Saturate Fraction Gas Chromatograms for Mackenzie Delta Crude Oils

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Geological Survey of Canada Open File Report #D3903

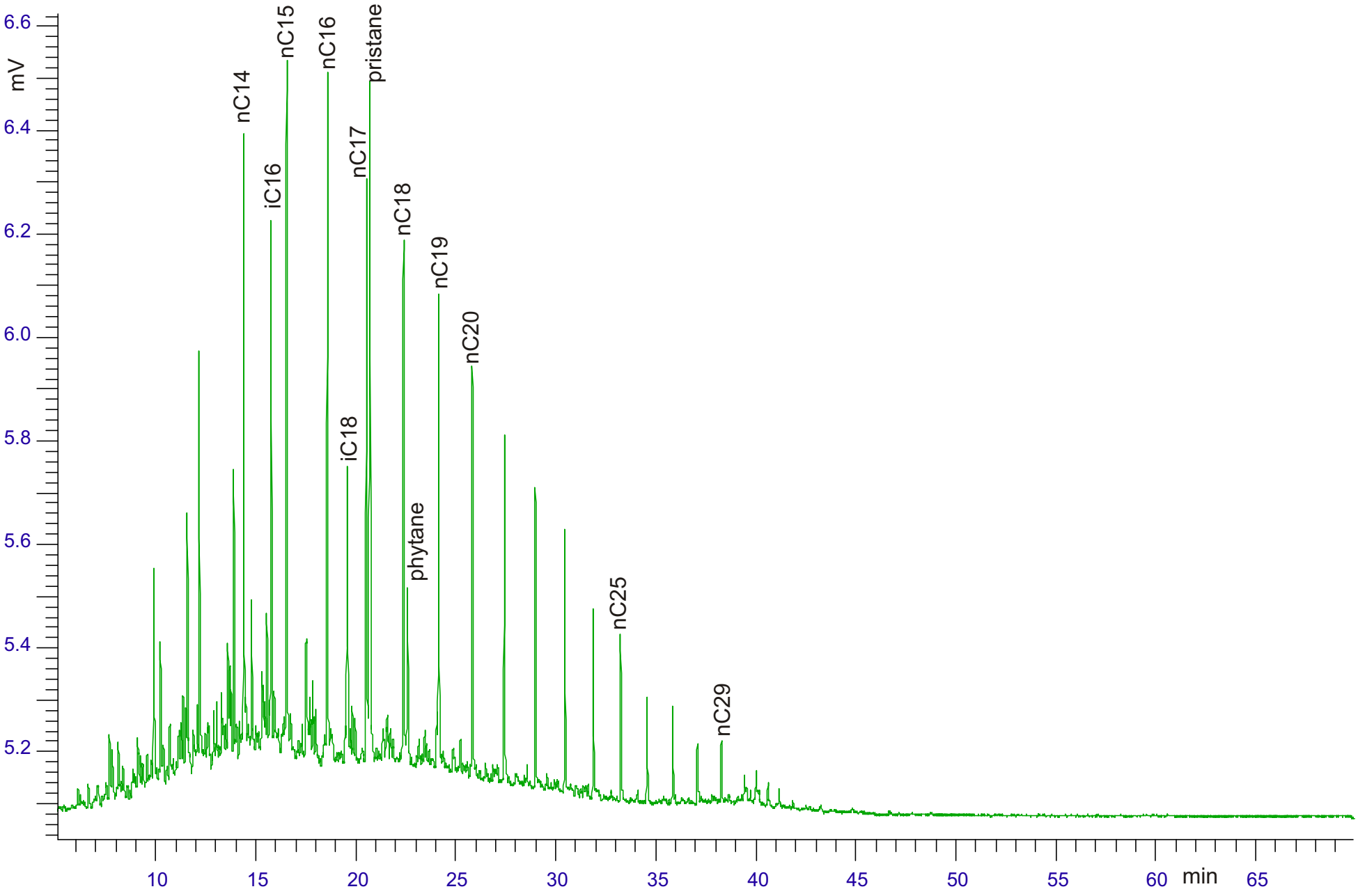
This open file report contains various graphics files that are traces derived from the gas chromatographic analysis of the saturate fraction of a number of crude oil and condensate samples recovered from the Mackenzie Delta of northern Canada. The traces are presented in a group of Adobe Portable Document Files (.PDF) that are accessible using the Adobe Acrobat Reader. This software is available on the web and Version 4.0 has also been included as part of this CD. In addition to .PDF, the data have also been saved as CorelDraw 9.0 files and as Enhanced Meta Files (.emf).

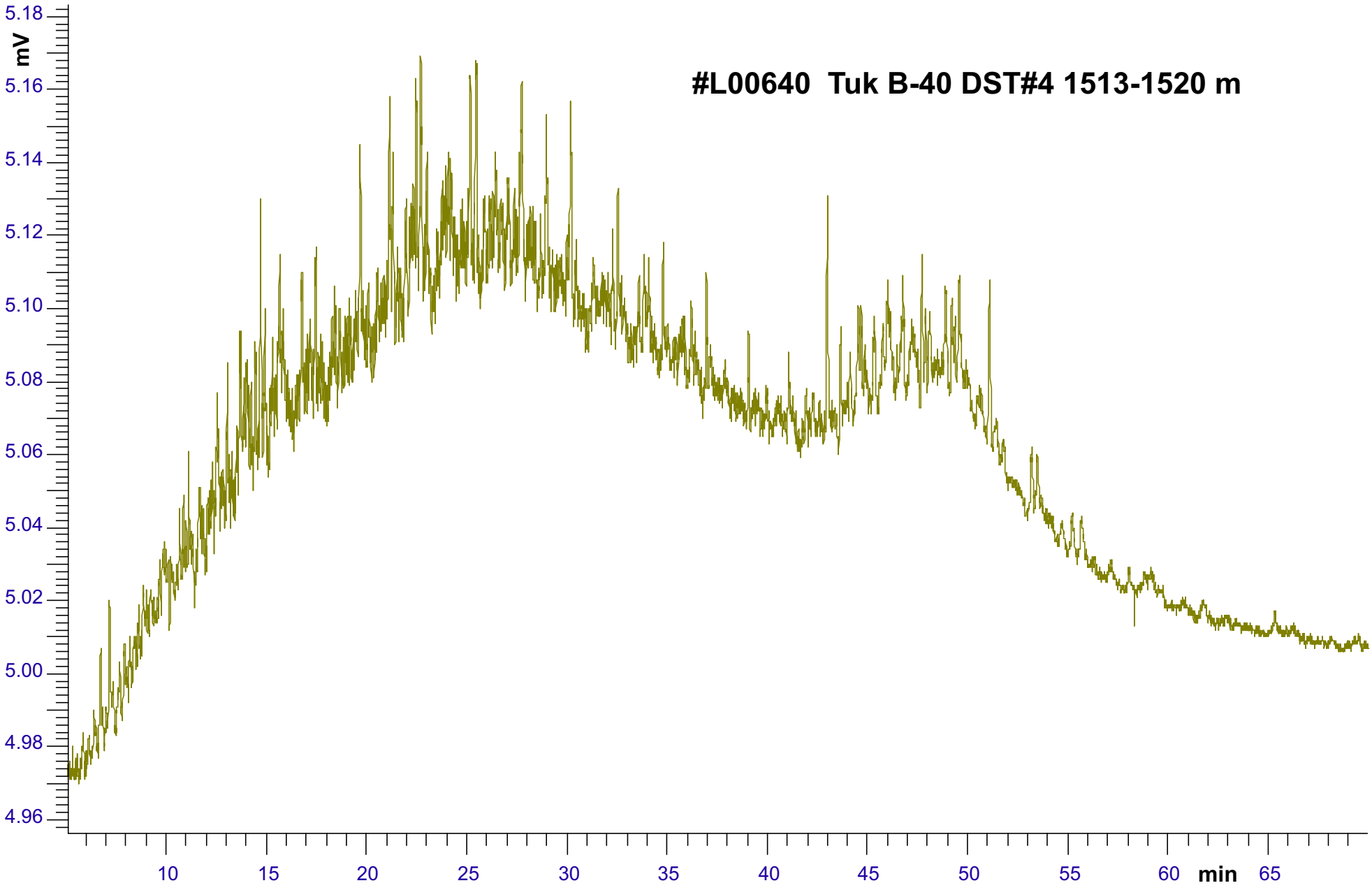
The GC analyses were carried out over a number of years using different columns, column lengths and column oven temperature programs. As a result, the absolute retention times of the various compounds varies. The sequence of compounds, however, is the same in all cases.

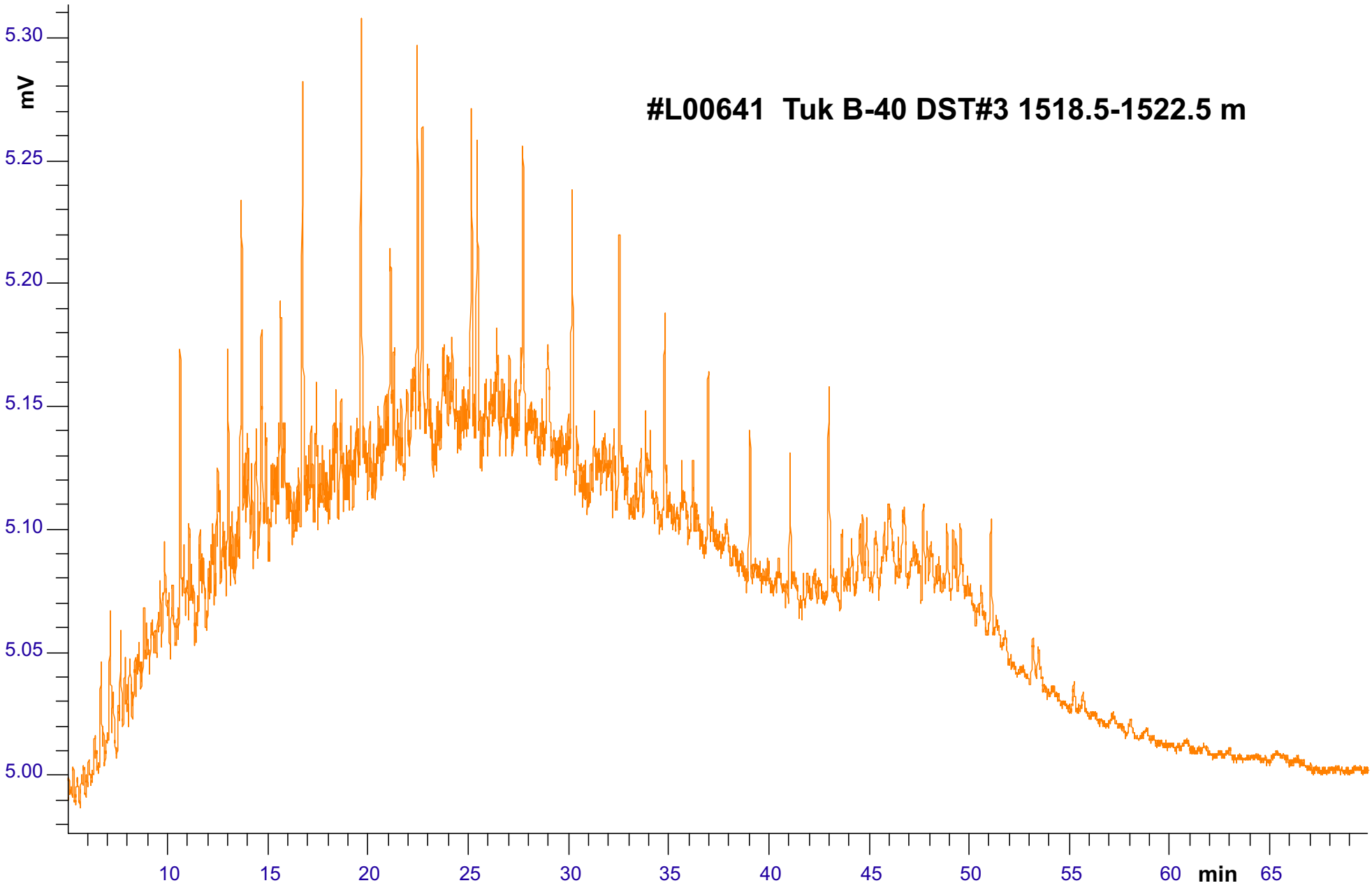
In samples that have not been biodegraded, the large peaks are the normal alkanes ranging from about C13 through about C33 plus a number of acyclic isoprenoids ranging from about C15 through C20 (phytane). Many of the oils and condensates from the Mackenzie Delta are extensively biodegraded and the normal alkanes and often the acyclic isoprenoids have been selectively removed. In these cases the residual peaks comprise cyclic compounds such as sesquiterpanes, diterpanes, triterpanes and steranes.

The samples have been labelled as they were when received in the laboratory with the exception of some well names which have been changed since the well was originally drilled (eg. Tuk M-09 became Tuk L-09).

lab #	sample ID
#992	Adgo H-29 DST#10
#15	Adgo P-25 DST#2 4408-4438'
#476	Adlartok P-09 DST#2
#1614	Adlartok P-09 DST#2A 1714-1725 m
#486	Adlartok P-09 DST#3
#1615	Adlartok P-09 DST#6A 1638-1642.8 m
#1264	Amauligak 2F-24B DST#3 2971-2998 m
#1265	Amauligak F-24 DST#4B 4686.5-4705.5 m
#462	Amauligak J-44 DST#2 2711-2715 m
#1263	Amauligak O-86 DST#3 2845-2853 m
#987	Amerk O-09 DST#2
#988	Amerk O-09 DST#3
#458	Amerk O-09 DST#3 4365m
#989	Amerk O-09 DST#5
#990	Amerk O-09 DST#6
#1004	Arnak K-06 DST#1
#1005	Arnak K-06 DST#2
#1007	Arnak K-06 DST#4
#26	Atkinson H-25 1737.4m DST#1
#26	Atkinson H-25 5700-5760'
#998	Hansen G-07 DST#1
#1002	Hansen G-07 DST#11
#1003	Hansen G-07 DST#12
#1000	Hansen G-07 DST#3
#1001	Hansen G-07 DST#7
#1616	Havik B-41 DST#3 3963-3986 m
#1617	Havik B-41 DST#4 3680-3693 m
#1195	Havik B-41 DST#4-37
#36	Imnak J-29 2845.6m
#325	Itiyok I-27 DST#8 1821-1826.5 m
#80	Kamik D-48 DST#3 9397-9403'
#1619	Kingark J-54 DST#3 1099-1112 m
#1619	Kingark J-54 DST#3 1099-1112 m
#1618	Kingark J-54 DST#4 1012-1022 m
#308	KKoakoak O-22 DST#4A
#1620	Koakoak 0-22 DST#5 3308-3330 m
#1620	Koakoak 0-22 DST#5 3308-3330 m
#308	Koakoak O-22 DST#4A
#308	Koakoak O-22 DST#4A
#308	Koakoak O-22 DST#4A
#308	Koakoak O-22 DST#4A
#308	Koakoak O-22 DST#4A
#308	Koakoak O-22 DST#4A
#1621	Kopanoar 2I-44 DST#5 3195-3245 m
#1621	Kopanoar 2I-44 DST#5 3195-3245 m
#1622	Kopanoar 2I-44 DST#6 3195-3207 m
#1623	Kopanoar 2I-44 DST#7 3100-3153 m
#156	Kopanoar M-13 DST#5A
#1624	Kopanoar M-13 DST#7 3497-3506.3m
#35	Kugpik L-24 2484.7m
#19	Kumak J-06 DST#10 4439-4473'
#44	Kumak J-06 DST#4 8145-8180'
#43	Kumak J-06 DST#7 7566-7590'
#20	Kumak J-06 DST#8 7048-7068'
#17	Kumak K-16 DST#12 4661-4700'
#40	Kumak K-16 DST#16 4936-4950'
#42	Kumak K-16 DST#2 9932-9977'
#18	Kumak K-16 DST#7 9618-9638'
#41	KumakK-16 DST#8 9732-9764'
#27	Mayogiak P-17 DST#12 9395-9582'
#56	Mayogiak P-17 DST#4 3790-3879'
#991	Minuk I-53 DST#1
#310	Nerlerk M-98 DST#4A
#1625	Nerlerk M-98 DST#5 3470-3490 m
#1626	Nerlerk M-98 DST#6 3435.2-3490.6 m
#312	Nerlerk M-98 DST#7
#311	Nerlerk M-98 DST#8
#309	Nerlerk M-98 DST#9
#75	Niglintgak B-19 DST#14 5234-5296'
#37	Niglintgak M-19 DST#10 6910-6945'
#73	Niglintgak M-19 DST#11 6560-6587'
#72	Niglintgak M-19 DST#13 6110-6130'
#71	Niglintgak M-19 DST#14 6055-6075'
#34	Niglintgak M-19 DST#16 5730-5750'
#70	Niglintgak M-19 DST#19 5647-5667'
#69	Niglintgak M-19 DST#20 4547-4567'
#33	Niglintgak M-19 DST#22 4345-4365'
#74	Niglintgak M-19 DST#9 7135-7155'
#460	Nipterk L-19 DST#7
#964	Nipterk L-19A 2486-2499 m DST#4
#457	Nipterk L-19A DST#7 2084.4 m
#59	Parsons D-20 3444.2m
#28	Parsons D-20 3596m
#60	Parsons D-20 3708.8m DST#1
#58	Parsons L-43 DST#4 9332-9389'
#57	Parsons N-17 DST#2
#461	Pitsiulak A-05 DST#3
#78	Siku C-11 DST#1 9710-9728'
#77	Siku C-11 DST#2
#76	Siku C-11 DST#3 9486-9506'
#1627	Siulik I-05 DST#1 4053-4272 m
#23	Taglu C-42 DST#11 9405-9424'
#24	Taglu C-42 DST#3 10610-10630'
#25	Taglu F-43 PT#4 9590-9680'
#21	Taglu G-33 PT#3 9208-9219'
#22	Taglu W P-03 DST#5 9640-9650'
#1629	Tarsiut A-25 DST#5 1500-1514 m
#1630	Tarsiut A-25 DST#6A 1487-1536 m
#1631	Tarsiut N-44 DST#3A 1822-1830 m
#1632	Tarsiut N-44 DST#4 1755-1777 m
#1633	Tarsiut N-44 DST#5A 1692-1713 m
#640	Tuk B-40 1513-1520 m
#641	Tuk B-40 1518.5-1522.5 m
#639	Tuk G-39 1310-1325 m
#643	Tuk G-48 1307-1318 m
#642	Tuk G-48 1341-1352 m
#644	Tuk G-48 1375.5-1396 m
#645	Tuk G-48 1566 - 1595 m
#638	Tuk H-30 1100-1105 m
#459	Tuk J-29 DST#4 1240.5-1250m
#427	Tuk L-09 DST#4
#994	Tuk L-09 DST#4
	Tuk L-09 DST#4
#465	Tuk L-09 DST#4 2655m
#995	Tuk L-09 DST#5
#996	Tuk L-09 DST#6
#997	Tuk L-09 DST#7
#637	Tuktuk A-12 1498-1508 m DST#3
#648	Tuktuk D-11 1368-1375 m
#647	Tuktuk D-11 1460-1465 m
#649	Tuktuk D-11 1470-1483 m
#646	Tuktuk D-11 943-950 m
#759	Unak 2039-2054 m DST#1
#695	Unak L-28
#1368	Unipkat N-12 DST#3 967-983 m
#1367	Unipkat N-12 DST#4 870-892.5 m
#1366	Unipkat N-12 DST#7 678-691 m
#1194	Uviluk P-66 DST#3
#79	Wagnark C-23 931.8m
#307	West Atkinson 2330-2367m L-17 DST#3


mV
6.6
6.4
6.2
6.0
5.8
5.6
5.4
5.2
nC14
iC16
nC15
nC16
iC18
nC17
pristane
nC18
phytane
nC19
nC20
nC25
nC29
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00640 Tuk B-40 DST#4 1513-1520 m
mV
5.18
5.16
5.14
5.12
5.10
5.08
5.06
5.04
5.02
5.00
4.98
4.96
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00641 Tuk B-40 DST#3 1518.5-1522.5 m
mV
5.30
5.25
5.20
5.15
5.10
5.05
5.00
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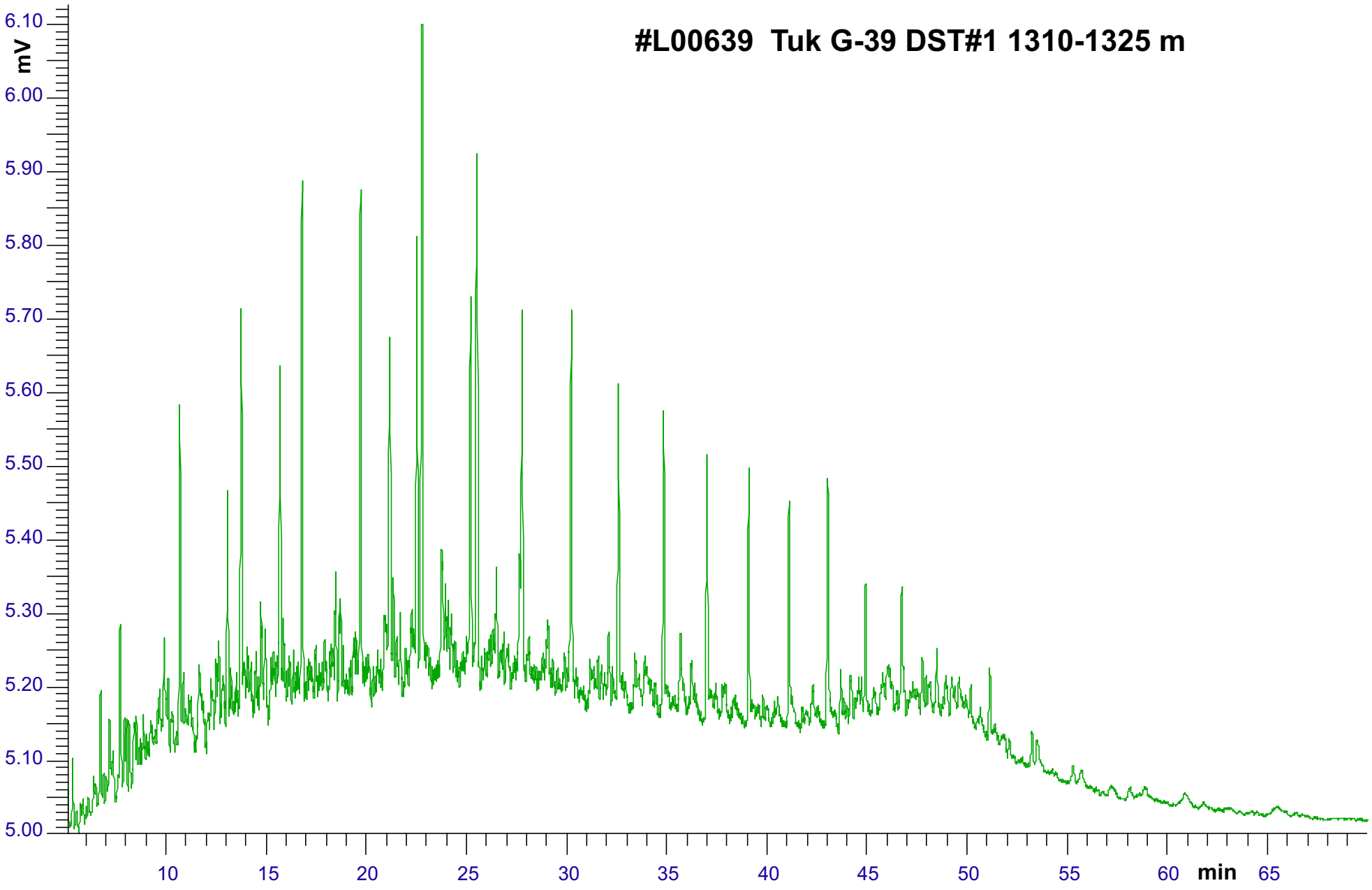
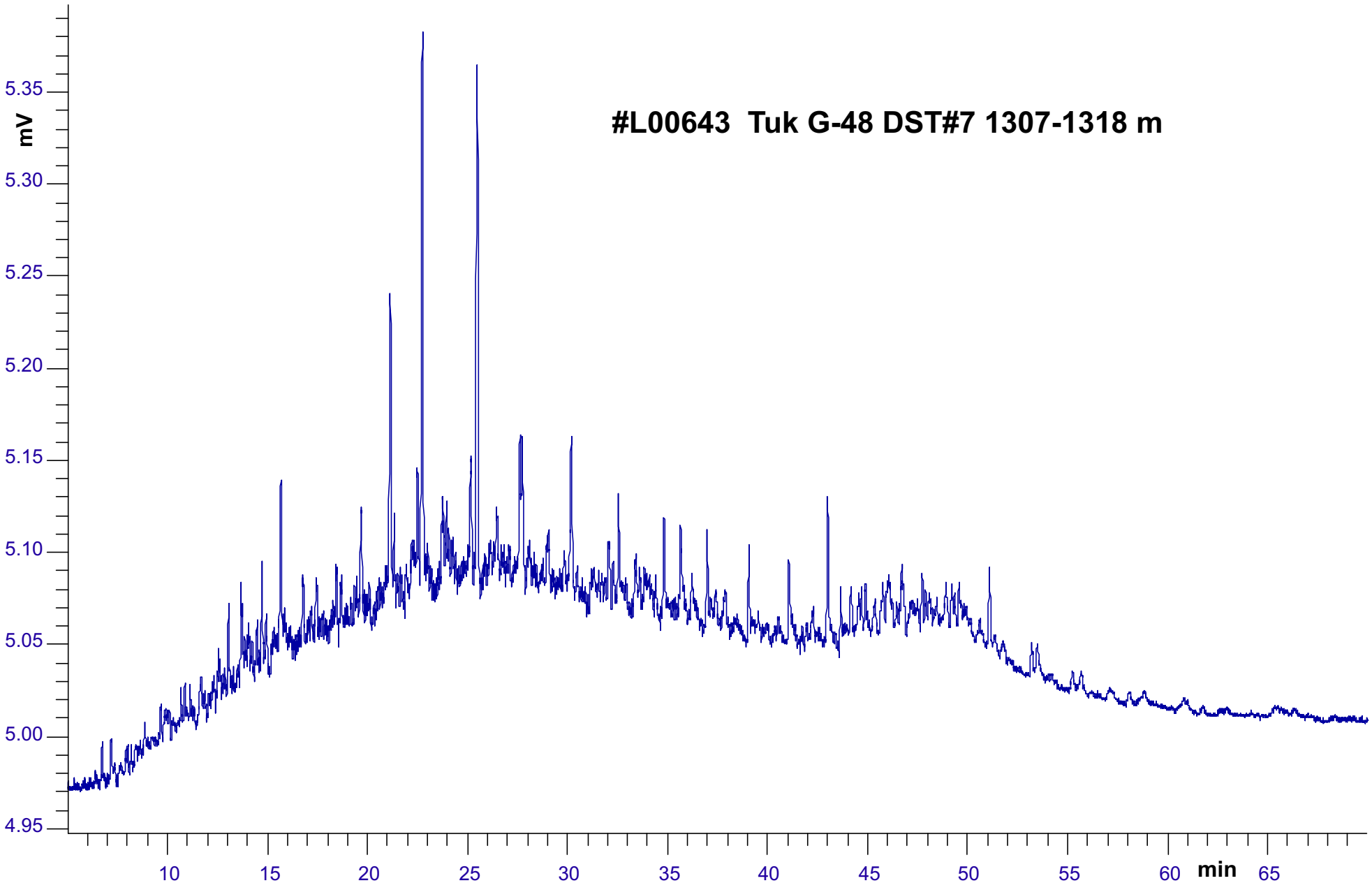
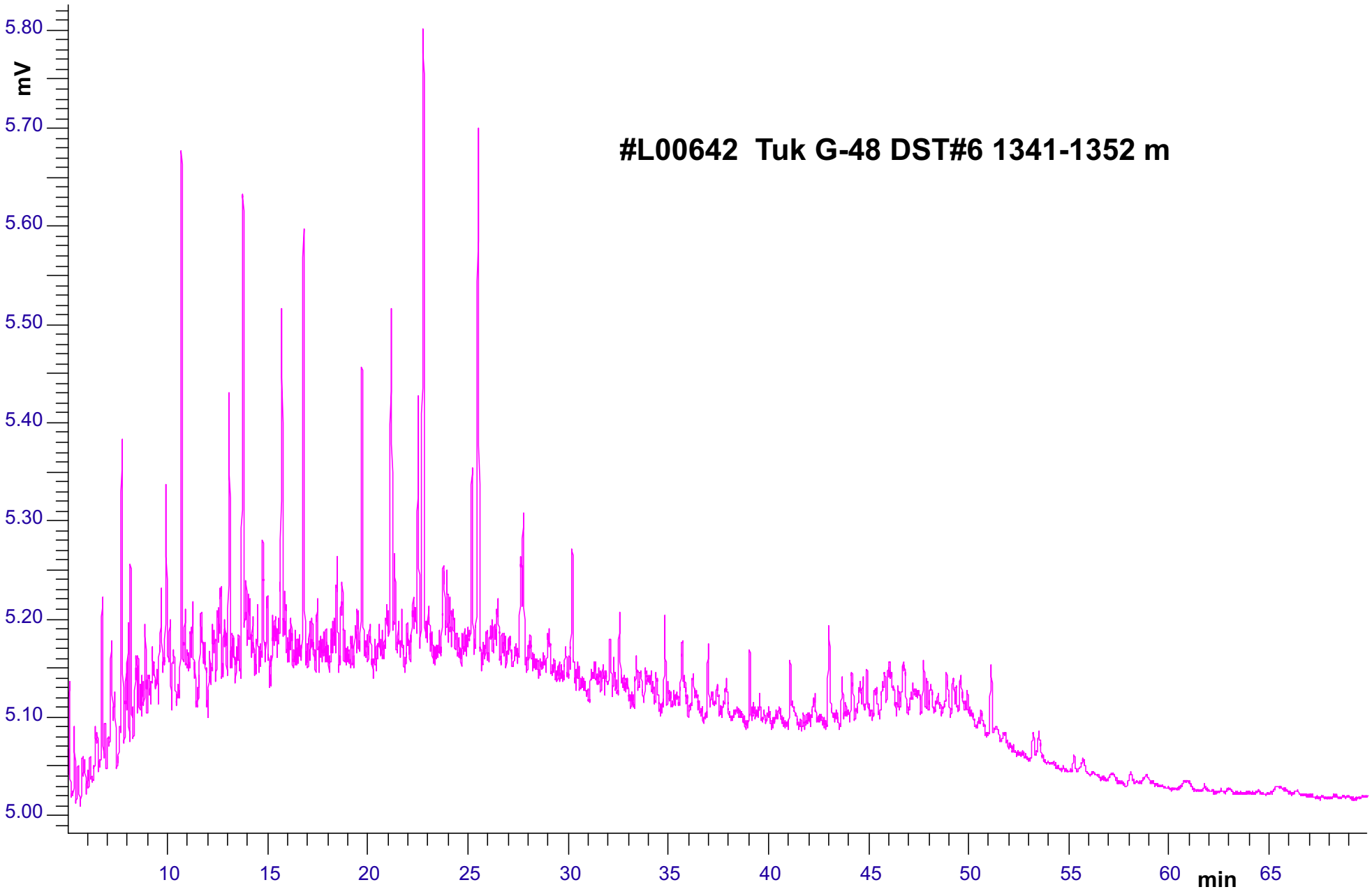
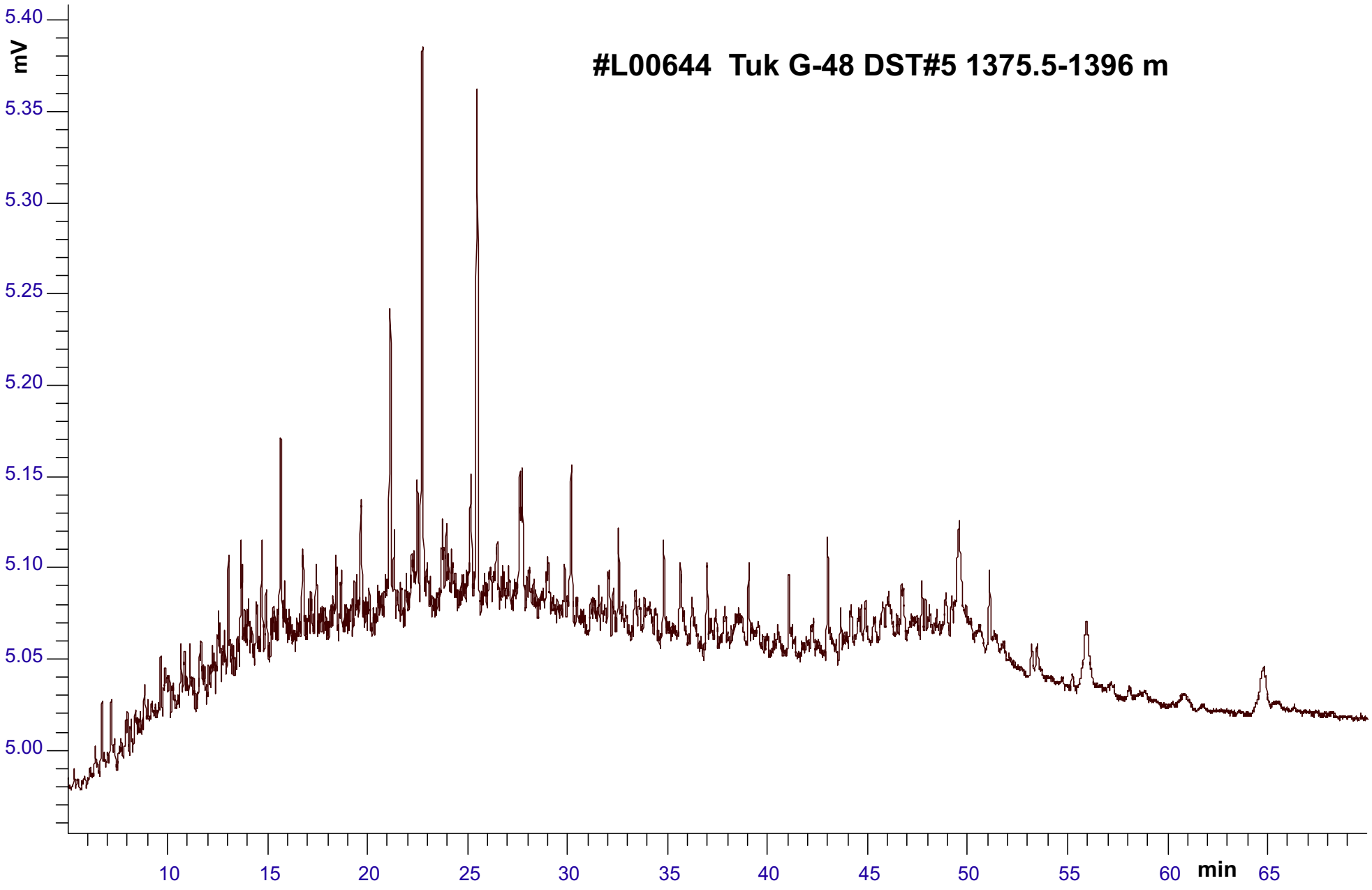
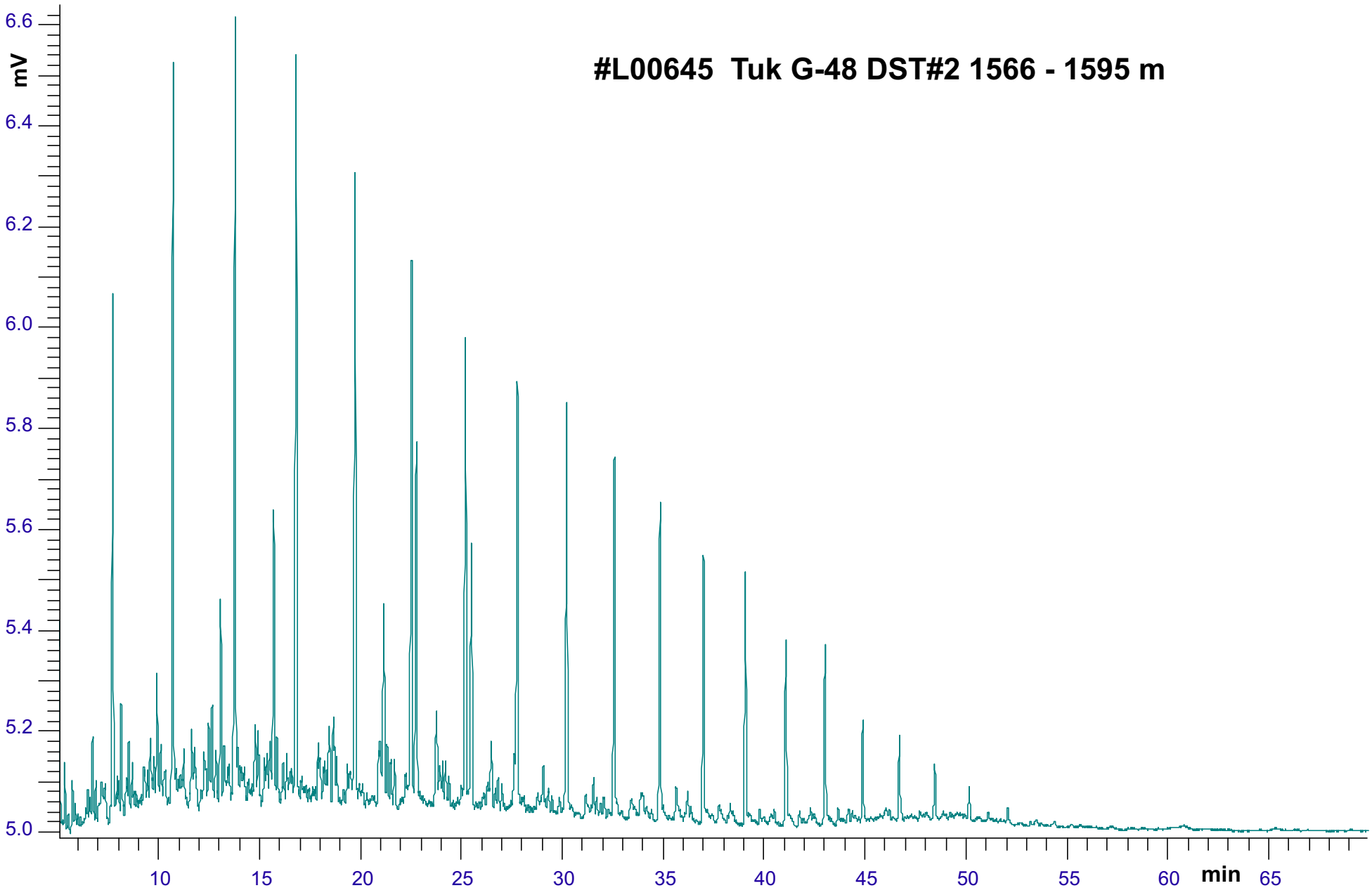
20
25
30
35
40
45
50
55
60
min
65

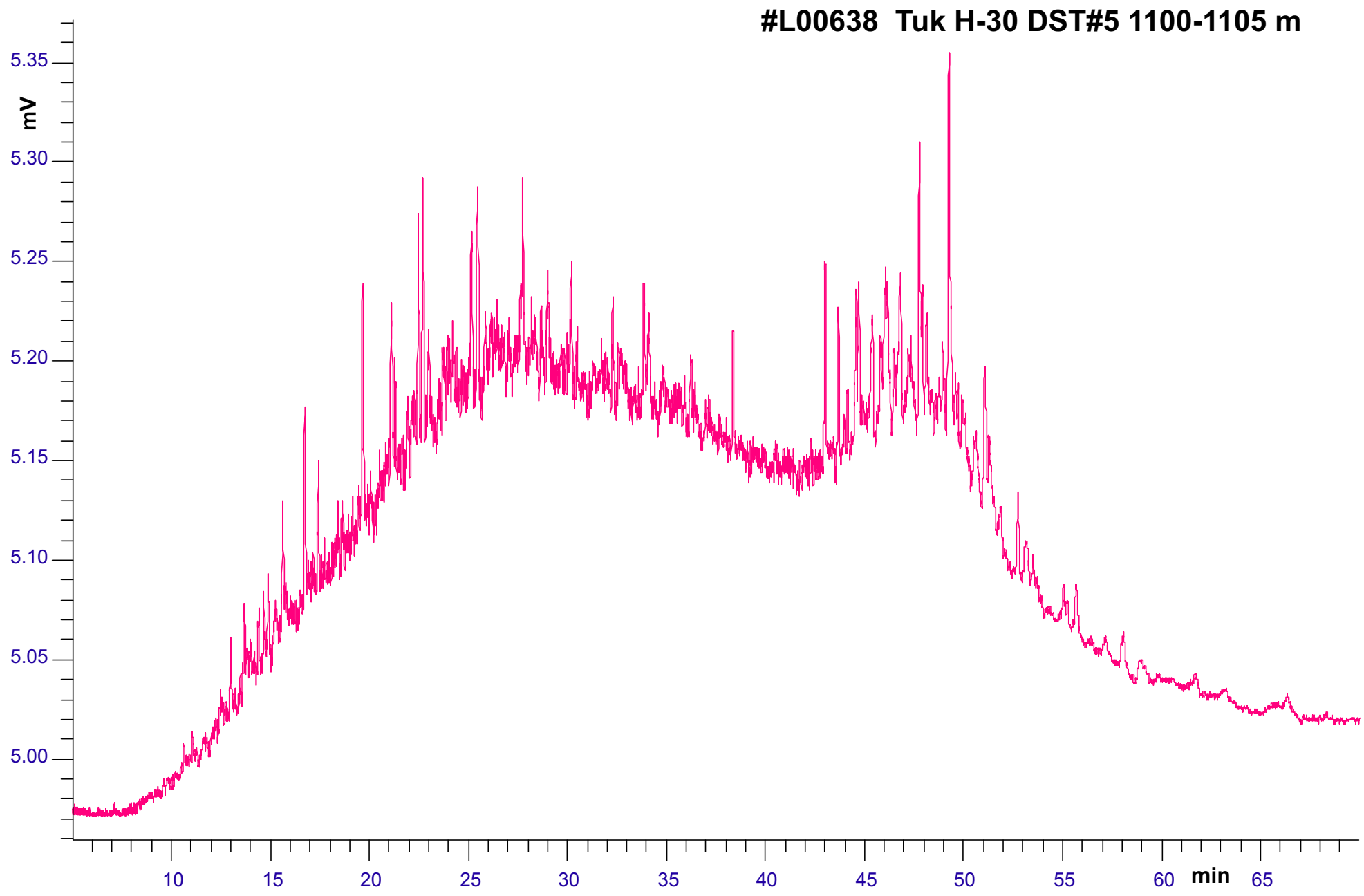

#L00639 Tuk G-39 DST#1 1310-1325 m
mV
6.10
6.00
5.90
5.80
5.70
5.60
5.50
5.40
5.30
5.20
5.10
5.00
10
15
20
25
30
35
40
45
50
55
60
min
65

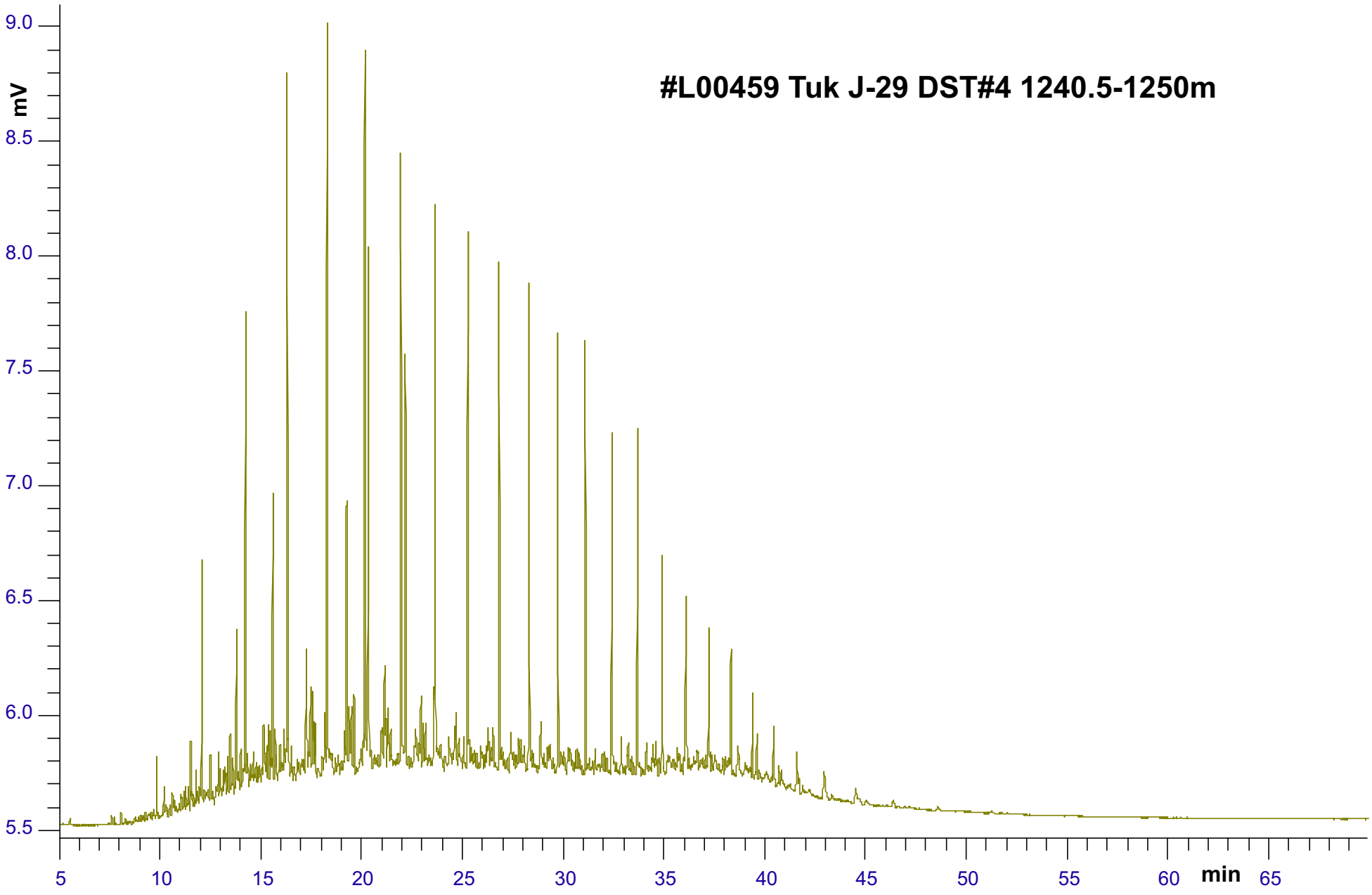

#L00643 Tuk G-48 DST#7 1307-1318 m
mV
5.35
5.30
5.25
5.20
5.15
5.10
5.05
5.00
4.95
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00642 Tuk G-48 DST#6 1341-1352 m
mV
5.80
5.70
5.60
5.50
5.40
5.30
5.20
5.10
5.00
10
15
20
25
30
35
40
45
50
55
60
65
min


#L00644 Tuk G-48 DST#5 1375.5-1396 m
mV
5.40
5.35
5.30
5.25
5.20
5.15
5.10
5.05
5.00
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00645 Tuk G-48 DST#2 1566 - 1595 m
mV
6.6
6.4
6.2
6.0
5.8
5.6
5.4
5.2
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00638 Tuk H-30 DST#5 1100-1105 m
mV
5.35
5.30
5.25
5.20
5.15
5.10
5.05
5.00
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00459 Tuk J-29 DST#4 1240.5-1250m
mV
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5
10
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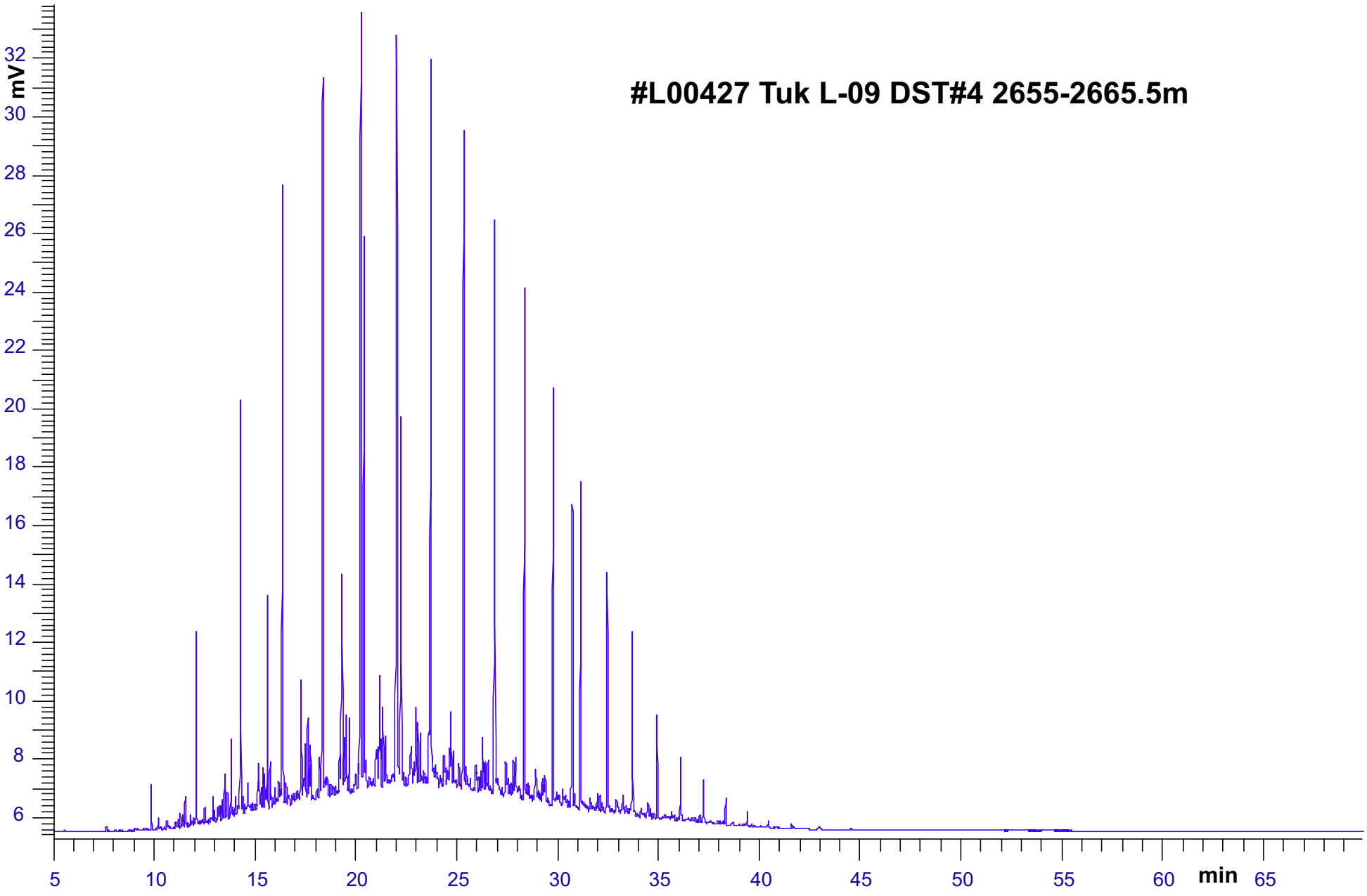
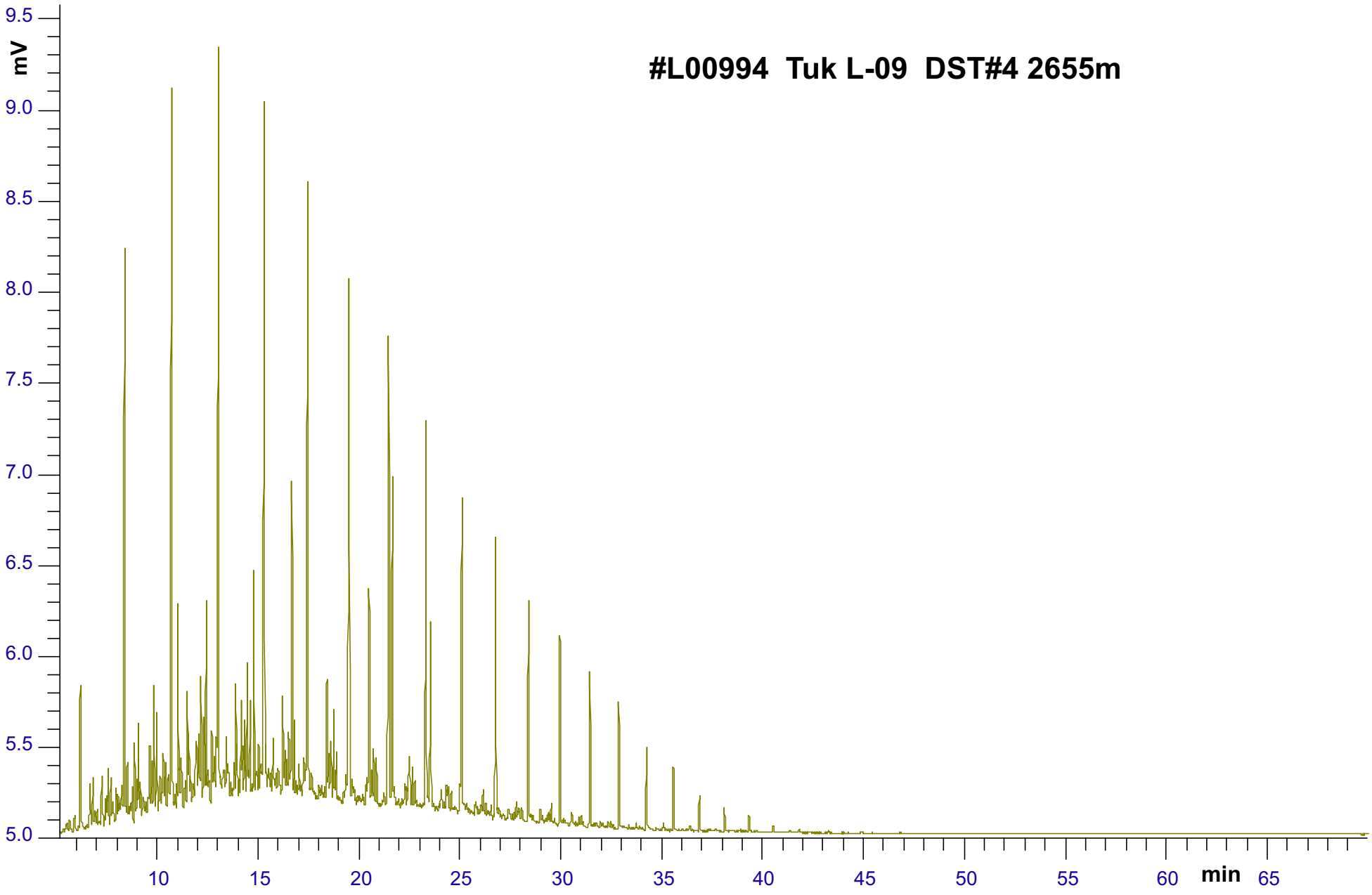
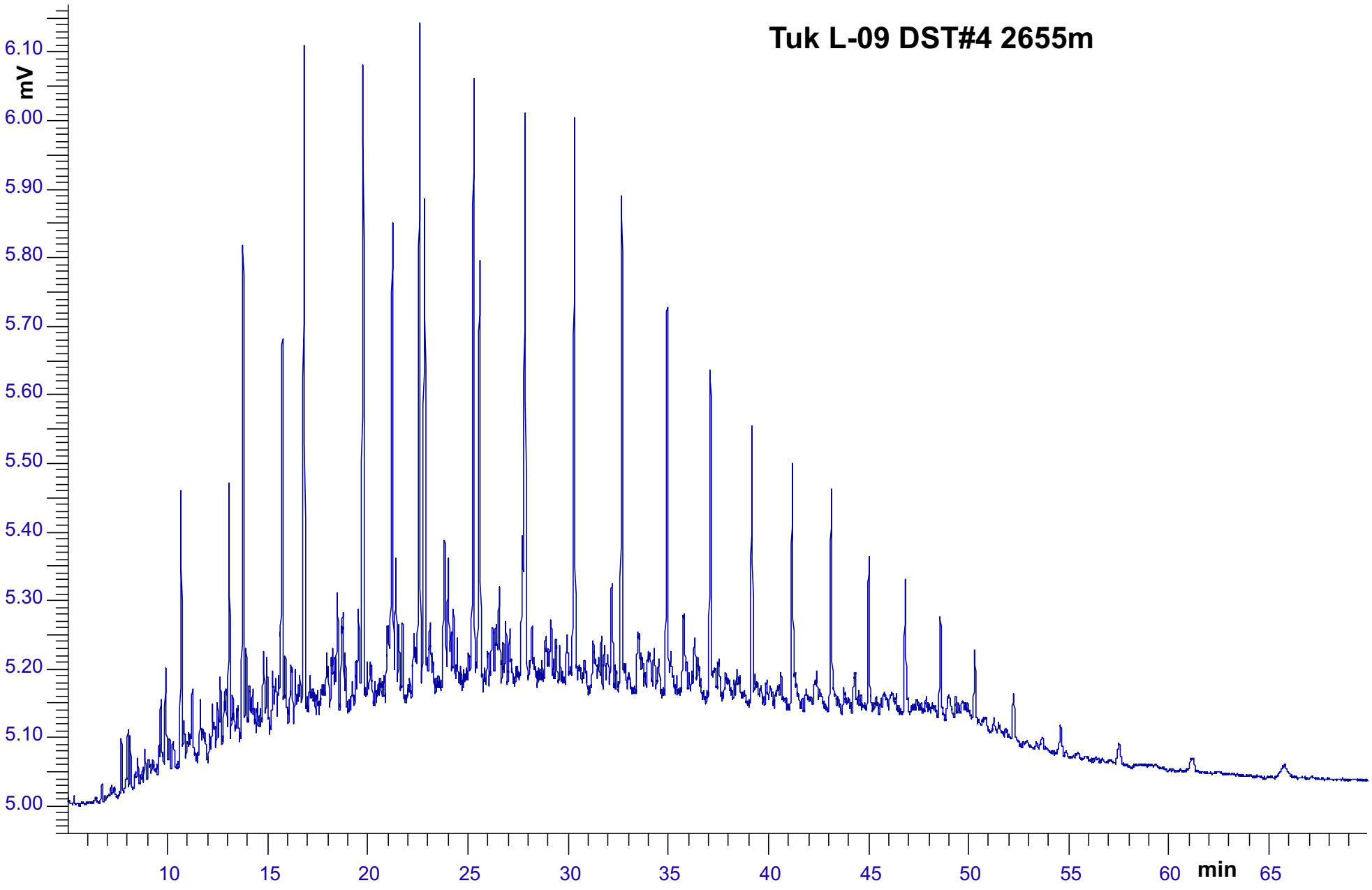
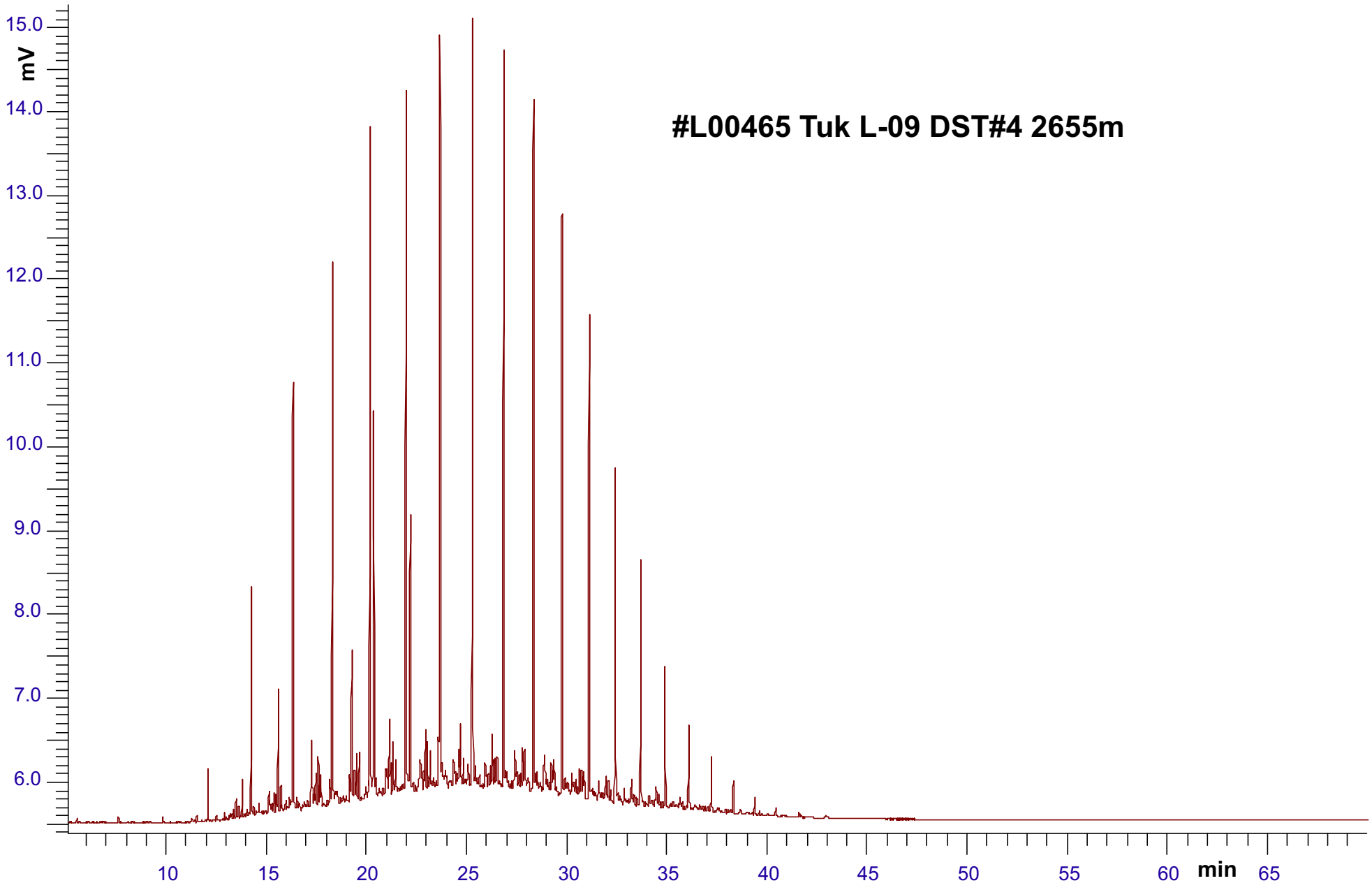
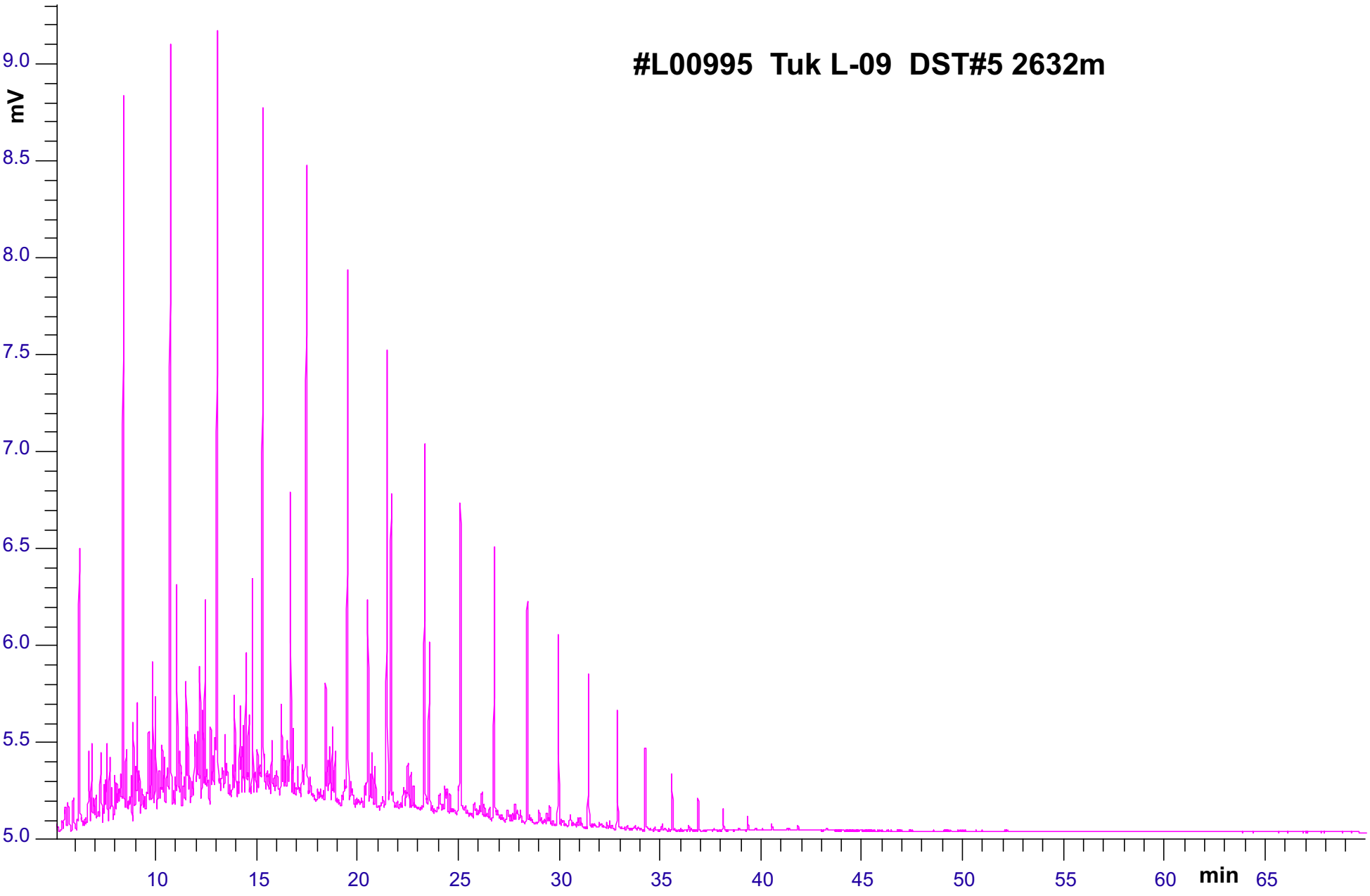
20
25
30
35
40
45
50
55
60
min
65

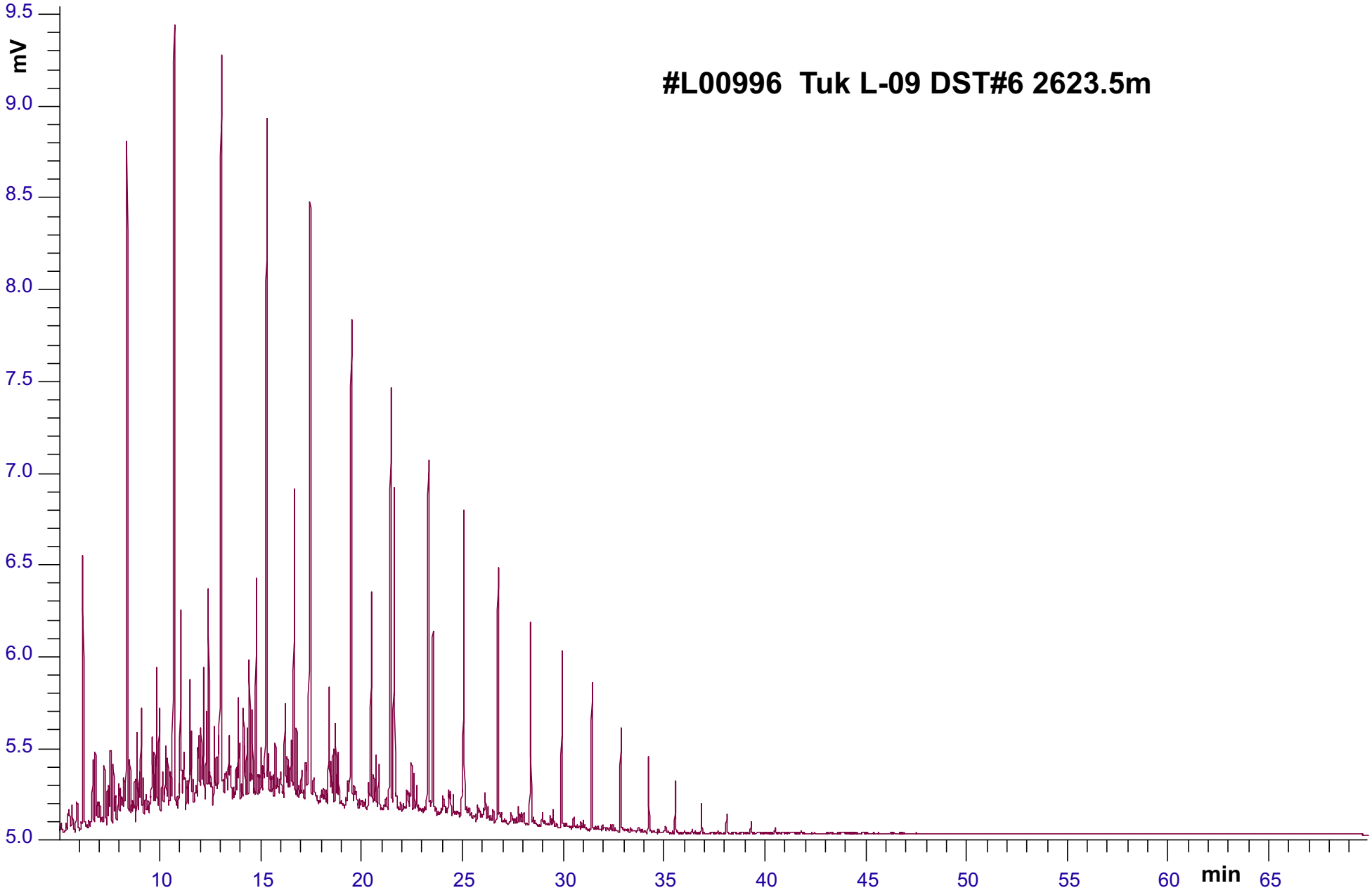

#L00427 Tuk L-09 DST#4 2655-2665.5m
mV
32
30
28
26
24
22
20
18
16
14
12
10
8
6
5
10
15
20
25
30
35
40
45
50
55
60
min
65

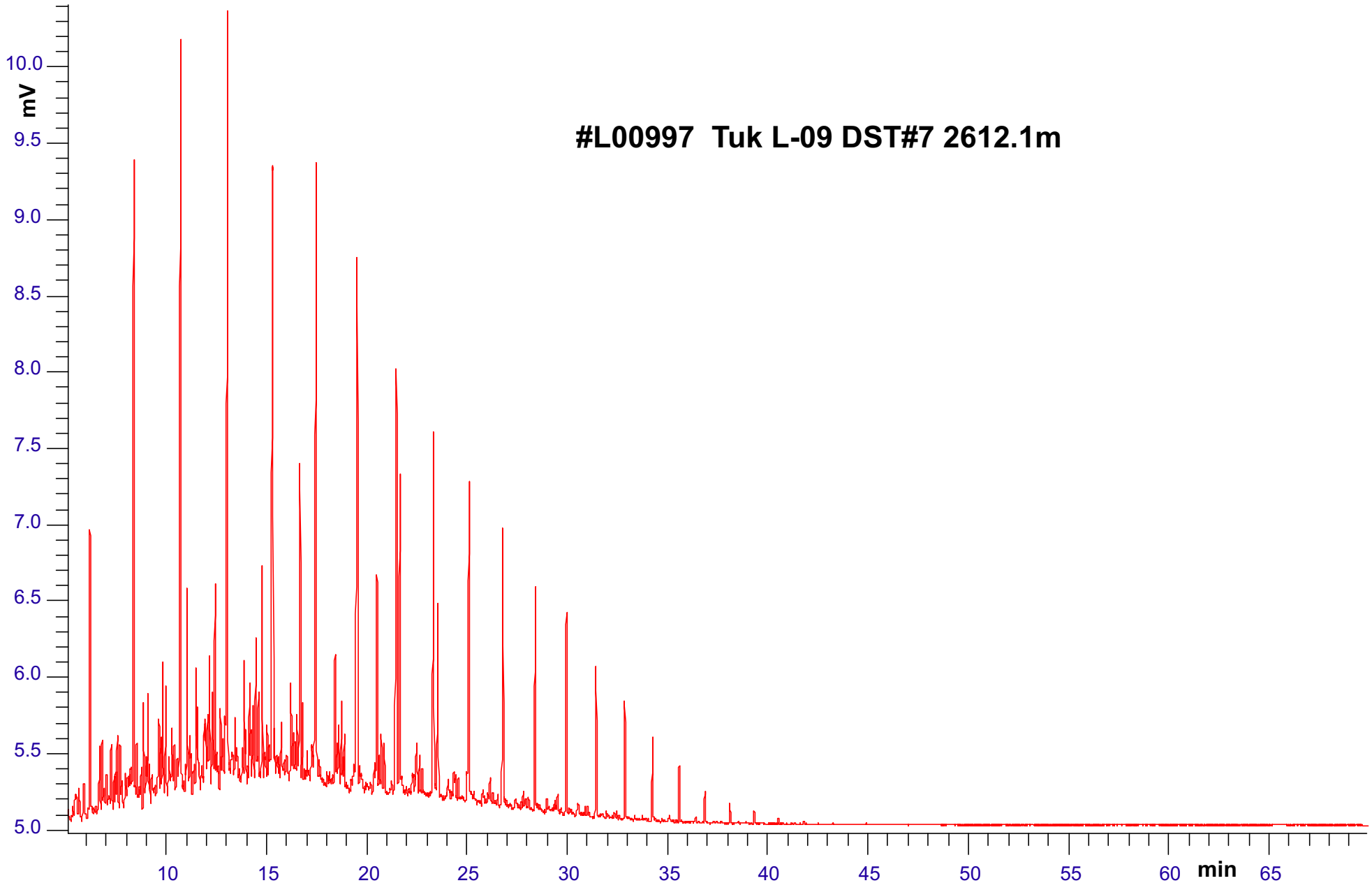

#L00994 Tuk L-09 DST#4 2655m
mV
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65

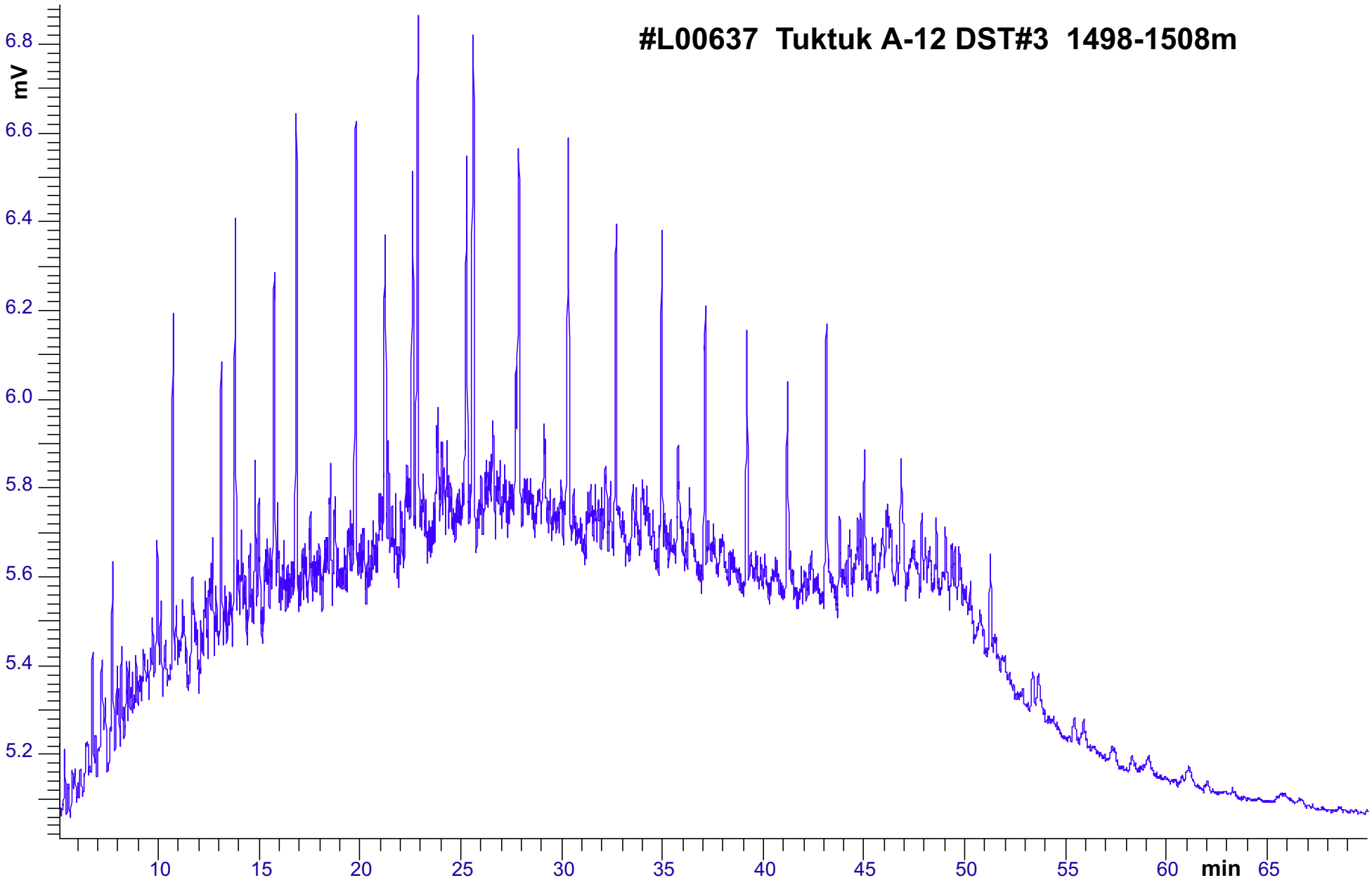

Tuk L-09 DST#4 2655m
mV
6.10
6.00
5.90
5.80
5.70
5.60
5.50
5.40
5.30
5.20
5.10
5.00
10
15
20
25
30
35
40
45
50
55
60
min
65

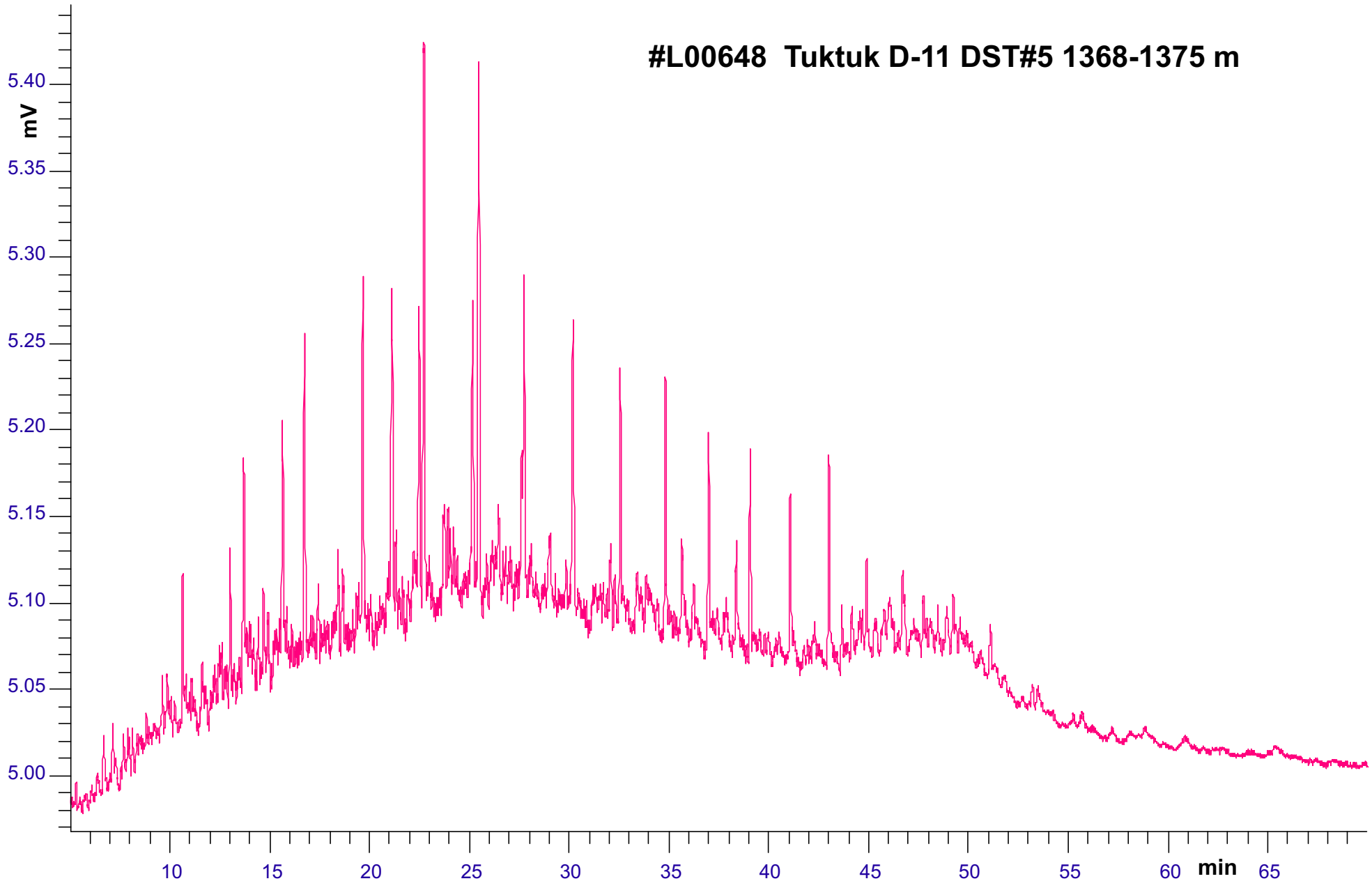

#L00465 Tuk L-09 DST#4 2655m
mV
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00995 Tuk L-09 DST#5 2632m
mV
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00996 Tuk L-09 DST#6 2623.5m
mV
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00997 Tuk L-09 DST#7 2612.1m
mV
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00637 Tuktuk A-12 DST#3 1498-1508m
mV
6.8
6.6
6.4
6.2
6.0
5.8
5.6
5.4
5.2
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00648 Tuktuk D-11 DST#5 1368-1375 m
mV
5.40
5.35
5.30
5.25
5.20
5.15
5.10
5.05
5.00
10
15
20
25
30
35
40
45
50
55
60
min
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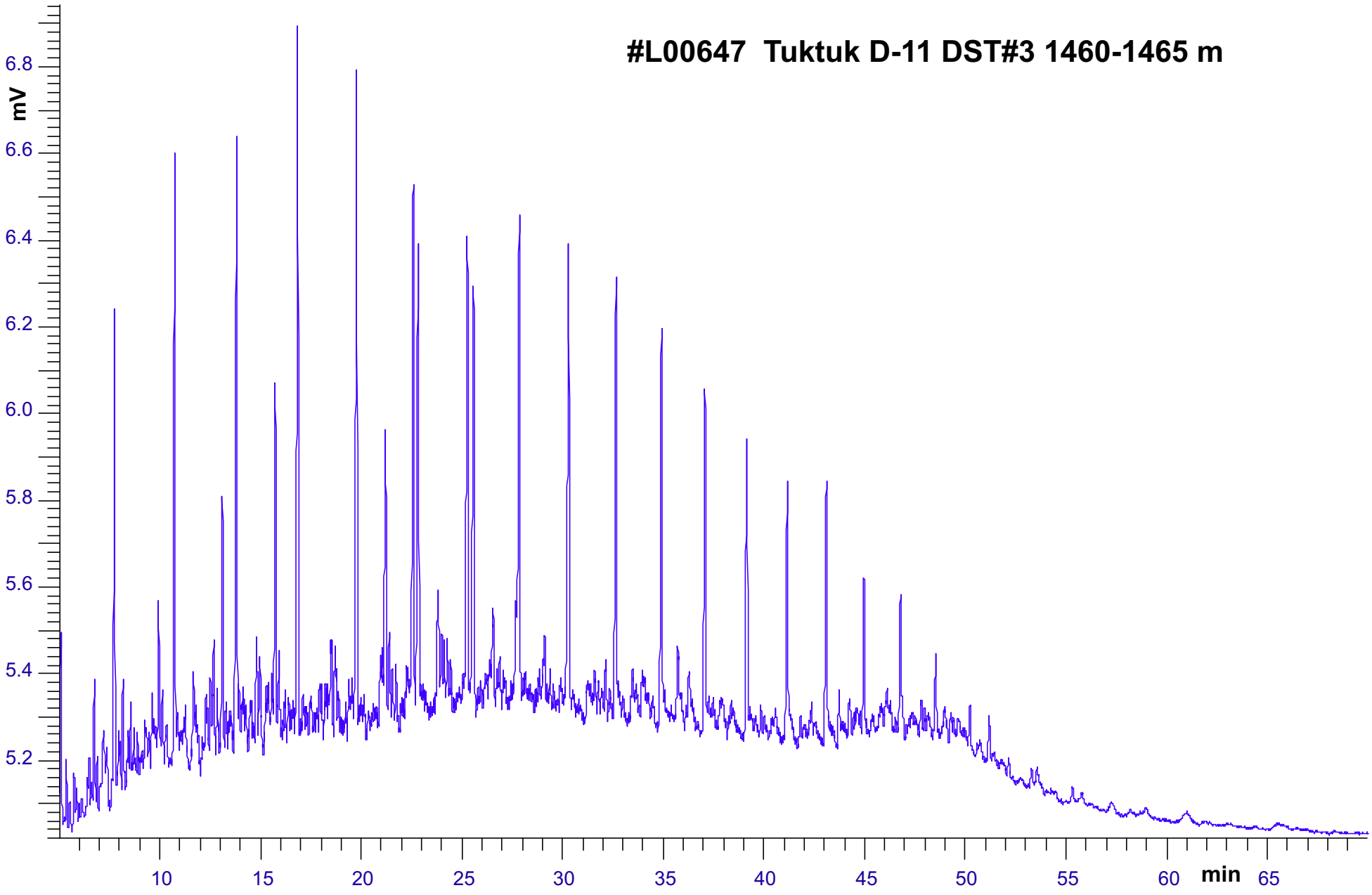
#L00647 Tuktuk D-11 DST#3 1460-1465 m
mV
6.8
6.6
6.4
6.2
6.0
5.8
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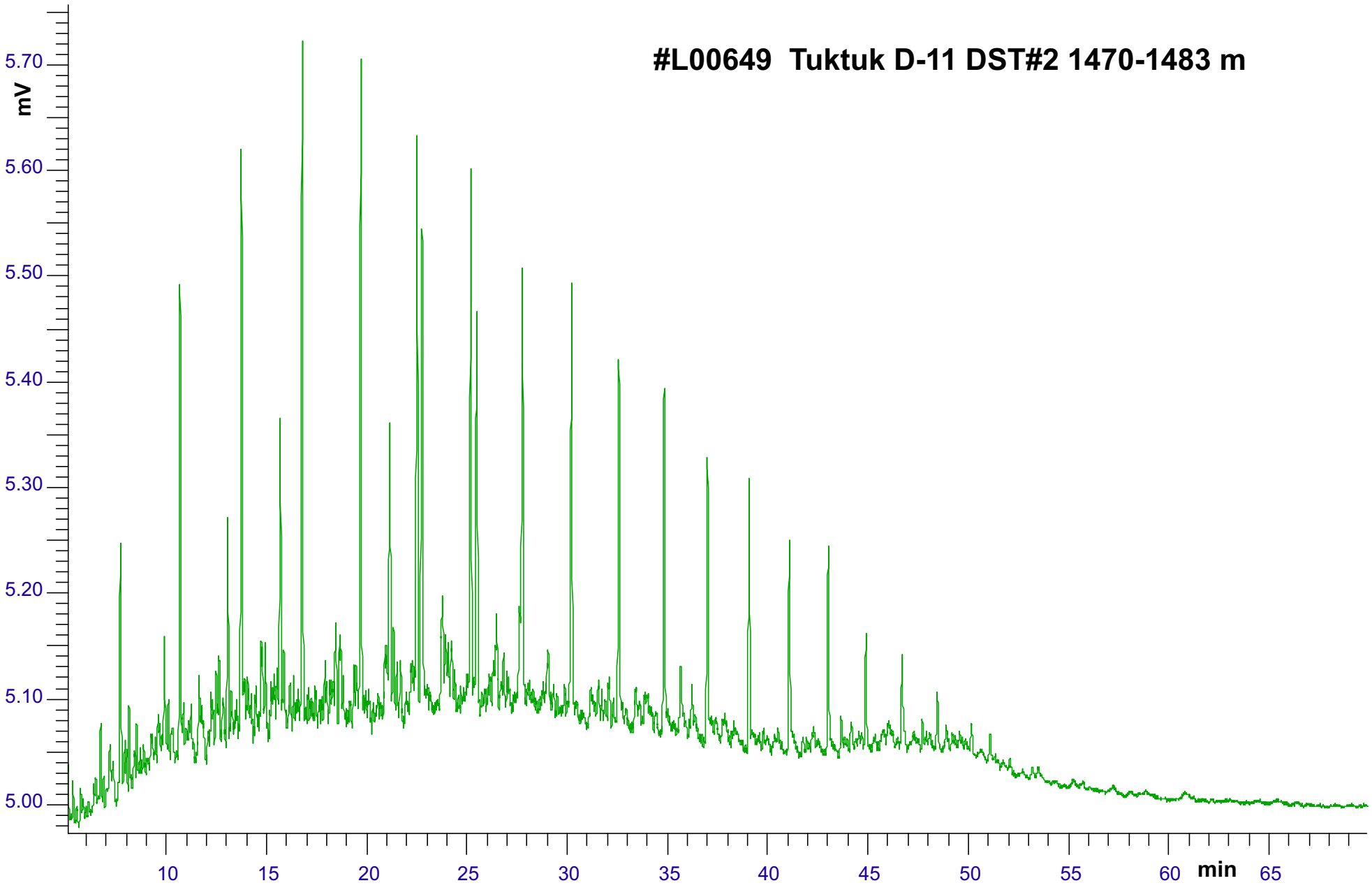
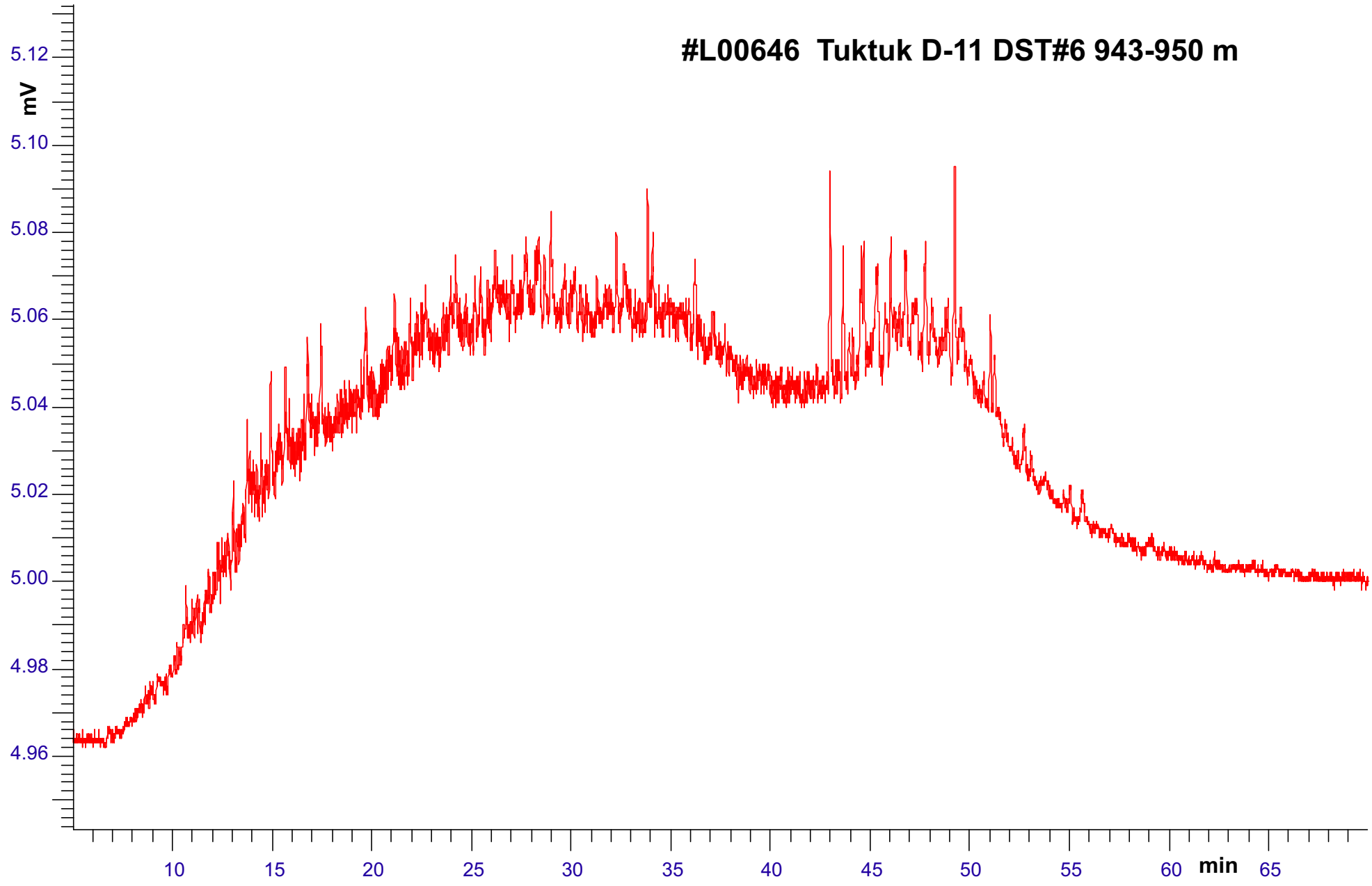
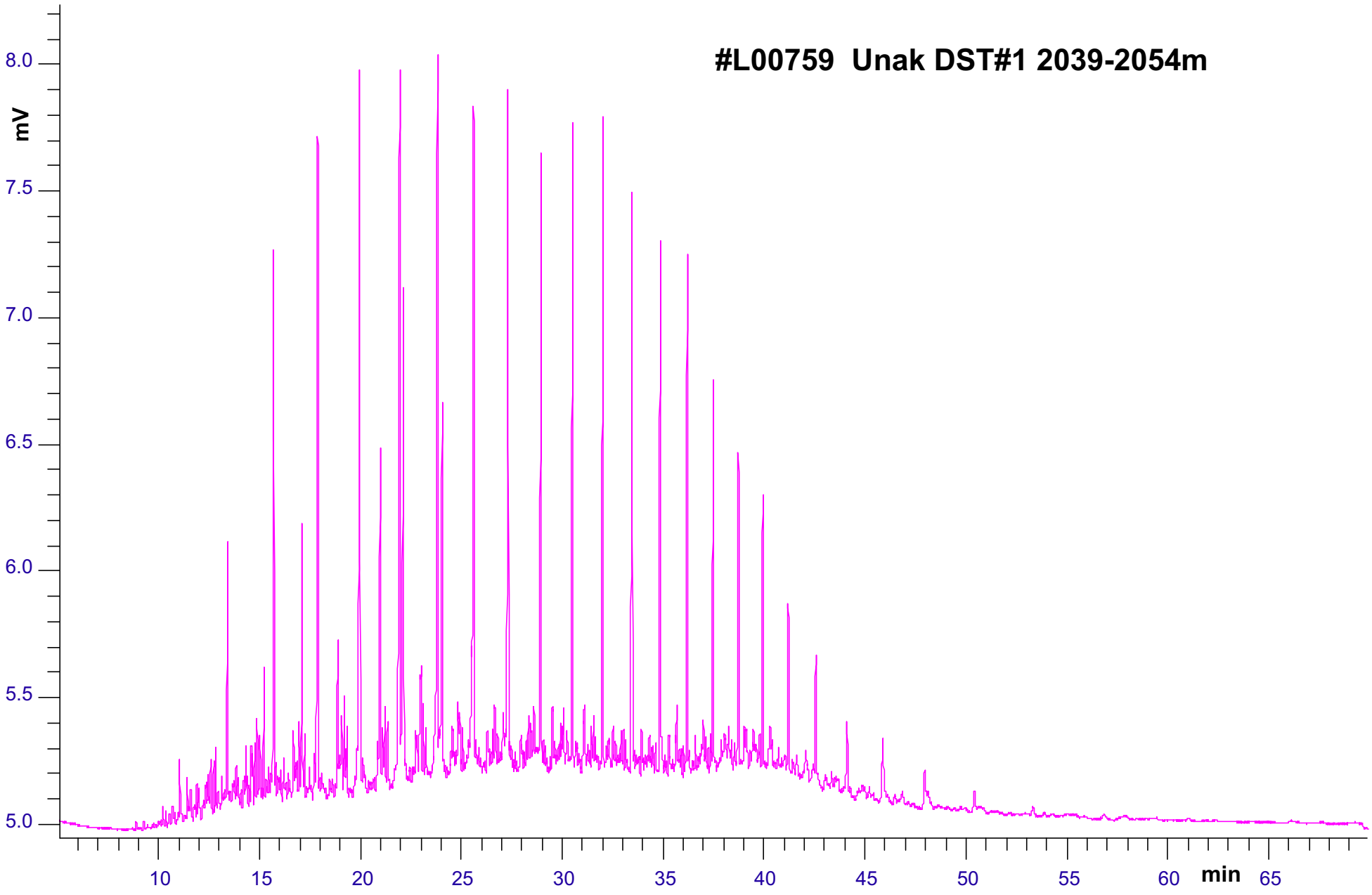
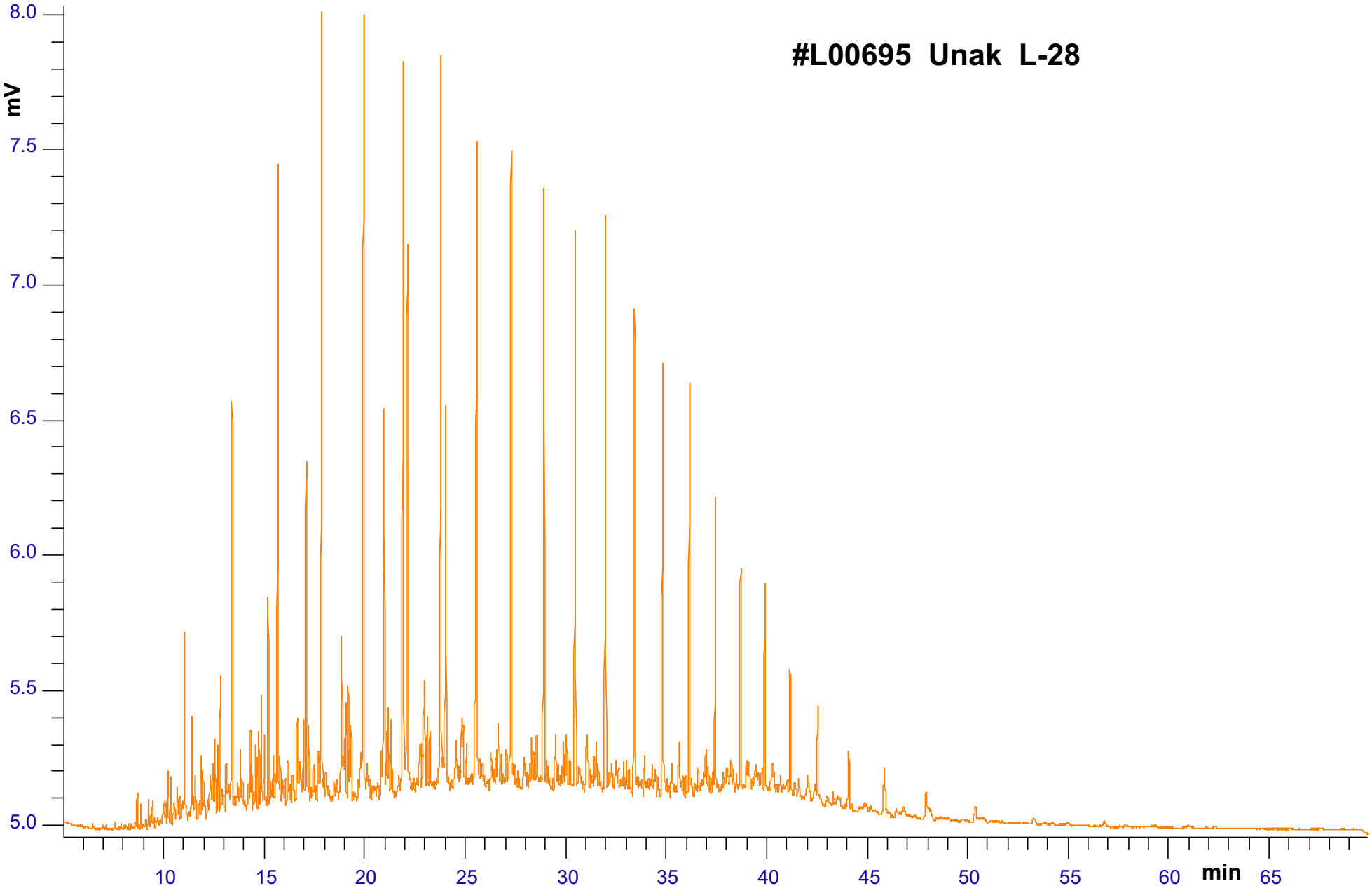
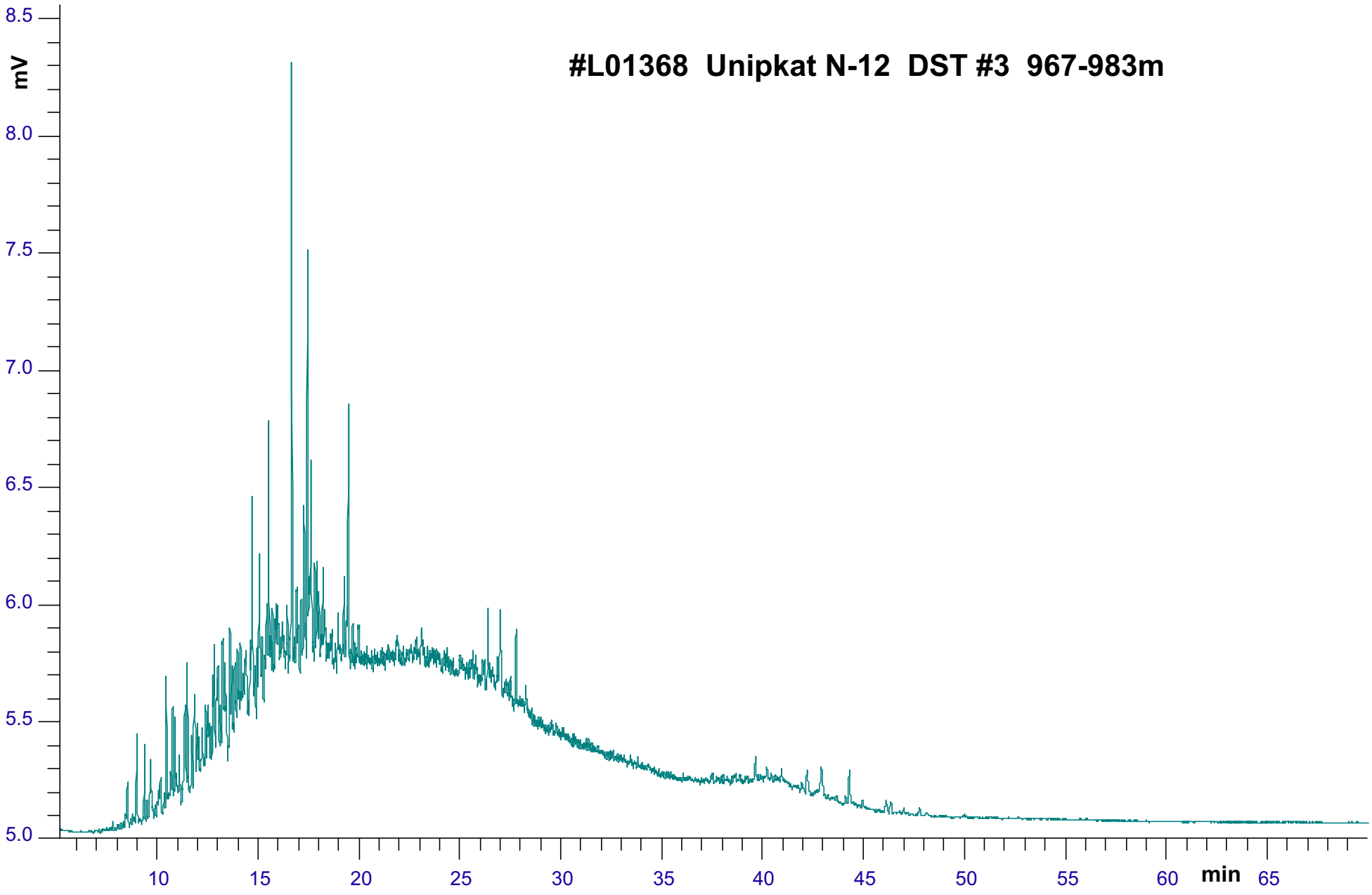
50
55
60
min
65

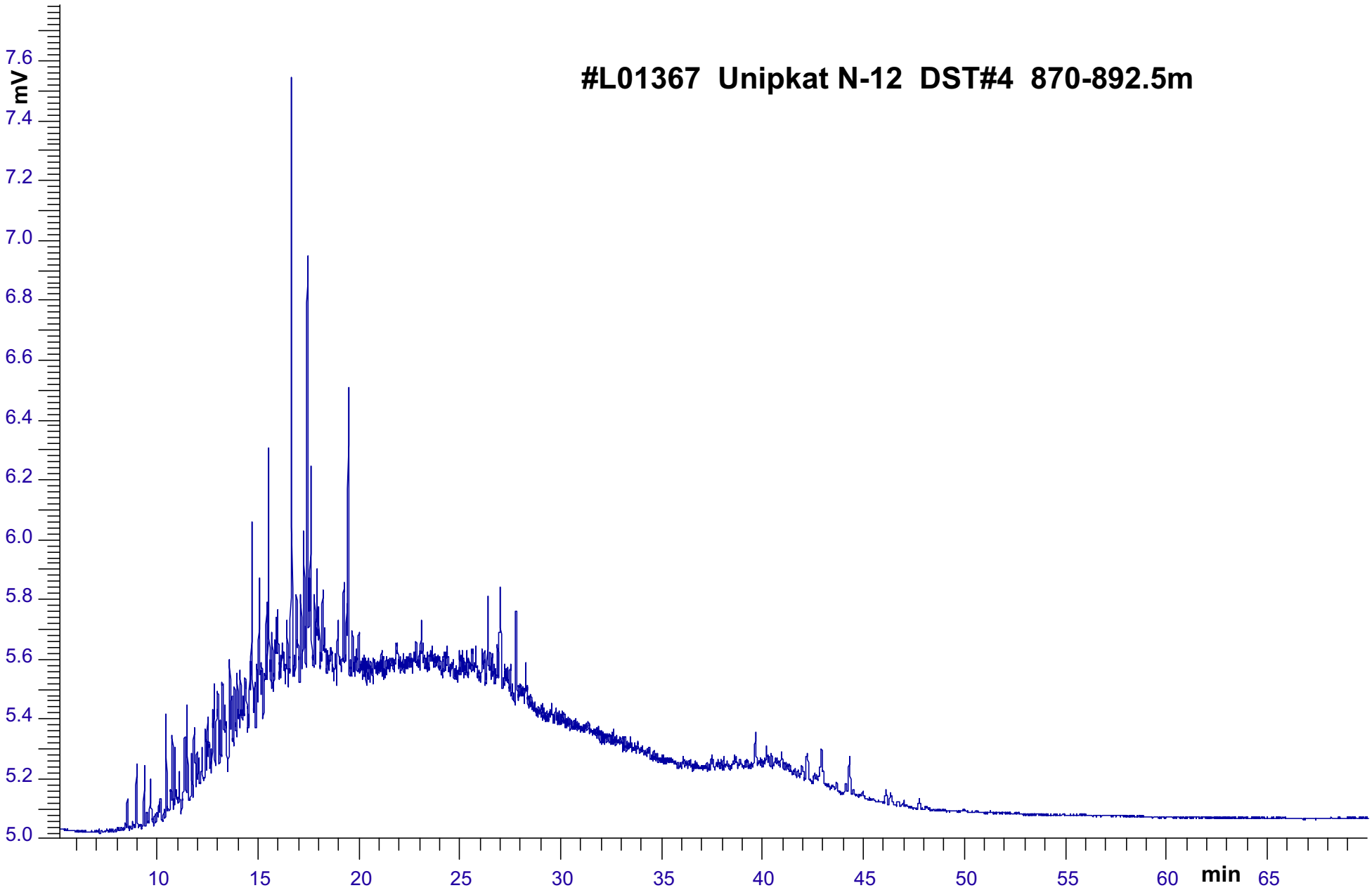

#L00649 Tuktuk D-11 DST#2 1470-1483 m
mV
5.70
5.60
5.50
5.40
5.30
5.20
5.10
5.00
10
15
20
25
30
35
40
45
50
55
60
min
65

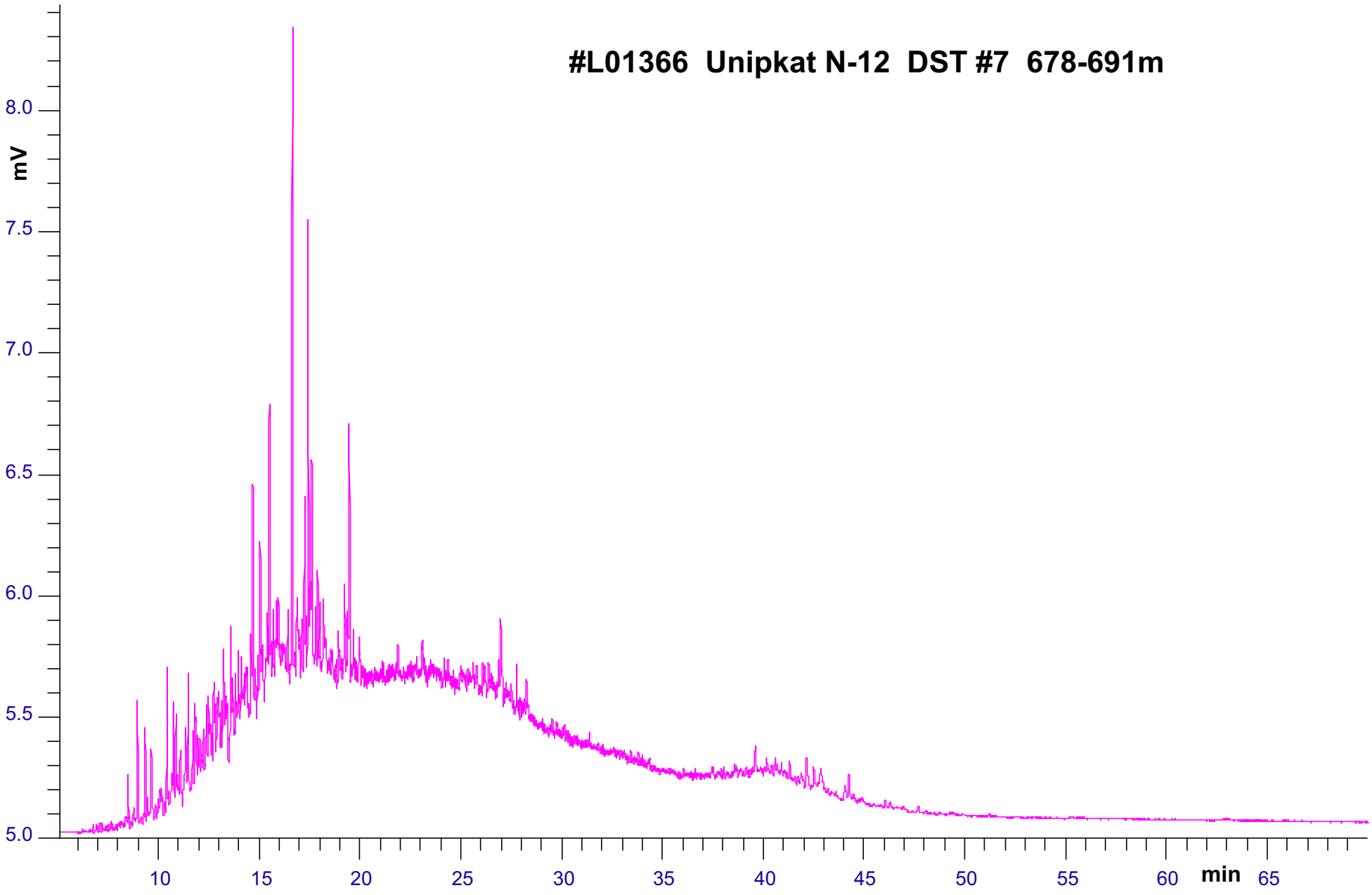

#L00646 Tuktuk D-11 DST#6 943-950 m
mV
5.12
5.10
5.08
5.06
5.04
5.02
5.00
4.98
4.96
10
15
20
25
30
35
40
45
50
55
60
min
65

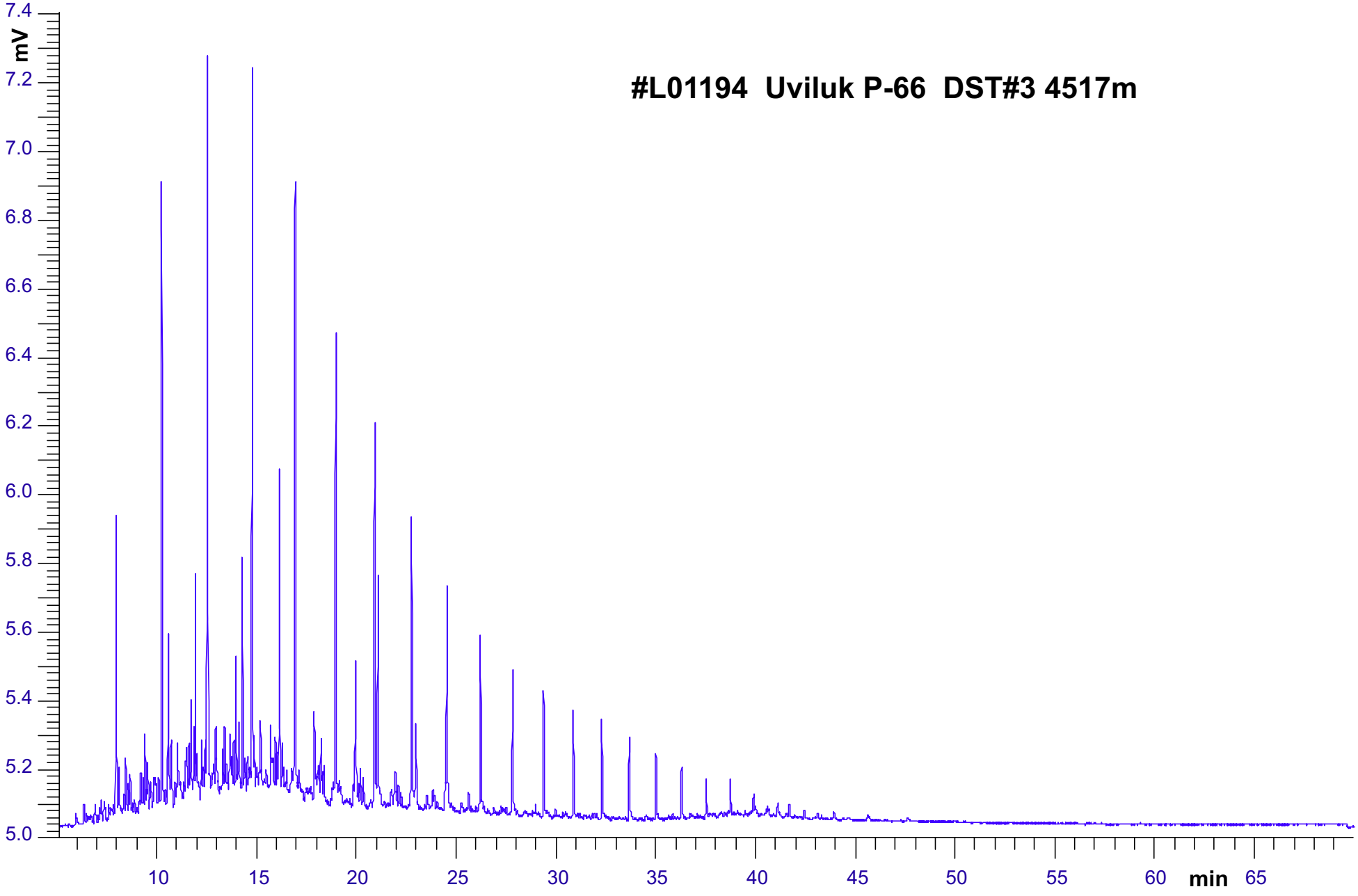

#L00759 Unak DST#1 2039-2054m
mV
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65

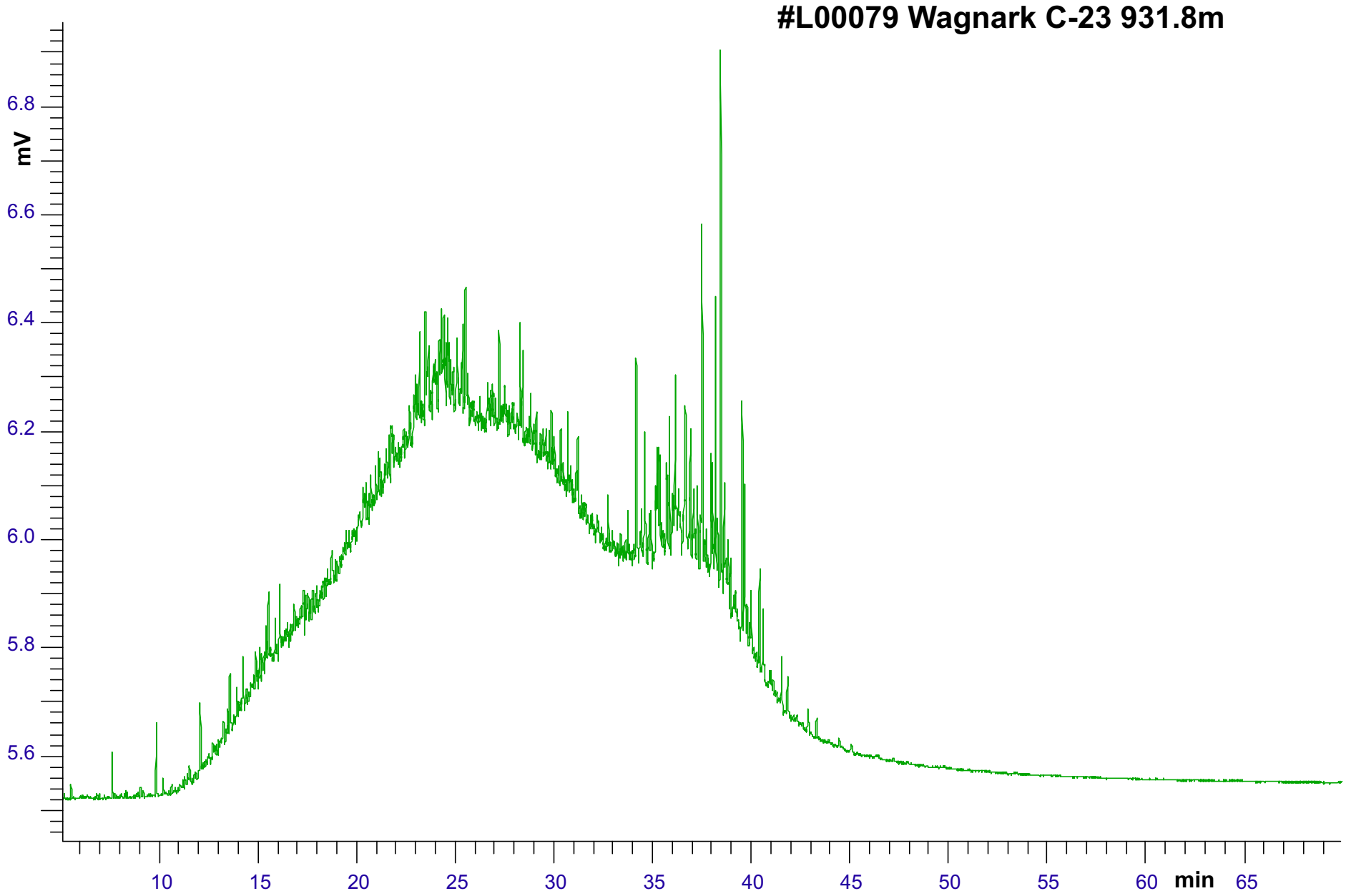

#L00695 Unak L-28
mV
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L01368 Unipkat N-12 DST #3 967-983m
mV
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L01367 Unipkat N-12 DST#4 870-892.5m
mV
7.6
7.4
7.2
7.0
6.8
6.6
6.4
6.2
6.0
5.8
5.6
5.4
5.2
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L01366 Unipkat N-12 DST #7 678-691m
mV
8.0
7.5
7.0
6.5
6.0
5.5
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L01194 Uviluk P-66 DST#3 4517m
mV
7.4
7.2
7.0
6.8
6.6
6.4
6.2
6.0
5.8
5.6
5.4
5.2
5.0
10
15
20
25
30
35
40
45
50
55
60
min
65


#L00079 Wagnark C-23 931.8m
mV
6.8
6.6
6.4
6.2
6.0
5.8
5.6
10
15
20
25
30
35
40
45
50
55
60
min
65