



Geologist's Report

Company: LD Drilling, Inc
 Lease: Rugan Farms #2-24
 Field: Maybach
 Surface Location: NE-SW-SE-NE (2086' FNL & 983' FEL)
 Sec: 24 Twp: 20S Rge: 14W
 County: Barton State: Kansas
 GL: 1887' KB: 1892'

Contractor: Petromark Drilling Rig #2
 Spud: 8/09/14 Comp: 8/16/14
 RTD: 3645' LTD: 3647'
 Mud Up: +/- 3000' Mud Type: Chemical Displaced

Drilling Time Kept From: 3000' to RTD
 Samples Saved From: 3000' to RTD
 Samples Examined: 3000' to RTD
 Geological Supervision: 3150' to RTD
 Geologist on Well: Kurt Talbott and Jim Musgrove

Surface Casing: 8 5/8" @ 364'
 Production Casing: 5 1/2" @

Wireline Logs: By Pioneer: CNL/CDL, DIL, MEL

Well Comparison

FORMATION	WELL BEING DRILLED		RUGAN FARMS #2		RUGAN FARMS #1		OFFSET	
	LOG	LOG SS	LOG	LOG SS	LOG	LOG SS	LOG	LOG SS
ANHYDRITE	783	1109			779	1111		
BASE ANHY	808	1084			803	1087		
HEEBNER	3135	-1243			3126	-1236		
TORONTO	3147	-1255			3137	-1247		
DOUGLAS	3163	-1261			3153	-1263		
BROWN LIME	3242	-1350			3230	-1340		
LANSING	3252	-1360			3238	-1348		
BASE KC	3465	-1573			3451	-1561		
REWORK ARB.	3500	-1608			3490	-1600		
SOLID ARBUCKLE	3508	-1616			3498	-1608		
TOTAL DEPTH	3647	-1755			3632	-1742		

ROCK TYPES

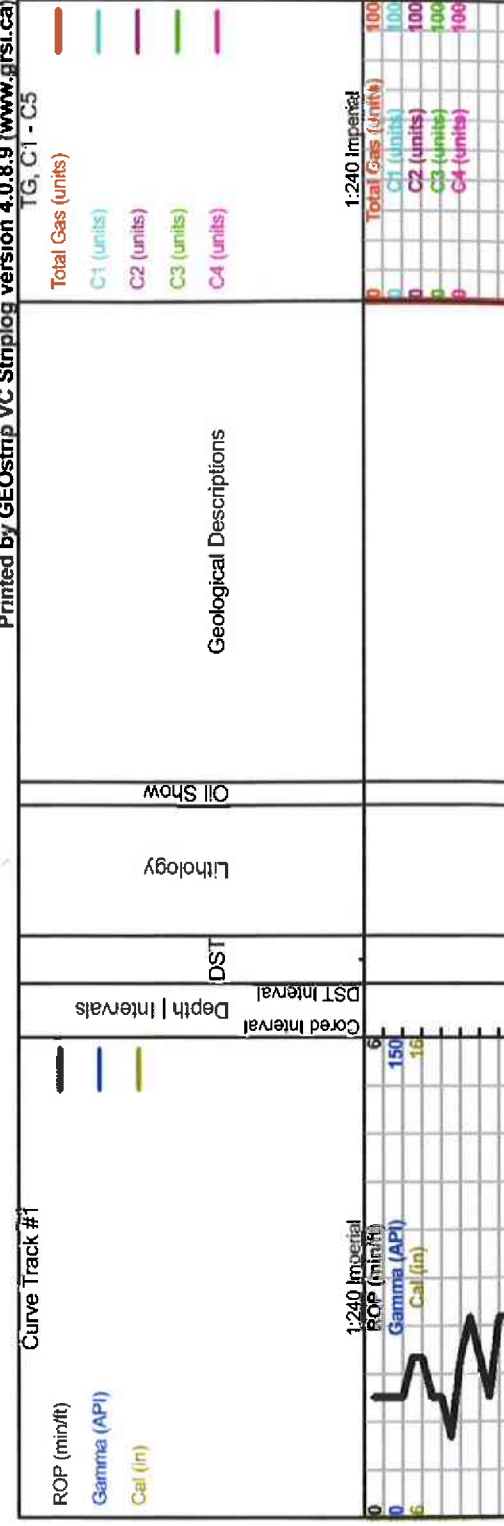


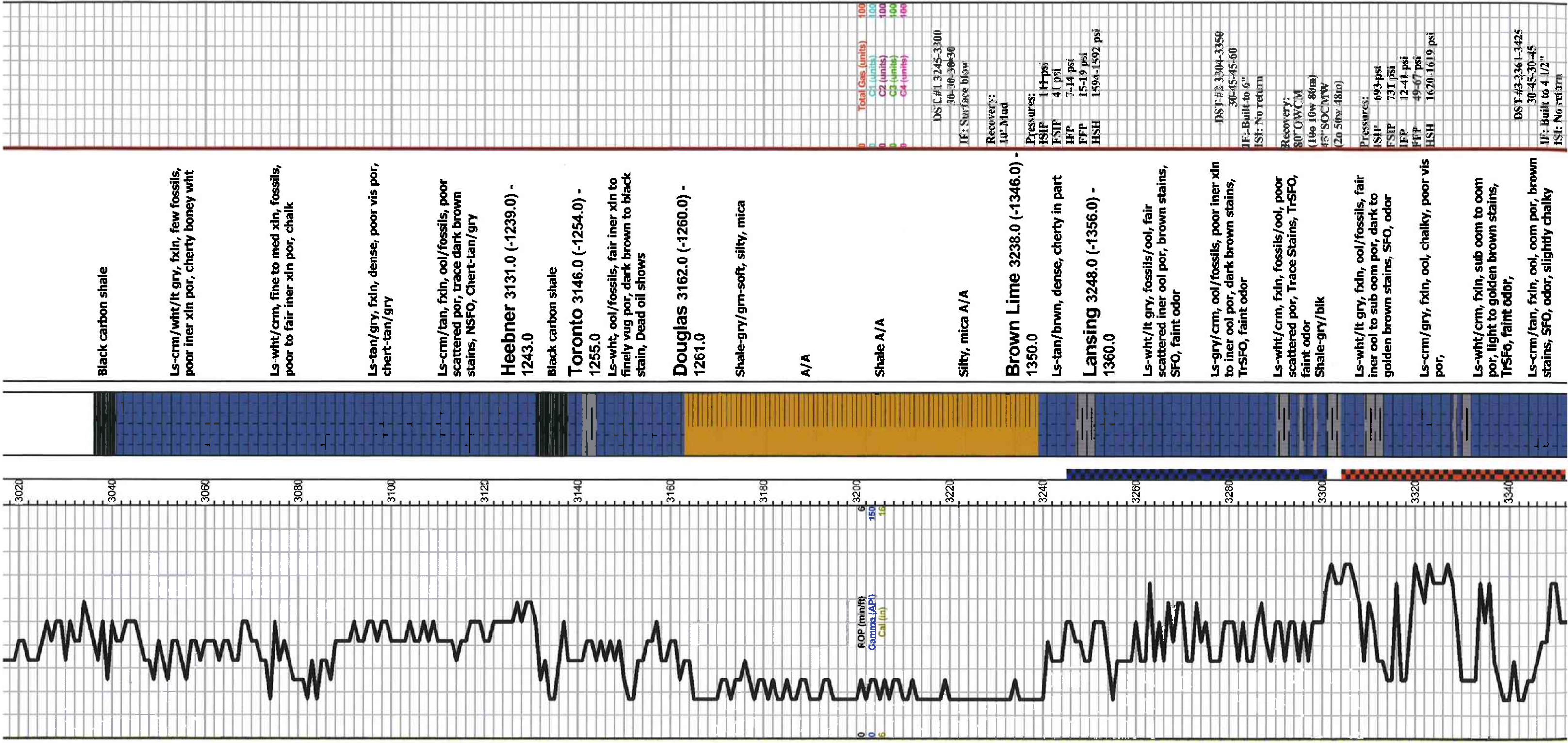
OTHER SYMBOLS

EVENTS
 : Casing Shoe
 > RTF
 > Sidewall
 > Left Casing Shoe
 > Right Casing Shoe

INTERVALS
 Core
 DST

DST
 DST Int
 DST alt





Black carbon shale

LS-crm/wht/lt gry, fxln, few fossils, poor iner xln por, cherty boney wht

LS-wht/crm, fine to med xln, fossils, poor to fair iner xln por, chalk

LS-tan/gry, fxln, dense, poor vis por, chert-tan/gry

LS-crm/tan, fxln, ool/fossils, poor scattered por, trace dark brown stains, NSFO, Chert-tan/gry

Heebner 3131.0 (-1239.0) - 1243.0

Black carbon shale

Toronto 3146.0 (-1254.0) - 1255.0

LS-wht, ool/fossils, fair iner xln to finely vug por, dark brown to black stain, Dead oil shows

Douglas 3162.0 (-1260.0) - 1261.0

Shale-gry/grn-soft, silty, mica

A/A

Shale A/A

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

DST #1 3245-3300
 30-36-36-30

Silty, mica A/A

Brown Lime 3238.0 (-1346.0) - 1350.0

LS-tan/brwn, dense, cherty in part

Lansing 3248.0 (-1356.0) - 1360.0

LS-wht/lt gry, fossils/ool, fair scattered iner ool por, brown stains, SFO, faint odor

LS-gry/crm, ool/fossils, poor iner xln to iner ool por, dark brown stains, TrSFO, faint odor

LS-wht/crm, fxln, fossils/ool, poor scattered por, Trace Stains, TrSFO, faint odor
 Shale-gry/blk

LS-wht/lt gry, fxln, ool/fossils, fair iner ool to sub oom por, dark to golden brown stains, SFO, odor

LS-crm/gry, fxln, ool, chalky, poor vis por,

LS-wht/crm, fxln, sub oom to oom por, light to golden brown stains, TrSFO, faint odor,

LS-crm/tan, fxln, ool, oom por, brown stains, SFO, odor, slightly chalky

Recovery:
 10' Mud
 Pressures:
 ISIP 114 psi
 FSIP 41 psi
 IHP 7-14 psi
 FFP 15-19 psi
 HSH 1594-1592 psi

DST #2 3304-3350
 30-45-45-60
 IF: Built to 6"
 IS: No return

Recovery:
 80' OWC/M
 (100-100-80m)
 45' SOCMW
 (20 500-48m)

Pressures:
 ISIP 693 psi
 FSIP 731 psi
 IHP 12-41 psi
 FFP 49-67 psi
 HSH 1620-1619 psi

DST #3 3361-3425
 30-45-30-45
 IF: Built to 4 1/2"
 IS: No return

Recovery: 150' SOCM (4x 4 1/2" 55m)	ISIP 635 psi	FSIP 627 psi	FFP 23-69 psi	FSH 72-80 psi	HSN 1658-1657 psi	Total Gas (units) 100	CH (units) 100	C2 (units) 100	C3 (units) 100	C4 (units) 100
Pressures:										
DST #4-3504-3525 30-30-45-60										
IF: BOB in 30 sec/ GTS @ 15 min. Max at 67500 CFM - FF: Gauge Levelled at 51800 CID										
Recovery: 142'SGCM (5g 95m) 63' SG&OCM (10g 3x 87m)										
Pressures:										
ISIP 1133 psi										
FSIP 1140 psi										
FFP 72-119 psi										
FSH 78-104 psi										
HSN 1708-1707 psi										
DST #5-3525-3545 30-30-30-45										
IF: BOB 15 sec/ GTS @ 8 min. Max gauge of 61900 CID										
Recovery: 1446" Clean Gassy Oil (86' GWMO (20g 15w 20m 45o) 248' water										
Pressures:										
ISIP 794 psi										
FSIP 838 psi										
FFP 498-671 psi										
FSH 795-771 psi										
HSN 1718-1714 psi										
Total Gas (units) 100										
CH (units) 100										
C2 (units) 100										
C3 (units) 100										
C4 (units) 100										

Ls-wht/lt gry, fxdn, few ool/fossils,
 poor vis por, chalky
 chert-crm/boney wht

 Ls-gry/tan, fxdn, ool, slightly chalky,
 poor to fair iner xin por, golden brown
 stains, SFO, faint odor

 Ls-wht/crm, fxdn, ool/fossils, fair iner
 ool to vuggy por, godlen brown stains,
 SFO, fair odor, slightly chalky

 Ls-wht/crm fxdn, ool, poor to fair iner
 xin por, trace golden brown stains,
 TrSFO, fair odor, chalky

 Shale-blk/green/gry

 Ls-wht, fxdn, oo, chalky, trace brown
 to golden brown stains, NSFO, no
 odor

**Base KC 3462.0 (-1570.0) -
 1573.0**
 Very coarse shale
 Ls-wht/lt gry, sandy, black stains,
 NSFO, no odor,

 Mar/brick red/grn shale
 A/A
**Solid Arbuckle 3506.0 (-
 1614.0) -1616.0**
 Dolomite- tan, sucrosic, few med xin,
 scattered por, brown to golden brown
 stains, SFO, faint to fair odor
 Dol A/A chert-gry/wht
 Dol-fine tomed xin, blk to brown
 stains, SFO, fair odor

 Dol-tan, fxdn, sub oom, scattered
 vuggy por, brown to golden brown
 stains/saturation, SFO, faint odor

 Dol-gry/tan, fxdn, few med xin,
 sucrosic, sattered por, trace stains,
 TrSFO, faint odor,
 Slug VC Shale

 A/A gry/blk stains, Trace Pyrite

 Dol-tan/gry, fxdn, few sucrosic, few
 oom, gry/blk stain, NSFO, faint odor

 Dol-gry/wht, fine to med xin,
 scattered iner xin por, chert-boney
 wht/gry

 Dol-wht/lt gry, fine to med xin,
 scattered iner xin por, chert-boney
 wht/gry

**Total Depth 3645.0 (0.0) -
 1755.0**

