EXXON COMPANY, U.S.A.
WESTERN DIVISION

LITHOLOGY STRIP LOG

Operator EXXON COMPANY, USA.
Well Name EXXON GPE FEDERAL COM # 1
Field
Location 816 FSL 1960 FEL
Sec. 3 **Twp.** 4N **Rge.** 3W
County COLUMBIA **State** OREGON
Contractor BAWDEN **Rig No.** 21E
Spud 9/2/85 **Comp.** 11/6/85
Total Depth 11,287 **Drlr.** 11,276 **E Log**

ELEVATIONS

K.B. 1760.1
D.F. 1758.6
G.L. 1734

CASING

20" 147
13 3/8" 1647

CORES

WIRELINE LOGS

DLL - SP	MICROLOG
CALIPER	SIDEWALL CORES
GAMMA RAY	
DENSITY NEUTRON	
VSP	
SONIC	

DRILL STEM TESTS

NL BAROID LOGGING SYSTEMS

REMARKS

GEOLOGICAL SUPERVISION

from
to

LEGEND

Porosity: > 12% — 12% — 6% — 3% — 0

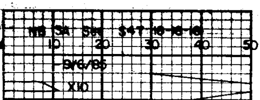
Sh	Ls	Coal	Cgl	No Sple (NS)
Slst	Dolo	Anhy	Ig	
Ss	Salt	Chert	Peat	

LITHOLOGY MODIFIERS

- // — Anhydritic
- B — Bentonitic
- ⊥ — Calcareous
- ⊥ — Dolomitic
- F — Fossiliferous
- ∾ — Glauconitic
- ɸ — Oolitic
- P — Pyritic

Grain or Crystal Size: Very fine — Fine — Medium — Course — Very cse.

SAMPLE DESCRIPTION	POROSITY	LITHOLOGY	GRAIN SIZE	DEPTH	DRILL TIME IN MINUTES PER 5 FEET	TOPS / MUD / NOTES / DST'S. 1"=100'	SHOW GAS (GAS INCREASE →)
Set 20" Conducter to 147' DRILL 17 1/2" Hole				20"			
BASALT - dk gy, blk, porp, qtz, vhd		V V V		50			



TUFF-gn, slty, cly, sft

SS-gn, gy, vfgr, sb rnd, v slty, arg, NSOFC

SS-gn, lt gy, brn, vfgr, sb rnd, v slty, sl calc, tuff mtx, NSOFC

SLTST-gn, gy, blk, blky, carb incl, sl calc, frm, grdg to vfgr uncons ss

SLTST-dk gy, blk, aren, arg, qtz, blk carb incl, lith frags, sl calc, frm

SS-lt gy, vfgr, sb rnd, msrt, v slty, qtz, carb, sl calc, frm

SH-lt gy, blky, v slty, frm

TR FORAM

CLY-gy, slty, gmmy, v sft

COAL-blk, frm-brit, pyr i.p.

SD-clr, gy, tn, f-mgr, sb ang-sb rnd, qtz, lith frag, predo uncons

CLY-gy, gmmy, slty, v sft

SLTST-brn, gy, aren, carb, hd

SS-lt gy, lt gn, vf-fgr, sb ang, m srt, qtz, lith frags, mica, carb, v slty, calc, uncons i.p., hd, NSOFC

GVL-gy, tn, clr, brn, ang, qtz, lith frags

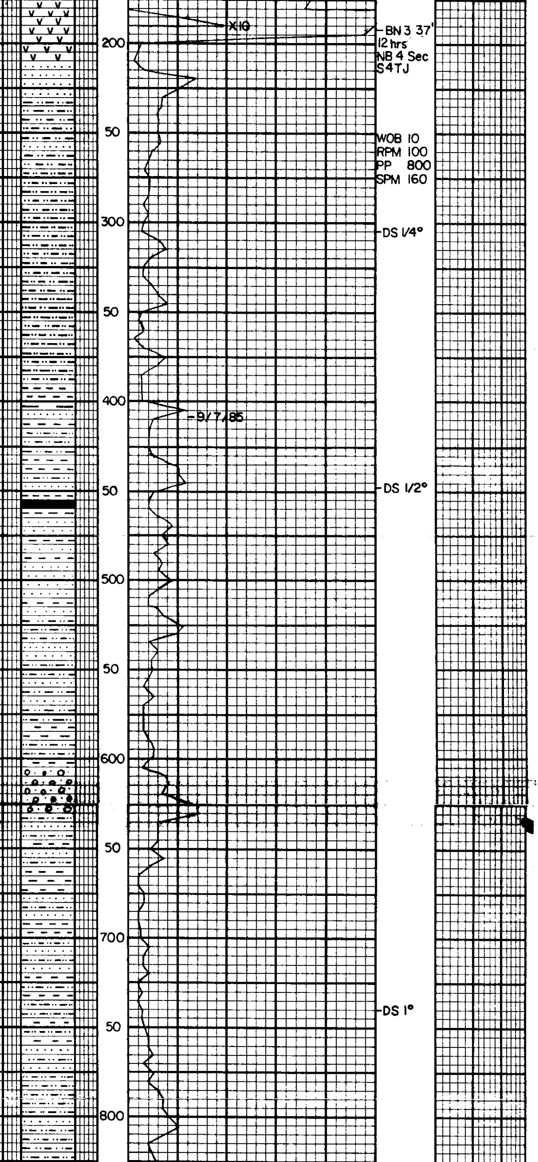
SLST-brn, brngy, blky, aren, v arg, carb lam, n calc, hd

CLY-gy, slty, sdy, gmy, sft

SS-brn, gy, qtz, vfgr, sbang, wsrt, v slty, lith frags, mica, carb, sl calc, p cons-hd ip, nsofc

SLST-brn, gy, yel-brn, blky, arg, v aren, mica, carb, sft-hd ip

SLST-a/a, v arg, p cons, grd to SS ip



SLST – lt gy, brn, tn, aren, arg, tr carb, tr ang, c gr, qtz sd

SLST – lt-mgy, tn, brn, aren, arg, carb incl, tr shell frags

CLY – dk gy, gmy, hyd, stky, sft

TR FOS SHL

CLY – dk gy, stky, slty, sft

CLY – a/a, very hydrated

CLY – dk gy, dk gn, slty, hyd, stky, gmy, sft, /w abnt fos shl

TR COAL

SLST – dk gy, aren, arg, carb, frm

CLY – a/a

CLY – lt brn, gy, v slty, mica, gmy

SLST – lt gy, brn, blky, v aren, arg, carb, mica, glauc, calc, hd

CLYST – lt brn, slty, gmy, sft - frm, bcmg shly

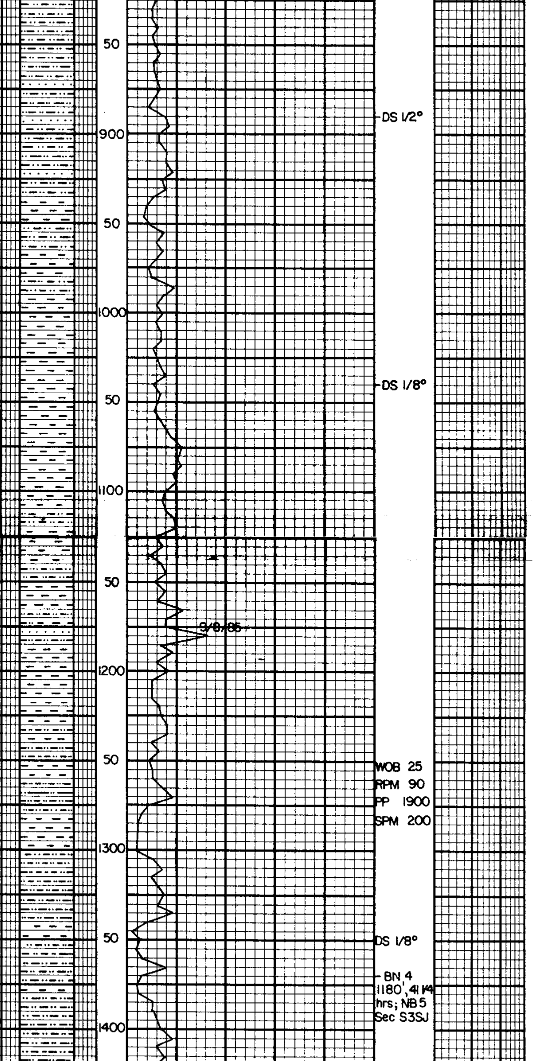
SLST – brngy, blky, arg, carb, aren ip, hd

SLST – a/a, incr arg

CLYST – brngy, slty, gmy, sft

SLST – brn, gy, blky, v arg, aren, carb, hd

SLST – lt gy, tn, aren, arg, carb incl frm - hd



SLST - lt brngy, blky, arg, aren, tr glauc, carb lam, m calc, frm w/ tr Foram

CLYST - a/a, grd to SH

SLST - lt brngy, blky, arg, tr glauc, aren, calc, w cons, tr Foram, hd

TR LS

SLST - lt brn, lt gy, bt, arg, sl aren, sl calc, fos, hd

SLST - a/a, shly ip, tr LS, Foram

SLST - lt brn, lt gy, arg, aren ip, tr glauc, n calc, fos

SH - gy, blky, slty, v hd

Poor Sample Quality

SLST - brn, brngy, blky, sl carb, bcmg shly, calc ip, hd-vhd

TR SS

SH - lt-dk gy, fn, blky-sbfis, slty, calc ip, hd, brit

SLTST - dkgy, ncalc, sdy ip, arg, carb, glau, sft

SH - m-dkgy, ncalc, slty, vsft-sft

SLTST - m-dkgy, ncalc, sdy, carb ip, glau, sft-frm

CLY - mgy, ncalc, sl slty, sft

SLTST - m-dkgy, ncalc, sdy, arg, tr glau, sft-frm

SLTST - gy, sl sdy, occ arg, glau ip, sft

SH - mgy, carb, sft

SLTST - gngy, glau, carb, sdy ip, arg ip, ncalc, sft

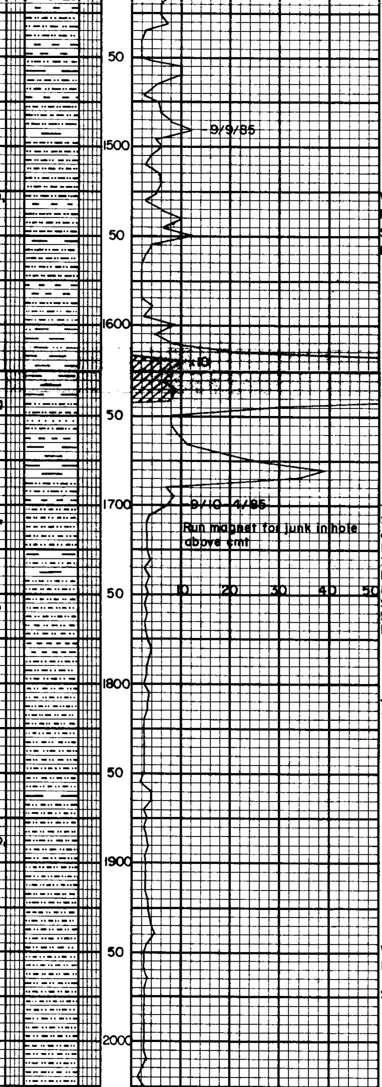
SLTST - gngy-dkgy, sdy, arg ip, carb, glau, ncalc, sft

TR SH - gn, ncalc, frm

SLTST - mgngy, pred sdy, pred carb, glau, mic ip, ncalc, sft

SLTST - a/a

CLY - gy, carb, v sft



- 9/9/85

- 9/10 - 4/85

Run magnet for junk in hole above cmt

WOB 10/50
RPM 45/90
SPM 180
PP 550

- Set 13 3/8 SFC CSG at 1647'
BN 5
328' 17 1/4 hrs; NB 6
12 1/4"
Sec M44N
In 1569'
Drl 80'
Cmt

1/4°

- POOH for wash-out - lost 1000 PP

WOB 25
RPM 85
PP 1050
SPM 100

SLTST-mgy, dkgybrn, ncalc, arg, inc sdy, glau, carb, sft-frm

CLY-mgy, ncalc, slty ip, sft

SLTST-mgy, dkgbrn, ncalc, vsdy, glau, carb, sft-frm

CLY-mgy, ncalc, slty, vsft

SLTST-m-dkgy, dkgybrn, ncalc, vsdy, gdg to vf ss ip, glau, pyr ip, sft-frm

SLTST-mgy, dkgy, vsdy, arg, glau, carb ip, sft-frm

SS-mgy, vf-fgr, ang-sbrd, vpsrt, arg, ncalc, mcmt, glau, frm, nflor

SLTST-mgy, dkgybrn, dk brn, ncalc, vsdy glau, carb ip, varg, sft-frm

SS-mgy, vf-fgr, ang-sbang, psrt, ncalc, glau, frm, nflor

SLTST-m-dkgy, dkgybrn, vsdy, arg, glau, sft-frm

CLY-mgy, ncalc, slty, sdy, sft

SS-lt-mgy, vf-fgr, ang-sbrd, psrt, ncalc, frm, glau, nflor

SLTST-mgngy, sdy, gdg to slty ss, varg ip, carb, glau, sft

CLY-gn-gy, ncalc

SLTST-lt-mgy, gngy, glau, carb, mica, varg ip, ncalc, sft

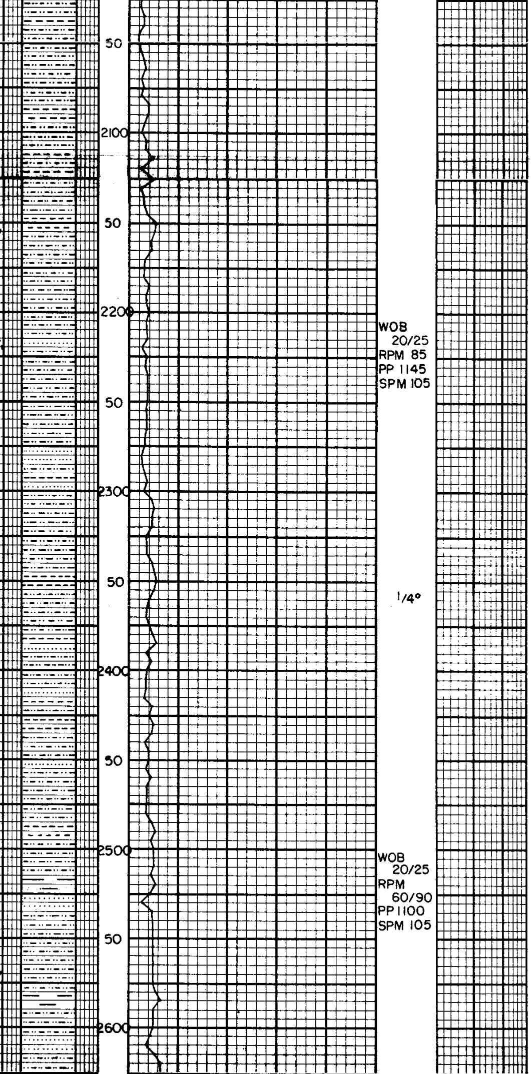
CLY-gn-gy, ncalc

SH-gn, gy, mas, carb, vsft

SS-gn, s+p, vfgr, glau, qtz, pred uncon, occ carb, fri

SLTST-mgy, gngy, sdy, varg ip, glau, carb, ncalc, sft

SS-gn, gy, s+p, vfgr, qtz, tuff, mafic ip, arg mtx, sl calc



WOB
20/25
RPM 85
PP 1145
SPM 105

1/4°

WOB
20/25
RPM
60/90
PP 1100
SPM 105

SLTST - ltgngy, sdy, arg, glau, ncalc, sft

SS - gngy, s+p, vfgr, qtz, mafic grns, sl calc cmt, fri-uncons, ff

SH - gy, gngy, mica, slty ip, occ glau, ncalc, vsft

SLTST - gngy, sdy, glau, carb ip, arg ip, sft

CLY - mgy, slty, sdy, sft

SLTST - m-dkgy, ltgy, ncalc, vsdy, arg, glau ip, tr pyr, sft-frm

CLY - mgygn, ncalc, slty, sdy ip, sft

SLTST - lt-dkgy, gygn, arg, vsdy, abd vol frag, frm-sft

SS - lt-mgy, dkgn, vf-fgr, ang-sbang, psrt, arg, pyr ip, frm, ncalc, nflor

CLY - mg, gygn, slty, sdy ip, sft

TUFF - gngy, gy, hd

SH - m-dkgy, gygn, ncalc, frm-hd

SLTST - gn, gngy, sdy ip, arg, vol det, ncalc, vsft

SS - gn, mot, s+p, fgr, ang, pred vol det, slt-arg mtx, fri-hd, ff

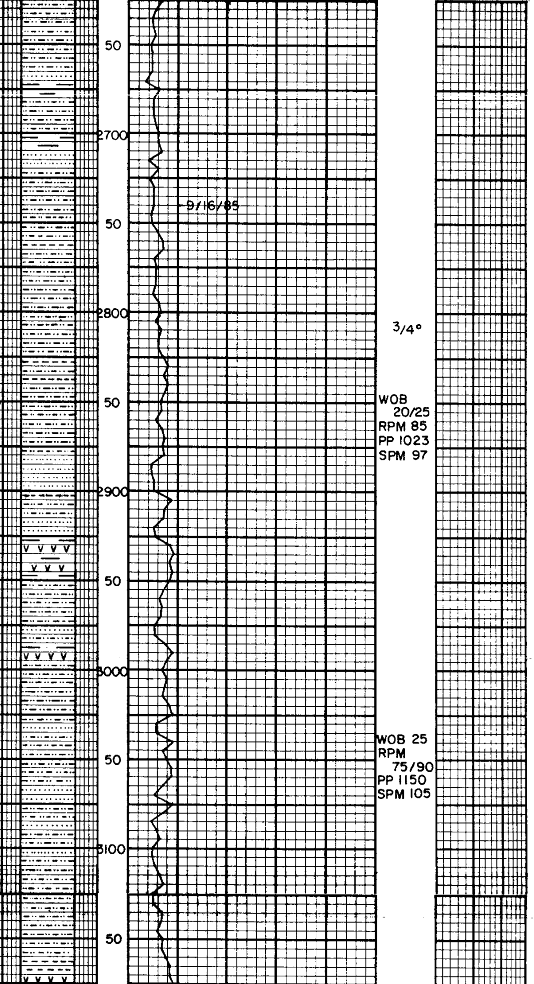
SLTST - lt-mgy, gngy, aren, arg, vol frag, vsft

SLTST - gngy, aren, glau, vsft, ncalc

SS - a/a

SLTST - gn, gngy, s+p, sdy, arg, ncalc, sft

CLY - ltgn, tuff, aren ip, sft



BASALT- dkgygn, vfxl, chlor

CLY-mgy, gygn, tuff, sft

BASALT-dkgy- gn, vfxl, chlor

CLY-a/a

SLTST-lt-mgygn, ncalc, arg, sdy ip, abd vol frag, sft-frm

CLY-gn, gy, tuff, glauc ip, chlor ip, sft

BASALT-gn, gybrn, dkbrn-blk, vfxl, chlor

SLTST-ltgn, gy, tuff, chlor ip, glau ip, sft-frm

CLY-ltgn, gy, tuff, ncalc, vsft

SLTST-gn, gy, aren, tuff, arg ip, sft-frm

CLY-ltgn, gy, tuff, slty, glau, chlor ip, sft

TUFF-gn, brn, mxln-porc, frm-vhd

SLTST-lt-mgn gy, mgn, aren, arg, chlor, ncalc

CLY-mgygn, lt gn, slty, sdy, tuff, chlor, v sft

SLTST-lt-m gn gy, arg, sdy, vol frag, chlor, n calc, sft-frm

CLY-lt gn, gy, sdy, vol frag, chlor ip, n calc, v sft

SLTST- a/a, tr pyr

SS-lt-mgygn, gy, vfgr, ang-sbang, vol frag, psrt, frm-hd, nflor

SLTST-lt-mgygn, ncalc, sdy ip, arg, abd vol frag, sft-frm

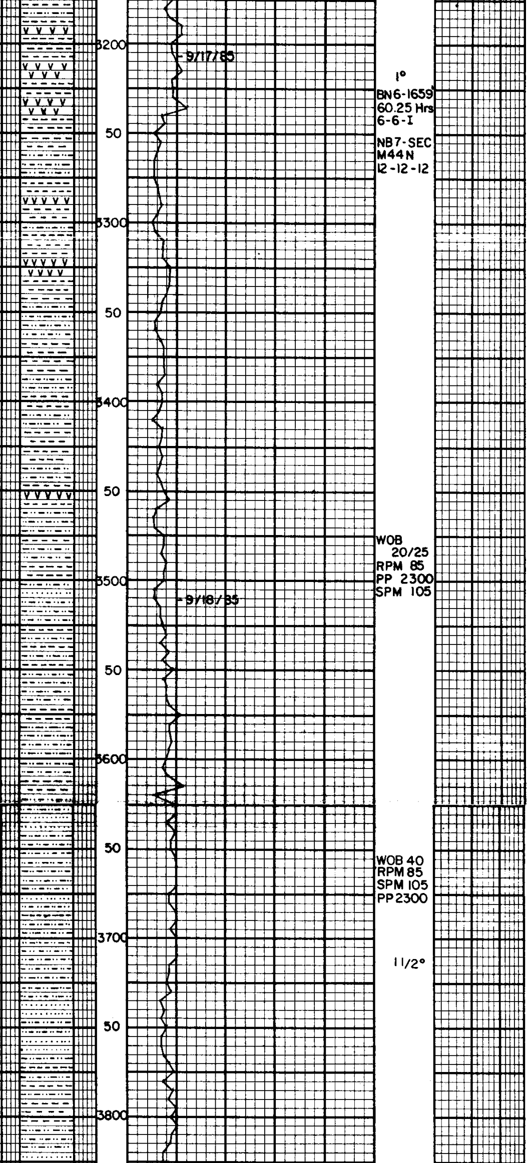
CLY-ltgngy, slty, ncalc, abd vol, tuff, sft

SLTST-gn, gngy, arg, tuff, glau, poss chlor, ncalc, pyr ip, sft-frm

SS-gn, s+p, fgr, psrt, ang, tuff, mica ip, occ chlor, arg mtx ip,

CLY-ltgn, ltgy, tuff, chlor ip, sft

SLTST-gn, mot, aren, tuff ip, glau-chlor, ncalc, sft-frm



CLY-gn, gy, aren ip, slty, vsft

SLTST-gygn, gn, mot, tuff ip, glau-chlor, ncalc, sft-frm

SH-lt-dkgy, gngy, blky-mas, occ sbfis, mica ip, slty ip, ncalc, frm

CLY-wh, ltgy, tuff, ncalc, vsft

SLTST-a/a

BASALT-brn, tn, gn, f-mxln, Fe stn, pyr ip, vhd

BASALT-brn, gn, rust, xl-vfxl, Fe stn, tuff, vhd-frm

TR SLTST-ltgygn, ncalc, arg, frm

BASALT-dkgy, dkgn, rust, vfxl, vhd

SLTST-ltgygn, dkgn, ncalc, tuff, frm-hd

CLY-ltgn, ltgy, tuff, ncalc, vsft

SLTST-gn, gngy, glau-chlor, arg mtx, sft

SLTST-lt-mgn, gy, tuff, arg, vol incl, ncalc, sft

CLY-ltgygn, tuff, ncalc, vsft

CLY-a/a, glau-chlor

SLTST-gn, gngy, mot, tuff, arg mtx, frm-sft

CLY-mggn, lt gn, ncalc, abd vol frag, sft

SS-mgy, gygn, vf-fgr, ang-sbang, psrt, arg, vol, ncalc, frm, nflor

CLY-mgygn, gn, ncalc, tuff, sft

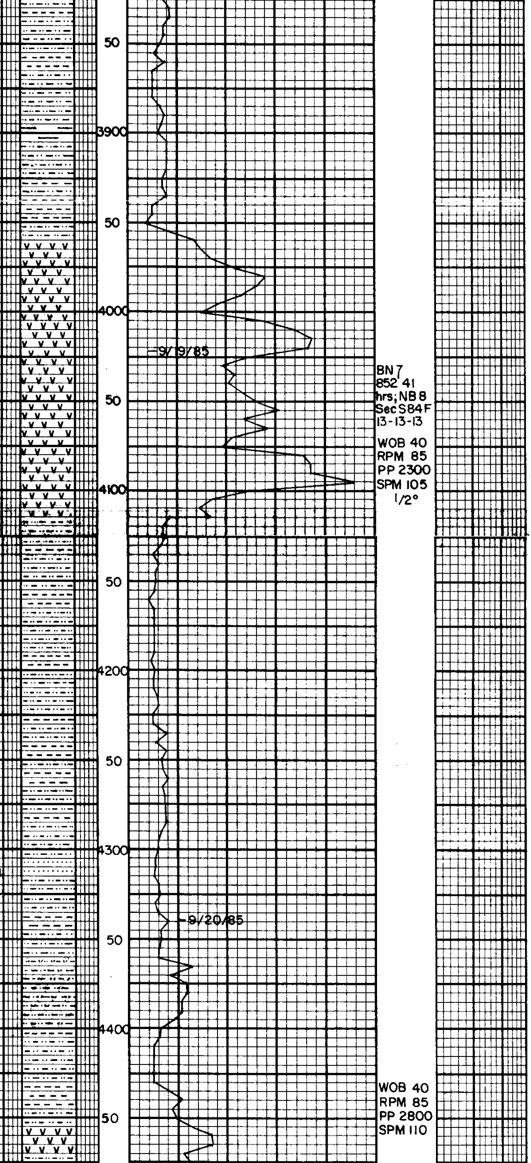
SLTST-dkgy, ncalc, arg, frm-hd

CLY-lt gy, slty, sdy, vol, v sft

SLTST-lt-mgygn, mgn, arg, ncalc, tuff, sft-frm

CLY-a/a

BASALT-dkgy, dkgn, vfxl, vhd



9/19/85

BN 7
852 41
hrs; NB 8
Sec S84F
13-13-13

WOB 40
RPM 85
PP 2300
SPM 105
1/2°

9/20/85

WOB 40
RPM 85
PP 2800
SPM 110

CLY-ltgy,gygn,ncalc,slty, abd vol frag,sft

SLTST-mgygn,ncalc,sdy ip, arg,tuff,sft-frm

CLY-gngy,rdbrn,sdy-slty, tuff,occ gdg to slt sh, ncalc,vsft

BASALT-dkbrn-blk,gn,brn, mas-fxl,gn phen,pyr,vhd

BASALT-a/a,aphan

BASALT-dkbrngy,dkgygn, rdbrn,aphan-fxl,occ phen-crst,pyr ip,flow lam ip, alt ip,vhd

CLY-rdbrn,ltgy,ltgn,tuff,vol frag,vsft

SLTST-gn,rdbrn,tuff,arg, vsft

BASALT-a/a,chlor ip

CLY-rdbrn,gn,ncalc,tuff,sft

SLTST-ltgygn,ltgn,ncalc,arg, abd vol frag,tuff,sft-frm

CLY-ltgn gy,ncalc,tuff,vsft

SLTST-ltgygn,ltgn,ncalc,arg-aren,tuff,sft-frm

BASALT-dkgy,dkgn,vfxl, aphan ip,occ pyr,chlor,vhd

BASALT-dkbrngy,dkgngy, micxl,occ aphan,occ gn phen, pyr ip,alt ip,hd

CLY-wh,rdorng,tuff,gdg to slt ip,sft

BASALT-dkgngy,brngy,micxl, gn phen,pyr ip,vhd

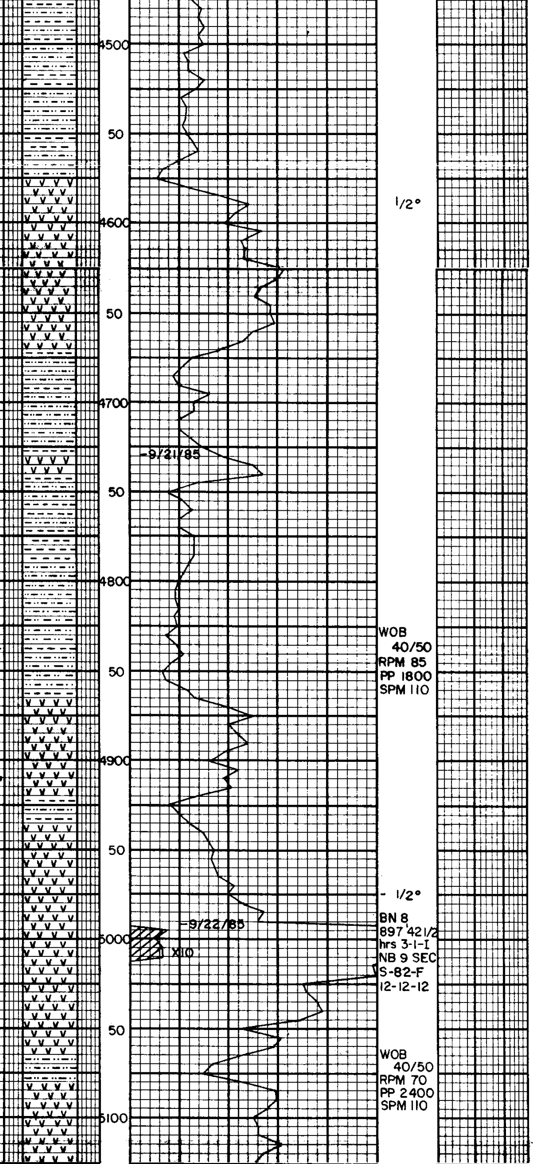
BASALT-dkgy,dkgn,chlor, micxl,vhd

TUFF-gygn,rdbrn,hd

BASALT-gn,dkgngy,fxl,occ aphan,occ plag phen,hd

SLTST-ltgygn,brn,arg,tuff, frm-sft

BASALT-gn-dkgngy,micxl-fxl,occ aphan,occ phen,hd



BASALT-dkgn-gy, dkbrngy, micxl-vfxl, occ aphan, phenporph ip, pyr, vhd

SLTST-ltgy, ltgn, sdy ip, tuff ip arg, frm

CLY-ltgy, slty ip, tuff ip, vsft

SLTST-ltgygn, mgy, ncalc, arg, tuff, sdy ip, sft-frm

CLY-ltgygn, slty, tuff, sft

SLTST-lt-mgngy, ncalc, aren ip, vol, frm-sft

SLTST-a/a, pyr ip

BASALT-dkgy, dkgn, aphan, chlor, pyr ip, vhd

BASALT-dkbrngy, dkgygn, micxl, pyr ip, frac fill ip, vhd

TR TUFF-blgy, pyr

SLTST-ltgn, ltgy, arg, ncalc, sft

BASALT-dkbrngy, dkgygn, micxl, frac fill-Wollast, tr sec bnd cht

CLY-ltgngy, ncalc, aren, vol, vsft

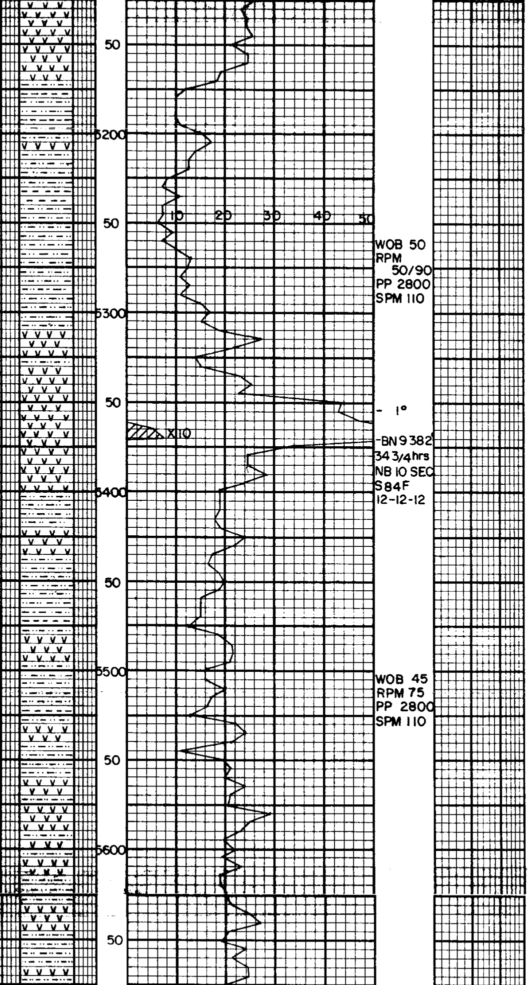
SLTST-ltgy, ltgngy, ncalc, arg, aren ip, abd vol det, sft-frm

BASALT-dkgy, dkgn, micxl, pyr, vhd, tr rdbrn baked zone

SLTST-ltgy, arg mtx, tuff ip, ncalc, frm-hd

BASALT-dkgygn, dkbrngy, micxl, qtz/plag phen w/rdbrn contact, pyr ip, vhd, frac

BASALT-dkgy, gngy, brn-blk, micxl, occ plag phen, alt to cly/slt ip, occ pyr, pred hd-vhd



WOB 50
RPM
50/90
PP 2800
SPM 110

- 1°

-BN 9382
34 3/4 hrs
NB 10 SEC
S 84F
12-12-12

WOB 45
RPM 75
PP 2800
SPM 110

SLTST-ltgngy, arg, vol frag, ncalc, sft

CLY-ltgy, ltgngy, slty, occ sdy, vol, sft

BASALT-dkgy, dkgn, micxl w/ blk phen, pyr ip, hd, alt to chlor ip

SLTST-ltgngy, ltgn, ncalc, arg, sdy ip, vol det, sft-frm

CLY-lt gy, lt gy gn, slty, sdy ip, tuff, ncalc, sft

SLTST-m brn, v sdy-grdg to vf ss, arg mtx, n calc, sft-frm

CLY-lt gn, lt gy gn, slty, sdyip n calc, sft

SLTST-m gy gn, m brn, arg, sdy ip, n calc, sft-frm

SS-lt gn, lt gy, vf-f gr, ang-sb ang, vp srt, arg mtx, vol det, n calc, tt, frm-hd, nsofc

TUFF-gn, wxy, pyr ip, frm-hd

BASALT-dk gy, dk gn gy; micxl, alt ip to chlor/cly, pyr, hd

TUFF-gn, wxy, vol frag, pyr, hd

TR SS-gn mott, vf gr, ang-sb ang, p srt, tt, tuff, arg mtx, slty ip, mafic gr, vol det, feldsp, frm, nsofc

SLST-lt gy, lt gn, v arg, tuff, sdy ip, n calc, sft-frm

CLY-[illegible]-lt gy, slty, v sft

CLY-lt gy gn, lt gn, sdy, vol det, ncalc, sft gmmy

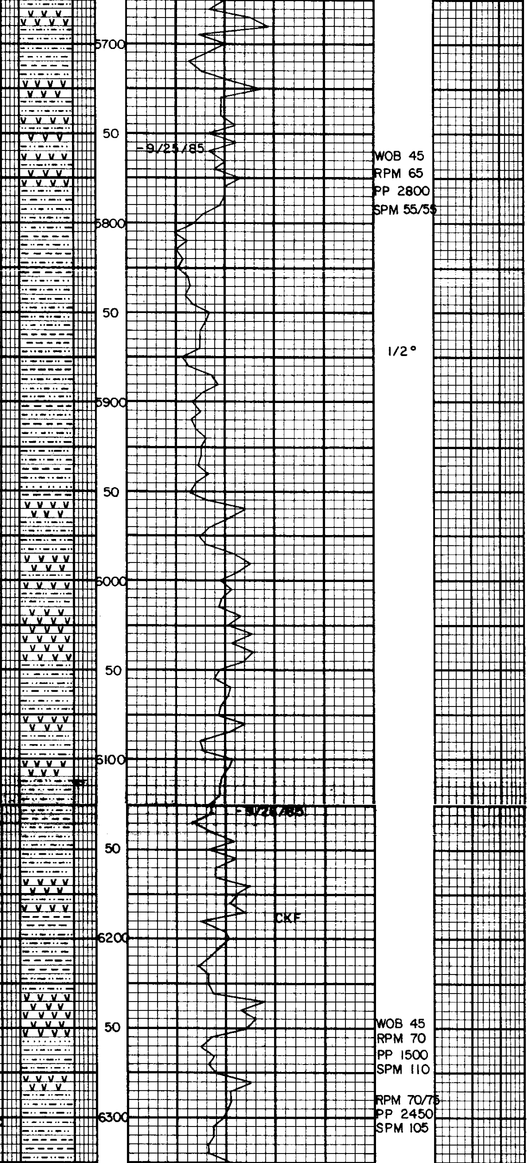
SLTST-m gn, m gn, arg, sdy ip, abdt vol det, n calc, sft-frm

TR SS-lt-m gn gy, lt gn, vf-f gr, ang-sbang, p srt, arg mtx ip, abdt vol frag, tt, n calc, frm-m hd, nsofc

BASALT-dk gy, m-dk gn, vf xln, pyr ip, hd

TUFF-lt gy, vol incl, hd

SLST-lt gn, lt gy, v arg mtx, occ sdy, n calc, sft-frm, occ hd



SS - gn mott, lt gn, pred vf gr, occ c gr, vp srt, occ cong, sbrd-rd, mafic/ark, cly mtx ip, sil cmt, v hd, v tt, nsofc

BASALT - dk gy, gn gy, gn, micxl, v alt ip, chlor ip, wh xln calc frac fill, pyr, v hd

TUFF - gn mott, gn, wxy-frag, zeol ip, cly ip, frm-hd

BASALT - dk gy, dk gn, micxln, phen, alt ip, chlor ip, v hd

SLST - lt gn, lt gy, arg, vol det, chlor, pyr ip, n calc, sft-frm, occ hd

SLTST - lt gn gy, arg, sdy ip, vol det, frm-hd

SS - gn, gn mott, s&p, vf gr, ang-sbrd, p srt, cly/slt mtx, chlor ip, sil cmt, tt, frm, nsofc

CLY - lt gy gn, lt gn, slty, vol det, n calc, sft

BASALT - dk-mgy, dkgn-blk, micxl/phen, alt to chlor ip, pyr ip, vhd

BASALT - a/a

SLTST - ltgn, mgngy, ncalc, sdy ip, chlor, frm-hd

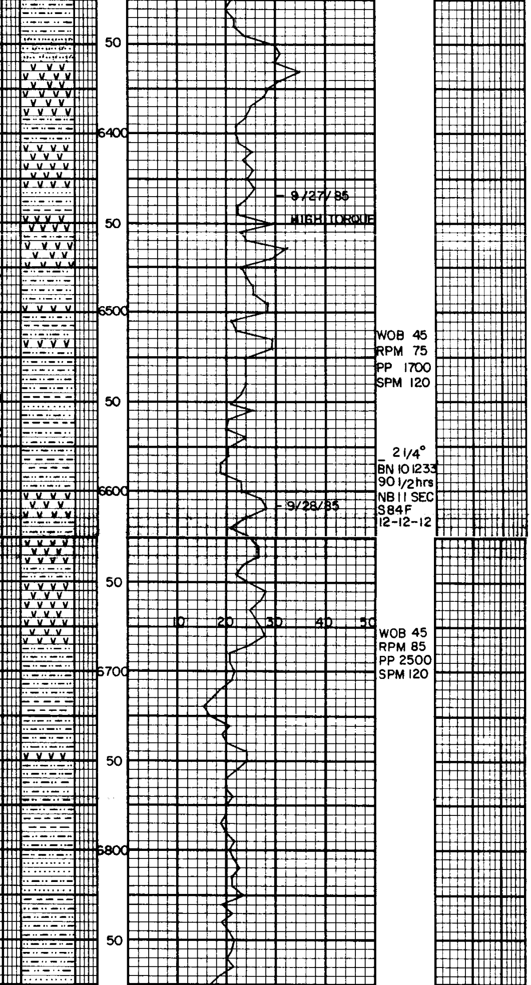
CLY - ltgn, ncalc, slty, occ sdy, vol, sft

BASALT - dkgy, dgngy, micxl, chlor, cly alt ip, pyr ip, vhd

SLTST - lt-mgn, arg mtx, chlor vol alt ip, occ sdy, vol det sft-frm

SS - dkgn, gn, mot, f-vfgr, psrt, sbang-ang, blk vol det, chlor, cly/slt mtx, tt, ncalc, nsofc

SLTST - lt-mgn, arg mtx ip, abd vol alt-chlor/cly, ncalc, sft-frm



CLY-ltgy,ltgn,sdy,occ slty, ncalc,vsft

SS-ltgy,mgn, s+p,vfgr,ang-sbang,varg mtx,pyrip,vtt, sft,nsofc

SLTST-ltgygn,mgngy,ncalc, chlor, sdy ip, frm-hd

CLY-ltgn, ltgygn,ncalc,slty, vol,sft

SS-lt-mgygn,vf-fgr,ang-sb-ang,psrt,arg-tuff mtx,ncalc, sil cmt,frm,nflor

SLTST-ltgngy,mgygn,ncalc, arg, sdy ip,occ pyr, frm

SLTST-a/a,vol

CLY-ltgngy,ltgy,ncalc,slty, sdy ip,vol,sft

SLTST-lt-mgngy,ncalc,sdyip, vol, pyr ip, frm-hd

CLY-lt gn, brn, occ sdy-slty, pyr ip, sft

SLST-lt gn gy, lt gy, lt brn, sdy ip, argip, tuff ip, sft-frm

CLY-a/a, r brn

SS-gn, gn brn mott, vf-f gr, occ c gr, ang-sbrd, vp srt-cong ip, vol det, arg mtx, tt, frm, nsofc

SLST-gn, r brn, v arg, sdy, n calc, occ pyr, sft

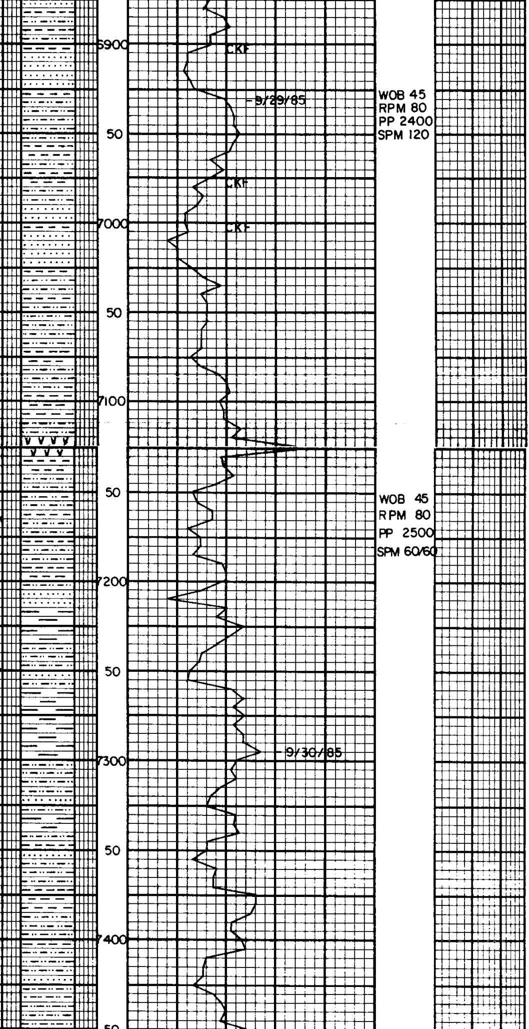
SH-lt gn gy, r brn, mass-blky, sdy, n calc, sft

SLST-r brn, lt-m gn gy, sdy ip, arg, abdt vol frag, sft-frm

SLST-lt-m r brn, occ dk brn, lt-m gn gy, arg, sl-v sdy, vol det, n-v sl calc; frm-sft

CLY-lt-m r brn, gy, slty, sdy ip, tuff, n calc, v sft

SS-lt-m r brn, lt gn gy, vf-f gr, ang-sbang, vp srt, arg mtx, vol frag, sl calc-calc, tt, sft-frm, nsofc



-9/29/85

WOB 45
RPM 80
PP 2400
SPM 120

WOB 45
RPM 80
PP 2500
SPM 60/60

-9/30/85

SH-dk gy, gn gy, blky, frm

SLST-lt-m gn gy, r brn, sdy, arg ip, vol detr ip, n calc, frm-occ hd

CLY-lt gn, slty-sdy ip, ncalc, sft

SLST-lt gy-gn gy, arg, occ sdy, tr pyr, occ sil cmt, frm-m hd

SH-m gy, gn gy, pred blky, n calc, frm

SLST-lt-m dk gn, gy, v sdy ip, arg ip, occ vol lith, sil cmt, tr wh calc frac/fill, pred frm, occ hd

SH-lt-m gn gy, tr r brn, blky, slty ip, sl calc, frm

CLY-lt gn, lt gy gn, slty, sdy ip, n calc, v sft

SH-m gy, blky-sbfiss, sl calc, frm

SLST-lt-m gy, lt gn, arg, slty ip, sl calc, sil cmt ip, calc frac fill, frm-hd

SS-m gy, vf gr, sbang, m srt, slty mtx, ark, pred sil cmt, occ sl calc, tt, hd, nsofc

CLY-lt gy, off wh, lt gn, slty, occ sdy, tr pyr, v sft

SH-m gy, gn gy, blky-sbfiss, slty ip, occ pyr, frm

SLST-lt brn, lt-m gy, sdy ip, v arg ip, sl calc, sil ip, frm-v hd

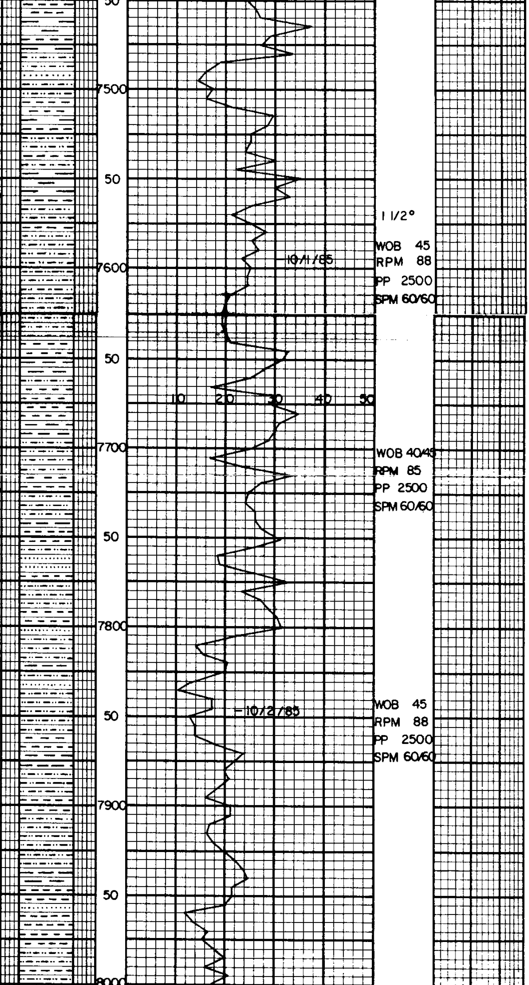
SLST-lt gn gy, m brn, r brn, sdy ip, vol, occ pyr, n calc, frm-hd

SLST-lt gn, lt-m gn gy, r brn, arg, vol ip, n calc, sft-hd

SH-m gy, r brn, lt gn, slty ip, frm

SS-lt-m gy, r brn, vf-f gr, ang-sbang, vp srt, arg/slt mtx, n calc cmt, frm, tt, nsofc

CLY,-r brn, lt gn, slty, n calc, v sft



10/1/85

1 1/2°

WOB 45
RPM 88
PP 2500
SPM 60/60

WOB 40/45
RPM 85
PP 2500
SPM 60/60

10/2/85

WOB 45
RPM 88
PP 2500
SPM 60/60

BASALT - dk gn, blk, f xln - micxl, plag/olvn phen, alt to cly ip, frac fill ip, hd - v hd

CLY - r brn, lt gn, mass, sdy ip, slty, n - sl calc, tr pyr, v sft

BASALT - a/a, chlor ip

SLST - lt gy, r brn, gn, arg, sdy ip vol det, sl calc, sil ip, frm - hd

SLTST - lt gn - gy, lt gy, arg, sdy ip, frm - sft

SH - m brn, m gy, r brn, blky ip, slty ip, frm

TR PYR

SLTST - lt gn - gy, r brn, gy arg, sdy ip, frm - hd

SH - m brn, r brn, gy, blky, mass, slty ip, frm - hd

BASALT - blk, gn, mic - m xln, chlor alt ip, abdt calc frac fl, pyr, hd

SS - var col, gn, vf gr, sb ang, m - w srt, volc det, tt, frm - hd

BASALT - blk, gn ip - chlor alt, mic - m xln, calc frac fl, porph ip, pyr, hd

SLTST - tn, khaki, grn, vol det ip, sl calc, sil ip, frm, v hd

BASALT - poss gabbro - dk gy - blk, micxln - porph, clr - trnsl - gn - trnsl phenos, pyr, v hd

SLTST - m brn, calc, sdy grd to vf gr ss ip, carb stks w/ assoc pyr, sft - frm

SS - lt - m brn, vf gr, ang - sb ang, v p srt, calc, arg. mtx, slty, tt, nsofc

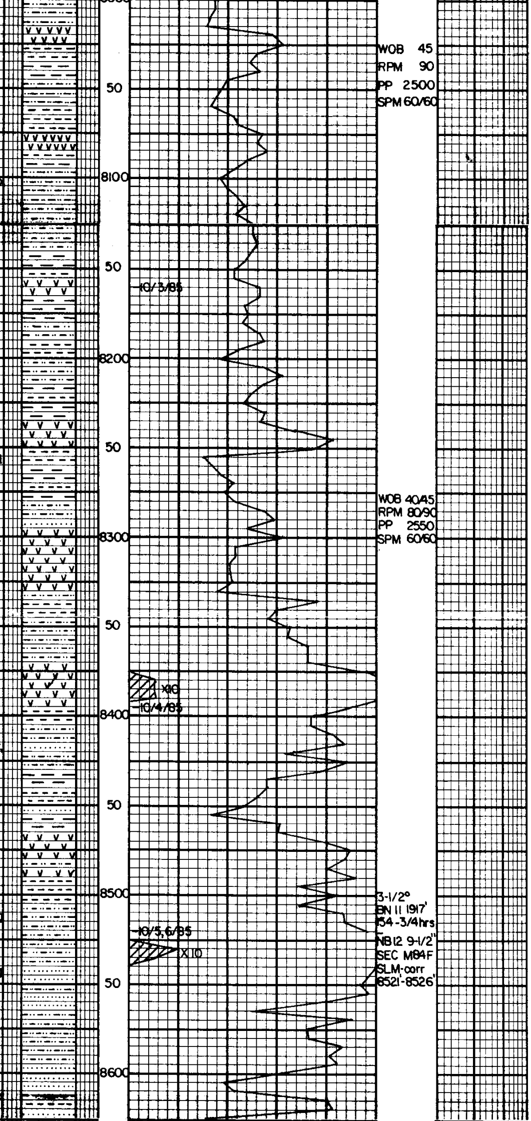
SLTST - lt brn, v calc, sl carb ip, hd

CLY - wh, lt gy, sl sdy, v sft

SLST - lt - m gn, lt brn, aren grdg to vf ss, n - m calc ip, frm - hd

SS - lt - m gn, vf - f gr, ang - sbang p - m srt - slty - arg mtx, vol comp - plag, calc, chlor alt, mfcs, tr qtz, n - m calc cmt, tt, frm - hd, nsofc

CLY - wh - lt gy, vari, slty, slcalc v sft



10/3/85

10/4/85

10/5,6/85

WOB 45
RPM 90
PP 2500
SPM 60/60

WOB 40/45
RPM 80/90
PP 2550
SPM 60/60

3-1/2°
BN 11 1917'
154-3/4 hrs
NB 12 9-1/2"
SEC M84F
SLM-corr
8521'-8526'

SS-m gy, vf gr, sb ang, m srt, slt mtx, qtz-vol det, occ mica, ft, hd

SLTST-lt-m gn, gy-gn, occ fbrn-fe stn incl, n-v sl calc ip, aren grd to vf gr ss, arg mtx ip, frm-hd, occ sft

CLY-lt gy, gn, off wh-pnk-mot, n-sl calc ip, grd to sh ip, slt-aren incl, v sft

SH-gn, gy, lt gn-off wh-mot, n-sl calc, clyey, aren-slt, incl, sft-frm

SLTST-lt-m gn, gn gy, aren incl, arg, vol comp-fe stn, mfc incl, chlor alt, frm-hd, occ sft

CLY-lt gy, lt gn gy, sdy, slty ip, sl calc, v sft

SS-dk-m gn, vf-m gr, ang-sb ang, p srt, cly mtx ip, chlor alt mtx ip, vol det w/mnr qtz, n calc, fri-frm, ft, nsofc

SS-lt gn, gn/blk s+p, vf-f gr, sb ang, m-p srt, arg mtx ip, plag/qtz w/mfcs-olv, pxn, n calc, ft n flor, n cut

SLST-lt-dk brn, blky-sbfiss, slty grdg to sh ip, sl calc, tr pyr, frm

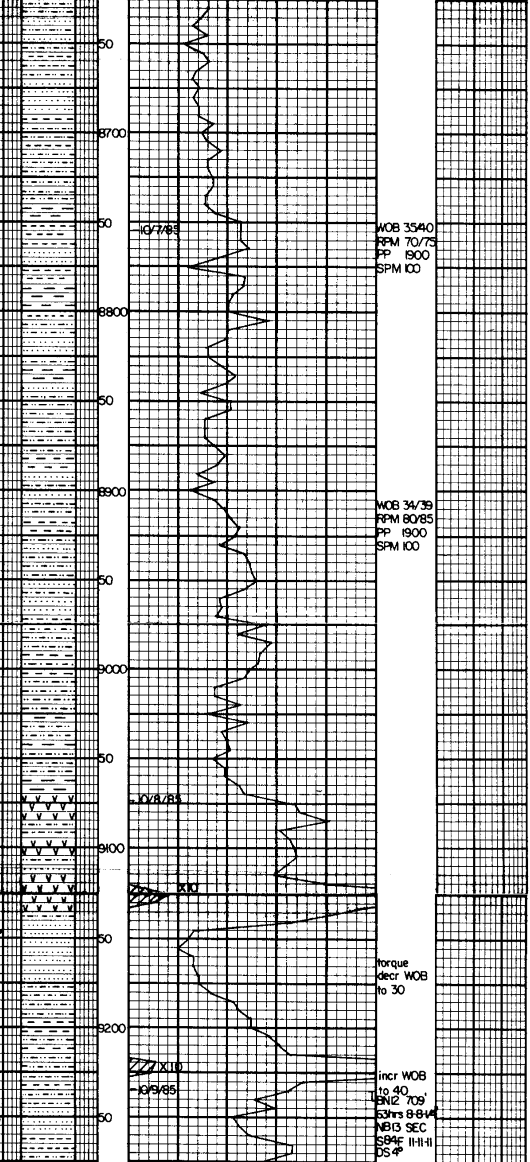
SH-m brn, brn-gy, lt gy, tr gn, slty, blky, sft

TUFF-gn, xl-lith, slty-lith mtx, plag, hblnde, biot, epid, poss pxn xl frags-chlor, fe alt ip, silicif ip, w indur, occ gy w/ flow lam, sl [illegible], dns, v hd

SS-off wh, lt gy-brn, vf-f gr, sb rnd, sb ang ip, w srt, m-p srt ip, qtz, fs, abdt mica, slty-arg mtx ip, cln ip, occ carb frag incl, n-sl calc-prly cmtd, fri, nsofc

CLY-wh-lt gy, lt brn, v sdy ip, occ grdg to slst, pred n calc, v sft

SS-wh, lt brn, gy brn, vf gr, mw srt, sbang, cly/slt mtx, occ grdg to sdy cly, sdy sltst, qtz,



WOB 35/40
RPM 70/75
PP 1900
SPM 100

WOB 34/39
RPM 80/85
PP 1900
SPM 100

torque
decr WOB
to 30

incr WOB
to 40

BN12 709'
63hrs 8-8-1/4
NB13 SEC
S84F 11-11-11
DS 4°

brn mica, tr carb, tr mfcs, sl-n calc, f 0 ip, nsofc

SLTST- tn, lt brn-wh, clyey, sdy-grdg to vf ss, carb ip, mica ip, n-m calc, sft-frm

SH-dk brn, blky-sbfiss, slty, sl-v calc, frm

SS-lt tn-wh, gy, gn, ang-sbang, pred w srt, vari cly/slt mtx, qtz, brn mica, tt-f 0, fri-hd, nsofc

SH-dk brn, blky, slty ip, n-sl calc, frm

CLY-lt gy-tn, sdy, slty, sft

SS-lt gy, off wh, lt brn gy, vf gr, sbrd, w srt, slty-arg mtx, qtz, fs, brn mica, occ dk min incl, n-sl calc, pcmt, frm-fri-nsofc

CLY-off wh-gy, occ tn, brn, slty, n-m calc, sft

SLTST-lt tn-lt gy brn, arg, occ in assoc w/ brn sh, sdy ip, carb, mica, tr foss, sft-frm

SS-a/a, tuff ip

CLY-wh-gy, occ tn, slty, n-m calc, sft

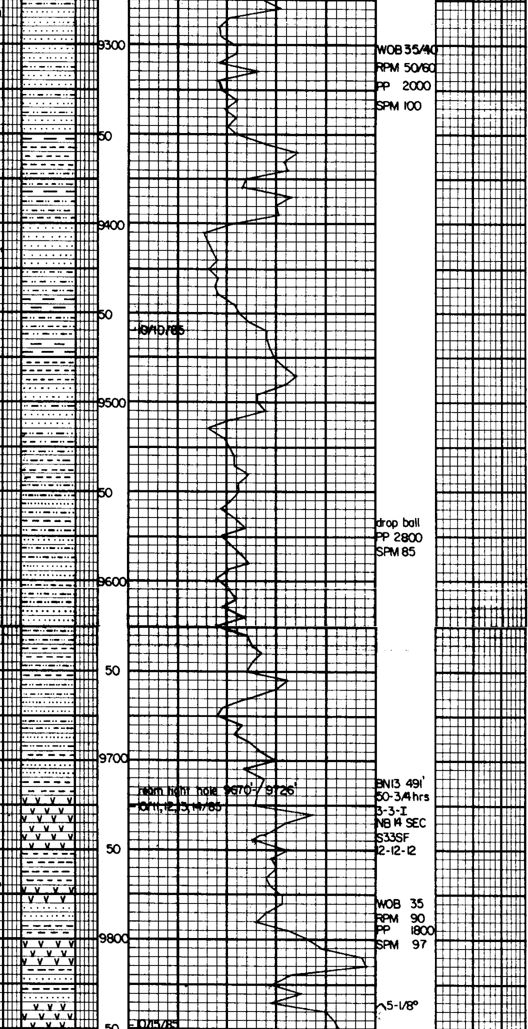
SLTST-lt tn-wh, gy brn, vsdy, gdg to ss, occ wh cly mtx, sl calc-calc, frm-sft

SS-tn, lt brn gy, vf gr, occ m gr, m-w srt, sbang, var arg/slt mtx, qtz w/mica, occ tuff, m-pcmt, fri-frm, nsofc

BASALT-dk gy, gy gn, micxl-porph, plag mtx w/porph chlor alt mfcs, dissem mag, dns, hd, brit, relic hblnde, aug

CLY-tn, wh, sdy-slty, bri wh min flor

SS-tn, gn, wh, vf-m gr, pred ang, m-w srt, wh cly mtx ip, abd vol det, fri-frm, pred tt, nsofc



BASALT-dkgngy,gy-blk,micxl-porph, plag mtx, w/aug,hblnde phenos-chlor alt, occ dissem mag, frm-hd

SLTST-m-dkbrn, occ ltbrn, ncalc, arg, grdg to sh, blky, carb lam, sft-frm

CLY-wh-gy, wh-gn, mot, sl calc, sdy, slty, tuff, sft

SS-wh, lt gy, s+p, vf-fgr, ang-sb ang, m-wsrt, p cmt-calc ip, uncons ip, tr carb incl, frm-fri ip, nsofc

SLTST-m-dk brn, lt brn ip, n-sl calc, sdy ip, arg, tr carb incl, sft-frm

CLY-wh-gy-gn-mot, n-sl calc ip, sdy, tuffac comp, tr lig, v sft

SLTST-lt-m brn, dk brn ip, n-sl calc, sdy, mica, carb, sft-frm

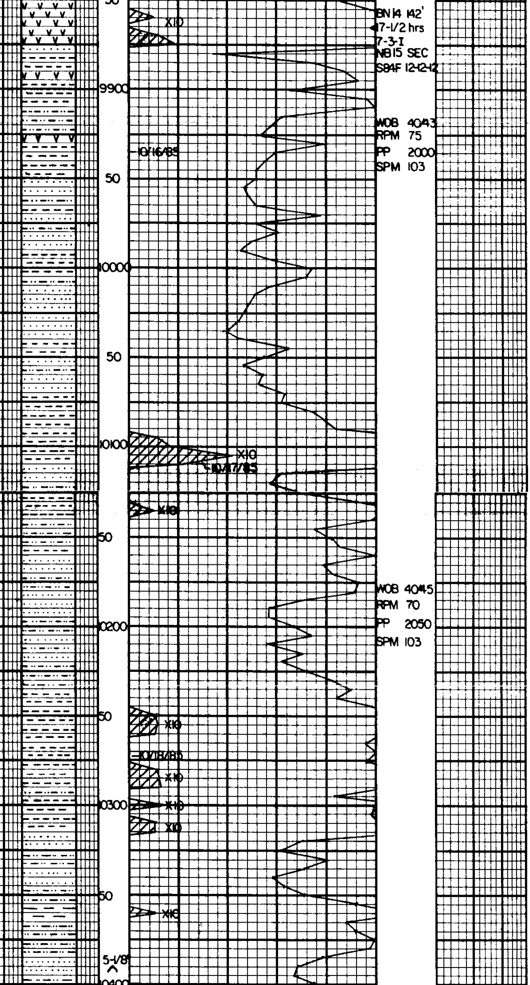
SS-wh, s+p, lt gy, lt brn, vf-fgr, ang-sb ang, m-w srt, m-w cmt-calc ip, wh cly mtx ip, slty ip, fs, qtz, mica, tr mics, carb incl, ft, nsofc

CLY-m brn, gy, wh, n calc, sdy, slty, tr lig, tuffac comp ip, v sft

SLTST-lt-dk brn, gy ip, arg, sdy intbdd w/ vfgr ss ip, mica, carb lam ip, sft-frm

SS-wh, ltbrn, s+p, bf, vf-fgr, ncalc, tr vcalc, wcmt, sltymtx ip, ft, yel flor ip, v wk diff crush ct

SH-m-dkbrn, mgy, n-sl calc, slty ip, frm



SLTST-m-dkbrn, n-slcalc, arg, sdy ip, gdg to vf ss ip, carb ip, frm-sft

SLTST-m gy-brn, m gy, occ lt brn, n-v sl calc, arg, sdy intbdd ip w vf gr ss, tr carb, pyr, blky, frm, brit ip

SS-wh, ltgy, vf-fgr, ang-sbang, p-msrt, calc, m-wcmt, mica ip, ft, frm, nflor

SH-dk gy, blk, blky, tr mica, slty ip frm

SH-dk brn-gy, dk brn, pred n calc, mod calc ip assoc w slicks, c xln calc frac fl, blky, frm, sft ip

SH-dk gy-brn, blk, sl calc, slty ip, sd incl ip, blky, dns, frm-hd

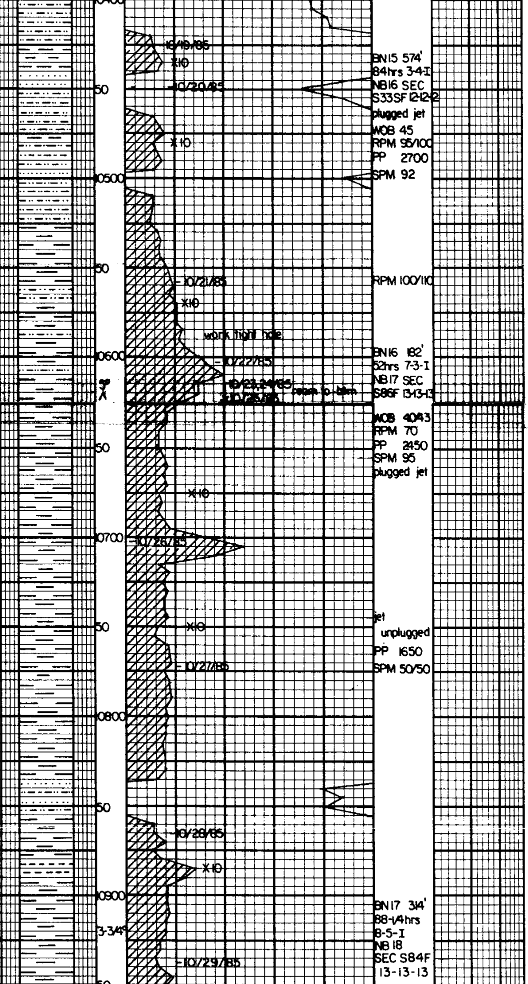
SH-dk brn-gy, blk, sl calc, slty, sd incl, dns, blky, tr pyr, frm-hd, occ sft grd to clyst ip

SH-dk gy-brn, dk gy, blk, sl calc, slty, sdy, dns ip, blky ip, frm-hd, occ-abdt sft grd to clyst

SS-wh, s+p, vfgr, sbang-ang, m-w srt, calc cmt ip, slt-cly mtx, tr cln, mica, sft-frm, nsofc

CLY-dk gy-brn, off wh, n-v sl calc, sd-slt incl, v sft, sft ip grd to clyst

SH-dk gy-blk, dk gy brn, blky/dns occ sbfiss, occ mica, slty ip, tr pyr, sl-n calc, frm-m hd



SLTST-m gy-blk, occ sdy, tr micr-foss, sl-m calc, frm

SS-wh, s+p, vf gr, sbang, m-w srt, p-m cmt, n calc, abnt mica, cons-fri, occ slt/cly mtx

SH-dk gy brn, dk gy, blky-sbfiss, occ carb/mica lam, sl-n calc, frm-brit

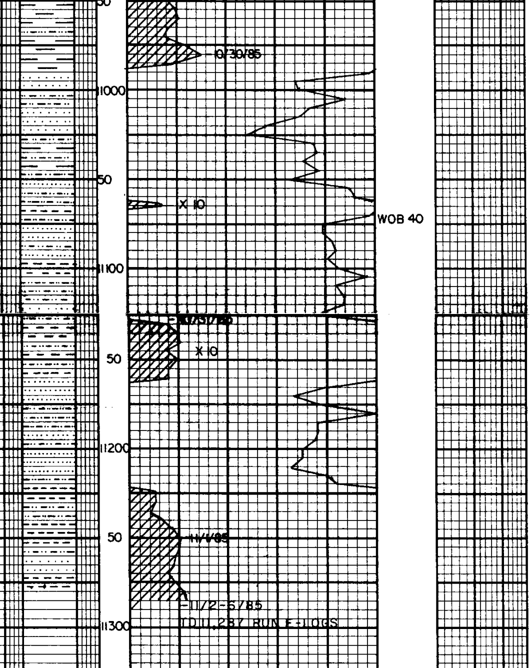
SS-wh-lt gy, m-dk gy, vf gr, sb ang, m-w srt, sl calc, slty-cly mtx ip, tr-abdt brn mica, occ carb, pred ff, frm

SLTST-lt m gn, occ lt brn-gy, vol dbf, cly mtx, frm, sft ip

CLY-off wh, gn/wh mott, slty, grdg to clyst ip, sft

SS-wh, gy, s-p, vf-f gr, m-w srt, wh cly/slt mtx, brn mica, tr carb incl, sl-m calc, pred ff, fri-frm, nsofc

CLY-lt gn, wh, sd incl ip, occ carb lam, slty, sft

SLTST-gn, gy, sdy ip, pyr, sl-n calc, frm