



# eog resources

600 Seventeenth Street  
Suite 1000N  
Denver, CO 80202  
(303) 572-9000

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

Well Name: Criter Creek 13-17H  
Location: Hereford Ranch Prospect SE/SE Section 17 T11N R63W Weld Co., CO  
License Number: API: 05-123-31442 Region: D J Basin  
Spud Date: August 12, 2010 Drilling Completed: August 30, 2010  
Surface Coordinates: 501' FSL & 501' FEEL SE/SE Section 17 T11N R63W  
Latitude 40.916469 Longitude 104.461883  
Bottom Hole Coordinates: 629.58' FNL & 1053.49' FWL NW/NW Section 17 T11N R63W  
Latitude 40.927950 Longitude 104.461883  
Ground Elevation (ft): 5280' K.B. Elevation (ft): 5302'  
Logged Interval (ft): 1340' To: TD Total Depth (ft): 12,780' MD, 7434.21' TVD  
Formation: Niobrara 'B' Chalk  
Type of Drilling Fluid: Water

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## OPERATOR

Company: EOG Resources, Inc.  
Address: 600 Seventeenth Street, Suite 1000N  
Denver, Colorado, 80202  
Company Geologist: John Melby

## GEOLOGIST

Name: Mike Dodge, Robert Nordeck  
Company: Goolsby Brothers & Assoc. (GBA), Inc. ([www.goolsbybrothers.com](http://www.goolsbybrothers.com))  
Address: 575 Union Blvd., Suite 208  
Lakewood CO. 80228

## E-Logs

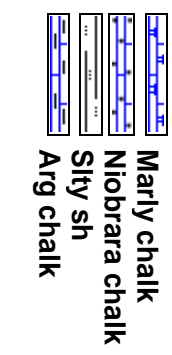
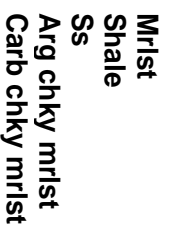
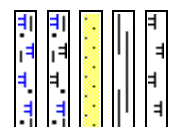
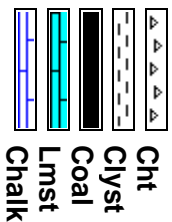
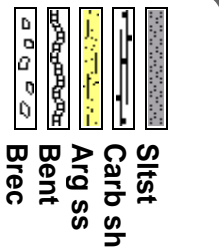
MWD GR from Surface Casing to TD.

## Casing

9 5/8" 36# J55 STC set @ 1340'.  
7" 23# HC-P110 LTC set @ 7665'.  
4.5" 11.6# P110 LTC Liner to TD.

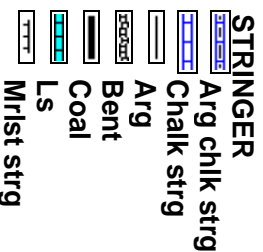
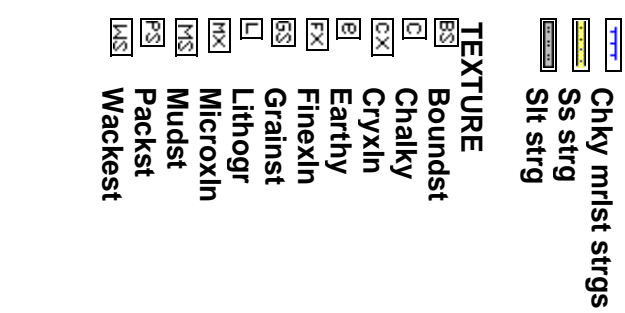
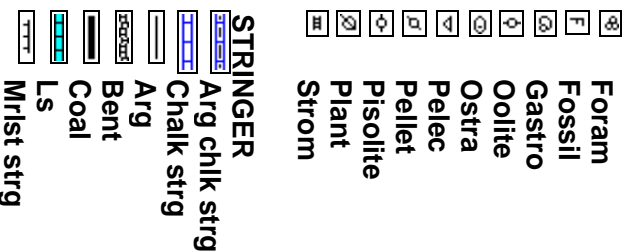
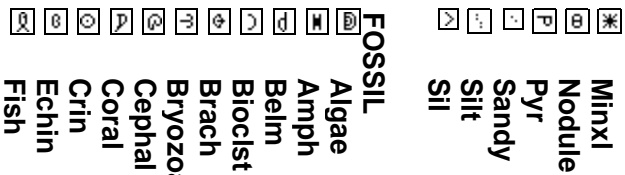
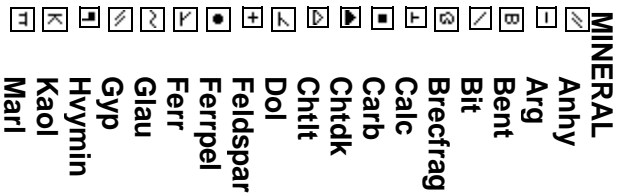
## Comments

- This well was spudded @ 16:00 on 8/12/10. A 13½" Hole was drilled to 1340', and 9 5/8" S.C. was set @ 1340'. The well was Drilled Vertically to KOP of 6930', at which point angle was built to 87° by 7673'. 7" Casing was set and the well was Drilled Horizontally to a TD of 12,780' MD. A Vertical Strip Log was made covering the Interval from S.C. to 7" Intermediate Casing. This Horizontal Strip Log Covers the interval from 6930' (KOP) to TD.
- 1) Drilling Contractor: DHS Drilling Co., Rig #8  
Tool Pusher: Scott Putnam, Robert Roman, Fred Weber.  
Pumps: #1 & #2 PZ-9 5.5" x 9" (.0628 bbl/stk)
  - 2) Company Men: Bill Hutto, Brian Dutton, Tim Storey, Bill Laird.
  - 3) Directional Services / MWD GR: Nevis Energy Services - Daniel Gilbert, Dusty Moyer, Jack Miller, Brian Heath.
  - 4) Mud Company : Baker Hughes Drilling Fluids  
Mud Engineer: Mark O'Harrow, Lee Smith.  
Solids Control: National Oilwell Varco / Brandt's Solids Control
  - 5) Contained/Under Balanced Drilling System: Weatherford.
  - 6) Gas Detection Equipment: Mudlogging Systems Inc.  
by Terra Services



## ROCK TYPES

## ACCESSORIES



**POROSITY**  
 E Earthy  
 B Fenest  
 F Fracture  
 Inter  
 Moldic  
 Organic  
 Pinpoint  
 Vuggy

**SORTING**  
 W Well  
 M Moderate  
 P Poor

**ROUNDING**  
 R Rounded  
 C Subrond  
 S Subang  
 A Angular

**OIL SHOW**  
 ● Even  
 ◐ Spotty  
 ◑ Patchy  
 ◒ Ques  
 ◓ Dead  
 ◔ Very spotty

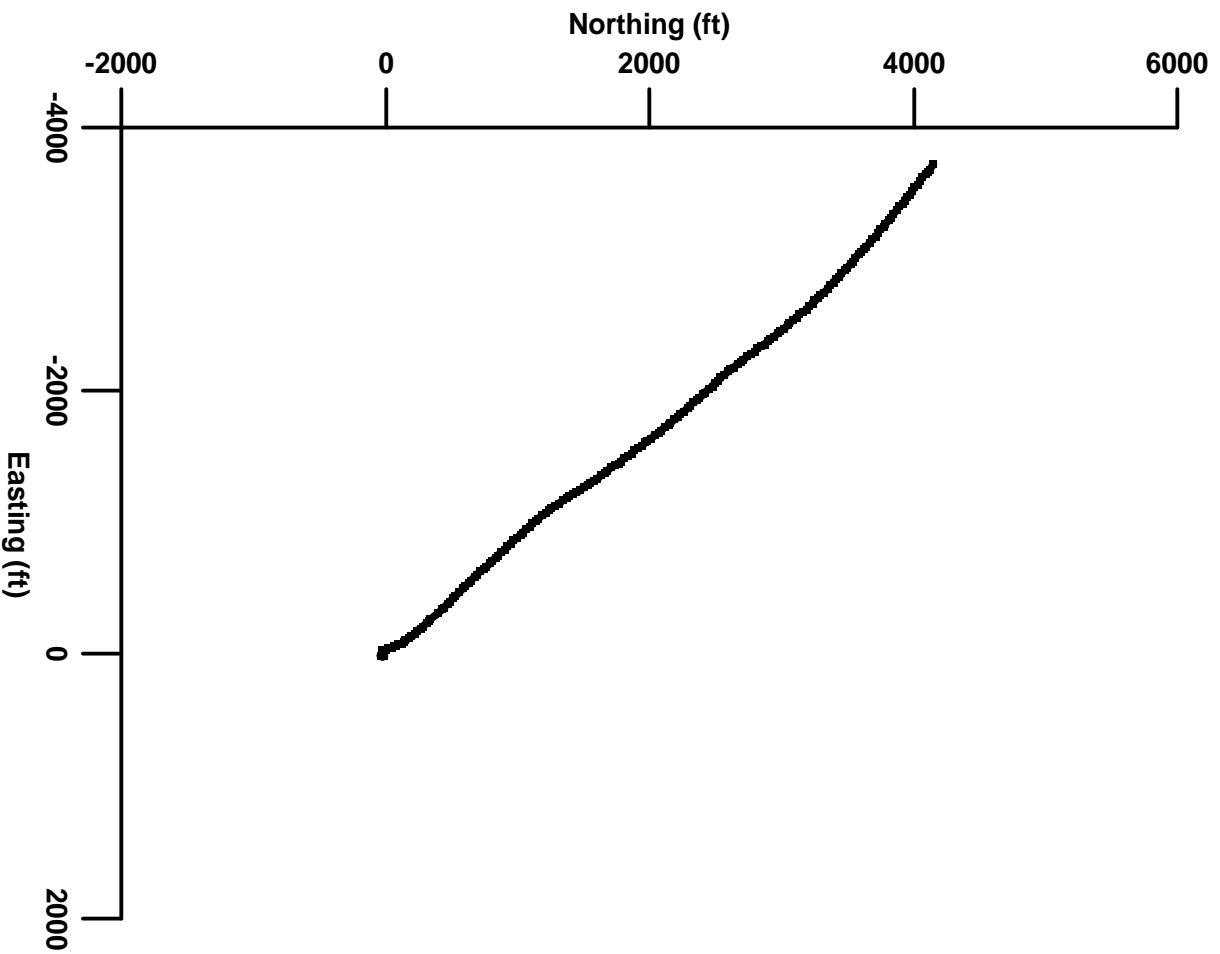
**INTERVAL**  
 ■ Core

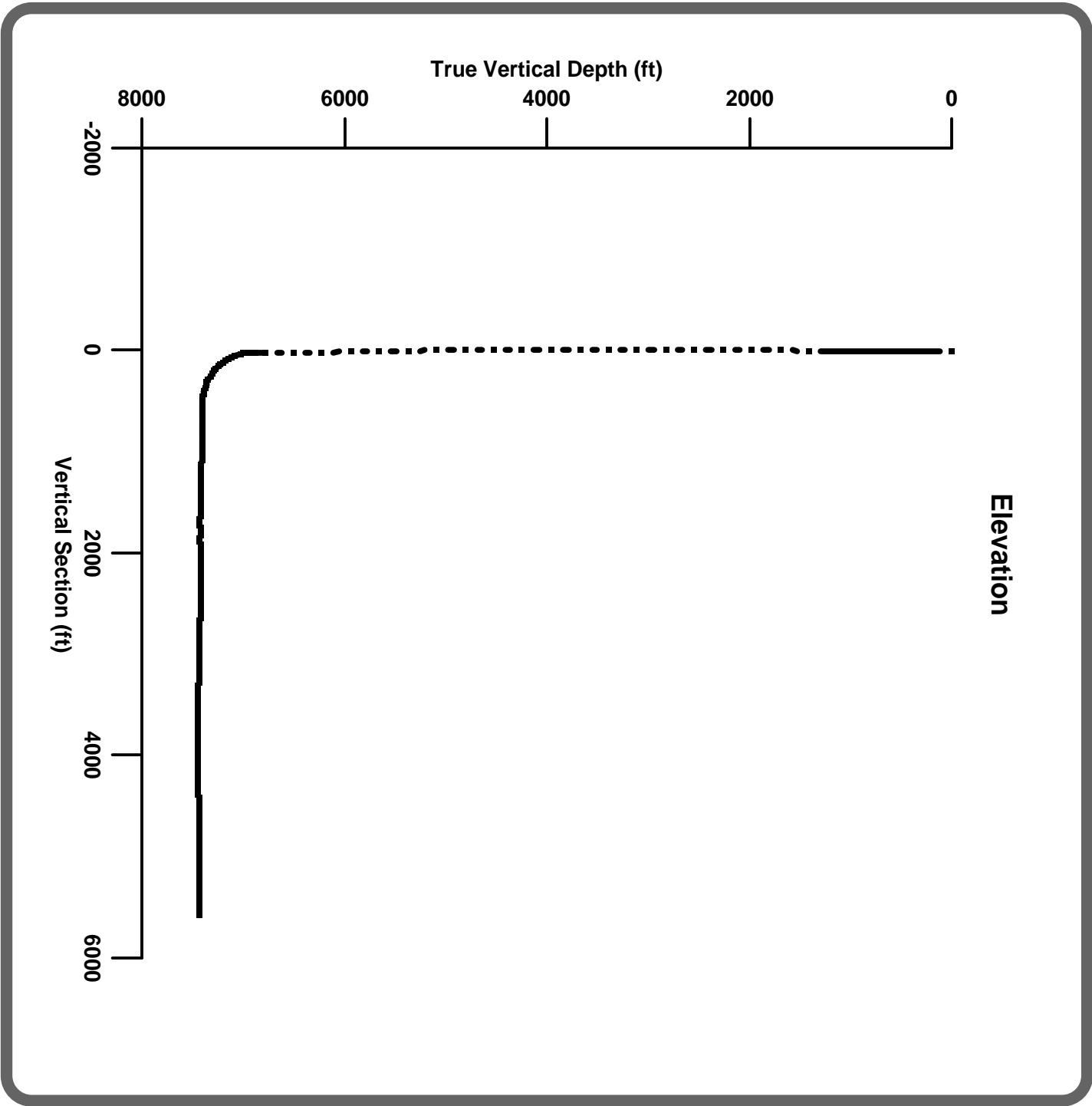
**OTHER SYMBOLS**

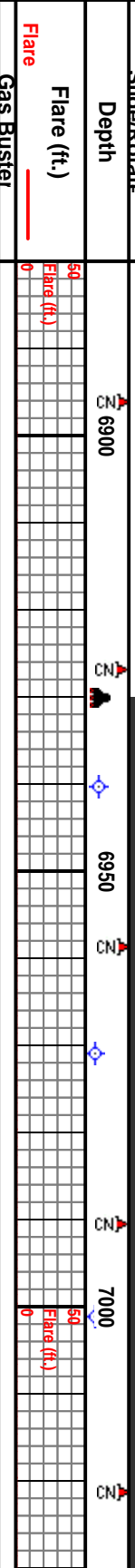
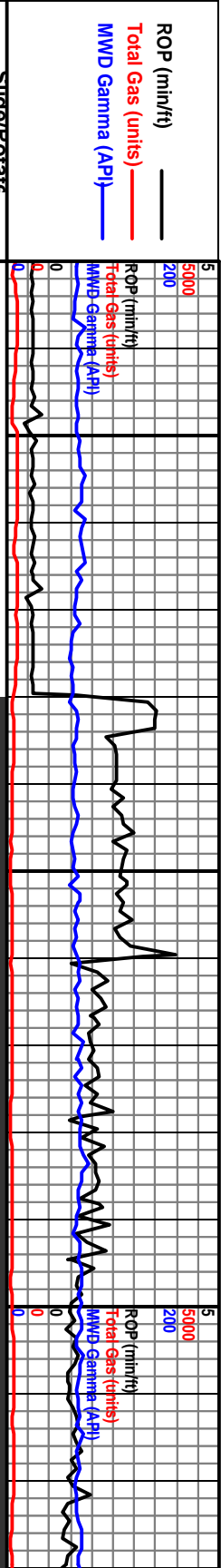
▣ Dst

**EVENT**  
 ▲ Conn  
 ◆ Survey (mwd)  
 ▼ Off bottom  
 ▲ New bit  
 ▲ Casing  
 ▲ Trip point

**Plan**







6900 TVD  
 Drilling in Lower Pierre Shale  
 KOP @ 6930'.  
 Start Horizontal Log @ 3am 8/19/10.  
 Drilling w/ Bit #3 8 3/4" HTC GT-1 (Jets 3x18), MWD GR/Survey Assembly w/ Directional Mud Motor In @ 6930'.  
 6940' MD Incl 2.9° Az 325.3°  
 TVD 6939.11' VS 14.34'

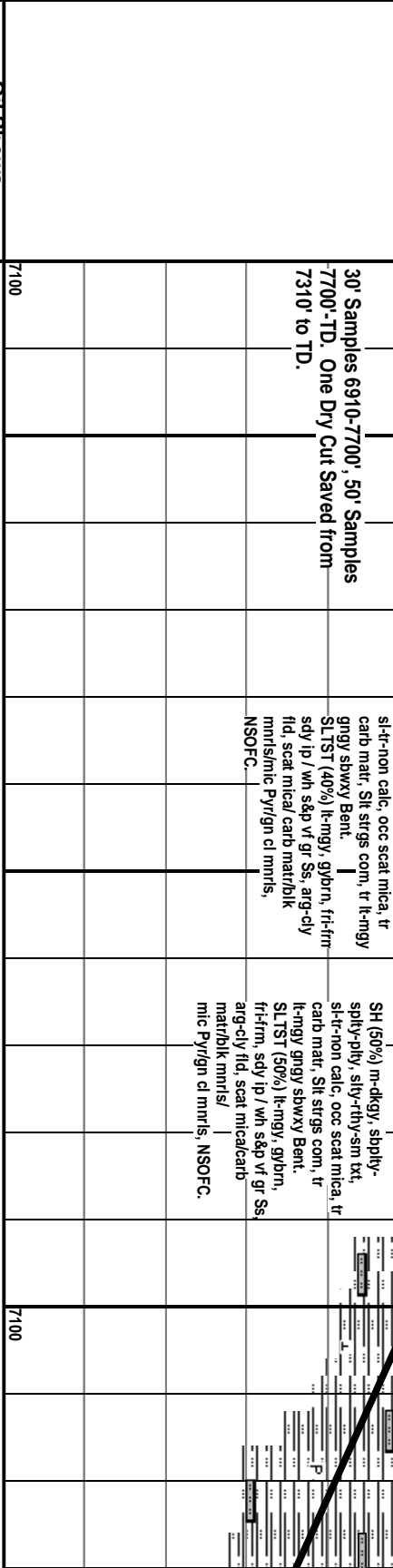
6900 TVD  
 7001' MD  
 Incl 11.6°  
 Az 335.8°  
 TVD 6999.57  
 VS 21.68'

SH (70%) dk-mngy, sbplk sily-sm-rthy txt, calc ip, v fr Ss strgs, scat mic mat & mic Pyr. frm. SLTST (30%) m-l-gy, g calc-sil calc. m sdy ip, tr pred clay fld & arg. scat grs, tr gn clay mntls.

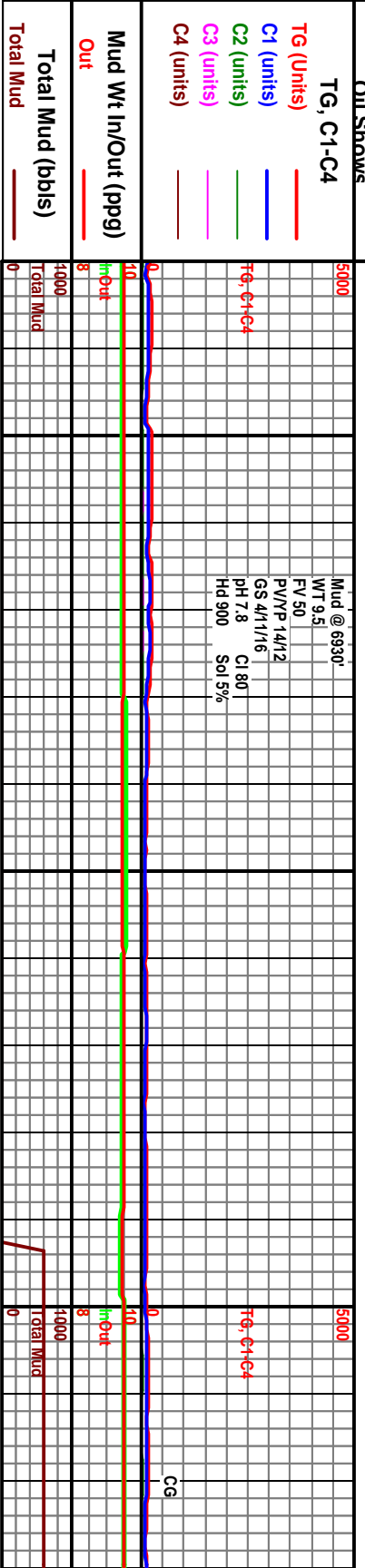
SH (60%) m-dkgy, sbply-sply-pty, sily-rthy-sm txt, silt-non calc, occ scat mica, tr carb mat. Slt strgs com, tr lk-mngy gngy shwxy Bent. SLTST (40%) lk-mngy, gvbrn, fr-frm sdy ip / wh sdp v fr Ss, arg-clay fld, scat mic calc matrbk mntls/mic Pyr/gn cl mntls, NSOFC.

SH (50%) m-dkgy, sbply-sply-pty, sily-rthy-sm txt, silt-non calc, occ scat mica, tr carb mat. Slt strgs com, tr lk-mngy gngy shwxy Bent. SLTST (50%) lk-mngy, gvbrn, fr-frm, sdy ip / wh sdp v fr Ss arg-clay fld, scat mic calc matrbk mntls/ mic Pyr/gn cl mntls, NSOFC.

**Well Bore Cross Section**

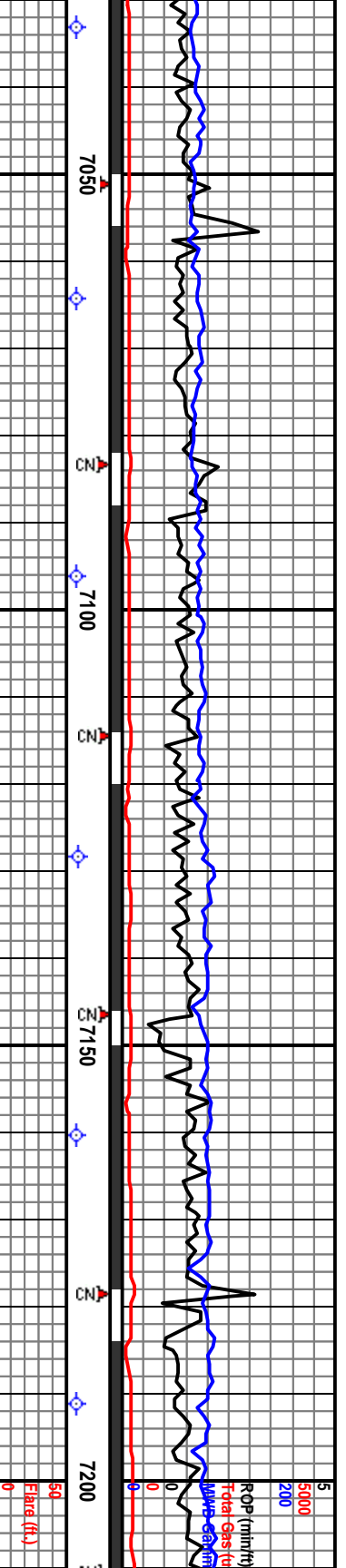


30' Samples 6910-7700', 50' Samples 7700'-TD. One Dry Cut Saved from 7310' to TD.



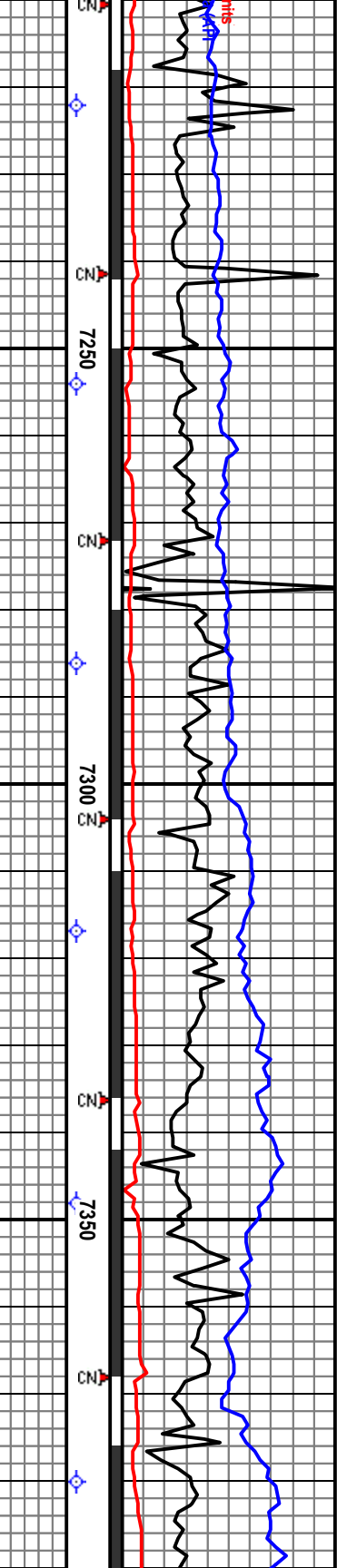
Mud @ 6930'  
 WT 9.5  
 FV 50  
 PV/VP 14/12  
 GS 4/1/1/6  
 pH 7.8  
 HD 900  
 Sol 5%

CG



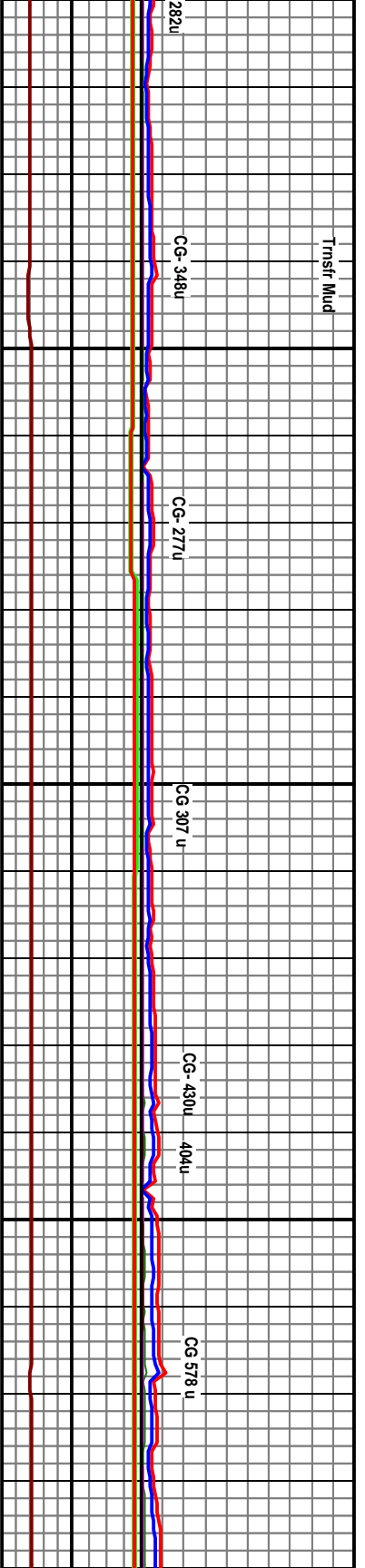
333 MD Incl 15.9° Az 335.5° TVD 7030.65'	7096' MD Incl 23.2° Az 341.3° TVD 7090.0'	7128' MD Incl 26.9° Az 339.9° VS 61.34 TVD 7118.98'	7191' MD Incl 35.2° Az 339.3° TVD 7172.91'
<p>SH (75%) as above. SLTST (15%) as above. SS (10%) of wh, s&amp;p, lgy, fr, silty vf gr, w-mod w srt, calc, wh clay fld, Sh &amp; slit ptgs con, scat mica &amp; carb matr, tr gn cly mntls &amp; mic Pyr, no vis por, NSOFC.</p> <p>SH (80%) m-dk gy, gybrn, sbblky-sbply-sply, pred stly, sm-thy lp, sl-mod calc, scat mica &amp; carb matr / tr carb lams, occ slit &amp; vf gr ss strgs, frm. SLTST (20%) m gy, gybrn, lt gy, frm-frt, sdy lp / occ silty vf gr Ss, calc, arg-clay fld, scat mica &amp; carb matr, tr glau &amp; mic Pyr, NSOFC.</p>	<p>SH (90%) dk-m gy, sbply-sply, sm-thy-sil stly, tr-sil calc, tr slit strgs, mic mica lp, occ scat carb matr, tr mic Pyr. SLTST (10%) as before, tr stly vf gr Ss.</p>	<p>SH (90%) dk-m gy, gybrn, pily-sbply-sply, pred sl stly-sim txt, sbwxy lp, sl calc, mic mica, occ dism &amp; mic Pyr, tr occ scat carb matr &amp; pint remn, frm, tr tan crm st stly cly strgs &amp; incl. SLTST/SS (10%) lt-m gy, wh, brn, frm-frt, slitst &amp; stly vf gr Ss, calc, arg, scat mica/calc mntls/glau/mic Pyr, tt, NSOFC.</p>	<p>SH (90%) m-dk gy, gybrn sbply-sbply-sply, sm-thy, sl calc, mic mica lp, occ scat carb matr, frm SLTST/SS (10%) as be</p>

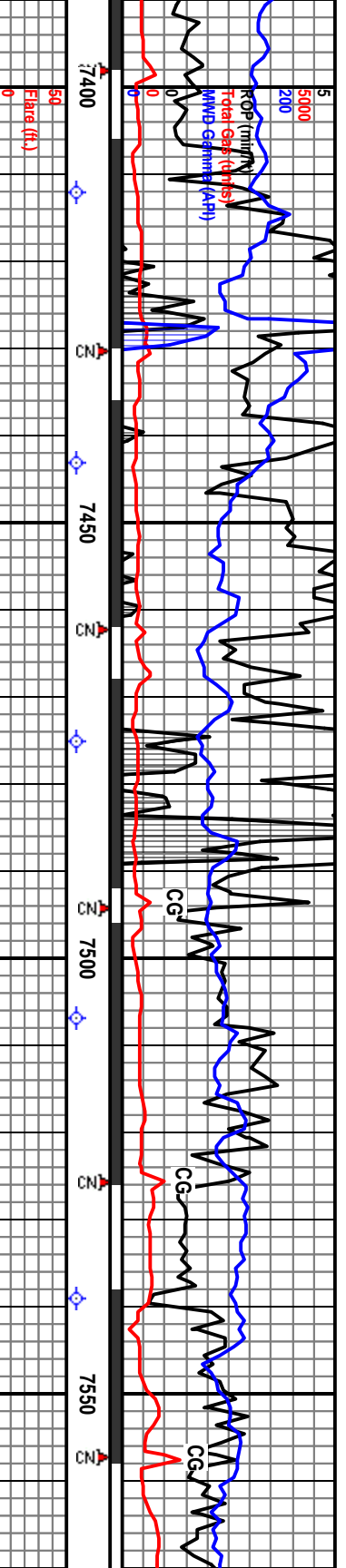
Trnsfr 150' Blbs Mud	CG	CG	CG	CG	CG-30'u	CG-
5000						
FTG, CH-G4						
8						
1000						
Total Mud						
0						



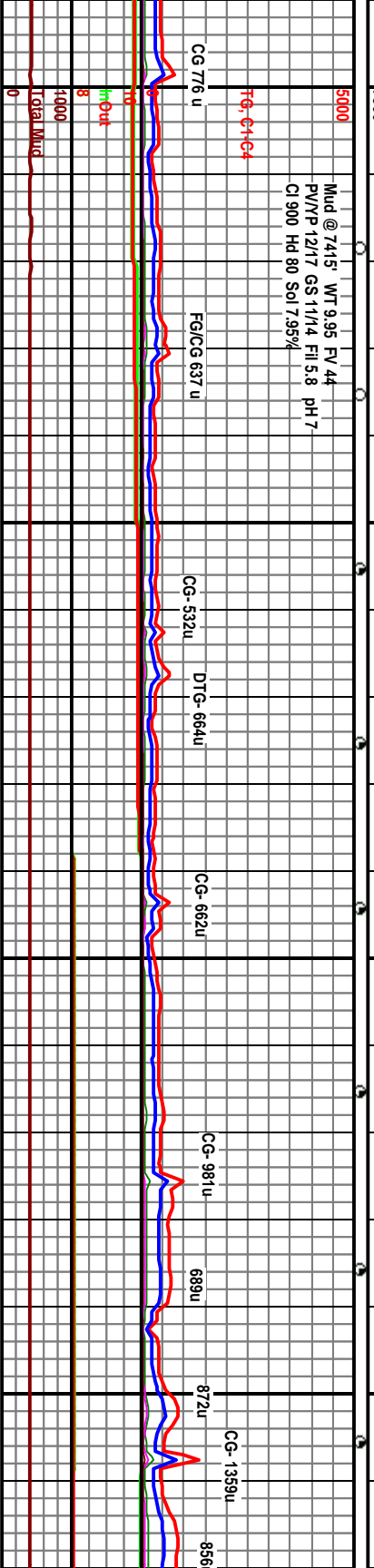
7222' MD Inc 38.5° AZ 338.3° TVD 7197.72 VS 109.32'	7254' MD Inc 41.46° AZ 336.3° TVD 7222.21	7286' MD Inc 45.4° AZ 334.0° TVD 7245.42	7317' MD Inc 49.1° AZ 330.2° TVD 7266.46 VS 172.24'	7348' MD Inc 52.0° AZ 326.3° TVD 7286.16	7380' MD Inc 54.1° AZ 322.8° TVD 7305.40
SH (100%) dk-m gy, sily carb ip	SH (100%) dk-m gy, sbply-sply-pty, sm-sil sily, shchly ip, sl calc, mic mica, tr-occc scat carb matr, tr sil & vf gr ss strgs, frm-sit.	SH (100%) m gy-n brn gy, mod frm, dkly-pred sb pty, ip splinty, rthy & sb wxy, tr sil sily w/gran txt, tr vf carb spks, tr vf dism pyr, sh-mod calc.	SH (95%) dk gy, frm-m hd, sb splinty, carb?, abnt vf dism p mic lams & 1-3 mm pyr inclus, non sily, non-v sil calc. Bent, wh, tn & org, v sft, thn pty, brt yel min fluor.	SH (95%) dk gy, frm-m hd, sb splinty, carb?, abnt vf dism p mic lams & 1-3 mm pyr inclus sily, non-v sil calc. Bent 5% w org, v sft, amorp, thn pty, b min fluor.	
	Mud @ 7300' WT 9.85 FV 44 PV/PP 13/14 GS 4/12/18 Sol 8.2%				Mud Wt 9.85

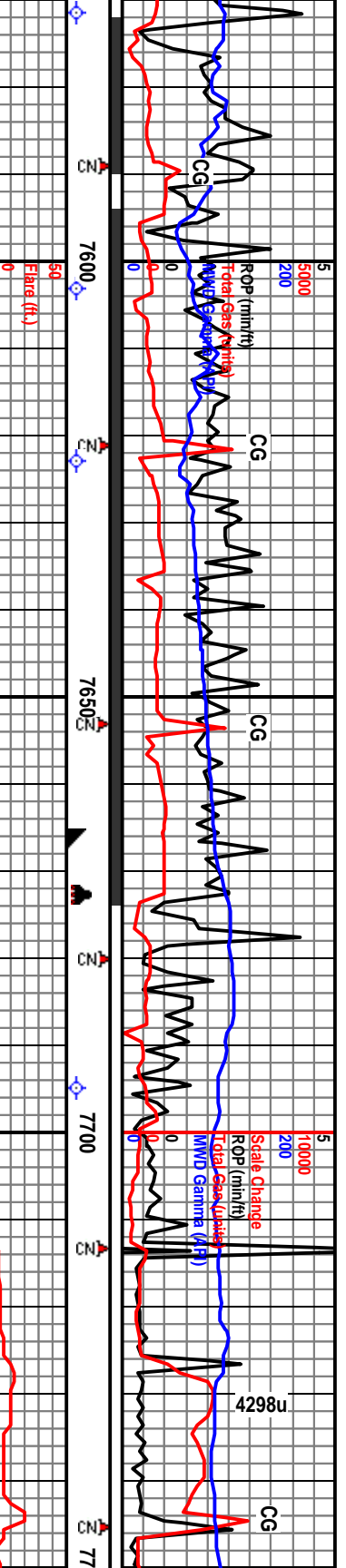
**Sharon Springs - 7325' MD;  
7272' TVD (-1970)**



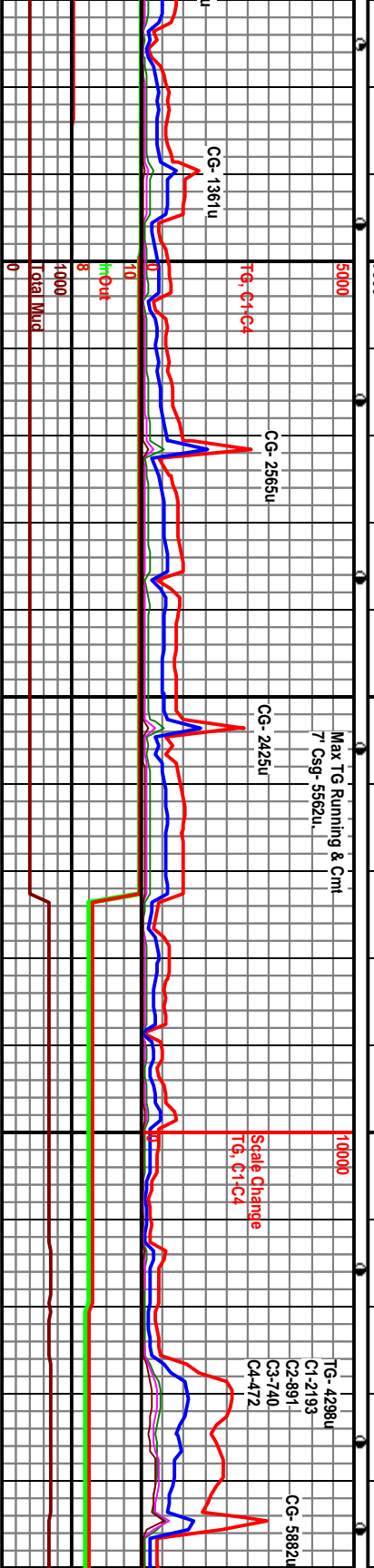


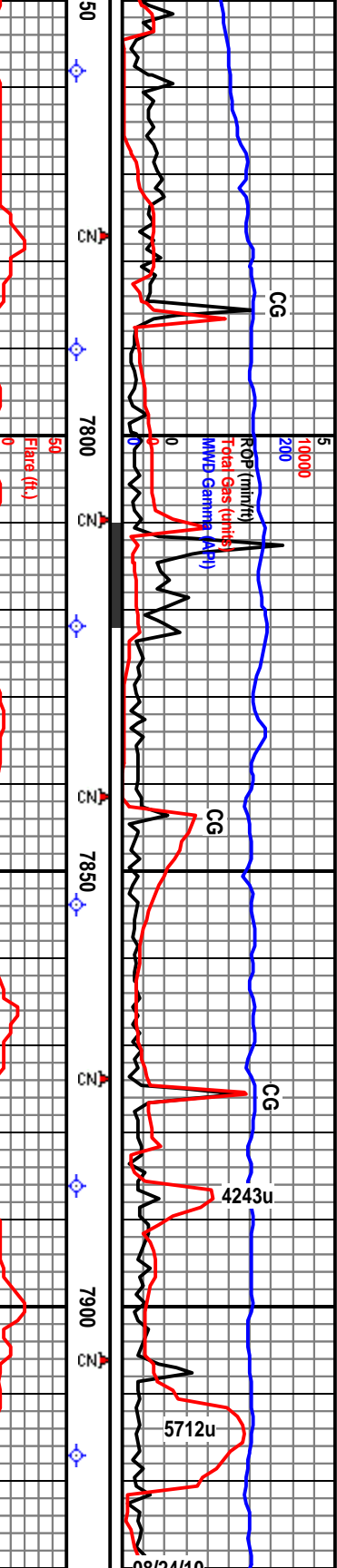
Depth (ft)	Well ID	Inc (°)	AZ	TVD (ft)	Description	Mud Wt (lb/gal)
7300	7300 TVD					
7412	7412 MD	Inc 57.2°	AZ 321.0°	TVD 7323.45		
7443	7443' MD	Inc 60.7°	AZ 320.6°	TVD 7339.44		
7475	7475' MD	Inc 52.0°	AZ 326.3°	TVD 7353.99		
7507	7507' MD	Inc 69.6°	AZ 320.9°	TVD 7366.29		
7539	7539' MD	Inc 72.0°	AZ 320.2°	TVD 7376.81		
75		Inc	AZ	TV		
<b>NIORARA FM. (SAMPLE TOP)</b>						
<b>7417' MD, 7324' TVD (-2022)</b>						
<b>Niobrara 'B1' Chalk</b>						
<b>7444' MD, 7340' TVD (-2038)</b>						
<b>7544' MD, 7379' TVD (-2077)</b>						
7400	SH (50%) dk gy, frm-m hd, sb pily & spinty, carb?, abnt vf dism pyr, pyr mic lams & 1-3 mm pyr inclusions, non silty, non-v sil calc. SHMARLSTONE (30%) m brn gy-gy brn, mtld lt brn, sft-m frm, blk-y-sb pily, pred rthy-ip-sb wxy, v calc, no vis flor, occ slow string yealm cut. Bent 20% th-lt gy & yl orng, v sft, thin pily, amorp, m mica apr inclusions, brt yl min fluor.					
7400	SH (60%) m-dk gy brn, mod sft, blk-y-sb pily, rthy-loc sb wxy, ip mtld/spkld w/lt brn, v nearly gdd; MRLST (40%) m gy brn, v sft, blk, rthy-loc sb wxy, mtldispkld w/lt brn/incl, abnt dism pyr & macro nodd/spher pyr, v calc, frt yeigm flor com, slow-fast string yealm cuts, frt-mod orng resd ring.					
7400	SH (50%) dk gybrn, dk-m gy, v dky-blk, spily-biky-spily, pred rthy, sm-slowxy ip, v calc, meaty ip, carb ip, scat dism & mic Pyr, no vis for, v slow string yeal cut. MRLST (50%) mott brn, dk-m-lygy crm tan, sft-fr-brt, rthy-chky txt, 30-60% clay mix, silty ip, tr mic Pyr, no odor or vis sin, 40% w/ sply frt yeigm flor, slow-v slow string yeal cut.					
7400	MRLST (50%) gybrn, m-dk gy, brn, mott ip, rthy-stochky txt, 40-50% ch mtx, scat carb mat & mica, occ mic & dism Pyr, no odor or vis sh, occ spily frt glid flor, v slow strng yeal cut, frt yeal resd ring. SH (50%) dk-m gy, tr blk, spily-spily-sbibly, rthy-sm, calc, manly ip, carb ip, mica ip, scat dism & mic Pyr, tr indist Fos frags, frm-brt-sft, no vis sin or flor, p cldy-v slow string cuts.					
7400	MRLST (65%) mott dk-mgy crm, frm, rthy chky ip w/ occ crm lams siks & incl, scat mic Pyr, tr dms brn l no vis por, no odor, glid flor, slow string frt glid resd ring. (35%) as before.					
7500	Mud @ 7415' WT 9.95 FV 44 PV/VP 12/17 GS 11/4 Fil 5.8 PH 7 CI 900 Hd 80 Sol 7.95%					
7500	Mud Wt 9.95 In					
7500	Mud Wt 10.05 In					





771' MD 742.0° 319.5° D 7386.11	7300 TVD 7603' MD Inc 77.7° AZ 318.0° TVD 7393.88	7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'	8/21-23/10	7695' MD Inc 88.7° AZ 315.1° TVD 7403.95	Rig Gas Buster
<p>SH (30%) dk-m-v dkgy, blk, rthy-sm txt, spilly-sbbkly, rthy-sm txt, calc marly ip, carb ip, scat mic &amp; dism Pyr, tr Indist Fos frags, frm-brt. MRLST (40%) as above.</p> <p>ARG CHKY MRLST (30%) gybrn-brn, mgy, brt-frm, sh-mod chky (arg CHH ip), 20-45% cly mtx, tr ise xin Calc, tr Calc fld mic frac, no odor or vis shtg, occ spdy fnt fld flor, p v slow string yel cut, v fnt resd ring.</p>	<p>ARG CHK (70%) gybrn brn</p> <p>ARG CHKY MRLST (60%) dk-m gy, gybrn m-dkbrn, rthy-sm, occ sl grry, pred dns, 20-50% cly mtx (chky Most ip), carb ip, tr xin Calc fld mic frac, tr scat mic &amp; nod Pyr, no vis por, no odor, occ ques dkbrn blk o stm, fnt yelgid flor, slow-fast string yel cut, mod-brt yel resd ring.</p>	<p>Very Poor Sample - Cement &amp; Pipe Dope (95%)- CARB CHLKY MRLST (&lt; 5%)</p>	<p>WPT #1: 7673- ~ 8180' (500-1000' VS) Top of Window-7405' TVD Target- 7408' TVD, Bottom of Window- 7411' TVD. Negligible Anticipated Dip.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>
<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Mud @ 7673' (Drill Out) WT 8.3 FV 27 PV/VP 4/4 GS 1/2/2 Fil 50 pH 7 CI 500 Hd 80</p>	<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Max TG Running &amp; Cml 7' Csg- 5562u.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>
<p>SH (30%) dk-m-v dkgy, blk, rthy-sm txt, spilly-sbbkly, rthy-sm txt, calc marly ip, carb ip, scat mic &amp; dism Pyr, tr Indist Fos frags, frm-brt. MRLST (40%) as above.</p> <p>ARG CHKY MRLST (30%) gybrn-brn, mgy, brt-frm, sh-mod chky (arg CHH ip), 20-45% cly mtx, tr ise xin Calc, tr Calc fld mic frac, no odor or vis shtg, occ spdy fnt fld flor, p v slow string yel cut, v fnt resd ring.</p>	<p>ARG CHK (70%) gybrn brn</p> <p>ARG CHKY MRLST (60%) dk-m gy, gybrn m-dkbrn, rthy-sm, occ sl grry, pred dns, 20-50% cly mtx (chky Most ip), carb ip, tr xin Calc fld mic frac, tr scat mic &amp; nod Pyr, no vis por, no odor, occ ques dkbrn blk o stm, fnt yelgid flor, slow-fast string yel cut, mod-brt yel resd ring.</p>	<p>Very Poor Sample - Cement &amp; Pipe Dope (95%)- CARB CHLKY MRLST (&lt; 5%)</p>	<p>WPT #1: 7673- ~ 8180' (500-1000' VS) Top of Window-7405' TVD Target- 7408' TVD, Bottom of Window- 7411' TVD. Negligible Anticipated Dip.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>
<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Mud @ 7673' (Drill Out) WT 8.3 FV 27 PV/VP 4/4 GS 1/2/2 Fil 50 pH 7 CI 500 Hd 80</p>	<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Max TG Running &amp; Cml 7' Csg- 5562u.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>
<p>SH (30%) dk-m-v dkgy, blk, rthy-sm txt, spilly-sbbkly, rthy-sm txt, calc marly ip, carb ip, scat mic &amp; dism Pyr, tr Indist Fos frags, frm-brt. MRLST (40%) as above.</p> <p>ARG CHKY MRLST (30%) gybrn-brn, mgy, brt-frm, sh-mod chky (arg CHH ip), 20-45% cly mtx, tr ise xin Calc, tr Calc fld mic frac, no odor or vis shtg, occ spdy fnt fld flor, p v slow string yel cut, v fnt resd ring.</p>	<p>ARG CHK (70%) gybrn brn</p> <p>ARG CHKY MRLST (60%) dk-m gy, gybrn m-dkbrn, rthy-sm, occ sl grry, pred dns, 20-50% cly mtx (chky Most ip), carb ip, tr xin Calc fld mic frac, tr scat mic &amp; nod Pyr, no vis por, no odor, occ ques dkbrn blk o stm, fnt yelgid flor, slow-fast string yel cut, mod-brt yel resd ring.</p>	<p>Very Poor Sample - Cement &amp; Pipe Dope (95%)- CARB CHLKY MRLST (&lt; 5%)</p>	<p>WPT #1: 7673- ~ 8180' (500-1000' VS) Top of Window-7405' TVD Target- 7408' TVD, Bottom of Window- 7411' TVD. Negligible Anticipated Dip.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>
<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Mud @ 7673' (Drill Out) WT 8.3 FV 27 PV/VP 4/4 GS 1/2/2 Fil 50 pH 7 CI 500 Hd 80</p>	<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Max TG Running &amp; Cml 7' Csg- 5562u.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>
<p>SH (30%) dk-m-v dkgy, blk, rthy-sm txt, spilly-sbbkly, rthy-sm txt, calc marly ip, carb ip, scat mic &amp; dism Pyr, tr Indist Fos frags, frm-brt. MRLST (40%) as above.</p> <p>ARG CHKY MRLST (30%) gybrn-brn, mgy, brt-frm, sh-mod chky (arg CHH ip), 20-45% cly mtx, tr ise xin Calc, tr Calc fld mic frac, no odor or vis shtg, occ spdy fnt fld flor, p v slow string yel cut, v fnt resd ring.</p>	<p>ARG CHK (70%) gybrn brn</p> <p>ARG CHKY MRLST (60%) dk-m gy, gybrn m-dkbrn, rthy-sm, occ sl grry, pred dns, 20-50% cly mtx (chky Most ip), carb ip, tr xin Calc fld mic frac, tr scat mic &amp; nod Pyr, no vis por, no odor, occ ques dkbrn blk o stm, fnt yelgid flor, slow-fast string yel cut, mod-brt yel resd ring.</p>	<p>Very Poor Sample - Cement &amp; Pipe Dope (95%)- CARB CHLKY MRLST (&lt; 5%)</p>	<p>WPT #1: 7673- ~ 8180' (500-1000' VS) Top of Window-7405' TVD Target- 7408' TVD, Bottom of Window- 7411' TVD. Negligible Anticipated Dip.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>
<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Mud @ 7673' (Drill Out) WT 8.3 FV 27 PV/VP 4/4 GS 1/2/2 Fil 50 pH 7 CI 500 Hd 80</p>	<p>Mud @ 7665' WT 9.95 FV 42 PV/VP 19/16 GS 10/17 Fil 5.0 pH 7 CI 900</p>	<p>Max TG Running &amp; Cml 7' Csg- 5562u.</p>	<p>7695' MD Inc 88.7° AZ 315.1° TVD 7403.95</p>	<p>7623' MD Inc 81.1° AZ 317.0° TVD 7397.56 VS 443.74'</p>





7758' MD Inc 88.5° AZ 315.7° TVD 7405.49 VS 578.11'	7790' MD Inc 88.4° AZ 315.3° TVD 7406.36	7300 TVD	7822' MD Inc 89.6° AZ 316.0° TVD 7406.92 VS 641.97'	7854' MD Inc 89.9° AZ 316.2° TVD 7407.06	7886' MD Inc 89.5° AZ 315.7° TVD 7407.22 VS 705.87'	7917' MD Inc 88.9° AZ 315.4° TVD 7407.66
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ARG CHKY MRLST (70%) m-dk gy brn, m sft-frn, rthy, ip mtld lt brn, tr wh amorp calc frac fill, NFOC, ARG CHK (30%) dk-v dk gy, blk-y-sb plty, frn, rthy, pred mic gran txt, hl (>50%) clay mtk, v calc, tr amorp wh free calc; no odor, tr spty wk dl vl fluor, slw strmg cut, brt vl resid ring fluor. Very Fine Cigs (0.2-0.5 mm)

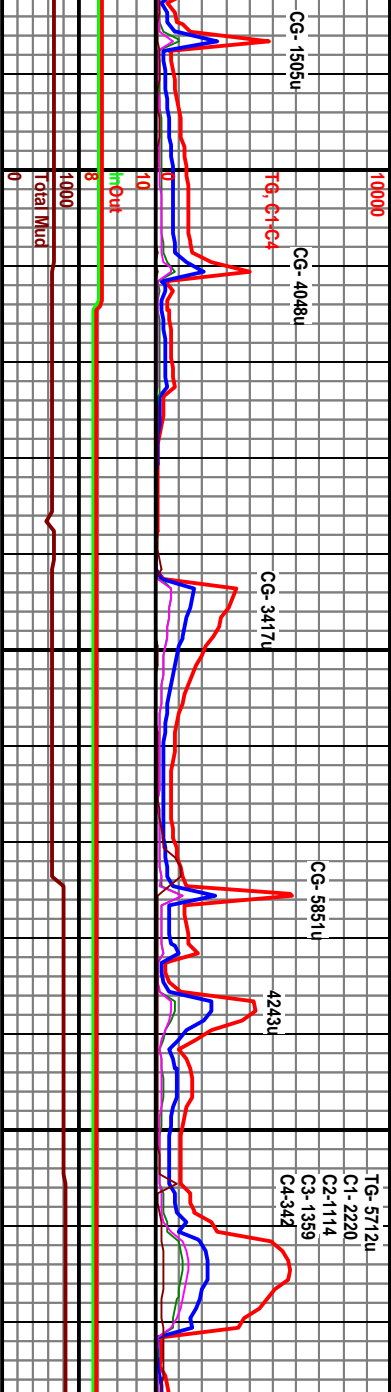
ARG CHKY MRLST (60%) m-dk gy brn, m sft-frn, rthy, ip mtld lt brn, tr wh amorp calc frac fill, NFOC, ARG CHK (40%) dk-v dk gy, blk-y-sb plty, frn, rthy, pred mic gran txt, hl (>50%) clay mtk, v calc, tr amorp wh free calc; no odor, tr frt dl vl fluor, pr slw mlty cut, frt vl resid ring fluor. Very Fine Cigs (0.2-0.5 mm)

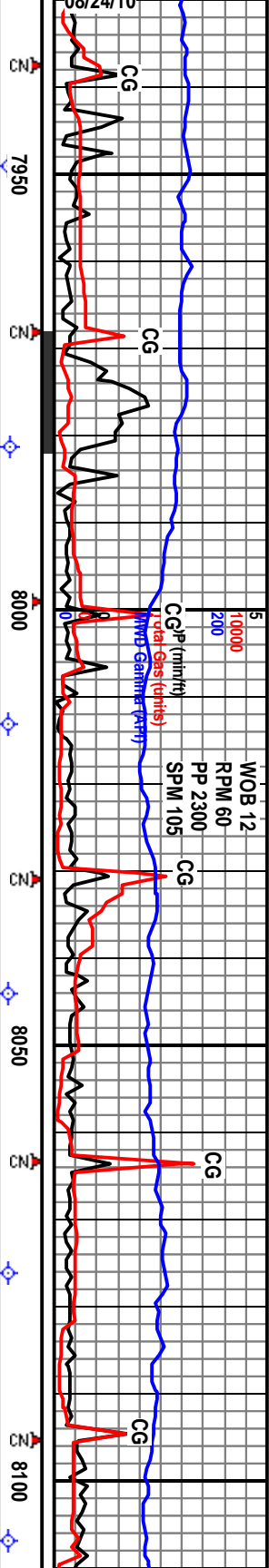
ARG CHKY MRLST (70%) m-dk gy brn, m frn, blk-y, rthy, com mtld lt brn, mic gran txt, tr wh amorp calc fill frags; frt hydrocarb odor, frt even dl vl fluor, gd immed strmg cut, brt vel resid ring fluor; CARB CHLK (30%) v dk gy, frn, blk-y, rthy-sb wxy, mic gran txt, hl (60%) arg/cly cont; ext calc, NFOC.

ARG CHKY MRLST (70%) m-dk blk-y, rthy, com mtld lt brn, m amorp calc fill frags; frt hydrocarb odor, frt even dl vl fluor, gd immed strmg cut fluor; CARB CHLK (30%) v dk rthy-sb wxy, mic gran txt, hl (6 ext calc, NFOC. No vis lth cha

Slight Oil Skim on Shaker

Fair Oil Skim on





7949' MD  
Inc 89.5°  
AZ 315.5°  
TVD 7408.10  
VS 768.73'

7981' MD  
Inc 90.6°  
AZ 316.7°  
TVD 7408.07

7300 TVD 8013' MD  
Inc 90.4°  
AZ 317.3°  
TVD 7407.80  
VS 832.66'

8044' MD  
Inc 90.5°  
AZ 316.7°  
TVD 7407.55

8076' MD  
Inc 89.4°  
AZ 316.3°  
TVD 7407.58  
VS 895.61'

8107' MD  
Inc 88.7°  
AZ 315.  
TVD 740

WPT #1: 7673- ~ 8180' (500-1000' VS) Top of Window-  
Target- 7408' TVD, Bottom of Window- 7411' TVD.  
Negligible Anticipated Dip.

Target

**Borehole**

gy brn, m frm  
c gran txt, tr w  
ARG CHKY MRLST (80%) m-dk gy brn, m frm,  
blk, rthy, com mtld lt brn, mic gran txt, abnt wh  
amorp calc-prob frac fill: fnt hydrocarb odor, fnt  
even dl yf fluor, gd immed string cut, brt yel resid  
ring fluor: CARB CHLK (20%) v dk gy, frm, blk,  
rthy-sb wxy, mic gran txt, hi (60%) argclly cont:  
ext calc, NFOC. No vis lith change.

ARG CHKY MRLST (80%) m-dk gy brn, m frm,  
blk, rthy, com mtld lt brn, mic gran txt, abnt wh  
amorp calc-prob frac fill: fnt hydrocarb odor, fnt  
even dl yf fluor, gd immed string cut, brt yel resid  
ring fluor: CARB CHLK (20%) v dk gy, frm, blk,  
rthy-sb wxy, mic gran txt, hi (50%) argclly cont:  
ext calc, NFOC. Very Fine 0.1-0.25 mm Clogs

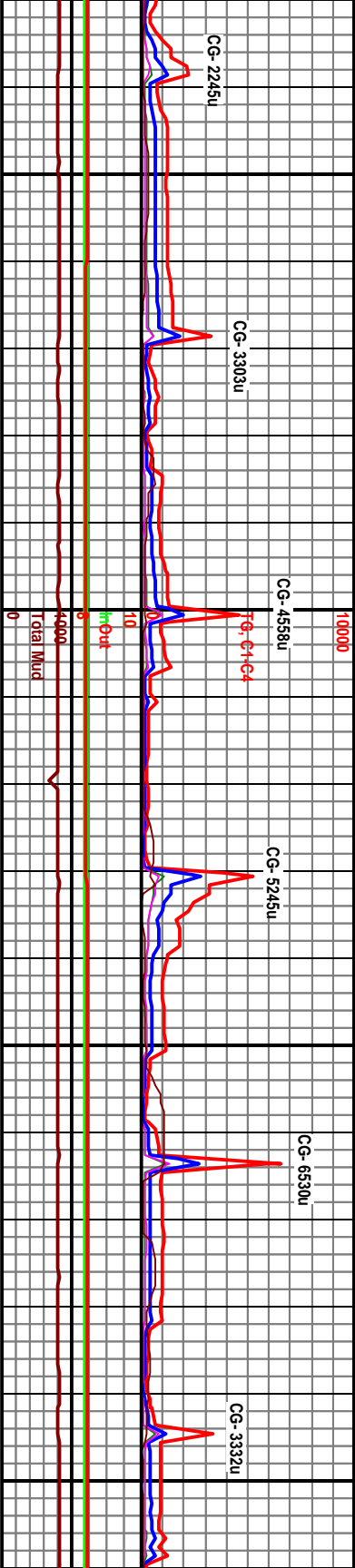
ARG CHALK brn-gy brn, occ dk-m gy, mot ip,  
blk, sbply, pred rthy txt, bcng grny ip, 10-30%  
cily mix, sl carb ip, tr blk sh ptygs, marly ip, occ xlf  
Calc fld mic frags, frm, no vis-wp por, fr o odor,  
spitchy brn sfn com, mod yeild flor, med flash  
yelwh cut, mod yel resid ring. Very fine Cuttings  
(.5-1mm).

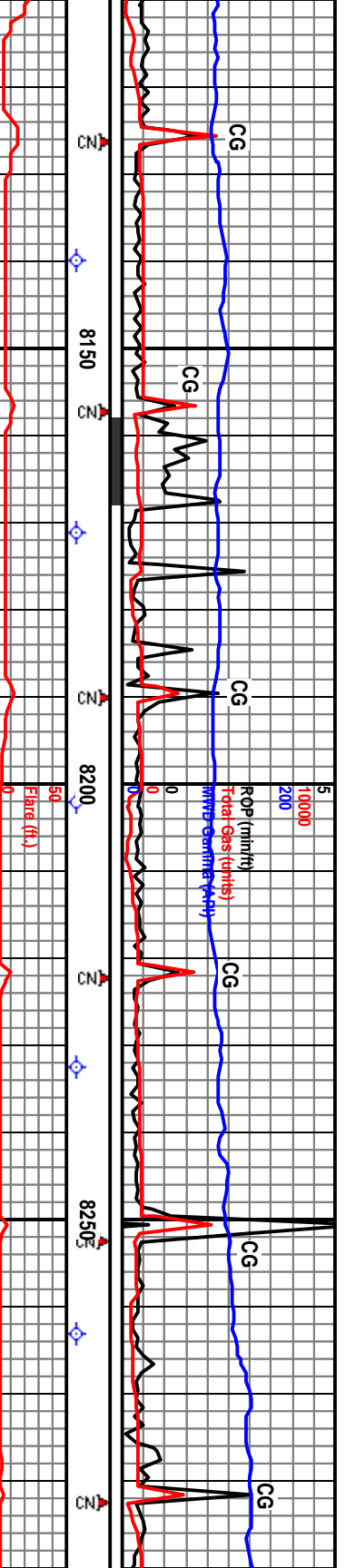
ARG CHALL  
dkgy cly lat  
yelgid flor, f  
ring. Very f

Shake

Mud @ 8064' WT 8.4 FV 27 PV/VP 1/1 GS 1/2/2 Fil 38 pH  
7 CI 825 Hd 320 Sol 2.97%

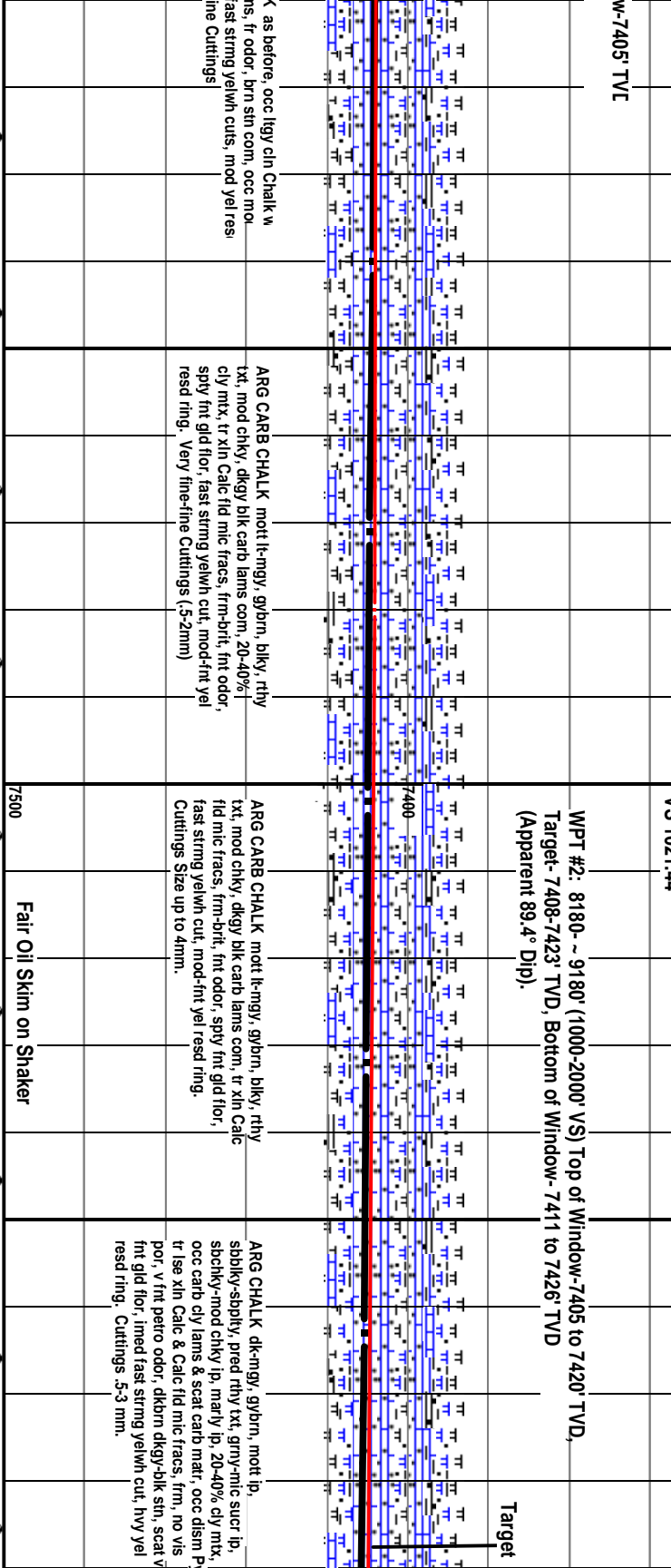
Fair Oil Skim on Shaker





8140' MD Inc 89.0° AZ 316.3° TVD 7408.76 VS 959.49'	8171' MD Inc 89.0° AZ 317.4° TVD 7409.3	7300 TVD 8202' MD Inc 88.9° AZ 317.0° TVD 7409.86 VS 1021.44'	8232' MD Inc 89.1° AZ 317.1° TVD 7410.39	8263' MD Inc 89.0° AZ 317.0° TVD 7410.9 VS 1082.39'	829' MD Inc 89.0° AZ 317.0° TVD 7410.9 VS 1082.39'
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WPT #2: 8180- ~ 9180' (1000-2000' VS) Top of Window-7405 to 7420' TVD,  
 Target- 7408-7423' TVD, Bottom of Window- 7411 to 7426' TVD  
 (Apparent 89.4° Dip).



CG-4465u	CG-3478u	CG-2639u	CG-3332u	CG-4157u	CG-2872u
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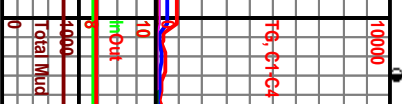
as before, occ lgy cin Chalk w  
 us, fr odor, brn sin com, occ mo-  
 aet strmg yelwh cuts, mod yel res  
 the Cuttings

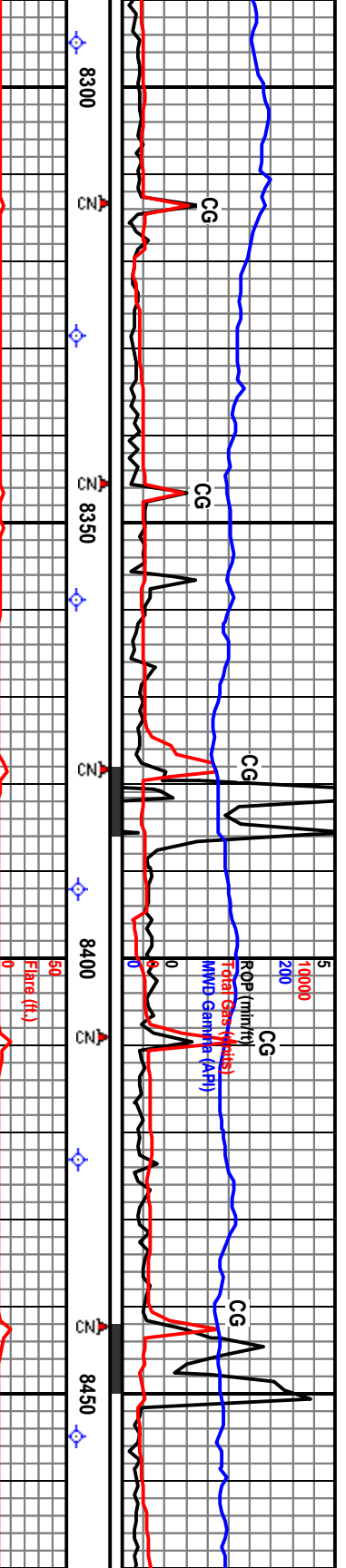
ARG CARB CHALK mot l-mgy, gybrn, blk, rthy  
 xt, mod chky, dkgy blk carb lams com, 20-40%  
 cly mtx, tr xin Calc fld mic frac, frm-brt, fnt odor,  
 spy fnt gid flor, fast strmg yelwh cut, mod-fnt yel  
 resd ring. Very fine-fine Cuttings (.5-2mm)

ARG CARB CHALK mot l-mgy, gybrn, blk, rthy  
 xt, mod chky, dkgy blk carb lams com, tr xin Calc  
 fld mic frac, frm-brt, fnt odor, spy fnt gid flor,  
 fast strmg yelwh cut, mod-fnt yel resd ring.  
 Cuttings Size up to 4mm.

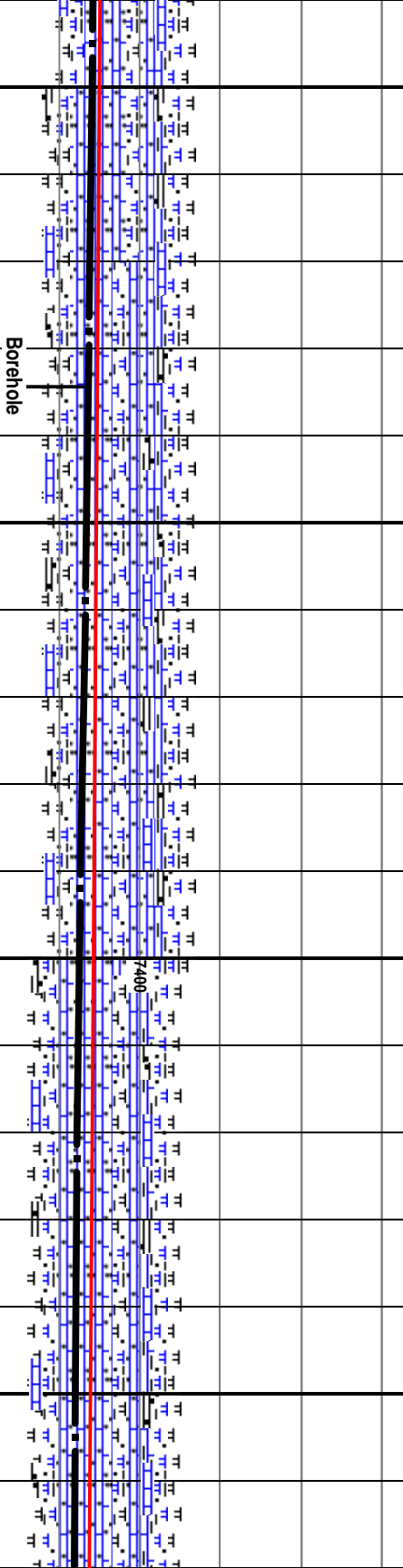
ARG CHALK dk-mgy, gybrn, mott ip,  
 sbblky-sbply, pred rthy xt, gny-mc suer ip,  
 sbchky-mod chky ip, marly ip, 20-40% dly mtx,  
 occ carb dly lams & scat carb matr, occ dsm P  
 tr lse xin Calc & Calc fld mic frac, frm, no vis  
 por, v fnt petro odor, dkbrn dkgy-blk sin, scat v  
 fnt gid flor, lined fast strmg yelwh cu, hvy yel  
 resd ring. Cuttings .5-3 mm.

Fair Oil Skim on Shaker





8328' MD Inc 88.4° AZ 316.6° TVD 7412.49 VS 1147.31'	8359' MD Inc 88.0° AZ 316.5° TVD 7413.47	8392' MD Inc 88.4° AZ 317.1° TVD 7414.50 VS 1211.22'	7300 TVD	8423' MD Inc 88.3° AZ 317.3° TVD 7415.40	8455' MD Inc 89.1° AZ 317.3° TVD 7416.12 VS 1274.16
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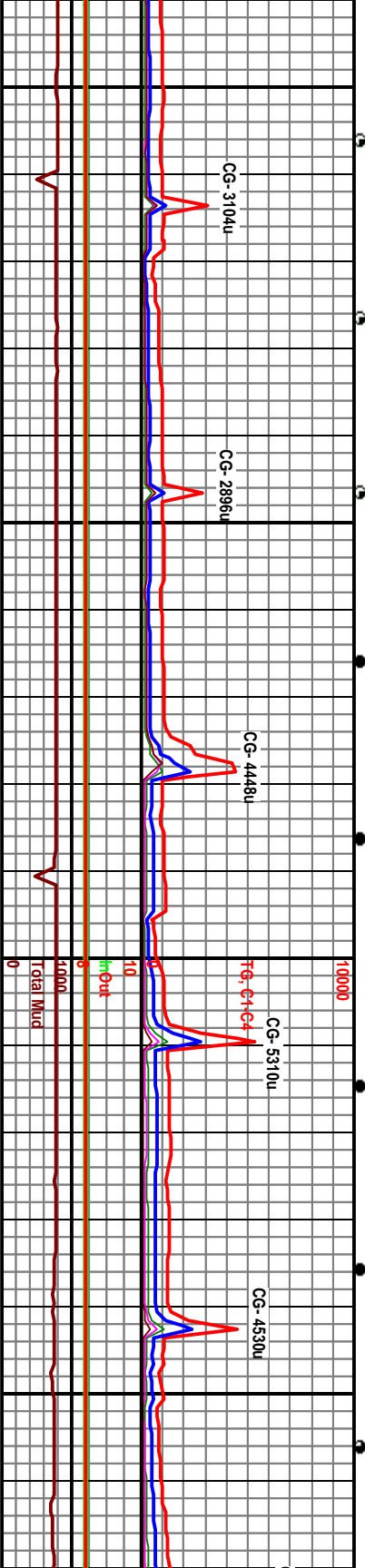
ARG CHALK dk-mngy, occ gybrn, mot ip, sbblky-sbply, pred rthy-sm txt, gny ip, sbckky ip, marly ip, 20-50% clay mix, occ carb clay lams & scat carb mat, occ dism Pyr, tr xin Calc fld mic frags, no vis por, v fnt petro odor, occ dkbrn dkgyr-blk sin, seat v fnt gid flr, slow-fast string yelwh cut, hvy yel resd ring. Cuttings :5-2 mm).

ARG CHALK dk-m gy, dk gybrn, sbblky-sbply, pred rthy-sm txt, gny ip, 10-30% clay mix, sl marly ip, occ dkgy carb clay siks & lams, lse xin Calc com w/ occ xin Calc fld mic frags, frm, fnt petro odor, dkbrn sin com, even fnt gid flr, slow-fast string yelwh cut, hvy yel resd ring. Very fine Cuttings (2-1.5 mm).

ARG CHALK dk brn, dk gybrn, occ brn dk-mngy, gen as before, occ dkgy blk carb Sh pigs, occ m-lyng cin v chky, occ dism Pyr, fnt petro odor, dkbrn sin com, even fnt gid flr, fast string yelwh cut, hvy yel resd ring. Very fine Cuttings (2-1.5 mm).

ARG CHALK dkbrn, rthy-gmy txt, tr mic sc, occ lk-mngy cin Chky, frags, sl marly ip, frm even fnt gid flr, slow yel resd ring. Very fi

Good Oil Skim on Shaker- Heavy on Conn.



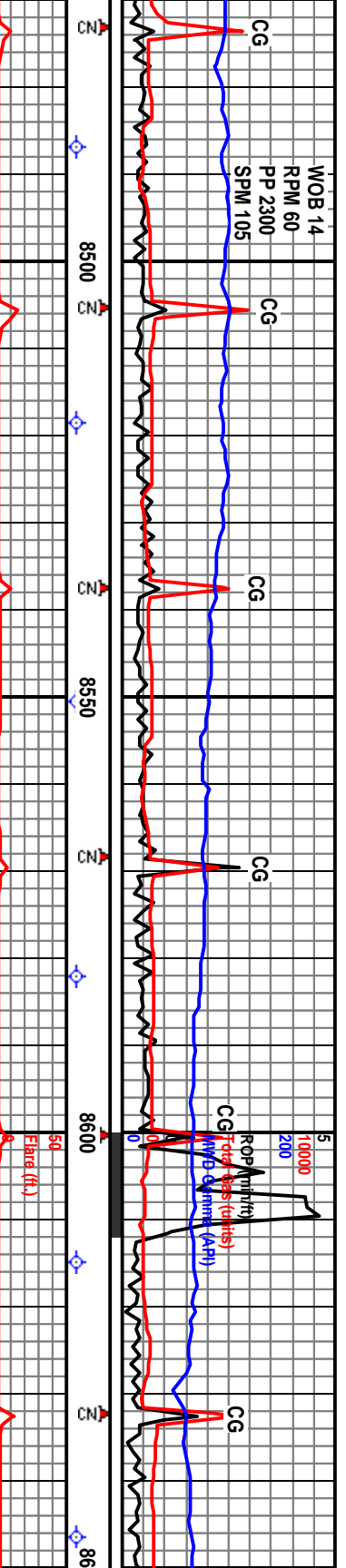
CG-3104u

CG-2896u

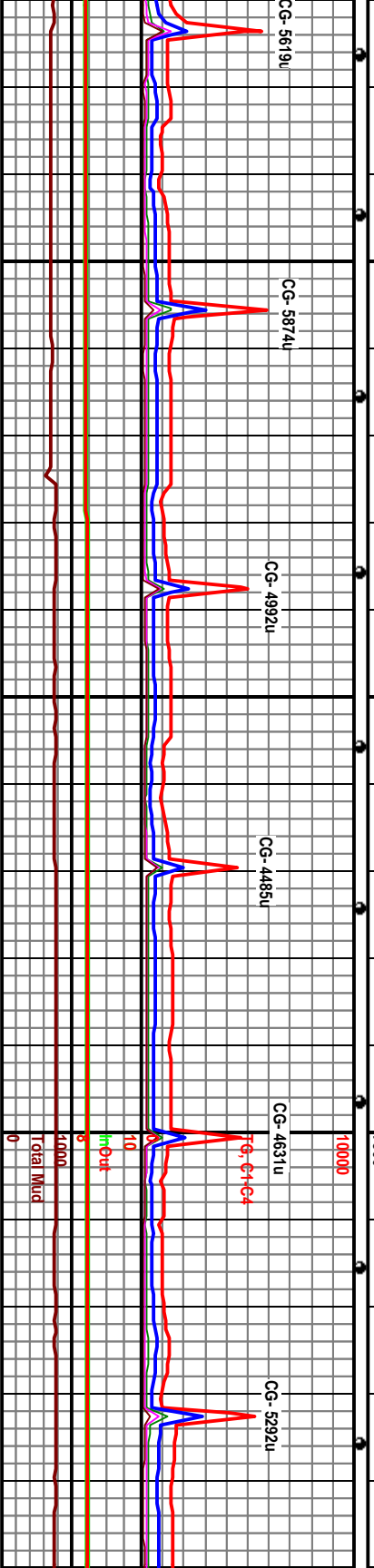
CG-4448u

CG-5310u

CG-4530u

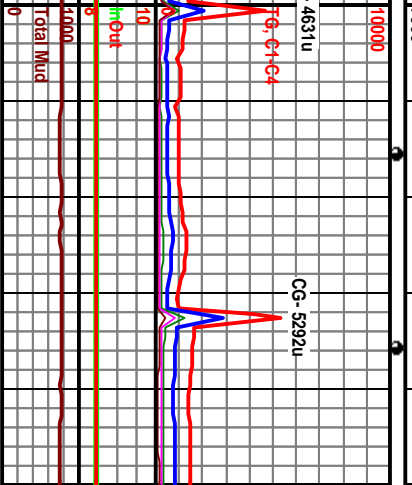


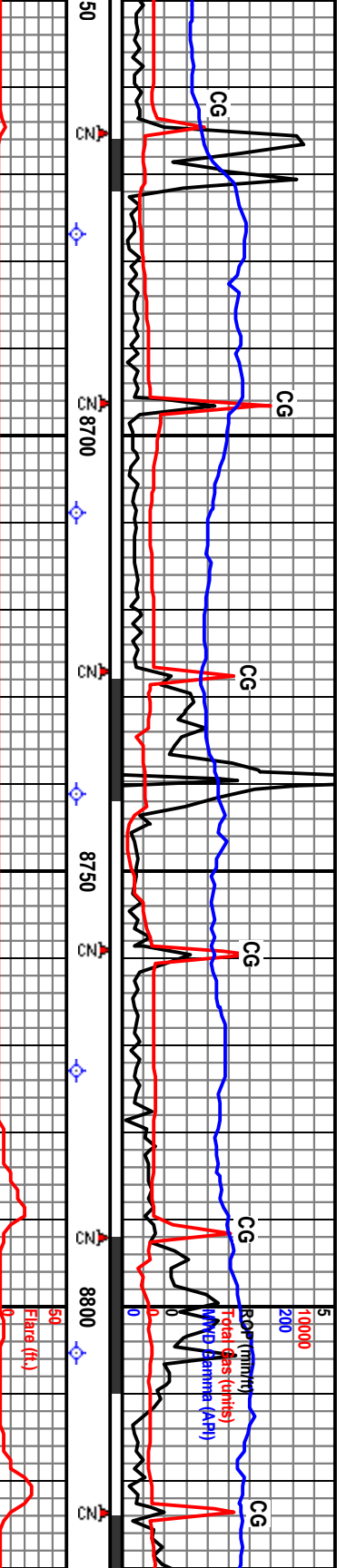
MD	Inc	AZ	TVD	VS	Remarks
8487' MD	Inc 89.4°	AZ 317.5°	TVD 7416.54		dkk gybrn, occ dkk-m gy, blkly sucr, pred 10-20% cly mtl
8518' MD	Inc 89.1°	AZ 317.6°	TVD 7416.95	VS 1337.13	ARG CHALK gen as before, tr-occ xin Calc fld fracs, occ dkgly carb. Sh pigs, frm-brtl, fair odor, patchy brn str, even fint gid flr, fast strng yelwh cut, hvy yel resd ring. Very fine Cuttings (2-1.5 mm).
8550' MD	Inc 88.8°	AZ 317.5°	TVD 7417.53		ARG CHALK mot m-dk brn gybrn, m-l-dk gy, blkly, sm-grny-slowxy txt, mic sucr ip, 10-20% cly mtx, occ dkgly carb/oly lams, xin Calc fld fracs
8582' MD	Inc 88.8°	AZ 317.2°	TVD 7418.2	VS 1401.09	ARG CHALK mot m-dk brn gybrn, m-l-dk gy, blkly, sm-grny-slowxy txt, mic sucr ip, 10-20% cly mtx, occ dkgly carb/oly lams, xin Calc fld fracs, com, tr-occ ise xin Calc, sl marly ip, frm, fint petro odor, patchy brn o str, fint yelgid flr, lined strng yelwh cut, hvy yel resd ring. Very fine Cuttings (2-1 mm).
8615' MD	Inc 88.6°	AZ 318.6°	TVD 7418.95		ARG CHALK mot m-dk brn gybrn, m-l-dk gy, blkly, sm-grny-slowxy txt, mic sucr ip, 10-20% cly mtx, occ dkgly carb/oly lams, xin Calc fld fracs, com, tr-occ ise xin Calc, sl marly ip, frm, fint petro odor, patchy brn o str, fint yelgid flr, lined strng yelwh cut, hvy yel resd ring. Very fine Cuttings (2-1 mm).
8646' MD	Inc 88.3°	AZ 318.7°	TVD 7419.0	VS 1465.0	



WPT #2: 8180 ~ 9180' (1000-2000' VS) Top  
 Target: 7408-7423' TVD, Bottom of Window-  
 (Apparent 89.4° Dip).

Mud @ 8661' WT 8.4 FV 28 PV/YP 1/1 GS 11/22 FI 38  
 pH 7 CI 825 Hd 1040 Sol 2.97%





8677' MD Inc 87.9° AZ 319.6° TVD 7420.82	8709' MD Inc 87.7° AZ 318.1° TVD 7422.05 VS 1528.01'	8741' MD Inc 88.1° AZ 320.0° TVD 7423.22	8773' MD Inc 88.0° AZ 319.7° TVD 7424.31 VS 1591.96'	7300' TVD 8805' MD Inc 88.5° AZ 321.7° TVD 7425.29
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of Window-7405 to 7420' TVL  
7411 to 7426' TVD

ARG CHALK m-dk gybrn, m-dk gy, m frm, biky-micr lam/varved, com mtld w/lt brn spks, sm mic grny txt, loc mic sucr, 10-20% clay mtk, oc dkgy-blk carb/cly lams, tr wh amorp-mixh frac fi calc, lp sl marly, frt petro odor, tr spy brn o sm, even frt yel flr, imed slw strng yelwh cut, brt yel resid ring fi. Very fine Cuttings (<2-1 mm).

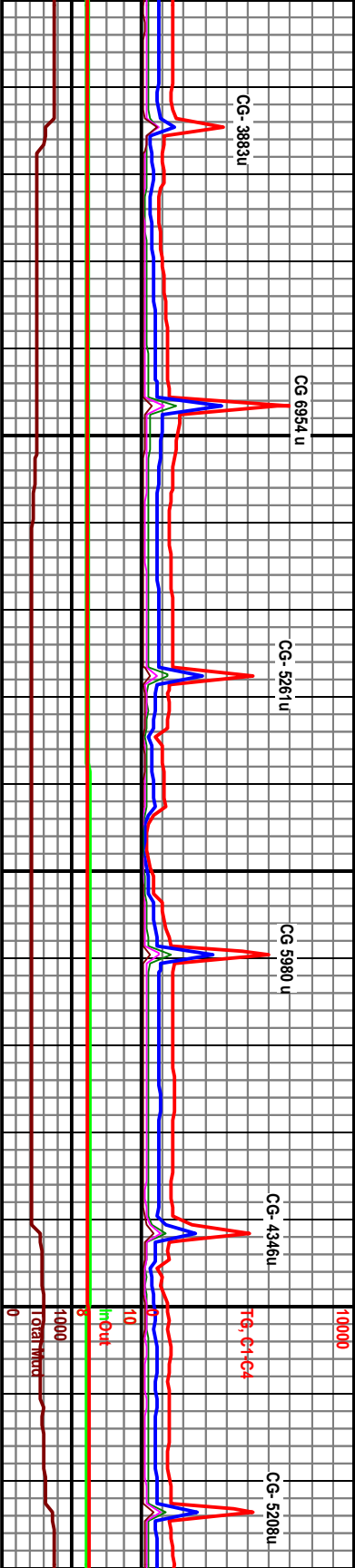
ARG CHALK(25%) m-dk gybrn, m-dk gy, m frm, biky-micr lam/varved, com mtld w/lt brn spks, sm mic grny txt, loc mic sucr, 10-20% clay mtk, tr spy brn o sm, even frt yel flr, imed slw strng yelwh cut, brt yel resid ring fi; ARG CHKY MRLST (25%) v dk gy-dk brn gy, frm-hd, biky, sb wxy, m gran txt, tr dk brn mry spks/inclus, v calc, no fl, fr slw strng cut, wk resid ring fi; Cement Cvgs.

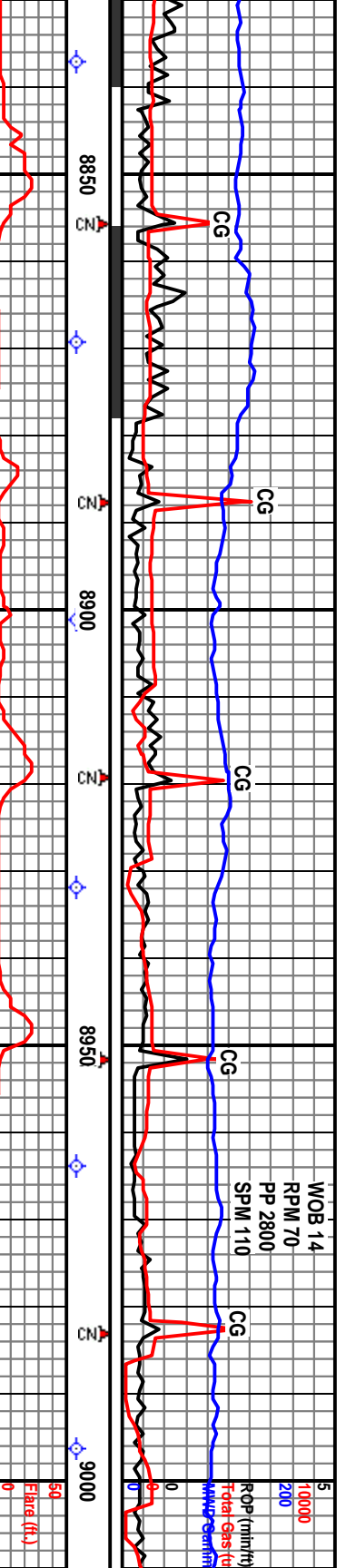
ARG CHALK (40%) m-dk gybrn, m-dk gy, m frm, biky-micr lam/varved, com mtld w/lt brn spks, sm mic grny txt, loc mic sucr, 10-20% clay mtk, tr spy brn o sm, even frt yel flr, imed slw strng yelwh cut, brt yel resid ring fi; ARG CHKY MRLST (40%) v dk gy-v dk brn gy, frm-hd, biky, sb wxy, m gran txt, tr dk brn mry spks/inclus, v calc, no fl, fr slw strng cut, wk resid ring fi; Cement Cvgs (20%)

ARG CHALK (80%) m-dk gybrn biky, rthy, micr lam/varved, com mtld w/lt brn spks, sm mic grny txt, loc mic sucr, 10-20% clay mtk, tr spy brn o sm, even frt yel flr, imed slw strng yelwh cut, brt yel resid ring fi; gds to ARG CHKY MRLST (20%) gy, frm-hd, biky, sb wxy, m gran spks/inclus, v calc, no fl, fr slw strng ring fi.

Good Oil Skim on Shaker-  
Heavy on Conn.

Good Oil Skim  
Heavy on Conn





8837' MD Inc 89.1° AZ 323.9° TVD 7425.96 VS 1655.86'	8869' MD Inc 90.5° AZ 326.0° TVD 7426.07	8901' MD Inc 90.6° AZ 326.7° TVD 7425.76 VS 1719.44'	8932' MD Inc 90.6° AZ 326.4° TVD 7425.44	8964' MD Inc 90.1° AZ 326.3° TVD 7425.24 VS 1681.94'	8996' MD Inc 89.2° AZ 325.7° TVD 7425.44
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m-dk brn gy, m fr  
 m mtd w/itr br  
 gran txt, loc mi  
 o sm, even fnt ye  
 brt yel resd ring f  
 v dk gy-v dk br  
 n txt, r dk brn mrl  
 string cut, wk resl  
 on Shaker-  
 n w/Flare

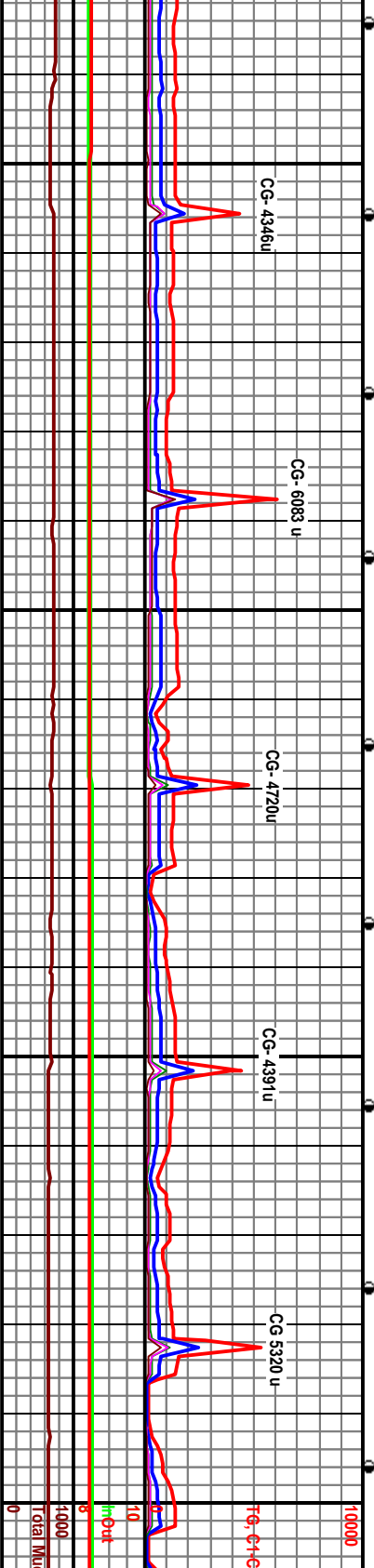
ARG CHALK (90%) m-dk gybrn-dk brn gy, m frm,  
 blkly, rthy, micr lam/varved, com mtd w/itr brn  
 micro sucr chk inclus, gen mic gran txt, loc mic  
 sucr, 20% cly mx, even fnt yel flor, imed slw  
 string yelwh cut, brt yel resd ring fl, gds to ARG  
 CHKY MRLST (10%), v dk gy-v dk brn gy, frm-hd,  
 blkly, sb wxy, m gran txt, tr dk brn mnty  
 spks/inclus, v calc, no fl, fr slw string cut, wk  
 resid ring fl, Tr Lse frac fill calc, wh & amorp &  
 cl/transl crs xln.

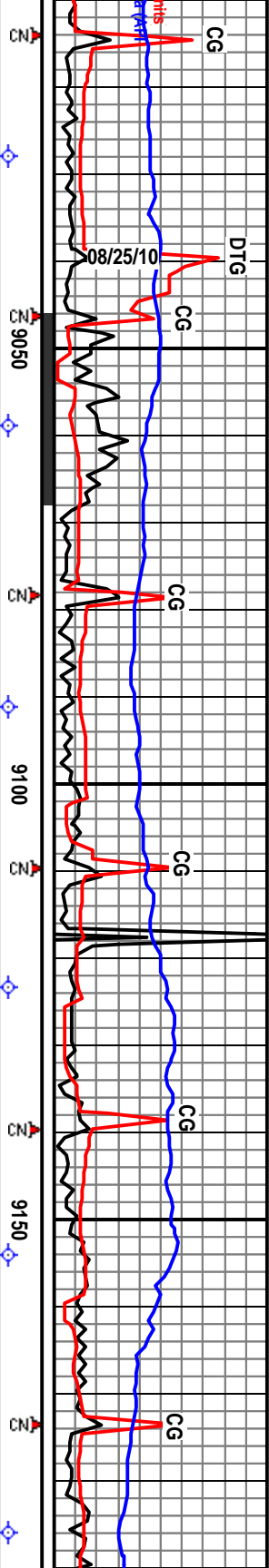
ARG CHALK (100%) m-dk gybrn-dk brn gy, m  
 frm, blkly, rthy, micr lam/varved, com mtd w/itr  
 brn micro sucr chk inclus, gen mic gran txt, loc  
 mic sucr, 20% cly mx, even fnt yel flor, imed slw  
 string yelwh cut, brt yel resd ring fl, gds to Trace  
 ARG CHKY MRLST, v dk gy-v dk brn gy, frm-hd,  
 blkly, sb wxy, m gran txt, tr dk brn mnty  
 spks/inclus, v calc, no fl, fr slw string cut, wk  
 resid ring fl, Tr Lse frac fill calc, wh & amorp &  
 cl/transl crs xln.

ARG CHALK (100%) m-dk gybrn, sm v dk gy-blk  
 m frm, blkly, rthy, micr lam/varved, gen mtd w/itr  
 brn micro sucr chk inclus, mic gran txt, loc mic  
 sucr, 20% arg/cly mx, even fnt yel flor, imed slw  
 string yelwh cut, brt yel resd ring fl, Tr Lse frac fill  
 calc, wh, amorp & cl/transl m-crs xln calc.

AR  
 m f  
 brn  
 suc  
 str  
 calc  
 Pool  
 scr

Good Oil Skim on Shaker-  
Heavy on Conn w/Flare.





9028' MD  
Inc 89.1°  
AZ 326.2°  
TVD 7425.88  
VS 1845.55

9059' MD  
Inc 91.0°  
AZ 327.2°  
TVD 7425.88

9091' MD  
Inc 91.3°  
AZ 327.7°  
TVD 7425.24  
VS 1907.94'

9123' MD  
Inc 90.9°  
AZ 327.9°  
TVD 7424.63

9154' MD  
Inc 90.5°  
AZ 327.9°  
TVD 7424.25  
VS 1970.14'

9186' MD  
Inc 90.5°  
AZ 327.6°  
TVD 7422.88

Target

WPT #: 8180' ~ 9180' (1000'-2000' VS) Top of Window-7405 to 7420' TVD,  
Target- 7408-7423' TVD, Bottom of Window- 7411 to 7426' TVD,  
(Apparent 89.4° Dip).

ARG CHALK (100%) m-dk gy-brn, sm v dk gy-blk  
frm, blk, rthy, micr lam varved, gen mtld w/  
micro sucr chk inclus, mic gran txt, loc mi-  
x, 20% argily mix, even fnt yel flr, imed slw  
o odor, sply-even fnt yel flr, imed slw strmg  
yelwh cut, brt yel read ring fl. Tr lsc frac fl-  
v dk gy-blk, frm, blk, rthy, mic gran/sucr, carb,  
no fl, wk slw mlky cut.

ARG CHALK (100%) m-dk gy-brn, tr v dk gy-blk, m  
frm, blk, rthy, micro lam varved, mtld w/lt brn  
micro gran & micro sucr chky inclus, sm argily  
mix, Tr wh calc fld frac & lsc frac fill calc, wh,  
amorp & cltr/trasl m-crs xin calc; tr brn oil stn, gd  
o odor, sply-even fnt yel flr, imed slw strmg  
yelwh cut, brt yel read ring fl.

ARG CHALK (100%) m-dk gy-brn, m frm, blk,  
rthy, micro lam varved, mtld w/lt brn micro gran  
& micro sucr chky inclus, sm argily mix, Tr wh  
calc fld frac & lsc frac fill calc, wh, amorp &  
cltr/trasl m-crs xin calc; tr brn oil stn, gd o odor,  
sply-even fnt yel flr, imed slw strmg yelwh cut,  
brt yel read ring fl, gds to ARG CARB CHLK (40%)  
v dk gy-blk, frm, blk, rthy, mic gran/sucr, carb,  
no fl, wk slw mlky cut.

ARG CHALK (100%) m-dk gy brn, mtld/spkld  
brn chky inclus, tr gds v dk gy, frm, blk, rth  
gran & m suc, apsr micro lam/varved, tr sply-  
oil stn, dl-semi brt y/ sply-even fl, imed gd str-  
cut w/ brt y/ resid ring fl.

Mud @ 9122' WT 8.4 FV 26 PV/YP 1/1 GS 1/1/1 Fil 45  
pH 7 Cl 500 Hd 900 Sol 2.97%

Good Oil Skim on Shaker- Heavy  
on Conn w/Flare.

DTG 7682 u

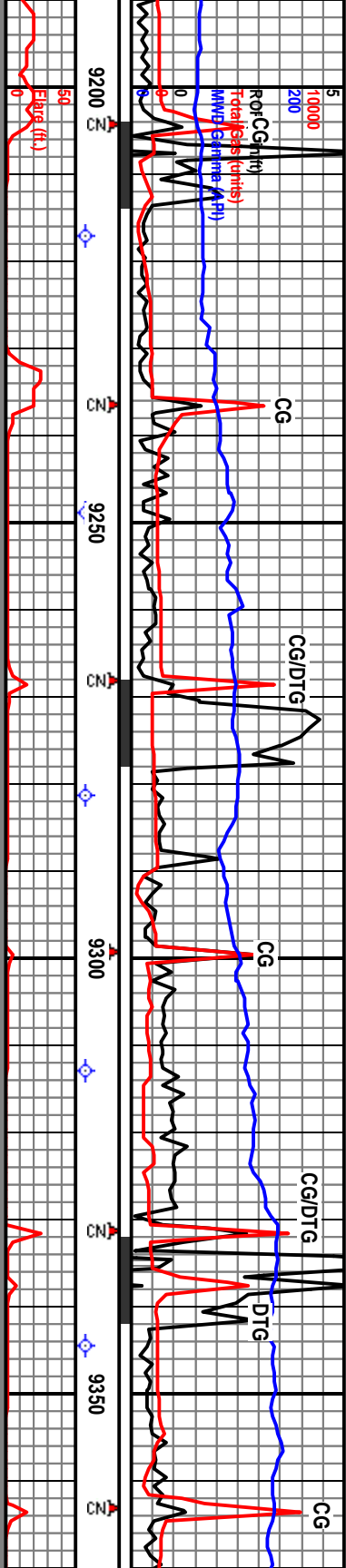
CG-5547u

CG-5613u

CG-5328u

CG-5382u

CG 6497 u



7300 TVD	9217' MD Inc 91.6° AZ 327.3° TVD 7423.40 VS 2032.46'	9249' MD Inc 91.7° AZ 326.9° TVD 7422.42	9281' MD Inc 91.3° AZ 325.2° TVD 7421.64 VS 2095.9'	9313' MD Inc 91.1° AZ 325.1° TVD 7420.97	9344' MD Inc 90.5° AZ 323.3° TVD 7420.54 VS 2158.59'	9376' MD Inc 90.2° AZ 322.8° TVD 7419.87
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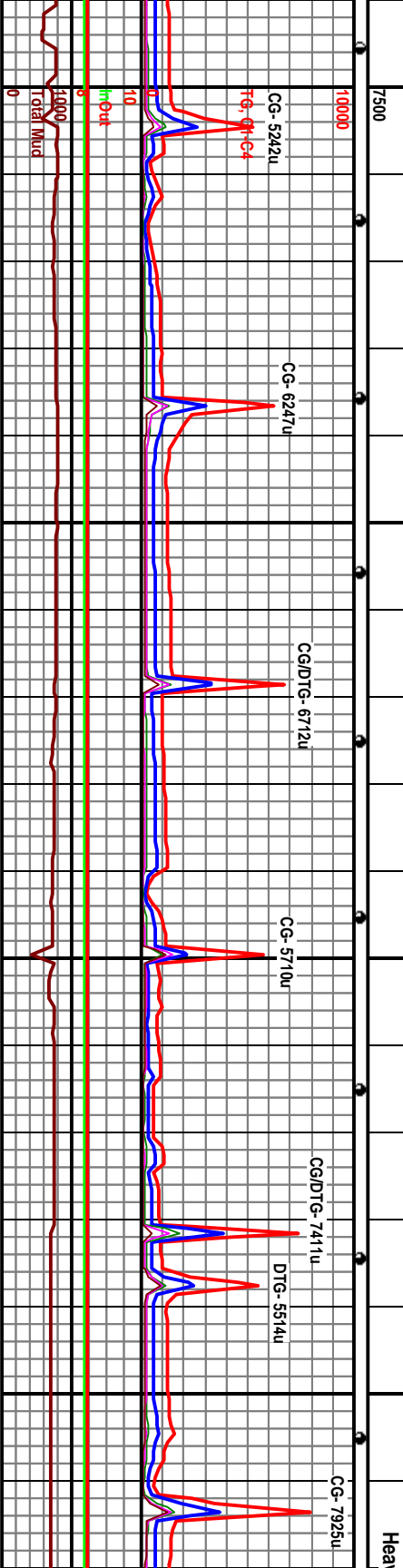
WPT #3: 9180 ~ 10,180' (2000-3000' VS) Top of Window-7420 to 7430' TVD,  
 Target: 7423-7433' TVD, Bottom of Window- 7426 to 7436' TVD  
 (Apparent 89.4° Dip).

ARG CHALK/CHALK mott gy/bm brn m-hlg,  
 sbbkly, rthy-grny, tr mic suc, 10-20% clay mix w/  
 tr cin, occ scat carb matr / tr carb Sh pfigs, ocd  
 dkgy sks & lams, occ xln Calc fld fracs, tr mid  
 Pyr, sl marly ip, frm, no vis por, no odor, patchy  
 dkbn o sin, scat v fnt fld flor, fast-imed strng  
 yelwh cut, mod-brt resd ring. Very fine Cuttings  
 (2-1 mm).

ARG CHALK/CHALK mott gy/bm brn m-hlg,  
 sbbkly, rthy-grny, tr mic suc, 10-20% clay mix w/  
 tr cin, occ scat carb matr / tr carb Sh pfigs, ocd  
 dkgy sks & lams, occ xln Calc fld fracs, tr mid  
 Pyr, sl marly ip, frm, no vis por, no odor, patchy  
 dkbn o sin, scat v fnt fld flor, fast-imed strng  
 yelwh cut, mod-brt resd ring. Very fine Cuttings  
 (2-1 mm).

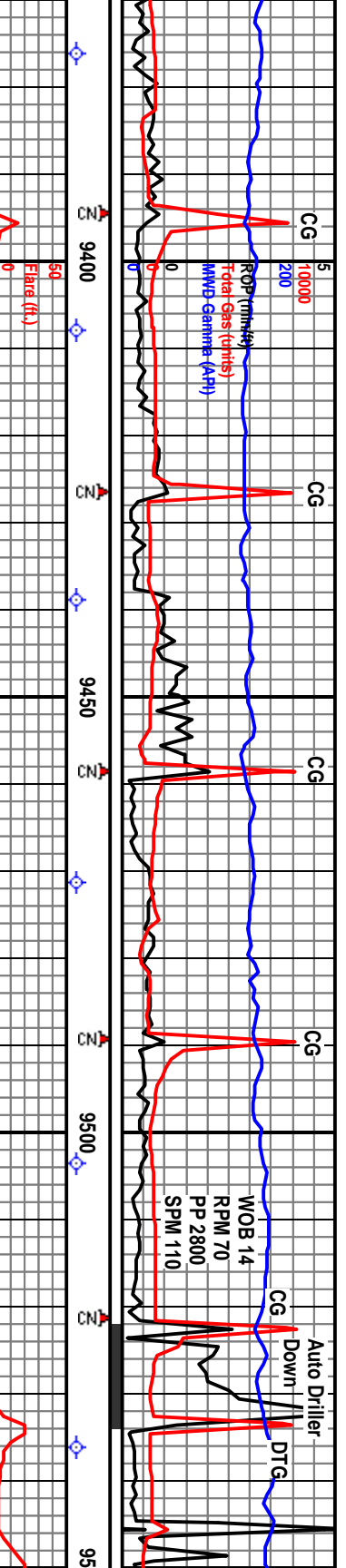
ARG CHALK gy/bm brn m-lc-dkgy, mott ip,  
 sbbkly-sbbly-sply, rthy-sm-grny txd, tr mic suc,  
 10-40% clay mix, marly ip, occ xln Calc fld mlf  
 fracs & lse Calc, occ dkgy blk Sh strgs & pfigs,  
 frm, fnt petro odor, patchy brn sin, occ spty v fnt  
 fld flor, slow strng yel cut, fnt resd ring,  
 SH (20%) dkgy blk, sbbly-ply-sply, rthy, v calc,  
 carb, marly ip, no vis sin or flor, slow strng yel  
 cut. Very fine Cuttings.

ARG CHKY M  
 Sh pfigs, occ l  
 patchy brn str  
 strng yel cut,  
 Very fine Cut

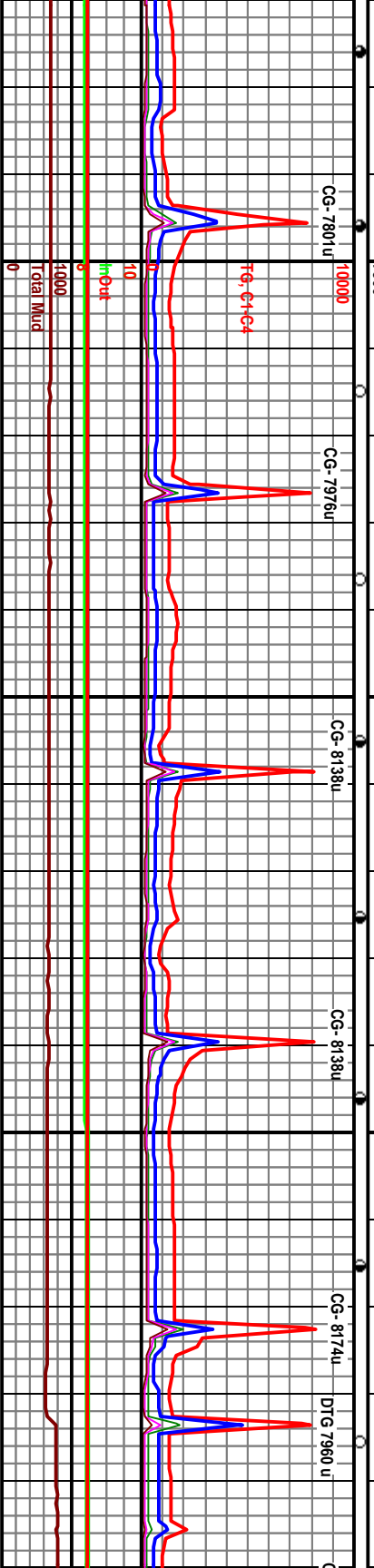


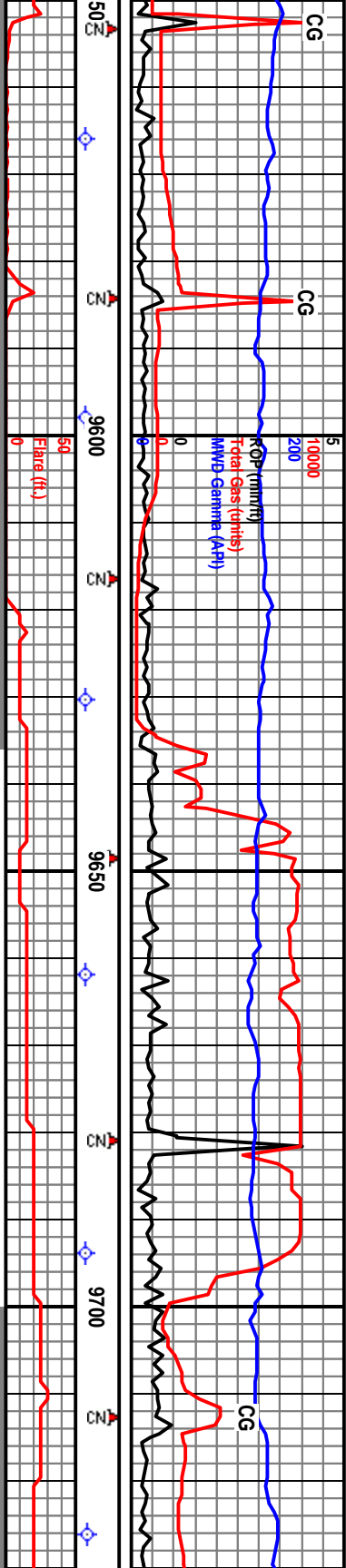
Go  
 Hea

Target

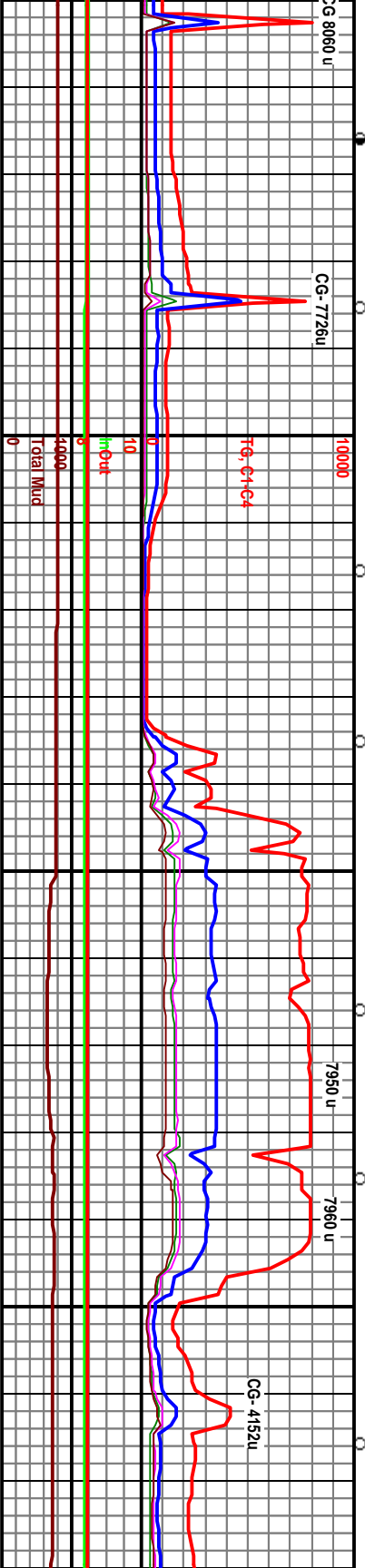


MD 9408' Inc 90.0° AZ 323.1° TVD 7420.29 VS 2222.45'	7300 TVD	ARG CHKY MRLST (60%) dkgy, dk gybrn-brn, mott lp, rthy-sm txt, chy & carb lp glog-Carb Chk, abnt lse xln Calc, frm-brt, no odor or vis stn, v frnt sply gld flr, fast strng yelwh cut, mod yel read ring. SH (40%) dkgy blk, sbply-sply, rthy, v calc, carb, many lp, no vis stn or flr, slow strng yel cut. Very fine Cuttings.	9439' MD Inc 89.3° AZ 322.6° TVD 7420.48	9471' MD Inc 88.8° AZ 322.6° TVD 7421.01	9503' MD Inc 88.8° AZ 322.6° TVD 7421.68	9534' MD Inc 89.7° AZ 322.8° TVD 7422.08 VS 2348.20'
ARG CHKY MRLST (60%) dkgy, dk gybrn-brn, mott lp, rthy-sm txt, chy & carb lp glog-Carb Chk, abnt lse xln Calc, frm-brt, no odor or vis stn, v frnt sply gld flr, fast strng yelwh cut, mod yel read ring. SH (40%) dkgy blk, sbply-sply, rthy, v calc, carb, many lp, no vis stn or flr, slow strng yel cut. Very fine Cuttings.	ARG CHKY MRLST (50%). SH (30%) CHALK (20%) mott m-l-dk gy, gybrn, rthy-gmry txt, 10-30% cly mx, many lp, occ xln Calc fill fracs, carb lp, frm, no odor, occ brn stn, sbly frnt yelgld flr, slow-fast-strng strng yelwh cut, mod read ring. Very fine Cuttings.	ARG CHKY MRLST (80%) dk gy brn, frm, blkly-sb ply, loc micro varved, rthy-sb wxy, mthd/spld w/lt tr-brn spks/inclus, lp micro gran/sucr txt, hi argily conq, v calc, frnt oil odor, sply frnt dl yl fi, pr wk slw mlky cut. (20%) v dk gy, frm-hd, sb ply, sb wxy, tr chky m lams, m calc, NFOC. Very fine Cuttings.	Flare Ignitor Out from 9400-9500'	Rig Gas Buster	Flare Ignitor Fixed	
Good Oil Skim on Shaker- Heavy on Conn w/Flare	Good Oil Skim on Shaker- Heavy on Conn. No Flare (Ignitor Out)	WPT #3: 9180- ~ 10,180' (2000-3000' VS) Top of Window-7420 to 7430' TVD, Target- 7423-7433' TVD, Bottom of Window- 7426 to 7436' TVD (Apparent 89.4° Dip).	Flare Ignitor Out from 9400-9500'	Rig Gas Buster	Flare Ignitor Fixed	
CG-7801u	CG-7976u	CG-8138u	CG-8138u	CG-8174u	DTG 7960 u	

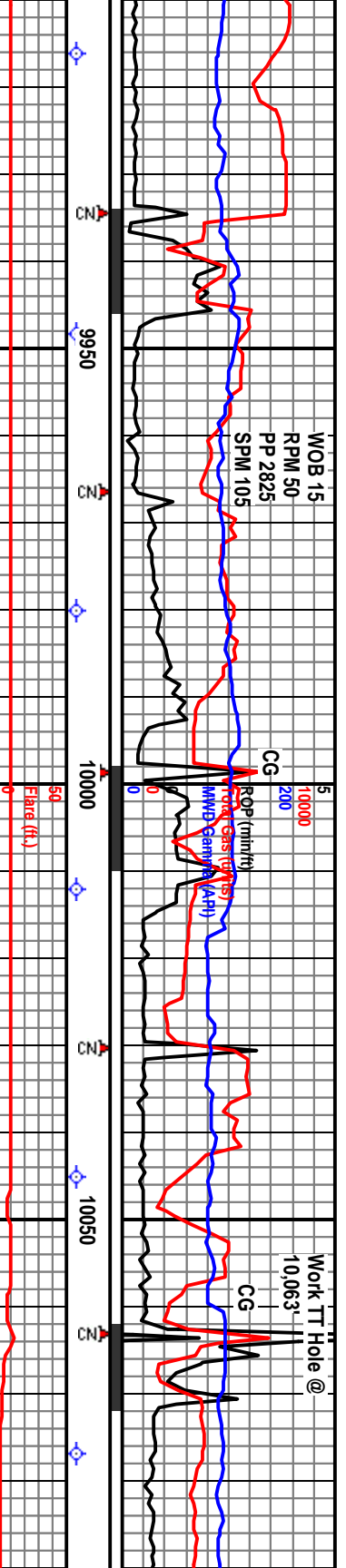




9566' MD Inc 89.9° AZ 323.4° TVD 7422.19	9598' MD Inc 90.1° AZ 323.2° TVD 7422.19 VS 2412.04'	9630' MD Inc 90.2° AZ 323.3° TVD 7422.11	9662' MD Inc 89.6° AZ 323.1° TVD 7422.17 VS 2475.88'	9694' MD Inc 88.6° AZ 323.0° TVD 7422.67	9726' MD Inc 88.8° AZ 323.4° TVD 7422.67 VS 2539.
ARG CHKY MRLST (90%) dk gy brn, frm, blk-y-sb pily, loc micro varved, rthy-sb wxy, mlt/d/spkld w/lt tr-brn spks/inclus, ip micro gran/sucr txt, hi arg/cly cont, v calc, frt oil odor, tr spy frt dl yl fl, v wk slw mlky cut. MRLY SH (10%) v dk gy, frm-hd, sb pily, sb wxy, carb, tr chky m lams, m calc, NFOC. Very fine Cuttings.	ARG CHKY MRLST (100%) dk gy brn, frm, blk-y-s pily, loc micro varved, rthy-sb wxy, mlt/d/spkld w/lt tr-brn spks/inclus, ip micro gran/sucr txt, hi arg/cly cont, v calc, tr spy frt dl yl fl, pr v wk slw mlky cut. Tr MRLY/CHKY SH, v dk gy-blk, frm-hd, blk-y, sb wxy, carb?, NFOC. Very fine Cuttings.	ARG CHKY MRLST (100%) dk gy brn, frm, blk-y-s pily, loc micro varved, rthy-sb wxy, mlt/d/spkld w/lt tr-brn spks/inclus, ip micro gran/sucr txt, hi arg/cly cont, v calc, tr spy frt dl yl fl, pr v wk slw mlky cut. Tr MRLY/CHKY SH, v dk gy-blk, frm-hd, blk-y, sb wxy, carb?, NFOC. Very fine Cuttings.	ARG CHKY MRLST (100%) dk gy brn, frm, blk-y-s pily, loc micro varved, rthy-sb wxy, mlt/d/spkld w/lt tr-brn spks/inclus, tr micro gran txt, hi arg/cly cont, v calc, tr lse wh amorp trac fill calc; ? spy frt dl yl fl, pr frt slw mlky cut, wk resid yl ring, MRLY/CHKY SH (TR) v dk gy-blk, frm-hd, blk-y, sb wxy, carb?, NFOC. Very fine Cuttings.	ARG CHKY MRLST (100%) dk gy brn, frm, blk-y-s pily, loc micro varved, rthy-sb wxy, mlt/d/spkld w/lt tr-brn spks/inclus, tr micro gran txt, hi arg/cly cont, v calc, tr lse wh amorp trac fill calc; ? spy frt dl yl fl, pr frt slw mlky cut, wk resid yl ring, MRLY/CHKY SH (TR) v dk gy-blk, frm-hd, blk-y, sb wxy, carb?, NFOC. Very fine Cuttings.	ARG CHKY MRLST (100%) dk gy brn, frm, blk-y-s pily, loc micro varved, rthy-sb wxy, mlt/d/spkld w/lt tr-brn spks/inclus, tr micro gran txt, hi arg/cly cont, v calc, tr lse wh amorp trac fill calc; ? spy frt dl yl fl, pr frt slw mlky cut, wk resid yl ring, MRLY/CHKY SH (TR) v dk gy-blk, frm-hd, blk-y, sb wxy, carb?, NFOC. Very fine Cuttings.







9916' MD Inc 89.7° AZ 323.0° TVD 7426.73 VS 2729.34'	9948' MD Inc 89.4° AZ 321.0° TVD 7426.98	9980' MD Inc 88.9° AZ 320.1° TVD 7427.46 VS 2793.29'	7300' TVD 10012' MD Inc 90.1° AZ 319.5° TVD 7427.74	10045' MD Inc 90.0° AZ 319.1° TVD 7427.71 VS 2858.28'	10077' MD Inc 89.2° AZ 317.4° TVD 7427.93
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On Weatherford  
Buster

ARG CHALK (80%) md gy brn, frm, blk, con  
micro lam/varved, mtd lt brn spks/inclus  
y-wxy, gen mic gran txt, abnt lse wh amor  
-prob frac fill; sply-even int y/ fi, fr slw sh  
mg y/wm cut fi, fr resid ring fi.  
ARG CHKY MRLST (20%) NFOC. Very fir

ARG CHALK (90%) md gy brn, frm, blk, con  
micro lam/varved, mtd lt brn spks/inclus,  
rthy-wxy, gen mic gran txt, fr lse wh amorp calc-  
prob frac fill; tr lnoea foss frags; sply-even int y/  
fi, fr slw slw strmg y/wm cut fi, fr resid ring fi.  
ARG CHKY MRLST & MRL Y SH (10%) NFOC. Very  
fine Cuttings.

ARG CHALK (80%) dk brn, dk gybrn, n-dk gy.  
sblily, rthy-sm txt, 10-30% clay mtx, occ xln Calc  
fld mic frags, sl carb lp, occ dkgy blk siks & lams,  
occ dkgy blk Sn plgs, frm, int petro odor, patchy  
brn sfn, mod-brt-int yel flr, imed-fast-slow strmg  
yel cuts, brt yel resd ring. CHKY MRLST & CARB  
SH (20%) Very fine Cuttings.

ARG CHALK (50%) as before, occ grdg-carb  
Chalk. CHKY ARG MRLST (30%) mot dk-v  
dkbrn, gybrn, m-dk gy, frm, blk, rthy, arg  
sbciky, carb lp, occ xln Calc & indist Fos frags  
occ patchy brn sfn, mod-brt yel flr, slow-fast  
strmg yel cuts, mod resd ring. SH (20%) blk di  
carb w/ silv, blk-yel-eg, sily txt, non calc, poss-  
bentic, scat mic Pyr, sft-fr-frm, brt yel mnr flr  
No Show. Very fine to fine Cuttings.

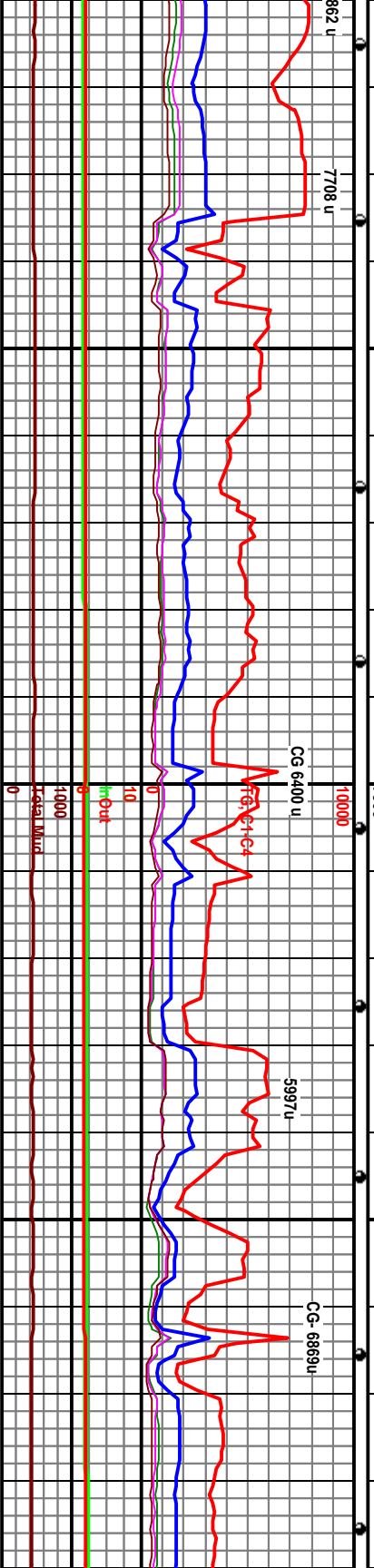
Borehole

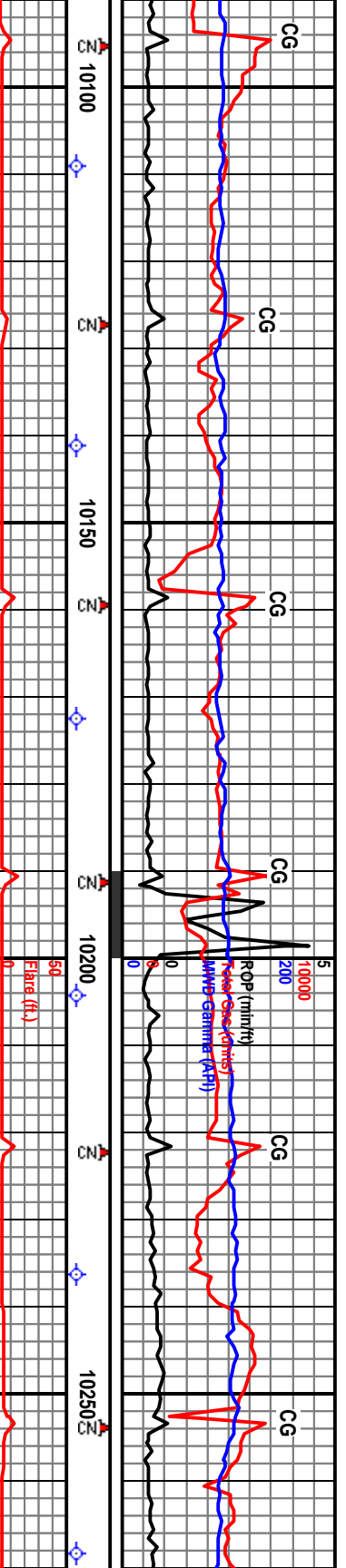
Target

od Oil Skim on Shaker-  
vny on Conn

Mud @ 9948' WT 8.4 FV 26 PV/PP 1/1 GS 1/1/1 Fil 42 pH  
7 Cl 600 Hd 520 Sol 2.97%

WPT #3: 9180- ~ 10,180' (2000-3000' VS  
7423-7433' TVD, Bottom of Window- 7423'  
(Apparent 89.4° Dip).





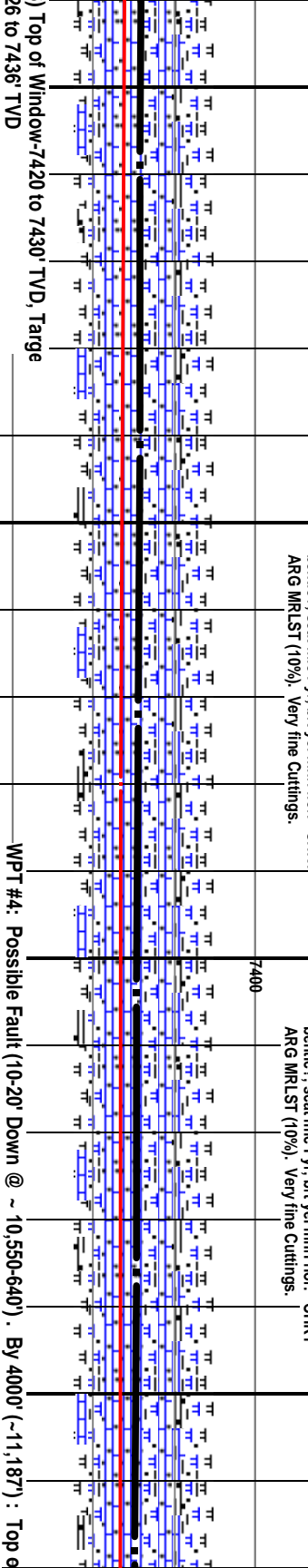
10109' MD Inc 89.3° AZ 317.7° TVD 7428.35 VS 2922.26'	10141' MD Inc 89.8° AZ 318.4° TVD 7428.60	10172' MD Inc 89.5° AZ 318.6° TVD 7428.79 VS 2985.25'	7300 TVD 10204' MD Inc 89.2° AZ 318.8° TVD 7429.15 On Weatherford Buster	10236' MD Inc 89.5° AZ 318.8° TVD 7429.52 VS 3049.24'	10268' MD Inc 89.3° AZ 318.8° TVD 7429.52 VS 3049.24'
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ARG CARB CHALK (50%) mot dkm brn gybrn m-dkgy, blk, rthy-gmly-mic sucrtxt, 10-30% clay mx, carb lp, occ xin Calc, patchy brn sin, mod-brt yel flor, fast-slow strng yel cuts, mod yel resd ring. CHKY ARG MARL (30%) as before. SH (20%) blk dkgy v calc carb w/ silver as before. Very fine to fine Cuttings.

ARG CARB CHALK dkbrn-dk gybrn, occ blk dkgy siks & lams, rthy-gmly txt, tr mic sucrt, sl-mod carb, 10-30% clay mx, occ dk Sh pigns, marly id, scat xin Calc, int petro odor, patchy-even brn str mod-brt yel flor, slow-fast strng yel cuts, hvy fn-mod resd ring. SH (20%) pred dkgy blk, brt-sft-frm, sbply-sply, rthy txt, v carb w/ silv m-lgy, sft-frm, blkly-irreg, silv-clay txt, sbchky, bentict?, scat mic Pyr, brt yel mnrl flor. CHKY ARG MRLST (10%). Very fine Cuttings.

ARG CARB CHALK dkbrn-dk gybrn, occ blk dkgy siks & lams, rthy-gmly txt, tr mic sucrt, sl-mod carb, 10-30% clay mx, occ dk Sh pigns, marly lp, scat xin Calc, int petro odor, patchy-even brn str mod-brt yel flor, slow-fast strng yel cuts, hvy fn-mod resd ring. SH (20%) pred dkgy blk, brt-sft-frm, sbply-sply, rthy txt, v carb w/ silv m-lgy, sft-frm, blkly-irreg, silv-clay txt, sbchky, bentict?, scat mic Pyr, brt yel mnrl flor. CHKY ARG MRLST (10%). Very fine Cuttings.

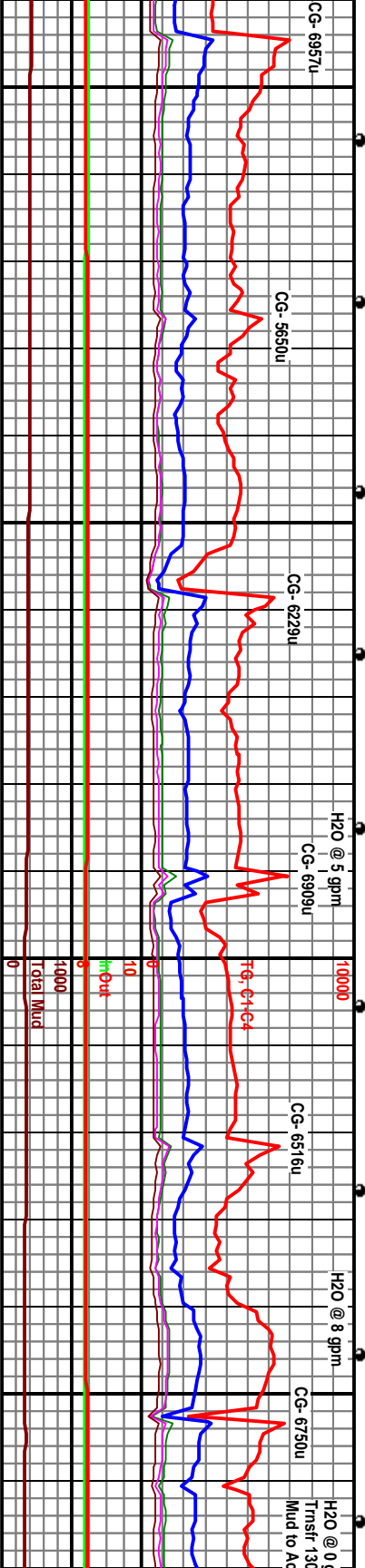
ARG CARB CHALK blkly, rthy-gmly txt, occ carb, xin Calc dkgy siks & lams, t mod-frm yeigid flor, mod-brt yel resd ring carb, tr mgy silv br

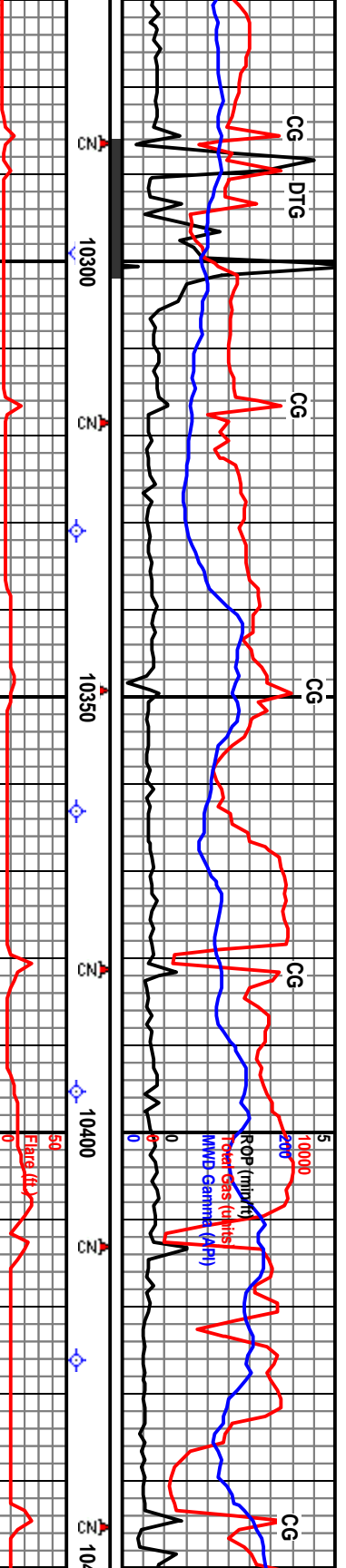


WPT #4: Possible Fault (10-20' Down @ ~10,550-640'). By 4000' (~11,187') : Top of Window- 7450' TVD, Target 7453' TVD, Bottom of Window- 7456' TVD. (This WPT Changed at 10,990' MD as Fault was not developed.)

Good Oil Skim on Shaker- Heavy on Conn.

Mud @ 10,284' WT 8.4 1  
7 Cl 500 Hd 480 Sol 2.





MD 10299' Inc 88.2° AZ 317.6° TVD 7430.58 VS 3112.23	MD 10331' Inc 87.4° AZ 317.0° TVD 7431.81	MD 10363' Inc 87.0° AZ 317.3° TVD 7433.38 VS 3176.13	MD 10395' Inc 86.8° AZ 317.2° TVD 7435.11	MD 10426' Inc 86.0° AZ 317.1° TVD 7437.05 VS 3238.98
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(80%) med m-dk lt gy. brn. tr mic sucr, 10-30% clay mix. Id frac & lse Calc com. oc Pyr, occ patchy brn snrl slow-fast strng ye/wh cut, hlg. SH (20%) pred dky bil antic

ARG CHALK (95%) m-dk gy brn, mtld lr brn, lp spkld, frm. blk-y-sb pily, rthy & sb wxy. hi argclty cont. tr v' dlsn pyr, com wh amorp lse frac fill? calc, tr Bent, lk gy, pily, abnt v' pyr spks, tr dk br oil sn spks, tr dl yl sply fl, fr slw strng cut & yl resid ring. CARB SH (5%), v dk gy-blk, prob as micro lam.

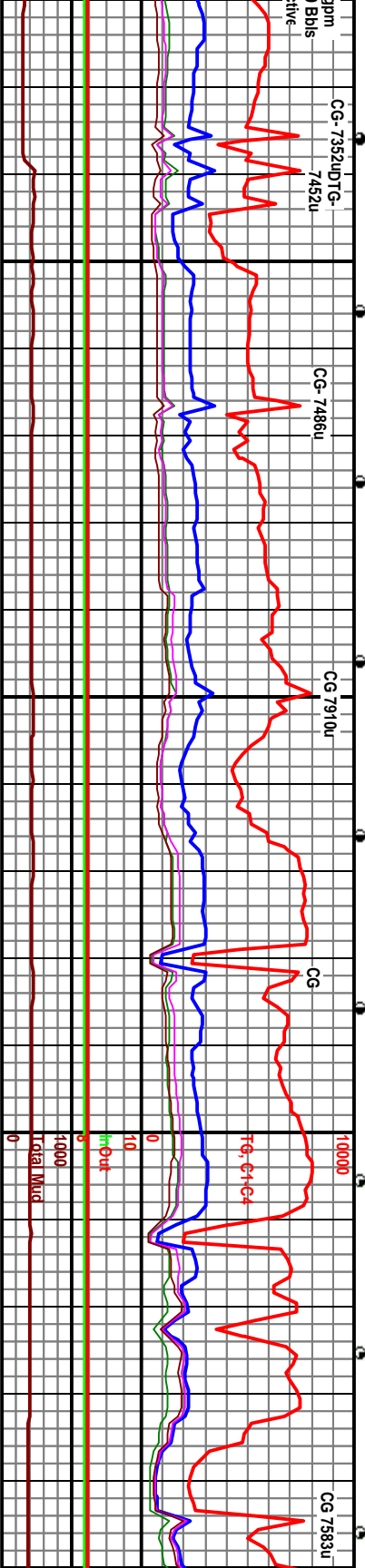
ARG CHALK (100%) m-dk gy brn, mtld lr brn, lp spkld, frm. blk-y-sb pily, rthy & sb wxy. hi argclty cont. tr v' dlsn pyr, com wh amorp lse frac fill? calc, tr Bent, lk gy, pily, abnt v' pyr spks, tr dk br oil sn spks, tr dl yl sply fl, fr slw strng cut & yl resid ring. Tr thn inbds CARB SH v dk gy-blk, blk-y, wxy, non calc.

ARG CHALK (100%) being pred m-gy brn, mtld lr brn, lp spkld, frm. blk-y-sb pily, rthy & sb wxy. 20 argclty cont. tr v' dlsn pyr, tr wh amorp lse frac fill? calc, tr Bent, lk gy, pily, abnt v' pyr spks, tr dk brn oil sn spks, fr evn dl yl sply fl, fr slw strng cut & yl resid ring. Tr thn inbds CARB SH v dk gy-blk, blk-y-sb pily, wxy, non calc. Very fine Clys (0.25-0.75 mm)

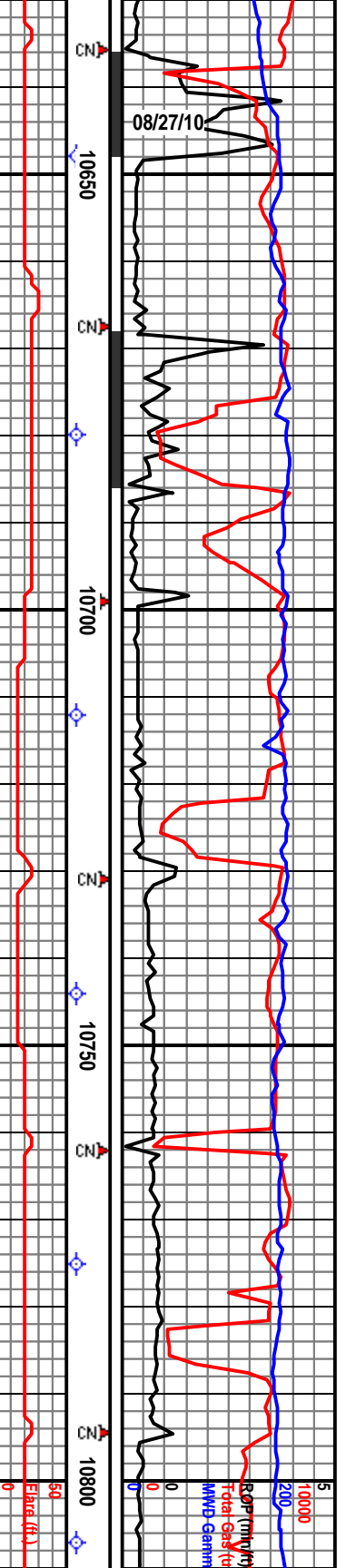
**Borehole**

**Target**

**Good Oil Skim on Shaker-Heavy on Conn.**







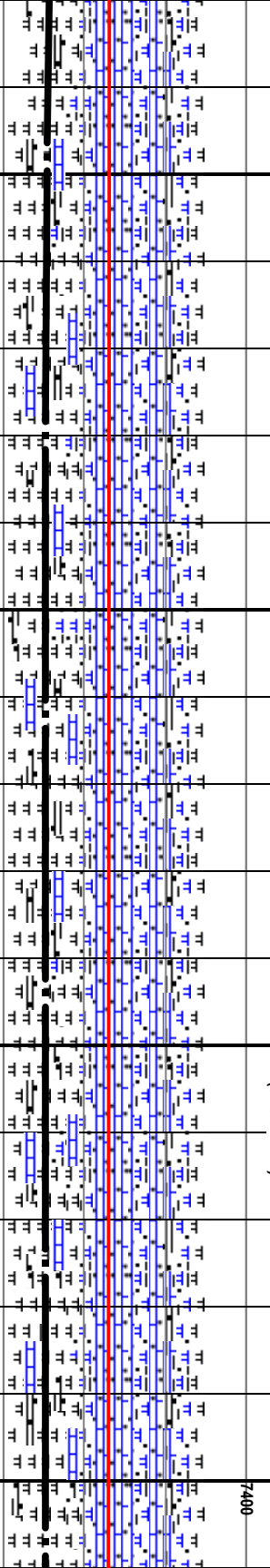
10648' MD Inc 88.5° AZ 320.6° TVD 7449.31	10680' MD Inc 90.2° AZ 322.7° TVD 7449.68 VS 3492.51'	10712' MD Inc 90.4° AZ 323.4° TVD 7449.51	10744' MD Inc 89.9° AZ 323.4° TVD 7449.43 VS 3556.35'	10775' MD Inc 89.8° AZ 323.1° TVD 7449.51	7300 TVD 10807' MD Inc 89.6° AZ 323.0° TVD 7449 VS 3619.1
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Weatherford & Gas Buster

ARG CHALK (60%) v dk gybrn- brn gy, ip mttld w/m brn, spkld, frm. blk/sb ply, rthy-sb wxy. 30+-% arg/clcy cont. tr wh amorp lse frac fill? calc, tr inocer foss frags; tr spy dk brn oil sn/spks, gd sply-ewn brt vl fl, imed gd strmg y/lwh cut fl & gd y/resid ring fl. CARB CHKY MRLST (40%) v dk gy-blk, frm. blk/sb ply, wxy, sl-m calc. brt vl fl, tr slw strmg cut, brt vl resid ring fl. Very fine Cigs (0.10-0.5 mm)

ARG CHKY MRLST (100%) v dk gybrn- brn gy, ip mttld w/m brn, spkld, frm. blk/sb ply, rthy-sb wxy. 30+-% arg/clcy cont. tr wh amorp lse frac fill? calc, tr inocer foss frags; tr spy dk brn oil sn/spks, gd sply-ewn brt vl fl, imed gd strmg y/lwh cut fl & gd y/resid ring fl. Very fine Cigs (0.10-0.5 mm)

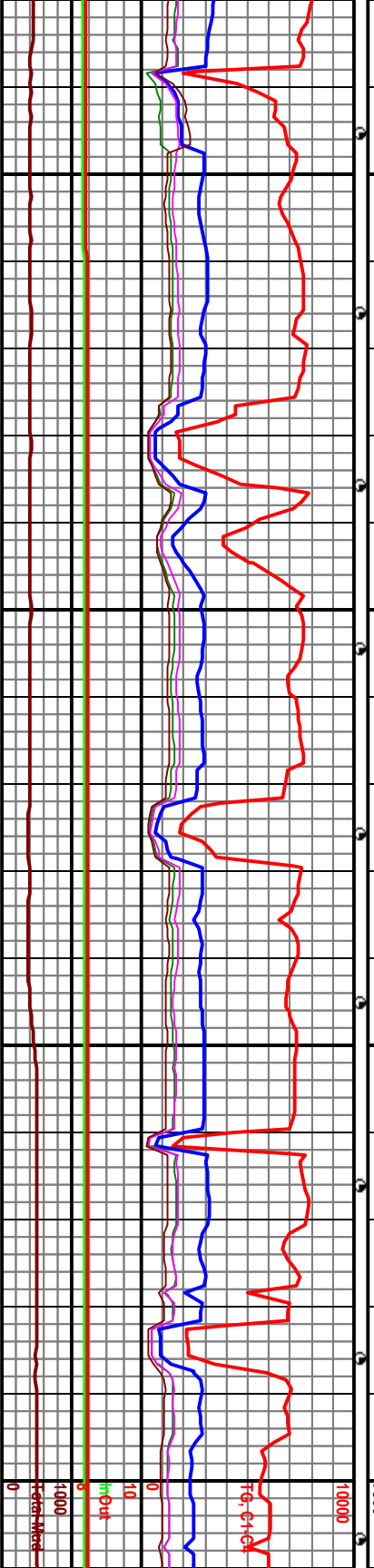
ARG CHKY MRLST (100%) v dk gybrn- brn gy, ip mttld w/m brn, spkld, frm. blk/sb ply, rthy-sb wxy. 30+-% arg/clcy cont. tr wh amorp lse frac fill? calc, tr inocer foss frags; tr spy dk brn oil sn/spks, gd sply-ewn brt vl fl, imed gd strmg y/lwh cut fl & gd y/resid ring fl. V homo lith w/no vis change. Very fine Cigs (0.10-0.5 mm)



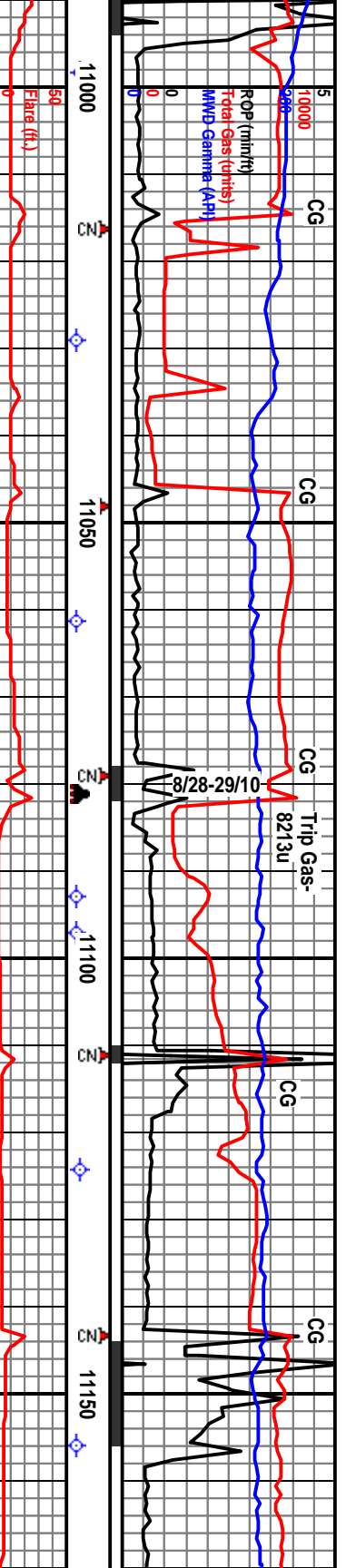
Top of Windo Changed

Mud @ 10742' WT 8.4 FV 32 PV/PP 9/1 GS 21/1 Fil 40 pH 7 Cl 500 Hd 240 Sol 2.97%

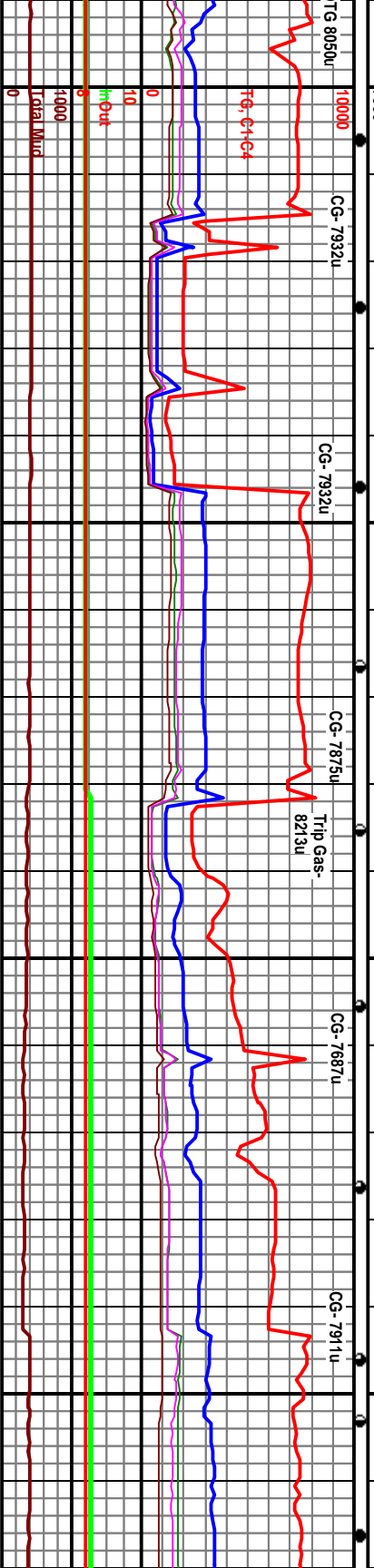
Good Oil Skim on Shaker- Heavy on Conn



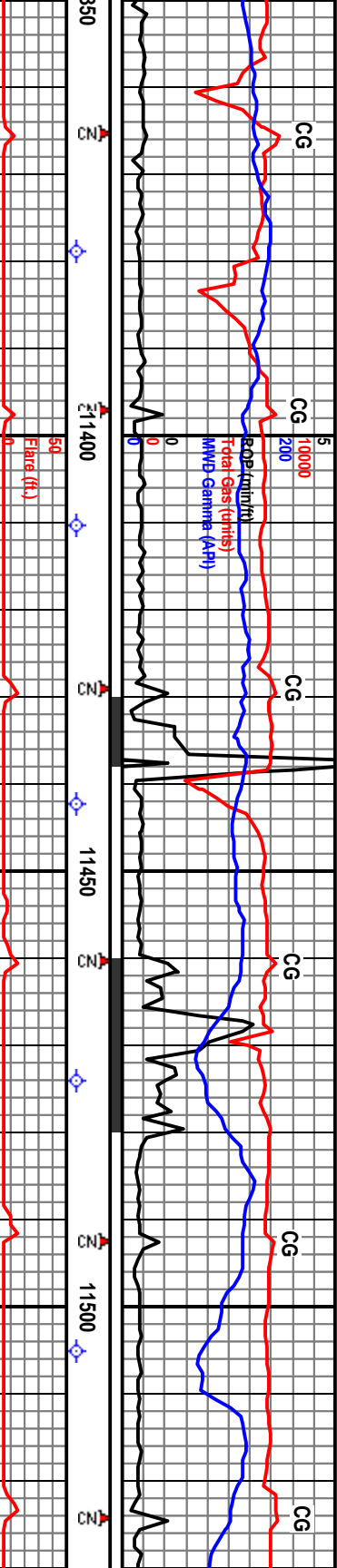




7300 TVD 10998' MD Inc 91.1° AZ 321.0° TVD 7448.32 VS 3809.8'	11029' MD Inc 90.9° AZ 320.8° TVD 7447.78	11061' MD Inc 89.8° AZ 319.7° TVD 7447.58 VS 3872.77'	11093' MD Inc 89.6° AZ 319.0° TVD 7447.75	11124' MD Inc 89.8° AZ 319.8° TVD 7447.91 VS 3935.77'	11156' MD Inc 90.6° AZ 320.2° TVD 7447.8
CARB MRLST (80%) dkbrn dkgybrn dkgy- blk, blkly-irrg, rthy-grny-mic surc txt, sl-v carb (grd)-nic surc Carb Chk (p), 20-50% clay mix, lse xln Calc com, occ Calc fld frags, occ Sh plds, tr linc, fnt petro odor, hvy dkbrn blk o sin, mod-fnt yeild fld, lined string yeild cut, brt resd ring, SH (20%). Very fine Cuttings.		Trip for Mud Motor @ 11,081', Well Trying to Flow on TOH, Bit #4 Cut 3408' in 72 1/2 Hrs, NB #5 6" B/H QD405 (Jets 5x9) w/ New Mud Motor & MWD GRS/Survey & Directional Drilling BHA.		ARG CARB MRLST (90%) dk gybrn-dk brn, v dkgy-blk, blkly-irrg-sply, rthy-grny txt, 10-50% clay mix, abnt lse xln Calc, tr f-m trnsf Chk grs, sh-mod carb / occ carb Sh plds, frm-bril, brn dkgy sin com, sply fnt-mod yeild fld, lmed-fast strm yeild cut, mod-brt resd ring, SH (10%) dkgy blk carb. Extremely fine Cuttings.	ARG CARB MRLST (70%) gybrn-brn, mott lp, blk pld, 20-60% clay mix / Sh pld abnt xln Calc, occ linc Chk grs & frags, hvy fld, slow-fast strng (30%) dkgy blk, sbbblk calc, carb, sl sily lp, f, Cuttings.
Borehole					
WPT #5: At 4300 VS (~11,488' MD) Target is 7435' TVD. Negligible Anticipated Dip.					
Mud @ 11,081' WT 8.4 FV 29 P/V/P 1/1 GS 1/1/1 Fil 42 pH 7 Cl 500 Hd 120 Sol 2.97%					
Mud @ 11,086' WT 8.4 FV 28 P/V/P 1/1 GS 1/1/1 Fil 50 F 7 Cl 500 Hd 120 Sol 1.97%					
Good Oil Show Heavy on					







11379' MD  
Inc 91.0°  
AZ 317.1°  
TVD 7444.90  
VS 4190.69

ARG MRLST (60%) dkgy, gybn brn, mott ip, blkly, rthy-grny txt, 20-60% clay mix w/ Sh ptgs & strgs, sl carb ip, occ dkgy siks & lams, occ lse xin Calc, occ Fos frags, tr inoc, tr brn sin, fr-mud yeilgid flr, fast strng yeilwh cut, int yeil resid ring, SH (35%) dk-v dkgy, blkly-sply, rthy, calc, v-sl carb, manly ip. BENT (5%). Very fine to fine Cuttings.

7300 TVD  
11410' MD  
Inc 90.6°  
AZ 316.7°  
TVD 7444.47

ARG CHKY MRLST (50%) m-dk gy brn & gy brn gy, frm, blkly-sb ply, pred rthy-sl sb wxy, ip mtld w/itr brn spks/inclns, rr vl dism pyr, tr dk brn oil stn/spks, spty-evn dl yeil fl, slw mlky-sl string cut; CARB MRLST (30%) v dk gy-blk, frm, blkly, mic gran / sucr txt, v calc, no fl, gd brt yl string cut & brt yl resid ring fl; SH (20%) v dg gy, sb wx sl-m calc.

11442' MD  
Inc 90.8°  
AZ 316.3°  
TVD 7444.08  
VS 4253.62

On Weatherford & Rig Gas Buster

ARG CHKY MRLST (80%) pred dk brn gy- dk gy brn, frm, blkly, pred sb wxy, mic gran txt, abnt inocer foss frags; sm wh amorp trac fill calc; spty-evn dl vl fl, fr med strng cut fl, gd brt yl resid ring fl; CARB MRLST (20%) v dk gy-blk, fr blkly, mic gran / sucr txt, v calc, no fl, gd brt yl string cut & brt yl resid ring fl; SH (20%) v dg gy, sb wxy, sl-m calc.

11474' MD  
Inc 91.9°  
AZ 314.9°  
TVD 7443.32

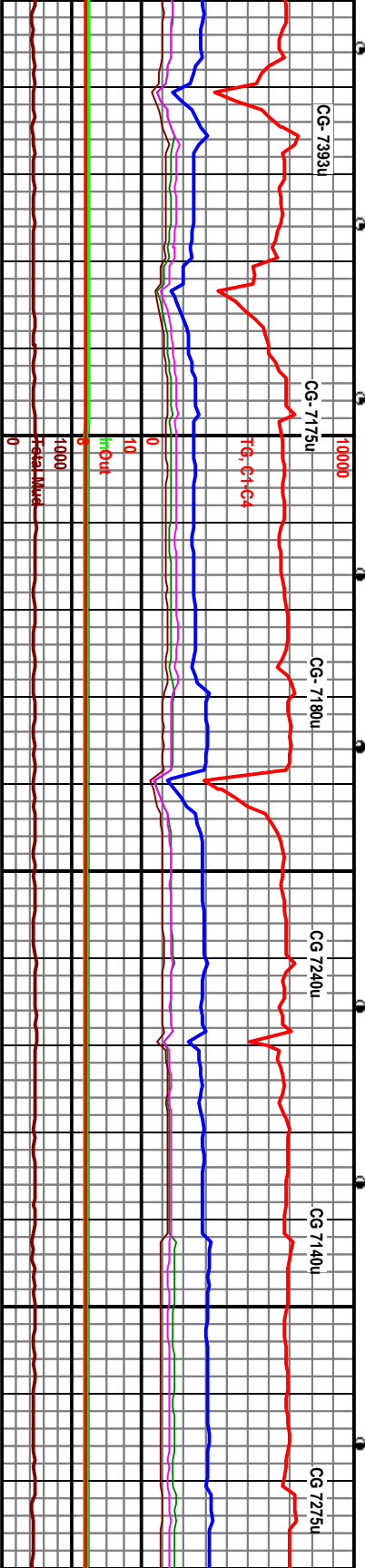
CARB CHKY MRLST (70%) v dk mic gran / sucr txt, v calc, no fl, no fl, cut & gd yl resid ring fl; ARG CHKY MRLST (30%) v dk gy-blk, frm, blkly-sb ply, rthy- sb wxy, inocer foss frags, gd evn dl-m tr strng yilwh cut fl & gd yl resid Cigs (0.10-0.5 mm)

11505' MD  
Inc 92.0°  
AZ 314.6°  
TVD 7442.27  
VS 4316.44

WPT #5: By 4300' VS (~1,488' MD) Target is 7435' TVD. Negligible Anticipated Dip.

Good Oil Skim on Shaker- Heavy on Conn.

Mud @ 11,414' WT 8.4 FV 29 PV/VP 1/2 GS 1/1/1 Fil 50 pH 7 Cl 600 Hd 120 Sol 1.97%



CG- 7393u

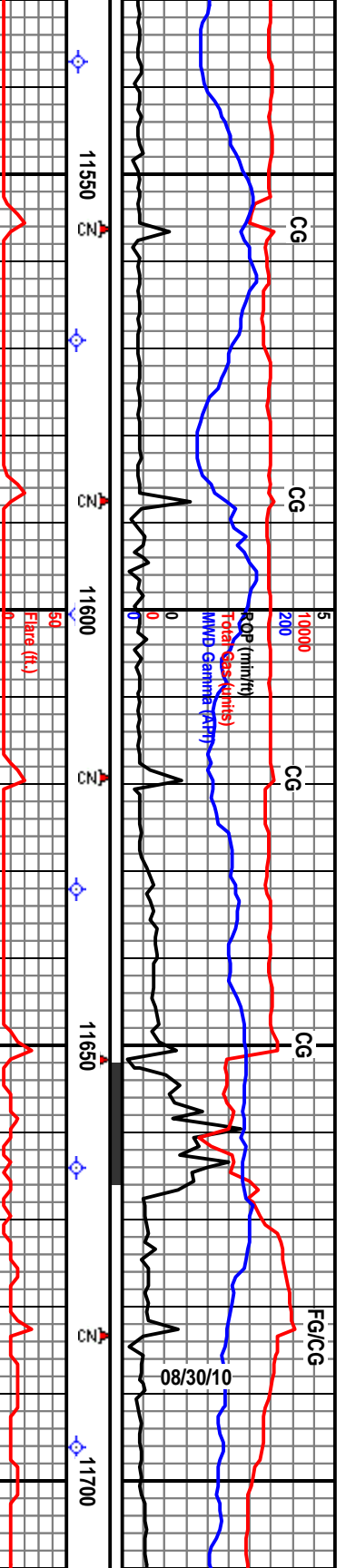
CG- 7175u

CG- 7180u

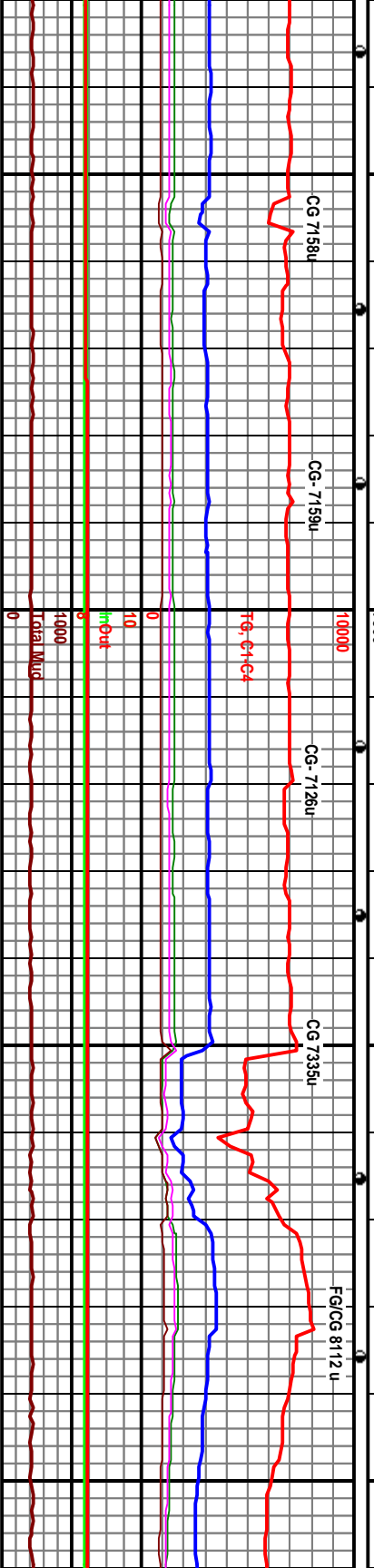
CG 7240u

CG 7140u

CG 7275u



MD	Inc	AZ	TVD	VS	Description
11537'	MD Inc 92.0°	AZ 314.1°	TVD 7441.15		gy-blk, frm, blkly, gd brt vl strmg c & yl resid ring fl. ARG CHALK (40%) pred m-gy brn mtld ltr brn, spkld, mic lam/Varvd, m frm, blkly-sb plty, rthy- sb wxy; 20% argclcy cont, abnt lse wh amorp &chl crs xin frac fill calc, abnt inocer foss frags, gd evn dl-m brt vl fl, lmed slw strmg y/wh cut fl & gd vl resid ring fl. Tr Bent, pl lt gn gy, sft, abnt dism pyr spks. Very fine Cigs (0.10-0.5 mm)
11569'	MD Inc 92.0°	AZ 313.8°	TVD 7440.04	VS 4380.15	
11601'	MD Inc 92.1°	AZ 313.7°	TVD 7438.89		7300 TVD
11632'	MD Inc 92.4°	AZ 313.7°	TVD 7437.67	VS 4442.82	
11664'	MD Inc 90.8°	AZ 313.7°	TVD 7436.78		
11696'	MD Inc 90.5°	AZ 313.7°	TVD 7436.42	VS 4506.51	

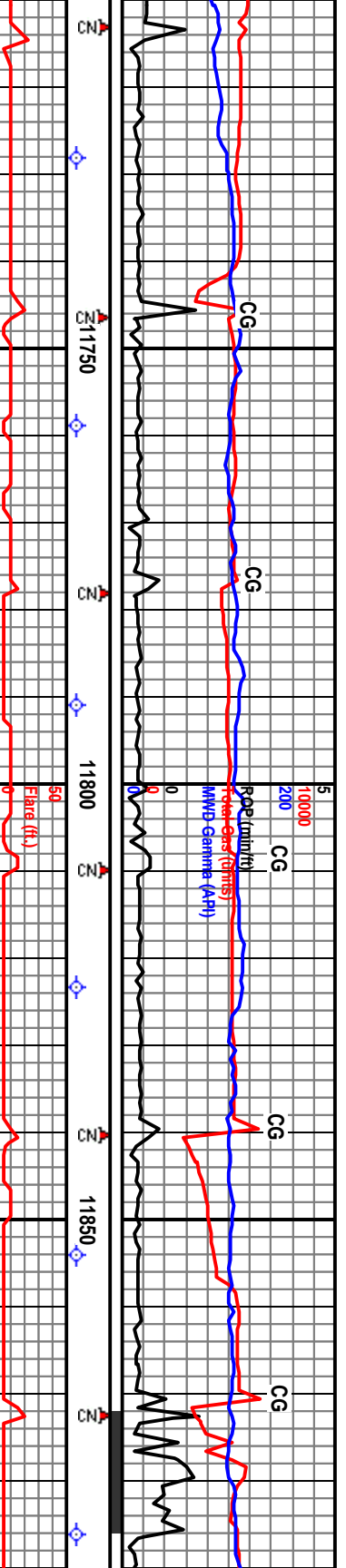


PT #6: At 5000' VS (~12,190' MD) Target is 7431' TVD. (Top c Window - 7428' TVD, Bottom of Window 7434' TVD). Negligible Anticipated Dip

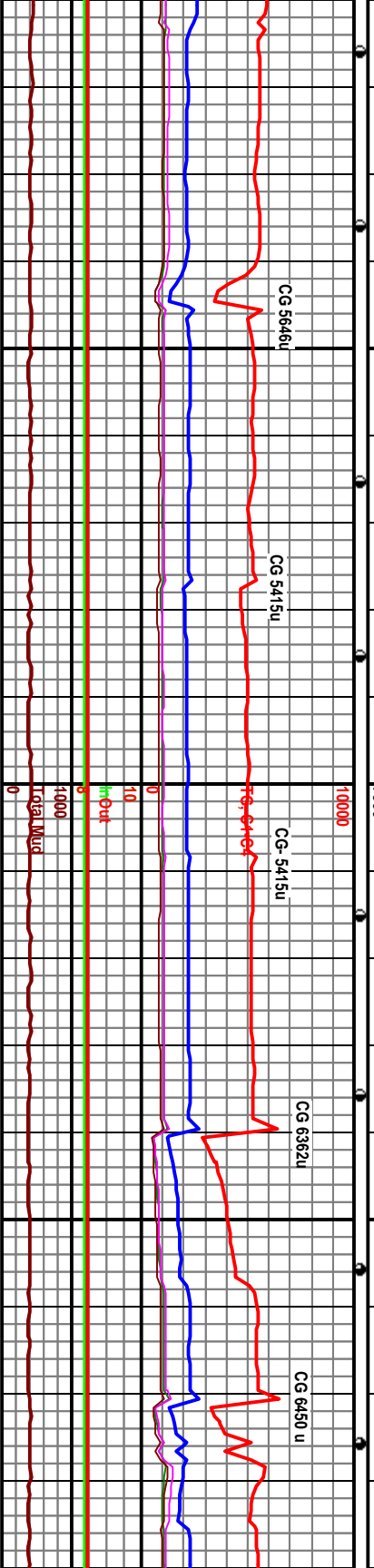
Good Oil Skim on Shaker- Heavy on Conn.

Target

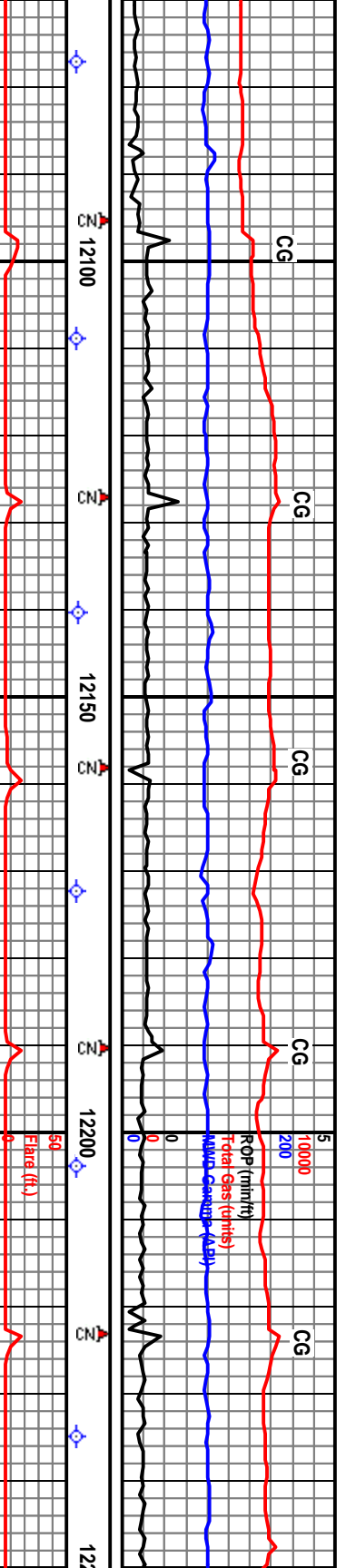
On V  
Rig



11728' MD Inc 90.6° AZ 313.5° TVD 7436.11	11759' MD Inc 90.8° AZ 313.2° TVD 7435.73 VS 4569.20	11791' MD Inc 90.2° AZ 312.7° TVD 7435.45	7300 TVD	11823' MD Inc 89.5° AZ 313.2° TVD 7435.54 VS 4632.79	11854' MD Inc 89.7° AZ 312.2° TVD 7435.75	11886' MD Inc 91.0° AZ 312.2° TVD 7435. VS 4695.3
Weatherford & Gas Buster						
MALK (60%) pred m-gy brn - brn gy, mtl ip spkld, frm, blk-y-sb ply, rthy & sb wxy gclcy cont, rr v/dism pyr, tr wh amorp ls calcic, tr inocer fos frags, gd spy-evn brt y pred string cut & y/l resid ring.	ARG CARB CHALK (60%) pred m-gy brn - brn gy, mttd lr brn, ip spkld, frm, blk-y-sb ply, rthy & sb wxy, ~30% argclcy cont, rr v/dism pyr, tr wh amorp lse frac fill calc, tr inocer fos frags, gd spy-evn brt y/l, gd imed string cut & y/l resid ring. CARB CHKY MRLST (40%) v dk gy-blk, frm, blk-y, mic gran / sucrt txt, v calc, even-spy br y/l, gd brt y/l string cut & y/l resid ring fl. Very Fine Cgs (0.25-0.5 mm)		CARB CHKY MRLST (75%) v dk gy-blk, frm, blk-y, sb wxy, mic gran / sucrt txt, v calc, gd brt y/l, gd brt y/l string cut & brt y/l resid ring fl. ARG CARB CHALK (25%) pred m-gy brn - brn gy, mtltd lr brn, ip spkld, frm, blk-y-sb ply, rthy & sb wxy, ~30% argclcy cont, rr v/dism pyr, wh amorp lse frac fill calc, tr inocer fos frags, gd spy-evn brt y/l, gd imed string cut & y/l resid ring.		ARG MRLST (85%) dk gy/brn, dk-m gy, blk-y-sply, rthy txt, 30-60% clay mix w/ dkgy pigs, scat xln calc & indist Fos frags, frm-h occ hvy patchy brn sin, fin-mod yeild flort fast-ined string yeild cut, mod resd ring. CARB CHALK (15%). Very fine Cuttings.	
Borehole						
	Good Oil Skim on Shaker- Heavy on Conn.			Mud @ 11,807' WT 8.4 FV 29 PV/VP 1/2 GS 1/1 1/1 Fil 50 f 7 Cl 600 Hd 120 Sol 1.97%		WPT #6: At 500' Window- 7428' Negligible A







12077' MD  
Inc 90.6°  
AZ 310.6°  
TVD 7432.73  
VS 4884.54'

frn brn dk-m-htgy, mott ip, blk  
f, ise xln Calc & Calc fld frac-  
txy, occ dkgy, blk sfs & lams, †  
occ patchy dkbrn sin, int yeigl  
flash-fast strmg yeIwh cut, hv  
MRLST (10%). Very fin.

12108' MD  
Inc 90.2°  
AZ 310.0°  
TVD 7432.51

CHALK (90%) gybrn, m-htgy, tan, mott, blk, gry-rthy-mic suc, ise xln Calc com w/ occ xln Calc fld mic ro frac, 10-20% clay mix w/ tr Sh ptgs, tr-sl carb ip, tr linc & indist Fos frags, tr mic Pyr, patchy brn sin, spy int fld flor, imed string-flash yeIwh cus, hv yeI resd ring. SH (10%) dkgy, blk, frm, blk, carb. Very fine Cuttings.

12140' MD  
Inc 90.1°  
AZ 309.6°  
TVD 7432.43  
VS 4946.74'

ARG CHALK (85%) dk gybrn-brn, m-dk-t gy, mott ip, blk, sbply, gry-rthy-mic suc txt, abnt ise xln Calc w/ Calc fld mic frac com, 10-30% clay mix w/ occ Sh ptgs, tr-slnod carb, tr mic Pyr, frm-bril, occ patchy-even dkbrn sin, int yeIgd flor thruout, imed string-flash yeIwh cut, hv yeI resd ring. SH (15%) dkgy, blk, sbply-sply, sly-rthy txt, calc, carb, mic mica, scat mic Pyr. Very fine Cuttings!

12172' MD  
Inc 90.1°  
AZ 309.3°  
TVD 7432.37

On Weatherford & Rig Gas Buster

7300 TVD  
12203' MD  
Inc 90.1°  
AZ 309.4°  
TVD 7432.32  
VS 5008.83'

ARG CHALK (85%) dk gybrn-brn, m-dk-t gy, mott ip, blk, sbply, gry-rthy-mic suc txt, abnt ise xln Calc w/ Calc fld mic frac com, 10-30% clay mix w/ occ Sh ptgs, tr-slnod carb, tr mic Pyr, frm-bril, occ patchy-even dkbrn sin, int yeIgd flor thruout, imed string-flash yeIwh cut, hv yeI resd ring. SH (15%) dkgy, blk, sbply-sply, sly-rthy txt, calc, carb, mic mica, scat mic Pyr. Very fine Cuttings.

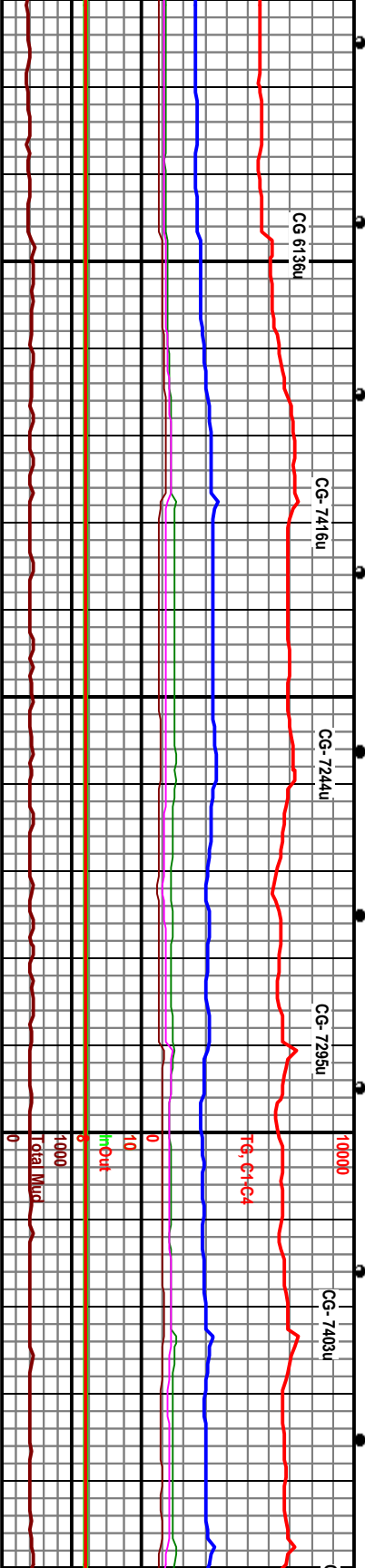
12235' MD  
Inc 90.2°  
AZ 309.3°  
TVD 7432.23

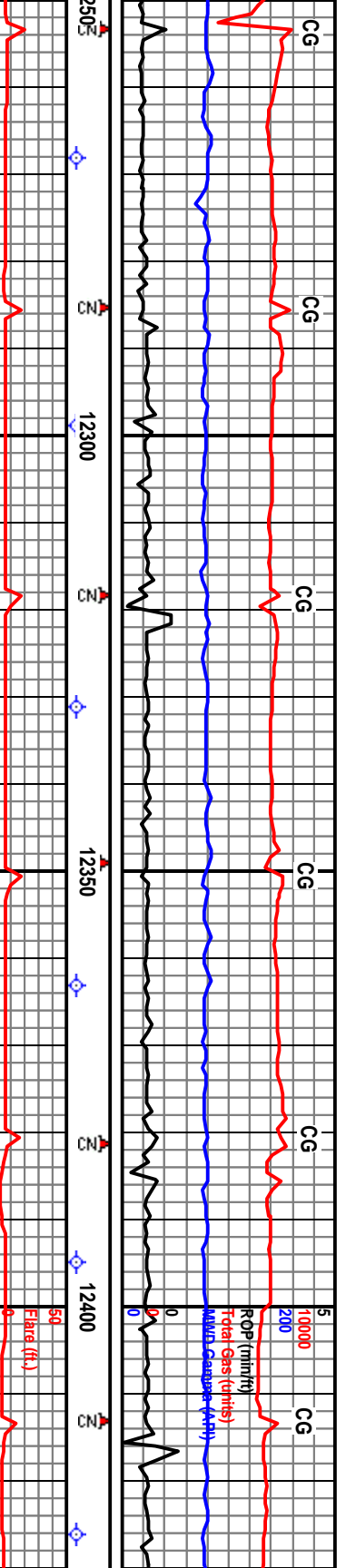
ARG CHALK (85%) dk gybrn-brn, m-dk-t gy, mott ip, blk, sbply, gry-rthy-mic suc txt, abnt ise xln Calc w/ Calc fld mic frac com, 10-30% clay mix w/ occ Sh ptgs, tr-slnod carb, tr mic Pyr, frm-bril, occ patchy-even dkbrn sin, int yeIgd flor thruout, imed string-flash yeIwh cut, hv yeI resd ring. SH (15%) dkgy, blk, sbply-sply, sly-rthy txt, calc, carb, mic mica, scat mic Pyr. Very fine Cuttings.

WPT #6: At 5000' VS (~12,190' MD) Target is 7431' TVD. (Top of Window- 7428' TVD, Bottom of Window 7434' TVD). Negligible Anticipated Dip.

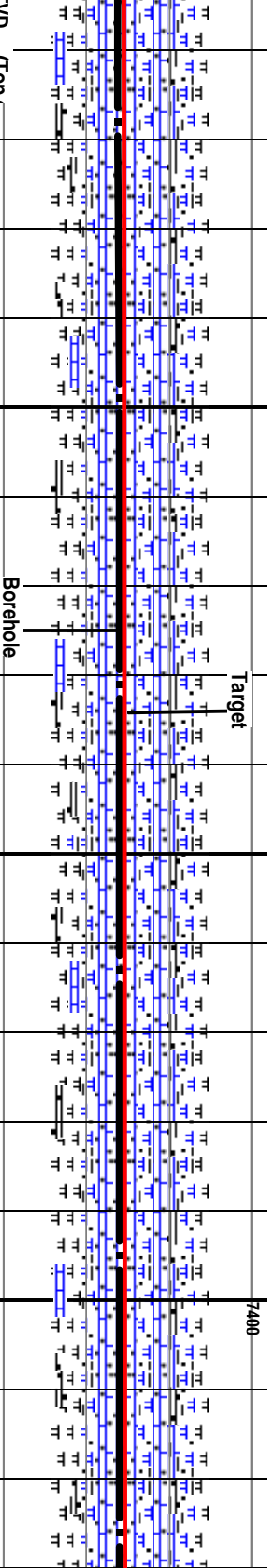
Good Oil Skin on Shaker- Heavy on Conn.

WPT #7: At 5700' VS (~12,800' MD) Target is 7426' TVD. (Top of Window- 7426' TVD, Bottom of Window 7434' TVD). Negligible Anticipated Dip.





12268' MD Inc 90.2° AZ 309.3° TVD 7432.12' VS 5072.87'	12299' MD Inc 90.2° AZ 309.2° TVD 7432.01'	12331' MD Inc 90.1° AZ 309.1° TVD 7431.93' VS 5134.91'	12363' MD Inc 90.1° AZ 309.1° TVD 7431.87'	12395' MD Inc 89.8° AZ 308.6° TVD 7431.90' VS 5197.90'	12426' MD Inc 90.0° AZ 308.6° TVD 7431'
CHALK/CARB CHALK (75%) gybrn-brn, m-dk-ldgy, mott ip, blk-y-sbply, gry-rthy-smic sucr, 10-20% clay mtx / ooc Sh pigs, ooc xin Calc, sl-v carb ip, ooc dkgy blk stks & lams, frm-brt, dkbrn dkgy sin com, sply frt yeild flr com, imed strng yeilwh cut, hvy resd ring. SH (25%) dkgy, sbblky+leg, gryn txt, calc, carb, mic mica ip, tr-occ mic Pyr, no vis flr, slow-fast strng yeilwh cut, mod-hvy resd ring. Very fine Cuttings.	CHALK (85%) gybrn brn m-dk-ldgy, mott ip, blk-y, gry-mic sucr-rthy, 5-15% clay mtx, sl carb ip, ooc dkgy blk stks & lams, lse xin Calc & Calc fld mic fracs com, frm-brt, patchy-even brn sin, ooc sply yeild flr, fast-slow-imed strng yeilwh cut, hvy resd ring. SH (15%). Very fine Cuttings.	ARG CHALK (90%) gybrn, m-dk-gy, mott, blk-y-sbply, gry-rthy, tr mic sucr, 5-20% clay mtx w/ ooc Sh pigs, tr-occ dkgy stks, ooc lse xin Calc & indist Fos frags, tr xin Calc fld fracs, sl carb ip, frm-brt, patchy -even brn o sin, scat v frt yeild flr, imed strng yeilwh cut, brt yel resd ring. SH (10%). Very fine Cuttings.	ARG CARB CHALK (95%) dkbrn gy, mott, blk-y, gry-rthy-mic sucr, mtx, lse xin Calc & Calc fld mic tr-sl-mod carb, marly ip, frm-brt sin, frt yeild flr, fast-slow-im cut, hvy mod yel resd ring. SH Cuttings.		



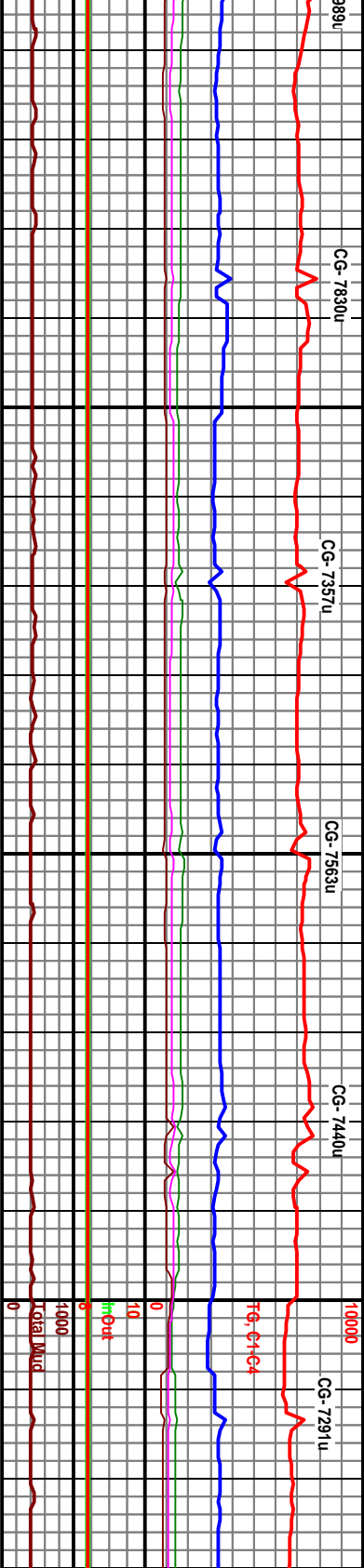
30' TVD. (Top (D)).

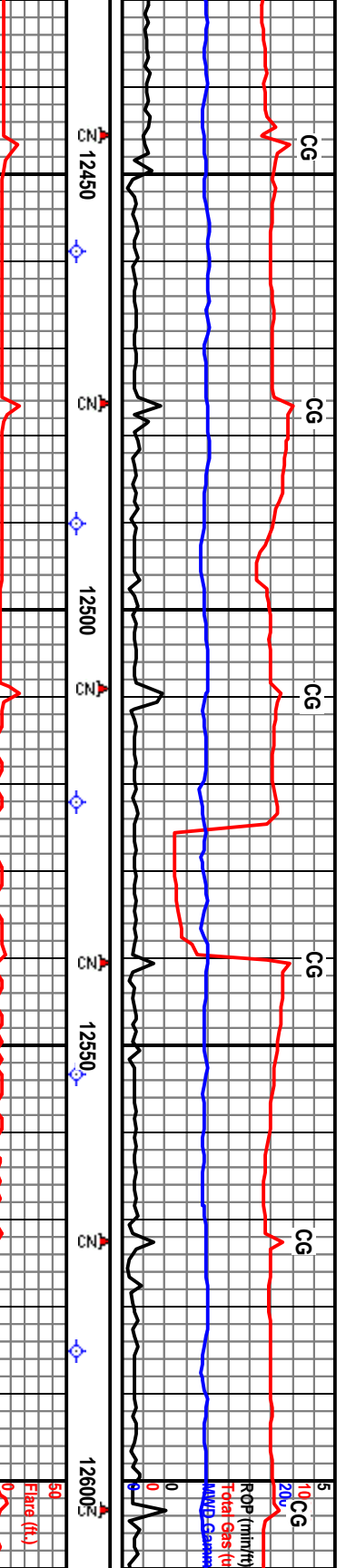
Borehole

Target

Good Oil Skim on Shaker-Heavy on Conn.

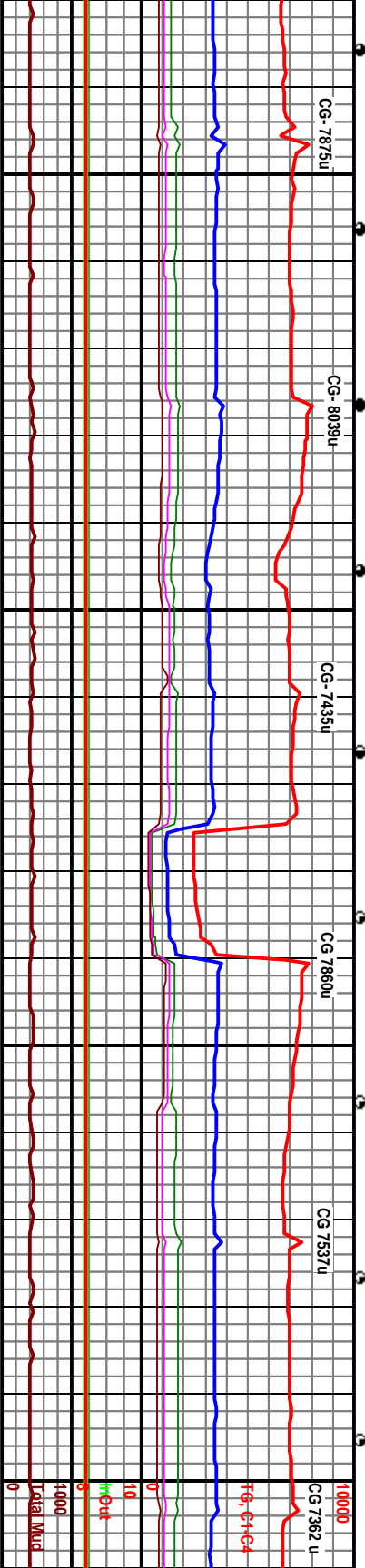
Mud @ 12,435' WT 8.4 FV  
pH 7 Cl 600 Hd 120 Scc



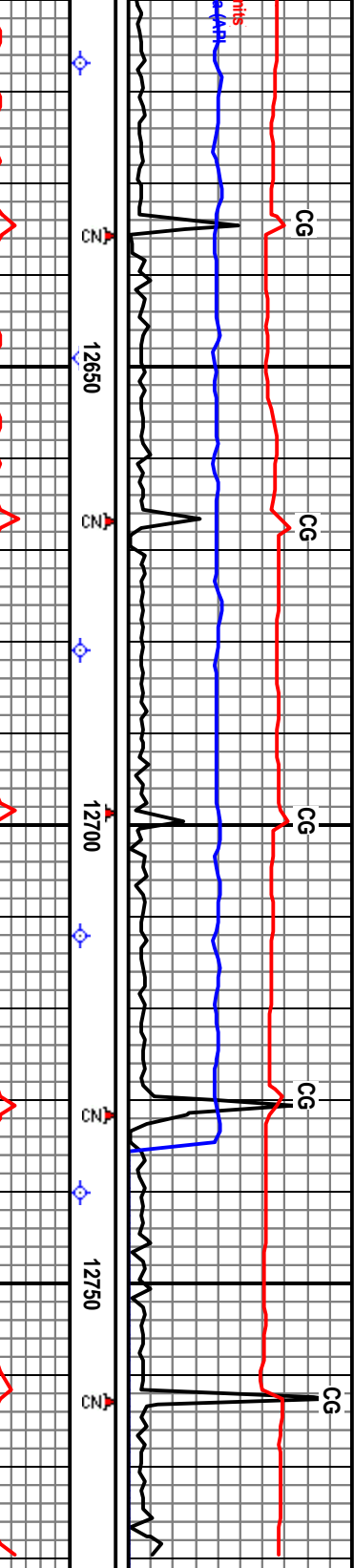


MD	Inc	AZ	TVD	VS	Description
12459' MD	Inc 90.0°	AZ 308.6°	TVD 7431.95	VS 5260.81	ARG CARB CHALK (100%) gybrn brn, m-dk-lk gy. mot, blk, gry-rthy-mic suc, 10-20% clay mix-
12490' MD	Inc 89.8°	AZ 308.5°	TVD 7432.01		ARG CARB CHALK (100%) gybrn brn, m-dk-lk gy. mot, blk, gry-rthy-mic suc, 10-20% clay mix-
12522' MD	Inc 89.9°	AZ 308.4°	TVD 7432.09	VS 5322.72	ARG CHK (90%) m gybrn-brn gy, gen mttld w/ tr tnbm spks, blk, rthy-sb wxy, sm wh amorp calc
12553' MD	Inc 89.8°	AZ 308.2°	TVD 7432.17		ARG CHK (80%) m gybrn-brn gy, gen mttld w/ tr tnbm spks, blk, rthy-sb wxy, sm wh amorp calc
12585' MD	Inc 89.5°	AZ 307.7°	TVD 7432.37	VS 5384.55	ARG CHK (20%) v dk gy-blk, stf, blk, wxy, mic gran/suc txt, v calv, prob oil sat; fnt dl yl fl, gd lined string cut & resid ring fl.

Good Oil Skim on Shaker-  
Heavy on Conn.



8/31-9/4/10



12617' MD Inc 89.5° AZ 307.3° TVD 7432.65	12649' MD Inc 89.6° AZ 307.9° TVD 7432.90 VS 5447.23	12681' MD Inc 89.6° AZ 307.8° TVD 7433.12	12712' MD Inc 89.4° AZ 307.2° TVD 7433.39 VS 5508.97	12730' MD Inc 89.3° AZ 307.1° TVD 7433.60 VS 5526.57
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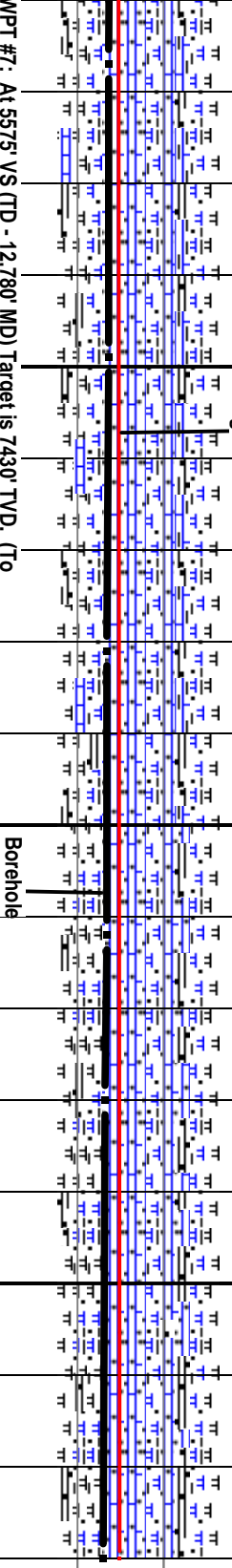
CHK (95%) l-m gy-brn-brn gy, gen mtld w/ l  
spks, blk, rthy-sb wxy, sm wh amorp cal  
fr wh amorp & cl c xin calc-prod fra  
v spy brn oil str/spks, spy dl yf fl, imed f  
ring cut & gd yf resid ring fl.  
CARB CHK (5%) v dk gy-blk, sft, blk, wxy  
gran/sucr txt, v calv, prob oil sat, fnt dl yf f  
red string cut & resid ring fl. Very Fine Cig  
(0.5mm).

ARG CHK (100%) l-m gy-brn-brn gy, com mtld w/  
lr tn/brn spks, blk, rthy-sb wxy, tr wh amorp ca  
includ, tr use wh amorp & cl c xin calc-prod frac  
fill: ?? spy brn oil str/spks, spy dl yf fl, imed fr  
slw string cut & gd yf resid ring fl.  
ARG CARB CHK (Tr) v dk gy-blk, sft, blk, wxy,  
mic gran/sucr txt, v calv, prob oil sat, fnt dl yf fl,  
gd imed string cut & resid ring fl. Very Fine Cigs  
(0.25-0.5mm)

ARG CHK (100%) l-m gy-brn-brn gy, com mtld w/  
lr tn/brn spks, blk, rthy-sb wxy, tr wh amorp ca  
includ, tr use wh amorp & cl c xin calc-prod frac  
fill: abnt inocer pellec foss frags: ?? spy brn oil  
str/spks, spy dl yf fl, imed fr slw string cut & gd  
yf resid ring fl.  
CARB CHK (Tr) v dk gy-blk, sft, blk, wxy, mic  
gran/sucr txt, v calv, prob oil sat, fnt dl yf fl, gd  
imed string cut & resid ring fl. Very Fine Cigs  
(0.25-0.5mm)

ARG CHK (100%) m gy-brn-brn gy, gen mtld v  
tn/brn spks, blk, rthy-sb wxy, sm wh amorp  
includ, sm use wh & cl calc prod frac fill: tr ln  
foss frags: spy dl yf fl, imed slw string cut &  
resid ring fl.  
CARB CHK (Tr) v dk gy-blk, sft, blk, wxy, mic  
gran/sucr txt, v calv, prob oil sat, fnt dl yf fl, g  
imed string cut & resid ring fl.

Target



WPT #: At 5575' VS (TD - 12,780' MD) Target is 7430' TVD. (To  
of Window - 7426' TVD, Bottom of Window 7434' TVD).  
Negligible Anticipated Dip

Mud @ 12,775' WT 8.4 FV 29 PV/NP 1/2 GS 1/1/1 Fil 48 f  
7 CI 600 Hd 120 Sol 2.97%

Good Oil Skim on Shaker-  
Heavy on Conn.

CG 6981 u	CG 7205 u	CG 7162 u	CG 6888 u	CG 6923 u
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Max Gas D  
Reamer R  
units.

