



Musgrove

Petroleum Geology
212 Main Street, Claflin KS

NOTES

Company: RJM Oil Company

Lease: ILS #1

Field: Dralle

Location: SE-NW-NE-NE (625' FNL & 850' FEL)

Sec: 16 Twsp: 22S Rge: 14W

County: Stafford State: Kansas

KB: 1949' GL: 1941'

API #: 15-185-23990-00-00

Contractor: Southwind Drilling, Inc. (Rig #3)

Spud: 6/9/2017 Comp: 6/15/2017

RTD: 3919' LTD: 3918'

Mud Up: 3200' Type Mud: Chemical

Samples Saved From: 3200' to RTD

Drilling Time Kept From: 3200' to RTD

Samples Examined From: 3200' to RTD

Geological Supervision from: 3200' to RTD

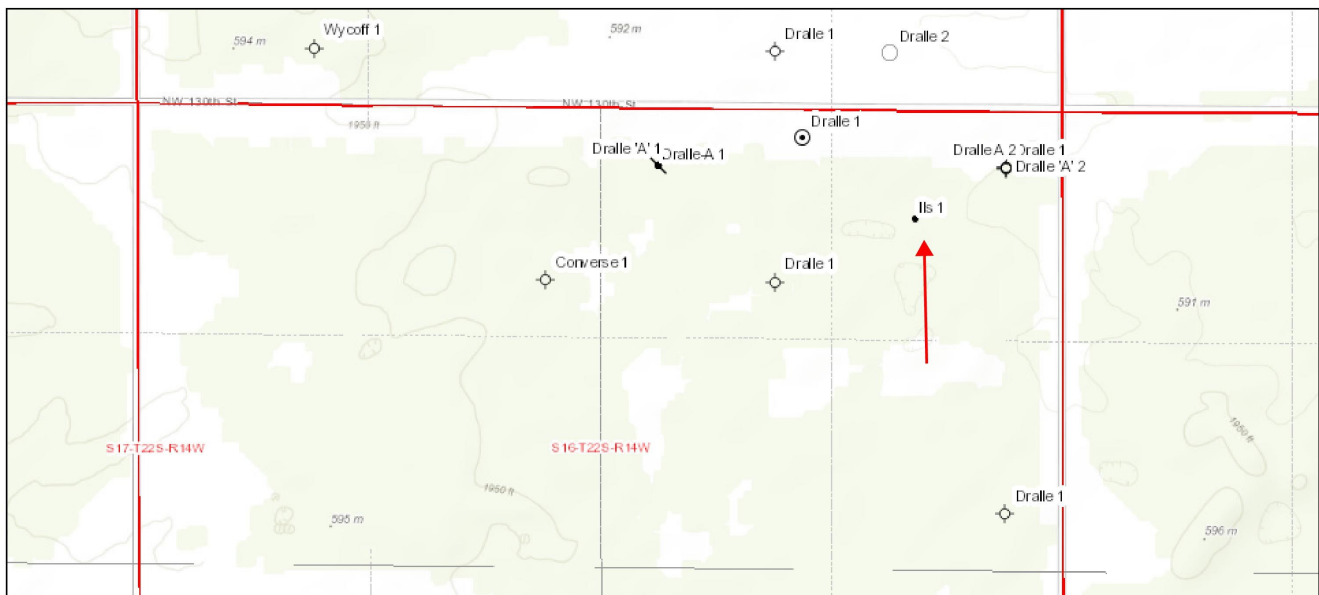
Geologist on Well: Jim Musgrove

Surface Casing: 8 5/8@305'

Production Casing: 5 1/2@ 3863'

Electronic Surveys: Logged by ELI; DIL/ MEL, CDL/CNL/PE, Sonic

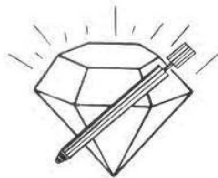
RJM- ILS #1





RJM Oil Company, Inc.

DRILLING WELL				COMPARISON WELL				COMPARISON WELL				
RJM OIL CO. - ILS #1				Imperial Oil-Dralle #1				Laguna Pet.- Dralle #1				
SE-NW-NE-NE 16-22S-14W				NE-NE-NE 16-22S-14W				SE-NW-NE 16-22S-14W				
oil				dry hole				dry hole				
1949 KB				1945 KB				1949 KB				
				Structural Relationship				Structural Relationship				
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	3339	-1390	3337	-1388	3330	-1385	5	-3	3354	-1405	15	17
Toronto	3363	-1414	3361	-1412	3354	-1409	5	-3				
Douglas	3379	-1430	3379	-1430		1945						
Brown Lime	3461	-1512	3460	-1511		1945						
Lansing	3471	-1522	3470	-1521	3465	-1520	-2	-1	3487	-1538	16	17
BKC	3710	-1761	3710	-1761		1945						
Viola	3780	-1831	3779	-1830	3764	-1819	-12	-11				
Simpson	3813	-1864	3811	-1862	3804	-1859	-5	-3				
Arbuckle	3864	-1915	3863	-1914	3851	-1906	-9	-8				
RTD	3919	-1970	3920	-1971	3901	-1956	-14	-15	3650	-1701	-269	-270
LTD	3918	-1969	3918	-1969								



DIAMOND TESTING
P.O. Box 157
HOISINGTON, KANSAS 67544
(800) 542-7313
DRILL-STEM TEST TICKET
FILE: ILS1DST1

TIME ON: 02:06
TIME OFF: 08:42

Company RJM Company Lease & Well No. ILS #1
Contractor Southwind Drlg. Rig #3 Charge to RJM Co
Elevation 1949' KB Formation Lansing "H,I,J" Effective Pay _____ Ft. Ticket No. F483
Date 6/14/17 Sec. 16 Twp. _____ Range 22 S County Stafford State KANSAS
Test Approved By Jim Musgrove Diamond Representative Jake Fahrenbruch

Formation Test No. 1 Interval Tested from 3584 ft. to 3644 ft. Total Depth 3644 ft.
Packer Depth 3579 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Packer Depth 3584 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 3586 ft. Recorder Number 5951 Cap. 6000 P.S.I.
Bottom Recorder Depth (Outside) 3589 ft. Recorder Number 5586 Cap. 6000 P.S.I.
Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 54 (1# LCM) Drill Collar Length 0 ft. I.D. 2 1/4 in.
Weight 8.9 Water Loss 8.0 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
Chlorides 3,000 P.P.M. Drill Pipe Length 3,564 ft. I.D. 3 1/2 in.
Jars: Make STERLING Serial Number _____ Test Tool Length 20 ft. Tool Size 3 1/2-IF in.
Did Well Flow? _____ Reversed Out _____ Anchor Length 60 ft. Size 4 1/2-FH in.
Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: Blow increased to BOB in 7.5 minutes. Blowback @ .25", died.
2nd Open: Blow increased to BOB in 2.5 minutes. Blowback @ 5".
Recovered 25 ft. of OM 35% oil, 65% mud

Recovered 60 ft. of HGCMO 40% gas, 35% oil, 25% mud
 Recovered 60 ft. of HGCWOM 30% gas, 18% oil, 17% wtr, 35% mud
 Recovered _____ ft. of 1,070' of Gas In Pipe
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Remarks: TOTAL RECOVERED FLUID: 145'
Chlorides: 38,000 PPM
RW: .19 ohm @ 70 F PH: 7.0

Price Job
Other Charges
Insurance
Total

Time Set Packer(s) 03:52 A.M. Time Started Off Bottom 06:52 P.M. Maximum Temperature 107 F
 Initial Hydrostatic Pressure..... (A) 1669 P.S.I.
 Initial Flow Period..... Minutes 30 (B) 26 P.S.I. to (C) 43 P.S.I.
 Initial Closed In Period..... Minutes 45 (D) 804 P.S.I.
 Final Flow Period..... Minutes 45 (E) 50 P.S.I. to (F) 71 P.S.I.
 Final Closed In Period..... Minutes 60 (G) 790 P.S.I.
 Final Hydrostatic Pressure..... (H) 1668 P.S.I.



DIAMOND TESTING
 P.O. Box 157
HOISINGTON, KANSAS 67544
 (800) 542-7313
DRILL-STEM TEST TICKET
 FILE: ILS1DST2

TIME ON: 15:34
 TIME OFF: 20:05

Company RJM Company Lease & Well No. ILS #1
 Contractor Southwind Drlg. Rig #3 Charge to RJM Co
 Elevation 1949' KB Formation LKC "K" Effective Pay _____ Ft. Ticket No. F484
 Date 6/14/17 Sec. 16 Twp. 22 S Range 14 W County Stafford State KANSAS
 Test Approved By Jim Musgrove Diamond Representative Jake Fahrenbruch

Formation Test No. 2 Interval Tested from 3643 ft. to 3670 ft. Total Depth 3670 ft.
 Packer Depth 3638 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.
 Packer Depth 3643 ft. Size 6 3/4 in. Packer depth _____ ft. Size 6 3/4 in.

Depth of Selective Zone Set _____
 Top Recorder Depth (Inside) 3648 ft. Recorder Number 5951 Cap. 6000 P.S.I.
 Bottom Recorder Depth (Outside) 3649 ft. Recorder Number 5586 Cap. 6000 P.S.I.
 Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____ P.S.I.

Mud Type CHEMICAL Viscosity 51 (1# LCM) Drill Collar Length 0 ft. I.D. 2 1/4 in.
 Weight 8.9 Water Loss 8.0 cc. Weight Pipe Length 0 ft. I.D. 2 7/8 in.
 Chlorides 5,000 P.P.M. Drill Pipe Length 3,623 ft. I.D. 3 1/2 in.
 Jars: Make STERLING Serial Number _____ Test Tool Length 20 ft. Tool Size 3 1/2-IF in.
 Did Well Flow? _____ Reversed Out _____ Anchor Length 27 ft. Size 4 1/2-FH in.
 Main Hole Size 7 7/8 Tool Joint Size 4 1/2 XH in. Surface Choke Size 1 in. Bottom Choke Size 5/8 in.

Blow: 1st Open: No blow, flushed tool, no blow.
 2nd Open: No blow, flushed tool, no blow.

Recovered 85 ft. of Drilling Mud 100% mud
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Recovered _____ ft. of _____

Price Job
Other Charges
Insurance
Total

Recovered _____ ft. of _____
 Recovered _____ ft. of _____
 Remarks: _____

Time Set Packer(s) 5:15 PM A.M. P.M. Time Started Off Bottom 6:35 PM A.M. P.M. Maximum Temperature 103 F

Initial Hydrostatic Pressure..... (A) 1704 P.S.I.

Initial Flow Period..... Minutes 20 (B) 24 P.S.I. to (C) 59 P.S.I.

Initial Closed In Period..... Minutes 20 (D) 468 P.S.I.

Final Flow Period..... Minutes 20 (E) 65 P.S.I. to (F) 60 P.S.I.

Final Closed In Period..... Minutes 20 (G) 323 P.S.I.

Final Hydrostatic Pressure..... (H) 1700 P.S.I.

ROCK TYPES

 Cht vari
  Lmst fw<7
  shale, gry
  shale, red
  Ss
 Dolprim
  shale, grn
  Carbon Sh
  Shcol

OTHER SYMBOLS

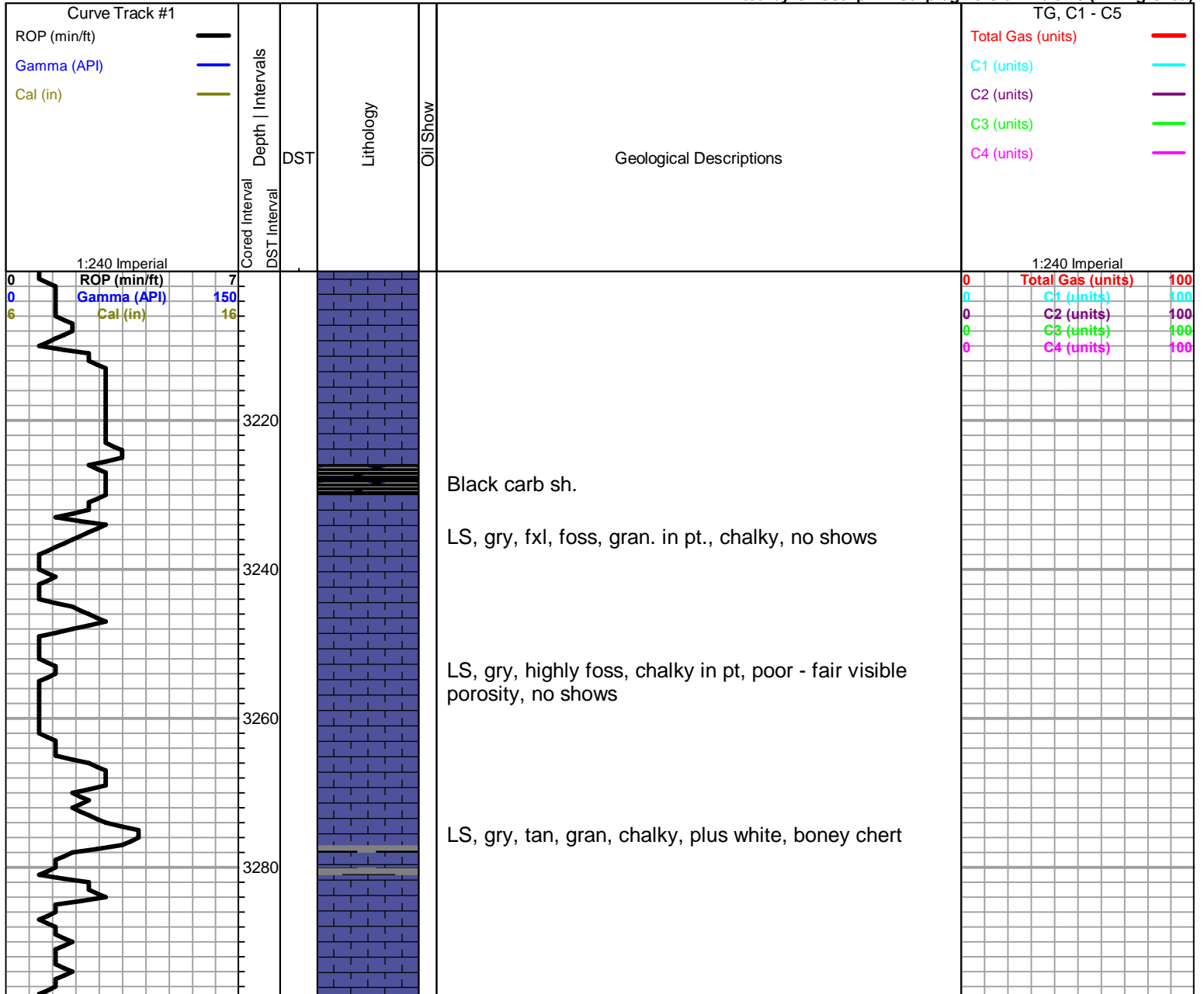
Oil Show

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- D Dead Oil Stn
- Fluorescence
- * Gas

DST

- DST Int
- DST alt
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)



3300
3320
3340
3360
3380
3400
3420
3440
3460
3480
3500

0 ROP (min/ft) 7
0 Gamma (API) 150
6 Cal (in) 16



LS, a/a

LS, tan, gry, slightly foss, chalky, cherty (dense)

Heebner 3339.0 (-1390.0)

Black carb sh.

Tr. gry, white, chert

Sh, gry, maroon, greenish

Toronto 3363.0 (-1414.0)

LS, tan, fxl, few sub oom, cherty, recrystallized, no shows

Douglas 3379.0 (-1430.0)

Sh, V.C. silty soft

Sh, a/a, soft, silty

Sh, a/a

Brown Lime 3461.0 (-1512.0)

LS, tan, brown, cherty in part, dense

Lansing 3471.0 (-1522.0)

LS, white, cream, few foss, chalky, no shows

LS, a/a, plus tan, dense LS

LS, cream, white, foss, scattered porosity, no shows

LS, a/a

0	Total Gas (units)	100
0	C1 (units)	100
0	C2 (units)	100
0	C3 (units)	100
0	C4 (units)	100

3520
3540
3560
3580
3600
3620
3640
3660
3680
3700
3720

0
0
6
K (min/ft)
Gamma (API)
Cal (in)

D
S
T

1
16
D
S
T

2

Sh, gry, greenish

LS, white, foss in pts, scattered vuggy porosity, no shows

LS, tan, ool, dense, poor visible porosity

LS, cream, white, oom in pt, scattered visible porosity, no shows, tr. white ool, chert

LS, cream, tan, ool, sub oom, scattered porosity, no shows

LS, white, gry, oom, poorly developed porosity, tr. poor stain, nsfo, no odor

LS, white, cream, oom, scattered porosity, brown stain, sfo, no odor

LS, tan, oom, fair oom porosity, brown/ dk brown stain, sfo, ??? odor

LS, cream, white, ool, sub oom, fair porosity, brown stain, sfo, no odor

LS, a/a

Sh, gry, limey, tr. black carb sh

LS, white, chalky, poor visible porosity, ??? stain, nsfo, no odor

Base Kansas City 3710.0 (-1761.0)

Sh, gry, greenish, tr. black carb shale

Tr. white, gry, chert,
Tr. dense ls

DST #1 3584-3566

30-45-45-60

1st Open:
BOB 7.5 mins

2nd Open:
BOB 2.5 mins

Recovery:
1,070' GIP

25' OM
(35%O, 65%M)

60' HGCMO
(40%G, 35%O, 25%
M)

60' HGCWOM
30%G, 18%O, 17%
W, 35% M)

Pressures:
ISIP 804 psi
FSIP 790 psi
IFP 26-43 psi
FFP 50-71 psi
HSH 1669-1668

DST # 2 3643-3670

20-20-20-20

1st Open:
Dead

Recovery:
85' Drilling Mud

3740
3760
3780
3800
3820
3840
3860
3880
3900
3920
3940

Sh, mar, green, gry
scattered LS, & chert a/a

Ditto a/a, plus yellow shale

Viola 3780.0 (-1831.0)

Chert, gry, white, opaque

Chert, a/a, few semi trip., black stain, nsfo, no odor

A/a, white, gry, boney chert, black tarry stain

Simpson 3811.0 (-1862.0)

Tr. LS, white, dense, glauc, in pt

V.C. sub waxey shale

Simpson Sd. 3831.0 (-1882.0)

Sd. white, vfg, poor visible porosity, no shows

Shale v.c. sub waxey

Arbuckle 3864.0 (-1915.0)

Dol., gry, white, fxl, dense, tr. pyrite

Dol., a/a, few suc. scattered porosity, no shows

Dol. a/a, tr. white, tan, med xln, dolomite, fair inxln
vuggy porosity, no shows

Dol. a/a, tr. white, chalky, tr. white chert

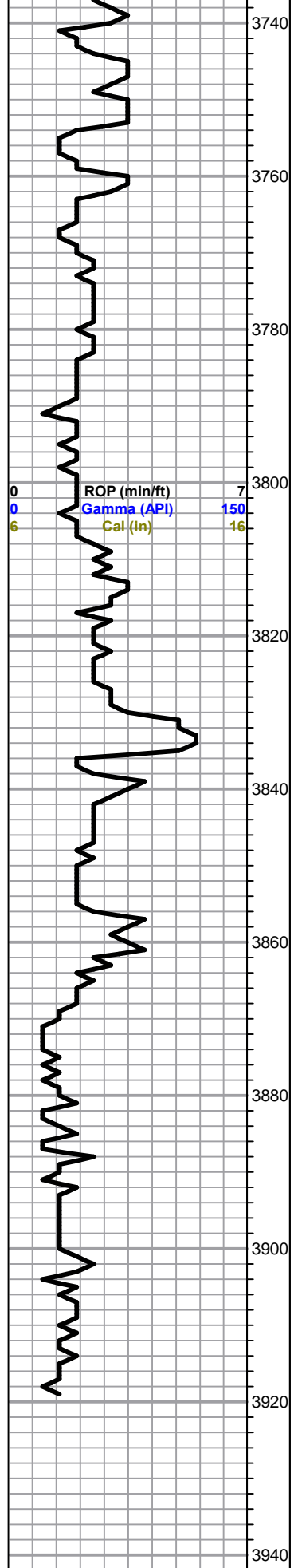
LTD 3918.0 (-1969.0)

RTD 3919.0 (-1970.0)

Pressures:
ISIP 468 psi
FSIP 323 psi
IFP 24-59 psi
FFP 65-60 psi
HSH 1704-1700 psi

ROP (min/ft) 7
Gamma (API) 150
Cal (in) 16

Total Gas (units) 100
C1 (units) 100
C2 (units) 100
C3 (units) 100
C4 (units) 100



3960

3980