

Cimarex Canyonlands 2 State Com 2H Rev0 RM 10Apr18 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: April 13, 2018 - 08:21 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Canyonlands 2 State Com 2H / Cimarex Canyonlands 2 State Com 2H
Well: Cimarex Canyonlands 2 State Com 2H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Canyonlands 2 State Com 2H Rev0 RM 10Apr18
Survey Date: April 10, 2018
Tort / AHD / DDI / ERD Ratio: 107.940 ° / 5241.692 ft / 5.890 / 0.440
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 14' 25.30017", W 103° 26' 7.60538"
Location Grid N/E Y/X: N 452337.390 ftUS, E 818948.260 ftUS
CRS Grid Convergence Angle: 0.4790 °
Grid Scale Factor: 0.99999736
Version / Patch: 2.10.715.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 359.297 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3451.900 ft above MSL
Seabed / Ground Elevation: 3425.900 ft above MSL
Magnetic Declination: 6.757 °
Total Gravity Field Strength: 998.4631mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48052.966 nT
Magnetic Dip Angle: 59.975 °
Declination Date: April 10, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.4790 °
Total Corr Mag North->Grid North: 6.2784 °
Local Coord Referenced To: Structure Reference Point

APR 25 2018

RECEIVED

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [390' FSL, 1000' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
100.00	0.00	95.27	100.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
200.00	0.00	95.27	200.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
300.00	0.00	95.27	300.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
400.00	0.00	95.27	400.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
500.00	0.00	95.27	500.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
600.00	0.00	95.27	600.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
700.00	0.00	95.27	700.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
800.00	0.00	95.27	800.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
900.00	0.00	95.27	900.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
Rustler	990.00	0.00	95.27	990.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
1000.00	0.00	95.27	1000.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
1100.00	0.00	95.27	1100.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
Top of Salt	1200.00	0.00	95.27	1200.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
1300.00	0.00	95.27	1300.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
1400.00	0.00	95.27	1400.00	0.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
Nudge 2"/100' DLS	1500.00	0.00	95.27	1500.00	0.00	0.00	0.00	0.00	452337.39	818948.26	N 32 14 25.30 W 103 26	7.61
1600.00	2.00	95.27	1599.98	-0.18	-0.16	-0.16	1.74	2.00	452337.23	818950.00	N 32 14 25.30 W 103 26	7.59
1700.00	4.00	95.27	1699.84	-0.73	-0.64	-0.64	6.95	2.00	452336.75	818955.21	N 32 14 25.29 W 103 26	7.52
1800.00	6.00	95.27	1799.45	-1.63	-1.44	-1.44	15.63	2.00	452335.95	818963.89	N 32 14 25.28 W 103 26	7.42
Hold Nudge	1819.45	6.39	95.27	1818.78	-1.85	-1.63	17.72	2.00	452335.76	818965.98	N 32 14 25.28 W 103 26	7.40
1900.00	6.39	95.27	1898.84	-2.78	-2.46	-2.46	26.64	0.00	452334.93	818974.90	N 32 14 25.27 W 103 26	7.30
2000.00	6.39	95.27	1998.22	-3.94	-3.48	-3.48	37.72	0.00	452333.91	818985.98	N 32 14 25.26 W 103 26	7.17
2100.00	6.39	95.27	2097.60	-5.10	-4.50	-4.50	48.80	0.00	452332.89	818997.06	N 32 14 25.25 W 103 26	7.04
2200.00	6.39	95.27	2196.97	-6.25	-5.52	-5.52	59.88	0.00	452331.87	819008.14	N 32 14 25.24 W 103 26	6.91
2300.00	6.39	95.27	2296.35	-7.41	-6.54	-6.54	70.97	0.00	452330.85	819019.23	N 32 14 25.23 W 103 26	6.78
2400.00	6.39	95.27	2395.73	-8.57	-7.56	-7.56	82.05	0.00	452329.83	819030.31	N 32 14 25.22 W 103 26	6.65
2500.00	6.39	95.27	2495.11	-9.72	-8.58	-8.58	93.13	0.00	452328.81	819041.39	N 32 14 25.21 W 103 26	6.52
2600.00	6.39	95.27	2594.49	-10.88	-9.60	-9.60	104.21	0.00	452327.79	819052.47	N 32 14 25.20 W 103 26	6.39
2700.00	6.39	95.27	2693.87	-12.04	-10.62	-10.62	115.29	0.00	452326.77	819063.55	N 32 14 25.19 W 103 26	6.26
2800.00	6.39	95.27	2793.25	-13.19	-11.65	-11.65	126.37	0.00	452325.75	819074.63	N 32 14 25.17 W 103 26	6.14
2900.00	6.39	95.27	2892.63	-14.35	-12.67	-12.67	137.45	0.00	452324.72	819085.71	N 32 14 25.16 W 103 26	6.01
3000.00	6.39	95.27	2992.01	-15.51	-13.69	-13.69	148.53	0.00	452323.70	819096.79	N 32 14 25.15 W 103 26	5.88
3100.00	6.39	95.27	3091.39	-16.67	-14.71	-14.71	159.61	0.00	452322.68	819107.87	N 32 14 25.14 W 103 26	5.75
3200.00	6.39	95.27	3190.76	-17.82	-15.73	-15.73	170.69	0.00	452321.66	819118.95	N 32 14 25.13 W 103 26	5.62
3300.00	6.39	95.27	3290.14	-18.98	-16.75	-16.75	181.77	0.00	452320.64	819130.03	N 32 14 25.12 W 103 26	5.49
3400.00	6.39	95.27	3389.52	-20.14	-17.77	-17.77	192.85	0.00	452319.62	819141.11	N 32 14 25.11 W 103 26	5.36
3500.00	6.39	95.27	3488.90	-21.29	-18.79	-18.79	203.93	0.00	452318.60	819152.19	N 32 14 25.10 W 103 26	5.23
3600.00	6.39	95.27	3588.28	-22.45	-19.81	-19.81	215.01	0.00	452317.58	819163.27	N 32 14 25.09 W 103 26	5.10
3700.00	6.39	95.27	3687.66	-23.61	-20.83	-20.83	226.10	0.00	452316.56	819174.35	N 32 14 25.08 W 103 26	4.98
3800.00	6.39	95.27	3787.04	-24.76	-21.86	-21.86	237.18	0.00	452315.53	819185.43	N 32 14 25.06 W 103 26	4.85
3900.00	6.39	95.27	3886.42	-25.92	-22.88	-22.88	248.26	0.00	452314.51	819196.52	N 32 14 25.05 W 103 26	4.72
4000.00	6.39	95.27	3985.80	-27.08	-23.90	-23.90	259.34	0.00	452313.49	819207.60	N 32 14 25.04 W 103 26	4.59
4100.00	6.39	95.27	4085.18	-28.24	-24.92	-24.92	270.42	0.00	452312.47	819218.68	N 32 14 25.03 W 103 26	4.46
4200.00	6.39	95.27	4184.55	-29.39	-25.94	-25.94	281.50	0.00	452311.45	819229.76	N 32 14 25.02 W 103 26	4.33
4300.00	6.39	95.27	4283.93	-30.55	-26.96	-26.96	292.58	0.00	452310.43	819240.84	N 32 14 25.01 W 103 26	4.20
4400.00	6.39	95.27	4383.31	-31.71	-27.98	-27.98	303.66	0.00	452309.41	819251.92	N 32 14 25.00 W 103 26	4.07
4500.00	6.39	95.27	4482.69	-32.86	-29.00	-29.00	314.74	0.00	452308.39	819263.00	N 32 14 24.99 W 103 26	3.94
4600.00	6.39	95.27	4582.07	-34.02	-30.02	-30.02	325.82	0.00	452307.37	819274.08	N 32 14 24.98 W 103 26	3.81
4700.00	6.39	95.27	4681.45	-35.18	-31.05	-31.05	336.90	0.00	452306.34	819285.16	N 32 14 24.97 W 103 26	3.69
Base of Salt	4800.00	6.39	95.27	4780.83	-36.33	-32.07	347.98	0.00	452305.32	819296.24	N 32 14 24.95 W 103 26	3.56
4894.76	6.39	95.27	4875.00	-37.43	-33.03	-33.03	358.48	0.00	452304.36	819306.74	N 32 14 24.94 W 103 26	3.44
4900.00	6.39	95.27	4880.21	-37.49	-33.09	-33.09	359.06	0.00	452304.30	819307.32	N 32 14 24.94 W 103 26	3.43
5000.00	6.39	95.27	4979.59	-38.65	-34.11	-34.11	370.14	0.00	452303.28	819318.40	N 32 14 24.93 W 103 26	3.30
5100.00	6.39	95.27	5078.96	-39.81	-35.13	-35.13	381.22	0.00	452302.26	819329.48	N 32 14 24.92 W 103 26	3.17
5200.00	6.39	95.27	5178.34	-40.96	-36.15	-36.15	392.31	0.00	452301.24	819340.56	N 32 14 24.91 W 103 26	3.04
Lamar	5201.67	6.39	95.27	5180.00	-40.98	-36.17	392.49	0.00	452301.22	819340.75	N 32 14 24.91 W 103 26	3.04
Bell Canyon	5262.04	6.39	95.27	5240.00	-41.68	-36.78	399.18	0.00	452300.61	819347.44	N 32 14 24.90 W 103 26	2.96
5300.00	6.39	95.27	5277.72	-42.12	-37.17	-37.17	403.39	0.00	452300.22	819351.64	N 32 14 24.90 W 103 26	2.91
5400.00	6.39	95.27	5377.10	-43.28	-38.19	-38.19	414.47	0.00	452299.20	819362.73	N 32 14 24.89 W 103 26	2.78
5500.00	6.39	95.27	5476.48	-44.43	-39.21	-39.21	425.55	0.00	452298.18	819373.81	N 32 14 24.88 W 103 26	2.65
5600.00	6.39	95.27	5575.86	-45.59	-40.24	-40.24	436.63	0.00	452297.15	819384.89	N 32 14 24.87 W 103 26	2.53
5700.00	6.39	95.27	5675.24	-46.75	-41.26	-41.26	447.71	0.00	452296.13	819395.97	N 32 14 24.85 W 103 26	2.40
5800.00	6.39	95.27	5774.62	-47.90	-42.28	-42.28	458.79	0.00	452295.11	819407.05	N 32 14 24.84 W 103 26	2.27
5900.00	6.39	95.27	5874.00	-49.06	-43.30	-43.30	469.87	0.00	452294.09	819418.13	N 32 14 24.83 W 103 26	2.14
6000.00	6.39	95.27	5973.38	-50.22	-44.32	-44.32	480.95	0.00	452293.07	819429.21	N 32 14 24.82 W 103 26	2.01
6100.00	6.39	95.27	6072.75	-51.37	-45.34	-45.34	492.03	0.00	452292.05	819440.29	N 32 14 24.81 W 103 26	1.88
Cherry Canyon	6177.73	6.39	95.27	6150.00	-52.27	-46.13	500.64	0.00	452291.26	819448.90	N 32 14 24.80 W 103 26	1.78
6200.00	6.39	95.27	6172.13	-52.53	-46.36	-46.36	503.11	0.00	452291.03	819451.37	N 32 14 24.80 W 103 26	1.75
6300.00	6.39	95.27	6271.51	-53.69	-47.38	-47.38	514.19	0.00	452290.01	819462.45	N 32 14 24.79 W 103 26	1.62
6400.00	6.39	95.27	6370.89	-54.85	-48.40	-48.40	525.27	0.00	452288.99	819473.53	N 32 14 24.78 W 103 26	1.49
6500.00	6.39	95.27	6470.27	-56.00	-49.43	-49.43	536.35	0.00	452287.96	819484.61		

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15500.00	95.15	359.30	11657.76	3699.14	3706.46	574.35	0.00	456043.83	819522.61	N 32 15 1.93 W 103 26 0.56	
	15600.00	95.15	359.30	11648.78	3798.73	3806.05	573.13	0.00	456143.42	819521.39	N 32 15 2.91 W 103 26 0.56	
	15700.00	95.15	359.30	11639.81	3898.33	3905.64	571.91	0.00	456243.01	819520.17	N 32 15 3.90 W 103 26 0.57	
	15800.00	95.15	359.30	11630.83	3997.92	4005.23	570.69	0.00	456342.60	819518.94	N 32 15 4.88 W 103 26 0.57	
	15900.00	95.15	359.30	11621.85	4097.52	4104.82	569.47	0.00	456442.19	819517.72	N 32 15 5.87 W 103 26 0.57	
	16000.00	95.15	359.30	11612.88	4197.12	4204.41	568.25	0.00	456541.78	819516.50	N 32 15 6.85 W 103 26 0.58	
	16100.00	95.15	359.30	11603.90	4296.71	4303.99	567.02	0.00	456641.36	819515.28	N 32 15 7.84 W 103 26 0.58	
	16200.00	95.15	359.30	11594.92	4396.31	4403.58	565.80	0.00	456740.95	819514.06	N 32 15 8.83 W 103 26 0.59	
	16300.00	95.15	359.30	11585.95	4495.91	4503.17	564.58	0.00	456840.54	819512.84	N 32 15 9.81 W 103 26 0.59	
Cimarex Canyonlands 2 State Com 2H - PBHL [330' FNL, 380' FEL]	16366.26	95.15	359.30	11580.00	4561.90	4569.16	563.77	0.00	456906.53	819512.03	N 32 15 10.46 W 103 26 0.60	

Survey Type: Non-Def Plan

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Canyonlands 2 State Com 2H Rev0 RM 10Apr18
	1	26.000	16366.262	1/100.000	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Cimarex Canyonlands 2 State Com 2H