

JERRY A. SMITH

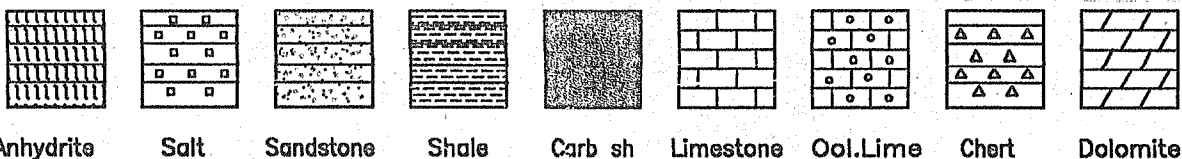
CERTIFIED PETROLEUM GEOLOGIST

GEOLOGIST'S REPORT

DRILLING TIME and SAMPLE LOG

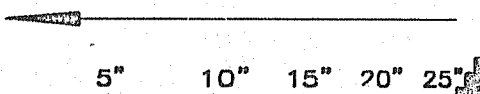
COMPANY: PICKRELL DRILLING COMPANY, INC.			ELEVATIONS
LEASE: #5 POPP "A"			K.B. 2458
FIELD: LAZY 17			D.F.
LOCATION: 1450' FSL & 330' FEL			G.L. 2451
SEC. 24	TWSP. 17	RNG. 26 W	Measurements Are All From:
COUNTY: NESS	STATE: KANSAS		KB
CONTRACTOR: COMPANY TOOLS, RIG #10			CASING
SPUD: 7/18/13	COMP. 7/26/13	SURFACE: 8 5/8 " @ 215'	
RTD. 4405	LTD. 4406	PRODUCTION :P & A	
MUD UP: 3435	TYPE MUD: CHEMICAL	ELECTRICAL SURVEYS	
API No. 15-135-25636			PIONEER: CNL/CDL, DIL, MEL
SAMPLES SAVED FROM: 3600			TO: RTD
DRILLING TIME KEPT FROM: 1700/3600			TO: 1900/RTD
SAMPLES EXAMINED FROM: 3600			TO: RTD
GEOLOGICAL SUPERVISON FROM: 3500			TO: RTD
GEOLOGIST ON WELL: JERRY A. SMITH			
FORMATION TOPS	LOG	SAMPLES	
ANHYDRITE	1782 (+674)	1783 (+675)	
HEEBNER	3740 (-1282)	3740 (-1282)	
LANSING	3779 (-1321)	3779 (-1321)	
STARK	4027 (-1569)	4026 (-1568)	
FT. SCOTT	4287 (-1829)	4288 (-1830)	
CHEROKEE	4313 (-1855)	4315 (-1857)	
MISSISSIPPIAN	4383 (-1925)	4381 (-1923)	

LEGEND



Anhydrite Salt Sandstone Shale Carb sh Limestone Ool.Lime Chert Dolomite

DRILLING TIME IN MINUTES
PER FOOT
Rate of Penetration Increases



SAMPLE DESCRIPTIONS

REMARKS

NO GAS DETECTOR
DST'S (3): TRILOBITE
MUD: MUD-CO

S.H.T.'S

218'	3/4"	2224'	1/2"
724'	3/4"	2724'	3/4"
1130'	3/4"	3871'	1/4"
1724'	3/4"	4390'	1"

LITHOLOGY

702L 501

1724 74 4330 1

VERT LOG SCALE: 2" = 100'

1700

50

1800

50

1900

ANHYDRITE

1783 (+675) SMPL

1782 (+674) LOG

B/ANHYDRITE

1813 (+645) SMPL

1810 (+648) LOG

VERT LOG SCALE: 5" = 100'

3600

ABD_{SH} DK GY → GY-GN

20

Ln = GRM, Lr GY, FX.
DSE.

Ln = AA. SHLY.

40

Ln = GRM, Lr GY, FX.
DSE.

Ln = AA_{SH} / SCAD DK
GY SH.

60

SHLY Ln = AA.

80

Ln = GRM, Lr → M GY.
FX. DSE.

Ln = AA.

SH = M → DK GY.

3700

20

40

60

80

3800

20

40

60

80

3900

20

Ln - Cem. Lr → M Gy.
FX. DSE. PR → PR
VGY. D. NS.

Ln - AA.

Ln - AA w/ SCATT DK
GY SH.

SH - BLK, CARR.

Ln - Lr GY. FX. DSE.

SH - DK GY, GY - GN.

Ln - Cem. Lr GY. FX.
DSE. → CHKY.

SCATT DK GY SH.

Ln - Lr → M Gy. GY - GN. FX.
DSE. CAMLD. D. W. CARR.
D. SH. FGO.

Ln - Cem. Lr GY. FX.
DSE. SCATT DK GY. DQ.
SH. DSE. CHKY.

Ln - AA w/ SCATT PR
VGY. D. NS.

Ln - Lr → M Gy. FX.
DSE. CHKY - AA.

SH - M → DK GY.

Ln - Cem. Lr GY. FX.
DSE. CHKY IN PR.

Ln - AA w/ SCATT DK
GY SH.

Ln - Cem. Lr → M Gy.
FX. DSE.

Ln - AA.

Ln - AA w/ SCATT DK
GY SH.

Ln - Lr → M Gy. FX. DSE.

Ln - Lr GY. FX. DSE. w/
CHKY - Cem. Lr GY. DQ.
SH. DSE.

Ln - Cem. Lr GY. FX.
DQ. CAMLD. D. W. CARR. W.
CHKY. No CARR. No Vis
SH.

Ln - AA.

Ln - Lr GY. FX. DSE. w/
SCATT CHKY - AA.

Ln - Lr → M Gy. FX.
SCATT PR VGY. D. NS.

HEEBNER

3740 (-1282) SMPL & LOG

LANSING

3779 (-1321) SMPL & LOG

DST #1: 3771-86

30-60-90-90

IF: BOB IN 17 MIN

ISI: NO RETURN

FF: BOB IN 25 MIN

FSI: NO RETURN

RECOVERY:

5' OIL

475' MCW

(95% W, 5% M)

58,000 PPM CHLORIDES

SIP'S: 1184-1074 #

FP'S: 27-100/108-254 #

HP'S: 1817-1802 #

BHT: 121° F

MUD @ 3871':

9.0 WT, 48 VIS, 8.0 FILT,

3000 CHLOR, 1.5 # LCM

PIPE STRAP @ 3871':

3881.00 BOARD

3880.99 STRAP

.01 SHORT

D
S
T
#1

40

60

80

4000

20

40

60

80

4100

20

40

LM - CRN, Lr GY, FX.
DSE - 1/2 HKT, SCAT
CHT - AA.

SH - DK GY, GY - GN.

LM - M GY, FX, DSE w/
ABD DK GY, GY - GN SH.

LM - Lr -> M GY, FX.
DSE.

LM - AA w/ DK GY & GY - GN
SH.

LM - CRN, Lr GY, FX.
DSE, Lr SCAT, CHT -
Lr GY, OPG, JHP, DSE.

CHTY LM - AA.

CHTY LM - AA.

LM - Lr -> M GY, FX.
PR, VGY, Lr GY, MUD
O, NS, ABD, SH - DK
GY, DK RD, GN.

LM - Lr GY, CRN, FX, DSE ->
CHTY, Lr -> DK GY, CHT -
OPG, JHP, DSE.

SH - BLK, CARR.

LM - Lr -> M GY, FX, OO-
LITG, w/ PR -> PR COMUD
O, NS.

LM - AA.

LM - CRN, Lr GY, FX.
DSE, CHTY, ABD
M GY, OPG, JHP, DSE
CHTY.

LM - AA.

SH - BLK, CARR.

SH - DK GY, DK RD, GY - GN.

LM - Lr -> M GY, FX.
SCAT, PR, FOS, MUD
O, NS.

LM - Lr -> M GY, FX.
DSE.

SH - DK GY, GY - GN, BLK.

LM - M -> DK GY, FX.
DSE, SCAT, GY, OPG,
JHP, DSE, CHT.

LM - AA w/ DK GY.
GY - GN, BLK SH.

LM - M GY, FX, DSE.

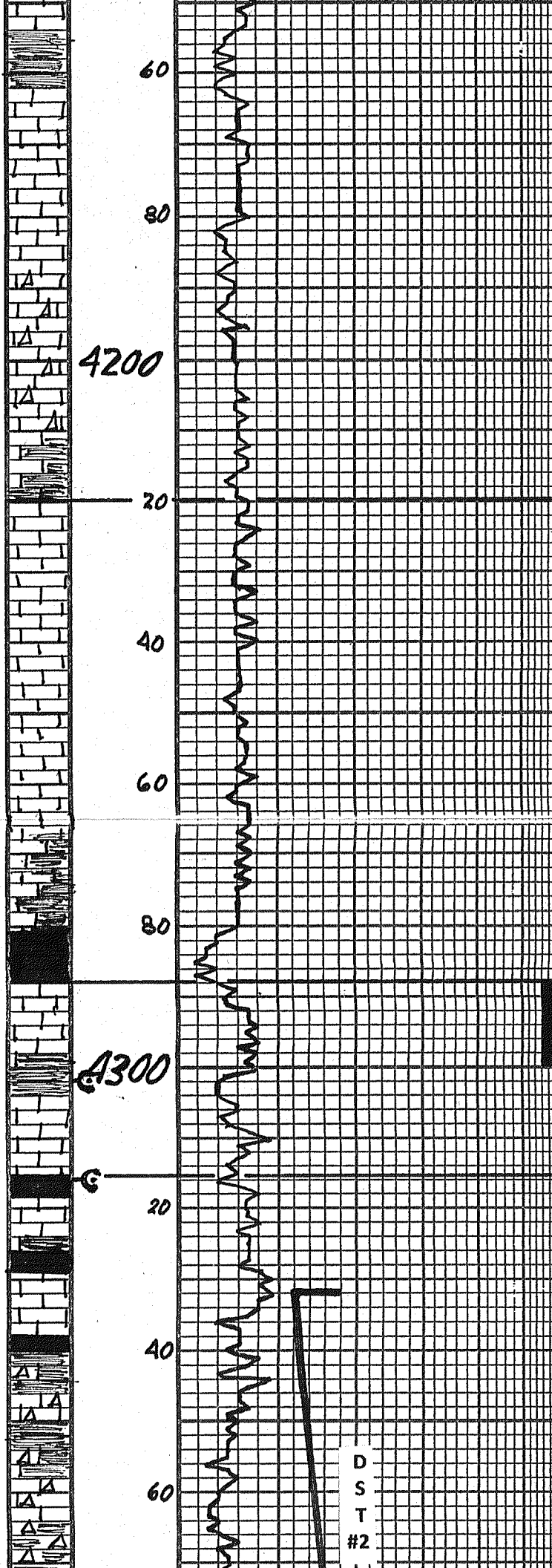
SH - M -> DK GY, GY -
GN.

LM - Lr -> M GY, FX.
DSE.

STARK
4026 (-1568) SMPL
4027 (-1569) LOG

B/KANSAS CITY
4090 (-1632) SMPL & LOG

MUD @ 4102':
9.0 WT, 48 VIS, 9.6 FILT,
5000 CHLOR, 1# LCM



LM- CRM, LT - M GY
FX, DSE. SCATT DK
GY SH.

LM & SCATT SH-AA.

LM- CRM, LT - M GY
FX, DSE.

LM- AA, TR SCATT
SH-AA.

LM- CRM, LT GY, FX.
DSE - SUB-CHKY.
w/ SCATT CHY - LT GY.
OPQ, SHP, DSE.

CHY LM-AA.

LM-AA, BECOMING
SHLY.

SH-DK GY, DK RD.

LM-LT - M GY, FX.
DSE.

LM-LT - M GY, FX.
DSE. SCATT WH, SUB-
CHKY - CHY SM.

LM-LT - M GY, FX.
DSE. SCATT WH,
SUB-CHKY - CHY EM.

LM-LT - M GY, FX.
DSE. SCATT WH, SUB-
CHKY - CHY EM.

LM-DK GY, FX, DSE.
w/ ABD DK GY, GY -
GY, DK RD, SH.

SH-BLK, CARB.

LM-CRM, LT, GY, FX, GO
VGT D, GO, OPQ.
GO SHD GAS & LT FGO.

LM-AA, WK OPQ, SH, DEC
IN D.

LM-MGY, FX, GO, VGT D, SER
OPQ. FA SHD GAS & FGO.

LM-M - DK GY, FX, DSE. w/
GY, GN SH, VGT OPQ, NO
VGT D, NO VGT SHD.

SH-BLK, CARB.

LM-LT GY, FX, DSE.
SUB-CHKY IN FT.

SH-GY, GY, DK RD.

LM-CRM, LT GY, FX.
DSE.

LM-CRM, LT GY, FX, DSE.
w/ ABD MGY, GY, GN
SHD TR, CHY - CRM,
LT GY, OPQ, SHP, DSE.

Long SH, CHY-AA.

SCATT VARICO, OPQ -
SEMITRSE CHY.

LM-LT - MGY, FX, DSE.

PAWNEE
4220 (-1762) SMPL & LOG

FT. SCOTT
4288 (-1830) SMPL
4287 (-1829) LOG

CHEROKEE
4315 (-1857) SMPL
4313 (-1855) LOG

D
S
T
#2

2010-25 → MGR FX GP
 VGR Ø. SSR DOOR. GP
 JNO FGO
 60%: Dena → AT PR SRN. SUC. VGR Ø.
 VGR Ø. SSR DOOR. GP JNO FGO.

2010-26 → GR-IN FX GP VGR Ø
 GP DOOR. JCAT SRN. PR
 JNO FGO.

2010-27 → GR-IN FX ONLY SUCRO IN
 AT. GP VGR Ø. GP SRN SRN.
 GP JNO FGO. GP DOOR.

MISSISSIPPIAN
4381 (-1923) SMPL
4383 (-1925) LOG

TOTAL DEPTH
4405 (-1947) ROTARY
4406 (-1948) LOG

MUD @ 4405':
9.2 WT, 52 VIS, 8.0 FILT,
2600 CHLOR, 2# LCM

DST #2: 4332-90
30-30-30-30

IF: ½" BLOW
ISI: NO RETURN
FF: NO BLOW-DEAD
FSI: NO RETURN

RECOVERY:
20' MUD
(OIL "PUDDLE" ON TOP)

SIP'S: 653-617 #
FP'S: 31-34/37-36 #
HP'S: 2024-2119 #
BHT: 121° F

DST #3: 4390-4405
30-60-90-90

IF: 4" BLOW
ISI: NO RETURN
FF: 5" BLOW
FSI: NO RETURN

RECOVERY:
25' OIL
(39° API GRAVITY)
125' MCW
(85% W, 15% M)

17,000 PPM CHLORIDES

SIP'S: 836-810 #
FP'S: 29-49/47-82 #
HP'S: 2161-2100 #
BHT: 129° F

COMPANY: PICKRELL DRILLING CO, INC.		ELEVATION: 2458 KB	
LEASE: #5 POPP "A"			
LOCATION: 1450' FSL & 330' FEL	SEC 24	TWP 17	RGE 26W
COUNTY: NESS	STATE: KANSAS		