



PHOENIX
TECHNOLOGY SERVICES

December 18, 2013



Apache Corporation
Attention: Vicki Brown, Drilling Tech II, Regulatory Department
303 Veterans Airpark Lane, Suite 3000,
Midland, TX 79705

Re: Apache Corporation
Washington 33 State #66
Eddy County, NM
API #30-015-41706
Job No. 1311437

Dear Regulatory Department;

Phoenix Technology Services, Inc. has filed the Survey Data Certification, Surveys, and Lease Plat for the above referenced well with the State of New Mexico Oil Conservation Division – District 2 via certified mail. A copy of the filing is attached for your records.

Name of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Brad Hill	66	560	4,460	11/10/13	11/12/13	MWD

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Best Regards,

Sonya Thomas

Sonya Thomas
Operations Administrator

RECEIVED

DEC 23 2013

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX
TECHNOLOGY SERVICES

PHOENIX JOB NUMBER

1311437

OPERATOR

Apache Corporation

WELL NAME

Washington 33 State #66

COUNTY & STATE

Eddy Count, New Mexico

API WELL NUMBER

30-015-41706

PROPOSED DIRECTION

14.95

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
495 ft	494.95 ft	1.48	145.84	-5.29 ft	2.84 ft	Gryodata Gryo

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
10-Nov-13	560 ft	1.7	153.0

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
12-Nov-13	4,460 ft	3.9	8.8

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

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
12-Nov-13	4,508 ft	3.9	8.8

Brad Hill

PRINT YOUR NAME ABOVE

Brad Hill

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	
	7.53
DECLINATION OR GRID	GRID

11/12/2013

TODAY'S DATE

MWD SUPERVISOR 1

Brad Hill

DIRECTIONAL DRILLER 1

Ken Smith

MWD SUPERVISOR 2

0

DIRECTIONAL DRILLER 2

Joe Paup

1805 Brittmore Road

Houston, Texas 77043

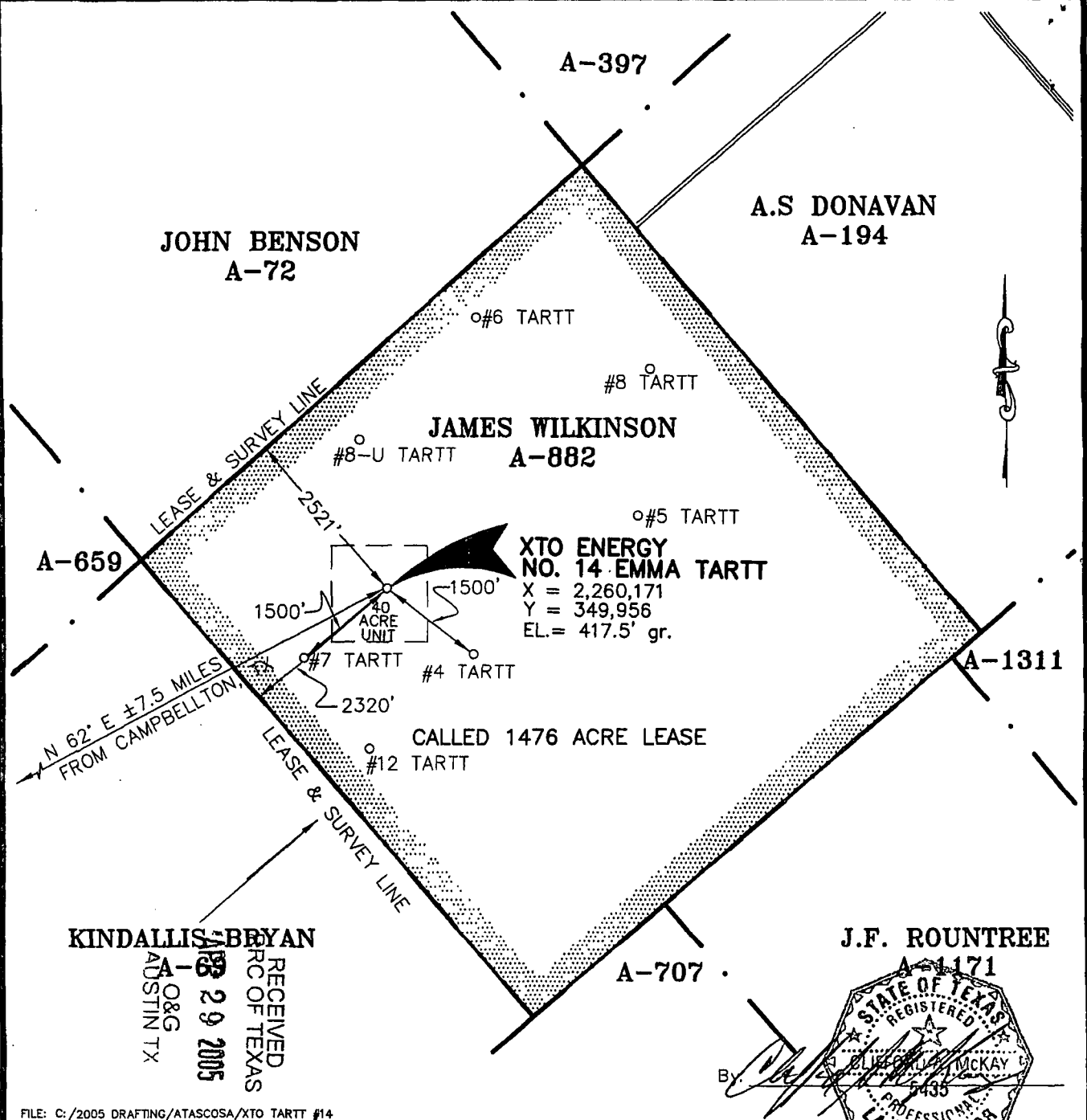
(713)3370609 (Voice), (713)337-0599 (Fax)

COORDINATES ARE GRID (NAD 27),
SOUTH CENTRAL ZONE, BASED ON G.
OBSERVATIONS MADE ON FEBRUARY 24,
2005

2000 1000 500 0 200

SCALE: 1" = 2000'

THIS PLAT IS FOR WELL LOCATION
PERMITTING PURPOSES ONLY AND DOES
NOT REPRESENT A BOUNDARY SURVEY.



XTO ENERGY

NO. 14 EMMA TARTT

J. WILKINSON SURVEY, A-882
ATASCOSA COUNTY, TEXAS



Laughlin-Simmons, Inc

OIL FIELD AND PROFESSIONAL LAND SURVEYING
P.O. BOX 1748, BEEVILLE, TEXAS 78104-1748
PH. 361-358-1498 FAX: 361-358-6485
Toll Free: 1-800-242-3028
Email: laughlin@laughlin-simmons.com

LSC

DATE: 4/20/05

SCALE: 1"=2000'



Apache Corporation

Eddy County, NM (NAD27 NME)

Washington 33 State

#66

WB1/Job #1311437

Survey: Phoenix MWD Survey

Phoenix Final Survey Report

14 November, 2013





Phoenix Technology Services
Phoenix Final Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #66
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3697.00usft (Capstar 114)
Site:	Washington 33 State	MD Reference:	KB @ 3697.00usft (Capstar 114)
Well:	#66	North Reference:	Grid
Wellbore:	WB1/Job #1311437	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	GCR DB

Project	Eddy 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	Washington 33 State		
Site Position:		Northing:	653,591.90 usft
From:	Map	Easting:	549,165.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 47' 48.16208 N
		Longitude:	104° 10' 23.99797 W
		Grid Convergence:	0.09 °

Well	#66		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 47' 48.16208 N
		Longitude:	104° 10' 23.99797 W
		Ground Level:	3,686.00 usft

Wellbore	WB1/Job #1311437				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	10/21/13	7.62	60.55	48,657

Design	Surveys (Capstar 114)			
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	14.95

Survey Program	Date 11/13/13			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
560.00	3,264.00	Phoenix MWD Survey (WB1/Job #131143)	MWD	MWD - Standard

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
	495.00	1.48	145.84	494.95	-5.29	2.84	-4.38	0.00
Tie-on to Gyro	560.00	1.70	153.00	559.93	-6.84	3.74	-5.65	0.46
First Phoenix MWD Survey	646.00	1.10	6.40	645.92	-7.16	4.42	-5.78	3.12
	732.00	1.10	353.80	731.90	-5.52	4.42	-4.19	0.28
	817.00	1.10	331.20	816.89	-3.99	3.94	-2.84	0.51
	903.00	1.30	330.20	902.87	-2.42	3.06	-1.55	0.23
	988.00	1.40	319.90	987.84	-0.79	1.91	-0.27	0.31
	1,074.00	2.00	358.60	1,073.81	1.51	1.19	1.77	1.47
	1,160.00	1.50	333.80	1,159.77	4.02	0.66	4.06	1.04
	1,245.00	2.90	0.30	1,244.71	7.17	0.18	6.97	1.99



Phoenix Technology Services

Phoenix Final Survey Report



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Site:	Washington 33 State	MD Reference:	KB @ 3697.00usft (Capstar 114)
Well:	#66	North Reference:	Grid
Wellbore:	WB1/Job #1311437	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	GCR DB

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,331.00	2.60	356.50	1,330.61	11.29	0.07	10.93	0.41	
1,419.00	3.90	359.30	1,418.46	16.28	-0.09	15.70	1.49	
1,505.00	3.50	13.20	1,504.29	21.76	0.48	21.14	1.14	
1,590.00	2.90	7.50	1,589.15	26.42	1.35	25.87	0.80	
1,676.00	4.60	22.00	1,674.97	31.77	2.93	31.45	2.25	
1,762.00	4.00	17.00	1,760.72	37.84	5.10	37.87	0.82	
1,847.00	3.50	7.90	1,845.54	43.24	6.32	43.41	0.91	
1,933.00	4.30	15.70	1,931.34	48.95	7.55	49.24	1.11	
2,018.00	4.20	9.70	2,016.11	55.08	8.94	55.52	0.54	
2,104.00	5.50	24.30	2,101.80	61.94	11.17	62.73	2.07	
2,190.00	5.50	22.70	2,187.41	69.50	14.45	70.88	0.18	
2,275.00	5.30	25.10	2,272.03	76.81	17.69	78.78	0.35	
2,361.00	5.20	25.50	2,357.67	83.93	21.05	86.52	0.12	
2,446.00	5.40	25.20	2,442.31	91.02	24.41	94.24	0.24	
2,532.00	5.10	17.70	2,527.95	98.33	27.30	102.04	0.87	
2,617.00	5.20	21.90	2,612.60	105.50	29.88	109.64	0.46	
2,702.00	4.70	22.10	2,697.29	112.30	32.63	116.92	0.59	
2,788.00	4.60	16.20	2,783.00	118.88	34.92	123.86	0.57	
2,874.00	4.20	14.10	2,868.75	125.24	36.65	130.46	0.50	
2,959.00	4.40	13.80	2,953.51	131.43	38.18	136.83	0.24	
3,045.00	4.50	11.10	3,039.25	137.94	39.62	143.49	0.27	
3,130.00	4.70	11.50	3,123.98	144.63	40.96	150.30	0.24	
3,216.00	4.70	14.50	3,209.69	151.49	42.54	157.34	0.29	
3,302.00	4.30	11.70	3,295.42	158.06	44.08	164.08	0.53	
3,387.00	3.30	19.10	3,380.24	163.49	45.52	169.70	1.31	
3,473.00	2.90	20.00	3,466.11	167.87	47.08	174.34	0.47	
3,558.00	2.90	20.40	3,551.00	171.91	48.56	178.62	0.02	
3,644.00	3.00	19.40	3,636.89	176.07	50.07	183.03	0.13	
3,730.00	3.10	17.70	3,722.77	180.41	51.52	187.60	0.16	
3,815.00	2.80	17.50	3,807.65	184.58	52.85	191.96	0.35	
3,901.00	2.90	16.50	3,893.55	188.67	54.10	196.24	0.13	
3,986.00	3.90	8.80	3,978.40	193.59	55.15	201.26	1.29	
4,072.00	3.70	8.00	4,064.21	199.23	55.98	206.92	0.24	
4,158.00	3.70	8.80	4,150.03	204.72	56.79	212.44	0.06	
4,243.00	3.60	8.00	4,234.86	210.07	57.58	217.81	0.13	
4,329.00	3.70	7.70	4,320.68	215.49	58.33	223.25	0.12	
4,414.00	3.90	9.30	4,405.49	221.06	59.17	228.84	0.27	
4,460.00	3.90	8.80	4,451.39	224.15	59.66	231.96	0.07	
Last Phoenix MWD Survey								
4,508.00	3.90	8.80	4,499.28	227.38	60.16	235.20	0.00	
Projection to TD								



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Site:	Washington 33 State	MD Reference:	KB @ 3697.00usft (Capstar 114)
Well:	#66	North Reference:	Grid
Wellbore:	WB1/Job #1311437	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	GCR DB

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
495.00	494.95	-5.29	2.84	Tie-on to Gyro
560.00	559.93	-6.84	3.74	First Phoenix MWD Survey
4,460.00	4,451.39	224.15	59.66	Last Phoenix MWD Survey
4,508.00	4,499.28	227.38	60.16	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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