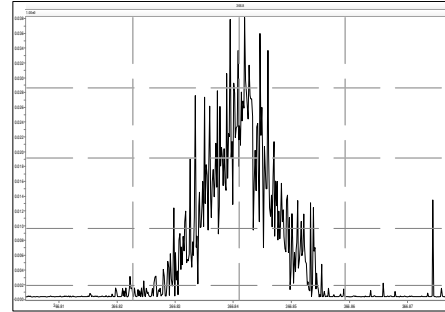
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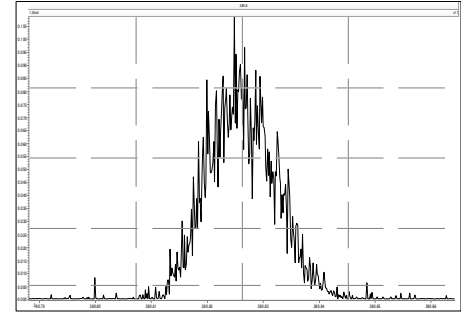
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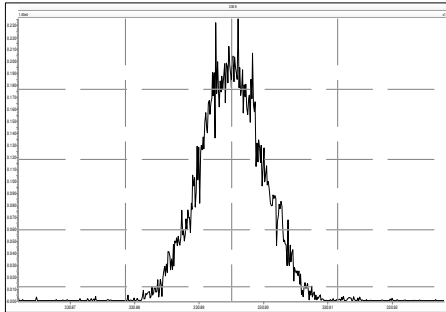
M 366.9792 R 16401



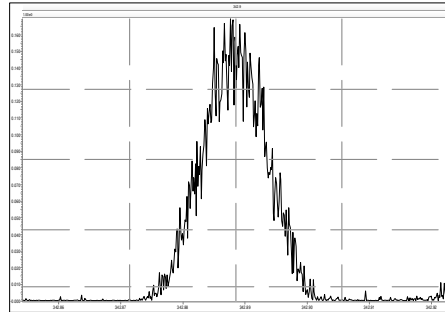
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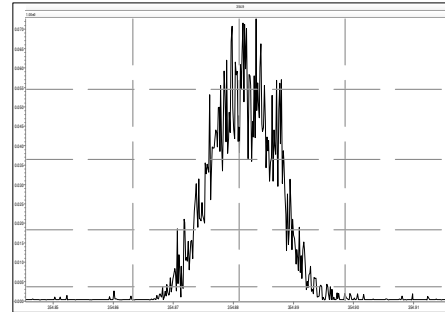
M 330.9792 R 15432



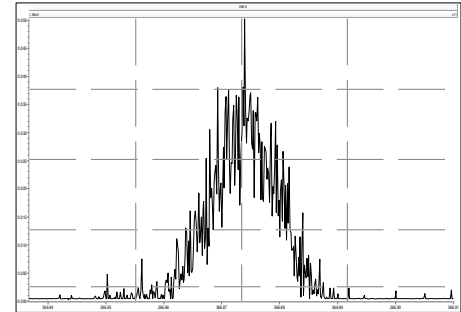
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M 354.9792 R 17428

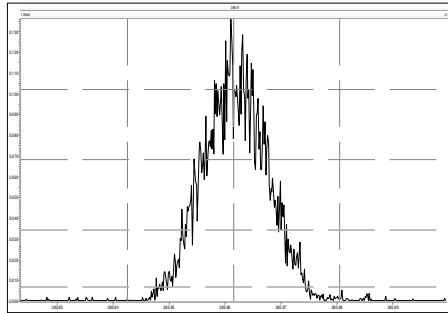


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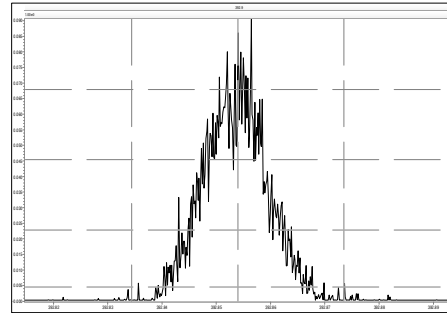


Printed: Wednesday, February 09, 2022 13:38:56 Eastern Standard Time

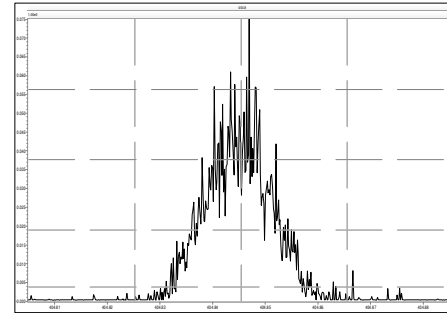
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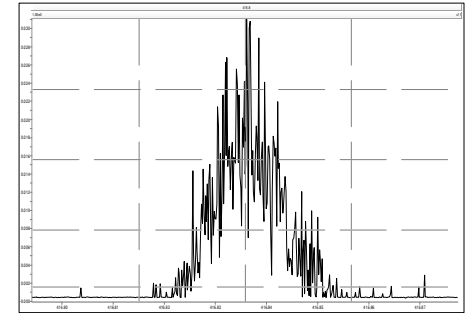
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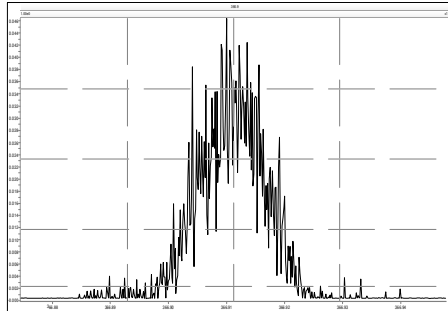
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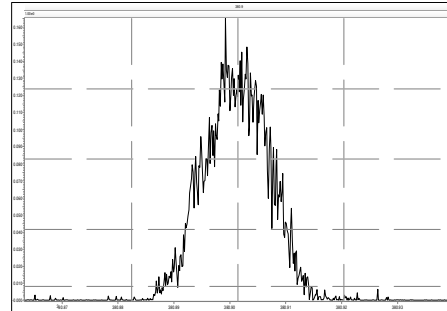
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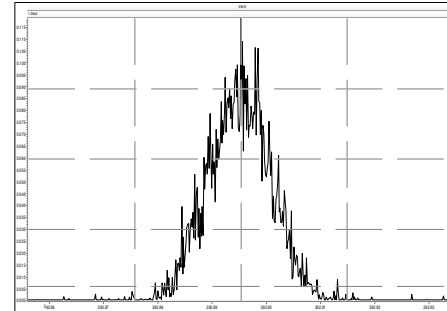
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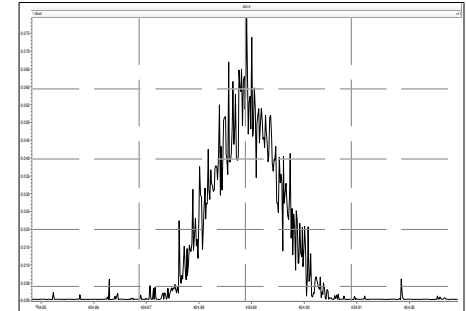
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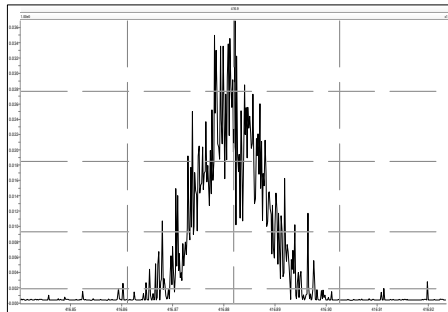
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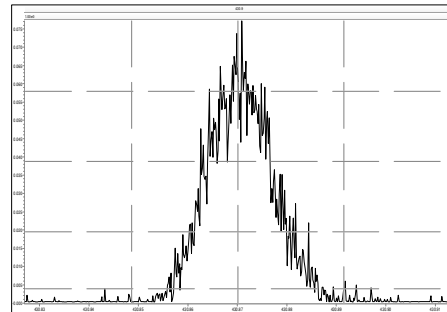
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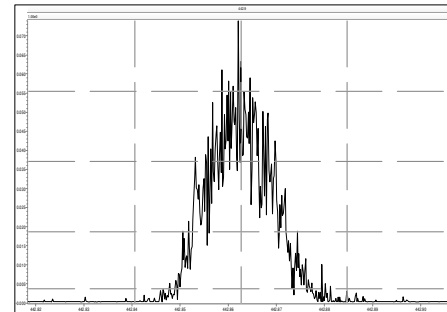
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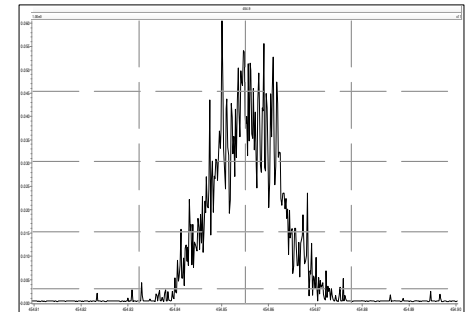
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M 442.9728 R 16500

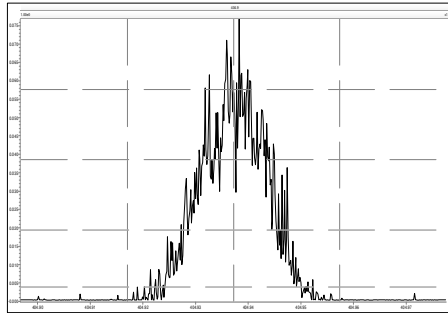


M 454.9728 R 15094

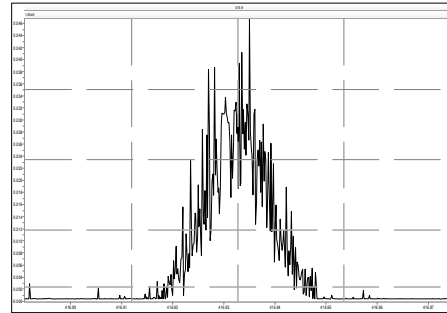


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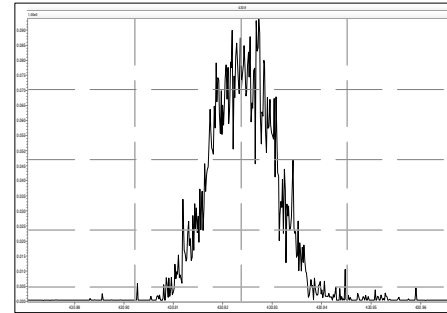
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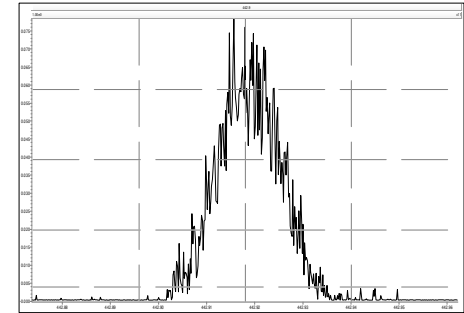
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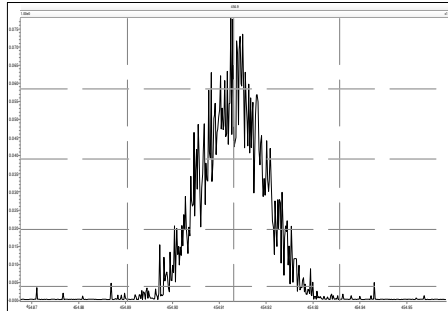
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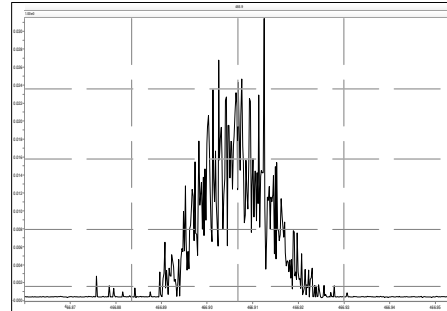
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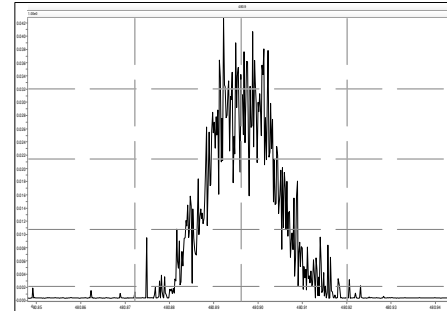
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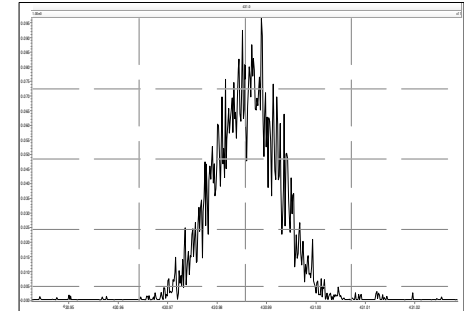
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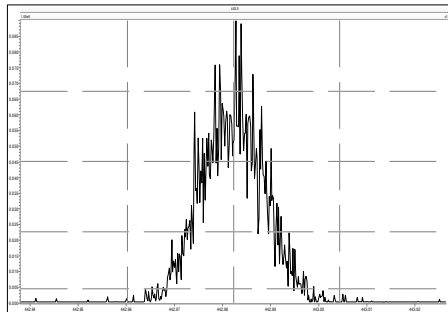
M 480.9696 R 16196



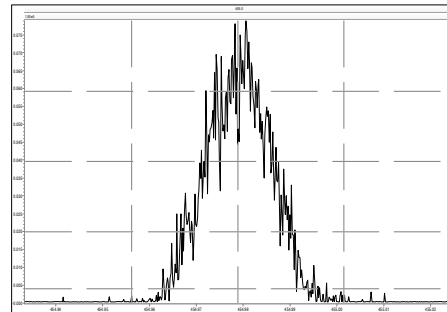
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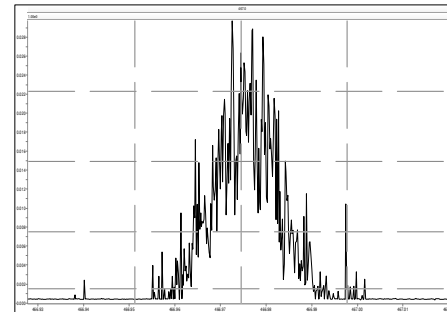
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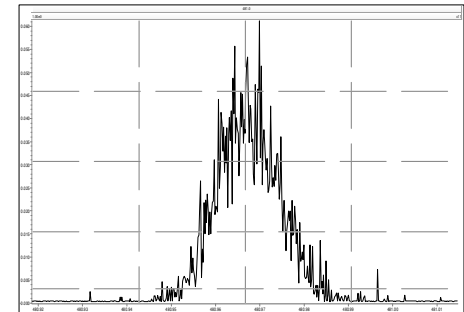
M 454.9728 R 16892



M 466.9728 R 16941

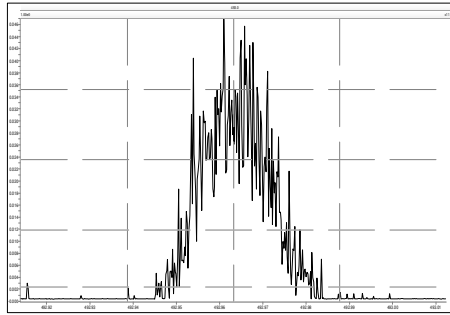


M 480.9696 R 16394

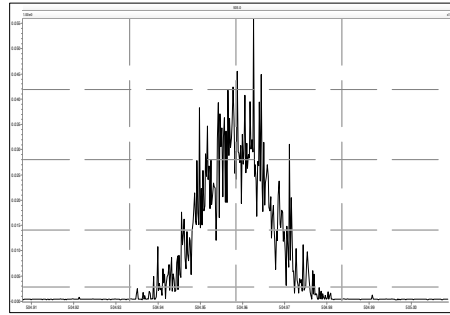


Printed: Wednesday, February 09, 2022 13:38:56 Eastern Standard Time

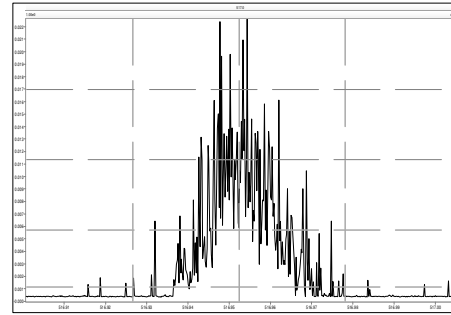
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M 504.9696 R 15263



M 516.9697 R 17255



Dioxin/Furan ICAL Summary

SGS North America

Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021

Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04	211110C05	211110C06	211110C07	211110C08	211110C09	211110C10
			0.25 pg/uL CS0	0.5 pg/uL CS1	2 pg/uL CS2	10 pg/uL CS3	40 pg/uL CS4	200 pg/uL CS5	500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34 ✓	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98 ✓
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84 ✓	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

Dioxin/Furan ICAL Summary

SGS North America

Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021

Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04	211110C05	211110C06	211110C07	211110C08	211110C09	211110C10
			0.25 pg/uL CS0	0.5 pg/uL CS1	2 pg/uL CS2	10 pg/uL CS3	40 pg/uL CS4	200 pg/uL CS5	500 pg/uL CS6
CS 37C1-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37C1-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28	1.33

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

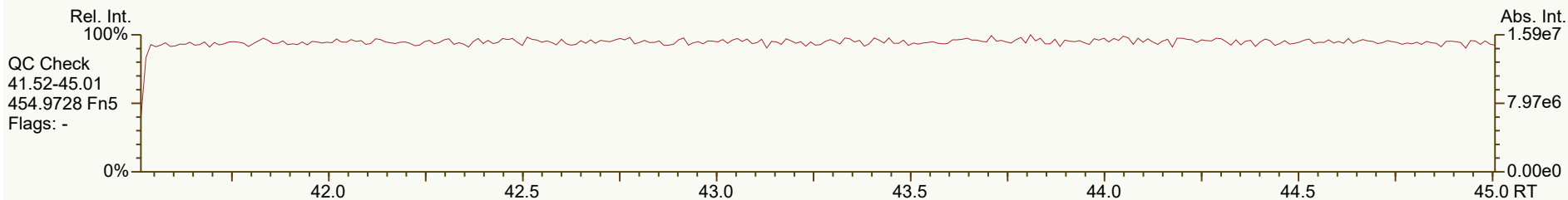
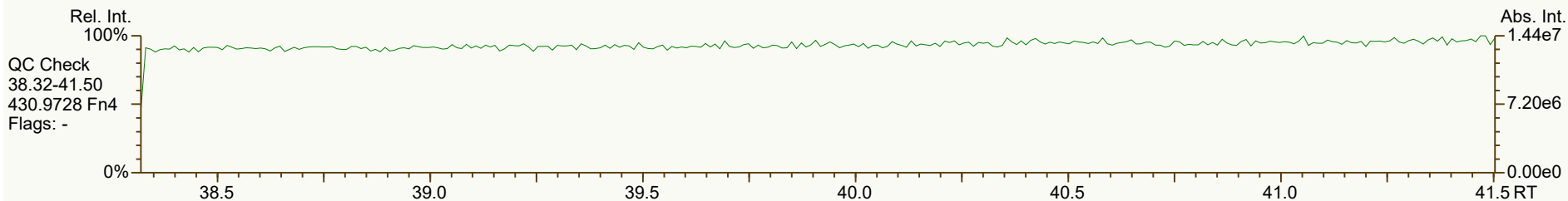
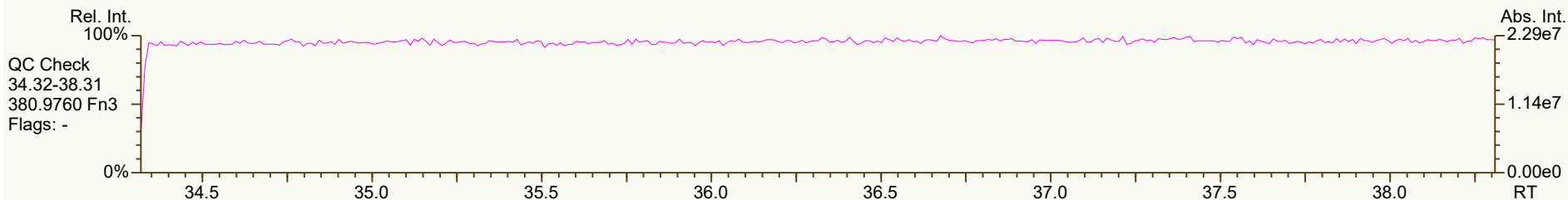
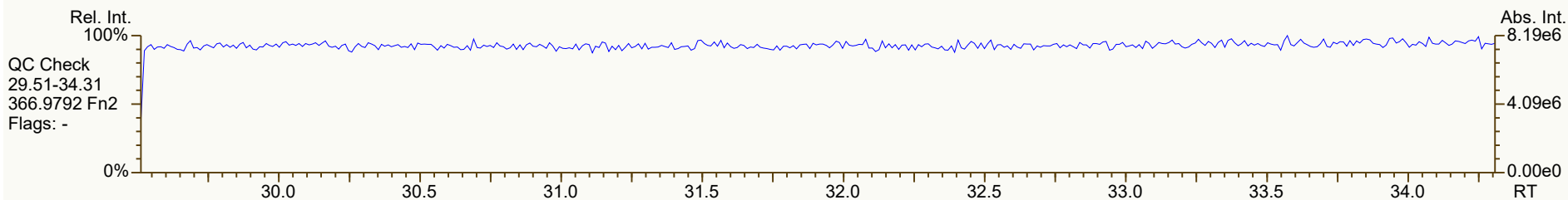
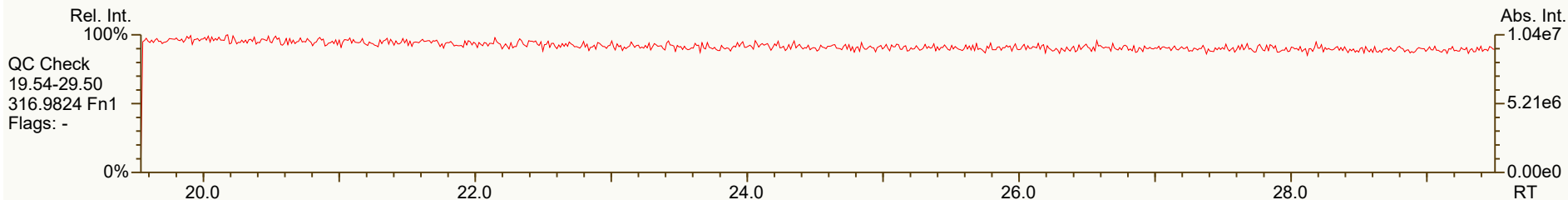
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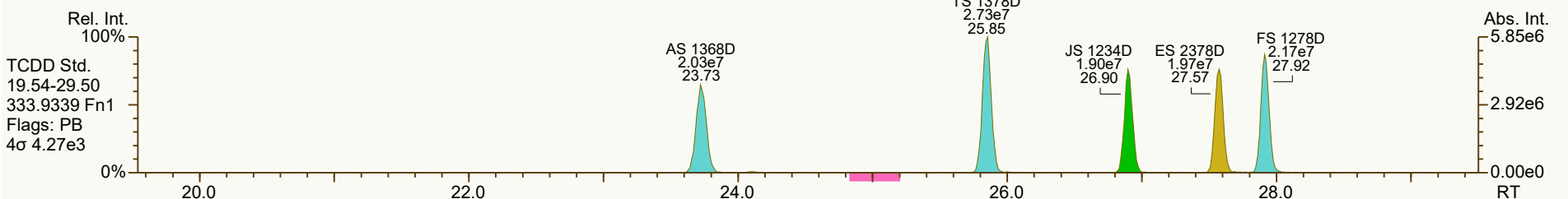
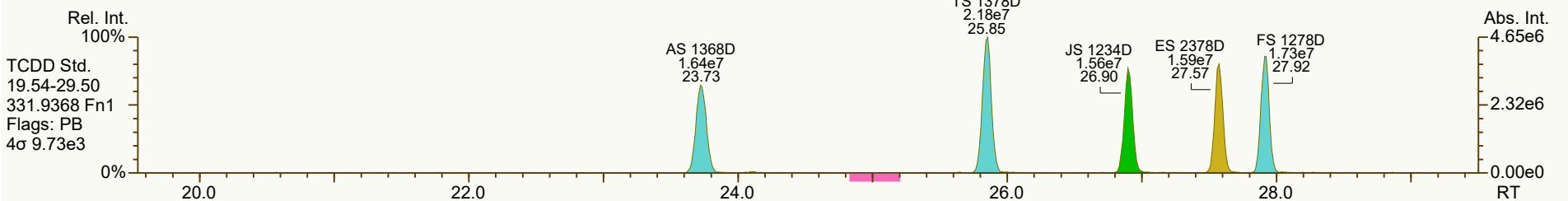
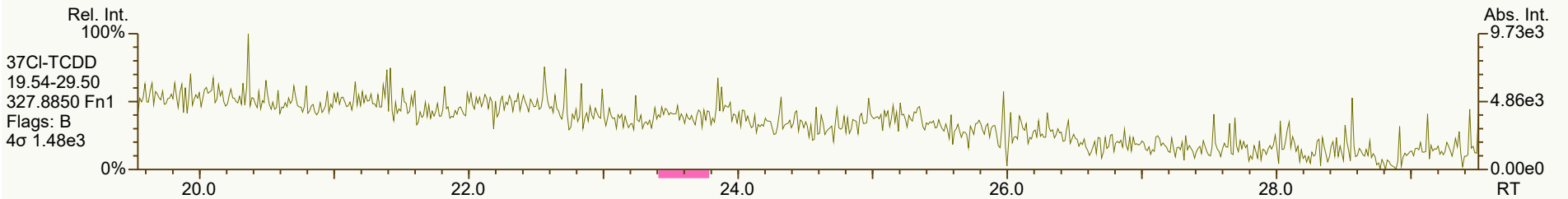
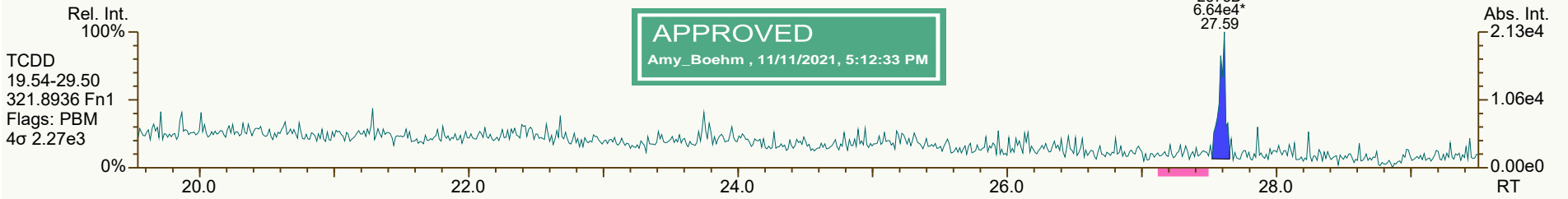
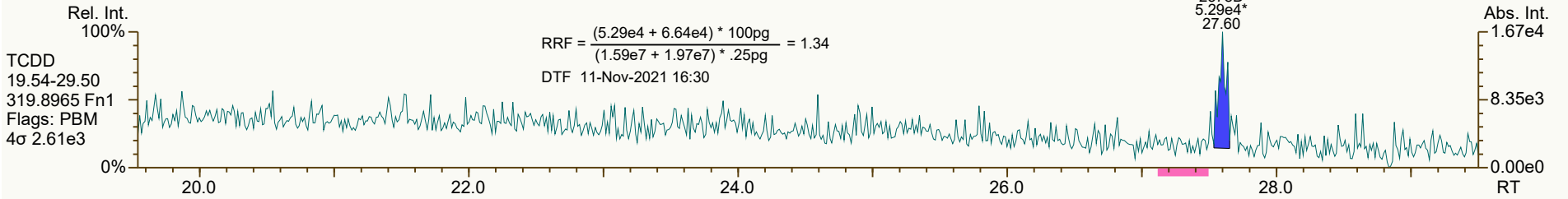
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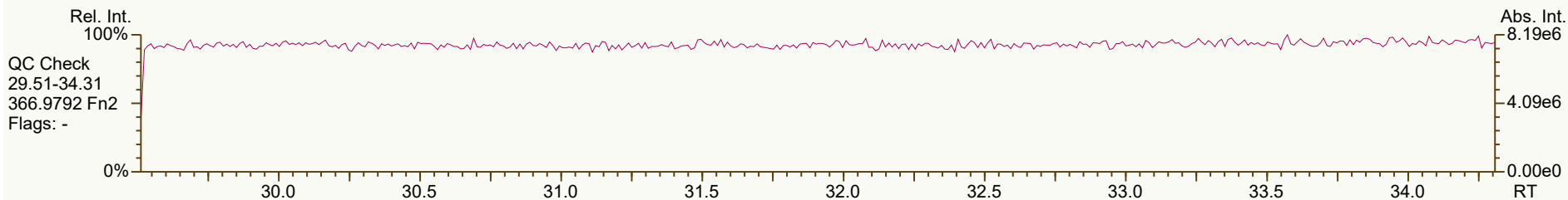
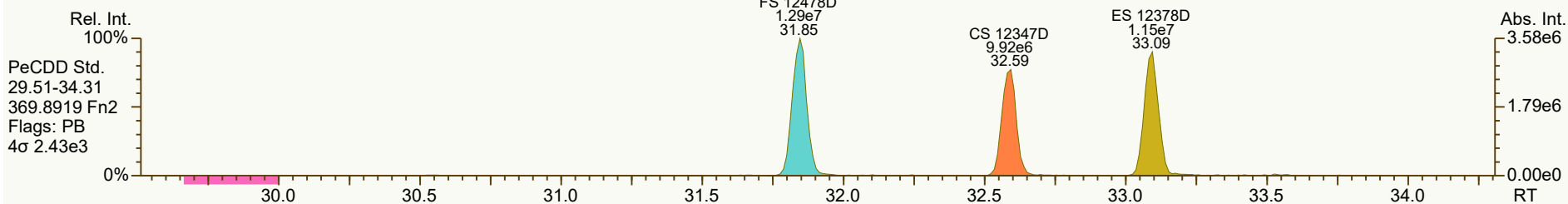
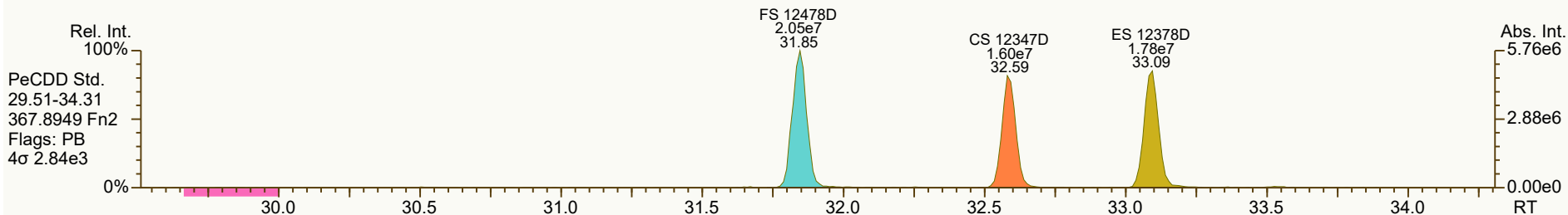
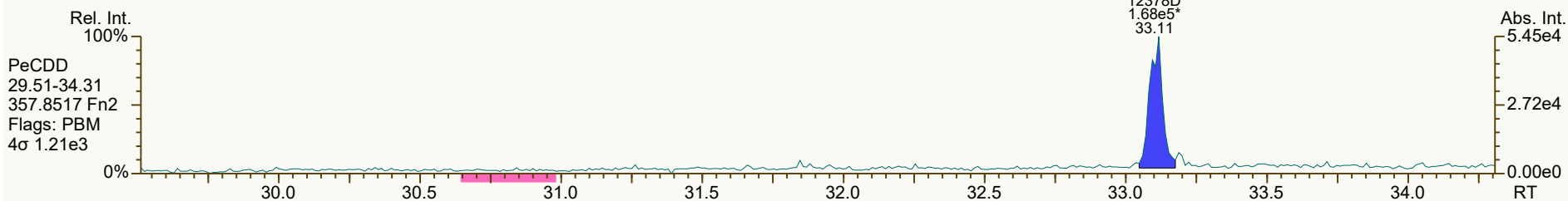
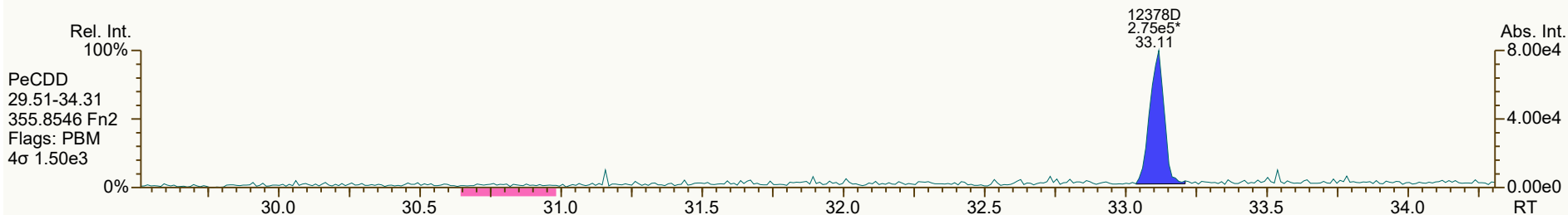
Dioxin/Furan ICAL Concentrations SGS Environmental Services								
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37C1-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

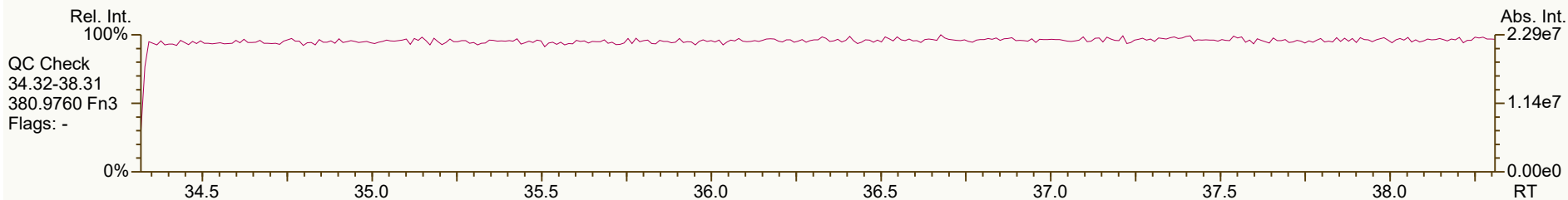
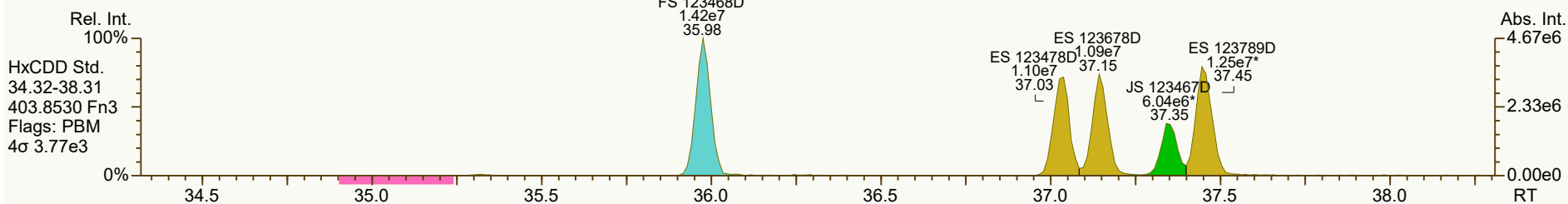
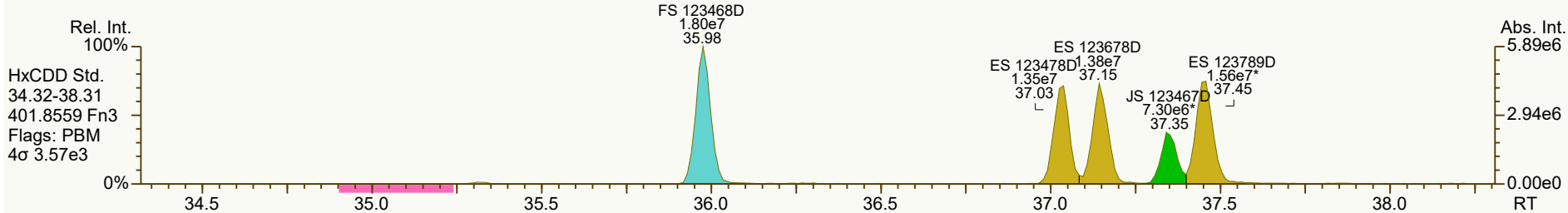
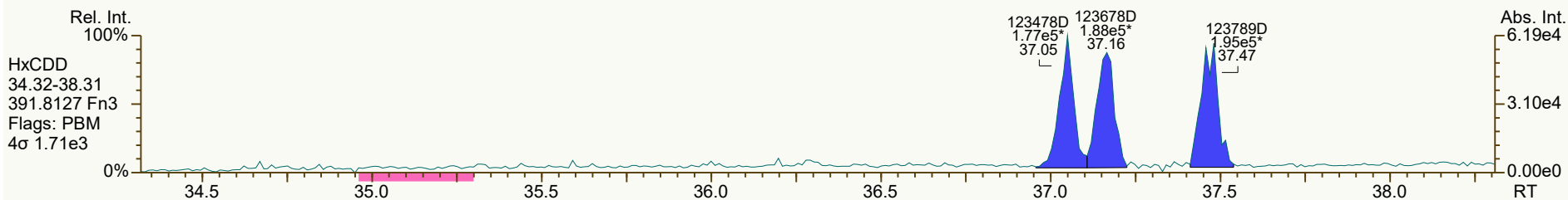
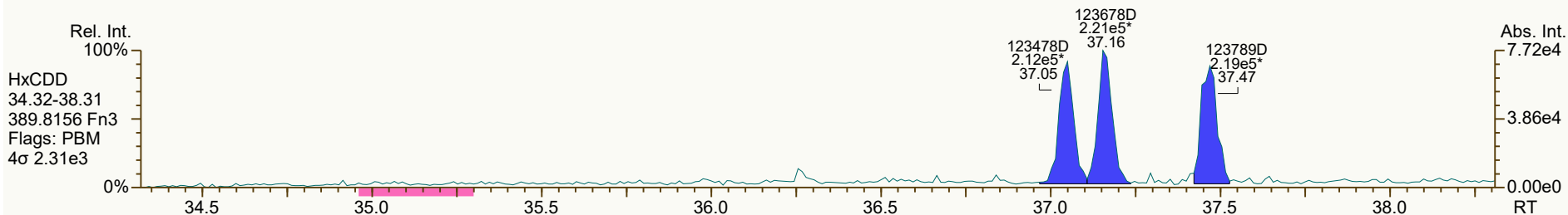
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF			Checkcode: 245-007-QLD		
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C04		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

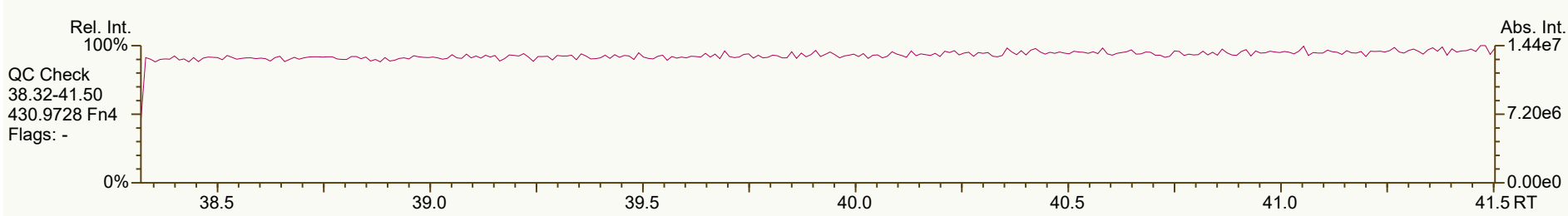
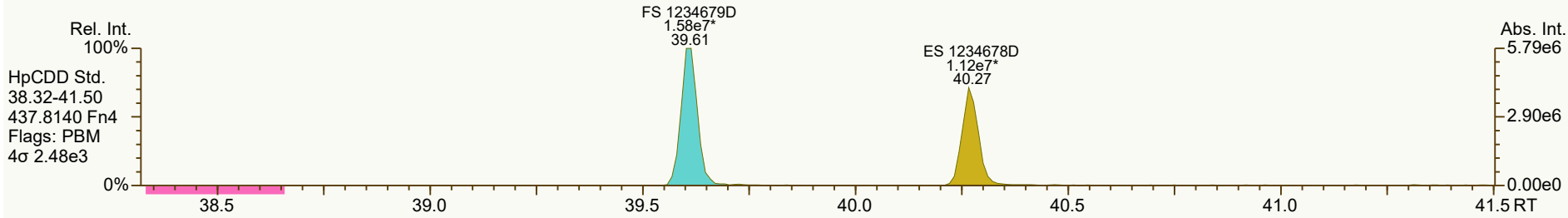
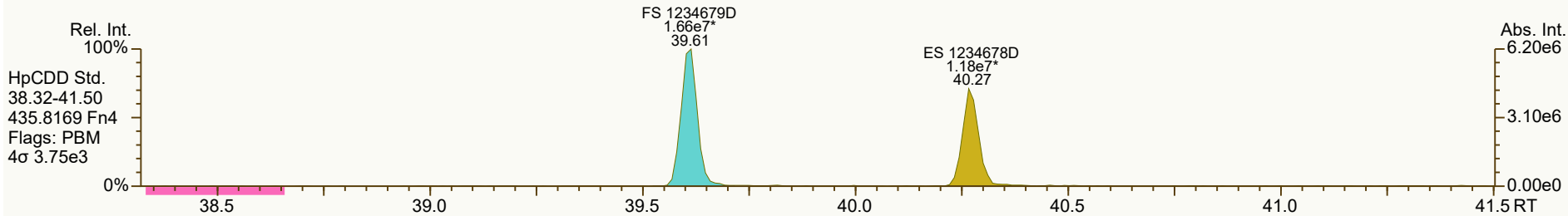
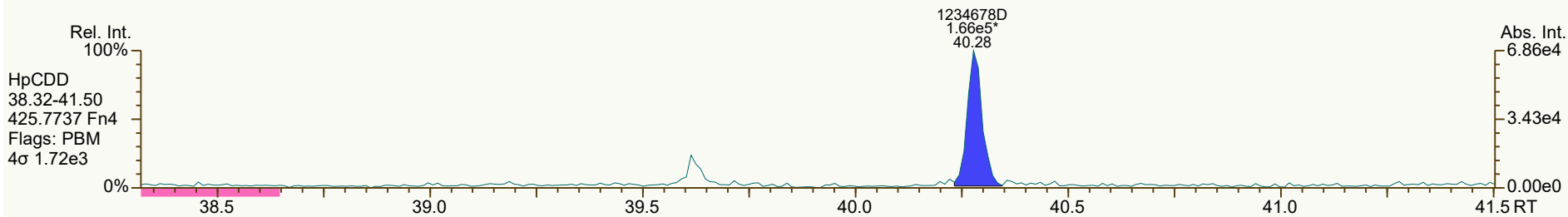
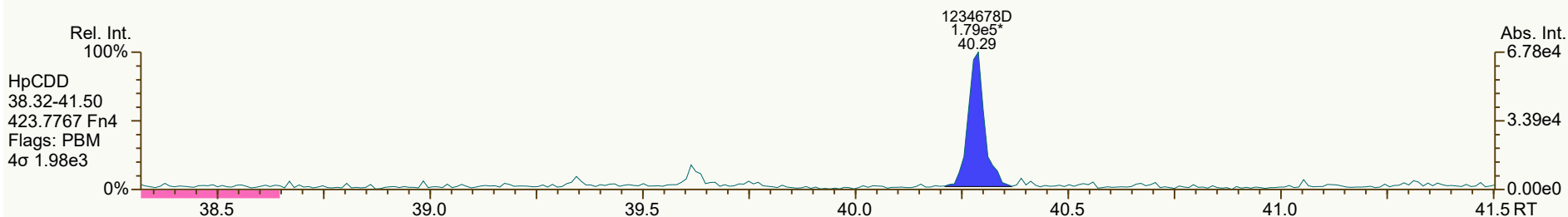
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF			Checkcode: 245-007-QLD		
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C04		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37C1-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37C1-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%







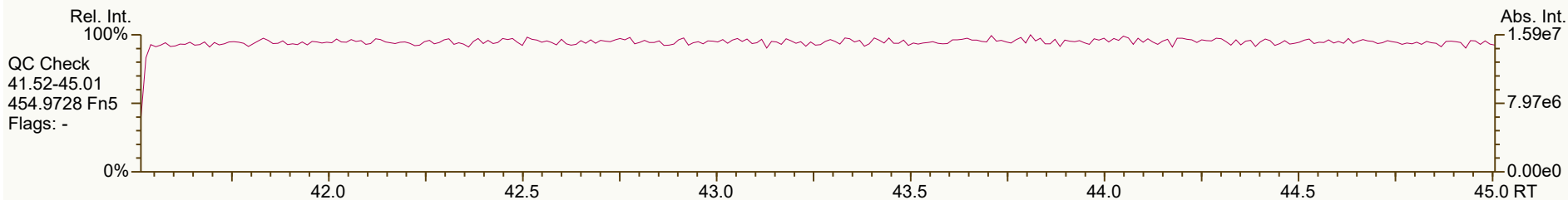
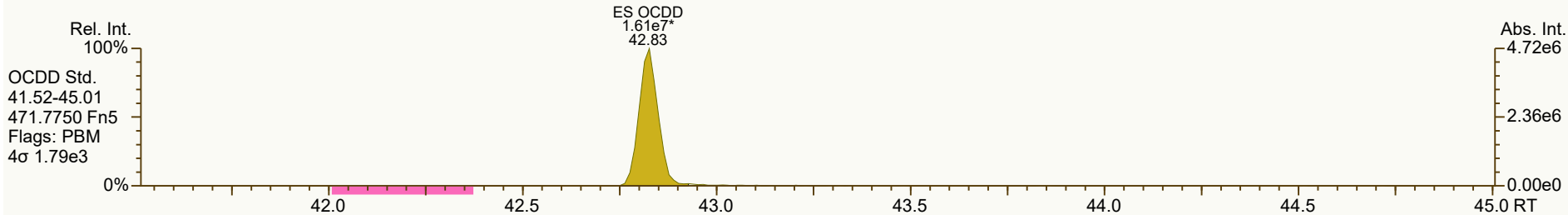
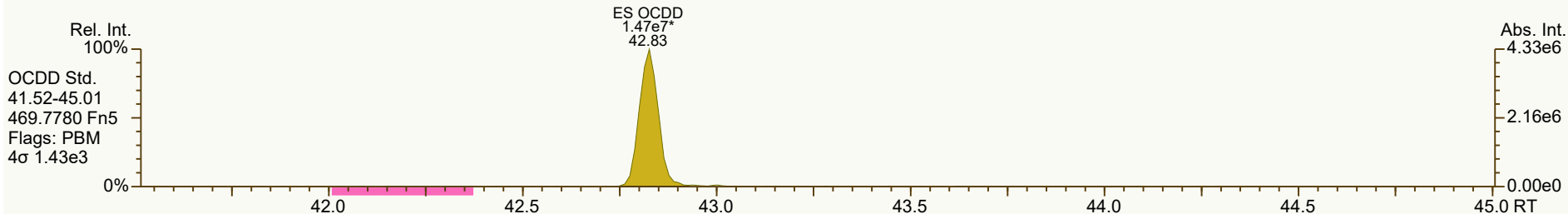
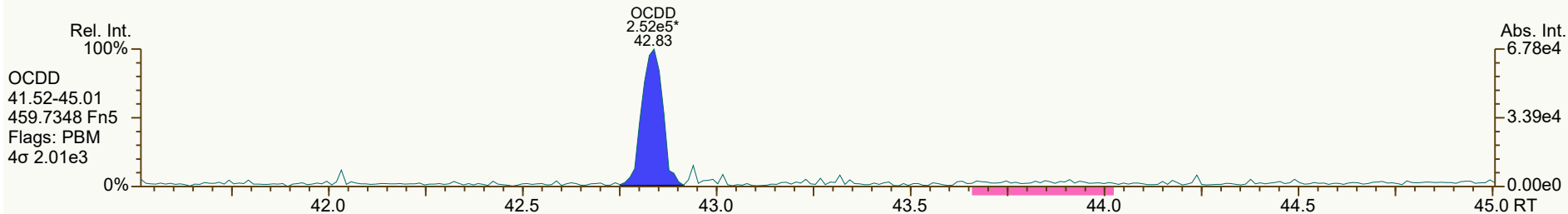
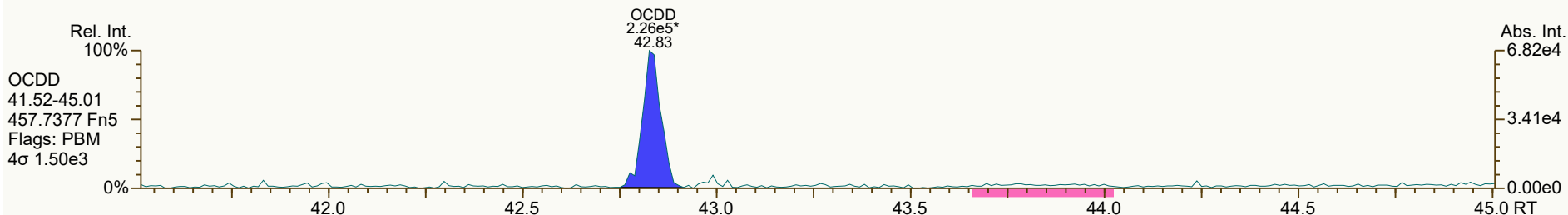


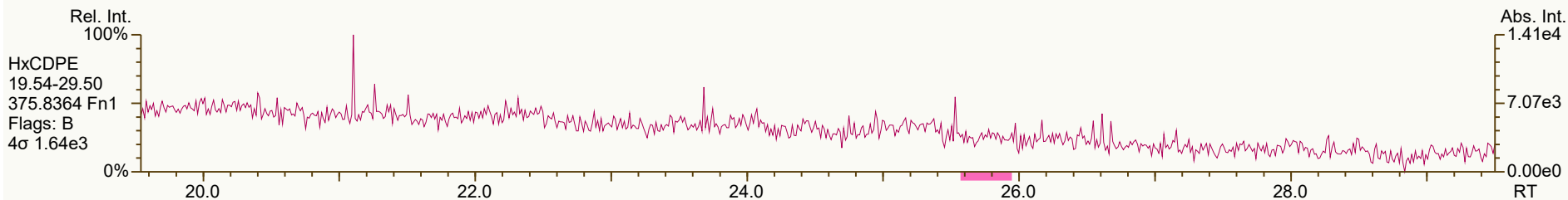
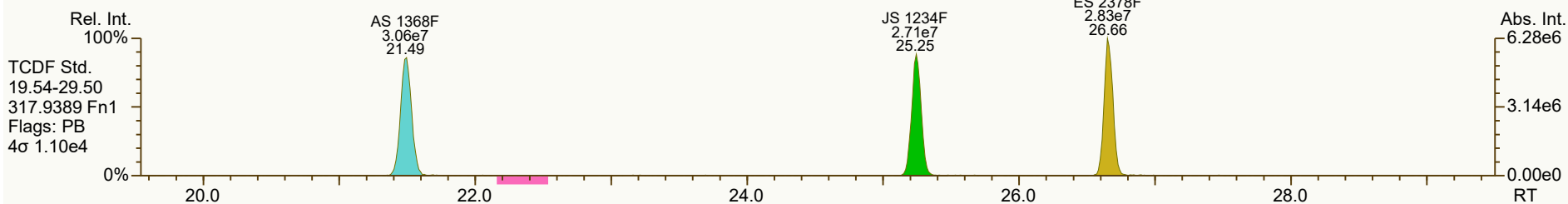
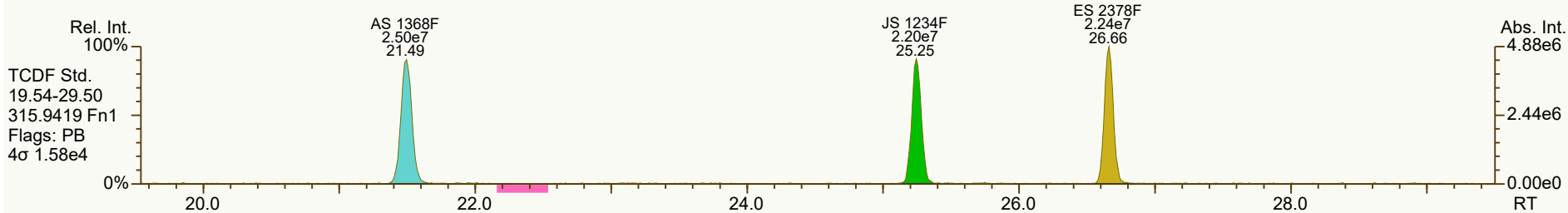
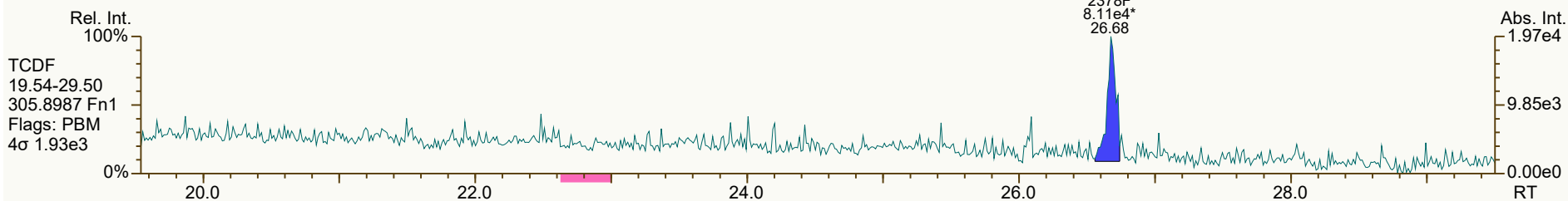
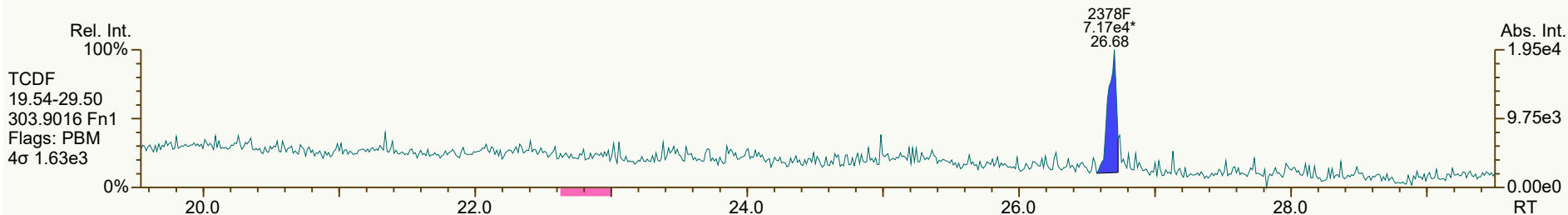


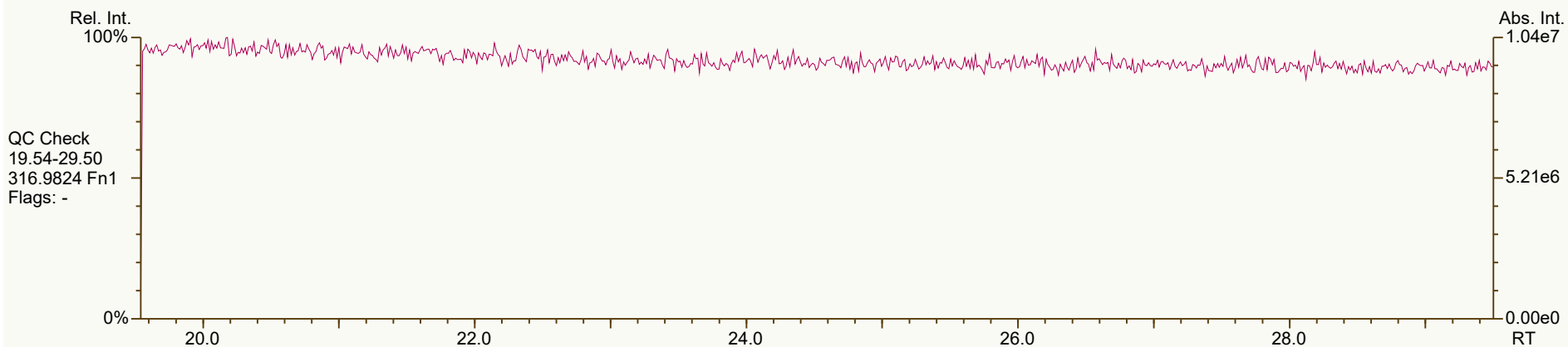
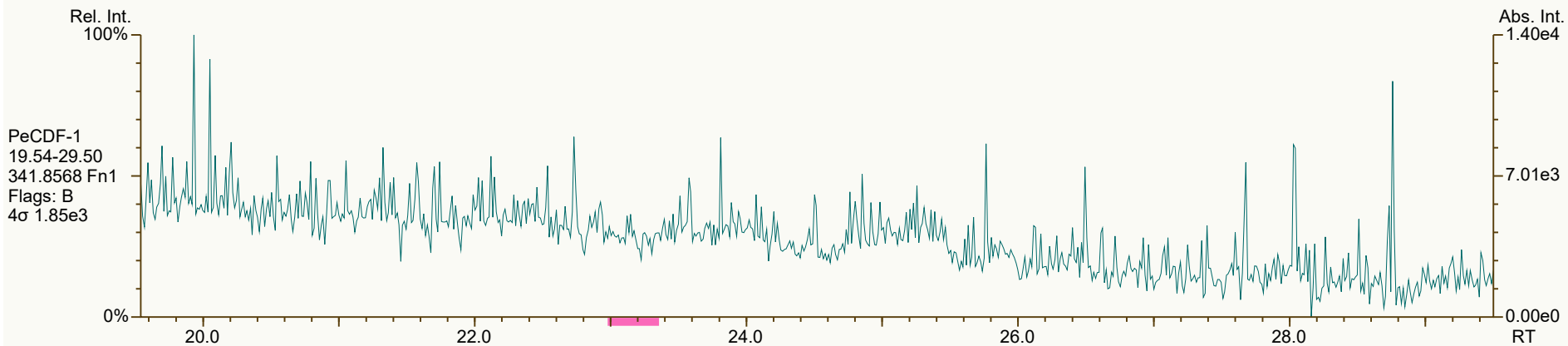
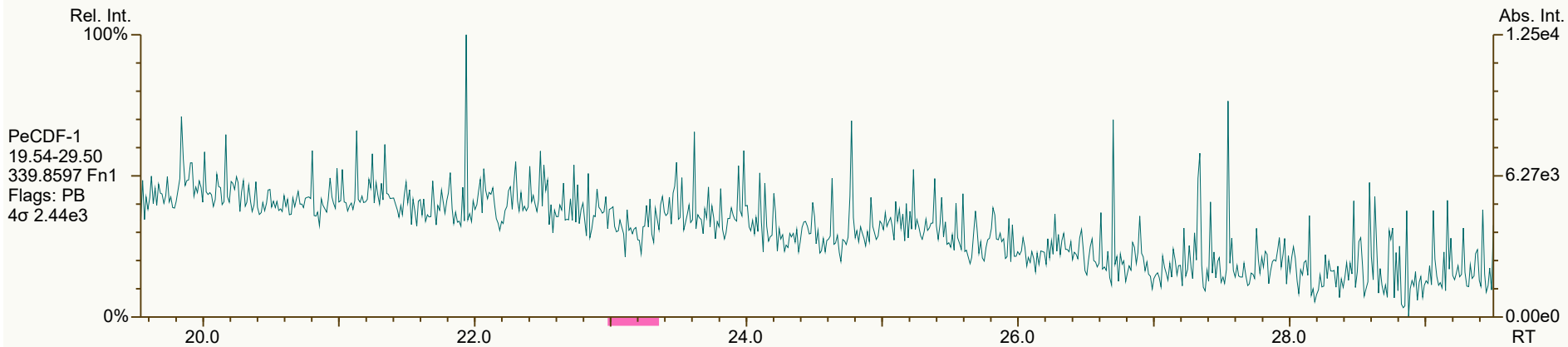
SGS ID: CS0_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

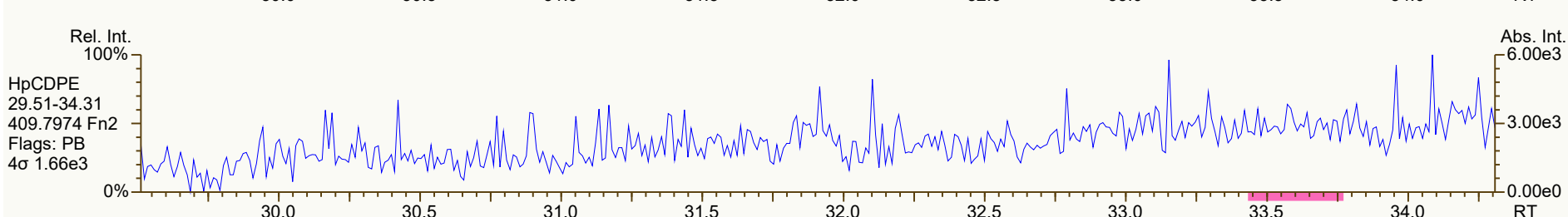
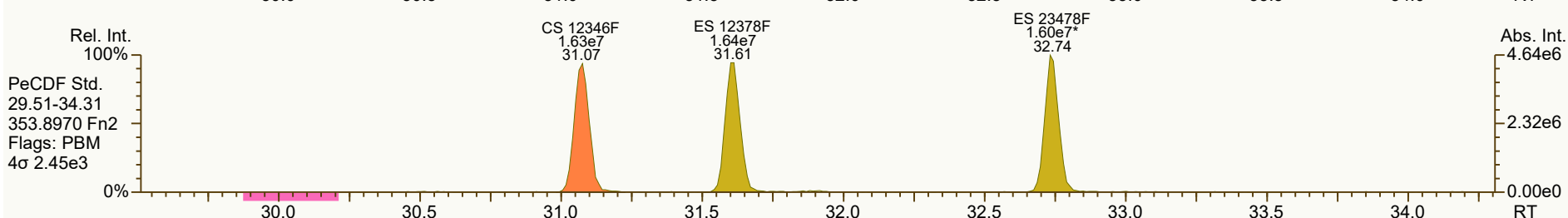
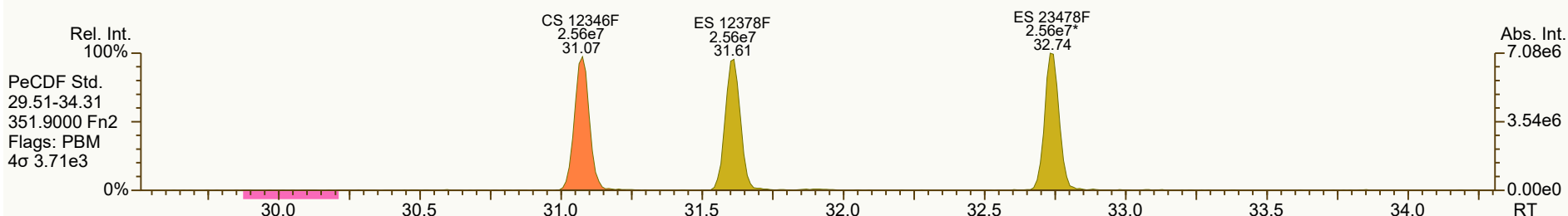
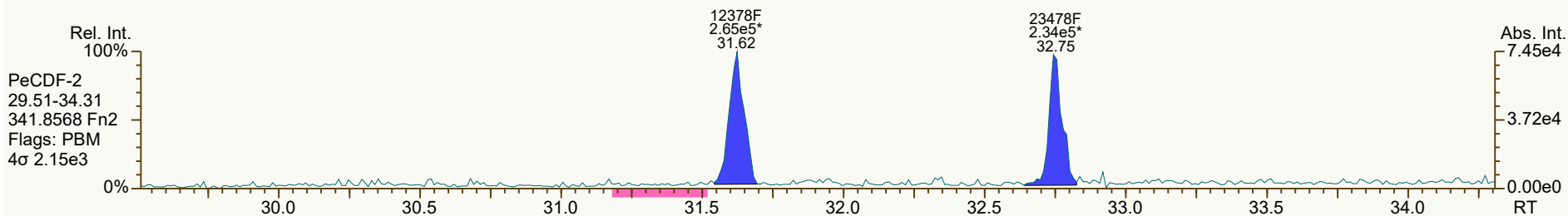
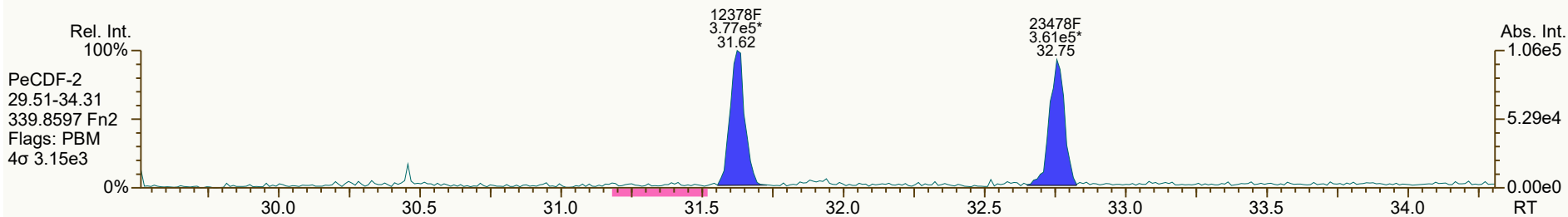
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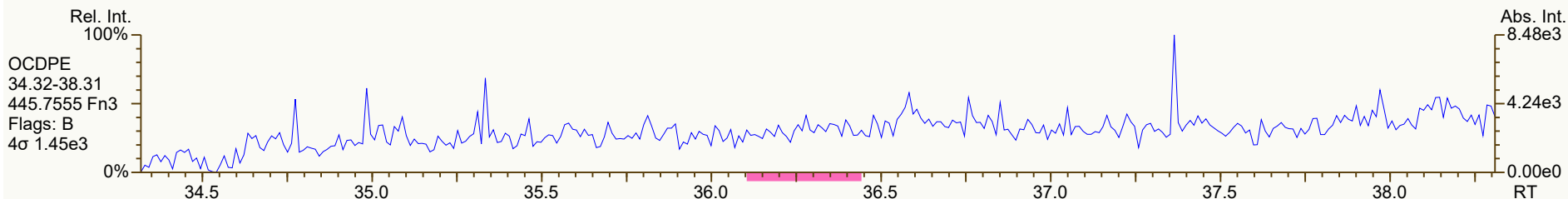
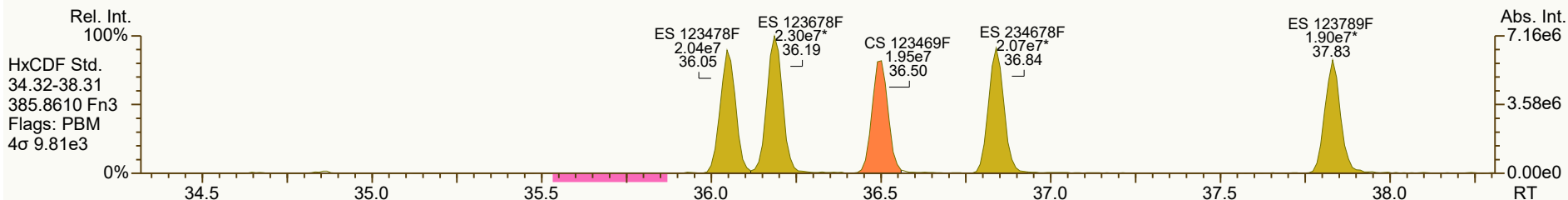
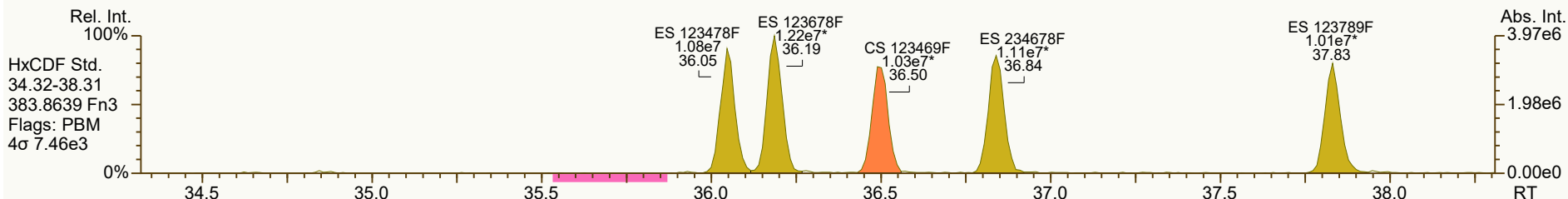
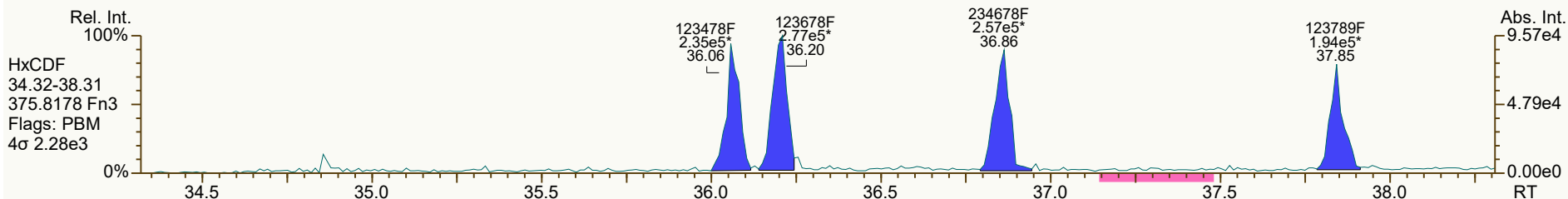
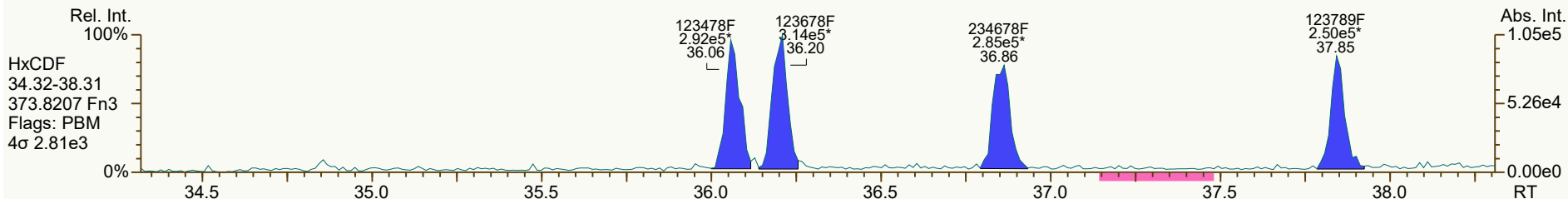
Acq: 10-Nov-2021 11:02:13
User: DTF Datafile: 211110C04

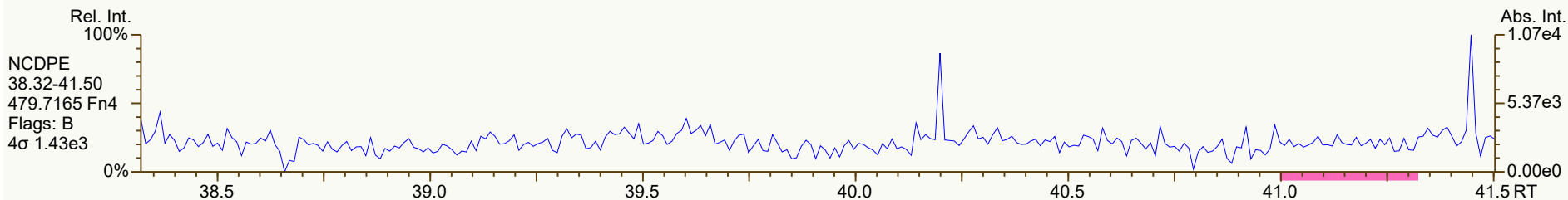
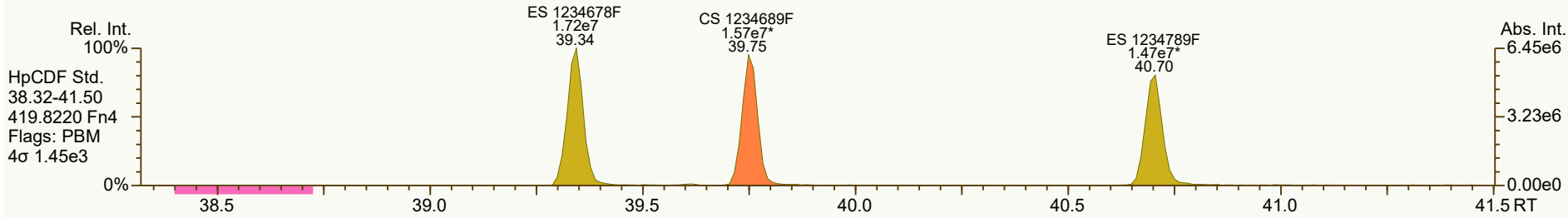
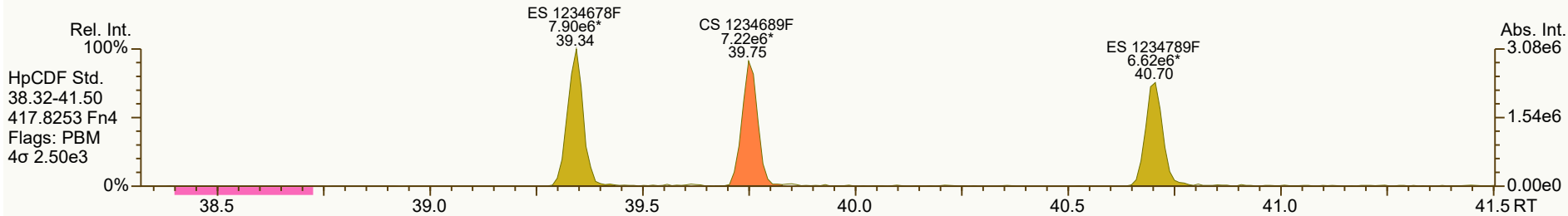
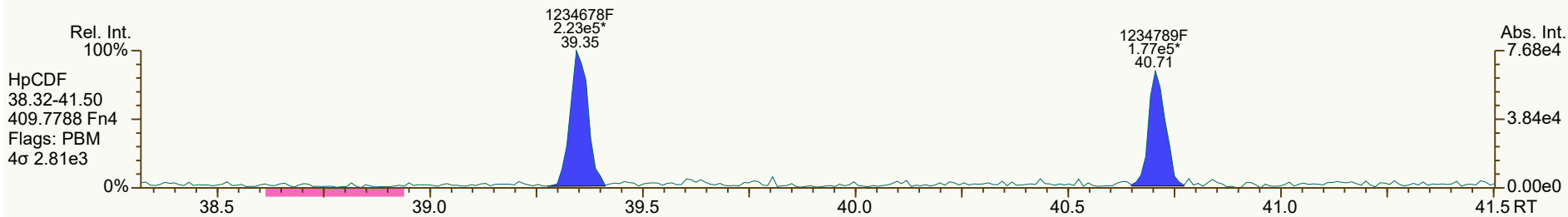
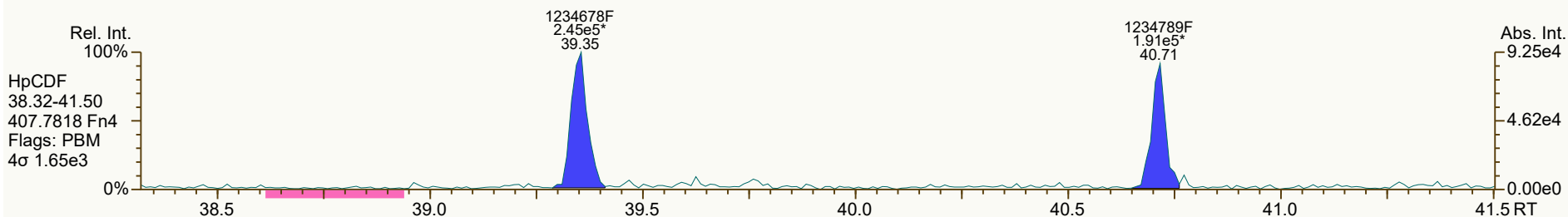


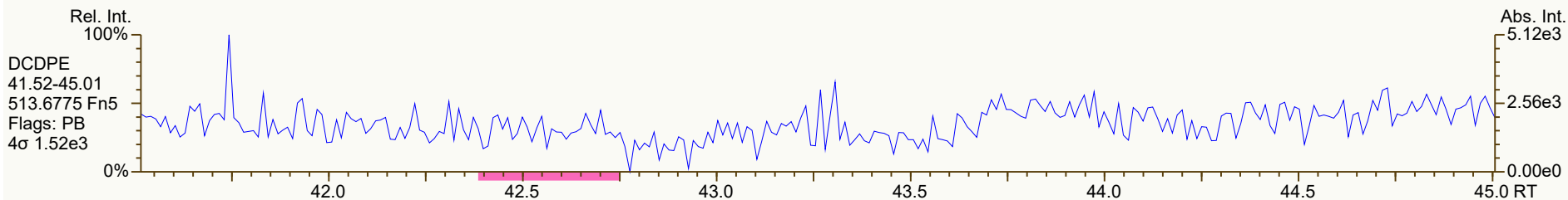
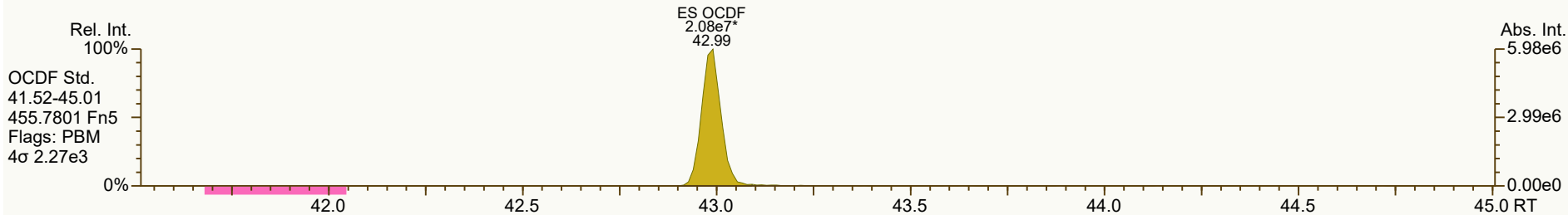
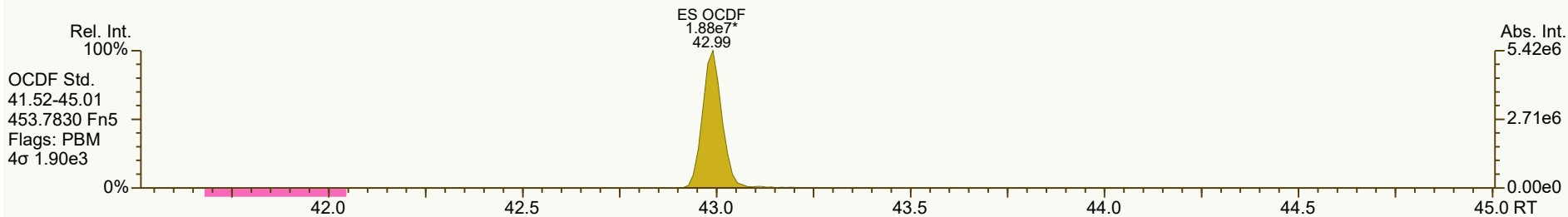
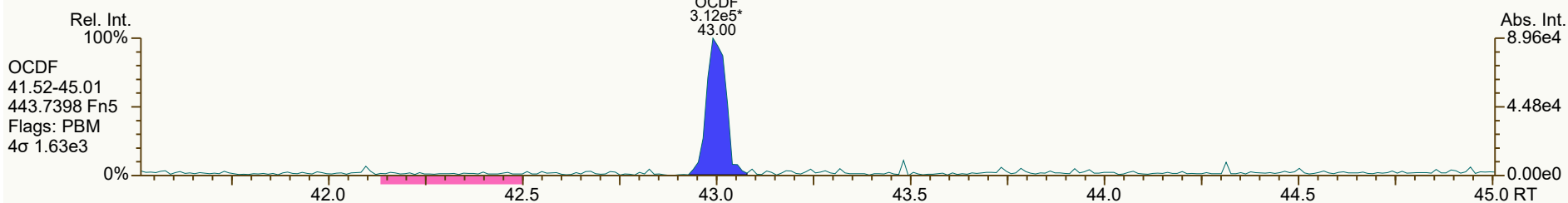
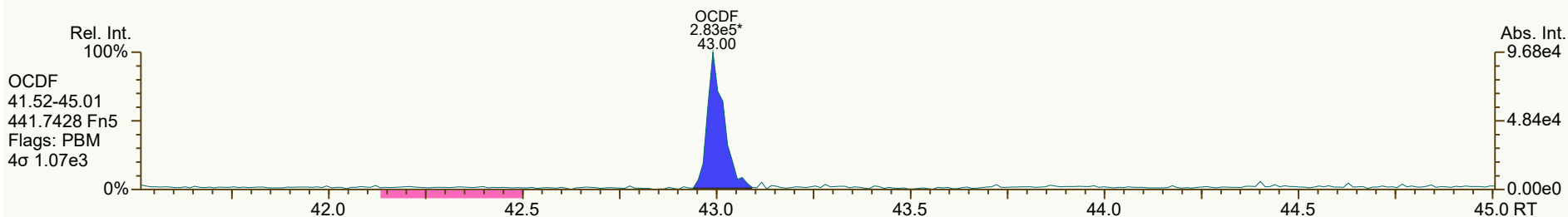






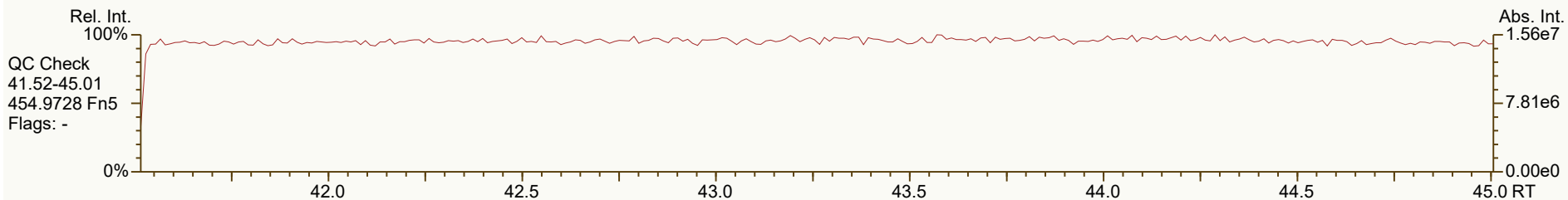
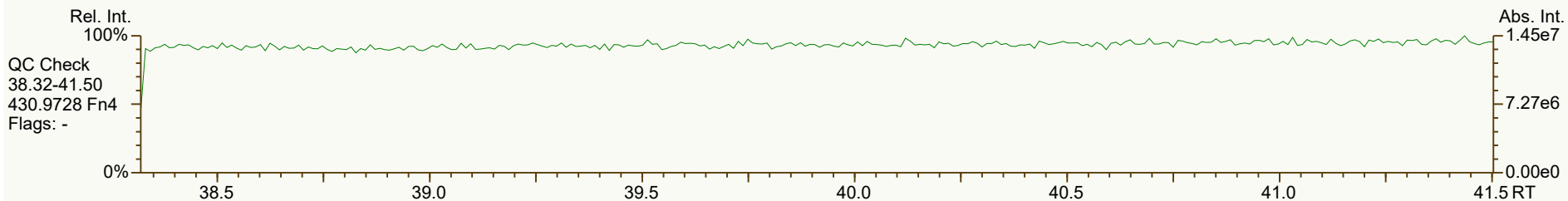
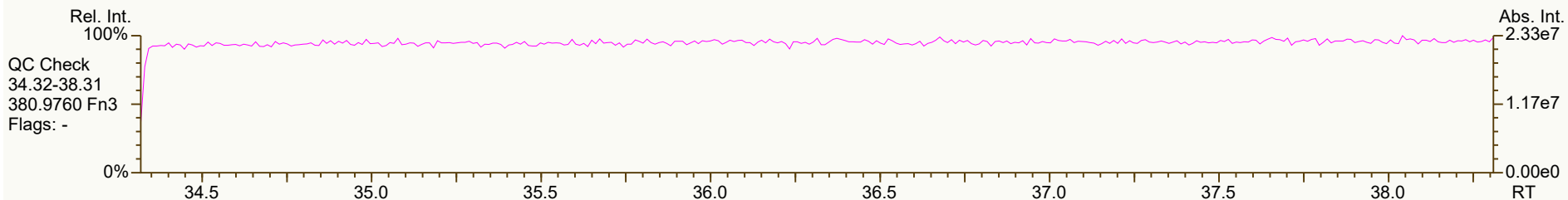
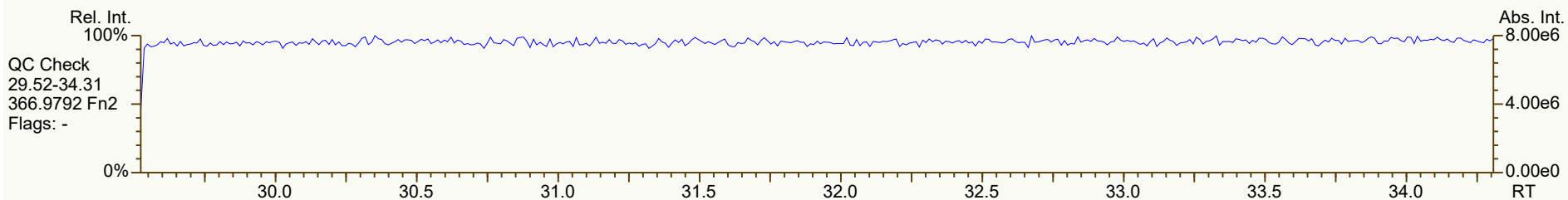
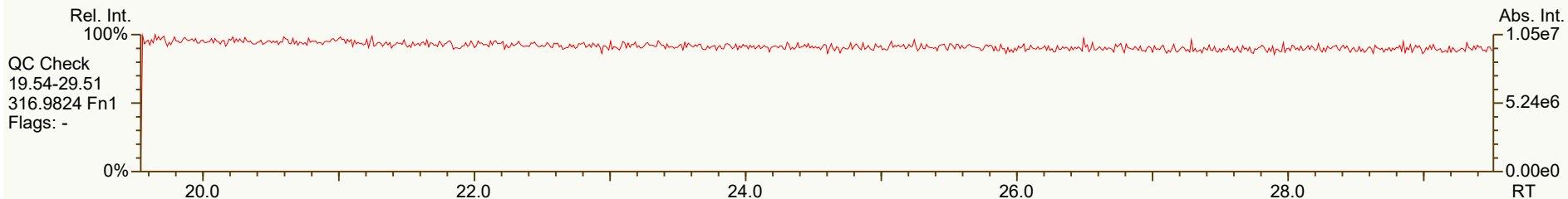


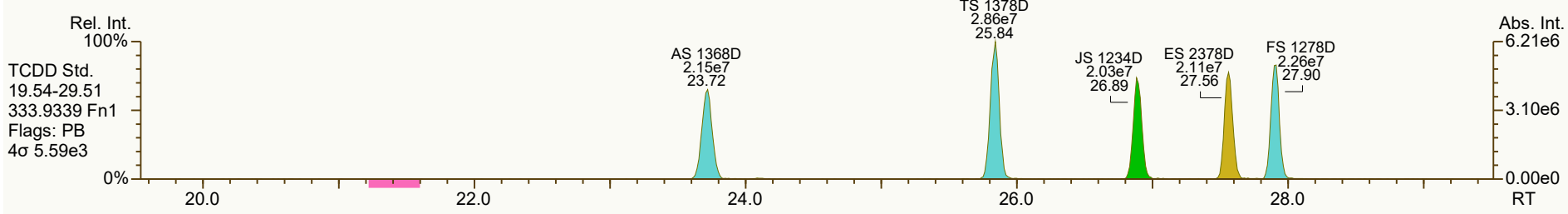
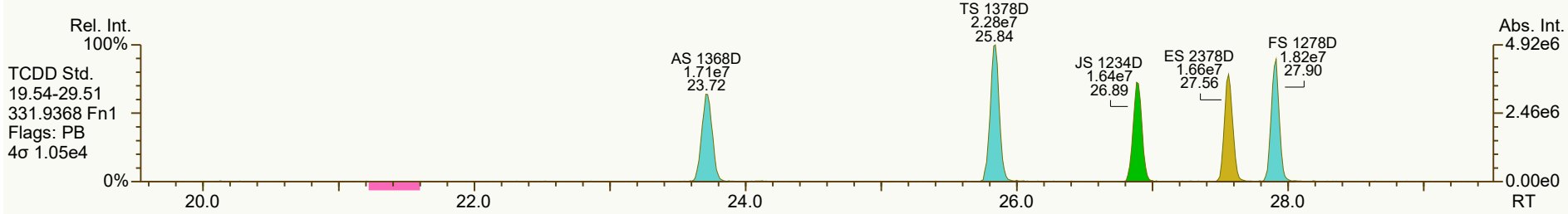
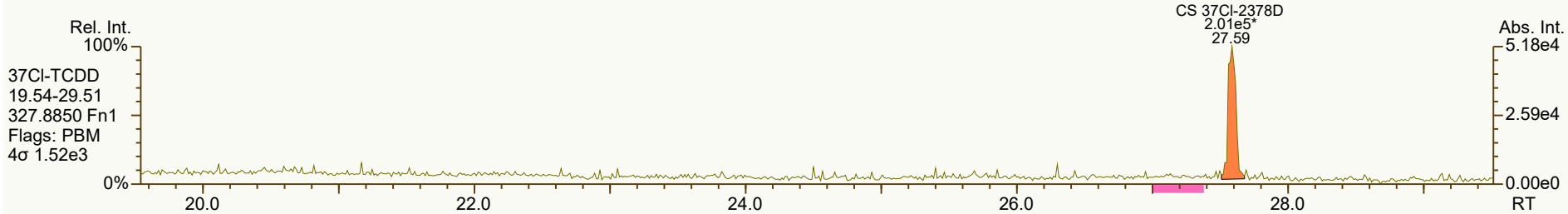
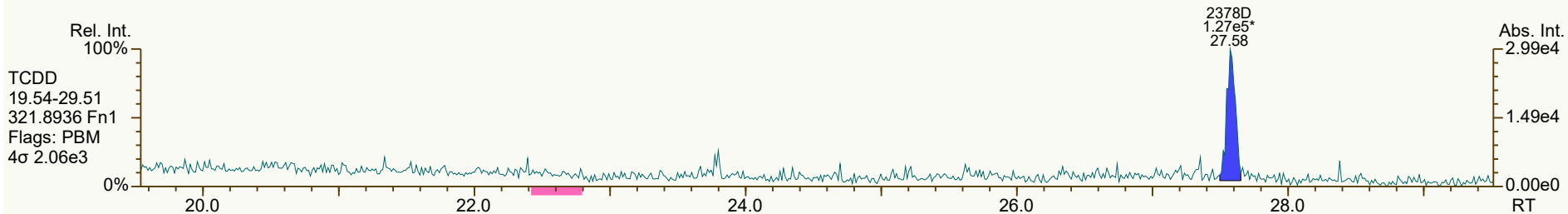
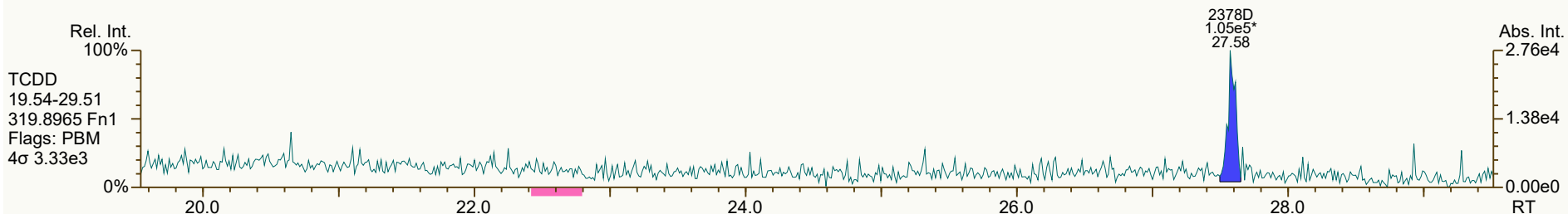


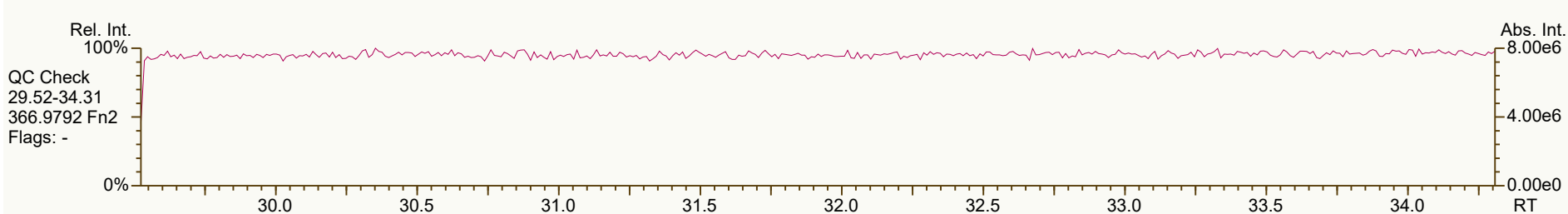
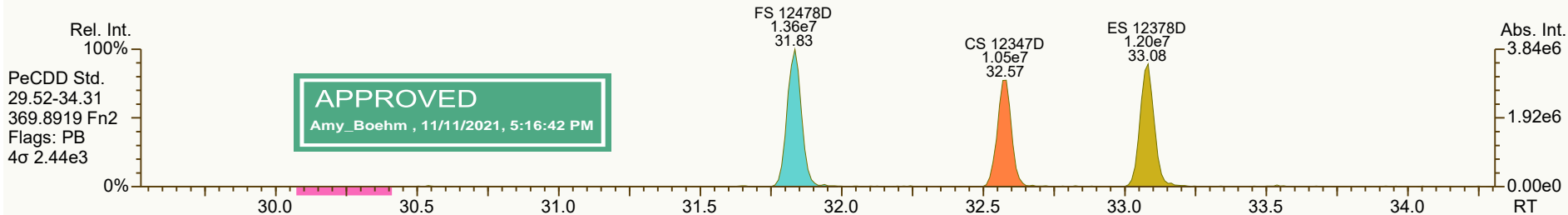
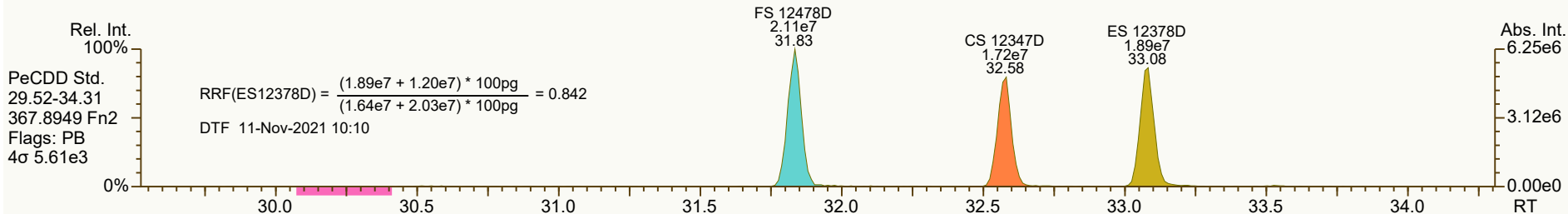
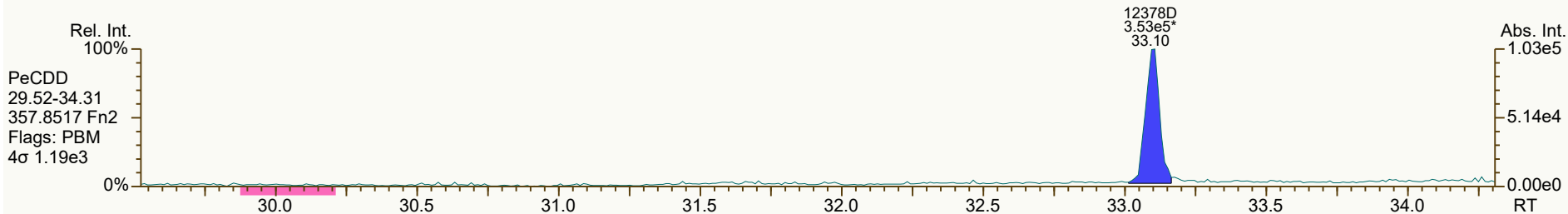
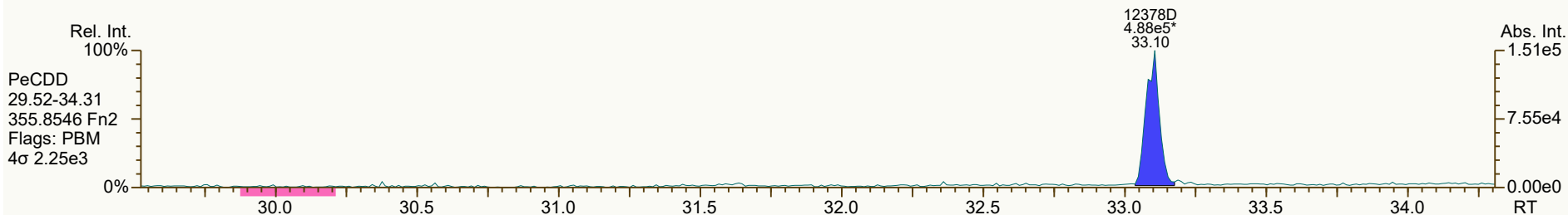


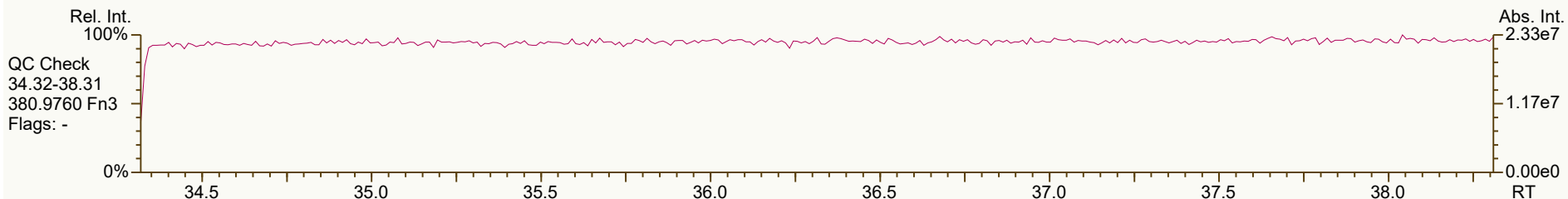
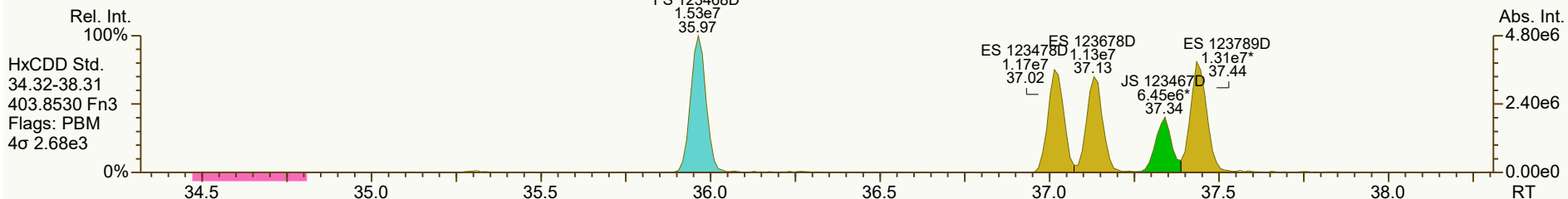
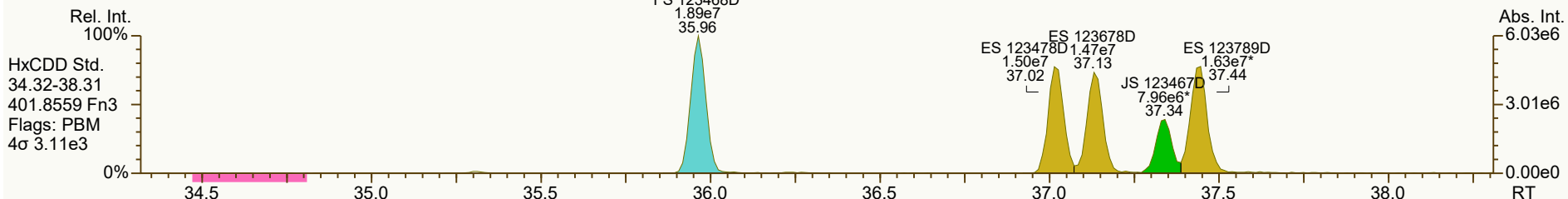
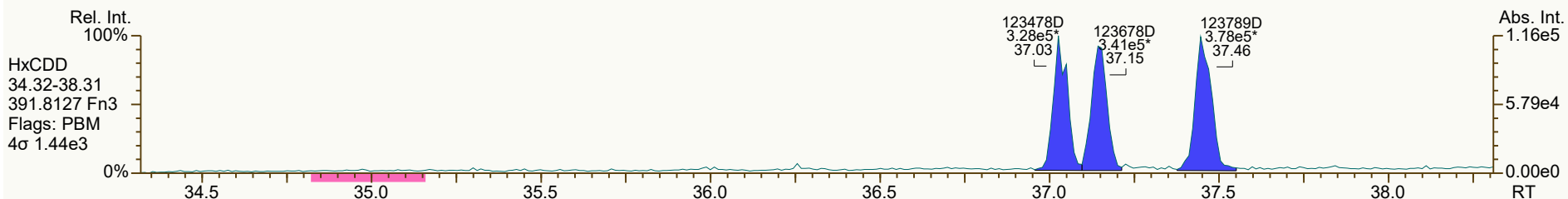
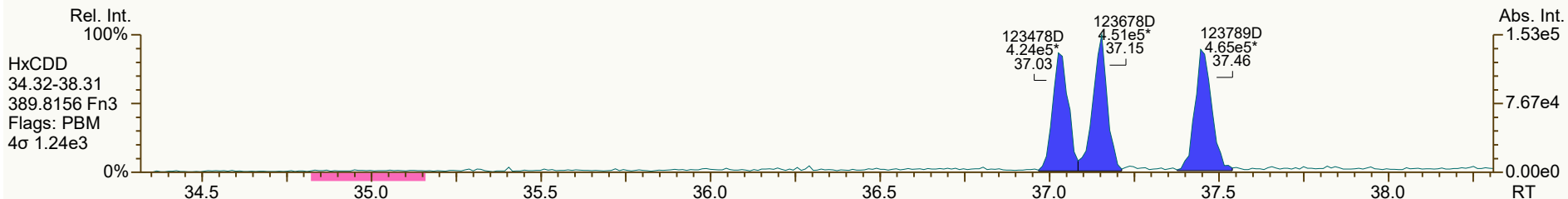
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF			Checkcode: 419-111-CRN		
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C05		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

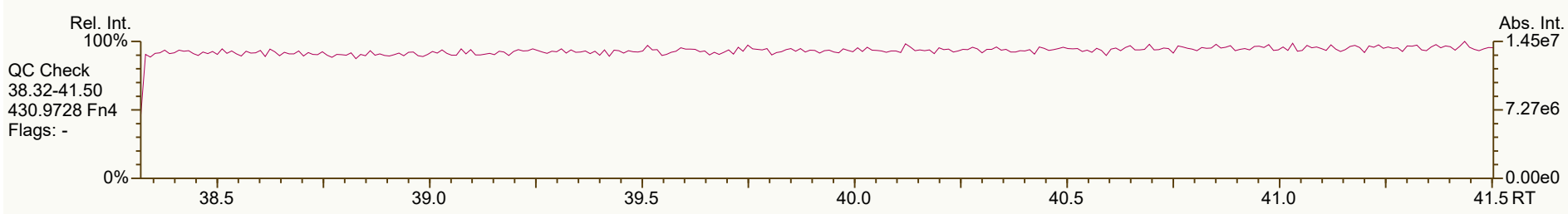
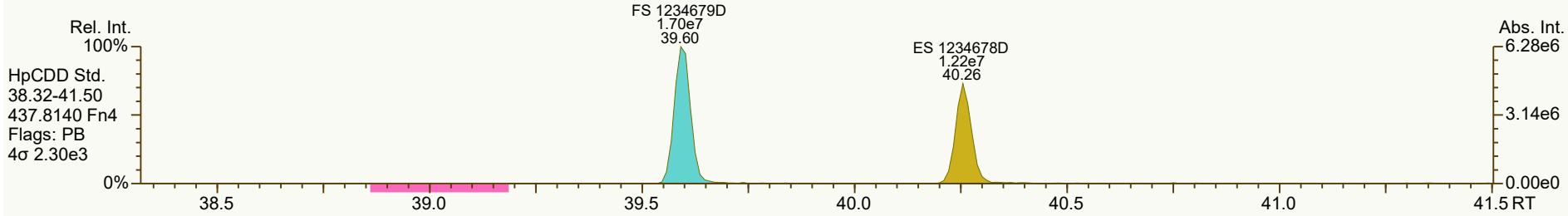
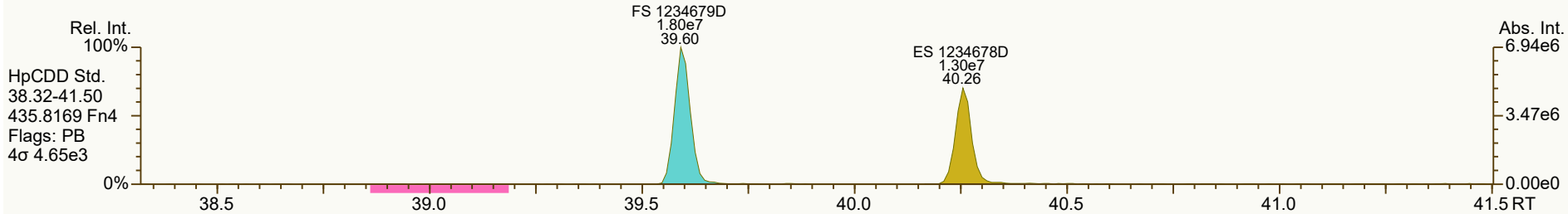
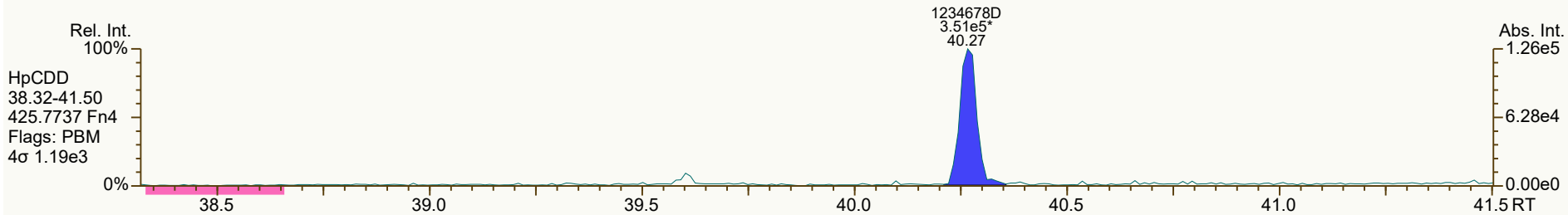
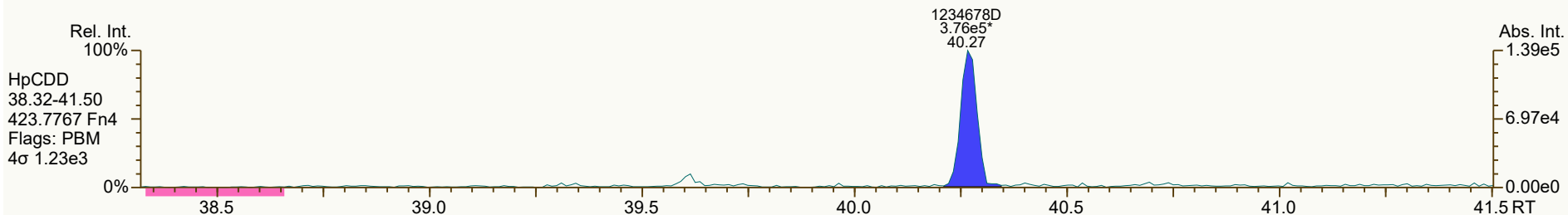
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF			Checkcode: 419-111-CRN		
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C05		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37C1-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37C1-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

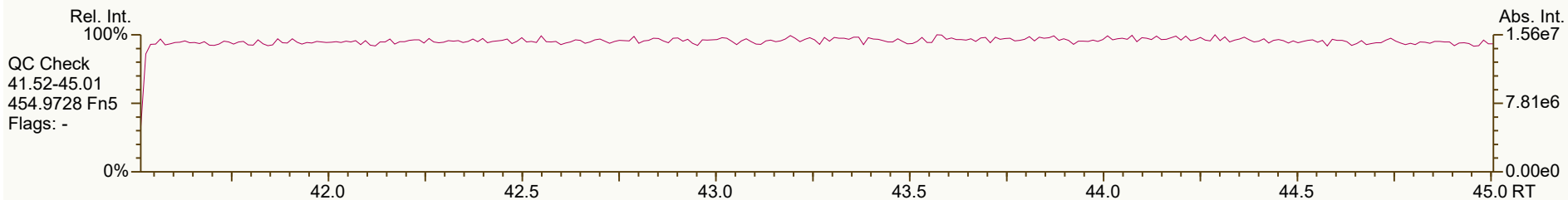
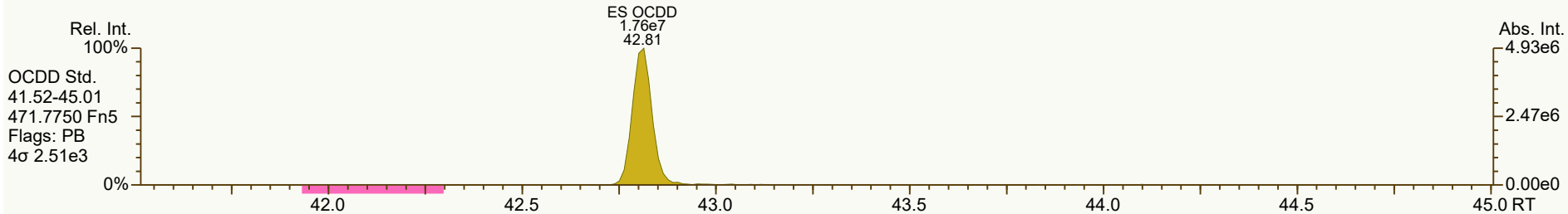
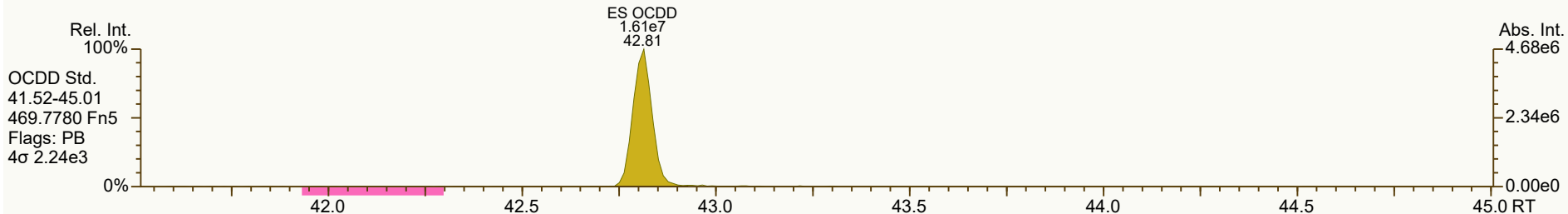
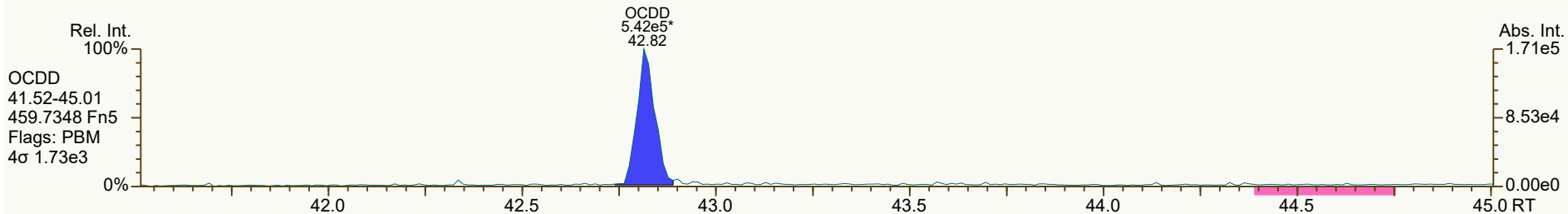
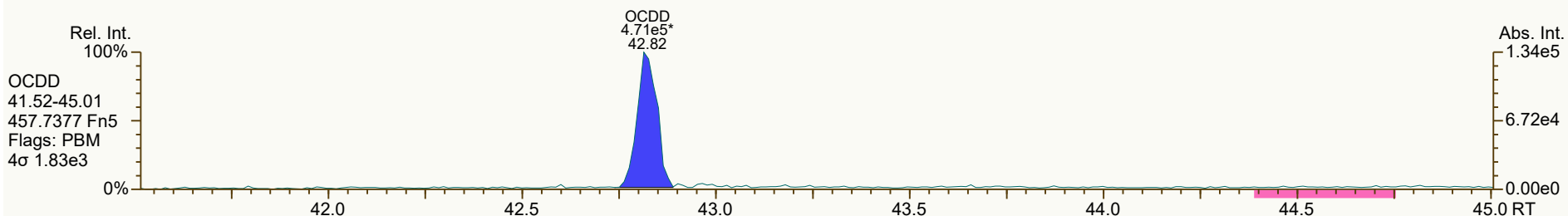


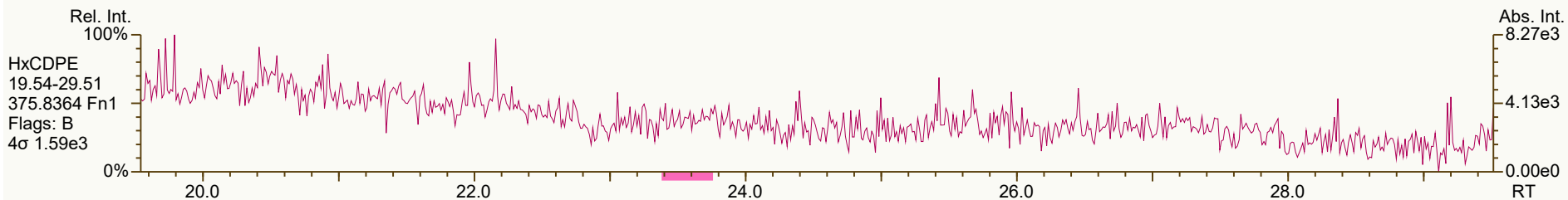
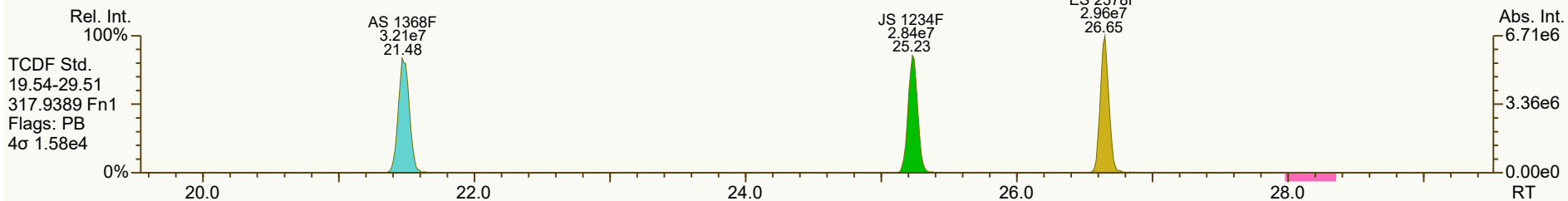
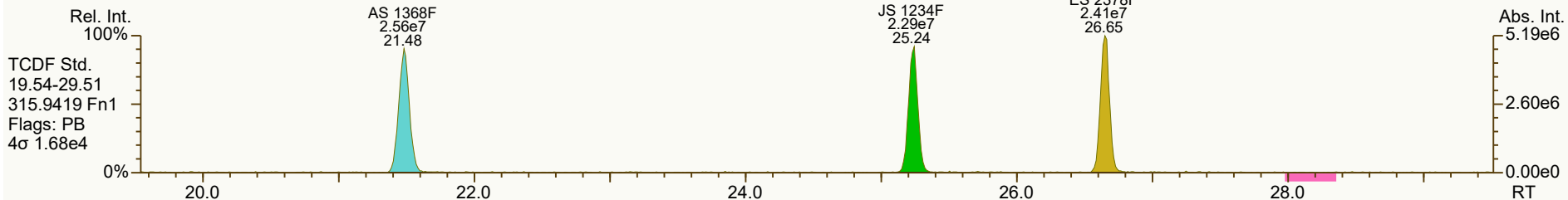
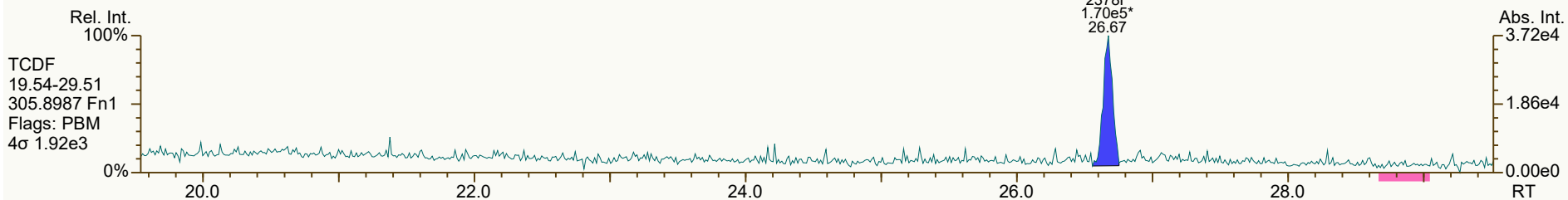
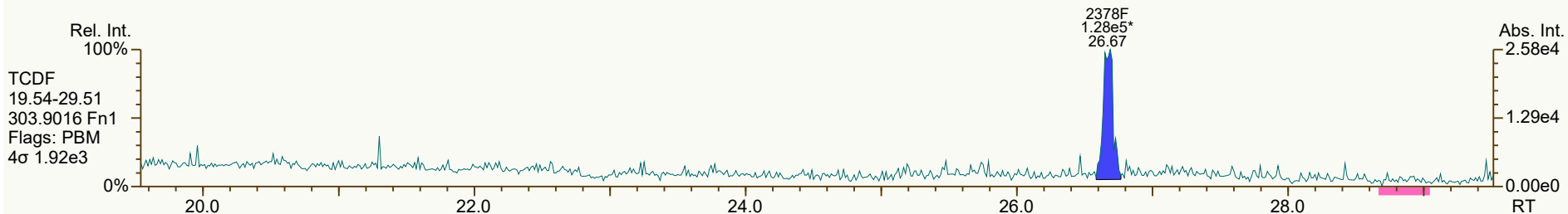


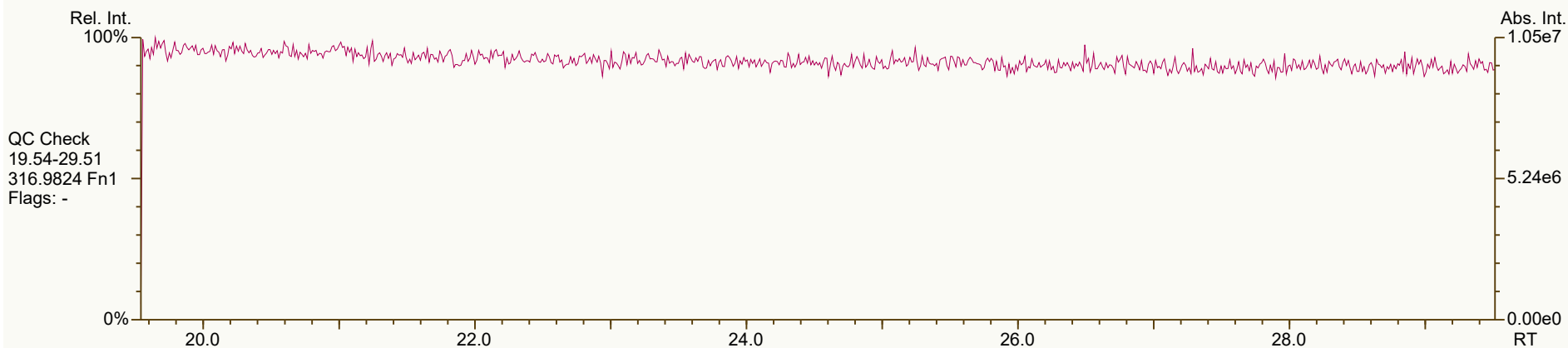
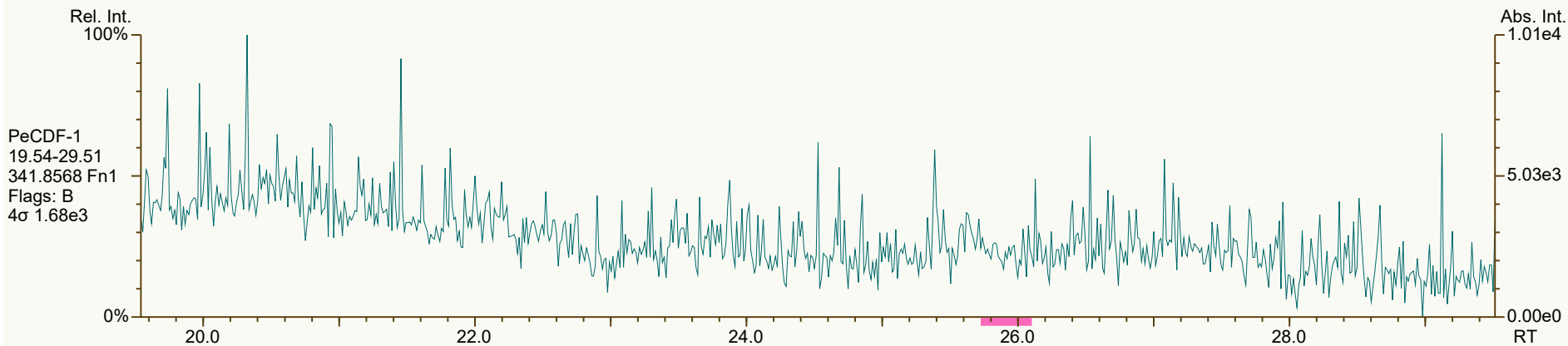
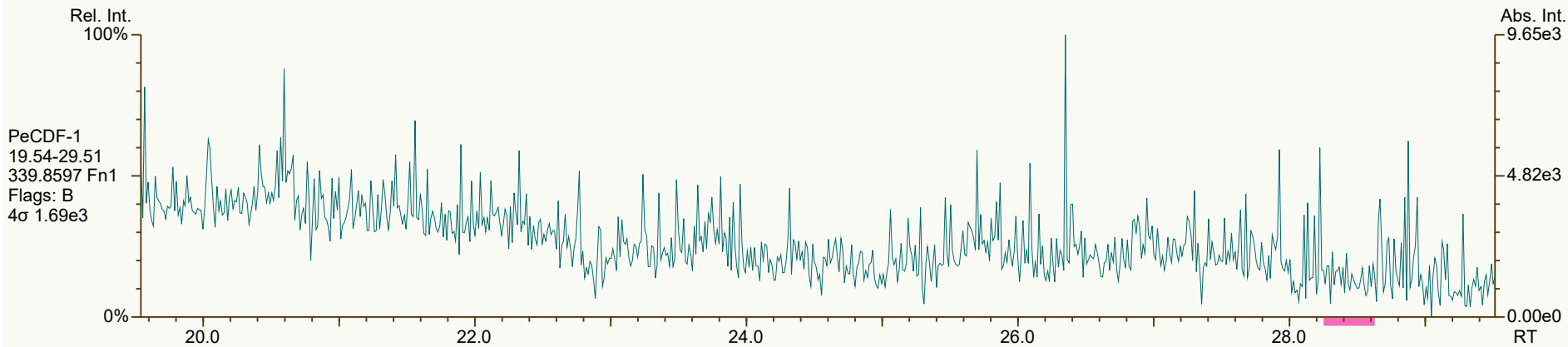


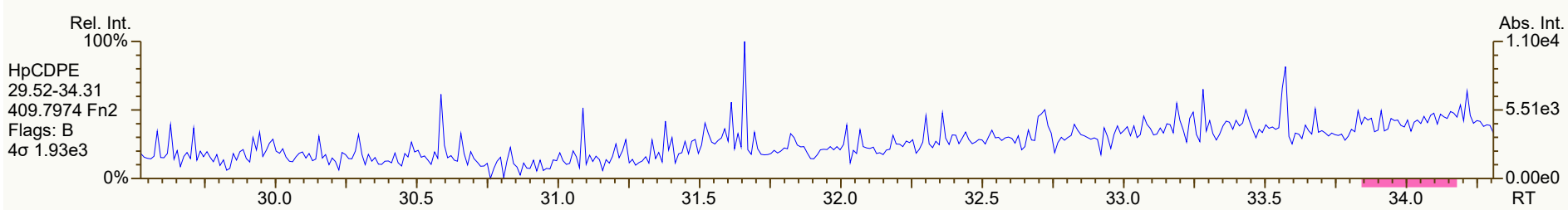
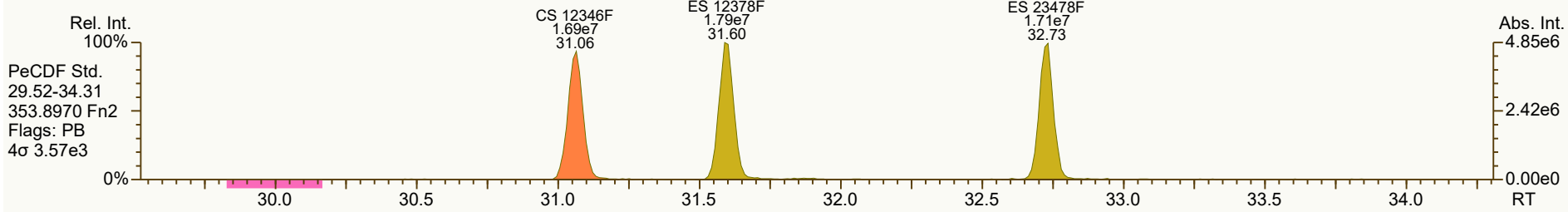
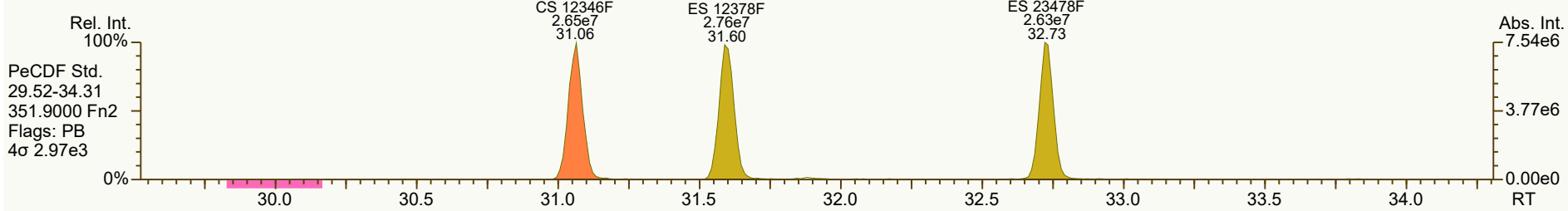
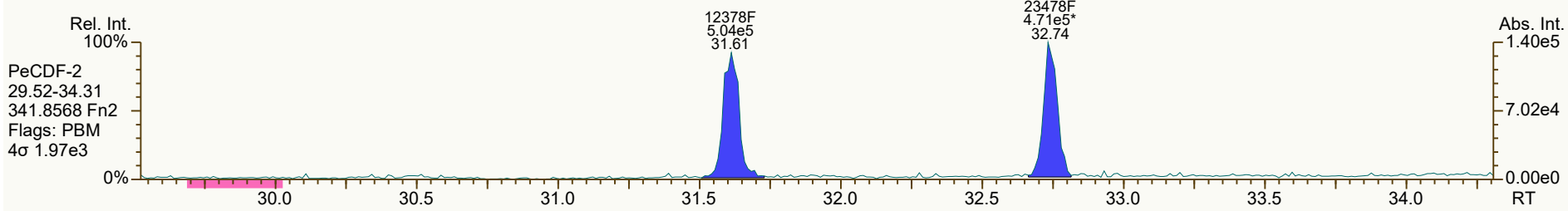
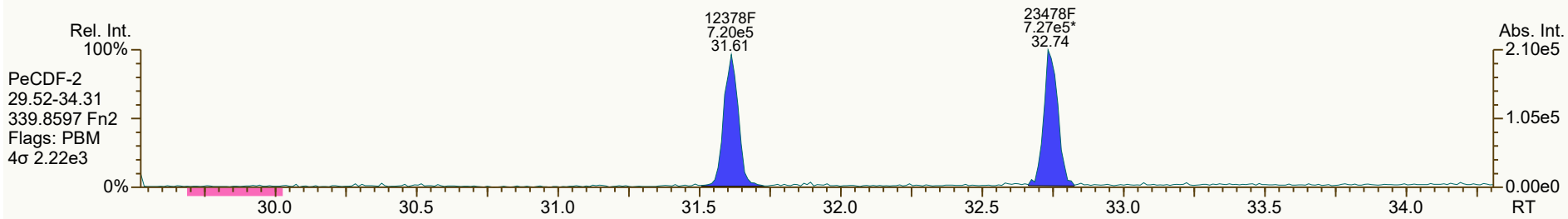


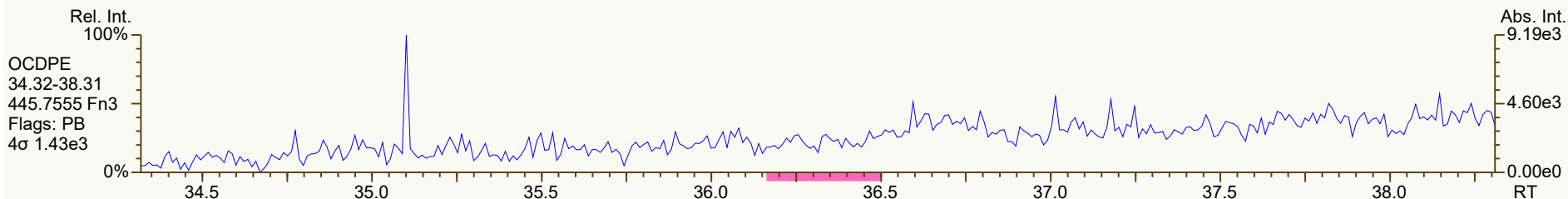
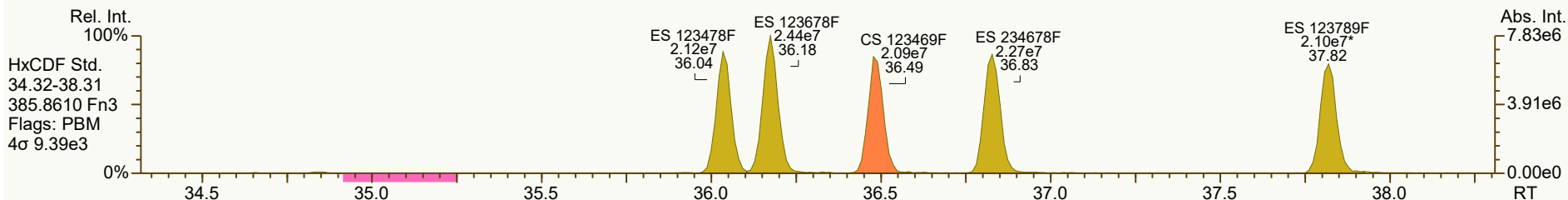
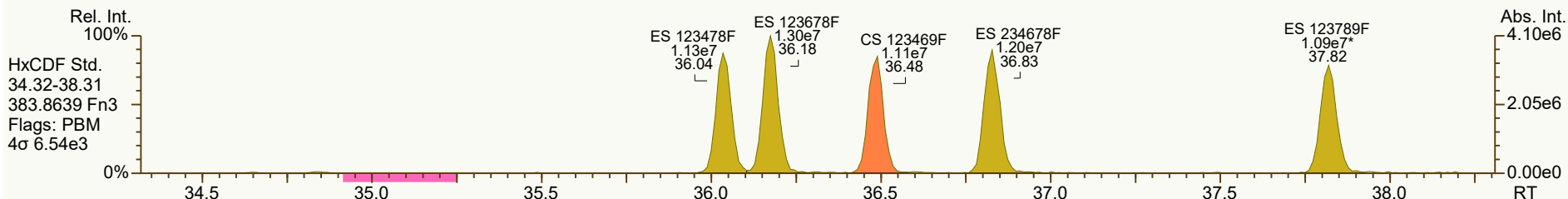
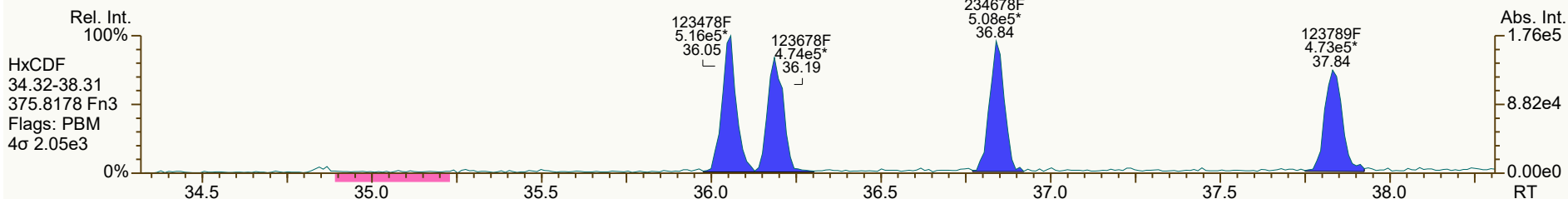
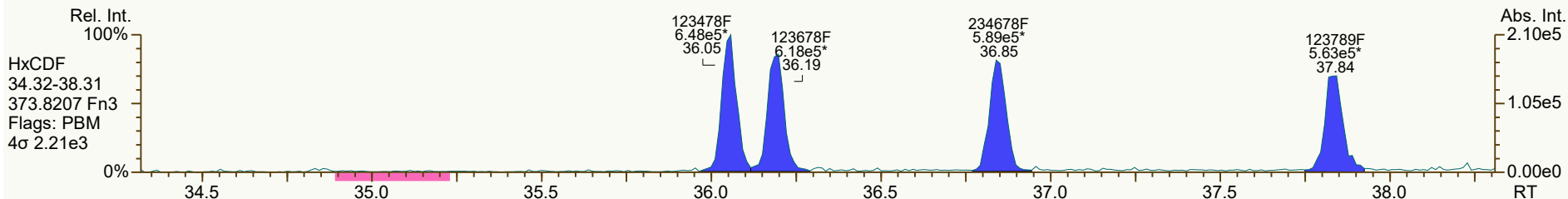


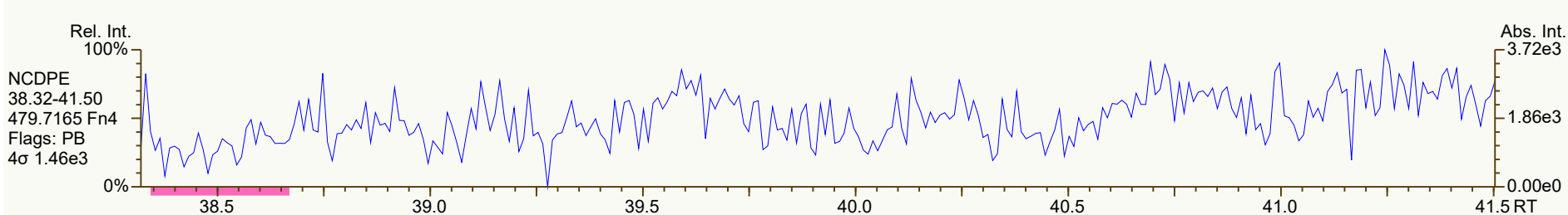
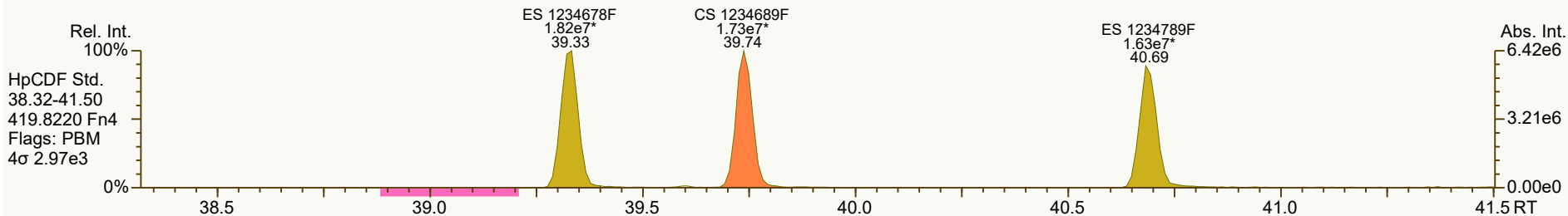
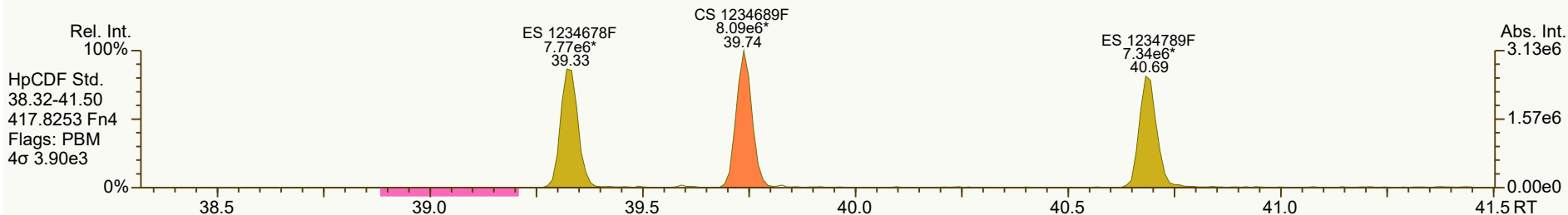
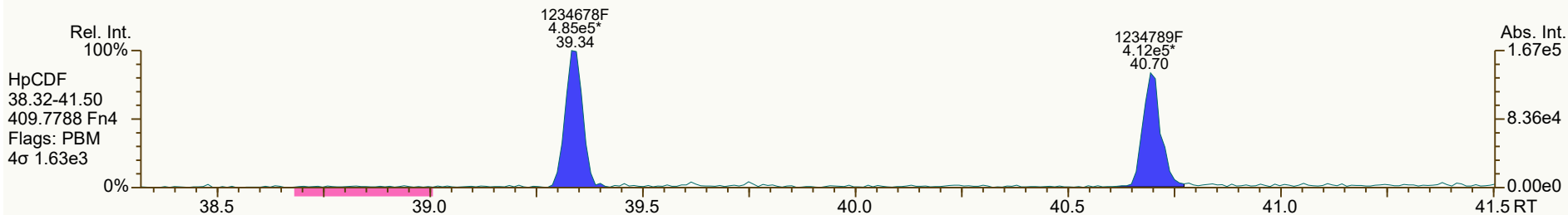
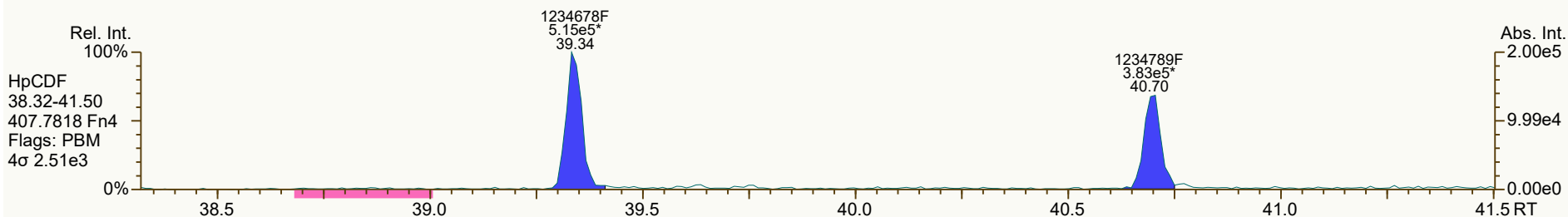


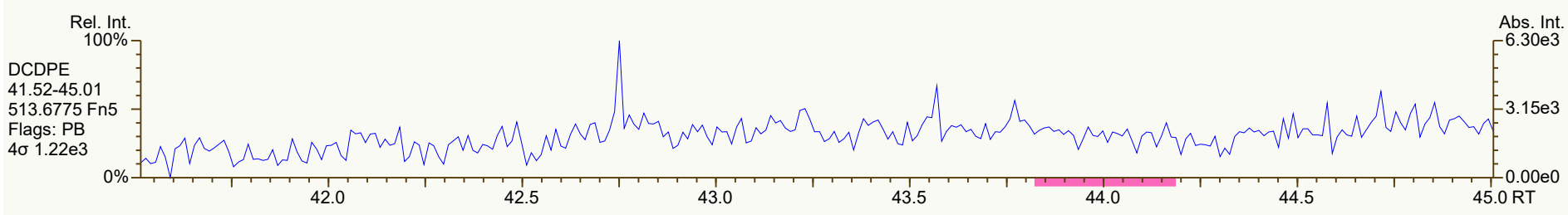
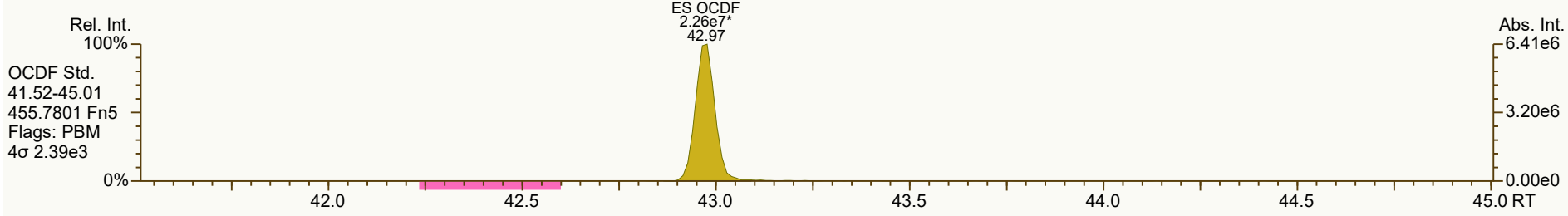
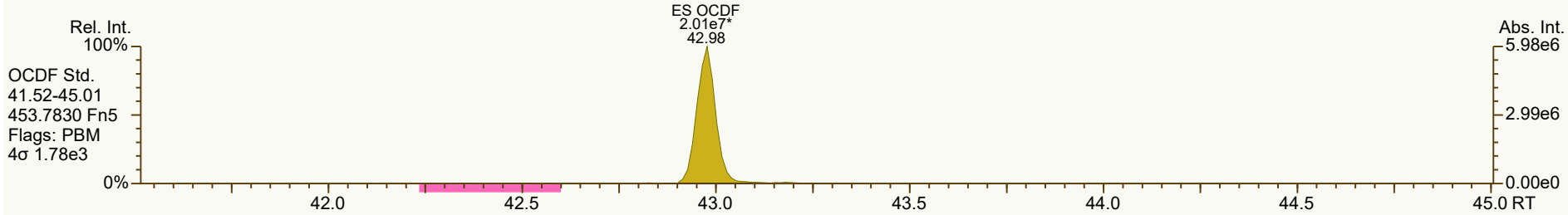
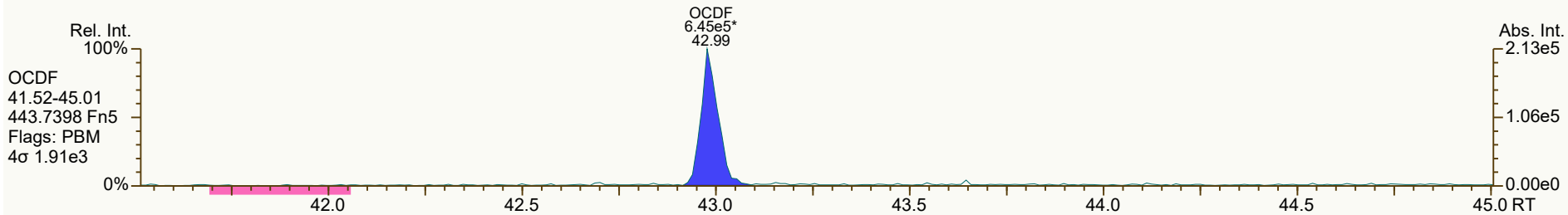
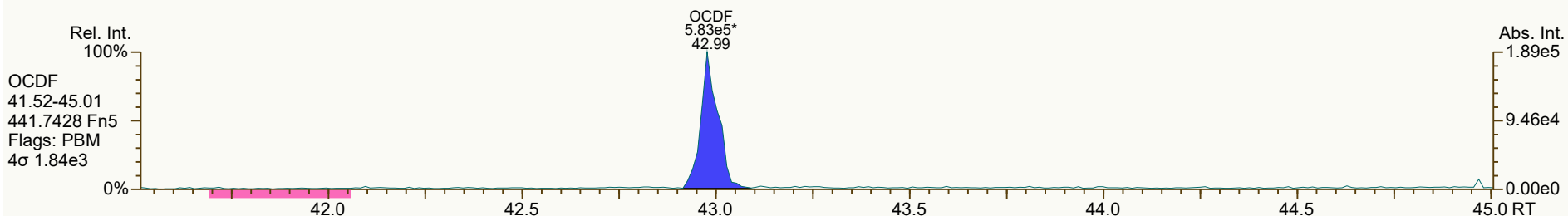






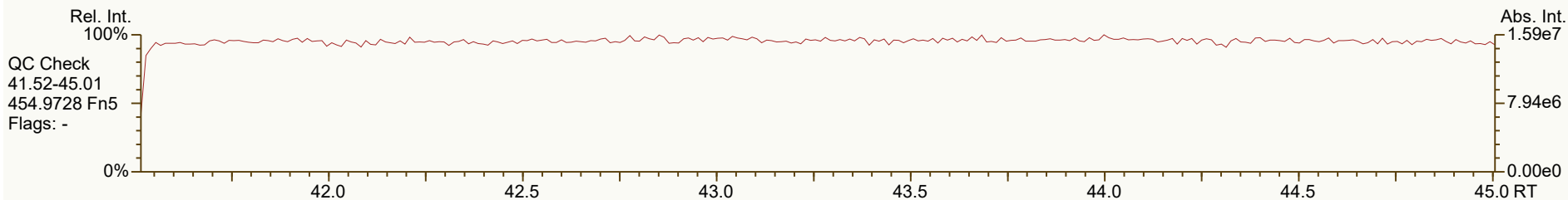
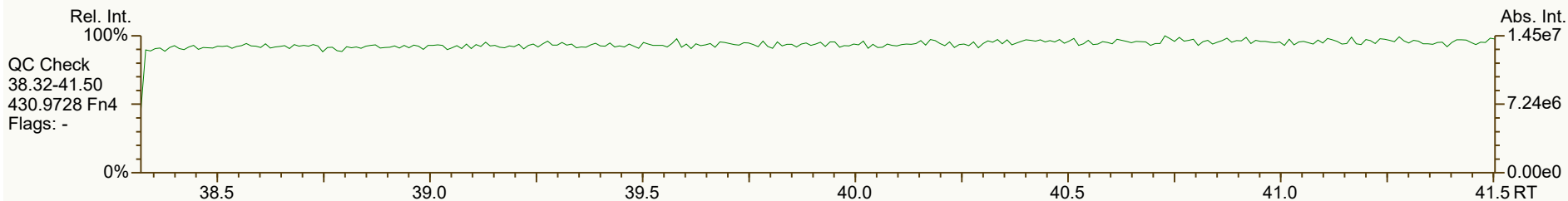
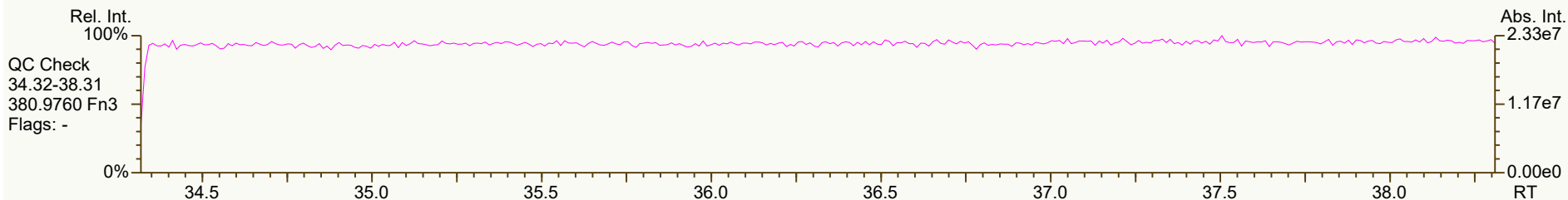
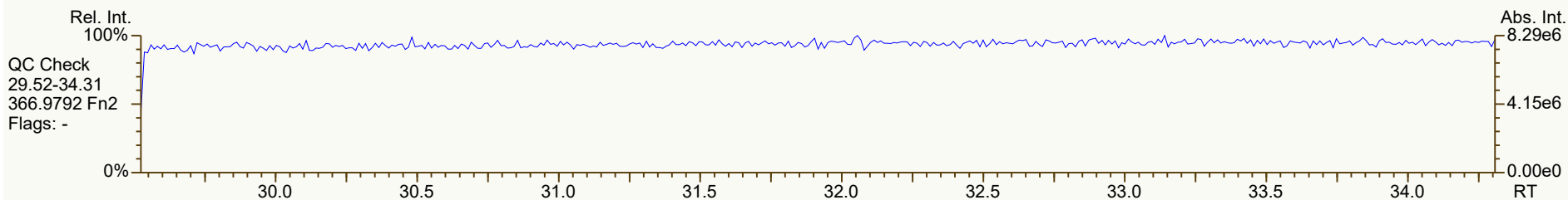
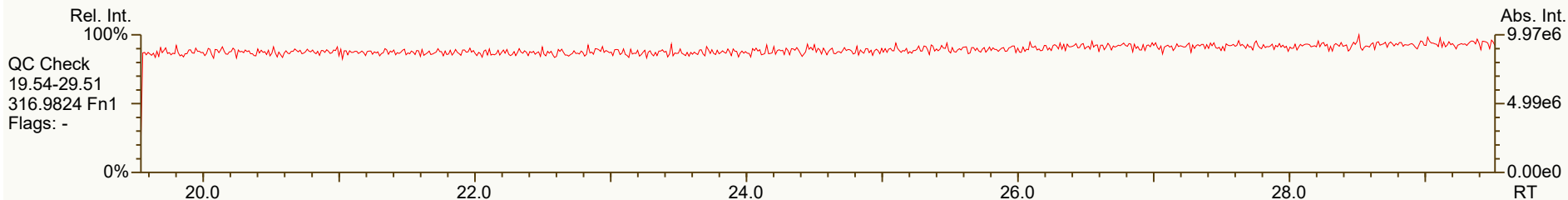


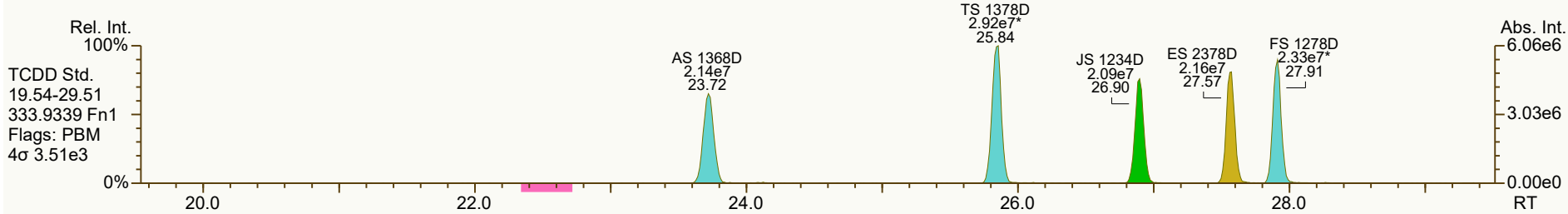
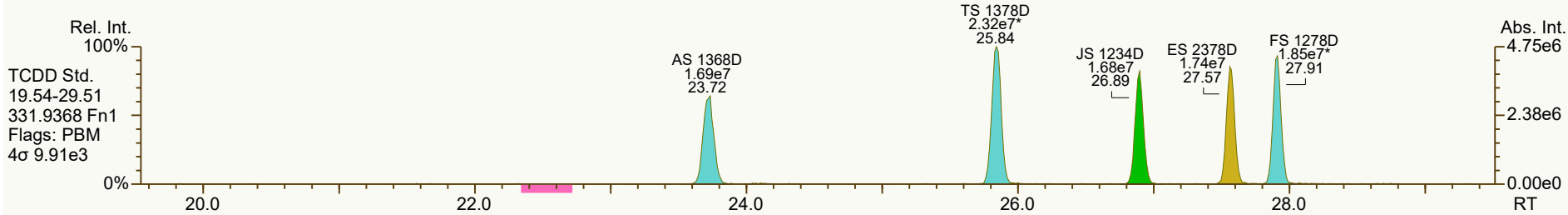
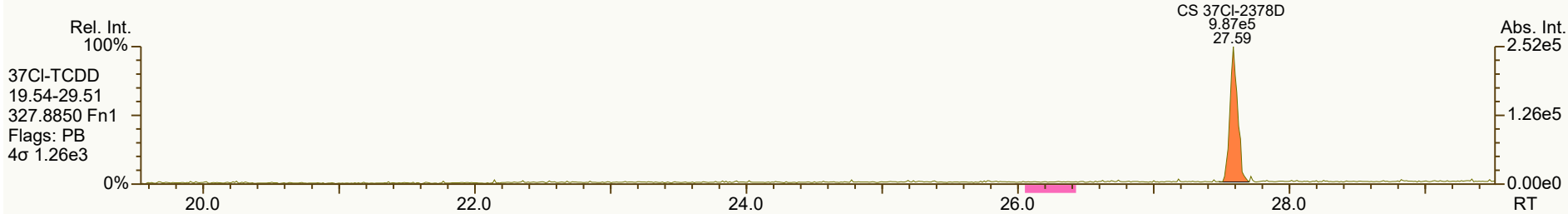
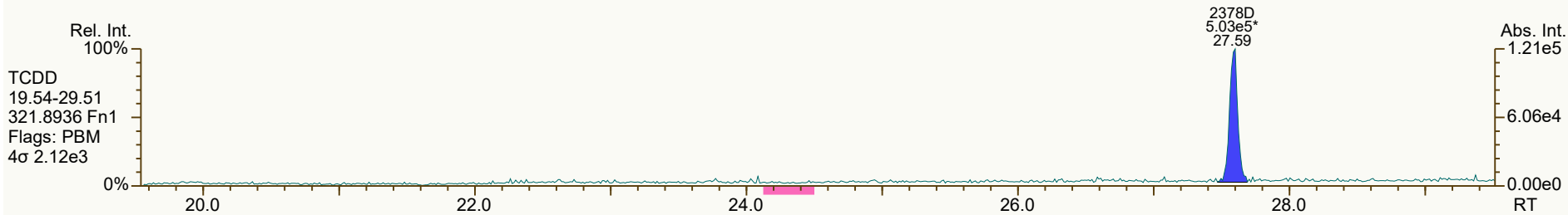
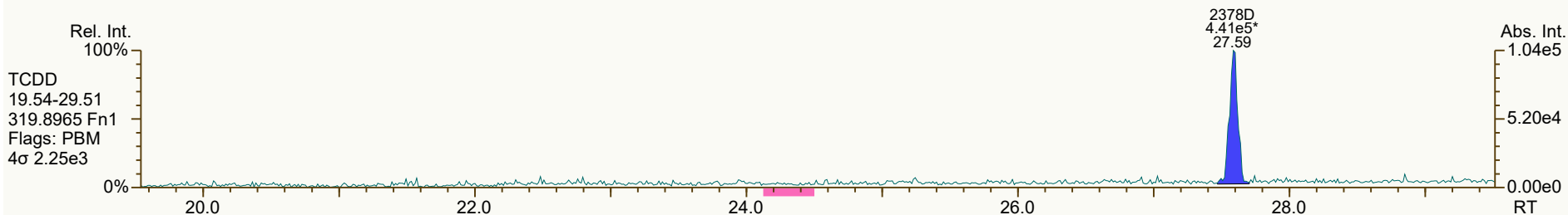


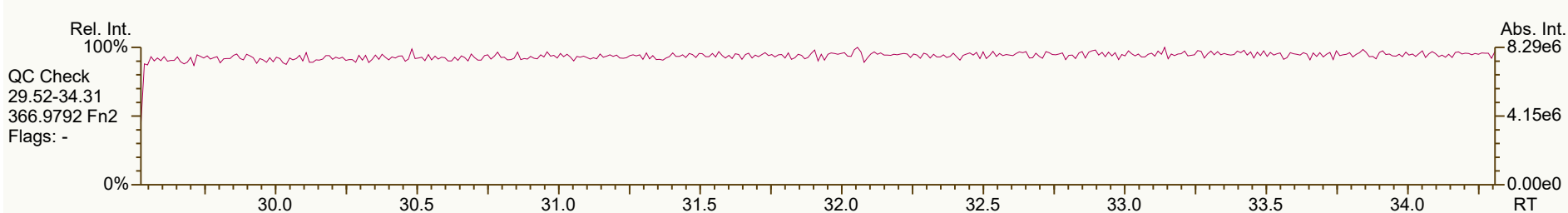
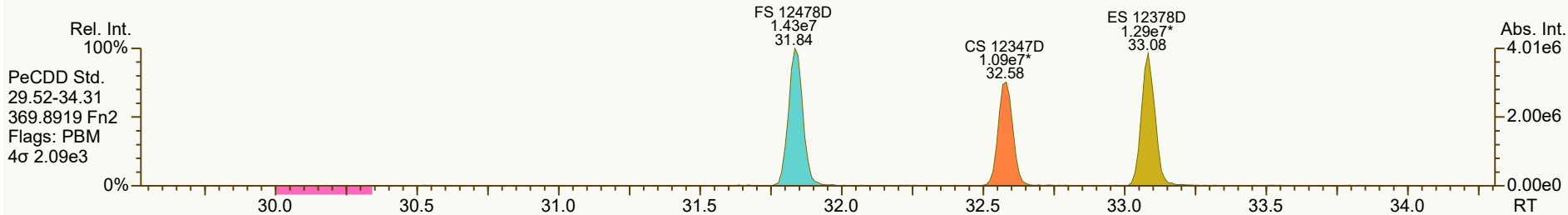
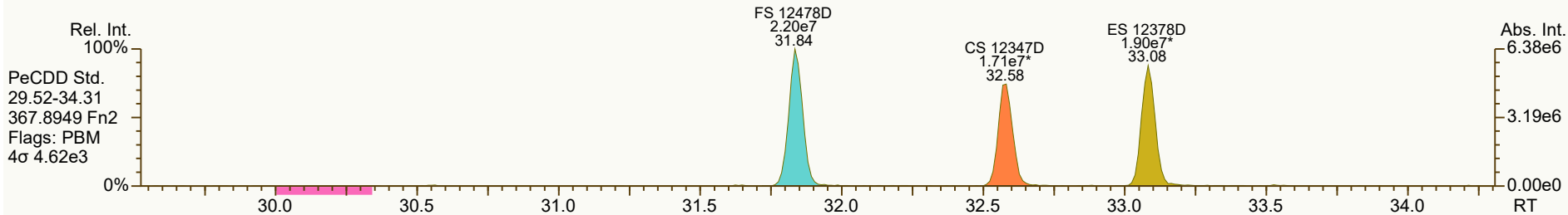
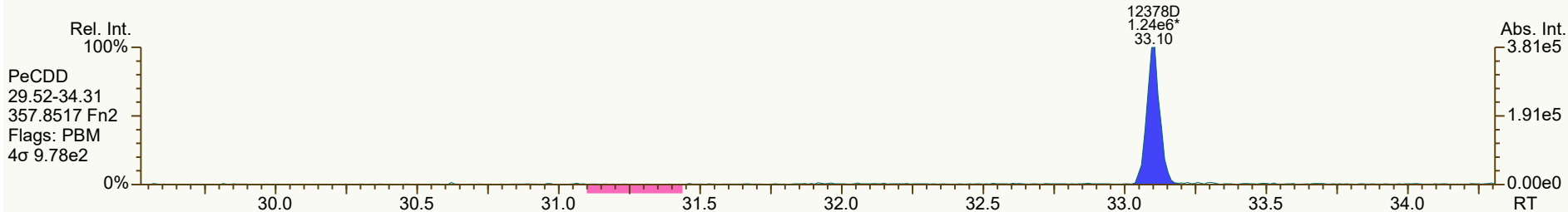
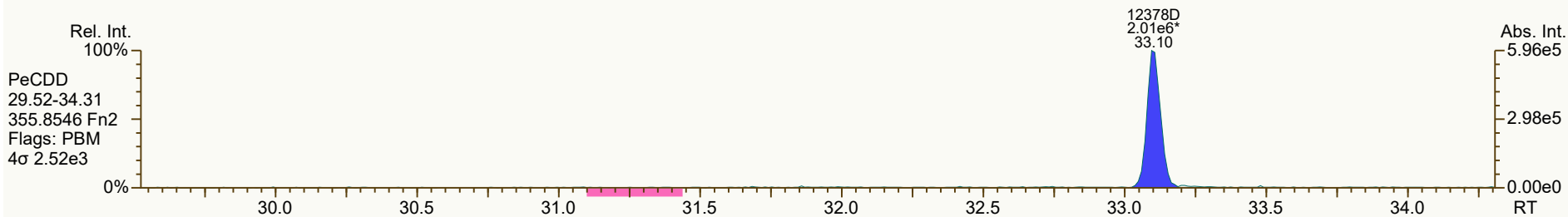


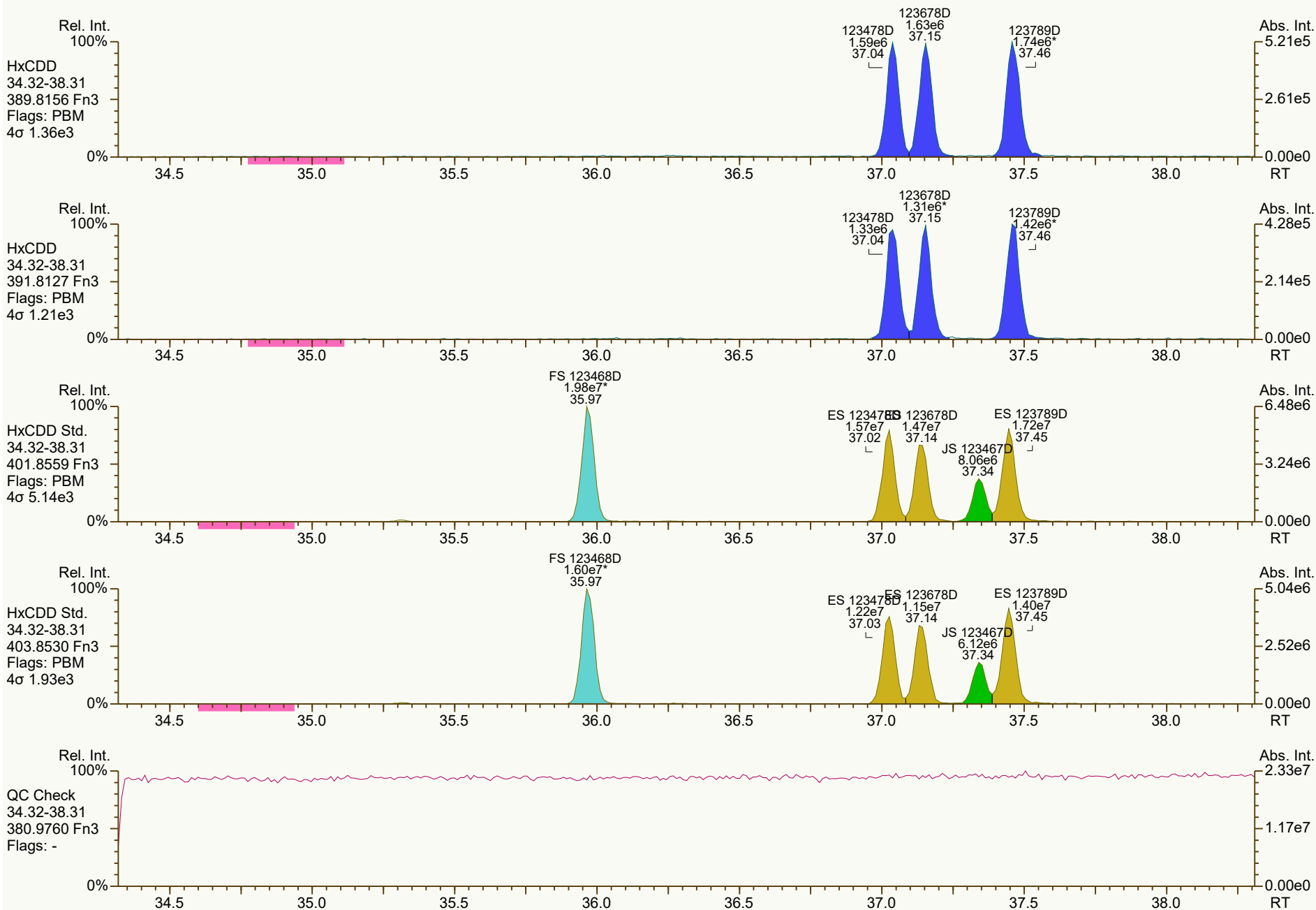
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 12:34 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF			Checkcode: 385-758-WQN		
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C06		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

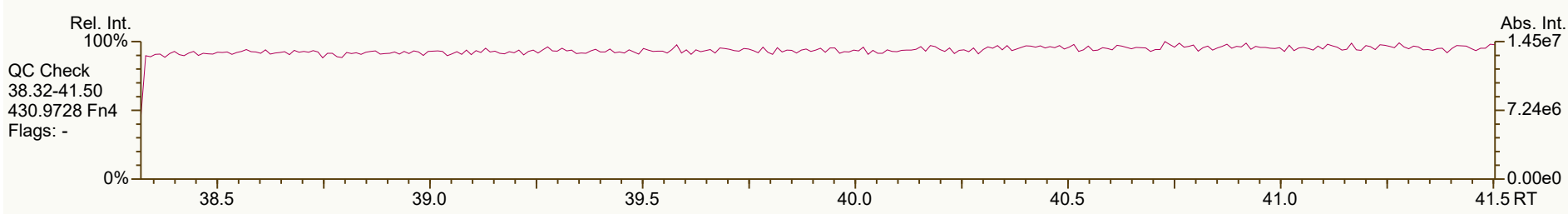
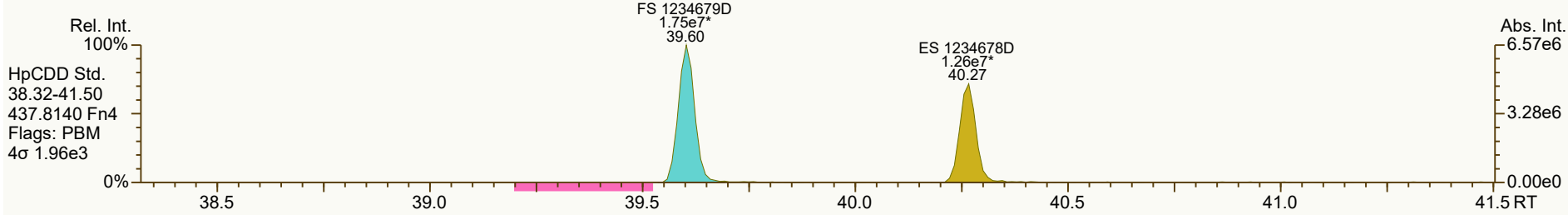
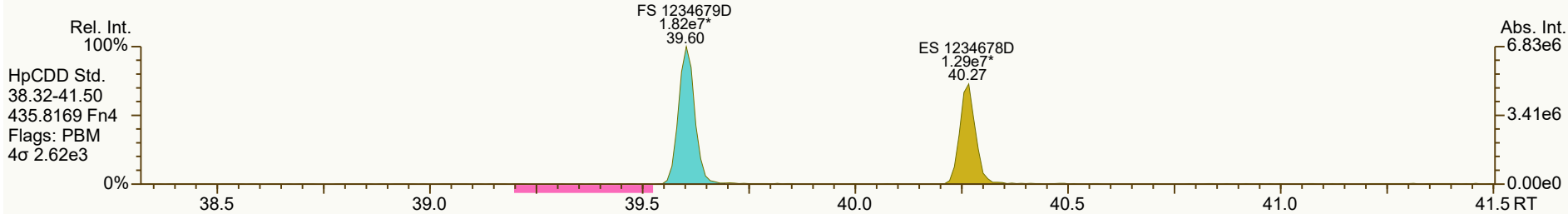
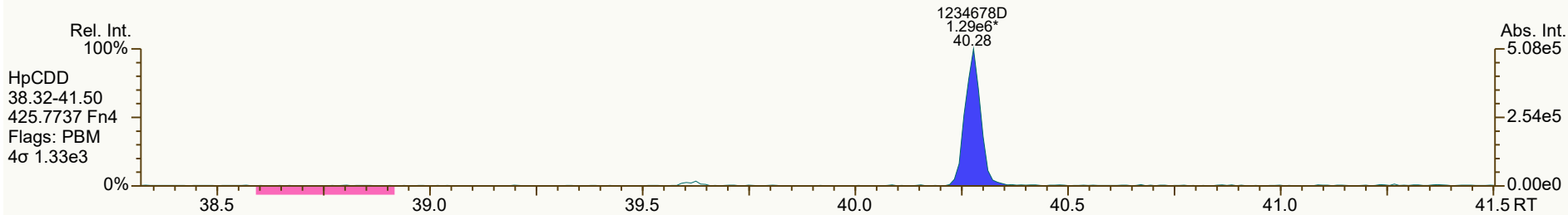
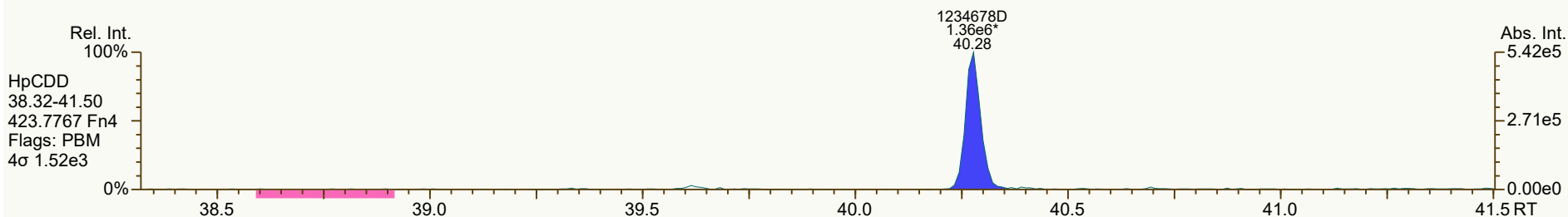
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 12:34 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF			Checkcode: 385-758-WQN		
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C06		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37C1-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37C1-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%







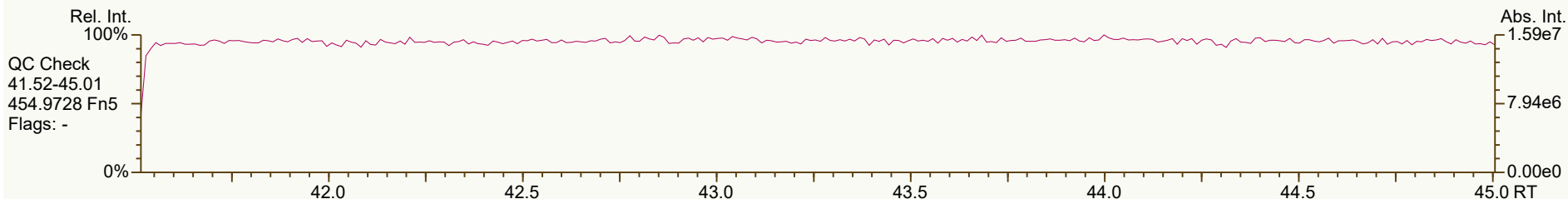
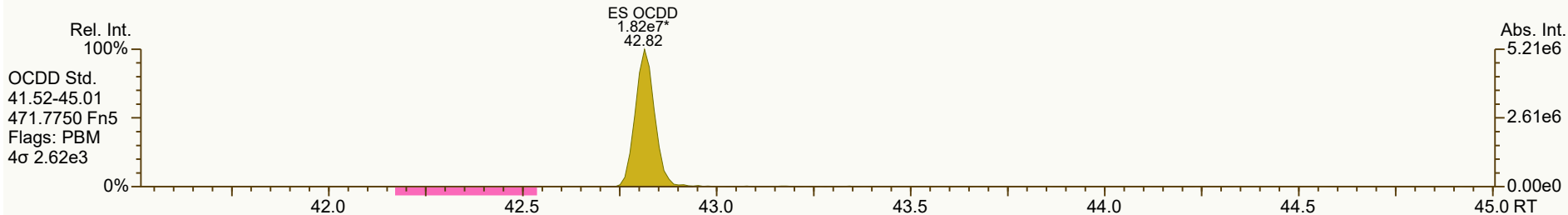
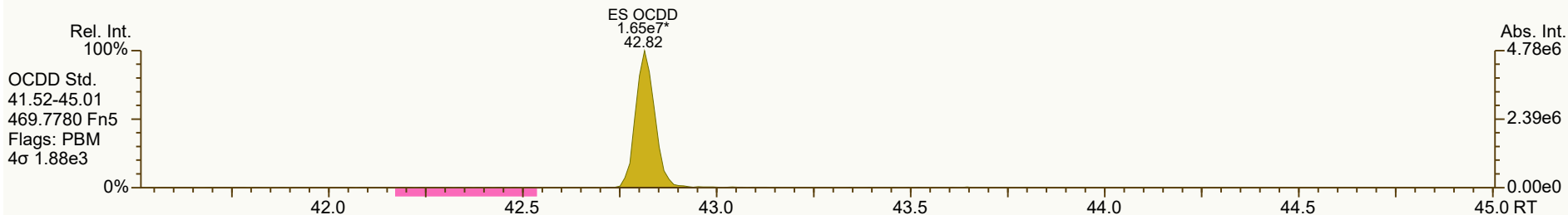
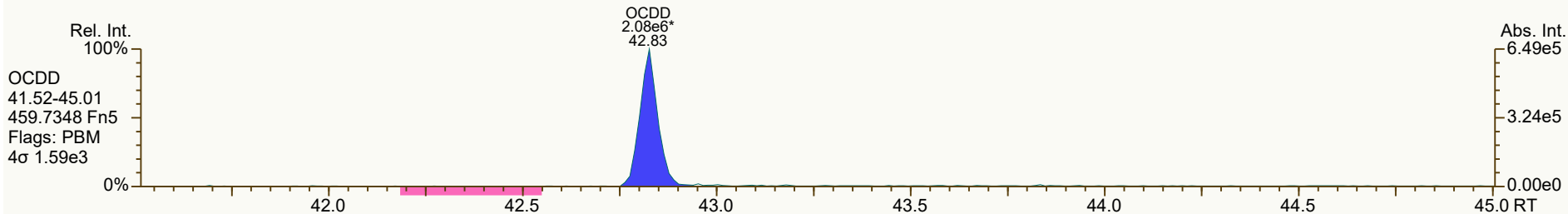
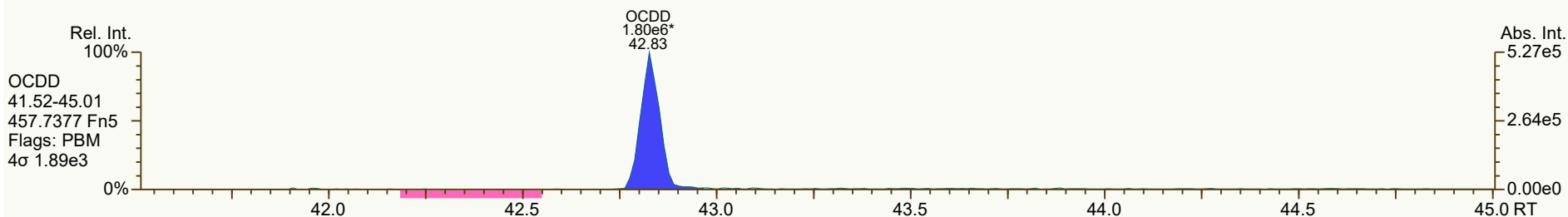


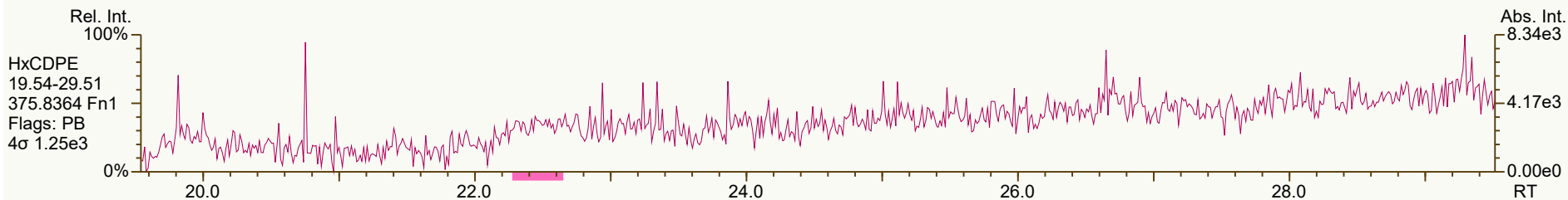
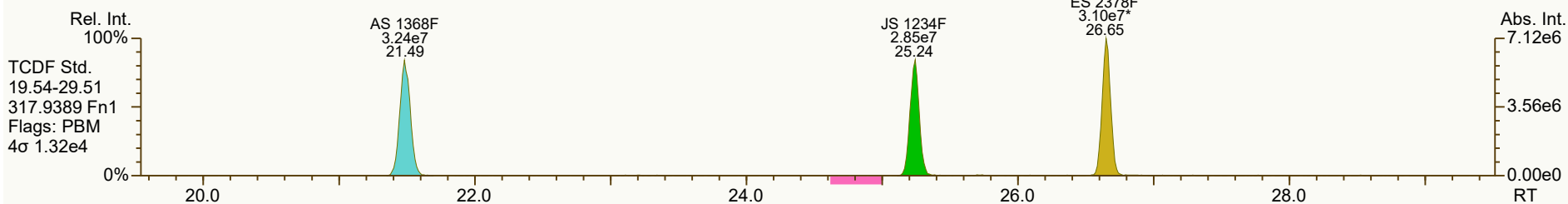
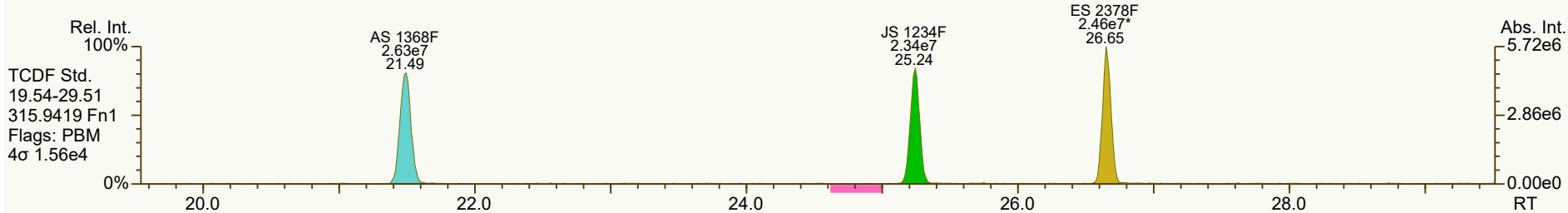
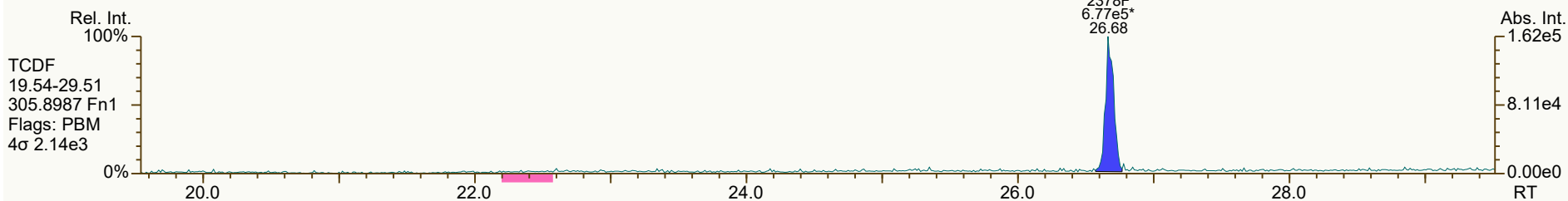
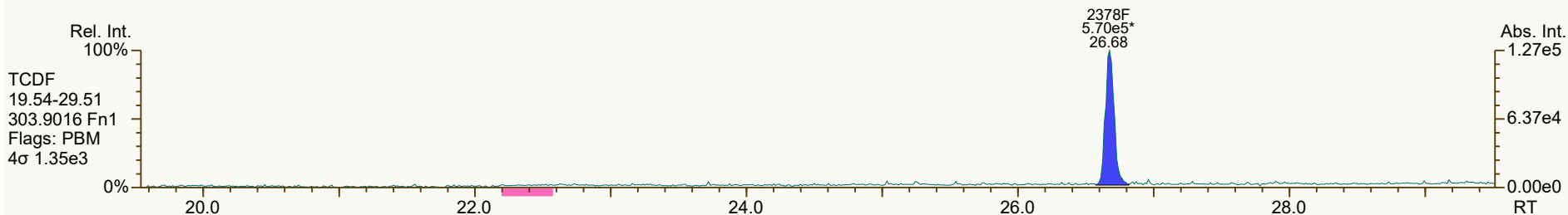


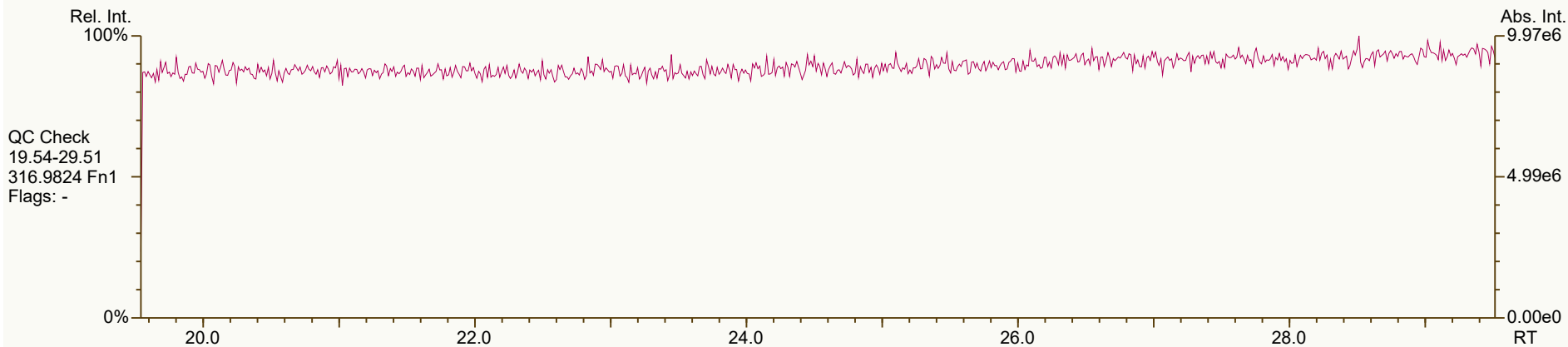
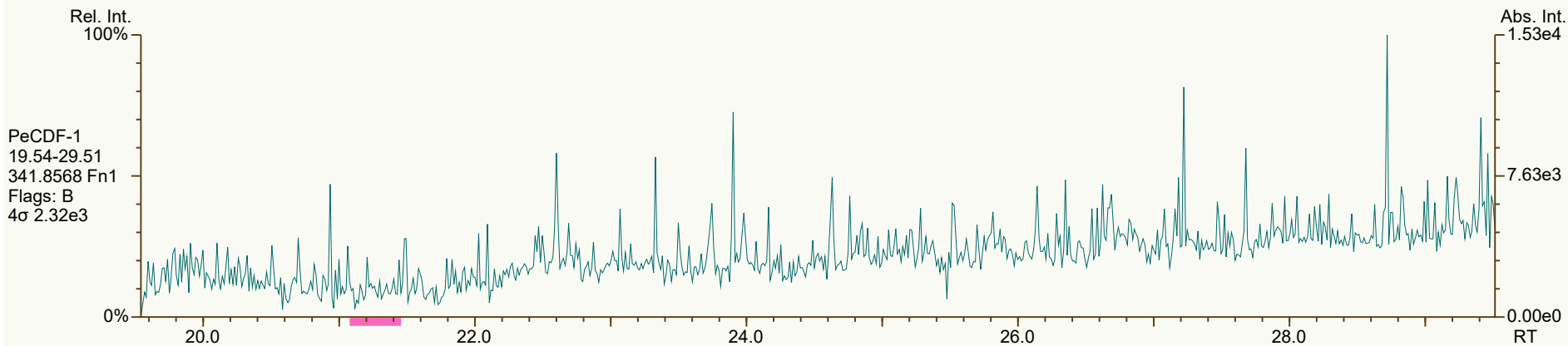
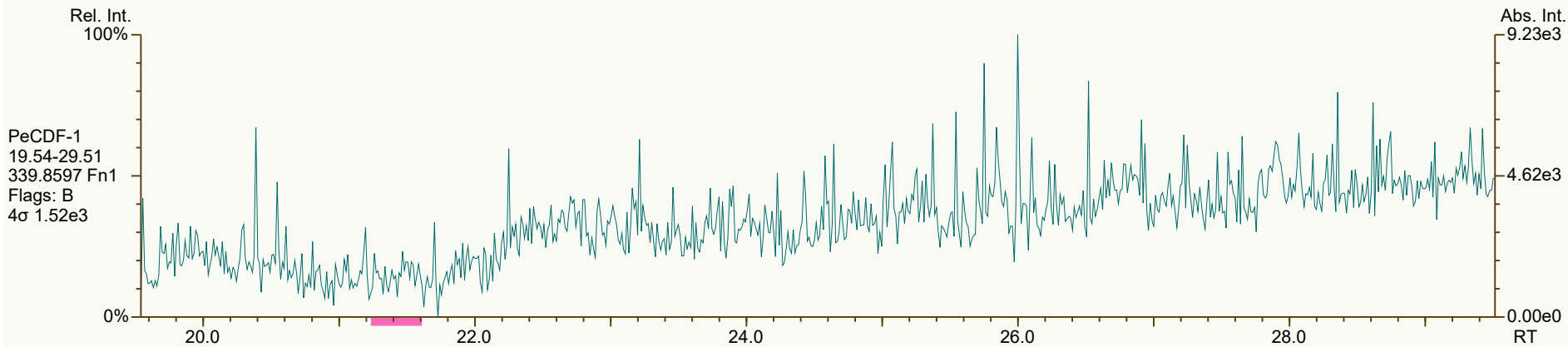
SGS ID: CS2_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

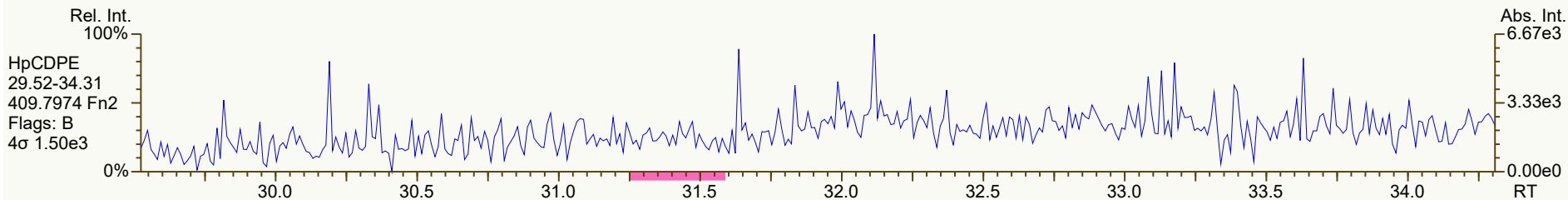
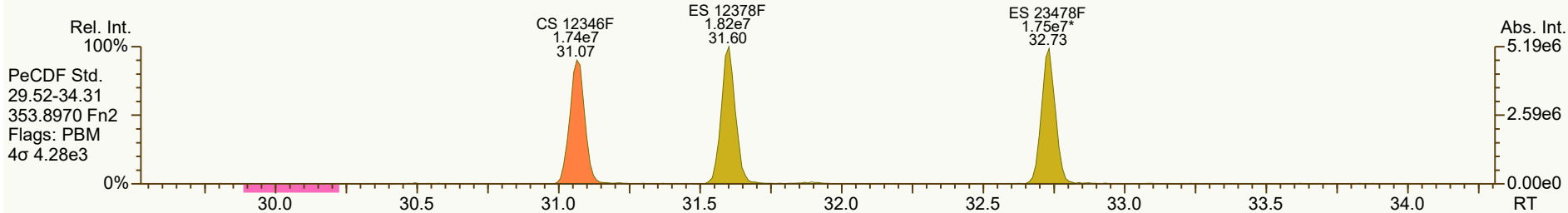
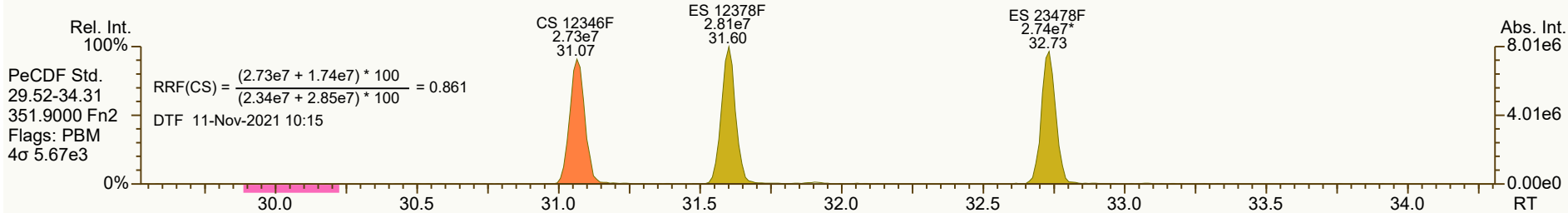
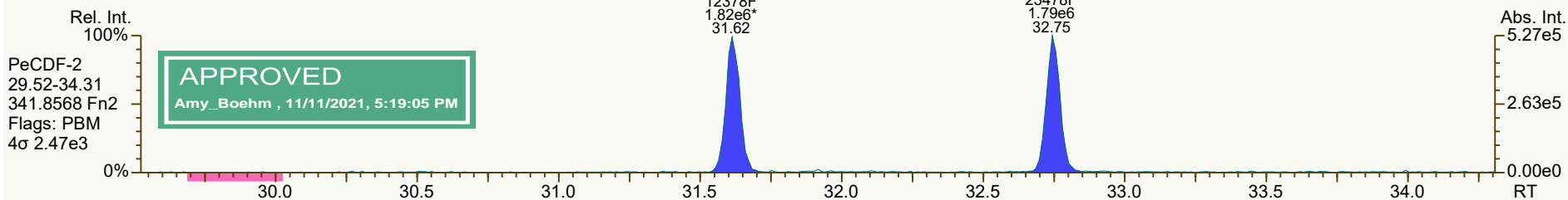
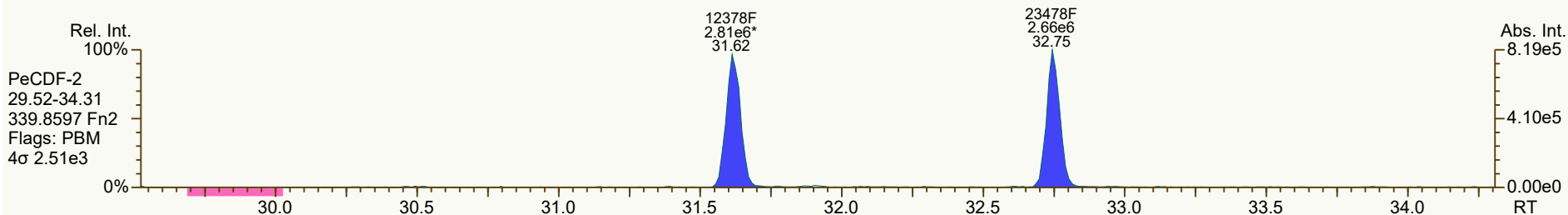
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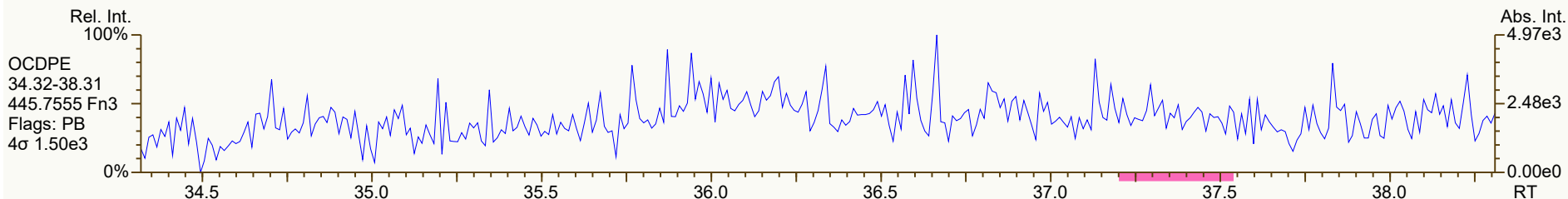
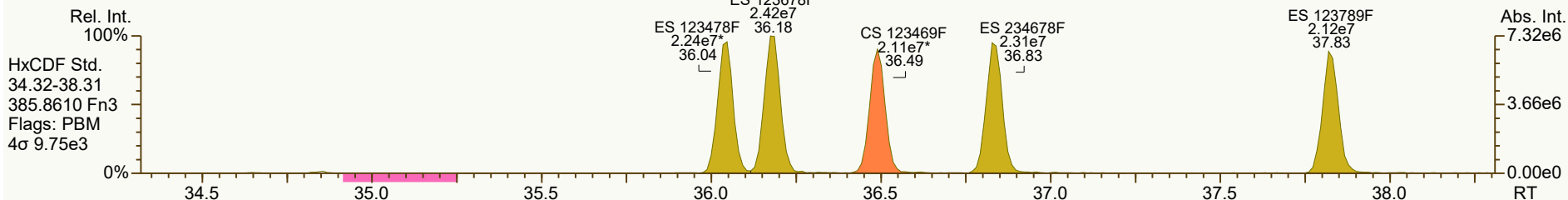
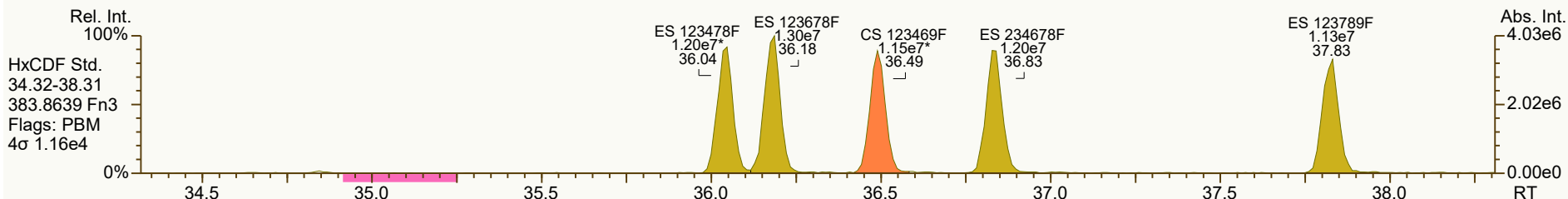
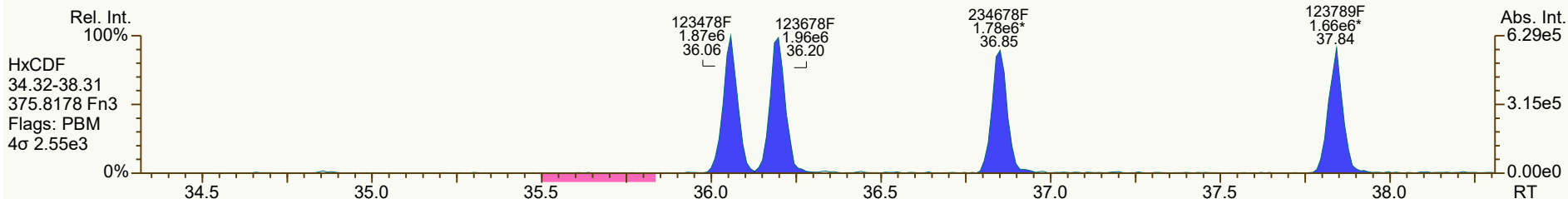
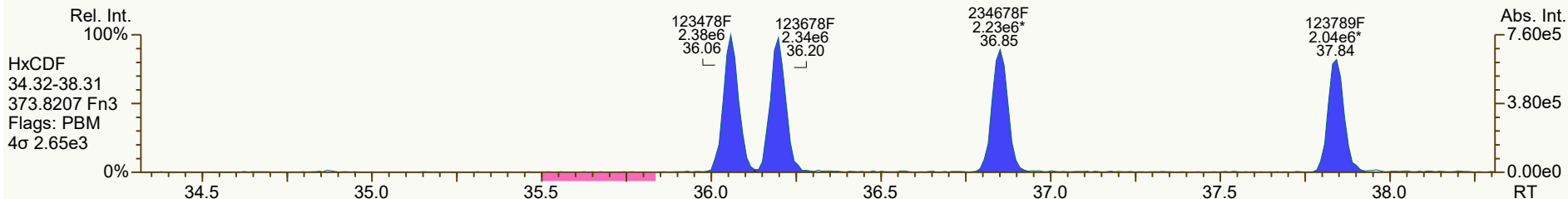
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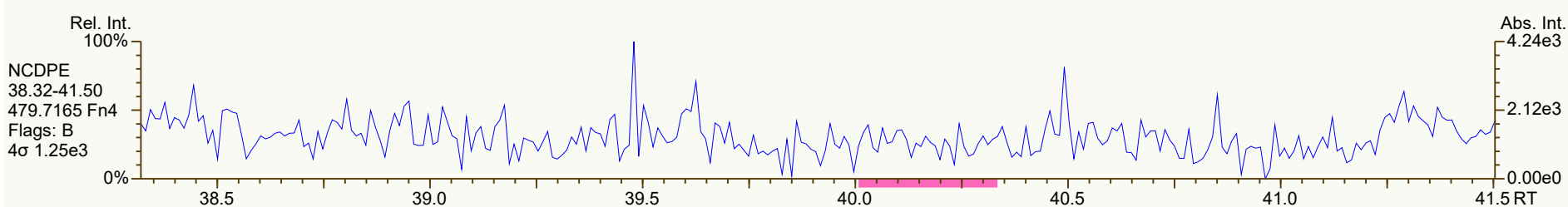
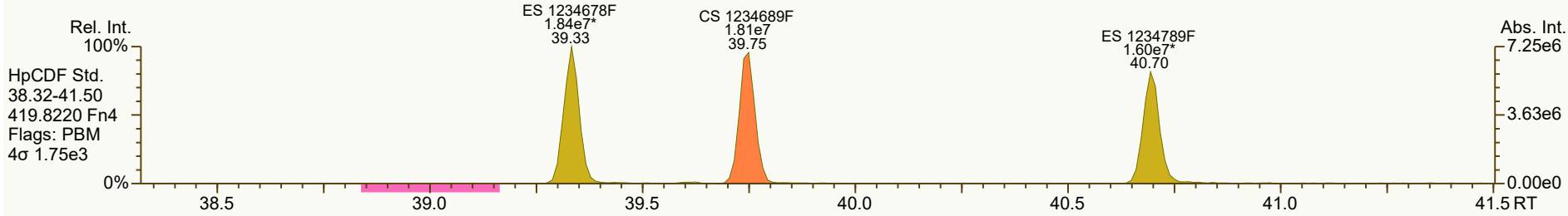
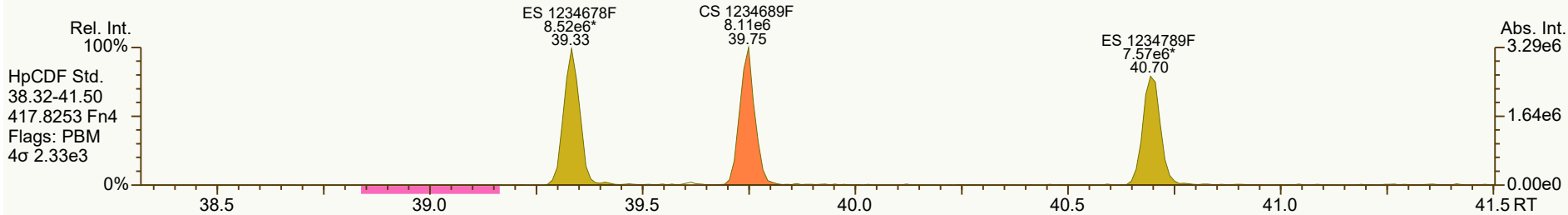
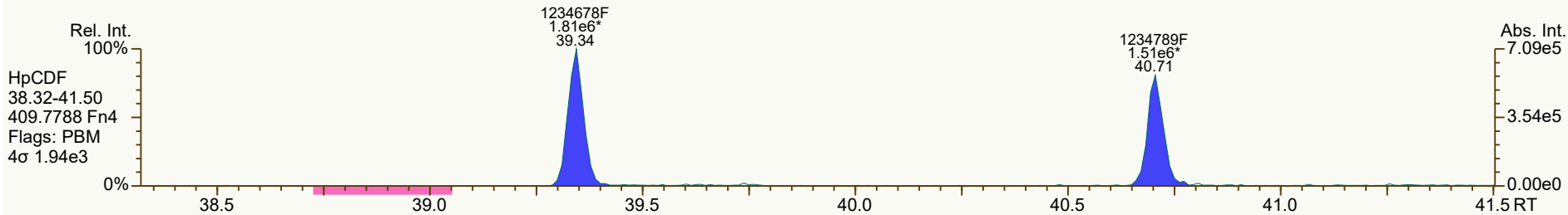
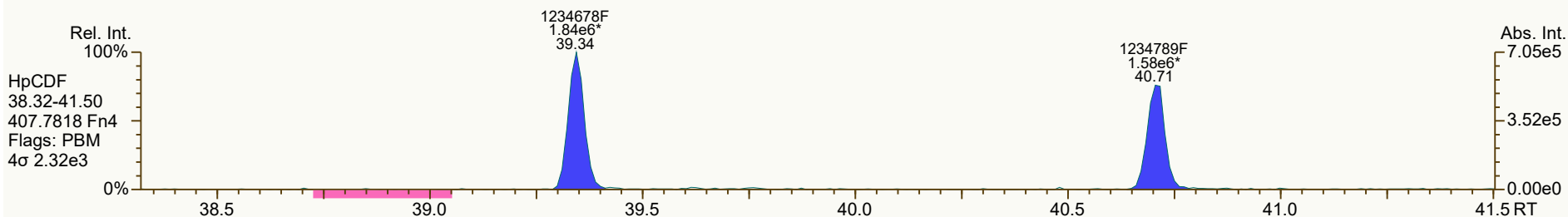


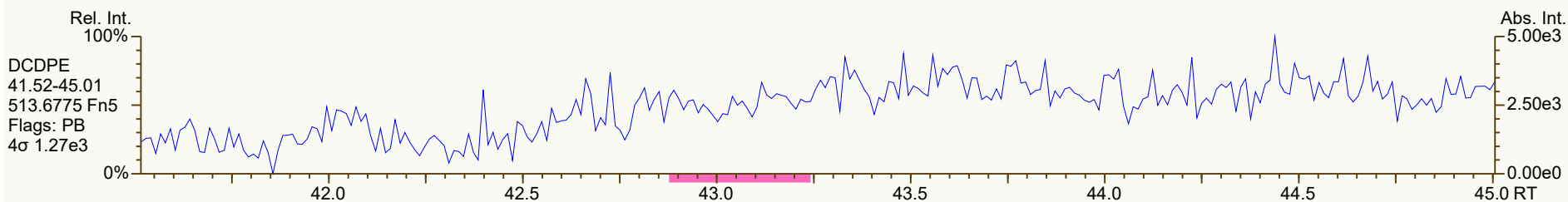
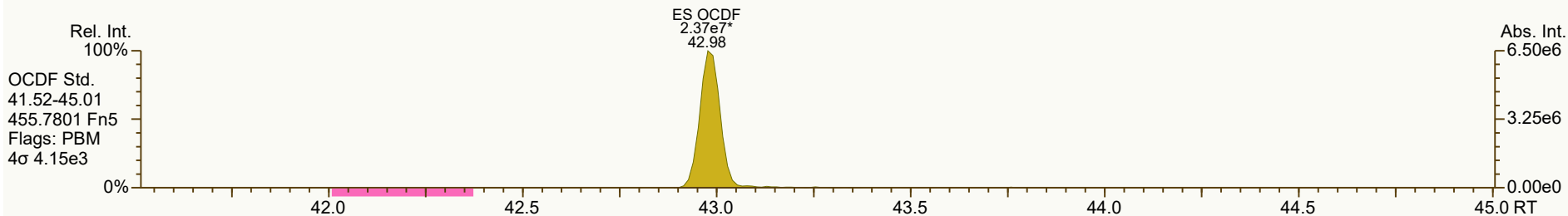
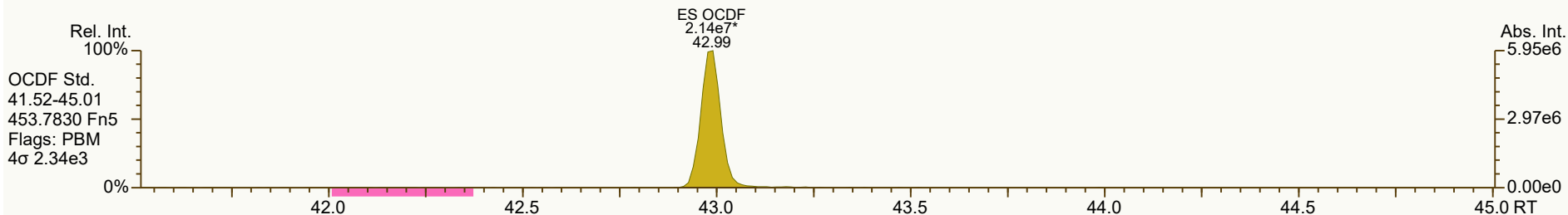
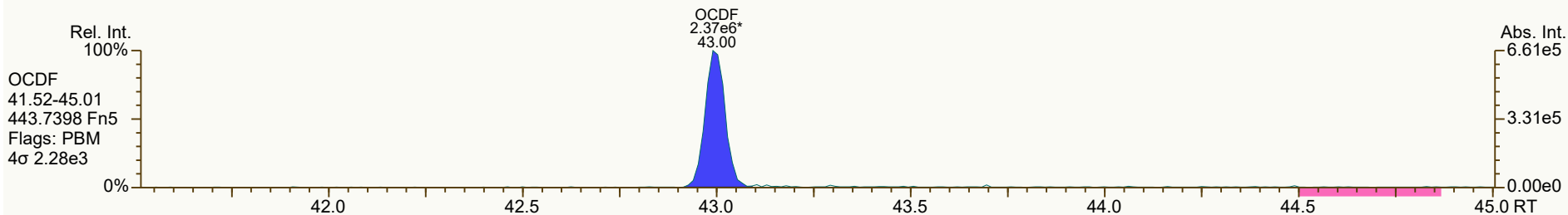
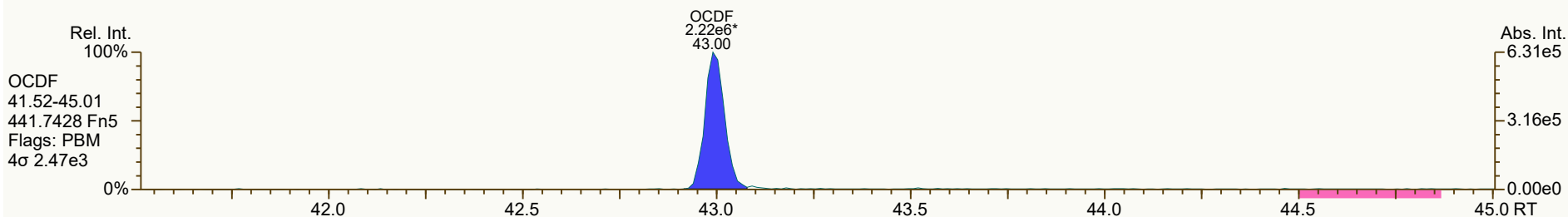






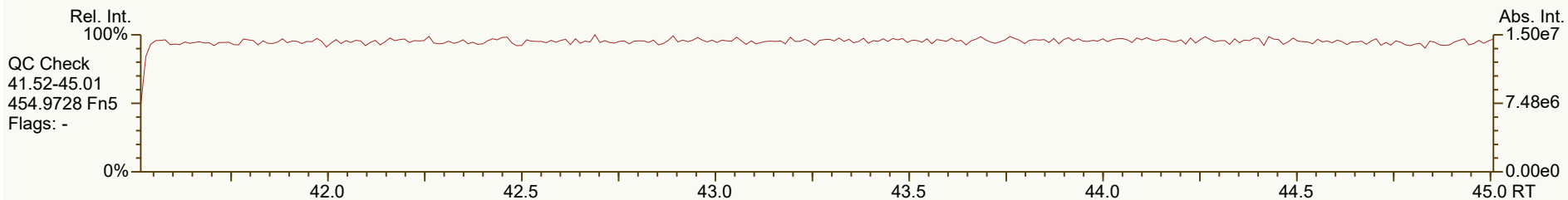
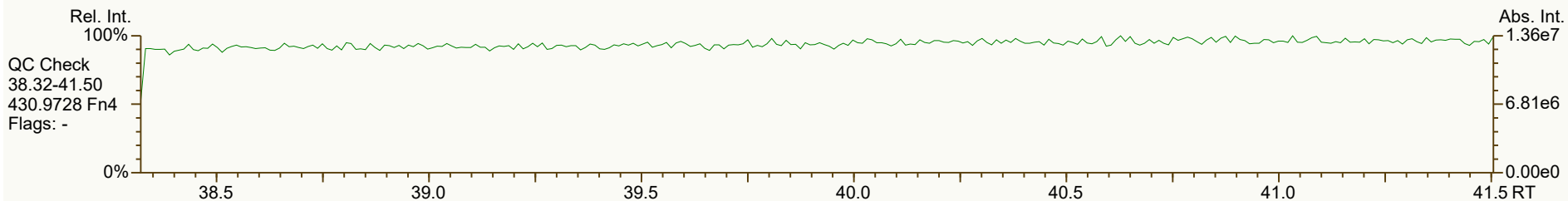
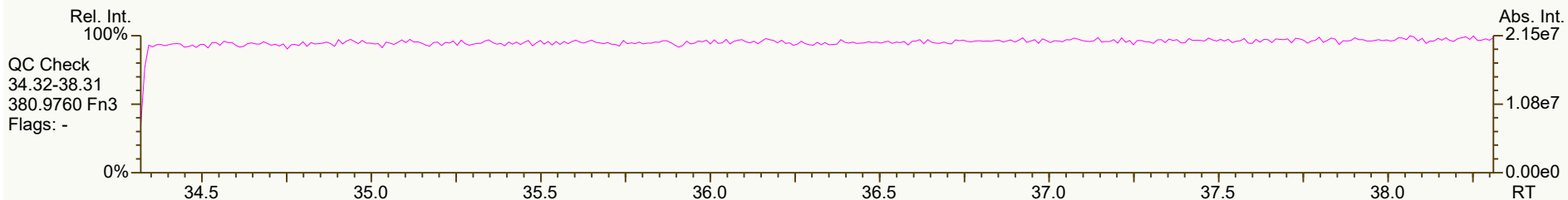
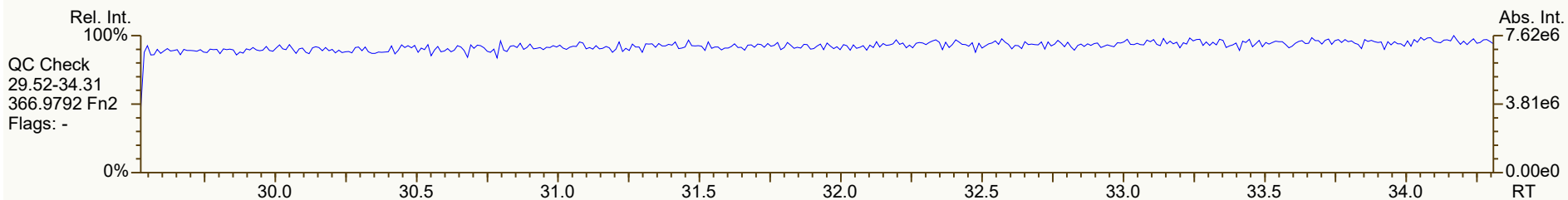
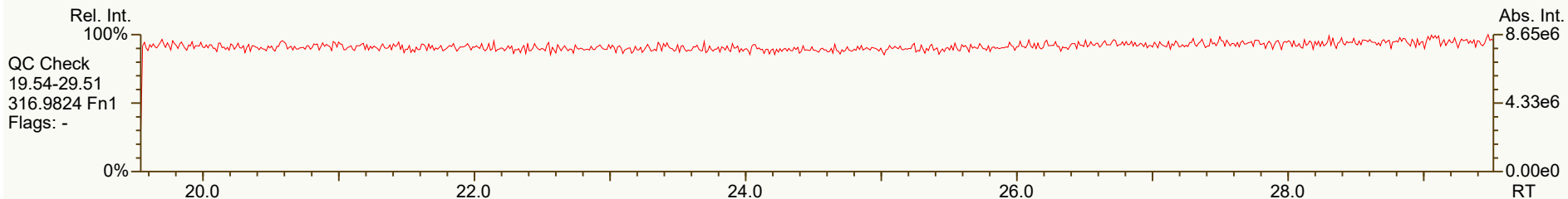


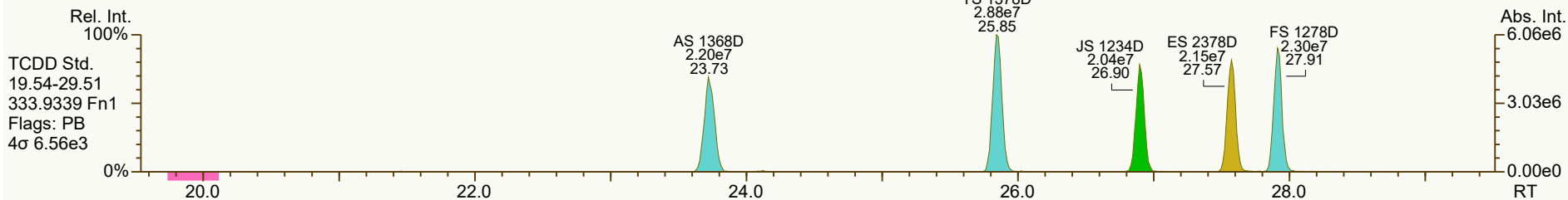
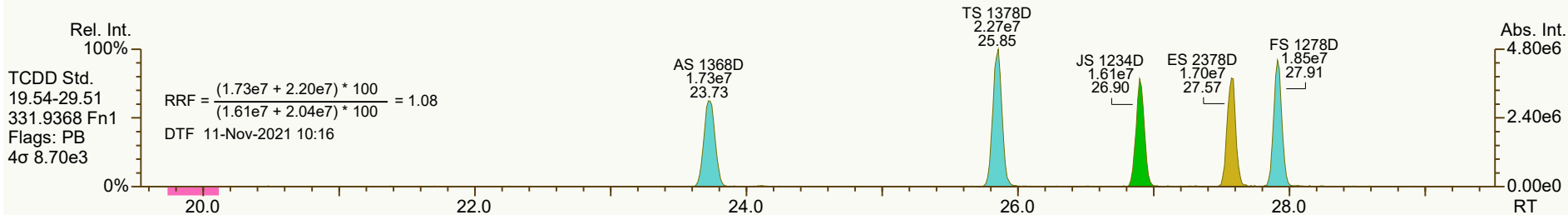
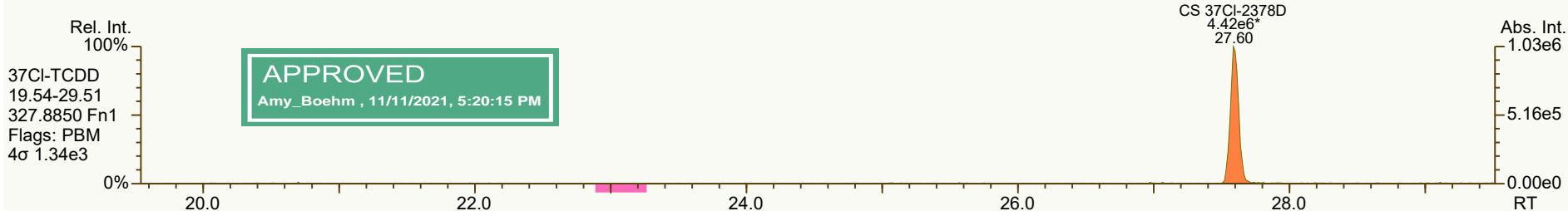
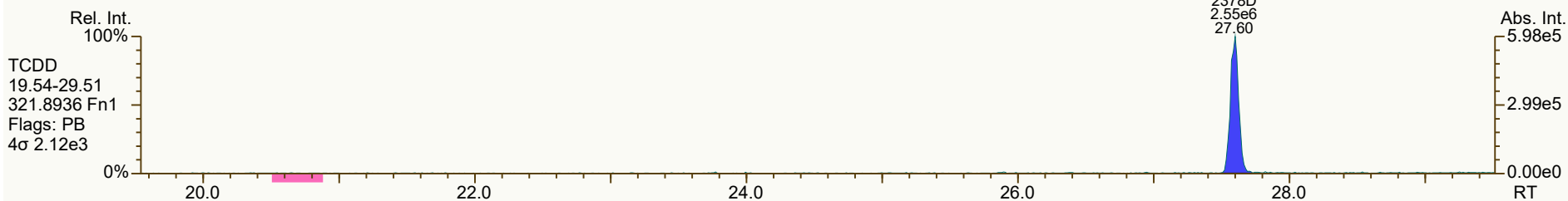
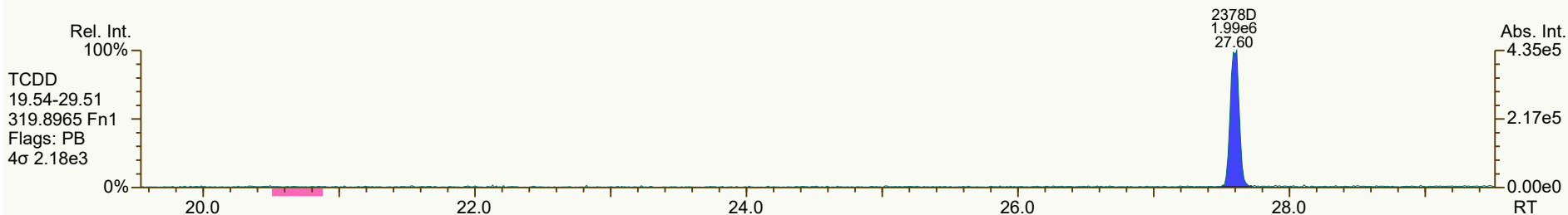


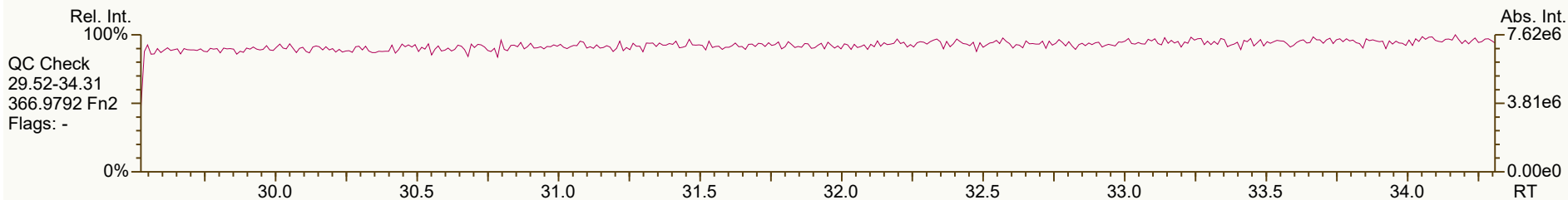
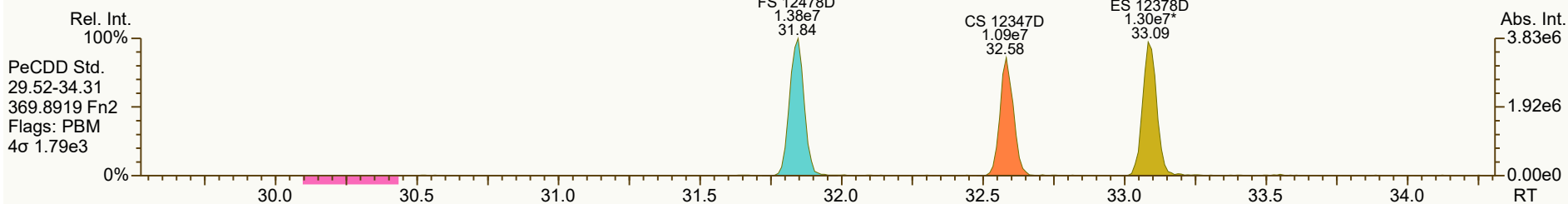
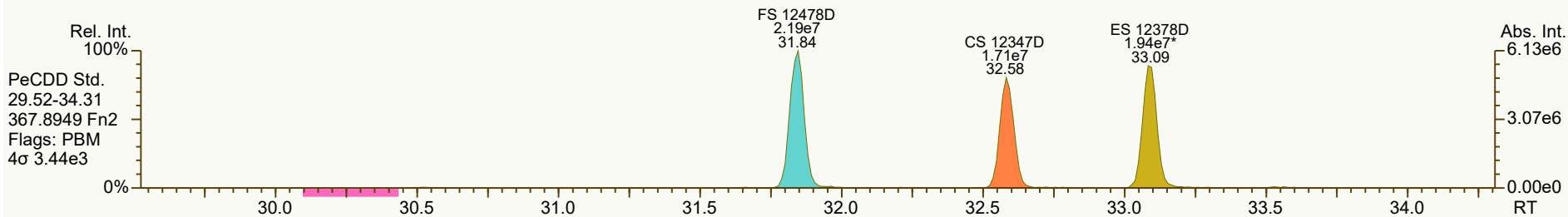
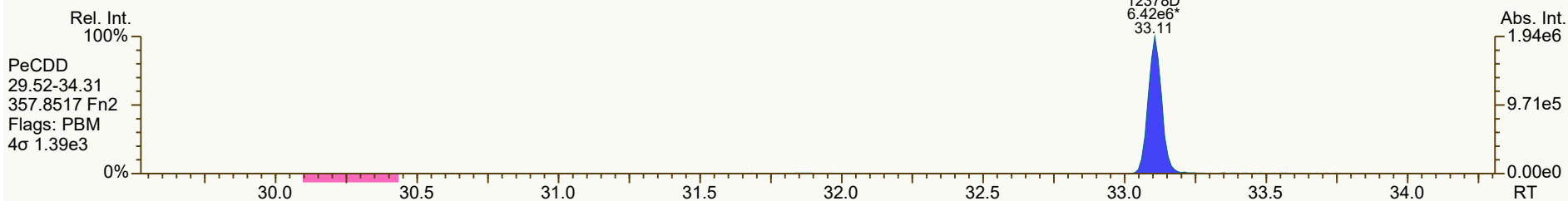
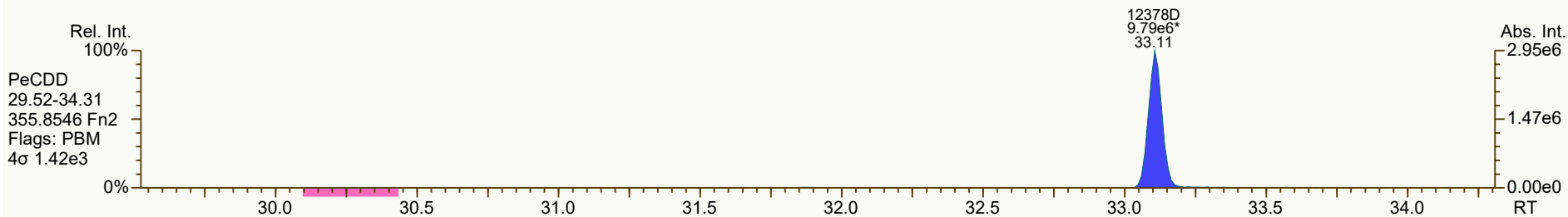


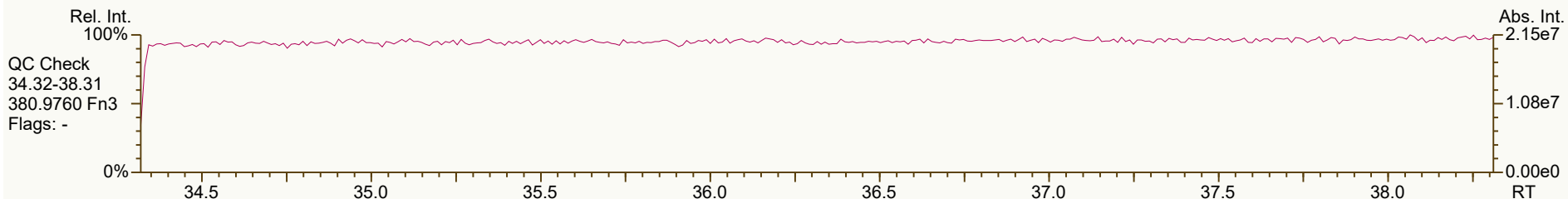
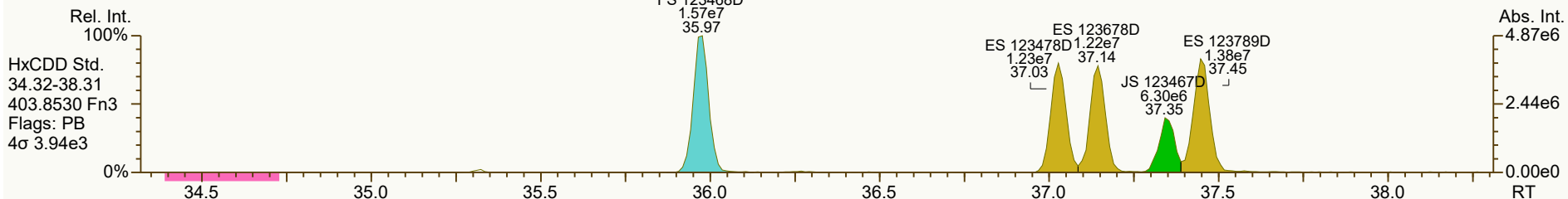
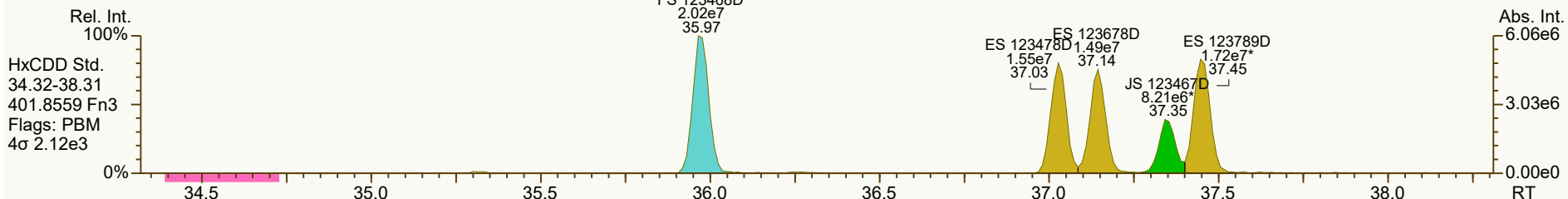
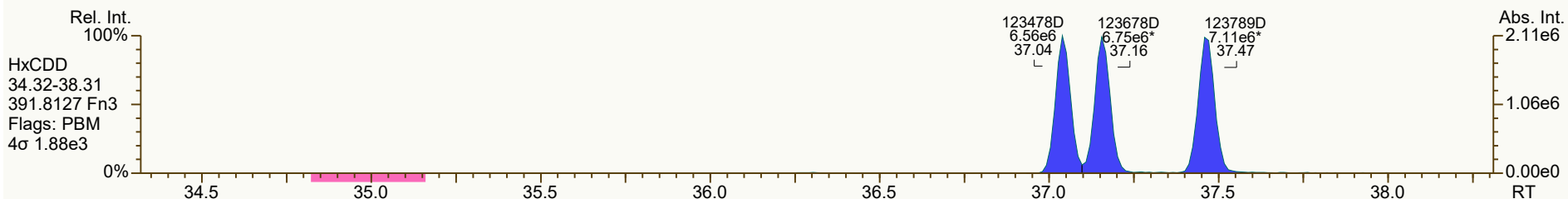
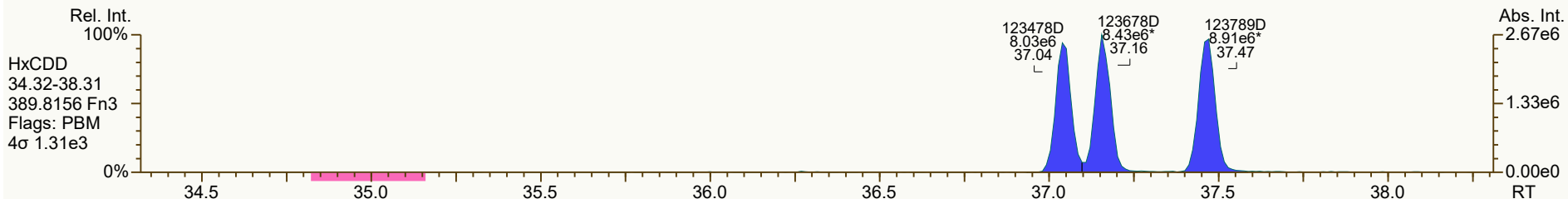
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF			Checkcode: 507-474-MKW		
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C07		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

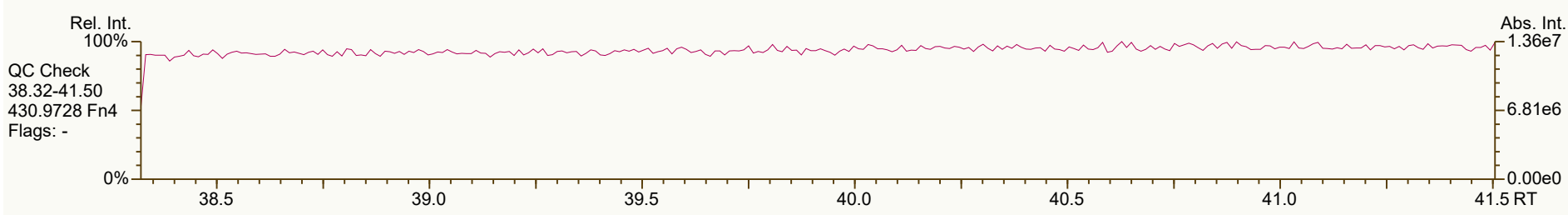
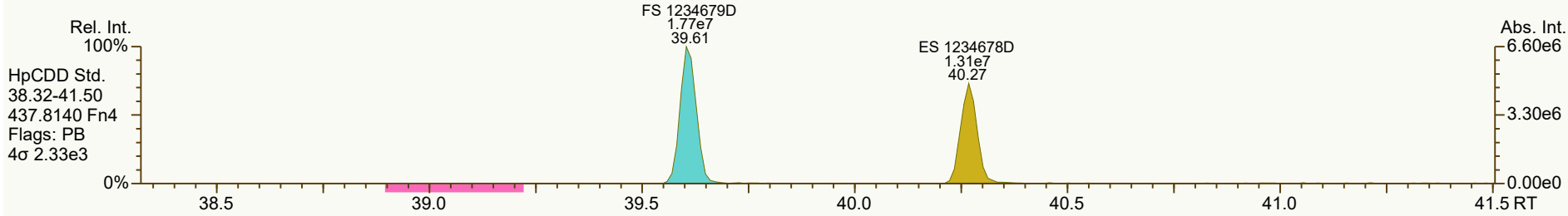
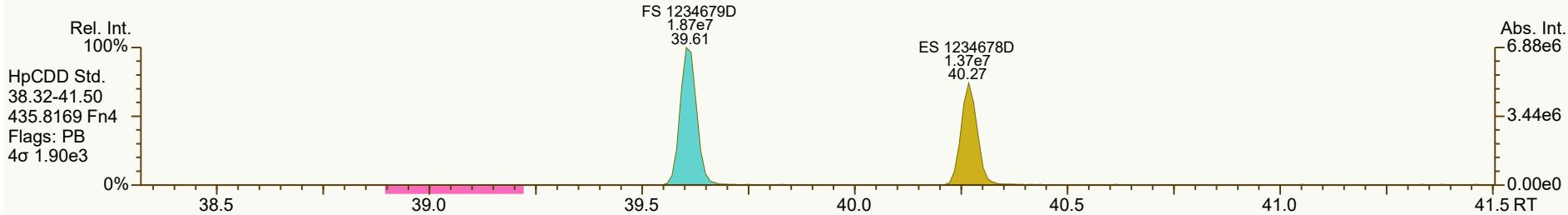
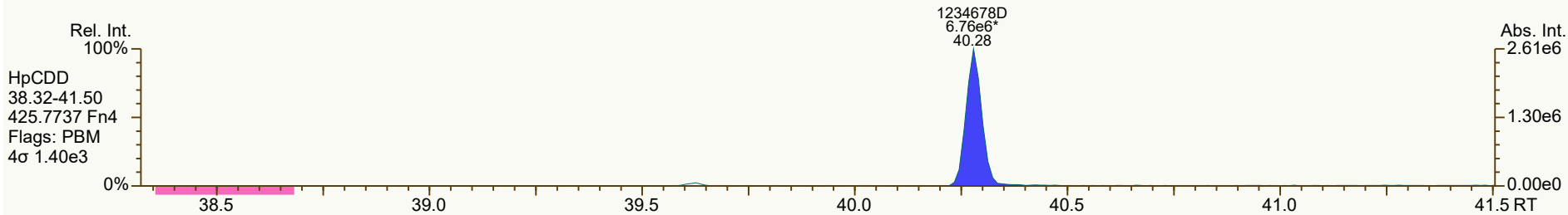
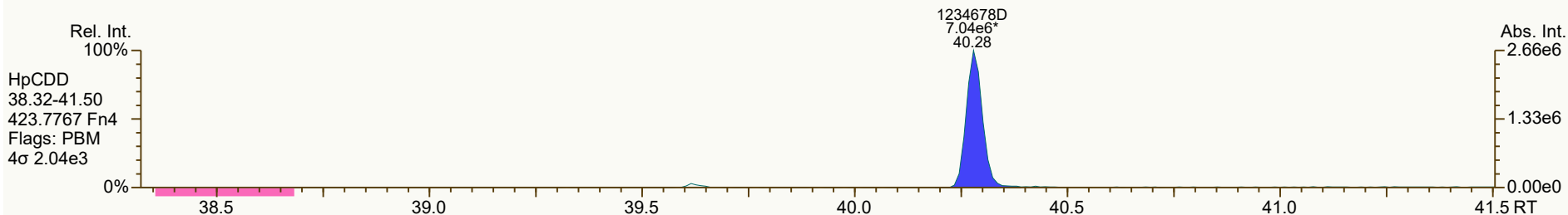
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF			Checkcode: 507-474-MKW		
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C07		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37C1-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37C1-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%







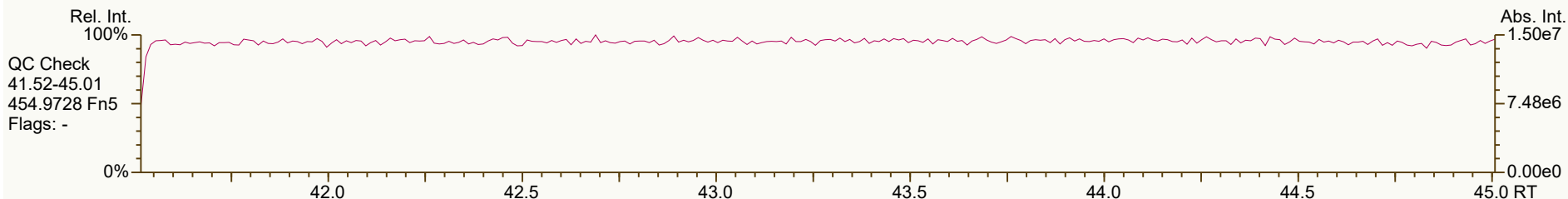
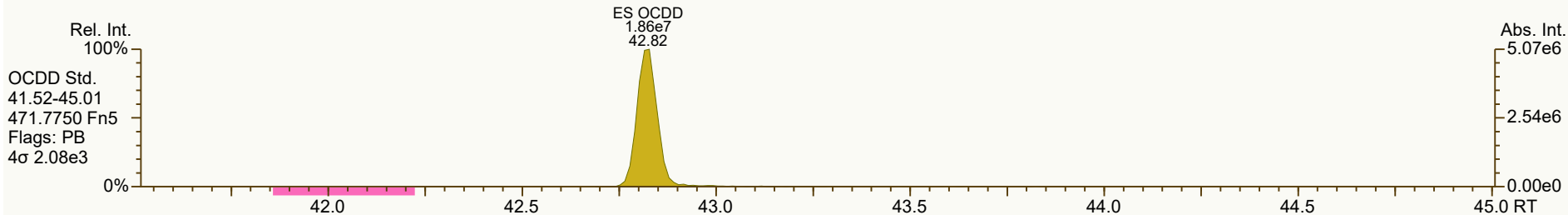
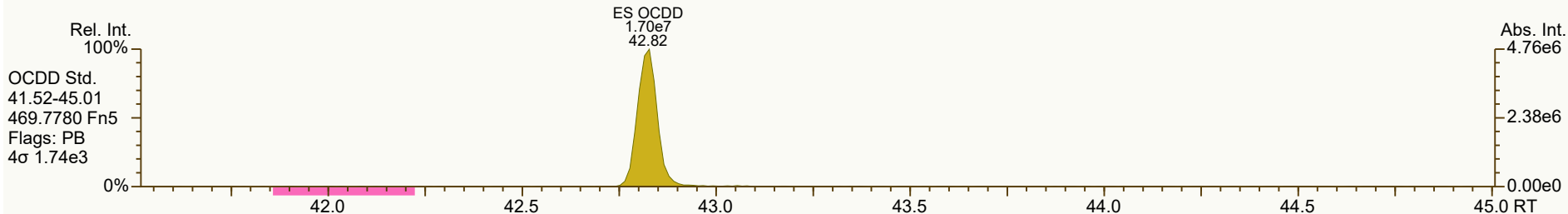
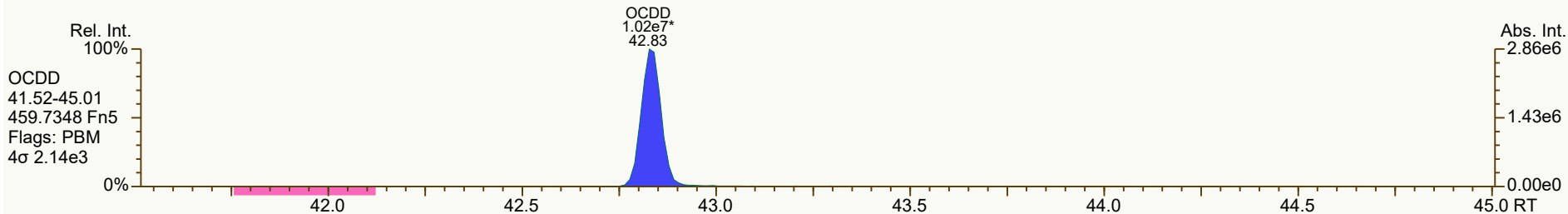
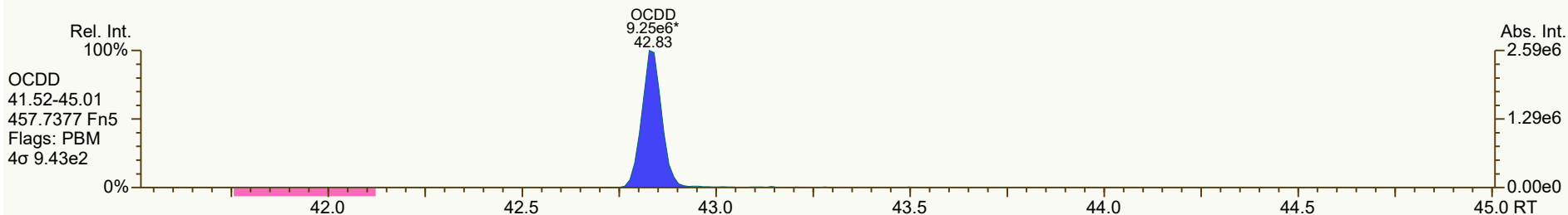


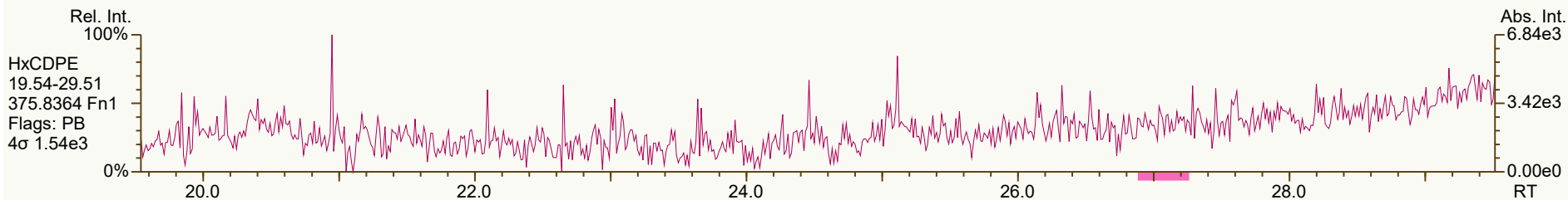
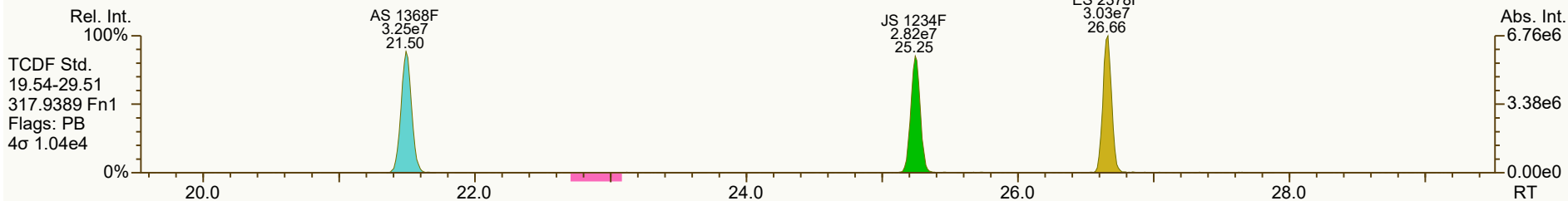
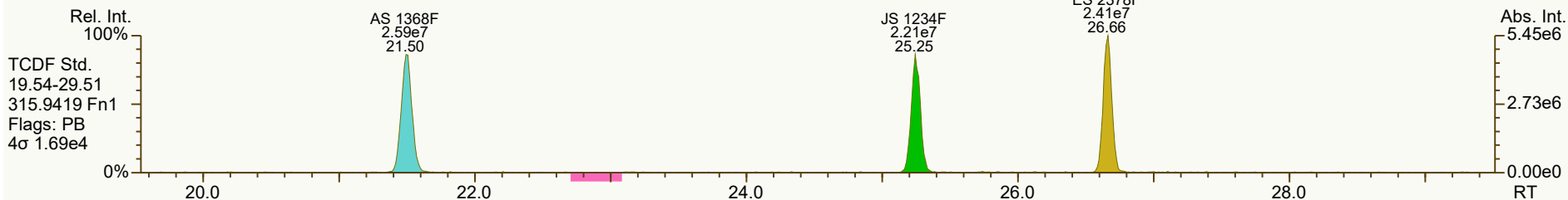
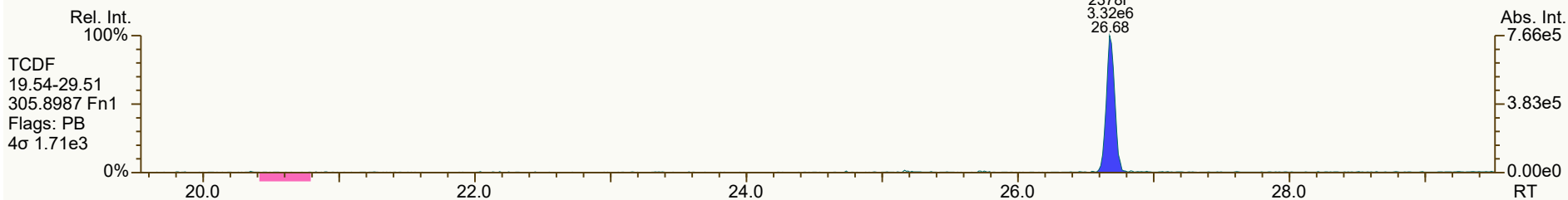
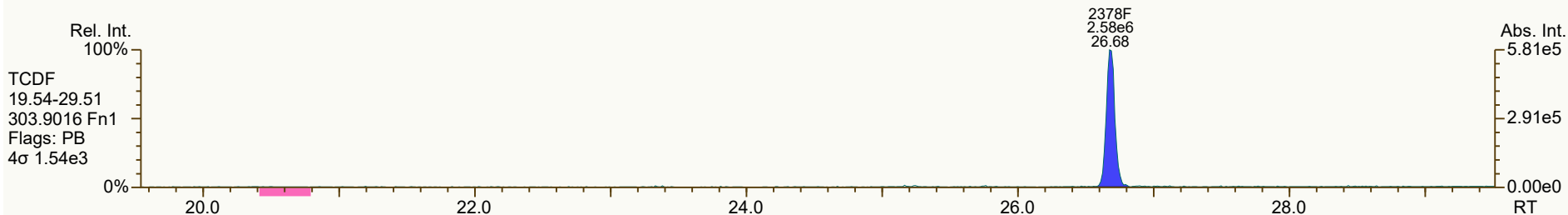


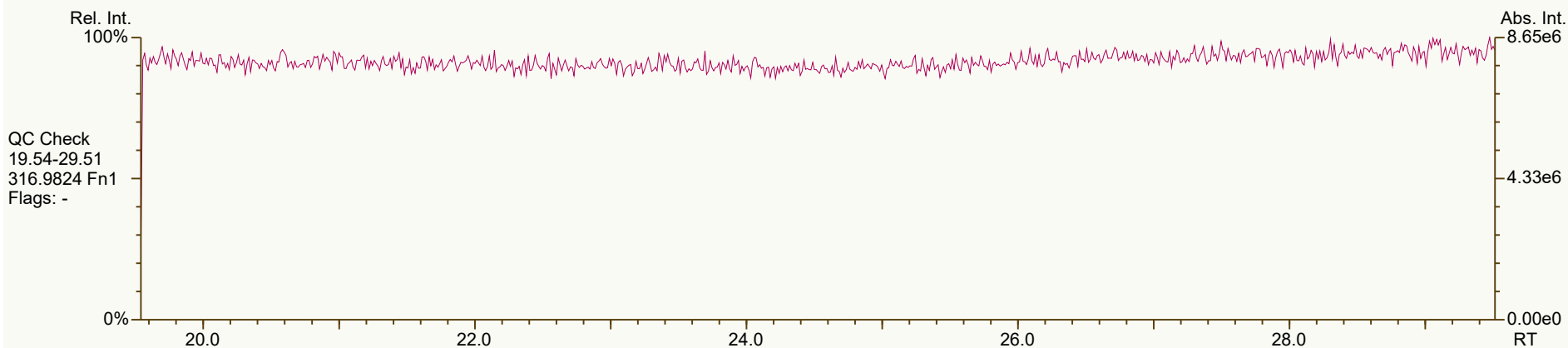
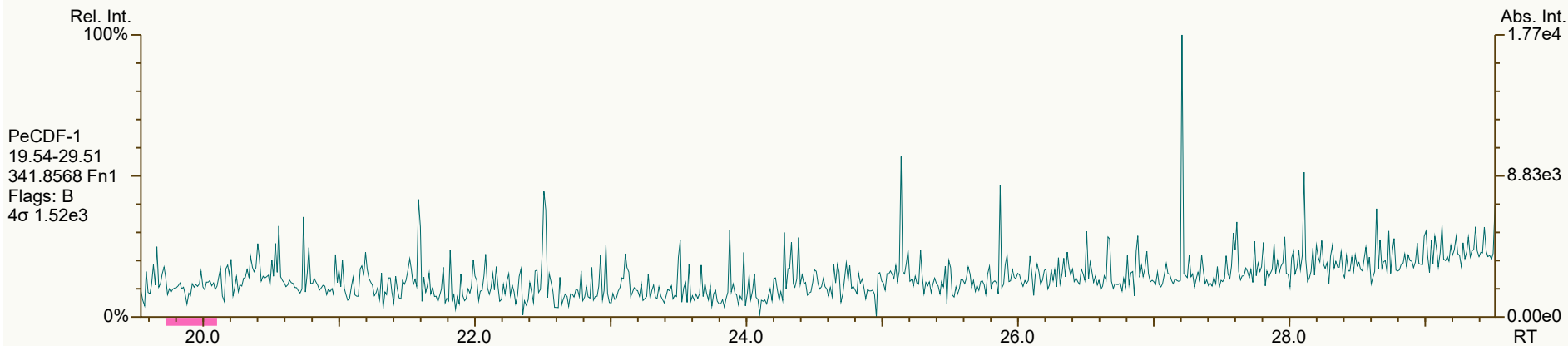
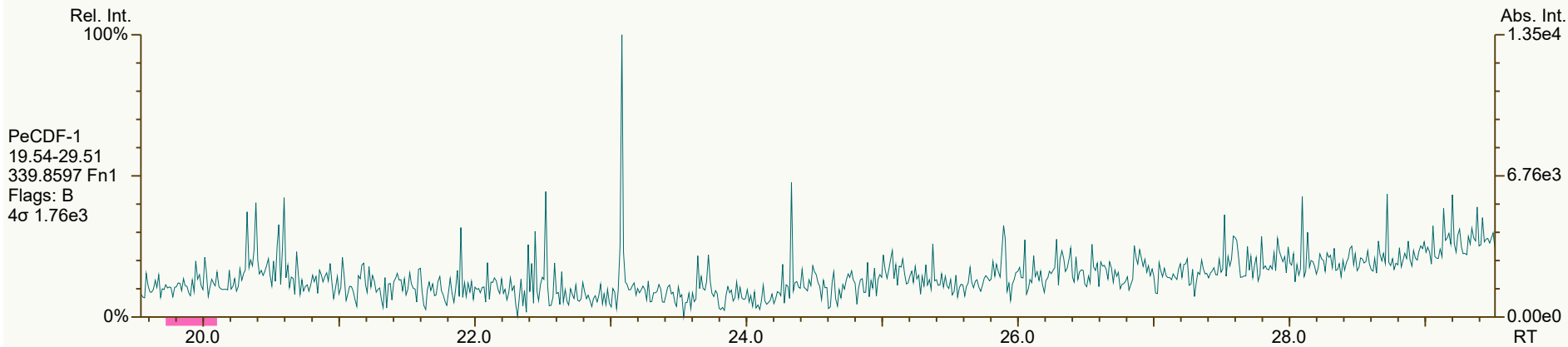
SGS ID: CS3_211110_DF_CB
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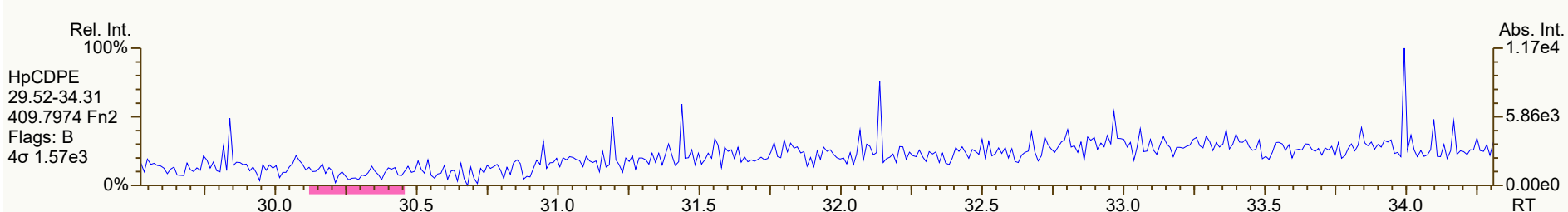
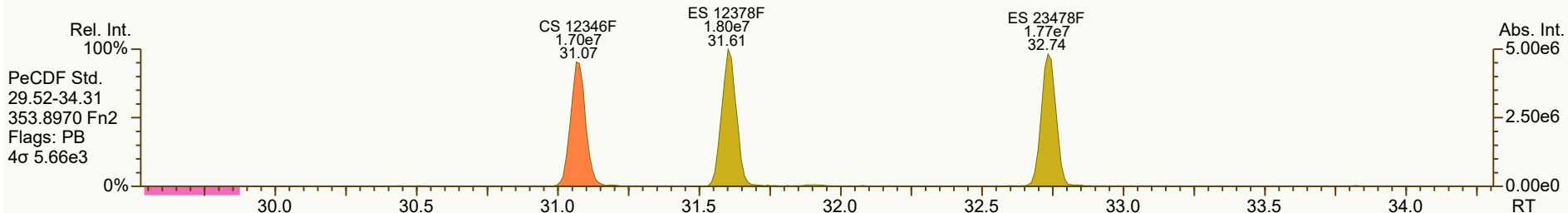
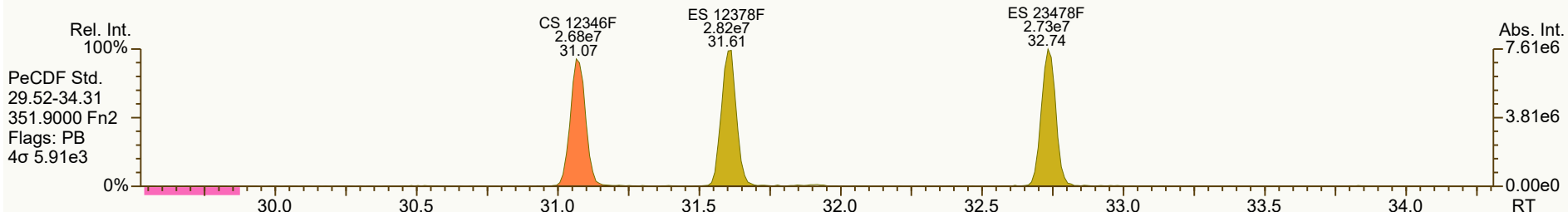
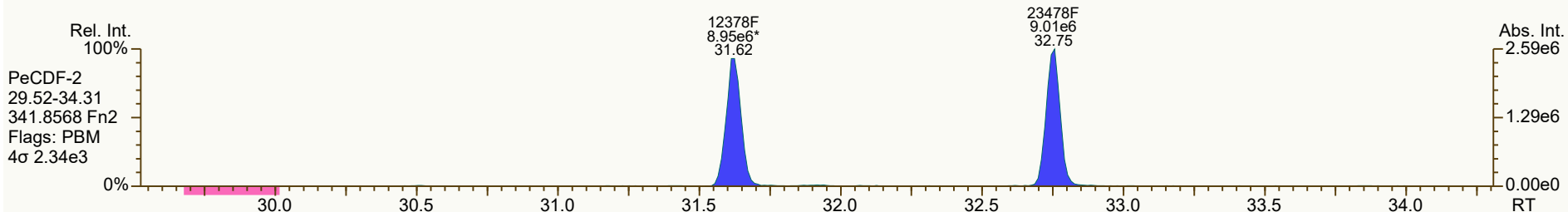
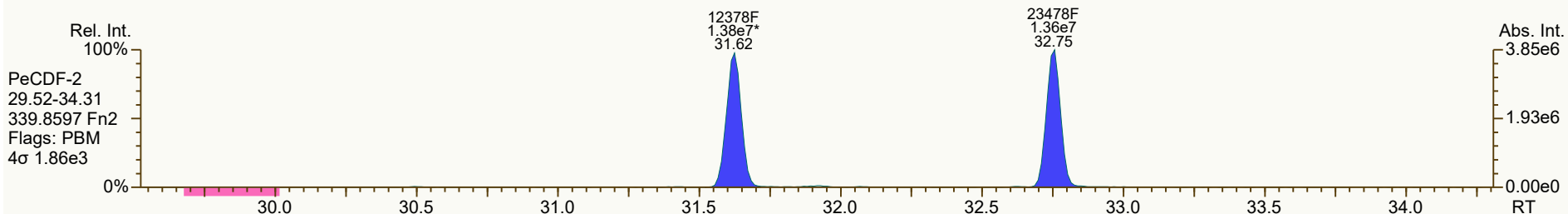
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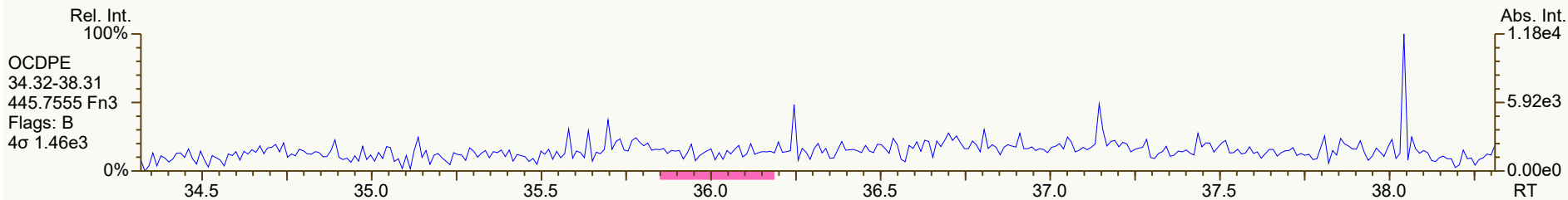
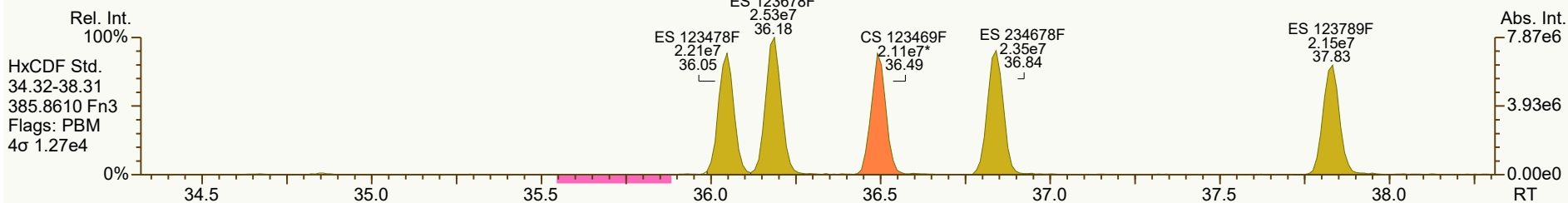
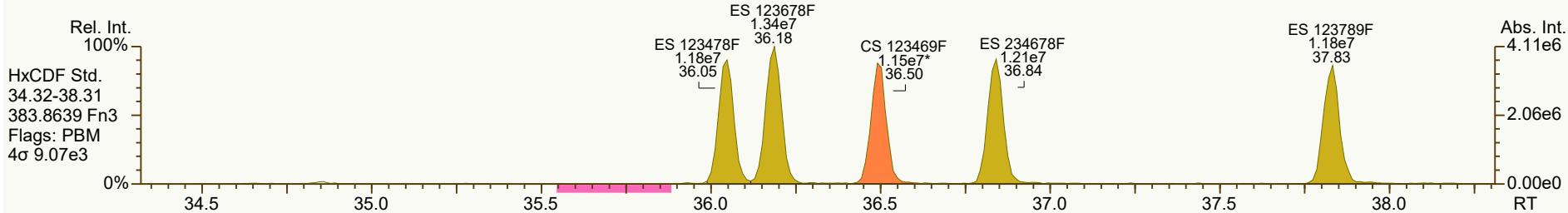
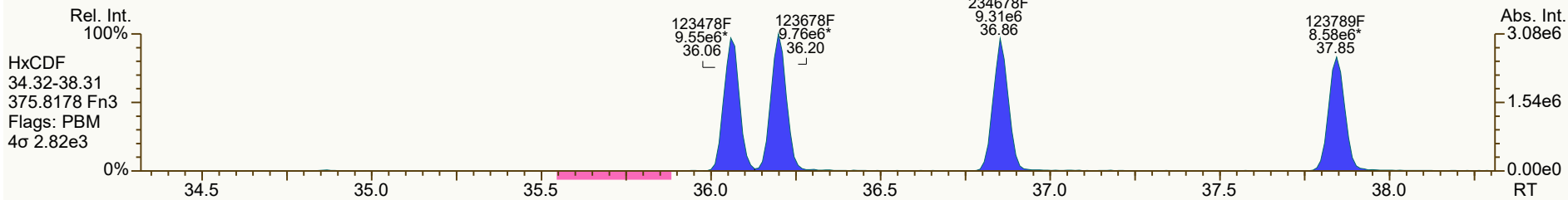
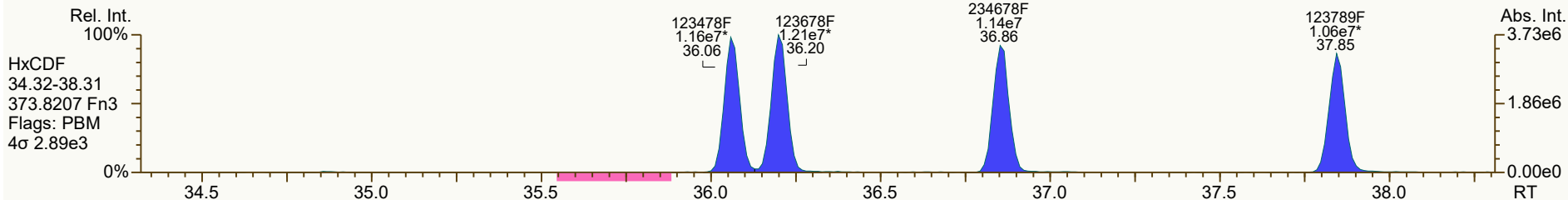
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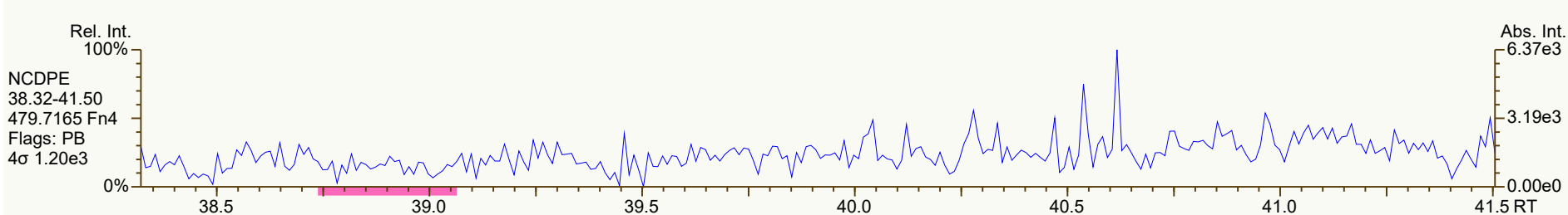
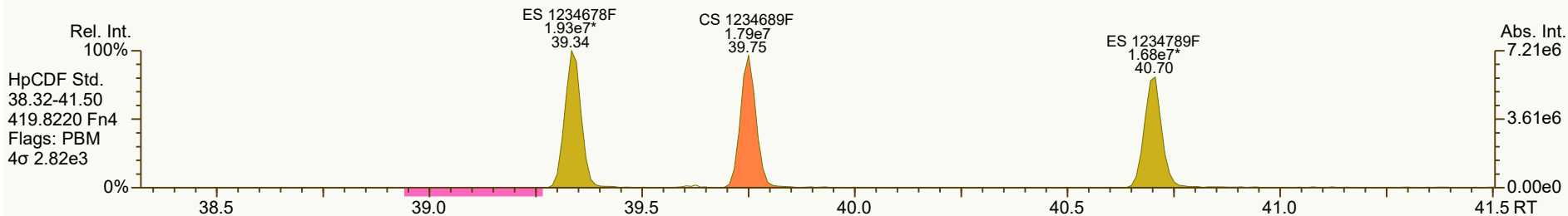
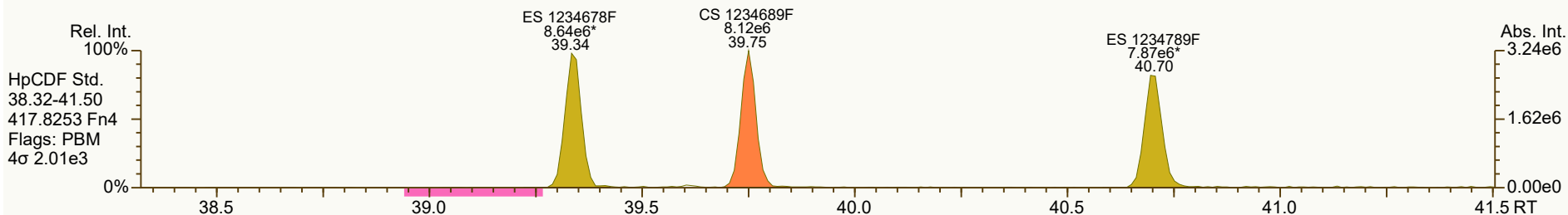
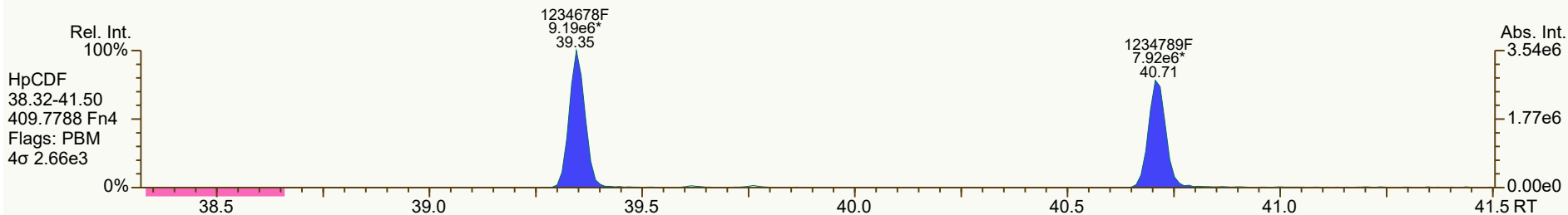
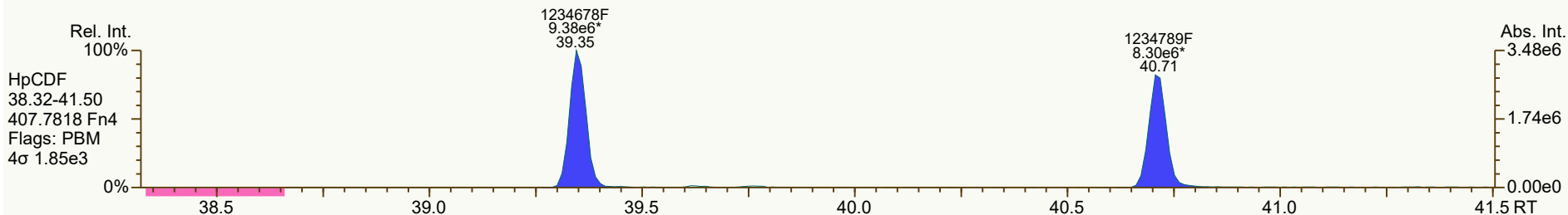


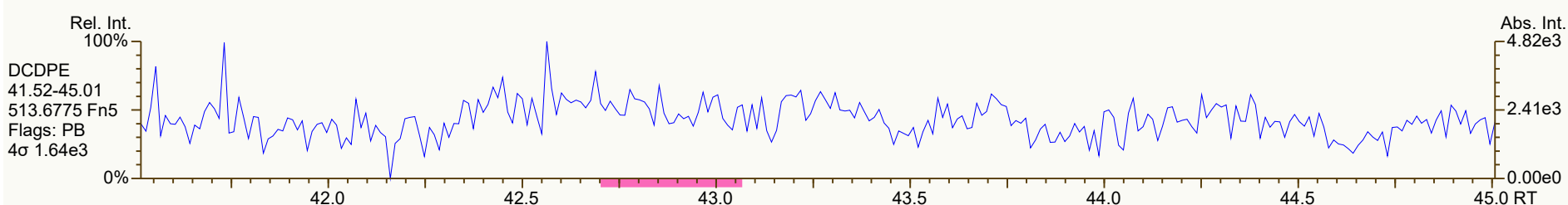
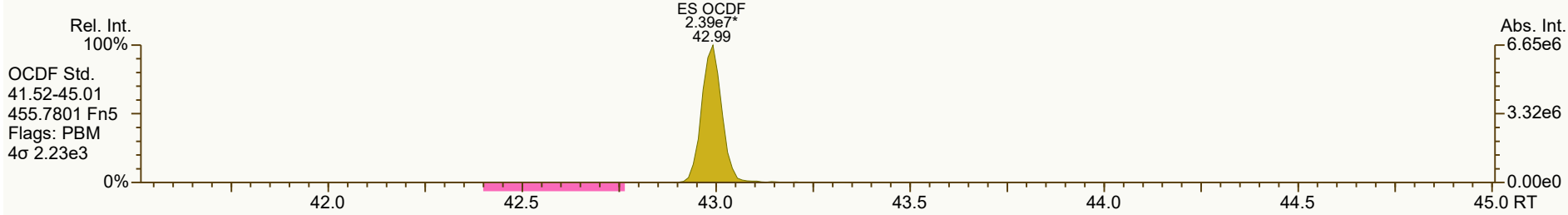
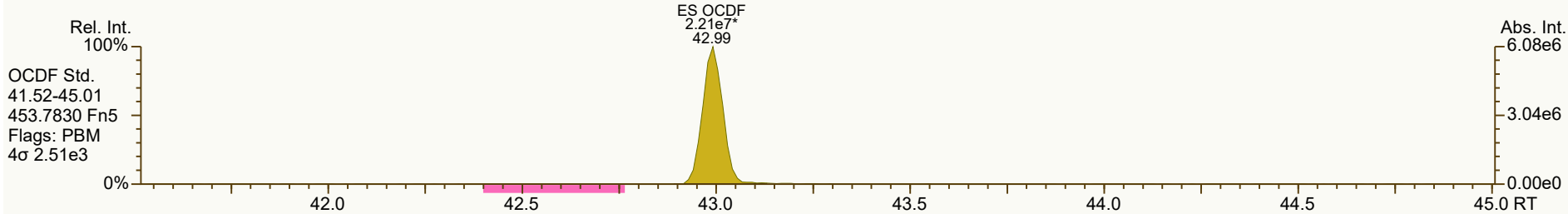
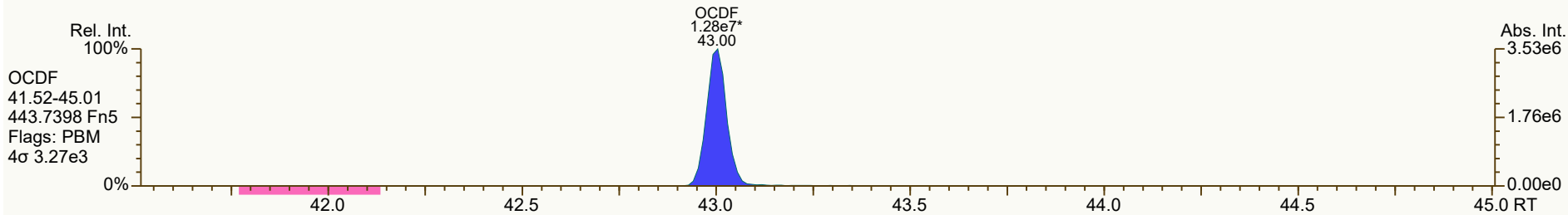
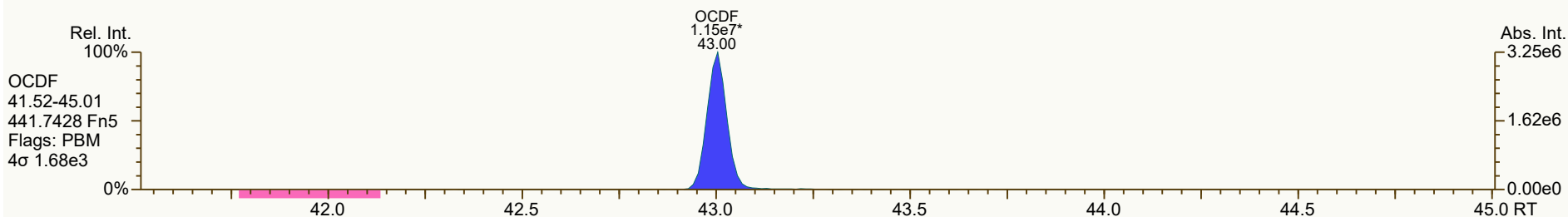




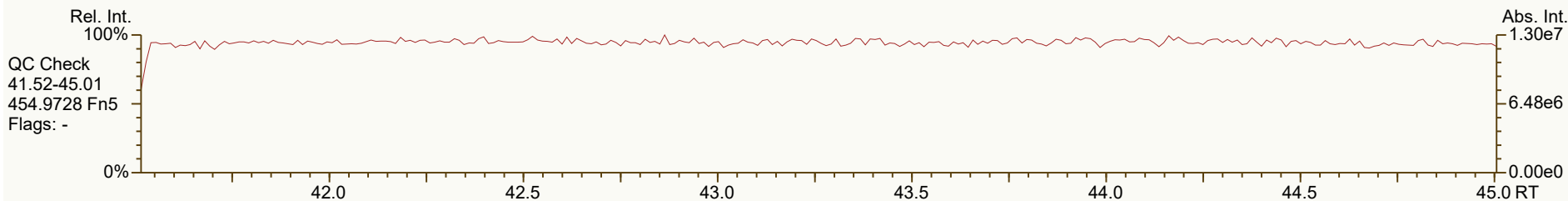
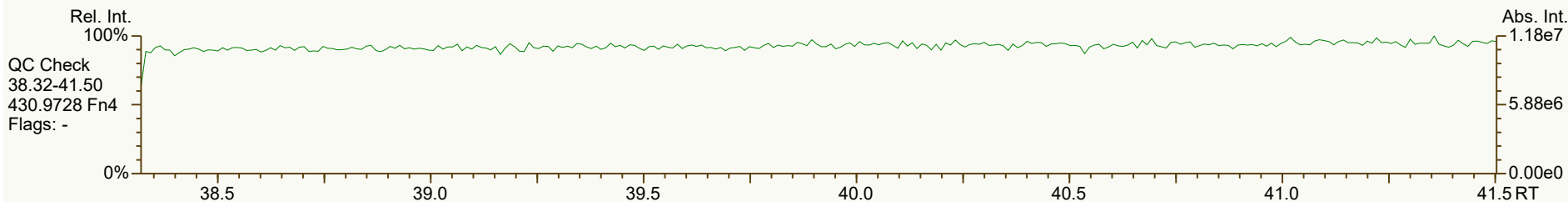
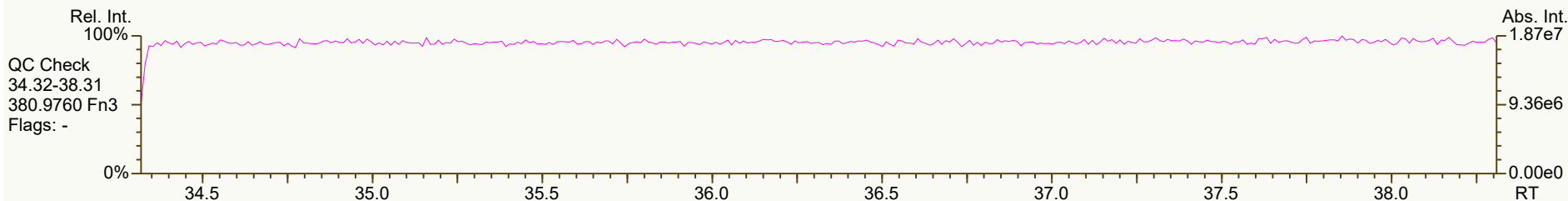
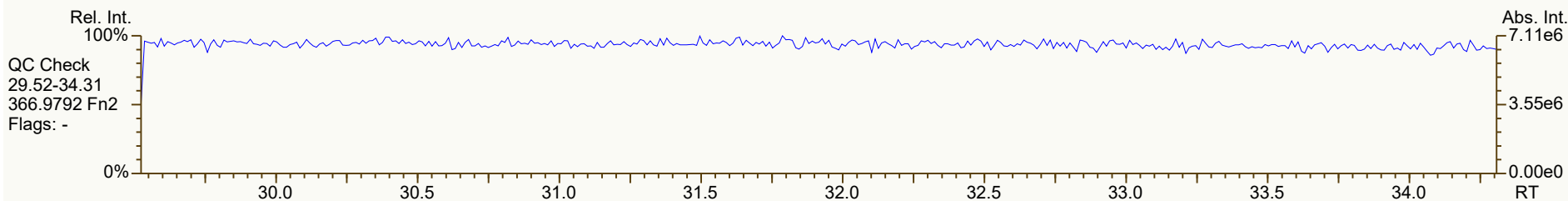
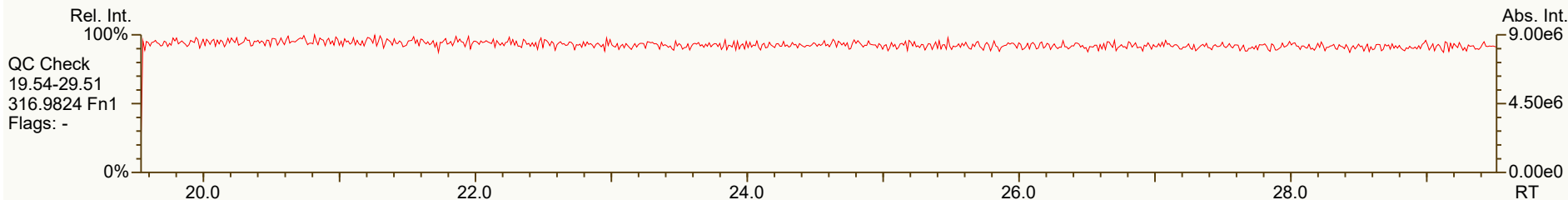


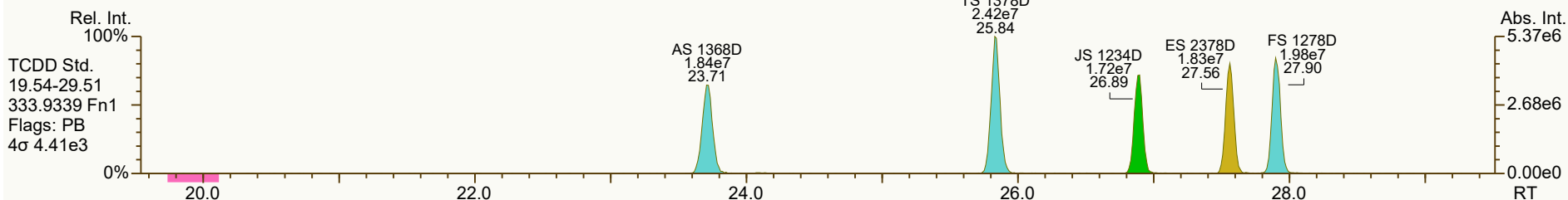
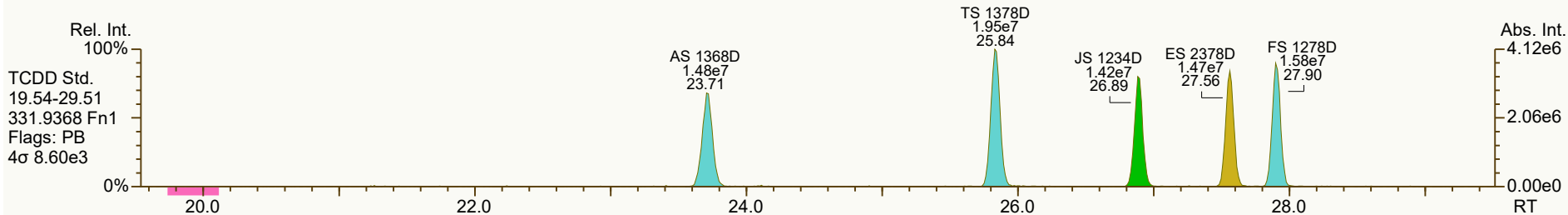
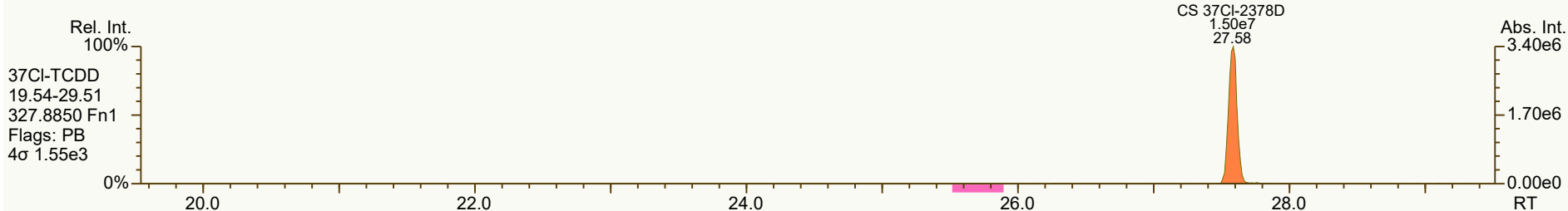
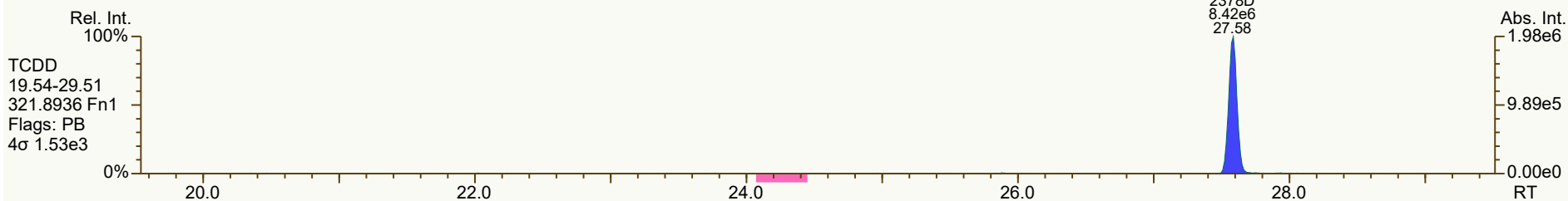
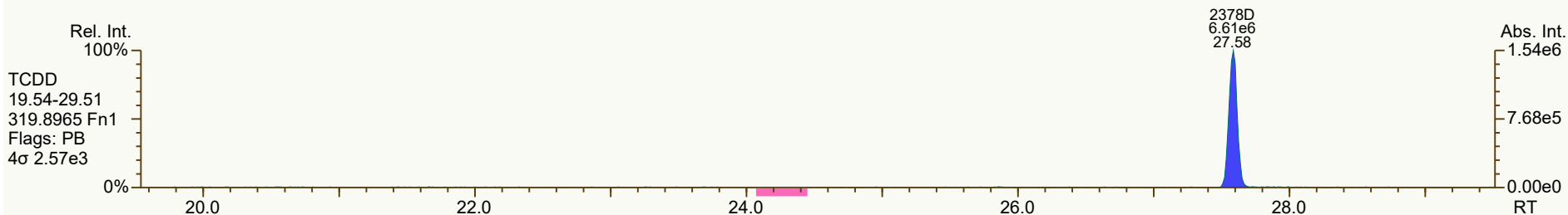


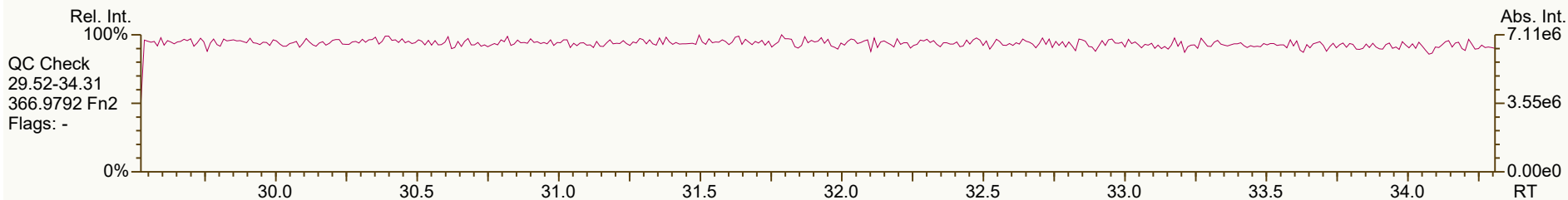
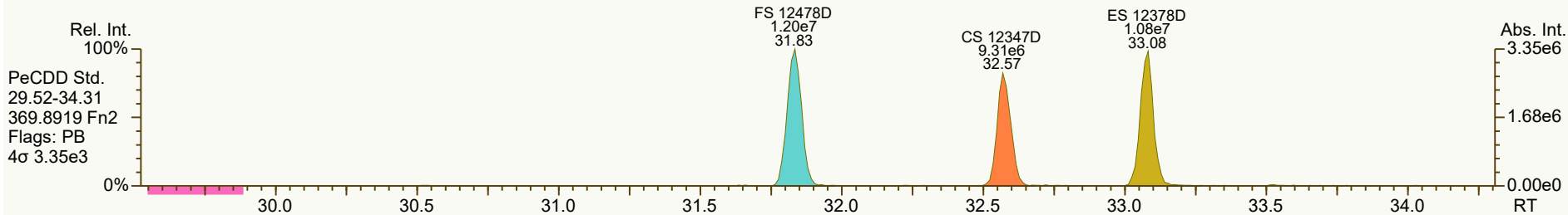
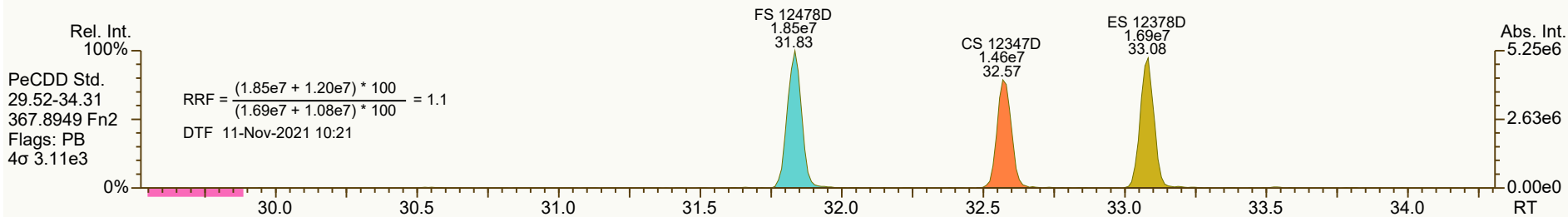
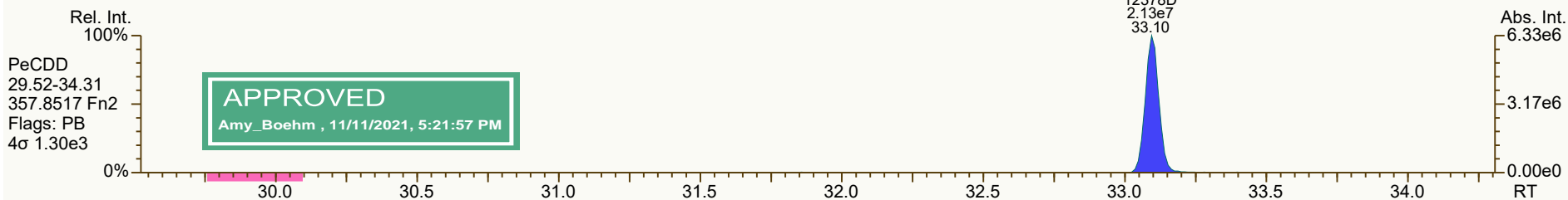
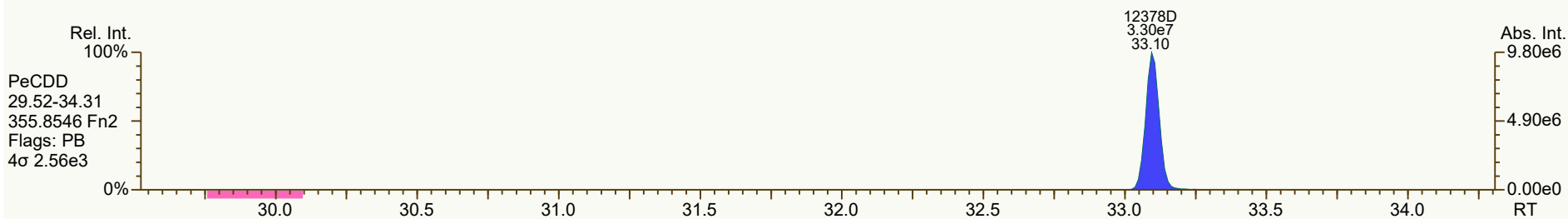


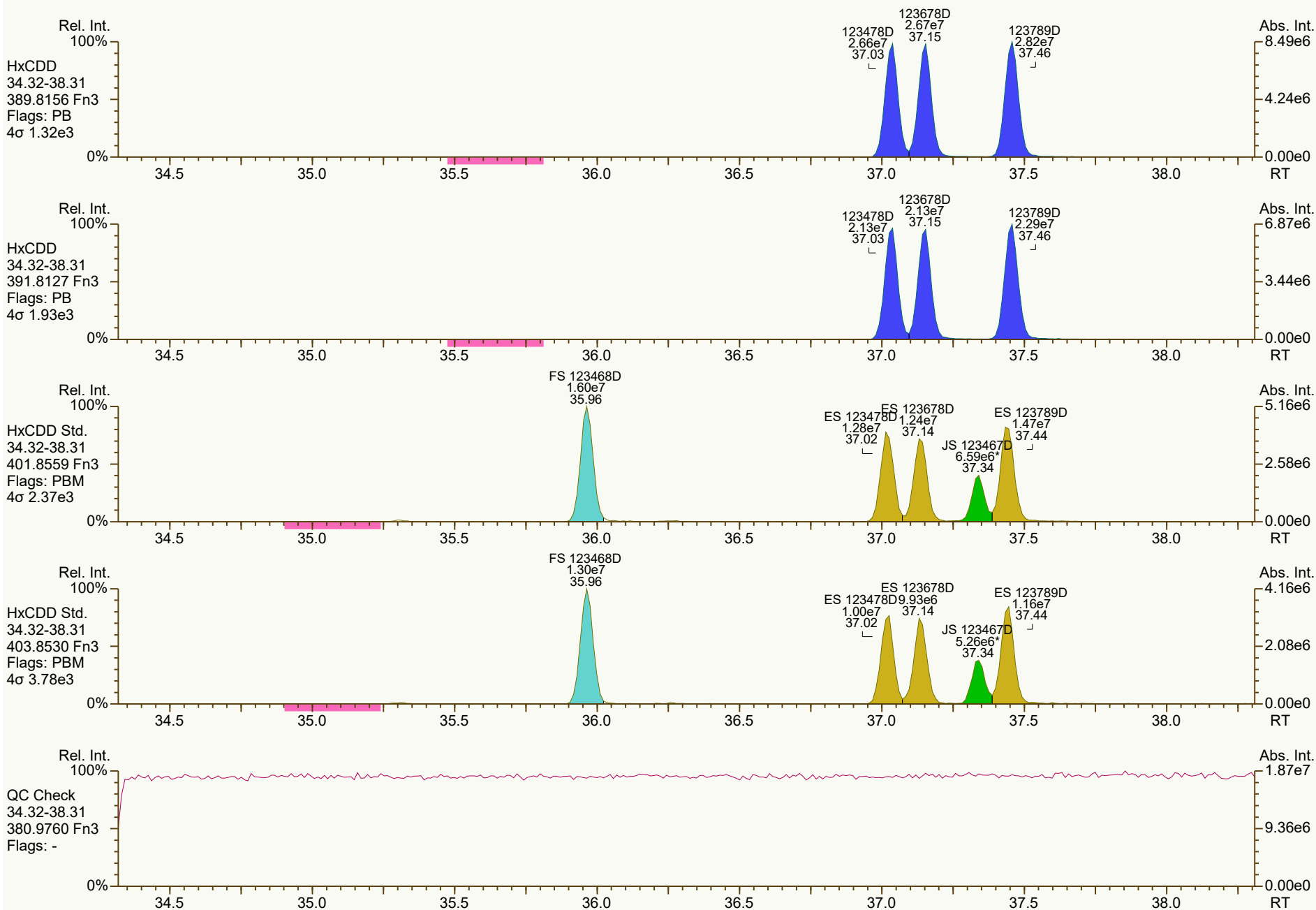


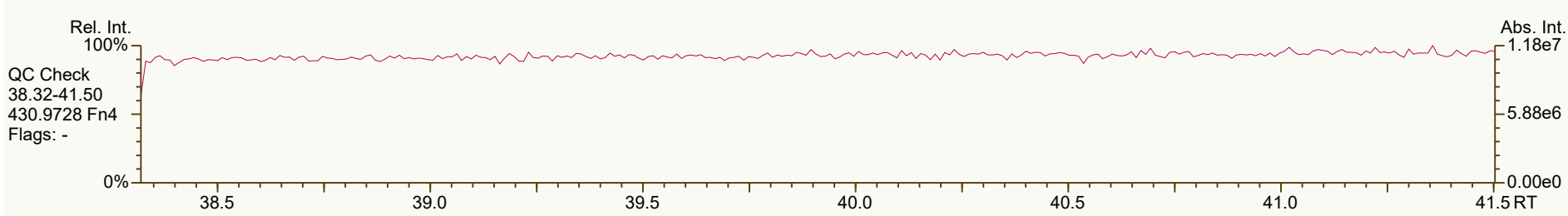
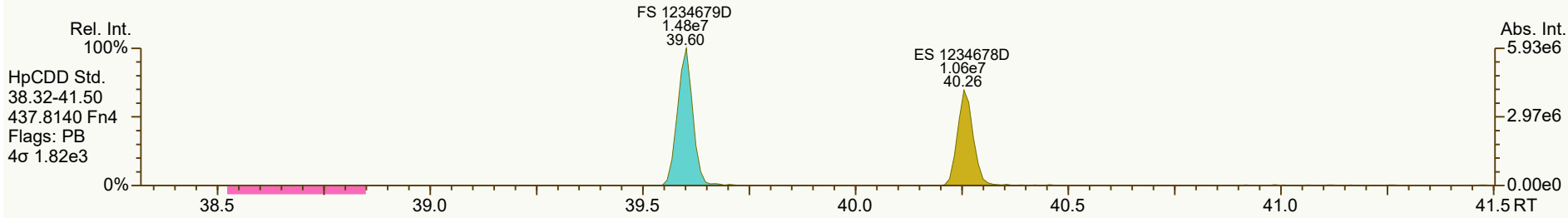
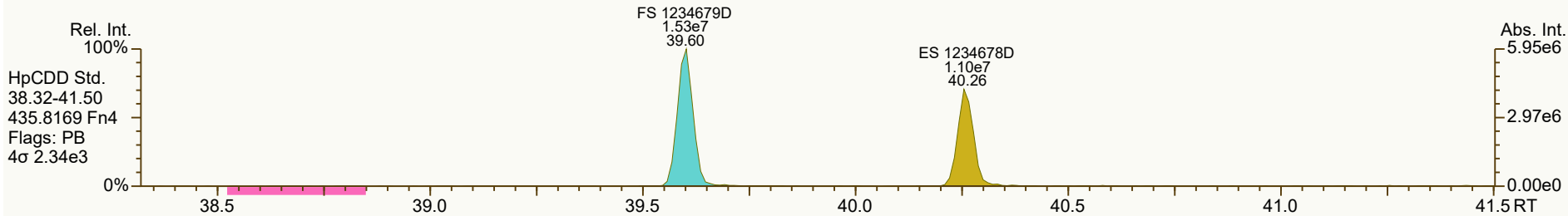
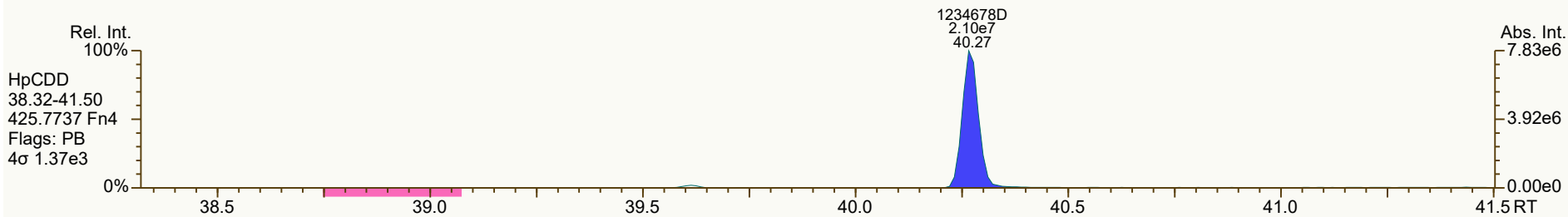
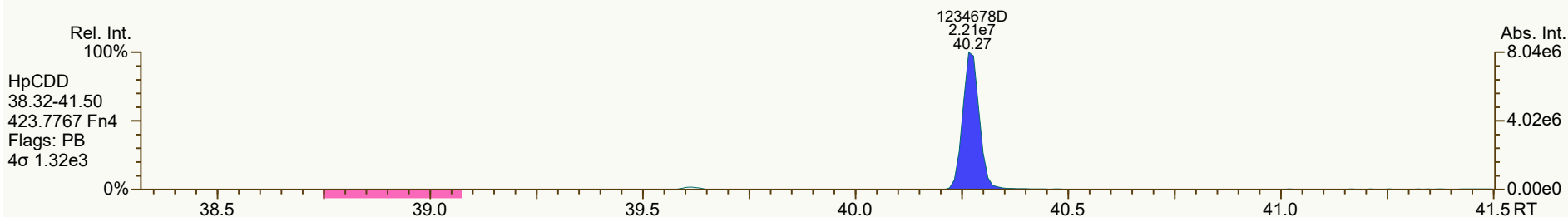
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF			Checkcode: 855-576-PGM		
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C08		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

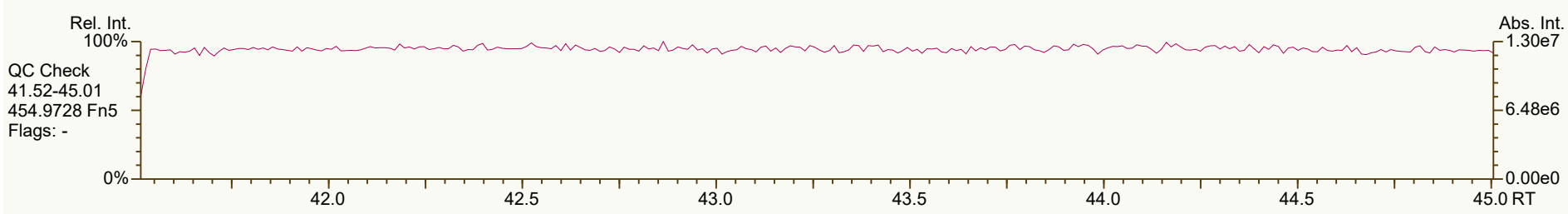
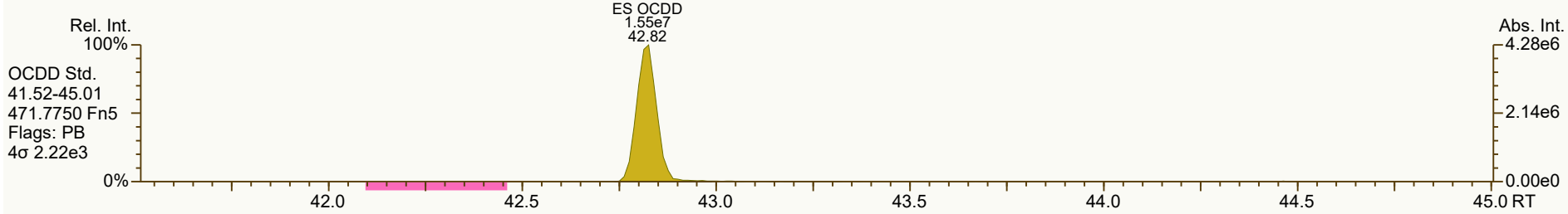
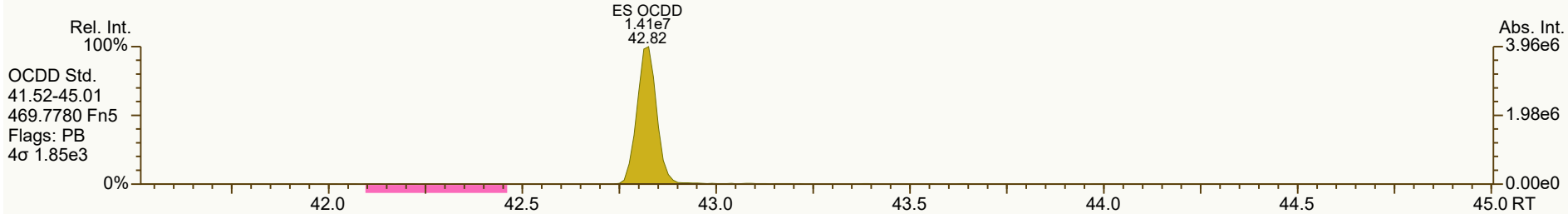
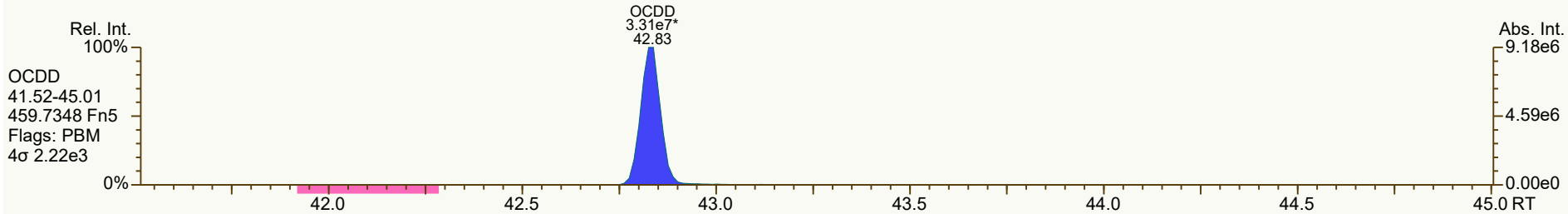
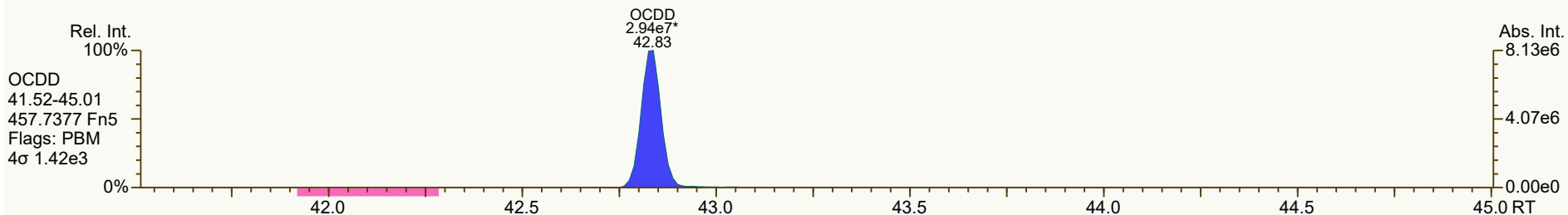


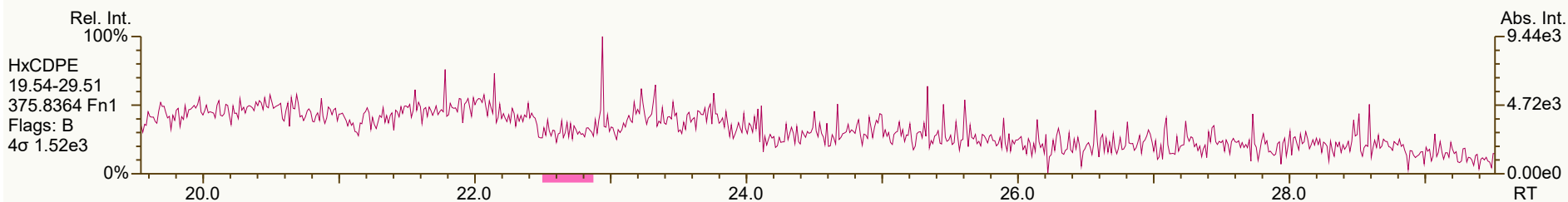
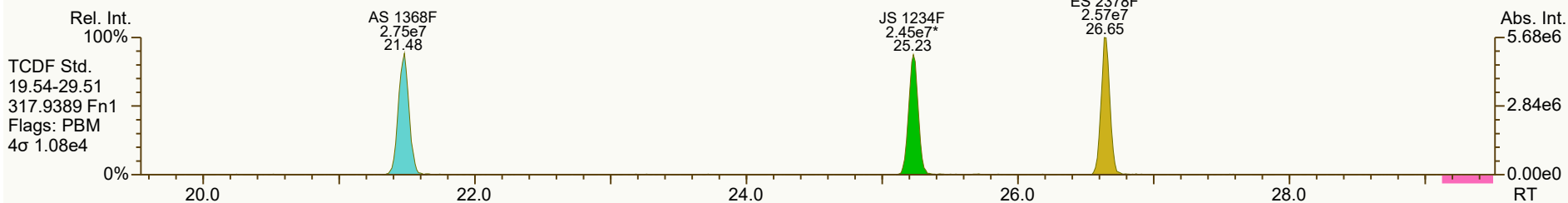
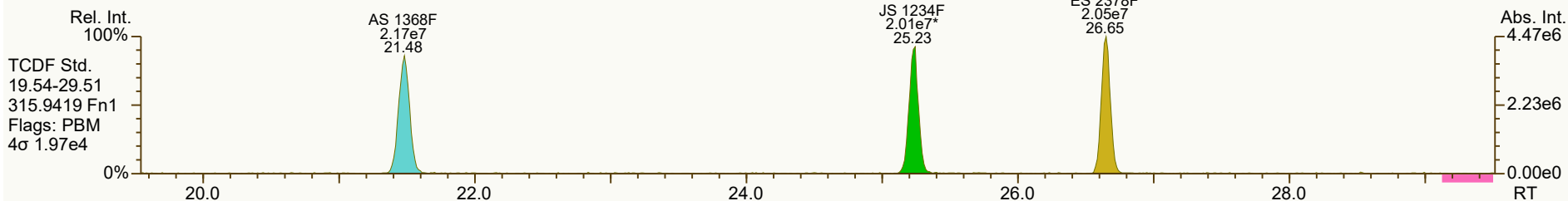
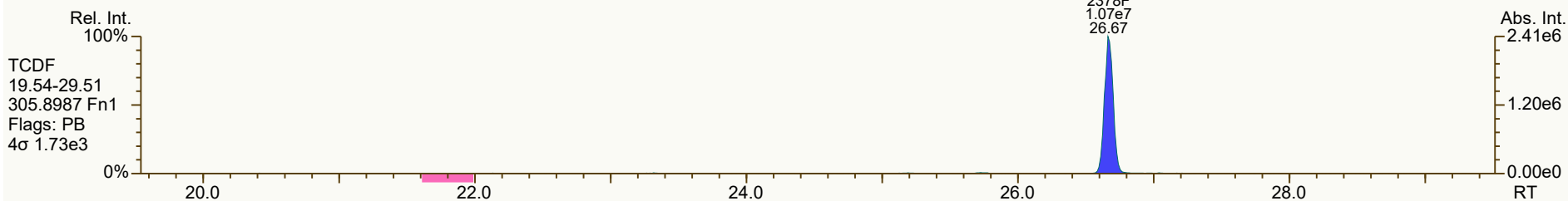
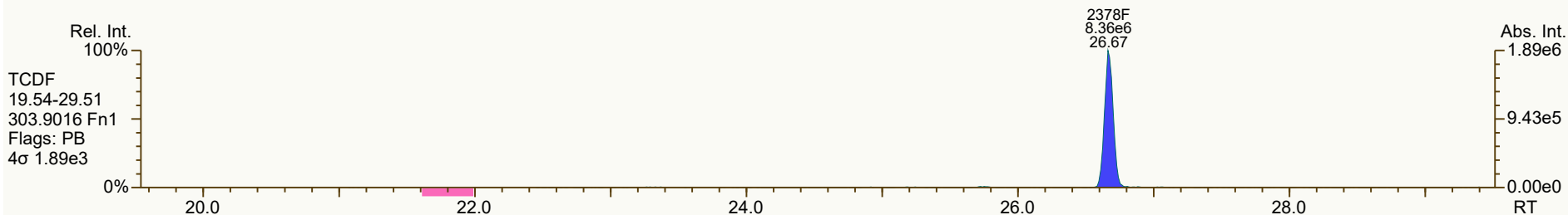


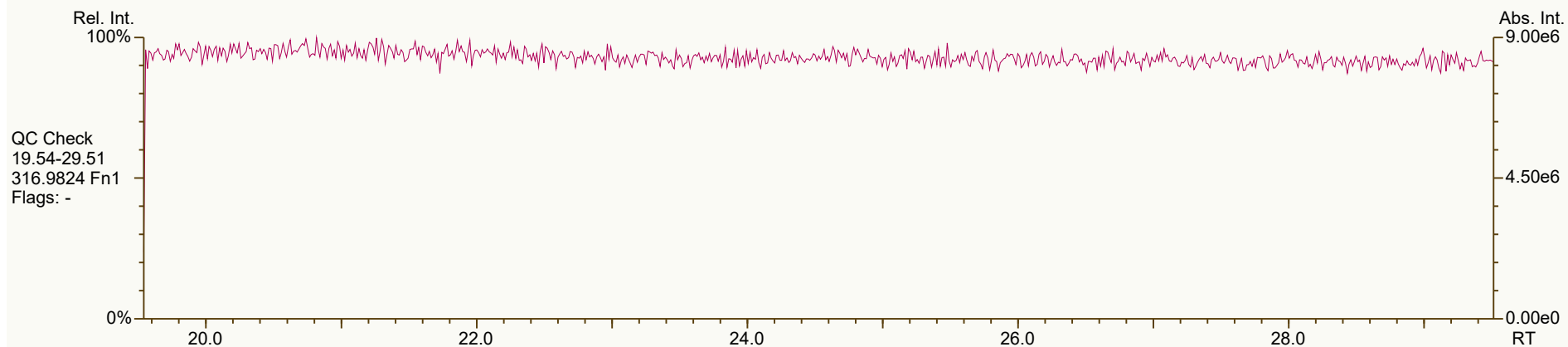
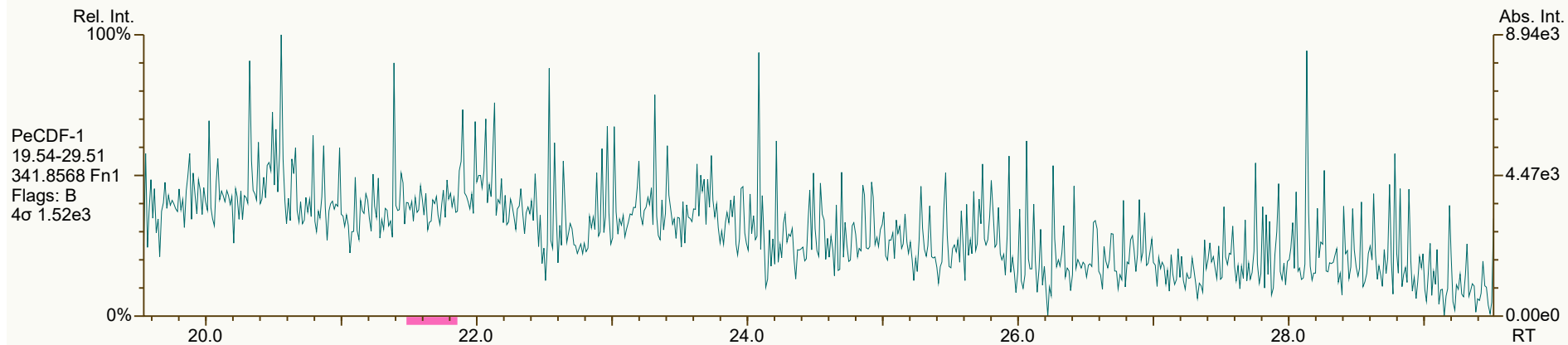
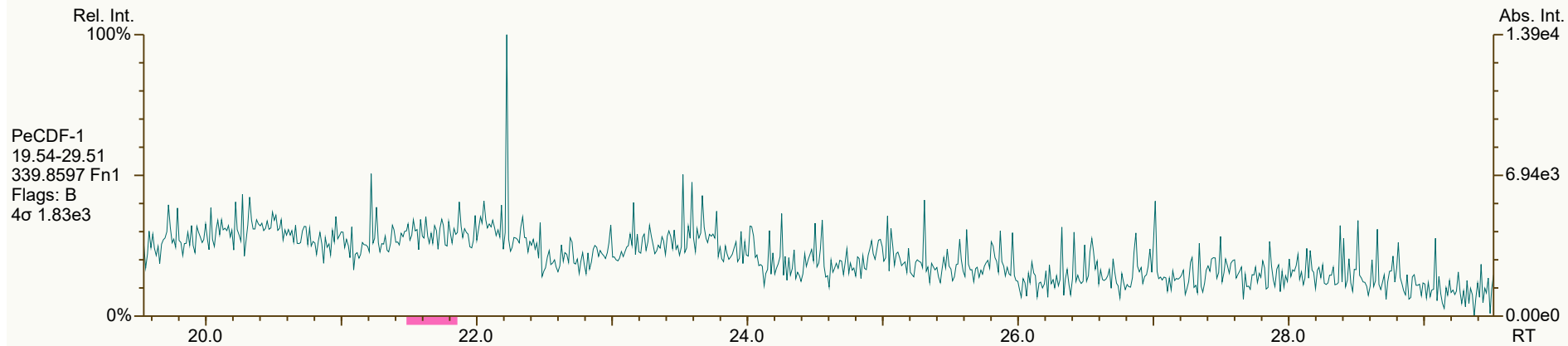








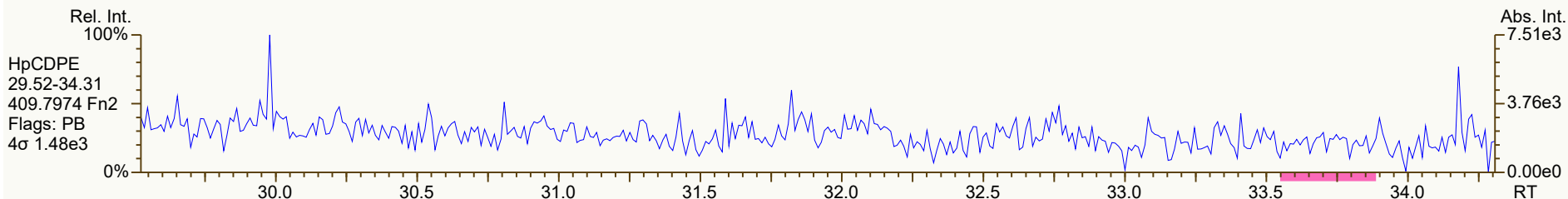
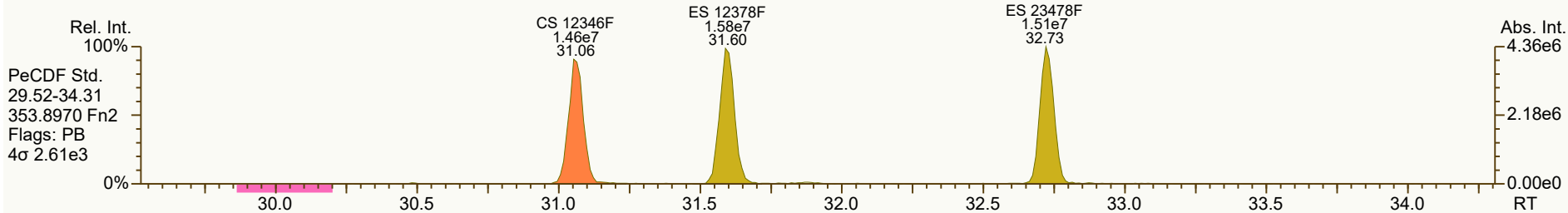
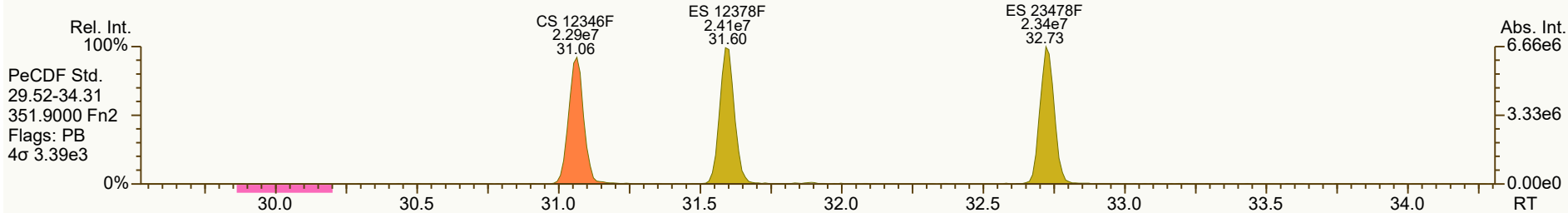
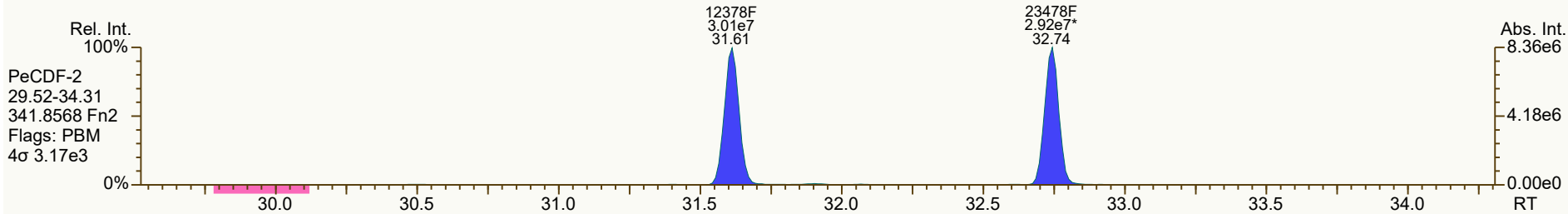
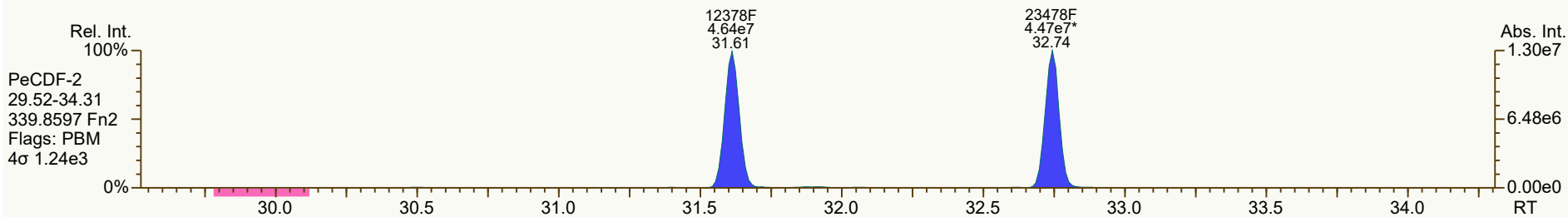




SGS ID: CS4_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-5-4
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69

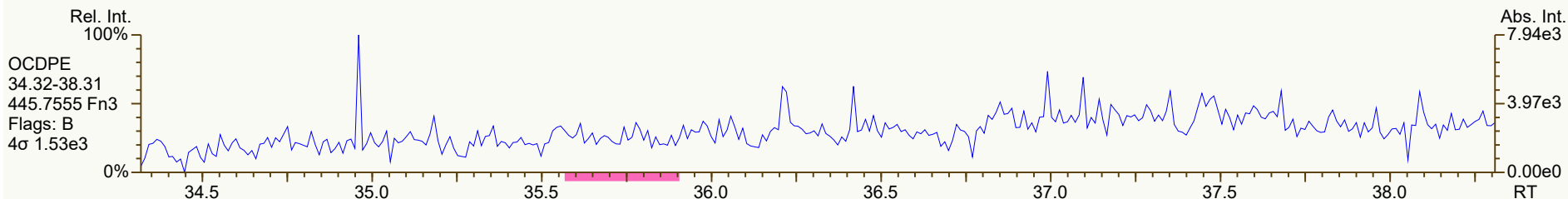
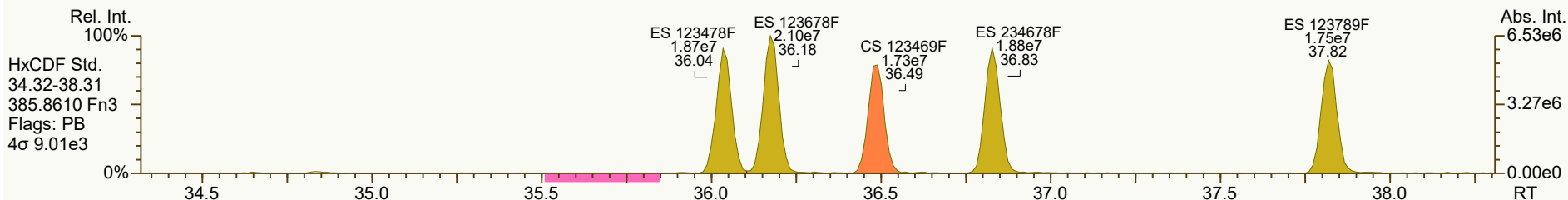
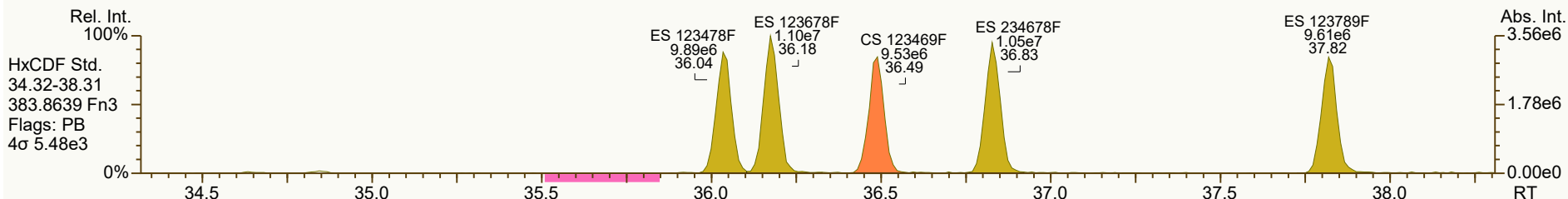
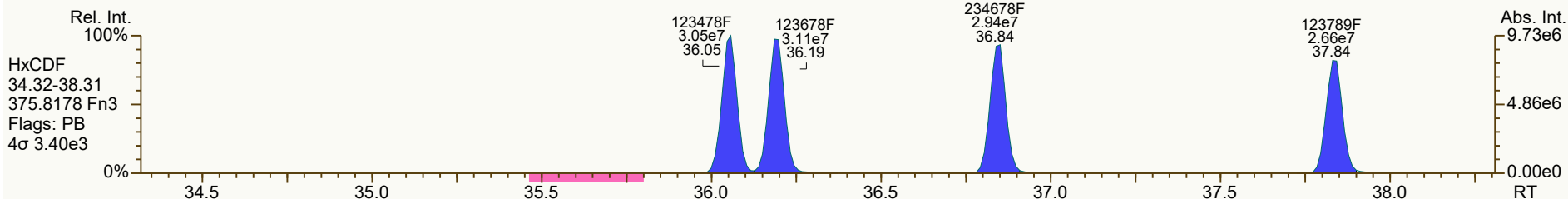
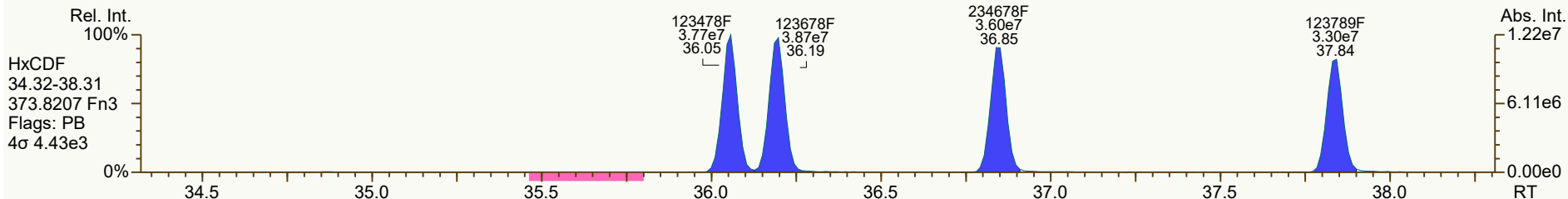
Acq: 10-Nov-2021 14:07:32
User: DTF Datafile: 211110C08

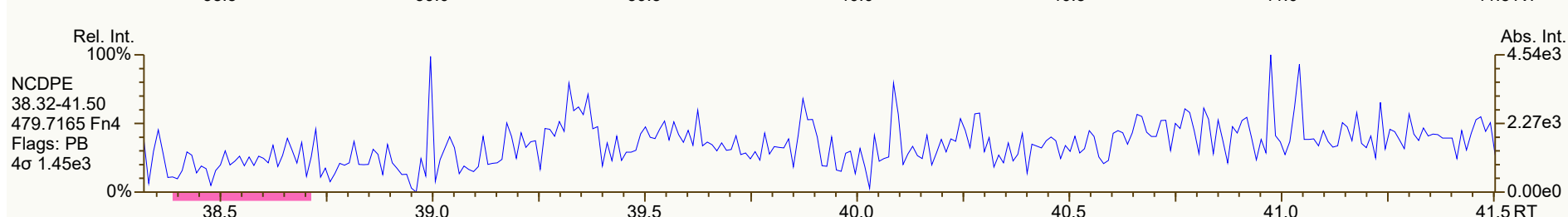
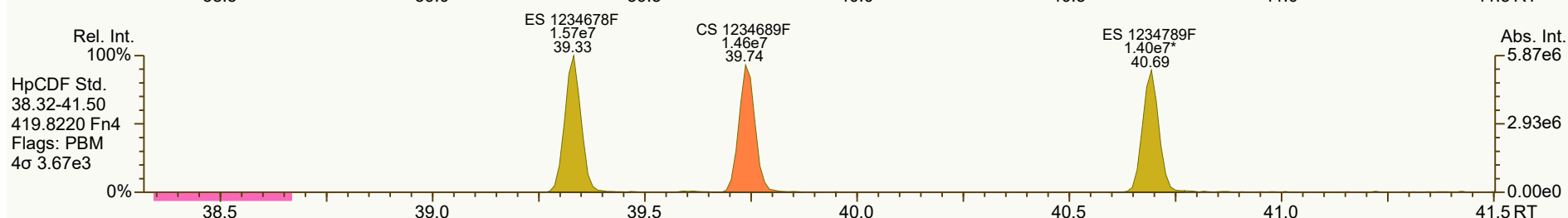
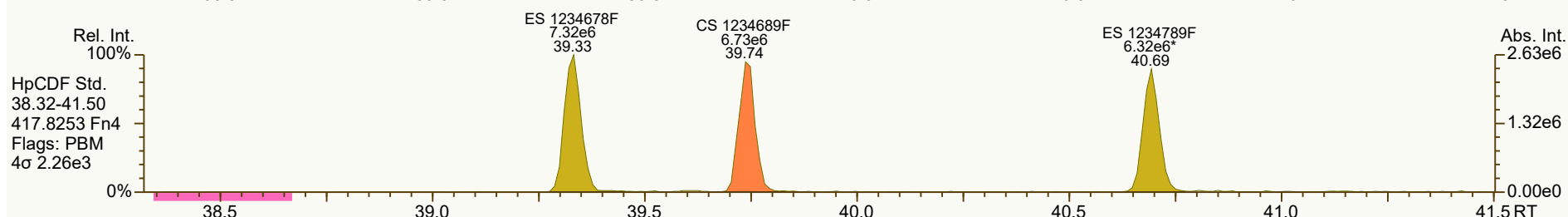
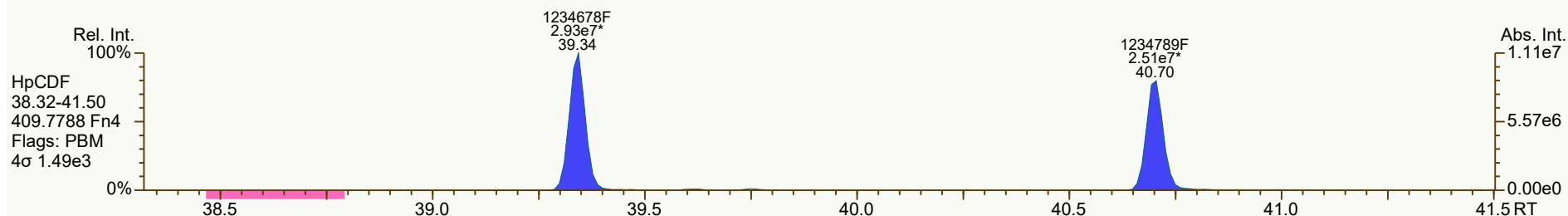
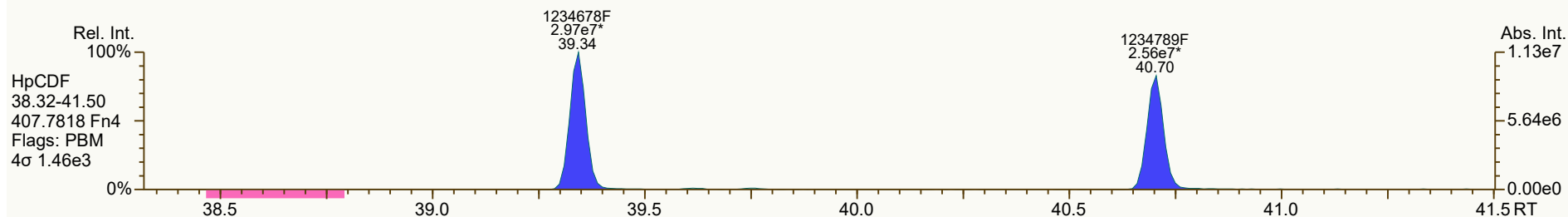


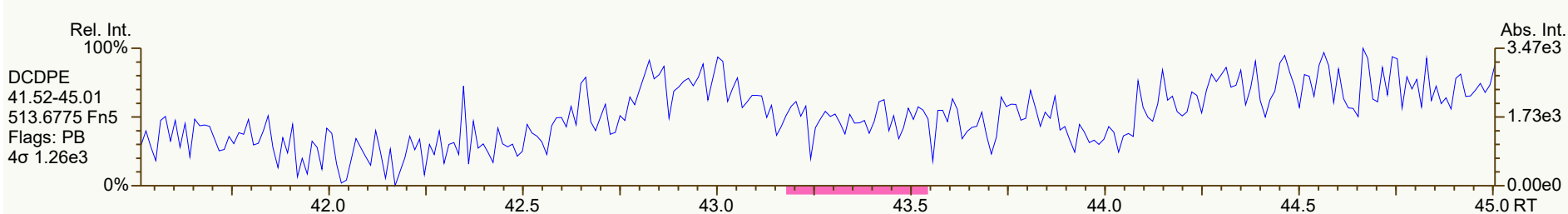
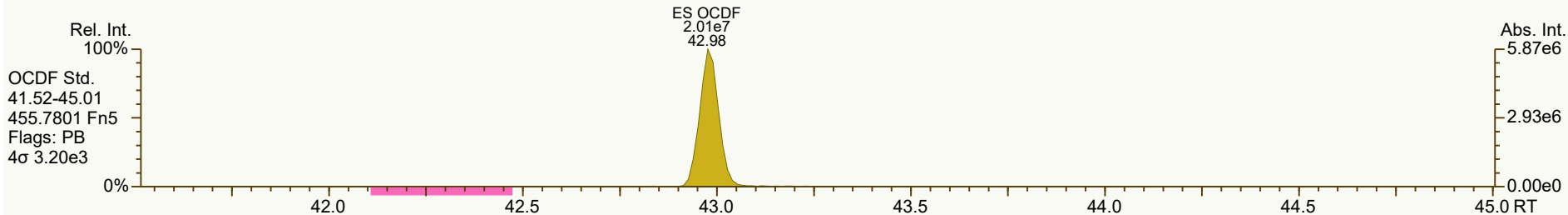
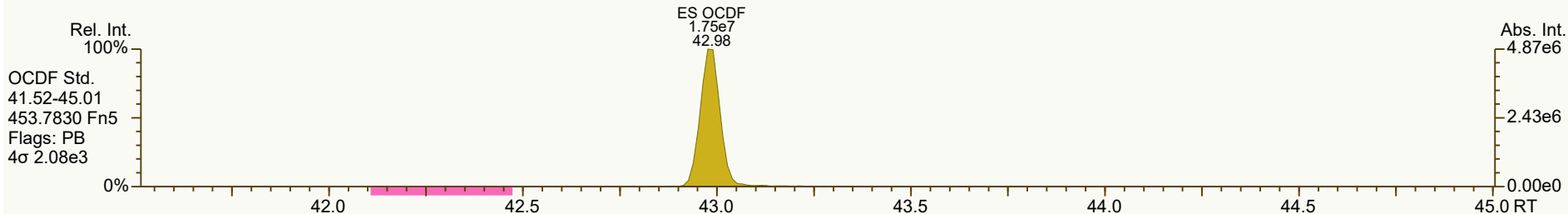
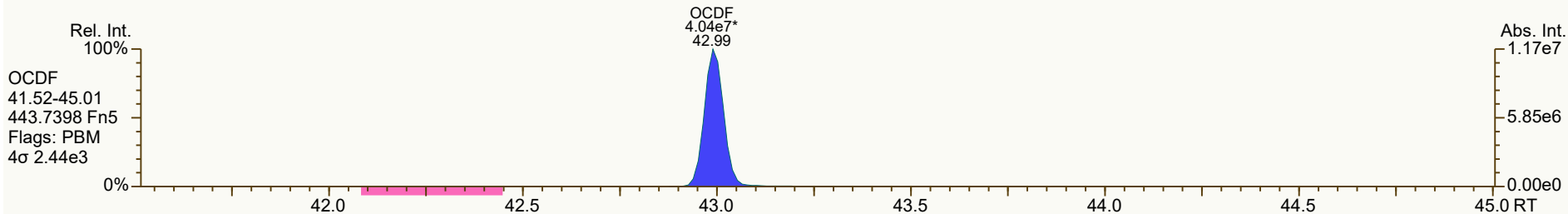
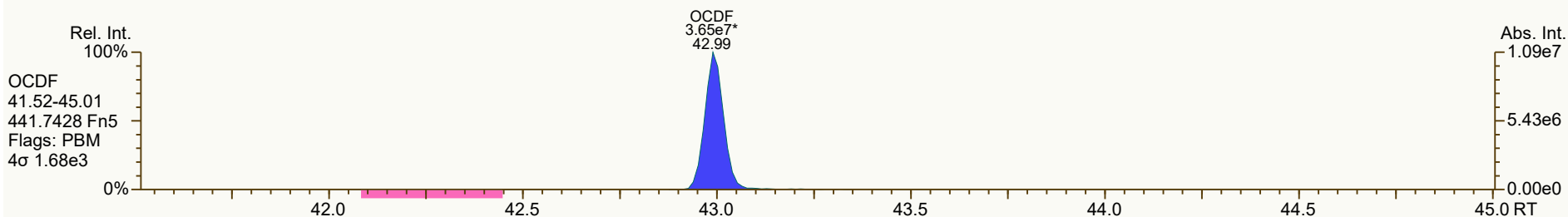
SGS ID: CS4_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-5-4
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69

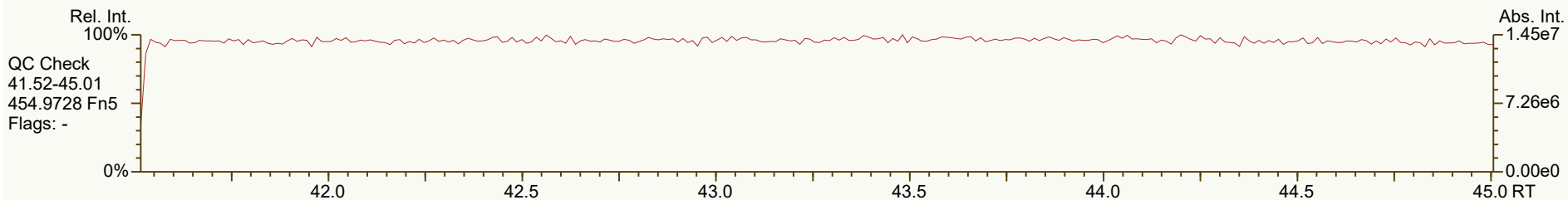
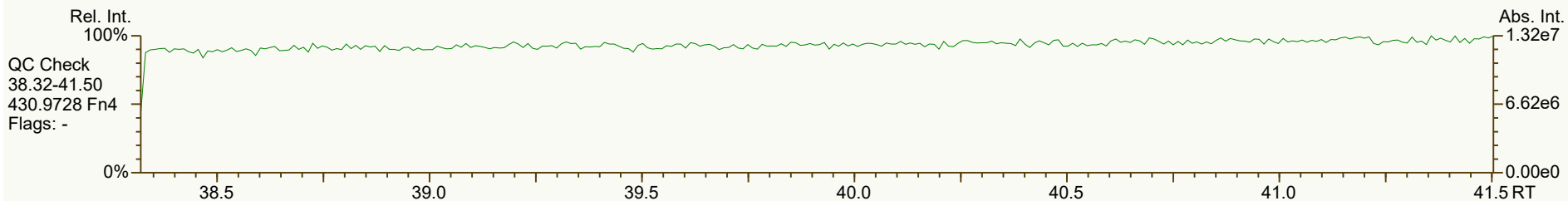
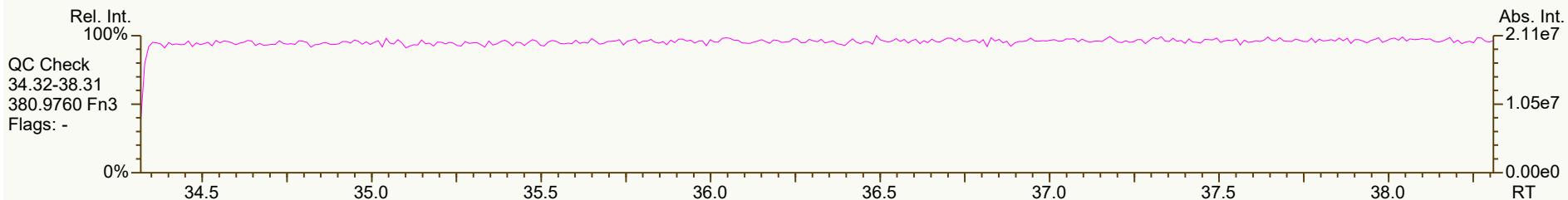
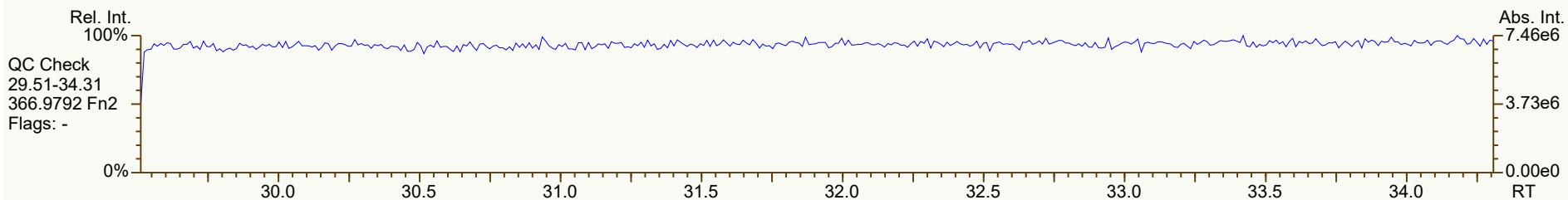
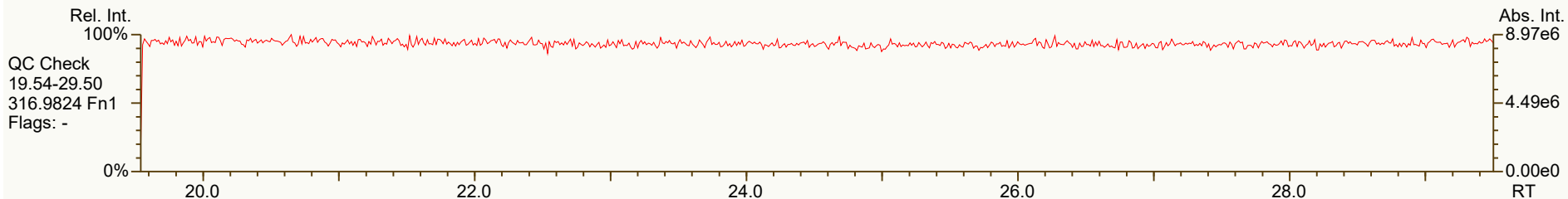
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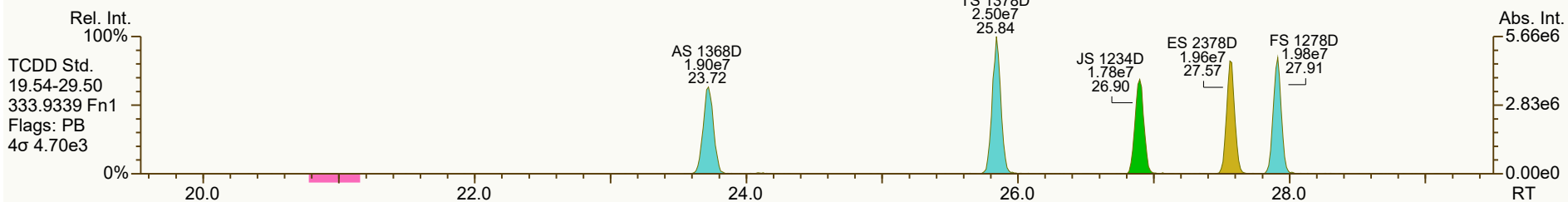
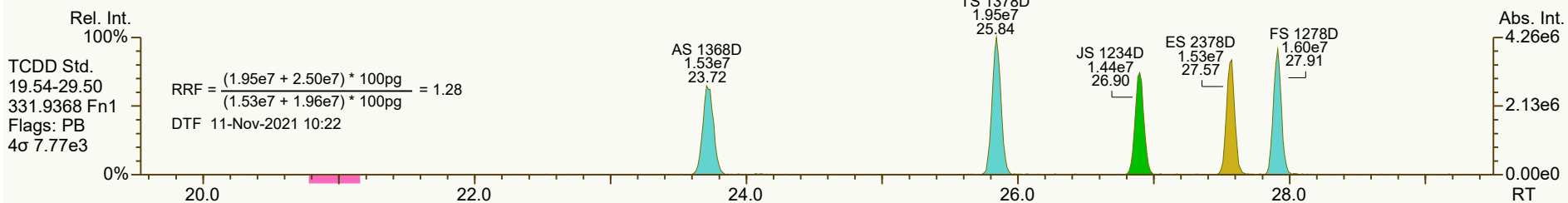
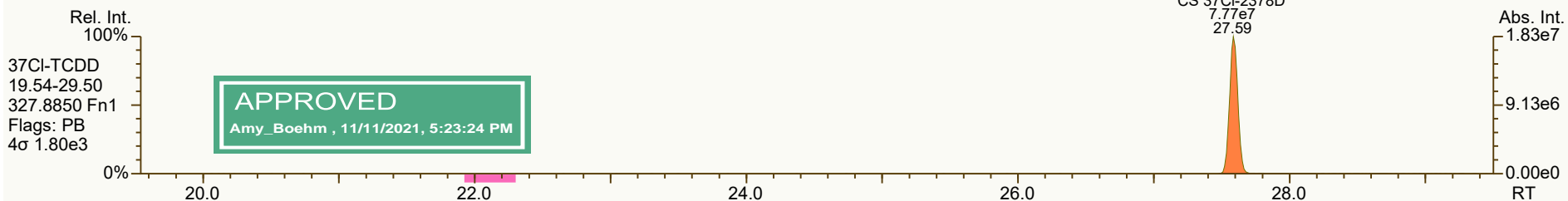
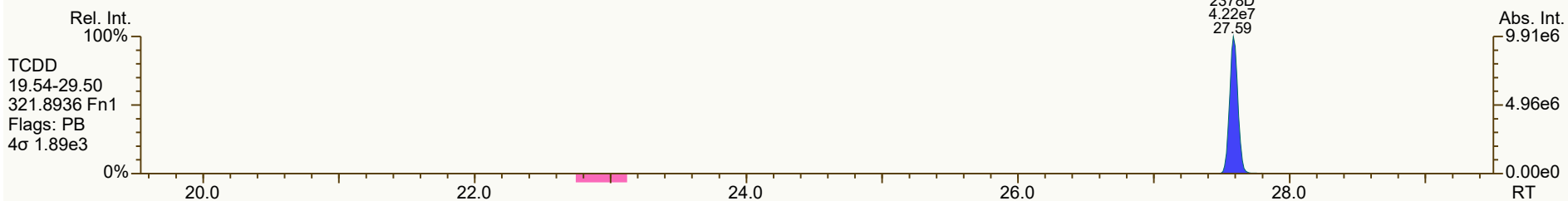
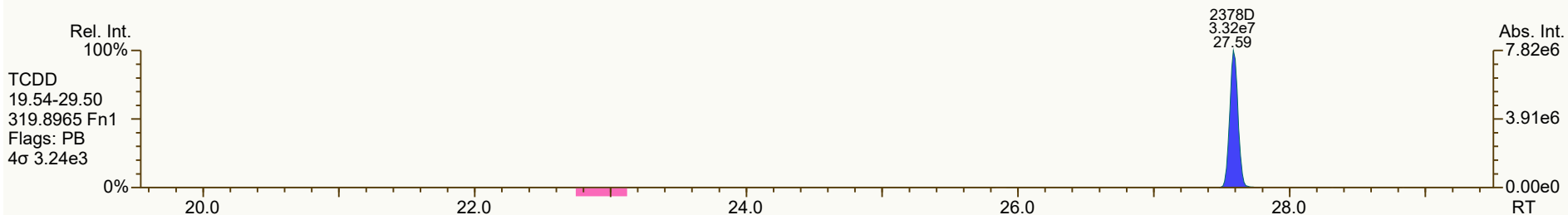


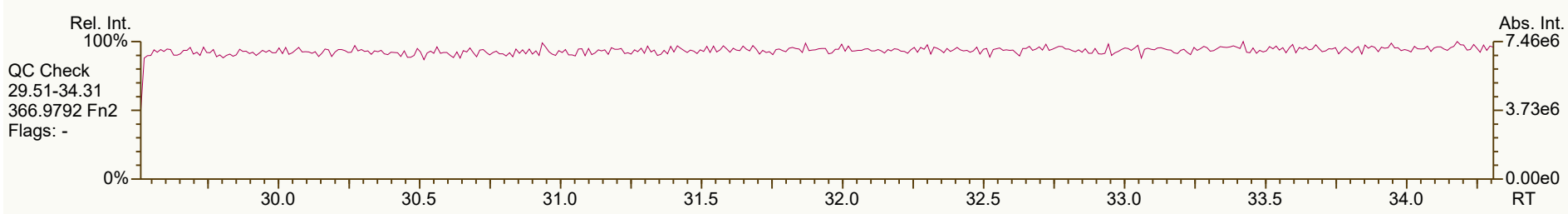
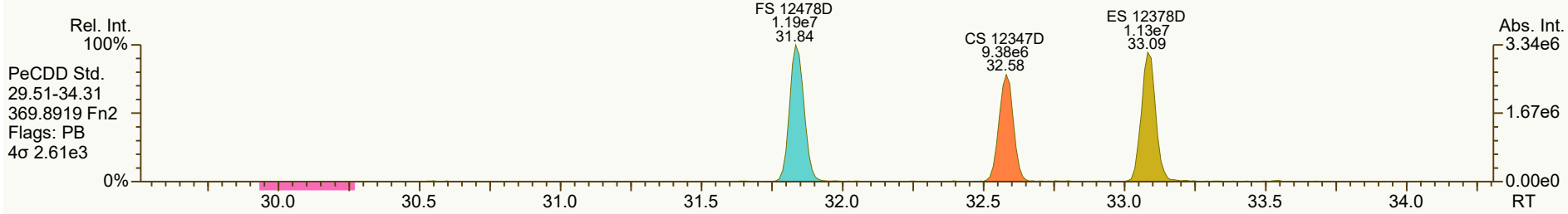
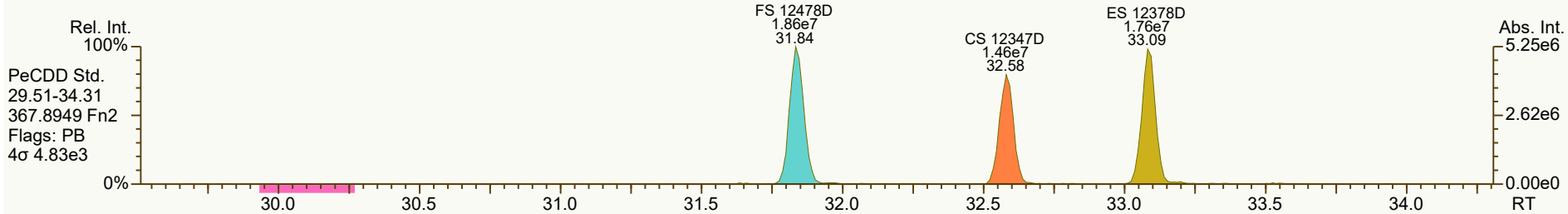
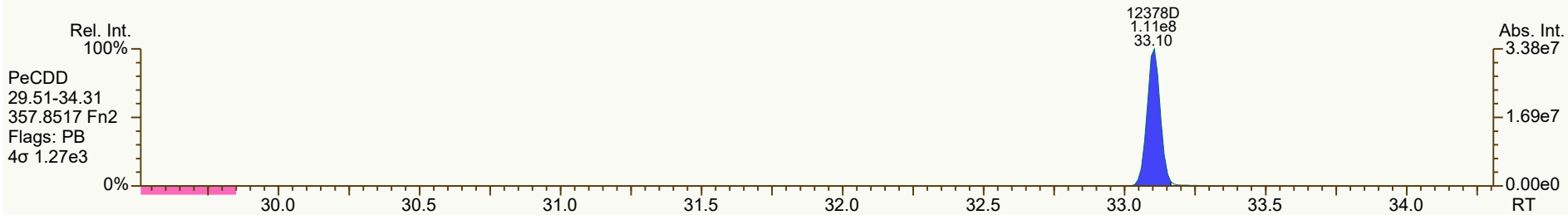
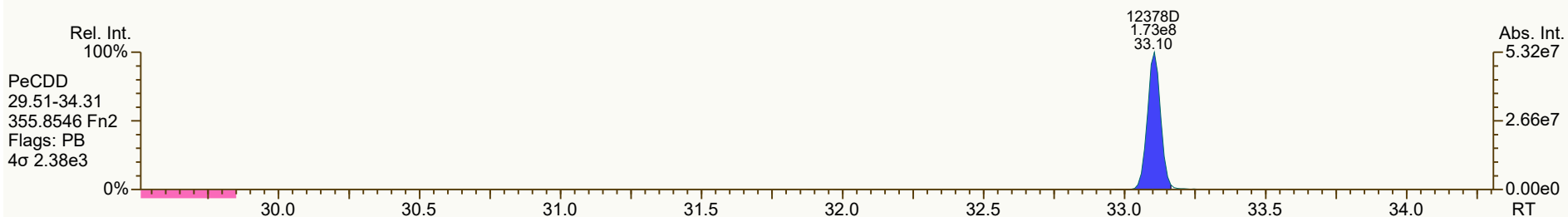


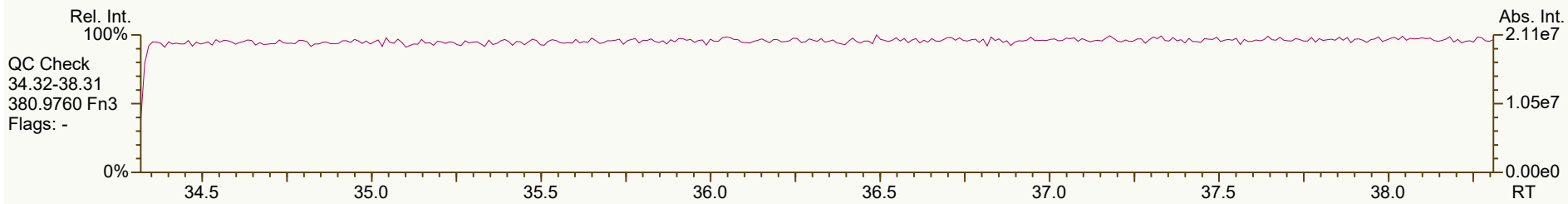
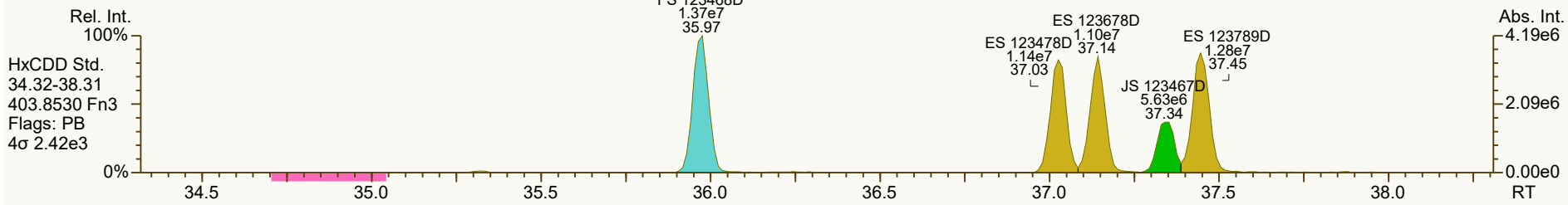
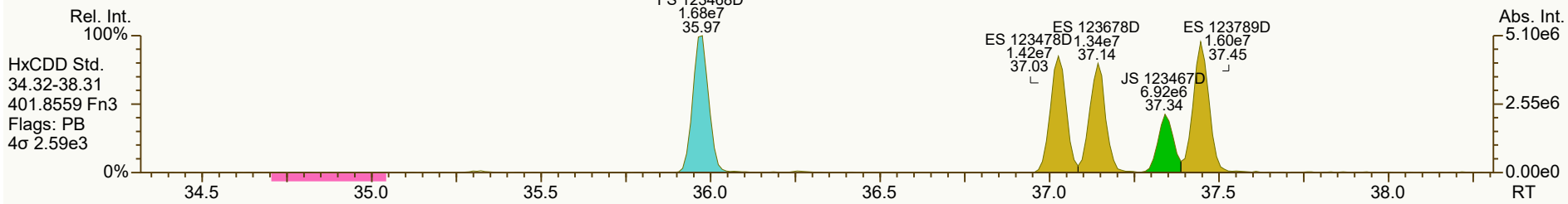
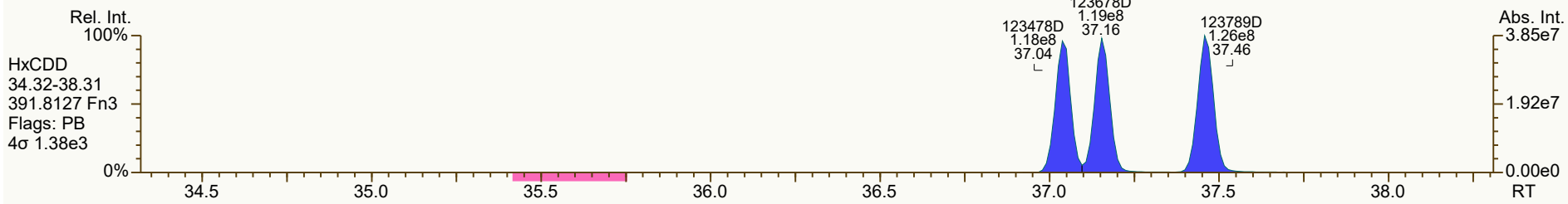
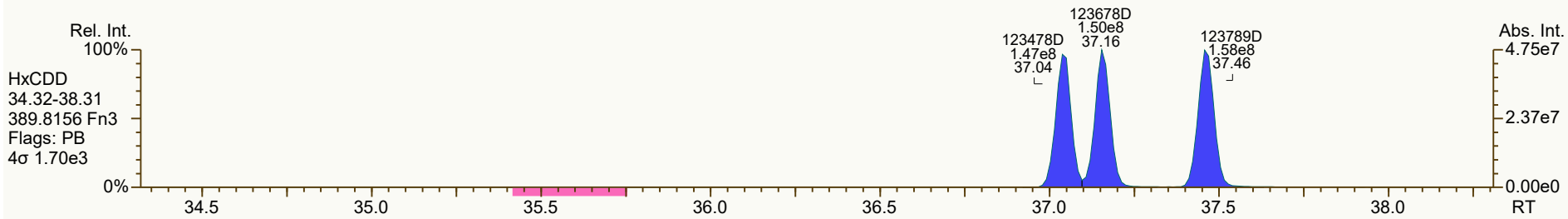


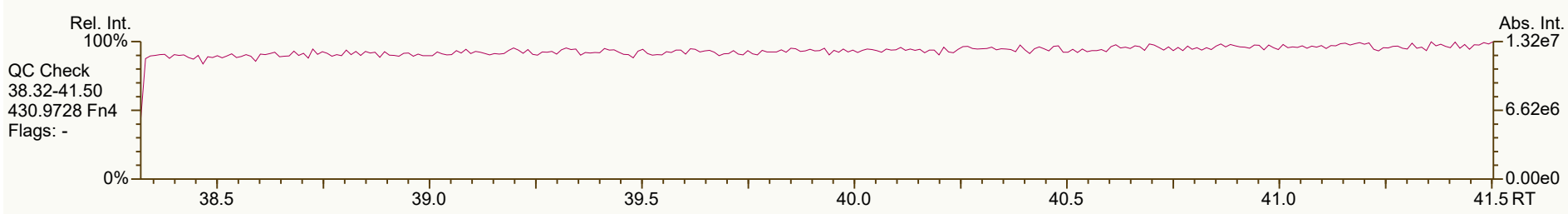
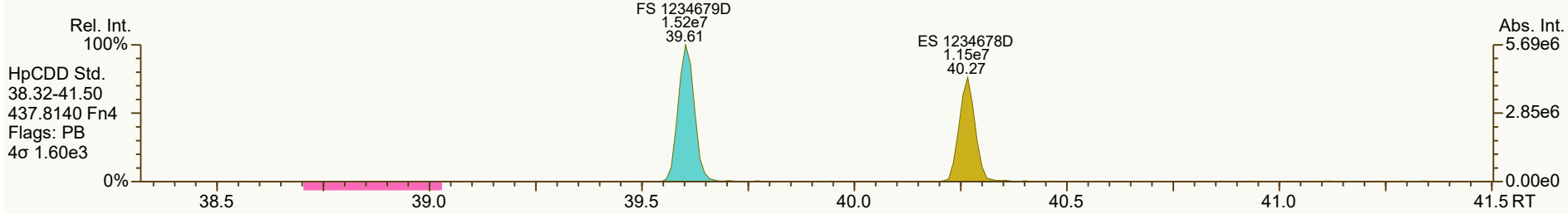
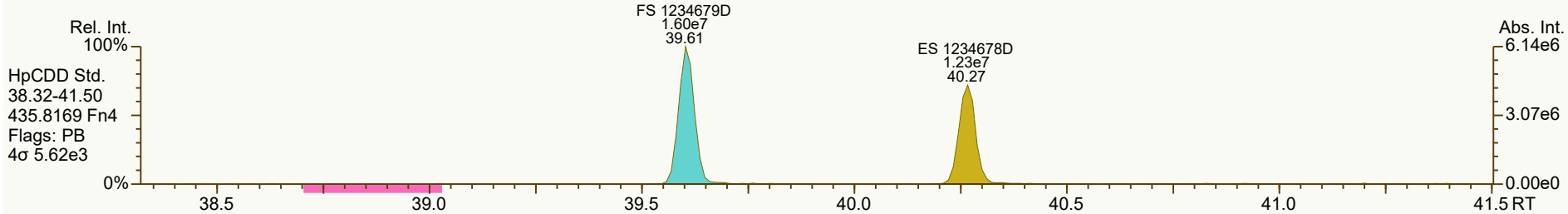
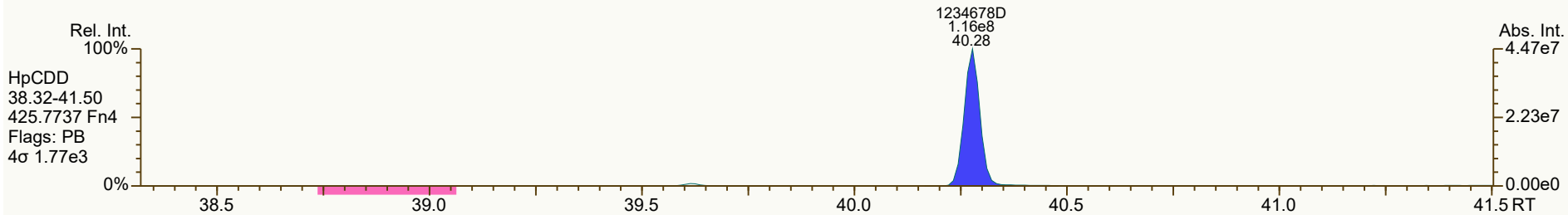
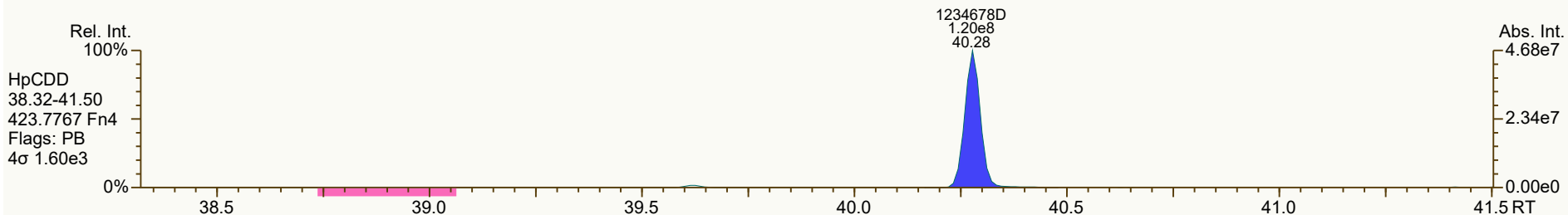
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF			Checkcode: 573-489-BMZ		
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C09		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

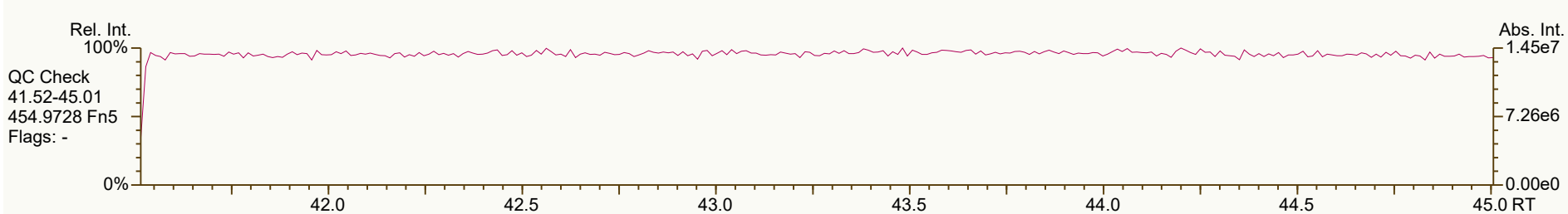
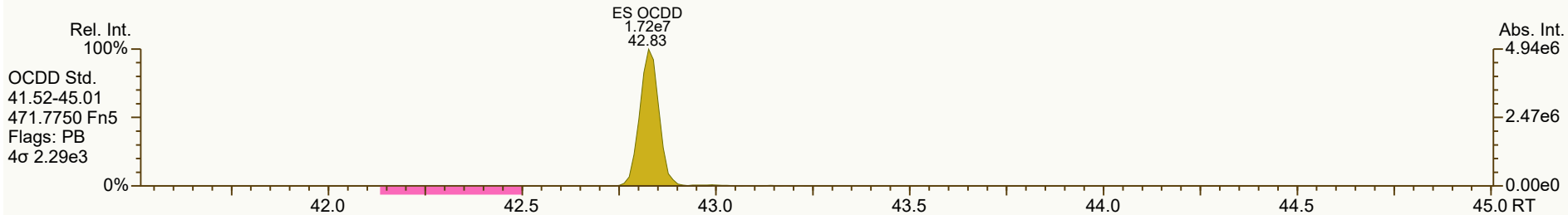
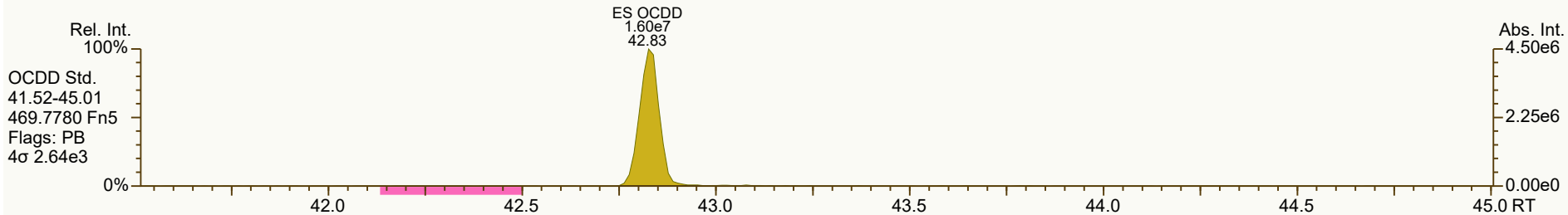
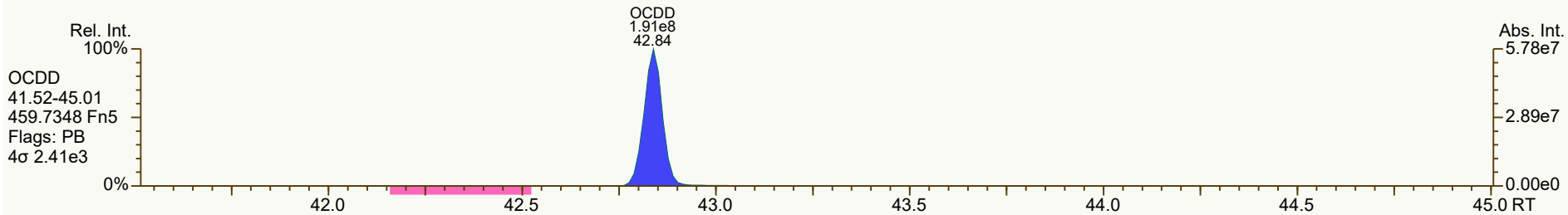
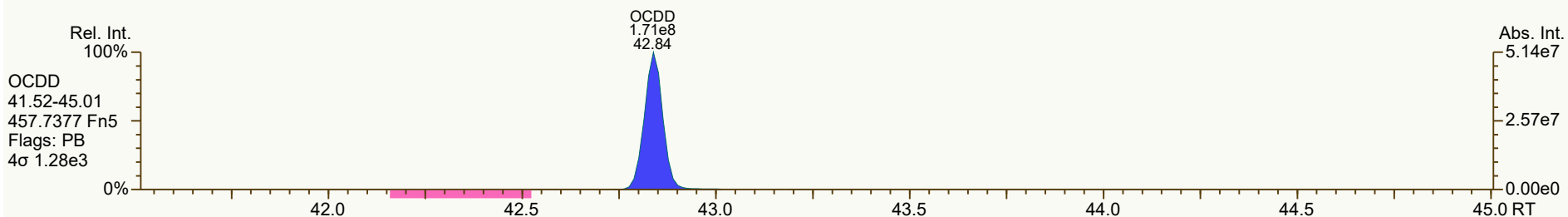


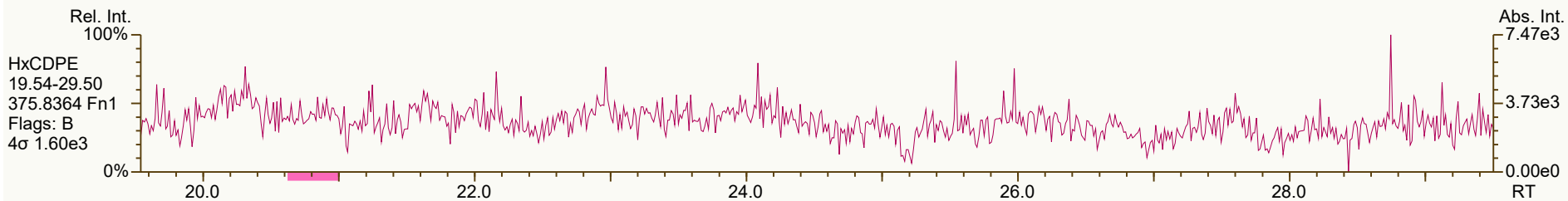
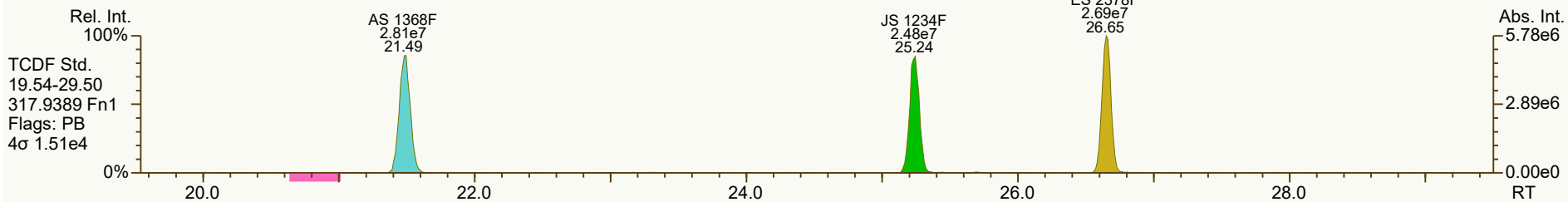
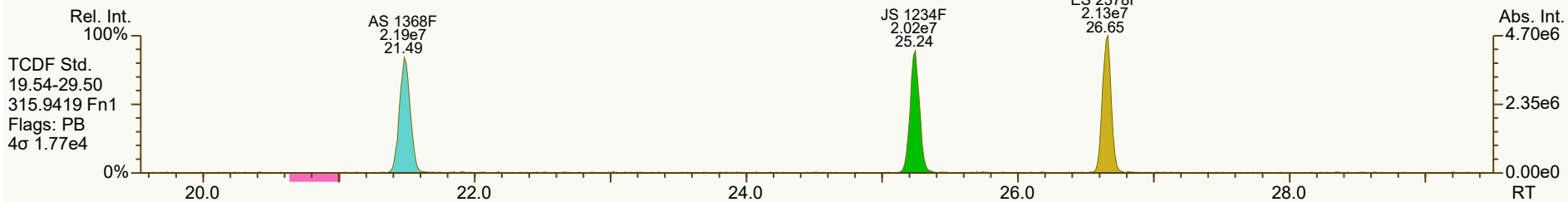
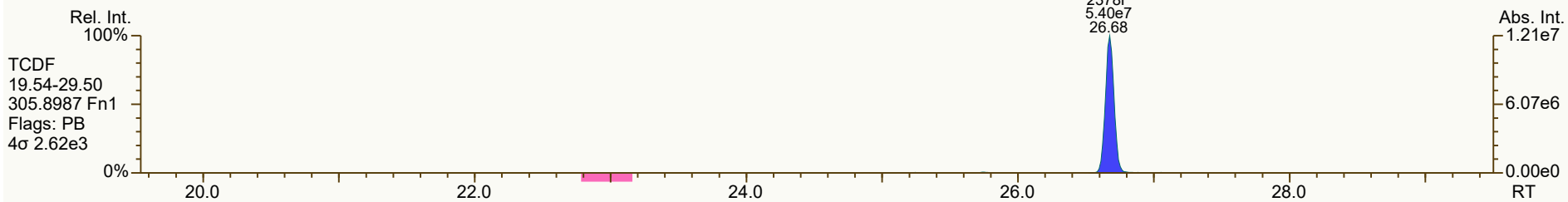
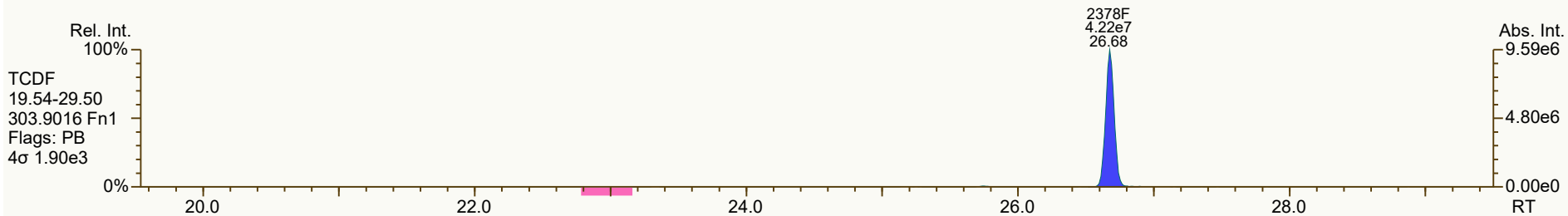


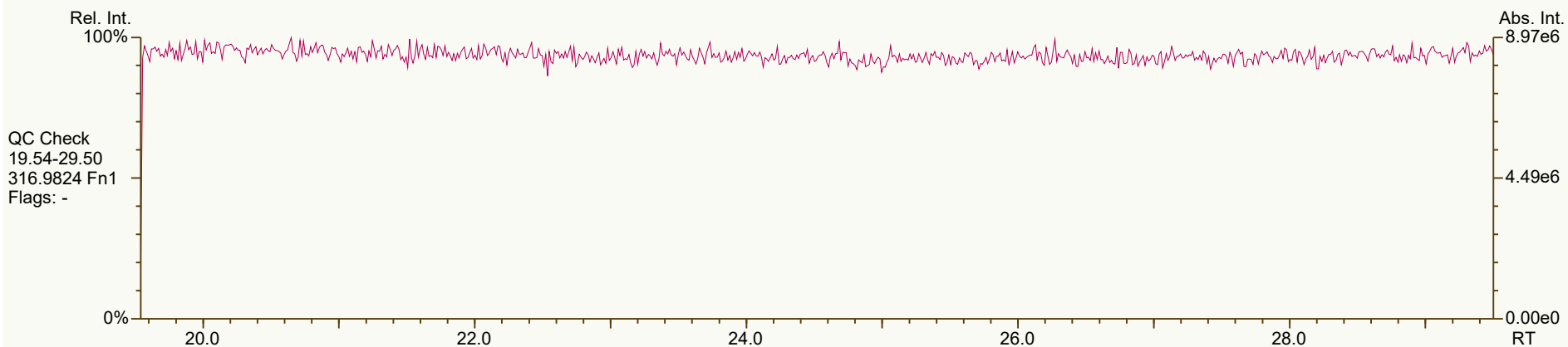
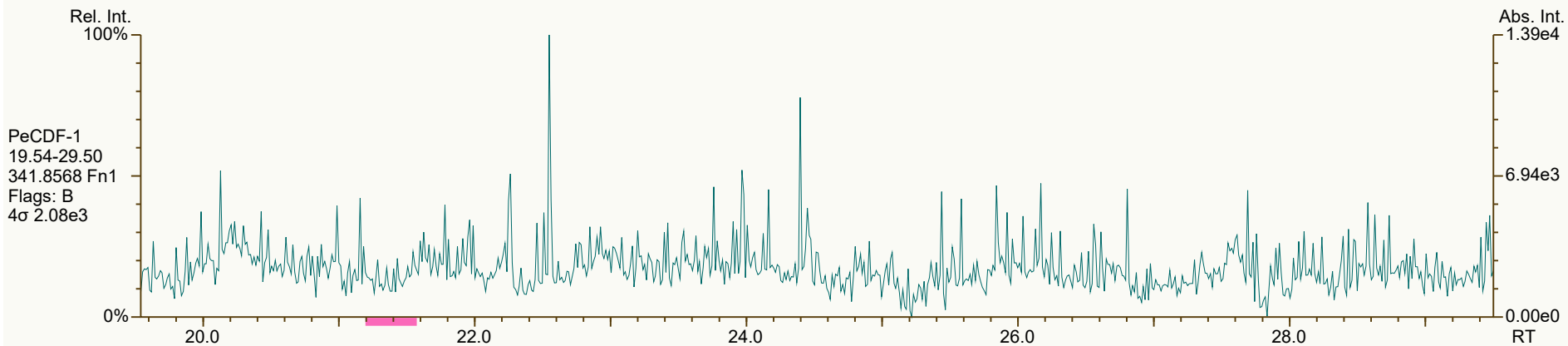
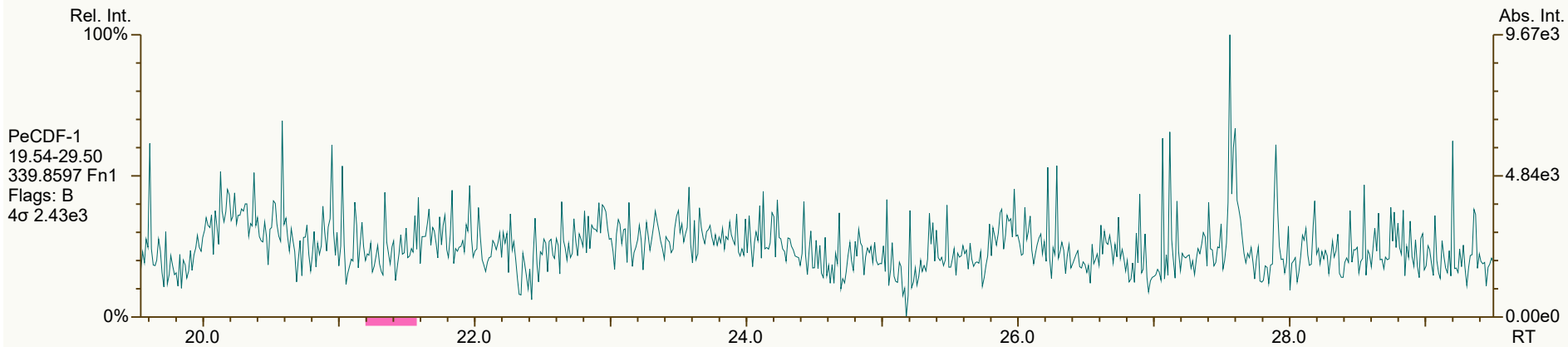


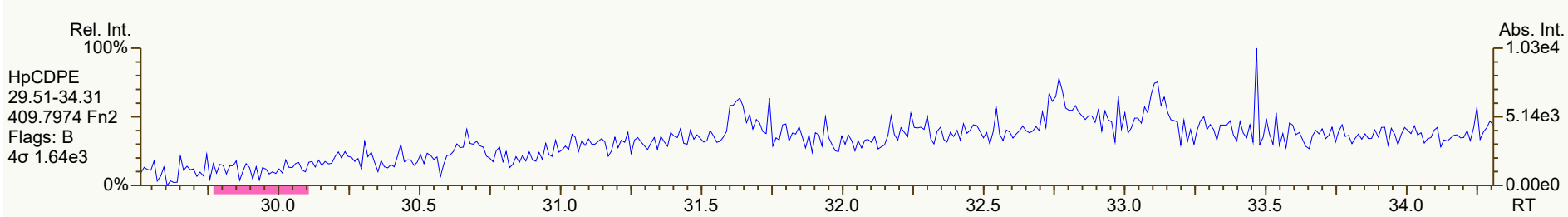
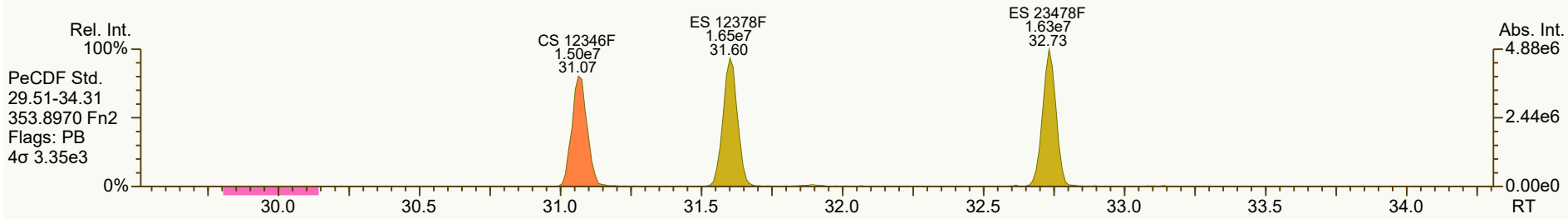
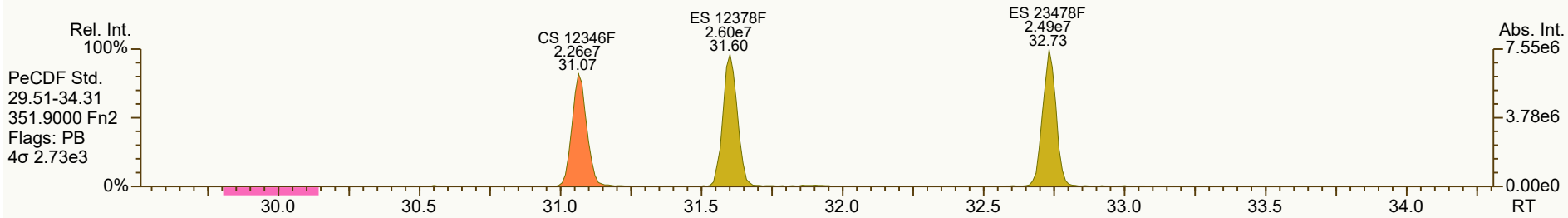
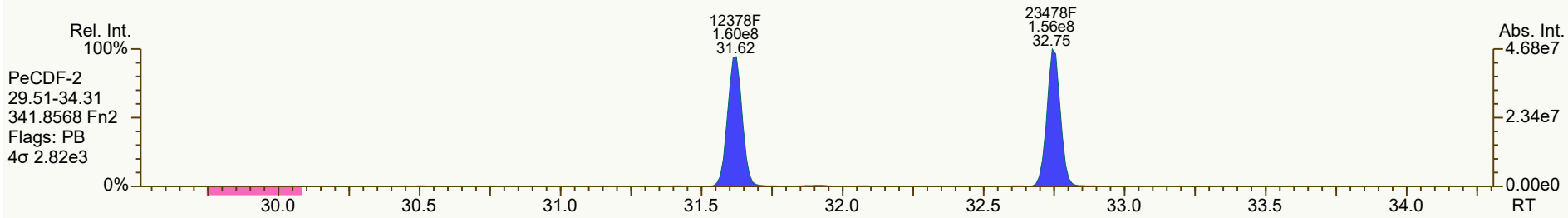
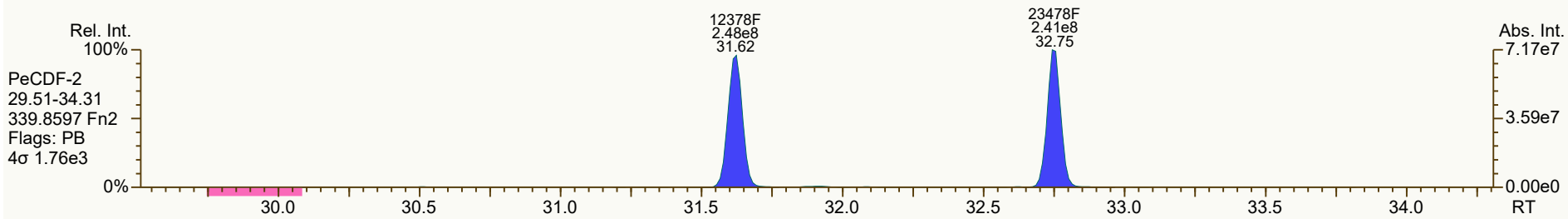








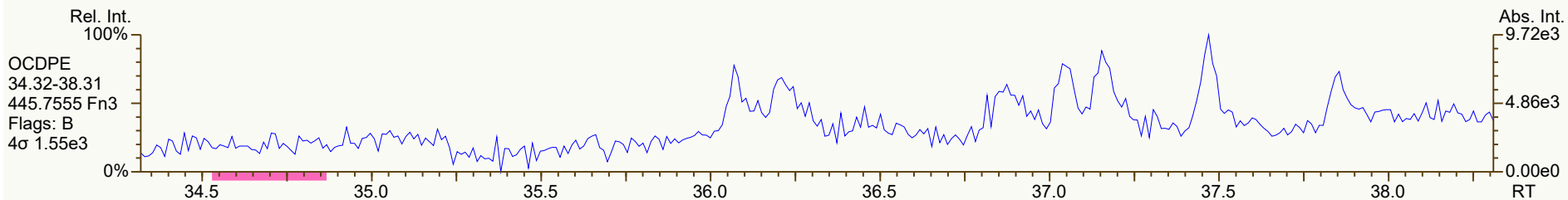
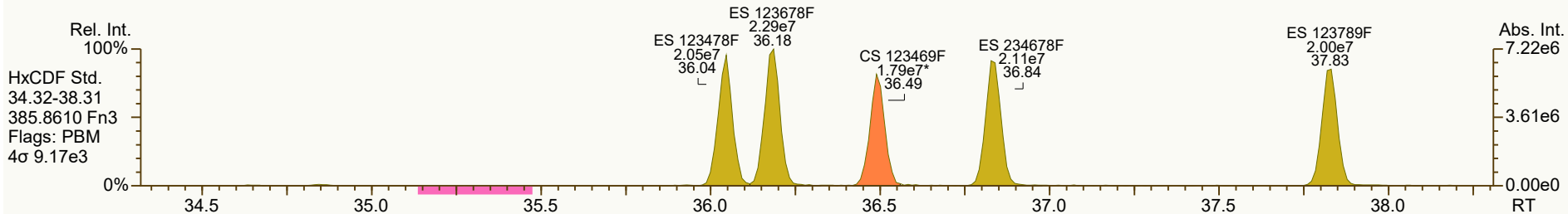
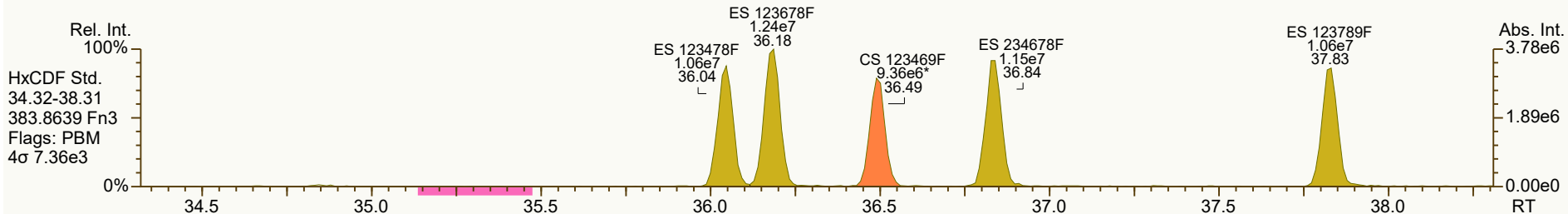
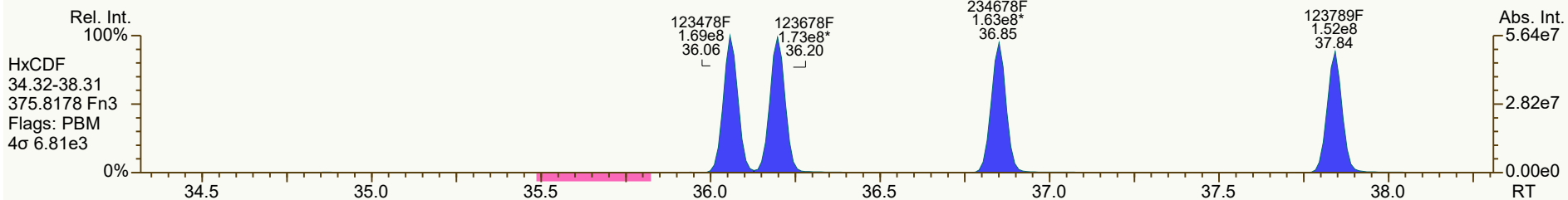
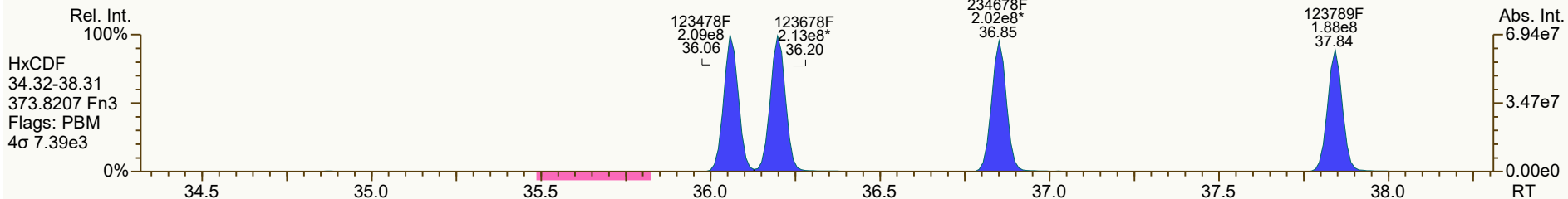


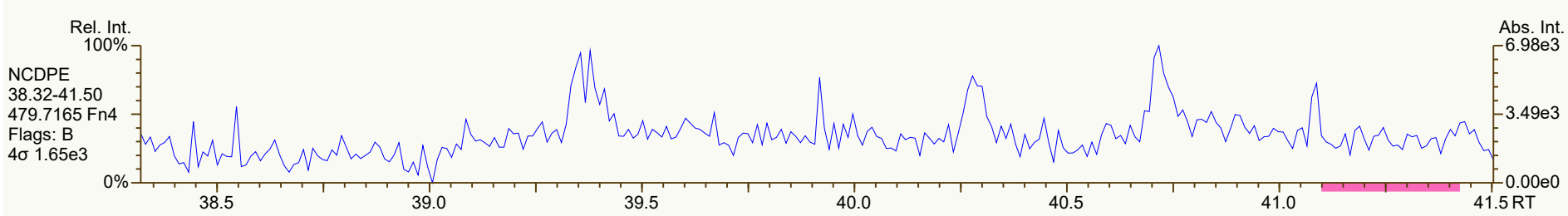
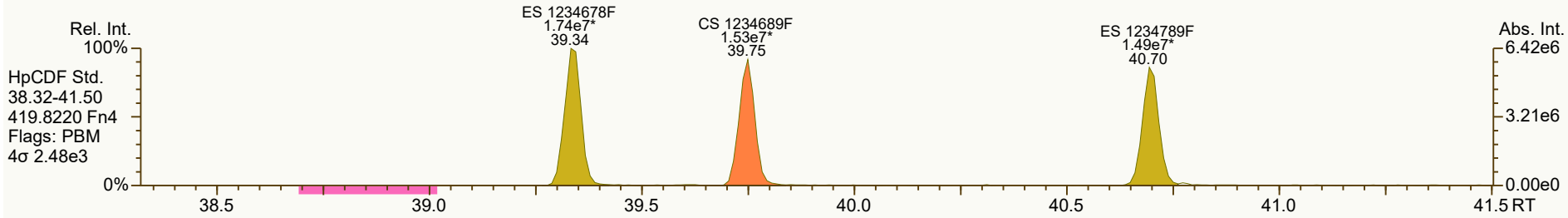
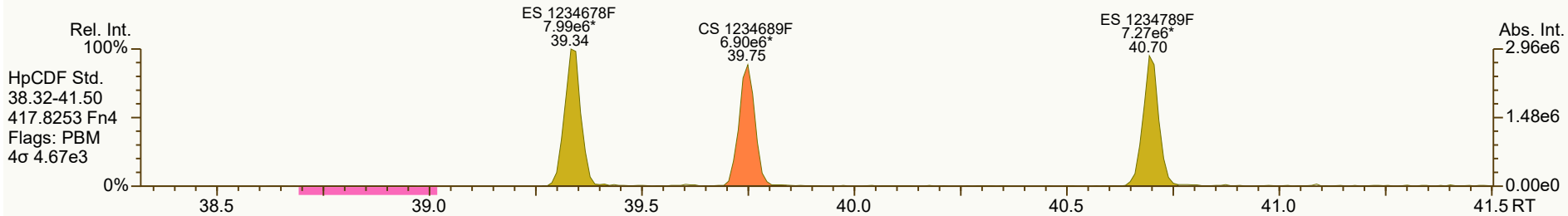
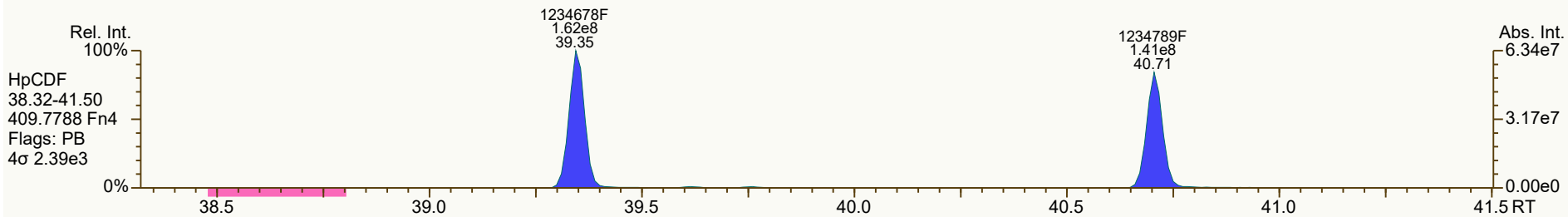
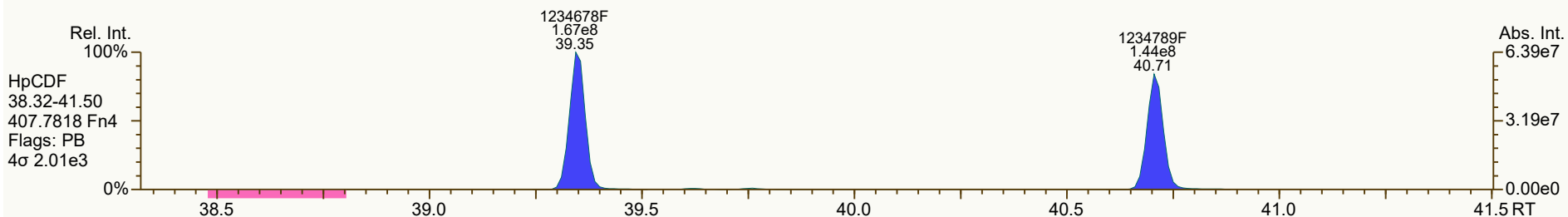


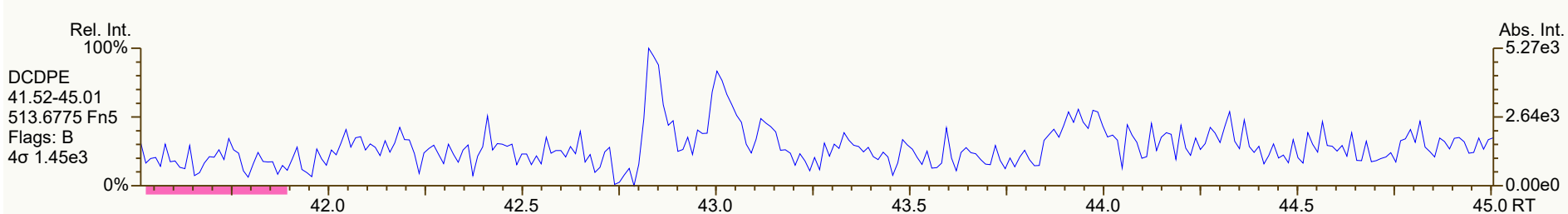
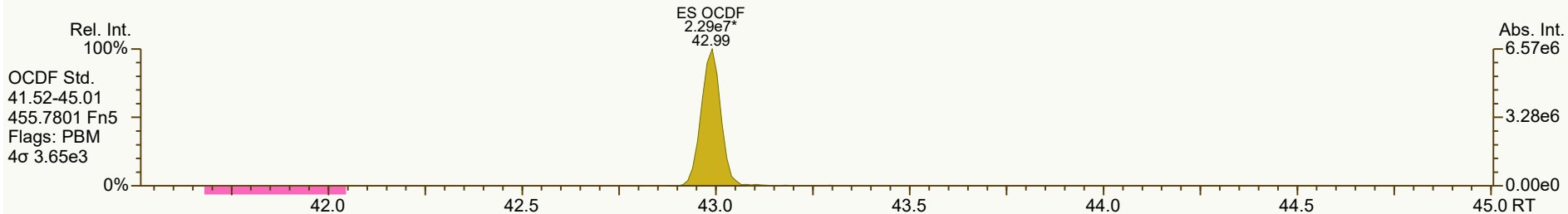
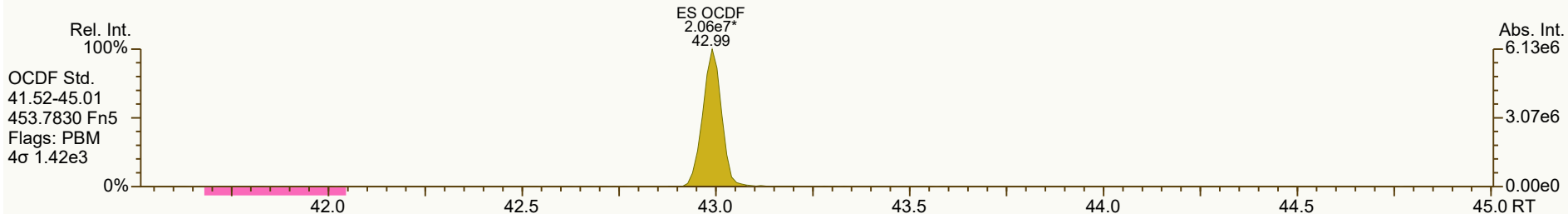
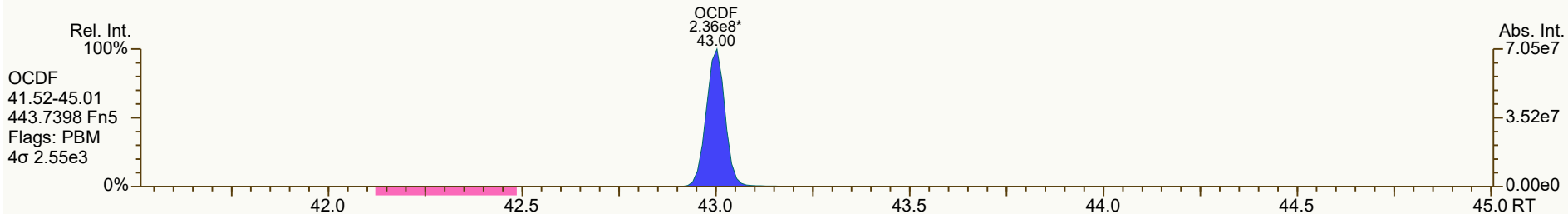
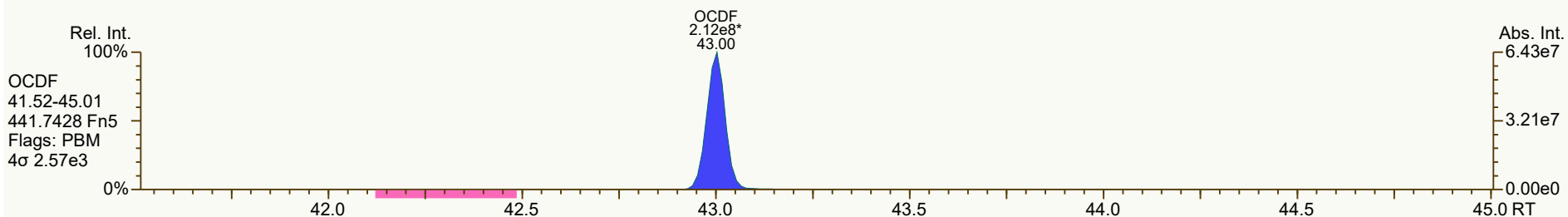
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Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70

Acq: 10-Nov-2021 14:53:51
User: DTF Datafile: 211110C09

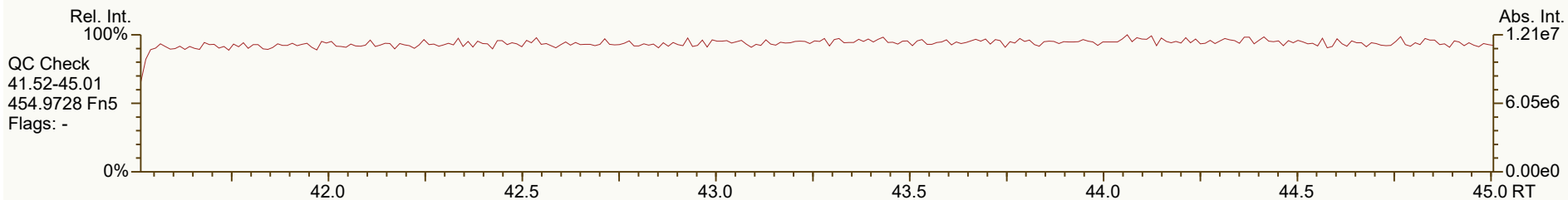
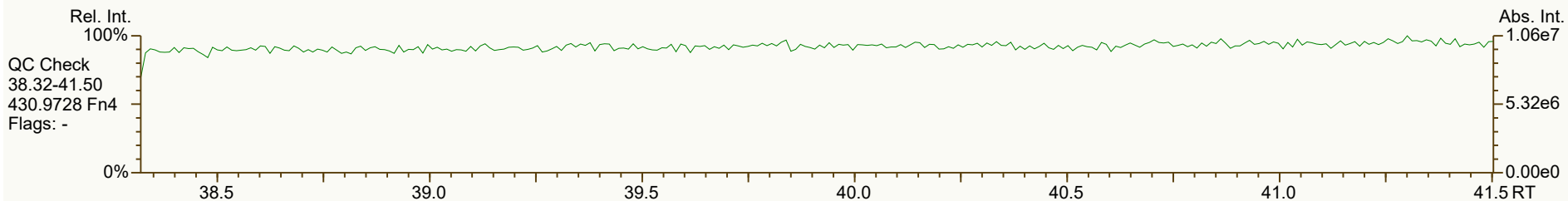
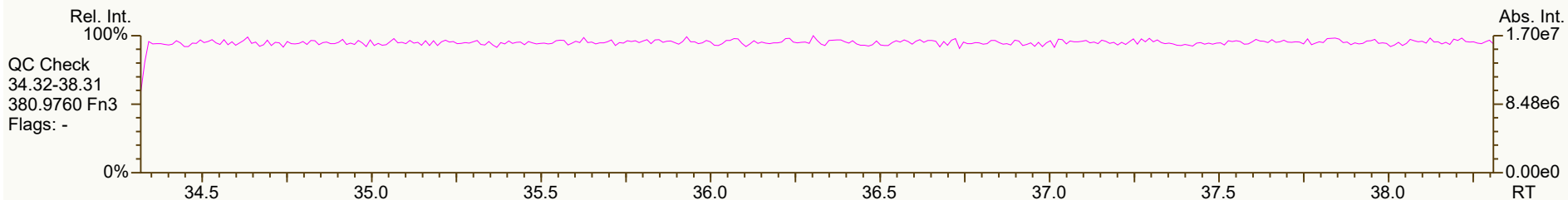
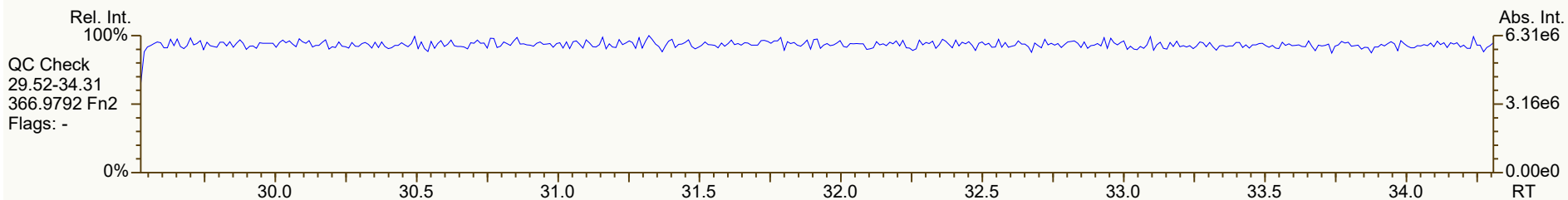
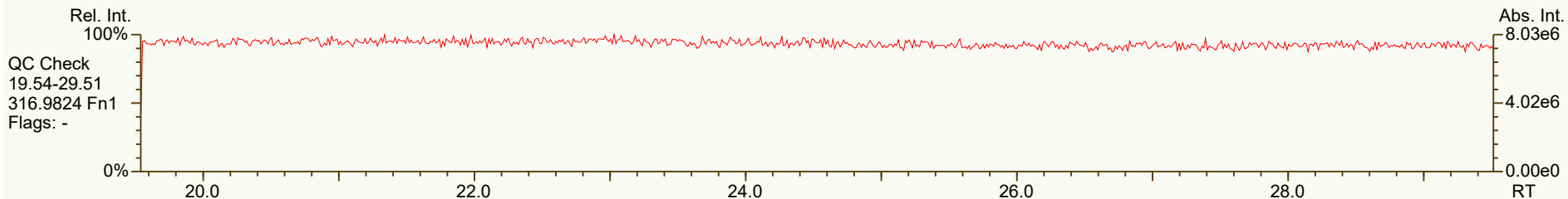


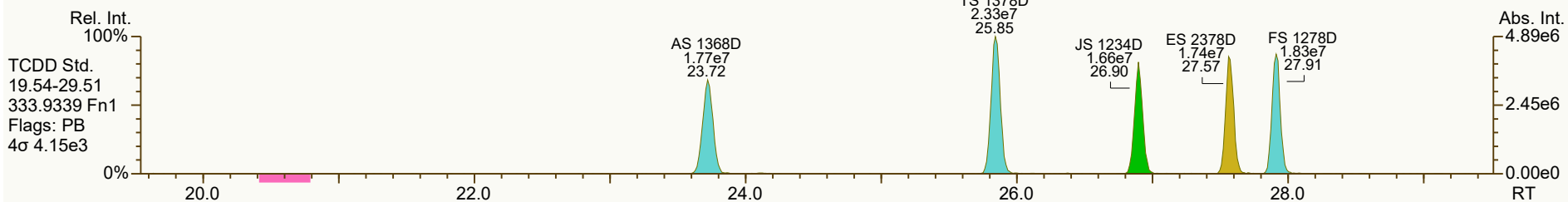
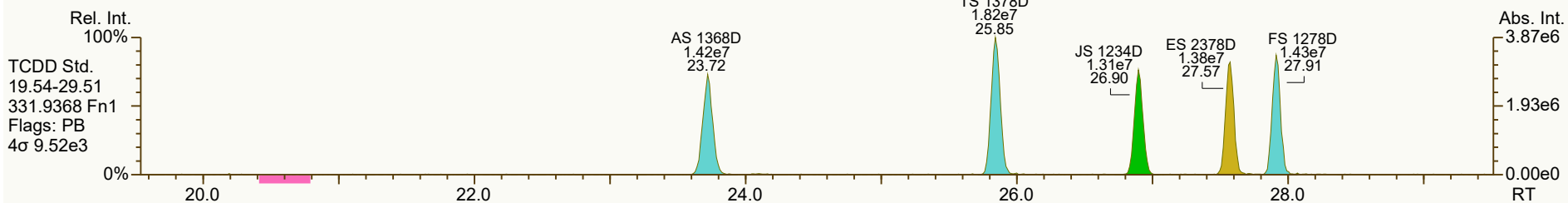
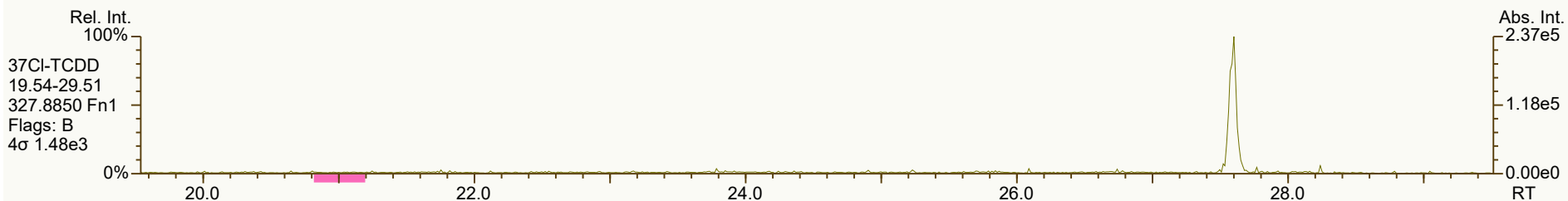
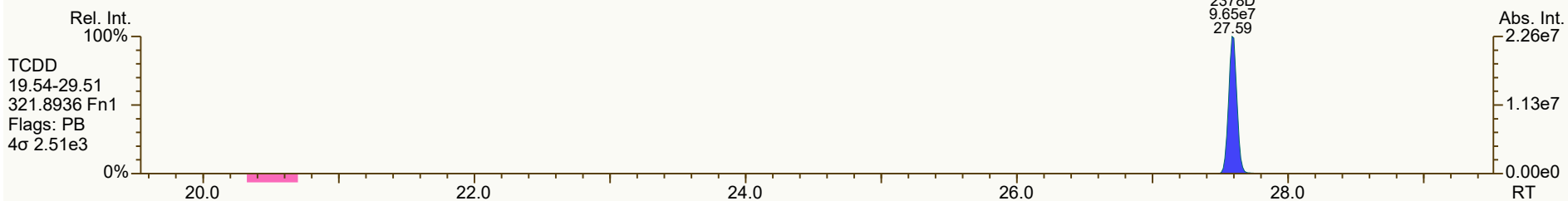
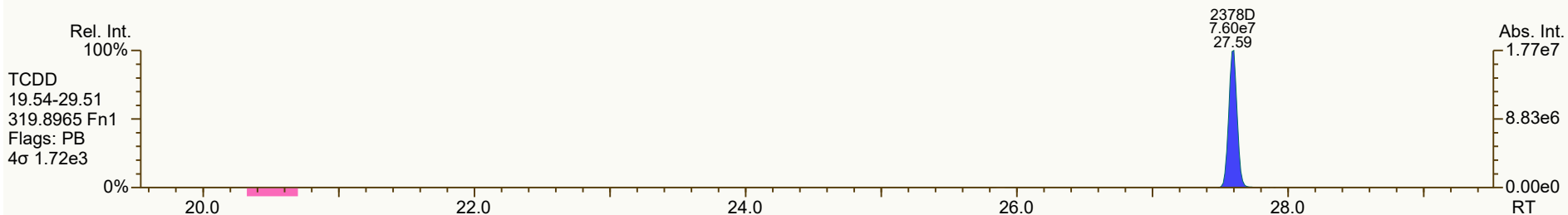


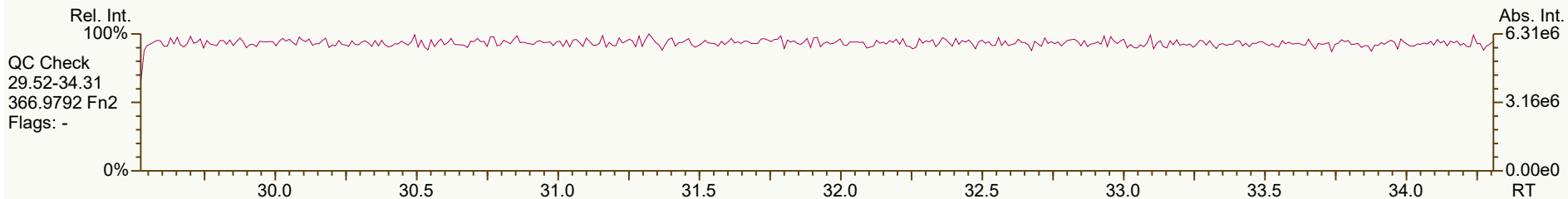
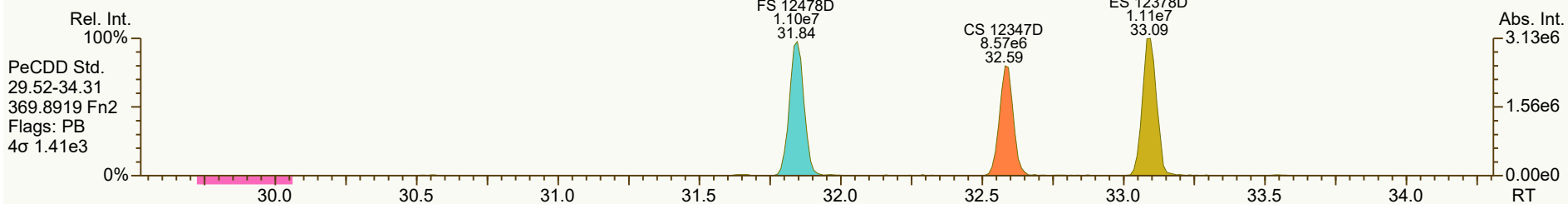
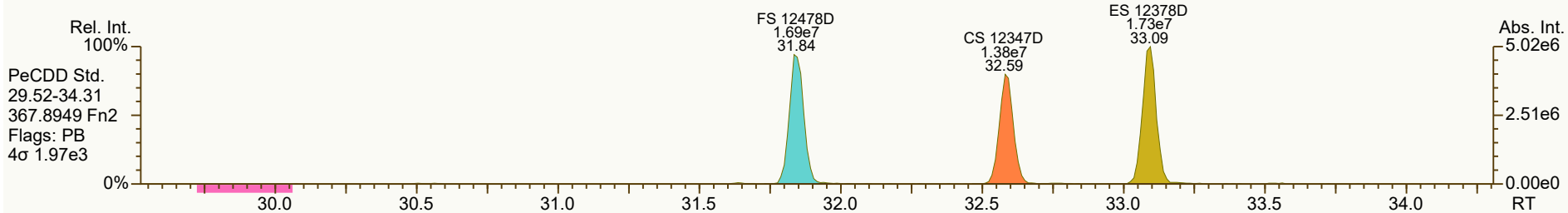
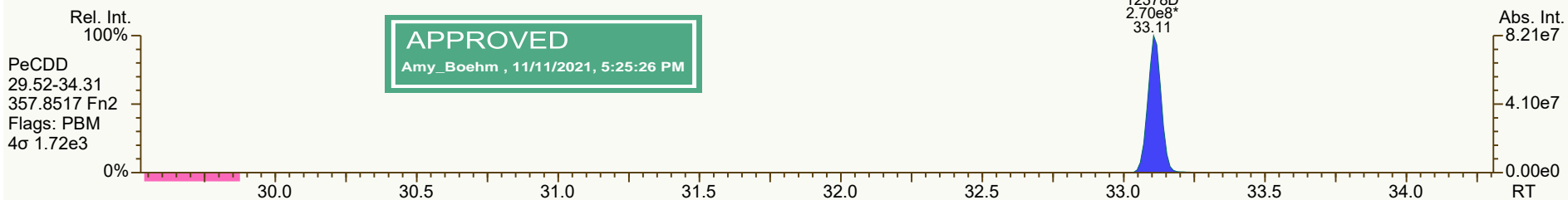
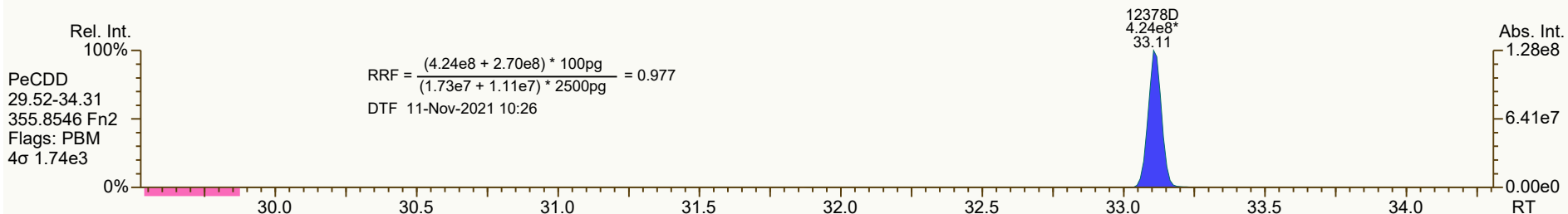


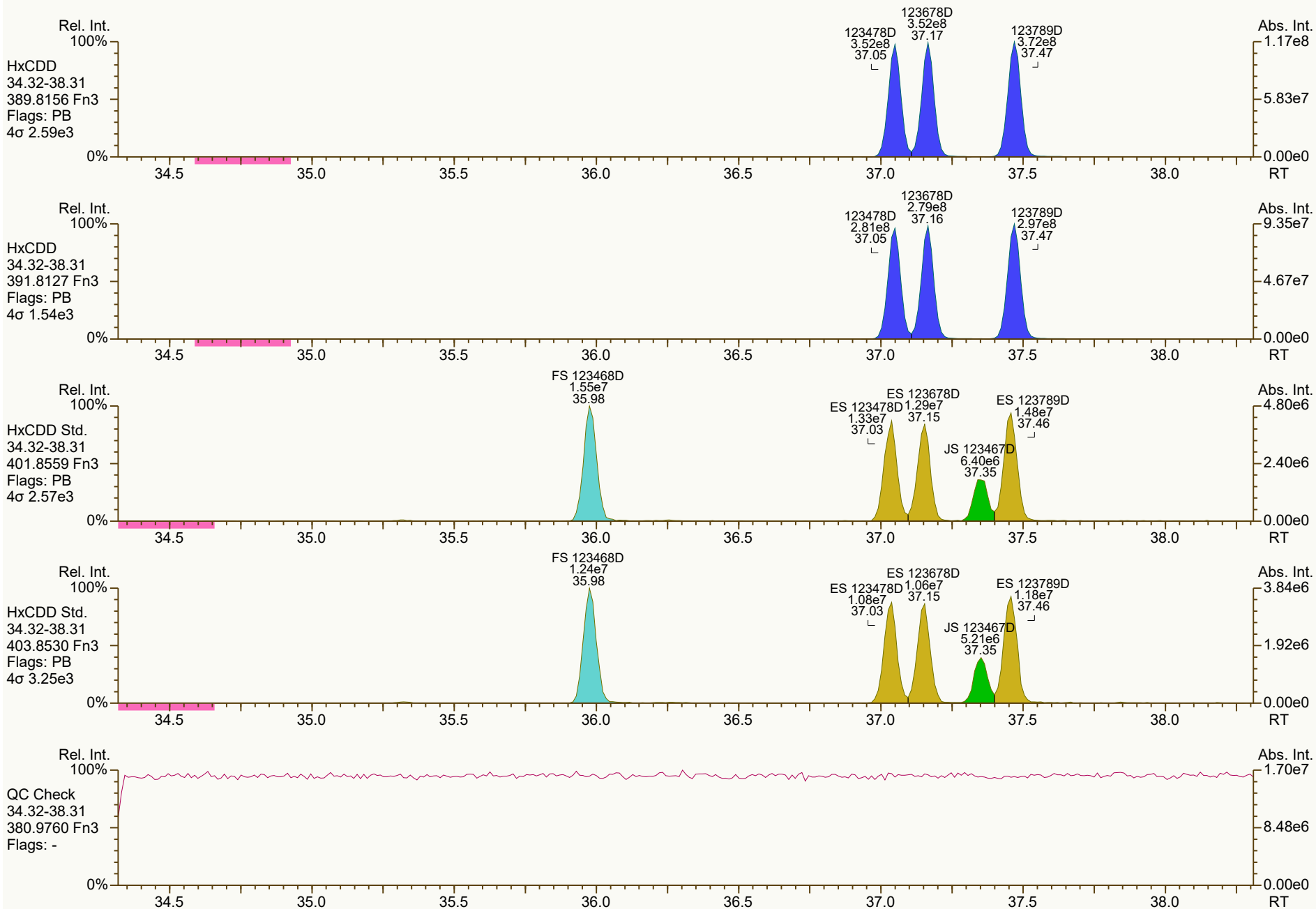
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF			Checkcode: 172-736-WQL		
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C10		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

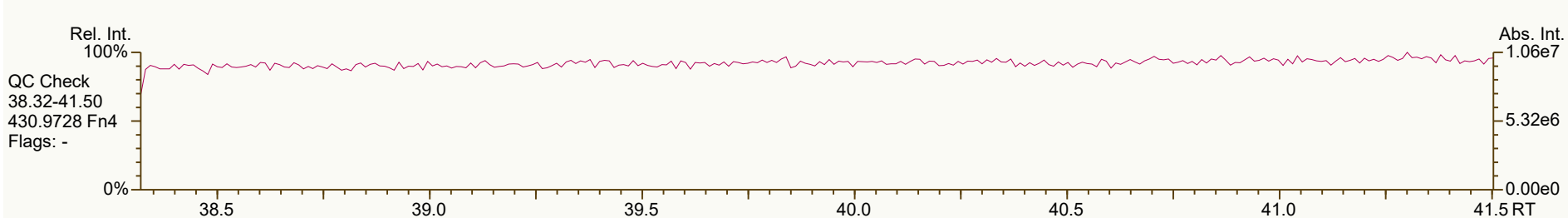
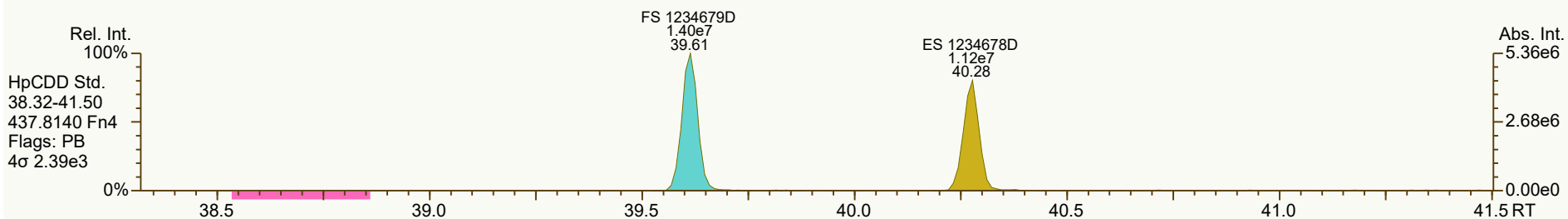
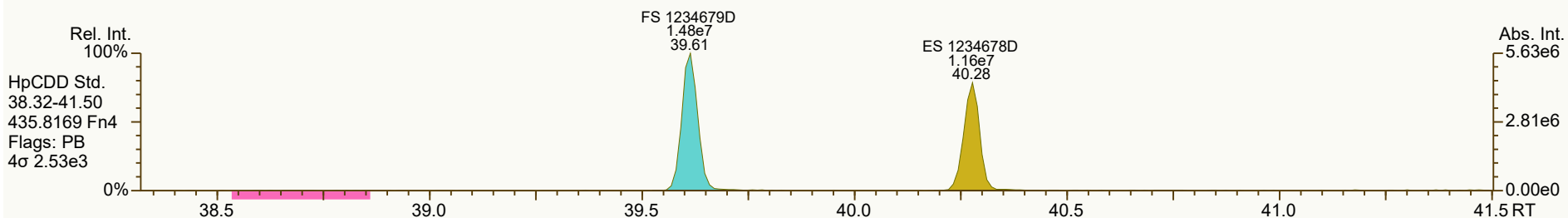
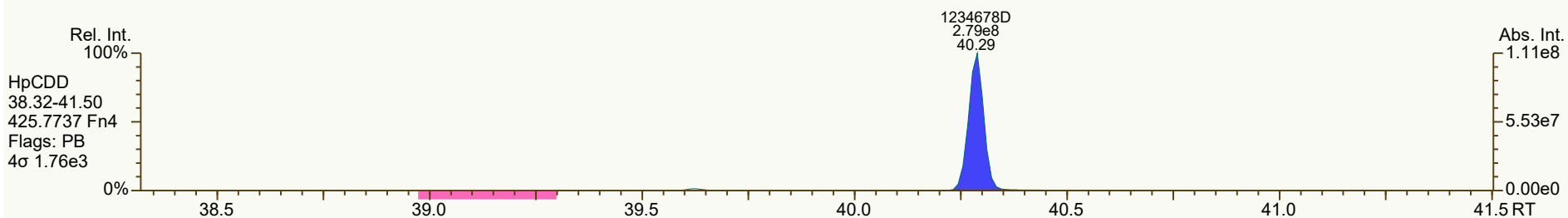
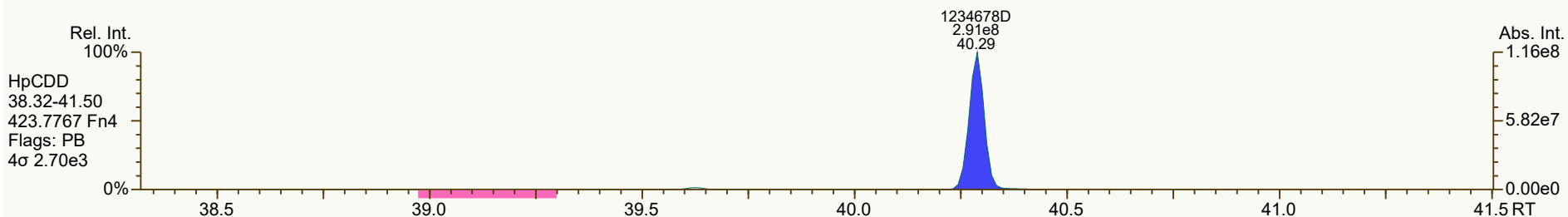
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF			ICAL: HRMS3_DF_10272021 10NOV2021		
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF			Checkcode: 172-736-WQL		
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF			Datafile: 211110C10		
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37C1-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37C1-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

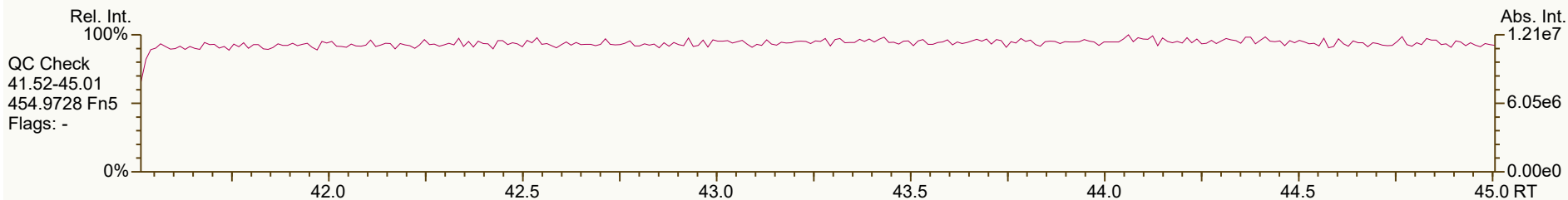
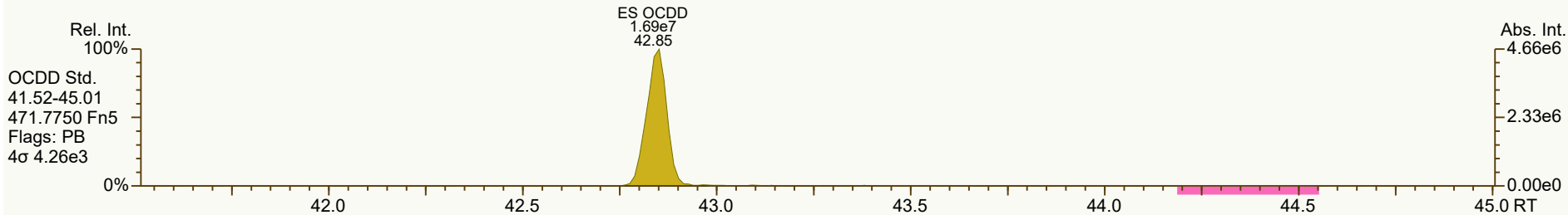
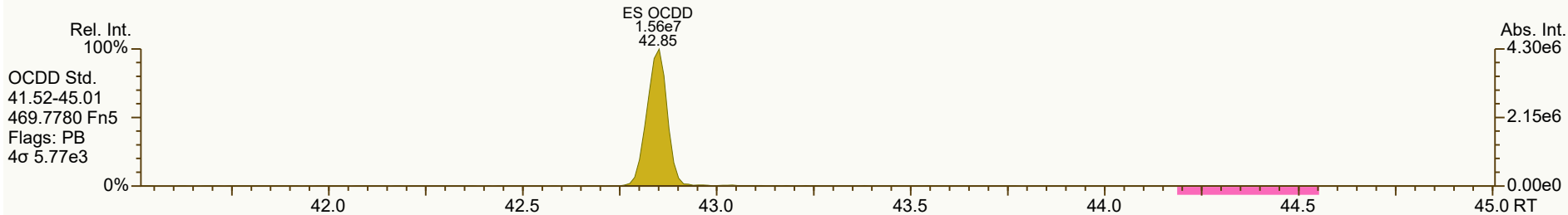
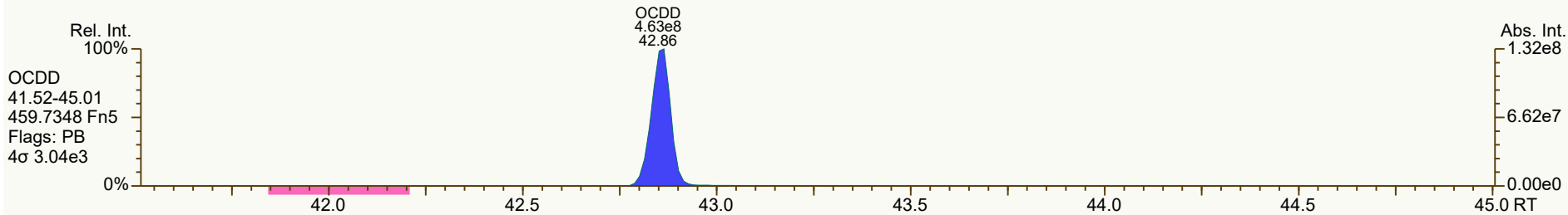
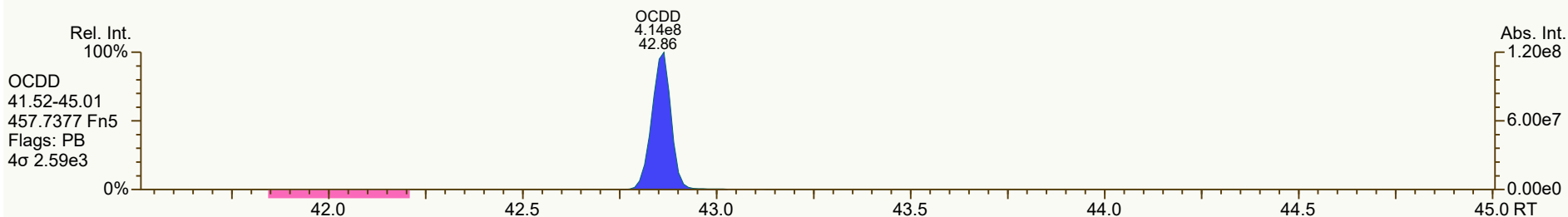


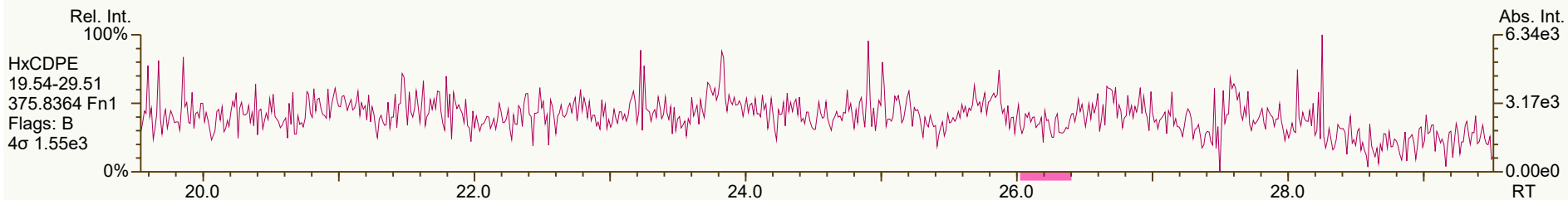
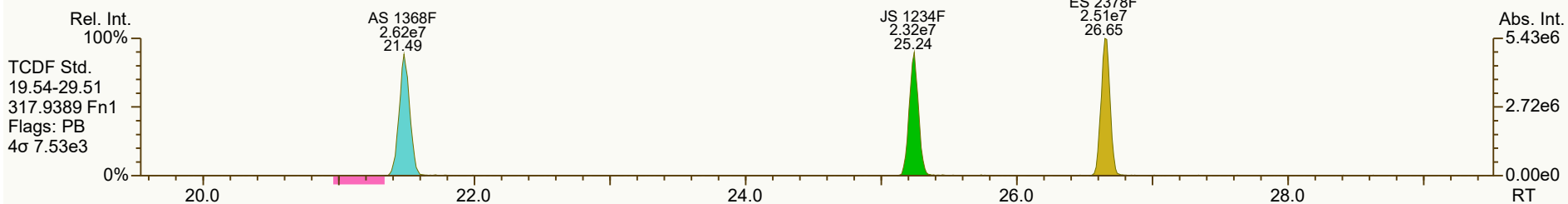
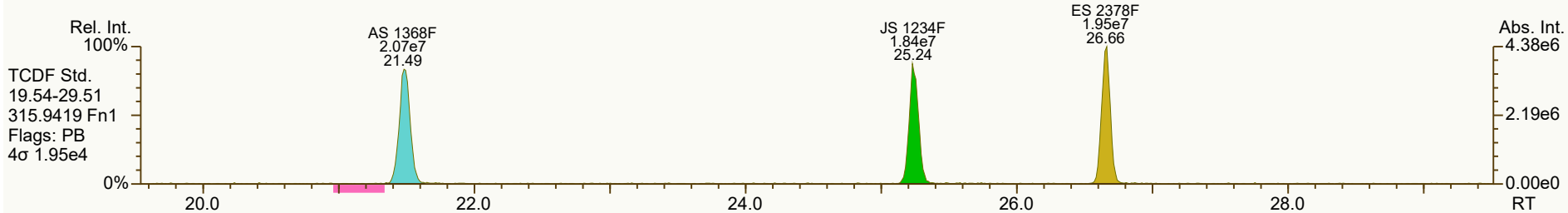
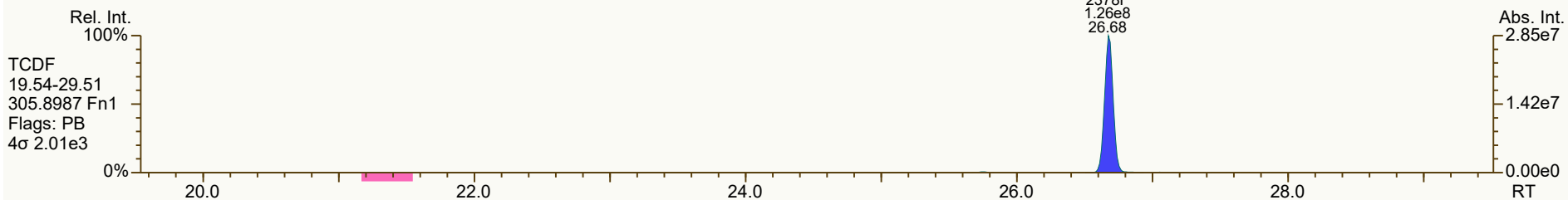
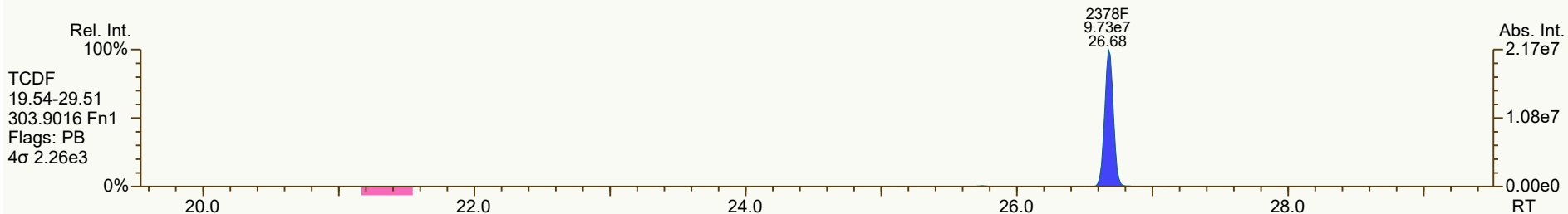


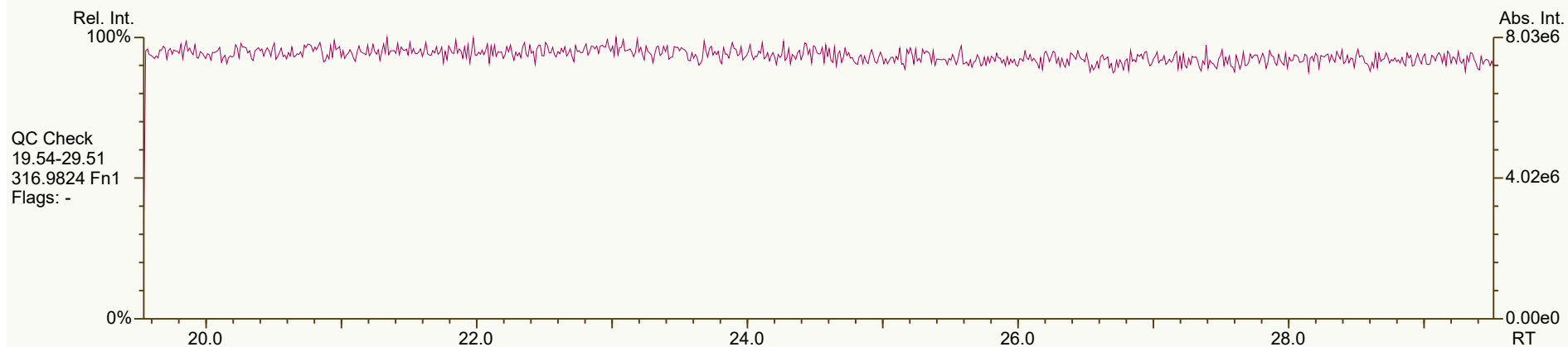
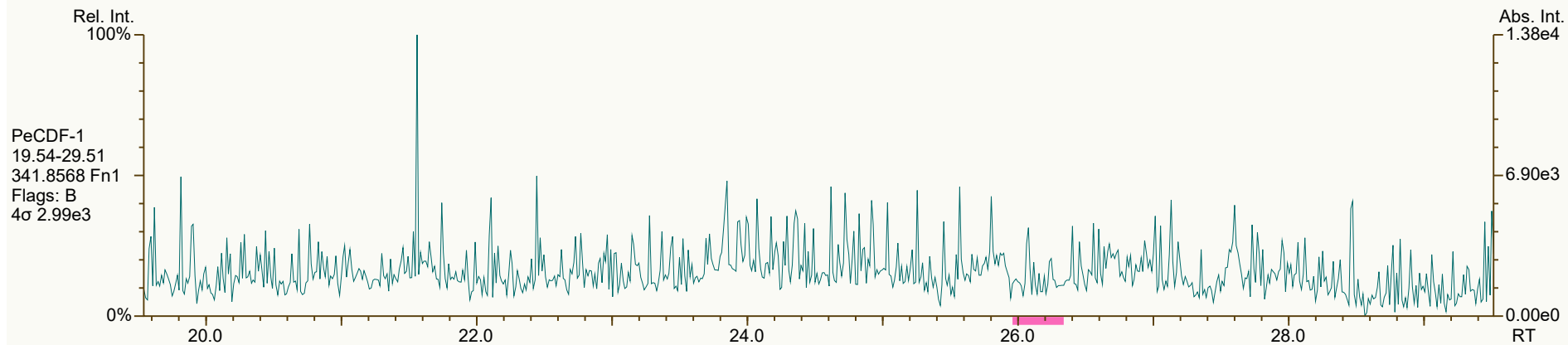
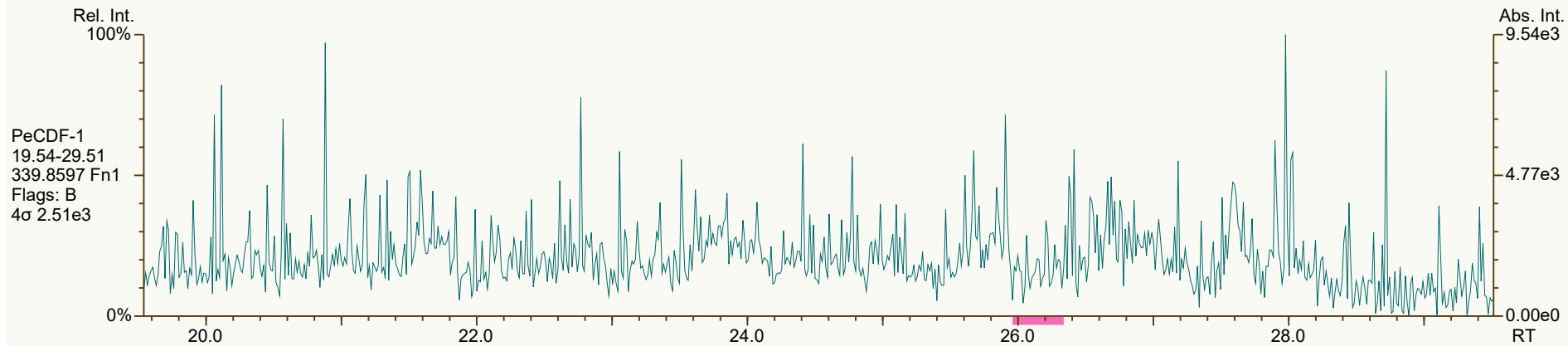


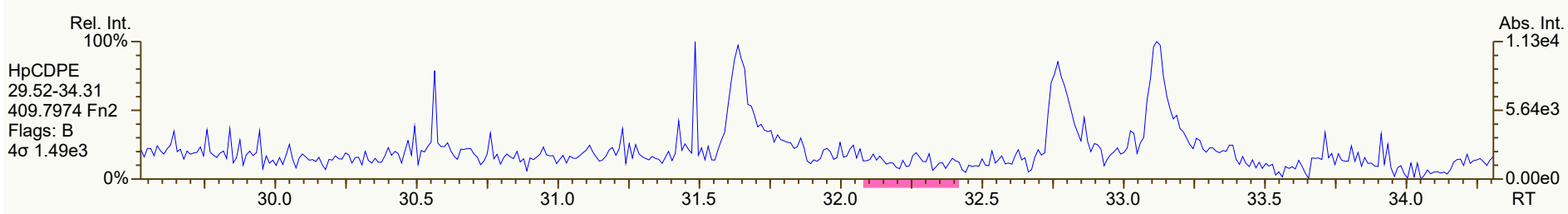
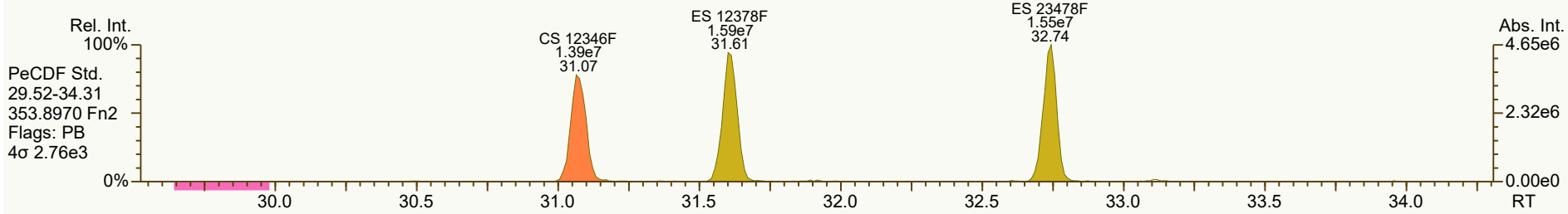
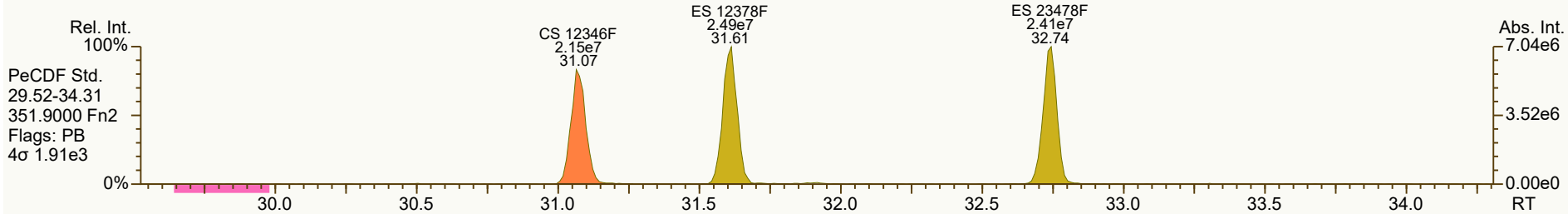
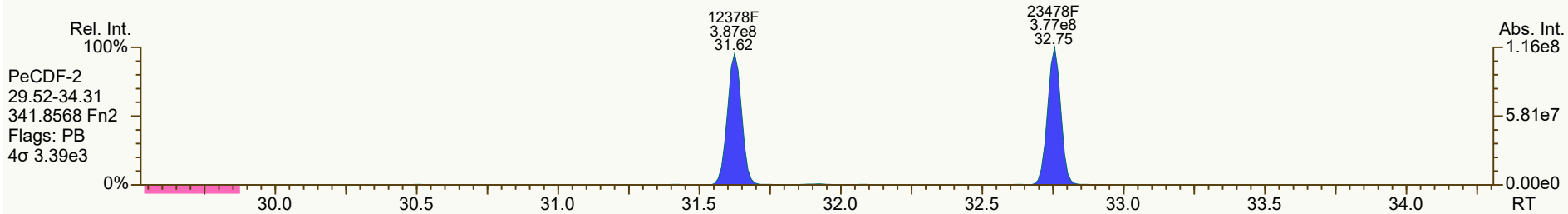
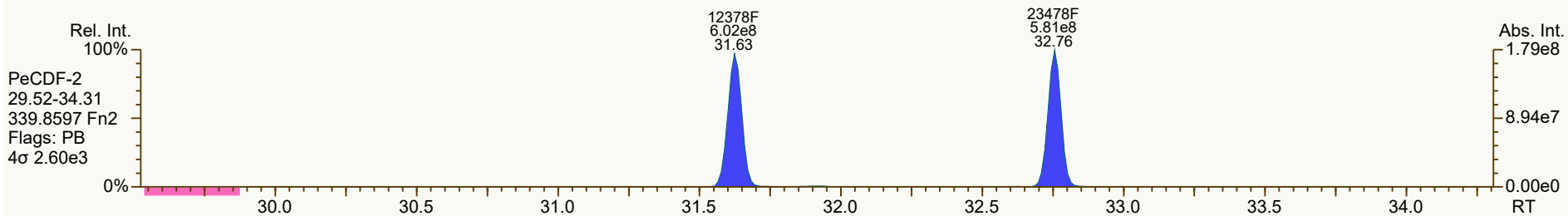








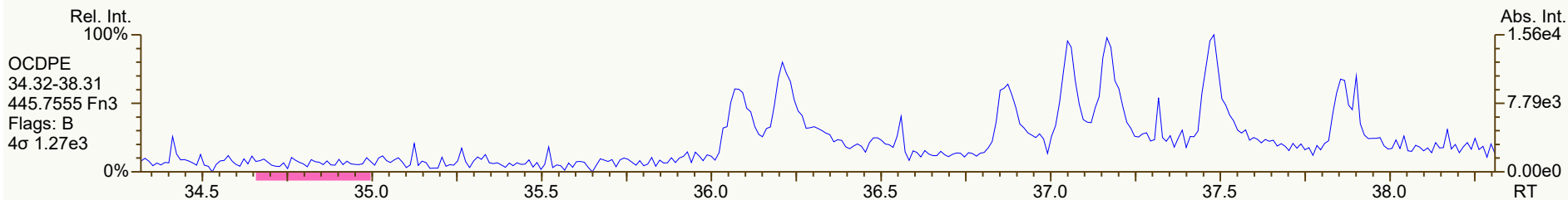
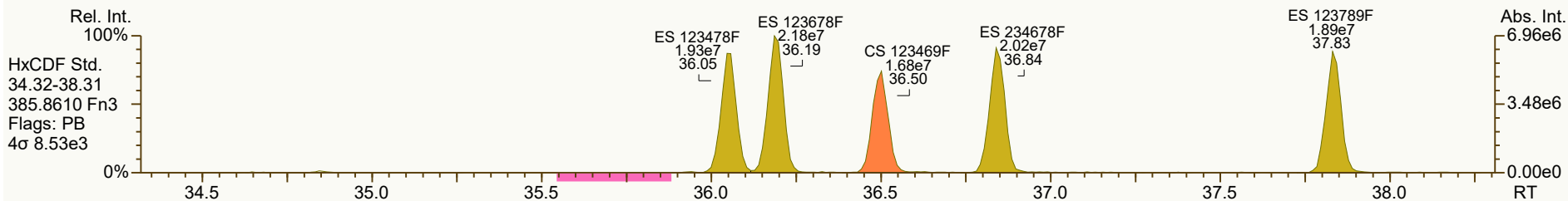
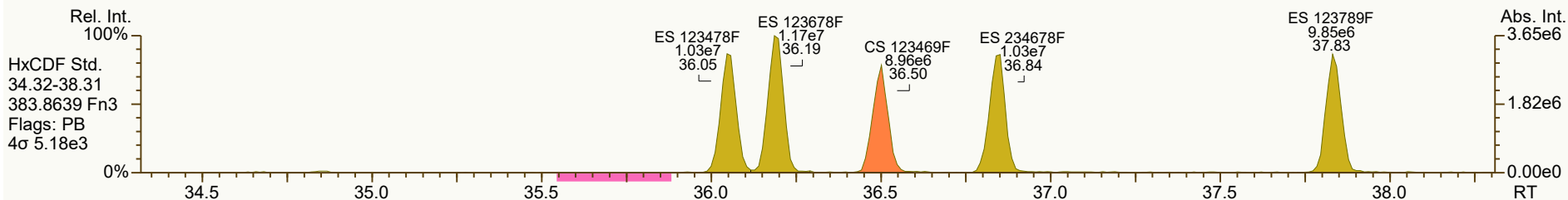
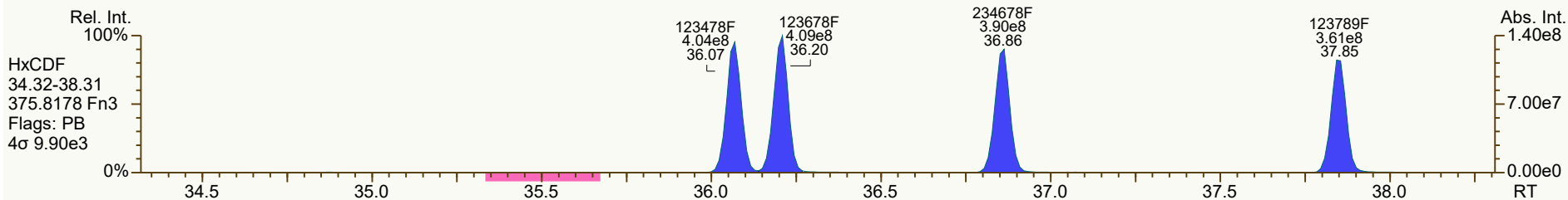
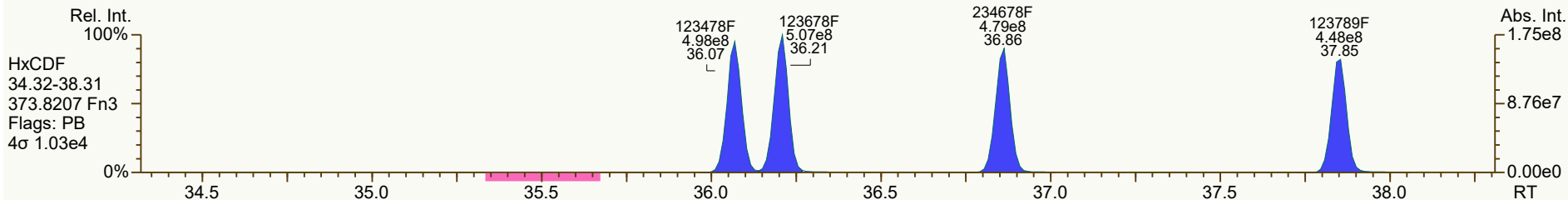


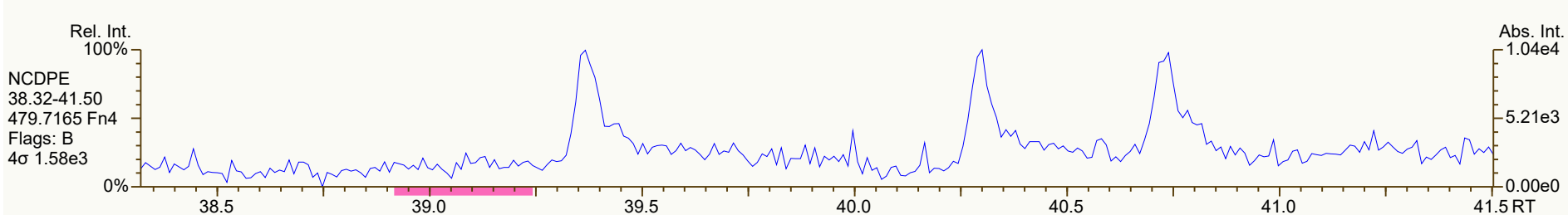
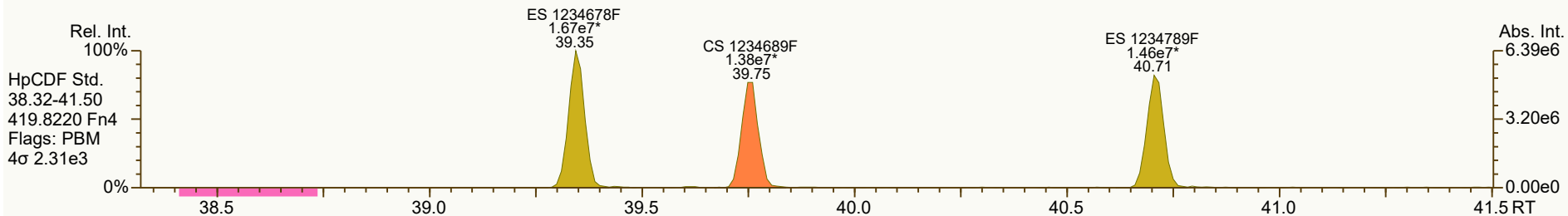
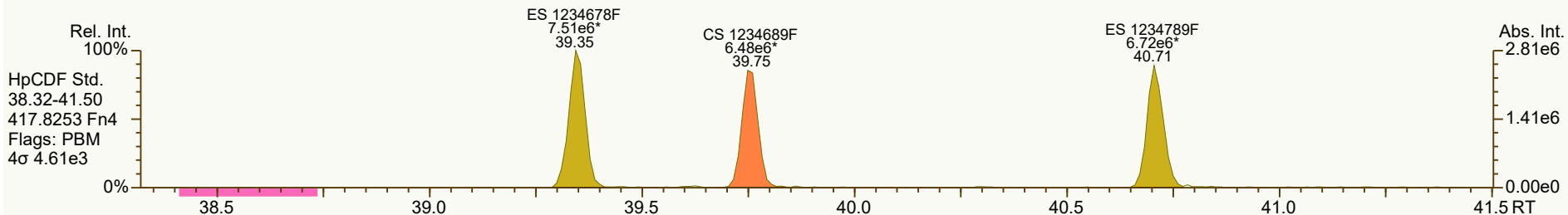
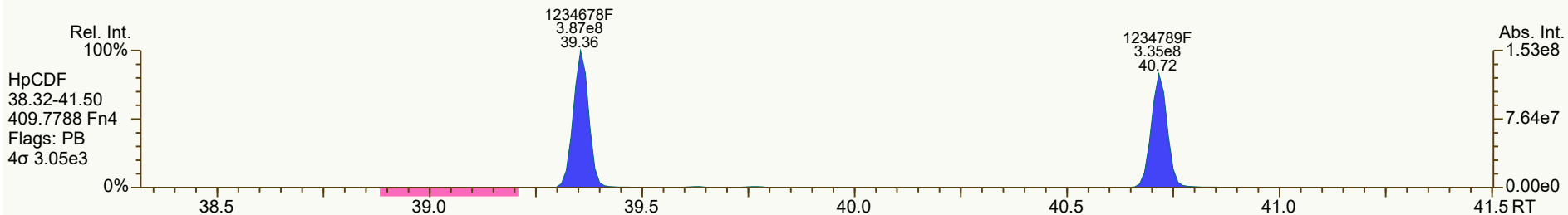
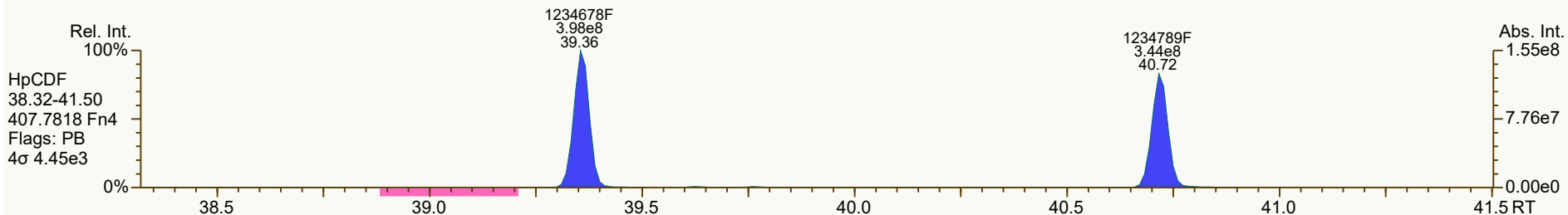


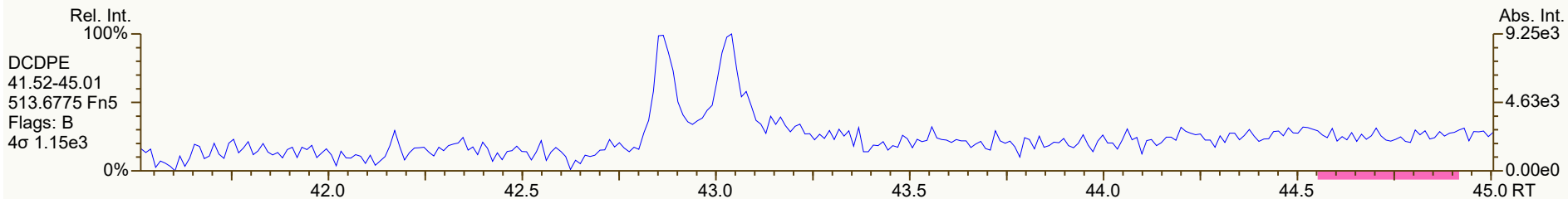
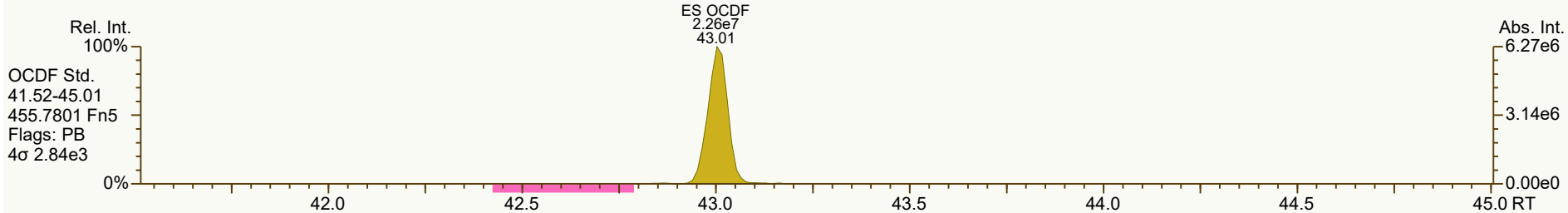
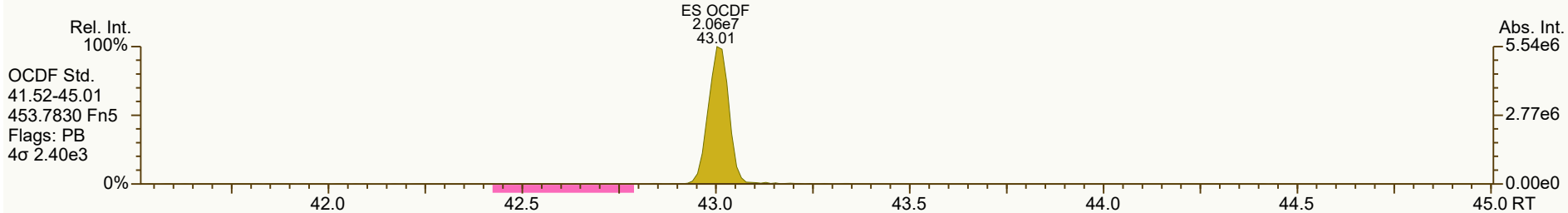
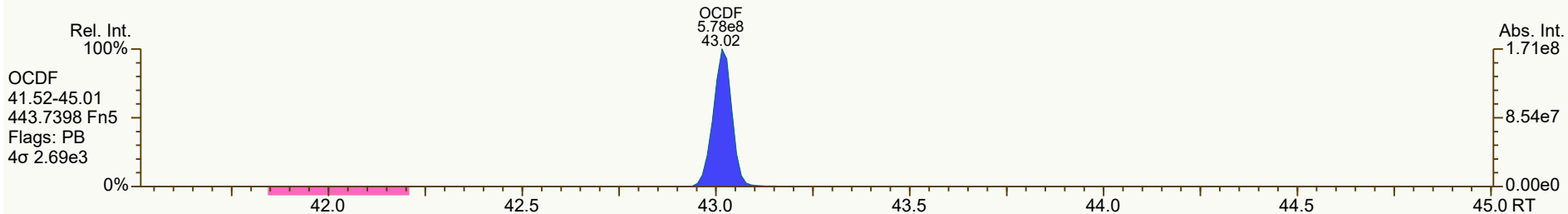
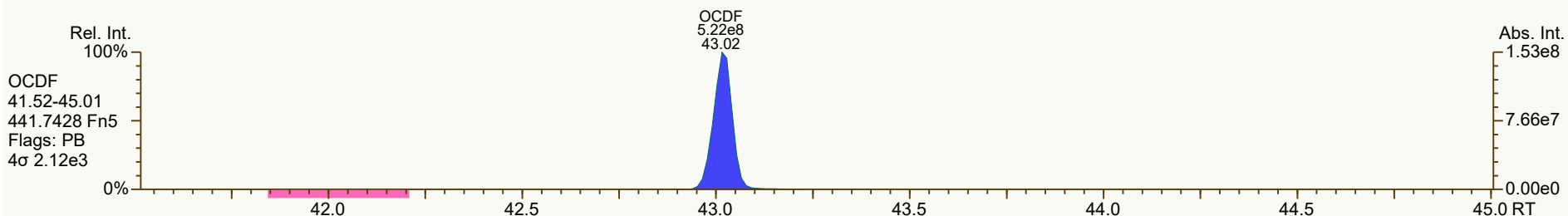
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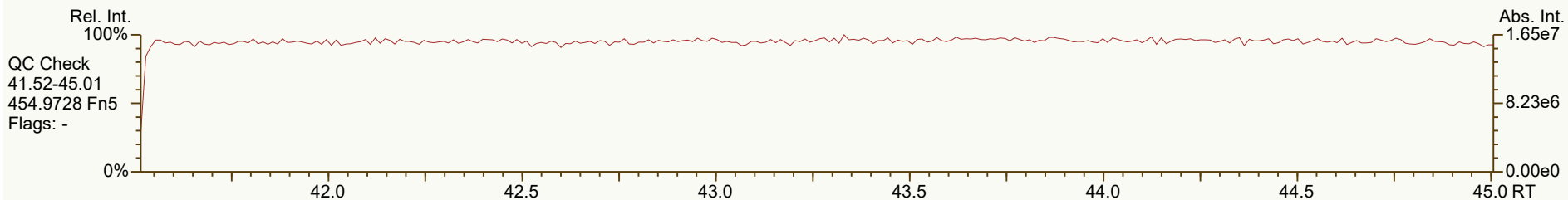
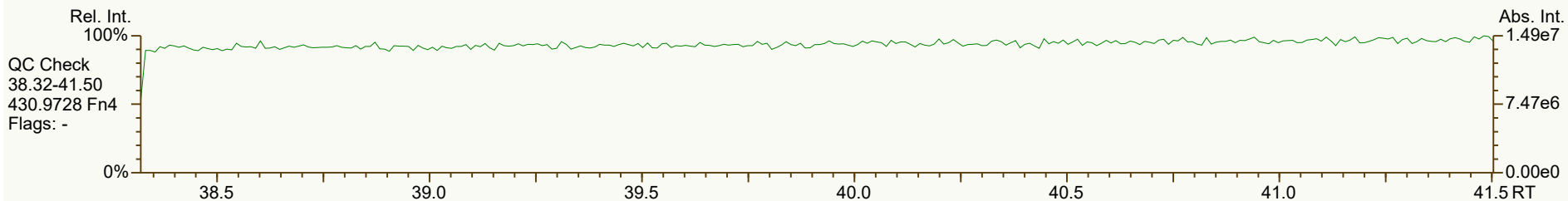
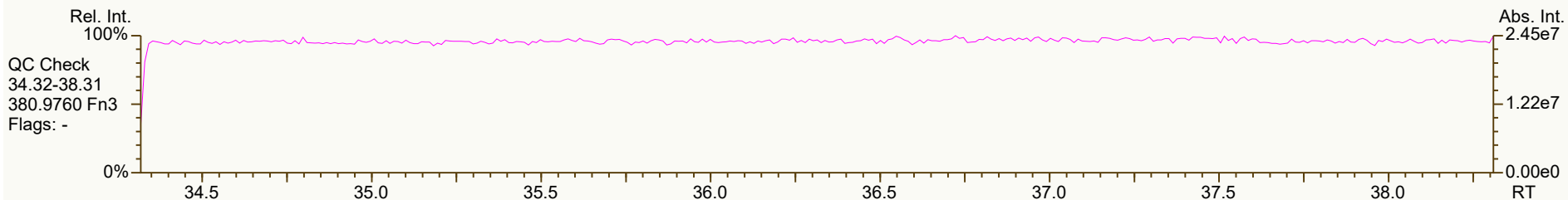
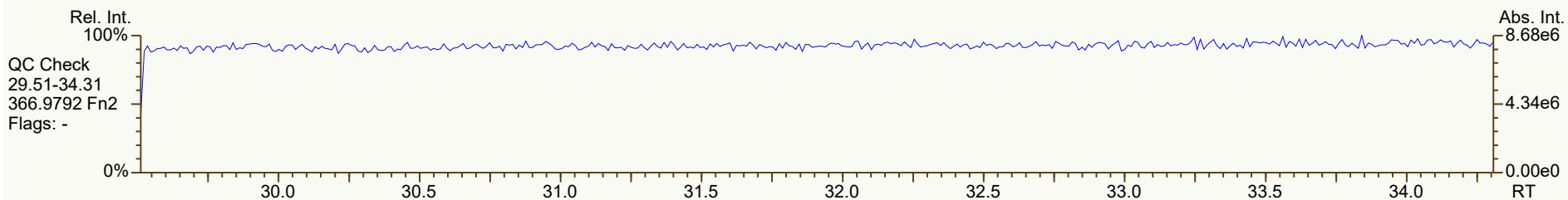
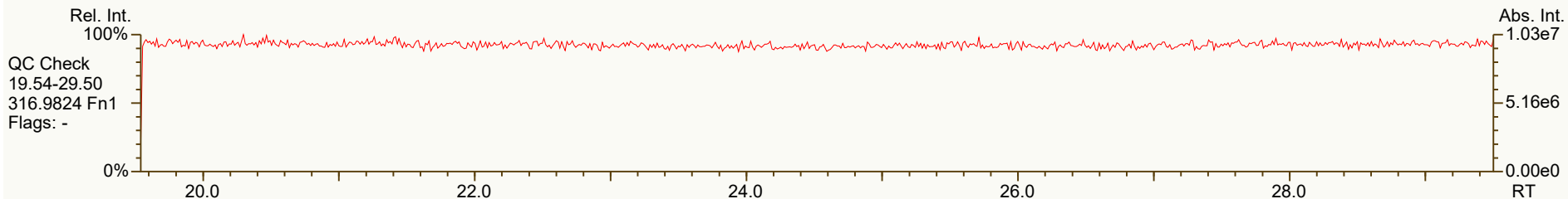
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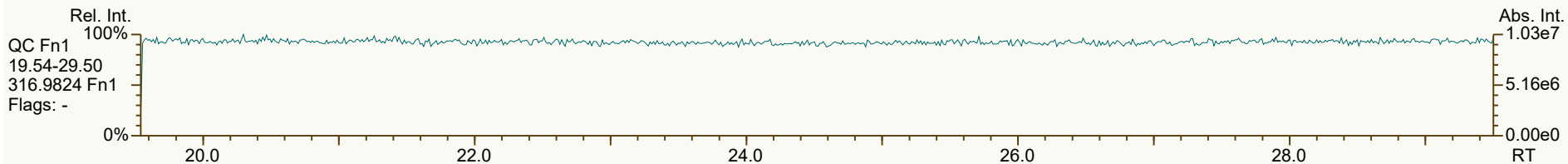
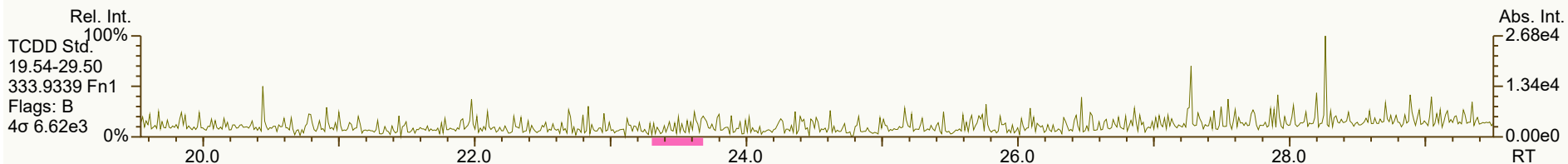
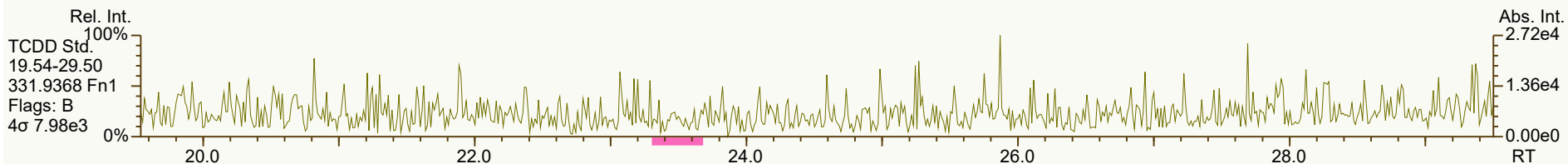
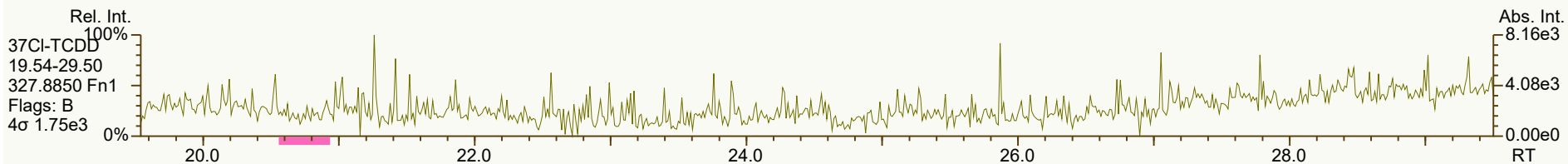
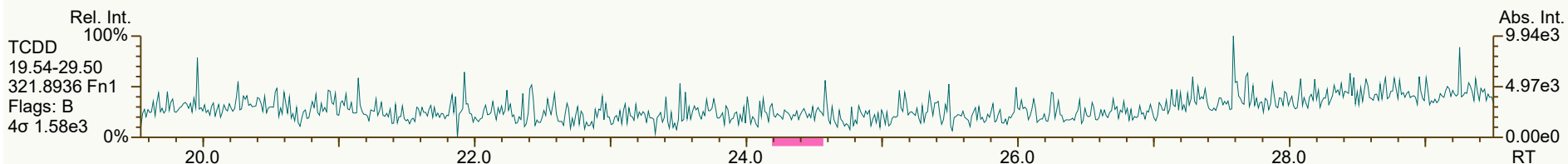
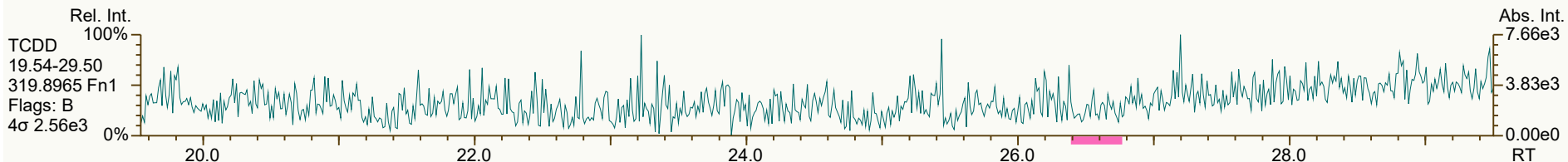
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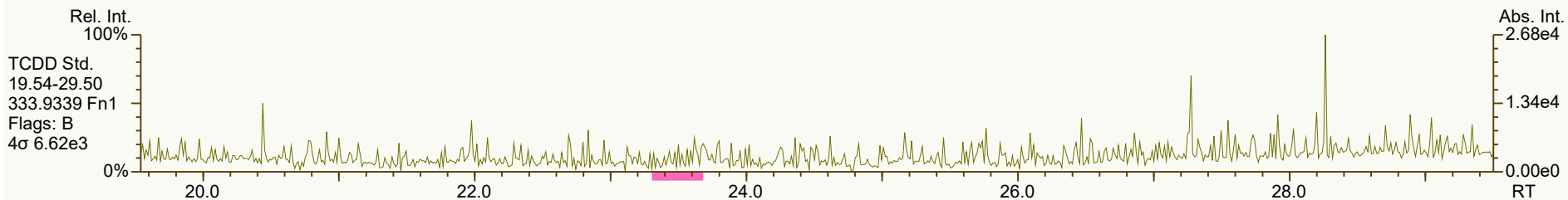
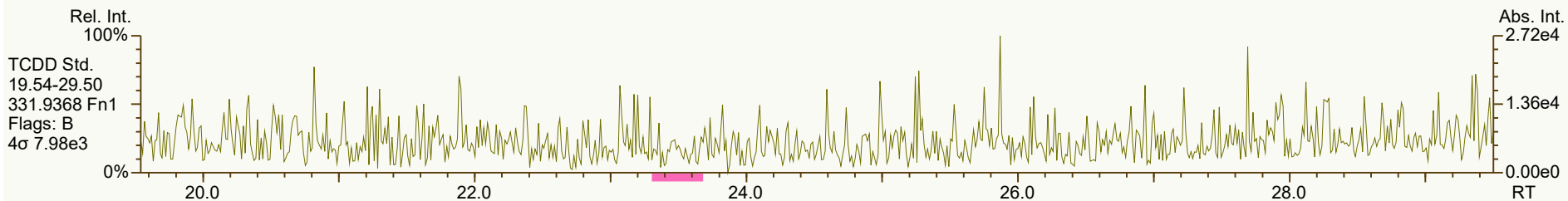
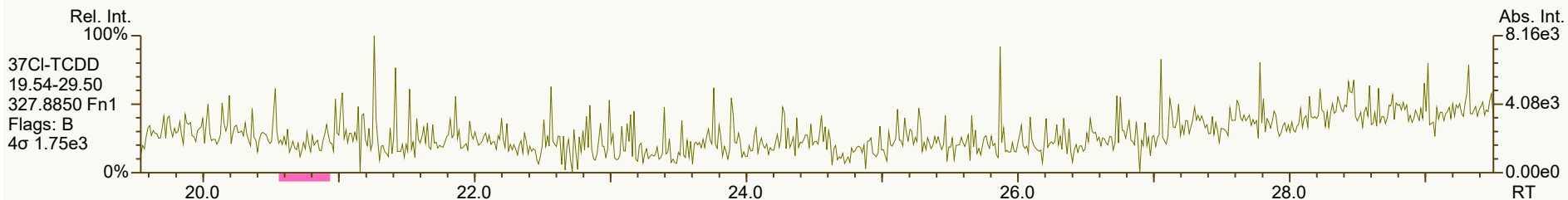
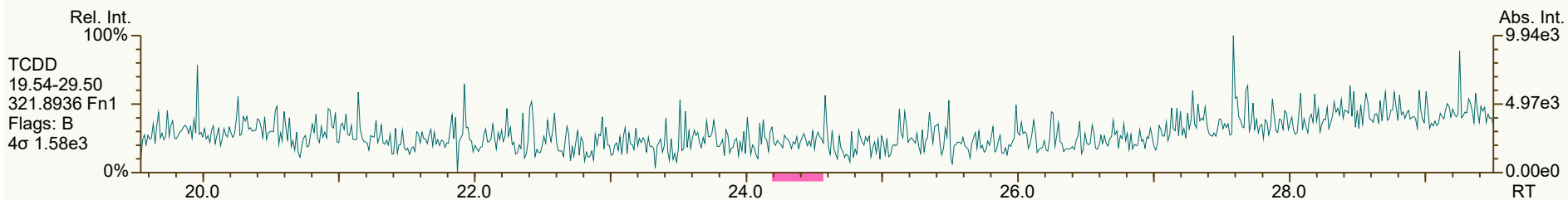
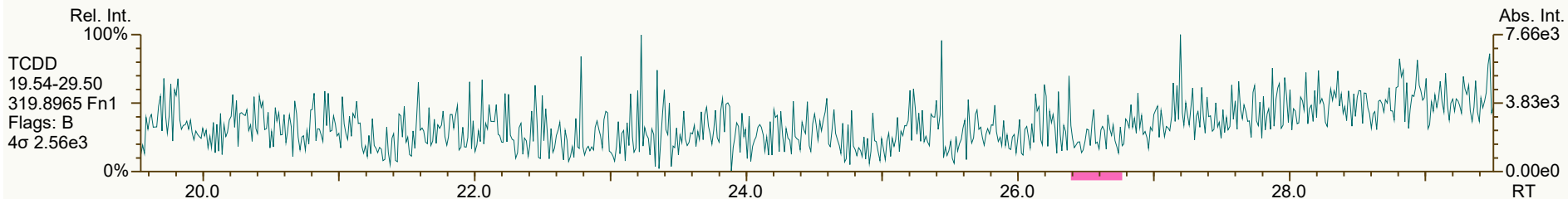


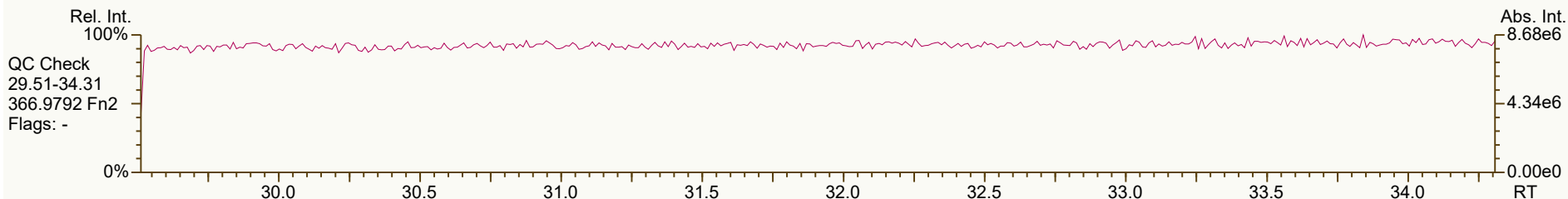
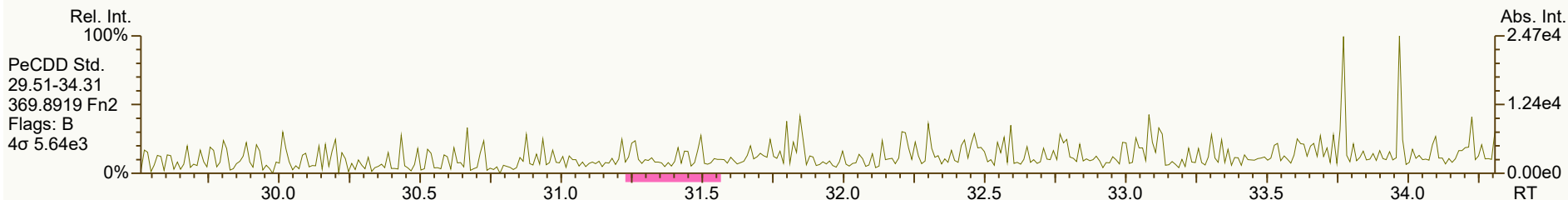
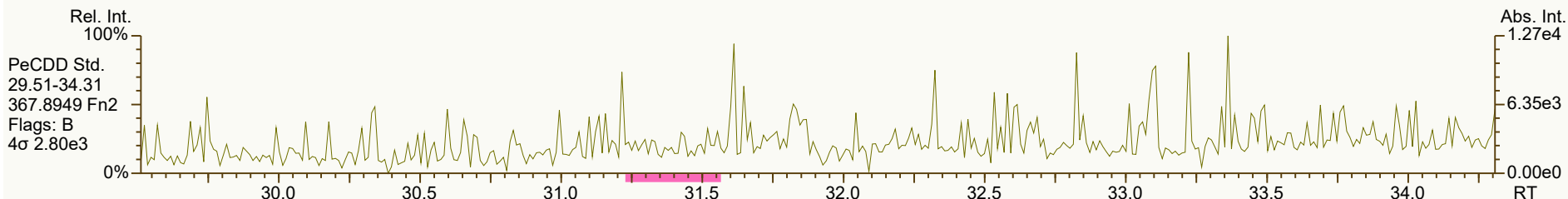
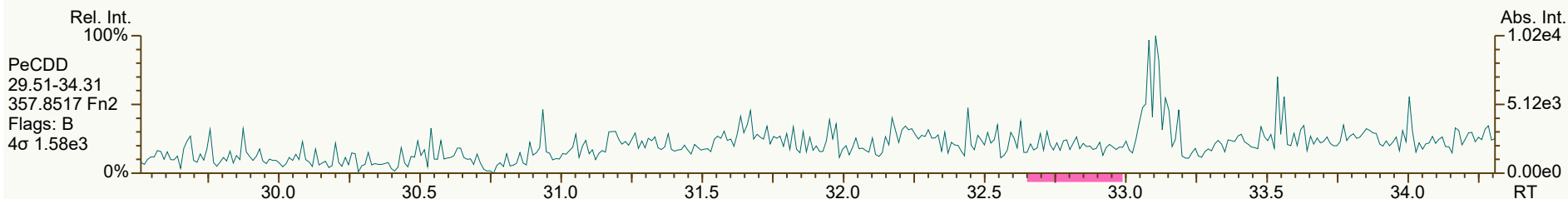
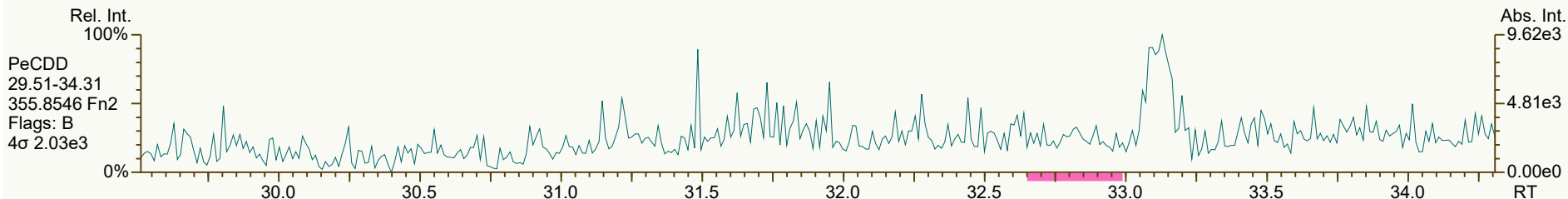


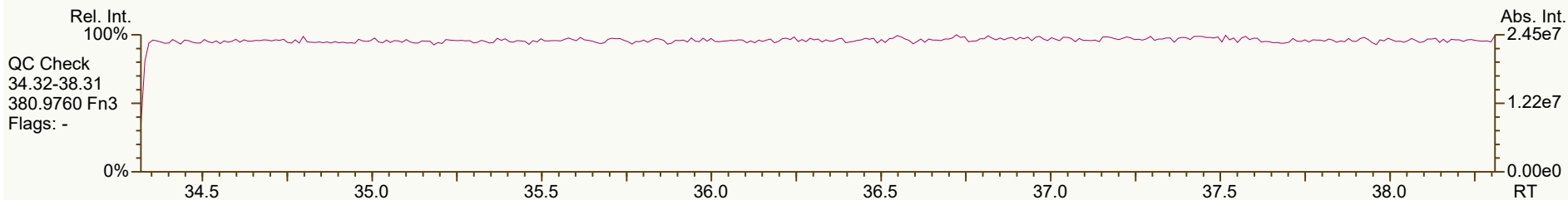
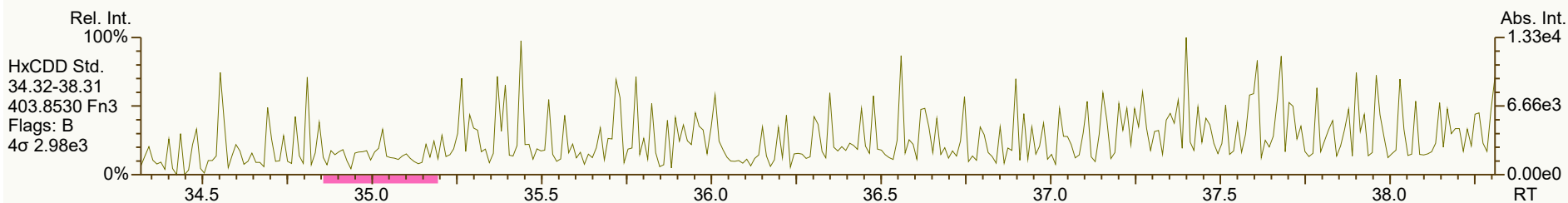
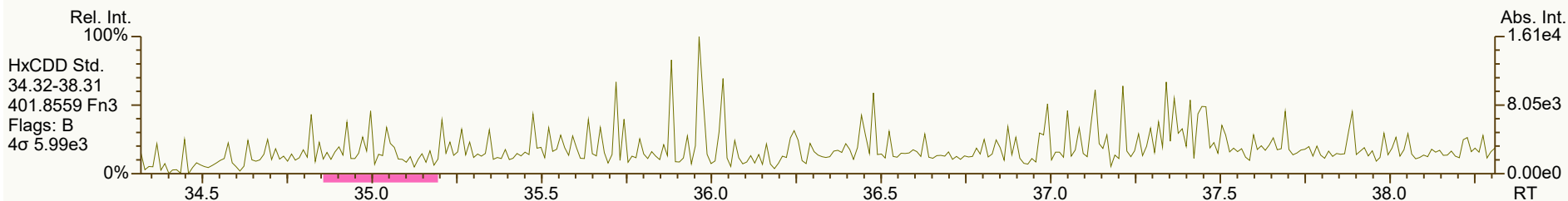
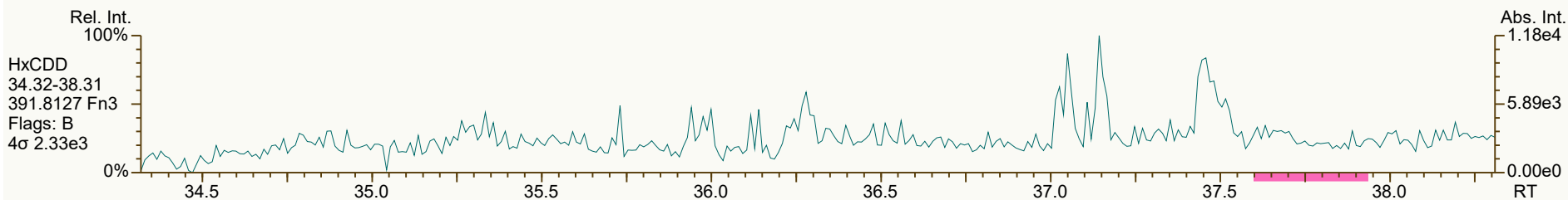
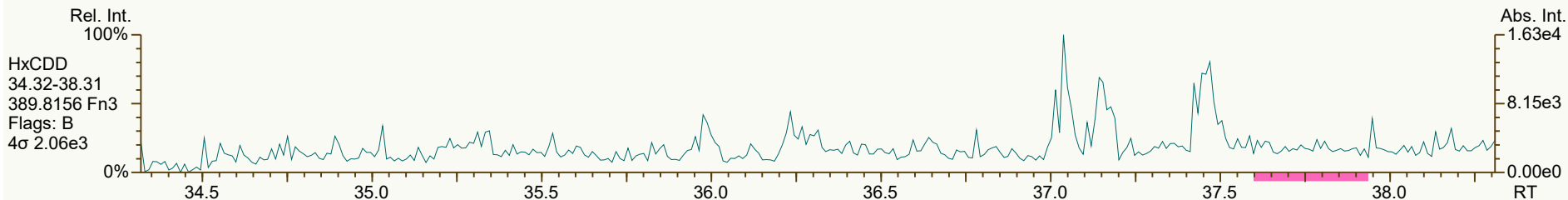


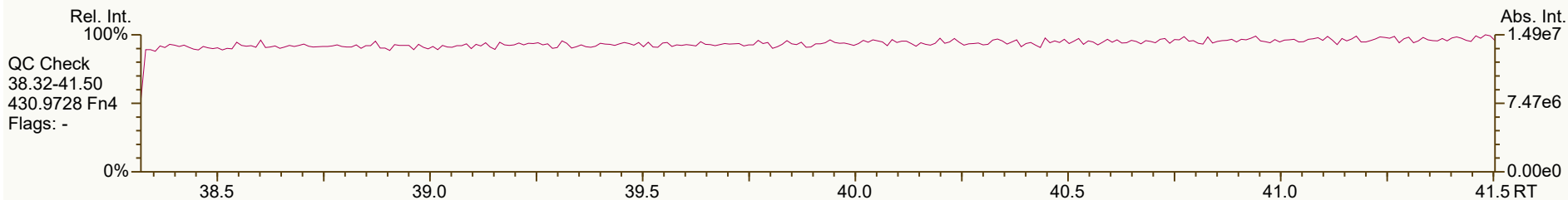
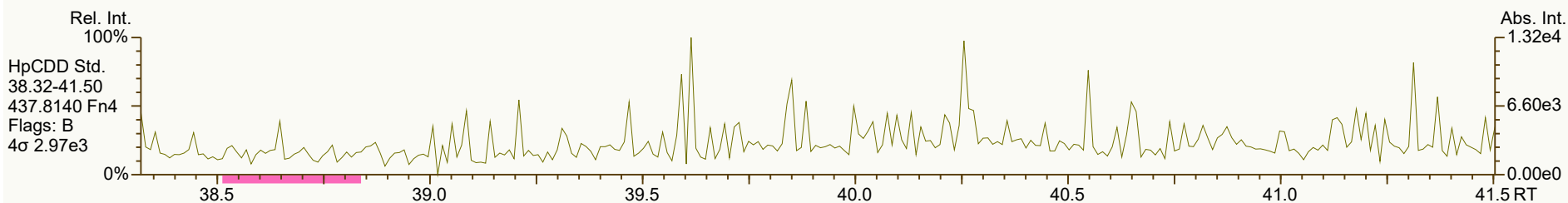
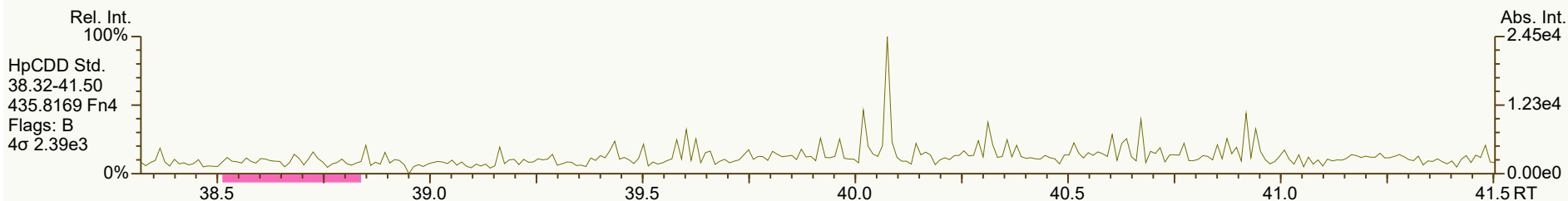
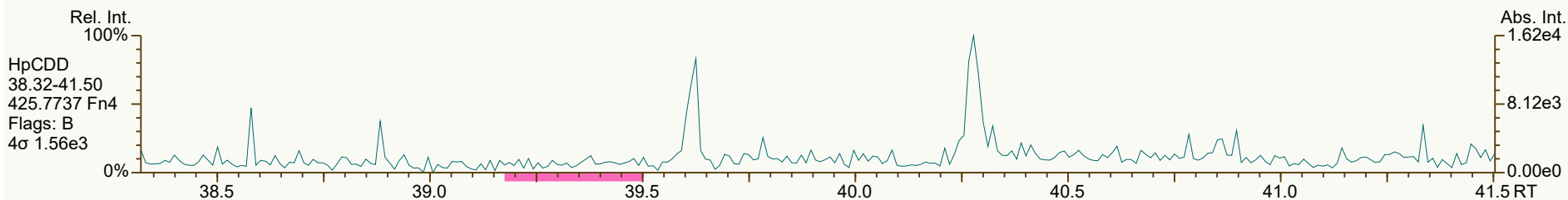
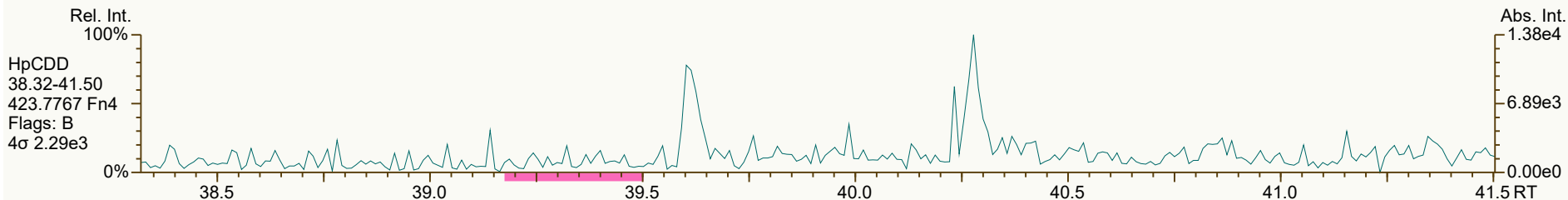


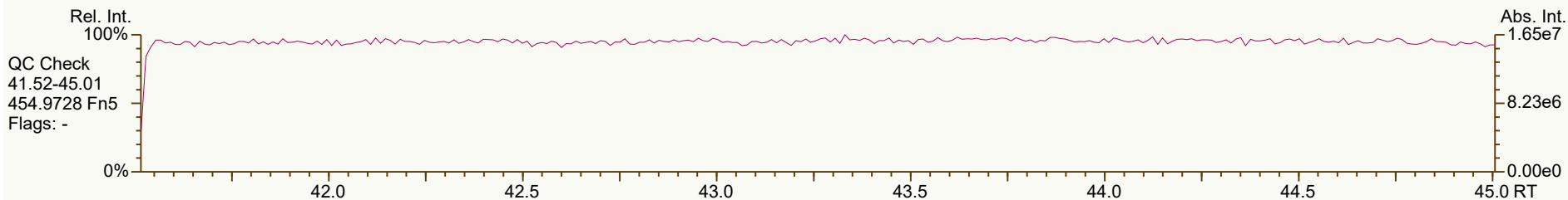
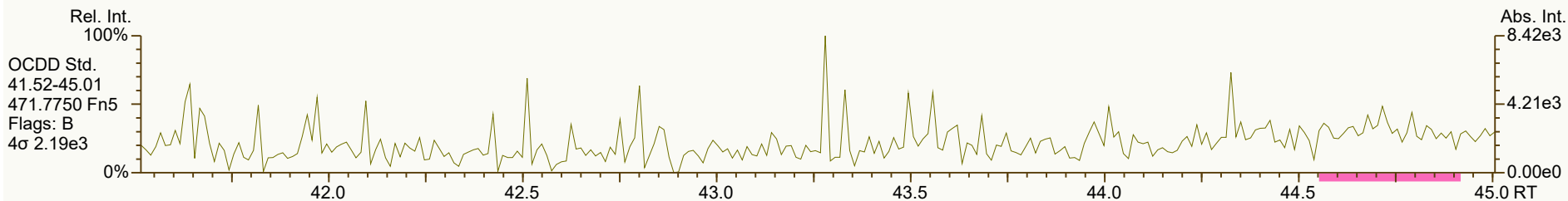
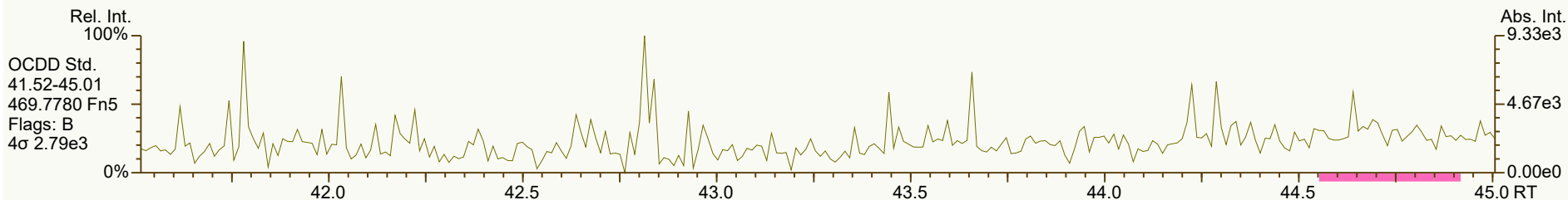
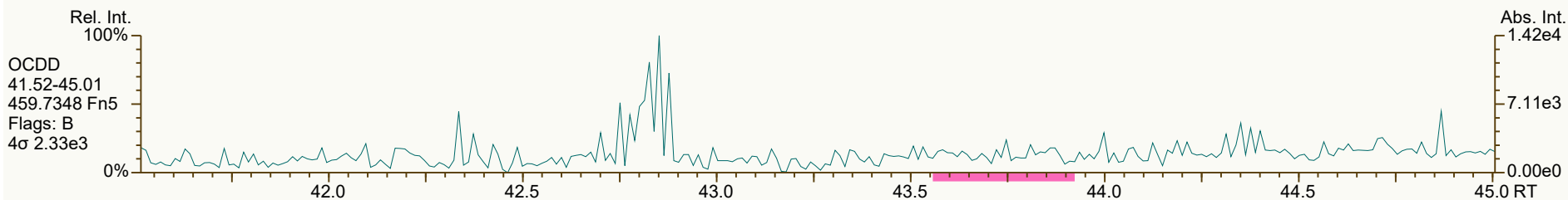
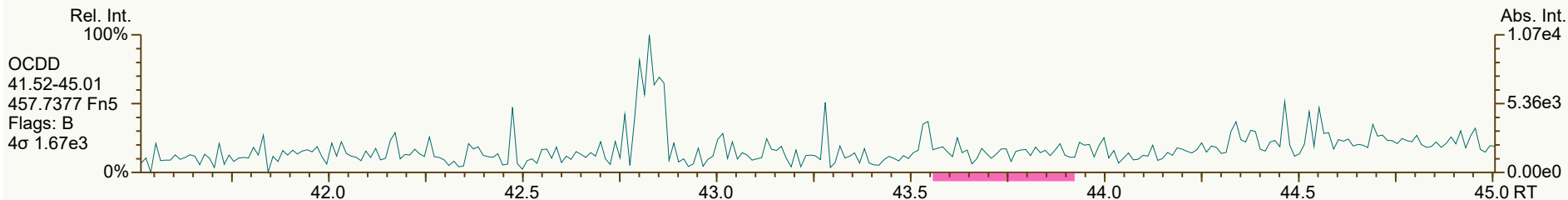


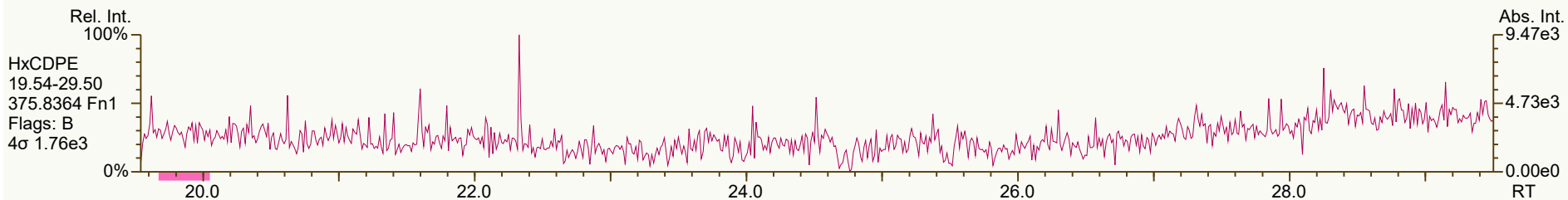
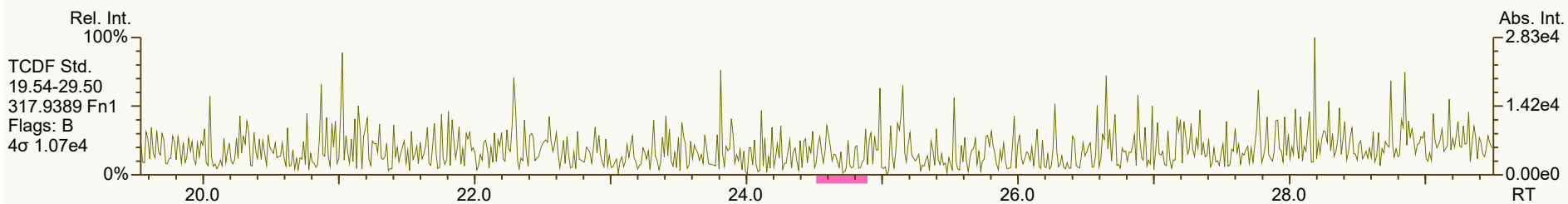
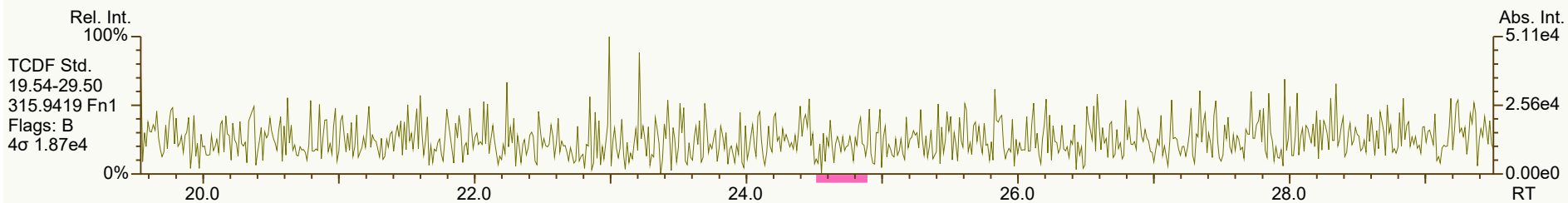
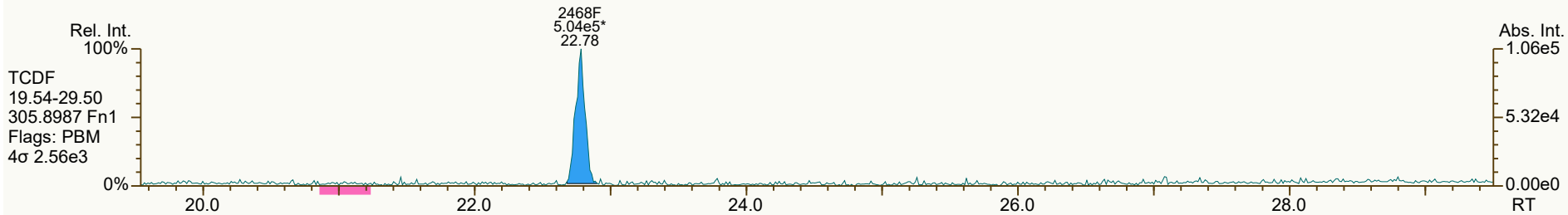
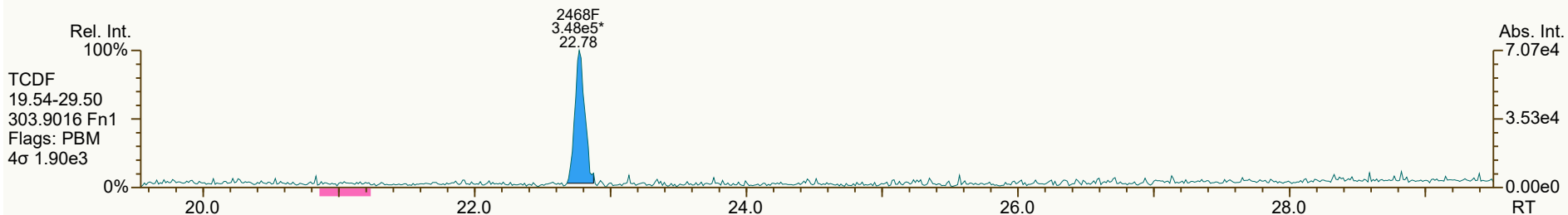


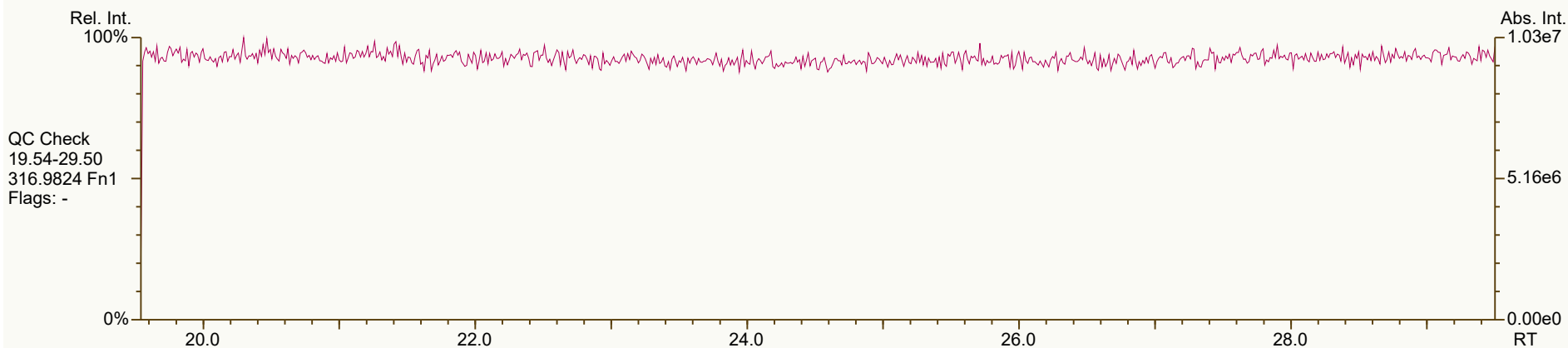
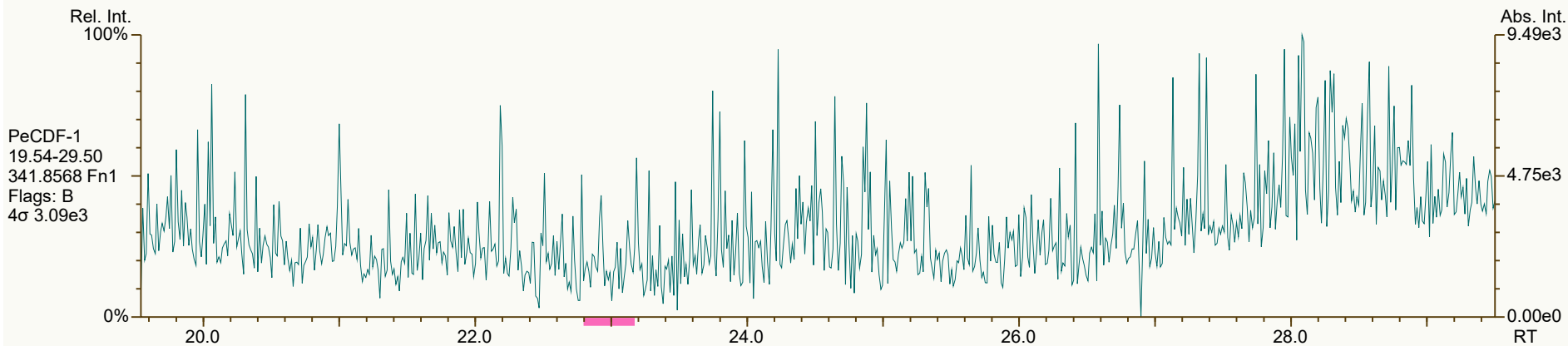
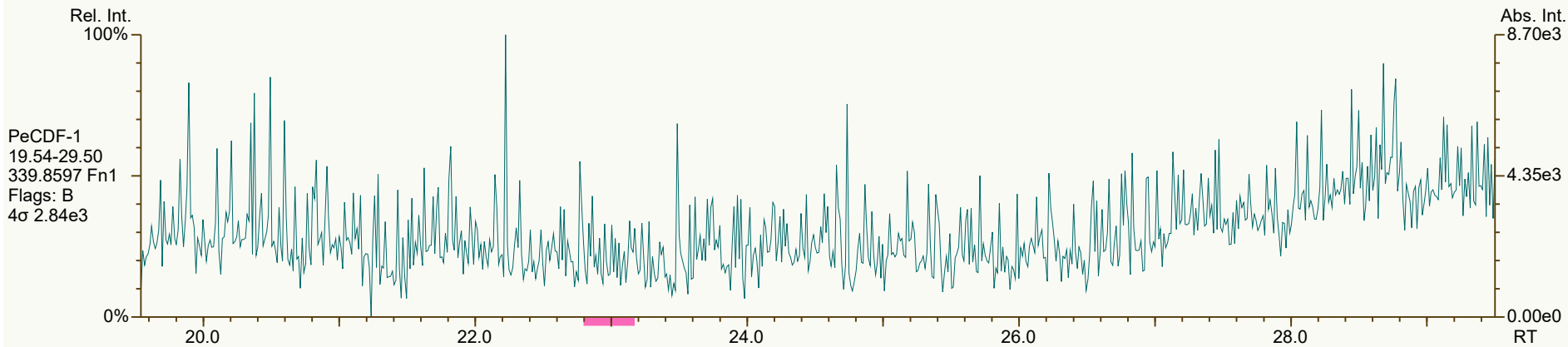


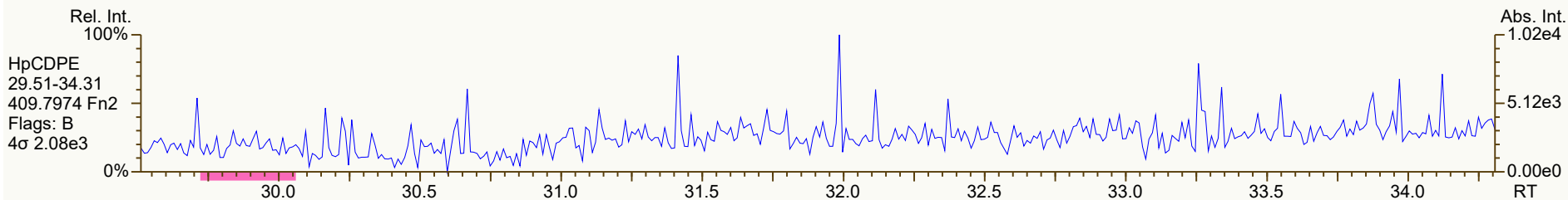
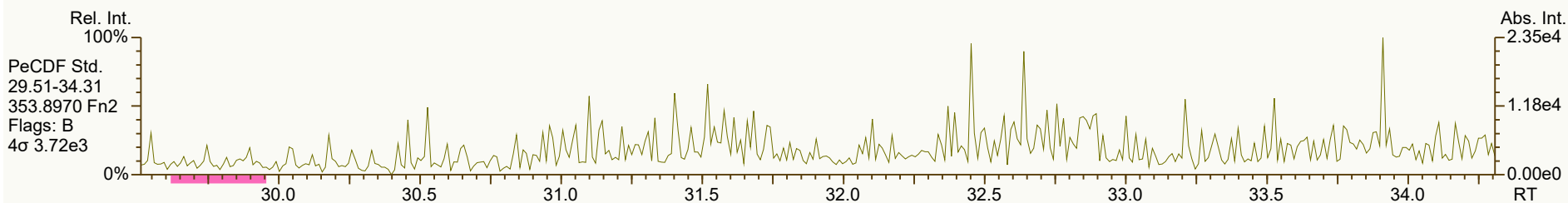
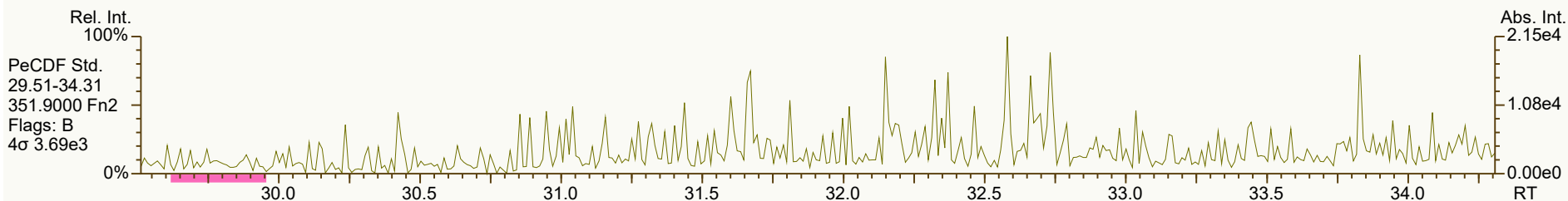
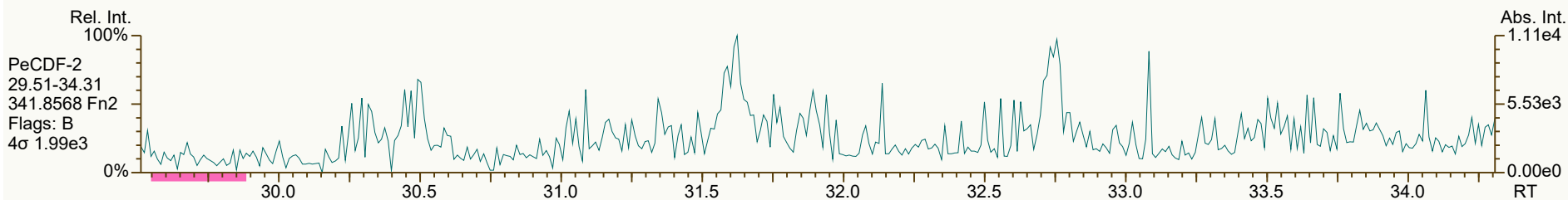
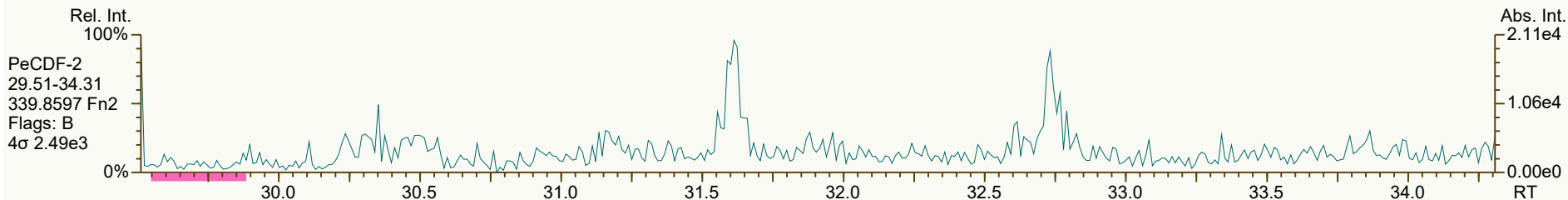


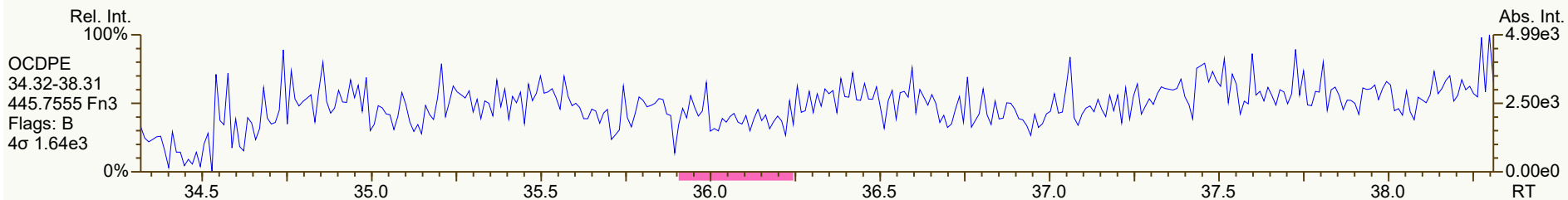
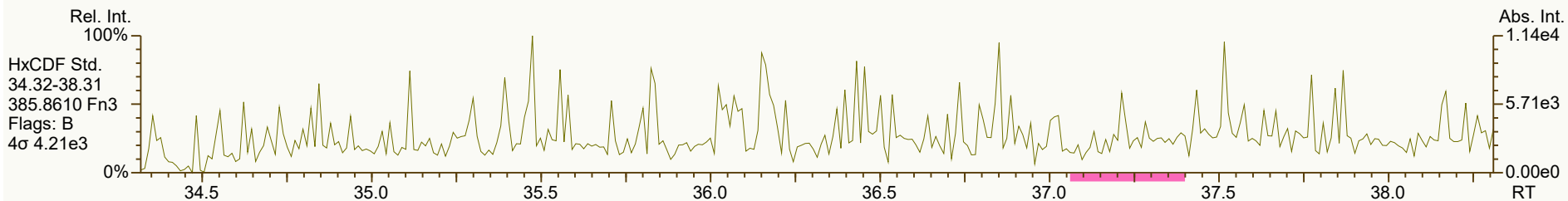
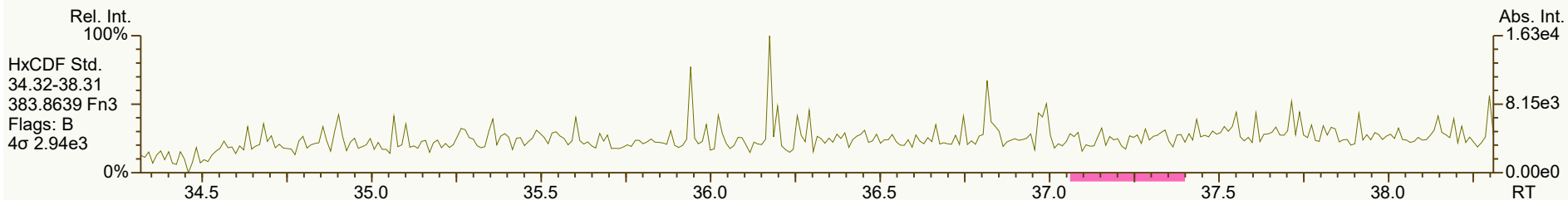
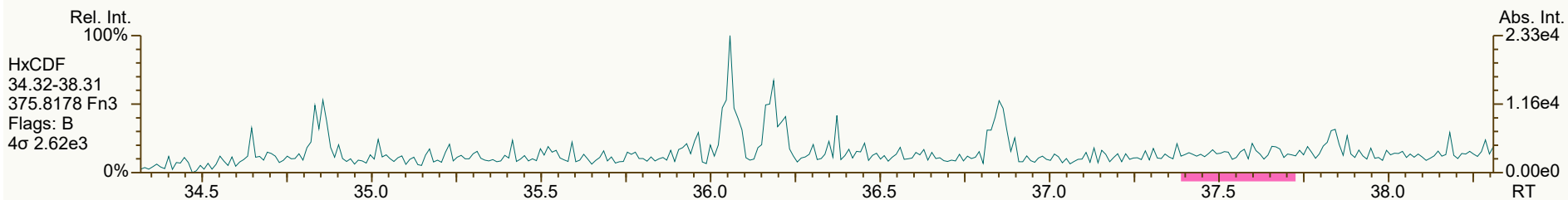
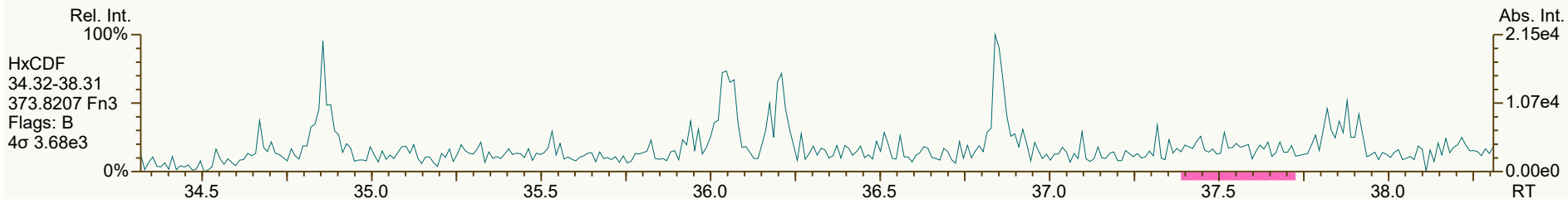


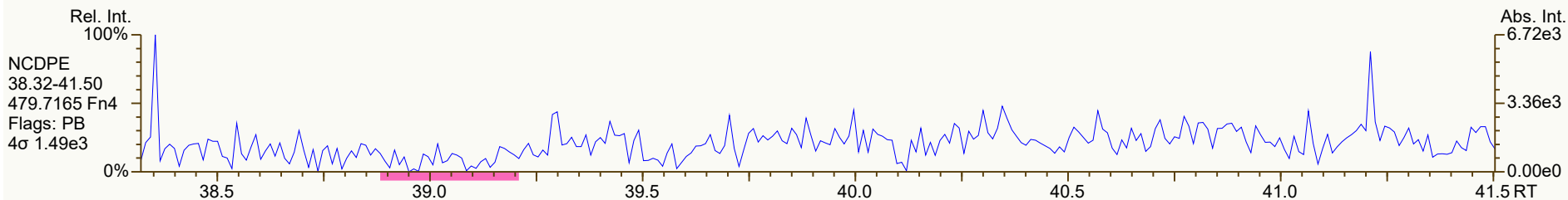
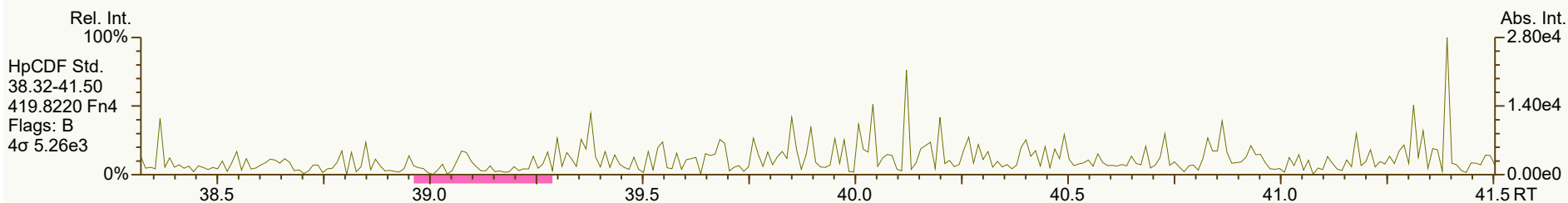
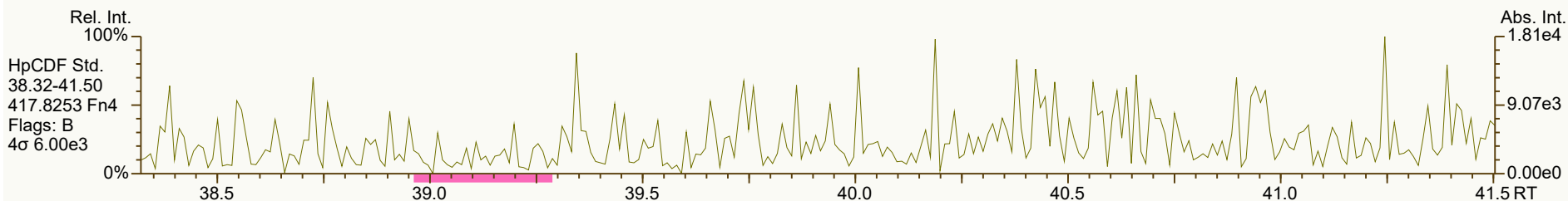
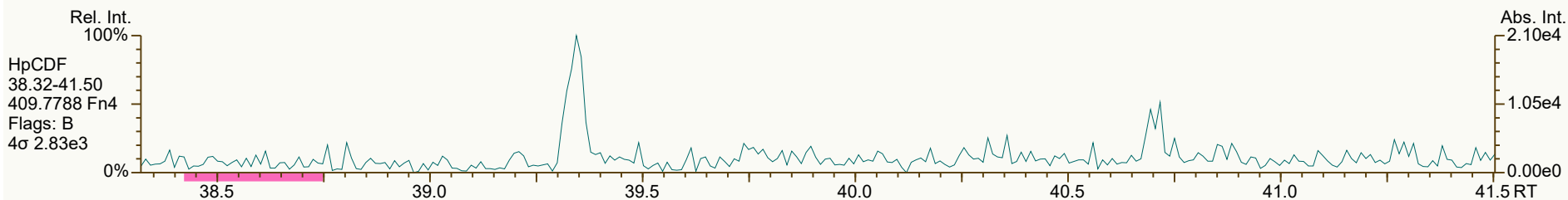
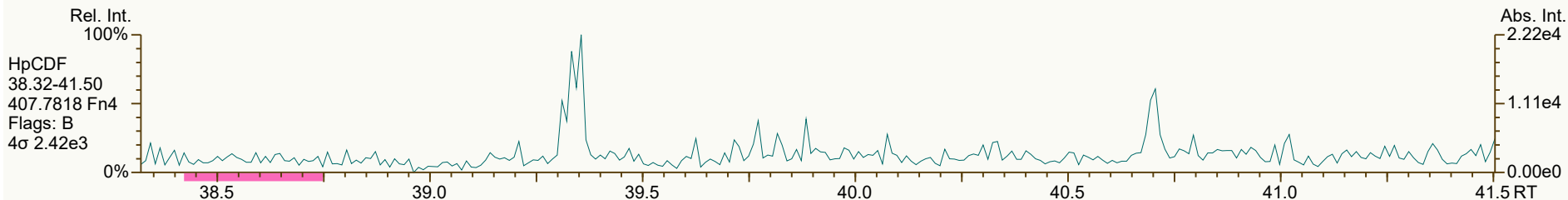


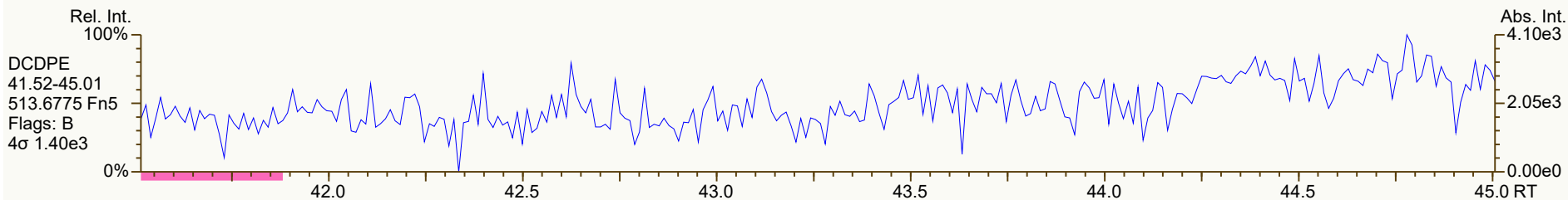
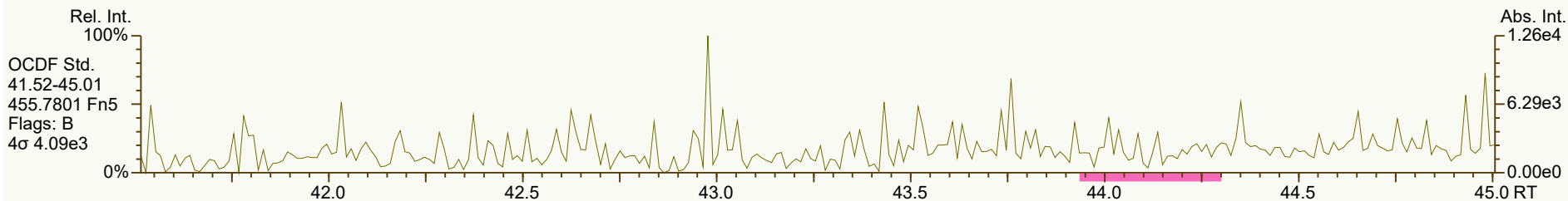
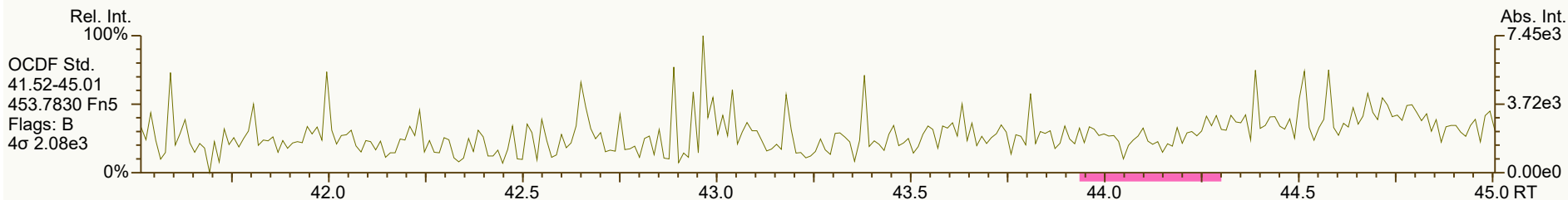
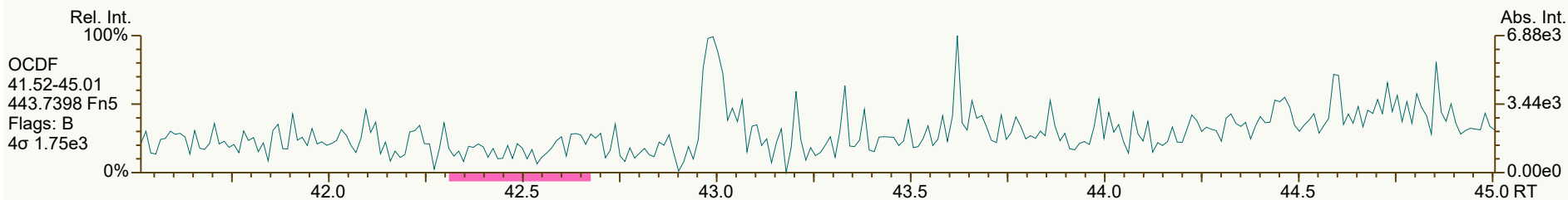
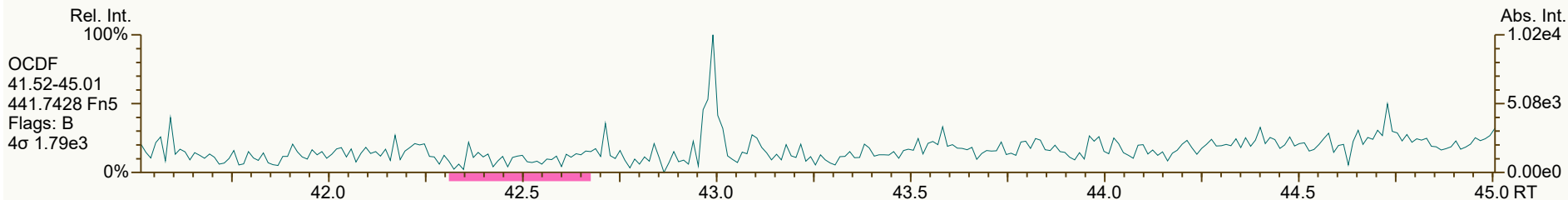








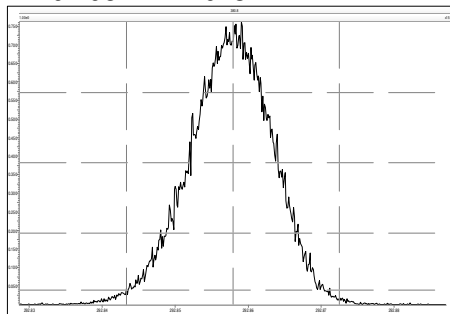




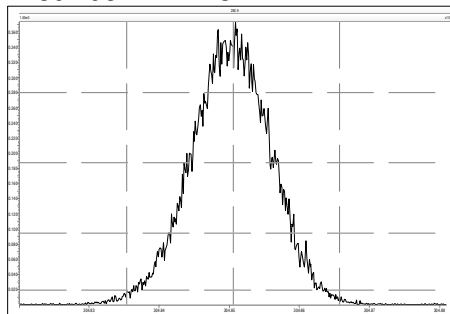
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

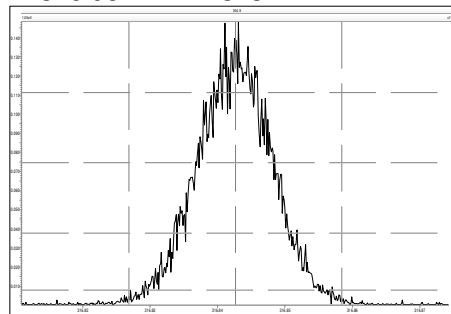
M 292.9824 R 10731



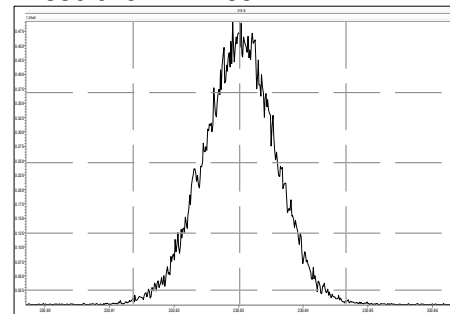
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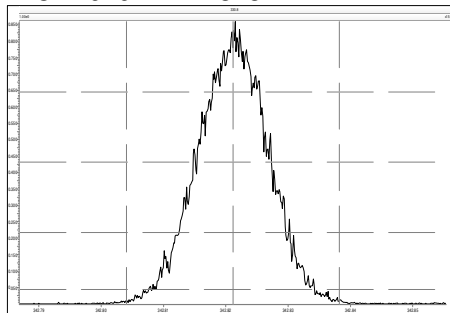
M 316.9824 R 12373



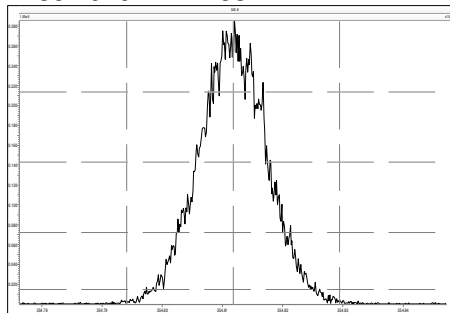
M 330.9792 R 12887



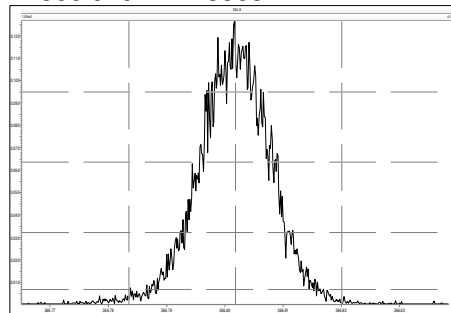
M 342.9792 R 12818



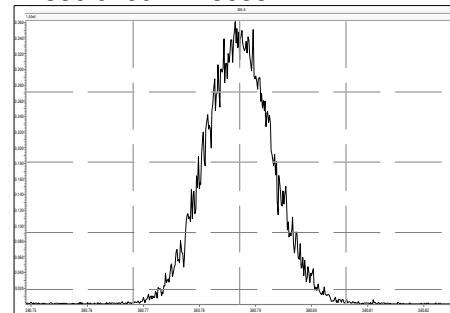
M 354.9792 R 12882



M 366.9792 R 13368



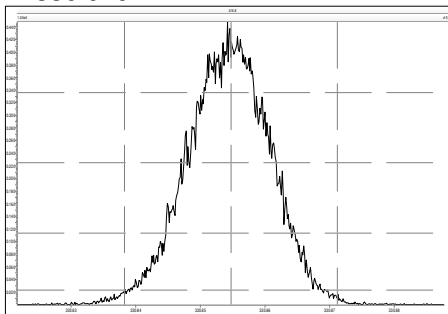
M 380.9760 R 13658



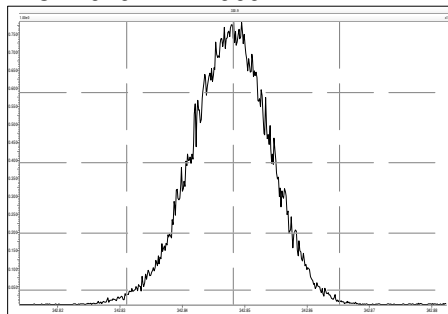
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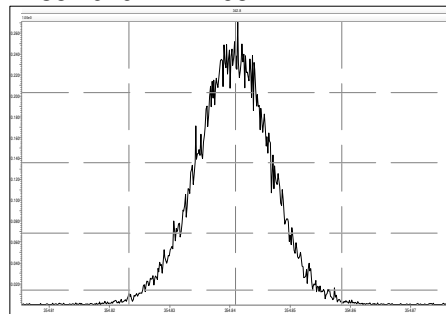
M 330.9792 R 11112



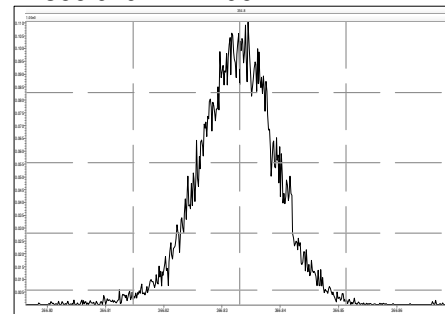
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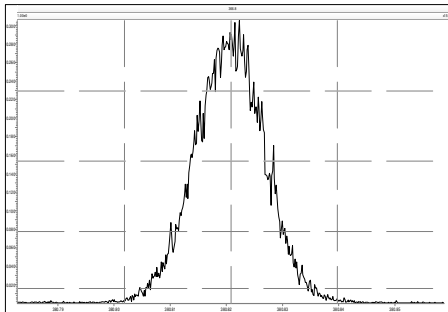
M 354.9792 R 11684



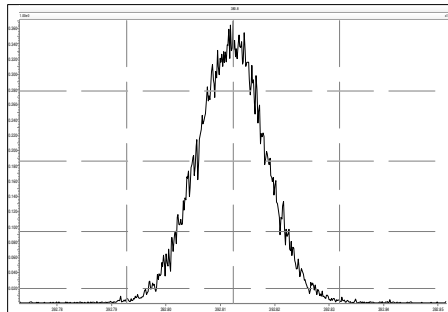
M 366.9792 R 11962



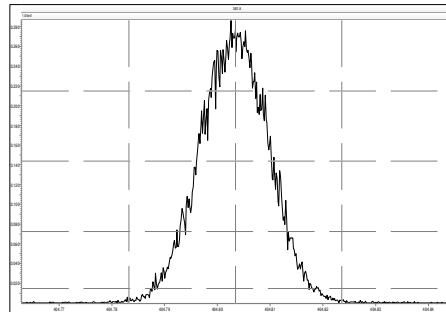
M 380.9760 R 13161



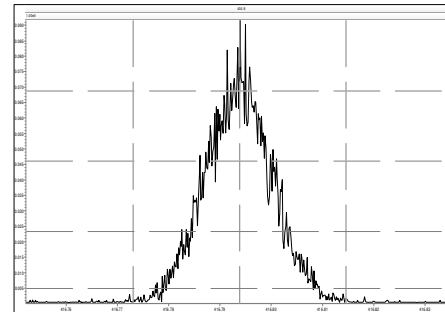
M 392.9760 R 13968



M 404.9760 R 13227



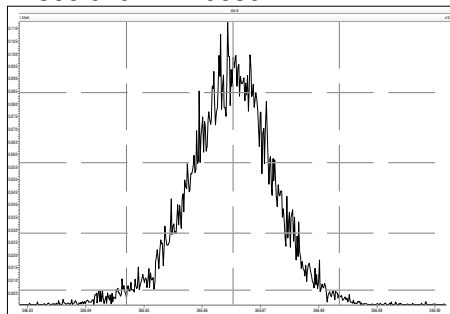
M 416.9760 R 13663



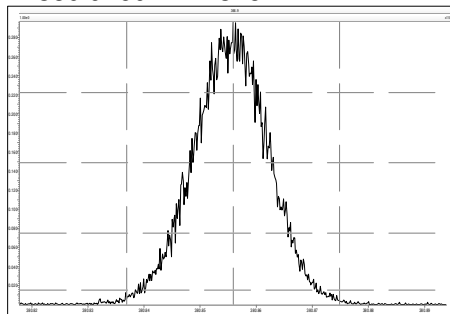
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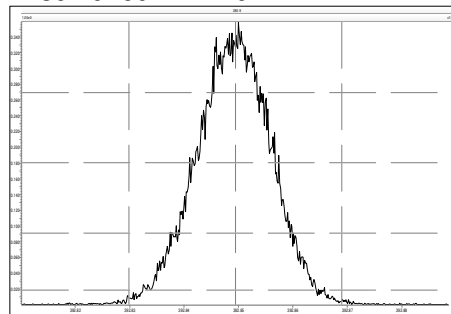
M 366.9792 R 10680



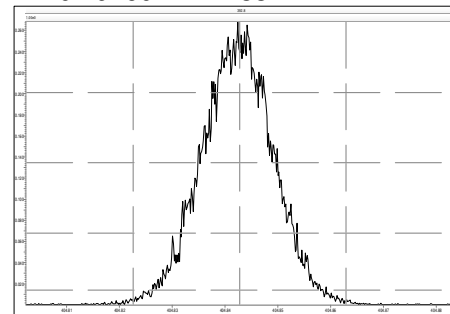
M 380.9760 R 12315



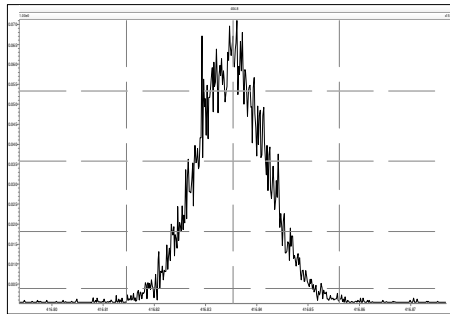
M 392.9760 R 12197



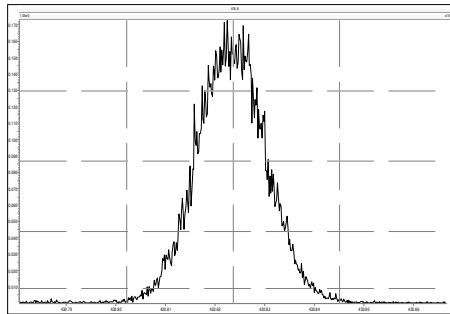
M 404.9760 R 12433



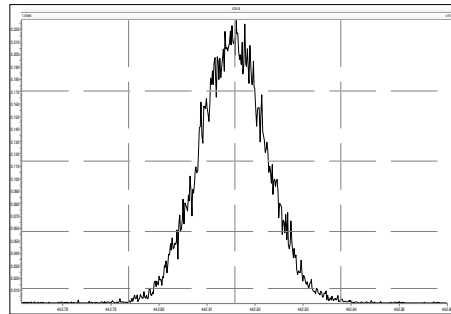
M 416.9760 R 13660



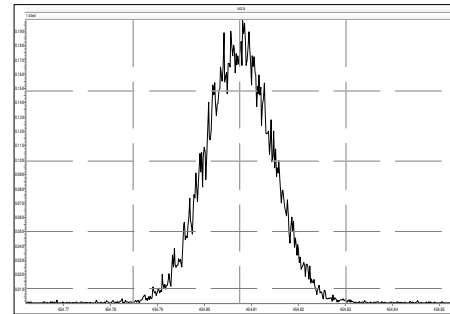
M 430.9728 R 13295



M 442.9728 R 13364



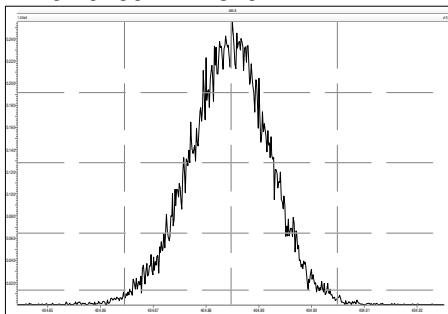
M 454.9728 R 13810



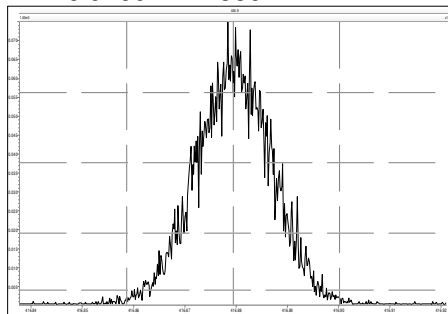
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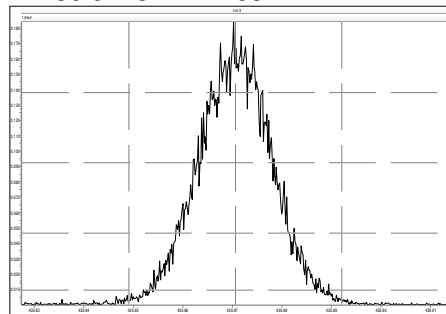
M 404.9760 R 11679



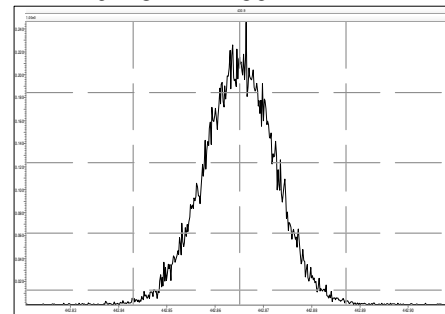
M 416.9760 R 12886



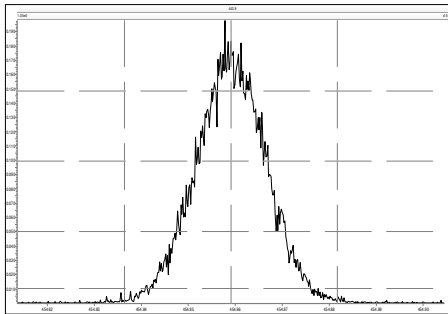
M 430.9728 R 12253



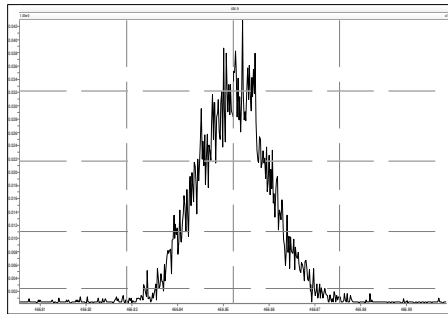
M 442.9728 R 12756



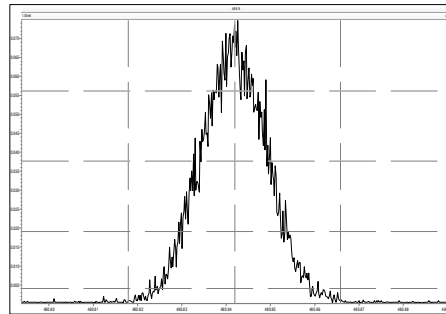
M 454.9728 R 13157



M 466.9728 R 13810



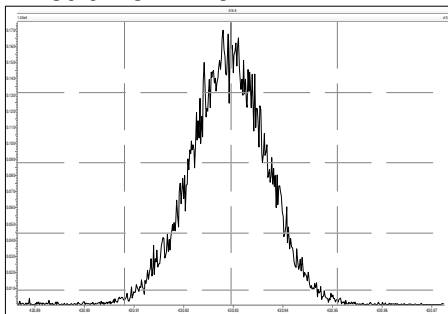
M 480.9696 R 14046



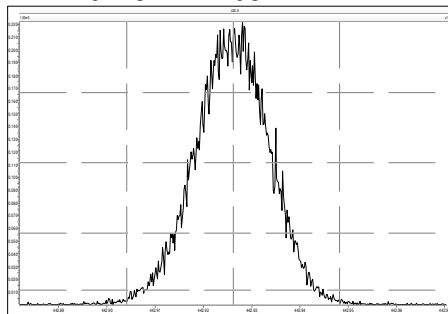
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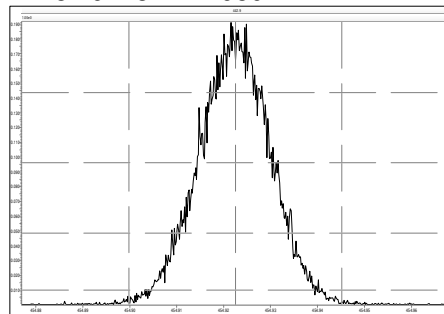
M 430.9728 R 11574



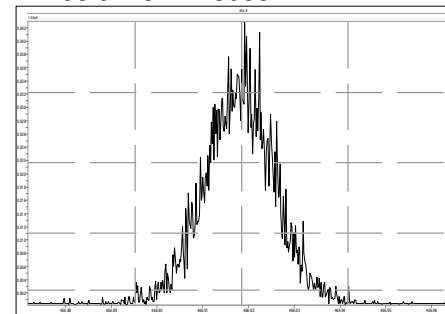
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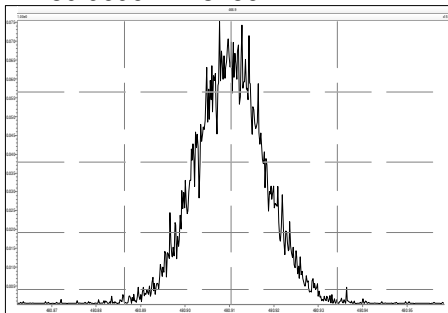
M 454.9728 R 12950



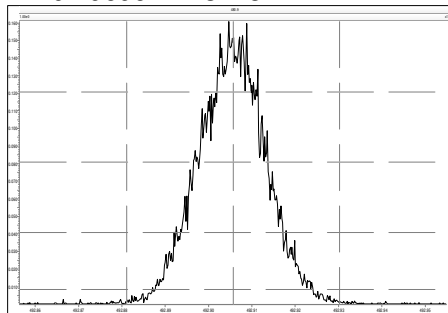
M 466.9728 R 13088



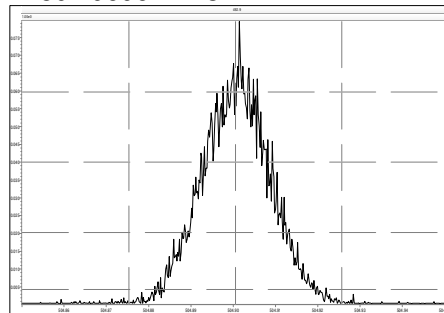
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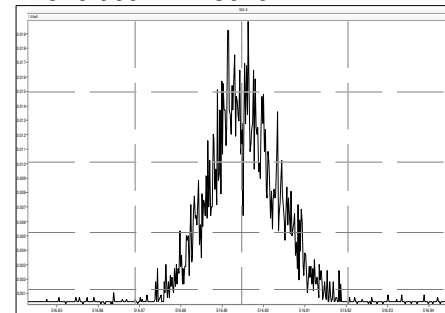
M 492.9696 R 13228



M 504.9696 R 13227



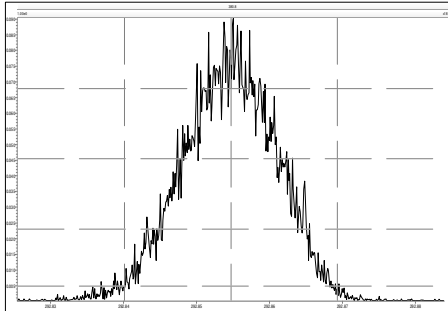
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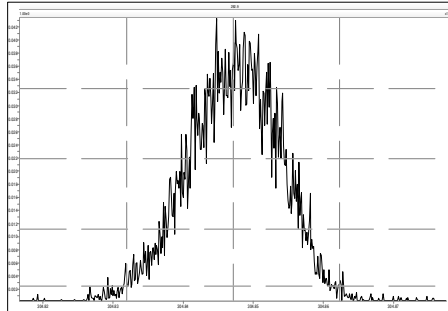
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Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

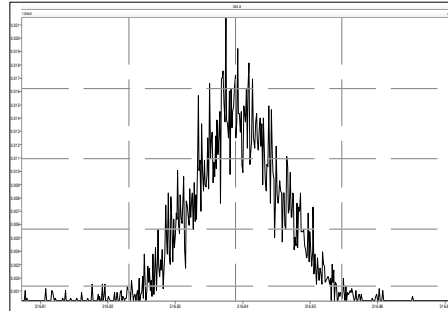
M 292.9824 R 10122



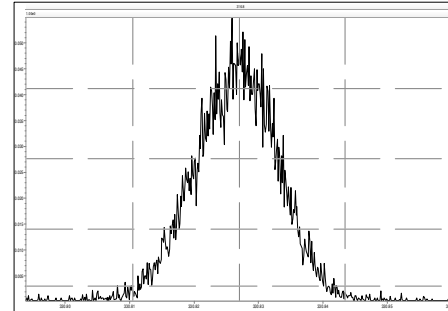
M 304.9824 R 10329



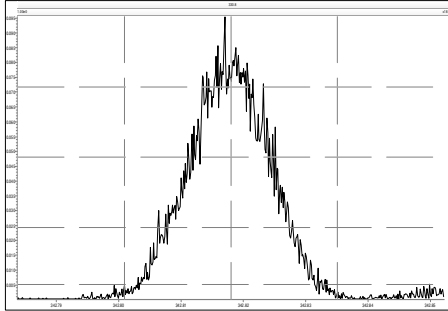
M 316.9824 R 11964



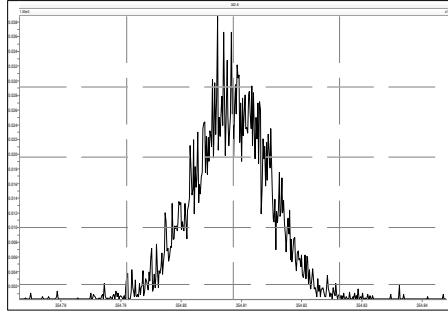
M 330.9792 R 11062



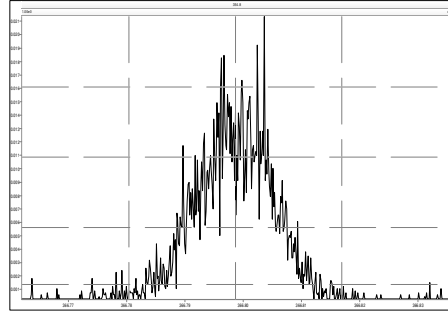
M 342.9792 R 12075



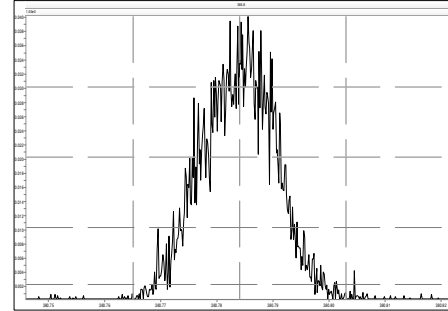
M 354.9792 R 12439



M 366.9792 R 12694



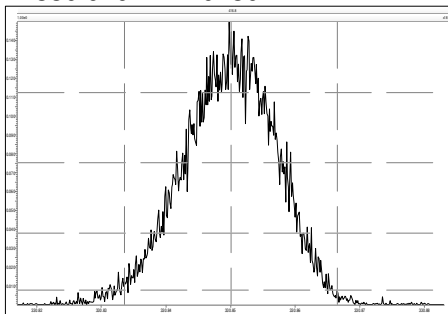
M 380.9760 R 13224



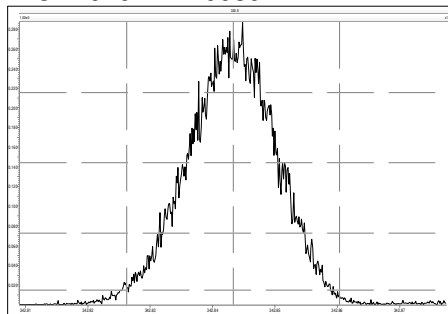
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Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

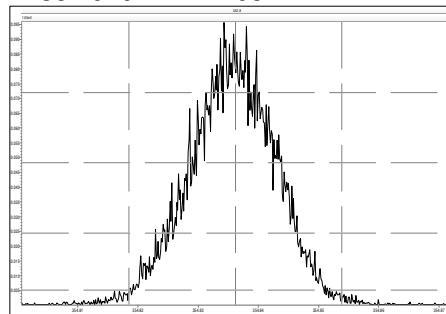
M 330.9792 R 10730



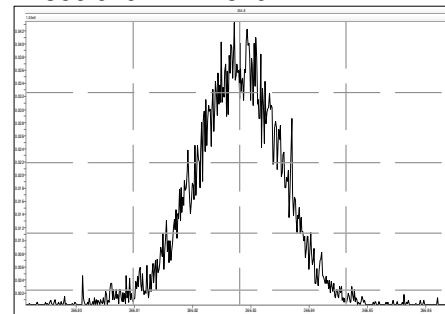
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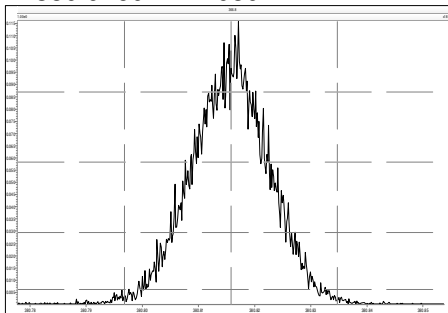
M 354.9792 R 11108



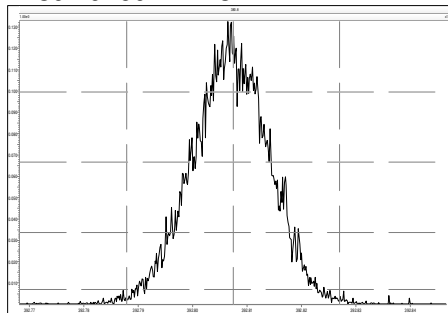
M 366.9792 R 11520



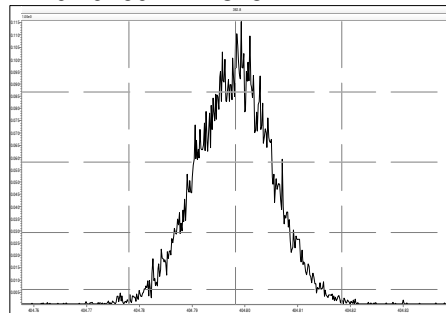
M 380.9760 R 12080



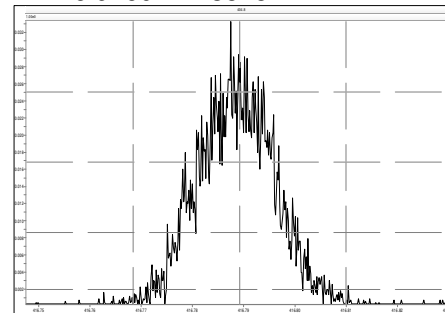
M 392.9760 R 12377



M 404.9760 R 12375



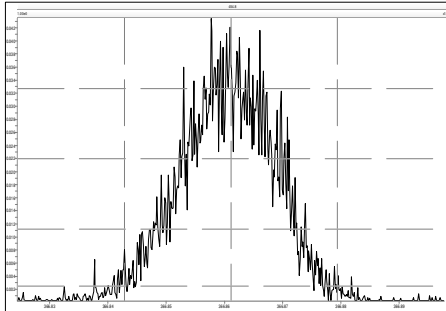
M 416.9760 R 13515



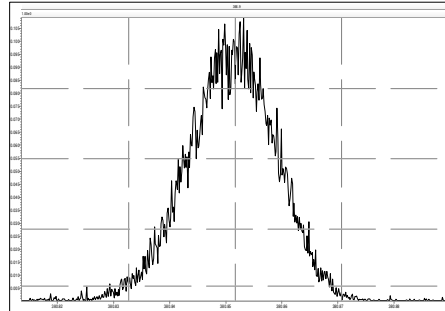
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Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

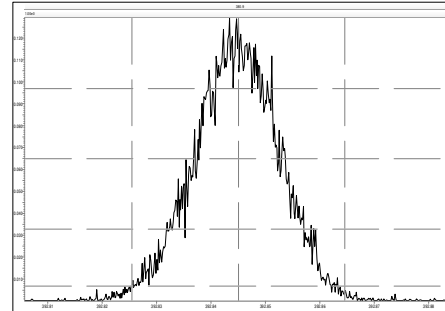
M 366.9792 R 10866



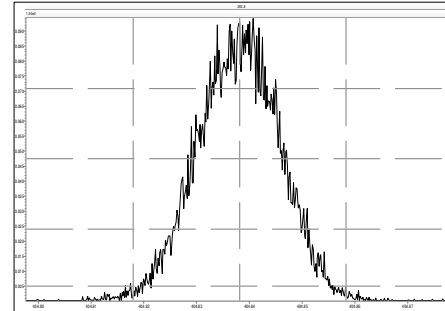
M 380.9760 R 10416



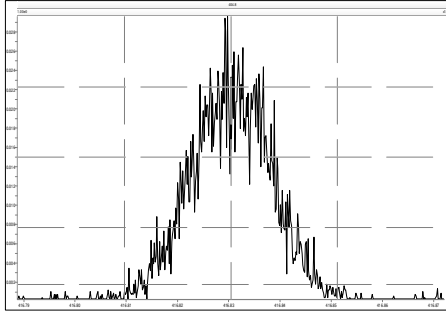
M 392.9760 R 10640



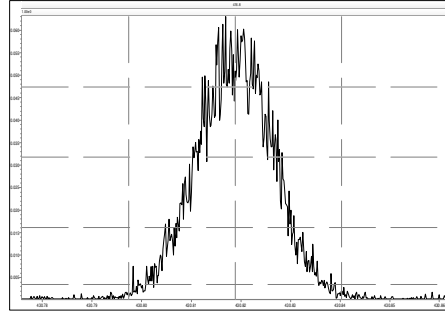
M 404.9760 R 11957



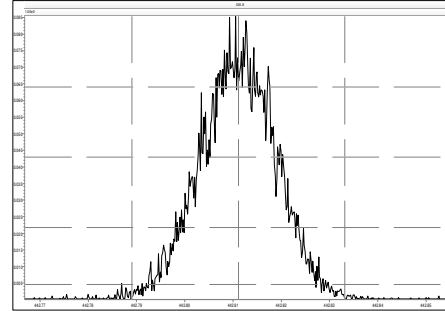
M 416.9760 R 12076



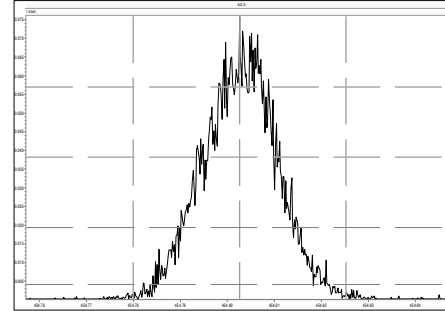
M 430.9728 R 11629



M 442.9728 R 12820



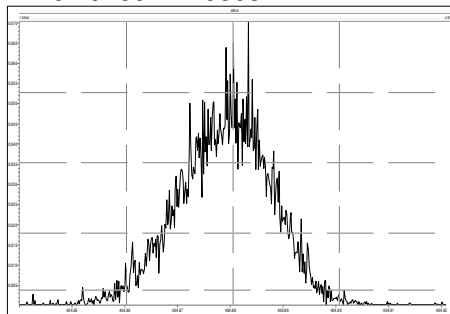
M 454.9728 R 12317



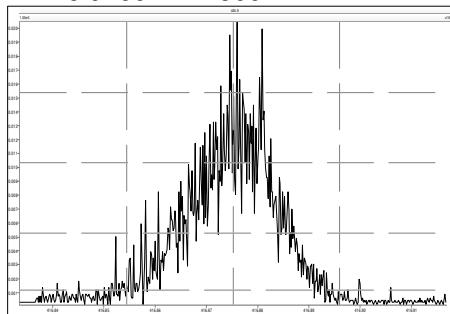
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

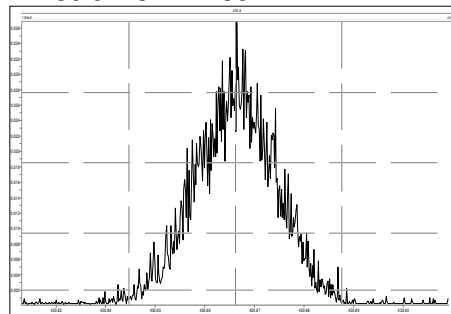
M 404.9760 R 10505



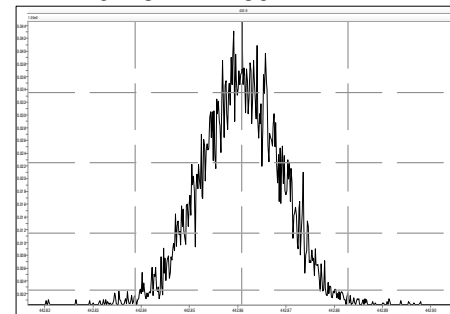
M 416.9760 R 12500



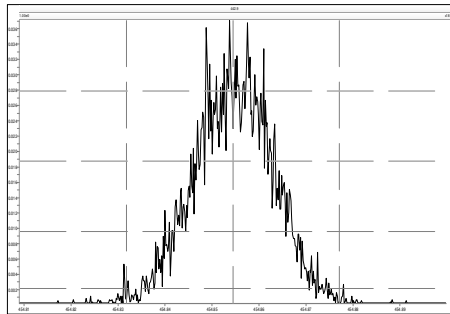
M 430.9728 R 11362



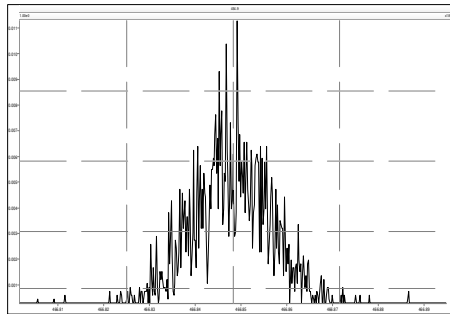
M 442.9728 R 12756



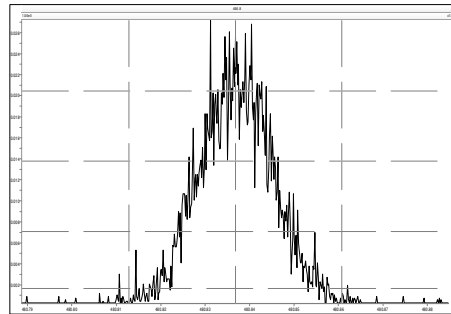
M 454.9728 R 12194



M 466.9728 R 12313



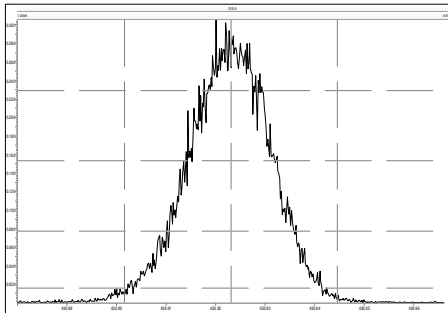
M 480.9696 R 13294



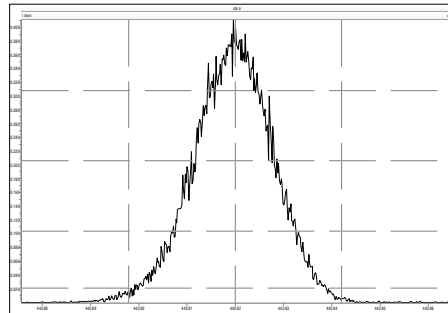
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Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

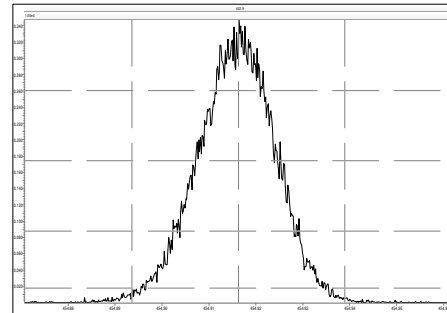
M 430.9728 R 11312



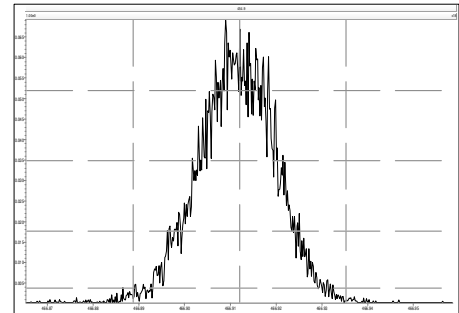
M 442.9728 R 11110



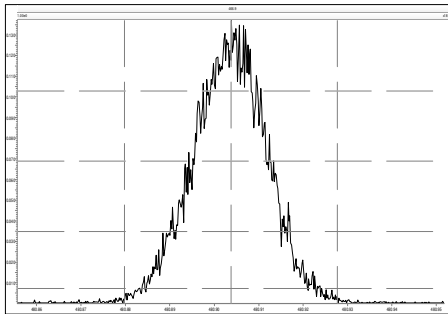
M 454.9728 R 11906



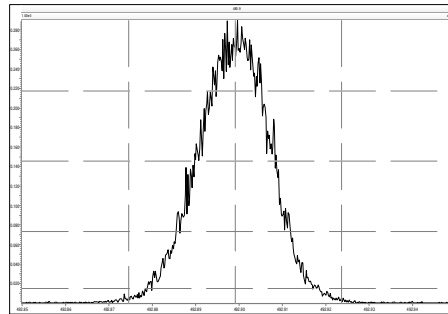
M 466.9728 R 12562



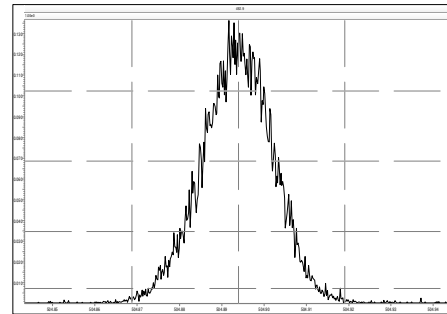
M 480.9696 R 12561



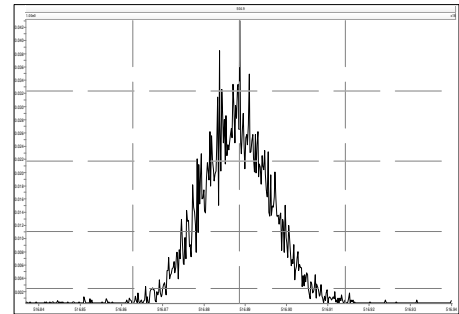
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18887_DF
 Client ID: 0_18887_OPR001
 Datafile: 220209C02



Acq'd: 09 Feb 2022 05:47 DTF
 UTP: 09-Feb-2022 14:37:50 DTF
 Report: 09 Feb 2022 17:30 TF

Wt/Vol: 1 uL
 J-level: 0.25 pg/uL Split: 1
 Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)
 ICAL: HRMS3_DF_10272021 10NOV2021
 Checkcode: 724-032-NJC

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.48		1.0008	1.0008	0	4.12E+06	0.76	Y	1.18	11.3	4277.164	0.125
12378-PeCDD	33.82		1.0006	1.0006	0	1.45E+07	1.53	Y	1.04	49.1	2206.26	0.0673
123478-HxCDD	37.72		1.0004	1.0004	0	1.43E+07	1.24	Y	1.09	52.6	3159.852	0.0981
123678-HxCDD	37.84		1.0035	1.0035	0	1.65E+07	1.27	Y	1.15	53.4	3159.852	0.0926
123789-HxCDD	38.14		1.0112	1.0113	+0.2	1.42E+07	1.27	Y	1.05	50.9	3159.852	0.0988
1234678-HpCDD	40.80		1.0003	1.0003	0	1.22E+07	1.03	Y	1.06	51.2	2988.88	0.101
OCDD	43.47		1.0004	1.0003	-0.3	1.72E+07	0.91	Y	1.13	109	4776.689	0.318

2378-TCDF	27.62		1.0008	1.0007	-0.2	5.87E+06	0.77	Y	1.08	11.1	2453.561	0.0504
12378-PeCDF	32.37		1.0005	1.0005	0	2.16E+07	1.53	Y	1.02	48.2	6833.168	0.14
23478-PeCDF	33.48		1.0005	1.0005	0	2.27E+07	1.57	Y	1.02	52.2	6833.168	0.141
123478-HxCDF	36.72		1.0004	1.0005	+0.2	1.87E+07	1.23	Y	1.27	51.3	8708.72	0.201
123678-HxCDF	36.86		1.0004	1.0005	+0.2	2.11E+07	1.25	Y	1.15	52.4	8708.72	0.183
234678-HxCDF	37.54		1.0005	1.0005	0	2.03E+07	1.23	Y	1.19	49.9	8708.72	0.186
123789-HxCDF	38.50		1.0004	1.0004	0	1.55E+07	1.23	Y	1.16	49.6	8708.72	0.231
1234678-HpCDF	39.87		1.0003	1.0003	0	1.71E+07	1.03	Y	1.37	50.3	2496.07	0.0493
1234789-HpCDF	41.26		1.0002	1.0003	+0.2	1.28E+07	1.03	Y	1.31	50.4	2496.07	0.0814
OCDF	43.66		1.0003	1.0002	-0.3	2.02E+07	0.91	Y	1.07	102	3174.746	0.185

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.46		1.0236	1.0238	+0.3	3.08E+07	0.84	Y	1.05	90.2
ES 12378-PeCDD	33.80		1.2144	1.2160	+3.2	2.85E+07	1.56	Y	0.88	99.3
ES 123478-HxCDD	37.71		0.9920	0.9918	-0.5	2.50E+07	1.31	Y	0.97	96.1
ES 123678-HxCDD	37.83		0.9951	0.9949	-0.5	2.69E+07	1.25	Y	0.94	107
ES 123789-HxCDD	38.12		1.0027	1.0026	-0.2	2.66E+07	1.29	Y	1.09	91.3
ES 1234678-HpCDD	40.79		1.0724	1.0729	+1.2	2.24E+07	1.07	Y	0.91	91.9
ES OCDD	43.46		1.1428	1.1431	+0.8	2.79E+07	0.92	Y	0.62	83.7

ES 2378-TCDF	27.60		1.0516	1.0519	+0.5	4.90E+07	0.80	Y	1.06	88.3
ES 12378-PeCDF	32.35		1.2312	1.2331	+3.7	4.37E+07	1.63	Y	0.91	91.7
ES 23478-PeCDF	33.46		1.2733	1.2756	+4.6	4.27E+07	1.58	Y	0.88	92.4
ES 123478-HxCDF	36.70		0.9655	0.9653	-0.4	2.87E+07	0.52	Y	1.20	89.7
ES 123678-HxCDF	36.84		0.9692	0.9690	-0.4	3.49E+07	0.54	Y	1.35	96.6
ES 234678-HxCDF	37.52		0.9871	0.9869	-0.5	3.42E+07	0.52	Y	1.24	103
ES 123789-HxCDF	38.48		1.0121	1.0120	-0.2	2.69E+07	0.55	Y	1.16	87.1
ES 1234678-HpCDF	39.86		1.0479	1.0483	+1.0	2.49E+07	0.45	Y	0.97	96.1
ES 1234789-HpCDF	41.25		1.0845	1.0849	+1.0	1.94E+07	0.47	Y	0.85	85.1
ES OCDF	43.65		1.1477	1.1479	+0.5	3.67E+07	0.90	Y	0.81	85.1

Lab ID: OPR1_18887_DF
 Client ID: 0_18887_OPR001
 Datafile: 220209C02

Acq'd: 09 Feb 2022 05:47 DTF
 UTP: 09-Feb-2022 14:37:50 DTF
 Report: 09 Feb 2022 17:30 TF

Wt/Vol: 1 uL
 J-level: 0.25 pg/uL Split: 1
 Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)
 ICAL: HRMS3_DF_10272021 10NOV2021
 Checkcode: 724-032-NJC

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.79		-	-	-	3.27E+07	0.83	Y	-	-
JS 1234-TCDF	26.24		-	-	-	5.24E+07	0.79	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.34E+07	1.25	Y	-	-
CS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.45E+07	n/a	-	1.20	92.2
CS 12347-PeCDD	33.29		1.1964	1.1979	+3.0	2.73E+07	1.59	Y	0.75	111
CS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.44E+07	1.59	Y	0.85	99.8
CS 123469-HxCDF	37.16		0.9775	0.9773	-0.4	3.40E+07	0.54	Y	1.12	114
CS 1234689-HpCDF	40.26		1.0584	1.0590	+1.4	2.63E+07	0.47	Y	0.89	111
SS 37Cl-2378-TCDD	28.48		1.0244	1.0246	+0.3	1.45E+07	n/a		1.15	103
SS 12347-PeCDD	33.29		1.1964	1.1979	+3.0	2.73E+07	1.59	Y	0.86	111
SS 12346-PeCDF	31.82		1.2112	1.2129	+3.2	4.44E+07	1.59	Y	0.94	109
SS 123469-HxCDF	37.16		0.9775	0.9773	-0.4	3.40E+07	0.54	Y	0.83	118
SS 1234689-HpCDF	40.26		1.0584	1.0590	+1.4	2.63E+07	0.47	Y	0.92	115

Totals	Conc	EMPC		
Total TCDD	52	52	* 37Cl correction has been applied to 2378-TCDD	
Total PeCDD	73.1	73.1	Original Values	Corrected Values
Total HxCDD	170	170	Ratio 0.76	0.76
Total HpCDD	63.5	63.5	Response 4.13E+06	4.12E+06
Total Tetra-Octa Dioxins	469	469		
Total TCDF	60.6	60.6		
Total PeCDF	200	200		
Total HxCDF	327	327		
Total HpCDF	101	101		
Total Tetra-Octa Furans	791	791		
Total Tetra-Octa Dioxins & Furans	1260	1260		

Lab ID: OPR1_18887_DF

Acq'd: 09 Feb 2022 05:47 DTF

Wt/Vol: 1 uL

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18887_OPR001

UTP: 09-Feb-2022 14:37:50 DTF

J-level: 0.25 pg/uL Split: 1

Checkcode: 724-032-NJC

Datafile: 220209C02

Report: 09 Feb 2022 17:30 TF

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.83		0.8737	0.8727	-1.5	5.48E+06	0.81	Y	1.18	15	4277.164	0.125
1379-TCDD	NotFnd		0.8860						1.18		4277.164	0.125
1369-TCDD	NotFnd		0.9009						1.18		4277.164	0.125
1469-TCDD	NotFnd		0.9281						1.18		4277.164	0.125
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		4277.164	0.125
1378-TCDD	NotFnd		0.9432						1.18		4277.164	0.125
1268-TCDD	NotFnd		0.9500						1.18		4277.164	0.125
1478-TCDD	NotFnd		0.9586						1.18		4277.164	0.125
1279-TCDD	NotFnd		0.9645						1.18		4277.164	0.125
1234/1269-TCDD	NotFnd		0.9770						1.18		4277.164	0.125
1236-TCDD	NotFnd		0.9817						1.18		4277.164	0.125
1237/1238-TCDD	NotFnd		0.9905						1.18		4277.164	0.125
1239-TCDD	28.32		0.9952	0.9952	0	3.75E+06	0.79	Y	1.18	10.3	4277.164	0.125
2378-TCDD	28.48		1.0008	1.0008	0	4.12E+06	0.76	Y	1.18	11.3	4277.164	0.125
1278-TCDD	NotFnd		1.0121						1.18		4277.164	0.125
1267-TCDD	NotFnd		1.0167						1.18		4277.164	0.125
1289-TCDD	29.45		1.0345	1.0349	+0.7	5.63E+06	0.80	Y	1.18	15.4	4277.164	0.125
12479/12468-PeCDD	31.31		0.9267	0.9265	-0.4	3.44E+06	1.59	Y	1.04	11.7	2206.26	0.0673
12469-PeCDD	NotFnd		0.9425						1.04		2206.26	0.0673
12368-PeCDD	NotFnd		0.9588						1.04		2206.26	0.0673
12478-PeCDD	NotFnd		0.9643						1.04		2206.26	0.0673
12379-PeCDD	NotFnd		0.9673						1.04		2206.26	0.0673
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2206.26	0.0673
12346/12347-PeCDD	NotFnd		0.9858						1.04		2206.26	0.0673
12378-PeCDD	33.82		1.0006	1.0006	0	1.45E+07	1.53	Y	1.04	49.1	2206.26	0.0673
12367-PeCDD	NotFnd		1.0033						1.04		2206.26	0.0673
12389-PeCDD	34.25		1.0134	1.0135	+0.2	3.66E+06	1.61	Y	1.04	12.4	2206.26	0.0673
124679/124689-HxCDD	35.98		0.9542	0.9540	-0.4	3.87E+06	1.23	Y	1.10	13.5	3159.852	0.0964
123468-HxCDD	NotFnd		0.9715						1.10		3159.852	0.0964
123679/123689-HxCDD	NotFnd		0.9793						1.10		3159.852	0.0964
123469-HxCDD	NotFnd		0.9828						1.10		3159.852	0.0964
123478-HxCDD	37.72		1.0004	1.0004	0	1.43E+07	1.24	Y	1.09	52.6	3159.852	0.0981
123678-HxCDD	37.84		1.0035	1.0035	0	1.65E+07	1.27	Y	1.15	53.4	3159.852	0.0926
123467-HxCDD	NotFnd		1.0085						1.10		3159.852	0.0964
123789-HxCDD	38.14		1.0112	1.0113	+0.2	1.42E+07	1.27	Y	1.05	50.9	3159.852	0.0988

Lab ID: OPR1_18887_DF

Acq'd: 09 Feb 2022 05:47 DTF

Wt/Vol: 1 uL

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18887_OPR001

UTP: 09-Feb-2022 14:37:50 DTF

J-level: 0.25 pg/uL

Split: 1

Checkcode: 724-032-NJC

Datafile: 220209C02

Report: 09 Feb 2022 17:30 TF

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.13		0.9837	0.9837	0	2.93E+06	1.01	Y	1.06	12.3	2988.88	0.101
1234678-HpCDD	40.80		1.0003	1.0003	0	1.22E+07	1.03	Y	1.06	51.2	2988.88	0.101
OCDD	43.47		1.0004	1.0003	-0.3	1.72E+07	0.91	Y	1.13	109	4776.689	0.318
OCDD-a	43.46		1.0003	1.0000	-0.8	1.03E+06	2.75	Y	0.07	103	3538.934	3.69
1368-TCDF	22.73		0.8251	0.8235	-2.2	7.92E+06	0.80	Y	1.08	15	2453.561	0.0504
1468-TCDF	NotFnd		0.8458						1.08		2453.561	0.0504
2468-TCDF	23.94		0.8686	0.8675	-1.6	1.97E+06	0.76	Y	1.08	3.73	2453.561	0.0504
1346/1246-TCDF	NotFnd		0.8814						1.08		2453.561	0.0504
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2453.561	0.0504
1348-TCDF	NotFnd		0.8962						1.08		2453.561	0.0504
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2453.561	0.0504
1268-TCDF	NotFnd		0.9145						1.08		2453.561	0.0504
1467-TCDF	NotFnd		0.9193						1.08		2453.561	0.0504
1478-TCDF	NotFnd		0.9254						1.08		2453.561	0.0504
1369/1237-TCDF	NotFnd		0.9387						1.08		2453.561	0.0504
2467-TCDF	NotFnd		0.9433						1.08		2453.561	0.0504
2368-TCDF	NotFnd		0.9489						1.08		2453.561	0.0504
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2453.561	0.0504
1278-TCDF	NotFnd		0.9683						1.08		2453.561	0.0504
1349-TCDF	NotFnd		0.9722						1.08		2453.561	0.0504
1267-TCDF	NotFnd		0.9783						1.08		2453.561	0.0504
2346/1249-TCDF	NotFnd		0.9850						1.08		2453.561	0.0504
2347/1279-TCDF	NotFnd		0.9926						1.08		2453.561	0.0504
2348-TCDF	27.51		0.9967	0.9967	0	7.58E+06	0.79	Y	1.08	14.3	2453.561	0.0504
2378-TCDF	27.62		1.0008	1.0007	-0.2	5.87E+06	0.77	Y	1.08	11.1	2453.561	0.0504
2367/3467-TCDF	NotFnd		1.0137						1.08		2453.561	0.0504
1269-TCDF	NotFnd		1.0223						1.08		2453.561	0.0504
1239-TCDF	NotFnd		1.0321						1.08		2453.561	0.0504
1289-TCDF	29.62		1.0722	1.0731	+1.6	8.66E+06	0.77	Y	1.08	16.4	2453.561	0.0504
13468/12468-PeCDF	29.53		0.9139	0.9129	-1.8	3.92E+07	1.60	Y	1.02	88.8	3397.283	0.0698
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		6833.168	0.14
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		6833.168	0.14
14678-PeCDF	NotFnd		0.9692						1.02		6833.168	0.14
13479-PeCDF	NotFnd		0.9723						1.02		6833.168	0.14
13469/12479-PeCDF	NotFnd		0.9797						1.02		6833.168	0.14
12346-PeCDF	NotFnd		0.9840						1.02		6833.168	0.14

Lab ID: OPR1_18887_DF
 Client ID: 0_18887_OPR001
 Datafile: 220209C02

Acq'd: 09 Feb 2022 05:47 DTF
 UTP: 09-Feb-2022 14:37:50 DTF
 Report: 09 Feb 2022 17:30 TF

Wt/Vol: 1 uL
 J-level: 0.25 pg/uL Split: 1
 Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37CI)
 ICAL: HRMS3_DF_10272021 10NOV2021
 Checkcode: 724-032-NJC

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6833.168	0.14
12347-PeCDF	NotFnd		0.9894						1.02		6833.168	0.14
12348-PeCDF	NotFnd		0.9940						1.02		6833.168	0.14
12378-PeCDF	32.37		1.0005	1.0005	0	2.16E+07	1.53	Y	1.02	48.2	6833.168	0.14
12678/12367-PeCDF	NotFnd		1.0089						1.02		6833.168	0.14
12379-PeCDF	NotFnd		1.0142						1.02		6833.168	0.14
12679-PeCDF	NotFnd		0.9929						1.02		6833.168	0.14
23467/12369-PeCDF	NotFnd		0.9967						1.02		6833.168	0.14
23478-PeCDF	33.48		1.0005	1.0005	0	2.27E+07	1.57	Y	1.02	52.2	6833.168	0.141
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6833.168	0.14
12349-PeCDF	NotFnd		1.0100						1.02		6833.168	0.14
12389-PeCDF	34.56		1.0324	1.0326	+0.4	4.71E+06	1.55	Y	1.02	10.7	6833.168	0.14
123468-HxCDF	35.33		0.9627	0.9627	0	4.62E+07	1.24	Y	1.19	124	8708.72	0.198
124678/134678-HxCDF	NotFnd		0.9682						1.19		8708.72	0.198
134679-HxCDF	NotFnd		0.9744						1.19		8708.72	0.198
124679-HxCDF	NotFnd		0.9798						1.19		8708.72	0.198
124689-HxCDF	NotFnd		0.9858						1.19		8708.72	0.198
123467-HxCDF	NotFnd		0.9972						1.19		8708.72	0.198
123478-HxCDF	36.72		1.0004	1.0005	+0.2	1.87E+07	1.23	Y	1.27	51.3	8708.72	0.201
123678-HxCDF	36.86		1.0004	1.0005	+0.2	2.11E+07	1.25	Y	1.15	52.4	8708.72	0.183
123479-HxCDF	NotFnd		1.0049						1.19		8708.72	0.198
123469-HxCDF	NotFnd		1.0090						1.19		8708.72	0.198
123679-HxCDF	NotFnd		0.9942						1.19		8708.72	0.198
234678-HxCDF	37.54		1.0005	1.0005	0	2.03E+07	1.23	Y	1.19	49.9	8708.72	0.186
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		8708.72	0.198
123789-HxCDF	38.50		1.0004	1.0004	0	1.55E+07	1.23	Y	1.16	49.6	8708.72	0.231
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		8708.72	0.198
1234678-HpCDF	39.87		1.0003	1.0003	0	1.71E+07	1.03	Y	1.37	50.3	2496.07	0.0493
1234679-HpCDF	NotFnd		1.0068						1.34		2496.07	0.0632
1234689-HpCDF	NotFnd		1.0103						1.34		2496.07	0.0632
1234789-HpCDF	41.26		1.0002	1.0003	+0.2	1.28E+07	1.03	Y	1.31	50.4	2496.07	0.0814
OCDF	43.66		1.0003	1.0002	-0.3	2.02E+07	0.91	Y	1.07	102	3174.746	0.185
OCDF-a	43.65		1.0002	1.0001	-0.3	1.37E+06	2.42	Y	0.07	112	2992.781	2.81

METHOD 1613B**PCDD/F ONGOING PRECISION AND RECOVERY (OPR)****FORM 8A**

Lab Name: SGS North America
 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C02 Analysis Date: 09-FEB-2022 05:47:32
 Lab ID: OPR1_18887_DF

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	49.1	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	52.6	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	53.4	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	50.9	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	51.2	35	-	70	Y
OCDD	100	109	78	-	144	Y
2,3,7,8-TCDF	10	11.1	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	48.2	40	-	67	Y
2,3,4,7,8-PeCDF	50	52.2	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	51.3	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	52.4	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	49.9	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	49.6	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	50.3	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	50.4	39	-	69	Y
OCDF	100	102	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
 Method 1613. 10/94

Processed: 09 Feb 2022 17:30 Analyst: TF

METHOD 1613B

PCDD/F ONGOING PRECISION AND RECOVERY (OPR)

FORM 8B

Lab Name: SGS North America
 Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
 Instrument ID: HRMS3 GC Column ID: ZB-5ms
 VER Data Filename: 220209C02 Analysis Date: 09-FEB-2022 05:47:32
 Lab ID: OPR1_18887_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	90.2	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	99.3	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	96.1	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	107	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	91.3	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	91.9	26	-	166	Y
13C-OCDD	200	167	26	-	397	Y
13C-2,3,7,8-TCDF	100	88.3	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	91.7	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	92.4	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	89.7	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	96.6	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	103	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	87.1	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	96.1	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	85.1	20	-	186	Y
13C-OCDF	200	170	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	36.9	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
 Method 1613. 10/94

Processed: 09 Feb 2022 17:30 Analyst: TF

METHOD 1613B**COLUMN PERFORMANCE AND RETENTION TIME WINDOWS****FORM CPSM**

Lab Name: SGS North America
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
Instrument ID: HRMS3 GC Column ID: ZB-5ms
CPSM Data Filename: 220209C02 Analysis Date: 09-FEB-2022 05:47:32
Lab ID: OPR1_18887_DF

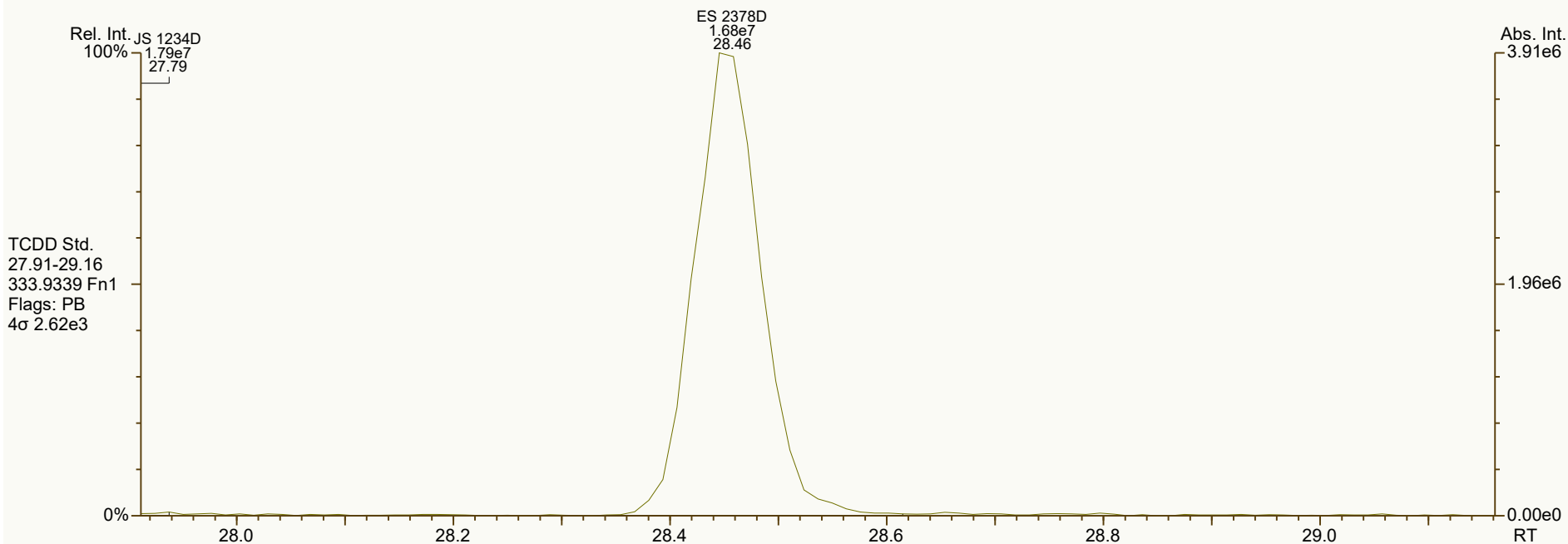
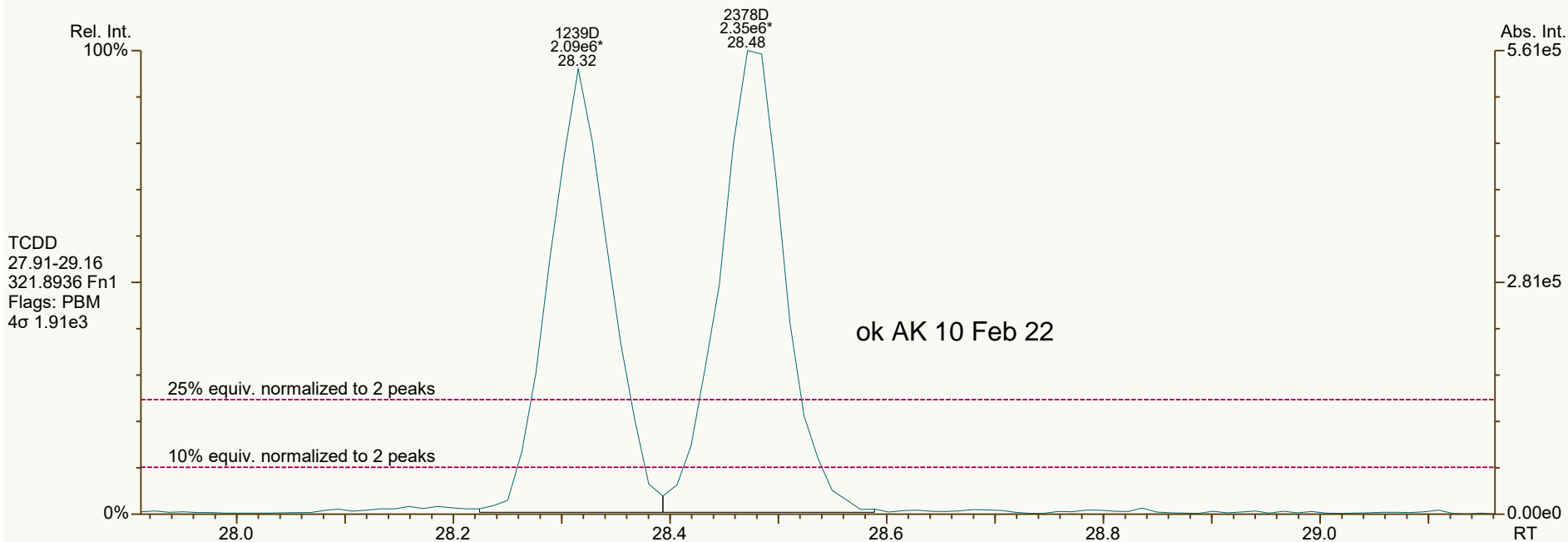
Window Defining Standards Results

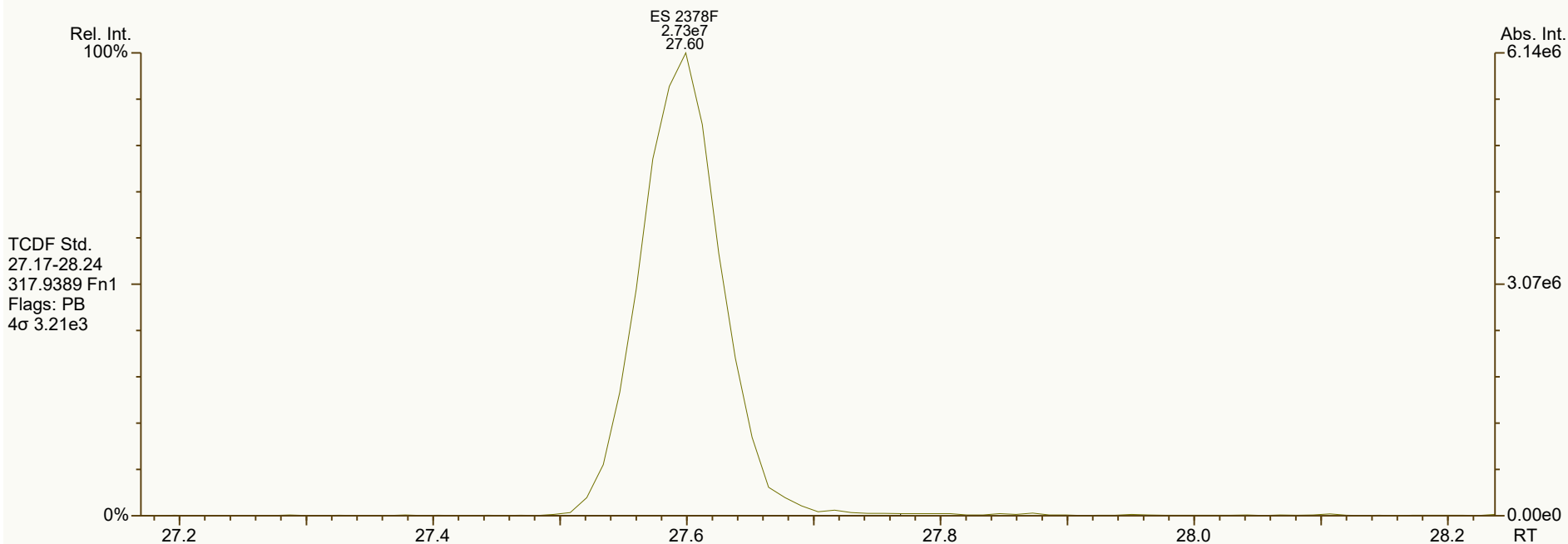
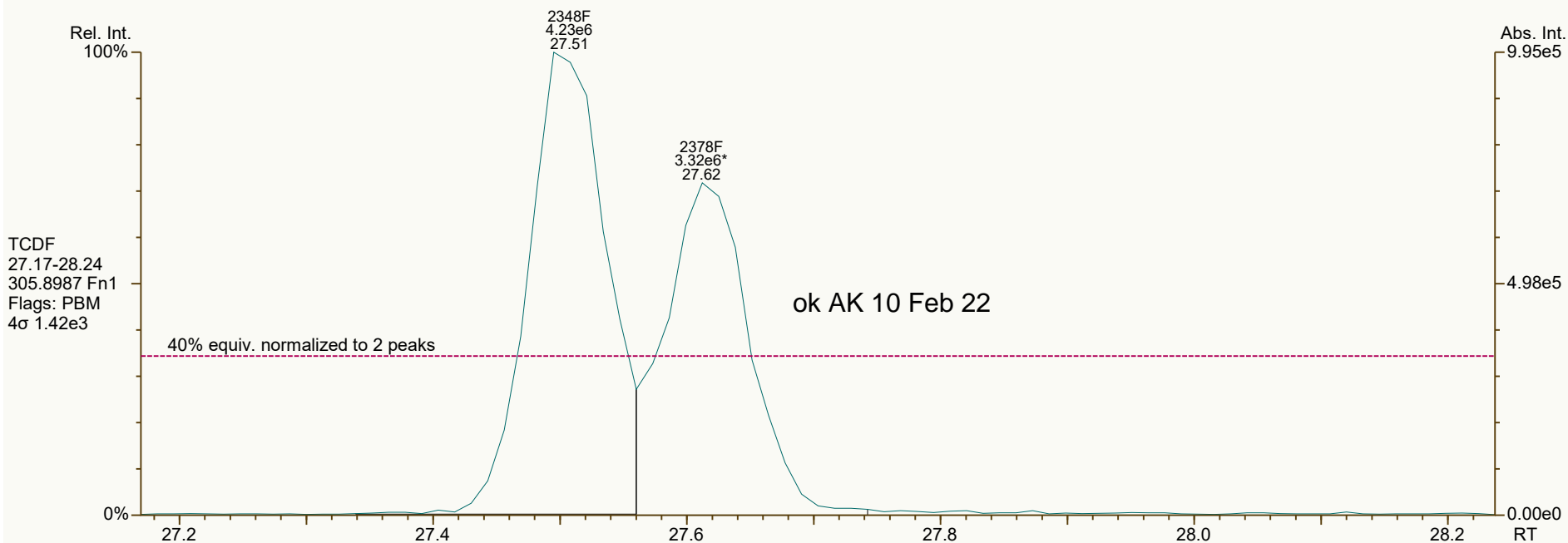
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.83	1289-TCDD	29.45
12479/12468-PeCDD	31.31	12389-PeCDD	34.25
124679/124689-HxCDD	35.98	123789-HxCDD	38.14
1234679-HpCDD	40.13	1234678-HpCDD	40.80
1368-TCDF	22.73	1289-TCDF	29.62
13468/12468-PeCDF	29.53	12389-PeCDF	34.56
123468-HxCDF	35.33	123789-HxCDF	38.50
1234678-HpCDF	39.87	1234789-HpCDF	41.26

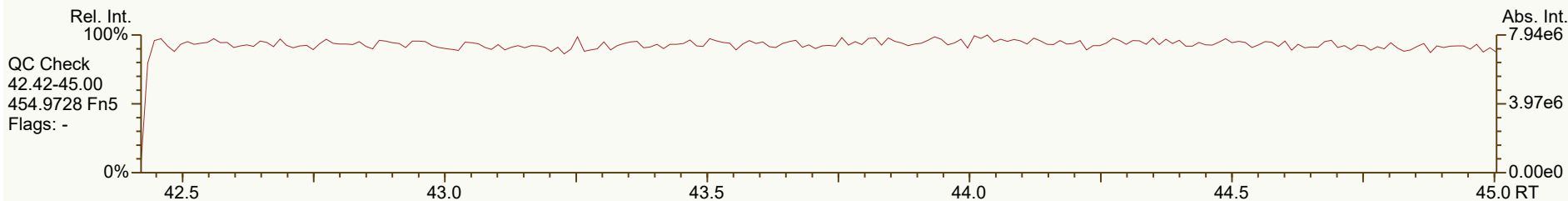
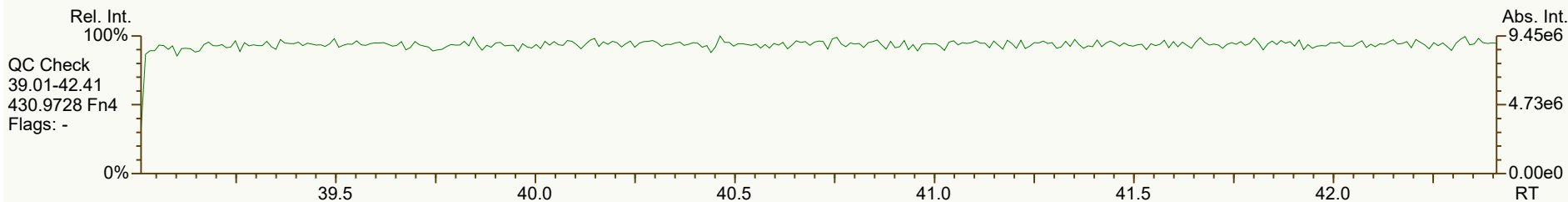
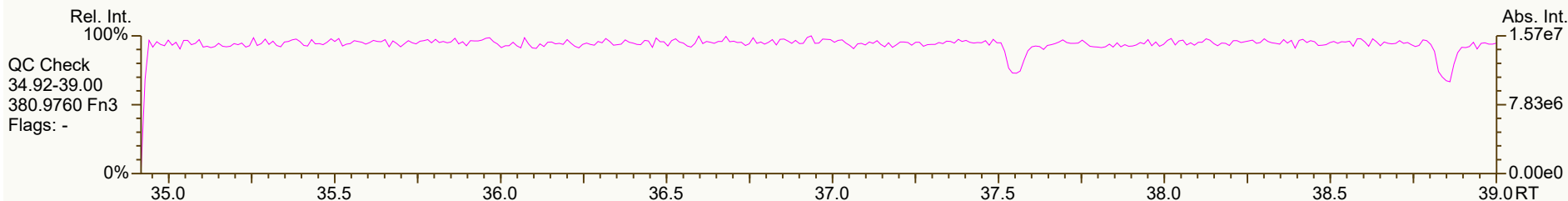
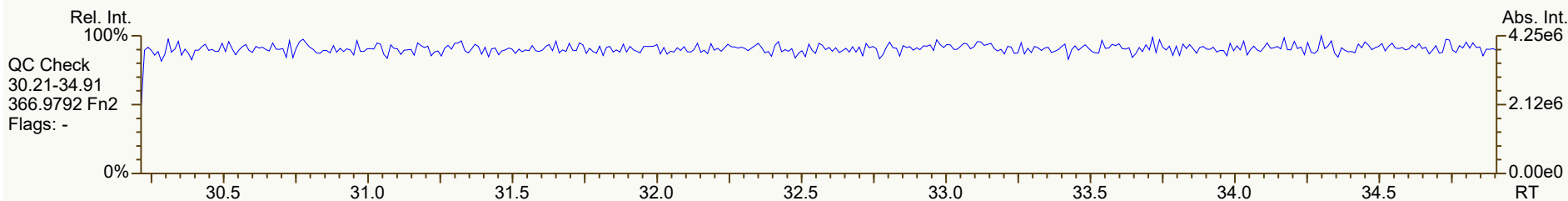
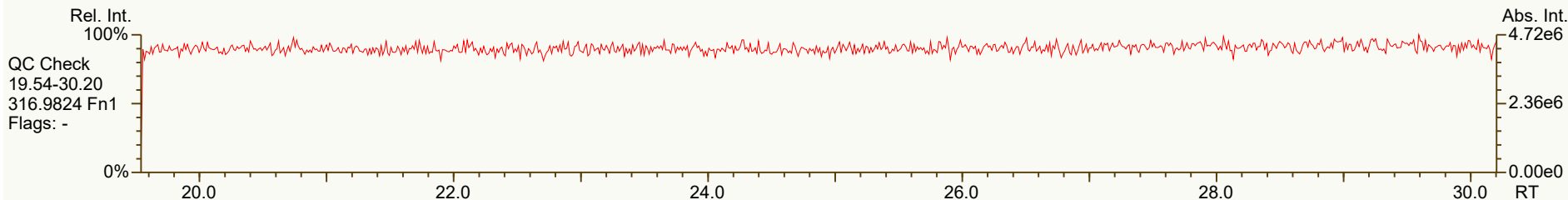
Isomer Specificity Test Standard Results

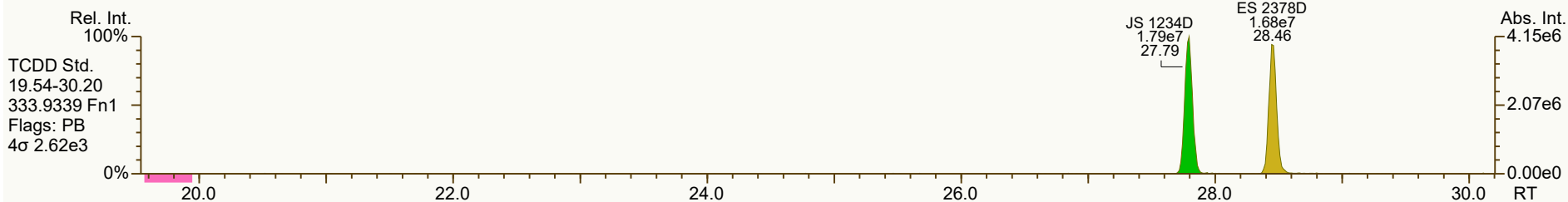
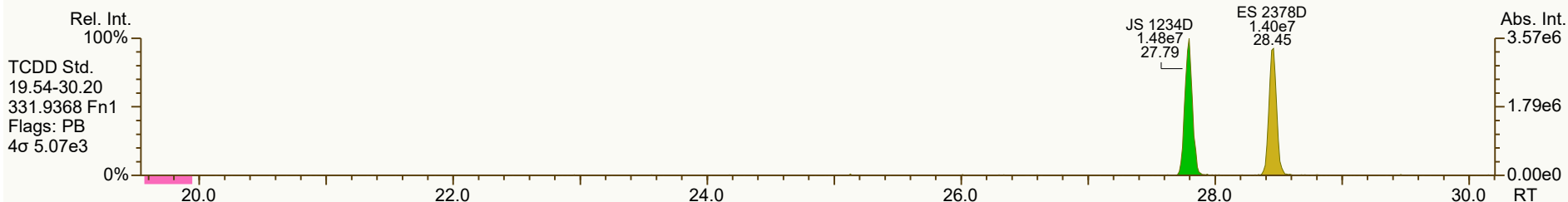
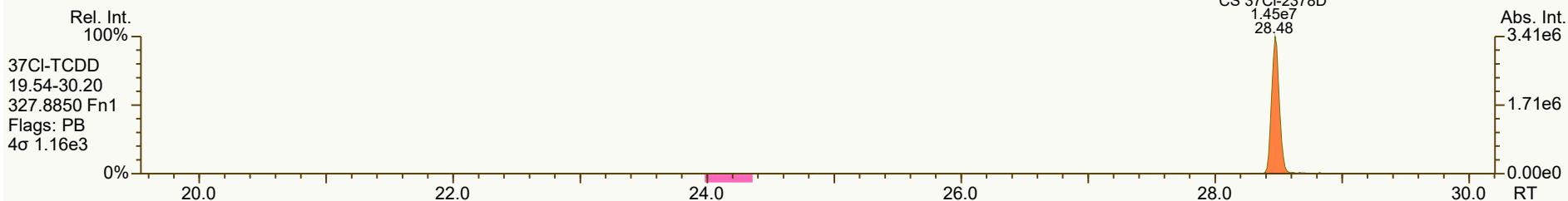
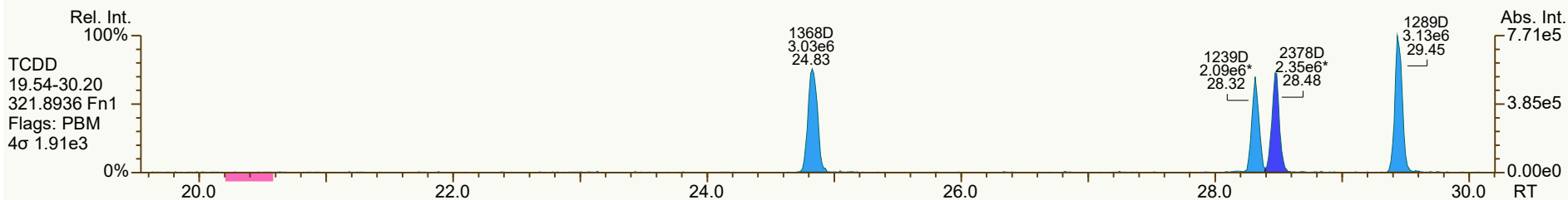
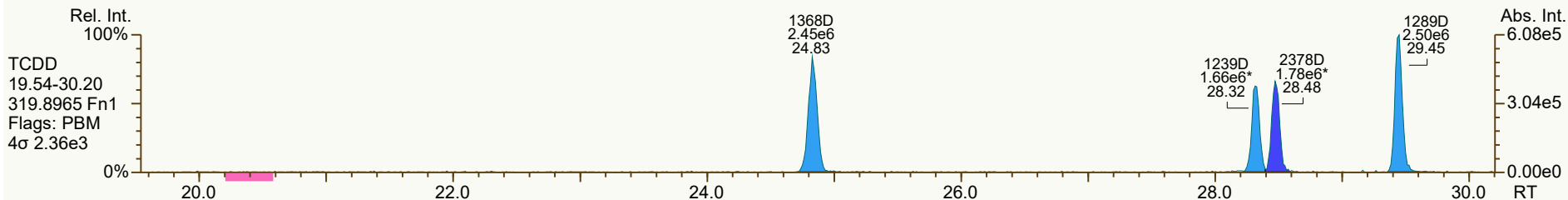
Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.32	2378-TCDD	28.48
2348-TCDF	27.51	2378-TCDF	27.62

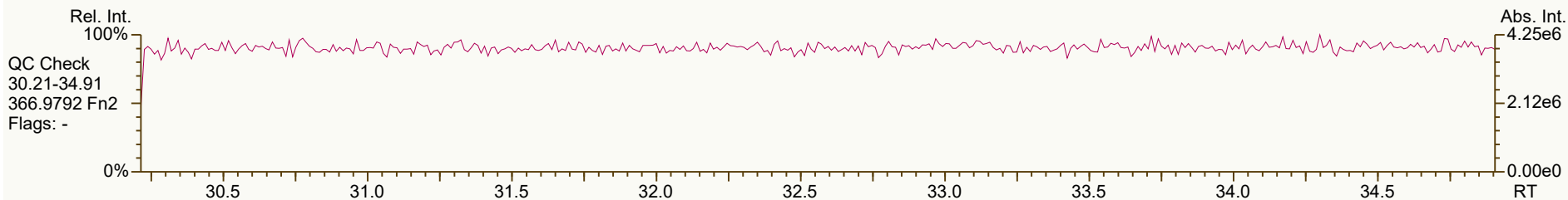
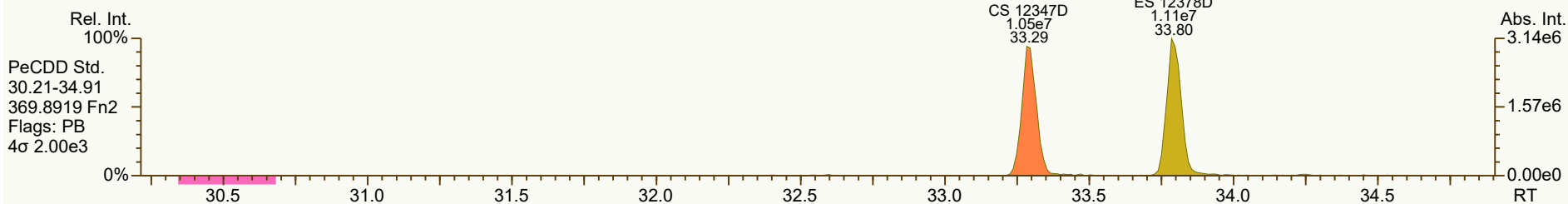
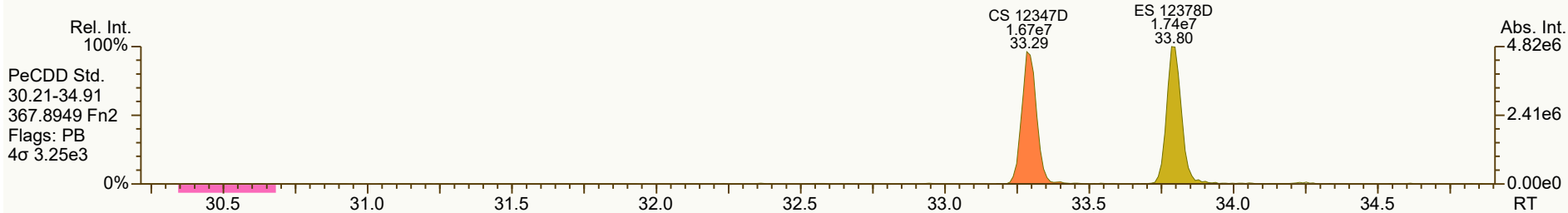
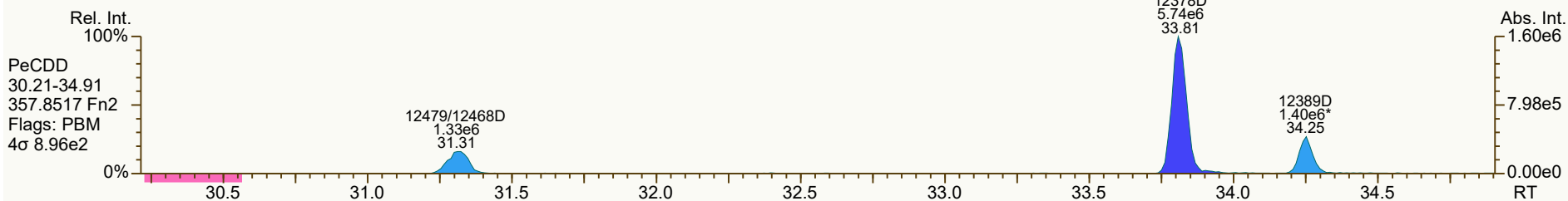
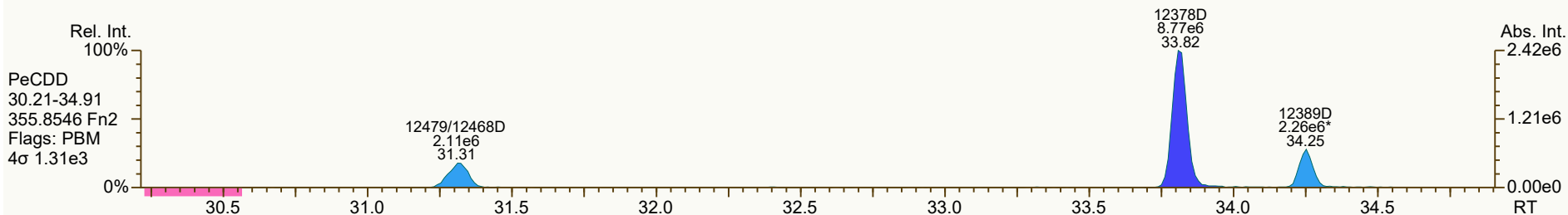
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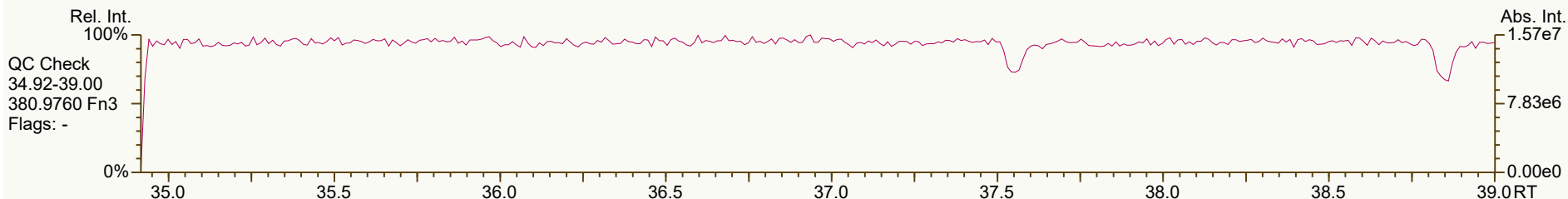
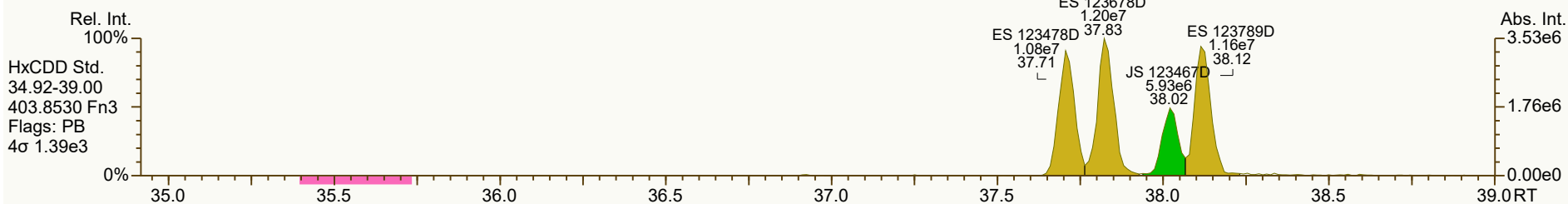
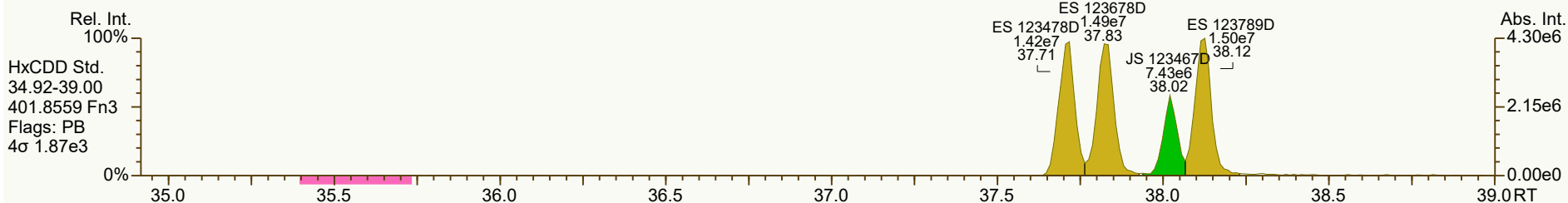
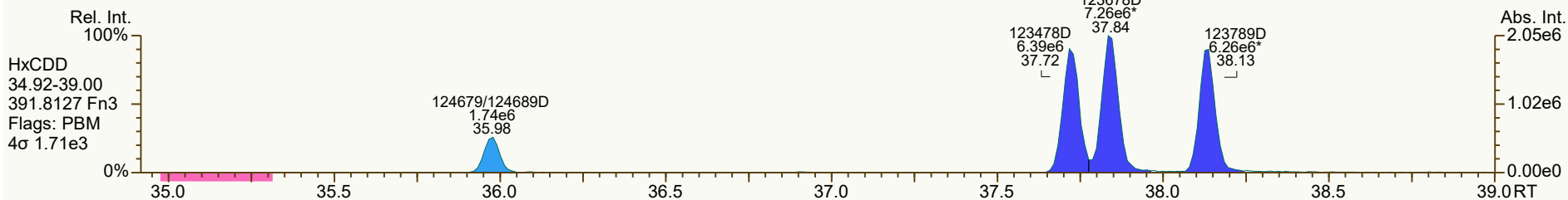
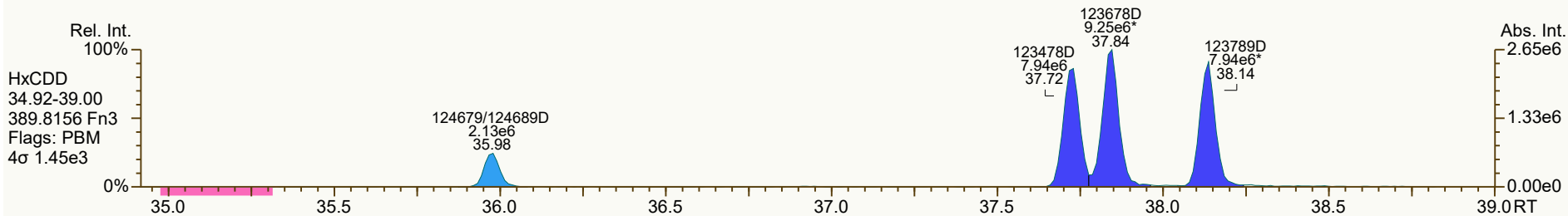


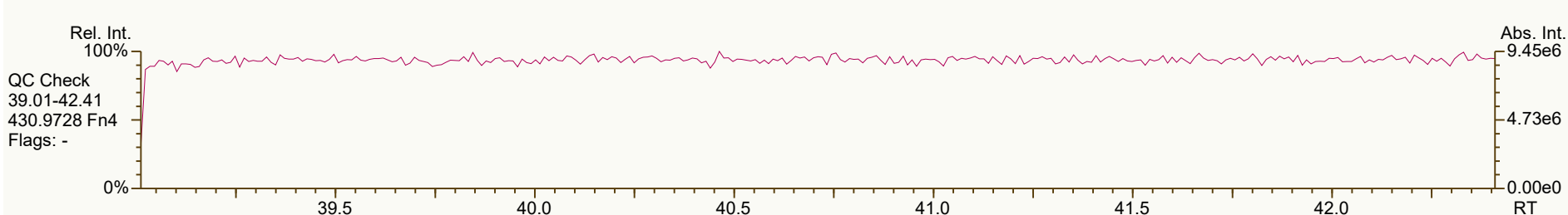
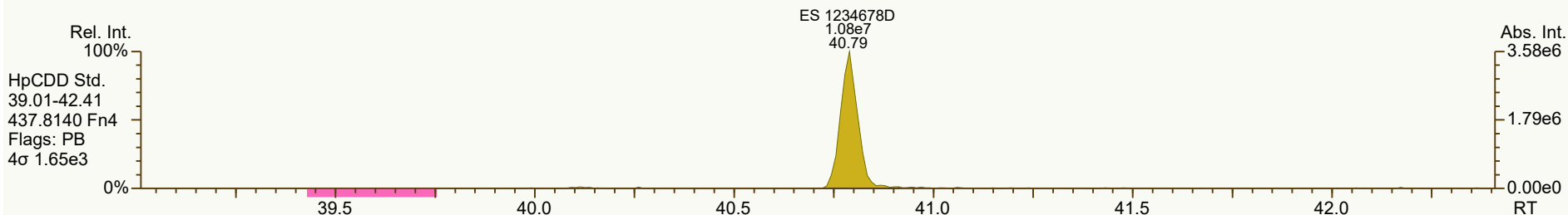
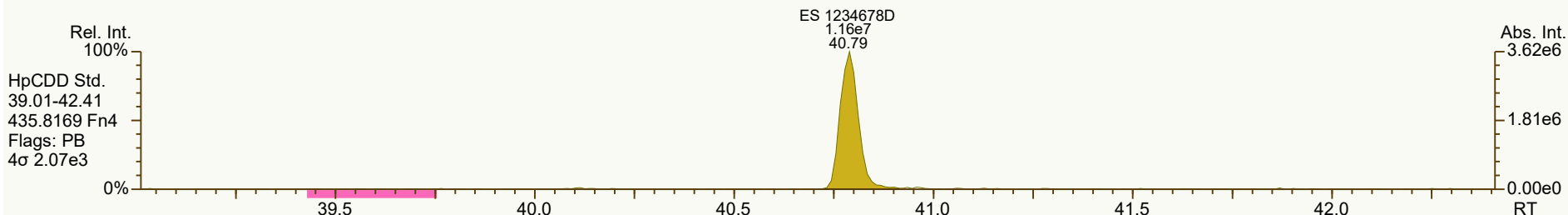
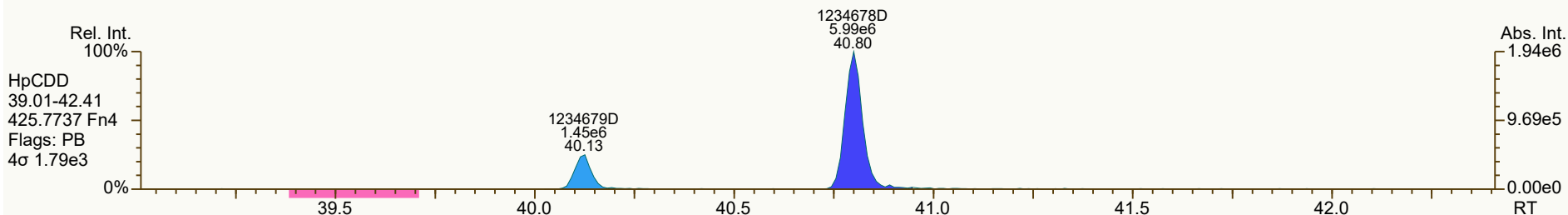
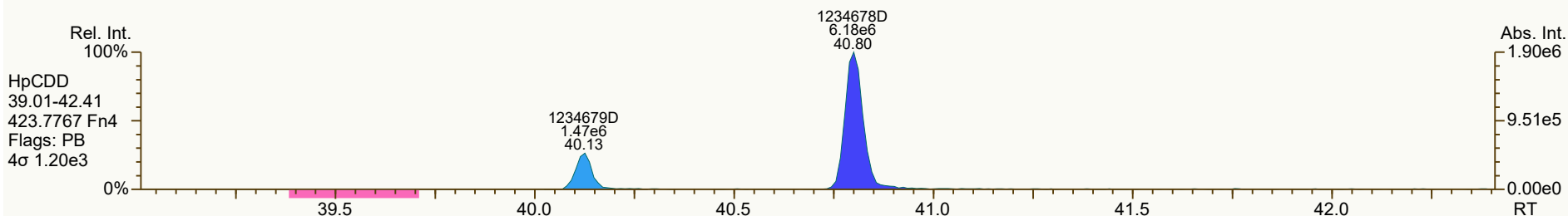


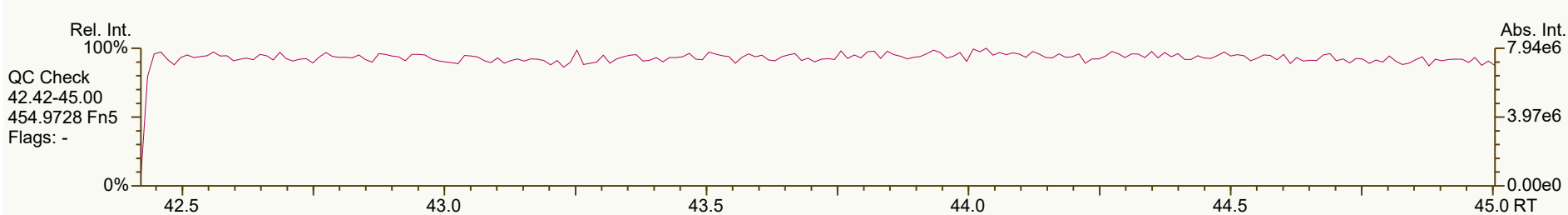
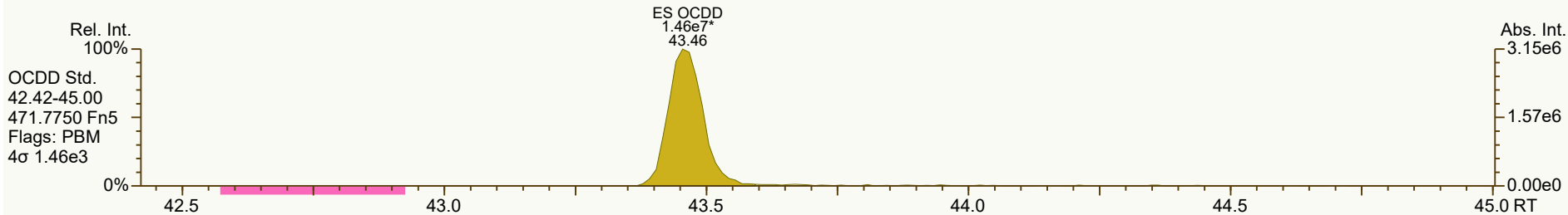
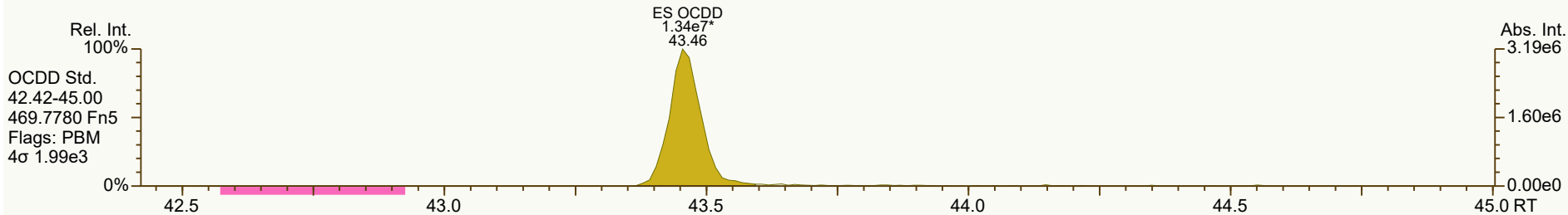
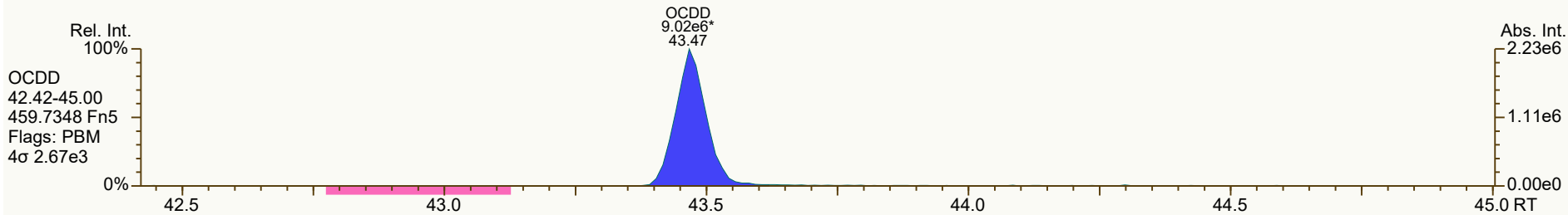
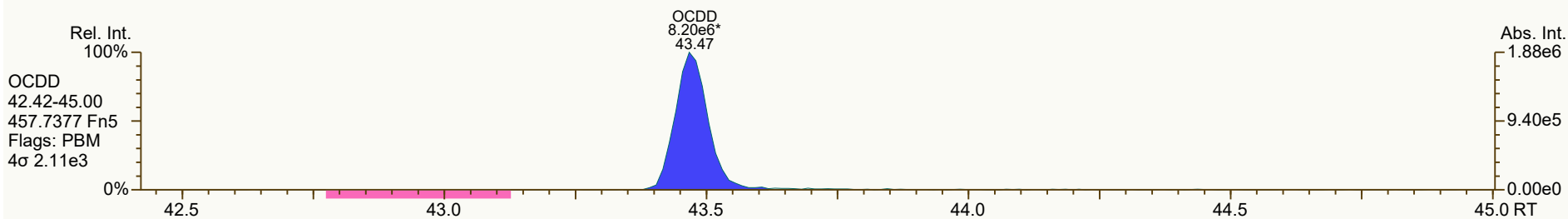


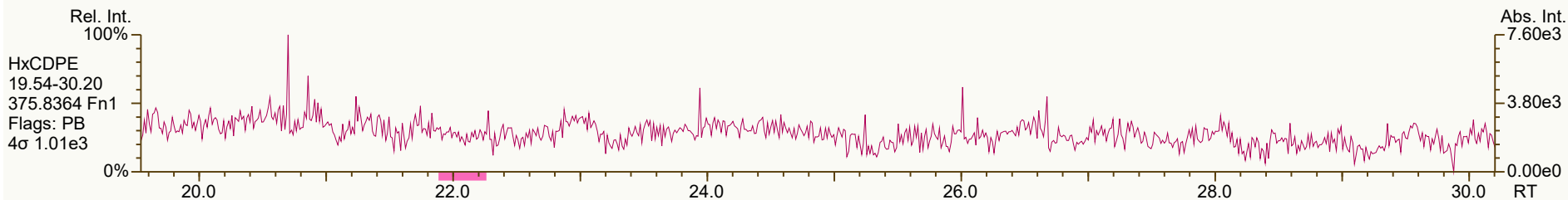
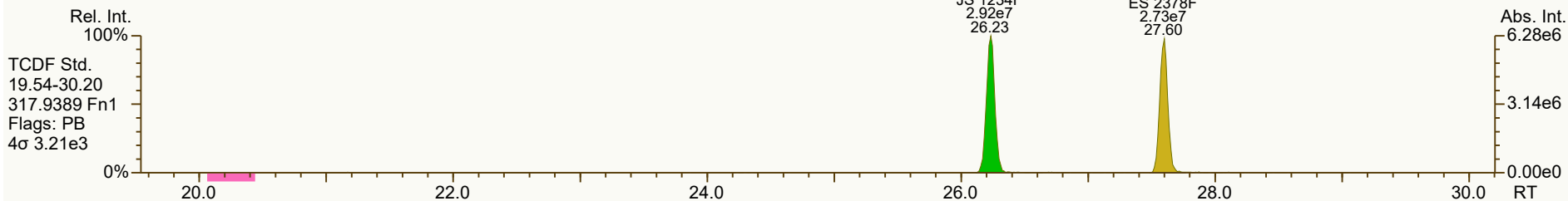
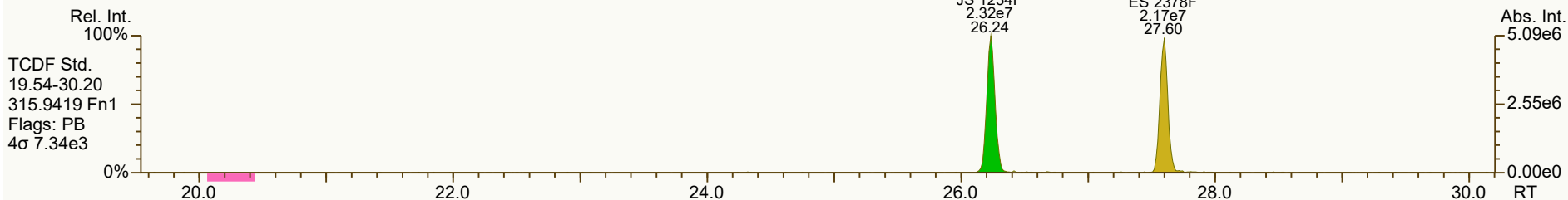
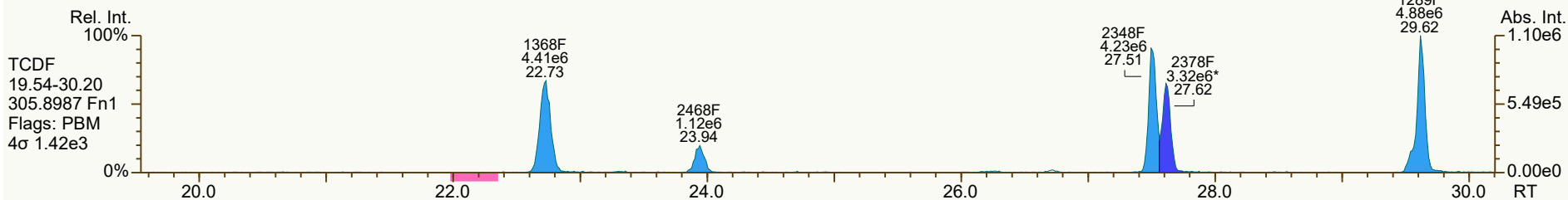
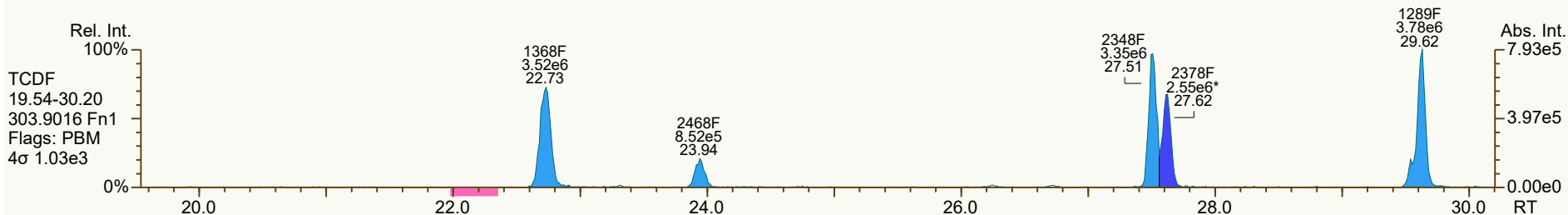


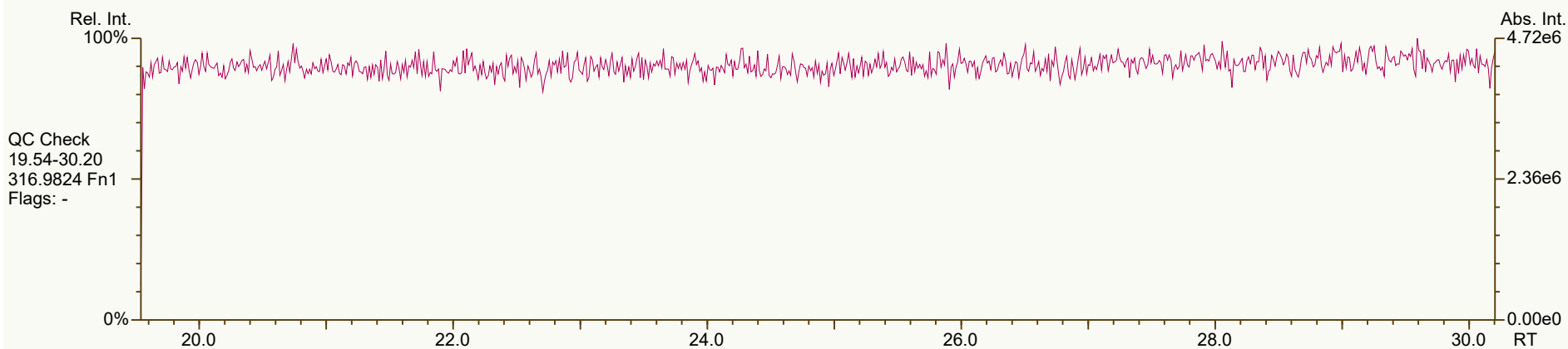
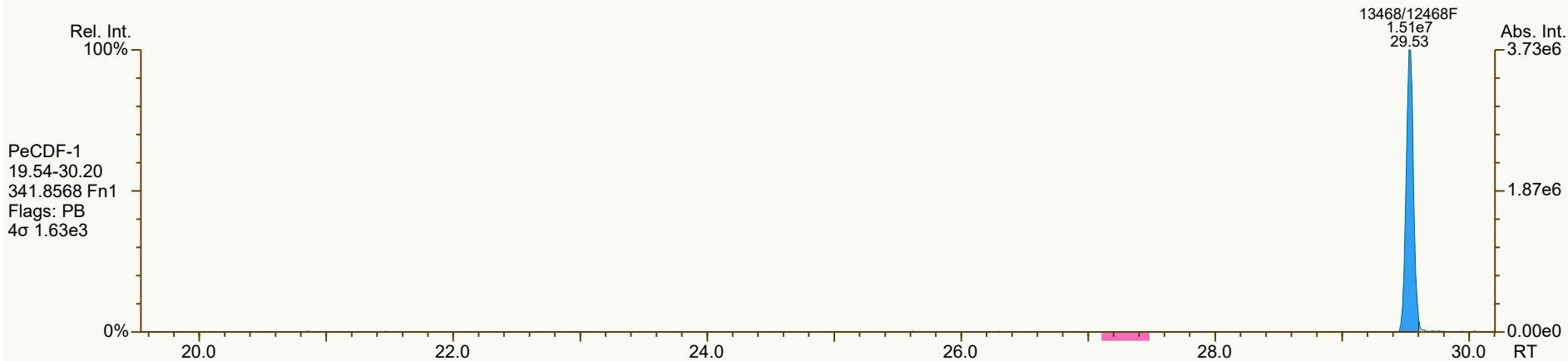
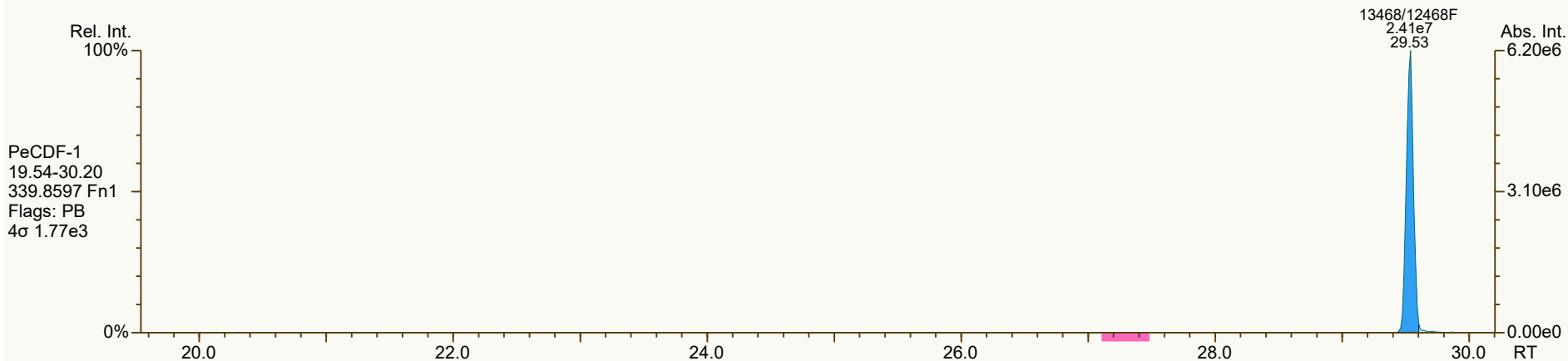


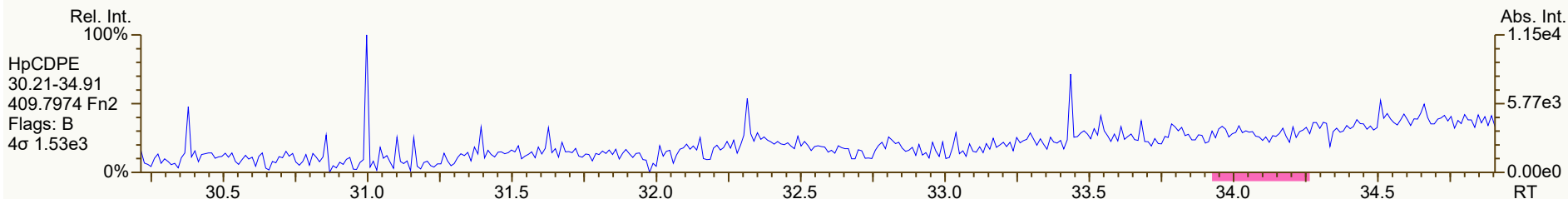
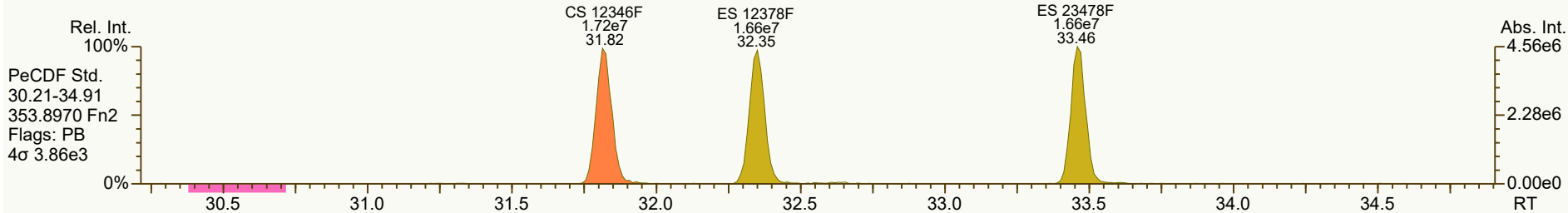
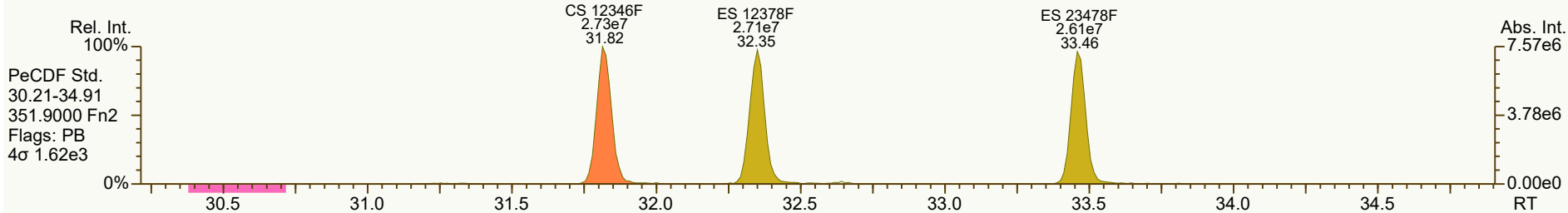
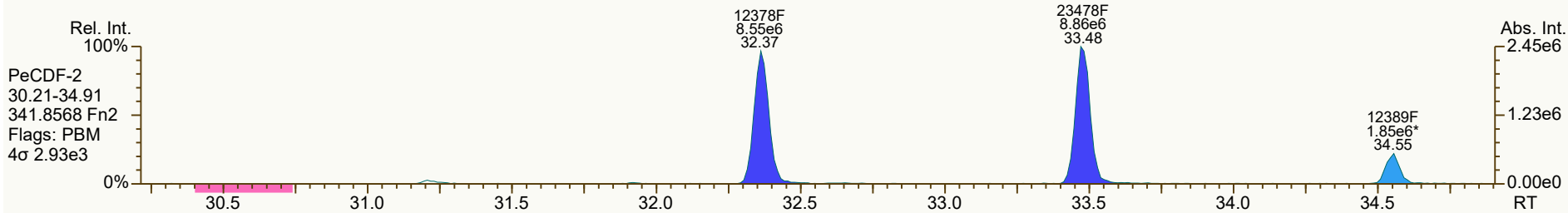
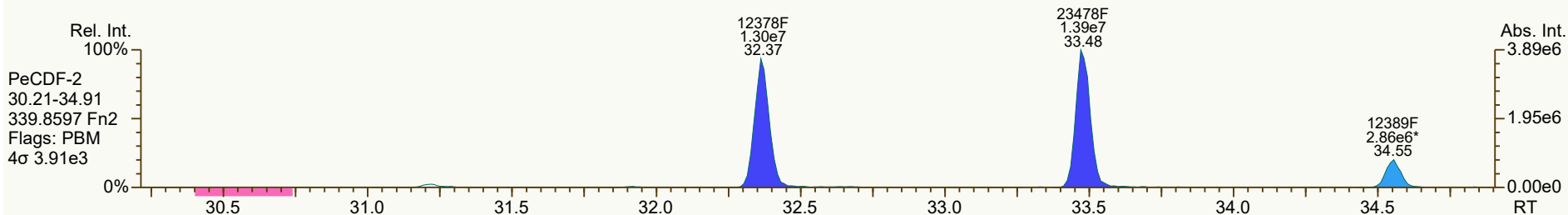


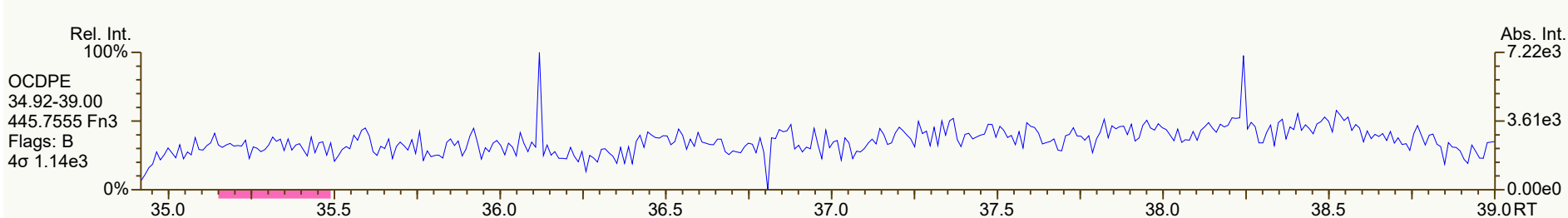
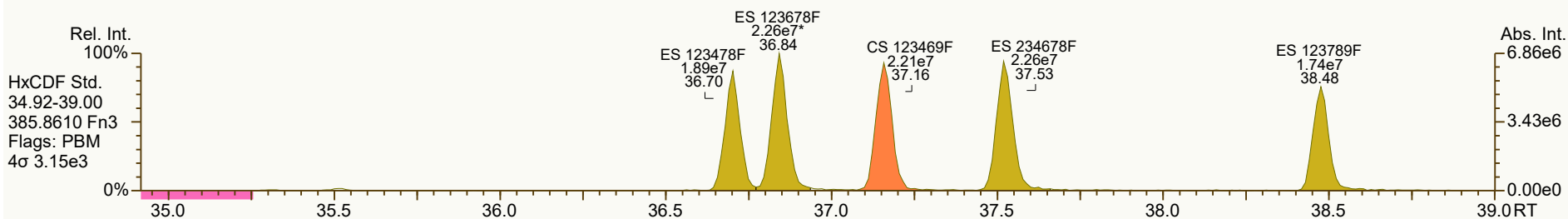
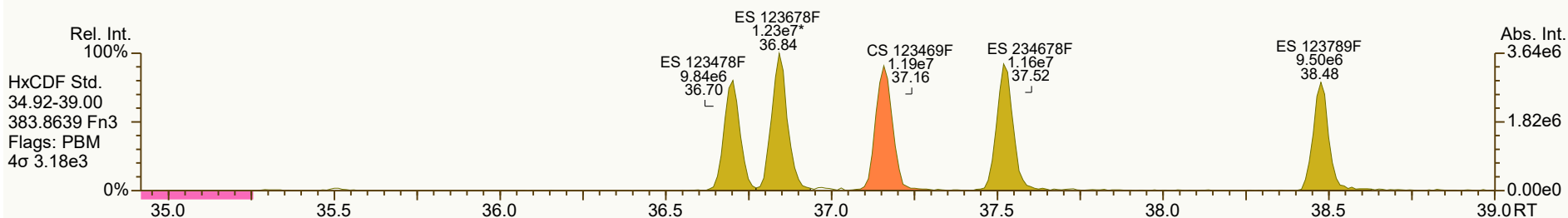
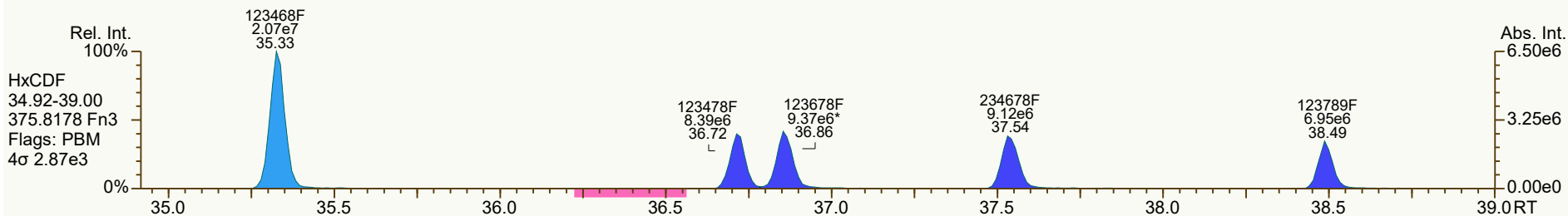
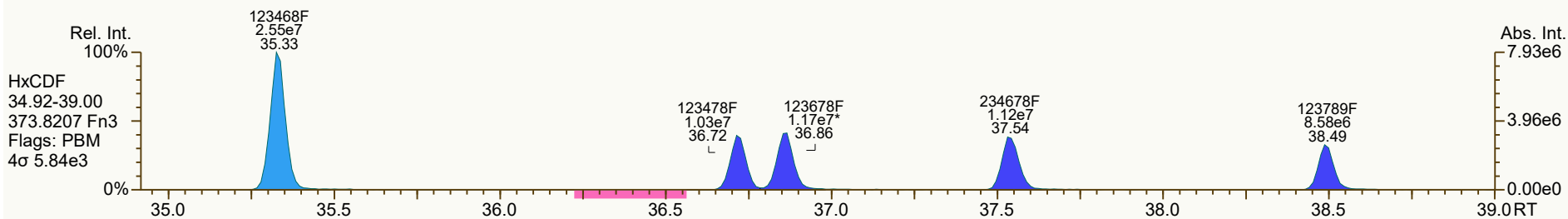


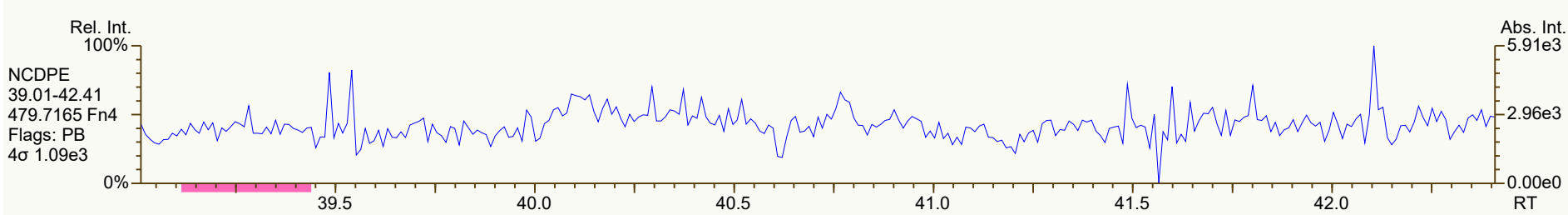
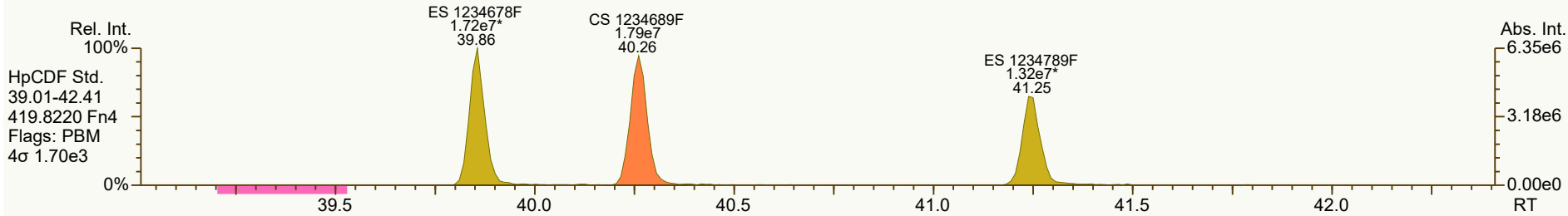
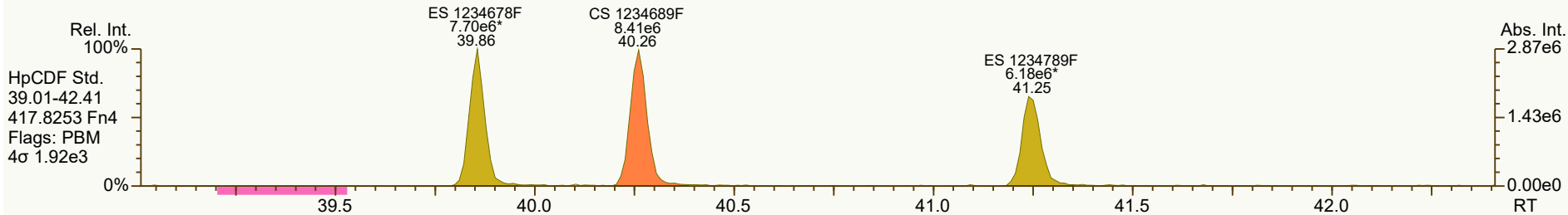
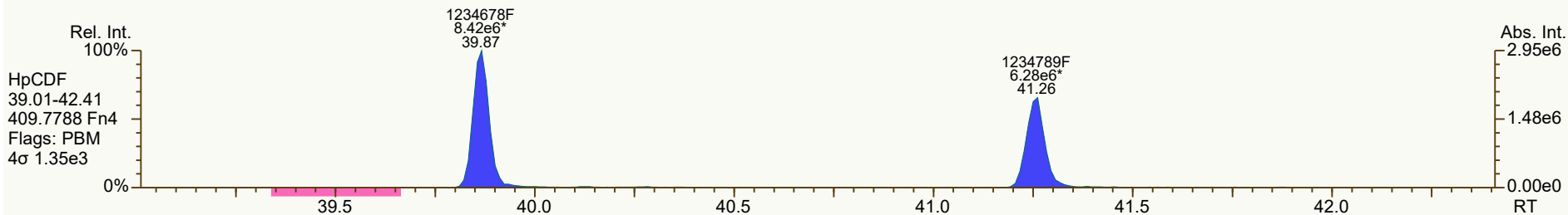
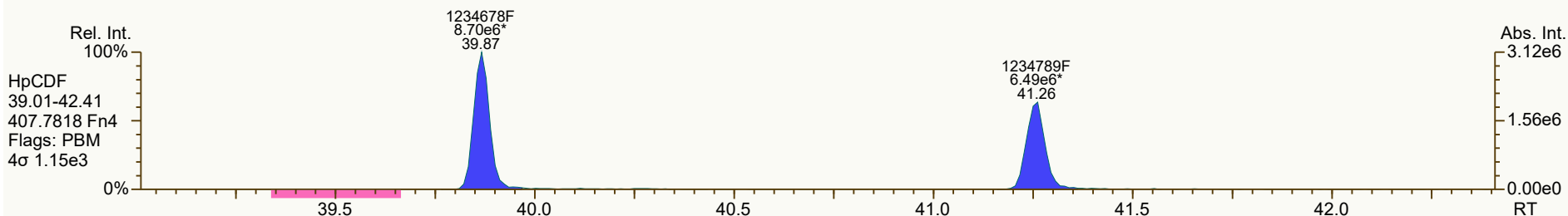


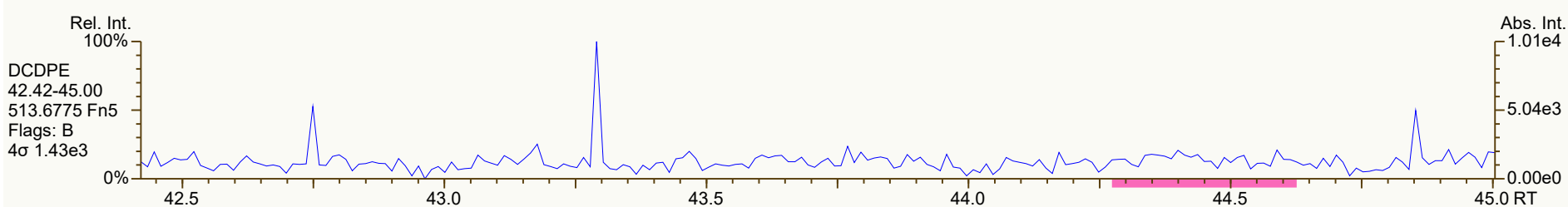
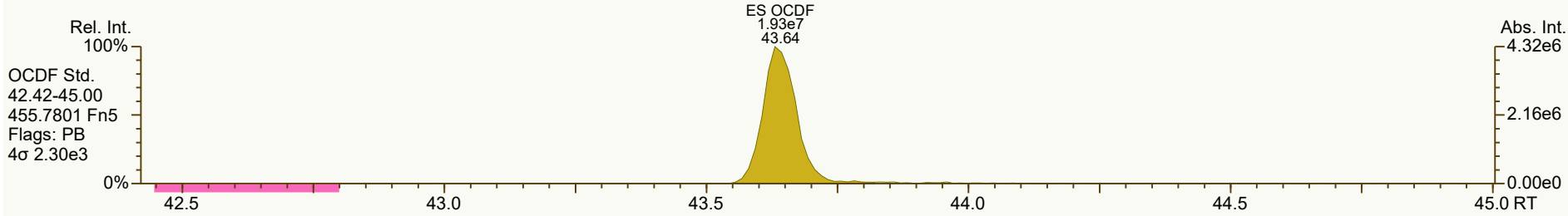
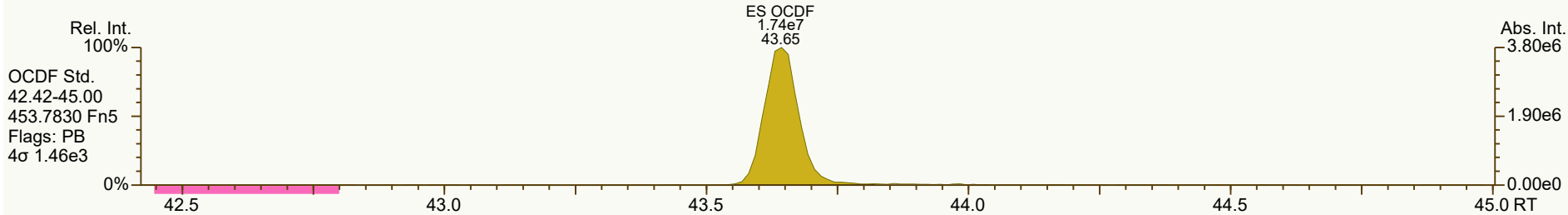
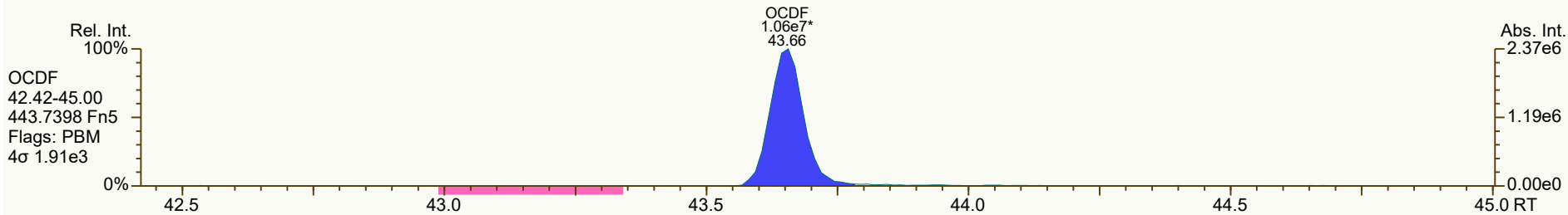
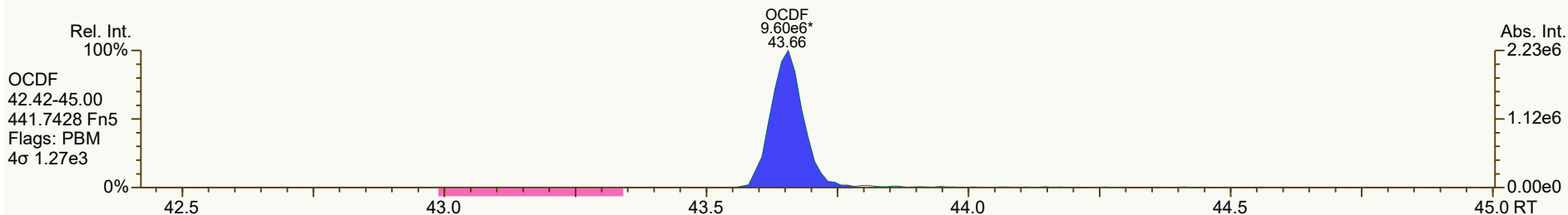












The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

GHD Services Inc.

SJRWP - PCFSE, Harris County, TX

SSOW:11215131 2021-001 / PO#340-002625

SGS Job Number: JD35489

Sampling Dates: 12/16/21 - 12/17/21

Report to:

GHD Services Inc.
11451 Katy Freeway Suite 400
Houston, TX 77079
Nate.Reece@ghd.com; Meagan.Willis@ghd.com;
Kathleen.Shaw@GHD.com; Marisa.Oriaku@GHD.com
ATTN: Meagan Willis

Total number of pages in report: **82**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read "Mike Earp".

Mike Earp
General Manager

Client Service contact: Kelly Ramos 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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Test results relate only to samples analyzed.



February 21, 2022

**Ms. Meagan Willis
GHD Services Inc.
11451 Katy Freeway Suite 400
Houston, TX 77079**

RE: SGS – Dayton, Job # JD35489- Reissues

Dear Ms. Willis,

The final report for SGS job number JD35489 has been edited to reflect corrections to the results. These edits have been incorporated into the revised report which is attached.

Specifically, this report has been revised COMMBN as per client's request. The attached revised report incorporates these revisions.

SGS apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

Report Department

SGS North America Inc.

SGS North America Inc. | Mid-Atlantic 2235 US Highway 130 Dayton, NJ 08810, USA t +1 (0)732 329 0200 www.sgs.com

Member of the SGS Group (SGS SA)

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Sample Summary

GHD Services Inc.

Job No: JD35489

SJRWP - PCFSE, Harris County, TX

Project No: SOW:11215131 2021-001 / PO#340-002625

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JD35489-1	12/17/21	08:20 SS	12/17/21	AQ	Ground Water	11215131-121721-GW-SS-PZ-NE
JD35489-1A	12/17/21	08:20 SS	12/17/21	AQ	Ground Water	11215131-121721-GW-SS-PZ-NE
JD35489-1F	12/17/21	08:20 SS	12/17/21	AQ	Groundwater Filtered	11215131-121721-GW-SS-PZ-NE
JD35489-2	12/17/21	00:00 SS	12/17/21	AQ	Ground Water	11215131-121721-GW-SS-DUP-1
JD35489-2A	12/17/21	00:00 SS	12/17/21	AQ	Ground Water	11215131-121721-GW-SS-DUP-1
JD35489-3	12/17/21	08:50 SS	12/17/21	AQ	Equipment Blank	11215131-121721-GW-SS-RB-1
JD35489-3A	12/17/21	08:50 SS	12/17/21	AQ	Equipment Blank	11215131-121721-GW-SS-RB-1
JD35489-4	12/16/21	15:40 SS	12/17/21	AQ	Ground Water	11215131-121621-GW-SS-PZ-SW
JD35489-4A	12/16/21	15:40 SS	12/17/21	AQ	Ground Water	11215131-121621-GW-SS-PZ-SW
JD35489-4F	12/16/21	15:40 SS	12/17/21	AQ	Groundwater Filtered	11215131-121621-GW-SS-PZ-SW
JD35489-5	12/16/21	14:10 SS	12/17/21	AQ	Ground Water	11215131-121621-GW-SS-PZ-SC
JD35489-5A	12/16/21	14:10 SS	12/17/21	AQ	Ground Water	11215131-121621-GW-SS-PZ-SC
JD35489-5D	12/16/21	14:10 SS	12/17/21	AQ	Water Dup/MSD	11215131-121621-GW-SS-PZ-SC MSD



Sample Summary

(continued)

GHD Services Inc.

Job No: JD35489

SJRWP - PCFSE, Harris County, TX

Project No: SSOW:11215131 2021-001 / PO#340-002625

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JD35489-5F	12/16/21	14:10 SS	12/17/21	AQ	Groundwater Filtered	11215131-121621-GW-SS-PZ-SC
JD35489-5S	12/16/21	14:10 SS	12/17/21	AQ	Water Matrix Spike	11215131-121621-GW-SS-PZ-SC MS
JD35489-6	12/16/21	11:50 SS	12/17/21	AQ	Ground Water	11215131-121621-GW-SS-PZ-NC
JD35489-6A	12/16/21	11:50 SS	12/17/21	AQ	Ground Water	11215131-121621-GW-SS-PZ-NC
JD35489-6F	12/16/21	11:50 SS	12/17/21	AQ	Groundwater Filtered	11215131-121621-GW-SS-PZ-NC

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: GHD Services Inc.

Job No JD35489

Site: SJRWP - PCFSE, Harris County, TX

Report Date 1/20/2022 4:13:06 PM

Between 12/17/2021 and 12/18/2021, 6 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD35489 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Metals Analysis By Method SW846 6010D

Matrix: AQ	Batch ID: MP30594
-------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-5MS, JD35489-5MSD, JD36943-2SDL were used as the QC samples for metals.
- Matrix Spike/Matrix Spike Duplicate Recovery(s) for Calcium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Aluminum, Antimony, Beryllium, Cadmium, Cobalt, Copper, Iron, Molybdenum, Nickel, Selenium, Titanium, Vanadium are outside control limits for sample MP30594-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- RPD(s) for Serial Dilution for Barium, Calcium, Zinc: Serial dilution indicates possible matrix interference.

Metals Analysis By Method SW846 7470A

Matrix: AQ	Batch ID: MP30529
-------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-5MS, JD35489-5MSD were used as the QC samples for metals.

General Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP37856
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- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-5DUP, JD35489-5MS were used as the QC samples for Bromide, Chloride, Fluoride, Sulfate, Bromide.
- Matrix Spike Recovery(s) for Bromide are outside control limits. Spike recovery indicates possible matrix interference.
- JD35489-6 for Bromide: Elevated sample detection limit due to difficult sample matrix.

General Chemistry By Method EPA 353.2

Matrix: AQ **Batch ID:** T:GP63117

- The data for EPA 353.2 meets quality control requirements.
- JD35489-6A for Nitrogen, Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-1A for Nitrogen, Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-4A for Nitrogen, Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-2A for Nitrogen, Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-3A for Nitrogen, Nitrite: Elevated reporting limit due to matrix interference. Analysis performed at SGS Houston, TX.
- JD35489-5A for Nitrogen, Nitrite: Analysis performed at SGS Houston, TX.

Matrix: AQ **Batch ID:** T:GP63118

- The data for EPA 353.2 meets quality control requirements.
- JD35489-6A for Nitrogen, Nitrate + Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-2A for Nitrogen, Nitrate + Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-4A for Nitrogen, Nitrate + Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-5A for Nitrogen, Nitrate + Nitrite: Analysis performed at SGS Houston, TX.
- JD35489-3A for Nitrogen, Nitrate + Nitrite: Elevated reporting limit due to matrix interference. Analysis performed at SGS Houston, TX.
- JD35489-1A for Nitrogen, Nitrate + Nitrite: Analysis performed at SGS Houston, TX.

Matrix: AQ **Batch ID:** T:R67940

- The data for EPA 353.2 meets quality control requirements.
- JD35489-2A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

Matrix: AQ **Batch ID:** T:R67941

- The data for EPA 353.2 meets quality control requirements.
- JD35489-1A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

Matrix: AQ **Batch ID:** T:R67942

- The data for EPA 353.2 meets quality control requirements.
- JD35489-3A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

Matrix: AQ **Batch ID:** T:R67943

- The data for EPA 353.2 meets quality control requirements.
- JD35489-4A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

Matrix: AQ **Batch ID:** T:R67944

- The data for EPA 353.2 meets quality control requirements.
- JD35489-5A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

Matrix: AQ **Batch ID:** T:R67945

- The data for EPA 353.2 meets quality control requirements.
- JD35489-6A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

General Chemistry By Method EPA 365.3

Matrix: AQ **Batch ID:** GP37757

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD36949-1ADUP, JD36949-1AMS were used as the QC samples for Phosphorus, Total.

General Chemistry By Method EPA353.2/SM4500NO2B

Matrix: AQ **Batch ID:** R195272

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JD35489-3A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ **Batch ID:** R195273

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JD35489-2A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ **Batch ID:** R195274

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JD35489-1A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ **Batch ID:** R195275

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JD35489-6A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ **Batch ID:** R195276

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JD35489-5A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ **Batch ID:** R195277

- The data for EPA353.2/SM4500NO2B meets quality control requirements.
- JD35489-4A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

General Chemistry By Method SM 5210B-2011

Matrix: AQ **Batch ID:** T:GP63096

- The data for SM 5210B-2011 meets quality control requirements.
- JD35489-4A for BOD, 5 Day: Analysis performed at SGS Houston, TX.
- JD35489-2A for BOD, 5 Day: Analysis performed at SGS Houston, TX.
- JD35489-5A for BOD, 5 Day: Analysis performed at SGS Houston, TX.
- JD35489-6A for BOD, 5 Day: Analysis performed at SGS Houston, TX.
- JD35489-1A for BOD, 5 Day: Analysis performed at SGS Houston, TX.
- JD35489-3A for BOD, 5 Day: Analysis performed at SGS Houston, TX.

General Chemistry By Method SM2320 B-11

Matrix: AQ

Batch ID: GN24970

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD36952-13DUP were used as the QC samples for Alkalinity, Total as CaCO₃.
- JD35489-5 for Alkalinity, Total as CaCO₃: Sample was titrated to a final pH of 4.5. Sample received with head space.
- JD35489-4 for Alkalinity, Total as CaCO₃: Sample was titrated to a final pH of 4.5. Sample received with head space.
- JD35489-1 for Alkalinity, Total as CaCO₃: Sample was titrated to a final pH of 4.5. Sample received with head space.
- JD35489-6 for Alkalinity, Total as CaCO₃: Sample was titrated to a final pH of 4.5. Sample received with head space.

Matrix: AQ

Batch ID: GN24989

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD37132-7DUP were used as the QC samples for Alkalinity, Total as CaCO₃.
- JD35489-2 for Alkalinity, Total as CaCO₃: Sample was titrated to a final pH of 4.5. Sample received with head space.
- JD35489-3 for Alkalinity, Total as CaCO₃: Sample was titrated to a final pH of 4.2. Sample received with head space.

General Chemistry By Method SM2540 C-11

Matrix: AQ

Batch ID: GN24930

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD36949-1ADUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM2540 D-11

Matrix: AQ

Batch ID: GN24928

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD37048-1DUP were used as the QC samples for Solids, Total Suspended.
- JD35489-6 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 50 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- JD35489-4 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 25 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- JD35489-5 for Solids, Total Suspended: Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

Matrix: AQ

Batch ID: GN24979

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-3DUP were used as the QC samples for Solids, Total Suspended.

General Chemistry By Method SM4500H+ B-11

Matrix: AQ

Batch ID: T:GN15647

- The data for SM4500H+ B-11 meets quality control requirements.
- JD35489-1A for pH: Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 17.2 Deg. C Analysis performed at SGS Houston, TX.
- JD35489-3A for pH: Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.1 Deg. C Analysis performed at SGS Houston, TX.
- JD35489-2A for pH: Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.3 Deg. C Analysis performed at SGS Houston, TX.
- JD35489-4A for pH: Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.8 Deg. C Analysis performed at SGS Houston, TX.
- JD35489-5A for pH: Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 16.4 Deg. C Analysis performed at SGS Houston, TX.
- JD35489-6A for pH: Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 16.2 Deg. C Analysis performed at SGS Houston, TX.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ

Batch ID: GP37881

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-5DUP, JD35489-5MS, JD35489-5MSD were used as the QC samples for Nitrogen, Ammonia.

General Chemistry By Method SM4500S2- F-11

Matrix: AQ

Batch ID: GN24968

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-1MS, JD35489-2DUP were used as the QC samples for Sulfide.

General Chemistry By Method SM5220 C-11,HACH8000

Matrix: AQ

Batch ID: GP37700

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD36762-1DUP, JD36762-1MS were used as the QC samples for Chemical Oxygen Demand.

Matrix: AQ

Batch ID: GP37701

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD36876-1DUP, JD36876-1MS were used as the QC samples for Chemical Oxygen Demand.

Matrix: AQ

Batch ID: GP37745

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-1DUP, JD35489-1MS were used as the QC samples for Chemical Oxygen Demand.

General Chemistry By Method SM5310 B-11

Matrix: AQ

Batch ID: GP37760

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD36952-13MS, JD36952-13MSD were used as the QC samples for Total Organic Carbon.

Matrix: AQ

Batch ID: GP37762

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-6MS, JD35489-6MSD were used as the QC samples for Total Organic Carbon.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS Dayton, NJ

Job No: JD35489

Site: CRATXH: SJRWP - PCFSE, Harris County, TX (IDW)

Report Date 12/30/2021 5:40:35 P

6 Samples were collected on between 12/16/2021 and 12/17/2021 and received intact at SGS North America Inc (SGS) between 12/17/2021 and 12/18/2021 and properly preserved in 4 coolers at 2.8 Deg C. The samples received an SGS job number of JD35489. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

General Chemistry By Method EPA 353.2

Matrix: AQ	Batch ID: GP63063
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- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-2MS, JD35489-2DUP were used as the QC samples for Nitrogen, Nitrite.
- RPD(s) for Duplicate for Nitrogen, Nitrite are outside control limits for sample GP63063-D1. RPD acceptable due to low duplicate and sample concentrations.
- JD35489-3 for Nitrogen, Nitrite: Elevated reporting limit due to matrix interference.

Matrix: AQ	Batch ID: GP63064
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- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-2DUP, JD35489-2MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.
- JD35489-3 for Nitrogen, Nitrate + Nitrite: Elevated reporting limit due to matrix interference.

Matrix: AQ	Batch ID: GP63117
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- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-2AMS, JD35489-2ADUP were used as the QC samples for Nitrogen, Nitrite.
- RPD(s) for Duplicate for Nitrogen, Nitrite are outside control limits for sample GP63117-D1. RPD acceptable due to low duplicate and sample concentrations.
- JD35489-3A for Nitrogen, Nitrite: Elevated reporting limit due to matrix interference.

Matrix: AQ	Batch ID: GP63118
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- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD35489-2ADUP, JD35489-2AMS were used as the QC samples for Nitrogen, Nitrate + Nitrite.
- JD35489-3A for Nitrogen, Nitrate + Nitrite: Elevated reporting limit due to matrix interference.

Matrix: AQ	Batch ID: R67914
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- JD35489-2 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

Matrix: AQ	Batch ID: R67915
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General Chemistry By Method EPA 353.2

Matrix: AQ	Batch ID: R67915
<ul style="list-style-type: none"> JD35489-1 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67916
<ul style="list-style-type: none"> JD35489-3 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67917
<ul style="list-style-type: none"> JD35489-4 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67918
<ul style="list-style-type: none"> JD35489-5 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67919
<ul style="list-style-type: none"> JD35489-6 for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67940
<ul style="list-style-type: none"> JD35489-2A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67941
<ul style="list-style-type: none"> JD35489-1A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67942
<ul style="list-style-type: none"> JD35489-3A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67943
<ul style="list-style-type: none"> JD35489-4A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67944
<ul style="list-style-type: none"> JD35489-5A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	
Matrix: AQ	Batch ID: R67945
<ul style="list-style-type: none"> JD35489-6A for Nitrogen, Nitrate: Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) 	

General Chemistry By Method SM 4500H+B-2011

Matrix: AQ	Batch ID: GN15516
<ul style="list-style-type: none"> Sample(s) TD76734-1DUP were used as the QC samples for pH. JD35489-1A, 2A, 3A, 4A, 5A, 6A for pH: Field analysis required. Received out of hold time and analyzed by request. Temp 17.2 C. 	

General Chemistry By Method SM 5210B-2011

Matrix: AQ	Batch ID: GP63096
<ul style="list-style-type: none"> All samples were prepared within the recommended method holding time. All samples were analyzed within the recommended method holding time. All method blanks for this batch meet method specific criteria. Sample(s) TD76820-1DUP were used as the QC samples for BOD, 5 Day. RPD(s) for Duplicate for BOD, 5 Day are outside control limits for sample GP63096-D1. RPD acceptable due to low duplicate and sample concentrations. 	

SGS certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS and as stated on the COC. SGS certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Quality Manual except as noted above. This report is to be used in its entirety. SGS is not responsible for any assumptions of data quality if partial data packages are used.

Thursday, December 30, 2021

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Summary of Hits

Job Number: JD35489
Account: GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX
Collected: 12/16/21 thru 12/17/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD35489-1 11215131-121721-GW-SS-PZ-NE

Arsenic	3.0	3.0	2.8	ug/l	SW846 6010D
Barium	425	200	13	ug/l	SW846 6010D
Boron	418	100	10	ug/l	SW846 6010D
Cadmium	2.1 B	3.0	1.0	ug/l	SW846 6010D
Calcium	125000	5000	99	ug/l	SW846 6010D
Chromium	2.0 B	10	2.0	ug/l	SW846 6010D
Iron	20000	100	32	ug/l	SW846 6010D
Magnesium	52400	5000	140	ug/l	SW846 6010D
Manganese	676	15	1.4	ug/l	SW846 6010D
Potassium	35800	10000	200	ug/l	SW846 6010D
Sodium	154000	10000	570	ug/l	SW846 6010D
Strontium	894	10	2.7	ug/l	SW846 6010D
Zinc	13.7 B	20	6.9	ug/l	SW846 6010D
Alkalinity, Total as CaCO3 ^a	598	10	7.1	mg/l	SM2320 B-11
Bromide	2.6	0.50	0.11	mg/l	EPA 300/SW846 9056A
Chemical Oxygen Demand	37.5	20	11	mg/l	SM5220 C-11,HACH8000
Chloride	209	2.0	0.83	mg/l	EPA 300/SW846 9056A
Fluoride	2.3	0.20	0.055	mg/l	EPA 300/SW846 9056A
Nitrogen, Ammonia	3.5	0.20	0.089	mg/l	SM4500NH3 H-11LACHAT
Phosphorus, Total	0.24	0.050	0.027	mg/l	EPA 365.3
Solids, Total Dissolved	340	10	6.0	mg/l	SM2540 C-11
Solids, Total Suspended	28.0	4.0	1.5	mg/l	SM2540 D-11
Sulfate	6.9	2.0	0.89	mg/l	EPA 300/SW846 9056A
Total Organic Carbon	12.0	1.0	0.72	mg/l	SM5310 B-11

JD35489-1A 11215131-121721-GW-SS-PZ-NE

BOD, 5 Day ^b	1.5 B	2.0	1.0	mg/l	SM 5210B-2011
pH ^c	8.15			su	SM4500H+ B-11

JD35489-1F 11215131-121721-GW-SS-PZ-NE

Arsenic	4.2	3.0	2.8	ug/l	SW846 6010D
Barium	439	200	13	ug/l	SW846 6010D
Boron	426	100	10	ug/l	SW846 6010D
Cadmium	2.2 B	3.0	1.0	ug/l	SW846 6010D
Calcium	128000	5000	99	ug/l	SW846 6010D
Iron	21100	100	32	ug/l	SW846 6010D
Magnesium	53600	5000	140	ug/l	SW846 6010D
Manganese	631	15	1.4	ug/l	SW846 6010D
Potassium	36500	10000	200	ug/l	SW846 6010D
Sodium	155000	10000	570	ug/l	SW846 6010D
Strontium	909	10	2.7	ug/l	SW846 6010D

Summary of Hits

Job Number: JD35489
Account: GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX
Collected: 12/16/21 thru 12/17/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Zinc		10.6 B	20	6.9	ug/l	SW846 6010D
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JD35489-2 11215131-121721-GW-SS-DUP-1

Arsenic		4.6	3.0	2.8	ug/l	SW846 6010D
Barium		432	200	13	ug/l	SW846 6010D
Boron		420	100	10	ug/l	SW846 6010D
Cadmium		2.1 B	3.0	1.0	ug/l	SW846 6010D
Calcium		126000	5000	99	ug/l	SW846 6010D
Chromium		2.7 B	10	2.0	ug/l	SW846 6010D
Iron		20600	100	32	ug/l	SW846 6010D
Magnesium		52700	5000	140	ug/l	SW846 6010D
Manganese		649	15	1.4	ug/l	SW846 6010D
Potassium		35900	10000	200	ug/l	SW846 6010D
Sodium		155000	10000	570	ug/l	SW846 6010D
Strontium		896	10	2.7	ug/l	SW846 6010D
Zinc		13.7 B	20	6.9	ug/l	SW846 6010D
Alkalinity, Total as CaCO ₃ ^a		607	10	7.1	mg/l	SM2320 B-11
Bromide		4.1	0.50	0.11	mg/l	EPA 300/SW846 9056A
Chemical Oxygen Demand		32.5	20	11	mg/l	SM5220 C-11, HACH8000
Chloride		205	2.0	0.83	mg/l	EPA 300/SW846 9056A
Fluoride		2.3	0.20	0.055	mg/l	EPA 300/SW846 9056A
Nitrogen, Ammonia		3.3	0.20	0.089	mg/l	SM4500NH3 H-11LACHAT
Phosphorus, Total		0.25	0.050	0.027	mg/l	EPA 365.3
Solids, Total Dissolved		540	10	6.0	mg/l	SM2540 C-11
Solids, Total Suspended		30.0	4.0	1.5	mg/l	SM2540 D-11
Sulfate		9.0	2.0	0.89	mg/l	EPA 300/SW846 9056A
Total Organic Carbon		12.1	1.0	0.72	mg/l	SM5310 B-11

JD35489-2A 11215131-121721-GW-SS-DUP-1

BOD, 5 Day ^b		8.7 B	12	6.0	mg/l	SM 5210B-2011
pH ^d		7.04			su	SM4500H+ B-11

JD35489-3 11215131-121721-GW-SS-RB-1

Sodium		611 B	10000	570	ug/l	SW846 6010D
Thallium		2.1 B	10	1.8	ug/l	SW846 6010D
Zinc		15.3 B	20	6.9	ug/l	SW846 6010D
Nitrogen, Ammonia		0.17 B	0.20	0.089	mg/l	SM4500NH3 H-11LACHAT

JD35489-3A 11215131-121721-GW-SS-RB-1

BOD, 5 Day ^b		30.1	12	6.0	mg/l	SM 5210B-2011
pH ^e		7.12			su	SM4500H+ B-11

Summary of Hits

Job Number: JD35489
Account: GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX
Collected: 12/16/21 thru 12/17/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD35489-4 11215131-121621-GW-SS-PZ-SW

Arsenic	5.4	3.0	2.8	ug/l	SW846 6010D
Barium	686	200	13	ug/l	SW846 6010D
Beryllium	0.70 B	1.0	0.50	ug/l	SW846 6010D
Boron	759	100	10	ug/l	SW846 6010D
Cadmium	2.3 B	3.0	1.0	ug/l	SW846 6010D
Calcium	163000	5000	99	ug/l	SW846 6010D
Iron	2330	100	32	ug/l	SW846 6010D
Magnesium	186000	5000	140	ug/l	SW846 6010D
Manganese	2360	15	1.4	ug/l	SW846 6010D
Potassium	63400	10000	200	ug/l	SW846 6010D
Sodium	1270000	100000	5700	ug/l	SW846 6010D
Strontium	1890	10	2.7	ug/l	SW846 6010D
Vanadium	2.8 B	50	1.8	ug/l	SW846 6010D
Zinc	13.9 B	20	6.9	ug/l	SW846 6010D
Alkalinity, Total as CaCO ₃ ^a	717	10	7.1	mg/l	SM2320 B-11
Bromide	8.3	5.0	1.1	mg/l	EPA 300/SW846 9056A
Chemical Oxygen Demand	200	20	11	mg/l	SM5220 C-11, HACH8000
Chloride	2680	20	8.3	mg/l	EPA 300/SW846 9056A
Fluoride	0.75	0.20	0.055	mg/l	EPA 300/SW846 9056A
Nitrogen, Ammonia	0.11 B	0.20	0.089	mg/l	SM4500NH3 H-11LACHAT
Phosphorus, Total	0.74	0.10	0.054	mg/l	EPA 365.3
Solids, Total Dissolved	4730	10	6.0	mg/l	SM2540 C-11
Solids, Total Suspended ^f	16.0	4.0	1.5	mg/l	SM2540 D-11
Sulfate	241	2.0	0.89	mg/l	EPA 300/SW846 9056A
Total Organic Carbon	16.8	1.0	0.72	mg/l	SM5310 B-11

JD35489-4A 11215131-121621-GW-SS-PZ-SW

Nitrogen, Nitrite ^b	0.0051 B	0.010	0.0050	mg/l	EPA 353.2
pH ^g	7.05			su	SM4500H+ B-11

JD35489-4F 11215131-121621-GW-SS-PZ-SW

Arsenic	5.1	3.0	2.8	ug/l	SW846 6010D
Barium	681	200	13	ug/l	SW846 6010D
Beryllium	0.80 B	1.0	0.50	ug/l	SW846 6010D
Boron	757	100	10	ug/l	SW846 6010D
Cadmium	2.2 B	3.0	1.0	ug/l	SW846 6010D
Calcium	164000	5000	99	ug/l	SW846 6010D
Iron	6270	100	32	ug/l	SW846 6010D
Magnesium	188000	5000	140	ug/l	SW846 6010D
Manganese	2310	15	1.4	ug/l	SW846 6010D

Summary of Hits

Job Number: JD35489
Account: GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX
Collected: 12/16/21 thru 12/17/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Nickel		2.0 B	10	1.7	ug/l	SW846 6010D
Potassium		64000	10000	200	ug/l	SW846 6010D
Sodium		1270000	100000	5700	ug/l	SW846 6010D
Strontium		1910	10	2.7	ug/l	SW846 6010D
Thallium		1.8 B	10	1.8	ug/l	SW846 6010D
Vanadium		3.7 B	50	1.8	ug/l	SW846 6010D
Zinc		18.7 B	20	6.9	ug/l	SW846 6010D

JD35489-5 11215131-121621-GW-SS-PZ-SC

Barium		420	200	13	ug/l	SW846 6010D
Boron		816	100	10	ug/l	SW846 6010D
Cadmium		2.5 B	3.0	1.0	ug/l	SW846 6010D
Calcium		285000	10000	200	ug/l	SW846 6010D
Chromium		2.9 B	10	2.0	ug/l	SW846 6010D
Iron		1000	100	32	ug/l	SW846 6010D
Lead		1.9 B	3.0	1.8	ug/l	SW846 6010D
Magnesium		55100	5000	140	ug/l	SW846 6010D
Manganese		1290	15	1.4	ug/l	SW846 6010D
Potassium		128000	10000	200	ug/l	SW846 6010D
Silver		6.7 B	10	6.1	ug/l	SW846 6010D
Sodium		156000	10000	570	ug/l	SW846 6010D
Strontium		1200	10	2.7	ug/l	SW846 6010D
Vanadium		2.6 B	50	1.8	ug/l	SW846 6010D
Zinc		13.5 B	20	6.9	ug/l	SW846 6010D
Alkalinity, Total as CaCO3 ^a		1120	5.0	3.6	mg/l	SM2320 B-11
Bromide		3.4	0.50	0.11	mg/l	EPA 300/SW846 9056A
Chemical Oxygen Demand		133	20	11	mg/l	SM5220 C-11, HACH8000
Chloride		133	2.0	0.83	mg/l	EPA 300/SW846 9056A
Fluoride		0.61	0.20	0.055	mg/l	EPA 300/SW846 9056A
Nitrogen, Ammonia		7.1	0.20	0.089	mg/l	SM4500NH3 H-11LACHAT
Phosphorus, Total		0.97	0.20	0.11	mg/l	EPA 365.3
Solids, Total Dissolved		1500	10	6.0	mg/l	SM2540 C-11
Sulfate		32.1	2.0	0.89	mg/l	EPA 300/SW846 9056A
Sulfide		4.3	2.0	0.48	mg/l	SM4500S2- F-11
Total Organic Carbon		37.0	1.0	0.72	mg/l	SM5310 B-11

JD35489-5A 11215131-121621-GW-SS-PZ-SC

pH ^h		6.08			su	SM4500H+ B-11
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JD35489-5F 11215131-121621-GW-SS-PZ-SC

Arsenic		3.4	3.0	2.8	ug/l	SW846 6010D
Barium		426	200	13	ug/l	SW846 6010D

Summary of Hits

Job Number: JD35489
Account: GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX
Collected: 12/16/21 thru 12/17/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method	
		Boron	837	100	10	ug/l	SW846 6010D
		Cadmium	2.4 B	3.0	1.0	ug/l	SW846 6010D
		Calcium	289000	10000	200	ug/l	SW846 6010D
		Chromium	2.7 B	10	2.0	ug/l	SW846 6010D
		Iron	1220	100	32	ug/l	SW846 6010D
		Magnesium	56600	5000	140	ug/l	SW846 6010D
		Manganese	1360	15	1.4	ug/l	SW846 6010D
		Potassium	130000	10000	200	ug/l	SW846 6010D
		Silver	6.2 B	10	6.1	ug/l	SW846 6010D
		Sodium	163000	10000	570	ug/l	SW846 6010D
		Strontium	1220	10	2.7	ug/l	SW846 6010D
		Thallium	1.8 B	10	1.8	ug/l	SW846 6010D
		Vanadium	2.3 B	50	1.8	ug/l	SW846 6010D

JD35489-6 11215131-121621-GW-SS-PZ-NC

		Aluminum	191 B	200	150	ug/l	SW846 6010D
		Antimony	6.4	6.0	4.7	ug/l	SW846 6010D
		Barium	115 B	200	13	ug/l	SW846 6010D
		Beryllium	2.6	1.0	0.50	ug/l	SW846 6010D
		Boron	628	100	10	ug/l	SW846 6010D
		Cadmium	1.2 B	3.0	1.0	ug/l	SW846 6010D
		Calcium	250000	25000	500	ug/l	SW846 6010D
		Chromium	2.4 B	10	2.0	ug/l	SW846 6010D
		Iron	10700	100	32	ug/l	SW846 6010D
		Lead	2.4 B	3.0	1.8	ug/l	SW846 6010D
		Magnesium	141000	5000	140	ug/l	SW846 6010D
		Manganese	731	15	1.4	ug/l	SW846 6010D
		Molybdenum	5.4 B	20	3.6	ug/l	SW846 6010D
		Potassium	75800	10000	200	ug/l	SW846 6010D
		Selenium	5.9 B	10	4.9	ug/l	SW846 6010D
		Sodium	421000	50000	2800	ug/l	SW846 6010D
		Strontium	1800	10	2.7	ug/l	SW846 6010D
		Thallium	5.5 B	10	1.8	ug/l	SW846 6010D
		Vanadium	2.5 B	50	1.8	ug/l	SW846 6010D
		Zinc	22.8	20	6.9	ug/l	SW846 6010D
		Alkalinity, Total as CaCO3 ^a	1140	5.0	3.6	mg/l	SM2320 B-11
		Bromide ⁱ	1.0 B	2.0	0.42	mg/l	EPA 300/SW846 9056A
		Chemical Oxygen Demand	66.7	20	11	mg/l	SM5220 C-11,HACH8000
		Chloride	185	2.0	0.83	mg/l	EPA 300/SW846 9056A
		Fluoride	0.61	0.20	0.055	mg/l	EPA 300/SW846 9056A
		Nitrogen, Ammonia	5.6	0.20	0.089	mg/l	SM4500NH3 H-11LACHAT
		Phosphorus, Total	0.34	0.20	0.11	mg/l	EPA 365.3
		Solids, Total Dissolved	2130	10	6.0	mg/l	SM2540 C-11
		Solids, Total Suspended ^j	16.0	4.0	1.5	mg/l	SM2540 D-11

Summary of Hits

Job Number: JD35489
Account: GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX
Collected: 12/16/21 thru 12/17/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Sulfate		714	8.0	3.5	mg/l	EPA 300/SW846 9056A
Total Organic Carbon		17.3	1.0	0.72	mg/l	SM5310 B-11

JD35489-6A 11215131-121621-GW-SS-PZ-NC

Nitrogen, Nitrite ^b		0.0058 B	0.010	0.0050	mg/l	EPA 353.2
pH ^k		6.89			su	SM4500H+ B-11

JD35489-6F 11215131-121621-GW-SS-PZ-NC

Antimony		6.8	6.0	4.7	ug/l	SW846 6010D
Arsenic		3.3	3.0	2.8	ug/l	SW846 6010D
Barium		117 B	200	13	ug/l	SW846 6010D
Beryllium		2.6	1.0	0.50	ug/l	SW846 6010D
Boron		643	100	10	ug/l	SW846 6010D
Cadmium		1.3 B	3.0	1.0	ug/l	SW846 6010D
Calcium		249000	25000	500	ug/l	SW846 6010D
Chromium		2.4 B	10	2.0	ug/l	SW846 6010D
Iron		10500	100	32	ug/l	SW846 6010D
Magnesium		143000	5000	140	ug/l	SW846 6010D
Manganese		743	15	1.4	ug/l	SW846 6010D
Molybdenum		5.6 B	20	3.6	ug/l	SW846 6010D
Potassium		77300	10000	200	ug/l	SW846 6010D
Selenium		5.8 B	10	4.9	ug/l	SW846 6010D
Sodium		425000	50000	2800	ug/l	SW846 6010D
Strontium		1820	10	2.7	ug/l	SW846 6010D
Thallium		5.8 B	10	1.8	ug/l	SW846 6010D
Vanadium		1.8 B	50	1.8	ug/l	SW846 6010D
Zinc		7.9 B	20	6.9	ug/l	SW846 6010D

- (a) Sample was titrated to a final pH of 4.5. Sample received with head space.
- (b) Analysis performed at SGS Houston, TX.
- (c) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 17.2 Deg. C
Analysis performed at SGS Houston, TX.
- (d) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.3 Deg. C
Analysis performed at SGS Houston, TX.
- (e) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.1 Deg. C
Analysis performed at SGS Houston, TX.
- (f) Reported sample aliquot obtained from filtration of 25 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- (g) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.8 Deg. C
Analysis performed at SGS Houston, TX.
- (h) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 16.4 Deg. C
Analysis performed at SGS Houston, TX.
- (i) Elevated sample detection limit due to difficult sample matrix.

Summary of Hits

Job Number: JD35489
Account: GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX
Collected: 12/16/21 thru 12/17/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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- (j) Reported sample aliquot obtained from filtration of 50 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.
- (k) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 16.2 Deg. C
Analysis performed at SGS Houston, TX.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-PZ-NE	Date Sampled: 12/17/21
Lab Sample ID: JD35489-1	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Arsenic	3.0	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Barium	425	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Beryllium	0.50 U	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Boron	418	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cadmium	2.1 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Calcium	125000	5000	99	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Chromium	2.0 B	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Iron	20000	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Magnesium	52400	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Manganese	676	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Potassium	35800	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Sodium	154000	10000	570	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Strontium	894	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Thallium	1.8 U	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Vanadium	1.8 U	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Zinc	13.7 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Prep QC Batch: MP30529
- (5) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.1
4

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-PZ-NE Lab Sample ID: JD35489-1 Matrix: AQ - Ground Water Project: SJRWP - PCFSE, Harris County, TX	Date Sampled: 12/17/21 Date Received: 12/17/21 Percent Solids: n/a
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General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃ ^a	598	10	7.1	mg/l	1	12/22/21 10:58 NP	SM2320	B-11
Bromide	2.6	0.50	0.11	mg/l	1	01/03/22 02:05 HP	EPA 300/SW846	9056A
Chemical Oxygen Demand	37.5	20	11	mg/l	1	12/23/21 14:25 NP	SM5220	C-11,HACH8000
Chloride	209	2.0	0.83	mg/l	1	01/03/22 02:05 HP	EPA 300/SW846	9056A
Fluoride	2.3	0.20	0.055	mg/l	1	01/03/22 02:05 HP	EPA 300/SW846	9056A
Nitrogen, Ammonia	3.5	0.20	0.089	mg/l	1	01/05/22 16:41 MM	SM4500NH3	H-11LACHAT
Phosphorus, Total	0.24	0.050	0.027	mg/l	1	12/26/21	JOO EPA 365.3	
Solids, Total Dissolved	340	10	6.0	mg/l	1	12/21/21 14:00 SP	SM2540	C-11
Solids, Total Suspended	28.0	4.0	1.5	mg/l	1	12/22/21 15:48 SP	SM2540	D-11
Sulfate	6.9	2.0	0.89	mg/l	1	01/03/22 02:05 HP	EPA 300/SW846	9056A
Sulfide	0.48 U	2.0	0.48	mg/l	1	12/22/21 11:30 MP	SM4500S2-	F-11
Total Organic Carbon	12.0	1.0	0.72	mg/l	1	12/24/21 02:12 MB	SM5310	B-11

(a) Sample was titrated to a final pH of 4.5. Sample received with head space.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.1
4

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-PZ-NE	Date Sampled: 12/17/21
Lab Sample ID: JD35489-1A	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By Method
BOD, 5 Day ^a	1.5 B	2.0	1.0	mg/l	1	12/17/21 22:15	ATXSM 5210B-2011
Nitrogen, Nitrate ^b	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:37	ATXEPA 353.2
Nitrogen, Nitrate ^c	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:37	ATXEPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite ^a	0.040 U	0.050	0.040	mg/l	1	12/18/21 10:37	ATXEPA 353.2
Nitrogen, Nitrite ^a	0.0050 U	0.010	0.0050	mg/l	1	12/18/21 09:33	ATXEPA 353.2
pH ^d	8.15			su	1	12/27/21 10:00	ATXSM4500H+ B-11

(a) Analysis performed at SGS Houston, TX.

(b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

(c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

(d) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 17.2 Deg. C
Analysis performed at SGS Houston, TX.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

4.2
4

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-PZ-NE	Date Sampled: 12/17/21
Lab Sample ID: JD35489-1F	Date Received: 12/17/21
Matrix: AQ - Groundwater Filtered	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Arsenic	4.2	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Barium	439	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Beryllium	0.50 U	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Boron	426	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cadmium	2.2 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Calcium	128000	5000	99	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Chromium	2.0 U	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Iron	21100	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Magnesium	53600	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Manganese	631	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Potassium	36500	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Sodium	155000	10000	570	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Strontium	909	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Thallium	1.8 U	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Vanadium	1.8 U	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Zinc	10.6 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Prep QC Batch: MP30529
- (5) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-DUP-1	Date Sampled: 12/17/21
Lab Sample ID: JD35489-2	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Arsenic	4.6	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Barium	432	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Beryllium	0.50 U	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Boron	420	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cadmium	2.1 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Calcium	126000	5000	99	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Chromium	2.7 B	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Iron	20600	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Magnesium	52700	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Manganese	649	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Potassium	35900	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Sodium	155000	10000	570	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Strontium	896	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Thallium	1.8 U	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Vanadium	1.8 U	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Zinc	13.7 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Prep QC Batch: MP30529
- (5) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.4
4

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-DUP-1 Lab Sample ID: JD35489-2 Matrix: AQ - Ground Water Project: SJRWP - PCFSE, Harris County, TX	Date Sampled: 12/17/21 Date Received: 12/17/21 Percent Solids: n/a
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General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	607	10	7.1	mg/l	1	12/22/21 14:27 NP	SM2320	B-11
Bromide	4.1	0.50	0.11	mg/l	1	01/03/22 02:29 HP	EPA 300/SW846	9056A
Chemical Oxygen Demand	32.5	20	11	mg/l	1	12/23/21 14:25 NP	SM5220	C-11,HACH8000
Chloride	205	2.0	0.83	mg/l	1	01/03/22 02:29 HP	EPA 300/SW846	9056A
Fluoride	2.3	0.20	0.055	mg/l	1	01/03/22 02:29 HP	EPA 300/SW846	9056A
Nitrogen, Ammonia	3.3	0.20	0.089	mg/l	1	01/05/22 16:43 MM	SM4500NH3	H-11LACHAT
Phosphorus, Total	0.25	0.050	0.027	mg/l	1	12/26/21	JOO EPA 365.3	
Solids, Total Dissolved	540	10	6.0	mg/l	1	12/21/21 14:00 SP	SM2540	C-11
Solids, Total Suspended	30.0	4.0	1.5	mg/l	1	12/22/21 15:48 SP	SM2540	D-11
Sulfate	9.0	2.0	0.89	mg/l	1	01/03/22 02:29 HP	EPA 300/SW846	9056A
Sulfide	0.48 U	2.0	0.48	mg/l	1	12/22/21 11:30 MP	SM4500S2-	F-11
Total Organic Carbon	12.1	1.0	0.72	mg/l	1	12/24/21 02:30 MB	SM5310	B-11

(a) Sample was titrated to a final pH of 4.5. Sample received with head space.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.4
4

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-DUP-1	Date Sampled: 12/17/21
Lab Sample ID: JD35489-2A	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By Method
BOD, 5 Day ^a	8.7 B	12	6.0	mg/l	1	12/17/21 22:16	ATXSM 5210B-2011
Nitrogen, Nitrate ^b	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:35	ATXEPA 353.2
Nitrogen, Nitrate ^c	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:35	ATXEPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite ^a	0.040 U	0.050	0.040	mg/l	1	12/18/21 10:35	ATXEPA 353.2
Nitrogen, Nitrite ^a	0.0050 U	0.010	0.0050	mg/l	1	12/18/21 09:33	ATXEPA 353.2
pH ^d	7.04			su	1	12/27/21 10:00	ATXSM4500H+ B-11

(a) Analysis performed at SGS Houston, TX.

(b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

(c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

(d) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.3 Deg. C
 Analysis performed at SGS Houston, TX.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.5
4

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-RB-1	Date Sampled: 12/17/21
Lab Sample ID: JD35489-3	Date Received: 12/17/21
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Arsenic	2.8 U	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Barium	13 U	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Beryllium	0.50 U	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Boron	10 U	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cadmium	1.0 U	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Calcium	99 U	5000	99	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Chromium	2.0 U	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Iron	32 U	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Magnesium	140 U	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Manganese	1.4 U	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Potassium	200 U	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Sodium	611 B	10000	570	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Strontium	2.7 U	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Thallium	2.1 B	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Vanadium	1.8 U	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Zinc	15.3 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Prep QC Batch: MP30529
- (5) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-RB-1 Lab Sample ID: JD35489-3 Matrix: AQ - Equipment Blank Project: SJRWP - PCFSE, Harris County, TX	Date Sampled: 12/17/21 Date Received: 12/17/21 Percent Solids: n/a
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4.6
4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	3.6 U	5.0	3.6	mg/l	1	12/22/21 14:27 NP	SM2320	B-11
Bromide	0.11 U	0.50	0.11	mg/l	1	01/03/22 02:53 HP	EPA 300/SW846	9056A
Chemical Oxygen Demand	11 U	20	11	mg/l	1	12/21/21 14:10 NP	SM5220	C-11,HACH8000
Chloride	0.83 U	2.0	0.83	mg/l	1	01/03/22 02:53 HP	EPA 300/SW846	9056A
Fluoride	0.055 U	0.20	0.055	mg/l	1	01/03/22 02:53 HP	EPA 300/SW846	9056A
Nitrogen, Ammonia	0.17 B	0.20	0.089	mg/l	1	01/05/22 16:47 MM	SM4500NH3	H-11LACHAT
Phosphorus, Total	0.027 U	0.050	0.027	mg/l	1	12/26/21	JOO EPA 365.3	
Solids, Total Dissolved	6.0 U	10	6.0	mg/l	1	12/21/21 14:00 SP	SM2540	C-11
Solids, Total Suspended	1.5 U	4.0	1.5	mg/l	1	12/22/21 15:48 SP	SM2540	D-11
Sulfate	0.89 U	2.0	0.89	mg/l	1	01/03/22 02:53 HP	EPA 300/SW846	9056A
Sulfide	0.48 U	2.0	0.48	mg/l	1	12/22/21 11:30 MP	SM4500S2-	F-11
Total Organic Carbon	0.72 U	1.0	0.72	mg/l	1	12/24/21 02:42 MB	SM5310	B-11

(a) Sample was titrated to a final pH of 4.2. Sample received with head space.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121721-GW-SS-RB-1	Date Sampled: 12/17/21
Lab Sample ID: JD35489-3A	Date Received: 12/17/21
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed By Method
BOD, 5 Day ^a	30.1	12	6.0	mg/l	1	12/17/21 22:19 ATXSM 5210B-2011
Nitrogen, Nitrate ^b	0.23 U	0.30	0.23	mg/l	1	12/18/21 10:39 ATXEPA 353.2
Nitrogen, Nitrate ^c	0.23 U	0.30	0.23	mg/l	1	12/18/21 10:39 ATXEPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite ^d	0.20 U	0.25	0.20	mg/l	5	12/18/21 10:39 ATXEPA 353.2
Nitrogen, Nitrite ^d	0.025 U	0.050	0.025	mg/l	5	12/18/21 09:34 ATXEPA 353.2
pH ^e	7.12			su	1	12/27/21 10:00 ATXSM4500H+ B-11

(a) Analysis performed at SGS Houston, TX.

(b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

(c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

(d) Elevated reporting limit due to matrix interference. Analysis performed at SGS Houston, TX.

(e) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.1 Deg. C
 Analysis performed at SGS Houston, TX.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.7
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Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SW	Date Sampled: 12/16/21
Lab Sample ID: JD35489-4	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Arsenic	5.4	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Barium	686	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Beryllium	0.70 B	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Boron	759	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cadmium	2.3 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Calcium	163000	5000	99	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Chromium	2.0 U	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Iron	2330	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Magnesium	186000	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Manganese	2360	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Potassium	63400	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Sodium	1270000	100000	5700	ug/l	10	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Strontium	1890	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Thallium	1.8 U	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Vanadium	2.8 B	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Zinc	13.9 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Prep QC Batch: MP30529
- (5) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SW	Date Sampled: 12/16/21
Lab Sample ID: JD35489-4	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

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General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃ ^a	717	10	7.1	mg/l	1	12/22/21 10:58	NP	SM2320 B-11
Bromide	8.3	5.0	1.1	mg/l	10	01/05/22 12:23	HP	EPA 300/SW846 9056A
Chemical Oxygen Demand	200	20	11	mg/l	1	12/21/21 15:17	NP	SM5220 C-11,HACH8000
Chloride	2680	20	8.3	mg/l	10	01/05/22 12:23	HP	EPA 300/SW846 9056A
Fluoride	0.75	0.20	0.055	mg/l	1	01/03/22 03:17	HP	EPA 300/SW846 9056A
Nitrogen, Ammonia	0.11 B	0.20	0.089	mg/l	1	01/05/22 16:49	MM	SM4500NH3 H-11LACHAT
Phosphorus, Total	0.74	0.10	0.054	mg/l	2	12/26/21	JOO	EPA 365.3
Solids, Total Dissolved	4730	10	6.0	mg/l	1	12/21/21 14:00	SP	SM2540 C-11
Solids, Total Suspended ^b	16.0	4.0	1.5	mg/l	1	12/21/21 16:20	SP	SM2540 D-11
Sulfate	241	2.0	0.89	mg/l	1	01/03/22 03:17	HP	EPA 300/SW846 9056A
Sulfide	0.48 U	2.0	0.48	mg/l	1	12/22/21 11:30	MP	SM4500S2- F-11
Total Organic Carbon	16.8	1.0	0.72	mg/l	1	12/24/21 02:56	MB	SM5310 B-11

(a) Sample was titrated to a final pH of 4.5. Sample received with head space.

(b) Reported sample aliquot obtained from filtration of 25 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SW	Date Sampled: 12/16/21
Lab Sample ID: JD35489-4A	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By Method
BOD, 5 Day ^a	6.0 U	12	6.0	mg/l	1	12/17/21 22:19	ATXSM 5210B-2011
Nitrogen, Nitrate ^b	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:40	ATXEPA 353.2
Nitrogen, Nitrate ^c	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:40	ATXEPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite ^a	0.040 U	0.050	0.040	mg/l	1	12/18/21 10:40	ATXEPA 353.2
Nitrogen, Nitrite ^a	0.0051 B	0.010	0.0050	mg/l	1	12/18/21 09:35	ATXEPA 353.2
pH ^d	7.05			su	1	12/27/21 10:00	ATXSM4500H+ B-11

(a) Analysis performed at SGS Houston, TX.

(b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

(c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

(d) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 15.8 Deg. C
 Analysis performed at SGS Houston, TX.

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.9
4

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SW	Date Sampled: 12/16/21
Lab Sample ID: JD35489-4F	Date Received: 12/17/21
Matrix: AQ - Groundwater Filtered	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Arsenic	5.1	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Barium	681	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Beryllium	0.80 B	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Boron	757	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cadmium	2.2 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Calcium	164000	5000	99	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Chromium	2.0 U	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Iron	6270	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Magnesium	188000	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Manganese	2310	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁴
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Nickel	2.0 B	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Potassium	64000	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Sodium	1270000	100000	5700	ug/l	10	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁵
Strontium	1910	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Thallium	1.8 B	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Vanadium	3.7 B	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵
Zinc	18.7 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁵

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Prep QC Batch: MP30529
- (5) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

4.10
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Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-5	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Arsenic	2.8 U	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Barium	420	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Beryllium	0.50 U	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Boron	816	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cadmium	2.5 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Calcium	285000	10000	200	ug/l	2	12/29/21	01/18/22 ND	SW846 6010D ⁴	SW846 3010A ⁶
Chromium	2.9 B	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Iron	1000	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Lead	1.9 B	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Magnesium	55100	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Manganese	1290	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁵
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Potassium	128000	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Silver	6.7 B	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Sodium	156000	10000	570	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Strontium	1200	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Thallium	1.8 U	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Vanadium	2.6 B	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Zinc	13.5 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Instrument QC Batch: MA51744
- (5) Prep QC Batch: MP30529
- (6) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-5	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

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General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	1120	5.0	3.6	mg/l	1	12/22/21 10:58 NP	SM2320	B-11
Bromide	3.4	0.50	0.11	mg/l	1	01/03/22 05:17 HP	EPA 300/SW846	9056A
Chemical Oxygen Demand	133	20	11	mg/l	1	12/21/21 15:17 NP	SM5220	C-11,HACH8000
Chloride	133	2.0	0.83	mg/l	1	01/03/22 05:17 HP	EPA 300/SW846	9056A
Fluoride	0.61	0.20	0.055	mg/l	1	01/03/22 05:17 HP	EPA 300/SW846	9056A
Nitrogen, Ammonia	7.1	0.20	0.089	mg/l	1	01/05/22 16:40 MM	SM4500NH3	H-11LACHAT
Phosphorus, Total	0.97	0.20	0.11	mg/l	1	12/26/21	JOO EPA 365.3	
Solids, Total Dissolved	1500	10	6.0	mg/l	1	12/21/21 14:00 SP	SM2540	C-11
Solids, Total Suspended ^b	1.5 U	4.0	1.5	mg/l	1	12/21/21 16:20 SP	SM2540	D-11
Sulfate	32.1	2.0	0.89	mg/l	1	01/03/22 05:17 HP	EPA 300/SW846	9056A
Sulfide	4.3	2.0	0.48	mg/l	1	12/22/21 11:30 MP	SM4500S2-	F-11
Total Organic Carbon	37.0	1.0	0.72	mg/l	1	12/24/21 04:48 MB	SM5310	B-11

(a) Sample was titrated to a final pH of 4.5. Sample received with head space.

(b) Reported sample aliquot obtained from filtration of 100 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-5A	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

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4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed By Method
BOD, 5 Day ^a	1.0 U	2.0	1.0	mg/l	1	12/17/21 22:23 ATXSM 5210B-2011
Nitrogen, Nitrate ^b	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:45 ATXEPA 353.2
Nitrogen, Nitrate ^c	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:45 ATXEPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite ^a	0.040 U	0.050	0.040	mg/l	1	12/18/21 10:45 ATXEPA 353.2
Nitrogen, Nitrite ^a	0.0050 U	0.010	0.0050	mg/l	1	12/18/21 09:36 ATXEPA 353.2
pH ^d	6.08			su	1	12/27/21 10:00 ATXSM4500H+ B-11

(a) Analysis performed at SGS Houston, TX.

(b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

(c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

(d) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 16.4 Deg. C
Analysis performed at SGS Houston, TX.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-SC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-5F	Date Received: 12/17/21
Matrix: AQ - Groundwater Filtered	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Antimony	4.7 U	6.0	4.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Arsenic	3.4	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Barium	426	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Beryllium	0.50 U	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Boron	837	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cadmium	2.4 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Calcium	289000	10000	200	ug/l	2	12/29/21	01/18/22 ND	SW846 6010D ⁴	SW846 3010A ⁶
Chromium	2.7 B	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Iron	1220	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Magnesium	56600	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Manganese	1360	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁵
Molybdenum	3.6 U	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Potassium	130000	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Selenium	4.9 U	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Silver	6.2 B	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Sodium	163000	10000	570	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Strontium	1220	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Thallium	1.8 B	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Vanadium	2.3 B	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Zinc	6.9 U	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Instrument QC Batch: MA51744
- (5) Prep QC Batch: MP30529
- (6) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-NC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-6	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	191 B	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Antimony	6.4	6.0	4.7	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Arsenic	2.8 U	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Barium	115 B	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Beryllium	2.6	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Boron	628	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cadmium	1.2 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Calcium	250000	25000	500	ug/l	5	12/29/21	01/18/22 ND	SW846 6010D ⁴	SW846 3010A ⁶
Chromium	2.4 B	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Iron	10700	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Lead	2.4 B	3.0	1.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Magnesium	141000	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Manganese	731	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁵
Molybdenum	5.4 B	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Potassium	75800	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Selenium	5.9 B	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Sodium	421000	50000	2800	ug/l	5	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Strontium	1800	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Thallium	5.5 B	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Vanadium	2.5 B	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Zinc	22.8	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Instrument QC Batch: MA51744
- (5) Prep QC Batch: MP30529
- (6) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-NC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-6	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

4.14
4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3 ^a	1140	5.0	3.6	mg/l	1	12/22/21 10:58	NP	SM2320 B-11
Bromide ^b	1.0 B	2.0	0.42	mg/l	4	01/05/22 12:47	HP	EPA 300/SW846 9056A
Chemical Oxygen Demand	66.7	20	11	mg/l	1	12/21/21 15:17	NP	SM5220 C-11,HACH8000
Chloride	185	2.0	0.83	mg/l	1	01/03/22 05:41	HP	EPA 300/SW846 9056A
Fluoride	0.61	0.20	0.055	mg/l	1	01/03/22 05:41	HP	EPA 300/SW846 9056A
Nitrogen, Ammonia	5.6	0.20	0.089	mg/l	1	01/05/22 16:50	MM	SM4500NH3 H-11LACHAT
Phosphorus, Total	0.34	0.20	0.11	mg/l	1	12/26/21	JOO	EPA 365.3
Solids, Total Dissolved	2130	10	6.0	mg/l	1	12/21/21 14:00	SP	SM2540 C-11
Solids, Total Suspended ^c	16.0	4.0	1.5	mg/l	1	12/21/21 16:20	SP	SM2540 D-11
Sulfate	714	8.0	3.5	mg/l	4	01/05/22 12:47	HP	EPA 300/SW846 9056A
Sulfide	0.48 U	2.0	0.48	mg/l	1	12/22/21 11:30	MP	SM4500S2- F-11
Total Organic Carbon	17.3	1.0	0.72	mg/l	1	12/24/21 03:58	MB	SM5310 B-11

- (a) Sample was titrated to a final pH of 4.5. Sample received with head space.
- (b) Elevated sample detection limit due to difficult sample matrix.
- (c) Reported sample aliquot obtained from filtration of 50 mL of sample. Volume was reduced from 1 liter due to nature of sample matrix.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-NC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-6A	Date Received: 12/17/21
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

4.15
4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed By Method
BOD, 5 Day ^a	6.0 U	12	6.0	mg/l	1	12/17/21 22:23 ATXSM 5210B-2011
Nitrogen, Nitrate ^b	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:47 ATXEPA 353.2
Nitrogen, Nitrate ^c	0.045 U	0.060	0.045	mg/l	1	12/18/21 10:47 ATXEPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite ^a	0.040 U	0.050	0.040	mg/l	1	12/18/21 10:47 ATXEPA 353.2
Nitrogen, Nitrite ^a	0.0058 B	0.010	0.0050	mg/l	1	12/18/21 09:36 ATXEPA 353.2
pH ^d	6.89			su	1	12/27/21 10:00 ATXSM4500H+ B-11

(a) Analysis performed at SGS Houston, TX.

(b) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite) Analysis performed at SGS Houston, TX.

(c) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

(d) Field analysis required. Received out of hold time and analyzed by request. Temp of pH Reading: 16.2 Deg. C
Analysis performed at SGS Houston, TX.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: 11215131-121621-GW-SS-PZ-NC	Date Sampled: 12/16/21
Lab Sample ID: JD35489-6F	Date Received: 12/17/21
Matrix: AQ - Groundwater Filtered	Percent Solids: n/a
Project: SJRWP - PCFSE, Harris County, TX	

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	150 U	200	150	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Antimony	6.8	6.0	4.7	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Arsenic	3.3	3.0	2.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Barium	117 B	200	13	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Beryllium	2.6	1.0	0.50	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Boron	643	100	10	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cadmium	1.3 B	3.0	1.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Calcium	249000	25000	500	ug/l	5	12/29/21	01/18/22 ND	SW846 6010D ⁴	SW846 3010A ⁶
Chromium	2.4 B	10	2.0	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Cobalt	2.6 U	50	2.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Copper	5.9 U	10	5.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Iron	10500	100	32	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Lead	1.8 U	3.0	1.8	ug/l	1	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Magnesium	143000	5000	140	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Manganese	743	15	1.4	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Mercury	0.095 U	0.20	0.095	ug/l	1	12/23/21	12/23/21 SB	SW846 7470A ¹	SW846 7470A ⁵
Molybdenum	5.6 B	20	3.6	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Nickel	1.7 U	10	1.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Potassium	77300	10000	200	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Selenium	5.8 B	10	4.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Silver	6.1 U	10	6.1	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Sodium	425000	50000	2800	ug/l	5	12/29/21	01/14/22 FW	SW846 6010D ³	SW846 3010A ⁶
Strontium	1820	10	2.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Thallium	5.8 B	10	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Tin	3.7 U	10	3.7	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Titanium	2.5 U	10	2.5	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Vanadium	1.8 B	50	1.8	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶
Zinc	7.9 B	20	6.9	ug/l	1	12/29/21	01/06/22 FW	SW846 6010D ²	SW846 3010A ⁶

- (1) Instrument QC Batch: MA51641
- (2) Instrument QC Batch: MA51692
- (3) Instrument QC Batch: MA51737
- (4) Instrument QC Batch: MA51744
- (5) Prep QC Batch: MP30529
- (6) Prep QC Batch: MP30594

RL = Reporting Limit
 MDL = Method Detection Limit

U = Indicates a result < MDL
 B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



6v

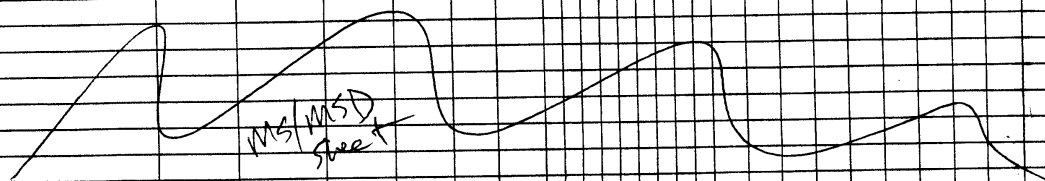
CHAIN OF CUSTODY

SGS North America Inc. - Dayton
 2235 Route 130, Dayton, NJ 08810
 TEL. 732-329-0200 FAX 732-329-3499
 www.sgs.com/ehsus

FED/EX Tracking # 4906 2704 2830
 Bottle Order Control # KA-111821-63
 SGS Quote # JD35489
 SGS Job # JD35489

Client / Reporting Information		Project Information		Requested Analysis (Use TEST CODES/short)												Matrix Codes	
Company Name: GHD Address: 11451 Katy Freeway Suite 400 State: TX Zip: 77079 Contact: Megan Willie E-mail: Meagan.willie@ghd.com Phone: 3-807-3710 Fax: 832-2818154		Project Name: SJRWP - PCFSE (Groundwater Samples) Street: Channelview City: Harris County State: TX Project #: 11215131 Client Purchase Order #: SGS # CRATXH90488 Project Manager: Stephen Schur		Billing Information (If different from Report to): Company Name: _____ Street Address: _____ City: _____ State: _____ Zip: _____ Attention: _____												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EB-Equipment Blank RB- Rinse Blank TB-Trip Blank	
Turnaround Time (Business days): <input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> other		Approved by (SGS Project Manager)/Date: _____		Data Deliverable Information: <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input checked="" type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ Data of Known Quality Protocol Reporting <input type="checkbox"/> Commercial "A" = Results Only; Commercial "B" = Results + QC Summary <input type="checkbox"/> NJ Reduced = Results + QC Summary + Partial Raw data												Log in under JD35489 Initial Assessment: AR 7A Label Verification: AR	
Inquisition by Sampler: _____ Date Time: 12/13/21 Inquisition by Receiver: _____ Date Time: 12/14/21		Received By: 1 Received By: 2 Received By: 3 Received By: 4 Received By: 5		Sample Custody must be documented below each time sample changes possession, including courier delivery. Relinquished By: 1 Relinquished By: 2 Relinquished By: 3 Relinquished By: 4 Relinquished By: 5												Sample Inventory is verified upon receipt in the Laboratory Date Time: 12/13/21 Date Time: 12/14/21 Date Time: 11/10 Date Time: 12/13/21	
<input type="checkbox"/> Intact <input type="checkbox"/> Not intact		<input type="checkbox"/> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp.		CUSTODY SEAL # _____												50*	

SF



5.1 5



SGS Sample Receipt Summary

Job Number: JD35489

Client: GHD SERVICES INC.

Project: SJRWP - PCFSE, HARRIS COUNTY, TX (GW B

Date / Time Received: 12/18/2021 11:00:00 AM

Delivery Method: _____

Airbill #s: _____

Cooler Temps (Raw Measured) °C: Cooler 4: (5.0);

Cooler Temps (Corrected) °C: Cooler 4: (3.6);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: 231619	pH 12+: 203117A	Other: (Specify) _____
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Comments

SM089-03
Rev. Date 12/7/17

JD35489: Chain of Custody

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5.1
5

Job Change Order: JD35489

Requested Date: 2/21/2022 **Received Date:** 12/17/2021
Account Name: GHD Services Inc. **Due Date:** 2/21/2022
Project Description: SJRWP - PCFSE, Harris County, TX **Deliverable:** FULT1
C/O Initiated By: KELLY.RAM **PM:** KR **TAT (Days):** 1

=====
Sample #: JD35489-ALL **Change:**
Dept: Please revise to COMMBN and reissue report
TAT: 1
=====

JD35489: Chain of Custody
Page 6 of 6

Above Changes Per: Kathy Shaw **Date/Time:** 2/21/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD35489
Account: CRATXH - GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30529
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/23/21 01/11/22

Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Mercury	0.20	.034	.095	-0.0028	<0.20	0.028	<0.20

Associated samples MP30529: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30529
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 01/11/22

Metal	JD35489-5 Original MS		Spike lot HGPW3	% Rec	QC Limits
Mercury	0.039	1.9	2	93.1	75-125

Associated samples MP30529: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

6.12
 6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30529
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 01/11/22

Metal	JD35489-5 Original MSD		SpikeLot HGPW3	% Rec	MSD RPD	QC Limit
Mercury	0.039	2.0	2	98.1	5.1	20

Associated samples MP30529: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

6.12
 6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30529
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 12/23/21 01/11/22

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits	BSP Result	Spikelot HGPW3	% Rec	QC Limits
Mercury	1.8	2	90.0	80-120	2.0	2	100.0	80-120

Associated samples MP30529: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.3
 6

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD35489
Account: CRATXH - GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/29/21

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	9.2	150	-6.7	<200
Antimony	6.0	1.7	4.7	-1.9	<6.0
Arsenic	3.0	1.3	2.8	-0.40	<3.0
Barium	200	.2	13	0.40	<200
Beryllium	1.0	.2	.5	0.10	<1.0
Bismuth	20	2.1	8.6		
Boron	100	1	10	1.4	<100
Cadmium	3.0	.2	1	0.20	<3.0
Calcium	5000	6.6	99	7.7	<5000
Cerium	100				
Chromium	10	.3	2	0.0	<10
Cobalt	50	.4	2.6	-0.10	<50
Copper	10	.7	5.9	-0.10	<10
Iron	100	3.3	32	5.4	<100
Lead	3.0	1.1	1.8	-0.60	<3.0
Lithium	50	1.5	7.3		
Magnesium	5000	25	140	-5.9	<5000
Manganese	15	.1	1.4	0.10	<15
Molybdenum	20	.5	3.6	0.10	<20
Nickel	10	.3	1.7	-0.10	<10
Phosphorus	50	1.2	18		
Potassium	10000	35	200	25.0	<10000
Selenium	10	2	4.9	3.7	<10
Silicon	200	1.3	32		
Silver	10	.6	6.1	-0.50	<10
Sodium	10000	14	570	-7.3	<10000
Strontium	10	.1	2.7	-0.10	<10
Sulfur	50	3	45		
Thallium	10	1.6	1.8	1.3	<10
Tin	10	.8	3.7	-0.20	<10
Titanium	10	.5	2.5	-0.20	<10
Tungsten	50	1.3	40		
Vanadium	50	.5	1.8	0.30	<50

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD35489
Account: CRATXH - GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/29/21

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	6.9	2.5	<20
Zirconium	10	.3	4.1		

Associated samples MP30594: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.2.1
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 01/18/22

Metal	JD35489-5 Original MS		SpikeLot MPSPK2	% Rec	QC Limits
Aluminum	0.00	53000	50000	106.0	75-125
Antimony	0.0	3810	4000	95.3	75-125
Arsenic	0.0	3820	4000	95.5	75-125
Barium	420	4390	4000	99.3	75-125
Beryllium	0.0	4020	4000	100.5	75-125
Bismuth					
Boron	816	4640	4000	95.6	75-125
Cadmium	2.5	3850	4000	96.2	75-125
Calcium	285000	312000	50000	54.0 (a)	75-125
Cerium					
Chromium	2.9	3860	4000	96.4	75-125
Cobalt	0.50	3890	4000	97.2	75-125
Copper	0.0	3890	4000	97.3	75-125
Iron	1000	53900	50000	105.8	75-125
Lead	1.9	3900	4000	97.5	75-125
Lithium					
Magnesium	55100	105000	50000	99.8	75-125
Manganese	1290	5170	4000	97.0	75-125
Molybdenum	0.80	3800	4000	95.0	75-125
Nickel	1.5	3940	4000	98.5	75-125
Phosphorus					
Potassium	128000	173000	50000	90.0	75-125
Selenium	0.0	3870	4000	96.8	75-125
Silicon					
Silver	6.7	517	500	102.1	75-125
Sodium	156000	213000	50000	114.0	75-125
Strontium	1200	5060	4000	96.5	75-125
Sulfur					
Thallium	0.0	3920	4000	98.0	75-125
Tin	0.0	3790	4000	94.8	75-125
Titanium	0.0	3850	4000	96.3	75-125
Tungsten					
Vanadium	2.6	3930	4000	98.2	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 01/18/22

Metal	JD35489-5 Original MS	Spike lot MPSPK2	% Rec	QC Limits
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Zinc	13.5	3840	4000	95.7	75-125
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Zirconium

Associated samples MP30594: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 01/18/22

Metal	JD35489-5 Original MSD	52700	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	0.00	52700	50000	105.4	0.6	20
Antimony	0.0	3900	4000	97.5	2.3	20
Arsenic	0.0	3890	4000	97.3	1.8	20
Barium	420	4330	4000	97.8	1.4	20
Beryllium	0.0	3960	4000	99.0	1.5	20
Bismuth						
Boron	816	4680	4000	96.6	0.9	20
Cadmium	2.5	3880	4000	96.9	0.8	20
Calcium	285000	309000	50000	48.0 (a)	1.0	20
Cerium						
Chromium	2.9	3850	4000	96.2	0.3	20
Cobalt	0.50	3920	4000	98.0	0.8	20
Copper	0.0	3880	4000	97.0	0.3	20
Iron	1000	53800	50000	105.6	0.2	20
Lead	1.9	3920	4000	98.0	0.5	20
Lithium						
Magnesium	55100	105000	50000	99.8	0.0	20
Manganese	1290	5130	4000	96.0	0.8	20
Molybdenum	0.80	3890	4000	97.2	2.3	20
Nickel	1.5	3960	4000	99.0	0.5	20
Phosphorus						
Potassium	128000	172000	50000	88.0	0.6	20
Selenium	0.0	3900	4000	97.5	0.8	20
Silicon						
Silver	6.7	519	500	102.5	0.4	20
Sodium	156000	211000	50000	110.0	0.9	20
Strontium	1200	5000	4000	95.0	1.2	20
Sulfur						
Thallium	0.0	3950	4000	98.8	0.8	20
Tin	0.0	3870	4000	96.8	2.1	20
Titanium	0.0	3910	4000	97.8	1.5	20
Tungsten						
Vanadium	2.6	3910	4000	97.7	0.5	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 01/18/22

Metal	JD35489-5 Original MSD	Spike lot MPSPK2	% Rec	MSD RPD	QC Limit
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Zinc	13.5	3860	4000	96.2	0.5	20
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Zirconium

Associated samples MP30594: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes

- (*) Outside of QC limits
- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested
- (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 12/29/21

Metal	BSP Result	SpikeLot MPSPK2	% Rec	QC Limits
Aluminum	25300	25000	101.2	80-120
Antimony	1900	2000	95.0	80-120
Arsenic	1850	2000	92.5	80-120
Barium	1940	2000	97.0	80-120
Beryllium	1950	2000	97.5	80-120
Bismuth				
Boron	1930	2000	96.5	80-120
Cadmium	1960	2000	98.0	80-120
Calcium	25500	25000	102.0	80-120
Cerium				
Chromium	1930	2000	96.5	80-120
Cobalt	1960	2000	98.0	80-120
Copper	1930	2000	96.5	80-120
Iron	25600	25000	102.4	80-120
Lead	1960	2000	98.0	80-120
Lithium				
Magnesium	25500	25000	102.0	80-120
Manganese	1980	2000	99.0	80-120
Molybdenum	1920	2000	96.0	80-120
Nickel	1970	2000	98.5	80-120
Phosphorus				
Potassium	24800	25000	99.2	80-120
Selenium	1900	2000	95.0	80-120
Silicon				
Silver	240	250	96.0	80-120
Sodium	25400	25000	101.6	80-120
Strontium	1940	2000	97.0	80-120
Sulfur				
Thallium	1920	2000	96.0	80-120
Tin	1940	2000	97.0	80-120
Titanium	1890	2000	94.5	80-120
Tungsten				
Vanadium	1930	2000	96.5	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 12/29/21

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
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Zinc	1950	2000	97.5	80-120
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Zirconium

Associated samples MP30594: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 12/29/21

Metal	JD36943-2 Original	SDL 1:1	%DIF	QC Limits
Aluminum	47.0	101	114.3 (a)	0-10
Antimony	7.40	0.00	100.0 (a)	0-10
Arsenic	0.00	0.00	NC	0-10
Barium	40.3	44.4	10.2* (b)	0-10
Beryllium	0.500	0.00	100.0 (a)	0-10
Bismuth				
Boron	130	141	8.2	0-10
Cadmium	1.50	2.20	46.7 (a)	0-10
Calcium	2370	3070	29.5* (b)	0-10
Cerium				
Chromium	180	183	1.6	0-10
Cobalt	5.40	4.60	14.8 (a)	0-10
Copper	14.6	17.6	20.5 (a)	0-10
Iron	122	158	30.0 (a)	0-10
Lead	0.00	0.00	NC	0-10
Lithium				
Magnesium	939	888	5.4	0-10
Manganese	11.6	12.5	7.8	0-10
Molybdenum	9.30	7.30	21.5 (a)	0-10
Nickel	8.50	7.50	11.8 (a)	0-10
Phosphorus				
Potassium	522000	526000	0.8	0-10
Selenium	4.10	0.00	100.0 (a)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	657000	675000	2.7	0-10
Strontium	453	476	4.9	0-10
Sulfur				
Thallium	0.00	10.1	NC	0-10
Tin	0.00	0.00	NC	0-10
Titanium	1.50	0.00	100.0 (a)	0-10
Tungsten				
Vanadium	3.50	4.30	22.9 (a)	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD35489
 Account: CRATXH - GHD Services Inc.
 Project: SJRWP - PCFSE, Harris County, TX

QC Batch ID: MP30594
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 12/29/21

Metal	JD36943-2 Original	SDL 1:1	%DIF	QC Limits
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Zinc 5.20 11.1 113.5*(b) 0-10

Zirconium

Associated samples MP30594: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6, JD35489-1F, JD35489-4F, JD35489-5F, JD35489-6F

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD35489
Account: CRATXH - GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO3	GN24970	5.0	0.0	mg/l	50	48.5	97.0	90-110%
Alkalinity, Total as CaCO3	GN24970			mg/l	250	246	98.4	90-110%
Alkalinity, Total as CaCO3	GN24989	5.0	0.0	mg/l	250	246	98.4	90-110%
Alkalinity, Total as CaCO3	GN24989			mg/l	50	48.5	97.0	90-110%
Bromide	GP37856/GN25220	0.50	0.0	mg/l	2	2.00	100.0	90-110%
Bromide	GP37856/GN25220	0.50	0.0	mg/l				
Bromide	GP37856/GN25220	0.50	0.0	mg/l				
Bromide	GP37856/GN25220	0.50	0.0	mg/l	2	1.89	94.5	90-110%
Chemical Oxygen Demand	GP37700/GN24936	20	0.0	mg/l				
Chemical Oxygen Demand	GP37700/GN24936	20	0.0	mg/l	150	156	104.0	90-110%
Chemical Oxygen Demand	GP37700/GN24936			mg/l	750	755	100.7	90-110%
Chemical Oxygen Demand	GP37701/GN24935	20	0.0	mg/l				
Chemical Oxygen Demand	GP37701/GN24935	20	0.0	mg/l	50	51.3	102.6	90-110%
Chemical Oxygen Demand	GP37745/GN25042	20	0.0	mg/l				
Chemical Oxygen Demand	GP37745/GN25042	20	0.0	mg/l	50	52.5	105.0	90-110%
Chloride	GP37856/GN25220	2.0	0.0	mg/l	80	82.8	103.5	90-110%
Chloride	GP37856/GN25220	2.0	0.0	mg/l	80	82.5	103.1	90-110%
Chloride	GP37856/GN25220	2.0	0.0	mg/l	80	82.2	102.8	90-110%
Chloride	GP37856/GN25220	2.0	0.0	mg/l	80	81.8	102.3	90-110%
Fluoride	GP37856/GN25220	0.20	0.0	mg/l	2	2.04	102.0	90-110%
Fluoride	GP37856/GN25220	0.20	0.0	mg/l	2	2.01	100.5	90-110%
Fluoride	GP37856/GN25220	0.20	0.0	mg/l	2	2.06	103.0	90-110%
Fluoride	GP37856/GN25220	0.20	0.0	mg/l	2	2.08	104.0	90-110%
Nitrogen, Ammonia	GP37881/GN25298	0.20	0.10	mg/l	1	0.996	99.6	80-120%
Phosphorus, Total	GP37757/GN25059	0.050	0.0	mg/l	.4	0.41	102.5	80-120%
Solids, Total Dissolved	GN24930	10	0.0	mg/l				
Solids, Total Suspended	GN24928	4.0	0.0	mg/l				
Solids, Total Suspended	GN24979	4.0	0.0	mg/l				
Sulfate	GP37856/GN25220	2.0	0.0	mg/l	80	79.5	99.4	90-110%
Sulfate	GP37856/GN25220	2.0	0.0	mg/l	80	80.8	101.0	90-110%
Sulfate	GP37856/GN25220	2.0	0.0	mg/l	80	78.7	98.4	90-110%
Sulfate	GP37856/GN25220	2.0	0.0	mg/l	80	80.8	101.0	90-110%
Sulfide	GN24968	2.0	0.0	mg/l	10.6	10.2	96.2	80-120%
Sulfide	GN24968			mg/l	5.3	5.3	100.0	80-120%
Total Organic Carbon	GP37760/GN25067	1.0	0.0	mg/l	10	10.9	109.0	90-110%
Total Organic Carbon	GP37762/GN25067	1.0	0.0	mg/l	10	10.8	108.0	90-110%

Associated Samples:

Batch GN24928: JD35489-4, JD35489-5, JD35489-6
 Batch GN24930: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GN24968: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GN24970: JD35489-1, JD35489-4, JD35489-5, JD35489-6
 Batch GN24979: JD35489-1, JD35489-2, JD35489-3
 Batch GN24989: JD35489-2, JD35489-3
 Batch GP37700: JD35489-4, JD35489-5, JD35489-6
 Batch GP37701: JD35489-3
 Batch GP37745: JD35489-1, JD35489-2
 Batch GP37757: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GP37760: JD35489-1, JD35489-2, JD35489-3, JD35489-4
 Batch GP37762: JD35489-5, JD35489-6
 Batch GP37856: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GP37881: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 (*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD35489
Account: CRATXH - GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN24970	JD36952-13	mg/l	199	199	0.0	0-10%
Alkalinity, Total as CaCO3	GN24989	JD37132-7	mg/l	642	642	0.0	0-10%
Bromide	GP37856/GN25220	JD35489-5	mg/l	3.4	4.1	18.7	0-20%
Chemical Oxygen Demand	GP37700/GN24936	JD36762-1	mg/l	467	467	0.0	0-25%
Chemical Oxygen Demand	GP37701/GN24935	JD36876-1	mg/l	0.00	0.00	0.0	0-25%
Chemical Oxygen Demand	GP37745/GN25042	JD35489-1	mg/l	37.5	37.5	0.0	0-25%
Chloride	GP37856/GN25220	JD35489-5	mg/l	133	133	0.0	0-20%
Fluoride	GP37856/GN25220	JD35489-5	mg/l	0.61	0.62	1.6	0-20%
Nitrogen, Ammonia	GP37881/GN25298	JD35489-5	mg/l	7.1	6.9	2.9	0-33%
Phosphorus, Total	GP37757/GN25059	JD36949-1A	mg/l	0.024	0.0	0.0	0-38%
Solids, Total Dissolved	GN24930	JD36949-1A	mg/l	4780	4550	4.9	0-16%
Solids, Total Suspended	GN24928	JD37048-1	mg/l	0.0	0.0	0.0	0-17%
Solids, Total Suspended	GN24979	JD35489-3	mg/l	1.5 U	0.0	0.0	0-17%
Sulfate	GP37856/GN25220	JD35489-5	mg/l	32.1	32.7	1.9	0-20%
Sulfide	GN24968	JD35489-2	mg/l	0.48 U	0.0	0.0	0-12%

Associated Samples:

Batch GN24928: JD35489-4, JD35489-5, JD35489-6
 Batch GN24930: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GN24968: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GN24970: JD35489-1, JD35489-4, JD35489-5, JD35489-6
 Batch GN24979: JD35489-1, JD35489-2, JD35489-3
 Batch GN24989: JD35489-2, JD35489-3
 Batch GP37700: JD35489-4, JD35489-5, JD35489-6
 Batch GP37701: JD35489-3
 Batch GP37745: JD35489-1, JD35489-2
 Batch GP37757: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GP37856: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GP37881: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 (*) Outside of QC limits

7.2
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MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD35489
Account: CRATXH - GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP37856/GN25220	JD35489-5	mg/l	3.4	2	2.9	-25.0N(a)	80-120%
Chemical Oxygen Demand	GP37700/GN24936	JD36762-1	mg/l	467	250	711	97.6	55-133%
Chemical Oxygen Demand	GP37701/GN24935	JD36876-1	mg/l	0.00	50	61.5	123.0	55-133%
Chemical Oxygen Demand	GP37745/GN25042	JD35489-1	mg/l	37.5	50	90.0	105.0	55-133%
Chloride	GP37856/GN25220	JD35489-5	mg/l	133	80	210	96.3	80-120%
Fluoride	GP37856/GN25220	JD35489-5	mg/l	0.61	2	2.6	99.5	80-120%
Nitrogen, Ammonia	GP37881/GN25298	JD35489-5	mg/l	7.1	1	8.0	90.0	75-131%
Phosphorus, Total	GP37757/GN25059	JD36949-1A	mg/l	0.024	.4	0.42	105.0	35-137%
Sulfate	GP37856/GN25220	JD35489-5	mg/l	32.1	80	113	101.1	80-120%
Sulfide	GN24968	JD35489-1	mg/l	0.48 U	3.66	3.2	87.4	37-135%
Total Organic Carbon	GP37760/GN25067	JD36952-13	mg/l	5.4	10	15.5	101.0	71-132%
Total Organic Carbon	GP37762/GN25067	JD35489-6	mg/l	17.3	10	27.5	102.0	71-132%

Associated Samples:

Batch GN24968: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GP37700: JD35489-4, JD35489-5, JD35489-6
 Batch GP37701: JD35489-3
 Batch GP37745: JD35489-1, JD35489-2
 Batch GP37757: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GP37760: JD35489-1, JD35489-2, JD35489-3, JD35489-4
 Batch GP37762: JD35489-5, JD35489-6
 Batch GP37856: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6
 Batch GP37881: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference.

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MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD35489
Account: CRATXH - GHD Services Inc.
Project: SJRWP - PCFSE, Harris County, TX

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Nitrogen, Ammonia	GP37881/GN25298	JD35489-5	mg/l	7.1	1	8.2	2.5	14%
Total Organic Carbon	GP37760/GN25067	JD36952-13	mg/l	5.4	10	15.6	0.6	10%
Total Organic Carbon	GP37762/GN25067	JD35489-6	mg/l	17.3	10	26.8	2.6	10%

Associated Samples:

Batch GP37760: JD35489-1, JD35489-2, JD35489-3, JD35489-4

Batch GP37762: JD35489-5, JD35489-6

Batch GP37881: JD35489-1, JD35489-2, JD35489-3, JD35489-4, JD35489-5, JD35489-6

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

7.4

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Misc. Forms

Custody Documents and Other Forms

(SGS Houston, TX)

Includes the following where applicable:

- Chain of Custody





CHAIN OF CUSTODY

SGS North America Inc. - Dayton
 2235 Route 130, Dayton, NJ 08810
 TEL. 732-329-0200 FAX 732-329-9499
 www.sgs.com/ehseusa

FED. BY Tracking #	Sample Order Control #
SGS Order #	SGS Job # JD35489

Client / Reporting Information		Project Information										Requested Analysis (see TEST CODE sheet)										Matrix Codes										
Company Name GHD		Project Name SJRWP - PCFSE (Groundwater Samples)										Total Metals (MTAL plus B, MC, SR, SN, TI by 6010) Dissolved-FF Metals (MTAL plus B, MC, SR, SN, TI by 6010) ALK, TDS AMN BRO, CHL, F, SO4 BOD (SGS Houston to analyze short hold) COD, TPO4 XNO3O, PH (SGS Houston to analyze short hold) S TOC TSS										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank TB - Trap Blank										
Street Address 11451 Katy Freeway Suite 400		Billing Information (if different from Report to) City: Channelview State: TX Company Name:																														
City: Houston TX 77079		Street Address:																														
Project Contact: Meagan Willis E-mail: Meagan.willis@ghd.com		Client Purchase Order #: 11215131 SGS # CRATXH90499																														
Phone #: 713-907-3710 Fax #:		City: State: Zip:																														
Sampler(s) Name(s): Stephen S. Lee Photo #:		Project Manager:																														
Lab Sample #		Collection										Number of preserved bottles																				
Field ID / Point of Collection		MEOHDI Vial # Date Time Sampled by Matrix # of bottles HC NICH HISS HISSA HISSB NONE DI Water DIB MESH SUCROSE																														
5 (121931)-121721-614-SS-RB-1		12/17/21 850 SS W 11 12 12 2 5																														
3 (121931)-121621-01-SS-PE-SW		12/16/21 1540 SS W 12 12 2 2 5																														
Turnaround Time (Business days)		Data Deliverable Information										Comments / Special Instructions																				
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> other		Approved by (SGS Project Manager)/Date: _____ _____ _____ _____ _____ Emergency & Rush T/A data available via LabLink										<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input checked="" type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ Data of Known Quality Protocol Reporting Commercial "A" = Results Only, Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data										<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> Other Log in under JD35489										
Requisitioned by Sampler: Stephen S. Lee		Date Time: 12/17/21										Received By: [Signature]																				
Requisitioned by Sampler: 3		Date Time:										Received By: 2																				
Requisitioned by: 5		Date Time:										Received By: 4																				
Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not intact										<input type="checkbox"/> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp.																				

JD35489: Chain of Custody



8.1
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Job Change Order: JD35489

Requested Date: 2/21/2022 Received Date: 12/17/2021
Account Name: GHD Services Inc. Due Date: 2/21/2022
Project Description: SJRWP - PCFSE, Harris County, TX Deliverable: FULLT
C/O Initiated By: KELLY RAM PM: KR TAT (Days): 1

=====
Sample #: JD35489-ALL Change:
Dept: Please revise to COMMBN and reissue report
TAT: 1
=====

JD35489: Chain of Custody
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Above Changes Per: Kathy Shaw Date/Time: 2/21/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

SGS Sample Receipt Summary

Job Number: JD35489 **Client:** SGS NJ **Project:** _____
Date / Time Received: 12/17/2021 3:25:00 PM **Delv Method:** SGS-EC **Airbill #'s:** _____
of Coolers: 5 **Therm ID:** IR-4; **Temp Adjustment Factor:** -0.1;

Cooler Temps (Initial/Adjusted): #1: (2.9/2.8); #2: (2.4/2.3); #3: (1.5/1.4); #4: (1.8/1.7);

Test Strip Lot #s: **pH 1-12:** 10D0391 **pH 12+:** _____ **Other: (Specify)** _____

Cooler Information Y or N N/A

- 1. Custody Seals Present:
- 2. Custody Seals Intact:
- 3. Temp criteria achieved:
- 4. Cooler temp verification:
- 3. Cooler media: Ice (Bag)

Trip Blank Information Y or N N/A

- 1. Trip Blank present / cooler:
- 2. Trip Blank listed on COC:
- 3. Type Of TB Received W or S N/A
-

Misc. Information

Number of terracores: _____ Number of Lab Filtered Metals: _____
 Number of 5035 Field Kits: _____
 Residual Chlorine Test Strip Lot #: _____

Sample Information Y or N N/A

- 1. Sample labels present on bottles:
- 2. Samples preserved properly:
- 3. Sufficient volume recvd for analysis:
- 4. Condition of sample: Intact
- 5. Sample recvd within HT:
- 6. Dates/Times/IDs on COC match Sample Label
- 7. Container labeling complete:
- 8. Analysis requested is clear:
- 9. VOCs headspace free:
- 10. Bottles received for unspecified tests
- 11. COC Present:
- 12. Special Instructions (compositing/filtering) clear:
- 13. Voa Soil Kits/Jars received past 48hrs?
- 14. % Solids Jar received?
- 15. Residual Chlorine Present?

Comments

JD35489: Chain of Custody

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8.1

Sample Receipt Log

Job #: JD35489

Date / Time Received: 12/17/2021 3:25:00 PM

Initials: BELINDG

Client: SGS NJ

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
2	JD35489-1	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	2.4	-0.1	2.3
2	JD35489-1	250ml	2	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	2.4	-0.1	2.3
4	JD35489-2	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
4	JD35489-2	250ml	2	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
4	JD35489-2	250ml	3	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
4	JD35489-2	250ml	4	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
4	JD35489-2	250ml	5	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
4	JD35489-2	250ml	6	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
1	JD35489-3	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	2.9	-0.1	2.8
1	JD35489-3	250ml	2	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	2.9	-0.1	2.8
3	JD35489-4	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.5	-0.1	1.4
3	JD35489-4	250ml	2	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.5	-0.1	1.4
4	JD35489-5	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
4	JD35489-5	250ml	2	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	1.8	-0.1	1.7
2	JD35489-6	250ml	1	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	2.4	-0.1	2.3
2	JD35489-6	250ml	2	3L	N/P	Note #2 - Preservative check not applicable.	IR-4	2.4	-0.1	2.3

JD35489: Chain of Custody

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General Chemistry

QC Data Summaries

(SGS Houston, TX)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD35489
Account: ALNJ - SGS Dayton, NJ
Project: CRATXH: SJRWP - PCFSE, Harris County, TX (IDW)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
BOD, 5 Day	GP63096/GN15498	2.0	0.0	mg/l	198	185	93.4	85-115%
Nitrogen, Nitrate + Nitrite	GP63118/GN15524	0.050	0.0	mg/l	1	1.02	102.0	90-110%
Nitrogen, Nitrite	GP63117/GN15523	0.010	0.0	mg/l	0.1	0.0996	99.6	90-110%

Associated Samples:

Batch GP63096: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

Batch GP63117: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

Batch GP63118: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD35489
Account: ALNJ - SGS Dayton, NJ
Project: CRATXH: SJRWP - PCFSE, Harris County, TX (IDW)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
BOD, 5 Day	GP63096/GN15498	TD76820-1	mg/l	0.0	1.3	200.0(a)	0-28%
Nitrogen, Nitrate + Nitrite	GP63118/GN15524	JD35489-2A	mg/l	0.0	0.0	0.0	0-11%
Nitrogen, Nitrite	GP63117/GN15523	JD35489-2A	mg/l	0.0	0.0083	200.0(a)	0-20%
pH	GN15647	TD76734-1Q	su	6.43	6.40	0.5	0-10%

Associated Samples:

Batch GN15647: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

Batch GP63096: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

Batch GP63117: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

Batch GP63118: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD35489
Account: ALNJ - SGS Dayton, NJ
Project: CRATXH: SJRWP - PCFSE, Harris County, TX (IDW)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Nitrogen, Nitrate + Nitrite	GP63118/GN15524	JD35489-2A	mg/l	0.0	1	1.0	100.0	90-110%
Nitrogen, Nitrite	GP63117/GN15523	JD35489-2A	mg/l	0.0	0.1	0.099	99.0	90-110%

Associated Samples:

Batch GP63117: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

Batch GP63118: JD35489-1A, JD35489-2A, JD35489-3A, JD35489-4A, JD35489-5A, JD35489-6A

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits