Tucker
WIRELINE SERVICES

COMPENSATED NEUTRON
PEL DENSITY LOG

1/19/2012

RECEIVED
FEB 01 2011
Mo Oil & Gas Council

File No. : TUL-56723
Company : RUNNING FOXES PETROLEUM, LLC
Well : EMMERSON 5-6A-4
Field :
County : VERNON
State : MISSOURI
Country : USA

Location : PERMIT#: 22663
1780' FNL & 1200' FWL
SE NE SW NW
Sect : 6 Twp : 36N Rge : 33W

Recorded By : B.BAILEY
Witnessed By : C.COUNTS

Date : DEC 14 2010
Run No. : 1

Permanent Datum :	GL	
Drilling Measured From :	GL	
Log Measured From:	GL	
Above Permanent Datum :	0.00	FT
Depth--Driller :	450.0	FT
Depth--Logger :	450.0	FT
Bottom Log Interval :	427.0	FT
Top Log Interval :	20.0	FT
Casing Depth--Driller:	20.0	FT
Casing Depth--Logger :	20.0	FT
Casing Diameter :	8.625	IN
Bit Size :	6.125	IN

Unit No. : 127
Location : TULSA

Elevations :

KB :		FT
DF :		FT
GL :	880.00	FT

Additional Services

PIT

The customer is hereby warned that by providing the log data herein, T. W. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. W. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. W. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. W. S. for its services. Any user of the log data is warned that said user is not entitled to rely on intepretations, conversions or recommendations as aforesaid.

Run Number 1

Depth To Fluid	0.0	FT		
Fluid Type In Hole :	NATIVE			
Density :	0.000	SG		
Viscosity :	0.000	SEC		
pH :	0.000			
Fluid Loss :	0.000			
Salinity :	0.000	KPPM		
RM Source :	MEASURED			
RM :	10.000	OHMM at	41	F
RM at BHT :	6.656	OHMM at	61	F
RMF Source :	CALCULATED			
RMF :	8.500	OHMM at	41	F
RMF at BHT :	5.658	OHMM at	61	F
RMC Source :	CALCULATED			
RMC :	11.500	OHMM at	41	F

RMC at BHT : 7.654 OHMM at 61 F

Max Recorded Temp. : 61 F
Time Circulation Stopped :
Operating Rig Time, Hrs. : 2.0

- Source Serial Numbers -

Gamma	CSV-587
Neutron	N-1044

- Sonde Serial Numbers -

GRTB	GRT-BA-14
CNT	CNP-AA-111
LDTNG	LDP-DA-01
PIT_B	PIT-CA-074

Casing Strings

Size (IN)	Weight (LB/FT)	Bottom (FT)
8.625	32.00	20.00

- Comments -

ALL PRESENTATIONS AS PER CUSTOMER REQUEST.

GRT, CNT, LDT, PIT RAN IN COMBINATION
CALIPERS ORIENTED ON THE X-Y AXIS.
PHIN IS CALIPER CORRECTED.
2.71 G/CC USED TO CALCULATE POROSITY.
ANNULAR HOLE VOLUME CALCULATED USING 2.875" PRODUCTION CASING.

GRT: GRP.
CNT: PHIN, CLCNIN.
LDT: PORL, LCORN, PECLN, CLLDIN, LDENN, PORLLS, PECSN.
PIT: ILD, ILM, CIRD, SFLAEC, SPU.

OPERATORS:
M.BURKE
M.BURKE

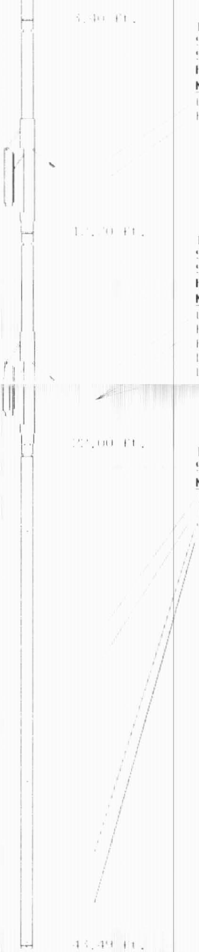
THANK YOU FOR USING TUCKER WIRELINE SERVICES!

Tool String Schematic

Total Tool Length 43.49 ft.
Maximum Outside diameter 4.00 in.
Net Weight in Air 743.00 lbs.

Tool: GRTB Length: 3.40 ft. O.D.: 3.60 in.
Sonde ID : GRT BA 14

Measure Point	Stack Offset	Tool Offset	Bottom Offset
GRT	2.00	2.00	41.49



Tool: CNT **Length:** 9.30 ft. **O.D.:** 4.56 in.
Sonde ID : CNP AA 111
Source ID : N 1044
Pad ID : CNP AA 111

Measure Point	Stack Offset	Tool Offset	Bottom Offset
CFCN	9.40	6.00	34.09
PHIN	10.24	6.84	33.25

Tool: LDTNG **Length:** 9.30 ft. **O.D.:** 4.80 in.
Sonde ID : LDP DA 01
Source ID : CSV 582
Pad ID : LDP DA 01

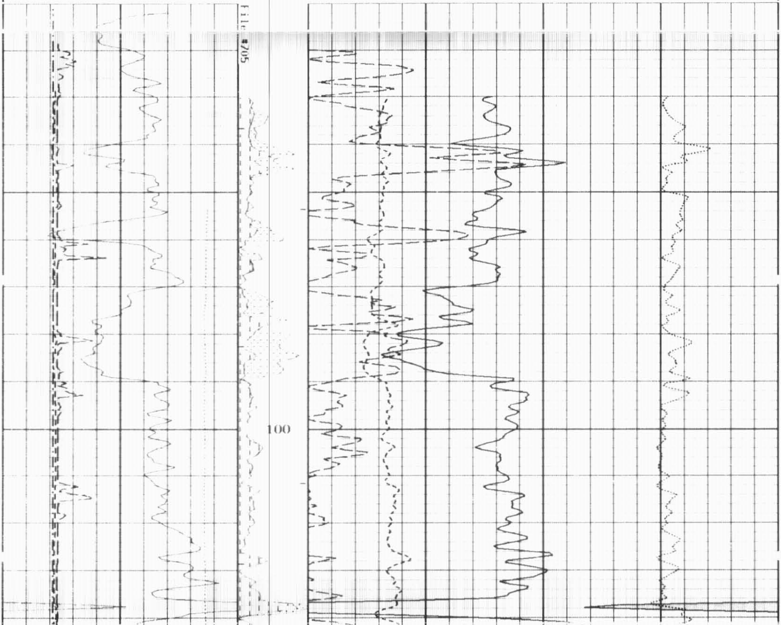
Measure Point	Stack Offset	Tool Offset	Bottom Offset
CLLD	18.70	6.00	24.79
PEL	19.70	7.00	23.79
PES	20.10	7.40	23.39
LDEN	19.70	7.00	23.79
LCOR	19.70	7.00	23.79

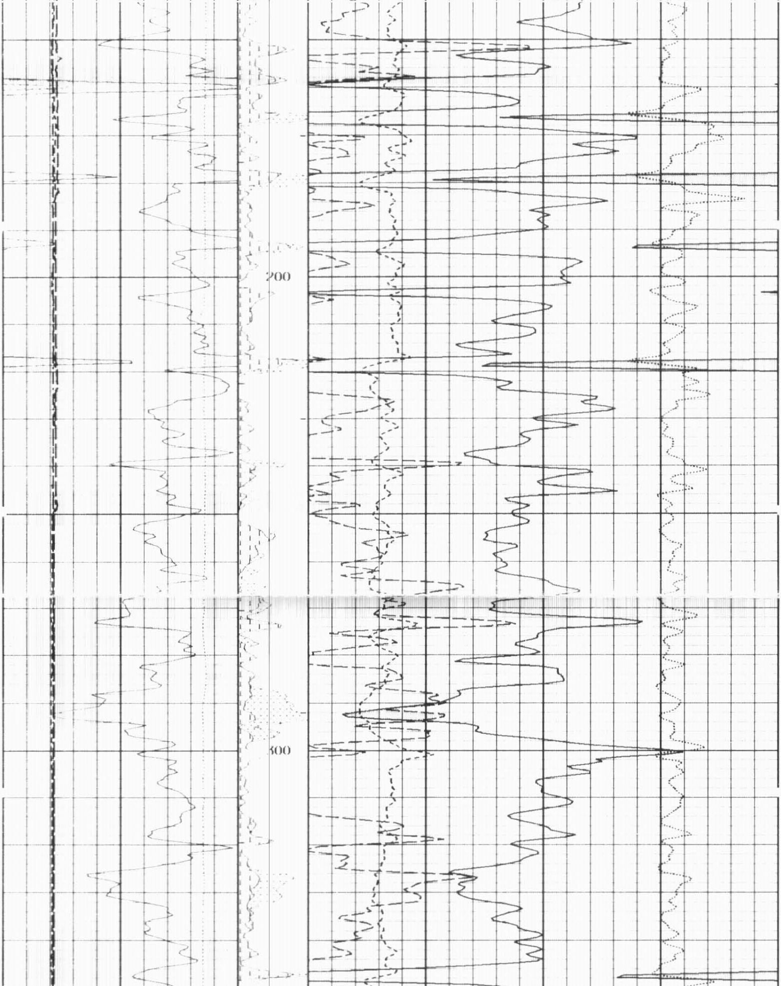
Tool: DIT **Length:** 21.49 ft. **O.D.:** 3.62 in.
Sonde ID : DIT LA 024

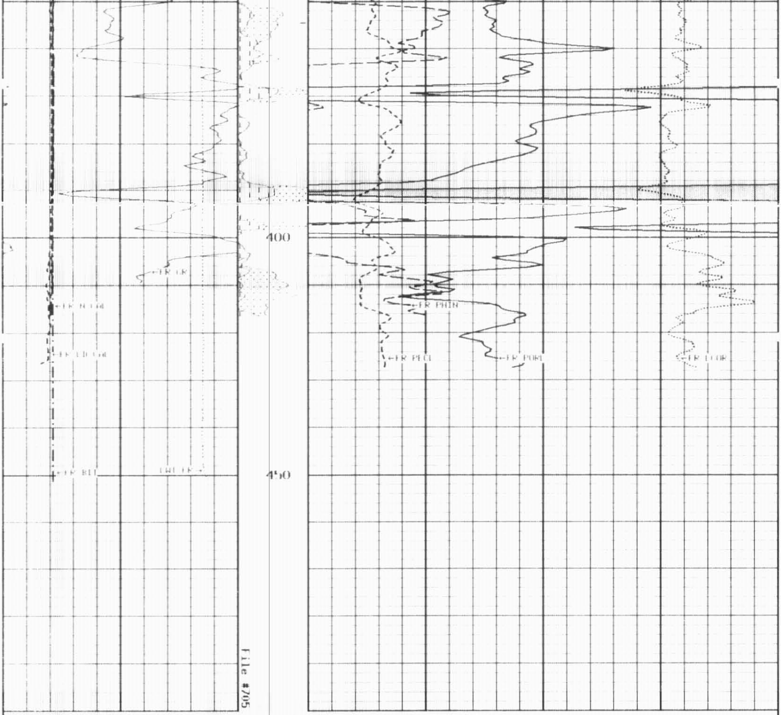
Measure Point	Stack Offset	Tool Offset	Bottom Offset
ILD	30.92	8.92	12.56
ILM	32.10	10.10	11.39
SFLU	39.49	17.49	4.00
SP	42.60	20.60	0.88

TENSION LBS 10000 0			
BIT SIZE INCHES (IN) 4 14	Volume Dolo/Shale		
DENSITY (X) CALIPER INCHES (IN) 14 24 4 14	Volume Quartz	PE CROSS SECTION BARNS/ELECTRON 0 10	DENSITY CORRECTION G/CC 0.25 0.25
NEUTRON (Y) CALIPER INCHES (IN) 14 24 4 14	Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) 30 10	
GAMMA RAY API UNITS 200 400 0 200	-BHV HHV- CU.FT	DENSITY POROSITY PERCENT (2.71 g/cc) 70 30 30 10 10 50	

1:240 MAIN SECTION







1:240 MAIN SECTION

GAMMA RAY
API UNITS
200 400
0 200

-BHV AHV-
CU.FT

DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 10
10 50

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

Volume
Calcite

NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)
30 10

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

Volume
Quartz

PE CROSS SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
0.25 0.25

BIT SIZE
INCHES (IN)
4 14

Volume
Dolo/Shale

TENSION
LBS
10000 0

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 F

Matrix Density	2.71 G/C3
Fluid Density	1.00 G/C3
Formation Matrix	Limestone
Drill Bit Size	6.125 IN
Production Casing Diameter	2.875 IN
Casing Correction (PHI-N)	Disable

TENSION
LBS
10000 0

BIT SIZE
INCHES (IN)
4 14

Volume
Dolo/Shale

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

Volume
Quartz

PE CROSS SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
0.25 0.25

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

Volume
Calcite

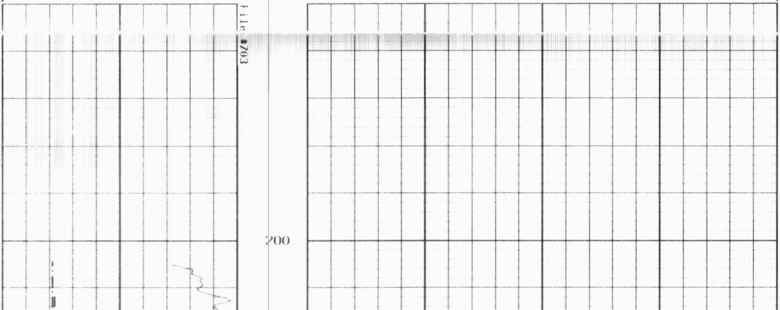
NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)
30 10

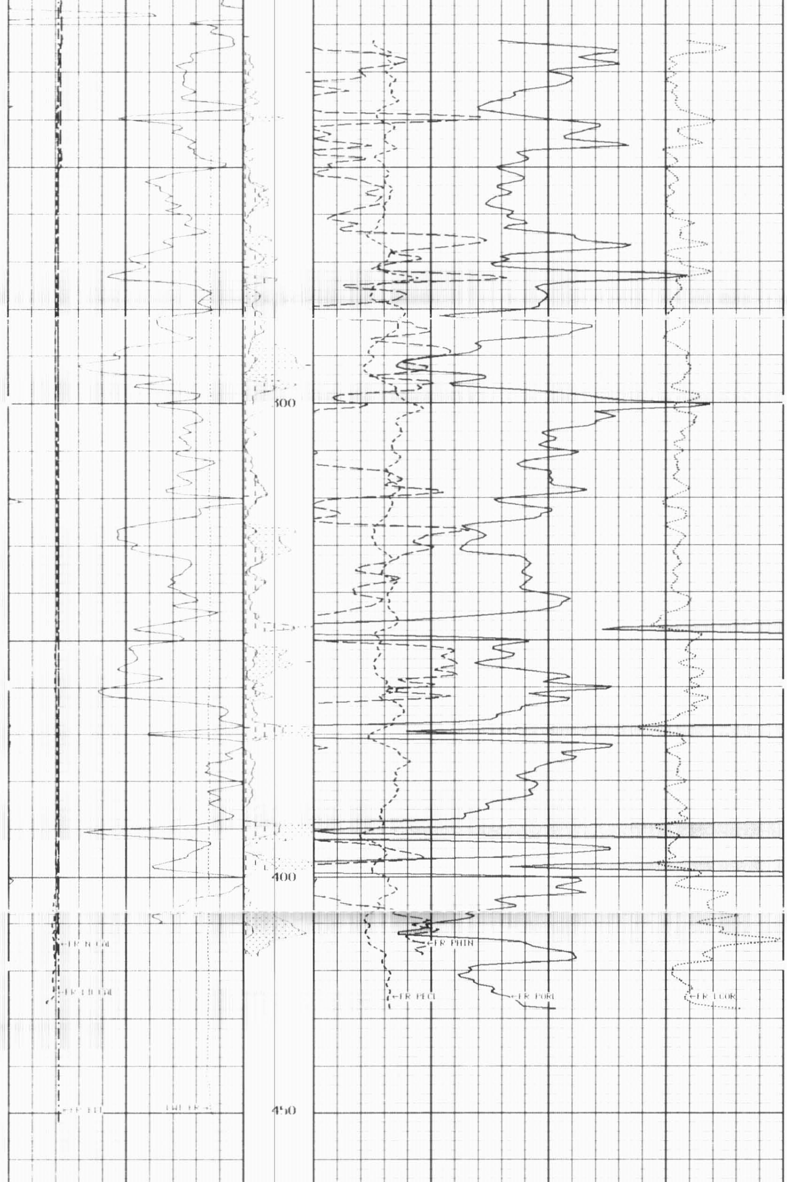
GAMMA RAY
API UNITS
200 400
0 200

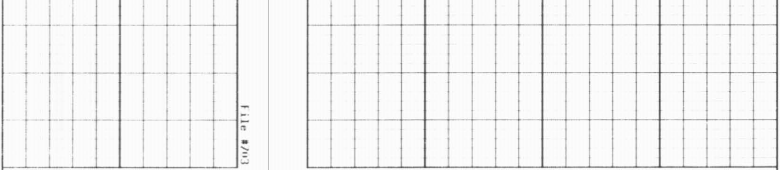
-BHV AHV-
CU.FT

DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 10
10 50

1:240 REPEAT SECTION







1:240 REPEAT SECTION

GAMMA RAY
API UNITS
200 400
0 200

-BHV AHV-
CU.FT

DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 10
10 50

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

Volume
Calcite

NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)
30 10

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

Volume
Quartz

PE CROSS SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
0.25 0.25

BIT SIZE
INCHES (IN)
4 14

Volume
Dolo/Shale

TENSION
LBS
10000 0

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 F

Matrix Density	2.71	G/C3
Fluid Density	1.00	G/C3
Formation Matrix	Limestone	
Drill Bit Size	6.125	IN
Production Casing Diameter	2.875	IN
Casing Correction (PHI N)	Disable	

TENSION
LBS
10000 0

BIT SIZE
INCHES (IN)
4 14

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

PE CROSS SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
0.25 0.25

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

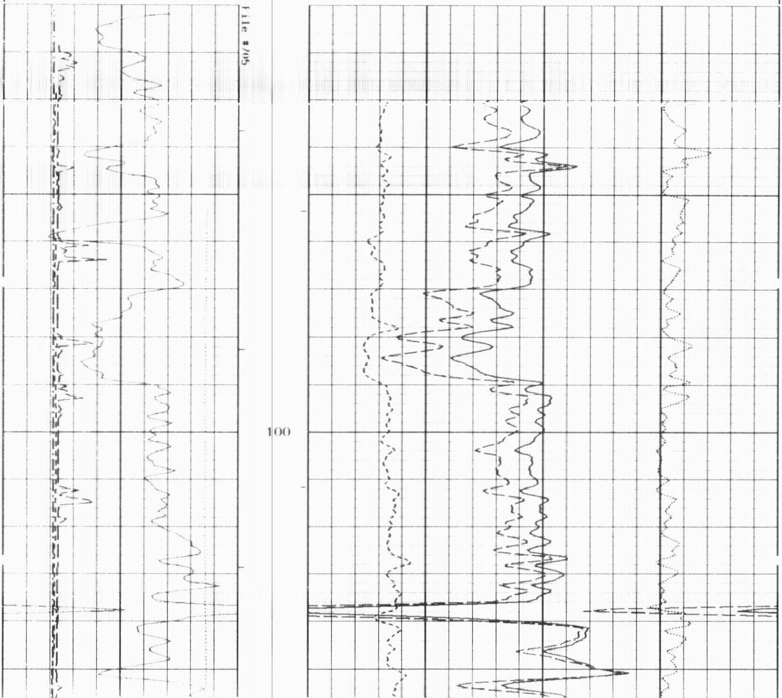
DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 10
10 50

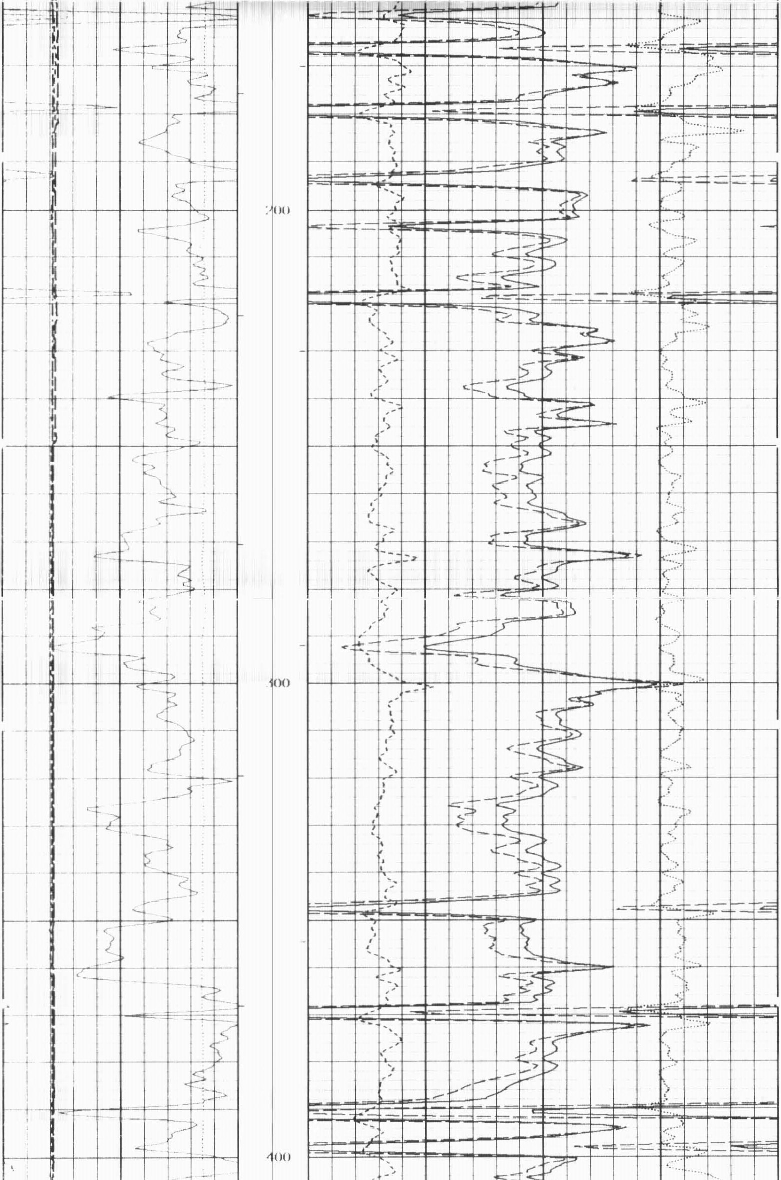
GAMMA RAY
API UNITS
200 400
0 200

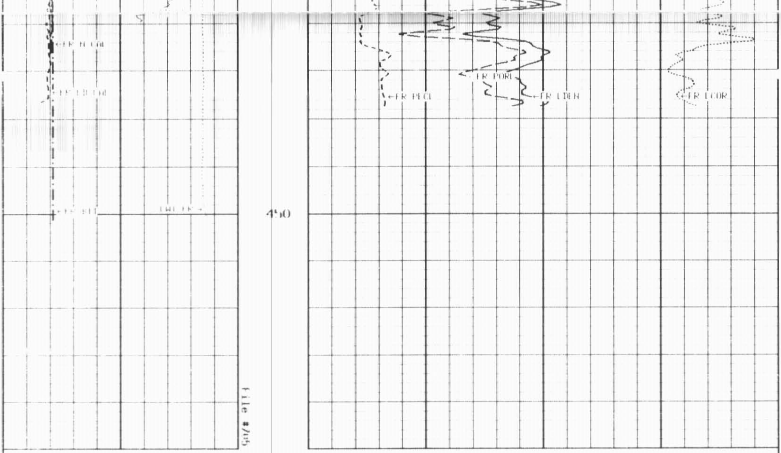
-BHV AHV-
CU.FT

COMPENSATED BULK DENSITY
G/CC
3.0 4.0
2.0 3.0
1.0 2.0

1:240 MAIN SECTION
BULK DENSITY







1:240 MAIN SECTION
BULK DENSITY

GAMMA RAY
API UNITS
200 400
0 200

-BHV BHV-
CU.FT

COMPENSATED BULK DENSITY
G/CC
3.0 4.0
2.0 3.0
1.0 2.0

NEUTRON (Y) CALIPER
INCHES (IN)
14 24
4 14

DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 10
10 50

DENSITY (X) CALIPER
INCHES (IN)
14 24
4 14

PE CROSS SECTION
BARNS/ELECTRON
0 10

DENSITY CORRECTION
G/CC
0.25 0.25

BIT SIZE
INCHES (IN)
4 14

TENSION
LBS
10000 0

* Borehole Zone Factors *

Zone 1 9999.0 to 0.0 F

Matrix Density	2.71 G/C3
Fluid Density	1.00 G/C3
Formation Matrix	Limestone
Drill Bit Size	6.125 IN
Production Casing Diameter	2.875 IN
Casing Correction (PHI N)	Disable

```
                    * Calibration Summary *

                      Shop Calibration
                            GRTB
    Performed : 21 Aug 2009              Time : 15:26
 Sensor Serial : GR GR5                    ID : GRT BA 14

                   Measured      Units        Calibrated         Units
         Background      Log                     Log
GR               49       347    CPS               175            GRAPI

                      Shop Calibration
                            CNT
    Performed : 25 Nov 2010              Time : 11:13
 Sensor Serial : BHH NEHI                  ID : CNP AA 111
    Source ID : N 1044

                        Tank                 Verification         Units
              Measured      Calibrated           Log
RAT            3.6301        3.6888            3.7041
Porosity        19.6          20.5              20.7                 %

    Performed : 16 AUG 2009              Time : 10:24
 Sensor Serial : CAL1 BCN                  ID : CNP AA 111

                 Log    Measured              Log    Calibrated   Units
               Ring#1   Ring#2              Ring#1   Ring#2
CL # 1            8.1     14.1                 6.0     12.0         IN.

                      Shop Calibration
                            LDTNG
    Performed : 19 OCT 2009              Time : 10:55
 Sensor Serial : CAL IPH                   ID : LDP DA 01

                 Log    Measured              Log    Calibrated   Units
               Ring#1   Ring#2              Ring#1   Ring#2
CL # 1            6.2     12.2                 6.0     12.0         IN.

    Performed : 25 Nov 2010              Time : 13:42
 Sensor Serial : BHHPEING                  ID : LDP DA 01
    Source ID : CSV 587

                          Short Space
              BKGD           Al           Mg          AlBe        Units
SSW1             65          499          814          538          CPS
SSW2             72          563          917          410          CPS
SSW3            294         1332         2112         1141          CPS
SSW4            314         1226         1705         1000          CPS
SSW5             31           38           40           38          CPS
SSW6             29           80           80           80          CPS
SSW7             53           52           52           52          CPS
SSW8              2            2            3            2          CPS
QS            0.192        0.212        0.212        0.212
PES                                    2.778        5.967
SDEN                       2.600        1.680                      G/CC

                          Long Space
              BKGD           Al           Mg          AlBe        Units
LSW1            112          642         2650          403          CPS
LSW2            126         1055         4339          274          CPS
LSW3            482         2012         7336         1248          CPS
LSW4            602         1163         2909         1082          CPS
LSW5             71           74           87           74          CPS
LSW6            187          188          180          189          CPS
LSW7            116          116          112          116          CPS
LSW8             11           13           18           12          CPS
QL            0.254        0.257        0.255        0.259
PEL                                    2.697        5.458
LDEN                       2.600        1.680                      G/CC
```