	14	Cyno 01 17 Dei	sure Energy, th Street, Suit nver, CO 8020	LLC te 850 2	
	4	4-R Ra 588' Sec. Ellis	anch # 1-36-1 FSL & 2225' F 36-T15S-R20 County, Kans	5-20 WL W as	
	Well Name Surface Location Bottom Location API License Number Spud Date Begion	: 4R Ranch : 588'FNL, : : 15-051-26 : : 2/20/2017 : Ellis Cour	<b>KB = 2133</b> Scale 1:240 Imperial # 1-36-15-20 2225' FWL, Sec 25-T15S-R20W 5863	: 4:45 PM	
Spud Date: 2/2 Region: Elli Drilling Completed: 3/1 Surface Coordinates: Bottom Hole Coordinates: Ground Elevation: 212 K.B. Elevation: 213 Logged Interval: 290 Total Depth: 39 Formation: Re Drilling Fluid Type: Ch			Time /Fresh Water Gel OPERATOR Energy, LLC	: 9:20 PM : 3915.00ft	
	Address Contact Geologist Contact Phone Nbr Well Name Location API Pool State	:: 1401 17th Denver, C Phone: 72 :: Gene Dav :: 720-272-9 : 4R Ranch : 588'FNL, : 15-051-26 : : Kansas	Street, Suite 850 CO 80202 20-476-3678 vis 9620 # 1-36-15-20 2225' FWL, Sec 25-T15S-R20W 5863 Field Country LOGGED BY	: Post Rock S : USA	South
	Company	Charlie St 920 12th	Sturdavant Consulting		
The Cyne Cambriai Lansing / Three DS same int	Phone Nbr Logged By osure 4-R Ranch #1-36 n Granite. The geologis A, C, D, E, F, H, I, and ST's were conducted in erval as DST #1: Lansi	Golden, C Golden, C Geologist G-15-20 well was st was on loca J.	Notes Notes	: Charlie Stur n LTD of 3915', Sample shows o T #1 was a miss	bottoming in the Pre- f oil were noted in the srun. DST #2 covered th
and 60% mud, 509 Based or be furthe The sam Wichita, Respectf Charlie S Consultir	6 mud), while test of the % oil). It also had GTS in the sample shows, DS in tested through product ples were saved and w Kansas. ully submitted, Sturdavant ing Geologist	e Lansing H-K on the second ST results, and ton casing. ill be available	zones (3548'-3650') recovered 193 I open. d log analysis, it was determined by e for review at the Kansas Geologic	30' clean oil, 120 all parties invo	D' MGO (25% gas, 25%
	CHARLING WELL Cynosure Energy 4R Ram 588' FNL & 2225' Sec. 36 T15S R20 Ellis Co, KS	Ch # 1-36-15-20 FWL W	Vell Comparison Sheet RDAVANT CO COMPARISON SHEET COMPARISON WELL Cynosure Energy Leiker #2-25-15-20 740' FSL & 2506' FWL Sec. 25-T15S-R20W Structural Structural	COMPA Cynosure Energ 700' FN Sec. 25-	RISON WELL y Leiker #1-25-15-20 L & 330' FW T15S-R20W Structural
Formation Anhydrite Top Bottom Anhyd. Tarkio Topeka King Hill Queen Hill Heebner Toronto Lansing Stark Base/KC Marmaton Pawnee Cherokee Shale	Sample         Sub-Sea         L           1363         770         13           1403         730         14           2987         -854         29           3111         -978         31           3236         -1103         32           33296         -1163         32           3407         -1252         33           3625         -1492         36           3668         -1535         36           3698         -1565         37           NP             NP	og         Sub-Sea           362         771           100         733           386         -853           111         -978           326         -1103           298         -1165           384         -1251           104         -1271           330         -1491           370         -1537           700         -1567           2133         2133           2133         -1455	Log         Sub-Sea         Sample         Log           1363         768         2         3           1403         728         2         2           2976         -845         -9         3           3100         -969         -9         3           3226         -1095         -8         3           3286         -1155         -8         3375           3375         -1244         -8         3396           3396         -1265         -9         3422           3422         -1291         -6         36200           3664         -1533         -2         3694           3694         -1563         -2         NP           200         1601         16	Log         Sub-Se           Log         Sub-Se           1328         803           1372         759           2956         -825           3079         -948           3207         -1076           3269         -1138           3355         -1224           3375         -1244           3398         -1267           3636         -1505           3677         -1546           3700         -1569           3716         -1585	Relationship           Isa         Sample         Log           -33         -32           -29         -26           -29         -28           -30         -30           -27         -27           -25         -27           -28         -27           -30         -30           -30         -30           -26         -25           -30         -32           -19         -21
Reagan Pre-Cambrian Total Depth	3750 -1617 37 3754 -1621 37 3915 -1782 39		3747         -1616         -1           3758         -1627         6           3799         -1668         -114	3749 -1618 3755 -1624 3790 -1659	1 1 3 3 -123 -123
CHAR Company:	<b>LIE STUR</b> DAIL Charlie Sturdavant Consultir 920 12th Street	<b>DAVA</b> <u>y Drillin</u> 19	Daily Drilling Report <b>INT CONSULTI</b> <i>G REPORT</i> Well: 4R Ranch # 1-36-15-20 Location: 588'FNL & 2225' FWL	NG	
Operator: Operator Contact: Gene Davis Ben Jackson Wellsite Geologis Drilling Contracto DATE 2/20/2017 2/21/2017	Golden, CO 80401 Cynosure Energy, LLC s: O: 720-476-3678 Cell: 720-2' O: 720-476-3678 Cell: 303-9: t: Charlie Sturdavant Cell: (303)907-2295 Office: (303) 384-9481 or: Duke Drilling Co. Rig #4 6 7:00 AM DEPTH 0 ft Spud @ 164 300 ft. Drilling ahe	72-9620 31-7368 20-793-0833, Tool 15 hrs. ad. Set 5 joints of	Sec. 36-F15S-R20W Ellis County, Kansas Elevation: GL: 2124, KB: 2133 Field: Post Rock South API No.: 15-051-26863 Surface Casing: 8 5/8" set @ 221' Pusher: Hector Torres cell: 620-793-0834 REMARKS new 8-5/8" 24# surface csg @ 221'. Cemented		
2/22/2017 2/23/2017 2/24/2017 2/25/2017 2/26/2017 2/27/2017 2/28/2017 3/1/2017	175 sks of £ 1620 ft. Drilling ahe 2411 ft. Drilling ahe 2893 ft. Drilling ahe 3368 ft. Drilling ahe 3515 ft. Conducting 107' HO&G0 3606 ft. Drilling ahe Gassy mud 3740 ft. CFS. RTD r 3915 ft. Pioneer Ene Logging op	30/20 poz mix. Plug ad. Set 5 joints of ad. ad. Geologist on I ad. DST # 1: 3416'-35 CM (20% gas, 20% ad. Conducted DS dy oil (25% gas, 24 reached @ 2120 hr ergy Services complete	g down @ 2145 hrs. new 8-5/8" 24# surface csg @ 221'. Cemented ocation @ 1700 hrs, @ 3080 feet. (15', Misrun. Run DST # 2: 3416'-3515', Rec: 36 oil, 60% mud), SIP: 929-948#. (17 #3: 3548'-3650', Rec: 1930' Clean gasy oil, 1 5% mud, 50% oil), SIP: 967-960#, (s. at 3915'. Logged by Pioneer Energy Servic menced logging operations @ 0030 hrs.	l w/ 35' GIP, 20' æs.	
	Well Type Longitude Longitude Latitude N/S Co-ord E/W C	SU Vertical 	ion cag. Geologist off location @ 1100 hrs. <b>RFACE CO-ORDINATES</b> 88 4		
	E/w Co-ord Contractor Rig # Rig Type Spud Date TD Date Rig Release	: Duke Drill : 2 : mud rotar : 2/20/2017 : 3/1/2017 : 2133.00ft	CONTRACTOR ing Co. y Time Time Time Time Time Cound Elevation	: 4:45 PM : 9:20 PM : : 2124.00ft	
Cht	FOSSIL Algae Construction Algae Construction FOSSIL Construction		ROCK TYPES         Shgy         Shgy         Shale, gry         Carbon Sh         Carbon Sh         ACCESSORIES         AACCESSORIES         Duconformity         Bioturbation (non spec)	Lartz	Igneacidic URE halky
	Liociastic or Fr	\ 	OTHER SYMBOLS		
<ul> <li>Daily Report</li> <li>Digital Photo</li> <li>Document</li> <li>Folder</li> <li>Link</li> <li>Vertical Log File</li> <li>Horizontal Log</li> <li>Core Log File</li> </ul>	e File				
Curve Track ROP (min/ft) Gamma (API) Cal (in)	tdt Interval Lerval LSC LSC L LSC	Mong IIO	Printed by GE	Ostrip VC Striplog	version 4.0.8.15 (www.grsi.o TG, C1 - C5
1:240 Imperia ROP-(min)/ft Cal.(in) Cal.(in)	2920 2930	588 Geol 3080 Anhy	Cynosure-4R Ranch # 1-36 ' FSL & 2225' FWL Sec 36-T Ellis County, Kansas KB = 2133' ogist on location @ 1700 hrs. 2/2	5-15-20 15S-R20W 5 4/2017, @	1:240 Imperial Mud-Co, Mud check 2918' @ 0730 hrs. 02/24/2017 Vis. 60+, Wt. 8.7 PV 19, YP 26 WL 7.4, Cake 1/32"
	2940 2950 2960	Anhy	drite Base: 1403 (+730) Stottler 2943 (-810)		PH 11.0, Ca Tr CHL 5,000 ppm Sol 2.6, LCM 2 DMC: \$2,216.26 CMC: \$6,794.74
ROP (min/ff	2970 2980 2990 ≥990 ≥990 ≥990 ≥990 ≥990 ≥990	Shale: 10' sa 10' sa 10' sa Limest	gray, soft and mushy. <b>Tarkio 2987 (-854)</b> <b>amples begin @ 3000'</b> one: gray to tan, brachiopods, fusulinids, bryoz to micro-xln matrix, packstone, tight, no show: one: as above w/ tr of oolites and tr of pelloids.	zoans, crinoids, set s.	
	3010 3020 3020 3030 ▲ 3030 ▲	Spicula Spicula Spicula Spicula Spicula Spicula Shale: Limest matrix, orginal of the spical of the spica	one: tan to It gray, tr coral, tr algal laminations, one, no shows. green, gray, soft, calcareous. one: cream to tan, brachiopods, crinoids, fusul wackestone, tr grayish-tan chert, frosted, no s	vf- to f-xln matrix, linids, f- to med-xln shows. Becomes	
	3050 3060 3070 3070	Argillac Shale: Limest in a f- t Limest f-xln m	eous with depth. gray, firm, calcareous, finely laminated. one: tan to grayish-tan, fussulinids, brachiopod o vf-xln matrix, packstone to wackestone, no s one: tan to brown, some is mottled, fusulinids, atrix, packstone, tr tan chert w/ fossils, vitreous	ds, fossil debris set hows. crinoids, pelloids, s, no shows.	
	3090 ↓ 3110 ↓ ↓ 3110	Limest	one: tan to gray to brown, tr brachiopods, argill aminations in part, f-xln matrix, mudstone to wa gray, firm, blocky, calcareous to non-calcareou <b>Topeka 3111 (-978)</b> one: tan, f- to med-xln, fossil debris, tr fusulinio, indicating recrystallization, packstone, no sho	laceous, thin gray ackestone, no us. ds, sparry calcite in ws.	
	3120 3130 3130 3140 3150	Limest Limest Limest Limest Limest Limest Limest Limest	one: gray to tan, brachiopods, spicules, crinoic eous in part, clean in other parts, packstone, r ayers. one: tan, fossiliferous as above, but with vf- to o shows. one: tan to gray, vf- to micro-xln mudstone, fev ws. one: tan to mottled tan and gray, tr bryozoans, ions, tr brachiopods with mudstone fill, mostly	ds, fusulinids, no shows, thin gray micro-xln matrix, v fossil frags, tight, tr thin gray shale micro-xln	
	3160 3170 3180 3190	mudsta     mudsta     mudsta     mudsta     tr fusul     tr fusu	one, tr tan frosted chert, tr f-xln sucrosic grains one: tan, finely-xln sucrosic grainstone with fai inids, tan, frosted chert, no shows. one: tan, micro-xln mudstone w/ tr sparry calci eous sli fossiliferous, vf-xln wackestone, tr fus aminations, tight, no shows. one: gray to tan, micro-xln to med-xln, spicules chert, tr porosity, no shows.	stone, no shows. r inter-xln porosity, te, tr gray ls sulinids, tr thin s, fusulinids, tr tan	
0 ROP min/#	5 3200 5 3210 √ 3210 √ 3220		ds, tr solitary coral, tr brachiopods, tr oolites a n porosity in some frags, no shows. one as above w/ Chert: gray to tan, fossils, fus ws. Some frags w/ algal laminations. one: tan to It gray, f-xln, fossiliferous, brachiop packstone, chert, no shows. one: cream to tan, f-xln bioclastic grainstone, f one, fair inter-xln porosity, no shows, tan chert pottom.	ulinids, crinoids, ods, fusulinids, tr usulinids, . Becomes chalky	
	3230 3240 3250 3250 3260	At the t	King Hill 3236 (-1103)         black, carbonaceous, calcareous, soft.         dded gray shales and tan to gray limestone, tr         rosted. No shows.         one: cream to tan, vf-xln to f-xln sucrosic grant         good inter-xln porosity, mudstone is tight.         one: tan, bioclastic grainstone f-xln, good inter         ids, sparry calcite, no shows.	dark fusulinid ular grainstone, -xln porosity,	
	3270 3280 3280 3290 3300	Limest w/ good chert. I	one: It tan to tan, f- to med-xln bioclastic/fragm tr tan chert, no shows. one: It tan, bioclastic grainstone, f-xln, partly cl d inter-xln porosity, fusulinids, no shows, tr dar ower part is It gray micro-xln mudstone. <b>Queen Hill 3296 (-110</b> ) black, carbonaceous, calcareous, soft.	eental grainstone, halky, partly porous rk gray fossiliferous 63)	
	3310 3320 3330 3330	Limest Limest Limest Limest Shows. Micro-) Limest fair inte Limest fair inte	one: tan to It brown, bioclastic-oolitic grainston n porosity, fusulinids, brachiopods, crinoids, the shale, no shows. one: tan, f-xln, bioclastic grainstone, fair inter- din mudstone, It gray. one: f- to vf-xln packstone, bioclastic, tr crinoic er-xln porosity, no shows. one: tan, fragmental, fossil frags, set in a f- to one to mudstone, no shows.	e, med-xln, fair nin stringers of It kln porosity, no ls, tr brachiopods, vf-xln matrix,	
	3340 3350 3350 3360 3370	C Limest C Lim	one: tan, f-xln, bioclastic to oolitic grainstone, r one: tan, brachiopods, spicules, fusulinids, bic stone, fine- to coarse-xln, fair inter-xln porosity chert.	no shows. oclastic grainstone y, no shows, tr tan	Mud-Co, Mud check 3380' @ 0750 hrs. 02/25/2017 Vis. 50, Wt. 9.1 PV 18, YP 24 WL 7.2, Cake 1/32" pH 11.0, Ca Tr CHL 5,000 ppm Sol 5.4, LCM 2
0 ROP (min ft)	3380 3380 1 3390 1 1 1 1 1 1 1 1 1 1 1 1 1	Tr whit vitreous Shale:	Black carbonaceous, calcareous firm, blocky, one: brown, micro-xln mudstone, tight, no show gray, greenish-gray, lt green, firm to soft and r Toronto 3407 (-1274 te: white to vy lt gray, vf-granular to successe	, ountes, spicules, combustible. ws. nushy, calcareous.	CMC: \$6,794.74
	3430 3440	Limest chert fr Limest calcite spotty Limest grainst Shale	one: tan to brown, vf- to micro-xln mudstone, to rag w/ fusulinids, tight, no shows. <b>Lansing 3430 (-1297</b> ) one: tan to It grayish-tan, recrystallized former patches, weak secondary pinpoint porosity, tr oil stain, weak oil aroma, fair to weak cut. one: cream to It tan, med- to f-xln, recrystallized one, sparry calcite patches, tight, no shows. It green to maroon to terra cotta, soft and mus- part ter to the	r white and gray grainstone, sparry fractures w/ slight d former hy.	DST #1: 3416'-3515', Rec: 0', Tool did not open. 4-R Ranch 1-36-15-20 d DST #2: 3416'-3515', Rec: 385' GIP, 107' HO&GCM (20% gas, 20% oil, 60% mud)
CFS @ 3470'	<b>S</b> <b>S</b> <b>3460</b> <b>#</b> <b>3470</b> <b>3480</b>	Cushe Cushe	calcite indicates recrystallization, very fine, iso to provide the provide the tray, fair aroma in the cup. Lime d. : free oil in the tray, fair aroma in the cup. Lime c grainstone w/ tr of secondary druzzy porosity Spotty pinpoint porosity and better oil shows wi ter secondary porosity and better oil shows wi 75% in some frags). More oolitic grainstone w/ im in dia. only about 10% of oolites have the s bed around them.	Lopods, crinoids, lated patches of oresence until estone as above w/ y around intact I cut. 60 min spl th more saturation depth. Oolites up econdary porosity	Wt: 9.2 vis: 48 LLCM: 1#
CFS @ 3490'	3490 3500 3510 3520	Country of the second with oil in tight Limest	y w/ spotty oil staining, weak odor, weak fluor, d. 60 min: increased frequency of pinpoint por it does not require crushing of frag. one: It tan to It gray, bioclastic grainstone, med allized and tight, except for traces of secondar taining, fair odor, good cut. one: It tan to It gray, oolitic grainstone, recrysta lary porosity, pinpoint, inter-xln, micro-vuggy a staining, good cut, becomes chalky w/ depth. rock w/ spotty pinpoint porosity and oil stain. one to vf-xln chalk, grainstones are well ports hert w/ calier	In o cut until frag is osity w/ oil stain, I-xIn to f-xIn, y pinpoint porosity Illized, good nd oomoldic, all 60 min: few shows	<b>3590':</b> Black shale, carbonaceous, dolomitic, firm to hard, combustible. Mud-Co, Mud check 3515' @ 0730 hrs. 02/26/2017 Vis. 60+, Wt. 9.2 PV 18, YP 30 WL 7.8, Cake 1/32" pH 11.0, Ca Tr CHL 4,900 ppm Sol 6.2, LCM 2 DMC: \$623.97 CMC <sup>+</sup> \$7.410 <sup></sup>
Lan G	3530 3540 3550	Limest	one: white to vy It tan, most is chalky, the rest iner grainstone, possible ghost oolites, sparry of ert: vitreous to frosted.	is recrystallized vf- calcite, white to It ids.	υνιυ: \$∕,418.71
Lan H CFS @ 3580'	3580 3590 3560 3580 3580 3590 3590	Contractions Co	one: tan to greenish-gray, fusulinids, crinoids, matrix, sli arg, wackestone, tight no shows. T oldic porosity and slight oil show, slow cut. one: vy lt gray to vy lt tan, recrystallized former il frags ans possible oolites, tr sparry calcite, tr point porosity w/ slight oil staining, poor to no aroma, tight rock. 60 min: Micritized limestone one: It tan to vy lt gray, micro-xln micrite, tr spa vy lt tan vitreous spicular-oolitic chert. Tr ooliti molds, slight oil stain, fair cut to no cut until cr	brachiopods, set in r oolitic grainstone grainstone, traces r secondary, very cut until crushed,  arry calcite, vy It ic grainstone w/ ushed, tight rock.	DST # 3: 3548'-3650', Rec: 1930' Clean Oil, 120' MGO (50% oil, 25% gas, 25% mud), SIP: 966-960#.
CFS @ 3600' ROP (min/ft Gamma (AP) CFS @ 3630'	3630 3630	C Limest patche frags c Limest fusulin Shale: Limest oolites,	one: tan to brown, recrystallized oolitic-bioclast ids, brachiopods, tight, no shows. black, carbonaceous, firm to hard and blocky, one: cream to tan, noiritized former oolitic grain source tan to brown, recrystallized oolitic-bioclast ids, brachiopods, tight, no shows. black, carbonaceous, firm to hard and blocky, one: cream to tan, micritized former oolitic grain very tight, no shows. Tr pyrite, tr It gray and w s chert.	Autoom isolated , fair odor, some -cemented, <b>some</b> w/ oil staining nish-gray shale. tic grainstone, tr calcareous. instone, ghost vhite mottled	<u>Stark Shale 3621</u> (-1492) Mud-Co. Mud-c
Lan K CFS @ 3650'	3640 3650 3660	Limest Limest tight to calcite	one: It gray to It tan, micro-xln mudstone, tr fus allized, tr sparry calcite, tr tan and white mottle s chert w/ traces of fossil frags, tight, no show one: cream to tan crypto-xln micrite, tr pelloids o shows. one: tan to It tan, crypto-xln micrite to oolitic gra ted, tight, no shows. Tr amber to tan vitreous of one: tan to It gray, argillaceous fossil-bearing f fair inter-xln porosity, no shows. Lt brown mic patches. Base/Kansas Citv 3668	sulinids, ad to It brown s. , tr fusulinids, very ainstone, well- chert. f-xln wackestone, rite w/ sparry -1535)	3625' @ 0745 hrs. 02/27/2017 Vis. 46, Wt. 9.2 PV 12, YP 19 WL 7.8, Cake 1/32" pH 10.5, Ca Tr CHL 4,900 ppm Sol 6.2, LCM 2 DMC: \$340.10 CMC: \$7,758.81
	3670 1 3680 3690 3700	Limest dolomit	maroon to terra cotta, soft and mushy to firm, ic. Interbedded w/ gray calcareous shale. <b>Marmaton 3698 (-156</b> one: tan, micro-xln micrite to recrystallized forr one, tight, no shows. <b>Marmaton 3698 (-156</b> one: tan, micro-xln mudstone, recrystallized, e nd fractures filled w/ red shale, tight no shows ne w/ amber chert inclusions. Tr tan micriteres s.	mer bioclastic non-calc to <b>5)</b> Tr white / clear spar	
CFS @ 3740'	3710 3720 3730 3730 3740	Starting sandst Minor p bottom by ma stain a Congle colored spheru has ab rounde limester	g to pick up amber chert and one frag of white one, no shows. Dart of the samples: Amber chert and free qtz so of the sample tray, well-rounded, f- to med-gr, <b>roon and gray shales</b> . One frag of qtz arenite nd instant streaming cut. merate: angular fragments of amber to honey- I shales: maroon, It green, It gray, gray; marooi les of limestone (erosional detritus), bottom of undant loose fine- to med-gr clear to amber qt d. White to gray limestone w/ amber chert nod ne w/ red shale fill. Many Is frags, which meric	qtz arenite sand grains in the clear. <b>Dominated</b> e sandstone w/ oil colored chert; vari- n, clay-filled the sample tray z sand grains, well- lules, erosionsl be part of this porce	Conglomerate           3718 (-1585)           Mud-Co, Mud check           3740'@ 0715 hrs.           02/28/2017           Vis. 49, Wt. 9.0           PV 10, VC -
CFS @ 3750'	3750 3760 3770	Quartz	<b>Tre-Cambrian Quartzite 3754</b> ite: clear qtz frags, very sharp and angular, w/ ons. Muscovite is an accessory mineral. Sands e conglomerate section above), f-gr, well-sorte it.	dark mafic stone (probably ed, oil saturated, noclase?), mafic	WL 7.2, Cake 1/32" PH 10.5, Ca 20ppm CHL 4,600 ppm Sol 4.8, LCM 2 DMC: \$57.42 CMC: \$7,816.23
D ROP (min fit	3780 3790 3790 5 3800 5 3800 5 3800 5 3800 5 3800 5 3800 5 3800 5 5 3800 5 5 3800 5 5 5 5 5 5 5 5 5 5 5 5 5	Cuartz C	ite: clear qtz frags w/ irreglar, serated metamo ual grains, accesory minerals are hornblende a of the accessory hornblende is partially altered ite. e: quartz, hornblende bission	rphic margins of and muscovite. to chlorite. clase.	
	3820 3820 3830 3830 3840 3840 3850 3850	Granite	e: muscovite flakes up to 6mm across.	agioclase.	
	3860 3860 3870 3870 3880 3880 3880 3880 3880 3880 3880 3880 3880 3880 3880 3880 3880 3880 3880 3860 300 300 300 300 300 300 300 3	Image: style	granite. 9.		
	3890 3900 3910 3920 3920	Granite	RTD 3915 (-1782 RTD 3915' @ 2120 hrs, 2/28/2 Pioneer Energy Services LTD Completed Logging Operations	2) 2017 3915' @ 00 hrs	
	3930		Geologist: Charlie Sturdavant off @ 1130 hrs 3/01/2017	location	

4-R Ranch 1-36-15-20 dst 1, P.10001.jpg

	DRILL STEM TEST REPORT						
	Coachman Energy Oper.Co.	36-15s-20w Ellis 4-R Ranch 1-36-15-20					
ESTING, IN	1125 17th St. Suite 410 Denver Co 80202 ATTN: Charlie Sturdavant						
1 穆書			Job Ticket: 6	34094	DST#: 1		
NOK.			Test Start: 2017.02.26 @ 02:00:00				
GENERAL INFORMATION:	å						
Formation: LKC A-F							
Deviated: No Whipstock:	ft (KB)		Test Type:	Conventiona	al Bottom Hol	e (Initial)	
Time Tool Opened: 04:30:00			Tester: Ray Schwager				
Time Test Ended: 00:00:00			Unit No:	77			
Interval: 3416.00 ft (KB) To 3515.00 ft (KB) (TVD)			Reference Bevations: 2133.00 ft (KB)				
Total Depth: 3515.00 ft (KB) (TVD)					2124.00	ft (CF)	
Hole Diameter: 7.85 inchesH	le Condition: Fair		KB	to GR/CF:	9.00	ft	
Serial #: 8360 Inside							
Press@RunDepth: psig	@ 3418.00 ft (KB)		Capacity:		8000.00	psig	
Start Date: 2017.02.26	End Date:	2017.02.26	Last Calib.:		2017.02.26		
Start Time: 02:00:22	End Time:	08:53:01	Time On Btm:				
Devenuemprovide Sector Se			Time Off Btm:				
TEST COMMENT: 15-IFP-wkbith	ru-out 1/2"to 3/4"bl						



## 4-R Ranch 1-36-15-20 dst 2, P.10001.jpg

	DRILL STEM TEST REPORT						
	Coachman Energy Oper.Co. LLC	36-15s-20w Ellis					
ESTING , INC	1125 17th St. Suite 410 Denver Co 80202	<b>4-R Ranch 1-36-15-20</b> Job Ticket: 64095 <b>DST#</b> : 2					
uitredit.	ATTN: Charlie Sturdavant		Test Start	: 2017.02.26	@ 13:40:12		
GENERAL INFORMATION:         Formation:       LKC A-F         Deviated:       No       Whipstock:         Time Tool Opened:       15:28:52         Time Test Ended:       19:39:51         Interval:       3416.00 ft (KB) To       35         Total Depth:       3515.00 ft (KB) (The Hole Diameter:       7.85 inchesHole	ft (KB) 5 <b>15.00 ft (KB) (TVD)</b> /D) e Condition: Fair		Test Type Tester: Unit No: Reference	: Conventio Ray Schw 77 e Bevations: KB to GR/CF:	nal Bottom Hol rager 2133.00 2124.00 9.00	ft (KB) ft (CF) ft	
Serial #:         8360         Inside           Press@RunDepth:         63.36 psig           Start Date:         2017.02.26           Start Time:         13:40:12	<ul> <li>3418.00 ft (KB)</li> <li>End Date:</li> <li>End Time:</li> </ul>	2017.02.26 19:39:51	Capacity: Last Calib.: Time On Btm: Time Off Btm:	2017.02.2 2017.02.2	8000.00 2017.02.26 6 @ 15:26:52 6 @ 17:48:07	psig	
TEST COMMENT: 15-IFP-wik to BOB in 12min 30-ISIP-no bl 30-FFP-BOB in 1 min 60-FSIP-surface bl bk, died in 17min							
Pressure vs. 'I T	inc.		PRESS	URE SUM	MARY		
1739 17 17 17 17 17 17 17 17 17 17 17 17 17 1	533 Temporales	Time (Min.) 2 17 48 48 78 138 138 142	Pressure         Ten           (psig)         (deg           1631.77         97           19.85         96           33.10         100           929.07         101           41.67         101           63.36         103           948.05         104           1599.84         105	np Annota F) .71 Initial Hy .95 Open To .71 Shut-In( .40 End Shu .15 Open To .22 Shut-In( .87 End Shu .15 Final Hy	tion dro-static Flow (1) 1) t-In(1) Flow (2) 2) t-In(2) dro-static		
Recovery			Gas Rates				
Length (ft) Description 107.00 HO&GCM 20%G20%O60 0.00 385'GIP	Volume (bbl) 0%IVI 1.50 0.00		Cr	oke (inches) Pre	ssure (psig) Ga	asRate(Mc∜d)	
*Recovery from multiple tests	Ref. No: 64095		Prin	ted: 2017.02 *	26 @ 20:09:04	1	

## 4-R Ranch 1-36-15-20 dst 3, P.10001.jpg

	DRILL STEM TEST REPORT					
	Coachman Energy Oper.Co. LLC	36-15s-20w Ellis				
ESTING, INC	1125 17th St.		4-R Ra	anch 1-36-15-2	0	
	Suite 410		Job Tiel	DST#-3		
	Denver Co 80202		300 TICK		UUT#. 3	
	ATTN: Charlie Sturdavant		Test Sta	art: 2017.02.27 @	g 14:26:00	
GENERAL INFORMATION:						
Formation: LKC H-K						
Deviated: No Whipstock:	ft (KB)	Test Type: Conventional Bottom Hole			al Bottom Hole (Reset)	
Time Tool Opened: 16:06:25		Tester: Ray Schwager				
Time Test Ended: 21:44:24			Unit No:	77		
Interval: 3548.00 ft (KB) To 36	50.00 ft (KB) (TVD)		Referen	nce ⊟evations:	2133.00 ft (KB)	
Total Depth: 3650.00 ft (KB) (T)	/D)				2124.00 ft (CF)	
Hole Diameter: 7.85 inchesHole	e Condition: Hair			KB to GR/CF:	9.00 ft	
Serial #: 8360 Inside						
Press@RunDepth: 618.64 psig	@ 3553.00 ft (KB)		Capacity:		8000.00 psig	
Start Date: 2017.02.27	End Date:	2017.02.27	Last Calib.:	0047 00 07	2017.02.27	
otart Time: 14:26:00	Ena lime:	21:44:24	Time Off Rtm:	2017.02.27	@ 18:09:10 @ 18:09:10	
				2017.02.27	w 10.00.10	
TEST COMMENT: 15-IFP-BOB in 1r	nin					
30-ISIP-BOB BI B	SK ES thru-out					
60-FSIP-BOB BI	Bk					
	davet					
Pressure vs. 'I	TT		PRES	SSURE SUMM	IARY	
		Time (Min.)	Pressure To	emp Annotatio	on	
			(psig) (a) 1757.72 10	eg () 02.77 Initial Hydr	o-static	
	. 119	1	341.61 10	02.44 Open To F	low (1)	
		15	440.61 1	17.15 Shut-In(1)		
		44	966.97 1	19.60 End Shut-I	n(1)	
		45	480.83 1	19.36 Open To F	low (2)	
Į <sub>™</sub> : V   Į   f   f		110	960.10 11	19.94 Shut-In(2) 20.01 End Shut-I	n(2)	
	1     <del> </del> - 3	124	1655.35 1	16.27 Final Hydri	o-static	
27 Man Feb 2007 Tine (Huss)						
Recovery				Gas Rates		
Length (ft) Description	Volume (bbl)			Choke (inches) Press	ure (psig) Gas Rate (Mct#d)	
120.00 GIVO 25%G25%W50%O	1.68					
1930.00 CO	27.07					
0.00 GTS	0.00					
		1				
* R ecovery from multiple tests						