Oilfield Services, Central U S Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

30-015-44318

Well Reference:

32.22367 -103.81525

I, Rasheed Atanda certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 10, 2017 through October 17, 2017, conduct or supervise the taking of the SlimPulse surveys from a depth of 10515.00 feet to a depth of 15751.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA INC. for the Patton MDP1 18 Federal 73H Well (Original Hole) API No. 30-015-44318 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Rasheed Atanda
FE

Subscribed and Sworn to before me this 23 day of October (month) 2017 (yr)

My Commission expires:
12-20-2020

JAllemand
Notary Public
(signature)

JENNIFER ALLEMAND
Notary Public
State of Colorado
Notary ID # 20164047962
My Commission Expires 12-20-2020

Adams County Colorado
(County State)

Schlumberger

Oxy Patton MDP1 18 Federal 73H Gyro+MWD 0-15,810' Survey Geodetic Report

(Def Survey)

Report Date:	October 18, 2017 - 09:34 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	181.771 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Patton MDP1 18 Federal 73H / Oxy Patton MDP1 18 Federal 73H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Patton MDP1 18 Federal 73H	**TVD Reference Elevation:**	3559.800 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3533.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.963 °
Survey Name:	Oxy Patton MDP1 18 Federal 73H Gyro+MWD 0-15,810'	**Total Gravity Field Strength:**	998.4277mgn (9.80665 Based)
Survey Date:	October 05, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	233.394 ° / 5413.472 ft / 6.252 / 0.484	**Total Magnetic Field Strength:**	48086.082 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.991 °
Location Lat / Long:	N 32° 13' 25.21754", W 103° 48' 54.56233"	**Declination Date:**	October 05, 2017
Location Grid N/E Y/X:	N 445491.910 ftUS, E 701576.010 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.2763 °	**North Reference:**	Grid North
Grid Scale Factor:	0.9999385	**Grid Convergence Used:**	0.2763 °
Version / Patch:	2.10.565.0	**Total Corr Mag North->Grid North:**	6.6865 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	445491.91	701576.01	N 32 13 25.22	W 103 48 54.56
RKB	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	445491.91	701576.01	N 32 13 25.22	W 103 48 54.56
	162.00	0.83	232.82	162.00	0.62	-0.59	-0.78	0.61	445491.32	701575.23	N 32 13 25.21	W 103 48 54.57
	593.00	0.61	83.45	592.98	2.25	-2.22	-0.99	0.32	445489.69	701575.02	N 32 13 25.20	W 103 48 54.57
	725.00	0.91	244.85	724.98	2.62	-2.58	-1.24	1.14	445489.33	701574.77	N 32 13 25.19	W 103 48 54.58
	848.00	0.93	254.99	847.96	3.35	-3.26	-3.09	0.13	445488.65	701572.92	N 32 13 25.19	W 103 48 54.60
	909.00	0.83	253.30	908.95	3.63	-3.51	-3.99	0.17	445488.40	701572.02	N 32 13 25.18	W 103 48 54.61
	1059.00	1.12	240.55	1058.93	4.74	-4.55	-6.31	0.24	445487.37	701569.70	N 32 13 25.17	W 103 48 54.64
	1240.00	1.16	247.04	1239.90	6.42	-6.13	-9.53	0.07	445485.78	701566.48	N 32 13 25.16	W 103 48 54.67
	1330.00	1.18	252.62	1329.88	7.11	-6.76	-11.26	0.13	445485.15	701564.75	N 32 13 25.15	W 103 48 54.69
	1419.00	0.13	277.54	1418.87	7.40	-7.02	-12.23	1.19	445484.89	701563.78	N 32 13 25.15	W 103 48 54.71
	1510.00	0.68	94.97	1509.87	7.42	-7.06	-11.80	0.89	445484.86	701564.21	N 32 13 25.15	W 103 48 54.70
	1600.00	1.76	98.01	1599.85	7.60	-7.29	-9.90	1.20	445484.62	701566.11	N 32 13 25.15	W 103 48 54.68
	1690.00	1.36	88.49	1689.81	7.69	-7.46	-7.46	0.53	445484.45	701568.55	N 32 13 25.14	W 103 48 54.65
	1781.00	1.24	75.57	1780.79	7.35	-7.18	-5.43	0.35	445484.73	701570.58	N 32 13 25.15	W 103 48 54.63
	1872.00	1.43	95.16	1871.77	7.14	-7.04	-3.34	0.54	445484.87	701572.67	N 32 13 25.15	W 103 48 54.60
	1966.00	1.32	93.62	1965.74	7.25	-7.22	-1.09	0.12	445484.69	701574.92	N 32 13 25.15	W 103 48 54.58
	2156.00	1.19	100.99	2155.69	7.63	-7.73	3.03	0.11	445484.18	701579.04	N 32 13 25.14	W 103 48 54.53
	2250.00	1.23	103.13	2249.67	7.99	-8.15	4.97	0.06	445483.77	701580.98	N 32 13 25.14	W 103 48 54.50
	2345.00	0.76	113.74	2344.66	8.42	-8.63	6.54	0.53	445483.28	701582.55	N 32 13 25.13	W 103 48 54.49
	2440.00	0.56	121.52	2439.65	8.89	-9.13	7.51	0.23	445482.78	701583.52	N 32 13 25.13	W 103 48 54.48
	2534.00	0.34	81.20	2533.65	9.07	-9.32	8.18	0.40	445482.59	701584.19	N 32 13 25.12	W 103 48 54.47
	2629.00	0.28	36.69	2628.65	8.82	-9.09	8.59	0.25	445482.82	701584.60	N 32 13 25.13	W 103 48 54.46
	2724.00	0.67	35.64	2723.64	8.17	-8.46	9.06	0.41	445483.45	701585.07	N 32 13 25.13	W 103 48 54.46
	2818.00	0.63	18.57	2817.64	7.22	-7.52	9.54	0.21	445484.39	701585.55	N 32 13 25.14	W 103 48 54.45
	2913.00	0.73	5.58	2912.63	6.12	-6.42	9.77	0.19	445485.49	701585.78	N 32 13 25.15	W 103 48 54.45
	3008.00	1.13	341.66	3007.62	4.64	-4.93	9.53	0.58	445486.98	701585.54	N 32 13 25.17	W 103 48 54.45
	3102.00	1.98	351.90	3101.58	2.16	-2.44	9.01	0.95	445489.47	701585.02	N 32 13 25.19	W 103 48 54.46
	3181.00	1.98	351.90	3180.54	-0.52	0.26	8.63	0.00	445492.17	701584.64	N 32 13 25.22	W 103 48 54.46
	3197.00	1.86	351.92	3196.53	-1.05	0.79	8.55	0.75	445492.70	701584.56	N 32 13 25.22	W 103 48 54.46
	3292.00	1.48	352.40	3291.49	-3.78	3.53	8.17	0.40	445495.44	701584.18	N 32 13 25.25	W 103 48 54.47
	3386.00	1.34	326.32	3385.46	-5.87	5.65	7.40	0.69	445497.56	701583.41	N 32 13 25.27	W 103 48 54.48
	3481.00	1.64	297.96	3480.43	-7.38	7.21	5.58	0.83	445499.12	701581.59	N 32 13 25.29	W 103 48 54.50
	3576.00	1.10	78.60	3575.42	-8.19	8.03	5.28	2.72	445499.94	701581.29	N 32 13 25.30	W 103 48 54.50
	3671.00	3.65	114.62	3670.33	-7.22	6.95	8.92	2.98	445498.86	701584.93	N 32 13 25.29	W 103 48 54.46
	3860.00	4.19	120.65	3858.89	-1.55	0.92	20.33	0.36	445492.83	701596.34	N 32 13 25.23	W 103 48 54.33
	3955.00	4.97	129.85	3953.59	2.66	-3.48	26.48	1.13	445488.43	701602.48	N 32 13 25.18	W 103 48 54.25
	4050.00	6.21	144.17	4048.14	9.27	-10.29	32.64	1.96	445481.62	701608.65	N 32 13 25.11	W 103 48 54.18
First Gyro	4122.07	6.37	141.75	4119.77	15.42	-16.59	37.40	0.43	445475.32	701613.41	N 32 13 25.05	W 103 48 54.13
	4216.81	5.38	154.42	4214.02	23.39	-24.72	42.57	1.72	445467.19	701618.58	N 32 13 24.97	W 103 48 54.07
	4311.53	4.11	155.52	4308.41	30.38	-31.82	45.90	1.34	445460.10	701621.90	N 32 13 24.90	W 103 48 54.03
	4406.21	3.86	157.93	4402.86	36.34	-37.86	48.50	0.32	445454.06	701624.51	N 32 13 24.84	W 103 48 54.00
	4501.00	2.81	148.03	4497.49	41.19	-42.79	50.93	1.26	445449.13	701626.94	N 32 13 24.79	W 103 48 53.97
	4595.73	2.04	151.53	4592.14	44.58	-46.24	52.96	0.83	445445.68	701628.97	N 32 13 24.76	W 103 48 53.95
	4690.36	1.26	157.81	4686.73	46.98	-48.68	54.16	0.84	445443.23	701630.16	N 32 13 24.73	W 103 48 53.93
	4784.83	0.20	144.58	4781.19	48.07	-49.78	54.65	1.13	445442.14	701630.65	N 32 13 24.72	W 103 48 53.93
	4879.54	0.13	27.28	4875.90	48.10	-49.82	54.79	0.30	445442.10	701630.80	N 32 13 24.72	W 103 48 53.93
	4974.35	0.06	291.47	4970.71	47.99	-49.70	54.79	0.16	445442.21	701630.80	N 32 13 24.72	W 103 48 53.93
	5068.98	0.05	358.39	5065.34	47.93	-49.64	54.75	0.06	445442.27	701630.75	N 32 13 24.72	W 103 48 53.93
	5163.75	0.07	338.23	5160.11	47.83	-49.55	54.72	0.03	445442.36	701630.73	N 32 13 24.72	W 103 48 53.93
	5258.47	0.09	316.32	5254.83	47.73	-49.44	54.65	0.04	445442.47	701630.66	N 32 13 24.73	W 103 48 53.93
	5353.12	0.08	11.90	5349.48	47.61	-49.32	54.61	0.08	445442.59	701630.62	N 32 13 24.73	W 103 48 53.93
	5447.75	0.05	329.95	5444.11	47.51	-49.22	54.61	0.06	445442.69	701630.61	N 32 13 24.73	W 103 48 53.93
	5542.57	0.08	299.55	5538.93	47.45	-49.15	54.53	0.05	445442.76	701630.53	N 32 13 24.73	W 103 48 53.93
	5637.28	0.12	330.64	5633.64	47.33	-49.03	54.42	0.07	445442.88	701630.43	N 32 13 24.73	W 103 48 53.93
	5731.96	0.07	48.25	5728.32	47.20	-48.91	54.42	0.13	445443.00	701630.42	N 32 13 24.73	W 103 48 53.93
	5826.68	0.07	52.06	5823.04	47.13	-48.84	54.51	0.00	445443.08	701630.51	N 32 13 24.73	W 103 48 53.93
	5921.40	0.09	5.52	5917.76	47.02	-48.73	54.56	0.07	445443.19	701630.56	N 32 13 24.73	W 103 48 53.93
	6016.13	0.11	1.55	6012.49	46.85	-48.56	54.57	0.02	445443.35	701630.57	N 32 13 24.73	W 103 48 53.93
	6110.82	0.04	301.15	6107.18	46.74	-48.45	54.54	0.10	445443.46	701630.55	N 32 13 24.74	W 103 48 53.93
	6205.55	0.06	46.89	6201.91	46.69	-48.40	54.55	0.09	445443.51	701630.56	N 32 13 24.74	W 103 48 53.93
	6300.26	0.11	24.87	6296.62	46.57	-48.29	54.62	0.06	445443.63	701630.63	N 32 13 24.74	W 103 48 53.93
	6395.04	0.08	316.31	6391.40	46.44	-48.16	54.62	0.12	445443.76	701630.62	N 32 13 24.74	W 103 48 53.93
	6489.75	0.07	68.42	6486.11	46.38	-48.09	54.62	0.13	445443.83	701630.63	N 32 13 24.74	W 103 48 53.93
	6584.57	0.05	44.87	6580.93	46.32	-48.04	54.71	0.03	445443.88	701630.71	N 32 13 24.74	W 103 48 53.93
	6679.34	0.04	220.28	6675.70	46.32	-48.03	54.72	0.09	445443.88	701630.72	N 32 13 24.74	W 103 48 53.93
	6774.09	0.02	138.89	6770.45	46.36	-48.07	54.71	0.04	445443.84	701630.71	N 32 13 24.74	W 103 48 53.93
	6868.83	0.08	338.86	6865.19	46.31	-48.02	54.69	0.10	445443.89	701630.70	N 32 13 24.74	W 103 48 53.93
	6963.46	0.01	257.28	6959.82	46.25	-47.96	54.66	0.08	445443.95	701630.67	N 32 13 24.74	W 103 48 53.93
	7058.18	0.03	73.43	7054.54	46.24	-47.95	54.68	0.04	445443.96	701630.68	N 32 13 24.74	W 103 48 53.93
	7152.90	0.04	339.90	7149.26	46.20	-47.92	54.69	0.05	445444.00	701630.69	N 32 13 24.74	W 103 48 53.93
	7247.63	0.06	19.66	7243.99	46.13	-47.84	54.69	0.04	445444.07	701630.70	N 32 13 24.74	W 103 48 53.93
	7342.45	0.02	304.63	7338.81	46.07	-47.78	54.70	0.06	445444.13	701630.70	N 32 13 24.74	W 103 48 53.93
	7437.21	0.04	238.76	7433.57	46.08	-47.79	54.65	0.04	445444.12	701630.66	N 32 13 24.74	W 103 48 53.93
	7531.94	0.89	341.78	7528.29	45.41	-47.11	54.40	0.95	445444.80	701630.40	N 32 13 24.75	W 103 48 53.93
	7626.78	2.02	343.90	7623.10	43.12	-44.80	53.70	1.19	445447.11	701629.71	N 32 13 24.77	W 103 48 53.94
	7721.47	3.01	344.37	7717.70	39.16	-40.81	52.57	1.05	445451.11	701628.58	N 32 13 24.81	W 103 48 53.95
	7816.19	4.16	344.50	7812.23	33.51	-35.10	50.98	1.21	445456.81	701626.99	N 32 13 24.87	W 103 48 53.97

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 ° ' ")
	7910.91	4.51	342.00	7906.68	26.72	-28.25	48.91	0.42	445463.66	701624.92	N 32 13 24.94	W 103 48 53.99
	8005.69	5.05	344.34	8001.13	19.24	-20.69	46.64	0.61	445471.22	701622.64	N 32 13 25.01	W 103 48 54.02
	8100.40	5.76	339.96	8095.42	10.85	-12.21	43.88	0.87	445479.70	701619.89	N 32 13 25.09	W 103 48 54.05
	8195.17	6.17	325.10	8189.68	2.35	-3.56	39.34	1.68	445488.35	701615.35	N 32 13 25.18	W 103 48 54.10
	8289.89	6.05	317.53	8283.86	-5.31	4.29	33.05	0.86	445496.20	701609.06	N 32 13 25.26	W 103 48 54.18
	8384.64	6.32	314.66	8378.06	-12.44	11.64	25.97	0.43	445503.55	701601.98	N 32 13 25.33	W 103 48 54.26
	8479.33	6.32	320.61	8472.18	-19.91	19.33	18.96	0.69	445511.24	701594.97	N 32 13 25.41	W 103 48 54.34
	8574.04	6.05	312.03	8566.34	-27.06	26.70	11.94	1.02	445518.61	701587.95	N 32 13 25.48	W 103 48 54.42
	8668.77	6.76	307.14	8660.48	-33.51	33.41	3.79	0.94	445525.32	701579.80	N 32 13 25.55	W 103 48 54.52
	8763.49	6.47	310.54	8754.57	-40.08	40.25	-4.71	0.51	445532.16	701571.30	N 32 13 25.62	W 103 48 54.61
	8858.10	7.02	312.46	8848.52	-47.19	47.62	-13.02	0.63	445539.52	701562.99	N 32 13 25.69	W 103 48 54.71
	8952.71	6.33	315.04	8942.49	-54.53	55.21	-20.98	0.80	445547.12	701555.04	N 32 13 25.76	W 103 48 54.80
	9047.23	9.27	327.77	9036.13	-64.42	65.34	-28.72	3.59	445557.25	701547.29	N 32 13 25.87	W 103 48 54.89
	9141.83	9.63	329.44	9129.45	-77.42	78.60	-36.81	0.48	445570.50	701539.21	N 32 13 26.00	W 103 48 54.99
	9236.39	11.85	329.35	9222.35	-92.30	93.76	-45.78	2.35	445585.67	701530.23	N 32 13 26.15	W 103 48 55.09
	9331.09	12.97	327.27	9314.83	-109.27	111.07	-56.48	1.27	445602.97	701519.53	N 32 13 26.32	W 103 48 55.21
	9425.70	13.57	323.07	9406.92	-126.68	128.87	-68.89	1.20	445620.78	701507.12	N 32 13 26.50	W 103 48 55.36
	9520.27	13.59	322.68	9498.85	-143.96	146.58	-82.29	0.10	445638.48	701493.72	N 32 13 26.67	W 103 48 55.51
	9614.90	12.75	323.90	9590.99	-160.84	163.86	-95.19	0.93	445655.76	701480.83	N 32 13 26.84	W 103 48 55.66
	9709.57	13.01	327.94	9683.28	-177.94	181.33	-107.00	0.89	445673.23	701469.02	N 32 13 27.02	W 103 48 55.80
	9804.25	7.34	321.54	9776.43	-191.42	195.11	-116.43	6.10	445687.01	701459.59	N 32 13 27.15	W 103 48 55.91
	9898.85	3.41	281.90	9870.62	-196.53	200.42	-122.94	5.49	445692.32	701453.08	N 32 13 27.21	W 103 48 55.98
	9993.26	4.75	223.42	9964.83	-194.10	198.16	-128.38	4.40	445690.06	701447.64	N 32 13 27.18	W 103 48 56.05
	10087.73	6.42	208.58	10058.85	-186.46	190.68	-133.59	2.32	445682.58	701442.42	N 32 13 27.11	W 103 48 56.11
	10182.48	6.97	187.51	10152.97	-176.01	180.33	-136.88	2.64	445672.23	701439.14	N 32 13 27.01	W 103 48 56.15
	10277.20	7.35	175.88	10246.96	-164.27	168.59	-137.20	1.58	445660.49	701438.82	N 32 13 26.89	W 103 48 56.15
	10371.90	6.52	173.45	10340.96	-152.92	157.20	-136.15	0.93	445649.10	701439.87	N 32 13 26.78	W 103 48 56.14
Last Gyro	10466.66	6.27	172.73	10435.13	-142.49	146.73	-134.88	0.28	445638.63	701441.14	N 32 13 26.68	W 103 48 56.12
	10515.00	6.67	161.45	10483.17	-137.25	141.45	-133.65	2.75	445633.35	701442.37	N 32 13 26.62	W 103 48 56.11
	10610.00	6.03	161.43	10577.58	-127.40	131.49	-130.31	0.67	445623.39	701445.71	N 32 13 26.52	W 103 48 56.07
	10704.00	12.35	179.15	10670.35	-112.71	116.74	-128.58	7.29	445608.64	701447.43	N 32 13 26.38	W 103 48 56.05
	10799.00	22.11	185.09	10760.98	-84.64	88.70	-130.02	10.43	445580.61	701446.00	N 32 13 26.10	W 103 48 56.07
	10893.00	26.60	182.89	10846.60	-45.92	50.04	-132.65	4.87	445541.95	701443.36	N 32 13 25.72	W 103 48 56.10
	11007.00	34.10	184.36	10944.90	11.61	-7.39	-136.38	6.61	445484.52	701439.64	N 32 13 25.15	W 103 48 56.15
	11101.00	49.39	185.45	11014.83	73.91	-69.56	-141.80	16.28	445422.36	701434.22	N 32 13 24.54	W 103 48 56.22
	11196.00	66.51	178.91	11065.10	154.06	-149.67	-144.42	18.93	445342.25	701431.60	N 32 13 23.74	W 103 48 56.25
	11290.00	78.54	179.21	11093.27	243.46	-239.15	-142.96	12.80	445252.77	701433.06	N 32 13 22.86	W 103 48 56.24
	11384.00	88.80	178.53	11103.62	336.64	-332.44	-141.11	10.94	445159.49	701434.91	N 32 13 21.93	W 103 48 56.22
	11432.00	90.07	179.08	11104.09	384.57	-380.42	-140.11	2.88	445111.51	701435.91	N 32 13 21.46	W 103 48 56.21
	11498.00	88.93	179.81	11104.67	450.51	-446.42	-139.47	2.05	445045.52	701436.55	N 32 13 20.81	W 103 48 56.21
	11592.00	90.62	180.29	11105.04	544.47	-540.41	-139.55	1.87	444951.53	701436.47	N 32 13 19.88	W 103 48 56.22
	11687.00	88.69	176.84	11105.61	639.30	-635.36	-137.18	4.16	444856.59	701438.84	N 32 13 18.94	W 103 48 56.19
	11782.00	87.70	176.59	11108.60	733.88	-730.16	-131.73	1.07	444761.80	701444.28	N 32 13 18.00	W 103 48 56.14
	11876.00	88.11	178.04	11112.04	827.53	-823.99	-127.33	1.60	444667.97	701448.68	N 32 13 17.07	W 103 48 56.09
	11970.00	87.80	180.04	11115.40	921.36	-917.91	-125.76	2.15	444574.06	701450.26	N 32 13 16.14	W 103 48 56.08
	12065.00	87.70	180.53	11119.12	1016.25	-1012.84	-126.23	0.53	444479.14	701449.79	N 32 13 15.20	W 103 48 56.09
	12159.00	89.86	181.04	11121.13	1110.21	-1106.80	-127.52	2.36	444385.18	701448.50	N 32 13 14.27	W 103 48 56.11
	12254.00	88.42	181.28	11122.55	1205.19	-1201.77	-129.44	1.54	444290.22	701446.58	N 32 13 13.33	W 103 48 56.14
	12349.00	87.70	181.12	11125.77	1300.13	-1296.69	-131.43	0.78	444195.30	701444.59	N 32 13 12.39	W 103 48 56.16
	12443.00	88.28	182.31	11129.07	1394.07	-1390.59	-134.24	1.41	444101.41	701441.78	N 32 13 11.46	W 103 48 56.20
	12538.00	87.14	180.74	11132.86	1488.99	-1485.48	-136.77	2.04	444006.53	701439.25	N 32 13 10.53	W 103 48 56.24
	12632.00	88.18	180.67	11136.70	1582.90	-1579.39	-137.93	1.11	443912.62	701438.09	N 32 13 9.60	W 103 48 56.26
	12727.00	89.00	181.09	11139.04	1677.85	-1674.35	-139.38	0.97	443817.67	701436.63	N 32 13 8.66	W 103 48 56.28
	12821.00	89.00	180.85	11140.68	1771.83	-1768.32	-140.97	0.26	443723.70	701435.04	N 32 13 7.73	W 103 48 56.30
	12916.00	89.35	181.61	11142.05	1866.82	-1863.29	-143.01	0.88	443628.74	701433.01	N 32 13 6.79	W 103 48 56.33
	13011.00	89.52	180.77	11142.98	1961.81	-1958.26	-144.99	0.90	443533.77	701431.03	N 32 13 5.85	W 103 48 56.36
	13105.00	89.21	181.50	11144.02	2055.79	-2052.24	-146.85	0.84	443439.80	701429.17	N 32 13 4.92	W 103 48 56.39
	13294.00	92.34	177.69	11141.47	2244.58	-2241.16	-145.52	2.61	443250.90	701430.50	N 32 13 3.05	W 103 48 56.38
	13389.00	88.28	180.08	11140.95	2339.43	-2336.11	-143.67	4.96	443155.95	701432.35	N 32 13 2.11	W 103 48 56.37
	13484.00	89.66	181.12	11142.66	2434.39	-2431.09	-144.66	1.82	443060.98	701431.36	N 32 13 1.17	W 103 48 56.38
	13578.00	93.96	180.42	11139.69	2528.31	-2525.01	-145.93	4.63	442967.06	701430.09	N 32 13 0.24	W 103 48 56.40
	13765.00	87.83	178.48	11136.77	2715.04	-2711.88	-144.13	3.44	442780.20	701431.89	N 32 12 58.39	W 103 48 56.39
	13859.00	87.83	180.56	11140.33	2808.89	-2805.80	-143.34	2.21	442686.29	701432.68	N 32 12 57.46	W 103 48 56.39
	13954.00	88.14	180.39	11143.67	2903.81	-2900.74	-144.13	0.37	442591.35	701431.89	N 32 12 56.52	W 103 48 56.40
	14049.00	87.97	180.15	11146.90	2998.72	-2995.68	-144.58	0.31	442496.42	701431.44	N 32 12 55.58	W 103 48 56.41
	14143.00	89.52	180.26	11148.96	3092.66	-3089.66	-144.91	1.65	442402.45	701431.11	N 32 12 54.65	W 103 48 56.42
	14238.00	87.70	180.12	11151.26	3187.59	-3184.63	-145.23	1.92	442307.49	701430.79	N 32 12 53.71	W 103 48 56.43
	14332.00	87.59	179.99	11155.12	3281.47	-3278.55	-145.32	0.18	442213.57	701430.70	N 32 12 52.78	W 103 48 56.44
	14427.00	88.04	180.15	11158.74	3376.36	-3373.48	-145.43	0.50	442118.65	701430.59	N 32 12 51.84	W 103 48 56.44
	14521.00	89.04	180.09	11161.14	3470.29	-3467.44	-145.63	1.07	442024.69	701430.39	N 32 12 50.91	W 103 48 56.45
	14711.00	90.14	180.15	11162.50	3660.20	-3657.44	-146.03	0.58	441834.71	701429.99	N 32 12 49.03	W 103 48 56.47
	14805.00	87.76	180.32	11164.22	3754.15	-3751.41	-146.41	2.54	441740.74	701429.61	N 32 12 48.10	W 103 48 56.48
	14900.00	88.04	180.46	11167.70	3849.05	-3846.35	-147.06	0.33	441645.81	701428.96	N 32 12 47.16	W 103 48 56.49
	14994.00	88.07	180.23	11170.89	3942.97	-3940.29	-147.63	0.25	441551.87	701428.39	N 32 12 46.24	W 103 48 56.50
	15089.00	88.45	179.95	11173.78	4037.89	-4035.25	-147.78	0.50	441456.92	701428.24	N 32 12 45.30	W 103 48 56.51
	15184.00	88.59	180.41	11176.23	4132.82	-4130.21	-148.07	0.51	441361.96	701427.95	N 32 12 44.36	W 103 48 56.52
	15278.00	88.86	180.34	11178.32	4226.77	-4224.19	-148.69	0.30	441267.99	701427.33	N 32 12 43.43	W 103 48 56.53
	15373.00	85.98	180.13	11182.60	4321.63	-4319.08	-149.08	3.04	441173.10	701426.94	N 32 12 42.49	W 103 48 56.54
	15467.00	88.25	179.99	11187.33	4415.46	-4412.96	-149.18	2.42	441079.23	701426.84	N 32 12 41.56	W 103 48 56.55
	15562.00	88.52	180.10	11190.01	4510.38	-4507.92	-149.25	0.31	440984.28	701426.77	N 32 12 40.62	W 103 48 56.55
	15656.00	89.35	179.55	11191.75	4604.31	-4601.90	-148.96	1.06	440890.30	701427.06	N 32 12 39.69	W 103 48 56.55
Last Survey	15751.00	89.76	179.45	11192.49	4699.23	-4696.89	-148.13	0.44	440795.31	701427.88	N 32 12 38.75	W 103 48 56.55
Proj to TD	15810.00	89.76	179.45	11192.74	4758.18	-4755.89	-147.57	0.00	440736.32	701428.45	N 32 12 38.16	W 103 48 56.55

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	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Patton MDP1 18 Federal 73H Gyro+MWD 0-15,810°
	1	26.500	162.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Patton MDP1 18 Federal 73H
	1	162.000	593.000	1/98.425	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Patton MDP1 18 Federal 73H
	1	593.000	10466.660	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Patton MDP1 18 Federal 73H
	1	10466.660	15810.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Patton MDP1 18 Federal 73H

A Gyrodata Directional Survey

Field Copy Only, not definitive

for

OXY USA

Lease: PATTON MDP1 18 FEDERAL Well: 73H, 5 INCH DRILL PIPE
Location: H&P 639, EDDY COUNTY, NEW MEXICO

Job Number: MD0917GO0654

Run Date: 03 Sep 2017
Report Generated: 04 Sep 2017 04:41

Surveyor: Paul Petersen

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Company Man
Survey Latitude: 32.223548 deg. N
Longitude: 103.814672 deg. W

Azimuth Correction:
Gyro: -2.80000 deg to Grid North

Depth Reference: Rotary Table

Air Gap (RKB to Ground / RKB to MSL): 26.50

Vertical Section Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

OXY USA
Lease: PATTON MDP1 18 FEDERAL Well: 73H, 5 INCH DRILL PIPE
Location: H&P 639 , EDDY COUNTY, NEW MEXICO
Job Number: MD0917GO0654

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	HORIZONTAL COORDINATES feet	
4122 FT.-10466 FT. RATE GYROSCOPIC MULTISHOT SURVEY RUN INSIDE 5" DRILLPIPE ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO DRILLING RIG H&P 639 R.K.B. OF 26.5 FT.						
4122.07	6.37	141.64	0.15	4113.58	179.49 S	142.06 E
4216.81	5.38	154.30	1.72	4207.83	187.61 S	147.25 E
4311.53	4.10	155.47	1.36	4302.22	194.70 S	150.58 E
4406.21	3.86	157.82	0.31	4396.67	200.73 S	153.19 E
4501.00	2.81	149.79	1.21	4491.30	205.69 S	155.56 E
4595.73	2.04	150.96	0.81	4585.95	209.17 S	157.55 E
4690.36	1.26	159.38	0.86	4680.54	211.62 S	158.73 E
4784.83	0.20	144.27	1.13	4775.00	212.72 S	159.19 E
4879.54	0.13	28.08	0.30	4869.71	212.76 S	159.34 E
4974.35	0.06	290.07	0.16	4964.52	212.65 S	159.34 E
5068.98	0.05	359.67	0.07	5059.15	212.59 S	159.30 E
5163.75	0.06	338.39	0.02	5153.92	212.50 S	159.28 E
5258.47	0.09	314.39	0.05	5248.64	212.41 S	159.21 E
5353.12	0.09	10.76	0.09	5343.29	212.28 S	159.17 E
5447.75	0.05	329.92	0.07	5437.92	212.17 S	159.16 E
5542.57	0.09	299.25	0.06	5532.74	212.10 S	159.08 E
5637.28	0.12	329.47	0.07	5627.45	211.98 S	158.96 E
5731.96	0.07	46.75	0.13	5722.13	211.85 S	158.95 E

A Gyrodata Directional Survey

OXY USA
Lease: PATTON MDP1 18 FEDERAL Well: 73H, 5 INCH DRILL PIPE
Location: H&P 639 , EDDY COUNTY, NEW MEXICO
Job Number: MD0917GOO654

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	HORIZONTAL COORDINATES feet	
5826.68	0.07	50.52	0.00	5816.85	211.78 S	159.04 E
5921.40	0.09	6.60	0.07	5911.57	211.67 S	159.09 E
6016.13	0.11	1.53	0.02	6006.30	211.50 S	159.10 E
6110.82	0.05	299.17	0.10	6100.99	211.39 S	159.07 E
6205.55	0.06	47.73	0.09	6195.72	211.34 S	159.07 E
6300.26	0.10	25.54	0.05	6290.43	211.23 S	159.14 E
6395.04	0.08	316.32	0.11	6385.21	211.11 S	159.13 E
6489.75	0.07	69.14	0.13	6479.92	211.04 S	159.14 E
6584.57	0.05	45.24	0.03	6574.74	210.99 S	159.22 E
6679.34	0.04	221.14	0.09	6669.51	210.98 S	159.23 E
6774.09	0.02	138.43	0.04	6764.26	211.02 S	159.22 E
6868.83	0.08	340.22	0.10	6859.00	210.97 S	159.21 E
6963.46	0.01	256.98	0.08	6953.63	210.91 S	159.18 E
7058.18	0.03	73.07	0.04	7048.35	210.91 S	159.19 E
7152.90	0.05	341.08	0.06	7143.07	210.86 S	159.21 E
7247.63	0.06	21.37	0.04	7237.80	210.77 S	159.21 E
7342.45	0.02	305.00	0.06	7332.62	210.72 S	159.21 E
7437.21	0.03	237.03	0.03	7427.38	210.72 S	159.18 E
7531.94	0.89	342.11	0.95	7522.10	210.04 S	158.93 E
7626.78	2.02	343.55	1.19	7616.91	207.73 S	158.23 E
7721.47	3.01	344.21	1.05	7711.51	203.74 S	157.08 E
7816.19	4.16	344.80	1.21	7806.04	198.03 S	155.51 E

A Gyrodata Directional Survey

OXY USA
Lease: PATTON MDP1 18 FEDERAL Well: 73H, 5 INCH DRILL PIPE
Location: H&P 639 , EDDY COUNTY, NEW MEXICO
Job Number: MD0917GOO654

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	HORIZONTAL COORDINATES feet	
7910.91	4.51	342.01	0.43	7900.49	191.17 S	153.46 E
8005.69	5.05	344.72	0.62	7994.94	183.60 S	151.21 E
8100.40	5.76	339.90	0.89	8089.23	175.12 S	148.47 E
8195.17	6.17	325.98	1.58	8183.49	166.43 S	143.99 E
8289.89	6.05	317.35	0.98	8277.68	158.54 S	137.76 E
8384.64	6.32	314.72	0.41	8371.87	151.20 S	130.67 E
8479.33	6.32	320.57	0.68	8465.99	143.51 S	123.66 E
8574.04	6.05	312.05	1.01	8560.15	136.14 S	116.64 E
8668.77	6.76	307.27	0.94	8654.29	129.42 S	108.50 E
8763.49	6.47	310.70	0.52	8748.38	122.56 S	100.01 E
8858.10	7.02	312.55	0.62	8842.33	115.18 S	91.71 E
8952.71	6.33	315.08	0.79	8936.30	107.57 S	83.77 E
9047.23	9.27	327.61	3.58	9029.94	97.45 S	76.01 E
9141.83	9.64	329.49	0.51	9123.26	84.19 S	67.91 E
9236.39	11.85	329.20	2.34	9216.15	69.03 S	58.92 E
9331.09	12.97	327.33	1.26	9308.64	51.73 S	48.20 E
9425.70	13.57	323.09	1.21	9400.73	33.92 S	35.80 E
9520.27	13.58	323.09	0.01	9492.65	16.17 S	22.47 E
9614.90	12.75	323.98	0.90	9584.80	1.16 N	9.66 E
9709.57	13.01	328.04	0.99	9677.09	18.65 N	2.12 W
9804.25	7.33	321.30	6.12	9770.24	32.42 N	11.55 W

A Gyrodata Directional Survey

OXY USA
Lease: PATTON MDP1 18 FEDERAL Well: 73H, 5 INCH DRILL PIPE
Location: H&P 639 , EDDY COUNTY, NEW MEXICO
Job Number: MD0917GOO654

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	HORIZONTAL COORDINATES feet	
9898.85	3.41	281.87	5.46	9864.44	37.71 N	18.08 W
9993.26	4.76	223.73	4.38	9958.64	35.45 N	23.54 W
10087.73	6.42	208.55	2.34	10052.66	27.98 N	28.77 W
10182.48	6.97	187.13	2.68	10146.78	17.62 N	32.02 W
10277.20	7.36	175.56	1.58	10240.77	5.87 N	32.26 W
10371.90	6.52	173.56	0.92	10334.77	5.52 S	31.19 W
10466.66	6.27	172.18	0.31	10428.94	15.99 S	29.88 W

Schlumberger **OXY**

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Patton MDP1 18 Federal 73H	NM Eddy County (NAD 83)	Oxy Patton MDP1 18 Federal 73H

Gravity & Magnetic Parameters
Model: HDGM 2017 Dip: 59.891° Date: 05-Oct-2017
MagDec: 6.963° FS: 48086.082nT Gravity FS: 998.472mgn (9.80665 Based)

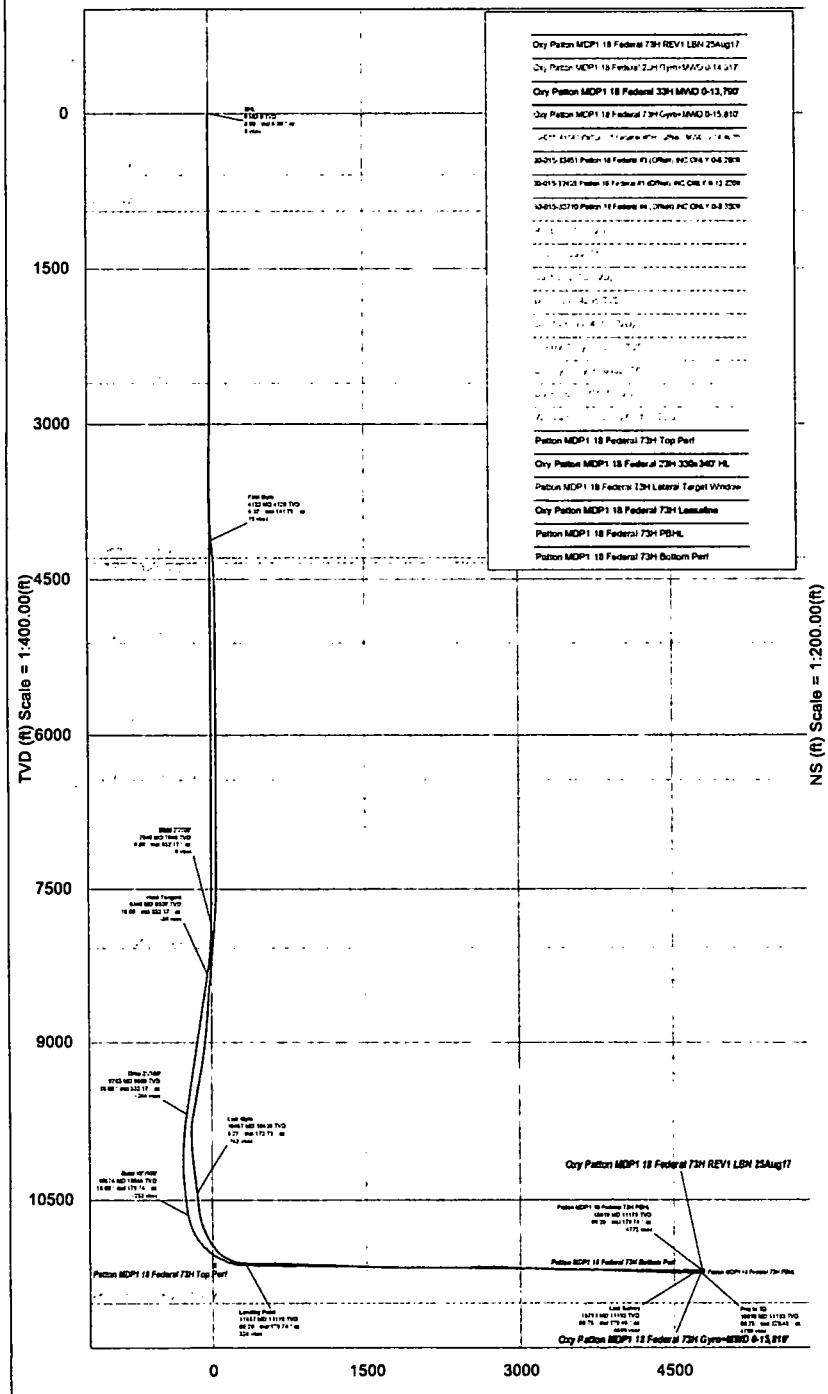
Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet
Lat: N 32 13 25.23 Northing: 445431.91fUS Grid Conv: 0.276°
Lon: W 103 48 54.56 Easting: 701576.01fUS Scale Fact: 0.9998385

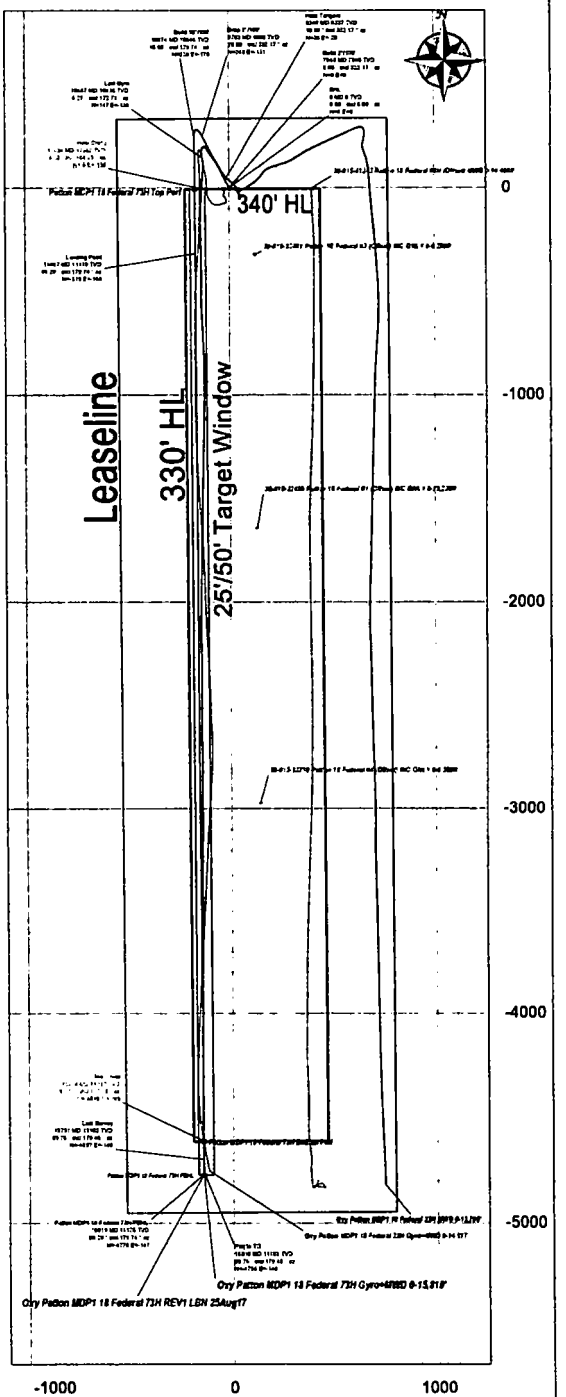
Miscellaneous
Slot: Oxy Patton MDP1 18 Federal 73H TVD Ref: RKB=26.5'(3558.8ft above MSL)
Plan: Oxy Patton MDP1 18 Federal 73H REV1 LBN 25Aug17

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	505.00	0.00	332.17	505.00	0.00	0.00	0.00	0.00
Salado	950.00	0.00	332.17	950.00	0.00	0.00	0.00	0.00
Castile	2609.00	0.00	332.17	2609.00	0.00	0.00	0.00	0.00
Delaware	4295.00	0.00	332.17	4295.00	0.00	0.00	0.00	0.00
Bell Canyon	4341.00	0.00	332.17	4341.00	0.00	0.00	0.00	0.00
Cherry Canyon	5118.00	0.00	332.17	5118.00	0.00	0.00	0.00	0.00
Brushy Canyon	6432.00	0.00	332.17	6432.00	0.00	0.00	0.00	0.00
Build 2 /100'	7840.00	0.00	332.17	7840.00	0.00	0.00	0.00	0.00
Bone Spring	8080.25	4.81	332.17	8080.00	-8.76	8.91	-4.70	2.00
Hold Tangent	8339.08	10.00	332.17	8337.44	-37.84	38.48	-20.32	2.00
Drop 2 /100'	9703.43	10.00	332.17	9680.18	-243.69	247.85	-130.85	0.00
Build 10°/100'	10674.32	10.00	179.74	10645.58	-232.63	236.00	-170.20	2.00
Landing Point	11467.11	89.28	179.74	11119.00	324.07	-319.04	-167.67	10.00
Patton MDP1 18 Federal 73H PBHL	15018.57	89.28	179.74	11175.00	4772.38	-4770.10	-147.48	0.00
WellCentre (projected)	NaN			11483.00				

Grid
True Mag
Grid North
Tot Corr (M->G 6.686°)
Mag Dec (6.963°)
Grid Conv (0.276°)





Vertical Section (ft) Azim = 181.77° Scale = 1:400.00(ft) Origin = 0N/-S, 0E/-W

EW (ft) Scale = 1:200.00(ft)