

SUNBURST CONSULTING

A G E O L O G Y S E R V I C E

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GEOSTEERING LOG

WellSight Systems

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Richard Knotts 513137
Location: Rosemont 7.5" Quadrangle, Booth Creek District, Taylor County, WV
License Number: API#: 47-091-01231
Spud Date: 19 July 2011
Surface Coordinates: Latitude: 39.321945
Longitude: 80.141296
Bottom Hole Coordinates: 2,566.22' South and 2,277.21' East of surface location
Ground Elevation (ft): 1328
Logged Interval (ft): 5,900' To: 10,491' Total Depth (ft): 10,491'
Formation: Sonyea through Marcellus
Type of Drilling Fluid: Water Based Mud

Region: Appalachian Basin
Drilling Completed: 31 July 2011

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.co




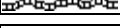
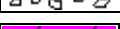

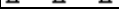
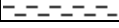








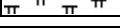

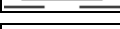
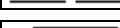
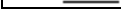



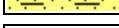

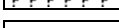
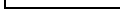
OPERATOR

Company: EQT Production Company
Address: EQT Plaza
625 Liberty Avenue
Pittsburgh, PA 15222








































































GEOLOGISTS

Name: Isaah Land, Chris Adair, Anthony Mihalko
Company: Sunburst Consulting, Inc.
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ROCK TYPES

 Anhy  Arg dol  Arg ls  Bent  Brec  Calc dol  Cht	 Clyst  Coal  Congl  Dol  Dol ls  Gyp  Igne	 Ls  Meta  Mrlst  Salt  Shale  Shblk  Shcol	 Shgy  Sltst  Ss  Sssilty  Tuff  Unknown  Blank
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ACCESSORIES

FOSSIL  Algae  Amph  Belm  Bioclst  Brach  Bryozoa  Cephal  Coral  Crin  Echin  Fish  Foram  Fossil  Gastro  Oolite  Ostra  Pelec  Pellet  Pisolite	 Plant  Strom MINERAL  Anhy  Arggrn  Arg  Bent  Bit  Brecfrag  Calc  Carb  Chtdk  Chtlt  Dol  Feldspar  Ferrpel  Ferr  Glau  Gyp	 Hvymn  Kaol  Marl  Minxl  Nodule  Phos  Pyr  Salt  Sandy  Silt  Sil  Sulphur  Tuff STRINGER  Anhy  Arg  Bent  Coal  Dol	 Gyp  Ls  Mrst  Sltstrg  Ssstrg TEXTURE  Boundst  Chalky  Cryxln  Earthy  Finexln  Grainst  Lithogr  Microxln  Mudst  Packst  Wackest
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OTHER SYMBOLS

INTERVALS

- None
- Core
- Dst

EVENTS

- Rft
- Sidewall
- Bit change

OIL SHOWS

- Even
- Spotted
- Ques
- Dead

POROSITY TYPE

- Earthy
- Fenest

- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

- #### ROUNDING
- Rounded

- Subrnd
- Subang
- Angular

SORTING

- Well
- Moderate
- Poor

COMMENTS

COMPANY MAN: Bill Ruff Teel, Jeff Lofton

TOOLPUSHER: Kevin Bayes

RIG: Savanna 640E

SURFACE CASING: 13 3/8" MC-50, 54.5#, 23 Jts, set to 885'

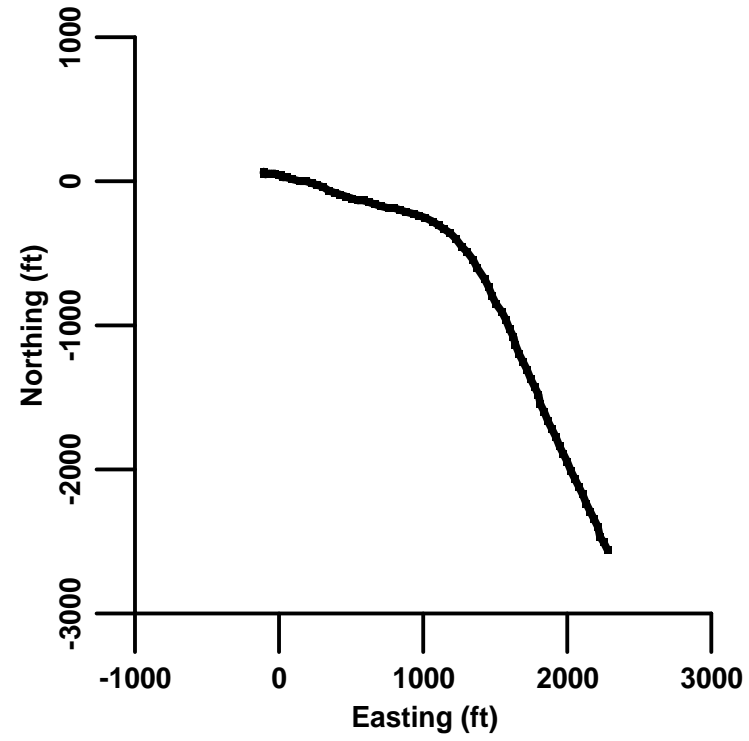
INTERMEDIATE CASING: 9 5/8" MC-50, 40#, 37 Jts, set to 2,602'

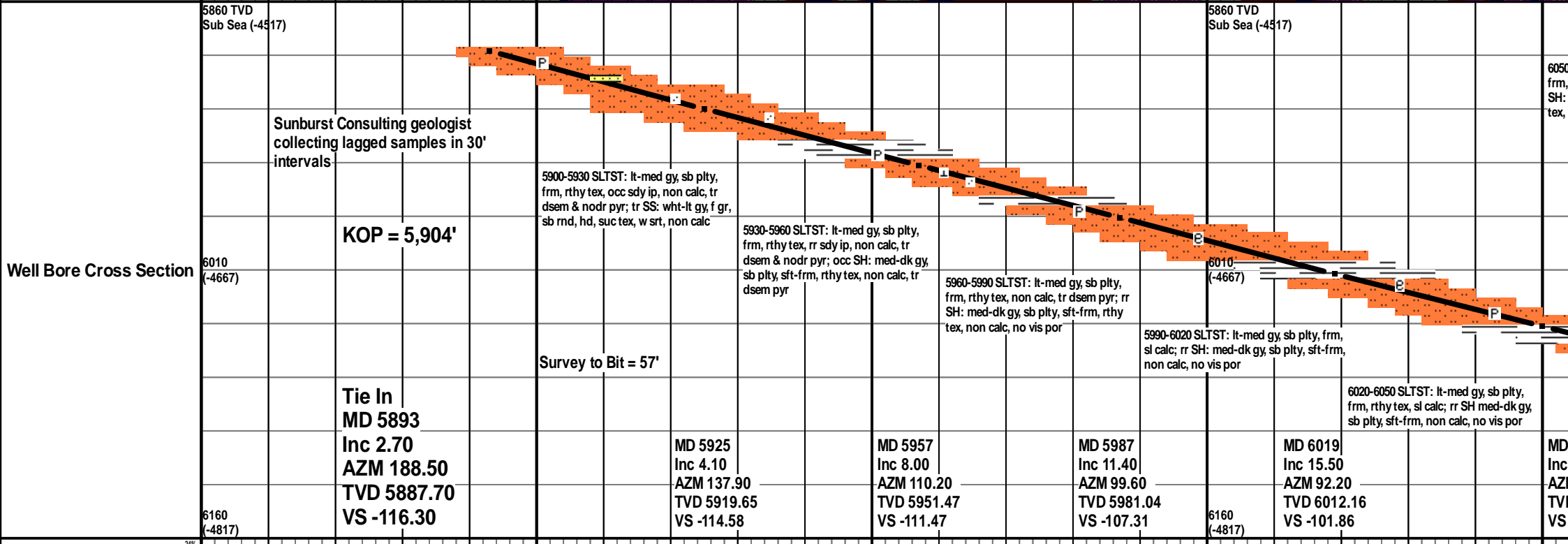
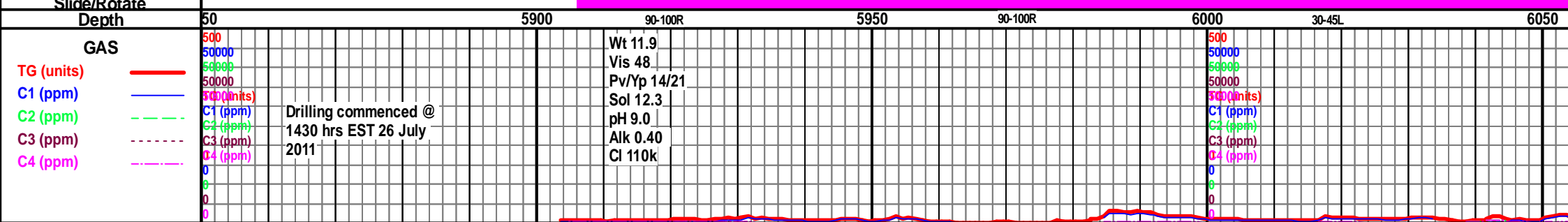
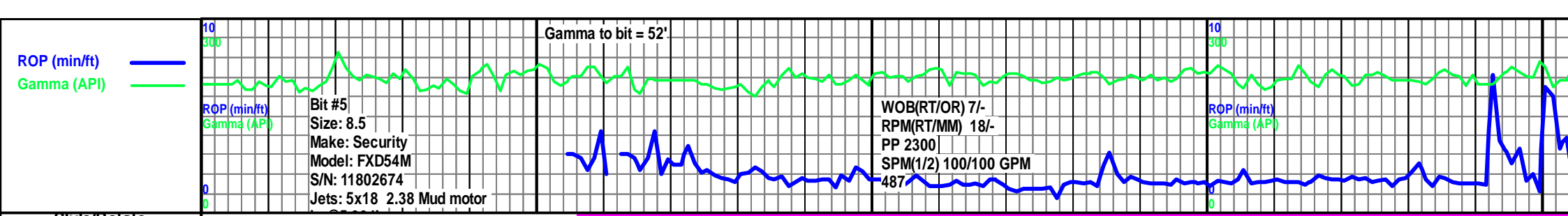
KOP: 5,904'

CLOSURE DIRECTION: 138.45°

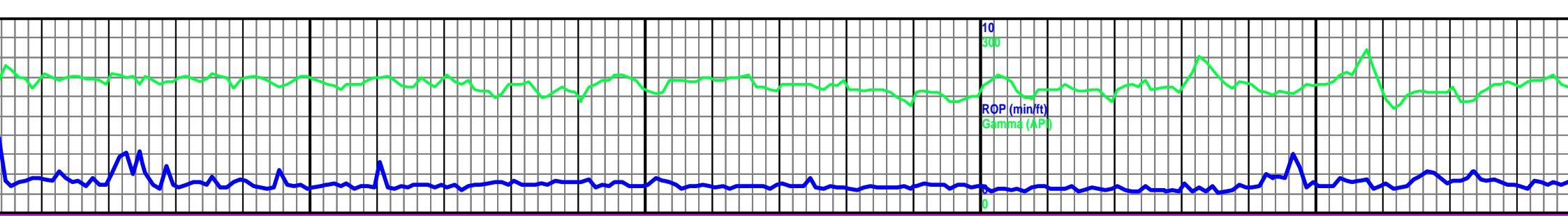
CLOSURE DISTANCE: 3,430.91'

Plan





Porosity	24% 18% 12% 6%
Porosity Type	
Oil Show	gd fr pc tr
Oil Show Type	



0-15L 15-30R 6100 15-30R 30R 45-50R 6150 45-50R 6200 30-45R 0-15R 6250 0-15L

500
50000
50000
50000
ROP (min/ft)
C1 (ppm)
C2 (ppm)
C3 (ppm)
C4 (ppm)
0
0
0
0

Wt 12.00
Vis 45
Pv/Yp 19/21
Sol 12.2
pH 9.2
Alk 0.40
Cl 120k

Note: TVD Scale Change

6070 TVD
Sub Sea (-4727)

6070 TVD
Sub Sea (-4727)

6230-6260 SH: med-dk gy, sb blkly, frm, rthy-sty tex, non calc, rr dsem & nodr pyr, tr pyr frac fl; rr SLTST: lt-med gy, sb plty, frm-hd, rthy-sdy tex, occ sdy ip, non calc, tr dsem & nodr pyr

6260-6290 SLTST: lt-med gy, tr wht, s plty-sb blkly, frm-hd, rthy tex, occ sdy imp, non calc, rr dsem & nodr pyr; tr SH: med-dk gy, sb blkly, sft-frm, rthy tex, non calc, tr dsem pyr

6080 SLTST: lt-med gy, sb plty, rthy tex, non calc, tr dsem pyr; rr med-dk gy, sb plty, sft-frm, rthy non calc, no vis por

6080-6110 SLTST: lt-med gy, sb plty, frm, rthy tex, non calc, tr dsem pyr; rr SH med gy sft-frm, rthy tex, non calc

6110-6140 SLTST: lt-med gy, sb plty, frm, rthy tex, sl sdy ip, tr dsem & nodr pyr, non calc

6140-6170 SLTST: lt-med gy, tr wht, sb plty, sft-frm, rthy tex, non calc, tr sdy ip, tr dsem & nodr pyr

6170-6200 SLTST: lt-med gy, tr wht, sb plty, sft-frm, rthy tex, non calc, tr dsem & nodr pyr

6220
(-4877)

6200-6230 SH: med-dk gy, sb plty, sft-frm, rthy tex, v sl calc, tr dsem & nodr pyr; rr SLTST: lt-med gy, sb plty, frm, rthy tex, non calc, tr dsem pyr

Scale Change
6220
(-4877)

6050
19.50
AZM 93.00
TVD 6041.72
VS -95.34

MD 6081
Inc 23.60
AZM 94.70
TVD 6041.72
VS -95.34

6370
(-5027)

MD 6113
Inc 27.20
AZM 96.60
TVD 6099.45
VS -77.06

MD 6144
Inc 31.00
AZM 98.80
TVD 6126.53
VS -65.58

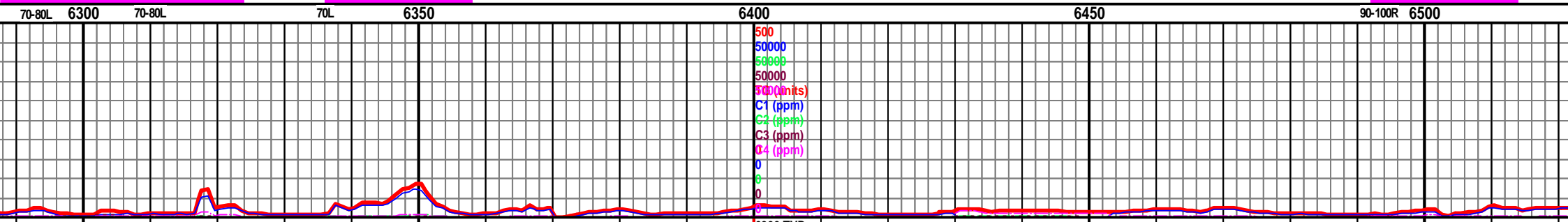
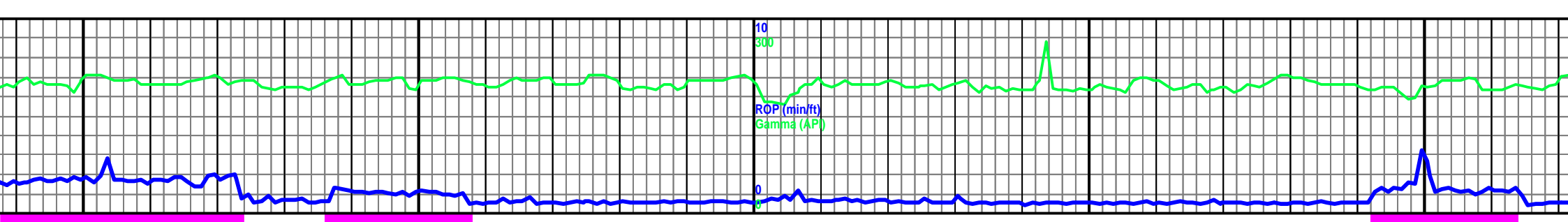
MD 6176
Inc 33.80
AZM 103.10
TVD 6153.55
VS -51.93

MD 6207
Inc 36.10
AZM 108.50
TVD 6178.96
VS -36.93

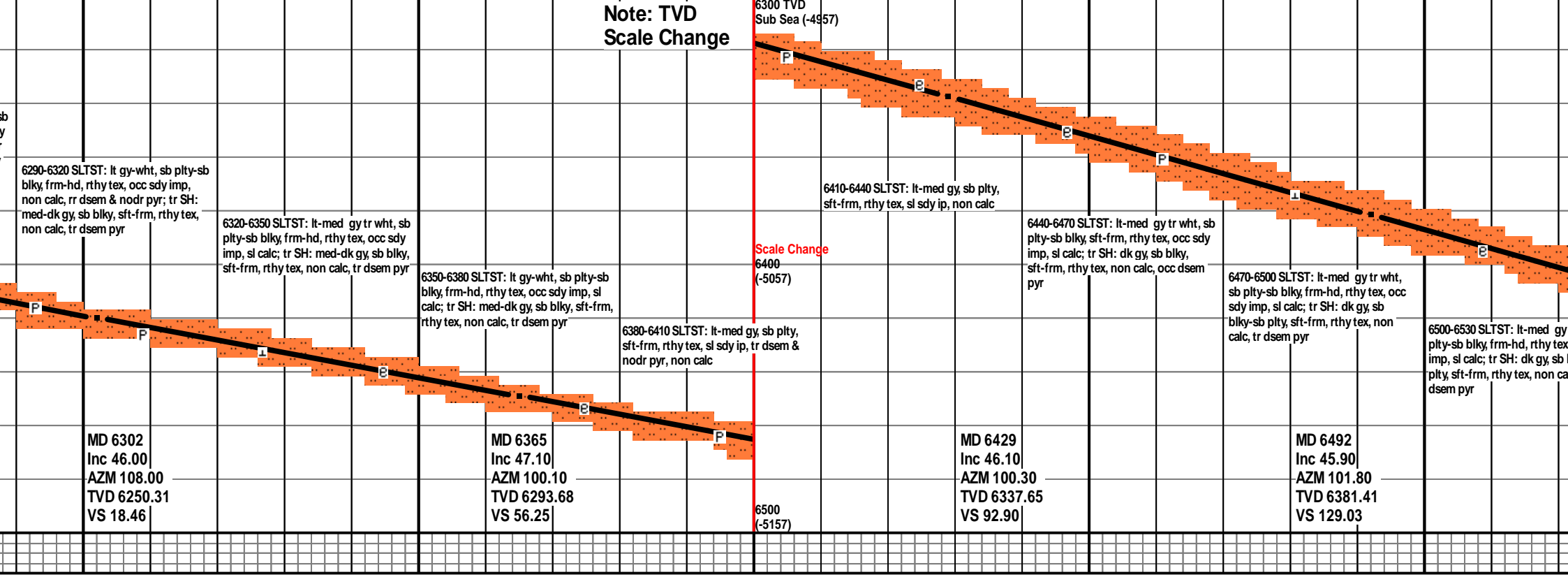
6370
(-5027)

MD 6238
Inc 38.80
AZM 111.80
TVD 6203.57
VS -20.29

MD 6270
Inc 43.70
AZM 111.80
TVD 6227.63
VS -1.39



Note: TVD Scale Change



6290-6320 SLTST: lt gy-wht, sb plty-sb blk, frm-hd, rthy tex, occ sdy imp, non calc, rr dsem & nodr pyr; tr SH: med-dk gy, sb blk, sft-frm, rthy tex, non calc, tr dsem pyr

6320-6350 SLTST: lt-med gy tr wht, sb plty-sb blk, frm-hd, rthy tex, occ sdy imp, sl calc; tr SH: med-dk gy, sb blk, sft-frm, rthy tex, non calc, tr dsem pyr

6350-6380 SLTST: lt gy-wht, sb plty-sb blk, frm-hd, rthy tex, occ sdy imp, sl calc; tr SH: med-dk gy, sb blk, sft-frm, rthy tex, non calc, tr dsem pyr

6380-6410 SLTST: lt-med gy, sb plty, sft-frm, rthy tex, sl sdy ip, tr dsem & nodr pyr, non calc

6410-6440 SLTST: lt-med gy, sb plty, sft-frm, rthy tex, sl sdy ip, non calc

6440-6470 SLTST: lt-med gy tr wht, sb plty-sb blk, sft-frm, rthy tex, occ sdy imp, sl calc; tr SH: dk gy, sb blk, sft-frm, rthy tex, non calc, occ dsem pyr

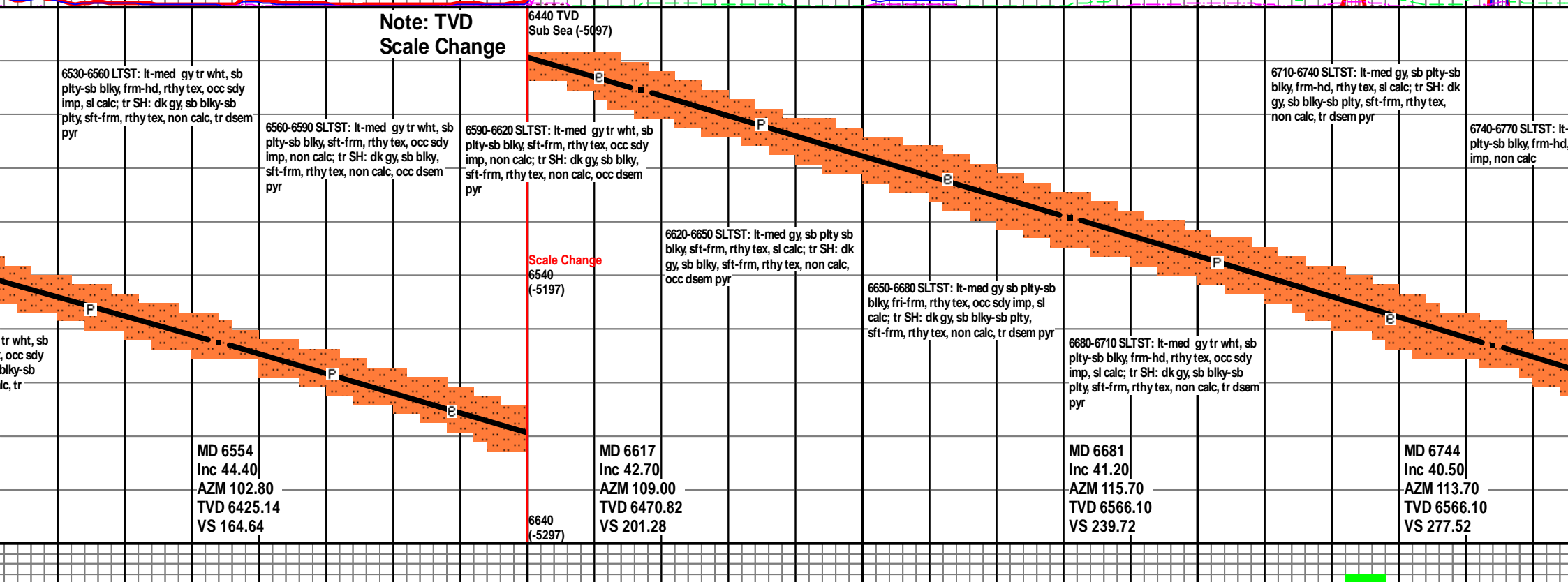
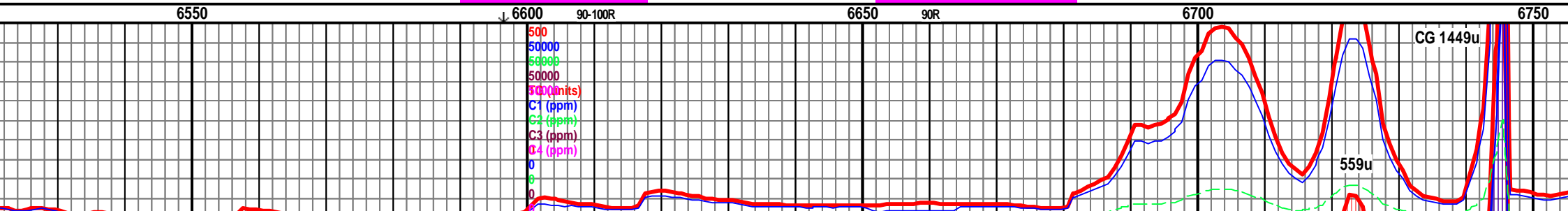
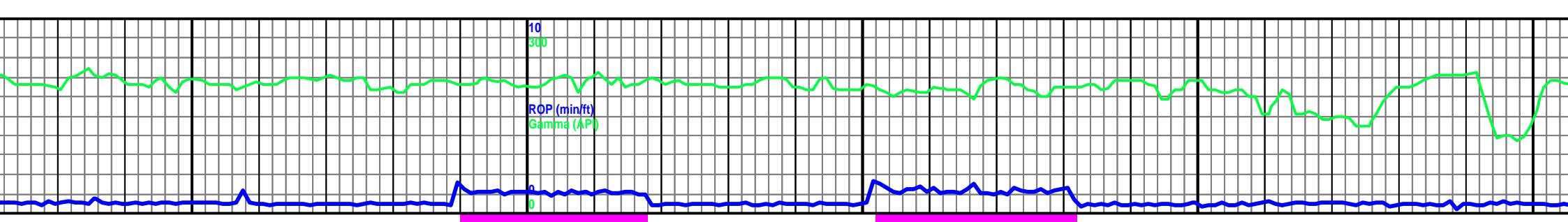
6470-6500 SLTST: lt-med gy tr wht, sb plty-sb blk, frm-hd, rthy tex, occ sdy imp, sl calc; tr SH: dk gy, sb blk, sft-frm, rthy tex, non calc, tr dsem pyr

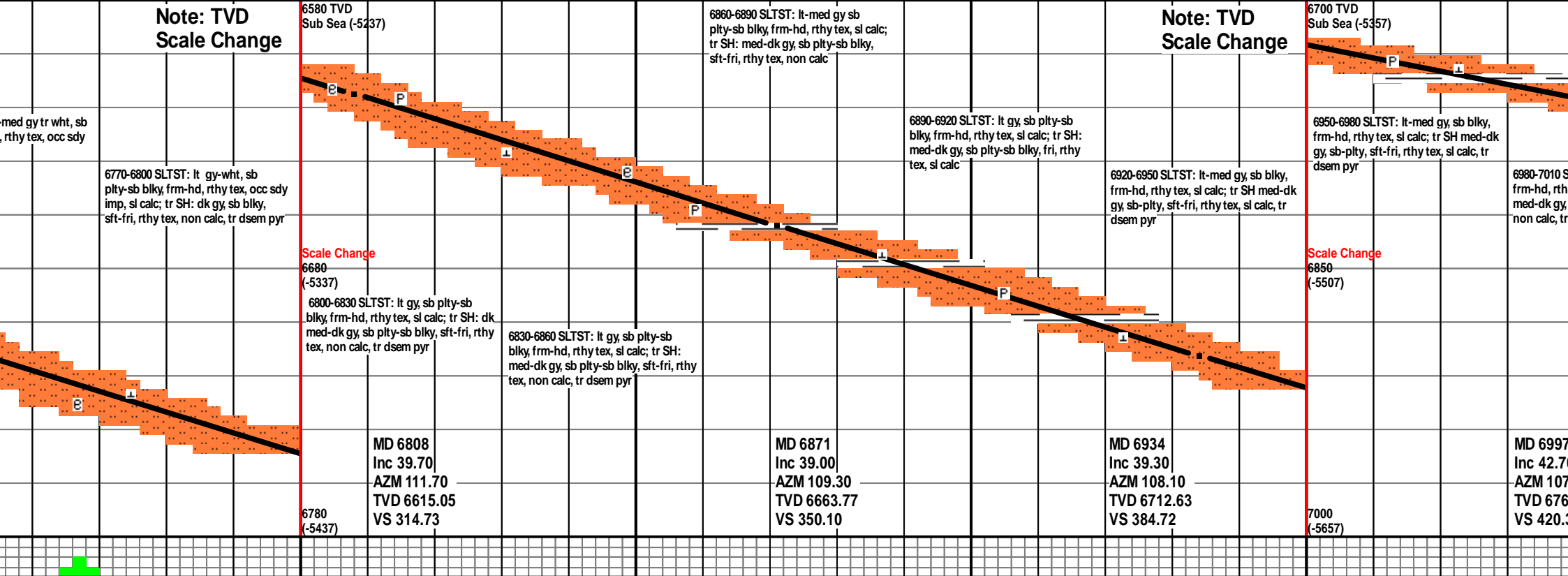
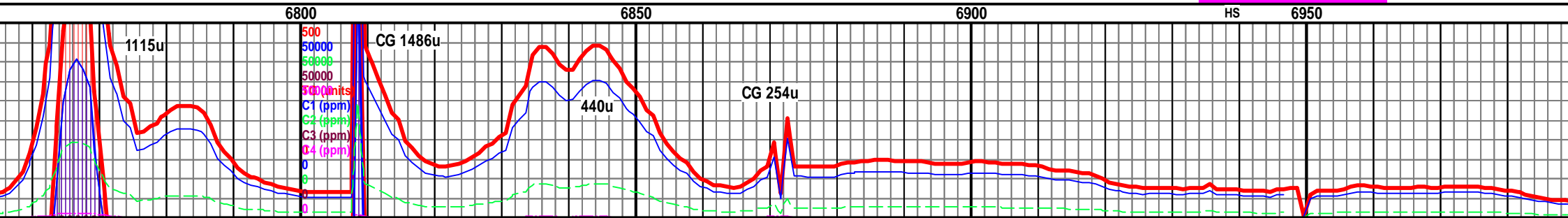
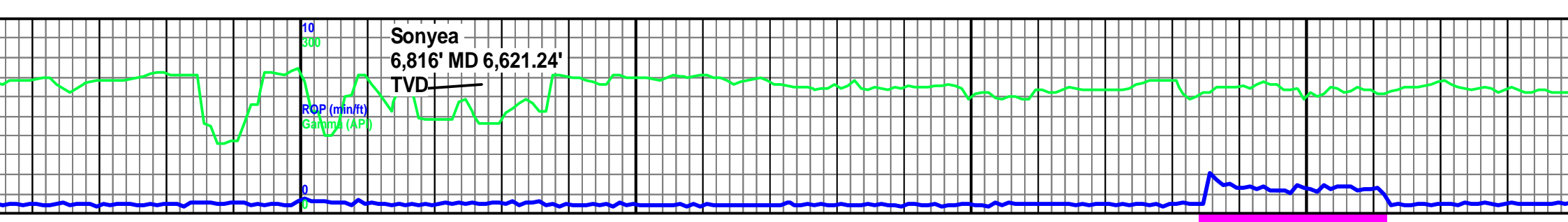
6500-6530 SLTST: lt-med gy plty-sb blk, frm-hd, rthy tex, occ sdy imp, sl calc; tr SH: dk gy, sb plty, sft-frm, rthy tex, non calc, tr dsem pyr

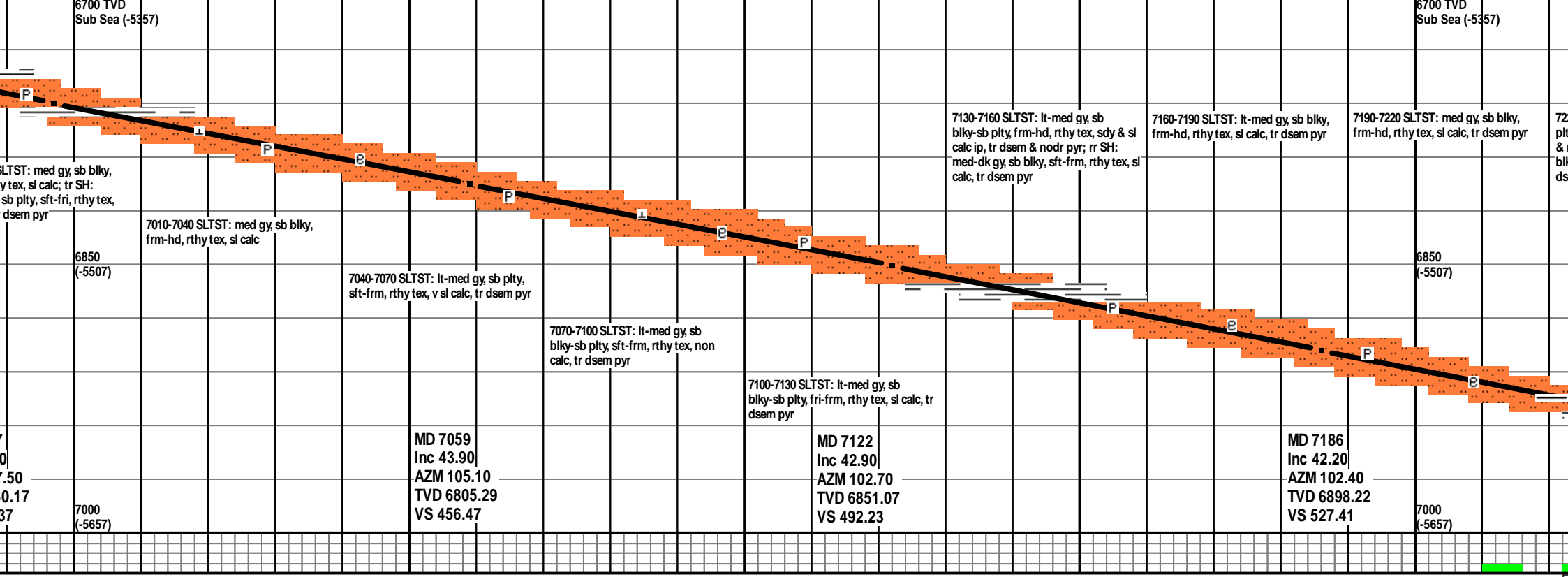
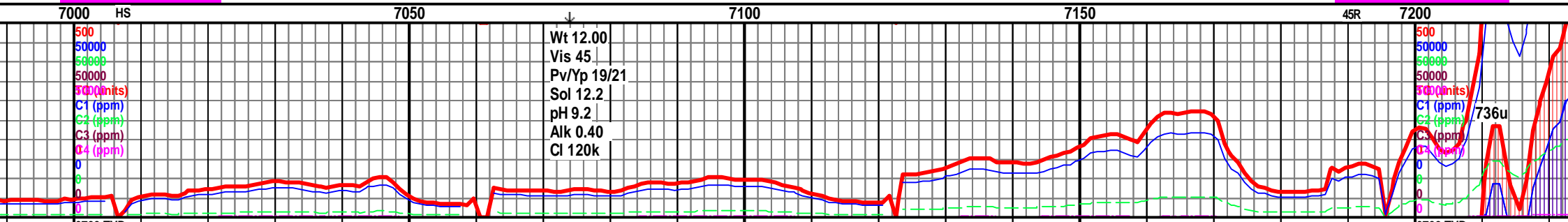
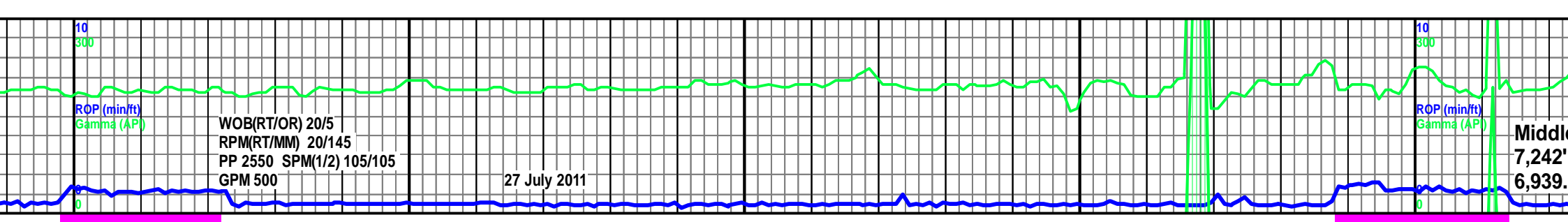
6300 TVD
Sub Sea (-4957)

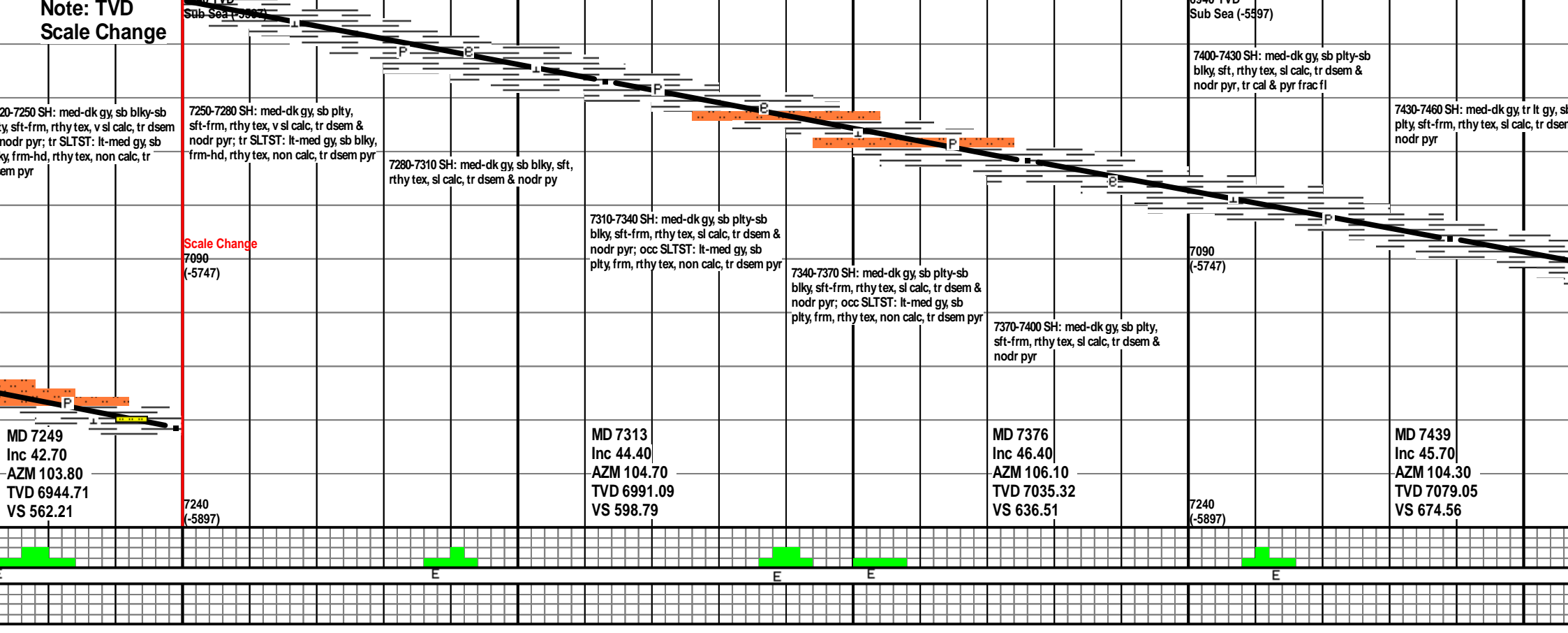
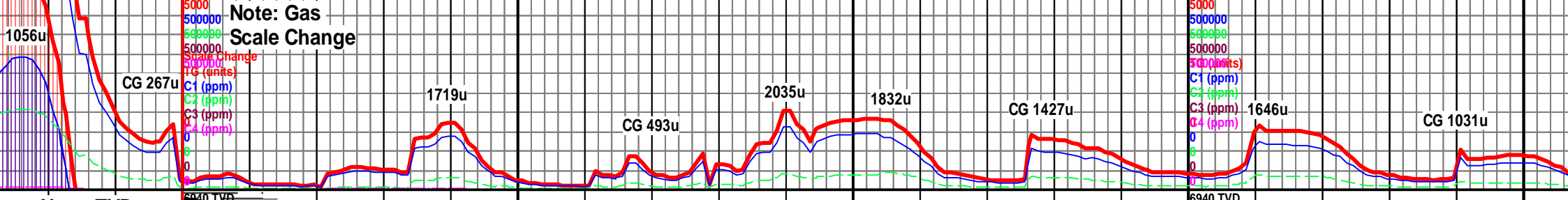
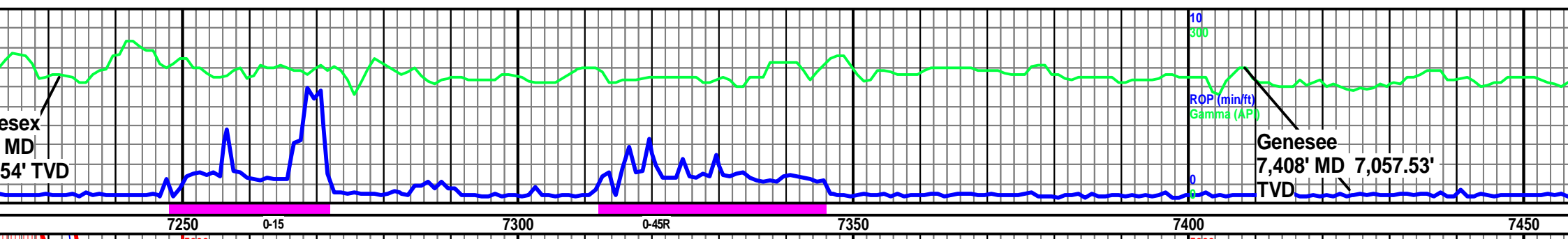
Scale Change
6400
(-5057)

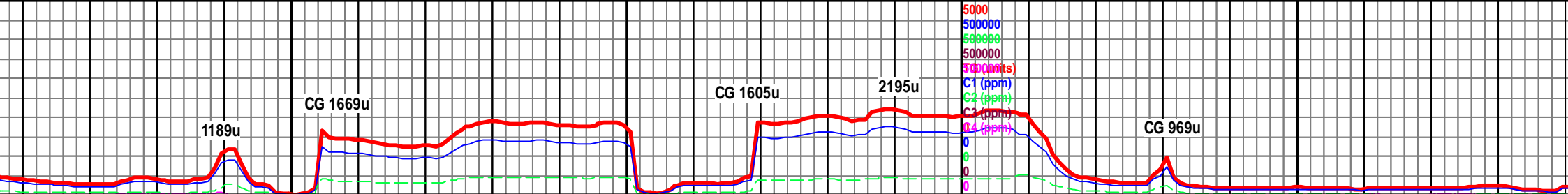
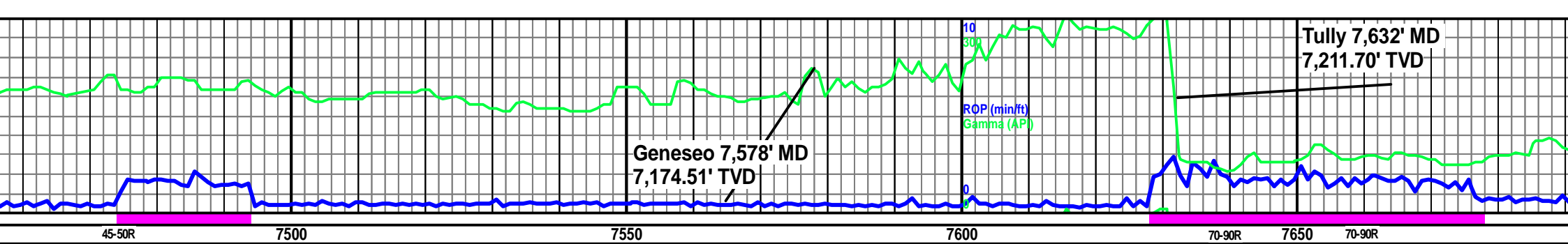
6500
(-5157)





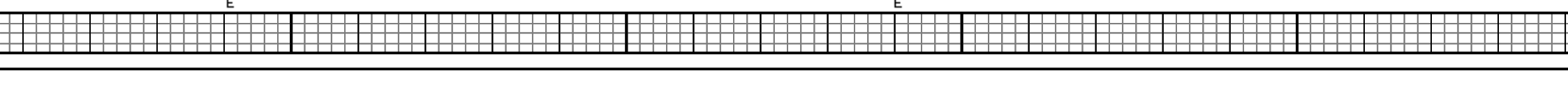




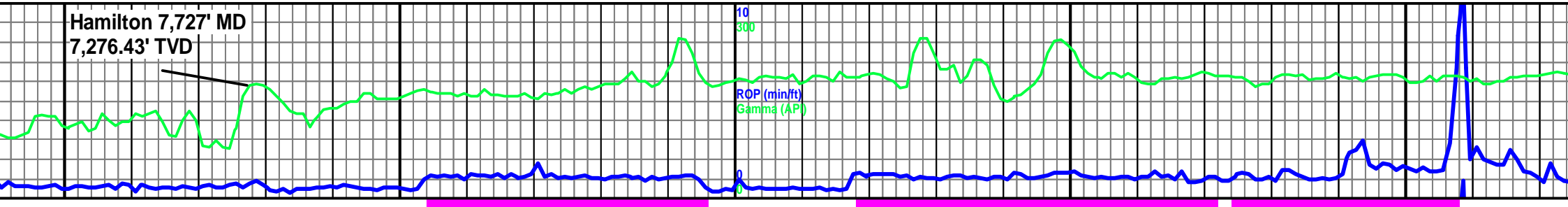


Note: TVD Scale Change

	<p>7460-7490 SH: med-dk gy, sb plty, sft-frm, rthy tex, sl calc, rr dsem & tr nodr pyr, tr cal & pyr frac fl</p>	<p>7490-7520 SH: dk gy, tr med gy, sb plty, frm, rthy tex, sl calc, tr dsem & nodr pyr</p>	<p>7520-7550 SH: med-dk gy, sb plty, frm, rthy tex, sl calc, tr dsem & nodr pyr</p>	<p>7550-7580 SH: dk gy, tr med gy, sb blk-ly-sb plty, rthy tex, sl calc, tr dsem & nodr pyr</p>	<p>7580-7610 SH: dk gy, sb blk-ly-sb plty, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl</p>	<p>7610-7640 SH: dk gy, sft-frm, sb blk-ly-sb plty, rthy tex, sl calc, tr dsem pyr; tr LS: mdst, lt gy-whl, micxn, sft-frm, rthy tex</p>	<p>7640-7670 LS: wkst, lt-med gy, micxn, sft-frm, rthy tex; tr SH: dk gy, sft-frm, rthy tex, sl calc</p>	<p>7670-7700 LS: wkst, lt-med sft-frm, rthy tex; tr SH: dk rthy tex, sl calc, tr cal & pyr</p>
<p>MD 7503 Inc 47.30 AZM 106.10 TVD 7123.11 VS 713.50</p>			<p>MD 7565 Inc 46.30 AZM 104.00 TVD 7165.55 VS 751.35</p>		<p>MD 7627 Inc 46.60 AZM 103.70 TVD 7208.27 VS 788.46</p>		<p>MD 7690 Inc 46.90 AZM 110.5 TVD 7251 VS 827.72</p>	



Hamilton 7,727' MD
7,276.43' TVD



7700 7750 50R 7800 50-60R 7850 50R 7900

5000
500000
500000
500000
300 (units)
C1 (ppm)
C2 (ppm)
C3 (ppm)
C4 (ppm)

952u

1245u

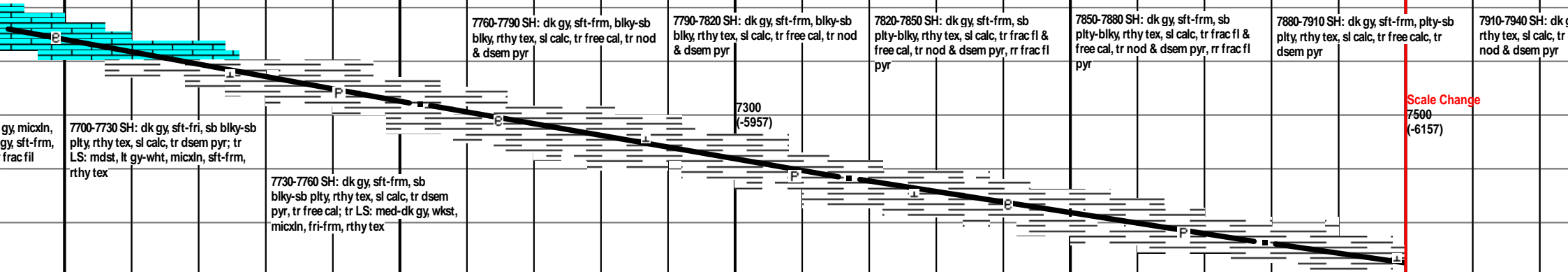
1381u

DTG 1028u

7150 TVD
Sub Sea (-5807)

Note: TVD
Scale Change

7350 TVD
Sub Sea (-6007)



gy, micxn,
gy, sft-frm,
frac fil

7700-7730 SH: dk gy, sft-fri, sb blk-ly-sb
ply, rthy tex, sl calc, tr dsem pyr; tr
LS: mdst, lt gy-wht, micxn, sft-frm,
rthy tex

7730-7760 SH: dk gy, sft-frm, sb
blk-ly-sb ply, rthy tex, sl calc, tr dsem
pyr, tr free cal; tr LS: med-dk gy, wkst,
micxn, fri-frm, rthy tex

7760-7790 SH: dk gy, sft-frm, blk-ly-sb
blk-ly, rthy tex, sl calc, tr free cal, tr nod
& dsem pyr

7790-7820 SH: dk gy, sft-frm, blk-ly-sb
blk-ly, rthy tex, sl calc, tr free cal, tr nod
& dsem pyr

7820-7850 SH: dk gy, sft-frm, sb
ply-blk-ly, rthy tex, sl calc, tr frac fl &
free cal, tr nod & dsem pyr, rr frac fl
pyr

7850-7880 SH: dk gy, sft-frm, sb
ply-blk-ly, rthy tex, sl calc, tr frac fl &
free cal, tr nod & dsem pyr, rr frac fl
pyr

7880-7910 SH: dk gy, sft-frm, ply-sb
ply, rthy tex, sl calc, tr free calc, tr
dsem pyr

7910-7940 SH: dk
rthy tex, sl calc, tr
nod & dsem pyr

7300
(-5957)

Scale Change
7500
(-6157)

MD 7753
Inc 48.20
AZM 110.40
TVD 7293.98
VS 868.86

MD 7817
Inc 52.10
AZM 116.20
TVD 7335.00
VS 913.42

MD 7879
Inc 56.10
AZM 121.50
TVD 7371.37
VS 960.79

7450
(-6107)

7650
(-6307)

E

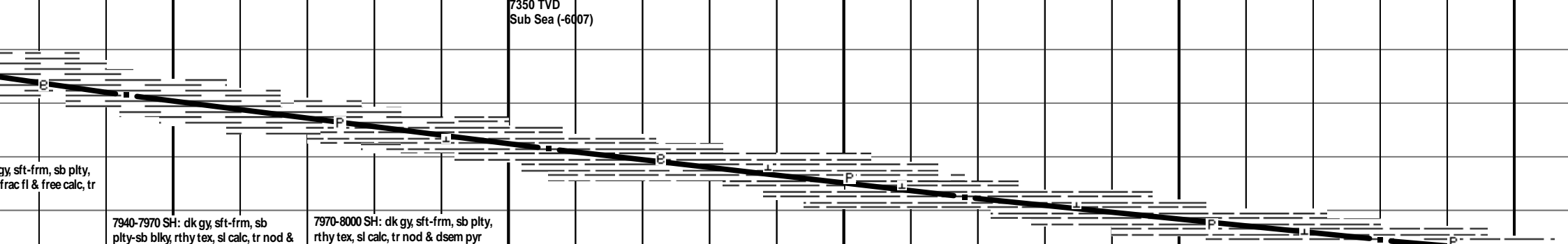
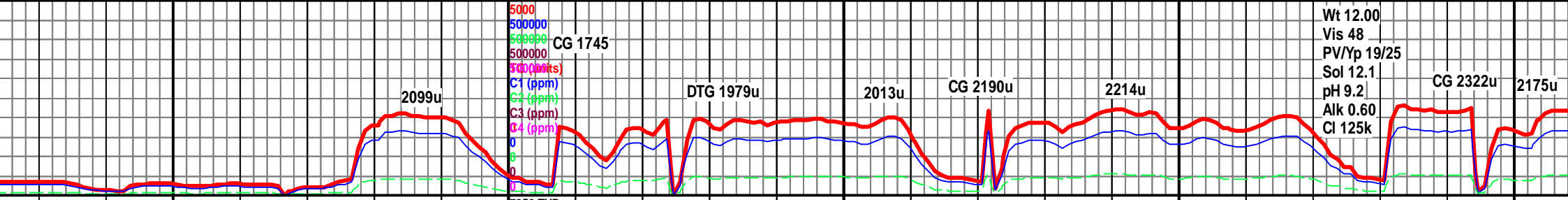
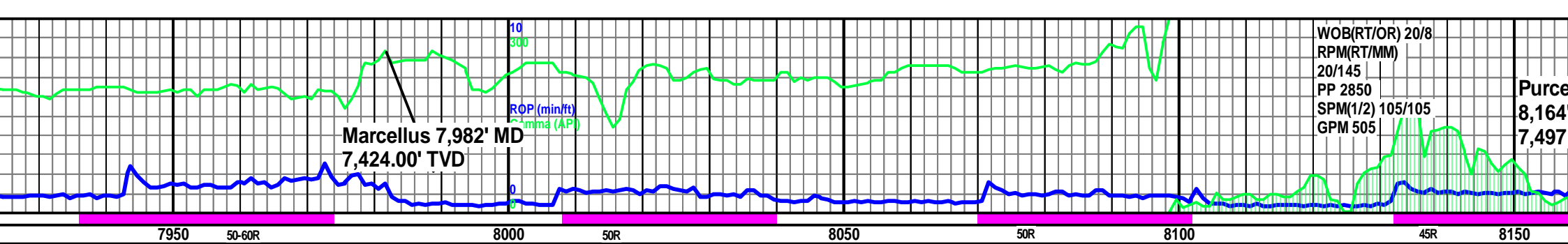
E

E

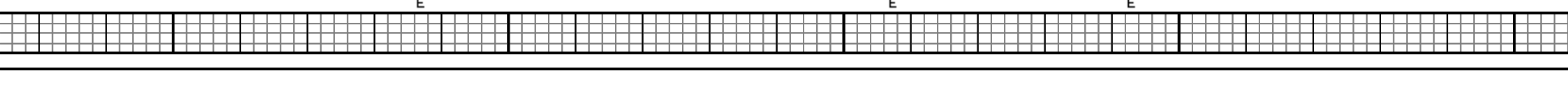
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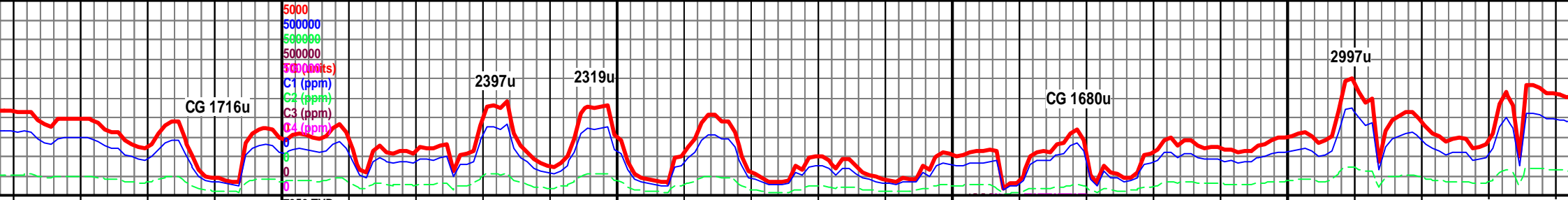
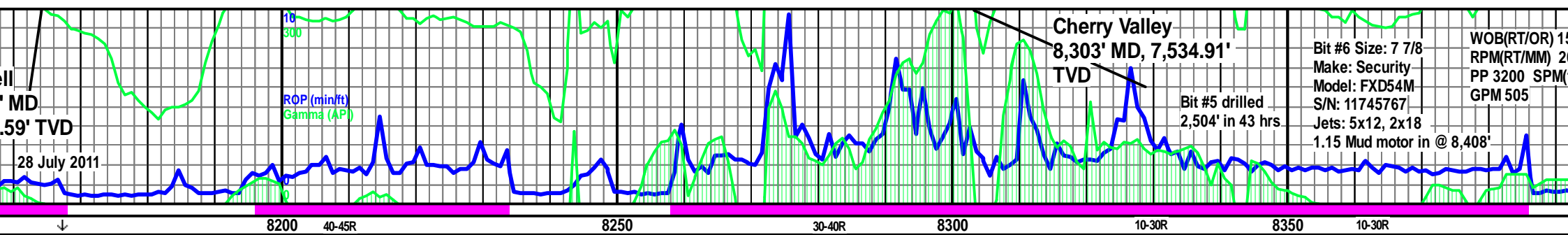
E

E



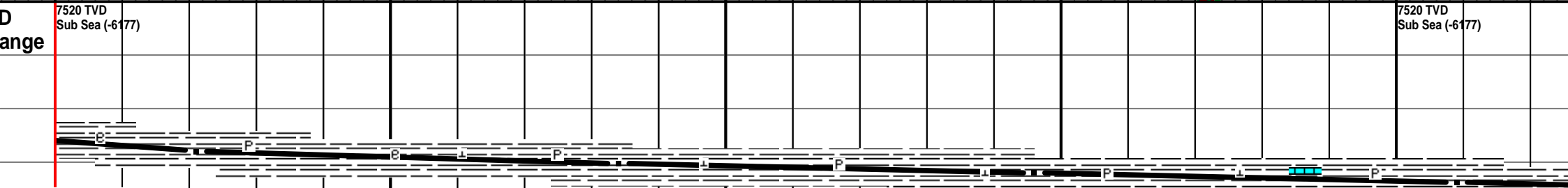
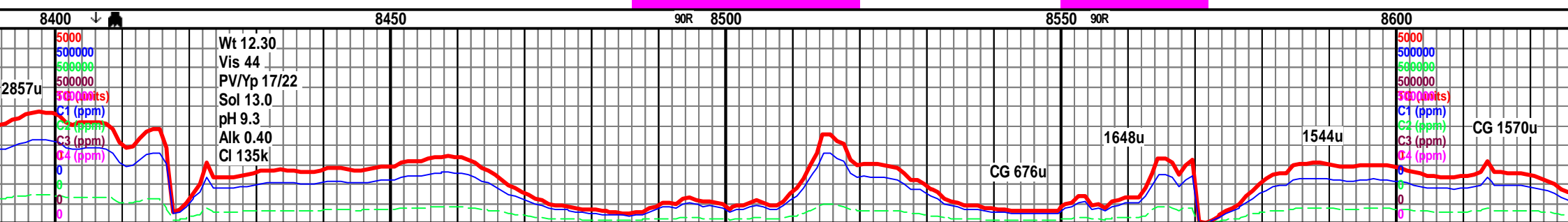
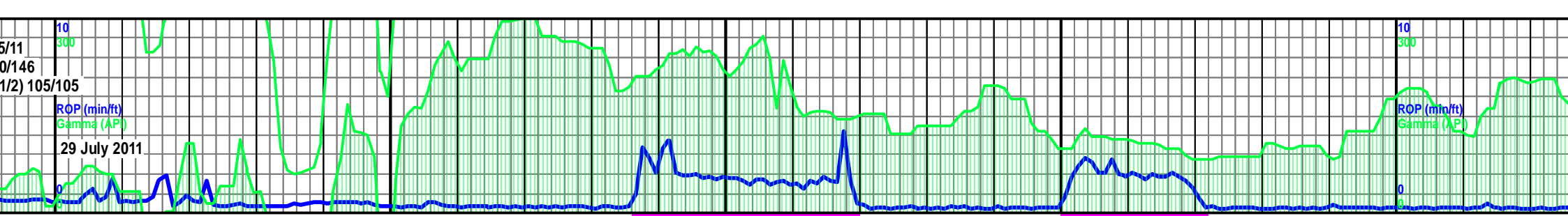
7940-7970 SH: dk gy, sft-frm, sb plty-sb blk, rthy tex, sl calc, tr nod & dsem pyr	7970-8000 SH: dk gy, sft-frm, sb plty, rthy tex, sl calc, tr nod & dsem pyr	7500 (-6157) 8000-8030 SH: dk gy, sft-frm, sb plty-sb blk, rthy tex, sl calc, tr dsem pyr	8030-8060 SH: dk gy, sft-frm, sb blk, rthy tex, sl calc, tr nod & dsem pyr	8060-8090 SH: dk gy, sft-frm, sb blk, rthy tex, sl calc, tr nod & dsem pyr	8090-8120 SH: dk gy, sft-frm, sb blk-sb plty, rthy tex, sl calc, tr nod & dsem pyr	8120-8150 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl & free cal	8150-8180 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl & free cal
MD 7943 Inc 59.70 AZM 127.40 TVD 7405.39 VS 1013.43		MD 8006 Inc 63.30 AZM 132.10 TVD 7435.46 VS 1068.17		MD 8068 Inc 65.70 AZM 135.90 TVD 7462.16 VS 1123.97		MD 8130 Inc 68.60 AZM 140.40 TVD 7486.24 VS 1181.07	



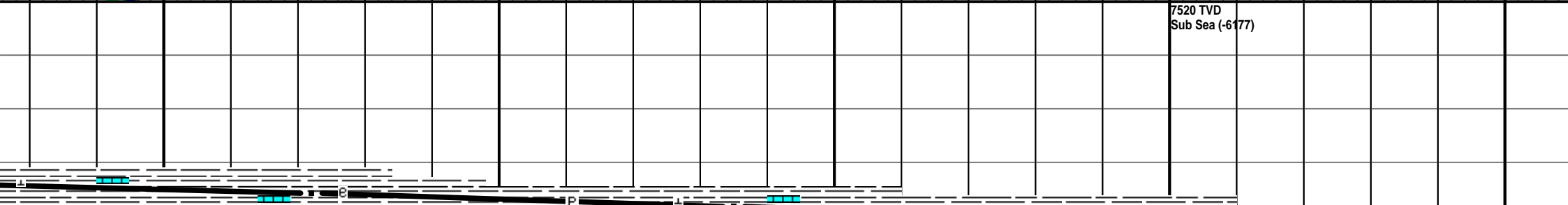
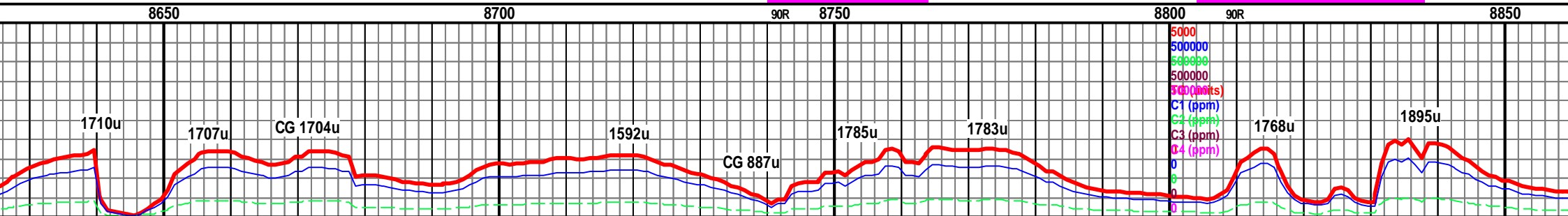
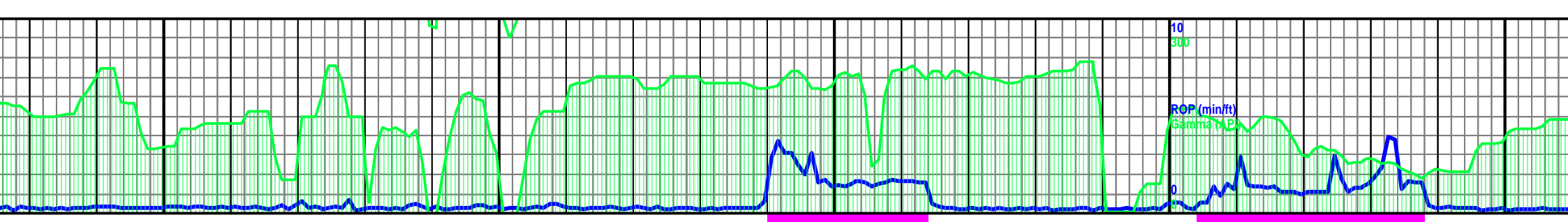


Interval	Description	MD	Inc	AZM	TVD	VS
8180-8210 SH	dk gy-blk, sb blk, rthy tex, sl calc, tr nod & dsem pyr, tr free cal	8194	72.40	144.90	7507.61	1241.19
8210-8240 SH	dk gy-blk, sb blk, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl	8257	74.90	146.80	7525.35	1301.09
8240-8270 SH	dk gy-blk, sb blk, sft-frm, rthy tex, sl calc, tr dsem pyr, tr cal frac fl					
8270-8300 SH	dk gy-blk, sb blk, rthy tex, sl calc, tr dsem & nodr pyr, tr free cal	8320	81.10	150.20	7538.44	1361.67
8300-8330 SH	dk gy-blk, sb blk, rthy tex, sl calc, tr dsem pyr					
8330-8360 SH	dk gy-blk, sb blk, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl					
8360-8390 SH	dk gy-blk, sb blk, rthy tex, sl calc, tr nod & dsem pyr, tr free cal					





7570 (-6227)	8420-8450 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr dsem pyr, tr free calc	8450-8480 SH: dk gy-blk, sb plty-sb blk, frm, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl	8480-8510 SH: dk gy-blk, sb blk, sb plty, frm, rthy tex, sl calc, rr dsem & nodr pyr, tr cal frac fl	8510-8540 SH: dk gy-blk, sb blk, sb plty, frm, rthy tex, sl calc, rr dsem & nodr pyr, tr cal frac fl	8540-8570 SH: dk gy-blk, sb blk, sb plty, frm, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl	8570-8600 SH: dk gy-blk, sb blk, sb plty, frm, rthy tex, sl calc, rr dsem & tr nodr pyr, tr cal frac fl; tr LS: wkst, med-dk gy mot, tr lt gy, micxn, blk, sft, rthy tex, no vis por	7570 (-6227) 8600-8630 SH: dk gy-blk, sb blk, sb plty, frm, rthy tex, sl calc, rr dsem & tr nodr pyr, tr cal frac fl; tr LS: wkst, med-dk gy mot, tr lt gy, micxn, blk, sft, rthy tex, no vis por
MD 8421 Inc 87.90 AZM 149.30 TVD 7548.12 VS 1460.11	MD 8484 Inc 88.10 AZM 150.70 TVD 7550.32 VS 1521.73	MD 8546 Inc 88.70 AZM 153.00 TVD 7552.05 VS 1581.95	MD 8609 Inc 88.40 AZM 154.50 TVD 7553.64 VS 1642.62				



8630-8660 SH: dk gy-blk, sb blk-ly-sb pty, frm-hd, rthy tex, sl calc, tr dsem, tr cal frac fl; tr LS: wkst, lt-med gy mot, tr dk gy, micxn, blk, sft, rthy tex, no vis por	8660-8690 SH: dk gy-blk, sb blk-ly-sb pty, frm-hd, rthy tex, sl calc, tr dsem, tr cal frac fl; tr LS: wkst, lt-med gy mot, tr dk gy, micxn, blk, sft, rthy tex, no vis por	8690-8720 SH: dk gy-blk, sb blk-ly-sb pty, frm, rthy tex, sl calc, tr dsem pyr, tr free cal; tr LS: wkst, lt-med gy mot, tr dk gy, micxn, blk, sft, rthy tex, no vis por	8720-8750 SH: dk gy-blk, sb pty-pty, frm, rthy tex, sl calc, tr dsem & nodr pyr	8750-8780 SH: dk gy-blk, sb blk-ly-sb pty, frm, rthy tex, sl calc, tr dsem & rr nodr pyr, occ cal frac fl; tr LS: wkst, lt-med gy mot, tr dk gy, blk, sft, rthy tex, no vis por	8780-8810 SH: dk gy-blk, sb blk-ly-sb pty, frm, rthy tex, sl calc, tr dsem & rr nodr pyr, tr cal frac fl; tr LS: wkst, lt-med gy mot, tr dk gy, blk, sft, rthy tex, no vis por	8810-8840 SH: dk gy-blk, sb blk-ly-sb pty, frm, rthy tex, sl calc, tr dsem & rr nodr pyr, occ cal frac fl & free cal; tr LS: wkst, lt-med gy mot, tr dk gy, blk, sft, rthy tex, no vis por	8840-8870 SH: dk gy-blk, sb blk-ly-sb pty, frm, rthy tex, sl calc, tr dsem pyr
	MD 8672 Inc 87.70 AZM 154.10 TVD 7555.79 VS 1703.10		MD 8735 Inc 87.70 AZM 153.90 TVD 7558.32 VS 1763.67		MD 8798 Inc 88.00 AZM 154.40 TVD 7560.68 VS 1824.19		

10
300

ROP (min/ft)
Gamma Ray

5000
500000
500000
500000
500000
C1 (ppm)
C2 (ppm)
C3 (ppm)
C4 (ppm)

7520 TVD
Sub Sea (-6177)

7570
(-6227)

7620
(-6277)

8650

8700

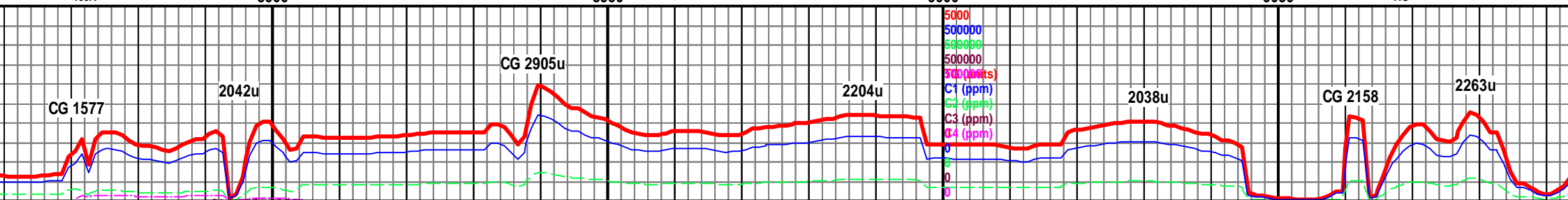
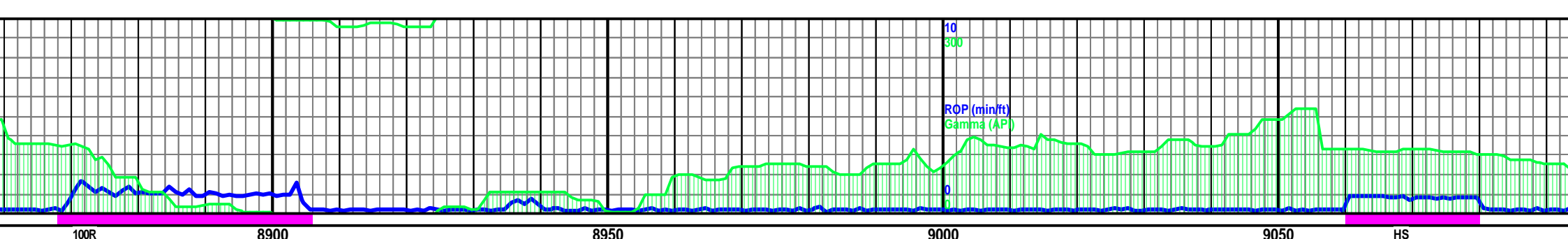
90R

8750

8800

90R

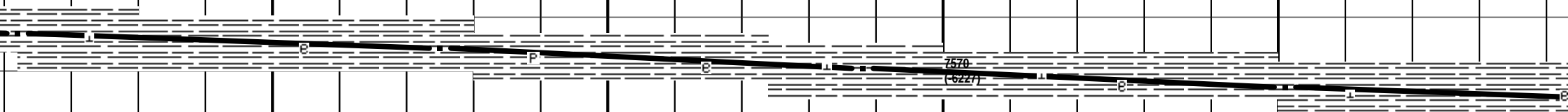
8850



5000
50000
500000
500000
500000
500000
C1 (ppm)
C2 (ppm)
C3 (ppm)
04 (ppm)

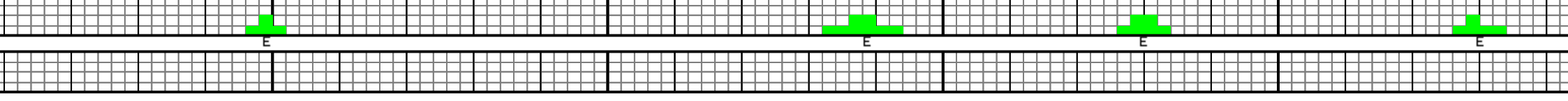
7520 TVD
Sub Sea (-6177)

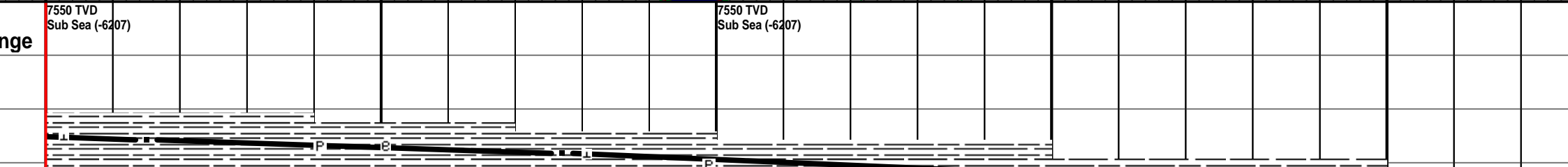
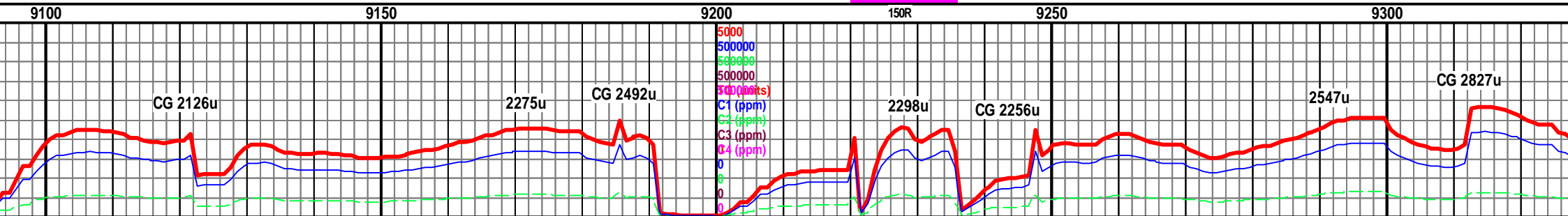
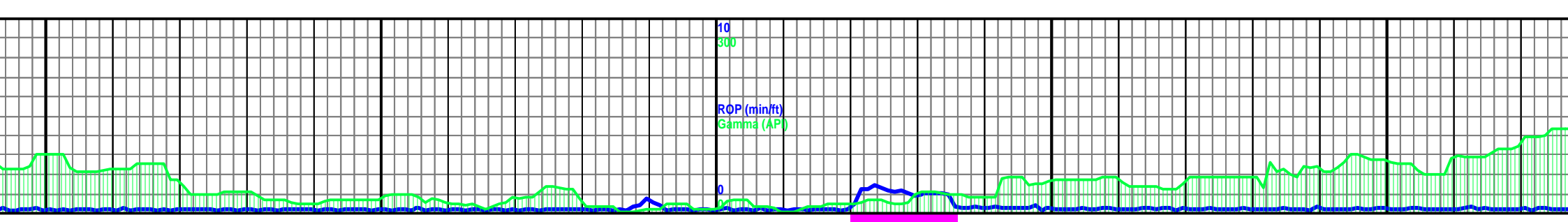
Note: TVD
Scale Char



sb blkly-sb ree cal, tr	8870-8900 SH: dk gy-blk, blkly-sb spl, sft-fri, rthy tex, occ free cal, tr pyr frac fl, tr nod & dsem pyr	8900-8930 SH: dk gy-blk, sb blkly-sb spl, sft-fri, rthy tex, tr free cal, tr dsem pyr	8930-8960 SH: dk gy-blk, sb blkly-sb spl, sft-fri, rthy tex, tr free cal, tr dsem pyr	8960-8990 SH: dk gy-blk, sb plty- sb blkly, sft-fri, rthy tex, occ free cal, tr cal frac fl	8990-9020 SH: dk gy-blk, sb plty- sb blkly, sft-fri, rthy tex, occ free cal, tr cal frac fl	9020-9050 SH: dk gy-blk, sb blkly-sb plty, rthy tex, tr frac fl cal	9050-9080 SH: dk gy-blk, sb blkly-sb plty, rthy tex, tr frac fl cal, tr dsem pyr	9080-9110 SH: dk gy-blk, sb blkly-sb plty, rthy tex, tr frac fl cal, tr dsem pyr
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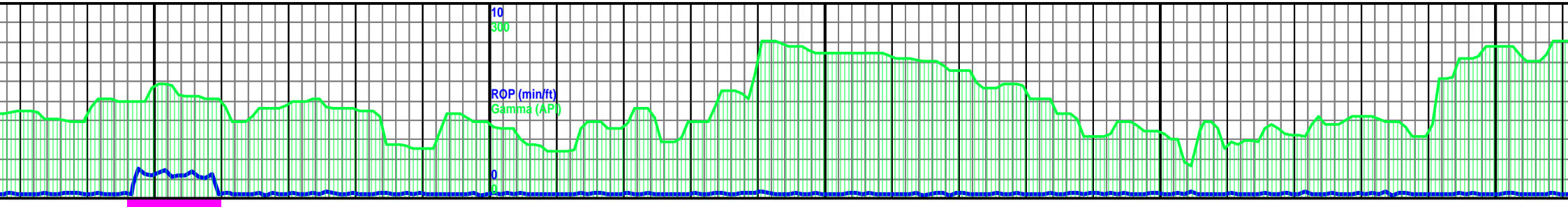
MD 8862 Inc 87.90 AZM 156.30 TVD 7562.97 VS 1885.30	MD 8925 Inc 86.90 AZM 158.10 TVD 7565.83 VS 1944.80	MD 8988 Inc 86.30 AZM 158.00 TVD 7569.56 VS 2003.94	MD 9051 Inc 87.30 AZM 155.10 TVD 7573.08 VS 2063.28
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<p>Scale Change</p> <p>7600 (-6257)</p>	<p>9110-9140 SH: dk gy-blk, sb blk-ly-sb pty, rthy tex, sl calc, tr frac fl & free cal, tr dsem & nod pyr</p>	<p>9140-9170 SH: dk gy-blk, sb blk-ly-sb pty, rthy tex, tr frac fl cal, tr dsem pyr</p>	<p>9170-9200 SH: dk gy-blk, sb blk-ly-sb pty, rthy tex, tr frac fl cal, tr dsem pyr</p>	<p>9200-9230 SH: gy-blk, sb blk-ly-sb split, rthy tex, tr free cal, tr dsem pyr</p>	<p>9230-9260 SH: dk gy-blk, sb blk-ly-sb pty, rthy tex, tr frac fl cal, tr dsem pyr</p>	<p>9260-9290 SH: dk gy-blk, sb blk-ly-sb pty, rthy tex, tr frac fl cal, tr dsem & nod pyr</p>	<p>9290-9320 SH: dk gy-blk, sb blk-ly-sb pty, rthy tex, tr frac fl cal, tr dsem & nod pyr</p>	<p>9320-9350 SH: dk gy-blk, sb blk-ly-sb pty, rthy tex, tr frac fl cal, tr dsem & nod pyr</p>
<p>7650 (-6307)</p>	<p>MD 9115 Inc 87.90 AZM 156.70 TVD 7575.76 VS 2123.84</p>		<p>MD 9177 Inc 87.60 AZM 156.60 TVD 7578.19 VS 2182.60</p>	<p>7650 (-6307)</p>	<p>MD 9241 Inc 86.60 AZM 157.00 TVD 7581.43 VS 2243.17</p>		<p>MD 9305 Inc 86.30 AZM 156.70 TVD 7585.39 VS 2303.69</p>	





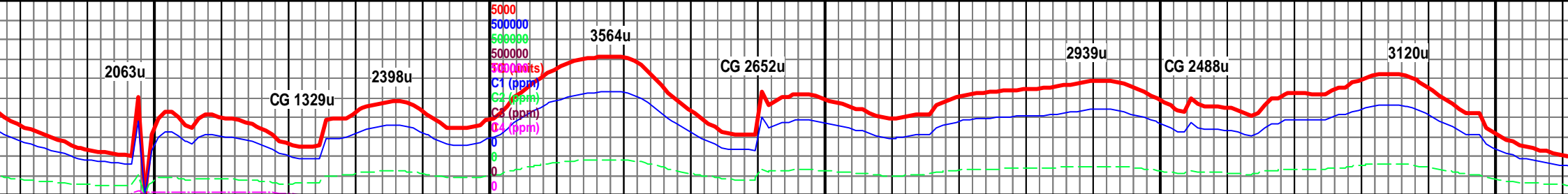
9350 150R

9400

9450

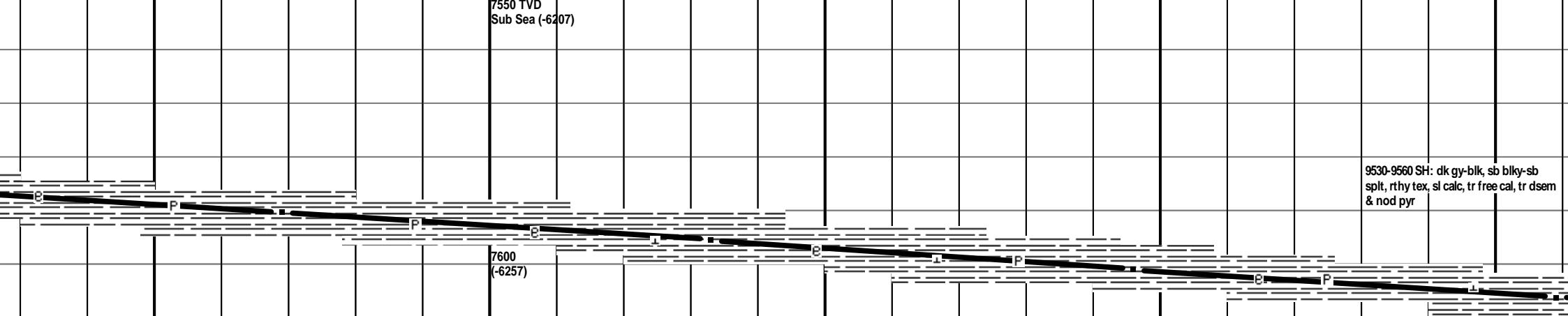
9500

9550



5000
50000
500000
500000
300 (units)
C1 (ppm)
C2 (ppm)
C3 (ppm)
CG (ppm)

7550 TVD
Sub Sea (-6207)



9530-9560 SH: dk gy-blk, sb blk- sb splt, rthy tex, sl calc, tr free cal, tr dsem & nod pyr

7600 (-6257)

0 SH: dk gy-blk, sb blk- sb pty, 9350-9380 SH: dk gy-blk, sb blk- sb pty, 9380-9410 SH: dk gy-blk, sb blk- sb pty, rthy tex, sl calc, tr free cal, tr dsem & nod pyr
 9410-9440 SH: dk gy-blk, sb blk- sb pty, rthy tex, sl calc, tr free cal, tr dsem pyr
 9440-9470 SH: dk gy- blk, sb blk- sb pty, 9470-9500 SH: dk gy- blk, sb blk- sb pty, rthy tex, sl calc, tr free cal, tr nod & dsem pyr
 9500-9530 SH: dk gy-blk, sb blk- sb pty, rthy tex, sl calc, tr free cal, tr nod & dsem pyr

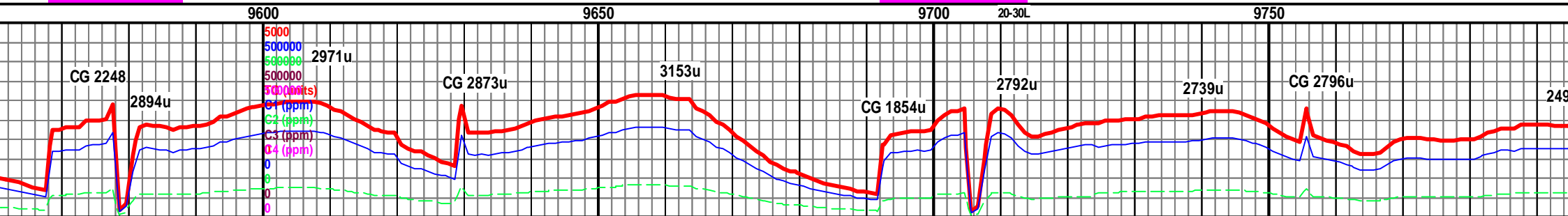
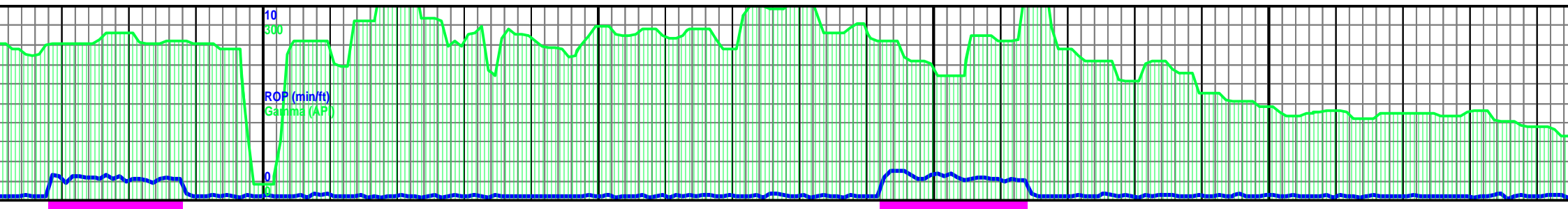
MD 9369
Inc 85.10
AZM 157.80
TVD 7590.19
VS 2364.01

MD 9433
Inc 85.20
AZM 157.80
TVD 7595.60
VS 2424.07

MD 9496
Inc 84.80
AZM 157.30
TVD 7601.09
VS 2483.28

7650 (-6307)





5000
 500000
 500000
 500000
 500 (limits)
 C1 (ppm)
 C2 (ppm)
 C3 (ppm)
 C4 (ppm)

7550 TVD
Sub Sea (-6207)

Note: TVD Scale Change

9560-9590 SH: dk gy-blk, sb blk-sb split, rthy tex, sl calc, tr free cal, tr dsem & nod pyr

9590-9620 SH: dk gy-blk, sb blk-sb plty, rthy tex, sl calc, tr free cal, tr dsem & nod pyr

9620-9650 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr free cal, tr dsem & nod pyr

9650-9680 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr free cal, tr dsem pyr

9680-9710 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr free cal, tr dsem & nod pyr

9710-9740 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr free cal, tr dsem pyr

9740-9770 SH: dk gy-blk, sb blk, rthy tex, sl calc, tr free & frac fl cal, tr dsem pyr

9770-9800 SH: dk gy-blk, sb blk-sb plty, rthy tex, sl calc, tr free cal, tr dsem & nod pyr

7600 (-6257)

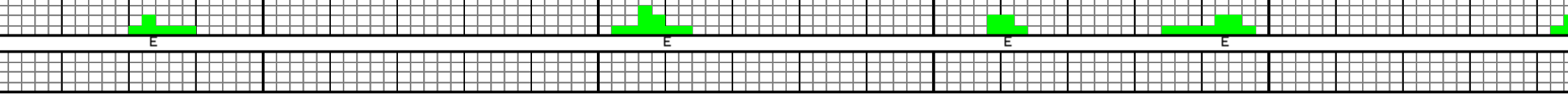
MD 9559
Inc 85.80
AZM 156.80
TVD 7606.26
VS 2542.69

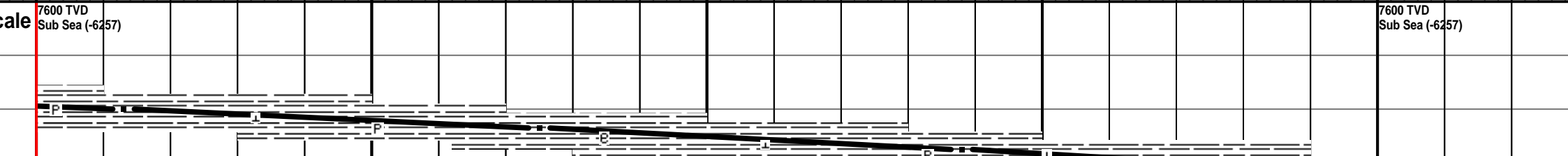
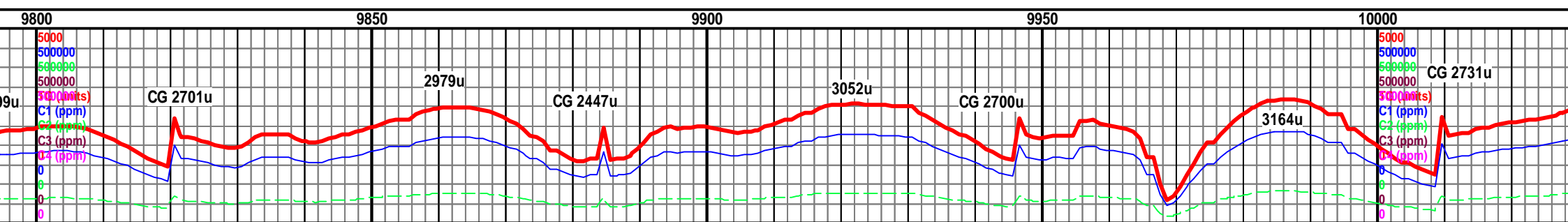
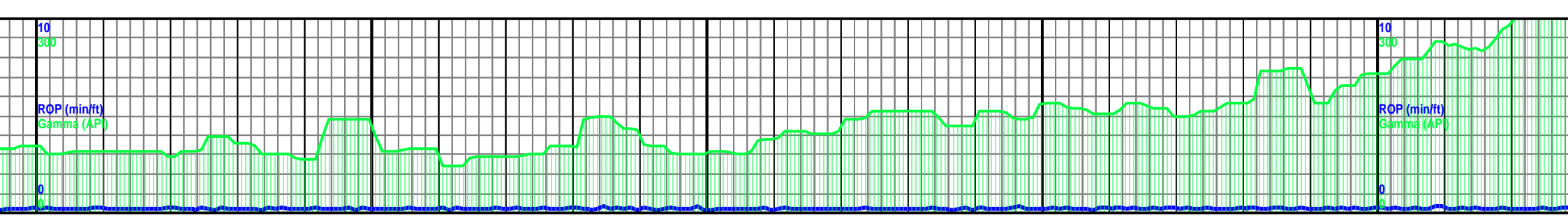
7650 (-6307)

MD 9622
Inc 86.30
AZM 156.80
TVD 7610.60
VS 2602.25

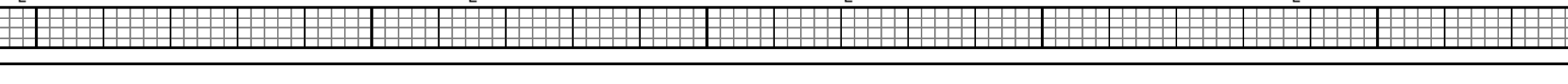
MD 9686
Inc 87.30
AZM 156.20
TVD 7614.17
VS 2662.91

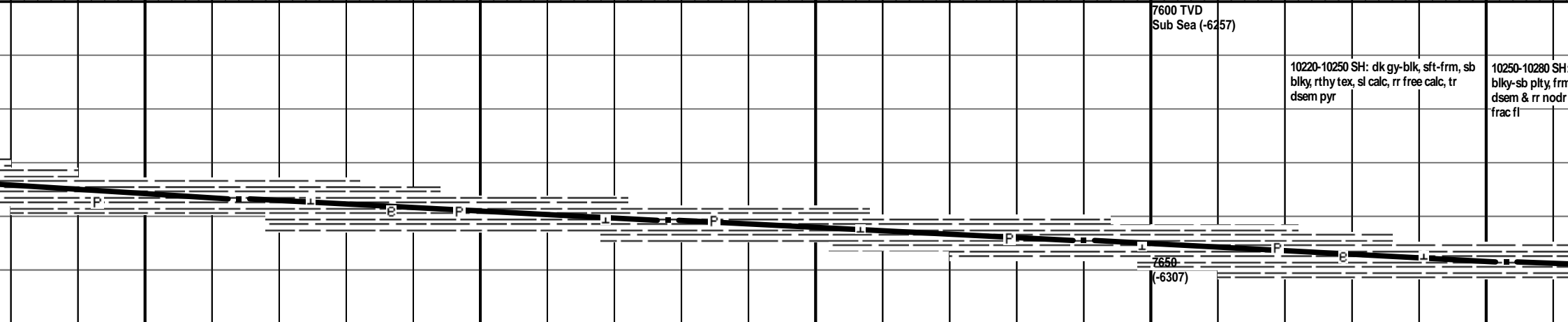
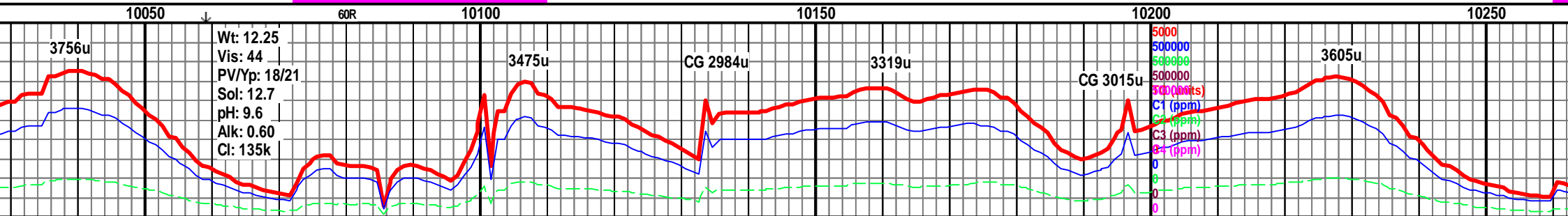
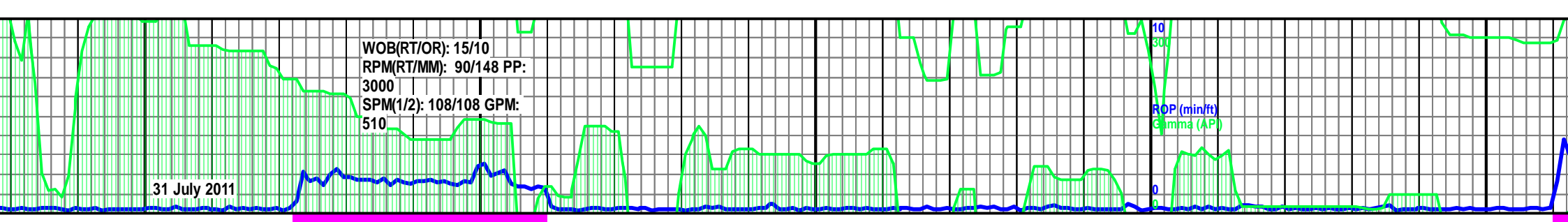
MD 9749
Inc 87.50
AZM 154.90
TVD 7617.03
VS 2722.98



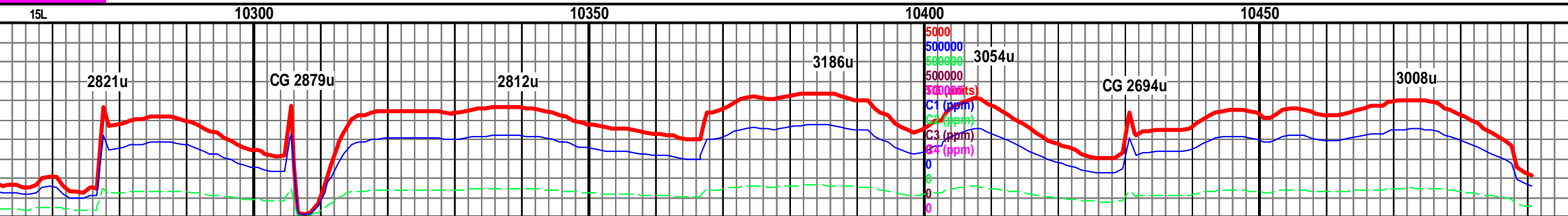
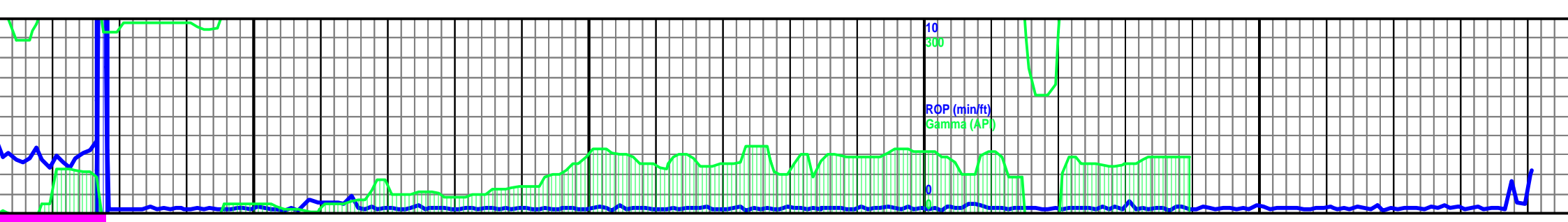


9800-9830 SH: dk gy-blk, sb blk-ly-sb plty, rthy tex, sl calc, tr free cal, tr dsem pyr	9830-9860 SH: dk gy-blk, sb blk-ly, rthy tex, sl calc, tr free cal, tr dsem pyr	9860-9890 SH: dk gy-blk, sb blk-ly, rthy tex, sl calc, tr free cal, tr dsem & nod pyr	9890-9920 SH: dk gy-blk, sb blk-ly-sb plty, rthy tex, sl calc, tr dsem & nod pyr	9920-9950 SH: dk gy-blk, sb blk-ly, rthy tex, sl calc, rr dsem & nod pyr	9950-9980 SH: dk gy-blk, sb blk-ly, rthy tex, sl calc, tr free cal, rr dsem & nod pyr	9980-10010 SH: dk gy-blk, sb blk-ly-sb plty, rthy tex, sl calc, tr free cal, tr dsem & nod pyr	10010-10040 SH: dk gy-blk, sb blk-ly-sb plty, rthy tex, sl calc, tr free cal, tr dsem & nod pyr
MD 9813 Inc 87.00 AZM 154.10 TVD 7620.10 VS 2784.33	MD 9875 Inc 86.60 AZM 153.80 TVD 7623.56 VS 2843.90	MD 9938 Inc 86.20 AZM 153.20 TVD 7627.51 VS 2904.54	MD 10,001 Inc 85.80 AZM 153.00 TVD 7631.91 VS 2965.27				

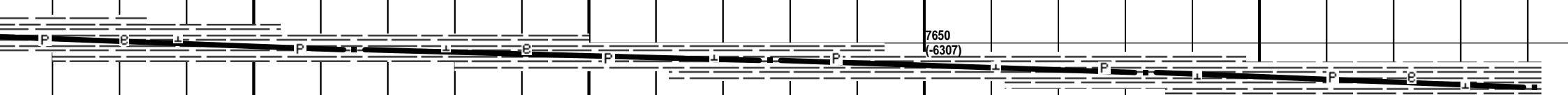




blk, sb blk-sb free cal, tr	10040-10070 SH: dk gy-blk, sft frm, sb blk-sb splty, tr free cal, tr dsem pyr	10070-10100 SH: dk gy-blk, sft frm, sb blk, rthy tex, tr free cal, tr dsem & nod pyr	10100-10130 SH: dk gy-blk, sft frm, sb blk, rthy tex, sl calc, tr free calc, tr dsem & nod pyr	10130-10160 SH: dk gy-blk, sft frm, sb blk-sb plty, rthy tex, sl calc, rr free cal, tr dsem pyr	10160-10190 SH: dk gy-blk, sft frm, sb blk, rthy tex, sl calc, rr free calc, tr dsem pyr	10190-10220 SH: dk gy-blk, sft frm, sb blk, rthy tex, sl calc, rr free calc, tr dsem pyr	7700 (-6357)	MD 10,253 Inc 86.60 AZM 156.50 TVD 7648.4 VS 3205.34
	MD 10,064 Inc 85.60 AZM 153.90 TVD 7636.63 VS 3025.87		MD 10,128 Inc 87.00 AZM 156.30 TVD 7640.76 VS 3086.97		MD 10,190 Inc 86.20 AZM 156.80 TVD 7644.44 VS 3145.71			



blk, tr dk gy, sb n, rthy tex, sl calc, tr pyr, tr free cal, tr pyr	10280-10310 SH: blk, sb blk- sb plty, sft frm, rthy tex, sl calc, tr dsem & nod pyr, tr free cal	10310-10340 SH: blk, sb blk- sb plty, sft frm, rthy tex, sl calc, tr dsem & nod pyr, tr free cal	10340-10370 SH: dk gy-blk, sb blk-sb plty, frm, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl & fr cal	10370-10400 SH: dk gy-blk, sb blk-sb plty, frm, rthy tex, sl calc, tr dsem & nodr pyr, rr cal frac fl, tr fr cal	10400-10430 SH: blk, tr dk gy, sb blk-sb plty, frm, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl & fr cal	10430-10460 SH: dk gy-blk, sb blk-sb plty, frm, rthy tex, sl calc, tr dsem & nodr pyr, tr cal frac fl	10460-10491 SH: blk, tr dk gy, sb blk-sb plty, frm, rthy tex, sl calc, tr dsem & occ nodr pyr, rr cal frac fl
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	<p>MD 10,315 Inc 88.30 AZM 156.80 TVD 7651.15 VS 3264.09</p>	<p>MD 10,377 Inc 87.90 AZM 156.20 TVD 7653.21 VS 3322.91</p>	<p>7700 (-6357)</p>	<p>MD 10,433 Inc 87.30 AZM 156.90 TVD 7655.56 VS 3376.01</p>
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Bit #6 2,083'
in 16.1
hours

10500

10

Total Depth of 10,491'
reached at 1200 hours EDT
31 July 2011

**Bottom Hole Location
2,566.22' South and 2,277.21'
East of surface location**

**Projection to Bit
MD 10491
Inc 87.30
AZM 156.90
TVD 7658.29
VS 3430.88**