217-22581

Tucker
WIRELINE SERVICES

COMPENSATED NEUTRON PEL DENSITY LOG

RECEIVED
SEP 26 2011
Mo Oil & Gas Council

CONFIDENTIAL
8/18/12

Company	RUNNING FOXES PETROLEUM,
Well	EMMERSON 5-6D-2
Field	
County	VERNON
State	MISSOURI
Country	USA
API No.	22581

File No : TUL-56069
Company : RUNNING FOXES PETROLEUM, INC
Well : EMMERSON 5-6D-2
Field :
County : VERNON
State : MISSOURI
Country : USA
API No : 22581

Location :
2110' FNL & 860' FWL

LSD : **Sect :** 6 **Twp :** 36N **Rge :** 33W

Permanent Datum:	GL	**Elevations:**			**Services:**
Drilling Measured From:	GL	**KB**	0.00	Ft	CNT
Log Measured From:	GL	**DF**	0.00	Ft	LDT
Above Permanent Datum:	0.00 Ft	**GL**	879.00	Ft	PIT

Date	2011-06-28		
Run Number	1		
Depth--Driller	450.0 Ft		
Depth--Logger	427.0 Ft		
First Reading	403.0 Ft		
Last Reading	20.0 Ft		
Casing--Driller	20.0 Ft		
Casing--Logger	20.0 Ft		
Bit Size	5.625 In		
Casing Size	8.625 In		
Hole Fluid Type	FRESH		
Density	0.0 LBS/GAL		
Fluid Loss	0.0 CC		
PH/Viscosity	0.0 0.0 SEC		
Sample Source	MEASURED		
RM@Measured Temp.	3.000 @ 80 F		
RMF@Measured Temp	2.400 @ 80 F		
RMC@Measured Temp.	3.600 @ 80 F		
Source RMF/RMC	CALCULATED CALCULATED		
RM@BHT	2.000 @ 80 F		
Time Circulation Stopped	2011-06-28 07:00		
Max Recorded Temp.	80 F		
Equipment/Base	TRK 127 TULSA		
Recorded By	B.BAILEY		
Witnessed By	C.COUNTS		

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.

Bitsize Intervals		Casing Strings		
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)
5.625	450.00	8.625	32.00	20.00

Run Number	1		
Date	2011-06-28		
Date/Time On Bottom	2011-06-28 10:00		
Depth to Fluid	0.0 Ft		
Salinity	0.000 PPM		
RMF@BHT	2.400 @ 80 F		
RMC@BHT	3.600 @ 80 F		

Run Number 1

Comments

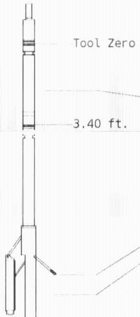
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION.
CALIPERS ORIENTED ON X-Y AXIS.
2.71 G/CC USED TO CALCULATED POROSITY.
ANNULAR HOLE VOLUME CALCULATED UISING 2.875" PRODUCTION CASING.
NO REPEAT DUE TO HOLE CONDICTIONS

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

OPERATORS:
R.AUSTIN

Tool String Schematic

Total Tool Length - 43.49 **ft.**
Maximum Outside diameter - 4.80 **in.**
Net Weight in Air - 743.00 **lbs.**

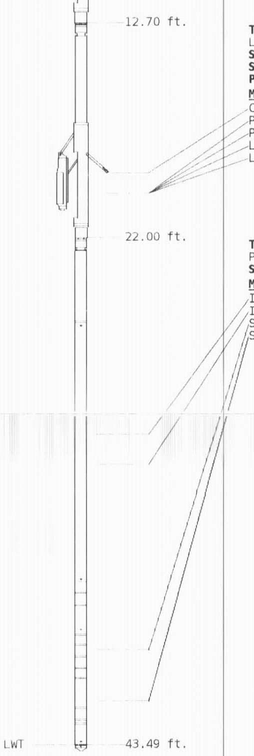


Tool: GRT-B **Length:** 3.40 **ft.** **O.D.** 3.60 **in.**
Gamma Ray Controller
Sonde ID :GRT-BA-14

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

Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.35 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-AB-400
Source ID :N-1044
Pad ID :CNP-AA-116

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	34.09
PHIN	6.80	10.20	33.29



Tool: LDT-DA **Length:** 9.30 **ft.** **O.D.** 4.80 **in.**
Litho Density D Pad on NDT-A
Sonde ID :PDT-GA-465
Source ID :CSV-587
Pad ID :LDP-DA-01

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	24.79
PEL	7.00	19.70	23.79
PES	7.40	20.10	23.39
LDEN	7.20	19.90	23.59
LCOR	7.20	19.90	23.59

Tool: PIT-CA **Length:** 21.49 **ft.** **O.D.** 3.62 **in.**
Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-075

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

Well File: rfp_emmerson_5-6d-2_jun28_st
Segment: V1.D1.S3 Reprocess MAIN
Reference: 0

Scale: 1:240
Acquired: 2011-06/28 10:00 3.2.0-10050
Processed: 2011-06/28 10:18 3.2.0-10050

TENSION
LBS
10000 **0**

BIT SIZE
INCHES (IN)
4 **14**

Volume
Dolo/Shale

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

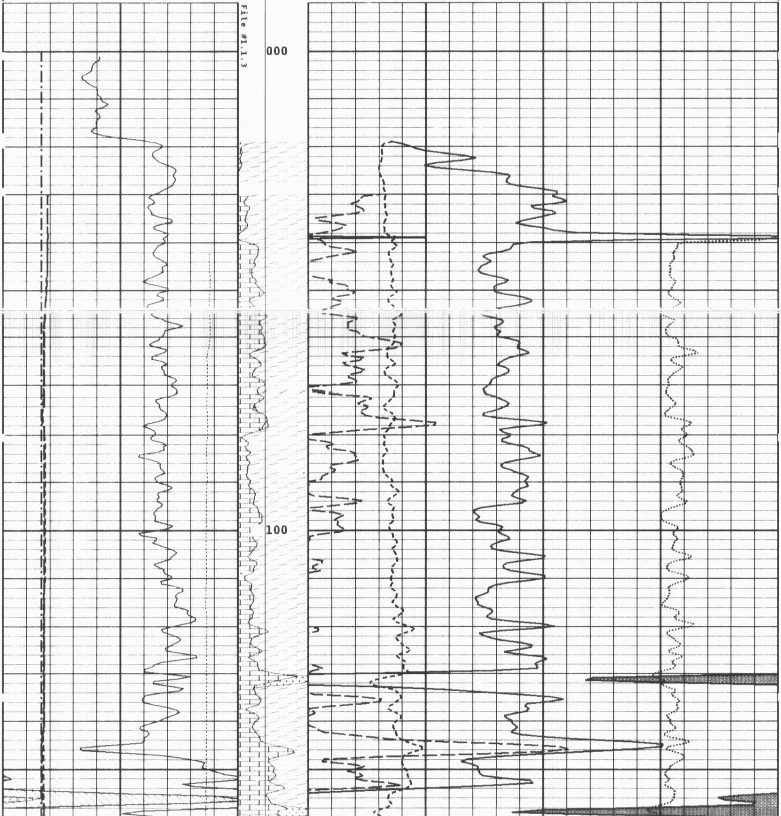
Volume
Quartz

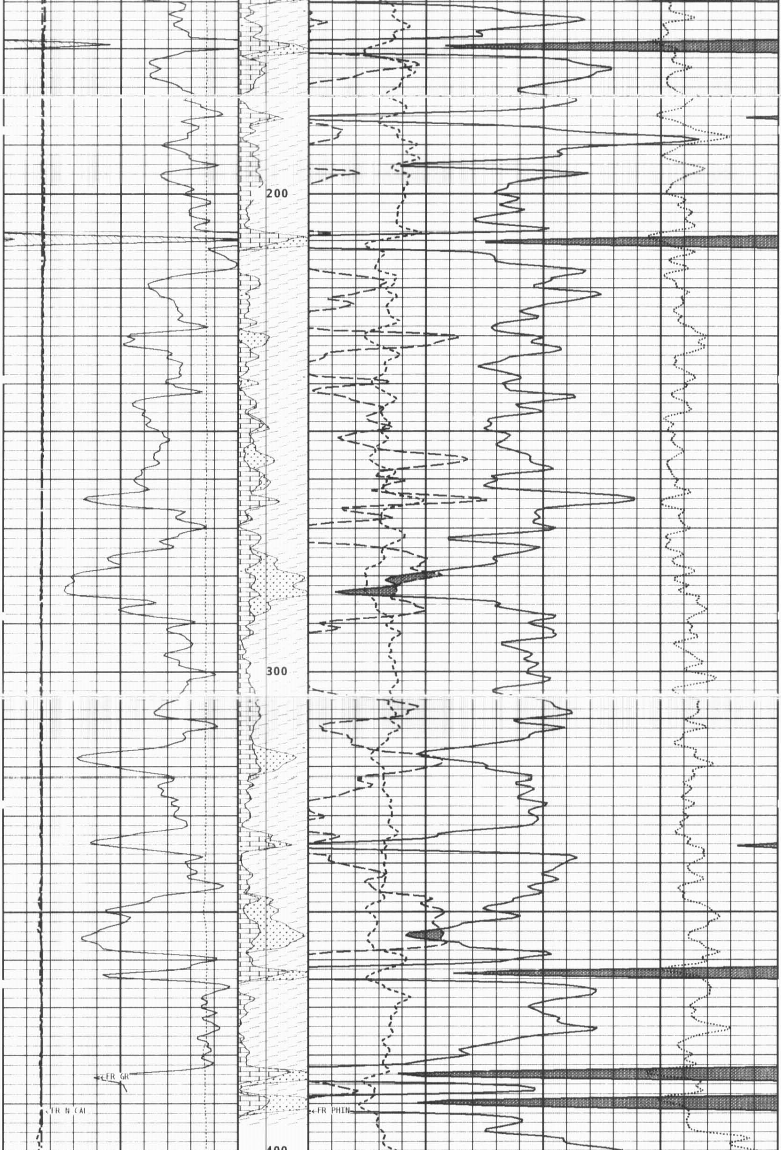
PE CROSS-SECTION
BARNS/ELECTRON

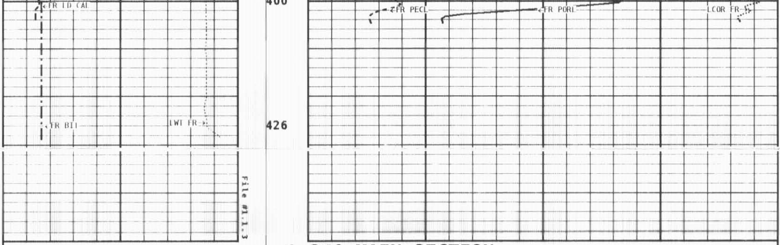
DENSITY CORRECTION
G/CC

4 14		0 10 | -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 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 Feet

Matrix Density	2.71 g/cc
Fluid Density	1.00 g/cc
Formation Matrix	Limestone
Drill Bit Size	5.625 in
Casing Diameter	2.875 in
Casing Correction (PHI N)	Disable

Well File: rfp_emmerson_5-6d-2_jun28_st	**Scale:** 1:240
Segment: V1.D1.S3 Reprocess MAIN	**Acquired:** 2011-06-28 10:00 3.2.0-10050
Reference: 0	**Processed:** 2011-06-28 10:18 3.2.0-10050

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

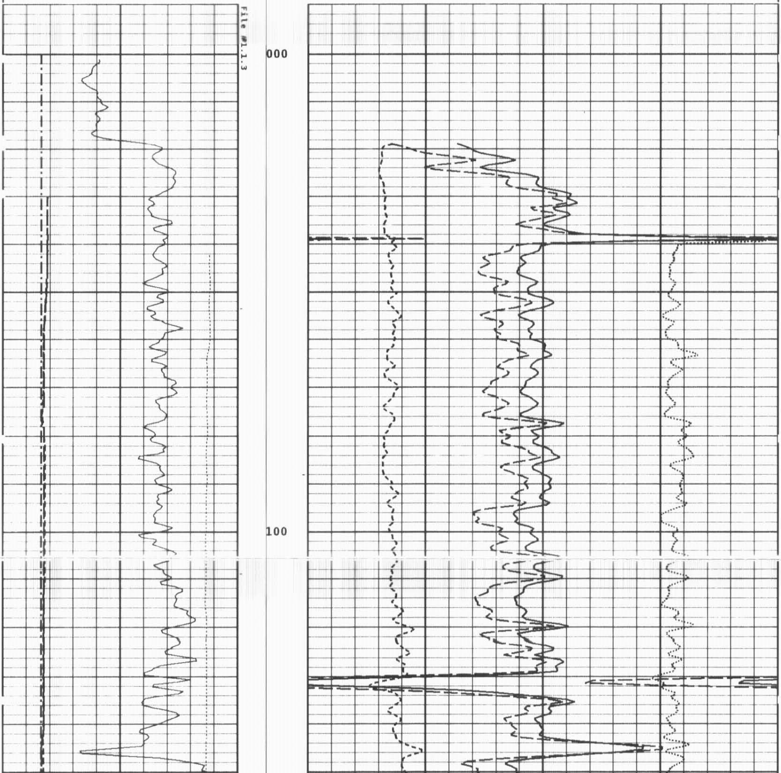
DENSITY POROSITY
PERCENT (2.71 g/cc)
70 30
30 -10
-10 -50

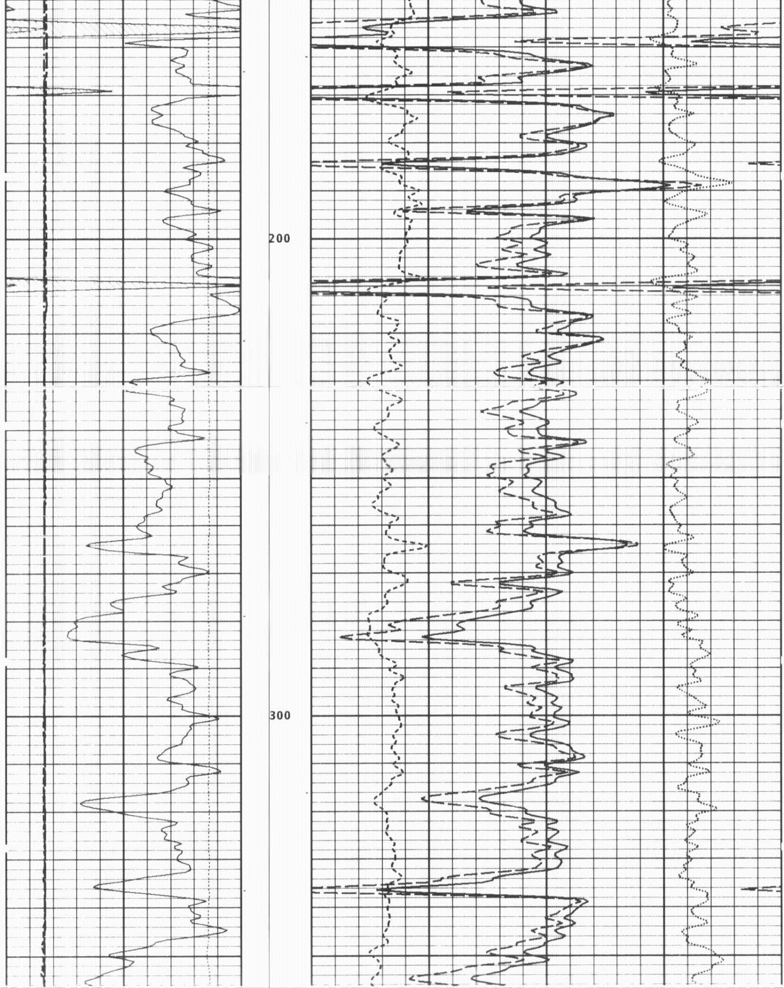
GAMMA RAY
API UNITS
200 400
0 200

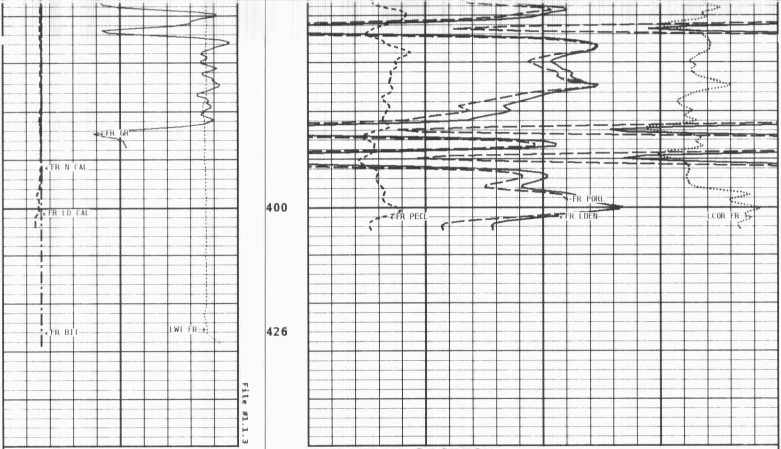
-BHV AHV-
CU.FT

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 AHV-
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 99999.0 to 0.0 Feet

Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	5.625	in
Casing Diameter	2.875	in
Casing Correction (PHI N)	Disable	

* Calibration Summary *

```
                        Shop Calibration
                              GRT-B
    Performed : 16-MAY-2011          Time : 09:49
 Sensor Suite : GR-GR5                 ID : GRT-BA-14

                  Measured     Units      Calibrated       Units
        Background      Jig                     Jig
GR              50      361    CPS              175        GRAPI

                        Shop Calibration
                              CNT-AA
    Performed : 21-MAR-2011          Time : 11:09
 Sensor Suite : CALI-BCN               ID : NDT-AB-400

               Jig - Measured           Jig - Calibrated   Units
              Ring#1  Ring#2          Ring#1  Ring#2
CL # 1          8.5     14.5             6.0     12.0        IN.

    Performed : 15-Apr-2011          Time : 11:12
 Sensor Suite : BHC NEUT               ID : CNP-AA-116
    Source ID : N-1044

                    Tank              Verification         Units
            Measured    Calibrated          Jig
N/F          3.8743       3.6893         3.7032
Porosity       23.4         20.5            20.7             %

                        Shop Calibration
                              LDT-DA
    Performed : 15-MAY-2011          Time : 08:26
 Sensor Suite : CALI-LTH               ID : PDT-GA-465

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

    Performed : 15-Apr-2011          Time : 10:15
 Sensor Suite : BHCPELNG               ID : LDP-DA-01
    Source ID : CSV-587

                            Short Space
            BKGD          Al          Mg       Al+Fe      Units
LSW1          64         488         810         324        CPS
LSW2          70         561         912         408        CPS
LSW3         257        1326        2113        1129        CPS
LSW4         313        1210        1702        1070        CPS
LSW5          31          40          40          38        CPS
LSW6          77          79          79          80        CPS
LSW7          51          52          51          51        CPS
LSW8           2           2           3           2        CPS
QS         0.205       0.206       0.215       0.218
PES                                2.778       5.967
SSDN                   2.600       1.680                   G/CC

                            Long Space
            BKGD          Al          Mg       Al+Fe      Units
LLW1         112         626        2629         396        CPS
LLW2         124        1045        4357         760        CPS
LLW3         470        1998        7382        1739        CPS
LLW4         595        1164        2951        1085        CPS
LLW5          67          72          85          72        CPS
LLW6         190         190         182         188        CPS
LLW7         122         121         115         119        CPS
LLW8           6           7          12           7        CPS
QL         0.217       0.223       0.226       0.224
PEL                                2.697       5.458
LSDN                   2.600       1.680                   G/CC
```