KOLAR Document ID: 1455742

Сс	onfiden	tiality R	equested:
	Yes	No	

KANSAS CORPORATION COMMISSION OIL & GAS CONSERVATION DIVISION

Form ACO-1 January 2018 Form must be Typed Form must be Signed All blanks must be Filled

WELL COMPLETION FORM

WELL	HISTORY	- DESCRIPTION		
VVELL	HISIORI	- DESCRIPTION	OF WELL &	LEAJE

OPERATOR: License #	API No.:
Name:	Spot Description:
Address 1:	
Address 2:	Feet from Dorth / South Line of Section
City: State: Zip:+	Feet from East / West Line of Section
Contact Person:	Footages Calculated from Nearest Outside Section Corner:
Phone: ()	
CONTRACTOR: License #	GPS Location: Lat:, Long:
Name:	(e.g. xx.xxxx) (e.gxxx.xxxx)
Wellsite Geologist:	Datum: NAD27 NAD83 WGS84
Purchaser:	County:
Designate Type of Completion:	Lease Name: Well #:
New Well Re-Entry Workover	Field Name:
	Producing Formation:
	Elevation: Ground: Kelly Bushing:
	Total Vertical Depth: Plug Back Total Depth:
CM (Coal Bed Methane)	Amount of Surface Pipe Set and Cemented at: Feet
Cathodic Other (Core, Expl., etc.):	Multiple Stage Cementing Collar Used? Yes No
If Workover/Re-entry: Old Well Info as follows:	If yes, show depth set: Feet
Operator:	If Alternate II completion, cement circulated from:
	feet depth to:w/sx cmt.
Original Comp. Date: Original Total Depth:	
Deepening Re-perf. Conv. to EOR Conv. to SWD	Drilling Fluid Management Plan
Plug Back Liner Conv. to GSW Conv. to Producer	(Data must be collected from the Reserve Pit)
	Chloride content: ppm Fluid volume: bbls
Commingled Permit #:	Dewatering method used:
Dual Completion Permit #:	
SWD Permit #:	Location of fluid disposal if hauled offsite:
EOR Permit #: GSW Permit #:	Operator Name:
	Lease Name: License #:
Spud Date or Date Reached TD Completion Date or	Quarter Sec TwpS. R East _ West
Recompletion Date Reached TD Recompletion Date	Countv: Permit #:

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY					
Confidentiality Requested					
Date:					
Confidential Release Date:					
Wireline Log Received Drill Stem Tests Received					
Geologist Report / Mud Logs Received					
UIC Distribution					
ALT I II III Approved by: Date:					

KOLAR Document ID: 1455742

Operator Nam	ne:			Lease Name:	Well #:
Sec	Twp	S. R	East West	County:	

Page Two

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken			<u> </u>	/es 🗌 No	1		L	og Forn	nation (Top), De	pth and	d Datum	Sample
(Attach Additiona				(N	lame)			Тор	Datum
Samples Sent to Geological Survey Cores Taken Electric Log Run Geologist Report / Mud Logs List All E. Logs Run:			∕es ∟ Νο ∕es □ Νο ∕es □ Νο ∕es □ Νο	1								
			Rep	CASI ort all strings	NG RECO		Nev		duction, etc.			
Purpose of String		ze Hole Drilled	Si	ze Casing et (In O.D.)		Weight _bs. / Ft.		Setting Depth	Type o Cemei		# Sacks Used	Type and Percent Additives
			ADDITIO e of Cement		NTING / S		EEZE RECC		and Pa	ercent Additives		
Perforate	Тор	Bottom	тур	e of Cement	#0				туре	anu re	Acent Additives	
Protect Casing Plug Back TD Plug Off Zone												
 Did you perform a h Does the volume of Was the hydraulic fractional first Production 	the total base acturing treat	e fluid of the hy ment informat	ydraulic fi ion subm	acturing treat	emical disclo		stry?	Gas Lift	No (If	No, skip No, fill c	o questions 2 an o question 3) out Page Three o	
Estimated Production Per 24 Hours	1	Oil B	bls.	Gas Mcf			Water Bbls. Gas-Oil Ratio Gravity				Gravity	
DISPOSIT	TION OF GAS	8:		METHOD OF			F COMPLETION: PRODUCTION INTE			N INTERVAL: Bottom		
Vented Sold Used on Lease (If vented, Submit ACO-18.)			Open Hole	Perf.		Dually Comp. Commingled (Submit ACO-5) (Submit ACO-4)		100				
Shots Per Foot	Perforation Top	Perforat Bottor		Bridge Plug Type		e Plug t At		,	Acid, Fracture, Sho (Amount ar		enting Squeeze of Material Used)	Record
TUBING RECORD:	Size:		Set At:		Packer	At:						

Form	ACO1 - Well Completion
Operator	Patterson Energy LLC
Well Name	HENDRICH UNIT 1-18
Doc ID	1455742

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement		Type and Percent Additives
Surface	12.25	8.625	23	260	80/20		3% CC 2% Gel
Production	7.875	5.5	15.5	3874	Common	175	10% Salt

QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025 Cell 785-324-1041 Home Office P.O. Box 32 Russell, KS 67665 No. Date /0.25-18 Sec. Twp. Range County State On Location Date /0.25-18 18 9 20 Acerts K5 On Location Lease Hendrich Unit Well No. 1-18 Owner To Quality Oilwell Cementing, Inc. Contractor Morfin #24 To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and cementer and helper to assist owner or contractor to do wor Hole Size 7 18 T.D. 388° Charge To Arthur Cem O.1 Tog. 51/2 174 Depth 3874 Street Tog. Size Depth City State Tool Part Cafter Depth 1778 The above was done to satisfaction and supervision of owner agen Cement Left in Csg. 20.11 Shoe Joint 20.11 Cement Amount Ordered 125 M.S.H. Shoe Joint 20.11	rk as listed.					
Date 18 9 20 Arek 5 K5 Lease Hendrich Unit Well No. 1-18 Owner Contractor Montin #24 Well No. 1-18 Owner Type Job To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and cementer and helper to assist owner or contractor to do wor Hole Size T.D. 3880 Cost 5/12 1)# Depth 3874 Size Depth Tool Park	fils fim I furnish rk as listed.					
Lease Hendrich Unit Well No. 1-18 Owner Contractor Montin #24 To Quality Oilwell Cementing, Inc. Type Job Production String T.D. 3880 Charge To American Oil Hole Size 7/8 T.D. 3880 Charge To American Oil Csg. 5/2 1)#1 Depth 3874 Street Tog. Size Depth 1778 The above was done to satisfaction and supervision of owner agen	l furnish rk as listed.					
Location Park 2w Unto Lease Hendrich Unit Well No. [-18] Owner Contractor Morfin #24 To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and cementer and helper to assist owner or contractor to do wor Type Job Production String T.D. 3880 Charge To Hole Size 7/8 T.D. 3880 Charge To Csg. 5/2 1)# Depth 3874 Street Tbg. Size Depth City State Tool Park Cake- Depth 1778 The above was done to satisfaction and supervision of owner agen	rk as listed.					
Lease Hendrich Unit Well No. [-18] Owner Contractor Mortin #24 To Quality Oilwell Cementing, Inc. Type Job Production String T.D. 3880 To Arrest and helper to assist owner or contractor to do wor Hole Size 7/8 T.D. 3880 Charge To Arrest and helper to assist owner or contractor to do wor Csg. 5/2 1)#1 Depth 3.874 Street Tbg. Size Depth City State Tool Part Cafe- Depth 1778 The above was done to satisfaction and supervision of owner agen	rk as listed.					
To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and cementer and helper to assist owner or contractor to do worHole Size77T.D.3880Charge ToAmthewardO:1Csg. $5/2$ 1)#Depth3874StreetTbg. SizeDepthCityStateTool $a+$ Cafk-Depth1778The above was done to satisfaction and supervision of owner agen	rk as listed.					
Type Job-Production String cementer and helper to assist owner or contractor to do wor Hole Size 7 7 T.D. 3880 Charge To Anthread Origonal Contractor to do wor Csg. 5 2 1)#1 Depth 3874 Street Tbg. Size Depth City State Tool Part Cake Depth City State Tool Part Cake Depth City State	rk as listed.					
Hole Size T.D. 3880 Charge To Hole Size 7/8 T.D. 3880 To Csg. 5/2 1)# Depth 3874 Tbg. Size Depth City State Tool A+ CAk- Depth 1778						
Csg. 5/2 1)# Depth 3.874 Street Tbg. Size Depth City State Tool A+ Capto Depth City	it or contractor.					
Tbg. Size Depth City State Tool City State Tool City State	nt or contractor.					
Tool Part Cake Depth 1778 The above was done to satisfaction and supervision of owner agen	nt or contractor.					
	it of contractor.					
Cement Left in Csg. AC, 11 Shoe Joint AQ, 11 Cement Amount Ordered 75 101-5/17 51.Cal Sale	1 17					
Dellas in the Desired	72					
Meas Line Displace 8912BL 500gal Mud Clear 20BL KCL EQUIPMENT Common 175	n					
No Cementer main	10 B					
Pumptrk 5 No. Helper Poz. Mix						
Bulktrk Driver Gel.						
Bulktrk 9 Driver 1011	*					
JOB SERVICES & REMARKS Hulls	a					
Remarks: Salt						
Rat Hole 305K Flowseal						
Mouse Hole 153% Kol-Seal 7504	10 - V100- 4000- 0000 - 1000-					
Centralizers Mud CLR 48 500, 9 d	Mud CLR 48 500, 9 2					
Baskets CFL-117 or CD110 CAF 38						
D/V or Port Collar Sand	1 ⁷² 11 - 2					
517 5010 3874- BALAR 385389 Handling						
Est Cincolation - Rung 500gal Web Clear & Mileage						
10BL KCL Plug Ratholic morschole. FLOAT EQUIPMENT						
Cement 51/2 with 1305K Clear lines avide shoe Part Callor						
Displace Phia 121 9BL KCL Centralizer 7	51					
Litt Dressive Stort Plan lander & 1520TT Baskets						
AFUInsorts Limit Champ						
Float Shoe						
Latch Down						
Denting Den D Chan						
Pumptrk Charge prod String						
Mileage 4.3 Tax						
Discount						
X Signature aven Weavening Total Charge						

QUALIT	Federal Ta	L CEMENTING, IN x I.D.# 20-2886107	¥
Phone 785-483-2025 Cell 785-324-1041	Home Office P.O. E	Box 32 Russell, KS 67665 No.	1038
Sec.	Twp. Range	County State On Location	Finish
Date 10-19-18 18	9 20 4	MS KS	7,39
Duite 10 1110 10	Loca	tion Paleo Ball Park 2W MINTO	
ila land			
Lease / Chan Ch	Well No./-/8	Owner To Quality Oilwell Cementing, Inc.	
Contractor Mur fin #24 Type Job Sour Face		 You are hereby requested to rent cementing equipment cementer and helper to assist owner or contractor to do 	and furnish work as listed.
Hole Size 12 14	T.D. 260	Charge Amarican Oil	8.7 197
Csg. 58-578	Depth 259	Street	*
Tbg. Size	Depth	City State	
Tool	Depth	The above was done to satisfaction and supervision of owner	agent or contractor.
Cement Left in Csg. 10	Shoe Joint	Cement Amount Ordered 160 8/20 31.00	2. 482
Meas Line	Displace 151/2BL		
EQUIP		Common 22128	i n choar
	119	Poz. Mix 32	
No. Driver	453	Gel.	2 N 3
Bulktrk Driver			
	ACC	Calcium 6	
JOB SERVICES	& REMARKS	Hulls	
Remarks:		Salt	<u> </u>
Rat Hole		Flowseal	
Mouse Hole	-	Kol-Seal	
Centralizers	a ^a da ^{li} a a ⁱ	Mud CLR 48	S 5 8
Baskets	1 <u>1 1 1</u>	CFL-117 or CD110 CAF 38	
D/V or Port Collar	1	Sand	1
85/8 on bottom &	25t. Circulation .	Handling 169	
mix plasse + Disp	loce	Mileage	
1 1	0	FLOAT EQUIPMENT 8-18 Swag	e
Provent inco	luter 1	Guide Shoe	
		Centralizer	2
		Baskets	·
		AFU Inserts	1
	· · · · · · · · · · · · · · · · · · ·	Float Shoe	1
		Latch Down	
			· · · · · ·
		a particular second	
		Pumptrk Charge Surface	
		Mileage 43	
		Mileage 7	
		 Discount	
× /	A		
X Signature	MAUX)-	Total Charge	L
. /	V		

QUALITY JILWELL CEMEINTING, INC. Federal Tax I.D.# 20-2886107

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No. 970

Centralizers Mud CLR 48	Cell 785-324-1041						,		110.	110	
Location Palco Ball Park Jw Niati Contractor Wegtern Well No. # I Owner Owner To Quality Olivel Comonting, Inc. Type Job, Part College TD To Quality Olivel Comonting, Inc. You are hereby requested to rent comenting autionment and furnish Type Job, Part College TD TD To Quality Olivel Comonting, Inc. You are hereby requested to rent comenting autionment and furnish Comment and helper to assist owner or contractor to do work as listed. Tog. Size Y/g Depth Street Tod Dapth Street Or Park 200 Street Tod Dapth The above was done to astistaction and supervision of owner agent or contractor. Common 200 Street Common 200 Street Port 200 Street Pumptik JO No. Common 200 Street Port 200 Street Pumptik JO No. Diver Device Street Bulkrik No. Diver Device Could Street Bulkrik No. Diver Device <td>Date 11-16-18</td> <td>Sec.</td> <td>Twp.</td> <td>Range</td> <td>- ALAS</td> <td>Same and the for</td> <td></td> <td></td> <td>On Location</td> <td>Finish</td>	Date 11-16-18	Sec.	Twp.	Range	- ALAS	Same and the for			On Location	Finish	
Lease Handrich Unit Well No. H / Owner Contractor Wegtern While Type Job Part Collegr Well No. H / To Quality Oliveal Comenting. Inc. You are hereby requested to rent comming equipment and furnish type Job Part Collegr To Original Participant of the sector or contractor to do work as listed. Hole Size To Collegr Depth Street To Depth Street To Depth City State Tool Depth City State Tool Depth City State Tool Common Contractor of State Contractor of the sector of t			2 E			/	Ball	Park	Die Aliate	<u>2</u>	
Contractor Wegtern Weil/ Too Judity Oliveil Cementing, inc. Too Judity Oliveil Cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. Hole Size T.D. Charge American_Oil Case, 5 ½ Depth Street Tool Depth Street Tool Depth Cement Amount Ordered 350 % and supervision of owner agent or contractor. Cament Lett in Case. Store Joint Cement Amount Ordered 350 % and Store S	Lease Hendrich	U	vit V	Vell No. ቑ 1				1 5/ 1	2 00 10 10		
Type Job Port College Interview Interview Charge Anterview Oil Size T.D. Charge Anterview Oil Size T.D. Charge Anterview Oil Size T.D. Charge Anterview Oil Size Tob Depth Streat Tob Tod Depth The above was done to satisfaction and supervision of owner agent or contractor. Cament Left in Csg. Shoe Joint Cernent Amount Ordered 3.50<% Log O % Log O						To Quality Oi	lwell Cem	enting, Inc		7.9 9090 C	
Hole Size T.D. Charge American Oil Csg. 5 1/2 Depth Street Tog. Strey 7/4 Depth City State Tool Depth The above was done to satisfaction and supervision of owner agent or contractor. Comment Left in Csg. Shoe Joint Comment Amount Ordered 350 % 10 GMDC 1/4, Flo Meas Line Displace 9 bil Userl 200 sx 0 0 Pumptrk JO No. Common Dog % 0 MbC 0 0 Pumptrk JO No. Depth Calcium 0 0 Bulktrix No. Driver David Gel, Ssk 0 0 0 JOB SERVICES & REMARKS Hulis 0 0 0 0 0 0 0 0 JOB SERVICES & REMARKS Hulis 0						cementer and	by reques d helper to	assist ow	cementing equipment ner or contractor to do	and furnish work as listed.	
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Tod Depth The above was done to satisfaction and supervision of owner agent or contractor. Cement Left in Csg. Shoe Joint Cement Amount Ordered 350 % Co Q MDC 1/4 flo Meas Line Displace 9 bJ/ Usecl 200 sx EQUIPMENT Common 200 % Q MDC Pumptrk 10 No. Driver Brenter Poz. Mix Builtrik 21 No. Driver Devict Gel. 8 5 x Builtrik 21 No. Driver Jock Catalum JOB SERVICES & REMARKS Hulls Remarks: Builtrik 21 No. Driver Jock Catalum JOB SERVICES & REMARKS Hulls Remarks: Baskets CFL-117 or CD110 CAF 38 CFL-117 or CD110 CAF 38 D/V or Port Collar (2) 17 % Sand Handling 3 50 Tested Fort Collar to 1000 lbs Mileage FLOAT EQUIPMENT Opeard Tool + Mix % 3x Col FLOAT EQUIPMENT Centralizer Classed Tool + Y Test for 1000 lbs Baskets Centralizer Dis placed Tool + Mix % 3x Col FLOAT EQUIPMENT FLOAT EQUIPMENT Classed Tool + Fest for 1000 lbs Baskets Ren 5 S T + Washed Clean Centralizer Classe Centralizer Classe Classed Tool + Test for 1000 lbs Baskets Ren 5 S T + Washed Clean Centralizer Cl			Depth			the second		4-0		<i>.</i>	
Tool Depth The above was done to satisfaction and supervision of owner agent or contractor. Cerment Left in Csg. Shoe Joint Cerment Amount Ordered 3.50 % (a) Q M Dc 1/4, F lo Meas Line Displace 9 bJ/ Ulsed 200 sx FOUIPMENT Common 200 % (b) Q M Dc 1/4, F lo Pumptrk JO No. Commentor Drept Poz. Mix Bulktrk Driver Drevid Get. 8 5x Bulktrk No. Driver Drevid Gald Bit Size Fr Poz. Mix Bulktrk No. Driver Drevid Get. 8 5x Calcium JOB SERVICES & REMARKS Huils Remarks: Sait Rat Hole Flowseal J S dB Mouse Hole Kot-Seal Centralizers Mud CLR 48 Baskets OFL-117 or CD110 CAF 38 DV or Port Collar @ 17 7% Sand Handling 3 50 FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 7 bbi Centralizer Cloged 7 apl 4 First fro 1000 lbs Baskets Displaced 7 bbi Centralizer Cloged 7 apl 4 First fro 1000 lbs Baskets Displaced 7 bbi Centralizer Cloged 7 apl 4 First fro 1000 lbs Baskets </td <td>Tbg. Size) 7/8</td> <td></td> <td>Depth</td> <td></td> <td></td> <td>City</td> <td></td> <td></td> <td>State</td> <td></td>	Tbg. Size) 7/8		Depth			City			State		
Cerrent Left in Csg. Shoe Joint Cerrent Amount Ordered 350 % and CM pc 1/4 fls Meas Line Displace 9 bb/ Used 200 sy Pumptrk 10 No. Cerrenter Pumptrk 10 No. Cerrenter Bulktrk 2 / No. Dervier Devid Bulktrk 2 / No. Dervier Devid JOB SERVICES & REMARKS Hults Bulktrk No. Dervier Jack Calcium JOB SERVICES & REMARKS Hults Remarks: Salt Rat Hole Flowseal Mouse Hole Kol-Seal Certralizers Mud CLR 48 Baskets OFL-117 or CD110 CAF 38 DV or Port Collar @ 17 76 Sand Handling 3 50 Mileage Opened Tool 4 Mix Sax Crel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced Tool 4 Fiest fts 1000 lbs Meage Ran 5 Jr x Washed Clean Float Shoe Care ent 4 circulated Lift. Latch Down Multing Pumptrk Charge Tax Discount Mileage 43 Tax	Tool	-	Depth			The above was	s done to s	atisfaction a	nd supervision of owner	agent or contractor.	
Meas Line Displace 9 bit Used 200 sx EQUIPMENT Pumptrk JO No. Common 200 % Mbc Pumptrk JO No. Common 200 % Mbc Bulktrk JO No. Driver Driver Driver JOB SERVICES & REMARKS Hulls Remarks: Salt Salt Rat Hole Flowseal 25 fb Mouse Hole Ko-Seal Centralizers Mud CLR 48 Sand Handling 3 50 DV or Port Collar @ 17 7 % Sand Handling 3 50 Test ed Part Coller to 1000 lbs Mileage Dogened Centralizer Displaced 1 bbl Centralizer Guide Shoe Centralizer Centralizer Closed Tool + Test fo 1000 lbs Baskets Centralizer Centralizer Closed Tool + Test fo 1000 lbs Baskets Centralizer Closed 100 lbs Float Shoe Closed Tool + Test fo 1000 lbs Baskets Float Shoe Mileage Mileage Tax Multh Pumptrk Charge Port	Cement Left in Csg.		Shoe Jo	int	- 4	Cement Amo	unt Order	ed 350	18/20 QMDC		
EQUIPMENT Common 100 % Quitty Pumptrk JO No. Driver Dreft Poz. Mix Bulktrk 1 No. Driver David Gel. 8.5x Bulktrk No. Driver Jack Calolum JOB SERVICES & REMARKS Hulls Remarks: Salt Rat Hole Flowseal 25 % Mouse Hole Kol-Seal Centralizers Mud CLR 48 Baskets OFL-117 or CD110 CAF 38 D/V or Port Collar @ 17 7% Sand Handling 3.50 Test to 1000 1bs Mileage Opened Tool + Mix Sax Cel Displaced Flows Sax Displaced Flow Sax Clogen Tool + Mix Sax Cel Part Sax Guide Shoe Displaced Flow Baskets Canteralizer Clogen Tool + Test to 1000 1bs Mileage Conteralizer Clogend Tool + Mix Sax Cel Mark Cateralizer Clogend Tool + Test to 1000 1bs Baskets Canteralizer Clogend Tool + Test to 1000 1bs Baskets	Meas Line	-	Displace	9 661							
Pumptrk 20 No. Heinernter Brerr Poz. Mix Bulktrk) / No. Driver David Bulktrk No. Driver Jack Gel. \$5x Bulktrk No. Driver Jack JOB SERVICES & REMARKS Hulls Remarks: Remarks: Rat Hole Rouse Hole Kol-Seal Centralizers Mud CLR 48 Baskets CFL-117 or CD110 CAF 38 DV or Port Collar @ 17 7% Handling 3 50 Test @ Part Collor to 1000 lbs Mileage Opeaal Tool + Mix \$3x Cel Displaced 9 bbi Centralizer Closed Tool + Test to 1000 lbs Baskets Rat Soe Cemeat circulated IIII Latch Down Furphrk Charge Pumptrk Charge Pumptrk Charge Tax Discount			IENT			1.		12 0	the		
Bulktrk No. Driver Gel. § 5x Bulktrk No. Driver Gacit Calcium JOB SERVICES & REMARKS Hulls Remarks: Remarks: Salt Salt Rat Hole Flowseal 25 # Mouse Hole Kol-Seal Centralizers Gentralizers Mud CLR 48 Gentralizers DIV or Port Collar @ 1776 Sand Handling 3.50 Tested Port Collor to 1000 lbs Mileage Openad Tool + Mix & Six Cel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Classed Displaced 9 bbj Centralizer Classed Classed Tool + Test fo 1000 lbs Baskets Ren Displaced 9 bbj Centralizer Classed Classed Tool + Mix & Six Cel FLOAT EQUIPMENT Float Shoe Classed Tool + Test fo 1000 lbs Baskets Ran 5 Ut + Washed Class Ran 5 Ut + Washed Classed AFU Inserts Float Shoe Ce meat circculated Hiii Latch Down Tax	Pumptrk 20 Helper	Br	eff			Poz. Mix		o den	<i>J</i> =	r.	
Bulktrk No. Driver Jack Calcium JOB SERVICES & REMARKS Hulls Remarks: Salt Rat Hole Flowseal 25 # Mouse Hole Kol-Seal Centralizers Mud CLR 48 Baskets CFL-117 or CD110 CAF 38 DV or Port Collar @ 17 7% Sand Handling 350 Mileage Operad Tool + Mix Six Cel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Dis placed 9 bbi Centralizer Closed Tool + Test for 1000 lbs Baskets Ran 5 Ur + Washed Clean AFU Inserts Float Shoe Float Shoe Ce ment circulated III!! Latch Down Multice Float Shoe Ce ment circulated II!! Latch Down Multice Float Shoe Multice Float Shoe Multice Float Shoe Multice Float Shoe Tax Discount	Bulktrk) / Driver	Dav	id			Gel. 85	ł			a an .	
Remarks: Salt Rat Hole Flowseal 25 fl Mouse Hole Kol-Seal Centralizers Mud CLR 48 Baskets CFL-117 or CD110 CAF 38 DIV or Port Collar @ 177% Sand Handling 350 Handling 350 Tested Port Collar to 1000 lbs Mileage Guide Shoe Displaced 9 bbi Cloged Tool + Test to 1000 lbs Guide Shoe Displaced 9 bbi Cloged Tool + Test to 1000 lbs Baskets Ran 5 Ur + Washed Clogin AFU Inserts Float Shoe Float Shoe Cem ent circulated IIII Latch Down Mileage 4/3 Float Shoe		Jac	k			0.7					
Rat Hole Flowseal 75 # Mouse Hole Kol-Seal Centralizers Mud CLR 48 Baskets CFL-117 or CD110 CAF 38 DN or Port Collar @ 177% Sand Handling 350 Heading 350 Test & Port Collar to 1000 fbs Mileage Openal Tool + Mix \$3x Gel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9bbl Centralizer Closed Tool + Test fo 1000 fbs Baskets Ran 5 St + Washed Clipgin AFU Inserts Float Shoe Float Shoe Cem ent circulated IIII Latch Down Mileage 43 Tax	JOB SER	VICES	& REMAR	KS		Hulls					
Mouse Hole Kol-Seal Centralizers Mud CLR 48 Baskets CFL-117 or CD110 CAF 38 DV or Port Collar @ 177% Sand Handling 350 Handling 350 Tested Port Collar to 1000 lbs Mileage Opened Tool + Mix \$5x Cel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9 bbj Centralizer Closed Tool + Test to 1000 lbs Baskets Ran 5 5 + Washed Clegn AFU Inserts Float Shoe Float Shoe Centralizer Tax Discount Mileage \$43	Remarks:					Salt		Dis D			
Mouse Hole Kol-Seal Centralizers Mud CLR 48 Baskets CFL-117 or CD110 CAF 38 DV or Port Collar @ 177% Sand Handling 350 Handling 350 Tested Port Collar to 1000 lbs Mileage Opened Tool + Mix \$5x Cel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9 bbj Centralizer Closed Tool + Test to 1000 lbs Baskets Ran 5 5 + Washed Clegn AFU Inserts Float Shoe Float Shoe Centralizer Tax Discount Mileage \$43	Rat Hole					Flowseal 75 #					
Baskets CFL-117 or CD110 CAF 38 DN or Port Collar @ 177% Sand Handling 350 Handling 350 Tested Port Collar to 1000 lbs Mileage Opened Tool + Mix \$5x Ocl FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9661 Centralizer Closed Tool + Test to 1000 lbs Baskets. Ran 5 Jr + Washed Clepin AFU Inserts Float Shoe Float Shoe Cement circulated 1111 Latch Down Mileage 4/3 Tax Discount Tax	Mouse Hole					Kol-Seal					
D/V or Port Collar @ 177% Sand Handling 350 Tested Port Collar to 1000 lbs Openal Tool + Mix 85x Cel Mileage Displaced 9bbi Closed Tool + Test to 1000 lbs Ran 5 5t + Washed Clean Float Shoe Cement circulated 11!! Latch Down Tax Discount	Centralizers					Mud CLR 48					
Iested Port Coller to 1000 lbs Mileage Opened Teol + Mix Sox Cel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9bbi Centralizer Closeed Teol + Test to 1000 lbs Baskets Ran 5 St + Washed Clean AFU Inserts Float Shoe Float Shoe Cement circulated 1111 Latch Down Mileage 4/3 Tax Discount Tax	Baskets					CFL-117 or C	D110 CA	= 38			
Tested Port Collar to 1000 lbs Mileage Opened Tool + Mix 85x Col FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9bbi Centralizer Closed Tool + Test to 1000 lbs Baskets Ran 5 Jr + Washed Clean AFU Inserts Float Shoe Float Shoe Cement circulated 1111 Latch Down Mileage 4/3 Tax Discount Tax	D/V or Port Collar @ 17	78	100			Sand				A	
Tested Port Collar to 1000 lbs Mileage Opened Tool + Mix 85x Col FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9bbi Centralizer Closed Tool + Test to 1000 lbs Baskets Ran 5 Jr + Washed Clean AFU Inserts Float Shoe Float Shoe Cement circulated 1111 Latch Down Mileage 4/3 Tax Discount Tax						Handling 3	50			10	
Openal Tool + Mix \$5x Gel FLOAT EQUIPMENT Mix 200 sx Guide Shoe Displaced 9bbl Centralizer Closed Tool + Test to 1000 lbs Baskets Ran 5 St + Washed Clean AFU Inserts Float Shoe Float Shoe Cement circulated 1111 Latch Down Mileage 43 Tax Discount Discount	Tested Port	Colla	c to	1000 135		- 0				-	
Mix 200 sx Guide Shoe Displaced 9bbl Centralizer Closed Tool + Test to 1000 lbs Baskets Ran 5 Jr + Washed Clean AFU Inserts Float Shoe Image 43							FLOAT	FEQUIPMI	ENT	al.	
Cloged Tool + Test to 1000 lbs Baskets Ran 5 Jr + Washed Clean AFU Inserts Float Shoe Cement circulated IIII Latch Down Pumptrk Charge port collar Mileage 43 Tax Discount						Guide Shoe					
Ran 5 Jr x Washed Clean AFU Inserts Float Shoe Cement circulated IIII Latch Down	Displaced 466	1				Centralizer					
Cement circulated IIII Latch Down Image 43 Float Shoe Image 43 Tax Image 43 Discount	Cloged Tool +	- Te	st fo	1000 165		Baskets			1		
Cement circulated IIII Latch Down	Ran 5 J+ W	Was	hed	Clean		AFU Inserts					
Multiple Pumptrk Charge Port collor Mileage 43						Float Shoe					
Mileage 4.3 Tax Discount	Compat cir	culaj	rod!	[]]		Latch Down					
Mileage Mileage Tax Discount				11							
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Signature Knewth Joppen Total Charge	· · · · · · · · · · · · · · · · · · ·	4							Discount		
	Signature Kentry	1sp	en						Total Charge	-	

AUSTIN B. KLAUS

Cell 785.650.3629 Work 785.483.3145 Ext 225

PO BOX 352 Russell, KS 67665 austin.klaus@johnofarmer.com

Scale 1:240 (5"=100') Imperial Measured Depth Log

	Hendrich Unit #1-18 Rooks County						
License Number:	API #15		Region:	Kansas			
Spud Date:	10/19/2018	Drill	ing Completed:	10/24/2018			
Surface Coordinates:	Section 18, Township 9 South, Range 20 West						
	130' FSL & 2,310' FEL						
Bottom Hole	Vertical well w/ minima	I deviation, same as	above				
Coordinates:							
Ground Elevation (ft):	2,258	K.B. Elevation (ft):	2,263				
Logged Interval (ft):	3,200 To: RTD	Total Depth (ft):	3,884				
Formation:	LKC-Arbuckle	-					
Type of Drilling Fluid:	Chemical (K.D.T)						
	Printed by	STRIP.LOG from WellSig	aht Systems 1-800-4	47-1534 www.WellSight.com			

OPERATOR

Company: American Oil, LLC Address: 1200 Main, Suite 410 Hays, KS 67601

GEOLOGIST

Name: Austin Klaus Company: John O. Farmer, Inc. Address: 370 W. Wichita Ave. Russell, KS 67665

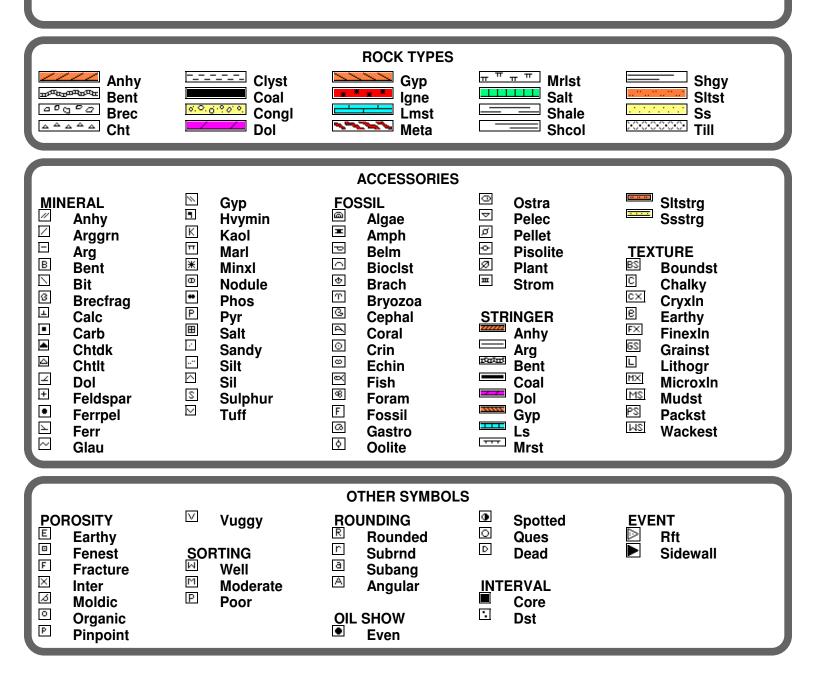
Cores

DSTs

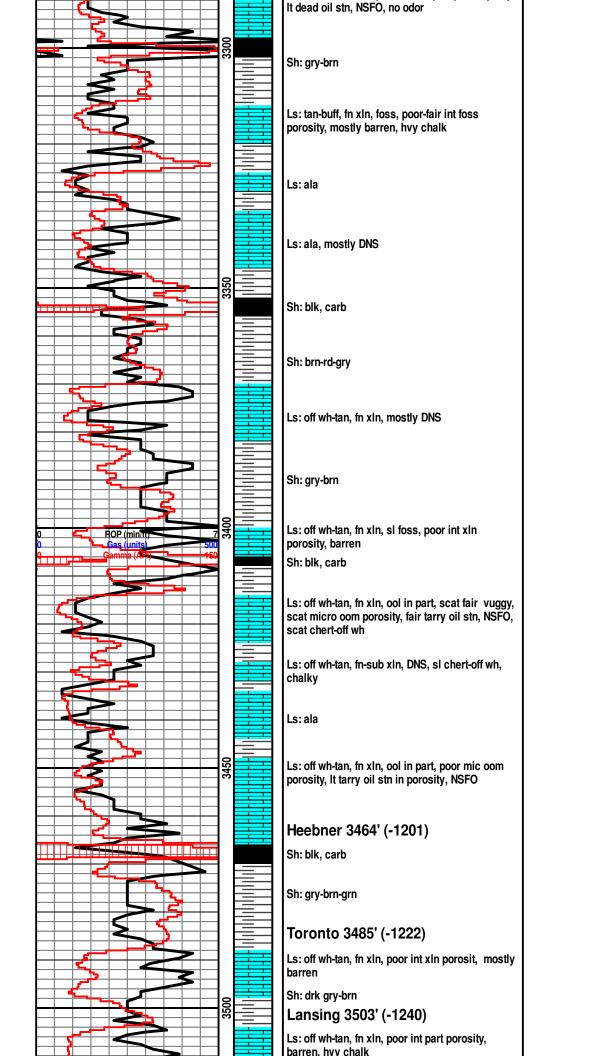
Comments

The Hendrich Unit #1-18 well was drilled by Murfin Drilling Rig #24 (Tool Pusher: Jesus Vargas).

The Hendrich Unit #1-18 was discovered via 3D seismic survey. Rock samples were gathered and evaluated from 3,200'- 3,880'. Oil shows were encountered in the LKC C,D,F/G,I, and Arbuckle. Structurally, the Lansing top was picked 5' low to the comparison well, 330' to the north (John Towns #1 - 1951'). Structural thinning occurred in the lower LKC, which resulted in an Arbuckle picked 1' low to the comparison well. After evaluation of all oil shows, and electric logs, it was decided that 5 1/2" production casing be set to further evaluate the Hendrich Unit #1-18 on 10/25/2018.



Curve Track 1 ROP (min/ft) Gas (units) Gamma (API)	Depth Lithology	Geological Descriptions	DST/Mud/Survey
0 Gas (µnits) 500 0 Gamma (API) 150 1 1 1 1 <	3200 3150 31	The open-hole logging was performed by Mr. Casey Patterson with Gemini Wireline, LLC (Hays, KS). Logs included: Compensated Density Neutron & Dual Induction.Formation tops and datums from the open-hole logs include the following:FormationE-LogDatumAnhydrite1770493Topeka3258-995Heebner3465-1202Toronto3488-1225Lansing3504-1241B/KC3724-1461Arbuckle3784-1521LTD3884-1621	Mud Engineer: Chris Keas
Convertience of the second sec	3250 	Ls: tan, sub xIn, DNS Sh: brn-grn Ls: tan, fn xIn, sI foss, DNS Sh: gry-drk gry, sI sIty Sh: ala Topeka 3259' (-996) Ls: It gry, fn xIn, sI mottled, scat sh: drk gry,	Wt: 8.5 Vis: 87
		mostly DNS Ls: ala Ls: tan-buff, fn xln, poor-fair int part porosity, vry	



			Ls: ala	
			Ls: off wh-tan, fn xln, scat fair vuggy porosity,	
			mostly barren, scat chert-off wh	
			Sh: drk gry-brn, soft	
		11		
	3550		Ls: off wh-tan, fn-md xln, foss, fair int xln & fair-good int foss porosity, good oil stn in porosity, FSFO, good odor	
	<u> </u>		Sh: It gry	Wt: 8.6
		•	Ls: off wht-tan, fn-md xIn, poor-fair int xIn & scat int foss porosity, fair oil stn, SSFO, fair-good odor	Wi. 8.6 Vis: 65
			Sh: It-drk gry	
	3600	•	Ls: off wh, fn-md xln, foss, fair-good int xln & scat int foss porosity, scat fair oil stn in porosity, FSFO in cup, good odor	
0 ROP (min/ft) 7 S 0 Gas (unic) 500 0 Gamma (API) 150			Ls: off wh-tan, fn xln, ool, poor-fair oom porosity, mostly barren, NSFO	
			Ls: ala, hvy chert-off wh	
			Sh: drk gry-blk	
	3650		Ls: off wh-tan, fn xln, foss, scat poor int xln & int foss porosity, scat dead oil stn, NSFO, sl odor	
	36 36		Sh: lt-drk gry	
		•	Ls: off wh-tan, fn xln, poor-fair int xln porosity, fair oil stn in porosity, fair-good odor, SSFO when broken	Lost All Fluid @ 3,674'; Stopped drilling for 4
			Sh: gry-brn	hours
			Ls: off wh-tan, fn-sub xln, mostly DNS, scat chert-off wh, scat chalk	
			Sh: lt-drk gry-blk	Wt: 8.5
	3700		Ls: tan-It gry, fn xIn, poor int xIn porosity, scat dead oil stn, NSFO, no odor, scat chalk	Vis: 57
			Sh: drk gry-blk	
			B/KC 3725' (-1460)	

		_	Sh: gry-brn-rd, soft	
	łĿ		3,,	
	1 1			
	IF			
			Ls: tan-gry, fn-sub xIn, scat chert-off wh, barren	
	1 6			
	lot	=		
	3750			
	`			
			Ls: ala	
	1 6			
	1 F		Sh: It gry-brn	
	łĿ			
	1 F		Sh: It-drk gry-grn, soft, scat cong: DNS	
	łF		Arbuskis 07001 (1500)	
	1		Arbuckle 3783' (-1520)	
	1		Dolo: off wh-tan, fn xln, sucrosic xln in part, poor	
		1	int xIn porosity, scat sh: drk gry-grn	
	1	 _	Dolo: off wh-tan, fn xln, fair-good sucrosic xln	
		<u> </u>	porosity, fair-good oil sat, SSFO, good odor, fair	
		-7,	yel fluor	
			yer nuor	
	3800		Dolo: off wh-tan, fn-md xln, scat crs xln, fair-good	
0 P (min/ft) 7 0 Sas (units) 500	ŝ	<u> </u>	sucrosic xIn porosity, good oil sat, FSFO, SO in	
0 (Jack Camma (ARI) 500 0 Gamma (ARI) 150		-	cup, fair-good odor, fair yel fluor	
			cup, ian-good odor, ian yer nuor	
		-4	Deley off whiten friend every sign with fair good	
		<u> </u>	Dolo: off wh-tan, fn-md sucrosic xIn, fair-good	Wt: 8.7
			sucrosic xIn porosity, good oil sat, FSFO, GSO in	Vis: 73
			cup, good odor, fair yel fluor	
		1,		
	j 🖡	1	Dolo: off wh-tan, md sucrosic xln, fair int xln	
	1		porosity, fair oil sat, SSFO, fair-good odor, fair yel	
			fluor	
		-7,		
		1	Dolo: off wh-tan, fn-md xln, poor-fair int xln	
			porosity, mostly barren, hvy chert-off wh, scat sh:	
		-4	grn	
⊢ + + + + 5 + + +	16	1		
	1_ H			
	3850	-4	Dolo: ala	
	Ř	-4		
	16	-7		
			Dolo: off wh-tan, fn-md xIn, poor-fair int xIn & scat	
		-7	vuggy porosity, mostly barren, scat sh: grn	
		1,		
		-1		
	j 🖡			
		1	.	
		1	Dolo: ala	
	1			Survey: 1 1/2 degrees
		1		Cartoy: 1 1/2 degrees