

Schlumberger

Reservoir Development

Drilling & Measurements (Anadrill)

4301 SW 44th St

Oklahoma City, Oklahoma 73119 USA

Phone: (405) 682-2284

Fax: (405) 682-3937

January 7, 2014

Cimarex

202 S. Cheyenne Ave, Ste 1000

TULSA, OK 74102

Re:

S8-T25S-R27E 330 FSL 330 FWL
N 32.13824 W 104.21985

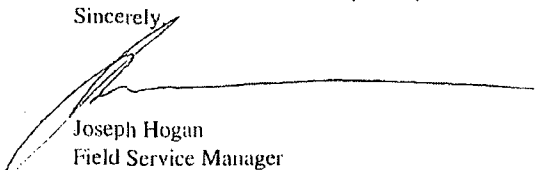
CLIENT: Cimarex Energy Co.
WELL: White City 8 Federal 2H
FIELD: Wildcat G-02 5252715A; B.S.
RIG: Cactus 116
COUNTY: Eddy
API NO: 30-015-41609
JOB NO: 13MLD0761

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation.
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Kurt Valentine MWD	White City 8 Federal 2H Original Hole	6637.00 Ft to 11683.00 Ft	December 19, 2013 to January 3, 2014	StimPulse

If any other information is required, please contact the undersigned at the above letterhead and phone number.

Sincerely,


Joseph Hogan
Field Service Manager

email 5/5/14

FD

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Well Reference:

S8-T2SS-R27E 330 FSL 330 FWL

N 32.13824 W 104.21985

I, Kurt Valentine certify that; I am employed by Drilling & Measurements (formerly Anadrill), a division of Schlumberger Technology Corporation; that I did on the day(s) of December 19, 2013 through January 03, 2014, conduct or supervise the taking of the SlimPulse surveys from a depth of 6637.00 feet to a depth of 11683.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of Cimarex Energy Co. for the White City 8 Federal 2H Well (Original Hole) API No. 30-015-41609 and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By

Kurt Valentine

MWD

Kurt Valentine

Subscribed and Sworn to before me this 8th day of JANUARY (month) 2014 (yr)

My Commission expires:

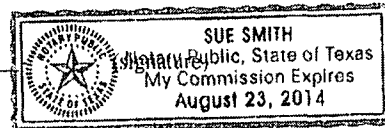
August 23, 2014

Sue Smith

Notary Public

Midland Co Texas

(County State)



SCHLUMBERGER
Survey Report

6-Jan-2014

Client.....: Cimarex Energy Co.
Field.....: Wildcat G-02 5252715A; B.S.

Well.....: White City 8 Federal 2H
API number.....: 30-015-41609
Engineer.....: Kingsley Nlewem

Spud date.....: 19-Dec-13
Last survey date.....: 3-Jan-14
Total accepted surveys.....: 62
MD of first survey.....: 6637.00 ft
MD of last survey.....: 11683.00 ft

County.....: Eddy
State.....: New Mexico
Rig.....: Cactus 116

Latitude.....: 32° 08' 17.653" N
Longitude.....: 104° 13' 11.446" W

----- Survey calculation methods -----

Method for positions.....: Minimum curvature
Method for DLS.....: Lubinski

----- Depth reference -----

Permanent datum.....: MSL
Depth reference.....: Driller's Depth
GL above permanent.....: 3251.00
KB above permanent.....: 3269.00
DF above permanent.....: 3269.00

----- Vertical section origin -----

Latitude (+N/S).....: 0.00 ft
Departure (+E/W).....: 0.00 ft

----- Grid Coordinates -----

NAD27 Texas State Plane, Central Zone, US Feet
X.....: 576464.30 ft
Y.....: 414044.80 ft

Azimuth from Vsect Origin to target: 3.84 degrees

----- MWD Survey Reference Criteria -----

---Run1--- Calculation Date: 28-Dec-2013
Location G.....: 998.81985 mgn Tolerance G.....: 2.50 mgn
Location B.....: 48215.06 nT Tolerance B.....: 300.00 nT
Magnetic Dip: 59.91423 degrees Tolerance Dip: 0.45 degrees

BGGM Model: 2013

-----Run1-----

Magnetic dec (+E/W).....: 7.68117 degrees
Grid Conv (+E/W).....: 0.0604 degrees
Total Azim Corr (+E/W).....: 7.62077 degrees

----- Survey Correction Index Description -----

0 = Uncorrected 1 = Sag Corrected 7 = Projection to Bit
2 = DMAG Corrected 3 = Sag + DMAG Corrected

===== Survey List =====													
Seq	MD (ft)	Incl (deg)	Azim (deg)	Course (ft)	TVD (ft)	V Sec (ft)	N/-S (ft)	E/-W (ft)	Closure (ft)	at Azl (deg)	DLS (deg/100ft)	Tool	Correction
1	0.00	0.00	0.00	-999.25	0.00	0.00	0.00	0.00	0	90.00	0.00	TIP	0
2	480.00	1.41	257.14	480.00	479.95	-1.70	-1.31	-5.76	5.9059	257.14	0.29	GyroTool	14
3	539.00	1.49	256.83	59.00	538.93	-2.13	-1.65	-7.21	7.39886	257.11	0.14	GyroTool	14
4	641.00	1.58	256.70	102.00	640.90	-2.93	-2.28	-9.87	10.13115	257.01	0.09	GyroTool	14
5	747.00	1.58	263.91	106.00	746.86	-3.62	-2.77	-12.75	13.04435	257.75	0.19	GyroTool	14
6	837.00	1.82	256.83	90.00	836.82	-4.25	-3.22	-15.37	15.70735	258.15	0.35	GyroTool	14
7	930.00	1.01	299.50	93.00	929.79	-4.32	-3.16	-17.52	17.80642	259.79	1.37	GyroTool	14
8	1022.00	1.19	316.82	92.00	1021.77	-3.32	-2.06	-18.88	18.99586	263.77	0.41	GyroTool	14
9	1113.00	1.19	313.61	91.00	1112.75	-2.07	-0.72	-20.21	20.22728	267.96	0.07	GyroTool	14
10	1205.00	1.41	288.21	92.00	1204.73	-1.18	0.29	-21.98	21.9833	270.76	0.66	GyroTool	14
11	1296.00	1.10	323.50	91.00	1295.71	-0.24	1.34	-23.56	23.60277	273.26	0.90	GyroTool	14
12	1390.00	0.88	353.12	94.00	1389.70	1.16	2.79	-24.19	24.34754	276.57	0.58	GyroTool	14
13	1485.00	0.79	1.12	95.00	1484.69	2.53	4.16	-24.26	24.61709	279.74	0.15	GyroTool	14
14	1576.00	0.88	8.94	91.00	1575.68	3.85	5.48	-24.14	24.75604	282.79	0.16	GyroTool	14
15	1671.00	1.01	34.43	95.00	1670.66	5.30	6.89	-23.55	24.54262	286.31	0.46	GyroTool	14
16	1765.00	1.19	43.30	94.00	1764.65	6.77	8.29	-22.42	23.89957	290.29	0.26	GyroTool	14
17	1864.00	1.41	51.52	99.00	1863.62	8.38	9.79	-20.76	22.9524	295.26	0.29	GyroTool	14
18	1959.00	1.41	49.50	95.00	1958.59	9.98	11.28	-18.95	22.0568	300.76	0.05	GyroTool	14
19	2053.00	1.19	37.81	94.00	2052.57	11.60	12.80	-17.48	21.66385	306.22	0.37	GyroTool	14
20	2146.00	1.19	43.30	93.00	2145.55	13.15	14.27	-16.22	21.60395	311.33	0.12	GyroTool	14
21	2241.00	1.10	39.44	95.00	2240.53	14.65	15.69	-14.97	21.68334	316.35	0.12	GyroTool	14
22	2334.00	1.01	32.80	93.00	2333.51	16.10	17.07	-13.96	22.04716	320.73	0.16	GyroTool	14
23	2429.00	1.10	27.53	95.00	2428.50	17.66	18.58	-13.08	22.72301	324.86	0.14	GyroTool	14
24	2523.00	1.19	33.42	94.00	2522.48	19.34	20.20	-12.13	23.55607	329.02	0.16	GyroTool	14

25	2617.00	1.32	23.44	94.00	2616.46	21.21	22.00	-11.16	24.67067	333.11	0.27	GyroTool	14
26	2712.00	1.01	27.00	95.00	2711.44	23.01	23.75	-10.34	25.90721	336.47	0.33	GyroTool	14
27	2806.00	1.10	23.44	94.00	2805.42	24.62	25.32	-9.61	27.08077	339.22	0.12	GyroTool	14
28	2906.00	1.10	21.42	100.00	2905.40	26.44	27.09	-8.87	28.5101	341.86	0.04	GyroTool	14
29	3000.00	0.88	8.63	94.00	2999.39	28.02	28.65	-8.44	29.86381	343.59	0.33	GyroTool	14
30	3092.00	1.01	15.31	92.00	3091.38	29.52	30.13	-8.12	31.20204	344.92	0.19	GyroTool	14
31	3188.00	1.10	6.74	96.00	3187.36	31.27	31.86	-7.79	32.79642	346.27	0.19	GyroTool	14
32	3282.00	0.88	5.60	94.00	3281.35	32.89	33.47	-7.61	34.32734	347.19	0.23	GyroTool	14
33	3375.00	0.88	4.32	93.00	3374.33	34.32	34.90	-7.49	35.69012	347.89	0.02	GyroTool	14
34	3470.00	0.88	0.11	95.00	3469.32	35.77	36.35	-7.43	37.10461	348.45	0.07	GyroTool	14
35	3563.00	0.88	3.23	93.00	3562.31	37.20	37.78	-7.39	38.49595	348.94	0.05	GyroTool	14
36	3662.00	0.79	0.24	99.00	3661.30	38.64	39.22	-7.34	39.9032	349.40	0.10	GyroTool	14
37	3756.00	0.88	352.63	94.00	3755.29	40.00	40.59	-7.43	41.26066	349.62	0.15	GyroTool	14
38	3851.00	0.79	348.42	95.00	3850.28	41.34	41.95	-7.66	42.64396	349.66	0.11	GyroTool	14
39	3947.00	0.70	354.61	96.00	3946.27	42.56	43.18	-7.84	43.89885	349.70	0.13	GyroTool	14
40	4041.00	0.79	325.63	94.00	4040.27	43.64	44.29	-8.26	45.05412	349.43	0.41	GyroTool	14
41	4137.00	0.62	353.34	96.00	4136.26	44.67	45.35	-8.70	46.17842	349.14	0.39	GyroTool	14
42	4232.00	0.70	323.10	95.00	4231.25	45.61	46.33	-9.11	47.21292	348.88	0.37	GyroTool	14
43	4326.00	0.70	322.22	94.00	4325.25	46.48	47.24	-9.80	48.2458	348.28	0.01	GyroTool	14
44	4422.00	0.79	310.62	96.00	4421.24	47.31	48.13	-10.66	49.301	347.51	0.18	GyroTool	14
45	4516.00	0.70	323.10	94.00	4515.23	48.13	49.01	-11.50	50.34607	346.79	0.20	GyroTool	14
46	4611.00	0.62	313.92	95.00	4610.22	48.90	49.84	-12.22	51.31169	346.22	0.14	GyroTool	14
47	4706.00	0.48	323.94	95.00	4705.22	49.54	50.51	-12.82	52.11609	345.76	0.18	GyroTool	14
48	4800.00	0.48	291.33	94.00	4799.22	49.96	50.98	-13.42	52.71276	345.25	0.29	GyroTool	14
49	4895.00	0.48	275.42	95.00	4894.21	50.09	51.16	-14.19	53.0889	344.50	0.14	GyroTool	14
50	4991.00	0.70	296.03	96.00	4990.21	50.32	51.45	-15.12	53.6275	343.63	0.31	GyroTool	14
51	5085.00	0.70	264.13	94.00	5084.20	50.44	51.65	-16.20	54.1284	342.58	0.41	GyroTool	14
52	5179.00	0.88	230.20	94.00	5178.19	49.85	51.13	-17.33	53.98253	341.28	0.52	GyroTool	14
53	5273.00	0.31	155.63	94.00	5272.19	49.13	50.43	-17.78	53.47382	340.58	0.91	GyroTool	14
54	5366.00	0.70	208.71	93.00	5365.18	48.39	49.70	-17.95	52.84552	340.15	0.61	GyroTool	14
55	5462.00	1.32	243.61	96.00	5461.17	47.30	48.70	-19.22	52.35419	338.46	0.88	GyroTool	14
56	5556.00	1.32	249.71	94.00	5555.15	46.31	47.84	-21.21	52.33087	336.09	0.15	GyroTool	14
57	5651.00	1.32	253.54	95.00	5650.12	45.49	47.15	-23.28	52.58674	333.72	0.09	GyroTool	14
58	5745.00	1.49	250.42	94.00	5744.09	44.63	46.44	-25.47	52.96304	331.25	0.20	GyroTool	14
59	5839.00	1.49	235.52	94.00	5838.06	43.38	45.33	-27.63	53.09092	328.64	0.41	GyroTool	14
60	5933.00	1.49	236.71	94.00	5932.03	41.89	43.97	-29.66	53.03954	326.00	0.03	GyroTool	14
61	6030.00	1.80	226.82	97.00	6028.99	40.01	42.24	-31.82	52.88446	323.00	0.43	GyroTool	14
62	6125.00	0.62	258.24	95.00	6123.97	38.78	41.11	-33.42	52.97875	320.90	1.38	GyroTool	14
63	6219.00	0.31	283.82	94.00	6217.96	38.69	41.07	-34.16	53.41868	320.25	0.39	GyroTool	14
64	6313.00	0.40	273.23	94.00	6311.96	38.73	41.15	-34.74	53.84841	319.83	0.12	GyroTool	14
65	6408.00	0.62	262.24	95.00	6406.96	38.62	41.10	-35.58	54.35593	319.12	0.25	GyroTool	14
66	6503.00	0.70	222.34	95.00	6501.95	38.06	40.60	-36.48	54.57757	318.06	0.48	GyroTool	14
67	6597.00	0.62	187.14	94.00	6595.95	37.11	39.67	-36.93	54.19561	317.05	0.43	GyroTool	14
68	6693.00	1.42	31.59	40.00	6693.94	37.33	39.88	-36.69	54.18959	317.38	5.00	SlimPulse	0
69	6664.00	5.80	48.29	27.00	6662.88	38.60	41.07	-35.50	54.28498	319.16	16.50	SlimPulse	0
70	6698.00	9.74	51.90	34.00	6696.56	41.75	43.99	-31.95	54.36756	324.01	11.70	SlimPulse	0
71	6730.00	10.25	50.25	32.00	6728.08	45.52	47.48	-27.63	54.93436	329.80	1.82	SlimPulse	0
72	6759.00	9.04	45.53	29.00	6756.67	49.00	50.73	-24.02	56.1263	334.66	4.97	SlimPulse	0
73	6824.00	12.89	34.10	65.00	6820.48	59.09	60.31	-16.31	62.4804	344.87	6.77	SlimPulse	0
74	6853.00	15.32	27.49	29.00	6848.60	65.39	66.39	-12.72	67.6029	349.15	10.04	SlimPulse	0
75	6920.00	18.13	14.53	67.00	6912.78	83.75	84.35	-6.02	84.56144	355.92	6.94	SlimPulse	0
76	6953.00	20.21	16.14	33.00	6943.95	94.37	94.79	-3.14	94.84483	358.10	6.51	SlimPulse	0
77	7047.00	24.45	33.03	94.00	7030.97	127.27	126.75	12.00	127.31379	5.41	8.14	SlimPulse	0
78	7110.00	30.79	43.85	63.00	7086.80	151.04	149.35	30.31	152.39012	11.47	12.80	SlimPulse	0
79	7142.00	33.25	42.96	32.00	7113.93	164.12	161.68	41.96	167.03234	14.55	7.82	SlimPulse	0
80	7174.00	36.08	37.20	32.00	7140.25	178.81	175.61	53.64	183.61937	16.99	13.53	SlimPulse	0
81	7205.00	39.09	31.27	31.00	7164.82	195.12	191.24	64.24	201.74353	18.57	15.14	SlimPulse	0
82	7237.00	41.86	25.97	32.00	7189.17	213.97	209.47	74.16	222.2111	19.50	13.81	SlimPulse	0
83	7331.00	51.14	11.16	94.00	7253.99	279.65	273.90	95.08	289.93445	19.14	15.06	SlimPulse	0
84	7425.00	61.22	0.72	94.00	7306.35	357.44	351.34	102.72	366.05171	16.30	14.13	SlimPulse	0
85	7514.00	74.15	357.91	89.00	7340.07	439.32	433.49	101.64	445.24345	13.20	14.81	SlimPulse	0
86	7610.00	83.87	358.36	96.00	7358.36	532.98	527.56	98.58	536.69341	10.58	10.13	SlimPulse	0
87	7706.00	85.25	2.43	96.00	7367.46	628.35	623.10	99.24	630.95788	9.05	4.47	SlimPulse	0
88	7801.00	84.70	3.08	95.00	7375.79	722.97	717.63	103.80	725.09581	8.23	0.89	SlimPulse	0
89	7894.00	85.59	2.91	93.00	7383.66	815.62	810.17	108.64	817.41828	7.64	0.98	SlimPulse	0
90	7988.00	89.76	6.91	94.00	7387.47	909.49	903.70	116.68	911.20589	7.36	6.15	SlimPulse	0
91	8082.00	87.59	5.45	94.00	7389.64	1003.38	997.12	126.80	1005.15475	7.25	2.78	SlimPulse	0
92	8177.00	91.17	2.83	95.00	7390.67	1098.35	1091.85	133.66	1099.99814	6.98	4.66	SlimPulse	0
93	8272.00	90.17	5.67	95.00	7389.56	1193.33	1186.57	140.70	1194.88182	6.76	3.17	SlimPulse	0
94	8371.00	88.32	5.45	99.00	7390.86	1292.27	1285.09	150.30	1293.84869	6.67	1.89	SlimPulse	0
95	8464.00	92.48	1.34	93.00	7390.22	1385.23	1377.88	155.80	1386.66433	6.45	6.29	SlimPulse	0
96	8559.00	93.10	2.24	95.00	7385.60	1480.05	1472.72	158.76	1481.25656	6.15	1.15	SlimPulse	0
97	8654.00	93.75	2.40	95.00	7379.93	1574.85	1567.48	162.60	1575.88707	5.92	0.71	SlimPulse	0
98	8749.00	92.06	2.82	95.00	7375.11	1669.70	1662.25	166.92	1670.61168	5.73	1.83	SlimPulse	0
99	8844.00	89.90	4.49	95.00	7373.49	1764.68	1757.04	172.97	1765.52965	5.62	2.88	SlimPulse	0
100	8939.00	90.31	3.71	95.00	7373.32	1859.67	1851.79	179.77	1860.49682	5.54	0.93	SlimPulse	0
101	9033.00	89.69	1.09	94.00	7373.32	1953.64	1945.70	183.70	1954.35318	5.39	2.87	SlimPulse	0
102	9127.00	90.03	4.37	94.00	7373.54	2047.60	2039.58	188.17	2048.2428	5.27	3.51	SlimPulse	0
103	9214.00	89.93	2.91	87.00	7373.57	2134.60	2126.40	193.69	2135.20658	5.20	1.68	SlimPulse	0
104	9313.00	89.83	4.35	99.00	7373.78	2233.60	2225.20	199.96	2234.16794	5.13	1.45	SlimPulse	0
105	9409.00	89.00	2.07	96.00	7374.76	2329.58	2321.04	205.33	2330.10387	5.06	2.52	SlimPulse	0
106	9504.00	89.48	3.65	95.00	7376.01	2424.55	2415.91	210.07	2425.02537	4.97	1.73	SlimPulse	0
107	9598.00	89.90	5.34	94.00	7376.52	2518.54	2509.62	217.44	2519.01725	4.95	1.85	SlimPulse	0
108	9692.00	89.83	4.38	94.00	7376.74	2612.53	2603.28	225.39	2613.01575	4.95	1.02	SlimPulse	0
109	9789.00	89.79	5.14	97.00	7377.06	2709.51	2699.94	233.44	2710.01398	4.90	0.79	SlimPulse	0

110	9882.00	89.93	4.44	93.00	7377.29	2802.50	2792.62	241.21	2803.01279	4.94	0.77	SlimPulse	0
111	9980.00	88.93	0.41	98.00	7378.26	2900.44	2890.50	245.35	2900.89572	4.85	4.23	SlimPulse	0
112	10075.00	90.00	0.05	95.00	7379.14	2995.25	2985.49	245.74	2995.591	4.71	1.19	SlimPulse	0
113	10170.00	91.20	0.01	95.00	7378.14	3090.03	3080.49	245.79	3090.27765	4.56	1.27	SlimPulse	0
114	10265.00	91.38	1.70	95.00	7376.01	3184.88	3175.45	247.21	3185.05753	4.45	1.78	SlimPulse	0
115	10360.00	91.34	359.78	95.00	7373.75	3279.71	3270.41	248.44	3279.83313	4.34	2.02	SlimPulse	0
116	10454.00	91.72	2.72	94.00	7371.24	3373.57	3364.34	250.49	3373.65606	4.26	3.15	SlimPulse	0
117	10549.00	92.30	1.85	95.00	7367.91	3468.47	3459.21	254.27	3468.54143	4.20	1.10	SlimPulse	0
118	10637.00	92.58	3.78	88.00	7364.16	3556.37	3547.02	258.59	3556.43211	4.17	2.22	SlimPulse	0
119	10735.00	92.13	2.94	98.00	7360.13	3654.29	3644.77	264.33	3654.33865	4.15	0.98	SlimPulse	0
120	10829.00	91.89	4.50	94.00	7356.83	3748.23	3738.51	270.43	3748.2752	4.14	1.68	SlimPulse	0
121	10925.00	91.10	3.69	96.00	7354.32	3844.19	3834.23	277.29	3844.24087	4.14	1.19	SlimPulse	0
122	11018.00	89.97	3.04	93.00	7353.46	3937.18	3927.06	282.74	3937.22654	4.12	1.40	SlimPulse	0
123	11114.00	90.07	3.89	96.00	7353.43	4033.18	4022.89	288.54	4033.21951	4.10	0.89	SlimPulse	0
124	11211.00	89.62	2.27	97.00	7353.69	4130.17	4119.74	293.75	4130.2006	4.08	1.73	SlimPulse	0
125	11303.00	90.24	3.08	92.00	7353.80	4222.14	4211.64	298.04	4222.17233	4.05	1.11	SlimPulse	0
126	11397.00	89.76	3.30	94.00	7353.80	4316.14	4305.49	303.27	4316.16164	4.03	0.56	SlimPulse	0
127	11493.00	90.00	1.78	96.00	7354.00	4412.11	4401.40	307.52	4412.12682	4.00	1.60	SlimPulse	0
128	11586.00	89.69	3.44	93.00	7354.26	4505.09	4494.30	311.76	4505.09651	3.97	1.82	SlimPulse	0
129	11683.00	89.83	2.87	97.00	7354.66	4602.08	4591.15	317.10	4602.08566	3.95	0.61	SlimPulse	0
130	11726.00	89.83	2.87	43.00	7354.79	4645.07	4634.09	319.25	4645.07788	3.94	0.01	PJB	7