Provide Signature Page for Directional Survey

Schlumberger

OXY Patton MDP1 17 Federal 173H Gyro + MWD 0-16764' MD Survey

Geodetic Report

(Def Survey)

30-015-44991

Report Date:	September 22, 2018 - 07:39 AM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	OXY	Vertical Section Azimuth:	172.690 ° (Grid North)
Field:	NM Eddy County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Patton MDP1 17 Federal 173H / Patton MDP1 17 Federal 173H	TVD Reference Datum:	RKB=26.5'
Well:	Patton MDP1 17 Federal 173H	TVD Reference Elevation:	3558.200 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3531.700 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	6.862 °
Survey Name:	OXY Patton MDP1 17 Federal 173H Gyro + MWD 0-16764' MD	Total Gravity Field Strength:	998.4283mgn (9.80665 Based)
Survey Date:	September 13, 2018	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	227.237 ° / 6025.704 ft / 6.288 / 0.509	Total Magnetic Field Strength:	47977.689 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.952 °
Location Lat / Long:	N 32° 13' 24.83423", W 103° 48' 11.40676"	Declination Date:	September 13, 2018
Location Grid N/E Y/X:	N 445471.260 ftUS, E 705283.250 ftUS	Magnetic Declination Model:	HDGM 2018
CRS Grid Convergence Angle:	0.2827 °	North Reference:	Grid North
Grid Scale Factor:	0.99993987	Grid Convergence Used:	0.2827 °
Version / Patch:	2.10.740.0	Total Corr Mag North->Grid North:	6.5793 °
		Local Coord Referenced To:	Well Head

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 17 2018

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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 ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	445471.26	705283.25	N 32 13 24.83	W 103 48 11.41
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	445471.26	705283.25	N 32 13 24.83	W 103 48 11.41
	93.98	0.33	242.88	93.98	0.07	-0.09	-0.17	0.49	445471.17	705283.08	N 32 13 24.83	W 103 48 11.41
	152.69	0.43	261.88	152.69	0.13	-0.20	-0.54	0.27	445471.06	705282.71	N 32 13 24.83	W 103 48 11.41
	240.71	0.44	271.10	240.71	0.08	-0.24	-1.21	0.08	445471.02	705282.04	N 32 13 24.83	W 103 48 11.42
	331.91	0.20	9.18	331.90	-0.12	-0.07	-1.53	0.56	445471.19	705281.72	N 32 13 24.83	W 103 48 11.42
	426.46	0.24	351.72	426.45	-0.48	0.29	-1.53	0.08	445471.55	705281.72	N 32 13 24.84	W 103 48 11.42
	521.03	0.27	348.69	521.02	-0.90	0.70	-1.61	0.03	445471.96	705281.64	N 32 13 24.84	W 103 48 11.43
	615.62	0.38	334.33	615.61	-1.40	1.19	-1.78	0.13	445472.45	705281.47	N 32 13 24.85	W 103 48 11.43
Final Gyro	713.13	0.33	289.84	713.12	-1.82	1.56	-2.17	0.27	445472.82	705281.08	N 32 13 24.85	W 103 48 11.43
	812.00	0.03	159.94	811.99	-1.93	1.63	-2.43	0.35	445472.89	705280.82	N 32 13 24.85	W 103 48 11.43
	906.00	0.08	74.47	905.99	-1.91	1.62	-2.36	0.09	445472.88	705280.89	N 32 13 24.85	W 103 48 11.43
	1001.00	0.08	91.36	1000.99	-1.91	1.64	-2.23	0.02	445472.90	705281.02	N 32 13 24.85	W 103 48 11.43
	1095.00	0.08	269.82	1094.99	-1.91	1.64	-2.23	0.17	445472.90	705281.02	N 32 13 24.85	W 103 48 11.43
	1189.00	0.08	193.37	1188.99	-1.86	1.58	-2.31	0.11	445472.83	705280.94	N 32 13 24.85	W 103 48 11.43
	1283.00	0.08	1.08	1282.99	-1.86	1.58	-2.33	0.17	445472.84	705280.92	N 32 13 24.85	W 103 48 11.43
	1377.00	0.08	20.91	1376.99	-1.98	1.70	-2.30	0.03	445472.96	705280.95	N 32 13 24.85	W 103 48 11.43
	1473.00	0.08	14.49	1472.99	-2.10	1.83	-2.26	0.01	445473.09	705280.99	N 32 13 24.85	W 103 48 11.43
	1567.00	0.08	234.35	1566.99	-2.13	1.86	-2.30	0.16	445473.12	705280.95	N 32 13 24.85	W 103 48 11.43
	1662.00	0.08	26.58	1661.99	-2.16	1.88	-2.32	0.16	445473.14	705280.93	N 32 13 24.85	W 103 48 11.43
	1851.00	0.08	11.94	1850.99	-2.39	2.12	-2.24	0.01	445473.38	705281.01	N 32 13 24.86	W 103 48 11.43
	1945.00	0.08	58.78	1944.99	-2.48	2.22	-2.17	0.07	445473.46	705281.08	N 32 13 24.86	W 103 48 11.43
	2040.00	0.08	106.45	2039.99	-2.48	2.24	-2.05	0.07	445473.50	705281.20	N 32 13 24.86	W 103 48 11.43
	2229.00	0.08	129.18	2228.99	-2.33	2.12	-1.82	0.02	445473.38	705281.43	N 32 13 24.86	W 103 48 11.43
	2329.00	0.08	329.41	2328.99	-2.34	2.13	-1.80	0.16	445473.39	705281.45	N 32 13 24.86	W 103 48 11.43
	2423.00	0.09	197.96	2422.99	-2.34	2.12	-1.85	0.16	445473.38	705281.40	N 32 13 24.86	W 103 48 11.43
	2518.00	0.08	290.04	2517.99	-2.30	2.07	-1.94	0.13	445473.33	705281.31	N 32 13 24.85	W 103 48 11.43
	2612.00	0.08	81.57	2611.99	-2.33	2.10	-1.94	0.18	445473.36	705281.31	N 32 13 24.86	W 103 48 11.43
	2707.00	0.08	130.33	2706.99	-2.29	2.07	-1.82	0.07	445473.33	705281.43	N 32 13 24.85	W 103 48 11.43
	2801.00	0.14	177.05	2800.99	-2.12	1.91	-1.76	0.11	445473.17	705281.49	N 32 13 24.85	W 103 48 11.43
	2896.00	0.03	285.90	2895.99	-2.02	1.80	-1.78	0.18	445473.06	705281.47	N 32 13 24.85	W 103 48 11.43
	2990.00	0.07	160.63	2989.99	-1.97	1.76	-1.79	0.10	445473.02	705281.46	N 32 13 24.85	W 103 48 11.43
	3085.00	0.03	252.92	3084.99	-1.91	1.69	-1.79	0.08	445472.95	705281.46	N 32 13 24.85	W 103 48 11.43
	3179.00	0.08	353.14	3178.99	-1.97	1.75	-1.82	0.10	445473.01	705281.43	N 32 13 24.85	W 103 48 11.43
	3274.00	0.03	39.60	3273.99	-2.05	1.84	-1.82	0.07	445473.10	705281.43	N 32 13 24.85	W 103 48 11.43
	3369.00	0.05	183.61	3368.99	-2.03	1.82	-1.79	0.08	445473.08	705281.46	N 32 13 24.85	W 103 48 11.43
	3558.00	0.14	270.93	3557.99	-1.98	1.74	-2.00	0.09	445473.00	705281.25	N 32 13 24.85	W 103 48 11.43
	3652.00	0.09	132.79	3651.99	-1.94	1.69	-2.06	0.23	445472.95	705281.19	N 32 13 24.85	W 103 48 11.43
	3747.00	0.11	287.93	3746.99	-1.92	1.67	-2.09	0.21	445472.93	705281.16	N 32 13 24.85	W 103 48 11.43
	3841.00	0.08	219.60	3840.99	-1.92	1.65	-2.22	0.12	445472.91	705281.03	N 32 13 24.85	W 103 48 11.43
	4036.00	0.08	148.05	4035.99	-1.70	1.43	-2.23	0.05	445472.69	705281.02	N 32 13 24.85	W 103 48 11.43
	4130.00	0.14	95.18	4129.99	-1.62	1.36	-2.08	0.12	445472.62	705281.17	N 32 13 24.85	W 103 48 11.43
	4224.00	0.03	250.93	4223.99	-1.59	1.34	-1.99	0.18	445472.60	705281.26	N 32 13 24.85	W 103 48 11.43
	4319.00	0.08	5.29	4318.99	-1.64	1.40	-2.01	0.10	445472.66	705281.24	N 32 13 24.85	W 103 48 11.43
	4414.00	0.03	106.84	4413.99	-1.69	1.44	-2.01	0.12	445472.70	705281.24	N 32 13 24.85	W 103 48 11.43
	4508.00	0.08	148.99	4507.99	-1.60	1.36	-1.98	0.07	445472.62	705281.27	N 32 13 24.85	W 103 48 11.43
	4603.00	0.08	30.39	4602.99	-1.60	1.36	-1.91	0.14	445472.62	705281.34	N 32 13 24.85	W 103 48 11.43
	4697.00	0.08	198.75	4696.99	-1.59	1.36	-1.90	0.17	445472.62	705281.35	N 32 13 24.85	W 103 48 11.43
	4792.00	0.08	80.41	4791.99	-1.53	1.31	-1.86	0.14	445472.57	705281.39	N 32 13 24.85	W 103 48 11.43
	4981.00	0.09	241.80	4980.99	-1.48	1.26	-1.86	0.09	445472.52	705281.39	N 32 13 24.85	W 103 48 11.43
	5078.00	0.03	85.28	5075.99	-1.47	1.23	-1.90	0.13	445472.49	705281.35	N 32 13 24.85	W 103 48 11.43
	5170.00	0.95	42.41	5169.98	-1.98	1.82	-1.35	0.98	445473.08	705281.90	N 32 13 24.85	W 103 48 11.42
	5264.00	2.26	32.47	5263.94	-3.90	3.96	0.17	1.42	445475.22	705283.42	N 32 13 24.87	W 103 48 11.40
	5339.00	3.42	35.19	5338.85	-6.69	7.03	2.25	1.56	445478.29	705285.50	N 32 13 24.90	W 103 48 11.38
	5548.00	5.77	34.46	5547.16	-19.12	20.79	11.79	1.12	445492.05	705295.04	N 32 13 25.04	W 103 48 11.27
	5642.00	7.33	34.59	5640.55	-27.11	29.63	17.87	1.66	445500.88	705301.12	N 32 13 25.13	W 103 48 11.20
	5736.00	8.33	33.18	5733.67	-36.75	40.26	25.00	1.08	445511.52	705308.25	N 32 13 25.23	W 103 48 11.11
	5831.00	8.79	33.27	5827.61	-47.50	52.09	32.75	0.48	445523.35	705315.99	N 32 13 25.35	W 103 48 11.02
	5925.00	8.90	33.56	5920.49	-58.45	64.15	40.71	0.13	445535.41	705323.95	N 32 13 25.47	W 103 48 10.93
	6020.00	8.80	31.21	6014.39	-69.57	76.35	48.45	0.49	445547.61	705331.70	N 32 13 25.59	W 103 48 10.84
	6209.00	8.98	32.10	6201.17	-92.02	100.93	63.61	0.21	445572.19	705346.86	N 32 13 25.83	W 103 48 10.66
	6303.00	9.01	32.10	6294.01	-103.38	113.38	71.42	0.03	445584.64	705354.66	N 32 13 25.95	W 103 48 10.57
	6398.00	9.48	32.12	6387.78	-115.17	126.31	79.53	0.49	445597.56	705362.78	N 32 13 26.08	W 103 48 10.47
	6492.00	9.41	31.78	6480.50	-127.11	139.40	87.69	0.10	445610.65	705370.94	N 32 13 26.21	W 103 48 10.38
	6586.00	9.05	30.76	6573.29	-138.90	152.29	95.52	0.42	445623.54	705378.76	N 32 13 26.34	W 103 48 10.29
	6681.00	9.06	29.27	6667.10	-150.79	165.23	103.00	0.25	445636.48	705386.24	N 32 13 26.46	W 103 48 10.20
	6775.00	9.15	26.29	6759.92	-162.95	178.39	109.93	0.51	445649.64	705393.17	N 32 13 26.59	W 103 48 10.12
	6870.00	9.01	25.15	6853.73	-175.52	191.90	116.43	0.24	445663.15	705399.67	N 32 13 26.73	W 103 48 10.04
	6964.00	8.94	23.39	6946.58	-188.01	205.26	122.46	0.30	445676.51	705405.70	N 32 13 26.86	W 103 48 9.97
	7059.00	9.19	19.94	7040.39	-201.10	219.17	127.98	0.63	445690.42	705411.22	N 32 13 27.00	W 103 48 9.90
	7153.00	8.99	18.73	7133.21	-214.38	233.16	132.90	0.29	445704.43	705416.14	N 32 13 27.14	W 103 48 9.85
	7342.00	9.39	17.31	7319.79	-241.66	261.89	142.23	0.24	445733.13	705425.47	N 32 13 27.42	W 103 48 9.74
	7436.00	9.25	16.87	7412.54	-255.52	276.44	146.70	0.17	445747.68	705429.94	N 32 13 27.56	W 103 48 9.68
	7531.00	9.11	15.41	7506.33	-269.43	290.99	150.91	0.29	445762.24	705434.15	N 32 13 27.71	W 103 48 9.63
	7625.00	9.37	14.81	7599.11	-283.38	305.57	154.85	0.29	445776.81	705438.09	N 32 13 27.85	W 103 48 9.59
	7814.00	9.39	16.34	7785.58	-311.76	335.24	163.12	0.13	445806.47	705446.36	N 32 13 28.14	W 103 48 9.49
	7909.00	9.30	18.20	7879.32	-325.78	349.98	167.69	0.33	445821.20	705450.93	N 32 13 28.29	W 103 48 9.43
	8003.00	8.87	15.70	7972.14	-339.31	364.18	172.03	0.62	445835.39	705455.27	N 32 13 28.43	W 103 48 9.38

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 ° ')
	8098.00	8.83	15.59	8068.01	-352.77	378.23	175.97	0.05	445849.47	705459.21	N 32 13 28.57	W 103 48 9.34
	8192.00	7.99	17.74	8159.00	-365.33	391.40	179.90	0.95	445862.84	705463.14	N 32 13 28.70	W 103 48 9.29
	8287.00	6.72	31.52	8253.22	-375.64	402.43	184.82	2.28	445873.67	705468.06	N 32 13 28.81	W 103 48 9.23
	8381.00	4.84	48.35	8346.75	-382.28	409.86	190.56	2.54	445881.09	705473.80	N 32 13 28.88	W 103 48 9.16
	8476.00	3.72	47.27	8441.48	-386.44	414.72	195.73	1.18	445885.95	705478.96	N 32 13 28.93	W 103 48 9.10
	8570.00	3.71	35.62	8535.28	-390.43	419.28	199.74	0.80	445890.49	705482.98	N 32 13 28.97	W 103 48 9.06
	8665.00	3.85	354.72	8630.09	-395.67	424.93	201.24	2.78	445896.17	705484.47	N 32 13 29.03	W 103 48 9.04
	8760.00	4.91	338.97	8724.84	-401.90	430.55	197.69	3.67	445901.79	705480.93	N 32 13 29.08	W 103 48 9.08
	8854.00	5.62	275.55	8818.47	-405.73	433.42	189.90	3.12	445904.65	705473.13	N 32 13 29.11	W 103 48 9.17
	8949.00	6.79	258.65	8912.92	-406.18	432.57	179.80	2.40	445903.81	705463.04	N 32 13 29.11	W 103 48 9.29
	9044.00	7.44	258.56	9007.19	-404.93	429.85	168.35	0.68	445901.08	705451.59	N 32 13 29.08	W 103 48 9.42
	9138.00	8.47	267.58	9100.29	-404.87	428.14	155.52	1.95	445899.37	705438.76	N 32 13 29.08	W 103 48 9.57
	9232.00	6.87	284.01	9193.23	-406.10	429.60	141.57	2.68	445900.83	705424.81	N 32 13 29.08	W 103 48 9.73
	9327.00	7.21	299.30	9287.30	-414.32	434.29	129.28	2.84	445905.53	705412.50	N 32 13 29.13	W 103 48 9.88
	9421.00	4.08	330.86	9380.85	-420.94	440.10	122.48	4.57	445911.34	705405.73	N 32 13 29.18	W 103 48 9.96
	9519.00	4.18	19.59	9478.63	-427.35	446.50	121.98	3.47	445917.73	705405.22	N 32 13 29.25	W 103 48 9.96
	9614.00	5.77	41.81	9573.28	-433.55	453.31	126.32	2.61	445924.54	705409.56	N 32 13 29.31	W 103 48 9.91
	9708.00	6.79	47.27	9666.71	-439.86	460.60	133.55	1.26	445931.83	705416.79	N 32 13 29.39	W 103 48 9.83
	9803.00	8.28	53.95	9760.69	-446.41	468.44	143.21	1.82	445939.67	705426.45	N 32 13 29.46	W 103 48 9.71
	9897.00	6.79	52.60	9854.08	-452.43	475.78	153.10	1.59	445947.01	705436.34	N 32 13 29.53	W 103 48 9.60
	9992.00	6.24	52.33	9948.46	-457.84	482.33	161.68	0.58	445953.56	705444.90	N 32 13 29.60	W 103 48 9.50
	10089.00	6.04	58.50	10041.92	-462.45	488.04	169.92	0.73	445959.27	705453.18	N 32 13 29.66	W 103 48 9.40
	10181.00	7.10	70.12	10130.30	-465.77	492.64	179.71	1.78	445963.87	705462.95	N 32 13 29.70	W 103 48 9.29
	10275.00	7.98	77.21	10229.49	-467.68	496.08	191.52	1.35	445967.29	705474.76	N 32 13 29.73	W 103 48 9.15
	10370.00	8.04	89.60	10323.58	-467.49	497.56	204.58	1.81	445968.79	705487.82	N 32 13 29.75	W 103 48 9.00
	10464.00	8.84	94.54	10418.58	-465.21	497.04	218.35	1.15	445968.27	705501.59	N 32 13 29.74	W 103 48 8.84
	10559.00	10.45	100.30	10510.22	-461.11	494.92	234.11	1.97	445966.15	705517.34	N 32 13 29.72	W 103 48 8.65
	10653.00	9.25	101.95	10602.83	-456.04	491.83	249.89	1.31	445963.06	705533.12	N 32 13 29.69	W 103 48 8.47
	10748.00	7.57	99.49	10696.60	-451.71	489.22	263.53	1.81	445960.45	705546.76	N 32 13 29.66	W 103 48 8.31
	10842.00	6.60	114.74	10790.09	-447.05	485.94	274.54	2.24	445957.18	705557.78	N 32 13 29.63	W 103 48 8.18
	11000.00	5.53	130.04	10947.22	-436.63	477.24	288.02	1.22	445948.47	705571.85	N 32 13 29.54	W 103 48 8.02
KOP Actual	11160.00	4.94	143.08	11106.47	-423.52	465.46	299.92	0.74	445936.69	705583.15	N 32 13 29.43	W 103 48 7.89
	11274.00	10.26	143.69	11219.61	-412.67	455.47	307.31	5.68	445926.70	705590.54	N 32 13 29.33	W 103 48 7.80
	11369.00	20.55	150.15	11311.08	-389.81	434.13	320.65	10.96	445905.37	705603.89	N 32 13 29.11	W 103 48 7.65
	11464.00	32.59	144.31	11395.91	-351.75	398.78	343.97	12.95	445869.99	705627.20	N 32 13 28.76	W 103 48 7.38
	11558.00	41.72	138.96	11470.77	-303.35	354.50	379.36	10.30	445825.74	705662.59	N 32 13 28.32	W 103 48 6.97
Wolfcamp Intersection	*11633.00*	*48.05*	*138.40*	*11523.88*	*-259.50*	*314.78*	*414.30*	*8.46*	*445786.02*	*705697.52*	*N 32 13 27.93*	*W 103 48 6.57*
	11652.00	49.66	138.28	11536.38	-247.69	304.09	423.81	8.46	445775.33	705707.03	N 32 13 27.82	W 103 48 6.46
	11747.00	51.40	142.97	11596.78	-185.56	247.40	470.28	4.23	445718.65	705753.50	N 32 13 27.26	W 103 48 5.92
	11841.00	52.06	152.41	11655.08	-118.79	185.14	509.62	7.91	445658.39	705792.84	N 32 13 26.64	W 103 48 5.46
	11936.00	61.24	163.10	11707.38	-42.28	111.79	539.20	13.48	445583.05	705822.42	N 32 13 25.91	W 103 48 5.12
Top Perf Cross	*12022.00*	*69.59*	*168.24*	*11743.13*	*35.25*	*36.10*	*558.41*	*11.12*	*445507.35*	*705841.63*	*N 32 13 25.16*	*W 103 48 4.90*
	12030.00	70.37	168.69	11745.87	42.74	28.73	559.92	11.12	445499.99	705843.13	N 32 13 25.09	W 103 48 4.89
	12125.00	81.58	171.76	11768.86	134.67	-61.95	575.48	12.21	445409.31	705858.69	N 32 13 24.19	W 103 48 4.71
	12215.00	88.53	176.64	11778.19	224.10	-150.06	584.50	7.70	445320.31	705867.71	N 32 13 23.31	W 103 48 4.61
	12272.00	88.21	178.49	11781.60	280.78	-207.79	588.92	3.29	445263.49	705870.13	N 32 13 22.75	W 103 48 4.59
	12330.00	88.86	179.74	11784.29	338.35	-265.72	587.81	5.05	445205.58	705871.03	N 32 13 22.18	W 103 48 4.58
	12462.00	90.61	179.96	11784.90	469.32	-397.71	588.18	1.34	445073.57	705871.37	N 32 13 20.87	W 103 48 4.58
	12558.00	90.78	180.73	11783.76	562.47	-491.70	587.59	0.84	444979.59	705870.81	N 32 13 19.94	W 103 48 4.60
	12651.00	90.51	180.81	11782.69	656.52	-586.69	586.32	0.30	444884.61	705869.53	N 32 13 19.00	W 103 48 4.62
	12745.00	90.58	181.23	11781.80	749.53	-680.67	584.64	0.45	444790.63	705867.86	N 32 13 18.07	W 103 48 4.64
	12840.00	89.44	180.22	11781.78	843.59	-775.66	583.44	1.60	444695.65	705866.65	N 32 13 17.13	W 103 48 4.66
	12934.00	88.27	180.88	11783.66	936.69	-869.63	582.55	1.42	444601.68	705865.77	N 32 13 16.20	W 103 48 4.68
	13029.00	87.72	181.06	11788.98	1030.64	-964.56	580.96	0.62	444506.76	705864.18	N 32 13 15.26	W 103 48 4.70
	13123.00	88.62	181.16	11793.98	1123.58	-1058.50	579.14	0.96	444412.83	705862.36	N 32 13 14.33	W 103 48 4.73
	13218.00	87.85	180.85	11799.08	1217.53	-1153.43	577.48	1.07	444317.90	705860.69	N 32 13 13.39	W 103 48 4.75
	13313.00	88.45	180.53	11796.31	1311.55	-1248.37	576.33	0.91	444222.97	705859.55	N 32 13 12.45	W 103 48 4.77
	13407.00	87.86	182.00	11799.33	1404.45	-1342.29	574.29	1.68	444129.05	705857.48	N 32 13 11.52	W 103 48 4.80
	13598.00	87.72	180.27	11806.62	1591.26	-1531.11	570.52	0.92	443940.25	705853.73	N 32 13 9.66	W 103 48 4.85
	13690.00	87.89	181.37	11810.22	1684.24	-1625.03	569.18	1.18	443846.33	705852.39	N 32 13 8.73	W 103 48 4.87
	13860.00	87.93	180.64	11817.15	1872.07	-1814.87	565.51	0.28	443658.51	705848.73	N 32 13 6.85	W 103 48 4.93
	13974.00	88.76	180.88	11819.87	1965.08	-1908.81	564.10	0.88	443562.56	705847.32	N 32 13 5.92	W 103 48 4.95
	14069.00	87.59	179.36	11822.89	2059.23	-2003.76	563.90	2.02	443467.62	705847.12	N 32 13 4.98	W 103 48 4.96
	14258.00	87.76	177.38	11830.56	2247.14	-2192.52	569.31	1.06	443278.88	705852.52	N 32 13 3.11	W 103 48 4.91
	14352.00	88.34	178.99	11833.70	2340.65	-2286.41	572.30	1.84	443184.99	705855.52	N 32 13 2.18	W 103 48 4.88
	14447.00	90.47	179.44	11834.75	2435.02	-2381.39	573.60	2.29	443090.01	705856.82	N 32 13 1.24	W 103 48 4.87
	14541.00	91.47	178.16	11833.16	2528.47	-2475.36	575.57	1.73	442996.06	705858.78	N 32 13 0.31	W 103 48 4.85
	14638.00	91.30	178.73	11830.86	2622.97	-2570.29	578.15	0.83	442901.13	705861.36	N 32 12 59.37	W 103 48 4.82
	14730.00	90.34	177.83	11829.51	2716.52	-2664.23	581.13	1.55	442807.19	705864.35	N 32 12 58.44	W 103 48 4.80
	14920.00	91.51	177.56	11826.45	2905.80	-2854.04	589.10	0.62	442617.40	705872.32	N 32 12 56.56	W 103 48 4.71
	15109.00	91.47	178.65	11821.53	3093.89	-3042.87	595.35	0.58	442428.58	705878.56	N 32 12 54.70	W 103 48 4.65
	15298.00	90.54	178.08	11818.22	3281.93	-3231.76	600.74	0.58	442239.70	705883.96	N 32 12 52.83	W 103 48 4.60
	15393.00	90.51	179.08	11817.35	3376.42	-3326.73	603.10	1.05	442144.74	705886.31	N 32 12 51.89	W 103 48 4.58
	15582.00	89.89	178.90	11816.69	3564.28	-3515.69	606.43	0.34	441955.78	705889.64	N 32 12 50.02	W 103 48 4.55
	15676.00	90.13	177.95	11816.67	3657.81	-3609.66	609.01	1.04	441861.83	705892.22	N 32 12 49.09	W 103 48 4.53
	15866.00	89.82	178.40	11817.08	3846.94	-3799.58	615.06	0.30	441671.94	705898.28	N 32 12 47.21	W 103 48 4.47
	16055.00	90.23	178.51	11817.33	4034.88	-3988.49	620.16	0.33	441483.02	705903.37	N 32 12 45.34	W 103 48 4.42
	16244.00	90.10	175.65	11816.79	4223.36	-4177.24	629.46	1.41	441294.26	705912.67	N 32 12 43.47	W 103 48 4.32
	16338.00	89.92	180.48	11816.77	4316.93	-4271.17	632.48	4.91	441200.36	705915.69	N 32 12 42.54	W 103 48 4.29
	16528.00	90.44	180.43	11816.17	4505.19	-4461.16	631.01	0.27	441010.38	705914.22	N 32 12 40.66	W 103 48 4.32
	16623.00	90.44	180.10	11815.45	4599.36	-4556.16	630.57	0.35	440915.39	705913.78	N 32 12 39.72	W 103 48 4.33
Bottom Perf Cross	*16630.00*	*90.39*	*180.19*	*11815.39*	*4606.30*	*-4563.16*	*630.55*	*1.50*	*440908.39*	*705913.76*	*N 32 12 39.65*	*W 103 48 4.33*
Final MWD Survey Proj to Bit	16718.00	89.75	181.35	11815.29	4693.42	-4651.15	-629.37	1.50	440820.40	705912.58	N 32 12 38.78	W 103 48 4.35
	16764.00	89.75	181.35	11815.49	4738.90	-4697.13	628.28	0.00	440774.42	705911.49	N 32 12 38.33	W 103 48 4.36

Survey Type: Def Survey

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / OXY Patton MDP1 17 Federal 173H Gyro + MWD 0-16764' MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / OXY Patton MDP1 17 Federal 173H Gyro + MWD 0-16764' MD
	1	26.500	713.130	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / OXY Patton MDP1 17 Federal 173H Gyro +
	1	713.130	16764.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / OXY Patton MDP1 17 Federal 173H Gyro +

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
Original Borehole	Patton MDP1 17 Federal 173H	NM Eddy County (NAD 83)	Oxy Patton MDP1 17 Federal 173H

Gravity & Magnetic Parameters

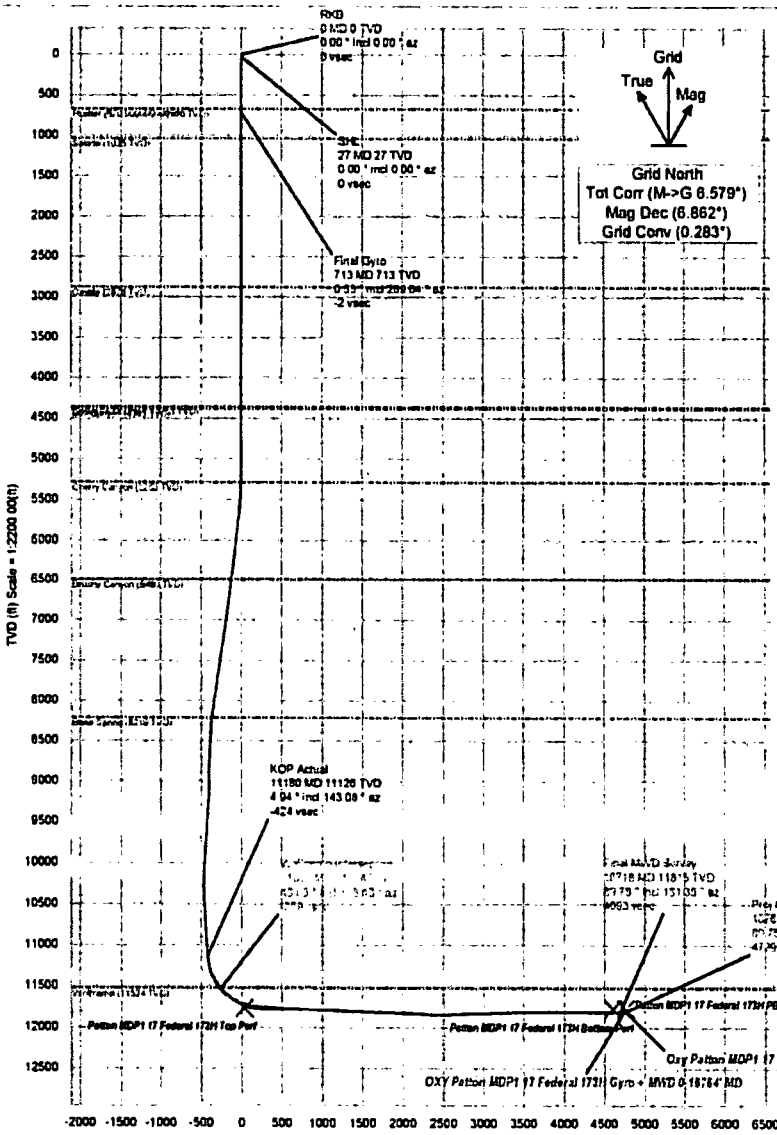
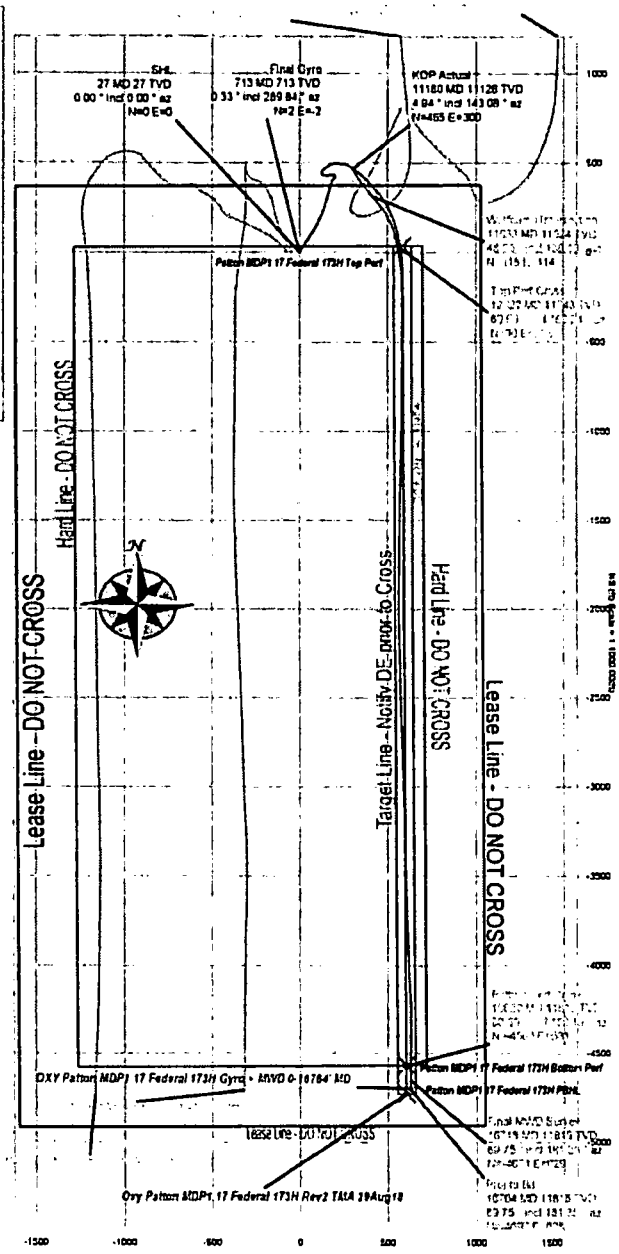
Model: HDGM 2018 Dip: 59.963° Date: 15-Sep-2018
MagDec: 6.862° FS: 47977.685nT Gravity FS: 998.429mgn (9.80665 Based)

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet

Lat: N 32 15 34.63 Northing: 446471.295US Grid Conv: 0.2827°
Lon: W 103 48 11.41 Easting: 706293.25US Scale Fact: 0.9999 2287

Miscellaneous

Slot: Patton MDP1 17 Federal 173H TVD Ref: RKB=26.5'(3588.29 above MSL)
Plan: OXY Patton MDP1 17 Federal 173H Gyro + MWD 0-16764' MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00
Final Gyro	713.13	0.33	289.84	713.12	-1.82	1.56	-2.17	0.27
KOP Actual	11180.00	4.94	143.08	11126.47	-423.52	465.46	299.92	0.74
KOP Actual	11180.00	4.94	143.08	11126.47	-423.52	465.46	299.92	0.74
Wolfcamp Intersection	11633.00	46.05	138.40	11523.88	-259.50	314.78	414.30	8.48
Top Perf Cross	12022.00	69.59	168.24	11743.13	35.25	38.10	558.41	11.12
Bottom Perf Cross	16830.00	90.39	180.19	11815.39	4606.30	-4563.16	630.55	1.50
Final MWD Survey	16718.00	89.75	181.35	11815.29	4693.42	-4651.15	629.37	1.50
Proj to Bit	16764.00	89.75	181.35	11815.49	4738.90	-4697.13	628.28	0.00