



Weatherford

COMPOSITE LOG

COMPANY	OXY USA INC.		
WELL	BRAVO DOME CARBON DIOXIDE GAS UNIT #181J		
FIELD	BRAVO DOME CARBON DIOXIDE GAS 640		
PROVINCE/COUNTY	HARDING		
COUNTRY/STATE	U.S.A./NEW MEXICO		
LOCATION	1780' FSL & 2296' FEL, SEC-18		
PERMIT NUMBER	TWP-21 N, RGE-30 E, N.M.P.M.		
SEC 18	TWP 21N	RGE 30E	Other Services
Latitude	36.047081		
Longitude	-103.784706		
API Number	30-021-20683		
Permanent Datum GL, Elevation 5377.8 feet	CROSS-DIPOLE SONIC		
Log Measured From KB, 17.50 feet above Permanent Datum			
Drilling Measured From KB			
Date	13-SEP-2018	Elevations:	
Run Number	ONE	KB	5395.30
Service Order	7263-223909354	DF	5394.30
Depth Driller	2912.00	GL	5377.80
Depth Logger	2908.00		
First Reading	2904.00		
Last Reading	2686.00		
Casing Driller	2689.00		
Casing Logger	2686.00		
Bit Size	4.625		
Hole Fluid Type	WBM		
Density / Viscosity	15.10 lb/USg	49.00 sec/qt	
PH / Fluid Loss	10.00	14.80 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	1.05 @ 79.7	ohm-m	
Rmf @ Measured Temp	0.78 @ 79.7	ohm-m	
Rmc @ Measured Temp	1.575 @ 79.7	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.87 @ 97.0	ohm-m	
Time Since Circulation	6 HOURS		
Max Recorded Temp	97.00	deg F	
Equipment / Base	13370	ODESSA	
Recorded By	BRIAN GRAHMANN		
Witnessed By	JING LI		
Rig	TRINIDAD #435		

BOREHOLE RECORD			Last Edited: 14-SEP-2018 09:00
Bit Size inches	Depth From feet	Depth To feet	
14.750	0.00	1400.00	
10.625	1400.00	2395.00	
7.875	2395.00	2689.00	
4.625	2689.00	3030.00	
CASING RECORD			
Type	Size inches	Depth From feet	Shoe Depth feet
SURFACE	11.750	0.00	1400.00
INTERMED	10.625	0.00	2395.00
INTERMED	5.500	0.00	2689.00
Weight pounds/ft			
			47.00
			32.00
			20.00

REMARKS
- TOOLS RUN ONE: MAI, SKJ, MPD, MDN, MISD, MSG, MCG, SHA, MTA RAN IN COMBINATION
- TOOLS RUN TWO: MTD, MRD, MDM, MBN, MCG, SHA, MTA RAN IN COMBINATION
- HARDWARE RUN ONE: MDN: DUAL ECCENTRALIZER MAI: TWO 0.5" STANDOFFS
- HARDWARE RUN TWO: MCG: CENTRALIZER BASKET MDM: CENTRALIZER BASKET MTD: CENTRALIZER BASKET

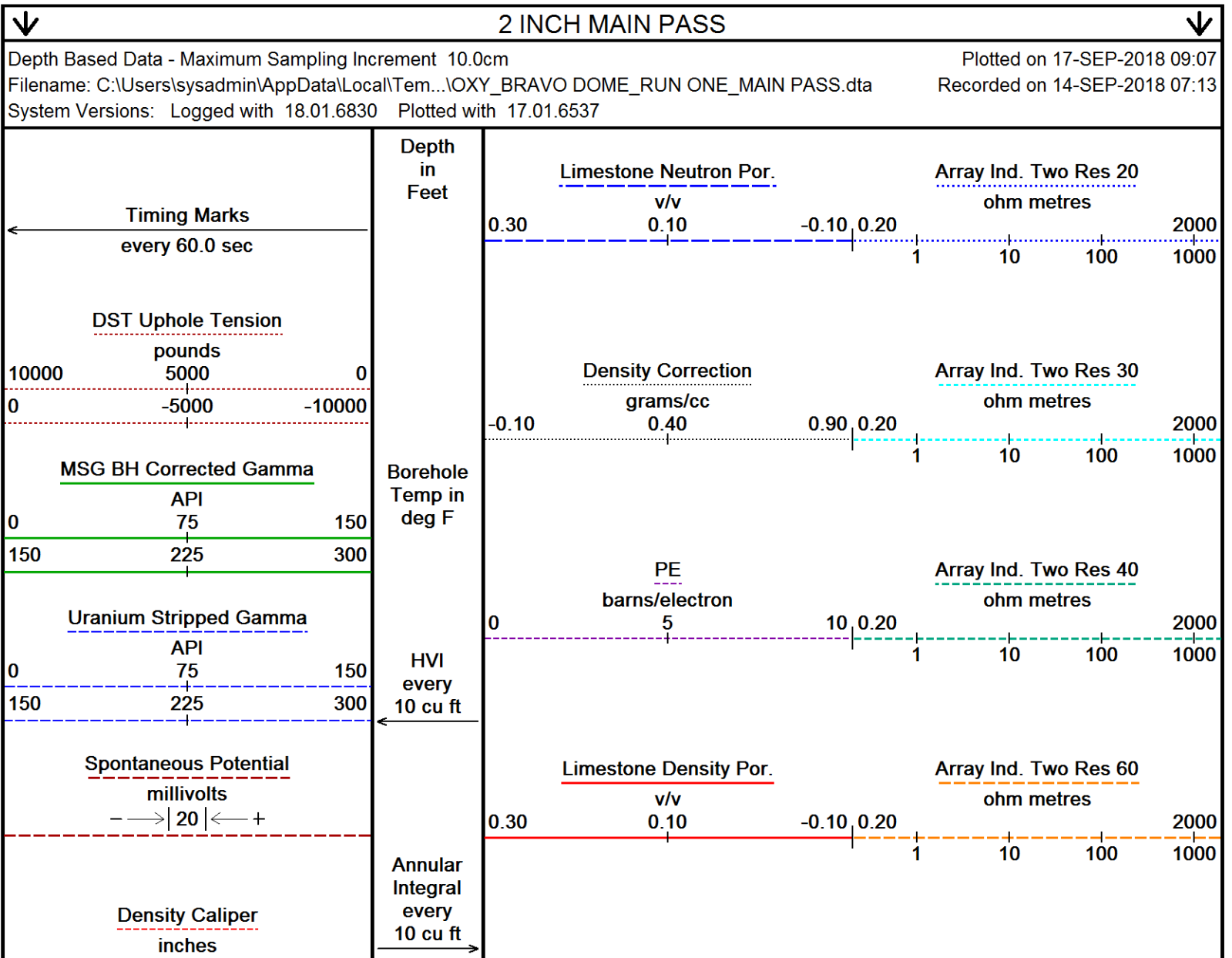
- 2.71 MATRIX DENSITY USED TO CALCULATE POROSITY

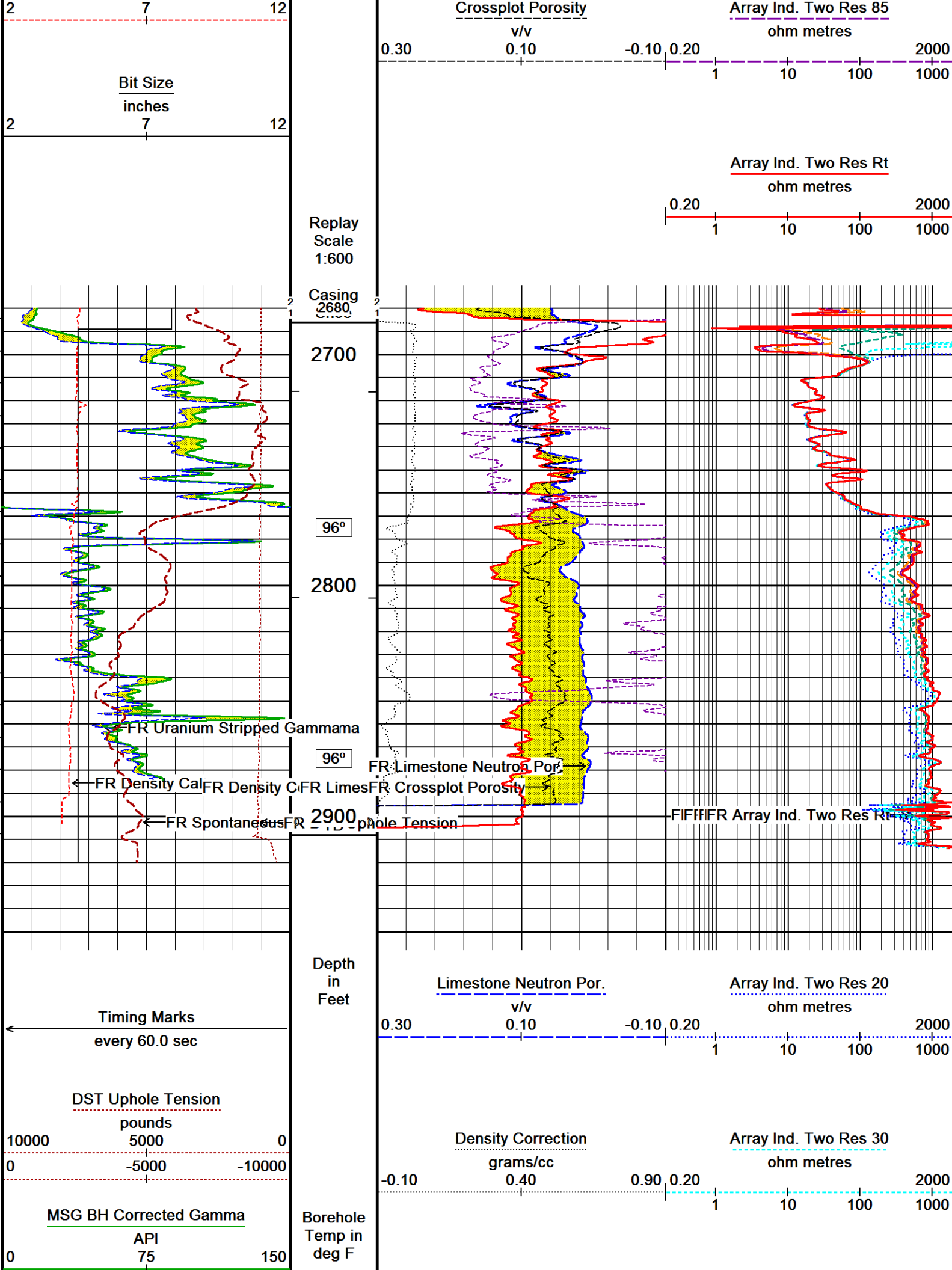
- TOTAL HOLE VOLUME FROM TD TO CASING: 25 CU. FT.
- NO FURTHER CASING IS PLANNED

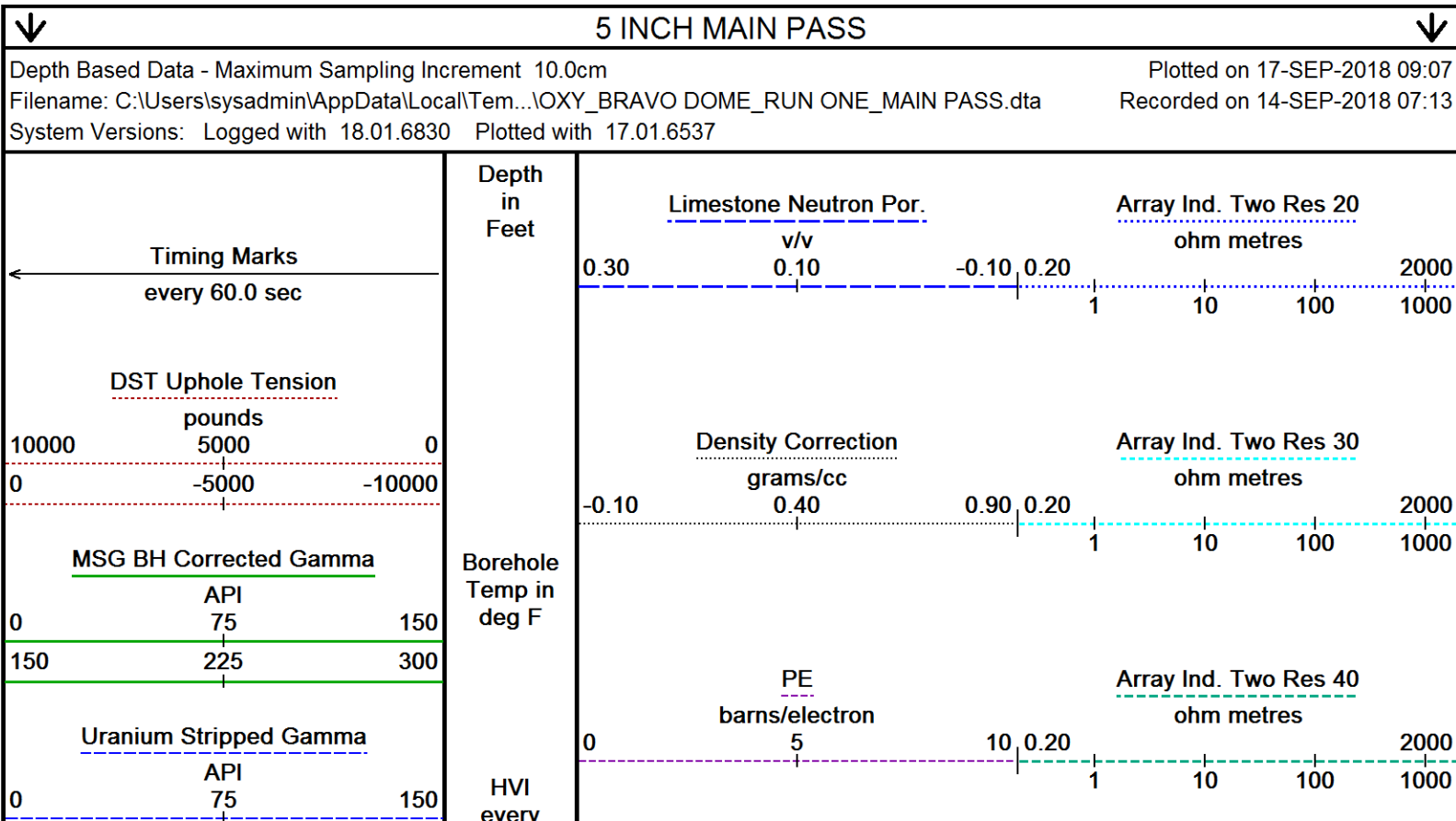
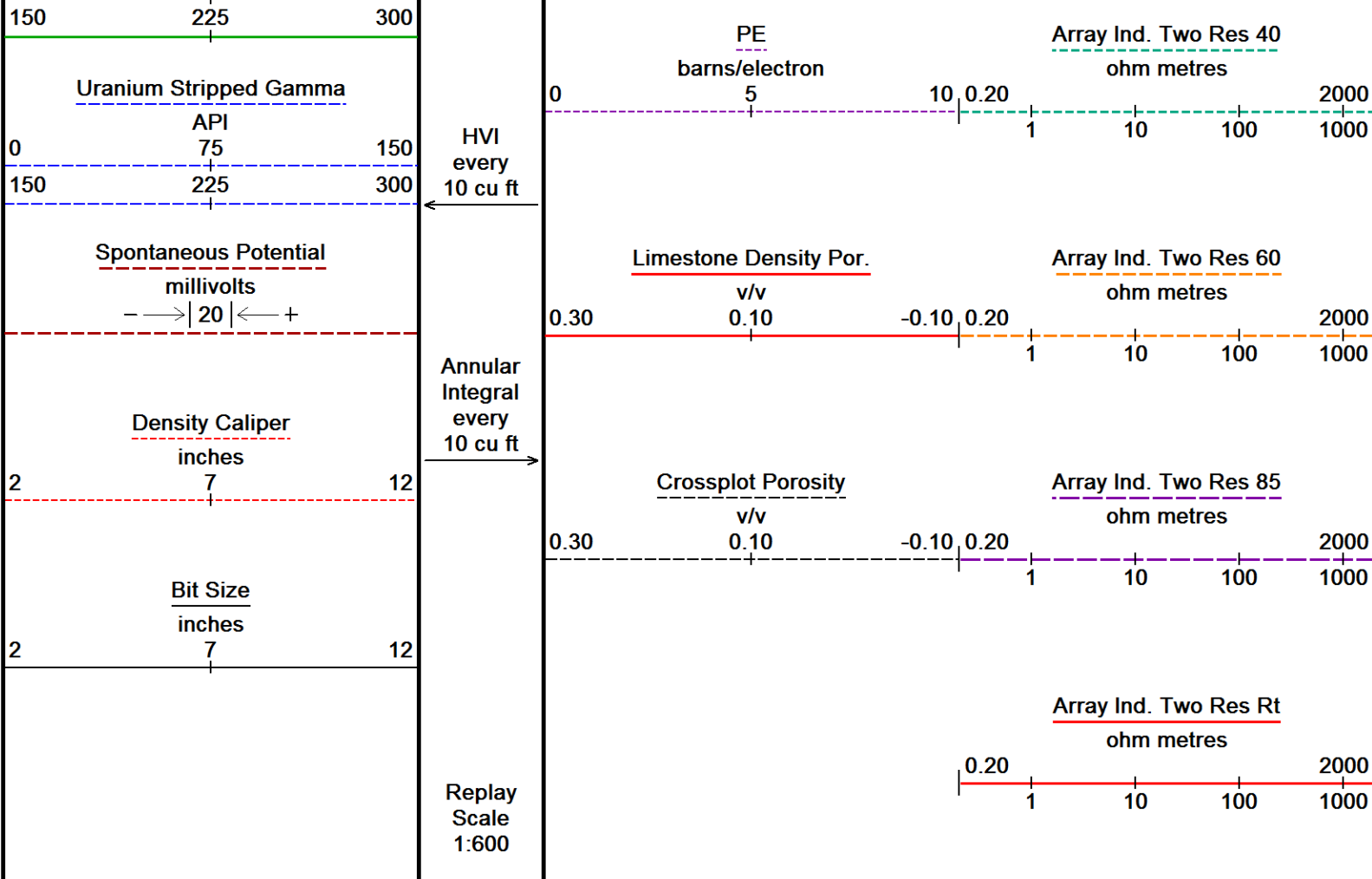
- BARITE PRESENT IN MUD SYSTEM
- MUD WEIGHT INCREASED FOR LOGS

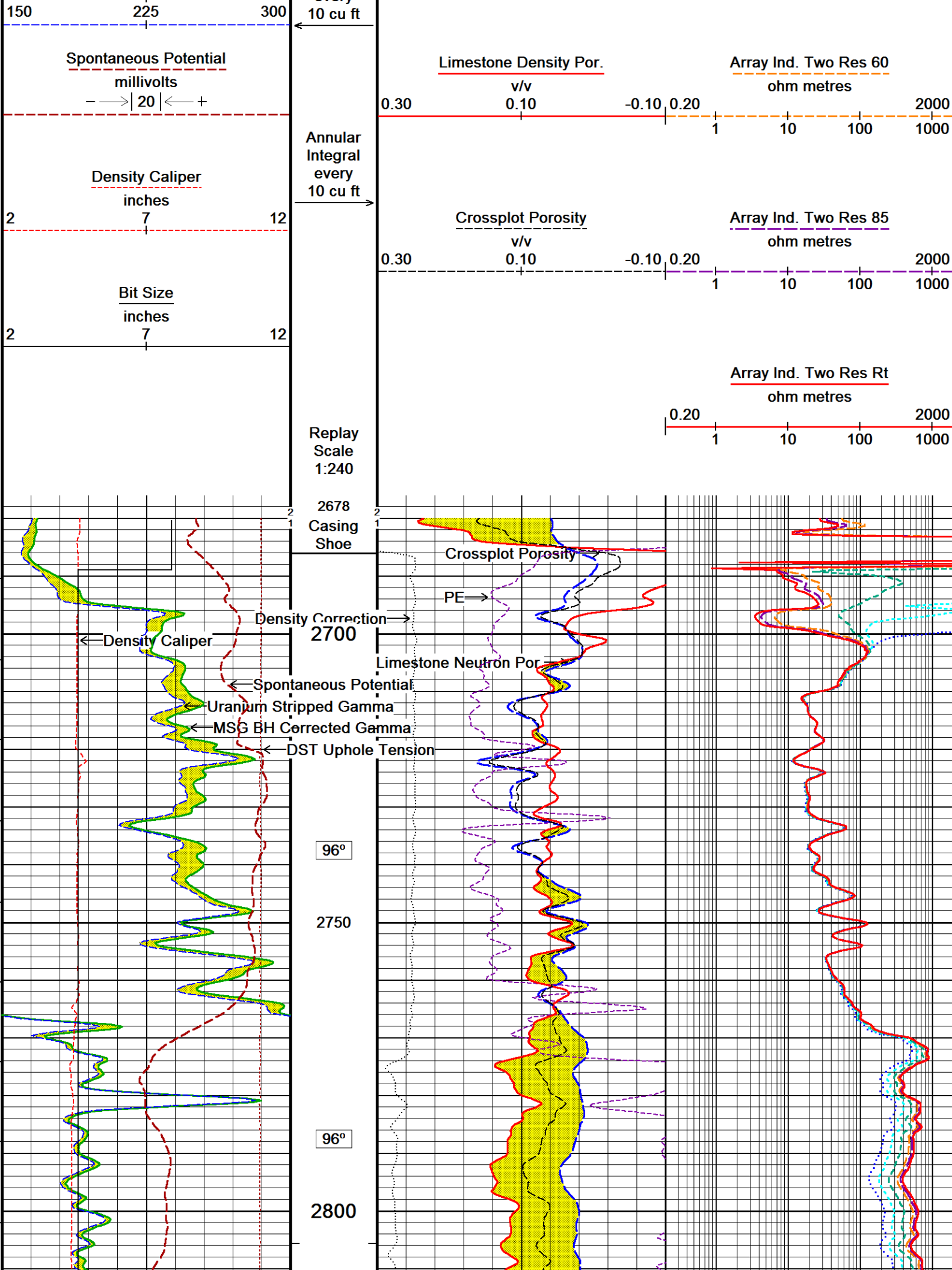
-CREW:
ENGINEER: BRIAN GRAHMANN
OPERATORS: ART NEVAREZ, RUBEN GUTIERREZ
SALES ENGINEER: BRUCE THOMAS

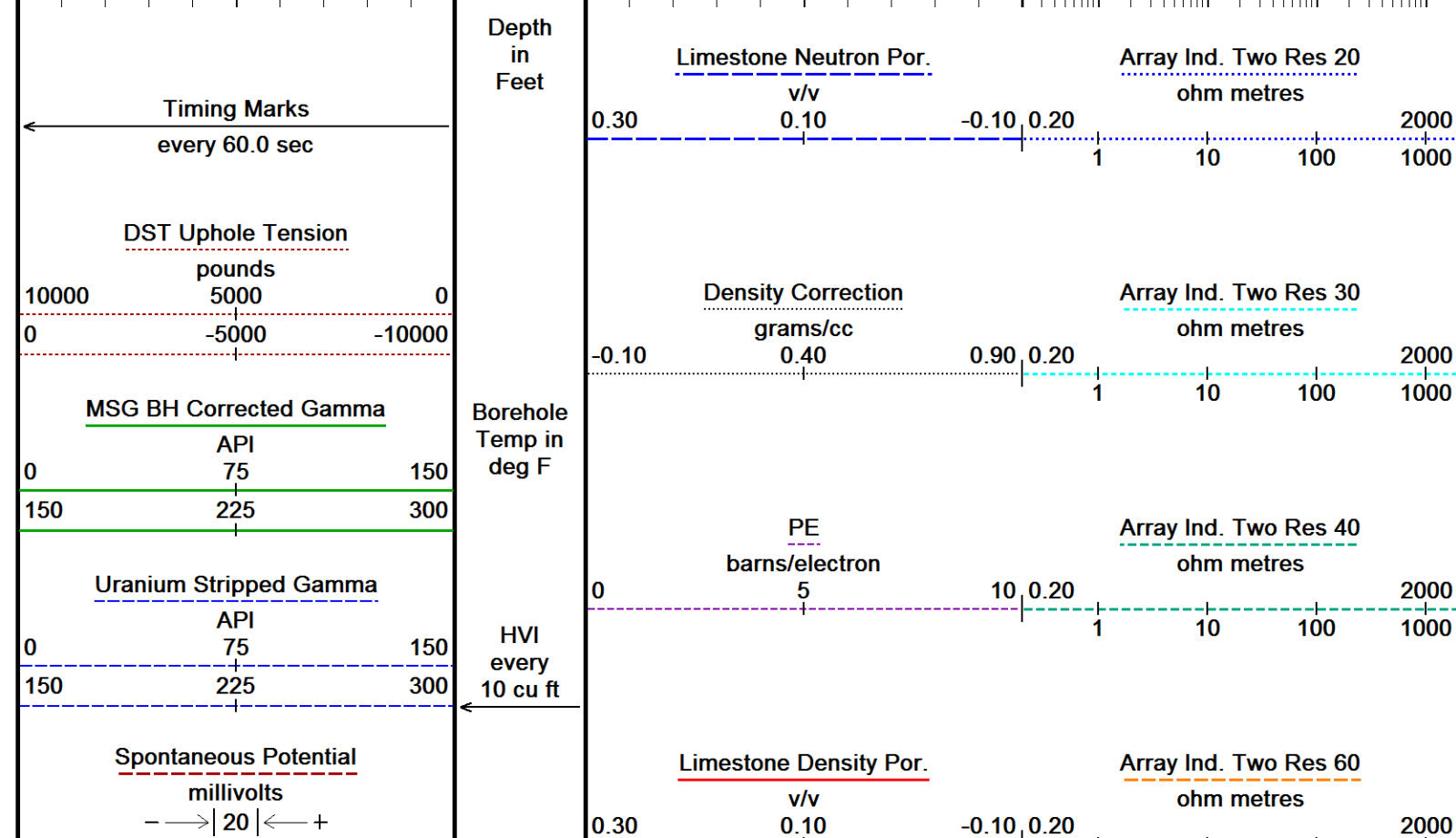
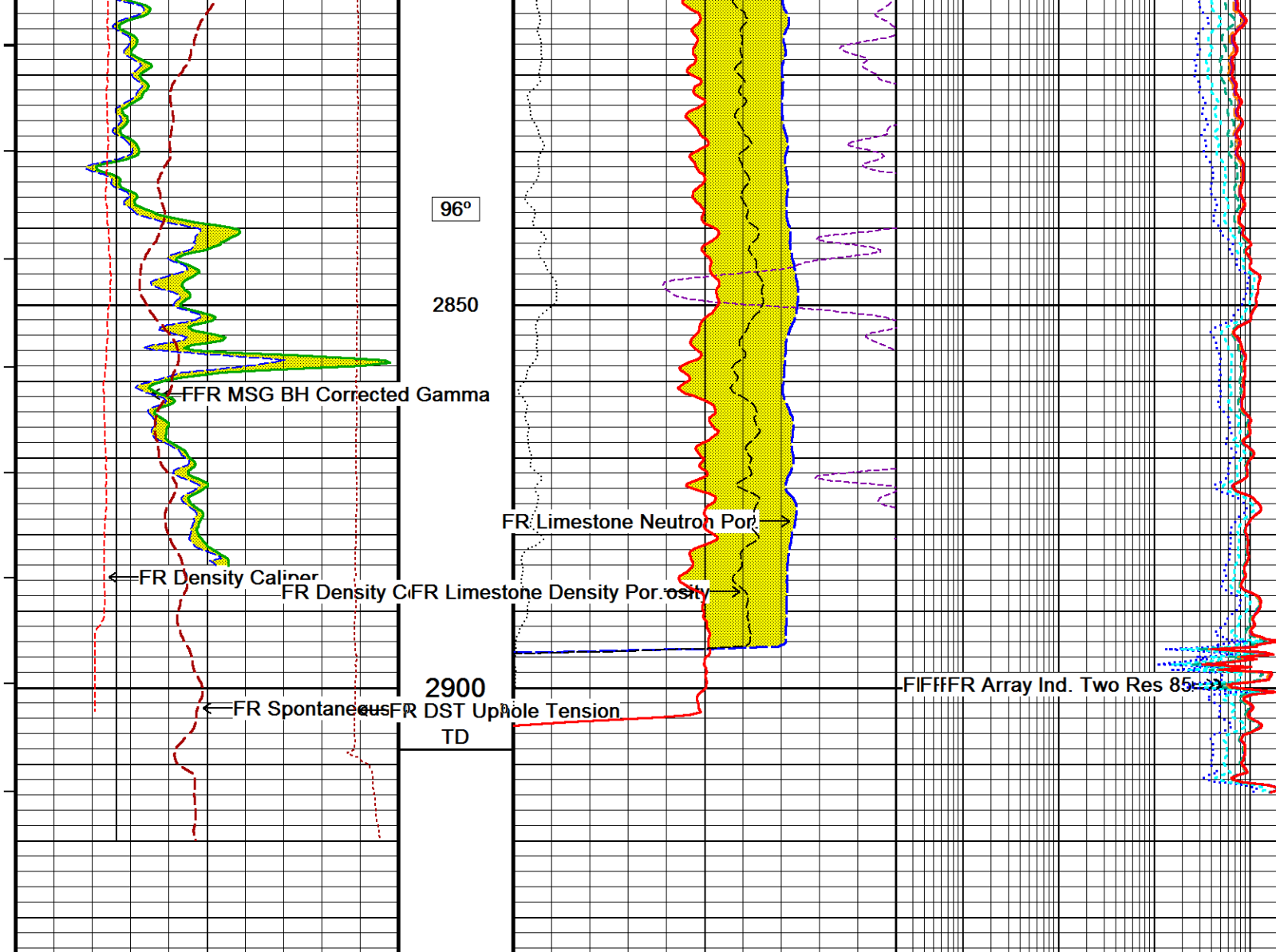
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

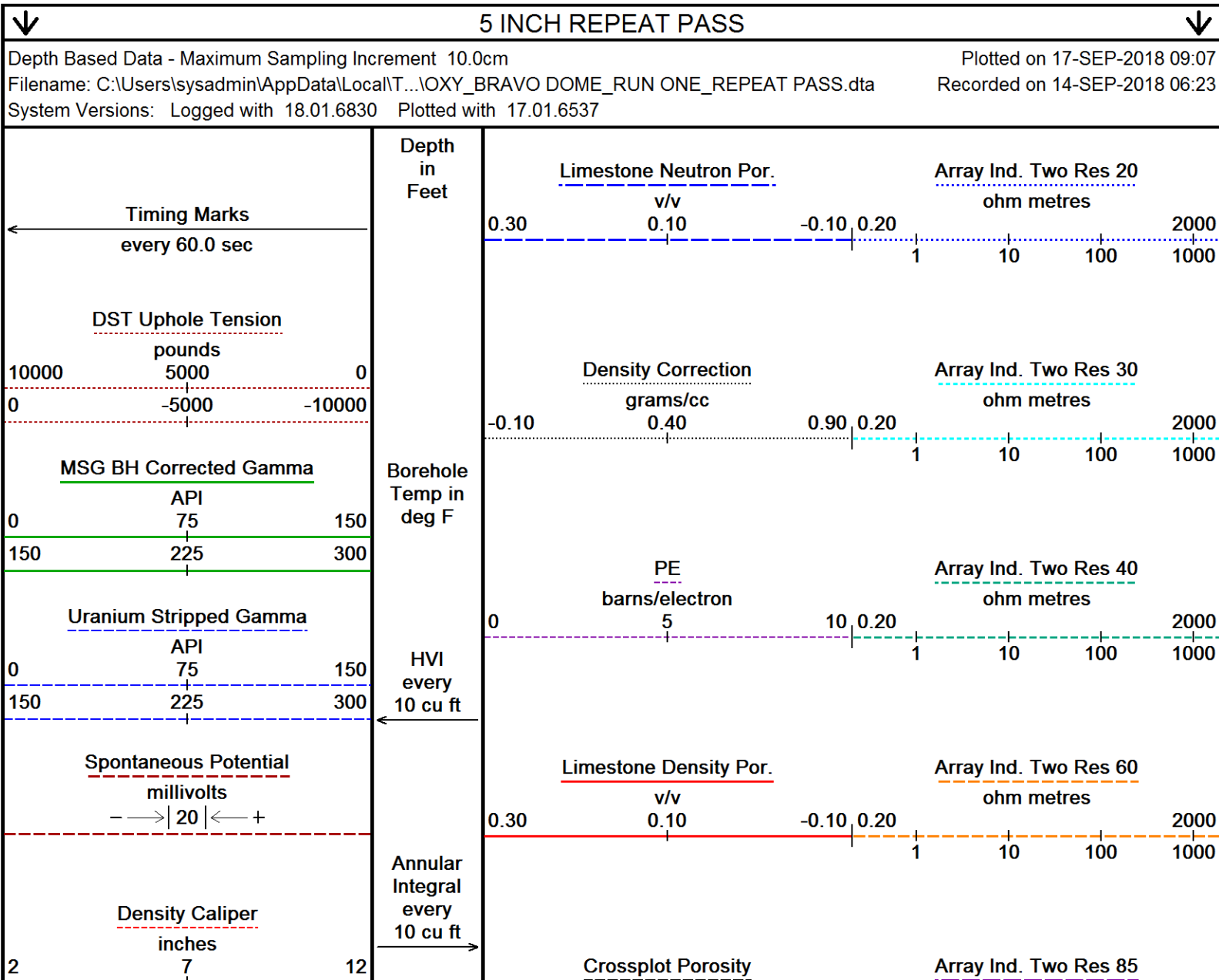
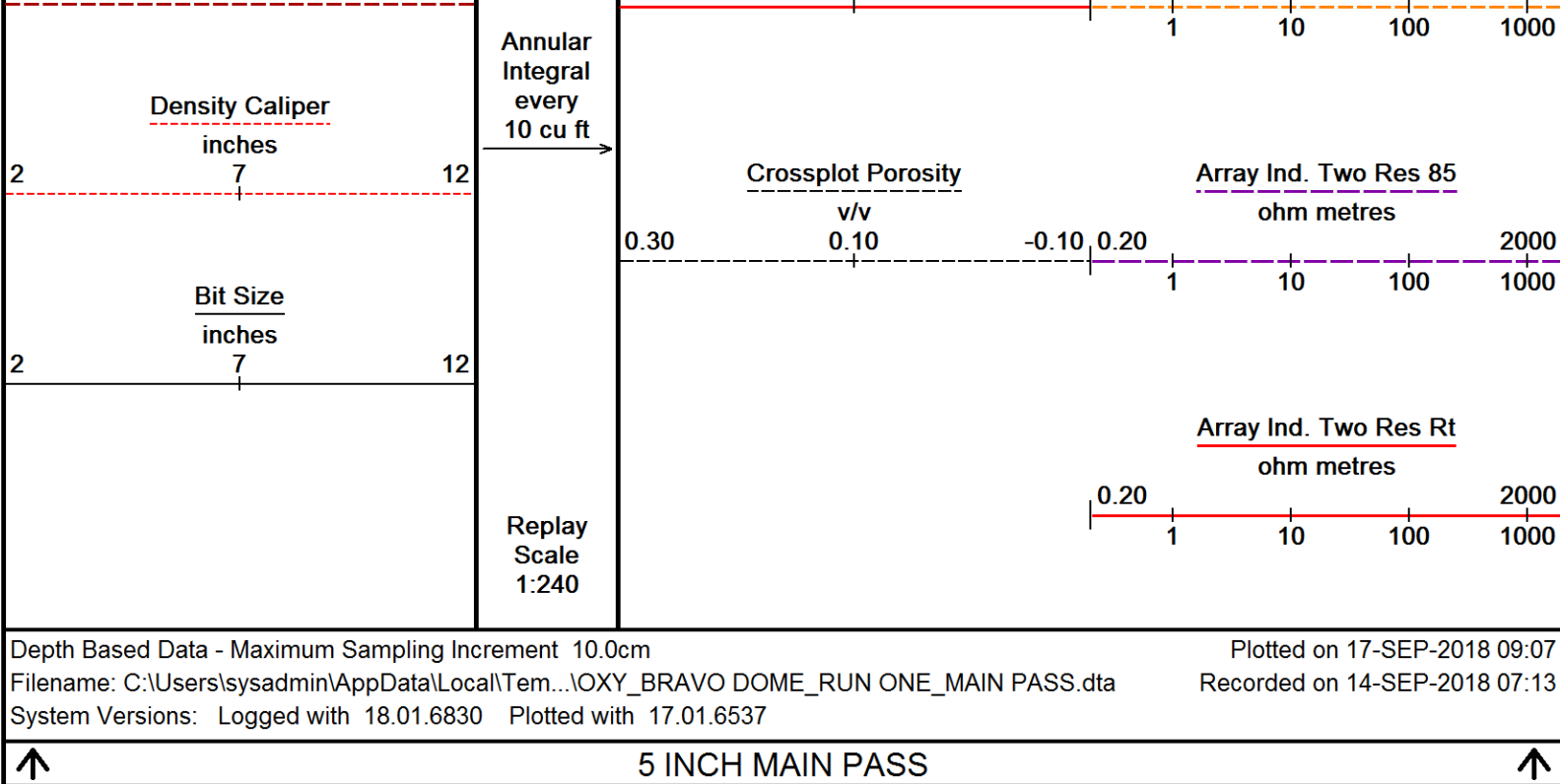


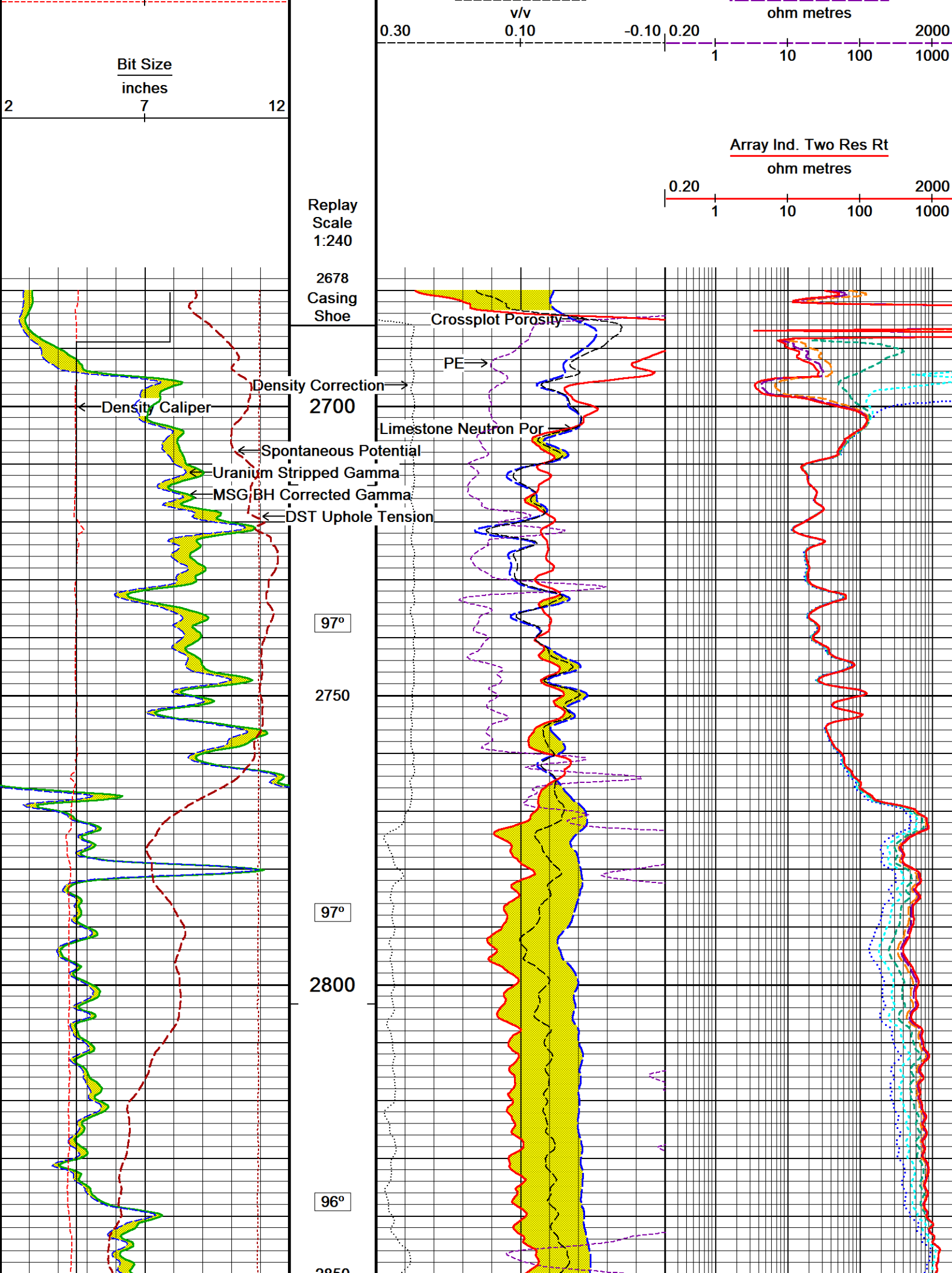


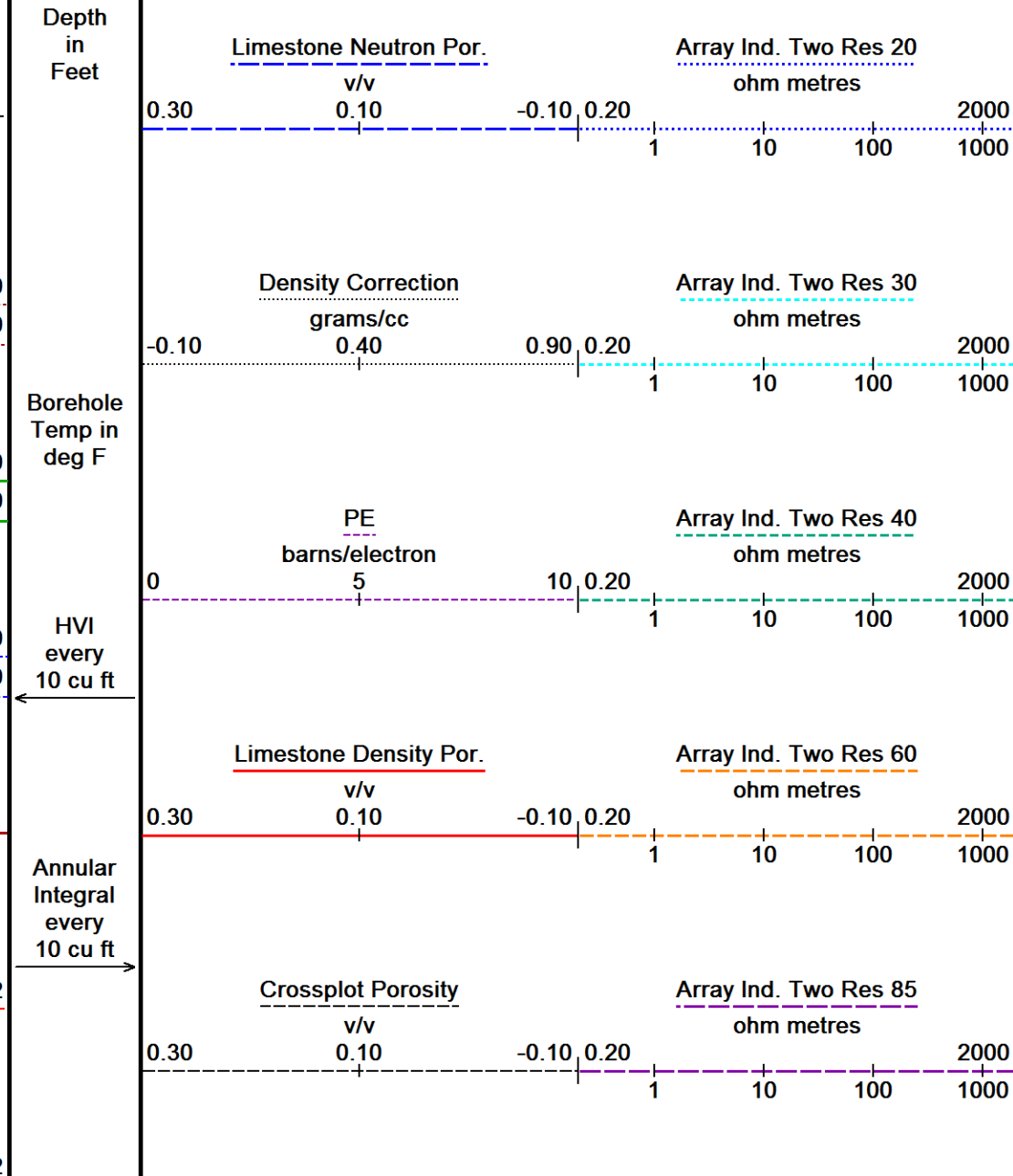
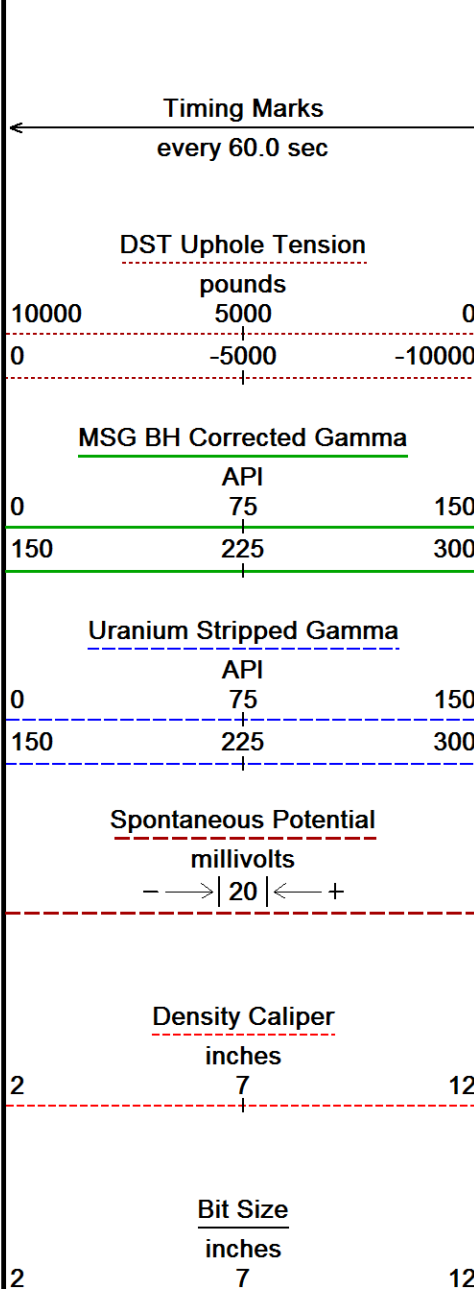
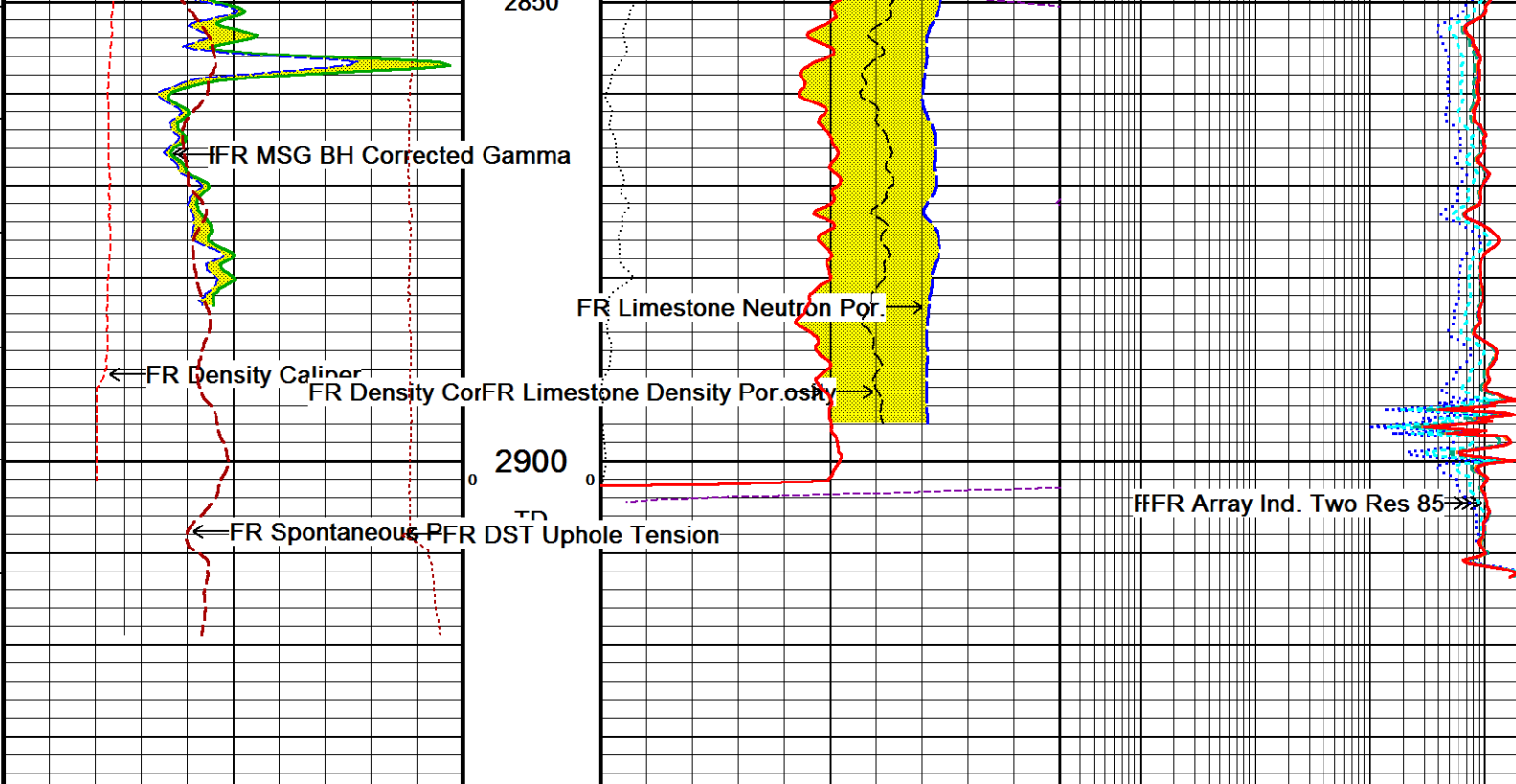












Replay Scale 1:240

Array Ind. Two Res Rt

ohm metres

0.20

1

10

100

2000

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 17-SEP-2018 09:07

Filename: C:\Users\sysadmin\AppData\Local\Temp\OXY_BRAGO DOME_RUN ONE_REPEAT PASS.dta

Recorded on 14-SEP-2018 06:23

System Versions: Logged with 18.01.6830

Plotted with 17.01.6537

↑

5 INCH REPEAT PASS

↑

BEFORE SURVEY CALIBRATION

C:\Users\sysadmin\AppData\Local\Temp\Weatherford PreView0\OXY_BRAGO DOME_RUN ONE_MAIN PASS.dta

General Constants All 000

Last Edited on 14-SEP-2018,04:21

General Parameters

Mud Resistivity

1.050

ohm-metres

Mud Resistivity Temperature

79.700

degrees F

Water Level

0.000

feet

Borehole Fluid Processing

Wet Hole

Hole/Annular Volume and Differential Caliper Parameters

HVOL Method

Single Caliper

HVOL Caliper 1

Density Caliper

HVOL Caliper 2

N/A

Annular Volume Diameter

0.000

inches

Caliper for Differential Caliper

Density Caliper

Rwa Parameters

Porosity used

Crossplot Porosity

Resistivity used

Array Ind. One Res Rt

RWA Constant A

0.620

RWA Constant M

2.150

SW/APOR Tool Source

0.000

High Resolution Temperature Calibration MCG-E.A 573

Field Calibration on 09-SEP-2018,11:17

Measured

Calibrated(Deg F)

Lower

10.00

10.00

Upper

100.00

100.00

High Resolution Temperature Constants MCG-E.A 573

Last Edited on 28-APR-2018,21:02

Pre-filter Length

11

Neutron Calibration MDN-C.A 477

Base Calibration on 05-SEP-2018 13:29

Field Check on 05-SEP-2018 13:45

Base Calibration

Measured

Calibrated (cps)

Near

Far

Near

Far

2911

90

3714

110

Ratio

32.475

33.764

Field Calibrator at Base

Calibrated (cps)

2121

3143

Ratio

0.675

Field Check

Calibrated (cps)

2119

3137

Ratio

0.675

Neutron Calibration Tolerances MDN-C.A 477

Ratio

32.475

-5%

33

+5%

0.65

0.7

0.75

Base Check 0.675

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Field Check 0.675

0.655	0.675	0.695
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Neutron Constants MDN-C.A 477

Last Edited on 14-SEP-2018,04:22

Neutron Source Id	P44387B	
Neutron Jig Number	NECD105	
Air Hole Processing	Modified Ratio	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	None	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

Induction Calibration MAI-C.A 490

Base Calibration on 04-JUL-2018 12:15

Field Check on 14-SEP-2018 05:02

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	15.2	455.2	9.3	966.2
2	5.9	373.9	7.6	821.4
3	3.7	251.6	5.2	566.0
4	1.8	128.7	2.6	279.2

Array Temperature 75.6 Deg F

Test Loop Calibration Verified

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	-2.0	2114.3	-1.3	2114.8
2	14.1	1921.3	14.9	1921.8
3	14.1	1678.4	14.8	1679.1
4	10.4	1144.8	10.9	1145.0
Deep	8.4	1118.6	8.8	1119.1
Medium	21.6	2197.8	22.7	2198.9
Shallow	21.1	2805.1	22.3	2805.7

Array Temperature 92.9 75.8 Deg F

Induction Constants MAI-C.A 490

Last Edited on 14-SEP-2018,05:34

Induction Model	RtAP	
Borehole Correction Constants		
Tool Centred	No	
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	8.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.7500	inches
Rm Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	MCG External Temperature	
Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Symmetrised Receiver Gains

Receiver 1	1.00
Receiver 2	1.00
Receiver 3	1.00
Receiver 4	1.00

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	1.00	v/v
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

Compact Spectral Gamma Calibration MSG-A.A 113

Base Calibration on 13-JUN-2018 15:49

Field Calibration on 07-SEP-2018 11:07

Base Calibration

Gamma Ray

	Measured	Calibrated (API)
Background	42	18
Calibrator (Gross)	736	318
Calibrator (Net)	694	299

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	34.6	5.2	1.3	0.5	0.7
Calibrator (Gross)	587.4	100.5	29.5	8.8	10.2
Calibrator (Net)	552.8	95.3	28.2	8.3	9.4

	K %	U ppm	Th ppm
Concentrations	6.1	16.8	43.3

Potassium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	34.6	5.2	1.3	0.5	0.7
Calibrator (Gross)	105.9	33.1	14.6	0.5	0.7
Calibrator (Net)	71.3	28.0	13.3	-0.0	-0.0

	K %	U ppm	Th ppm
Concentrations	5.7	0.0	0.0

Uranium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	34.6	5.2	1.3	0.5	0.7
Calibrator (Gross)	200.3	28.0	6.8	3.5	1.8
Calibrator (Net)	165.8	22.8	5.5	3.0	1.1

	K %	U ppm	Th ppm
Concentrations	0.0	9.8	0.0

Thorium Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	34.6	5.2	1.3	0.5	0.7
Calibrator (Gross)	225.6	32.2	6.5	3.6	8.3
Calibrator (Net)	191.0	27.0	5.2	3.1	7.6

	K %	U ppm	Th ppm
Concentrations	0.0	0.0	40.5

Field @ Base Calibration

Calibration Type

442
485

Gamma Ray

	Measured	Calibrated (API)
Background	42.3	18.3
Calibrator (Gross)	736.4	317.7
Calibrator (Net)	694.0	299.4

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	34.6	5.2	1.3	0.5	0.7
Calibrator (Gross)	587.4	100.5	29.5	8.8	10.2
Calibrator (Net)	552.8	95.3	28.2	8.3	9.4

Field Calibration

Calibration Type	SG Jigs
SGB Calibrator Serial Number	442
SGM Calibrator Serial Number	485

Gamma Ray

	Measured	Calibrated (API)
Background	44.0	19.1
Calibrator (Gross)	735.1	318.5
Calibrator (Net)	691.1	299.4

Mixture Calibrator

	Gate 1	Gate 2	Gate 3	Gate 4	Gate 5
Background	36.4	5.0	1.4	0.5	0.7
Calibrator (Gross)	586.4	99.9	30.2	8.7	9.9
Calibrator (Net)	550.0	94.8	28.8	8.2	9.2

Compact Spectral Gamma Calibration Tolerances MSG-A.A 113

Base Check K	5.77		%	Field @ Base Check K	5.77		%
Base Check U	17.14		ppm	Field @ Base Check U	17.14		ppm
Base Check T	40.47		ppm	Field @ Base Check T	40.47		ppm
Field Check K	5.95		%				
Field Check U	17.19		ppm				
Field Check T	39.13		ppm				

Compact Spectral Gamma Constants MSG-A.A 113

Last Edited on 14-SEP-2018,04:22

Background Calibrator Number	442	
Mixture Calibrator Number	485	
Potassium Calibrator Number	381	
Uranium Calibrator Number	383	
Thorium Calibrator Number	385	
Mud Density	1.81	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

Photo Density Calibration MPD-D.A 477

Base Calibration on 11-SEP-2018 13:50

Field Check on 11-SEP-2018 14:00

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1215	1386		
Reference 1	55777	26362	59509	30925
Reference 2	22463	2560	24862	2515

Field Check at Base

1215.2 1385.8

Field Check

Field Check

1217.2

1388.3

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	233	1089		
Reference 1	24265	55575	0.441	0.371
Reference 2	6863	22326	0.312	0.269

Field Check at Base

232.9 1089.0

Field Check

231.0 1090.7

Photo Density Calibration Tolerances MPD-D.A 477

Near Density Ratio	2.57	
PE Calibration	0.118	

Far Density Ratio	21.27	
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Near Den. Field Check	1217.2	
PE WS Field Check	231.0	

Far Den. Field Check	1388.3	
PE WH Field Check	1090.7	

Density Constants MPD-D.A 477

Last Edited on 14-SEP-2018,05:41

Density Source Id	P79949B	
Nylon Calibrator Number	DNCE 630	
Aluminium Calibrator Number	DACD 657	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.81	gm/cc
Mud Density Type		
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Precision Enhanced Density Processing	Not Applied	
Matrix Density (gm/cc)	Depth (ft)	
2.71	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

Caliper Calibration MPD-D.A 477

Base Calibration on 11-SEP-2018 14:09
Field Calibration on 11-SEP-2018 14:11

Base Calibration	Measured	Calibrator Size (in)
Reading No		
1	15571	3.98
2	25379	5.97
3	35365	7.96
4	45004	9.85
5	56013	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in) 7.95 Actual Caliper (in) 7.96

Caliper Calibration Tolerances MPD-D.A 477

Short Arm Field Cal.	7.95	
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DOWNHOLE EQUIPMENT

C:\Users\sysadmin\AppData\Local\Temp\Weatherford PreView0\0\OXY_BRAVO DOME_RUN ONE_MAIN PASS.dta

Cablehead, 11 pin
CBH-CA 120 LG: 2.40 ft WT: 24.3 lb OD: 2.240 in

11C-11B Compact Tool Adaptor
MTA-K.B 374 LG: 1.53 ft WT: 13.2 lb OD: 2.240 in

Compact Swivel Head Adaptor
SHA-J.B 708 LG: 2.30 ft WT: 22.0 lb OD: 2.240 in

Compact Comms Gamma
MCG-E.A 573 LG: 8.70 ft WT: 63.9 lb OD: 2.240 in

Compact Spectral Gamma
MSG-A.A 113 LG: 10.94 ft WT: 90.4 lb OD: 2.244 in

Compact Inline Bowspring sub
MIS-D.B 674 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

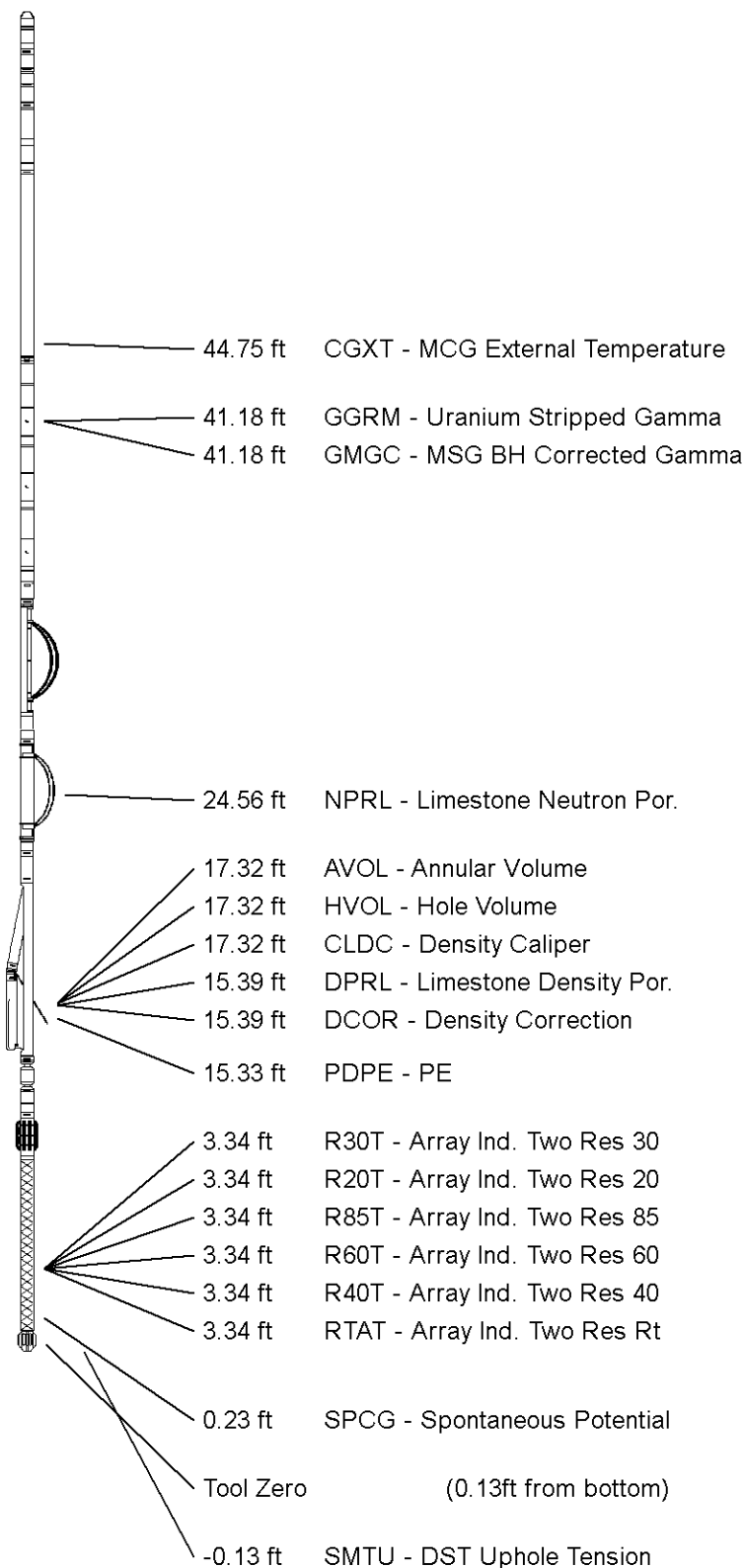
Compact Neutron
MDN-C.A 477 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-D.A 477 LG: 9.59 ft WT: 90.4 lb OD: 2.244 in

Compact Knuckle Joint
SKJ-E.B 652 LG: 2.17 ft WT: 24.3 lb OD: 2.240 in

Compact Induction
MAI-C.A 490 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 59.16 ft Weight: 460.8 lb



All measurements relative to tool zero.

COMPANY

OXY USA INC.

WELL

BRAVO DOME CARBON DIOXIDE GAS UNIT #181J

FIELD

BRAVO DOME CARBON DIOXIDE GAS 640

PROVINCE/COUNTY

HARDING

COUNTRY/STATE

U.S.A./NEW MEXICO

Elevation Kelly Bushing 5395.3 feet
Elevation Drill Floor 5394.3 feet
Elevation Ground Level 5377.8 feet

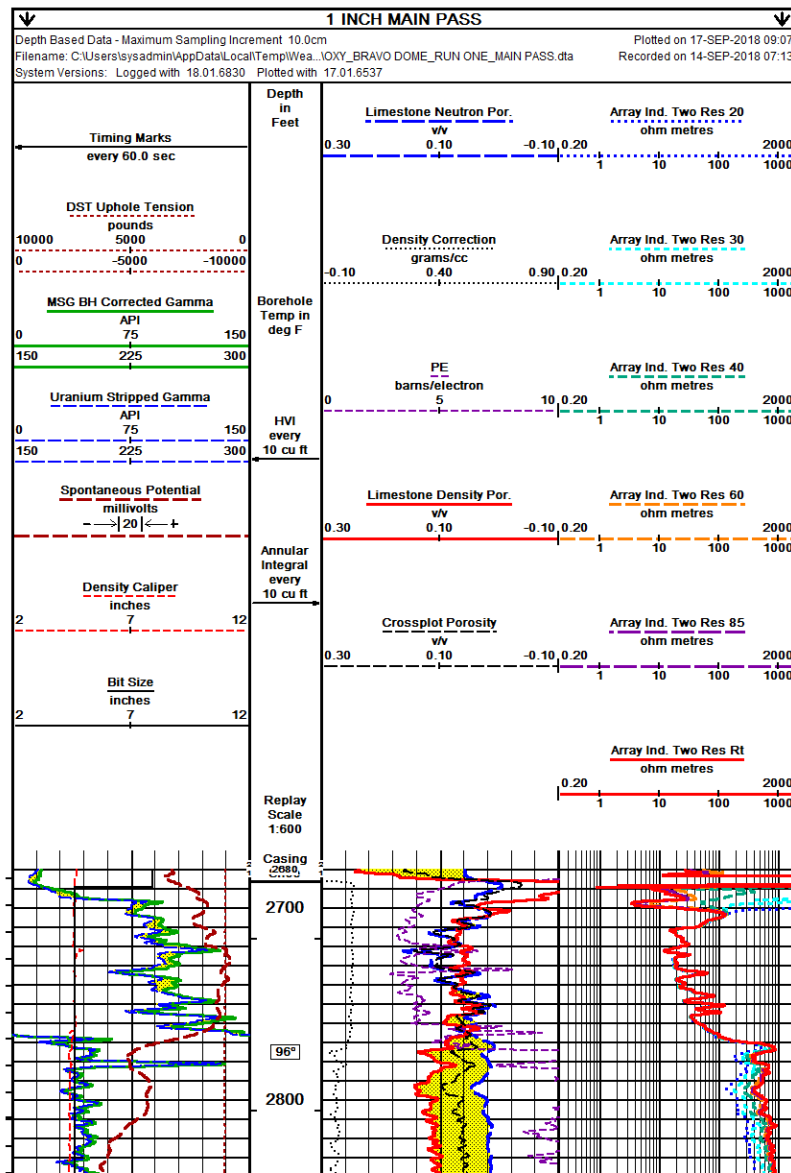
First Reading 2900.00 feet
Depth Driller 2912.00 feet
Depth Logger 2908.00 feet

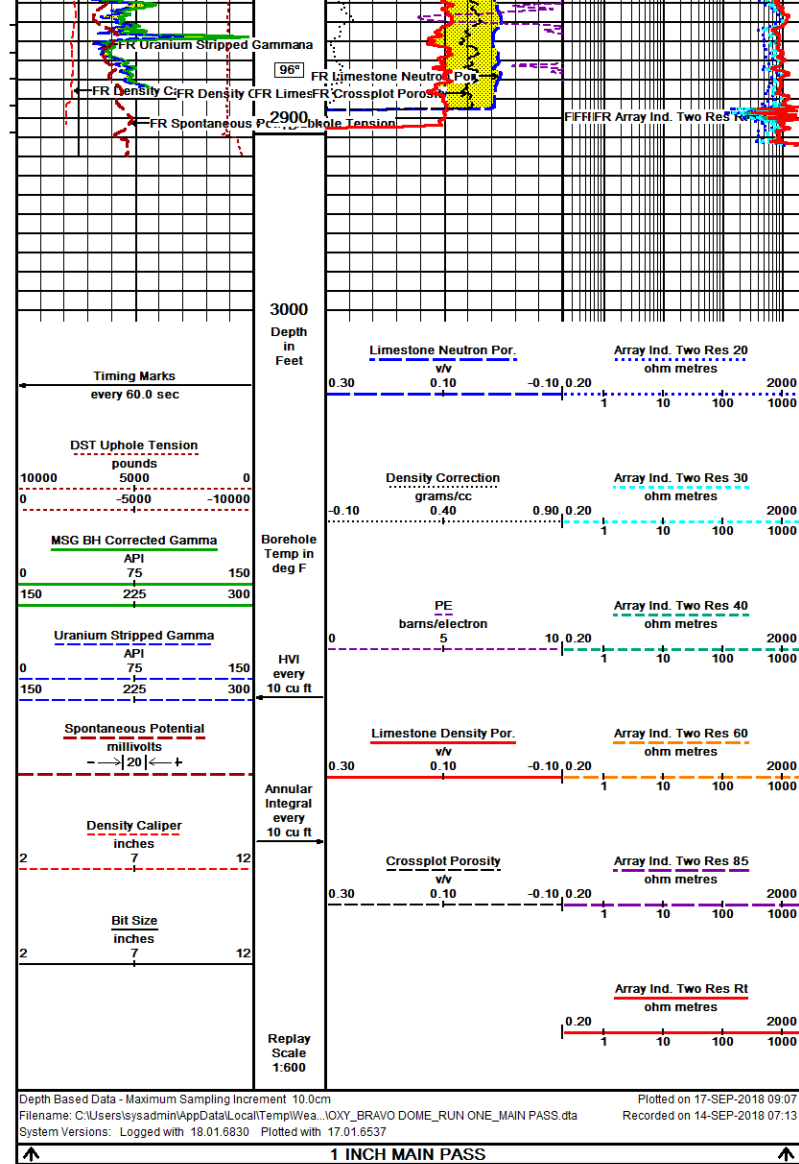


Weatherford®

COMPOSITE LOG

Weatherford®		COMPOSITE LOG	
COMPANY	OXY USA INC.	WELL	BRAVO DOME CARBON DIOXIDE GAS UNIT #181J
FIELD	BRAVO DOME CARBON DIOXIDE GAS 640	PROVINCE/COUNTY	HARDING
COUNTRY/STATE	U.S.A./NEW MEXICO	LOCATION	1780' FSL & 2296' FSL SEC. 18
PERMIT NUMBER	TWP-21 N, RGE-30 E, N.M.P.M.	SEC. 18	TWP-21 N, RGE-30 E, N.M.P.M.
Latitude	36.047081	Longitude	-103.784706
API Number	30-021-20683	Other Services	CROSS-DIPOLE SONIC
Permanent Datum GL Elevation 5377.8 feet			
Log Measured From KB 17.50 feet above Permanent Datum			
Drilling Measured From KB			
Date	13-SEP-2018	Run Number	ONE
Service Order	7263-22390354	Depth Driller	2912.00 feet
Depth Logger	2908.00 feet	First Reading	2904.00 feet
Last Reading	2908.00 feet	Casing Driller	2908.00 feet
Bit Size	4.625 inches	Hole Fluid Type	WBH
Density / Viscosity	15.10 lb/lb/sq	PI / Fluid Loss	10.00
Sample Source	FLOWLINE	Run @ Measured Temp	1.05 @ 79.7 ohm-m
Run @ Measured Temp	0.78 @ 79.7 ohm-m	Run @ Measured Temp	1.575 @ 79.7 ohm-m
Source Run / Rmc	CALC	Run @ BHT	0.87 @ 97.0 ohm-m
Time Since Circulation	6 HOURS	Max Recorded Temp	97.00 deg F
Equipment Base	13370	Recorded By	BRIAN GRAHAMMAN
Witnessed By	JING LI	Rig	TRINIDAD #435





COMPANY		OXY USA INC.			
WELL		BRAVO DOME CARBON DIOXIDE GAS UNIT #181J			
FIELD		BRAVO DOME CARBON DIOXIDE GAS 640			
PROVINCE/COUNTY		HARDING			
COUNTRY/STATE		U.S.A./NEW MEXICO			
Elevation Kelly Bushing	5395.3	feet	First Reading	2904.00	feet
Elevation Drill Floor	5394.3	feet	Depth Driller	2912.00	feet
Elevation Ground Level	5377.8	feet	Depth Logger	2908.00	feet



COMPOSITE LOG