

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
--	---

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)</i> <i>(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:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	Okland Oil Company
Well Name	LIBERTY 1-8
Doc ID	1319876

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	4481-4484		
	CIBP		4470
6	3992-3995	750 gals 15% MCA	
6	3998-4005		



PAGE	CUST NO	YARD #	INVOICE DATE
1 of 1	1003001	1718	09/22/2016
INVOICE NUMBER			
92232873			

Pratt (620) 672-1201
 B OKLAND OIL COMPANY
 I 110 N ROBINSON AVE STE 400
 L OKLAHOMA CITY
 L OK US 73102
 T
 O ATTN: JANIS

J LEASE NAME Liberty 1-8
 O LOCATION
 B COUNTY Kingman
 S STATE KS
 I JOB DESCRIPTION Cement-New Well Casing/Pi
 T JOB CONTACT
 E

JOB #	EQUIPMENT #	PURCHASE ORDER NO.	TERMS	DUE DATE
40966866	86779		Net - 30 days	10/22/2016

	QTY	U of M	UNIT PRICE	INVOICE AMOUNT
<i>For Service Dates: 09/09/2016 to 09/09/2016</i>				
0040966866				
171813968A Cement-New Well Casing/Pi 09/09/2016				
Cement 8 5/8 Surface				
Common Cement	175.00	EA	7.68	1,344.00 T
Calcium Chloride	495.00	EA	0.50	249.48 T
Cement Gel	330.00	EA	0.12	39.60 T
"Wooden Cmt Plug, 8 5/8""	1.00	EA	76.80	76.80
"Unit Mileage Chg (PU, cars one way)"	30.00	MI	2.16	64.80
Heavy Equipment Mileage	60.00	MI	3.60	216.00
248--"Propp & Bulk Del. Chrg per ton mil	1.00	EA	297.00	297.00
Blending & Mixing Service Charge	175.00	BAG	0.67	117.60
Plug Container Util. Chg.	1.00	EA	120.00	120.00
Depth Charge; 0-500'	1.00	EA	480.00	480.00
"Service Supervisor, first 8 hrs on loc.	1.00	EA	84.00	84.00

RECEIVED
 SEP 26 2016
 OKLAND OIL COMPANY

LOP

PLEASE REMIT TO:	SEND OTHER CORRESPONDENCE TO:	SUB TOTAL	3,089.28
BASIC ENERGY SERVICES, LP	BASIC ENERGY SERVICES, LP	TAX	118.40
PO BOX 841903	801 CHERRY ST, STE 2100	INVOICE TOTAL	3,207.68
DALLAS, TX 75284-1903	FORT WORTH, TX 76102		



PAGE 1 of 1	CUST NO 1003001	YARD # 1718	INVOICE DATE 09/24/2016
INVOICE NUMBER 92233864			

Pratt (620) 672-1201
 B OKLAND OIL COMPANY
 I 110 N ROBINSON AVE STE 400
 L OKLAHOMA CITY
 L OK US 73102
 T
 O ATTN: JANIS

J LEASE NAME Liberty 1-8
 O LOCATION
 B COUNTY Kingman
 S STATE KS
 I JOB DESCRIPTION Cement-New Well Casing/Pi
 T
 E JOB CONTACT

JOB #	EQUIPMENT #	PURCHASE ORDER NO.		TERMS	DUE DATE
40967209	20920			Net - 30 days	10/24/2016
<i>For Service Dates: 09/14/2016 to 09/14/2016</i>		QTY	U of M	UNIT PRICE	INVOICE AMOUNT
0040967209		RECEIVED SEP 28 2016 OKLAND OIL COMPANY			
171814042A Cement-New Well Casing/Pi 09/14/2016 Cement 4 1/2" Longstring					
AA2 Cement		275.00	EA	8.16	2,244.00 T
C-41P		65.00	EA	1.92	124.80 T
Salt		1,497.00	EA	0.24	359.28 T
Gypsum		1,295.00	EA	0.36	466.20 T
FLA-322		208.00	EA	3.60	748.80 T
Gilsonite		1,650.00	EA	0.32	530.64 T
"Auto Fill Float Shoe 4 1/2" (Blue)"		1.00	EA	158.40	158.40
"Latch Down Plug & Baffle, 4 1/2" (Blue)"		1.00	EA	177.60	177.60
"Turbolizer, 4 1/2" (Blue)"		6.00	EA	40.80	244.80
"Unit Mileage Chg (PU, cars one way)"		30.00	MI	2.16	64.80
Heavy Equipment Mileage		60.00	MI	3.60	216.00
389--"Propp & Bulk Del. Chrg per ton mil		1.00	EA	466.20	466.20
Blending & Mixing Service Charge		275.00	BAG	0.67	184.80
Plug Container Util. Chg.		1.00	EA	120.00	120.00
Depth Charge; 4001'-5000'		1.00	EA	1,209.60	1,209.60
"Service Supervisor, first 8 hrs on loc.		1.00	EA	84.00	84.00

209

 APPROVED BY:

PLEASE REMIT TO:	SEND OTHER CORRESPONDENCE TO:	SUB TOTAL	7,399.92
BASIC ENERGY SERVICES, LP	BASIC ENERGY SERVICES, LP	TAX	324.34
PO BOX 841903	801 CHERRY ST, STE 2100	INVOICE TOTAL	7,724.26
DALLAS, TX 75284-1903	FORT WORTH, TX 76102		



BASICSM
ENERGY SERVICES
PRESSURE PUMPING & WIRELINE

10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

FIELD SERVICE TICKET
1718 14042 A

DATE _____ TICKET NO. _____

DATE OF JOB <i>9-14-11</i>	DISTRICT <i>Pratt, Kas.</i>	NEW WELL <input checked="" type="checkbox"/> OLD WELL <input type="checkbox"/> PROD <input type="checkbox"/> INJ <input type="checkbox"/> WDW <input type="checkbox"/> CUSTOMER ORDER NO.:								
CUSTOMER <i>OKLAHOMA OIL COMPANY</i>	LEASE <i>LIBERTY #1-8</i>	WELL NO.:								
ADDRESS	COUNTY <i>KENNICOTT</i>	STATE <i>Ks.</i>								
CITY	STATE	SERVICE CREW <i>B.G. McCRAW ADAMS</i>								
AUTHORIZED BY	JOB TYPE: <i>C/W - LOW STRING</i>									
EQUIPMENT#	HRS	EQUIPMENT#	HRS	EQUIPMENT#	HRS	TRUCK CALLED	DATE	AM	PM	TIME
<i>20920</i>	<i>1/2</i>						<i>9-14</i>			<i>1500</i>
						ARRIVED AT JOB				<i>1830</i>
<i>19808-008</i>	<i>1/2</i>					START OPERATION	<i>7</i>			<i>235</i>
						FINISH OPERATION				<i>2345</i>
						RELEASED	<i>9-15</i>			<i>0030</i>
						MILES FROM STATION TO WELL				<i>30</i>

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: _____
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
<i>118105</i>	<i>4 1/2" CEMENT (LIB)</i>	<i>SK</i>	<i>50</i>		<i>850.00</i>
<i>118105</i>	<i>4 1/2" CEMENT (LIB)</i>	<i>SK</i>	<i>175</i>		<i>2975.00</i>
<i>118105</i>	<i>4 1/2" CEMENT (LIB)</i>	<i>SK</i>	<i>50</i>		<i>850.00</i>
<i>118113</i>	<i>C-41P SUM (LIB)</i>	<i>LB.</i>	<i>1295</i>		<i>971.25</i>
<i>118111</i>	<i>SURT (LIB)</i>	<i>LB.</i>	<i>1497</i>		<i>748.50</i>
<i>118105</i>	<i>C-41P (LIB)</i>	<i>LB.</i>	<i>65</i>		<i>260.00</i>
<i>118129</i>	<i>FLA-322 (LIB)</i>	<i>LB.</i>	<i>208</i>		<i>1560.00</i>
<i>118201</i>	<i>GILSONITE (LIB)</i>	<i>LB.</i>	<i>1650</i>		<i>1105.50</i>
<i>1181250</i>	<i>4 1/2" API FLOAT SHOE</i>	<i>EA</i>	<i>1</i>		<i>330.00</i>
<i>118606</i>	<i>4 1/2" LATCH DOWN PLUG</i>	<i>EA</i>	<i>1</i>		<i>370.00</i>
<i>1181650</i>	<i>4 1/2" TURBOIZER</i>	<i>EA</i>	<i>6</i>		<i>510.00</i>
<i>118764</i>	<i>4 1/2" TURBOIZER</i>	<i>EA</i>	<i>6</i>		<i>510.00</i>
<i>E100</i>	<i>PICKUP MILEAGE</i>	<i>Mi.</i>	<i>30</i>		<i>135.00</i>
<i>E101</i>	<i>HEAVY EQUIPMENT MILEAGE</i>	<i>Mi.</i>	<i>60</i>		<i>450.00</i>
<i>E113</i>	<i>BULK DELIVERY</i>	<i>MM</i>	<i>389</i>		<i>971.25</i>
<i>CE205</i>	<i>DEPTH CHARGE 4001-5000'</i>	<i>EA.</i>	<i>1</i>		<i>2520.00</i>
<i>CE240</i>	<i>BLENDING CHARGE</i>	<i>SK</i>	<i>275</i>		<i>385.00</i>
<i>CE504</i>	<i>PLUG CONTAINER</i>	<i>EA</i>	<i>1</i>		<i>250.00</i>
<i>5003</i>	<i>SERVICE SUPERVISOR</i>	<i>EA</i>	<i>1</i>		<i>175.00</i>

SUB TOTAL *15,416.50*

CHEMICAL / ACID DATA:			

SERVICE & EQUIPMENT %TAX ON \$
MATERIALS %TAX ON \$

TOTAL *7,399.92*
DISC. PRICE

SERVICE REPRESENTATIVE *[Signature]* THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: *[Signature]*

FIELD SERVICE ORDER NO.

(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

Customer	OKLAHOMA OIL COMPANY	Lease No.		Date	9-14-16
Lease	LIBERTY	Well #	1-8		
Field Order #	19042	Station	PRATT, KS.	Casing	4 1/2
Type Job	PNW - LONG STRING	Depth	4043	County	KINGMAN
		Formation	TD-4650'	State	KS.
				Legal Description	8-29-9

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid		RATE	PRESS	ISIP
4 1/2				Pre Pad	Max			5 Min.
Depth	Depth	From	To	Pad	Min			10 Min.
4043				Frac	Avg			15 Min.
Volume	Volume	From	To		HHP Used			Annulus Pressure
				Flush	Gas Volume			Total Load
Max Press	Max Press	From	To					
Well Connection	Annulus Vol.	From	To					
Plug Depth	Packer Depth	From	To					

Customer Representative	ALAN WATSON	Station Manager	KEVIN	Treater	BOBBIEN
Service Units	83323	19903-20920	19827-19808	- Lab.	
Driver Names	KG	WATERMAN	ADAMS		

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
2000					ON LOCATION
					RUN 4 1/2 PSB 11.6"
					RUN NEW FRONT SLOPE, LATCH BIFFLE
					DN 1 1/2 COLLAR 22' - 5"
					HEWT - 2-4-6-8-10-13
					TAG BOTTOM - DROP BALL - CIRCULATE
2315	200		20	6	PUMP 50 SK AAZ SEVEN FEET AT 12.8"
	200		48	6	PUMP 125 SK AAZ AT 14.8"
	0		0	6	STOP - WASH LINE - DROP PLUG
	300		55	6	START DESP
	250		61	3	LEFT CEMENT
2345	1500		71.7	3	SLOW RATE
					PLUG DOWN - HELD
					PLUG RAT - 30 SK AAZ
					PLUG MOUSE - 20 SK AAZ
0030					JOB COMPLETE - KEVIN



GEOLOGICAL REPORT

S. Pat Creek Prospect – Liberty #1-8
Kingman County, Kansas

Operator: Okland Oil Company
Well Name: Liberty #2-8
Location: 1217' FNL & 1625' FWL of NW/4,
S/2 SW NE NW; Section 8-T29S-R9W
Elevation: GL: 1711' DF: 1722' KB: 1724'
Date Spud: September 8, 2016 @ 7:45 pm
Drilling Contractor: Duke Drilling Company, Rig 7
Surface Casing: 8 ⁵/₈" @ 223', 24#, J-55
Hole Size: 7 ⁷/₈"
Total Depth: 4,650'
Mud Logger: GeoDynamic Well Logging
Logging Services: Allied Wireline: IAT/GR, LDT/CNL/GR, MAS/GR,
MEL/GR
Status: Pipe set; 4½", N-80, 11.6#, 4,650'
Rig Release: September 13, 2016

<u>FORMATION TOPS</u>	<u>DEPTH</u>	<u>SUBSEA</u>
Topeka	3290	-1566
Heebner	3406	-1682
Douglas Shale	3434	-1710
Brown Lime	3604	-1880
Lansing	3610	-1886
Stark Shale	3946	-2222
Swope	3952	-2228
Hushpuckney Shale	3984	-2260
Hertha	3990	-2266
Mississippi	4196	-2472
Kinderhook Shale	4274	-2550
Woodford Shale	4452	-2728
Viola	4481	-2757
Simpson Shale	4557	-2833
Simpson Sand	4566	-2842

Viola

The top of the Viola was encountered at 4481' (-2757). It was a white to off-white dolomite, sucrosic texture, fine crystalline, moderate hardness grading to firm hardness, some friable, fair intercrystalline porosity with some quartz grains present. The samples exhibited yellow-fluorescence with a poor streaming cut and a continuous hotwire show of 178 units with C₁ C₂ C₃ C₄ recorded on the chromatograph thru the upper 21 foot porosity interval (4481' – 4502'). This porosity interval drilled off at a rate of 30 to 40 seconds/foot versus overlying shales that drilled at a rate of 1 - ½ minutes/foot. Evaluation of samples, gas detector recordings, Open

Hole Log calculations and correlative relationship to offset wells indicate the Liberty #1-8 encountered 9 feet of productive porosity bearing Viola with a oil-water contact at 4490' (-2766). See log analysis below:

	Rt	Ø d	Ø n	Ø cp	Ø s	Pe	Ø ml	Sw
4481 – 84	8	8	13	10.5	10	2.8	16	65%
4484 – 86	5	10	13	12	11	2.8	20	72%
4486 – 88	7	15	12	13.5	14	2.2	18	53%
4488 – 90	4.5	9	15	12.5	11	2.5	18	72%
4490 – 92	2	9	19	15	14	3	18	96%
4492 – 94	2	10	19	15.5	13	3	16	93%
4494 – 96	2.5	7	17	13	11	3	16	100%
4496 – 98	3	4	13	9.5	10	3	15	100%
4498 – 4500	4	1	11	7.5	8	3	15	100%
4500 – 02	6	7	12	10	10	2.5	15	84%
4502 – 56		3	69	5.5	8	3.4	--	tite

The S. Pat Creek Prospect/Liberty #1-8 proposed location was based on both seismic and subsurface geology; requiring three components to be successful for Viola production:

1. Porosity development due to a paleo-structural high feature.
2. Present day subsurface structurally high feature.
3. Fault separation from the north with a thinning of the Mississippi Formation, resulting in the Viola structural high.

Evaluation of the Liberty #1-8 well data indicate that all three components were met.

1) The Viola developed 21 porosity feet of dolomite, averaging 12% porosity with an effective Microlog porosity (permeability) of 18%; confirming, the Liberty #1-8 paleo-structurally positive position. By our interpretation, a recent well drilled by Messenger, - Adelhart #1-7, was positioned structural up-dip; however, not positioned in a paleo-structural high feature. Therefore, no potential for porosity development occurred which accounts for the Open Hole Log values of only 2 porosity feet of 9%.

2) The Liberty #1-8 was projected to encounter the top of the Viola at -2753, actually encountering the top at -2757; with only a 4 foot difference. This critical structural position puts the Liberty #1-8 oil column 5 feet high to the Julius - Weber #1 (-2762) which produced 6,737 BO.

3) Finally the third component necessary is separation from the north offset Weber #2 (-2758); which was wet. This fault separation is confirmed by both a significant thinning of the Mississippi Formation in the south block (30' thinner in the Liberty #1-8 vs. north offset Weber #2), as well as the presence of a 9 foot oil column while being down-dip to the wet Weber #2.

It is Okland Oil Company's recommendation to set pipe and test the Viola.

Hertha (Kansas City)

The top of the Hertha was encountered at 3990' (-2266). It was a buff-white to tan limestone, moderately firm, very fine crystalline, slightly fossiliferous, pinpoint vugglar porosity with some oolomitic porosity. The samples exhibit spotty yellow fluorescence, poor ring cut, hotwire show of 29 units with C₁ C₂ C₃ C₄ on the chromatograph while drilling off at a rate of 20 seconds/foot

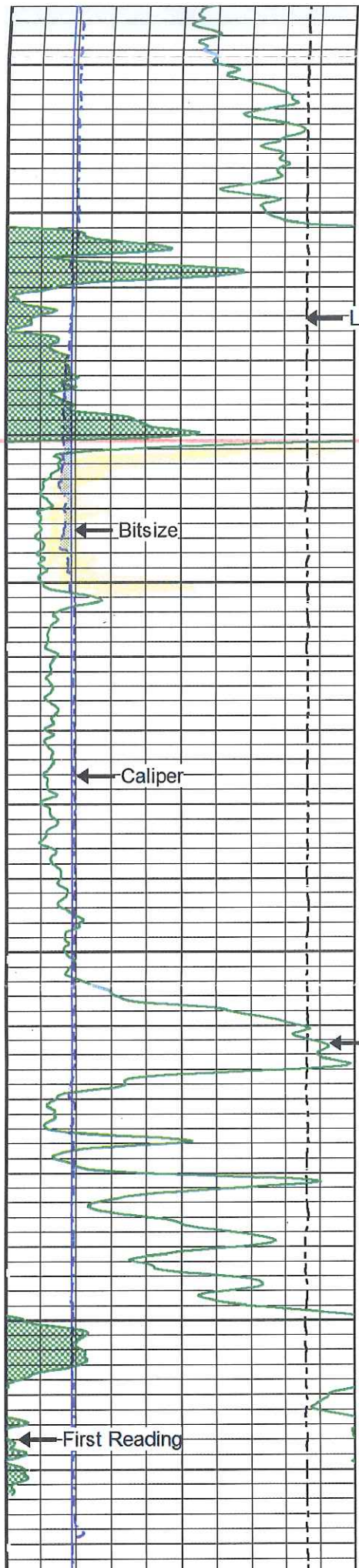
versus overlying shales that drilled at a rate of 1 - ¼ minutes/foot. There appear to be 2 porosity members within the Hertha, from 3992' – 3996' and 3998' – 4006'. The first porosity member (3992' – 3996') calculates on average porosity of 20.5% with a Sw of 19%. The second porosity member (3998 – 4004') calculates an average porosity of 26% with a Sw of 29%. See Log analysis below.

	Rt	Ø d	Ø n	Ø cp	Ø s	Pe	Ø ml	Sw
3992 – 94	30	18	20	19	12	5	11	20%
3994 – 96	28	22	21	21.5	14	4.5	11	18%
3998 – 4000	8	25	30	27	17	4.5	13	26%
4000 – 4002	6	25	28	26	17	4.5	12	32%
4002 – 4004	7	25	27	26	17	4.5	12	29%

This zone calculates productive on the Open Hole Logs as well as exhibiting sample and gas detector shows. More significant is the correlative relationship with two wells 5 miles to the southeast which were productive from the Hertha with similar log characteristics. The Edmiston - Lubbers "B" #2, NE NE NW, Section 25-29S-9W produced 75,315 BO and the Edmiston - Miller #3, SW SE SW, Section 24-29S-9W produced 85,231 BO.

It is Okland Oil Company's recommendation that the Hertha merits testing in the Liberty #1-8.

Gregg Alletag
Geologist



Line Tension

VIOLA

Bitsize

4500

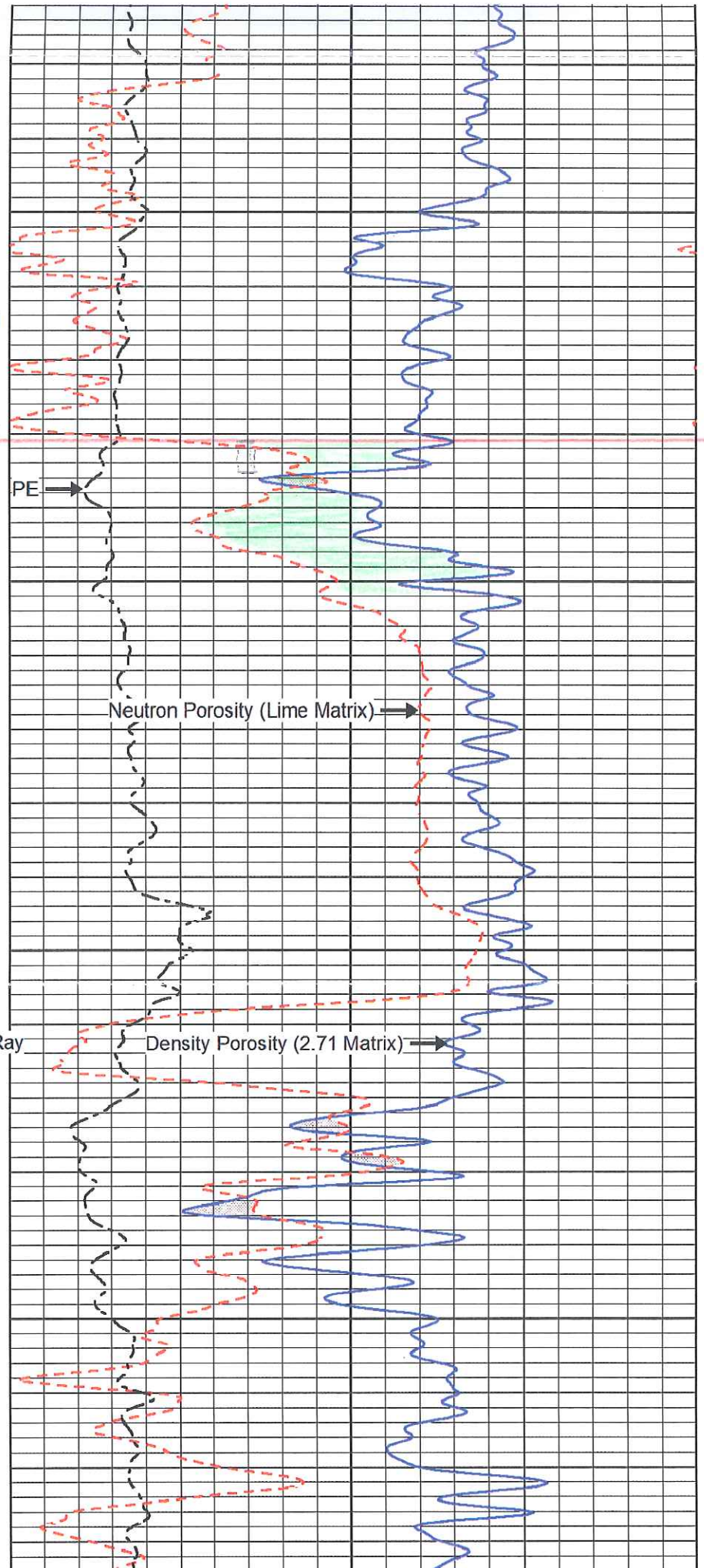
Caliper

Gamma Ray

First Reading

4600

First Reading

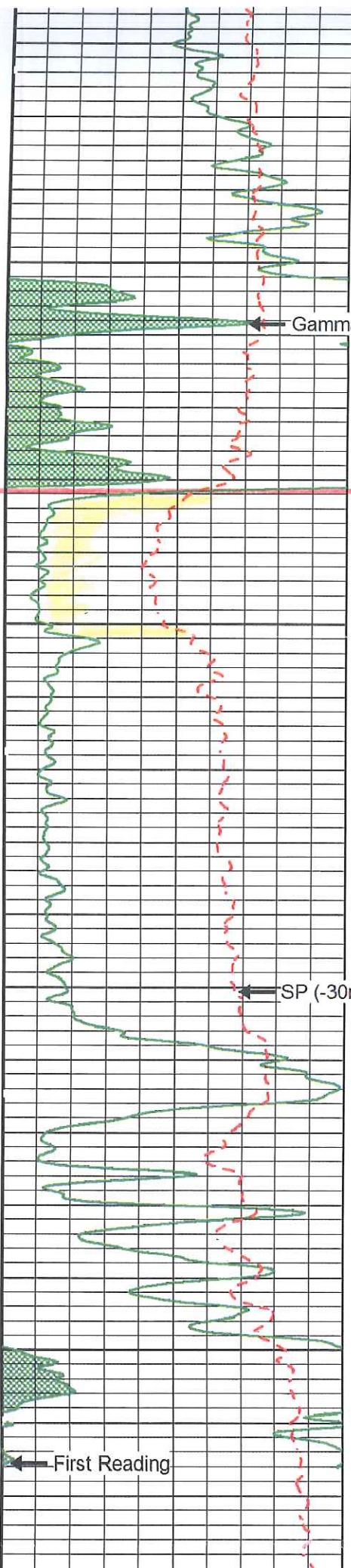


PE

Neutron Porosity (Lime Matrix)

Density Porosity (2.71 Matrix)

First Reading



Gamma Ray

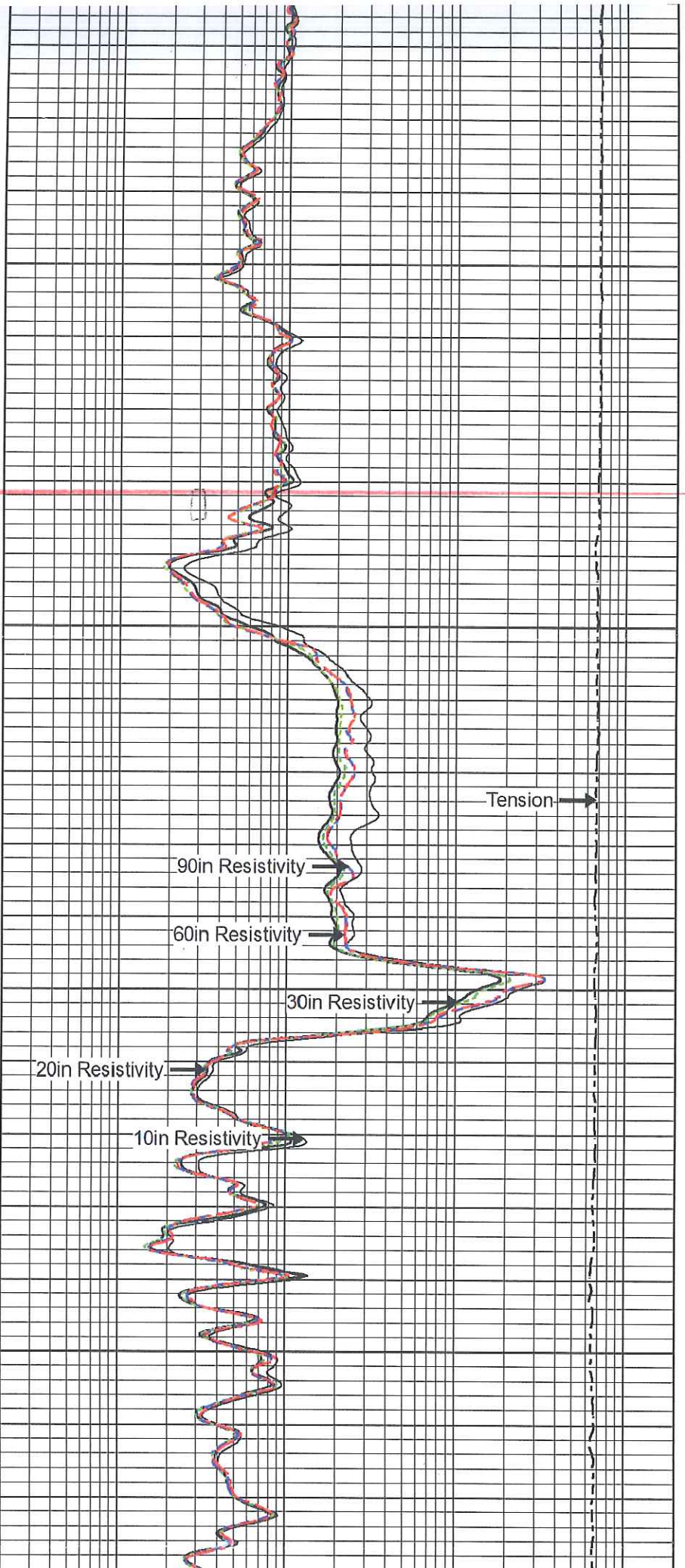
VIOLA

4500

SP (-30mv+)

4600

First Reading



Tension

90in Resistivity

60in Resistivity

30in Resistivity

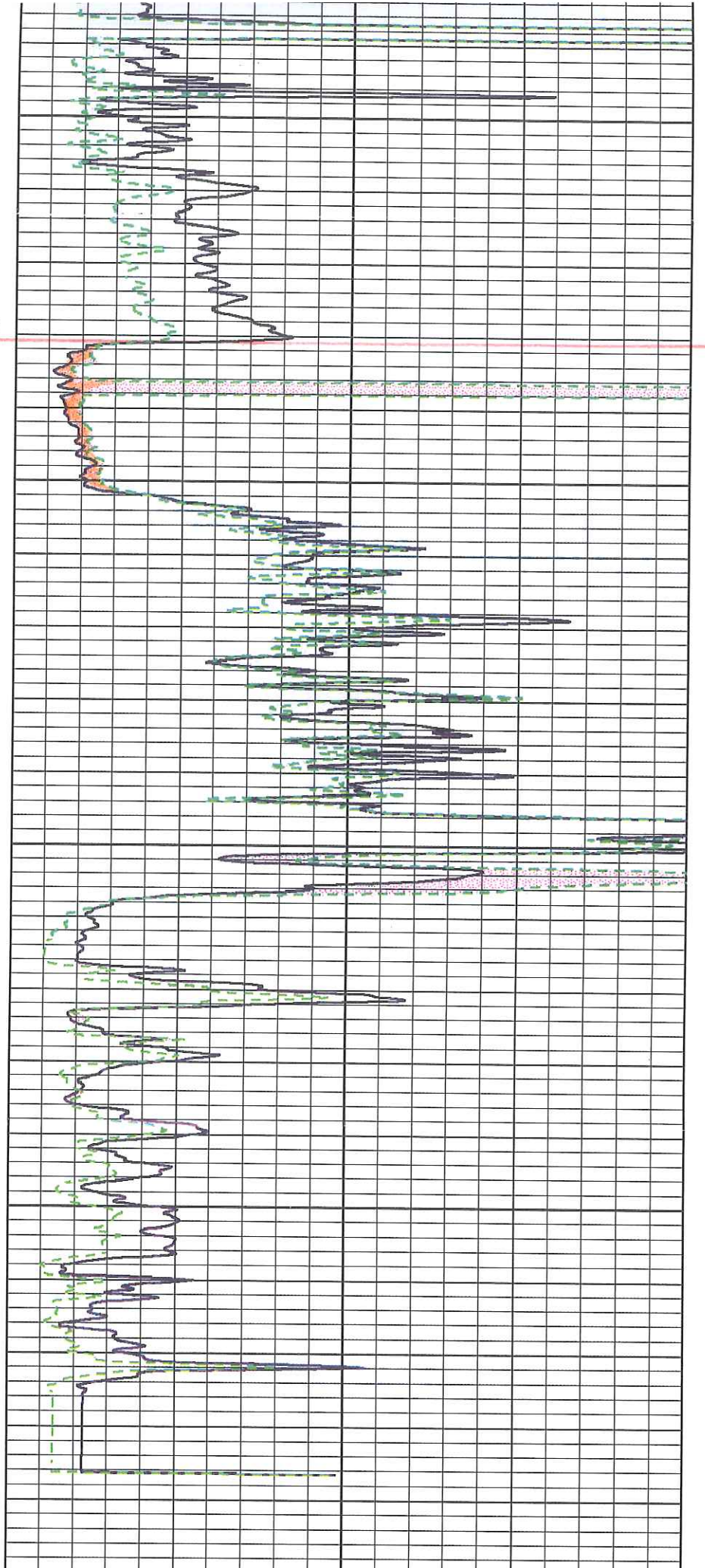
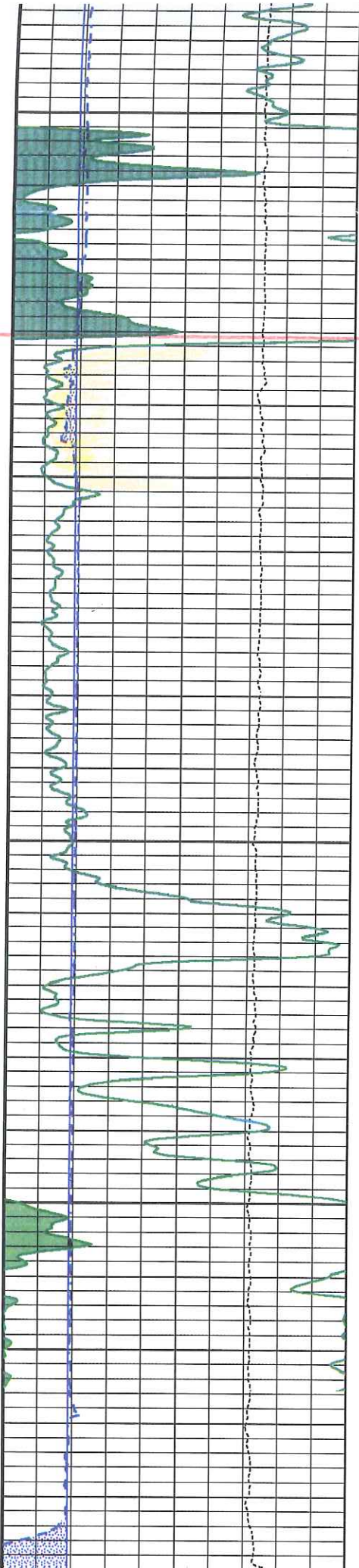
20in Resistivity

10in Resistivity

VIOLA

4500

4600



SFT-MOD FRM, PLTY SPLNTY, SLI
SLTY I.P., FNLY MICA

SH-DK GY-DK BRN-BLK, V/F TXT,
SFT-MOD FRM, SPLNTY, SM BLKY
I.P., W/ TR ORNG SPTTD FLOUR

SH-DK GY-DK BRN-BLK, V/F TXT,
SFT-MOD FRM, SPLNTY, FISS, W/
SPTTD ORNGE MIN FLOUR

LS-LT BRN-BRN, V/F-F XLN, MOD
FRM, MOTT, SM SLI ARGL I.P., W/
SLI SUC TXT, SLI OOLMOL'IC, W/
TR-FR INTR-XLN POR, W/ SPTTD
MOD BRT YEL FLOUR, W/ SLOW
STRMNG CUT, NO VIS STN, NO
ODOR

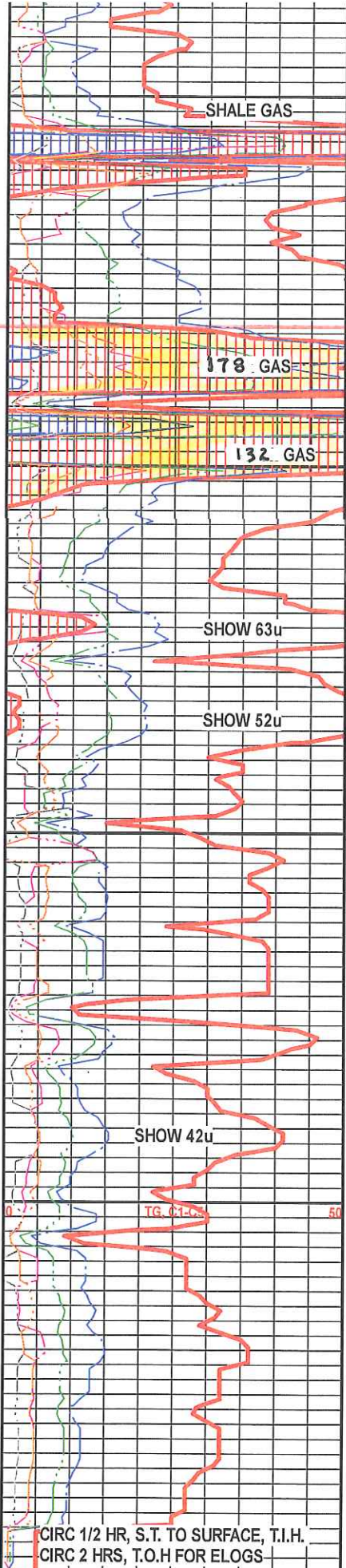
LS-OFF WHT-CRM, V/F-F XLN,
MOD FRM, SLI SUC, SLI DOLOMIC,
W/ FR INTR-XLN POR, NO VIS
FLOUR, NO VIS CUT OR STN, NO
ODOR

SH-MED GY, F TXT, SLI CALC I.P.,
SM SLI SNDY I.P.

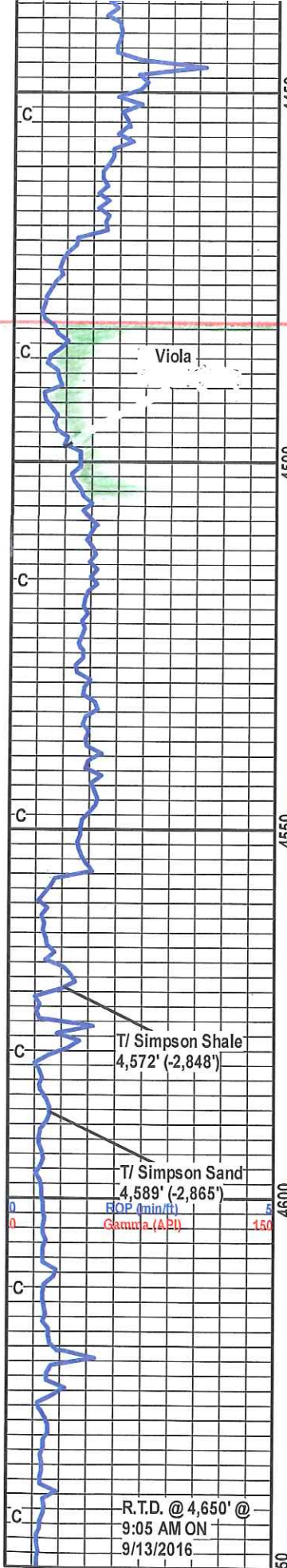
SS-LT GY-MED GY, V/FG, CONSD,
WELL SRTD, S/RND-S/ANG, SLI
SLTY-ARGL, W/ TR INTR-GRAN
POR, W/ SPTTD DULL YEL MIN
FLOUR, NO VIS CUT OR STN, NO
ODOR

SH-DK GY-BLK, V/F TXT, SFT-MOD
FRM, PLTY, SLI PYR'IC I.P., FNLY
MICA

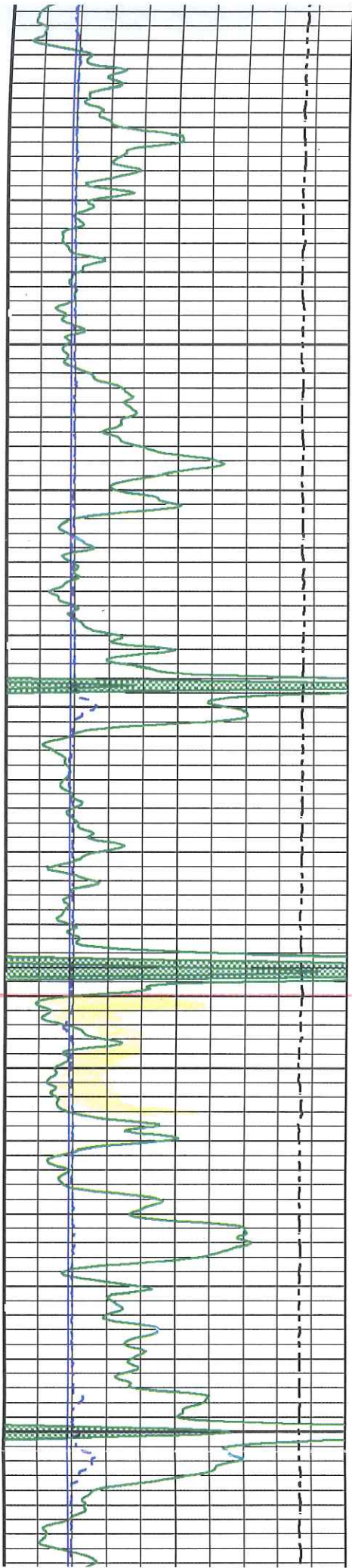
THANK YOU FOR CHOOSING
GEODYNAMIC WELL LOGGING



CIRC 1/2 HR, S.T. TO SURFACE, T.I.H.
CIRC 2 HRS, T.O.H FOR ELOGS



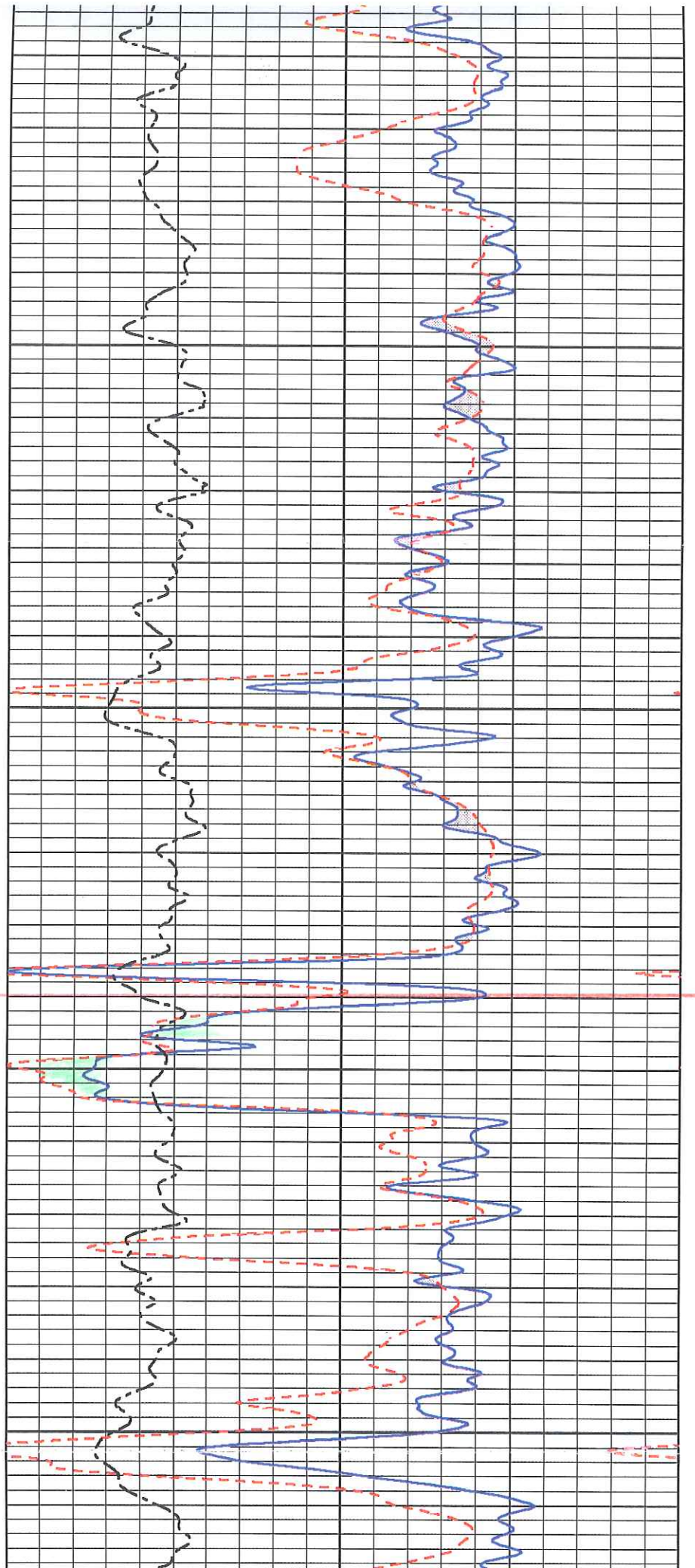
BCP (min/f)
Gamma (API)

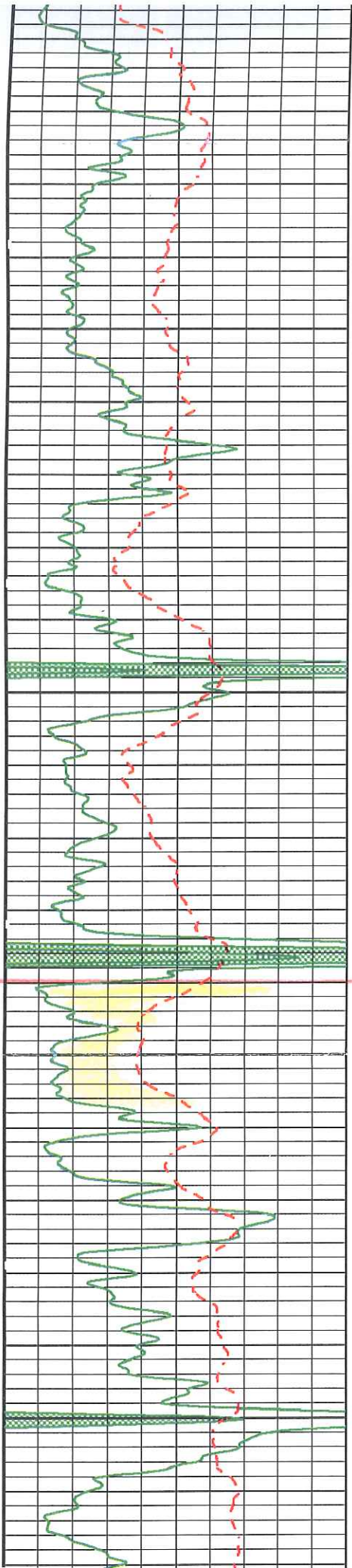


3900

HERTHA

4000

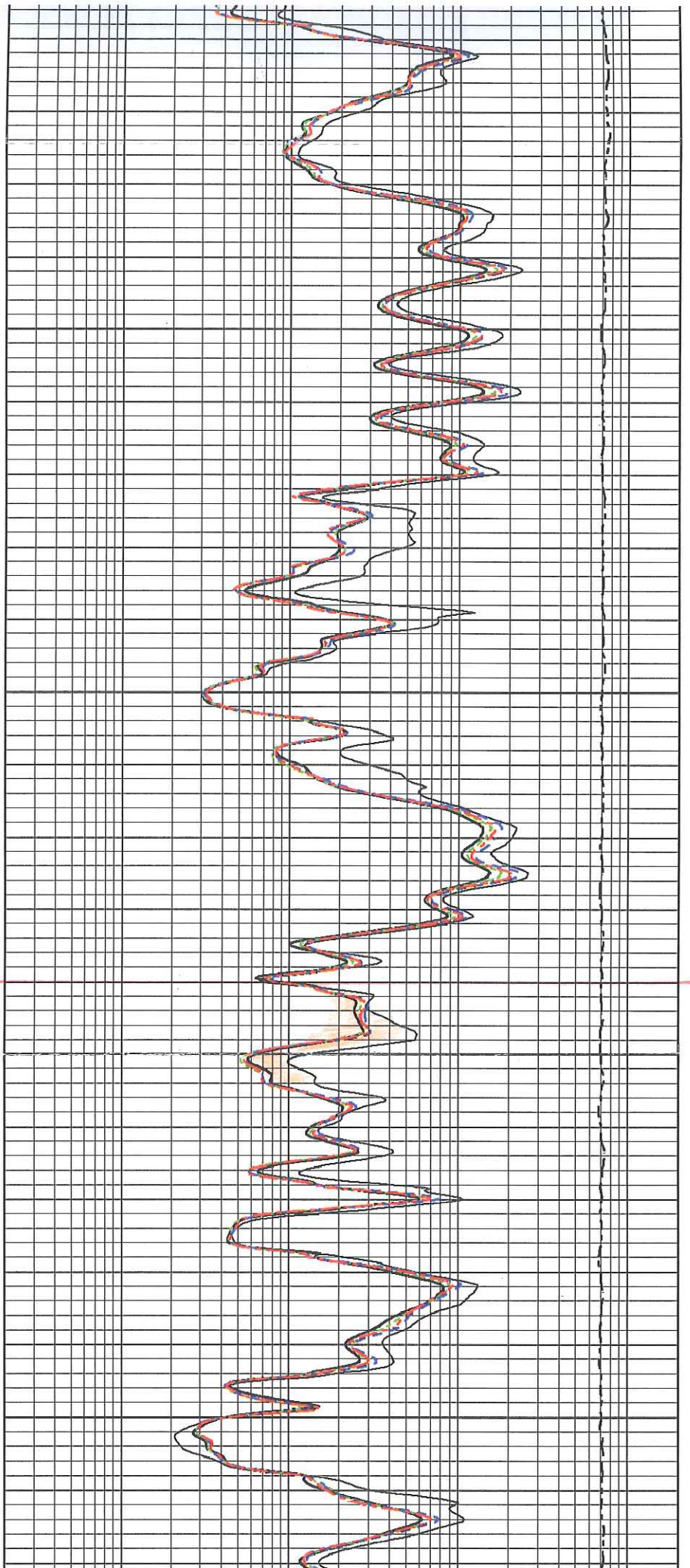


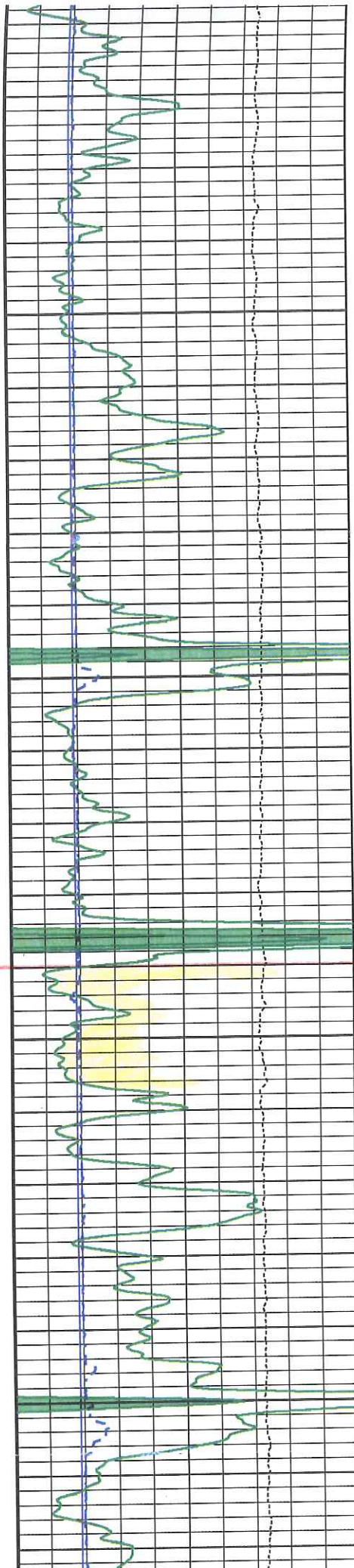


3900

HERTHA

4000

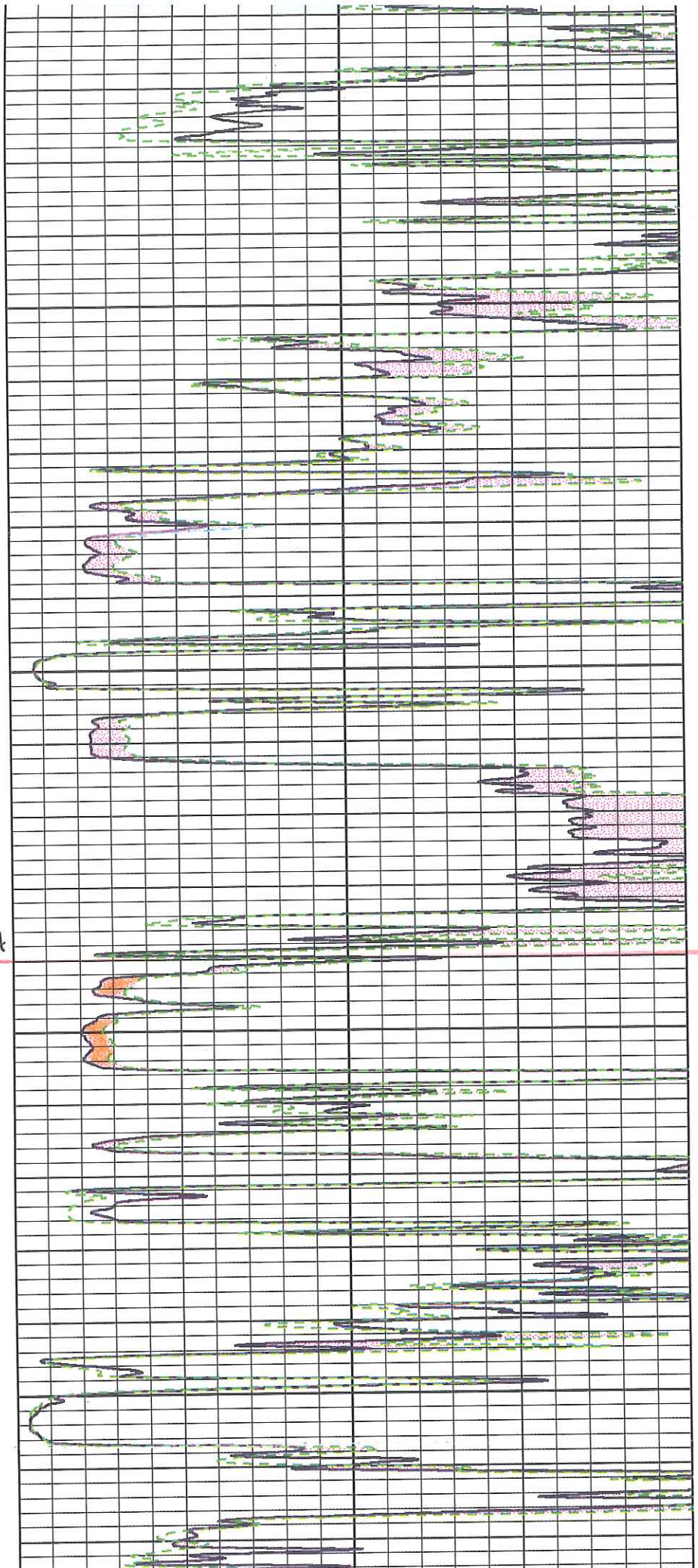


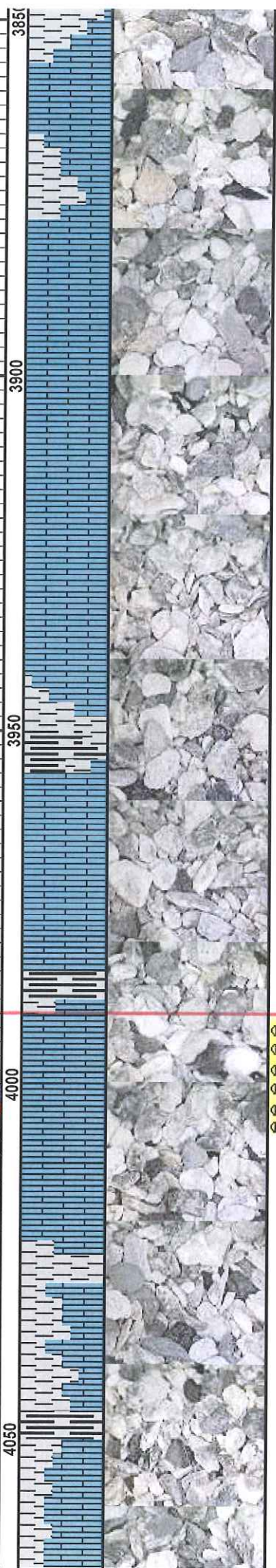
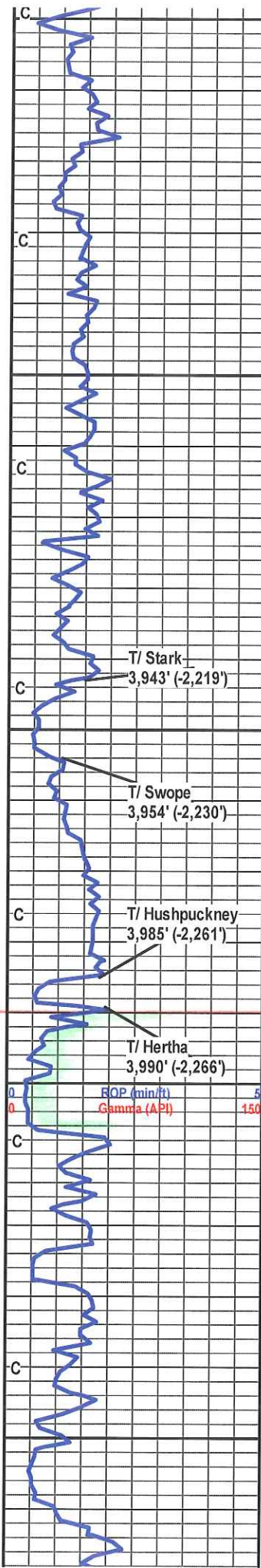


3900

HERTHA

4000





VIS CUT OR STN, NO ODOR

LS- CRM-TN, V/F-MICRO-XLN, MOD FRM, BRITTL, W/ PR INTR-XLN POR, W/ MOD BRT YEL MIN FLOUR, NO VIS CUT OR STN, NO ODOR

LS- TN-BUFF-LT BRN, V/F XLN, PRED DNS, BRITTL, W/ PR INTR-XLN POR, NO VIS FLOUR, NO VIS CUT OR STN, NO ODOR

LS- AAB

LS- OFF WHT-CRM-TN, V/F-MICRO XLN, MOD FRM, PRED DNS, W/ PR INTR XLN POR, W/ V/ DULL YEL MIN FLOUR, NO VIS CUT OR STN, NO ODOR

SH- DK GY-BLK, V/F TXT, MOD FRM, PLTY-SPLNTY, SM SLI PYR'IC I.P., CARB

LS- CRM-TN, V/F XLN, MOD FRM, SM SLI FOSS W/ TR CRINS, W/ SM PP VUG POR, NO VIS FLOUR, NO VIS CUT OR STN, NO ODOR

LS- TN-BUFF, V/F XLN, MOD FRM, SM SLI FOSS, W/ PP VUG POR, SM OOLMOL'IC POR, W/ SPTRD YEL FLOUR, W/ V/ PR RING CUT, NO VIS STN, NO ODOR

SH- MED GY, V/F TXT, SFT-MOD FRM, SLI CALC, SM SLI PYR'IC

SH- DK GY-BLK, V/F TXT, SFT-MOD FRM, PLTY, SM, SLI CALC, SLI CARB

LS- CRM-TN-BUFF, V/F XLN, MOD FRM, SM SLI ARGL I.P. W/ TR INTR

