

Geologic Report  
**Aaron L. Young**

Drilling Time and Sample Log

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

Well Name: Higgins C #1  
API: 15-095-22319  
Location: Section 10 - T30S - R8W  
License Number: 4419  
Spud Date: 3/6/2018  
Surface Coordinates: 3300' FSL and 3300' FEL  
Approx. SE - NW  
Region: Kingman Co., KS  
Drilling Completed: 3/15/2018  
Bottom Hole Coordinates:  
Ground Elevation (ft): 1525' K.B. Elevation (ft): 1536'  
Logged Interval (ft): 3000' To: 4250' Total Depth (ft): 4250'  
Formation: Mississippi  
Type of Drilling Fluid: Chemical - Andy's

Printed by WellSight LogViewer from WellSight Systems 1-800-447-1534 www.WellSight.com

**OPERATOR**

Company: Bear Petroleum, LLC  
Address: PO BOX 438  
Haysville, KS 67060+0438

**GEOLOGIST**

Name: Aaron L. Young, M.S.  
Company: Young Consulting LLC  
Address: 100 S Main, Suite 505  
Wichita, Kansas 67202

**General Info**

CONTRACTOR: Murfin Drilling, Rig #20

**BIT RECORD:**

No.	Size	Make	Jets	Out	Feet	Hours
1	12-1/4	Smith	16-16-16	225	214	3.5
2	7-7/8	HTCO DP 506 PDC	15-15-15	2988	2774	48.0
3	7-7/8	HTCO GX220C	15-15-15	4250	1262	50.0 / 101.5

SURVEYS: 211'-0.7, 649'-0.4, 1155'-0.2, 1661'-0.4, 1946'-0, 2261'-0.1, 2988-0, 3494'-0.4, 3874'-0.3, 4250'-0.2

**GENERAL DRILLING AND PUMP INFORMATION:**

Drilling with 28,000 - 36,000 lbs. on bit and approx 80-85 RPM.  
Running 8.5 stands of collars; 511.61'  
Pumping approx 800-900 psi at standpipe.

**Daily Status**

3/6/18 - Spud, Ran 5 jts of 8 5/8" surface casing set @ 211', cmt w/ 185 sx 60/40 poz, 2% gel, 3% CC  
3/7/18 - WOC  
3/8/18 - Drilling @ 1820'  
3/9/18 - Drilling @ 2705'  
3/10/18 - Drilling @ 3442'  
3/11/18 - Drilling @ 3950' DST #1

3/12/18 - Drilling @ 4308' DST #2

3/13/18 - Circ @ 4195' DST #3

3/14/18 - Drilling at 4308', Set 4 1/2" used production casing w/ 150 sx 60/40 Poz 2% gel

DST #1 HERTHA 3850' - 3874'  
30"-60"-45"-90"

IF: Weak blow, built to 2"

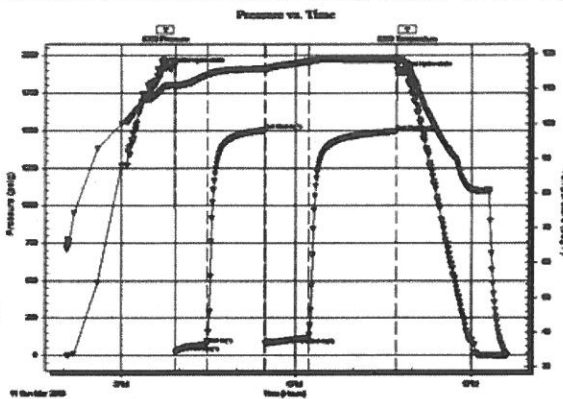
ISI: No blow

FF: Weak blow built to 2"

FSI: No blow

Rec'd: 220' HMCW w/ trace of oil (26% M, 74% W)

SIP: 1504-1496# FP: 20-75#, 80-119# HP: 1911-1885#



DST #2 MISSISSIPPI 4098' - 4195'  
30"-60"-45"-90"

IF: Weak build to BOB in 2.5 min, GTS in 27 min

ISI: Strong blow throughout

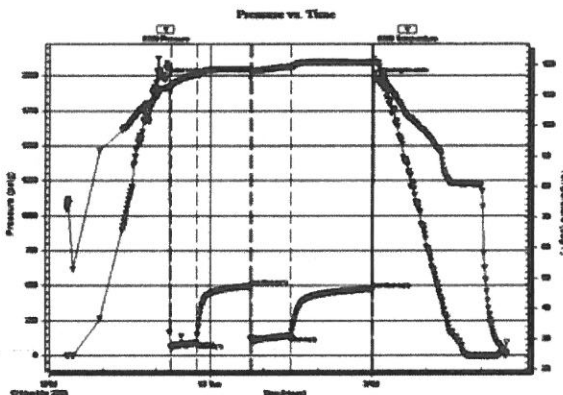
FF: Strong blow throughout

FSI: Strong blow throughout

Rec'd: 300' Gassy mud (11% G, 89% M)

Guaged 28.71 Mcf/d stabilized

SIP: 496-477# FP: 56-92#, 104-141# HP: 1975-1975#



DST #3 MISSISSIPPI 4194' - 4210'  
30"-60"-45"-90"

IF: Weak build to strong blow, GTS in 29 min

ISI: Surface blow back

FF: Strong blow throughout

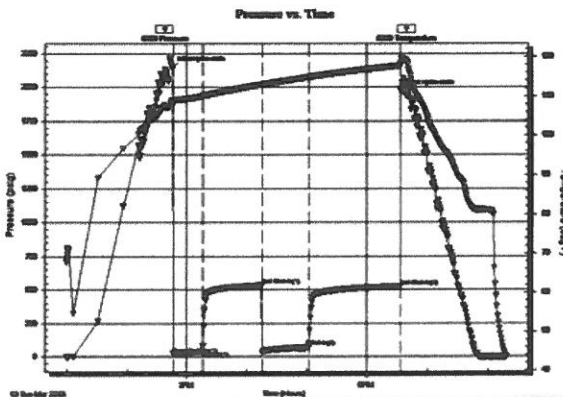
Rec'd: 60' GO&MCW (10% G, 8% O, 71% W, 11% M), 85'  
GHO&WCM (10% G, 22% O, 26% W, 42% M)

Guaged 6.7 Mcf/d stabilized

SIP: 534-526#

FP: 20-41#, 30-74#

HP: 2143-1968#



**ROCK TYPES**

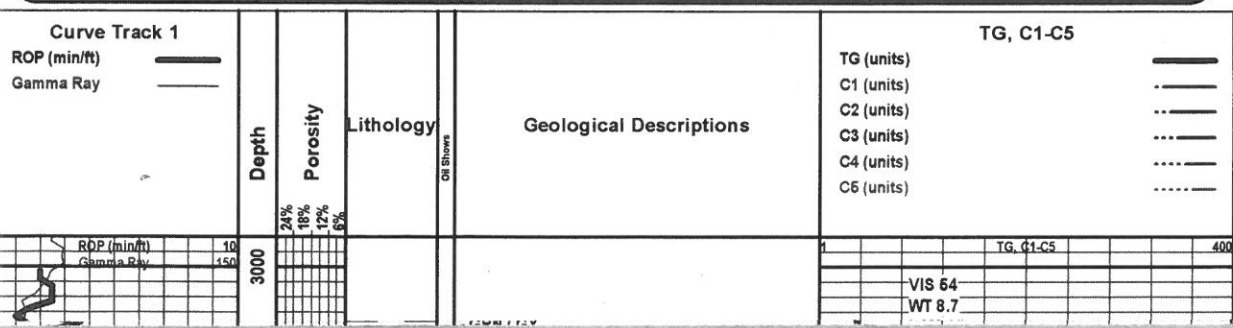
- |       |       |         |          |
|-------|-------|---------|----------|
| Anhy  | Gyp   | Shgy    | Sandylms |
| Bent  | Igne  | Sltst   | Shale    |
| Brec  | Lmst  | Ss      | Sltstn   |
| Cht   | Meta  | Till    | Shlysis  |
| Clyst | Mrst  | Carb sh | Sitysh   |
| Coal  | Salt  | Dol     | Lms      |
| Congl | Shale | Dtd     |          |
| Dol   | Shcol | Gry sh  |          |

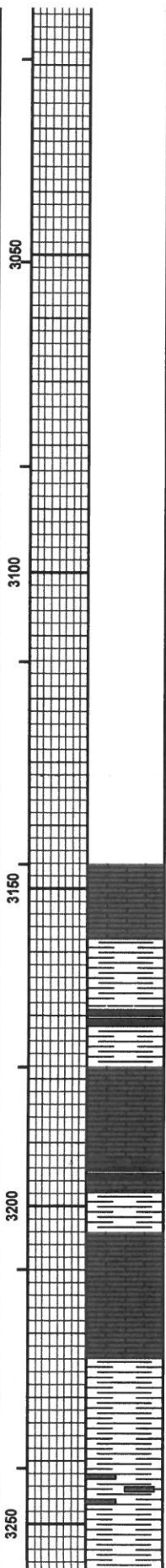
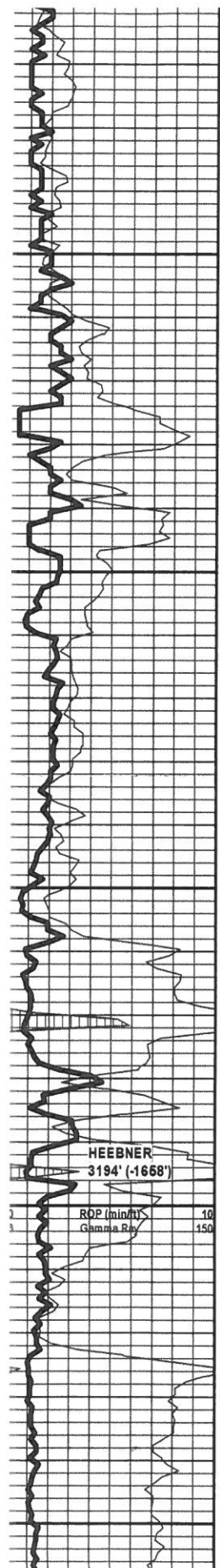
**ACCESSORIES**

- |                |               |                 |                |
|----------------|---------------|-----------------|----------------|
| <b>MINERAL</b> | Salt          | Fossil          | Clystn         |
| Anhy           | Sandy         | Gastro          | Dol            |
| Arggrn         | Silt          | Oolite          | Grysh          |
| Arg            | Sulphur       | Ostra           | Grylst         |
| Bent           | Tuff          | Pelec           | Lms            |
| Bit            | Chlorite      | Pellet          | Sandylms       |
| Brecfrag       | Dol           | Pisolite        | Sh             |
| Calc           | Sand          | Plant           | Sltstn         |
| Carb           | Sity          | Strom           |                |
| Chtdk          |               | Fuss            | <b>TEXTURE</b> |
| Chtlt          | <b>FOSSIL</b> | Oomold          | Boundst        |
| Dol            | Algae         | <b>STRINGER</b> | Chalky         |
| Feldspar       | Amph          | Anhy            | Cryxln         |
| Ferrpel        | Belm          | Arg             | Earthy         |
| Ferr           | Bioclst       | Bent            | Finexln        |
| Glau           | Brach         | Coal            | Grainst        |
| Gyp            | Bryozoa       | Dol             | Lithogr        |
| Hvymin         | Cephal        | Gyp             | Microxln       |
| Kaol           | Coral         | Ls              | Mudst          |
| Marl           | Crin          | Mrst            | Packst         |
| Minxl          | Echin         | Sltstrg         | Wackest        |
| Nodule         | Fish          | Ssstrg          |                |
| Phos           | Foram         | Carbsh          |                |
| Pyr            |               |                 |                |

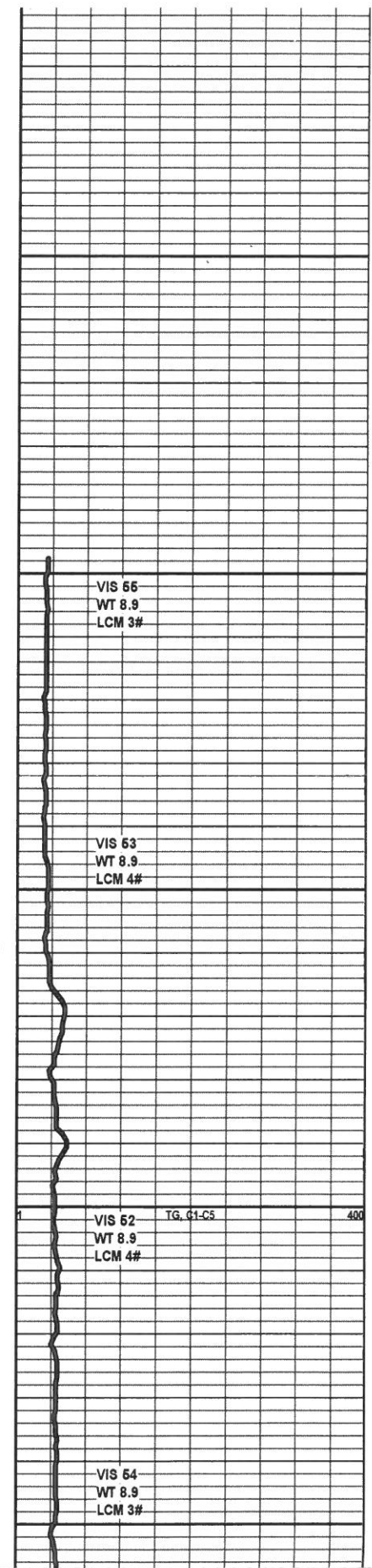
**OTHER SYMBOLS**

- |                      |                 |                  |               |
|----------------------|-----------------|------------------|---------------|
| <b>POROSITY TYPE</b> | <b>SORTING</b>  | <b>OIL SHOWS</b> | Dst           |
| Earthy               | Well            | Even             | <b>EVENTS</b> |
| Fenest               | Moderate        | Spotted          | Rft           |
| Fracture             | Poor            | Ques             | Sidewall      |
| Inter                | <b>ROUNDING</b> | Dead             | Conn          |
| Moldic               | Rounded         | Gas show         |               |
| Organic              | Subrnd          | <b>INTERVALS</b> |               |
| Pinpoint             | Subang          | Core             |               |
| Vuggy                | Angular         | Dst              |               |





LS - CRM / TAN, VF / F XLN, SUBCHKY / CHKY,  
 MOD DNS IN PT, FOSS IN PT  
  
 SH - GY / DK GY  
  
 SH - BLK, CARB, W/ SH - LT GY / GY  
  
 LS - CRM / TAN, VF / F XLN, MOD DNS /  
 SUBCHKY, CHKY IN PT, FOSS IN PT  
  
 SH - BLK, CARB  
  
 LS - CRM, VF / F XLN, MOD DNS, SUBCHKY IN  
 PT  
  
 LS - CRM / WHT, VF XLN, SUBCHKY / CHKY, V  
 CHKY IN PT  
  
 LS - TAN / GY, F / M XLN, MOD DNS / DNS,  
 FOSS  
  
 SH - GY / DK GY  
  
 SH - GY / DK GY, PYRITIC IN PT  
  
 SH - LT GY / GY, SLTY  
  
 SH - LT GY / GY, V ROFT

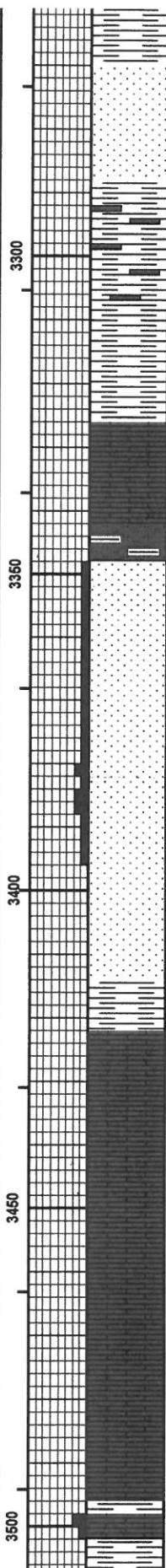
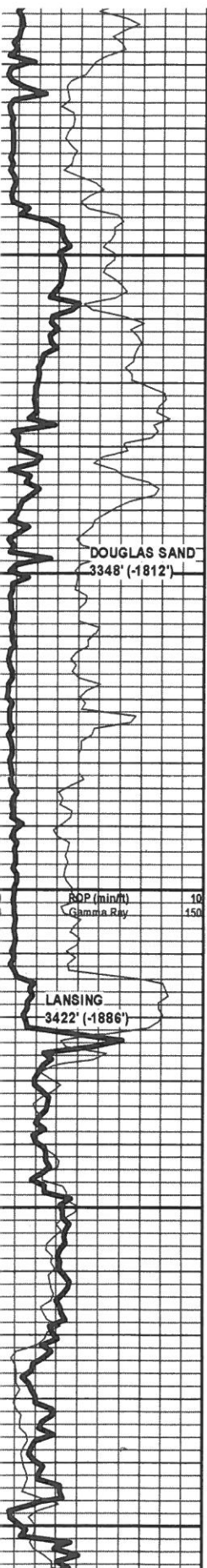


VIS 66  
 WT 8.9  
 LCM 3#

VIS 63  
 WT 8.9  
 LCM 4#

VIS 62    TG. G1-C5    400  
 WT 8.9  
 LCM 4#

VIS 64  
 WT 8.9  
 LCM 3#



SH - GY, MOD DNS, W/ FEW PIECS OF SS - CLR / GY, F GR, SUB-RND, WSRTD, SHLY IN PT, P / F INTERGR POR, FRI IN PT, NS, NO ODR

SS - CLR / GY, F GR, SUB-ANG / SUB-RND, W MOD SRTD, W CEM IN PT, FRI IN PT, NS

SH - GY / LT GY, SLTY IN PT

SH - LT GY, SLI SLTY IN PT

SH - LT GY / DK GY

SH - GY, W/ LS - CRM, VF / F XLN, MOD DNS / SUBCHKY

LS - CRM / TAN / BRN IN PT, VF / F XLN, PRED SUBCHKY / MOD DNS, DNS IN PT, FOSS IN PT

LS - CRM / TAN, VF / F XLN, SUBCHKY / CHKY

SHLY SLTSTN - LT GY / GY

SS - CLR / GY, F GR, SUB-RND, WSRTD, M CEM, DNS IN PT, P INTGR POR, NS

SS - CLR / GY, F GR, SUB-RND, WSRTD, FRI IN PT, P / F INTERGR POR

SS - CLR / GY, VF / F GR, SUB-RND, WSRTD, MOD DNS, NS

LS - CRM / WHT IN PT, VF / F XLN, PRED MOD DNS / SUBCHKY, CHKY IN PT

LS - BRN / GY, F / M XLN, MOD DNS / DNS, FOSS

LS - CRM / TAN, VF / F XLN, MOD DNS, FOSS, LRG FOSS REPLACED BY CALCTE

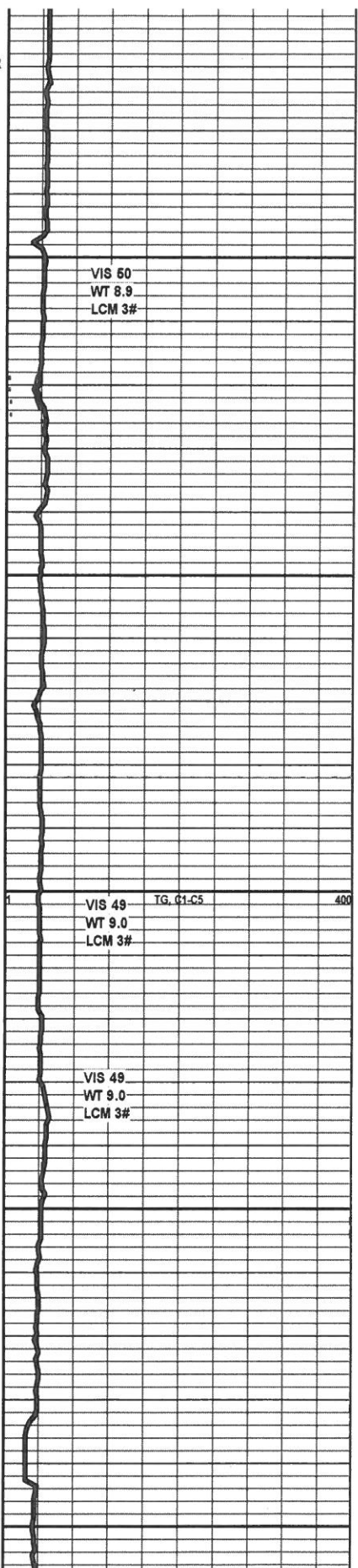
LS - TAN / LT GY, F XLN, MOD DNS / DNS, FOSS, FOSS REPLACED BY CALCTE

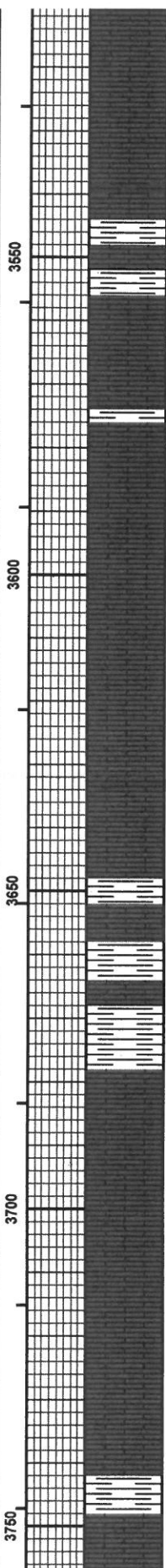
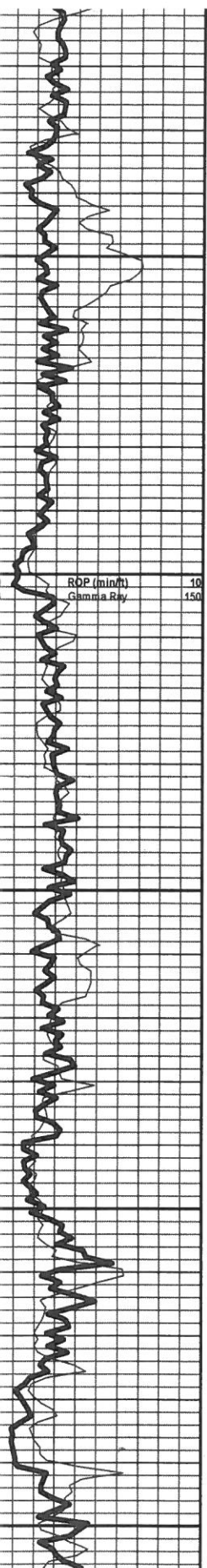
LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY, CHKY IN PT, STYLITIZED IN PT, FOSS

LS - CRM / TAN, VF / F XLN, MOD DNS, STYLITIZED, FOSS

LS - TAN / GY, F XLN, MOD DNS, FOSS, ABUND FOSS IN PT

LS - BRN / TAN / CRM, F XLN, MOD DNS / DNS, P OOLMOLDIC POR IN PT PT, NS, FOSS, W/ SH GRN / GY





LS - CRM / TAN, F XLN, MOD DNS / DNS, ABUND OF FOSS IN PT

LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS

LS - TAN / BRN, F / M XLN, MOD DNS / DNS, FOSS

LS - BRN, F / M XLN, MOD DNS / DNS, FOSS

SH - DK GY / BLK, SLI CARB, W LS - GY, F XLN, MOD DNS, SLI FOSS, W SH - GRN / GY

SH - GRN / GY / BRN, LS - DK BRN / GY, F / M XLN, MOD DNS / DNS, FOSS

LS - DK BRN / GY / TAN, F / M XLN, MOD DNS / DNS, FOSS

LS - CRM / TAN, F XLN, MOD DNS / SUBCHKY, FOSS IN PT, W SH - GY

LS - DK BRN / BRN, F / M XLN, MOD DNS / DNS, ABUND OF FOSS

LS - TAN / DK GY / BRN IN PT, VF / F XLN, MOD DNS / DNS, SUBCHKY IN PT, ABUND FOSS

LS - TAN / GY, F XLN, MOD DNS / DNS, ABUND OF FOSS, PYRITIC IN PT

LS - WHT / GY, VF / F XLN, MOD DNS, SUBCHKY / CHKY IN PT, FOSS IN PT

LS - TAN / LT GY, VF / F XLN, MOD DNS / SUBCHKY IN PT, FOSS

LS - TAN, F / M XLN, MOD DNS / DNS, FOSS, FOSS REPLACED WITH CALCITE CEM

LS - TAN, F XLN, MOD DNS / DNS, FOSS, W SH - GRN / RD / GY

SH - GY, W LS - TAN / GY, F XLN, MOD DNS / DNS, ABUND FOSS

SH - GY / GRN / MAR, W LS - CRM / TAN / GY, VF / F XLN, MOD DNS / SUBCHKY

LS - LT GY / TAN / LT BRN, F / M XLN, MOD DNS / DNS, FOSS

LS - CRM / TAN, VF / F XLN, SUBCHKY / MOD DNS, CHKY IN PT, FOSS IN PT

LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS

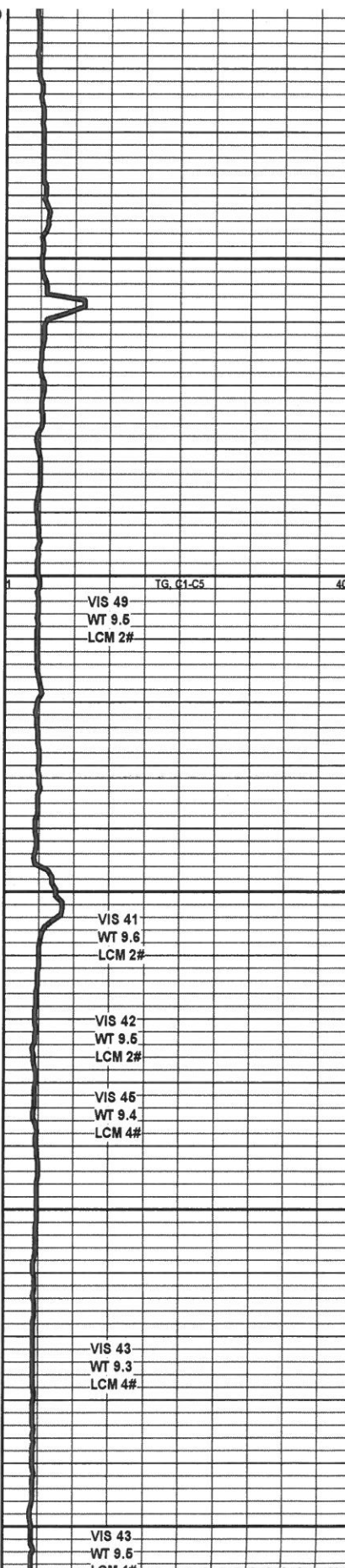
LS - CRM / TAN, VF / F XLN, MOD DNS, SUBCHKY IN PT, FOSS IN PT

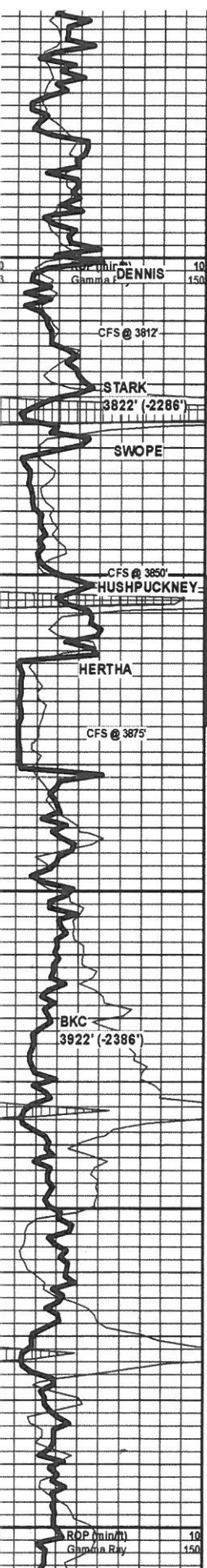
LS - WHT / CRM, TAN / GY IN PT, PRED MOD DNS / SUBCHKY, CHKY IN PT

LS - CRM / TAN, BRN IN PT, VF / F XLN, MOD DNS

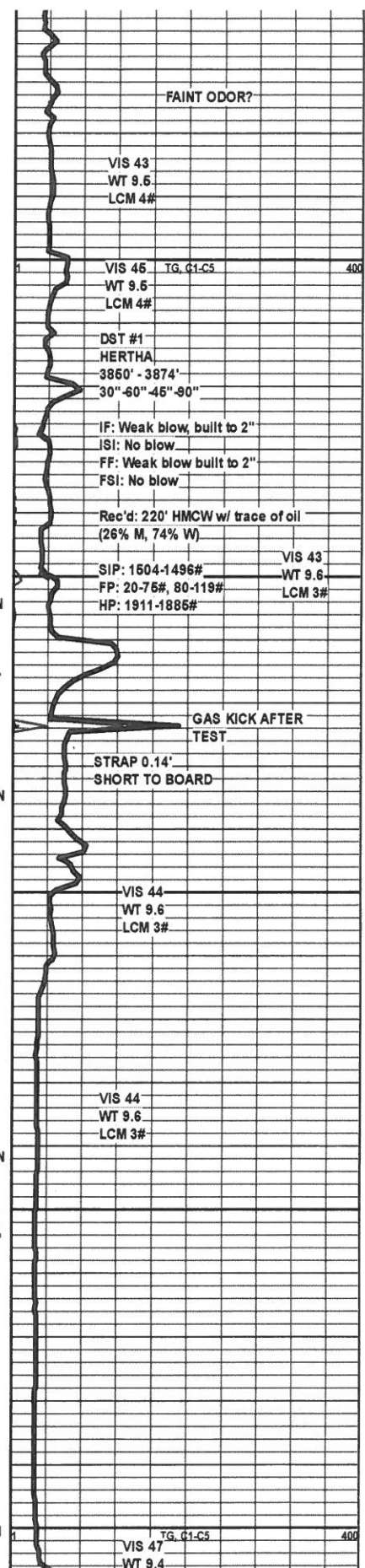
LS - CRM / TAN, VF / F XLN, MOD DNS, FOSS IN PT,

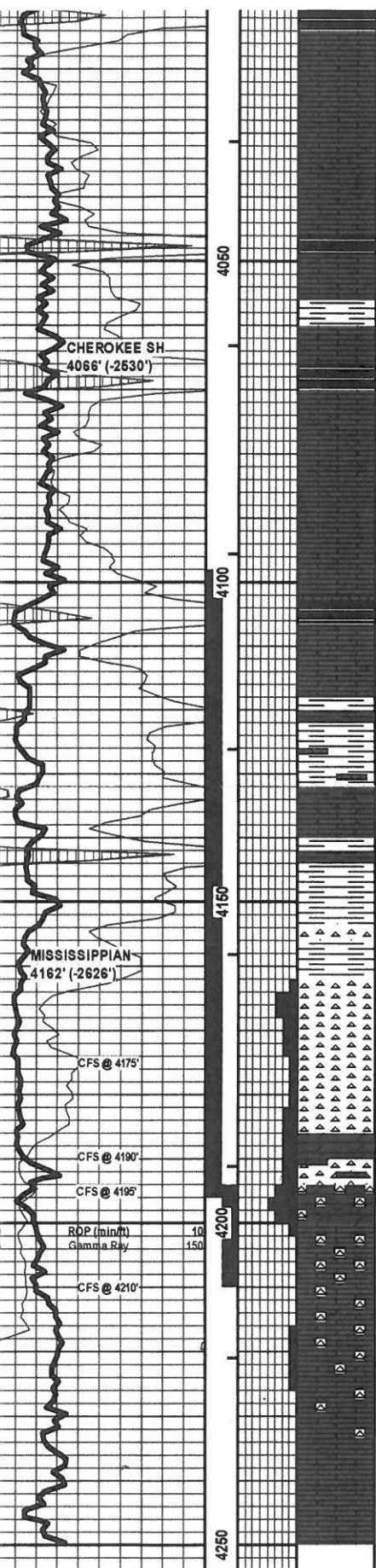
SH - GRN / GY, PLATY, W LS - TAN / GY, F XLN, DNS, FOSS





LS - CRM / TAN, VF XLN, SUBCHKY  
 LS - WHT / GY, VF XLN, CHKY / SUBCHKY  
 LS - GY / TAN, VF XLN, SUBCHKY / CHKY, NO VIS POR, NS, FAINT CUP ODOR  
 LS - TAN / GY, F / M XLN, MOD DNS / DNS, FOSS  
 LS - TAN / GY, F / M XLN, MOD DNS / DNS, HEAVILY STYLITIZED  
 LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY, CHKY IN PT  
 LS - WHT / CRM, VF XLN, SUBCHKY / CHKY  
 SH - BLK, CARB, SLI SHO OF GAS BUBBLES  
 LS - TAN / CRM, VF / F XLN, PRED MOD DNS, SUBCHKY IN PT, FOSS IN PT  
 LS - CRM / WHT, VF XLN, PRED SUBCHKY, CHKY INPT  
 LS - CRM, VF / F XLN, SUBCHKY / MOD DNS, STYLITIZED  
 SH - BLK, CARB, SLI SHO OF GAS, W/ LS - TAN / GY IN PT, F / M XLN, MOD DNS / DNS, FOSS  
 LS - TAN / BRN, F XLN, F/G OOLMOLDIC & INTERXLN POR, SSFO, ABUND OIL SHEEN, F SHO OF GAS BUBB, G CUP ODOR, V BRI YEL-GRN FLUOR, FOSS IN PT  
 LS - TAN / BRN, F XLN, PRED MOD DNS, P / F INTERXLN POR, NS, OOLITIC, W CEM  
 LS - GY / TAN, F XLN, MOD DNS / DNS, FOSS IN PT  
 SH - GY, W/ LS - DK GY, F / M XLN, MOD DNS / DNS  
 LS - DK GY, F XLN, MOD DNS / DNS, SHLY, FOSS IN PT  
 SH - GY, SOFT  
 SH - BLK, CARB, W/ SH - LT GY, V SOFT  
 LS - CRM, VF / F XLN, MOD DNS / DNS, FOSS IN PT, W/ SH - LT GRN  
 SH - GRN, W/ LS - CRM, VF / F XLN, MOD DNS / SUBCHKY, CHKY IN PT, ABUND OF FOSS IN PT,  
 LS - WHT / CRM, VF / F XLN, SUBCHKY / CHKY, FOSS IN PT  
 SH - GY / DK GY, BLK IN PT, V SLI CARB  
 LS - CRM / WHT, VF / F XLN, SUBCHKY / CHKY, W/ LS - GRN / GY  
 LS - CRM / TAN, F XLN, MOD DNS, FOSS, MOD DNS / DNS  
 LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS IN PT





SH - BLK, SLI CARB

LS - TAN / GY, F XLN, MOD DNS / DNS, FOSS IN PT

LS - CRM / WHT, VF / F XLN, SUBCHKY / CHKY IN PT

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS

SH - BLK, SLI CARB, W/ LS - TAN, F XLN, MOD DNS, FOSS

SH - GRN / GY, W/ LS - CRM / TAN, F XLN, MOD DSN / DSN, FOSS

SH - BLK, CARB, W/ LS - CRM / TAN, VF / F XLN, MOD DNS / DNS, SUBCHKY IN PT

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS IN PT

LS - CRM / WHT IN PT, VF / F XLN, PRED SUBCHKY, CHKY IN PT, FOSS IN PT

LS - TAN, F XLN, MOD DNS / DNS, FOSS

SH - DK GY / BLK, CARB IN PT, W/ LS - BRN, F XLN, MOD DNS, ABUND FOSS & OOLITES

LS - TAN, F XLN, MOD DNS / DNS, FOSS

SH - GY / GRN / YEL / MAR / PURP

SH - GRN / GY / PURP, LMY IN PT

LS - TAN, F XLN, MOD DNS / DNS, FOSS, W/ SH - GRN / GY / DK GY

SH - GRN / GY / PURP, W/ FEW PIECS OF CHT - WHT, OPAQ, P WEATH POR IN FEW PIECES, DEAD FLAKES, SLI SHO OF GAS

CHT - TAN / WHT / YEL, PRED FRSH, SHLY IN PT, VP / F WEATH POR IN PT, DEAD OIL FLAKES, V SLI OIL SHEEN, NSFO, V SLI ODOR, NO FLUOR, SHO OF GAS BUBB

CHT - WHT / CRM, 30% FRSH, 70% P / F / G WEATH POR, VSSFO, OIL SHEEN, F ODOR, SHO OF GAS BUBB, V SLI FLOUR

CHT - WHT / CRM, 30% FRSH, 70% P / F / G WEATH POR, DOLOMITIC IN PT, VSSFO, OIL SHEEN, SLI ODOR, F SHO OF GAS, F YEL-GRN FLUOR

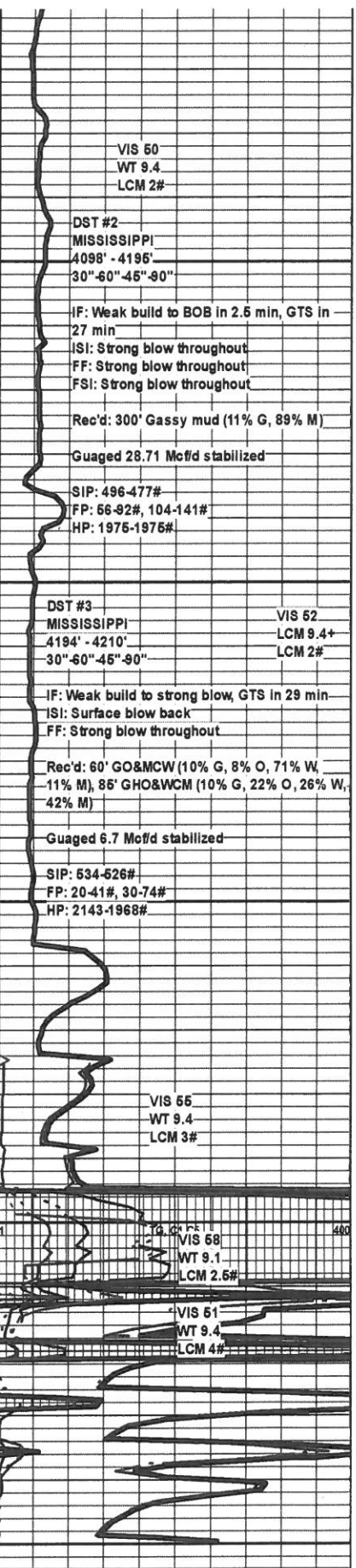
DOLO - CRM / GY, VF / F XLN, M XLN IN PT, RHOMBIC IN PT, SUCROSIC IN PT, CHTY, F / G INTERXLN POR, SSFO, COMP SAT IN PT WITH HEAVY BLK OIL, F YEL-GRN FLUOR, SLI ODOR, V G SHO OF GAS BUBB

LS - CRM / WHT, VF XLN, SUBCHKY / CHKY, NO VIS POR, NS, CHTY - WHT / CLR, TRANSLUCNT, FRSH, ANGULAR

LS - CRM / WHT, VF / F XLN, SUBCHKY / CHKY, P INTERXLN POR, NSFO, SLI OIL SHEEN WHEN BROKEN, CHTY IN PT - WHT / CLR, FRSH, TRANSLUCNT

LS - CRM / WHT, PRED CHKY, SUBCHKY IN PT

LS - WHT / CRM, VF XLN, CHKY / SUBCHKY



RTD 4250'