TIM PRIEST
PetroNum Geologist
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GEOLOGIC REPORT
DRILLING TIME AND SAMPLE LOG

OPERATOR:	ANADARKO E&P ONSHORE LLC
LEASE:	ANADARKO A-AE-WILCO
LOCATION:	997' FSL, 1191' FEL
COUNTY:	Grant
STATE:	Kansas
API#:	15-067-21788-00-00
SPUD:	10-5-17 COMP: 10-14-17
TOTAL DEPTH:	5800'
MAIN HOLE SIZE:	7875' - 8 3/4" 5800' - 6 1/8"
DRILLING TIME START FROM:	3900' - 8 1/2"
DRILLING TIME END FROM:	5800' - 6 1/8"
GEOLOGICAL SUPERVISION:	HOURLY
DRILLING TIME RECORDED:	HOURLY
FORMATION TOPS:	ELECTRICAL LOG
DRILLING TIME:	ELECTRICAL LOG
SAMPLES:	5800'
Elevation:	3127' KB
Spud Date:	10-5-17
Completion Date:	10-14-17
Rig:	Sterling #4
Contractor:	Sterling Drilling
Mud Type:	Chemical
Bit Type:	Various
Surface Casing:	8 5/8" @ 1775'
Production Casing:	5 1/2" @ 5800'
Total Depth:	5800'
Ground Level:	3117'
Kelly Bushing:	10'
Logged Interval:	3900' to 5800'
Total Depth:	5800'
Formation at TD:	Total Depth
Lithology:	Limestone, Shale
Mud Type:	Chemical
Bit Type:	Various
Surface Casing:	8 5/8" @ 1775'
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Operator:	Anadarko E&P Onshore LLC	Geologist:	Tim Priest
Lease:	Anadarko A-AE-Wilco	Date:	10-14-17
Location:	997' FSL, 1191' FEL	Page:	1
County:	Grant	Total Pages:	1
State:	Kansas		
API#:	15-067-21788-00-00		

REMARKS:

Respectfully Submitted:

API #15-067-21788-00-00

Tim Priest
Petroleum Geologist

LEGEND

Drilling Time / Sample Description / Gas / Chart / Remarks

DRILLING TIME
Hard Penetration Rate
Soft Penetration Rate

DEPTH	DRILLING TIME	SAMPLE DESCRIPTION	REMARKS
5 1.0 0 5 10 15 20 30			
2450		La. crm. tn. sd, fos. o.cmp f.xst sft & tnt frag.pos. NO	Anhydrite 2452(+665)
50		La.crm.bas.,tn.sft, fos. p.f.xst sft.sp.pos. NO	Base Anhydrite 2492(+625)
2500		La.crm.cwn, vfr.sft, draw	
50		Dk.gry.tnk La.crm.bas. fr.sft, arg.sp.pr.pst	
2550		Dk.gry, sdy	
50		La.gry, fr.sft, chky, draw	
2600		Dk.gry,dk.gry	
50		La.crm, tn.sd, fos.chky, p.f xst sft.sp.pos. NO	
2650		Dk.tnk La.crm, fr.sft, fos. chky, p.f xst sft.sp.pos. NO	
50		Dk.gry.tnk La.crm.bas.,tn.sft, arg.sp.pst	
2700		Dk.gry.gry La.crm.bas.,tn.sft, chky, f xt sft.sp.pos. NO	
50		La.crm.bas.,tn.sft, fos. chky, p.f xst sft.sp.pos. NO	Stone Corral 2680 (+445)
2750		Dk.tnk, cwn	Topeka 2800 (+325)
50		Dk.gry,dk.gry, cwn	
2800		La.crm.f.gry, fr.sft, chky, draw	Lansing 4210 (-1085)
50		La.crm.f.gry, fr.sft, fos.chky, f.xst sft.sp.pos. NO	
2850		La.crm.f.gry, fr.sft, fos.,sft chky, p.f.xst sft.sp.pos. NO	
50		La.crm.f.gry, fr.sft, fos.xst. chky, p.f.xst frag.pos. NO	
2900		La.f.gry, vfr.sft, draw	
50		Dk.gry, cwn	
2950		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.sp.pos. NO	
50		La.crm.f.gry, fr.sft, fos. chky, draw	
3000		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.sp.pos. NO	
50		La.crm, mic.xl, draw	
3050		Dk.dk.gry.tnk La.crm, mic.xl, draw	
50		La.crm, vfr.sft, chky, draw	
3100		La.f.cr.crm, fr.mod.sft, fos.fr. sft.sp.pos. NO, Dead Oil Stain & tnt frag.pos. NO, draw Gas	Kansas City 3150 (-1025)
50		Dk.gry.dk.gry	
3150		La.crm, fr.sft, fos.fr.xst, chky, f.xst sft & tnt frag.pos. NO	
50		La.crm.bas.,vfr.sft, chky, draw	
3200		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.sp.pos. NO	
50		La.crm.bas.,vfr.sft, draw	Muncie Creek 3250 (-1125)
3250		Dk.tnk, cwn La.crm.bas.,vfr.sft, chky, draw	
50		Dk.gry.gry La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft & tnt frag.pos. NO	
3300		La.crm.f.gry, xxc.sft, chky, draw	
50		Dk.tnk,cwn La.crm.f.gry,tan, fr.sft, fos. chky, p.f.xst sft.sp.pos. spkl oil stain, Dead Oil Stain, VSOFC's sdst, dull flour	
3350		Dk.gry,dk.gry	
50		La.crm.f.gry, fr.sft, fos.xst. chky, f.xst sft & tnt frag.pos. NO	Hushpuckney 3400 (-1300)
3400		Dk.tnk, cwn	
50		La.crm.f.gry, vfr.sft, sil.chky, draw	
3450		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.pos. NO	
50		La.crm.f.gry, fr.sft, fos.xst. chky, f.xst sft & bxx.pos. NO	
3500		La.gry, vfr.sft, draw	Base Kc 3450 (-1350)
50		Dk.tnk, cwn La.crm.gry,vsdst, fr.sft, fos. chky, p.f.xst sft & tnt frag.pos. NO	
3550		La.crm.f.gry, vfr.sft, draw	
50		Dk.red,gry.gry, sdy	
3600		La.crm.f.gry, fr.sft, fos. draw	
50		Dk.gry.tnk	Marmaton 3650 (-1550)
3650		La.crm.f.gry, vfr.sft, draw	Pawnee 3700 (-1600)
50		La.crm.f.gry,tan, fr.sft, fos. chky, p.f.xst sft.sp.pos. spkl oil on a fract sft, VSOFC's, o.sh sdst, dull flour	Fort Scott 3740 (-1640)
3700		La.crm.f.gry, fr.f.xst.sft, fos. chky, p.f.xst & tnt frag.pos. spkl oil stain, VSOFC's sdst, dull flour	Cherokee Shale 3780 (-1680)
50		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.sp.pos. spkl oil on a fract sft, VSOFC's, o.sh sdst, dull flour	
3750		Dk.gry.tnk La.crm.f.gry, vfr.sft, fos. chky, draw	
50		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.sp.pos. spkl oil on a fract sft, VSOFC's, o.sh sdst, dull flour	
3800		Dk.tnk La.crm.f.gry, vfr.sft, fos. chky, draw	Johnson Zone 3840 (-1740)
50		La.crm.bas.,tn.sft, fos. chky, p.f.xst sft.sp.pos. spkl oil on a fract sft, VSOFC's, o.sh sdst, dull flour	
3850		La.tan.gry, vfr.sft, fos. draw	
50		La.tan.gry, vfr.sft, fos. draw	
3900		Dk.dk.gry La.tan, mic.xl, chky, draw	
50		La.tan.gry, fr.sft, fos. chky, p.f.xst sft.pos. NO	
3950		La.tan.gry, vfr.sft, draw	
50		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.sp.pos. spkl oil on a fract sft, VSOFC's, o.sh sdst, dull flour	
4000		La.crm.f.gry, fr.sft, fos. chky, p.f.xst sft.sp.pos. NO	
50		Dk.var.col, sdy	
4050		Dk.var.col, chky	
50		Dk.var.col, sdy	
4100		Dk.var.col, sdy	
50		Dk.tnk,cwn	Mississippian 4150 (-1475)
4150		Lt.f.gry, vfr.sft, v.sandy, chky, draw	
50		Dk.f.gry	
4200		Lt.f.gry, fr.sft, chky, draw	
50		Lt.f.gry, vfr.sft, chky, draw	
4250		T.Round dk.gry,dk.Sh	
50		La.crm.f.gry, fr.sft, sandy, v chky, draw	
4300			Total Depth 4300 (-1625)