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

February 15, 2018

OXY USA INC.
5 Greenway Plaza Suite 110
Houston, Texas 77046-0521

30-015-44444

Re:

8, 24S, 31E, NM
-32.22689 -103.79643

CLIENT: OXY USA INC.
WELL: Patten MDP1 17 Federal 5H
FIELD: Cotton Draw Bone Spring

RIG: H&P 656
COUNTY: Eddy
API NO: 30-015-44444
JOB NO: 17MLD2555

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
Leslie Bullard FS	Patten MDP1 17 Federal 5H Original Hole	10423.00 Ft 15265.00 Ft	to	February 2, 2018 February 8, 2018	to	SlimPulse

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Les Foster
Field Service Manager

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

Well Reference:
8, 24S, 31E, NM
-32.22689 -103.79643

I, Leslie Bullard certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of February 02, 2018 through February 08, 2018, conduct or supervise the taking of the SlimPulse surveys from a depth of 10423.00 feet to a depth of 15265.00 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 Patten MDP1 17 Federal 5H Well (Original Hole) API No. 30-015-44444 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 Leslie Bullard
Leslie Bullard
FS

Subscribed and Sworn to before me this 22nd day of February (month) 2018 (yr)

My Commission expires:
12-20-2020

Allemand
Notary Public (signature)

Adams County Colorado
(County State)

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

Schlumberger

Oxy Patton MDP1 17 Federal 5H Gyro+MWD 0-15,310' Survey Geodetic Report

(Def Survey)

Report Date:	February 09, 2018 - 09:09 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	176.543 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Patton MDP1 17 Federal 5H / Oxy Patton MDP1 17 Federal 5H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Patton MDP1 17 Federal 5H	**TVD Reference Elevation:**	3570.100 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3543.600 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.923 °
Survey Name:	Oxy Patton MDP1 17 Federal 5H Gyro+MWD 0-15,310'	**Total Gravity Field Strength:**	998.4280mgn (9.80665 Based)
Survey Date:	*January 30, 2018*	***Gravity Model:***	GARM
Tort / AHD / DDI / ERD Ratio:	173.764 ° / 6109.817 ft / 6.208 / 0.607	**Total Magnetic Field Strength:**	48051.731 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.980 °
Location Lat / Long:	N 32° 13' 36.79707", W 103° 47' 47.14372"	**Declination Date:**	January 30, 2018
Location Grid N/E Y/X:	N 446690.480 ftUS, E 707361.400 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.2863 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994066	**Grid Convergence Used:**	0.2863 °
Version / Patch:	2.10.706.0	**Total Corr Mag North->Grid North:**	6.6364 °
		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	446690.48	707361.40	N 32 13 36.80	W 103 47 47.14
	78.85	0.28	107.69	78.85	0.07	-0.06	0.18	0.36	446690.42	707361.58	N 32 13 36.80	W 103 47 47.14
	171.27	0.57	105.35	171.27	0.30	-0.25	0.84	0.31	446690.23	707362.24	N 32 13 36.79	W 103 47 47.13
	262.95	0.58	101.17	262.94	0.56	-0.46	1.74	0.05	446690.02	707363.14	N 32 13 36.79	W 103 47 47.12
	354.62	0.74	98.12	354.61	0.80	-0.63	2.78	0.18	446689.85	707364.18	N 32 13 36.79	W 103 47 47.11
	445.20	0.99	105.05	445.18	1.17	-0.92	4.11	0.30	446689.56	707365.51	N 32 13 36.79	W 103 47 47.10
	536.52	1.23	108.31	536.48	1.78	-1.43	5.81	0.27	446689.05	707367.20	N 32 13 36.78	W 103 47 47.08
	629.30	1.29	102.22	629.24	2.43	-1.97	7.77	0.16	446688.51	707369.17	N 32 13 36.78	W 103 47 47.05
	721.20	1.64	99.92	721.11	3.01	-2.41	10.08	0.39	446688.07	707371.48	N 32 13 36.77	W 103 47 47.03
	811.98	0.85	115.49	811.86	3.64	-2.92	11.97	0.94	446687.56	707373.36	N 32 13 36.77	W 103 47 47.00
	903.52	0.26	240.79	903.40	4.06	-3.32	12.40	1.12	446687.16	707373.80	N 32 13 36.76	W 103 47 47.00
	995.04	0.29	247.56	994.92	4.23	-3.51	12.00	0.05	446686.97	707373.40	N 32 13 36.76	W 103 47 47.00
	1087.38	0.29	267.82	1087.26	4.30	-3.61	11.55	0.11	446686.87	707372.95	N 32 13 36.76	W 103 47 47.01
	1179.38	0.29	282.14	1179.26	4.23	-3.57	11.09	0.08	446686.91	707372.49	N 32 13 36.76	W 103 47 47.01
	1273.99	0.26	288.70	1273.87	4.08	-3.45	10.65	0.05	446687.03	707372.05	N 32 13 36.76	W 103 47 47.02
	1368.50	0.25	306.29	1368.38	3.87	-3.26	10.29	0.08	446687.22	707371.68	N 32 13 36.76	W 103 47 47.02
	1463.08	0.22	316.97	1462.96	3.60	-3.00	9.99	0.06	446687.48	707371.39	N 32 13 36.77	W 103 47 47.03
	1557.67	0.07	313.36	1557.54	3.42	-2.83	9.83	0.16	446687.65	707371.23	N 32 13 36.77	W 103 47 47.03
	1652.36	0.04	273.25	1652.23	3.37	-2.79	9.75	0.05	446687.69	707371.15	N 32 13 36.77	W 103 47 47.03
	1747.04	0.11	220.24	1746.91	3.43	-2.85	9.66	0.10	446687.63	707371.06	N 32 13 36.77	W 103 47 47.03
	1841.72	0.14	217.07	1841.59	3.59	-3.02	9.53	0.03	446687.46	707370.93	N 32 13 36.77	W 103 47 47.03
	1936.49	0.16	223.77	1936.36	3.76	-3.20	9.37	0.03	446687.28	707370.77	N 32 13 36.76	W 103 47 47.03
	2031.24	0.17	211.20	2031.11	3.97	-3.42	9.21	0.04	446687.06	707370.61	N 32 13 36.76	W 103 47 47.04
	2125.91	0.22	224.07	2125.78	4.21	-3.67	9.01	0.07	446686.81	707370.41	N 32 13 36.76	W 103 47 47.04
	2220.76	0.21	229.50	2220.63	4.43	-3.91	8.75	0.02	446686.57	707370.15	N 32 13 36.76	W 103 47 47.04
	2315.40	0.23	249.72	2315.27	4.59	-4.09	8.44	0.08	446686.39	707369.84	N 32 13 36.76	W 103 47 47.05
	2409.99	0.06	116.50	2409.86	4.67	-4.18	8.31	0.29	446686.30	707369.71	N 32 13 36.76	W 103 47 47.05
	2504.74	0.10	119.43	2504.61	4.74	-4.24	8.42	0.04	446686.24	707369.82	N 32 13 36.75	W 103 47 47.05
	2599.42	0.11	118.01	2599.29	4.84	-4.33	8.57	0.01	446686.15	707369.97	N 32 13 36.75	W 103 47 47.04
	2694.13	0.14	120.25	2694.00	4.95	-4.43	8.76	0.03	446686.05	707370.15	N 32 13 36.75	W 103 47 47.04
	2788.84	0.19	114.71	2788.71	5.09	-4.55	9.00	0.06	446685.93	707370.40	N 32 13 36.75	W 103 47 47.04
	2883.43	0.17	104.08	2883.30	5.20	-4.65	9.28	0.04	446685.83	707370.68	N 32 13 36.75	W 103 47 47.04
	2978.23	0.25	150.21	2978.10	5.43	-4.87	9.52	0.19	446685.62	707370.91	N 32 13 36.75	W 103 47 47.03
	3073.06	0.24	130.61	3072.93	5.75	-5.17	9.77	0.09	446685.31	707371.17	N 32 13 36.75	W 103 47 47.03
	3167.51	0.37	72.22	3167.38	5.82	-5.21	10.21	0.34	446685.27	707371.61	N 32 13 36.75	W 103 47 47.03
	3262.27	0.37	72.33	3262.14	5.66	-5.02	10.79	0.00	446685.46	707372.19	N 32 13 36.75	W 103 47 47.02
	3357.10	0.34	79.24	3356.96	5.55	-4.88	11.36	0.06	446685.60	707372.76	N 32 13 36.75	W 103 47 47.01
	3451.81	0.33	67.52	3451.67	5.43	-4.72	11.89	0.07	446685.76	707373.29	N 32 13 36.75	W 103 47 47.01
	3546.66	0.36	353.01	3546.52	5.04	-4.32	12.10	0.44	446686.16	707373.50	N 32 13 36.75	W 103 47 47.00
	3641.32	0.35	341.06	3641.18	4.47	-3.75	11.97	0.08	446686.73	707373.37	N 32 13 36.76	W 103 47 47.00
	3735.94	0.28	25.50	3735.80	3.99	-3.27	11.98	0.26	446687.21	707373.38	N 32 13 36.76	W 103 47 47.00
	3830.54	0.31	307.63	3830.40	3.62	-2.91	11.88	0.39	446687.57	707373.28	N 32 13 36.77	W 103 47 47.01
	3925.18	0.13	10.55	3925.04	3.34	-2.64	11.69	0.29	446687.84	707373.09	N 32 13 36.77	W 103 47 47.01
	4019.76	0.21	224.62	4019.62	3.36	-2.66	11.59	0.34	446687.82	707372.99	N 32 13 36.77	W 103 47 47.01
	4114.36	0.34	253.79	4114.21	3.53	-2.86	11.20	0.20	446687.62	707372.60	N 32 13 36.77	W 103 47 47.01
	4209.06	0.25	299.84	4208.91	3.48	-2.84	10.75	0.26	446687.64	707372.15	N 32 13 36.77	W 103 47 47.02
	4303.91	0.28	318.41	4303.76	3.19	-2.56	10.42	0.10	446687.92	707371.82	N 32 13 36.77	W 103 47 47.02
	4398.57	0.17	271.52	4398.42	2.99	-2.39	10.12	0.22	446688.09	707371.52	N 32 13 36.77	W 103 47 47.03
	4493.28	0.19	262.47	4493.13	2.99	-2.40	9.83	0.04	446688.08	707371.23	N 32 13 36.77	W 103 47 47.03
	4587.81	0.22	204.40	4587.66	3.16	-2.59	9.60	0.21	446687.89	707371.00	N 32 13 36.77	W 103 47 47.03
	4682.29	0.20	245.63	4682.14	3.38	-2.82	9.37	0.16	446687.66	707370.77	N 32 13 36.77	W 103 47 47.03
	4776.82	0.25	224.26	4776.67	3.58	-3.04	9.08	0.10	446687.44	707370.48	N 32 13 36.77	W 103 47 47.04
	4870.91	0.21	250.60	4870.76	3.76	-3.24	8.77	0.12	446687.24	707370.17	N 32 13 36.76	W 103 47 47.04
	4965.73	0.20	242.34	4965.58	3.88	-3.38	8.46	0.03	446687.10	707369.86	N 32 13 36.76	W 103 47 47.05
	5060.37	0.20	229.92	5060.22	4.05	-3.56	8.19	0.05	446686.92	707369.59	N 32 13 36.76	W 103 47 47.05
	5154.90	0.22	210.24	5154.75	4.30	-3.82	7.97	0.08	446686.66	707369.37	N 32 13 36.76	W 103 47 47.05
	5249.49	0.22	204.88	5249.34	4.61	-4.14	7.80	0.02	446686.34	707369.20	N 32 13 36.76	W 103 47 47.05
	5344.28	0.23	217.03	5344.13	4.91	-4.46	7.61	0.05	446686.02	707369.01	N 32 13 36.75	W 103 47 47.06
	5439.02	0.25	103.52	5438.87	5.12	-4.66	7.70	0.42	446685.82	707369.10	N 32 13 36.75	W 103 47 47.05
	5533.76	0.23	104.47	5533.60	5.24	-4.76	8.08	0.02	446685.72	707369.48	N 32 13 36.75	W 103 47 47.05
	5628.34	0.23	103.17	5628.18	5.35	-4.85	8.45	0.01	446685.63	707369.85	N 32 13 36.75	W 103 47 47.05
	5723.01	0.23	94.56	5722.85	5.43	-4.91	8.83	0.04	446685.57	707370.23	N 32 13 36.75	W 103 47 47.04
	5817.77	0.23	88.54	5817.61	5.46	-4.92	9.21	0.03	446685.56	707370.61	N 32 13 36.75	W 103 47 47.04
	5912.55	0.23	109.25	5912.39	5.54	-4.97	9.58	0.09	446685.51	707370.98	N 32 13 36.75	W 103 47 47.03
	6007.25	0.21	96.74	6007.09	5.65	-5.06	9.93	0.05	446685.42	707371.33	N 32 13 36.75	W 103 47 47.03
	6101.96	0.22	76.65	6101.80	5.65	-5.04	10.28	0.08	446685.44	707371.68	N 32 13 36.75	W 103 47 47.02
	6196.69	2.01	158.98	6196.51	7.20	-6.54	11.05	2.10	446683.94	707372.45	N 32 13 36.73	W 103 47 47.02
	6291.45	4.30	165.06	6291.12	12.27	-11.53	12.56	2.44	446678.95	707373.96	N 32 13 36.68	W 103 47 47.00
	6386.25	6.92	170.74	6385.46	21.43	-20.60	14.40	2.82	446669.88	707375.80	N 32 13 36.59	W 103 47 46.98
	6480.90	9.42	172.42	6479.14	34.83	-33.91	16.34	2.65	446656.57	707377.74	N 32 13 36.46	W 103 47 46.96
	6575.64	10.77	169.56	6572.41	51.35	-50.30	18.97	1.52	446640.18	707380.36	N 32 13 36.30	W 103 47 46.93
	6670.37	10.88	170.62	6665.46	69.03	-67.83	22.03	0.24	446622.66	707383.42	N 32 13 36.12	W 103 47 46.89
	6764.99	10.98	162.43	6758.37	86.65	-85.23	26.20	1.64	446605.26	707387.60	N 32 13 35.95	W 103 47 46.84
	6859.72	10.95	148.61	6851.38	103.35	-101.51	33.61	2.77	446588.98	707395.01	N 32 13 35.79	W 103 47 46.76
	6954.40	11.08	137.17	6944.33	118.33	-115.86	44.48	2.31	446574.63	707405.88	N 32 13 35.65	W 103 47 46.63
	7049.14	10.99	128.52	7037.32	131.41	-128.16	57.74	1.75	446562.33	707419.13	N 32 13 35.53	W 103 47 46.48
	7143.68	11.04	128.02	7130.12	143.43	-139.35	71.92	0.11	446551.14	707433.32	N 32 13 35.41	W 103 47 46.31
	7238.38	10.93	128.84	7223.09	155.48	-150.57	86.06	0.20	446539.92	707447.45	N 32 13 35.30	W 103 47 46.15

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 ° ' ")
	7332.99	10.77	130.93	7316.01	167.70	-161.98	99.72	0.45	446528.51	707461.11	N 32 13 35.19	W 103 47 45.99
	7427.80	10.57	131.32	7409.18	180.02	-173.53	112.94	0.22	446516.96	707474.34	N 32 13 35.07	W 103 47 45.84
	7522.40	10.81	132.39	7502.14	192.50	-185.24	126.01	0.33	446505.26	707487.40	N 32 13 34.96	W 103 47 45.69
	7617.18	10.34	134.79	7595.31	205.22	-197.22	138.61	0.68	446493.27	707500.01	N 32 13 34.84	W 103 47 45.54
	7711.82	10.82	133.36	7688.34	218.03	-209.30	151.10	0.58	446481.19	707512.49	N 32 13 34.72	W 103 47 45.40
	7806.56	10.45	135.04	7781.45	230.95	-221.49	163.64	0.51	446469.00	707525.03	N 32 13 34.60	W 103 47 45.25
	7901.21	10.54	135.00	7874.52	243.86	-233.68	175.82	0.10	446456.81	707537.21	N 32 13 34.48	W 103 47 45.11
	7995.89	10.39	135.70	7967.62	256.80	-245.92	187.91	0.21	446444.58	707549.30	N 32 13 34.35	W 103 47 44.97
	8090.51	10.55	134.24	8060.67	269.66	-258.07	200.07	0.33	446432.43	707561.46	N 32 13 34.23	W 103 47 44.83
	8185.14	10.51	134.14	8153.70	282.44	-270.12	212.47	0.05	446420.37	707573.86	N 32 13 34.11	W 103 47 44.69
	8279.72	10.38	136.06	8246.72	295.29	-282.26	224.58	0.39	446408.23	707585.96	N 32 13 33.99	W 103 47 44.55
	8374.34	10.59	135.15	8339.76	308.30	-294.57	236.62	0.28	446395.93	707598.01	N 32 13 33.87	W 103 47 44.41
	8468.95	10.33	135.12	8432.79	321.18	-306.74	248.74	0.27	446383.76	707610.13	N 32 13 33.75	W 103 47 44.27
	8563.27	11.01	137.50	8525.48	334.52	-319.37	260.79	0.86	446371.13	707622.18	N 32 13 33.62	W 103 47 44.13
	8657.95	11.06	137.40	8618.41	348.58	-332.72	273.05	0.06	446357.78	707634.43	N 32 13 33.49	W 103 47 43.98
	8752.55	11.42	137.61	8711.20	362.91	-346.32	285.50	0.38	446344.18	707646.89	N 32 13 33.36	W 103 47 43.84
	8847.13	11.10	135.74	8803.96	377.08	-359.76	298.17	0.51	446330.75	707659.55	N 32 13 33.22	W 103 47 43.69
	8941.89	11.94	134.67	8896.81	391.29	-373.18	311.51	0.91	446317.32	707672.89	N 32 13 33.09	W 103 47 43.54
	9036.53	11.28	135.29	8989.51	405.54	-386.64	324.98	0.71	446303.86	707686.36	N 32 13 32.96	W 103 47 43.38
	9131.25	11.80	135.69	9082.32	419.83	-400.16	338.26	0.56	446290.35	707699.64	N 32 13 32.82	W 103 47 43.23
	9225.90	11.57	135.28	9175.00	434.28	-413.82	351.70	0.26	446276.68	707713.08	N 32 13 32.68	W 103 47 43.07
	9320.52	11.94	134.24	9267.64	448.65	-427.40	365.39	0.45	446263.11	707726.77	N 32 13 32.55	W 103 47 42.92
	9415.11	11.79	134.04	9360.21	463.01	-440.94	379.35	0.16	446249.57	707740.73	N 32 13 32.42	W 103 47 42.75
	9509.72	11.76	140.42	9452.83	477.93	-455.09	392.44	1.38	446235.42	707753.82	N 32 13 32.27	W 103 47 42.60
	9604.34	12.15	141.98	9545.40	493.92	-470.37	404.72	0.54	446220.14	707766.09	N 32 13 32.12	W 103 47 42.46
	9699.04	21.43	162.28	9636.04	518.97	-494.77	416.16	11.45	446195.74	707777.53	N 32 13 31.88	W 103 47 42.33
	9793.63	27.89	160.50	9721.96	557.02	-532.12	428.81	6.87	446158.39	707790.19	N 32 13 31.51	W 103 47 42.18
	9888.24	32.86	172.62	9803.63	603.96	-578.51	439.51	8.32	446112.00	707800.89	N 32 13 31.05	W 103 47 42.06
	9982.35	41.56	177.45	9878.53	660.77	-635.14	444.19	9.75	446055.38	707805.57	N 32 13 30.49	W 103 47 42.01
	10077.03	55.03	178.56	9941.37	731.26	-705.62	446.58	14.25	445984.90	707807.95	N 32 13 29.79	W 103 47 41.99
	10171.67	67.03	186.30	9987.18	813.35	-788.08	442.75	14.55	445902.44	707804.12	N 32 13 28.98	W 103 47 42.04
Last Gyro	10361.03	79.72	190.29	10041.27	990.54	-967.19	416.43	7.00	445723.35	707777.80	N 32 13 27.21	W 103 47 42.35
	10423.00	87.01	189.20	10048.42	1050.43	-1027.82	406.02	11.89	445662.73	707767.39	N 32 13 26.61	W 103 47 42.48
	10483.00	87.59	188.50	10051.25	1108.99	-1087.04	396.80	1.51	445603.51	707758.17	N 32 13 26.02	W 103 47 42.59
	10568.00	87.92	189.66	10054.58	1191.90	-1170.91	383.40	1.42	445519.65	707744.77	N 32 13 25.19	W 103 47 42.75
	10663.00	89.65	191.79	10056.59	1283.97	-1264.22	365.72	2.89	445426.34	707727.10	N 32 13 24.27	W 103 47 42.96
	10758.00	90.75	191.50	10056.26	1375.69	-1357.26	346.55	1.20	445333.30	707707.92	N 32 13 23.35	W 103 47 43.19
	10852.00	90.71	189.65	10055.06	1466.87	-1449.65	329.30	1.97	445240.92	707690.68	N 32 13 22.44	W 103 47 43.39
	11041.00	91.26	183.73	10051.81	1652.80	-1637.25	307.29	3.15	445053.33	707668.67	N 32 13 20.58	W 103 47 43.66
	11135.00	90.95	179.13	10050.00	1746.42	-1731.18	304.95	4.90	444959.41	707666.33	N 32 13 19.65	W 103 47 43.69
	11230.00	90.75	174.46	10048.59	1841.38	-1825.99	310.26	4.92	444864.60	707671.64	N 32 13 18.71	W 103 47 43.64
	11324.00	90.61	171.26	10047.47	1935.17	-1919.25	321.94	3.41	444771.35	707683.32	N 32 13 17.79	W 103 47 43.51
	11419.00	90.85	171.40	10046.26	2029.77	-2013.15	336.26	0.29	444677.45	707697.64	N 32 13 16.86	W 103 47 43.35
	11513.00	90.61	173.68	10045.06	2123.52	-2106.34	348.46	2.44	444584.27	707709.84	N 32 13 15.94	W 103 47 43.21
	11636.00	90.68	173.35	10043.68	2246.34	-2228.55	362.35	0.27	444462.07	707723.73	N 32 13 14.73	W 103 47 43.06
	11703.00	90.64	174.00	10042.91	2313.26	-2295.14	369.73	0.97	444395.48	707731.11	N 32 13 14.07	W 103 47 42.97
	11797.00	90.61	177.21	10041.88	2407.23	-2388.84	376.93	3.41	444301.78	707738.31	N 32 13 13.14	W 103 47 42.90
	11892.00	91.23	178.87	10040.36	2502.18	-2483.77	380.18	1.87	444206.86	707741.56	N 32 13 12.20	W 103 47 42.86
	11987.00	89.78	180.01	10039.52	2597.05	-2578.76	381.11	1.94	444111.88	707742.49	N 32 13 11.26	W 103 47 42.86
	12081.00	89.03	179.93	10040.50	2690.87	-2672.75	381.16	0.80	444017.89	707742.54	N 32 13 10.33	W 103 47 42.86
	12176.00	89.10	179.81	10042.05	2785.70	-2767.74	381.38	0.15	443922.91	707742.75	N 32 13 9.39	W 103 47 42.87
	12270.00	89.06	179.92	10043.56	2879.53	-2861.73	381.60	0.12	443828.93	707742.97	N 32 13 8.46	W 103 47 42.87
	12364.00	89.03	179.89	10045.12	2973.36	-2955.71	381.75	0.05	443734.95	707743.13	N 32 13 7.53	W 103 47 42.87
	12458.00	88.92	180.13	10046.80	3067.17	-3049.70	381.74	0.28	443640.97	707743.11	N 32 13 6.60	W 103 47 42.88
	12552.00	88.79	180.08	10048.68	3160.97	-3143.68	381.56	0.15	443546.99	707742.94	N 32 13 5.67	W 103 47 42.89
	12646.00	89.20	180.39	10050.33	3254.76	-3237.66	381.18	0.55	443453.01	707742.56	N 32 13 4.74	W 103 47 42.90
	12741.00	89.16	180.45	10051.69	3349.53	-3332.65	380.48	0.08	443358.03	707741.86	N 32 13 3.80	W 103 47 42.91
	12835.00	89.16	180.68	10053.07	3443.29	-3426.64	379.56	0.24	443264.05	707740.93	N 32 13 2.87	W 103 47 42.93
	12929.00	89.75	180.49	10053.96	3537.05	-3520.63	378.60	0.66	443170.07	707739.97	N 32 13 1.94	W 103 47 42.94
	13023.00	88.92	180.14	10055.05	3630.84	-3614.62	378.08	0.96	443076.08	707739.46	N 32 13 1.01	W 103 47 42.95
	13211.00	89.20	180.60	10058.14	3818.40	-3802.59	376.86	0.29	442888.12	707738.24	N 32 12 59.15	W 103 47 42.98
	13306.00	89.58	180.42	10059.15	3913.16	-3897.58	376.02	0.44	442793.14	707737.40	N 32 12 58.21	W 103 47 42.99
	13494.00	89.75	180.55	10060.25	4100.71	-4085.57	374.43	0.11	442605.16	707735.81	N 32 12 56.35	W 103 47 43.02
	13588.00	90.27	179.84	10060.23	4194.52	-4179.57	374.11	0.94	442511.17	707735.49	N 32 12 55.42	W 103 47 43.03
	13682.00	90.16	179.59	10059.88	4288.38	-4273.57	374.58	0.29	442417.18	707735.95	N 32 12 54.49	W 103 47 43.03
	13776.00	89.99	180.19	10059.76	4382.22	-4367.57	374.76	0.66	442323.18	707736.13	N 32 12 53.56	W 103 47 43.04
	13870.00	90.13	180.65	10059.66	4476.00	-4461.56	374.07	0.51	442229.19	707735.44	N 32 12 52.63	W 103 47 43.05
	13964.00	90.51	179.26	10059.13	4569.83	-4555.56	374.14	1.53	442135.20	707735.52	N 32 12 51.70	W 103 47 43.05
	14058.00	89.72	179.29	10058.94	4663.72	-4649.55	375.33	0.84	442041.21	707736.71	N 32 12 50.77	W 103 47 43.05
	14152.00	90.13	180.03	10059.07	4757.58	-4743.55	375.89	0.90	441947.22	707737.27	N 32 12 49.84	W 103 47 43.04
	14246.00	90.10	180.14	10058.88	4851.40	-4837.55	375.75	0.12	441853.23	707737.13	N 32 12 48.91	W 103 47 43.05
	14340.00	90.27	180.57	10058.57	4945.19	-4931.54	375.17	0.49	441759.24	707736.54	N 32 12 47.98	W 103 47 43.06
	14435.00	90.10	179.31	10058.27	5040.02	-5026.54	375.27	1.34	441664.25	707736.64	N 32 12 47.04	W 103 47 43.07
	14539.00	90.23	179.40	10057.97	5143.90	-5130.54	376.44	0.15	441560.26	707737.81	N 32 12 46.01	W 103 47 43.06
	14623.00	90.06	179.69	10057.76	5227.78	-5214.53	377.10	0.40	441476.27	707738.48	N 32 12 45.18	W 103 47 43.06
	14717.00	90.30	179.65	10057.46	5321.64	-5308.53	377.64	0.26	441382.28	707739.02	N 32 12 44.25	W 103 47 43.06
	14811.00	90.27	179.89	10056.99	5415.49	-5402.53	378.02	0.26	441288.28	707739.40	N 32 12 43.32	W 103 47 43.06
	14906.00	90.10	180.37	10056.69	5510.31	-5497.53	377.81	0.54	441193.29	707739.18	N 32 12 42.38	W 103 47 43.07
	15000.00	90.20	180.67	10056.44	5604.08	-5591.52	376.95	0.34	441099.30	707738.33	N 32 12 41.45	W 103 47 43.08
	15094.00	89.82	180.29	10056.42	5697.86	-5685.52	376.17	0.57	441005.31	707737.54	N 32 12 40.52	W 103 47 43.10
	15188.00	90.06	180.62	10056.52	5791.64	-5779.52	375.42	0.43	440911.32	707736.80	N 32 12 39.59	W 103 47 43.11
Final MWD Survey	15265.00	90.13	180.47	10056.39	5868.45	-5856.51	374.89	0.21	440834.33	707736.06	N 32 12 38.83	W 103 47 43.12
Proj. to Bit	15310.00	90.13	180.47	10056.29	5913.34	-5901.51	374.32	0.00	440789.33	707735.70	N 32 12 38.38	W 103 47 43.13

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 5H Gyro+MWD 0-15,310'
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Patton MDP1 17 Federal 5H Gyro+MWD 0-15,310'
	1	26.500	10361.030	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Patton MDP1 17 Federal 5H Gyro+MWD
	1	10361.030	10483.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Patton MDP1 17 Federal 5H Gyro+MWD
	1	10483.000	15310.000	Act Stns	30.000	30.000	NAL_MWD_HDGM+MS	Original Borehole / Oxy Patton MDP1 17 Federal 5H Gyro+MWD

Schlumberger OXY

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Patton MDP1 17 Federal 5H	NM Eddy County (NAD 83)	Oxy Patton MDP1 17 Federal 5H

Gravity & Magnetic Parameters				Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model: HDGM 2017	Dip: 59.98°	Date: 30-Jan-2018		Lat: N 32 13 36.80	Northing: 446690.48ftUS	Grid Conv: 0.2863°		Slot: Oxy Patton MDP1 17 Federal 5H	TVD Ref: RKB=26.5'(3570.1ft above MSL)		
MagDec: 6.923°	FS: 48981.731nT	Gravity FS: 998.428mgn (9.80665 Based)		Lon: W 103 47 47.14	Easting: 707361.4ftUS	Scale Fact: 0.99994066		Plan: Oxy Patton MDP1 17 Federal 5H REV2 LBN 29Nov17