PASON SYSTEMS USA CORP.
16080 Table Mountain Parkway
Suite 500
Golden, CO 80403 U.S.A.
(720) 880-2000

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OPERATOR: NW NATURAL
WELL: OM 43A-22-65
LOCATION: SEC 23, T6N, R5W
COUNTY: COLUMBIA
STATE: OREGON
SPOT: W 1/4,500'FSL, 200'FSL
ELEVATION: GL 875', KB 885'
FIELD: REICHHOLD POOL DEVELOPMENT

SPUD DATE: MAY 24,2000
TD DATE: JUNE 2,2000
DATES LOGGED: MAY 24,2000 - JUNE 2,2000
DEPTHS LOGGED: 30' - 2317'
LOGGERS: ED PERRY, SCOTT WAGGONER
DRILLING FLUID: SPUD MUD-SURFACE, LSND
DRILLING RIG: TAYLOR RIG #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	▨ VOLCANICS	■ BRIGHT COAL	▨ INTERMEDIATE COAL
▨ DULL COAL	▨ COALY SHALE	▨ NON COAL	▨ GRANITE	▨ BRECCIA
▨ MARL	▨ DOLOMITIC MARL	▨ CARBONACEOUS SHALE	▨ CHALK	▨ GYPSUM
▨ UNABLE TO INTERPRET	☒ NO SAMPLE	▨ BLACK SHALE	▨ COLORED SHALE	▨ GRAY SHALE
▨ SILTY SHALE	▨ SHALY SILTSTONE	□ NOTHING		

MODIFIERS

AHYDRITE STRINGERS	ALGAE, LAMINATED	ALGAE, NON-DESCRIPT	ALGAE, OOTOID	ALGAE, SKELETAL	AMPHIPORA
ANHYDRITIC	ARGILLACEOUS	ARGILLITE GRAIN	BELEMNITE	BENTONITE	BIOCLAST/ FRAGMENTAL
BRACHIOPOD	BRECCIA	BRYOZOA	CALCAREOUS	CARBONACEOUS FLAKES	CEMENTING BITUMENOUS
CEPHALOPOD	CHERT, DARK	CHERT, LIGHT	CHERT, TRIPOLITIC	COAL	CORAL

⊙	CRINOID	✳	CRYSTALS	Π	DOLOMITE STRINGERS	∠	DOLOMITIC	♡	ECHINOID	+	FELDSPAR
⊥	FERRUGINOUS	●	FERRUGINOUS GRAINS	Π	FERRUGINOUS STRINGERS	∝	FISH REMAINS	℘	FORAMINIFERA	F	FOSSILS
⌘	FRACTURES	△	GASTROPOD	∼	GLAUCONITE	\\	GYPSIFEROUS	Ш	GYPSUM STRINGERS	▪	HEAVY/DARK MINERALS
Y	INTRACLASTS	K	KAOLIN	Ⅱ	LIMESTONE STRINGERS	L	LIMONITE	Π	MARLSTONE, CALCAREOUS	π	MARLSTONE, DOLOMITIC
◡	MICACEOUS	◎	NODULES	◊	OOLITES	⊖	OSTRACOD	∞	PEBBLES	▽	PELECYPOD
ø	PELLETS	●	PHOSPHATE PELLETS	◇	PISOLITE	◈	PLANT REMAINS	P	PYRITE	⊞	SALT CAST/INFILL
∘	SAND GRAINS	⊡	SANDSTONE STRINGERS	∴	SANDY	♁	SCAPHOPOD	—	SHALE LAMINAE	^	SILICEOUS
⊟	SILTSTONE STRINGERS	--	SILTY	‖	SLICKENSLIDE	S	SPORES	Ⅲ	STROMATOPOROID	⎍	STYLOLITE
V	TUFFACEOUS										

POROSITY/SORTING/ROUNDNESS SYMBOLS

X	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	◣	CASING	◀	SIDEWALL CORE	▶	SIDEWALL CORE
▷	WIRELINE TEST	◁	WIRELINE TEST	⊤	GAS TO SURFACE	Ŧ	OIL TO SURFACE	▽	WATER TO SURFACE	●	EVEN STAINING
◑	SPOTTED STAINING	D	DEAD OIL	O	QUESTIONABLE	•	OIL SHOW	☼	GAS SHOW	✹	OIL AND GAS SHOW
CG	CONNECTION GAS	TG	TRIP GAS	▨	MIDNIGHT DEPTH	▧	MIDNIGHT DEPTH	▭	CONNECTION	–	OFF BOTTOM
⫽	NORMAL FAULT	⫽	REVERSE FAULT	↶	OVERTURNED STRATA						

BAR SYMBOLS

▨	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

INTERPRETIVE LITHOLOGY

TOTAL GAS (UNITS)

C1 PPM C2 PPM C3 PPM C4 PPM

DEPTH FEET

CUTTINGS LITHOLOGY

OIL SHOW T F G

0.0 MIN/FT 10.0

DRILLING 12 1/4" SURFACE HOLE

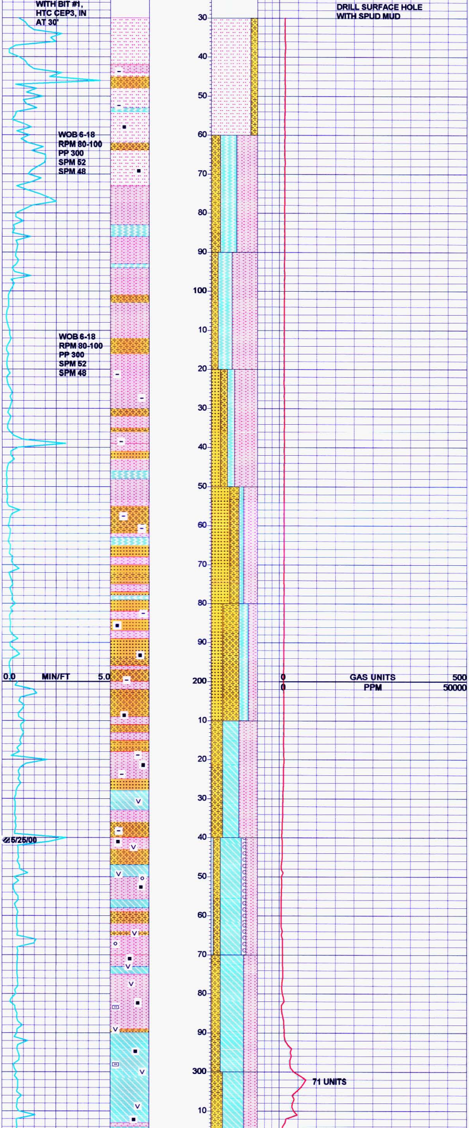
20

0 GAS UNITS 500

0 PPM 50000

0 PPM 50000

LITHOLOGY DESCRIPTIONS



Pason Systems MIT/PAL Unit
on location 5/24/00

COMMENCE LOGGING 1600 HOURS
5/24/00 @ 30'

SLTST: ltgy-dkgy-gybrn-tanbrn-tr glaugn, vf-f gr, sbrd-rd-sbang, mod-p srt, tr calc cmt, gr-mtx supt, arg incl, sme carb strg-incl w/ tr lse mat

SHLYSLTST: ltgy-dkgy-gybrn-crmtan, vf-fgr, sbrd-rd, sl sft-mod frm, rthy-gt, sme carb incl-strg, occ sh ss strg-intlam

SHSLTST: lt brn & lt gybrn sme vcol gr, pred vf gr qtz evenly-scat incl y & gmy mudstn, sme grdg to vf gr qtz ss, pred non-calc, abnt tuff & org infil/frag, tr pyr, mostly non-consol

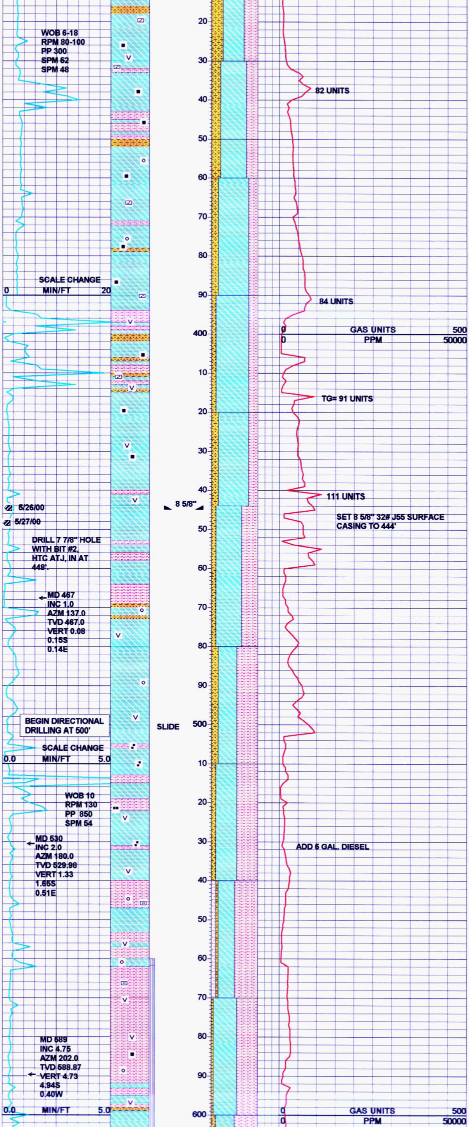
SS: ltgy-gybrn-trnsl-clr-fros-offwh-op-gl gy, vf-f gr w/ sme m gr, mod-p srt, fri-tr uncons, sbrd-rd-sbang, gr supt w/ sil cmt, sme arg incl, occ carb incl-lse mat, tr mic mica, NSFOC

SHLYSS: ltgy-dkgy-offwh-gybrn-clr-fros-gl gy-op, vf-fgr, sft-mod frm w/ tr uncons, mtx supt w/ sme gr supt, occ arg incl, abnt lse carb mat w/ sme strg-incl, tr mic mica, p intgran por, NSFOC

MUDSTN: brn bf op lt gy vcol grip, v sft, abnt tuffaceous frag & debris thru, scat-abnt ss gr-pred lse ang & gl, vcol orng & gn volc frag, sft cly non-calc mtx, abnt dk coaly-carb & org gr/frag

SHSLTST: lt brn & lt gybrn sme vcol gr, pred vf gr qtz evenly-scat consol incl y & gmy mudstn, smr grdg to vf gr qtz ss, pred non-calc, abnt tuff & org infil/frags, tr pyr, mostly non-consol

MUDSTN: brn bf op lt fgy vcol grs ip, v sft, abnt tuffaceous frags & debris thru, scat-abnt ss gr-pred lse ang & gl, vcol orng & gn volc frags, sft cly non-calc mtx, abnt dk coaly-carb & org grs/frag, pred grdg to a fragmental sltst



SHSLTST: ltbrn & ltgybrn vcolgrip, pred vfgr qtz evenly dism in cly & mudstn, sme grdg to vf gr qtz ss, pred non-calc, abnt tuff & org infil/frags, tr pyr, mostly non-cons, sme coaly/lignitic frags

GYCLYST/MUDSTN: gybrn ltgy m brn motip, pred vsft clayey sticky & gmy, abnt tuffaceous debris dk-blk organic lit frag, pred non-calc, scat op-clr ang qtz gr lse in mtx,

SHSLTST: lt-m brn ltgybrn vcolgrip, pred vfgr qtz evenly dism ip w/ cly & mudstn, sme grdg to vf gr qtz ss, pred non-calc, abnt tuff & org infil/frags, tr pyr, mostly non-consol, sme coaly/lignitic frag

GYCLYST: MUDSTN: brn bf ltfgy vcolgrip, v sft, abnt tuff frag & debris thru, scat-abnt ss gr-pred lse ang & op-clr, vcol orng & gn volc frags, sft cly non-calc mtx, abnt dk coaly-carb & org grs/frag, vslty

Wt=8.5 Vis=42 Wl=14.0 pH=12.0
Cl=1800 Ca=40 Sol=1% Ck=3/32

GYCLYST/MUDSTN: gy gybrn ltgy m brn motip, pred vsft clayey sticky & gmy, abnt tuffaceous debris dk-blk organic-lit frag, non-calc, pred insl in water scat op-clr ang qtz gr-lse,

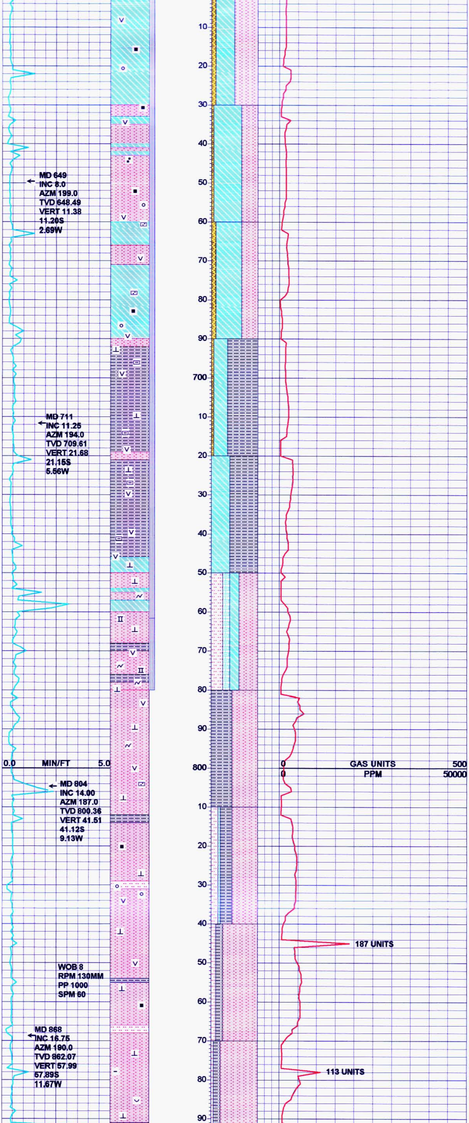
SHYSLTST: ltgy ltgnbrn, pred abnt debris-qtz gr tuffaceous frag carb & org gr, vsft-sticky & gummy mtx, noncalc

SHSLTST: ltbrn & ltgybrn sme vcolgr, pred vf gr qtz evenly-scat ing my mudstn, sme grdg to vf gr qtz ss, pred non-calc, abnt tuff & org infil/frag, tr pyr, non-cons

GYCLYST/MUDSTN: gy gybrn ltgy ltbrn ip, pred vsft clayey sticky, abnt tuffaceous debris dk-blk organic lit frag, non-calc, scat op-clr ang qtz gr-lse, v insl,

SHYSLTST/SLTST: lt-m brn ltgy, vf gr qtz grip abnt volc/tuff frag & debris, sme org/carb mat, fri thru, pred non-calc, v cly & stky insl mtx, sme sbrd-rd vf lse ss gr

SHSLTST: lt-m brn ltgybrn, pred vf gr qtz evenly dism in cly & mudstn, smr grdg to vf gr qtz ss, pred non-calc, abnt tuff & org infil/frags, tr pyr, mostly non-cons, lignitic frags, dk brn org/carb incl



GYCLYST: brnbfltfgydkbrnip,vsft,abnttuff frags&debristhru,scat-abntssgr-predlseang &op-clr,vcolorng&gnvolcfrags,sftclynon-calc&inslmtx,decrdkcoaly-carb&orggr/frag, vsltymatthru

SHSLTST: ltgyltgybrnm-dkbrnmotip,vsft-clayey&stickypredinsl,abnttuffdebris,vflserd sbrdssgr,dkcarb/orggr&vthnlam

LOG TOP KEASEY @ +-685'

SLTYSH: bcmpredmbrn,incrfrm,sbblky-blky occssgr,abnttuffmat,increvenlydismchlorite dkbrn-blkcarbmat,decrgummy&sticky,rthy-sltytextip,calc

SLTYSH: bcmpredmbrn,incrfrm,sbblky-blky occssgr,abnttuffmat,increvenlydismchlor,dk brn-blkcarbmat,decrgummy&sticky,rthy-sltytextip,calc

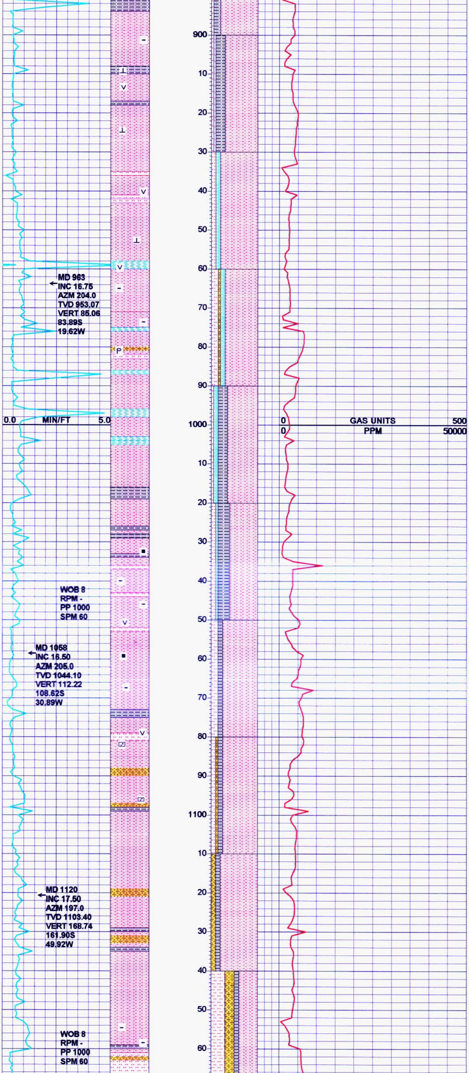
SLTST: ltgybfgybrnip,smblky&friclus,tuffgr thruscat-abntvfqtz,glauc/chlorgr,s&p carb/orggr,lsfragip,m-vcalc

SHSLTST: gybfltgybrniptryel,vfri-frmip,sme vfsbrdqtzgr,abntdebris-predtufffrags&dkorg mat,scat-abntchlor,mod-vcalc

SHSLTST: gybrn-ltgy-dkgy-crmbrn-dkbrn-tr gn,vf-fgr,sbrd-sbangw/smelsesbrdqtzgr, modfrm-fri-w/smesft,iregarginclw/tr-mod lmyincl,smesbrdcarbincl-flk,scat-abntchlor, smetufffrag

SHSLTST: gybrn-ltgy-dkgy-crmbrn-dkbrn-tr gn,vf-fgr,sbrd-sbangw/smelsesbrdqtzgr, modfrm-fri-w/smesft,iregarginclw/tr-mod lmyincl,smesbrdcarbincl-flk,scat-abntchlor, smetufffrag

SHSLTST: gybrn-ltgy-dkgy-crmbrn-dkbrn-,vf fgr,sbrd-sbangw/smelsesbrdqtzgr,modfrm-fri-w/smesft,iregarginclw/tr-modlmyincl, smesbrdcarbincl-flk,scatchlor,trsilgnincl, smelsessgr,trmicmica



SHSLTST: ltgy-glgy-dkgy-gybrn-crmtan,vf-f
gr,frm-fri,sbrd-sbang w/ smesbrd-rdqtzgr,
abnt-modarginclw/ smelmymtx,occcarbstrg
incl,occoffwh-mkywhtuffincl-gr

SHSLTST: ltgy-glgy-dkgy-gybrn-crmtan,vf-f
gr,frm-fri,sbrd-sbang w/ smesbrd-rdqtzgr,
abnt-modarginclw/ smelmymtx,occcarbstrg
incl,occoffwh-mkywhtuffincl-gr

Wt. 8.7 Vis 41 pH 8.5 Wl 8.4 Cl 1900
Ca 60 Sol 2.5% Ck 2/32

SHSLTST: ltgy-dkgy-glgy-gybrn-clrbrn,vf-fgr
fri-modfrm,sbrd-sbang,arginclthruw/ sme
lmymtx,smelgecarbinclw/ dismpyr,occgrdg
tosltst,trshss-ssstrg-intlam,tr-modinclchlor

SHSLTST: ltgy-dkgy-glgy-gybrn-clrbrn,vf-fgr
fri-modfrm,sbrd-sbang,arginclthruw/ sme
lmymtx,smelgecarbincl,occgrdgtosltst,tr
shss-ssstrg-intlam

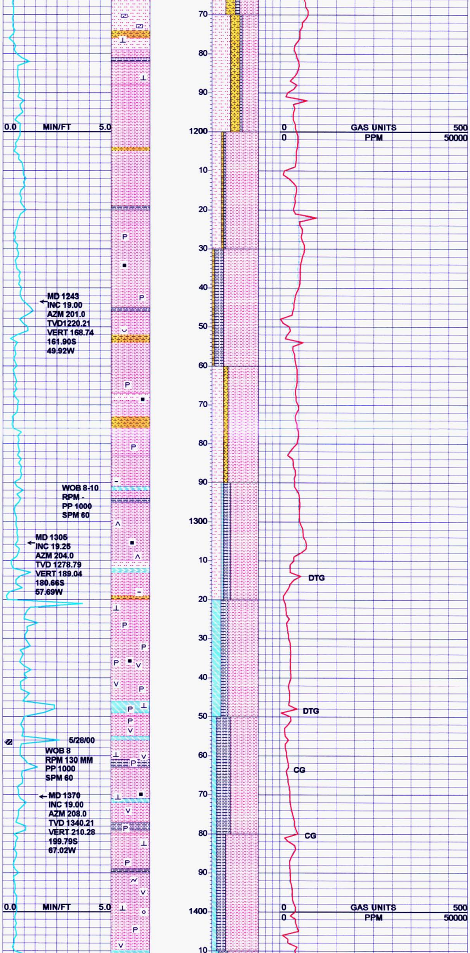
SHSLTST: ltgy-dkgy-glgy-gybrn-clrbrn,vf-fgr
fri-modfrm,sbrd-sbang,arginclthruw/ sme
lmymtx,smecarbincl-lsematthru,occgrdgto
sltst,smelsessgr,occchlorincl

SHSLTST: ltgy-dkgy-glgy-gybrn-clrbrn,vf-fgr
fri-modfrm,sbrd-sbang,arginclthruw/ sme
lmymtx,smecarbincl-lsematthru,occgrdgto
sltst,smelsessgr,occchlorincl

SHSLTST: dkgy-ltgy-gybrn-glgy-offbrn,S&P,
vf-fgr,psrt,sbrd-rdqtzgr,mod-trcalccmt,abnt
argincl,lrgsbangcarbincl,iregchlorgrthru,
grdgtosltst

SHSLTST: dkgy-ltgy-gybrn-glgy-offbrn,S&P,
vf-fgr,psrt,sbrd-rdqtzgr,mod-trcalccmt,abnt
argincl,lrgsbangcarbincl,iregchlorgrthru,
grdgtosltst

SHSS: offwh-clr-fros-trnsl-mlkywh,slS&P,vf-f
gr,sbrd-rd-sbang,mod-psrt,tr-modcalc,mtx
suptw/ smegrsupt,abnt-occarg-lmyincl,abnt
carbincl,occchlorthru,trgrdgtoss,pintgran
por,NSFOC



SHSS: offwh-clr-fros-trnsl-mlkywh,sl S&P,vf-f gr,sbrd-rd-sbang,mod-p srt,tr-mod calc,mtx supt w/ sme gr supt,abnt-occ arg-lmy incl,abnt carb incl,occ chlor thru,tr grdg to ss,p intgran por,NSFOC

SHSLTST: gybrn-ltgy-dkgy-glgy,gytan,sl S&P,vf-fgr,sme m gr qtz gr,sbrd-rd,sme ang-sbang carb incl w/ tr strg,tr calc cmt,abnt arg incl,sme grdg to sltst,sme clus dism pyr

SHSLTST: gybrn-ltgy-dkgy-glgy,gytan,sl S&P,vf-fgr,sme m gr qtz gr,sbrd-rd,sme ang-sbang carb incl w/ tr strg,tr calc cmt,abnt arg incl,sme grdg to sltst,sme clus dism pyr

SHSLTST: gybrn-ltgy-dkgy-glgy,gytan,sl S&P,vf-fgr,sme m gr qtz gr,sbrd-rd,sme ang-sbang carb incl w/ tr strg,tr calc cmt,abnt arg incl,sme grdg to sltst,sme clus dism pyr

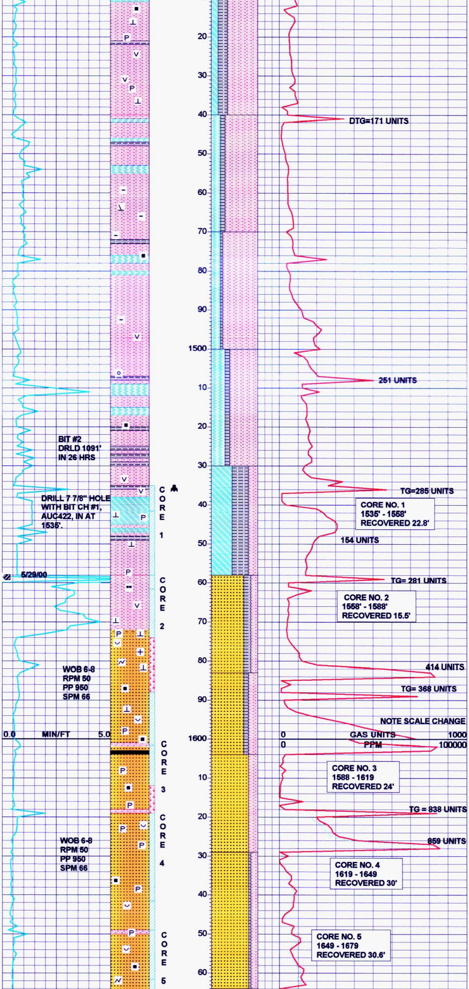
SHSLTST: dkgy-ltgy-glgy-brngy-dkbrn-tr mot chocbrn,tr S&P,vf-fgr,tr lse sbrd qtz gr,mod srt,rthy gtip,sme ss intlam,occ carb incl-flk,tr chlor thru

LOG TOP COWLITZ @ 1323'

SHSLTST: ltgybrn ltgy,sft fri,pt vf ss qtz,abnt pk-dk tuff debris,bcm incr sticky-gummy pyr thru,mnrl calcite pos frac fl,microfos frag,arg mtx

SHSLTST: dkgy-ltgy dkbrn-tr mot chocbrn,tr s&p,vf-fgr,tr lse sbrd qtz gr,mod srt,rthy-gtip, sme ss intlam,occ carb incl-flk,chlor/glau,bcm v stky-gummy,abnt pyr clus

SHSLTST: ltgy occ gybrn,sft fri,sml blky clus, sme vf qtz,abnt debris-lt-pk tuff scat org mat abnt pyr clus,calc,sft-clayey & sticky mtx,chlor, tr chocbrn mat



SHSLTST:dkgy-ltgydkbrn-trmot,trs&p,vf-fgr trlsesbrdqtzgr,modsrt,rthy-gtip,sme,occcarb incl-flk,chlor/glau,bcmvstky-gummyip,abnt pyr

DMA
Wt. 8.8 Vis 42 pH 8.5 Wl 7.0 Cl 2000
Ca 40 Sol 3% Ck 2/32

SHSLTST:dkgy-ltgydkbrn-trmot,trs&p,vf-fgr trlsesbrdqtzgr,modsrt,rthy-gtip,sme,occcarb incl-flk,chlor/glau,bcmvstky-gummyip,abnt pyr

SHSLTST:dkgy-ltgydkbrn-trmot,trs&p,vf-fgr trlsesbrdqtzgr,modsrt,rthy-gtip,sme,occcarb incl-flk,abntargintrw/trsmecalccmt,sme grdgtosltysh

SHSLTST:dkgy-ltgydkbrn-trmot,trs&p,vf-fgr trlsesbrdqtzgr,modsrt,rthy-grtyip,sme,occ carbincl-flk,abntargintrw/trsmecalccmt, smegrdgtoSLTYSH

DMA
Wt. 8.9 Vis 44 pH 8.5 Wl 6.5 Cl 2000
Ca 40 Sol 4% Ck 2/32

CLAYST:lt-mgyincrdkgy,predsft-vsft,incr cly-gummt,rthy,smetuffincl,smemnrlcalc, abntpyrclus,thnltsltylam,incrchlornods,occ dkcoaly/carbincl

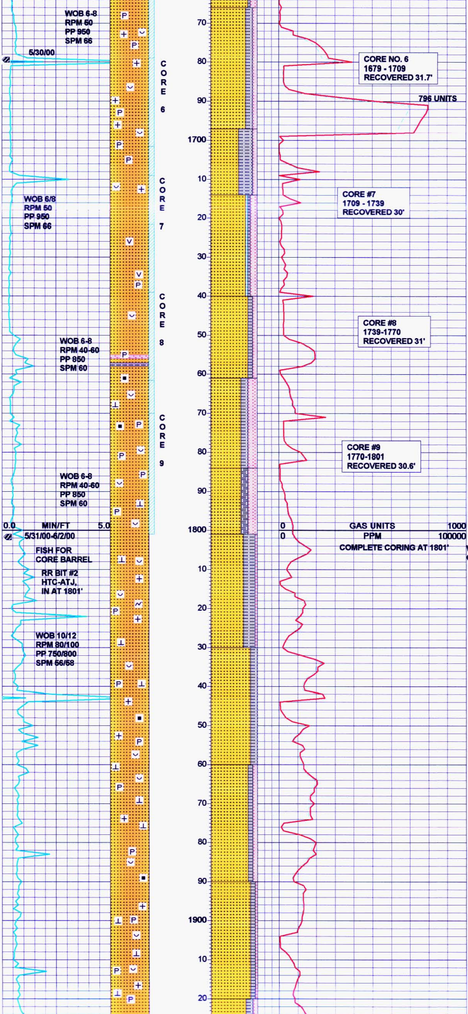
SS:oplt-mgytrnslsmokyips&pip,vf-f-mgr,m-psrt,predangsbangip,m-vcalc,chlor-glauthru scatpyrclstrs,abntfeldgrs,micathru,thndk carb/orglam&gr,visporip,ttip

LOG TOP C & W SAND @ 1576'

SS:trnsl-clr-fros-op-glgy-offwh,S&P,vf-fgr, sbrd-rdw/occsbang,predfriclusw/smelse unconsmatthrugrsuptw/trargincl,sme-tr calccmt,abntcarbinclw/smelsemat,occ dismpyrclus,trmicmica&biot,trlsecoalw/ smple,mod-gintgranpor,NSFOC

SS:trnsl-clr-fros-op-glgy-offwh,S&P,vf-fgr, sbrd-rdw/occsbang,predfriclusw/smelse unconsmatthrugrsuptw/trargincl,sme-tr calccmt,abntcarbinclw/smelsemat,abnt dismpyrclus,trmicmica&biot,mod-gintgran por,NSFOC

SS:trnsl-clr-fros-op-glgy-offwh,S&P,vf-fgr w/smelsemgr,sbrd-rdw/occsbang,predfri clusw/smelseunconsmatthrugrsuptw/tr argincl,sme-trcalccmt,abntcarbinclw/sme lsemat,abntdismpyrclus,trmicmica&biot, mod-gintgranpor,NSFOC



SS: oplt-mgy trnsl smoky ips&pip, vf-f-mgr, m-psrt, predang sbang ip, m-vcalc, chlor/glau thru scat pyr clus, abnt fld gr, mica thru, thn dk carb/org lam & gr, good vis por thru

DMA
Wt 8.8 Vis 38 pH 8.5 Wl 6.4 Cl 2100
Ca 40 Sol 3% Ck 2/32

SS: oplt-mgy trnsl occ clr incr S&P, vf-mgr, msrt, predang, gr supt w/ mnr arg infil ip v calc ip, scat-abnt chlor/glau, abnt pyr clstrs, feld gr thru, dk carb/org grs, sme vis por, scat mnrl calcite, NSOFC

SS: trnsl-op-clr-fros-ltgy-offwh-glgy, S&P, vf-mgr, msrt, sbang-ang w/ sme sbrd, fri-lse uncons thru, gr supt w/ sil cmt, tr-mod mnrl calcite, abnt dism pyr clus, abnt carb mat-flk, mod intgran por, NSFOC

SS: trnsl-op-clr-fros-ltgy-offwh-glgy, S&P, vf-mgr, msrt, sbang-ang w/ sme sbrd, fri-lse uncons thru, gr supt w/ sil cmt, tr-mod mnrl calcite, abnt dism pyr clus, abnt carb mat-flk, mod intgran por, NSFOC

SS: ops&plt-mgy trnsl occ clr incr, vf-mgr, msrt predang, gr supt w/ minor arg infil ip v calc ip, abnt chlor, abnt pyr clus, fld gr thru, dk carb/org gr, sme vis por

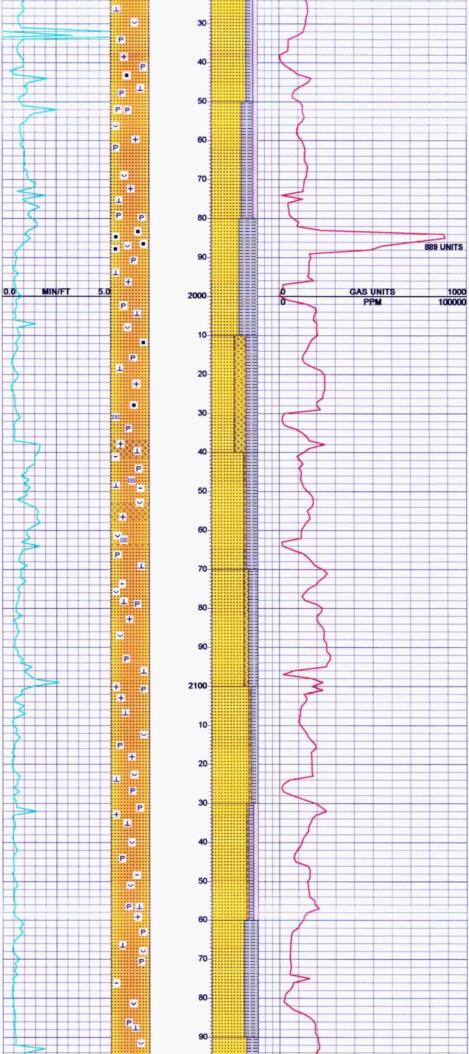
Wt=8.7 Vis=36 Wl=6.6 pH=8.5 Cl=2100
Ca=40 Ck=2/32 Sol=2.5%

SS: trnsl-clr-fros-ops&pip, vf-fgr, sbrd-rd w/ occ sbang, pred fri clus w/ sme lse uncons mat thru, gr supt w/ tr arg incl-pred cln, calc cmt ip, abnt carb incl w/ sme lse mat, occ dism pyr clus, tr mic mica & biot, vis mod-g intgran por ip

SS: lt-mgy mottled op clr ips&pip, pred Uf-Lm gr, m-wsrt, sbang-ang, mod-v calc cmt/mtx, scat-abnt pyr clstrs, chlor spec, mica flk thru, sme scat dk carb/org gr, mnr arg infil, fri thru, abnt fld gr, sme vis por

SS: lt-mgy mot op clr ips&pip, pred Uf-Lmgr, m-wsrt, sbang-ang, mod-v calc cmt/mtx, scat-abnt pyr, chlor ip, mica flks thru, sme scat dk carb/org gr, mnr arg infil, fri thru, feld grs, sme tt clus, sme g por

SS: oplt-mgy occ clr incr S&P, vf-mgr, msrt, pred ang, gr supt w/ mnr arg infil ip v calc ip, scat chlor, abnt pyr clus, feld grs, dk carb/org gr, sme vis por, scat mnrl calc



SS: pred gy op ip trs & p, pred f-m gr, m-w srt, ang sbang ip, fri thru w/ wk calc cmt & v mnr arg infil, abnt incl-mica fld gr chlor pyr clus, sme org/carb mat & gr, vis por ip

SS: lt-m gy op clr ip s & p ip, pred Uf-L m gr, m-w srt, sbang-ang, mod-v calc cmt/mtx, abnt pyr clus & mtx thru, chlor spec, mica flks thru, sme scat dk carb/org grs, mnr arg infil, fri thru, abnt fld gr, vis por ip, incr cavings

SS: aa, incr-abnt dk brn-blk lignitic/coaly frag

SS: lt-m gy op ip trs & p, pred f-m gr, m-w srt, ang sbang ip, fri thru w/ wk calc cmt & v mnr arg infil, abnt incl-mica fld gr chlor pyr clus, m sme org/carb mat & gr, vis por ip, incr slty sh in samp-pos cvgs

SS: pt pred aa, pt bcm vf gr & slty, incr-abnt intgran cly-bcm sticky & gummy, calc, pyr clus thru, mica fld gr chlor ip, mnr tuff mat, tip vis por i

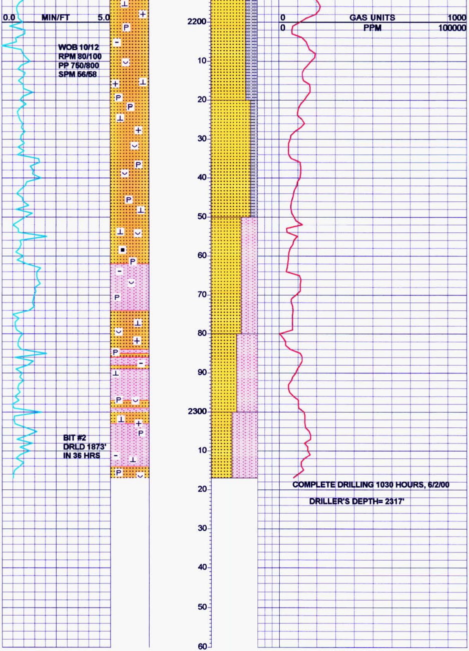
SS: wh gy op s & p bcm brn ip, vf gr & slty ip f-m gr ip, pred v fri, drty-slty ip, mica abnt pyr clus, sme chlor, incr v dk brn-blk carb/lig/org gr, sme cln w/ vis por

SS: wh gy op s & p brn ip, vf gr & slty ip f-m gr ip, pred v fri, drty-slty ip, mica pyr clus, occ chlor, incr v dk brn-blk carb/lig/org gr, sme cln w/ vis por, coal lam & ptgs

SS: op lt gy lt brn incr lt-dk gn, bcm incr f-m gr, m-w srt, ang sbang ip, decr mica incl ip, incr-abnt chlor w/ sme glau, fld gr thru, pyr clus & intgran pyr repl thru, mnr arg & slty infil, v calc & fri, sme g vis por

SS: op lt gy lt brn incr gn, incr f-m gr, m-w srt, ang sbang ip, decr mica, incr-abnt chlor w/ sme glau fld gr thru, pyr clus & intgran pyr repl thru, mnr arg infil, v calc & fri, vis por ip

SS: lt-m gy mot op clr ip s & p ip abnt gn, pred Uf-L m gr, m-w srt, sbang-ang, mod-v calc cmt/mtx, scat-abnt pyr, chlor, mica flks thru, sme scat dk carb/org gr, mnr arg infil, fri thru, fld gr, sme tt clus, g por ip



WOB 10/12
RPM 80/100
PP 750/800
SPM 56/58

BIT #2
DRLD 1873'
IN 36 HRS

COMPLETE DRILLING 1030 HOURS, 6/2/00

DRILLER'S DEPTH= 2317'

SS: opltgyltbrngn,incrf-mgr,m-wsrt,ang sbangip,decrmica,incr-abntchlorw/smeglau fldgr,pyrclus&intgranpyrreplthru,mnrarginfil vcalc&fri,f-gvisporip

SS: opltgyltbrngn,incrf-mgr,m-wsrt,ang sbangip,decrmica,incr-abntchlorw/smeglau fldgr,pyrclus&intgranpyrreplthru,mnrarginfil fri,f-gvisporip,incr-abntcalc&whcly

SS: lt-mgyopclrips&pip,predf-m-occcgr,m-wsrt,sbang-ang,mod-vcalccmt/mtx,abntpyr clus&mtx,chlorspec,micaflks,smescatdk carb/orggr,mnr-modwhclyinfil,frithru,abntfld gr,occvispor

SHSLTST: predlt-mbrn,mfrmip-sft,predgran &hklytext&grdgtosh,smesdylam,m-vcalc, abntmtxpyr,smechlor/glau,thndkligflk&lam, thnbdgip,

SHSLTST: incr-abntchocbrnlt-mbrn,mfrmip -sft,predgran&hklytext&grdgtosh,smesdy lam,m-vcalc,abntmtxpyr,smechlor/glau,thn dkligflk&lam,thnbdgip

DMA
Wt 8.8 Vis 38 pH 8.0 Wl 6.6 Cl 2100
Ca 40 Sol 3% Ck 2/32