PASON ROCKY MOUNTAIN GEO-ENGINEERING
2450 Industrial Boulevard
Grand Junction, CO 81505 U.S.A.
(970) 243-3044

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OPERATOR:	NORTHWEST NATURAL GAS	SPUD DATE:	7-15-98
WELL:	OM-32-22-65	TD DATE:	RELEASED 7-22-98
LOCATION:	SE/NE SEC. 22, T6N, R5W	DATES LOGGED:	7-15-98 THRU 7-22-98
COUNTY:	COLUMBIA	DEPTHS LOGGED:	20' THRU 2365'
STATE:	OREGON	LOGGERS:	DAVID L. HARRIS K.M. LAUGHLIN
SPOT:	1261'FWL, 1884' FSL		
ELEVATION:	KB 762', GL 753'	DRILLING FLUID:	LOW SOLIDS POLYMER
FIELD:	CALVIN CREEK	DRILLING RIG:	TAYLOR RIG NO. 7

LOG TYPE: MUD LOG

SCALE: 1:240 (5.0 INCH/100 FT)

REMARKS:

LITHOLOGIES

SANDSTONE	SILTSTONE	SHALE	COAL	BENTONITE
LIMESTONE	DOLOMITE	ANHYDRITE	CHERT	SALT
CONGLOMERATE	TUFF	ALLUVIUM	METAMORPHIC	GLACIAL TILL
DARK CHERT	WELDED TUFF	ARGILLACEOUS LIMESTONE	LIME MUDSTONE	CRYSTALLINE LIMESTONE
LIME BOUNDSTONE	LIME GRAINSTONE	LIME PACKSTONE	LIME WACKESTONE	DOLOMITIC LIMESTONE
CALCAREOUS DOLOMITE	ARGILLACEOUS DOLOMITE	DOLOMITIC MUDSTONE	CRYSTALLINE DOLOMITE	DOLOMITIC BOUNDSTONE
DOLOMITIC GRAINSTONE	DOLOMITIC PACKSTONE	DOLOMITIC WACKESTONE	SHALY SANDSTONE	CLAYSTONE
GRAY CLAYSTONE	COLORED CLAYSTONE	VOLCANIC	BRIGHT COAL	INTERMEDIATE COAL
DULL COAL	COALY SHALE	BONY COAL	GRANITE	BRECCIA
MARL	DOLOMITIC MARL	CARBONACEOUS SHALE	CHALK	GYPSUM
UNABLE TO INTERPRET	NO SAMPLE	BLACK SHALE	COLORED SHALE	OIL SHALE
SILTY SHALE	SHALY SILTSTONE			

MODIFIERS

AHYDRITE STRINGERS	ALGAE LAMINATED	ALGAE NON-DESCRIPT	ALGAE [illegible]	ALGAE SKELETAL	AMPHIPORA

//	ANHYDRITIC	▬	ARGILLACEOUS	/	ARGILLITE GREEN	⊳	BELEMNITE	B	BENTONITE	⌒	BIOCLAST HORIZONTAL
♢	BRACHIOPOD	✧	BRECCIA	♈	BRYOZOA	⊥	CALCAREOUS	■	CARBONACEOUS FLAKES	▰	CARB. OR BITUMINOUS
ɕ	CEPHALOPOD	▲	CHERT, DARK	△	CHERT LIGHT	⊠	CHERT PEBBLE	▬	COAL	⚑	CORAL
⊙	CRINOID	✳	CRYSTALS	Ⅱ	DOLOMITE STRINGERS	∠	DOLOMITIC	♡	ECHINOID	+	FELDSPAR
⊾	FERRUGINOUS	●	FERRUGINOUS GRAINS	Ⅱ	FERRUGINOUS STRINGERS	⊂	FISH REMAINS	✿	FORAMINIFERA	F	FOSSILS
≷	FRACTURES	△	GASTROPOD	∿	GLAUCONITE	\\	GYPSIFEROUS	Ⅲ	GYPSUM STRINGERS	▮	HEAVY/DARK MINERALS
Y	INTRACLASTS	K	KAOLIN	Ⅱ	LIMESTONE STRINGERS	L	LIGNITE	Π	MARLSTONE CALCAREOUS	Π	MARLSTONE, DOLOMITIC
◡	MICACEOUS	⊖	NODULES	ϕ	OOLITES	⊙	OSTRACOD	⊕	PEBBLES	▽	PELECYPOD
ɸ	PELLETS	●●	PHOSPHATE PELLETS	⊸	PISOLITE	◇	PLANT REMAINS	P	PYRITE	⊞	SALT CAST/INFILL
○	SAND GRAINS	⊡	SANDSTONE STRINGERS	▪	SANDY	▽	SCAPHOPOD	—	SHALE LAMINAE	Λ	SILICEOUS
⊡	SILTSTONE STRINGERS	▪▪	SILTY	≷	SLICKENSIDE	S	SPORES	Ⅲ	STROMATOPOROID	Ⲙ	STYLOLITE
V	TUFFACEOUS										

POROSITY/SORTING/ROUNDNESS SYMBOLS

I	INTERCRYSTALLINE INTERGRANULAR	V	VUGGY	F	FRACTURE	○	INTEROOLITIC	P	PINPOINT	☆	ORGANIC
O	MOLDIC	e	EARTHY	☐	FENESTRAL						
A	ANGULAR	a	SUBANGULAR	R	ROUNDED	r	SUBROUNDED				
W	WELL	M	MEDIUM	P	POOR						

ENGINEERING SYMBOLS

♠	BIT CHANGE	^	LOST CIRCULATION	◢	CASING	◣	TUBING	◀	SIDEWALL CORE	▶	SIDEWALL CORE
▷	WIRELINE TEST	◁	WIRELINE LOGS	⤒	GAS TO SURFACE	⊤	OIL TO SURFACE	W	WATER TO SURFACE	●	EVEN STAINING
◐	SPOTTED STAINING	D	DEAD OIL	○	QUESTIONABLE	•	OIL FLUOR	☼	CUT FLU	✹	OIL AND GAS SHOW
(CG)	CONNECTION GAS	(TG)	TRIP GAS	▨	MIDNIGHT DEPTH	▧	MIDNIGHT DEPTH	═	TD POINT	—•	OFF BOTTOM
///	NORMAL FAULT	///	REVERSE FAULT	⫯	OVERTURNED STRATA						

▨	CORE RECOVERED	☐	CORE LOST	⊓	DST INTERVAL	⎽	ROTATING	⊐	SLIDING	☰	CANISTER

ABBREVIATIONS

CB — CORE BIT
CG — CONNECTION GAS
CO — CIRCULATE OUT
SPM — STROKES/MIN

DST — DRILL STEM TEST
DTG — DOWNTIME GAS
LAT — LOGGED AFTER TRIP
TG — TRIP GAS

NR — NO RETURNS
NS — NO SAMPLE
PP — PUMP PRESSURE
WOB — WEIGHT ON BIT

RPM — REVOLUTIONS/MIN
RR — RE-RUN
SLM — STEEL LINE MEASURE

ROP MIN/FT

TOTAL GAS UNITS

C1 PPM C2 PPM C3 PPM C4 PPM

TRUE VERTICAL DEPTH
SECTION DEPART

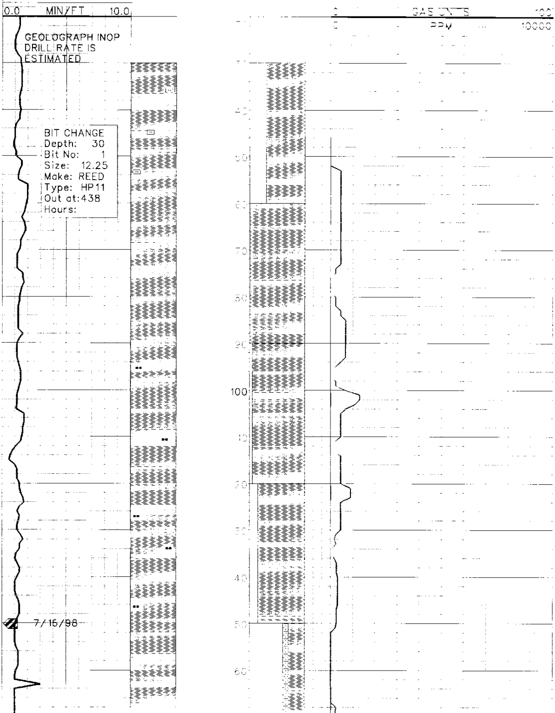
HOLE ANGLE
AZIMUTH

SPUD MUD 22-422

RMGE FID/PAL UNIT ON LOCATION 7/15/98 AT 1030 HOURS. D.L. HARRIS AND K. LAUGHLIN LOGGERS

SET 30' OF CONDUCTOR CASING

COMMENCE LOGGING 1930 HOURS 7/15/98 AT 20'



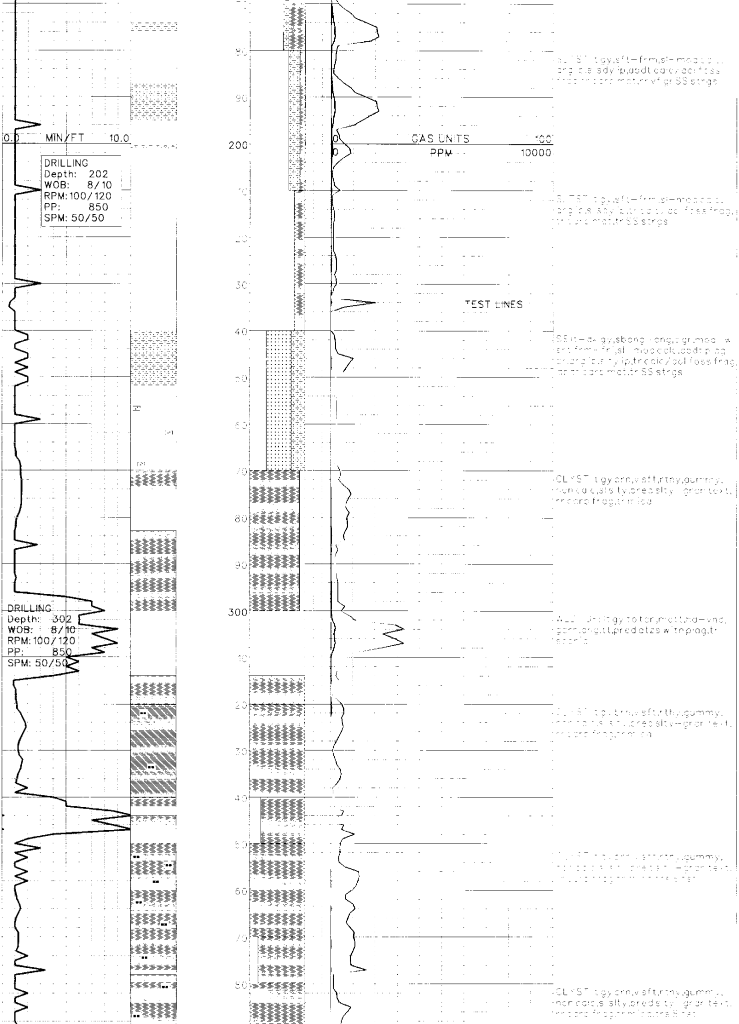
CLYST lt gy, v sft, gummy, rthy, tr carb frag, frm calc SLTST strgs

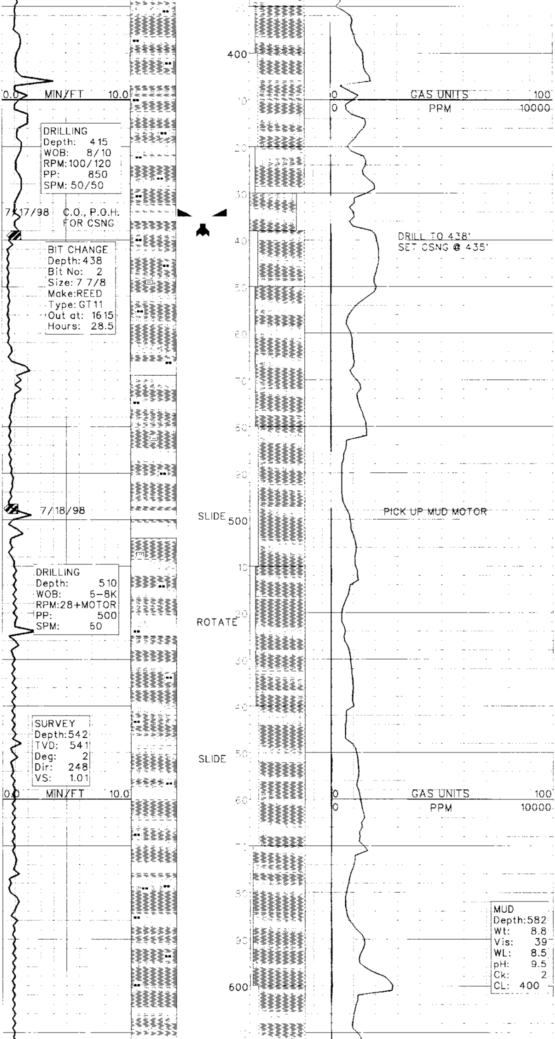
CLYST m-dk gy, brn, v sft, rthy, gummy, trnsl-opq cht, pred slty-gran tex, tr carb frag, tr mica

CLYST m-v brn, frm-v sft, sbblky-... calc, prec slty gran tex, tr carb frag, tr mica

CLYST lt gy, brn, v sft, rthy, gummy, ... pred slty-gran tex, tr carb frag, tr mica

SLTST lt gy, sft-frm, sl-mod calc, arg ip, sl sdy ip, tr calc/col foss frag, tr carb mat, tr SS strgs





DRILLING
Depth: 415
WOB: 8/10
RPM: 100/120
PP: 850
SPM: 50/50

7/17/98 C.O., P.O.H. FOR CSNG

DRILL TO 438'
SET CSNG @ 435'

BIT CHANGE
Depth: 438
Bit No: 2
Size: 7 7/8
Make: REED
Type: GT11
Out at: 1615
Hours: 28.5

7/18/98

PICK UP MUD MOTOR

DRILLING
Depth: 510
WOB: 6-8K
RPM: 28+MOTOR
PP: 500
SPM: 50

SURVEY
Depth: 542
TVD: 541
Deg: 2
Dir: 248
VS: 1.01

MUD
Depth: 582
Wt: 8.8
Vis: 39
WL: 8.5
pH: 9.5
Ck: 2
CL: 400

CLAYST: lt gy, brn, v sft, trty, gummy, [illegible] slty, pred slty [illegible] in part freq [illegible] tr Sltst, bent, [illegible]

CLAYST: lt gy to gyish brn, gummy, bent, washes away in water, slt to mod to v slty, w/ cont scat free slt grs, with trs sft gummy SLTST:

CLAYST: lt gy to gyish brn, gummy, bent, washes away in water, slt to mod to v slty, w/ cont scat free slt grs, with trs sft gummy SLTST:

CLAYST: lt gy to gyish brn, gummy, bent, washes away in water, slt to med to v slty, w/ cont scat free slt grs, with trs sft gummy SLTST:

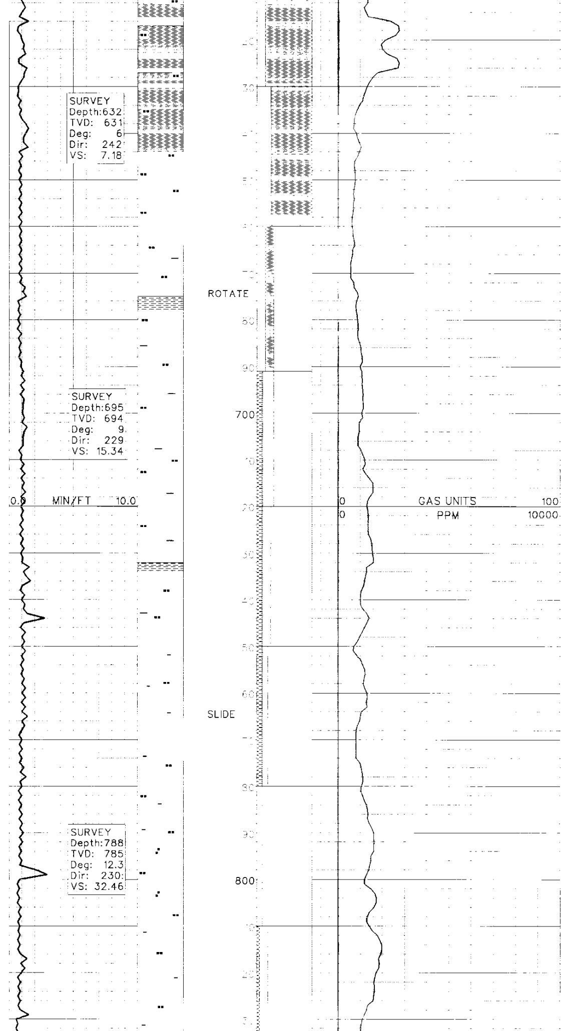
CLAYST: lt gy to gyish brn, gummy, bent, washes away in water, slt to mod to v slty w/ cont scat free slt grs, with trs sft gummy SLTST:

CLAYST: lt gy to gyish brn, gummy, bent, washes away in water, slt to mod to v slty, w/ cont scat free slt grs, with trs sft gummy SLTST:

CLAYST: lt gy to gyish brn, gummy, bent, washes away in water, slt to mod to v slty, w/ cont scat free slt grs, with trs sft gummy SLTST:

CLAYST: med gy, sft gummy sl bent, slsity in part, scat blk spks, grad in part to SLTST: med gy frm to sft sl gummy, scat tr slt to vf qtz grs

CLAYST: med gy, sft gummy sl bent, sl slty in part, scat blk spks, grad in part to SLTST: med gy frm to sft sl gummy, scat tr slt to vf qtz grs



SURVEY
Depth:632
TVD: 631
Deg: 6
Dir: 242
VS: 7.18

SURVEY
Depth:695
TVD: 694
Deg: 9.
Dir: 229
VS: 15.34

SURVEY
Depth:788
TVD: 785
Deg: 12.3
Dir: 230
VS: 32.46

CLAYST: med gy, sft gummy, sl calc, sl silty in part, scat blk spks, grdg in part to SLTST: med gy, frm to sft, gummy, scat tr sl to vf qtz grs

CLAYST: med gy, med lt grnish gy, sft, [illegible] less gummy, sl firm, sl silty, [illegible] scat frags sltst, tr shell frags, tr [illegible] carb spks, grds in sl grit part to SLTST: [illegible] med gy, lt grnish gy

SLTST: med gy, lt grnish gy to grnish gy, sl blky to blky to amorph, [illegible] in part, argil in part with Shale and Clay streaks and [illegible] grds to Sltst in part, grds to SH in part, trs mica, carb flakes, tr shell frags

SHSLT: lt to med gy to grnish to grnish gy, sl gummy to frm hd brit in part, argil mtx in part, scat streaks Sh, streaks Sltst, trs mica, shell frags in part, few scat slt and vfg sd grs

SHSLT: lt to med gy to grnish to grnish gy, sl gummy to frm hd brit in part, argil mtx in part, scat streaks Sh, streaks Sltst, trs mica, shell frags, tr part, few scat slt and vfg sd grs

SHSLT: lt to med gy to grnish to grnish gy, sl gummy to frm hd brit in part, argil mtx in part, scat streaks Sh, streaks Sltst, trs mica, shell frags in part, few scat slt and vfg sd grs

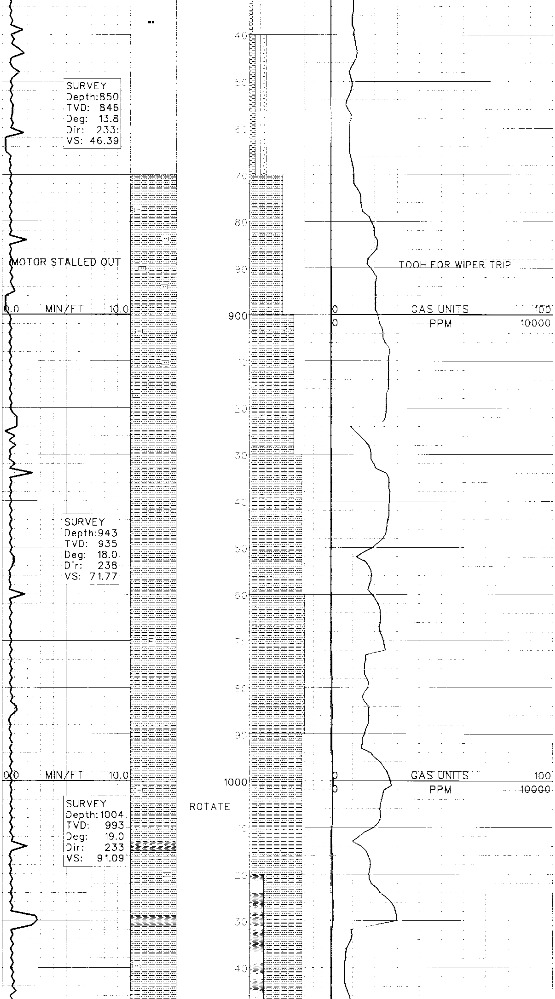
SHSLTST: med gy grnish—grnish gy, trs lt grnish gy, blky plty, gritty, firm to brit, some streaks Shale and Siltstone, scat shell frags, tr mic, v sl tr carb spks

SHSLTST: med gy grnish—grnish gy, trs lt grnish gy, blky plty, gritty, firm to brit, some streaks Shale and Siltstone, scat shell frags, tr mic, v sl tr carb spks

SHSLTST: med gy grnish—grnish gy, trs lt grnish gy, blky plty, gritty, firm to brit, some streaks Shale and Siltstone, scat shell frags, tr mic, v sl tr carb spks

SHSLTST: med gy grnish grnish gy, trs lt to grnish gy, blky plty, gritty, firm to brit, some streaks Shale and Siltstone, scat shell frags, tr mic, v sl tr carb spks

SHSLTST: med gy to lt grnish gy, blky to plty, argil with some clay mtx and grds to SH in part, grds to clean SLTST in part [illegible]



SURVEY
Depth:850
TVD: 846
Deg: 13.8
Dir: 233
VS: 46.39

SURVEY
Depth:943
TVD: 935
Deg: 18.0
Dir: 238
VS: 71.77

SURVEY
Depth:1004
TVD: 993
Deg: 19.0
Dir: 233
VS: 91.09

SH-SLTST: med to lt gnish gy, lt brnish gy, tr lt tan, some clay-sticky, [illegible] w/ trs of thin streaks SH, v slty, and SLTST slty to v argil, scat [illegible] tan-gy, SS, lt gnish, [illegible] shaly, tr micro, tr carb specks

SLTY SH: med to lt gnish gy, lt brnish gy, tr lt tan, frm-sft, sbblky-sbplty, [illegible] strgs of arg SLTST, v slty, tr mica, tr carb mat

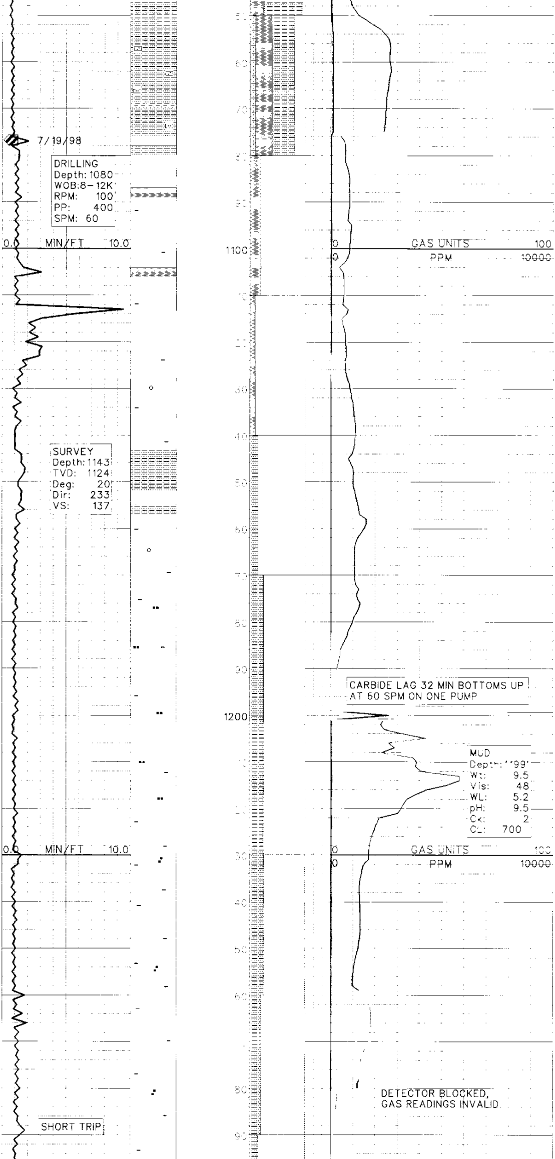
SLTY SH: med gy, brn, tr lt tan, frm-sft, sbblky-sbplty, [illegible], non calc, [illegible] strgs of arg SLTST, v slty, tr [illegible] carb mat

SLTY SH: med-lt gy, brn, frm-sft, sbblky-sbplty, sdwxy-[illegible], non calc, tr strgs of arg SLTST, med-v slt, tr mica, carb mat

SLTY SH: med to lt gy, lt brnish gy, frm-sft, sbblky-sbplty, [illegible], non calc, mod slty, tr mica, tr carb mat, tr foss shells

SLTY SH: med to lt gy, lt brnish gy, frm-sft, sbblky-sbplty, [illegible], non calc, mod slty, tr mica, tr carb mat

CLY SH: lt gy brn, v sft, [illegible], gummy, washes out of sample, non calc, sl silty, predwxy, smooth text



7/19/98

DRILLING
Depth: 1080
WOB: 8-12K
RPM: 100
PP: 400
SPM: 60

SURVEY
Depth: 1143
TVD: 1124
Deg: 20
Dir: 233
VS: 137

CARBIDE LAG 32 MIN BOTTOMS UP
AT 60 SPM ON ONE PUMP

MUD
Depth: 1199
Wt: 9.5
Vis: 48
WL: 5.2
pH: 9.5
Ck: 2
CL: 700

SHORT TRIP

DETECTOR BLOCKED,
GAS READINGS INVALID

SS: lt-dk gy,vf–m gr,ang–sbrd,mod srt,non calc-mod calc mtx,arg w arg cmt,mod slty,pred clr sil gr,tr pyr,tr glau,NFSOC

TOOH FOR BHA

SHSLT: lt to med gy,rd,brittle,non calc,stcky,orgnc,tr s mica,tr carb,tr vf sdy grs

SHSLT: lt to med gy,hd,brittle,non calc,stcky,orgnc,tr s mica,tr carb,tr vf sdy grs

SHSLTST: med to dk gy,blky,chunky, tit ty,rough course txt,argil,grds to slty, SHALE: med to dk gy,blky, chunky,topity,slty,non-calc,tr v few scat vf sd grs

SHSLTST: med to dk gy,blky,chunky, topity,trs brn to brnish gy,cse txt, scat free slt to vf gr qtz grs with tr vfg SS,med gy,tt,med shaly

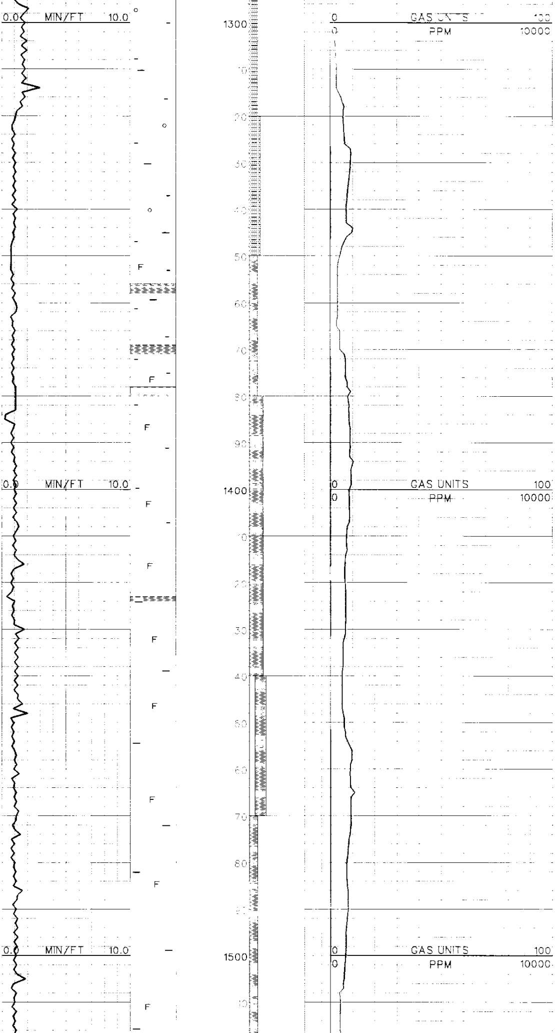
SHSLTST: med to dk gy,blky,chunky, topity,trs brn to brnish gy,cse txt, scat free slt to vf gr qtz grs with tr vfg SS,med gy,tt,med shaly

SHSLTST: med to dk gy,blky,chunky, topity,trs brn to brnish gy,cse txt, scat free slt to vf gr qtz grs with tr vfg SS,med gy,tt,med shaly

SHSLTST: med to dk gy,blky,chunky, topity,trs brn to brnish gy,cse txt, scat free slt to vf gr qtz grs with tr vfg SS,med gy,tt,med shaly,with scat blk carb spks–flakes,tr lt gy SLTST

SHSLTST: med to dk gy,blky,chunky, topity,trs brn to brnish gy,cse txt, scat free slt to vf gr qtz grs with tr vfg SS,med gy,tt,med shaly,with scat blk carb spks–flakes,tr lt gy SLTST

SHSLTST: med to dk gy,blky,chunky, topity,trs brn to brnish gy,cse txt, scat free slt to vf gr qtz grs with tr vfg SS,med gy,tt,med shaly,with scat blk carb spks–flakes,tr lt gy SLTST



SHSLTST: med to dk gy, blky, chunky, tacky, trs brn to brnish gy, cse txt, scat free slt to vfgr qtz grs with tr vfg SS, med gy, tt, med shaly, with scat blk carb spks + flakes, tr lt gy SLTST

SHSLTST: med to dk gy, blky, chunky, tacky, trs brn to brnish gy, cse txt, scat free slt to vfgr qtz grs with tr vfg SS, med gy, tt, med shaly, with scat blk carb spks – flakes, tr lt gy SLTST

SLTST: a/a bec med gnish gy, blky, slty, bec sft gummy, washes away in water, with CLAYST: lt to med gnish gy, sft gummy, plastic, slty, med amount scat white shell frags

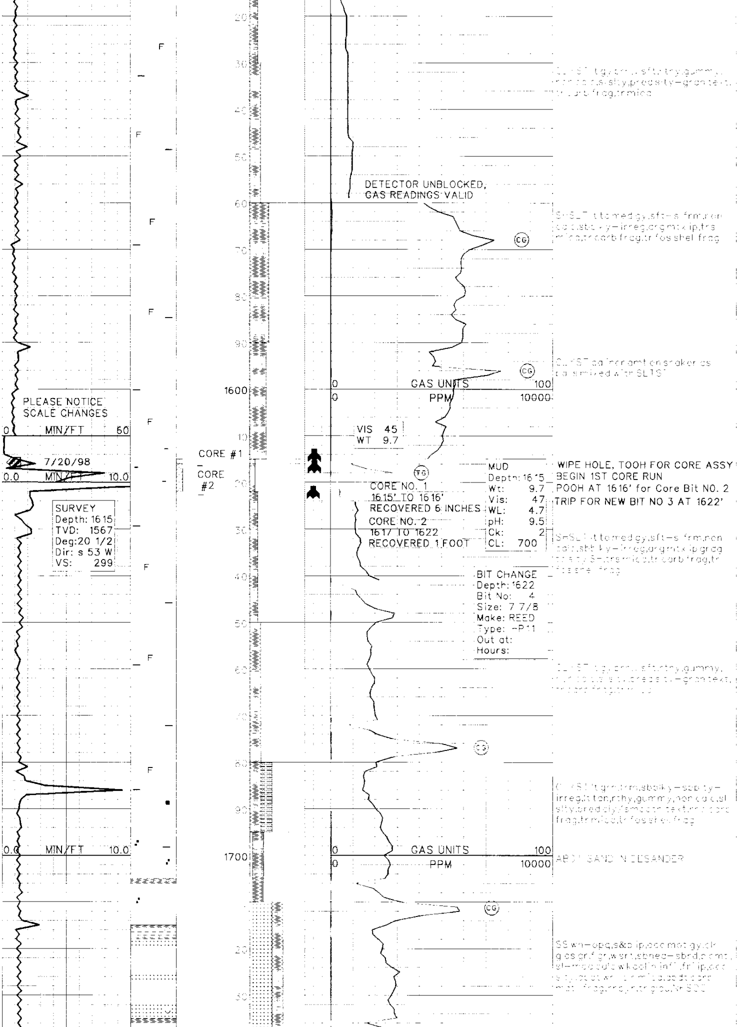
CLAYST: med gnish gy, sft, sl to v gummy, washes away in water, sl to mod slty, grds to Shaly Sltst: med gnish gy, sft to frm, sl to mod to v gummy, grds to blky, slty SLTST: with tr orng streaks, scat abnt white shell frags

SHSLTST: A/A 80% TO 90% water soluble, washes away in water, with Clayst: dark olive green to gnish gy, abnt scat shell frags

CLAYST: med gnish gy, sft, sl to v gummy, washes away in water, sl to mod slty, grds to Shaly Sltst: med gnish gy, sft to frm, sl to mod to v gummy, grds to blky, slty SLTST: with tr orng streaks, scat abnt white shell frags

SLTST: a/a bec med gnish gy, blky, slty bec sft gummy, washes away in water, with CLAYST: lt to med gnish gy, sft gummy, plastic, slty, mod amount scat white shell frags

SHSLT: lt to med gy, sft – sl frm, non calc, scat blk irreg, arg mtx lb, trs with brn carb tr fos shell frag



DETECTOR UNBLOCKED, GAS READINGS VALID

VIS 45
WT 9.7

SURVEY
Depth: 1615
TVD: 1567
Deg: 20 1/2
Dir: s 53 W
VS: 299

CORE NO. 1
1615' TO 1616'
RECOVERED 6 INCHES
CORE NO. 2
1617' TO 1622
RECOVERED 1 FOOT

MUD
Depth: 1615
Wt: 9.7
Vis: 47
WL: 4.7
pH: 9.5
Ck: 2
CL: 700

BIT CHANGE
Depth: 1622
Bit No: 4
Size: 7 7/8
Make: REED
Type: -P11
Out at:
Hours:

CLYST lt gy,crm,v sft,frtry,gummy, non calc,sl slty,pred slty-grn text, tr carb frag,tr mica

SH-SLT lt to med gy,sft-s frm,non calc,sbblky-irreg,arg mtx ip,tr s mica,tr carb frag,tr fos shel frag

CLYST as incr amt on shaker as calc mixed with SLTST

WIPE HOLE, TOOH FOR CORE ASSY
BEGIN 1ST CORE RUN
POOH AT 1616' for Core Bit NO. 2
TRIP FOR NEW BIT NO 3 AT 1622'

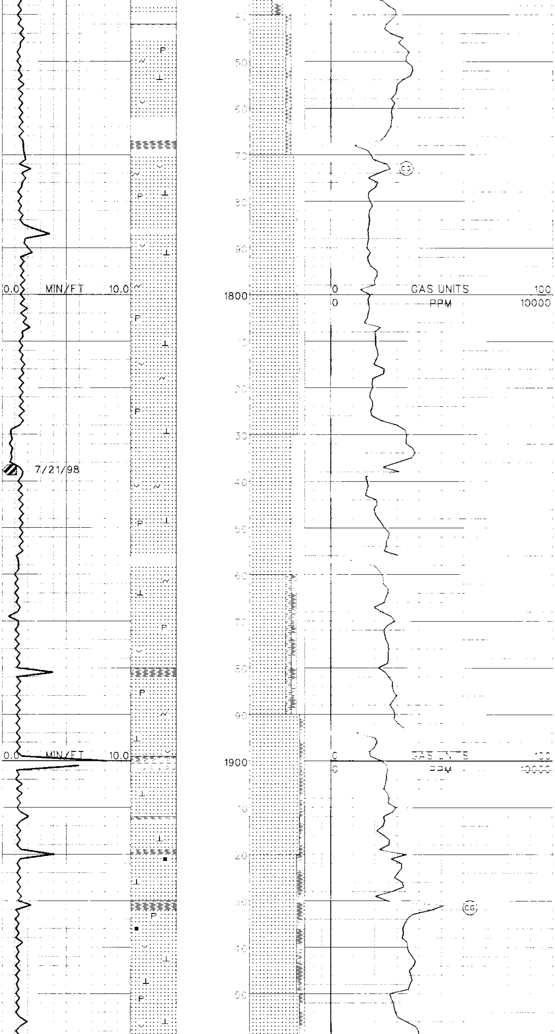
SH-SLT lt to med gy,sft-s frm,non calc,sbblky-irreg,arg mtx ip grdg to slty SH,tr s mica,tr carb frag,tr fos shel frag

CLYST lt gy,crm,v sft,frtry,gummy, non calc,sl slty,pred slty-grn text, tr carb frag,tr mica

CLYST lt grn,frm,sbblky-sbplty-irreg,lt tan,rthy,gummy,non calc,sl slty,pred cly/smooth text,tr carb frag,tr mica,tr fos shel frag

ABDT SAND IN DESANDER

SS wh-opq,s&p ip,occ mot gy,clr qtz gr,f gr,w srt,sbang-sbrd,p cmt, sl-mod calc,wk kaolin infl,fri ip,occ slty,occ ut wh [illegible] calc,carb [illegible] frag,[illegible]



VS 42
WT 9.7

SS wh-opq,s&p ip,clr qtz gr,f gr,w srt,sbrd-sbrd,p-mod cmt,occ fri,sl-mod calc,wk kaoln infl,sl slty,tt,abdt wh/clr mica,abdt carb mat frag,rr pyr strg,gd,NFSOC

abdt carb in cuttings

SS wh-opq,s&p ip,clr qtz gr,f gr,w srt,sbrd-sbrd,p-mod cmt,occ fri,sl-mod calc,wk kaoln infl,sl slty,tt,abdt wh/clr mica,abdt carb mat frag,abdt pyr strgs/clstrs,tr glau,NFSOC

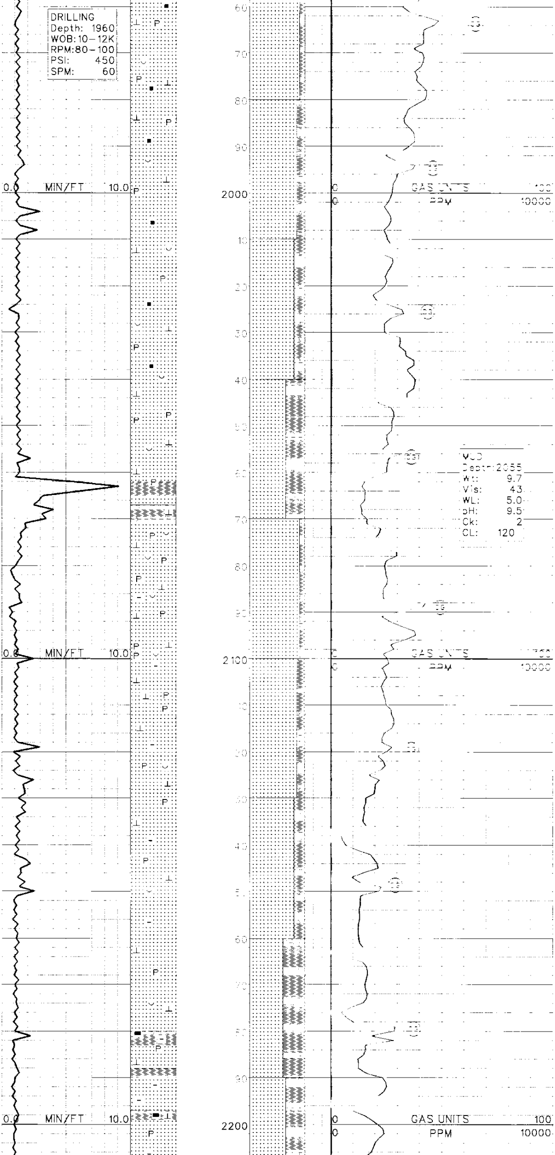
SS wh-opq,s&p ip,clr/wh gr,f-m gr,mod-w srt,sbrd-sbrd,p cmt,fri,p-w cmt,sc gr,sl-mod calc,wk kaoln infl,sl slty,tt,abdt wh/clr mica,abdt carb mat frag,abdt pyr strgs/clstrs,tr glau,NFSOC

SS a/a,abdt lse gr,abdt lse mica,com carb mat,pyr frag,abdt clay on shaker

CLYST lt gy,brn,sft,stky,gummy,n-lt calc,sl slty,abdt slty-gran text,abdt carb frag,mica

SS wh-opq,s&p ip,clr/wh gr,f-m gr,mod-w srt,sbrd-sbrd,p-mod cmt,fri,w cmt,sc gr,sl-mod calc,wk kaolin infl,sl slty,tt,abdt wh/clr mica,abdt carb mat frag,abdt pyr strgs/clstrs,tr glau,NFSOC

SS [illegible] mod w cl cmt to sl,slt [illegible] cmt,abnt scat pyr,no vis [illegible], w/ thn abnt CLYST [illegible] med gy sft plastic water sol [illegible]



SS: wh-off wh to lt gy, with abnt scat [illegible] — [illegible] streaks, vf f gr [illegible] sl to calc mtx — [illegible] CLYST: [illegible] med gy, sft to pst, water soluble

SS: wh-off wh to lt gy with abnt scat [illegible] — bstn spks streaks, vf f gr [illegible] sl to calc mtx [illegible] CLYST: lt to med gy, sft to pst, water soluble

SS: wh-off wh to lt gy, with abnt scat [illegible] — bstn spks streaks, vf f gr [illegible] sl to calc mtx — [illegible] water soluble

SS: wh-off wh to lt gy to clr, mostly [illegible] some med gr, subrnd to subang [illegible] sl to calc mtx-cmt [illegible] abnt scat [illegible] bstn spks, abnt scat pyr, no vis [illegible] stn f or crush cut, scat tr [illegible]

SS: a/a with increasing CLAYSTONE: med to dk gy, blky to [illegible] gummy, water soluble, sl slty

SS: [illegible] to lt gy to clr, mostly [illegible] some med gr, subrnd to subang [illegible] sl to calc mtx-cmt [illegible] abnt scat [illegible] bstn spks, abnt scat pyr, [illegible] stn f or crush cut, scat tr [illegible]

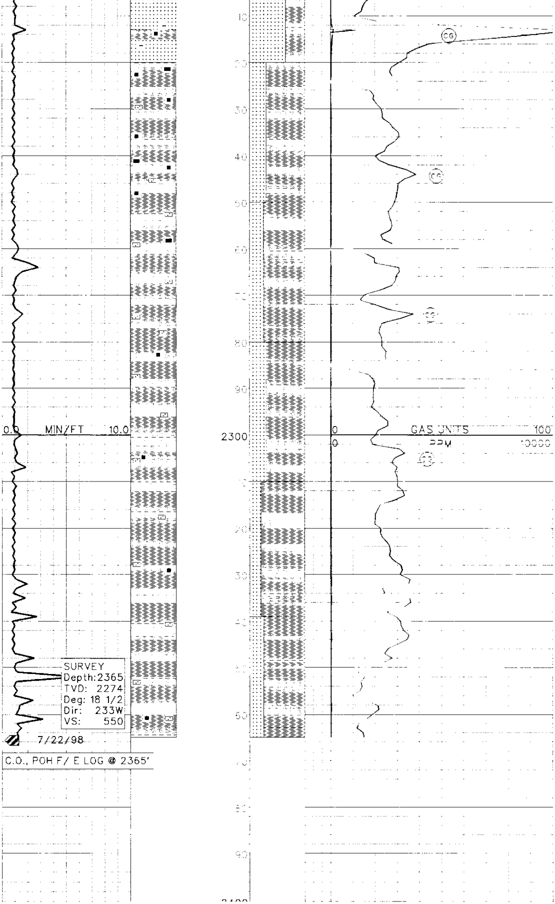
SS: [illegible] to lt gy to clr, mostly [illegible] some med gr, subrnd to subang [illegible] sl to calc mtx-cmt [illegible] abnt scat [illegible] bstn spks, abnt scat pyr, [illegible] stn f or crush cut, scat tr [illegible]

SS: wh, off wh, lt gy, vf/f gr with some vf gr, subang to subrnd, mod well srtd, sl to calc cmt-mtx, mod well cmtd with some lse grs, mica, chl or pyr, carb & asph, no vis [illegible] stn f or cr cut with Clay/Mud/Sltst: lt to dk gy, lt to [illegible] gummy

SS: [illegible] vf gr, subang to subrnd, mod well srtd, sl to calc cmt-mtx, mod well cmtd with some lse grs, mica, chl or pyr, carb & asph, no vis live oil stn f or cr cut with Clay/Mud/Sltst: lt to dk gy, lt to dk brn blky to gummy

SS: a/a with Clay/Mudstone, med [illegible] gy-gyish-brn, blky, slty, fissile [illegible] scat [illegible] carb spks & laminations

SS: a/a with Clay/Mudstone, med dark gy-gyish-brn, blky, slty, fissile in part, v slsty in part, scat blk carb spks & laminations



SURVEY
Depth:2365
TVD: 2274
Deg: 18 1/2
Dir: 233W
VS: 550

7/22/98

C.O., POH F/ E LOG @ 2365'

[illegible] ST:med to dk gy,sh brn to brn t[illegible] dk gy,blky,laminar,sft to mod firm to brit,blky to slty,earthy,v carb, grds to Sh to dk brn-gy,reddish brn,s[illegible] mic carb with tr trs LIG,few clusters SS:a/a

[illegible] gy,brn sh-gy [illegible] carb,brit,firm, [illegible] with some clusters SS: [illegible] grnsh gy cly washes out of the sample

[illegible] ST med gy to grnsh gy to brn, [illegible] grds to Mudst,[illegible] carb flakes-specks,tr free [illegible]-lg,few clusters SS:a/a possibly cavings

[illegible] ST med gy to grnish gy to brn, [illegible] grds to Mudst,mod [illegible] carb flakes specks,tr free [illegible] few clusters SS:a/a possibly cavings

CL[illegible]ST:med gy to grnish gy to brn, firm to brit,blky,grds to Mudst,mod [illegible] carb flakes-specks,tr free [illegible] few clusters SS:a/a possibly cavings

[illegible] ST:med gy to grnish gy to brn, firm to brit,blky,grds to Mudst,mod [illegible] carb flakes-specks,tr free [illegible]-lg,few clusters SS:a/a possibly cavings

CLAYST:a/a with slight increase in SS,poss cavings

PRMGE UNIT #20 RELEASED
7/22/98 AT 1600 HRS.