RESUME

Operator: Union Pacific Resources Company

Well Name and Number: #1 Benz 11-24

Prospect: Mercedes 380

Location: Section 24, 1056' FNL, 791' FWL; T-16S, R-52W

County and State: Lincoln County, Colorado

Elevation: GL: 4653', KB: 4663'

Spud Date: January 13, 1992

Completion Date: January 25, 1992

Exploration Geologist: Mark P. Germinario

Drilling Foreman: Jack Parrott, John Ritz

Wellsite Geologist: John C. Lamb

Contractor: Murfin, Rig 25

Tool Pusher: Gus Schwartz, Matt Finnesy

Mud Type: Chemical-Gel

Mud Company: MSI, Rich Steinbrink, Dusty Rhoades

Hole Sizes: 12 1/4": 0-500'; 7 7/8": 500'-6075'

Surface Casing: 8 5/8' set at 495'

Logs Run: DIL/GR, SDL/CDN/ML/GR, Sonic; HLS, LIberal, Kansas

Total Depth: Driller: 6275', Logger: 6273'

Drilling Days: 11

Rotating Hours: 200 1/2

Bottom Formation: Mississippian Spergen

Status: Dry & Abandoned

FORMATION TOPS AND CORRELATION

	UPRC 1 Benz 11-24 24-16S-52W KB 4663	UPRC 1 Mercedes 32-14 14-15S-52W KB 4661
	E-Log	E-Log
DAKOTA	1728(2935)	1890(2771)
CHEYENNE	1904(2759)	2181(2481)
BLAINE SALT	2852(1811)	3026(1635)
STONE CORRAL	3180(1483)	3322(1339)
NEVA	3840(823)	3973(688)
FORAKER	3922(741)	4056(605)
SHAWNEE	4322(341)	4317(344)
HEEBNER	4562(101)	4681(-20)
TORONTO	4588(75)	4696(-35)
LANSING	4612(51)	4712(-51)
MARMATON	4971(-308)	5050(-389)
CHEROKEE	5099(-436)	5195(-534)
ATOKA	5335(-672)	5415(-754)
MORROW SHALE	5638(-975)	5712(-1051)
V7 MARKER	5760(-1097)	5834(-1173)
V7 SAND	Not Deposited	5840(-1179)
L. MORROW LS.	5840(-1177)	5916(-1255)
SPERGEN	6014(-1351)	6057(-1396)
TOTAL DEPTH	6073	6115

BIT RECORD

BIT	SIZE	TYPE	IN	OUT	FOOTAGE	HOURS
1	12 1/4"	FDT	0'	500'	500'	6 3/4
2	7 7/8"	ATJ05C	500'	2880'	2380'	32
3	7 7/8"	ATJ22	2880'	6045'	3165'	158 1/4
4	7 7/8"	ATJ11C	6045'	6075'	30'	3 1/2

SURVEYS

128 1/2	500 1/2	2615 3/4	4409 1 1/4
218 1/2	1064 3/4	2880 1 1/4	4994 1/2
309 1/2	1576 1	3356 1	5490 1
397 1/2	2119 1/2	3852 1 1/4	6075 2

MUD REPORTS

DATE	1-19	1-20	1-21	1-22	1-23
DEPTH	4525	4945	5255	5595	5965
WT	9.2	9.3	9.2	9.3	9.3
VIS	40	36	48	47	45
PV	12	6	18	20	20
YP	6	8	12	14	16
GEL	4/12	4/10	10/12	12/26	12/28
WL	12.8	9.6	9.4	7.6	8.0
CK	2	2	2	2	2
Sol	6.3	7.0	6.5	7.0	7.0
Sd	tr	tr	tr	tr	tr
pH	11.0	10.5	11.0	11.0	10.5
Alk pf/mf	.5/.7	.3/.4	.45/.6	.4/.55	.15/.4
Chl	450	425	400	350	300
Cal	80	100	120	130	80
LCM	2	3	3	2	2

DAILY CHRONOLOGY

	DATE	7AM DEPTH	FOOTAGE DRILLED	ACTIVITY
DAY 1	1-13	0'	0'	RU, drlg
DAY 2	1-14	500	500'	drlg, run & cem csg, WOC, NU, drlg, LC
DAY 3	1-15	1720'	820'	drlg, LC, drlg
DAY 4	1-16	2880'	1160'	drlg, TFB, drlg
DAY 5	1-17	3600'	720'	drlg
DAY 6	1-18	4175'	575'	drlg, LC, drlg
DAY 7	1-19	4600'	425'	drlg
DAY 8	1-20	5000'	400'	drlg
DAY 9	1-21	5315'	315'	drlg
DAY 10	1-22	5690'	375'	drlg
DAY 11	1-23	6036'	346'	drlg, TFB, drlg, prep to log, logging
DAY 12	1-24	6075'	39'	logging, circ & prep to DST
DAY 13	1-25	6075'	0'	DST, plug

LOST CIRCULATION INTERVALS

775' 250 bbl 2025 100 bbl 2728 200 bbl 4116 150 bbl 4530 50 bbl

SUMMARY

The #1 Benz 11-24 was drilled on the Mercedes 380 Prospect. The location was based upon siesmic interpretation. Primary objectives were the Morrow V7 & V11 Channel Sands.

Total Morrow Clastic Interval was 202'. No Morrow Sands were encountered. However, numerous non marine intervals were penetrated. Please refer to the Sample Descriptions portion of this report and the strip log for particulars.

Within the uppermost portion of the Spergen, a fair to good show with a strong (1200 units) gas increase was encountered. Description: Dolomite very light brown to brown, coarse to very coarse crystalline to finely granular, very friable, frequent traces poor to fair intercrystalline porosity with possible traces very good porosity, 60% of sample with light to moderately heavy oil staining, moderately bright to bright greenish yellow fluorescence, fair to good streaming green cut. In the sucessive samples, the percentage of show decreased substancially. This interval was drill stem tested after logs, with mud being recovered.

Minor, non productive shows were recorded within the Shawnee, Lansing and Cherokee Formations.

SAMPLE DESCRIPTIONS
Unlagged Sample Depths & Electric Log Tops

4010 Sh rd & gy /abdt Gyp Dol fr amt buf-pnk fxl frm brit sli arg
4020 No Sample
4030 Sh rd & gy /incr gn sft sdy Dol def decr amts
4040 Sh rd & gy /def incr dk gy carb
4050 Sh rd & gn & gy Sltst buf blky vsdy grds to Ss
4060 Sh rd & gn & gy
4070 Sh rd & gy /decr gn
4080 Sh def incr dk gy fn txt
4090 Sh rd & gy & gn Sltst sli incr /amts sli incr Ss lt gysh buf l.vfg-slt vsft pr cons
4100 Sh rd & gy Ls sli tr wh vfxl sparry app
4110 Sh cont'd Ls cont'd tr's AA /sme vslty-sdy
4120 Sh rd & gy Ls decr tr's Ss freq uncon cg-mg
4130 Sh rd & gy & gn
Note: Begin Displacement of Mud System
4140 Ss lrg incr uncon cg-mg /sme Kspar grns
4150 Ss cont'd incr
4160 Sh rd & gy /hvy amt Sd
4170 Sd hvy amt amt
4180 Ss lrg decr Ls def incr to sm amt: buf vfxl sparry & fos i.p. pred dns frm Sh rd /sme vdk gy-blk mod carb
4190 Ls buf-lt tn vfxl decrly sparry & fos

T. WAUBUNSEE 4188'

4200 Ls cont'd sli incr AA Sh rd slty-fn txt /occ dk gy
4210 Ls incr & sli chng: lt gysh micxl-vfxl sli arg dns sli rthy txt
4220 Ls cont'd amt lt tn-lt gysh micxl-vfxl incrly fos i.p.
4230 Ls off wh-lt tn-lt gysh vfxl-micxl decrly fos /occ blky spar xl's
4240 Ls sli decr amts AA
4250 Ls cont'd sli decr amts Sh rd /occ gy's
4260 Sh pos incr blk-vdk gy mod carb Ls lt gysh tn-lt tn micxl incrly sparry & fos
4270 Ls lt tn micxl mod sparry /indist fos
4280 Ls lt tn-off wh micxl decrly sparry & fos
4290 Ls lt tn-lt gysh wh micxl /freq blky spar xl's
4300 No Sample

4310 No Sample
4320 Sh vhvy amt rd vslty-sdy Ls def decr
4330 Sh & Ls cont'd amts

T. SHAWNEE 4322'

4340 Ls chng: lrg incr: lt gy-sli pnksh micxl-vfxl sli mod arg
4350 Ls cont'd incr lt gy arg /decr pnksh
4360 Ls chng: bec sdy /gen decr amts Sh incr rd
4370 Sh vsm amt blk-vdk gysh blk blky carb /dism pyr
4380 Ls lt gy-off wh micxl-vfxl sli-mod arg /sme cln'r app
4390 Ls cont'd lt gy fos /pos sli chng: wh-off wh fxl-sb chky /rthy txt
4400 Ls lt gysh wh vfxl-micxl incrly sdy & cont'd fos
4410 Ls def chng: gy-dk gy micxl dns brit arg vfos i.p. Dol hvy tr tr bnsh cxl-mxl tr pr vug poro NSOC Sh sli tr blk carb
4420 Ls cont'd gy's arg /chng: bec fxl-mxl i.p. indist fos /hvy tr's pr-fr vug poro NSOC
4430 Dol incr: bnsh gysh mxl-cxl sft-fri pred /spotty tarry carb stn NSFOC
4440 Dol def decr Sh def incr tr's blk vcarb Ls lt-m-dk gy micxl-vfxl dns arg-varg pos sli frag /Sh rip ups
4450 Ls def chng: off wh-gysh wh fxl-vfxl occ rthy txt occ vsparry & vfos Sh cont'd sm amt blk /incr rd's Dol pos sli incr amts AA
4460 Sh pos sli incr blk /cont'd amt rd's Ls cont'd off wh-lt gysh wh /pos chng: bnsh micxl vdns
4470 Dol incr: off wh-buf cxl-mxl-fxl dns vfrm-hd fri Sh def decr rd /pos incr blk
4480 Dol cont'd AA /pos sli decr amt sme /dull gn flor & vfnt gn crush ct Ls incr & chng: wh-off wh micxl dns freq sdy (?lam?)
4490 Dol incr wh-buf mxl dns hd Ls decr Sh cont'd sm amt's blk carb
4500 Ls pos incr amts /chng: sm amt sdy Dol prob decr Ss vsm amt clus: wh vfg calc cem
4510 Ls pred off wh-lt gysh wh fxl-vfxl dns sli-mod fos /cont'd sm amts off wh-lt tn vfxl mod sdy Sh sm amt blk /cont'd hvy amt rd's
4520 Sh def incr blk vcarb Dol incr off wh-lt tnsh bn fxl-mxl fri-sli sft pred calc grds to dolic Ls i.p. Ls lt-m gysh bn vfxl-micxl gen dolic frag app i.p. arg
4530 Ls chng: incrly sdy i.p. Dol sli decr Ss sm amt off wh-wh fg-vfg calc cem Sh cont'd amt blk vcarb
Note: Lost 50 bbl mud 4530
4540 Sh lrg incr rd /cont'd blk Ls cont'd incr amts sdy Ss incr AA
4550 Ls off wh-lt gysh wh micxl-vfxl vsdy
4560 Note: Very Poor Sample Btottoms Up From LC: abdt Sd & rd Sh
4570 AA
4580 Ls lrg incr: wh-off wh pred micxl-vfxl non arg dns mod ool?fos /freq pr-fr moldic poro NSOC
4590 Ls chng: bec less dns & incrly arg: lt gysh wh-lt-m gy micxl-vfxl arg gen dolic freq frag /Ls rip ups
4600 Poor Sample Sh incr rd /uncon Sd Sh pos sli incr blk vcarb Ls off wh-lt gysh wh micxl-vfxl mod-vsparry freq vfos Ss freq clus: lt gysh wh vfg-l.fg calc cem

T. LANSING 4588'

4610 Ls lt gysh wh incrly fos grds to Wkst & Pkst rgh txt Sh vhvy amt rd /sme blk-gy

4620 Sh cont'd hvy amt rd's Ls off wh-lt gysh micxl-vfxl mod-vfos sli arg pos sli amt ool
4630 Ls chng: bec gysh micxl dns arg
Note: Sample Quality Improving
4640 Ss freq clus: gysh wh l.fg-vfg calc cem Ls decrly arg & bec dolic Dol fr amt: buf-off wh mxl-fxl dns calc Sh sli incr blk
4650 Ls chng: vlt gysh wh vfxl-micxl ool Wkst-Pkst mod sparry /cont'd amts sdy-vsdy AA Dol sli decr
4670 Ls cont'd pred fos freq sdy /sli incr amts ool
4670 Sh incr rd's cvngs? Ls cont'd pred fos /sm incr amts vsparry & ool
4680 Ls chng: off wh-lt gysh micxl-vfxl sli fos sdy /decr ool Sh pos sli incr gy fn-slty & sdt
4690 Ls chng: incrly dolic & grdg to Dol
4700 Ss sm amts: gysh wh l.fg-vfg hd non fri sil cem sli calc
Sh incr gy & rd Ls incrly arg & sdy bec vsil-chty Cht gysh smi trnsl-opq sli fos
4710 Sh def incr blk carb /abdt rd bd's Cht vfreq amt AA
4720 Sh vabdt rd bd's Ls chng: bec ool & incrly arg
4730 Ls lt gysh wh-lt gy vfxl-micxl pred fos /sme ool sli-mod arg
4740 Ls off wh-buf fxl-vfxl pred fri frm & dolic grds to vcalc Dol i.p.
4750 Sh def incr bnsh blk-blk mod-vcarb /incr rd's Ls chng: lt gy-bnsh gy micxl-vfxl dns mod arg
4760 Ls lt gysh-bnsh sli gran Bndst rgh txt carb sli arg /fos frags
Ss sm amt wh vfg-l.fg vcalc grds to sdy Ls
4770 Very Poor Sample: 90% red beds
4780 Dol incr gysh bnsh mxl arg carb Ls cont'd gran vrgh txt /?fos frags bec dolic
4790 Dol decr Sh incr rd's
4800 Dol lrg incr: off wh-lt bn mxl-cxl vfri sli calc-calc tr vpr vis poro occ /lt bn oil stn dull gn flor fr-g sb stmg-mlky gn ct
4810 Sh lrg incr: blk-bnsh blk mod-vcarb Dol lrg decr
4820 Ls off wh-lt gysh wh pred micxl dns freq sdy
4830 Ls lt gysh micxl dns
4840 Ls chng: buf-off wh mod-vsparry ool Pkst grds to ool & fos Wkst gen sli arg
4850 Sh lrg incr blk-bnsh blk vcarb
4860 Ls pred lt-vlt gy vfxl vsdy dns rgh txt arg
4870 Ls cont'd AA
4880 Ls def chng: off wh-buf cln app sb chky sft to micxl dns hd
4890 Ls cont'd /incr amts fos & sdy bec sli less cln app
4900 Ls chng: lt gysh-off wh vfxl bec ool & gen less dns
4910 Ls bec sli gran app /rgh txt sli arg gen indist ool Wkst-Pkst /scat tr's vpr oolm poro NSOC Dol sm amt lt bnsh gy mxl-fxl fos calc
4920 Ls chng: lt gysh-bnsh micxl-vfxl incrly dns pos fos frm brit sme sb chky sft sme sdy Ss lt gysh wh vfg vpr calc cem sft & arg
4930 Sh def incr m-dk gy & rd hvy tf blk vcarb
4940 Ls def chng: wh-off wh-buf cln app vfxl-fxl-sb chky loc sli sdy-sdy
4950 Sh vlrg incr rd & gy
4960 Ls lt gysh wh-off wh vfxl dns sli fos sli chty Sh sli decr
4970 Ls off wh-gysh bn micxl vsparry indist ool i.p. Sh rd-orng-gy /tr blk
4980 Sh vlrg incr /chng: bn blky fn-vfn txt

T. MARMATON 4981'

4990 Sh lrg decr /sli incr blk vcarb Ls off wh-vlt gysh wh micxl-vfxl occ lith dns occ sli sdy freq blky spar xl's
5000 Ls chng: lt gysh-vlt gysh wh vsdy grds to limy Ss sme lt bn micxl-lith vdns Sh cont'd incr to fr amt: blk-vdk gy carb
5010 Ls lt gy fxl-vfxl sli rthy txt vfos /sme bn micxl-lith vdns
5020 Sh questionable incr blk & gy Ls rthy txt AA bec dns'r
5030 Ls lt gy vfxl sli rthy txt fos tr's vfrag sme vslty sdy sme off wh
5040 Ls lt gy vfxl arg /chng: decrly fos & decrly frag /sme off wh fxl-mxl dolic
5050 Ls lt gy-off wh-gysh wh micxl-vfxl sparry app indist fos?ool tr pr moldic poro NSOC Sh cont'd hvy amt rd's /pos sli incr gy's
5060 Ls lt gysh-bnsh fxl-sli suc app ool Wkst gen dolic vdolic sme arg-mrly /freq vlt gysh tn fxl sli ool
5070 Ls cont'd lt'r col sme wh sb chky /chng: lt bn-bn lith vdns sme sil & chty sli fos Sh hvy amt blk vcarb Cht freq trnsl bnsh fos

T. Ft. Scott Member 5060

5080 Sh sli decr blk Ls chng: sme gysh fxl-vfxl frag /indist gy clasts /gen decr dk'r col /incr lt tn fxl ool dolic Dol sm amt lt tnsh-lt gy mxl-fxl vfrm to sft & fri-mushy
5090 Dol chng: lt bnsh cxl-sb suc-suc vfri gen fr intxl poro /sli tr lrg vug poro NSFOC Ls chng: lt gysh ool Pkst vfxl vdolic grdg to gran app Dol tr's spa rimmed oolm poro tr only /vfnt dull gn flor /vfnt vwk slo stmg gn ct no resid ct
5100 Ls pred lt tnsh fxl rthy app non dolic sme sli carb /pos incr gysh bn micxl-lith sli pyr
5110 Ls cont'd incr gysh bn micxl-lith /chng: bec vool grdg to Wkst pred fxl rthy txt AA

T. CHEROKEE 5099'

5120 Sh sm amt blk-bnsh blk vcarb /dism pyr
5130 Sh cont'd incr blk Ls fxl AA /tr dk bnsh-gysh vfxl arg vpr-no poro lt bn oil stn dull gn flor vfnt-fnt sb stmg gn ct
5140 Ls incr amts AA /show Sh abdt amt bnsh blk-blk
5150 Sh cont'd Ls cont'd incr sm amts /show
5160 Sh def decr blk Ls lt-m gy vfxl-micxl pred dns freq /rthy txt def decr amt /show
5170 Ls chng: off wh-lt gysh wh fxl-vfxl dns freq dk col ool?rip ups?
5180 Ls chng: bec pred lt bnsh micxl-vfxl gen incrly dns & less cln
5190 Sh lrg incr: blk-bnsh blk & vdk gy Ls chng: bec m-dk gy micxl dns arg sli fos
5200 Ls chng: off wh-vlt gysh fxl-vfxl gen cln'r app sme sli gran app & dolic Sh def decr
5210 Ls incr gy's fxl-vfxl sli pyr Sh cont'd decr /tr bn flky wxy pyr
Note: Sample Quality Decreasing
5220 Ls gy AA bec fos /chng: sme off wh fxl-vfxl rthy txt Sh lrg incr rd's /freq uncon Sd
5230 Sh abdt rd & gy /pos vsli incr blk
5240 Sh def incr blk /cont'd incr rd's /freq uncon Sd
5250 Sh vhvy amt rd's /cont'd incr blk Ls bnsh-gysh-off wh fos i.p sme bnsh mxl-fxl /fnt dull gn flor
Note: Sample Quality Increasing
5260 Sh decr rd's /sli decr blk Ls sli incr off wh cln'r app
5270 Ls lrg chng: lt gysh fxl-vfxl vfrag /rip ups & fos frags sli-mod arg

Sh def incr blk
5280 Ls chng: bec dk bn micxl vdns arg arg Sh lrg incr rd's & gy's Cht sm amt bnsh opq
5290 Ls chng: off wh-vlt gysh wh fxl sli-vfos rthy txt /cln'r app
5300 Ls chng: gysh-bnshmicxl-vfxl dns arg Sh def incr m gy flky vfn-sb wxy txt pyr /vfreq blk vcarb
5310 Ls pos chng: sme off wh fxl rthy txt fos cln'r app Sh incr rd's
5320 Ls cont'd sm incr cln'r appAA /incr fos Sh m-dk gy sme blk /abdt rd's
5330 Ls off wh fxl vfos & lt gy vfxl sli arg
5340 Ls chng: bec pred gy arg

T. ATOKA 5335'

5350 Ls chng: incr bn micxl vdns Sh lrg incr blk vcarb
5360 Ls pred vlt gy-bn micxl dns Sh blk-vdk gy /cont'd abdt rd's
5370 Ls vlt gy-gysh bn micxl-fxl sli decrly dns Sh decr blk
5380 Ls chng: m gy sli mot vfxl sli fos def incrly arg Sh lrg decr rd's /cont'd blk & gy tr gnsh gy plty fn txt
5390 Ls m gy sli mot sme /pos frag app pred sli fos sme vfos
5400 Sh lrg incr: pred blk-vdk gy /tr's mot bn & gnsh gy Ls cont'd /pos sli incr off wh-vlt gysh wh /cln'r app
5410 Ls chng: freq bn micxl-lith vdns Sh decr blk-vdk gy /sme amt gnsh flky wxy pyr
5420 Ls chng: decr bn /incr gy-gysh bn micxl-vfxl sme /vfrag app Sh icnr vdk gy-blk mod-vcarb
5430 Sh cont'd incr Ls chng: sme off wh-vlt gysh wh fxl rthy txt cln-sli arg
5440 Sh lrg incr blk-vdk gy pred vcarb
5450 Sh chng: decr vcarb /incr m gy vfn txt Ls chng: lt gysh vfxl rthy txt bn micxl dns occ frag app
5460 Ls gen incrly arg & bec fos Sh freq m gy fn txt & lt gnsh gy sb wxy pyr
5470 Ls chng: mot dk bn & gy incrly arg occ sli mrly Sh incr blk & vdk gy
5480 Ls chng: pred m gy vfxl Sh cont'd amt AA
5490 Ls pos chng: m gy AA /incr dk gy micxl vdns Sh incr blk-vdk gy carb
5500 Ls def chng: lt tnsh bn-lt bn micxl-lith brit Sh pos incr blk
5510 Ls chng: gysh bn varg /tr wh vsparry ool Pkst /hvy tr pr oolm poro NSOC Sh hvy amt vdk gy-blk occ fos
5520 Ls gysh bn-bn sli decr arg Sh cont'd hvy amt AA
5530 Ls cont'd vsm amts: pred bnsh micxl-lith sli sparry Sh AA
5540 Ls sli incr: sli mot lt gysh vfxl-micxl incrly arg Sh sli decr blk
5550 Ls & Sh AA /sli incr rd bd's
5560 Ls chng: def incr dk bn-dk gysh bn micxl vdns vdolic grds to Dol pred /vstrong HCL show NSFOC
5570 Ls chng: vlt gy-m gy vfxl rthy txt cln'r app occ frag Sh cont'd decr
5580 Ls chng: gysh wh vfxl-fxl rthy txt frag /pos incr Dol dk bn cxl Sh pos sli incr blk vcarb
5590 Ls vlt gy vfxl rthy txt m-dk gy sli mot micxl dns
5600 Sh def incr vdk gy mod carb Ls sli mot lt-m-dk gy
5610 Ls vlt gysh wh fxl rthy txt Sh cont'd amts mod-vcarb
5620 Ls cont'd lt'r col bec incrly arg i.p. Dol sli incr bn micxl-vfxl dns
5630 Sh chng: gnsh buf sb wxy & mot bn wxy pyr Ls chng: incr bn micxl vdns Cht sli tr
5640 Sh incr blk-vdk gy carb Ls chng: incr off wh-lt gysh wh fxl-vfxl frm cln'r app

5650 Ls cont'd incr cln'r app bec incrly dns Sh incr rd bd's

T. MORROW 5630 or 5639'

Non Marine

5660 Coal hvy amt glos vitr occ /plnt txt Sh blk /chng: sme gysh bn flky sb wxy pyr tr m gy sdy

Marine

5670 Sh incr dk-vdk gy fn txt Coal lrg decr
5680 Sh chng: def incr gnsh gy vfn txt sli pyr

Non Marine 5676'

5690 Sh sli tr buf & bn blky wxy /freq mot gy wthd Ls pos incr lt tn-off wh vfxl-fxl frm
5695 Ls prob decr Coal def incr tr's Sh freq buf wxy /carb debr
5700 Sh incr lt'r col wxy /vcrs-crs carb debr Pyr sm amt lse chnks

Weathered Marine 5689'

5705 Sh hvy amt lt'r col /chng: sli tr mot gy-gn fn txt wthd
5710 Sh pos incr dk'r col
5715 Sh admixture lt & dk col's

Non Marine 5706'

5720 Sh def chng: lrg incr buf-bnsh buf sb wxy blky-flky pyr /tr lt gy fn txt plty vwthd app Ss tr amt uncon clr v.cg

Weathered Marine 5714'

5725 Sh chng: sli incr dk gy & wthd lt gy /hvy amt lt'r col AA
5730 Sh questionable chng: sli incr lt'r col wxy to slty
5735 Sh AA /pos sli incr dk'r col & sm amt mot wthd
5740 Sh admixture /incr tr's uncon Sd
5745 Sh gen incr gn's & gy's /chng: lt gnsh gy sb wxy to vrgh txt sdy & glau
5750 Sh gen incr amt dk gy fn txt

Non Marine 5742'

5755 Sh def chng: lrg incr: buf-lt bnsh buf sb wxy-wxy freq slty pred /vfn carb debr tr crs carb debr pyr Ss tr's uncon clr u.fg-mg
5760 Sh chng: incr gn vfn to sb wxy txt Coal sm amt dull arg

Paleosol & Weathered Marine 5751'

5765 Sh chng: tr rdsh purp Paleosol /def incr wthd lt-m gy fn txt
5770 Sh admixture lt & dk col's freq /lust & vsli tr Paleosol
5775 Sh sli incr dk gy & bec less wthd app

Probable V7 MARKER 5759'

5780 Sh sm incr lt'r col sb wxy pyr
5785 Sh def chng: lt bnsh-gnsh gy sb wxy to rgh txt flky-blky tr's vcrs carb debr Ss freq uncon: clr cg-v.cg /sli tr lrg'r clus: off wh vfg-l.fg sb ang fr srtd sil & calc cem

Marine 5776'

5790 Sh chng: incr dk gy fn txt freq /wthd lt gy /lust

5795 Sh lrg incr vdk gy /decr wthd app

Interbedded Marine & Non Marine 5787-95'

5800 Sh cont'd vdk gy /pos sli incr lt'r col wxy
5805 Sh def chng: buf & lt bn wxy fn carb debr /vhvy tr coaly plnt debr
5810 Sh admixture lt & dk col's /pos incr vdk gy

Indistinctly Fossiliferous Limestone Stringer 5796'

5815 Ls def incr vlt-m gy-off wh /indist fos or rip ups gen rthy txt sme vcln & cxl Sh chng: gen incr lt'r col sme /vcrs carb debr
5820 Ls decr amt Sh cont'd admixture

Bioclastic Limestone 5806'

5825 Ls lrg incr: off wh fxl-sb chky rthy txt bnsh-gysh fos frag Pkst occ /vcxl blky spar infill all gen sli-mod arg hvy tr /dull gnsh gd flor vpr vfnt sb stmg gd & vpr fnt crush ct
5830 Ls decr amts AA Sh incr amt admixture lt & dk col's
5835 Sh cont'd incr amt pred lt-m-dk gy pred fn txt occ sdy & glau

Non Marine 5825'

5840 Sh chng: prob incr buf-bnsh buf bn wxy-sb wxy occ sli sdy freq vfn carb debr tr dk bn /vcrs carb debr

Weathered Marine 5832'

5845 Sh chng: sm amt dk gy & gn fn txt fos freq lt-m gy /lust & pos decr lt'r col
5850 Sh cont'd incr dk'r col & gen less wthd /decr lt'r col Ss sm amt: gysh vfg varg calc lams?

T. LOWER MORROW LIMESTONE 5840'

5855 Sh pred dk-vdk gy Ls sli incr wh-lt bnsh micxl-occ lith sli-non fos
5860 Ls def incr off wh-vlt gysh bnsh wh vfxl-fxl-sb chky indist fos frag Pkst? occ /cxl blky spar infill sme bn lith-micxl vdns /tr lse fos frags
5865 Ls vlt gy-vlt bnsh fxl-vfxl rthy txt to micxl dns & frag sme lith vsparry all gen fos grdg to Wkst?Pkst freq vcxl-suc blky spar infill pred /dull gd mnrl flor Sh def decr
5870 Ls cont'd incr /chng: pred wh-vlt tnsh wh vcln app
5875 Ls decr amt & bec sli glau Sh incr amt pred admixture lt & dk col'
5880 Ls vlrg incr (95%) lt gysh tn fxl rthy txt indist fos to micxl-lith vsparry fos Pkst
5885 Ls cont'd abdt amt gen AA /decr amts vsparry
5890 Ls sli decr /chng: bec sli-mod arg /sme bn micxl vdns Sh incr amts pred lt-m gy /sme lt gn
5900 Ls cont'd amt AA bec vfrag & incrly arg Sh cont'd
5910 Ls lt gysh-lt bnsh wh fxl-vfxl dns vfos sli-mod arg freq rthy txt/sme micxl-lith vsparry freq wh sb chky
5920 Ls cont'd /sli decr amts sme sli gran app Sh incr blk & gy
5930 Ls chng: bec sdy /freq cg Sd incl sli glau Sh decr amt /chng: lt-m gn flky Ss sm amt gnsh l.-u.fg varg

KEYES SANDSTONE 5912'

5940 Ss incr & chng: wh l.-u.fg sb ang fr cons /calc & sil wh cly fld tight Sh chng: gn flky sdy Ls cont'd fos & sdy

5950 Ls chng: lt tnsh wh sli-mod sparry ool Pkst Cht sm amt wh opq Sh decr amt

Probable T. MISSISSIPPIAN 5946'

5960 Ls chng: off wh-lt tnsh wh incrly sdy /def decr ool size to mic ool Sh pos incr gn fn txt
5970 Ls chng: incrly dns bec micxl /def decr ool & sdy
5980 Ls bec pred bnsh tn-bnsh def incr ool sme indist
5990 Ls sli chng: bnsh gysh vfxl indist fos sli arg Dol vhvy tr lt-m-dk bnsh mxl-cxl dns sli-mod calc fri vsft sli tr fnly gran vfri gen arg thru out dull gd mnrl flor NSOC
Note: 80% Morrow Cavings
6000 Dol chng: incrly dns & incrly calc Ls dk gysh bn micxl dns hd brit
6010 Sh decr Morrow Cavings Ls lrg incr: m-dk bn micxl dns hd brit arg mod-vdolic /freq lt-m gy vfxl frm non dolic
6020 Ls incr off wh-lt gysh wh vfxl vfreq rthy txt pred dns brit indist fos /def decr dk bn

T. SPERGEN 6013'

6030 Ls chng: lt gysh wh fxl-vfxl crin Pkst-Wkst rthy sparry txt sli arg vsli dolic
6040 Dol lt bn-bn cxl-vcxl-fnly gran vfri freq scat pr intxl poro tr's pos vg poro lt-mod hvy oil stn /mod bri-bri gnsh yel flor f g stmg gn ct
6045 Dol cont'd amts pred /show sme with no show
Circulating at 6045'
+30 min Dol lt-dk bn cxl-fnly gran /decr show tr /even dull gnsh flor & spotty tarry stn (looks similar to staining below water contact in Morrow Sands) & chng: bec gen dns'r & incrly arg grds to vfxl
+60 min Dol decr amt Ls incr: gysh tn fxl-vfxl rthy txt abdt crin grdg to Wkst
Drilling After Bottoms Up
6065 Dol sm amt bnsh vfxl-mxl-cxl sme /dull gnsh flor Ls incr gysh rgh txt crin arg dolic varg
6070 Ls off wh-gysh wh cont'd rgh txt & crin /sli incr amt mod-vdolic
6075 Ls hvy amt AA pred mod-vdolic
Circulating At TD
+30 min Dol def incr bn-gysh bn fxl-mxl arg vcalc indist fos pos grds to vdolic Ls
+60 min Dol gysh bn vfxl arg freq dk allochems