

Reservoir Development

Drilling & Measurements (Extreme Engineering)

6724 Corporation Pkwy Suite 100

Fort Worth, TX 76126

Phone: (817) 717-1820

Fax: (817) 546-7551

August 28, 2013

Conoco Phillips

3401 E. 30th Street

Farmington, 87402

Attention: Anthony Tschacher

Re:

CLIENT: Occidental Petroleum Corporation (OXY)

WELL: Yeso Viking Federal 004

FIELD: Artesia; Glorieta-YESO

RIG: Savanna 415

COUNTY: Eddy, NM.

API NO: 30-015-41341

JOB NO: NM-OXY-0079

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements (formerly Extreme), 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>
Troy Miller FST-2	Yeso Viking Federal 004 Original Hole	438.00 Ft to 4474.00 Ft	August 1, 2013 to August 6, 2013	SlimPulse

A plat of the bottom hole location is oriented both to the surface location and to the lease lines (or unit line in case of pooling), is attached to the survey report.

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

Joey Stewart
Field Service Manager

CC: Occidental Petroleum Corporation (OXY)

Enclosures: [2]

County of Eddy, NM.

State of New Mexico

Reservoir Development

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I, Troy Miller certify that; I am employed by Drilling & Measurements (formerly Extreme), a division of Schlumberger Technology Corporation; that I did on the day(s) of August 01, 2013 through August 06, 2013, conduct or supervise the taking of the SlimPulse surveys from a depth of 438.00 feet to a depth of 4474.00 feet; 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 Occidental Petroleum Corporation (OXY) for the Yeso Viking Federal 004 Well (Original Hole) API No. 30-015-41341 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.



Troy Miller
FST-2

Before me, Dana M Rodriguez, on this day personally appeared Troy Miller, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 28th day of Aug 2013 (year).

Dana M Rodriguez
Notary Public



OFFICIAL SEAL
Dana M Rodriguez
NOTARY PUBLIC - STATE OF NEW MEXICO
My Commission Expires: 8/8/2015

Yeso Viking Federal 004 MWD 0' to 4473' Survey Report

(Def Survey)

Report Date: August 06, 2013 - 05:35 PM
 Client: Occidental
 Field: NM, Eddy (NAD 27 EZ) 2012
 Structure / Slot: Yeso Viking Federal (Yeso Viking Federal 004) Savanna 415 / Yeso Viking Federal 004
 Well: Yeso Viking Federal 004
 Borehole: Original Hole
 UWI / API#: Unknown / 30-015-41341
 Survey Name: Yeso Viking Federal 004 MWD 0' to 4473'
 Survey Date: August 06, 2013
 Tort / AHD / DDI / ERD Ratio: 7.217 * / 29.556 ft / 2.329 / 0.007
 Coordinate Reference System: NAD27, New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 49' 6.24000", W 104° 14' 50.64000"
 Location Grid N/E Y/X: N 561455.728 ftUS, E 526399.563 ftUS
 CRS Grid Convergence Angle: 0.04657401 *
 Grid Scale Factor: 0.99990989

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 0.000 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3559.000 ft above Unknown
 Seabed / Ground Elevation: 3545.000 ft above Unknown
 Magnetic Declination: 7.773 *
 Total Field Strength: 48844.840 nT
 Magnetic Dip Angle: 60.524 *
 Declination Date: August 06, 2013
 Magnetic Declination Model: BGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.047 *
 Total Corr Mag North -> Grid North: 7.726 *
 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 ° ' '')
Tie-In	350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	661455.73	526399.56	N 32 49 6.24	W 104 14 50.64
Begin MWD Surveys	438.00	0.31	278.02	438.00	0.03	0.03	-0.24	0.35	661455.76	526399.33	N 32 49 6.24	W 104 14 50.64
	499.00	0.30	318.40	499.00	0.18	0.18	-0.51	0.35	661455.90	526399.06	N 32 49 6.24	W 104 14 50.65
	561.00	0.40	310.80	561.00	0.44	0.44	-0.78	0.18	661456.17	526398.79	N 32 49 6.24	W 104 14 50.65
	651.00	0.40	322.40	651.00	0.89	0.89	-1.21	0.09	661456.62	526398.36	N 32 49 6.25	W 104 14 50.65
	742.00	0.40	328.28	741.99	1.41	1.41	-1.57	0.05	661457.14	526398.00	N 32 49 6.25	W 104 14 50.66
	833.00	0.40	316.80	832.99	1.92	1.92	-1.95	0.09	661457.64	526397.61	N 32 49 6.25	W 104 14 50.66
	925.00	0.31	225.51	924.99	1.98	1.98	-2.35	0.56	661457.70	526397.21	N 32 49 6.25	W 104 14 50.67
	993.00	0.20	309.60	992.99	1.92	1.92	-2.57	0.52	661457.65	526396.99	N 32 49 6.25	W 104 14 50.67
	1061.00	0.09	315.50	1060.99	2.04	2.04	-2.70	0.16	661457.76	526396.86	N 32 49 6.25	W 104 14 50.67
	1147.00	0.20	305.20	1146.99	2.17	2.17	-2.87	0.13	661457.90	526396.69	N 32 49 6.26	W 104 14 50.67
	1243.00	0.31	339.02	1242.99	2.51	2.51	-3.10	0.19	661458.24	526396.46	N 32 49 6.26	W 104 14 50.68
	1342.00	0.20	344.60	1341.99	2.93	2.93	-3.24	0.11	661458.65	526396.32	N 32 49 6.27	W 104 14 50.68
	1378.00	0.20	324.70	1377.99	3.04	3.04	-3.30	0.19	661458.77	526396.27	N 32 49 6.27	W 104 14 50.68
	1469.00	0.22	358.90	1468.99	3.34	3.34	-3.40	0.13	661459.07	526396.17	N 32 49 6.27	W 104 14 50.68
	1567.00	0.30	346.50	1566.99	3.78	3.78	-3.47	0.09	661459.51	526396.10	N 32 49 6.28	W 104 14 50.68
	1666.00	0.40	349.30	1665.98	4.37	4.37	-3.59	0.10	661460.10	526395.97	N 32 49 6.28	W 104 14 50.68
	1753.00	0.50	316.30	1752.98	4.94	4.94	-3.91	0.31	661460.67	526395.65	N 32 49 6.29	W 104 14 50.69
	1839.00	0.70	306.72	1838.98	5.53	5.53	-4.59	0.26	661461.26	526394.97	N 32 49 6.29	W 104 14 50.69
	1925.00	0.70	310.90	1924.97	6.19	6.19	-5.41	0.06	661461.91	526394.15	N 32 49 6.30	W 104 14 50.70
	2012.00	0.60	308.32	2011.96	6.81	6.81	-6.19	0.11	661462.54	526393.37	N 32 49 6.31	W 104 14 50.71
	2101.00	0.60	307.30	2100.96	7.38	7.38	-6.95	0.03	661463.11	526392.62	N 32 49 6.31	W 104 14 50.72
	2192.00	0.70	307.60	2191.95	8.01	8.01	-7.77	0.11	661463.74	526391.80	N 32 49 6.32	W 104 14 50.73
	2266.00	0.64	328.60	2265.95	8.64	8.64	-8.34	0.34	661464.37	526391.22	N 32 49 6.33	W 104 14 50.74
	2354.00	0.50	327.80	2353.94	9.38	9.38	-8.80	0.16	661465.11	526390.78	N 32 49 6.33	W 104 14 50.74
	2443.00	0.48	328.60	2442.94	10.03	10.03	-9.20	0.02	661465.76	526390.36	N 32 49 6.34	W 104 14 50.75
	2529.00	0.60	324.00	2528.94	10.70	10.70	-9.65	0.15	661466.43	526389.91	N 32 49 6.35	W 104 14 50.75
	2616.00	0.70	328.51	2615.93	11.52	11.52	-10.20	0.13	661467.25	526389.36	N 32 49 6.35	W 104 14 50.75
	2702.00	0.60	322.30	2701.93	12.33	12.33	-10.75	0.14	661468.05	526388.81	N 32 49 6.36	W 104 14 50.77
	2789.00	0.48	323.42	2788.92	12.99	12.99	-11.25	0.14	661468.71	526388.32	N 32 49 6.37	W 104 14 50.77
	2875.00	0.20	348.40	2874.92	13.42	13.42	-11.50	0.38	661469.14	526388.07	N 32 49 6.37	W 104 14 50.77
	2962.00	0.31	9.82	2961.92	13.80	13.80	-11.49	0.17	661469.52	526388.07	N 32 49 6.38	W 104 14 50.77
	3048.00	0.20	2.80	3047.92	14.17	14.17	-11.44	0.13	661469.90	526388.12	N 32 49 6.38	W 104 14 50.77
	3135.00	0.31	17.70	3134.92	14.55	14.55	-11.37	0.15	661470.28	526388.20	N 32 49 6.38	W 104 14 50.77
	3221.00	0.20	25.00	3220.92	14.98	14.98	-11.20	0.05	661470.70	526388.36	N 32 49 6.39	W 104 14 50.77
	3308.00	0.40	352.42	3307.91	15.48	15.48	-11.14	0.25	661471.21	526388.42	N 32 49 6.39	W 104 14 50.77
	3394.00	0.40	7.40	3393.91	16.08	16.08	-11.14	0.12	661471.80	526388.42	N 32 49 6.40	W 104 14 50.77
	3481.00	0.40	350.31	3480.91	16.68	16.68	-11.16	0.14	661472.41	526388.41	N 32 49 6.41	W 104 14 50.77
	3567.00	0.50	21.20	3566.91	17.33	17.33	-11.07	0.30	661473.05	526388.49	N 32 49 6.41	W 104 14 50.77
	3653.00	0.40	343.28	3652.91	17.96	17.96	-11.02	0.38	661473.69	526388.54	N 32 49 6.42	W 104 14 50.77
	3739.00	0.50	356.80	3738.90	18.62	18.62	-11.13	0.17	661474.35	526388.43	N 32 49 6.42	W 104 14 50.77
	3836.00	0.40	354.40	3835.90	19.38	19.38	-11.19	0.10	661475.11	526388.38	N 32 49 6.43	W 104 14 50.77
	3934.00	0.50	2.60	3933.90	20.15	20.15	-11.20	0.12	661475.88	526388.36	N 32 49 6.44	W 104 14 50.77
	4024.00	0.40	19.18	4023.89	20.84	20.84	-11.08	0.18	661476.57	526388.49	N 32 49 6.45	W 104 14 50.77
	4119.00	0.50	14.00	4118.89	21.56	21.56	-10.87	0.11	661477.28	526388.69	N 32 49 6.45	W 104 14 50.77
	4215.00	0.48	3.41	4214.89	22.36	22.36	-10.74	0.10	661478.09	526388.82	N 32 49 6.46	W 104 14 50.77
	4301.00	0.40	355.70	4300.88	23.02	23.02	-10.75	0.12	661478.75	526388.82	N 32 49 6.47	W 104 14 50.77
	4388.00	0.40	356.51	4387.88	23.63	23.63	-10.79	0.01	661479.35	526388.78	N 32 49 6.47	W 104 14 50.77
End MWD Surveys	4474.00	0.60	317.60	4473.88	24.26	24.26	-11.11	0.45	661479.99	526388.46	N 32 49 6.48	W 104 14 50.77

Survey Type: Def Survey

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

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Survey Tool Type	Borehole / Survey
	0.000	14.000	Act Stns	SLB_UNKNOWN-Depth Only	Original Hole / Tie In
	14.000	14.000	Act Stns	SLB_UNKNOWN-Depth Only	Original Hole / Tie In
	14.000	350.000	Act Stns	SLB_UNKNOWN	Original Hole / Tie In
	350.000	4474.000	Act Stns	SLB_MWD-STD	Original Hole / Yeso Viking Federal 004 MWD 0' to 4473'