





Form	ACO1 - Well Completion
Operator	Farmer, John O., Inc.
Well Name	SUTOR-ZIEGLER 11
Doc ID	1705484

All Electric Logs Run

Micro Resistivity
Compensated Density Neutron
Dual Induction
Cement Bond

Form	ACO1 - Well Completion
Operator	Farmer, John O., Inc.
Well Name	SUTOR-ZIEGLER 11
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#### Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	223	80/20 Pozmix	180	3% C.C., 2% gel
Production	7.875	5.50	15.50	3928	Common	175	10% salt, 5% gilsonite, 500 gal. M.F.



**Discovery  
Drilling**

P.O. Box 763 • Hays, KS 67601 • OFFICE (785) 623-2920 • CELLULAR (785) 635-1511

### DRILLER'S LOG

Operator: John O. Farmer, Inc. Lic# 5135 Contractor: Discovery Drilling Co., Inc. LIC#31548  
370 West Wichita Avenue - P.O. Box 352 PO Box 763  
Russell, KS 67665 + 0352 Hays, KS 67601

Lease: Sutor-Ziegler # 11 Location: 1300 FNL - 1740 FWL  
SE/SW/NE/NW  
Section 30/ 8S/ 26W  
Sheridan County, KS

Loggers Total Depth: 3924' API#15- 179-21,494-00-00  
 Rotary Total Depth: 3930' Elevation: 2509 GL - 2517 KB  
 Commenced: 1/31/2023 Completed: 2/5/2023  
 Casing: 8 5/8" @ 223'W/180sks Status: Injection Well  
5.5" @ 3928'W/175sks  
DV Tool @ 2130'W/355sks  
 (Circulated 15sks to Pit)

### DEPTHS & FORMATIONS (All from KB)

Surface, Sand & Shales	<u>0'</u>	Shale	<u>2160'</u>
Dakota Sand	<u>1259'</u>	Shale & Lime	<u>2479'</u>
Shale	<u>1352'</u>	Shale	<u>2794'</u>
Cader Hill Sand	<u>1699'</u>	Shale & Lime	<u>3087'</u>
Red Bed Shale	<u>1913'</u>	Lime & Shale	<u>3647'</u>
Anhydrite	<u>2125'</u>	RTD	<u>3930'</u>
Base Anhydrite	<u>2160'</u>		

STATE OF KANSAS )  
 ) ss  
 COUNTY OF ELLIS )

Thomas H. Alm of Discovery Drilling states that to the best of his knowledge the above and foregoing is a true and correct log of the above captioned well.

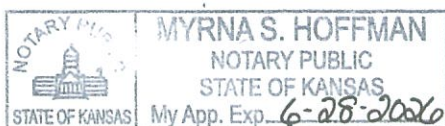
Thomas H. Alm

Subscribed and sworn to before me on 2-8-2023

My Commission expires: 6-28-2026

(Place stamp or seal below)

Myrna S. Hoffman  
 Notary Public



# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071

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

No. 3250

Cell 785-324-1041

Date <u>1-31-23</u>	Sec. <u>30</u>	Twp. <u>8</u>	Range <u>26</u>	County <u>Sheridan</u>	State <u>KS</u>	On Location	Finish <u>3:45pm</u>
				Location <u>Hill City 23 W TO Rd 90E</u>			
Lease <u>SUTOR-Ziegler</u>		Well No. <u>11</u>		Owner <u>3 1/2 S&amp;E TO Rig</u>			
Contractor <u>DISCOVERY</u>				To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Type Job <u>SURFACE</u>				Charge To <u>J.O. FARMER</u>			
Hole Size <u>12 1/4</u>		T.D.					
Csg. <u>8 3/8</u>		Depth <u>223</u>		Street			
Tbg. Size		Depth		City			
Tool		Depth		State			
Cement Left in Csg. <u>15</u>		Shoe Joint		The above was done to satisfaction and supervision of owner agent or contractor.			
Meas Line		Displace <u>13 1/4</u>		Cement Amount Ordered <u>180.21 80/20 3-2</u>			
EQUIPMENT							
Pumptrk <u>17</u>	No.	Cementer	<u>B. H.</u>	Common <u>143</u>			
		Helper	<u>Mike</u>	Poz. Mix <u>35</u>			
Bulktrk	No.	Driver		Gel. <u>3</u>			
Bulktrk <u>20</u>	No.	Driver	<u>Tim</u>	Calcium <u>7</u>			
JOB SERVICES & REMARKS							
Remarks:				Hulls			
Rat Hole				Salt			
Mouse Hole				Flowseal			
Centralizers				Kol-Seal			
Baskets				Mud CLR 48			
D/V or Port Collar				CFL-117 or CD110 CAF 38			
<u>Set c 223</u>				Sand			
<u>Cent w/ 180.21</u>				Handling <u>190</u>			
<u>pump plug w/ 13 1/4</u>				Mileage			
<u>Cent Did Circ</u>				FLOAT EQUIPMENT			
				Guide Shoe			
				Centralizer			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			
				Pumptrk Charge <u>Surface</u>			
				Mileage <u>50</u>			
				Tax			
				Discount			
				Total Charge			
Signature <u>Ryan J. Harkle</u>				Thanks			

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071  
Cell 785-324-1041

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

No. 3453

Date <u>2-5-23</u>	Sec. <u>30</u>	Twp. <u>8</u>	Range <u>26</u>	County <u>Sheridan</u>	State <u>Ks</u>	On Location	Finish <u>7:00 PM</u>
<u>Sutor - Ziegler</u>				Location <u>Hill City - 23 W to S Rd 90E, 1/4 S, 1E to Rd 100, 1 1/2 S, West into</u>			
Lease		Well No. <u>11</u>		Owner <u>To Quality Oilwell Cementing, Inc.</u> You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Contractor <u>Discovery #4</u>		Type Job <u>Bottom Stage</u>		Charge To <u>John O Farmer</u>			
Hole Size <u>7 7/8"</u>		T.D. <u>3930'</u>		Street			
Csg. <u>5 1/2" <del>5 1/2"</del></u>		Depth <u>3928'</u>		City			
Tbg. Size <u>15.50 #</u>		Depth		State			
Tool <u>DV Tool #44</u>		Depth <u>2130'</u>		The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg.		Shoe Joint <u>42.07'</u>		Cement Amount Ordered <u>175 Cum 10% Salt 5%</u>			
Meas Line		Displace <u>92 1/2 BLS</u>		Gilsonite - 500 gal mud Clear 20 BLS KCL			
EQUIPMENT				Common <u>175</u>			
Pumptrk <u>16</u>	No.	Cementor <u>David</u>	<u>Rick</u>	Poz. Mix			
Bulktrk <u>20</u>	No.	Driver <u>Tim</u>		Gel.			
Bulktrk <u>21</u>	No.	Driver <u>Doug</u>		Calcium <u>KCL 2 gal</u>			
JOB SERVICES & REMARKS				Hulls			
Remarks: <u>42 W 50 1/2 mud</u>				Salt <u>15</u>			
Rat Hole				Flowseal			
Mouse Hole				Kol-Seal <u>875#</u>			
Centralizers <u>1,3,5,7,9,11,43</u>				Mud CLR 48			
Baskets <u>2, <del>1</del> #44 12' below DV</u>				CFL-117 or CD110 CAF 38			
DV or Port Collar <u>#44 2130'</u>				Sand			
<u>Pipe on bottom break Circulation</u>				Handling <u>198</u>			
<u>Pump 500 gal mud Clear 20 BLS KCL</u>				Mileage			
<u>spacer mix 1755x Cement. Shut</u>				FLOAT EQUIPMENT			
<u>down wash pump + lines Displaced</u>				Guide Shoe <u>DV Tool</u>			
<u>plug w/ 192 1/2 BLS H2O + mud</u>				Centralizer <u>7</u>			
<u>Lift pressure 700 #.</u>				Baskets <u>2</u>			
<u>Land plug 1500 #</u>				AFU Inserts <u>1 Limit Clamp</u>			
<u>Open tool 900 #</u>				Float Shoe <u>1</u>			
				Latch Down <u>1</u>			
				Pumptrk Charge <u>prod string</u>			
				Mileage <u>50</u>			
				Tax			
				Discount			
Signature <u>[Signature]</u>				Total Charge			

Thanks

Bottom Stage

# QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071

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

No. 3454

Cell 785-324-1041

Date	2-5-23	Sec.	36	Twp.	8	Range	26	County	Sheridan	State	Ks	On Location		Finish	8:45PM
Sutor - Ziegler								Location Hill City - 23 W to SR 90E, 1/4 S, 1E to							
Lease								Well No.		11					
Contractor								#4		Owner 100 R2, 1 1/2 S, w/ Into					
Type Job								Discovery		To Quality Oilwell Cementing, Inc.					
Hole Size								7 7/8"		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.					
Csg.								5 1/2"		T.D.		3930'			
Tbg. Size										Depth		3928'			
Tool								DU Tool		Depth		2130'			
Cement Left in Csg.										Shoe Joint		Charge To John O Farmer			
Meas Line								Displace		50 1/2 BLS					
EQUIPMENT				Common 400 80% QMDL											
Pumptrk								16		No.		Cement			
Bulktrk								21		No.		Driver Doug			
Bulktrk								20		No.		Driver Tom			
JOB SERVICES & REMARKS				Hulls											
Remarks:				Salt											
Rat Hole				30 SX											
Mouse Hole				15 SX											
Centralizers				Mud CLR 48											
Baskets				CFL-117 or CD110 CAF 38											
D/V or Port Collar				2130'											
Break Circulation, plug Rat & Mousehole - Cement top stage w/ 355 SX Cement. Shut down Displaced plug w/ 50 1/2 BLS H2O				Handling 400											
Closed tool 1500 #.				Mileage											
Released & Rigged down.				FLOAT EQUIPMENT											
Cement did Circulate				Guide Shoe											
				Centralizer											
				Baskets											
				AFU Inserts											
				Float Shoe											
				Latch Down											
				Pumptrk Charge											
				Mileage 50											
				prod string											
				Top stage											
				Tax											
				Discount											
				Total Charge											
X Signature				Thanks											





# 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**

**Well Name:** Sutor-Ziegler #11  
**API:** 15-179-21494-00-00  
**Location:** Sheridan County  
**License Number:**  
**Spud Date:** 1/31/2023  
**Surface Coordinates:** Section 30-Township 8 South-Range 26 West  
1,305' FNL & 1,760' FWL  
**Bottom Hole Coordinates:** Vertical well w/ minimal deviation, same as above  
**Ground Elevation (ft):** 2,509  
**Logged Interval (ft):** 3,200  
**Formation:** Topeka-Lansing-Kansas City  
**Type of Drilling Fluid:** Chemical (Andy's Mud)

**Region:** Kansas  
**Drilling Completed:** 2/4/2023  
**K.B. Elevation (ft):** 2,517  
**Total Depth (ft):** 3,930  
**To:** RTD

Printed by StripLog from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

## OPERATOR

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

## Comments

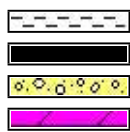
The Sutor-Ziegler #11 well was drilled by Discovery Drilling Rig #4 (Ryan Gaschler).

The Sutor-Ziegler #11 was drilled to serve as a water-injection well for secondary oil recovery on the Sutor-Ziegler WF Unit (4 active producing wells). Structurally, this well ran as expected, according to 3D seismic. The Lansing-Kansas City and Toronto tops were picked 2' high to the comparison well (Sutor #6, 3,630' FSL & 2,970' FEL). Geologic samples were collected and 1' drill time was recorded from 3,550-3,930'. The geologist noted good development with oil shows in the Toronto, Lansing A,B,C,F,H,J, & K zones. 5 1/2" production casing was set on February 5, 2023 to prepare this well for water injection.

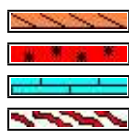
# ROCK TYPES



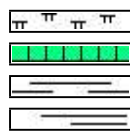
Anhy  
Bent  
Brec  
Cht



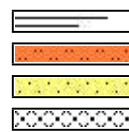
Clyst  
Coal  
Congl  
Dol



Gyp  
Igne  
Lmst  
Meta



Mrlst  
Salt  
Shale  
Shcol



Shgy  
Sltst  
Ss  
Till

# OTHER SYMBOLS

## POROSITY



Earthly  
Fenest  
Fracture  
Inter  
Moldic  
Organic  
Pinpoint



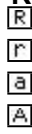
Vuggy

## SORTING



Well  
Moderate  
Poor

## ROUNDING



Rounded  
Subrnd  
Subang  
Angular



Spotted



Ques



Dead

## EVENT



Rft  
Sidewall

## INTERVAL



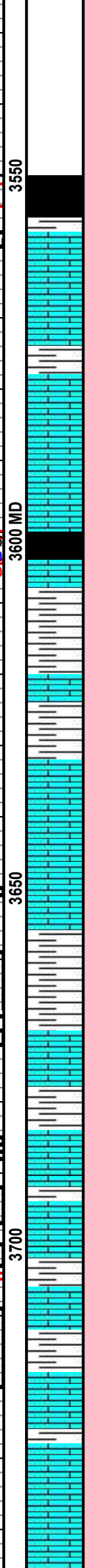
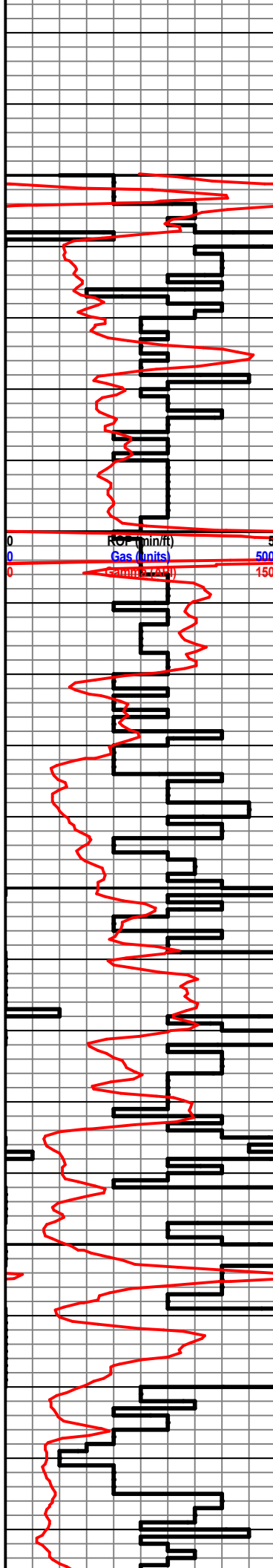
Core  
Dst

## OIL SHOW



Even

Curve Track 1			MD	Lithology	Oil Shows	Geological Descriptions	DST/Mud/Survey																								
ROP (min/ft)	Gas (units)	Gamma (API)																													
0	0	0	3400			<p><i>The open-hole logging was performed by Mr. Casey Patterson with Gemini Wireline, LLC (Hays, KS). Logs included: Compensated Density Neutron, Dual Induction, and Microresistivity.</i></p> <p><i>Formation tops and datums from the open-hole logs include the following:</i></p> <table><tr><th>Formation</th><th>E-Log</th><th>Datum</th></tr><tr><td>Anhydrite</td><td>2116</td><td>401</td></tr><tr><td>Topeka</td><td>3391</td><td>-874</td></tr><tr><td>Heebner</td><td>3600</td><td>-1083</td></tr><tr><td>Toronto</td><td>3621</td><td>-1104</td></tr><tr><td>Lansing</td><td>3632</td><td>-1115</td></tr><tr><td>B/KC</td><td>3856</td><td>-1339</td></tr><tr><td>LTD</td><td>3924</td><td>-1407</td></tr></table>	Formation	E-Log	Datum	Anhydrite	2116	401	Topeka	3391	-874	Heebner	3600	-1083	Toronto	3621	-1104	Lansing	3632	-1115	B/KC	3856	-1339	LTD	3924	-1407	<p><b>Mud Engineer:</b> Kirk Werth</p>
Formation	E-Log	Datum																													
Anhydrite	2116	401																													
Topeka	3391	-874																													
Heebner	3600	-1083																													
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Lansing	3632	-1115																													
B/KC	3856	-1339																													
LTD	3924	-1407																													
Daily Rig Activity:																															
1/27/2023-1/30/2023																															
Move in and rig up																															
1/31/2023																															
Spud @ 10:30am, drilled 223'																															
2/1/2023																															
-470', drilling																															
2/2/2023																															
-2,320', drilling																															
2/3/2023																															
-3,240', drilling																															
2/4/2023																															
-3,730', drilling																															
2/5/2023																															
-3,930', logging																															



Sh: drk gry-blk

Ls: tan-lt gry, fn xln, scat fair int xln porosity, NSFO

Sh: lt-drk gry

Ls: off wh-tan, fn xln, poor int xln & scat vuggy porosity, NSFO

### **Heebner 3608' (-1091)**

Sh: blk, carb, fissile

Sh: drk gry-blk

### **Toronto 3628' (-1111)**

Ls: off wh-tan, fn-md xln, fair-good int xln porosity, fair int vug porosity, fair-good oil stn, SSFO, fair odor

### **Lansing 3642' (-1125)**

Ls: off wh-tan, fn xln, ool, foss, fair-good ool porosity, fair int foss porosity, good oil stn, SFO, fair-good odor

Ls: off wh-tan-lt gry, fn-sub xln, DNS, no visible porosity

Sh: lt-drk gry-bm

Ls: off wh-tan, fn-md xln, foss, fair-good int xln porosity, scat fair int foss porosity, good drk bm oil stn, SFO, good odor

Sh: lt-drk gry

Ls: off wh-tan, fn xln, fair int xln porosity, scat vuggy porosity, fair-good oil stn, GSFO in cup, good odor

Sh: lt-drk gry

Ls: off wh-tan, fn xln, mostly DNS, no visible porosity

Ls: off wh-tan, fn xln, ool, scat foss, good ool porosity, fair-good oil stn, F-GSFO, good odor

Ls: off wh-tan, fn xln, poor int xln porosity, DNS, NSFO

