Tucker
WIRELINE SERVICES

DUAL INDUCTION RESISTIVITY LOG

1/19/2012

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

RECEIVED
FEB 01 2011
Mo Oil & Gas Council

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 :	449.0	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

CNT
LDT

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, CILD, SFLAEC, SPU.

OPERATORS:
M.BURKE
M.BURKE

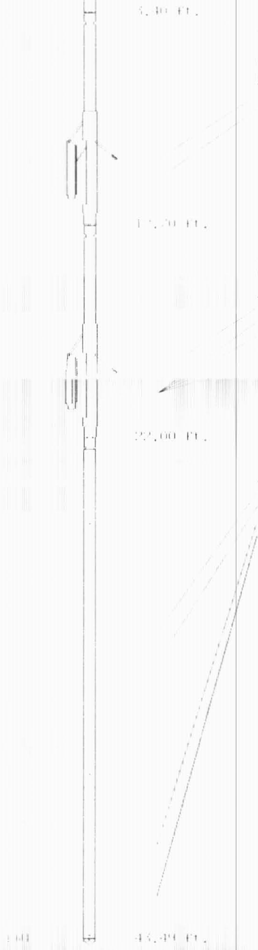
THANK YOU FOR USING TUCKER WIRELINE SERVICES!

Tool String Schematic

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

Tool: GRTB Length: 5.40 ft. O.D.: 3.60 in.
Sonde ID : GRT BA 14

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 00 111
Source ID : N 1044
Pad ID : CNP 00 111

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 01
Source ID : CSV 582
Pad ID : LDP DA 01

Measure Point	Stack Offset	Tool Offset	Bottom Offset
FLLD	18.70	6.00	24.79
PE	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: PTI **Length:** 21.49 **ft. O.D.:** 3.62 **in.**
Sonde ID : PTI CA 074

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

SPONTANEOUS POTENTIAL
mV
→| |← 20

GAMMA RAY
API UNITS
200 400
0 200

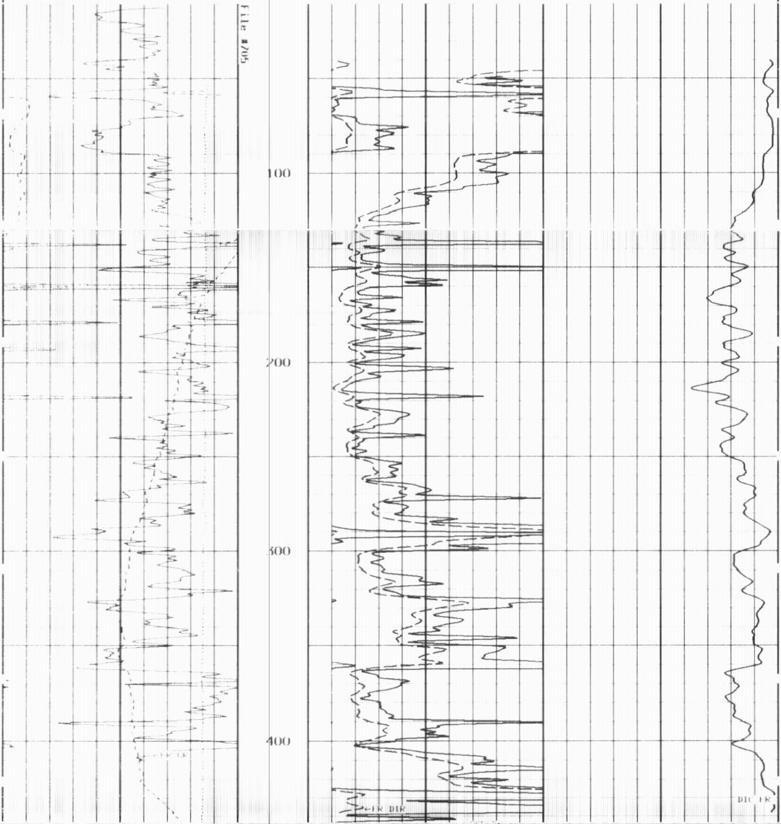
SHALLOW FOCUSED RESISTIVITY
OHMM
0.0 500.0
0.0 50.0

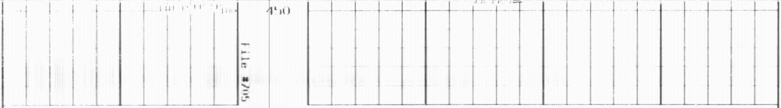
DEEP INDUCTION
OHMM
0.0 500.0
0.0 50.0

DEEP CONDUCTIVITY
MMHO
2000 1000
1000 0

1:600 SECTION

2 INCH





1:600 SECTION

2 INCH

GAMMA RAY
API UNITS
200 400
0 200

SPONTANEOUS POTENTIAL
mV
→| |← 20

TENSION
LBS
10000 0

DEEP CONDUCTIVITY
MMHO
2000 1000
1000 0

DEEP INDUCTION
OHMM
0.0 500.0
0.0 50.0

SHALLOW FOCUSED RESISTIVITY
OHMM
0.0 500.0
0.0 50.0

TENSION
LBS
10000 0

SPONTANEOUS POTENTIAL
mV
→| |← 20

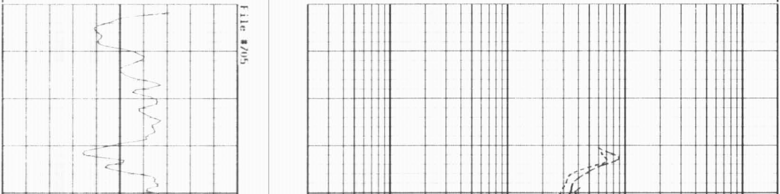
GAMMA RAY
API UNITS
200 400
0 200

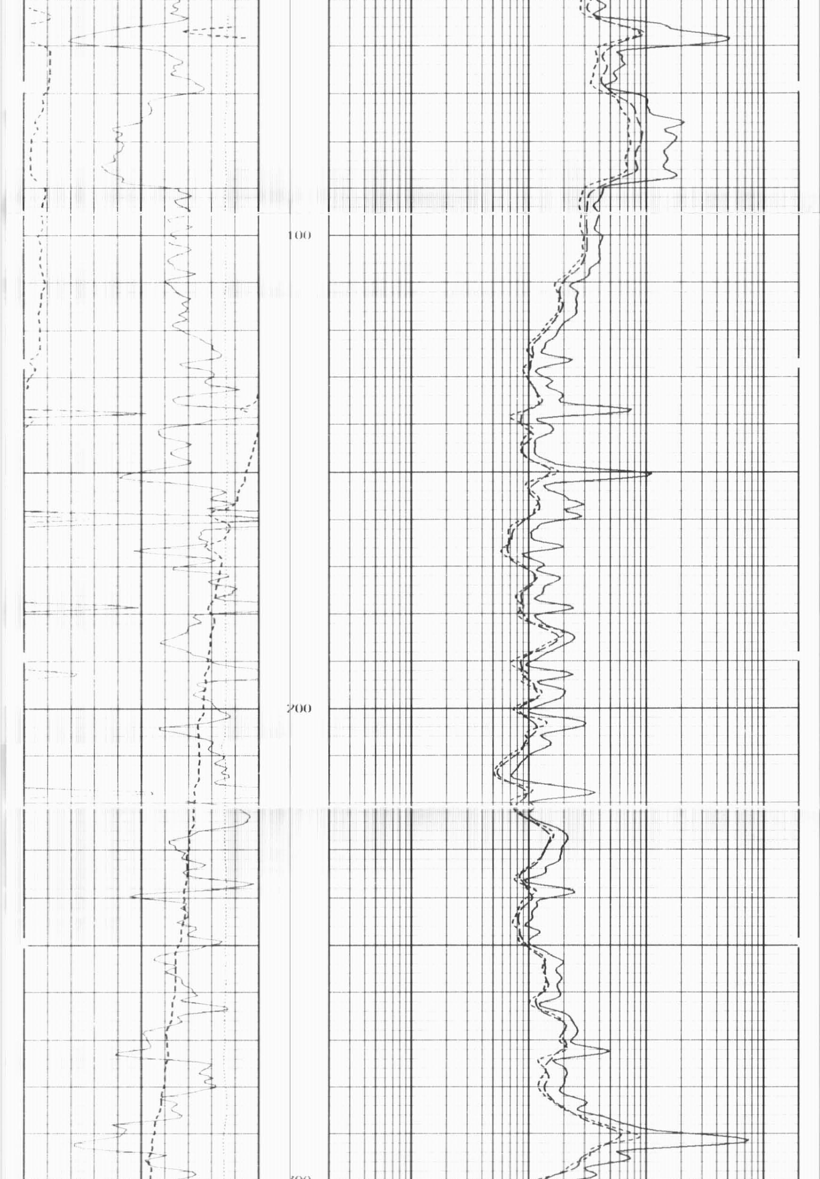
SHALLOW FOCUSED RESISTIVITY
OHMM
0.2 2000.0

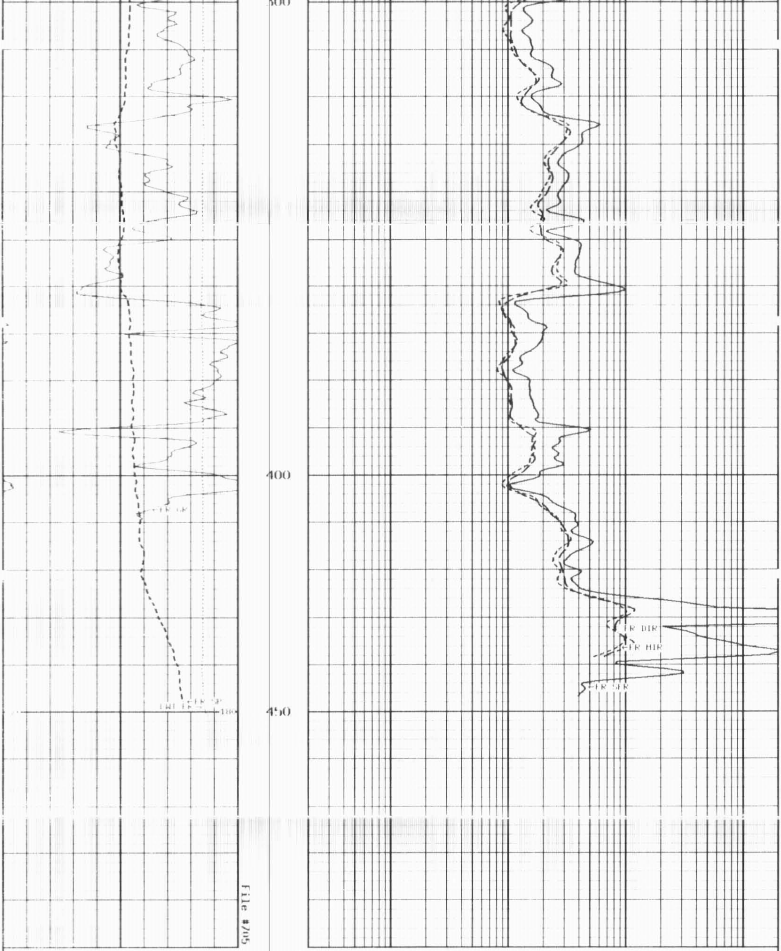
MEDIUM INDUCTION
OHMM
0.2 2000.0

DEEP INDUCTION
OHMM
0.2 2000.0

1:240 MAIN SECTION







1:240 MAIN SECTION

GAMMA RAY API UNITS 200 400 0 200	DEEP INDUCTION OHMM 0.2 2000.0
SPONTANEOUS POTENTIAL mV →| |← 20	MEDIUM INDUCTION OHMM 0.2 2000.0
TENSION LBS 10000 0	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0

* Borehole Zone Factors *

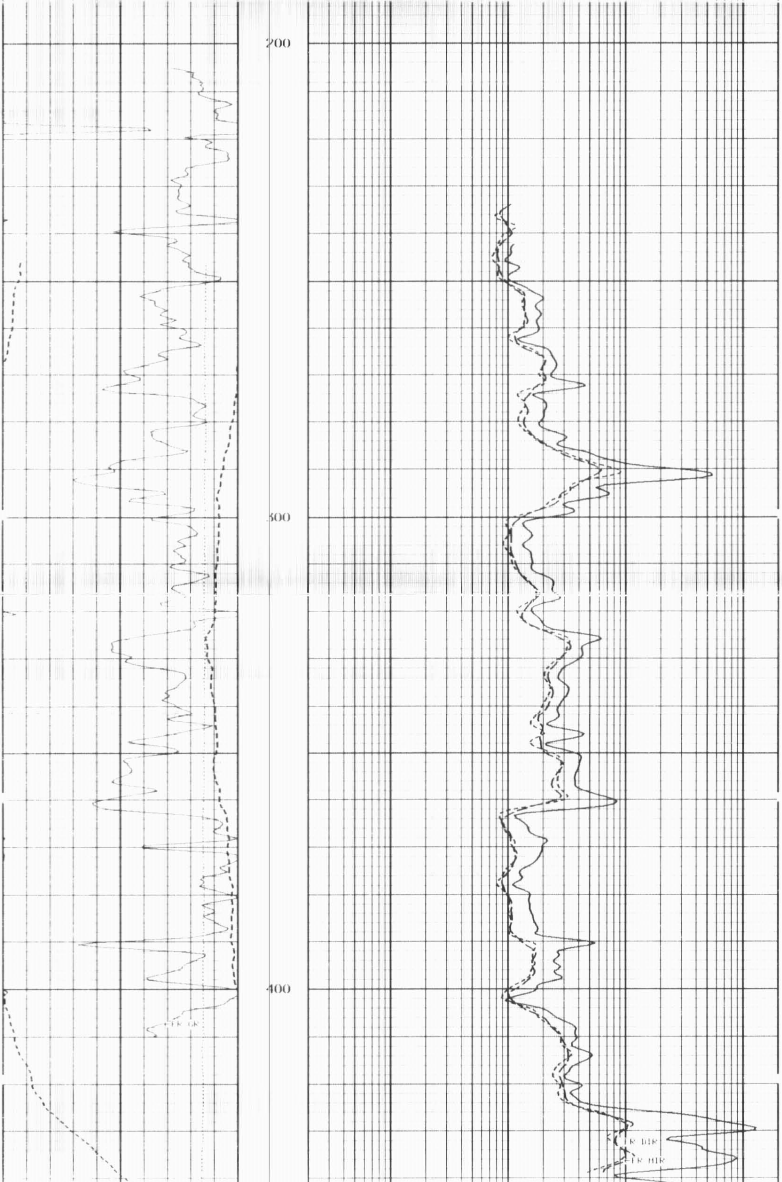
Zone 1 9999.0 to 0.0 F

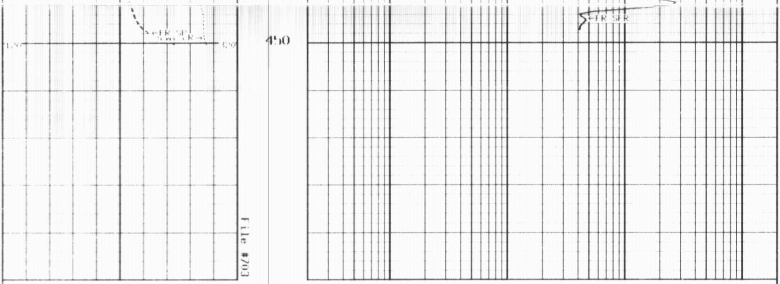
Drill Bit Size	6.125	IN
BHT Depth	450.000	F
Borehole Temperature	64.0	DEGF
Temperature Gradient	1.00	DEHF
Resistivity Of Mud	10.00	OHMM
Standoff	1.5	
Resistivity Of Mud Temperature	41.00	DEGF

TENSION LBS 10000 0	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0
SPONTANEOUS POTENTIAL mV →| |← 20	MEDIUM INDUCTION OHMM 0.2 2000.0
GAMMA RAY API UNITS 200 400 0 200	DEEP INDUCTION OHMM 0.2 2000.0

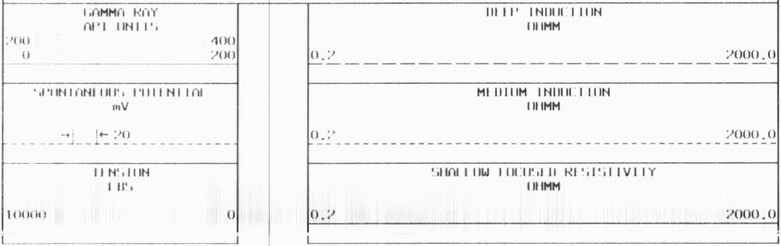
1:240 REPEAT SECTION

File #703





1:240 REPEAT SECTION



* Borehole Zone Factors *

```
                    Zone 1    9999.0   to     0.0  F

     Drill Bit Size                                      6.125   IN
     BHT Depth                                         450.000   F
     Borehole Temperature                               64.0     DEGF
     Temperature Gradient                                1.00    DEGF
     Resistivity Of Mud                                 10.00     OHMM
     Standoff                                           1.5
     Resistivity Of Mud Temperature                     41.00     DEGF
```

* Calibration Summary *

```
                         Shop Calibration
                              GRTB
     Performed : 21 Aug 2009               Time : 15:26
  Sensor Suite : GR GR5                       ID : GRT-BG-14

                   Measured        Units         Calibrated        Units
        Background       Jig                        Jig
 GR              49      542       CPS              175            GRAPI

                         Shop Calibration
                              PIT B
     Performed : 26 Oct 2010               Time : 15:00
  Sensor Suite : P IND I                      ID : PIT GA 024

                              Medium
                  Measured                     Calibrated
                 R         X                  R          X       Units
  Air          129085    131631              1.8        0.9      MMHOS
  Zero         131023    131069              0.0        0.0      MMHOS
  Reference    250510    250460           5000.0     5000.0      MMHOS
  Loop         150493    127054           2800.2     1005.1      MMHOS
  Sonde Error                                0.2       17.5      MMHOS
  Total                                   5000.0     5000.0      MMHOS
```

Deep

	Measured R	Measured X	Calibrated R	Calibrated X	Units
Air	129182	131225	0.2	0.5	MMHOS
Zero	131070	131069	0.0	0.0	MMHOS
Reference	234261	234640	2000.0	2000.0	MMHOS
Loop	150874	177126	1307.0	465.5	MMHOS
Sonde Error			5.0	6.0	MMHOS
Final			2000.0	2000.0	MMHOS

Temperature

Measured Low	Measured High	Calibrated Low	Calibrated High	Units
16980.0	56920.0	20.0	350.0	DEGF

Performed : 26 Oct 2010 Time : 14:24
Sensor Suite : SFL ID : PTI CG 074

Internal

	Measured Zero	Measured Reference	Calibrated Zero	Calibrated Reference	Units
Im	32902.7	48515.7	0.0	2028.0	mA
Io	32772.2	49422.5	0.0	1750.0	mA
MONI	32741.3	56808.0	0.0	1750.0	mV
Equivalent SFL				43.97	OHMM

Performed : 26 Oct 2010 Time : 13:58
Sensor Suite : PCSP ID : PTI CG 074

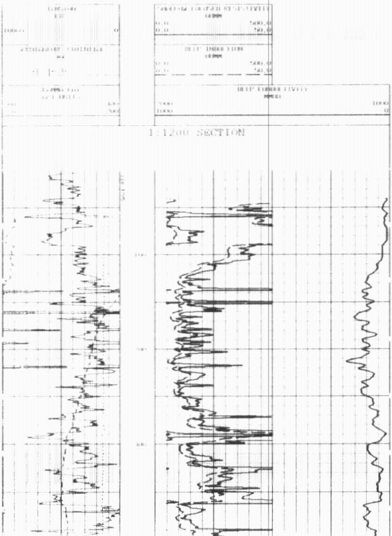
Internal

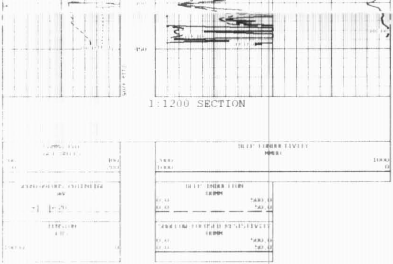
Measured Zero	Measured Reference	Calibrated Zero	Calibrated Reference	Units
32766.9	58975.1	0.0	1000.0	mV

Performed : 10 SEP 2010 Time : 17:00
Sensor Suite : PCEMUD ID : PTI CG 074

Internal

	Measured Zero	Measured Reference	Calibrated Zero	Calibrated Reference	Units
Rm1	0.0	34825.0	0.0	290.6	mA
Em	0.0	34825.0	0.0	290.6	mV
Equivalent Rm				0.0871	OHMM





1:1200 SECTION