

Cimarex Cotton Draw 9L Federal #5H Preliminary 05Aug16 Proposal

Report

(Non-Def Plan)



Report Date:	August 17, 2016 - 04:33 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Cimarex	Vertical Section Azimuth:	354.083 ° (Grid North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Cotton Draw 9L Federal #5H / Cotton Draw 9L Federal #5H	TVD Reference Datum:	RKB = TBD
Well:	Cotton Draw 9L Federal #5H	TVD Reference Elevation:	3444.600 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3444.600 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	6.942 °
Survey Name:	Cimarex Cotton Draw 9L Federal #5H Preliminary 05Aug16	Total Gravity Field Strength:	998.4295mgn (9.80665 Based)
Survey Date:	August 05, 2016	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	131.815 ° / 4758.754 ft / 5.950 / 0.450	Total Magnetic Field Strength:	48134.079 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.889 °
Location Lat / Long:	N 32° 8' 20.30261", W 103° 40' 49.38476"	Declination Date:	August 05, 2016
Location Grid N/E Y/X:	N 414906.640 ftUS, E 743439.820 ftUS	Magnetic Declination Model:	HDGM 2016
CRS Grid Convergence Angle:	0.3474 °	North Reference:	Grid North
Grid Scale Factor:	0.99995587	Grid Convergence Used:	0.3474 °
Version / Patch:	2.9.370.0	Total Corr Mag North->Grid	6.5947 °
		North:	
		Local Coord Referenced To:	Well Head

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 ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	100.00	0.00	272.84	100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	200.00	0.00	272.84	200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	300.00	0.00	272.84	300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	400.00	0.00	272.84	400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	500.00	0.00	272.84	500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	600.00	0.00	272.84	600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	700.00	0.00	272.84	700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	800.00	0.00	272.84	800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	900.00	0.00	272.84	900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1000.00	0.00	272.84	1000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1100.00	0.00	272.84	1100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1200.00	0.00	272.84	1200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1300.00	0.00	272.84	1300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1400.00	0.00	272.84	1400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1500.00	0.00	272.84	1500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1600.00	0.00	272.84	1600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1700.00	0.00	272.84	1700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1800.00	0.00	272.84	1800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	1900.00	0.00	272.84	1900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2000.00	0.00	272.84	2000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2100.00	0.00	272.84	2100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2200.00	0.00	272.84	2200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2300.00	0.00	272.84	2300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2400.00	0.00	272.84	2400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2500.00	0.00	272.84	2500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2600.00	0.00	272.84	2600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	

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 ° ' ")
	2700.00	0.00	272.84	2700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2800.00	0.00	272.84	2800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	2900.00	0.00	272.84	2900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3000.00	0.00	272.84	3000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3100.00	0.00	272.84	3100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3200.00	0.00	272.84	3200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3300.00	0.00	272.84	3300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3400.00	0.00	272.84	3400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3500.00	0.00	272.84	3500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3600.00	0.00	272.84	3600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3700.00	0.00	272.84	3700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3800.00	0.00	272.84	3800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	3900.00	0.00	272.84	3900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4000.00	0.00	272.84	4000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4100.00	0.00	272.84	4100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4200.00	0.00	272.84	4200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4300.00	0.00	272.84	4300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4400.00	0.00	272.84	4400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4500.00	0.00	272.84	4500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4600.00	0.00	272.84	4600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4700.00	0.00	272.84	4700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4800.00	0.00	272.84	4800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	4900.00	0.00	272.84	4900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5000.00	0.00	272.84	5000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5100.00	0.00	272.84	5100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5200.00	0.00	272.84	5200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5300.00	0.00	272.84	5300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5400.00	0.00	272.84	5400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5500.00	0.00	272.84	5500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5600.00	0.00	272.84	5600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5700.00	0.00	272.84	5700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5800.00	0.00	272.84	5800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	5900.00	0.00	272.84	5900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6000.00	0.00	272.84	6000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6100.00	0.00	272.84	6100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6200.00	0.00	272.84	6200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6300.00	0.00	272.84	6300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6400.00	0.00	272.84	6400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6500.00	0.00	272.84	6500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6600.00	0.00	272.84	6600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6700.00	0.00	272.84	6700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6800.00	0.00	272.84	6800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	6900.00	0.00	272.84	6900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7000.00	0.00	272.84	7000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7100.00	0.00	272.84	7100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7200.00	0.00	272.84	7200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7300.00	0.00	272.84	7300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7400.00	0.00	272.84	7400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7500.00	0.00	272.84	7500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7600.00	0.00	272.84	7600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7700.00	0.00	272.84	7700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7800.00	0.00	272.84	7800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	7900.00	0.00	272.84	7900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	8000.00	0.00	272.84	8000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	8100.00	0.00	272.84	8100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	8200.00	0.00	272.84	8200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	8300.00	0.00	272.84	8300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	8400.00	0.00	272.84	8400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	
	8500.00	0.00	272.84	8500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W 103 40 49.38	

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 ° ' ")
	8600.00	0.00	272.84	8600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	8700.00	0.00	272.84	8700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	8800.00	0.00	272.84	8800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	8900.00	0.00	272.84	8900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9000.00	0.00	272.84	9000.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9100.00	0.00	272.84	9100.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9200.00	0.00	272.84	9200.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9300.00	0.00	272.84	9300.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9400.00	0.00	272.84	9400.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9500.00	0.00	272.84	9500.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9600.00	0.00	272.84	9600.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9700.00	0.00	272.84	9700.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	9800.00	0.00	272.84	9800.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
KOP, Build 12"/100ft DLS	9900.00	0.00	272.84	9900.00	0.00	0.00	0.00	0.00	414906.64	743439.82	N 32 8 20.30 W	103 40 49.38
	10000.00	12.00	272.84	9999.27	1.59	0.52	-10.42	12.00	414907.16	743429.40	N 32 8 20.31 W	103 40 49.51
	10100.00	24.00	272.84	10094.20	6.28	2.04	-41.23	12.00	414908.68	743398.59	N 32 8 20.33 W	103 40 49.86
Penetration Point	10150.31	30.04	272.84	10139.00	9.76	3.17	-64.04	12.00	414909.81	743375.78	N 32 8 20.34 W	103 40 50.13
	10200.00	36.00	272.84	10180.65	13.88	4.51	-91.08	12.00	414911.15	743348.75	N 32 8 20.35 W	103 40 50.44
	10265.68	43.88	272.84	10230.96	20.29	6.60	-133.15	12.00	414913.24	743306.67	N 32 8 20.38 W	103 40 50.93
Build & Turn 12"/100ft DLS	10267.18	43.88	272.84	10232.05	20.45	6.65	-134.20	0.00	414913.29	743305.63	N 32 8 20.38 W	103 40 50.94
	10300.00	44.17	278.49	10255.65	25.03	8.90	-156.87	12.00	414915.54	743282.95	N 32 8 20.40 W	103 40 51.21
	10400.00	46.69	294.99	10326.07	52.49	29.49	-224.56	12.00	414936.13	743215.27	N 32 8 20.61 W	103 40 51.99
	10500.00	51.35	309.67	10391.84	99.24	69.94	-287.82	12.00	414976.58	743152.01	N 32 8 21.01 W	103 40 52.73
	10600.00	57.59	322.29	10450.08	163.25	128.48	-343.90	12.00	415035.11	743095.94	N 32 8 21.59 W	103 40 53.38
	10700.00	64.92	333.15	10498.25	241.71	202.55	-390.35	12.00	415109.18	743049.49	N 32 8 22.33 W	103 40 53.91
	10800.00	72.94	342.72	10534.24	331.20	288.91	-425.13	12.00	415195.53	743014.71	N 32 8 23.19 W	103 40 54.31
	10900.00	81.38	351.48	10556.48	427.80	383.79	-446.73	12.00	415290.41	742993.11	N 32 8 24.13 W	103 40 54.55
Landing Point	10999.96	90.00	359.86	10564.00	527.25	483.00	-454.20	12.00	415389.62	742985.64	N 32 8 25.11 W	103 40 54.63
	11000.00	90.00	359.86	10564.00	527.29	483.04	-454.20	0.00	415389.66	742985.64	N 32 8 25.11 W	103 40 54.63
	11100.00	90.00	359.86	10564.00	626.78	583.04	-454.45	0.00	415489.65	742985.39	N 32 8 26.10 W	103 40 54.63
	11200.00	90.00	359.86	10564.00	726.28	683.04	-454.71	0.00	415589.65	742985.14	N 32 8 27.09 W	103 40 54.62
	11300.00	90.00	359.86	10564.00	825.77	783.04	-454.96	0.00	415689.64	742984.88	N 32 8 28.08 W	103 40 54.62
	11316.96	90.00	359.86	10564.00	842.65	800.00	-455.00	0.00	415706.60	742984.84	N 32 8 28.25 W	103 40 54.62
	11400.00	90.00	359.86	10564.00	925.26	883.04	-455.21	0.00	415789.64	742984.63	N 32 8 29.07 W	103 40 54.62
	11500.00	90.00	359.86	10564.00	1024.76	983.04	-455.46	0.00	415889.63	742984.38	N 32 8 30.06 W	103 40 54.61
	11600.00	90.00	359.86	10564.00	1124.25	1083.04	-455.71	0.00	415989.63	742984.13	N 32 8 31.05 W	103 40 54.61
	11700.00	90.00	359.86	10564.00	1223.74	1183.04	-455.97	0.00	416089.62	742983.88	N 32 8 32.04 W	103 40 54.60
	11800.00	90.00	359.86	10564.00	1323.23	1283.04	-456.22	0.00	416189.62	742983.62	N 32 8 33.03 W	103 40 54.60
	11900.00	90.00	359.86	10564.00	1422.73	1383.04	-456.47	0.00	416289.61	742983.37	N 32 8 34.02 W	103 40 54.60
	12000.00	90.00	359.86	10564.00	1522.22	1483.04	-456.72	0.00	416389.61	742983.12	N 32 8 35.00 W	103 40 54.59
	12100.00	90.00	359.86	10564.00	1621.71	1583.04	-456.97	0.00	416489.60	742982.87	N 32 8 35.99 W	103 40 54.59
	12200.00	90.00	359.86	10564.00	1721.21	1683.04	-457.23	0.00	416589.60	742982.62	N 32 8 36.98 W	103 40 54.58
	12300.00	90.00	359.86	10564.00	1820.70	1783.04	-457.48	0.00	416689.59	742982.36	N 32 8 37.97 W	103 40 54.58
	12400.00	90.00	359.86	10564.00	1920.19	1883.04	-457.73	0.00	416789.59	742982.11	N 32 8 38.96 W	103 40 54.58
	12500.00	90.00	359.86	10564.00	2019.68	1983.04	-457.98	0.00	416889.58	742981.86	N 32 8 39.95 W	103 40 54.57
	12600.00	90.00	359.86	10564.00	2119.18	2083.03	-458.23	0.00	416989.58	742981.61	N 32 8 40.94 W	103 40 54.57
	12700.00	90.00	359.86	10564.00	2218.67	2183.03	-458.49	0.00	417089.57	742981.36	N 32 8 41.93 W	103 40 54.56
	12800.00	90.00	359.86	10564.00	2318.16	2283.03	-458.74	0.00	417189.57	742981.10	N 32 8 42.92 W	103 40 54.56
	12900.00	90.00	359.86	10564.00	2417.66	2383.03	-458.99	0.00	417289.56	742980.85	N 32 8 43.91 W	103 40 54.55
	13000.00	90.00	359.86	10564.00	2517.15	2483.03	-459.24	0.00	417389.56	742980.60	N 32 8 44.90 W	103 40 54.55
	13100.00	90.00	359.86	10564.00	2616.64	2583.03	-459.49	0.00	417489.55	742980.35	N 32 8 45.89 W	103 40 54.55
	13200.00	90.00	359.86	10564.00	2716.13	2683.03	-459.75	0.00	417589.55	742980.10	N 32 8 46.88 W	103 40 54.54
	13300.00	90.00	359.86	10564.00	2815.63	2783.03	-460.00	0.00	417689.54	742979.84	N 32 8 47.87 W	103 40 54.54
	13400.00	90.00	359.86	10564.00	2915.12	2883.03	-460.25	0.00	417789.54	742979.59	N 32 8 48.86 W	103 40 54.53
	13500.00	90.00	359.86	10564.00	3014.61	2983.03	-460.50	0.00	417889.53	742979.34	N 32 8 49.85 W	103 40 54.53
	13600.00	90.00	359.86	10564.00	3114.11	3083.03	-460.75	0.00	417989.53	742979.09	N 32 8 50.84 W	103 40 54.53

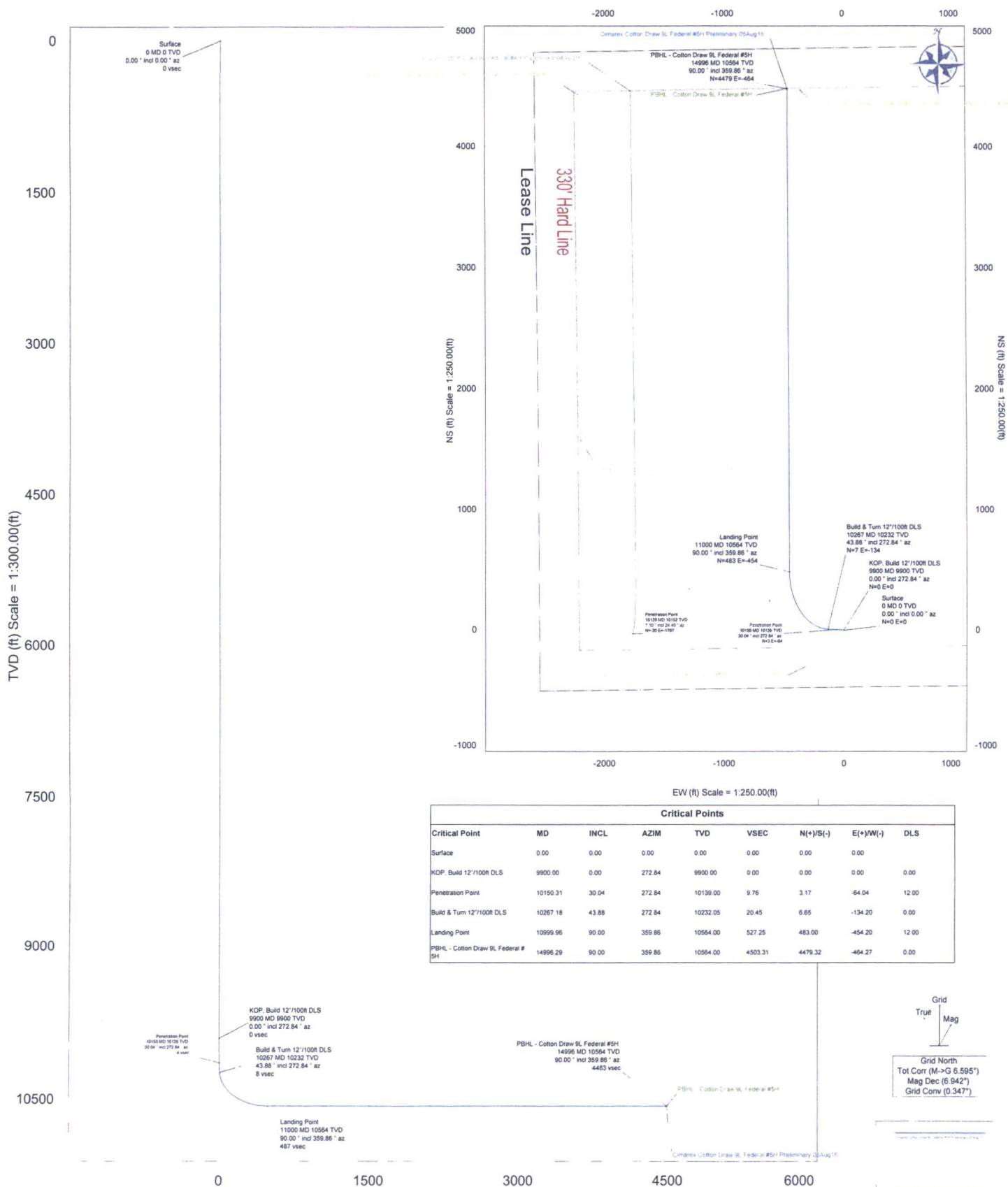
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	13700.00	90.00	359.86	10564.00	3213.60	3183.03	-461.00	0.00	418089.52	742978.84	N 32 8 51.83 W	103 40 54.52
	13800.00	90.00	359.86	10564.00	3313.09	3283.03	-461.26	0.00	418189.52	742978.58	N 32 8 52.82 W	103 40 54.52
	13900.00	90.00	359.86	10564.00	3412.58	3383.03	-461.51	0.00	418289.51	742978.33	N 32 8 53.81 W	103 40 54.51
	14000.00	90.00	359.86	10564.00	3512.08	3483.03	-461.76	0.00	418389.51	742978.08	N 32 8 54.80 W	103 40 54.51
	14100.00	90.00	359.86	10564.00	3611.57	3583.03	-462.01	0.00	418489.50	742977.83	N 32 8 55.78 W	103 40 54.51
	14200.00	90.00	359.86	10564.00	3711.06	3683.03	-462.26	0.00	418589.50	742977.58	N 32 8 56.77 W	103 40 54.50
	14300.00	90.00	359.86	10564.00	3810.55	3783.03	-462.52	0.00	418689.49	742977.32	N 32 8 57.76 W	103 40 54.50
	14400.00	90.00	359.86	10564.00	3910.05	3883.03	-462.77	0.00	418789.49	742977.07	N 32 8 58.75 W	103 40 54.49
	14500.00	90.00	359.86	10564.00	4009.54	3983.03	-463.02	0.00	418889.49	742976.82	N 32 8 59.74 W	103 40 54.49
	14600.00	90.00	359.86	10564.00	4109.03	4083.03	-463.27	0.00	418989.48	742976.57	N 32 9 0.73 W	103 40 54.49
	14700.00	90.00	359.86	10564.00	4208.53	4183.03	-463.52	0.00	419089.48	742976.32	N 32 9 1.72 W	103 40 54.48
	14800.00	90.00	359.86	10564.00	4308.02	4283.03	-463.78	0.00	419189.47	742976.06	N 32 9 2.71 W	103 40 54.48
	14900.00	90.00	359.86	10564.00	4407.51	4383.03	-464.03	0.00	419289.47	742975.81	N 32 9 3.70 W	103 40 54.47
PBHL - Cotton Draw 9L Federal #5H	14996.29	90.00	359.86	10564.00	4503.31	4479.32	-464.27	0.00	419385.75	742975.57	N 32 9 4.65 W	103 40 54.47

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 (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	14996.289	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Cotton Draw 9L Federal #5H

Borehole:	Original Borehole	Well:	Cotton Draw 9L Federal #5H	Field:	NM Lea County (NAD 83)	Structure:	Cimarex Cotton Draw 9L Federal #5H
Gravity & Magnetic Parameters		Surface Location		Miscellaneous			
Model:	HDGM 2016	Dip:	89.889°	Date:	05-Aug-2016	Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet
MagDec:	6.942°	FS:	48134.079nT	Gravity FS:	998.423mgm (9.80665 Based)	Lat:	N 32 8 20.30
						Lon:	W 103 40 49.38
						North:	414906.641US
						East:	743439.821US
						Grid Conv:	0.3474°
						Scale Fact:	0.99995567
						Slot:	Cotton Draw 9L Federal #5H
						Plan:	Cimarex Cotton Draw 9L Federal #5H Preliminary 05Aug16
						TVD Ref:	RKB = TBD(3444.6ft above MSL)



Vertical Section (ft) Azim = 359.48° Scale = 1:300.00(ft) Origin = 0N/-S, 0E/-W