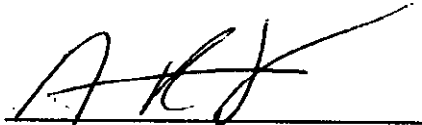


Apache Corporation
303 Veterans Airpark Lane, #3000
Midland, TX 79705

NFE Federal #029H
Eddy County, New Mexico

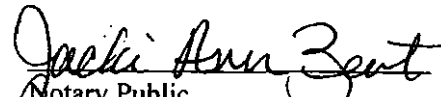
API # 30-015-42585
LL-P-SEC. 6 T17S R31E
985' FSL & 155' FEL

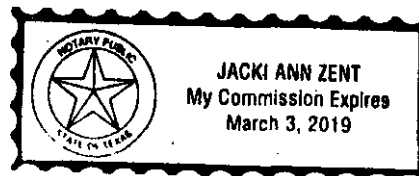
167	1.67	0.50	0.88	1.46	1.46
445	2.78	1.40	2.45	6.81	8.27
589	1.44	0.70	1.23	1.76	10.04
843	2.54	0.80	1.40	3.56	13.59
1065	2.22	0.90	1.58	3.50	17.09
1321	2.56	1.00	1.75	4.48	21.57
1507	1.86	0.90	1.58	2.93	24.50
1974	4.67	0.10	0.18	0.82	25.32
2142	1.68	0.10	0.18	0.29	25.61
2364	2.22	0.40	0.70	1.55	27.16
2584	2.20	0.20	0.35	0.77	27.93
2837	2.53	0.50	0.88	2.21	30.15
3090	2.53	0.50	0.88	2.21	32.36
3343	2.53	0.00	0.00	0.00	32.36
3534	1.91	0.20	0.35	0.67	33.03
3755	2.21	0.10	0.18	0.39	33.42
4210	4.55	0.40	0.70	3.19	36.60
4420	2.10	0.30	0.53	1.10	37.70
4525	1.05	0.50	0.88	0.92	38.62



Archie Brown - General Manager

The attached instrument was acknowledged before me on the 30th day of March, 2015 by
Archie Brown - General Manager, CapStar Drilling, Inc.


Notary Public





Apache Corporation

Eddy County, NM (NAD27 NME)

NFE Federal

#29H

WB1 / Job #1512834

Design: Surveys (Capstar 119)

Standard Survey Report

23 March, 2015



Company: Apache Corporation
Project: Eddy County, NM (NAD27 NME)
Site: NFE Federal
Well: #29H
Wellbore: WB1 / Job #1512834
Design: Surveys (Capstar 119)

Local Co-ordinate Reference: Well #29H
TVD Reference: KB @ 3764.00usft (Capstar 119)
MD Reference: KB @ 3764.00usft (Capstar 119)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Project: Eddy County, NM (NAD27 NME)
Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001
System Datum: Mean Sea Level

Site: NFE Federal
Site Position: Northing: 673,264.70 usft Latitude: 32° 51' 0.49036 N
From: Map Easting: 633,303.50 usft Longitude: 103° 53' 57.34866 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.24 "

Well: #29H
Well Position: +N/-S 0.00 usft Northing: 676,438.80 usft Latitude: 32° 51' 31.91534 N
+E/-W 0.00 usft Easting: 632,910.40 usft Longitude: 103° 54' 1.80517 W
Position Uncertainty: 0.00 usft Wellhead Elevation: usft Ground Level: 3,753.00 usft

Wellbore: WB1 / Job #1512834
Magnetics: Model Name Sample Date Declination Dip Angle Field Strength
BGGM2014 3/18/2015 7.51 60.62 48,529

Design: Surveys (Capstar 119)
Audit Notes:
Version: 1.0 Phase: ACTUAL Tie On Depth: 0.00
Vertical Section: Depth From (TVD) +N/-S +E/-W Direction
(usft) (usft) (usft) (°)
0.00 0.00 0.00 269.62

Survey Program: Date: 3/23/2015
From To Survey (Wellbore) Tool Name Description
(usft) (usft)
100.00 4,425.00 Phoenix Gyro Survey (WB1 / Job #151283) NS-GYRO-MS North sensing gyrocompassing m/s
4,525.00 9,580.00 Phoenix MWD Survey (WB1 / Job #15128) PHX+MWD+BGGM PHX+MWD+BGGM v3: standard declination

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.21	314.69	100.00	0.13	-0.13	0.13	0.21	0.21	0.00
200.00	0.27	313.37	200.00	0.42	-0.43	0.43	0.06	0.06	-1.32
300.00	0.84	281.00	289.99	0.45	-1.41	1.41	0.80	0.87	-52.37
400.00	1.01	261.15	399.98	0.19	-3.09	3.09	0.07	0.07	0.15
500.00	0.92	238.43	499.96	-0.37	-4.65	4.65	0.39	-0.09	-22.72
600.00	0.92	182.68	599.95	-1.59	-5.37	5.38	0.86	0.00	-55.75
700.00	0.97	193.17	699.94	-3.22	-5.60	5.62	0.18	0.05	10.49
800.00	0.87	293.50	799.93	-3.74	-6.49	6.51	1.41	-0.10	100.33
900.00	0.90	234.49	899.92	-3.89	-7.83	7.85	0.87	0.03	-59.01

Company: Apache Corporation
Project: Eddy County, NM (NAD27 NME)
Site: NFE Federal
Well: #29H
Wellbore: WB1 / Job #1512834
Design: Surveys (Capstar 119)

Local Co-ordinate Reference: Well #29H
TVD Reference: KB @ 3764.00usft (Capstar 119)
MD Reference: KB @ 3764.00usft (Capstar 119)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
1,000.00	0.89	187.22	999.91	-5.12	-8.56	8.60	0.72	-0.01	-47.27
1,100.00	0.87	170.40	1,099.90	-6.64	-8.53	8.58	0.28	-0.02	-18.62
1,200.00	0.96	244.29	1,199.89	-7.75	-9.16	9.21	1.10	0.09	73.89
1,300.00	1.06	229.55	1,299.87	-8.71	-10.62	10.68	0.28	0.10	-14.74
1,400.00	1.01	243.39	1,399.86	-9.71	-12.11	12.18	0.25	-0.05	13.84
1,500.00	0.72	220.34	1,499.85	-10.58	-13.31	13.38	0.45	-0.29	-23.05
1,600.00	0.70	247.16	1,599.84	-11.30	-14.28	14.35	0.33	-0.02	26.82
1,700.00	0.50	101.75	1,699.84	-11.82	-14.41	14.49	1.15	-0.20	-145.41
1,800.00	0.32	324.96	1,799.84	-11.48	-14.15	14.22	0.77	-0.18	-138.79
1,900.00	0.29	132.98	1,899.84	-11.43	-14.12	14.20	0.61	-0.03	168.02
2,000.00	0.13	267.43	1,999.84	-11.60	-14.05	14.13	0.39	-0.16	134.45
2,100.00	0.09	265.37	2,099.84	-11.82	-14.24	14.32	0.04	-0.04	-2.06
2,200.00	0.22	133.93	2,199.84	-11.75	-14.18	14.26	0.29	0.13	-131.44
2,300.00	0.18	299.36	2,299.84	-11.81	-14.18	14.26	0.40	-0.04	165.43
2,400.00	0.22	302.29	2,399.83	-11.63	-14.48	14.56	0.04	0.04	2.93
2,500.00	0.22	187.58	2,499.83	-11.72	-14.67	14.74	0.37	0.00	-114.71
2,600.00	0.41	85.42	2,599.83	-11.88	-14.33	14.41	0.50	0.19	-102.16
2,700.00	0.49	92.45	2,699.83	-11.87	-13.55	13.63	0.10	0.08	7.03
2,800.00	0.39	162.06	2,799.83	-12.21	-13.02	13.10	0.51	-0.10	69.61
2,900.00	0.43	249.85	2,899.83	-12.67	-13.27	13.35	0.57	0.04	87.79
3,000.00	0.54	46.47	2,999.82	-12.47	-13.28	13.36	0.95	0.11	156.62
3,100.00	0.29	354.36	3,099.82	-11.89	-12.96	13.04	0.43	-0.25	-52.11
3,200.00	0.25	130.25	3,199.82	-11.78	-12.82	12.90	0.50	-0.04	135.89
3,300.00	0.36	34.45	3,299.82	-11.66	-12.47	12.55	0.46	0.11	-95.80
3,400.00	0.26	102.96	3,399.82	-11.46	-12.08	12.15	0.36	-0.10	68.51
3,500.00	0.28	97.36	3,499.82	-11.54	-11.61	11.89	0.03	0.02	-5.60
3,600.00	0.17	180.86	3,599.82	-11.72	-11.40	11.48	0.34	-0.11	93.50
3,700.00	0.33	201.64	3,699.82	-12.13	-11.53	11.61	0.17	0.16	10.78
3,800.00	0.24	152.96	3,799.82	-12.58	-11.54	11.63	0.25	-0.09	-48.68
3,900.00	0.30	320.82	3,899.82	-12.57	-11.61	11.70	0.54	0.06	167.86
4,000.00	0.36	21.72	3,999.81	-12.07	-11.66	11.74	0.34	0.06	60.90
4,100.00	0.38	118.68	4,099.81	-11.84	-11.26	11.33	0.55	0.02	96.96
4,200.00	0.44	85.07	4,199.81	-12.07	-10.58	10.66	0.24	0.06	-33.61
4,300.00	0.45	286.18	4,299.81	-11.92	-10.58	10.65	0.67	0.01	-158.89
4,400.00	0.30	10.66	4,399.81	-11.56	-10.90	10.98	0.52	-0.15	84.48
4,425.00	0.52	59.00	4,424.81	-11.43	-10.80	10.87	1.56	0.88	193.36
Tie-on to Phoenix Gyro Survey									
4,525.00	0.50	337.90	4,524.80	-10.80	-10.57	10.64	0.66	-0.02	-81.10
First Phoenix MWD Survey									
4,620.00	0.70	336.20	4,619.80	-9.88	-10.96	11.03	0.21	0.21	-1.79
4,715.00	0.50	336.30	4,714.79	-8.97	-11.36	11.42	0.21	-0.21	0.11
4,778.00	0.50	319.50	4,777.79	-8.51	-11.65	11.71	0.23	0.00	-26.67
4,810.00	2.90	266.60	4,809.78	-8.45	-12.55	12.61	8.21	7.50	-165.31

Company: Apache Corporation
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MD Reference: KB @ 3764.00usft (Capstar 119)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
4,841.00	7.00	265.10	4,840.65	-8.68	-15.22	15.27	13.23	13.23	-4.84
4,873.00	11.30	267.10	4,872.24	-8.98	-20.29	20.35	13.47	13.44	6.25
4,904.00	15.70	270.00	4,902.38	-9.14	-27.52	27.58	14.36	14.19	9.35
4,936.00	20.00	272.70	4,932.83	-8.88	-37.32	37.38	13.68	13.44	8.44
4,968.00	24.20	274.10	4,962.47	-8.15	-49.34	49.39	13.23	13.13	4.38
4,999.00	25.80	274.00	4,990.55	-7.23	-62.43	62.48	5.49	5.48	-0.32
5,031.00	27.20	270.60	5,019.18	-6.66	-76.72	76.76	6.25	4.06	-10.63
5,062.00	30.10	268.80	5,046.38	-6.75	-91.58	91.62	9.76	9.35	-5.81
5,094.00	33.60	268.80	5,073.56	-7.10	-108.46	108.50	10.94	10.94	0.00
5,126.00	38.00	268.80	5,099.51	-7.50	-127.17	127.21	13.75	13.75	0.00
5,157.00	41.80	269.50	5,123.29	-7.79	-147.04	147.09	12.34	12.26	2.26
5,188.00	44.80	270.50	5,145.84	-7.78	-168.30	168.35	9.93	9.68	3.23
5,220.00	47.70	270.90	5,167.97	-7.50	-191.41	191.46	9.11	9.06	1.25
5,251.00	51.00	271.60	5,188.16	-6.98	-214.92	214.97	10.78	10.65	2.26
5,283.00	54.00	271.60	5,207.84	-8.27	-240.30	240.34	9.38	9.38	0.00
5,314.00	57.00	271.60	5,225.20	-5.56	-265.83	265.86	9.68	9.68	0.00
5,346.00	59.60	270.90	5,242.01	-4.97	-293.05	293.08	8.34	8.13	-2.19
5,378.00	63.00	269.60	5,257.38	-4.85	-321.11	321.14	11.21	10.63	-4.06
5,409.00	66.50	269.50	5,270.60	-5.07	-349.15	349.17	11.29	11.29	-0.32
5,441.00	69.60	269.80	5,282.56	-5.25	-378.82	378.85	9.73	9.69	0.94
5,473.00	72.20	270.00	5,293.03	-5.30	-409.06	409.09	8.15	8.13	0.63
5,504.00	74.10	271.00	5,302.01	-5.04	-438.72	438.75	6.86	6.13	3.23
5,535.00	76.00	271.60	5,310.01	-4.36	-468.67	468.69	6.41	6.13	1.94
5,567.00	78.90	271.60	5,316.86	-3.49	-499.89	499.90	9.06	9.06	0.00
5,599.00	83.20	271.00	5,321.94	-2.77	-531.48	531.49	13.56	13.44	-1.88
5,646.00	90.50	269.20	5,324.52	-2.70	-578.38	578.38	16.00	15.53	-3.83
5,677.00	92.50	269.20	5,323.71	-3.13	-609.36	609.37	6.45	6.45	0.00
5,709.00	92.80	268.70	5,322.23	-3.71	-641.32	641.33	1.82	0.94	-1.56
5,741.00	93.10	268.60	5,320.58	-4.47	-673.27	673.28	0.99	0.94	-0.31
5,836.00	94.30	268.80	5,314.45	-6.62	-768.05	768.07	1.28	1.26	0.21
5,931.00	93.40	267.20	5,308.07	-9.93	-862.77	862.82	1.93	-0.95	-1.68
6,026.00	93.30	265.80	5,302.52	-15.72	-957.43	957.51	1.47	-0.11	-1.47
6,120.00	90.10	269.30	5,299.73	-19.73	-1,051.27	1,051.38	5.04	-3.40	3.72
6,215.00	91.30	269.40	5,298.57	-20.81	-1,146.26	1,146.37	1.27	1.26	0.11
6,310.00	90.20	270.10	5,297.33	-21.22	-1,241.25	1,241.36	1.37	-1.18	0.74
6,406.00	88.50	270.90	5,298.42	-20.38	-1,337.23	1,337.34	1.86	-1.77	0.83
6,500.00	89.60	270.50	5,299.98	-19.24	-1,431.21	1,431.31	1.25	1.17	-0.43
6,596.00	90.60	270.60	5,299.81	-18.31	-1,527.21	1,527.29	1.05	1.04	0.10
6,691.00	91.50	270.80	5,298.07	-17.15	-1,622.18	1,622.26	0.87	0.85	0.21
6,785.00	91.10	271.70	5,295.94	-15.10	-1,716.13	1,716.20	1.05	-0.43	0.96
6,880.00	90.80	270.70	5,294.28	-13.11	-1,811.10	1,811.15	1.07	-0.21	-1.05
6,975.00	91.10	270.40	5,292.62	-12.20	-1,906.08	1,906.12	0.38	0.21	-0.32
7,069.00	90.10	269.60	5,291.64	-12.20	-2,000.07	2,000.11	1.36	-1.06	-0.85
7,164.00	90.70	269.70	5,290.97	-12.78	-2,095.07	2,095.11	0.64	0.63	0.11

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Survey Calculation Method: Minimum Curvature
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)
7,260.00	90.30	268.10	5,290.13	-14.63	-2,191.04	2,191.09	1.72	-0.42	-1.67
7,355.00	91.20	268.40	5,288.89	-17.53	-2,285.99	2,286.06	1.00	0.95	0.32
7,450.00	90.20	268.60	5,287.73	-20.01	-2,380.95	2,381.03	1.07	-1.05	0.21
7,544.00	90.40	268.90	5,287.24	-22.06	-2,474.92	2,475.02	0.38	0.21	0.32
7,639.00	91.40	268.80	5,285.75	-23.97	-2,569.89	2,569.99	1.06	1.05	-0.11
7,734.00	90.30	270.20	5,284.34	-24.80	-2,664.87	2,664.98	1.87	-1.16	1.47
7,828.00	91.00	269.80	5,283.27	-24.80	-2,758.87	2,758.97	0.86	0.74	-0.43
7,923.00	90.80	270.30	5,281.78	-24.72	-2,853.86	2,853.96	0.57	-0.21	0.53
8,017.00	91.50	271.30	5,279.89	-23.40	-2,947.83	2,947.92	1.30	0.74	1.06
8,113.00	89.70	271.70	5,278.89	-20.89	-3,043.76	3,043.86	1.82	-1.88	0.42
8,207.00	90.90	272.70	5,278.39	-17.28	-3,137.71	3,137.76	1.66	1.28	1.06
8,302.00	90.40	271.60	5,277.32	-13.72	-3,232.64	3,232.68	1.27	-0.53	-1.16
8,397.00	89.30	270.90	5,277.57	-11.65	-3,327.61	3,327.61	1.37	-1.16	-0.74
8,492.00	89.80	268.80	5,278.31	-11.90	-3,422.60	3,422.61	2.27	0.53	-2.21
8,587.00	90.90	268.70	5,277.73	-13.97	-3,517.58	3,517.59	1.16	1.16	-0.11
8,682.00	92.50	268.30	5,274.81	-16.45	-3,612.50	3,612.53	1.74	1.68	-0.42
8,777.00	90.80	269.10	5,272.18	-18.61	-3,707.43	3,707.47	1.98	-1.79	0.84
8,872.00	91.40	268.80	5,270.35	-20.35	-3,802.40	3,802.45	0.71	0.63	-0.32
8,965.00	90.40	267.90	5,268.89	-23.03	-3,895.34	3,895.41	1.45	-1.08	-0.97
9,060.00	91.10	268.30	5,267.65	-26.17	-3,990.28	3,990.37	0.85	0.74	0.42
9,155.00	92.00	268.00	5,265.08	-29.24	-4,085.20	4,085.30	1.00	0.95	-0.32
9,250.00	90.30	270.30	5,263.17	-30.85	-4,180.16	4,180.27	3.01	-1.79	2.42
9,344.00	90.60	269.60	5,262.43	-30.73	-4,274.15	4,274.26	0.81	0.32	-0.74
9,439.00	91.40	269.80	5,260.78	-31.23	-4,369.14	4,369.25	0.87	0.84	0.21
9,511.00	92.50	269.50	5,258.33	-31.67	-4,441.08	4,441.21	1.58	1.53	-0.42
Last Phoenix MWD Survey									
9,580.00	92.50	269.50	5,255.32	-32.27	-4,510.03	4,510.14	0.00	0.00	0.00
Projection to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
4,425.00	4,424.81	-11.43	-10.80	Tie-on to Phoenix Gyro Survey
4,525.00	4,524.80	-10.80	-10.57	First Phoenix MWD Survey
9,511.00	5,258.33	-31.67	-4,441.08	Last Phoenix MWD Survey
9,580.00	5,255.32	-32.27	-4,510.03	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



Apache Corporation

Eddy County, NM (NAD27 NME)

NFE Federal

#29H

WB1 / Job #1512834

Survey: Phoenix MWD Survey

Standard Survey Report

23 March, 2015



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #29H
Project:	Eddy County, NM (NAD27, NME)	TVD Reference:	KB @ 3764.00usft (Capstar 119)
Site:	NFE Federal	MD Reference:	KB @ 3764.00usft (Capstar 119)
Well:	#29H	North Reference:	Grid
Wellbore:	WB1 / Job #1512834	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 119)	Database:	Compass 5000 GCR

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	NFE Federal				
Site Position:		Northing:	673,264.70 usft	Latitude:	32° 51' 0.49036 N
From:	Map	Easting:	633,303.50 usft	Longitude:	103° 53' 57.34966 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.24 °

Well	#29H					
Well Position	+N-S	0.00 usft	Northing:	676,438.90 usft	Latitude:	32° 51' 31.91534 N
	+E-W	0.00 usft	Easting:	632,910.40 usft	Longitude:	103° 54' 1.80517 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,753.00 usft	

Wellbore WB1 / Job #1512834					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	3/18/2015	7.51	60.62	48,529

Design: Surveys (Capstar 119)				
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	269.62

Survey Program		Date: 3/23/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	4,425.00	Phoenix Gyro Survey (WB1 / Job #151283	NS-GYRO-MS	North sensing gyrocompassing m/s
4,525.00	9,580.00	Phoenix MWD Survey (WB1 / Job #15128	PHX+MWD+BGGM	PHX+MWD+BGGM v3: standard declination

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)
4,425.00	0.52	59.00	4,424.81	-11.43	-10.80	10.87	0.00	0.00	0.00
Tie-on to Phoenix Gyro Survey									
4,525.00	0.50	337.90	4,524.80	-10.80	-10.57	10.64	0.66	-0.02	-81.10
First Phoenix MWD Survey									
4,620.00	0.70	336.20	4,619.80	-9.88	-10.96	11.03	0.21	0.21	-1.79
4,715.00	0.50	336.30	4,714.79	-8.97	-11.36	11.42	0.21	-0.21	0.11
4,778.00	0.50	319.50	4,777.79	-8.51	-11.65	11.71	0.23	0.00	-26.67
4,810.00	2.90	266.60	4,809.78	-8.45	-12.55	12.61	8.21	7.50	-165.31
4,841.00	7.00	265.10	4,840.65	-8.66	-15.22	15.27	13.23	13.23	-4.84

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #29H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3764.00usft (Capstar 119)
Site:	NFE Federal	MD Reference:	KB @ 3764.00usft (Capstar 119)
Well:	#29H	North Reference:	Grid
Wellbore:	WB1 / Job #1512834	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 119)	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)	
4,873.00	11.30	287.10	4,872.24	-8.98	-20.29	20.35	13.47	13.44	6.25	
4,904.00	15.70	270.00	4,902.38	-9.14	-27.52	27.58	14.36	14.19	9.35	
4,936.00	20.00	272.70	4,932.83	-8.88	-37.32	37.38	13.68	13.44	8.44	
4,968.00	24.20	274.10	4,962.47	-8.15	-49.34	49.39	13.23	13.13	4.38	
4,999.00	25.90	274.00	4,990.55	-7.23	-62.43	62.48	5.49	5.48	-0.32	
5,031.00	27.20	270.60	5,019.18	-6.66	-76.72	76.76	6.25	4.06	-10.63	
5,062.00	30.10	268.80	5,046.38	-6.75	-81.58	81.62	9.76	9.35	-5.81	
5,094.00	33.60	268.80	5,073.56	-7.10	-108.48	108.50	10.94	10.94	0.00	
5,126.00	38.00	268.80	5,099.51	-7.50	-127.17	127.21	13.75	13.75	0.00	
5,157.00	41.80	269.50	5,123.29	-7.79	-147.04	147.09	12.34	12.26	2.26	
5,188.00	44.80	270.50	5,145.84	-7.78	-168.30	168.35	9.93	9.88	3.23	
5,220.00	47.70	270.90	5,167.97	-7.50	-191.41	191.46	9.11	9.06	1.25	
5,251.00	51.00	271.60	5,188.16	-6.98	-214.92	214.97	10.78	10.65	2.26	
5,283.00	54.00	271.60	5,207.64	-6.27	-240.30	240.34	9.38	9.38	0.00	
5,314.00	57.00	271.60	5,225.20	-5.56	-265.83	265.86	9.68	9.68	0.00	
5,346.00	59.60	270.90	5,242.01	-4.97	-293.05	293.08	8.34	8.13	-2.19	
5,378.00	63.00	269.60	5,257.38	-4.85	-321.11	321.14	11.21	10.63	-4.06	
5,409.00	66.50	269.50	5,270.60	-5.07	-349.15	349.17	11.29	11.29	-0.32	
5,441.00	69.60	269.80	5,282.56	-5.25	-378.82	378.85	9.73	9.69	0.94	
5,473.00	72.20	270.00	5,293.03	-5.30	-409.06	409.09	8.15	8.13	0.63	
5,504.00	74.10	271.00	5,302.01	-5.04	-438.72	438.75	6.86	6.13	3.23	
5,535.00	76.00	271.60	5,310.01	-4.36	-468.67	468.69	6.41	6.13	1.94	
5,567.00	78.80	271.60	5,316.96	-3.49	-499.89	499.90	9.06	9.06	0.00	
5,599.00	83.20	271.00	5,321.94	-2.77	-531.48	531.49	13.56	13.44	-1.88	
5,648.00	90.50	269.20	5,324.62	-2.70	-578.38	578.38	16.00	15.53	-3.83	
5,677.00	92.50	269.20	5,323.71	-3.13	-609.36	609.37	8.45	8.45	0.00	
5,709.00	92.80	268.70	5,322.23	-3.71	-641.32	641.33	1.82	0.94	-1.56	
5,741.00	93.10	268.60	5,320.58	-4.47	-673.27	673.28	0.99	0.94	-0.31	
5,836.00	94.30	268.80	5,314.45	-6.62	-768.05	768.07	1.28	1.26	0.21	
5,931.00	93.40	267.20	5,308.07	-8.93	-862.77	862.82	1.93	-0.95	-1.68	
6,026.00	93.30	265.80	5,302.52	-15.72	-957.43	957.51	1.47	-0.11	-1.47	
6,120.00	90.10	269.30	5,299.73	-19.73	-1,051.27	1,051.38	5.04	-3.40	3.72	
6,215.00	91.30	269.40	5,298.57	-20.81	-1,148.26	1,146.37	1.27	1.26	0.11	
6,310.00	90.20	270.10	5,297.33	-21.22	-1,241.25	1,241.36	1.37	-1.16	0.74	
6,406.00	88.50	270.80	5,298.42	-20.38	-1,337.23	1,337.34	1.96	-1.77	0.83	
6,500.00	89.60	270.50	5,299.98	-19.24	-1,431.21	1,431.31	1.25	1.17	-0.43	
6,596.00	90.60	270.60	5,299.81	-18.31	-1,527.21	1,527.29	1.05	1.04	0.10	
6,691.00	91.50	270.80	5,298.07	-17.15	-1,622.16	1,622.26	0.97	0.95	0.21	
6,785.00	91.10	271.70	5,295.94	-15.10	-1,716.13	1,716.20	1.05	-0.43	0.86	
6,880.00	90.90	270.70	5,294.28	-13.11	-1,811.10	1,811.15	1.07	-0.21	-1.05	
6,975.00	91.10	270.40	5,292.62	-12.20	-1,906.08	1,906.12	0.38	0.21	-0.32	
7,068.00	90.10	269.60	5,291.84	-12.20	-2,000.07	2,000.11	1.36	-1.06	-0.85	
7,164.00	90.70	269.70	5,290.97	-12.78	-2,095.07	2,095.11	0.84	0.63	0.11	

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #29H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3764.00usft (Capstar 119)
Site:	NFE Federal	MD Reference:	KB @ 3764.00usft (Capstar 119)
Well:	#29H	North Reference:	Grid
Wellbore:	WB1 / Job #1512834	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 119)	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)	
7,260.00	90.30	268.10	5,290.13	-14.63	-2,191.04	2,191.09	1.72	-0.42	-1.67	
7,355.00	91.20	268.40	5,288.89	-17.53	-2,285.99	2,286.06	1.00	0.95	0.32	
7,450.00	90.20	268.60	5,287.73	-20.01	-2,380.95	2,381.03	1.07	-1.05	0.21	
7,544.00	90.40	268.90	5,287.24	-22.06	-2,474.92	2,475.02	0.38	0.21	0.32	
7,639.00	91.40	268.80	5,285.75	-23.97	-2,569.89	2,569.99	1.06	1.05	-0.11	
7,734.00	90.30	270.20	5,284.34	-24.80	-2,664.87	2,664.98	1.87	-1.16	1.47	
7,828.00	91.00	269.80	5,283.27	-24.80	-2,758.87	2,758.97	0.86	0.74	-0.43	
7,923.00	90.80	270.30	5,281.78	-24.72	-2,853.86	2,853.96	0.57	-0.21	0.53	
8,017.00	91.50	271.30	5,279.89	-23.40	-2,947.83	2,947.92	1.30	0.74	1.06	
8,113.00	89.70	271.70	5,278.89	-20.89	-3,043.78	3,043.86	1.92	-1.88	0.42	
8,207.00	90.90	272.70	5,278.39	-17.28	-3,137.71	3,137.76	1.66	1.28	1.06	
8,302.00	90.40	271.60	5,277.32	-13.72	-3,232.64	3,232.68	1.27	-0.53	-1.16	
8,397.00	89.30	270.90	5,277.57	-11.65	-3,327.61	3,327.61	1.37	-1.16	-0.74	
8,492.00	89.80	268.80	5,278.31	-11.90	-3,422.60	3,422.61	2.27	0.53	-2.21	
8,587.00	90.90	268.70	5,277.73	-13.97	-3,517.58	3,517.59	1.16	1.16	-0.11	
8,682.00	92.50	268.30	5,274.91	-16.45	-3,612.50	3,612.53	1.74	1.68	-0.42	
8,777.00	90.80	269.10	5,272.18	-18.61	-3,707.43	3,707.47	1.98	-1.79	0.84	
8,872.00	91.40	268.80	5,270.35	-20.35	-3,802.40	3,802.45	0.71	0.63	-0.32	
8,965.00	90.40	267.90	5,268.89	-23.03	-3,895.34	3,895.41	1.45	-1.08	-0.97	
9,060.00	91.10	268.30	5,267.65	-26.17	-3,990.28	3,990.37	0.85	0.74	0.42	
9,155.00	92.00	268.00	5,265.08	-29.24	-4,085.20	4,085.30	1.00	0.95	-0.32	
9,250.00	90.30	270.30	5,263.17	-30.65	-4,180.16	4,180.27	3.01	-1.79	2.42	
9,344.00	90.60	269.60	5,262.43	-30.73	-4,274.15	4,274.26	0.81	0.32	-0.74	
9,439.00	91.40	269.80	5,260.78	-31.23	-4,369.14	4,369.25	0.87	0.84	0.21	
9,511.00	92.50	269.50	5,258.33	-31.67	-4,441.09	4,441.21	1.58	1.53	-0.42	
Last Phoenix MWD Survey										
9,580.00	92.50	269.50	5,255.32	-32.27	-4,510.03	4,510.14	0.00	0.00	0.00	
Projection to TD										

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
4,425.00	4,424.81	-11.43	-10.80	Tie-on to Phoenix Gyro Survey
4,525.00	4,524.80	-10.80	-10.57	First Phoenix MWD Survey
9,511.00	5,258.33	-31.67	-4,441.09	Last Phoenix MWD Survey
9,580.00	5,255.32	-32.27	-4,510.03	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

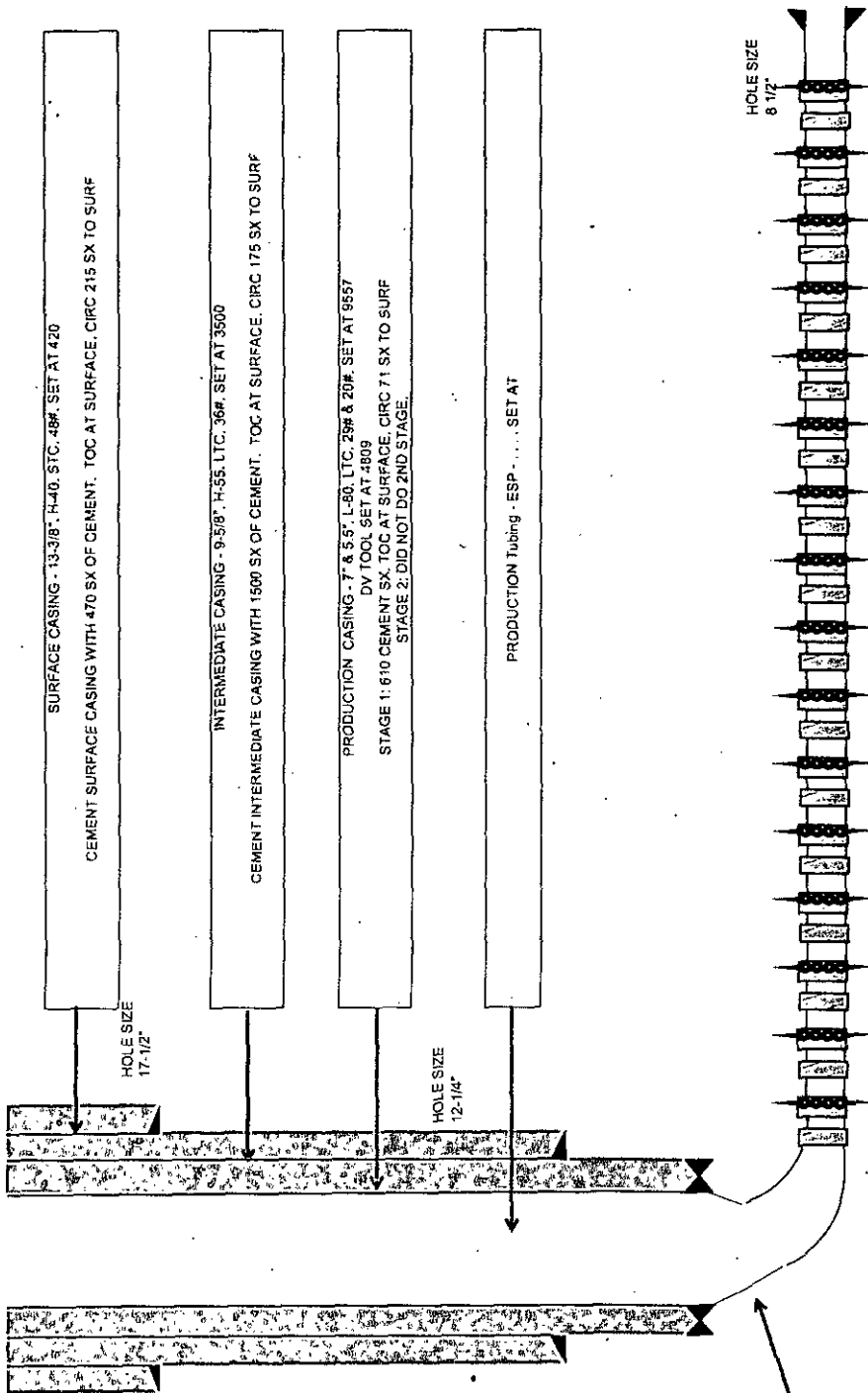
WELL NAME: NFE FEDERAL COM 29H
 API: 30-015-42585
 SPUD DATE: 3/10/2015
 PRODUCING FORMATION: YESO UPPER BLINEBRY
 FIELD: CEDAR LAKE (B?)
 COUNTY: EDDY
 STATE: NEW MEXICO
 WORKING INTEREST 50.00%

SURFACE LOC: 985 FSL & 155 FEL
 SECTION: 6
 TOWNSHIP: 17-S
 RANGE: 31-E
 SURVEY: JOHN WEST SURVEYING CO
 BOTTOM HOLE LOC: 983 FSL & 333 FWL
 SECTION: 6
 TOWNSHIP: 17-S
 RANGE: 31-E
 SURVEY: JOHN WEST SURVEYING CO

DRILL RIG: CAPSTAR 119
 RIG RELEASE: 3/26/2015

K2 (ft): 3,764.00
 GL (ft): 3,753.00
 KB/GL DIFF (ft): 11.00
 TMD (ft): 9,580.00
 TO OF PILOT HOLE (ft): N/A
 FC DEPTH (ft): 9,548.00
 PBMD (ft): 9,580.00
 RDV DEPTH (ft): N/A
 ORIO VALVE (ft): N/A
 DEEPEST TVD (ft): 5,324.00

TAPERED CASING STRING:
 7" 20# L-80 TO X-OVER @ 4.811'
 TAPERING TO 5.5" 20# L-80 SET @ 9,557'



KOP (ft):
 LATERAL LENGTH (ft):
 TD OF PILOT HOLE (ft): N/A

PACKERS & SLEEVES
 TOP PERF (MD): 5,686
 BOTTOM PERF (MD): -9,548

TMD (ft): 9,580
 FC DEPTH (ft): 9,548
 PBMD (ft): 9,580
 RDV DEPTH (ft): N/A
 ORIO VALVE (ft): N/A

PACKERS & SLEEVES - 14 STAGES

TOTAL ACID (gal)	2,456	TOTAL LTR (bbl)	61.075	TOTAL PROPPANT (lb)	2,059,660	MAX WH RATE (bpm)	94.00	MAX WH PRESSURE (psi)	7,050
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PRODUCTION METHOD	Pumping	LIFT TYPE	ESP	SETTING DEPTH	0
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COMPLETION:
 STIMULATION:
 STATUS:
 COMMENTS:

CROSSOVER SUB @ 4.811'

LAST UPDATED BY: HILLARI SOULD
 LAST UPDATED: 10/12/2015