

Results of Directional Survey

API number:	30-025-41834		
OGRID:		Operator:	CIMAREX ENERGY CO.
		Property:	CORDONIZ 28 FEDERAL COM # 4H

surface	ULSTR:	P	28	T	19S	R	34E
				150	FSL	750	FEL

BH Loc	ULSTR:	A	28	T	19S	R	34E
15386	MD	10797.6	TVD	341	FNL	746	FEL
4939 FSL							

Top Perf/OH	ULSTR:	P	28	T	19S	R	34E
10880	MD	10760.6	TVD	459	FSL	771	FEL

Bot Perf/OH	ULSTR:	A	28	T	19S	R	34E
15355	MD	10797.6	TVD	378	FNL	751	FEL
4908 FSL							

	MD	N/S	E/W	VD
	10849.00	282.37	-23.67	10745.51
TOP PERFS/OH	10880.00	309.34	-21.43	10760.61
	10881.00	310.21	-21.36	10761.10
	15316.00	4719.55	-7.00	10797.57
BOT PERFS/OH	15355.00	4758.03	-0.63	10797.57
	15386.00	4788.61	4.44	10797.57

NEXT TO LAST	15316.00	4719.55	-7.00	10797.57
LAST READING	15386.00	4788.61	4.44	10797.57
TD	15386.00	4788.61	4.44	10797.57

Surface Location	150	FS	750	FE
Projected BHL	4939	FS	746	FE
Location of				
Top Perfs/OH	459	FS	771	FE
Bottom Perfs/OH	4908	FS	751	FE

SUMMARY of Subsurface Locations

Surface Location	P-28-19S-34E	150	FS	750	FE	Vert. Depth
Top Perfs/OH	P-28-19S-34E	459	FS	771	FE	10760.61
Bottom Perfs/OH	A-28-19S-34E	4908	FS	751	FE	10797.57
Projected TD	A-28-19S-34E	4939	FS	746	FE	10797.57

JAN 07 2015





Cimarex Cordoniz 28 Federal Com 4H XEM+MWD 0ft to 15386ft MD Survey



Geodetic Report

(Non-Def Survey)

Report Date: July 30, 2014 - 09:11 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Cordoniz 28 Federal Com #4H / Cimarex Cordoniz 28 Federal Com #4H
Well: Cimarex Cordoniz 28 Federal Com 4H
Borehole: Original Borehole
UWI / API#: Noram 26 / 30-025-41834
Survey Name: Cimarex Cordoniz 28 Federal Com 4H XEM+MWD 0ft to 15386ft MD
Survey Date: July 10, 2014
Tort / AHD / DDI / ERD Ratio: 180.475 ° / 5030.402 ft / 6.111 / 0.465
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 37' 27.94276", W 103° 33' 32.65332"
Location Grid N/E Y/X: N 591766.300 ftUS, E 779712.000 ftUS
CRS Grid Convergence Angle: 0.4174 °
Grid Scale Factor: 0.99997416
Version / Patch: 2.7.1043.0
Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.590 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3728.000 ft above MSL
Seabed / Ground Elevation: 3700.000 ft above MSL
Magnetic Declination: 7.391 °
Total Gravity Field Strength: 998.5077mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48515.734 nT
Magnetic Dip Angle: 60.479 °
Declination Date: July 10, 2014
Magnetic Declination Model: BGGM 2014
North Reference: Grid North
Grid Convergence Used: 0.4174 °
Total Corr Mag North->Grid North: 6.9740 °
Local Coord Referenced To: Structure Reference Point

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MOBISOD

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	TF (°)
SHL Cordiniz 28 Fed #4H	0.00	0.00	0.00	0.00	-3728.00	0.00	0.00	0.00	N/A	0.00	0.00	591766.30	779712.00	N 32 37 27.94	W 103 33 32.65	264.97M
	234.50	1.58	264.97	234.47	-3493.53	-0.32	-0.28	-3.22	0.67	264.97	3.23	591766.02	779708.78	N 32 37 27.94	W 103 33 32.69	267.79M
	533.91	1.71	267.79	533.76	-3194.24	-0.94	-0.82	-11.80	0.05	266.04	11.82	591765.48	779700.20	N 32 37 27.94	W 103 33 32.79	266.07M
	624.25	1.80	266.07	624.05	-3103.95	-1.12	-0.97	-14.56	0.12	266.20	14.59	591765.33	779697.44	N 32 37 27.93	W 103 33 32.82	264.97M
	715.14	1.80	264.97	714.90	-3013.10	-1.37	-1.19	-17.40	0.04	266.09	17.45	591765.11	779694.60	N 32 37 27.93	W 103 33 32.86	263.48M
	806.66	1.80	263.48	806.37	-2921.63	-1.69	-1.48	-20.26	0.05	265.83	20.32	591764.82	779691.74	N 32 37 27.93	W 103 33 32.89	267.65M
	896.49	1.80	267.65	896.16	-2831.84	-1.93	-1.70	-23.08	0.15	265.79	23.14	591764.60	779688.92	N 32 37 27.93	W 103 33 32.92	264.89M
	992.05	1.89	264.89	991.67	-2736.33	-2.17	-1.90	-26.15	0.13	265.85	26.21	591764.40	779685.86	N 32 37 27.93	W 103 33 32.96	266.86M
	1087.05	1.89	266.86	1086.62	-2641.38	-2.43	-2.12	-29.27	0.07	265.85	29.35	591764.18	779682.73	N 32 37 27.92	W 103 33 33.00	267.39M
	1181.31	2.11	267.39	1180.82	-2547.18	-2.62	-2.29	-32.56	0.23	265.98	32.64	591764.01	779679.45	N 32 37 27.92	W 103 33 33.03	266.07M
	1276.02	2.02	266.07	1275.47	-2452.53	-2.85	-2.48	-35.96	0.11	266.05	36.05	591763.82	779676.04	N 32 37 27.92	W 103 33 33.07	260.75M
	1369.84	1.71	260.75	1369.24	-2358.76	-3.22	-2.82	-38.99	0.38	265.86	39.10	591763.48	779673.01	N 32 37 27.92	W 103 33 33.11	251.48M
	1463.73	1.41	251.48	1463.10	-2264.90	-3.84	-3.41	-41.47	0.42	265.30	41.61	591762.89	779670.53	N 32 37 27.91	W 103 33 33.14	251.35M
	1559.63	1.58	251.35	1558.96	-2169.04	-4.66	-4.21	-43.84	0.18	264.51	44.04	591762.09	779668.16	N 32 37 27.90	W 103 33 33.17	251.17M
	1653.58	1.41	251.17	1652.88	-2075.12	-5.47	-5.00	-46.16	0.18	263.82	46.43	591761.30	779665.84	N 32 37 27.90	W 103 33 33.19	251.09M
	1841.03	1.58	251.09	1840.27	-1887.73	-7.10	-6.58	-50.79	0.09	262.82	51.22	591759.72	779661.21	N 32 37 27.88	W 103 33 33.25	246.78M
	1932.49	1.41	246.78	1931.70	-1796.30	-7.98	-7.43	-53.02	0.22	262.02	53.54	591758.87	779658.98	N 32 37 27.87	W 103 33 33.27	266.29M
	2030.67	1.01	266.29	2029.85	-1698.15	-8.53	-7.96	-54.99	0.58	261.76	55.57	591758.34	779657.01	N 32 37 27.87	W 103 33 33.30	277.06M
	2125.06	1.01	277.06	2124.23	-1603.77	-8.50	-7.92	-56.65	0.20	262.05	57.20	591758.38	779655.35	N 32 37 27.87	W 103 33 33.32	263.08M
	2219.00	1.10	263.08	2218.15	-1509.85	-8.52	-7.92	-58.37	0.29	262.27	58.90	591758.38	779653.64	N 32 37 27.87	W 103 33 33.34	267.65M
	2313.20	1.10	267.65	2312.34	-1415.66	-8.69	-8.07	-60.17	0.09	262.36	60.70	591758.23	779651.84	N 32 37 27.87	W 103 33 33.36	280.66M
	2407.14	0.79	280.66	2406.26	-1321.74	-8.62	-7.99	-61.70	0.40	262.63	62.22	591758.31	779650.30	N 32 37 27.87	W 103 33 33.38	281.58M
	2502.90	0.70	281.58	2502.02	-1225.98	-8.39	-7.75	-62.93	0.09	262.98	63.40	591758.55	779649.08	N 32 37 27.87	W 103 33 33.39	274.77M
	2597.16	0.79	274.77	2596.27	-1131.73	-8.24	-7.58	-64.14	0.13	263.26	64.58	591758.72	779647.86	N 32 37 27.87	W 103 33 33.40	276.57M
	2690.42	0.70	276.57	2689.52	-1038.48	-8.13	-7.46	-65.34	0.10	263.49	65.77	591758.84	779646.66	N 32 37 27.87	W 103 33 33.42	279.17M
	2786.11	0.79	279.17	2785.20	-942.80	-7.97	-7.29	-66.58	0.10	263.75	66.97	591759.01	779645.43	N 32 37 27.88	W 103 33 33.43	287.47M
	2880.86	0.48	287.47	2879.65	-848.35	-7.76	-7.06	-67.60	0.34	264.03	67.96	591759.24	779644.41	N 32 37 27.88	W 103 33 33.44	309.97M
	2975.00	0.40	309.97	2974.08	-753.92	-7.44	-6.73	-68.23	0.20	264.36	68.56	591759.57	779643.78	N 32 37 27.88	W 103 33 33.45	336.08M
	3069.82	0.40	336.08	3068.90	-659.10	-6.92	-6.22	-68.61	0.19	264.82	68.89	591760.08	779643.39	N 32 37 27.89	W 103 33 33.46	0.86M
	3163.58	0.62	0.86	3162.66	-565.34	-6.12	-5.41	-68.74	0.33	265.50	68.95	591760.89	779643.26	N 32 37 27.89	W 103 33 33.46	4.86M
	3257.47	0.70	4.86	3256.54	-471.46	-5.04	-4.33	-68.68	0.10	266.39	68.82	591761.97	779643.32	N 32 37 27.90	W 103 33 33.46	12.07M
	3351.35	0.62	12.07	3350.41	-377.59	-3.97	-3.26	-68.53	0.12	267.27	68.61	591763.04	779643.47	N 32 37 27.92	W 103 33 33.45	14.75M
	3445.82	0.70	14.75	3444.88	-283.12	-2.91	-2.21	-68.27	0.09	268.15	68.31	591764.09	779643.73	N 32 37 27.93	W 103 33 33.45	19.89M
	3539.89	0.70	19.89	3538.94	-189.06	-1.81	-1.11	-67.93	0.07	269.06	67.94	591765.19	779644.07	N 32 37 27.94	W 103 33 33.45	22.88M
	3634.84	0.70	22.88	3633.88	-94.12	-0.73	-0.03	-67.51	0.04	269.97	67.51	591766.27	779644.49	N 32 37 27.95	W 103 33 33.44	22.57M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	TF (°)
	3728.54	1.01	22.57	3727.57	-0.43	0.57	1.26	-66.97	0.33	271.08	66.98	591767.56	779645.03	N 32 37 27.96	W 103 33 33.44	21.47M
	3822.61	1.01	21.47	3821.63	93.63	2.11	2.80	-66.35	0.02	272.41	66.41	591769.10	779645.65	N 32 37 27.98	W 103 33 33.43	17.87M
	3918.46	1.10	17.87	3917.46	189.46	3.78	4.46	-65.76	0.12	273.88	65.91	591770.76	779646.25	N 32 37 27.99	W 103 33 33.42	18.18M
	4011.53	1.10	18.18	4010.52	282.52	5.49	6.16	-65.20	0.01	275.39	65.49	591772.46	779646.80	N 32 37 28.01	W 103 33 33.42	22.88M
	4107.15	1.19	22.88	4106.12	378.12	7.28	7.94	-64.53	0.14	277.02	65.02	591774.24	779647.47	N 32 37 28.03	W 103 33 33.41	22.09M
	4201.09	1.89	22.09	4200.02	472.02	9.62	10.28	-63.57	0.75	279.18	64.39	591776.58	779648.43	N 32 37 28.05	W 103 33 33.40	23.45M
	4295.79	1.32	23.45	4294.68	566.68	12.08	12.73	-62.55	0.60	281.50	63.83	591779.03	779649.45	N 32 37 28.07	W 103 33 33.38	22.35M
	4389.76	1.19	22.35	4388.63	660.63	13.99	14.62	-61.75	0.14	283.32	63.45	591780.92	779650.26	N 32 37 28.09	W 103 33 33.37	22.88M
	4484.52	1.32	22.88	4483.37	755.37	15.91	16.54	-60.95	0.14	285.18	63.15	591782.84	779651.05	N 32 37 28.11	W 103 33 33.36	22.79M
	4578.96	1.32	22.79	4577.78	849.78	17.92	18.54	-60.10	0.00	287.15	62.90	591784.84	779651.90	N 32 37 28.13	W 103 33 33.35	21.47M
	4672.85	1.41	21.47	4671.65	943.65	20.00	20.61	-59.26	0.10	289.18	62.74	591786.91	779652.74	N 32 37 28.15	W 103 33 33.34	22.97M
	4765.73	1.32	22.97	4764.50	1036.50	22.06	22.66	-58.43	0.10	291.20	62.67	591788.96	779653.58	N 32 37 28.17	W 103 33 33.33	21.56M
	4860.05	1.32	21.56	4858.80	1130.80	24.08	24.67	-57.60	0.03	293.19	62.66	591790.97	779654.40	N 32 37 28.19	W 103 33 33.32	26.66M
	4954.31	1.19	26.66	4953.03	1225.03	25.97	26.56	-56.76	0.18	295.07	62.67	591792.86	779655.24	N 32 37 28.21	W 103 33 33.31	21.25M
	5051.86	1.32	21.25	5050.56	1322.56	27.93	28.51	-55.90	0.18	297.02	62.75	591794.81	779656.10	N 32 37 28.23	W 103 33 33.30	24.55M
	5144.25	1.32	24.55	5142.93	1414.93	29.90	30.47	-55.08	0.08	298.95	62.94	591796.77	779656.93	N 32 37 28.25	W 103 33 33.29	18.57M
	5239.69	1.19	18.57	5238.34	1510.34	31.85	32.41	-54.30	0.19	300.83	63.24	591798.71	779657.77	N 32 37 28.27	W 103 33 33.29	18.66M
	5429.00	1.19	18.66	5427.61	1699.61	35.59	36.14	-53.05	0.00	304.26	64.19	591802.43	779658.59	N 32 37 28.30	W 103 33 33.27	20.77M
	5640.00	1.19	20.77	5638.57	1910.57	39.73	40.26	-51.57	0.02	307.98	65.42	591806.56	779660.43	N 32 37 28.34	W 103 33 33.25	19.45M
	5828.00	1.32	19.45	5826.52	2098.52	43.61	44.13	-50.16	0.07	311.34	66.80	591810.43	779661.85	N 32 37 28.38	W 103 33 33.24	14.48M
	5922.00	1.41	14.48	5920.49	2192.49	45.76	46.27	-49.51	0.16	313.06	67.76	591812.57	779662.49	N 32 37 28.40	W 103 33 33.23	324.26M
	6016.00	0.88	324.26	6014.48	2286.48	47.46	47.97	-49.64	1.15	314.02	69.03	591814.27	779663.36	N 32 37 28.42	W 103 33 33.23	311.47M
	6109.00	0.70	311.47	6107.47	2379.47	48.41	48.93	-50.48	0.27	314.11	70.30	591815.23	779664.12	N 32 37 28.43	W 103 33 33.24	303.78M
	6203.00	0.40	303.78	6201.46	2473.46	48.96	49.49	-51.18	0.33	314.04	71.20	591815.79	779665.02	N 32 37 28.44	W 103 33 33.25	302.85M
	6298.00	0.31	302.85	6296.45	2568.45	49.28	49.82	-51.68	0.09	313.95	71.78	591816.11	779666.03	N 32 37 28.44	W 103 33 33.25	308.96M
	6392.00	0.22	308.96	6390.46	2662.46	49.53	50.07	-52.03	0.10	313.90	72.21	591816.37	779659.97	N 32 37 28.44	W 103 33 33.26	312.48M
	6487.00	0.22	312.48	6485.46	2757.46	49.76	50.31	-52.31	0.01	313.88	72.57	591816.60	779659.69	N 32 37 28.44	W 103 33 33.26	215.58M
	6580.00	1.80	215.58	6578.45	2850.45	48.69	49.24	-53.29	1.98	312.74	72.55	591815.54	779658.71	N 32 37 28.43	W 103 33 33.27	214.39M
	6675.00	2.59	214.39	6673.38	2945.38	45.68	46.25	-55.37	0.83	309.87	72.15	591812.55	779656.63	N 32 37 28.40	W 103 33 33.30	210.48M
	6773.00	2.59	210.48	6771.28	3043.28	41.92	42.52	-57.74	0.18	306.37	71.71	591808.82	779654.26	N 32 37 28.37	W 103 33 33.32	190.75M
	6867.00	2.68	190.75	6865.18	3137.18	37.92	38.53	-59.23	0.96	303.04	70.66	591804.83	779652.77	N 32 37 28.33	W 103 33 33.34	155.37M
	6961.00	3.12	155.37	6959.06	3231.06	33.44	34.04	-58.57	1.93	300.17	67.75	591800.34	779653.43	N 32 37 28.28	W 103 33 33.34	156.87M
	7056.00	3.91	156.87	7053.88	3325.88	28.13	28.71	-56.22	0.84	297.05	63.13	591795.01	779655.78	N 32 37 28.23	W 103 33 33.31	168.16M
	7150.00	2.99	168.16	7147.71	3419.71	22.81	23.37	-54.46	1.21	293.22	59.26	591789.67	779657.54	N 32 37 28.18	W 103 33 33.29	177.08M
	7244.00	1.80	177.08	7241.63	3513.63	18.94	19.49	-53.88	1.32	289.89	57.30	591785.79	779658.12	N 32 37 28.14	W 103 33 33.28	174.27M
	7338.00	1.71	174.27	7335.59	3607.59	16.07	16.62	-53.67	0.13	287.21	56.18	591782.92	779658.33	N 32 37 28.11	W 103 33 33.28	172.38M
	7433.00	1.89	172.38	7430.54	3702.54	13.11	13.66	-53.32	0.20	284.37	55.04	591779.96	779658.68	N 32 37 28.08	W 103 33 33.28	168.86M
	7527.00	2.02	168.86	7524.49	3796.49	9.95	10.50	-52.79	0.19	281.25	53.83	591776.80	779659.21	N 32 37 28.05	W 103 33 33.27	162.05M
	7621.00	1.80	162.05	7618.43	3890.43	6.93	7.47	-52.02	0.34	278.17	52.55	591773.77	779659.98	N 32 37 28.02	W 103 33 33.26	160.25M
	7715.00	1.89	160.25	7712.38	3984.38	4.08	4.61	-51.04	0.11	275.16	51.25	591770.91	779660.96	N 32 37 27.99	W 103 33 33.25	156.96M
	7808.00	1.89	156.96	7805.33	4077.33	1.24	1.75	-49.92	0.12	272.01	49.95	591768.05	779662.08	N 32 37 27.96	W 103 33 33.24	156.96M
	7903.00	1.89	156.96	7900.28	4172.28	-1.63	-1.13	-48.69	0.00	268.67	48.71	591765.17	779663.31	N 32 37 27.94	W 103 33 33.22	160.08M
	7997.00	1.71	160.08	7994.24	4266.24	-4.37	-3.88	-47.61	0.22	285.34	47.77	591762.42	779664.39	N 32 37 27.91	W 103 33 33.21	166.05M
	8091.00	0.88	166.05	8088.21	4360.21	-6.38	-5.90	-46.96	0.89	262.84	47.33	591760.40	779665.04	N 32 37 27.89	W 103 33 33.20	160.16M
	8187.00	0.31	160.16	8184.21	4456.21	-7.34	-6.86	-46.69	0.60	261.65	47.19	591759.44	779665.31	N 32 37 27.88	W 103 33 33.20	2.58M
	8278.00	0.09	2.58	8275.21	4547.21	-7.50	-7.02	-46.61	0.43	261.44	47.13	591759.28	779665.40	N 32 37 27.88	W 103 33 33.20	4.07M
	8377.00	0.04	4.07	8374.21	4646.21	-7.38	-6.90	-46.60	0.05	261.57	47.11	591759.40	779665.40	N 32 37 27.88	W 103 33 33.20	4.07M
	8477.00	0.40	4.07	8474.20	4746.20	-7.00	-6.52	-46.57	0.36	262.03	47.03	591759.78	779665.43	N 32 37 27.88	W 103 33 33.20	30.17M
	8565.00	0.79	30.17	8562.20	4834.20	-6.17	-5.69	-46.25	0.53	262.99	46.59	591760.61	779665.76	N 32 37 27.89	W 103 33 33.19	31.36M
	8659.00	1.80	31.36	8656.17	4928.17	-4.33	-3.87	-45.15	1.07	265.10	45.32	591762.43	779666.85	N 32 37 27.91	W 103 33 33.18	4.95M
	8754.00	2.99	4.95	8751.09	5023.09	-0.58	-0.13	-44.16	1.68	269.84	44.16	591766.17	779667.84	N 32 37 27.94	W 103 33 33.17	358.58M
	8849.00	2.50	358.58	8845.98	5117.98	3.96	4.41	-44.00	0.61	275.73	44.22	591770.71	779668.00	N 32 37 27.99	W 103 33 33.17	1.87M
	9037.00	1.32	1.87	9033.88	5305.88	10.22	10.68	-44.03	0.63	283.63	45.31	591776.98	779667.97	N 32 37 28.05	W 103 33 33.17	342.58M
	9132.00	0.88	342.58	9128.66	5400.66	12.01	12.47	-44.21	0.60	285.75	45.94	591778.77	779667.79	N 32 37 28.07	W 103 33 33.17	322.06M
	9226.00	1.01	322.06	9222.85	5494.85	13.34	13.81	-44.94	0.38	287.08	47.01	591780.11	779667.06	N 32 37 28.08	W 103 33 33.18	297.18M
	9414.00	2.68	297.18	9410.74	5682.74	16.61	17.12	-49.87	0.96	288.95	52.73	591783.42	779662.13	N 32 37 28.12	W 103 33 33.23	297.36M
	9509.00	2.29	297.36	9505.65	5777.65	18.46	19.01	-53.53	0.41	289.55	56.80	591785.31	779658.47	N 32 37 28.13	W 103 33 33.28	259.66M
	9691.00	0.88	259.66	9687.58	5959.58	19.83	20.43	-58.13	0.92	289.36	61.62	591786.73	779653.87	N 32 37 28.15	W 103 33 33.33	261.46M
	9791.00	0.79	261.46	9787.57	6059.57	19.58	20.19	-59.57	0.09	288.72	62.90	591786.49	779652.43	N 32 37 28.15	W 103 33 33.35	247.66M
	9885.00	0.79	247.66	9881.56	6153.56	19.22	19.85	-60.81	0.20	288.08	63.97	591786.15	779651.19	N 32 37 28.14	W 103 33 33.36	222.57M
	9980.00	0.40	222.57	9976.56	6248.56	18.72	19.35	-61.64	0.48	287.43	64.61	591785.65	779650.36	N 32 37 28.14	W 103 33 33.37	184.16M
	10075.00															

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	TF (°)
Last XEM Survey	10265.00	0.79	185.28	10261.54	6533.54	15.86	16.50	-61.94	0.14	284.92	64.10	591782.80	779650.06	N 32 37 28.11	W 103 33 33.38	18.49M
	10376.00	5.99	18.49	10372.36	6644.36	20.62	21.24	-60.18	6.09	289.44	63.81	591787.54	779651.83	N 32 37 28.16	W 103 33 33.36	18.8M
	10407.00	11.10	18.80	10403.01	6675.01	24.99	25.60	-58.70	16.48	293.56	64.04	591791.90	779653.30	N 32 37 28.20	W 103 33 33.34	5.21R
	10439.00	16.23	20.47	10434.09	6706.09	32.13	32.71	-56.14	16.08	300.23	64.98	591799.01	779655.86	N 32 37 28.27	W 103 33 33.31	9.89L
	10470.00	22.11	17.76	10463.36	6735.36	41.79	42.33	-52.84	19.18	308.70	67.71	591808.63	779659.16	N 32 37 28.37	W 103 33 33.27	36.23L
	10502.00	25.10	12.74	10492.68	6764.68	54.18	54.69	-49.51	11.25	317.85	73.77	591820.99	779662.49	N 32 37 28.49	W 103 33 33.23	51.86L
	10533.00	26.60	8.64	10520.58	6792.58	67.48	67.97	-47.02	7.53	325.33	82.65	591834.27	779664.98	N 32 37 28.62	W 103 33 33.20	21.03L
	10565.00	28.86	6.85	10548.91	6820.91	82.25	82.72	-45.02	7.53	331.44	94.18	591849.02	779666.98	N 32 37 28.76	W 103 33 33.17	8.27L
	10596.00	32.61	5.84	10575.55	6847.55	98.01	98.47	-43.28	12.21	336.27	107.66	591864.76	779668.73	N 32 37 28.92	W 103 33 33.15	3.14R
	10628.00	38.14	6.33	10601.63	6873.63	116.45	116.88	-41.31	17.30	340.54	123.96	591883.18	779670.69	N 32 37 29.10	W 103 33 33.13	7.67R
	10660.00	43.52	7.38	10625.84	6897.84	137.23	137.64	-38.80	16.95	344.26	143.01	591903.94	779673.20	N 32 37 29.31	W 103 33 33.10	0.93R
	10691.00	45.72	7.43	10647.90	6919.90	158.85	159.23	-35.99	7.10	347.26	163.25	591925.53	779676.01	N 32 37 29.52	W 103 33 33.06	20.33L
	10732.00	47.93	6.33	10675.95	6947.95	188.57	188.92	-32.42	5.73	350.26	191.68	591955.21	779679.58	N 32 37 29.81	W 103 33 33.02	25.96L
	10754.00	50.76	4.56	10690.28	6962.28	205.20	205.53	-30.84	14.24	351.47	207.83	591971.82	779681.16	N 32 37 29.98	W 103 33 33.00	13.56R
	10786.00	52.37	5.05	10710.17	6982.17	230.20	230.50	-28.74	5.17	352.89	232.29	591996.80	779683.26	N 32 37 30.23	W 103 33 32.97	11.6R
	10818.00	56.01	5.95	10728.90	7000.90	256.05	256.33	-26.25	11.60	354.15	257.67	592022.62	779685.75	N 32 37 30.48	W 103 33 32.94	8.84L
	10849.00	59.16	5.38	10745.51	7017.51	282.11	282.37	-23.67	10.28	355.21	283.36	592048.66	779688.33	N 32 37 30.74	W 103 33 32.91	18.72L
	10881.00	62.52	4.10	10761.10	7033.10	309.98	310.21	-21.36	11.07	356.06	310.95	592076.51	779690.64	N 32 37 31.01	W 103 33 32.88	5.4R
	10912.00	66.40	4.50	10774.46	7046.46	337.88	338.10	-19.27	12.57	356.74	338.65	592104.39	779692.74	N 32 37 31.29	W 103 33 32.85	13.3L
	10944.00	71.01	3.35	10786.08	7058.08	367.64	367.84	-17.23	14.79	357.32	368.24	592134.13	779694.77	N 32 37 31.58	W 103 33 32.82	5.07L
	10975.00	75.15	2.97	10795.10	7067.10	397.26	397.44	-15.60	13.41	357.75	397.75	592163.73	779696.40	N 32 37 31.88	W 103 33 32.80	8.29L
	11007.00	80.23	2.22	10801.92	7073.92	428.50	428.67	-14.18	16.04	358.10	428.90	592194.95	779697.82	N 32 37 32.19	W 103 33 32.78	2.31L
	11069.00	86.18	1.98	10809.26	7081.26	490.01	490.16	-11.93	9.60	358.61	490.31	592256.45	779700.07	N 32 37 32.79	W 103 33 32.75	0.94L
	11133.00	89.83	1.92	10811.48	7083.48	553.95	554.07	-9.75	5.70	358.99	554.16	592320.36	779702.25	N 32 37 33.43	W 103 33 32.72	25.94L
	11285.00	92.89	0.43	10807.88	7079.88	705.87	705.98	-6.64	2.24	359.46	706.01	592472.26	779705.36	N 32 37 34.93	W 103 33 32.67	118.68L
	11474.00	92.54	359.79	10798.92	7070.92	894.65	894.76	-6.27	0.39	359.60	894.79	592661.04	779705.73	N 32 37 36.80	W 103 33 32.65	103.6L
	11662.00	90.76	352.50	10793.50	7065.50	1081.87	1082.13	-18.90	3.99	359.00	1082.29	592848.40	779693.10	N 32 37 38.65	W 103 33 32.78	108.72R
	11851.00	89.79	355.36	10792.60	7064.60	1269.57	1270.04	-38.89	1.60	358.25	1270.64	593036.31	779673.11	N 32 37 40.51	W 103 33 33.00	78.49R
	12040.00	90.69	359.78	10791.80	7063.80	1458.26	1458.82	-46.90	2.39	358.16	1459.58	593225.08	779665.10	N 32 37 42.38	W 103 33 33.08	119.86L
	12229.00	90.38	359.24	10790.04	7062.04	1647.22	1647.81	-48.52	0.33	358.31	1648.52	593414.06	779663.49	N 32 37 44.25	W 103 33 33.08	90.72L
	12418.00	90.31	353.82	10788.90	7060.90	1835.67	1836.39	-59.95	2.87	358.13	1837.36	593602.63	779652.05	N 32 37 46.12	W 103 33 33.20	155.38L
	12607.00	90.07	353.71	10788.27	7060.27	2023.33	2024.27	-80.48	0.14	357.72	2025.87	593790.51	779631.53	N 32 37 47.98	W 103 33 33.42	91.99R
	12796.00	90.00	355.72	10788.16	7060.16	2211.33	2212.45	-97.88	1.06	357.47	2214.62	593978.69	779614.12	N 32 37 49.84	W 103 33 33.61	92.06R
	12985.00	89.93	357.67	10788.27	7060.27	2399.88	2401.13	-108.78	1.03	357.41	2403.59	594167.36	779603.22	N 32 37 51.71	W 103 33 33.72	142.26R
	13173.00	89.00	358.39	10790.03	7062.03	2587.68	2589.01	-115.24	0.63	357.45	2591.57	594355.24	779596.76	N 32 37 53.57	W 103 33 33.78	31.41L
	13362.00	90.31	357.59	10791.17	7063.17	2776.48	2777.88	-121.87	0.81	357.49	2780.55	594544.10	779590.13	N 32 37 55.44	W 103 33 33.84	130L
	13551.00	89.32	356.41	10791.78	7063.78	2965.10	2966.62	-131.76	0.81	357.46	2969.54	594732.83	779580.24	N 32 37 57.30	W 103 33 33.94	79.32R
	13740.00	89.42	356.94	10793.85	7065.85	3153.65	3155.29	-142.72	0.29	357.41	3158.51	594921.50	779569.28	N 32 37 59.17	W 103 33 34.05	91.43R
	13929.00	89.38	358.55	10795.83	7067.83	3342.40	3344.12	-150.16	0.85	357.43	3347.49	595110.33	779561.84	N 32 38 1.04	W 103 33 34.12	90R
	14119.00	89.38	359.73	10797.89	7069.89	3532.32	3534.09	-153.01	0.62	357.52	3537.40	595300.29	779558.99	N 32 38 2.92	W 103 33 34.14	67.7R
	14213.00	89.86	0.90	10798.51	7070.51	3626.08	3628.08	-152.49	1.35	357.59	3631.29	595394.28	779559.51	N 32 38 3.85	W 103 33 34.13	66.43R
	14307.00	90.10	1.45	10798.55	7070.55	3720.31	3722.06	-150.57	0.64	357.68	3725.11	595488.26	779561.44	N 32 38 4.78	W 103 33 34.10	88.46R
	14402.00	90.14	2.94	10798.35	7070.35	3815.27	3816.99	-146.93	1.57	357.80	3819.82	595583.18	779565.08	N 32 38 5.72	W 103 33 34.05	88.07R
	14497.00	90.24	5.91	10798.03	7070.03	3910.05	3911.69	-139.60	3.13	357.96	3914.19	595677.89	779572.40	N 32 38 6.66	W 103 33 33.95	99.76R
	14591.00	90.03	7.13	10797.81	7069.81	4003.54	4005.08	-128.93	1.32	358.16	4007.16	595771.27	779583.08	N 32 38 7.58	W 103 33 33.82	73.74L
	14686.00	90.10	6.89	10797.70	7069.70	4097.95	4099.37	-117.33	0.26	358.36	4101.05	595865.55	779584.67	N 32 38 8.51	W 103 33 33.68	91.56R
	14780.00	90.03	9.45	10797.60	7069.60	4191.12	4192.41	-103.97	2.72	358.58	4193.70	595958.60	779608.03	N 32 38 9.43	W 103 33 33.51	86R
	14875.00	90.10	10.45	10797.49	7069.49	4284.85	4285.98	-87.56	1.06	358.83	4286.88	596052.16	779624.44	N 32 38 10.36	W 103 33 33.31	80.13L
	14970.00	90.14	10.22	10797.29	7069.29	4378.48	4379.44	-70.52	0.25	359.08	4380.01	596145.62	779641.49	N 32 38 11.28	W 103 33 33.10	97.89R
	15065.00	90.00	11.23	10797.17	7069.17	4472.00	4472.78	-52.84	1.07	359.32	4473.09	596238.96	779659.16	N 32 38 12.20	W 103 33 32.89	104.74L
	15160.00	89.90	10.85	10797.26	7069.26	4565.42	4566.02	-34.65	0.41	359.57	4566.15	596332.19	779677.35	N 32 38 13.12	W 103 33 32.67	95.48L
	15256.00	89.83	10.12	10797.48	7069.48	4659.99	4660.42	-17.18	0.76	359.79	4660.45	596426.59	779694.82	N 32 38 14.06	W 103 33 32.46	76.54L
Final Survey	15316.00	90.00	9.41	10797.57	7069.57	4719.23	4719.55	-7.00	1.22	359.92	4719.55	596485.72	779705.00	N 32 38 14.64	W 103 33 32.33	HS
Proj to TD	15386.00	90.00	9.41	10797.57	7069.57	4788.40	4788.61	4.44	0.00	0.05	4788.61	596554.77	779716.44	N 32 38 15.32	W 103 33 32.19	

Survey Type: Non-Def Survey

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

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	TF (°)
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	28.000	Act Stns	30.000	30.000	SLB_MWD-POOR-Depth Only		Original Borehole / Cimarex Cordoniz 28 Federal Com 4H							
	1	28.000	234.500	Act Stns	30.000	30.000	SLB_MWD-POOR		Original Borehole / Cimarex Cordoniz 28 Federal Com 4H							
	1	234.500	533.910	1/98.425	30.000	30.000	SLB_MWD-POOR		Original Borehole / Cimarex Cordoniz 28 Federal Com 4H							
	1	533.910	10265.000	Act Stns	30.000	30.000	SLB_MWD-POOR		Original Borehole / Cimarex Cordoniz 28 Federal Com 4H							
	1	10265.000	15316.000	Act Stns	30.000	30.000	SLB_MWD-STD		Original Borehole / Cimarex Cordoniz 28 Federal Com 4H							
	1	15316.000	15386.000	Act Stns	30.000	30.000	SLB_BLIND+TREND		Original Borehole / Cimarex Cordoniz 28 Federal Com 4H							