



Final Survey Cimarex Coriander AOC 1-12 State 2H Surcon Corrected 0ft - 19642ft Survey Geodetic Report



(Def Survey)

Report Date: September 21, 2018 - 03:41 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Coriander AOC 1-12 State 2H / Cimarex Coriander AOC 1-12 State 2H
Well: Cimarex Coriander AOC 1-12 State 2H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Final Survey Cimarex Coriander AOC 1-12 State 2H Surcon Corrected 0ft - 19642ft
Survey Date: August 03, 2018
Tort / AHD / DDI / ERD Ratio: 262.777 ° / 10282.481 ft / 6.733 / 1.048
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 20' 24.55721", W 103° 37' 19.46487"
Location Grid N/E Y/X: N 488209.700 ftUS, E 761004.100 ftUS
CRS Grid Convergence Angle: 0.3805 °
Grid Scale Factor: 0.99996435
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: 3777.000 ft above MSL
Seabed / Ground Elevation: 3751.000 ft above MSL
Magnetic Declination: 6.796 °
Total Gravity Field Strength: 998.4395mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48082.975 nT
Magnetic Dip Angle: 60.109 °
Declination Date: September 12, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.3805 °
Total Corr Mag North->Grid North: 6.4160 °
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, 710' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	488209.70	761004.10	N 32 20 24.56	W 103 37 19.46
	241.00	0.88	300.41	240.99	-0.95	0.94	-1.60	0.37	488210.64	761002.50	N 32 20 24.57	W 103 37 19.48
	301.00	0.80	294.10	300.98	-1.36	1.34	-2.38	0.20	488211.04	761001.72	N 32 20 24.57	W 103 37 19.49
	393.00	0.49	113.03	392.98	-1.47	1.45	-2.60	1.40	488211.15	761001.50	N 32 20 24.57	W 103 37 19.50
	572.00	0.49	100.03	571.98	-1.02	1.02	-1.14	0.06	488210.72	761002.96	N 32 20 24.57	W 103 37 19.48
	753.00	0.31	89.01	752.97	-0.89	0.89	0.11	0.11	488210.59	761004.21	N 32 20 24.57	W 103 37 19.46
	939.00	0.31	89.10	938.97	-0.90	0.91	1.12	0.00	488210.61	761005.22	N 32 20 24.57	W 103 37 19.45
	1128.00	0.40	87.34	1127.96	-0.93	0.95	2.29	0.05	488210.65	761006.39	N 32 20 24.57	W 103 37 19.44
	1208.00	0.31	103.73	1207.96	-0.89	0.91	2.78	0.17	488210.61	761006.88	N 32 20 24.57	W 103 37 19.43
	1318.00	0.40	81.30	1317.96	-0.87	0.89	3.44	0.15	488210.59	761007.54	N 32 20 24.57	W 103 37 19.42
	1413.00	0.13	98.83	1412.96	-0.90	0.93	3.88	0.29	488210.63	761007.98	N 32 20 24.57	W 103 37 19.42
	1507.00	0.45	163.89	1506.96	-0.53	0.56	4.09	0.44	488210.26	761008.19	N 32 20 24.56	W 103 37 19.42
	1602.00	0.34	152.32	1601.96	0.08	-0.05	4.32	0.14	488209.65	761008.42	N 32 20 24.56	W 103 37 19.41
	1697.00	0.28	146.09	1696.95	0.52	-0.49	4.58	0.07	488209.21	761008.68	N 32 20 24.55	W 103 37 19.41
	1791.00	0.34	147.07	1790.95	0.95	-0.92	4.86	0.06	488208.78	761008.96	N 32 20 24.55	W 103 37 19.41
	1885.00	0.49	165.41	1884.95	1.57	-1.54	5.11	0.21	488208.16	761009.21	N 32 20 24.54	W 103 37 19.41
	1980.00	0.69	172.37	1979.95	2.54	-2.50	5.29	0.22	488207.20	761009.39	N 32 20 24.53	W 103 37 19.40
	2074.00	1.02	177.02	2073.94	3.93	-3.90	5.41	0.36	488205.80	761009.51	N 32 20 24.52	W 103 37 19.40
	2169.00	0.74	175.54	2168.92	5.39	-5.35	5.50	0.30	488204.35	761009.60	N 32 20 24.50	W 103 37 19.40
	2264.00	1.02	191.10	2263.91	6.83	-6.79	5.39	0.38	488202.91	761009.49	N 32 20 24.49	W 103 37 19.40
	2358.00	1.10	183.29	2357.90	8.55	-8.52	5.17	0.18	488201.18	761009.27	N 32 20 24.47	W 103 37 19.41
	2453.00	1.07	197.60	2452.88	10.30	-10.27	4.85	0.29	488199.43	761008.95	N 32 20 24.46	W 103 37 19.41
	2547.00	0.93	194.15	2546.87	11.88	-11.85	4.40	0.16	488197.85	761008.50	N 32 20 24.44	W 103 37 19.41
	2642.00	0.98	191.21	2641.85	13.42	-13.39	4.06	0.07	488196.31	761008.16	N 32 20 24.42	W 103 37 19.42

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 ° ' ")
	2737.00	1.13	206.94	2736.84	15.05	-15.03	3.47	0.34	488194.68	761007.57	N 32 20 24.41	W 103 37 19.43
	2831.00	0.88	207.81	2830.82	16.51	-16.49	2.72	0.27	488193.21	761006.82	N 32 20 24.39	W 103 37 19.43
	2926.00	0.53	196.01	2925.81	17.57	-17.56	2.25	0.40	488192.14	761006.35	N 32 20 24.38	W 103 37 19.44
	3020.00	0.25	100.07	3019.81	18.03	-18.01	2.34	0.65	488191.69	761006.44	N 32 20 24.38	W 103 37 19.44
	3115.00	0.73	54.95	3114.81	17.72	-17.70	3.04	0.61	488192.00	761007.14	N 32 20 24.38	W 103 37 19.43
	3210.00	0.88	62.43	3209.80	17.04	-17.01	4.18	0.19	488192.69	761008.28	N 32 20 24.39	W 103 37 19.42
	3304.00	1.02	50.30	3303.79	16.18	-16.15	5.46	0.26	488193.55	761009.56	N 32 20 24.40	W 103 37 19.40
	3399.00	1.35	56.18	3398.77	15.03	-14.98	7.04	0.37	488194.72	761011.14	N 32 20 24.41	W 103 37 19.38
	3493.00	1.89	49.80	3492.73	13.43	-13.37	9.15	0.60	488196.33	761013.25	N 32 20 24.42	W 103 37 19.36
	3587.00	1.77	39.41	3586.68	11.32	-11.24	11.25	0.37	488198.46	761015.35	N 32 20 24.45	W 103 37 19.33
	3682.00	1.33	10.02	3681.65	9.10	-9.03	12.38	0.94	488200.68	761016.47	N 32 20 24.47	W 103 37 19.32
	3777.00	1.23	357.55	3776.62	7.00	-6.92	12.52	0.31	488202.78	761016.62	N 32 20 24.49	W 103 37 19.32
	3871.00	1.02	336.10	3870.61	5.23	-5.15	12.14	0.50	488204.55	761016.24	N 32 20 24.51	W 103 37 19.32
	3966.00	0.95	341.85	3965.59	3.70	-3.63	11.55	0.13	488206.07	761015.65	N 32 20 24.52	W 103 37 19.33
	4060.00	0.29	349.45	4059.59	2.72	-2.65	11.27	0.71	488207.05	761015.37	N 32 20 24.53	W 103 37 19.33
	4155.00	1.07	112.61	4154.58	2.83	-2.76	12.04	1.32	488206.94	761016.14	N 32 20 24.53	W 103 37 19.32
	4249.00	2.44	116.37	4248.54	4.08	-3.98	14.65	1.46	488205.72	761018.74	N 32 20 24.52	W 103 37 19.29
	4344.00	2.14	102.80	4343.46	5.39	-5.27	18.19	0.65	488204.43	761022.29	N 32 20 24.50	W 103 37 19.25
	4438.00	1.87	95.27	4437.40	5.94	-5.80	21.43	0.40	488203.90	761025.52	N 32 20 24.50	W 103 37 19.22
	4533.00	1.62	105.51	4532.36	6.46	-6.31	24.26	0.42	488203.39	761028.36	N 32 20 24.49	W 103 37 19.18
	4628.00	2.02	112.26	4627.31	7.47	-7.30	27.11	0.48	488202.40	761031.21	N 32 20 24.48	W 103 37 19.15
	4722.00	1.75	110.93	4721.26	8.63	-8.44	29.98	0.29	488201.26	761034.08	N 32 20 24.47	W 103 37 19.12
	4816.00	1.29	114.45	4815.23	9.60	-9.39	32.28	0.50	488200.31	761036.38	N 32 20 24.46	W 103 37 19.09
	4890.00	1.18	110.41	4889.21	10.22	-10.00	33.76	0.19	488199.70	761037.85	N 32 20 24.46	W 103 37 19.07
	4984.00	1.25	126.50	4983.19	11.18	-10.95	35.49	0.37	488198.75	761039.59	N 32 20 24.45	W 103 37 19.05
	5173.00	0.15	259.91	5172.17	12.46	-12.22	36.90	0.72	488197.48	761041.00	N 32 20 24.43	W 103 37 19.04
	5267.00	0.16	267.42	5266.17	12.48	-12.24	36.65	0.02	488197.46	761040.75	N 32 20 24.43	W 103 37 19.04
	5457.00	0.36	305.77	5456.17	12.14	-11.91	35.90	0.13	488197.79	761040.00	N 32 20 24.44	W 103 37 19.05
	5551.00	0.57	311.24	5550.17	11.65	-11.43	35.31	0.23	488198.27	761039.41	N 32 20 24.44	W 103 37 19.05
	5740.00	0.71	302.01	5739.16	10.40	-10.19	33.61	0.09	488199.51	761037.71	N 32 20 24.45	W 103 37 19.07
	5834.00	0.90	296.73	5833.15	9.75	-9.55	32.46	0.22	488200.15	761036.55	N 32 20 24.46	W 103 37 19.09
	6024.00	0.90	294.56	6023.12	8.45	-8.25	29.77	0.02	488201.45	761033.86	N 32 20 24.47	W 103 37 19.12
	6118.00	1.03	316.27	6117.11	7.52	-7.34	28.51	0.41	488202.36	761032.61	N 32 20 24.48	W 103 37 19.13
	6308.00	1.34	314.11	6307.07	4.72	-4.56	25.73	0.16	488205.14	761029.83	N 32 20 24.51	W 103 37 19.17
	6402.00	1.28	316.20	6401.05	3.19	-3.03	24.22	0.08	488206.67	761028.32	N 32 20 24.53	W 103 37 19.18
	6592.00	1.40	314.97	6590.99	0.00	0.14	21.11	0.06	488209.84	761025.21	N 32 20 24.56	W 103 37 19.22
	6686.00	1.40	319.41	6684.97	-1.70	1.82	19.55	0.12	488211.52	761023.65	N 32 20 24.57	W 103 37 19.24
	6780.00	1.18	302.65	6778.94	-3.10	3.22	17.99	0.46	488212.92	761022.09	N 32 20 24.59	W 103 37 19.25
	6971.00	1.20	307.73	6969.90	-5.41	5.50	14.75	0.06	488215.20	761018.85	N 32 20 24.61	W 103 37 19.29
	7065.00	1.31	316.03	7063.88	-6.79	6.88	13.22	0.23	488216.58	761017.32	N 32 20 24.62	W 103 37 19.31
	7160.00	1.05	301.24	7158.86	-8.03	8.11	11.73	0.42	488217.81	761015.83	N 32 20 24.64	W 103 37 19.33
	7254.00	0.92	291.70	7252.84	-8.77	8.84	10.29	0.22	488218.54	761014.39	N 32 20 24.64	W 103 37 19.34
	7443.00	0.76	296.29	7441.82	-9.90	9.95	7.75	0.09	488219.65	761011.85	N 32 20 24.66	W 103 37 19.37
	7537.00	0.79	285.00	7535.82	-10.35	10.40	6.57	0.17	488220.10	761010.67	N 32 20 24.66	W 103 37 19.39
	7727.00	0.51	321.08	7725.80	-11.36	11.39	4.77	0.25	488221.09	761008.87	N 32 20 24.67	W 103 37 19.41
	7821.00	0.70	319.38	7819.80	-12.13	12.15	4.14	0.20	488221.85	761008.24	N 32 20 24.68	W 103 37 19.42
	8011.00	0.74	304.94	8009.78	-13.72	13.74	2.38	0.10	488223.44	761006.47	N 32 20 24.69	W 103 37 19.44
	8105.00	0.79	289.60	8103.78	-14.29	14.30	1.27	0.22	488224.00	761005.37	N 32 20 24.70	W 103 37 19.45
	8295.00	0.70	278.75	8293.76	-14.93	14.92	-1.11	0.09	488224.62	761002.99	N 32 20 24.70	W 103 37 19.48
	8389.00	0.45	301.44	8387.76	-15.21	15.20	-2.00	0.35	488224.90	761002.10	N 32 20 24.71	W 103 37 19.49
	8579.00	0.12	288.15	8577.75	-15.67	15.65	-2.82	0.18	488225.35	761001.28	N 32 20 24.71	W 103 37 19.50
	8673.00	0.19	212.76	8671.75	-15.57	15.55	-3.00	0.21	488225.25	761001.10	N 32 20 24.71	W 103 37 19.50
	8862.00	0.57	225.56	8860.75	-14.65	14.63	-3.84	0.20	488224.33	761000.26	N 32 20 24.70	W 103 37 19.51
	8956.00	0.72	219.91	8954.74	-13.88	13.85	-4.55	0.17	488223.55	760999.55	N 32 20 24.69	W 103 37 19.52
	9134.00	0.90	238.96	9132.72	-12.31	12.27	-6.47	0.18	488221.97	760997.63	N 32 20 24.68	W 103 37 19.54
	9189.00	1.24	227.41	9187.71	-11.69	11.64	-7.28	0.73	488221.34	760996.82	N 32 20 24.67	W 103 37 19.55
	9252.00	8.98	171.40	9250.43	-6.36	6.31	-7.04	13.25	488216.01	760997.06	N 32 20 24.62	W 103 37 19.55
	9284.00	13.85	168.44	9281.79	-0.12	0.08	-5.90	15.32	488209.78	760998.20	N 32 20 24.56	W 103 37 19.53

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 ° ' ")
	9331.00	19.91	170.13	9326.74	13.30	-13.32	-3.40	12.93	488196.38	761000.70	N 32 20 24.43	W 103 37 19.51
	9378.00	22.49	170.29	9370.56	30.07	-30.07	-0.51	5.49	488179.63	761003.59	N 32 20 24.26	W 103 37 19.47
	9425.00	26.29	168.45	9413.36	49.16	-49.14	3.09	8.24	488160.57	761007.19	N 32 20 24.07	W 103 37 19.43
	9473.00	30.97	166.53	9455.48	71.63	-71.57	8.10	9.94	488138.13	761012.20	N 32 20 23.85	W 103 37 19.38
	9520.00	34.84	167.56	9494.93	96.54	-96.45	13.81	8.32	488113.25	761017.91	N 32 20 23.60	W 103 37 19.31
	9567.00	39.35	167.15	9532.41	124.23	-124.11	20.02	9.61	488085.60	761024.12	N 32 20 23.33	W 103 37 19.24
	9614.00	43.11	168.20	9567.75	154.53	-154.36	26.62	8.13	488055.34	761030.72	N 32 20 23.03	W 103 37 19.17
	9662.00	47.75	170.42	9601.43	188.17	-187.96	32.93	10.21	488021.75	761037.03	N 32 20 22.70	W 103 37 19.10
	9709.00	54.01	173.67	9631.07	224.29	-224.05	37.93	14.36	487985.66	761042.03	N 32 20 22.34	W 103 37 19.04
	9756.00	61.07	175.10	9656.29	263.76	-263.49	41.79	15.24	487946.22	761045.89	N 32 20 21.95	W 103 37 19.00
	9803.00	67.35	176.62	9676.72	305.96	-305.68	44.83	13.67	487904.03	761048.93	N 32 20 21.53	W 103 37 18.97
	9851.00	69.52	177.76	9694.37	350.56	-350.26	47.01	5.03	487859.45	761051.11	N 32 20 21.09	W 103 37 18.94
	9898.00	73.41	178.64	9709.30	395.10	-394.79	48.41	8.46	487814.92	761052.51	N 32 20 20.65	W 103 37 18.93
	9946.00	79.59	178.76	9720.50	441.74	-441.43	49.47	12.88	487768.28	761053.56	N 32 20 20.19	W 103 37 18.92
	9993.00	86.47	178.23	9726.20	488.36	-488.04	50.69	14.68	487721.68	761054.79	N 32 20 19.72	W 103 37 18.91
	10040.00	88.60	178.99	9728.23	535.30	-534.98	51.83	4.81	487674.74	761055.93	N 32 20 19.26	W 103 37 18.90
	10066.00	89.22	178.77	9728.72	561.30	-560.97	52.34	2.53	487648.75	761056.44	N 32 20 19.00	W 103 37 18.90
	10160.00	89.83	179.30	9729.50	655.29	-654.95	53.92	0.86	487554.77	761058.02	N 32 20 18.07	W 103 37 18.89
	10255.00	88.49	180.84	9730.89	750.27	-749.94	53.81	2.15	487459.79	761057.90	N 32 20 17.13	W 103 37 18.90
	10349.00	89.10	181.15	9732.87	844.22	-843.90	52.17	0.73	487365.83	761056.27	N 32 20 16.20	W 103 37 18.92
	10444.00	88.21	179.81	9735.10	939.18	-938.87	51.38	1.69	487270.87	761055.48	N 32 20 15.26	W 103 37 18.94
	10538.00	89.16	179.81	9737.26	1033.16	-1032.84	51.69	1.01	487176.90	761055.79	N 32 20 14.33	W 103 37 18.94
	10633.00	88.26	179.29	9739.40	1128.13	-1127.82	52.44	1.09	487081.93	761056.53	N 32 20 13.39	W 103 37 18.94
	10727.00	88.88	179.45	9741.74	1222.10	-1221.78	53.47	0.68	486987.97	761057.57	N 32 20 12.46	W 103 37 18.94
	10822.00	89.38	179.35	9743.18	1317.09	-1316.76	54.46	0.54	486892.99	761058.56	N 32 20 11.52	W 103 37 18.93
	10917.00	87.09	179.16	9746.11	1412.03	-1411.70	55.70	2.42	486798.05	761059.80	N 32 20 10.59	W 103 37 18.92
	11011.00	87.03	178.06	9750.93	1505.89	-1505.55	57.97	1.17	486704.21	761062.07	N 32 20 9.66	W 103 37 18.91
	11106.00	87.59	178.24	9755.39	1600.76	-1600.40	61.04	0.62	486609.36	761065.14	N 32 20 8.72	W 103 37 18.88
	11201.00	87.14	178.84	9759.76	1695.64	-1695.26	63.46	0.79	486514.50	761067.55	N 32 20 7.78	W 103 37 18.86
	11295.00	88.82	179.17	9763.07	1789.57	-1789.19	65.09	1.82	486420.58	761069.18	N 32 20 6.85	W 103 37 18.84
	11390.00	89.10	178.56	9764.79	1884.55	-1884.15	66.97	0.71	486325.62	761071.07	N 32 20 5.91	W 103 37 18.83
	11487.00	88.71	178.05	9766.65	1981.50	-1981.09	69.84	0.66	486228.68	761073.93	N 32 20 4.95	W 103 37 18.80
	11582.00	90.34	179.22	9767.44	2076.48	-2076.06	72.10	2.11	486133.72	761076.20	N 32 20 4.01	W 103 37 18.79
	11676.00	91.96	179.25	9765.55	2170.46	-2170.03	73.35	1.72	486039.75	761077.45	N 32 20 3.08	W 103 37 18.78
	11771.00	87.14	179.53	9766.30	2265.42	-2264.99	74.37	5.08	485944.79	761078.46	N 32 20 2.14	W 103 37 18.77
	11865.00	88.54	179.64	9769.84	2359.35	-2358.92	75.05	1.49	485850.87	761079.14	N 32 20 1.21	W 103 37 18.77
	11960.00	90.39	180.21	9770.72	2454.34	-2453.91	75.17	2.04	485755.88	761079.27	N 32 20 0.27	W 103 37 18.78
	12054.00	91.01	180.98	9769.58	2548.32	-2547.90	74.19	1.05	485661.90	761078.29	N 32 19 59.34	W 103 37 18.80
	12149.00	90.17	182.13	9768.60	2643.26	-2642.85	71.62	1.50	485566.94	761075.71	N 32 19 58.40	W 103 37 18.83
	12243.00	88.15	181.65	9769.98	2737.17	-2736.79	68.52	2.21	485473.01	761072.61	N 32 19 57.47	W 103 37 18.88
	12338.00	87.48	181.08	9773.60	2832.06	-2831.69	66.26	0.93	485378.12	761070.35	N 32 19 56.53	W 103 37 18.91
	12432.00	87.31	180.01	9777.87	2925.95	-2925.59	65.36	1.15	485284.22	761069.46	N 32 19 55.60	W 103 37 18.93
	12527.00	86.92	178.81	9782.65	3020.83	-3020.46	66.34	1.33	485189.35	761070.44	N 32 19 54.67	W 103 37 18.93
	12622.00	89.16	179.92	9785.90	3115.76	-3115.39	67.39	2.63	485094.42	761071.49	N 32 19 53.73	W 103 37 18.92
	12716.00	88.82	178.78	9787.56	3209.75	-3209.37	68.46	1.27	485000.45	761072.55	N 32 19 52.80	W 103 37 18.92
	12811.00	90.78	178.54	9787.89	3304.73	-3304.34	70.68	2.08	484905.49	761074.78	N 32 19 51.86	W 103 37 18.90
	12905.00	93.25	180.56	9784.58	3398.66	-3398.27	71.42	3.39	484811.56	761075.51	N 32 19 50.93	W 103 37 18.90
	13000.00	95.16	183.03	9777.62	3493.32	-3492.95	68.45	3.28	484716.88	761072.55	N 32 19 49.99	W 103 37 18.94
	13095.00	92.91	182.70	9770.93	3587.93	-3587.59	63.72	2.39	484622.24	761067.81	N 32 19 49.05	W 103 37 19.00
	13189.00	84.51	182.57	9773.05	3681.69	-3681.38	59.40	8.94	484528.45	761063.50	N 32 19 48.13	W 103 37 19.06
	13284.00	83.10	178.06	9783.30	3776.10	-3775.80	58.88	4.95	484434.04	761062.97	N 32 19 47.19	W 103 37 19.07
	13378.00	84.22	177.06	9793.69	3869.46	-3869.14	62.85	1.59	484340.71	761066.95	N 32 19 46.27	W 103 37 19.03
	13473.00	86.97	175.38	9800.98	3964.00	-3963.64	69.10	3.39	484246.21	761073.20	N 32 19 45.33	W 103 37 18.97
	13567.00	88.71	177.71	9804.52	4057.79	-4057.39	74.76	3.09	484152.46	761078.86	N 32 19 44.41	W 103 37 18.91
	13662.00	89.05	179.54	9806.38	4152.75	-4152.34	77.04	1.96	484057.51	761081.14	N 32 19 43.47	W 103 37 18.89
	13756.00	89.78	179.46	9807.34	4246.75	-4246.33	77.86	0.78	483963.53	761081.96	N 32 19 42.54	W 103 37 18.89
	13851.00	88.66	178.79	9808.63	4341.73	-4341.31	79.31	1.37	483868.55	761083.41	N 32 19 41.60	W 103 37 18.88
	13945.00	89.72	178.21	9809.96	4435.70	-4435.27	81.77	1.29	483774.60	761085.87	N 32 19 40.67	W 103 37 18.86

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 ° ' ")
	14039.00	90.95	179.86	9809.41	4529.69	-4529.25	83.35	2.19	483680.62	761087.45	N 32 19 39.74	W 103 37 18.84
	14134.00	91.79	180.01	9807.14	4624.66	-4624.22	83.46	0.90	483585.65	761087.56	N 32 19 38.80	W 103 37 18.85
	14228.00	90.34	181.74	9805.40	4718.62	-4718.19	82.02	2.40	483491.69	761086.12	N 32 19 37.87	W 103 37 18.87
	14323.00	90.95	182.31	9804.33	4813.53	-4813.12	78.67	0.88	483396.76	761082.76	N 32 19 36.93	W 103 37 18.92
	14417.00	91.57	180.64	9802.26	4907.45	-4907.06	76.25	1.89	483302.82	761080.35	N 32 19 36.00	W 103 37 18.96
	14512.00	92.58	180.49	9798.82	5002.38	-5001.99	75.31	1.07	483207.89	761079.41	N 32 19 35.06	W 103 37 18.97
	14606.00	91.06	179.17	9795.83	5096.32	-5095.94	75.59	2.14	483113.95	761079.69	N 32 19 34.13	W 103 37 18.98
	14701.00	89.61	178.54	9795.28	5191.31	-5190.92	77.49	1.66	483018.98	761081.59	N 32 19 33.19	W 103 37 18.96
	14795.00	91.62	179.06	9794.27	5285.29	-5284.89	79.46	2.21	482925.01	761083.56	N 32 19 32.26	W 103 37 18.95
	14890.00	90.00	178.58	9792.93	5380.27	-5379.85	81.41	1.78	482830.05	761085.51	N 32 19 31.32	W 103 37 18.93
	14985.00	90.67	178.34	9792.37	5475.25	-5474.82	83.97	0.75	482735.09	761088.06	N 32 19 30.38	W 103 37 18.91
	15079.00	92.07	178.35	9790.12	5569.19	-5568.75	86.68	1.49	482641.16	761090.78	N 32 19 29.45	W 103 37 18.89
	15174.00	89.78	177.61	9788.59	5664.13	-5663.67	90.03	2.53	482546.24	761094.13	N 32 19 28.51	W 103 37 18.85
	15268.00	90.45	177.06	9788.40	5758.06	-5757.57	94.40	0.92	482452.35	761098.50	N 32 19 27.58	W 103 37 18.81
	15363.00	89.72	178.91	9788.26	5853.01	-5852.50	97.74	2.09	482357.42	761101.84	N 32 19 26.64	W 103 37 18.78
	15458.00	89.78	178.83	9788.67	5948.00	-5947.48	99.61	0.11	482262.44	761103.71	N 32 19 25.70	W 103 37 18.76
	15552.00	88.77	178.45	9789.86	6041.98	-6041.45	101.84	1.15	482168.48	761105.94	N 32 19 24.77	W 103 37 18.75
	15647.00	88.54	179.24	9792.09	6136.94	-6136.40	103.76	0.87	482073.53	761107.86	N 32 19 23.83	W 103 37 18.73
	15741.00	87.09	180.41	9795.68	6230.87	-6230.33	104.05	1.98	481979.60	761108.14	N 32 19 22.90	W 103 37 18.73
	15836.00	88.26	179.99	9799.53	6325.79	-6325.25	103.72	1.31	481884.69	761107.81	N 32 19 21.96	W 103 37 18.75
	15930.00	90.84	181.08	9800.27	6419.76	-6419.23	102.84	2.98	481790.71	761106.93	N 32 19 21.03	W 103 37 18.76
	16024.00	91.18	180.58	9798.61	6513.73	-6513.21	101.48	0.64	481696.74	761105.57	N 32 19 20.10	W 103 37 18.79
	16119.00	90.34	180.74	9797.35	6608.70	-6608.19	100.38	0.90	481601.76	761104.48	N 32 19 19.16	W 103 37 18.81
	16213.00	90.06	180.18	9797.03	6702.69	-6702.19	99.63	0.67	481507.76	761103.72	N 32 19 18.23	W 103 37 18.82
	16308.00	90.17	180.40	9796.83	6797.69	-6797.19	99.15	0.26	481412.77	761103.24	N 32 19 17.29	W 103 37 18.84
	16402.00	89.94	180.03	9796.74	6891.68	-6891.19	98.79	0.46	481318.77	761102.89	N 32 19 16.36	W 103 37 18.85
	16496.00	89.33	179.53	9797.34	6985.68	-6985.18	99.15	0.84	481224.78	761103.25	N 32 19 15.43	W 103 37 18.85
	16591.00	89.89	179.04	9797.99	7080.67	-7080.17	100.34	0.78	481129.79	761104.44	N 32 19 14.49	W 103 37 18.84
	16685.00	90.06	178.73	9798.03	7174.66	-7174.15	102.17	0.38	481035.82	761106.27	N 32 19 13.56	W 103 37 18.83
	16780.00	90.39	180.61	9797.66	7269.66	-7269.15	102.72	2.01	480940.83	761106.81	N 32 19 12.62	W 103 37 18.83
	16874.00	90.56	181.32	9796.88	7363.63	-7363.13	101.13	0.78	480846.85	761105.23	N 32 19 11.69	W 103 37 18.86
	16969.00	91.79	182.31	9794.93	7458.54	-7458.06	98.13	1.66	480751.92	761102.22	N 32 19 10.76	W 103 37 18.90
	17064.00	90.17	181.37	9793.31	7553.45	-7552.99	95.08	1.97	480656.99	761099.17	N 32 19 9.82	W 103 37 18.94
	17158.00	90.62	181.68	9792.66	7647.40	-7646.96	92.57	0.58	480563.03	761096.67	N 32 19 8.89	W 103 37 18.98
	17252.00	91.18	179.52	9791.18	7741.36	-7740.93	91.59	2.37	480469.06	761095.69	N 32 19 7.96	W 103 37 19.00
	17347.00	90.62	178.51	9789.69	7836.35	-7835.91	93.22	1.22	480374.09	761097.32	N 32 19 7.02	W 103 37 18.98
	17442.00	91.62	178.47	9787.83	7931.31	-7930.85	95.73	1.05	480279.14	761099.82	N 32 19 6.08	W 103 37 18.96
	17536.00	90.78	177.97	9785.86	8025.26	-8024.79	98.65	1.04	480185.21	761102.74	N 32 19 5.15	W 103 37 18.94
	17660.00	91.72	176.52	9783.16	8149.12	-8148.61	104.60	1.39	480061.40	761108.70	N 32 19 3.92	W 103 37 18.88
	17755.00	92.55	177.30	9779.62	8243.94	-8243.40	109.72	1.20	479966.61	761113.82	N 32 19 2.98	W 103 37 18.82
	17850.00	92.17	176.68	9775.71	8338.76	-8338.19	114.70	0.76	479871.82	761118.80	N 32 19 2.05	W 103 37 18.77
	17944.00	92.00	177.55	9772.29	8432.61	-8432.01	119.43	0.94	479778.01	761123.53	N 32 19 1.12	W 103 37 18.73
	18039.00	91.69	180.21	9769.23	8527.54	-8526.93	121.29	2.82	479683.09	761125.38	N 32 19 0.18	W 103 37 18.71
	18133.00	91.41	182.36	9766.68	8621.46	-8620.87	119.18	2.31	479589.15	761123.28	N 32 18 59.25	W 103 37 18.74
	18228.00	90.89	182.90	9764.78	8716.31	-8715.75	114.82	0.79	479494.28	761118.92	N 32 18 58.31	W 103 37 18.80
	18322.00	91.13	182.10	9763.12	8810.18	-8809.65	110.72	0.89	479400.39	761114.82	N 32 18 57.38	W 103 37 18.86
	18416.00	90.45	180.80	9761.82	8904.12	-8903.60	108.35	1.56	479306.43	761112.44	N 32 18 56.45	W 103 37 18.89
	18509.00	91.17	179.93	9760.51	8997.10	-8996.59	107.75	1.21	479213.45	761111.85	N 32 18 55.53	W 103 37 18.91
	18606.00	91.20	180.57	9758.50	9094.07	-9093.57	107.33	0.66	479116.47	761111.43	N 32 18 54.57	W 103 37 18.92
	18700.00	91.07	180.61	9756.64	9188.04	-9187.55	106.36	0.14	479022.50	761110.46	N 32 18 53.64	W 103 37 18.94
	18795.00	91.27	179.51	9754.70	9283.02	-9282.52	106.26	1.18	478927.53	761110.36	N 32 18 52.70	W 103 37 18.94
	18889.00	90.96	177.68	9752.87	9376.98	-9376.47	108.57	1.97	478833.58	761112.66	N 32 18 51.77	W 103 37 18.93
	18984.00	90.58	178.07	9751.60	9471.93	-9471.40	112.09	0.57	478738.66	761116.18	N 32 18 50.83	W 103 37 18.89
	19078.00	90.45	178.42	9750.75	9565.89	-9565.35	114.97	0.40	478644.71	761119.06	N 32 18 49.90	W 103 37 18.87
	19172.00	90.45	178.24	9750.01	9659.87	-9659.31	117.71	0.19	478550.75	761121.80	N 32 18 48.97	W 103 37 18.84
	19267.00	90.72	178.32	9749.04	9754.84	-9754.26	120.56	0.30	478455.81	761124.65	N 32 18 48.03	W 103 37 18.81
	19361.00	89.66	178.40	9748.73	9848.81	-9848.22	123.25	1.13	478361.85	761127.34	N 32 18 47.10	W 103 37 18.79
	19456.00	90.21	179.38	9748.84	9943.80	-9943.20	125.09	1.18	478266.87	761129.18	N 32 18 46.16	W 103 37 18.78

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 ° ' ")
Last Survey	19551.00	90.55	180.60	9748.21	10038.80	-10038.20	125.11	1.33	478171.88	761129.20	N 32 18 45.22	W 103 37 18.78
PTB [100' FSL, 654' FEL]	19602.00	90.50	180.50	9747.74	10089.79	-10089.19	124.62	0.22	478120.89	761128.71	N 32 18 44.72	W 103 37 18.79
	19642.00	90.60	180.50	9747.36	10129.78	-10129.19	124.27	0.25	478080.89	761128.36	N 32 18 44.32	W 103 37 18.80

Survey Type: Def Survey

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)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/98.425	17.500	13.375	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Survey Cimarex Coriander AOC 1-12 State 2H Surcon Corrected 0ft -
	1	26.000	26.000	Act Stns	17.500	13.375	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Survey Cimarex Coriander AOC 1-12 State 2H Surcon Corrected 0ft -
	1	26.000	1290.000	Act Stns	17.500	13.375	NAL_MWD_IFR1+MS	Original Borehole / Final Survey Cimarex Coriander AOC 1-12
	1	1290.000	4970.000	Act Stns	12.250	9.625	NAL_MWD_IFR1+MS	Original Borehole / Final Survey Cimarex Coriander AOC 1-12
	1	4970.000	19642.000	Act Stns	8.750	7.000	NAL_MWD_IFR1+MS	Original Borehole / Final Survey Cimarex Coriander AOC 1-12

[illegible]

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