

Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18 Proposal Geodetic Report (Non-Def Plan)



Report Date: August 01, 2018 - 10:35 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Coriander AOC 1-12 State 3H / Cimarex Coriander AOC 1-12 State 3H
Well: Cimarex Coriander AOC 1-12 State 3H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18
Survey Date: April 04, 2017
Tort / AHD / DDI / ERD Ratio: 103.828 * / 10352.115 ft / 6.338 / 1.078
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 20' 24.5555", W 103° 37' 19.69801"
Location Grid N/E Y/X: N 488209.400 RUS, E 780984.100 RUS
CRS Grid Convergence Angle: 0.3805 *
Grid Scale Factor: 0.99996434
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.630 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3778.000 ft above MSL
Seabed / Ground Elevation: 3752.000 * ft above MSL
Magnetic Declination: 6.807 *
Total Gravity Field Strength: 998.4394mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48098.400 nT
Magnetic Dip Angle: 60.114 *
Declination Date: August 01, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.3805 *
Total Corr Mag North->Grid North: 6.4268 *
Local Coord Referenced To: Structure Reference Point

HOT TO GO

AUG 03 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 [330' FNL, 730' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	100.00	0.00	261.00	100.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	200.00	0.00	261.00	200.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	300.00	0.00	261.00	300.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	400.00	0.00	261.00	400.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	500.00	0.00	261.00	500.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	600.00	0.00	261.00	600.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	700.00	0.00	261.00	700.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	800.00	0.00	261.00	800.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	900.00	0.00	261.00	900.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1000.00	0.00	261.00	1000.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1100.00	0.00	261.00	1100.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1200.00	0.00	261.00	1200.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
Rustler	1250.00	0.00	261.00	1250.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1300.00	0.00	261.00	1300.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1400.00	0.00	261.00	1400.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1500.00	0.00	261.00	1500.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1600.00	0.00	261.00	1600.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1700.00	0.00	261.00	1700.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1800.00	0.00	261.00	1800.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	1900.00	0.00	261.00	1900.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	2000.00	0.00	261.00	2000.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	2100.00	0.00	261.00	2100.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	2200.00	0.00	261.00	2200.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	2300.00	0.00	261.00	2300.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	2400.00	0.00	261.00	2400.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
Nudge 2'/100' DLS	2500.00	0.00	261.00	2500.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
	2600.00	2.00	261.00	2599.98	0.26	-0.27	-1.72	2.00	488209.13	780982.38	N 32 20 24.55	W 103 37 19.72
	2700.00	4.00	261.00	2699.84	1.05	-1.09	-6.89	2.00	488208.31	780977.21	N 32 20 24.55	W 103 37 19.78
Hold Nudge	2797.50	5.95	261.00	2796.97	2.32	-2.41	-15.24	2.00	488206.99	780968.88	N 32 20 24.53	W 103 37 19.88
	2800.00	5.95	261.00	2799.45	2.35	-2.45	-15.50	0.00	488206.95	780968.60	N 32 20 24.53	W 103 37 19.88
	2900.00	5.95	261.00	2898.91	3.91	-4.08	-25.74	0.00	488205.32	780958.36	N 32 20 24.52	W 103 37 20.00
	3000.00	5.95	261.00	2998.37	5.47	-5.70	-35.98	0.00	488203.70	780948.13	N 32 20 24.50	W 103 37 20.12
	3100.00	5.95	261.00	3097.84	7.02	-7.32	-46.21	0.00	488202.08	780937.89	N 32 20 24.49	W 103 37 20.24
	3200.00	5.95	261.00	3197.30	8.58	-8.94	-56.45	0.00	488200.46	780927.65	N 32 20 24.47	W 103 37 20.36
	3300.00	5.95	261.00	3296.76	10.13	-10.58	-66.69	0.00	488198.84	780917.41	N 32 20 24.46	W 103 37 20.48
	3400.00	5.95	261.00	3396.22	11.69	-12.18	-76.93	0.00	488197.22	780907.17	N 32 20 24.44	W 103 37 20.60
	3500.00	5.95	261.00	3495.68	13.24	-13.81	-87.17	0.00	488195.59	780896.93	N 32 20 24.42	W 103 37 20.72
	3600.00	5.95	261.00	3595.14	14.80	-15.43	-97.41	0.00	488193.97	780886.70	N 32 20 24.41	W 103 37 20.83
Top of Salt	3660.18	5.95	261.00	3655.00	15.73	-16.40	-103.57	0.00	488193.00	780880.54	N 32 20 24.40	W 103 37 20.91
	3700.00	5.95	261.00	3694.60	16.35	-17.05	-107.65	0.00	488192.35	780876.48	N 32 20 24.39	W 103 37 20.95
	3800.00	5.95	261.00	3794.06	17.91	-18.67	-117.88	0.00	488190.73	780866.22	N 32 20 24.38	W 103 37 21.07
	3900.00	5.95	261.00	3893.53	19.46	-20.29	-128.12	0.00	488189.11	780855.98	N 32 20 24.36	W 103 37 21.19
	4000.00	5.95	261.00	3992.99	21.02	-21.91	-138.36	0.00	488187.49	780845.74	N 32 20 24.35	W 103 37 21.31
	4100.00	5.95	261.00	4092.45	22.58	-23.54	-148.60	0.00	488185.87	780835.51	N 32 20 24.33	W 103 37 21.43
	4200.00	5.95	261.00	4191.91	24.13	-25.16	-158.84	0.00	488184.24	780825.27	N 32 20 24.32	W 103 37 21.55
	4300.00	5.95	261.00	4291.37	25.69	-26.78	-169.08	0.00	488182.62	780815.03	N 32 20 24.30	W 103 37 21.67
	4400.00	5.95	261.00	4390.83	27.24	-28.40	-179.31	0.00	488181.00	780804.79	N 32 20 24.29	W 103 37 21.79
	4500.00	5.95	261.00	4490.29	28.80	-30.02	-189.55	0.00	488179.38	780794.55	N 32 20 24.27	W 103 37 21.91
	4600.00	5.95	261.00	4589.76	30.35	-31.64	-199.79	0.00	488177.76	780784.32	N 32 20 24.26	W 103 37 22.03
Base of Salt	4690.73	5.95	261.00	4689.22	31.91	-33.27	-209.08	0.00	488176.29	780774.08	N 32 20 24.24	W 103 37 22.14
	4700.00	5.95	261.00	4689.22	31.91	-33.27	-210.03	0.00	488176.14	780774.08	N 32 20 24.24	W 103 37 22.15
	4800.00	5.95	261.00	4788.68	33.46	-34.89	-220.27	0.00	488174.51	780763.84	N 32 20 24.22	W 103 37 22.27
	4900.00	5.95	261.00	4888.14	35.02	-36.51	-230.51	0.00	488172.89	780753.60	N 32 20 24.21	W 103 37 22.39
Lamar	4962.20	5.95	261.00	4950.00	35.99	-37.52	-236.87	0.00	488171.88	780747.23	N 32 20 24.20	W 103 37 22.46
	5000.00	5.95	261.00	4987.60	38.57	-38.13	-240.74	0.00	488171.27	780743.36	N 32 20 24.19	W 103 37 22.51
Bell Canyon Drop to Vertical 2'/100' DLS	5012.47	5.95	261.00	5000.00	36.77	-38.33	-242.02	0.00	488171.07	780742.09	N 32 20 24.19	W 103 37 22.52
	5100.00	4.20	261.00	5087.19	37.93	-39.54	-249.67	2.00	488169.86	780734.44	N 32 20 24.18	W 103 37 22.61
	5200.00	2.20	261.00	5187.03	38.77	-40.42	-255.18	2.00	488168.98	780728.93	N 32 20 24.17	W 103 37 22.68
	5300.00	0.20	261.00	5287.00	39.08	-40.74	-257.25	2.00	488168.66	780726.86	N 32 20 24.17	W 103 37 22.70
Hold Vertical	5309.97	0.00	261.00	5296.97	39.08	-40.75	-257.26	2.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	5400.00	0.00	261.00	5387.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	5500.00	0.00	261.00	5487.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	5600.00	0.00	261.00	5587.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	5700.00	0.00	261.00	5687.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	5800.00	0.00	261.00	5787.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	5900.00	0.00	261.00	5887.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
Cherry Canyon	5903.00	0.00	261.00	5890.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	6000.00	0.00	261.00	5987.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	6100.00	0.00	261.00	6087.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	6200.00	0.00	261.00	6187.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	6300.00	0.00	261.00	6287.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70
	6400.00	0.00	261.00	6387.00	39.08	-40.75	-257.26	0.00	488168.65	780726.85	N 32 20 24.17	W 103 37 22.70

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6500.00	0.00	261.00	6487.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	6800.00	0.00	261.00	6587.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	6700.00	0.00	261.00	6687.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	6800.00	0.00	261.00	6787.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	6900.00	0.00	261.00	6887.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7000.00	0.00	261.00	6987.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7100.00	0.00	261.00	7087.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7200.00	0.00	261.00	7187.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
Brushy Canyon	7233.00	0.00	261.00	7220.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7300.00	0.00	261.00	7287.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7400.00	0.00	261.00	7387.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7500.00	0.00	261.00	7487.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7600.00	0.00	261.00	7587.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7700.00	0.00	261.00	7687.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7800.00	0.00	261.00	7787.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	7900.00	0.00	261.00	7887.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8000.00	0.00	261.00	7987.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8100.00	0.00	261.00	8087.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8200.00	0.00	261.00	8187.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8300.00	0.00	261.00	8287.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8400.00	0.00	261.00	8387.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8500.00	0.00	261.00	8487.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8600.00	0.00	261.00	8587.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8700.00	0.00	261.00	8687.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8800.00	0.00	261.00	8787.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
Bone Spring	8803.00	0.00	261.00	8790.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	8900.00	0.00	261.00	8887.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	9000.00	0.00	261.00	8987.00	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
KOP - Build 12"/100' DLS	9075.87	0.00	261.00	9062.87	39.08	-40.75	-257.26	0.00	488168.65	760728.85	N 32 20 24.17	W 103 37 22.70
	9100.00	2.92	179.63	9098.99	39.70	-41.37	-257.26	12.00	488168.04	760728.85	N 32 20 24.16	W 103 37 22.70
	9200.00	14.92	179.63	9185.60	55.18	-56.84	-257.16	12.00	488152.56	760728.95	N 32 20 24.01	W 103 37 22.70
	9300.00	26.92	179.63	9278.84	90.82	-82.48	-256.93	12.00	488116.92	760727.18	N 32 20 23.68	W 103 37 22.70
Avalon Shale	9396.63	38.52	179.63	9360.00	142.96	-144.62	-256.60	12.00	488064.78	760727.51	N 32 20 23.14	W 103 37 22.70
	9400.00	38.92	179.63	9362.63	145.07	-146.73	-256.59	12.00	488062.68	760727.52	N 32 20 23.12	W 103 37 22.70
	9500.00	50.92	179.63	9433.31	215.55	-217.21	-256.14	12.00	487992.20	760727.97	N 32 20 22.42	W 103 37 22.70
	9600.00	62.92	179.63	9487.79	299.19	-300.84	-255.60	12.00	487908.57	760728.51	N 32 20 21.80	W 103 37 22.70
	9700.00	74.92	179.63	9523.69	392.32	-393.98	-255.01	12.00	487815.44	760729.10	N 32 20 20.67	W 103 37 22.70
	9800.00	86.92	179.63	9539.44	490.89	-492.54	-254.38	12.00	487716.88	760729.73	N 32 20 19.70	W 103 37 22.70
Landing Point, Hold	9813.95	88.59	179.63	9539.99	504.83	-506.48	-254.29	12.00	487702.94	760729.82	N 32 20 19.56	W 103 37 22.70
	9900.00	88.59	179.63	9542.10	590.85	-592.50	-253.74	0.00	487616.82	760730.37	N 32 20 18.71	W 103 37 22.70
	10000.00	88.59	179.63	9544.56	690.82	-692.47	-253.10	0.00	487516.85	760731.01	N 32 20 17.72	W 103 37 22.70
	10100.00	88.59	179.63	9547.01	790.79	-792.44	-252.46	0.00	487416.89	760731.65	N 32 20 16.73	W 103 37 22.70
	10200.00	88.59	179.63	9549.47	890.76	-892.41	-251.82	0.00	487317.03	760732.29	N 32 20 15.74	W 103 37 22.70
	10300.00	88.59	179.63	9551.93	990.73	-992.38	-251.19	0.00	487217.06	760732.92	N 32 20 14.75	W 103 37 22.70
	10400.00	88.59	179.63	9554.38	1090.70	-1092.34	-250.55	0.00	487117.10	760733.56	N 32 20 13.76	W 103 37 22.70
	10500.00	88.59	179.63	9556.84	1190.67	-1192.31	-249.91	0.00	487017.13	760734.20	N 32 20 12.77	W 103 37 22.70
	10600.00	88.59	179.63	9559.29	1290.64	-1292.28	-249.27	0.00	486917.17	760734.84	N 32 20 11.79	W 103 37 22.70
	10700.00	88.59	179.63	9561.75	1390.61	-1392.25	-248.63	0.00	486817.21	760735.48	N 32 20 10.80	W 103 37 22.70
	10800.00	88.59	179.63	9564.20	1490.58	-1492.21	-247.99	0.00	486717.24	760736.12	N 32 20 9.81	W 103 37 22.70
	10900.00	88.59	179.63	9566.66	1590.55	-1592.18	-247.35	0.00	486617.28	760736.76	N 32 20 8.82	W 103 37 22.70
	11000.00	88.59	179.63	9569.11	1690.52	-1692.15	-246.72	0.00	486517.31	760737.39	N 32 20 7.83	W 103 37 22.70
	11100.00	88.59	179.63	9571.57	1790.49	-1792.12	-246.08	0.00	486417.35	760738.03	N 32 20 6.84	W 103 37 22.70
	11200.00	88.59	179.63	9574.02	1890.46	-1892.09	-245.44	0.00	486317.39	760738.67	N 32 20 5.85	W 103 37 22.70
	11300.00	88.59	179.63	9576.48	1990.43	-1992.05	-244.80	0.00	486217.42	760739.31	N 32 20 4.86	W 103 37 22.71
	11400.00	88.59	179.63	9578.94	2090.40	-2092.02	-244.16	0.00	486117.46	760739.95	N 32 20 3.87	W 103 37 22.71
	11500.00	88.59	179.63	9581.39	2190.37	-2191.99	-243.52	0.00	486017.49	760740.59	N 32 20 2.88	W 103 37 22.71
	11600.00	88.59	179.63	9583.85	2290.34	-2291.96	-242.88	0.00	485917.53	760741.23	N 32 20 1.89	W 103 37 22.71
	11700.00	88.59	179.63	9586.30	2390.31	-2391.92	-242.25	0.00	485817.57	760741.86	N 32 20 0.90	W 103 37 22.71
	11800.00	88.59	179.63	9588.76	2490.28	-2491.89	-241.61	0.00	485717.60	760742.50	N 32 19 59.91	W 103 37 22.71
	11900.00	88.59	179.63	9591.21	2590.25	-2591.86	-240.97	0.00	485617.64	760743.14	N 32 19 58.93	W 103 37 22.71
	12000.00	88.59	179.63	9593.67	2690.22	-2691.83	-240.33	0.00	485517.67	760743.78	N 32 19 57.94	W 103 37 22.71
	12100.00	88.59	179.63	9596.12	2790.19	-2791.80	-239.69	0.00	485417.71	760744.42	N 32 19 56.95	W 103 37 22.71
	12200.00	88.59	179.63	9598.58	2890.16	-2891.76	-239.05	0.00	485317.75	760745.06	N 32 19 55.96	W 103 37 22.71
2948' VS: Build 2" DLS	12257.88	88.59	179.63	9600.00	2948.00	-2949.61	-238.68	0.00	485259.91	760745.43	N 32 19 55.39	W 103 37 22.71
	12300.00	89.44	179.63	9600.72	2990.14	-2991.74	-238.41	2.00	485217.78	760745.70	N 32 19 54.97	W 103 37 22.71
	12368.54	90.81	179.63	9600.58	3058.67	-3060.27	-237.98	2.00	485149.25	760746.13	N 32 19 54.29	W 103 37 22.71
Hold	12400.00	90.81	179.63	9600.14	3090.13	-3091.73	-237.77	0.00	485117.79	760746.33	N 32 19 53.98	W 103 37 22.71
	12500.00	90.81	179.63	9598.73	3190.12	-3191.72	-237.14	0.00	485017.80	760746.97	N 32 19 52.99	W 103 37 22.71
	12600.00	90.81	179.63	9597.32	3290.11	-3291.71	-236.50	0.00	484917.82	760747.61	N 32 19 52.00	W 103 37 22.71
	12700.00	90.81	179.63	9595.91	3390.10	-3391.69	-235.86	0.00	484817.83	760748.25	N 32 19 51.01	W 103 37 22.71
	12800.00	90.81	179.63	9594.51	3490.09	-3491.68	-235.22	0.00	484717.85	760748.89	N 32 19 50.02	W 103 37 22.71
	12900.00	90.81	179.63	9593.10	3590.08	-3591.67	-234.58	0.00	484617.86	760749.53	N 32 19 49.03	W 103 37 22.71
	13000.00	90.81	179.63	9591.69	3690.07	-3691.66	-233.94	0.00	484517.88	760750.17	N 32 19 48.04	W 103 37 22.71
	13100.00	90.81	179.63	9590.28	3790.06	-3791.65	-233.30	0.00	484417.90	760750.80	N 32 19 47.05	W 103 37 22.71
	13200.00	90.81	179.63	9588.88	3890.05	-3891.64	-232.67	0.00	484317.91	760751.44	N 32 19 46.06	W 103 37 22.71
	13300.00	90.81	179.63	9587.47	3990.04	-3991.62	-232.03	0.00	484217.93	760752.08	N 32 19 45.07	W 103 37 22.

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 ° ' ")
	16100.00	89.69	179.63	9551.65	8789.78	-6791.31	-214.12	0.00	481418.35	760769.99	N 32 19 17.37	W 103 37 22.72
	16200.00	89.69	179.63	9552.20	8889.78	-6891.30	-213.46	0.00	481318.36	760770.64	N 32 19 16.38	W 103 37 22.72
	16300.00	89.69	179.63	9552.75	8989.78	-6991.30	-212.81	0.00	481218.36	760771.30	N 32 19 15.39	W 103 37 22.72
	16400.00	89.69	179.63	9553.30	9089.78	-7091.29	-212.16	0.00	481118.37	760771.95	N 32 19 14.40	W 103 37 22.72
	16500.00	89.69	179.63	9553.85	9189.78	-7191.29	-211.51	0.00	481018.38	760772.60	N 32 19 13.41	W 103 37 22.72
	16600.00	89.69	179.63	9554.40	9289.77	-7291.29	-210.85	0.00	480918.39	760773.26	N 32 19 12.42	W 103 37 22.72
	16700.00	89.69	179.63	9554.95	9389.77	-7391.28	-210.20	0.00	480818.39	760773.91	N 32 19 11.43	W 103 37 22.72
	16800.00	89.69	179.63	9555.50	9489.77	-7491.28	-209.55	0.00	480718.40	760774.56	N 32 19 10.44	W 103 37 22.72
	16900.00	89.69	179.63	9556.05	9589.77	-7591.28	-208.89	0.00	480618.41	760775.21	N 32 19 9.46	W 103 37 22.72
	17000.00	89.69	179.63	9556.59	9689.77	-7691.27	-208.24	0.00	480518.42	760775.87	N 32 19 8.47	W 103 37 22.72
	17100.00	89.69	179.63	9557.14	9789.77	-7791.27	-207.59	0.00	480418.42	760776.52	N 32 19 7.48	W 103 37 22.72
	17200.00	89.69	179.63	9557.69	9889.76	-7891.27	-206.94	0.00	480318.43	760777.17	N 32 19 6.49	W 103 37 22.72
	17300.00	89.69	179.63	9558.24	9989.76	-7991.26	-206.28	0.00	480218.44	760777.82	N 32 19 5.50	W 103 37 22.72
	17400.00	89.69	179.63	9558.79	10089.76	-8091.26	-205.63	0.00	480118.45	760778.48	N 32 19 4.51	W 103 37 22.72
	17500.00	89.69	179.63	9559.34	10189.76	-8191.25	-204.98	0.00	480018.45	760779.13	N 32 19 3.52	W 103 37 22.72
	17600.00	89.69	179.63	9559.89	10289.76	-8291.25	-204.32	0.00	479918.46	760779.78	N 32 19 2.53	W 103 37 22.72
	17700.00	89.69	179.63	9560.44	10389.76	-8391.25	-203.67	0.00	479818.47	760780.44	N 32 19 1.54	W 103 37 22.72
	17800.00	89.69	179.63	9560.99	10489.76	-8491.24	-203.02	0.00	479718.48	760781.09	N 32 19 0.55	W 103 37 22.72
	17900.00	89.69	179.63	9561.54	10589.75	-8591.24	-202.37	0.00	479618.48	760781.74	N 32 18 59.56	W 103 37 22.72
	18000.00	89.69	179.63	9562.09	10689.75	-8691.24	-201.71	0.00	479518.49	760782.39	N 32 18 58.57	W 103 37 22.72
	18100.00	89.69	179.63	9562.64	10789.75	-8791.23	-201.06	0.00	479418.50	760783.05	N 32 18 57.58	W 103 37 22.72
	18200.00	89.69	179.63	9563.18	10889.75	-8891.23	-200.41	0.00	479318.51	760783.70	N 32 18 56.59	W 103 37 22.72
	18300.00	89.69	179.63	9563.73	10989.75	-8991.23	-199.76	0.00	479218.51	760784.35	N 32 18 55.60	W 103 37 22.72
	18400.00	89.69	179.63	9564.28	11089.75	-9091.22	-199.10	0.00	479118.52	760785.00	N 32 18 54.61	W 103 37 22.72
	18500.00	89.69	179.63	9564.83	11189.75	-9191.22	-198.45	0.00	479018.53	760785.66	N 32 18 53.62	W 103 37 22.72
	18600.00	89.69	179.63	9565.38	11289.74	-9291.21	-197.80	0.00	478918.54	760786.31	N 32 18 52.63	W 103 37 22.72
	18700.00	89.69	179.63	9565.93	11389.74	-9391.21	-197.14	0.00	478818.54	760786.96	N 32 18 51.64	W 103 37 22.72
	18800.00	89.69	179.63	9566.48	11489.74	-9491.21	-196.49	0.00	478718.55	760787.62	N 32 18 50.66	W 103 37 22.72
	18900.00	89.69	179.63	9567.03	11589.74	-9591.20	-195.84	0.00	478618.56	760788.27	N 32 18 49.67	W 103 37 22.72
	19000.00	89.69	179.63	9567.58	11689.74	-9691.20	-195.19	0.00	478518.56	760788.92	N 32 18 48.68	W 103 37 22.72
	19100.00	89.69	179.63	9568.13	11789.74	-9791.20	-194.53	0.00	478418.57	760789.57	N 32 18 47.69	W 103 37 22.72
	19200.00	89.69	179.63	9568.68	11889.73	-9891.19	-193.88	0.00	478318.58	760790.23	N 32 18 46.70	W 103 37 22.72
	19300.00	89.69	179.63	9569.23	11989.73	-9991.19	-193.23	0.00	478218.59	760790.88	N 32 18 45.71	W 103 37 22.72
	19400.00	89.69	179.63	9569.77	12089.73	-10091.19	-192.57	0.00	478118.59	760791.53	N 32 18 44.72	W 103 37 22.72

Cimarex
Coriander AOC
1-12 State 3H -
PBHL [100' FSL,
990' FWL]

19441.00	89.69	179.63	9570.00	10130.73	-10132.18	-192.31	0.00	478077.60	760791.80	N 32 18 44.31	W 103 37 22.72
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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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18
	1	26.000	19440.997	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Coriander AOC 1-12 State 3H

Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18 Proposal Geodetic Report

(Non-Def Plan)



Report Date: August 01, 2018 - 10:35 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Coriander AOC 1-12 State 3H / Cimarex Coriander AOC 1-12 State 3H
Well: Cimarex Coriander AOC 1-12 State 3H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18
Survey Date: April 04, 2017
Tort / AHD / DDI / ERD Ratio: 103.828 * / 10352.115 ft / 6.338 / 1.078
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 20' 24.55555", W 103° 37' 19.89801"
Location Grid N/E Y/X: N 488209.400 RUS, E 780984.100 RUS
CRS Grid Convergence Angle: 0.3805 *
Grid Scale Factor: 0.99998434
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.830 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3778.000 ft above MSL
Seabed / Ground Elevation: 3752.000 ft above MSL
Magnetic Declination: 8.807 *
Total Gravity Field Strength: 988.4394mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48096.400 nT
Magnetic Dip Angle: 60.114 *
Declination Date: August 01, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.3805 *
Total Corr Mag North->Grid North: 6.4266 *
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [330' FNL, 730' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
Nudge 2"/100'	2500.00	0.00	261.00	2500.00	0.00	0.00	0.00	0.00	488209.40	780984.10	N 32 20 24.56	W 103 37 19.70
DLS	2797.50	5.95	261.00	2796.97	2.32	-2.41	-15.24	2.00	488209.99	780988.86	N 32 20 24.53	W 103 37 19.88
Hold Nudge	5012.47	5.95	261.00	5000.00	38.77	-38.33	-242.02	0.00	488171.07	780742.09	N 32 20 24.19	W 103 37 22.52
Drop to Vertical	5309.97	0.00	261.00	5296.97	39.08	-40.75	-257.26	2.00	488168.85	780728.85	N 32 20 24.17	W 103 37 22.70
2"/100' DLS	9075.87	0.00	261.00	9062.67	39.08	-40.75	-257.26	0.00	488168.65	780728.85	N 32 20 24.17	W 103 37 22.70
Hold Vertical	9813.95	88.59	179.83	9539.99	504.83	-506.48	-254.29	12.00	487702.94	780729.82	N 32 20 19.56	W 103 37 22.70
KOP - Build	12257.86	88.59	179.83	9600.00	2948.00	-2949.61	-238.68	0.00	485259.91	780745.43	N 32 19 55.39	W 103 37 22.71
12"/100' DLS	12368.54	90.81	179.83	9600.58	3058.67	-3060.27	-237.98	2.00	485149.25	780746.13	N 32 19 54.29	W 103 37 22.71
Landing Point, Hold	15888.21	90.81	179.83	9551.04	6578.00	-6579.52	-215.49	0.00	481630.12	780768.81	N 32 19 19.47	W 103 37 22.72
2" DLS	15944.27	89.89	179.83	9550.80	6634.05	-6635.58	-215.13	2.00	481574.07	780768.98	N 32 19 18.91	W 103 37 22.72
Hold to TD	19441.00	89.89	179.83	9570.00	10130.73	-10132.18	-192.31	0.00	478077.60	780791.80	N 32 18 44.31	W 103 37 22.72
Cimarex Coriander AOC 1-12 State 3H - PBHL [100' FSL, 990' FWL]												

Survey Type: Non-Def Plan

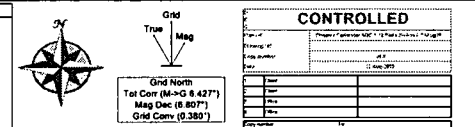
Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18
	1	26.000	19440.997	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Coriander AOC 1-12 State 3H

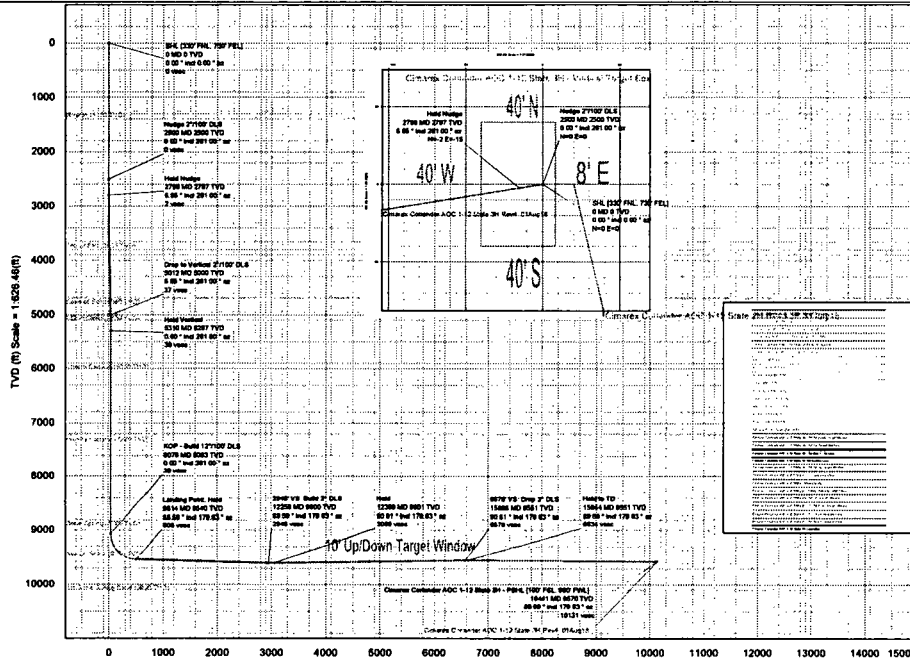
Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Corlander AOC 1-12 State 3H	NM Lea County (NAD 83)	Cimarex Corlander AOC 1-12 State 3H

Property & Magnitude Parameters	Depth	Date	Refuse Location	Refuse Location	Refuse Location	Refuse Location	Refuse Location	Refuse Location	Refuse Location
Model: 10000 2018	10000 2018	10000 2018	10000 2018	10000 2018	10000 2018	10000 2018	10000 2018	10000 2018	10000 2018
Depth: 6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"	6.00"

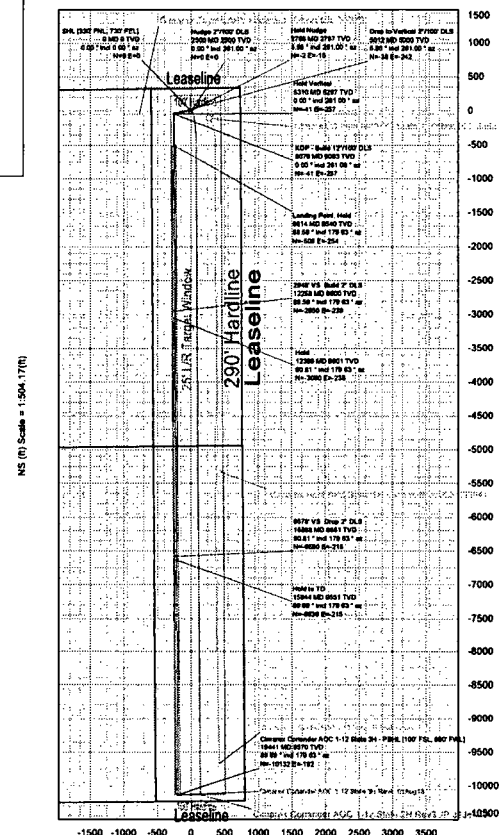
Critical Point	MD	BCL	AZM	TVD	VSSC	IN-PPH-1	ET-PPH-1	DLS
SHL (330' FNL, 730' FEL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rudder	1250.00	0.00	261.00	1250.00	0.00	0.00	0.00	0.00
Nudge 27100' DLS	2500.00	0.00	261.00	2500.00	0.00	0.00	0.00	0.00
Hold Nudge	2797.50	5.95	261.00	2795.57	2.32	-2.41	-15.24	2.00
Top of Salt	3860.18	5.95	261.00	3855.00	15.73	-16.40	-103.57	0.00
Base of Salt	4690.73	5.95	261.00	4680.00	31.76	-33.12	-206.09	0.00
Lamar	4962.20	5.95	261.00	4950.00	35.99	-37.52	-236.87	0.00
Drop to Vertical 27100' DLS	5012.47	5.95	261.00	5000.00	36.77	-38.33	-242.62	0.00
Salt Canyon	5012.47	5.95	261.00	5000.00	36.77	-38.33	-242.62	0.00
Hold Vertical	5309.97	0.00	261.00	5296.97	39.08	-40.75	-257.26	2.00
Cherry Canyon	5903.00	0.00	261.00	5890.00	39.08	-40.75	-257.26	0.00
Brady Canyon	7233.00	0.00	261.00	7220.00	39.08	-40.75	-257.26	0.00
Bone Spring	8803.00	0.00	261.00	8790.00	39.08	-40.75	-257.26	0.00
KOP - Build 127100' DLS	9075.67	0.00	261.00	9062.67	39.08	-40.75	-257.26	0.00
Aviation Shale	9396.53	38.52	179.63	9380.00	142.96	-144.62	-236.60	12.00
Landing Point, Hold	9513.95	89.59	179.63	9503.99	504.83	-506.48	-254.29	12.00
2948' VS: Build 2' DLS	12257.86	88.59	179.63	12240.00	2948.00	-2943.81	-238.68	0.00
Hold	12388.54	90.81	179.63	12369.58	3058.57	-3064.27	-237.88	2.00
9578' VS: Drop 2' DLS	15944.27	89.69	179.63	15925.04	6578.00	-6579.52	-215.49	0.00
Hold to TD	15944.27	89.69	179.63	15925.04	6578.00	-6579.52	-215.49	0.00
Cimarex Corlander AOC 1-12 State 3H - PHL (100' FNL, 900' FNL)	15944.27	89.69	179.63	15925.04	6578.00	-6579.52	-215.49	0.00
1st Bone Spring Sand	15944.27	89.69	179.63	15925.04	6578.00	-6579.52	-215.49	0.00



CONTROLLED	
Property / Location	10000 2018
Drawn by	10000 2018
Check by	10000 2018
Date	10000 2018
Scale	10000 2018
Notes	10000 2018



Vertical Section (ft) Azim = 179.63° Scale = 1:626.46(ft) Origin = 0N-S, 0E-W



EW (ft) Scale = 1:504.17 (ft)

Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18 Anti-Collision Summary Report

Analysis Date-24hr Time: August 01, 2018 - 10:35

Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure: Cimarex Coriander AOC 1-12 State 3H
 Slot: Cimarex Coriander AOC 1-12 State 3H
 Well: Cimarex Coriander AOC 1-12 State 3H
 Borehole: Original Borehole
 Scan MD Range: 0.00ft - 19441.00ft

Analysis Method: 3D Least Distance
 Reference Trajectory: Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18 (Non-Def Plan)
 Depth Interval: Every 10.00 Measured Depth (ft)
 Rule Set: NAL Procedure: D&M AntiCollision Standard S002
 Min Pts: All local minima indicated.
 Version / Patch: 2.10.740.0
 Database \ Project: US1153APP452.dir.slb.com/drilling-NM Lea County 2.10

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!
 Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
 - All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Cl-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Coriander AOC 1-12
 State 2H Rev2 RM 18July18
 (Def Plan)

20.03	16.50	17.53	3.53	N/A	MAS = 5.03 (m)	0.00	0.00	Cl-Ct<=15m<15.00	Enter Alert				Fail Minor
20.00	16.50	17.50	3.50	N/A	MAS = 5.03 (m)	26.00	26.00		WRP				
20.00	20.09	5.77	-0.09	1.43	OSF1.50	1930.00	1930.00		Enter Minor				
20.00	25.47	2.19	-5.48	1.14	OSF1.50	2500.00	2500.00	OSF<1.50	MinPt-Cl-Ct				
20.02	25.52	2.19	-5.51	1.14	OSF1.50	2510.00	2510.00		MinPts				
20.07	25.60	2.17	-5.53	1.14	OSF1.50	2520.00	2520.00		MinPt-O-ADP				
24.25	26.53	7.73	-0.28	1.44	OSF1.50	2680.00	2689.66		Exit Minor				
84.62	30.14	73.70	84.48	5.00	OSF1.50	3370.00	3368.38	OSF>5.00	Exit Alert				
280.32	75.68	228.03	204.63	5.69	OSF1.50	9080.00	9077.00		MinPts				
280.37	75.74	228.05	204.64	5.69	OSF1.50	9100.00	9086.99		MinPt-O-SF				
356.21	105.27	285.20	250.94	5.16	OSF1.50	12320.00	9600.85		MinPt-Cl-Ct				
356.95	108.04	283.42	247.81	4.99	OSF1.50	12470.00	9599.15	OSF<5.00	Enter Alert				
374.11	317.76	161.44	56.35	1.77	OSF1.50	19441.00	9570.00		MinPts				

Cimarex Coriander AOC State 1
 (Offset 025-33531) (Def
 Survey)

380.86	32.81	388.36	358.05	N/A	MAS = 10.00 (m)	0.00	0.00		Surface				Fail Minor
389.63	32.81	387.00	356.82	3085.26	MAS = 10.00 (m)	20.00	20.00		MinPt-O-SF				
389.48	32.81	388.87	356.65	4149.82	MAS = 10.00 (m)	28.00	28.00		WRP				
371.88	113.55	295.44	258.43	4.99	OSF1.50	2010.00	2010.00	OSF<5.00	Enter Alert				
365.74	145.48	287.92	220.28	3.81	OSF1.50	2530.00	2530.00		MinPt-Cl-Ct				
367.78	151.92	265.88	215.88	3.87	OSF1.50	2640.00	2639.84		MINPT-O-EQU				
370.84	155.35	268.24	215.28	3.81	OSF1.50	2700.00	2699.84		MinPt-O-ADP				
531.48	531.85	178.07	-0.39	1.50	OSF1.50	8630.00	8487.00	OSF<1.50	Enter Minor				
524.43	569.50	143.93	-45.07	1.36	OSF1.50	9170.00	9158.39		MinPts				
524.34	569.19	144.05	-44.85	1.36	OSF1.50	9180.00	9165.17		MinPt-Cl-Ct				
542.41	544.48	178.59	-2.07	1.49	OSF1.50	9350.00	9305.14	OSF>1.50	Exit Minor				
1835.78	552.72	1488.45	1283.04	5.00	OSF1.50	11130.00	9572.31	OSF>5.00	Exit Alert				
10042.17	569.01	9862.00	9473.18	26.58	OSF1.50	19441.00	9570.00		TD				

Cimarex Thyme APY Federal 1
 (Offset 025-33370) (Def
 Survey)

831.84	32.81	828.34	889.04	N/A	MAS = 10.00 (m)	0.00	0.00		Surface				Fail Minor
831.62	32.81	829.09	898.81	3083.56	MAS = 10.00 (m)	10.00	10.00		MinPt-O-SF				
831.50	32.81	828.98	898.69	41300.93	MAS = 10.00 (m)	20.00	20.00		MINPT-O-EQU				
831.48	32.81	828.98	898.67	N/A	MAS = 10.00 (m)	28.00	28.00		WRP				
745.30	228.33	593.53	518.87	4.98	OSF1.50	3990.00	3983.04	OSF<5.00	Enter Alert				
528.51	536.75	178.37	-0.24	1.50	OSF1.50	8930.00	8917.00	OSF<1.50	Enter Minor				
533.70	558.03	190.70	-24.32	1.43	OSF1.50	9240.00	9223.77		MinPt-Cl-Ct				
534.95	562.55	158.94	-27.90	1.43	OSF1.50	9320.00	9296.47		MINPT-O-EQU				
535.83	563.62	158.10	-27.70	1.43	OSF1.50	9340.00	9313.70		MinPts				
570.07	572.76	187.32	-0.69	1.49	OSF1.50	9550.00	9462.74	OSF>1.50	Exit Minor				
1820.51	579.94	1533.05	1340.57	4.98	OSF1.50	11200.00	9574.02	OSF>5.00	Exit Alert				
10100.82	580.77	9712.81	9520.05	26.19	OSF1.50	19441.00	9570.00		TD				

Cimarex Coriander AOC 1-12
 State 1H final survey (Def
 Survey)

152.11	32.81	149.61	119.30	N/A	MAS = 10.00 (m)	0.00	0.00		Surface				Warning Alert
152.01	32.81	149.51	119.21	21542.60	MAS = 10.00 (m)	26.00	26.00		WRP				
129.21	32.81	115.78	90.40	11.60	MAS = 10.00 (m)	2510.00	2510.00		MinPts				
129.22	32.81	115.78	90.41	11.58	MAS = 10.00 (m)	2520.00	2520.00		MINPT-O-EQU				
130.07	32.81	116.48	97.26	11.51	MAS = 10.00 (m)	2590.00	2589.99		MinPt-O-SF				
403.62	43.62	373.70	390.00	14.63	OSF1.50	8950.00	8937.00		MinPt-Cl-Ct				
403.64	43.68	373.69	359.96	14.81	OSF1.50	8960.00	8947.00		MINPT-O-EQU				
403.70	43.74	373.70	359.95	14.59	OSF1.50	8970.00	8957.00		MinPt-O-ADP				
404.82	44.01	374.44	360.60	14.53	OSF1.50	9020.00	9007.00		MinPt-O-SF				
607.62	50.38	573.20	557.24	18.96	OSF1.50	10040.00	9545.54		MinPt-Cl-Ct				
610.10	55.60	572.20	554.50	17.16	OSF1.50	10240.00	9650.45		MINPT-O-EQU				
615.59	73.89	565.50	541.70	12.88	OSF1.50	10780.00	9563.71		MINPT-O-EQU				
607.04	114.95	529.57	492.09	8.08	OSF1.50	11780.00	9588.27		MinPt-Cl-Ct				
611.15	125.05	526.95	486.10	7.45	OSF1.50	12030.00	9594.40		MINPT-O-EQU				
614.52	130.19	529.90	484.34	7.19	OSF1.50	12150.00	9597.35		MINPT-O-EQU				
612.98	186.82	500.93	446.16	5.57	OSF1.50	12980.00	9591.97		MinPt-Cl-Ct				
621.18	188.43	494.74	432.78	4.98	OSF1.50	13470.00	9585.08	OSF<5.00	Enter Alert				
587.86	221.23	439.54	368.63	4.01	OSF1.50	14210.00	9574.68		MinPt-Cl-Ct				
589.94	227.32	437.56	362.62	3.92	OSF1.50	14380.00	9572.55		MINPT-O-EQU				
576.96	265.89	398.86	311.06	3.27	OSF1.50	15210.00	9560.58		MinPt-Cl-Ct				
581.14	277.48	395.34	303.68	3.16	OSF1.50	15480.00	9556.78		MINPT-O-EQU				
586.14	298.18	386.54	287.98	2.96	OSF1.50	15830.00	9550.75		MinPt-Cl-Ct				
586.09	307.42	380.32	278.68	2.87	OSF1.50	16140.00	9551.87		MinPt-Cl-Ct				
584.26	320.41	369.84	263.87	2.75	OSF1.50	16430.00	9553.46		MinPt-Cl-Ct				
594.91	352.48	359.08	242.43	2.54	OSF1.50	17140.00	9557.36		MinPt-Cl-Ct				
595.52	367.42	349.74	228.10	2.44	OSF1.50	17470.00	9559.18		MinPt-Cl-Ct				

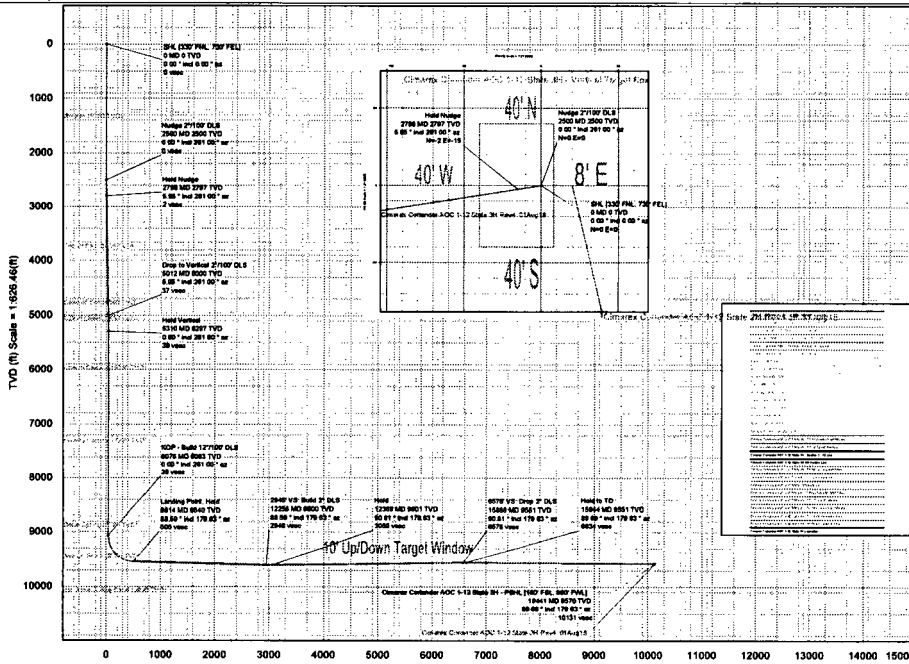
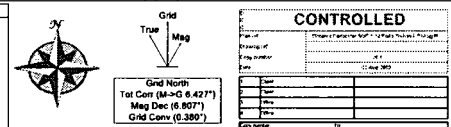
Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EQU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
598.09	374.46	347.61	223.63	2.40		OSF1.50	17840.00	9560.11				MINPT-O-EQU	
602.70	388.18	343.08	214.52	2.33		OSF1.50	17930.00	9561.70				MinPt-CtCt	
612.21	435.66	320.94	178.56	2.11		OSF1.50	18980.00	9567.47				MinPt-CtCt	
612.27	435.77	320.92	178.50	2.11		OSF1.50	18980.00	9567.52				MinPts	
785.52	355.81	527.48	409.71	3.24		OSF1.50	19441.00	9570.00				TD	

Onshore April AP2 State 1H
Gyro (Offset 025-33354) (Def
Survey)

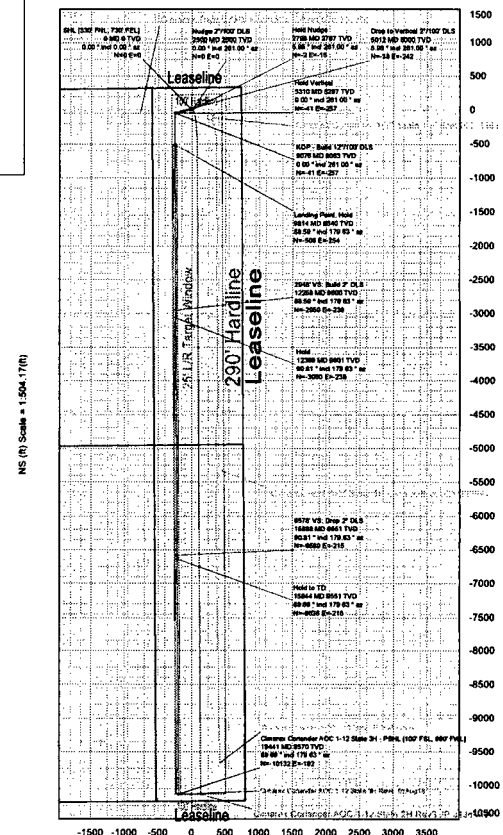
5311.47	32.81	5309.99	5278.68	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	
5311.30	32.81	5309.80	5278.49	270097.61		MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
5311.25	32.81	5308.71	5278.44	99478.75		MAS = 10.00 (m)	50.00	50.00				MinPts	
5311.33	32.81	5303.45	5278.52	829.34		MAS = 10.00 (m)	1500.00	1500.00				MinPts	
5314.61	32.81	5301.97	5281.81	475.75		MAS = 10.00 (m)	2500.00	2500.00				MINPT-O-EQU	
5314.80	32.81	5301.91	5281.86	465.97		MAS = 10.00 (m)	2600.00	2598.98				MinPts	
5307.00	32.81	5293.19	5274.19	430.19		MAS = 10.00 (m)	3920.00	3913.42				MinPts	
5307.03	32.81	5293.18	5274.22	428.79		MAS = 10.00 (m)	3940.00	3933.31				MINPT-O-EQU	
5306.97	32.81	5294.28	5276.17	401.75		MAS = 10.00 (m)	4220.00	4211.80				MINPT-O-EQU	
5315.20	32.81	5298.06	5282.39	339.34		MAS = 10.00 (m)	5100.00	5087.19				MinPt-O-SF	
5315.23	32.81	5298.25	5282.42	342.73		MAS = 10.00 (m)	5180.00	5147.07				MinPts	
5314.87	32.81	5298.21	5282.08	350.33		MAS = 10.00 (m)	5360.00	5347.00				MinPt-O-SF	
5303.33	32.81	5282.28	5270.52	271.05		MAS = 10.00 (m)	6870.00	6857.00				MinPts	
5303.35	32.81	5282.00	5270.55	266.78		MAS = 10.00 (m)	6950.00	6937.00				MinPts	
5303.95	35.37	5279.89	5268.59	234.73		OSF1.50	7630.00	7617.00				MinPt-CtCt	
5303.99	36.49	5279.17	5267.50	227.24		OSF1.50	7820.00	7807.00				MinPt-CtCt	
5304.60	38.30	5277.90	5265.30	210.34		OSF1.50	8290.00	8277.00				MinPt-CtCt	
5304.72	40.19	5277.43	5264.53	205.50		OSF1.50	8440.00	8427.00				MinPt-CtCt	
5304.77	41.08	5276.89	5263.69	200.90		OSF1.50	8590.00	8577.00				MinPt-CtCt	
5304.78	41.58	5276.55	5263.18	198.42		OSF1.50	8670.00	8657.00				MinPt-CtCt	
5305.20	42.96	5276.07	5262.24	191.77		OSF1.50	8800.00	8887.00				MINPT-O-EQU	
5305.48	43.33	5276.10	5262.15	190.12		OSF1.50	8960.00	8947.00				MinPt-O-ADP	
5306.48	44.05	5276.64	5262.45	186.94		OSF1.50	9100.00	9086.99				MinPt-O-SF	
692.78	118.19	613.50	574.60	8.89		OSF1.50	14620.00	9568.89				MinPt-CtCt	
692.79	118.28	613.45	574.51	8.88		OSF1.50	14630.00	9568.75				MinPts	
692.94	118.35	613.55	574.60	8.87		OSF1.50	14640.00	9568.61				MinPt-O-SF	
4865.28	49.80	4831.59	4815.48	150.98		OSF1.50	19441.00	9570.00				TD	

Borehole:		Well:		Field:		Structure:	
Original Borehole		Cimarex Coriander AOC 1-12 State 3H		NM Lea County (NAD 83)		Cimarex Coriander AOC 1-12 State 3H	
Model:	HCN88 3018	Dip:	86.114°	Date:	01-Aug-2018	Before Location:	882613 New Mexico State Plane, Eastern Zone, 18 Feet
MagDec:	6.907°	FB:	68896.4m	Gravity FB:	986.43 (mg) (2.0000 Gauss)	Lat:	N 32 39 24.66
						Lon:	W 105 37 18.78
						Easting:	789064.1800
						Grid Cent:	6.3880°
						Grid East:	6.99996434
						Mag:	Cimarex Coriander AOC 1-12 State 3H
						Plan:	Cimarex Coriander AOC 1-12 State 3H Revd: 01-Aug-18

Critical Points							
Critical Point	MD	INCL	AZIM	TVD	N(+)/S(-)	E(+)/W(-)	DLS
SHL (330° FNL, 730° FEL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler	1250.00	0.00	261.00	1250.00	0.00	0.00	0.00
Nudge 2°/100° DLS	2500.00	0.00	261.00	2500.00	0.00	0.00	0.00
Hold Nudge	2797.50	5.95	261.00	2796.97	2.32	-2.41	2.00
Top of Salt	3680.18	5.95	261.00	3655.00	15.73	-16.40	0.00
Base of Salt	4680.73	5.95	261.00	4680.00	31.78	-33.12	0.00
Lamar	4982.20	5.95	261.00	4950.00	35.99	-37.52	0.00
Drop to Vertical 2°/100° DLS	5012.47	5.95	261.00	5000.00	38.77	-38.33	0.00
Bell Canyon	5012.47	5.95	261.00	5000.00	38.77	-38.33	0.00
Hold Vertical	5308.97	0.00	261.00	5296.97	39.08	-40.75	2.00
Cherry Canyon	5903.00	0.00	261.00	5890.00	39.08	-40.75	0.00
Brushy Canyon	7233.00	0.00	261.00	7220.00	39.08	-40.75	0.00
Burns Spring	8803.00	0.00	261.00	8790.00	39.08	-40.75	0.00
KOP - Build 12°/100° DLS	9075.87	0.00	261.00	9062.87	39.08	-40.75	0.00
Avellan Shale	9395.83	38.82	179.83	9380.00	142.96	-144.82	12.00
Landing Point, Hold	9813.95	88.59	179.83	9539.99	594.83	-508.48	12.00
2048° VS: Build 2° DLS	12257.86	88.59	179.83	9600.00	2948.00	-2849.81	0.00
Hold	12388.54	90.81	179.83	9600.58	3058.87	-3060.27	2.00
8578° VS: Drop 2° DLS	16886.21	90.81	179.83	9551.04	6578.60	-6578.52	0.00
Hold to TD	18944.27	90.89	179.83	9550.80	8634.05	-8635.58	2.00
Cimarex Coriander AOC 1-12 State 3H - PBHL (100° FNL, 800° FNL)	19441.00	89.89	179.83	9570.00	10130.73	-10132.18	0.00
Top Bone Spring Sand	NaN			9990.00			



Vertical Section (ft) Azim = 179.83° Scale = 1:526.46(ft) Origin = ONI-S, OE-W



EW (ft) Scale = 1:504.17(ft)

Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18 Proposal Geodetic Report

(Non-Def Plan)



Report Date: August 01, 2018 - 10:35 AM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Coriander AOC 1-12 State 3H / Cimarex Coriander AOC 1-12 State 3H
 Well: Cimarex Coriander AOC 1-12 State 3H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18
 Survey Date: April 04, 2017
 Tort / AHD / DDI / ERD Ratio: 103.828 * / 10352.115 ft / 6.338 / 1.078
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 20' 24.55555", W 103° 37' 19.89801"
 Location Grid N/E Y/X: N 488209.400 ftUS, E 760984.100 ftUS
 CRS Grid Convergence Angle: 0.3805 *
 Grid Scale Factor: 0.99996434
 Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 179.630 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3776.000 ft above MSL
 Seabed / Ground Elevation: 3752.000 ft above MSL
 Magnetic Declination: 6.807 *
 Total Gravity Field Strength: 998.4394mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48096.400 nT
 Magnetic Dip Angle: 60.114 *
 Declination Date: August 01, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3805 *
 Total Corr Mag North->Grid: 6.4268 *
 North:
 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 [330' FNL, 730' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
100.00	0.00		261.00	100.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
200.00	0.00		261.00	200.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
300.00	0.00		261.00	300.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
400.00	0.00		261.00	400.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
500.00	0.00		261.00	500.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
600.00	0.00		261.00	600.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
700.00	0.00		261.00	700.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
800.00	0.00		261.00	800.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
900.00	0.00		261.00	900.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1000.00	0.00		261.00	1000.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1100.00	0.00		261.00	1100.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1200.00	0.00		261.00	1200.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
Rustler 1250.00	0.00		261.00	1250.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1300.00	0.00		261.00	1300.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1400.00	0.00		261.00	1400.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1500.00	0.00		261.00	1500.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1600.00	0.00		261.00	1600.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1700.00	0.00		261.00	1700.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1800.00	0.00		261.00	1800.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
1900.00	0.00		261.00	1900.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
2000.00	0.00		261.00	2000.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
2100.00	0.00		261.00	2100.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
2200.00	0.00		261.00	2200.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
2300.00	0.00		261.00	2300.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
2400.00	0.00		261.00	2400.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
Nudge 2"/100' DLS	2500.00	0.00	261.00	2500.00	0.00	0.00	0.00	0.00	488209.40	760984.10	N 32 20 24.56	W 103 37 19.70
2600.00	2.00		261.00	2599.98	0.26	-0.27	-1.72	2.00	488209.13	760982.38	N 32 20 24.55	W 103 37 19.72
2700.00	4.00		261.00	2699.84	1.05	-1.09	-6.89	2.00	488208.31	760977.21	N 32 20 24.55	W 103 37 19.78
Hold Nudge 2797.50	5.95		261.00	2796.97	2.32	-2.41	-15.24	2.00	488206.99	760968.88	N 32 20 24.53	W 103 37 19.88
2800.00	5.95		261.00	2799.45	2.35	-2.45	-15.50	0.00	488206.95	760968.60	N 32 20 24.53	W 103 37 19.88
2900.00	5.95		261.00	2898.91	3.91	-4.08	-25.74	0.00	488205.32	760958.36	N 32 20 24.52	W 103 37 20.00
3000.00	5.95		261.00	2998.37	5.47	-5.70	-35.98	0.00	488203.70	760948.13	N 32 20 24.50	W 103 37 20.12
3100.00	5.95		261.00	3097.84	7.02	-7.32	-46.21	0.00	488202.08	760937.89	N 32 20 24.49	W 103 37 20.24
3200.00	5.95		261.00	3197.30	8.58	-8.94	-56.45	0.00	488200.46	760927.65	N 32 20 24.47	W 103 37 20.36
3300.00	5.95		261.00	3296.76	10.13	-10.56	-66.69	0.00	488198.84	760917.41	N 32 20 24.46	W 103 37 20.48
3400.00	5.95		261.00	3396.22	11.69	-12.18	-76.93	0.00	488197.22	760907.17	N 32 20 24.44	W 103 37 20.60
3500.00	5.95		261.00	3495.68	13.24	-13.81	-87.17	0.00	488195.59	760896.93	N 32 20 24.42	W 103 37 20.72
3600.00	5.95		261.00	3595.14	14.80	-15.43	-97.41	0.00	488193.97	760886.70	N 32 20 24.41	W 103 37 20.83
Top of Salt 3660.18	5.95		261.00	3655.00	15.73	-16.40	-103.57	0.00	488193.00	760880.54	N 32 20 24.40	W 103 37 20.91
3700.00	5.95		261.00	3694.60	16.35	-17.05	-107.65	0.00	488192.35	760878.46	N 32 20 24.39	W 103 37 20.95
3800.00	5.95		261.00	3794.06	17.91	-18.67	-117.88	0.00	488190.73	760866.22	N 32 20 24.38	W 103 37 21.07
3900.00	5.95		261.00	3893.53	19.46	-20.29	-128.12	0.00	488189.11	760855.98	N 32 20 24.38	W 103 37 21.19
4000.00	5.95		261.00	3992.99	21.02	-21.91	-138.36	0.00	488187.49	760845.74	N 32 20 24.35	W 103 37 21.31
4100.00	5.95		261.00	4092.45	22.58	-23.54	-148.60	0.00	488185.87	760835.51	N 32 20 24.33	W 103 37 21.43
4200.00	5.95		261.00	4191.91	24.13	-25.16	-158.84	0.00	488184.24	760825.27	N 32 20 24.32	W 103 37 21.55
4300.00	5.95		261.00	4291.37	25.69	-26.78	-169.08	0.00	488182.62	760815.03	N 32 20 24.30	W 103 37 21.67
4400.00	5.95		261.00	4390.83	27.24	-28.40	-179.31	0.00	488181.00	760804.79	N 32 20 24.29	W 103 37 21.79
4500.00	5.95		261.00	4490.29	28.80	-30.02	-189.55	0.00	488179.38	760794.55	N 32 20 24.27	W 103 37 21.91
4600.00	5.95		261.00	4589.76	30.35	-31.64	-199.79	0.00	488177.76	760784.32	N 32 20 24.26	W 103 37 22.03
Base of Salt 4690.73	5.95		261.00	4680.00	31.76	-33.12	-209.08	0.00	488176.29	760775.03	N 32 20 24.24	W 103 37 22.14
4700.00	5.95		261.00	4699.22	31.91	-33.27	-210.03	0.00	488176.14	760774.08	N 32 20 24.24	W 103 37 22.15
4800.00	5.95		261.00	4788.68	33.48	-34.89	-220.27	0.00	488174.51	760763.84	N 32 20 24.22	W 103 37 22.27
4900.00	5.95		261.00	4888.14	35.02	-36.51	-230.51	0.00	488172.89	760753.60	N 32 20 24.21	W 103 37 22.39
Lamar 4962.20	5.95		261.00	4950.00	35.99	-37.52	-236.87	0.00	488171.88	760747.23	N 32 20 24.20	W 103 37 22.46
5000.00	5.95		261.00	4987.80	36.57	-38.13	-240.74	0.00	488171.27	760743.38	N 32 20 24.19	W 103 37 22.51
Bell Canyon Drop to Vertical 2"/100' DLS	5012.47	5.95	261.00	5000.00	36.77	-38.33	-242.02	0.00	488171.07	760742.09	N 32 20 24.19	W 103 37 22.52
5100.00	4.20		261.00	5087.19	37.93	-39.54	-249.67	2.00	488169.86	760734.44	N 32 20 24.18	W 103 37 22.61
5200.00	2.20		261.00	5187.03	38.77	-40.42	-255.18	2.00	488168.98	760728.93	N 32 20 24.17	W 103 37 22.68
5300.00	0.20		261.00	5287.00	39.08	-40.74	-257.25	2.00	488168.66	760726.86	N 32 20 24.17	W 103 37 22.70
Hold Vertical 5309.97	0.00		261.00	5296.97	39.08	-40.75	-257.26	2.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
5400.00	0.00		261.00	5387.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
5500.00	0.00		261.00	5487.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
5600.00	0.00		261.00	5587.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
5700.00	0.00		261.00	5687.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
5800.00	0.00		261.00	5787.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
5900.00	0.00		261.00	5887.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
Cherry Canyon 5903.00	0.00		261.00	5890.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
6000.00	0.00		261.00	5987.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
6100.00	0.00		261.00	6087.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
6200.00	0.00		261.00	6187.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 24.17	W 103 37 22.70
6300.00	0.00		261.00	6287.00	39.08	-40.75	-257.26	0.00	488168.65	760726.85	N 32 20 20	

Comments	MD	Incl	Azlm Grid	TVD	VSEC	NS	EW	DLS	Northng	Eastng	Latitude	Longitude
Brushy Canyon	6500.00	0.00	261.00	6487.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	6600.00	0.00	261.00	6587.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	6700.00	0.00	261.00	6687.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	6800.00	0.00	261.00	6787.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	6900.00	0.00	261.00	6887.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	7000.00	0.00	261.00	6987.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	7100.00	0.00	261.00	7087.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	7200.00	0.00	261.00	7187.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	7300.00	0.00	261.00	7287.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
	7400.00	0.00	261.00	7387.00	39.08	-40.75	-257.26	0.00	488168.85	760726.85	N 32 20 24.17 W	103 37 22.70
KOP - Build	8100.00	2.82	178.63	8086.88	39.70	-41.37	-257.26	12.00	488168.04	760726.85	N 32 20 24.16 W	103 37 22.70
	8200.00	14.82	178.63	8185.60	58.18	-58.84	-257.16	12.00	488152.56	760726.95	N 32 20 24.01 W	103 37 22.70
	8300.00	26.82	178.63	8278.84	90.82	-92.48	-256.93	12.00	488116.92	760727.18	N 32 20 23.66 W	103 37 22.70
	8400.00	38.52	178.63	8360.00	142.62	-144.62	-256.60	12.00	488064.78	760727.51	N 32 20 23.14 W	103 37 22.70
	8500.00	62.82	178.63	8433.31	215.55	-217.21	-256.14	12.00	487982.20	760727.97	N 32 20 22.42 W	103 37 22.70
	8600.00	60.82	178.63	8437.91	298.19	-300.84	-255.80	12.00	487908.57	760728.51	N 32 20 21.60 W	103 37 22.70
	8700.00	74.32	178.63	8523.68	382.32	-385.96	-255.14	12.00	487815.44	760728.10	N 32 20 20.67 W	103 37 22.70
	8800.00	86.92	178.63	8538.44	480.88	-482.54	-254.38	12.00	487716.88	760728.73	N 32 20 19.70 W	103 37 22.70
	8813.95	88.58	178.63	8539.98	504.83	-508.48	-254.29	12.00	487702.94	760729.82	N 32 20 19.56 W	103 37 22.70
	8800.00	88.59	178.63	8542.10	590.85	-592.50	-253.74	0.00	487618.92	760730.37	N 32 20 18.71 W	103 37 22.70
Avalon Shale	9000.00	88.59	178.63	9544.98	680.82	-682.47	-253.10	0.00	487516.95	760731.01	N 32 20 17.72 W	103 37 22.70
	9100.00	88.59	178.63	9547.01	780.78	-782.44	-252.46	0.00	487416.98	760731.65	N 32 20 16.73 W	103 37 22.70
	9200.00	88.59	178.63	9549.47	880.76	-882.41	-251.82	0.00	487317.03	760732.29	N 32 20 15.74 W	103 37 22.70
	9300.00	88.59	178.63	9551.93	980.73	-982.38	-251.19	0.00	487217.06	760732.92	N 32 20 14.75 W	103 37 22.70
	9400.00	88.59	178.63	9554.38	1080.70	-1082.34	-250.55	0.00	487117.10	760733.56	N 32 20 13.76 W	103 37 22.70
	9500.00	88.59	178.63	9556.84	1180.67	-1182.31	-249.91	0.00	487017.13	760734.20	N 32 20 12.77 W	103 37 22.70
	9600.00	88.59	178.63	9559.29	1280.64	-1282.28	-249.27	0.00	486917.17	760734.84	N 32 20 11.79 W	103 37 22.70
	9700.00	88.59	178.63	9561.75	1380.61	-1382.25	-248.63	0.00	486817.21	760735.48	N 32 20 10.80 W	103 37 22.70
	9800.00	88.59	178.63	9564.20	1480.58	-1482.21	-247.99	0.00	486717.24	760736.12	N 32 20 9.81 W	103 37 22.70
	9900.00	88.59	178.63	9566.66	1580.55	-1582.18	-247.35	0.00	486617.28	760736.76	N 32 20 8.82 W	103 37 22.70
Landing Point	10000.00	88.59	178.63	9569.11	1680.52	-1682.15	-246.72	0.00	486517.31	760737.39	N 32 20 7.83 W	103 37 22.70
	10100.00	88.59	178.63	9571.57	1780.49	-1782.12	-246.08	0.00	486417.35	760738.03	N 32 20 6.84 W	103 37 22.70
	10200.00	88.59	178.63	9574.02	1880.46	-1882.08	-245.44	0.00	486317.39	760738.67	N 32 20 5.85 W	103 37 22.70
	10300.00	88.59	178.63	9576.48	1980.43	-1982.05	-244.80	0.00	486217.42	760739.31	N 32 20 4.86 W	103 37 22.71
	10400.00	88.59	178.63	9578.94	2080.40	-2082.02	-244.16	0.00	486117.46	760739.95	N 32 20 3.87 W	103 37 22.71
	10500.00	88.59	178.63	9581.39	2180.37	-2181.99	-243.52	0.00	486017.49	760740.59	N 32 20 2.88 W	103 37 22.71
	10600.00	88.59	178.63	9583.85	2280.34	-2281.96	-242.88	0.00	485917.53	760741.23	N 32 20 1.89 W	103 37 22.71
	10700.00	88.59	178.63	9586.30	2380.31	-2381.92	-242.25	0.00	485817.57	760741.88	N 32 20 0.90 W	103 37 22.71
	10800.00	88.59	178.63	9588.76	2480.28	-2481.89	-241.61	0.00	485717.60	760742.50	N 32 19 58.91 W	103 37 22.71
	10900.00	88.59	178.63	9591.21	2580.25	-2581.86	-240.97	0.00	485617.64	760743.14	N 32 19 58.93 W	103 37 22.71
2948' VS: Build	12200.00	88.59	178.63	9598.58	2680.22	-2681.83	-240.33	0.00	485517.67	760743.78	N 32 19 57.94 W	103 37 22.71
	12100.00	88.59	178.63	9596.12	2780.19	-2781.80	-239.69	0.00	485417.71	760744.42	N 32 19 56.95 W	103 37 22.71
	12257.88	89.44	178.63	9600.72	2980.14	-2981.74	-238.41	2.00	485217.78	760745.70	N 32 19 54.97 W	103 37 22.71
	12300.00	89.44	178.63	9603.17	3080.11	-3081.73	-237.77	2.00	485149.25	760746.33	N 32 19 54.29 W	103 37 22.71
	12400.00	89.44	178.63	9605.62	3180.08	-3181.72	-237.14	0.00	485017.80	760746.97	N 32 19 52.98 W	103 37 22.71
	12500.00	89.44	178.63	9608.07	3280.05	-3281.71	-236.50	0.00	484917.82	760747.61	N 32 19 52.00 W	103 37 22.71
	12600.00	89.44	178.63	9610.52	3380.02	-3381.68	-235.86	0.00	484817.85	760748.25	N 32 19 51.01 W	103 37 22.71
	12700.00	89.44	178.63	9612.97	3480.00	-3481.65	-235.22	0.00	484717.88	760748.89	N 32 19 50.02 W	103 37 22.71
	12800.00	89.44	178.63	9615.42	3580.00	-3581.62	-234.58	0.00	484617.91	760749.53	N 32 19 49.03 W	103 37 22.71
	12900.00	89.44	178.63	9617.87	3680.00	-3681.59	-233.94	0.00	484517.94	760750.17	N 32 19 48.04 W	103 37 22.71
Hold	13000.00	89.44	178.63	9620.32	3780.00	-3781.56	-233.30	0.00	484417.97	760750.80	N 32 19 47.05 W	103 37 22.71
	13100.00	89.44	178.63	9622.77	3880.00	-3881.53	-232.67	0.00	484317.99	760751.44	N 32 19 46.06 W	103 37 22.71
	13200.00	89.44	178.63	9625.22	3980.00	-3981.50	-232.03	0.00	484217.99	760752.08	N 32 19 45.07 W	103 37 22.71
	13300.00	89.44	178.63	9627.67	4080.00	-4081.47	-231.39	0.00	484117.94	760752.72	N 32 19 44.09 W	103 37 22.71
	13400.00	89.44	178.63	9630.12	4180.00	-4181.44	-230.75	0.00	484017.96	760753.36	N 32 19 43.10 W	103 37 22.71
	13500.00	89.44	178.63	9632.57	4280.00	-4281.41	-230.11	0.00	483917.97	760754.00	N 32 19 42.11 W	103 37 22.71
	13600.00	89.44	178.63	9635.02	4380.00	-4381.38	-229.47	0.00	483817.99	760754.64	N 32 19 41.12 W	103 37 22.71
	13700.00	89.44	178.63	9637.47	4480.00	-4481.35	-228.83	0.00	483718.01	760755.28	N 32 19 40.13 W	103 37 22.71
	13800.00	89.44	178.63	9639.92	4580.00	-4581.32	-228.19	0.00	483618.02	760755.91	N 32 19 39.14 W	103 37 22.71
	13900.00	89.44	178.63	9642.37	4680.00	-4681.29	-227.56	0.00	483518.04	760756.55	N 32 19 38.15 W	103 37 22.71
2' DLS	14000.00	89.44	178.63	9644.82	4780.00	-4781.26	-226.92	0.00	483418.05	760757.19	N 32 19 37.16 W	103 37 22.71
	14100.00	89.44	178.63	9647.27	4880.00	-4881.23	-226.28	0.00	483318.07	760757.83	N 32 19 36.17 W	103 37 22.71
	14200.00	89.44	178.63	9649.72	4980.00	-4981.20	-225.64	0.00	483218.08	760758.47	N 32 19 35.18 W	103 37 22.71
	14300.00	89.44	178.63	9652.17	5080.00	-5081.17	-225.00	0.00	483118.10	760759.11	N 32 19 34.19 W	1

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (NUS)	Easting (EUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	16100.00	89.69	179.63	9551.65	6789.78	-8791.31	-214.12	0.00	481418.35	760769.99	N 32 19 17.37	W 103 37 22.72
	16200.00	89.69	179.63	9552.20	6889.78	-8891.30	-213.46	0.00	481318.36	760770.64	N 32 19 16.38	W 103 37 22.72
	16300.00	89.69	179.63	9552.75	6989.78	-8991.30	-212.81	0.00	481218.36	760771.30	N 32 19 15.39	W 103 37 22.72
	16400.00	89.69	179.63	9553.30	7089.78	-9091.29	-212.16	0.00	481118.37	760771.95	N 32 19 14.40	W 103 37 22.72
	16500.00	89.69	179.63	9553.85	7189.78	-9191.29	-211.51	0.00	481018.38	760772.60	N 32 19 13.41	W 103 37 22.72
	16600.00	89.69	179.63	9554.40	7289.77	-9291.29	-210.85	0.00	480918.39	760773.26	N 32 19 12.42	W 103 37 22.72
	16700.00	89.69	179.63	9554.95	7389.77	-9391.28	-210.20	0.00	480818.39	760773.91	N 32 19 11.43	W 103 37 22.72
	16800.00	89.69	179.63	9555.50	7489.77	-9491.28	-209.55	0.00	480718.40	760774.56	N 32 19 10.44	W 103 37 22.72
	16900.00	89.69	179.63	9556.05	7589.77	-9591.28	-208.89	0.00	480618.41	760775.21	N 32 19 9.46	W 103 37 22.72
	17000.00	89.69	179.63	9556.59	7689.77	-9691.27	-208.24	0.00	480518.42	760775.87	N 32 19 8.47	W 103 37 22.72
	17100.00	89.69	179.63	9557.14	7789.77	-9791.27	-207.59	0.00	480418.42	760776.52	N 32 19 7.48	W 103 37 22.72
	17200.00	89.69	179.63	9557.69	7889.78	-9891.27	-206.94	0.00	480318.43	760777.17	N 32 19 6.49	W 103 37 22.72
	17300.00	89.69	179.63	9558.24	7989.78	-9991.26	-206.28	0.00	480218.44	760777.82	N 32 19 5.50	W 103 37 22.72
	17400.00	89.69	179.63	9558.79	8089.78	-10091.26	-205.63	0.00	480118.45	760778.48	N 32 19 4.51	W 103 37 22.72
	17500.00	89.69	179.63	9559.34	8189.76	-10191.25	-204.98	0.00	480018.45	760779.13	N 32 19 3.52	W 103 37 22.72
	17600.00	89.69	179.63	9559.89	8289.76	-10291.25	-204.32	0.00	479918.46	760779.78	N 32 19 2.53	W 103 37 22.72
	17700.00	89.69	179.63	9560.44	8389.76	-10391.25	-203.67	0.00	479818.47	760780.44	N 32 19 1.54	W 103 37 22.72
	17800.00	89.69	179.63	9560.99	8489.76	-10491.24	-203.02	0.00	479718.48	760781.09	N 32 19 0.55	W 103 37 22.72
	17900.00	89.69	179.63	9561.54	8589.75	-10591.24	-202.37	0.00	479618.48	760781.74	N 32 18 59.56	W 103 37 22.72
	18000.00	89.69	179.63	9562.09	8689.75	-10691.24	-201.71	0.00	479518.49	760782.39	N 32 18 58.57	W 103 37 22.72
	18100.00	89.69	179.63	9562.64	8789.75	-10791.23	-201.06	0.00	479418.50	760783.05	N 32 18 57.58	W 103 37 22.72
	18200.00	89.69	179.63	9563.18	8889.75	-10891.23	-200.41	0.00	479318.51	760783.70	N 32 18 56.59	W 103 37 22.72
	18300.00	89.69	179.63	9563.73	8989.75	-10991.23	-199.76	0.00	479218.51	760784.35	N 32 18 55.60	W 103 37 22.72
	18400.00	89.69	179.63	9564.28	9089.75	-10991.22	-199.10	0.00	479118.52	760785.00	N 32 18 54.61	W 103 37 22.72
	18500.00	89.69	179.63	9564.83	9189.75	-10991.22	-198.45	0.00	479018.53	760785.66	N 32 18 53.62	W 103 37 22.72
	18600.00	89.69	179.63	9565.38	9289.74	-10991.21	-197.80	0.00	478918.54	760786.31	N 32 18 52.63	W 103 37 22.72
	18700.00	89.69	179.63	9565.93	9389.74	-10991.21	-197.14	0.00	478818.54	760786.96	N 32 18 51.64	W 103 37 22.72
	18800.00	89.69	179.63	9566.48	9489.74	-10991.21	-196.49	0.00	478718.55	760787.62	N 32 18 50.66	W 103 37 22.72
	18900.00	89.69	179.63	9567.03	9589.74	-10991.20	-195.84	0.00	478618.56	760788.27	N 32 18 49.67	W 103 37 22.72
	19000.00	89.69	179.63	9567.58	9689.74	-10991.20	-195.19	0.00	478518.56	760788.92	N 32 18 48.68	W 103 37 22.72
	19100.00	89.69	179.63	9568.13	9789.74	-10991.20	-194.53	0.00	478418.57	760789.57	N 32 18 47.69	W 103 37 22.72
	19200.00	89.69	179.63	9568.68	9889.73	-10991.19	-193.88	0.00	478318.58	760790.23	N 32 18 46.70	W 103 37 22.72
	19300.00	89.69	179.63	9569.23	9989.73	-10991.19	-193.23	0.00	478218.59	760790.88	N 32 18 45.71	W 103 37 22.72
	19400.00	89.69	179.63	9569.77	10089.73	-10091.19	-192.57	0.00	478118.59	760791.53	N 32 18 44.72	W 103 37 22.72

Cimarex
Coriander AOC
1-12 State 3H -
PBHL 1100' FSL,
990' FWL

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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Coriander AOC 1-12 State 3H Rev4 01Aug18
	1	26.000	19440.997	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Coriander AOC 1-12 State 3H