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Directional Survey

30-015-43847

Schlumberger



Cimarex Crescent Hale 10 Federal #4H Final Survey Geodetic Report

(Def Survey)

Report Date: March 05, 2017 - 11:46 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Crescent Hale 10 Federal #4H / Cimarex Crescent Hale 10 Federal #4H
Well: Cimarex Crescent Hale 10 Federal #4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Crescent Hale 10 Federal #4H Final
Survey Date: February 02, 2017
Tort / AHD / DDI / ERD Ratio: 181.948 ° / 9291.969 ft / 6.525 / 1.090
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 40' 15.80357", W 103° 56' 25.78357"
Location Grid N/E Y/X: N 608085.150 ftUS, E 662217.700 ftUS
CRS Grid Convergence Angle: 0.2121 °
Grid Scale Factor: 0.99992582
Version / Patch: 2.10.254.0

Survey / DLS Computation:
Vertical Section Azimuth:
Vertical Section Origin:
TVD Reference Datum:
TVD Reference Elevation:
Seabed / Ground Elevation:
Magnetic Declination:
Total Gravity Field Strength:
Gravity Model:
Total Magnetic Field Strength:
Magnetic Dip Angle:
Declination Date:
Magnetic Declination Model:
North Reference:
Grid Convergence Used:
Total Corr Mag North->Grid
North:
Local Coord Referenced To:

Minimum Curvature / Lubinski
264.858 ° (Grid North)
0.000 ft, 0.000 ft
RKB
3374.600 ft above MSL
3350.600 ft above MSL
7.534 °
998.5169mgn (9.80665 Based)
GARM
48360.974 nT
60.592 °
February 02, 2017
HDGM 2016
Grid North
0.2121 °
7.3217 °
Structure Reference Point

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 21 2017
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 [1257' FSL, 1974' FEL] EXTREME SURVEYS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	608085.15	662217.70	N 32 40 15.80	W 103 56 25.78
	81.07	0.31	32.92	81.07	-0.14	0.18	0.12	0.38	608085.33	662217.82	N 32 40 15.81	W 103 56 25.78
	100.00	0.10	104.67	100.00	-0.18	0.22	0.16	1.56	608085.37	662217.86	N 32 40 15.81	W 103 56 25.78
	118.92	0.31	176.32	118.92	-0.20	0.17	0.18	1.56	608085.32	662217.88	N 32 40 15.81	W 103 56 25.78
	148.89	0.31	139.92	148.89	-0.24	0.02	0.24	0.65	608085.17	662217.94	N 32 40 15.80	W 103 56 25.78
	177.83	0.31	139.92	177.83	-0.33	-0.09	0.34	0.00	608085.06	662218.04	N 32 40 15.80	W 103 56 25.78
	200.00	0.14	121.96	200.00	-0.39	-0.16	0.40	0.82	608084.99	662218.10	N 32 40 15.80	W 103 56 25.78
	207.97	0.09	99.51	207.97	-0.40	-0.16	0.42	0.82	608084.99	662218.12	N 32 40 15.80	W 103 56 25.78
	235.42	0.31	180.81	235.42	-0.41	-0.24	0.44	1.13	608084.91	662218.14	N 32 40 15.80	W 103 56 25.78
	251.62	0.40	127.84	251.62	-0.45	-0.32	0.48	2.02	608084.83	662218.18	N 32 40 15.80	W 103 56 25.78
	300.00	0.52	110.20	300.00	-0.77	-0.50	0.82	0.38	608084.65	662218.52	N 32 40 15.80	W 103 56 25.77
	358.95	0.71	98.19	358.94	-1.86	-0.64	1.43	0.38	608084.51	662219.13	N 32 40 15.80	W 103 56 25.77
	400.00	0.71	100.00	399.99	-1.86	-0.72	1.94	0.05	608084.43	662219.64	N 32 40 15.80	W 103 56 25.76
	491.00	0.71	104.00	490.98	-2.94	-0.96	3.04	0.05	608084.19	662220.74	N 32 40 15.79	W 103 56 25.75
	500.00	0.74	105.05	499.98	-3.05	-0.99	3.15	0.36	608084.16	662220.85	N 32 40 15.79	W 103 56 25.75
	582.00	1.02	111.71	581.97	-4.19	-1.39	4.34	0.36	608083.76	662222.04	N 32 40 15.79	W 103 56 25.73
	600.00	0.98	111.11	599.97	-4.48	-1.51	4.63	0.25	608083.64	662222.33	N 32 40 15.79	W 103 56 25.72
	673.00	0.80	108.01	672.96	-5.50	-1.89	5.69	0.25	608083.26	662223.39	N 32 40 15.78	W 103 56 25.72
	700.00	0.80	104.63	699.96	-5.85	-1.99	6.05	0.17	608083.16	662223.75	N 32 40 15.78	W 103 56 25.71
	784.00	0.80	96.60	763.95	-6.71	-2.16	6.93	0.17	608082.99	662224.63	N 32 40 15.78	W 103 56 25.70
	800.00	0.95	95.18	799.95	-7.25	-2.21	7.48	0.43	608082.94	662225.18	N 32 40 15.78	W 103 56 25.70
	856.00	1.19	93.69	855.94	-8.28	-2.29	8.52	0.43	608082.86	662226.22	N 32 40 15.78	W 103 56 25.68
	900.00	1.26	93.97	899.93	-9.21	-2.36	9.46	0.15	608082.79	662227.16	N 32 40 15.78	W 103 56 25.67

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 ° ' ")
	950.00	1.33	94.26	949.92	-10.32	-2.44	10.58	0.15	608082.71	662226.28	N 32 40 15.78	W 103 56 25.66
	1000.00	1.33	90.83	999.90	-11.47	-2.49	11.74	0.16	608082.66	662229.44	N 32 40 15.78	W 103 56 25.65
	1045.00	1.33	87.74	1044.89	-12.51	-2.48	12.78	0.16	608082.67	662230.48	N 32 40 15.78	W 103 56 25.65
	1100.00	1.48	89.88	1099.87	-13.86	-2.45	14.13	0.29	608082.70	662231.83	N 32 40 15.78	W 103 56 25.62
	1140.00	1.59	91.18	1139.86	-14.92	-2.46	15.20	0.29	608082.69	662232.90	N 32 40 15.78	W 103 56 25.61
	1200.00	1.48	91.18	1199.84	-16.52	-2.49	16.81	0.19	608082.66	662234.51	N 32 40 15.78	W 103 56 25.59
	1236.00	1.41	91.18	1235.83	-17.42	-2.51	17.72	0.19	608082.64	662235.41	N 32 40 15.78	W 103 56 25.58
	1300.00	1.62	84.93	1299.80	-19.10	-2.45	19.40	0.41	608082.70	662237.10	N 32 40 15.78	W 103 56 25.56
	1331.00	1.72	82.45	1330.79	-20.01	-2.35	20.30	0.41	608082.80	662238.00	N 32 40 15.78	W 103 56 25.55
	1400.00	1.70	88.50	1399.76	-22.06	-2.18	22.35	0.26	608082.97	662240.05	N 32 40 15.78	W 103 56 25.52
	1426.00	1.70	90.80	1425.75	-22.83	-2.18	23.12	0.26	608082.97	662240.82	N 32 40 15.78	W 103 56 25.51
	1500.00	1.78	84.88	1499.71	-25.07	-2.09	25.36	0.27	608083.06	662243.06	N 32 40 15.78	W 103 56 25.49
	1523.00	1.81	83.16	1522.70	-25.79	-2.02	26.08	0.27	608083.13	662243.78	N 32 40 15.78	W 103 56 25.48
	1600.00	1.88	89.75	1599.66	-28.27	-1.87	28.55	0.29	608083.28	662246.25	N 32 40 15.78	W 103 56 25.45
	1616.00	1.90	91.05	1615.65	-28.79	-1.87	29.08	0.29	608083.28	662246.78	N 32 40 15.78	W 103 56 25.44
	1700.00	2.10	92.04	1699.60	-31.70	-1.95	32.01	0.24	608083.20	662249.70	N 32 40 15.78	W 103 56 25.41
	1710.00	2.12	92.15	1709.60	-32.07	-1.96	32.37	0.24	608083.19	662250.07	N 32 40 15.78	W 103 56 25.40
	1800.00	2.03	93.48	1799.54	-35.30	-2.12	35.63	0.11	608083.03	662253.33	N 32 40 15.78	W 103 56 25.37
	1805.00	2.03	93.56	1804.53	-35.47	-2.14	35.81	0.11	608083.01	662253.51	N 32 40 15.78	W 103 56 25.36
	1900.00	1.93	94.77	1899.48	-38.71	-2.37	39.08	0.11	608082.78	662256.78	N 32 40 15.78	W 103 56 25.33
	1931.00	1.90	95.19	1930.46	-39.73	-2.46	40.12	0.11	608082.69	662257.81	N 32 40 15.78	W 103 56 25.31
	1994.00	1.81	95.76	1993.43	-41.74	-2.66	42.15	0.15	608082.49	662259.84	N 32 40 15.78	W 103 56 25.29
	2000.00	1.77	99.27	1999.42	-41.92	-2.68	42.33	1.95	608082.47	662260.03	N 32 40 15.78	W 103 56 25.29
	2088.00	2.03	152.34	2087.38	-43.83	-4.28	44.40	1.95	608080.87	662262.09	N 32 40 15.76	W 103 56 25.26
	2100.00	2.03	153.62	2099.37	-43.99	-4.66	44.59	0.38	608080.49	662262.29	N 32 40 15.76	W 103 56 25.26
	2183.00	2.03	162.48	2182.32	-44.84	-7.38	45.68	0.38	608077.77	662263.38	N 32 40 15.73	W 103 56 25.25
	2200.00	2.03	161.41	2199.31	-44.97	-7.95	45.87	0.22	608077.20	662263.57	N 32 40 15.72	W 103 56 25.25
	2279.00	2.03	156.44	2278.26	-45.74	-10.56	46.88	0.22	608074.60	662264.57	N 32 40 15.70	W 103 56 25.24
	2300.00	1.80	163.90	2299.25	-45.92	-11.21	47.12	1.61	608073.94	662264.81	N 32 40 15.69	W 103 56 25.23
	2374.00	1.41	205.09	2373.22	-45.68	-13.16	47.05	1.61	608071.99	662264.75	N 32 40 15.67	W 103 56 25.23
	2400.00	1.46	205.99	2399.22	-45.35	-13.74	46.77	0.21	608071.41	662264.47	N 32 40 15.67	W 103 56 25.24
	2468.00	1.59	208.09	2467.19	-44.39	-15.35	45.95	0.21	608069.80	662263.65	N 32 40 15.65	W 103 56 25.25
	2500.00	1.56	209.03	2499.18	-43.90	-16.13	45.53	0.13	608069.02	662263.22	N 32 40 15.64	W 103 56 25.25
	2563.00	1.50	211.00	2562.16	-42.93	-17.58	44.69	0.13	608067.57	662262.38	N 32 40 15.63	W 103 56 25.26
	2600.00	1.65	209.03	2599.14	-42.35	-18.47	44.18	0.44	608066.69	662261.88	N 32 40 15.62	W 103 56 25.27
	2658.00	1.90	206.59	2657.12	-41.37	-20.06	43.34	0.44	608065.09	662261.04	N 32 40 15.60	W 103 56 25.28
	2700.00	1.90	204.54	2699.09	-40.66	-21.31	42.74	0.16	608063.84	662260.44	N 32 40 15.59	W 103 56 25.28
	2753.00	1.90	201.96	2752.06	-39.82	-22.93	42.05	0.16	608062.23	662259.75	N 32 40 15.58	W 103 56 25.29
	2800.00	1.86	200.90	2799.04	-39.14	-24.36	41.49	0.12	608060.79	662259.18	N 32 40 15.56	W 103 56 25.30
	2849.00	1.81	199.76	2847.01	-38.48	-25.80	40.95	0.12	608059.35	662258.65	N 32 40 15.55	W 103 56 25.31
	2900.00	1.93	203.32	2898.99	-37.71	-27.38	40.33	0.32	608057.78	662258.03	N 32 40 15.53	W 103 56 25.31
	2942.00	2.03	205.89	2940.96	-36.99	-28.69	39.72	0.32	608056.46	662257.42	N 32 40 15.52	W 103 56 25.32
	3000.00	1.84	204.00	2998.93	-36.01	-30.47	38.90	0.35	608054.68	662256.59	N 32 40 15.50	W 103 56 25.33
	3037.00	1.72	202.58	3035.91	-35.46	-31.52	38.44	0.35	608053.63	662256.14	N 32 40 15.49	W 103 56 25.34
	3100.00	1.78	208.32	3098.88	-34.48	-33.26	37.62	0.29	608051.90	662255.31	N 32 40 15.47	W 103 56 25.34
	3132.00	1.81	211.09	3130.86	-33.91	-34.12	37.12	0.29	608051.03	662254.82	N 32 40 15.46	W 103 56 25.35
	3200.00	1.88	210.22	3198.83	-32.63	-36.01	36.00	0.10	608049.15	662253.70	N 32 40 15.45	W 103 56 25.36
	3226.00	1.90	209.90	3224.82	-32.14	-36.75	35.58	0.10	608048.41	662253.27	N 32 40 15.44	W 103 56 25.37
	3300.00	1.83	211.60	3298.78	-30.73	-38.82	34.35	0.12	608046.34	662252.04	N 32 40 15.42	W 103 56 25.38
	3321.00	1.81	212.10	3319.77	-30.33	-39.38	33.99	0.12	608045.77	662251.69	N 32 40 15.41	W 103 56 25.39
	3400.00	1.81	214.92	3398.73	-28.77	-41.46	32.62	0.11	608043.69	662250.02	N 32 40 15.39	W 103 56 25.40
	3416.00	1.81	215.49	3414.72	-28.44	-41.88	32.33	0.11	608043.28	662250.02	N 32 40 15.39	W 103 56 25.41
	3500.00	1.89	225.51	3498.67	-26.51	-43.93	30.57	0.40	608041.23	662248.27	N 32 40 15.37	W 103 56 25.43
	3510.00	1.90	226.64	3508.67	-26.25	-44.15	30.33	0.40	608041.00	662248.03	N 32 40 15.37	W 103 56 25.43
	3600.00	1.20	186.68	3598.64	-24.89	-46.12	29.14	1.38	608039.04	662246.83	N 32 40 15.35	W 103 56 25.44
	3605.00	1.19	183.41	3603.64	-24.87	-46.22	29.13	1.38	608038.93	662246.82	N 32 40 15.35	W 103 56 25.44
	3700.00	1.33	163.05	3698.61	-24.95	-48.26	29.39	0.49	608036.89	662247.09	N 32 40 15.32	W 103 56 25.44
	3795.00	1.19	169.88	3793.59	-25.26	-50.29	29.88	0.22	608034.87	662247.58	N 32 40 15.30	W 103 56 25.44

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 ° ' ")
	3800.00	1.20	169.31	3798.59	-25.27	-50.39	29.90	0.27	608034.77	662247.60	N 32 40 15.30	W 103 56 25.44
	3890.00	1.33	160.06	3888.57	-25.62	-52.29	30.43	0.27	608032.86	662248.13	N 32 40 15.29	W 103 56 25.43
	3900.00	1.34	161.95	3896.57	-25.68	-52.51	30.51	0.46	608032.64	662248.21	N 32 40 15.28	W 103 56 25.43
	3985.00	1.50	176.32	3983.54	-25.87	-54.57	30.89	0.46	608030.58	662248.59	N 32 40 15.26	W 103 56 25.42
	4000.00	1.43	172.90	3998.54	-25.88	-54.95	30.93	0.75	608030.20	662248.62	N 32 40 15.26	W 103 56 25.42
	4023.00	1.33	166.97	4021.53	-25.92	-55.50	31.02	0.75	608029.66	662248.72	N 32 40 15.25	W 103 56 25.42
	4100.00	1.54	158.22	4098.50	-26.34	-57.33	31.61	0.40	608027.83	662249.30	N 32 40 15.24	W 103 56 25.42
	4158.00	1.72	153.14	4156.48	-26.89	-58.83	32.29	0.40	608026.32	662249.99	N 32 40 15.22	W 103 56 25.41
	4200.00	1.62	154.96	4198.46	-27.32	-59.93	32.83	0.27	608025.22	662250.52	N 32 40 15.21	W 103 56 25.40
	4252.00	1.50	157.54	4250.44	-27.77	-61.23	33.40	0.27	608023.93	662251.09	N 32 40 15.20	W 103 56 25.40
	4300.00	2.17	159.31	4298.42	-28.21	-62.66	33.96	1.40	608022.50	662251.66	N 32 40 15.18	W 103 56 25.39
	4347.00	2.83	160.23	4345.37	-28.74	-64.58	34.74	1.40	608020.57	662252.36	N 32 40 15.16	W 103 56 25.38
	4400.00	3.77	159.44	4398.29	-29.53	-67.44	35.72	1.77	608017.71	662253.42	N 32 40 15.13	W 103 56 25.37
	4442.00	4.51	159.04	4440.18	-30.35	-70.28	36.79	1.77	608014.88	662254.49	N 32 40 15.11	W 103 56 25.36
	4500.00	5.38	158.65	4497.96	-31.73	-74.94	38.60	1.50	608010.22	662256.30	N 32 40 15.06	W 103 56 25.34
	4536.00	5.92	158.47	4533.78	-32.72	-78.24	39.90	1.50	608006.92	662257.59	N 32 40 15.03	W 103 56 25.32
	4600.00	6.81	161.12	4597.39	-34.56	-84.90	42.34	1.47	608000.26	662260.03	N 32 40 14.96	W 103 56 25.29
	4631.00	7.25	162.17	4628.16	-35.42	-88.50	43.53	1.47	607996.65	662261.23	N 32 40 14.84	W 103 56 25.25
	4700.00	7.97	164.47	4696.55	-37.24	-97.26	46.14	1.14	607987.90	662263.84	N 32 40 14.80	W 103 56 25.24
	4727.00	8.26	165.26	4723.28	-37.90	-100.94	47.14	1.14	607984.22	662264.84	N 32 40 14.80	W 103 56 25.24
	4800.00	8.64	165.50	4795.48	-39.67	-111.32	49.85	0.52	607973.84	662267.54	N 32 40 14.70	W 103 56 25.21
	4821.00	8.75	165.56	4816.24	-40.18	-114.39	50.64	0.52	607970.77	662268.34	N 32 40 14.67	W 103 56 25.20
	4900.00	9.16	164.38	4894.28	-42.30	-126.27	53.83	0.57	607958.89	662271.53	N 32 40 14.55	W 103 56 25.16
	4916.00	9.24	164.15	4910.07	-42.77	-128.73	54.52	0.57	607956.43	662272.22	N 32 40 14.53	W 103 56 25.15
	5000.00	9.59	163.24	4992.94	-45.43	-141.91	58.38	0.45	607943.25	662276.08	N 32 40 14.40	W 103 56 25.11
	5010.00	9.63	163.14	5002.80	-45.77	-143.51	58.87	0.45	607941.65	662276.56	N 32 40 14.38	W 103 56 25.10
	5100.00	10.06	162.76	5091.48	-48.94	-158.22	63.38	0.48	607926.94	662281.07	N 32 40 14.24	W 103 56 25.05
	5105.00	10.08	162.74	5096.40	-49.13	-159.06	63.64	0.48	607926.11	662281.33	N 32 40 14.23	W 103 56 25.05
	5200.00	10.65	163.05	5189.85	-52.67	-175.39	68.66	0.60	607909.77	662286.36	N 32 40 14.07	W 103 56 24.99
	5295.00	11.05	163.05	5283.15	-56.33	-192.50	73.88	0.42	607892.67	662291.57	N 32 40 13.90	W 103 56 24.93
	5300.00	11.02	162.75	5288.06	-56.52	-193.41	74.16	1.34	607891.75	662291.85	N 32 40 13.89	W 103 56 24.92
	5389.00	10.47	157.06	5375.50	-60.78	-208.98	79.83	1.34	607876.19	662297.53	N 32 40 13.73	W 103 56 24.86
	5400.00	10.48	156.90	5386.32	-61.39	-210.82	80.61	0.29	607874.34	662298.31	N 32 40 13.71	W 103 56 24.85
	5484.00	10.56	155.65	5468.91	-66.28	-224.86	86.79	0.29	607860.31	662304.48	N 32 40 13.58	W 103 56 24.78
	5500.00	10.63	155.65	5484.63	-67.25	-227.54	88.00	0.42	607857.63	662305.69	N 32 40 13.55	W 103 56 24.78
	5579.00	10.96	155.65	5562.24	-72.12	-241.02	94.10	0.42	607844.15	662311.79	N 32 40 13.42	W 103 56 24.69
	5600.00	11.07	155.24	5582.85	-73.45	-244.67	95.77	0.63	607840.50	662313.46	N 32 40 13.38	W 103 56 24.67
	5674.00	11.45	153.84	5655.43	-78.47	-257.71	101.98	0.63	607827.46	662319.67	N 32 40 13.25	W 103 56 24.60
	5700.00	11.47	155.33	5680.92	-80.24	-262.32	104.17	1.55	607822.85	662321.86	N 32 40 13.20	W 103 56 24.58
	5789.00	10.47	159.66	5748.69	-84.12	-274.27	109.14	1.55	607810.90	662326.83	N 32 40 13.09	W 103 56 24.52
	5800.00	10.53	159.89	5779.17	-85.59	-279.57	111.09	0.23	607805.60	662328.78	N 32 40 13.03	W 103 56 24.50
	5864.00	10.65	160.36	5842.09	-88.58	-290.63	115.09	0.23	607794.54	662332.78	N 32 40 12.92	W 103 56 24.45
	5900.00	10.62	160.01	5877.47	-90.26	-296.88	117.34	0.20	607788.29	662335.03	N 32 40 12.86	W 103 56 24.42
	5959.00	10.56	159.44	5935.46	-93.09	-307.05	121.10	0.20	607778.13	662338.79	N 32 40 12.76	W 103 56 24.38
	6000.00	10.60	159.01	5975.77	-95.12	-314.09	123.77	0.21	607771.09	662341.46	N 32 40 12.69	W 103 56 24.35
	6052.00	10.65	158.47	6026.87	-97.78	-323.02	127.24	0.21	607762.15	662344.93	N 32 40 12.60	W 103 56 24.31
	6100.00	10.76	158.47	6074.04	-100.29	-331.32	130.52	0.23	607753.86	662348.21	N 32 40 12.52	W 103 56 24.27
	6146.00	10.87	158.47	6119.22	-102.73	-339.35	133.68	0.23	607745.83	662351.37	N 32 40 12.44	W 103 56 24.23
	6200.00	11.20	157.65	6172.22	-105.72	-348.93	137.55	0.67	607736.24	662355.24	N 32 40 12.35	W 103 56 24.19
	6241.00	11.45	157.06	6212.42	-108.14	-356.36	140.65	0.67	607728.82	662358.34	N 32 40 12.27	W 103 56 24.15
	6300.00	11.20	156.19	6270.28	-111.76	-367.00	145.24	0.52	607718.18	662362.93	N 32 40 12.17	W 103 56 24.10
	6335.00	11.05	155.65	6304.62	-113.95	-373.16	148.00	0.52	607712.02	662365.69	N 32 40 12.11	W 103 56 24.07
	6400.00	10.84	153.80	6368.44	-118.20	-384.32	153.26	0.63	607700.86	662370.95	N 32 40 12.00	W 103 56 24.01
	6430.00	10.74	152.92	6397.91	-120.26	-389.34	155.78	0.63	607695.84	662373.47	N 32 40 11.95	W 103 56 23.98
	6500.00	10.60	155.66	6466.70	-124.81	-401.01	161.40	0.75	607684.17	662379.09	N 32 40 11.83	W 103 56 23.91
	6525.00	10.56	156.66	6491.27	-126.28	-405.21	163.26	0.75	607679.97	662380.95	N 32 40 11.79	W 103 56 23.89
	6600.00	10.24	155.38	6565.04	-130.65	-417.58	168.76	0.52	607667.60	662386.45	N 32 40 11.67	W 103 56 23.83
	6620.00	10.16	155.03	6584.72	-131.84	-420.80	170.24	0.52	607664.38	662387.93	N 32 40 11.63	W 103 56 23.81

Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6700.00	9.97	156.75	6663.48	-136.39	-433.56	175.96	0.44	607651.62	662393.64	N 32 40 11.51	W 103 56 23.74
	6714.00	9.94	157.06	6677.28	-137.13	-435.79	176.91	0.44	607649.40	662394.59	N 32 40 11.49	W 103 56 23.73
	6800.00	11.56	158.43	6761.77	-141.84	-450.84	182.97	1.91	607634.55	662400.85	N 32 40 11.34	W 103 56 23.66
	6810.00	11.75	158.56	6771.56	-142.41	-452.52	183.71	1.91	607632.67	662401.40	N 32 40 11.32	W 103 56 23.65
	6900.00	11.46	158.05	6859.72	-147.57	-469.34	190.40	0.34	607615.84	662408.09	N 32 40 11.15	W 103 56 23.58
	6904.00	11.45	158.03	6863.64	-147.80	-470.08	190.70	0.34	607615.11	662408.38	N 32 40 11.15	W 103 56 23.57
	6999.00	11.18	156.93	6956.80	-153.36	-487.30	197.84	0.36	607597.89	662415.52	N 32 40 10.97	W 103 56 23.49
	7000.00	11.20	156.99	6957.78	-153.42	-487.48	197.91	2.14	607597.71	662415.60	N 32 40 10.97	W 103 56 23.49
	7093.00	12.86	162.26	7048.73	-158.45	-505.65	204.59	2.14	607579.54	662422.28	N 32 40 10.79	W 103 56 23.41
	7100.00	12.85	162.24	7055.56	-158.79	-507.13	205.07	0.20	607578.06	662422.75	N 32 40 10.78	W 103 56 23.41
	7187.00	12.68	161.95	7140.41	-163.04	-525.42	210.98	0.20	607559.77	662428.66	N 32 40 10.60	W 103 56 23.34
	7200.00	12.64	161.72	7153.09	-163.68	-528.13	211.87	0.51	607557.07	662429.55	N 32 40 10.57	W 103 56 23.33
	7282.00	12.37	160.23	7233.15	-167.93	-544.91	217.65	0.51	607540.28	662435.33	N 32 40 10.40	W 103 56 23.26
	7300.00	12.19	160.94	7250.74	-168.88	-548.52	218.92	1.30	607536.67	662436.81	N 32 40 10.37	W 103 56 23.25
	7377.00	11.45	164.23	7326.10	-172.24	-563.56	223.66	1.30	607521.63	662441.34	N 32 40 10.22	W 103 56 23.19
	7400.00	11.41	164.46	7348.65	-173.07	-567.95	224.89	0.27	607517.25	662442.57	N 32 40 10.18	W 103 56 23.18
	7471.00	11.27	163.17	7418.26	-175.51	-581.42	228.54	0.27	607503.78	662446.22	N 32 40 10.04	W 103 56 23.14
	7500.00	10.59	164.25	7446.74	-176.48	-586.72	229.99	2.42	607498.47	662447.67	N 32 40 9.99	W 103 56 23.12
	7566.00	9.06	161.64	7511.77	-178.78	-597.49	233.28	2.42	607487.70	662450.96	N 32 40 9.88	W 103 56 23.08
	7600.00	8.73	161.24	7545.36	-180.00	-602.48	234.95	1.00	607482.72	662452.63	N 32 40 9.83	W 103 56 23.06
	7661.00	8.13	160.45	7605.70	-182.16	-610.92	237.88	1.00	607474.28	662455.56	N 32 40 9.75	W 103 56 23.03
	7700.00	8.59	160.10	7644.28	-183.59	-616.26	239.79	1.19	607468.94	662457.48	N 32 40 9.70	W 103 56 23.01
	7755.00	9.24	159.66	7698.62	-185.80	-624.26	242.73	1.19	607460.94	662460.41	N 32 40 9.62	W 103 56 22.97
	7800.00	9.11	160.32	7743.04	-187.64	-631.00	245.18	0.37	607454.19	662462.86	N 32 40 9.55	W 103 56 22.94
	7850.00	8.97	161.07	7792.42	-189.56	-638.42	247.78	0.37	607446.78	662465.46	N 32 40 9.48	W 103 56 22.91
	7900.00	8.74	161.84	7841.83	-191.35	-645.71	250.23	0.52	607439.48	662467.91	N 32 40 9.41	W 103 56 22.88
	7945.00	8.53	162.57	7886.32	-192.83	-652.15	252.29	0.52	607433.05	662469.97	N 32 40 9.34	W 103 56 22.86
	8000.00	8.26	162.63	7940.73	-194.53	-659.81	254.69	0.49	607425.39	662472.38	N 32 40 9.27	W 103 56 22.83
	8026.00	8.13	162.66	7966.46	-195.31	-663.35	255.80	0.49	607421.86	662473.48	N 32 40 9.23	W 103 56 22.82
	8062.00	8.33	159.81	8002.09	-196.53	-668.22	257.46	1.26	607416.98	662475.14	N 32 40 9.18	W 103 56 22.80
	8094.00	7.93	168.96	8033.77	-197.36	-672.56	258.68	4.23	607412.64	662476.36	N 32 40 9.14	W 103 56 22.79
	8100.00	8.00	173.13	8039.71	-197.41	-673.39	258.81	9.69	607411.82	662476.49	N 32 40 9.13	W 103 56 22.79
	8126.00	8.75	189.72	8065.44	-196.96	-677.13	258.69	9.69	607408.07	662476.37	N 32 40 9.09	W 103 56 22.79
	8157.00	11.41	204.59	8095.96	-194.83	-682.25	257.02	11.94	607402.96	662474.70	N 32 40 9.04	W 103 56 22.81
	8189.00	14.67	218.13	8127.14	-190.48	-688.31	253.20	13.90	607396.89	662470.88	N 32 40 8.98	W 103 56 22.85
	8200.00	15.70	222.56	8137.76	-188.43	-690.51	251.33	14.07	607394.70	662469.01	N 32 40 8.96	W 103 56 22.87
	8221.00	17.86	229.54	8157.86	-183.70	-694.69	246.96	14.07	607390.51	662464.64	N 32 40 8.92	W 103 56 22.92
	8253.00	21.15	238.40	8188.03	-174.52	-700.90	238.30	13.80	607384.30	662455.99	N 32 40 8.86	W 103 56 23.03
	8316.00	23.68	245.31	8217.62	-163.29	-706.61	227.54	11.40	607378.59	662445.23	N 32 40 8.80	W 103 56 23.15
	8300.00	24.52	248.14	8231.31	-157.47	-709.03	221.92	9.54	607376.17	662439.60	N 32 40 8.78	W 103 56 23.22
	8348.00	25.48	250.96	8245.81	-150.95	-711.39	215.58	9.54	607373.81	662433.27	N 32 40 8.76	W 103 56 23.29
	8379.00	29.76	258.89	8274.52	-137.09	-715.28	202.01	9.37	607369.92	662419.70	N 32 40 8.69	W 103 56 23.45
	8400.00	32.36	261.41	8319.79	-122.47	-718.24	187.60	10.13	607366.97	662405.28	N 32 40 8.67	W 103 56 23.62
	8411.00	33.73	262.16	8329.01	-105.67	-720.86	170.97	13.00	607365.21	662394.60	N 32 40 8.67	W 103 56 23.75
	8443.00	36.98	264.21	8355.11	-87.17	-723.04	152.59	10.81	607362.17	662370.28	N 32 40 8.64	W 103 56 24.03
	8475.00	40.70	265.70	8380.03	-67.11	-724.79	132.60	11.99	607360.41	662350.29	N 32 40 8.63	W 103 56 24.26
	8500.00	43.77	266.19	8398.54	-50.31	-725.98	115.84	12.35	607359.23	662333.53	N 32 40 8.62	W 103 56 24.46
	8507.00	44.63	266.32	8403.56	-45.43	-726.30	110.97	12.35	607358.91	662328.66	N 32 40 8.61	W 103 56 24.52
	8538.00	48.28	267.20	8424.91	-22.97	-727.56	88.54	11.95	607357.64	662306.24	N 32 40 8.60	W 103 56 24.78
	8569.00	52.65	267.02	8444.64	0.91	-728.77	64.67	14.10	607356.44	662282.37	N 32 40 8.59	W 103 56 25.06
	8600.00	56.96	267.87	8462.50	26.21	-729.89	39.37	14.09	607355.31	662257.07	N 32 40 8.58	W 103 56 25.35
	8601.00	57.10	267.90	8463.04	27.05	-729.92	38.53	14.09	607355.28	662256.23	N 32 40 8.58	W 103 56 25.36
	8632.00	61.79	269.24	8478.80	53.68	-730.58	11.85	15.58	607354.63	662229.55	N 32 40 8.57	W 103 56 25.68
	8664.00	66.55	270.65	8492.74	82.36	-730.60	-16.94	15.39	607354.60	662200.76	N 32 40 8.58	W 103 56 26.01
	8696.00	71.19	272.59	8504.27	111.99	-729.75	-46.77	15.56	607355.46	662170.94	N 32 40 8.58	W 103 56 26.36
	8700.00	71.74	272.69	8505.54	115.75	-729.57	-50.56	14.03	607355.63	662167.15	N 32 40 8.59	W 103 56 26.41
	8728.00	75.62	273.35	8513.41	142.34	-728.16	-77.39	14.03	607357.05	662140.32	N 32 40 8.60	W 103 56 26.72

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 ° ' '')
	8760.00	79.10	273.62	8520.41	173.21	-726.26	-108.55	10.91	607358.94	662109.16	N 32 40 8.62	W 103 56 27.08
	8792.00	83.32	272.70	8525.30	204.49	-724.52	-140.12	13.49	607360.69	662077.59	N 32 40 8.64	W 103 56 27.45
	8800.00	84.48	272.27	8526.15	212.38	-724.17	-148.06	15.49	607361.03	662069.85	N 32 40 8.64	W 103 56 27.55
	8823.00	87.83	271.05	8527.69	235.16	-723.51	-171.00	15.49	607361.70	662046.71	N 32 40 8.65	W 103 56 27.82
	8855.00	90.45	271.43	8528.17	266.95	-722.82	-202.98	8.27	607362.39	662014.73	N 32 40 8.66	W 103 56 28.19
	8882.00	90.65	270.61	8527.91	293.80	-722.34	-229.98	3.13	607362.87	661987.74	N 32 40 8.66	W 103 56 28.51
	8900.00	90.82	270.81	8527.68	311.70	-722.11	-247.98	1.47	607363.09	661969.74	N 32 40 8.67	W 103 56 28.72
	8958.00	91.38	271.46	8526.57	369.34	-720.96	-305.95	1.47	607364.24	661911.77	N 32 40 8.68	W 103 56 29.39
	9000.00	90.68	271.65	8525.81	411.05	-719.83	-347.93	1.73	607365.38	661869.80	N 32 40 8.69	W 103 56 29.88
	9053.00	89.79	271.88	8525.60	463.66	-718.20	-400.90	1.73	607367.01	661816.83	N 32 40 8.71	W 103 56 30.50
	9100.00	89.98	271.26	8525.69	510.34	-716.91	-447.89	1.38	607368.30	661769.85	N 32 40 8.73	W 103 56 31.05
	9148.00	90.17	270.63	8525.63	558.07	-716.11	-495.88	1.38	607369.09	661721.86	N 32 40 8.74	W 103 56 31.62
	9200.00	90.06	270.10	8525.52	609.83	-715.78	-547.88	1.04	607369.42	661669.86	N 32 40 8.74	W 103 56 32.22
	9242.00	89.97	269.67	8525.51	651.67	-715.87	-589.88	1.04	607369.34	661627.87	N 32 40 8.74	W 103 56 32.71
	9300.00	89.88	269.66	8525.59	709.46	-716.21	-647.88	0.15	607369.00	661569.87	N 32 40 8.74	W 103 56 33.39
	9337.00	89.83	269.66	8525.68	746.33	-716.42	-684.88	0.15	607368.78	661532.88	N 32 40 8.74	W 103 56 33.83
	9400.00	89.92	269.69	8525.85	809.11	-716.78	-747.88	0.15	607368.42	661469.88	N 32 40 8.74	W 103 56 34.56
	9432.00	89.97	269.70	8525.85	841.00	-716.95	-779.87	0.15	607368.25	661437.88	N 32 40 8.74	W 103 56 34.94
	9500.00	90.06	269.83	8525.83	908.75	-717.23	-847.87	0.24	607367.97	661369.89	N 32 40 8.74	W 103 56 35.73
	9526.00	90.10	269.88	8525.79	934.65	-717.30	-873.87	0.24	607367.91	661343.89	N 32 40 8.74	W 103 56 36.04
	9600.00	89.89	269.87	8525.80	1008.37	-717.46	-947.87	0.29	607367.75	661269.90	N 32 40 8.74	W 103 56 36.90
	9620.00	89.83	269.87	8525.85	1028.29	-717.50	-967.87	0.29	607367.70	661249.90	N 32 40 8.74	W 103 56 37.14
	9700.00	89.71	269.96	8526.16	1107.98	-717.62	-1047.87	0.19	607367.58	661169.91	N 32 40 8.74	W 103 56 38.07
	9715.00	89.69	269.98	8526.24	1122.92	-717.63	-1062.87	0.19	607367.58	661154.91	N 32 40 8.74	W 103 56 38.25
	9800.00	89.84	269.74	8526.59	1207.59	-717.84	-1147.87	0.34	607367.37	661069.92	N 32 40 8.74	W 103 56 39.24
	9810.00	89.86	269.71	8526.62	1217.56	-717.89	-1157.87	0.34	607367.32	661059.92	N 32 40 8.74	W 103 56 39.36
	9900.00	89.86	269.92	8526.84	1307.22	-718.18	-1247.87	0.23	607367.03	660969.92	N 32 40 8.74	W 103 56 40.41
	9905.00	89.86	269.93	8526.85	1312.20	-718.18	-1252.87	0.23	607367.02	660964.92	N 32 40 8.74	W 103 56 40.47
	10000.00	89.62	269.74	8527.28	1406.84	-718.46	-1347.87	0.32	607366.75	660869.93	N 32 40 8.74	W 103 56 41.58
	10095.00	89.86	269.61	8527.71	1501.50	-719.00	-1442.87	0.29	607366.21	660774.94	N 32 40 8.74	W 103 56 42.69
	10100.00	89.86	269.62	8527.72	1506.49	-719.03	-1447.87	0.28	607366.17	660769.94	N 32 40 8.74	W 103 56 42.75
	10190.00	89.90	269.87	8527.91	1596.16	-719.43	-1537.87	0.28	607365.78	660679.95	N 32 40 8.74	W 103 56 43.80
	10200.00	89.90	269.88	8527.93	1606.12	-719.45	-1547.87	0.08	607365.76	660669.95	N 32 40 8.74	W 103 56 43.92
	10285.00	89.93	269.94	8528.05	1690.79	-719.59	-1632.87	0.08	607365.62	660584.96	N 32 40 8.74	W 103 56 44.92
	10300.00	89.91	269.86	8528.07	1705.73	-719.61	-1647.87	0.54	607365.59	660569.96	N 32 40 8.74	W 103 56 45.09
	10380.00	89.83	269.44	8528.25	1785.45	-720.18	-1727.86	0.54	607365.11	660489.97	N 32 40 8.74	W 103 56 46.03
	10400.00	89.86	269.51	8528.30	1805.39	-720.28	-1747.86	0.38	607364.92	660469.97	N 32 40 8.74	W 103 56 46.26
	10475.00	89.97	269.77	8528.42	1880.13	-720.75	-1822.86	0.38	607364.45	660394.98	N 32 40 8.74	W 103 56 47.14
	10500.00	89.94	269.73	8528.43	1905.03	-720.86	-1847.86	0.21	607364.34	660369.98	N 32 40 8.74	W 103 56 47.43
	10569.00	89.86	269.61	8528.55	1973.79	-721.26	-1916.86	0.21	607363.94	660300.99	N 32 40 8.74	W 103 56 48.24
	10600.00	90.14	269.58	8528.55	2004.69	-721.48	-1947.86	0.91	607363.72	660269.99	N 32 40 8.74	W 103 56 48.60
	10664.00	90.72	269.51	8528.07	2068.47	-721.99	-2011.85	0.91	607363.21	660206.00	N 32 40 8.73	W 103 56 49.35
	10700.00	90.72	269.42	8527.62	2104.35	-722.33	-2047.85	0.24	607362.88	660170.01	N 32 40 8.73	W 103 56 49.77
	10758.00	90.72	269.28	8526.89	2162.17	-722.98	-2105.84	0.24	607362.22	660112.02	N 32 40 8.73	W 103 56 50.45
	10800.00	90.54	269.31	8526.43	2204.04	-723.50	-2147.84	0.44	607361.70	660070.03	N 32 40 8.72	W 103 56 50.94
	10852.00	90.31	269.35	8526.05	2255.88	-724.11	-2199.83	0.44	607361.10	660018.04	N 32 40 8.72	W 103 56 51.55
	10900.00	90.35	269.63	8525.77	2303.72	-724.54	-2247.83	0.58	607360.67	659970.04	N 32 40 8.72	W 103 56 52.11
	10947.00	90.38	269.90	8525.48	2350.55	-724.73	-2294.83	0.58	607360.48	659923.05	N 32 40 8.72	W 103 56 52.66
	11000.00	90.40	269.94	8525.12	2403.34	-724.80	-2347.83	0.08	607360.40	659870.05	N 32 40 8.72	W 103 56 53.28
	11042.00	90.41	269.97	8524.82	2445.17	-724.84	-2389.82	0.08	607360.37	659828.06	N 32 40 8.72	W 103 56 53.77
	11100.00	90.45	269.69	8524.38	2502.95	-725.01	-2447.82	0.48	607360.20	659770.06	N 32 40 8.72	W 103 56 54.45
	11136.00	90.48	269.52	8523.83	2538.83	-725.26	-2483.82	0.48	607359.95	659734.07	N 32 40 8.72	W 103 56 54.87
	11200.00	90.35	269.35	8523.63	2602.62	-725.89	-2547.82	0.33	607359.32	659670.08	N 32 40 8.71	W 103 56 55.82
	11232.00	90.28	269.27	8523.45	2634.53	-726.27	-2579.81	0.33	607358.94	659638.08	N 32 40 8.71	W 103 56 55.99
	11300.00	90.42	269.30	8523.04	2702.32	-727.12	-2647.81	0.22	607358.09	659570.10	N 32 40 8.71	W 103 56 56.79
	11326.00	90.48	269.31	8522.83	2728.24	-727.43	-2673.80	0.22	607357.77	659544.10	N 32 40 8.70	W 103 56 57.09
	11400.00	90.46	269.52	8522.23	2802.01	-728.19	-2747.80	0.29	607357.02	659470.11	N 32 40 8.70	W 103 56 57.96
	11421.00	90.45	269.58	8522.06	2822.93	-728.35	-2768.80	0.29	607356.85	659449.12	N 32 40 8.70	W 103 56 58.20

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 ° ' '')
	11500.00	90.39	269.56	8521.48	2901.67	-728.95	-2847.79	0.08	607356.26	659370.13	N 32 40 8.69	W 103 56 59.13
	11516.00	90.38	269.56	8521.37	2917.61	-729.07	-2863.79	0.08	607356.14	659354.13	N 32 40 8.69	W 103 56 59.32
	11600.00	90.41	269.51	8520.79	3001.33	-729.75	-2947.79	0.06	607355.46	659270.14	N 32 40 8.69	W 103 57 0.30
	11609.00	90.41	269.51	8520.73	3010.30	-729.82	-2956.79	0.06	607355.38	659261.14	N 32 40 8.69	W 103 57 0.40
	11700.00	90.48	269.18	8520.03	3101.02	-730.86	-3047.78	0.37	607354.34	659170.16	N 32 40 8.68	W 103 57 1.47
	11703.00	90.48	269.17	8520.00	3104.01	-730.91	-3050.78	0.37	607354.30	659167.16	N 32 40 8.68	W 103 57 1.50
	11798.00	90.52	269.37	8519.17	3198.72	-732.12	-3145.76	0.21	607353.09	659072.17	N 32 40 8.67	W 103 57 2.61
	11800.00	90.52	269.36	8519.15	3200.72	-732.14	-3147.76	0.31	607353.07	659070.18	N 32 40 8.67	W 103 57 2.64
	11892.00	90.55	269.08	8518.29	3292.45	-733.39	-3239.75	0.31	607351.82	658978.19	N 32 40 8.66	W 103 57 3.71
	11900.00	90.55	269.12	8518.22	3300.42	-733.51	-3247.75	0.48	607351.69	658970.20	N 32 40 8.66	W 103 57 3.81
	11987.00	90.55	269.54	8517.38	3387.16	-734.53	-3334.74	0.48	607350.68	658883.21	N 32 40 8.66	W 103 57 4.82
	12000.00	90.55	269.49	8517.28	3400.11	-734.64	-3347.74	0.42	607350.56	658870.22	N 32 40 8.66	W 103 57 4.98
	12081.00	90.52	269.15	8516.50	3480.86	-735.61	-3428.73	0.42	607349.60	658789.23	N 32 40 8.65	W 103 57 5.92
	12100.00	90.53	269.14	8516.33	3499.81	-735.89	-3447.73	0.08	607349.32	658770.24	N 32 40 8.65	W 103 57 6.15
	12176.00	90.55	269.08	8515.62	3575.60	-737.07	-3523.71	0.08	607348.13	658694.25	N 32 40 8.64	W 103 57 7.04
	12200.00	90.60	269.42	8515.38	3599.52	-737.39	-3547.71	1.42	607347.82	658670.26	N 32 40 8.64	W 103 57 7.32
	12270.00	90.76	270.40	8514.54	3669.25	-737.50	-3617.71	1.42	607347.71	658600.27	N 32 40 8.64	W 103 57 8.14
	12300.00	90.90	270.70	8514.11	3699.10	-737.21	-3647.70	1.10	607347.99	658570.28	N 32 40 8.64	W 103 57 8.49
	12365.00	91.20	271.35	8512.92	3763.71	-736.05	-3712.68	1.10	607349.16	658505.30	N 32 40 8.65	W 103 57 9.25
	12400.00	91.15	271.18	8512.20	3798.48	-735.27	-3747.66	0.49	607349.93	658470.32	N 32 40 8.66	W 103 57 9.66
	12458.00	91.07	270.91	8511.08	3856.13	-734.22	-3805.64	0.49	607350.64	658412.35	N 32 40 8.68	W 103 57 10.33
	12500.00	91.04	270.86	8510.30	3897.89	-733.57	-3847.63	0.14	607351.64	658370.36	N 32 40 8.68	W 103 57 10.82
	12554.00	91.00	270.79	8509.34	3951.59	-732.79	-3901.62	0.14	607352.41	658316.38	N 32 40 8.69	W 103 57 11.46
	12600.00	90.85	270.75	8508.60	3997.34	-732.17	-3947.61	0.34	607353.03	658270.39	N 32 40 8.70	W 103 57 11.99
	12649.00	90.69	270.70	8507.94	4046.08	-731.56	-3996.60	0.34	607353.65	658221.41	N 32 40 8.71	W 103 57 12.57
	12700.00	90.89	270.69	8507.24	4096.81	-730.94	-4047.59	0.40	607354.27	658170.42	N 32 40 8.72	W 103 57 13.16
	12744.00	91.07	270.68	8506.48	4140.58	-730.41	-4091.58	0.40	607354.79	658126.43	N 32 40 8.72	W 103 57 13.68
	12800.00	90.99	270.67	8505.48	4196.28	-729.75	-4147.57	0.15	607355.45	658070.45	N 32 40 8.73	W 103 57 14.33
	12838.00	90.93	270.67	8504.84	4234.08	-729.31	-4185.56	0.15	607355.90	658032.46	N 32 40 8.74	W 103 57 14.78
	12900.00	91.18	270.94	8503.70	4295.74	-728.43	-4247.54	0.59	607356.77	657970.48	N 32 40 8.75	W 103 57 15.50
	12932.00	91.31	271.08	8503.00	4327.54	-727.87	-4279.53	0.59	607357.34	657938.50	N 32 40 8.76	W 103 57 15.88
	13000.00	91.21	269.98	8501.51	4395.19	-727.24	-4347.51	1.63	607357.96	657870.52	N 32 40 8.76	W 103 57 16.67
	13027.00	91.17	269.54	8500.95	4422.09	-727.36	-4374.50	1.63	607357.85	657843.53	N 32 40 8.76	W 103 57 16.99
	13100.00	90.46	269.18	8499.91	4494.86	-728.17	-4447.49	1.10	607357.03	657770.55	N 32 40 8.76	W 103 57 17.84
	13122.00	90.24	269.07	8499.78	4516.79	-728.51	-4489.49	1.10	607356.70	657748.55	N 32 40 8.76	W 103 57 18.10
	13200.00	90.41	269.17	8499.33	4594.58	-729.71	-4547.48	0.25	607355.50	657670.57	N 32 40 8.75	W 103 57 19.01
	13217.00	90.45	269.19	8499.21	4611.53	-729.95	-4564.47	0.25	607355.25	657653.57	N 32 40 8.75	W 103 57 19.21
	13300.00	90.60	269.06	8498.45	4694.30	-731.22	-4647.46	0.24	607353.99	657570.59	N 32 40 8.74	W 103 57 20.18
	13311.00	90.62	269.04	8498.33	4705.27	-731.40	-4658.46	0.24	607353.80	657559.60	N 32 40 8.73	W 103 57 20.31
	13400.00	90.42	268.71	8497.52	4794.04	-733.15	-4747.44	0.43	607352.06	657470.62	N 32 40 8.72	W 103 57 21.35
	13406.00	90.41	268.69	8497.47	4800.03	-733.28	-4753.44	0.43	607351.92	657464.63	N 32 40 8.72	W 103 57 21.42
	13499.00	90.65	268.65	8496.61	4892.82	-735.44	-4846.41	0.26	607349.76	657371.66	N 32 40 8.70	W 103 57 22.51
	13500.00	90.65	268.65	8496.60	4893.82	-735.47	-4847.41	0.54	607349.74	657370.66	N 32 40 8.70	W 103 57 22.52
	13594.00	90.38	269.09	8495.76	4987.58	-737.32	-4941.38	0.54	607347.89	657276.69	N 32 40 8.69	W 103 57 23.62
	13600.00	90.40	269.04	8495.72	4993.57	-737.41	-4947.38	0.80	607347.79	657270.69	N 32 40 8.68	W 103 57 23.69
	13687.00	90.62	268.39	8494.95	5080.36	-739.36	-5034.36	0.80	607345.85	657183.73	N 32 40 8.67	W 103 57 24.71
	13700.00	90.60	268.44	8494.81	5093.34	-739.72	-5047.35	0.44	607345.49	657170.73	N 32 40 8.67	W 103 57 24.86
	13783.00	90.45	268.78	8494.05	5176.16	-741.73	-5130.32	0.44	607343.47	657087.77	N 32 40 8.65	W 103 57 25.83
	13800.00	90.39	268.99	8493.93	5193.11	-742.06	-5147.32	1.28	607343.14	657070.77	N 32 40 8.65	W 103 57 26.03
	13877.00	90.14	269.94	8493.57	5269.86	-742.78	-5224.32	1.28	607342.43	656993.78	N 32 40 8.64	W 103 57 26.93
	13900.00	90.26	270.10	8493.49	5292.77	-742.77	-5247.32	0.85	607342.43	656970.78	N 32 40 8.64	W 103 57 27.20
	13971.00	90.62	270.58	8492.95	5363.44	-742.05	-5318.31	0.85	607342.85	656899.79	N 32 40 8.65	W 103 57 28.03
	14000.00	90.60	270.57	8492.64	5392.30	-742.36	-5347.31	0.08	607343.14	656870.80	N 32 40 8.65	W 103 57 28.37
	14085.00	90.55	270.56	8491.99	5456.97	-741.42	-5412.30	0.08	607343.79	656805.81	N 32 40 8.66	W 103 57 29.13
	14100.00	90.51	270.66	8491.66	5491.79	-741.05	-5447.29	0.30	607344.16	656770.82	N 32 40 8.67	W 103 57 29.54
	14160.00	90.45	270.83	8491.16	5551.48	-740.27	-5507.29	0.30	607344.94	656710.83	N 32 40 8.68	W 103 57 30.24
	14200.00	90.42	270.74	8490.85	5591.26	-739.72	-5547.29	0.23	607345.49	656670.84	N 32 40 8.68	W 103 57 30.71
	14266.00	90.38	270.62	8490.46	5646.97	-739.05	-5603.28	0.23	607346.15	656614.85	N 32 40 8.69	W 103 57 31.36

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 ° ' ")
	14300.00	90.41	270.73	8490.77	5690.74	-738.54	-5647.28	0.25	607346.67	656570.85	N 32 40 8.70	W 103 57 31.88
	14351.00	90.45	270.85	8489.77	5741.47	-737.83	-5698.27	0.25	607347.37	656519.86	N 32 40 8.71	W 103 57 32.47
	14400.00	90.41	270.84	8489.40	5790.20	-737.11	-5747.26	0.08	607348.09	656470.87	N 32 40 8.72	W 103 57 33.05
	14445.00	90.38	270.83	8489.09	5834.95	-736.46	-5792.26	0.08	607348.75	656425.88	N 32 40 8.72	W 103 57 33.57
	14500.00	90.32	270.93	8488.76	5889.65	-735.61	-5847.25	0.21	607349.59	656370.89	N 32 40 8.73	W 103 57 34.22
	14539.00	90.28	271.00	8488.55	5928.43	-734.96	-5886.24	0.21	607350.25	656331.90	N 32 40 8.74	W 103 57 34.67
	14600.00	90.30	270.90	8488.24	5989.08	-733.94	-5947.24	0.16	607351.26	656270.92	N 32 40 8.75	W 103 57 35.39
	14633.00	90.31	270.85	8488.07	6021.90	-733.44	-5980.23	0.16	607351.77	656237.92	N 32 40 8.76	W 103 57 35.77
	14700.00	90.29	270.79	8487.72	6088.54	-732.48	-6047.22	0.09	607352.73	656170.94	N 32 40 8.77	W 103 57 36.56
	14728.00	90.28	270.77	8487.58	6116.39	-732.09	-6075.22	0.09	607353.11	656142.94	N 32 40 8.78	W 103 57 36.88
	14800.00	90.28	270.78	8487.23	6188.00	-731.12	-6147.21	0.01	607354.08	656070.96	N 32 40 8.79	W 103 57 37.73
	14823.00	90.28	270.78	8487.11	6210.88	-730.81	-6170.21	0.01	607354.40	656047.96	N 32 40 8.79	W 103 57 37.99
	14900.00	90.17	270.67	8486.81	6287.47	-729.83	-6247.20	0.20	607355.37	655970.97	N 32 40 8.81	W 103 57 38.89
	14918.00	90.14	270.65	8486.77	6305.38	-729.62	-6285.20	0.20	607355.58	655952.97	N 32 40 8.81	W 103 57 39.11
	15000.00	90.74	269.48	8486.14	6387.04	-729.53	-6347.20	1.60	607355.68	655870.99	N 32 40 8.81	W 103 57 40.06
	15013.00	90.83	269.30	8485.96	6400.00	-729.67	-6360.20	1.60	607355.54	655857.99	N 32 40 8.81	W 103 57 40.22
	15100.00	90.45	268.72	8484.99	6486.76	-731.17	-6447.18	0.80	607354.04	655771.01	N 32 40 8.80	W 103 57 41.23
	15108.00	90.41	268.67	8484.93	6494.74	-731.35	-6455.18	0.80	607353.86	655763.02	N 32 40 8.80	W 103 57 41.33
	15200.00	90.45	268.64	8484.24	6586.54	-733.51	-6547.15	0.05	607351.70	655671.05	N 32 40 8.78	W 103 57 42.40
	15202.00	90.45	268.64	8484.23	6588.54	-733.55	-6549.15	0.05	607351.65	655669.05	N 32 40 8.78	W 103 57 42.43
	15297.00	90.52	268.66	8483.42	6683.32	-735.79	-6644.12	0.08	607349.41	655574.09	N 32 40 8.76	W 103 57 43.54
	15300.00	90.52	268.66	8483.40	6686.32	-735.86	-6647.12	0.15	607349.34	655571.09	N 32 40 8.76	W 103 57 43.57
	15393.00	90.55	268.80	8482.53	6779.10	-737.92	-6740.09	0.15	607347.29	655478.12	N 32 40 8.74	W 103 57 44.66
	15400.00	90.54	268.80	8482.46	6786.08	-738.07	-6747.09	0.08	607347.14	655471.13	N 32 40 8.74	W 103 57 44.74
	15488.00	90.48	268.83	8481.67	6873.87	-739.89	-6835.06	0.08	607345.32	655383.16	N 32 40 8.73	W 103 57 45.77
	15500.00	90.48	268.84	8481.57	6885.84	-740.13	-6847.06	0.12	607345.08	655371.16	N 32 40 8.72	W 103 57 45.91
	15583.00	90.48	268.94	8480.88	6968.63	-741.73	-6930.04	0.12	607343.47	655288.18	N 32 40 8.71	W 103 57 46.88
	15600.00	90.49	268.90	8480.73	6985.59	-742.05	-6947.04	0.24	607343.15	655271.19	N 32 40 8.71	W 103 57 47.08
	15678.00	90.55	268.72	8480.02	7063.40	-743.67	-7025.02	0.24	607341.53	655193.22	N 32 40 8.70	W 103 57 47.99
	15700.00	90.54	268.68	8479.81	7085.35	-744.17	-7047.01	0.20	607341.03	655171.22	N 32 40 8.69	W 103 57 48.25
	15772.00	90.52	268.53	8479.15	7157.19	-745.93	-7118.99	0.20	607339.28	655099.25	N 32 40 8.68	W 103 57 49.09
	15800.00	90.62	268.98	8478.87	7185.13	-746.54	-7146.98	1.66	607338.67	655071.26	N 32 40 8.67	W 103 57 49.42
	15866.00	90.86	270.05	8478.01	7250.90	-747.09	-7212.97	1.66	607338.11	655005.28	N 32 40 8.67	W 103 57 50.19
	15900.00	90.88	270.10	8477.50	7284.76	-747.05	-7246.97	0.16	607338.16	654971.28	N 32 40 8.67	W 103 57 50.59
	15962.00	90.93	270.19	8476.51	7346.49	-746.89	-7308.96	0.16	607338.31	654909.30	N 32 40 8.67	W 103 57 51.32
	16000.00	90.96	270.33	8475.89	7384.31	-746.72	-7346.95	0.38	607338.49	654871.31	N 32 40 8.68	W 103 57 51.76
	16056.00	91.00	270.54	8474.93	7440.04	-746.29	-7402.94	0.38	607338.91	654815.32	N 32 40 8.68	W 103 57 52.42
	16100.00	90.94	270.38	8474.19	7483.82	-745.94	-7446.94	0.40	607339.27	654771.33	N 32 40 8.69	W 103 57 52.93
	16151.00	90.86	270.19	8473.39	7534.59	-745.69	-7497.93	0.40	607339.52	654720.34	N 32 40 8.69	W 103 57 53.53
	16200.00	90.91	270.40	8472.63	7583.36	-745.44	-7546.92	0.44	607339.77	654671.35	N 32 40 8.70	W 103 57 54.10
	16244.00	90.96	270.59	8471.91	7627.14	-745.06	-7590.92	0.44	607340.15	654627.36	N 32 40 8.70	W 103 57 54.61
	16300.00	90.92	270.38	8470.99	7682.87	-744.58	-7646.91	0.38	607340.63	654571.38	N 32 40 8.71	W 103 57 55.27
	16338.00	90.89	270.24	8470.39	7720.69	-744.34	-7684.90	0.38	607341.07	654533.38	N 32 40 8.71	W 103 57 55.71
	16400.00	90.87	270.20	8469.44	7782.41	-744.14	-7746.89	0.07	607341.07	654471.40	N 32 40 8.72	W 103 57 56.44
	16432.00	90.86	270.18	8468.96	7814.27	-744.03	-7778.89	0.07	607341.18	654439.40	N 32 40 8.72	W 103 57 56.81
	16500.00	90.93	270.24	8468.70	7881.96	-743.78	-7846.88	0.14	607341.42	654371.42	N 32 40 8.72	W 103 57 57.61
	16526.00	90.96	270.26	8467.47	7907.84	-743.67	-7872.88	0.14	607341.54	654345.42	N 32 40 8.72	W 103 57 57.81
	16600.00	89.87	269.94	8466.93	7981.53	-743.54	-7946.87	1.53	607341.67	654271.43	N 32 40 8.73	W 103 57 58.78
	16622.00	89.55	269.85	8467.04	8003.45	-743.58	-7968.87	1.53	607341.63	654249.43	N 32 40 8.73	W 103 57 59.04
	16700.00	90.77	270.09	8466.82	8081.13	-743.62	-8046.87	1.59	607341.59	654171.44	N 32 40 8.73	W 103 57 59.95
	16717.00	91.03	270.14	8466.56	8098.06	-743.59	-8063.87	1.59	607341.62	654154.45	N 32 40 8.73	W 103 58 0.15
	16800.00	91.09	269.94	8465.02	8180.71	-743.53	-8146.85	0.25	607341.68	654071.47	N 32 40 8.74	W 103 58 1.12
	16812.00	91.10	269.91	8464.79	8192.66	-743.54	-8158.85	0.25	607341.66	654059.47	N 32 40 8.74	W 103 58 1.28
	16885.00	90.72	270.05	8463.95	8245.44	-743.56	-8211.85	0.76	607341.64	654006.48	N 32 40 8.74	W 103 58 1.86
Last Survey												
TD, project to bit	16904.00	90.72	270.05	8463.46	8284.28	-743.53	-8250.84	0.00	607341.68	653967.49	N 32 40 8.74	W 103 58 2.33

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 ° ' ")
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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	24.000	1/98.425	30.000	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Crescent Hale 10 Federal #4H Final
	1	24.000	24.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Crescent Hale 10 Federal #4H Final
	1	24.000	16904.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Crescent Hale 10 Federal #4H

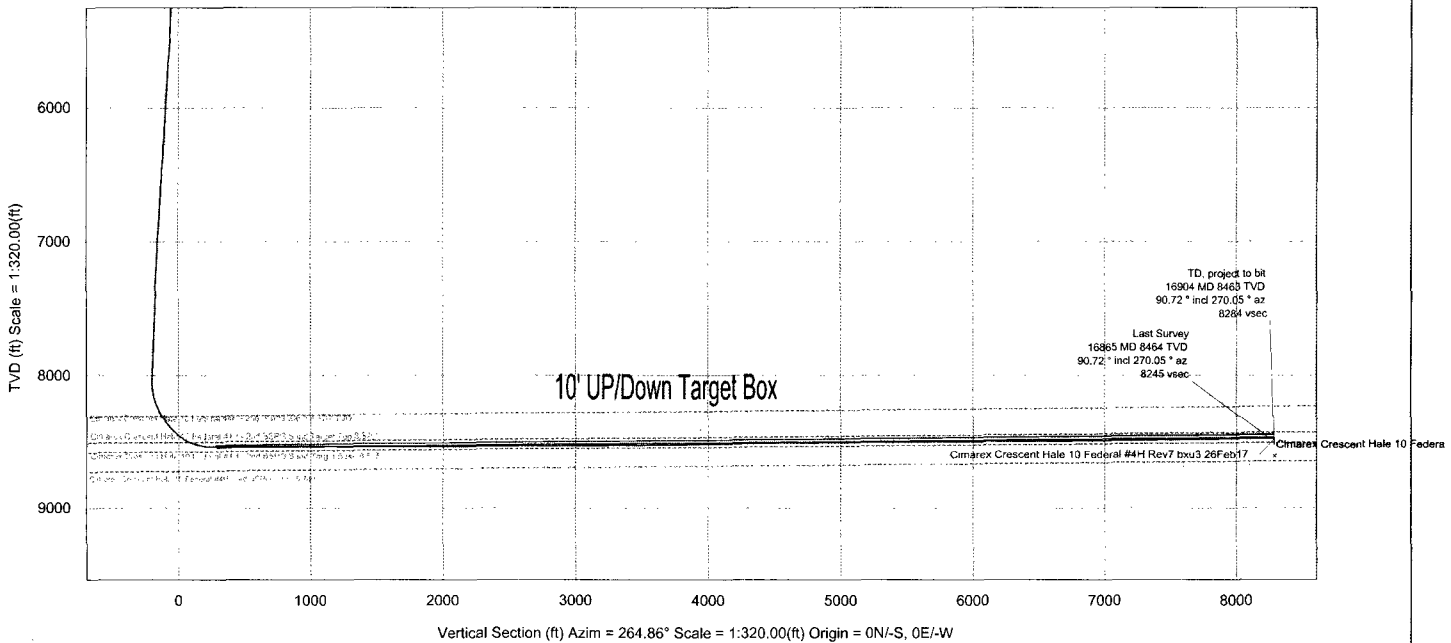
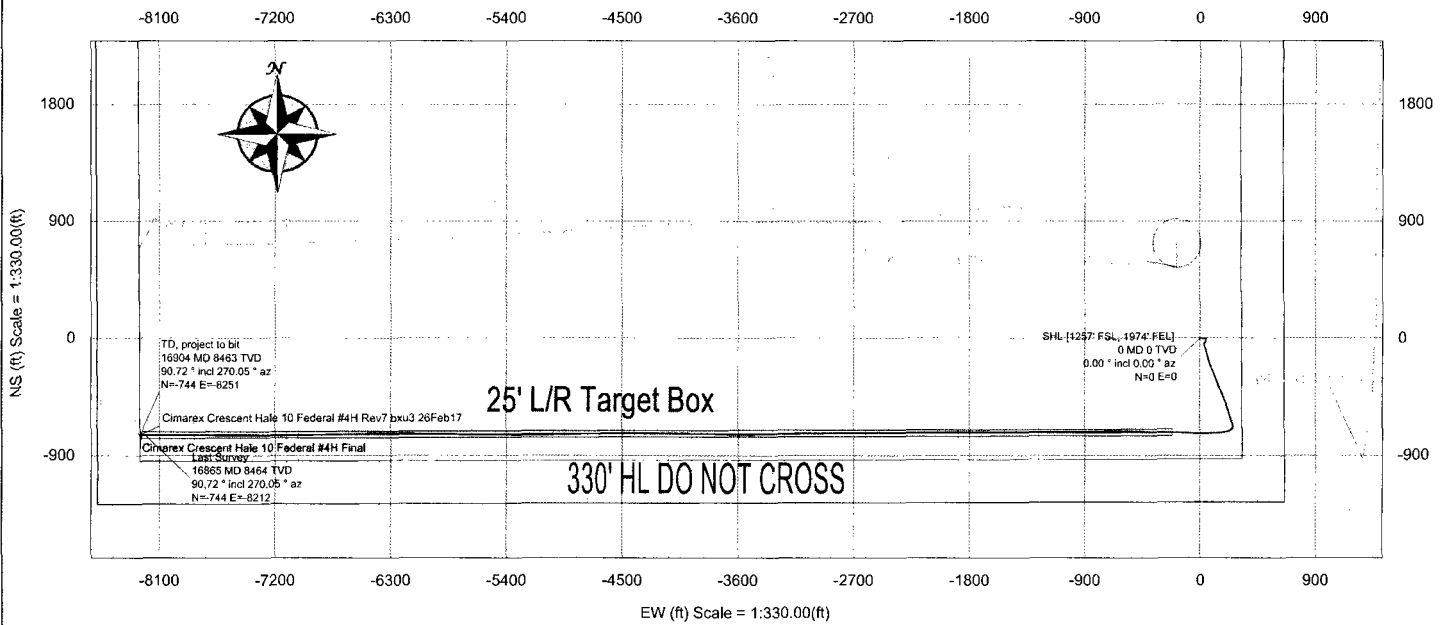
30-015-43847

Schlumberger**Cactus 153****Cimarex**

Final PvA

CIMAREX

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Crescent Hale 10 Federal #4H	NM Eddy County (NAD 83)	Cimarex Crescent Hale 10 Federal #4H
Gravity & Magnetic Parameters			
Model: HDGM 2016	Dip: 60.592°	Date: 02-Feb-2017	Surface Location
MagDec: 7.534°	FS: 48360.974mT	Gravity FS: 998.517mgal (9.80665 Based)	NAD83 New Mexico State Plane, Eastern Zone, US Feet
			Lat: N 32 40 15.80
			North: 608085.15NUS
			Grid Conv: 0.2121°
			Lon: W 103 56 25.78
			Easting: 662217.7NUS
			Scale Fact: 0.99992582
			Miscellaneous
			Cimarex Crescent
			Slot: Hale 10 Federal
			TVD Ref: RKB(3374.6ft above MSL)
			Plan: #4H
			Cimarex Crescent Hale 10 Federal #4H Final



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [1257' FSL, 1974' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
EXTREME SURVEYS	81.07	0.31	32.92	81.07	-0.14	0.18	0.12	0.38
Last Survey	16865.00	90.72	270.05	8463.95	8245.44	-743.56	-8211.85	0.76
TD, project to bit	16904.00	90.72	270.05	8463.46	8284.28	-743.53	-8250.84	0.00

Grid
True
Mag

Grid North
Tot Corr (M->G 7.322°)
Mag Dec (7.534°)
Grid Conv (0.212°)

CONTROLLED

Printed: []
Drawing of: []
Cray number: []
Date: 05-Mar-2017

Client: []
Drawn: []
Office: []
Copy number: []