

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 # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

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 #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ 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: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

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: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> 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: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 756

Date	4-30-18	Sec.	17	Twp.	19	Range	10	County	Rice	State	Ks	On Location		Finish	9:00 PM
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Location **Silica Elevator - 3³/₄N, E1s**

Lease	Hager	Well No.	1	Owner	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor	Royal 1			Charge To	Charter Energy
Type Job	Surface			Street	
Hole Size	12 1/4"	T.D.	348'	City	
Csg.	8 5/8"	Depth	348'	State	
Tbg. Size		Depth		The above was done to satisfaction and supervision of owner agent or contractor.	

Tool		Depth		Cement Amount Ordered	360 60/40 4% CC 2% Gel
Cement Left in Csg.	15'	Shoe Joint	15'		

Meas Line		Displace	21 BLS	1/2# Flow Seal		
EQUIPMENT					Common	150
Pumptrk	17 No.	Cementer	David	Poz. Mix	100 100	
		Helper		Gel.	5	
Bulktrk	21 No.	Driver	Doug	Calcium	11	
		Driver				
Bulktrk	P.U. No.	Driver	Rick			
		Driver				

JOB SERVICES & REMARKS					Hulls	
Remarks:	Cement did Circulate				Salt	
Rat Hole					Flowseal	180#
Mouse Hole					Kol-Seal	
Centralizers					Mud CLR 48	
Baskets	Mix 250 SX Cement				CFL-117 or CD110 CAF 38	
D/V or Port Collar	Cement did Circulate				Sand	
					Handling	360
					Mileage	

FLOAT EQUIPMENT				
	Guide Shoe			
	Centralizer			
	Baskets			
	AFU Inserts			
	Float Shoe			
	Latch Down			

	Pumptrk Charge	Surface
	Mileage	15 (min)
	Tax	
	Discount	
	Total Charge	

X Signature *Hong Budig*



CHARGE TO: Charter Energy
 ADDRESS: _____
 CITY, STATE, ZIP CODE: _____

TICKET 27282
 PAGE 1 OF

SERVICE LOCATIONS
 1. Haus Ks WELL/PROJECT NO. # 1 LEASE Hager COUNTY/PARISH Rice STATE Ks CITY _____ DATE 5-6-18 OWNER _____
 2. Ness City Ks TICKET TYPE SERVICE CONTRACTOR Loyal Drilling RIG NAME/NO. _____ ORDER NO. _____
 SALES WELL TYPE D:1 WELL CATEGORIES development JOB PURPOSE long string DELIVERED TO location WELL PERMIT NO. _____
 4. REFERRAL LOCATION _____ INVOICE INSTRUCTIONS _____

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING		DESCRIPTION	QTY.	UM	QTY.	UM	UNIT PRICE	AMOUNT
		LOC	ACCT							
575				MILEAGE TR # 111	70	mi			5.00	350.00
578				Pump Charge - long string	1	EA			1300.00	1300.00
290				D-Air	2	600			42.00	84.00
281				Mud Flush	500	600			1.50	750.00
221				Liquid Kel	2	600			25.00	50.00
403				Wellhead						
403				Cement Basket	0				275.00	0
406				Catch Down Plug & Baffle	1	EA			250.00	250.00
404				Insert float shoe of Auto	1	EA			325.00	325.00
402				Centralizer	7	EA			70.00	490.00

LEGAL TERMS: Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.
 MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS
 X DATE SIGNED _____ TIME SIGNED _____
 A.M. P.M.

REMIT PAYMENT TO:
 SWIFT SERVICES, INC.
 P.O. BOX 466
 NESS CITY, KS 67560
 785-798-2300

SURVEY
 OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN? YES NO
 WE UNDERSTOOD AND MET YOUR NEEDS? YES NO
 OUR SERVICE WAS PERFORMED WITHOUT DELAY? YES NO
 WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY? YES NO
 ARE YOU SATISFIED WITH OUR SERVICE? YES NO
 CUSTOMER DID NOT WISH TO RESPOND

UN-DECIDED	DIS-AGREE	PAGE TOTAL	3599.00
		P.2	4506.95
		TOTAL	8105.95
		File to: <u>9510</u>	42030
		TOTAL	8526.95

SWIFT OPERATOR Davis Edgerton APPROVAL _____
 CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.
 Thank You!



PO Box 466
Ness City, KS 67560
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. 27982

CUSTOMER
Character Energy

WELL
Hager # 1

DATE
5-6-18

PAGE 1 OF

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	WELL		UNIT PRICE		AMOUNT
		LOG	ACCT	DF			QTY	U/M	QTY	U/M	
325						Standard Cement	175	SKS	13	00	2275.00
284						Calseal	8	SKS	35	00	280.00
283						Salt	950	lbs	20	00	190.00
292						Halad 322	100	lbs	8	00	800.00
276						Flocele	44	lbs	2	50	110.00
SERVICE CHARGE											
MILEAGE CHARGE											
TOTAL						18344					
LOADING MILES						75					
CUBIC FEET						175	SKS				
TON MILES						642					
CONTINUATION TOTAL											4506.95

JOB LOG

SWIFT Services, Inc.

DATE 5-6-18 PAGE NO.

CUSTOMER		WELL NO.		LEASE		JOB TYPE		TICKET NO.
Charter Energy		#1		Hager		Long String		27282
CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2100							On location
								Rts - 3400
								Shoe -
								pipe -
								Centralizers - 1, 4, 7, 10, 13, 16, 19
	2200							Start Running Csg
	2320							Break Circ on Bottom
	0005	2.5	7			0		Plug Rat Hole - 30 sks
		2.5	5			0		Plug Mouse Hole - 20 sks
		5	12			300		Pump Mudflush - 500 Gall
		5	20			300		Pump Kee Spacer
	0020	5	30			300		pump cmt 125 sks @ 15.5 PPG
								Drop plug - wash p 3L
	0025	7	0			100		Start Disp
	0040	7	79			800		land plug - lift - 800 psi land - 1600 psi
								Release Psi - Dry
								Thanks David Zach & Kirby



DRILL STEM TEST REPORT

Prepared For: **Charter Energy Inc**

PO Box 252
Great Bend KS 67530-0252

ATTN: Jim Musgrove

Hager #1

17-19s-10w Rice,KS

Start Date: 2018.05.04 @ 19:40:34

End Date: 2018.05.05 @ 00:21:28

Job Ticket #: 63867 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.07 @ 09:29:21



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63867 **DST#: 1**
 Test Start: 2018.05.04 @ 19:40:34

GENERAL INFORMATION:

Formation: **LKC "G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:52:14
 Time Test Ended: 00:21:28
 Interval: **3080.00 ft (KB) To 3098.00 ft (KB) (TVD)**
 Total Depth: 3098.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1776.00 ft (KB)
 1771.00 ft (CF)
 KB to GR/CF: 5.00 ft

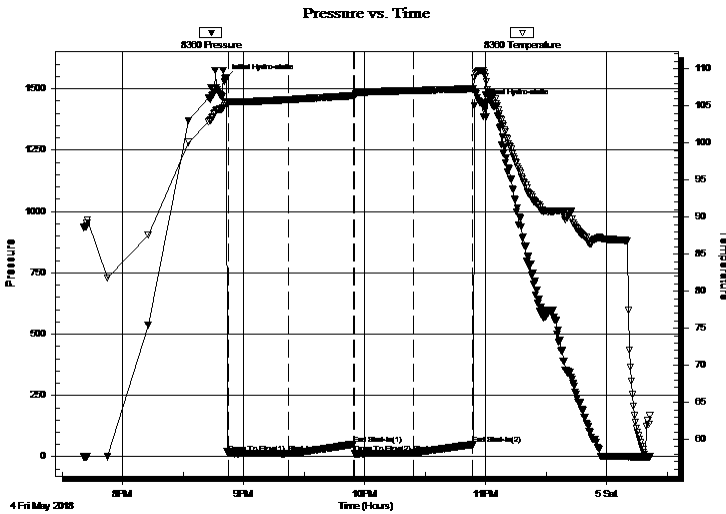
Serial #: 8360

Inside

Press@RunDepth: 15.53 psig @ 3081.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.04 End Date: 2018.05.05 Last Calib.: 2018.05.05
 Start Time: 19:40:34 End Time: 00:21:28 Time On Btm: 2018.05.04 @ 20:50:44
 Time Off Btm: 2018.05.04 @ 22:57:44

TEST COMMENT: 30-IFP-w k blow thru-out 1/2" to 1 1/4" blow
 30-ISIP-no blow
 30-FFP-w k blow thru-out 1/4" to 1" blow
 30-FSIP-no blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1541.70	105.38	Initial Hydro-static
2	16.46	105.50	Open To Flow (1)
32	13.59	105.86	Shut-In(1)
64	51.32	106.38	End Shut-In(1)
64	12.48	106.41	Open To Flow (2)
94	15.53	107.07	Shut-In(2)
123	50.11	107.32	End Shut-In(2)
127	1439.45	109.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	VSOCM 1%O99%M	0.14
0.00	50' GIP	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63867 **DST#: 1**
 Test Start: 2018.05.04 @ 19:40:34

Tool Information

Drill Pipe:	Length: 3069.00 ft	Diameter: 3.80 inches	Volume: 43.05 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 43.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3080.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	18.00 ft			
Tool Length:	39.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3060.00	
Shut In Tool	5.00			3065.00	
Hydraulic tool	5.00			3070.00	
Packer	5.00			3075.00	21.00 Bottom Of Top Packer
Packer	5.00			3080.00	
Stubb	1.00			3081.00	
Recorder	0.00	8360	Inside	3081.00	
Recorder	0.00	8673	Outside	3081.00	
Perforations	14.00			3095.00	
Bullnose	3.00			3098.00	18.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice,KS
Hager #1
 Job Ticket: 63867 **DST#: 1**
 Test Start: 2018.05.04 @ 19:40:34

Mud and Cushion Information

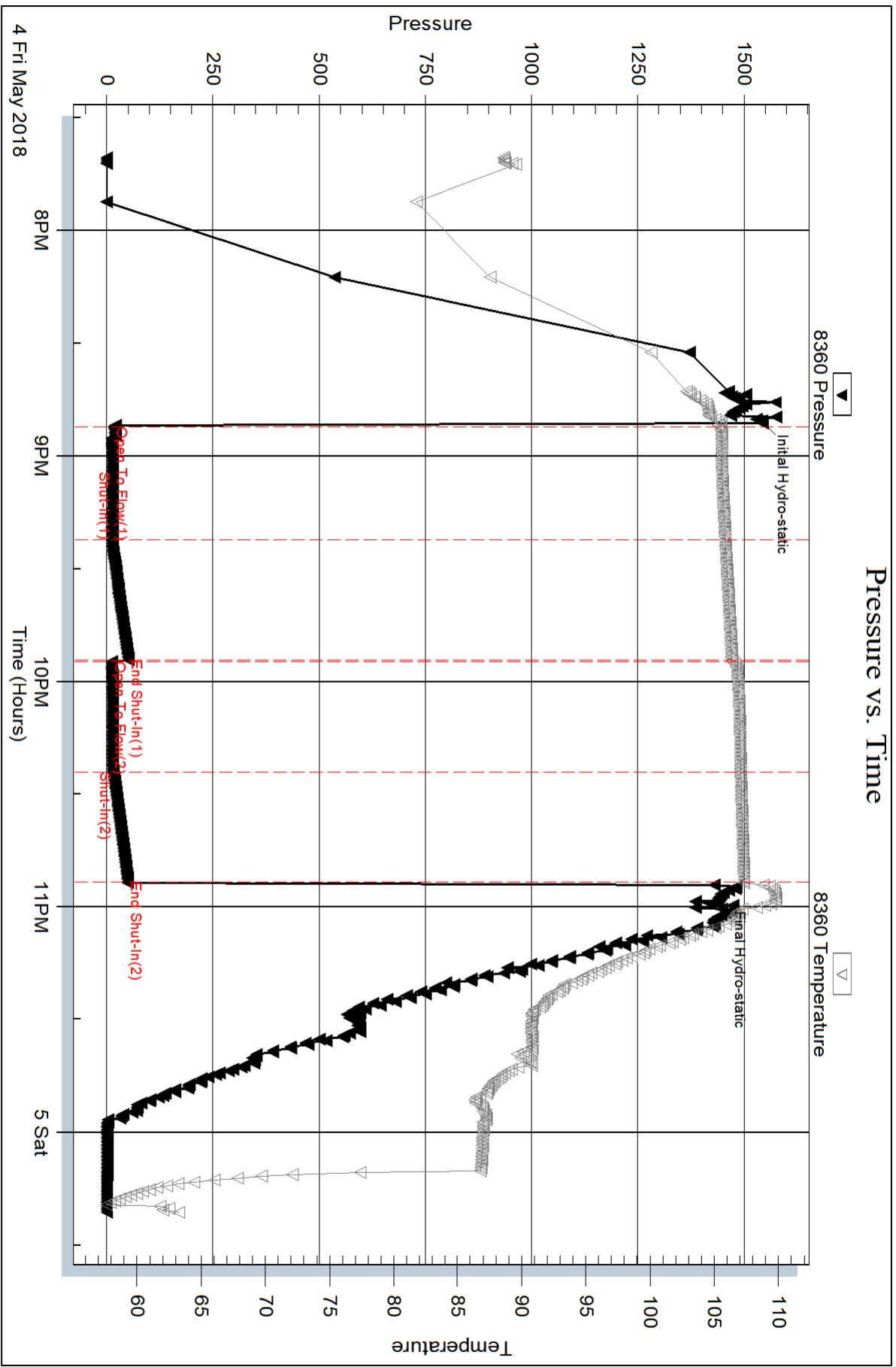
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.14 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 7000.00 ppm			
Filter Cake: 1.00 inches			

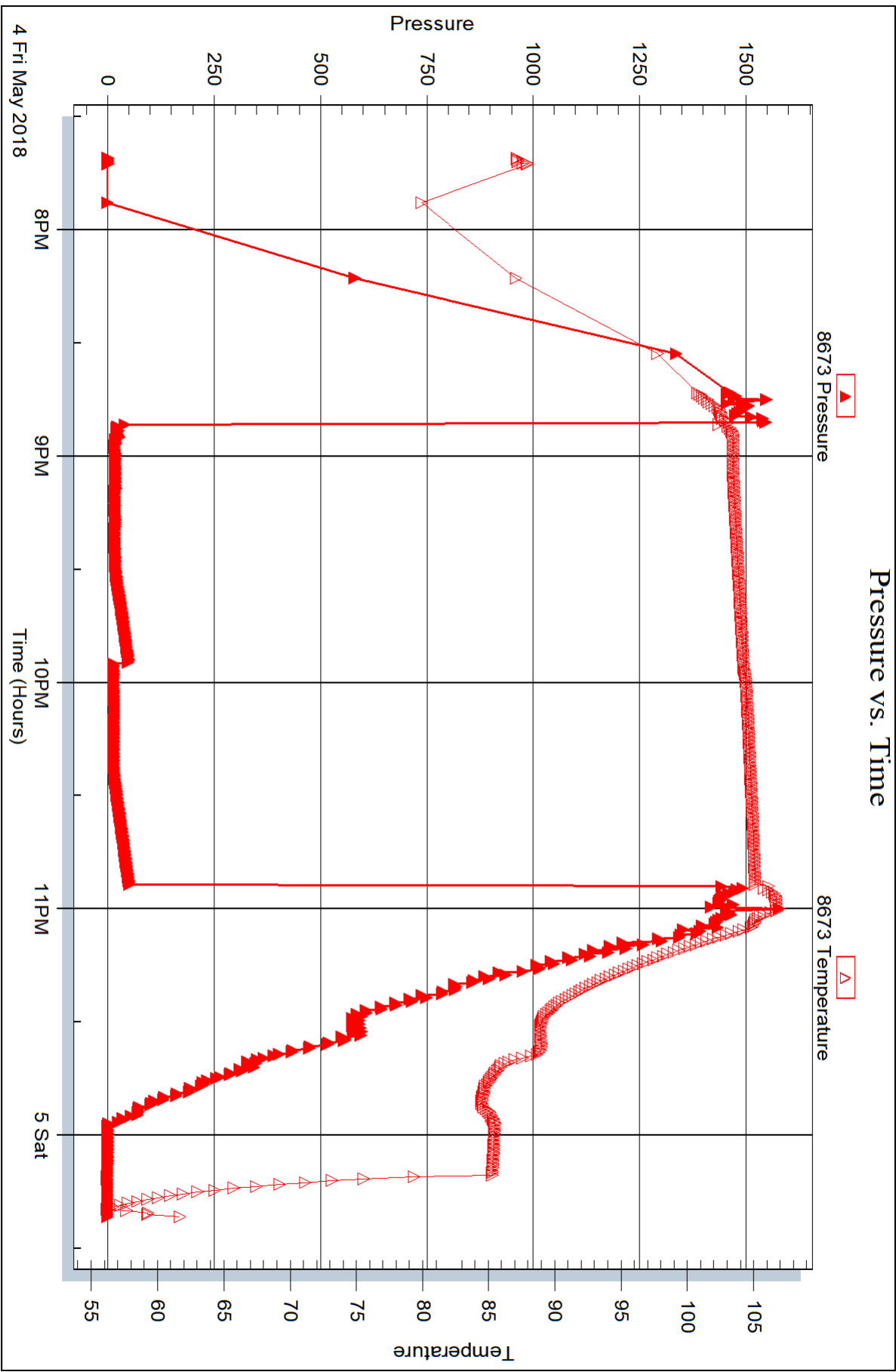
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	VSOCM 1%O99%M	0.140
0.00	50' GIP	0.000

Total Length: 10.00 ft Total Volume: 0.140 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Charter Energy Inc**

PO Box 252
Great Bend KS 67530-0252

ATTN: Jim Musgrove

Hager #1

17-19s-10w Rice,KS

Start Date: 2018.05.05 @ 21:55:55

End Date: 2018.05.06 @ 04:22:49

Job Ticket #: 63868 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.05.07 @ 09:29:00



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63868 **DST#: 2**
 Test Start: 2018.05.05 @ 21:55:55

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:33:35
 Time Test Ended: 04:22:49
 Interval: **3261.00 ft (KB) To 3323.00 ft (KB) (TVD)**
 Total Depth: 3323.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1776.00 ft (KB)
 1771.00 ft (CF)
 KB to GR/CF: 5.00 ft

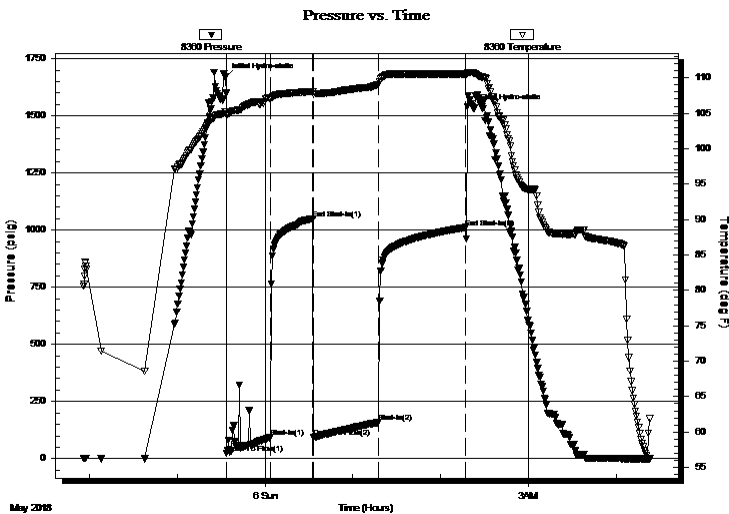
Serial #: 8360

Inside

Press@RunDepth: 159.13 psig @ 3267.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.05 End Date: 2018.05.06 Last Calib.: 2018.05.06
 Start Time: 21:55:55 End Time: 04:22:49 Time On Btm: 2018.05.05 @ 23:32:35
 Time Off Btm: 2018.05.06 @ 02:22:19

TEST COMMENT: 30-IFP-weak to BOB in 15 min
 30-ISIP-no blow back
 45-FFP-weak to BOB in 14 min
 60-FSIP-no blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1669.05	105.16	Initial Hydro-static
1	24.20	104.75	Open To Flow (1)
31	94.18	107.11	Shut-In(1)
60	1050.11	108.04	End Shut-In(1)
61	92.09	107.70	Open To Flow (2)
105	159.13	109.09	Shut-In(2)
165	1011.27	110.52	End Shut-In(2)
170	1530.81	110.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	SMGO 20%G5%M75%O	0.87
92.00	GMO 40%G10%M50%O	1.29
310.00	CO	4.35
0.00	340' GIP	0.00

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63868 **DST#: 2**
 Test Start: 2018.05.05 @ 21:55:55

Tool Information

Drill Pipe:	Length: 3262.00 ft	Diameter: 3.80 inches	Volume: 45.76 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 45.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3261.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	83.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			3241.00	
Shut In Tool	5.00			3246.00	
Hydraulic tool	5.00			3251.00	
Packer	5.00			3256.00	21.00 Bottom Of Top Packer
Packer	5.00			3261.00	
Stubb	1.00			3262.00	
Perforations	5.00			3267.00	
Recorder	0.00	8360	Inside	3267.00	
Recorder	0.00	8673	Outside	3267.00	
Blank Spacing	33.00			3300.00	
Perforations	20.00			3320.00	
Bullnose	3.00			3323.00	62.00 Bottom Packers & Anchor

Total Tool Length: 83.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice,KS
Hager #1
 Job Ticket: 63868 **DST#: 2**
 Test Start: 2018.05.05 @ 21:55:55

Mud and Cushion Information

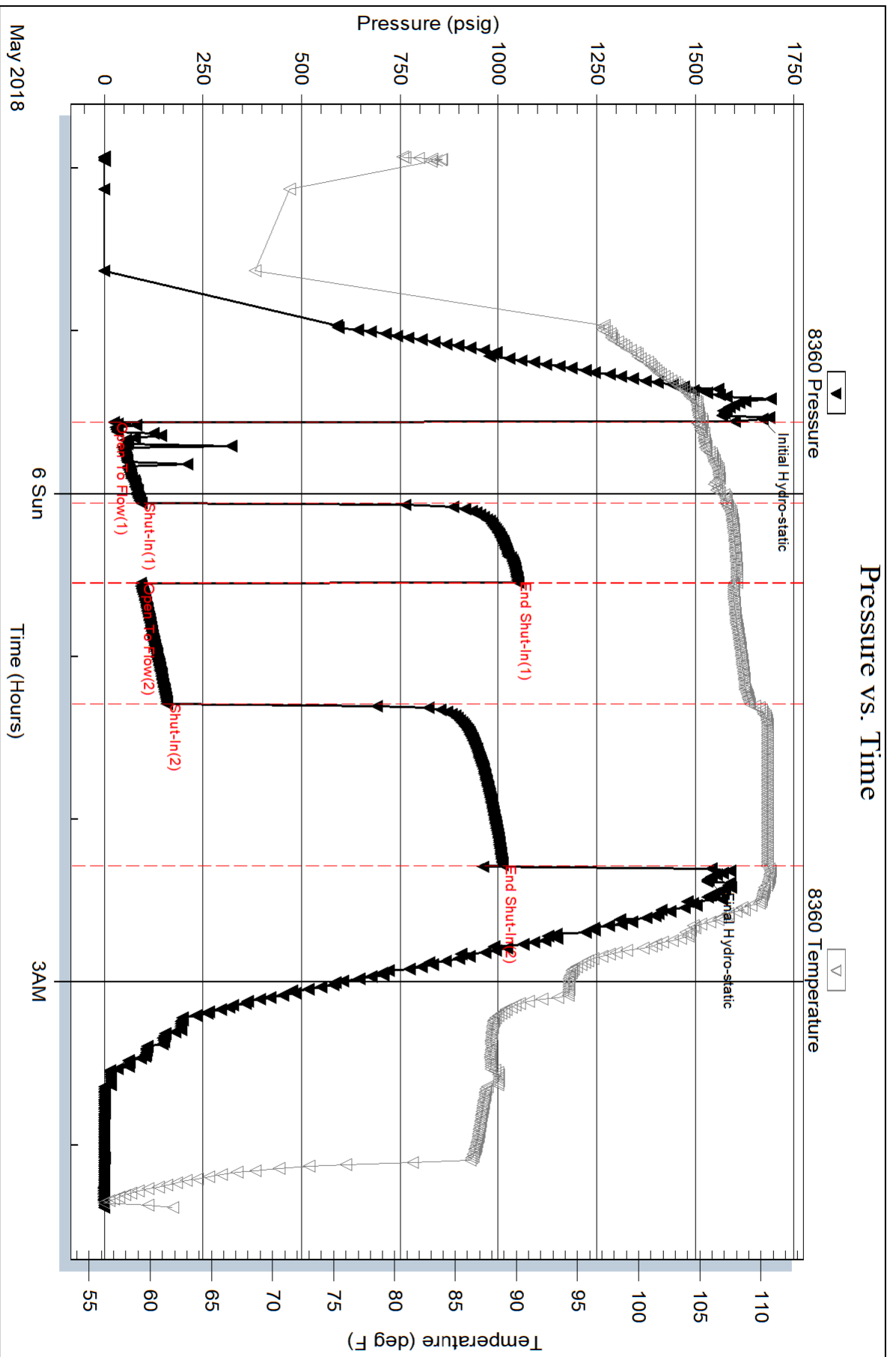
Mud Type: Gel Chem	Cushion Type:	Oil API: 41 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl	
Water Loss: 10.54 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 10100.00 ppm		
Filter Cake: 1.00 inches		

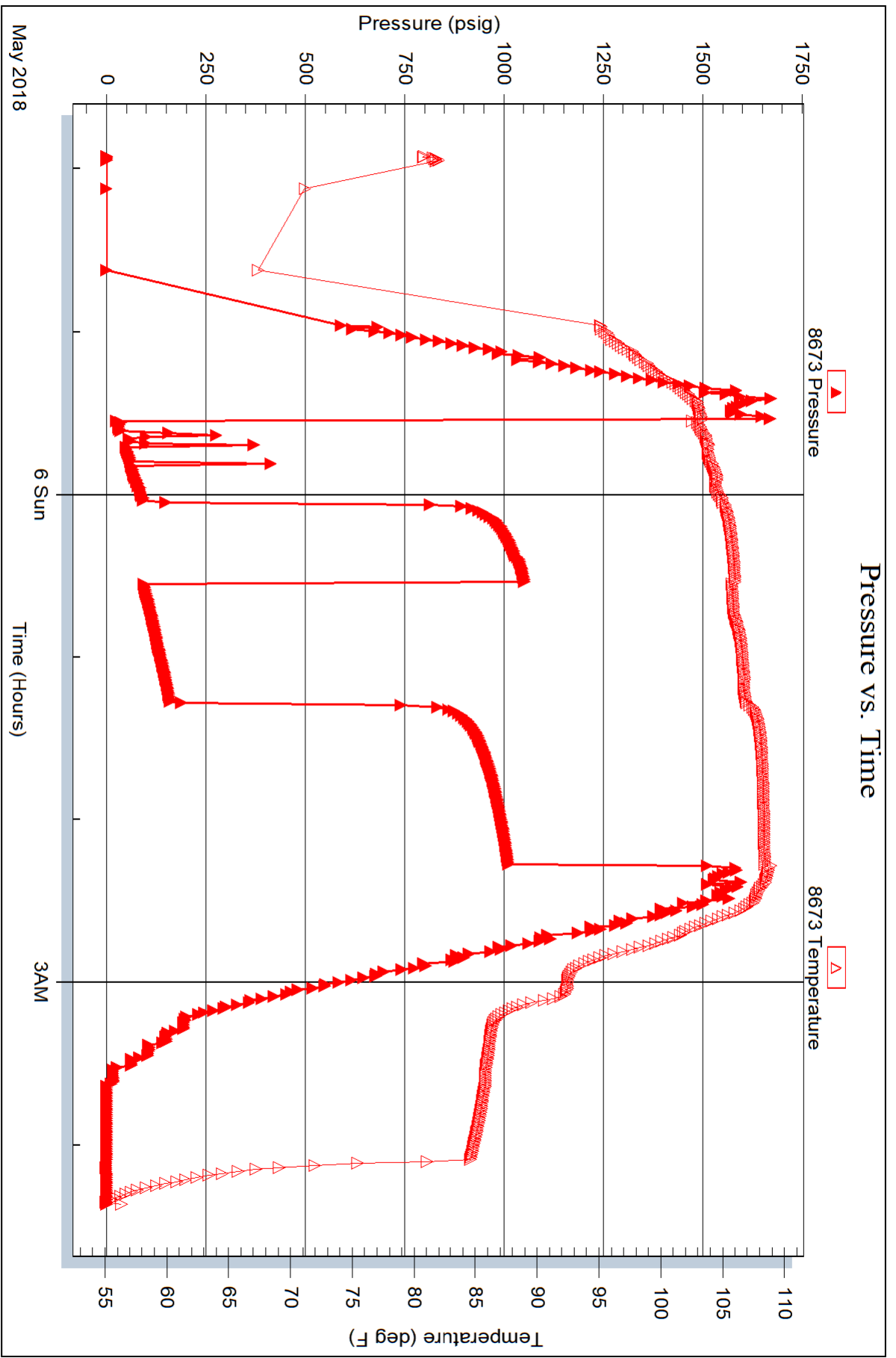
Recovery Information

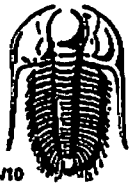
Recovery Table

Length ft	Description	Volume bbl
62.00	SMGO 20%G5%M75%O	0.870
92.00	GMO 40%G10%M50%O	1.291
310.00	CO	4.348
0.00	340' GIP	0.000

Total Length: 464.00 ft Total Volume: 6.509 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63867

Well Name & No. Hager #1 Test No. 1 Date 5-4-18
 Company CHARTER Energy Inc Elevation 1770 KB 1785 GL
 Address PO Box 252 Great Bend, Ks 67530-0252
 Co. Rep / Geo. Jim Musgrove Rig Royalrig1
 Location: Sec. 17 Twp 19^s Rge. 10^w Co. Rice State Ks

Interval Tested 3080-3098 Zone Tested LKC 'G'
 Anchor Length 18 Drill Pipe Run 3069 Mud Wt. 9.2
 Top Packer Depth 3075 Drill Collars Run — Vis 58
 Bottom Packer Depth 3080 Wt. Pipe Run — WL 10.2
 Total Depth 3098 Chlorides 7000 ppm System LCM TR.

Blow Description IFP - WEAK Blow thru-out 1/2" to 1 1/4" Blow
TSTP - NO BLOW
FFP - WEAK Blow thru-out 1/4" to 1" Blow
FSTP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>GIP</u>				
<u>10</u>	<u>V60CM</u>		<u>1</u>		<u>99</u>

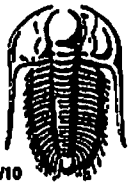
Rec Total 10 BHT 107 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1541 Test 1050 T-On Location 1720
 (B) First Initial Flow 16 Jars — T-Started 1940
 (C) First Final Flow 13 Safety Joint — T-Open 2050
 (D) Initial Shut-In 51 Circ Sub — T-Pulled 2250
 (E) Second Initial Flow 12 Hourly Standby — T-Out 0021
 (F) Second Final Flow 15 Mileage 42rt Comments —
 (G) Final Shut-In 50 Sampler —
 (H) Final Hydrostatic 1439 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —

Initial Open 30 Extra Packer — Extra Copies —
 Initial Shut-In 30 Extra Recorder — Sub Total 0
 Final Flow 30 Day Standby — Total 1092
 Final Shut-In 30 Accessibility — MP/DST Disc't —
 Sub Total 1092

Approved By _____ Our Representative RAUSCHWAGNER THANK YOU

TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63868

Well Name & No. Hager #1 Test No. 2 Date 5-5-18
 Company CHARTER Energy Inc Elevation 1770 KB 1765 GL
 Address PO Box 252 Great Bend, Ks 67530-0252
 Co. Rep / Geo. Jim Musgrove Rig Royal rig 1
 Location: Sec. 17 Twp 19^s Rge. 10^w Co. Rice State Ks

Interval Tested 3261-3323 Zone Tested Arbuckle
 Anchor Length 62 Drill Pipe Run 3262 Mud Wt. 9.4
 Top Packer Depth 3256 Drill Collars Run - Vis 54
 Bottom Packer Depth 3261 Wt. Pipe Run - WL 10.6
 Total Depth 3323 Chlorides 10100 ppm System LCM TR.

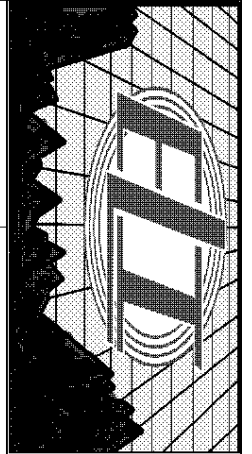
Blow Description IFP - WEAK TO BOBIN 15 MIN
ISIP - NO BLOW BACK
FFP - WEAK TO BOBIN 14 MIN
FSTP - NO BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>340</u>	<u>GIP</u>				
<u>310</u>	<u>CO</u>				
<u>92</u>	<u>M60</u>	<u>40</u>	<u>50</u>		<u>10</u>
<u>62</u>	<u>SM60</u>	<u>20</u>	<u>75</u>		<u>5</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec Total <u>464</u>	BHT <u>110</u>	Gravity <u>41</u>	API RW <u>-</u>	@ <u>-</u>	F Chlorides <u>-</u> ppm

(A) Initial Hydrostatic 11669 Test 1050 T-On Location 2100
 (B) First Initial Flow 24 Jars _____ T-Started 2155
 (C) First Final Flow 94 Safety Joint _____ T-Open 2330
 (D) Initial Shut-In 1050 Circ Sub _____ T-Pulled 0215
 (E) Second Initial Flow 92 Hourly Standby _____ T-Out 0422
 (F) Second Final Flow 159 Mileage 42 Comments _____
 (G) Final Shut-In 1011 Sampler _____
 (H) Final Hydrostatic 1530 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1092
 Accessibility _____ MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 60
 Sub Total 1092

Approved By _____ Our Representative RAY SCHWAGN Thank you
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



**COMPENSATED
DENSITY / NEUTRON
LOG**

Company CHARTER ENERGY, INC.
Well HAGER #1
Field CHASE - SILICA
County RICE
State KANSAS

Company CHARTER ENERGY, INC.
Well HAGER #1
Field CHASE - SILICA
County RICE State KANSAS

Location: 2310' FSL & 660' FWL
N/2 - NW - SW
APL # : 15-159-22851-0000
Permanent Datum GROUND LEVEL Elevation 1765
Log Measured From KELLY BUSHING 6' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services DIL/MEL
Elevation K.B. 1771
D.F. 1769
G.L. 1765

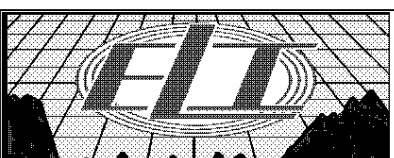
Date	5/6/18		
Run Number	TWO		
Depth Driller	3400		
Depth Logger	3398		
Bottom Logged Interval	3396		
Top Log Interval	2700		
Casing Driller	8 5/8" @ 348'		
Casing Logger	348		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,300 PPM	
Density / Viscosity	9.2/59		
pH / Fluid Loss	10.5/10.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.950 @ 90F		
Rmf @ Meas. Temp	.713 @ 90F		
Rmc @ Meas. Temp	1.14 @ 90F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.770 @ 111F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	2:15 P.M.		
Maximum Recorded Temperature	111F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	JIM MUSGROVE		

<<< 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

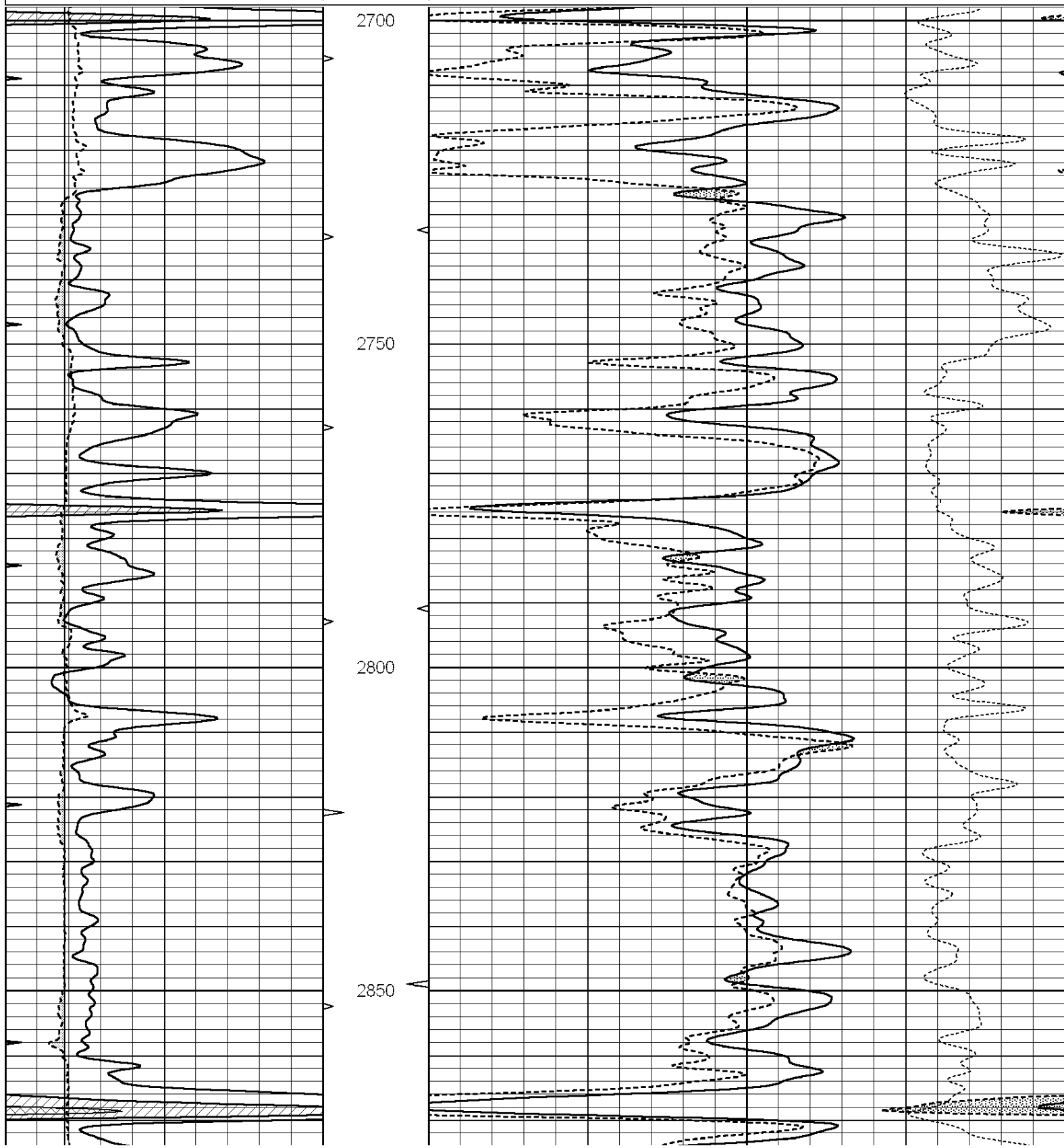
THANK YOU FOR USING ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
ELLINWOOD, KS., E. TO COUNTY LINE, 4N. TO "AVE. I", 1E., 1/2S., E. INTO

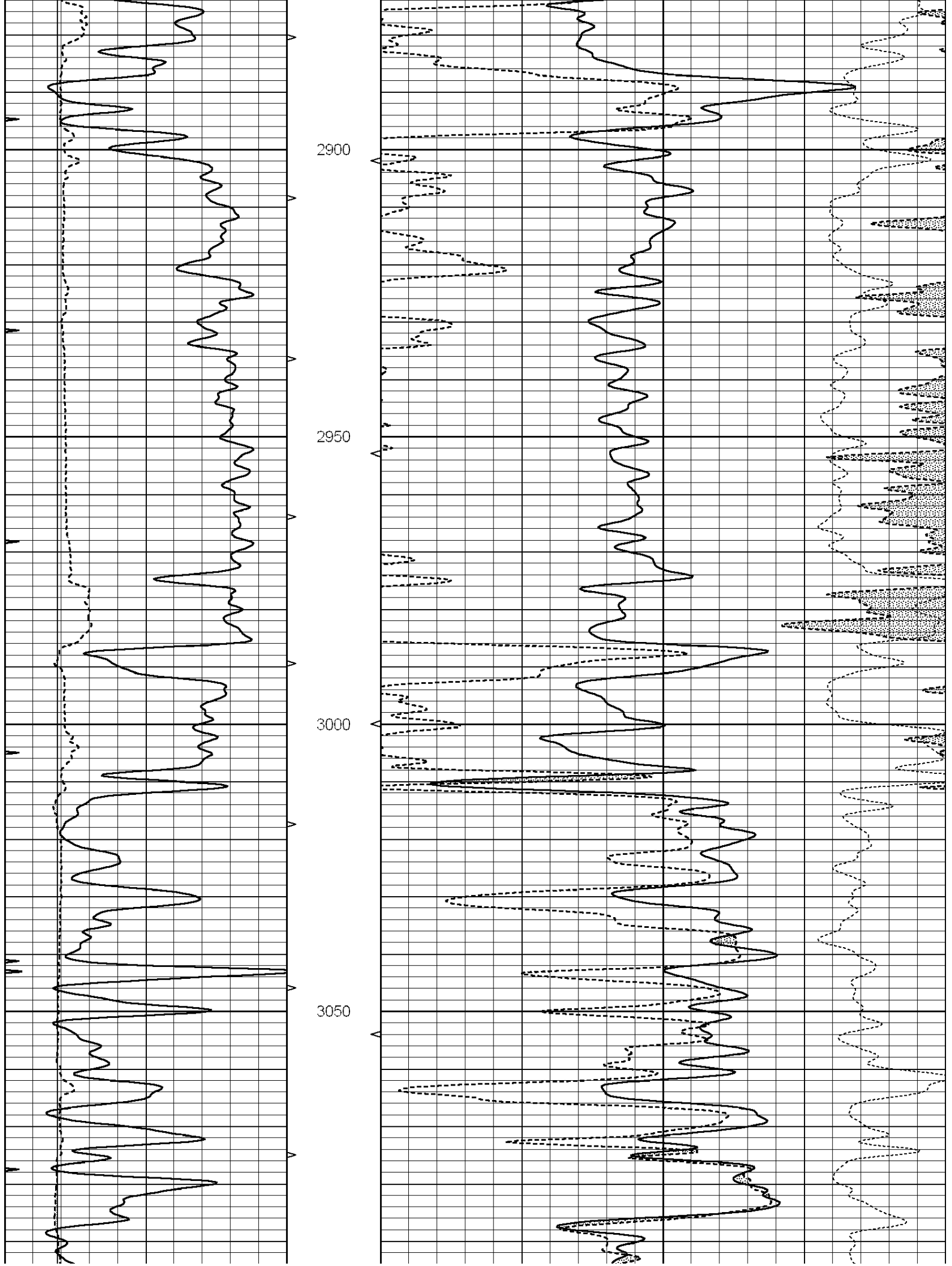


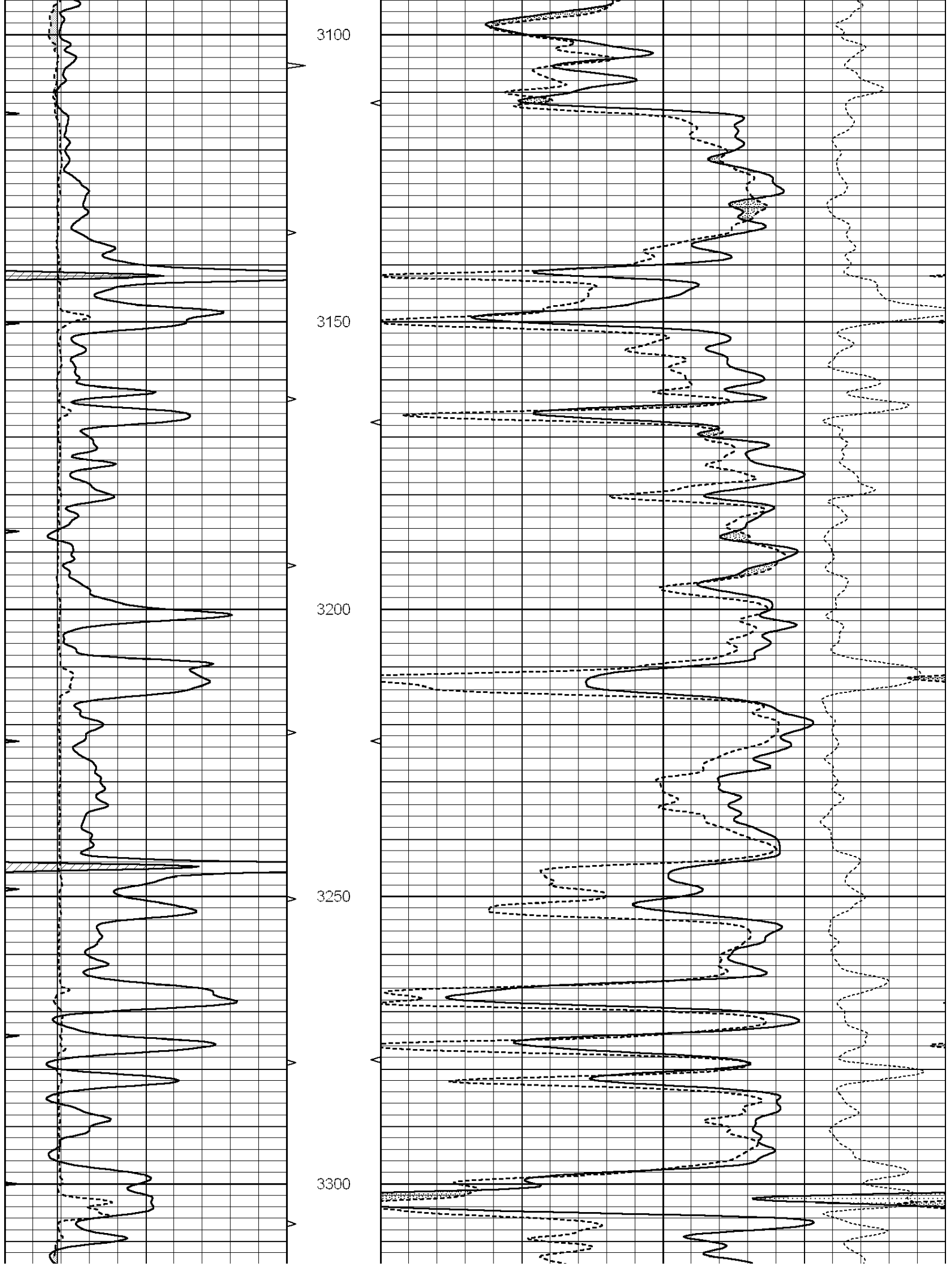
MAIN SECTION

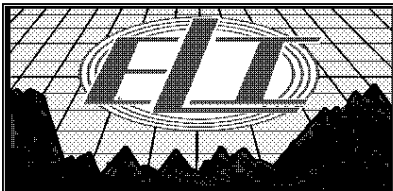
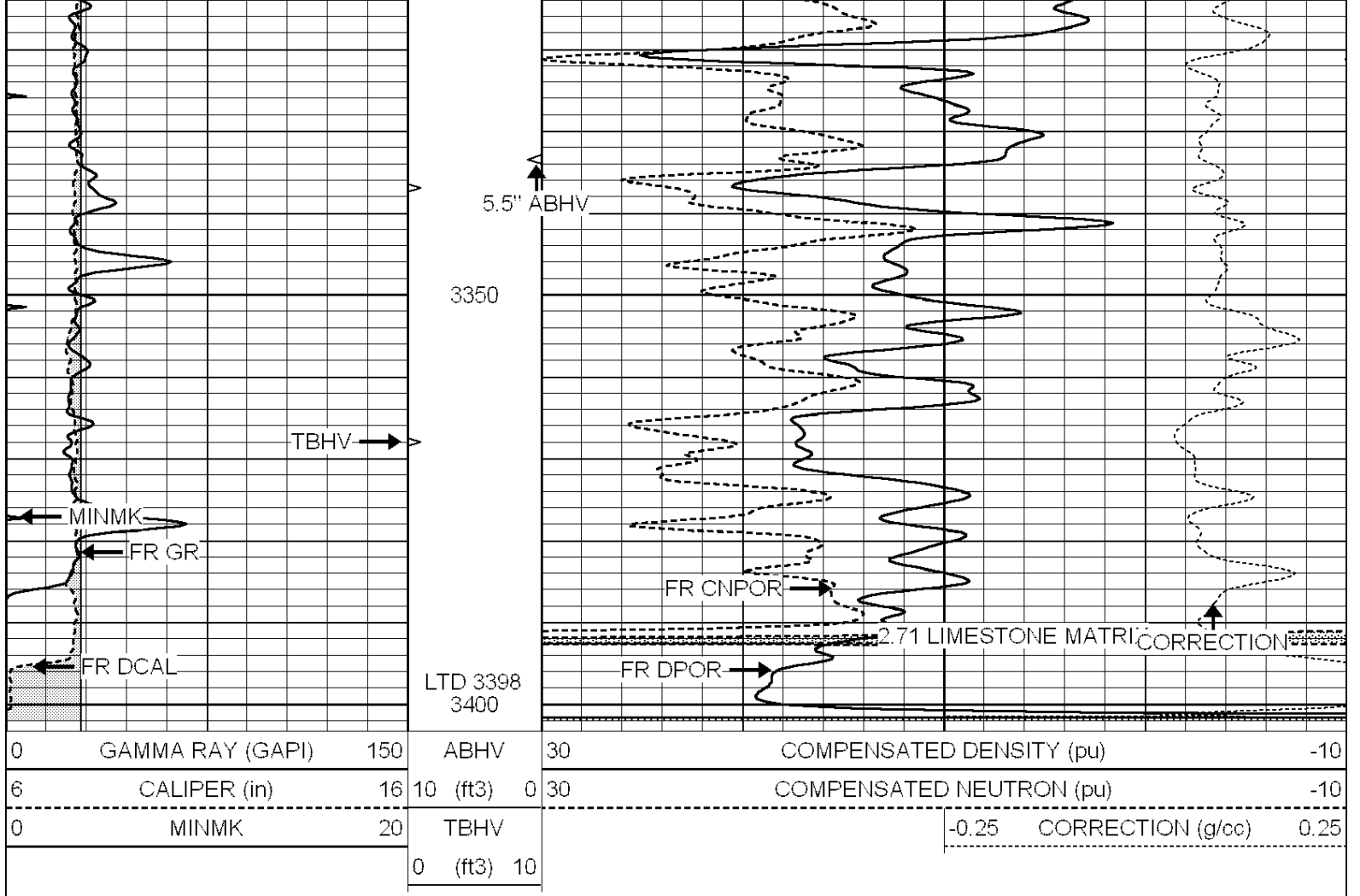
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 Dataset Pathname: pass6.2
 Presentation Format: den_neu
 Dataset Creation: Sun May 06 15:17:27 2018 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





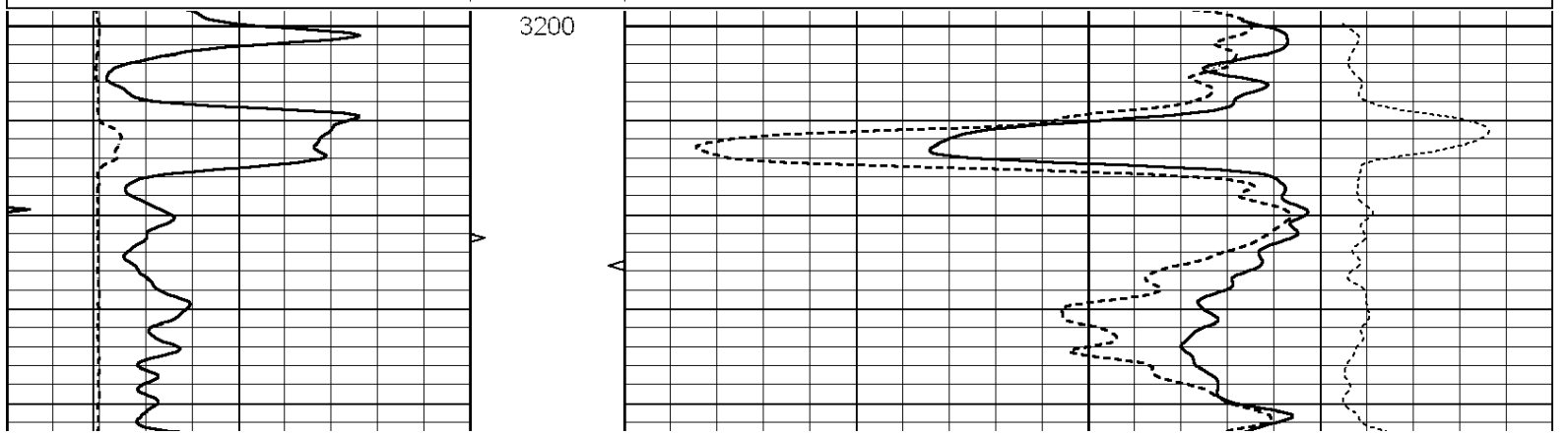


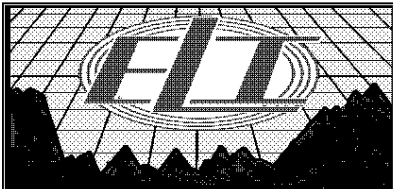
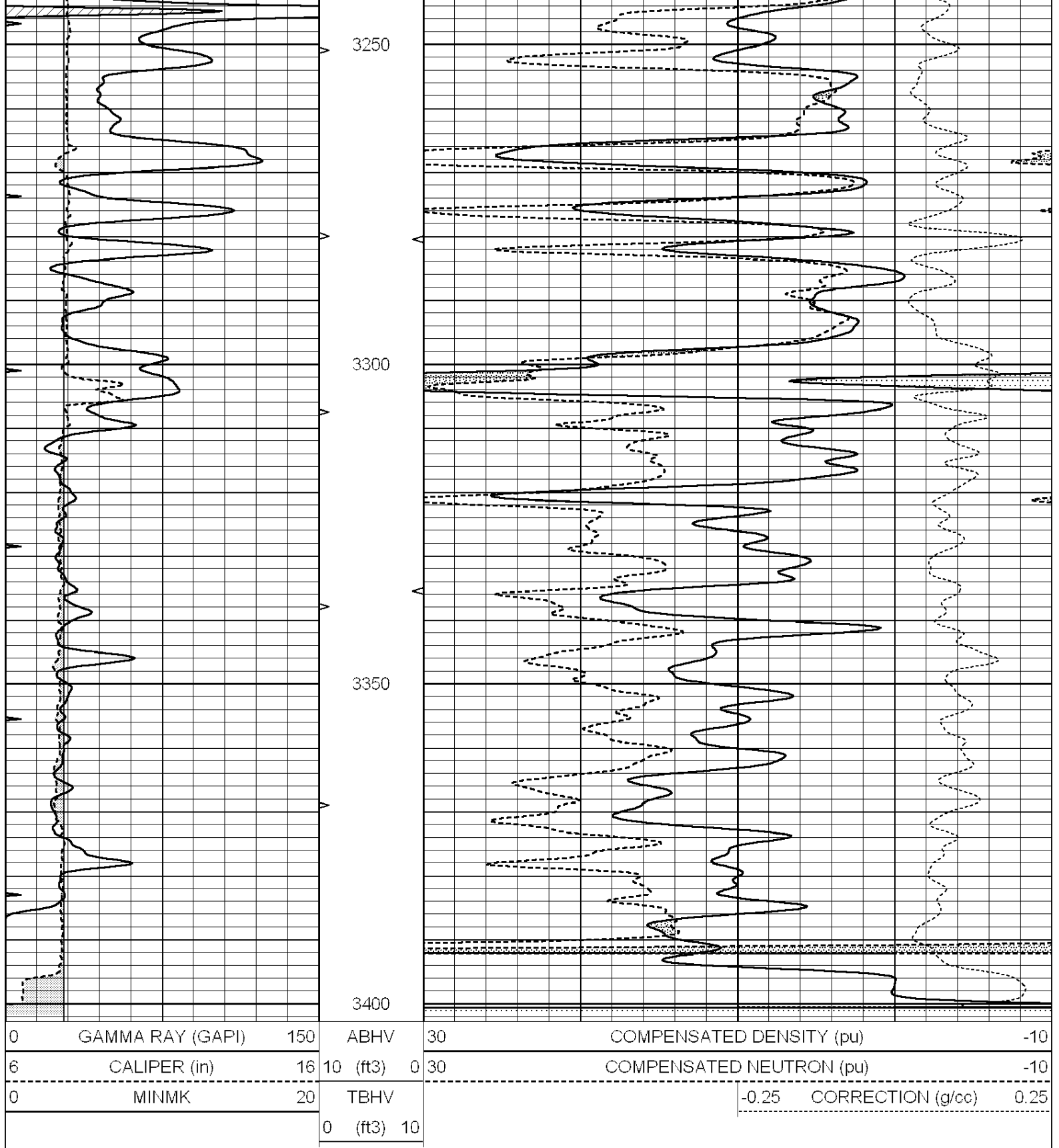


REPEAT SECTION

Database File: 2491ddn.db
 Dataset Pathname: pass5.1
 Presentation Format: den_neu
 Dataset Creation: Sun May 06 14:51:50 2018 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		

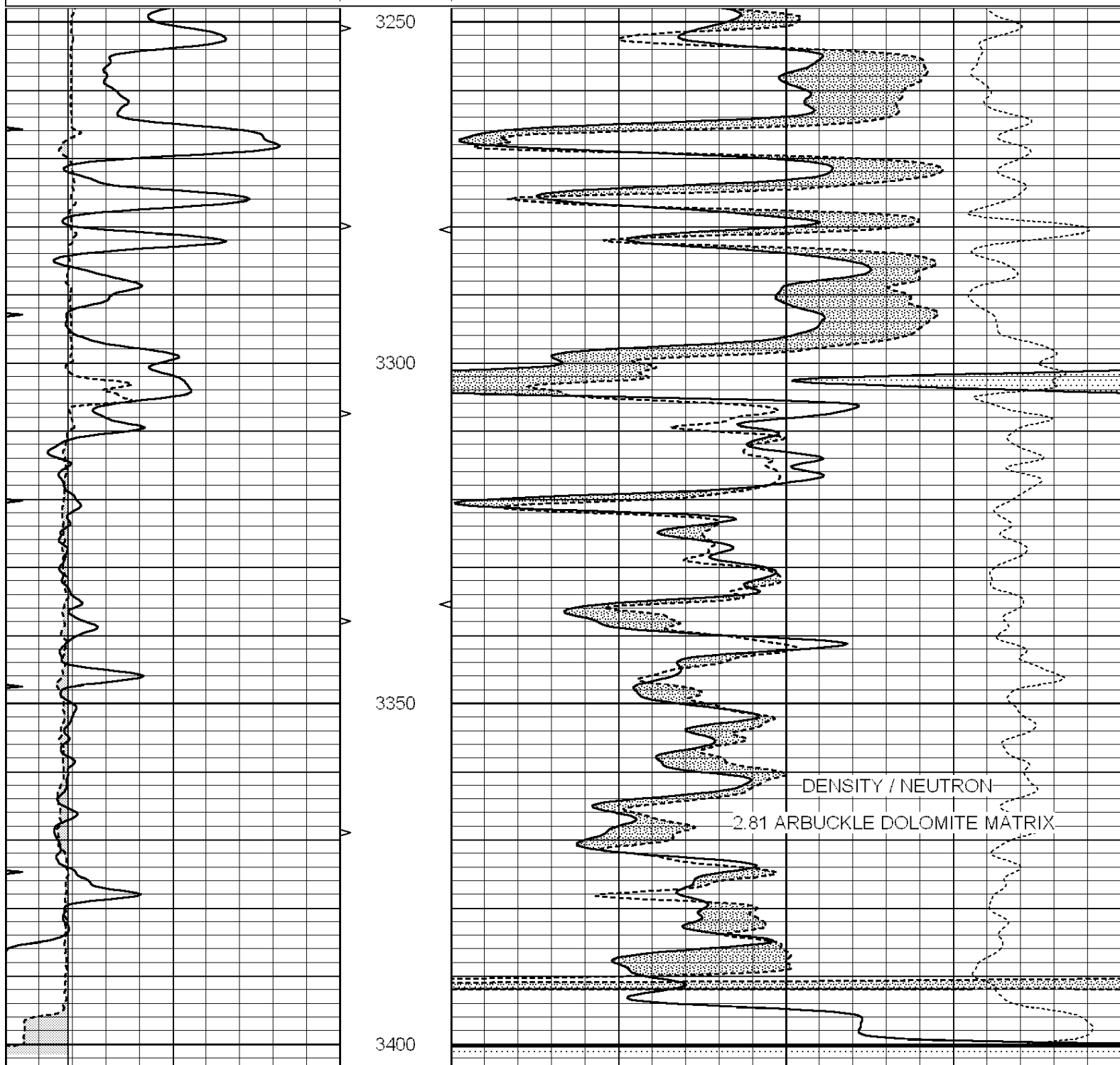




DOLOMITE MATRIX

Database File: 2491ddn.db
 Dataset Pathname: pass5.1D
 Presentation Format: den_neu
 Dataset Creation: Sun May 06 14:54:39 2018

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		



0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		

Calibration Report

Database File: 1598ddn.db
 Dataset Pathname: pass4
 Dataset Creation: Wed Aug 30 02:13:00 2017 by Log SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Wed Aug 30 00:06:33 2017
 Downhole Cal Performed: Mon Jul 28 12:02:56 2008
 After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report

Serial: 002 Model: PRB

Master Calibration

Performed Mon Aug 21 11:27:42 2017

	Background	Magnesium	Aluminum	Sandstone	
Window 1	837.1	10632.5	2945.1	12110.1	cps
Window 2	772.0	9117.4	2570.1	10197.3	cps
Window 3	631.7	4669.0	1481.9	5042.9	cps
Window 4	187.0	187.5	185.9	189.9	cps
Long Space	0.0	8345.4	1798.1	9425.3	cps
Short Space	1.1	1927.9	1285.9	2050.2	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio	: 0.558
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept	: -19.6

Before Survey Verification

Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps

Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

After Survey Verification

Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

Compensated Neutron Calibration Report

Serial Number: 070808
Tool Model: Probe

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 070558
Tool Model: OPEN_GR
Performed: Wed May 31 00:09:32 2017

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.2800 GAPI/cps