



**WESLEY D. HANSEN Consulting Petroleum Geologist**

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KGS  
AAPG  
Kansas License #418

**GRAND  
MESA**

**OPERATING COMPANY**

Scale 1:240 (5"=100') Imperial

Well Name: Grand Mesa Operating Company #1-23 Ellis  
Location: 1711' FSL, 2310' FWL of Section 23-14S-32W  
Licence Number: API: 15-109-21001 Region: Logan County, Kansas  
Spud Date: 4-18-2011 Drilling Completed: 4-26-2011  
Surface Coordinates: 1711' FSL, 2310' FWL of 23-14S-32W

Bottom Hole Vertical hole  
Coordinates:  
Ground Elevation (ft): 2780' K.B. Elevation (ft): 2785'  
Logged Interval (ft): 3700' To: RTD Total Depth (ft): 4570'  
Formation: Mississippian at RTD  
Type of Drilling Fluid: Chemical

Printed by MUD.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

#### OPERATOR

Company: Grand Mesa Operating Company  
Address: 1700 N. Waterfront Parkway  
Building 600  
Wichita, KS 67206

#### GEOLOGIST

Name: Wesley D. Hansen  
Company: Wesley D. Hansen - Consulting Petroleum Geologist  
Address: 212 N. Market, Suite 257  
Wichita, KS 67202  
Office: 316-263-7313 Cellular: 316-772-6188

## COMMENTS

Contractor: Murfin Drilling Company Rig #8  
Pusher: Rodney Farr

Surface Casing: 8 5/8" set at 214' w/165sx  
Production Casing: P&A

Mud by: MudCo - Reid Atkins was the engineer

DST's by: Eagle Testers L.L.C. - David Nchols was the tester

Logs by: Weatherford (DIL, CN-CD-PE, ML, Sonic)

Deviation Surveys: 1/2 deg. @ 214'; 1/8 deg. @ 1240'; 2 deg. @ 3232'; 2 deg. @ 4004'; 2 1/2 deg. @4420'; 1 3/4 deg. @ 4570'

Bit #	Size	MFG	Type	Depth Out	Footage Cut	Hours on bit
1	12 1/4"	Varel	CF15	214'	214'	3
2	7 7/8"	HTC	DP506F	1661'	1447'	19 1/4
3	7 7/8"	HTC	GX22S	4570'	2909'	105 3/4

## FORMATION TOPS AND STRUCTURAL COMPARISON

FORMATION	SAMPLE TOPS		LOG TOPS		COMPARISON WELL Ritchie #1 Ellis 23D 2200' FSL, 1080' FEL 23-14S-32W 2757' KB
	Depth	Datum	Depth	Datum	
Stone Corral	2247'	+538	2248'	+537	flat
B/Stone Corral	2267'	+518	2268'	+517	flat
Heebner Shale	3772'	-987	3772'	-987	+8'
Lansing	3807'	-1022	3805'	-1020	+9'
Muncie Creek Shale	3974'	-1189	3975'	-1190	+4'
Stark Shale	4068'	-1283	4068'	-1283	+1'
Hushpuckney Shale	4102'	-1317	4103'	-1318	-1'
Marmaton	4172'	-1387	4174'	-1389	-2'
Pawnee	4246'	-1461	4245'	-1460	+3'
Upper Fort Scott	4268'	-1483	4272'	-1487	-1'
Little Osage Shale	4298'	-1513	4301'	-1516	-4'
Excello Shale	4324'	-1539	4324'	-1539	-5'
Johnson Zone	4398'	-1613	4398'	-1613	-6'
Morrow	4428'	-1643	4426'	-1641	-4'
Mississippian	4468'	-1683	4468'	-1683	-10'
RTD	4570'	-1785			
LTD			4572'	-1787	

# DRILL STEM TESTS

DST No. 1 Lansing "H" Zone  
Interval: 3970'-4004'  
Times: 15-15-15-15  
Recovery: 2' mud  
FP: 45-46/46-46 SIP: 133-87  
HP: 2009-2006 BHT: 107 deg. F

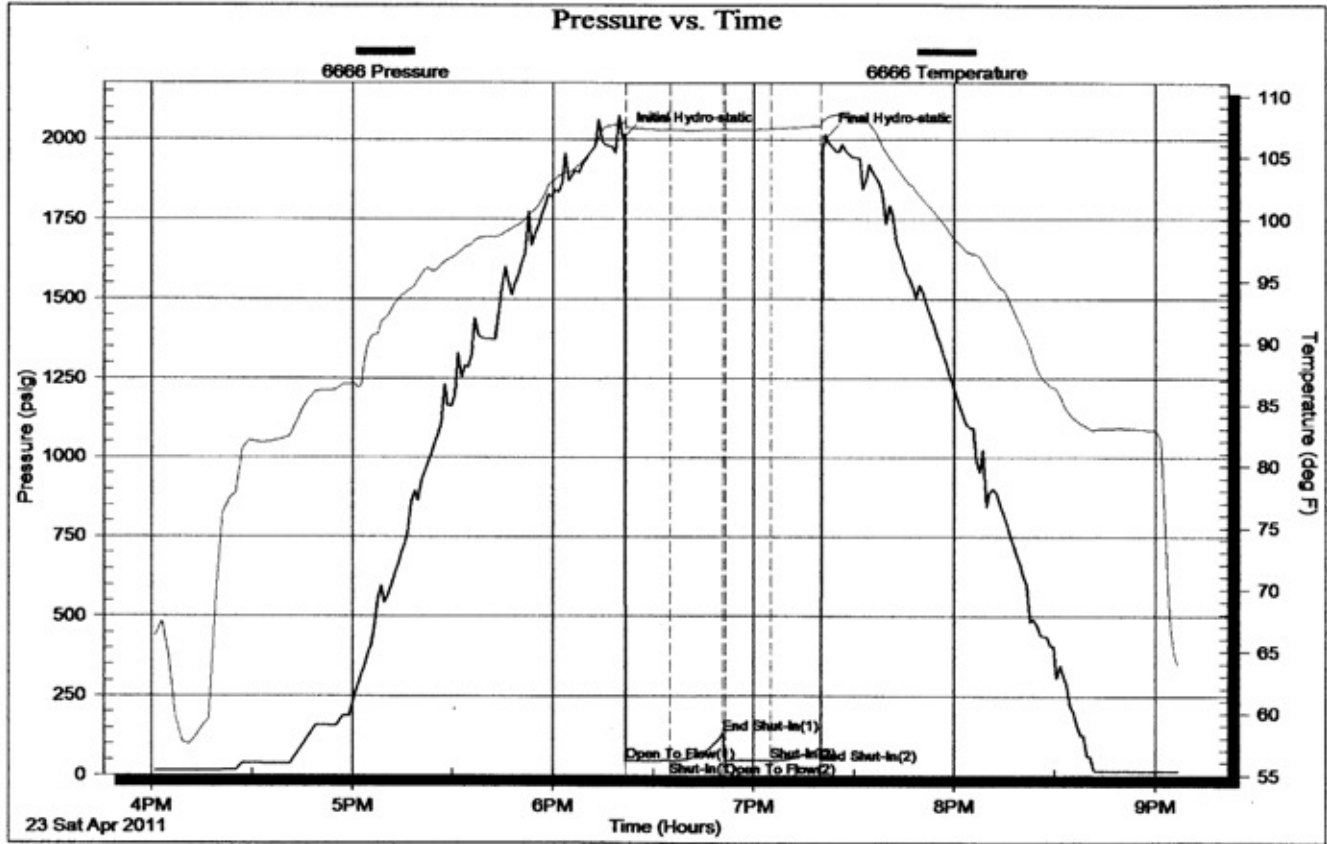
IFP: very weak surface blow, died in 3 minutes  
ISIP: no return  
FFP: very weak surface blow, died in 1 minute  
FSIP: no return

Serial #: 6666

Inside GRAND MESA OPERATING

23-14S-32W

DST Test Number: 1



# DRILL STEM TESTS

DST No. 2 Johnson Zone  
 Interval: 4365'-4420'  
 Times: 30-30-30-30  
 Recovery: 10' mud  
 FP: 55-64/65-73 SIP: 1184-1164  
 HP: 2191-2192 BHT: 114 deg. F

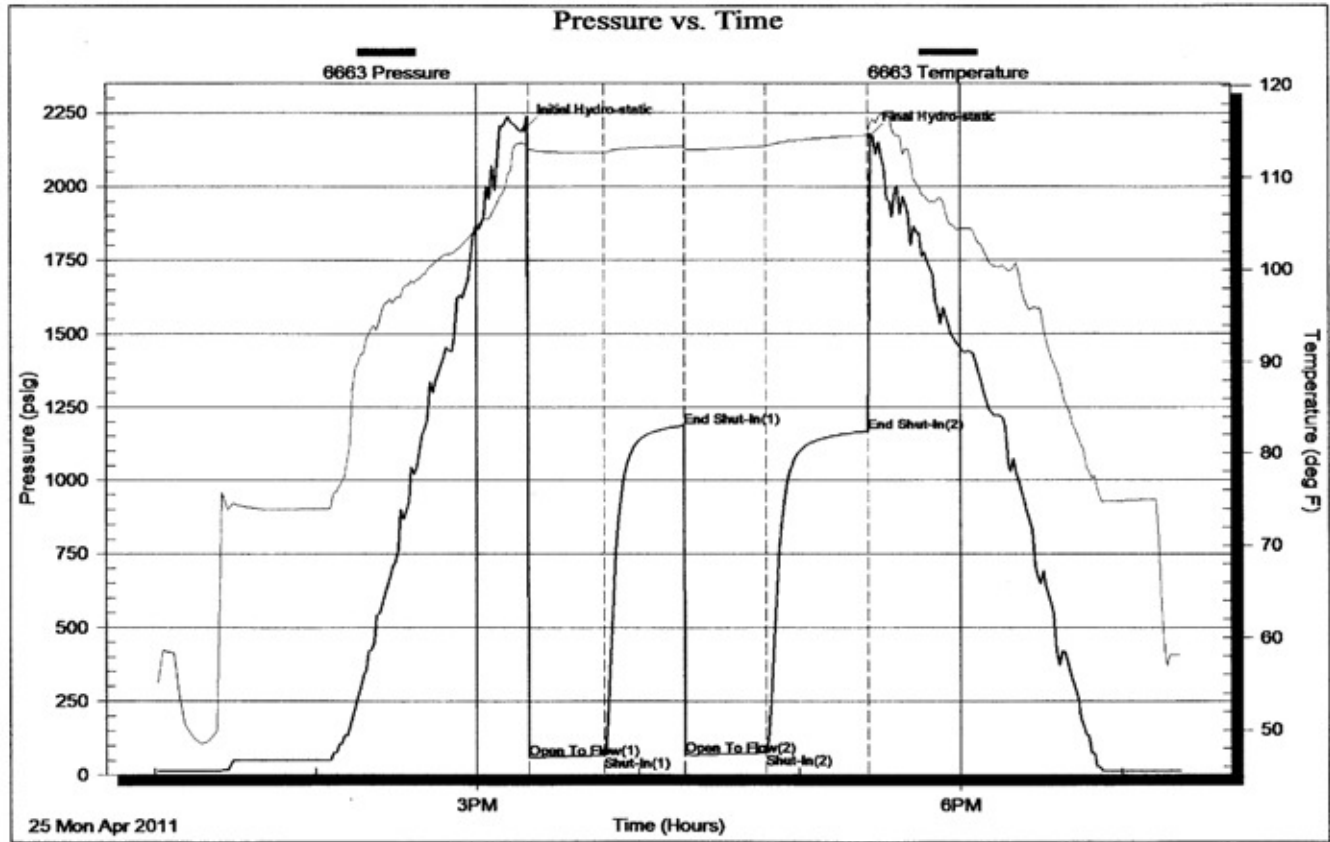
IFP: surface blow  
 ISIP: no return  
 FFP: very weak surface blow  
 FSIP: no return

Serial #: 6663

Outside GRAND MESA OPERATING

23-14S-32W LOGAN

DST Test Number: 2



## ROCK TYPES

	Anhy		Lmst		Ss		Shale		Shy dolo
	Cht		Salt		Carb sh		Sltstn		Shaly ls
	Coal		Shale		Dol		Shlyslts		
	Congl		Shcol		Dtd		Sltys		
	Dol		Shgy		Gry sh		Sdy dolo		
	Gyp		Sltst		Sandylms		Silty dolo		

### ACCESSORIES

#### FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite

- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

#### MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Breclrag

- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos

- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Sity

#### STRINGER

- Anhy
- Arg
- Bent

- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

### OTHER SYMBOLS

#### INTERVALS

- Core
- Dst
- Dst

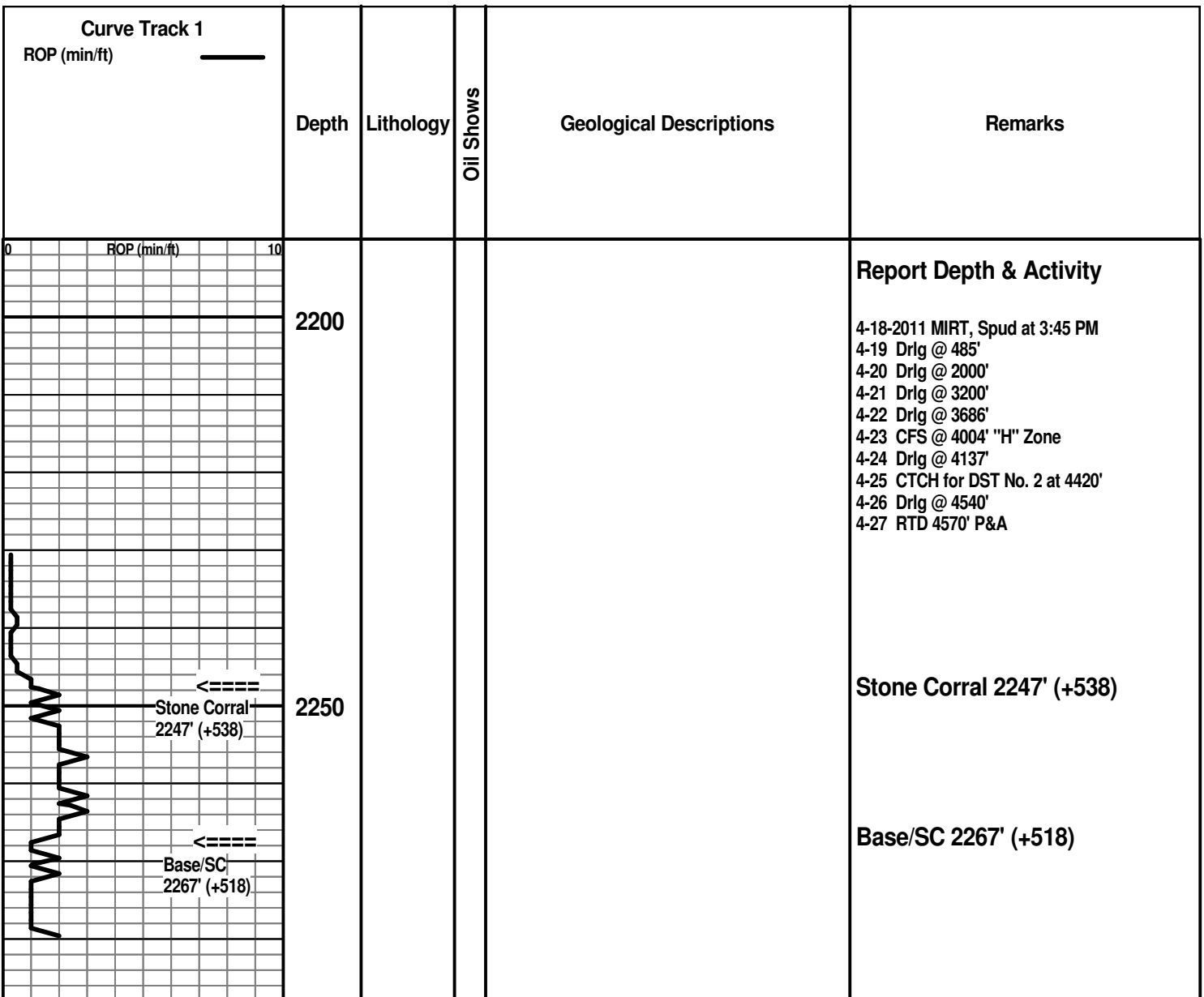
#### EVENTS

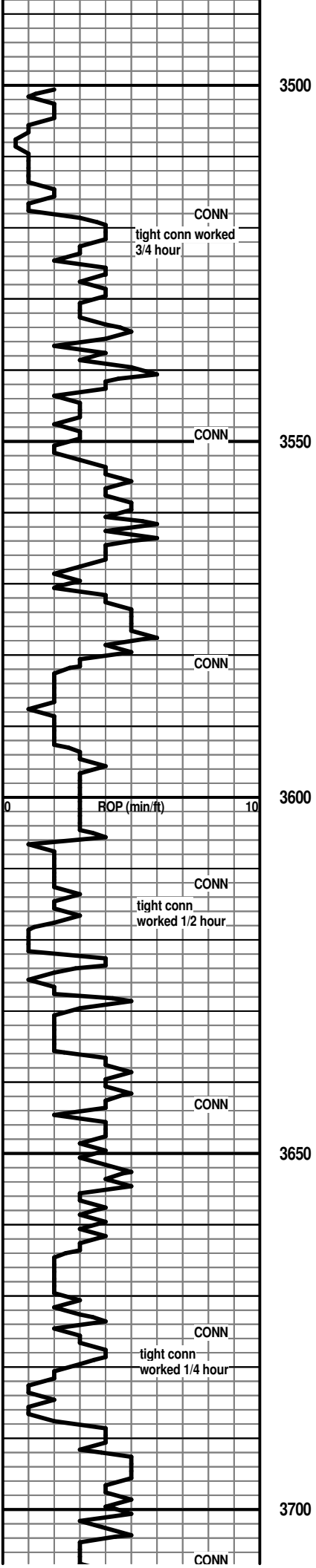
- Rft
- Dst top/base

#### OIL SHOWS

- Even
- Spotted
- Quest.

- Trace
- Dead
- Gas show





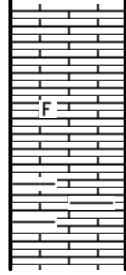
Drilling with reduced WOB due to 2 degrees deviation at 3232'

Geologist on location at 3530'

MudCo Mud Check at 3666'  
 6:00 AM on 4-22-2011  
 wt vis wl pH chl  
 9.0 53 7.2 10.5 1500  
 PV YP GelS lcm solids  
 14 15 7/16 1# 4.9%

7:00 AM at 3686' on 4-22-2011

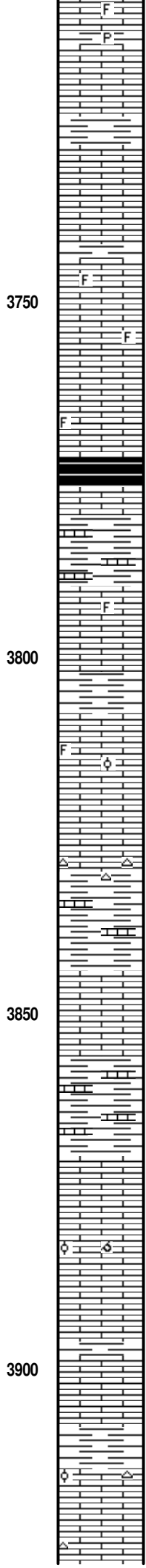
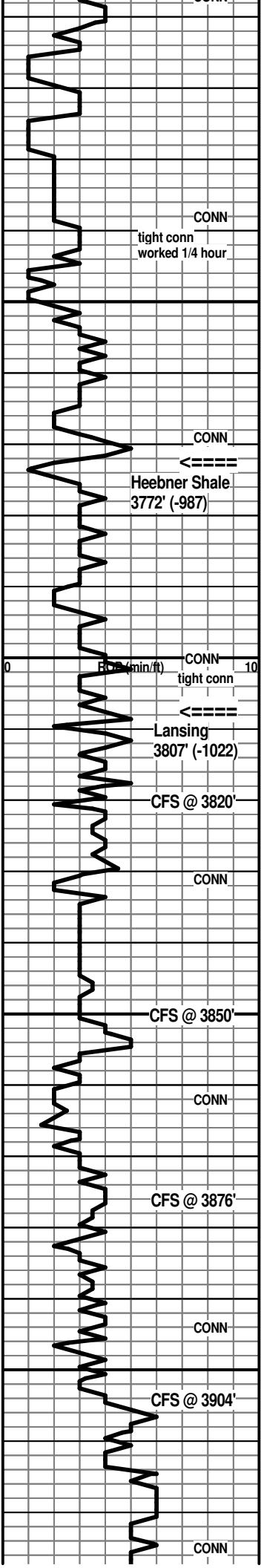
10' samples started at 3700'



Ls: offwhite fn granular with pp and inter-particle por, some white chalky, N.S.

Ls: tan, lt brn fn-med granular, dense, fossilif. IP with some intra-particle por., N.S.; lesser tan, lt brn vf-cryptoxln, no vis. por.

Ls: influx in 20' spl of lt gray vfxln dense; with tan, lt brn vf-cryptoxln AA; occ white chalky; scatt. med to dark gray shale



30' spl - Ls: various dense AA with sl influx med brn cryptoxln; incr. white chalky; some tan, lt brn fossilif. with intra-particle por., N.S.; Sh: sl influx very lt gray, finely pyritic, soft

40' spl - common med to dark gray and red-brn shales (tight conn); Ls: mix tan, lt brn, offwhite fn-vfxln, granular IP with some pp and inter-particle por. and lt-med gray vfxln dense, shaly IP, N.S.

50' spl - shaly spls AA, vsI influx black carbon.; Ls: mix tan, offwhite, lt gray mic-vfxln dense; sl influx lt gray, lt brn cryptoxln

60' spl - Ls: various tan, lt brn, lt gray mic-vfxln dense; some tan fossilif. with intra-particle por.; some offwhite, tan mic-vfxln dense, subchalky; spls still shaly - vc gray, red-brn, brick red, trace black

70' spl - Ls: influx lt-med brn mic-vfxln dense, sl mottled with gray; mottled brn/gray more granular, fossilif. IP, no vis. por.; scatt. subchalky to white chalky and med brn cryptoxln

80' spl - Ls: flood tan, lt brn mic-vfxln dense, mottled and granular IP; much more dense subchalky to white chalky; some lt brn, lt gray dense, fossilif. with intra-particle por., N.S.

90' spl - Ls: flood dense AA; Sh: sl influx black carbon.;

Ls: lt-med brn cryptoxln; Sh: some gray-green

3800' spl - incr. black carbon. shale with lt-med gray, gray-green (shales not real abund.); Ls: tan, lt brn mic-vfxln dense, subchalky and mottled IP; scatt. tan fossilif. with vug. por. and tan vfxln with pp por., N.S.

10' spl - Ls: tan, lt brn mic-fnxln dense, fossilif. IP, subchalky IP; occ lt gray, brn cryptoxln; minor shale %

20' spl - Sh: good influx med to dark gray; Ls: various tan, lt brn, lt gray mic-fnxln dense AA; scatt. tan, lt gray vfxln with small vug. por., N.S.

CFS 3820' 20" spl - Ls: tan, lt brn mic-vfxln, some fossilif. with intra-particle por., predom. dense; incr. offwhite subchalky to chalky; some mottled lt brn dense, faintly oolitic, no vis.por.

30' spl - Ls: mix AA with some new tan, offwhite vf-cryptoxln; ?? faint fleeting odor, N.S.; Sh: common med to dark gray, black

40' spl - Ls: flood tan cryptoxln, no vis. por.; tan, offwhite vf-cryptoxln, no vis. por.; trace offwhite vfxln with lt brn stain along healed microsutures, weak milky cut, no odor, nfo; influx offwhite opq chert

50' spl - Ls: various dense AA, some trace show AA, sl cherty; incr. vc gray shale %

CFS 3850' 20" spl - Ls: sl influx mottled lt brn mic-vfxln, speckled; some white subchalky to chalky

60'/70' spls - Ls: predom. tan cryptoxln and tan, offwhite mic-vfxln dense, subchalky IP; lesser mottled lt brn fn granular, N.S.; persistant med to dark gray shales

76' spl - Ls: very predom. tan, offwhite dense subchalky with more white chalky in the 20" CFS spl; shales AA

CFS 3876' 45" spl - Ls: flood offwhite, tan mic-vfxln dense, subchalky with common white chalky; influx lt to med brn cryptoxln and mottled lt brn fn granular at base

90' spl - Ls: mix AA

3900' spl - Sh: influx dark gray to black; Ls: still a mix AA; occ tan oolitic with fair oomoldic por., N.S.

CFS 3904' 30" spl - Ls: still very predom. tan cryptoxln and tan, offwhite mic-vfxln dese; occ tan oolitic with fair oomoldic por., N.S.; Sh: vc gray, dark gray-green, red-brn

CFS 3904' 60" spl - Ls: AA; vsI influx med brn cryptoxln and sl mottled lt brn mic-vfxln dense

20' spl - Ls: abund. tan, offwhite mic-vfxln dense and tan, lt brn cryptoxln; trace lt brn with vug. por., coarse calcite xtals in matrix; shale vc gray

30' spl - very shaly AA; Ls: mix AA with sl influx lt gray, med brn cryptoxln; one chip tan oolitic/granular with spotty stain in dry spl, very weak ring cut, no odor, nfo; scatt. gray, offwhite chert

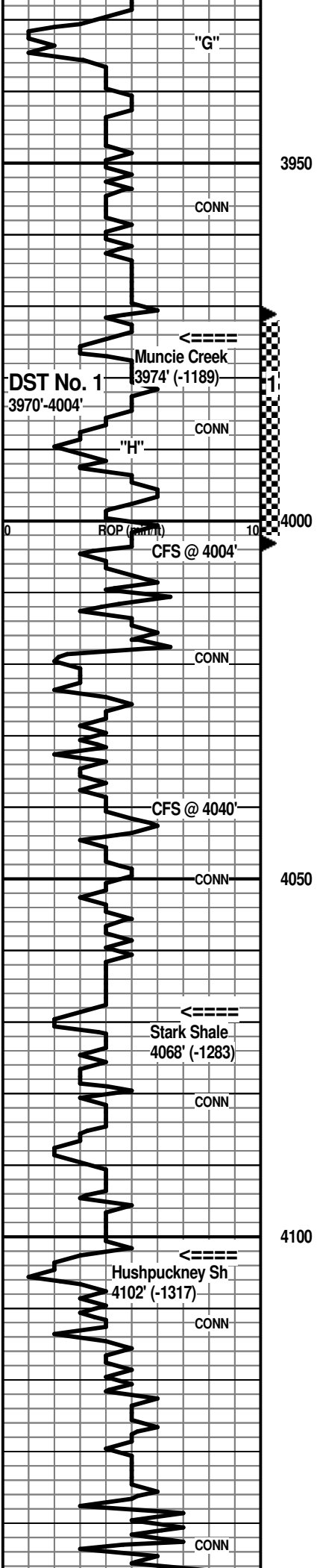
40' spl - Ls: predom. tan, lt brn, lt gray cryptoxln; lesser

**Heebner Shale 3772' (-987)**

**Lansing 3807' (-1022)**

CFS 3820' 45" spl - Ls: tan, lt brn mic-fnxln, some pp por.; occ fossilif. with scatt. intra-particle por., N.S.

CFS 3850' 45" spl - Ls: tan, offwhite vf-cryptoxln and offwhite, tan mic-vfxln dense, subchalky to chalky; occ lt brn fn granular, N.S.; spls remain shaly



tan, offwhite mic-vfxln dense; occ chert AA; persistant shaly spls

50' spl - Ls: occ tan sucrosic; trace tan oolitic with oomoldic por.; rare loose oolites, N.S.; influx offwhite, lt gray opq chert; becoming mix tan, lt gray cryptoxln at base

60' spl - Ls: mix tan, offwhite mic-vfxln dense, subchalky IP and tan vf-cryptoxln, no vis. por.; decr. chert AA; still shaly spls

70' spl - Ls: mix AA, sl incr. chert %; less shaly

80' spl - Ls: mix AA with some lt gray, med brn cryptoxln; sl cherty; shaly mix AA

90' spl - Sh: influx black carbon.; Ls: lt gray, lt brn, tan cryptoxln; abund. tan, offwhite mic-vfxln dense; scatt. lt gray, offwhite opq chert; common vc gray and red-brn shales

4000' spl - Ls: med to dark brn, med to dark gray cryptoxln; Sh: mix AA with more dark gray-green

Ls: 1-2 chips tan granular with vug. and inter-particle por. with spotty brn stain, trace free oil, trace sg on break, no odor, patchy stain dry

4004' spl - Ls: influx med brn, med gray cryptoxln, some mottled granular, no vis. por., N.S.; still common tan, offwhite dense AA; shaly spls AA; scatt. gray opq chert

20' spl - Sh: good influx med to dark gray and green-gray; Ls: tan, lt gray, lt brn cryptoxln

30' spl - Sh: AA, decr. %; Ls: lt to med brn, lt to med gray cryptoxln; occ lt brn granular, no vis. por.

40' spl - Sh: incr. med to dark gray, gray-green; Ls: various cryptoxln AA, some darker brn cryptoxln and mottled granular

CFS 4040' 15" spl - Ls: various cryptoxln AA; sl influx lt gray, tan vfxln dense; some very soft, mushy offwhite clayey shale; 30' spl - Ls: good influx lt gray, tan, offwhite mic-vfxln dense; sl influx offwhite subchalky to chalky; decr. shale %

50' spl - Ls: lt gray, tan vf-cryptoxln, some sl mottled granular; lesser subchalky to chalky

60' spl - Ls: influx med brn, gray-brn cryptoxln; various dense AA; Sh: incr. % of med to dark gray, some black, gray-green

70' spl - Ls: lt-med brn, tan cryptoxln; sl influx mottled lt brn and mottled lt gray granular, no vis. por.; still common subchalky AA

80' spl - Ls: flood med gray, lt-med brn cryptoxln, rarely pyritic; lesser tan cryptoxln and offwhite subchalky

90' spl - Sh: influx black carbon.; Ls: mix AA with more med to dark brn cryptoxln, no vis. por.

4100' spl - Sh: sl influx lt-med gray very hard silic.; Ls: various brn, tan, gray cryptoxln to sl mottled granular, no vis. por.; sl influx lt gray mic-fnxln with pp and interxln por., N.S.

10' spl - Ls: flood mottled tan/brn/gray granular with offwhite subchalky matrix; common offwhite subchalky to white chalky

20' spl - Sh: sl influx black carbon.; Ls: predom. subchalky dense AA; some med brn, gray cryptoxln to sl mottled fossilif., no vis. por.

30' spl - Ls: influx med to dark brn, dark gray-brn cryptoxln, mottled IP; lesser offwhite, tan micxln, mottled with gray; occ offwhite opq chert

40' spl - Ls: various med to dark brn, med to dark gray cryptoxln, mottled IP; offwhite, lt gray vfxln dense, rarely pyritic

50' spl - Sh: occ black carbon.; Ls: decr. various cryptoxln AA; predom. tan, lt gray, offwhite mic-vfxln dense, subchalky IP; scatt. gray/brn opq chert

60' spl - Ls: flood lt-med brn, med gray, some dark brn

DST No. 1 Lansing "H" Zone  
Interval: 3970'-4004'  
Times: 15-15-15-15  
IFP: very weak surface blow, died in 3 minutes  
ISIP: no return  
FFP: very weak surface blow, died in 1 minute  
FSIP: no return  
Recovery: 2' mud  
FP: 45-46/46-46 SIP: 133-87  
HP: 2009-2006 BHT: 107 deg. F

**Muncie Creek 3974' (-1189)**

CFS 4004' 30" spl - Ls: flood tan, lt brn sl mottled granular and fossilif., no vis. por.; decr. shale %; 60" spl - great spl (no shale), Ls AA with flood tan vf-cryptoxln, no vis. por.; decr. subchalky Ls

7:00 AM at 4004' on 4-23-2011

Pipe strap at 4004' was 1' short to the board

**MudCo Mud Check at 4004'**

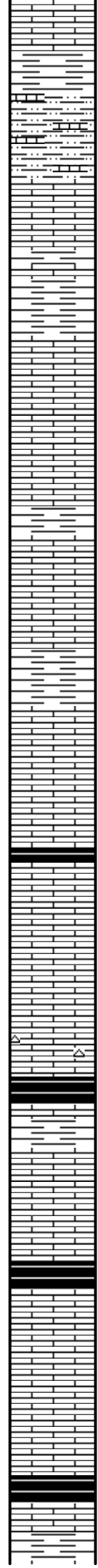
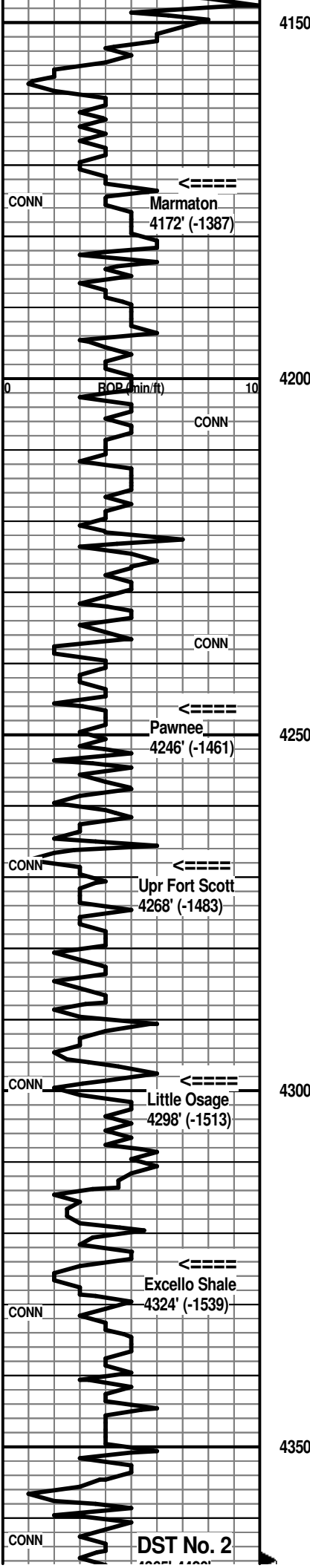
8:00 AM on 4-23-2011  
wt vis wl pH chl  
9.3 56 7.6 10.5 2000  
PV YP GelS lcm solids  
14 17 10/23 2# 6.6%

**Stark Shale 4068' (-1283)**

**Hushpuckney Sh 4102' (-1317)**

7:00 AM at 4137' on 4-24-2011





cryptoxln; trace lt brn oolitic with spar matrix

70' spl - still very predom. various cryptoxln Ls's AA; Sh: fairly minor med to dark gray

80' spl - influx offwhite, lt gray vfg silty Sst and sandy siltst with calcar. matrix; trace red-brn shale; still carrying common Ls's AA

90' spl - sl influx red-brn shaly siltst; flood Ls: lt brn sl mottled granular, no vis. por.; lesser tan, lt brn cryptoxln with rextal vugs and microfractures, N.S.

4200' spl - Ls: predom. lt brn, tan cryptoxln and sl mottled granular AA; lesser offwhite mic-vfxln dense, subchalky IP; very minor gray shale

10' spl - Ls: lt-med brn, tan, some lt gray predom. cryptoxln, mottled granular IP, no vis. por., N.S.; scatt. red shaly cryptoxln Ls; definite influx med to dark gray shale

20' spl - Sh: good influx dark gray to black, dark red-brn; Ls: various brn, tan cryptoxln with sl influx dark gray cryptoxln; occ mottled gray/brn coarse granular, no vis. por.

30' spl - interbedded various cryptoxln and mottled dense Ls's AA with med to dark gray and black shales; some red tinted Ls AA

40' spl - Ls: tan, lt brn, lt gray cryptoxln to sl mottled granular; shales AA

50' spl - Ls: various dense AA; sl influx lt gray shaly Ls and calcar. shale; interbedded shale streaks AA

60' spl - Sh: influx dark gray to black carbon.; Ls: still predom. lt-med brn, tan, some gray cryptoxln, sl mottled IP

70' spl - shales and various dense Ls's AA; sl influx tan, lt brn fn granular, no vis. por. and tan granular with offwhite micxln matrix, subchalky and sl oolitic IP, N.S.; trace brn vitreous chert

80' spl - Ls: tan, brn sl mottled granular, rarely oolitic and fossilif., N.S.; Sh: med to dark gray, gray-green, some black

90' spl - Sh: influx dark gray to black; Ls: various brn, gray, some dark brn cryptoxln; lesser tan granular AA; some offwhite subchalky

4300' spl - Ls: various cryptoxln AA; some smooth med brn cryptoxln; some mottled gray/brn granular, no vis. por.; Sh: good influx med to dark gray, gray-green

10' spl - Ls: various tan, lt brn, lt gray cryptoxln, some granular, no vis. por.; scatt. brn, offwhite opq chert; Sh: med to dark gray, black, gray-green, red-brn (cavings and whippings)

20' spl - Ls: various dense AA; spls very shaly and poor

30' spl - Sh: influx black carbon., abund. med to dark gray; Ls: tan, lt-med brn, lt gray cryptoxln with common offwhite, tan mic-vfxln dense; sl influx dark brn, dark gray cryptoxln

40' spl - various cryptoxln Ls's and shales AA; 2-3 chips tan fnxln with patchy brn stain in dry spls, not seen in wet spl, no odor, no fluor.

50' spl - Ls: various cryptoxln dense with gray and black shales (poor quality spls - much cave and whippings)

60' spl - Ls: various tan, brn, gray predom. cryptoxln; Sh: streaks med to dark gray, gray-green, black carbon.

70' spl - very shaly - vc gray, gray-green, black, red-brn; Ls: tan, lt brn cryptoxln and tan, offwhite mic-vfxln dense (poor quality)

80' spl - much improved - Sh: abund. med to dark gray, black; Ls: tan, brn, gray cryptoxln; lesser offwhite subchalky to white chalky; 2 chips offwhite mic-vfxln with

MudCo Mud Check at 4150'  
 8:50 AM on 4-24-2011  
 wt vis wl pH chl  
 9.3 59 8.0 10.0 2400  
 PV YP GelS lcm solids  
 16 19 13/27 2# 6.6%

**Marmaton 4172' (-1387)**

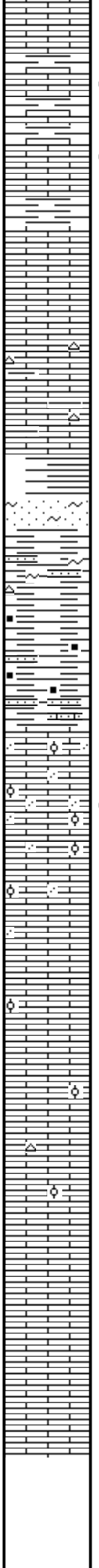
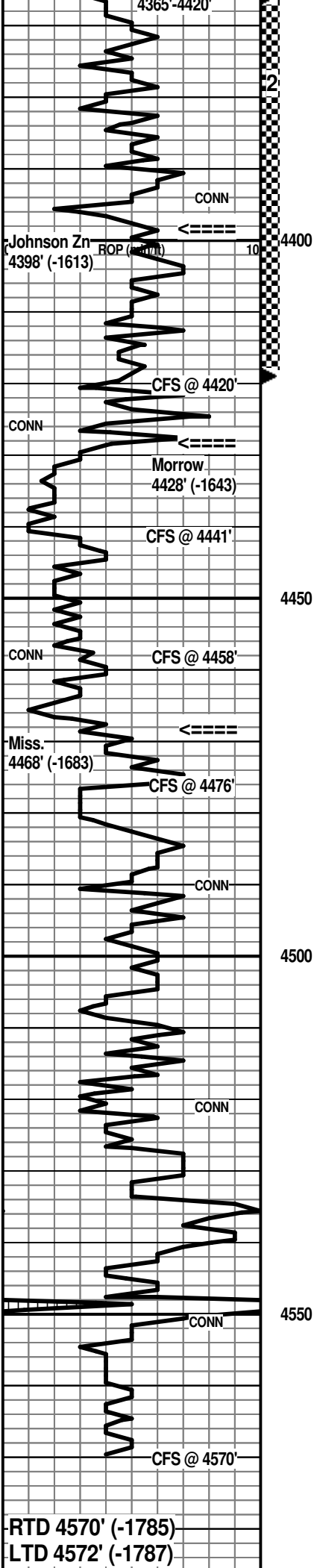
**Pawnee 4246' (-1461)**

**Upr Fort Scott 4268' (-1483)**

**Little Osage 4298' (-1513)**

**Excello Shale 4324' (-1539)**

DST No. 2 Johnson Zone  
 Interval: 4365'-4420'  
 Times: 30-30-30-30  
 IFF: surface blow  
 ICD: no return



small vug. por. on chip edges, spotty brn stain, trace dark brn oil, no odor, no fluor.

90' spl - Ls: decr. various cryptoxln AA; more offwhite, tan mic-vfxln dense with scatt. chips with por. and shows AA; trace tan cryptoxln with vug. por., spotty dark oily stain, faint odor, trace dark oil on break, no fluor.; common shales AA

4400' spl - Ls: various AA with some shows AA; sl influx med to dark brn cryptoxln, N.S.; occ tan, lt gray cryptoxln with vug. por., with dark brn oily stain, trace dark brn oil, faint odor, no fluor.; Sh: dark gray, black AA

10' spl - Ls: lt-med brn cryptoxln, sl mottled IP; common offwhite subchalky to chalky; trace tan fn-medxln with vug. por. with spotty dark stain, faint odor, nfo

20' spl - Ls: flood lt-med brn, occ gray-brn cryptoxln; trace tan, lt brn sl mottled granular with poor small vug. por. with faint odor, dark brn oily stain; occ offwhite mic-vfxln with dark pp stain, nfo

40' spl - Sh: good influx vc gray, gray-green; common Ls: med brn, gray cryptoxln; some mottled gray/offwhite dense; sl influx tan, brn vitreous chert

CFS 4441' 20" spl - 50% Sh: vc gray, gray-green, black, red-brn; 50% Ls: med gray, brn cryptoxln and offwhite, lt gray mic-vfxln dense; 45" spl - still 50/50 with some multi-colored shale (dark yellow, mottled red-green, lt green); trace lt gray vfg-fg Sst, silica cmt, tight, N.S.; 50' spl - mix AA with sl influx Sst: lt gray vfg glauc., N.S.

CFS 4458' 20" spl - still 50% Ls's AA; Sst: incr. % lt green vfg glauc. and lt gray, offwhite vfg tight, N.S.; Sh: multi-colored AA with some maroon and mottled dark orange/yellow; scatt. chert and reworked sandy Ls (St. Gen. type)

70' and 76' spls - Sh: predom. dark gray to black, carbon. IP; some scatt. lt gray and offwhite vfg glauc. Sst clusters, N.S.; some multi-colored shale with more mottled yellow/red/green and mottled ochre/red and gray/green

CFS spls to right -----

90' spl - Ls: various AA with some tan granular, oolitic IP with minute pp black to dark brn stain, good shows of dark brn residual and listless oil on break, no fluor., no odor, patchy stain in dry spls

Ls: tan, lt brn fn granular, sl oolitic with micxln to chalky matrix; some chalky and finely sandy; scatt. chips with shows AA

Ls: tan, brn fn granular with micxln matrix; some white chalky and sandy AA

Ls: mix tan, lt brn fn granular and more cryptoxln, no vis. por., N.S.

Ls: mix AA

Ls: mix AA, some white chalky; occ tan chert

Ls: tan, lt brn granular, oolitic IP, no vis. por., N.S.

Ls: AA

Ls: influx smooth lt-med brn cryptoxln

Ls: predom. AA

Because of the lack of commercial shows, negative DST results and negative e- log evaluation, the decision was made to plug and abandon the #1-23 Ellis as a drv hole.

rsr: no return  
FFP: very weak surface blow  
FSIP: no return  
Recovery: 10' mud  
FP: 55-64/65-73 SIP: 1184-1164  
HP: 2191-2192 BHT: 114 deg. F

jet and start adding premix at 4384'

**Johnson Zn 4398' (-1613)**

CFS 4420' 30" spl - Ls: very predom. various brn cryptoxln, sl mottled IP, no vis. por., N.S.; 1-2 chips lt brn cryptoxln with spotty dark pp stain, poor to no vis. por.; sl influx lt brn opg chert; 60" spl - Ls: various predom. cryptoxln AA, N.S.; Sh: trace green with imbedded Ls fragments

7:00 AM at 4420' on 4-25-2011

**Morrow 4428' (-1643)**

MudCo Mud Check at 4420'  
9:30 AM on 4-25-2011  
wt vis wl pH chl  
9.4 56 8.6 10.5 3000  
PV YP GelS lcm solids  
13 16 10/22 2# 7.3%

CFS 4458' 40" spl - Sh: influx dark gray to black, decr. multi-colored; occ lt gray, offwhite tight Sst and glauc. Sst, N.S.; still 40% Ls's in spl; occ free pyrite; 60" spl - Sh: flood dark gray to black carbon., gen. soft; scatt. Sst's AA; trace offwhite fn sandy Ls

**Mississippian 4468' (-1683)**

CFS 4476' 20" spl - predom. shales AA mixed and mottled IP; scatt. tight Sst clusters, not abund.; Ls: few chips tan granular, sl oolitic and tan, offwhite finely sandy, N.S.; 45" Ls: AA with common white chalky and chalky oolitic, N.S.

7:00 AM at 4540' on 4-26-2011

MudCo Mud Check at 4564'  
9:35 AM on 4-26-2011  
wt vis wl pH chl  
9.5 59 10.4 9.0 4000  
PV YP GelS lcm solids  
15 19 12/28 1# 8.3%

RTD reached at 9:40 AM on 4-26-2011  
CFS/CTCH until 11:45 AM (loggers expected at 2:00 PM)

Abandon the 11-25-218 as a dry hole.

Respectfully submitted,

Wesley D. Hansen  
Petroleum Geologist  
Kansas License No. 418

0	ROP (min/ft)	10
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4600