

Final Survey - Cimarex Canyonlands 2 State Com 1H MWD 0ft-15979ft (Surcon Corrected) (Def Survey)



Report Date:	September 10, 2018 - 11:35 AM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Cimarex	Vertical Section Azimuth:	359.280 ° (Grid North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Canyonlands 2 State Com 1H / Cimarex Canyonlands 2 State Com 1H	TVD Reference Datum:	RKB
Well:	Cimarex Canyonlands 2 State Com 1H	TVD Reference Elevation:	3449.300 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3426.300 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	6.725 °
Survey Name:	Final Survey - Cimarex Canyonlands 2 State Com 1H MWD 0ft-15979ft (Surcon Corrected)	Total Gravity Field Strength:	998.4634mgn (9.80665 Based)
Survey Date:	July 25, 2018	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	234.825 ° / 5038.138 ft / 6.217 / 0.439	Total Magnetic Field Strength:	48012.659 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.960 °
Location Lat / Long:	N 32° 14' 25.30073", W 103° 26' 7.83742"	Declination Date:	August 14, 2018
Location Grid N/E Y/X:	N 452337.280 ftUS, E 818928.330 ftUS	Magnetic Declination Model:	HDGM 2018
CRS Grid Convergence Angle:	0.4790 °	North Reference:	Grid North
Grid Scale Factor:	0.99999734	Grid Convergence Used:	0.4790 °
Version / Patch:	2.10.720.0	Total Corr Mag North->Grid North:	6.2464 °
		Local Coord Referenced To:	Structure Reference Point

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, 1020° FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	452337.28	818928.33	N 32 14 25.30	W 103 26 7.84
	198.00	1.48	351.18	197.98	2.53	2.53	-0.39	0.75	452339.81	818927.94	N 32 14 25.33	W 103 26 7.84
	297.00	1.63	345.06	296.94	5.16	5.15	-0.95	0.23	452342.43	818927.38	N 32 14 25.35	W 103 26 7.85
	387.00	1.65	346.77	386.90	7.67	7.65	-1.58	0.06	452344.93	818926.75	N 32 14 25.38	W 103 26 7.86
	478.00	1.50	349.21	477.87	10.12	10.09	-2.10	0.18	452347.37	818926.23	N 32 14 25.40	W 103 26 7.86
	569.00	1.45	349.82	568.84	12.43	12.40	-2.53	0.06	452349.68	818925.80	N 32 14 25.42	W 103 26 7.87
	660.00	1.47	345.25	659.81	14.70	14.66	-3.03	0.13	452351.94	818925.30	N 32 14 25.45	W 103 26 7.87
	751.00	1.09	321.91	750.79	16.52	16.47	-3.86	0.70	452353.75	818924.47	N 32 14 25.46	W 103 26 7.88
	843.00	1.25	321.18	842.77	18.00	17.94	-5.03	0.17	452355.22	818923.30	N 32 14 25.48	W 103 26 7.89
	937.00	1.04	319.86	936.75	19.47	19.39	-6.22	0.23	452356.67	818922.11	N 32 14 25.49	W 103 26 7.91
	966.00	0.83	303.76	965.75	19.79	19.71	-6.56	1.15	452356.99	818921.77	N 32 14 25.50	W 103 26 7.91
	1120.00	0.87	288.67	1119.73	20.81	20.70	-8.60	0.15	452357.98	818919.73	N 32 14 25.51	W 103 26 7.94
	1214.00	0.86	298.82	1213.72	21.39	21.27	-9.89	0.16	452358.55	818918.44	N 32 14 25.51	W 103 26 7.95
	1308.00	0.78	318.28	1307.71	22.22	22.09	-10.94	0.31	452359.37	818917.39	N 32 14 25.52	W 103 26 7.96
	1401.00	1.02	321.24	1400.70	23.35	23.21	-11.88	0.26	452360.49	818916.45	N 32 14 25.53	W 103 26 7.97
	1495.00	1.10	326.64	1494.68	24.77	24.61	-12.90	0.14	452361.89	818915.43	N 32 14 25.55	W 103 26 7.99
	1589.00	0.75	239.50	1588.67	25.23	25.05	-13.92	1.38	452362.33	818914.41	N 32 14 25.55	W 103 26 8.00
	1684.00	0.67	229.28	1683.67	24.56	24.38	-14.88	0.16	452361.66	818913.45	N 32 14 25.54	W 103 26 8.01
	1779.00	0.43	238.76	1778.66	24.02	23.83	-15.61	0.27	452361.11	818912.72	N 32 14 25.54	W 103 26 8.02
	1873.00	0.55	260.85	1872.66	23.78	23.57	-16.35	0.24	452360.85	818911.98	N 32 14 25.54	W 103 26 8.03
	1967.00	0.34	291.34	1966.66	23.82	23.60	-17.06	0.33	452360.88	818911.27	N 32 14 25.54	W 103 26 8.03
	2060.00	0.33	295.94	2059.65	24.04	23.82	-17.56	0.03	452361.10	818910.77	N 32 14 25.54	W 103 26 8.04
	2156.00	0.43	313.77	2155.65	24.42	24.19	-18.06	0.16	452361.47	818910.27	N 32 14 25.54	W 103 26 8.05
	2250.00	0.55	173.20	2249.65	24.22	23.99	-18.27	0.98	452361.27	818910.06	N 32 14 25.54	W 103 26 8.05

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 ° ' ")
	2345.00	0.64	169.73	2344.65	23.24	23.01	-18.12	0.10	452360.29	818910.21	N 32 14 25.53	W 103 26 8.05
	2439.00	0.58	161.66	2438.64	22.27	22.05	-17.87	0.11	452359.32	818910.46	N 32 14 25.52	W 103 26 8.04
	2534.00	0.50	158.49	2533.64	21.42	21.20	-17.57	0.09	452358.48	818910.76	N 32 14 25.51	W 103 26 8.04
	2628.00	0.19	169.71	2627.63	20.89	20.67	-17.39	0.34	452357.95	818910.94	N 32 14 25.51	W 103 26 8.04
	2722.00	0.17	50.93	2721.63	20.82	20.60	-17.26	0.33	452357.88	818911.07	N 32 14 25.51	W 103 26 8.04
	2816.00	0.34	46.72	2815.63	21.09	20.88	-16.95	0.18	452358.16	818911.39	N 32 14 25.51	W 103 26 8.03
	2909.00	0.74	38.13	2908.63	21.75	21.54	-16.37	0.44	452358.82	818911.96	N 32 14 25.52	W 103 26 8.03
	3004.00	0.70	69.43	3003.62	22.42	22.23	-15.45	0.41	452359.51	818912.88	N 32 14 25.52	W 103 26 8.02
	3099.00	0.91	70.34	3098.61	22.86	22.69	-14.20	0.22	452359.97	818914.13	N 32 14 25.53	W 103 26 8.00
	3193.00	1.40	66.64	3192.59	23.55	23.39	-12.44	0.53	452360.67	818915.89	N 32 14 25.53	W 103 26 7.98
	3287.00	0.68	72.27	3286.58	24.15	24.02	-10.85	0.77	452361.30	818917.48	N 32 14 25.54	W 103 26 7.96
	3382.00	0.85	88.43	3381.57	24.33	24.21	-9.61	0.29	452361.49	818918.72	N 32 14 25.54	W 103 26 7.95
	3476.00	1.43	73.70	3475.55	24.65	24.56	-7.79	0.69	452361.84	818920.54	N 32 14 25.54	W 103 26 7.93
	3570.00	1.09	90.35	3569.53	24.95	24.88	-5.77	0.53	452362.16	818922.56	N 32 14 25.55	W 103 26 7.90
	3666.00	0.97	198.40	3665.52	24.17	24.11	-5.11	1.74	452361.39	818923.22	N 32 14 25.54	W 103 26 7.89
	3761.00	1.49	218.50	3760.50	22.45	22.38	-6.14	0.70	452359.66	818922.19	N 32 14 25.52	W 103 26 7.91
	3855.00	1.20	215.78	3854.47	20.71	20.62	-7.47	0.32	452357.90	818920.86	N 32 14 25.51	W 103 26 7.92
	3950.00	1.14	221.31	3949.45	19.21	19.10	-8.68	0.13	452356.38	818919.65	N 32 14 25.49	W 103 26 7.94
	4045.00	1.02	221.20	4044.43	17.88	17.76	-9.86	0.13	452355.04	818918.47	N 32 14 25.48	W 103 26 7.95
	4139.00	0.75	226.27	4138.42	16.84	16.70	-10.86	0.30	452353.98	818917.47	N 32 14 25.47	W 103 26 7.96
	4234.00	1.62	127.91	4233.41	15.58	15.45	-10.24	1.98	452352.73	818918.09	N 32 14 25.45	W 103 26 7.96
	4327.00	3.71	115.63	4326.30	13.42	13.34	-6.49	2.32	452350.62	818921.84	N 32 14 25.43	W 103 26 7.91
	4421.00	3.95	113.55	4420.09	10.74	10.73	-0.78	0.29	452348.01	818927.55	N 32 14 25.41	W 103 26 7.85
	4516.00	1.38	135.35	4514.98	8.57	8.61	3.02	2.86	452345.89	818931.35	N 32 14 25.39	W 103 26 7.80
	4610.00	1.77	126.75	4608.95	6.87	6.93	4.98	0.48	452344.21	818933.31	N 32 14 25.37	W 103 26 7.78
	4704.00	3.73	115.63	4702.84	4.63	4.74	8.90	2.15	452342.02	818937.23	N 32 14 25.35	W 103 26 7.73
	4799.00	3.07	97.61	4797.67	2.89	3.07	14.21	1.31	452340.35	818942.54	N 32 14 25.33	W 103 26 7.67
	4893.00	3.56	71.11	4891.52	3.44	3.68	19.46	1.69	452340.96	818947.79	N 32 14 25.34	W 103 26 7.61
	4987.00	3.55	35.59	4985.35	6.69	6.99	23.92	2.31	452344.27	818952.25	N 32 14 25.37	W 103 26 7.56
	5081.00	2.54	345.21	5079.23	11.06	11.37	25.08	2.92	452348.65	818953.41	N 32 14 25.41	W 103 26 7.54
	5176.00	2.81	288.38	5174.14	13.86	14.14	22.33	2.69	452351.42	818950.66	N 32 14 25.44	W 103 26 7.58
	5271.00	2.61	283.84	5269.04	15.17	15.40	18.02	0.31	452352.68	818946.35	N 32 14 25.45	W 103 26 7.63
	5365.00	2.56	282.28	5362.94	16.18	16.35	13.89	0.09	452353.63	818942.22	N 32 14 25.46	W 103 26 7.67
	5459.00	2.52	281.42	5456.85	17.08	17.21	9.82	0.06	452354.49	818938.15	N 32 14 25.47	W 103 26 7.72
	5554.00	2.50	281.60	5551.76	17.97	18.04	5.74	0.02	452355.32	818934.07	N 32 14 25.48	W 103 26 7.77
	5649.00	2.78	278.45	5646.66	18.78	18.79	1.43	0.33	452356.07	818929.76	N 32 14 25.49	W 103 26 7.82
	5743.00	2.83	278.80	5740.54	19.52	19.48	-3.12	0.06	452356.76	818925.21	N 32 14 25.49	W 103 26 7.87
	5837.00	2.82	277.51	5834.43	20.24	20.14	-7.70	0.07	452357.42	818920.63	N 32 14 25.50	W 103 26 7.93
	5932.00	2.85	278.29	5929.31	20.94	20.79	-12.36	0.05	452358.07	818915.97	N 32 14 25.51	W 103 26 7.98
	6027.00	2.90	280.00	6024.19	21.76	21.55	-17.06	0.10	452358.83	818911.27	N 32 14 25.52	W 103 26 8.03
	6121.00	2.87	282.66	6118.07	22.75	22.47	-21.70	0.15	452359.75	818906.63	N 32 14 25.52	W 103 26 8.09
	6216.00	2.87	284.91	6212.96	23.94	23.61	-26.32	0.12	452360.89	818902.01	N 32 14 25.54	W 103 26 8.14
	6310.00	2.84	284.28	6306.84	25.17	24.79	-30.85	0.05	452362.07	818897.48	N 32 14 25.55	W 103 26 8.19
	6403.00	2.89	283.61	6399.72	26.35	25.91	-35.36	0.06	452363.19	818892.97	N 32 14 25.56	W 103 26 8.25
	6498.00	2.94	283.49	6494.60	27.54	27.04	-40.06	0.05	452364.32	818888.27	N 32 14 25.57	W 103 26 8.30
	6592.00	2.20	282.31	6588.50	28.54	27.99	-44.16	0.79	452365.27	818884.17	N 32 14 25.58	W 103 26 8.35
	6687.00	1.98	280.36	6683.44	29.27	28.67	-47.56	0.24	452365.95	818880.77	N 32 14 25.59	W 103 26 8.39
	6780.00	2.03	280.45	6776.38	29.89	29.26	-50.76	0.05	452366.54	818877.57	N 32 14 25.59	W 103 26 8.43
	6874.00	0.95	281.48	6870.35	30.38	29.72	-53.16	1.15	452367.00	818875.17	N 32 14 25.60	W 103 26 8.45
	6969.00	0.65	254.46	6965.34	30.41	29.73	-54.45	0.50	452367.01	818873.88	N 32 14 25.60	W 103 26 8.47
	7063.00	0.69	261.03	7059.34	30.19	29.50	-55.52	0.09	452366.78	818872.81	N 32 14 25.60	W 103 26 8.48
	7158.00	0.78	267.93	7154.33	30.09	29.38	-56.73	0.13	452366.66	818871.60	N 32 14 25.60	W 103 26 8.50
	7252.00	0.83	271.22	7248.32	30.10	29.38	-58.05	0.07	452366.66	818870.28	N 32 14 25.60	W 103 26 8.51
	7347.00	0.87	285.41	7343.31	30.33	29.58	-59.44	0.22	452366.86	818868.89	N 32 14 25.60	W 103 26 8.53
	7441.00	1.03	285.07	7437.30	30.75	29.99	-60.94	0.17	452367.27	818867.39	N 32 14 25.60	W 103 26 8.54
	7536.00	1.15	286.28	7532.28	31.27	30.48	-62.68	0.13	452367.76	818865.65	N 32 14 25.61	W 103 26 8.56
	7630.00	0.95	283.48	7626.26	31.73	30.93	-64.34	0.22	452368.21	818863.99	N 32 14 25.61	W 103 26 8.58
	7725.00	0.80	298.85	7721.25	32.25	31.43	-65.69	0.29	452368.71	818862.64	N 32 14 25.62	W 103 26 8.60

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 ° ' ")
	7820.00	0.82	286.56	7816.24	32.78	31.94	-66.92	0.18	452369.22	818861.41	N 32 14 25.62	W 103 26 8.61
	7915.00	0.85	288.59	7911.23	33.22	32.36	-68.24	0.04	452369.64	818860.09	N 32 14 25.63	W 103 26 8.63
	8010.00	0.94	287.96	8006.22	33.70	32.83	-69.65	0.10	452370.11	818858.68	N 32 14 25.63	W 103 26 8.65
	8104.00	1.14	291.97	8100.20	34.31	33.41	-71.25	0.23	452370.69	818857.08	N 32 14 25.64	W 103 26 8.66
	8199.00	1.44	294.94	8195.18	35.19	34.27	-73.21	0.32	452371.55	818855.12	N 32 14 25.65	W 103 26 8.69
	8293.00	1.34	297.25	8289.15	36.22	35.27	-75.26	0.12	452372.55	818853.07	N 32 14 25.66	W 103 26 8.71
	8388.00	1.35	309.71	8384.13	37.46	36.50	-77.11	0.31	452373.78	818851.22	N 32 14 25.67	W 103 26 8.73
	8482.00	1.49	323.99	8478.10	39.18	38.19	-78.68	0.40	452375.47	818849.65	N 32 14 25.69	W 103 26 8.75
	8577.00	1.59	329.70	8573.06	41.33	40.33	-80.07	0.19	452377.61	818848.26	N 32 14 25.71	W 103 26 8.77
	8671.00	1.72	333.01	8667.02	43.73	42.71	-81.37	0.17	452379.99	818846.96	N 32 14 25.73	W 103 26 8.78
	8766.00	1.76	339.04	8761.98	46.38	45.35	-82.54	0.20	452382.62	818845.79	N 32 14 25.76	W 103 26 8.79
	8860.00	1.83	340.82	8855.94	49.16	48.11	-83.55	0.10	452385.39	818844.78	N 32 14 25.78	W 103 26 8.81
	8955.00	1.82	346.92	8950.89	52.07	51.01	-84.39	0.20	452388.29	818843.94	N 32 14 25.81	W 103 26 8.81
	9049.00	2.17	345.59	9044.83	55.26	54.19	-85.17	0.38	452391.47	818843.16	N 32 14 25.84	W 103 26 8.82
	9143.00	2.61	344.35	9138.75	59.05	57.98	-86.19	0.47	452395.25	818842.14	N 32 14 25.88	W 103 26 8.84
	9238.00	2.88	341.59	9233.64	63.42	62.32	-87.52	0.32	452399.60	818840.81	N 32 14 25.92	W 103 26 8.85
	9332.00	2.23	345.06	9327.54	67.44	66.33	-88.74	0.71	452403.61	818839.59	N 32 14 25.96	W 103 26 8.86
	9426.00	1.92	354.71	9421.48	70.78	69.67	-89.36	0.50	452406.94	818838.97	N 32 14 26.00	W 103 26 8.87
	9520.00	1.69	350.04	9515.44	73.72	72.60	-89.74	0.29	452409.88	818838.59	N 32 14 26.03	W 103 26 8.88
	9615.00	1.79	337.30	9610.39	76.48	75.35	-90.56	0.42	452412.63	818837.77	N 32 14 26.05	W 103 26 8.88
	9710.00	3.04	338.46	9705.31	80.21	79.06	-92.06	1.32	452416.34	818836.27	N 32 14 26.09	W 103 26 8.90
	9804.00	2.25	350.08	9799.21	84.36	83.20	-93.29	1.01	452420.47	818835.04	N 32 14 26.13	W 103 26 8.92
	9899.00	1.18	3.35	9894.16	87.18	86.01	-93.55	1.19	452423.29	818834.78	N 32 14 26.16	W 103 26 8.92
	9993.00	0.53	59.52	9988.15	88.36	87.20	-93.12	1.05	452424.48	818835.21	N 32 14 26.17	W 103 26 8.91
	10087.00	0.75	36.23	10082.15	89.07	87.91	-92.38	0.36	452425.19	818835.95	N 32 14 26.18	W 103 26 8.90
	10183.00	0.86	19.73	10178.14	90.24	89.10	-91.77	0.27	452426.38	818836.56	N 32 14 26.19	W 103 26 8.90
	10278.00	0.56	77.22	10273.13	91.01	89.87	-91.08	0.77	452427.15	818837.26	N 32 14 26.20	W 103 26 8.89
	10372.00	1.35	174.30	10367.12	90.00	88.87	-90.52	1.62	452426.15	818837.81	N 32 14 26.19	W 103 26 8.88
	10466.00	1.46	186.04	10461.09	87.71	86.58	-90.53	0.33	452423.86	818837.80	N 32 14 26.16	W 103 26 8.88
	10561.00	1.24	170.65	10556.07	85.49	84.36	-90.49	0.44	452421.64	818837.84	N 32 14 26.14	W 103 26 8.88
	10655.00	1.90	127.71	10650.04	83.52	82.40	-89.10	1.39	452419.68	818839.24	N 32 14 26.12	W 103 26 8.87
	10749.00	3.19	121.54	10743.94	81.15	80.08	-85.63	1.40	452417.36	818842.70	N 32 14 26.10	W 103 26 8.83
	10835.00	2.08	100.18	10829.85	79.58	78.55	-82.06	1.70	452415.83	818846.27	N 32 14 26.08	W 103 26 8.79
	10875.00	1.72	54.57	10869.83	79.78	78.77	-80.85	3.77	452416.05	818847.48	N 32 14 26.09	W 103 26 8.77
	10907.00	2.13	32.85	10901.81	80.55	79.55	-80.14	2.59	452416.83	818848.19	N 32 14 26.09	W 103 26 8.76
	10938.00	2.72	22.66	10932.79	81.71	80.71	-79.54	2.35	452417.99	818848.79	N 32 14 26.11	W 103 26 8.76
	10970.00	4.49	34.81	10964.72	83.42	82.44	-78.54	5.99	452419.72	818849.79	N 32 14 26.12	W 103 26 8.74
	11001.00	8.90	41.00	10995.50	86.20	85.25	-76.27	14.39	452422.53	818852.06	N 32 14 26.15	W 103 26 8.72
	11033.00	11.08	41.02	11027.02	90.35	89.44	-72.63	6.81	452426.72	818855.70	N 32 14 26.19	W 103 26 8.67
	11065.00	15.32	39.07	11058.16	95.89	95.04	-67.94	13.32	452432.32	818860.39	N 32 14 26.25	W 103 26 8.62
	11097.00	17.10	38.11	11088.89	102.80	102.03	-62.37	5.63	452439.31	818865.96	N 32 14 26.32	W 103 26 8.55
	11128.00	21.64	32.25	11118.13	111.16	110.45	-56.51	15.91	452447.73	818871.82	N 32 14 26.40	W 103 26 8.48
	11159.00	25.91	30.15	11146.49	121.77	121.15	-50.05	14.04	452458.43	818878.28	N 32 14 26.50	W 103 26 8.41
	11206.00	32.53	29.92	11187.49	141.48	141.00	-38.58	14.09	452478.28	818889.75	N 32 14 26.70	W 103 26 8.27
	11254.00	37.92	28.21	11226.69	165.51	165.21	-25.16	11.41	452502.49	818903.17	N 32 14 26.94	W 103 26 8.11
	11300.00	44.34	26.42	11261.32	192.21	192.09	-11.31	14.19	452529.37	818917.02	N 32 14 27.20	W 103 26 7.95
	11348.00	50.73	23.96	11293.71	224.06	224.12	3.72	13.84	452561.40	818932.05	N 32 14 27.52	W 103 26 7.77
	11395.00	55.14	21.82	11322.03	258.42	258.67	18.28	10.06	452595.95	818946.61	N 32 14 27.86	W 103 26 7.60
First Legal Take Point	11424.00	56.68	20.78	11338.29	280.68	281.05	27.00	6.08	452618.32	818955.33	N 32 14 28.08	W 103 26 7.50
	11443.00	57.69	20.12	11348.59	295.57	296.01	32.58	6.08	452633.29	818960.91	N 32 14 28.23	W 103 26 7.43
	11490.00	57.91	14.38	11373.65	333.38	333.97	44.36	10.34	452671.24	818972.69	N 32 14 28.60	W 103 26 7.29
	11537.00	58.53	7.86	11398.42	372.45	373.14	52.06	11.86	452710.42	818980.38	N 32 14 28.99	W 103 26 7.20
	11584.00	62.06	3.83	11421.71	412.99	413.73	56.19	10.58	452751.01	818984.52	N 32 14 29.39	W 103 26 7.14
	11632.00	68.46	0.36	11441.79	456.51	457.27	57.74	14.86	452794.55	818986.07	N 32 14 29.82	W 103 26 7.12
	11679.00	76.27	357.26	11456.02	501.25	502.01	56.79	17.76	452839.28	818985.12	N 32 14 30.26	W 103 26 7.13
	11679.10	76.27	357.38	11456.05	501.35	502.10	56.78	116.57	452839.38	818985.11	N 32 14 30.26	W 103 26 7.13
	11727.00	84.80	359.69	11463.92	548.55	549.29	55.59	18.43	452886.57	818983.92	N 32 14 30.73	W 103 26 7.14

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 ° ' ")
	11818.00	83.83	356.25	11472.94	639.06	639.77	52.38	3.91	452977.05	818980.71	N 32 14 31.63	W 103 26 7.17
	11848.00	84.11	355.91	11476.09	668.85	669.53	50.34	1.46	453006.81	818978.67	N 32 14 31.92	W 103 26 7.19
	11896.00	87.04	355.93	11479.79	716.62	717.27	46.94	6.10	453054.54	818975.27	N 32 14 32.39	W 103 26 7.22
	11942.00	88.93	356.20	11481.41	762.52	763.13	43.79	4.15	453100.40	818972.12	N 32 14 32.85	W 103 26 7.25
	11989.00	89.93	356.15	11481.88	809.44	810.02	40.65	2.13	453147.29	818968.98	N 32 14 33.31	W 103 26 7.29
	12036.00	93.03	356.90	11480.66	856.37	856.91	37.80	6.79	453194.19	818966.13	N 32 14 33.78	W 103 26 7.31
	12080.00	94.06	357.49	11477.94	900.25	900.77	35.65	2.70	453238.05	818963.98	N 32 14 34.21	W 103 26 7.33
	12131.00	93.75	356.88	11474.47	951.10	951.59	33.15	1.34	453288.87	818961.48	N 32 14 34.71	W 103 26 7.36
	12225.00	94.89	358.97	11467.39	1044.80	1045.26	29.76	2.53	453382.53	818958.09	N 32 14 35.64	W 103 26 7.39
	12319.00	95.20	1.75	11459.12	1138.41	1138.88	30.35	2.96	453476.16	818958.68	N 32 14 36.57	W 103 26 7.37
	12413.00	94.20	2.16	11451.42	1231.99	1232.51	33.54	1.15	453569.78	818961.87	N 32 14 37.49	W 103 26 7.33
	12507.00	94.27	0.28	11444.47	1325.68	1326.23	35.54	2.00	453663.50	818963.87	N 32 14 38.42	W 103 26 7.29
	12601.00	93.44	0.10	11438.15	1419.45	1420.01	35.85	0.90	453757.29	818964.18	N 32 14 39.35	W 103 26 7.28
	12696.00	92.96	0.11	11432.85	1514.29	1514.87	36.02	0.51	453852.14	818964.35	N 32 14 40.29	W 103 26 7.27
	12790.00	93.72	1.53	11427.37	1608.10	1608.69	37.37	1.71	453945.97	818965.70	N 32 14 41.22	W 103 26 7.25
	12885.00	93.13	2.15	11421.70	1702.83	1703.47	40.41	0.90	454040.75	818968.74	N 32 14 42.15	W 103 26 7.20
	12979.00	92.34	1.75	11417.21	1796.62	1797.31	43.61	0.94	454134.58	818971.94	N 32 14 43.08	W 103 26 7.15
	13073.00	93.13	1.16	11412.73	1890.45	1891.17	45.99	1.05	454228.44	818974.32	N 32 14 44.01	W 103 26 7.12
	13167.00	91.82	1.60	11408.67	1984.29	1985.06	48.25	1.47	454322.33	818976.58	N 32 14 44.94	W 103 26 7.08
	13261.00	93.79	1.65	11404.07	2078.10	2078.90	50.91	2.10	454416.17	818979.24	N 32 14 45.87	W 103 26 7.04
	13355.00	93.27	359.82	11398.28	2171.88	2172.71	52.12	2.02	454509.98	818980.45	N 32 14 46.79	W 103 26 7.02
	13449.00	90.21	359.52	11395.43	2265.83	2266.65	51.58	3.27	454603.92	818979.91	N 32 14 47.72	W 103 26 7.02
	13544.00	90.55	358.62	11394.80	2360.82	2361.64	50.03	1.01	454698.91	818978.36	N 32 14 48.66	W 103 26 7.02
	13639.00	92.51	359.56	11392.26	2455.78	2456.59	48.53	2.29	454793.85	818976.86	N 32 14 49.60	W 103 26 7.03
	13732.00	90.00	359.41	11390.22	2548.75	2549.55	47.69	2.70	454886.82	818976.02	N 32 14 50.52	W 103 26 7.03
	13827.00	91.41	359.35	11389.06	2643.74	2644.54	46.66	1.49	454981.81	818974.99	N 32 14 51.46	W 103 26 7.04
	13922.00	89.11	357.99	11388.62	2738.73	2739.50	44.46	2.81	455076.77	818972.79	N 32 14 52.40	W 103 26 7.05
	14016.00	89.66	358.29	11389.63	2832.70	2833.45	41.41	0.67	455170.71	818969.74	N 32 14 53.33	W 103 26 7.08
	14110.00	91.17	358.31	11388.95	2926.68	2927.40	38.62	1.61	455264.67	818966.95	N 32 14 54.26	W 103 26 7.10
	14205.00	92.51	0.03	11385.90	3021.63	3022.34	37.24	2.29	455359.60	818965.57	N 32 14 55.20	W 103 26 7.11
	14299.00	93.41	359.10	11381.05	3115.50	3116.21	36.53	1.38	455453.47	818964.86	N 32 14 56.13	W 103 26 7.11
	14393.00	92.41	359.37	11376.28	3209.38	3210.07	35.28	1.10	455547.34	818963.61	N 32 14 57.06	W 103 26 7.11
	14487.00	91.24	0.16	11373.28	3303.32	3304.02	34.89	1.50	455641.29	818963.22	N 32 14 57.99	W 103 26 7.11
	14581.00	90.24	358.36	11372.07	3397.31	3398.00	33.68	2.19	455735.27	818962.01	N 32 14 58.92	W 103 26 7.11
	14675.00	90.21	357.78	11371.70	3491.29	3491.95	30.51	0.62	455829.21	818958.84	N 32 14 59.85	W 103 26 7.14
	14768.00	93.41	359.15	11368.76	3584.22	3584.85	28.02	3.74	455922.12	818956.35	N 32 15 0.77	W 103 26 7.16
	14863.00	94.06	1.41	11362.57	3679.00	3679.65	28.48	2.47	456016.91	818956.81	N 32 15 1.71	W 103 26 7.15
	14956.00	94.27	1.11	11355.82	3771.70	3772.38	30.52	0.39	456109.64	818958.85	N 32 15 2.62	W 103 26 7.11
	15051.00	93.58	0.29	11349.32	3866.44	3867.15	31.68	1.13	456204.41	818960.01	N 32 15 3.56	W 103 26 7.09
	15144.00	92.86	359.34	11344.09	3959.29	3960.00	31.38	1.28	456297.26	818959.71	N 32 15 4.48	W 103 26 7.09
	15239.00	91.82	359.76	11340.21	4054.21	4054.91	30.64	1.18	456392.17	818958.97	N 32 15 5.42	W 103 26 7.09
	15333.00	92.24	359.96	11336.88	4148.14	4148.85	30.41	0.49	456486.11	818958.74	N 32 15 6.35	W 103 26 7.08
	15427.00	93.06	0.01	11332.54	4242.04	4242.75	30.38	0.87	456580.01	818958.71	N 32 15 7.28	W 103 26 7.07
	15521.00	89.97	359.37	11330.05	4335.99	4336.71	29.87	3.36	456673.97	818958.20	N 32 15 8.21	W 103 26 7.07
	15615.00	90.83	359.02	11329.40	4429.98	4430.69	28.55	0.99	456767.95	818956.88	N 32 15 9.14	W 103 26 7.07
	15709.00	92.06	357.85	11327.03	4523.94	4524.63	25.99	1.81	456861.88	818954.32	N 32 15 10.07	W 103 26 7.09
	15803.00	93.96	357.05	11322.09	4617.76	4618.40	21.81	2.19	456955.66	818950.14	N 32 15 11.00	W 103 26 7.13
	15897.00	93.48	357.17	11315.99	4711.49	4712.08	17.08	0.53	457049.34	818945.41	N 32 15 11.92	W 103 26 7.18
	15928.00	93.82	357.12	11314.02	4742.41	4742.98	15.54	1.11	457080.24	818943.87	N 32 15 12.23	W 103 26 7.19
TD, PTB [101' FNL, 948' FEL]	15979.00	93.82	357.12	11310.62	4793.26	4793.80	12.98	0.00	457131.06	818941.31	N 32 15 12.73	W 103 26 7.22

Survey Type: Def Survey

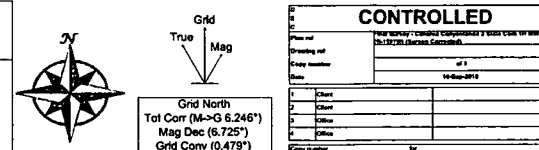
Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

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 ° ' ")
Survey Program:												
Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey				
	1	0.000	23.000	1/98.425	12.250	9.625	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Survey - Cimarex Canyonlands 2 State Com 1H MWD 0ft-15979ft (Surcon				
	1	23.000	23.000	Act Stns	12.250	9.625	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Survey - Cimarex Canyonlands 2 State Com 1H MWD 0ft-15979ft (Surcon				
	1	23.000	1050.000	Act Stns	12.250	9.625	NAL_MWD_IFR1+MS	Original Borehole / Final Survey - Cimarex Canyonlands 2 State				
	1	1050.000	11737.000	Act Stns	8.750	7.000	NAL_MWD_IFR1+MS	Original Borehole / Final Survey - Cimarex Canyonlands 2 State				
	1	11737.000	15979.000	Act Stns	6.000	4.500	NAL_MWD_IFR1+MS	Original Borehole / Final Survey - Cimarex Canyonlands 2 State				

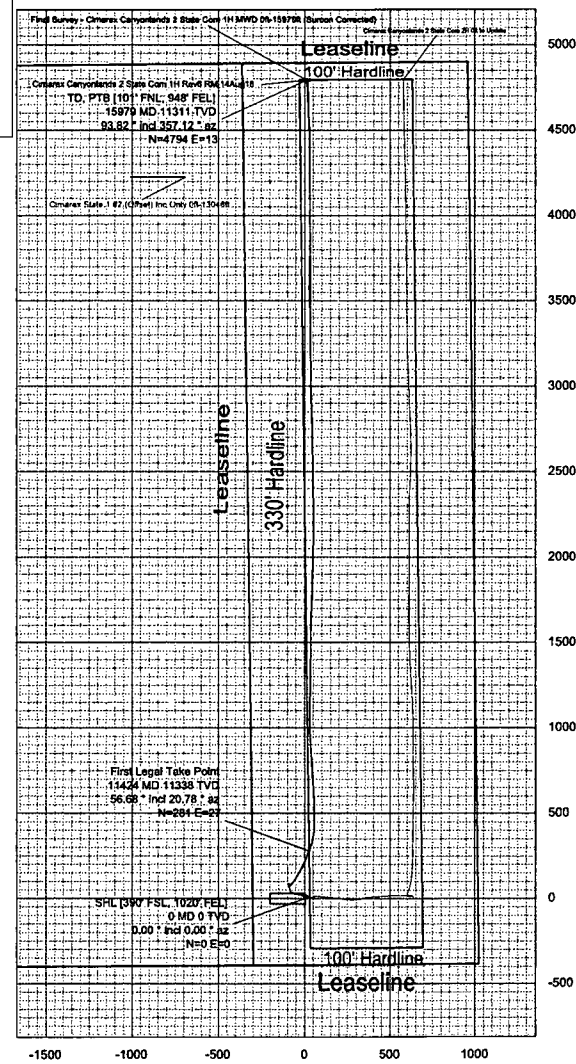
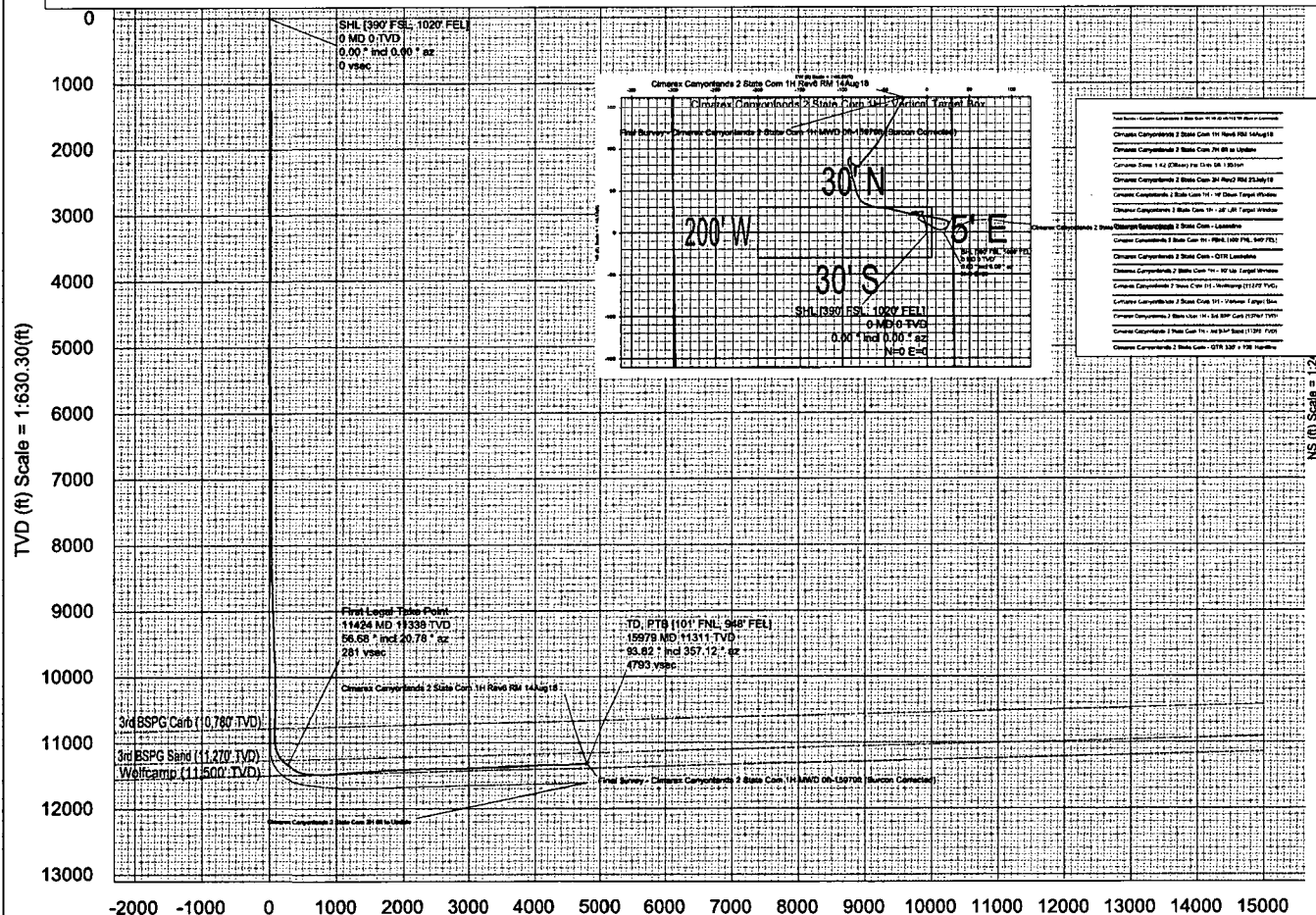
Borehole:			Well:			Field:			Structure:		
Original Borehole			Cimarex Canyonlands 2 State Com 1H			NM Lea County (NAD 83)			Cimarex Canyonlands 2 State Com 1H		
Geology & Magnetic Parameters			Surface Location			NAZ83 New Mexico State Plane, Eastern Zone, US Feet			Miscellaneous		
Model: HDGM 2018	Dip: 93.86°	Date: 16-Aug-2018	Lat: N 32 14 28.38			Northing: 452337.28RUS	Grid Conv: 0.479°	Slot: Cimarex Canyonlands 2	TVD Ref: RKB(3448.3R above MSL)		
MagDec: 6.725°	FB: 48913.85N/T	Gravity FB: 998.663mgn (9.80665 Based)	Long: W 103 26 7.84			Easting: 818928.33RUS	Scale Fact: 0.99999734	Plan: Cimarex Canyonlands 2 State Com 1H	Final Survey: Cimarex Canyonlands 2 State Com 1H MWD 06-15879R (Surcon Corrected)		

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(°)S(-)	E(°)W(-)	DLS
SHL [390° FSL, 1020' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
First Legal Take Point	11424.00	56.68	20.78	11338.29	280.68	281.05	27.00	6.08
TD, PTB [101° FNL, 948' FEL]	15979.00	93.82	357.12	11310.62	4793.28	4793.80	12.98	0.00



CONTROLLED	
Plan ref	Final Survey / Cimarex Canyonlands 2 State Com 1H MWD 06-15879R (Surcon Corrected)
Drawing ref	06-15879R (Surcon Corrected)
Ready number	01 of 1
Date	16-Aug-2018
Drawn	
Checked	
Reviewed	
Approved	
Copy Number	for



Vertical Section (ft) Azim = 359.28° Scale = 1:630.30(ft) Origin = 0N/-S, 0E/-W

EW (ft) Scale = 1:247.98(ft)