

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

NFE Federal #028H
Eddy County, New Mexico

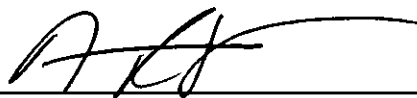
API # 30-015-42653
UL-P, Sec. 6, T17S, R31E
920 FSL, + 155 FES

196	1.96	0.50	0.88	1.72	1.72
468	2.72	1.50	2.63	7.14	8.86
687	2.19	1.40	2.45	5.37	14.22
877	1.90	1.50	2.63	4.99	19.21
1132	2.55	1.30	2.28	5.80	25.01
1351	2.19	1.90	3.33	7.28	32.29
1540	1.89	1.00	1.75	3.31	35.60
1730	1.90	1.30	2.28	4.32	39.92
2172	4.42	0.60	1.05	4.64	44.56
2362	1.90	0.80	1.40	2.66	47.22
2573	2.11	0.90	1.58	3.32	50.55
2794	2.21	0.80	1.40	3.09	53.64
3014	2.20	0.40	0.70	1.54	55.18
3266	2.52	0.80	1.40	3.53	58.71
3338	0.72	0.70	1.23	0.88	59.59
3611	2.73	1.00	1.75	4.78	64.37
3867	2.56	0.80	1.40	3.58	67.95
4090	2.23	0.90	1.58	3.51	71.46
4380	2.90	0.70	1.23	3.55	75.02

NM OIL CONSERVATION
ARTESIA DISTRICT

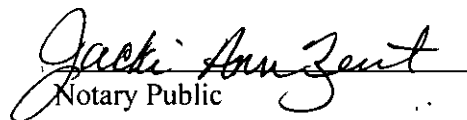
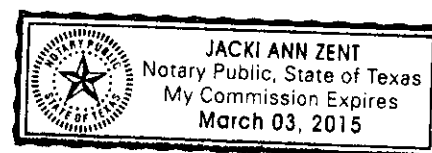
NOV 23 2015

RECEIVED



Archie Brown - General Manager

The attached instrument was acknowledged before me on the 24th day of February, 2015 by
Archie Brown - General Manager, CapStar Drilling, Inc.


Notary Public



Apache Corporation

Eddy County, NM (NAD27 NME)
NFE Federal
#28H

WB1 / Job #1512833

Design: Surveys (Capstar 119)

Standard Survey Report

12 February, 2015

NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 23 2015
RECEIVED



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #28H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3763.00usft (Capstar 119)
Site:	NFE Federal	MD Reference:	KB @ 3763.00usft (Capstar 119)
Well:	#28H	North Reference:	Grid
Wellbore:	WB1 / Job #1512833	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
From:	Map	Easting:	633,303.50 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 51' 0.49036 N
		Longitude:	103° 53' 57.34966 W
		Grid Convergence:	0.24 °

Well	#28H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 51' 31.27214 N
		Longitude:	103° 54' 1.80360 W
		Ground Level:	3,752.00 usft

Wellbore	WB1 / Job #1512833				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	1/30/2015	7.52	60.62	48,545

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 2/12/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	4,275.00	Phoenix Gyro Surveys (WB1 / Job #15128	NS-GYRO-MS	North sensing gyrocompassing m/s	
4,354.00	9,200.00	Phoenix MWD Surveys (WB1 / Job #1512	PHX+MWD+BGGM	PHX+MWD+BGGM v3:standard declination	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.22	73.51	100.00	0.05	0.18	-0.18	0.22	0.22	0.00	
200.00	0.53	18.71	200.00	0.55	0.52	-0.52	0.44	0.31	-54.80	
300.00	0.77	52.81	299.99	1.39	1.20	-1.21	0.44	0.24	34.10	
400.00	1.39	14.96	399.97	2.97	2.05	-2.07	0.91	0.62	-37.85	
500.00	1.25	19.29	499.95	5.17	2.72	-2.76	0.17	-0.14	4.33	
600.00	1.20	60.25	599.93	6.72	3.99	-4.04	0.86	-0.05	40.96	
700.00	1.17	142.69	699.91	6.43	5.52	-5.56	1.56	-0.03	82.44	
800.00	1.33	54.80	799.90	6.28	7.09	-7.13	1.74	0.16	-87.89	
900.00	1.21	2.74	899.87	8.01	8.09	-8.14	1.12	-0.12	-52.06	

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #28H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3763.00usft (Capstar 119)
Site:	NFE Federal	MD Reference:	KB @ 3763.00usft (Capstar 119)
Well:	#28H	North Reference:	Grid
Wellbore:	WB1 / Job #1512833	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)
1,000.00	1.21	273.52	999.86	9.13	7.08	-7.14	1.70	0.00	-89.22
1,100.00	1.56	65.21	1,099.85	9.76	7.26	-7.33	2.69	0.35	151.69
1,200.00	1.64	45.24	1,199.81	11.34	9.52	-9.59	0.56	0.08	-19.97
1,300.00	1.51	49.28	1,299.77	13.21	11.53	-11.62	0.17	-0.13	4.04
1,400.00	1.15	140.53	1,399.75	13.29	13.17	-13.26	1.92	-0.36	91.25
1,500.00	1.20	50.03	1,499.74	13.19	14.61	-14.69	1.67	0.05	-90.50
1,600.00	1.40	37.80	1,599.71	14.83	16.16	-16.26	0.34	0.20	-12.23
1,700.00	1.14	169.91	1,699.70	14.82	17.08	-17.18	2.32	-0.26	132.11
1,800.00	0.87	340.76	1,799.70	14.55	17.01	-17.10	2.00	-0.27	170.85
1,900.00	0.87	293.21	1,899.69	15.57	16.06	-16.16	0.70	0.00	-47.55
2,000.00	1.12	141.75	1,999.68	15.10	15.97	-16.07	1.93	0.25	-151.46
2,100.00	1.11	71.59	2,099.67	14.64	17.49	-17.59	1.28	-0.01	-70.16
2,200.00	0.77	228.67	2,199.66	14.50	17.90	-18.00	1.84	-0.34	157.08
2,300.00	0.79	19.45	2,299.66	14.71	17.63	-17.73	1.51	0.02	150.78
2,400.00	0.71	239.32	2,399.65	15.04	17.33	-17.43	1.41	-0.08	-140.13
2,500.00	0.66	30.88	2,499.65	15.22	17.09	-17.19	1.33	-0.05	151.56
2,600.00	0.55	150.88	2,599.65	15.29	17.62	-17.72	1.05	-0.11	120.00
2,700.00	0.75	224.02	2,699.64	14.40	17.40	-17.49	0.79	0.20	73.14
2,800.00	0.56	38.90	2,799.64	14.31	17.25	-17.34	1.31	-0.19	174.88
2,900.00	0.42	359.41	2,899.64	15.06	17.55	-17.65	0.36	-0.14	-39.49
3,000.00	0.48	270.43	2,999.64	15.43	17.13	-17.23	0.63	0.06	-88.98
3,100.00	0.59	266.51	3,099.63	15.40	16.20	-16.30	0.12	0.11	-3.92
3,200.00	0.53	76.45	3,199.63	15.48	16.13	-16.23	1.12	-0.06	169.94
3,300.00	0.64	353.88	3,299.63	16.14	16.52	-16.63	0.78	0.11	-82.57
3,400.00	0.64	343.19	3,399.62	17.23	16.30	-16.42	0.12	0.00	-10.69
3,500.00	0.72	322.27	3,499.61	18.26	15.76	-15.88	0.26	0.08	-20.92
3,600.00	0.75	341.87	3,599.61	19.38	15.17	-15.30	0.25	0.03	19.60
3,700.00	0.99	311.54	3,699.59	20.58	14.32	-14.45	0.51	0.24	-30.33
3,800.00	0.89	226.28	3,799.58	20.61	13.11	-13.25	1.28	-0.10	-85.26
3,900.00	0.73	183.67	3,899.58	19.44	12.51	-12.64	0.61	-0.16	-42.61
4,000.00	0.74	312.43	3,999.57	19.24	11.99	-12.12	1.33	0.01	128.76
4,100.00	0.68	101.84	4,099.57	19.56	12.09	-12.22	1.37	-0.06	149.41
4,200.00	0.56	153.76	4,199.56	19.00	12.89	-13.02	0.55	-0.12	51.92
4,275.00	0.46	292.42	4,274.56	18.78	12.77	-12.90	1.27	-0.13	184.88
Tie In to Phoenix Gyro Surveys									
4,354.00	0.70	304.70	4,353.56	19.18	12.08	-12.21	0.34	0.30	15.54
First Phoenix MWD Survey									
4,386.00	1.80	288.10	4,385.55	19.44	11.45	-11.57	3.58	3.44	-51.88
4,417.00	4.00	278.20	4,416.51	19.75	9.91	-10.04	7.25	7.10	-31.94
4,449.00	6.80	273.90	4,448.36	20.04	6.92	-7.05	8.83	8.75	-13.44
4,480.00	10.10	271.50	4,479.02	20.23	2.37	-2.50	10.70	10.65	-7.74
4,512.00	13.60	269.40	4,510.34	20.27	-4.20	4.07	11.02	10.94	-6.56
4,544.00	17.40	266.80	4,541.17	19.96	-12.74	12.61	12.07	11.88	-8.13

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Site:	NFE Federal	MD Reference:	KB @ 3763.00usft (Capstar 119)
Well:	#28H	North Reference:	Grid
Wellbore:	WB1 / Job #1512833	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)
4,576.00	21.20	265.80	4,571.36	19.27	-23.30	23.17	11.92	11.88	-3.13
4,607.00	24.80	265.50	4,599.89	18.35	-35.37	35.25	11.62	11.61	-0.97
4,639.00	28.00	265.90	4,628.55	17.29	-49.56	49.44	10.02	10.00	1.25
4,670.00	31.70	265.50	4,655.44	16.13	-64.94	64.83	11.95	11.94	-1.29
4,701.00	35.60	265.90	4,681.24	14.84	-82.07	81.97	12.60	12.58	1.29
4,733.00	39.70	266.40	4,706.57	13.53	-101.57	101.47	12.85	12.81	1.56
4,764.00	43.60	268.10	4,729.73	12.56	-122.14	122.05	13.10	12.58	5.48
4,796.00	47.10	270.10	4,752.21	12.21	-144.90	144.81	11.81	10.94	6.25
4,828.00	50.70	271.40	4,773.25	12.53	-169.00	168.92	11.66	11.25	4.06
4,859.00	54.60	272.30	4,792.05	13.33	-193.63	193.53	12.79	12.58	2.90
4,891.00	58.10	271.80	4,809.78	14.29	-220.24	220.14	11.01	10.94	-1.56
4,922.00	61.70	271.30	4,825.32	15.01	-247.05	246.94	11.70	11.61	-1.61
4,954.00	63.80	268.30	4,839.98	14.90	-275.49	275.39	10.61	6.56	-9.38
4,986.00	66.20	266.10	4,853.50	13.48	-304.45	304.36	9.75	7.50	-6.88
5,017.00	68.20	265.30	4,865.52	11.34	-332.95	332.87	6.88	6.45	-2.58
5,048.00	71.20	264.50	4,876.27	8.75	-361.91	361.84	9.98	9.68	-2.58
5,080.00	74.90	263.50	4,885.60	5.55	-392.34	392.30	11.94	11.56	-3.13
5,112.00	78.70	264.50	4,892.90	2.29	-423.32	423.30	12.26	11.88	3.13
5,143.00	82.40	264.60	4,897.99	-0.61	-453.76	453.75	11.94	11.94	0.32
5,174.00	85.60	264.50	4,901.23	-3.54	-484.44	484.46	10.33	10.32	-0.32
5,205.00	89.10	265.50	4,902.66	-6.24	-515.29	515.32	11.74	11.29	3.23
5,237.00	90.10	266.70	4,902.89	-8.41	-547.21	547.25	4.88	3.13	3.75
5,269.00	90.70	269.30	4,902.66	-9.53	-579.19	579.24	8.34	1.88	8.13
5,300.00	91.00	269.50	4,902.20	-9.85	-610.18	610.23	1.16	0.97	0.65
5,332.00	91.70	269.40	4,901.45	-10.16	-642.17	642.22	2.21	2.19	-0.31
5,364.00	92.00	268.90	4,900.42	-10.63	-674.15	674.21	1.82	0.94	-1.56
5,395.00	91.70	269.40	4,899.42	-11.09	-705.13	705.19	1.88	-0.97	1.61
5,427.00	90.60	269.90	4,898.77	-11.29	-737.12	737.18	3.78	-3.44	1.56
5,459.00	90.40	270.70	4,898.50	-11.12	-769.12	769.18	2.58	-0.63	2.50
5,491.00	90.80	270.90	4,898.16	-10.67	-801.12	801.17	1.40	1.25	0.63
5,521.00	91.20	270.80	4,897.64	-10.23	-831.11	831.16	1.37	1.33	-0.33
5,616.00	92.40	270.60	4,894.65	-9.07	-926.05	926.09	1.28	1.26	-0.21
5,711.00	91.30	270.10	4,891.59	-8.49	-1,021.00	1,021.03	1.27	-1.16	-0.53
5,805.00	91.70	270.00	4,889.13	-8.41	-1,114.97	1,115.00	0.44	0.43	-0.11
5,900.00	92.00	269.90	4,886.06	-8.49	-1,209.92	1,209.95	0.33	0.32	-0.11
5,995.00	92.70	269.80	4,882.16	-8.74	-1,304.84	1,304.87	0.74	0.74	-0.11
6,090.00	91.00	269.50	4,879.10	-9.32	-1,399.78	1,399.81	1.82	-1.79	-0.32
6,184.00	91.30	269.80	4,877.21	-9.89	-1,493.76	1,493.79	0.45	0.32	0.32
6,279.00	91.00	268.90	4,875.30	-10.97	-1,588.74	1,588.77	1.00	-0.32	-0.95
6,374.00	90.80	268.40	4,873.81	-13.21	-1,683.70	1,683.75	0.57	-0.21	-0.53
6,469.00	90.80	267.80	4,872.48	-16.36	-1,778.63	1,778.70	0.63	0.00	-0.63
6,564.00	89.40	269.70	4,872.32	-18.43	-1,873.61	1,873.69	2.48	-1.47	2.00
6,659.00	89.80	269.60	4,872.98	-19.01	-1,968.60	1,968.68	0.43	0.42	-0.11
6,753.00	90.10	269.40	4,873.06	-19.83	-2,062.60	2,062.68	0.38	0.32	-0.21

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Well:	#28H	North Reference:	Grid
Wellbore:	WB1 / Job #1512833	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)
6,848.00	90.00	268.90	4,872.98	-21.24	-2,157.59	2,157.68	0.54	-0.11	-0.53
6,943.00	91.30	269.60	4,871.90	-22.48	-2,252.57	2,252.67	1.55	1.37	0.74
7,039.00	91.30	270.50	4,869.73	-22.40	-2,348.54	2,348.64	0.94	0.00	0.94
7,134.00	92.00	271.20	4,866.99	-20.99	-2,443.49	2,443.58	1.04	0.74	0.74
7,229.00	92.20	271.30	4,863.51	-18.92	-2,538.41	2,538.48	0.24	0.21	0.11
7,323.00	91.80	269.70	4,860.23	-18.10	-2,632.34	2,632.40	1.75	-0.43	-1.70
7,418.00	91.80	268.80	4,857.24	-19.34	-2,727.29	2,727.35	0.95	0.00	-0.95
7,513.00	91.10	270.00	4,854.84	-20.34	-2,822.25	2,822.32	1.46	-0.74	1.26
7,608.00	91.60	269.70	4,852.60	-20.59	-2,917.22	2,917.29	0.61	0.53	-0.32
7,703.00	91.80	269.40	4,849.78	-21.33	-3,012.18	3,012.25	0.38	0.21	-0.32
7,797.00	91.30	270.10	4,847.24	-21.74	-3,106.14	3,106.22	0.91	-0.53	0.74
7,892.00	92.00	270.10	4,844.51	-21.58	-3,201.10	3,201.17	0.74	0.74	0.00
7,987.00	89.80	269.90	4,843.01	-21.58	-3,296.08	3,296.15	2.33	-2.32	-0.21
8,082.00	90.30	269.70	4,842.93	-21.91	-3,391.08	3,391.15	0.57	0.53	-0.21
8,176.00	90.90	269.60	4,841.95	-22.48	-3,485.07	3,485.15	0.65	0.64	-0.11
8,271.00	91.60	269.80	4,839.87	-22.98	-3,580.05	3,580.12	0.77	0.74	0.21
8,460.00	91.60	271.70	4,834.60	-20.51	-3,768.95	3,769.00	1.00	0.00	1.01
8,555.00	92.20	271.30	4,831.45	-18.02	-3,863.87	3,863.90	0.76	0.63	-0.42
8,649.00	90.30	270.80	4,829.40	-16.30	-3,957.82	3,957.84	2.09	-2.02	-0.53
8,744.00	89.50	270.90	4,829.56	-14.89	-4,052.81	4,052.82	0.85	-0.84	0.11
8,839.00	89.80	268.10	4,830.14	-15.72	-4,147.80	4,147.81	2.96	0.32	-2.95
8,932.00	90.40	267.20	4,829.98	-19.53	-4,240.72	4,240.75	1.16	0.65	-0.97
9,029.00	91.20	266.80	4,828.63	-24.61	-4,337.57	4,337.64	0.92	0.82	-0.41
9,124.00	92.10	266.50	4,825.89	-30.16	-4,432.37	4,432.47	1.00	0.95	-0.32
Last Phoenix MWD Survey									
9,200.00	92.10	266.50	4,823.11	-34.79	-4,508.18	4,508.31	0.00	0.00	0.00
Projection to Bit									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,275.00	4,274.56	18.78	12.77	Tie In to Phoenix Gyro Surveys
4,354.00	4,353.56	19.18	12.08	First Phoenix MWD Survey
9,124.00	4,825.89	-30.16	-4,432.37	Last Phoenix MWD Survey
9,200.00	4,823.11	-34.79	-4,508.18	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____

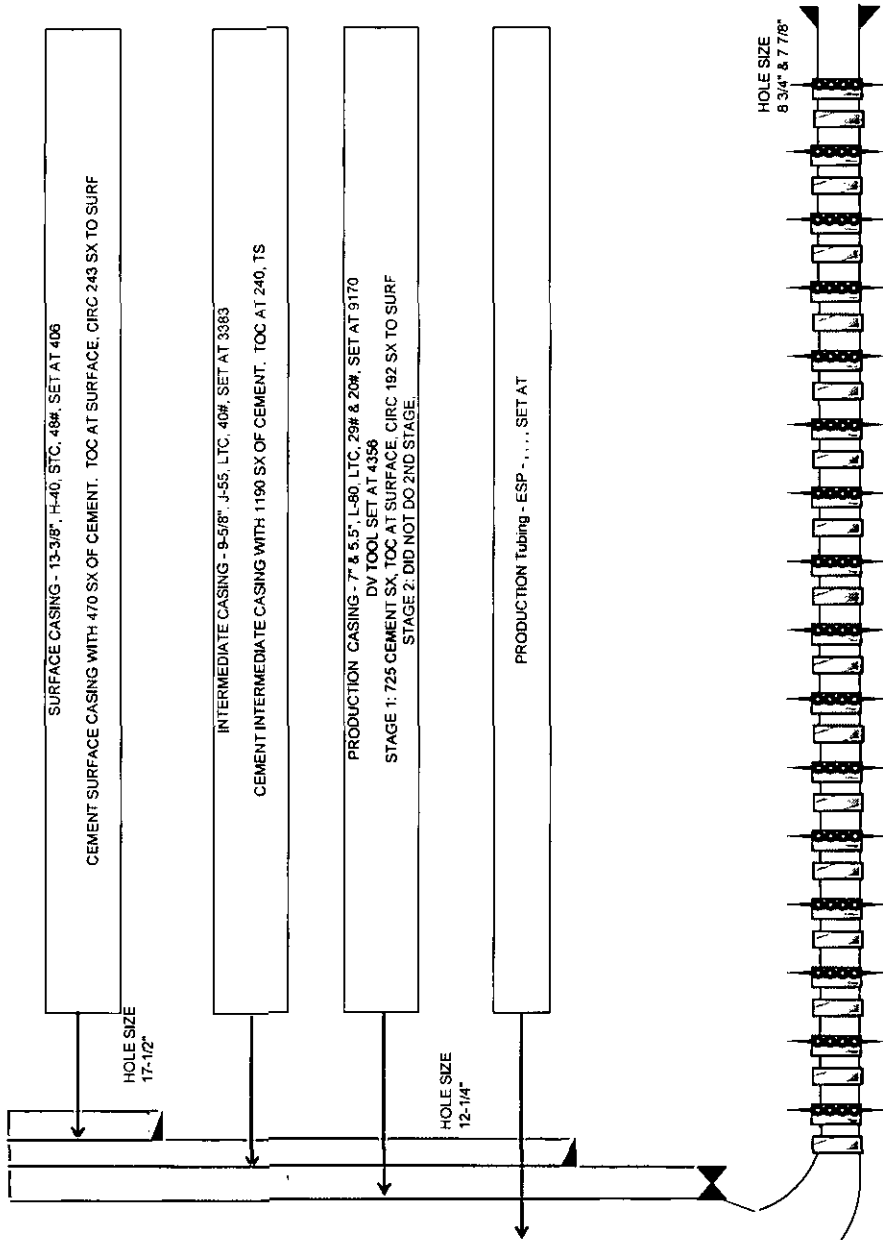
WELL NAME: NFE FEDERAL COM 28H
API: 30-015-42653
SPUD DATE: 1/30/2015
PRODUCING FORMATION: YESO PADDOCK
FIELD: CEDAR LAKE (BP)
COUNTY: EDDY
STATE: NEW MEXICO
WORKING INTEREST: 60.00%

SURFACE LOC: 920' FSL & 155' FEL
SECTION: 6
TOWNSHIP: 17-S
RANGE: 31-E
SURVEY: JOHN WEST SURVEYING CO
BOTTOM HOLE LOC: 915' FSL & 335' FWL
SECTION: 6
TOWNSHIP: 17-S
RANGE: 31-E
SURVEY: JOHN WEST SURVEYING CO
DRILL RIG: CAPSTAR 119
RIG RELEASE: 2/16/2015

KB (ft): 3,763.00
GL (ft): 3,752.00
KB/GL DIFF (ft): 11.00
TMD (ft): 9,200.00
TO OF PILOT HOLE (ft): N/A
FC DEPTH (ft): 9,161.00
PBMD (ft): 9,200.00
RDV DEPTH (ft): N/A
ORIO VALVE (ft): N/A
DEEPEST TVD (ft): 4,902.00

TAPERED CASING STRING:

7" 29# L-80 TO X-OVER @ 4,358'
TAPERING TO 5.5" 20# L-80 SET @ 9,170'



KOP (ft):
LATERAL LENGTH (ft):
TD OF PILOT HOLE (ft):

PACKERS & SLEEVES
TOP PERF (MD):
BOTTOM PERF (MD):

TMD (ft): 9,200
FC DEPTH (ft): 9,161
PBMD (ft): 9,200
RDV DEPTH (ft): N/A
ORIO VALVE (ft): N/A

COMPLETION:

STIMULATION:

STATUS:

COMMENTS:

PACKERS & SLEEVES - 15 STAGES

TOTAL ACID (gal)	TOTAL LTR (bbl)	TOTAL PROPPANT (lbs)	MAX WH RATE (bpm)	MAX WH PRESSURE (psi)
2,466	64,883	2,845,040	94.00	5,706

PRODUCTION METHOD	LIFT TYPE	SETTING DEPTH
Pumping	ESP	0

CROSSOVER SUB @ 4,358'

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