Schlumberger

CIMAREX

Final Surveys - Cimarex Vaca Draw 20-17 Federal #7H MWD 0ft-22544ft (Surcon Corrected) Survey Geodetic Report

(Def Survey)

Report Date:	February 20, 2019 - 10:03 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	359.627 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Vaca Draw 20-17 Federal #7H / Cimarex Vaca Draw 20-17 Federal #7H	**TVD Reference Datum:**	RKB
Well:	Cimarex Vaca Draw 20-17 Federal #7H	**TVD Reference Elevation:**	3446.400 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3423.400 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.680 °
Survey Name:	Final Surveys - Cimarex Vaca Draw 20-17 Federal #7H MWD 0ft-22544ft (Surcon Corrected)	**Total Gravity Field Strength:**	998.4294mgn (9.80665 Based)
Survey Date:	January 10, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	342.525 ° / 10633.194 ft / 6.815 / 0.846	**Total Magnetic Field Strength:**	47610.567 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.734 °
Location Lat / Long:	N 32° 6' 35.06066", W 103° 36' 2.22942"	**Declination Date:**	February 07, 2019
Location Grid N/E Y/X:	N 404430.530 ftUS, E 768201.880 ftUS	**Magnetic Declination Model:**	HDGM 2019
CRS Grid Convergence Angle:	0.3895 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99996804	**Grid Convergence Used:**	0.3895 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.2905 °
		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 ° ' ")	Closure Azimuth (°)	Closure (ft)
SHL [330' FSL, 690' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404430.53	768201.88	N 32 6 35.06	W 103 36 2.23	0.00	0.00
	196.00	0.85	244.88	195.99	-0.61	-0.62	-1.32	0.43	404429.91	768200.56	N 32 6 35.05	W 103 36 2.24	244.88	1.45
	296.00	0.70	226.89	295.98	-1.33	-1.35	-2.43	0.28	404429.18	768199.45	N 32 6 35.05	W 103 36 2.26	240.99	2.78
	479.00	0.67	248.52	478.97	-2.48	-2.51	-4.25	0.14	404428.02	768197.63	N 32 6 35.04	W 103 36 2.28	239.46	4.93
	662.00	1.07	265.40	661.95	-2.99	-3.03	-6.94	0.26	404427.50	768194.94	N 32 6 35.03	W 103 36 2.31	246.40	7.58
	843.00	1.38	267.59	842.91	-3.19	-3.26	-10.81	0.17	404427.27	768191.07	N 32 6 35.03	W 103 36 2.36	253.21	11.29
	940.00	1.58	276.56	939.88	-3.07	-3.16	-13.30	0.31	404427.37	768188.58	N 32 6 35.03	W 103 36 2.38	256.65	13.67
	1124.00	1.69	281.32	1123.80	-2.21	-2.34	-18.48	0.09	404428.19	768183.40	N 32 6 35.04	W 103 36 2.44	262.80	18.63
	1218.00	1.97	283.07	1217.75	-1.56	-1.70	-21.42	0.30	404428.83	768180.47	N 32 6 35.05	W 103 36 2.48	265.47	21.48
	1313.00	1.85	297.65	1312.70	-0.46	-0.62	-24.36	0.53	404429.91	768177.52	N 32 6 35.06	W 103 36 2.51	268.55	24.37
	1407.00	0.62	288.91	1406.68	0.42	0.25	-26.19	1.32	404430.78	768175.69	N 32 6 35.06	W 103 36 2.53	270.55	26.19
	1502.00	0.81	106.46	1501.67	0.40	0.23	-26.03	1.50	404430.76	768175.85	N 32 6 35.06	W 103 36 2.53	270.50	26.03
	1596.00	1.02	125.01	1595.66	-0.28	-0.44	-24.71	0.38	404430.09	768177.17	N 32 6 35.06	W 103 36 2.52	268.98	24.71
	1690.00	1.21	99.27	1689.65	-0.93	-1.08	-23.04	0.56	404429.45	768178.84	N 32 6 35.05	W 103 36 2.50	267.32	23.07
	1785.00	1.50	109.85	1784.62	-1.53	-1.68	-20.89	0.40	404428.87	768181.00	N 32 6 35.05	W 103 36 2.47	265.45	20.95
	1880.00	1.83	111.44	1879.58	-2.52	-2.64	-18.30	0.35	404427.89	768183.58	N 32 6 35.04	W 103 36 2.44	261.79	18.49
	1974.00	1.07	98.20	1973.55	-3.21	-3.31	-16.04	0.88	404427.22	768185.84	N 32 6 35.03	W 103 36 2.42	258.32	16.38
	2069.00	0.81	91.22	2068.54	-3.36	-3.45	-14.49	0.30	404427.08	768187.39	N 32 6 35.03	W 103 36 2.40	256.59	14.89
	2163.00	1.27	83.98	2162.52	-3.28	-3.36	-12.79	0.51	404427.17	768189.09	N 32 6 35.03	W 103 36 2.38	255.28	13.22
	2258.00	1.98	80.32	2257.48	-2.91	-2.97	-10.12	0.75	404427.56	768191.76	N 32 6 35.03	W 103 36 2.35	253.63	10.55
	2351.00	2.67	75.07	2350.40	-2.10	-2.15	-6.45	0.78	404428.38	768195.43	N 32 6 35.04	W 103 36 2.30	251.60	6.79
	2445.00	2.45	82.75	2444.31	-1.31	-1.33	-2.34	0.43	404429.20	768199.54	N 32 6 35.05	W 103 36 2.26	240.42	2.69
	2540.00	1.95	86.55	2539.24	-0.98	-0.97	1.29	0.55	404429.56	768203.17	N 32 6 35.05	W 103 36 2.21	127.07	1.62
	2634.00	1.97	112.89	2633.19	-1.53	-1.51	4.37	0.95	404429.02	768206.25	N 32 6 35.05	W 103 36 2.18	109.00	4.63
	2729.00	1.58	116.24	2728.14	-2.77	-2.72	7.05	0.42	404427.81	768208.93	N 32 6 35.03	W 103 36 2.15	111.09	7.56
	2824.00	2.06	101.14	2823.09	-3.69	-3.63	9.90	0.71	404426.90	768211.78	N 32 6 35.02	W 103 36 2.11	110.13	10.55
	2919.00	1.21	97.84	2918.05	-4.17	-4.09	12.57	0.90	404426.44	768214.45	N 32 6 35.02	W 103 36 2.08	108.03	13.22
	3014.00	1.17	24.68	3013.04	-3.44	-3.34	13.97	1.49	404427.19	768215.85	N 32 6 35.03	W 103 36 2.07	103.46	14.37
	3108.00	2.13	50.07	3107.00	-1.45	-1.35	15.71	1.26	404429.18	768217.59	N 32 6 35.05	W 103 36 2.05	94.92	15.77
	3296.00	2.64	52.85	3294.84	3.38	3.51	21.84	0.28	404434.04	768223.72	N 32 6 35.09	W 103 36 1.98	80.88	22.12
	3391.00	3.05	53.42	3389.72	6.17	6.33	25.62	0.43	404436.86	768227.49	N 32 6 35.12	W 103 36 1.93	76.11	26.39
	3485.00	2.52	63.62	3483.61	8.55	8.74	29.48	0.77	404439.27	768231.35	N 32 6 35.15	W 103 36 1.89	73.48	30.74
	3579.00	0.86	169.30	3577.58	8.76	8.97	31.46	3.06	404439.50	768233.34	N 32 6 35.15	W 103 36 1.86	74.09	32.71
	3673.00	1.70	195.15	3671.55	6.72	6.93	31.22	1.06	404437.48	768233.10	N 32 6 35.13	W 103 36 1.87	77.49	31.98
	3767.00	0.59	70.58	3765.54	5.54	5.74	31.32	2.23	404436.27	768233.20	N 32 6 35.12	W 103 36 1.86	79.61	31.84
	3861.00	2.48	46.20	3859.50	7.09	7.31	33.24	2.08	404437.84	768235.12	N 32 6 35.13	W 103 36 1.84	77.60	34.04
	3955.00	1.54	52.23	3953.44	9.26	9.49	35.71	1.02	404440.02	768237.59	N 32 6 35.15	W 103 36 1.81	75.11	36.95
	4050.00	1.48	203.98	4048.43	8.92	9.15	36.22	3.08	404439.68	768238.10	N 32 6 35.15	W 103 36 1.81	75.82	37.38
	4145.00	1.70	206.87	4143.40	6.55	6.78	35.08	0.25	404437.31	768236.96	N 32 6 35.13	W 103 36 1.82	79.07	35.73
	4239.00	1.96	174.56	4237.35	3.71	3.93	34.60	1.12	404434.46	768236.48	N 32 6 35.10	W 103 36 1.83	83.52	34.83
	4334.00	1.89	173.70	4332.30	0.53	0.76	34.93	0.08	404431.29	768236.81	N 32 6 35.07	W 103 36 1.82	88.76	34.94
	4427.00	1.33	199.69	4425.26	-2.01	-1.78	34.74	0.97	404428.75	768236.61	N 32 6 35.04	W 103 36 1.83	92.94	34.78
	4522.00	2.84	151.31	4520.20	-5.12	-4.89	35.49	2.31	404425.64	768237.37	N 32 6 35.01	W 103 36 1.82	97.84	35.83
	4616.00	4.05	143.11	4614.03	-9.84	-9.58	38.60	1.39	404420.95	768240.48	N 32 6 34.96	W 103 36 1.78	103.94	39.78
	4710.00	2.28	178.46	4707.89	-14.37	-14.11	40.65	2.72	404416.42	768242.53	N 32 6 34.92	W 103 36 1.76	109.14	43.03
	4805.00	2.61	255.89	4802.83	-16.76	-16.53	38.60	3.23	404414.00	768240.48	N 32 6 34.89	W 103 36 1.78	113.18	41.99
	4899.00	3.31	301.77	4896.71	-15.84	-15.62	34.22	2.55	404414.91	768236.10	N 32 6 34.90	W 103 36 1.83	114.53	37.61
	4994.00	2.66	3.92	4991.61	-12.18	-11.97	32.04	3.30	404418.56	768233.91	N 32 6 34.94	W 103 36 1.86	110.50	34.20
	5089.00	2.02	50.06	5086.53	-8.92	-8.70	33.47	2.03	404421.83	768235.35	N 32 6 34.97	W 103 36 1.84	104.57	34.58
	5183.00	1.46	70.26	5180.49	-7.47	-7.23	35.87	0.87	404423.30	768237.75	N 32 6 34.99	W 103 36 1.81	101.40	36.59
	5278.00	1.43	90.13	5275.46	-7.07	-6.83	38.19	0.53	404423.70	768240.07	N 32 6 34.99	W 103 36 1.79	100.13	38.80
	5371.00	1.58	77.88	5368.43	-6.82	-6.56	40.61	0.38	404423.97	768242.48	N 32 6 34.99	W 103 36 1.76	99.18	41.13
	5466.00	1.89	79.87	5463.39	-6.29	-6.01	43.43	0.33	404424.52	768245.31	N 32 6 35.00	W 103 36 1.73	97.88	43.84
	5560.00	1.75	82.06	5557.34	-5.84	-5.54	46.36	0.17	404424.99	768248.25	N 32 6 35.00	W 103 36 1.69	96.81	46.71
	5655.00	2.19	89.00	5652.28	-5.63	-5.31	49.63	0.53	404425.22	768251.51	N 32 6 35.00	W 103 36 1.65	96.10	49.91
	5749.00	2.56	81.37	5746.20	-5.31	-4.98	53.50	0.52	404425.57	768255.38	N 32 6 35.01	W 103 36 1.61	95.30	53.73
	5843.00	2.41	87.10	5840.11	-4.92	-4.54	57.55	0.31	404425.99	768259.43	N 32 6 35.01	W 103 36 1.56	94.52	57.73
	5938.00	2.51	76.81	5935.03	-4.37	-3.97	61.57	0.48	404426.56	768263.45	N 32 6 35.02	W 103 36 1.51	93.69	61.70
	6032.00	2.39	82.50	6028.94	-3.67	-3.24	65.52	0.29	404427.29	768267.39	N 32 6 35.02	W 103 36 1.47	92.83	65.60
	6127.00	2.39	80.82	6123.86	-3.12	-2.67	69.43	0.07	404427.86	768271.31	N 32 6 35.03	W 103 36 1.42	92.20	69.49
	6222.00	2.88	75.59	6218.76	-2.24	-1.76	73.70	0.57	404428.77	768275.58	N 32 6 35.04	W 103 36 1.37	91.37	73.72
	6316.00	2.59	74.87	6312.65	-1.12	-0.62	78.04	0.31	404429.91	768279.92	N 32 6 35.05	W 103 36 1.32	90.45	78.04
	6411.00	1.57	79.07	6407.59	-0.34	0.19	81.39	1.08	404430.72	768283.27	N 32 6 35.06	W 103 36 1.28	89.87	81.39
	6504.00	1.95	67.38	6500.54	0.49	1.04	84.10	0.56	404431.57	768285.98	N 32 6 35.07	W 103 36 1.25	89.29	84.11
	6598.00	2.21	72.88	6594.48	1.62	2.19	87.31	0.35	404432.72	768289.19	N 32 6 35.08	W 103 36 1.21	88.56	87.34
	6693.00	1.74	94.14	6689.43	2.03	2.62	90.50	0.91	404433.15	768292.38	N 32 6 35.08	W 103 36 1.18	88.34	90.54
	6787.00	1.82	153.05	6783.39	0.59	1.19	92.60	1.86	404431.72	768294.48	N 32 6 35.07	W 103 36 1.15	89.26	92.61
	6882.00	1.59	160.72	6878.35	-2.01	-1.40	93.72	0.34	404429.13	768295.59	N 32 6 35.04	W 103 36 1.14	90.85	93.73
	6975.00	1.81	156.68	6971.31	-4.43	-3.82	94.66	0.12	404426.71	768296.54	N 32 6 35.02	W 103 36 1.13	92.31	94.74
	7069.00	1.76	148.71	7065.27	-6.89	-6.26	95.93	0.30	404424.27	768297.81	N 32 6 34.99	W 103 36 1.11	93.73	96.14
	7163.00	1.75	151.92	7159.22	-9.40	-8.76	97.36	0.11	404421.77	768299.23	N 32 6 34.97	W 103 36 1.10	95.14	97.75
	7258.00	2.18	159.71	7254.17	-12.38	-11.74	98.67	0.53	404418.79	768300.54	N 32 6 34.94	W 103 36 1.08	96.78	99.38
	7352.00	1.82	162.22	7348.12	-15.33	-14.68	99.69	0.60	404415.85	768301.57	N 32 6 34.91	W 103 36 1.07	98.38	100.77
	7447.00	1.25	153.27	7443.09	-17.54	-16.88	100.57	0.45	404413.65	768302.45	N 32 6 34.89	W 103 36 1.06	99.53	101.98
	7541.00	1.34	154.45	7537.06	-19.45	-18.79	101.50	0.10	404411.74	768303.38	N 32 6 34.87	W 103 36 1.05	100.49	103.23
	7637.00	1.33	171.23	7633.04	-21.57	-20.90	102.16	0.41	404409.63	768304.04	N 32 6 34.85	W 103 36 1.04	101.56	104.28
	7731.00	1.58	177.85	7727.01	-23.94	-23.28	102.37	0.32	404407.25	768304.25	N 32 6 34.82	W 103 36 1.04	102.81	104.99
	7826.00	1.68	196.10	7821.97	-26.59	-25.92	102.04	0.55	404404.61	768303.91	N 32 6 34.80	W 103 36 1.05	104.26	105.28
	7920.00	1.76	188.72	7915.93	-29.34	-28.68	101.49	0.31	404401.85	768303.36	N 32 6 34.77	W 103 36 1.05	105.78	105.48
	8015.00	1.48	193.45	8010.89	-31.98	-31.32	101.03	0.36	404399.21	768302.91	N 32 6 34.74	W 103 36 1.06	107.23	105.77
	8109.00	1.61	184.53	8104.86	-34.48	-33.82	100.64	0.29	404396.71	768302.52	N 32 6 34.72	W 103 36 1.06	108.57	106.17
	8204.00	0.88	238.31	8199.83	-36.21	-35.56	99.93	1.34	404394.98	768301.81	N 32 6 34.70	W 103 36 1.07	109.59	106.07
	8274.00	1.12	289.75	8269.83	-36.27	-35.62	98.84	1.32	404394.91	768300.72	N 32 6 34.70	W 103 36 1.08	109.82	105.06

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 ° ' ")	Closure Azimuth (°)	Closure (ft)
	8299.00	1.05	282.11	8294.82	-36.13	-35.49	98.39	0.64	404395.04	768300.26	N 32 6 34.70	W 103 36 1.09	109.84	104.59
	8393.00	1.17	273.48	8388.80	-35.88	-35.25	96.59	0.22	404395.28	768298.46	N 32 6 34.71	W 103 36 1.11	110.05	102.82
	8488.00	1.00	265.70	8483.79	-35.87	-35.26	94.79	0.24	404395.27	768296.67	N 32 6 34.71	W 103 36 1.13	110.40	101.13
	8582.00	1.05	258.28	8577.77	-36.10	-35.49	93.13	0.15	404395.04	768295.01	N 32 6 34.70	W 103 36 1.15	110.88	99.66
	8676.00	0.96	263.39	8671.76	-36.35	-35.76	91.50	0.14	404394.77	768293.38	N 32 6 34.70	W 103 36 1.17	111.35	98.24
	8771.00	1.09	259.85	8766.74	-36.59	-36.01	89.82	0.15	404394.52	768291.70	N 32 6 34.70	W 103 36 1.19	111.85	96.77
	8865.00	1.21	257.97	8860.72	-36.95	-36.37	87.97	0.13	404394.16	768289.85	N 32 6 34.69	W 103 36 1.21	112.46	95.20
	8959.00	1.00	266.16	8954.71	-37.20	-36.64	86.18	0.28	404393.90	768288.06	N 32 6 34.69	W 103 36 1.23	113.03	93.65
	9054.00	0.91	250.26	9049.69	-37.50	-36.95	84.65	0.29	404393.59	768286.52	N 32 6 34.69	W 103 36 1.25	113.58	92.36
	9149.00	1.09	251.67	9144.68	-38.03	-37.49	83.08	0.19	404393.05	768284.96	N 32 6 34.68	W 103 36 1.27	114.28	91.14
	9244.00	0.98	259.88	9239.66	-38.44	-37.91	81.42	0.19	404392.62	768283.30	N 32 6 34.68	W 103 36 1.29	114.97	89.82
	9338.00	1.38	229.52	9333.64	-39.31	-38.79	79.77	0.78	404391.74	768281.65	N 32 6 34.67	W 103 36 1.31	115.93	88.70
	9432.00	1.74	221.31	9427.61	-41.10	-40.59	77.97	0.45	404389.94	768279.84	N 32 6 34.65	W 103 36 1.33	117.50	87.90
	9527.00	1.51	212.77	9522.57	-43.23	-42.73	76.34	0.35	404387.80	768278.21	N 32 6 34.63	W 103 36 1.35	119.24	87.48
	9621.00	0.59	346.93	9616.56	-43.79	-43.30	75.56	2.09	404387.23	768277.43	N 32 6 34.63	W 103 36 1.35	119.82	87.08
	9714.00	0.60	0.82	9709.56	-42.84	-42.35	75.46	0.16	404388.18	768277.33	N 32 6 34.64	W 103 36 1.36	119.30	86.53
	9810.00	0.35	13.70	9805.55	-42.05	-41.56	75.53	0.28	404388.97	768277.41	N 32 6 34.64	W 103 36 1.35	118.82	86.21
	9903.00	0.47	351.72	9898.55	-41.40	-40.91	75.54	0.21	404389.62	768277.42	N 32 6 34.65	W 103 36 1.35	118.44	85.91
	9997.00	0.80	327.99	9992.54	-40.46	-39.97	75.14	0.44	404390.56	768277.02	N 32 6 34.66	W 103 36 1.36	118.01	85.11
	10092.00	0.65	339.76	10087.54	-39.39	-38.90	74.60	0.22	404391.63	768276.48	N 32 6 34.67	W 103 36 1.37	117.54	84.14
	10186.00	0.68	1.48	10181.53	-38.34	-37.86	74.43	0.26	404392.67	768276.31	N 32 6 34.68	W 103 36 1.37	116.96	83.51
	10281.00	0.28	24.02	10276.53	-37.58	-37.10	74.54	0.44	404393.43	768276.42	N 32 6 34.69	W 103 36 1.37	116.48	83.26
	10375.00	0.06	174.83	10370.53	-37.42	-36.94	74.64	0.35	404393.59	768276.52	N 32 6 34.69	W 103 36 1.36	116.33	83.28
	10469.00	0.21	96.36	10464.53	-37.49	-37.01	74.81	0.22	404393.52	768276.69	N 32 6 34.69	W 103 36 1.36	116.32	83.47
	10563.00	0.24	169.93	10558.53	-37.71	-37.22	75.02	0.29	404393.31	768276.90	N 32 6 34.69	W 103 36 1.36	116.39	83.75
	10658.00	0.52	157.17	10653.52	-38.30	-37.81	75.22	0.31	404392.72	768277.10	N 32 6 34.68	W 103 36 1.36	116.69	84.19
	10752.00	1.30	149.45	10747.51	-39.62	-39.13	75.93	0.84	404391.41	768277.81	N 32 6 34.67	W 103 36 1.35	117.26	85.42
	10847.00	2.04	152.07	10842.47	-42.05	-41.55	77.27	0.78	404388.98	768279.15	N 32 6 34.64	W 103 36 1.33	118.27	87.73
	10941.00	1.90	154.84	10936.41	-44.95	-44.44	78.72	0.18	404386.10	768280.59	N 32 6 34.62	W 103 36 1.32	119.45	90.39
	11036.00	2.48	154.34	11031.34	-48.24	-47.71	80.28	0.61	404382.82	768282.15	N 32 6 34.58	W 103 36 1.30	120.73	93.38
	11130.00	3.57	157.10	11125.21	-52.78	-52.24	82.29	1.17	404378.29	768284.17	N 32 6 34.54	W 103 36 1.28	122.41	97.48
	11224.00	3.76	150.88	11219.02	-58.18	-57.63	84.93	0.47	404372.90	768286.81	N 32 6 34.48	W 103 36 1.25	124.16	102.64
	11319.00	2.64	154.05	11313.87	-62.89	-62.32	87.41	1.19	404368.21	768289.28	N 32 6 34.44	W 103 36 1.22	125.49	107.35
	11413.00	2.66	171.57	11407.77	-67.00	-66.42	88.67	0.86	404364.11	768290.55	N 32 6 34.40	W 103 36 1.20	126.84	110.79
	11508.00	3.12	180.00	11502.65	-71.77	-71.19	89.00	0.66	404359.34	768290.87	N 32 6 34.35	W 103 36 1.20	128.66	113.97
	11602.00	3.52	184.19	11596.49	-77.20	-76.63	88.79	0.50	404353.91	768290.66	N 32 6 34.30	W 103 36 1.20	130.80	117.28
	11697.00	3.67	180.20	11691.31	-83.15	-82.58	88.56	0.31	404347.96	768290.44	N 32 6 34.24	W 103 36 1.21	133.00	121.09
	11790.00	3.67	182.71	11784.12	-89.10	-88.53	88.41	0.17	404342.01	768290.29	N 32 6 34.18	W 103 36 1.21	135.04	125.11
	11831.00	3.69	185.30	11825.03	-91.72	-91.15	88.23	0.41	404339.38	768290.10	N 32 6 34.15	W 103 36 1.21	135.93	126.88
	11913.00	2.92	194.84	11906.90	-96.36	-95.80	87.45	1.15	404334.74	768289.33	N 32 6 34.11	W 103 36 1.22	137.61	129.71
	11944.00	1.18	261.39	11937.88	-97.17	-96.61	86.94	8.64	404333.93	768288.81	N 32 6 34.10	W 103 36 1.23	138.02	129.96
	11976.00	3.81	341.61	11969.85	-96.21	-95.65	86.28	11.84	404334.89	768288.16	N 32 6 34.11	W 103 36 1.23	137.95	128.81
	12007.00	7.66	351.93	12000.69	-93.16	-92.62	85.66	12.81	404337.91	768287.54	N 32 6 34.14	W 103 36 1.24	137.23	126.16
	12055.00	13.89	341.12	12047.83	-84.53	-83.99	83.35	13.59	404346.54	768285.23	N 32 6 34.22	W 103 36 1.27	135.22	118.33
	12102.00	20.17	338.94	12092.74	-71.59	-71.08	78.61	13.43	404359.45	768280.48	N 32 6 34.35	W 103 36 1.32	132.12	105.98
	12148.00	24.56	343.04	12133.43	-55.72	-55.25	73.21	10.58	404375.29	768275.09	N 32 6 34.51	W 103 36 1.38	127.04	91.72
	12197.00	28.19	344.15	12179.11	-33.95	-33.51	68.83	7.18	404397.02	768268.70	N 32 6 34.72	W 103 36 1.46	118.63	74.76
	12228.00	30.42	343.38	12208.14	-19.35	-18.95	62.58	7.30	404411.58	768264.46	N 32 6 34.87	W 103 36 1.50	106.84	65.39
	12260.00	32.87	343.49	12233.38	-3.23	-2.86	57.60	7.66	404427.67	768259.67	N 32 6 35.03	W 103 36 1.56	92.83	57.87
	12291.00	36.60	343.85	12258.85	13.75	14.10	52.85	12.06	404444.63	768254.73	N 32 6 35.20	W 103 36 1.61	75.06	54.70
	12323.00	40.53	349.25	12283.87	33.18	33.49	48.27	16.04	404464.02	768250.15	N 32 6 35.39	W 103 36 1.67	55.24	58.75
	12354.00	43.20	354.91	12308.97	53.67	53.97	45.45	14.92	404484.50	768247.33	N 32 6 35.59	W 103 36 1.70	40.10	70.55
	12385.00	46.93	358.79	12328.88	75.58	75.87	44.27	14.94	404506.40	768246.14	N 32 6 35.81	W 103 36 1.71	30.26	87.84
	12416.00	51.21	1.97	12349.17	98.99	99.28	44.44	15.83	404529.81	768246.32	N 32 6 36.04	W 103 36 1.70	24.12	108.77
	12448.00	53.73	6.46	12368.67	124.27	124.57	46.32	13.63	404555.10	768248.20	N 32 6 36.29	W 103 36 1.68	20.40	132.91
	12479.00	55.41	12.88	12388.65	149.12	149.45	50.58	17.72	404579.97	768252.45	N 32 6 36.54	W 103 36 1.63	18.70	157.77
	12510.00	58.13	16.86	12403.64	174.12	174.50	57.24	13.87	404605.02	768259.12	N 32 6 36.78	W 103 36 1.55	18.16	183.65
	12542.00	61.45	15.14	12419.74	200.65	201.08	64.86	11.37	404631.60	768266.73	N 32 6 37.05	W 103 36 1.48	17.88	211.28
	12573.00	62.79	9.28	12434.25	227.38	227.84	70.64	17.26	404658.36	768272.52	N 32 6 37.31	W 103 36 1.39	17.23	238.54
	12644.00	68.63	358.73	12463.51	291.76	292.26	75.01	15.83	404722.78	768276.89	N 32 6 37.95	W 103 36 1.33	14.39	301.73
	12676.00	73.00	357.85	12474.02	321.97	322.46	74.11	13.90	404752.98	768275.98	N 32 6 38.25	W 103 36 1.34	12.94	330.67
	12707.00	76.82	357.62	12482.09	351.88	352.36	72.92	12.34	404782.88	768274.80	N 32 6 38.54	W 103 36 1.35	11.69	359.63
	12739.00	79.07	358.80	12488.78	383.16	383.64	71.95	7.90	404814.16	768273.83	N 32 6 38.85	W 103 36 1.36	10.62	390.33
	12770.00	80.78	0.44	12494.20	413.68	414.16	71.75	7.59	404844.67	768273.62	N 32 6 39.15	W 103 36 1.36	9.83	420.33
	12801.00	83.31	1.76	12498.49	444.37	444.85	72.34	9.19	404875.37	768274.21	N 32 6 39.46	W 103 36 1.35	9.24	450.69
	12849.00	86.83	4.26	12502.61	492.10	492.60	74.85	8.98	404923.11	768276.73	N 32 6 39.93	W 103 36 1.32	8.64	498.25
	12895.00	88.66	4.89	12504.42	537.89	538.41	78.52	4.21	404968.92	768280.39	N 32 6 40.38	W 103 36 1.27	8.30	544.11
	12989.00	90.28	4.76	12505.29	631.49	632.07	86.42	1.73	405062.58	768288.30	N 32 6 41.31	W 103 36 1.17	7.79	637.95
	13083.00	92.58	4.39	12502.95	725.11	725.74	93.92	2.48	405156.24	768295.79	N 32 6 42.24	W 103 36 1.08	7.37	731.79
	13177.00	89.90	0.02	12500.91	818.96	819.61	97.53	5.45	405250.11	768299.41	N 32 6 43.16	W 103 36 1.03	6.79	825.40
	13272.00	89.55	359.68	12501.37	913.96	914.61	97.28	0.51	405345.11	768299.16	N 32 6 44.10	W 103 36 1.03	6.07	919.77
	13368.00	89.93	357.44	12501.80	1007.93	1008.57	94.92	2.42	405439.07	768296.80	N 32 6 45.03	W 103 36 1.05	5.38	1013.03
	13460.00	87.97	357.48	12503.52	1101.85	1102.48	90.74	2.09	405532.95	768292.62	N 32 6 45.96	W 103 36 1.09	4.71	1106.19
	13554.00	87.83	0.93	12508.96	1195.77	1196.37	89.42	3.69	405626.86	768291.30	N 32 6 46.89	W 103 36 1.10	4.27	1199.71
	13649.00	89.17	1.27	12509.45	1290.70	1291.32	91.24	1.48	405721.81	768293.12	N 32 6 47.83	W 103 36 1.07	4.04	1294.54
	13743.00	88.38	0.99	12511.48	1384.65	1385.28	93.10	0.89	405815.76	768294.97	N 32 6 48.76	W 103 36 1.04	3.84	1388.41
	13838.00	88.07	0.77	12514.40	1479.58	1480.22	94.55	0.40	405910.70	768296.43	N 32 6 49.70	W 103 36 1.01	3.65	1483.24
	13932.00	89.76	2.56	12516.18	1573.49	1574.16	97.26	2.62	406004.64	768299.16	N 32 6 50.63	W 103 36 0.97	3.54	1577.16
	14026.00	89.76	3.10	12516.58	1667.35	1668.04	101.93	0.57	406098.52	768303.80	N 32 6 51.56	W 103 36 0.91	3.50	1671.16
	14121.00	88.69	1.02	12517.88	1762.24	1762.97	105.34	2.48	406193.44	768307.22	N 32 6 52.50	W 103 36 0.87	3.42	1766.11
	14216.00	92.13	1.38	12517.18	1857.19	1857.93	107.33	3.64	406288.40	768309.21	N 32 6 53.44	W 103 36 0.83	3.31	1861.03
	14310.00	92.48	359.98	12513.40	1951.10	1951.85	108.43	1.55	406382.31	768310.30	N 32 6 54.37	W 103 36 0.81	3.18	1954.85
	14404.00	89.83	358.52	12511.51	2045.07	2045.81	107.18	3.21	406476.27	768309.06	N 32 6 55.30	W 103 36 0.82	3.00	2048.61
	14498.00	88.18	358.87	12513.14	2139.04	2139.76	105.04	1.79	406570.22	768306.92	N 32 6 56.23	W 103 36 0.84	2.81	2142.34
	14593.00	88.04	358.09	12516.27	2233.98	2234.68	102.52	0.83	406665.13	768304.40	N 32 6 57.17	W 103 36 0.86	2.63	2237.03
	14687.00	88.38	358.29	12519.21	2327.89	2328.59	99.55	0.42	406759.04	768301.43	N 32 6 58.10	W 103 36 0.89	2.45	2330.71
	14781.00	89.17	358.05	12521.22	2421.84	2422.52	96.55	0.88	406852.96	768298.43	N 32 6 59.03	W 103 36 0.92	2.28	2424.44
	14875.00	88.28	357.10	12523.31	2515.75	2516.41	92.58	1.38	406946.85	768294.45	N 32 6 59.95	W 103 36 0.95	2.11	2518.11
	14970.00	90.07	357.41	12524.68	2610.66	2611.28	88.03	1.91	407041.73	768289.90	N 32 7 0.89	W 103 36 1.00	1.93	2612.77
	15065.00	89.93	355.84	12524.68	2705.52	2706.12	82.44	1.66	407136.55	768284.31	N 32 7 1.83	W 103 36 1.06	1.74	2707.37
	15159.00	89.42	357.50	12525.21	2799.39	2799.95	76.98	1.85	407230.39	768278.85	N 32 7 2.76	W 103 36 1.11	1.57	2801.01
	15253.00	90.38	357.57	12525.37	2893.33	2893.86	72.93	1.02	407324.30	768274.81	N 32 7 3.69	W 103 36 1.15	1.44	2894.78
	15347.00	89.48	359.04	12525.49	2987.30	2987.82	70.15	1.83	407418.25	768272.03	N 32 7 4.62	W 103 36 1.18	1.35	2988.64
	15442.00	89.76	0.63	12526.12	3082.29	3082.81	69.88	1.70	407513.24	768271.76	N 32 7 5.56	W 103 36 1.17	1.30	3083.61
	15536.00	91.17	0.74	12525.36	3176.27	3176.80	71.00	1.50	407607.22	768272.88	N 32 7 6.49	W 103 36 1.15	1.28	3177.59
	15630.00	89.97	1.79	12524.42	3270.23	3270.77	73.08	1.70	407701.19	768274.96	N 32 7 7.42	W 103 36 1.12	1.28	3271.59
	15724.00	88.04	2.09	12526.05	3364.13	3364.70	76.26	2.08	407795.11	768278.14	N 32 7 8.35	W 103 36 1.08	1.30	3365.56
	15818.00	91.27	2.71	12528.62	3458.01	3458.60	80.19	3.50	407889.01	768282.07	N 32 7 9.28	W 103 36 1.02	1.33	3459.53
	15913.00	88.42	3.13	12528.53	3552.80	3553.43	85.03	5.12	407983.84	768286.91	N 32 7 10.22	W 103 36 0.96	1.37	3554.45
	16007.00	89.45	3.83	12531.92	3646.52	3647.18	90.73	3.31	408077.59	768292.61	N 32 7 11.14	W 103 36 0.89	1.43	3648.31
	16101.00	87.14	359.96	12534.72	3740.38	3741.07	93.84	4.79	408171.47	768295.72	N 32 7 12.07	W 103 36 0.84	1.44	3742.24
	16195.00	88.83	0.97	12538.02	3834.30	3835.00	94.60	2.09	408265.40	768296.48	N 32 7 13.00	W 103 36 0.83	1.41	3836.17
	16289.00	89.04	359.64	12539.77	3928.28	3928.98	95.10	1.43	408359.38	768296.98	N 32 7 13.93	W 103 36 0.81	1.39	3930.13
	16383.00	89.66	359.58	12540.84	4022.27	4022.97	94.48	0.66	408453.37	768296.34	N 32 7 14.86	W 103 36 0.81	1.35	4024.08
	16477.00	91.51	0.20	12539.88	4116.26	4116.96	94.28	2.08	408547.35	768296.16	N 32 7 15.79	W 103 36 0.81	1.31	4118.04
	16572.00	90.14	357.14	12538.51	4211.23	4211.91	92.08	3.53	408642.30	768293.96	N 32 7 16.73	W 103 36 0.83	1.25	4212.92
	16666.00	91.44	0.15	12537.35	4295.19	4295.87	90.09	3.90	408726.26	768291.97	N 32 7 17.56	W 103 36 0.84	1.20	4296.82
	16750.00	87.76	355.06	12538.01	4389.09	4389.74	88.17	6.68	408820.12	768288.05	N 32 7 18.49	W 103 36 0.88	1.12	4390.59
	16844.00	87.90	355.62	12541.57	4482.76	4483.36	78.54	0.61	408913.74	768280.41	N 32 7 19.42	W 103 36 0.96	1.00	4484.05
	16939.00	87.80	356.13	12545.13	4577.48	4578.05	71.71	0.55	409008.42	768273.59	N 32 7 20.36	W 103 36 1.03	0.90	4578.61
	17033.00	86.97	357.01	12549.42	4671.25	4671.78	66.09	1.29	409102.15	768267.97	N 32 7 21.28	W 103 36 1.09	0.81	4672.25
	17127.00	86.04	357.30	12555.15	4764.99	4765.49	61.43	1.04	409195.86	768263.31	N 32 7 22.21	W 103 36 1.14	0.74	4765.88
	17222.00	85.25	357.54	12562.36	4859.64	4860.12	57.17	0.87	409290.48	768259.05	N 32 7 23.15	W 103 36 1.18	0.67	4860.45

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 ° ' ")	Closure Azimuth (°)	Closure (ft)
Section Line Crossing [775' FWL]	*17312.00*	*86.14*	*357.37*	*12569.12*	*4949.32*	*4949.77*	*53.18*	*1.01*	*409380.14*	*768255.06*	*N 32 7 24.04*	*W 103 36 1.22*	*0.62*	*4950.06*
	17316.00	86.18	357.36	12569.39	4953.31	4953.76	53.00	1.01	409384.12	768254.88	N 32 7 24.07	W 103 36 1.22	0.61	4954.04
	17410.00	89.83	358.66	12572.66	5047.20	5047.63	49.74	4.12	409477.99	768251.62	N 32 7 25.00	W 103 36 1.25	0.56	5047.87
	17504.00	91.07	358.92	12571.92	5141.18	5141.60	47.75	1.35	409571.96	768249.63	N 32 7 25.93	W 103 36 1.27	0.53	5141.83
	17598.00	90.96	0.26	12570.26	5235.17	5235.58	47.08	1.43	409665.94	768248.96	N 32 7 26.86	W 103 36 1.27	0.52	5235.80
	17692.00	91.07	2.26	12568.59	5329.11	5329.54	49.15	2.13	409759.89	768251.03	N 32 7 27.79	W 103 36 1.24	0.53	5329.77
	17786.00	90.62	1.60	12567.20	5423.02	5423.48	52.31	0.85	409853.82	768254.19	N 32 7 28.72	W 103 36 1.19	0.55	5423.73
	17880.00	90.52	2.32	12566.27	5516.94	5517.42	55.53	0.77	409947.76	768257.41	N 32 7 29.65	W 103 36 1.15	0.58	5517.70
	17974.00	90.17	1.54	12565.70	5610.86	5611.36	58.69	0.91	410041.70	768260.57	N 32 7 30.58	W 103 36 1.10	0.60	5611.67
	18068.00	89.79	1.78	12565.74	5704.80	5705.32	61.42	0.48	410135.66	768263.29	N 32 7 31.51	W 103 36 1.06	0.62	5705.65
	18162.00	89.93	1.10	12565.97	5798.75	5799.29	63.76	0.74	410229.62	768265.66	N 32 7 32.44	W 103 36 1.03	0.63	5799.64
	18256.00	89.83	0.58	12566.18	5892.73	5893.28	65.16	0.56	410323.61	768267.03	N 32 7 33.37	W 103 36 1.01	0.63	5893.64
	18350.00	90.45	1.24	12565.93	5986.71	5987.27	66.65	0.96	410417.59	768268.53	N 32 7 34.30	W 103 36 0.98	0.64	5987.64
	18444.00	89.38	0.83	12566.07	6080.68	6081.25	68.35	1.22	410511.57	768270.22	N 32 7 35.23	W 103 36 0.95	0.64	6081.63
	18538.00	89.38	0.67	12567.09	6174.65	6175.24	69.58	0.17	410605.56	768271.45	N 32 7 36.16	W 103 36 0.93	0.65	6175.63
	18632.00	89.97	0.66	12567.62	6268.64	6269.23	70.67	0.63	410699.55	768272.55	N 32 7 37.09	W 103 36 0.91	0.65	6269.63
	18727.00	90.14	1.08	12567.53	6363.61	6364.22	72.11	0.48	410794.53	768273.99	N 32 7 38.03	W 103 36 0.89	0.65	6364.63
	18821.00	90.34	359.80	12567.14	6457.60	6458.21	72.83	1.38	410888.52	768274.71	N 32 7 38.96	W 103 36 0.87	0.65	6458.62
	18915.00	89.76	358.77	12567.06	6551.60	6552.20	71.88	1.26	410982.51	768273.54	N 32 7 39.89	W 103 36 0.88	0.63	6552.59
	19009.00	90.48	358.20	12566.86	6645.58	6646.17	69.17	0.98	411076.47	768271.05	N 32 7 40.82	W 103 36 0.90	0.60	6646.53
	19103.00	90.58	358.49	12565.99	6739.55	6740.13	66.46	0.33	411170.43	768268.34	N 32 7 41.75	W 103 36 0.92	0.58	6740.45
	19197.00	90.72	358.76	12564.92	6833.53	6834.09	64.20	0.32	411264.39	768266.08	N 32 7 42.68	W 103 36 0.94	0.54	6834.39
	19290.00	90.72	357.72	12563.75	6926.49	6927.04	61.35	1.12	411357.33	768263.23	N 32 7 43.60	W 103 36 0.97	0.51	6927.31
	19384.00	89.86	357.75	12563.28	7020.44	7020.98	57.63	0.92	411451.26	768259.51	N 32 7 44.53	W 103 36 1.00	0.47	7021.20
	19479.00	89.86	359.82	12563.51	7115.42	7115.93	55.45	1.97	411546.22	768257.33	N 32 7 45.47	W 103 36 1.02	0.45	7116.15
	19573.00	90.07	1.00	12563.57	7209.41	7209.93	55.96	1.48	411640.22	768257.84	N 32 7 46.40	W 103 36 1.01	0.44	7210.15
	19667.00	90.41	0.48	12563.17	7303.39	7303.92	57.18	0.66	411734.20	768259.05	N 32 7 47.33	W 103 36 0.99	0.45	7304.15
	19761.00	90.41	0.53	12562.50	7397.38	7397.92	58.00	0.05	411828.19	768259.88	N 32 7 48.26	W 103 36 0.97	0.45	7398.14
	19855.00	89.79	0.69	12562.34	7491.37	7491.91	59.00	0.68	411922.19	768260.88	N 32 7 49.19	W 103 36 0.95	0.45	7492.14
	19949.00	89.66	0.57	12562.79	7585.35	7585.90	60.04	0.19	412016.18	768261.92	N 32 7 50.12	W 103 36 0.93	0.45	7586.14
	20042.00	90.79	0.24	12562.42	7678.34	7678.90	60.70	1.27	412109.17	768262.57	N 32 7 51.04	W 103 36 0.92	0.45	7679.14
	20137.00	90.24	359.25	12561.57	7773.33	7773.89	60.27	1.19	412204.16	768262.15	N 32 7 51.98	W 103 36 0.91	0.44	7774.13
	20231.00	90.65	358.91	12560.84	7867.33	7867.88	58.76	0.57	412298.14	768260.64	N 32 7 52.91	W 103 36 0.92	0.43	7868.10
	20325.00	90.14	359.07	12560.19	7961.32	7961.88	57.11	0.57	412392.12	768258.98	N 32 7 53.84	W 103 36 0.94	0.41	7962.06
	20419.00	90.48	359.04	12559.68	8055.31	8055.85	55.56	0.36	412486.10	768257.43	N 32 7 54.77	W 103 36 0.95	0.40	8056.04
	20514.00	90.28	358.64	12559.05	8150.30	8150.82	53.63	0.47	412581.08	768255.51	N 32 7 55.71	W 103 36 0.96	0.38	8151.00
	20608.00	90.55	359.37	12558.37	8244.29	8244.81	52.00	0.83	412675.06	768253.88	N 32 7 56.64	W 103 36 0.97	0.36	8244.97
	20701.00	90.86	359.00	12557.23	8337.28	8337.79	50.68	0.52	412768.04	768252.56	N 32 7 57.56	W 103 36 0.98	0.35	8337.94
	20795.00	90.28	357.63	12556.29	8431.25	8431.74	47.91	1.58	412861.99	768249.79	N 32 7 58.49	W 103 36 1.01	0.33	8431.88
	20890.00	89.66	357.88	12556.34	8526.20	8526.67	44.19	0.70	412956.91	768246.07	N 32 7 59.43	W 103 36 1.04	0.30	8526.78
	20984.00	90.03	359.66	12556.60	8620.18	8620.64	42.18	1.93	413050.88	768244.05	N 32 8 0.36	W 103 36 1.06	0.28	8620.75
	21078.00	89.66	0.24	12556.85	8714.18	8714.64	42.09	0.73	413144.88	768243.97	N 32 8 1.29	W 103 36 1.05	0.28	8714.74
	21172.00	90.03	0.63	12557.10	8808.17	8808.64	42.81	0.57	413238.87	768244.69	N 32 8 2.22	W 103 36 1.04	0.28	8808.74
	21266.00	89.97	359.90	12557.10	8902.17	8902.64	43.24	0.78	413332.86	768245.12	N 32 8 3.15	W 103 36 1.02	0.28	8902.74
	21360.00	89.83	359.48	12557.27	8996.17	8996.63	42.73	0.47	413426.86	768244.61	N 32 8 4.08	W 103 36 1.02	0.27	8996.74
	21455.00	90.17	0.41	12557.27	9091.16	9091.63	42.64	1.04	413521.85	768244.52	N 32 8 5.02	W 103 36 1.01	0.27	9091.73
	21549.00	90.21	1.47	12556.96	9185.14	9185.62	44.18	1.13	413615.84	768246.06	N 32 8 5.95	W 103 36 0.99	0.28	9185.72
	21643.00	90.96	1.11	12556.00	9279.09	9279.59	46.30	0.89	413709.80	768248.18	N 32 8 6.88	W 103 36 0.96	0.29	9279.70
	21738.00	89.45	359.80	12555.66	9374.08	9374.58	47.05	2.10	413804.79	768248.93	N 32 8 7.82	W 103 36 0.94	0.29	9374.70
	21832.00	90.38	0.08	12555.80	9468.07	9468.58	46.96	1.03	413898.79	768248.83	N 32 8 8.75	W 103 36 0.93	0.28	9468.70
	21925.00	91.00	359.14	12554.68	9561.06	9561.57	46.32	1.21	413991.77	768248.20	N 32 8 9.67	W 103 36 0.93	0.28	9561.68
	22019.00	90.03	357.36	12553.83	9655.03	9655.52	43.45	2.16	414085.72	768245.33	N 32 8 10.60	W 103 36 0.96	0.28	9655.61
	22113.00	90.41	357.14	12553.47	9748.95	9749.41	38.94	0.47	414179.61	768240.82	N 32 8 11.53	W 103 36 1.01	0.23	9749.49
	22207.00	89.72	358.93	12553.38	9842.91	9843.35	35.72	2.04	414273.54	768237.60	N 32 8 12.46	W 103 36 1.04	0.21	9843.41
	22301.00	90.34	359.61	12553.32	9936.90	9937.34	34.52	0.98	414367.53	768236.40	N 32 8 13.39	W 103 36 1.04	0.20	9937.40
	22394.00	89.79	359.73	12553.21	10029.90	10030.34	33.99	0.61	414460.53	768235.87	N 32 8 14.31	W 103 36 1.04	0.19	10030.39
Last Survey	22489.00	89.90	0.42	12553.47	10124.90	10125.34	34.11	0.74	414555.52	768235.99	N 32 8 15.25	W 103 36 1.03	0.19	10125.39
Last Legal Take Point [100' FNL, 790' FWL]	*22493.60*	*89.90*	*0.42*	*12553.47*	*10129.50*	*10129.94*	*34.14*	*0.00*	*414560.12*	*768236.02*	*N 32 8 15.29*	*W 103 36 1.03*	*0.19*	*10129.99*
TD, PTB [50' FNL, 791' FWL]	22544.00	89.90	0.42	12553.56	10179.89	10180.33	34.51	0.00	414610.52	768236.39	N 32 8 15.79	W 103 36 1.02	0.19	10180.39

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	23.000	1/98.425	14.750	10.750	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Surveys - Cimarex Vaca Draw 20-17 Federal #7H MWD 0ft-22544ft (Surcon
	1	23.000	23.000	Act Stns	14.750	10.750	NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Final Surveys - Cimarex Vaca Draw 20-17 Federal #7H MWD 0ft-22544ft (Surcon
	1	23.000	1027.000	Act Stns	14.750	10.750	NAL_MWD_IFR1+MS	Original Borehole / Final Surveys - Cimarex Vaca Draw 20-17 Federal
	1	1027.000	11915.000	Act Stns	9.875	7.625	NAL_MWD_IFR1+MS	Original Borehole / Final Surveys - Cimarex Vaca Draw 20-17 Federal
	1	11915.000	12632.000	Act Stns	6.750	7.000	NAL_MWD_IFR1+MS	Original Borehole / Final Surveys - Cimarex Vaca Draw 20-17 Federal
	1	12632.000	22544.000	Act Stns	6.750	4.500	NAL_MWD_IFR1+MS	Original Borehole / Final Surveys - Cimarex Vaca Draw 20-17 Federal