

THE ARBUCKLES BELOW YOUR FEET

Robert W. Allen, Independent, Ardmore, OK

R. L. Neman Ph.D. Arbuckle Geosciences, LLC, Ada, OK

Bronston W. James
“Bronc”
1904-2001

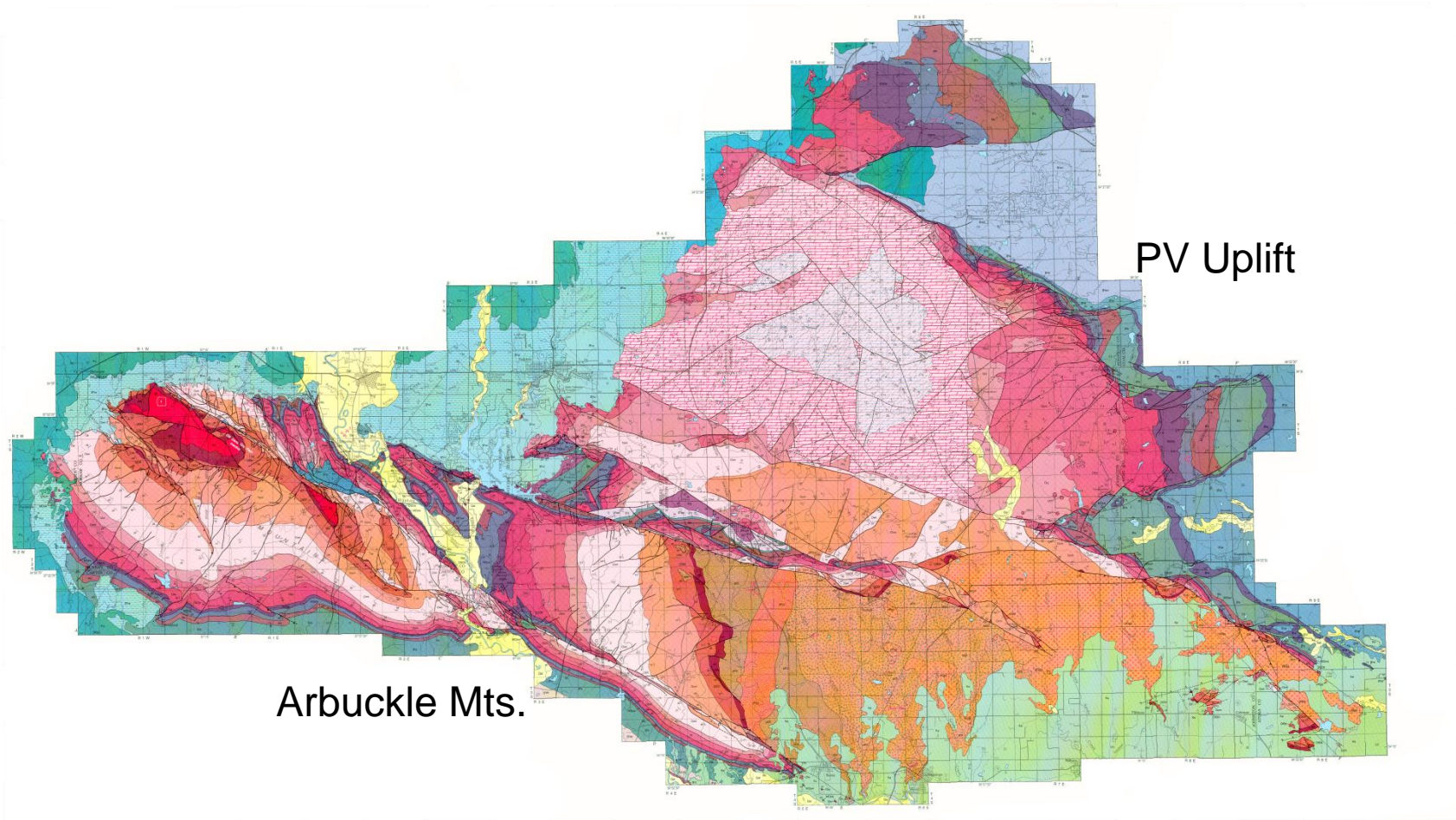
Bronc was considered to be one of the deans of the geological world in Southern Oklahoma.

Bronc’s main interest was to help people learn about the fossils which represent the life that existed in the ancient seas in the Ardmore area.

Riding Morgan Horses at the age of 95



Pauls Valley Uplift is north of the true Arbuckle Mountains.



Geologic Correlation Chart

SYSTEM	MILLIONS OF YRS.		GROUP	FORMATION	MEMBER		
	DURATION	AGO					
Quaternary	0.01	2.5	Recent		Alluvium	Cenozoic	
			Pleistocene		Not present		
Tertiary	4.5	65	Pliocene		Not present		
	19		Miocene		Not present		
	12		Oligocene		Not present		
	15		Eocene		Not present		
	11		Paleocene		Not present		
Cretaceous	71	136		Goodland Ls	Present in SE OK.		Mesozoic
Jurassic	54	190			Not present		
Triassic	35	225			Not present		
Permian	55	280				Paleozoic	
Pennsylvanian	45	325	Pontotoc	Vanoss	Collings Ranch Cgl		
			Cisco				
			Hoxbar (2500')	Hoxbar	Zuckerman Ls		
					Daube Ls		
					Anadarche Ls		
					Crinerville Ls		
					Confederate Ls		
			Deese (5700')	Deese	Natsy Ls		
					Williams Ls		
					Rocky Point Cgl		
					Arnold Ls		
					Devils Kitchen Cgl		
			Dornick Hills (5885')	Big Branch	Pumpkin Creek Ls		
				Lake Murray	Frensley Ls		
					Lester Ls		
					Bostwick Cgl		
				Golf Course	Otterville Ls		
Springer (5000')		Jolliff Ls					
		Primrose Ss					
		Lake Ardmore Ss					
		Overbrook Ss					
		Rod Club Ss					

Correlation Chart Continued

SYSTEM	MILLIONS OF YRS.		GROUP	FORMATION	
	DURATION	AGO			
Mississippian	20	345		Caney Sh (425')	
				Sycamore Ls (370')	
				Woodford Sh & Chert (290')	
Devonian	50	395	Hunton (250')	Pine Top Chert	
				Frisco Ls	
				Bois D'Arc Ls	
				Haragan Marl	
Silurian	35	430		Henryhouse Marl	
				Chimney Hill Ls	
Ordovician	70	500	Viola (684')	Sylvan Sh (305')	
				Fernvale Ls	
				Trenton Ls	
			Simpson (2330')	Bromide Ls & Sh	
				Tulip Creek/3rd Bromide Ss	
				McLish Ls & Sh	
				Basal McLish Ss	
				Oil Creek Ls & Sh	
				Basal Oil Creek Ss	
				Joins Ls & Sh	
			Arbuckle (6722')	West Spring Creek Ls	
				Kinblade Ls	
				Cool Creek Ls	
				McKenzie Hill Ls	
Butterly Dolomite					
Cambrian	70	570		Signal Mountain Ls	
				Royer Dolomite	
				Fort Sill Ls	
				Timbered Hills	
				Honey Creek Ls (155')	
				Reagan Ss (105')	
				Colbert Rhyolite (Porphyry)	
Precambrian	3930	4500		Tishomingo Granite	
				Troy Granite	

**Paleozoic
(cont.)**

Total Thickness 30,721'

Hamilton Brothers
 #1 Turner Falls
 SE, NE, NW, SW
 SEC 18-T1S-R1E
 Murray Co., OK

ANDREWS
 ELECTRIC LOG LABORATORY
 5 South Commerce
 Ardmore, Ok. 73401

18-13-16
 #1 Turner Falls
 Hamilton Brothers
 10
 COT Turner Falls
 151.0000
 18 13 16
 SEC 18-T1S-R1E
 1827

Sample log
 Colored log
 Samples run Jan 24, 1934
 B.W. Varnes + R.H. Miller

LOG DATA	
Well Name	#1 Turner Falls
Operator	Hamilton Brothers
Section	SEC 18-T1S-R1E
Correlation	1827
Log Date	18 13 16

LOG DATA	
Well Name	#1 Turner Falls
Operator	Hamilton Brothers
Section	SEC 18-T1S-R1E
Correlation	1827
Log Date	18 13 16

EQUIPMENT NUMBERS: Run 9

SIC 1827	SIC 1842	SIC 2135	GSB - W 126
PHM 3128	PHM 425	PHM 428	

ALL INTERPRETATIONS AND OPINIONS BASED ON INDICENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND THE SKILL OF ONE WHO SUBMITTED THE LOGS. THE CORRECTNESS OF ANY INTERPRETATIONS AND THE QUALITY EXCEPT IN THE CASE OF PLOTTING SHALL BE THE RESPONSIBILITY OF THE PARTY WHO SUBMITTED THE LOGS. THE LOGS ARE NOT GUARANTEED TO BE CORRECT. THESE INTERPRETATIONS AND OPINIONS ARE MADE IN GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR GENERAL PRICE LIST AND NO.

PARAMETERS

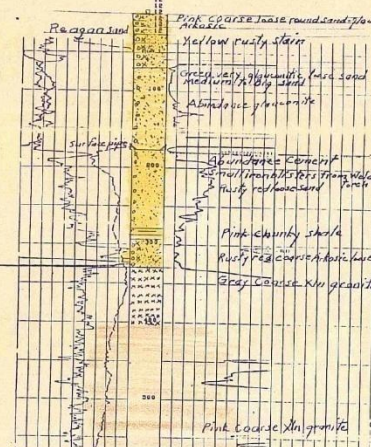
NAME	UNIT	VALUE	NAME	UNIT	VALUE
RISE	H/IN	4.800	SBR	OHMS	1.500
BT	H/IN	27.50			

Surface +1214

Reagan Sand

Reagan sand
 Granite 350 (7884)

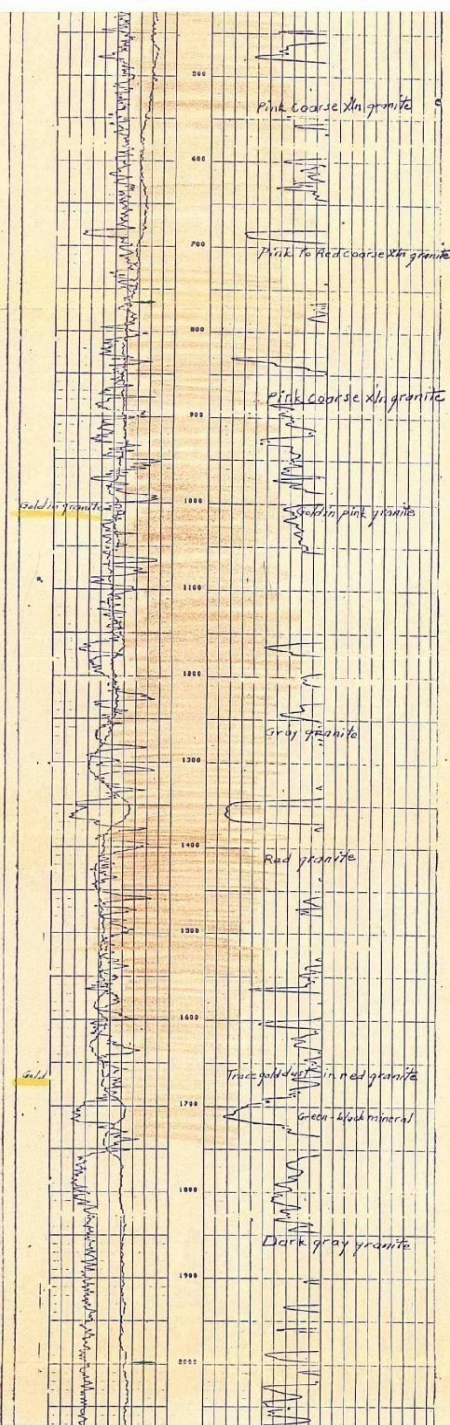
Red
 Granite



In
Cambrian Rhyolite

GOLD In
Pink Granite

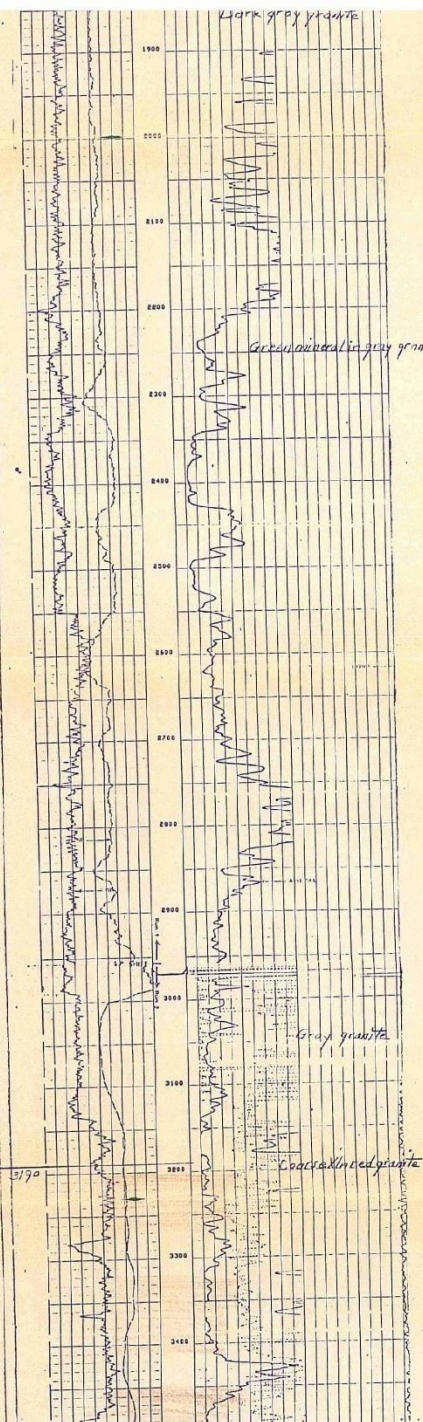
GOLD



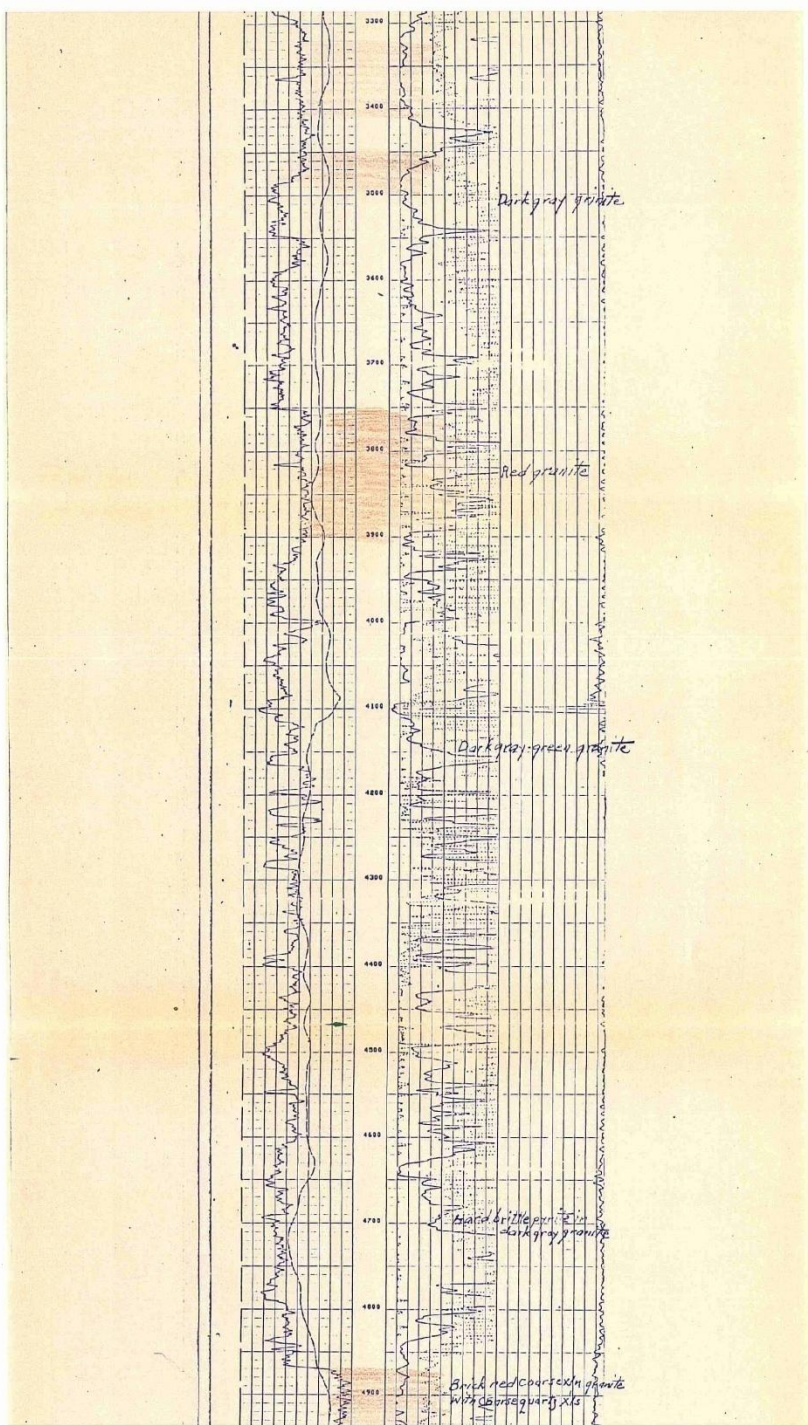
Cambrian Colbert Rhyolite

Gray
Granite

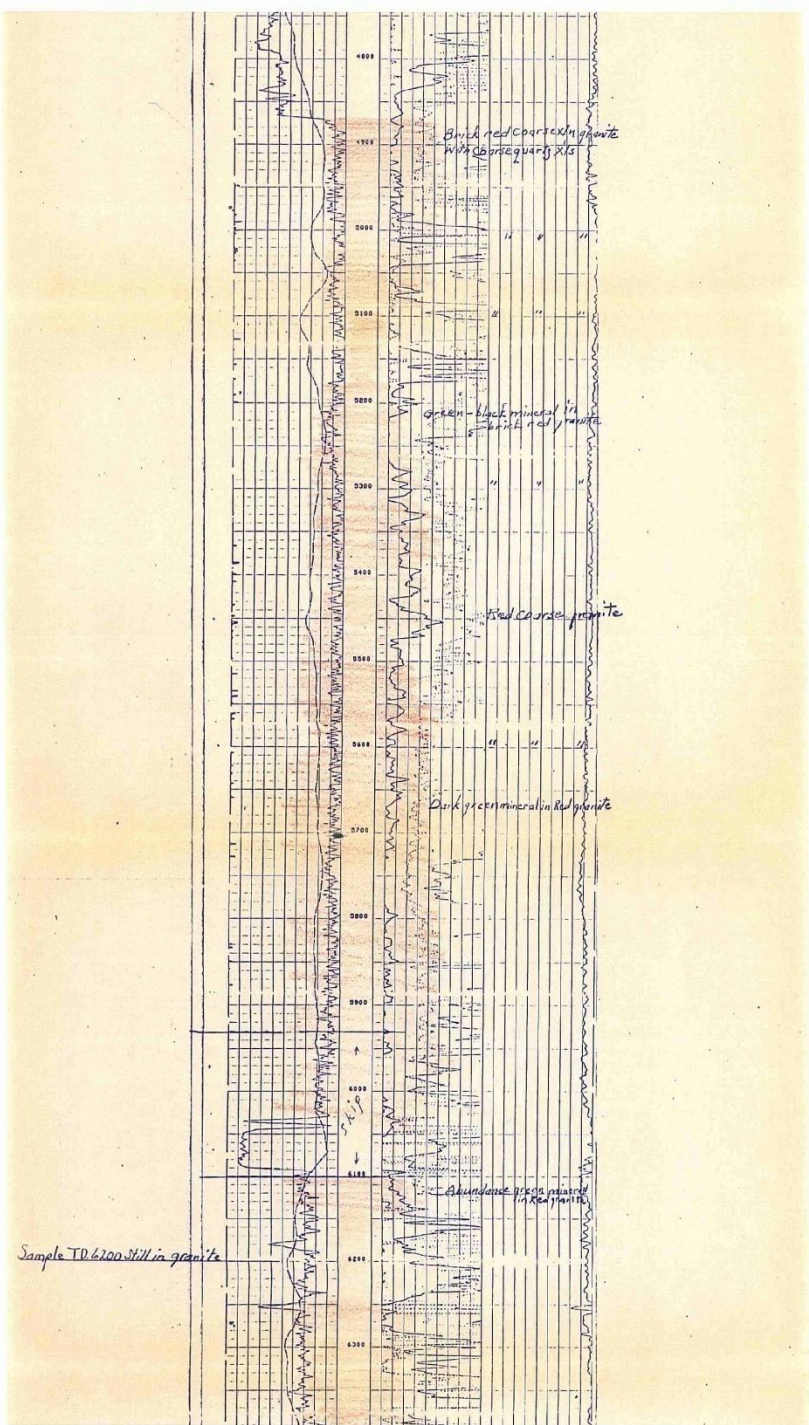
Gray Granite
Brick Red Granite 3179



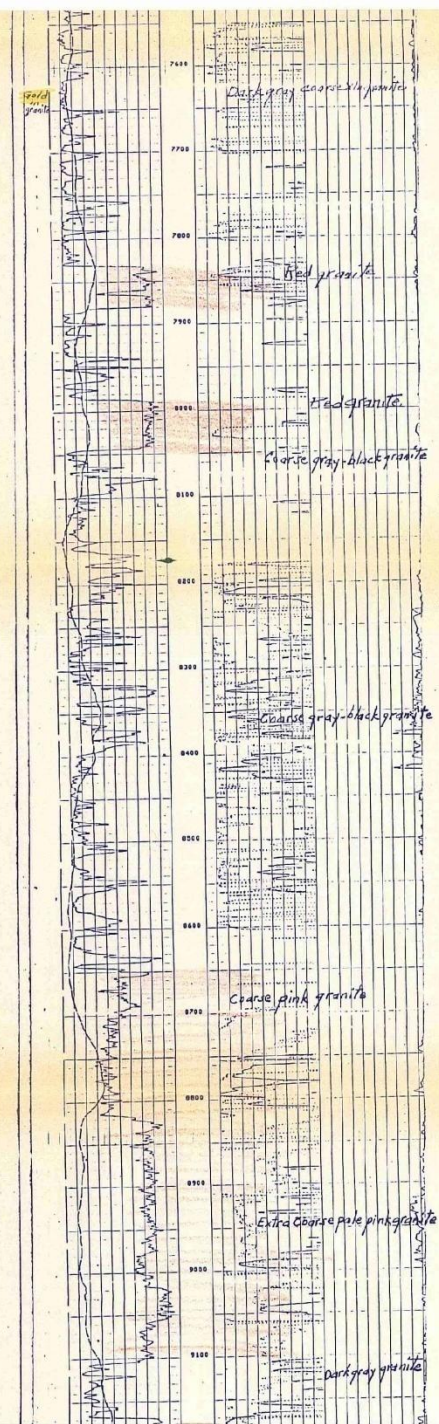
More Cambrian Colbert Rhyolite



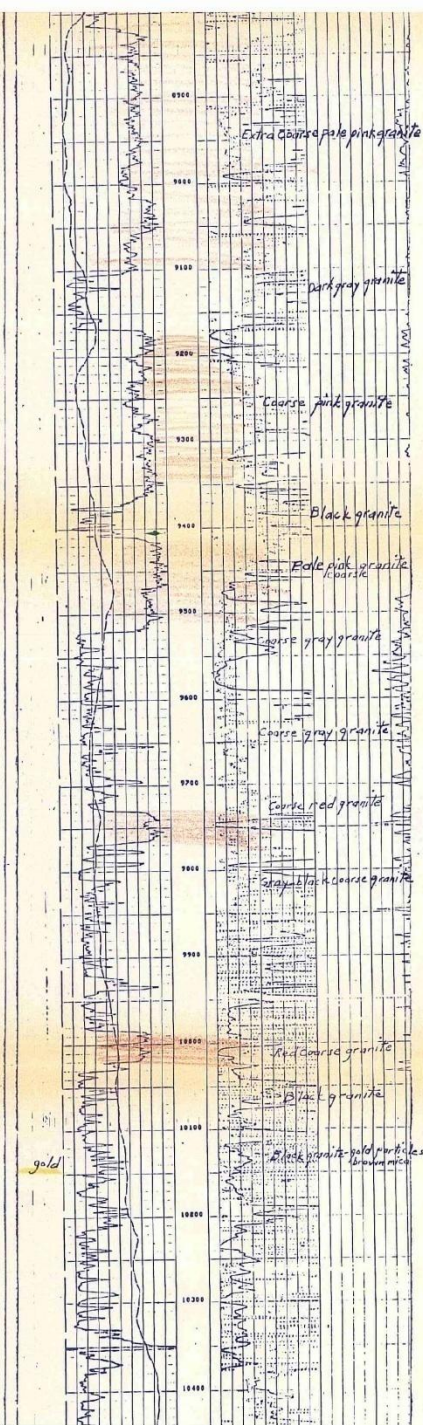
...And
more
Granite...



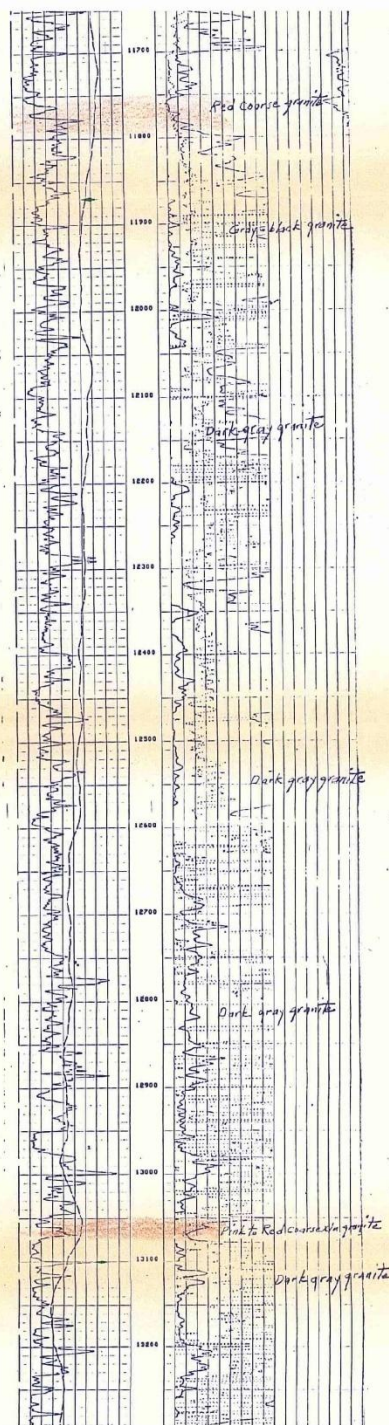
...and
More
Granite....



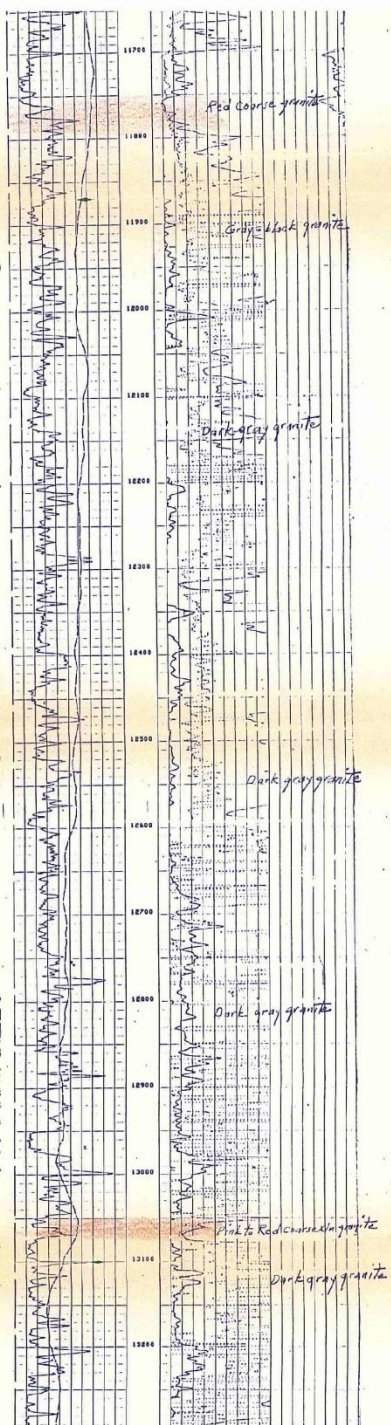
AND.....
more
Granite....



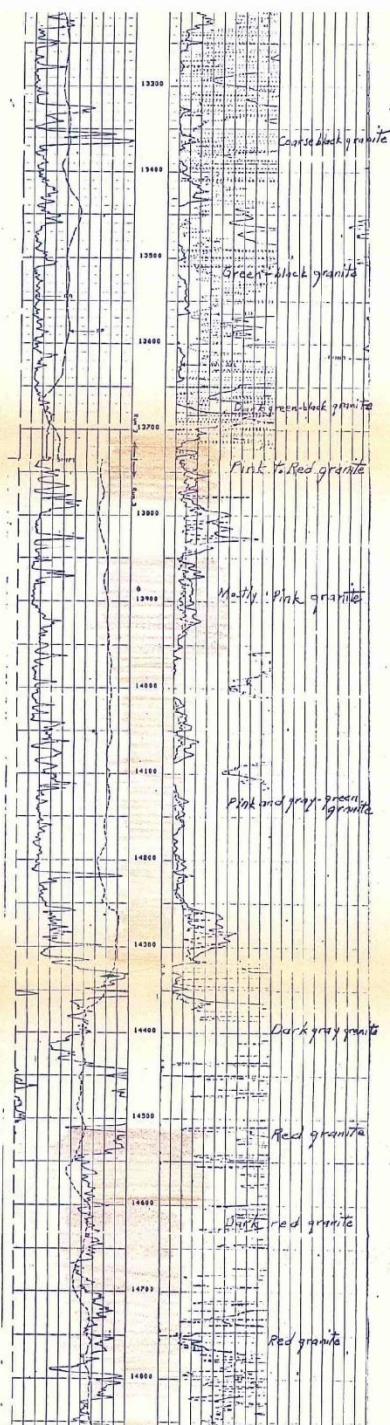
At
12,000'
Dark
Gray
Granite



Still
More
Granite



Granite
at
14,300'



Note the
50 feet of
Arbuckle
at 15,390'
and then
back into
the
Granite.

And finally,
at 16,130'
drilled into
Arbuckle
McKenzie Hill
Limestone.

Arbuckle
15,390'

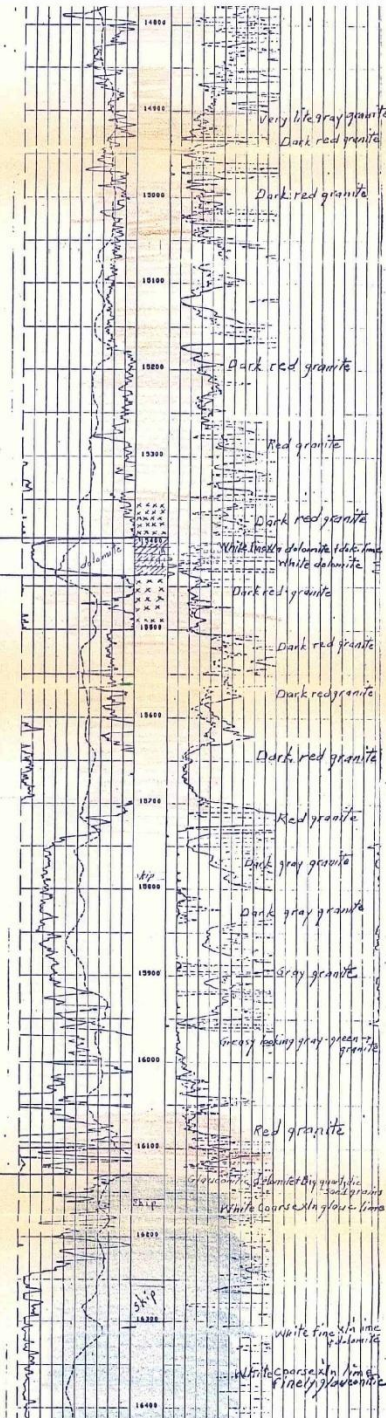
Arbuckle 15390 (14176)

Granite 15440 (14226)

Granite
15,440'

*Granite
Arbuckle 16130 (14916)
McKenzie Hill lime*

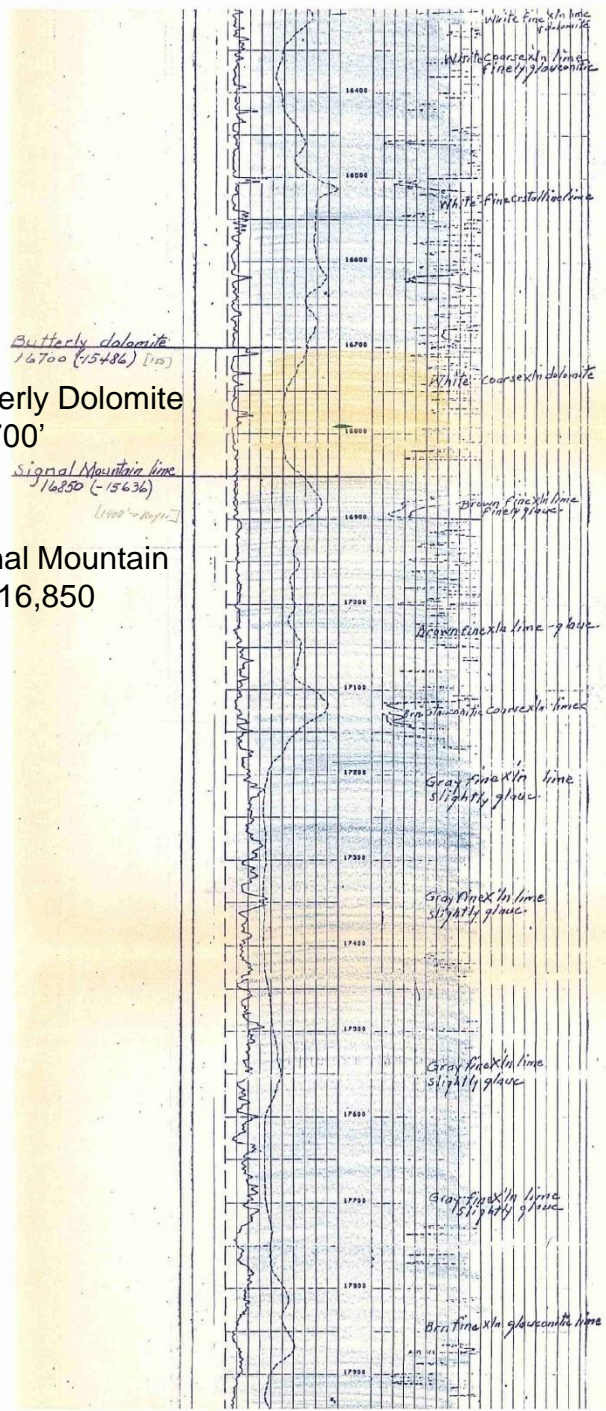
Arbuckle 16,130'
McKenzie Hill
Limestone



Butterly Dolomite
at 16,700 '
and
Signal Mountain LS
at 16,850'

Butterly Dolomite
16,700'

Signal Mountain
LS 16,850'

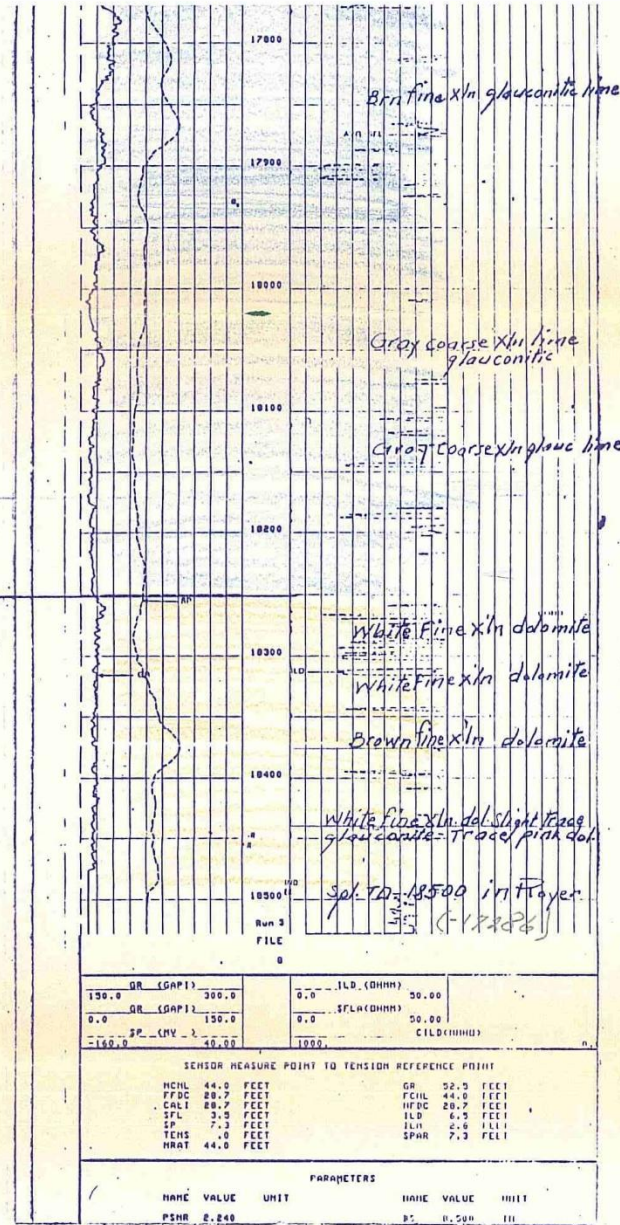


at 18,250' drilled into the lower Cambrian Arbuckle Royer Dolomite

Cambrian	70	570	Arbuckle (6722')	West Spring Creek Ls
				Kinblade Ls
				Cool Creek Ls
				McKenzie Hill Ls
				Butterly Dolomite
				Signal Mountain Ls
				Royer Dolomite
Fort Sill Ls				

Royer Dolomite
18,250'

Royer dolomite
18250 (-17036)
1850'



This log shows that 16,500 feet of igneous granite and/or rhyolite was drilled above the fault to the lower Ordovician Arbuckle (McKenzie Hill Formation,) and then into the Cambrian Arbuckle (Butterly Dolomite, Signal Mountain Limestone and finally the Royer Dolomite Formations).

Frankfort
#1 Hale
W/2, SW, NE
SEC 4-T1S-R1E
Murray Co., OK

Top of Viola Noted.

Viola 1054'

SCHLUMBERGER WELL SURVEYING CORPORATION
ELECTRIC LOG

Location of Well: COMPANY, FRANKFORT OIL CO.
WELL, GLADYS HALE #1
FIELD, MR. SAM
LOCATION, SEC. 4-1S-1E
C/2 W/2 SW NE
COUNTY, MURRAY
STATE, OKLAHOMA

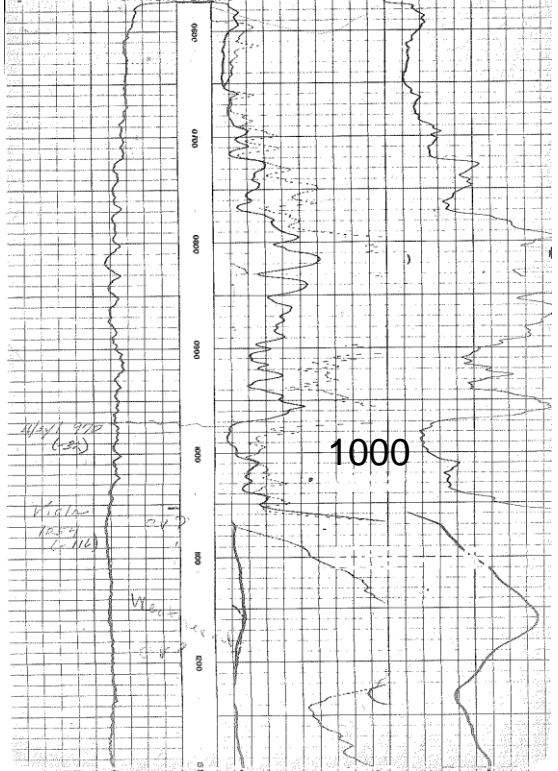
Run No. ONE TWO THREE FOUR FIVE
First Reading 7547 11217 12800
Vint Reading 6374 10744 12878
Feet Measured 6374 10744 12878
Core Taken 6374 11217 12800
Log Driller 550 550 550
Depth Reached 7544 11218 12814
Bottom Driller 7544 11217 12814
Depth from 40' to 128' 7544 11217 12814
Mud Nat. GEL OIL EMULSION
Mud Density 9.3 9.3 9.3
Viscosity 34 34 34
Temp. 116 116 116
Res. 500 128 500 128 500 128
Wt. Loss 5-10 cc 30 min. 5-10 cc 30 min. 5-10 cc 30 min.
Mud Temp. 116 116 116
Bit Size 5 5 5
Spool-A 18" 18" 18"
A W 24" 24" 24"
AD 18" 18" 18"
Obs. Rig Time 2430 2400 2400
Log No. 781-8000 781-8000 781-8000
Recorded By CLIFF IRVIN MATYIELD
Witness By W. H. KAWASCH WARREN
REMARKS MUD SOURCE MUD-S-11
*KB 13.481ARCV G1 (RUN #3)
TOP OF FISH AT 12504'

ARDMORE
ELECTRIC LOG LIBRARY
5 South Commerce
Ardmore, Okla. 73401

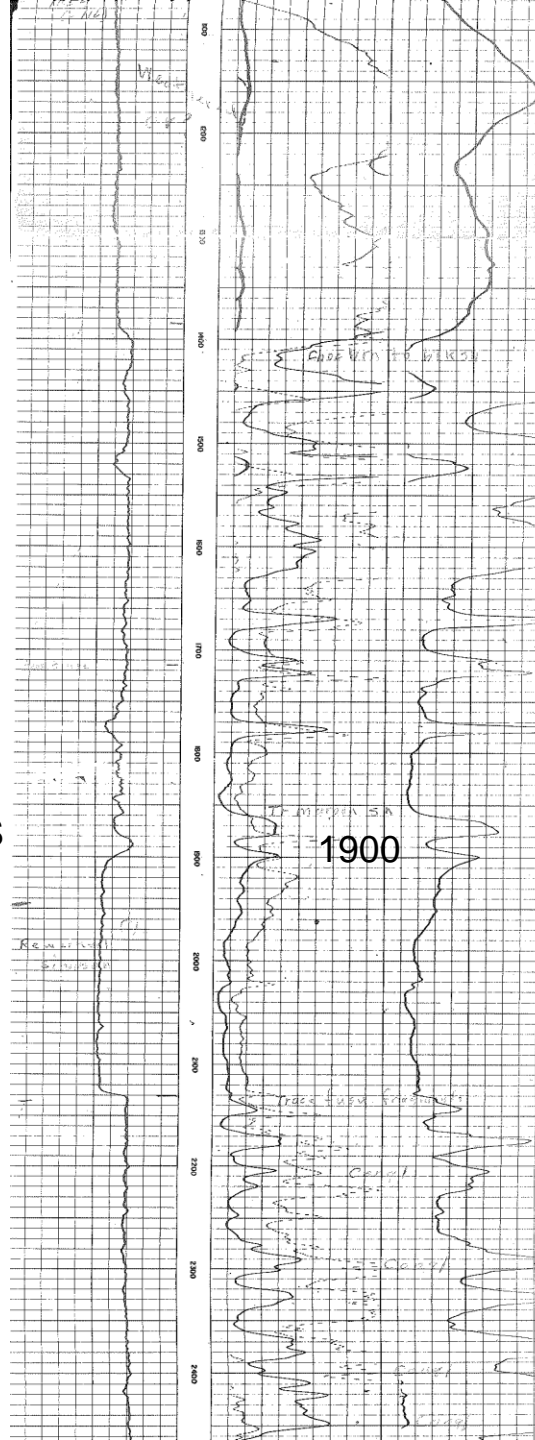
12300
953
11357
C. W. TOMLINSON
510 Little Bldg.
Ardmore, Okla.

SPONTANEOUS-POTENTIAL millivolts	RESISTIVITY -ohms. m ² /m	RESISTIVITY -ohms. m ² /m
	SHORT NORMAL AM-16"	LONG NORMAL AM-24"
	500	500
	LATERAL AC-19"	500
	500	500

A RILEY REPRODUCTION

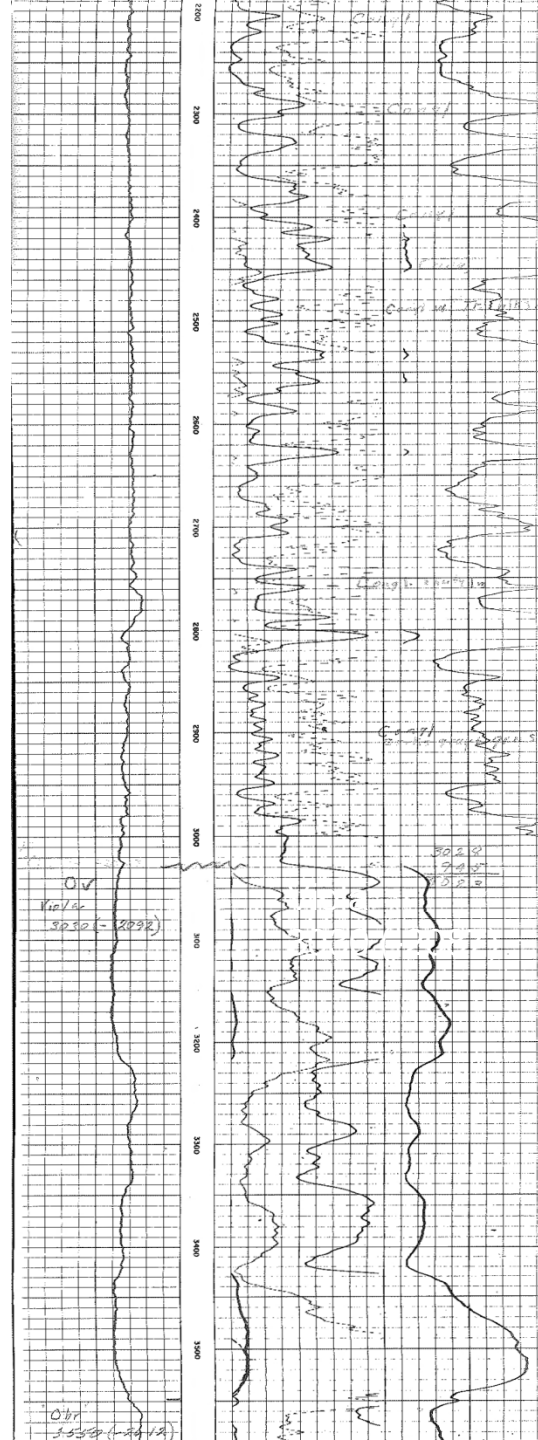


Bromide SS

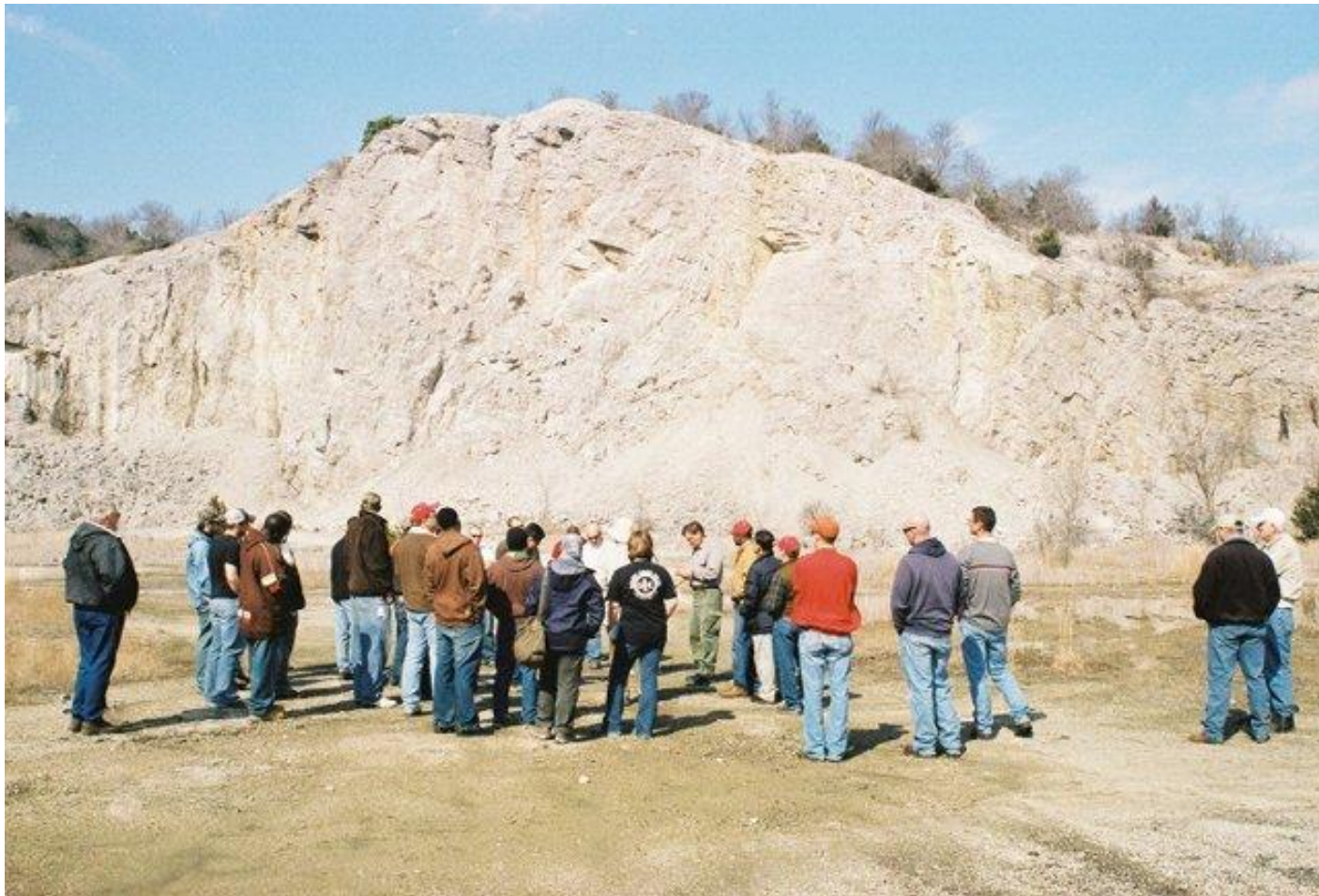


Viola
again!

Viola 3030 (-2087)

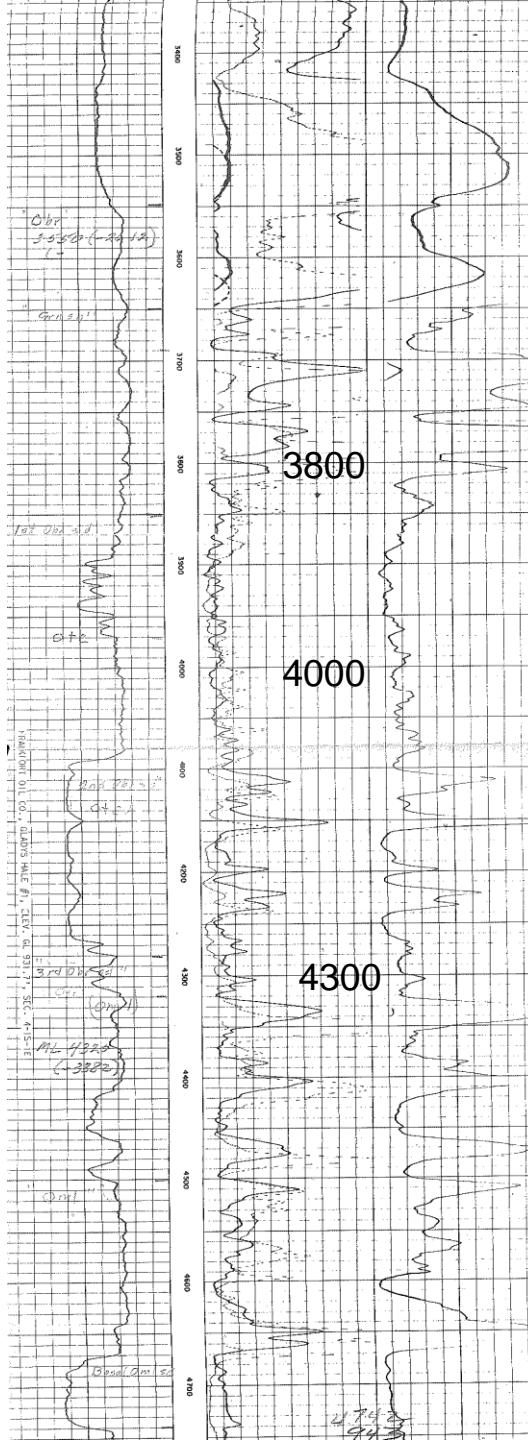


Bob Allen and Bob Neman leading Halliburton Engineers on a field trip to the exposed Viola Quarry (closed) near Sulphur, OK. In warm weather oil seeps from this formation.



Bromide SS at 3890'
and again at 4090'

Top of the McLish SS at 4320'

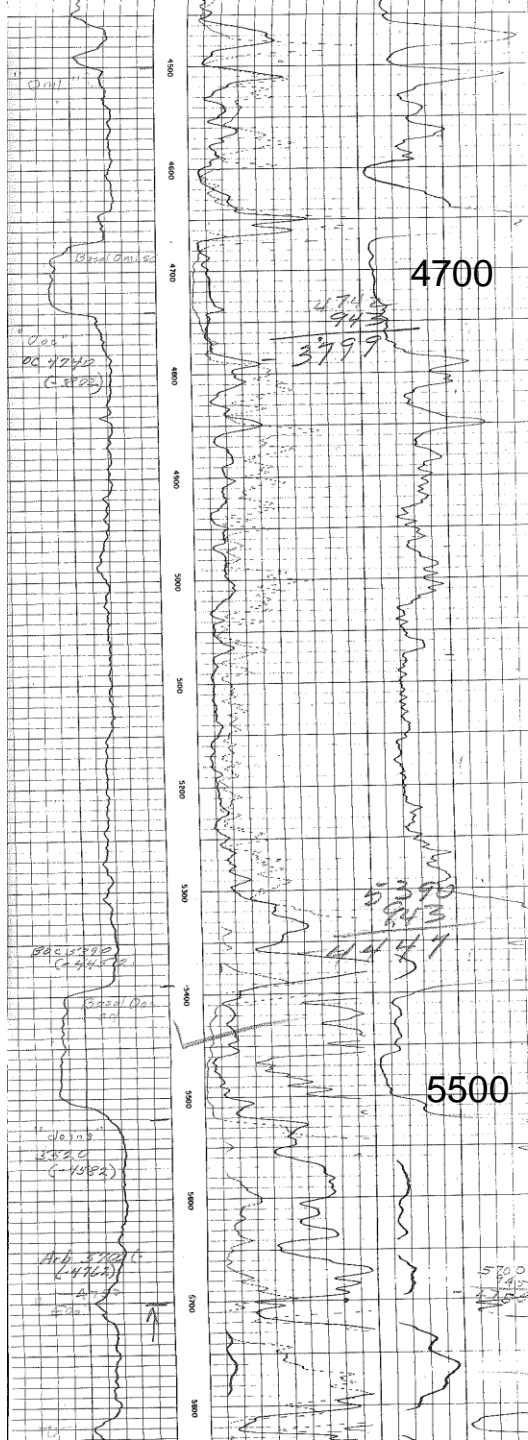


Basal McLish SS at 4670'

Top of the Oil Creek SS at 4750'

Basal Oil Creek SS at 5390'

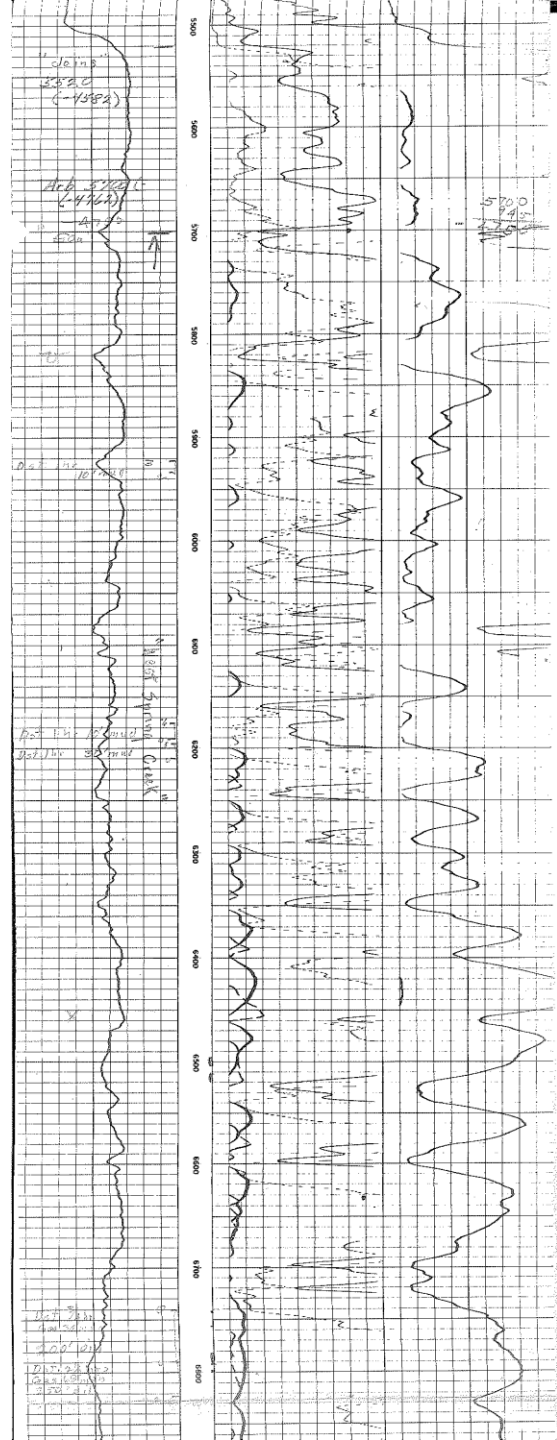
Joins Sh at 5520'



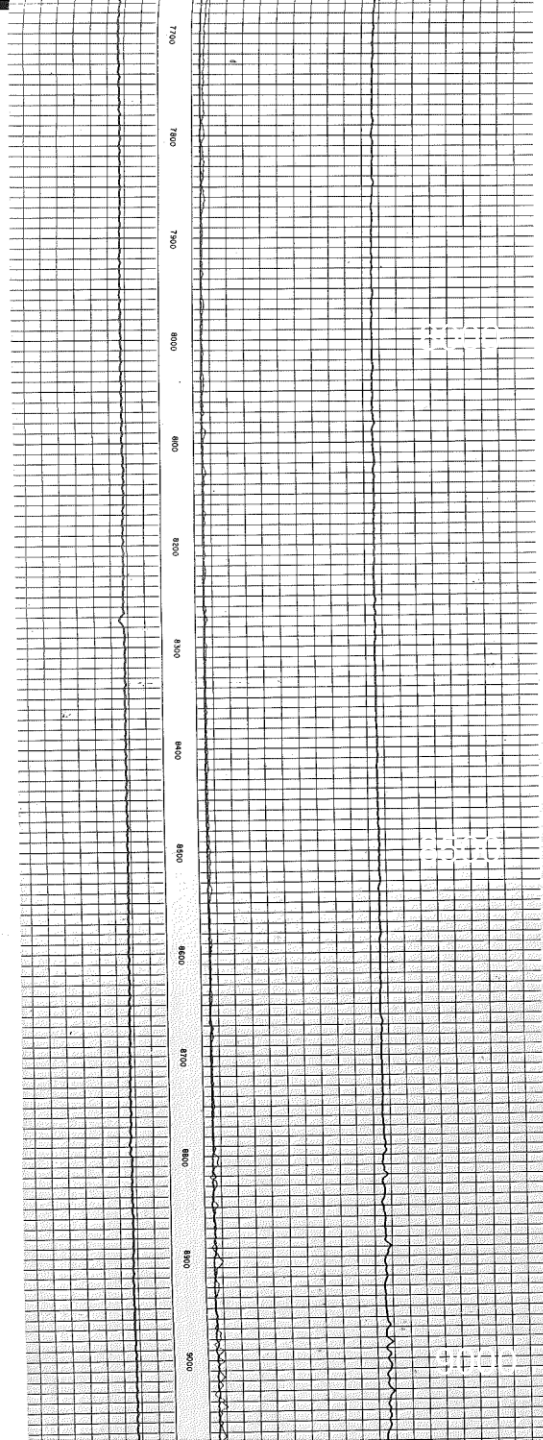
Basal Oil Creek Tar Sand
Basal Oil Creek on the surface
South of Sulphur, OK
Sec 15-T1S-R3E



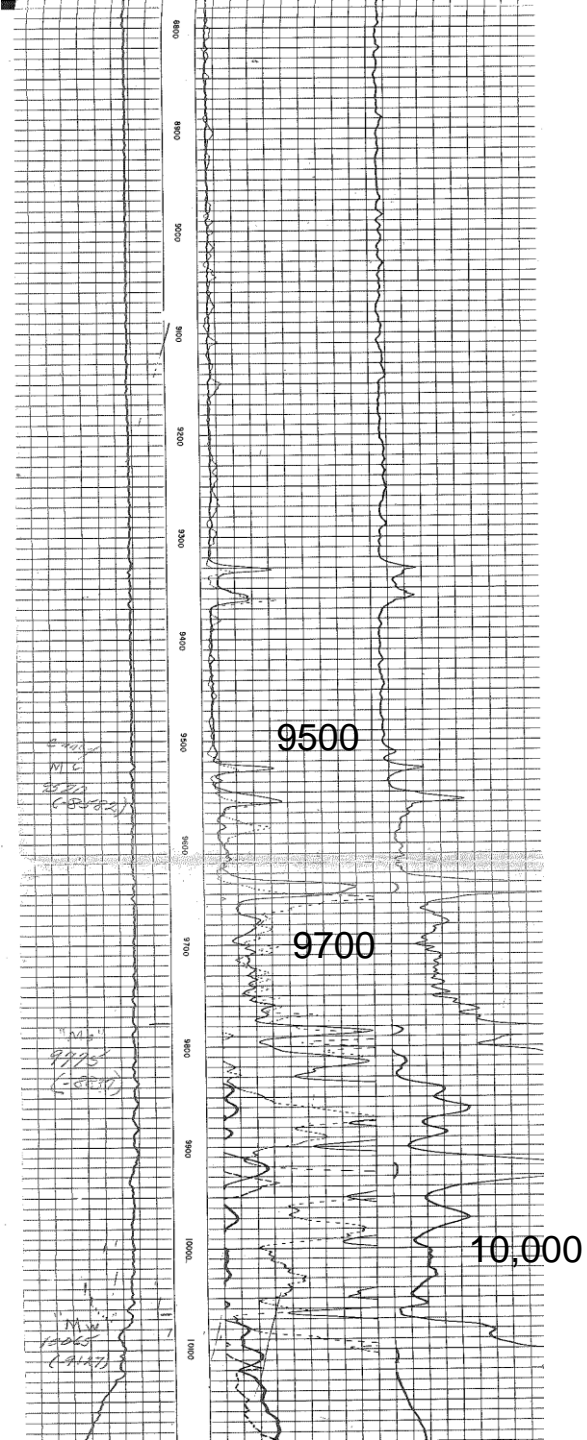
Top of Arbuckle West Spring Creek Member



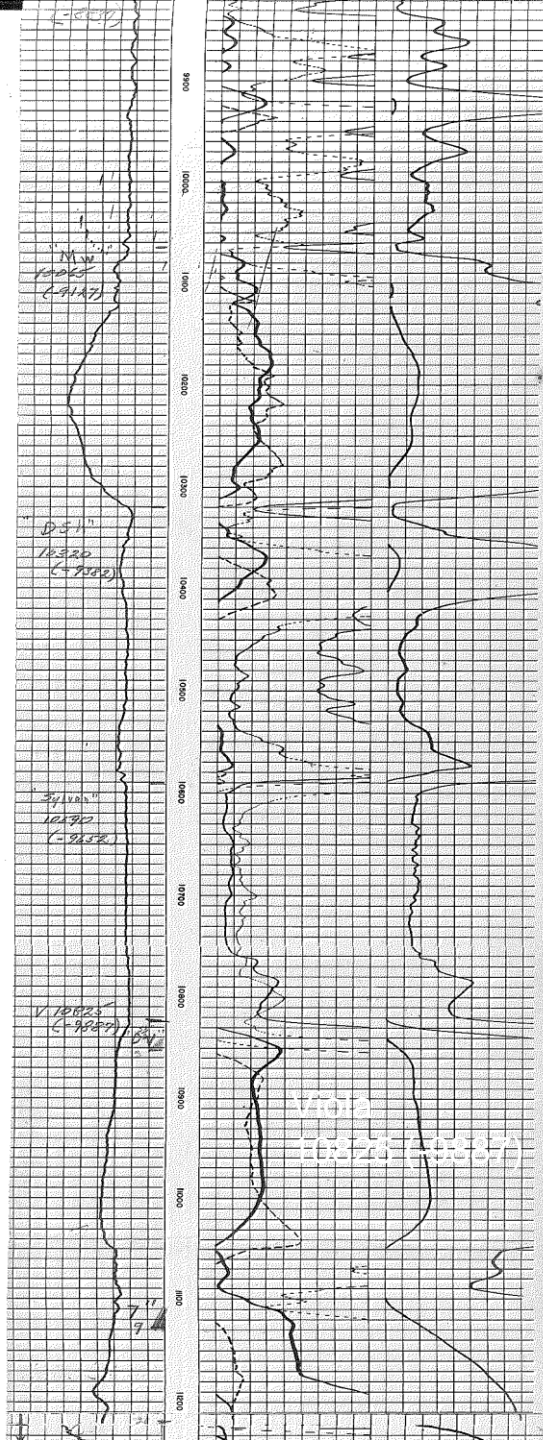
All
Springer



Caney at 9520',
Sycamore at 9775',
Woodford at 10,065'



Chimney Hill member of
Hunton Limestone,
Sylvan Shale,
Viola Limestone
at 10,825'



Viola at 3030' and again at 10,825'
giving a vertical displacement of 7795'.

Two other wells, the Frankford #1 Baldwin and
the Gadsco #1 Mary Stromberg,
both had vertical displacements of
7645' and 7610' respectively.

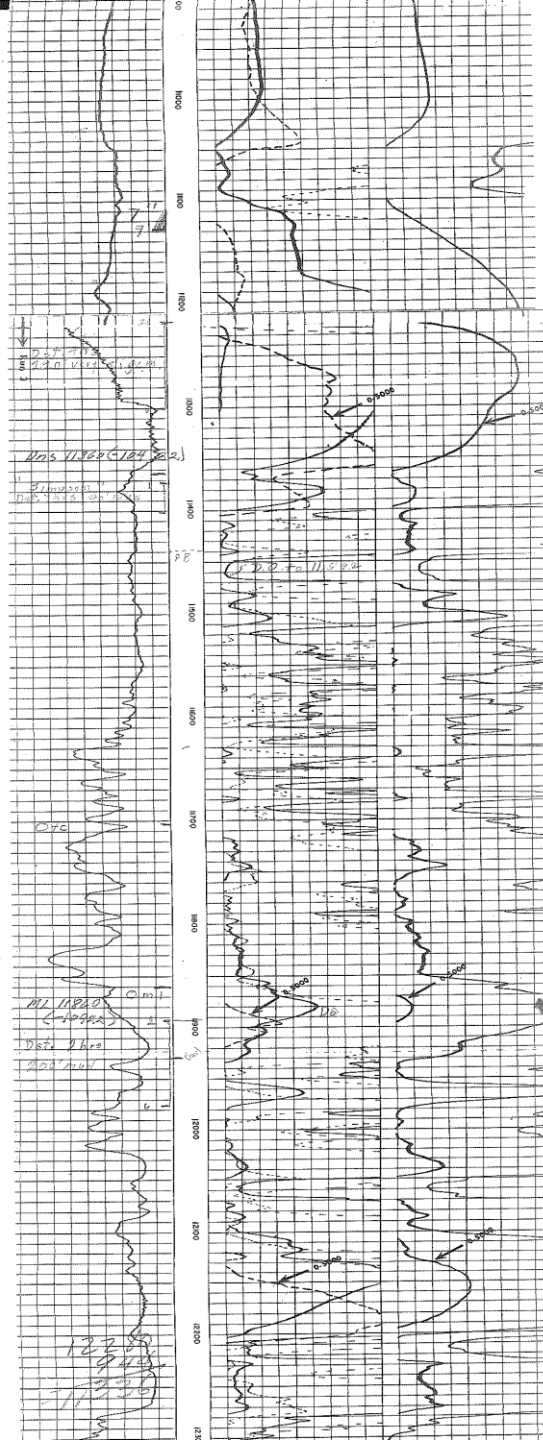
Contacts between various lower Ordovician units at Exit 51, I-35
Taken from "My Favorite Outcrop" R.L. Neman, Ph.D.
Shale Shaker, May-June 2011



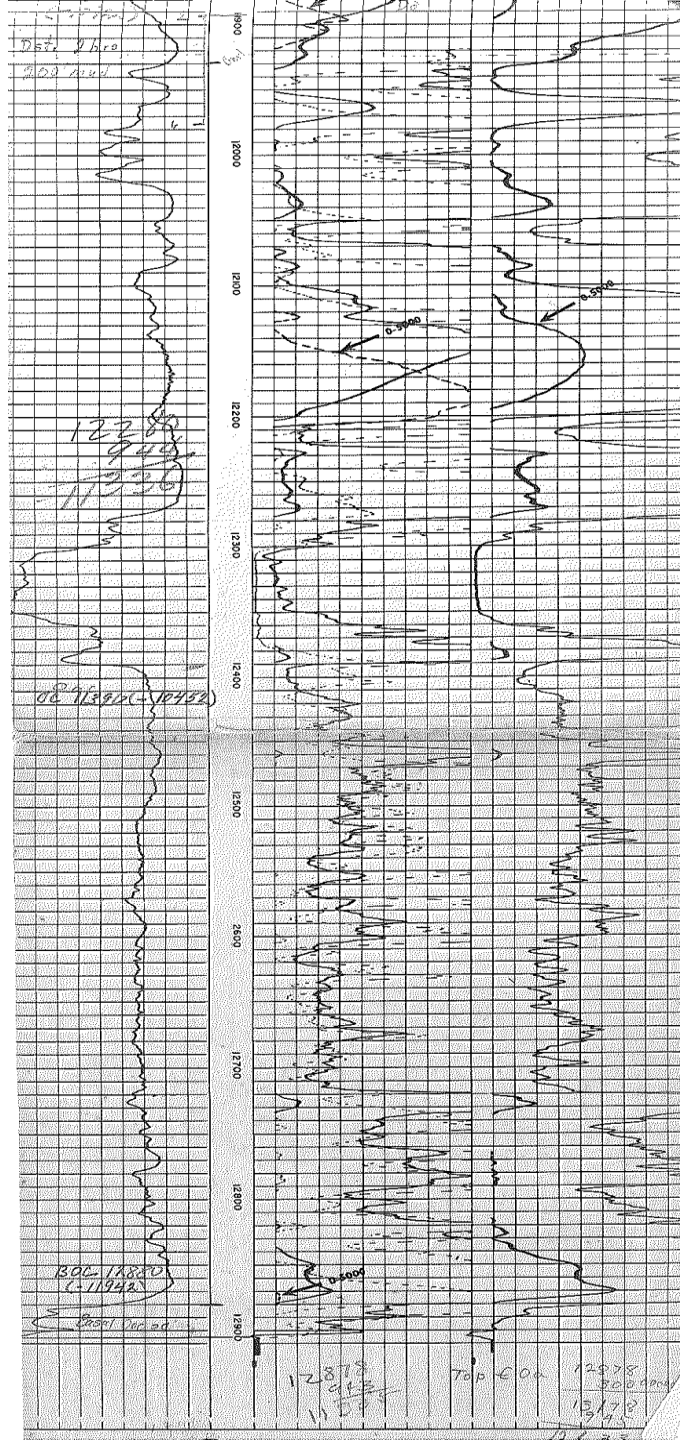
Bromide Dense 11360'

Bromide SS

McLish SS 11860'



Total Depth
in the
Basal Oil Creek Sand

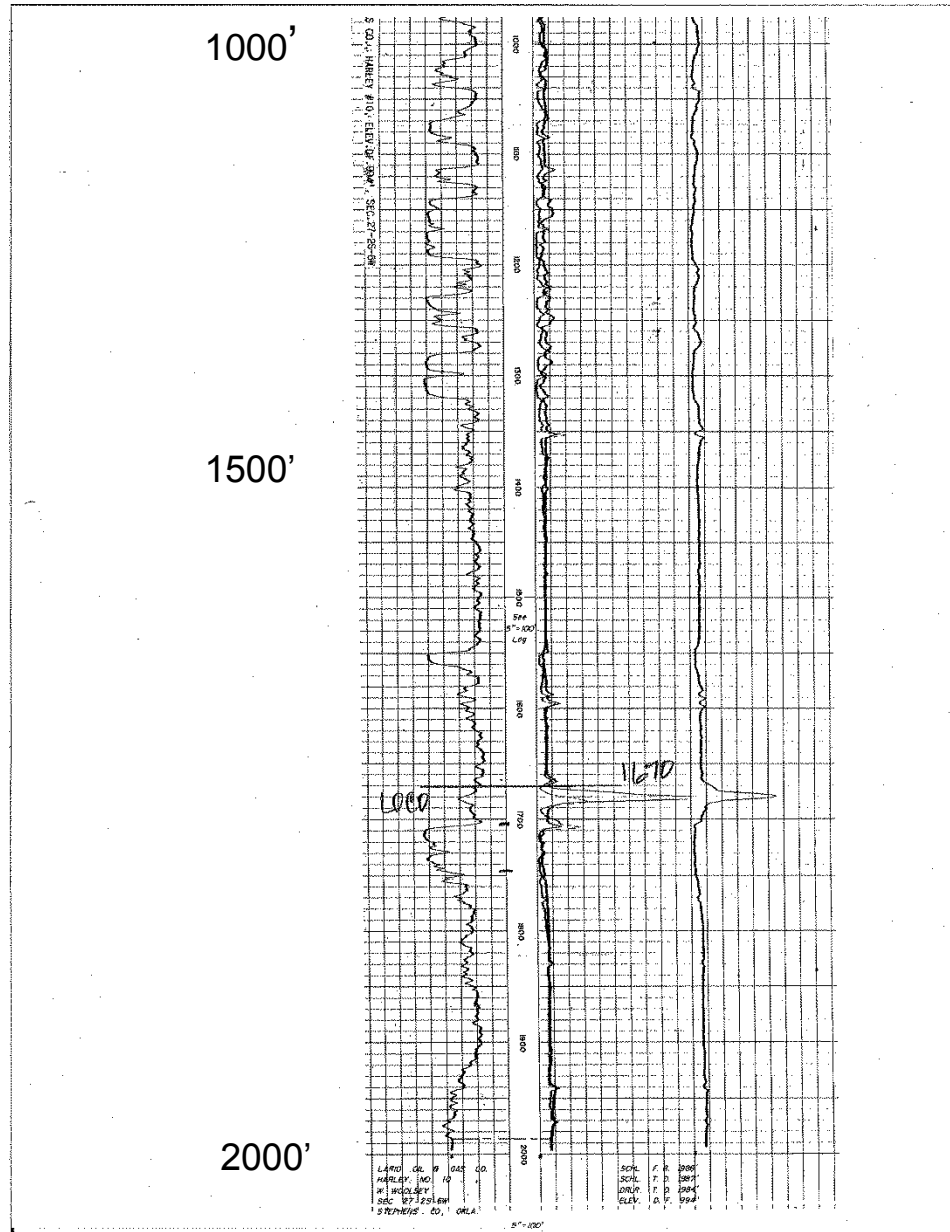


Basal McLish SS 12280'

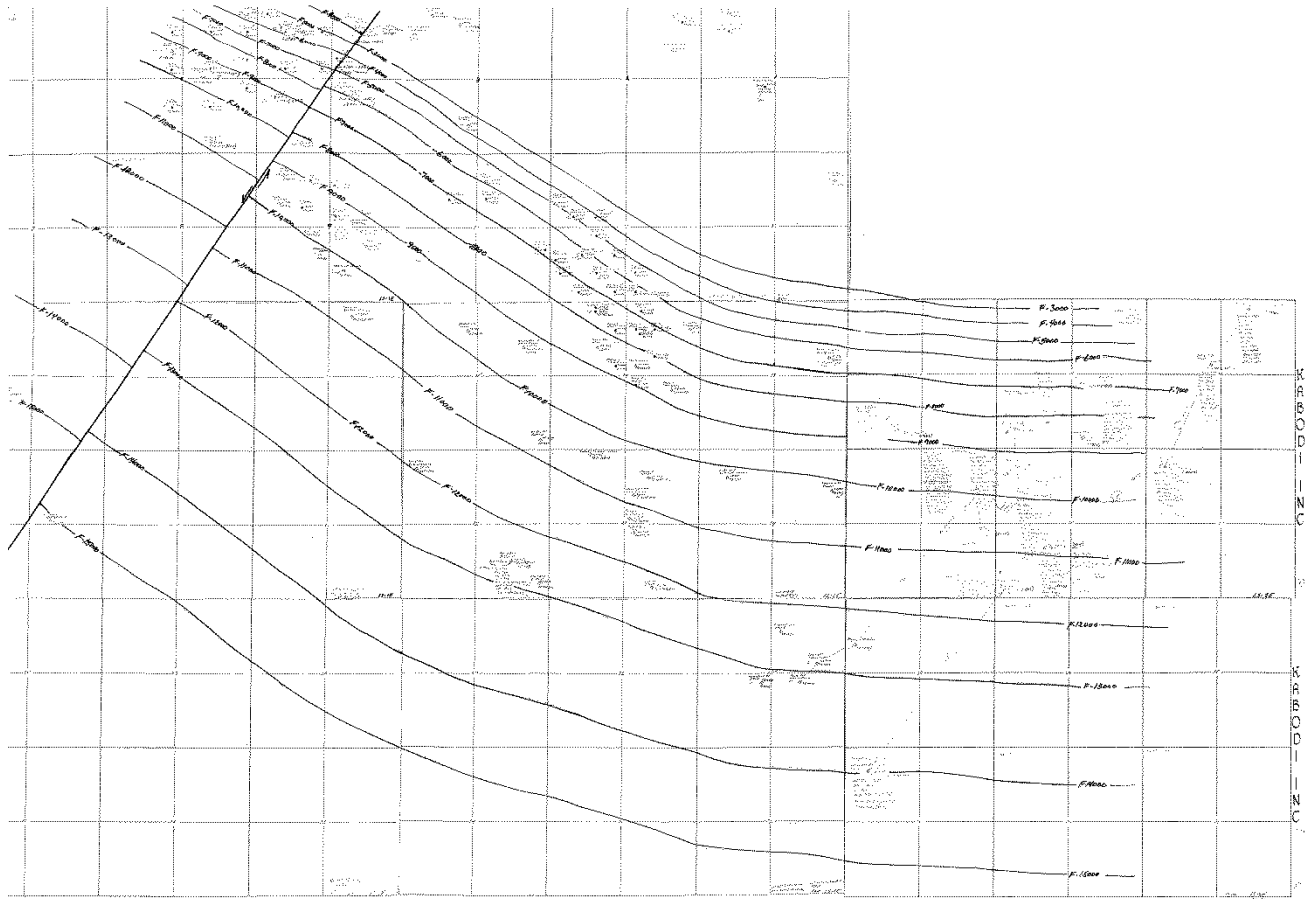
Oil Creek 12,390'

Basal Oil Creek SS 12880'

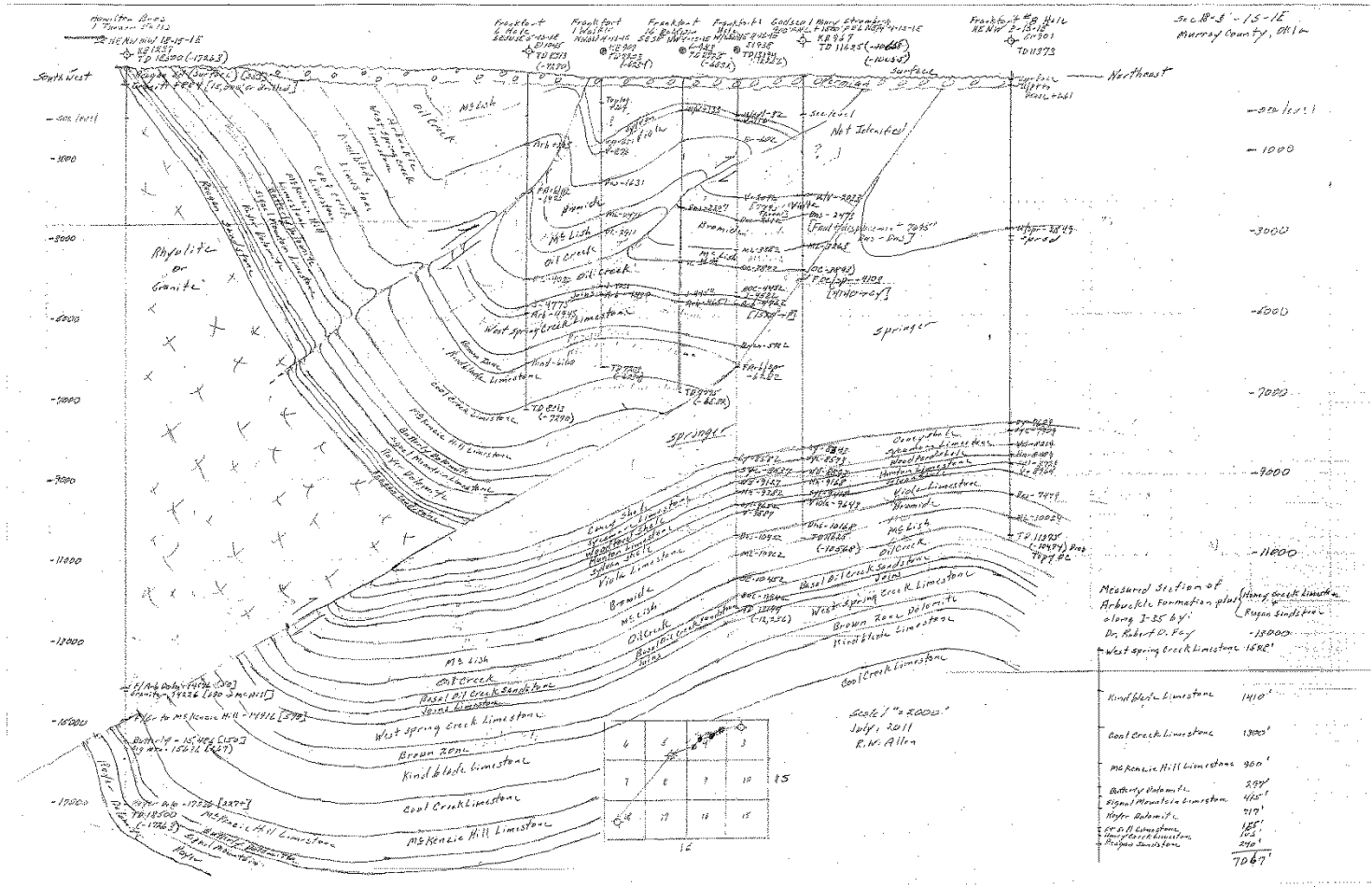
Lario Oil & Gas
 Harley #10
 NE, NW, NE
 SEC 27-T2S-R6W
 Stephens Co., OK



Map of Fault Plane
T1S-R1-2E
Murray Co., OK



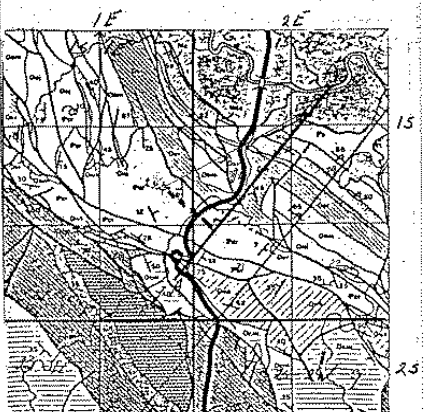
This Cross Section shows displacement of Fault.



Measured Section
On Highway 77
By: Dr. Robert A. Fay

Arbuckle Thickness
West Spring Creek

Sea level	—
1528	
Kudblade	1410
1410'	-2000
Cool Creek	1300
1300'	-4000
McKinzie Hill	900
900'	
Buttery 277	277
Signal Mountain	415
415'	-6000
Royer	717
717'	
Ft Sill	155
Honey Creek	105
Reagan	246
7062'	-8000

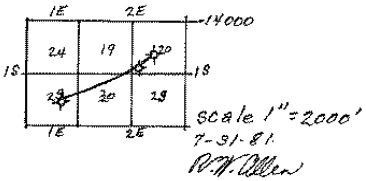
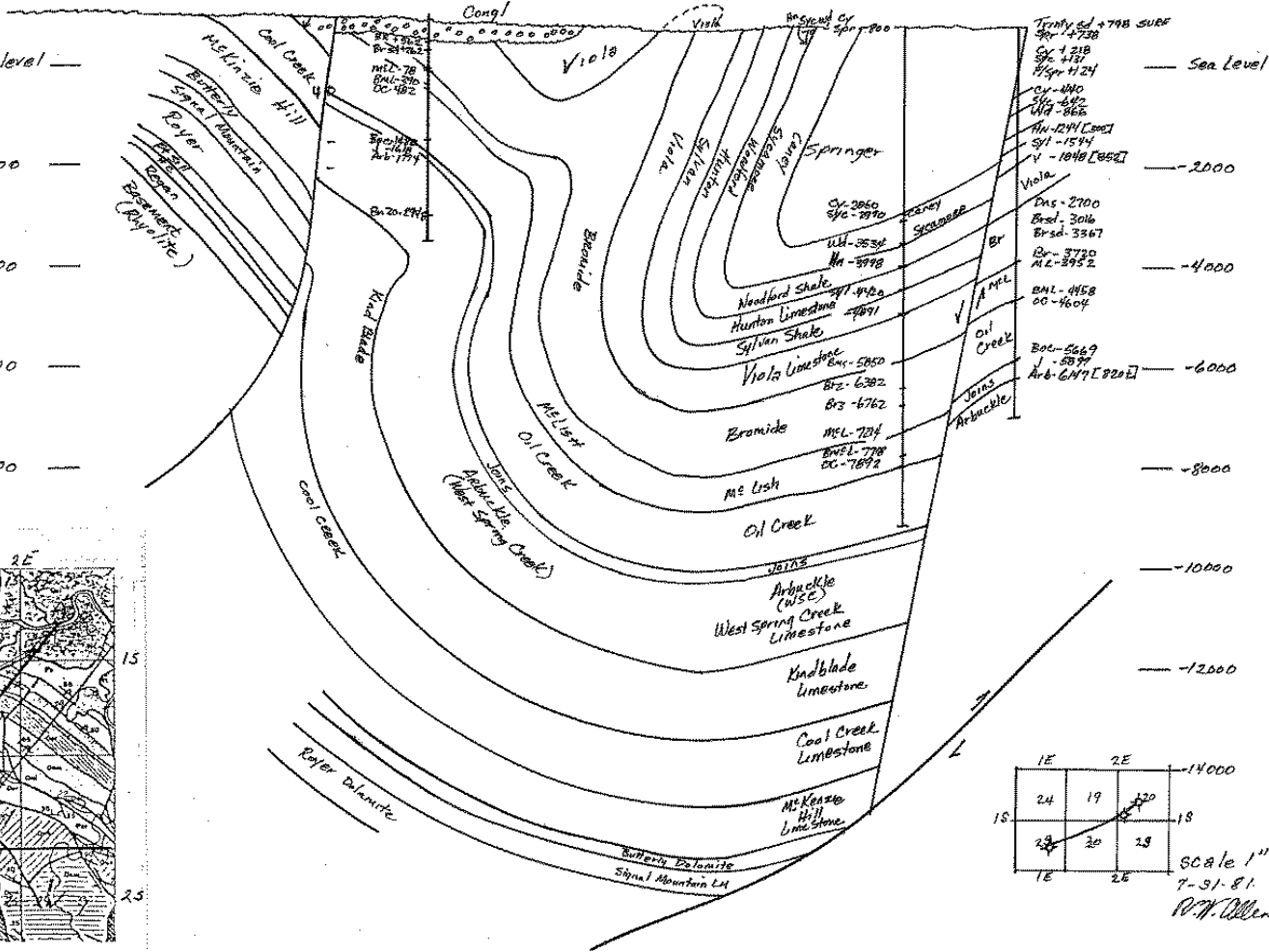


Washita Valley Fault
6000' + Throw

Essex & Collins Ranch
NE NW 26 26 - 15 - 1E
KE 1462
TD 4446/Arb

Placid & Goy's
SW SW SW 20 - 15 - 2E
KB 800
TD 3902/80C

Placid & Joyce
NE SW 20 - 15 - 2E
KB 798
TD 7785/Arb



The following outcrops occur on the Arbuckle Wilderness property in Murray County, OK, just east of Exit 51. A driving tour of the property will reveal most of the formations discussed in this paper.

Cliff = Chimney Hill Member of Hunton Limestone
Flat = Sylvan Shale



Contact: Hunton Formation Chimney Hill (left)--Henryhouse Limestone



Contact: Henryhouse (left) – Haragan (Hunton Formation)



Woodford Shale



Woodford Shale



Woodford Shale (hill left)
Sycamore Limestone (bottom right)



Caney Shale on Right



Sycamore Limestone – Caney Shale



Springer Shale



Washita River from Dougherty Bridge looking South.
Note the bedding planes normally under water.



As you drive thru the Arbuckle Wilderness
you will see various creatures including this
Emu.....



This strange horse is a Przewalski (pronounced “shed-walski”) from Mongolia



White Rhino wishing we would leave!



“The 2 Bobs”

Robert W. Allen



Dr. Bob Neman

THE END!