



NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 13 2017

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Apache Corporation

Eddy County, NM (NAD 83 NME)

Salt Fork 3-4 Federal Com

2H

30-015-43666

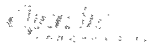
OH / Job #61546

Design: Surveys (H&P 482)

Standard Survey Report

15 September, 2017





Phoenix Technology Services LP
Survey Report



Company: Apache Corporation
Project: Eddy County, NM (NAD 83 NME)
Site: Salt Fork 3-4 Federal Com
Well: 2H
Wellbore: OH / Job #61546
Design: Surveys (H&P 482)

Local Co-ordinate Reference: Well 2H
TVD Reference: GL + KB @ 3439.00usft (H&P 482)
MD Reference: GL + KB @ 3439.00usft (H&P 482)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Project	Eddy County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Salt Fork 3-4 Federal Com				
Site Position:		Northing:	614,456.20 usft	Latitude:	32° 41' 19.07240 N
From:	Map	Easting:	655,869.01 usft	Longitude:	103° 57' 39.65114 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.20 "

Well	2H					
Well Position	+N-S	0.00 usft	Northing:	614,397.51 usft	Latitude:	32° 41' 18.49114 N
	+E-W	0.00 usft	Easting:	655,881.60 usft	Longitude:	103° 57' 39.65114 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,413.00 usft	

Wellbore	OH / Job #61546				
Magnetics	Model Name	Sample Date	Declination (")	Dip Angle (")	Field Strength (nT)
	HDGM	8/26/2017	7.50	60.58	48,282

Design	Surveys (H&P 482)				
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	257.00	

Survey Program	Date 9/15/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	7,800.00	MS Gyro Surveys (OH / Job #61546)	NS-GYRO-MS	North sensing gyrocompassing m/s	
7,974.00	15,893.00	Phoenix MWD Surveys (OH / Job #61546)	MWD+HDGM	OWSG Rev.2 MWD + HDGM	

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	0.66	78.03	100.00	0.12	0.56	-0.58	0.66	0.66	0.00	
200.00	0.84	59.33	199.99	0.61	1.76	-1.85	0.30	0.18	-18.70	
300.00	0.65	49.85	299.98	1.35	2.82	-3.05	0.23	-0.19	-9.48	
400.00	0.42	53.39	399.98	1.94	3.55	-3.89	0.23	-0.23	3.54	
500.00	0.82	311.80	499.97	2.63	3.31	-3.82	0.99	0.40	-101.59	
600.00	0.72	305.09	599.96	3.47	2.26	-2.99	0.13	-0.10	-6.71	
700.00	0.70	312.17	699.96	4.24	1.30	-2.22	0.09	-0.02	7.08	
800.00	0.68	310.43	799.95	5.04	0.39	-1.51	0.03	-0.02	-1.74	
900.00	0.69	308.95	899.94	5.80	-0.53	-0.79	0.02	0.01	-1.48	

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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)
1,000.00	0.62	306.80	999.93	6.50	-1.43	-0.07	0.07	-0.07	-2.15
1,100.00	0.55	315.12	1,099.93	7.17	-2.20	0.53	0.11	-0.07	8.32
1,200.00	0.49	330.55	1,199.93	7.88	-2.75	0.91	0.15	-0.06	15.43
1,300.00	0.53	335.86	1,299.92	8.67	-3.15	1.12	0.06	0.04	5.31
1,400.00	0.58	333.94	1,399.92	9.55	-3.56	1.32	0.05	0.05	-1.92
1,500.00	0.56	330.51	1,499.91	10.43	-4.02	1.58	0.04	-0.02	-3.43
1,600.00	0.26	25.11	1,599.91	11.06	-4.17	1.57	0.46	-0.30	54.60
1,700.00	0.37	355.24	1,699.91	11.59	-4.10	1.39	0.19	0.11	-29.87
1,800.00	0.16	2.62	1,799.91	12.05	-4.12	1.30	0.21	-0.21	7.38
1,900.00	0.26	35.59	1,899.91	12.37	-3.98	1.10	0.15	0.10	32.97
2,000.00	0.29	27.26	1,999.91	12.78	-3.73	0.76	0.05	0.03	-8.33
2,100.00	0.43	2.76	2,099.90	13.38	-3.60	0.50	0.21	0.14	-24.50
2,200.00	0.46	343.74	2,199.90	14.14	-3.69	0.42	0.15	0.03	-19.02
2,300.00	0.54	324.34	2,299.90	14.91	-4.08	0.62	0.19	0.08	-19.40
2,400.00	0.66	328.37	2,399.89	15.78	-4.66	0.99	0.13	0.12	4.03
2,500.00	0.61	349.24	2,499.89	16.80	-5.06	1.15	0.24	-0.05	20.87
2,600.00	0.77	348.78	2,599.88	17.98	-5.29	1.11	0.16	0.16	-0.46
2,700.00	0.85	342.03	2,699.87	19.34	-5.65	1.15	0.12	0.08	-6.75
2,800.00	0.78	342.90	2,799.86	20.70	-6.08	1.26	0.07	-0.07	0.87
2,900.00	0.54	332.01	2,899.85	21.77	-6.50	1.44	0.27	-0.24	-10.89
3,000.00	0.51	330.45	2,999.85	22.57	-6.94	1.68	0.03	-0.03	-1.56
3,100.00	0.15	117.17	3,099.85	22.90	-7.04	1.71	0.64	-0.36	146.72
3,200.00	0.38	131.57	3,199.84	22.62	-6.68	1.42	0.24	0.23	14.40
3,300.00	0.19	176.73	3,299.84	22.23	-6.42	1.25	0.28	-0.19	45.16
3,400.00	0.38	149.94	3,399.84	21.78	-6.25	1.18	0.23	0.19	-26.79
3,500.00	0.33	136.98	3,499.84	21.28	-5.88	0.94	0.09	-0.05	-12.96
3,600.00	0.10	151.31	3,599.84	21.00	-5.64	0.78	0.23	-0.23	14.33
3,700.00	0.29	175.14	3,699.84	20.67	-5.58	0.79	0.20	0.19	23.83
3,800.00	0.27	138.90	3,799.84	20.24	-5.40	0.71	0.18	-0.02	-36.24
3,900.00	0.09	167.77	3,899.84	19.98	-5.23	0.60	0.20	-0.18	28.87
4,000.00	0.30	202.10	3,999.84	19.66	-5.32	0.75	0.23	0.21	34.33
4,100.00	1.35	196.58	4,099.82	18.29	-5.75	1.49	1.05	1.05	-5.52
4,200.00	5.07	210.55	4,199.65	13.36	-8.33	5.11	3.77	3.72	13.97
4,300.00	5.88	211.86	4,299.19	5.20	-13.28	11.77	0.82	0.81	1.31
4,400.00	5.86	211.87	4,398.67	-3.49	-18.68	18.99	0.02	-0.02	0.01
4,500.00	5.86	212.90	4,498.15	-12.11	-24.15	26.25	0.11	0.00	1.03
4,600.00	5.29	209.06	4,597.67	-20.42	-29.16	33.01	0.68	-0.57	-3.84
4,700.00	4.72	209.17	4,697.29	-28.05	-33.41	38.88	0.57	-0.57	0.11
4,800.00	4.65	201.73	4,796.96	-35.40	-36.91	43.93	0.61	-0.07	-7.44
4,900.00	4.53	202.35	4,896.64	-42.82	-39.91	48.53	0.13	-0.12	0.62
5,000.00	4.08	199.70	4,996.36	-49.82	-42.62	52.73	0.49	-0.45	-2.65
5,100.00	4.46	206.38	5,096.08	-56.66	-45.54	57.12	0.63	0.38	6.68
5,200.00	4.42	206.15	5,195.78	-63.60	-48.97	62.02	0.04	-0.04	-0.23

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Survey

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5,300.00	4.00	209.08	5,295.51	-70.10	-52.36	66.79	0.47	-0.42	2.93
5,400.00	3.87	209.43	5,395.27	-76.09	-55.72	71.41	0.13	-0.13	0.35
5,500.00	4.31	215.25	5,495.02	-82.10	-59.54	76.49	0.60	0.44	5.82
5,600.00	4.32	213.85	5,594.74	-88.30	-63.81	82.04	0.11	0.01	-1.40
5,700.00	4.46	211.41	5,694.44	-94.74	-67.93	87.51	0.23	0.14	-2.44
5,800.00	4.57	204.66	5,794.13	-101.68	-71.62	92.66	0.54	0.11	-6.75
5,900.00	4.71	195.67	5,893.81	-109.26	-74.39	97.07	0.74	0.14	-8.99
6,000.00	4.33	198.28	5,993.50	-116.79	-76.69	101.00	0.43	-0.38	2.61
6,100.00	4.22	210.06	6,093.22	-123.56	-79.71	105.47	0.88	-0.11	11.78
6,200.00	4.15	213.56	6,192.95	-129.76	-83.56	110.61	0.26	-0.07	3.50
6,300.00	3.94	215.02	6,292.70	-135.59	-87.53	115.79	0.23	-0.21	1.46
6,400.00	3.63	214.46	6,392.49	-141.01	-91.29	120.68	0.31	-0.31	-0.56
6,500.00	3.57	215.09	6,492.29	-146.17	-94.87	125.33	0.07	-0.06	0.63
6,600.00	3.14	213.08	6,592.12	-151.01	-98.16	129.62	0.45	-0.43	-2.01
6,700.00	3.21	218.05	6,691.96	-155.51	-101.38	133.77	0.28	0.07	4.97
6,800.00	4.31	215.16	6,791.75	-160.79	-105.27	138.74	1.12	1.10	-2.89
6,900.00	5.77	205.34	6,891.36	-168.41	-109.58	144.66	1.69	1.46	-9.82
7,000.00	5.37	206.25	6,990.89	-177.15	-113.80	150.74	0.41	-0.40	0.91
7,100.00	4.68	207.48	7,090.50	-184.96	-117.76	156.35	0.70	-0.69	1.23
7,200.00	4.59	198.61	7,190.18	-192.37	-120.91	161.10	0.72	-0.09	-8.87
7,300.00	6.69	203.71	7,289.69	-201.50	-124.53	166.68	2.16	2.10	5.10
7,400.00	6.53	203.73	7,389.02	-212.04	-129.16	173.56	0.16	-0.16	0.02
7,500.00	6.11	200.96	7,488.41	-222.21	-133.36	179.93	0.52	-0.42	-2.77
7,600.00	5.46	201.78	7,587.90	-231.60	-137.03	185.62	0.66	-0.65	0.82
7,700.00	4.97	204.90	7,687.49	-239.95	-140.62	191.00	0.57	-0.49	3.12
7,800.00	4.91	204.86	7,787.12	-247.76	-144.24	196.28	0.06	-0.06	-0.04
Tie In									
7,974.00	9.76	213.62	7,959.65	-266.81	-155.54	211.58	2.85	2.79	5.03
First Phoenix MWD Survey									
8,021.00	16.00	212.09	8,005.44	-275.63	-161.19	219.07	13.30	13.28	-3.26
8,069.00	22.43	209.64	8,050.75	-289.20	-169.25	229.97	13.50	13.40	-5.10
8,116.00	28.51	207.73	8,093.16	-306.94	-178.91	243.38	13.05	12.94	-4.06
8,164.00	32.58	206.32	8,134.49	-328.67	-189.97	259.05	8.61	8.48	-2.94
8,211.00	36.00	206.80	8,173.32	-352.35	-201.82	275.92	7.30	7.28	1.02
8,258.00	38.63	208.69	8,210.69	-377.56	-215.09	294.52	6.10	5.60	4.02
8,305.00	42.04	209.88	8,246.52	-404.08	-229.98	315.00	7.44	7.26	2.53
8,353.00	44.46	212.66	8,281.48	-432.17	-247.06	337.96	6.42	5.04	5.79
8,400.00	47.36	214.35	8,314.18	-460.31	-265.70	362.46	6.69	6.17	3.60
8,448.00	50.97	214.85	8,345.56	-490.20	-286.32	389.27	7.56	7.52	1.04
8,495.00	55.73	214.77	8,373.61	-521.15	-307.84	417.20	10.13	10.13	-0.17
8,542.00	60.57	214.60	8,398.40	-553.97	-330.55	446.72	10.30	10.30	-0.36
8,589.00	65.69	214.29	8,419.64	-588.53	-354.26	477.59	10.91	10.89	-0.66
8,637.00	72.02	212.70	8,436.94	-625.85	-378.94	510.03	13.54	13.19	-3.31
8,688.00	76.48	212.00	8,445.36	-651.05	-394.90	531.25	14.55	14.39	-2.26



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8,700.00	79.37	211.58	8,452.05	-677.65	-411.38	553.30	9.12	9.03	-1.31
8,732.00	82.90	211.78	8,456.98	-704.55	-427.98	575.53	11.05	11.03	0.63
8,763.00	86.37	213.56	8,459.88	-730.53	-444.64	597.60	12.57	11.19	5.74
8,826.00	91.33	216.21	8,461.14	-782.17	-480.65	644.31	8.93	7.87	4.21
8,921.00	92.69	215.80	8,457.81	-858.98	-536.46	715.97	1.50	1.43	-0.43
9,039.00	93.36	214.31	8,451.58	-955.43	-604.14	803.62	1.38	0.57	-1.26
9,133.00	92.05	214.29	8,447.15	-1,033.00	-657.05	872.62	1.39	-1.39	-0.02
9,228.00	91.75	216.29	8,444.00	-1,110.49	-711.90	943.50	2.13	-0.32	2.11
9,322.00	89.38	218.07	8,443.07	-1,185.38	-768.70	1,015.69	3.15	-2.52	1.89
9,417.00	87.07	221.70	8,446.01	-1,258.22	-829.57	1,091.39	4.53	-2.43	3.82
9,517.00	87.79	226.87	8,450.50	-1,329.71	-899.30	1,175.42	5.21	0.72	5.17
9,612.00	91.87	232.00	8,450.78	-1,391.46	-971.43	1,259.59	6.90	4.29	5.40
9,706.00	89.48	237.43	8,449.67	-1,445.73	-1,048.12	1,346.53	6.31	-2.54	5.78
9,801.00	89.35	242.28	8,450.65	-1,493.42	-1,130.25	1,437.28	5.11	-0.14	5.11
9,895.00	88.93	243.54	8,452.06	-1,536.22	-1,213.92	1,528.44	1.41	-0.45	1.34
9,990.00	90.17	246.07	8,452.80	-1,576.65	-1,299.87	1,621.28	2.97	1.31	2.66
10,084.00	90.49	248.85	8,452.26	-1,612.68	-1,386.68	1,713.97	2.98	0.34	2.96
10,179.00	89.05	254.37	8,452.64	-1,642.64	-1,476.79	1,808.51	6.00	-1.52	5.81
10,273.00	87.70	256.62	8,455.31	-1,666.17	-1,567.75	1,902.43	2.79	-1.44	2.39
10,368.00	87.78	261.04	8,459.06	-1,684.56	-1,660.86	1,997.29	4.65	0.08	4.65
10,462.00	88.71	265.14	8,461.94	-1,695.86	-1,754.11	2,090.69	4.47	0.99	4.36
10,557.00	89.84	269.96	8,463.14	-1,699.92	-1,848.99	2,184.05	5.21	1.19	5.07
10,652.00	87.84	273.18	8,465.06	-1,697.32	-1,943.91	2,275.96	3.99	-2.11	3.39
10,746.00	87.88	272.57	8,468.57	-1,692.61	-2,037.73	2,366.31	0.65	0.04	-0.65
10,841.00	88.24	271.07	8,471.79	-1,689.59	-2,132.62	2,458.09	1.62	0.38	-1.58
10,936.00	89.01	272.05	8,474.07	-1,687.00	-2,227.56	2,550.01	1.31	0.81	1.03
11,030.00	90.46	272.34	8,474.50	-1,683.40	-2,321.49	2,640.72	1.57	1.54	0.31
11,125.00	92.27	271.92	8,472.24	-1,679.87	-2,416.39	2,732.39	1.96	1.91	-0.44
11,220.00	90.54	273.03	8,469.91	-1,675.77	-2,511.27	2,823.92	2.16	-1.82	1.17
11,314.00	91.30	272.20	8,468.40	-1,671.49	-2,605.16	2,914.43	1.20	0.81	-0.88
11,409.00	91.73	271.02	8,465.89	-1,668.82	-2,700.08	3,006.33	1.32	0.45	-1.24
11,503.00	92.22	269.95	8,462.65	-1,668.02	-2,794.02	3,097.68	1.25	0.52	-1.14
11,598.00	91.58	272.25	8,459.50	-1,665.20	-2,888.95	3,189.76	2.51	-0.67	2.42
11,693.00	91.74	271.55	8,456.75	-1,663.05	-2,983.85	3,281.52	0.76	0.17	-0.74
11,787.00	92.29	270.67	8,453.44	-1,661.23	-3,077.78	3,372.63	1.10	0.59	-0.94
11,882.00	90.78	271.58	8,450.90	-1,659.28	-3,172.72	3,464.70	1.91	-1.59	1.06
11,977.00	91.34	271.14	8,449.14	-1,656.95	-3,267.67	3,556.69	0.82	0.59	-0.57
12,107.00	92.73	271.60	8,444.52	-1,653.84	-3,397.55	3,682.54	1.13	1.07	0.35
12,201.00	90.83	270.14	8,441.60	-1,652.41	-3,491.49	3,773.75	2.55	-2.02	-1.55
12,296.00	89.50	269.18	8,441.33	-1,652.98	-3,586.48	3,866.43	1.73	-1.40	-1.01
12,391.00	89.80	268.39	8,441.91	-1,654.99	-3,681.46	3,959.43	0.89	0.32	-0.83
12,486.00	89.33	267.65	8,442.63	-1,658.27	-3,776.40	4,052.67	0.92	-0.49	-0.78
12,580.00	88.32	266.38	8,444.56	-1,663.17	-3,870.25	4,145.22	1.73	-1.07	-1.35

Phoenix Technology Services LP
Survey Report



Company: Apache Corporation
Project: Eddy County, NM (NAD 83 NME)
Site: Salt Fork 3-4 Federal Com
Well: 2H
Wellbore: OH / Job #61546
Design: Surveys (H&P 482)

Local Co-ordinate Reference: Well 2H
TVD Reference: GL + KB @ 3439 00usft (H&P 482)
MD Reference: GL + KB @ 3439 00usft (H&P 482)
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)
12,675.00	90.05	269.17	8,445.91	-1,666.85	-3,965.15	4,238.52	3.46	1.82	2.94
12,769.00	90.84	268.86	8,445.18	-1,668.47	-4,059.14	4,330.45	0.90	0.84	-0.33
12,864.00	90.14	271.24	8,444.37	-1,668.39	-4,154.12	4,422.99	2.61	-0.74	2.51
12,959.00	89.75	270.82	8,444.46	-1,666.68	-4,249.11	4,515.15	0.60	-0.41	-0.44
13,053.00	90.57	270.85	8,444.20	-1,665.31	-4,343.10	4,606.42	0.87	0.87	0.03
13,148.00	90.32	270.03	8,443.46	-1,664.58	-4,438.09	4,698.82	0.90	-0.26	-0.86
13,243.00	92.43	270.74	8,441.18	-1,663.94	-4,533.06	4,791.20	2.34	2.22	0.75
13,337.00	92.66	270.17	8,437.01	-1,663.20	-4,626.96	4,882.53	0.65	0.24	-0.61
13,432.00	93.18	269.30	8,432.17	-1,663.64	-4,721.83	4,975.07	1.07	0.55	-0.92
13,526.00	91.36	270.35	8,428.44	-1,663.92	-4,815.75	5,066.65	2.23	-1.94	1.12
13,621.00	91.13	269.79	8,426.38	-1,663.81	-4,910.73	5,159.17	0.64	-0.24	-0.59
13,715.00	91.91	269.60	8,423.89	-1,664.31	-5,004.70	5,250.83	0.85	0.83	-0.20
13,810.00	91.18	269.05	8,421.33	-1,665.42	-5,099.65	5,343.61	0.96	-0.77	-0.58
13,905.00	92.26	269.35	8,418.47	-1,666.75	-5,194.60	5,436.42	1.18	1.14	0.32
13,999.00	91.25	270.40	8,415.59	-1,666.96	-5,288.55	5,528.01	1.55	-1.07	1.12
14,093.00	91.37	269.78	8,413.45	-1,666.81	-5,382.53	5,619.54	0.67	0.13	-0.66
14,188.00	91.44	269.44	8,411.12	-1,667.45	-5,477.50	5,712.22	0.37	0.07	-0.36
14,282.00	91.75	269.19	8,408.50	-1,668.58	-5,571.45	5,804.02	0.42	0.33	-0.27
14,377.00	90.17	269.23	8,406.91	-1,669.89	-5,666.43	5,896.86	1.66	-1.66	0.04
14,471.00	90.29	268.67	8,406.53	-1,671.61	-5,760.41	5,988.82	0.61	0.13	-0.60
14,566.00	89.42	271.47	8,406.77	-1,671.49	-5,855.40	6,081.35	3.09	-0.92	2.95
14,661.00	89.84	271.14	8,407.38	-1,669.33	-5,950.37	6,173.40	0.56	0.44	-0.35
14,755.00	90.07	270.61	8,407.46	-1,667.89	-6,044.36	6,264.65	0.61	0.24	-0.56
14,850.00	90.24	269.88	8,407.20	-1,667.49	-6,139.36	6,357.12	0.79	0.18	-0.77
14,944.00	91.12	269.88	8,406.09	-1,667.68	-6,233.35	6,448.75	0.94	0.94	0.00
15,039.00	91.19	269.35	8,404.17	-1,668.32	-6,328.33	6,541.44	0.56	0.07	-0.56
15,134.00	91.67	271.55	8,401.80	-1,667.58	-6,423.29	6,633.80	2.37	0.51	2.32
15,228.00	92.48	271.13	8,398.40	-1,665.38	-6,517.20	6,724.80	0.97	0.86	-0.45
15,323.00	93.41	271.23	8,393.52	-1,663.43	-6,612.06	6,816.79	0.98	0.98	0.11
15,417.00	92.78	272.18	8,388.44	-1,660.63	-6,705.88	6,907.57	1.21	-0.67	1.01
15,512.00	93.11	271.85	8,383.56	-1,657.30	-6,800.69	6,999.21	0.49	0.35	-0.35
15,606.00	92.90	271.52	8,378.63	-1,654.54	-6,894.52	7,090.01	0.42	-0.22	-0.35
15,701.00	91.35	270.76	8,375.11	-1,652.65	-6,989.44	7,182.06	1.82	-1.63	-0.80
15,796.00	91.23	270.55	8,372.97	-1,651.56	-7,084.40	7,274.35	0.25	-0.13	-0.22
15,891.00	91.66	270.69	8,372.01	-1,651.15	-7,179.39	7,366.54	1.19	1.13	0.37
Final Phoenix MWD Survey									
15,893.00	91.80	270.90	8,370.23	-1,650.33	-7,181.36	7,368.54	0.43	0.24	0.36
Projection to TD									

Phoenix Technology Services LP
Survey Report



Company: Apache Corporation
Project: Eddy County, NM (NAD 83 NME)
Site: Salt Fork 3-4 Federal Com
Well: 2H
Wellbore: OH / Job #61546
Design: Surveys (H&P 482)

Local Co-ordinate Reference: Well 2H
TVD Reference: GL + KB @ 3439.00usft (H&P 482)
MD Reference: GL + KB @ 3439.00usft (H&P 482)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,800.00	7,787.12	-247.76	-144.24	Tie In
7,974.00	7,959.65	-266.81	-155.54	First Phoenix MWD Survey
15,834.00	8,372.01	-1,651.15	-7,122.39	Final Phoenix MWD Survey
15,893.00	8,370.23	-1,650.33	-7,181.36	Projection to TD