Tucker WIRELINE SERVICES

COMPENSATED NEUTRON
PE DENSITY LOG

File No. : TUL-56631
Company : RUNNING FOXES PETROLEUM, INC.
Well : EMMERSON #3-6A
Field :
County : VERNON
State : MISSOURI
Country : USA

Location : PERMIT #22654
330' FNL & 2229' FWL

Sect : 06 Twp : 36N Rge : 33W

Recorded By : R. FRANKLIN
Witnessed By : C. COUNTS

Elevations :
KB : FT
DF : FT
GL : 871.00 FT

Date : DEC 06 2010
Run No. : 1

Permanent Datum : GL
Drilling Measured From : GL
Log Measured From: GL
Above Permanent Datum : 0.000 FT

Depth--Driller : 440.0 FT
Depth--Logger : 440.0 FT
Bottom Log Interval : 417.0 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. : 123
Location : TULSA

Additional Services
PIT

217-22654
RECEIVED
DEC 20 2010
Mo Oil & Gas Council
CONFIDENTIAL
12/20/11

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 :	FRESH / 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	60	F
RM at BHT :	9.570	OHMM at	63	F
RMF Source :	CALCULATED			
RMF :	8.500	OHMM at	60	F
RMF at BHT :	8.130	OHMM at	63	F
RMC Source :	CALCULATED			
RMC :	11.500	OHMM at	60	F
RMC at BHT :	11.000	OHMM at	63	F
Max Recorded Temp. :			63	F
Time Circulation Stopped :				
Operating Rig Time, Hrs. :			1.5	

- Source Serial Numbers -

Gamma	2991GW
Neutron	N-1046

- Sonde Serial Numbers -

GRTB	GRT-BC-41
CNT	CNP-AA-112
LDTNG	LDP-DA-66
PIT_B	PIT-CA-069

Casing Strings

Size (IN)	Weight (LB/FT)	Bottom (FT)
8.625	24.00	20.00

- Comments -

ALL PRESENTATIONS AS PER CUSTOMER REQUEST.

GRT, CNT, LDT, AND PIT RUN 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.

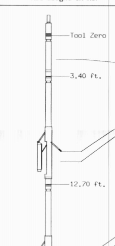
GRT: GRP.
CNT: CLCNIN, PHIN, PHINLS.
LDT: PORL, LCORN, PECLN, CLLDIN, LDENN, PORLLS.
PIT: ILD, ILM, CIRD, SFLAEC, SPU.

OPERATORS:
S. DAVIS
M. GARNER

THANK YOU FOR USING TUCKER WIRELINE SERVICES!

Tool String Schematic

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



Tool: GRTB Length: 3.40 ft. O.D.: 3.60 in.
Sonde ID : GRT-BC-41

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

Tool: CNT Length: 9.30 ft. O.D.: 4.36 in.
Sonde ID : CNP-AA-112
Source ID : N-1046
Pad ID : CNP-AA-112

Measure Point	Stack Offset	Tool Offset	Bottom Offset
CLCN	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-66
Source ID : 2991GW
Pad ID : LDP-DA-66

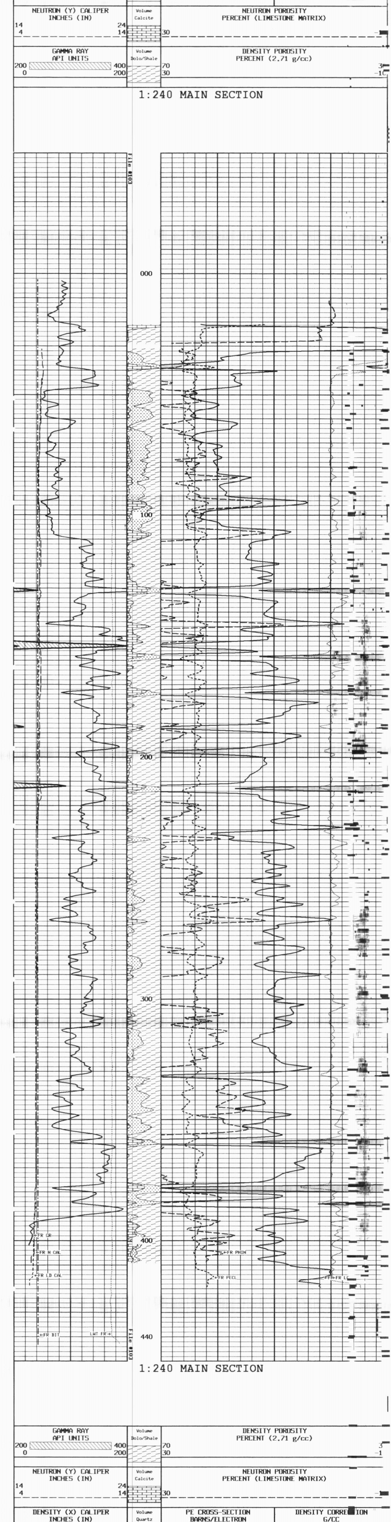
Measure Point	Stack Offset	Tool Offset	Bottom Offset
CLLD	18.70	6.00	24.79
PEL	19.70	7.00	23.79
PES	20.10	7.40	23.39
LDEN	19.70	7.00	23.79
LCOR	19.70	7.00	23.79

Tool: PIT Length: 21.49 ft. O.D.: 3.62 in.
Sonde ID : PIT-CA-069

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
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 | Volume Dolo/Shale | DENSITY POROSITY PERCENT (2.71 g/cc) 70 — 30; 30 — -10

1:240 MAIN SECTION



1:240 MAIN SECTION

GAMMA RAY API UNITS 200 — 400; 0 — 200 | Volume Dolo/Shale | DENSITY POROSITY PERCENT (2.71 g/cc) 70 — 30; 30 — -10
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
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
Casing Correction (PHI N)	Disable	

TENSION LBS 10000 — 0
BIT SIZE INCHES (IN) 4 — 14
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
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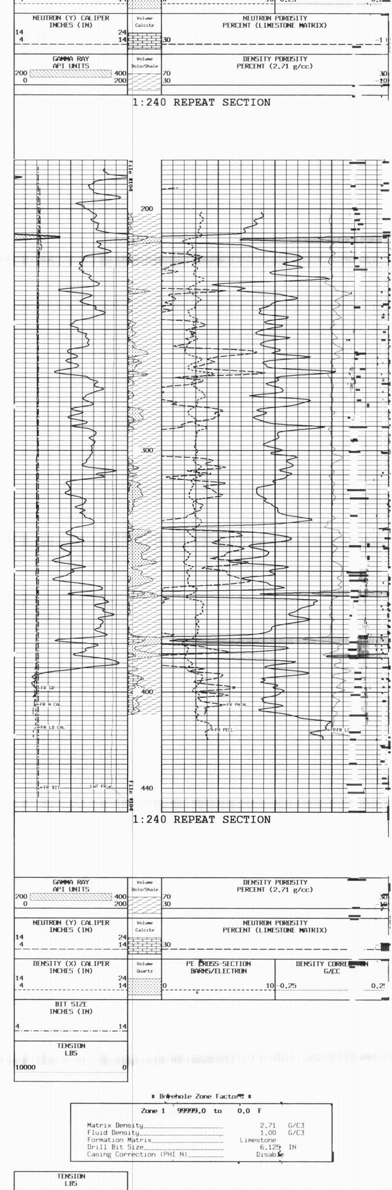
1:240 REPEAT SECTION



1:240 REPEAT SECTION

GAMMA RAY API UNITS 200 — 400; 0 — 200 | Volume Dolo/Shale | DENSITY POROSITY PERCENT (2.71 g/cc) 70 — 30; 30 — -10
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
TENSION LBS 10000 — 0

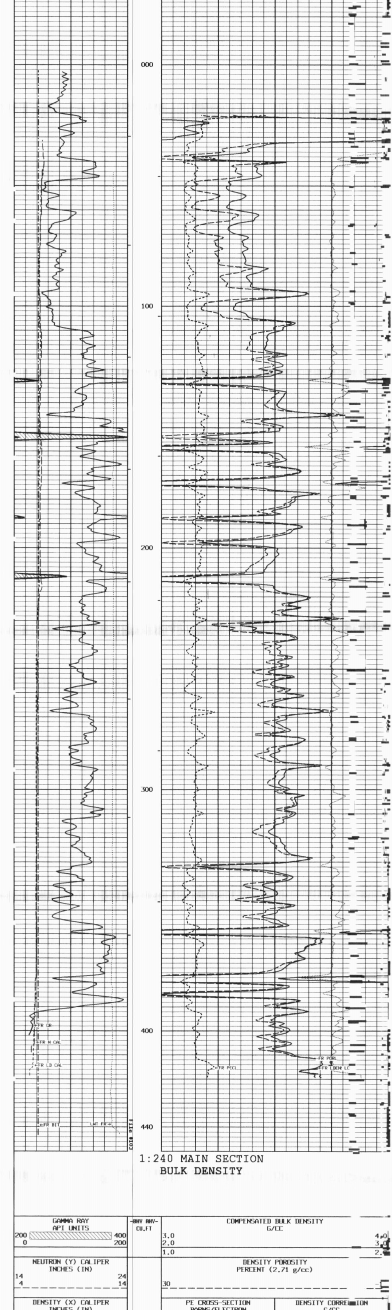
*** Borehole Zone Factors ***

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
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) 30 — -10
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) 30 — -10
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 F

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

*** Calibration Summary ***

Shop Calibration GRTB

Performed : 29-Apr-2010 Time : 11:02
Sensor Suite : GR-GR5 ID : GRT-BC-41

	Background	Measured Jig	Units	Calibrated Jig	Units
GR	46	346	CPS	175	GRAPI

Shop Calibration CNT

Performed : 24-Nov-2010 Time : 11:52
Sensor Suite : BHC NEUT ID : CNP-AA-112
Source ID : N-1046

	Tank Measured	Tank Calibrated	Verification Jig	Units
N/F	4.0824	3.6888	3.6760	
Porosity	26.9	20.5	20.3	%

Performed : 24-NOV-2010 Time : 12:10
Sensor Suite : CALI-BCN ID : CNP-AA-112

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	11.4	16.3	6.0	12.0	IN.

Shop Calibration LDTNG

Performed : 24-NOV-2010 Time : 12:11
Sensor Suite : CALIPEL ID : LDP-DA-66

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	9.2	13.5	6.0	12.0	IN.

Performed : 24-Nov-2010 Time : 10:18
Sensor Suite : BHCPELNG ID : LDP-DA-68
Source ID : 2991GW

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	69	1111	1791	725	CPS
LSW2	74	1346	2144	974	CPS
LSW3	275	3167	5115	2699	CPS
LSW4	337	2838	4093	2489	CPS
LSW5	32	60	67	58	CPS
LSW6	92	95	95	95	CPS
LSW7	58	63	61	64	CPS
LSW8	2	4	6	4	CPS
QS	0.227	0.203	0.218	0.195	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	105	1141	4618	701	CPS
LLW2	115	2193	8610	1573	CPS
LLW3	448	4239	16045	3658	CPS
LLW4	576	2040	6530	1864	CPS
LLW5	62	74	137	71	CPS
LLW6	184	178	169	180	CPS
LLW7	116	112	110	115	CPS
LLW8	3	7	20	6	CPS
QL	0.227	0.228	0.211	0.220	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC

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