

OPERATOR

Company: BOP WEST, LLC
 Address: P.O. BOX 129
 WOOSTER, OHIO 44691

Contact Geologist:
 Contact Phone Nbr: 330-264-8847
 Well Name: M. REDDEN # 21-2
 Location: 330 FNL, 1390 FWL, SEC21-T16S-R1WAPI: 15-169-20343-00-00
 Pool: DRY AND ABANDONED Field: HUNTER
 State: KANSAS Country: SALINE

Scale 1:240 Imperial

Well Name: M. REDDEN # 21-2
 Surface Location: 330 FNL, 1390 FWL, SEC21-T16S-R1W
 Bottom Location:
 API: 15-169-20343-00-00
 License Number: 34439
 Spud Date: 10/18/2012 Time: 7:00 AM
 Region:
 Drilling Completed: 10/22/2012 Time: 12:52 PM
 Surface Coordinates: Y = 116453 & X = 2159665
 Bottom Hole Coordinates:
 Ground Elevation: 1280.00ft
 K.B. Elevation: 1289.00ft
 Logged Interval: 1750.00ft To: 2680.00ft
 Total Depth: 2680.00ft
 Formation: MISSISSIPPIAN
 Drilling Fluid Type: CHEMICAL

SURFACE CO-ORDINATES

Well Type: Vertical
 Longitude: Latitude:
 N/S Co-ord: Y = 116453
 E/W Co-ord: X = 2159665

CASING SUMMARY

	Surface	Intermediate	Main		
Bit Size	12.25 in				
Hole Size	12.25 in				
	Size	Set At	Type	# of Joints	Drilled Out At
Surf Casing	8.625 in	219 ft	24#		10/18/2012 9:40 PM
Int Casing					
Prod Casing					

CASING SEQUENCE

Type	Hole Size	Casing Size	At
SURFACE	12.25 in	8.63	219.00 ft

CONTRACTOR

Contractor: C + G DRILLING CO.
 Rig #: 2
 Rig Type: DOUBLE PORTABLE
 Spud Date: 10/18/2012 Time: 7:00 AM
 TD Date: 10/22/2012 Time: 12:52 PM
 Rig Release: Time:

LOGGED BY

Company: LARRY P. FRIEND
 Address: 1639 BURNS ST.
 WICHITA, KS 67203-2757

Phone Nbr: 316-265-2228

FORMATION DEPTHS

FORMATION DEPTHS:	SAMPLE	COMPARISON TO:
		BOP WEST, LLC, 1 MAX REDDEN 530 FSL, 1170 FWL, 21-T16S-R1W
HEEBNER	1821 (-532)	-11
BROWN LIME	1974 (-685)	-8
LANSING	2031 (-742)	-14
MUNCIE CREEK SH.	2196 (-907)	-12
STARK SHALE	2296 (-1007)	-15
BKC	2366 (-1077)	-14
MARMATON	2379 (-1090)	-15
CHEROKEE	2545 (-1256)	-7
MISSISSIPPIAN	2656 (-1367)	-31

NOTES

DUE TO THE LACK OF DOLOMITE AND SHOWS IN THE MISS, A LACK OF ANY OTHER POSITIVE OIL SHOWS AND A POOR STRUCTURAL POSITION, IT WAS DECIDED TO PLUG AND ABANDON THIS TEST.
RESPECTFULLY SUBMITTED,
LARRY P. FRIEND

ROCK TYPES

Cht	Lmst fw<7	Shgy	Slst
Coal	Lmst fw>7	Shblk	
Dolsec	Ss	Shcol	

ACCESSORIES

MINERAL

- Argillaceous
- ▲ Chert, dark
- △ Dolomitic
- Sandy
- ^ Siliceous
- ** Silty

FOSSIL

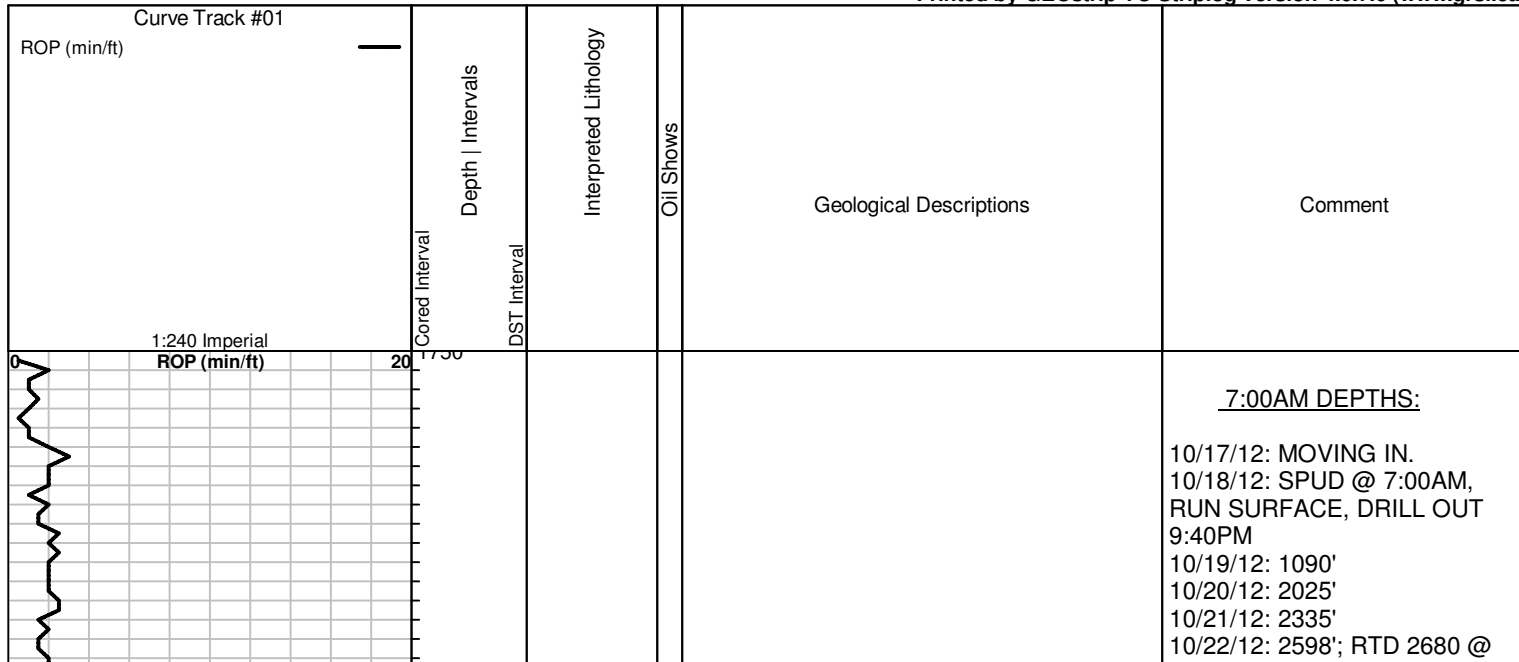
- ◊ Oolites

OTHER SYMBOLS

OIL SHOWS

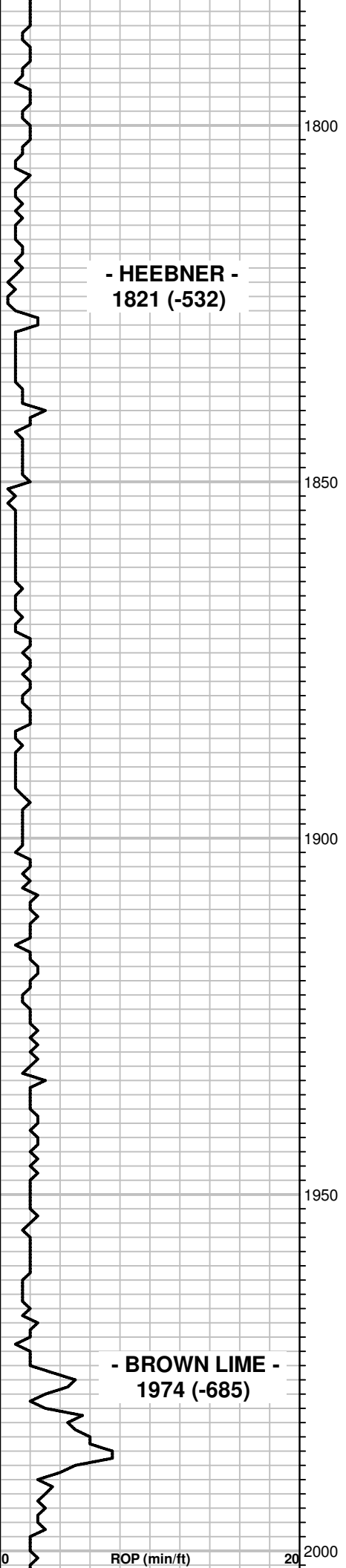
- Even Stn
- Spotted Stn 50 - 75 %
- Spotted Stn 25 - 50 %
- Spotted Stn 1 - 25 %
- Questionable Stn
- D Dead Oil Stn
- Fluorescence

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DEVIATION SURVEYS:

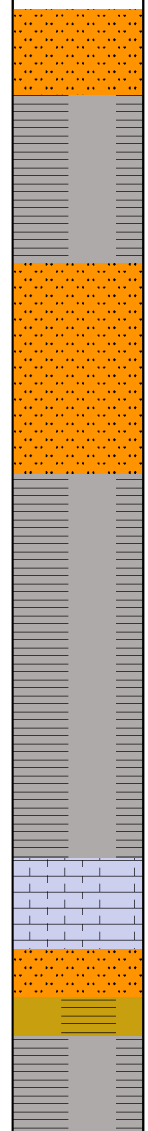
.25 DEGREES @ 1247'
.5 DEGREES @ 1902'



**- HEEBNER -
1821 (-532)**

**- BROWN LIME -
1974 (-685)**

ROP (min/ft)



10: LT. GRY, TITE SILTSTONE; TR. DK. SHALE/ COAL LAYERS.

20: SHALE, GRY.

30: LT. GRY, SLI. MICA. SILTSTONE, TITE; TR. PYRITE

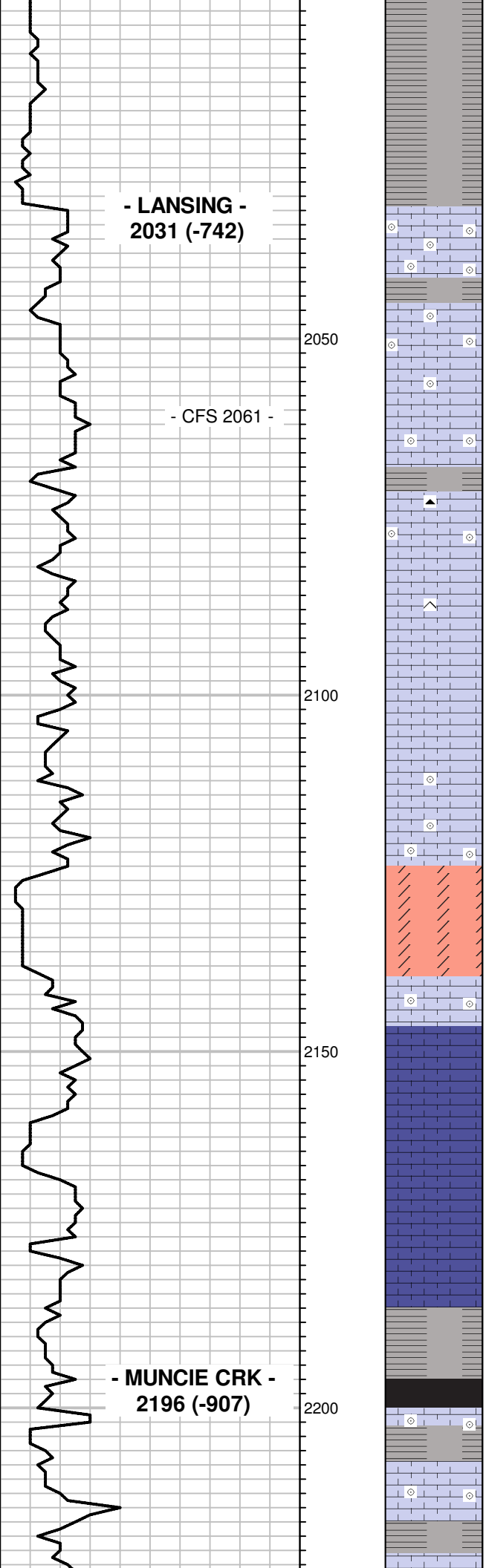
40: SILTSTONE, AS ABOVE; TR. V. THIN DK. SHLAE / COAL LAYERS; TR. PYRITE.

50, 60, 70: SHALE, GRY.

80: TR. LS, BRN, VFXLN, FOSS., DSE; NS

90 & 100: LS, GRY - BRN, VF-FXLN, FOSS, DSE; AND MUCH REDDISH-BRN (RUSTY) LMY SILTSTONE, SLI. SHALEY; TR. REDDISH-BRN SHALE; NS

SAMPLES STARTED AT 1900'.



10, 20, 30: SHALE, GRY.

40: TR. LS, TAN - BRN, VF-FXLN, FOSS, PR. VIS. POR; NS

50: LS, CRM- BRN, V. OOLITIC, SOME FN / SOME MED. OOLITES, TR. SLI. CHLKY, TR. FR. INTER-OOL. XLN. POR; NS

60: LS, BRN, VF-FXLN, V. OOLITIC, PR. - FR. XLN. POR & TR. MOSTLY PR- 1 PC. FR. OOLIC. POR, SM. SLI. CHLKY IN DRY, SM. CALCITE FILL, FSFO (MOSTLY V. LT.- TR. BRN), PR. SPTY BRN SAT. STN, TR. SPTY. FLUOR, FR. FLUSH CUT, SLI. ODOR (LOOKS TITE)

61 CIRC: LS, BRN, FXLN, OOLITIC, PR. XLN. POR; NS

80: LS, CRM - BRN, FXLN, FOSS, SOME SLI. CHLKY, PR - FR. XLN. POR; TR. CHERT, BRN; SHALE, GRY; NS

90: LS, TAN-BRN, SLI. - TR. V. FOSS / OOLITIC PR. VIS. POR; SHALE, GRY; NS

100: LS, TAN, FXLN, SOME FOSS, PR - TR. FR. XLN. POR, SM. AMT. CHERY; SHALE, GRY; PYRITE; NS

10: LS, BRN, VFXLN, FOSS, SOME WEATH, PR. POR; SHALE, GRY, LT. GRN; NS

20: LS, BRN, V. FOSS, SLI. WEATHERED, PR. POR; NS

30: LS, BRN, V. FOSS. / OOLITIC, PR. POR; INC. GRY SHALE IN SAMPLE; NS

40: DOLOMITE, FXLN, TAN, SLI. SUC, FR - GD. PPT - VUG. SOLUTION POR, ALSO FR. XLN. POR; NS, NO FLUOR.

50: LS, TAN-BRN, V. OOLITIC, SOME SLI. WEATH, PR. - TR. FR. XLN POR; NS

60: LS, BRN, VFXLN, DSE; NS

70: LS, CRM - TAN, SOFT, SLI. CHLKY; NS

80: LS, TAN-BRN, VF-FXLN, DSE TO PR. XLN. POR; NS

90: LS, AS ABV; TR. GRY SILTSTONE; SHALE, GRY; NS

100: LS, DK. GRY- BRN, FXLN, SOME SHLY AND SHALE, GRY; NS

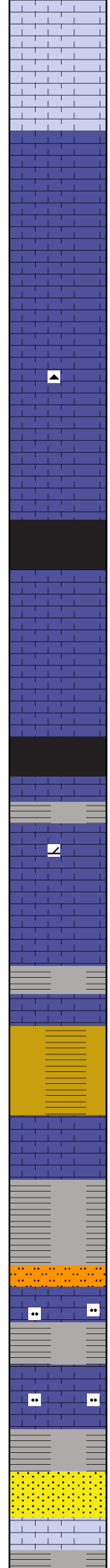
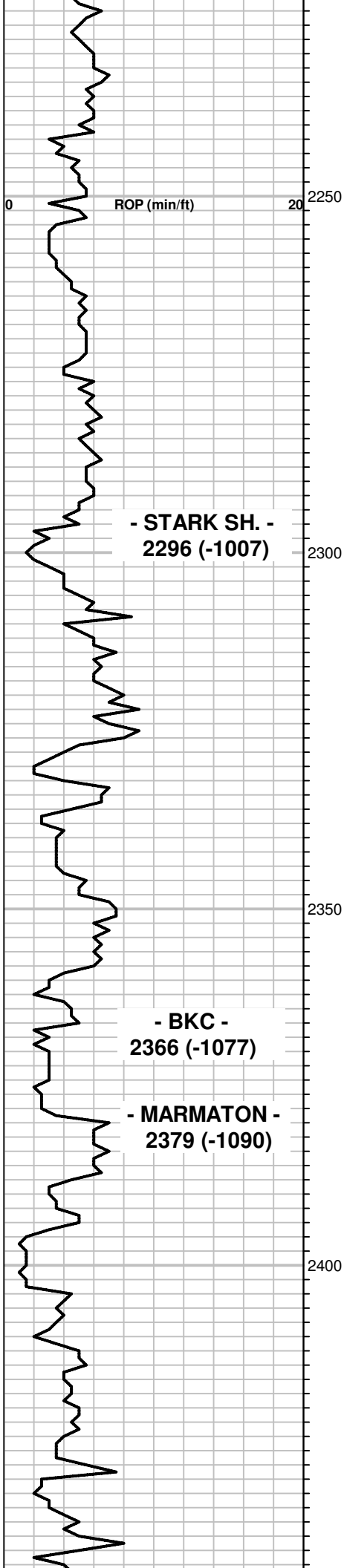
10: TR. BLK. SHALE, CARBONACEOUS; LS, BRN, V. OOLITIC, PR. POR; NS

20: SHALE, GRY AND LS, TAN, VFXLN, FAINTLY OOLITIC, DSE; NS

30: INC. GRY SHALE AND TR. LS, TAN-BRN, VFXLN, SM. FOSS, DSE; NS

PUMP PRESSURE DOWN TO 325#, SOME SHALE SLUFF.

MUD AT 2080:
 WT: 9.3
 VIS: 30
 FILT: 26
 CHLOR: 1,450
 LCM: 0#



40: TR. LS, TAN-BRN, VFXLN, TR. FOSS, DSE; MOSTLY GRY SHALE IN SAMPLE; NS

50: LS, BRN, FXLN, V. FOSS, PR- TR. FR. XLN. POR; SHALE, GRY; NS

60: LS, BRN, VFXLN, DSE; NS

70: LS, AS ABV TO SOME CRM, WEATHERED, SLI. CHLKY; TR. LS, GRY, V. FOSS, CALCITIC, PR. VIS. POR; NS

80 & 90: LS, BRN, VFXLN, SLI. CALCITIC, DSE TO LIT. CRM, WEATHERED, SLI. CHLKY; TR. CHERT, BRN; NS

100 & 10: LS, AS ABOVE; NS

20: SHALE, BLK, CARBONACEOUS; LS, CRM - TAN, VF-FXLN, SM. SLI. WEATH, SLI. CHLKY, PR - FR. XLN. POR; NS

30: LS, BRN, VF-FXLN, SLI. CALCITIC, DSE; NS

40: SHALE, BLK; LS, BRN, VFXLN, DSE; TR. PYRITE; NS

50: LS, TAN, FXLN, SLI. SUCROSIC (SLI. DOLOMITIC?) W/ PR - FR. XLN. POR; TR. CHERT, TAN; NS

70: LS, TAN-BRN, VFXLN, V. SLI. FOSS, DSE; NS

80: SHALE, GRY & LT. GREEN; TR. PYRITE.

90 & 100: LS, BRN - DK. BRN, VFXLN, SLI. FOSS, DSE; NS

10: SHALE, GRY & GRN; NS

20: GRY LS, SILTY, SHLY; TR. SILTSTN, LMY, MICA; SHALE, GRY.

30: LS, GRY, SHLY, SLI. SILTY; TR. LMY. SILTSTN; SHALE, GRY

40: SST, WH, VF-MED, CLR - FROST. GRNS, SBANG, PR, SORT, MOSTLY TITELY CEM W/ LMY CEM, TR. FR. INTERGRAN. POR, 5-7% W/ FSFO, SPTY BRN. SAT. STN, NO FLUOR OR FLUSH CUT BUT GD CRUSH CUT, NO ODOR.

50: LS, TAN-BRN, VFXLN, FOSS, DSE - PR.

PUMP PRESSURE 400#
CARRYING MUCH GRY SHALE
SLUFF IN SAMPLES

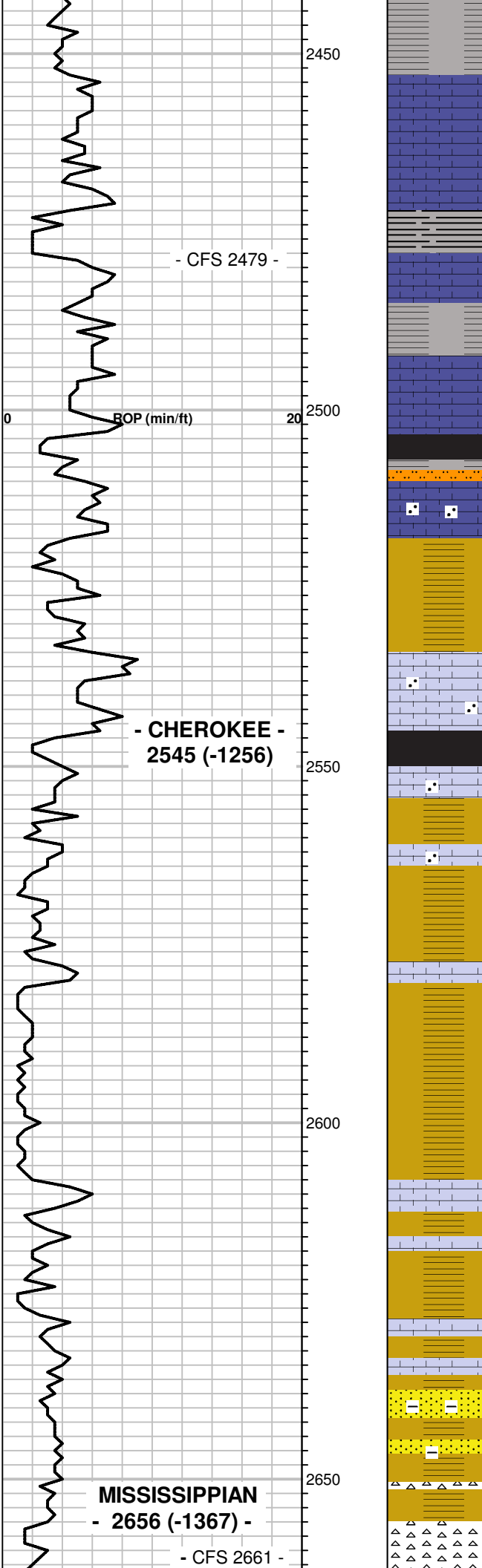
SAMPLES 50% GRY SHALE
SLUFF.

SAMPLES GOOD

PUMP PRESSURE 350#.

BIT TRIP AT 2358' AND WORK
ON MUD PUMP. PUMP
PRESSURE BACK TO 450#
NO PIPE STRAP.

MUD AT 2358:
WT: 9.4
VIS: 40
FILT: 19+
CHLOR: 1,300



XLN. POR; SHALE, MAROON & GRY; NS

60: SHALE, GRY AND LS, AS ABV TO LS, GRY, EARTHY, DSE; NS

70 & 79: LS, BRN, VFXLN, SLI. SUCROSIC, SLI. FOSS, DSE; NS

79 CIRC: SHALE, DK GRY TO BLK.

90: LS, GRY-BRN, VF-FXLN, PR. POR; NS

100: LS, AS ABV & SM. AMT. GRY, LMY SILTSTONE; NS

10: LS, BRN, VFXLN, SLI. FOSS, PR. POR; SHALE, GRY, LT. GRN; NS

20: LS, BRN, VF-FXLN, SLI. SILTY, DSE; SHALE, LT. GRY - LT. GRN; NS

30: SHALE, LT. BRN; LS, BRN, SILTY TO LMY SILTSTONE, PR. POR; NS

40: SHALE, VARY COLORED.

50: LS, BRN, VF-FXLN, SOME FOSS - SOME SILTY, DSE TO PR. XLN. POR; NS

60: SHALE, MOSTLY GRY TO TR. BLK.

70: SHALE, VARY COLORED AND LS, TAN-BRN, FXLN, FOSS. TO SILTY, PR. VIS. POR; NS

80: SHALE, VARY COLORED; TR. LS, CSELY FOSS, PR. VIS. POR; NS

90: SHALE, BLK AND VARY COLORED; TR. LS, TAN, V. FOSS, PR. VIS. POR; NS

100 & 10: MOSTLY VARY COLORED SHALE.

20: SHALE, AS ABV; TR. LS, BRN, FXLN, FOSS, GLAUCONITIC, PR. VIS. POR; NS

30: LS, TAN-BRN, VF-FXLN, V. FOSS, SLI. GLAUC, DSE TO PR. XLN. POR; SHALE, VARY COLORED.

40: SHALE, VARY COLORED, TR. BLK, CARB; LS, BRN, VF-FXLN, V. FOSS, SLI. GLAUC, DSE - PR. XLN. POR; NS

50 & 55: SM. AMT. SST, VF-MED, CLR, GRNS IN CRM CLAY CEM, SOFT TO TITE; SHALE AS ABV; NS

60: SM. AMT. TAN CHERT; NS

61 CIRC: CHERT, CLEAN, TAN SHARP TO TR. WEATHERED; TR. CSE, GRY QTZ. GRNS; NS,

MUD AT 2680:
WT: 9.3+
VIS: 48
FILT: 9.8

