Scale 1:240 Imperial

Well Name:	Leiker # 2-25-15-20		
Surface Location:	740'FSL, 2506' FWL, Sec 25-T15S-R20W		
Bottom Location:			
API:	15-051-26848		
License Number:			
Spud Date:	10/25/2016	Time:	6:45 PM
Region:	Ellis County		
Drilling Completed:	2/2/2011	Time:	5:50 PM
Surface Coordinates:	141865 & 1573086.9		
Bottom Hole Coordinates:			
Ground Elevation:	2123.00ft		
K.B. Elevation:	2131.00ft		
Logged Interval:	0.00ft	To:	0.00ft
Total Depth:	0.00ft		
Formation:	Reagan		
Drilling Fluid Type:	Chemical/Fresh Water Gel		

OPERATOR

Company:	Cynosure Energy, LLC		
Address:	1401 17th Street, Suite 850 Denver, CO 80202 Phone: 720-476-3678		
Contact Geologist:	Gene Davis		
Contact Phone Nbr:	720-272-9620		
Well Name:	Leiker # 2-25-15-20		
Location:	740'FSL, 2506' FWL, Sec 25-T15S-R20W		
API:	15-051-26848		
Pool:		Field:	
State:	Kansas	Country:	USA

LOGGED BY

Charlie Sturdavant Consulting

Company:	Charlie Sturdavant Consulting		
Address:	920 12th Street Golden, CO 80401		
Phone Nbr:	303-907-2295----303-384-9481		
Logged By:	Geologist	Name:	Charlie Sturdavant

NOTES

Daily Drilling Report

Well Comparison Sheet

SURFACE CO-ORDINATES

Well Type:	Vertical
Longitude:	99.4961290
Latitude:	38.713187528
N/S Co-ord:	141865
E/W Co-ord:	1573086.9

CONTRACTOR

Contractor:	620-793-0840		
Rig #:	2		
Rig Type:	mud rotary		
Spud Date:	10/25/2016	Time:	6:45 PM
TD Date:	2/2/2011	Time:	5:50 PM
Rig Release:		Time:	

ELEVATIONS

K.B. Elevation:	2131.00ft	Ground Elevation:	2123.00ft
K.B. to Ground:	8.00ft		

ROCK TYPES

- Lmst fw<7
- Lmst fw7>
- shale, grn
- shale, gry
- Carbon Sh
- shale, red

ACCESSORIES

MINERAL
- Argillaceous
- Calcareous
- Chert White
- Chert, dark
- Dolomitic
- Euhed rhombs of dol or
- Nodules

FOSSIL
- Bioclastic or Fragmental
- Brachiopod
- Bryozoa
- Crinoids
- Foraminifera
- Fussilinid
- Oolite
- Oolites
- Pelloids
- Pellets
- Spicules

STRAT./SED. STRUCTS
- Stylolite

STRINGER
- Shale
- green shale

TEXTURE
- Chalky

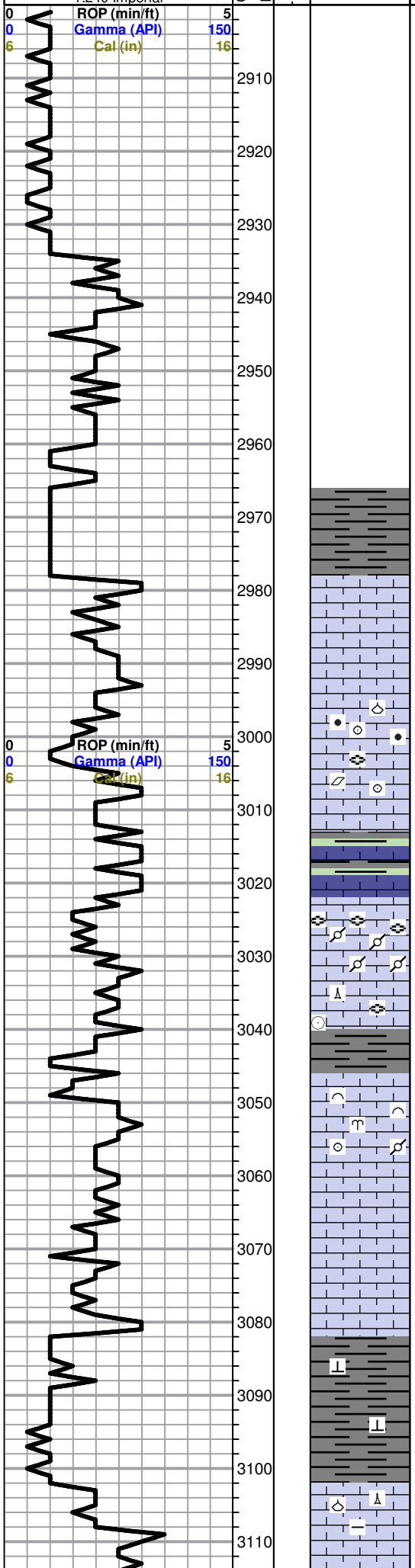
OTHER SYMBOLS

MISC
- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings Rpt

DST
- DST Int
- DST alt

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

Curve Track #1	Depth | Intervals	DST	Lithology	Oil Show	Geological Descriptions	TG, C1 - C5
ROP (min/ft) Gamma (API) Cal (in)	Interval Interval					



Cynosure-Leiker # 2-25-15-20
740' FSL & 2506' FWL Sec 25-T15S-R20W
Ellis County, Kansas
KB = 2131'

Geologist on location @ 1310 hrs, 3012'

Stottler 2934 (-803)

Tarkio 2978 (-847)

10' samples begin @ 3000'

Limestone: brown, brachiopods, med-xln oolitic-pelletal grainstone to micro-xln mudstone, recrystalized, well-cemented, no shows.

Limestone: lt gray to tan, sparry calcite patches, tr small mud/shale clasts, tr fussulinids, packstone, tr inter-xln porosity, no shows.

Limestone: cream to lt tan, micro-xln mudstone to vf-xln grainstone w/ fosslil frags to 1mm, thin streaks of gray to lt greenish-gray shale.

Limestone: lt gray to brownish-gray, fussulinid packstone to pelletal (0.1 to 1.5mm in dia) packstone (mottled gray and lt tan), fair inter-xln porosity, no shows.

Limestone: lt tan, spicules, random oolites, finely granular, tr crinoids, tr fussulinids, grainstone, tight, no shows.

Shale: lumps of mushy gray shale.

Limestone: brown to grayish-brown, bioclastic, bryozoans, oolitic, pelletal, f-xln, sli arg., grainstone, no shows.

Shale: gray, calcareous, soft to firm, sli silty.

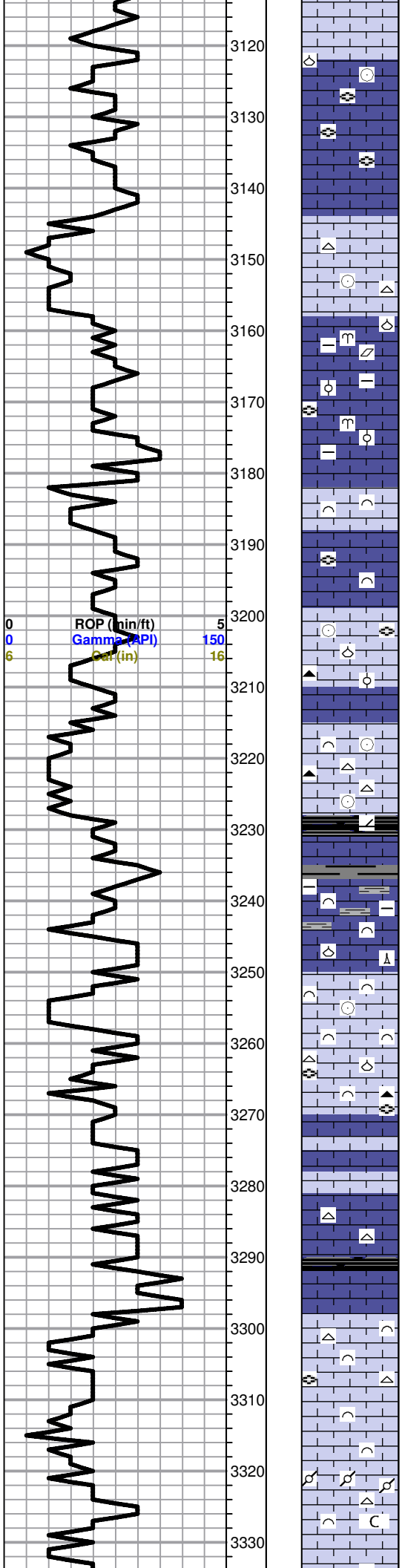
Topeka 3102 (-971)

Limestone: brown to mottled brown and tan, brachiopods, crinoid discs, spicules, set in a f-xln matrix, sli arg., packstone, no shows.

Limestone: lt tan to cream, brachiopods, fusculinids, set in a vf-xln

1:240 Imperial

Mud-Co, Mud check
2809' @ 0710 hrs.
10/29/2016
Vis. 51, Wt. 8.8
PV 15, YP 23
WL 6.8, Cake 1/32"
pH 11.5, Ca Tr
CHL 5,200 ppm
Sol 3.3, LCM 3
DMC: $2,470.69
CMC: $6,701.01



Limestone: lt tan to cream, brachioods, fussulinids, set in a vf-xln matrix, grainstone to micro-xln mudatone, tight, no shows.

Limestone: lt brown to tan, finely granular to micro-xln mudstone, fussulinids, crinoids, brach., sli arg., wackestone, no shows.

Limestone: grayish-brown, argillaceous, fussulinids, f-xln matrix, wackestone, no shows.

Limestone: lt tan to tan, finely-granular, tr crinoids, soft to chalky, tr frosted tan chert, grainstone, fair inter-xln porosity, no shows.

Limestone: gray to grayish-brown, fragmental, f-xln, tr bryozozns, spicules, brachiopods, sparry calcite patches, fussulinids, rare oolites, argillaceous, wackestone, tight, no shows.

Limestone: tan to brown, mottled, bioclastic grainstone, med-xln, fair inter-xln porosity, no shows.

Limestone: tan to brown, bioclastic, argillaceous, f-xln-granular, small fussulinids, wackestone, no shows.

Limestone: tan, sli arg, bioclastic packstone, fossil debris, fusulinids, crinoids, brachiopods, oolites, set in a f- to med-xln matrix, tight, no shows. Tr dark gray fossiliferous chert.

Limestone: lt tan, micro-xln mudstone to f-xln, bioclastic-fragmental grainstone, tr crinoids, tight to fair inter-xln porosity, no shows.

Tr tan to dark gray vitreous chert, tr fossils.

King Hill 3228 (-1097)

Shale: black, carbonaceous, soft, dolomitic.

Shale: gray to dark gray, calc, firm.

Limestone: tan to brown, arg., w/ dark brown, gray, whispy shale streaks, f-xln, fossil debris, spicules, no shows.

Limestone: lt tan, bioclastic grainstone, f-xln, tr crinoid, recrystallized, fair inter-xln porosity, no shows.

Limestone: lt tan, f-xln, recrystallized, brachiopods, fussulinids, former grainstone, w/ chert: lt tan to gray, fussulinids, frosted, tight, no shows.

Streaks of lt tan micro-xln mudstone

Limestone: tan to lt brown to grayish-tan, tight, micro-xln mudstone, tr lt tan frosted chert.

Queen Hill 3290 (-1159)

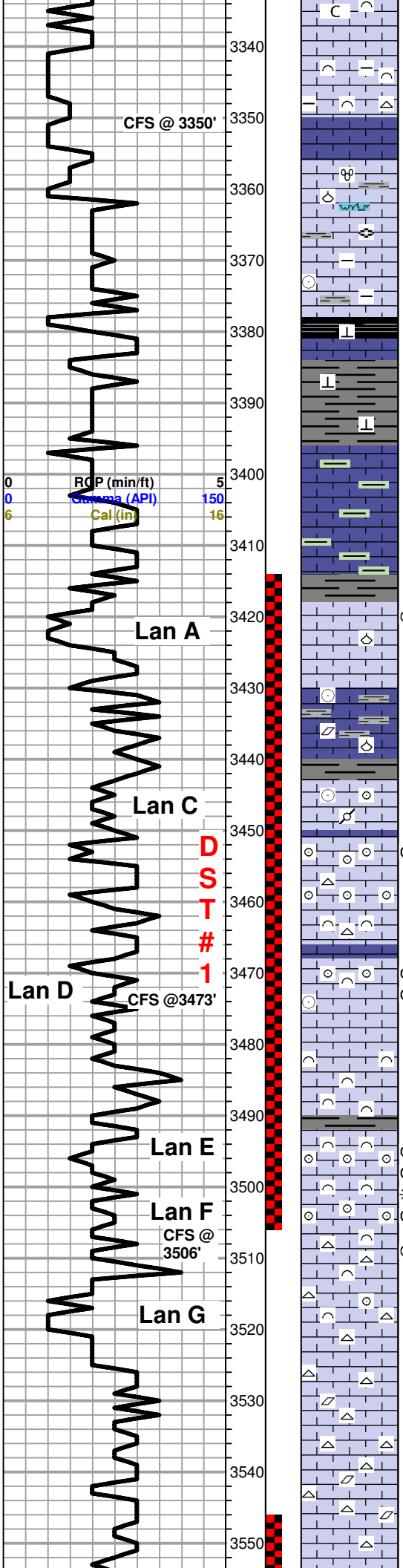
Black shale.

Limestone: tan, micro-xln mudstone.

Limestone: lt gray to tan, bioclastic grainstone, f-xln, w/ frosted chert of same colors, recrystallized, fusulinids, oolites, fair inter-xln porosity, no shows.

Limestone: mottled gray and tan, pelletal grainstone, chalky, other ls as above w/ tan chert.

Limestone: white, chalky, to soft fragmental grainstone, no shows.



Limestone: lt gray to salt and pepper, sli arg bioclastic grainstone, f-xln, good inter-xln porosity, silicified in parts to chert of same character, no shows.

Limestone: lt brown to tan micro-xln mudstone, tight, no shows.

Limestone: lt brown f-xln, sli arg, thin whispy brown shale laminations, possible stylolites, recrystalized grainstone, fusulinids, forams, brach., no shows.

crinoids.

Heebner 3378 (-1247)

Shale: black, carbonaceous, hard, brittle, calcareous, combustible.

Shale: gray to lt gray soft and mushy, calc.

Toronto 3396 (-1265)

Limestone: white to vy lt gray, dense, hard, micro-xln mudstone, tr green shale streaks and patches.

Limestone: white to cream to vy lt gray, vf- to micro-xln mudstone, thin lt green shale separations, tight, no shows.

Lansing 3418 (-1287)

Limestone: lt tan, vf- to f-xln, tr brachiopods, recrystallizwd, one frag had minor secondary pinpoint porosity w/ spotty oil show, slow to good cut w/ bright yellow fluor, weak odor.

Limestone: white to grayish-brown, brachiopods, crinoids, set in a vf-xln matrix, thin whispy brown shale laminations, sli arg., sparry calcite (possibly part of larger brach shells), wackestone.

Limestone: tan to brown, recrystallized, f- to med-xln, former grainstone, crinoids, pellets, oolites, sparry calcite, tight, no shows.

Limestone: cream to lt tan, oolitic grainstone, recrystallized, good inter-xln porosity, fair to good secondary pinpoint porosity, all is saturated w/ live brown oil. strong hydrocarbon aroma, dull yellow fluor, instant streaming cut w/ bright yellow fluor.

Limestone: cream, oolitic-bioclastic grainstone w/ white vitreous chert, well-cemented, no shows.

Limestone: white to cream, oolitic-bioclastic grainstone w/ secondary inter-xln and pinpoint porosity w/ fair to good show of free oil, slow to excellent cut. Some oil-filled vugs. Crinoids.

Leiker 2-25-15-20 dst1-P.10001.jpg

Limestone: white to cream, semi-translucent, recrystallized bioclastic grainstone, tight, no shows. Still carrying frags from above w/ oil shows and aroma.

Limestone: lt tan, oolitic to bioclastic grainstone, well-developes secondary inter-xln porsity, pinpoint porosity and druzzy-lined vugs, very strong oil aroma, saturated to spotty show of free oil, instant streaming cut.

Limestone: white to cream, oolitic-bioclastic grainstone, druzzy-lined vugs and fractures, excellent pinpoint porosity, inter-oolite porosity, all is oil-stained, very strong hydrocarbon aroma, instant streaming cut. Gas bubbles emanate from pores.

Tr white to lt tan vitreous chert w/ preserved oolites and fossils.

Limestone: white to cream, recrystallized oolitic-bioclastic grainstone, chert: lt grayish-tan to white to mottled, fossiliferous, oolites, vitreous, rock is tight, no shows. Still a few frags w/ oil stn.

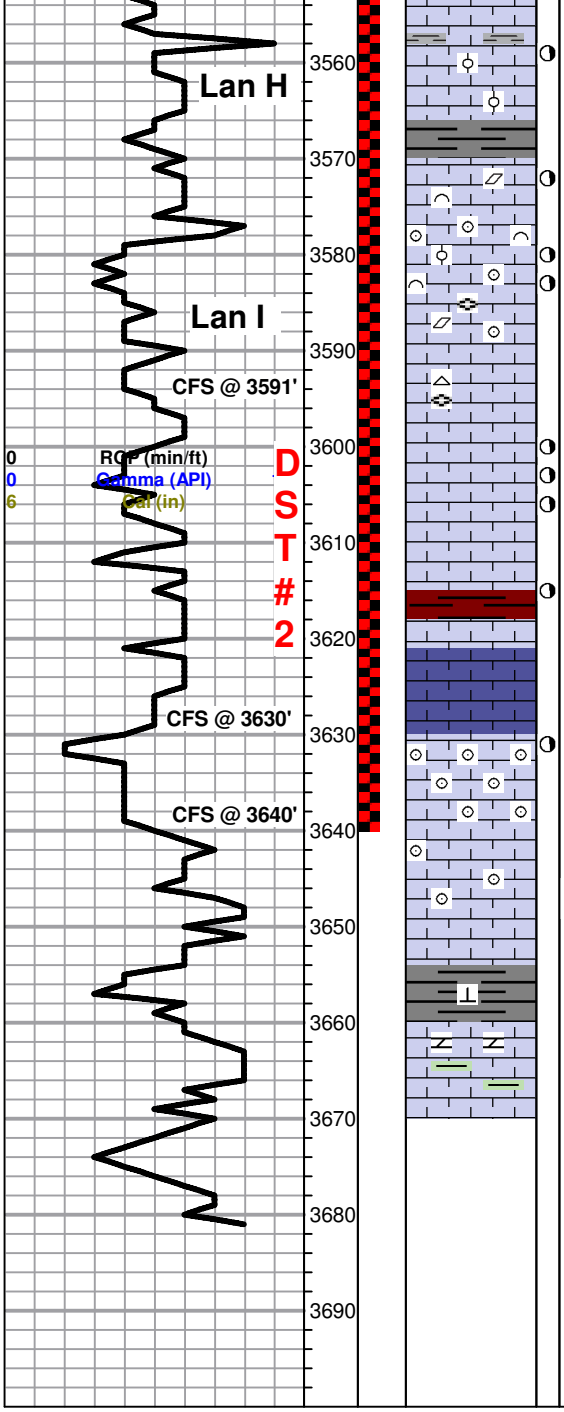
Limestone: white, recrystallized grainstone, ghost fossils and oolites, sparry calcite streaks and patches, hard to chalky, w/ chert as above.

Mud-Co, Mud check
3424' @ 0635 hrs.
10/30/2016
Vis. 46, Wt. 9.0
PV 15, YP 20
WL 6.8, Cake 1/32"
pH 11.0, Ca Tr
CHL 5,200 ppm
Sol 4.7, LCM 2
DMC: $425.65
CMC: $7,126.66

WO Mud Pump @ 3419'

DST # 1: 3414'-3506', Rec: 62' SGWMCO (5% G, 10% W, 10% M, 75% Oil, 125' GMCO (30% G, 10% M, 60% Oil), 31' SOCM (5% O, 95% M), SIP: 981-988#

Strap: 0.9' long to board.
Deviation: 3/4 degree.



Shale: gray, firm to hard, calcareous.

Limestone: white to lt cream, recrystallized oolitic grainstone, some evidence of subareal exposure, brown shale infill of weathered porosity, tr pinpoint secondary porosity w/ very slight oil fill, slight odor, fair cut.

Limestone: cream to vy lt gray, bioclastic grainstone, fossil frags, oolites, sparry calcite, recrystallized, fair inter-xln porosity, fair secondary pinpoint porosity, micro-vugs, spotty stain of brown oil, instant streaming cut.

Limestone is same as above, but the fragments w/ shows are fewer, and may be cavings from above.

After resuming drilling, the next sample had an abundance of frags w/ good pinpoint, fracture, and vuggy porosity w/ oil staining.

Limestone: cream to white, recrystallized grainstone, sparry calcite, ghost oolites and fossil frags, white to lt tan chert w/ fusulinids, tight, except for the frag w/ secondary pinpoint and micro-vuggy porosity with spotty oil shows, live oil, good cut.

Shale: dark gray, flakey blades, firm.

Maroon shale, sample washes red. Limestone below has red shale infill of fine, spotty secondary porosity at the top due to erosional exposure. Limestone below is recrystallized grainstone, oolites, spotty show of oil in the secondary porosity.

Limestone: vy lt gray to lt tan, partially translucent, micro-xln mudstone to wackestone w/ very few fossil frags, weak oil shows are still present (cavings?) as are flakey dk gray shale frags.

Limestone: white to lt tan, oolitic grainstone w/ a few fossil frags, (ooids are 0.2-0.75mm in dia.), pyritized brachiopods in gray shale, some frags w/ secondary pinpoint to vuggy porosity have live oil stain and black, flakey gilsonite to dead oil, live oil has good cut.

Leiker # 2 DST # 2 P. 10001.jpg

Base Kansas City 3654 (-1523)

Shale: gray, calc, firm, blades to blocky.

Limestone: tan to lt brown, recrystallized grainstone, tr nodules from subareal exposure, tr brown shale infill at surface, tr of green shale partings, mostly med-xln, no shows.

DST # 2: 3546'-3640', Rec: 2751' GIP, 748' GMCO (60% oil, 30% gas, 10% mud), 31' GCO (60% oil, 40% gas), SIP: 1147-1100#. Sample chamber: 200ml oil, 35 gravity.

Leiker 2-25-15-20 dst1-P.10001.jpg

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Coachman Energy Operating Company LLC

1125 17th St., Suite 410
Denver, CO 80202

ATTN: Charlie Sturdavant

25-15S-20W Ellis, KS

Leiker #2-25-15-20

Job Ticket: 61298 **DST#: 1**

Test Start: 2016.10.30 @ 18:20:16

GENERAL INFORMATION:

Formation: **Lansing "A-F"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:22:46
Time Test Ended: 02:18:46

Test Type: Conventional Bottom Hole (Initial)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3414.00 ft (KB) To 3506.00 ft (KB) (TVD)
Total Depth: 3506.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

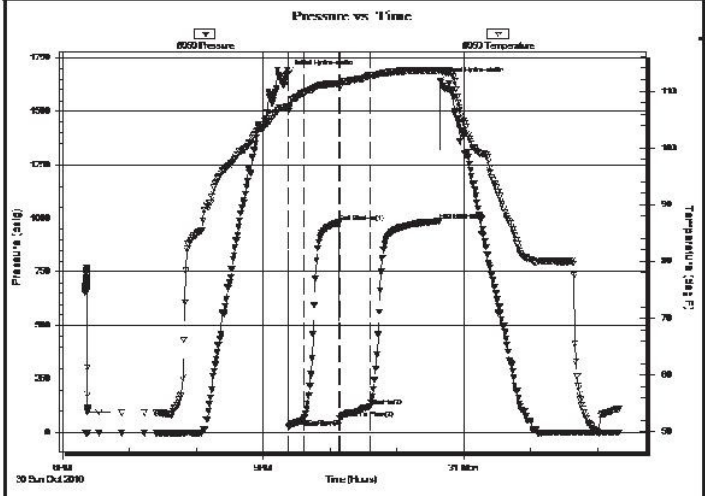
Reference Elevations: 2131.00 ft (KB)
2123.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 8959 **Outside**

Press@RunDepth: 124.16 psig @ 3439.00 ft (KB)
Start Date: 2016.10.30 End Date: 2016.10.31
Start Time: 18:20:17 End Time: 02:18:46

Capacity: 8000.00 psig
Last Calib.: 2016.10.31
Time On Btm: 2016.10.30 @ 21:22:16
Time Off Btm: 2016.10.30 @ 23:38:46

TEST COMMENT: 15- IF- BOB 5mins
30- ISI- No blow
30- FF- BOB 1min, 5" initial surge
60- FSI- Surface blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1675.22	107.25	Initial Hydro-static
1	26.19	106.43	Open To Flow (1)
14	59.94	109.64	Shut-In(1)
46	980.71	111.31	End Shut-In(1)
47	65.66	111.05	Open To Flow (2)
74	124.16	112.94	Shut-In(2)
136	987.89	113.63	End Shut-In(2)
137	1639.00	113.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	SGWMCO, 5%G 75%O 10%W 10%M	0.88
125.00	GMCO, 30%G 60%O 10%M	1.77
31.00	SOCM, 5%O 95%M	0.44

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Coachman Energy Operating Company LLC

1125 17th St., Suite 410
Denver, CO 80202

ATTN: Charlie Sturdavant

25-15S-20W Ellis, KS

Leiker #2-25-15-20

Job Ticket: 61299 **DST#: 2**

Test Start: 2016.10.31 @ 18:17:32

GENERAL INFORMATION:

Formation: **Lansing "H-K"**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:40:32
Time Test Ended: 03:36:02

Test Type: Conventional Bottom Hole (Reset)
Tester: Brannan Lonsdale
Unit No: 73

Interval: 3546.00 ft (KB) To 3640.00 ft (KB) (TVD)
Total Depth: 3640.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

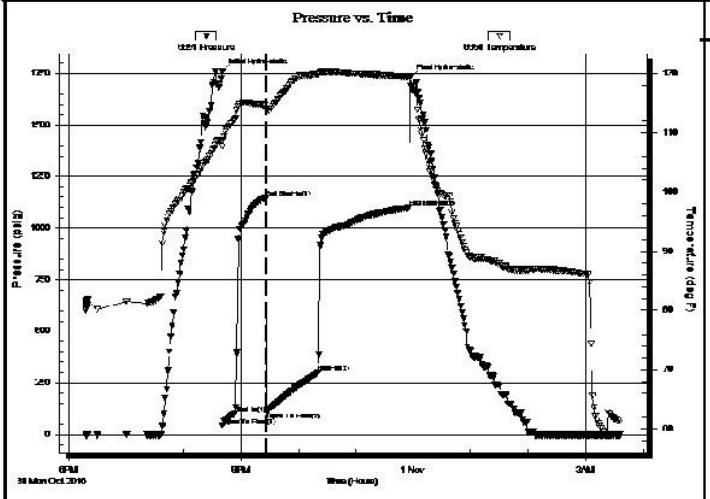
Reference Elevations: 2131.00 ft (KB)
2123.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6651 **Inside**

Press@RunDepth: 299.94 psig @ 3573.00 ft (KB)
Start Date: 2016.10.31 End Date: 2016.11.01
Start Time: 18:17:33 End Time: 03:36:02

Capacity: 8000.00 psig
Last Calib.: 2016.11.01
Time On Btm: 2016.10.31 @ 20:40:02
Time Off Btm: 2016.10.31 @ 23:57:02

TEST COMMENT: 15- IF- BOB 3mins
30- ISI- Built to 1.5" in 8mins then slowly died back to .5"
60- FF- BOB 3mins
90- FSI- BOB 2mins



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1757.00	108.60	Initial Hydro-static
1	40.94	107.58	Open To Flow (1)
14	100.22	112.27	Shut-In(1)
45	1147.44	114.64	End Shut-In(1)
47	109.58	114.01	Open To Flow (2)
101	299.94	119.84	Shut-In(2)
196	1099.70	119.38	End Shut-In(2)
197	1726.04	117.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
748.00	GMCO, 30%G 10%M 60%O	10.60
31.00	CGO, 40%G 60%O	0.44
0.00	2751' GIP	0.00

* Recovery from multiple tests

Gas Rates

	Choke (Inches)	Pressure (psig)	Gas Rate (Mcf/d)