



FEB 18 2014

Cimarex Red Hills Unit #12H Rev1 TP 3-Jan-14 Proposal Report
(Non-Def Plan)

Report Date: January 03, 2014 - 12:56 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Red Hills Unit #12H / Red Hills Unit #12H
Well: Red Hills Unit #12H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Red Hills Unit #12H Rev1 TP 3-Jan-14
Survey Date: August 22, 2013
Tort / AHD / DDI / ERD Ratio: 90.000 ° / 4867.805 ft / 5.810 / 0.493
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 5' 37.96885", W 103° 35' 54.69648"
Location Grid N/E Y/X: N 398665.500 ftUS, E 768889.100 ftUS
CRS Grid Convergence Angle: 0.3904 °
Grid Scale Factor: 0.9999684

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 169.453 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3403.000 ft above MSL
Seabed / Ground Elevation: 3403.000 ft above MSL
Magnetic Declination: 7.423 °
Total Field Strength: 48304.772 nT
Magnetic Dip Angle: -59.994 °
Declination Date: January 03, 2014
Magnetic Declination Model: BGM 2013
North Reference: Grid North
Grid Convergence Used: 0.3910 °
Total Corr Mag North->Grid North: 7.0317 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
SHL	0.00	0.00	169.45	0.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	N/A
	100.00	0.00	169.45	100.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	200.00	0.00	169.45	200.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	300.00	0.00	169.45	300.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	400.00	0.00	169.45	400.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	500.00	0.00	169.45	500.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	600.00	0.00	169.45	600.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	700.00	0.00	169.45	700.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	800.00	0.00	169.45	800.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	900.00	0.00	169.45	900.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1000.00	0.00	169.45	1000.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1100.00	0.00	169.45	1100.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1200.00	0.00	169.45	1200.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1300.00	0.00	169.45	1300.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1400.00	0.00	169.45	1400.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1500.00	0.00	169.45	1500.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1600.00	0.00	169.45	1600.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1700.00	0.00	169.45	1700.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1800.00	0.00	169.45	1800.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	1900.00	0.00	169.45	1900.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2000.00	0.00	169.45	2000.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2100.00	0.00	169.45	2100.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2200.00	0.00	169.45	2200.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2300.00	0.00	169.45	2300.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2400.00	0.00	169.45	2400.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2500.00	0.00	169.45	2500.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2600.00	0.00	169.45	2600.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2700.00	0.00	169.45	2700.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2800.00	0.00	169.45	2800.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	2900.00	0.00	169.45	2900.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	3000.00	0.00	169.45	3000.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	3100.00	0.00	169.45	3100.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00
	3200.00	0.00	169.45	3200.00	0.00	0.00	0.00	398665.50	768889.10	N 32° 5' 37.97"	W 103° 35' 54.70"	0.00	0.00	0.00

Comments	MD (ft)	Incl (°)	Azim Grd (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)	Closure (ft)	Closure Azimuth (°)	DLS (ft/100ft)
	8700.00	0.00	169.45	8700.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
	8800.00	0.00	169.45	8800.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
	8900.00	0.00	169.45	8900.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
	9000.00	0.00	169.45	9000.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
Avalon Shale	9080.00	0.00	169.45	9080.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
	9100.00	0.00	169.45	9100.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
	9200.00	0.00	169.45	9200.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
	9300.00	0.00	169.45	9300.00	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
KOP, Build 12" DLS	9397.54	0.00	169.45	9397.54	0.00	0.00	0.00	398665.50	768889.10	N 32 5 37.97	W 103 35 54.70	0.00	0.00	0.00
	9400.00	0.30	169.45	9400.00	0.01	-0.01	0.00	398665.49	768889.10	N 32 5 37.97	W 103 35 54.70	0.01	169.45	12.00
	9500.00	12.30	169.45	9499.22	10.95	-10.77	2.00	398654.73	768891.10	N 32 5 37.86	W 103 35 54.67	10.95	169.45	12.00
	9600.00	24.30	169.45	9593.99	42.29	-41.57	7.74	398623.93	768896.84	N 32 5 37.55	W 103 35 54.61	42.29	169.45	12.00
	9700.00	36.30	169.45	9680.17	92.64	-91.08	16.96	398574.43	768906.06	N 32 5 37.06	W 103 35 54.51	92.64	169.45	12.00
	9800.00	48.30	169.45	9754.01	159.81	-157.11	29.25	398508.39	768918.35	N 32 5 36.41	W 103 35 54.37	159.81	169.45	12.00
	9900.00	60.30	169.45	9812.26	240.87	-236.80	44.09	398428.71	768933.19	N 32 5 35.62	W 103 35 54.20	240.87	169.45	12.00
	10000.00	72.30	169.45	9852.39	332.27	-326.65	60.82	398338.86	768949.92	N 32 5 34.73	W 103 35 54.02	332.27	169.45	12.00
	10100.00	84.30	169.45	9872.64	430.01	-422.74	78.71	398242.77	768967.81	N 32 5 33.78	W 103 35 53.82	430.01	169.45	12.00
Landing Point	10147.54	90.00	169.45	9875.00	477.46	-469.40	87.40	398196.12	768976.49	N 32 5 33.32	W 103 35 53.72	477.46	169.45	12.00
	10200.00	90.00	169.45	9875.00	529.93	-520.98	97.00	398144.54	768986.10	N 32 5 32.81	W 103 35 53.61	529.93	169.45	0.00
	10300.00	90.00	169.45	9875.00	629.93	-619.29	115.31	398046.23	769004.40	N 32 5 31.83	W 103 35 53.41	629.93	169.45	0.00
	10400.00	90.00	169.45	9875.00	729.93	-717.60	133.61	397947.93	769022.71	N 32 5 30.86	W 103 35 53.20	729.93	169.45	0.00
	10500.00	90.00	169.45	9875.00	829.93	-815.91	151.91	397849.62	769041.01	N 32 5 29.88	W 103 35 53.00	829.93	169.45	0.00
	10600.00	90.00	169.45	9875.00	929.93	-914.22	170.22	397751.31	769059.31	N 32 5 28.91	W 103 35 52.79	929.93	169.45	0.00
	10700.00	90.00	169.45	9875.00	1029.93	-1012.53	188.52	397653.01	769077.62	N 32 5 27.94	W 103 35 52.59	1029.93	169.45	0.00
	10800.00	90.00	169.45	9875.00	1129.93	-1110.84	206.83	397554.70	769095.92	N 32 5 26.96	W 103 35 52.38	1129.93	169.45	0.00
	10900.00	90.00	169.45	9875.00	1229.93	-1209.15	225.13	397456.39	769114.23	N 32 5 25.99	W 103 35 52.18	1229.93	169.45	0.00
	11000.00	90.00	169.45	9875.00	1329.93	-1307.46	243.44	397358.08	769132.53	N 32 5 25.01	W 103 35 51.97	1329.93	169.45	0.00
	11100.00	90.00	169.45	9875.00	1429.93	-1405.77	261.74	397259.78	769150.83	N 32 5 24.04	W 103 35 51.77	1429.93	169.45	0.00
	11200.00	90.00	169.45	9875.00	1529.93	-1504.08	280.05	397161.47	769169.14	N 32 5 23.06	W 103 35 51.56	1529.93	169.45	0.00
	11300.00	90.00	169.45	9875.00	1629.93	-1602.39	298.35	397063.16	769187.44	N 32 5 22.09	W 103 35 51.36	1629.93	169.45	0.00
	11400.00	90.00	169.45	9875.00	1729.93	-1700.70	316.66	396964.86	769205.75	N 32 5 21.12	W 103 35 51.15	1729.93	169.45	0.00
	11500.00	90.00	169.45	9875.00	1829.93	-1799.01	334.96	396866.55	769224.05	N 32 5 20.14	W 103 35 50.95	1829.93	169.45	0.00
	11600.00	90.00	169.45	9875.00	1929.93	-1897.32	353.26	396768.24	769242.35	N 32 5 19.17	W 103 35 50.74	1929.93	169.45	0.00
	11700.00	90.00	169.45	9875.00	2029.93	-1995.63	371.57	396669.93	769260.66	N 32 5 18.19	W 103 35 50.54	2029.93	169.45	0.00
	11800.00	90.00	169.45	9875.00	2129.93	-2093.94	389.87	396571.63	769278.96	N 32 5 17.22	W 103 35 50.33	2129.93	169.45	0.00
	11900.00	90.00	169.45	9875.00	2229.93	-2192.25	408.18	396473.32	769297.26	N 32 5 16.25	W 103 35 50.13	2229.93	169.45	0.00
	12000.00	90.00	169.45	9875.00	2329.93	-2290.56	426.48	396375.01	769315.57	N 32 5 15.27	W 103 35 49.92	2329.93	169.45	0.00
	12100.00	90.00	169.45	9875.00	2429.93	-2388.87	444.79	396276.71	769333.87	N 32 5 14.30	W 103 35 49.72	2429.93	169.45	0.00
	12200.00	90.00	169.45	9875.00	2529.93	-2487.19	463.09	396178.40	769352.18	N 32 5 13.32	W 103 35 49.51	2529.93	169.45	0.00
	12300.00	90.00	169.45	9875.00	2629.93	-2585.50	481.40	396080.09	769370.48	N 32 5 12.35	W 103 35 49.31	2629.93	169.45	0.00
	12400.00	90.00	169.45	9875.00	2729.93	-2683.81	499.70	395981.78	769388.78	N 32 5 11.38	W 103 35 49.10	2729.93	169.45	0.00
	12500.00	90.00	169.45	9875.00	2829.93	-2782.12	518.01	395883.48	769407.09	N 32 5 10.40	W 103 35 48.90	2829.93	169.45	0.00
	12600.00	90.00	169.45	9875.00	2929.93	-2880.43	536.31	395785.17	769425.39	N 32 5 9.43	W 103 35 48.69	2929.93	169.45	0.00
	12700.00	90.00	169.45	9875.00	3029.93	-2978.74	554.62	395686.86	769443.70	N 32 5 8.45	W 103 35 48.49	3029.93	169.45	0.00
	12800.00	90.00	169.45	9875.00	3129.93	-3077.05	572.92	395588.56	769462.00	N 32 5 7.48	W 103 35 48.28	3129.93	169.45	0.00
	12900.00	90.00	169.45	9875.00	3229.93	-3175.36	591.22	395490.25	769480.30	N 32 5 6.51	W 103 35 48.08	3229.93	169.45	0.00
	13000.00	90.00	169.45	9875.00	3329.93	-3273.67	609.53	395391.94	769498.61	N 32 5 5.53	W 103 35 47.87	3329.93	169.45	0.00
	13100.00	90.00	169.45	9875.00	3429.93	-3371.98	627.83	395293.63	769516.91	N 32 5 4.56	W 103 35 47.67	3429.93	169.45	0.00
	13200.00	90.00	169.45	9875.00	3529.93	-3470.29	646.14	395195.33	769535.22	N 32 5 3.58	W 103 35 47.46	3529.93	169.45	0.00
	13300.00	90.00	169.45	9875.00	3629.93	-3568.60	664.44	395097.02	769553.52	N 32 5 2.61	W 103 35 47.26	3629.93	169.45	0.00
	13400.00	90.00	169.45	9875.00	3729.93	-3666.91	682.75	394998.71	769571.82	N 32 5 1.64	W 103 35 47.05	3729.93	169.45	0.00
	13500.00	90.00	169.45	9875.00	3829.93	-3765.22	701.05	394900.41	769590.13	N 32 5 0.66	W 103 35 46.85	3829.93	169.45	0.00
	13600.00	90.00	169.45	9875.00	3929.93	-3863.53	719.36	394802.10	769608.43	N 32 4 59.69	W 103 35 46.64	3929.93	169.45	0.00
	13700.00	90.00	169.45	9875.00	4029.93	-3961.84	737.66	394703.79	769626.74	N 32 4 58.71	W 103 35 46.44	4029.93	169.45	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')		Longitude (E/W ° ' '')		Closure (ft)	Closure Azimuth (°)	DLS ("/100ft)
	13800.00	90.00	169.45	9875.00	4129.93	-4060.15	755.97	394605.48	769645.04	N 32	4 57.74	W 103 35 48.23		4129.93	169.45	0.00
	13900.00	90.00	169.45	9875.00	4229.93	-4158.46	774.27	394507.18	769663.34	N 32	4 56.77	W 103 35 46.03		4229.93	169.45	0.00
	14000.00	90.00	169.45	9875.00	4329.93	-4256.77	792.57	394408.87	769681.65	N 32	4 55.79	W 103 35 45.82		4329.93	169.45	0.00
	14100.00	90.00	169.45	9875.00	4429.93	-4355.08	810.88	394310.56	769699.95	N 32	4 54.82	W 103 35 45.62		4429.93	169.45	0.00
	14200.00	90.00	169.45	9875.00	4529.93	-4453.39	829.18	394212.26	769718.26	N 32	4 53.84	W 103 35 45.41		4529.93	169.45	0.00
	14300.00	90.00	169.45	9875.00	4629.93	-4551.70	847.49	394113.95	769736.56	N 32	4 52.87	W 103 35 45.21		4629.93	169.45	0.00
	14400.00	90.00	169.45	9875.00	4729.93	-4650.01	865.79	394016.64	769754.86	N 32	4 51.90	W 103 35 45.00		4729.93	169.45	0.00
	14500.00	90.00	169.45	9875.00	4829.93	-4748.33	884.10	393917.33	769773.17	N 32	4 50.92	W 103 35 44.80		4829.93	169.45	0.00
Cimarex Red Hills Unit #12H PBHL	14537.88	90.00	169.45	9875.00	4867.81	-4785.56	891.03	393880.10	769780.10	N 32	4 50.55	W 103 35 44.72		4867.81	169.45	0.00

Survey Type: Non-Def Plan

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	14537.875	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Red Hills Unit #12H Rev1 TP 3-Jan-14