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30-015-43156

Schlumberger



Cimarex Wigeon 23 Federal Com 4H Final Survey Geodetic Report

(Def Survey)

Report Date: July 12, 2017 - 09:05 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Wigeon 23 Federal Com 4H / Cimarex Wigeon 23 Federal Com 4H
Well: Cimarex Wigeon 23 Federal Com 4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Wigeon 23 Federal Com 4H Final
Survey Date: June 13, 2017
Tort / AHD / DDI / ERD Ratio: 256.732 * / 10287.622 ft / 6.720 / 1.056
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 7' 18.54603", W 104° 15' 26.60056"
Location Grid N/E Y/X: N 408071.970 NUS, E 564848.140 RUS
CRS Grid Convergence Angle: 0.0404 *
Grid Scale Factor: 0.99990972
Version / Patch: 2.10.254.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 180.000 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3305.100 ft above MS
Seabed / Ground Elevation: 3281.100 ft above MS
Magnetic Dip Angle: 7.483 *
Total Gravity Field Strength: 998.4362mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47999.082 nT
Magnetic Dip Angle: 59.826 *
Declination Date: June 22, 2017
Magnetic Declination Model: HDGM 2017
North Reference: Grid North
Grid Convergence Used: 0.0404 *
Total Corr Mag North->Grid North: 7.4424 *
Local Coord Referenced To: Structure Reference Point

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 20 2018

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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00		408071.97	564848.14	N 32° 7' 18.65"	W 104° 15' 26.60"
	179.00	0.71	255.93	179.00	0.27	-0.27	-1.08	0.40	408071.70	564847.06	N 32° 7' 18.64"	W 104° 15' 26.61"
	254.00	0.71	264.12	253.99	0.43	-0.43	-1.99	0.14	408071.54	564846.15	N 32° 7' 18.64"	W 104° 15' 26.62"
	450.00	0.62	255.75	449.98	0.82	-0.82	-4.22	0.07	408071.15	564843.92	N 32° 7' 18.64"	W 104° 15' 26.65"
	480.00	0.80	247.11	479.97	0.94	-0.94	-4.57	0.70	408071.03	564843.57	N 32° 7' 18.64"	W 104° 15' 26.65"
	573.00	0.40	82.63	572.97	1.15	-1.15	-4.85	1.28	408070.82	564843.29	N 32° 7' 18.63"	W 104° 15' 26.66"
	664.00	0.62	77.85	663.97	1.00	-1.00	-4.05	0.25	408070.97	564844.00	N 32° 7' 18.64"	W 104° 15' 26.65"
	754.00	0.44	88.91	753.96	0.89	-0.89	-3.23	0.23	408071.08	564844.91	N 32° 7' 18.64"	W 104° 15' 26.64"
	848.00	0.62	68.73	847.96	0.70	-0.70	-2.40	0.27	408071.27	564845.74	N 32° 7' 18.64"	W 104° 15' 26.63"
	948.00	0.50	69.53	945.96	0.36	-0.36	-1.50	0.12	408071.61	564846.64	N 32° 7' 18.64"	W 104° 15' 26.62"
	1041.00	0.40	49.41	1040.95	0.00	0.00	-0.88	0.20	408071.97	564847.28	N 32° 7' 18.65"	W 104° 15' 26.61"
	1135.00	1.41	73.82	1134.94	-0.54	0.54	0.50	1.13	408072.51	564848.64	N 32° 7' 18.65"	W 104° 15' 26.59"
	1230.00	2.78	78.82	1229.87	-1.32	1.32	3.88	1.45	408073.29	564852.02	N 32° 7' 18.66"	W 104° 15' 26.56"
	1324.00	2.52	69.43	1323.77	-2.48	2.48	8.05	0.54	408074.45	564856.19	N 32° 7' 18.67"	W 104° 15' 26.51"
	1419.00	3.00	70.84	1418.66	-4.03	4.03	12.35	0.51	408076.00	564860.49	N 32° 7' 18.69"	W 104° 15' 26.46"
	1509.00	3.31	72.43	1508.53	-5.59	5.59	17.05	0.38	408077.56	564865.19	N 32° 7' 18.70"	W 104° 15' 26.40"
	1604.00	2.39	92.44	1603.41	-8.33	6.33	21.65	1.41	408078.30	564869.79	N 32° 7' 18.71"	W 104° 15' 26.35"
	1699.00	2.70	100.02	1698.32	-5.86	5.86	25.83	0.48	408077.83	564873.97	N 32° 7' 18.70"	W 104° 15' 26.30"
	1793.00	1.90	118.13	1792.24	-4.74	4.74	29.38	1.14	408078.71	564877.52	N 32° 7' 18.69"	W 104° 15' 26.26"
	1811.00	1.59	127.03	1810.23	-4.45	4.45	29.85	2.28	408078.42	564877.98	N 32° 7' 18.69"	W 104° 15' 26.25"
	1896.00	1.59	127.03	1894.20	-3.05	3.05	31.71	0.00	408075.02	564879.84	N 32° 7' 18.68"	W 104° 15' 26.23"
	1981.00	1.28	148.42	1980.17	-1.53	1.53	33.19	0.68	408073.50	564881.33	N 32° 7' 18.66"	W 104° 15' 26.21"
	2077.00	1.50	148.72	2076.15	0.45	-0.45	-34.42	0.24	408071.52	564882.55	N 32° 7' 18.64"	W 104° 15' 26.20"
	2171.00	1.50	137.74	2170.11	2.42	-2.42	-35.87	0.33	408069.55	564884.00	N 32° 7' 18.62"	W 104° 15' 26.18"
	2265.00	1.40	149.53	2264.08	4.32	-4.32	-37.28	0.33	408067.65	564885.41	N 32° 7' 18.60"	W 104° 15' 26.17"
	2359.00	1.59	154.35	2358.05	6.49	-6.49	-38.42	0.24	408065.48	564886.56	N 32° 7' 18.59"	W 104° 15' 26.15"
	2454.00	1.19	158.14	2453.02	8.59	-8.59	-39.36	0.43	408063.38	564887.50	N 32° 7' 18.56"	W 104° 15' 26.14"
	2548.00	1.68	160.34	2548.99	10.80	-10.80	-40.19	0.52	408061.17	564888.32	N 32° 7' 18.54"	W 104° 15' 26.13"
	2642.00	1.59	159.73	2640.96	13.32	-13.32	-41.10	0.10	408059.65	564889.24	N 32° 7' 18.51"	W 104° 15' 26.12"
	2737.00	1.50	156.51	2735.92	15.69	-15.69	-42.05	0.13	408058.28	564890.19	N 32° 7' 18.49"	W 104° 15' 26.11"
	2832.00	1.19	170.61	2830.90	17.81	-17.81	-42.71	0.48	408054.16	564890.85	N 32° 7' 18.47"	W 104° 15' 26.10"
	2926.00	1.10	158.14	2924.88	19.61	-19.61	-43.21	0.28	408052.38	564891.34	N 32° 7' 18.45"	W 104° 15' 26.10"
	3019.00	1.19	157.44	3017.86	21.33	-21.33	-43.91	0.10	408050.64	564892.05	N 32° 7' 18.43"	W 104° 15' 26.09"
	3115.00	1.50	165.94	3113.83	23.47	-23.47	-44.60	0.38	408048.50	564892.73	N 32° 7' 18.41"	W 104° 15' 26.08"
	3209.00	1.02	165.24	3207.81	25.47	-25.47	-45.11	0.51	408046.50	564893.24	N 32° 7' 18.39"	W 104° 15' 26.08"
	3303.00	1.19	149.55	3301.79	27.12	-27.12	-45.82	0.37	408044.85	564893.95	N 32° 7' 18.38"	W 104° 15' 26.07"
	3399.00	1.28	164.31	3397.77	29.01	-29.01	-46.61	0.34	408042.96	564894.75	N 32° 7' 18.36"	W 104° 15' 26.06"
	3493.00	0.88	186.04	3491.75	30.74	-30.74	-46.82	0.60	408041.23	564894.96	N 32° 7' 18.34"	W 104° 15' 26.06"
	3588.00	1.41	188.02	3586.73	32.62	-32.62	-46.58	0.56	408039.35	564894.72	N 32° 7' 18.32"	W 104° 15' 26.06"
	3682.00	1.10	198.02	3680.71	34.63	-34.63	-46.14	0.40	408037.35	564894.28	N 32° 7' 18.30"	W 104° 15' 26.06"
	3777.00	1.10	195.11	3775.69	36.38	-36.38	-45.62	0.08	408035.60	564893.76	N 32° 7' 18.29"	W 104° 15' 26.07"
	3844.00	1.10	200.00	3842.68	37.60	-37.60	-45.23	0.14	408034.37	564893.37	N 32° 7' 18.27"	W 104° 15' 26.07"
	3944.00	0.62	312.95	3942.67	38.24	-38.24	-44.36	1.22	408033.73	564892.50	N 32° 7' 18.27"	W 104° 15' 26.09"
	4060.00	1.02	294.04	4058.66	37.54	-37.54	-43.20	0.50	408034.43	564891.34	N 32° 7' 18.27"	W 104° 15' 26.10"
	4153.00	1.02	269.01	4151.65	37.22	-37.22	-41.62	0.48	408034.76	564889.75	N 32° 7' 18.28"	W 104° 15' 26.12"
	4249.00	0.88	252.71	4247.64	37.45	-37.45	-40.06	0.32	408034.52	564888.20	N 32° 7' 18.26"	W 104° 15' 26.14"
	4344.00	0.62	263.02	4342.63	37.73	-37.73	-38.85	0.31	408034.24	564886.99	N 32° 7' 18.27"	W 104° 15' 26.15"
	4437.00	1.41	18.05	4435.62	36.70	-36.70	-38.71	1.60	408035.27	564886.85	N 32° 7' 18.26"	W 104° 15' 26.15"
	4533.00	1.10	18.14	4531.60	34.70	-34.70	-39.36	0.32	408037.27	564887.50	N 32° 7' 18.30"	W 104° 15' 26.14"
	4628.00	0.80	27.04	4626.58	33.25	-33.25	-39.95	0.35	408038.73	564888.08	N 32° 7' 18.32"	W 104° 15' 26.14"
	4721.00	0.88	18.93	4719.57	31.89	-31.89	-40.47	0.15	408039.98	564888.61	N 32° 7' 18.33"	W 104° 15' 26.13"
	4816.00	1.10	33.12	4816.56	30.51	-30.51	-41.22	0.34	408041.46	564889.36	N 32° 7' 18.34"	W 104° 15' 26.12"
	4911.00	0.88	28.14	4909.54	29.13	-29.13	-42.05	0.25	408042.84	564890.19	N 32° 7' 18.38"	W 104° 15' 26.11"
	5006.00	0.62	61.24	5004.54	28.24	-28.24	-42.84	0.52	408043.73	564890.98	N 32° 7' 18.37"	W 104° 15' 26.10"
	5100.00	0.49	68.02	5098.53	27.85	-27.85	-43.66	0.15	408044.13	564891.80	N 32° 7' 18.37"	W 104° 15' 26.09"
	5195.00	0.71	78.33	5193.53	27.57	-27.57	-44.62	0.28	408044.40	564892.75	N 32° 7' 18.37"	W 104° 15' 26.08"
	5286.00	0.88	17.92	5284.52	26.79	-26.79	-45.38	0.89	408045.18	564893.52	N 32° 7' 18.38"	W 104° 15' 26.07"
	5381.00	1.41	30.81	5379.50	25.09	-25.09	-46.20	0.62	408046.88	564894.34	N 32° 7' 18.40"	W 104° 15' 26.06"
	5476.00	1.41	10.34	5474.47	22.94	-22.94	-47.01	0.52	408048.03	564895.14	N 32° 7' 18.40"	W 104° 15' 26.05"
	5570.00	2.52	0.15	5568.42	19.73	-19.73	-47.22	1.23	408049.03	564895.38	N 32° 7' 18.42"	W 104° 15' 26.05"
	5664.00	1.41	338.51	5662.38	16.59	-16.59	-48.00	1.40	408050.58	564894.94	N 32° 7' 18.48"	W 104° 15' 26.06"
	5759.00	1.10	357.43	5757.34	14.59	-14.59	-48.00	0.54	408057.38	564894.47	N 32° 7' 18.50"	W 104° 15' 26.06"
	5853.00	1.28	328.95	5851.32	12.79	-12.79	-45.75	0.65	408059.18	564893.89	N 32° 7' 18.52"	W 104° 15' 26.07"
	5941.00	1.28	347.85	5939.27	8.94	-8.94	-44.23	0.22	408063.03	564892.38	N 32° 7' 18.56"	W 104° 15' 26.09"
	6036.00	1.28	347.85	6039.27	6.67	-6.67	-44.18	0.56	408065.30	564892.31	N 32° 7' 18.58"	W 104° 15' 26.09"
	6138.00	1.90	8.05	6134.24	3.92	-3.92	-44.63	0.43	408068.05	564892.76	N 32° 7' 18.61"	W 104° 15' 26.08"
	6230.00	1.50	10.34	6228.20	1.88	-1.88	-45.45	1.38	408070.09	564893.58	N 32° 7' 18.63"	W 104° 15' 26.07"
	6325.00	0.88	47.34	6323.18	0.62	-0.62	-46.49	0.34	408071.35	564894.62	N 32° 7' 18.64"	W 104° 15' 26.06"
	6420.00	1.10	33.43	6418.16	0.62	-0.62	-47.29	0.42	408072.59	564895.43	N 32° 7' 18.65"	W 104° 15' 26.05"
	6514.00	0.71	32.24	6512.15	-0.62	0.62	-47.95	0.37	408073.30	564896.08	N 32° 7' 18.66"	W 104° 15' 26.04"
	6608.00	0.49	58.42	6606.14	-1.33	1.33	-48.63	0.23	408073.90	564896.76	N 32° 7' 18.66"	W 104° 15' 26.04"
	6703.00	0.62	40.22	6701.14	-1.93	1.93	-49.14	0.24	408074.56	564897.27	N 32° 7' 18.67"	W 104° 15' 26.03"
	6797.00	0.40	33.83	6795.14	-2.59	2.59	-49.71	0.53	408074.76	564897.85	N 32° 7' 18.67"	W 104° 15' 26.02"
	6891.00	0.49	100.63	6889.13	-2.79	2.79	-50.73	0.59	408074.29	5648		

Comments	MD (m)	Incl (°)	Azim Grid (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	DLS (m)	Northing (m)	Easting (m)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	7364.00	2.39	128.13	7361.92	5.47	-5.47	59.53	0.02	408060.50	564908.06	N 32° 7' 18.59"	W 104° 15' 25.90"
	7459.00	1.68	140.65	7458.86	7.77	-7.77	62.37	0.88	408064.20	564910.50	N 32° 7' 18.57"	W 104° 15' 25.88"
	7553.00	1.19	151.22	7550.83	9.69	-9.69	63.71	0.59	408062.28	564911.85	N 32° 7' 18.55"	W 104° 15' 25.86"
	7649.00	1.50	153.12	7648.80	11.69	-11.69	64.76	0.33	408060.28	564912.89	N 32° 7' 18.53"	W 104° 15' 25.85"
	7741.00	1.10	172.84	7738.78	13.64	-13.64	65.42	0.64	408058.33	564913.55	N 32° 7' 18.51"	W 104° 15' 25.84"
	7837.00	1.28	177.13	7834.76	15.62	-15.62	65.59	0.21	408056.35	564913.72	N 32° 7' 18.49"	W 104° 15' 25.84"
	7930.00	0.80	163.74	7927.74	17.28	-17.28	65.82	0.58	408054.69	564913.96	N 32° 7' 18.47"	W 104° 15' 25.84"
	8025.00	1.68	165.94	8022.72	19.27	-19.27	66.35	0.93	408052.70	564914.48	N 32° 7' 18.45"	W 104° 15' 25.83"
	8120.00	1.59	163.21	8117.68	21.88	-21.88	67.07	0.13	408050.09	564915.20	N 32° 7' 18.43"	W 104° 15' 25.82"
First Taken Point	8195.00	1.52	165.87	8192.66	23.84	-23.84	67.61	0.14	408048.13	564915.74	N 32° 7' 18.41"	W 104° 15' 25.81"
	8212.00	1.50	166.51	8209.65	24.28	-24.28	67.72	0.14	408047.70	564915.85	N 32° 7' 18.41"	W 104° 15' 25.81"
	8307.00	1.10	173.21	8304.62	26.39	-26.39	68.11	0.45	408045.58	564916.25	N 32° 7' 18.38"	W 104° 15' 25.81"
	8402.00	1.41	158.45	8399.60	28.38	-28.38	68.65	0.47	408043.59	564916.78	N 32° 7' 18.35"	W 104° 15' 25.80"
	8497.00	1.02	162.02	8494.58	30.27	-30.27	69.34	0.42	408041.70	564917.47	N 32° 7' 18.36"	W 104° 15' 25.79"
	8591.00	1.41	154.53	8588.56	32.11	-32.11	70.10	0.45	408039.86	564918.23	N 32° 7' 18.33"	W 104° 15' 25.79"
	8686.00	1.19	164.75	8683.53	34.12	-34.12	70.88	0.34	408037.85	564918.99	N 32° 7' 18.31"	W 104° 15' 25.78"
	8778.00	1.41	158.23	8775.51	36.09	-36.09	71.53	0.29	408035.88	564919.66	N 32° 7' 18.29"	W 104° 15' 25.77"
	8812.00	1.19	164.53	8809.50	38.82	-38.82	71.78	0.77	408035.15	564919.91	N 32° 7' 18.28"	W 104° 15' 25.77"
	8902.00	2.16	119.09	8899.47	38.55	-38.55	73.51	1.75	408033.43	564921.84	N 32° 7' 18.26"	W 104° 15' 25.75"
	8934.00	5.57	97.95	8931.39	39.06	-39.06	75.58	11.37	408032.92	564923.71	N 32° 7' 18.26"	W 104° 15' 25.72"
	8965.00	9.16	92.20	8962.13	39.36	-39.36	79.53	11.81	408032.61	564927.67	N 32° 7' 18.26"	W 104° 15' 25.69"
	8997.00	12.38	90.48	8993.56	39.49	-39.49	85.50	10.05	408032.49	564933.64	N 32° 7' 18.25"	W 104° 15' 25.61"
	9028.00	15.44	91.07	9023.65	39.59	-39.59	92.95	9.95	408032.38	564941.08	N 32° 7' 18.25"	W 104° 15' 25.52"
	9060.00	19.02	90.50	9054.21	39.72	-39.72	102.43	11.20	408032.26	564950.56	N 32° 7' 18.25"	W 104° 15' 25.41"
	9091.00	21.51	92.50	9093.29	40.01	-40.01	113.16	8.34	408031.97	564961.29	N 32° 7' 18.25"	W 104° 15' 25.29"
	9122.00	24.95	93.03	9111.77	40.80	-40.80	125.37	11.12	408031.37	564973.50	N 32° 7' 18.24"	W 104° 15' 25.14"
	9154.00	28.19	94.05	9140.39	41.49	-41.49	139.65	10.19	408030.48	564987.78	N 32° 7' 18.23"	W 104° 15' 24.98"
	9185.00	31.42	94.27	9167.29	42.81	-42.81	155.01	10.48	408029.38	565003.14	N 32° 7' 18.22"	W 104° 15' 24.80"
	9216.00	33.67	98.99	9193.42	44.56	-44.56	171.56	10.94	408027.42	565019.69	N 32° 7' 18.20"	W 104° 15' 24.61"
	9248.00	34.56	104.57	9219.92	46.23	-46.23	189.12	10.18	408023.75	565037.24	N 32° 7' 18.17"	W 104° 15' 24.40"
	9279.00	35.86	108.90	9245.25	53.53	-53.53	206.17	10.74	408018.44	565054.30	N 32° 7' 18.11"	W 104° 15' 24.20"
	9311.00	37.72	116.81	9270.89	61.14	-61.14	223.73	14.17	408010.83	565071.85	N 32° 7' 18.04"	W 104° 15' 24.00"
	9342.00	38.38	123.49	9295.31	70.73	-70.73	240.23	13.43	408001.25	565088.34	N 32° 7' 17.94"	W 104° 15' 23.81"
	9372.00	38.51	129.69	9318.82	81.84	-81.84	255.18	12.85	407990.14	565103.30	N 32° 7' 17.83"	W 104° 15' 23.63"
	9405.00	38.98	137.05	9344.57	96.00	-96.00	270.17	14.02	407975.98	565118.28	N 32° 7' 17.69"	W 104° 15' 23.46"
	9437.00	40.06	143.52	9369.27	111.68	-111.68	283.15	13.30	407960.32	565131.27	N 32° 7' 17.54"	W 104° 15' 23.31"
	9468.00	41.88	149.37	9392.68	126.59	-126.59	294.36	13.69	407943.39	565142.48	N 32° 7' 17.37"	W 104° 15' 23.18"
	9500.00	44.32	153.79	9418.05	147.82	-147.82	304.75	12.13	407924.17	565152.88	N 32° 7' 17.18"	W 104° 15' 23.06"
	9531.00	46.52	157.23	9437.81	167.91	-167.91	313.88	10.82	407904.08	565162.00	N 32° 7' 16.98"	W 104° 15' 22.95"
	9563.00	49.49	159.79	9459.22	190.04	-190.04	322.58	11.02	407881.95	565170.69	N 32° 7' 16.76"	W 104° 15' 22.85"
	9594.00	53.02	162.88	9478.62	212.94	-212.94	330.31	13.78	407859.05	565178.42	N 32° 7' 16.54"	W 104° 15' 22.76"
	9626.00	54.98	164.48	9497.43	237.78	-237.78	337.59	7.34	407834.21	565185.69	N 32° 7' 16.29"	W 104° 15' 22.68"
	9657.00	55.94	166.23	9515.01	262.48	-262.48	344.04	5.63	407809.51	565192.15	N 32° 7' 16.05"	W 104° 15' 22.60"
	9689.00	58.96	169.00	9532.23	288.82	-288.82	349.82	11.93	407783.17	565197.92	N 32° 7' 15.79"	W 104° 15' 22.54"
	9720.00	63.04	171.18	9547.25	315.53	-315.53	354.47	14.53	407758.47	565202.58	N 32° 7' 15.52"	W 104° 15' 22.48"
	9751.00	65.89	173.01	9560.82	343.23	-343.23	358.31	10.82	407728.77	565206.42	N 32° 7' 15.25"	W 104° 15' 22.44"
	9772.00	67.81	174.19	9568.90	362.40	-362.40	360.48	9.68	407708.60	565208.57	N 32° 7' 15.08"	W 104° 15' 22.41"
	9857.00	73.96	176.00	9598.87	442.33	-442.33	367.30	7.74	407629.68	565215.40	N 32° 7' 14.27"	W 104° 15' 22.33"
	9951.00	83.65	173.52	9615.10	534.04	-534.04	373.74	10.63	407537.98	565223.85	N 32° 7' 13.36"	W 104° 15' 22.24"
	10044.00	88.80	180.29	9622.85	626.51	-626.51	380.73	9.24	407445.52	565228.83	N 32° 7' 12.44"	W 104° 15' 22.18"
	10139.00	88.94	183.37	9628.04	721.31	-721.31	377.70	0.88	407350.73	565235.80	N 32° 7' 11.51"	W 104° 15' 22.21"
	10233.00	87.73	183.14	9632.41	815.96	-815.96	372.37	0.88	407256.99	565240.47	N 32° 7' 10.58"	W 104° 15' 22.28"
	10327.00	88.04	181.88	9635.88	908.90	-908.90	369.25	1.38	407163.15	565246.36	N 32° 7' 9.65"	W 104° 15' 22.33"
	10421.00	88.04	181.87	9639.09	1002.79	-1002.79	365.10	0.10	407069.27	565251.20	N 32° 7' 8.72"	W 104° 15' 22.36"
	10515.00	88.38	180.22	9642.03	1096.73	-1096.73	363.30	1.90	406975.35	565251.41	N 32° 7' 7.79"	W 104° 15' 22.39"
	10608.00	88.35	179.47	9644.68	1189.69	-1189.69	363.55	0.81	406882.39	565251.66	N 32° 7' 6.87"	W 104° 15' 22.38"
	10703.00	88.18	179.40	9647.58	1284.64	-1284.64	364.49	0.19	406787.45	565252.60	N 32° 7' 5.93"	W 104° 15' 22.37"
	10797.00	88.59	179.62	9650.21	1378.60	-1378.60	365.29	0.49	406693.50	565253.40	N 32° 7' 5.00"	W 104° 15' 22.36"
	10891.00	88.58	179.17	9652.54	1472.56	-1472.56	366.29	0.48	406599.54	565254.39	N 32° 7' 4.07"	W 104° 15' 22.35"
	10986.00	89.45	180.81	9654.19	1567.54	-1567.54	366.30	1.98	406504.57	565254.41	N 32° 7' 3.13"	W 104° 15' 22.35"
	11080.00	87.39	179.68	9656.79	1661.50	-1661.50	365.90	2.50	406410.62	565254.01	N 32° 7' 2.20"	W 104° 15' 22.36"
	11174.00	88.31	179.00	9660.31	1755.43	-1755.43	366.98	1.22	406316.70	565253.09	N 32° 7' 1.27"	W 104° 15' 22.35"
	11268.00	89.07	179.05	9662.48	1849.39	-1849.39	368.58	0.81	406222.75	565252.69	N 32° 7' 0.34"	W 104° 15' 22.33"
	11363.00	88.80	179.20	9664.23	1944.36	-1944.36	370.03	0.33	406127.79	565252.18	N 32° 6' 59.40"	W 104° 15' 22.31"
	11457.00	88.66	179.16	9668.31	2038.33	-2038.33	371.38	0.15	406033.83	565252.48	N 32° 6' 58.47"	W 104° 15' 22.30"
	11552.00	89.83	181.14	9667.58	2133.31	-2133.31	371.13	2.42	405938.85	565252.93	N 32° 6' 57.53"	W 104° 15' 22.30"
	11646.00	89.28	180.52	9668.29	2227.30	-2227.30	369.77	0.88	405844.88	565252.87	N 32° 6' 56.60"	W 104° 15' 22.32"
	11741.00	89.21	180.80	9669.54	2322.29	-2322.29	368.87	0.30	405749.90	565252.78	N 32° 6' 55.66"	W 104° 15' 22.33"
	11835.00	88.45	180.89	9671.48	2416.25	-2416.25	367.29	0.81	405655.94	565253.39	N 32° 6' 54.73"	W 104° 15' 22.35"
	11928.00	88.18	180.38	9674.20	2509.21	-2509.21	366.26	0.62	405562.99	565254.36	N 32° 6' 53.81"	W 104° 15' 22.38"
	12022.00	88.66	181.67	9676.79	2603.16	-2603.16	364.57	1.48	405469.06	565252.68	N 32° 6' 52.88"	W 104° 15' 22.38"
	12116.00	89.42	181.38	9678.37	2697.11	-2697.11	362.09	0.87	405375.11	565252.00	N 32° 6' 51.95"	W 104° 15' 22.41"
	12210.00	89.79	181.15	9679.01	2791.08	-2791.08	360.03	0.45	405281.14	565250.18	N 32° 6' 51.02"	W 104° 15' 22.44"
	12304.00	89.38	181.62	9679.69	2885.05	-2885.05	357.76	0.68	405187.18	565250.87	N 32° 6' 50.10"	W 104° 15' 22.47"
	12398.00	89.68	179.15	9680.48	2979.04	-2979.04	357.13	2.64	405093.20	565250.23		

Comments	MD (m)	Incl (°)	Azim Grid (°)	TVD (m)	VSEC (m)	NS (m)	EW (m)	OLS (°/100ft)	Northing (mUS)	Easting (mUS)	Latitude (N/S ° ° ' '')	Longitude (E/W ° ° ' '')
	15595.00	89.93	179.31	9683.49	6175.45	-6175.45	362.20	0.26	401897.09	565210.31	N 32 6 17.54	W 104 15 22.44
	15689.00	89.83	179.08	9683.68	6269.44	-6269.44	363.52	0.27	401893.11	565211.63	N 32 6 16.61	W 104 15 22.43
	15784.00	90.21	178.64	9683.65	6364.42	-6364.42	365.41	0.81	401706.14	565213.52	N 32 6 15.67	W 104 15 22.40
	15878.00	90.31	179.71	9683.22	6458.41	-6458.41	366.77	1.14	401614.16	565214.87	N 32 6 14.74	W 104 15 22.39
	15971.00	88.73	178.98	9684.00	6551.39	-6551.39	367.93	1.87	401521.18	565215.94	N 32 6 13.82	W 104 15 22.38
	16065.00	89.21	179.51	9685.69	6645.37	-6645.37	369.26	0.76	401427.21	565217.17	N 32 6 12.89	W 104 15 22.36
	16159.00	88.52	180.26	9687.55	6739.35	-6739.35	369.26	1.06	401333.24	565217.36	N 32 6 11.96	W 104 15 22.36
	16253.00	88.59	181.31	9689.92	6833.31	-6833.31	367.97	1.12	401239.29	565218.08	N 32 6 11.03	W 104 15 22.38
	16347.00	88.49	181.54	9692.32	6927.25	-6927.25	365.63	0.27	401145.36	565213.74	N 32 6 10.10	W 104 15 22.41
	16441.00	88.42	181.60	9694.85	7021.18	-7021.18	363.06	0.10	401051.44	565211.17	N 32 6 9.17	W 104 15 22.44
	16535.00	88.87	181.82	9697.08	7115.11	-7115.11	360.25	0.53	400957.51	565208.38	N 32 6 8.24	W 104 15 22.47
	16629.00	88.45	181.45	9699.28	7209.05	-7209.05	357.57	0.60	400863.59	565205.68	N 32 6 7.31	W 104 15 22.50
	16723.00	88.42	180.54	9701.84	7303.00	-7303.00	355.94	0.97	400769.65	565204.05	N 32 6 6.38	W 104 15 22.52
	16816.00	88.45	179.39	9704.38	7395.96	-7395.96	356.00	1.24	400676.69	565204.11	N 32 6 5.46	W 104 15 22.52
	16910.00	88.26	178.93	9707.06	7489.91	-7489.91	357.38	0.52	400582.75	565205.48	N 32 6 4.53	W 104 15 22.51
	17004.00	88.26	179.17	9709.89	7583.86	-7583.86	358.93	0.26	400488.81	565207.04	N 32 6 3.60	W 104 15 22.49
	17098.00	88.62	179.43	9712.43	7677.82	-7677.82	360.08	0.46	400394.88	565208.19	N 32 6 2.67	W 104 15 22.48
	17192.00	88.73	179.37	9714.60	7771.79	-7771.79	361.07	0.13	400300.90	565209.17	N 32 6 1.74	W 104 15 22.47
	17285.00	87.73	179.12	9717.47	7864.73	-7864.73	362.29	1.11	400207.96	565210.40	N 32 6 0.82	W 104 15 22.45
	17379.00	89.93	178.97	9719.39	7958.69	-7958.69	363.86	2.35	400114.01	565211.96	N 32 5 59.89	W 104 15 22.44
	17474.00	88.90	179.38	9720.36	8053.68	-8053.68	365.22	1.17	400019.04	565213.33	N 32 5 58.95	W 104 15 22.42
	17568.00	88.93	181.02	9722.14	8147.66	-8147.66	364.90	1.74	399925.06	565213.00	N 32 5 58.02	W 104 15 22.43
	17662.00	88.87	181.02	9723.95	8241.63	-8241.63	363.22	0.06	399831.11	565211.33	N 32 5 57.09	W 104 15 22.45
	17756.00	89.62	181.77	9725.19	8335.59	-8335.59	360.94	1.13	399737.15	565209.04	N 32 5 56.16	W 104 15 22.47
	17850.00	90.14	181.95	9725.38	8429.54	-8429.54	357.88	0.59	399643.21	565205.99	N 32 5 55.23	W 104 15 22.51
	17944.00	88.66	179.63	9726.37	8523.51	-8523.51	356.59	2.93	399549.24	565204.70	N 32 5 54.30	W 104 15 22.53
	18038.00	88.38	178.88	9728.80	8617.47	-8617.47	357.83	0.87	399455.29	565205.93	N 32 5 53.37	W 104 15 22.51
	18132.00	88.49	179.18	9731.36	8711.43	-8711.43	359.43	0.36	399361.35	565207.54	N 32 5 52.44	W 104 15 22.51
	18224.00	88.97	179.54	9733.40	8803.40	-8803.40	360.46	0.65	399269.38	565208.57	N 32 5 51.53	W 104 15 22.48
	18318.00	88.69	179.08	9735.32	8897.37	-8897.37	361.59	0.57	399175.42	565209.70	N 32 5 50.60	W 104 15 22.47
	18413.00	88.73	179.12	9737.46	8992.33	-8992.33	363.08	0.06	399080.47	565211.19	N 32 5 49.66	W 104 15 22.45
	18506.00	88.45	179.17	9739.75	9085.30	-9085.30	364.47	0.31	398987.51	565212.58	N 32 5 48.74	W 104 15 22.44
	18599.00	88.31	179.14	9742.38	9178.25	-9178.25	365.84	0.15	398894.57	565213.95	N 32 5 47.82	W 104 15 22.42
	18693.00	88.62	178.34	9744.90	9272.19	-9272.19	367.91	0.91	398800.63	565216.01	N 32 5 46.89	W 104 15 22.40
	18787.00	91.31	180.28	9747.95	9366.17	-9366.17	369.04	3.53	398706.66	565217.15	N 32 5 45.96	W 104 15 22.39
	18880.00	92.72	181.44	9751.68	9459.10	-9459.10	367.65	1.96	398613.74	565215.75	N 32 5 45.04	W 104 15 22.40
	18974.00	93.23	181.24	9756.81	9552.95	-9552.95	365.45	0.58	398519.91	565212.55	N 32 5 44.11	W 104 15 22.43
	19067.00	89.93	180.00	9764.24	9645.89	-9645.89	364.45	3.79	398426.97	565212.55	N 32 5 43.19	W 104 15 22.44
	19160.00	90.14	179.47	9774.18	9738.89	-9738.89	364.88	0.61	398333.98	565212.98	N 32 5 42.27	W 104 15 22.44
	19255.00	90.31	179.39	9783.61	9833.88	-9833.88	365.82	0.20	398238.99	565213.93	N 32 5 41.33	W 104 15 22.43
	19337.00	91.14	180.43	9792.77	9915.88	-9915.88	365.95	1.62	398157.01	565214.06	N 32 5 40.52	W 104 15 22.43
TD, project to bit	19380.00	91.14	180.43	9793.92	9958.87	-9958.87	365.63	0.00	398114.02	565213.73	N 32 5 40.10	W 104 15 22.43

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 Wigeon 23 Federal Com 4H Final
	1	24.000	24.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Wigeon 23 Federal Com 4H Final
	1	24.000	19380.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Wigeon 23 Federal Com 4H Final

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Wigeon 23 Federal Com 4H	NM Eddy County (NAD 83)	Cimarex Wigeon 23 Federal Com 4H

Gravity & Magnetic Parameters	Dip: 89.82°	Date: 23-Jun-2017	Survey Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Grid Conv: 0.0404°	Well Information	Well Name: Cimarex Wigeon 23 Federal Com 4H	TVD Ref: RKB(1306.18 above MSL)
Model: HDGM 2017	PR: 47889.092mT	Gravity PR: 980.43m/s² (9.80665 m/s²)	Lat: N 32 7 18.88	Morthing: 408071.877U.S	Scale Fact: 0.8999072	Plan:	Well Type: Cimarex Wigeon 23 Federal Com 4H Final	
Mag Dec: 7.483°			Lon: W 104 19 25.80	Bearing: 664548.147U.S				

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(=YS(=)	E(=YW(=)	DLS
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
First Taken Point	8195.00	1.52	185.87	8192.66	23.84	-23.84	87.81	0.14
TD, project to be	19380.00	91.14	180.43	9731.92	9958.87	-9958.87	365.63	0.00



Grid
True
Mag

Grid North
Tot Cor (M→G 7.442°)
Mag Dec (7.483°)
Grid Conv (0.040°)

CONTROLLED

Well Name	Cimarex Wigeon 23 Federal Com 4H Final
Well Type	Oil
Well Status	13-Jun-2017
Well Depth	
Well Diameter	
Well Completion	
Well Production	
Well Injection	
Well Monitoring	
Well Control	

