

Roger L. Moses

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**GEOLOGIC
REPORT
LOG**

COMPANY Bill Bowman Oil Co.
Natoma, Kansas

WELL Eunice Berland #1

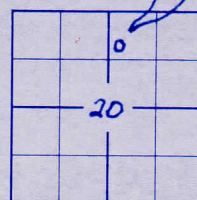
FIELD Berland East

LOCATION 4532' FSL & 2500' FEL

SEC. 20 TWP. 10s RGE. 19w

COUNTY Rooks

STATE Kansas



PRODUCTION Dry

ELEVATION KB 2203'

DF

GL 2198'

Drilling Measured From: Kelly Bushing

Samples Saved From 3100' To: T.D.

Drilling Time From 3050' To: T.D.

Samples Examined From: 3100' To: T.D.

Geological Supervision From 2950' To Total Depth

Wellsite Geologist Roger L. Moses

Electrical Surveys Dual Induction

Microresistivity

Porosity

Pioneer Energy Services

OPERATOR Bill Bowman Oil Co.

CONTRACTOR White Knight Drlg LLC

COMM: 9-9-2019 COMP: 9-14-2019

CASING RECORD

SURF: 259' (8 3/8") PROD:

TOTAL DEPTH DRILLERS: 3880'

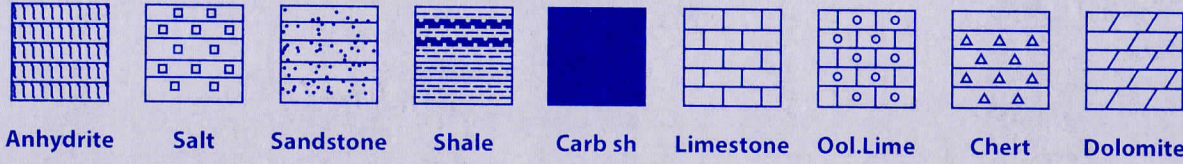
TOTAL DEPTH LOG: 3880'

FORMATION TOPS AND STRUCTURAL POSITION

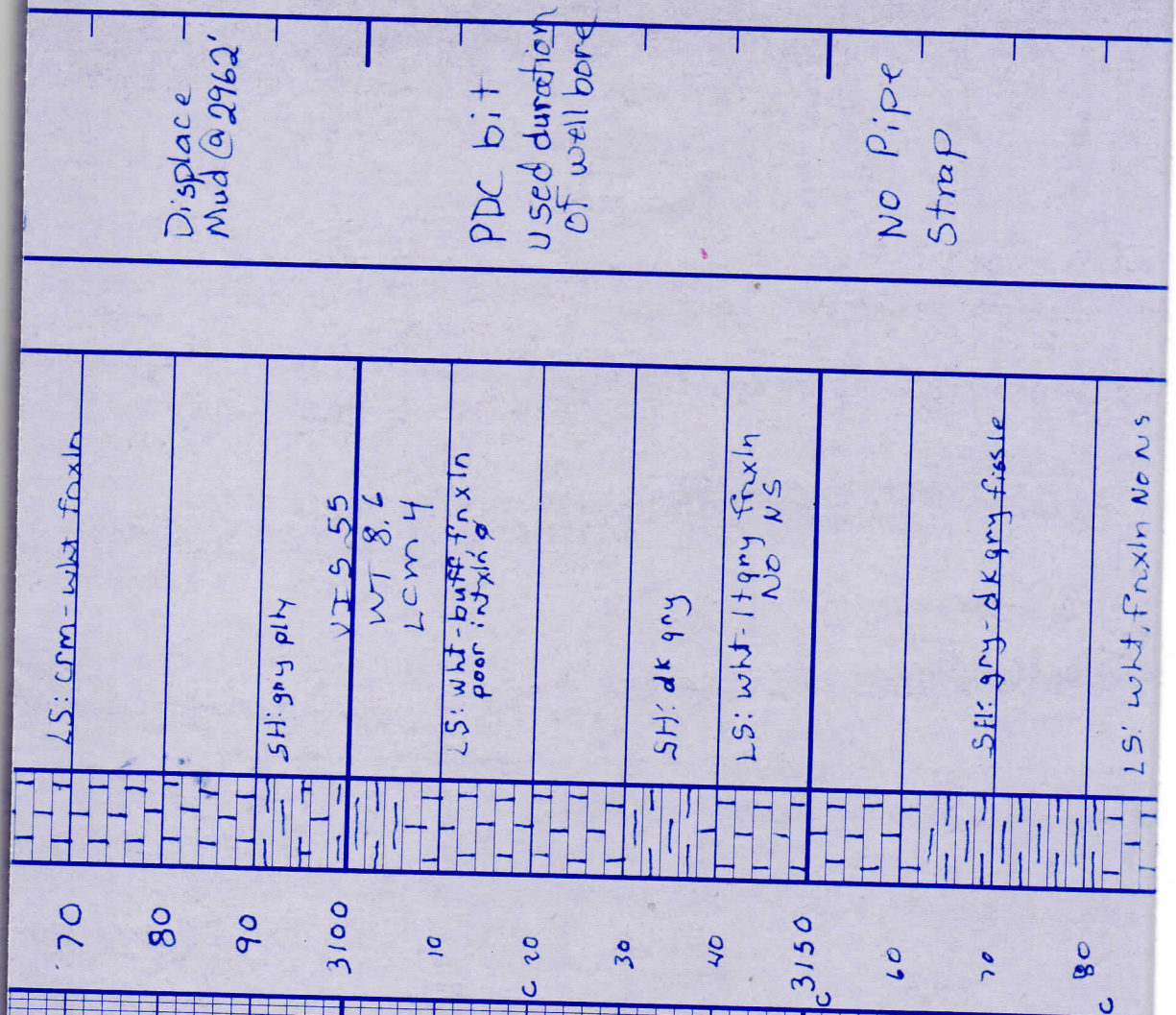
FORMATION	SAMPLE TOP	ELECTRIC LOG TOP	SUB-SEA DATUM	STRUCTURAL POSITION
Anhydrite Top	1635(+568)	1634	+569	-16
Anhydrite Base	1664(+539)	1664	+539	NA
Topeka	3209(+1006)	3204	-1001	NA
Heebner	3421(-1218)	3421	-1218	-17
Lansing	3461(-1258)	3460	-1257	-17
B/Kansas City	3668(-1465)	3678	-1475	-28
Conglomerate	3695(-1492)	3719	-1516	NA
Arbuckle	3820(-1617)	3816	-1613	-55

REFERENCE WELL FOR STRUCTURE Rex E Morris Drlg Co.;
Berland B-1, NE-SE-NW (3630' FSL & 2970' FEL)
Sec 20-10s-19w; Rooks County, Kansas

LEGEND



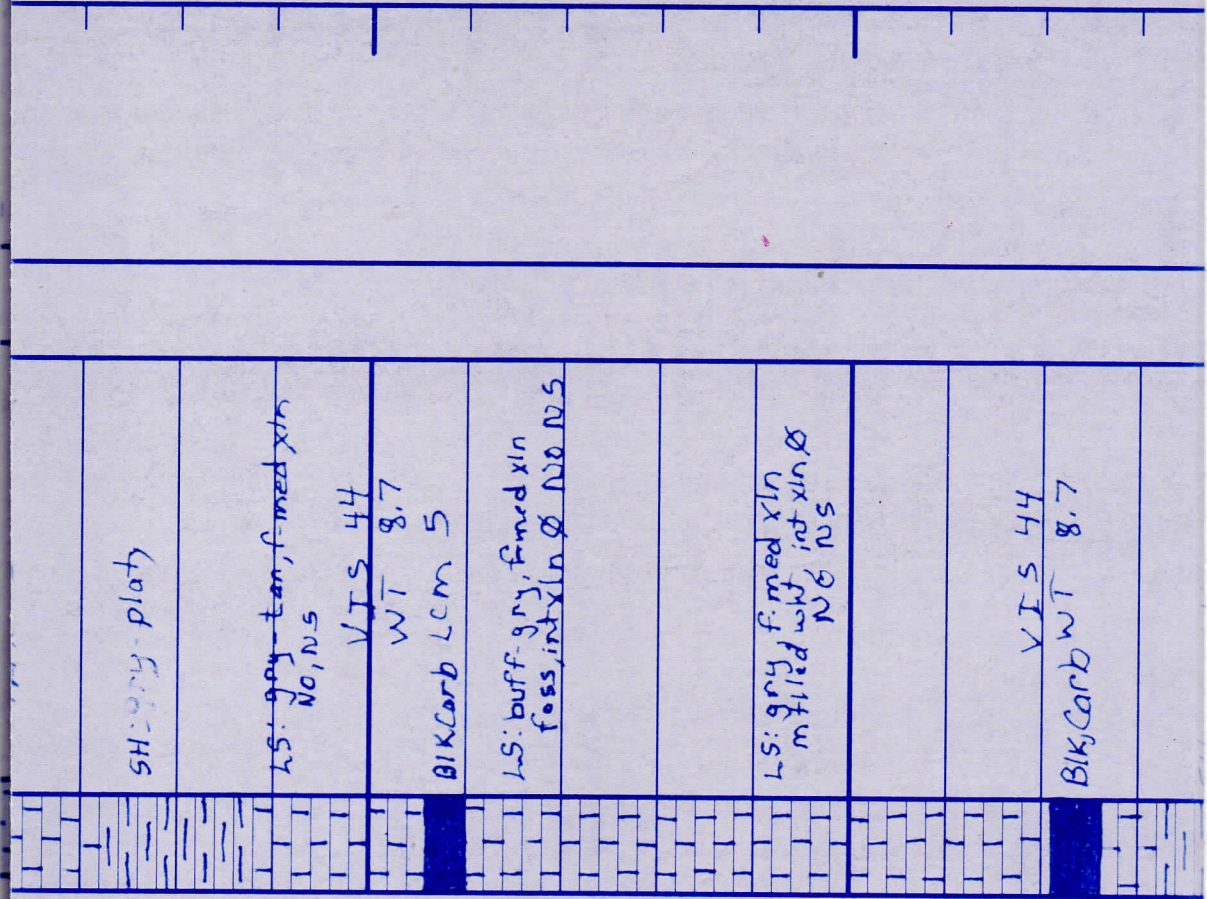
DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Decreases 5" 10" 15" 20" 25"	DEPTH	LITHOLOGY	SAMPLE DESCRIPTIONS	OIL SHOWS	REMARKS
	1630 40 50 60 70 60				DV Survey @ 259' Y4 Geologist on Location @ 2965'
			Anhydrite Top 1635 (+568)		
			Anhydrite Base 1644 (+539)		



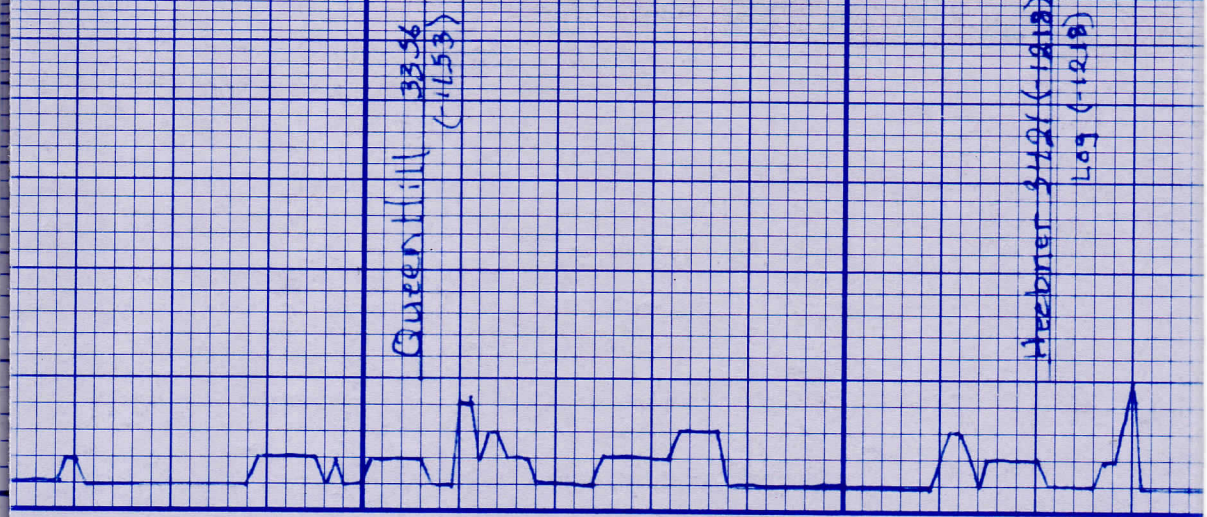
Displace
Mud @ 2962'

PDC bit
used duration
of well bore

NO Pipe
Strap



20
30
40
3350
60
70
80
90
3400
10
20
30



SH: gny - platy

LS: gny-tan, f-med xln
No, NS

VTS 44
WT 8.7
BIK Carb LCM 5

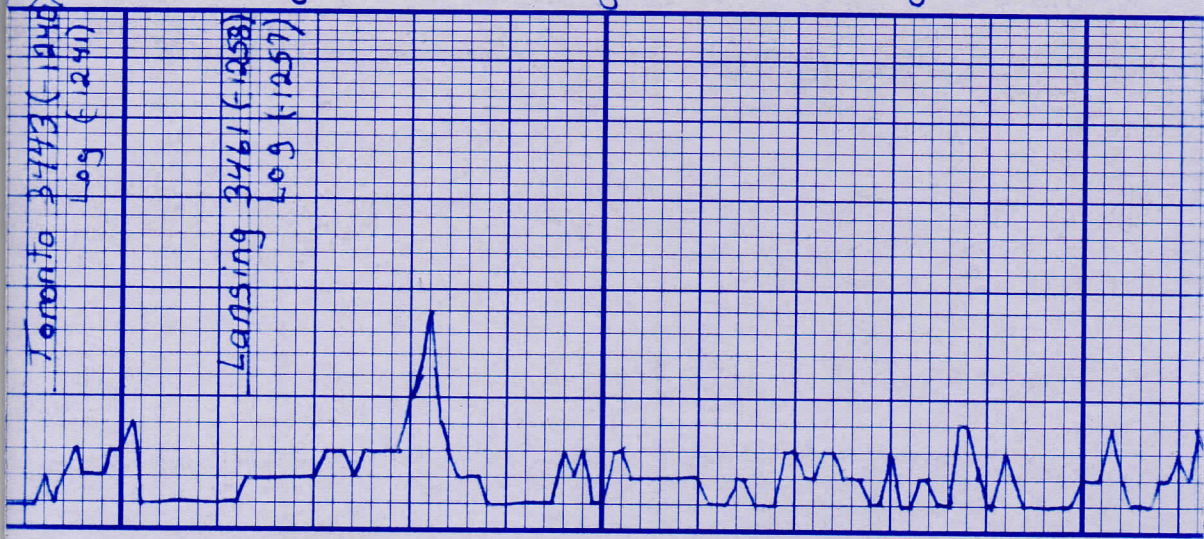
LS: buff-gny, f-med xln
foss, int xln Ø No, NS

LS: gny, f-med xln
m filled wkt, int xln Ø
No, NS

VTS 44
WT 8.7
BIK Carb

Queen Hill 3356
(-1153)

Heebiner 3421 (-1212)
Log (-1212)



SH: gry-silgomy	40
LS: crm-wht, fnxln foss, NO, NS	3450
LS: tan-wht, fnxln dense, ppø-oomø Fer, Siodor 17 str.	60
SH: dk gry, blk	70
LS: crm, fnxln, intxlnø ppø, NO, NS	80
VI 5 41 WT 8.7 1 cm 2	90
SH: gry, plty	c.3500
LS: crm-tan, fnxln chky, intxlnø, AIG NS	10
	20
	30
	40
	3550
	60



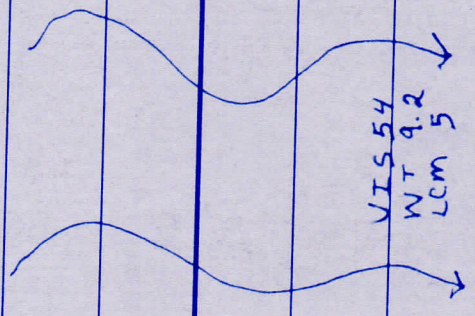


Base/Kansas City
 3668
 (-465)
 109(1475)

70	LS: 5 a/a	
80	BIK Carb	
90	LS: wlt-tan, faxln, indxn StrOdor	
3600	VIS 42, Break wt 9.1 Lcm 2	
10	LS: wlt-tan, faxln, indxn VSlidior very lt-str	
20		
30	LS: 5 a/a	
40	BIK Carb SA	
3650	LS: CRM-wlt faxln indxn, weak odor Sl, stair	
60	BIK Carb SL LS: CRM-lt grey, faxln indxn, Sl: st.	
70	SH: Var. clod, mushy blk, pcs of Δ	
80		



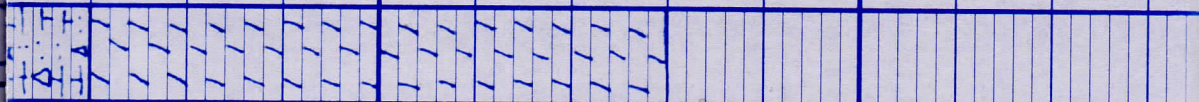
90	SH: 5	9/9
3700	VIS 45	WT: 9.0
10	LCM 1	CG: 1.5 wkt-tan fr-mud
20		xin, foss
30		SND: sub angular, cln grns
40		chert: tan-blk
3750		SH: Varic ind
60		washing red
70	VIS 54	WT 9.2
80	LCM 5	
90		CG: 1.5 wkt-tan fr-xin
3800		porif xin g, few foss
10		SND: pcs of sub angular to
		rounded grz, clear, none cmtd
		chert: blk, tan, wkt.
		SH: varic ind, pity-biky
		gummy.



Arbuckle 3820

(-1617)
209-1613

c 20
30
40
c3850
60
70
80



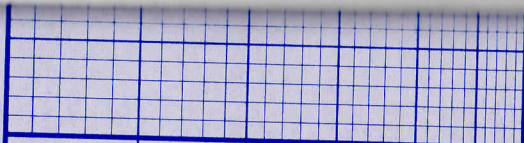
Dolo: white, suc/Rhomb
x15, PP med-Coarsexn
NO NS

Dolo: 5 a/a, No NS

VIS 54
WT 9.2
LCM 5

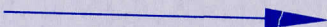
Dolo: 5 a/a barren

Total Depth
3880'



5" 10" 15" 20" 25"

DRILLING TIME Minutes/Foot



Rate of Penetration Decreases

DEPTH

LITHOLOGY

SAMPLE DESCRIPTIONS

OIL SHOWS

REMARKS

CONTRACTOR White Knight Drlg Co LLC

LOCATION 4532' FSL E 2500' FEL

LEASE Eunice Berland IP Dry

SEC 20 TWP 10s RNG 19w

ELEVATION 2203 KB RTD 3880

COUNTY Rooks STATE Kansas