



Mudgrove

Petroleum Geology
212 Main Street, Claflin KS

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY RF Hembree Oil, LLC
 LEASE Parker #9
 FIELD Ness City North
 LOCATION S2-S2-NW (2310' ENL&1320' FWL)
 SEC 25 TWSP 18s RGE 24w
 COUNTY Ness STATE Kansas

ELEVATIONS

KB 2257'
 DF _____
 GL 2250'
 Measurements Are All
 From KB

CONTRACTOR Pickrell Drilling, Inc. (Rig #10)
 SPUD 08/30/2018 COMP 09/07/2018
 RTD 4283' LTD 4284'
 MUD UP 3550' TYPE MUD Chemical

CASING
 SURFACE 8 5/8' @ 220'
 PRODUCTION 4 1/2" @ 4164'

ELECTRICAL SURVEYS
 ELI; DIL, MEL,
 CDL/CNL, PE

SAMPLES SAVED FROM 3500' TO RTD
 DRILLING TIME KEPT FROM 3500' TO RTD
 SAMPLES EXAMINED FROM 3500' TO RTD
 GEOLOGICAL SUPERVISION FROM 3585' TO RTD
 GEOLOGIST ON WELL Wyatt Urban

FORMATION TOPS	LOG		SAMPLES	
Heebner	1506	(+751)	RTD	4283 (-2026)
Anhydrite	1543	(+714)	LTD	4284 (-2027)
Heebner	3639	(-1382)		
Toronto	3658	(-1401)		
Lansing	3679	(-1422)		
Base Kansas City	3978	(-1721)		

	25	X	

Marmaton	4014	(-1757)
Pawnee	4101	(-1844)
Cherokee	4207	(-1950)
Miss- Reworked	4268	(-2011)
Miss. Dol.	4273	(-2016)

LEGEND

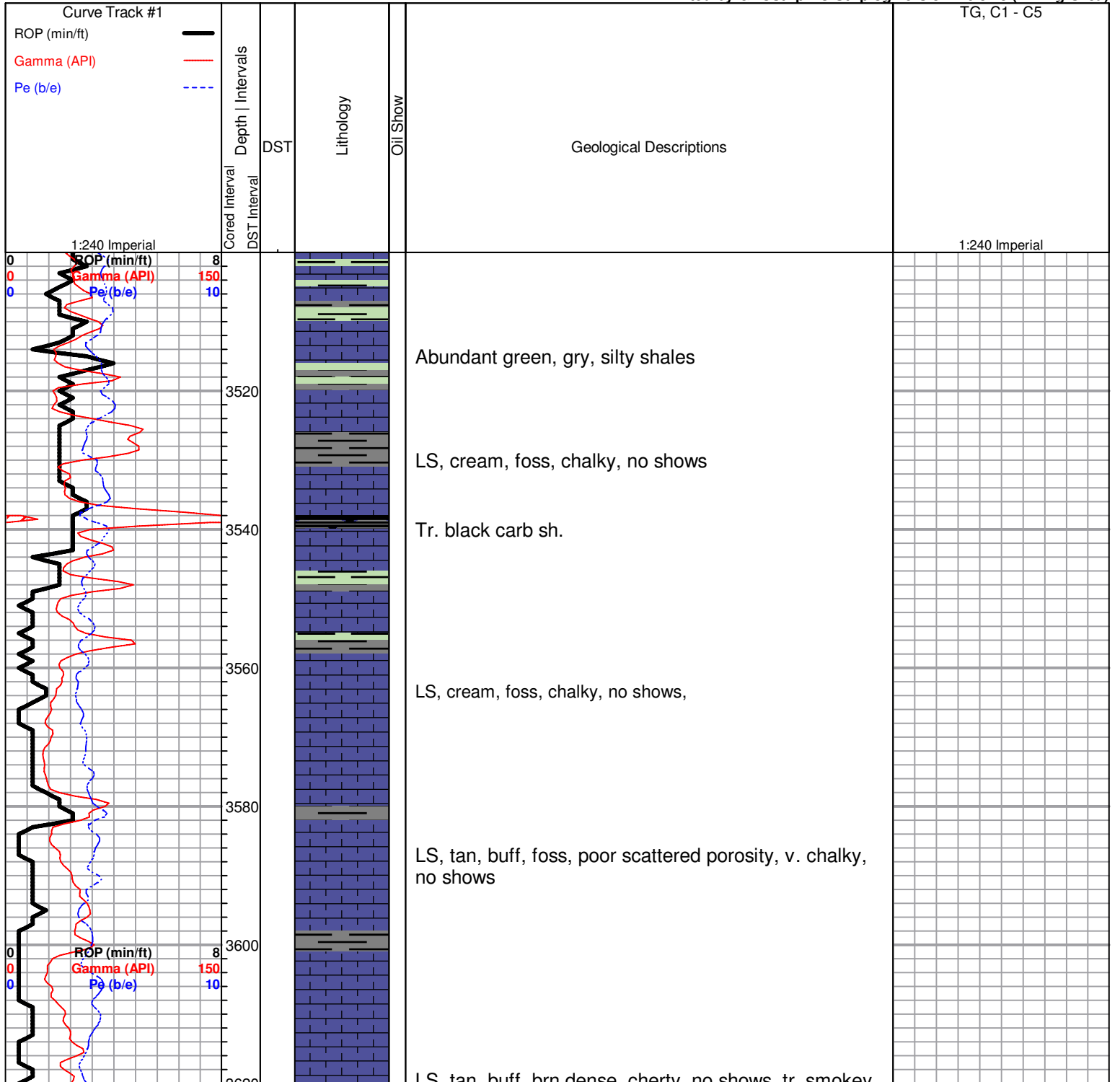
Oil Show

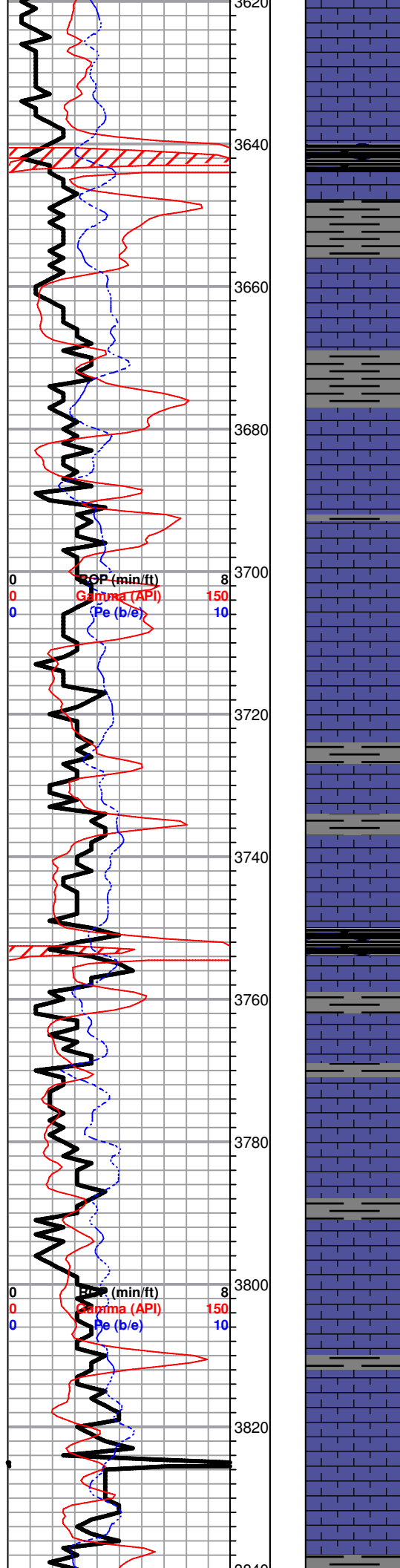
- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- Dead Oil Stn
- Fluorescence
- * Gas

DST

- DST Int
- DST alt
- Core
- tail pipe

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LS, tan, bun, brn dense, cherty, no shows, tr. smokey, gry, cherts

Heebner 3639.0 (-1382.0)

Sh, black carb

Sh, gry, greenish

Toronto 3659.0 (-1401.0)

LS, tan, scattered p.p porosity, chalky, nsfo, tr. blk sppty stain, nsfo, no odor

Sh, gry, greenish, silty

Lansing 3679.0 (-1422.0)

LS, tan, brn, fxl, few foss, fair scattered p.p. porosity, n/s

Sh, gry/ greenish, maroon

LS, tan, brn, fxl, dense, poor vis. porosity, no shows

Sh, gry/ dk gry, few green

LS, tan/ cream, foss, scattered p.p. porosity, v. chalky, no shows

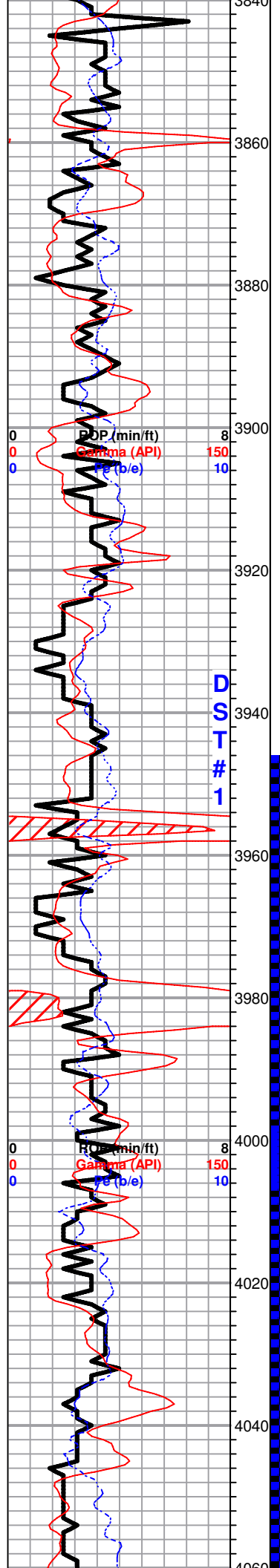
Sh. black carb

LS, tan, fxl, foss, poor p.p. porosity, chalky, no shows

LS, foss, fair scatt vuggy type porosity, sl. chalky, tr. blk stain, nsfo no odor, tr. opaque, white/ boney chert

LS, white, cream, foss/ ool, chalky, poor scattered vuggy type porosity, no shows

LS, gryish, white/cream, fxl, dense, poor vis. porosity, few foss, no shows



LS, tan, fxl, few foss, sl. chalky, no shows

Tr. black carb

LS, cream, dense, poor vis. porosity, tr. blk / dk gry stain???, nsfo, no odor

LS, tan, cream, foss, v. chalky, tr. brn-blk stain, tr. dead (flakey) dk brn,- blk oil, no odor

Sh, gry, greenish, waxey

LS, white, ool, pr-fair scattered vuggy type porosity, cherty in pts, no sfo, no odor

LS, tan, foss, scattered p.p. porosity, tr. brn stain, nsfo,

LS, tan, fxl, poor scattered p.p. porosity, sl. chalky, no shows

Sh, black carb

LS, white, cream, foss, good vis porosity, v. chalky, nsfo,

BKC 3979.0 (-1722.0)

Sh, black carb

LS, white, cream, ool, well developed scattered vuggy porosity, tr. brn stain, tr. black dk gry flakes, nsfo, no odor

Slug gry, dk gry shales, tr. tan & brn chert

Marmaton 4012.0 (-1755.0)

LS, white, cream, lg. well developed ool, fxl, cherty dense, no shows, no odor

LS, tan, ool, poorly developed ool porosity, chalky, tr. blk stain, nsfo, tr. blk stain, ??? odor - (cfs 40 min).

Slug aqua green shale

LS, a/a, decrease, p.p. porosity, dense--> cherty, tr. blk stain on one (1), (3) spots of dk brown sfo, no odor

LS, cream, tan, gran--> chalky, fr vis. porosity, tr. brn

DST#1 3945-4068
30-30-45-60

1st Open:
BOB 90 sec.

1st Close:
Built to 1"

2nd Open:
BOB 3 mins.

2nd Close:
Built to 3"

Recovery:
1798' GIP

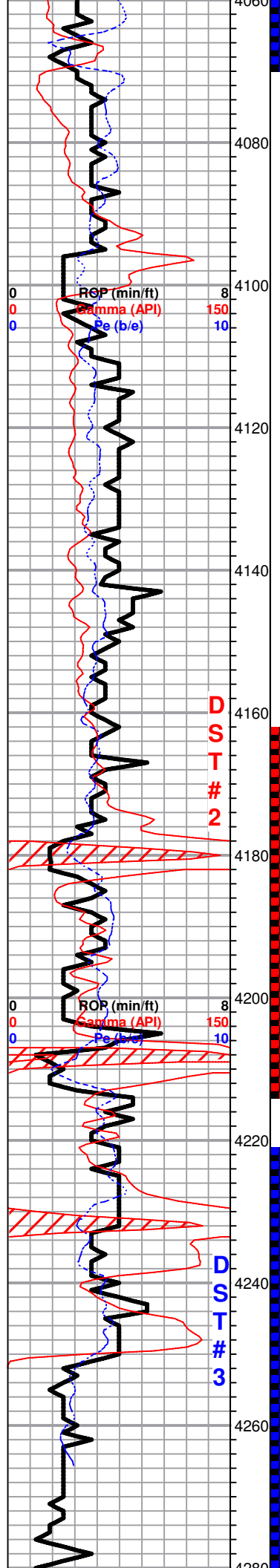
565' GSY OIL
(30%G, 70%O)

126' MCO
(30%M, 70%O)

378' GOCM
(30%G, 20%O, 50%M)

Pressures:
ISIP 1238 psi
FSIP 1242 psi
IFP 165-296 psi
FFP 312-426 psi
HSH 2037-1925 psi

spooky SFO, no more
in sample cup



stain, tr. sfo (v. weak sfo), ??? odor

LS, tan-buff, ool, pr-fair scattered p.p. type porosity, lt. brn/blk stain, v. wk. spty sfo, no odor

LS, white, gry, few foss, poor scattered p.p. porosity, sl. chalky, tr. white & opaque cherts

Sh. dk, gry, purp, maroon

Pawnee 4103.0 (-1846.0)

LS, tan, brn, pr - fair scattered p.p. porosity, dense, tr. brn stain, tr. spty sfo, no odor

LS, tan, fxl, poor p.p type, porosity, chalky, slightly cherty, tr. brn stain, tr. dead oil (flakes), nsfo, no odor

LS, tan, cream, few foss, dense, poor vis. porosity, chalky, no shows,

LS, tan, cream, flx, poor scattered p.p. type porosity, chalky, nsfo,/ tr. aqua green, sh.

DST#2 4163-4212

30-30-30-30

1st Open:
Weak blow (1.25")

2nd Open:
Weak surface blow

Recovery:
25' SGCM
(2%G, 98%M)

Pressures:
ISIP 103 psi
FSIP 54 psi
IFP 15-21 psi
FFP 22-25 psi
HSH 2119 - 2109 psi

Sh, blk carb

Ft. Scott 4182.0 (-1925.0)

LS, cream, white, foss, poorly develedop vuggy.type porosity, tr. blk stain, nsfo, ??? odor

LS, white, cream, few foss, scattered p.p. type porosity, chalky, tr. golden brown stain, dk brn spty sfo fair odor

Cherokee Sh. 4205.0 (-1948.0)

Sh, black carb

LS,tan, fxl, sl. dol., dense, cherty, poor vis. porosity, tr. blk stain, tr. sfo, ft. odor

LS, a/a , no shows, dense, tr. abd. v.c. cherts,

Sh, black carb

Sh, a/a. tr. LS, white, cream, dense, poor vis. porosity, chalky no shows,

DST#3 4221-4283

30-30-30-30

1st Open:
Weak Surface blow

2nd Open:
Weak Surface blow

Recovery:
25' SOCM
(2%O, 98%M)

Slug gry, dk gry maroon, shales. V. C. cherts

Tr. dol. gry, dense, few fxl, poor scattered porosity, no show no odor abundant cherts, orange, boney, opaque

Miss. 4273.0 (-2016.0)

Dol. gry, fxl, dense, poor p.p. type porosity on few, no shows, ??? odor, + slug aqua green waxey shale

4200

4300

4320

4340

4360

4380

0	ROP (min/ft)	8
0	Gamma (API)	150
0	Pe (b/e)	10



Dol. tan, fxl, fair scattered vuggy porosity, tr. brn stain, sfo, strong odor

RTD 4283.0 (-2026.0)

Pressures:

- ISIP 70 psi
- FSIP 88 psi
- IFP 24-70 psi
- FFP 54-88 psi
- HSH 2175-2071 psi