

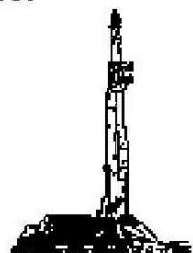
GOOLSBY BROTHERS
and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office



Geological Wellsite
Supervision

www.goolsbybrothers.com



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

Well Name: Vogl 16C-36HZ

API: 05-123-39688-0000

Location: Section 36, T3N, R68W

License Number:

Spud Date: August 19, 2014

Surface Coordinates: SWSW Sec 36 T3N R68W; 556' FSL & 713' FWL

Lat N 40.176683 Long W -104.958119

Bottom Hole Coordinates: Sec 36 T3N R68W; 898' FSL; 493' FEL

Ground Elevation (ft): 4,818'

Logged Interval (ft): 6,850'

To: 12,492'

K.B. Elevation (ft): 4,834'

Total Depth (ft): 12,492' DMTD

Formation: Pierre Shales/Sands, Niobrara, Codell Target

Type of Drilling Fluid: Water & Poly to 6,850', LSND 6,850'-12,492'

Region: Wattenberg, DJ Basin
Drilling Completed: August 26, 2014

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Kerr-McGee Oil & Gas Onshore LP

Address: Granite Tower - 1099 18th St, Ste 1800

Denver, CO 80202

CO Geologist, Ian Harris

GEOLOGIST

Name: Andrew Krueger & Daniel Kabala

Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)

Address: 575 Union Blvd.

Suite 208,

Lakewood CO. 80228

E-logs

MWD GR 6850' - 12,427'

Casing

9 5/8" Surface Casing set @ 1,145' MD

7" Intermediate Casing set @ 7,824' MD

4 1/2" Production Liner hung 08/28/2014, landed @ 12,477'

Comments

1) Drilling Contractor: Xtreme Drilling, Rig #20

Toolpusher: Shaun Cox

2) Company Man: Tim Walker & Marvin Hackworth

3) Mud Company : AES

Engineer: Shannon Davis

4) Directional Drilling: Baker Hughes

Pulse Tool

Drillers: Barry Combs & Adam Schlenz





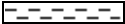
MWD: Greg Dore & Bryan Severson

5) Gas Equipment: Pason Systems






6) Wellsite Geology: Goolsby Brothers & Associates






Geologists: Dan Kabala, Andrew Krueger

ROCK TYPES

 Anhy
 Bent
 Brec
 Cht
 Clyst

 Coal
 Oil sat.
 Congl
 Dol
 Gyp

 Lmst
 Mrlst
 Salt
 Shale
 Shcol

 Shgy
 Ss
 Slstst
 Ss
 Chalk

 Carb sh
 Slty sh

ACCESSORIES

MINERAL

Anhy
 Arggrn
 Arg
 Bent
 Bit
 Brecfrag
 Calc
 Carb
 Chtdk
 Chtlt
 Dol
 Feldspar
 Ferrpel
 Ferr
 Glau

Gyp
 Hvymin
 Kaol
 Marl
 Minxl
 Nodule
 Phos
 Pyr
 Salt
 Sandy
 Silt
 Sil
 Sulphur
 Tuff

FOSSIL

Algae
 Amph
 Belm
 Bioclst
 Brach
 Bryozoa
 Cephal
 Coral
 Crin
 Echin
 Fish
 Foram
 Fossil
 Gastro
 Oolite

Ostra
 Pelec
 Pellet
 Pisolite
 Plant
 Strom

STRINGER

Chlkstg
 Anhy
 Arg
 Bent
 Coal
 Dol
 Gyp
 Ls

Mrst
 Sltstgr
 Ssstgr

TEXTURE

Boundst
 Chalky
 Cryxln
 Earthy
 Finexln
 Grainst
 Lithogr
 Microxln
 Mudst
 Packst
 Wackest

OTHER SYMBOLS

OIL SHOWS

Even
 Spotted
 Ques
 Dead
 Vspotty

near even

POROSITY TYPE

Earthy
 Fenest
 Fracture

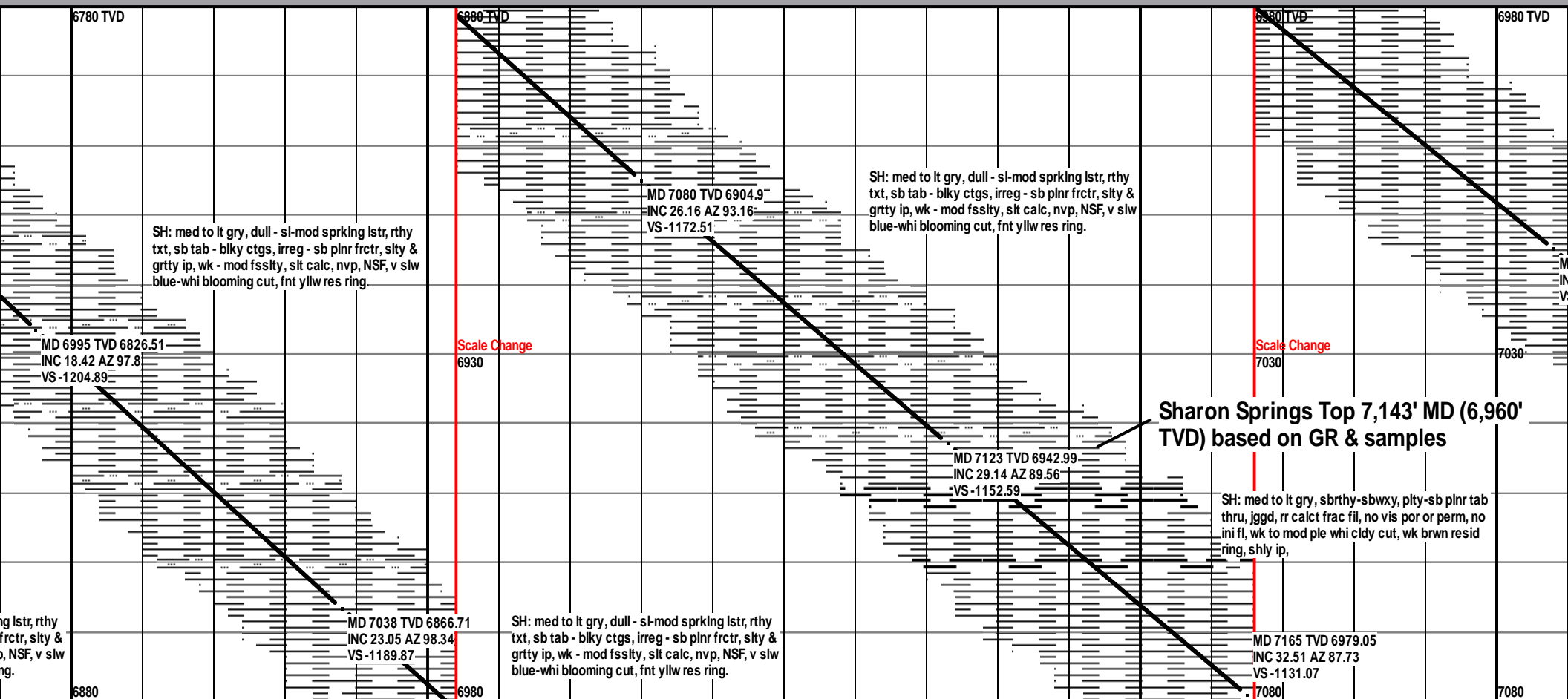
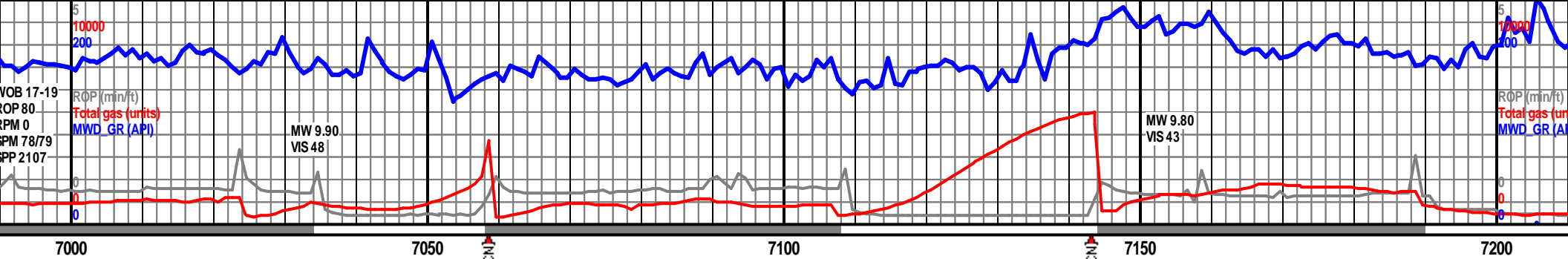
Inter
 Moldic
 Organic
 Pinpoint
 Vuggy

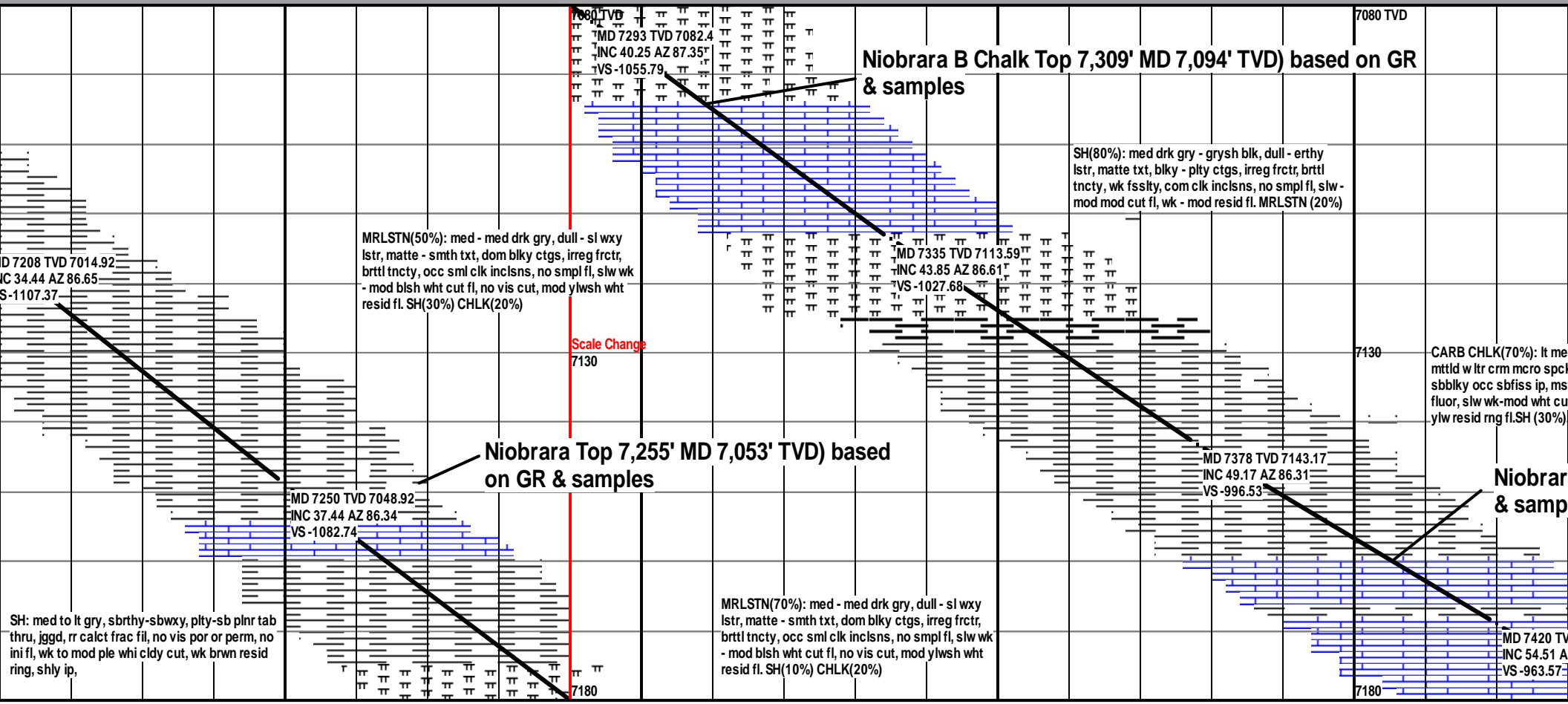
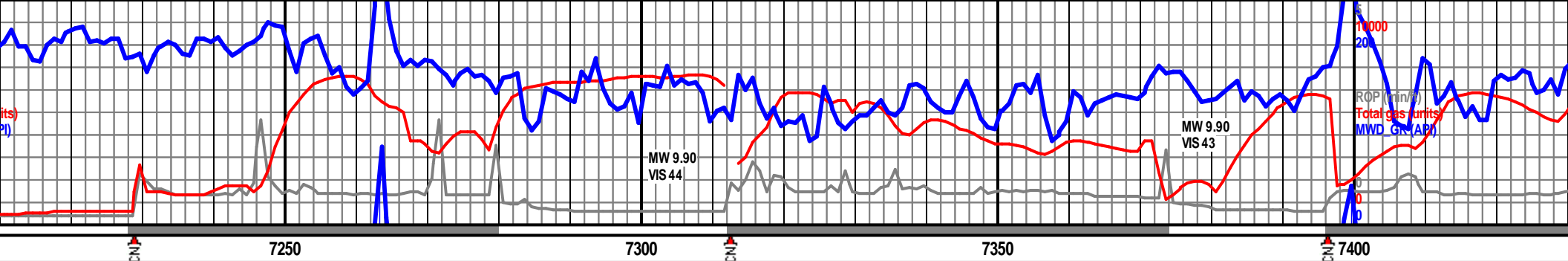
ROUNDING

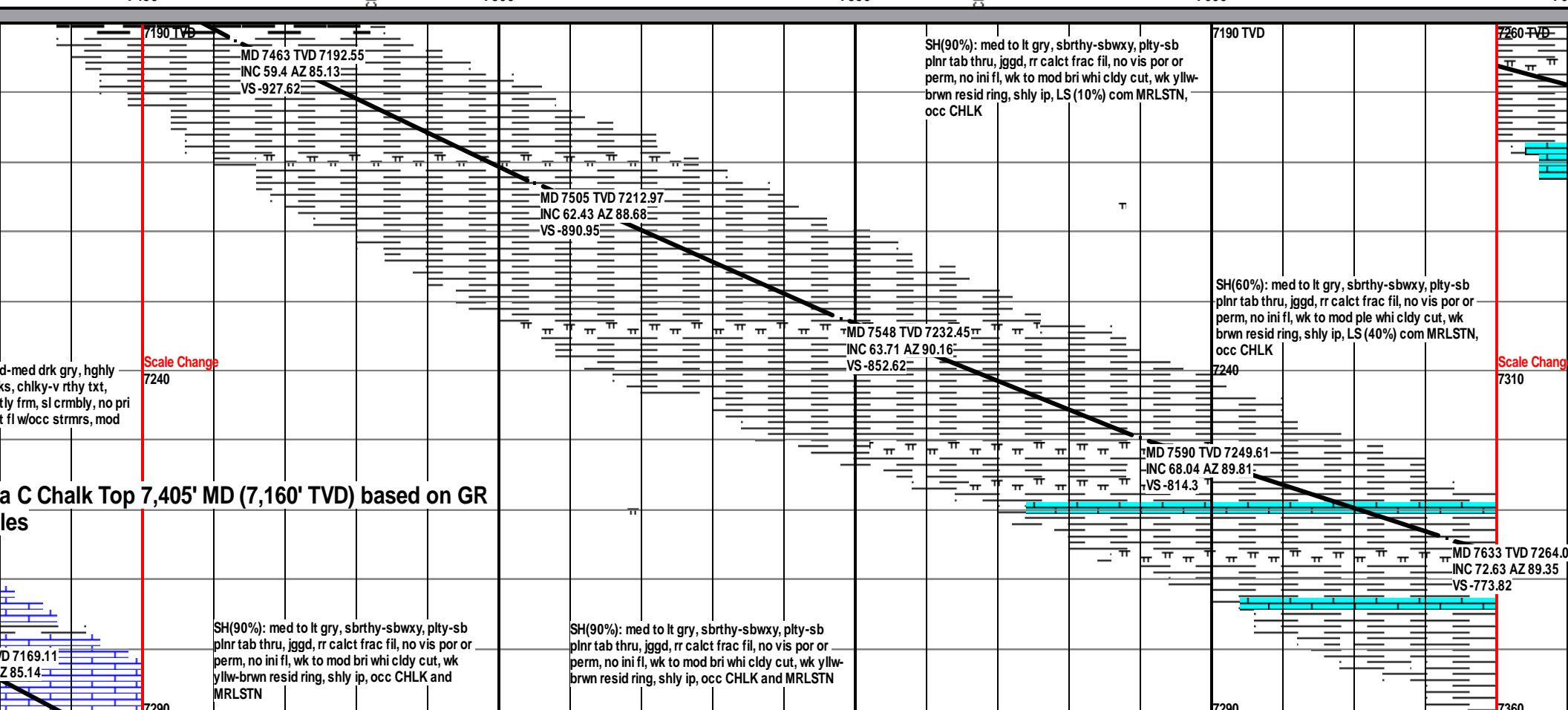
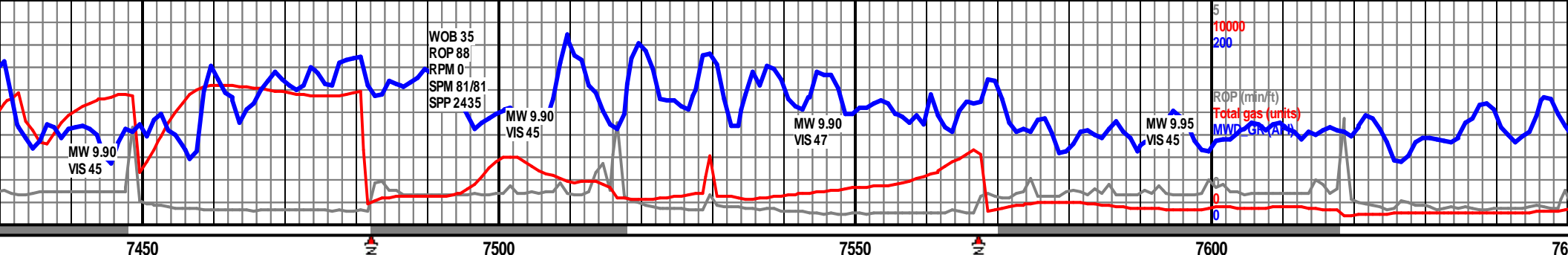
Rounded
 Subrnd
 Subang
 Angular

SORTING

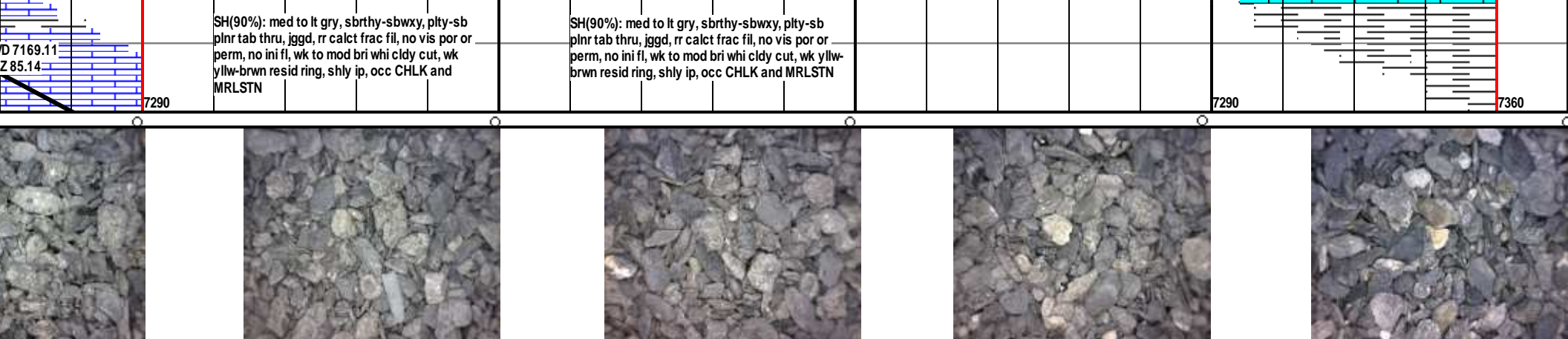
Well
 Moderate
 Poor

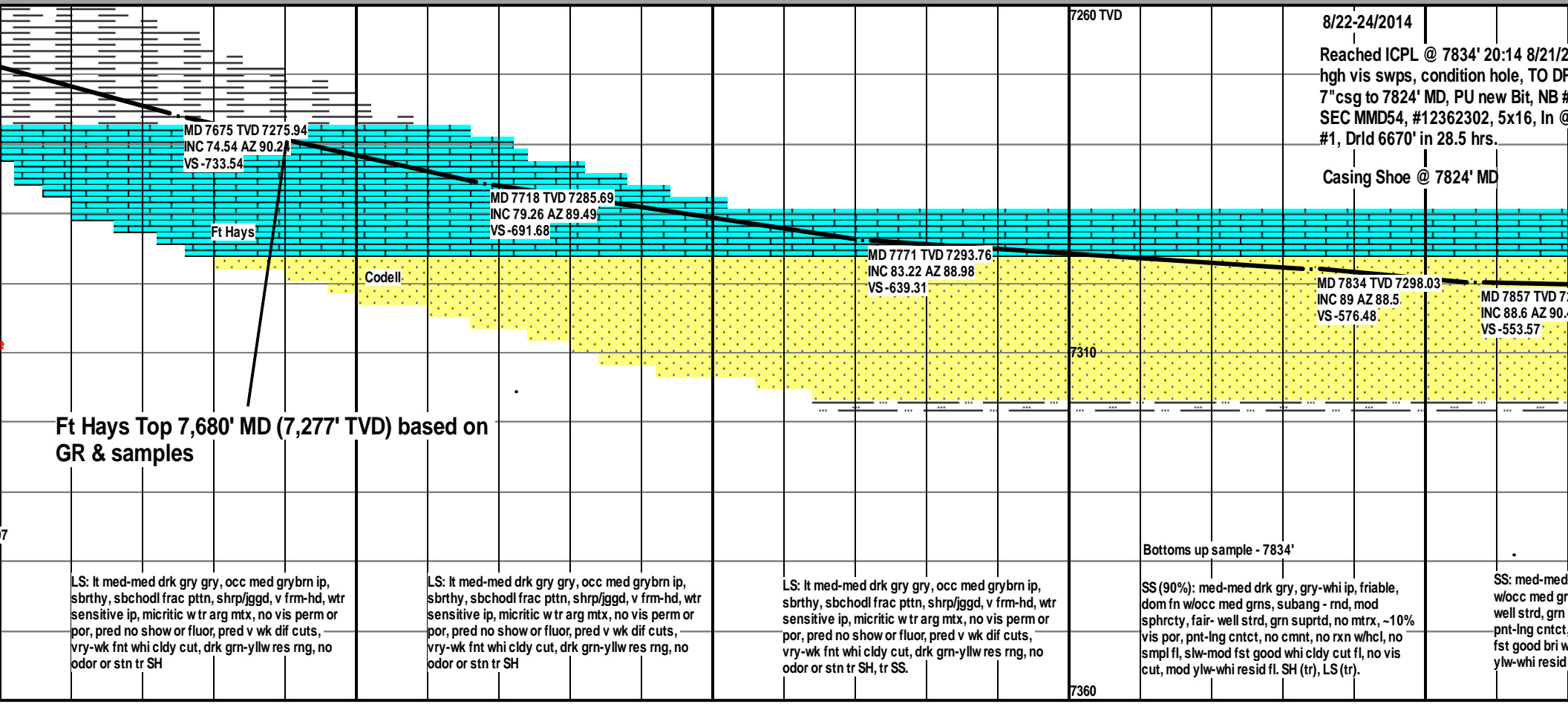
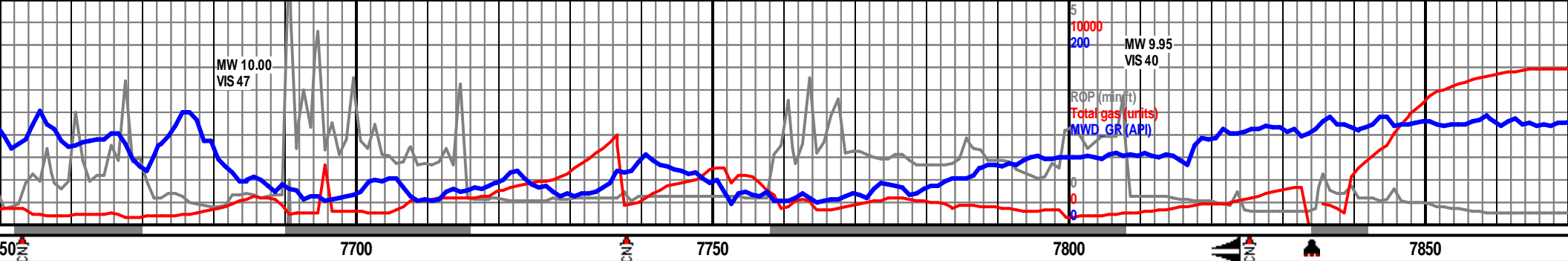


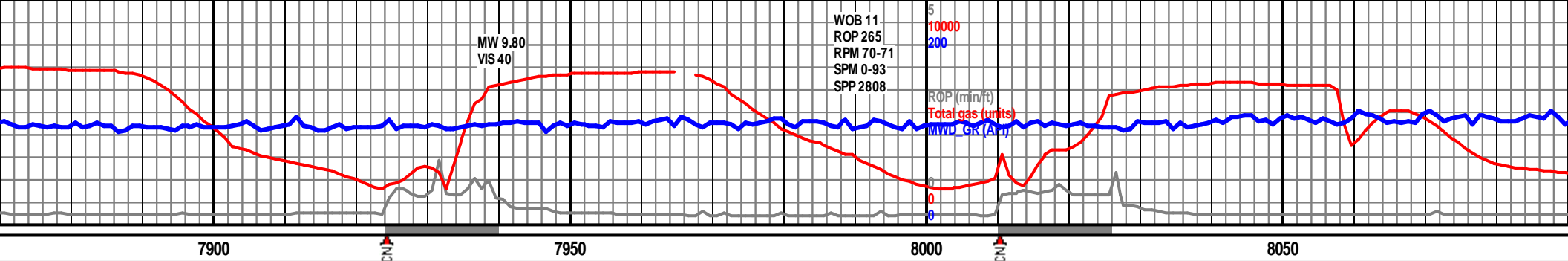




C Chalk Top 7,405' MD (7,160' TVD) based on GR

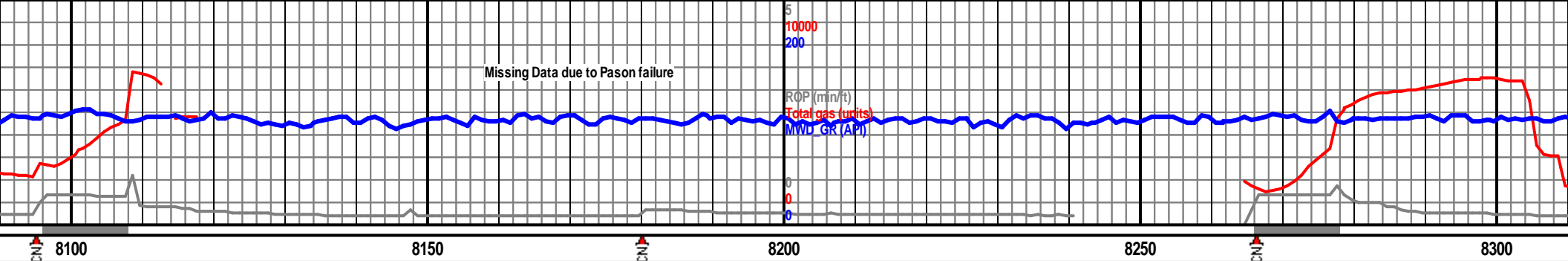






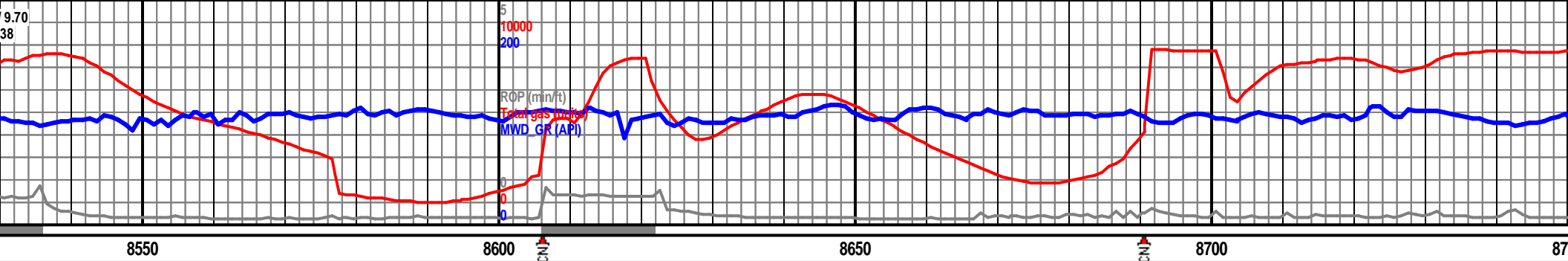
<p>014. pmp ; PU & run 2, 6 1/8", 7824'. OB</p>			<p>7260 TVD</p>	
<p>299.89 49</p>		<p>MD 7942 TVD 7301.78 INC 88.85 AZ 89.27 VS -468.6</p>	<p>7310</p>	<p>MD 8027 TVD 7303.05 INC 89.44 AZ 87.71 VS -383.62</p>
<p>drk gry, gry-whi ip, friable, dom fn ns, subang - rnd, mod sphrcty, fair- suprtd, no mtrx, ~10% vis por, no cmnt, no rxn whcl, no smpl fl, whi cldy cut fl, no vis cut, mod fl. SH (tr).</p>		<p>SS: med-med drk gry, gry-whi ip, friable, dom fn w/occ med grns, subang - rnd, mod sphrcty, fair- well strd, grn suprtd, no mtrx, ~10% vis por, pnt-ling cntct, no cmnt, no rxn whcl, no smpl fl, fst good bri whi cldy cut fl, no vis cut, mod ylw-whi resid fl. SH (tr).</p>	<p>7360</p>	<p>SS: med-med drk gry, gry-whi ip, friable, dom fn w/occ med grns, subang - rnd, mod sp well strd, grn suprtd, no mtrx, ~10% vis pnt-ling cntct, no cmnt, no rxn whcl, no fst good bri whi cldy cut fl, no vis cut, mod ylw-whi resid fl.</p>





7260 TVD																																							





	7260 TVD	
MD 8537 TVD 7303.88 INC 89.59 AZ 88.13 VS 126.13	MD 8622 TVD 7303.64 INC 90.73 AZ 89.11 VS 211.12	MD 8707 TVD 7302.6 INC 90.67 AZ 89.26 VS 296.12
SS: med-med drk gry, gry-whi ip, friable, dom fn w/occ med grns, subang - rnd, mod sphrcty, fair-well strd, grn suprtd, no mtrx, ~10% vis por, pnt-ling cntct, no cmnt, no rxn whcl, no smpl fl, fst good bri whi cldy cut fl, no vis cut, mod ylw-whi resid fl. SH (tr).	7310	Ft Hays Codell
	7360	



10000
200
ROP (g)

MW 9.80
VIS 53

9150

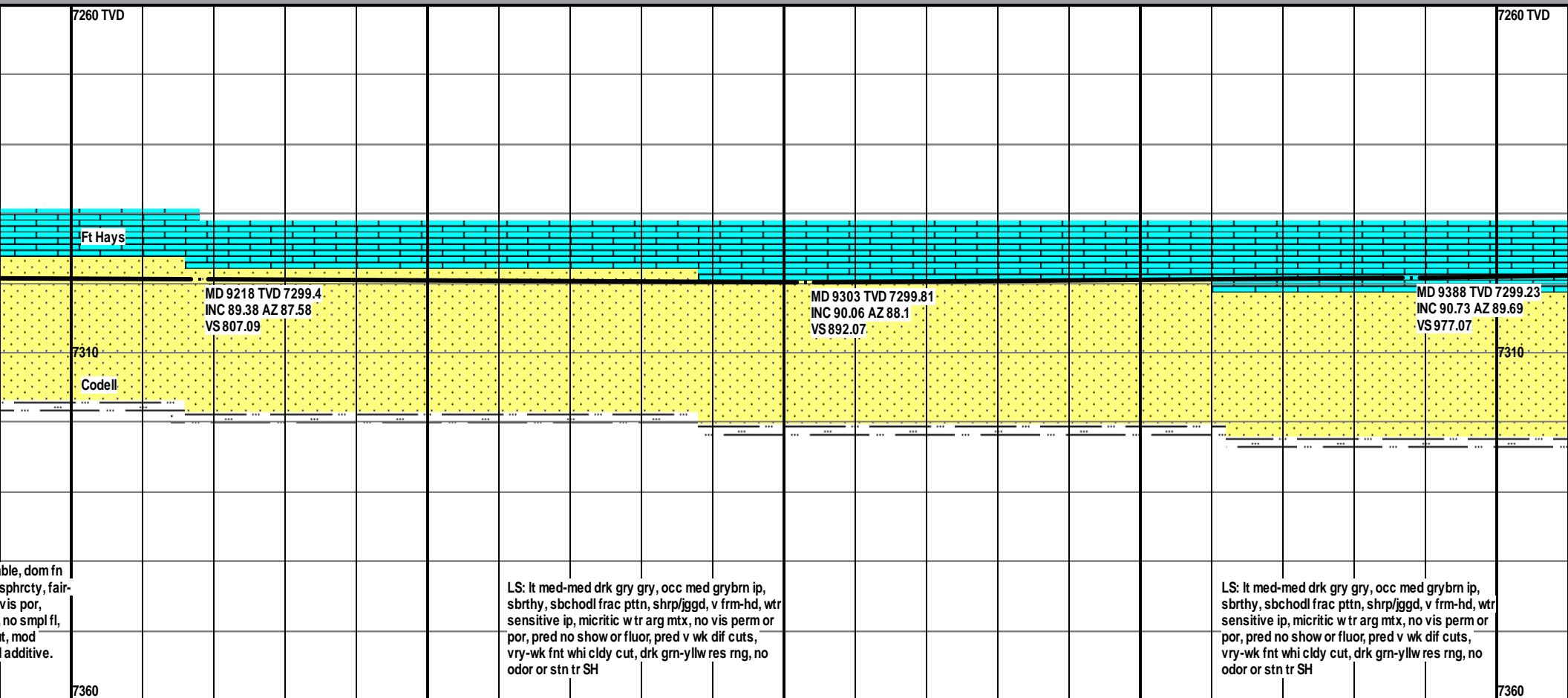
8/25/2014

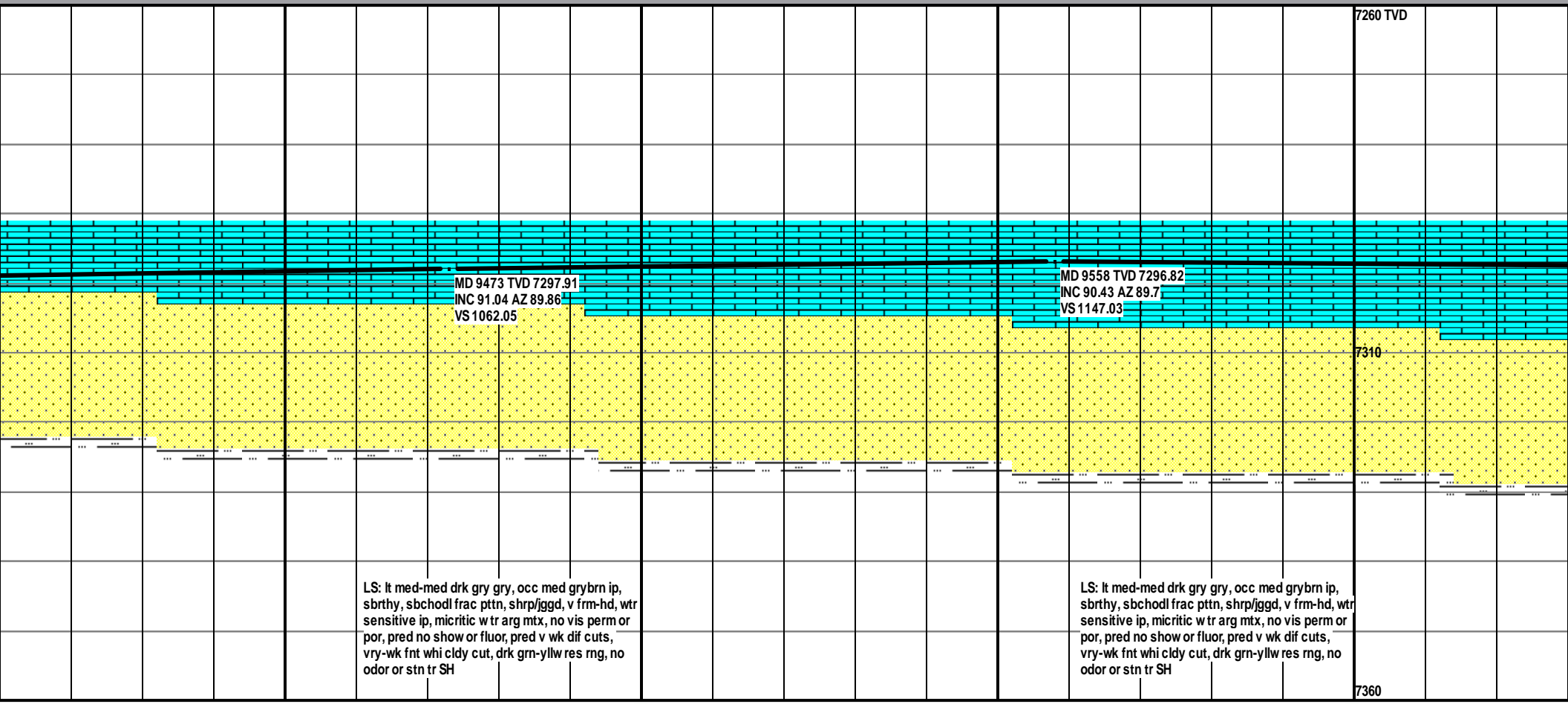
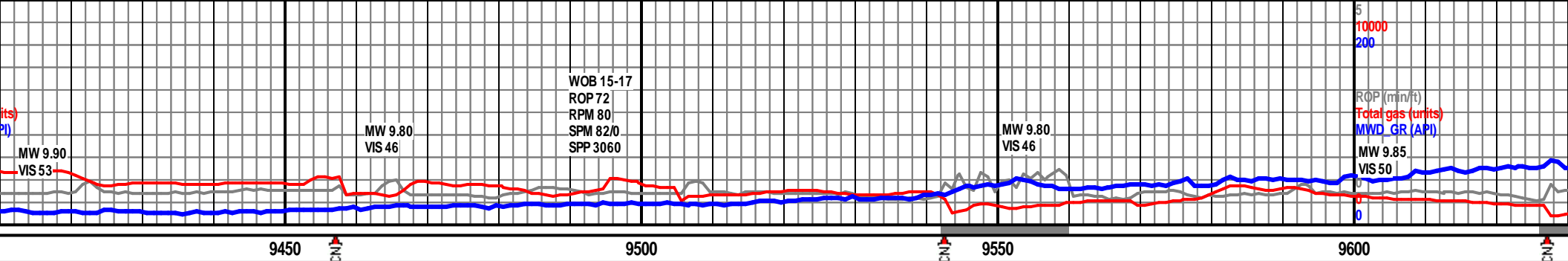
MD 9133 TVD 7299.05
INC 90.15 AZ 89.06
VS722.1

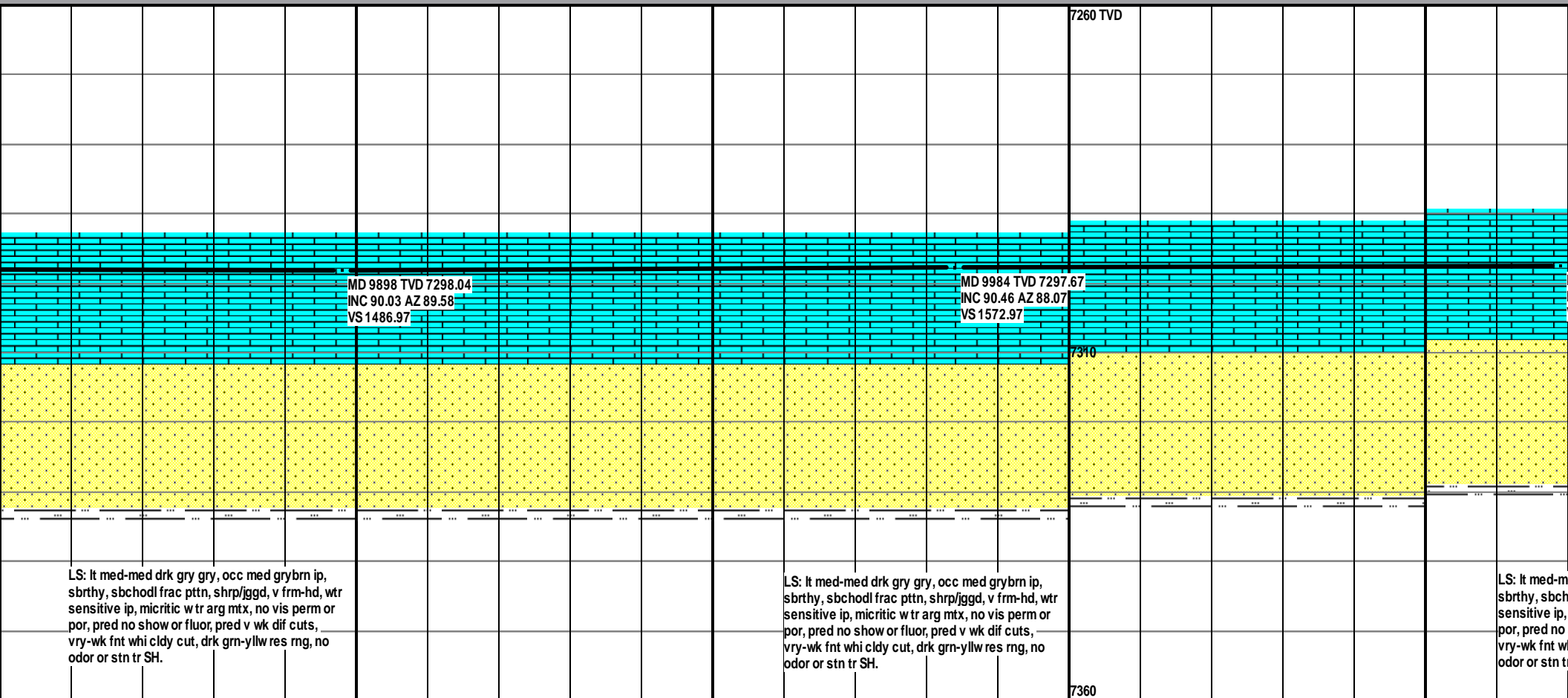
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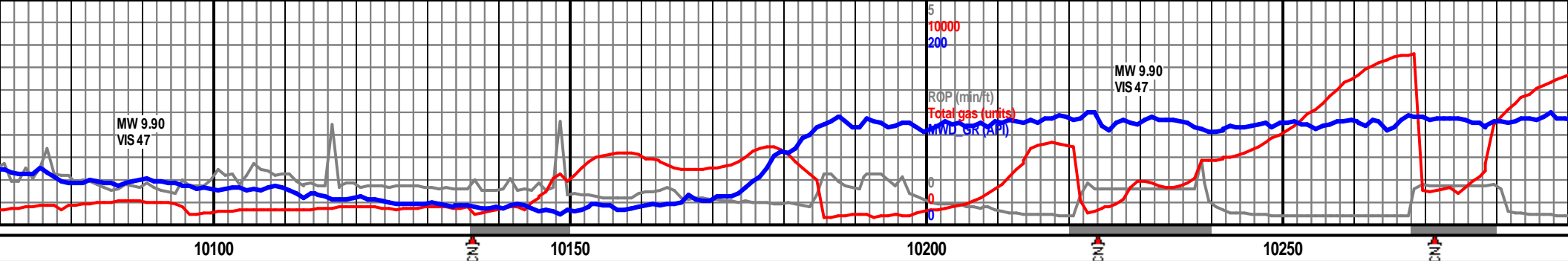
SS: med-med drk gry, gry-whi ip, fria
w/occ med grns, subang - rnd, mod
well strd, grn suprted, no mtrx, ~10%
pnt-lng cntct, no cmnt, no rxn w/hcl,
fst good bri whi cldy cut fl, no vis cu
ylw-whi resid fl. SH (tr). com blk mud





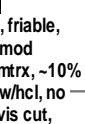
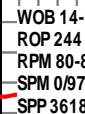


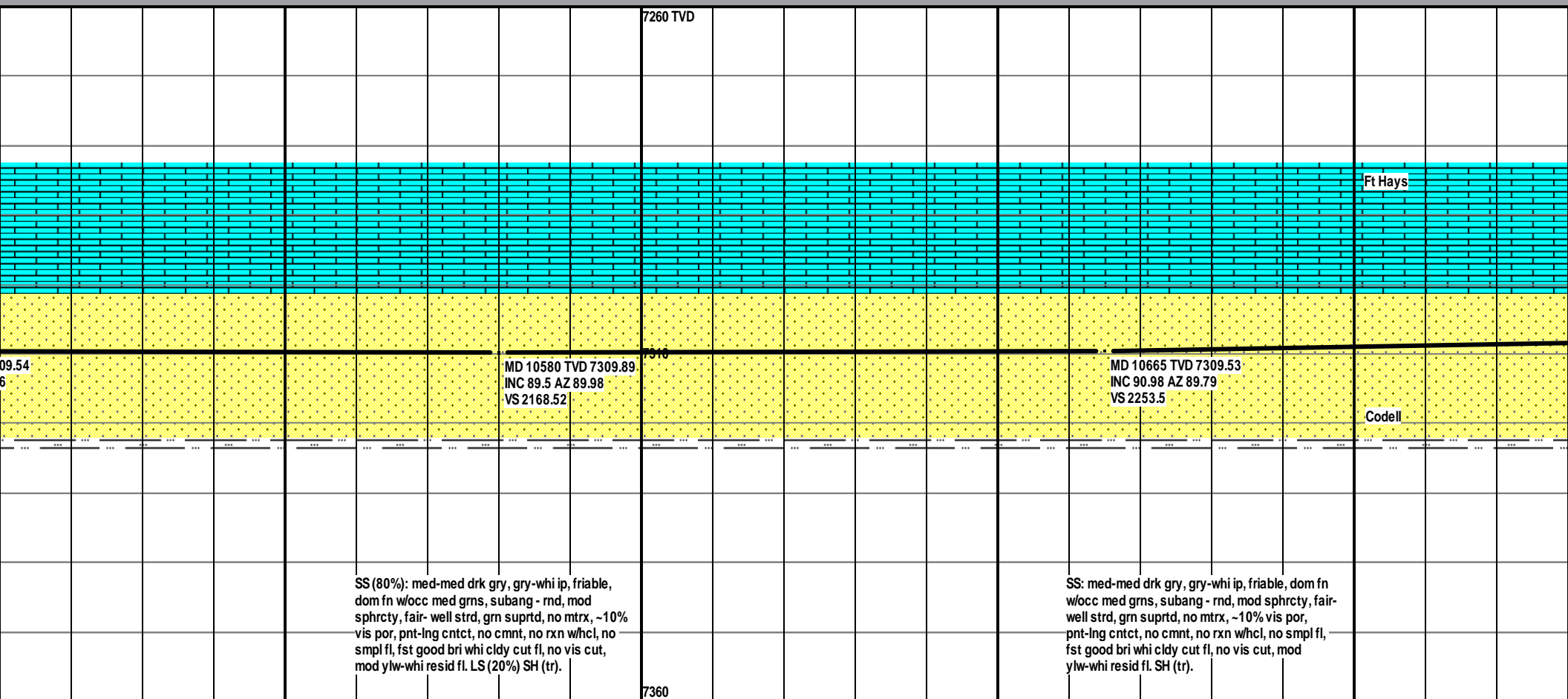
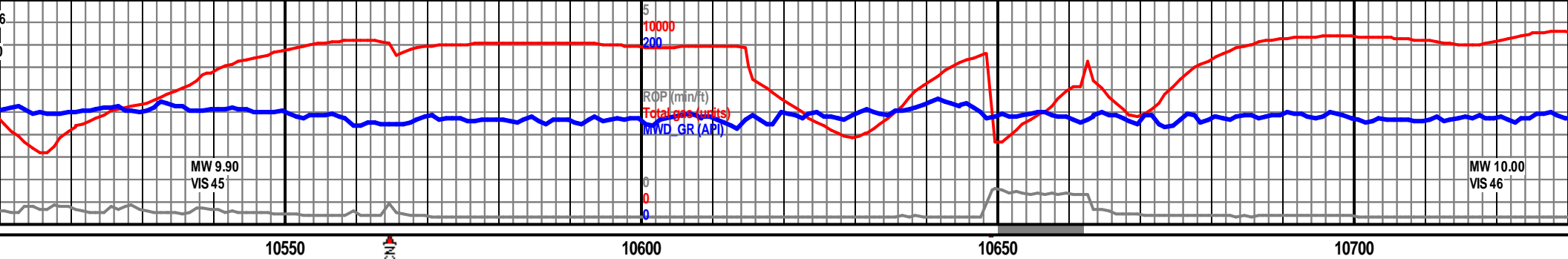


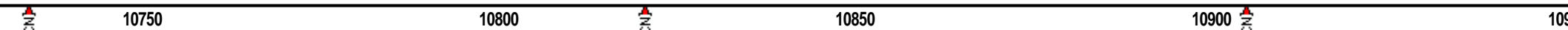


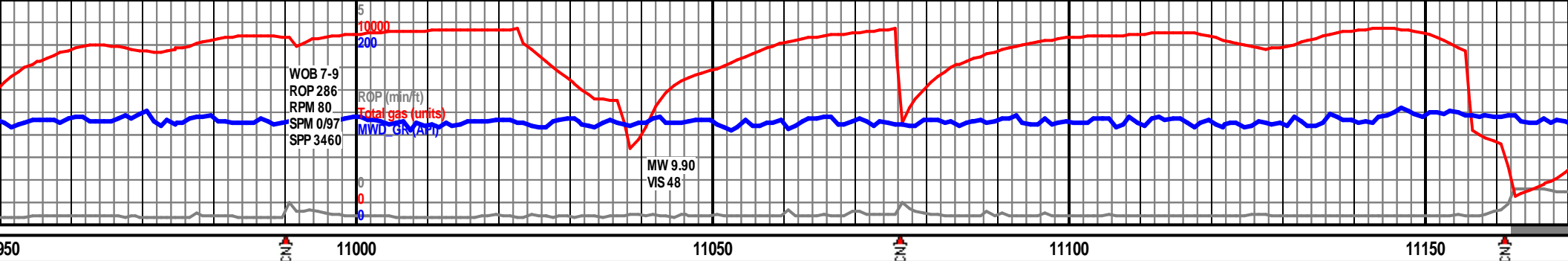
<p>MD 10069 TVD 7297.58 INC 89.66 AZ 86.93 VS 1657.94</p>	<p>MD 10154 TVD 7300.69 INC 86.15 AZ 87.86 VS 1742.84</p>	<p>MD 10239 TVD 7305.75 INC 87.03 AZ 89.41 VS 1827.68</p>
<p>Ft Hays</p>	<p>Ft Hays</p>	<p>Ft Hays</p>
<p>7310</p>	<p>7310</p>	<p>7310</p>
<p>Codell</p>	<p>Codell</p>	<p>Codell</p>
<p>med drk gry gry, occ med grybrn ip, modl frac ptnn, shrp/jggd, v frm-hd, wtr micritic w tr arg mtx, no vis perm or show or fluor, pred v wk dif cuts, hi cldy cut, drk grn-ylw res rng, no SH.</p>	<p>LS (85%): lt med-med drk gry gry, occ med grybrn ip, sbrthy, sbchodl frac ptnn, shrp/jggd, v frm-hd, wtr sensitive ip, micritic w tr arg mtx, no vis perm or por, pred no show or fluor, pred v wk dif cuts, vry-wk fnt whi cldy cut, drk grn-ylw res rng, no odor or stn tr SH. SS (15%)</p>	<p>SS (80%): med-med drk gry, gry-whi ip dom fn wocc med grns, subang - rnd, sphrcty, fair- well strd, grn suptrd, no vis por, pnt-ling cntct, no cmnt, no rxn smpl fl, fst good bri whi cldy cut fl, no mod ylw-whi resid fl. LS (20%) SH (tr).</p>



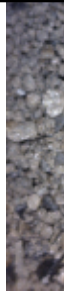


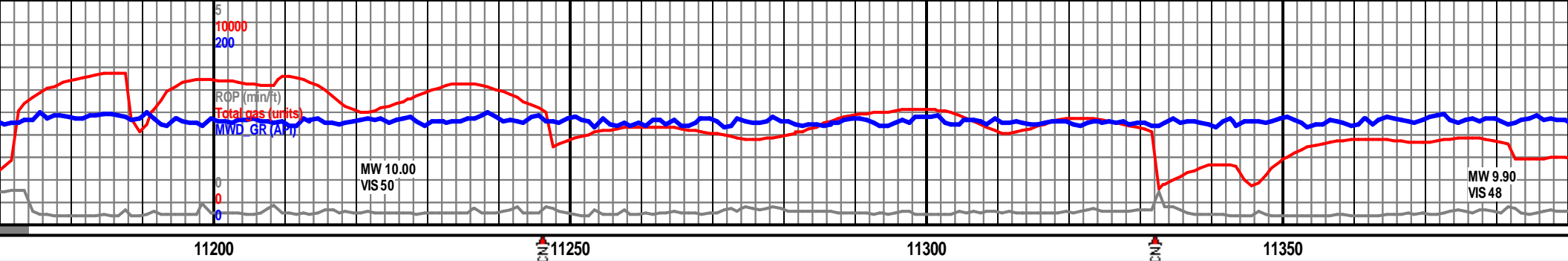




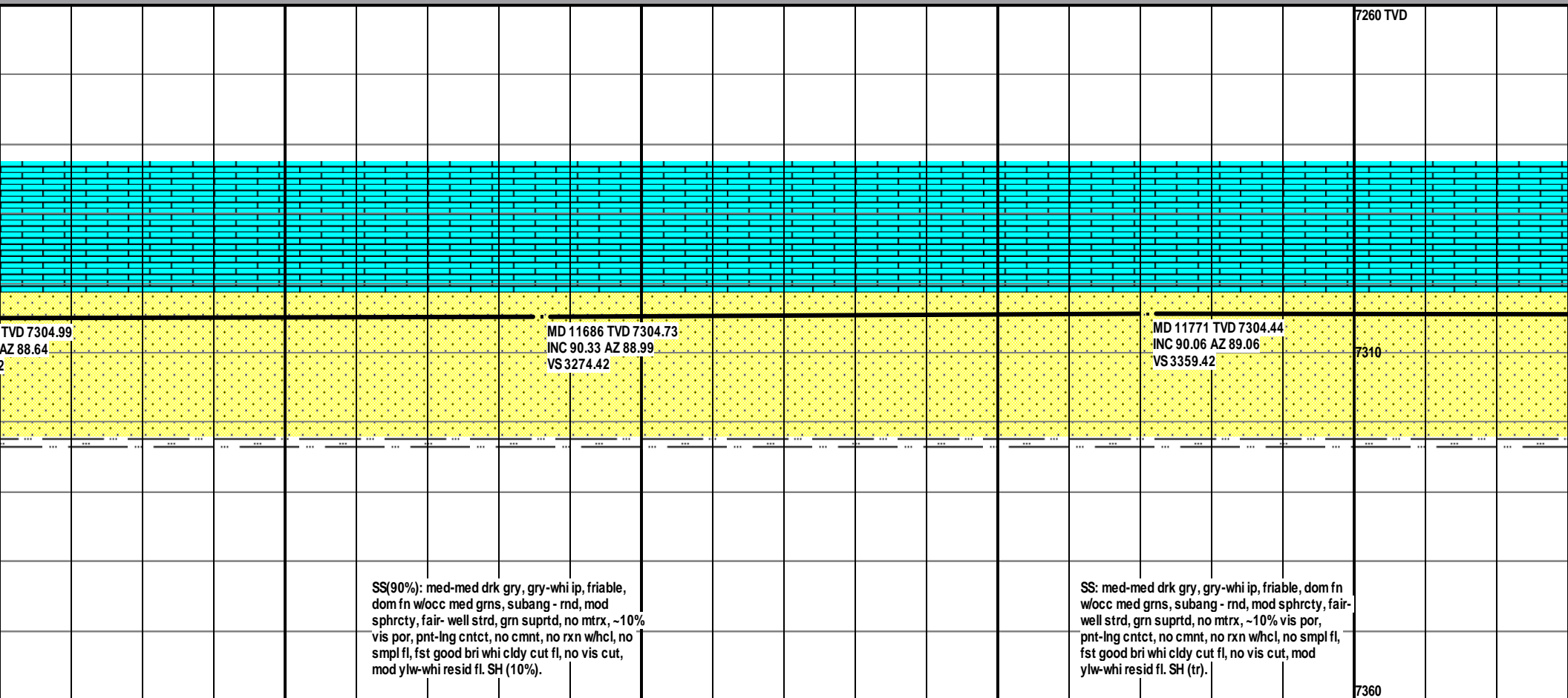


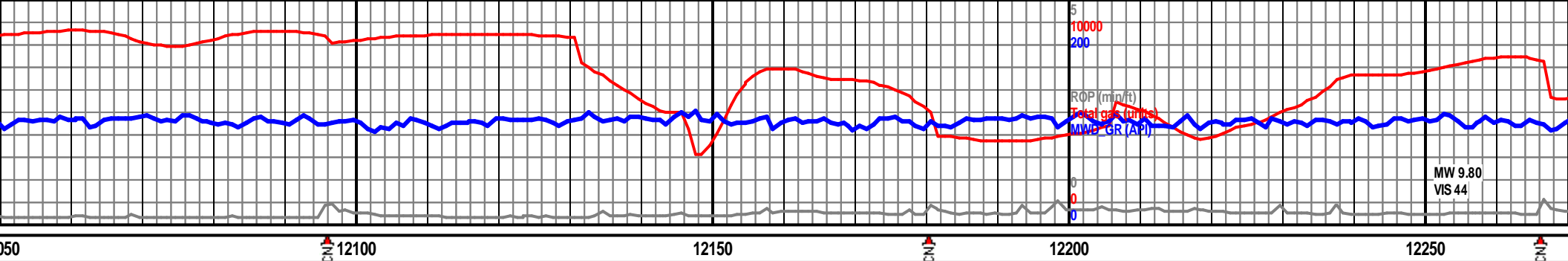
7260 TVD										8/26/2014																			
Ft. Hays																													
Codell																													
MD 11006 TVD 7305.63 INC 90.43 AZ 89.45 VS 2594.46										MD 11091 TVD 7305.56 INC 89.66 AZ 88.89 VS 2679.45																			
SS: med-med drk gry, gry-whi ip, friable, dom fn w/occ med grns, subang - rnd, mod sphrcy, fair- well strd, grn suptrd, no mtrx, ~10% vis por, pnt-ling cntct, no cmnt, no rxn whcl, no smpl fl, fst good bri whi cldy cut fl, no vis cut, mod ylw-whi resid fl. SH (tr).										SS: med-med drk gry, gry-whi ip, friable, dom fn w/occ med grns, subang - rnd, mod sphrcy, fair- well strd, grn suptrd, no mtrx, ~10% vis por, pnt-ling cntct, no cmnt, no rxn whcl, no smpl fl, fst good bri whi cldy cut fl, no vis cut, mod ylw-whi resid fl. SH (tr).										SS: med-m w/occ med well strd, g pnt-ling cn fst good b ylw-whi res									
7360																													



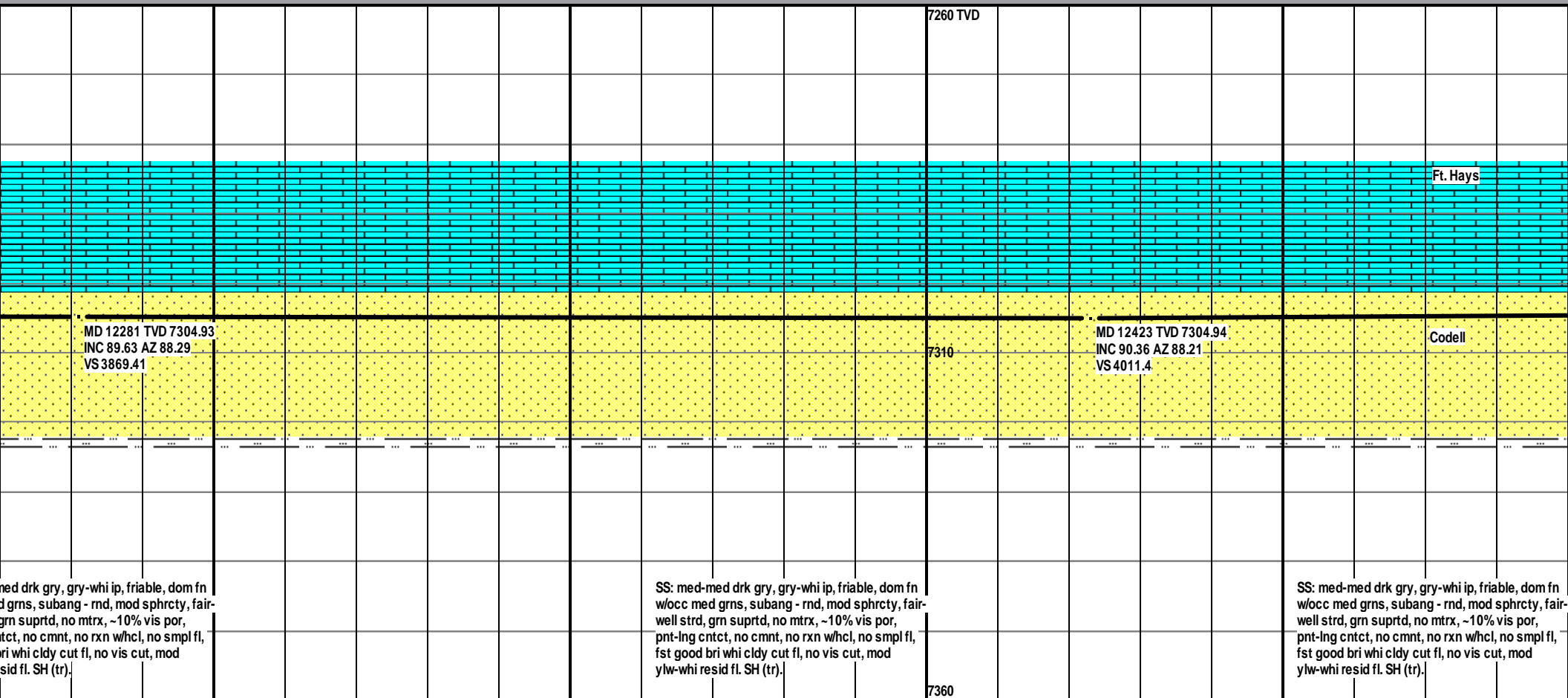


7260 TVD											





										7260 TVD																			
</																													



12500

12500

DMTD reached @ 08:50hrs on August 26, 2014

Short Trip @ 12,492' DMTD, condition hole, hang 4
1/2" production liner landed @ 12,477' on 8/28/2014

OB #2 Drilled 4658' in 28.6hrs

Projection to Bit
MD 12492 TVD 7304.51
INC 90.36 AZ 88.21
VS 4080.39

Geologic Tops picked by Ian Harris,
Anadarko.

Sharon Springs	6,960' (-2,126')
Niobrara	7,053' (-2,219')
Niobrara B Chalk	7,094' (-2,260')
Niobrara C Chalk	7,160' (-2,326')
Fort Hays	7,277' (-2,443')
DMTD	12,492'
Production csg	12,428'

Wellsight Geologists Andrew Krueger and
Dan Kabala, GBA.