

30-015-44316

OXY

PATTON MDP1 18 FED #23H

H&P #639

8/19/2017

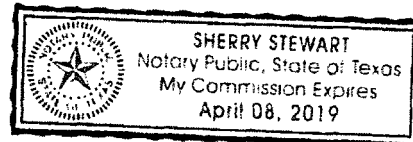
This survey is correct to the best of my knowledge and is supported by actual field data.

Kolton E. Cotton

Notarized this date 27 of October, 2017.

Sherry Stewart

Notary Signature
County of Midland
State of Texas



Scientific Drilling

The

In Wellbore Placement

SURVEY REPORT

PATTON MDP1 18 FED #23H

KEEPER GYRO SURVEY

CUSTOMER OXY
PROJECT Patton MDP1 18 Fed #23H
FIELD Bone Springs

SDI JOB NO. OP.003633
SDI DISTRICT Midland
SDI KIT/UNIT

SITE INFORMATION

Site Name Patton MDP1 18 Fed #23H
Lat/Long 32.2236715° N, 103.8152532° W
Northing 445,491.76 ft
Easting 701,546.01 ft

Section
Township
Range

MAP INFORMATION

North Reference Grid North
Grid Correction -0.28 deg
System US State Plane 1983
Datum North American Datum 1983 (GRS 1980)
Map Zone New Mexico East: 3001

**WELL INFORMATION**

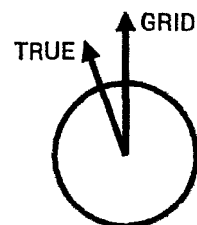
Lat/Long 32.2236715° N, 103.8152532° W
Northing 445,491.76 ft
Easting 701,546.01 ft
UWI 30-015-44316

DEPTH AND ELEVATION REFERENCE

Ground Level 3532 ft above Mean Sea Level
Reference Datum KB
Reference Height 26.5 ft above G.L.
Reference Elevation 3558.5 ft

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction 181.41°
Calculation Method Minimum Curvature

**LOCAL GRAVITY REFERENCE INFORMATION**

Local Gravity 998.488 mG [computed]
True to Grid subtract 0.28°

WELL NOTES**OPERATORS**

Grayson Wegner, Jeff Loyd

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	"/100ft	ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	Invalid
76.00	0.12	37.88	76.00	-0.06	0.06	0.05	0.15	76.00
163.00	0.23	53.71	163.00	-0.24	0.23	0.24	0.14	87.00
255.00	0.25	62.31	255.00	-0.45	0.44	0.57	0.05	92.00
288.00	0.24	60.93	288.00	-0.52	0.51	0.70	0.05	33.00
350.00	0.19	69.30	350.00	-0.63	0.60	0.91	0.09	62.00
412.00	0.12	86.97	412.00	-0.67	0.64	1.07	0.14	62.00
473.00	0.10	145.52	473.00	-0.63	0.60	1.16	0.18	61.00
535.00	0.14	163.09	535.00	-0.51	0.48	1.22	0.08	62.00
595.00	0.17	164.24	595.00	-0.36	0.33	1.26	0.05	60.00
656.00	0.22	157.52	656.00	-0.16	0.13	1.33	0.08	61.00
718.00	0.23	151.71	718.00	0.05	-0.09	1.43	0.05	62.00
779.00	0.26	155.64	779.00	0.29	-0.32	1.55	0.06	61.00
841.00	0.28	158.05	841.00	0.55	-0.59	1.66	0.03	62.00
901.00	0.31	168.15	900.99	0.84	-0.88	1.75	0.10	60.00
991.00	0.34	173.98	990.99	1.34	-1.38	1.83	0.05	90.00
1082.00	0.40	173.66	1081.99	1.92	-1.97	1.89	0.07	91.00
1172.00	0.46	172.90	1171.99	2.59	-2.64	1.97	0.07	90.00
1262.00	0.53	170.90	1261.99	3.36	-3.41	2.08	0.08	90.00
1352.00	0.56	169.02	1351.98	4.20	-4.26	2.23	0.04	90.00
1442.00	0.59	169.01	1441.98	5.08	-5.14	2.41	0.03	90.00
1532.00	0.63	169.39	1531.97	6.02	-6.08	2.58	0.05	90.00
1622.00	0.69	167.09	1621.97	7.02	-7.10	2.80	0.07	90.00
1713.00	0.71	164.37	1712.96	8.09	-8.17	3.07	0.05	91.00
1804.00	0.72	160.80	1803.95	9.17	-9.25	3.41	0.05	91.00
1899.00	0.79	158.87	1898.94	10.33	-10.43	3.84	0.08	95.00
1993.00	0.86	159.09	1992.93	11.58	-11.69	4.33	0.08	94.00
2088.00	0.92	172.11	2087.92	13.00	-13.12	4.69	0.22	95.00
2183.00	0.97	168.99	2182.91	14.53	-14.66	4.95	0.08	95.00
2277.00	0.98	166.19	2276.90	16.08	-16.22	5.29	0.05	94.00
2372.00	0.94	169.79	2371.88	17.63	-17.78	5.62	0.08	95.00
2467.00	0.84	179.27	2466.87	19.09	-19.24	5.77	0.19	95.00

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	COURSE LENGTH
ft	deg	deg	ft	ft	ft	ft	%/100ft	ft
2561.00	0.77	179.05	2560.86	20.42	-20.56	5.79	0.07	94.00
2656.00	0.72	185.15	2655.85	21.65	-21.80	5.75	0.10	95.00
2751.00	0.74	194.23	2750.85	22.85	-22.99	5.54	0.12	95.00
2845.00	0.72	200.22	2844.84	24.00	-24.13	5.19	0.09	94.00
2940.00	0.70	204.29	2939.83	25.09	-25.22	4.74	0.06	95.00
3035.00	0.65	211.44	3034.82	26.09	-26.20	4.23	0.10	95.00
3129.00	0.60	218.59	3128.82	26.95	-27.04	3.64	0.10	94.00
3224.00	0.62	220.03	3223.81	27.75	-27.83	3.00	0.03	95.00
3319.00	0.66	221.03	3318.81	28.57	-28.64	2.31	0.04	95.00
3413.00	0.69	216.36	3412.80	29.45	-29.50	1.62	0.07	94.00
3508.00	0.56	211.25	3507.80	30.32	-30.35	1.04	0.16	95.00
3603.00	0.72	173.19	3602.79	31.31	-31.35	0.87	0.47	95.00
3698.00	1.09	157.39	3697.78	32.73	-32.77	1.29	0.46	95.00
3792.00	1.20	152.16	3791.76	34.40	-34.47	2.09	0.17	94.00
3887.00	1.70	150.51	3886.73	36.49	-36.58	3.25	0.53	95.00
3982.00	2.36	153.38	3981.67	39.42	-39.55	4.82	0.69	95.00
4076.00	2.90	151.98	4075.57	43.20	-43.38	6.80	0.58	94.00
4171.00	2.80	149.63	4170.45	47.26	-47.50	9.10	0.16	95.00
4245.00	2.76	149.23	4244.36	50.30	-50.59	10.93	0.06	74.00

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

October 5, 2017

OXY USA INC.

Re:

CLIENT: OXY USA INC.
WELL: Patton MDP1 18 Federal 23H
FIELD: Cotton Draw; Bone Spring

32.22367 -103.81525

RIG: H&P 639
COUNTY: Eddy
API NO: 30-015-44316
JOB NO: 17MLD1940

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.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Rasheed Atanda FE	Patton MDP1 18 Federal 23H Original Hole	3982.00 Ft to 14879.00 Ft	August 14, 2017 to September 25, 2017	TelePacer SlimPulse

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

Sincerely,

Cody Nelms
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:

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 August 14, 2017 through September 25, 2017. conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 3982.00 feet to a depth of 14879.00 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 23H Well (Original Hole) API No. 30-015-44316 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

R. Atanda

Subscribed and Sworn to before me this 5th day of October (month) 2017 (yr)

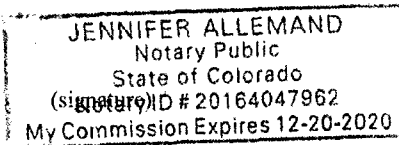
My Commission expires:

12-20-2020

J. Allemand

Notary Public

Adams County Colorado
(County State)



Oxy Patton MDP1 18 Federal 23H Gyro+MWD 0-14,917' Survey Geodetic Report

(Def Survey)



Report Date: September 25, 2017 - 12:30 PM
 Client: OXY
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Oxy Patton MDP1 18 Federal 23H / Oxy Patton MDP1 18 Federal 23H
 Well: Oxy Patton MDP1 18 Federal 23H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Oxy Patton MDP1 18 Federal 23H Gyro+MWD 0-14,917'
 Survey Date: August 15, 2017
 Tort / AHD / DDI / ERD Ratio: 224.129' / 5374.894 ft / 6.242' / 0.522
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 13' 25.21749", W 103° 48' 54.91157"
 Location Grid N/E Y/X: N 445491.760 RUS, E 701546.010 RUS
 CRS Grid Convergence Angle: 0.2763°
 Grid Scale Factor: 0.99993849
 Version / Patch: 2.10.544.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 181.411° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3559.300 ft above MSL
 Seabed / Ground Elevation: 3532.800 ft above MSL
 Magnetic Declination: 6.968°
 Total Gravity Field Strength: 998.4278mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48092.349 nT
 Magnetic Dip Angle: 59.993°
 Declination Date: September 15, 2017
 Magnetic Declination Model: HDGM 2017
 North Reference: Grid North
 Grid Convergence Used: 0.2763°
 Total Corr Mag North->Grid: 6.6915°
 North: Well Head
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	445491.76	701546.01	N 32 13 25.22	W 103 48 54.91
RKB	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	445491.76	701546.01	N 32 13 25.22	W 103 48 54.91
	76.00	0.12	37.88	76.00	-0.04	0.04	0.03	0.24	445491.80	701546.04	N 32 13 25.22	W 103 48 54.91
	163.00	0.23	53.71	163.00	-0.22	0.22	0.23	0.14	445491.98	701546.24	N 32 13 25.22	W 103 48 54.91
	255.00	0.25	62.31	255.00	-0.43	0.42	0.56	0.04	445492.18	701546.57	N 32 13 25.22	W 103 48 54.91
	288.00	0.24	60.93	288.00	-0.50	0.49	0.68	0.04	445492.25	701546.69	N 32 13 25.22	W 103 48 54.90
	350.00	0.19	69.30	350.00	-0.61	0.59	0.89	0.10	445492.35	701546.90	N 32 13 25.22	W 103 48 54.90
	412.00	0.12	86.97	412.00	-0.65	0.62	1.05	0.14	445492.38	701547.06	N 32 13 25.22	W 103 48 54.90
	473.00	0.10	145.52	473.00	-0.61	0.58	1.14	0.18	445492.34	701547.15	N 32 13 25.22	W 103 48 54.90
	535.00	0.14	163.09	535.00	-0.50	0.47	1.20	0.09	445492.23	701547.21	N 32 13 25.22	W 103 48 54.90
	595.00	0.17	164.24	595.00	-0.34	0.31	1.24	0.05	445492.07	701547.25	N 32 13 25.22	W 103 48 54.90
	656.00	0.22	157.52	656.00	-0.15	0.12	1.31	0.09	445491.88	701547.32	N 32 13 25.22	W 103 48 54.90
	718.00	0.23	151.71	718.00	0.07	-0.10	1.42	0.04	445491.66	701547.43	N 32 13 25.21	W 103 48 54.90
	779.00	0.26	155.64	779.00	0.30	-0.34	1.53	0.06	445491.42	701547.54	N 32 13 25.21	W 103 48 54.89
	841.00	0.28	158.05	841.00	0.57	-0.61	1.65	0.04	445491.15	701547.66	N 32 13 25.21	W 103 48 54.89
	901.00	0.31	168.15	900.99	0.86	-0.90	1.73	0.10	445490.86	701547.74	N 32 13 25.21	W 103 48 54.89
	991.00	0.34	173.98	990.99	1.36	-1.40	1.81	0.05	445490.36	701547.82	N 32 13 25.20	W 103 48 54.89
	1082.00	0.40	173.66	1081.99	1.94	-1.99	1.88	0.07	445489.77	701547.89	N 32 13 25.20	W 103 48 54.89
	1172.00	0.46	172.90	1171.99	2.61	-2.66	1.95	0.07	445489.10	701547.96	N 32 13 25.19	W 103 48 54.89
	1262.00	0.53	170.90	1261.99	3.38	-3.43	2.06	0.08	445488.33	701548.07	N 32 13 25.18	W 103 48 54.89
	1352.00	0.56	169.02	1351.98	4.22	-4.27	2.21	0.04	445487.49	701548.22	N 32 13 25.18	W 103 48 54.89
	1442.00	0.59	169.01	1441.98	5.10	-5.16	2.39	0.03	445486.60	701548.40	N 32 13 25.17	W 103 48 54.88
	1532.00	0.63	169.39	1531.97	6.03	-6.10	2.57	0.04	445485.66	701548.58	N 32 13 25.16	W 103 48 54.88
	1622.00	0.69	167.09	1621.97	7.04	-7.11	2.78	0.07	445484.65	701548.79	N 32 13 25.15	W 103 48 54.88
	1713.00	0.71	164.37	1712.96	8.11	-8.19	3.05	0.04	445483.57	701549.06	N 32 13 25.14	W 103 48 54.88
	1804.00	0.72	160.80	1803.95	9.19	-9.27	3.39	0.05	445482.49	701549.40	N 32 13 25.13	W 103 48 54.87
	1899.00	0.79	158.87	1898.94	10.35	-10.45	3.82	0.08	445481.31	701549.83	N 32 13 25.11	W 103 48 54.87
	1993.00	0.86	159.09	1992.93	11.60	-11.71	4.31	0.07	445480.05	701550.32	N 32 13 25.10	W 103 48 54.86
	2088.00	0.92	172.11	2087.92	13.01	-13.13	4.67	0.22	445478.63	701550.68	N 32 13 25.09	W 103 48 54.86
	2183.00	0.97	168.99	2182.91	14.55	-14.68	4.93	0.08	445477.08	701550.94	N 32 13 25.07	W 103 48 54.86
	2277.00	0.98	166.19	2276.90	16.11	-16.24	5.27	0.05	445475.52	701551.28	N 32 13 25.06	W 103 48 54.85
	2372.00	0.94	169.79	2371.88	17.65	-17.80	5.60	0.08	445473.97	701551.61	N 32 13 25.04	W 103 48 54.85
	2467.00	0.84	179.27	2466.87	19.11	-19.26	5.75	0.19	445472.50	701551.76	N 32 13 25.03	W 103 48 54.85
	2561.00	0.77	179.05	2560.86	20.43	-20.58	5.77	0.07	445471.18	701551.78	N 32 13 25.01	W 103 48 54.85
	2656.00	0.72	185.15	2655.85	21.66	-21.81	5.73	0.10	445469.95	701551.74	N 32 13 25.00	W 103 48 54.85
	2751.00	0.74	194.23	2750.85	22.86	-23.00	5.52	0.12	445468.76	701551.53	N 32 13 24.99	W 103 48 54.85
	2845.00	0.72	200.22	2844.84	24.01	-24.14	5.17	0.08	445467.62	701551.18	N 32 13 24.98	W 103 48 54.85
	2940.00	0.70	204.29	2939.83	25.11	-25.23	4.72	0.06	445466.53	701550.73	N 32 13 24.97	W 103 48 54.86
	3035.00	0.65	211.44	3034.82	26.11	-26.22	4.20	0.10	445465.54	701550.21	N 32 13 24.96	W 103 48 54.86
	3129.00	0.60	218.59	3128.82	26.96	-27.06	3.62	0.10	445464.70	701549.63	N 32 13 24.95	W 103 48 54.87
	3224.00	0.62	220.03	3223.81	27.76	-27.84	2.98	0.03	445463.92	701548.99	N 32 13 24.94	W 103 48 54.88
	3319.00	0.66	221.03	3318.81	28.58	-28.65	2.29	0.04	445463.11	701548.30	N 32 13 24.93	W 103 48 54.89
	3413.00	0.69	216.36	3412.80	29.47	-29.51	1.60	0.07	445462.25	701547.61	N 32 13 24.93	W 103 48 54.89
	3508.00	0.56	211.25	3507.80	30.34	-30.37	1.02	0.15	445461.39	701547.03	N 32 13 24.92	W 103 48 54.90
	3603.00	0.72	173.19	3602.79	31.33	-31.36	0.85	0.47	445460.40	701546.86	N 32 13 24.91	W 103 48 54.90
	3698.00	1.09	157.39	3697.78	32.75	-32.79	1.27	0.47	445458.97	701547.28	N 32 13 24.89	W 103 48 54.90
	3792.00	1.20	152.16	3791.76	34.42	-34.48	2.07	0.16	445457.28	701548.08	N 32 13 24.88	W 103 48 54.89
	3887.00	1.70	150.51	3886.73	36.50	-36.59	3.23	0.53	445455.17	701549.24	N 32 13 24.86	W 103 48 54.88
	3982.00	2.36	153.38	3981.67	39.44	-39.57	4.80	0.70	445452.20	701550.81	N 32 13 24.83	W 103 48 54.86
	4076.00	2.90	151.98	4075.57	43.21	-43.39	6.78	0.58	445448.37	701552.79	N 32 13 24.79	W 103 48 54.84
	4171.00	2.80	149.63	4170.45	47.28	-47.52	9.08	0.16	445444.24	701555.09	N 32 13 24.75	W 103 48 54.81
	4245.00	2.76	149.23	4244.36	50.32	-50.61	10.91	0.06	445441.15	701556.92	N 32 13 24.72	W 103 48 54.79
	4401.00	2.86	148.08	4400.18	56.76	-57.14	14.89	0.07	445434.62	701560.90	N 32 13 24.65	W 103 48 54.74
	4590.00	0.13	299.22	4589.10	60.60	-61.04	17.19	1.57	445430.73	701563.20	N 32 13 24.61	W 103 48 54.71
	4779.00	0.11	252.96	4778.10	60.55	-60.99	16.83	0.05	445430.78	701562.84	N 32 13 24.61	W 103 48 54.72
	4968.00	0.11	219.65	4967.10	60.75	-61.18	16.55	0.03	445430.59	701562.55	N 32 13 24.61	W 103 48 54.72
	5156.00	0.06	132.14	5155.10	60.96	-61.38	16.50	0.07	445430.38	701562.51	N 32 13 24.61	W 103 48 54.72
	5251.00	0.00	319.49	5250.10	60.99	-61.42	16.54	0.06	445430.35	701562.55	N 32 13 24.61	W 103 48 54.72
	5345.00	0.06	292.11	5344.10	60.97	-61.40	16.49	0.06	445430.37	701562.50	N 32 13 24.61	W 103 48 54.72
	5440.00	0.08	337.78	5439.10	60.90	-61.32	16.42	0.06	445430.45	701562.43	N 32 13 24.61	W 103 48 54.72
	5630.00	0.06	209.69	5629.10	60.86	-61.28	16.32	0.07	445430.48	701562.33	N 32 13 24.61	W 103 48 54.73
	5819.00	0.00	52.40	5818.10	60.95	-61.37	16.27	0.03	445430.40	701562.28	N 32 13 24.61	W 103 48 54.73
	6008.00	0.13	265.73	6007.10	60.97	-61.38	16.06	0.07	445430.38	701562.07	N 32 13 24.61	W 103 48 54.73
	6103.00	0.18	204.41	6102.10	61.12	-61.53	15.89	0.17	445430.24	701561.90	N 32 13 24.61	W 103 48 54.73
	6198.00	0.13	217.77	6197.10	61.34	-61.75	15.76	0.06	445430.01	701561.77	N 32 13 24.61	W 103 48 54.73
	6292.00	0.34	218.91	6291.10	61.65	-62.05	15.52	0.22	445429.71	701561.53	N 32 13 24.60	W 103 48 54.73
	6387.00	0.28	216.09	6386.10	62.06	-62.46	15.21	0.07	445429.31	701561.22	N 32 13 24.60	W 103 48 54.74
	6482.00	0.34	189.28	6481.10	62.53	-62.92	15.03	0.16	445428.84	701561.04	N 32 13 24.59	W 103 48 54.74
	6671.00	0.45	170.87	6670.09	63.82	-64.21	15.05	0.09	445427.55	701561.06	N 32 13 24.58	W 103 48 54.74
	6766.00	0.44	146.90	6765.09	64.49	-64.88	15.31	0.19	445426.88	701561.32	N 32 13 24.57	W 103 48 54.74
	6953.00	0.51	193.37	6952.08	65.89	-66.29	15.51	0.20	445425.47	701561.52	N 32 13 24.56	W 103 48 54.73
	7048.00	0.48	192.38	7047.08	66.70	-67.09	15.33	0.03	445424.67	701561.34	N 32 13 24.55	W 103 48 54.74
	7146.00	0.50	192.77	7145.08	67.52	-67.91	15.15	0.02	445423.85	701561.16	N 32 13 24.54	W 103 48 54.74
	7241.00	0.56	193.37	7240.07	68.38	-68.77	14.95	0.06	445423.00	701560.96	N 32 13 24.5	

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 ° ° °)
	7715.00	0.20	214.16	7714.06	72.11	-72.48	14.07	0.30	445419.29	701560.08	N 32 13 24.50	W 103 48 54.75
	7810.00	0.20	328.16	7809.06	72.11	-72.47	13.89	0.35	445419.29	701559.90	N 32 13 24.50	W 103 48 54.75
	7904.00	2.24	283.47	7903.03	71.59	-71.91	12.02	2.24	445419.86	701558.03	N 32 13 24.51	W 103 48 54.78
	7999.00	5.80	250.11	7997.79	72.95	-73.11	5.69	4.33	445418.66	701551.70	N 32 13 24.49	W 103 48 54.85
	8094.00	8.15	246.69	8092.08	77.51	-77.41	-5.00	2.51	445414.36	701541.01	N 32 13 24.45	W 103 48 54.97
	8172.00	9.13	253.91	8169.20	81.68	-81.31	-16.03	1.87	445410.46	701529.98	N 32 13 24.41	W 103 48 55.10
	8231.00	10.54	269.20	8227.34	83.30	-82.68	-25.92	5.01	445409.08	701520.09	N 32 13 24.40	W 103 48 55.22
	8326.00	9.33	285.26	8320.93	81.79	-80.78	-42.04	3.17	445410.99	701503.97	N 32 13 24.42	W 103 48 55.41
	8421.00	9.05	312.37	8414.76	75.04	-73.71	-55.00	4.53	445418.05	701491.01	N 32 13 24.49	W 103 48 55.56
	8516.00	11.23	323.20	8508.27	62.87	-61.27	-66.06	3.04	445430.50	701479.95	N 32 13 24.61	W 103 48 55.68
	8610.00	11.02	339.34	8600.53	47.35	-45.53	-74.72	3.31	445446.24	701471.30	N 32 13 24.77	W 103 48 55.78
	8705.00	11.58	350.81	8693.70	29.56	-27.62	-79.45	2.43	445464.15	701466.57	N 32 13 24.95	W 103 48 55.84
	8799.00	12.86	1.32	8785.58	9.83	-7.84	-80.71	2.72	445483.92	701465.30	N 32 13 25.14	W 103 48 55.85
	8894.00	14.81	356.56	8877.82	-12.85	14.85	-81.20	2.38	445506.61	701464.82	N 32 13 25.37	W 103 48 55.86
	8989.00	17.65	354.60	8969.03	-39.25	41.31	-83.28	3.04	445533.07	701462.73	N 32 13 25.63	W 103 48 55.88
	9083.00	17.08	346.64	9058.76	-66.75	68.94	-87.81	2.60	445560.69	701458.20	N 32 13 25.90	W 103 48 55.93
	9178.00	14.80	346.41	9150.10	-91.97	94.31	-93.89	2.40	445586.06	701452.13	N 32 13 26.16	W 103 48 56.00
	9273.00	16.86	349.22	9241.49	-117.18	119.84	-99.32	2.31	445611.39	701448.70	N 32 13 26.41	W 103 48 56.06
	9367.00	15.79	348.32	9331.70	-142.94	145.55	-104.46	1.17	445637.30	701441.56	N 32 13 26.66	W 103 48 56.12
	9462.00	13.26	342.95	9423.66	-165.87	168.63	-110.27	3.01	445660.38	701435.75	N 32 13 26.89	W 103 48 56.19
	9557.00	6.34	312.94	9517.27	-179.70	182.65	-117.32	8.82	445674.40	701428.70	N 32 13 27.03	W 103 48 56.27
	9651.00	4.97	188.71	9611.05	-179.10	182.16	-121.74	10.65	445673.91	701424.28	N 32 13 27.03	W 103 48 56.32
	9746.00	15.86	179.08	9704.34	-162.00	165.06	-122.16	11.57	445656.81	701423.86	N 32 13 26.86	W 103 48 56.32
	9841.00	27.15	174.19	9792.60	-127.41	130.40	-119.75	12.02	445622.15	701426.27	N 32 13 26.51	W 103 48 56.30
	9935.00	32.20	176.57	9874.24	-81.15	84.03	-116.08	5.52	445575.78	701429.94	N 32 13 26.05	W 103 48 56.26
	10030.00	35.37	179.33	9953.20	-28.43	31.25	-114.24	3.71	445523.01	701431.78	N 32 13 25.53	W 103 48 56.24
	10124.00	46.59	180.59	10024.05	33.09	-30.29	-114.27	11.97	445461.47	701431.74	N 32 13 24.92	W 103 48 56.24
	10219.00	55.23	181.45	10083.89	106.76	-103.94	-115.62	9.12	445387.82	701430.40	N 32 13 24.19	W 103 48 56.26
	10313.00	60.03	182.43	10134.21	186.12	-183.26	-118.32	5.18	445308.51	701427.69	N 32 13 23.41	W 103 48 56.30
	10408.00	68.96	183.29	10175.07	271.75	-268.81	-122.62	9.44	445222.97	701423.40	N 32 13 22.56	W 103 48 56.35
	10503.00	72.72	184.45	10206.25	361.38	-358.32	-128.69	4.12	445133.46	701417.33	N 32 13 21.68	W 103 48 56.43
	10655.00	76.90	182.53	10246.07	507.94	-504.70	-137.59	3.01	444987.09	701408.43	N 32 13 20.23	W 103 48 56.54
	10749.00	79.73	180.32	10265.11	599.97	-596.71	-139.87	3.79	444895.09	701406.15	N 32 13 19.32	W 103 48 56.57
	10843.00	83.56	179.77	10278.76	692.93	-689.70	-139.94	4.12	444802.11	701406.08	N 32 13 18.40	W 103 48 56.58
	10938.00	87.97	179.96	10285.78	787.62	-784.41	-139.72	4.65	444707.40	701406.30	N 32 13 17.46	W 103 48 56.58
	11032.00	92.16	180.83	10285.67	881.58	-878.39	-140.37	4.55	444613.43	701405.65	N 32 13 16.53	W 103 48 56.59
	11127.00	94.82	179.61	10279.89	976.37	-973.20	-140.73	3.08	444518.62	701405.29	N 32 13 15.59	W 103 48 56.60
	11315.00	92.48	178.82	10267.92	1163.84	-1160.79	-138.16	1.31	444331.05	701407.86	N 32 13 13.74	W 103 48 56.58
	11410.00	90.21	177.67	10265.69	1258.66	-1255.71	-135.25	2.68	444236.13	701410.77	N 32 13 12.80	W 103 48 56.56
	11504.00	87.80	177.54	10267.32	1352.43	-1349.61	-131.32	2.57	444142.24	701414.70	N 32 13 11.87	W 103 48 56.52
	11693.00	84.63	175.74	10279.80	1540.33	-1537.84	-120.28	1.93	443954.02	701425.74	N 32 13 10.01	W 103 48 56.40
	11788.00	85.39	175.74	10286.06	1634.51	-1632.22	-113.25	0.80	443859.65	701432.77	N 32 13 9.07	W 103 48 56.32
	11976.00	90.79	177.44	10294.32	1821.66	-1819.70	-102.08	3.01	443672.17	701443.94	N 32 13 7.22	W 103 48 56.20
	12070.00	92.31	178.01	10291.78	1915.43	-1913.59	-98.35	1.73	443578.29	701447.67	N 32 13 6.29	W 103 48 56.16
	12165.00	92.14	177.52	10288.09	2010.17	-2008.45	-94.65	0.55	443483.44	701451.37	N 32 13 5.35	W 103 48 56.13
	12259.00	91.51	177.39	10285.10	2103.90	-2102.31	-90.48	0.68	443389.59	701455.54	N 32 13 4.42	W 103 48 56.08
	12354.00	91.24	176.36	10282.82	2198.57	-2197.14	-85.30	1.12	443294.76	701460.72	N 32 13 3.48	W 103 48 56.03
	12543.00	89.35	177.99	10281.85	2387.04	-2385.89	-75.98	1.32	443106.02	701470.03	N 32 13 1.61	W 103 48 55.93
	12637.00	87.66	177.92	10284.30	2480.83	-2479.79	-72.63	1.80	443012.12	701473.38	N 32 13 0.88	W 103 48 55.90
	12732.00	87.14	177.16	10288.61	2575.52	-2574.61	-68.56	0.97	442917.32	701477.46	N 32 12 59.74	W 103 48 55.85
	12823.00	88.80	177.89	10291.83	2666.25	-2665.46	-64.63	1.99	442826.47	701481.38	N 32 12 58.85	W 103 48 55.81
	12917.00	90.34	181.62	10292.54	2760.18	-2759.44	-64.23	4.29	442732.50	701481.78	N 32 12 57.92	W 103 48 55.81
	13012.00	90.93	183.80	10291.48	2855.15	-2854.32	-68.72	2.38	442637.62	701477.29	N 32 12 56.98	W 103 48 55.87
	13201.00	90.96	183.36	10288.37	3043.99	-3042.93	-80.52	0.23	442449.03	701465.49	N 32 12 55.11	W 103 48 56.02
	13295.00	90.96	183.35	10286.79	3137.92	-3136.75	-86.02	0.01	442355.21	701459.99	N 32 12 53.22	W 103 48 56.09
	13390.00	90.86	182.66	10285.28	3232.87	-3231.61	-91.00	0.73	442260.36	701455.02	N 32 12 53.24	W 103 48 56.15
	13484.00	90.96	182.93	10283.79	3326.83	-3325.49	-95.58	0.31	442166.49	701450.43	N 32 12 51.48	W 103 48 56.21
	13579.00	91.00	183.70	10282.17	3421.76	-3420.31	-101.08	0.81	442071.67	701444.94	N 32 12 51.38	W 103 48 56.28
	13673.00	90.96	183.25	10280.56	3515.69	-3514.12	-106.77	0.48	441977.86	701439.24	N 32 12 50.45	W 103 48 56.35
	13862.00	90.41	182.90	10278.30	3704.59	-3702.84	-116.91	0.34	441789.16	701429.11	N 32 12 48.58	W 103 48 56.48
	14052.00	89.76	182.94	10278.02	3894.53	-3892.59	-126.59	0.34	441599.42	701419.43	N 32 12 46.71	W 103 48 56.60
	14241.00	89.38	182.74	10279.44	4083.46	-4081.35	-135.95	0.23	441410.67	701410.06	N 32 12 44.84	W 103 48 56.72
	14430.00	89.72	181.63	10280.92	4272.44	-4270.21	-143.16	0.61	441221.83	701402.86	N 32 12 42.97	W 103 48 56.82
	14620.00	89.52	175.00	10282.18	4462.05	-4460.01	-137.58	3.49	441032.03	701408.44	N 32 12 41.09	W 103 48 56.76
	14809.00	89.24	169.12	10284.23	4648.44	-4647.11	-111.48	3.11	440844.95	701434.54	N 32 12 39.24	W 103 48 56.47
Final MWD survey	14879.00	88.93	167.85	10285.35	4716.66	-4715.69	-97.51	1.87	440776.37	701448.51	N 32 12 38.56	W 103 48 56.31
Proj. to bit	14917.00	88.93	167.85	10286.06	4753.59	-4752.83	-89.51	0.00	440739.23	701456.50	N 32 12 38.19	W 103 48 56.22

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	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 18 Federal 23H Gyro+MWD 0-14,917'
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Patton MDP1 18 Federal 23H Gyro+MWD 0-14,917'
	1	26.500	4245.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Patton MDP1 18 Federal 23H
	1	4245.000	14917.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Patton MDP1 18 Federal 23H

Schlumberger**OXY**

Borehole:

Original Borehole

Well:

Oxy Patton MDP1 18 Federal 23H

Field:

NM Eddy County (NAD 83)

Structure:

Oxy Patton MDP1 18 Federal 23H

Gravity & Magnetic Parameters

Model: HDGM 2017 Dip: 59.993° Date: 15-Sep-2017
 MagDec: 6.968° FS: 48092.34mT Gravity FS: 998.428mg (9.80665 Based)

Surface Location

NAD83 New Mexico State Plane Eastern Zone US Feet
 Lat: N 32 13 25.22 Northings: 445491.76RUS
 Lon: W 103 48 54.91 Eastings: 701546.01RUS

Miscellaneous

Oxy Patton MDP1 18 Federal 23H
 Plan: Oxy Patton MDP1 18 Federal 23H REV2 LBN 15Sep17
 TVD Ref: RKB=26.5'(3559.38 above MSL)

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(H)/S(L)	E(H)/W(L)	DLS
Rustler	594.00	0.17	164.22	594.00	-0.34	0.31	1.24	0.05
Salado	949.01	0.23	171.39	949.02	1.12	-1.16	1.78	0.05
Delaware	4294.69	2.79	148.95	4294.00	52.36	52.67	12.15	0.07
Bell Canyon	4347.75	2.82	148.51	4341.00	54.30	54.64	13.35	0.07
Cherry Canyon	5122.90	0.05	153.19	5122.00	60.65	61.30	16.48	0.07
Brushy Canyon	6443.90	0.31	198.74	6443.00	62.32	62.71	15.08	0.16
1st Bone Spring	8580.70	7.82	247.04	8579.00	70.74	-76.69	-3.32	2.51
Tie In	8094.00	8.15	246.09	8052.08	77.34	-77.25	-4.87	
PTB	8222.00	9.00	250.00	8218.65	84.79	-84.26	-22.61	0.77
Hold	8451.50	15.00	351.20	8433.18	22.02	-20.01	81.88	3.00
Build/Turn 8 /100'	9408.43	16.00	351.20	9375.20	119.33	121.92	-103.86	0.00
2nd Bone Spring	9436.09	12.66	349.54	9404.00	-126.12	128.75	-105.16	8.00
Landing Point	10713.40	89.73	179.74	10274.00	570.35	-567.17	-136.36	3.00
Patton MDP1 18 Federal 23H PBHL	14916.28	89.73	179.74	10294.00	4771.40	-4769.95	-117.48	0.00
2nd Bone Spring (Projected)	N/A			10507.00				



Grid North
 Tot Corr (M->G 6.691°)
 Mag Dec (6.968°)
 Grid Conv (0.276°)

