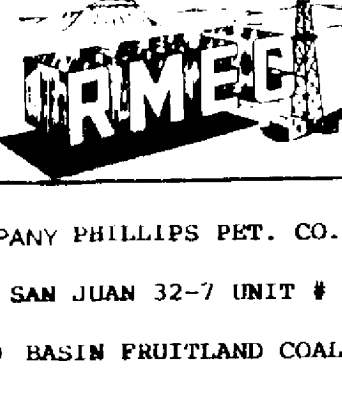




ROCKY MOUNTAIN GEO-ENGINEERING CO.

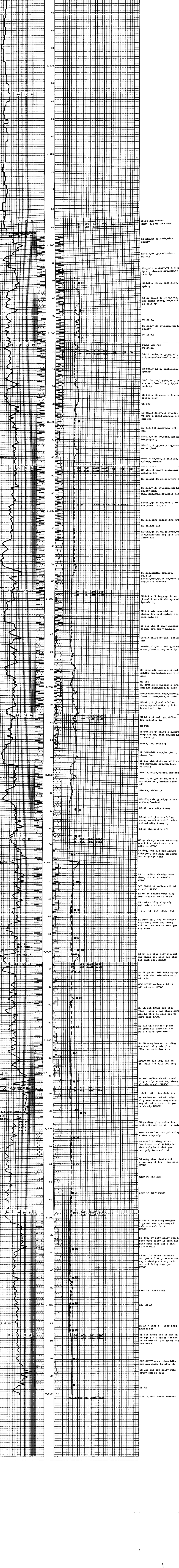
WELL SITE GEOLOGY - MUD LOGGING

2450 INDUSTRIAL BLVD. PHONE (303) 243-3044 GRAND JUNCTION, CO 81505

RECEIVED SEP 03 1991 OK CON. DIV DIST. 3

COMPANY PHILLIPS PET. CO. LOCATION 735' FSL & 761' PBL. DEPTH LOGGED FROM 8150' TO 9500'. WELL SAN JUAN 32-7 UNIT # 301 SMD COUNTY SAN JUAN DATE LOGGED 8-9-91 8-18-91. FIELD BASIN FRUITLAND COAL STATE NEW MEXICO ENGINEERS ANDY CHOQUETTE JIM DICUSON. ELEVATION GR 6758 KB 6775 DRILLING FLUID H₂O & GEL.

LEGEND: SHALE, SANDSTONE, LIMESTONE, DOLOMITE, CHERT, SALT, COAL, ANHY. GYP, SILTSTONE.



DRILLING RATE IN MIN / 2 FT. 5 10 15 20. INTERPRET. 10 15 20. REMARKS: 20:00 HRS 8-9-91 UNIT #24 ON LOCATION. SH-blk,dk gy,carb,mica,spinty. SS-gy,lt gy,bngy,vf g,slty ip,arg,abang,m srt,frm,sl calc ip. SS-blk,v dk gy,carb,mica,spinty. SS-gy,bn,lt gy,vf g,slty, arg,abnd-abang,frm,m srt, sl calc ip. TR SS-AA. SH-blk,v dk gy,carb,frm-hrd spinty. TR SS-AA. ABNDT WHT CLY. TR SS-AA. SS-lt bn,lt gy,gy,vf g, slty,arg,abnd-rnd,m srt,frm. SH-blk,v dk gy,carb,mica,spinty. SS-lt bn,lt gy,gy,vf g,abnd m w srt,frm-fri, arg ip,sl carb ip. SH-blk,v dk gy,carb,frm-hrd,spinty-biky. TR PYR. SS-bn,lt bn,gy,lt gy,clr, vt-crs g,abnd-abang,p-m srt,frm-fri. SS-clr,f-m g,abnd,w srt,frm. SH-blk,v dk gy,carb,frm-hrd, biky-spinty. SS-clr,lt gy,wh,vt g,abnd m srt,frm. SH-AA & gn,wh,lt gn,fiss, spinty,frm-hrd. SS-wh,lt gn,vf g,abang,m srt,frm-hrd. SH-gn,wh,lt gn,sil,whrd-hrd. SH-blk,v dk gy,carb,frm-hrd spinty-biky. COAL-blk,shny,bri,brit,biky. SS-wh,gn,lt gn,vf-f g,mw srt,abnd,hrd,sil. SH-blk,carb,spinty,frm-hrd. SH-gn,hrd,sil. SS-wh,gn,lt gy,gy,gybn,vf-f g,shang-ang,arg ip,m srt, frm-v hrd. SH-blk,abiky,frm,slty, calc ip. SS-clr,wh,gn,lt gn,vf-f g ang,m srt,frm-hrd. SH-blk,v dk bngy,gn,lt gn, pk-sal,frm-brit,shbiky,carb ip,calc ip. SH-blk,vdk bngy,abfiss-shbiky,frm-brit,spinty ip, carb,calc ip. SS-clr,wh,lt gn,f g,shang-ang,mw srt,frm-v hrd,sil. SH-blk,gn,lt pk-sal, sbfiss frm. SS-wh,clr,bn,v f-f g,shang m srt,frm-hrd,hvy mtrix ip. SH-pred vdk bngy,gn,pk,sal, shbiky,frm-hrd,mica,carb,sl calc. TR PYR. SS-lwh,vt-f g,abang,m srt, frm-hrd,carb,mica,sl calc. SH-predbik-vdk bngy,shbiky, frm-hrd,carb,mica,sl calc. SS-wh,lt pk,sal,vf-f g, shang,mw srt,slty ip,fri-hrd,sl calc ip. SH-AA & pk,sal, gn,abfiss, frm-hrd,slty ip. TR PYR. SS-wh,lt gn,pk,vf-f g,shnd m-w srt,hvy mtrix ip,frm-hrd sl calc ip. SS-AA, occ m-crs g. TR COAL-blk,shny,bri,brit, chonc frac. SS-clr,wh,vt,lt gy,vf-f g, ang-shnd,mw srt,frm-hrd, calc-sil. SH-blk,rd,gn,sb,frm-hrd. SS-clr,wh,vt,lt bn,vf-f g, shang,mw srt,frm-hrd,calc-sil. SS-AA, abndt pk. SH-blk,v dk gy,rd,gn,fiss-abfiss,frm-hrd. SS-AA, occ slty & arg. SS-wh,rd,pk,cm,vf-f g, shang,mw srt,frm-hrd,calc-sil,rd slty & arg ip. SH-gn,shbiky,frm-sft. SS gn wh cgr v cat rd shang p srt frm hd sl calc sil slty ip NF50C. SH dky dul blk occ ltygn flky pty occ biky m shway occ rthy rgh carb. SS lt redbrn wh vfgr wcat shang sil hd tt slcalc NF50C. OCC SLTST lt redbrn sil hd sl calc NF50C. SS wh lt redbrn vfgr slty wcat ang sil hd tt NF50C. SH redbrn biky slty sdy rgh calc - sl calc. 8.9 44 8.4 2/32 9.5. SS pred wh / occ lt redbrn vfgr slty wcat ang shang sil dol hd whd tt abnt pyr xls NF50C. SS wh clr vfgr slty w-m cat ang-shang sil calc occ dky blk carb incl NF50C. SH dk gy dul blk biky spity hd brit abnt mic mica carb sl calc. OCC SLTST redbrn v hd tt sil sl calc NF50C. SS wh clt trnsal occ ltyg vfgr - slty w cat shang shrd sil hd tt v sl calc occ pp carb spks NF50C. SS clr wh vfgr m - p cat rd shrd sil calc fri occ pp blk carb spks NF50C. SH SH ong brn gn occ dky occ carb slty sdy pty flky occ calc-lwy mica. SLTST wh clr ltyg sil hd tt calc - v calc occ shly. SS red redbrn wh clr trnsal slty - vfgr w cat ang shang sl calc - calc NF50C. 8.9 41 9.6 2/32 9.5. SS redbrn wh red clr vfgr slty wcat - wcat ang shang arg sil sl - n calc tr pyr tr wh cly NF50C. SH gy dky pty spity frm brit slty sdy ip sl - m calc. ANHY wh off wh occ pnk chiky / abnt slty sdy. LS crm ltrndky alxcl shu / occ intal g biky hd abnt shly brit abnt pyr occ grdg to v calc sh. SS ong vfgr shrd w srt m cat arg tt fri - frm calc NF50C. ABNT TR PYR XLS. ABNT LS ANHY CVNGS. SLTST lt - m orgn orgnbn ltyg ark clr qtz arg sil calc - v calc hd tt NF50C. SH dky gy pty spity frm hd brit carb slty ip abnt mic mica abnt carb lam & incl sl - v calc. SS wh clr ltrn ltrndbrn occ pnk & f vf gr m - w cat ang - shrd p srt arg calc occ sil fri g ingr por NF50C. ABNT LS, ANHY CVGS. SS, SH AA. SS AA / incr f - vfgr bcwg pred m srt. SS clr trnsal occ lt pnk wh vf gr m - w cat m - w srt tt wh cly fil arg ip sl calc frm NF50C. OCC SLTST orgn rdbrn biky sdy arg grdg to slty sh. SH var red brn spity rthy - shway frm sl calc. SS AA. T.D. 9,500' 16:48 8-18-91.