

OPERATOR  
WELL/LEASE  
COUNTY

CIMAREX / GRUY  
CAUDILL WEST 17 FEE 1  
LEA, NM

075-0048

*A-17-153-30E  
980/W & 660/E*

STATE OF NEW MEXICO  
DEVIATION REPORT

*30-025-37975*

248	0.00	7,605	1.00
430	0.50	8,269	1.00
920	1.00	8,688	2.00
1,310	1.00	9,667	1.50
1,500	1.00	10,064	1.00
1,728	1.00	10,131	2.00
2,006	1.00	10,704	2.00
2,320	1.00	10,759	2.00
2,542	1.00	10,835	3.00
3,048	1.00	11,078	3.00
3,248	1.00	11,445	3.00
3,457	1.00	11,698	3.00
3,715	2.00	11,991	6.00
1,663	4.60	12,032	5.50
1,725	5.80	12,101	7.00
1,849	6.20	12,225	7.00
1,879	5.50	12,287	6.00
1,911	4.80	12,474	8.00
1,943	4.20	12,898	8.00
2,069	2.70	13,036	8.00
2,272	1.00		
2,370	1.00		
2,486	1.00		
2,777	1.00		
2,906	1.00		
2,991	1.00		
3,212	1.00		
3,252	0.75		
3,413	1.00		
3,575	1.00		
3,858	1.00		
3,950	0.25		
4,196	1.00		
4,411	1.00		
4,896	1.00		
5,270	1.00		
5,742	1.00		
6,249	1.00		
6,530	1.00		
7,039	1.00		

BY:

*Steve Moore*

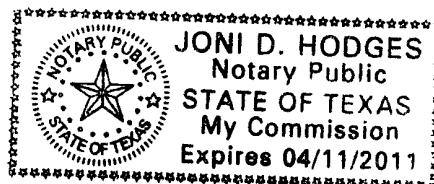
COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on  
Moore on behalf of Patterson-UTI Drilling Company LP, LLLP.

June 8, 2007, by Steve


*Joni D. Hodges*  
Notary Public for Midland County, Texas  
My Commission Expires: 4/08/07

*[Signature]*



Attachments can contain viruses that may harm your computer. Attachments may not display correctly.

**Mull, Donna, EMNRD**

**From:** Zeno Farris [zfarris@cimarex.com] **Sent:** Tue 5/13/2008 10:52 AM  
**To:** Mull, Donna, EMNRD  
**Cc:** Natalie Krueger  
**Subject:** FW: Caudill West 17 Fee No. 1 Maximum Displacement Calc.xlsx  
**Attachments:**  Maximum Displacement Calc.xlsx(19KB)

Donna attached a maximum displacement calc for the referenced well. I don't know what happened to your original request but I think we sent it to Patterson and it slipped through the cracks. I think your original request was for a deviation survey but we only used directional tools to sidetrack away from junk in the hole and lease lines. At 2152' MD we were 890' FNL & 700' FEL. From there we drilled straight to TD. So it seems that a maximum displacement calc from 2152' MD to TD would satisfy the rule. Do you agree?

Thanks

Zeno

**From:** Natalie Krueger  
**Sent:** Monday, May 12, 2008 10:30 AM  
**To:** Zeno Farris  
**Subject:** Maximum Displacement Calc.xlsx

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This inbound email has been scanned by the MessageLabs Email Security System.

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Calculation of Maximum Displacement

**Caudill West 17 Fee No. 1**

880' FNL & 660' FEL

17-15S-36E

Lea County, NM

Measured Depth (ft)	Course Length (hundreds of ft)	Angle of Inclination (degrees)	Displacement per 100 ft (sine of angle x 100)	Course Displacement (ft)	Accumulative Displacement (ft)
2,272*	1.20	1.00	1.7452	2.09	2.09
2,370	0.98	1.00	1.7452	1.71	3.80
2,486	1.16	1.00	1.7452	2.02	5.83
2,777	2.91	1.00	1.7452	5.08	10.91
2,906	1.29	1.00	1.7452	2.25	13.16
2,991	0.85	1.00	1.7452	1.48	14.64
3,212	2.21	1.00	1.7452	3.86	18.50
3,252	0.40	0.75	1.3090	0.52	19.02
3,413	1.61	1.00	1.7452	2.81	21.83
3,575	1.62	1.00	1.7452	2.83	24.66
3,858	2.83	1.00	1.7452	4.94	29.60
3,950	0.92	0.25	0.4363	0.40	30.00
4,196	2.46	1.00	1.7452	4.29	34.29
4,411	2.15	1.00	1.7452	3.75	38.05
4,896	4.85	1.00	1.7452	8.46	46.51
5,270	3.74	1.00	1.7452	6.53	53.04
5,742	4.72	1.00	1.7452	8.24	61.28
6,249	5.07	1.00	1.7452	8.85	70.12
6,530	2.81	1.00	1.7452	4.90	75.03
7,039	5.09	1.00	1.7452	8.88	83.91
7,605	5.66	1.00	1.7452	9.88	93.79
8,269	6.64	1.00	1.7452	11.59	105.38
8,688	4.19	2.00	3.4899	14.62	120.00
9,667	9.79	1.50	2.6177	25.63	145.63
10,064	3.97	1.00	1.7452	6.93	152.56
10,131	0.67	2.00	3.4899	2.34	154.89
10,704	5.73	2.00	3.4899	20.00	174.89
10,759	0.55	2.00	3.4899	1.92	176.81
10,835	0.76	3.00	5.2336	3.98	180.79
11,078	2.43	3.00	5.2336	12.72	193.51
11,445	3.67	3.00	5.2336	19.21	212.71
11,698	2.53	3.00	5.2336	13.24	225.96
11,991	2.93	6.00	10.4528	30.63	256.58
12,032	0.41	5.50	9.5846	3.93	260.51
12,101	0.69	7.00	12.1869	8.41	268.92
12,225	1.24	7.00	12.1869	15.11	284.03
12,287	0.62	6.00	10.4528	6.48	290.51
12,474	1.87	8.00	13.9173	26.03	316.54
12,898	4.24	8.00	13.9173	59.01	375.55
13,036	1.38	8.00	13.9173	19.21	394.75

\* From last measurement on Sidetrack Directional Survey at 2152' MD indicating SHL at 890' FNL & 700' FEL.

**Sidetrack Directional Survey  
Caudill West 17 Fee No. 1**

STATION NUMBER	SURVEY DEPTH	INC	AZMTH	TVD	N-S	E-W	VERT. SECTION	DLS/100
Tie-In	1574	0.3	132.4	1574	0	0	0	
1	1600	1.8	272.7	1599.99615	-0.0266655	-0.3576595	-0.0266655	7.84553332
2	1632	3.4	272.1	1631.96217	0.03178401	-1.8080327	0.03178401	5.00065674
3	1663	4.6	271.2	1662.8861	0.09150406	-3.969554	0.09150406	3.87614465
4	1694	5.1	270.4	1693.77501	0.12715668	-6.5902097	0.12715668	1.6275569
5	1725	5.8	276.2	1724.63491	0.30594671	-9.5253076	0.30594671	2.87069949
6	1756	7.2	268.2	1755.43551	0.41410096	-13.024471	0.41410096	5.3682195
7	1787	7.7	276.5	1786.17462	0.58818542	-17.029756	0.58818542	3.82348899
8	1819	7	273.7	1817.91159	0.95670603	-21.105664	0.95670603	2.45664941
9	1849	6.2	267.9	1847.71286	1.01531284	-24.548891	1.01531284	3.46795804
10	1879	5.5	257.3	1877.55732	0.63986479	-27.570432	0.63986479	4.28151167
11	1911	4.8	236.2	1909.4308	-0.4421807	-30.179272	-0.4421807	6.26630125
12	1943	4.2	237	1941.33201	-1.8252015	-32.274614	-1.8252015	1.88518815
13	1973	3.8	225.7	1971.25934	-3.1178533	-33.907464	-3.1178533	2.93974438
14	2005	3.7	223.1	2003.19085	-4.612347	-35.371865	-4.612347	0.61639811
15	2037	2.9	220.3	2035.13755	-5.9836452	-36.600945	-5.9836452	2.54949703
16	2069	2.7	218.7	2067.09933	-7.1892296	-37.595762	-7.1892296	0.67097321
17	2100	2.6	214.3	2098.06621	-8.3399138	-38.448514	-8.3399138	0.73098643
ProToBit	2152	2.3	210.2	2150.01866	-10.216058	-39.638026	-10.216058	0.66780929

**L.D. Burton**

Well Design Engineer

Black Viper Energy Services

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