KOLAR Document ID: 1326718

Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
January 2018
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34950
Name: Future Acquisition Company LLC
Address 1: PO BOX 1129
Address 2:
City: FULSHEAR State: TX Zip: 77441 + __ __ __ __
Contact Person: Chris Haefele
Phone: (832) 831-3700
CONTRACTOR: License # 32701
Name: C & G Drilling, Inc.
Wellsite Geologist: Paladin
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☑ Oil ☐ WSW ☐ SWD
☐ Gas ☐ DH ☐ EOR
☐ OG ☐ GSW
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:
☐ Deepening ☐ Re-perf. ☐ Conv. to EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ EOR Permit #:
☐ GSW Permit #:

10/24/2016 Spud Date or Recompletion Date
10/30/2016 Date Reached TD
12/13/2016 Completion Date or Recompletion Date

API No.: 15-035-24660-00-00
Spot Description:
SE - NE - NE - NW Sec. 22 Twp. 33 S. R. 5 ☑ East ☐ West
400 Feet from ☑ North / ☐ South Line of Section
2425 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Cowley
Lease Name: SAMMS Well #: 22-1
Field Name: Maddix North
Producing Formation: Mississippi
Elevation: Ground: 1233 Kelly Bushing: 1242
Total Vertical Depth: 3644 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 217 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: 1000 ppm Fluid volume: 300 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT
I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY
☑ **Confidentiality Requested**
Date: 01/11/2017
☑ **Confidential Release Date:** 01/11/2019
☑ **Wireline Log Received** ☐ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** Karen Ritter **Date:** 01/23/2017

Operator Name: Future Acquisition Company LLC Lease Name: SAMMS Well #: 22-1

Sec. 22 Twp. 33 S. R. 5 ☑ East ☐ West County: Cowley

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken *(Attach Additional Sheets)*	☐ Yes	☑ No
Samples Sent to Geological Survey	☑ Yes	☐ No
Cores Taken	☐ Yes	☑ No
Electric Log Run	☑ Yes	☐ No
Geologist Report / Mud Logs	☐ Yes	☐ No

List All E. Logs Run:

Quad Combo
CBL

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
STALNAKER	1907	-665
LAYTON	2319	-1077
FT. SCOTT	2820	-1578
MISS	3105	-1863
KINDERHOOK	3500	-2258
WOODFORD	3521	-2279
ARBUCKLE	3554	-2312

CASING RECORD ☑ New ☐ Used

Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.25	8.625	4	217	Class A	150	3% Calcium, 2% Gel 100# Poly Flake
Production	7.875	5.5	15.5	3635	Class A	300	3% Gel, 2% Calcium, 5#/sk Kolseal

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☐ Plug Off Zone	-			
	-			

1. Did you perform a hydraulic fracturing treatment on this well? ☑ Yes ☐ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☑ Yes ☐ No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☑ No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/ Injection:	Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	42	0	550		39

DISPOSITION OF GAS:	METHOD OF COMPLETION:	PRODUCTION INTERVAL: Top	Bottom
☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*	☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*	3108-3420	

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*

TUBING RECORD:	Size:	Set At:	Packer At:
	2.875	3164	N/A

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Future Acquisition Company LLC
Well Name	SAMMS 22-1
Doc ID	1326718

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	3108-3112, 3116-3122	3000 gal 15% HCL	3108-3122
1	3168-3188, 3200-3210, 3220-3240, 3254-3274	10000# 100 Mesh, 81000# 40/70, 300 gal 15% HCL, 6200 bbls	3168-3274
1	3310-3330, 3340-3360, 3370-3390, 3400-3420	10000# 100 Mesh, 81000# 40/70, 500 gal 15% HCL, 6492 bbls	3310-3420

Form	ACO1 - Well Completion
Operator	Future Acquisition Company LLC
Well Name	SAMMS 22-1
Doc ID	1326718

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	4	217	Class A	150	3% Calcium, 2% Gel 100# Poly Flake
Production	7.875	5.5	15.5	3635	Class A	300	3% Gel, 2% Calcium, 5#/sk Kolseal

CONSOLIDATED
Oil Well Services, LLC

REMIT TO

Consolidated Oil Well Services,LLC
Dept:970
P.O.Box 4346
Houston,TX 77210-4346

MAIN OFFICE

P.O.Box884
Chanute,KS 66720
620/431-9210,1-800/467-8676
Fax 620/431-0012

Invoice

Invoice# 808937

Invoice Date: 10/31/16 Terms: Net 30 Page 1

FUTURE ACQUISITION COMPANY,LLC

P.O. BOX 1129
FULSHEAR TX 77441
USA

8328313700

SAMMS 22-1

15-035-24660-00-00

Part No	Description	Quantity	Unit Price	Discount(%)	Total
CE0452	Cement Pump Charge 3001' - 4000'	1.000	2,300.0000	50.000	1,150.00
CE0002	Equipment Mileage Charge - Heavy Equipment	75.000	7.1500	50.000	268.13
CE0001	Equipment Mileage Charge - Light Equipment	75.000	3.0000	50.000	112.50
CE0710	Cement Delivery Charge	1,163.000	1.7500	50.000	1,017.63
CE1201	5 1/2" Cement Head	1.000	350.0000	50.000	175.00
CC5800A	Class A Cement - Sack	330.000	20.0000	50.000	3,299.99
CC5325	Calcium Chloride	650.000	1.2500	50.000	406.25
CC6079	PhenoSeal Formica Flakes	160.000	1.3500	50.000	108.00
CC5965	*Bentonite*	950.000	0.3000	50.000	142.50
CC6077	Kolseal	1,650.000	0.5000	50.000	412.50
CC6125	Mud Flush, Viscous	500.000	0.6500	50.000	162.50
CP8254	5 1/2" Latch Down Plug & Assembly	1.000	400.0000	50.000	200.00
CP8485	5 1/2" Float Shoe, AFU	1.000	585.0000	50.000	292.50
CP8576	5 1/2" Turbolizer	10.000	110.0000	50.000	550.00

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BY: .....

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Field ticket doc
6886

CONSOLIDATED
Oil Well Services, LLC

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

TICKET NUMBER 51911
LOCATION El Dorado
FOREMAN Fuzzy

INVOICE # 808937

FIELD TICKET & TREATMENT REPORT
CEMENT API* 15-035-24660-0000

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
10-30-16	5014	Samms 22-1	22	33	5E	Cowley, KS

CUSTOMER: Future Acquisitions Co.
MAILING ADDRESS: P.O. Box 1129
CITY: Fulshear | STATE: TX | ZIP CODE: 77441

Cowley* + Rose Valley cement 3/4 E South in

TRUCK #	DRIVER	TRUCK #	DRIVER
760	Chris		
713	Tracey		
611	Jeremy		
775	Fuzzy		

JOB TYPE Production | HOLE SIZE 7 7/8 | HOLE DEPTH 3644' | CASING SIZE & WEIGHT 5 1/2 15.5
CASING DEPTH 3626' | DRILL PIPE | TUBING | OTHER
SLURRY WEIGHT 14.7 | SLURRY VOL 76.4 BBL | WATER gal/sk 6.39 | CEMENT LEFT in CASING 42'
DISPLACEMENT 85.3 | DISPLACEMENT PSI | MIX PSI | RATE

REMARKS: Safety meeting on C+G Drlg. Float equip Turbolizers 3-5-7-9-11-13-15-17-19-21 Baskets #4 + #14 Circulate 20min. Pump 5 BBL water, 500gal mud flush, 5 BBL water. mix 15sks 2% RH and 15sks in mH. mix 300sks class 'A' 3% gel, 2% cc w/5# Kolseal and 1# phenoseal per sk. Wash pump and lines. Drop plug and displace 25 BBL pressured up to 2700# and held. Float returns after dropping plug.

Thanks Fuzzy + Crew

ACCOUNT CODE	QUANITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0452	1	PUMP CHARGE	2300.00	2300.00
CE0002	75 miles	MILEAGE	7.15	536.25
CE0001	75 miles	PU mileage	3.00	225.00
CE0710	1163	Ton mileage Delivery	1.75	2035.25
CE1201	1	5 1/2 Cement Plug Container	350.00	350.00
CC5800#	10394 330sks	Class 'A'	20.00	6600.00
CC5325	650#	Calcium Chloride	1.25	812.50
CC6079	160#	Phenoseal	1.35	216.00
CC5965	950#	Bentonite (gel)	.30	285.00
CC6077	1650#	Kolseal	.50	825.00
CC6125	10395 500gal	mud flush	.65	325.00
CP8254	1	5 1/2- Latchdown Plug & Assembly	400.00	400.00
CP8485	1	5 1/2- AFU floatshoe	585.00	585.00
CP8576	10	5 1/2- 5-Band Turbolizer	110.00	1100.00
CP8629	2	5 1/2- Recip Basket	385.00	770.00
		subtotal		17365.00
		discount		8682.50
		subtotal		8682.50
		SALES TAX		402.25
		ESTIMATED TOTAL		$9084.75

Ravin 3737

AUTHORIZTION [signature] TITLE Eng. DATE 10-31-16

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office; and conditions of service on the back of this form are in effect for services identified on this form.

HYDRAULIC FRACTURING FLUID PRODUCT COMPONENT INFORMATION DISCLOSURE

Last Fracture Date:	11/29/16 16:26
County:	Cowley
API Number (14 Digits):	15-035-24660
Operator Name:	Future Acquisition Company LLC
Well Name and Number:	Samms #22-1
Latitude:	37.170549
Longitude:	-96.870085
Datum:	NAD27
Production Type:	Oil
True Vertical Depth (TVD):	3,644'
Total Base Fluid Volume (gal)*:	535,416

Kansas Corporation Commission

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS#)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Authorized Representative's Name, Address and Phone Number
Water	Well Perator	Carrier/Base Fluid	Water	7732-18-5	100.00%	***95.64995%***	
100 Mesh sand	COWS	Proppant, Scouring, Fill	Crystalline Silica (quar	14808-60-7	100.00%	***0.43329%***	
40/70 Northern White Sand	COWS	Proppant, Scouring, Fill	Crystalline Silica (quar	14808-60-7	100.00%	***3.13364%***	
15% Uninhibited HCL Acid (22° Baume)	COWS	Etching, Dissolving, Cleaning	Hydrochloric Acid	7647-01-0	15.00%	***0.10134%***	
			Water	7732-18-5	85.00%	***0.57427%***	
CIA-1, Corrosion Inhibitor <350°F	COWS	Acid Corrosion Inhibitor	Methanol	67-56-1	80.00%	***0.00049%***	
			Propargyl Alchohol	107-19-7	10.00%	***0.00006%***	
BIO-2L, Liquid Biocide (THPS)	COWS	Biocide	Tetrakis(hydroxymethy	55566-30-8	20.00%	***0.00493%***	
FR-1, Friction Reducer (Cationic)	COWS	Friction Reducer	Polyacrylamide	9003-05-8	30.00%	***0.01598%***	
			Petroleum distillate	64742-47-8	20.00%	***0.01065%***	
S-3ME, Surfactant, Micro emulsion, (Nonionic)	COWS	Surfactant	D-Limonene	5989-27-5	30.00%	***0.00870%***	
			Isopropanol	67-63-0	15.00%	***0.00435%***	
			Ethoxylated Alcohol	68131-39-5	25.00%	***0.00725%***	
			Nonyl Phenol Ethoxyla	127087-87-0	30.00%	***0.00870%***	
Ingredients shown above are subject to 29 CRF 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							

*Total Water Volume sources may include fresh water, produced water, and/or recycled water. **Information is based on the maximum potential for concentration and thus the total may be over 100%.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers' Material Safety Data Sheets (MSDS).

CONSOLIDATED
Oil Well Services, LLC

REMIT TO

Consolidated Oil Well Services,LLC
Dept:970
P.O.Box 4346
Houston,TX 77210-4346

MAIN OFFICE

P.O.Box884
Chanute,KS 66720
620/431-9210,1-800/467-8676
Fax 620/431-0012

Invoice

Invoice# 808915

Invoice Date: 10/31/16

Terms: Net 30

Page 1

FUTURE ACQUISITION COMPANY,LLC

P.O. BOX 1129
FULSHEAR TX 77441
USA

8328313700

SAMMS 22-1

15-035-24660-00-00

Part No	Description	Quantity	Unit Price	Discount(%)	Total
CE0450	Cement Pump Charge 0 - 1500'	1.000	1,500.0000	50.000	750.00
CE0001	Equipment Mileage Charge - Light Equipment	75.000	3.0000	50.000	112.50
CE0002	Equipment Mileage Charge - Heavy Equipment	75.000	7.1500	50.000	268.13
CE0710	Cement Delivery Charge	528.750	1.7500	50.000	462.66
CC5800A	Class A Cement - Sack	150.000	20.0000	50.000	1,499.99
CC5325	Calcium Chloride	400.000	1.2500	50.000	250.00
CC6079	PhenoSeal Formica Flakes	80.000	1.3500	50.000	54.00
CC5965	*Bentonite*	300.000	0.3000	50.000	45.00

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Subtotal	6,884.56
Discounted Amount	3,442.28
SubTotal After Discount	3,442.28

Amount Due 7,134.18 If paid after 11/30/16

Tax:	124.80
Total:	3,567.08

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9285

Received Time Oct. 30. 2016 9:24AM No. 0047

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Field tkt doc 2
6833

CONSOLIDATED
Oil Well Services, LLC

INVOICE #808915

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

TICKET NUMBER 51443
LOCATION 180
FOREMAN Jacob Storm

FIELD TICKET & TREATMENT REPORT
CEMENT

API. 15-035-24660-00-00

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
10-24-16	5014	Samms 22-1	22	33	5E	cowley

CUSTOMER: Future Acquisition
MAILING ADDRESS: Po Box 1129
CITY: Fulshear STATE: tx ZIP CODE: 77441

TRUCK#	DRIVER	TRUCK#	DRIVER
603	Tracy		
775	mark		
577	Jacob		

JOB TYPE Surface B HOLE SIZE 12 1/4 HOLE DEPTH 217 CASING SIZE & WEIGHT 8 5/8
CASING DEPTH 217 DRILL PIPE TUBING OTHER
SLURRY WEIGHT 14.6 ppg SLURRY VOL 37.401 bbl WATER gal/sk 6.64 CEMENT LEFT in CASING K ft
DISPLACEMENT DISPLACEMENT PSI MIX PSI RATE

REMARKS: Safty Meating, rig onto 8 5/8 casing Break circulate mix 150 sks class A 3% cc 2% gel 1/2 lb pheno, displaced 13 bbl circulating, 14 bbl + cement to pit Shut in.

ACCOUNT CODE	QUANITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
CE0450	1	PUMP CHARGE	1500.00	1500.00
CE0001	75	MILEAGE	3.00	225.00
CE0002	75	Truck mileage	7.15	536.25
CE0710	75 mile X	ton mileage 7.05 ton	1.75	925.31
CC5800A (10336)	150	class A	20.00	3000.00
CC5325	400	Calcium chloride	1.25	500.00
CC6079	80	Pheno-Seal	1.35	108.00
CC5965	300	gel	.30	90.00
			Subtotal	6884.56
			- 50%	3442.28
			total	3442.28
			SALES TAX	124.80
			ESTIMATED TOTAL	3.567.08

SCANNED

Ravin 3737

AUTHORIZTION Dick Coulter TITLE DATE

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.

10/30/2016 09:22 (FAX) P.012/015

PALADIN
SURFACE LOGGING

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name:	SAMMS 22-1		
API:	15-035-24660		
Location:	S22/T33S/R5E SE NE NE NW, 400S 2425E FNWC, COWLEY CO., KS		
License Number:	15-035-24660	Region:	MADDIX NORTH
Spud Date:	10/24/16	Drilling Completed:	10/30/16
Surface Coordinates:	37.1705652,-96.8700615		
Bottom Hole Coordinates:			
Ground Elevation (ft):	1233'	K.B. Elevation (ft):	1242'
Logged Interval (ft):	600' To: 3644'	Total Depth (ft):	3644'
Formation:	Primary Objective - MISSISSIPPIAN LIME		
Type of Drilling Fluid:	Fresh Water/Water Based Mud		

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: FUTURE ACQUISITION COMPNAY LLC
Address: 9990 RICHMOND AVENUE, STE 202 SOUTH
HOUSTON, TX 77042

GEOLOGIST

Name: LOUIS BERTOLI
Company: FUTURE ACQUISITION COMPANY LLC
Address: 9990 RICHMOND AVENUE, STE 202 SOUTH
HOUSTON, TX 77042

Equipment

Trailer # PS5
Hasp # D-14
Bloodhound # 5757

Comments

Two man start date: 10/24/16
Two man release date: 10/30/16
Loggers: Robert Reynolds, Joey Dineen
Rig: C&G #2

ROCK TYPES

Anhy
Bent
Brec
Cht
Clyst
Coal
Congl
Dol
Gyp
Igne
Lmst
Meta
Mrlst
Salt
Shale
Sltst
Ss
Till
hvycrbsh
Cement image

OTHER SYMBOLS

INTERVALS

Arbuckle
Wood3
Kinderhook
Pierson
Miss chert
Cowley
Cherokee
Marmaton
Cleveland
Kansas city
Stalnaker
latan lime
Admire
Layton ss
New symbol

CONNECTIONS

Kellydown
Iso tube
Iso jar

POROSITY TYPE

E Earthy
Fenest
F Fracture
Inter
Moldic
O Organic
P Pinpoint
V Vuggy
conn
D dt

flowchk
S svy
T trip

SORTING

W Well
M Moderate
P Poor

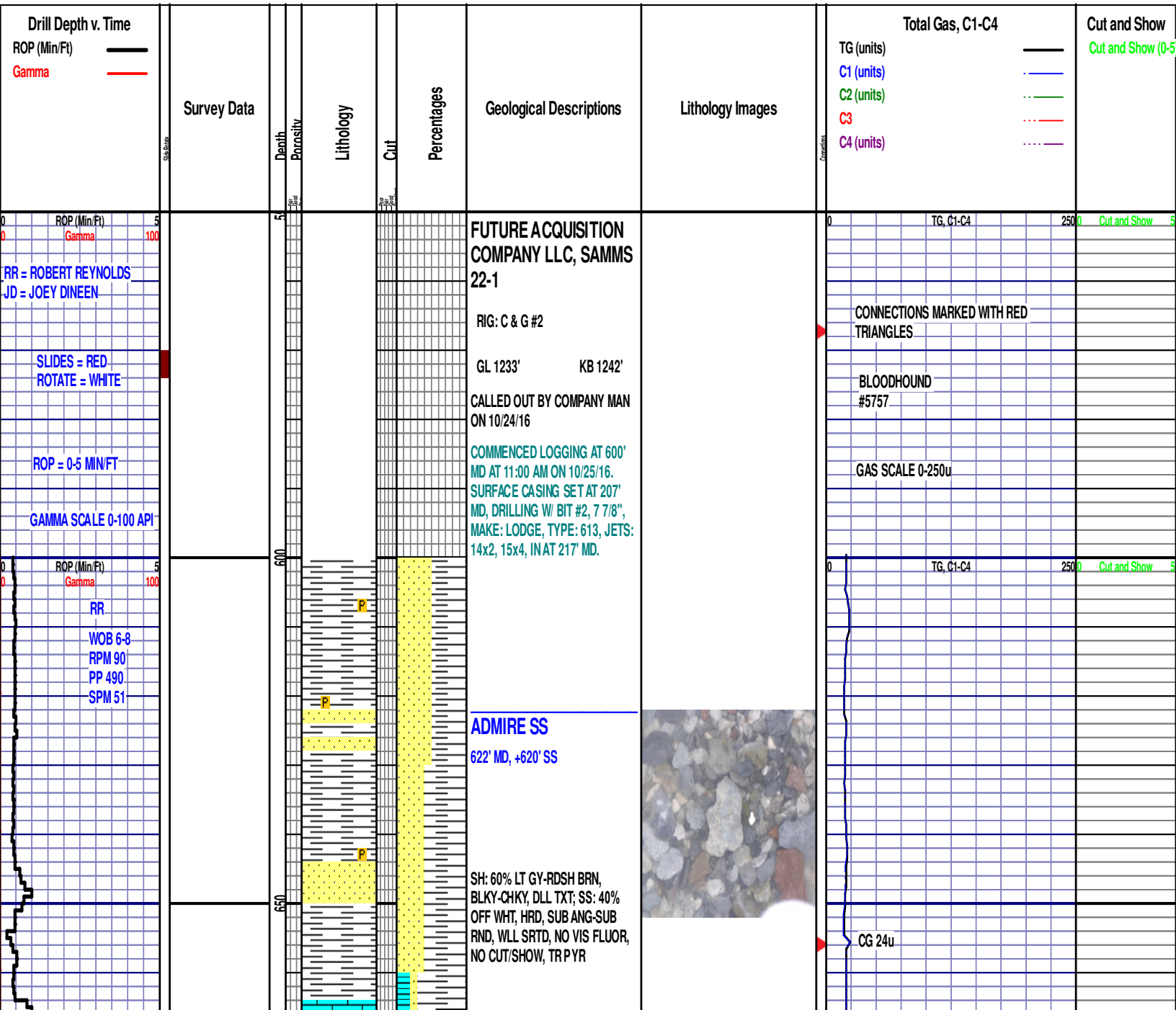
ROUNDING

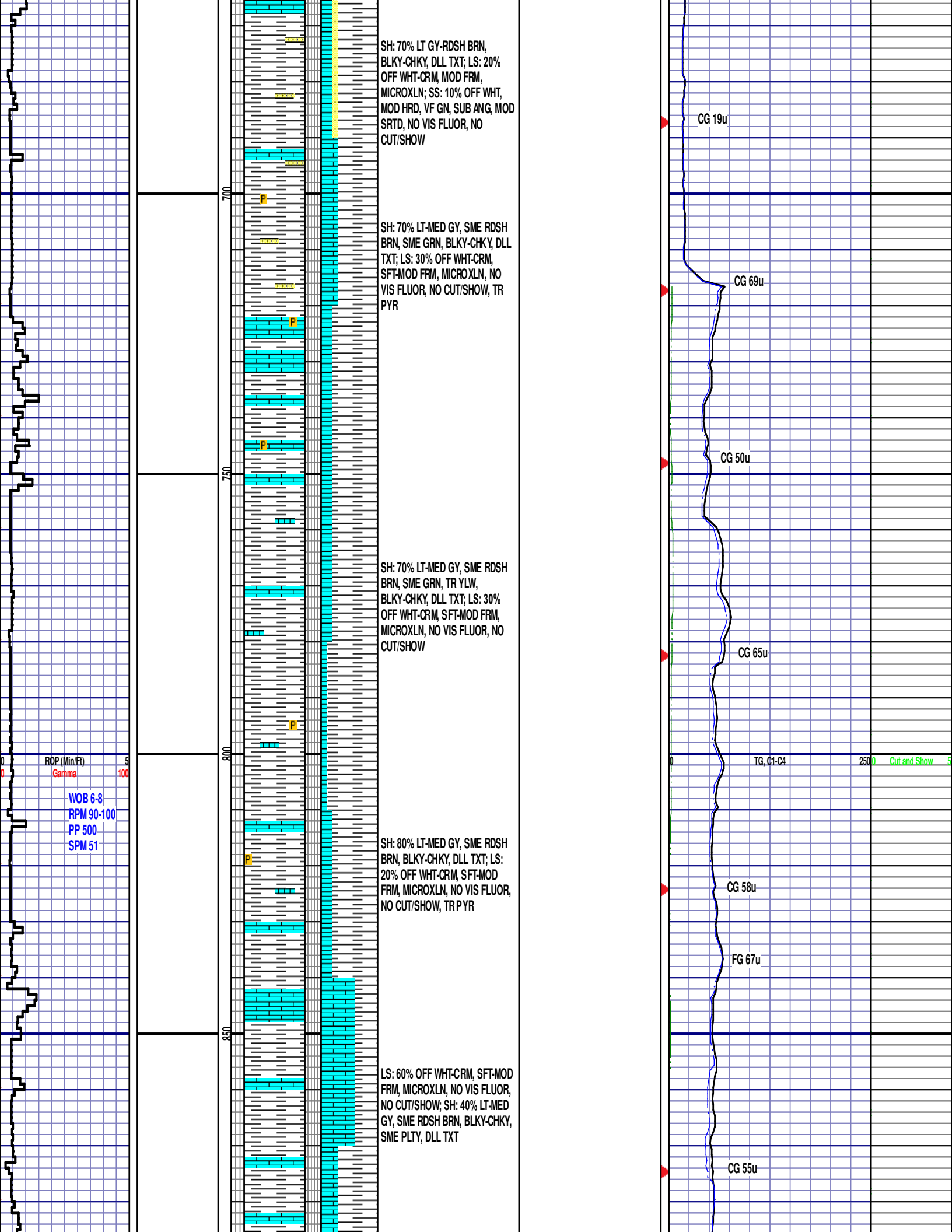
R Rounded

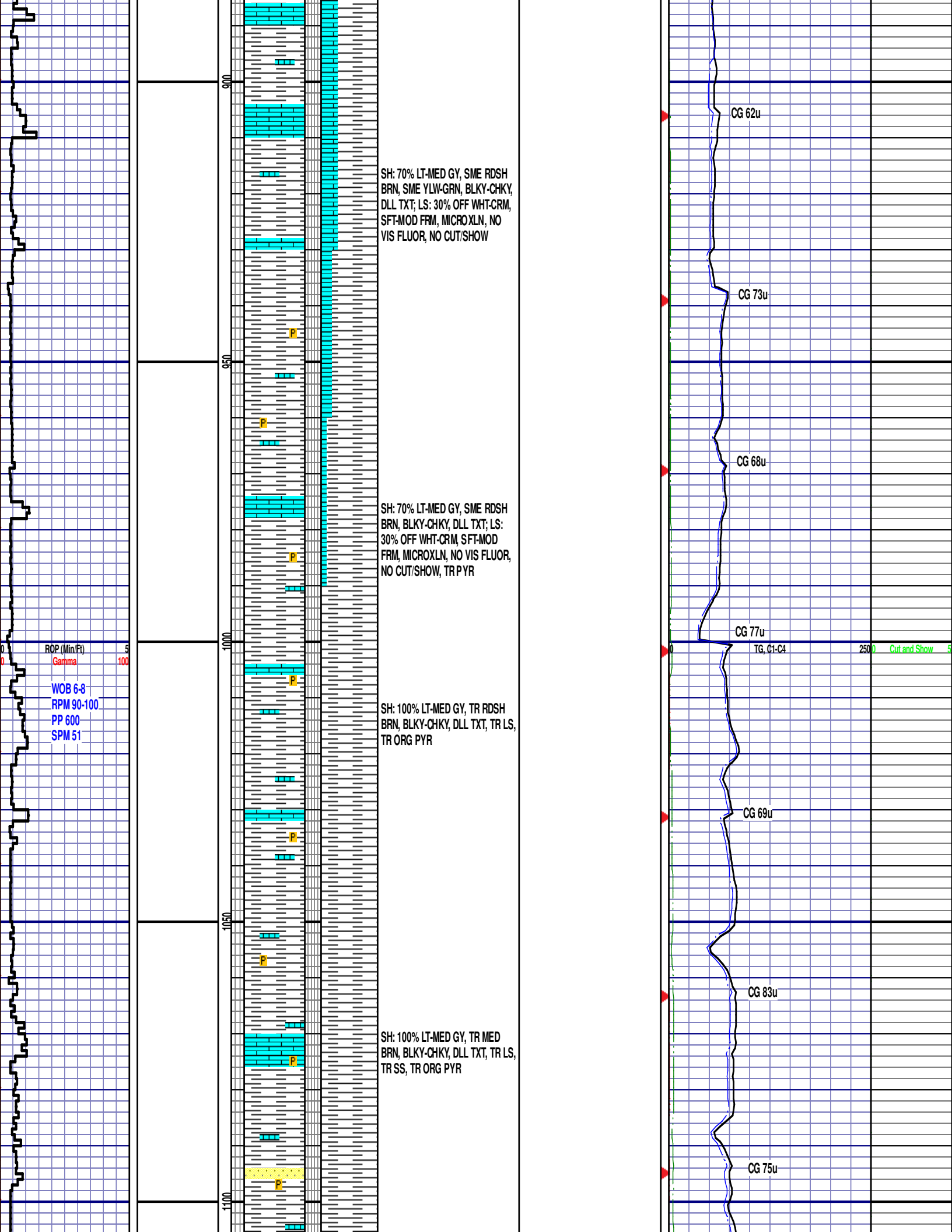
Subrnd
Subang
Angular

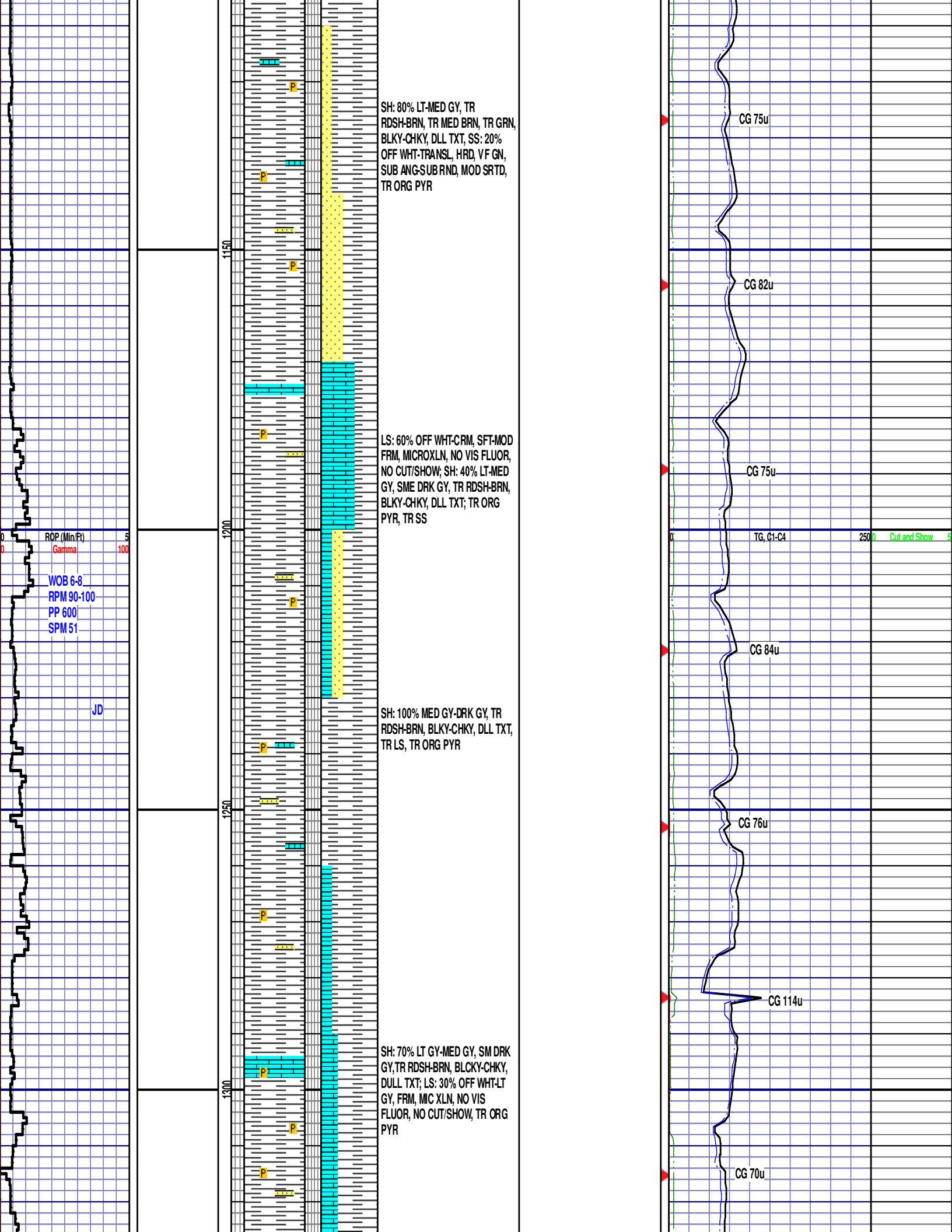
OIL SHOWS

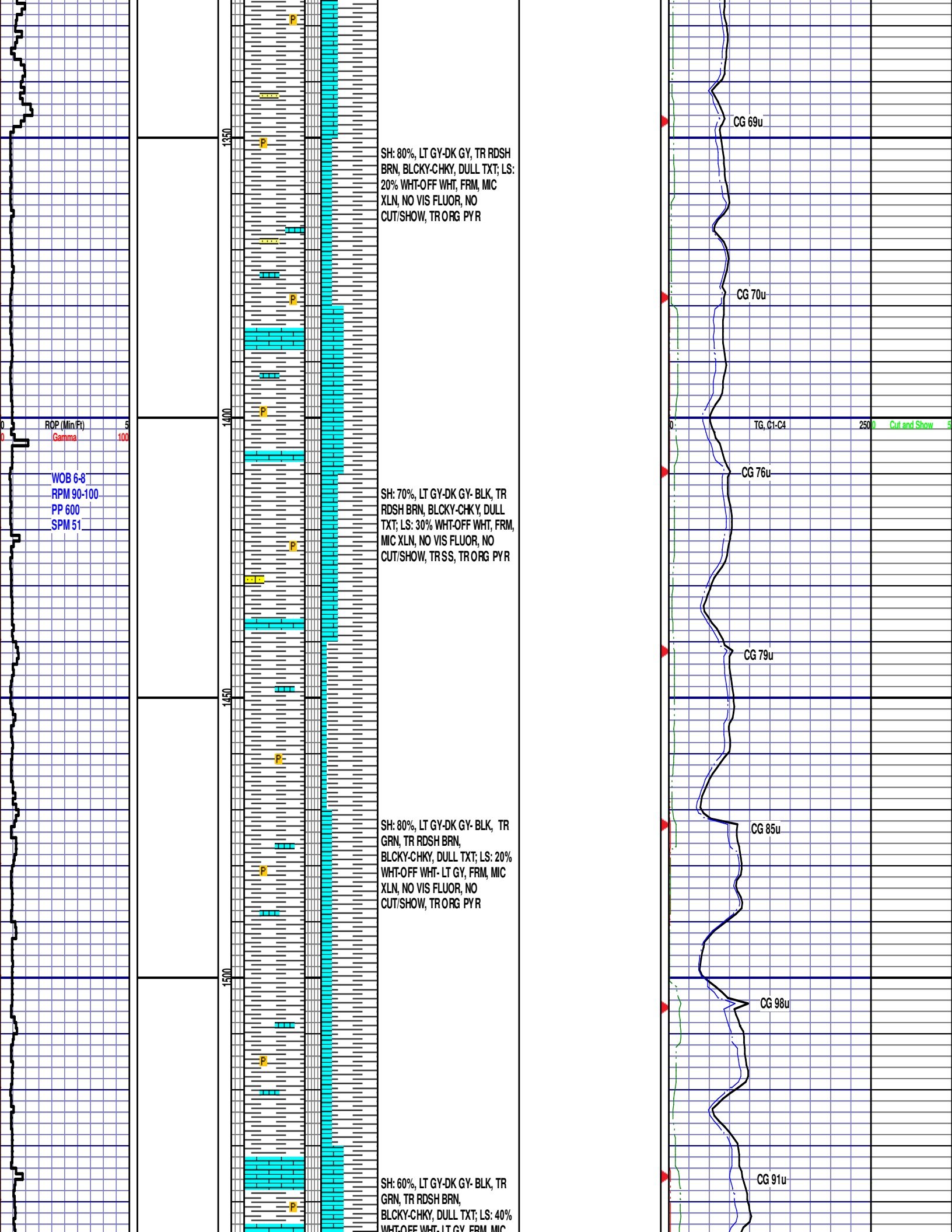
Even
Spotted
Ques
Dead

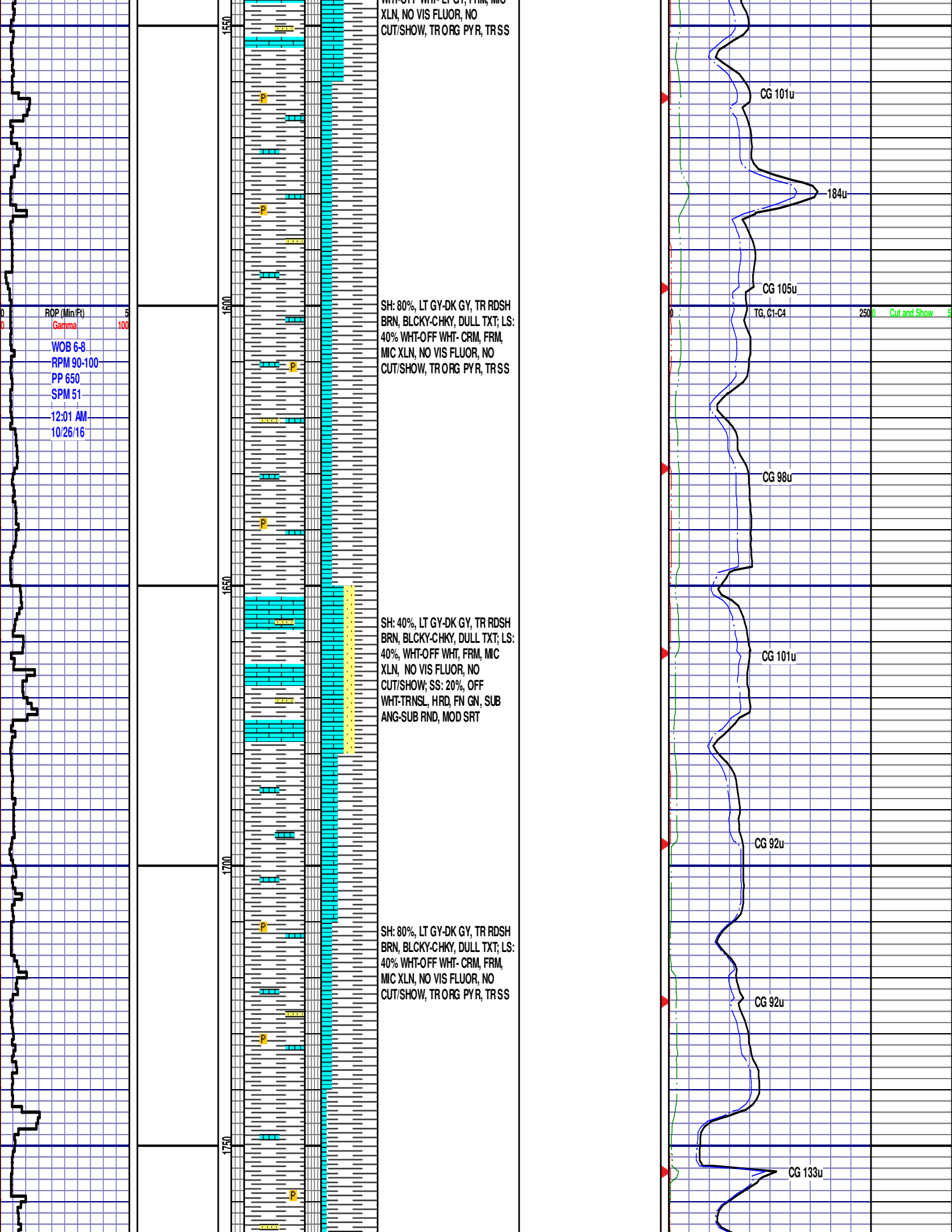



SH: 70% LT GY-RDSH BRN, BLKY-CHKY, DLL TXT; LS: 20% OFF WHT-CRM, MOD FRM, MICROXLN; SS: 10% OFF WHT, MOD HRD, VF GN, SUB ANG, MOD SRTD, NO VIS FLUOR, NO CUT/SHOW
SH: 70% LT-MED GY, SME RDSH BRN, SME GRN, BLKY-CHKY, DLL TXT; LS: 30% OFF WHT-CRM, SFT-MOD FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW, TR PYR
SH: 70% LT-MED GY, SME RDSH BRN, SME GRN, TR YLW, BLKY-CHKY, DLL TXT; LS: 30% OFF WHT-CRM, SFT-MOD FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW
SH: 80% LT-MED GY, SME RDSH BRN, BLKY-CHKY, DLL TXT; LS: 20% OFF WHT-CRM, SFT-MOD FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW, TR PYR
LS: 60% OFF WHT-CRM, SFT-MOD FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW; SH: 40% LT-MED GY, SME RDSH BRN, BLKY-CHKY, SME PLTY, DLL TXT
700
750
800
850
P
CG 19u
CG 69u
CG 50u
CG 65u
CG 58u
FG 67u
CG 55u
ROP (Min/Ft)
Gamma
TG, C1-C4
Cut and Show
WOB 6-8
RPM 90-100
PP 500
SPM 51


900
950
1000
1050
1100
SH: 70% LT-MED GY, SME RDSH BRN, SME YLW-GRN, BLKY-CHKY, DLL TXT; LS: 30% OFF WHT-CRM, SFT-MOD FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW
SH: 70% LT-MED GY, SME RDSH BRN, BLKY-CHKY, DLL TXT; LS: 30% OFF WHT-CRM, SFT-MOD FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW, TR PYR
SH: 100% LT-MED GY, TR RDSH BRN, BLKY-CHKY, DLL TXT, TR LS, TR ORG PYR
SH: 100% LT-MED GY, TR MED BRN, BLKY-CHKY, DLL TXT, TR LS, TR SS, TR ORG PYR
P
ROP (Min/Ft)
Gamma
WOB 6-8
RPM 90-100
PP 600
SPM 51
CG 62u
CG 73u
CG 68u
CG 77u
CG 69u
CG 83u
CG 75u
TG, C1-C4
Cut and Show


ROP (Min/Ft)
Gamma
WOB 6-8
RPM 90-100
PP 600
SPM 51
JD
1150
1200
1250
1300
SH: 80% LT-MED GY, TR RDSH-BRN, TR MED BRN, TR GRN, BLKY-CHKY, DLL TXT, SS: 20% OFF WHT-TRANSL, HRD, V F GN, SUB ANG-SUB RND, MOD SRTD, TR ORG PYR
LS: 60% OFF WHT-CRM, SFT-MOD FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW; SH: 40% LT-MED GY, SME DRK GY, TR RDSH-BRN, BLKY-CHKY, DLL TXT; TR ORG PYR, TR SS
SH: 100% MED GY-DRK GY, TR RDSH-BRN, BLKY-CHKY, DLL TXT, TR LS, TR ORG PYR
SH: 70% LT GY-MED GY, SM DRK GY,TR RDSH-BRN, BLCKY-CHKY, DULL TXT; LS: 30% OFF WHT-LT GY, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR ORG PYR
TG, C1-C4
Cut and Show
CG 75u
CG 82u
CG 75u
CG 84u
CG 76u
CG 114u
CG 70u


ROP (Min/Ft)
Gamma
WOB 6-8
RPM 90-100
PP 600
SPM 51
1350
1400
1450
1500
SH: 80%, LT GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 20% WHT-OFF WHT, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR ORG PYR
SH: 70%, LT GY-DK GY- BLK, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 30% WHT-OFF WHT, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR SS, TR ORG PYR
SH: 80%, LT GY-DK GY- BLK, TR GRN, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 20% WHT-OFF WHT- LT GY, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR ORG PYR
SH: 60%, LT GY-DK GY- BLK, TR GRN, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 40% WHT-OFF WHT- LT GY, FRM, MIC
TG, C1-C4
Cut and Show
CG 69u
CG 70u
CG 76u
CG 79u
CG 85u
CG 98u
CG 91u


XLN, NO VIS FLUOR, NO
CUT/SHOW, TR ORG PYR, TR SS
1550
P
P
CG 101u
184u
CG 105u
1600
ROP (Min/Ft)
Gamma
WOB 6-8
RPM 90-100
PP 650
SPM 51
12:01 AM
10/26/16
SH: 80%, LT GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 40% WHT-OFF WHT- CRM, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR ORG PYR, TR SS
TG, C1-C4
Cut and Show
P
CG 98u
1650
SH: 40%, LT GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 40%, WHT-OFF WHT, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW; SS: 20%, OFF WHT-TRNSL, HRD, FN GN, SUB ANG-SUB RND, MOD SRT
CG 101u
CG 92u
1700
P
SH: 80%, LT GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 40% WHT-OFF WHT- CRM, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR ORG PYR, TR SS
CG 92u
P
1750
CG 133u
P

ROP (Min/Ft) 5
Gamma 100

WOB 6-8
RPM 90-100
PP 650
SPM 51

RR

1800
1850
1900
1950

P

SH: 70%, LT GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DULL TXT; LS: 30% WHT-OFF WHT, LT GY, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR ORG PYR, TR SS

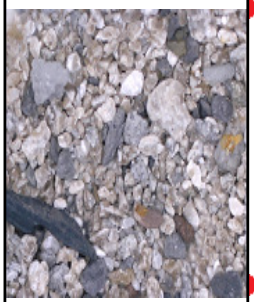
SH: 100%, LT GY-DK GY, TR RDSH-BRN, BLCKY-CHKY, DULL TXT, TR SS, TR LS, TR ORG PYR

IATAN LIME

1885' MD, -643 SS

STALNAKER

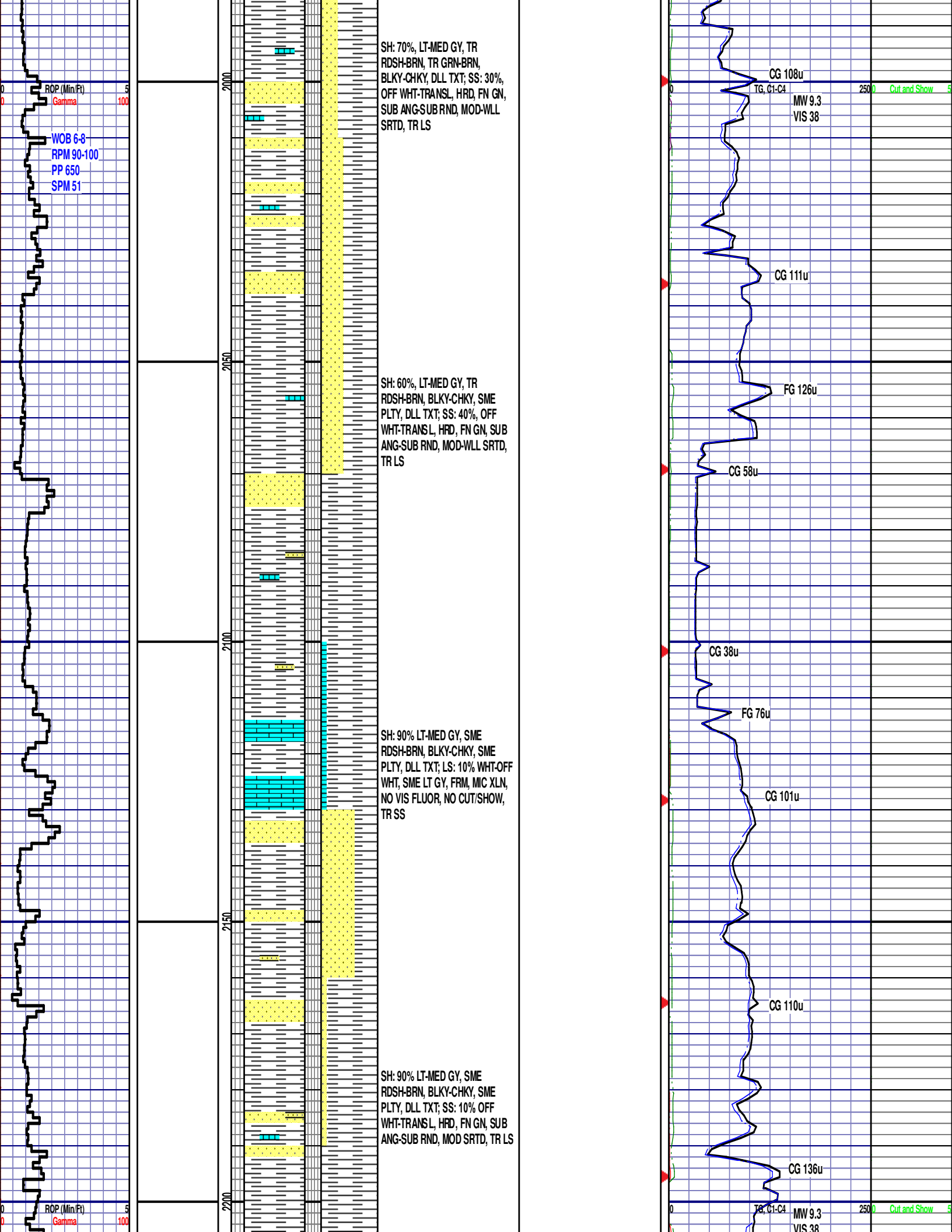
1910' MD, -668' SS



SH: 80%, LT GY-GY, TR RDSH-BRN, BLCKY-CHKY, DULL TXT; SS: 20%, OFF WHT-TRANSL, HRD, FN GN, SUB ANG, SUB RND, MOD SRT, TR LS

0 TG, C1-C4 2500 Cut and Show 5

CG 105u
CG 105u
CG 110u
CG 87u
CG 90u
FG 121u
CG 83u
CG 101u


ROP (Min/Ft)
Gamma
WOB 6-8
RPM 90-100
PP 650
SPM 51
2000
2050
2100
2150
2200
SH: 70%, LT-MED GY, TR RDSH-BRN, TR GRN-BRN, BLKY-CHKY, DLL TXT; SS: 30%, OFF WHT-TRANSL, HRD, FN GN, SUB ANG-SUB RND, MOD-WLL SRTD, TR LS
SH: 60%, LT-MED GY, TR RDSH-BRN, BLKY-CHKY, SME PLTY, DLL TXT; SS: 40%, OFF WHT-TRANSL, HRD, FN GN, SUB ANG-SUB RND, MOD-WLL SRTD, TR LS
SH: 90% LT-MED GY, SME RDSH-BRN, BLKY-CHKY, SME PLTY, DLL TXT; LS: 10% WHT-OFF WHT, SME LT GY, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR SS
SH: 90% LT-MED GY, SME RDSH-BRN, BLKY-CHKY, SME PLTY, DLL TXT; SS: 10% OFF WHT-TRANSL, HRD, FN GN, SUB ANG-SUB RND, MOD SRTD, TR LS
TG, C1-C4
Cut and Show
MW 9.3
VIS 38
CG 108u
CG 111u
FG 126u
CG 58u
CG 38u
FG 76u
CG 101u
CG 110u
CG 136u

WOB 6-8
RPM 80
PP 670
SPM 51

JD

ROP (Min/Ft) 5
Gamma 100

WOB 6-8
RPM 80
PP 670
SPM 51

2250

2300

2350

2400

SH: 100% LT-MED GY, SME RDSH-BRN, BLKY-CHKY, DLL TXT, TR LS, TR SS, TR ORG PYR

SH: 100% LT-MED GY, SME RDSH-BRN, BLKY-CHKY, DLL TXT, TR LS, TR SS, TR ORG PYR

TOOH FOR NEW BIT AT 2262' MD AT 1:00 PM ON 10/26/16. TIH AT 3:30 PM ON 10/26/16 W/ BIT #3, MAKE: LODGE, TYPE: 613, JETS: 6x16s. BOB AND RESUME DRILLING AT 4:45 PM ON 10/26/16.

LAYTON SS

2316' MD, -1074' SS

SS: 80%, OFF WHT-LT GY-TRANSL, HRD, FN GR, SUB RND, MOD SRTD; SHALE: 20%, GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DLL TXT

SS: 80%, OFF WHT-LT GY-TRANSL, HRD, FN GR, SUB RND, MOD SRTD; SHALE: 20%, GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DLL TXT

CG 129u

CG 109u

CG 100u

CG 98u

CG 84u

CG 75u

CG 71u

TG, C1-C4 2500 Cut and Show 5

MW 9.2
VIS 38

12:01 AM
10/27/16

2450

SS: 80%, OFF WHT-LT GY-TRANSL, HRD, FN GR, SUB RND, MOD SRTD; SHALE: 20%, GY-DK GY, TR RDSH BRN, BLCKY-CHKY, DLL TXT

CG 71u

CG 79u

P

2500

SH: 90% LT GY-DRK GY, TR RDSH BRN, BLCKY-CHKY, DLL TXT; OFF WHT-LT GY-TRANSL, HRD, FN GR, SUB RND, MOD SRTD, TR LS, TR ORG PYR

CG 101u

CG 62u

2550

KANSAS CITY

2550' MD, -1308' SS

LS: 50%, WHT-OFF WHT-CRM, MIC XLN, FRM, NO VIS FLUOR, NO CUT/SHOW, TR SS; SH: 50%, LT GY-DRK GY, TR RDSH BRN, BLCKY-CHKY, DLL TXT

CG 56u

2600

0 ROP (Min/Ft) 5

0 Gamma 100

0 TG, C1-C4 2500 Cut and Show 5

CG 50u

MW 9.3
VIS 38

WOB 6-8
RPM 80
PP 670
SPM 51

SH: 80%, LT GY-DK GY, TR RDSH BRWN, BLCKY-CHKY, DLL TXT; LS: 20%, WHT-OFF WHT, FRM, MIC XLN, NO VIS FLUOR, NO CUT/SHOW, TR SS

CG 187u

RR

2650

2700

2750

2800

2850

CLEVELAND SS

2670' MD, (-1428' SS)

SH: 60% LT-DK GY, TR RDSH BRWN, BLKY-CHKY, DLL TXT; SS: 30% OFF WHT, TR TRANSL, HRD, VF-F GN, SUB ANG, MOD CONSOL; LS: 10% OFF WHT-CRM, SME LT TN, FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW

MARMATON

2732' MD, (-1490' SS)

LS: 70% OFF WHT-CRM, SME LT TN, FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW; SH: 30% LT-MED GY, SME RDSH-BRN, SME GRN, BLKY-CHKY, TR PLTY, DLL TXT

RIG SERVICE AND REPAIR ON CLUTCH AT 2790' MD AT 10:00 AM ON 10/27/16. BOB AND RESUME DRILLING AT 5:20 PM ON 10/28/16.

LS: 70% OFF WHT-CRM, SME LT TN, FRM, MICROXLN, NO VIS FLUOR, NO CUT/SHOW; SH: 30% LT-MED GY, TR RDSH-BRN, BLKY-CHKY, TR PLTY, DLL TXT

12:01 AM
10/28/16
JD

0 ROP (Min/Ft) 5
0 Gamma 100

WOB 6-8
RPM 82
PP 680
SPM 52

CG 109u

CG 103u

CG 156u

CG 143u

CG 151u

0 TG, C1-C4 2500 Cut and Show 5

MW 9.3
VIS 38

CG 335u

CG 222u

CHEROKEE

2887' MD, (-1645' SS)

SS: 100%, OFF WHT-LT GY-DK GY, HRD, VFN-FN GR, SUB RND, MOD SRTD, TR LS, TR SH

SH: 90% LT-MED GY, TR RDSH-BRN, TR GRN, BLKY-CHKY, TR PLTY, DLL TXT; SS: 10%, OFF WHT-LT GY-DK GY, HRD, VFN-FN GR, SUB ANG, MOD SRTD, TR LS, TR ORG PYR

SH: 70% LT GY-DK GY, TR RDSH-BRN, TR GRN, BLKY-CHKY, DLL TXT; SS: 30%, OFF WHT-LT GY, HRD, VFN-FN GR, SUB ANG, MOD SRTD, TR LS, TR ORG PYR

SH: 80% LT GY-DK GY, TR RDSH-BRN, TR GRN, BLKY-CHKY, DLL TXT; SS: 20%, WHT-OFF WHT-LT GY, HRD, VFN-FN GR, SUB ANG, MOD SRTD

2000
2050
3000
3050

P
P
P

12:01 AM
10/29/16

0 ROP (Min/Ft) 5
0 Gamma 100

WOB 6-8
RPM 80
PP 680
SPM 51

CG 142u
CG 152u
CG 144u
CG 128u
FG 256u

0 TG, C1-C4 2500 Cut and Show 5

CG 233u
MW 9.3
VIS 39
CG 130u
CG 183u

RR

ROP (Min/Ft)
Gamma

WOB 6-8
RPM 80
PP 680
SPM 50

3100
3150
3200
3250
3300

SH: 80% LT GY-DK GY, TR RDSH-BRN, TR GRN, BLKY-CHKY, DLL TXT; SS: 20%, WHT-OFF WHT-LT GY, HRD, VFN-FN GR, SUB ANG, MOD-WLL SRTD

MISS CHERT

3132' MD, (-1890 SS)

CHT: 70% WHT-OFF WHT, TR CRM, V FRM-HRD, SUB ANG; SH: LT-MED GY, BLKY-CHKY, DLL TXT

COWLEY

3160' MD, (-1918' SS)

LS: 50% LT-MED GY, FRM, VF XLN, BRI YLW-WH FLUOR, VIS STNG, IMMED FAIR YLW-GLD CUT W/ THN BLU RES RNG; TRP CHT: 30% MED-DRK GY, TR TRANSL, FRM-HRD, SUB ANG; SH: 20% LT-MED GY, TR RDSH-BRN, BLKY-CHKY, DLL TXT; TR LT CHT, TR DOL

LS: 60% LT-MED GY, TR GRN, TR BRNSH-GY, FRM, VF XLN, TR YLW-WH FLUOR, IMMED POOR YLW-GLD CUT W/ BLU RES RNG; TRP CHT: 30% MED-DRK GY, FRM-HRD, ANG; SH: 10% DRK GY, BLKY, DLL TXT; TR DOL

LS 100% LT-MED GY, SME BRN, FRM-V FRM, VF XLN, TR YLW FLUOR, IMMED FAIR YLW-GLD CUT, THN BLU-WH RES RNG; TR LT CHT, TR DRK CHT, TR DOL, TR SH

TOTAL GAS
SCALE CHANGE
0-500u

Scale Change
TG, C1-C4
CG 144u

CG 406u

CG 271u

CG 260u

TG, C1-C4
Cut and Show

MW 9.3
VIS 40

CG 259u

CG 274u

CG 284u

JD

0 ROP (Min/Ft) 5
0 Gamma 100
WOB 6-8
RPM 81
PP 680
SPM 52

3350
3400
3450
3500

LS 90% LT-MED GY, SME BRN, TR GRN, FRM-V FRM, VF XLN, TR YLW FLUOR, IMMED POOR YLW-GLD CUT, THN BLU-WH RES RNG; TRP CHT: 10% MED-DRK GY, HRD, SUB ANG; TR LT CHT, TR DOL, TR SH, TR ORG PYR

LS: 90%,LT-MED GY, SME BRN, TR GRN, FRM-V FRM, VF XLN, IMMED GOOD, YLW-GOLD, WHT-BLU CUT, THK BLU-WHT RNG; TRP CHT: 10% MED-DRK GY, HRD, SUB ANG; TR LT CHT, TR DOL, TR SH

LS: 90%,LT-MED GY, SME BRN, TR GRN, FRM-V FRM, VF XLN, IMMED GOOD, YLW-GOLD, WHT-BLU CUT, THK BLU-WHT RNG; SH: 10%, LT GY-DK GY, TR GRN, BLKY-CHKY, DLL TXT, TR CHT

PIERSON LIME
3452' MD, (-2210' SS)

LS: 90% OFF WHT, CRM, LT GY-DK GY, FRM, VF XLN, SLW POOR YLW-GOLD CUT, V THN BLU-WHT RNG; SH: 10% LT GY-DK GY, TR GRN, BLKY-CHKY, DLL TXT, TR CHT

KINDERHOOK SH
3506' MD, (-2264' SS)

WOODFORD SH
3516' MD, (-2274' SS)

CG 285u
CG 337u
CG 265u
CG 359u
CG 287u
CG 131u
CG 268u

0 TG, C1-C5 5000
MW 9.3
VIS 40
Cut and Show

RR

WOB 6-8
RPM 76
PP 660
SPM 0

0 ROP (min/Ft) 5
0 Gamma 100

RR = ROBERT REYNOLDS
JD = JOEY DINEEN

SLIDES = RED
ROTATE = WHITE

ROP = 0-5 MIN/FT

GAMMA SCALE
0-100 API

3550
3600
3650
00

P

SH: 100% DK GY-BLK, TR MED GY, BLKY-CHKY, SME PLTY, FRM-V FRM, SME BRTL, CALC, TR ORG PYR

WOODFORD SH

ARBUCKLE

3560' MD, (-2318' SS)

DOL: 90% LT-MED GY, SME CRM, VF-F XLN, SLI LMY, BLKY-CHKY, TR YLW FLUOR, DLYD WEAK YLW CUT, V THN BLU RES RNG; SH: 10%) MED-DK GY, BLKY, FRM, CALC, TR LT CHT, TR ORG PYR

DOL: 90% LT-MED GY, SME CRM, VF-F XLN, SLI LMY, BLKY-CHKY, TR YLW FLUOR, DLYD POOR YLW CUT, V THN BLU RES RNG; SH: 10%) MED-DK GY, BLKY, FRM, CALC, TR ORG PYR

TD AT 3644' MD AT 11:00 AM ON 10/30/16.

FUTURE ACQUISITION COMPANY LLC, SAMMS 22-1

RIG: C & G #2

GL 1233' KB 1242'

RELEASED 10/30/16

THANK YOU FOR USING PALADIN GEOLOGICAL SERVICES, WE APPRECIATE YOUR BUSINESS AND LOOK FORWARD TO WORKING WITH YOU AGAIN.

CG 317u

FG 377u

CG 326u

CG 281u

MW 9.3
VIS 40

0 TG, C1-C4 5000 Cut and Show 5

FG 221u

CG 78u

FG 215u

CONNECTIONS MARKED WITH RED TRIANGLES

BLOODHOUND #5757

GAS SCALE 0-500u

Cement Bond Log

GEMINI WIRELINE

Company	Future Acquisition Company, LLC.
Well	Samms No.22-1
Field	Maddix North
County	Cowley
State	Kansas

Company Future Acquisition Company, LLC.
Well Samms No.22-1
Field Maddix North
County Cowley State Kansas

API #: 15-035-24660-00-00

Location: SE NE NE NW
400' FNL & 2425' FWL

SEC 22 TWP 33S RGE 5E

Other Services

			Elevation
Permanent Datum	Ground Level	Elevation 1233	K.B. 1242
Log Measured From	Kelly Bushing	KB 9 AGL	D.F. 1241
Drilling Measured From	Kelly Bushing		G.L. 1233

Date	11/18/2016
Run Number	One
Depth Driller	3644
Depth Logger	3565
Bottom Logged Interval	3564
Top Log Interval	2800
Open Hole Size	////
Type Fluid	Water
Density / Viscosity	////
Max. Recorded Temp.	114
Estimated Cement Top	3100
Time Well Ready	////
Time Logger on Bottom	////
Equipment Number	T922
Location	Pratt, Ks
Recorded By	S. Chesney
Witnessed By	Chris Haefele

Borehole Record				Tubing Record		
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String				
Production String	5.5		0	TD
Liner				

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Winfield, E to Co Rd 1, 5S, 1/2E
S into

Main Pass

GEMINI WIRELINE

Database File	future-samms22-1.db
Dataset Pathname	grcbl/pass3
Presentation Format	pnr_cbl
Dataset Creation	Fri Nov 18 13:58:37 2016
Charted by	Depth in Feet scaled 1:240

500 3' Travel Time (usec) 235	Line Tension	0 Amplitude (mV) 100	200 VDL (V) 1200
0 Gamma Ray (GAPI) 150	0 (lb) 2000	20 Collar Locator -3	
		1 Bond Index 0	

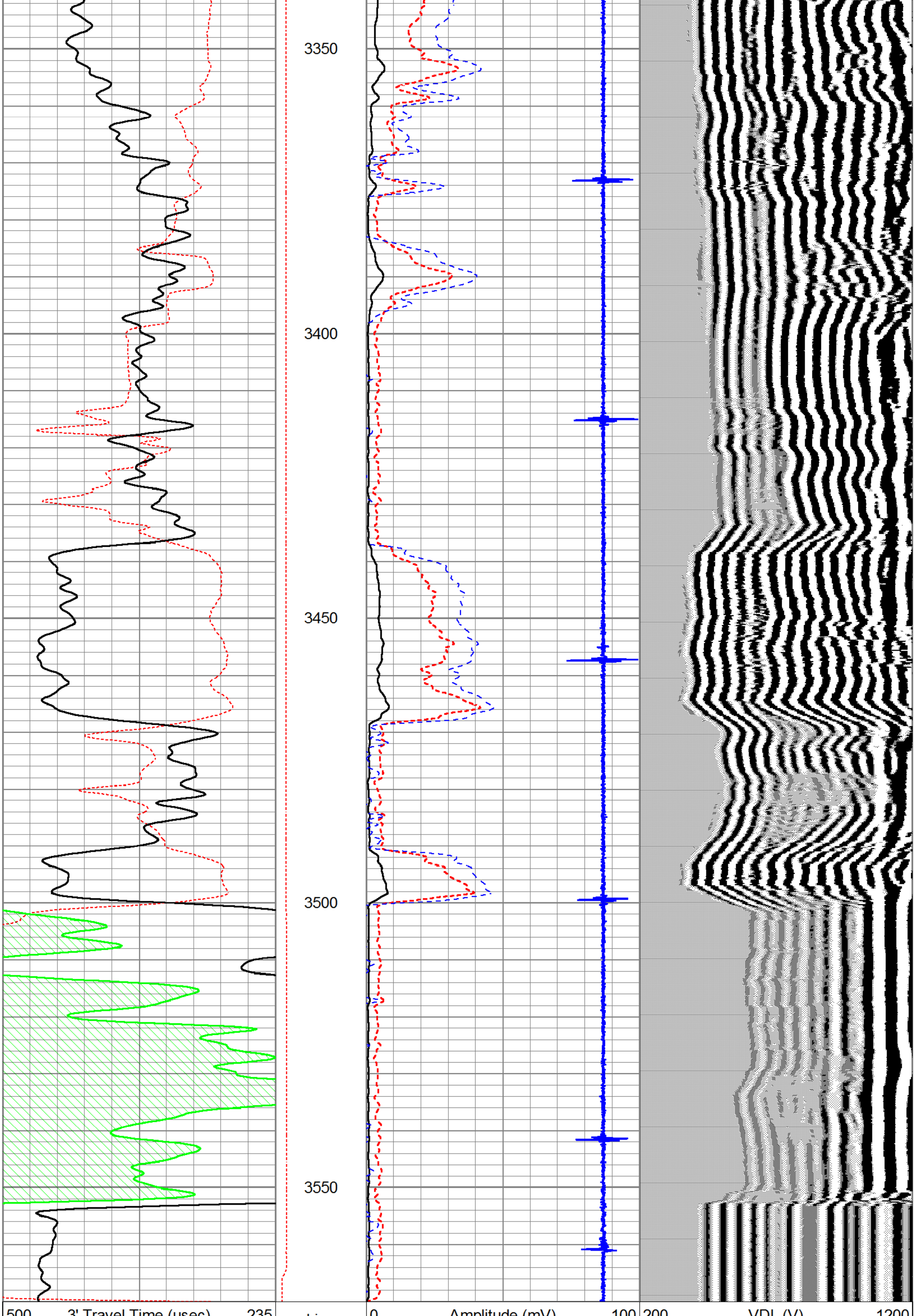
500 3' Travel Time (usec) 235	Line Tension	0 Amplitude (mV) 100	200 VDL (V) 1200
0 Gamma Ray (GAPI) 150	0 (lb) 2000	20 Collar Locator -3	
		1 Bond Index 0	

Repeat Section

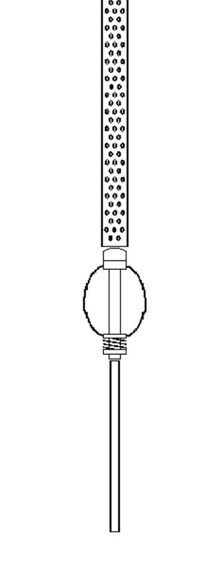
GEMINI WIRELINE

Database File	future-samms22-1.db
Dataset Pathname	grcbl/pass2
Presentation Format	pnr_cbl
Dataset Creation	Fri Nov 18 13:51:20 2016
Charted by	Depth in Feet scaled 1:240

500 3' Travel Time (usec) 235	Line Tension	0 Amplitude (mV) 100	200 VDL (V) 1200
0 Gamma Ray (GAPI) 150	0 (lb) 2000	20 Collar Locator -3	
		1 Bond Index 0	



500 3' Travel Time (usec) 235	Line Tension	0 Amplitude (mV) 100	200 VDL (V) 1200
0 Gamma Ray (GAPI) 150	0 (lb) 2000	20 Collar Locator -3	
		1 Bond Index 0	



Sensor	Offset (ft)	Description	Length (ft)	O.D. (in)	Weight (lb)
		CHD-sdschd	0.75	1.44	3.00
WVF5FT	11.69	Probedig-DigitalCBL (080201) 2 3/4 Bond Tool	8.77	2.75	92.00
WVF3FT	11.69				
		CENT-275 2 3/4" Centralizer	2.94	2.75	10.00
CCL	3.50	GR-275D_INC (081014) 2-3/4" GR-CCL with Inclination	4.50	2.75	
ACCZ	1.83				
ACCY	1.83				
ACCX	1.83				
GR	0.83				

Dataset:	future-samms22-1.db: field/well/grcbl/pass3
Total length:	16.95 ft
Total weight:	105.00 lb
O.D.:	2.75 in

Weatherford®

ARRAY INDUCTION
COMPACT DENSITY / NEUTRON
MICROLOG

COMPANY	FUTURE ACQUISITION COMPANY LLC.
WELL	SAMMS 22-1
FIELD	MADDIX NORTH
PROVINCE/COUNTY	COWLEY
COUNTRY/STATE	USA / KANSAS
LOCATION	400' FNL, 2425' FWL SE NE NE NW

SEC	TWP	RGE	Other Services
22	33S	5E	NONE

API NUMBER 15-035-24660

Permanent Datum GL, Elevation 1249 feet
Log Measured From KB
Drilling Measured From KB

Elevations:	feet
KB	1242.00
DF	1241.00
GL	1233.00

Date	30-OCT-2016			
Run Number	ONE			
Service Order	4052-165047964			
Depth Driller	3644.00	feet		
Depth Logger	3639.00	feet		
First Reading	3636.00	feet		
Last Reading	213.00	feet		
Casing Driller	213.00	feet		
Casing Logger	213.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	WBM			
Density / Viscosity	9.10 lb/USg		49.00 CP	
PH / Fluid Loss	9.00		8.00 ml/30Min	
Sample Source	FLOWLINE			
Rm @ Measured Temp	2.60 @ 66.0	ohm-m		
Rmf @ Measured Temp	2.08 @ 66.0	ohm-m		
Rmc @ Measured Temp	3.12 @ 66.0	ohm-m		
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	1.53 @114.0	ohm-m		
Time Since Circulation	3 HOURS			
Max Recorded Temp	1.53	deg F		
Equipment / Base	13379		OKC	
Recorded By	Z. AL SUDANI			
Witnessed By	CHRIS HAEFELE		LOU BERTOLI	

BOREHOLE RECORD

Last Edited: 30-OCT-2016 19:42

Bit Size inches	Depth From feet	Depth To feet
7.875	208.00	3644.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	208.00	24.00

REMARKS

SOTWARE VERSION: 16.03.1458

TOOLS RAN: MCG, MML, MDN, MPD, MFE, MAI RAN IN COMBINATION.

HARDWARE:
MAI: TWO 0.5 INCH STANDOFFS USED.
MFE: ONE 0.5 INCH STANDOFF USED.
MVC: DUAL CALIPERS USED FOR ECCENTRALIZATION.
MPD: 8 INCH PROFILE PLATE USED.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 1403 CU.FT.
ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO SURFACE CASING =838 CU.FT.

RIG: GG #2

RIG: SCR #2

OPERATOR(S): C.HENDERSON, T.GUTHMULLER

HOLE WASHOUTS AND RUGOSITY WILL AFFECT LOG QUALITY AND REPEATABILITY.

5 INCH MAIN SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: E:\WLS 16_03_562 DATA\FUTURE ACQUISITION (BOGNER 2-22)\MAIN.dta
System Versions: Logged with 16.03.1458 Plotted with 16.03.1458

Plotted on 30-OCT-2016 19:54
Recorded on 30-OCT-2016 17:16

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– → | 22 | ← +

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth
in
Feet

Borehole
Temp in
deg F

MNRL
0 20

MINV
0 20

HVI
every
10 cu ft

Annular
Integral
every
10 cu ft

Replay
Scale
1:240

Shallow FE
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

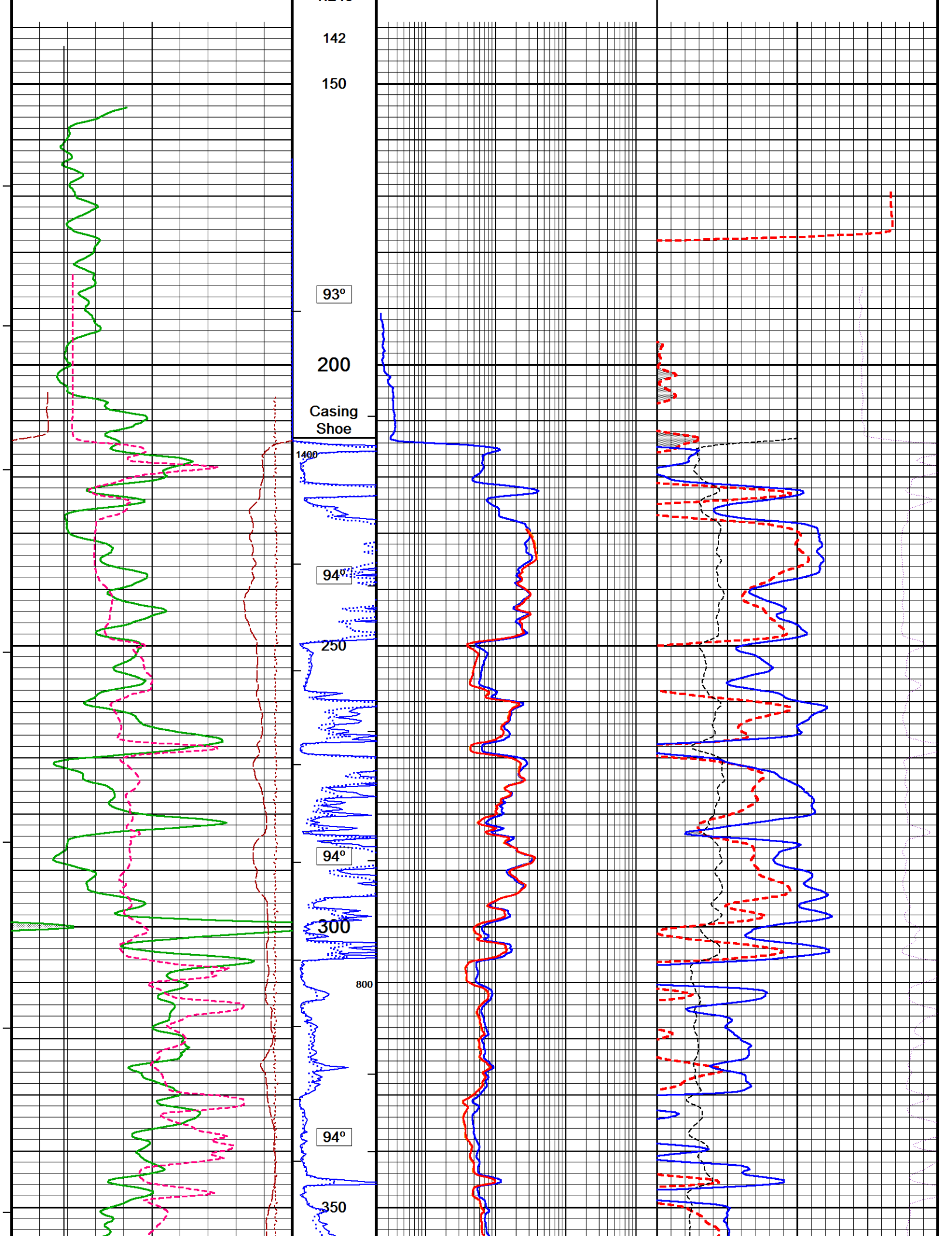
Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

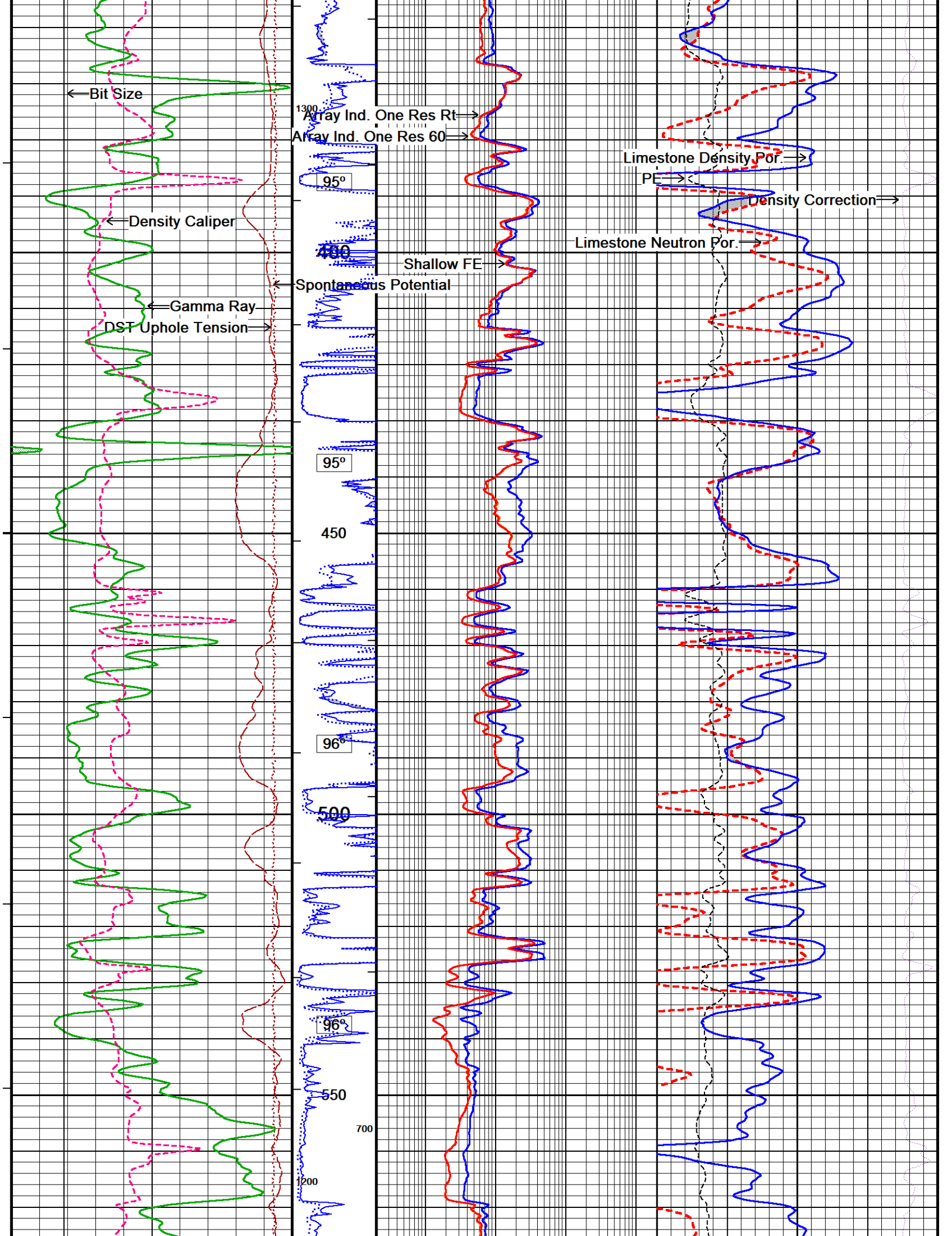
Limestone Neutron Por.
percent
30 10 -10

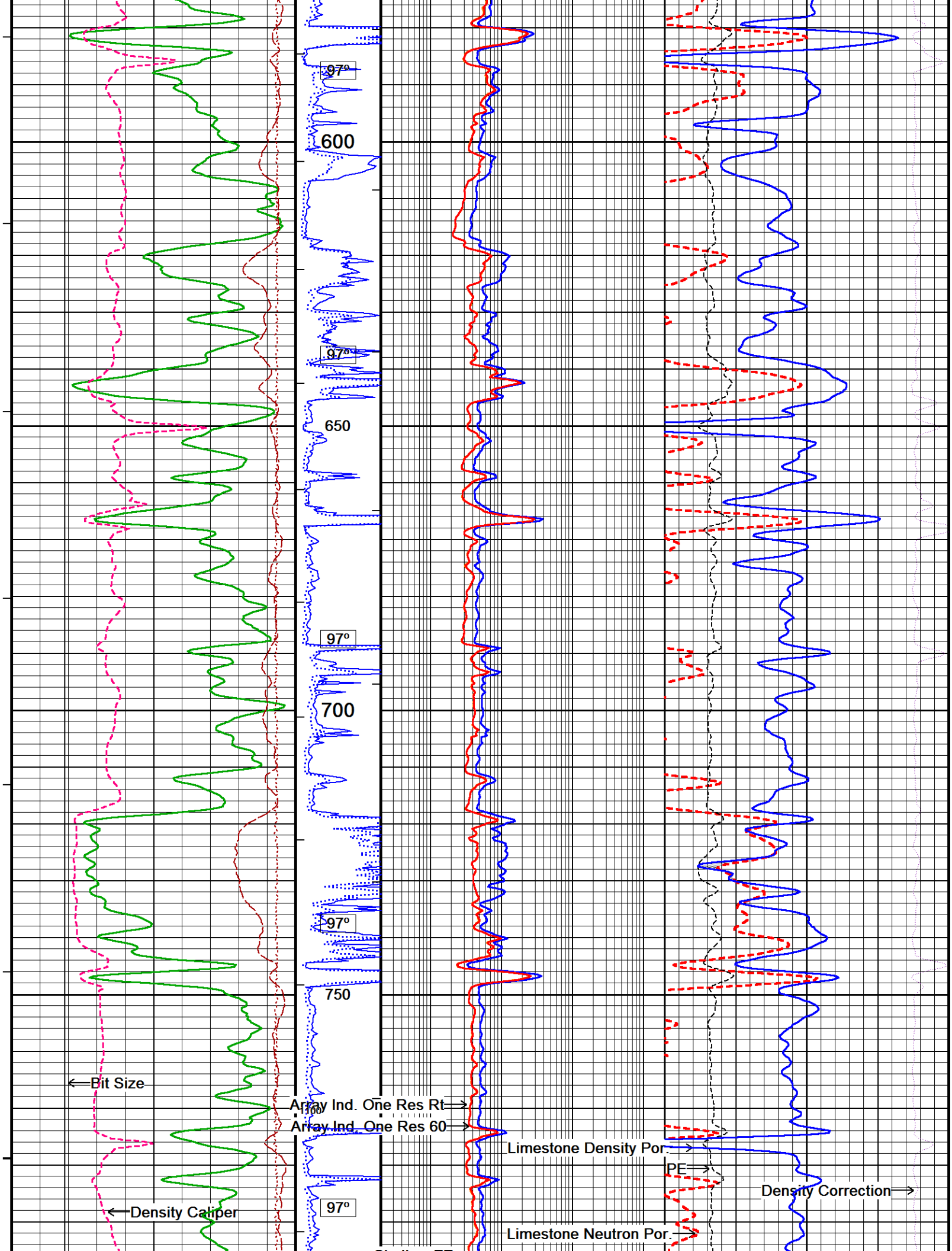
Limestone Density Por.
percent
30 10 -10

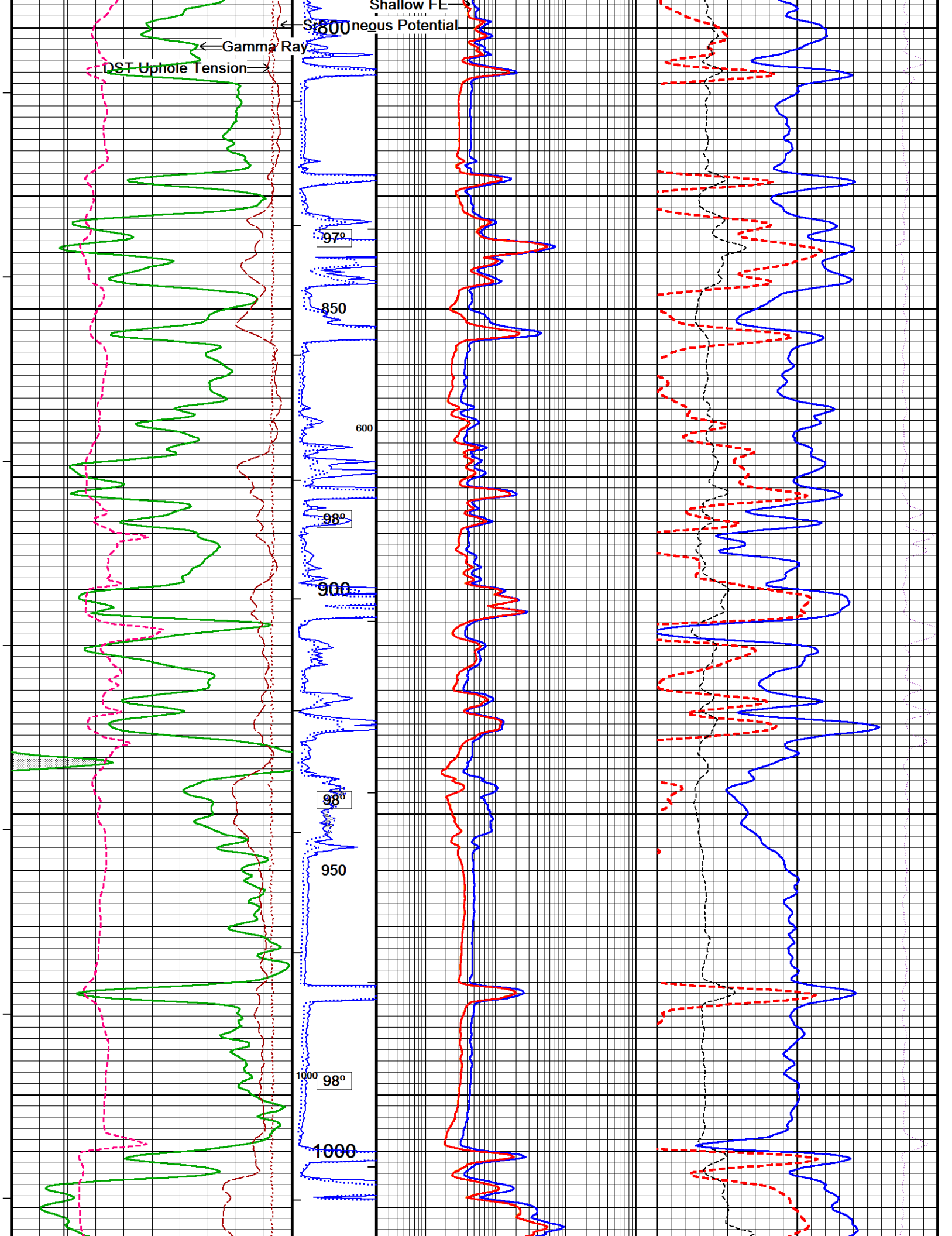
PE
barns/electron
0 10

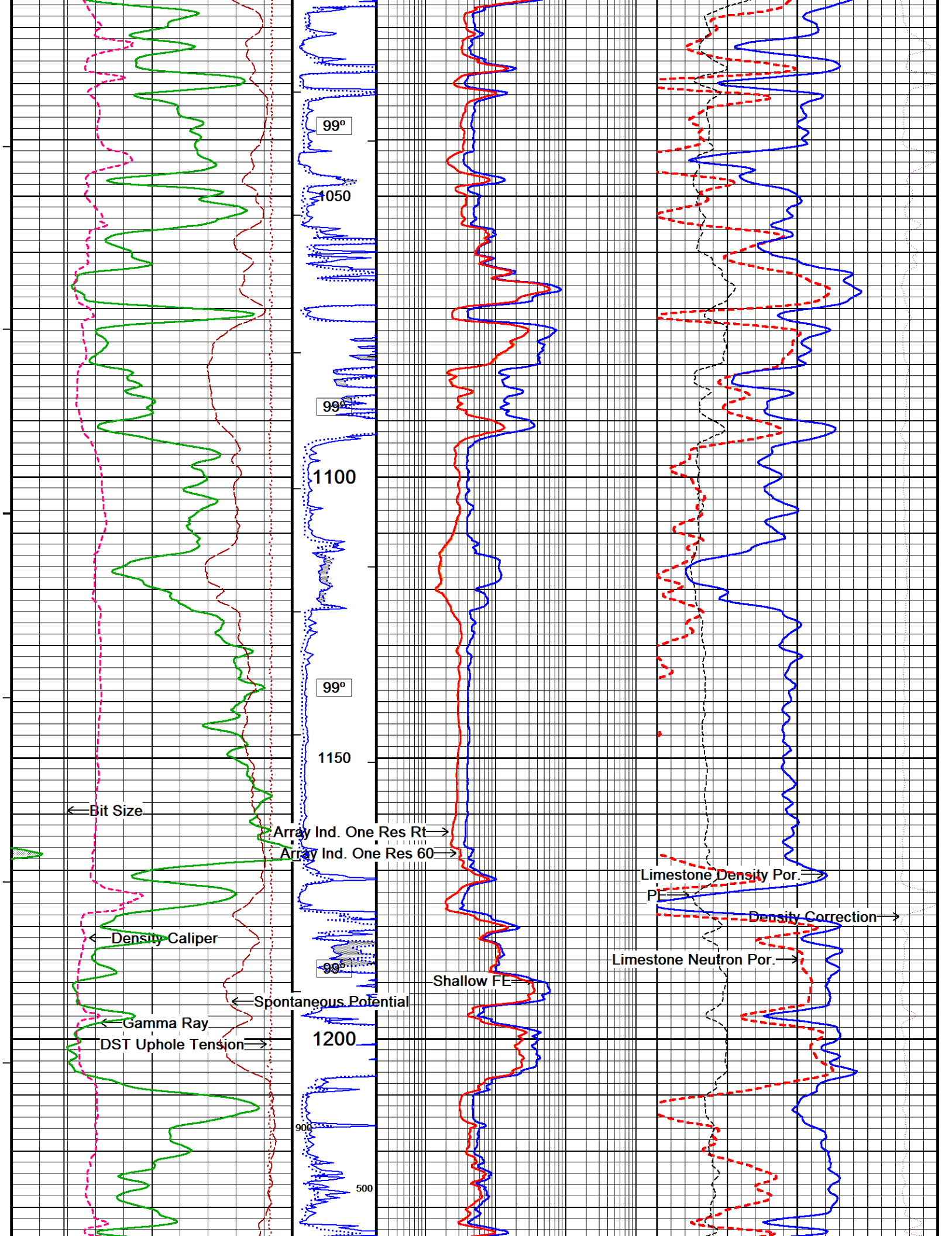
Density Correction
grams/cc
-0.75 0.25

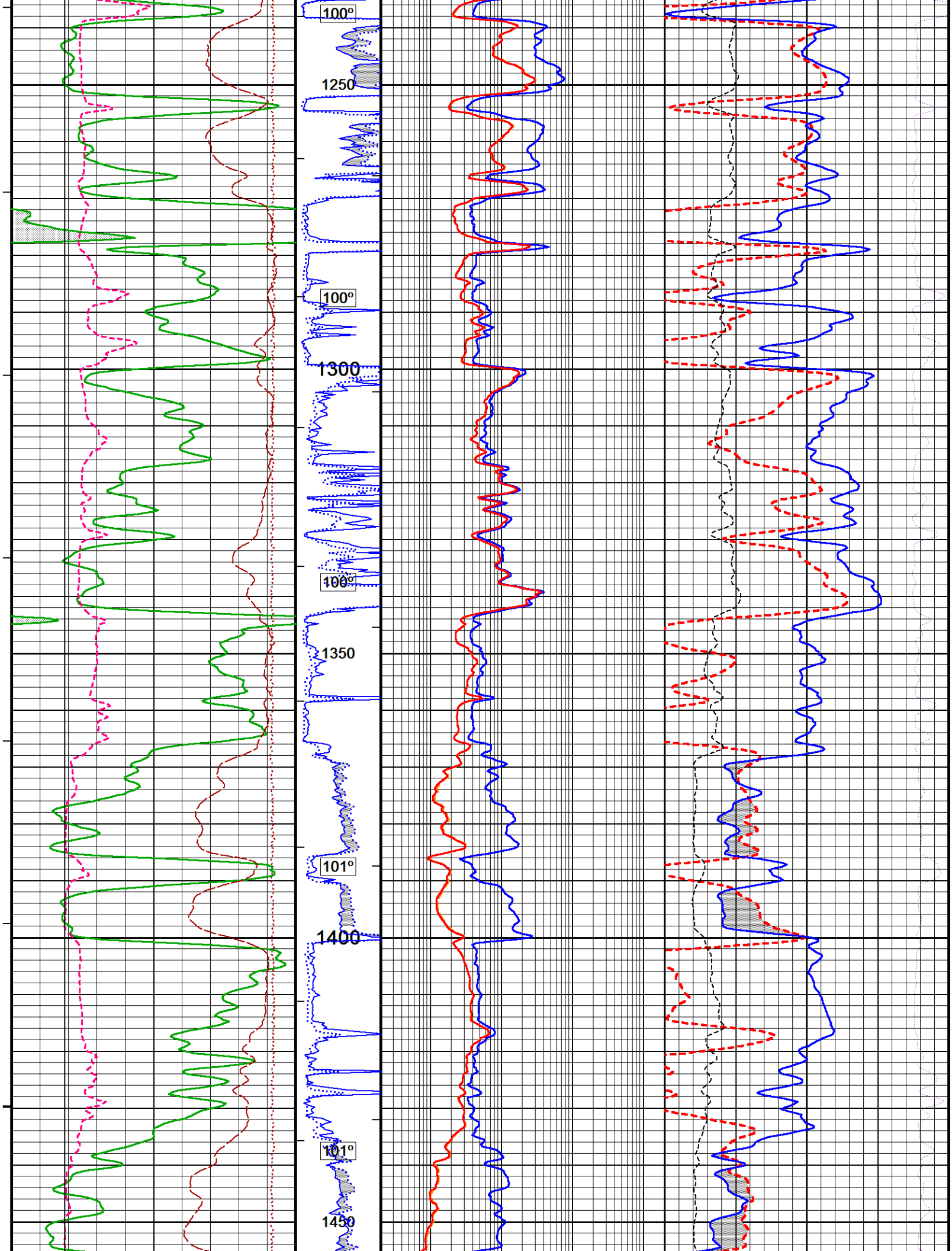

142
150
93°
200
Casing
Shoe
1400
94°
250
94°
300
800
94°
350

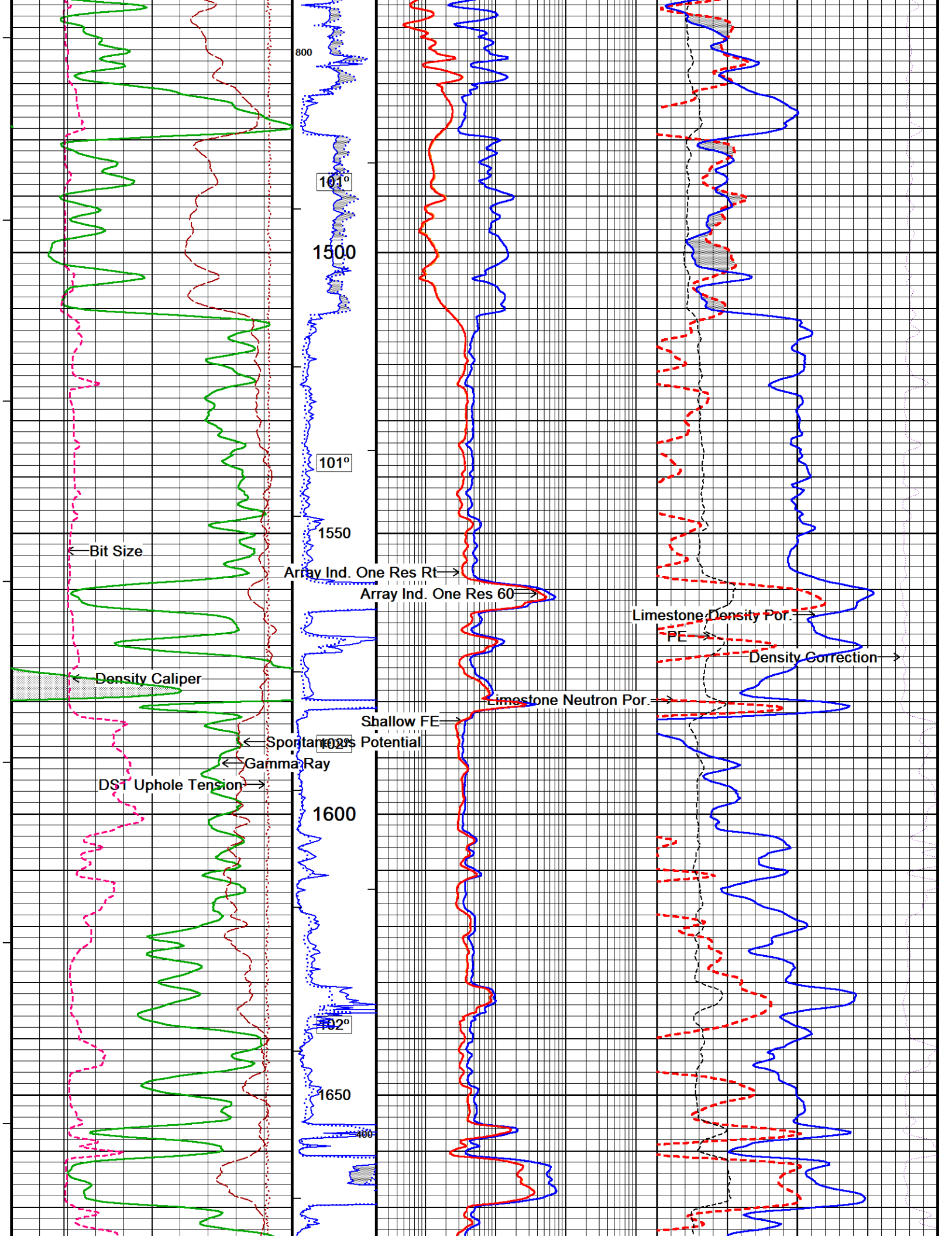

Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
1300
Array Ind. One Res Rt
Array Ind. One Res 60
95°
400
Shallow FE
Spontaneous Potential
95°
450
96°
500
96°
550
700
1200
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.

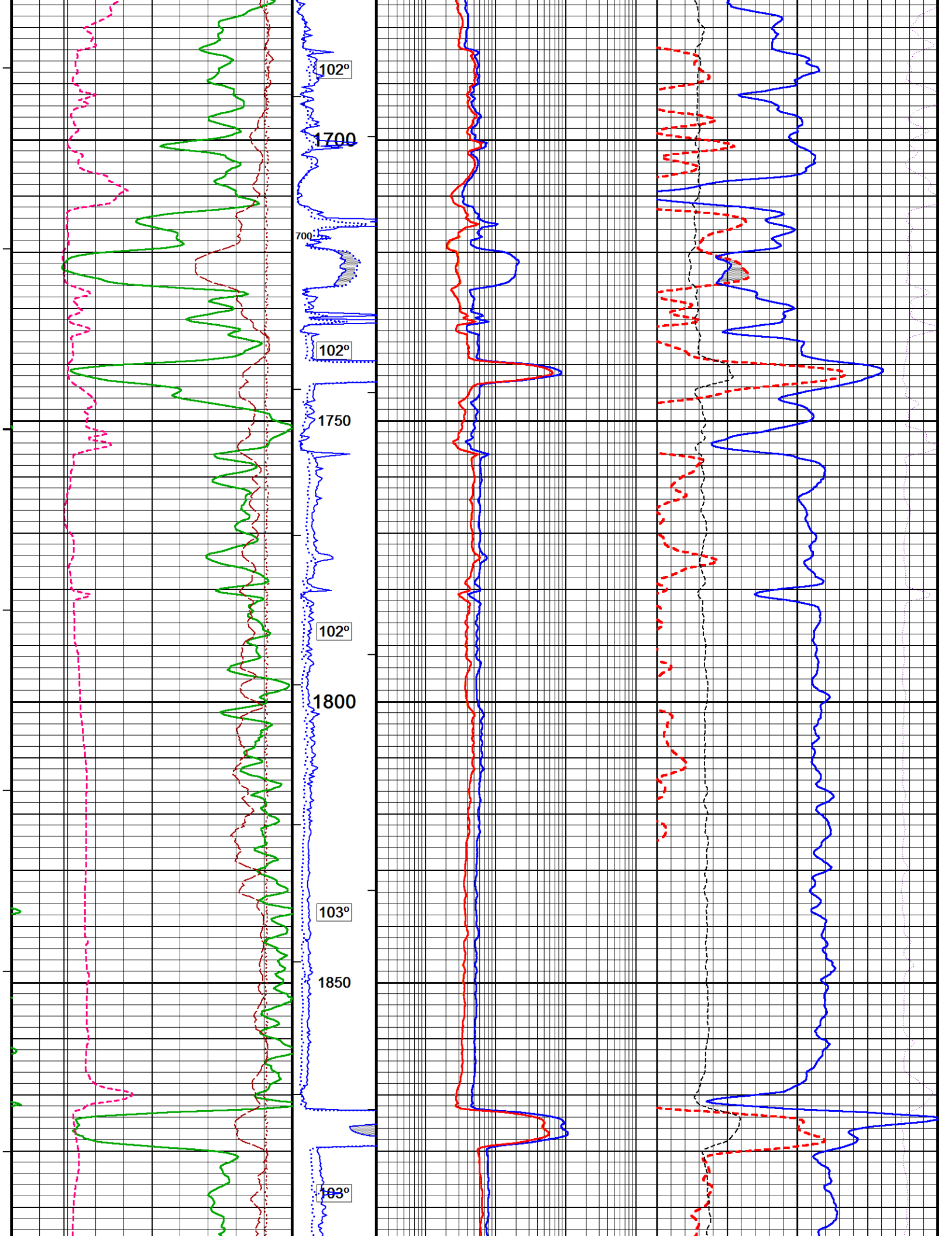

97°
600
97°
650
700
97°
97°
750
97°
Bit Size
Density Caliper
Array Ind. One Res Rt
Array Ind. One Res 60
100
Limestone Density Por
PE
Density Correction
Limestone Neutron Por.

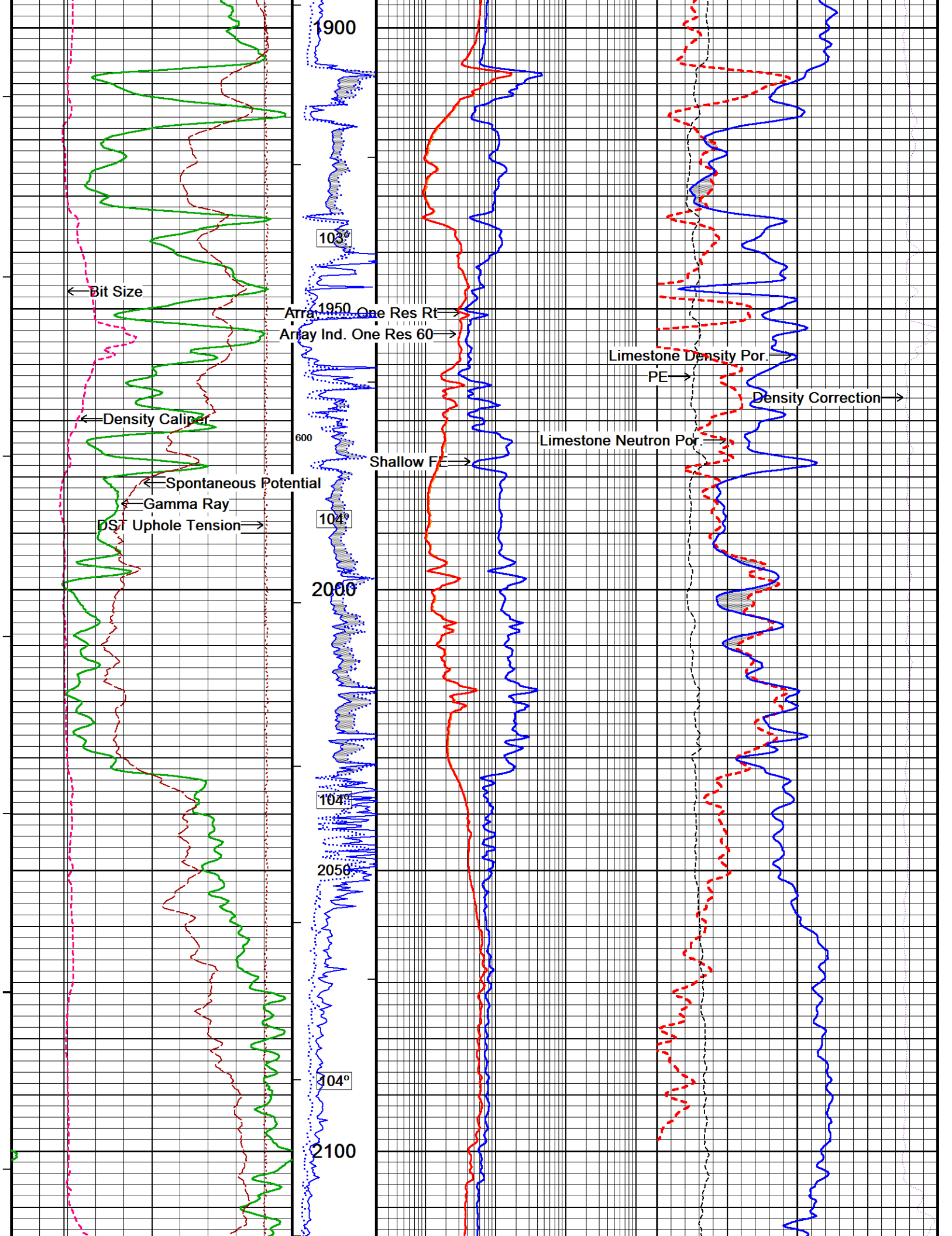

Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
800
97°
850
600
98°
900
98°
950
1000
98°
1000

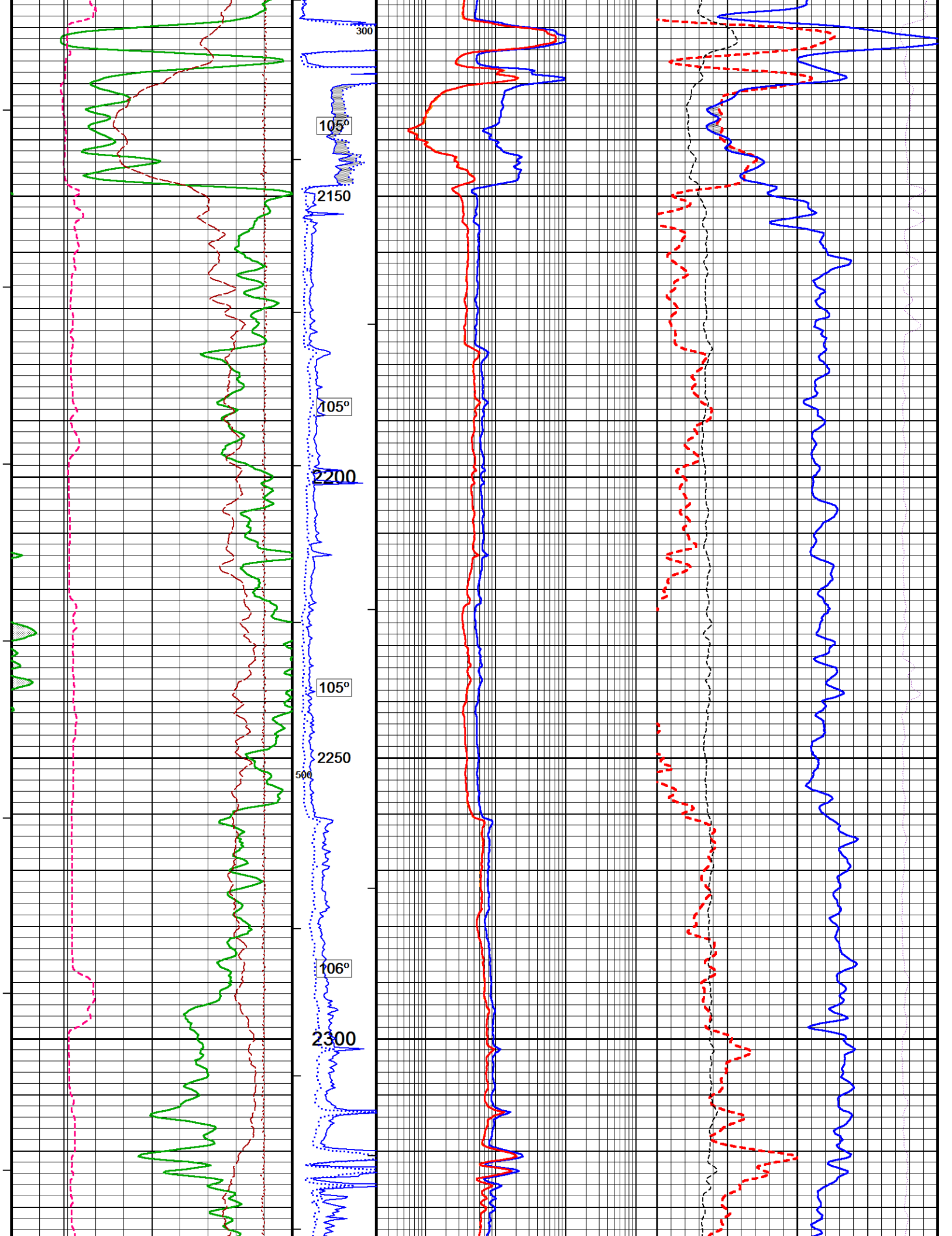

99°
1050
99°
1100
99°
1150
99°
1200
900
500
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Density Caliper
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.

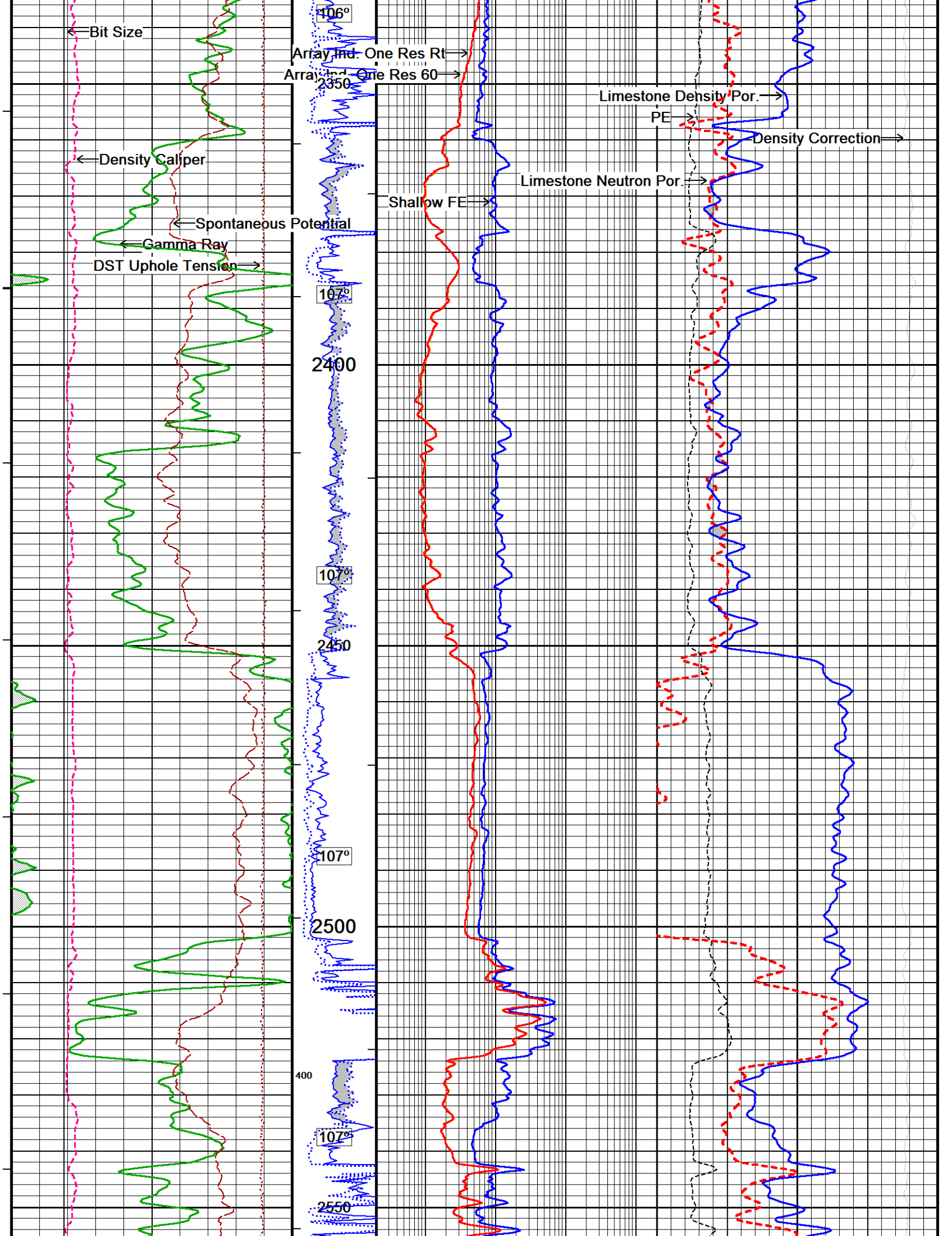

100°
1250
100°
1300
100°
1350
101°
1400
101°
1450

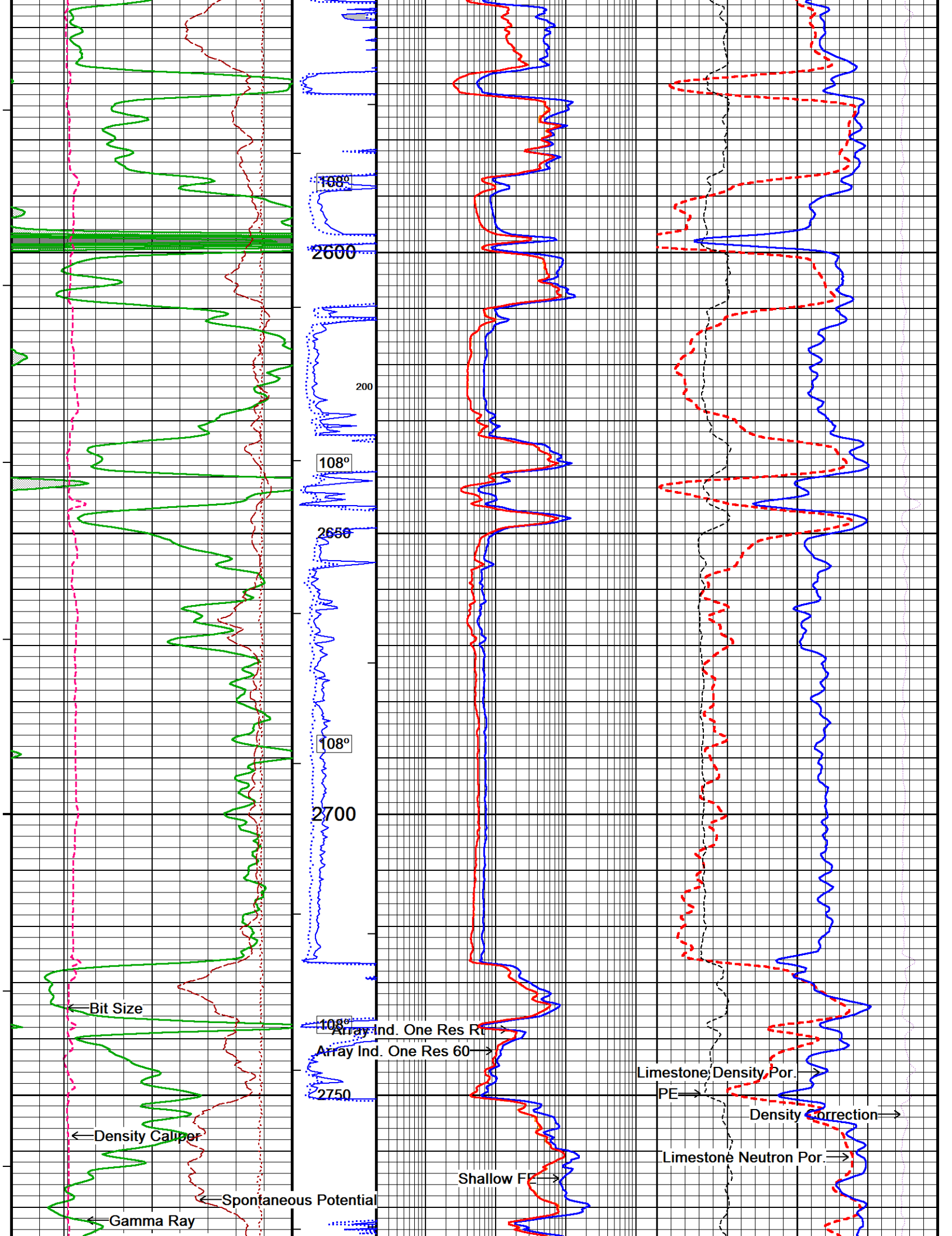

800
101°
1500
101°
1550
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Limestone Density Por.
PE
Density Correction
Density Caliper
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
102°
Gamma Ray
DST Uphole Tension
1600
102°
1650
400

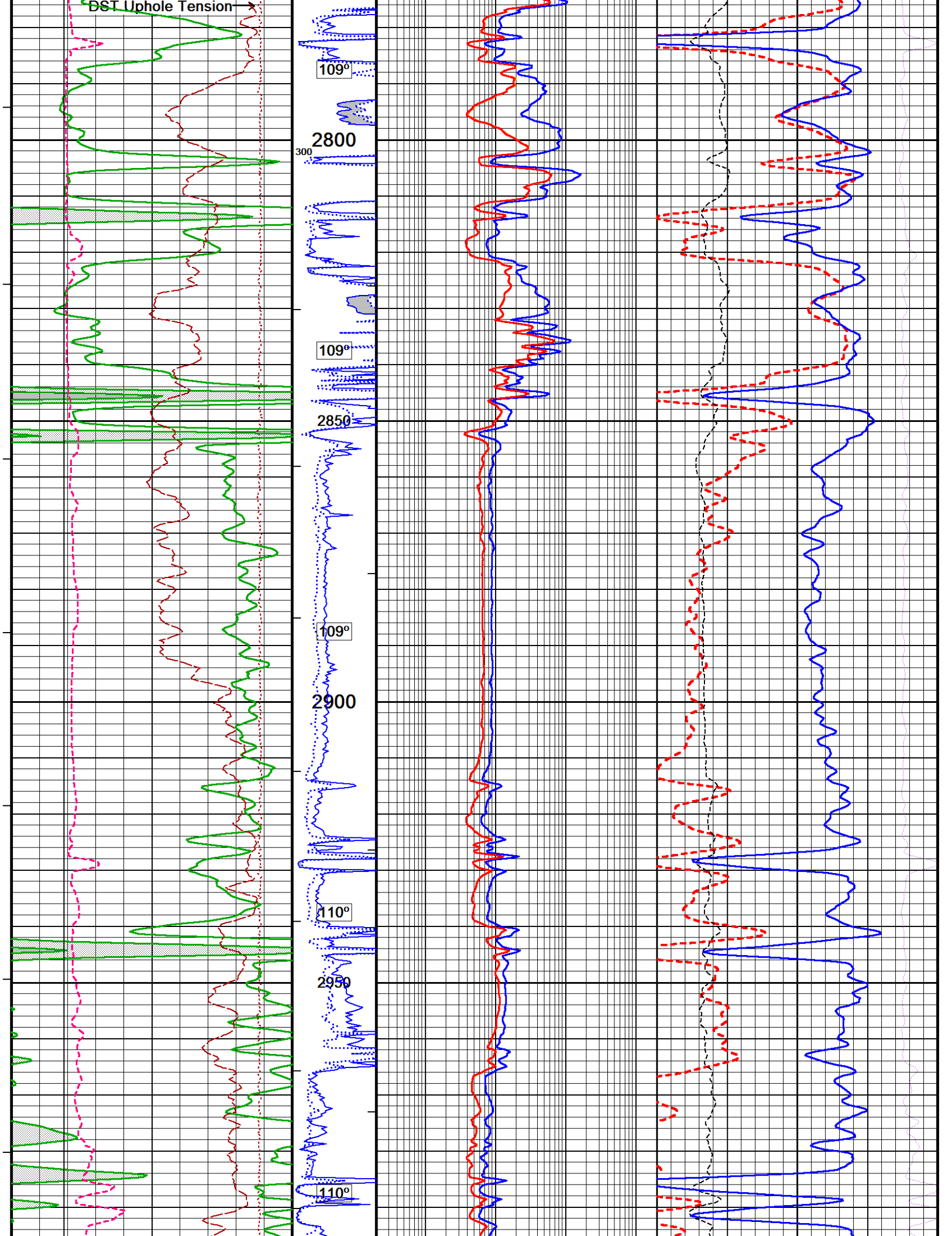

102°
1700
700
102°
1750
102°
1800
103°
1850
103°

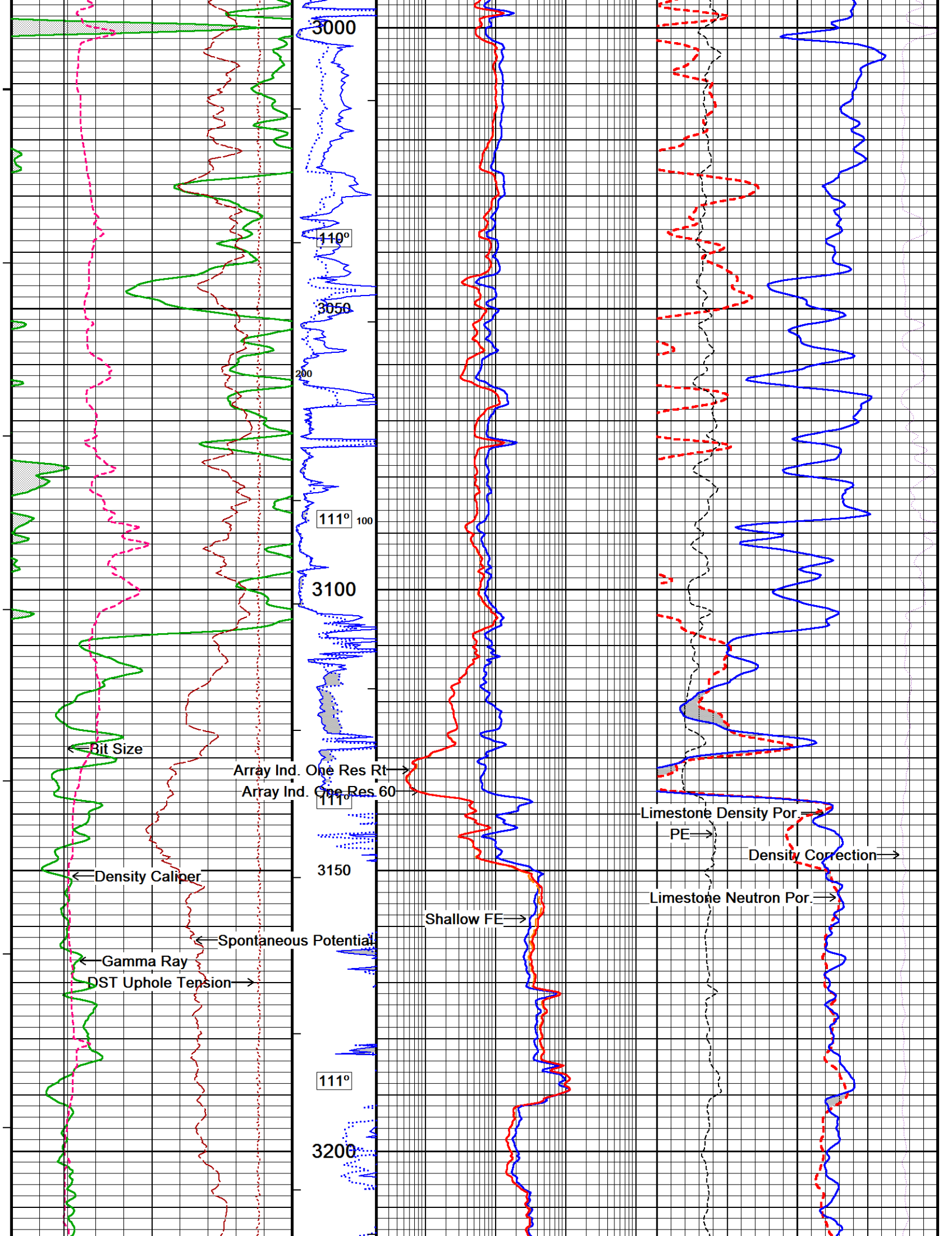

1900
103°
Bit Size
Array One Res Rt
Array Ind. One Res 60
Limestone Density Por.
PE
Density Correction
Density Caliper
600
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
104°
2000
104°
2050
104°
2100

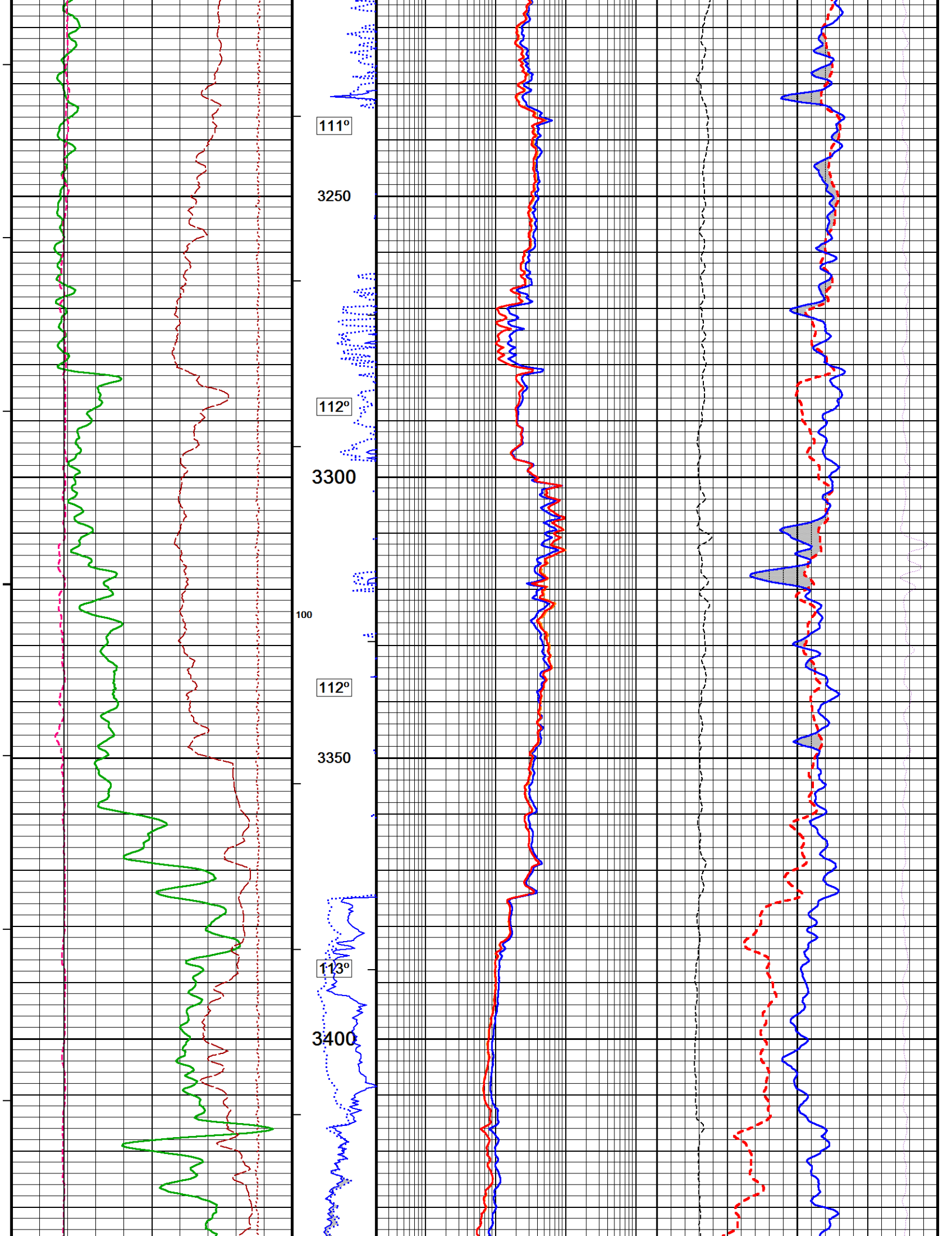

300
105°
2150
105°
2200
105°
2250
500
106°
2300

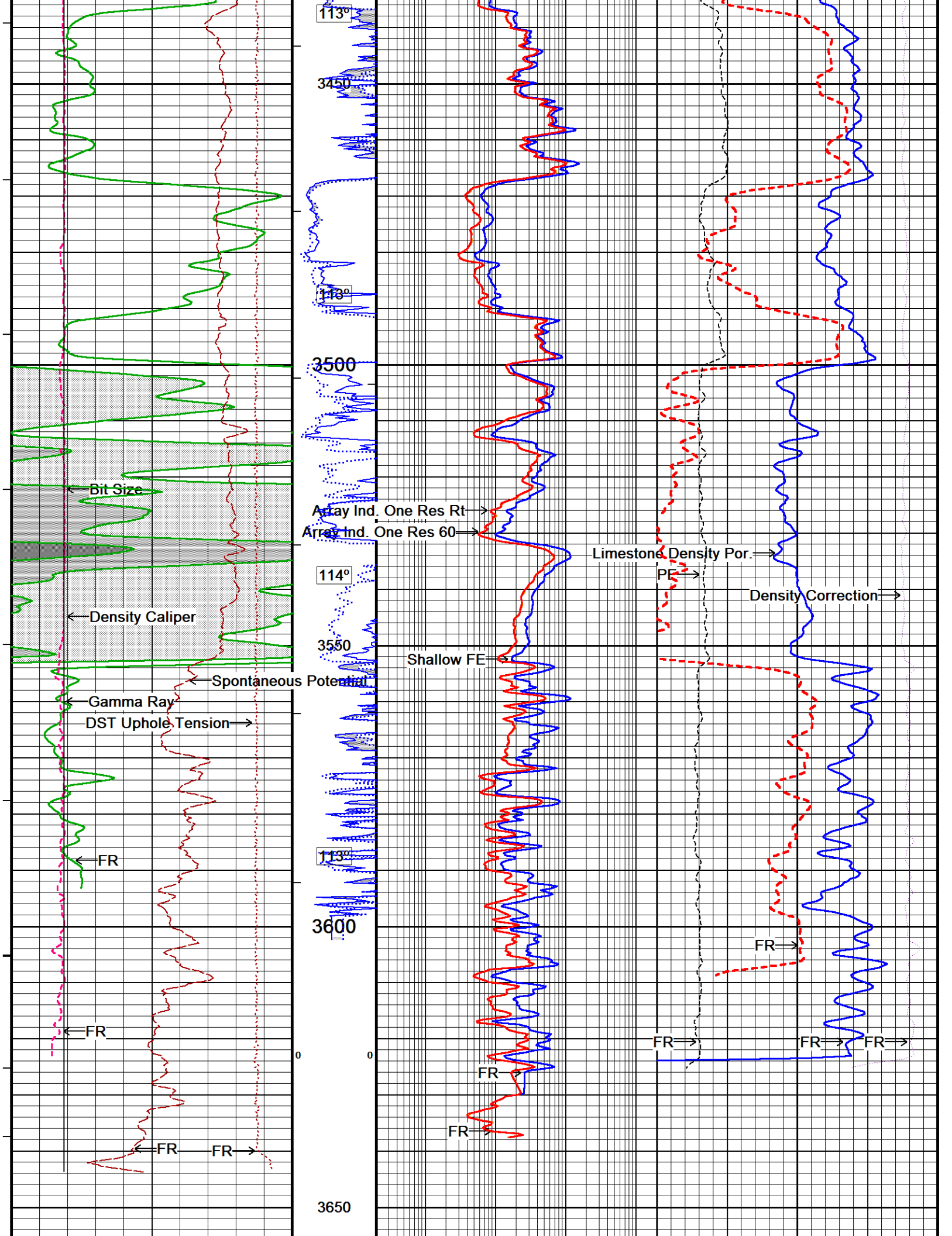

Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
106°
Array Ind. One Res Rt
Array Ind. One Res 60
2350
Shallow FE
107°
2400
107°
2450
107°
2500
400
107°
2550
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.

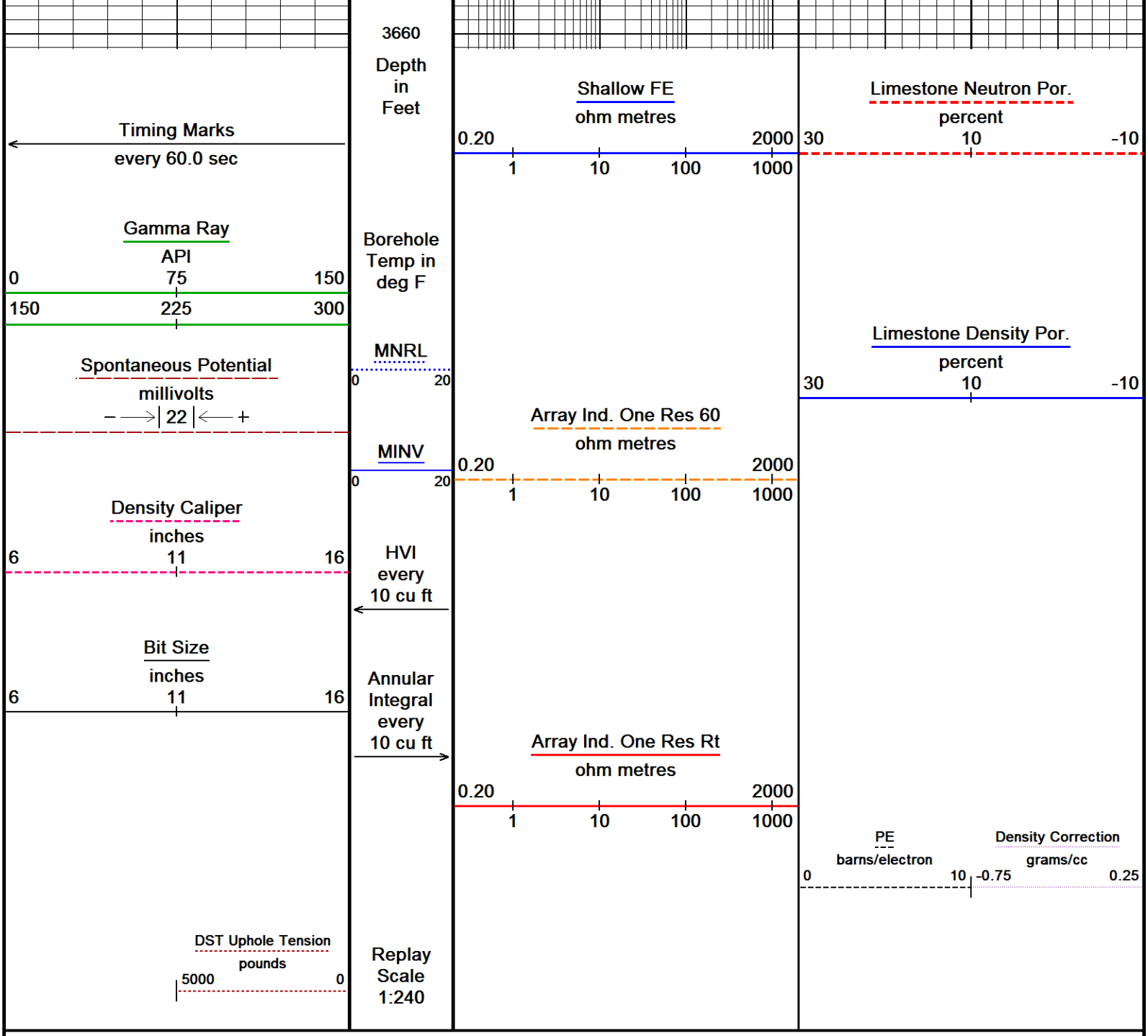

108°
2600
200
108°
2650
108°
2700
108°
2750
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
Array Ind. One Res Rt
Array Ind. One Res 60
Shallow FE
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.


DST Uphole Tension
109°
2800
300
109°
2850
109°
2900
110°
2950
110°


3000
110°
3050
200
111°
100
3100
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
111°
Limestone Density Por
PE
Density Correction
Density Caliper
3150
Limestone Neutron Por.
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
111°
3200


111°
3250
112°
3300
100
112°
3350
113°
3400


113°
3450
113°
3500
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 60
Limestone Density Por.
PE
Density Correction
114°
Density Caliper
3550
Shallow FE
Spontaneous Potential
Gamma Ray
DST Uphole Tension
113°
FR
3600
FR
FR
FR
FR
FR
FR
FR
FR
FR
0
0
3650

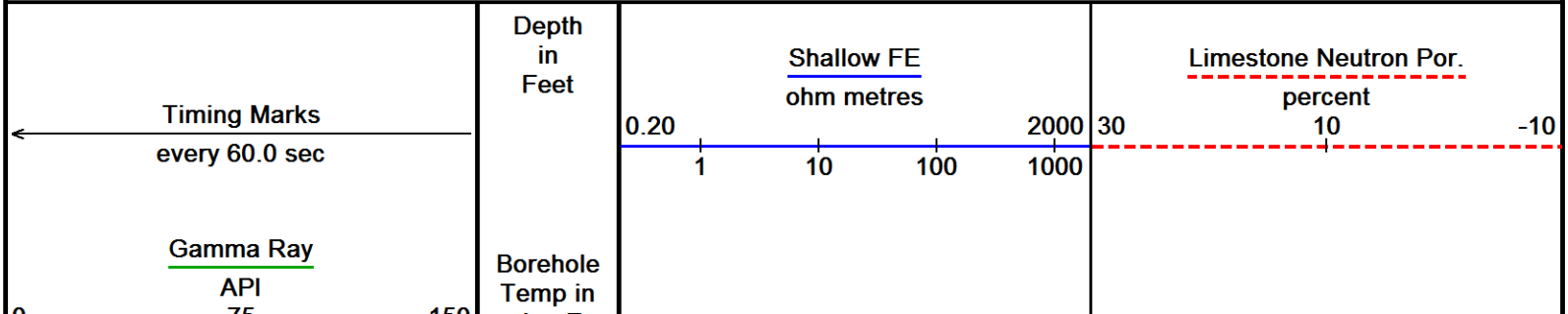


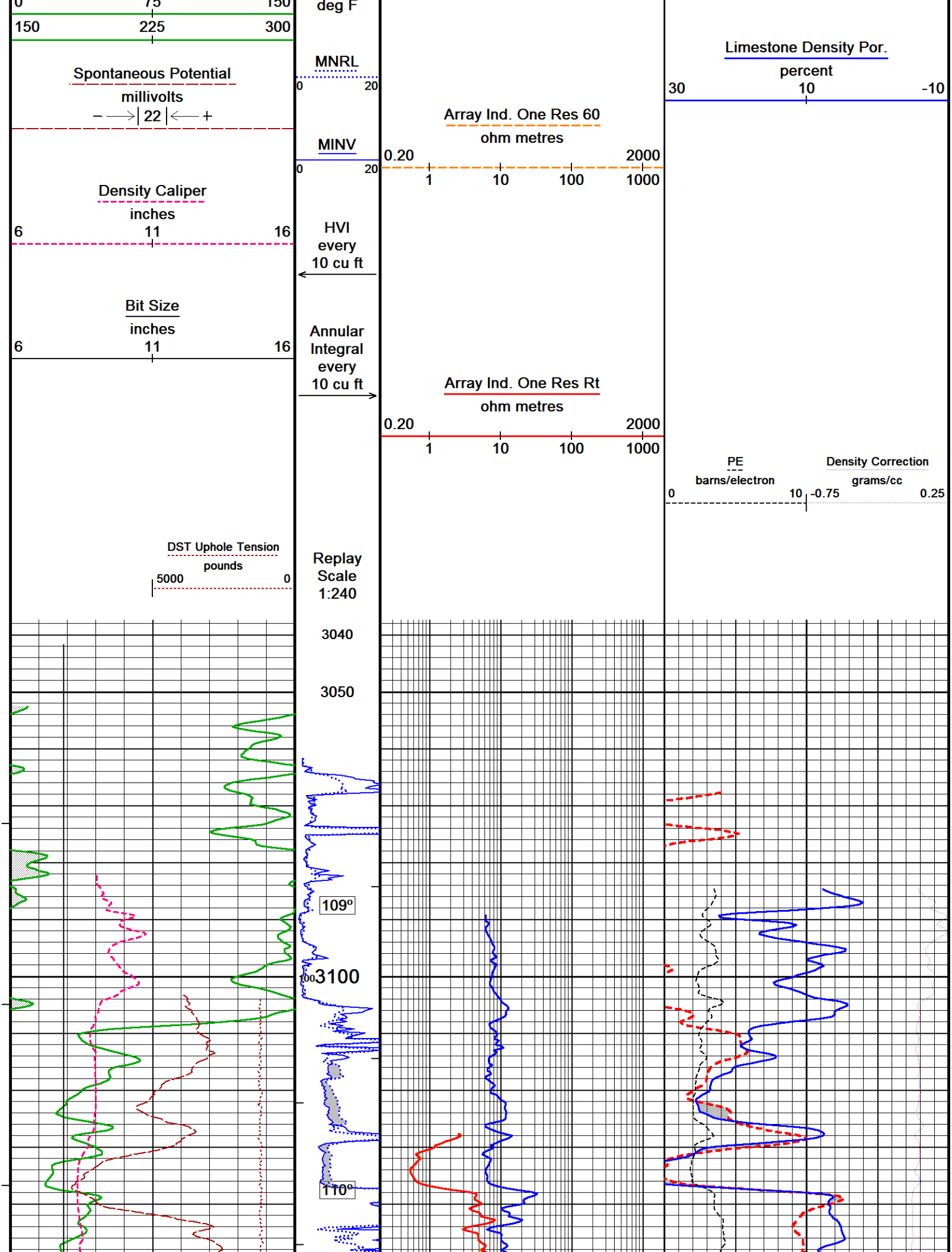
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 30-OCT-2016 19:54
Filename: E:\WLS 16_03_562 DATA\FUTURE ACQUISITION (BOGNER 2-22)\MAIN.dta
Recorded on 30-OCT-2016 17:16
System Versions: Logged with 16.03.1458 Plotted with 16.03.1458

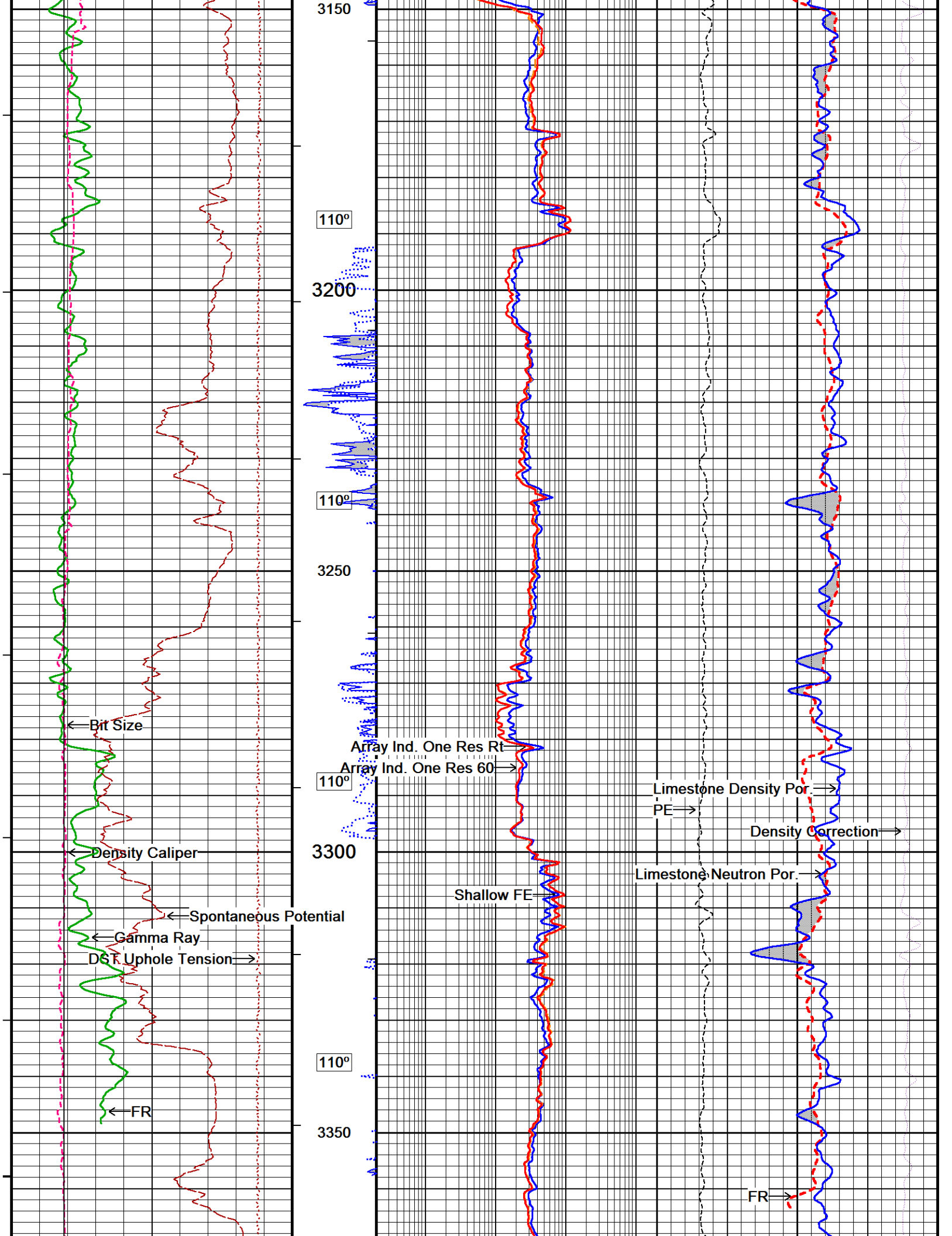
5 INCH MAIN SECTION

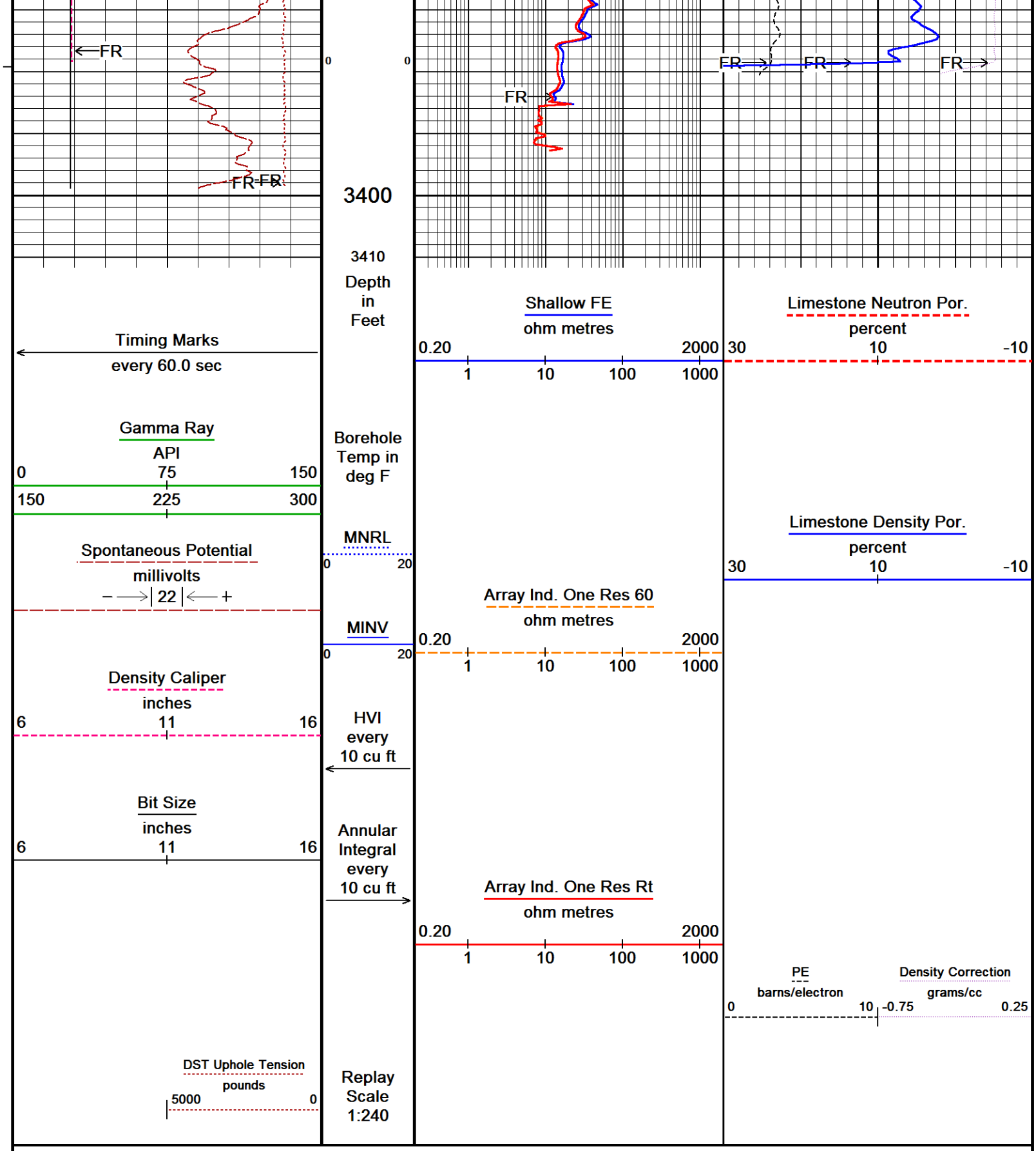
5 INCH REPEAT SECTON 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 30-OCT-2016 19:54
Filename: E:\WLS 16_03_562 DATA\FUTURE ACQUISITION (BOGNER 2-22)\REPEAT PASS_001.dta
Recorded on 30-OCT-2016 16:55
System Versions: Logged with 16.03.1458 Processed with 16.03.1458 Plotted with 16.03.1458




0
75
150
deg F
150
225
300
MNRL
0
20
Spontaneous Potential
millivolts
22
MINV
0
20
Array Ind. One Res 60
ohm metres
0.20
2000
1
10
100
1000
Limestone Density Por.
percent
30
10
-10
Density Caliper
inches
6
11
16
HVI
every
10 cu ft
Bit Size
inches
6
11
16
Annular
Integral
every
10 cu ft
Array Ind. One Res Rt
ohm metres
0.20
2000
1
10
100
1000
PE
barns/electron
0
10
Density Correction
grams/cc
-0.75
0.25
DST Uphole Tension
pounds
5000
0
Replay
Scale
1:240
3040
3050
109°
100
3100
110°


3150
110°
3200
110°
3250
110°
3300
110°
3350
Bit Size
Density Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
FR
Array Ind. One Res Rt
Array Ind. One Res 60
Shallow FE
Limestone Density Por.
PE
Density Correction
Limestone Neutron Por.
FR



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 30-OCT-2016 19:54
Filename: E:\WLS 16_03_562 DATA\FUTURE ACQUISITION (BOGNER 2-22)\REPEAT PASS_001.dta
Recorded on 30-OCT-2016 16:55
System Versions: Logged with 16.03.1458 Processed with 16.03.1458 Plotted with 16.03.1458

5 INCH REPEAT SECTON 1:240

BEFORE SURVEY CALIBRATION

E:\WLS 16_03_562 DATA\FUTURE ACQUISITION (BOGNER 2-22)\MAIN.dta

General Constants_All 000
Last Edited on 30-OCT-2016 16:51

General Constants All 000 — Last Edited on 30-OCT-2016,16:51

General Parameters		
Mud Resistivity	1.400	ohm-metres
Mud Resistivity Temperature	80.000	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	5.500	inches
Caliper for Differential Caliper	Density Caliper	

Rwa Parameters	
Porosity used	Base Density Porosity
Resistivity used	Array Ind. One Res Rt
RWA Constant A	0.620
RWA Constant M	2.150
SW/APOR Tool Source	0.000

Down-hole Tension Calibration SMS 0

Field Calibration on 30-OCT-2016 16:28

Reading No	Measured	Calibrated (lbs)
1	16619.64	0.00
2	18388.60	491.00

High Resolution Temperature Calibration MCG-E.A 571

Field Calibration on 25-OCT-2016,10:00

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	200.00	200.00

High Resolution Temperature Constants MCG-E.A 571

Last Edited on 22-JUL-2014,14:44

Pre-filter Length	11

SP Calibration MCG-E.A 571

Field Calibration on 25-OCT-2016,10:01

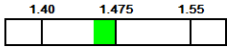
	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

Gamma Calibration MCG-E.A 571

Field Calibration on 25-OCT-2016 10:15

	Measured	Calibrated (API)
Background	55	38
Calibrator (Gross)	1886	1299
Calibrator (Net)	1831	1261

Gamma Calibration Tolerances MCG-E.A 571

Ratio 1.452 

Counts/API

Gamma Constants MCG-E.A 571

Last Edited on 30-OCT-2016,16:51

Gamma Calibrator Number	46	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

Micro Normal and Micro Inverse Calibration MMR-A 33

Base Calibration on 19-OCT-2016 14:03
Field Check on 25-OCT-2016 10:00

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	9.9	49.2	5.1	25.6
Micro Inverse	9.9	49.4	3.4	16.9

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	94.5	94.5
Micro Inverse	62.3	62.3

Micro Normal & Micro Inverse Calibration Tolerance MMR-A 33

Micro Normal Res. 1	9.9	-5% 10.0 +5%	ohm	Micro Normal Res. 2	49.2	-5% 50.0 +5% ohm
Micro Inverse Res. 1	9.9	-5% 10.0 +5%	ohm	Micro Inverse Res. 2	49.4	-5% 50.0 +5% ohm

Micro Normal Base Check	94.5	-2% 94.43 +2%	ohm-m
Micro Inverse Base Check	62.3	-2% 62.26 +2%	ohm-m
Micro Normal Field Check	94.5	-2% 94.5 +2%	ohm-m
Micro Inverse Field Check	62.3	-2% 62.3 +2%	ohm-m

Micro Normal and Micro Inverse Constants MMR-A 33

Last Edited on 10-MAY-2016,09:49

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159	
Micro Normal K Factor	0.5110	
Micro Inverse K Factor	0.3380	
Standoff Offset	0.0000	inches

Caliper Calibration MMR-A 33

Base Calibration on 19-OCT-2016 14:13
Field Calibration on 25-OCT-2016 09:59

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14415	5.96
2	17830	8.03
3	20954	9.86
4	24819	11.88
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.93	7.98

Caliper Calibration Tolerances MMR-A 33

Short Arm Field Cal.	7.93	7.78 7.98 8.18	in

Micro-Resistivity Caliper Constants MMR-A 33

Last Edited on

Sonde Configuration	Resistivity Mode

Neutron Calibration MDN-B.J 391

Base Calibration on 28-SEP-2016 13:07
Field Check on 25-OCT-2016 10:22

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3267	97	3714	110
Ratio	33.568		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1162	1753
Ratio	0.663	

Field Check

	Calibrated (cps)	
	1152	1741
Ratio	0.662	

Neutron Calibration Tolerances MDN-B.J 391

Ratio	33.568	-5% 33 +5%
Base Check	0.663	0.65 0.7 0.75
Field Check	0.662	0.643 0.663 0.683

Neutron Constants MDN-B.J 391

Last Edited on 25-OCT-2016,18:45

Neutron Source Id	N1054	
Neutron Jig Number	46BLUE	
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	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	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	

Caliper Calibration MVC-A.A 111

Base Calibration on 19-OCT-2016 10:41
Field Calibration on 25-OCT-2016 09:56

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	10013	3.99
2	16933	5.96
3	24448	8.03
4	30954	9.86
5	38232	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.98	7.97

FE Calibration MFE-B.J 359

Base Calibration on 19-OCT-2016 10:59
Field Check on 25-OCT-2016 09:48

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	958.7	126.8
Base Check		281.3
Field Check		281.4

FE Calibration Tolerances MFE-B.J 359

Reference 2	958.7	-3% 980.0 +3%	ohm
Base Check	281.3	-2% 277.0 +2%	ohm-m
Field Check	281.4	-2% 281.3 +2%	ohm-m

FE Constants MFE-B.J 359

Last Edited on 25-OCT-2016,18:46

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Borehole Correction Constants		
Sonde Position	0.5	inches
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Rm Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	MCG External Temperature	

High Resolution Temperature Calibration MAI-B.J 426

Field Calibration on 25-OCT-2016,09:43

	Measured	Calibrated(Deg F)
Lower	50.00	50.00

Lower	50.00	50.00
Upper	212.00	212.00

High Resolution Temperature Constants MAI-B.J 426

Last Edited on 13-NOV-2015,09:37

Pre-filter Length	11

Induction Calibration MAI-B.J 426

Base Calibration on 25-OCT-2016,09:44
Field Check on 25-OCT-2016 09:46

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	15.9	452.0	9.3	966.2
2	5.1	359.5	7.6	821.4
3	3.0	246.4	5.2	566.0
4	2.1	128.2	2.6	279.2

Array Temperature 74.8 Deg F

Test Loop Calibration Verified

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			16.7	4008.9
2			34.7	3738.2
3			31.6	3201.3
4			20.4	2155.7
Deep			17.5	2042.6
Medium			47.6	4261.1
Shallow			54.4	5588.8
Array Temperature	0.0		69.7	Deg F

Induction Calibration Tolerances MAI-B.J 426

Low Conductivity 1	15.9	13.0 / 17.0 / 21.0	mmho/m	High Conductivity 1	452.0	430.0 / 475.0 / 520.0	mmho/m
Low Conductivity 2	5.1	4.5 / 6.0 / 7.5	mmho/m	High Conductivity 2	359.5	345.0 / 385.0 / 425.0	mmho/m
Low Conductivity 3	3.0	1.0 / 3.5 / 6.0	mmho/m	High Conductivity 3	246.4	240.0 / 260.0 / 280.0	mmho/m
Low Conductivity 4	2.1	0.0 / 2.0 / 4.0	mmho/m	High Conductivity 4	128.2	120.0 / 135.0 / 150.0	mmho/m
Background Vx 1	0.0	-110.0 / -32.5 / 45.0	mmho/m	Phase Check Loop 1	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 2	0.0	-35.0 / 20.0 / 75.0	mmho/m	Phase Check Loop 2	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 3	0.0	-60.0 / 2.5 / 65.0	mmho/m	Phase Check Loop 3	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 4	0.0	-50.0 / -17.5 / 15.0	mmho/m	Phase Check Loop 4	0.0	-2.0 / 0.0 / 2.0	%

Induction Constants MAI-B.J 426

Last Edited on 28-OCT-2016,15:37

Induction Model	RtAP	
Borehole Correction Constants		
Tool Centred	No	
Hole Size Source	Density Caliper	
Hole Size Constant Value	2.500	inches
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	6.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.5000	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	100.00	percent
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	

Caliper Calibration MPD-B 120

Base Calibration on 28-SEP-2016 09:20
Field Calibration on 25-OCT-2016 09:50

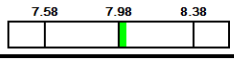
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17552	3.99
2	26134	5.96
3	35152	8.03
4	43168	9.86
5	52288	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.02	7.98

Caliper Calibration Tolerances MPD-B 120

Long Arm Field Cal. 8.02 

in

Photo Density Calibration MPD-B 120

Base Calibration on 28-SEP-2016 09:05
Field Check on 25-OCT-2016 09:54

Density Calibration

Base Calibration	Measured Near	Measured Far	Calibrated (sdu) Near	Calibrated (sdu) Far
Background	921	1159		
Reference 1	54896	28028	59494	30754
Reference 2	22407	2439	24557	2522

Field Check at Base		
	920.7	1158.9

Field Check		
	920.7	1155.2

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	166	821		
Reference 1	21022	54743	0.387	0.367
Reference 2	5995	22301	0.271	0.271

Field Check at Base		
	165.5	820.6

Field Check		
	166.0	820.7

Photo Density Calibration Tolerances MPD-B 120

Near Density Ratio	2.51	-5% 2.52 +5%	Far Density Ratio	20.98	-5% 21.00 +5%
PE Calibration	0.110	0.089 0.110 0.131			
Near Den. Field Check	920.7	-3% 920.7 +3%	Far Den. Field Check	1155.2	-3% 1158.9 +3%
PE WS Field Check	166.0	-6% 165.5 +6%	PE WH Field Check	820.7	-6% 820.6 +6%

Density Constants MPD-B 120

Last Edited on 30-OCT-2016,16:50

Density Source Id	P56135B	
Nylon Calibrator Number	766	
Aluminium Calibrator Number	633	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.09	gm/cc
Mud Density Z/A Multiplier	1.11	
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	

DOWNHOLE EQUIPMENT

E:\WLS 16_03_562 DATA\FUTURE ACQUISITION (BOGNER 2-22)\MAIN.dta

Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Swivel Head Adaptor
SHA-J.B 720 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Comms Gamma
MCG-E.A 571 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

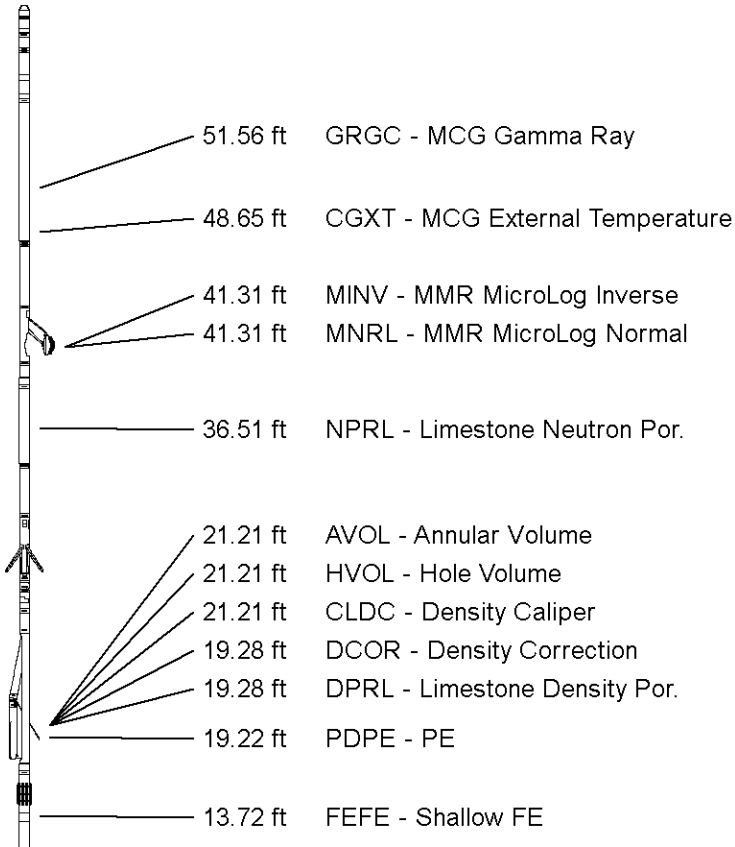
Compact Micro-Resistivity
MMR-A 33 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-B.J 391 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Vee Arm Caliper
MVC-A.A 111 LG: 8.06 ft WT: 61.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-B 120 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

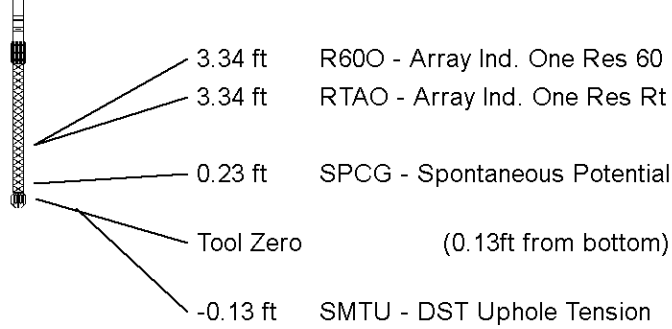
Compact Focussed Electric



MFE-B.J 359 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction
MAI-B.J 426 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 61.54 ft Weight: 491.6 lb



All measurements relative to tool zero.

COMPANY	FUTURE ACQUISITION COMPANY LLC.
WELL	SAMMS 22-1
FIELD	MADDIX NORTH
PROVINCE/COUNTY	COWLEY
COUNTRY/STATE	USA / KANSAS

Elevation Kelly Bushing	1242	feet	First Reading	3636.00	feet
Elevation Drill Floor	1241	feet	Depth Driller	3644.00	feet
Elevation Ground Level	1233	feet	Depth Logger	3639.00	feet

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COMPACT DENSITY / NEUTRON
MICROLOG