GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

SUEMAUR EXPLORATION & PROD. , LLC

GAEDE #1-19
SEC. 19 TWP. 7S RGE 28W
SE NW SE SW
981' FSL & 1852' FWL
SHERIDAN COUNTY, KANSAS
API: 15-179-21424-00-00

DRILLING CONTR.: MURFIN RIG #7
SPUD: 12-09-2016 COMP:
MUD UP: 3050' TYPE MUD: CHEM.
DRILL TIME: 3300' to RTD
RTD: XXXX' LTD:XXXX'
SAMPLES SAVED: 3350' to RTD
GEOLOGIST: ROBERT J. PETERSEN

ELEVATION
KB: 2797
GL: 2792
LOG MEASURED FROM: KB

SURFACE CASING
8 5/8" Set @290' w/ 275SX

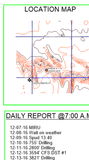
PRODUCTION CASING

WELL LOG SURVEYS
HEATHER
Hi-Res AIL,DNL,ML,GR,SP

ELECTRIC LOG TOPS

Complnt	Sample Top	Datum	Rel A	Rel B
Stone Corral	2486	+311	-2	-2
Base Stone Corral	2532	+265	-1	-1
Topeka	3346	-549	-3	-3
Heebner	3585	-788	-3	-3
Toronto	3604	-807	-3	-3
Lansing-KC	3622	-825	-3	-3
Muncie Crk	3793	-996	-3	-3
Stark	3882	-1085	-3	-3
Hushpuckney	3920	-1123	-3	-3
Pleasanton	3960	-1163	-3	-3
Marmaton	4000	-1203	-3	-3
Cherokee	4250	-1453	-3	-3
Atoka	4344	-1547	-3	-3
Morrow	4384	-1587	-3	-3
Chester	4577	-1780	-3	-3
Ste. Genevieve	4630	-1833	-3	-3
St. Louis	4700	-1903	-3	-3
Spergen	4778	-1981	-3	-3
Spergen Ls	4790	-1993	-3	-3
Warsaw	4838	-2041	-3	-3
Keokuk Ls	4878	-2081	-3	-3
Gilmore City Ls	4910	-2113	-3	-3
Hunton Ls	4946	-2149	-3	-3
ARBUCKLE	4980	-2183	230 shallow	43 deeper

LOCATION MAP



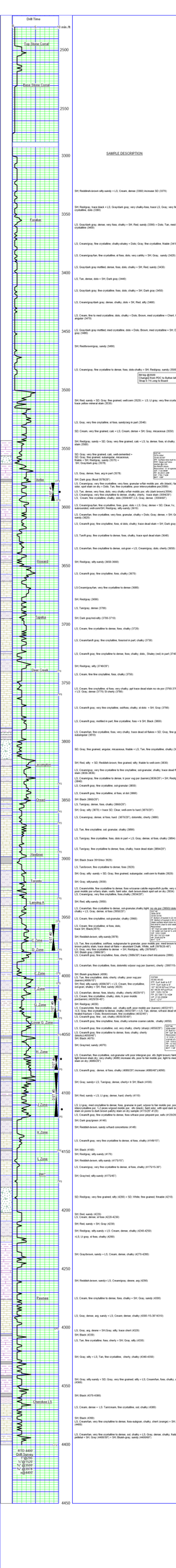
REFERENCE WELL A
15-179-20076
DEAN & ELAINE INC
GAEDE TRUST
(SAMPLE LOG TOPS)
C NE NE SE 19-7S-28W
Longitude: -100.4238534
Latitude: 39.4278994
Elevation: 2792 KB

REFERENCE WELL B
15-179-21421
Suemaur Expl. & Prod., LLC
Gaede #1-18
(E LOG TOPS)
C NW NW SW 18-7S-28W
Longitude: 100.4238134
Latitude: 39.4278934
Elevation: 2792 KB

REMARKS AND RECOMMENDATIONS

DAILY REPORT @7:00 A.M.

12-07-16 MIRU
12-08-16 Drlg on weather
12-09-16 Spud 12:45
12-10-16 TD 3300'
12-11-16 Drlg 3300'
12-12-16 3550' CFS DST #1
12-13-16 3637' Drlling
12-14-16 3978' DST #2
12-15-16 4032' Circulating
12-16-16 4400' Circulating
12-17-16 4400' RTD CFS


Drill Time
min./ft
Top Stone Corral
2500
Base Stone Corral
2550
3300
Topeka
3350
Heebner
3400
Toronto
3450
Lansing-KC
3500
Muncie Crk
3550
Stark
3600
Hushpuckney
3650
Pleasanton
3700
Marmaton
3750
Cherokee Shale
3800
Cherokee LS
3850
Atoka
3900
Morrow Shale
3950
Morrow Sd
4000
Chester
4050
Ste. Genevieve
4100
St. Louis
4150
Spergen
4200
Warsaw
4250
Keokuk LS
4300
Hunton
4350
Gilmore City LS
4400
RTD 4400'
LTD XXXX'
DRILLING TIME
SAMPLE DESCRIPTION
Sh Redbed/brown sdy sandy • LS; Cream, dense (3380) increasingly SD (3370)
Sh Redbed/brown sdy sandy • LS; Gray/dark gray, very chalky/tuff, trace LS; Gray, very fine crystalline, dolo (3390)
LS; Cream/gray, dense, very fine, chalky • Sh Red, sandy (3395) • Dolo; Tan, med crystalline, friable (3410)
LS; Cream/gray/tan, fine crystalline, vf fossil, dolo, very calcitic • Sh Gray, sandy (3420)
LS; Gray/dark gray mottled, dense, fossil, dolo, chalky • Sh, Red, sandy (3430)
LS; Tan, dense, dolo • Sh Dark Gray (3440)
LS; Gray/dark gray, fine crystalline, fossil, dolo, chalky • Sh; Dark gray (3450)
LS; Cream/gray/dark gray; dense, dolo, chalky • Sh; Red, sdy (3460)
LS; Cream, fine to med crystalline, dolo, chalky • Dolo; Brown, med crystalline • Chert; Gray, angular (3470)
LS; Gray/dark gray mottled, med crystalline, dolo • Dolo; Brown, med crystalline • Sh; Dark gray (3480)
Sh Redbrown/gray, sandy (3490)
LS; Cream/gray; fine crystalline to dense, fossil, dolo-chalky • Sh; Red/gray, sandy (3500-3510)
Sh Red/gray; sandy • SD; Gray, very fine grained, well-cmtd (3520) • LS; Lt gray, very fine crystalline, trace pellet mineral stain (3530)
SD; Cream, very fine grained, calc • LS; Cream, dense • Sh Gray, micaceous (3550)
Sh Red/gray; sandy • SD; Gray, very fine grained, calc • LS; Tan, dense, fossil, dolo, trace dead stain (3560)
SD; Gray, very fine grained, calc, well-cemented • SD; Gray, fine grained, subangular, micaceous, friable • Sh Red/gray, sandy (3570) • Sh; Gray/black (3575)
LS; Gray, dense, fossil, arg in part (3578)
Sh Dark gray (fossil 3579-3581)
LS; Cream/gray/tan, fine crystalline, very fossil, granular w/fair vuggy por, sh (black), faint spot dead stain on dry • Coal, black (3585) • Sh; Gray/black, fissile (3590)
LS; Tan, dense, very fossil, dolo, very chalky w/fair middle por, sh (dark brown)(3594) • Sh; Gray/black, fissile, micaceous, carbonaceous (3595) • LS; Cream/gray/tan, fine crystalline, vuggy, dolo (3596)(87%) • LS; Gray, dense (3598)(13%)
LS; Cream/gray/tan, fine crystalline, fossil, dolo, vuggy, dense • SD; Clear, fr, subrounded, well-cmtd (Redbrown, sdy sandy) (3610)
LS; Cream/tan, fine crystalline, very fossil, granular, chalky • Dolo; Gray, dense, • Sh; Gray, sandy (3620)
LS; Cream/gray; fine crystalline, fossil, vf dolo, chalky; trace dead stain • Sh; Dark gray (3630)
Sh; Tan/lt gray, fine crystalline to dense, fossil, chalky; trace spot dead stain (3640)
LS; Cream/tan, fine crystalline to dense, sol grain • LS; Cream/gray; dolo, chalky (3650)
LS; Cream/lt gray; fine crystalline, fossil, chalky (3670)
LS; Cream/gray/tan, very fine crystalline to dense (3680)
Sh; Red/gray (3690)
LS; Tan/gray; dense (3700)
Sh; Dark gray/red-sdy (3700-3710)
LS; Cream, fine crystalline to dense, fossil, chalky (3720)
LS; Cream/lt gray, fine crystalline, fossil/vf pel, chalky (3730)
LS; Cream/lt gray; fine crystalline to dense, fossil, chalky, dolo; Shale (red) in part (3740)
Sh; Red/gray; sdy (3740/20')
LS; Cream, fine fine crystalline, fossil, chalky (3750)
LS; Cream, fine crystalline, sl fossil, very chalky; pal trace dead stain no vis por (3760-3780(20')) • LS; Gray, dense (3770) Sh chalky (3780)
LS; Cream/lt gray, fine crystalline, fossil, chalky, dense • Sh; Gray (3790)
LS; Cream/lt gray, fine crystalline, earthose, chalky, vf dolo • Sh; Gray (3790)
LS; Cream/lt gray, mottled in part, fine crystalline, fossil, tace • Sh Black (3800)
LS; Cream/tan, fine crystalline, fossil, very chalky; trace dead oil flavin • SD; Gray, fine grained, subangular (3810)
LS; Gray; fine grained, angular, micaceous, friable • LS; Tan, fine crystalline, chalky (3820)
SH; Red, sdy • SD; Reddish-brown, fine grained, sdy; fissile to well-cem (3830)
LS; Cream/gray; very fine crystalline, very granular chalky (fossil); trace dead flavy dull stain (3836-3838)
LS; Cream/gray, fine crystalline to dense, fr poor vug por (barren)(3839(20')) • Sh; Red/gray (3840)
LS; Cream/gray; fine crystalline, sol-granular (3850)
LS; Cream/lt gray; fine crystalline, vf fossil, vf dol (3860)
Sh Black (3860(20'))
LS; Tan/gray, dense, fossil, chalky (3880(20'))
Sh; Gray, dkl, (3870) • trace SD; Clear, subrounded, well-cmtd (3870(20'))
LS; Cream/gray, dense, vf fossil, hard (3870(20')); dolomitic, chalky (3880)
LS; Tan, fine crystalline, sol, granular, chalky (3890)
LS; Tan/gray; fine crystalline, fossil, dolo in part • LS; Gray, dense, vf fossil, chalky (3894)
LS; Tan/gray, fine crystalline to dense, fossil, chalky, trace dead stain (3894(20'))
Sh Black (trace 3910/sw 3920)
LS; Tan/brown, fine crystalline to dense, fossil (3920)
Sh; Gray, sdy, sandy • SD; Gray, fine grained, subangular, well-cem to friable (3930)
Sh; Gray, sdy/sandy (3930)
LS; Cream/white, fine crystalline to dense, fine sucrosse/ calcite replacing/fill grotto, very chalky, poor inside pin-vuggy/ intern. vuggy, spots, faint dead stain, dark brown/dkl dead spot on dry (3934)
LS; Cream/gray, very fine crystalline, fossil, chalky (3934(20'))
Sh; Red, sdy,sandy (3950)
LS; Cream/white, fine crystalline to dense, fossil, sol-granular, chalky, tight; no vis por (3950)
LS; Cream/lt gray, fine crystalline, fossil, chalky (3960)
LS; Cream, fine crystalline, sol-granular, chalky (3980)
LS; Cream, fine crystalline, fossil, dolo, trace Sh (Black)(3970)
Sh Redbrown/brown, sdy sandy(3970)
LS; Tan, fine crystalline, earthose, subgranular to granular, poor intercrystalline porosity, dolo, trace brown patchy stain, trace dead oil flavor + abundant Chalk, White, soft (3979(20'))
LS; Cream/lt gray, fine crystalline to dense • Sh; Red/gray, sdy (3979(40'))
LS; Black, poor (3980(20'))
LS; Cream/lt gray, fine crystalline, fossil, chalky (3989(20')) trace dead oil/stains (3989)
LS; Cream/tan, fine crystalline, fossil, dolomitic w/poor vug por (barren), chalky (3993(10')) • LS; Cream, fine crystalline, sol-granular, chalky • Sh; Red, sandy (4000)
LS; Cream/white, dense, fossil, chalky, chalky (4003(10'))
LS; Cream, fine crystalline, chalky, dolo; tr poor middle intercrystalline porosity (4003(20'))
Sh Black (4000)
LS; Cream/white, fine crystalline, sol, chalky-soft, poor middle por (barren) (4023(10'))
• LS; Cream, fine crystalline to dense, chalky (4023(20')) • LS; Tan, dense, earthose dead stain on dry (4023(30'))
LS; Cream/lt gray, fine crystalline, fossil, chalky (4023(40'))
LS; Cream/gray, fine crystalline, dolo, chalky w/some coarse calcite, chalky (4050)
LS; Cream/gray, fine crystalline, sol, very chalky, chalky (chalky) (4050(20'))
LS; Cream, fine crystalline to dense, fossil, chalky, chalky (4050(40'))
Sh Black (4050)
Sh; Gray/red, sandy (4070)
LS; Cream/tan, fine crystalline, sol-granular with poor intergran por, dkl, light brown/ faint odor dead stain on dry (4080) • LS; Cream/white, dkl, dense to fair middle por, light to dead brown stain on dry (4080(20'))
LS; Cream/lt gray, dense, fine chalky (4080(20')) trace/no stain (4080(40'))
Sh; Gray, sandy • LS; Tan/gray, dense, chalky • Sh Black (4100)
Sh; Red, sandy • LS; Lt gray, dense, fossil, chalky (4110)
LS; Lt gray, med crystalline to dense, fossil, granular to sucrosse, spots of tan middle por, poor intercrystalline por, 1.2 pious original middle por, dkl (black), faint odor, with spot dark brown dead stain on dry, trace dead stain in dry sample (4110(20'))
LS; Cream/lt gray, fine crystalline to dense, fine sucrosse/ poor intergrnl por, sdy (4120(30-40'))
Sh Dark gray/green (4140)
Sh Reddish-brown, sandy shale/ fossil contents (4140)
LS; Cream/lt gray, very fine crystalline to dense, sol fossil, chalky (4149/10')
Sh Black (4160)
Sh; Redbrown, sdy sandy (4170)
Sh Redbrown-brown, sdy sandy (4170/10')
LS; Cream/gray, very fine crystalline to dense, sol fossil, chalky (4170/10-30')
Sh; Gray/red, sdy,sandy (4170/40')
SD; Redbrown, very fine grained, sdy (4200) • SD; White, fine grained, friable (4210)
Sh; Red, sandy (4220)
LS; Cream, dense, sl fossil, KCR (4230)
Sh; Red, sandy • Sh; Gray, sandy (4230)
Sh; Redbrown, sdy sandy • LS; Cream, dense, chalky (4240-4250)
•LS; Lt gray, sl fossil, chalky (4250)
Sh; Gray/brown, sandy • LS; Cream, dense, chalky (4270-4280)
Sh; Redbrown-brown, sandy • LS; Cream/gray; dense, arg (4290)
LS; Cream, fine crystalline to dense, fossil, chalky • SH; Gray, sandy (4300)
LS; Gray, dense, arg, sandy • LS; Cream, dense, chalky (4300-15,30'(4315))
Sh; Red, sandy (4320)
LS; Cream, dense, sl fossil, KCR (4330)
Sh; Red, sandy • Sh Gray, sandy (4330)
Sh; Red/gray; sdy,