

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 601H
Project:	Lea County, New Mexico	TVD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Site:	Merchant State Unit 601H	MD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Well:	#601H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

Project	Lea County, New Mexico		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Merchant State Unit 601H			
Site Position:		Northing:	525,436.90 usft	Latitude:	32° 26' 31.414 N
From:	Map	Easting:	782,776.70 usft	Longitude:	103° 33' 2.518 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	#601H					
Well Position	+N/-S	0.00 usft	Northing:	525,436.90 usft	Latitude:	32° 26' 31.414 N
	+E/-W	0.00 usft	Easting:	782,776.70 usft	Longitude:	103° 33' 2.518 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,692.00 usft

Wellbore	Aim MWD Surveys				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	8/25/2018	6.72	60.26	48,176.97621451

Design	Aim MWD Surveys				
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	179.56	

Survey Program	Date	9/18/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
199.00	22,133.00	Aim MWD Surveys (Aim MWD Surveys)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

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
199.00	0.28	278.44	199.00	0.07	-0.48	-0.08	0.14	0.14	0.00
First Aim MWD Survey									
258.00	0.45	252.68	258.00	0.02	-0.84	-0.03	0.39	0.29	-43.66
409.00	1.19	254.15	408.98	-0.58	-2.92	0.56	0.49	0.49	0.97
589.00	3.21	254.42	588.84	-2.45	-9.57	2.37	1.12	1.12	0.15
678.00	3.30	257.05	677.70	-3.69	-14.47	3.58	0.20	0.10	2.96
773.00	2.73	251.51	772.56	-5.02	-19.28	4.87	0.67	-0.60	-5.83
866.00	2.55	223.57	865.47	-7.22	-22.81	7.05	1.38	-0.19	-30.04
958.00	2.51	199.66	957.38	-10.60	-24.89	10.41	1.14	-0.04	-25.99
1,050.00	2.15	183.84	1,049.31	-14.22	-25.69	14.02	0.80	-0.39	-17.20

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1,142.00	2.02	172.68	1,141.25	-17.55	-25.60	17.35	0.46	-0.14	-12.13
1,234.00	2.02	166.00	1,233.19	-20.73	-25.00	20.54	0.26	0.00	-7.26
1,325.00	2.29	163.71	1,324.13	-24.03	-24.10	23.85	0.31	0.30	-2.52
1,418.00	2.29	162.48	1,417.05	-27.59	-23.02	27.41	0.05	0.00	-1.32
1,508.00	2.33	158.97	1,506.98	-31.01	-21.82	30.84	0.16	0.04	-3.90
1,693.00	1.83	164.25	1,691.86	-37.36	-19.67	37.21	0.29	-0.27	2.85
1,788.00	2.07	163.45	1,786.80	-40.47	-18.77	40.32	0.25	0.25	-0.84
1,882.00	1.36	135.50	1,880.76	-42.89	-17.50	42.75	1.15	-0.76	-29.73
1,976.00	1.41	108.52	1,974.73	-44.05	-15.63	43.93	0.69	0.05	-28.70
2,071.00	1.19	115.64	2,069.71	-44.85	-13.63	44.75	0.29	-0.23	7.49
2,165.00	1.01	106.93	2,163.69	-45.52	-11.96	45.42	0.26	-0.19	-9.27
2,259.00	0.53	110.54	2,257.68	-45.91	-10.76	45.83	0.51	-0.51	3.84
2,353.00	0.40	115.81	2,351.68	-46.20	-10.05	46.13	0.15	-0.14	5.61
2,448.00	0.22	127.15	2,446.68	-46.46	-9.61	46.38	0.20	-0.19	11.94
2,542.00	0.26	90.32	2,540.68	-46.57	-9.25	46.50	0.17	0.04	-39.18
2,636.00	0.18	60.35	2,634.68	-46.50	-8.91	46.43	0.15	-0.09	-31.88
2,731.00	0.44	62.37	2,729.67	-46.25	-8.46	46.19	0.27	0.27	2.13
2,825.00	0.48	87.60	2,823.67	-46.07	-7.74	46.01	0.22	0.04	26.84
2,918.00	0.40	83.29	2,916.67	-46.02	-7.03	45.96	0.09	-0.09	-4.63
3,013.00	0.62	63.34	3,011.67	-45.75	-6.24	45.70	0.29	0.23	-21.00
3,107.00	0.84	71.34	3,105.66	-45.30	-5.14	45.26	0.26	0.23	8.51
3,201.00	1.05	66.51	3,199.64	-44.73	-3.69	44.70	0.24	0.22	-5.14
3,295.00	1.01	57.45	3,293.63	-43.95	-2.21	43.93	0.18	-0.04	-9.64
3,390.00	1.01	58.16	3,388.61	-43.05	-0.79	43.05	0.01	0.00	0.75
3,484.00	1.45	63.87	3,482.59	-42.09	0.98	42.10	0.49	0.47	6.07
3,578.00	1.36	69.05	3,576.56	-41.17	3.09	41.19	0.17	-0.10	5.51
3,672.00	1.14	53.50	3,670.54	-40.21	4.89	40.25	0.43	-0.23	-16.54
3,766.00	1.10	67.47	3,764.52	-39.31	6.47	39.36	0.29	-0.04	14.86
3,861.00	1.14	70.99	3,859.51	-38.66	8.21	38.72	0.08	0.04	3.71
3,955.00	1.23	69.58	3,953.49	-38.00	10.04	38.07	0.10	0.10	-1.50
4,049.00	1.01	74.50	4,047.47	-37.43	11.78	37.51	0.26	-0.23	5.23
4,144.00	0.92	68.88	4,142.46	-36.93	13.30	37.03	0.14	-0.09	-5.92
4,239.00	0.84	50.07	4,237.44	-36.21	14.54	36.32	0.31	-0.08	-19.80
4,334.00	0.62	76.17	4,332.44	-35.64	15.58	35.75	0.41	-0.23	27.47
4,428.00	0.53	69.58	4,426.43	-35.36	16.48	35.49	0.12	-0.10	-7.01
4,523.00	0.48	61.23	4,521.43	-35.02	17.24	35.15	0.09	-0.05	-8.79
4,617.00	0.35	68.88	4,615.43	-34.72	17.85	34.86	0.15	-0.14	8.14
4,711.00	0.44	34.60	4,709.42	-34.32	18.32	34.46	0.26	0.10	-36.47
4,805.00	0.22	58.24	4,803.42	-33.93	18.68	34.07	0.27	-0.23	25.15
4,899.00	0.26	352.76	4,897.42	-33.63	18.81	33.77	0.28	0.04	-69.66
4,994.00	0.13	57.36	4,992.42	-33.35	18.87	33.50	0.25	-0.14	68.00
5,088.00	0.13	331.23	5,086.42	-33.20	18.91	33.35	0.19	0.00	-91.63
5,182.00	0.26	68.97	5,180.42	-33.03	19.06	33.18	0.33	0.14	103.98

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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)
5,214.00	0.18	90.59	5,212.42	-33.01	19.18	33.15	0.36	-0.25	67.56
5,367.00	0.31	241.85	5,365.42	-33.20	19.05	33.35	0.31	0.08	98.86
5,462.00	0.35	237.98	5,460.42	-33.48	18.58	33.62	0.05	0.04	-4.07
5,556.00	0.31	255.65	5,554.42	-33.69	18.09	33.83	0.12	-0.04	18.80
5,651.00	0.18	237.54	5,649.42	-33.84	17.71	33.97	0.16	-0.14	-19.06
5,745.00	0.35	197.64	5,743.41	-34.19	17.50	34.32	0.26	0.18	-42.45
5,840.00	0.35	217.24	5,838.41	-34.70	17.24	34.83	0.13	0.00	20.63
5,934.00	1.14	348.99	5,932.41	-34.01	16.89	34.14	1.49	0.84	140.16
6,028.00	1.63	341.08	6,026.38	-31.83	16.28	31.95	0.56	0.52	-8.41
6,123.00	1.63	345.12	6,121.34	-29.24	15.49	29.36	0.12	0.00	4.25
6,217.00	1.89	338.00	6,215.30	-26.51	14.57	26.62	0.36	0.28	-7.57
6,311.00	2.11	331.23	6,309.24	-23.56	13.15	23.66	0.34	0.23	-7.20
6,405.00	2.99	350.22	6,403.15	-19.63	11.90	19.72	1.29	0.94	20.20
6,500.00	3.38	351.97	6,498.00	-14.41	11.09	14.50	0.42	0.41	1.84
6,594.00	3.25	350.83	6,591.84	-9.04	10.28	9.12	0.16	-0.14	-1.21
6,688.00	4.00	351.01	6,685.65	-3.17	9.34	3.24	0.80	0.80	0.19
6,783.00	4.26	350.74	6,780.41	3.59	8.26	-3.52	0.27	0.27	-0.28
6,877.00	4.26	349.42	6,874.15	10.46	7.05	-10.41	0.10	0.00	-1.40
6,971.00	4.26	348.90	6,967.89	17.32	5.74	-17.28	0.04	0.00	-0.55
7,066.00	4.44	349.07	7,062.61	24.40	4.36	-24.36	0.19	0.19	0.18
7,160.00	3.74	352.59	7,156.37	31.01	3.28	-30.98	0.79	-0.74	3.74
7,254.00	3.03	347.93	7,250.21	36.48	2.36	-36.46	0.81	-0.76	-4.96
7,348.00	3.21	346.00	7,344.07	41.46	1.21	-41.45	0.22	0.19	-2.05
7,443.00	3.74	337.47	7,438.90	46.90	-0.62	-46.91	0.78	0.56	-8.98
7,537.00	3.38	330.00	7,532.72	52.13	-3.18	-52.16	0.62	-0.38	-7.95
7,631.00	3.82	335.89	7,626.53	57.39	-5.85	-57.44	0.61	0.47	6.27
7,726.00	4.48	334.40	7,721.28	63.63	-8.74	-63.69	0.70	0.69	-1.57
7,820.00	4.26	332.20	7,815.01	70.03	-11.96	-70.12	0.29	-0.23	-2.34
7,914.00	3.82	337.91	7,908.77	76.02	-14.76	-76.13	0.63	-0.47	6.07
8,009.00	3.74	331.58	8,003.57	81.67	-17.43	-81.81	0.45	-0.08	-6.66
8,103.00	2.11	348.28	8,097.44	86.06	-19.24	-86.21	1.94	-1.73	17.77
8,197.00	1.67	6.65	8,191.39	89.12	-19.43	-89.27	0.79	-0.47	19.54
8,291.00	0.62	80.30	8,285.38	90.57	-18.77	-90.71	1.71	-1.12	78.35
8,386.00	1.05	114.14	8,380.37	90.30	-17.47	-90.43	0.67	0.45	35.62
8,480.00	0.92	119.33	8,474.35	89.57	-16.03	-89.70	0.17	-0.14	5.52
8,575.00	0.84	132.69	8,569.34	88.73	-14.85	-88.84	0.23	-0.08	14.06
8,669.00	0.84	139.54	8,663.33	87.74	-13.90	-87.84	0.11	0.00	7.29
8,763.00	0.79	141.12	8,757.32	86.71	-13.04	-86.81	0.06	-0.05	1.68
8,857.00	1.05	161.78	8,851.31	85.39	-12.37	-85.48	0.44	0.28	21.98
8,952.00	1.19	169.51	8,946.29	83.59	-11.92	-83.68	0.22	0.15	8.14
9,046.00	1.36	151.85	9,040.27	81.65	-11.21	-81.73	0.45	0.18	-18.79
9,140.00	0.84	136.91	9,134.25	80.16	-10.21	-80.24	0.63	-0.55	-15.89
9,235.00	0.92	153.69	9,229.24	78.97	-9.40	-79.04	0.28	0.08	17.66

Aim Directional Services, LLC

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9,329.00	0.84	188.67	9,323.23	77.61	-9.17	-77.68	0.57	-0.09	37.21
9,423.00	1.05	208.27	9,417.22	76.17	-9.68	-76.24	0.41	0.22	20.85
9,521.00	0.84	215.66	9,515.20	74.80	-10.53	-74.87	0.25	-0.21	7.54
9,615.00	0.88	276.48	9,609.20	74.32	-11.64	-74.40	0.93	0.04	64.70
9,709.00	1.23	275.95	9,703.18	74.50	-13.37	-74.60	0.37	0.37	-0.56
9,803.00	1.10	246.42	9,797.16	74.25	-15.20	-74.36	0.65	-0.14	-31.41
9,897.00	0.79	23.53	9,891.16	74.48	-15.76	-74.60	1.88	-0.33	145.86
9,991.00	1.41	329.30	9,985.14	76.07	-16.10	-76.19	1.22	0.66	-57.69
10,085.00	1.14	337.30	10,079.12	77.93	-17.05	-78.05	0.34	-0.29	8.51
10,179.00	0.88	0.32	10,173.10	79.51	-17.40	-79.64	0.51	-0.28	24.49
10,274.00	0.62	332.81	10,268.09	80.70	-17.63	-80.83	0.46	-0.27	-28.96
10,368.00	0.88	352.41	10,362.09	81.86	-17.96	-82.00	0.38	0.28	20.85
10,462.00	0.97	316.82	10,456.07	83.16	-18.60	-83.30	0.61	0.10	-37.86
10,556.00	1.19	306.27	10,550.06	84.32	-19.93	-84.47	0.31	0.23	-11.22
10,651.00	1.32	288.87	10,645.04	85.26	-21.76	-85.42	0.42	0.14	-18.32
10,745.00	0.79	170.48	10,739.03	84.97	-22.68	-85.14	1.95	-0.56	-125.95
10,839.00	0.92	170.39	10,833.02	83.58	-22.45	-83.75	0.14	0.14	-0.10
10,933.00	2.59	156.42	10,926.97	80.89	-21.47	-81.06	1.82	1.78	-14.86
11,028.00	3.47	151.50	11,021.84	76.40	-19.24	-76.54	0.97	0.93	-5.18
11,139.00	3.91	152.02	11,132.61	70.10	-15.86	-70.22	0.40	0.40	0.47
11,234.00	4.09	146.31	11,227.37	64.43	-12.47	-64.52	0.46	0.19	-6.01
11,328.00	4.04	134.88	11,321.14	59.30	-8.26	-59.36	0.86	-0.05	-12.16
11,423.00	6.07	142.53	11,415.77	52.95	-2.83	-52.97	2.25	2.14	8.05
11,517.00	20.04	153.96	11,507.12	34.44	7.31	-34.38	15.04	14.86	12.16
11,564.00	28.40	158.53	11,549.95	16.77	14.95	-16.66	18.22	17.79	9.72
11,612.00	33.10	170.92	11,591.23	-6.83	21.21	6.99	16.39	9.79	25.81
11,659.00	35.65	183.40	11,630.07	-33.21	22.42	33.38	15.92	5.43	26.55
11,706.00	37.49	187.35	11,667.82	-61.08	19.78	61.23	6.35	3.91	8.40
11,753.00	41.76	188.15	11,704.01	-90.77	15.73	90.89	9.15	9.09	1.70
11,801.00	47.56	185.60	11,738.14	-124.25	11.73	124.34	12.65	12.08	-5.31
11,848.00	51.96	183.66	11,768.50	-160.00	8.86	160.06	9.88	9.36	-4.13
11,895.00	54.64	182.34	11,796.58	-197.63	6.89	197.68	6.13	5.70	-2.81
11,990.00	64.13	180.50	11,844.91	-279.26	4.93	279.29	10.13	9.99	-1.94
12,084.00	70.86	179.27	11,880.87	-366.05	5.13	366.08	7.26	7.16	-1.31
12,179.00	77.93	179.44	11,906.41	-457.49	6.16	457.52	7.44	7.44	0.18
12,273.00	80.00	180.59	11,924.40	-549.74	6.13	549.77	2.51	2.20	1.22
12,367.00	86.37	179.88	11,935.55	-643.03	5.75	643.05	6.82	6.78	-0.76
12,431.00	89.36	180.06	11,937.94	-706.98	5.79	707.00	4.68	4.67	0.28
12,486.00	89.14	179.97	11,938.66	-761.97	5.77	761.99	0.43	-0.40	-0.16
12,580.00	88.18	179.01	11,940.86	-855.94	6.61	855.97	1.44	-1.02	-1.02
12,675.00	89.49	177.69	11,942.79	-950.88	9.34	950.92	1.96	1.38	-1.39
12,769.00	89.27	177.60	11,943.80	-1,044.79	13.21	1,044.86	0.25	-0.23	-0.10
12,863.00	90.64	177.42	11,943.88	-1,138.70	17.29	1,138.80	1.47	1.46	-0.19
12,958.00	92.57	177.51	11,941.22	-1,233.57	21.49	1,233.70	2.03	2.03	0.09

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 601H
Project:	Lea County, New Mexico	TVD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Site:	Merchant State Unit 601H	MD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Well:	#601H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

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)
13,052.00	92.22	178.65	11,937.29	-1,327.43	24.64	1,327.58	1.27	-0.37	1.21
13,146.00	91.21	178.39	11,934.48	-1,421.36	27.06	1,421.52	1.11	-1.07	-0.28
13,240.00	91.69	179.62	11,932.10	-1,515.31	28.69	1,515.48	1.40	0.51	1.31
13,334.00	91.08	179.44	11,929.82	-1,609.28	29.46	1,609.46	0.68	-0.65	-0.19
13,428.00	90.68	179.01	11,928.38	-1,703.26	30.74	1,703.44	0.62	-0.43	-0.46
13,523.00	89.49	179.09	11,928.24	-1,798.24	32.31	1,798.44	1.26	-1.25	0.08
13,617.00	87.87	178.83	11,930.41	-1,892.20	34.02	1,892.40	1.75	-1.72	-0.28
13,711.00	88.92	180.15	11,933.04	-1,986.16	34.85	1,986.36	1.79	1.12	1.40
13,806.00	88.22	179.53	11,935.41	-2,081.12	35.12	2,081.33	0.98	-0.74	-0.65
13,900.00	86.73	179.09	11,939.55	-2,175.02	36.25	2,175.24	1.65	-1.59	-0.47
13,995.00	88.62	178.04	11,943.40	-2,269.91	38.63	2,270.14	2.28	1.99	-1.11
14,089.00	89.49	178.21	11,944.95	-2,363.85	41.70	2,364.10	0.94	0.93	0.18
14,183.00	88.75	177.51	11,946.40	-2,457.77	45.21	2,458.04	1.08	-0.79	-0.74
14,277.00	90.20	179.71	11,947.26	-2,551.73	47.49	2,552.02	2.80	1.54	2.34
14,371.00	89.85	179.88	11,947.22	-2,645.73	47.83	2,646.02	0.41	-0.37	0.18
14,465.00	89.76	180.85	11,947.54	-2,739.72	47.23	2,740.01	1.04	-0.10	1.03
14,559.00	89.45	180.24	11,948.19	-2,833.72	46.33	2,833.99	0.73	-0.33	-0.65
14,654.00	89.93	179.71	11,948.70	-2,928.71	46.38	2,928.98	0.75	0.51	-0.56
14,748.00	88.09	181.55	11,950.32	-3,022.69	45.34	3,022.95	2.77	-1.96	1.96
14,842.00	87.30	180.94	11,954.11	-3,116.59	43.30	3,116.83	1.06	-0.84	-0.65
14,937.00	86.86	180.41	11,958.94	-3,211.46	42.18	3,211.69	0.72	-0.46	-0.56
15,031.00	86.20	180.15	11,964.63	-3,305.28	41.73	3,305.51	0.75	-0.70	-0.28
15,126.00	85.80	179.27	11,971.26	-3,400.05	42.20	3,400.27	1.02	-0.42	-0.93
15,221.00	85.10	178.92	11,978.80	-3,494.74	43.70	3,494.97	0.82	-0.74	-0.37
15,315.00	86.95	179.88	11,985.31	-3,588.50	44.68	3,588.74	2.22	1.97	1.02
15,410.00	86.02	179.18	11,991.14	-3,683.32	45.46	3,683.56	1.22	-0.98	-0.74
15,504.00	87.12	179.18	11,996.76	-3,777.14	46.80	3,777.39	1.17	1.17	0.00
15,599.00	87.69	178.57	12,001.06	-3,872.02	48.67	3,872.28	0.88	0.60	-0.64
15,693.00	85.67	177.95	12,006.51	-3,965.81	51.51	3,966.09	2.25	-2.15	-0.66
15,787.00	85.05	176.98	12,014.11	-4,059.41	55.66	4,059.72	1.22	-0.66	-1.03
15,881.00	85.89	176.46	12,021.54	-4,152.97	61.02	4,153.31	1.05	0.89	-0.55
15,975.00	86.02	176.63	12,028.17	-4,246.56	66.67	4,246.95	0.23	0.14	0.18
16,069.00	85.89	177.51	12,034.80	-4,340.20	71.46	4,340.62	0.94	-0.14	0.94
16,163.00	85.63	180.59	12,041.75	-4,433.92	73.02	4,434.35	3.28	-0.28	3.28
16,257.00	89.89	182.34	12,045.42	-4,527.79	70.61	4,528.20	4.90	4.53	1.86
16,351.00	94.29	183.58	12,041.99	-4,621.58	65.77	4,621.95	4.86	4.68	1.32
16,446.00	94.55	184.01	12,034.67	-4,716.09	59.50	4,716.41	0.53	0.27	0.45
16,540.00	92.53	182.96	12,028.87	-4,809.73	53.80	4,810.00	2.42	-2.15	-1.12
16,634.00	88.62	181.73	12,027.93	-4,903.63	49.95	4,903.87	4.36	-4.16	-1.31
16,728.00	87.16	180.59	12,031.39	-4,997.54	48.05	4,997.76	1.97	-1.55	-1.21
16,822.00	86.86	180.15	12,036.29	-5,091.41	47.44	5,091.62	0.57	-0.32	-0.47
16,950.00	88.62	181.38	12,041.34	-5,219.29	45.73	5,219.49	1.68	1.38	0.96
17,044.00	89.54	181.99	12,042.85	-5,313.24	42.97	5,313.41	1.17	0.98	0.65

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 601H
Project:	Lea County, New Mexico	TVD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Site:	Merchant State Unit 601H	MD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Well:	#601H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

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)	
17,138.00	91.25	181.47	12,042.20	-5,407.19	40.13	5,407.34	1.90	1.82	-0.55	
17,233.00	90.55	181.03	12,040.71	-5,502.15	38.06	5,502.28	0.87	-0.74	-0.46	
17,327.00	89.10	180.85	12,040.99	-5,596.14	36.52	5,596.25	1.55	-1.54	-0.19	
17,421.00	89.14	180.94	12,042.44	-5,690.12	35.05	5,690.22	0.10	0.04	0.10	
17,516.00	89.58	181.82	12,043.50	-5,785.08	32.76	5,785.16	1.04	0.46	0.93	
17,610.00	88.79	181.55	12,044.84	-5,879.03	30.00	5,879.09	0.89	-0.84	-0.29	
17,704.00	87.96	181.64	12,047.50	-5,972.95	27.38	5,972.99	0.89	-0.88	0.10	
17,799.00	87.43	181.73	12,051.32	-6,067.84	24.59	6,067.85	0.57	-0.56	0.09	
17,893.00	87.38	178.83	12,055.58	-6,161.73	24.13	6,161.73	3.08	-0.05	-3.09	
17,987.00	87.16	178.39	12,060.06	-6,255.59	26.41	6,255.61	0.52	-0.23	-0.47	
18,081.00	86.15	177.95	12,065.54	-6,349.39	29.41	6,349.42	1.17	-1.07	-0.47	
18,176.00	85.89	177.25	12,072.13	-6,444.07	33.38	6,444.14	0.78	-0.27	-0.74	
18,270.00	87.47	175.75	12,077.58	-6,537.73	39.11	6,537.84	2.32	1.68	-1.60	
18,364.00	91.30	175.58	12,078.59	-6,631.44	46.21	6,631.60	4.08	4.07	-0.18	
18,459.00	91.69	175.14	12,076.11	-6,726.10	53.89	6,726.31	0.62	0.41	-0.46	
18,553.00	90.64	174.70	12,074.20	-6,819.71	62.21	6,819.98	1.21	-1.12	-0.47	
18,647.00	91.43	175.84	12,072.50	-6,913.37	69.96	6,913.70	1.48	0.84	1.21	
18,742.00	89.71	177.07	12,071.55	-7,008.18	75.84	7,008.55	2.23	-1.81	1.29	
18,836.00	88.04	178.39	12,073.40	-7,102.08	79.56	7,102.48	2.26	-1.78	1.40	
18,930.00	85.27	179.09	12,078.88	-7,195.89	81.62	7,196.30	3.04	-2.95	0.74	
19,025.00	84.53	178.39	12,087.33	-7,290.49	83.70	7,290.92	1.07	-0.78	-0.74	
19,119.00	87.03	179.18	12,094.25	-7,384.20	85.69	7,384.64	2.79	2.66	0.84	
19,214.00	88.31	180.06	12,098.11	-7,479.12	86.32	7,479.56	1.63	1.35	0.93	
19,308.00	88.53	179.36	12,100.70	-7,573.08	86.79	7,573.53	0.78	0.23	-0.74	
19,403.00	88.97	179.53	12,102.77	-7,668.06	87.71	7,668.50	0.50	0.46	0.18	
19,497.00	87.74	180.76	12,105.47	-7,762.01	87.48	7,762.46	1.85	-1.31	1.31	
19,591.00	85.58	183.40	12,110.95	-7,855.78	84.07	7,856.19	3.62	-2.30	2.81	
19,685.00	85.10	184.10	12,118.59	-7,949.27	77.95	7,949.63	0.90	-0.51	0.74	
19,780.00	86.73	183.40	12,125.35	-8,043.82	71.75	8,044.13	1.87	1.72	-0.74	
19,874.00	86.55	183.40	12,130.86	-8,137.49	66.18	8,137.76	0.19	-0.19	0.00	
19,968.00	88.18	181.73	12,135.18	-8,231.29	61.98	8,231.52	2.48	1.73	-1.78	
20,063.00	88.84	181.55	12,137.65	-8,326.22	59.27	8,326.43	0.72	0.69	-0.19	
20,157.00	88.26	181.38	12,140.03	-8,420.16	56.86	8,420.35	0.64	-0.62	-0.18	
20,251.00	88.88	181.73	12,142.38	-8,514.09	54.31	8,514.26	0.76	0.66	0.37	
20,346.00	88.13	181.03	12,144.86	-8,609.03	52.03	8,609.18	1.08	-0.79	-0.74	
20,440.00	87.82	180.32	12,148.18	-8,702.97	50.92	8,703.10	0.82	-0.33	-0.76	
20,534.00	86.51	179.36	12,152.83	-8,796.85	51.18	8,796.98	1.73	-1.39	-1.02	
20,628.00	87.08	178.04	12,158.08	-8,890.67	53.31	8,890.82	1.53	0.61	-1.40	
20,723.00	88.26	176.10	12,161.95	-8,985.47	58.16	8,985.65	2.39	1.24	-2.04	
20,817.00	90.42	175.75	12,163.03	-9,079.22	64.84	9,079.45	2.33	2.30	-0.37	
20,911.00	90.55	175.31	12,162.23	-9,172.93	72.17	9,173.21	0.49	0.14	-0.47	
21,005.00	91.47	175.84	12,160.58	-9,266.63	79.42	9,266.97	1.13	0.98	0.56	
21,100.00	93.58	176.54	12,156.39	-9,361.32	85.73	9,361.70	2.34	2.22	0.74	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 601H
Project:	Lea County, New Mexico	TVD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Site:	Merchant State Unit 601H	MD Reference:	3692'GL+26.5'KB @ 3718.50usft (H&P 620)
Well:	#601H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

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)
21,194.00	93.05	177.69	12,150.95	-9,455.04	90.45	9,455.46	1.35	-0.56	1.22
21,288.00	92.79	178.39	12,146.17	-9,548.87	93.66	9,549.30	0.79	-0.28	0.74
21,382.00	90.81	179.44	12,143.21	-9,642.80	95.44	9,643.25	2.38	-2.11	1.12
21,476.00	93.41	180.85	12,139.75	-9,736.72	95.20	9,737.17	3.15	2.77	1.50
21,570.00	92.57	182.08	12,134.85	-9,830.56	92.80	9,830.98	1.58	-0.89	1.31
21,665.00	90.24	181.99	12,132.52	-9,925.47	89.43	9,925.86	2.45	-2.45	-0.09
21,759.00	89.45	182.43	12,132.77	-10,019.40	85.80	10,019.76	0.96	-0.84	0.47
21,853.00	89.54	181.55	12,133.60	-10,113.33	82.54	10,113.67	0.94	0.10	-0.94
21,948.00	90.29	180.94	12,133.74	-10,208.31	80.48	10,208.63	1.02	0.79	-0.64
22,011.80	90.77	180.51	12,133.15	-10,272.10	79.67	10,272.41	1.01	0.75	-0.67
@100'FSL									
22,041.00	90.99	180.32	12,132.71	-10,301.30	79.45	10,301.60	1.01	0.75	-0.67
22,075.00	91.03	180.06	12,132.11	-10,335.29	79.34	10,335.60	0.77	0.12	-0.76
Last Aim MWD Survey									
22,133.00	91.03	180.06	12,131.06	-10,393.28	79.28	10,393.59	0.00	0.00	0.00
Projection to BHL									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
22,011.80	12,133.15	-10,272.10	79.67	@100'FSL	
22,075.00	12,132.11	-10,335.29	79.34	Last Aim MWD Survey	
22,133.00	12,131.06	-10,393.28	79.28	Projection to BHL	