



Advance Energy Partners, LLC

Merchant State Unit 504H
Lea County, New Mexico
Job No. WT-18-230
H&P 620
Plan 1.0 Final PVA



SITE DETAILS: Merchant State Unit 504H

Site Centre Northing: 525485.20
Easting: 786391.20

Positional Uncertainty: 0.00
Convergence: 0.43
Local North: Grid



Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.27°

Magnetic Field
Strength: 48151.5nT
Dip Angle: 60.25°
Date: 11/6/2018
Model: MVHD

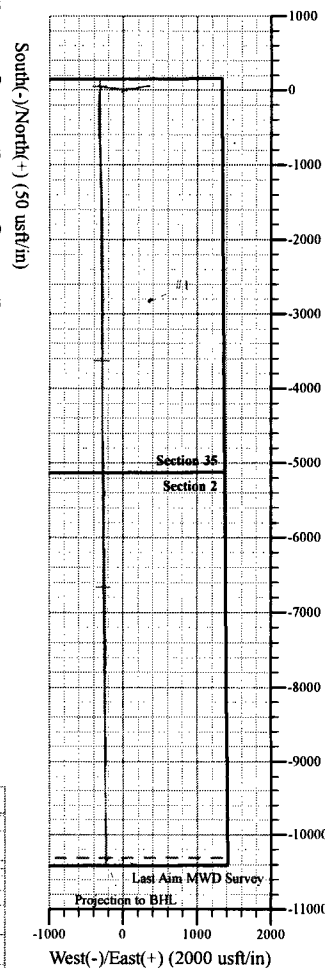
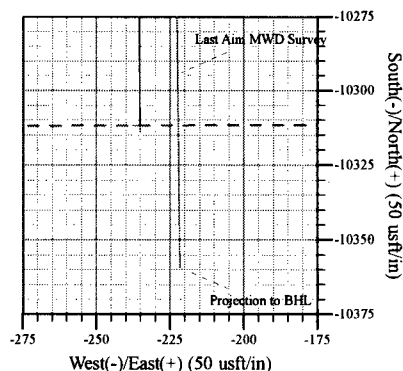
Magnetic North: 6.27° to Grid North

PROJECT DETAILS: Lea County, New Mexico

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Depth Reference:
3664'GL+26.5'KB @ 3690.50usft (H&P 620)

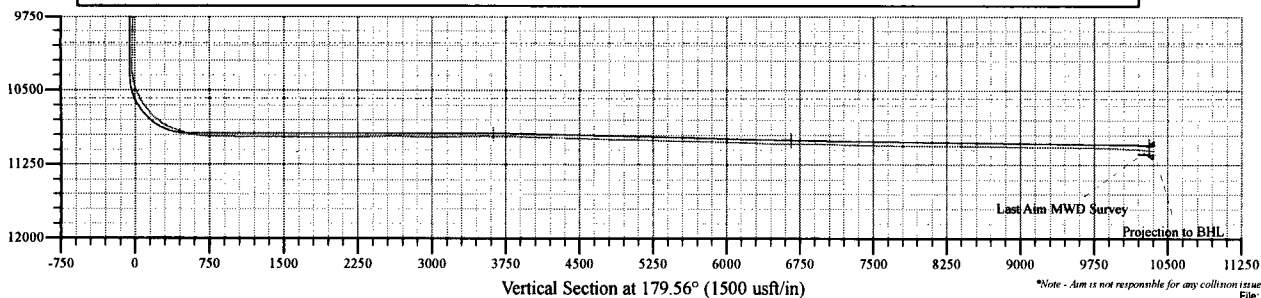


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	21002.00	86.59	179.33	11099.54	-10294.51	-222.37	0.00	0.00	10292.50	Last Aim MWD Survey
2	21067.00	86.59	179.33	11103.41	-10359.39	-221.61	0.00	0.00	10357.38	Projection to BHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Merchant504H)	0.00	48.70	-315.40	525533.90	786075.80	$32^\circ 26' 32.133^\circ \text{N}$	$103^\circ 32' 24.013^\circ \text{W}$
PBHL r1 (Merchant504H)	11049.00	-10311.90	-235.20	515173.30	786156.00	$32^\circ 24' 49.611^\circ \text{N}$	$103^\circ 32' 23.975^\circ \text{W}$
Target 1 (Merchant504H)	10935.00	-3628.81	-286.93	521856.39	786104.27	$32^\circ 25' 55.743^\circ \text{N}$	$103^\circ 32' 24.000^\circ \text{W}$
Target 2 (Merchant504H)	11003.00	-6661.72	-263.46	518823.48	786127.74	$32^\circ 25' 25.731^\circ \text{N}$	$103^\circ 32' 23.989^\circ \text{W}$



Note: Aim is not responsible for any collision issues against unknown offset wells.

Drawn By: [Name]
Date Created: 10/10/2
Date Revised: 12/16/2
File: Advance Energy - Merchant State Unit 504H Plan 1.0 Final PVA.

Aim Directional Services, LLC

Survey Report

HOBBS OCD

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 504H
Project:	Lea County, New Mexico	TVD Reference:	3664'GL+26.5'KB @ 3690.50usft (H&P 620)
Site:	Merchant State Unit 504H	MD Reference:	3664'GL+26.5'KB @ 3690.50usft (H&P 620)
Well:	#504H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

FFB 262019
RECEIVED

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 504H		
Site Position:	Northing:	525,485.20 usft	Latitude: 32° 26' 31.628 N
From: Map	Easting:	786,391.20 usft	Longitude: 103° 32' 20.337 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.43 °

Well	#504H - Slot 504H		
Well Position	+N-S	0.00 usft	Latitude: 32° 26' 31.628 N
	+E-W	0.00 usft	Longitude: 103° 32' 20.337 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
			Ground Level: 3,664.00 usft

Wellbore	Aim MWD Surveys				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	MVHD	11/13/2018	6.70	60.25	48,149.32602183

Design	Aim MWD Surveys				
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	179.56	

Survey Program	Date 12/16/2018				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
173.00	21,067.00	Aim MWD Surveys (Aim MWD Surveys)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

Survey										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
173.00	0.70	210.79	173.00	-0.91	-0.54	0.90	0.40	0.40	0.00	
First Aim MWD Survey										
296.00	0.79	158.85	295.99	-2.34	-0.62	2.34	0.53	0.07	-42.23	
421.00	1.36	158.76	420.96	-4.53	0.23	4.53	0.46	0.46	-0.07	
544.00	1.67	166.23	543.92	-7.63	1.18	7.64	0.30	0.25	6.07	
697.00	2.29	176.07	696.83	-12.85	1.92	12.86	0.46	0.41	6.43	
792.00	2.24	172.30	791.76	-16.58	2.30	16.60	0.17	-0.05	-3.97	
979.00	1.58	168.16	978.65	-22.72	3.32	22.75	0.36	-0.35	-2.21	
1,163.00	0.92	176.78	1,162.61	-26.68	3.93	26.71	0.37	-0.36	4.68	
1,253.00	0.57	169.48	1,252.60	-27.84	4.05	27.87	0.40	-0.39	-8.11	

Aim Directional Services, LLC

Survey Report

Company: Advance Energy Partners, LLC
Project: Lea County, New Mexico
Site: Merchant State Unit 504H
Well: #504H
Wellbore: Aim MWD Surveys
Design: Aim MWD Surveys

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Site Merchant State Unit 504H
 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
 Grid
 Minimum Curvature
 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)
1,344.00	0.35	214.66	1,343.60	-28.52	3.97	28.55	0.45	-0.24	49.65
1,434.00	0.44	240.32	1,433.59	-28.91	3.52	28.94	0.22	0.10	28.51
1,526.00	0.92	267.04	1,525.59	-29.13	2.47	29.15	0.61	0.52	29.04
1,618.00	1.36	265.55	1,617.57	-29.25	0.64	29.25	0.48	0.48	-1.62
1,713.00	2.11	273.90	1,712.52	-29.22	-2.22	29.20	0.83	0.79	8.79
1,899.00	2.11	279.08	1,898.40	-28.45	-9.02	28.38	0.10	0.00	2.78
1,963.00	1.67	275.30	1,962.36	-28.17	-11.11	28.09	0.71	-0.69	-5.91
2,057.00	0.92	286.20	2,056.34	-27.84	-13.20	27.73	0.84	-0.80	11.60
2,152.00	0.84	280.05	2,151.33	-27.50	-14.62	27.39	0.13	-0.08	-6.47
2,246.00	0.75	286.47	2,245.32	-27.21	-15.89	27.09	0.13	-0.10	6.83
2,341.00	0.79	278.82	2,340.31	-26.93	-17.13	26.80	0.12	0.04	-8.05
2,435.00	1.05	265.37	2,434.30	-26.90	-18.63	26.76	0.36	0.28	-14.31
2,530.00	0.70	263.44	2,529.29	-27.04	-20.07	26.88	0.37	-0.37	-2.03
2,624.00	0.44	346.76	2,623.28	-26.75	-20.73	26.59	0.83	-0.28	88.64
2,719.00	0.79	37.38	2,718.28	-25.88	-20.41	25.72	0.65	0.37	53.28
2,813.00	0.84	31.23	2,812.27	-24.77	-19.66	24.62	0.11	0.05	-6.54
2,908.00	0.92	25.61	2,907.26	-23.49	-18.97	23.34	0.12	0.08	-5.92
3,003.00	1.27	26.40	3,002.24	-21.86	-18.17	21.72	0.37	0.37	0.83
3,097.00	1.67	38.09	3,096.21	-19.85	-16.87	19.72	0.53	0.43	12.44
3,191.00	1.80	53.56	3,190.17	-17.89	-14.83	17.78	0.52	0.14	16.46
3,286.00	2.24	59.00	3,285.11	-16.05	-12.04	15.96	0.50	0.46	5.73
3,381.00	2.20	64.19	3,380.04	-14.30	-8.81	14.23	0.22	-0.04	5.46
3,475.00	2.46	66.83	3,473.96	-12.72	-5.33	12.68	0.30	0.28	2.81
3,570.00	2.77	60.50	3,568.86	-10.79	-1.46	10.78	0.45	0.33	-6.66
3,665.00	2.37	66.12	3,663.76	-8.86	2.34	8.88	0.50	-0.42	5.92
3,759.00	2.29	57.77	3,757.69	-7.07	5.70	7.12	0.37	-0.09	-8.88
3,854.00	2.24	62.43	3,852.61	-5.20	8.95	5.27	0.20	-0.05	4.91
3,949.00	2.33	63.75	3,947.54	-3.49	12.33	3.58	0.11	0.09	1.39
4,043.00	2.37	60.06	4,041.46	-1.67	15.73	1.80	0.17	0.04	-3.93
4,233.00	2.02	67.35	4,231.32	1.58	22.22	-1.41	0.24	-0.18	3.84
4,328.00	2.11	69.99	4,326.26	2.82	25.41	-2.62	0.14	0.09	2.78
4,422.00	1.93	65.33	4,420.20	4.07	28.48	-3.85	0.26	-0.19	-4.96
4,516.00	2.02	76.14	4,514.14	5.13	31.52	-4.89	0.41	0.10	11.50
4,611.00	1.54	96.71	4,609.10	5.38	34.42	-5.12	0.83	-0.51	21.65
4,705.00	0.62	89.33	4,703.08	5.24	36.18	-4.96	0.99	-0.98	-7.85
4,799.00	0.18	273.46	4,797.08	5.25	36.54	-4.97	0.85	-0.47	-187.10
4,894.00	0.97	264.23	4,892.07	5.18	35.59	-4.91	0.83	0.83	-9.72
4,988.00	1.76	276.89	4,986.05	5.28	33.37	-5.02	0.89	0.84	13.47
5,083.00	2.37	273.98	5,080.98	5.59	29.96	-5.36	0.65	0.64	-3.06
5,169.00	2.90	275.65	5,166.89	5.92	26.02	-5.72	0.62	0.62	1.94
5,266.00	2.77	270.91	5,263.77	6.20	21.23	-6.04	0.28	-0.13	-4.89
5,360.00	4.26	276.09	5,357.59	6.61	15.49	-6.49	1.62	1.59	5.51
5,454.00	4.48	276.45	5,451.32	7.39	8.37	-7.33	0.24	0.23	0.38

Aim Directional Services, LLC

Survey Report

Company: Advance Energy Partners, LLC
Project: Lea County, New Mexico
Site: Merchant State Unit 504H
Well: #504H
Wellbore: Aim MWD Surveys
Design: Aim MWD Surveys

Local Co-ordinate Reference: Site Merchant State Unit 504H
TVD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
MD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
5,549.00	5.71	276.45	5,545.94	8.34	-0.01	-8.34	1.29	1.29	0.00
5,643.00	5.98	277.24	5,639.46	9.48	-9.52	-9.56	0.30	0.29	0.84
5,738.00	5.98	278.56	5,733.94	10.84	-19.32	-10.99	0.14	0.00	1.39
5,832.00	5.93	280.23	5,827.43	12.43	-28.94	-12.66	0.19	-0.05	1.78
5,926.00	5.85	279.35	5,920.94	14.08	-38.44	-14.37	0.13	-0.09	-0.94
6,020.00	5.85	279.79	6,014.45	15.67	-47.89	-16.04	0.05	0.00	0.47
6,114.00	5.89	278.20	6,107.95	17.17	-57.39	-17.61	0.18	0.04	-1.69
6,209.00	5.93	279.43	6,202.45	18.67	-67.05	-19.18	0.14	0.04	1.29
6,303.00	5.98	278.03	6,295.94	20.15	-76.69	-20.74	0.16	0.05	-1.49
6,398.00	5.89	274.51	6,390.43	21.22	-86.45	-21.89	0.39	-0.09	-3.71
6,492.00	5.93	277.06	6,483.93	22.20	-96.08	-22.94	0.28	0.04	2.71
6,586.00	5.80	277.15	6,577.44	23.39	-105.61	-24.20	0.14	-0.14	0.10
6,680.00	5.71	275.83	6,670.97	24.45	-114.97	-25.34	0.17	-0.10	-1.40
6,775.00	5.76	276.36	6,765.49	25.46	-124.41	-26.42	0.08	0.05	0.56
6,869.00	5.58	275.74	6,859.03	26.44	-133.65	-27.47	0.20	-0.19	-0.66
6,963.00	5.49	275.30	6,952.59	27.31	-142.67	-28.41	0.11	-0.10	-0.47
7,058.00	5.23	275.65	7,047.18	28.16	-151.51	-29.32	0.28	-0.27	0.37
7,152.00	4.97	272.23	7,140.81	28.74	-159.84	-29.97	0.43	-0.28	-3.64
7,247.00	4.66	271.00	7,235.47	28.97	-167.81	-30.26	0.34	-0.33	-1.29
7,341.00	4.62	275.39	7,329.16	29.39	-175.39	-30.74	0.38	-0.04	4.67
7,436.00	4.84	276.62	7,423.84	30.21	-183.18	-31.62	0.25	0.23	1.29
7,530.00	4.13	275.39	7,517.55	30.99	-190.49	-32.45	0.76	-0.76	-1.31
7,625.00	5.41	277.24	7,612.22	31.87	-198.34	-33.39	1.36	1.35	1.95
7,719.00	4.62	278.38	7,705.86	32.98	-206.48	-34.57	0.85	-0.84	1.21
7,814.00	4.22	273.98	7,800.58	33.78	-213.76	-35.42	0.55	-0.42	-4.63
7,908.00	5.23	272.67	7,894.26	34.22	-221.49	-35.92	1.08	1.07	-1.39
8,003.00	4.62	273.72	7,988.90	34.67	-229.63	-36.44	0.65	-0.64	1.11
8,097.00	4.22	272.58	8,082.62	35.07	-236.86	-36.89	0.44	-0.43	-1.21
8,192.00	4.18	272.40	8,177.37	35.38	-243.81	-37.25	0.04	-0.04	-0.19
8,287.00	3.60	275.13	8,272.15	35.79	-250.24	-37.71	0.64	-0.61	2.87
8,381.00	3.38	273.55	8,365.98	36.22	-255.95	-38.19	0.26	-0.23	-1.68
8,475.00	3.12	272.31	8,459.82	36.50	-261.27	-38.50	0.29	-0.28	-1.32
8,570.00	3.65	276.53	8,554.66	36.95	-266.86	-38.99	0.62	0.56	4.44
8,664.00	3.74	275.74	8,648.46	37.59	-272.88	-39.69	0.11	0.10	-0.84
8,759.00	3.43	271.96	8,743.28	38.00	-278.80	-40.14	0.41	-0.33	-3.98
8,853.00	3.38	269.50	8,837.11	38.07	-284.38	-40.25	0.16	-0.05	-2.62
8,947.00	2.29	262.56	8,931.00	37.80	-289.02	-40.02	1.21	-1.16	-7.38
9,042.00	1.36	252.10	9,025.95	37.21	-291.97	-39.45	1.04	-0.98	-11.01
9,136.00	0.48	203.23	9,119.93	36.51	-293.19	-38.76	1.18	-0.94	-51.99
9,230.00	1.36	202.88	9,213.92	35.12	-293.78	-37.37	0.94	0.94	-0.37
9,324.00	1.14	207.80	9,307.90	33.26	-294.65	-35.53	0.26	-0.23	5.23
9,419.00	1.32	215.45	9,402.88	31.54	-295.72	-33.81	0.26	0.19	8.05
9,513.00	0.62	207.80	9,496.86	30.20	-296.59	-32.48	0.76	-0.74	-8.14

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Survey Report

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Site: Merchant State Unit 504H
Well: #504H
Wellbore: Aim MWD Surveys
Design: Aim MWD Surveys

Local Co-ordinate Reference: Site Merchant State Unit 504H
TVD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
MD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
9,608.00	1.80	191.19	9,591.84	28.29	-297.12	-30.57	1.28	1.24	-17.48
9,702.00	3.16	202.88	9,685.75	24.45	-298.41	-26.74	1.54	1.45	12.44
9,796.00	1.85	229.25	9,779.66	21.07	-300.57	-23.38	1.82	-1.39	28.05
9,890.00	1.27	266.25	9,873.63	20.01	-302.76	-22.34	1.20	-0.62	39.36
9,985.00	2.46	300.70	9,968.58	20.99	-305.56	-23.33	1.67	1.25	36.26
10,079.00	2.15	278.38	10,062.51	22.27	-309.04	-24.65	1.00	-0.33	-23.74
10,173.00	2.02	288.49	10,156.44	23.06	-312.36	-25.45	0.41	-0.14	10.76
10,268.00	1.89	298.15	10,251.39	24.33	-315.33	-26.75	0.37	-0.14	10.17
10,331.00	1.71	294.99	10,314.36	25.21	-317.09	-27.65	0.33	-0.29	-5.02
10,425.00	13.27	191.10	10,407.53	15.17	-320.46	-17.63	14.66	12.30	-110.52
10,520.00	22.07	186.36	10,497.96	-13.32	-324.54	10.83	9.38	9.26	-4.99
10,614.00	28.04	184.78	10,583.08	-52.93	-328.34	50.41	6.39	6.35	-1.68
10,708.00	33.63	182.93	10,663.76	-100.98	-331.52	98.43	6.03	5.95	-1.97
10,803.00	42.59	181.96	10,738.44	-159.50	-333.97	156.93	9.45	9.43	-1.02
10,897.00	53.41	180.56	10,801.24	-229.23	-335.43	226.65	11.56	11.51	-1.49
10,992.00	61.98	180.56	10,851.97	-309.45	-336.21	306.86	9.02	9.02	0.00
11,086.00	69.58	180.29	10,890.50	-395.11	-336.84	392.51	8.09	8.09	-0.29
11,181.00	68.97	178.98	10,924.12	-483.96	-336.28	481.36	1.44	-0.64	-1.38
11,244.00	76.35	176.43	10,942.89	-544.00	-333.84	541.42	12.33	11.71	-4.05
11,275.00	80.04	177.13	10,949.23	-574.29	-332.14	571.72	12.11	11.90	2.26
11,369.00	84.48	177.04	10,961.89	-667.29	-327.41	664.76	4.72	4.72	-0.10
11,464.00	89.32	176.87	10,967.02	-761.99	-322.37	759.49	5.10	5.09	-0.18
11,558.00	89.41	176.43	10,968.06	-855.82	-316.88	853.36	0.48	0.10	-0.47
11,653.00	89.45	175.55	10,969.01	-950.58	-310.23	948.17	0.93	0.04	-0.93
11,747.00	89.32	176.07	10,970.02	-1,044.33	-303.36	1,041.97	0.57	-0.14	0.55
11,841.00	89.71	175.46	10,970.81	-1,138.07	-296.42	1,135.76	0.77	0.41	-0.65
11,936.00	89.89	178.36	10,971.14	-1,232.92	-291.30	1,230.64	3.06	0.19	3.05
12,030.00	89.76	178.80	10,971.43	-1,326.89	-288.97	1,324.63	0.49	-0.14	0.47
12,125.00	90.68	177.57	10,971.07	-1,421.84	-285.96	1,419.60	1.62	0.97	-1.29
12,219.00	89.32	178.80	10,971.07	-1,515.79	-282.99	1,513.57	1.95	-1.45	1.31
12,313.00	89.63	179.77	10,971.93	-1,609.77	-281.81	1,607.56	1.08	0.33	1.03
12,408.00	89.19	179.59	10,972.91	-1,704.77	-281.28	1,702.56	0.50	-0.46	-0.19
12,502.00	89.71	180.82	10,973.81	-1,798.76	-281.62	1,796.54	1.42	0.55	1.31
12,596.00	89.49	179.77	10,974.47	-1,892.75	-282.10	1,890.53	1.14	-0.23	-1.12
12,691.00	90.64	179.85	10,974.36	-1,987.75	-281.79	1,985.53	1.21	1.21	0.08
12,784.00	90.15	178.10	10,973.72	-2,080.73	-280.13	2,078.52	1.95	-0.53	-1.88
12,879.00	90.95	179.15	10,972.80	-2,175.70	-277.85	2,173.50	1.39	0.84	1.11
12,973.00	90.42	178.80	10,971.68	-2,269.67	-276.17	2,267.49	0.68	-0.56	-0.37
13,067.00	91.03	180.03	10,970.49	-2,363.66	-275.21	2,361.48	1.46	0.65	1.31
13,162.00	92.66	179.68	10,967.43	-2,458.61	-274.97	2,456.42	1.75	1.72	-0.37
13,256.00	90.42	180.21	10,964.91	-2,552.57	-274.88	2,550.38	2.45	-2.38	0.56
13,351.00	89.36	178.80	10,965.09	-2,647.56	-274.05	2,645.38	1.86	-1.12	-1.48
13,445.00	88.53	180.56	10,966.82	-2,741.54	-273.53	2,739.36	2.07	-0.88	1.87
13,539.00	88.09	180.82	10,969.59	-2,835.49	-274.66	2,833.30	0.54	-0.47	0.28

Aim Directional Services, LLC

Survey Report

Company: Advance Energy Partners, LLC
Project: Lea County, New Mexico
Site: Merchant State Unit 504H
Well: #504H
Wellbore: Aim MWD Surveys
Design: Aim MWD Surveys

Local Co-ordinate Reference: Site Merchant State Unit 504H
TVD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
MD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
13,634.00	88.62	181.44	10,972.32	-2,930.43	-276.53	2,928.22	0.86	0.56	0.65
13,728.00	89.93	181.26	10,973.51	-3,024.40	-278.75	3,022.17	1.41	1.39	-0.19
13,822.00	91.52	180.91	10,972.32	-3,118.37	-280.53	3,116.12	1.73	1.69	-0.37
13,917.00	91.56	179.41	10,969.77	-3,213.33	-280.79	3,211.08	1.58	0.04	-1.58
14,011.00	90.46	179.24	10,968.11	-3,307.31	-279.69	3,305.06	1.18	-1.17	-0.18
14,105.00	90.51	178.18	10,967.31	-3,401.28	-277.57	3,399.05	1.13	0.05	-1.13
14,142.00	91.03	176.95	10,966.82	-3,438.24	-276.00	3,436.02	3.61	1.41	-3.32
14,237.00	90.90	178.36	10,965.22	-3,533.15	-272.11	3,530.95	1.49	-0.14	1.48
14,331.00	89.85	180.91	10,964.60	-3,627.13	-271.51	3,624.94	2.93	-1.12	2.71
14,425.00	88.09	181.61	10,966.29	-3,721.09	-273.58	3,718.88	2.01	-1.87	0.74
14,519.00	88.18	180.82	10,969.35	-3,815.02	-275.57	3,812.79	0.85	0.10	-0.84
14,614.00	88.35	179.77	10,972.23	-3,909.97	-276.06	3,907.74	1.12	0.18	-1.11
14,708.00	88.70	179.33	10,974.65	-4,003.94	-275.32	4,001.71	0.60	0.37	-0.47
14,802.00	88.40	180.29	10,977.02	-4,097.91	-275.01	4,095.67	1.07	-0.32	1.02
14,897.00	88.44	180.47	10,979.64	-4,192.87	-275.64	4,190.63	0.19	0.04	0.19
14,991.00	88.79	180.12	10,981.92	-4,286.84	-276.12	4,284.59	0.53	0.37	-0.37
15,085.00	89.54	179.85	10,983.29	-4,380.83	-276.10	4,378.58	0.85	0.80	-0.29
15,179.00	88.53	179.94	10,984.87	-4,474.81	-275.93	4,472.56	1.08	-1.07	0.10
15,273.00	88.44	179.33	10,987.35	-4,568.78	-275.33	4,566.53	0.66	-0.10	-0.65
15,367.00	88.31	178.62	10,990.02	-4,662.73	-273.65	4,660.49	0.77	-0.14	-0.76
15,462.00	88.44	178.10	10,992.71	-4,757.65	-270.93	4,755.43	0.56	0.14	-0.55
15,556.00	88.75	177.31	10,995.02	-4,851.54	-267.17	4,849.35	0.90	0.33	-0.84
15,650.00	89.01	178.01	10,996.86	-4,945.45	-263.33	4,943.28	0.79	0.28	0.74
15,745.00	89.58	179.15	10,998.02	-5,040.41	-260.98	5,038.26	1.34	0.60	1.20
15,839.00	88.40	179.24	10,999.68	-5,134.38	-259.66	5,132.24	1.26	-1.26	0.10
15,933.00	88.13	178.45	11,002.53	-5,228.32	-257.76	5,226.19	0.89	-0.29	-0.84
16,028.00	88.31	178.10	11,005.48	-5,323.23	-254.90	5,321.12	0.41	0.19	-0.37
16,122.00	87.65	179.15	11,008.79	-5,417.14	-252.65	5,415.04	1.32	-0.70	1.12
16,216.00	88.97	179.68	11,011.56	-5,511.10	-251.69	5,509.00	1.51	1.40	0.56
16,310.00	88.97	181.17	11,013.25	-5,605.07	-252.39	5,602.97	1.58	0.00	1.59
16,404.00	89.05	180.91	11,014.88	-5,699.05	-254.09	5,696.93	0.29	0.09	-0.28
16,499.00	88.92	180.03	11,016.56	-5,794.03	-254.87	5,791.90	0.94	-0.14	-0.93
16,593.00	89.32	179.59	11,018.00	-5,888.01	-254.56	5,885.89	0.63	0.43	-0.47
16,688.00	87.91	179.85	11,020.30	-5,982.98	-254.10	5,980.86	1.51	-1.48	0.27
16,782.00	88.00	179.68	11,023.66	-6,076.92	-253.71	6,074.79	0.20	0.10	-0.18
16,876.00	89.27	179.33	11,025.89	-6,170.89	-252.90	6,168.77	1.40	1.35	-0.37
16,970.00	87.69	179.15	11,028.39	-6,264.85	-251.65	6,262.73	1.69	-1.68	-0.19
17,065.00	87.56	178.45	11,032.32	-6,359.74	-249.66	6,357.64	0.75	-0.14	-0.74
17,159.00	86.95	177.22	11,036.83	-6,453.57	-246.12	6,451.49	1.46	-0.65	-1.31
17,253.00	88.53	176.87	11,040.53	-6,547.36	-241.28	6,545.32	1.72	1.68	-0.37
17,347.00	91.08	177.92	11,040.85	-6,641.26	-237.00	6,639.24	2.93	2.71	1.12
17,442.00	89.98	179.94	11,039.97	-6,736.23	-235.23	6,734.23	2.42	-1.16	2.13
17,536.00	90.20	179.59	11,039.83	-6,830.23	-234.85	6,828.22	0.44	0.23	-0.37

Aim Directional Services, LLC

Survey Report

Company: Advance Energy Partners, LLC
Project: Lea County, New Mexico
Site: Merchant State Unit 504H
Well: #504H
Wellbore: Aim MWD Surveys
Design: Aim MWD Surveys

Local Co-ordinate Reference: Site Merchant State Unit 504H
TVD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
MD Reference: 3664'GL+26.5'KB @ 3690.50usft (H&P 620)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
17,631.00	89.49	181.44	11,040.08	-6,925.22	-235.70	6,923.21	2.09	-0.75	1.95
17,725.00	88.84	180.03	11,041.45	-7,019.20	-236.90	7,017.17	1.65	-0.69	-1.50
17,820.00	88.26	180.38	11,043.86	-7,114.17	-237.24	7,112.14	0.71	-0.61	0.37
17,914.00	88.09	179.24	11,046.85	-7,208.12	-236.93	7,206.09	1.23	-0.18	-1.21
18,009.00	89.14	179.77	11,049.15	-7,303.09	-236.11	7,301.06	1.24	1.11	0.56
18,104.00	88.97	179.24	11,050.71	-7,398.07	-235.29	7,396.04	0.59	-0.18	-0.56
18,198.00	88.35	179.15	11,052.91	-7,492.03	-233.97	7,490.02	0.67	-0.66	-0.10
18,293.00	89.23	180.29	11,054.92	-7,587.01	-233.51	7,584.99	1.52	0.93	1.20
18,387.00	88.26	180.47	11,056.98	-7,680.98	-234.13	7,678.96	1.05	-1.03	0.19
18,482.00	89.98	180.82	11,058.44	-7,775.96	-235.20	7,773.93	1.85	1.81	0.37
18,579.00	91.43	182.31	11,057.24	-7,872.91	-237.85	7,870.85	2.14	1.49	1.54
18,673.00	90.68	180.47	11,055.51	-7,966.86	-240.13	7,964.79	2.11	-0.80	-1.96
18,768.00	88.84	178.98	11,055.91	-8,061.86	-239.67	8,059.78	2.49	-1.94	-1.57
18,862.00	88.88	179.06	11,057.78	-8,155.82	-238.07	8,153.75	0.10	0.04	0.09
18,956.00	89.98	179.94	11,058.72	-8,249.81	-237.24	8,247.75	1.50	1.17	0.94
19,050.00	89.45	179.68	11,059.18	-8,343.81	-236.93	8,341.75	0.63	-0.56	-0.28
19,145.00	89.71	180.47	11,059.88	-8,438.81	-237.06	8,436.74	0.88	0.27	0.83
19,239.00	89.85	179.85	11,060.24	-8,532.81	-237.32	8,530.73	0.68	0.15	-0.66
19,334.00	89.41	178.71	11,060.85	-8,627.79	-236.13	8,625.73	1.29	-0.46	-1.20
19,429.00	88.88	178.27	11,062.27	-8,722.75	-233.62	8,720.70	0.73	-0.56	-0.46
19,524.00	88.97	179.15	11,064.05	-8,817.71	-231.49	8,815.67	0.93	0.09	0.93
19,618.00	88.88	181.96	11,065.82	-8,911.68	-232.40	8,909.63	2.99	-0.10	2.99
19,713.00	87.43	181.52	11,068.88	-9,006.58	-235.28	9,004.51	1.59	-1.53	-0.46
19,807.00	89.32	181.61	11,071.54	-9,100.51	-237.84	9,098.41	2.01	2.01	0.10
19,902.00	91.25	181.08	11,071.07	-9,195.47	-240.07	9,193.36	2.11	2.03	-0.56
19,996.00	89.80	180.56	11,070.21	-9,289.46	-241.42	9,287.33	1.64	-1.54	-0.55
20,091.00	88.53	179.24	11,071.59	-9,384.44	-241.25	9,382.31	1.93	-1.34	-1.39
20,185.00	89.54	179.24	11,073.18	-9,478.42	-240.01	9,476.30	1.07	1.07	0.00
20,280.00	90.90	179.06	11,072.81	-9,573.41	-238.60	9,571.29	1.44	1.43	-0.19
20,375.00	89.14	178.71	11,072.78	-9,668.38	-236.75	9,666.28	1.89	-1.85	-0.37
20,469.00	88.57	178.10	11,074.66	-9,762.33	-234.13	9,760.24	0.89	-0.61	-0.65
20,563.00	87.91	176.60	11,077.54	-9,856.18	-229.79	9,854.13	1.74	-0.70	-1.60
20,658.00	87.69	179.06	11,081.19	-9,951.04	-226.20	9,949.00	2.60	-0.23	2.59
20,752.00	87.34	179.50	11,085.27	-10,044.94	-225.02	10,042.91	0.60	-0.37	0.47
20,846.00	87.08	179.41	11,089.84	-10,138.82	-224.12	10,136.80	0.29	-0.28	-0.10
20,941.00	85.98	179.33	11,095.59	-10,233.64	-223.08	10,231.63	1.16	-1.16	-0.08
21,002.00	86.59	179.33	11,099.54	-10,294.51	-222.37	10,292.50	1.00	1.00	0.00
Last Aim MWD Survey									
21,067.00	86.59	179.33	11,103.41	-10,359.39	-221.61	10,357.38	0.00	0.00	0.00
Projection to BHL									

Aim Directional Services, LLC

Survey Report

Company: Advance Energy Partners, LLC
Project: Lea County, New Mexico
Site: Merchant State Unit 504H
Well: #504H
Wellbore: Aim MWD Surveys
Design: Aim MWD Surveys

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Site Merchant State Unit 504H
3664'GL+26.5'KB @ 3690.50usft (H&P 620)
3664'GL+26.5'KB @ 3690.50usft (H&P 620)
Grid
Minimum Curvature
EDM 5000.14 Single User Db

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
173.00	173.00	-0.91	-0.54	First Aim MWD Survey
21,002.00	11,099.54	-10,294.51	-222.37	Last Aim MWD Survey
21,067.00	11,103.41	-10,359.39	-221.61	Projection to BHL