

# Duke Drilling Company, Inc.

Great Bend, Kansas

# Daily Drilling Record

FOR 24 HOURS ENDING AT MIDNIGHT

11-15

20 1 RIG NO.

WELL OWNER

C.M. [unclear]

LEASE

[unclear]

WELL NO.

36 1

SECTION

TOWNSHIP

RANGE

COUNTY

STATE

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
				150 Greg Martins CM
				210 Freddy Bethel RB
				MOTORMAN Javier Ramirez JR
				HELPER Karen Scott KS
				HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO.	REMARKS: Full section TP 1000' more in Rig up in cement				
SIZE	Hedgerison 36-1				
MAKE					
SERIAL NO.					
SERIAL NO.					

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
				10 [unclear] 10 92
				DERRICKMAN [unclear] 10 CC
				MOTORMAN [unclear] 10
				HELPER [unclear] 10
				HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO.	REMARKS: [unclear] 10 7				
SIZE					
MAKE					
SERIAL NO.					
SERIAL NO.					

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
0	190			Steven Green SG
RPM	120	DNS OK		DERRICKMAN Dillon Paschka DP
ST-WT	32 029	CONTR		MOTORMAN Charles Stout CS
WOB	2200	210 OK		HELPER [unclear] ES
BIT 56	350	Table OK		HELPER
ST-1 26		Pump OK		HELPER
		LP OK		

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO.	REMARKS: 3:00 6:45 Rig up 7 M.X mud 6:45 7:45 Drlg R.H. 7:45 11:00 Drlg				
SIZE	12 1/4				
MAKE	JZ MAXI				
SERIAL NO.	060 QR				
SERIAL NO.	JZ 3-15				
HOB	234 Drlg 2 3/4 Conn 1/2 Drlg R.H. 1, Rig up 3 3/4				

# Duke Drilling Company, Inc.

Great Bend, Kansas

# Daily Drilling Record

FOR 24 HOURS ENDING AT MIDNIGHT

20 18 RIG NO. 7

WELL OWNER SM Exploration LLC

LEASE Hutgerson

WELL NO. 36-1

SECTION 36 TOWNSHIP 27 RANGE 12 COUNTY Pratt

STATE Ks

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
190	315		2 1/2" 7 1/2" 8 1/2" 9 1/2"	95 Craig Martens CM
RPM	120		7 1/2" 2 1/2" 7 1/2" 8 1/2" 9 1/2"	100 DERRICKMAN Family Bittel
57-114	7 1/2"		3 1/2" 2 1/2" 7 1/2" 8 1/2" 9 1/2"	MOTORMAN JAVIER Ramirez JR
152056	400	BT Comp		HELPER + Aaron Scott AS
		TRUCK		HELPER
		PISTON		
		TOOL		

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <u>1</u>	1 1/2"	11:00 - 11:45 DML	11:45 - 12:00 V R 202'	315	114
SIZE <u>1 1/2"</u>	7 1/2"	11:45 - 12:00 V R 202'	12:00 - 12:15		
MAKE <u>J2 MXI</u>	7 1/2"	2:45 - 3:10 H 10	3:15 - 4:00 top of drain to 4 1/2"		
SERIAL NO.		starting 4:00 - 5:00	5:00 - 5:15		
SERIAL NO. <u>060 QA</u>		connecting 6:00 - 7:00 WOC			
<u>Hrs 5 1/2</u>		DML 2 1/4 1/2" 7 1/2" 8 1/2" 9 1/2"			

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
315				100 DRILLER
				DERRICKMAN
				MOTORMAN
				HELPER
				HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <u>2</u>	7 1/2"	7:00 - 8:00			
SIZE <u>7 1/2"</u>					
MAKE <u>J2</u>					
SERIAL NO. <u>112 20</u>					
SERIAL NO. <u>1520144</u>					

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
315	540		Red Bed / Shale	145 Steven Green SG
RPM	80	OKS OK		DERRICKMAN Dalton Paschka
57-114	50	Comp OK	11-15-18 145m	MOTORMAN Charles Stout CS
1108	1014	Tool OK	145	HELPER Eamon Stout ES
152056	500	TRUCK OK		HELPER
		PISTON OK		
		TOOL OK		

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <u>2</u>	7 1/2"	3:00 - 4:45 WOC	4:45 - 6:45 Only Plug ADD Rock		
SIZE <u>7 1/2"</u>		6:45 - 7:00 R 1/4 1/4" 341	7:00 - 11:00 Only		
MAKE <u>J2 1120</u>					
SERIAL NO. <u>1520144</u>					
SERIAL NO. <u>1108</u>					

# Duke Drilling Company, Inc.

# Daily Drilling Record

Great Bend, Kansas

FOR 24 HOURS ENDING AT MIDNIGHT

11-17

20 18 RIG NO. 7

WELL OWNER C.M. Exploration LLC

LEASE Hartman

WELL NO. 36-1

SECTION 36 TOWNSHIP 27 RANGE 12 COUNTY Pratt

STATE KS

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
540	1075			75 Craig Martinsen
BPM	85		Gal-20	DERRICKMAN Frank Bethel
Str ut	24x		SA-1	MOTORMAN 145 Javier Ramirez JR
Str ut	36x		UA-1	HELPER Karen Scott
Flash	600			HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <u>2</u>	REMARKS: <u>11:00-11:30 Drlg, 11:30-12:00 Rig, CPS, SH @ 580'</u>			<u>580</u>	<u>1/4</u>
SIZE <u>7 7/8</u>					
MAKE <u>JZ</u>					
SERIAL NO.					
SERIAL NO. <u>1806144</u>					
<u>HRS</u>					

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
1048	1450			100
BPM	55			DERRICKMAN
Str ut	20			MOTORMAN
Flash	650			HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <u>2</u>	REMARKS: <u>7:00-7:15 Run in hole, 7:15-7:30 Drlg, 7:30-7:45 Rig, CPS, SH @ 1075'</u>			<u>1393</u>	<u>7/4</u>
SIZE <u>7 1/2</u>					
MAKE <u>JZ</u>					
SERIAL NO. <u>HA20</u>					
SERIAL NO. <u>1806144</u>					
<u>14 1/2</u>					

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
1450	1775		Shale/line	145 Steven Green
BPM	80	DWKS OK		DERRICKMAN Dustin Paschke
Str ut	62	Comp OK		MOTORMAN Charles Stout
WOB	34	Top G OK		HELPER Ethan Stout
Flash	650	Table OK		HELPER
Fuel	17	Pump OK		HELPER
		LP OK	2 IN Frack	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <u>2</u>	REMARKS: <u>3:00-3:30 Rig CPS S.M. @ 1456</u>			<u>3:30 @ 30</u>	<u>Drlg 8:30-9:00</u>
SIZE <u>7 7/8</u>					
MAKE <u>JZ</u>					
SERIAL NO. <u>1806144</u>					
SERIAL NO. <u>3-15</u>					
<u>HOB</u>					

# Duke Drilling Company, Inc.

Great Bend, Kansas

# Daily Drilling Record

FOR 24 HOURS ENDING AT MIDNIGHT

11-18

20 18 RIG NO. 7

WELL OWNER C-M Exploration LLC

LEASE 11/18/18

WELL NO. 36-1

SECTION 36 TOWNSHIP 27 RANGE 12 COUNTY Franklin

STATE KS

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

FROM	DRILLED TO	FEET DRILLED	FORMATION	75	
1775	2142		Shale/line	DRILLER	Crane D. Porter, CM
RPM	85			DERRICKMAN	Frank B. Hill, RUC
WOB	3400			MOTORMAN	Javier Ramirez, JR
WOB	70			HELPER	Karen S. Tate, KS
WOB	675			HELPER	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY 2018	DEGREES OFF 3/4
RUN NO. <u>2</u>	REMARKS: <u>11:00-11:45 Drlg, 11:45-12:15 Vln CPS @ 1829'</u>				
SIZE <u>7 7/8</u>	<u>12:15-4:15 Drlg, 4:15-4:30 SAT @ 2018, 4:30-7:00 Drlg</u>				
MAKE <u>J2</u>					
SERIAL NO. <u>1806144</u>					
SERIAL NO. <u>Hrs 27 1/2</u>	<u>Drlg 6 1/4 Conn 1 Long 1/2 SHT 1/4</u>				<u>Clean #1</u>

FROM	DRILLED TO	FEET DRILLED	FORMATION	100	
2142	2415		Shale/line	DRILLER	Steven Green, SG
RPM	25			DERRICKMAN	Dalton Paschka, DP
WOB	34			MOTORMAN	Charles Stout, CS
WOB	70			HELPER	Eldon Stout, ES
WOB	600			HELPER	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY 2018	DEGREES OFF 3/4
RUN NO. <u>2</u>	REMARKS: <u>7:45-10:15 SHT @ 2615 3/4</u>				
SIZE <u>7 7/8</u>	<u>11:45-12:00 SAT @ 2300 3/4, 12:00-3:00 Drlg</u>				
MAKE <u>J2</u>					
SERIAL NO. <u>1806144</u>					
SERIAL NO. <u>3374</u>	<u>Drlg 6 1/4 Conn 1 SHT 1/4</u>				<u>Clean #1</u>

FROM	DRILLED TO	FEET DRILLED	FORMATION	145	
2415	2645		Shale/line	DRILLER	Steven Green, SG
RPM	85			DERRICKMAN	Dalton Paschka, DP
WOB	3400			MOTORMAN	Charles Stout, CS
WOB	600			HELPER	Eldon Stout, ES
FUEL	40			HELPER	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY 2615	DEGREES OFF 3/4
RUN NO. <u>2</u>	REMARKS: <u>3:00-3:30 Drlg, 3:30-4:00 H2O CPS @ 2425</u>				
SIZE <u>7 7/8</u>	<u>7:45-10:15 SHT @ 2615 3/4, 10:15-11:00 Drlg</u>				
MAKE <u>J2</u>					
SERIAL NO. <u>1806144</u>					
SERIAL NO. <u>3-15</u>	<u>Drlg 6 1/2, Conn 1/2, Conn 1/2, SHT 1/2</u>				<u>Clean #1</u>

# Duke Drilling Company, Inc.

# Daily Drilling Record

Great Bend, Kansas

FOR 24 HOURS ENDING AT MIDNIGHT

11-19

20 18 RIG NO. 7

WELL OWNER *EM Exploration LLC*

LEASE *Hodgkinson*

WELL NO. *361*

SECTION *36* TOWNSHIP *27* RANGE *12* COUNTY *Franklin*

STATE *Ks*

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	75	
<i>2645</i>	<i>2865</i>		<i>Shaleline</i>	DRILLER	<i>Craig Mertens</i>
			<i>10 G.L.</i>	DERRICKMAN	<i>Randy Ethel</i>
<i>RPM</i>	<i>55</i>		<i>10-11-15</i>	MOTORMAN	<i>Janet Ramirez</i>
<i>Bl wt</i>	<i>34K</i>	<i>AS1 OK</i>		HELPER	<i>Karen Scott</i>
<i>Str wt</i>	<i>32K</i>	<i>Comp OK</i>		HELPER	
<i>WOB</i>	<i>625</i>	<i>Drub OK</i>			
		<i>Temp OK</i>	<i>✓ Johnson 11/17</i>		
		<i>TDW OK</i>			

DRILLING BITS	CASING RECORD:	SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <i>2</i>	REMARKS:	<i>11:00-11:30</i>	<i>1/2" CPS @ 2646</i>	<i>11:30-1:00</i>	<i>Drly</i>	<i>1:00-1:30</i>
SIZE <i>7 7/8</i>		<i>11:30-1:00</i>	<i>Drly</i>			
MAKE <i>JZ</i>		<i>1:00-1:30</i>	<i>7:00 TDW</i>			
SERIAL NO.						
SERIAL NO. <i>1806144</i>						
<i>HFS</i>			<i>Drly 6" Conn 3/4</i>	<i>1/2" Rangle Repair 1/2</i>		<i>Chan 1</i>

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	100	
	<i>3050</i>			DRILLER	<i>9E</i>
			<i>11:00-11:30</i>	DERRICKMAN	<i>CC</i>
			<i>11:30-1:00</i>	MOTORMAN	<i>CC</i>
	<i>36</i>			HELPER	<i>CC</i>
	<i>625</i>	<i>5</i>		HELPER	<i>CC</i>
		<i>MP 1</i>			
	<i>35</i>	<i>LT OK</i>			

DRILLING BITS	CASING RECORD:	SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <i>2</i>	REMARKS:	<i>7:00-7:15</i>	<i>Drly 6" Conn 3/4</i>	<i>1/2" Rangle Repair 1/2</i>		<i>Chan 1</i>
SIZE <i>7 7/8</i>		<i>7:15-7:30</i>	<i>Drly 6" Conn 3/4</i>	<i>1/2" Rangle Repair 1/2</i>		<i>Chan 1</i>
MAKE <i>JZ</i>		<i>7:30-7:45</i>	<i>Drly 6" Conn 3/4</i>	<i>1/2" Rangle Repair 1/2</i>		<i>Chan 1</i>
SERIAL NO.		<i>7:45-8:00</i>	<i>Drly 6" Conn 3/4</i>	<i>1/2" Rangle Repair 1/2</i>		<i>Chan 1</i>
SERIAL NO. <i>1806144</i>		<i>8:00-8:15</i>	<i>Drly 6" Conn 3/4</i>	<i>1/2" Rangle Repair 1/2</i>		<i>Chan 1</i>
<i>52 1/2</i>		<i>8:15-8:30</i>	<i>Drly 6" Conn 3/4</i>	<i>1/2" Rangle Repair 1/2</i>		<i>Chan 1</i>

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	145	
<i>3050</i>	<i>3300</i>		<i>Shaleline</i>	DRILLER	<i>Steven Green</i>
			<i>9E 115</i>	DERRICKMAN	<i>Dalton Peschke</i>
<i>RPM</i>	<i>85</i>	<i>DNKS OK</i>		MOTORMAN	<i>Charles Stout</i>
<i>St-Wt</i>	<i>28 000</i>	<i>Comp OK</i>		HELPER	<i>Ethan Stout</i>
<i>WOB</i>	<i>34 000</i>	<i>Temp OK</i>		HELPER	
<i>WOB</i>	<i>650</i>	<i>Temp OK</i>			
<i>Fuel 32"</i>		<i>Temp OK</i>	<i>Sample Bags - 11</i>		

DRILLING BITS	CASING RECORD:	SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. <i>2</i>	REMARKS:	<i>3:00-3:30</i>	<i>Rig/SM CPS @ 3053</i>	<i>3:30-7:00</i>	<i>Drly</i>	<i>7:00-7:30</i>
SIZE <i>7 7/8</i>		<i>7:00-7:30</i>	<i>Displace @ 3178</i>	<i>7:30-9:45</i>	<i>Drly</i>	<i>9:45-10:15</i>
MAKE <i>JZ</i>		<i>9:45-10:15</i>	<i>WOP @ 3272</i>	<i>10:15-11:00</i>		
SERIAL NO.		<i>10:15-11:00</i>				
SERIAL NO. <i>1806144</i>						
<i>3-15</i>						
<i>11:00</i>			<i>Drly 6"</i>	<i>Rig 1/2</i>	<i>Conn 1/2</i>	<i>Displace 1/2</i>
<i>58 1/2</i>						<i>Repair 1/2</i>

# Duke Drilling Company, Inc.

# Daily Drilling Record

Great Bend, Kansas

FOR 24 HOURS ENDING AT MIDNIGHT

11-20 20 18 RIG NO. 9

WELL OWNER CMA Exploration

LEASE Henderson

WELL NO. 361

SECTION 36 TOWNSHIP 27 RANGE 17 COUNTY Pratt

STATE KS

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	75	
3300	3520		Shale/lim	DRILLER	Craig M. Johnson CM
RPM	85		CS-2	DERRICKMAN	Frank Bethel R.B.
ST-1/2	34 1/2		LS-12	MOTORMAN	JAVIER Ramirez JR
WOB	9014		100-35	HELPER	Karen Sora KS
Fuel	700		100-35	HELPER	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. 2	3 7/8			3303	
SIZE	HA-21				
MAKE	JZ				
SERIAL NO.	1806144				
SERIAL NO.	Hrs 64				
REMARKS: 11:00-11:15 SHT @ 3303, 11:15-12:00 WOB Pump legs 12:00-12:15 Drlg, 12:15-12:45 1/2 pair pump tooth 12:45-7:00 Drlg					
Drlg 5 1/2 Conn 1 @ 3303, 11K SHT - 1/4					

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	100	
3520	3690		SHALE LIM	DRILLER	Scott Crowder KS
RPM	85		CS-1	DERRICKMAN	CC
ST-1/2	34		LS-12	MOTORMAN	COIN FOMER
WOB	94		100-15	HELPER	JERRY ADAMSON JRA
Fuel	750		601-20	HELPER	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. 2	3 7/8			3612	314
SIZE	JZ				
MAKE	HA 20				
SERIAL NO.	1806144				
SERIAL NO.	16912				
REMARKS: 7:00-7:15 SHT @ 3612 3/4 10:15-11:15 WOB 11:15-12:45 R/LIMB DRLG 12:45-3:00 DRLG					
17265 1/2 Conn 3/4 SHT 1/2 REMARK 1					

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	145	
3690	3845		Shale/lim	DRILLER	Steven Green SC
RPM	85			DERRICKMAN	Dalton Peschka
ST-1/2	95 000			MOTORMAN	Charles Stout CS
WOB	34000			HELPER	Eldon Stout ES
Fuel	750			HELPER	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. 2	3 7/8			3706	
SIZE	HA 20				
MAKE	JZ				
SERIAL NO.	1806144				
SERIAL NO.	3-15				
REMARKS: 3:00-4:00 Drlg 4:00-4:30 R/L CPS 3 1/2 @ 3706 4:30 11:00					
HOB 76 1/2 Drlg 7 R/L 1/2 Conn 1/2 Clean #1					

# Duke Drilling Company, Inc.

Great Bend, Kansas

# Daily Drilling Record

FOR 24 HOURS ENDING AT MIDNIGHT

11-21-2018 RIG NO. 7

WELL OWNER L&M Exploration LEASE Hedgeman WELL NO. 36-1

SECTION 36 TOWNSHIP 27 RANGE 12 COUNTY Franklin STATE KS

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
3845	3986		Shale/Lime	75 Craig Martens CM
RPM	85		29-GCL	145 DERRICKMAN Fanny Bethel RB
St-Wt	24K		2 1/2 L.G	MOTORMAN JAVIER Ramirez SR
WOB	100K	RT	1-Pack	HELPER Karen Scott KS
PSE-56	800	Comp	15-H. H. H.	HELPER
		Druck	4-S.A	
Fuel	23'	100K	5-Bags-14	HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. 2	REMARKS: 11:00-1:15 Drlg, 1:15-1:45 Vry, CS SHT 3893			2873	34
SIZE 7 7/8	1:45-7:00 Drlg				
MAKE JZ HA-20					
SERIAL NO.					
SERIAL NO. 1806144					
HFS 83 1/2	Drlg 7 Conn 1/2 Vry-14 SHT-1/4				Chan #2

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
3986	4120		Shale/Lime	100 Steve Edwards BE
RPM	85		Hous-20	DERRICKMAN Christy Mose CC
St-Wt	103		Cons-1	MOTORMAN Cory Fournier CF
WOB	34		Lig-1/2	HELPER Jimmy Anderson SA
PSE-56	800			HELPER
Fuel	40		5-BAGS-13	
FUEL	21			

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. 2	REMARKS: 11:00-11:45 Drlg-730-745 RVL-0 11:00-11:45 145-1230 Drlg				
SIZE 7 7/8	1230-1:15 Drlg 412-2 2 1/2 L.G. 115-3 1/2 Drlg				
MAKE JZ					
SERIAL NO. 171120					
SERIAL NO. 1806144					
90	REMARKS: DRLG 1/2 Conn 1/2 REPAIR 3/4 Conn 4				

FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
4120	4210		Shale/Lime	145 Steven Green SB
RPM	85	OKS OK		DERRICKMAN Dalton Peschka OP
St-Wt	103 200	Comp OK		MOTORMAN Charles Stout CS
WOB	34 200	Tool OK		HELPER Eldon Stout ES
PSE-56	800	Table OK		HELPER
		Pump OK		
		LP OK	Sample Bags-9	HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. 2	REMARKS: 3:00-5:00 Drlg 5:00-5:15 Rlg/CPSS.M@4142 5:15-11:00				
SIZE 7 7/8	Drlg				
MAKE JZ HA 20					
SERIAL NO. 1806144					
SERIAL NO. 3-15					
HOB 97 1/2	Drlg 7 1/2, Rlg 1/4 Conn 1/4				

# Duke Drilling Company, Inc.

Great Bend, Kansas

# Daily Drilling Record

FOR 24 HOURS ENDING AT MIDNIGHT

11-22 20 18 RIG NO. 7

WELL OWNER C-M Exploration LLC

LEASE Hydrocarbon

WELL NO. 36-1

SECTION 36 TOWNSHIP 27 RANGE 12 COUNTY trail

STATE KS

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
4210	4318		Shale/lim	175 Craig Mortenson CM
RPM	85		30-Deh	145 Randy Bethel RB
ST-WT	34K	WT OK	4-SA	MOTORMAN JAVIER RIVERA JR
SWT	105K	Comp OK	4-caustic	HELPER Karen Scott
WOB	800	Torque OK	4-Lig	HELPER
Fuel	36'	Pump OK	1-Pack	
		Torque OK	20-Hulls	
			5 Bags 5-16	

DRILLING BITS: RUN NO. 2, SIZE 7 7/8, MAKE JZ, SERIAL NO. HA-20, SERIAL NO. 1806144, HFS 10314

CASING RECORD: SIZE, BOTTOMED AT, CEMENT USED, DEFLECTION SURVEY 4234, DEGREES OFF 1

REMARKS: 11:00-12:15 Drlg 12:15-12:45 Rig CFS 2 SHT: 4234, 12:45-4:30 Drlg, 4:30-5:45 Rig 4304, 5:45-7:00 Drlg

Drlg 5 3/4 conn 1/2 Rig 1/4 SHT 1/4 CFS-1 1/4 Clean

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
4318	4414		SHALE-GMF	100 Scott Edwards SE
RPM	85		Get-32	DERRICKMAN CHRIS GINE CC
ST-WT	34	DWBS OK	3-Air-4	MOTORMAN Cody Felmak
SWT	108	Comp 5	Caustic-2	HELPER JEREMY ALEXANDER
WOB	800	Torque OK	Air-2	HELPER
Fuel	33	WT OK	R-1	
		MP OK	AVIS-15	
		LP	Sample Bags	

DRILLING BITS: RUN NO. 2, SIZE 7 7/8, MAKE JZ, SERIAL NO. HA-20, SERIAL NO. 1806144, 110

CASING RECORD: SIZE, BOTTOMED AT, CEMENT USED, DEFLECTION SURVEY, DEGREES OFF

REMARKS: 7:00-7:45 Drlg 7:45-8:30 Rig 4330 CFS, 4, Adjust Brakes ~~to Pump 830-300~~ CFS

Rig 3/4 Drlg 6 1/2 conn 1/2 CFS 4.3

DRILLED FROM	DRILLED TO	FEET DRILLED	FORMATION	DRILLER
4414	4455		Shale/lim	145 Steven Green SG
RPM	85	DWBS OK	4-SA	DERRICKMAN Dalton Peschka DP
ST-WT	108	Comp OK	4-caustic	MOTORMAN Charles Stout CS
WOB	34	Torque OK	4-Lig	HELPER Eldon Stout ES
WOB	800	Tablet OK	1-Pack	HELPER
Fuel	37'	Pump OK	20-Hulls	
		LP OK	Sample Bags - 7	

DRILLING BITS: RUN NO. 2, SIZE 7 7/8, MAKE JZ, SERIAL NO. HA-20, SERIAL NO. 1806144, 3-15, HOB 115 1/4

CASING RECORD: SIZE, BOTTOMED AT, CEMENT USED, DEFLECTION SURVEY, DEGREES OFF

REMARKS: 3:00-4:00 Drlg 4:00-4:30 Rig CFS 5.176 @ 4425, 4:30-9:00 Only 9:00-10:00 CFS @ 4455 10:00-11:00 Short Trip, 21 stands

Drlg 5 1/4, Rig 1/2, Conn 1/4, CFS 1, Short Trip 1



# Duke Drilling Company, Inc.

Great Bend, Kansas

# Daily Drilling Record

FOR 24 HOURS ENDING AT MIDNIGHT

11-23 20 18 RIG NO. 7

WELL OWNER LeM Exploration LLC LEASE Hedrickson WELL NO. 36-1

SECTION 36 TOWNSHIP 27 RANGE 12 COUNTY Pratt STATE KS

IF INJURED: SIGN AND DESCRIBE INJURY UNDER REMARKS

WE HAVE NOT BEEN INJURED THIS DAY

FROM	DRILLED TO	FEET DRILLED	FORMATION	75
4455	RTD		LTD 4455	DRILLER Craig Mertens CM
				DERRICKMAN Randy Bethel R.B.
				MOTORMAN 145 JAVIER PARRINEZ JR
				HELPER Karen Scott AS
				HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO. 271/8	REMARKS: 11:00-12:00 CTC 4455			4455	374
SIZE	12:30-1:00 Trip Log				
MAKE J2 HA-20	2:15-7:00				
SERIAL NO.					
SERIAL NO. 1806144					
1151/4	AVS	CTC 16-1	SHT 1/2 Trip 1/2 Log 5/4 at 11:00-1/4		

FROM	DRILLED TO	FEET DRILLED	FORMATION	100
4455				DRILLER SCOTT EDWARDS SG
				DERRICKMAN CHRIS CHASE CC
				MOTORMAN CODY FARMER CT
				HELPER JEREMY ROEMERDT
				HELPER

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO.	REMARKS: 7:00-9:00 T.H. W/ BIT				
SIZE	100-1000				
MAKE	1215-200				
SERIAL NO.					
SERIAL NO.					
	TOP 2	1/4	CDPF 2 1/4	NAPRE 1 3/4	RUN CAS 1

FROM	DRILLED TO	FEET DRILLED	FORMATION	145
4455			Run 106 JIS used 5/8 x 10"	DRILLER STEVEN GREEN SG
			1 1/2" 2 1/2" 4 1/2" w/ 250 SX MA 2	DERRICKMAN Dalton Paschka DP
			10" out, 2" 5/8" 1/4" 1/4"	MOTORMAN Chanks Stout CS
			30 SX 1/4"	HELPER Eldon Stout FS
			20 SX 1/4" 3/4"	HELPER
			1 1/2" 2 1/2" 4 1/2" 1/4" 1/4"	
			Run 106	
			Registered 11:30 PM	

DRILLING BITS	CASING RECORD: SIZE	BOTTOMED AT	CEMENT USED	DEFLECTION SURVEY	DEGREES OFF
RUN NO.	REMARKS: 3:00 4:15 Run 5/2 Casg				
SIZE	4:15 4:30 Cement Casg				
MAKE	Cement Casg + R.H. + M.H. 6:15 6:30 Set Slips				
SERIAL NO.	6:30 8:30 Clean Pts				
SERIAL NO.	8:30 11:00 Rig Down				
	Run Casg 1/4, Cement 1 1/4, Set Slips 1/4, Clean Pts 2 6:30 1/4				