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GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY LD Drilling Inc.

LEASE Aiken # 1-20

FIELD Richardson

LOCATION NW-SE-SE-NW (2075' FNL; 2025' FWL)

SEC 20 TWP 22S RGE 11W

COUNTY Stafford STATE Kansas

CONTRACTOR Petromark Drilling (rig # 2)

SPUD 2-22-14 COMP 3/1/2014

RTD 3665 LTD 3662

MUD WP 2800 TYPE MUD Chemical displaced

ELEVATIONS

KB 1838

DF _____

GI 1833

Measurements Are All From - KB -

CASING
SURFACE 8 5/8" @ 343'
PRODUCTION 5 1/2" @ 3664'

ELECTRICAL SURVEYS
By Pioneer, DIL,
CML/CDL, MEI, BHCS

SAMPLES SAVED FROM 2950 TO _____

DRILLING TIME KEPT FROM 2950 TO _____

SAMPLES EXAMINED FROM 2950 TO _____

GEOLOGICAL SUPERVISION FROM 3100 TO _____

GEOLOGIST ON WELL Jim Musgrove

RTD

FORMATION TOPS	LOG	SAMPLES
anhydrite	567 +1271	RTD 3665 - 1827
Base anhydrite	587 +1251	LTD 3662 - 1824
Heebner	3085 - 1247	
Toronto	3104 - 1269	
Douglas	3120 - 1287	
Brown lime	3221 - 1383	
Lansing	3248 - 1410	
Base Kansas City	3490 - 1652	
1st Simpson Sand	3520 - 1682	
2nd Simpson Sand	3527 - 1689	
Arbuckle	3554 - 1716	

REMARKS

Recommendations) 5 1/2" production casing was set & cemented on the Aiken #1-20.

Respectfully submitted
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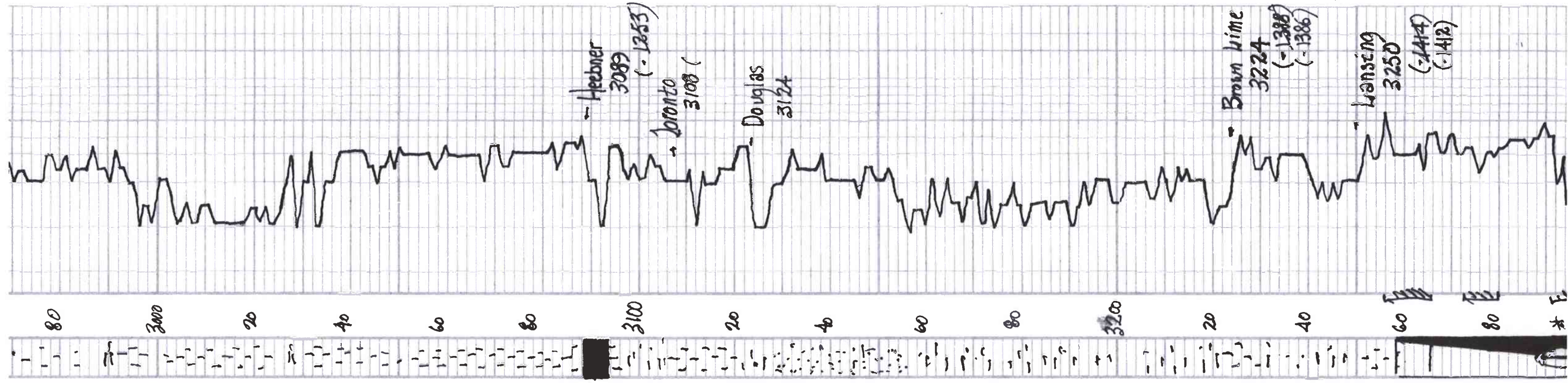
SKY

LEGEND

- Anhydrite
- Salt
- Sandstone
- Shale
- Carb sh
- Limestone
- Co/Lime
- Chert
- Dolomite

LITHOLOGY	DEPTH	DRILLING TIME (Logarithmic Scale)	SAMPLE DESCRIPTIONS	REMARKS
	0			
	1			
	2			
	3			
	4			
	5			
	10			
	15			
	20			
	25			
	30			
	60			





~ blk carb sh

LS, gry, oo, (oom) fr good com's (barren)

32
d. to / few foss
Dr. gry / green sh

LS, wh / gry - tan, clay

32

LS, tan / brown, f. med x. l. / cherty in part, scatt.

32

Dr. gry / wh Δ

32

~ blk carb sh.

(-1251) revised elevation

LS, tan / brown, f. med x. l. / (few foss) cherty - poor

gry / greenish grey, v. f. / mica, sand

+ rusty brown / green silty sh.

32

ava

32

gry / dk gry sh.

32

ava

32

LS, tan / f. x. l., few foss, slightly dry in part

~ gry / greenish green sh

LS, wh / tan, foss / cool, scatt. of

Dr. light brown / golden brown sh, Dr. fo, no odor

~ 1/2" cm / oo, cherty, Sp. my Ca. C. te cement, poor

- 1836 KD -
Revised *
1838 KB *

DST #1

3266-3325

30.30-45-45

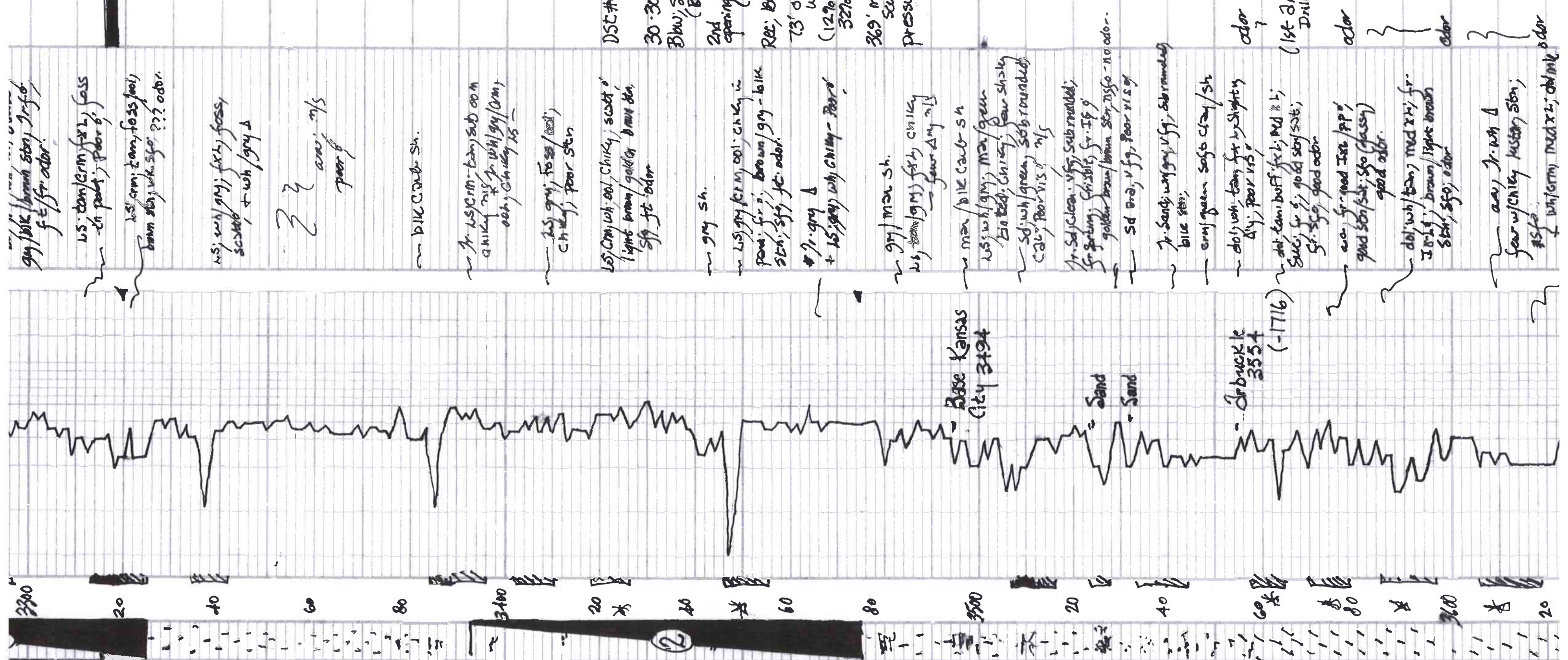
Blw, fair (4 1/2")

2nd opening, fair (7")

Rec, 10' mud

pressures) DIP 1331

5/11-20
 5/19-26
 HSH
 1576
 -1566



gy blk / brown stn, fr. odor.
 US. tan/crm (x2), foss in part; poor g.
 US. crm; tan, to ss (ool) brown stn, v. sfo. ??? odor.
 us. wh/gm; (x2) foss, scab, + wh/gry d.
 22 aw. m/s poor g.
 blk carb. sh.
 Jr. US crm - tan; sub ool chiky m/s; wh/gry/crm; ool; chiky x5.
 us. gry; foss/ool; chiky; poor stn.
 US. crm; wh. ool; chiky; scab o' light brown/golden brown tan; sfo. jt. odor.
 gry sh.
 US. gry/crm; ool; chiky in part; fr. d.; brown/gry - blk stn; sfo; jt. odor.
 #1. gry d + 15. gry; wh; chiky - poor g/m; m. sh.
 us. brown/gm; chiky
 → few dry m/s
 m. blk carb. sh
 us. wh/gm; m. green to tan; chiky; few shaly
 sd; wh/green; sub rounded; carb; poor vis; m/s
 Jr. sd; clean; v. sfo; sub rounded; fr. sfo; fr. sfo; fr. sfo; golden brown/brown stn; sfo - no odor.
 sd brd; v. sfo; poor vis g.
 Jr. sand; wh/gry; v. sfo; sub rounded; blk stn.
 em/green soso crm/sh
 dol; wh; tan; fr. slightly dy; poor vis.
 dol; tan; buff; fr. m. d. t.; suc; fr. g.; good sfo; sfo; sfo; good odor.
 a.o. fr. good fat; pp; good stn/sat; sfo (glassy) good odor.
 dol; wh; tan; med x2; fr. sfo; brown; light brown stn; sfo; odor.
 a.o.; Jr. wh d
 few w/crmy kuster; stn; #sfo
 wh/crm; med x2; dol m. odor

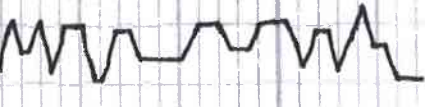
DSC #2 3395-3475
 30-30-45-45
 Blw; string (BOB 3 mins)
 2nd opening; string (BOB 14 mins)
 Rec; 80' gas in pipe
 73' oil's gas out mudda water
 (12% gas; 14% oil; 32% water; 42% mud)
 369' muddy water, scum of oil
 pressures; Isip 663 P
 Isip 661
 Isip 32-128
 Isip 134-212
 HSH 1633
 -1632

(1st drb 3565 - Drilling sample)

2

40 60

RTD 3665



Maximal 100%...
4000/2000/1000
of

2

del: grey, whi, fawn &
fec, grey/light brown sbg
1/2g odor

2

del: 50 F ash bimey d; fawn
sme; floor grey/broc sbg
ns (g) odor

odor