PHOENIX
TECHNOLOGY SERVICES

March 6, 2015

Oil Conservation Division
State of New Mexico
1625 N. French Drive
Hobbs, New Mexico 88240

HOBBS OCD
MAR 1 6 2015
RECEIVED

Dear District 1 - Hobbs

Re: Marshall & Winston, Inc
Slick Mesa 27 State #3H
Lea County, NM
API #30-025-42172
Job No. 1412613

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 606018). Other information required by your office is as follows:

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Luke Mosley	3H	10,598	14,862	12/23/14	01/04/15	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,
Bobbi Jo Jorgensen

Bobbi Jo Jorgensen
Operations Administrator

Certified mail receipt number: **7014 2120 0004 3423 7170**

1805 Brittmoore Rd. Houston, TX 77043 • Phone (713) 337-0600 • Fax (713) 337-0599
www.phxtech.com

JUN 0 8 2015

Phoenix Technology Services
SURVEY DATA CERTIFICATION

PHOENIX TECHNOLOGY SERVICES

PHOENIX JOB NUMBER	1412613	OPERATOR	Marshall & Winston
WELL NAME	Slick Mesa 27 State #3H	COUNTY & STATE	Lea County, NM
API WELL NUMBER	30-025-42172	PROPOSED DIRECTION	357.01

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
10,579. ft	10,368.10 ft	88.20	352.23	470.05 ft	42.51 ft	PHX Corrected

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
23-Dec-14	10,598.00 ft	89.50	348.30

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
4-Jan-15	14,862.00 ft	85.30	347.20

TO THE BEST OF MY KNOWLEDGE I CERTIFY THIS SURVEY DATA TO BE TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
4-Jan-15	14,917.00 ft	85.30	347.20

Luke Mosley
PRINT YOUR NAME ABOVE

Luke Mosley
SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	6.64
DECLINATION OR GRID	GRID

1/5/2015
TODAY'S DATE

MWD SUPERVISOR 1	Luke Mosley	DIRECTIONAL DRILLER 1	Larry Sledge
MWD SUPERVISOR 2	Matthew Frank	DIRECTIONAL DRILLER 2	Travis LaGarce

12329 Cutten Rd., Houston, Texas 77066 (713)337-0600 (Voice), (713)337-0599 (Fax)

Marshall & Winston, Inc.

Marshall & Winston, Inc.

Lea County, NM (NAD27 NME)
Slick Mesa State 27
3H

Wellbore #1 Job #1412613

Survey: Phoenix MWD Surveys

Standard Survey Report

06 March, 2015

Marshall & Winston, Inc.

Survey Report

Company:	Marshall & Winston, Inc.	**Local Co-ordinate Reference:**	Well 3H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	RKB @ 3716.00usft (McVay 10)
Site:	Slick Mesa State 27	**MD Reference:**	RKB @ 3716.00usft (McVay 10)
Well:	3H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1412613	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (McVay 10)	**Database:**	Compass 5000 GCR

Project Lea County, NM (NAD27 NME)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Slick Mesa State 27

Site Position:		**Northing:**	525,967.90 usft	**Latitude:**	32° 26' 34.66155 N
From:	Map	**Easting:**	769,815.50 usft	**Longitude:**	103° 27' 31.42654 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.47 °

Well 3H

Well Position	**+N/-S**	0.00 usft	**Northing:**	525,967.90 usft	**Latitude:**	32° 26' 34.66155 N
	+E/-W	0.00 usft	**Easting:**	769,815.50 usft	**Longitude:**	103° 27' 31.42654 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,698.00 usft

Wellbore Wellbore #1 Job #1412613

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	12/23/2014	7.11	60.32	48,405

Design Surveys (McVay 10)

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	357.01

Survey Program **Date** 1/5/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	9,700.00	Scientific Gyro Surveys (Wellbore #1 Job #	Scientific Gyro	Scientific Drilling Intl. Standard Wireline Keeper
9,795.00	10,579.00	Isys MWD Survey (Wellbore #1 Job #1412	MWD	MWD - Standard
10,598.00	14,917.00	Phoenix MWD Surveys (Wellbore #1 Job #	PHX+MWD+IGRF	PHX+OWSG MWD + IGRF or WMM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,579.00	88.20	352.23	10,368.10	470.05	42.51	467.19	0.00	0.00	0.00
Tie-in to Isys Surveys									
10,598.00	89.50	348.30	10,368.49	488.77	39.30	486.05	21.78	6.84	-20.68
First Phoenix Survey									
10,633.00	89.90	349.40	10,368.67	523.11	32.53	520.70	3.34	1.14	3.14
10,728.00	89.40	348.40	10,369.25	616.33	14.24	614.75	1.18	-0.53	-1.05
10,822.00	89.80	349.70	10,369.91	708.61	-3.61	707.84	1.45	0.43	1.38
10,916.00	90.00	351.40	10,370.07	801.33	-19.05	801.24	1.82	0.21	1.81

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Site:	Slick Mesa State 27	**MD Reference:**	RKB @ 3716.00usft (McVay 10)
Well:	3H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1412613	**Survey Calculation Method:**	Minimum Curvature
Design:	Surveys (McVay 10)	**Database:**	Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,010.00	89.90	355.20	10,370.15	894.67	-30.01	895.02	4.04	-0.11	4.04
11,104.00	90.30	355.40	10,369.99	988.36	-37.71	988.98	0.48	0.43	0.21
11,198.00	89.30	356.80	10,370.32	1,082.14	-44.11	1,082.96	1.83	-1.06	1.49
11,293.00	89.60	356.10	10,371.23	1,176.95	-49.99	1,177.95	0.80	0.32	-0.74
11,387.00	90.30	354.50	10,371.31	1,270.63	-57.69	1,271.91	1.86	0.74	-1.70
11,481.00	90.80	353.60	10,370.41	1,364.12	-67.43	1,365.78	1.10	0.53	-0.96
11,575.00	90.10	355.30	10,369.67	1,457.67	-76.52	1,459.68	1.96	-0.74	1.81
11,669.00	90.70	0.80	10,369.01	1,551.58	-79.72	1,553.62	5.89	0.64	5.85
11,763.00	90.90	0.00	10,367.70	1,645.56	-79.07	1,647.45	0.88	0.21	-0.85
11,858.00	91.10	359.80	10,366.04	1,740.55	-79.23	1,742.31	0.30	0.21	-0.21
11,952.00	89.40	359.90	10,365.63	1,834.54	-79.48	1,836.19	1.81	-1.81	0.11
12,046.00	89.00	359.70	10,366.94	1,928.53	-79.81	1,930.07	0.48	-0.43	-0.21
12,140.00	89.30	358.90	10,368.34	2,022.52	-80.95	2,023.99	0.91	0.32	-0.85
12,233.00	89.00	358.60	10,369.72	2,115.48	-82.98	2,116.93	0.46	-0.32	-0.32
12,328.00	88.80	358.30	10,371.54	2,210.43	-85.55	2,211.88	0.38	-0.21	-0.32
12,423.00	88.90	358.20	10,373.45	2,305.37	-88.45	2,306.84	0.15	0.11	-0.11
12,518.00	89.40	357.50	10,374.86	2,400.29	-92.02	2,401.82	0.91	0.53	-0.74
12,613.00	89.50	357.10	10,375.77	2,495.18	-96.49	2,496.82	0.43	0.11	-0.42
12,707.00	89.60	356.80	10,376.51	2,589.04	-101.49	2,590.81	0.34	0.11	-0.32
12,802.00	90.10	356.60	10,376.76	2,683.88	-106.96	2,685.81	0.57	0.53	-0.21
12,897.00	90.40	356.10	10,376.34	2,778.69	-113.01	2,780.80	0.61	0.32	-0.53
12,992.00	90.60	355.70	10,375.51	2,873.44	-119.80	2,875.78	0.47	0.21	-0.42
13,087.00	90.20	355.70	10,374.85	2,968.17	-126.92	2,970.75	0.42	-0.42	0.00
13,182.00	90.40	355.10	10,374.35	3,062.87	-134.54	3,065.71	0.67	0.21	-0.63
13,277.00	90.50	354.90	10,373.61	3,157.50	-142.82	3,160.65	0.24	0.11	-0.21
13,372.00	90.50	354.30	10,372.78	3,252.08	-151.76	3,255.56	0.63	0.00	-0.63
13,468.00	90.50	354.50	10,371.94	3,347.61	-161.13	3,351.46	0.21	0.00	0.21
13,563.00	90.60	353.70	10,371.03	3,442.11	-170.89	3,446.33	0.85	0.11	-0.84
13,658.00	90.60	353.90	10,370.03	3,536.54	-181.15	3,541.18	0.21	0.00	0.21
13,753.00	89.80	353.40	10,369.70	3,630.96	-191.66	3,636.01	0.99	-0.84	-0.53
13,848.00	89.90	352.80	10,369.95	3,725.27	-203.07	3,730.79	0.64	0.11	-0.63
13,943.00	89.70	352.60	10,370.28	3,819.50	-215.14	3,825.52	0.30	-0.21	-0.21
14,038.00	89.40	352.10	10,371.03	3,913.65	-227.79	3,920.21	0.61	-0.32	-0.53
14,134.00	88.70	351.50	10,372.62	4,008.66	-241.48	4,015.80	0.96	-0.73	-0.63
14,229.00	88.70	351.20	10,374.77	4,102.55	-255.76	4,110.31	0.32	0.00	-0.32
14,324.00	88.30	350.70	10,377.26	4,196.34	-270.70	4,204.74	0.67	-0.42	-0.53
14,419.00	88.00	350.70	10,380.33	4,290.04	-286.05	4,299.12	0.32	-0.32	0.00
14,513.00	87.80	349.90	10,383.77	4,382.63	-301.87	4,392.41	0.88	-0.21	-0.85
14,609.00	87.40	349.50	10,387.79	4,477.00	-319.02	4,487.55	0.59	-0.42	-0.42
14,704.00	86.70	348.70	10,392.68	4,570.16	-336.96	4,581.52	1.12	-0.74	-0.84
14,799.00	85.90	348.10	10,398.81	4,663.03	-356.03	4,675.25	1.05	-0.84	-0.63
14,862.00	85.30	347.20	10,403.65	4,724.39	-369.46	4,737.23	1.71	-0.95	-1.43
Final Phoenix Survey									
14,917.00	85.30	347.20	10,408.15	4,777.84	-381.60	4,791.24	0.00	0.00	0.00

Marshall & Winston, Inc.

Survey Report

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
10,579.00	10,368.10	470.05	42.51	Tie-in to Isys Surveys
10,598.00	10,368.49	488.77	39.30	First Phoenix Survey
14,862.00	10,403.65	4,724.39	-369.46	Final Phoenix Survey
14,917.00	10,408.15	4,777.84	-381.60	Projection to TD

Checked By: _____ Approved By: _____ Date: _____