

Cimarex Taos Fed #4H Gyro+MWD 0ft to 12146ft MD

(Def Survey)

Report Date: July 07, 2013 - 09:20 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cactus 104 / Cimarex Taos Federal #4H
Well: Cimarex Taos Federal #4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Taos Fed #4H Gyro+MWD 0ft to 12146ft MD
Survey Date: June 18, 2013
Tort / AHD / DDI / ERD Ratio: 165.647° / 4956.993 ft / 6.121 / 0.657
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 10' 1.63453", W 104° 13' 24.04540"
Location Grid N/E Y/X: N 424550.900 ftUS, E 575370.300 ftUS
CRS Grid Convergence Angle: 0.0586°
Grid Scale Factor: 0.99991042

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.410° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3420.000 ft above MSL
Seabed / Ground Elevation: 3400.000 ft above MSL
Magnetic Declination: 7.740°
Total Gravity Field Strength: 998.4823mgn (9.80665 Based)
Total Magnetic Field Strength: 48272.005 nT
Magnetic Dip Angle: 59.922°
Declination Date: June 18, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.0586°

Total Corr Mag North->Grid North: 7.6811°

Local Coord Referenced To: Structure Reference Point

HOBBS OCD

JAN 09 2014

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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Taos Fed #4H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	232.01M
	100.00	0.50	232.01	100.00	-0.27	-0.27	-0.34	0.44	232.01	0.50	231.7M
	200.00	1.03	231.70	199.99	-1.10	-1.09	-1.39	1.77	231.85	0.53	234.56M
	300.00	1.58	234.56	299.96	-2.47	-2.45	-3.22	4.05	232.74	0.55	238.96M
	400.00	2.03	238.96	399.91	-4.21	-4.16	-5.86	7.19	234.62	0.47	247.05M
	500.00	2.37	247.05	499.84	-5.95	-5.88	-9.28	10.99	237.64	0.46	248.75M
	622.10	2.23	248.75	621.84	-7.83	-7.73	-13.82	15.84	240.79	0.13	248.5M
	715.20	2.24	248.50	714.87	-9.17	-9.05	-17.20	19.44	242.25	0.02	215.74M
	808.20	0.92	215.74	807.83	-10.46	-10.32	-19.33	21.91	241.90	1.67	109.46M
	901.30	0.19	109.46	900.93	-11.12	-10.98	-19.62	22.49	240.77	1.06	33.56M
	994.40	0.22	33.56	994.03	-11.02	-10.88	-19.38	22.23	240.68	0.27	307.44M
	1087.50	0.54	307.44	1087.13	-10.61	-10.47	-19.63	22.24	241.93	0.61	277.16M
	1180.60	0.54	277.16	1180.22	-10.29	-10.15	-20.41	22.79	243.57	0.30	227.32M
	1273.70	0.18	227.32	1273.32	-10.34	-10.19	-20.95	23.30	244.06	0.48	275.9M
	1366.80	0.13	275.90	1366.42	-10.43	-10.28	-21.17	23.53	244.10	0.15	286.67M
	1459.90	0.17	286.67	1459.52	-10.38	-10.23	-21.40	23.72	244.46	0.05	240.5M
	1553.00	0.18	240.50	1552.62	-10.42	-10.26	-21.66	23.97	244.65	0.15	102.17M
	1646.10	0.09	102.17	1645.72	-10.50	-10.35	-21.72	24.06	244.52	0.27	38.85M
	1739.10	0.68	38.85	1738.72	-10.09	-9.93	-21.30	23.50	245.00	0.69	329.38M
	1832.20	0.84	329.38	1831.81	-9.07	-8.92	-21.30	23.09	247.29	0.94	256.04M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
Last Gyro	1925.30	0.70	256.04	1924.91	-8.63	-8.47	-22.20	23.76	249.12	1.00	114.57M
	2018.40	0.50	114.57	2018.00	-8.93	-8.77	-22.38	24.04	248.60	1.22	22.23M
	2111.50	0.46	22.23	2111.10	-8.75	-8.60	-21.87	23.50	248.54	0.74	98.69M
	2257.00	0.40	98.69	2256.60	-8.28	-8.13	-21.15	22.66	248.97	0.37	68.32M
	2450.00	0.22	68.32	2449.60	-8.24	-8.10	-20.14	21.71	248.10	0.12	78.91M
	2544.00	0.22	78.91	2543.60	-8.14	-8.00	-19.80	21.35	248.00	0.04	77.73M
	2639.00	0.22	77.73	2638.59	-8.06	-7.92	-19.44	20.99	247.83	0.00	62.7M
	2734.00	0.31	62.70	2733.59	-7.90	-7.77	-19.03	20.55	247.80	0.12	83M
	2828.00	0.31	83.00	2827.59	-7.75	-7.62	-18.55	20.06	247.68	0.12	91.7M
	2923.00	0.31	91.70	2922.59	-7.72	-7.59	-18.04	19.57	247.17	0.05	108.8M
	3018.00	0.31	108.80	3017.59	-7.81	-7.68	-17.54	19.15	246.34	0.10	125.32M
	3113.00	0.31	125.32	3112.59	-8.04	-7.92	-17.09	18.83	245.14	0.09	128.31M
	3207.00	0.31	128.31	3206.59	-8.34	-8.22	-16.68	18.60	243.77	0.02	137.4M
	3302.00	0.40	137.40	3301.59	-8.74	-8.62	-16.25	18.40	242.05	0.11	137.01M
	3397.00	0.40	137.01	3396.58	-9.22	-9.11	-15.80	18.24	240.04	0.00	130.51M
	3493.00	0.40	130.51	3492.58	-9.68	-9.57	-15.32	18.07	238.00	0.05	136M
	3588.00	0.48	136.00	3587.58	-10.18	-10.08	-14.79	17.90	235.74	0.10	133.32M
	3683.00	0.48	133.32	3682.57	-10.74	-10.63	-14.23	17.76	233.22	0.02	143.03M
	3778.00	0.62	143.03	3777.57	-11.42	-11.32	-13.63	17.72	230.29	0.18	140.39M
	3873.00	0.70	140.39	3872.56	-12.27	-12.18	-12.95	17.77	226.76	0.09	141.32M
	3967.00	0.70	141.32	3966.56	-13.15	-13.07	-12.22	17.89	223.09	0.01	137.89M
	4063.00	0.70	137.89	4062.55	-14.04	-13.96	-11.46	18.06	219.40	0.04	137.71M
	4158.00	0.62	137.71	4157.54	-14.85	-14.77	-10.73	18.26	216.00	0.08	147.12M
	4253.00	0.70	147.12	4252.54	-15.71	-15.64	-10.07	18.60	212.78	0.14	149.01M
	4348.00	0.62	149.01	4347.53	-16.63	-16.57	-9.49	19.09	209.80	0.09	161M
	4443.00	0.70	161.00	4442.52	-17.62	-17.55	-9.04	19.74	207.23	0.17	177.39M
	4538.00	0.70	177.39	4537.52	-18.75	-18.68	-8.82	20.66	205.27	0.21	177.13M
	4633.00	0.79	177.13	4632.51	-19.98	-19.92	-8.76	21.76	203.74	0.09	173M
	4728.00	0.79	173.00	4727.50	-21.28	-21.22	-8.65	22.92	202.17	0.06	167.51M
	4823.00	1.01	167.51	4822.49	-22.75	-22.69	-8.39	24.19	200.29	0.25	174.1M
	4918.00	1.10	174.10	4917.47	-24.47	-24.41	-8.11	25.73	198.38	0.16	174.63M
	5013.00	1.19	174.63	5012.45	-26.36	-26.30	-7.93	27.47	196.77	0.10	173.53M
	5108.00	1.19	173.53	5107.43	-28.32	-28.26	-7.72	29.30	195.28	0.02	178.8M
	5203.00	1.32	178.80	5202.41	-30.39	-30.34	-7.59	31.27	194.04	0.18	181.7M
	5298.00	1.32	181.70	5297.38	-32.58	-32.53	-7.60	33.40	193.15	0.07	178.32M
	5392.00	1.41	178.32	5391.36	-34.82	-34.76	-7.60	35.59	192.33	0.13	183.5M
	5488.00	1.19	183.50	5487.33	-36.99	-36.94	-7.62	37.72	191.66	0.26	186.71M
	5583.00	1.32	186.71	5582.31	-39.07	-39.01	-7.81	39.79	191.32	0.16	189.3M
	5678.00	1.32	189.30	5677.29	-41.24	-41.18	-8.12	41.97	191.15	0.06	198.23M
	5774.00	1.41	198.23	5773.26	-43.45	-43.39	-8.66	44.25	191.29	0.24	216.1M
	5869.00	1.58	216.10	5868.23	-45.63	-45.56	-9.80	46.60	192.14	0.52	226.79M
	5963.00	1.58	226.79	5962.19	-47.58	-47.49	-11.51	48.87	193.62	0.31	232.9M
	6059.00	1.80	232.90	6058.15	-49.41	-49.31	-13.68	51.17	195.50	0.30	220.59M
	6154.00	2.02	220.59	6153.10	-51.59	-51.48	-15.96	53.90	197.22	0.49	215.32M
	6249.00	1.80	215.32	6248.04	-54.10	-53.97	-17.91	56.86	198.36	0.30	204.11M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	6342.00	1.89	204.11	6341.00	-56.70	-56.56	-19.38	59.79	198.91	0.40	204.03M
	6437.00	2.11	204.03	6435.94	-59.74	-59.59	-20.73	63.09	199.18	0.23	210.62M
	6532.00	2.29	210.62	6530.87	-62.98	-62.82	-22.41	66.70	199.63	0.33	217.69M
	6628.00	2.20	217.69	6626.79	-66.10	-65.93	-24.51	70.34	200.40	0.30	220.99M
	6723.00	2.42	220.99	6721.72	-69.08	-68.89	-26.94	73.97	201.36	0.27	222.79M
	6818.00	2.42	222.79	6816.63	-72.08	-71.87	-29.62	77.74	202.40	0.08	220.81M
Final Extreme Survey	6867.00	2.42	220.81	6865.59	-73.63	-73.41	-31.00	79.69	202.89	0.17	220.06M
	6912.00	2.36	220.06	6910.55	-75.07	-74.84	-32.22	81.48	203.29	0.15	211.57M
Survey 26-Jun-13	6943.00	1.69	211.57	6941.53	-75.95	-75.72	-32.87	82.54	203.46	2.36	215.49M
	6975.00	1.15	215.49	6973.52	-76.62	-76.38	-33.30	83.33	203.56	1.71	318.12M
	7022.00	0.62	318.12	7020.52	-76.82	-76.58	-33.74	83.68	203.78	3.02	350.69M
	7054.00	3.92	350.69	7052.49	-75.61	-75.37	-34.04	82.70	204.30	10.67	351.42M
	7085.00	8.00	351.42	7083.31	-72.43	-72.19	-34.53	80.02	205.56	13.16	353.78M
	7117.00	12.31	353.78	7114.81	-66.84	-66.59	-35.23	75.34	207.88	13.53	0.66L
	7148.00	16.51	353.61	7144.82	-59.18	-58.93	-36.08	69.10	211.48	13.55	2.9L
	7180.00	20.87	352.99	7175.13	-49.01	-48.75	-37.28	61.37	217.41	13.64	17.93L
	7211.00	25.15	349.76	7203.66	-37.06	-36.78	-39.13	53.70	226.78	14.39	15.33L
	7243.00	29.91	347.16	7232.03	-22.60	-22.30	-42.11	47.65	242.10	15.34	25.15L
	7275.00	32.00	345.32	7259.47	-6.64	-6.32	-46.04	46.47	262.19	7.17	6.19L
	7307.00	33.37	345.05	7286.40	10.03	10.39	-50.45	51.51	281.64	4.31	7.6R
	7338.00	35.83	345.61	7311.92	27.03	27.42	-54.91	61.37	296.54	8.00	14.87L
	7369.00	37.53	344.87	7336.78	44.90	45.32	-59.63	74.90	307.24	5.67	48.88L
Survey 27-Jun-13	7401.00	39.40	341.58	7361.83	63.90	64.37	-65.38	91.75	314.55	8.66	13.94L
	7433.00	43.58	340.08	7385.80	83.87	84.39	-72.35	111.16	319.39	13.43	15.95L
	7462.00	47.57	338.54	7406.09	103.18	103.75	-79.68	130.82	322.48	14.27	3.73L
	7497.00	52.83	338.11	7428.49	128.09	128.73	-89.61	156.85	325.16	15.06	7.69R
	7529.00	56.54	338.71	7446.99	152.29	153.01	-99.21	182.36	327.04	11.69	8.92L
	7560.00	59.62	338.15	7463.37	176.69	177.47	-108.89	208.22	328.47	10.05	4.47R
	7592.00	64.60	338.58	7478.34	202.90	203.76	-119.31	236.12	329.65	15.61	6.74L
	7623.00	69.52	337.96	7490.42	229.33	230.27	-129.88	264.37	330.58	15.98	14.29R
	7655.00	74.33	339.23	7500.34	257.57	258.58	-140.97	294.51	331.40	15.50	29.58R
	7686.00	79.34	342.11	7507.40	285.97	287.06	-150.95	324.33	332.26	18.52	21.38R
	7718.00	82.51	343.36	7512.45	316.07	317.23	-160.33	355.44	333.19	10.63	21.23R
	7749.00	83.97	343.93	7516.10	345.55	346.77	-169.00	385.75	334.02	5.05	2.76R
	7781.00	87.49	344.10	7518.48	376.16	377.44	-177.78	417.21	334.78	11.01	6.5R
	7814.00	89.42	344.32	7519.37	407.83	409.18	-186.76	449.79	335.47	5.89	50.2R
Survey 28-Jun-13	7842.00	90.72	345.88	7519.34	434.84	436.24	-193.96	477.41	336.03	7.25	95.91R
	7937.00	89.24	0.11	7519.37	528.80	530.28	-205.51	568.71	338.82	15.06	122.49R
	7969.00	87.39	3.02	7520.31	560.77	562.25	-204.64	598.34	340.00	10.77	107.71R
	8029.00	86.77	4.97	7523.37	620.58	622.03	-200.47	653.53	342.14	3.41	44.98L
	8126.00	87.32	4.42	7528.37	717.18	718.57	-192.54	743.92	345.00	0.80	50.5L
Survey 30-Jun-13	8221.00	87.46	4.25	7532.69	811.85	813.20	-185.36	834.06	347.16	0.23	94.68L
	8315.00	87.42	3.76	7536.89	905.58	906.88	-178.81	924.34	348.85	0.52	95.9L

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	8410.00	87.35	3.08	7541.23	1000.34	1001.61	-173.14	1016.46	350.19	0.72	86.2L
	8506.00	87.39	2.48	7545.63	1096.16	1097.39	-168.49	1110.25	351.27	0.63	26.86R
	8623.00	88.93	3.26	7549.39	1212.99	1214.18	-162.64	1225.03	352.37	1.48	23.96R
	8718.00	91.27	4.30	7549.22	1307.82	1308.97	-156.38	1318.28	353.19	2.70	17.03R
	8813.00	91.89	4.49	7546.60	1402.55	1403.65	-149.10	1411.55	353.94	0.68	110.23L
	8907.00	91.75	4.11	7543.62	1496.29	1497.34	-142.05	1504.06	354.58	0.43	154.06L
	9002.00	91.38	3.93	7541.02	1591.06	1592.07	-135.40	1597.82	355.14	0.43	10.3R
	9097.00	92.37	4.11	7537.92	1685.82	1686.79	-128.74	1691.69	355.64	1.06	106.71R
	9192.00	92.34	4.21	7534.01	1780.54	1781.46	-121.85	1785.62	356.09	0.11	147.28L
	9287.00	92.06	4.03	7530.37	1875.27	1876.14	-115.03	1879.66	356.49	0.35	167.48R
	9382.00	91.79	4.09	7527.17	1970.02	1970.85	-108.31	1973.82	356.85	0.29	164.99R
	9478.00	91.38	4.20	7524.52	2065.78	2066.56	-101.38	2069.05	357.19	0.44	169.05R
	9573.00	91.07	4.26	7522.49	2160.55	2161.28	-94.37	2163.34	357.50	0.33	169.56R
	9667.00	90.69	4.33	7521.04	2254.32	2255.00	-87.33	2256.69	357.78	0.41	145.84R
	9763.00	90.41	4.52	7520.12	2350.08	2350.71	-79.92	2352.07	358.05	0.35	168.69R
	9858.00	90.31	4.54	7519.53	2444.83	2445.42	-72.42	2446.49	358.30	0.11	174.96R
Survey 2-Jul-13	9953.00	89.97	4.57	7519.29	2539.59	2540.11	-64.88	2540.94	358.54	0.36	51.27L
	10047.00	90.86	3.46	7518.61	2633.39	2633.88	-58.30	2634.52	358.73	1.51	125.83L
	10142.00	90.34	2.74	7517.62	2728.28	2728.73	-53.16	2729.25	358.88	0.93	115.84R
	10237.00	90.03	3.38	7517.31	2823.18	2823.60	-48.09	2824.01	359.02	0.75	159.27L
	10332.00	89.66	3.24	7517.57	2918.06	2918.44	-42.60	2918.75	359.16	0.42	141.71R
	10428.00	89.28	3.54	7518.46	3013.92	3014.27	-36.93	3014.49	359.30	0.50	109.91L
	10523.00	89.07	2.96	7519.82	3108.80	3109.10	-31.54	3109.26	359.42	0.65	19.21L
	10618.00	90.62	2.42	7520.08	3203.72	3203.99	-27.08	3204.11	359.52	1.73	111.16R
	10713.00	90.38	3.04	7519.25	3298.64	3298.88	-22.56	3298.96	359.61	0.70	156.8L
	10808.00	90.17	2.95	7518.80	3393.54	3393.75	-17.59	3393.80	359.70	0.24	168.69L
	10904.00	89.42	2.80	7519.14	3489.45	3489.63	-12.78	3489.65	359.79	0.80	165.97R
	10999.00	88.62	3.00	7520.76	3584.34	3584.49	-7.97	3584.50	359.87	0.87	71.93L
Survey 3-Jul-13	11093.00	88.93	2.05	7522.77	3678.26	3678.38	-3.83	3678.38	359.94	1.06	1.65R
	11162.00	89.97	2.08	7523.44	3747.22	3747.33	-1.35	3747.33	359.98	1.51	27.71R
	11257.00	90.96	2.60	7522.67	3842.17	3842.25	2.53	3842.25	0.04	1.18	90R
	11352.00	90.96	2.96	7521.07	3937.07	3937.12	7.14	3937.13	0.10	0.38	127.57R
	11447.00	90.86	3.09	7519.56	4031.96	4031.98	12.15	4032.00	0.17	0.17	162.47L
	11540.00	90.48	2.97	7518.48	4124.86	4124.84	17.07	4124.88	0.24	0.43	97.25R
Survey 5-Jul-13	11635.00	90.41	3.52	7517.74	4219.74	4219.68	22.44	4219.74	0.30	0.58	33.69R
	11732.00	90.62	3.66	7516.87	4316.58	4316.49	28.52	4316.58	0.38	0.26	35.98L
	11826.00	92.34	2.41	7514.44	4410.45	4410.32	33.49	4410.45	0.44	2.26	99.46L
	11922.00	92.27	1.99	7510.58	4506.32	4506.17	37.17	4506.33	0.47	0.44	177.21R
	12015.00	91.86	2.01	7507.23	4599.23	4599.06	40.42	4599.23	0.50	0.44	63.16R
Final Survey	12092.00	92.34	2.96	7504.41	4676.12	4675.93	43.75	4676.14	0.54	1.38	HS
Proj to TD	12146.00	92.34	2.96	7502.20	4730.03	4729.81	46.54	4730.04	0.56	0.00	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
Survey Type:	Def Survey										

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	20.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT-Depth Only	Original Borehole / Cimarex Taos Fed #4H Gyro+MWD 0ft to 12146ft MD
	20.000	2111.500	Act Stns	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Taos Fed #4H Gyro+MWD 0ft to
	2111.500	6867.000	Act Stns	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Taos Fed #4H Gyro+MWD 0ft to
	6867.000	12092.000	Act Stns	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Taos Fed #4H Gyro+MWD 0ft to
	12092.000	12146.000	Act Stns	30.000	30.000	SLB_BLIND+TREND	Original Borehole / Cimarex Taos Fed #4H Gyro+MWD 0ft to

Reservoir Development

Drilling & Measurements (Anadrill)

4301 SW 44th St

Oklahoma City, Oklahoma 73119 USA

Phone: (405) 682-2284

Fax: (405) 682-3937

Date August 4, 2013

Cimarex Energy Co.

600 N Marienfeld Street Suite 600

Midland, TX 79701

RECEIVED

JAN 09 2014

HOBBS OCD

Re:

CLIENT: Cimarex Energy Co.
WELL: Taos Federal #4H
FIELD: Willow Lake; B.S. West
RIG: Cactus 104
COUNTY: Eddy
API NO: 30-015-41270
JOB NO: 13MLD0233

P-31-24S-27E 27S FSL 630 FEL
N 32.16712 W 104.22334

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements (formerly Anadrill), a division of Schlumberger Technology Corporation (P-5 No. 754900).
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>
Wayne Allick, Jr. Field Engineer I	Taos Federal #4H Original Hole	6912.00 Ft to 12092.00 Ft	June 25, 2013 to July 5, 2013	SlimPulse

A plat of the bottom hole location is oriented both to the surface location and to the lease lines (or until line in case of pooling), is attached to the survey report.

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

Jasem Alharer
Field Service Manager



CC: Cimarex Energy Co.
Enclosures: [2]
County of Eddy
State of Texas

Reservoir Development

Drilling & Measurements (Anadrill)

4301 SW 44th St

Oklahoma City, Oklahoma 73119 USA

Phone: (405) 682-2284

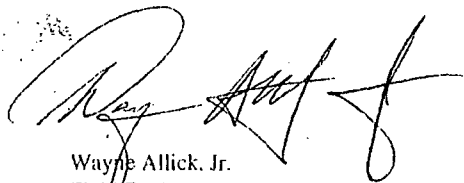
Fax: (405) 682-3937

Well Reference:

Sec 31 T24S R27E SESE 275FSL 630FEL

N 32.16712 W 104.22334

I, Wayne Allick, Jr. certify that; I am employed by Drilling & Measurements (formerly Anadrill), a division of Schlumberger Technology Corporation; that I did on the day(s) of June 25, 2013 through July 05, 2013, conduct or supervise the taking of the SlimPulse surveys from a depth of 6912.00 feet to a depth of 12092.00 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 Taos Federal #4H Well (Original Hole) API No. 30-015-41270 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.


Wayne Allick, Jr.
Field Engineer I

HOBBS OCD

JAN 09 2014

RECEIVED

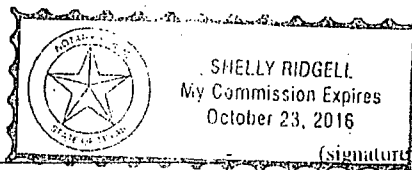
Subscribed and Sworn to before me this 4 day of August (month) 2013 (yr)

My Commission expires:

10-23-16

Notary Public

Shelly Ridgell
Midland Texas
(County State)



SCHLUMBERGER
Survey Report

2-Aug-2013

Client..... Cimarex Energy Co.
Field..... Bone Spring

Well..... Taos Federal #4H
API number..... 30-015-41270
Engineer..... Wayne Allick, Jr.

Spud date..... 16-Jun-13
Last survey date..... 5-Jul-13
Total accepted surveys..... 149
MD of first survey..... 6912.00 ft
MD of last survey..... 12092.00 ft

County..... Eddy
State..... New Mexico
Rig..... Cactus 104

Latitude..... 32° 10' 1.635" N
Longitude..... 104° 13' 24.045" 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..... 3400.00
KB above permanent..... 3420.00
DF above permanent..... 3420.00

----- 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..... 424550.90 ft
Y..... 575370.30 ft

Azimuth from Vsect Origin to target: 0.41 degrees

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

-----Run1----- Calculation Date: 24-Jun-2013
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48269.92 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.9214 degrees Tolerance Dip: 0.45 degrees

-----Run2----- Calculation Date: 25-Jun-2013
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48269.57 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.9213 degrees Tolerance Dip: 0.45 degrees

-----Run3----- Calculation Date: 28-Jun-2013
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48268.53 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.921 degrees Tolerance Dip: 0.45 degrees

-----Run4----- Calculation Date: 30-Jun-2013
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48267.83 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.9209 degrees Tolerance Dip: 0.45 degrees

-----Run5----- Calculation Date: 3-Jul-2013
Location G..... 998.94325 mgn Tolerance G..... 2.50 mgn
Location B..... 48266.79 nT Tolerance B..... 300.00 nT
Magnetic Dip: 59.9206 degrees Tolerance Dip: 0.45 degrees

BGGM Model: 2012

-----Run1-----
Magnetic dec (+E/W)..... 7.7377 degrees
Grid Conv (+E/W)..... 0.0577 degrees
Total Azim Corr (+E/W)..... 7.68 degrees

-----Run2-----
Magnetic dec (+E/W)..... 7.7374 degrees
Grid Conv (+E/W)..... 0.0574 degrees
Total Azim Corr (+E/W)..... 7.68 degrees

-----Run3-----
Magnetic dec (+E/W)..... 7.7364 degrees
Grid Conv (+E/W)..... 0.0564 degrees
Total Azim Corr (+E/W)..... 7.68 degrees

-----Run4-----

Magnetic dec (+E/W)..... 7.7358 degrees
Grid Conv (+E/W)..... 0.0558 degrees
Total Azim Corr (+E/W).... 7.68 degrees

-----Run5-----

Magnetic dec (+E/W)..... 7.7348 degrees
Grid Conv (+E/W)..... 0.0548 degrees
Total Azim Corr (+E/W).... 7.68 degrees

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

0 = Uncorrected 1 = Sag Corrected
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 Azi (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	100.00	0.50	232.01	100.00	100.00	-0.27	-0.27	-0.34	0.44	232.01	0.50	GyroTool	0
3	200.00	1.03	231.70	100.00	199.99	-1.10	-1.09	-1.39	1.77	231.85	0.53	GyroTool	0
4	300.00	1.58	234.56	100.00	299.96	-2.47	-2.45	-3.22	4.05	232.74	0.55	GyroTool	0
5	400.00	2.03	238.96	100.00	399.91	-4.21	-4.16	-5.86	7.19	234.62	0.47	GyroTool	0
6	500.00	2.37	247.05	100.00	499.84	-5.95	-5.88	-9.28	10.99	237.64	0.46	GyroTool	0
7	622.10	2.23	248.75	122.10	621.84	-7.83	-7.73	-13.82	15.84	240.79	0.13	GyroTool	0
8	715.20	2.24	248.50	93.10	714.87	-9.17	-9.05	-17.20	19.44	242.25	0.02	GyroTool	0
9	808.20	0.92	215.74	93.00	807.83	-10.46	-10.32	-19.33	21.91	241.90	1.67	GyroTool	0
10	901.30	0.19	109.46	93.10	900.93	-11.12	-10.98	-19.62	22.49	240.77	1.06	GyroTool	0
11	994.40	0.22	33.56	93.10	994.03	-11.02	-10.88	-19.38	22.23	240.68	0.27	GyroTool	0
12	1087.50	0.54	307.44	93.10	1087.13	-10.61	-10.47	-19.63	22.24	241.93	0.61	GyroTool	0
13	1180.60	0.54	277.16	93.10	1180.22	-10.29	-10.15	-20.41	22.79	243.57	0.30	GyroTool	0
14	1273.70	0.18	227.32	93.10	1273.32	-10.34	-10.19	-20.95	23.3	244.06	0.48	GyroTool	0
15	1366.80	0.13	275.90	93.10	1366.42	-10.43	-10.28	-21.17	23.53	244.10	0.15	GyroTool	0
16	1459.90	0.17	286.67	93.10	1459.52	-10.38	-10.23	-21.40	23.72	244.46	0.05	GyroTool	0
17	1553.00	0.18	240.50	93.10	1552.62	-10.42	-10.26	-21.66	23.97	244.65	0.15	GyroTool	0
18	1646.10	0.09	102.17	93.10	1645.72	-10.50	-10.35	-21.72	24.06	244.52	0.27	GyroTool	0
19	1739.10	0.68	38.85	93.00	1738.72	-10.09	-9.93	-21.30	23.5	245.00	0.69	GyroTool	0
20	1832.20	0.84	329.38	93.10	1831.81	-9.07	-8.92	-21.30	23.09	247.29	0.94	GyroTool	0
21	1925.30	0.70	256.04	93.10	1924.91	-8.63	-8.47	-22.20	23.76	249.12	1.00	GyroTool	0
22	2018.40	0.50	114.57	93.10	2018.00	-8.93	-8.77	-22.38	24.04	248.60	1.22	GyroTool	0
23	2111.50	0.46	22.23	93.10	2111.10	-8.75	-8.60	-21.87	23.5	248.54	0.74	GyroTool	0
24	2257.00	0.40	98.69	145.50	2256.60	-8.28	-8.13	-21.15	22.66	248.97	0.37	Other	0
25	2450.00	0.22	68.32	193.00	2449.60	-8.24	-8.10	-20.14	21.71	248.10	0.12	Other	0
26	2544.00	0.22	78.91	94.00	2543.60	-8.14	-8.00	-19.80	21.35	248.00	0.04	Other	0
27	2639.00	0.22	77.73	95.00	2638.59	-8.06	-7.92	-19.44	20.99	247.83	0.00	Other	0
28	2734.00	0.31	62.70	95.00	2733.59	-7.90	-7.77	-19.03	20.55	247.80	0.12	Other	0
29	2828.00	0.31	83.00	94.00	2827.59	-7.75	-7.62	-18.55	20.06	247.68	0.12	Other	0
30	2923.00	0.31	91.70	95.00	2922.59	-7.72	-7.59	-18.04	19.57	247.17	0.05	Other	0
31	3018.00	0.31	108.80	95.00	3017.59	-7.81	-7.68	-17.54	19.15	246.34	0.10	Other	0
32	3113.00	0.31	125.32	95.00	3112.59	-8.04	-7.92	-17.09	18.83	245.14	0.09	Other	0
33	3207.00	0.31	128.31	94.00	3206.59	-8.34	-8.22	-16.68	18.6	243.77	0.02	Other	0
34	3302.00	0.40	137.40	95.00	3301.59	-8.74	-8.62	-16.25	18.4	242.05	0.11	Other	0
35	3397.00	0.40	137.01	95.00	3396.58	-9.22	-9.11	-15.80	18.24	240.04	0.00	Other	0
36	3493.00	0.40	130.51	96.00	3492.58	-9.68	-9.57	-15.32	18.07	238.00	0.05	Other	0
37	3588.00	0.48	136.00	95.00	3587.58	-10.18	-10.08	-14.79	17.9	235.74	0.10	Other	0
38	3683.00	0.48	133.32	95.00	3682.57	-10.74	-10.63	-14.23	17.76	233.22	0.02	Other	0
39	3778.00	0.62	143.03	95.00	3777.57	-11.42	-11.32	-13.63	17.72	230.29	0.18	Other	0
40	3873.00	0.70	140.39	95.00	3872.56	-12.27	-12.18	-12.95	17.77	226.76	0.09	Other	0
41	3967.00	0.70	141.32	94.00	3966.56	-13.15	-13.07	-12.22	17.89	223.09	0.01	Other	0
42	4063.00	0.70	137.89	96.00	4062.55	-14.04	-13.96	-11.46	18.06	219.40	0.04	Other	0
43	4158.00	0.62	137.71	95.00	4157.54	-14.85	-14.77	-10.73	18.26	216.00	0.08	Other	0
44	4253.00	0.70	147.12	95.00	4252.54	-15.71	-15.64	-10.07	18.6	212.78	0.14	Other	0
45	4348.00	0.62	149.01	95.00	4347.53	-16.63	-16.57	-9.49	19.09	209.80	0.09	Other	0
46	4443.00	0.70	161.00	95.00	4442.52	-17.62	-17.55	-9.04	19.74	207.23	0.17	Other	0
47	4538.00	0.70	177.39	95.00	4537.52	-18.75	-18.68	-8.82	20.66	205.27	0.21	Other	0
48	4633.00	0.79	177.13	95.00	4632.51	-19.98	-19.92	-8.76	21.76	203.74	0.09	Other	0
49	4728.00	0.79	173.00	95.00	4727.50	-21.28	-21.22	-8.65	22.92	202.17	0.06	Other	0
50	4823.00	1.01	167.51	95.00	4822.49	-22.75	-22.69	-8.39	24.19	200.29	0.25	Other	0
51	4918.00	1.10	174.10	95.00	4917.47	-24.47	-24.41	-8.11	25.73	198.38	0.16	Other	0
52	5013.00	1.19	174.63	95.00	5012.45	-26.36	-26.30	-7.93	27.47	196.77	0.10	Other	0
53	5108.00	1.19	173.53	95.00	5107.43	-28.32	-28.26	-7.72	29.3	195.28	0.02	Other	0
54	5203.00	1.32	178.80	95.00	5202.41	-30.39	-30.34	-7.59	31.27	194.04	0.18	Other	0
55	5298.00	1.32	181.70	95.00	5297.38	-32.58	-32.53	-7.60	33.4	193.15	0.07	Other	0
56	5392.00	1.41	178.32	94.00	5391.36	-34.82	-34.76	-7.60	35.59	192.33	0.13	Other	0
57	5488.00	1.19	183.50	96.00	5487.33	-36.99	-36.94	-7.62	37.72	191.66	0.26	Other	0
58	5583.00	1.32	186.71	95.00	5582.31	-39.07	-39.01	-7.81	39.79	191.32	0.16	Other	0
59	5678.00	1.32	189.30	95.00	5677.29	-41.24	-41.18	-8.12	41.97	191.15	0.06	Other	0
60	5774.00	1.41	198.23	96.00	5773.26	-43.45	-43.39	-8.66	44.25	191.29	0.24	Other	0
61	5869.00	1.58	216.10	95.00	5868.23	-45.63	-45.56	-9.80	46.6	192.14	0.52	Other	0
62	5963.00	1.58	226.79	94.00	5962.19	-47.58	-47.49	-11.51	48.87	193.62	0.31	Other	0
63	6059.00	1.80	232.90	96.00	6058.15	-49.41	-49.31	-13.68	51.17	195.50	0.30	Other	0
64	6154.00	2.02	220.59	95.00	6153.10	-51.59	-51.48	-15.96	53.9	197.22	0.49	Other	0
65	6249.00	1.80	215.32	95.00	6248.04	-54.10	-53.97	-17.91	56.86	198.36	0.30	Other	0

66	6342.00	1.89	204.11	93.00	6341.00	-56.70	-56.56	-19.38	59.79	198.91	0.40	Other	0
67	6437.00	2.11	204.03	95.00	6435.94	-59.74	-59.59	-20.73	63.09	199.18	0.23	Other	0
68	6532.00	2.29	210.62	95.00	6530.87	-62.98	-62.82	-22.41	66.7	199.63	0.33	Other	0
69	6628.00	2.20	217.69	96.00	6626.79	-66.10	-65.93	-24.51	70.34	200.40	0.30	Other	0
70	6723.00	2.42	220.99	95.00	6721.72	-69.08	-68.89	-26.94	73.97	201.36	0.27	Other	0
71	6818.00	2.42	222.79	95.00	6816.63	-72.08	-71.87	-29.62	77.74	202.40	0.08	Other	-1
72	6867.00	2.42	220.81	49.00	6865.59	-73.63	-73.41	-31.00	79.69	202.89	0.17	Other	0
73	6912.00	2.36	220.06	45.00	6910.55	-75.07	-74.84	-32.22	81.48	203.29	0.15	SlimpPulse	0
74	6943.00	1.69	211.57	31.00	6941.53	-75.95	-75.72	-32.87	82.55	203.46	2.38	SlimpPulse	0
75	6975.00	1.15	215.49	32.00	6973.52	-76.62	-76.38	-33.30	83.33	203.56	1.69	SlimpPulse	0
76	7022.00	0.62	318.12	47.00	7020.52	-76.82	-76.58	-33.75	83.68	203.78	3.03	SlimpPulse	0
77	7054.00	3.92	350.69	32.00	7052.49	-75.61	-75.37	-34.04	82.7	204.31	10.68	SlimpPulse	0
78	7085.00	8.00	351.42	31.00	7083.31	-72.43	-72.19	-34.53	80.02	205.57	13.15	SlimpPulse	0
79	7117.00	12.31	353.78	32.00	7114.81	-66.84	-66.59	-35.23	75.34	207.88	13.53	SlimpPulse	0
80	7148.00	16.51	353.61	31.00	7144.82	-59.18	-58.92	-36.08	69.1	211.48	13.56	SlimpPulse	0
81	7180.00	20.87	352.99	32.00	7175.15	-49.01	-48.74	-37.29	61.37	217.41	13.62	SlimpPulse	0
82	7211.00	25.15	349.76	31.00	7203.66	-37.05	-36.78	-39.13	53.7	226.78	14.41	SlimpPulse	0
83	7243.00	29.91	347.16	32.00	7232.03	-22.60	-22.30	-42.12	47.65	242.10	15.35	SlimpPulse	0
84	7275.00	32.00	345.32	32.00	7259.47	-6.64	-6.31	-46.04	46.47	262.20	7.16	SlimpPulse	0
85	7307.00	33.37	345.05	32.00	7286.40	10.03	10.40	-50.46	51.52	281.64	4.29	SlimpPulse	0
86	7338.00	35.83	345.61	31.00	7311.91	27.03	27.43	-54.91	61.38	296.54	8.02	SlimpPulse	0
87	7369.00	37.53	344.87	31.00	7336.77	44.90	45.33	-59.63	74.91	307.24	5.65	SlimpPulse	0
88	7401.00	39.40	341.58	32.00	7361.83	63.91	64.38	-65.39	91.76	314.56	8.67	SlimpPulse	0
89	7433.00	43.58	340.08	32.00	7385.79	83.88	84.40	-72.36	111.17	319.39	13.41	SlimpPulse	0
90	7462.00	47.57	338.54	29.00	7406.09	103.19	103.76	-79.68	130.83	322.48	14.27	SlimpPulse	0
91	7497.00	52.83	338.11	35.00	7428.48	128.10	128.74	-89.61	156.86	325.16	15.06	SlimpPulse	0
92	7529.00	56.54	338.71	32.00	7466.98	152.31	153.02	-99.22	182.37	327.04	11.68	SlimpPulse	0
93	7560.00	59.62	338.15	31.00	7463.37	176.70	177.49	-108.89	208.23	328.47	10.07	SlimpPulse	0
94	7592.00	64.60	338.58	32.00	7478.33	202.91	203.77	-119.31	236.13	329.65	15.59	SlimpPulse	0
95	7623.00	69.52	337.96	31.00	7500.41	229.34	230.28	-129.88	264.38	331.40	15.99	SlimpPulse	0
96	7655.00	74.33	339.23	32.00	7530.93	257.58	258.59	-140.98	294.53	331.40	15.49	SlimpPulse	0
97	7686.00	79.34	342.11	31.00	7507.39	285.98	287.07	-150.96	324.34	332.26	18.52	SlimpPulse	0
98	7718.00	82.51	343.36	32.00	7512.44	316.09	317.24	-160.33	355.45	333.19	10.65	SlimpPulse	0
99	7749.00	83.97	343.93	31.00	7516.09	345.56	346.78	-169.00	385.77	334.02	5.04	SlimpPulse	0
100	7781.00	87.49	344.10	32.00	7518.47	376.17	377.45	-177.78	417.23	334.78	11.01	SlimpPulse	0
101	7814.00	89.42	344.32	33.00	7519.36	407.85	409.19	-186.76	449.8	335.47	5.88	SlimpPulse	0
102	7842.00	90.72	345.88	28.00	7519.33	434.85	436.25	-193.96	477.42	336.03	7.26	SlimpPulse	0
103	7869.00	87.39	302	32.00	7520.30	560.79	562.27	-204.65	530.30	338.82	15.06	SlimpPulse	0
104	7899.00	86.77	4.97	60.00	7523.36	620.59	622.04	-200.48	558.35	340.00	10.78	SlimpPulse	0
105	8029.00	86.77	4.42	97.00	7523.36	717.19	718.58	-192.55	743.93	342.14	3.41	SlimpPulse	0
106	8126.00	87.32	4.25	95.00	7523.70	811.87	813.21	-185.37	834.07	347.16	0.23	SlimpPulse	0
107	8221.00	87.46	4.33	94.00	7536.90	905.59	906.89	-178.81	924.35	348.85	0.52	SlimpPulse	0
108	8315.00	87.42	3.76	94.00	7541.23	1000.36	1001.62	-173.15	1016.48	350.19	0.72	SlimpPulse	0
109	8410.00	87.35	3.08	95.00	7546.52	1307.83	1308.98	-156.39	1318.29	353.19	2.70	SlimpPulse	0
110	8506.00	87.39	2.48	96.00	7549.39	1696.17	1697.41	-168.50	1710.27	351.27	0.63	SlimpPulse	0
111	8633.00	88.93	3.26	117.00	7549.39	1213.00	1214.20	-162.65	1225.04	352.37	1.48	SlimpPulse	0
112	8718.00	91.27	4.30	95.00	7549.52	1407.83	1409.67	-149.12	1411.56	353.94	0.68	SlimpPulse	0
113	8813.00	91.89	4.49	95.00	7549.52	1685.83	1686.80	-128.76	1691.71	355.63	1.07	SlimpPulse	0
114	8907.00	91.75	4.11	94.00	7543.60	1486.30	1489.35	-142.07	1504.08	354.58	0.43	SlimpPulse	0
115	9002.00	91.38	3.93	95.00	7541.90	1591.07	1592.08	-135.41	1597.83	355.14	0.44	SlimpPulse	0
116	9097.00	92.37	4.11	95.00	7537.90	1685.83	1686.80	-128.76	1691.71	355.63	1.07	SlimpPulse	0
117	9192.00	92.34	4.21	95.00	7533.59	1780.55	1781.47	-121.87	1785.63	356.09	0.11	SlimpPulse	0
118	9287.00	92.06	4.03	95.00	7530.34	1875.28	1876.15	-115.05	1879.68	356.49	0.35	SlimpPulse	0
119	9382.00	91.79	4.09	95.00	7527.14	1970.03	1970.86	-108.33	1973.84	356.85	0.30	SlimpPulse	0
120	9478.00	91.38	4.20	96.00	7524.49	2065.79	2066.57	-101.38	2068.06	357.19	0.45	SlimpPulse	0
121	9573.00	91.07	4.26	95.00	7522.47	2160.56	2161.29	-94.37	2163.35	357.50	0.33	SlimpPulse	0
122	9667.00	90.69	4.33	94.00	7521.03	2254.33	2255.02	-87.33	2256.71	357.78	0.41	SlimpPulse	0
123	9763.00	90.41	4.52	96.00	7520.11	2350.09	2350.73	-79.92	2352.09	358.05	0.34	SlimpPulse	0
124	9858.00	90.31	4.54	95.00	7519.51	2444.85	2445.43	-72.42	2446.5	358.30	0.11	SlimpPulse	0
125	9953.00	89.97	4.57	95.00	7519.28	2539.60	2540.13	-64.87	2540.95	358.54	0.36	SlimpPulse	0
126	10047.00	90.86	3.46	94.00	7518.60	2633.41	2633.89	-58.28	2634.53	358.73	1.52	SlimpPulse	0
127	10142.00	90.34	2.74	95.00	7517.60	2728.29	2728.74	-53.14	2729.26	358.88	0.94	SlimpPulse	0
128	10237.00	90.03	3.38	95.00	7517.29	2823.19	2823.61	-48.07	2824.02	359.02	0.75	SlimpPulse	0
129	10332.00	89.66	3.24	95.00	7517.55	2918.07	2918.45	-42.58	2918.76	359.16	0.42	SlimpPulse	0
130	10428.00	89.28	3.54	96.00	7518.44	3013.93	3014.28	-36.91	3014.5	359.30	0.50	SlimpPulse	0
131	10523.00	89.07	2.96	95.00	7519.81	3108.81	3109.11	-31.52	3109.27	359.42	0.64	SlimpPulse	0
132	10618.00	90.62	2.42	95.00	7520.07	3203.73	3204.00	-27.06	3204.12	359.52	1.72	SlimpPulse	0
133	10713.00	90.38	3.04	95.00	7519.24	3298.65	3298.89	-22.53	3298.97	359.61	0.70	SlimpPulse	0
134	10804.00	90.17	2.95	95.00	7518.79	3393.55	3393.76	-17.58	3393.81	359.70	0.24	SlimpPulse	0
135	10908.00	89.42	2.80	96.00	7519.13	3489.46	3489.64	-12.76	3489.66	359.79	0.80	SlimpPulse	0
136	10999.00	88.62	3.00	95.00	7520.76	3584.35	3584.51	-7.96	3584.51	359.87	0.86	SlimpPulse	0
137	11093.00	88.93	2.05	94.00	7522.76	3678.27	3678.39	-3.81	3678.39	359.94	1.07	SlimpPulse	0
138	11162.00	89.97	2.08	69.00	7522.65	3747.24	3747.34	-1.33	3747.34	359.98	1.50	SlimpPulse	0
139	11257.00	90.96	2.60	95.00	7522.65	3842.18	3842.26	2.55	3842.26	0.04	1.18	SlimpPulse	0
140	11355.00	90.96	2.96	95.00	7521.06	3937.08	3937.13	7.16	3937.14	0.10	0.38	SlimpPulse	0
141	11447.00	90.86	3.09	95.00	7519.54	4031.97	4031.99	12.17	4032.01	0.17	0.18	SlimpPulse	0
142	11540.00	90.48	2.97	93.00	7518.46	4124.87	4124.85	17.09	4124.89	0.24	0.43	SlimpPulse	0
143	11635.00	90.41	3.52	92.00	7517.72	4219.75	4219.75	22.47	4219.75	0.31	0.58	SlimpPulse	0
144	11732.00	90.62	3.66	97.00	7516.84	4316.59	4316.50	28.54	4316.59	0.38	0.25	SlimpPulse	0
145	11826.00	92.34	2.41	94.00	7514.42	4410.46	4410.33	33.52	4410.46	0.44	2.26	SlimpPulse	0
146	11922.00	92.27	1.99	96.00	7510.55	4506.33	4506.18	37.20	4506.34	0.47	0.44	SlimpPulse	0
147	12015.00	91.86	2.01	93.00	7507.21	4599.07	4599.18	40.45	4599.24	0.50	0.65	SlimpPulse	0
148	12092.00	92.34	2.96	77.00	7504.39	4676.13	4675.94	43.79	4676.15	0.54	1.38	SlimpPulse	0
149	12145.00	92.34	2.96	53.00	7502.22	4729.04	4728.83	46.52	4729.05	0.56	0.00	Other	7