

Released to Imaging: 6/12/2024 10:03:56 AM

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-104
Revised August 1, 2011
Submit one copy to appropriate District Office
☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address Advance Energy Partners Hat Mesa, LLC 11490 Westheimer RD, Suite 950 Houston, TX 77077		² OGRID Number 372417
		³ Reason for Filing Code/ Effective Date NW
⁴ API Number 30-025-46266	⁵ Pool Name WC-025 G-08 S213304; BONE SPRING	⁶ Pool Code 97895
⁷ Property Code 325948	⁸ Property Name Wool Head 20 State Com	⁹ Well Number 605H

II. ¹⁰ Surface Location

UI or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
O	20	21S	33E		150	SOUTH	2046	EAST	Lea

¹¹ Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	17	21S	33E		2570	SOUTH	2023	EAST	Lea
¹² Lse Code	¹³ Producing Method Code	¹⁴ Gas Connection Date	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date				

III. Oil and Gas Transporters

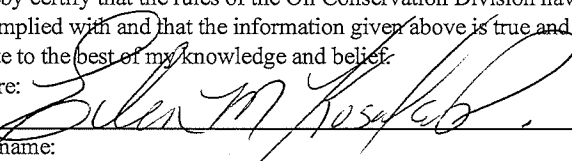
¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
214984	Plains Marketing, L.P. 10 Desta Drive, Suite 200E Midland, TX 79705	O
330291	3 Bear Energy-Cottonwood, LLC 1512 Larimer St. Suite 540 Denver, CO. 80202	G

IV. Well Completion Data

²¹ Spud Date 08/12/2019	²² Ready Date 06/27/20	²³ TD 19,551	²⁴ PBTB 19,453	²⁵ Perforations 12,118'-19,423'	²⁶ DHC, MC
²⁷ Hole Size	²⁸ Casing & Tubing Size	²⁹ Depth Set	³⁰ Sacks Cement		
17.5"	13.375"	1802	865		
12.25"	9.625"	5204 5240	1325		
8.5"	5.5"	19,536	2555		

V. Well Test Data

³¹ Date New Oil 06/27/20	³² Gas Delivery Date 06/27/20	³³ Test Date 07/25/20	³⁴ Test Length 24 Hrs	³⁵ Tbg. Pressure 643	³⁶ Csg. Pressure 398
³⁷ Choke Size 60/64	³⁸ Oil 951	³⁹ Water 3480	⁴⁰ Gas 1690		⁴¹ Test Method Flowing

⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: 		OIL CONSERVATION DIVISION	
Printed name: Eileen M Kosakowski		Approved by: PATRICIA MARTINEZ	
Title: Senior Engineer Tech		Title: PETROLEUM SPECIALIST	
E-mail Address: ekosakowski@advanceenergypartners.com		Approval Date: 6/12/2024	
Date: 2/14/22	Phone: 832-672-4604		

Received by OCD: 2/16/2022 8:16:15 AM

DISTRICT I
Hobbs, NM 88240
Phone (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (505) 746-1263 Fax: (505) 746-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6176 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 4, 2011
Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-46266	Pool Code 97895	Pool Name WC-025 G-08 S213304D; BONE SPRING
Property Code 325948	Property Name WOOL HEAD 20 STATE COM	Well Number 605H
OGRID No. 372417	Operator Name ADVANCE ENERGY PARTNERS HAT MESA	Elevation 3715'

Surface Location

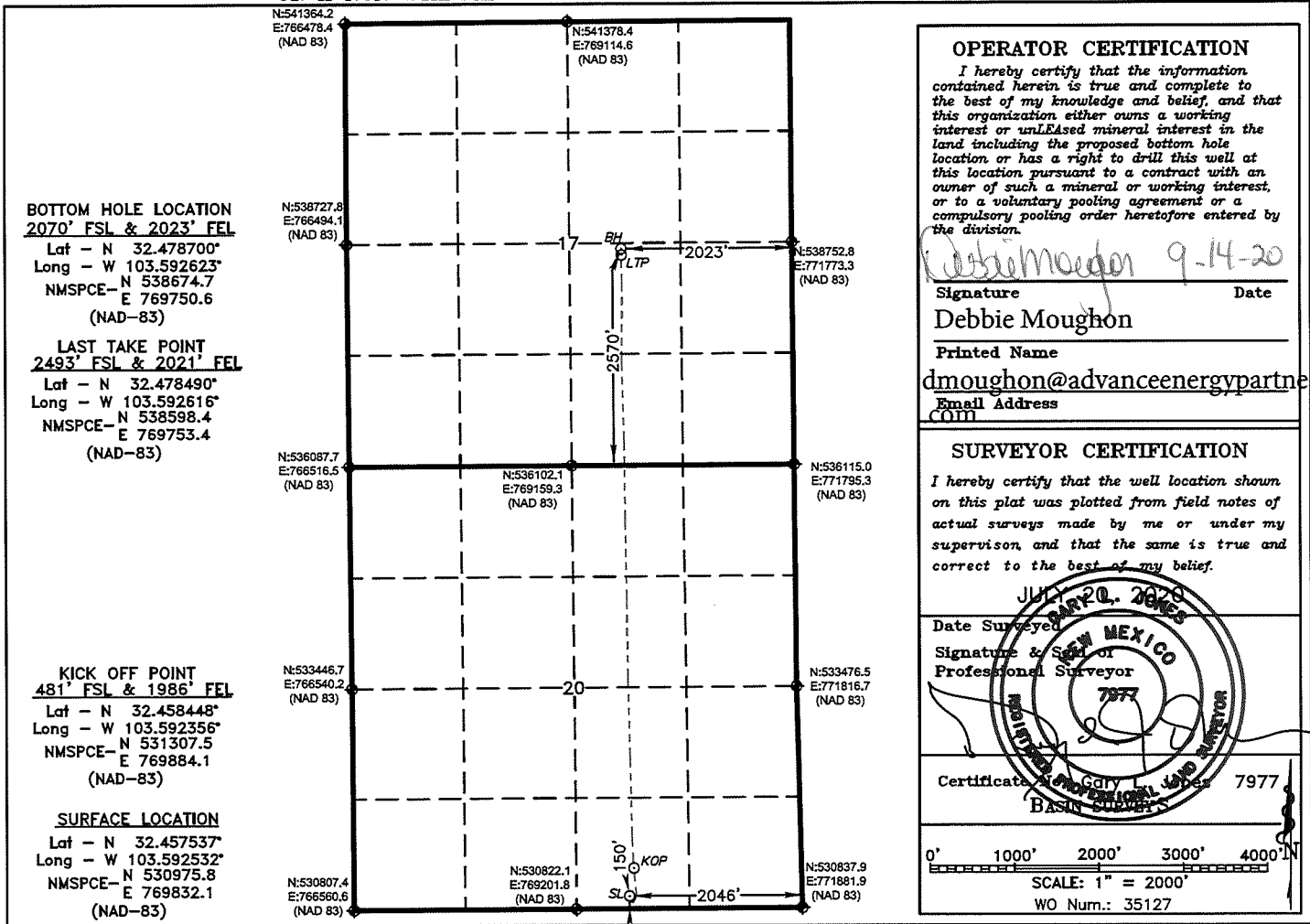
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South Line	Feet from the	East/West Line	County
0	20	21 S	33 E		150	SOUTH	2046	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South Line	Feet from the	East/West Line	County
J	17	21 S	33 E		2570	SOUTH	2023	EAST	LEA

Dedicated Acres 240	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION





End of Well Report

Advance Energy Partners, LLC Wool Head 20 State Com, Well No. 605H Lea County, New Mexico

Rig: H&P #620

Job No.: WT-19-115

Start Date: 08/12/2019

End Date: 10/02/2019

Directional Drillers:

Omar Alaniz, Joel Johnson

Office Support:

Damien Tarpley

Directional Coordinator

E-mail: Damien.Tarpley@aimdir.com

Ivonne Gonzalez

Well Planner

E-mail: Ivonne.Gonzalez@aimdir.com

Allison Reinert

Executive VP

E-mail: Allison.Reinert@aimdir.com

Thomas Rinald

President

E-mail: Thomas.Rinald@aimdir.com

P.O. Box 181015 • Corpus Christi, Texas 78480

Phone: 361-653-6500 • Fax: 361-653-6599

www.aimdir.com





Performance Overview

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)

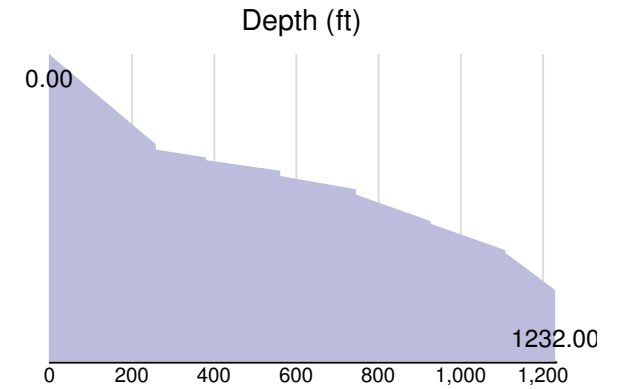
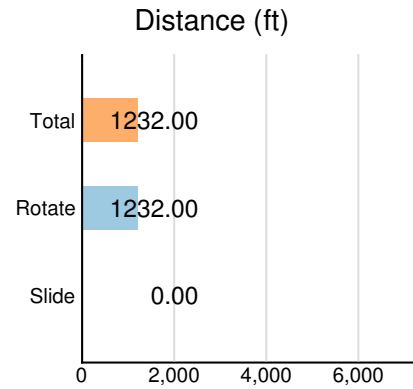
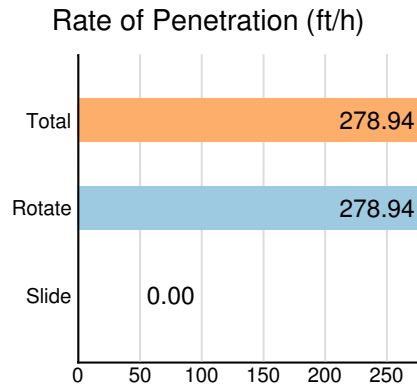
BHA Performance

BHA 1

BHA #1 (Surface)

In: 08/12/2019 13:30

Out: 08/12/2019 23:10

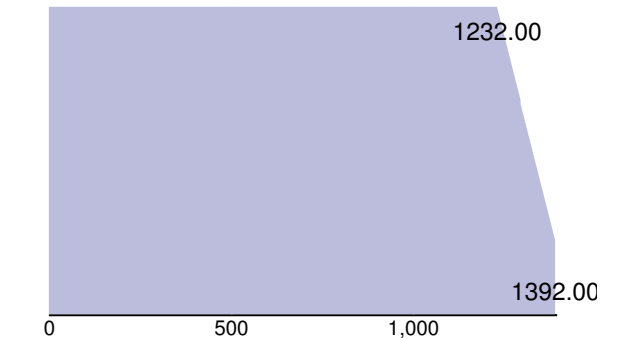
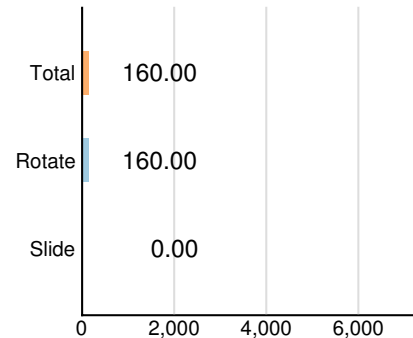
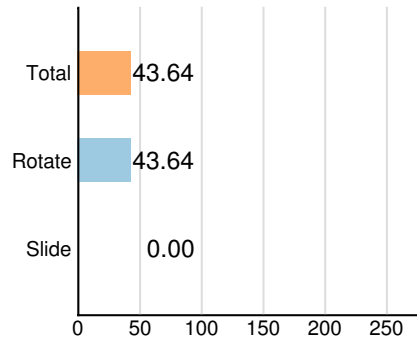


BHA 2

BHA #2 Surface

In: 08/12/2019 23:10

Out: 08/13/2019 05:45

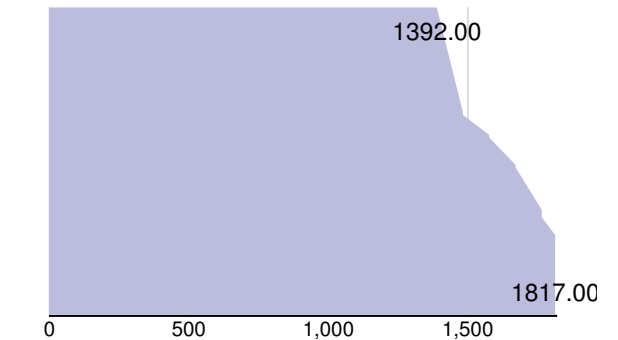
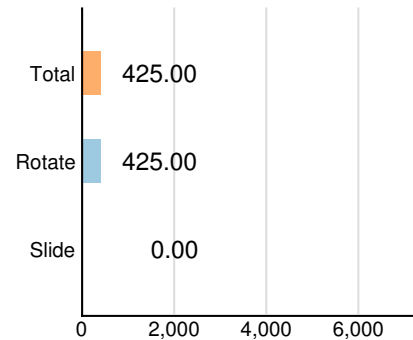
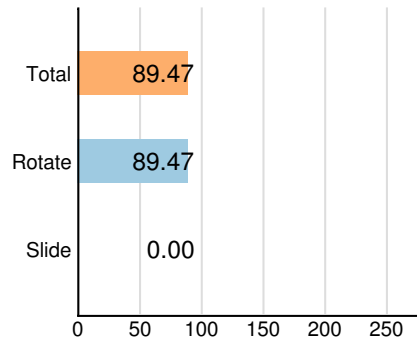


BHA 3

BHA # 3

In: 08/13/2019 05:45

Out: 08/13/2019 16:00

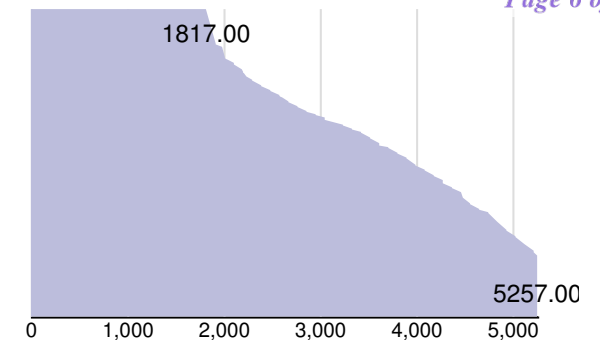
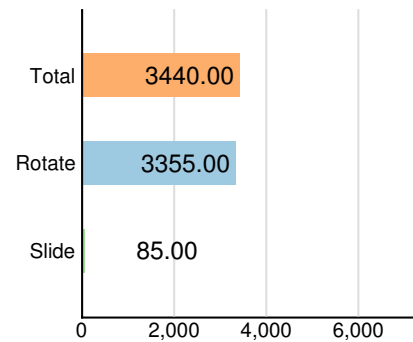
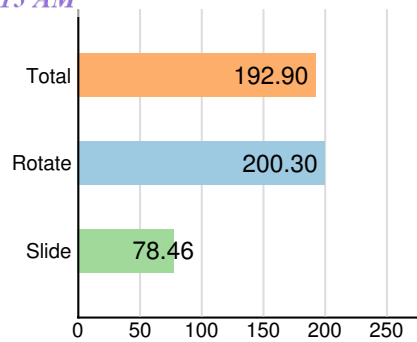


BHA 4

BHA #4 (12.25
Intermediate)

In: 08/18/2019 20:05

Out: 08/20/2019 04:00

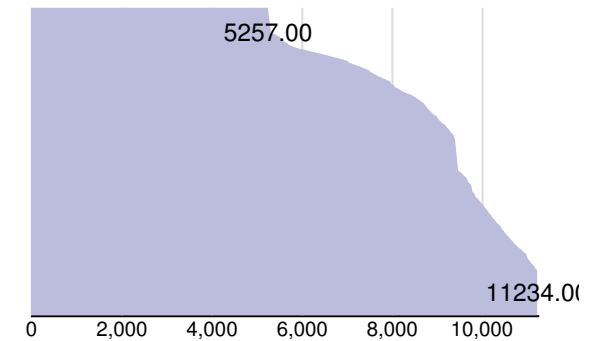
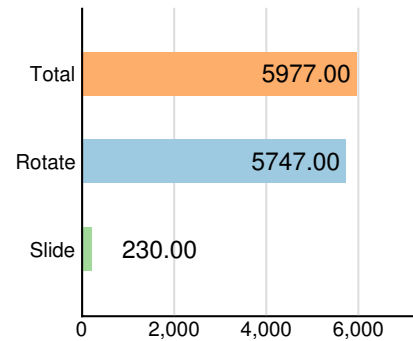
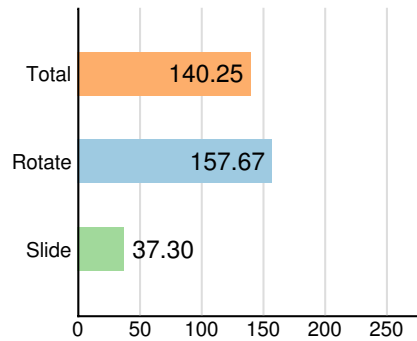


BHA 5

BHA #5
Intermediate

In: 09/14/2019 22:30

Out: 09/17/2019 19:10

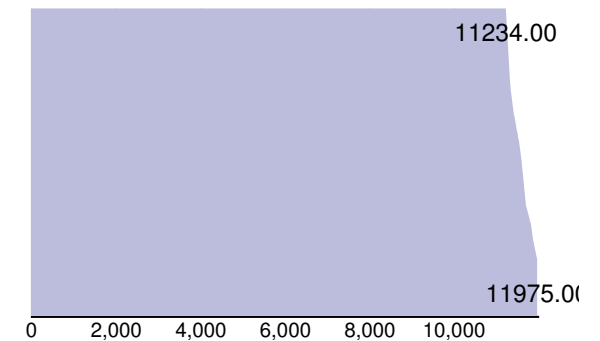
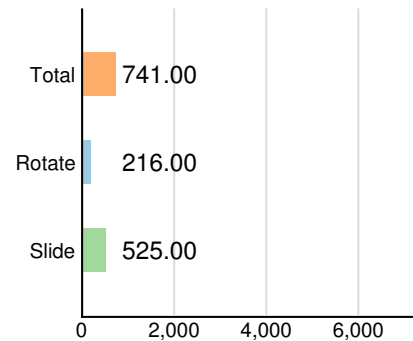
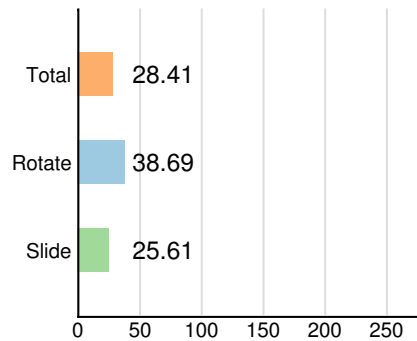


BHA 6

BHA #6 Curve

In: 09/18/2019 01:40

Out: 09/19/2019 18:50

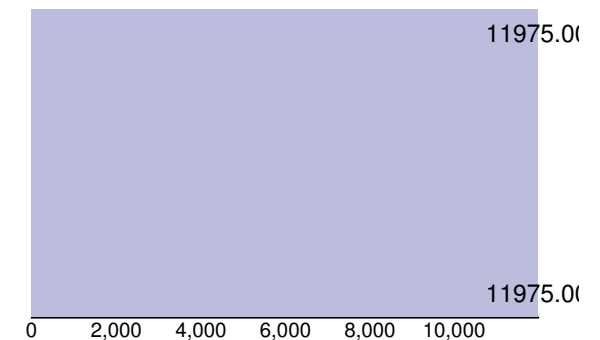
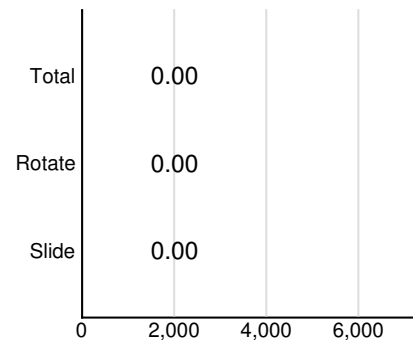
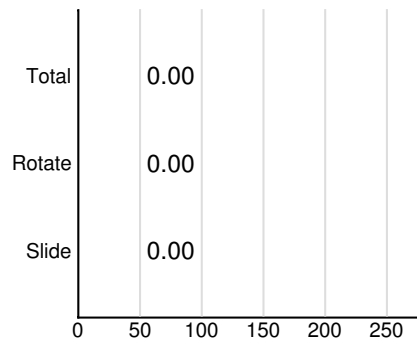


BHA 7

BHA #7 Curve/
Lateral

In: 09/19/2019 18:50

Out: 09/20/2019 16:00

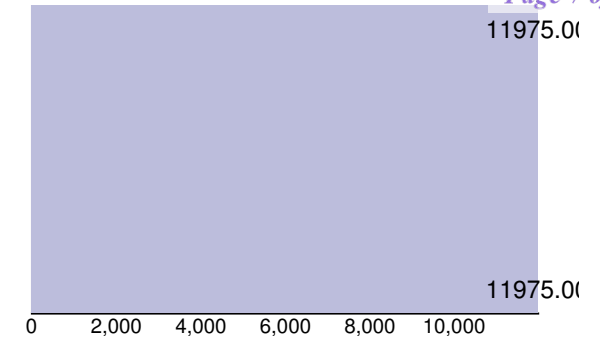
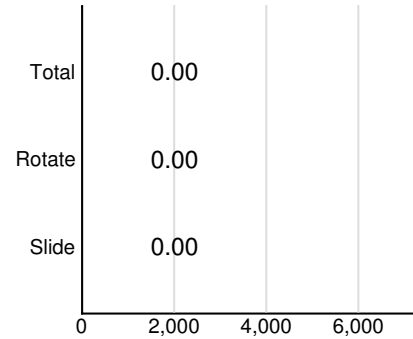
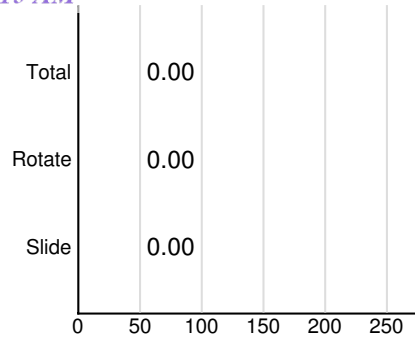


BHA 8

BHA # 8 (Fishing
BHA)

In: 09/20/2019 16:00

Out: 09/21/2019 11:00

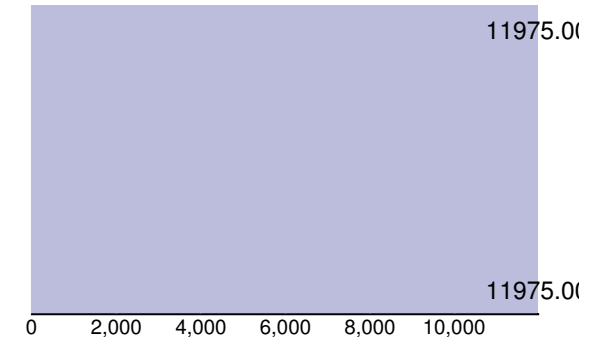
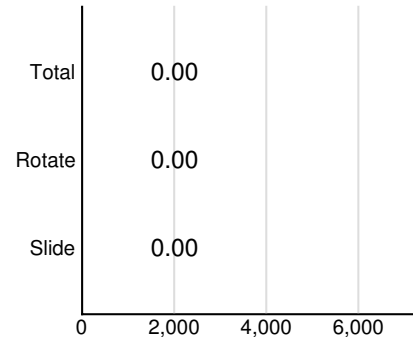
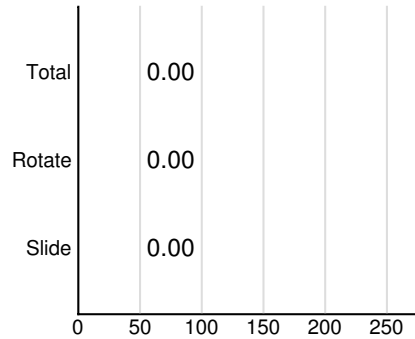


BHA 9

BHA #9 Hole
Opener

In: 09/21/2019 14:00

Out: 09/22/2019 22:10

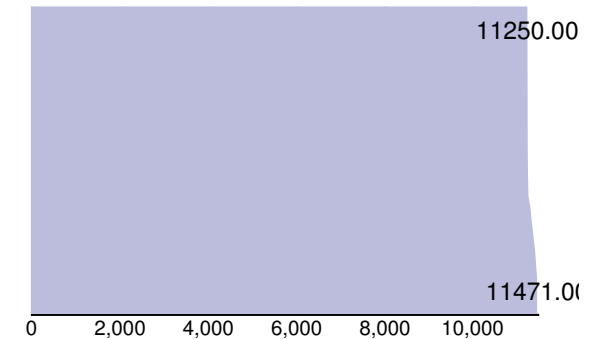
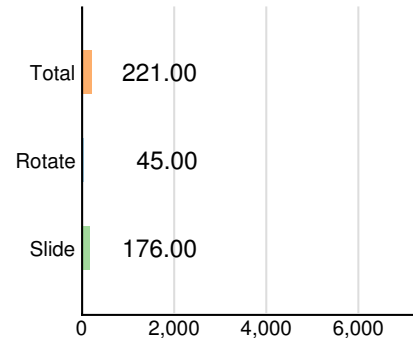
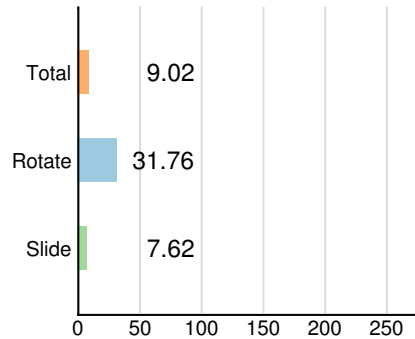


BHA 10

Aim BHA #10
(ST/Curve) - AEP
BHA #9

In: 09/22/2019 22:10

Out: 09/24/2019 13:30

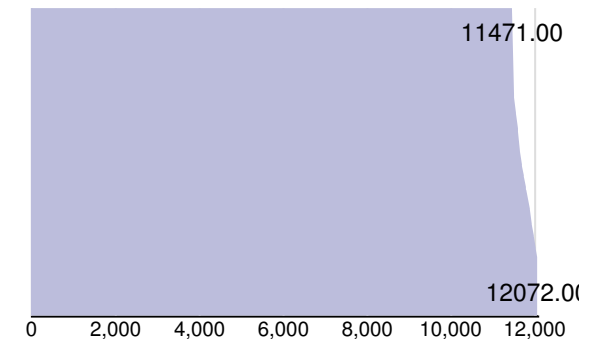
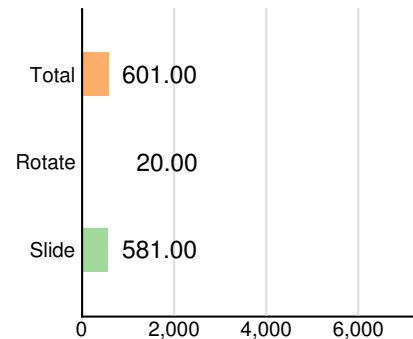
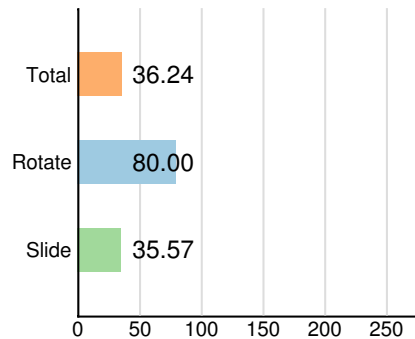


BHA 11

BHA #11 (Curve)
AEP BHA #10

In: 09/24/2019 13:30

Out: 09/25/2019 20:10

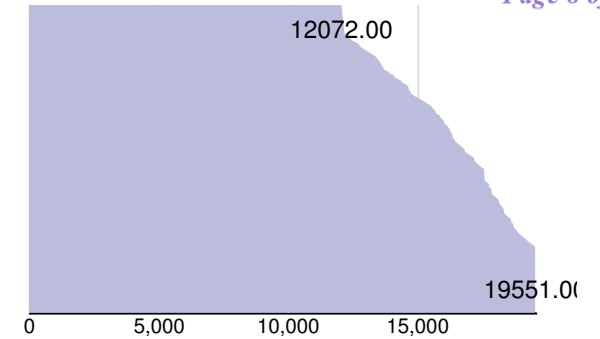
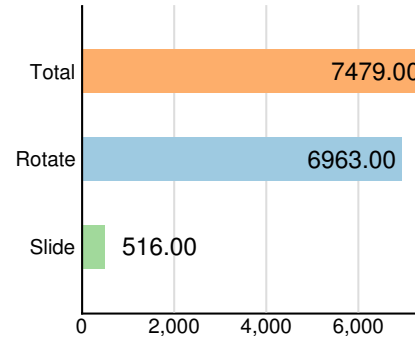
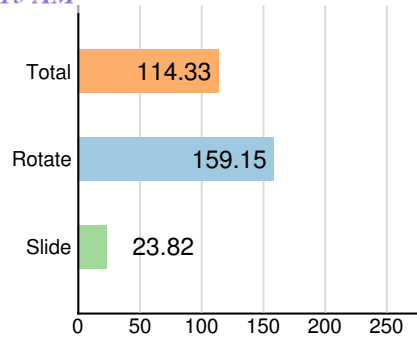


BHA 12

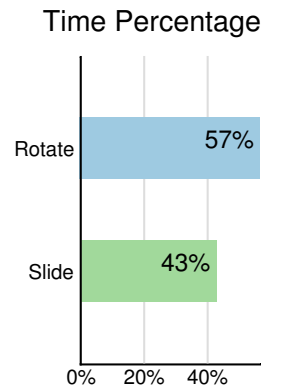
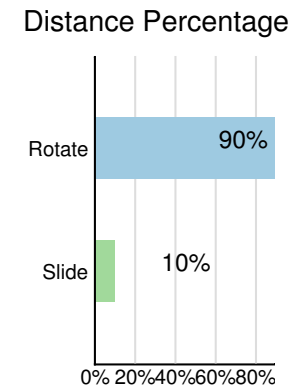
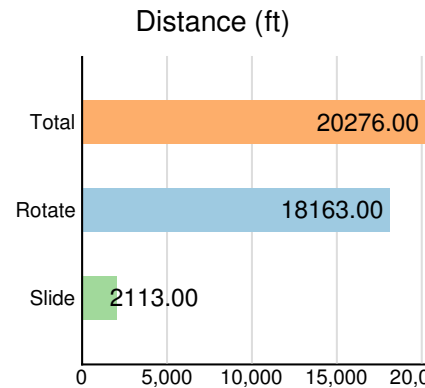
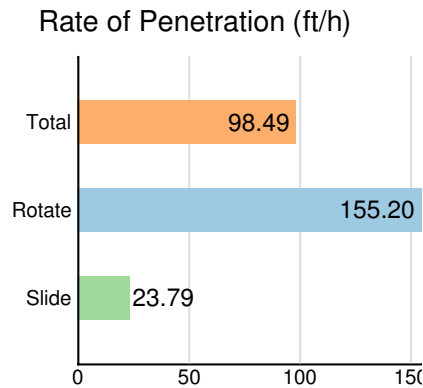
BHA #12 Lateral

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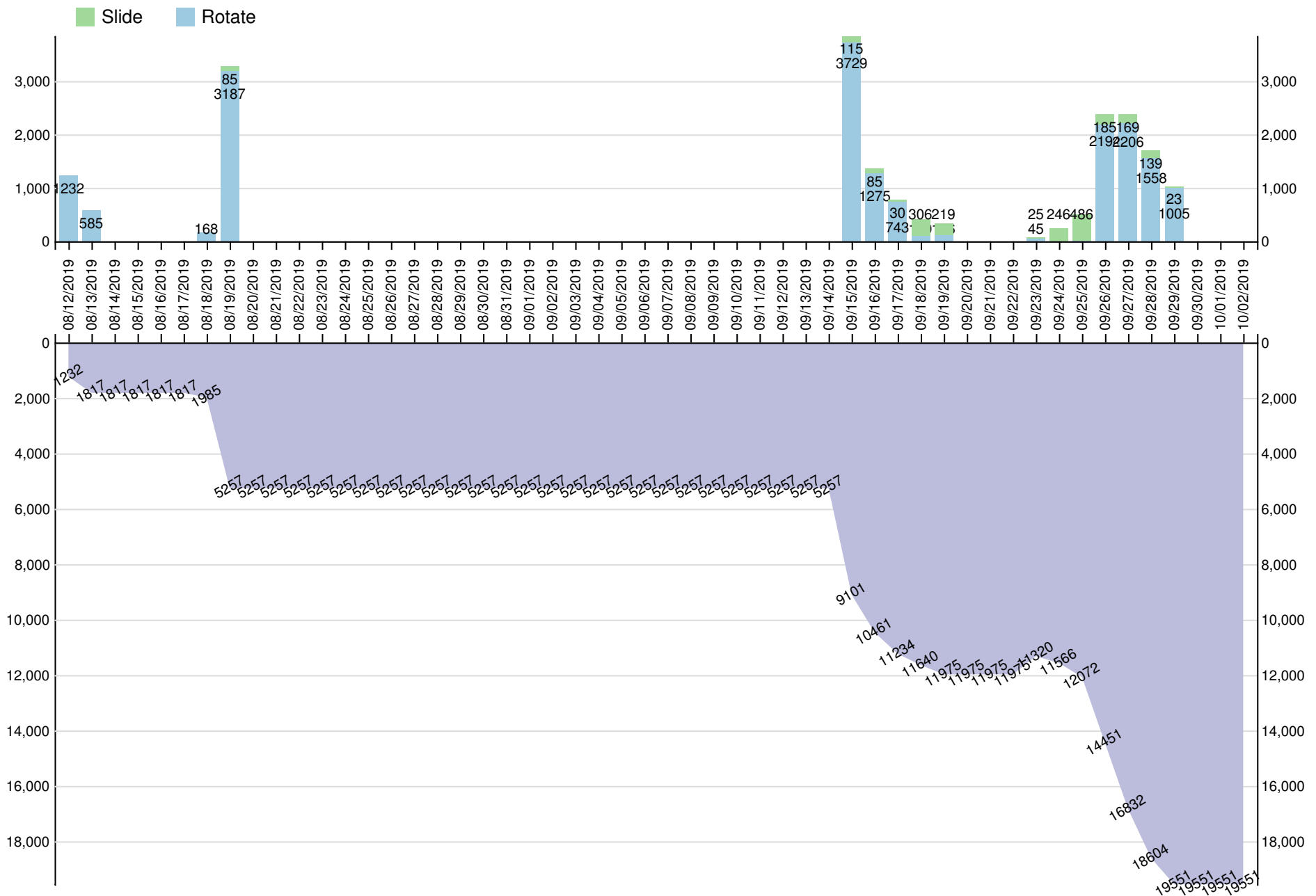
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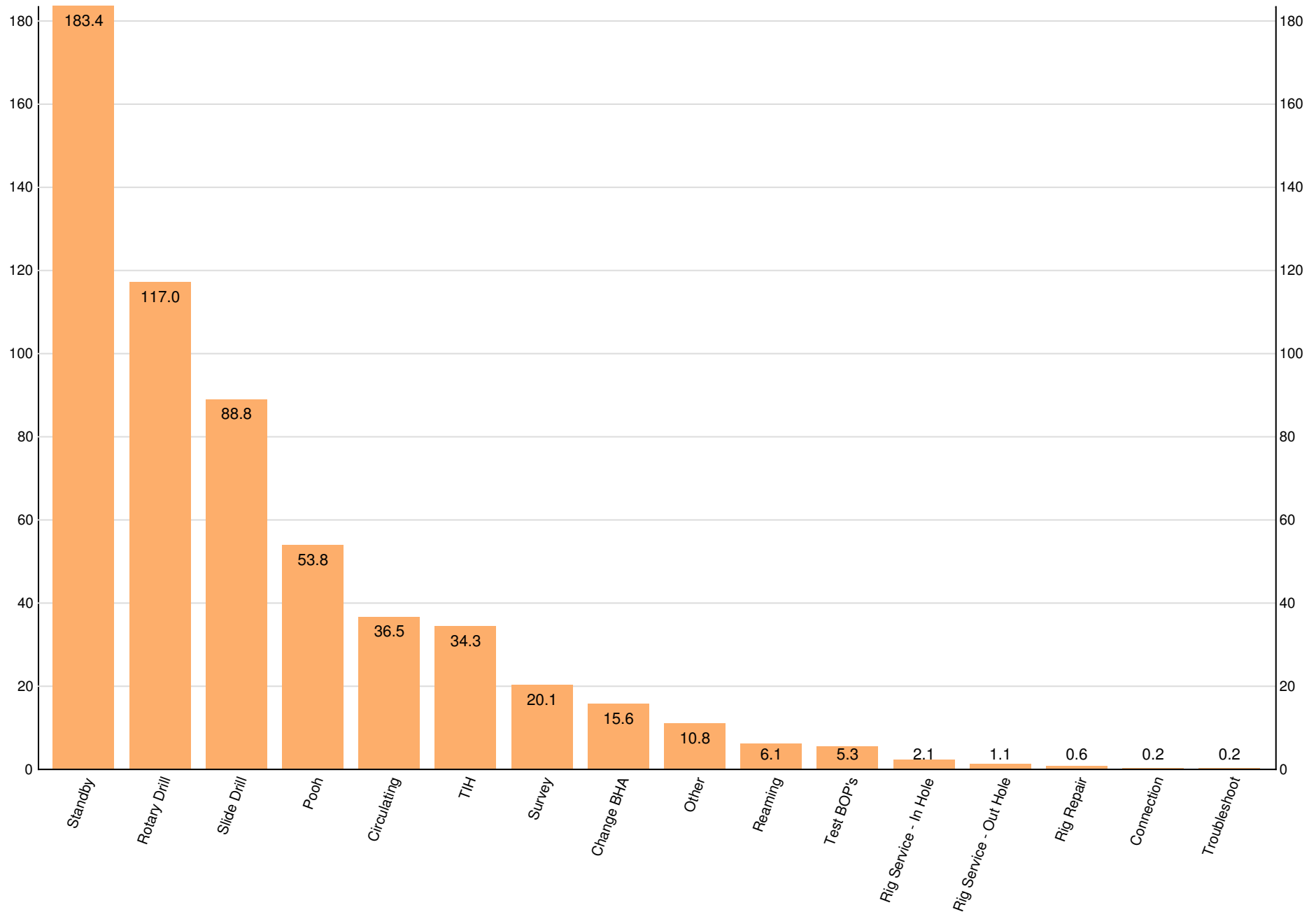
Total



Days vs. Depth



Directional Activity Hours





Proposed vs. As Drilled Original Hole

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)

Advance Energy Partners, LLC

Wool Head 20 State Com 605H

Lea County, New Mexico

Job No. WT-19-115

H&P 620

Plan 1.0



Received by OGD: 2/16/2022 8:16:15 AM



SITE DETAILS: Wool Head 20 State Com 605H

Site Centre Northing: 530975.80
Easting: 769832.10

Positional Uncertainty: 0.00
Convergence: 0.40
Local North: Grid

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

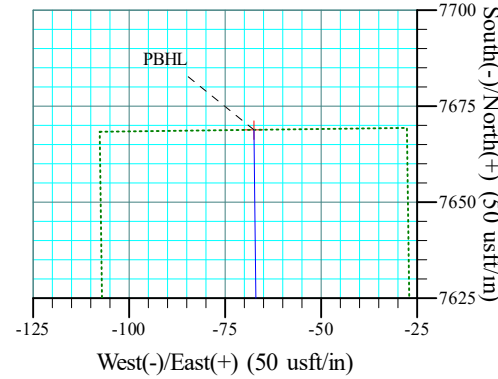
Depth Reference:
3715'GL+26.5'KB @ 3741.50usft (H&P 620)



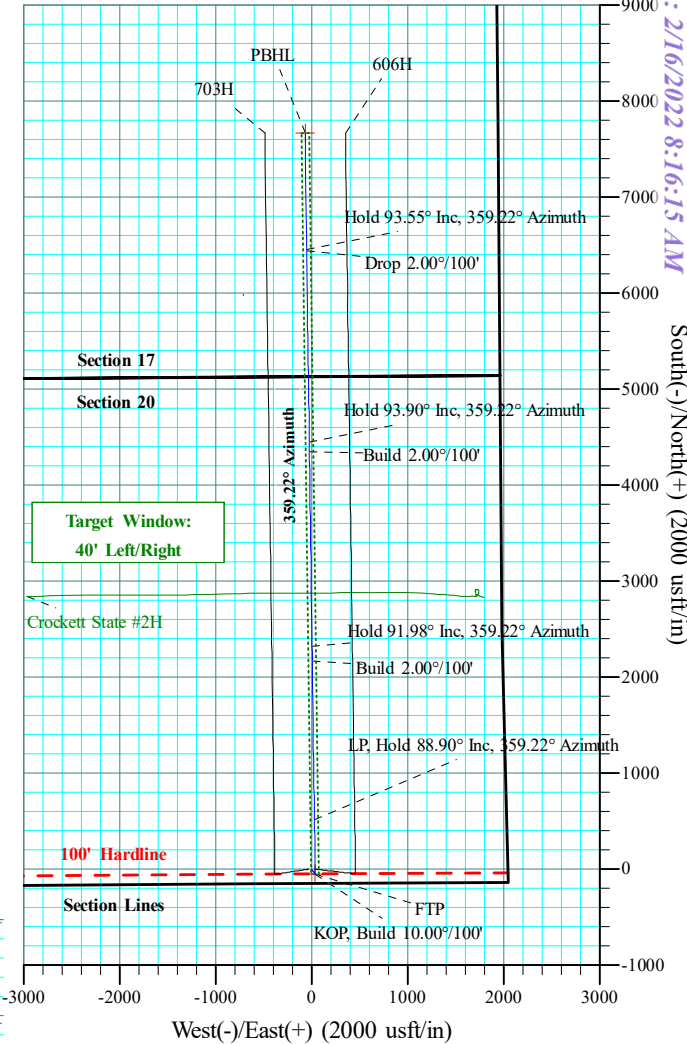
Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.24°

Magnetic Field
Strength: 48100.3nT
Dip Angle: 60.25°
Date: 8/5/2019
Model: MVHD

Magnetic North: 6.24° to Grid North

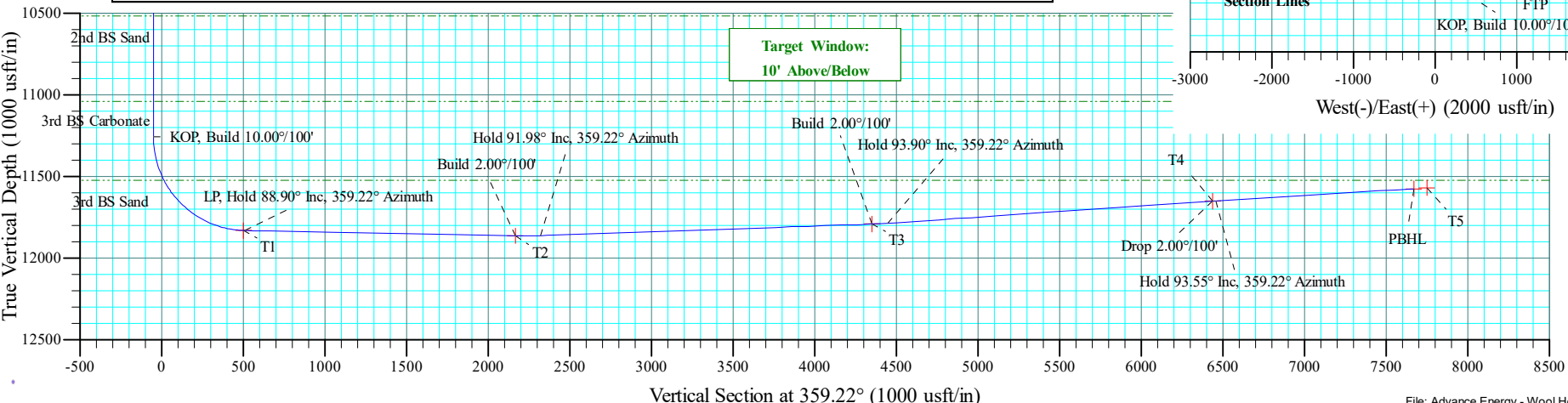


*Note - Aim is not responsible for any collision issues against unknown offset wells.



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00	Build 1.00°/100'
3	5700.00	3.00	142.80	5699.86	-6.25	4.75	1.00	142.80	-6.32	Hold 3.0° Inc, 142.80° Azimuth
4	6594.54	3.00	142.80	6593.18	-43.55	33.05	0.00	0.00	-43.99	Drop 1.00°/100'
5	6894.54	0.00	0.00	6893.04	-49.80	37.80	1.00	180.00	-50.31	Hold Vertical
6	11260.33	0.00	0.00	11258.83	-49.80	37.80	0.00	0.00	-50.31	KOP, Build 10.00°/100'
7	12149.33	88.90	359.22	11831.68	512.11	30.13	10.00	359.22	511.65	LP, Hold 88.90° Inc, 359.22° Azimuth
8	13804.17	88.90	359.22	11863.45	2166.48	7.56	0.00	0.00	2166.18	Build 2.00°/100'
9	13958.37	91.98	359.22	11862.26	2320.65	5.46	2.00	0.00	2320.36	Hold 91.98° Inc, 359.22° Azimuth
10	15990.86	91.98	359.22	11791.90	4351.73	-22.25	0.00	0.00	4351.63	Build 2.00°/100'
11	16086.47	93.90	359.22	11786.99	4447.21	-23.55	2.00	0.00	4447.11	Hold 93.90° Inc, 359.22° Azimuth
12	18082.65	93.90	359.22	11651.35	6438.59	-50.72	0.00	0.00	6438.68	Drop 2.00°/100'
13	18100.06	93.55	359.22	11650.22	6455.96	-50.95	2.00	180.00	6456.05	Hold 93.55° Inc, 359.22° Azimuth
14	19315.35	93.55	359.22	11575.01	7668.80	-67.50	0.00	0.00	7669.01	PBHL

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
FTP (Wool605H)	0.00	-49.80	37.80	530926.00	769869.90	32° 27' 26.639 N
PBHL r1 (Wool605H)	11575.01	7668.80	-67.50	538644.60	769764.60	32° 28' 43.021 N





Wool Head 20 State Com 605H
Lea County, New Mexico
Job No. WT-19-115
H&P 620
Plan 1.0



Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.24°

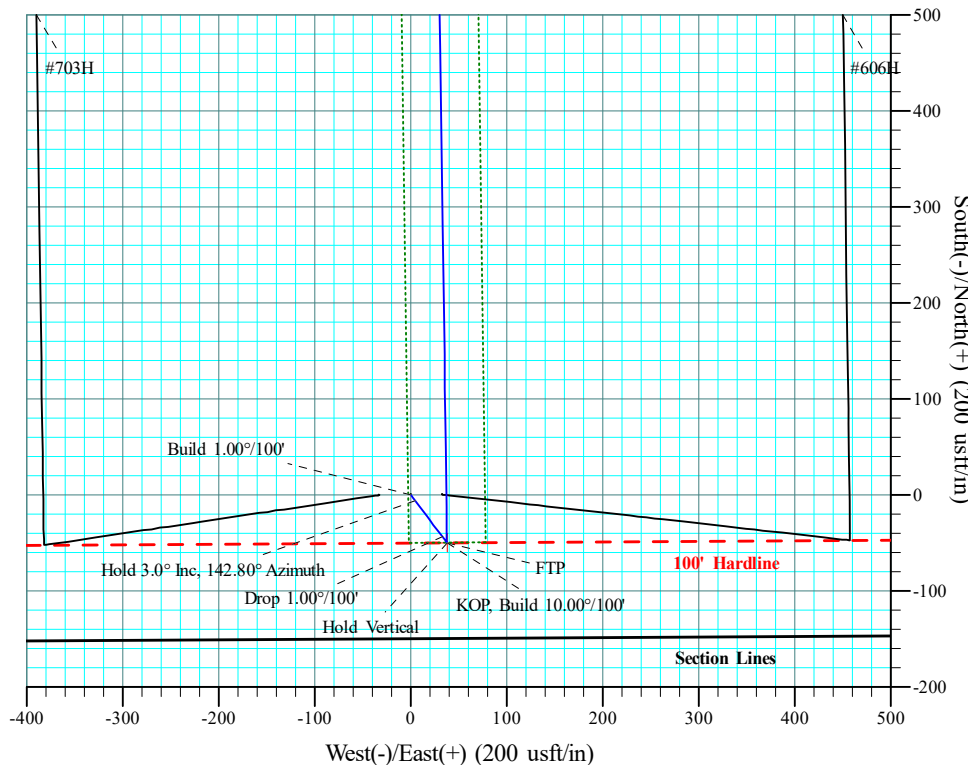
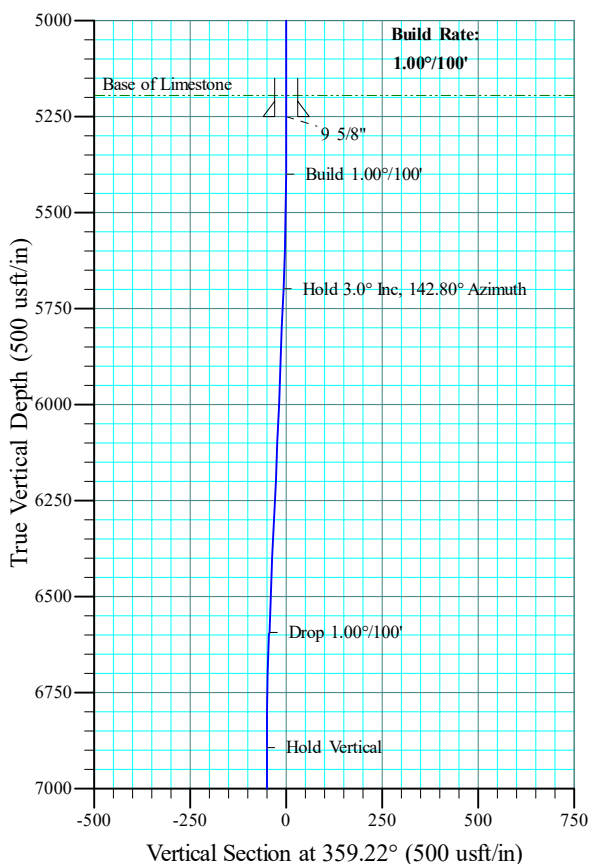
Magnetic Field
Strength: 48100.3nT
Dip Angle: 60.25°
Date: 8/5/2019
Model: MVHD

Magnetic North: 6.24° 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



SLOTS		
Slot Name	+N/-S	+E/-W
605H	0.00	0.00
606H	0.40	33.00
703H	-0.30	-32.90

CASING DETAILS		
TVD	MD	Name
1850.00	1850.00	13 3/8"
5250.00	5250.00	9 5/8"

SITE DETAILS: Wool Head 20 State Com 605H

Site Centre Northing: 530975.80
Easting: 769832.10

Positional Uncertainty: 0.00
Convergence: 0.40
Local North: Grid

Depth Reference:
3715'GL+26.5'KB @ 3741.50usft (H&P 620)

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

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Wool605H)	0.00	-49.80	37.80	530926.00	769869.90	32° 27' 26.639 N	103° 35' 32.678 W
PBHL r1 (Wool605H)	11575.01	7668.80	-67.50	538644.60	769764.60	32° 28' 43.021 N	103° 35' 33.282 W

Drawn By: IG

Date Created: 7/30/2019

Date Revised: 8/5/2019

File: Advance Energy - Wool Head 20 State Com 605H Plan 1.0 Surface.wpc

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00	Build 1.00°/100'
3	5700.00	3.00	142.80	5699.86	-6.25	4.75	1.00	142.80	-6.32	Hold 3.0° Inc, 142.80° Azimuth
4	6594.54	3.00	142.80	6593.18	-43.55	33.05	0.00	0.00	-43.99	Drop 1.00°/100'
5	6894.54	0.00	0.00	6893.04	-49.80	37.80	1.00	180.00	-50.31	Hold Vertical
6	11260.33	0.00	0.00	11258.83	-49.80	37.80	0.00	0.00	-50.31	KOP, Build 10.00°/100'
7	12149.33	88.90	359.22	11831.68	512.11	30.13	10.00	359.22	511.65	LP, Hold 88.90° Inc, 359.22° Azimuth
8	13804.17	88.90	359.22	11863.45	2166.48	7.56	0.00	0.00	2166.18	Build 2.00°/100'
9	13958.37	91.98	359.22	11862.26	2320.65	5.46	2.00	0.00	2320.36	Hold 91.98° Inc, 359.22° Azimuth
10	15990.86	91.98	359.22	11791.90	4351.73	-22.25	0.00	0.00	4351.63	Build 2.00°/100'
11	16086.47	93.90	359.22	11786.99	4447.21	-23.55	2.00	0.00	4447.11	Hold 93.90° Inc, 359.22° Azimuth
12	18082.65	93.90	359.22	11651.35	6438.59	-50.72	0.00	0.00	6438.68	Drop 2.00°/100'
13	18140.00	93.55	359.22	11650.22	6455.96	-50.95	2.00	180.00	6456.05	Hold 93.55° Inc, 359.22° Azimuth
14	19315.35	93.55	359.22	11575.01	7668.80	-67.50	0.00	0.00	7669.01	PBHL

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

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		Wool Head 20 State Com 605H			
Site Position:		Northing:	530,975.80 usft	Latitude:	32° 27' 27.134 N
From:	Map	Easting:	769,832.10 usft	Longitude:	103° 35' 33.115 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#605H - Slot 605H					
Well Position	+N/-S	0.00 usft	Northing:	530,975.80 usft	Latitude:	32° 27' 27.134 N
	+E/-W	0.00 usft	Easting:	769,832.10 usft	Longitude:	103° 35' 33.115 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,715.00 usft

Wellbore	Lateral 1r1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	8/5/2019	6.64	60.25	48,100.31782793

Design	Plan 1.0				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.22	

Survey Tool Program	Date	8/5/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,315.35	Plan 1.0 (Lateral 1r1)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

Planned 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	
FTP (Wool605H)										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,793.00	0.00	0.00	1,793.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,850.00	0.00	0.00	1,850.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,196.00	0.00	0.00	5,196.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Limestone									
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,250.00	0.00	0.00	5,250.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 1.00°/100'									
5,500.00	1.00	142.80	5,500.00	-0.70	0.53	-0.70	1.00	1.00	0.00
5,600.00	2.00	142.80	5,599.96	-2.78	2.11	-2.81	1.00	1.00	0.00
5,700.00	3.00	142.80	5,699.86	-6.25	4.75	-6.32	1.00	1.00	0.00
Hold 3.0° Inc, 142.80° Azimuth									
5,800.00	3.00	142.80	5,799.73	-10.42	7.91	-10.53	0.00	0.00	0.00
5,900.00	3.00	142.80	5,899.59	-14.59	11.08	-14.74	0.00	0.00	0.00
6,000.00	3.00	142.80	5,999.45	-18.76	14.24	-18.95	0.00	0.00	0.00
6,100.00	3.00	142.80	6,099.31	-22.93	17.40	-23.16	0.00	0.00	0.00
6,200.00	3.00	142.80	6,199.18	-27.10	20.57	-27.38	0.00	0.00	0.00
6,300.00	3.00	142.80	6,299.04	-31.27	23.73	-31.59	0.00	0.00	0.00
6,400.00	3.00	142.80	6,398.90	-35.44	26.90	-35.80	0.00	0.00	0.00
6,500.00	3.00	142.80	6,498.77	-39.60	30.06	-40.01	0.00	0.00	0.00
6,594.54	3.00	142.80	6,593.18	-43.55	33.05	-43.99	0.00	0.00	0.00
Drop 1.00°/100'									
6,600.00	2.95	142.80	6,598.63	-43.77	33.22	-44.22	1.00	-1.00	0.00
6,700.00	1.95	142.80	6,698.54	-47.17	35.80	-47.65	1.00	-1.00	0.00
6,800.00	0.95	142.80	6,798.50	-49.18	37.33	-49.68	1.00	-1.00	0.00
6,894.54	0.00	0.00	6,893.04	-49.80	37.80	-50.31	1.00	-1.00	-151.05
Hold Vertical									
6,900.00	0.00	0.00	6,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,000.00	0.00	0.00	6,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,100.00	0.00	0.00	7,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,200.00	0.00	0.00	7,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,300.00	0.00	0.00	7,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,400.00	0.00	0.00	7,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,500.00	0.00	0.00	7,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,600.00	0.00	0.00	7,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,700.00	0.00	0.00	7,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,800.00	0.00	0.00	7,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,900.00	0.00	0.00	7,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,000.00	0.00	0.00	7,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,100.00	0.00	0.00	8,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,200.00	0.00	0.00	8,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,300.00	0.00	0.00	8,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
8,400.00	0.00	0.00	8,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,420.50	0.00	0.00	8,419.00	-49.80	37.80	-50.31	0.00	0.00	0.00
Lower Brushy									
8,500.00	0.00	0.00	8,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,600.00	0.00	0.00	8,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,700.00	0.00	0.00	8,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,800.00	0.00	0.00	8,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,890.50	0.00	0.00	8,889.00	-49.80	37.80	-50.31	0.00	0.00	0.00
Avalon									
8,900.00	0.00	0.00	8,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,000.00	0.00	0.00	8,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,100.00	0.00	0.00	9,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,200.00	0.00	0.00	9,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,300.00	0.00	0.00	9,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,400.00	0.00	0.00	9,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,500.00	0.00	0.00	9,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,600.00	0.00	0.00	9,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,700.00	0.00	0.00	9,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,800.00	0.00	0.00	9,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,900.00	0.00	0.00	9,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,913.50	0.00	0.00	9,912.00	-49.80	37.80	-50.31	0.00	0.00	0.00
1st BS Sand									
10,000.00	0.00	0.00	9,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,100.00	0.00	0.00	10,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,200.00	0.00	0.00	10,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,300.00	0.00	0.00	10,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,400.00	0.00	0.00	10,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,500.00	0.00	0.00	10,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,519.50	0.00	0.00	10,518.00	-49.80	37.80	-50.31	0.00	0.00	0.00
2nd BS Sand									
10,600.00	0.00	0.00	10,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,700.00	0.00	0.00	10,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,800.00	0.00	0.00	10,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,900.00	0.00	0.00	10,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,000.00	0.00	0.00	10,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,040.50	0.00	0.00	11,039.00	-49.80	37.80	-50.31	0.00	0.00	0.00
3rd BS Carbonate									
11,100.00	0.00	0.00	11,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,200.00	0.00	0.00	11,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,260.33	0.00	0.00	11,258.83	-49.80	37.80	-50.31	0.00	0.00	0.00
KOP, Build 10.00°/100'									
11,300.00	3.97	359.22	11,298.47	-48.43	37.78	-48.94	10.00	10.00	0.00
11,350.00	8.97	359.22	11,348.13	-42.80	37.70	-43.31	10.00	10.00	0.00
11,400.00	13.97	359.22	11,397.12	-32.86	37.57	-33.37	10.00	10.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
11,450.00	18.97	359.22	11,445.05	-18.69	37.38	-19.20	10.00	10.00	0.00
11,500.00	23.97	359.22	11,491.57	-0.40	37.13	-0.91	10.00	10.00	0.00
11,536.02	27.57	359.22	11,524.00	15.25	36.91	14.74	10.00	10.00	0.00
3rd BS Sand									
11,550.00	28.97	359.22	11,536.32	21.87	36.82	21.37	10.00	10.00	0.00
11,600.00	33.97	359.22	11,578.95	47.96	36.47	47.46	10.00	10.00	0.00
11,650.00	38.97	359.22	11,619.15	77.67	36.06	77.17	10.00	10.00	0.00
11,700.00	43.97	359.22	11,656.60	110.76	35.61	110.27	10.00	10.00	0.00
11,750.00	48.97	359.22	11,691.03	147.00	35.12	146.50	10.00	10.00	0.00
11,800.00	53.97	359.22	11,722.17	186.09	34.58	185.60	10.00	10.00	0.00
11,850.00	58.97	359.22	11,749.78	227.75	34.01	227.27	10.00	10.00	0.00
11,900.00	63.97	359.22	11,773.66	271.66	33.41	271.18	10.00	10.00	0.00
11,950.00	68.97	359.22	11,793.61	317.49	32.79	317.01	10.00	10.00	0.00
12,000.00	73.97	359.22	11,809.50	364.87	32.14	364.40	10.00	10.00	0.00
12,050.00	78.97	359.22	11,821.20	413.47	31.48	413.00	10.00	10.00	0.00
12,100.00	83.97	359.22	11,828.61	462.89	30.81	462.43	10.00	10.00	0.00
12,138.94	87.86	359.22	11,831.39	501.72	30.28	501.26	10.00	10.00	0.00
T1 (Wool605H)									
12,149.33	88.90	359.22	11,831.68	512.11	30.13	511.65	10.00	10.00	0.00
LP, Hold 88.90° Inc, 359.22° Azimuth									
12,200.00	88.90	359.22	11,832.66	562.76	29.44	562.31	0.00	0.00	0.00
12,300.00	88.90	359.22	11,834.57	662.73	28.08	662.29	0.00	0.00	0.00
12,400.00	88.90	359.22	11,836.49	762.71	26.72	762.27	0.00	0.00	0.00
12,500.00	88.90	359.22	11,838.41	862.68	25.35	862.25	0.00	0.00	0.00
12,600.00	88.90	359.22	11,840.33	962.65	23.99	962.24	0.00	0.00	0.00
12,700.00	88.90	359.22	11,842.25	1,062.62	22.62	1,062.22	0.00	0.00	0.00
12,800.00	88.90	359.22	11,844.17	1,162.60	21.26	1,162.20	0.00	0.00	0.00
12,900.00	88.90	359.22	11,846.09	1,262.57	19.90	1,262.18	0.00	0.00	0.00
13,000.00	88.90	359.22	11,848.01	1,362.54	18.53	1,362.16	0.00	0.00	0.00
13,100.00	88.90	359.22	11,849.93	1,462.51	17.17	1,462.14	0.00	0.00	0.00
13,200.00	88.90	359.22	11,851.85	1,562.48	15.80	1,562.12	0.00	0.00	0.00
13,300.00	88.90	359.22	11,853.77	1,662.46	14.44	1,662.11	0.00	0.00	0.00
13,400.00	88.90	359.22	11,855.69	1,762.43	13.08	1,762.09	0.00	0.00	0.00
13,500.00	88.90	359.22	11,857.61	1,862.40	11.71	1,862.07	0.00	0.00	0.00
13,600.00	88.90	359.22	11,859.53	1,962.37	10.35	1,962.05	0.00	0.00	0.00
13,700.00	88.90	359.22	11,861.45	2,062.35	8.99	2,062.03	0.00	0.00	0.00
13,804.17	88.90	359.22	11,863.45	2,166.48	7.56	2,166.18	0.00	0.00	0.00
Build 2.00°/100' - T2 (Wool605H)									
13,900.00	90.82	359.22	11,863.69	2,262.30	6.26	2,262.01	2.00	2.00	0.00
13,958.37	91.98	359.22	11,862.26	2,320.65	5.46	2,320.36	2.00	2.00	0.00
Hold 91.98° Inc, 359.22° Azimuth									
14,000.00	91.98	359.22	11,860.82	2,362.25	4.89	2,361.97	0.00	0.00	0.00
14,100.00	91.98	359.22	11,857.36	2,462.18	3.53	2,461.91	0.00	0.00	0.00
14,200.00	91.98	359.22	11,853.90	2,562.11	2.17	2,561.85	0.00	0.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
14,300.00	91.98	359.22	11,850.43	2,662.04	0.80	2,661.79	0.00	0.00	0.00
14,400.00	91.98	359.22	11,846.97	2,761.97	-0.56	2,761.73	0.00	0.00	0.00
14,500.00	91.98	359.22	11,843.51	2,861.90	-1.92	2,861.67	0.00	0.00	0.00
14,600.00	91.98	359.22	11,840.05	2,961.84	-3.29	2,961.61	0.00	0.00	0.00
14,700.00	91.98	359.22	11,836.59	3,061.77	-4.65	3,061.55	0.00	0.00	0.00
14,800.00	91.98	359.22	11,833.12	3,161.70	-6.01	3,161.49	0.00	0.00	0.00
14,900.00	91.98	359.22	11,829.66	3,261.63	-7.38	3,261.43	0.00	0.00	0.00
15,000.00	91.98	359.22	11,826.20	3,361.56	-8.74	3,361.37	0.00	0.00	0.00
15,100.00	91.98	359.22	11,822.74	3,461.49	-10.10	3,461.31	0.00	0.00	0.00
15,200.00	91.98	359.22	11,819.28	3,561.42	-11.47	3,561.25	0.00	0.00	0.00
15,300.00	91.98	359.22	11,815.81	3,661.35	-12.83	3,661.19	0.00	0.00	0.00
15,400.00	91.98	359.22	11,812.35	3,761.28	-14.19	3,761.13	0.00	0.00	0.00
15,500.00	91.98	359.22	11,808.89	3,861.21	-15.56	3,861.07	0.00	0.00	0.00
15,600.00	91.98	359.22	11,805.43	3,961.14	-16.92	3,961.01	0.00	0.00	0.00
15,700.00	91.98	359.22	11,801.97	4,061.07	-18.28	4,060.95	0.00	0.00	0.00
15,800.00	91.98	359.22	11,798.50	4,161.00	-19.65	4,160.89	0.00	0.00	0.00
15,900.00	91.98	359.22	11,795.04	4,260.94	-21.01	4,260.83	0.00	0.00	0.00
15,990.86	91.98	359.22	11,791.90	4,351.73	-22.25	4,351.63	0.00	0.00	0.00
Build 2.00°/100' - T3 (Wool605H)									
16,000.00	92.17	359.22	11,791.56	4,360.87	-22.37	4,360.77	2.00	2.00	0.00
16,086.47	93.90	359.22	11,786.99	4,447.21	-23.55	4,447.11	2.00	2.00	0.00
Hold 93.90° Inc, 359.22° Azimuth									
16,100.00	93.90	359.22	11,786.07	4,460.70	-23.73	4,460.61	0.00	0.00	0.00
16,200.00	93.90	359.22	11,779.28	4,560.46	-25.09	4,560.38	0.00	0.00	0.00
16,300.00	93.90	359.22	11,772.48	4,660.22	-26.46	4,660.15	0.00	0.00	0.00
16,400.00	93.90	359.22	11,765.69	4,759.98	-27.82	4,759.92	0.00	0.00	0.00
16,500.00	93.90	359.22	11,758.89	4,859.74	-29.18	4,859.69	0.00	0.00	0.00
16,600.00	93.90	359.22	11,752.10	4,959.50	-30.54	4,959.45	0.00	0.00	0.00
16,700.00	93.90	359.22	11,745.30	5,059.26	-31.90	5,059.22	0.00	0.00	0.00
16,800.00	93.90	359.22	11,738.51	5,159.02	-33.26	5,158.99	0.00	0.00	0.00
16,900.00	93.90	359.22	11,731.71	5,258.78	-34.62	5,258.76	0.00	0.00	0.00
17,000.00	93.90	359.22	11,724.92	5,358.54	-35.98	5,358.53	0.00	0.00	0.00
17,100.00	93.90	359.22	11,718.12	5,458.30	-37.34	5,458.30	0.00	0.00	0.00
17,200.00	93.90	359.22	11,711.33	5,558.06	-38.70	5,558.07	0.00	0.00	0.00
17,300.00	93.90	359.22	11,704.53	5,657.82	-40.07	5,657.84	0.00	0.00	0.00
17,400.00	93.90	359.22	11,697.74	5,757.58	-41.43	5,757.61	0.00	0.00	0.00
17,500.00	93.90	359.22	11,690.94	5,857.33	-42.79	5,857.37	0.00	0.00	0.00
17,600.00	93.90	359.22	11,684.15	5,957.09	-44.15	5,957.14	0.00	0.00	0.00
17,700.00	93.90	359.22	11,677.35	6,056.85	-45.51	6,056.91	0.00	0.00	0.00
17,800.00	93.90	359.22	11,670.56	6,156.61	-46.87	6,156.68	0.00	0.00	0.00
17,900.00	93.90	359.22	11,663.76	6,256.37	-48.23	6,256.45	0.00	0.00	0.00
18,000.00	93.90	359.22	11,656.97	6,356.13	-49.59	6,356.22	0.00	0.00	0.00
18,082.65	93.90	359.22	11,651.35	6,438.59	-50.72	6,438.68	0.00	0.00	0.00
Drop 2.00°/100' - T4 (Wool605H)									

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)	
18,100.06	93.55	359.22	11,650.22	6,455.96	-50.95	6,456.05	2.00	-2.00	0.00	
Hold 93.55° Inc, 359.22° Azimuth										
18,200.00	93.55	359.22	11,644.03	6,555.69	-52.31	6,555.80	0.00	0.00	0.00	
18,300.00	93.55	359.22	11,637.85	6,655.49	-53.68	6,655.61	0.00	0.00	0.00	
18,400.00	93.55	359.22	11,631.66	6,755.29	-55.04	6,755.42	0.00	0.00	0.00	
18,500.00	93.55	359.22	11,625.47	6,855.09	-56.40	6,855.22	0.00	0.00	0.00	
18,600.00	93.55	359.22	11,619.28	6,954.89	-57.76	6,955.03	0.00	0.00	0.00	
18,700.00	93.55	359.22	11,613.09	7,054.69	-59.12	7,054.84	0.00	0.00	0.00	
18,800.00	93.55	359.22	11,606.90	7,154.49	-60.48	7,154.65	0.00	0.00	0.00	
18,900.00	93.55	359.22	11,600.71	7,254.29	-61.85	7,254.46	0.00	0.00	0.00	
19,000.00	93.55	359.22	11,594.53	7,354.09	-63.21	7,354.27	0.00	0.00	0.00	
19,100.00	93.55	359.22	11,588.34	7,453.89	-64.57	7,454.07	0.00	0.00	0.00	
19,200.00	93.55	359.22	11,582.15	7,553.69	-65.93	7,553.88	0.00	0.00	0.00	
19,300.00	93.55	359.22	11,575.96	7,653.48	-67.29	7,653.69	0.00	0.00	0.00	
19,315.35	93.55	359.22	11,575.01	7,668.80	-67.50	7,669.01	0.00	0.00	0.00	
PBHL - PBHL r1 (Wool605H) - T5 (Wool605H)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
FTP (Wool605H)	0.00	0.00	0.00	-49.80	37.80	530,926.00	769,869.90	32° 27' 26.639 N		103° 35' 32.678 W
- hit/miss target										
- Shape										
- plan misses target center by 62.52usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Point										
PBHL r1 (Wool605H)	0.00	0.00	11,575.01	7,668.80	-67.50	538,644.60	769,764.60	32° 28' 43.021 N		103° 35' 33.282 W
- plan hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,850.00	1,850.00	13 3/8"		13-3/8	17-1/2
5,250.00	5,250.00	9 5/8"		9-5/8	12-1/4

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,793.00	1,793.00	Rustler		0.00	
5,196.00	5,196.00	Base of Limestone		0.00	
8,420.50	8,419.00	Lower Brushy		0.00	
8,890.50	8,889.00	Avalon		0.00	
9,913.50	9,912.00	1st BS Sand		0.00	
10,519.50	10,518.00	2nd BS Sand		0.00	
11,040.50	11,039.00	3rd BS Carbonate		0.00	
11,536.02	11,524.00	3rd BS Sand		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5400	5400	0	0	Build 1.00°/100'	
5700	5700	-6	5	Hold 3.0° Inc, 142.80° Azimuth	
6595	6593	-44	33	Drop 1.00°/100'	
6895	6893	-50	38	Hold Vertical	
11,260	11,259	-50	38	KOP, Build 10.00°/100'	
12,149	11,832	512	30	LP, Hold 88.90° Inc, 359.22° Azimuth	
13,804	11,863	2166	8	Build 2.00°/100'	
13,958	11,862	2321	5	Hold 91.98° Inc, 359.22° Azimuth	
15,991	11,792	4352	-22	Build 2.00°/100'	
16,086	11,787	4447	-24	Hold 93.90° Inc, 359.22° Azimuth	
18,083	11,651	6439	-51	Drop 2.00°/100'	
18,100	11,650	6456	-51	Hold 93.55° Inc, 359.22° Azimuth	
19,315	11,575	7669	-67	PBHL	

Advance Energy Partners, LLC

Wool Head 20 State Com 605H

Lea County, New Mexico

Job No. WT-19-115

H&P 620

Plan 1.0 Final PVA



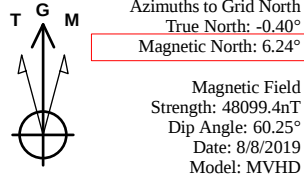
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Received by OCD: 2/16/2022 8:16:15 AM

South(-)/North(+) (2000 usft/in)

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TE DETAILS: Wool Head 20 State Com 605H	
Site Centre Northing:	530975.80
Easting:	769832.10
Positional Uncertainty:	0.00
Convergence:	0.40
Local North:	Grid

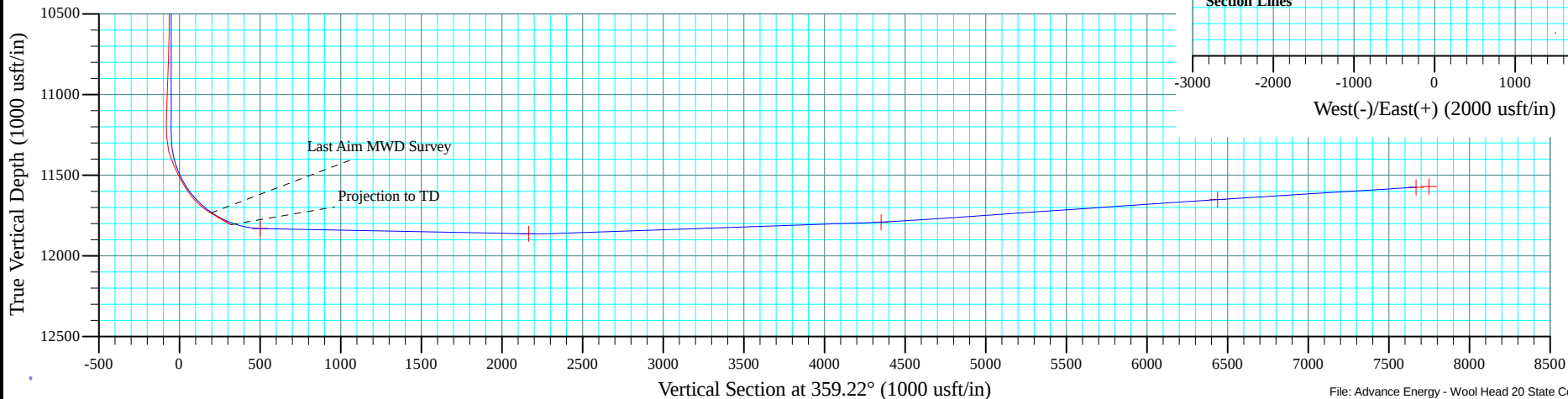
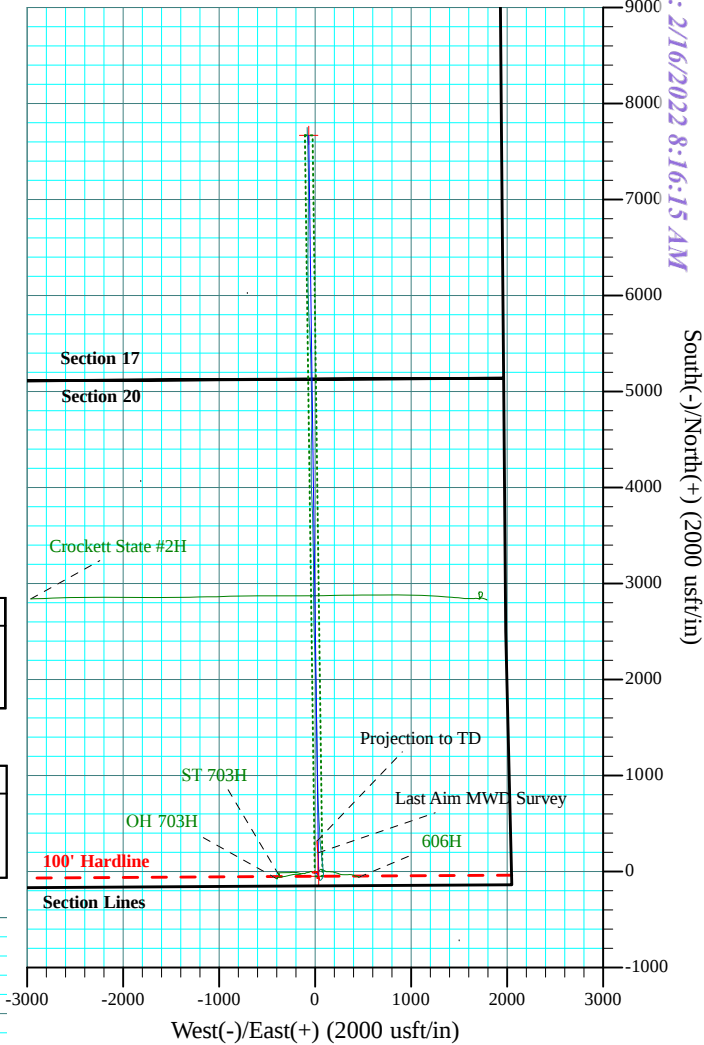
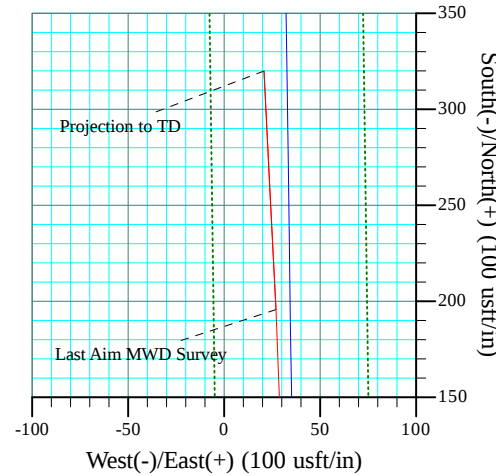


Magnetic North: 6.24° to Grid North

OBJECT 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:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation	
1	11831.00	59.69	357.10	11735.00	195.79	27.00	0.00	0.00	195.41	Last Aim MWD Survey	
2	11975.00	59.69	357.10	11807.67	319.95	20.71	0.00	0.00	319.64	Projection to TD	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Wool605H)	0.00	-49.80	37.80	530926.00	769869.90	32° 27' 26.639 N	103° 35' 32.678 W
PBHL r1 (Wool605H)	11575.01	7668.80	-67.50	538644.60	769764.60	32° 28' 43.021 N	103° 35' 33.282 W





Proposed vs. As Drilled Lateral #1

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)

Advance Energy Partners, LLC

Wool Head 20 State Com 605H

Lea County, New Mexico

Job No. WT-19-115

H&P 620

Plan 1.0



Received by OGD: 2/16/2022 8:16:15 AM
Referenced to Imaging: 6/12/2024 10:03:56 AM

South(-)/North(+) (2000 usft/in)

Page 24 of 198



SITE DETAILS: Wool Head 20 State Com 605H

Site Centre Northing: 530975.80
Easting: 769832.10

Positional Uncertainty: 0.00
Convergence: 0.40
Local North: Grid

OBJECT 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

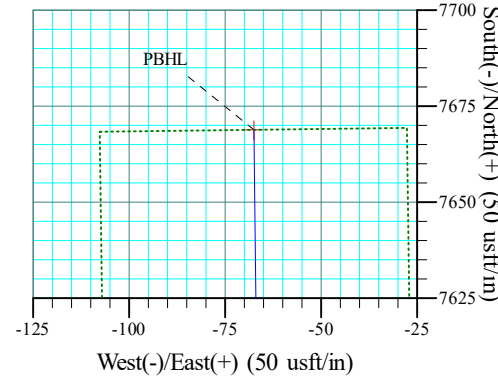
Depth Reference:
3715'GL+26.5'KB @ 3741.50usft (H&P 620)



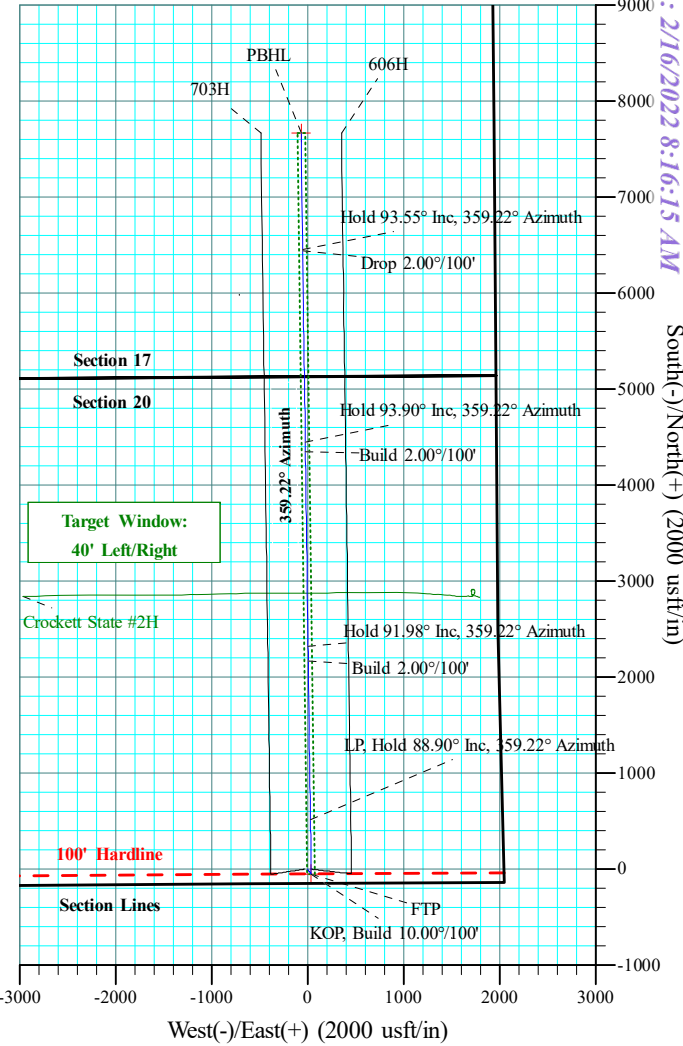
Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.24°

Magnetic Field
Strength: 48100.3nT
Dip Angle: 60.25°
Date: 8/5/2019
Model: MVHD

Magnetic North: 6.24° to Grid North

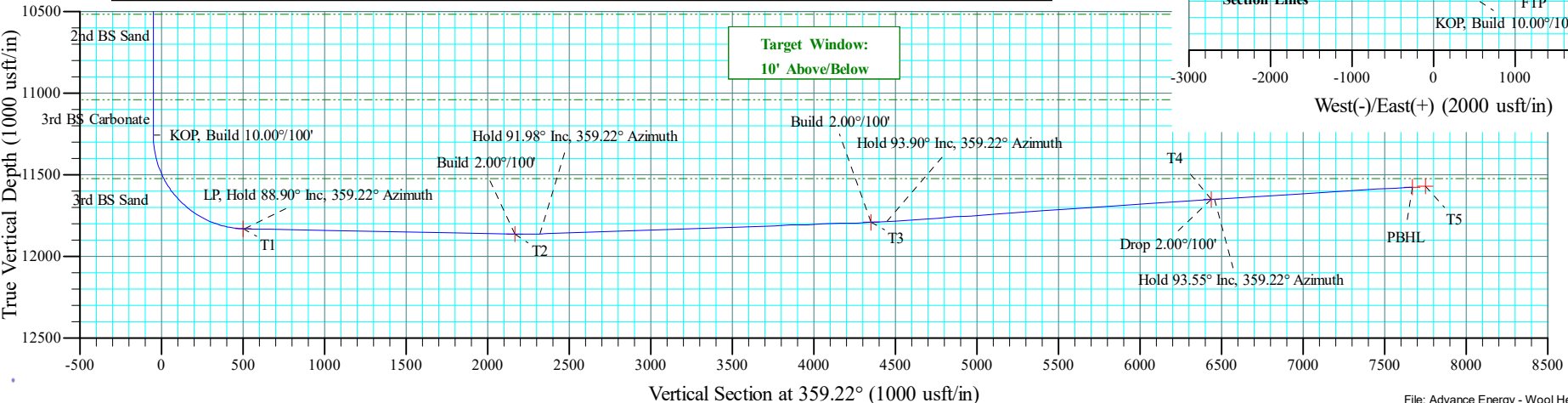


*Note - Aim is not responsible for any collision issues against unknown offset wells.



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00	Build 1.00°/100'
3	5700.00	3.00	142.80	5699.86	-6.25	4.75	1.00	142.80	-6.32	Hold 3.0° Inc, 142.80° Azimuth
4	6594.54	3.00	142.80	6593.18	-43.55	33.05	0.00	0.00	-43.99	Drop 1.00°/100'
5	6894.54	0.00	0.00	6893.04	-49.80	37.80	1.00	180.00	-50.31	Hold Vertical
6	11260.33	0.00	0.00	11258.83	-49.80	37.80	0.00	0.00	-50.31	KOP, Build 10.00°/100'
7	12149.33	88.90	359.22	11831.68	512.11	30.13	10.00	359.22	511.65	LP, Hold 88.90° Inc, 359.22° Azimuth
8	13804.17	88.90	359.22	11863.45	2166.48	7.56	0.00	0.00	2166.18	Build 2.00°/100'
9	13958.37	91.98	359.22	11862.26	2320.65	5.46	2.00	0.00	2320.36	Hold 91.98° Inc, 359.22° Azimuth
10	15990.86	91.98	359.22	11791.90	4351.73	-22.25	0.00	0.00	4351.63	Build 2.00°/100'
11	16086.47	93.90	359.22	11786.99	4447.21	-23.55	2.00	0.00	4447.11	Hold 93.90° Inc, 359.22° Azimuth
12	18082.65	93.90	359.22	11651.35	6438.59	-50.72	0.00	0.00	6438.68	Drop 2.00°/100'
13	18100.06	93.55	359.22	11650.22	6455.96	-50.95	2.00	180.00	6456.05	Hold 93.55° Inc, 359.22° Azimuth
14	19315.35	93.55	359.22	11575.01	7668.80	-67.50	0.00	0.00	7669.01	PBHL

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
FTP (Wool605H)	0.00	-49.80	37.80	530926.00	769869.90	32° 27' 26.639 N
PBHL r1 (Wool605H)	11575.01	7668.80	-67.50	538644.60	769764.60	32° 28' 43.021 N





Wool Head 20 State Com 605H
Lea County, New Mexico
Job No. WT-19-115
H&P 620
Plan 1.0



Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.24°

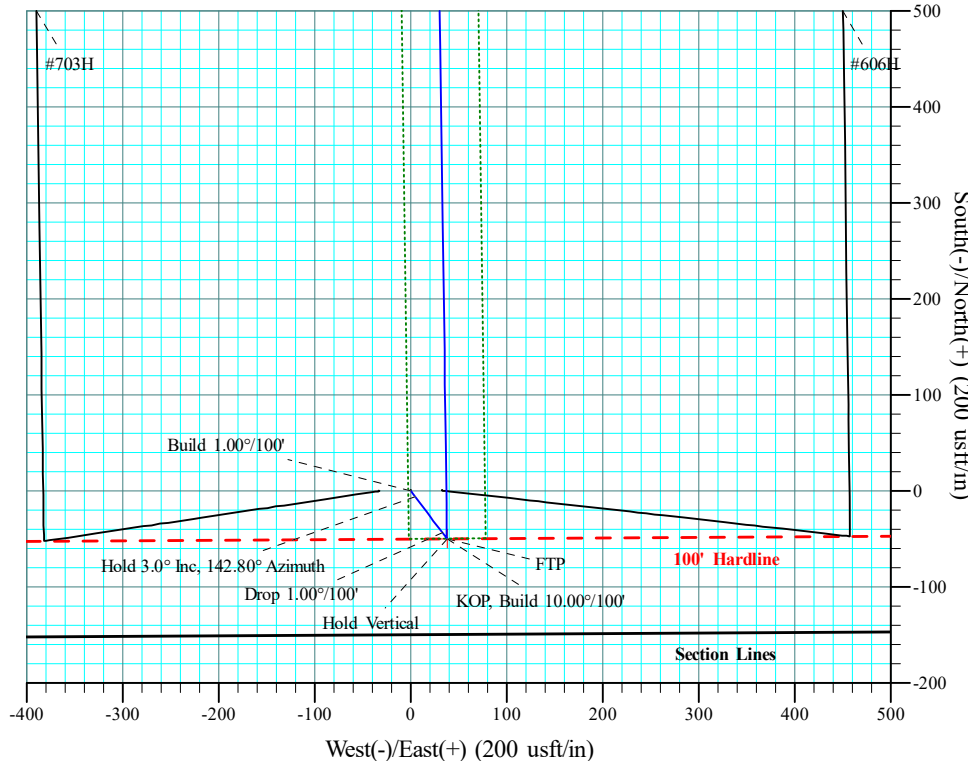
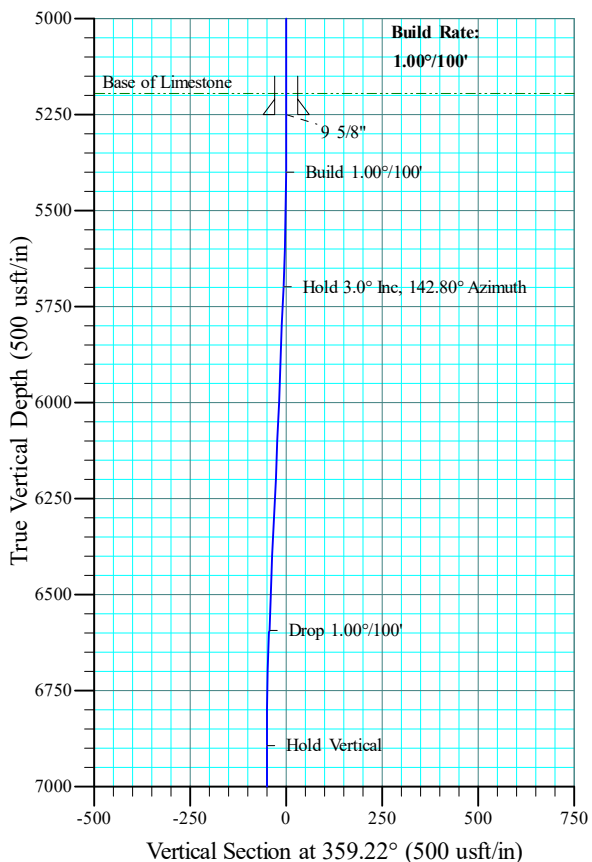
Magnetic Field
Strength: 48100.3nT
Dip Angle: 60.25°
Date: 8/5/2019
Model: MVHD

Magnetic North: 6.24° 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



SLOTS		
Slot Name	+N/-S	+E/-W
605H	0.00	0.00
606H	0.40	33.00
703H	-0.30	-32.90

CASING DETAILS		
TVD	MD	Name
1850.00	1850.00	13 3/8"
5250.00	5250.00	9 5/8"

SITE DETAILS: Wool Head 20 State Com 605H	
Site Centre Northing:	530975.80
Easting:	769832.10
Positional Uncertainty:	0.00
Convergence:	0.40
Local North:	Grid
Depth Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)

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

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Wool605H)	0.00	-49.80	37.80	530926.00	769869.90	32° 27' 26.639 N	103° 35' 32.678 W
PBHL r1 (Wool605H)	11575.01	7668.80	-67.50	538644.60	769764.60	32° 28' 43.021 N	103° 35' 33.282 W

Drawn By: IG

Date Created: 7/30/2019

Date Revised: 8/5/2019

File: Advance Energy - Wool Head 20 State Com 605H Plan 1.0 Surface.wpc

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00	Build 1.00°/100'
3	5700.00	3.00	142.80	5699.86	-6.25	4.75	1.00	142.80	-6.32	Hold 3.0° Inc, 142.80° Azimuth
4	6594.54	3.00	142.80	6593.18	-43.55	33.05	0.00	0.00	-43.99	Drop 1.00°/100'
5	6894.54	0.00	0.00	6893.04	-49.80	37.80	1.00	180.00	-50.31	Hold Vertical
6	11260.33	0.00	0.00	11258.83	-49.80	37.80	0.00	0.00	-50.31	KOP, Build 10.00°/100'
7	12149.33	88.90	359.22	11831.68	512.11	30.13	10.00	359.22	511.65	LP, Hold 88.90° Inc, 359.22° Azimuth
8	13804.17	88.90	359.22	11863.45	2166.48	7.56	0.00	0.00	2166.18	Build 2.00°/100'
9	13958.37	91.98	359.22	11862.26	2320.65	5.46	2.00	0.00	2320.36	Hold 91.98° Inc, 359.22° Azimuth
10	15990.86	91.98	359.22	11791.90	4351.73	-22.25	0.00	0.00	4351.63	Build 2.00°/100'
11	16086.47	93.90	359.22	11786.99	4447.21	-23.55	2.00	0.00	4447.11	Hold 93.90° Inc, 359.22° Azimuth
12	18082.65	93.90	359.22	11651.35	6438.59	-50.72	0.00	0.00	6438.68	Drop 2.00°/100'
13	18140.00	93.90	359.22	11650.22	6455.96	-50.95	2.00	180.00	6456.05	Hold 93.55° Inc, 359.22° Azimuth
14	19315.35	93.55	359.22	11575.01	7668.80	-67.50	0.00	0.00	7669.01	PBHL

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

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		Wool Head 20 State Com 605H			
Site Position:		Northing:	530,975.80 usft	Latitude:	32° 27' 27.134 N
From:	Map	Easting:	769,832.10 usft	Longitude:	103° 35' 33.115 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#605H - Slot 605H					
Well Position	+N/-S	0.00 usft	Northing:	530,975.80 usft	Latitude:	32° 27' 27.134 N
	+E/-W	0.00 usft	Easting:	769,832.10 usft	Longitude:	103° 35' 33.115 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,715.00 usft

Wellbore	Lateral 1r1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	8/5/2019	6.64	60.25	48,100.31782793

Design	Plan 1.0				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.22	

Survey Tool Program	Date	8/5/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,315.35	Plan 1.0 (Lateral 1r1)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

Planned 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	
FTP (Wool605H)										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,793.00	0.00	0.00	1,793.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,850.00	0.00	0.00	1,850.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,196.00	0.00	0.00	5,196.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Limestone									
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,250.00	0.00	0.00	5,250.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 1.00°/100'									
5,500.00	1.00	142.80	5,500.00	-0.70	0.53	-0.70	1.00	1.00	0.00
5,600.00	2.00	142.80	5,599.96	-2.78	2.11	-2.81	1.00	1.00	0.00
5,700.00	3.00	142.80	5,699.86	-6.25	4.75	-6.32	1.00	1.00	0.00
Hold 3.0° Inc, 142.80° Azimuth									
5,800.00	3.00	142.80	5,799.73	-10.42	7.91	-10.53	0.00	0.00	0.00
5,900.00	3.00	142.80	5,899.59	-14.59	11.08	-14.74	0.00	0.00	0.00
6,000.00	3.00	142.80	5,999.45	-18.76	14.24	-18.95	0.00	0.00	0.00
6,100.00	3.00	142.80	6,099.31	-22.93	17.40	-23.16	0.00	0.00	0.00
6,200.00	3.00	142.80	6,199.18	-27.10	20.57	-27.38	0.00	0.00	0.00
6,300.00	3.00	142.80	6,299.04	-31.27	23.73	-31.59	0.00	0.00	0.00
6,400.00	3.00	142.80	6,398.90	-35.44	26.90	-35.80	0.00	0.00	0.00
6,500.00	3.00	142.80	6,498.77	-39.60	30.06	-40.01	0.00	0.00	0.00
6,594.54	3.00	142.80	6,593.18	-43.55	33.05	-43.99	0.00	0.00	0.00
Drop 1.00°/100'									
6,600.00	2.95	142.80	6,598.63	-43.77	33.22	-44.22	1.00	-1.00	0.00
6,700.00	1.95	142.80	6,698.54	-47.17	35.80	-47.65	1.00	-1.00	0.00
6,800.00	0.95	142.80	6,798.50	-49.18	37.33	-49.68	1.00	-1.00	0.00
6,894.54	0.00	0.00	6,893.04	-49.80	37.80	-50.31	1.00	-1.00	-151.05
Hold Vertical									
6,900.00	0.00	0.00	6,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,000.00	0.00	0.00	6,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,100.00	0.00	0.00	7,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,200.00	0.00	0.00	7,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,300.00	0.00	0.00	7,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,400.00	0.00	0.00	7,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,500.00	0.00	0.00	7,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,600.00	0.00	0.00	7,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,700.00	0.00	0.00	7,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,800.00	0.00	0.00	7,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
7,900.00	0.00	0.00	7,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,000.00	0.00	0.00	7,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,100.00	0.00	0.00	8,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,200.00	0.00	0.00	8,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,300.00	0.00	0.00	8,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
8,400.00	0.00	0.00	8,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,420.50	0.00	0.00	8,419.00	-49.80	37.80	-50.31	0.00	0.00	0.00
Lower Brushy									
8,500.00	0.00	0.00	8,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,600.00	0.00	0.00	8,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,700.00	0.00	0.00	8,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,800.00	0.00	0.00	8,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
8,890.50	0.00	0.00	8,889.00	-49.80	37.80	-50.31	0.00	0.00	0.00
Avalon									
8,900.00	0.00	0.00	8,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,000.00	0.00	0.00	8,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,100.00	0.00	0.00	9,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,200.00	0.00	0.00	9,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,300.00	0.00	0.00	9,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,400.00	0.00	0.00	9,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,500.00	0.00	0.00	9,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,600.00	0.00	0.00	9,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,700.00	0.00	0.00	9,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,800.00	0.00	0.00	9,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,900.00	0.00	0.00	9,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
9,913.50	0.00	0.00	9,912.00	-49.80	37.80	-50.31	0.00	0.00	0.00
1st BS Sand									
10,000.00	0.00	0.00	9,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,100.00	0.00	0.00	10,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,200.00	0.00	0.00	10,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,300.00	0.00	0.00	10,298.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,400.00	0.00	0.00	10,398.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,500.00	0.00	0.00	10,498.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,519.50	0.00	0.00	10,518.00	-49.80	37.80	-50.31	0.00	0.00	0.00
2nd BS Sand									
10,600.00	0.00	0.00	10,598.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,700.00	0.00	0.00	10,698.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,800.00	0.00	0.00	10,798.50	-49.80	37.80	-50.31	0.00	0.00	0.00
10,900.00	0.00	0.00	10,898.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,000.00	0.00	0.00	10,998.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,040.50	0.00	0.00	11,039.00	-49.80	37.80	-50.31	0.00	0.00	0.00
3rd BS Carbonate									
11,100.00	0.00	0.00	11,098.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,200.00	0.00	0.00	11,198.50	-49.80	37.80	-50.31	0.00	0.00	0.00
11,260.33	0.00	0.00	11,258.83	-49.80	37.80	-50.31	0.00	0.00	0.00
KOP, Build 10.00°/100'									
11,300.00	3.97	359.22	11,298.47	-48.43	37.78	-48.94	10.00	10.00	0.00
11,350.00	8.97	359.22	11,348.13	-42.80	37.70	-43.31	10.00	10.00	0.00
11,400.00	13.97	359.22	11,397.12	-32.86	37.57	-33.37	10.00	10.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
11,450.00	18.97	359.22	11,445.05	-18.69	37.38	-19.20	10.00	10.00	0.00
11,500.00	23.97	359.22	11,491.57	-0.40	37.13	-0.91	10.00	10.00	0.00
11,536.02	27.57	359.22	11,524.00	15.25	36.91	14.74	10.00	10.00	0.00
3rd BS Sand									
11,550.00	28.97	359.22	11,536.32	21.87	36.82	21.37	10.00	10.00	0.00
11,600.00	33.97	359.22	11,578.95	47.96	36.47	47.46	10.00	10.00	0.00
11,650.00	38.97	359.22	11,619.15	77.67	36.06	77.17	10.00	10.00	0.00
11,700.00	43.97	359.22	11,656.60	110.76	35.61	110.27	10.00	10.00	0.00
11,750.00	48.97	359.22	11,691.03	147.00	35.12	146.50	10.00	10.00	0.00
11,800.00	53.97	359.22	11,722.17	186.09	34.58	185.60	10.00	10.00	0.00
11,850.00	58.97	359.22	11,749.78	227.75	34.01	227.27	10.00	10.00	0.00
11,900.00	63.97	359.22	11,773.66	271.66	33.41	271.18	10.00	10.00	0.00
11,950.00	68.97	359.22	11,793.61	317.49	32.79	317.01	10.00	10.00	0.00
12,000.00	73.97	359.22	11,809.50	364.87	32.14	364.40	10.00	10.00	0.00
12,050.00	78.97	359.22	11,821.20	413.47	31.48	413.00	10.00	10.00	0.00
12,100.00	83.97	359.22	11,828.61	462.89	30.81	462.43	10.00	10.00	0.00
12,138.94	87.86	359.22	11,831.39	501.72	30.28	501.26	10.00	10.00	0.00
T1 (Wool605H)									
12,149.33	88.90	359.22	11,831.68	512.11	30.13	511.65	10.00	10.00	0.00
LP, Hold 88.90° Inc, 359.22° Azimuth									
12,200.00	88.90	359.22	11,832.66	562.76	29.44	562.31	0.00	0.00	0.00
12,300.00	88.90	359.22	11,834.57	662.73	28.08	662.29	0.00	0.00	0.00
12,400.00	88.90	359.22	11,836.49	762.71	26.72	762.27	0.00	0.00	0.00
12,500.00	88.90	359.22	11,838.41	862.68	25.35	862.25	0.00	0.00	0.00
12,600.00	88.90	359.22	11,840.33	962.65	23.99	962.24	0.00	0.00	0.00
12,700.00	88.90	359.22	11,842.25	1,062.62	22.62	1,062.22	0.00	0.00	0.00
12,800.00	88.90	359.22	11,844.17	1,162.60	21.26	1,162.20	0.00	0.00	0.00
12,900.00	88.90	359.22	11,846.09	1,262.57	19.90	1,262.18	0.00	0.00	0.00
13,000.00	88.90	359.22	11,848.01	1,362.54	18.53	1,362.16	0.00	0.00	0.00
13,100.00	88.90	359.22	11,849.93	1,462.51	17.17	1,462.14	0.00	0.00	0.00
13,200.00	88.90	359.22	11,851.85	1,562.48	15.80	1,562.12	0.00	0.00	0.00
13,300.00	88.90	359.22	11,853.77	1,662.46	14.44	1,662.11	0.00	0.00	0.00
13,400.00	88.90	359.22	11,855.69	1,762.43	13.08	1,762.09	0.00	0.00	0.00
13,500.00	88.90	359.22	11,857.61	1,862.40	11.71	1,862.07	0.00	0.00	0.00
13,600.00	88.90	359.22	11,859.53	1,962.37	10.35	1,962.05	0.00	0.00	0.00
13,700.00	88.90	359.22	11,861.45	2,062.35	8.99	2,062.03	0.00	0.00	0.00
13,804.17	88.90	359.22	11,863.45	2,166.48	7.56	2,166.18	0.00	0.00	0.00
Build 2.00°/100' - T2 (Wool605H)									
13,900.00	90.82	359.22	11,863.69	2,262.30	6.26	2,262.01	2.00	2.00	0.00
13,958.37	91.98	359.22	11,862.26	2,320.65	5.46	2,320.36	2.00	2.00	0.00
Hold 91.98° Inc, 359.22° Azimuth									
14,000.00	91.98	359.22	11,860.82	2,362.25	4.89	2,361.97	0.00	0.00	0.00
14,100.00	91.98	359.22	11,857.36	2,462.18	3.53	2,461.91	0.00	0.00	0.00
14,200.00	91.98	359.22	11,853.90	2,562.11	2.17	2,561.85	0.00	0.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
14,300.00	91.98	359.22	11,850.43	2,662.04	0.80	2,661.79	0.00	0.00	0.00
14,400.00	91.98	359.22	11,846.97	2,761.97	-0.56	2,761.73	0.00	0.00	0.00
14,500.00	91.98	359.22	11,843.51	2,861.90	-1.92	2,861.67	0.00	0.00	0.00
14,600.00	91.98	359.22	11,840.05	2,961.84	-3.29	2,961.61	0.00	0.00	0.00
14,700.00	91.98	359.22	11,836.59	3,061.77	-4.65	3,061.55	0.00	0.00	0.00
14,800.00	91.98	359.22	11,833.12	3,161.70	-6.01	3,161.49	0.00	0.00	0.00
14,900.00	91.98	359.22	11,829.66	3,261.63	-7.38	3,261.43	0.00	0.00	0.00
15,000.00	91.98	359.22	11,826.20	3,361.56	-8.74	3,361.37	0.00	0.00	0.00
15,100.00	91.98	359.22	11,822.74	3,461.49	-10.10	3,461.31	0.00	0.00	0.00
15,200.00	91.98	359.22	11,819.28	3,561.42	-11.47	3,561.25	0.00	0.00	0.00
15,300.00	91.98	359.22	11,815.81	3,661.35	-12.83	3,661.19	0.00	0.00	0.00
15,400.00	91.98	359.22	11,812.35	3,761.28	-14.19	3,761.13	0.00	0.00	0.00
15,500.00	91.98	359.22	11,808.89	3,861.21	-15.56	3,861.07	0.00	0.00	0.00
15,600.00	91.98	359.22	11,805.43	3,961.14	-16.92	3,961.01	0.00	0.00	0.00
15,700.00	91.98	359.22	11,801.97	4,061.07	-18.28	4,060.95	0.00	0.00	0.00
15,800.00	91.98	359.22	11,798.50	4,161.00	-19.65	4,160.89	0.00	0.00	0.00
15,900.00	91.98	359.22	11,795.04	4,260.94	-21.01	4,260.83	0.00	0.00	0.00
15,990.86	91.98	359.22	11,791.90	4,351.73	-22.25	4,351.63	0.00	0.00	0.00
Build 2.00°/100' - T3 (Wool605H)									
16,000.00	92.17	359.22	11,791.56	4,360.87	-22.37	4,360.77	2.00	2.00	0.00
16,086.47	93.90	359.22	11,786.99	4,447.21	-23.55	4,447.11	2.00	2.00	0.00
Hold 93.90° Inc, 359.22° Azimuth									
16,100.00	93.90	359.22	11,786.07	4,460.70	-23.73	4,460.61	0.00	0.00	0.00
16,200.00	93.90	359.22	11,779.28	4,560.46	-25.09	4,560.38	0.00	0.00	0.00
16,300.00	93.90	359.22	11,772.48	4,660.22	-26.46	4,660.15	0.00	0.00	0.00
16,400.00	93.90	359.22	11,765.69	4,759.98	-27.82	4,759.92	0.00	0.00	0.00
16,500.00	93.90	359.22	11,758.89	4,859.74	-29.18	4,859.69	0.00	0.00	0.00
16,600.00	93.90	359.22	11,752.10	4,959.50	-30.54	4,959.45	0.00	0.00	0.00
16,700.00	93.90	359.22	11,745.30	5,059.26	-31.90	5,059.22	0.00	0.00	0.00
16,800.00	93.90	359.22	11,738.51	5,159.02	-33.26	5,158.99	0.00	0.00	0.00
16,900.00	93.90	359.22	11,731.71	5,258.78	-34.62	5,258.76	0.00	0.00	0.00
17,000.00	93.90	359.22	11,724.92	5,358.54	-35.98	5,358.53	0.00	0.00	0.00
17,100.00	93.90	359.22	11,718.12	5,458.30	-37.34	5,458.30	0.00	0.00	0.00
17,200.00	93.90	359.22	11,711.33	5,558.06	-38.70	5,558.07	0.00	0.00	0.00
17,300.00	93.90	359.22	11,704.53	5,657.82	-40.07	5,657.84	0.00	0.00	0.00
17,400.00	93.90	359.22	11,697.74	5,757.58	-41.43	5,757.61	0.00	0.00	0.00
17,500.00	93.90	359.22	11,690.94	5,857.33	-42.79	5,857.37	0.00	0.00	0.00
17,600.00	93.90	359.22	11,684.15	5,957.09	-44.15	5,957.14	0.00	0.00	0.00
17,700.00	93.90	359.22	11,677.35	6,056.85	-45.51	6,056.91	0.00	0.00	0.00
17,800.00	93.90	359.22	11,670.56	6,156.61	-46.87	6,156.68	0.00	0.00	0.00
17,900.00	93.90	359.22	11,663.76	6,256.37	-48.23	6,256.45	0.00	0.00	0.00
18,000.00	93.90	359.22	11,656.97	6,356.13	-49.59	6,356.22	0.00	0.00	0.00
18,082.65	93.90	359.22	11,651.35	6,438.59	-50.72	6,438.68	0.00	0.00	0.00
Drop 2.00°/100' - T4 (Wool605H)									

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned 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)
18,100.06	93.55	359.22	11,650.22	6,455.96	-50.95	6,456.05	2.00	-2.00	0.00
Hold 93.55° Inc, 359.22° Azimuth									
18,200.00	93.55	359.22	11,644.03	6,555.69	-52.31	6,555.80	0.00	0.00	0.00
18,300.00	93.55	359.22	11,637.85	6,655.49	-53.68	6,655.61	0.00	0.00	0.00
18,400.00	93.55	359.22	11,631.66	6,755.29	-55.04	6,755.42	0.00	0.00	0.00
18,500.00	93.55	359.22	11,625.47	6,855.09	-56.40	6,855.22	0.00	0.00	0.00
18,600.00	93.55	359.22	11,619.28	6,954.89	-57.76	6,955.03	0.00	0.00	0.00
18,700.00	93.55	359.22	11,613.09	7,054.69	-59.12	7,054.84	0.00	0.00	0.00
18,800.00	93.55	359.22	11,606.90	7,154.49	-60.48	7,154.65	0.00	0.00	0.00
18,900.00	93.55	359.22	11,600.71	7,254.29	-61.85	7,254.46	0.00	0.00	0.00
19,000.00	93.55	359.22	11,594.53	7,354.09	-63.21	7,354.27	0.00	0.00	0.00
19,100.00	93.55	359.22	11,588.34	7,453.89	-64.57	7,454.07	0.00	0.00	0.00
19,200.00	93.55	359.22	11,582.15	7,553.69	-65.93	7,553.88	0.00	0.00	0.00
19,300.00	93.55	359.22	11,575.96	7,653.48	-67.29	7,653.69	0.00	0.00	0.00
19,315.35	93.55	359.22	11,575.01	7,668.80	-67.50	7,669.01	0.00	0.00	0.00
PBHL - PBHL r1 (Wool605H) - T5 (Wool605H)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Wool605H) - plan misses target center by 62.52usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-49.80	37.80	530,926.00	769,869.90	32° 27' 26.639 N	103° 35' 32.678 W
PBHL r1 (Wool605H) - plan hits target center - Point	0.00	0.00	11,575.01	7,668.80	-67.50	538,644.60	769,764.60	32° 28' 43.021 N	103° 35' 33.282 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,850.00	1,850.00	13 3/8"	13-3/8	17-1/2
5,250.00	5,250.00	9 5/8"	9-5/8	12-1/4

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,793.00	1,793.00	Rustler		0.00	
5,196.00	5,196.00	Base of Limestone		0.00	
8,420.50	8,419.00	Lower Brushy		0.00	
8,890.50	8,889.00	Avalon		0.00	
9,913.50	9,912.00	1st BS Sand		0.00	
10,519.50	10,518.00	2nd BS Sand		0.00	
11,040.50	11,039.00	3rd BS Carbonate		0.00	
11,536.02	11,524.00	3rd BS Sand		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5400	5400	0	0	Build 1.00°/100'	
5700	5700	-6	5	Hold 3.0° Inc, 142.80° Azimuth	
6595	6593	-44	33	Drop 1.00°/100'	
6895	6893	-50	38	Hold Vertical	
11,260	11,259	-50	38	KOP, Build 10.00°/100'	
12,149	11,832	512	30	LP, Hold 88.90° Inc, 359.22° Azimuth	
13,804	11,863	2166	8	Build 2.00°/100'	
13,958	11,862	2321	5	Hold 91.98° Inc, 359.22° Azimuth	
15,991	11,792	4352	-22	Build 2.00°/100'	
16,086	11,787	4447	-24	Hold 93.90° Inc, 359.22° Azimuth	
18,083	11,651	6439	-51	Drop 2.00°/100'	
18,100	11,650	6456	-51	Hold 93.55° Inc, 359.22° Azimuth	
19,315	11,575	7669	-67	PBHL	

Advance Energy Partners, LLC

Wool Head 20 State Com 605H

Lea County, New Mexico

Job No. WT-19-115

H&P 620

Plan 1.0 Final PVA



SITE DETAILS: Wool Head 20 State Com 605H

Site Centre Northing: 530975.80
Easting: 769832.10

Positional Uncertainty: 0.00
Convergence: 0.40
Local North: Grid



Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.24°

Magnetic Field
Strength: 48099.4nT
Dip Angle: 60.25°
Date: 8/8/2019
Model: MVHD

Magnetic North: 6.24° 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

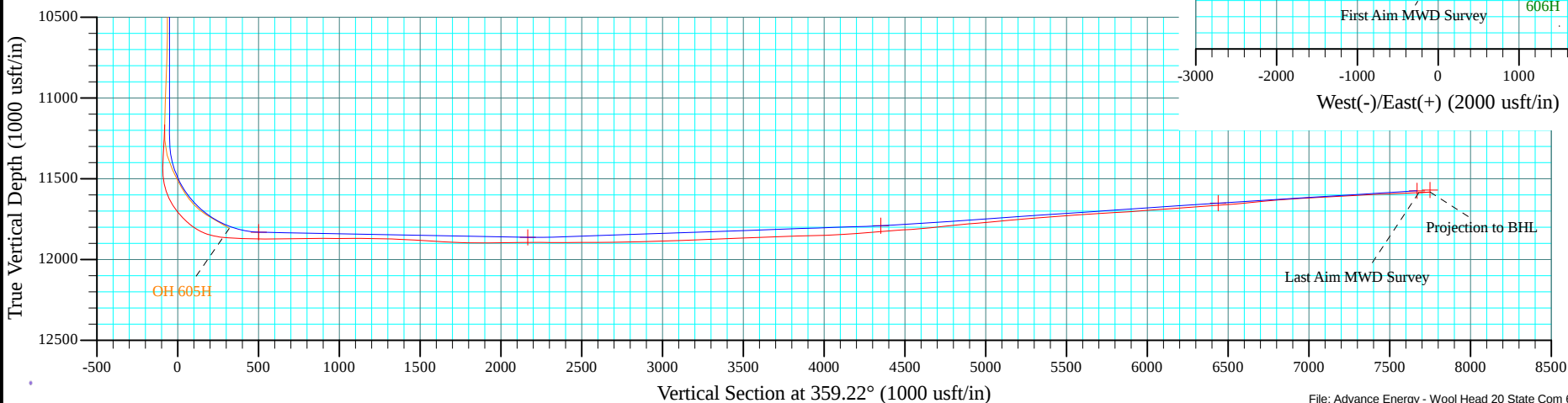
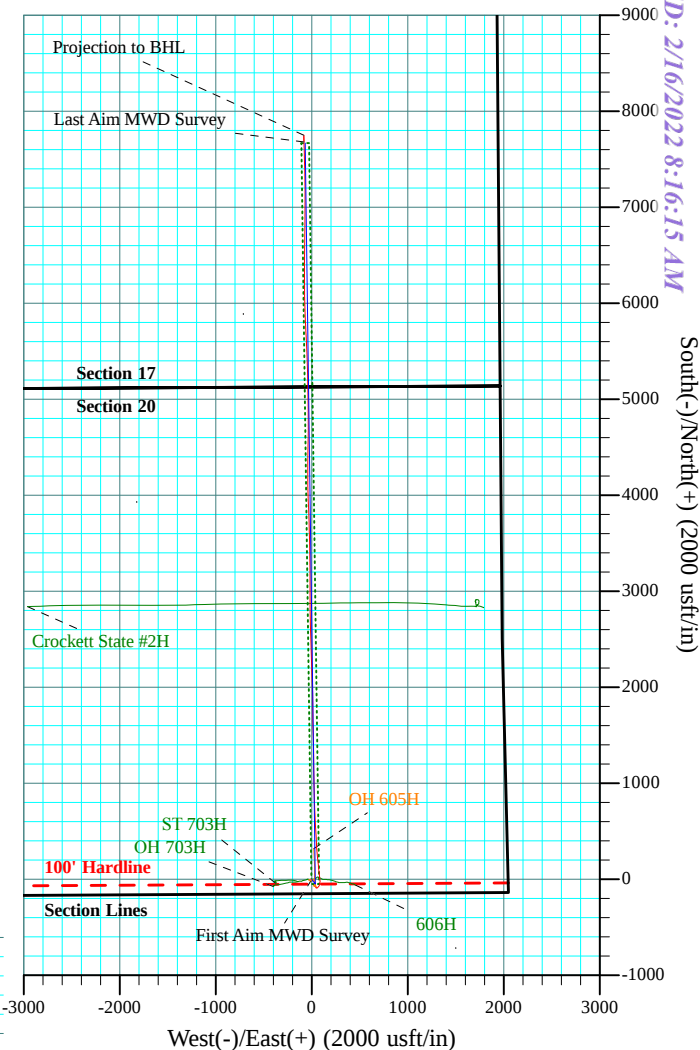
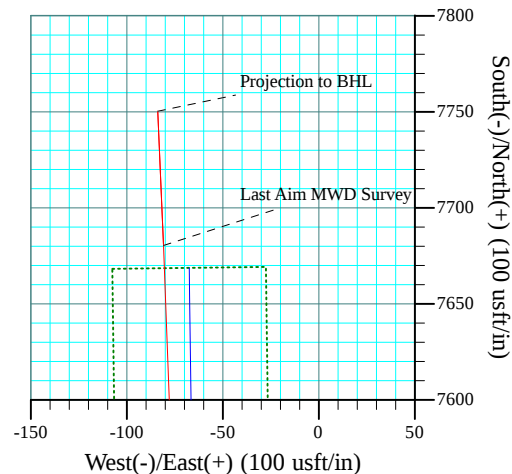
Depth Reference:
3715'GL+26.5'KB @ 3741.50usft (H&P 620)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	19481.00	92.09	357.54	11586.31	7680.45	-80.87	0.00	0.00	7680.84	Last Aim MWD Survey
2	19551.00	92.09	357.54	11583.76	7750.34	-83.88	0.00	0.00	7750.77	Projection to BHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Wool605H)	0.00	-49.80	37.80	530926.00	769869.90	32° 27' 26.639 N	103° 35' 32.678 W
PBHL r1 (Wool605H)	11575.01	7668.80	-67.50	538644.60	769764.60	32° 28' 43.021 N	103° 35' 33.282 W



Received by OCD: 2/16/2022 8:16:15 AM

South(-)/North(+) (2000 usft/in)

Page 34 of 100

Drawn by: LM
Date Created: 7/30/2019
Date Revised: 10/10/2019

File: Advance Energy - Wool Head 20 State Com 605H Lateral 1 Plan 1.0 Final PVA.wpc



Survey Reports

Original Hole

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	OH 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		Wool Head 20 State Com 605H			
Site Position:		Northing:	530,975.80 usft	Latitude:	32° 27' 27.134 N
From:	Map	Easting:	769,832.10 usft	Longitude:	103° 35' 33.115 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#605H - Slot 605H					
Well Position	+N/-S	0.00 usft	Northing:	530,975.80 usft	Latitude:	32° 27' 27.134 N
	+E/-W	0.00 usft	Easting:	769,832.10 usft	Longitude:	103° 35' 33.115 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,715.00 usft

Wellbore	OH Surveys				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	8/13/2019	6.63	60.25	48,097.92241513

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	359.22	

Survey Program	Date	10/3/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
198.00	11,975.00	Aim MWD Surveys (OH 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	
198.00	0.26	105.29	198.00	-0.12	0.43	-0.12	0.13	0.13	0.00	
First Aim MWD Survey										
320.00	0.22	61.17	320.00	-0.08	0.91	-0.09	0.15	-0.03	-36.16	
501.00	0.22	45.53	501.00	0.33	1.46	0.31	0.03	0.00	-8.64	
685.00	0.22	358.86	685.00	0.93	1.70	0.91	0.09	0.00	-25.36	
867.00	0.31	279.49	866.99	1.36	1.21	1.35	0.19	0.05	-43.61	
1,049.00	0.35	197.14	1,048.99	0.91	0.56	0.91	0.24	0.02	-45.25	
1,235.00	0.57	265.96	1,234.99	0.31	-0.53	0.31	0.30	0.12	37.00	
1,424.00	1.49	254.71	1,423.95	-0.41	-3.84	-0.36	0.50	0.49	-5.95	
1,518.00	1.63	260.24	1,517.92	-0.96	-6.33	-0.87	0.22	0.15	5.88	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	OH 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)
1,613.00	1.54	249.96	1,612.88	-1.62	-8.86	-1.50	0.31	-0.09	-10.82
1,707.00	2.24	257.52	1,706.83	-2.45	-11.84	-2.29	0.79	0.74	8.04
1,755.00	2.02	255.59	1,754.80	-2.87	-13.58	-2.68	0.48	-0.46	-4.02
1,846.00	2.29	281.16	1,845.74	-2.91	-16.92	-2.68	1.09	0.30	28.10
1,941.00	2.68	274.75	1,940.65	-2.36	-20.99	-2.08	0.50	0.41	-6.75
2,035.00	2.07	275.98	2,034.57	-2.00	-24.87	-1.67	0.65	-0.65	1.31
2,130.00	2.24	249.96	2,129.50	-2.46	-28.32	-2.08	1.04	0.18	-27.39
2,224.00	1.45	196.17	2,223.46	-4.23	-30.38	-3.82	1.93	-0.84	-57.22
2,318.00	1.05	168.49	2,317.44	-6.22	-30.54	-5.80	0.76	-0.43	-29.45
2,413.00	1.23	147.66	2,412.42	-7.93	-29.82	-7.53	0.47	0.19	-21.93
2,507.00	1.41	170.95	2,506.39	-9.93	-29.10	-9.53	0.60	0.19	24.78
2,601.00	1.71	135.26	2,600.36	-12.07	-27.93	-11.69	1.06	0.32	-37.97
2,695.00	1.98	114.35	2,694.31	-13.73	-25.46	-13.39	0.77	0.29	-22.24
2,789.00	1.85	108.81	2,788.26	-14.89	-22.55	-14.58	0.24	-0.14	-5.89
2,884.00	1.85	104.59	2,883.21	-15.77	-19.61	-15.50	0.14	0.00	-4.44
2,978.00	1.67	83.32	2,977.17	-16.00	-16.78	-15.77	0.72	-0.19	-22.63
3,167.00	1.76	81.21	3,166.08	-15.23	-11.18	-15.08	0.06	0.05	-1.12
3,261.00	1.71	75.59	3,260.04	-14.66	-8.39	-14.55	0.19	-0.05	-5.98
3,355.00	1.19	81.65	3,354.01	-14.17	-6.07	-14.09	0.58	-0.55	6.45
3,449.00	1.19	73.48	3,447.99	-13.75	-4.17	-13.69	0.18	0.00	-8.69
3,544.00	1.14	73.83	3,542.97	-13.21	-2.31	-13.18	0.05	-0.05	0.37
3,638.00	1.14	69.96	3,636.95	-12.63	-0.54	-12.62	0.08	0.00	-4.12
3,733.00	1.89	66.53	3,731.92	-11.68	1.79	-11.70	0.79	0.79	-3.61
3,827.00	1.67	72.95	3,825.87	-10.66	4.52	-10.72	0.32	-0.23	6.83
3,921.00	1.58	61.44	3,919.83	-9.64	6.97	-9.73	0.36	-0.10	-12.24
4,016.00	2.11	55.99	4,014.79	-8.03	9.57	-8.16	0.59	0.56	-5.74
4,110.00	1.32	57.57	4,108.74	-6.49	11.91	-6.65	0.84	-0.84	1.68
4,204.00	1.19	56.60	4,202.72	-5.37	13.64	-5.55	0.14	-0.14	-1.03
4,299.00	1.23	51.59	4,297.70	-4.19	15.27	-4.40	0.12	0.04	-5.27
4,487.00	0.22	65.39	4,485.68	-2.79	17.18	-3.02	0.54	-0.54	7.34
4,582.00	0.48	41.31	4,580.68	-2.41	17.60	-2.65	0.31	0.27	-25.35
4,676.00	0.62	82.62	4,674.68	-2.05	18.37	-2.30	0.44	0.15	43.95
4,865.00	0.44	67.41	4,863.67	-1.64	20.05	-1.91	0.12	-0.10	-8.05
4,959.00	0.35	143.79	4,957.67	-1.73	20.56	-2.01	0.53	-0.10	81.26
5,148.00	0.18	71.63	5,146.66	-2.11	21.18	-2.40	0.18	-0.09	-38.18
5,184.00	0.35	155.65	5,182.66	-2.19	21.28	-2.48	1.05	0.47	233.39
5,264.00	0.18	244.07	5,262.66	-2.47	21.26	-2.76	0.49	-0.21	110.53
5,358.00	0.35	229.92	5,356.66	-2.72	20.91	-3.00	0.19	0.18	-15.05
5,453.00	0.53	231.94	5,451.66	-3.17	20.34	-3.45	0.19	0.19	2.13
5,547.00	1.14	166.55	5,545.65	-4.35	20.22	-4.63	1.10	0.65	-69.56
5,641.00	1.45	165.50	5,639.63	-6.41	20.73	-6.69	0.33	0.33	-1.12
5,736.00	1.76	156.62	5,734.59	-8.92	21.61	-9.21	0.42	0.33	-9.35
5,830.00	1.98	160.58	5,828.54	-11.77	22.73	-12.08	0.27	0.23	4.21

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	OH 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)	
5,924.00	2.02	163.48	5,922.48	-14.89	23.74	-15.21	0.12	0.04	3.09	
6,018.00	1.89	156.88	6,016.43	-17.91	24.82	-18.24	0.28	-0.14	-7.02	
6,113.00	1.85	156.36	6,111.38	-20.75	26.05	-21.10	0.05	-0.04	-0.55	
6,207.00	1.93	156.97	6,205.33	-23.60	27.28	-23.97	0.09	0.09	0.65	
6,301.00	1.85	163.74	6,299.27	-26.51	28.32	-26.89	0.25	-0.09	7.20	
6,395.00	1.98	164.88	6,393.22	-29.54	29.17	-29.93	0.14	0.14	1.21	
6,490.00	1.67	167.96	6,488.17	-32.47	29.88	-32.88	0.34	-0.33	3.24	
6,584.00	1.49	167.08	6,582.14	-35.00	30.44	-35.42	0.19	-0.19	-0.94	
6,678.00	1.41	175.34	6,676.11	-37.35	30.81	-37.76	0.24	-0.09	8.79	
6,773.00	1.05	175.61	6,771.09	-39.38	30.97	-39.80	0.38	-0.38	0.28	
6,867.00	1.01	170.68	6,865.07	-41.06	31.17	-41.48	0.10	-0.04	-5.24	
6,962.00	0.84	199.16	6,960.06	-42.54	31.08	-42.96	0.51	-0.18	29.98	
7,056.00	2.29	179.12	7,054.02	-45.07	30.88	-45.49	1.63	1.54	-21.32	
7,150.00	2.42	166.29	7,147.94	-48.88	31.38	-49.30	0.58	0.14	-13.65	
7,245.00	2.20	169.01	7,242.87	-52.61	32.20	-53.05	0.26	-0.23	2.86	
7,340.00	2.33	166.03	7,337.79	-56.28	33.02	-56.72	0.18	0.14	-3.14	
7,434.00	2.51	172.97	7,431.71	-60.18	33.73	-60.63	0.37	0.19	7.38	
7,529.00	1.10	194.50	7,526.66	-63.12	33.76	-63.58	1.62	-1.48	22.66	
7,623.00	0.88	205.66	7,620.65	-64.65	33.22	-65.09	0.31	-0.23	11.87	
7,718.00	1.14	177.19	7,715.63	-66.25	32.95	-66.69	0.59	0.27	-29.97	
7,812.00	1.10	165.41	7,809.61	-68.06	33.22	-68.50	0.25	-0.04	-12.53	
7,907.00	1.01	170.95	7,904.60	-69.77	33.58	-70.22	0.14	-0.09	5.83	
8,001.00	0.57	283.27	7,998.59	-70.48	33.26	-70.92	1.42	-0.47	119.49	
8,095.00	0.84	315.26	8,092.58	-69.88	32.32	-70.31	0.50	0.29	34.03	
8,189.00	0.22	315.09	8,186.58	-69.26	31.71	-69.69	0.66	-0.66	-0.18	
8,283.00	0.09	258.49	8,280.58	-69.15	31.51	-69.57	0.20	-0.14	-60.21	
8,378.00	0.22	209.97	8,375.58	-69.32	31.34	-69.74	0.18	0.14	-51.07	
8,472.00	0.31	218.14	8,469.58	-69.68	31.10	-70.10	0.10	0.10	8.69	
8,566.00	0.57	246.27	8,563.58	-70.07	30.51	-70.48	0.35	0.28	29.93	
8,660.00	0.70	219.29	8,657.57	-70.70	29.72	-71.10	0.34	0.14	-28.70	
8,754.00	0.62	238.27	8,751.56	-71.41	28.92	-71.80	0.25	-0.09	20.19	
8,849.00	0.79	231.94	8,846.56	-72.08	27.97	-72.46	0.20	0.18	-6.66	
8,943.00	1.41	273.69	8,940.54	-72.41	26.31	-72.76	1.04	0.66	44.41	
9,037.00	1.10	314.47	9,034.52	-71.70	24.51	-72.03	0.98	-0.33	43.38	
9,132.00	1.10	310.25	9,129.50	-70.48	23.16	-70.78	0.09	0.00	-4.44	
9,226.00	1.45	333.19	9,223.48	-68.83	21.94	-69.12	0.65	0.37	24.40	
9,321.00	1.63	306.56	9,318.45	-66.95	20.31	-67.22	0.77	0.19	-28.03	
9,415.00	0.48	280.55	9,412.43	-66.08	18.85	-66.34	1.29	-1.22	-27.67	
9,509.00	0.31	296.37	9,506.43	-65.90	18.23	-66.14	0.21	-0.18	16.83	
9,604.00	0.57	306.21	9,601.42	-65.51	17.62	-65.74	0.28	0.27	10.36	
9,698.00	0.88	294.26	9,695.42	-64.93	16.59	-65.15	0.37	0.33	-12.71	
9,793.00	1.01	55.37	9,790.41	-64.16	16.61	-64.38	1.73	0.14	127.48	
9,887.00	1.67	67.06	9,884.38	-63.15	18.55	-63.40	0.76	0.70	12.44	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	OH 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)	
9,981.00	1.32	79.37	9,978.35	-62.42	20.88	-62.70	0.50	-0.37	13.10	
10,076.00	1.49	94.83	10,073.32	-62.32	23.18	-62.63	0.44	0.18	16.27	
10,170.00	1.10	86.92	10,167.30	-62.38	25.30	-62.72	0.46	-0.41	-8.41	
10,264.00	0.79	90.70	10,261.29	-62.34	26.85	-62.70	0.34	-0.33	4.02	
10,359.00	1.89	97.12	10,356.26	-62.54	29.06	-62.93	1.17	1.16	6.76	
10,453.00	1.93	91.93	10,450.21	-62.78	32.18	-63.22	0.19	0.04	-5.52	
10,547.00	1.89	95.89	10,544.16	-63.00	35.31	-63.47	0.15	-0.04	4.21	
10,641.00	2.02	111.88	10,638.10	-63.77	38.39	-64.29	0.59	0.14	17.01	
10,736.00	1.71	142.03	10,733.05	-65.51	40.81	-66.06	1.07	-0.33	31.74	
10,830.00	2.33	143.70	10,826.99	-68.16	42.80	-68.74	0.66	0.66	1.78	
10,925.00	2.81	160.49	10,921.90	-71.91	44.73	-72.51	0.93	0.51	17.67	
11,019.00	2.02	189.76	11,015.82	-75.72	45.21	-76.32	1.53	-0.84	31.14	
11,113.00	1.54	196.08	11,109.77	-78.56	44.58	-79.16	0.55	-0.51	6.72	
11,170.00	1.85	199.25	11,166.75	-80.17	44.07	-80.76	0.57	0.54	5.56	
11,266.00	3.52	336.18	11,262.69	-78.93	42.37	-79.50	5.24	1.74	142.64	
11,359.00	14.86	351.74	11,354.36	-64.47	39.49	-65.00	12.37	12.19	16.73	
11,454.00	25.58	351.74	11,443.38	-32.02	34.78	-32.49	11.28	11.28	0.00	
11,548.00	27.56	352.62	11,527.44	9.63	29.07	9.23	2.15	2.11	0.94	
11,642.00	34.77	4.48	11,607.90	58.03	28.37	57.63	10.04	7.67	12.62	
11,736.00	47.38	358.86	11,678.64	119.59	29.78	119.18	13.97	13.41	-5.98	
11,772.00	52.04	358.12	11,701.92	147.04	29.05	146.63	13.04	12.95	-2.04	
Fish Top										
11,831.00	59.69	357.10	11,735.00	195.79	27.00	195.41	13.04	12.96	-1.74	
Last Aim MWD Survey										
11,894.00	59.69	357.10	11,766.79	250.11	24.25	249.76	0.00	0.00	0.00	
Fish Btm										
11,975.00	59.69	357.10	11,807.67	319.95	20.71	319.64	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
198.00	198.00	-0.12	0.43	First Aim MWD Survey	
11,772.00	11,701.92	147.04	29.05	Fish Top	
11,831.00	11,735.00	195.79	27.00	Last Aim MWD Survey	
11,894.00	11,766.79	250.11	24.25	Fish Btm	
11,975.00	11,807.67	319.95	20.71	Projection to TD	



Survey Reports

Lateral #1

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 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	Wool Head 20 State Com 605H		
Site Position:		Northing:	530,975.80 usft
From:	Map	Easting:	769,832.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 27' 27.134 N
		Longitude:	103° 35' 33.115 W
		Grid Convergence:	0.40 °

Well	#605H - Slot 605H		
Well Position	+N/-S	0.00 usft	Northing: 530,975.80 usft
	+E/-W	0.00 usft	Easting: 769,832.10 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 27' 27.134 N
		Longitude:	103° 35' 33.115 W
		Ground Level:	3,715.00 usft

Wellbore	Lateral Surveys				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	9/24/2019	6.62	60.24	48,085.34812431

Design	Aim MWD Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	11,170.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00		359.22

Survey Program	Date	10/1/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
198.00	11,170.00	Aim MWD Surveys (OH Surveys)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	
11,258.00	19,551.00	Aim MWD Surveys (Lateral 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	
198.00	0.26	105.29	198.00	-0.12	0.43	-0.12	0.13	0.13	0.00	
320.00	0.22	61.17	320.00	-0.08	0.91	-0.09	0.15	-0.03	-36.16	
501.00	0.22	45.53	501.00	0.33	1.46	0.31	0.03	0.00	-8.64	
685.00	0.22	358.86	685.00	0.93	1.70	0.91	0.09	0.00	-25.36	
867.00	0.31	279.49	866.99	1.36	1.21	1.35	0.19	0.05	-43.61	
1,049.00	0.35	197.14	1,048.99	0.91	0.56	0.91	0.24	0.02	-45.25	
1,235.00	0.57	265.96	1,234.99	0.31	-0.53	0.31	0.30	0.12	37.00	
1,424.00	1.49	254.71	1,423.95	-0.41	-3.84	-0.36	0.50	0.49	-5.95	
1,518.00	1.63	260.24	1,517.92	-0.96	-6.33	-0.87	0.22	0.15	5.88	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 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)
1,613.00	1.54	249.96	1,612.88	-1.62	-8.86	-1.50	0.31	-0.09	-10.82
1,707.00	2.24	257.52	1,706.83	-2.45	-11.84	-2.29	0.79	0.74	8.04
1,755.00	2.02	255.59	1,754.80	-2.87	-13.58	-2.68	0.48	-0.46	-4.02
1,846.00	2.29	281.16	1,845.74	-2.91	-16.92	-2.68	1.09	0.30	28.10
1,941.00	2.68	274.75	1,940.65	-2.36	-20.99	-2.08	0.50	0.41	-6.75
2,035.00	2.07	275.98	2,034.57	-2.00	-24.87	-1.67	0.65	-0.65	1.31
2,130.00	2.24	249.96	2,129.50	-2.46	-28.32	-2.08	1.04	0.18	-27.39
2,224.00	1.45	196.17	2,223.46	-4.23	-30.38	-3.82	1.93	-0.84	-57.22
2,318.00	1.05	168.49	2,317.44	-6.22	-30.54	-5.80	0.76	-0.43	-29.45
2,413.00	1.23	147.66	2,412.42	-7.93	-29.82	-7.53	0.47	0.19	-21.93
2,507.00	1.41	170.95	2,506.39	-9.93	-29.10	-9.53	0.60	0.19	24.78
2,601.00	1.71	135.26	2,600.36	-12.07	-27.93	-11.69	1.06	0.32	-37.97
2,695.00	1.98	114.35	2,694.31	-13.73	-25.46	-13.39	0.77	0.29	-22.24
2,789.00	1.85	108.81	2,788.26	-14.89	-22.55	-14.58	0.24	-0.14	-5.89
2,884.00	1.85	104.59	2,883.21	-15.77	-19.61	-15.50	0.14	0.00	-4.44
2,978.00	1.67	83.32	2,977.17	-16.00	-16.78	-15.77	0.72	-0.19	-22.63
3,167.00	1.76	81.21	3,166.08	-15.23	-11.18	-15.08	0.06	0.05	-1.12
3,261.00	1.71	75.59	3,260.04	-14.66	-8.39	-14.55	0.19	-0.05	-5.98
3,355.00	1.19	81.65	3,354.01	-14.17	-6.07	-14.09	0.58	-0.55	6.45
3,449.00	1.19	73.48	3,447.99	-13.75	-4.17	-13.69	0.18	0.00	-8.69
3,544.00	1.14	73.83	3,542.97	-13.21	-2.31	-13.18	0.05	-0.05	0.37
3,638.00	1.14	69.96	3,636.95	-12.63	-0.54	-12.62	0.08	0.00	-4.12
3,733.00	1.89	66.53	3,731.92	-11.68	1.79	-11.70	0.79	0.79	-3.61
3,827.00	1.67	72.95	3,825.87	-10.66	4.52	-10.72	0.32	-0.23	6.83
3,921.00	1.58	61.44	3,919.83	-9.64	6.97	-9.73	0.36	-0.10	-12.24
4,016.00	2.11	55.99	4,014.79	-8.03	9.57	-8.16	0.59	0.56	-5.74
4,110.00	1.32	57.57	4,108.74	-6.49	11.91	-6.65	0.84	-0.84	1.68
4,204.00	1.19	56.60	4,202.72	-5.37	13.64	-5.55	0.14	-0.14	-1.03
4,299.00	1.23	51.59	4,297.70	-4.19	15.27	-4.40	0.12	0.04	-5.27
4,487.00	0.22	65.39	4,485.68	-2.79	17.18	-3.02	0.54	-0.54	7.34
4,582.00	0.48	41.31	4,580.68	-2.41	17.60	-2.65	0.31	0.27	-25.35
4,676.00	0.62	82.62	4,674.68	-2.05	18.37	-2.30	0.44	0.15	43.95
4,865.00	0.44	67.41	4,863.67	-1.64	20.05	-1.91	0.12	-0.10	-8.05
4,959.00	0.35	143.79	4,957.67	-1.73	20.56	-2.01	0.53	-0.10	81.26
5,148.00	0.18	71.63	5,146.66	-2.11	21.18	-2.40	0.18	-0.09	-38.18
5,184.00	0.35	155.65	5,182.66	-2.19	21.28	-2.48	1.05	0.47	233.39
5,264.00	0.18	244.07	5,262.66	-2.47	21.26	-2.76	0.49	-0.21	110.53
5,358.00	0.35	229.92	5,356.66	-2.72	20.91	-3.00	0.19	0.18	-15.05
5,453.00	0.53	231.94	5,451.66	-3.17	20.34	-3.45	0.19	0.19	2.13
5,547.00	1.14	166.55	5,545.65	-4.35	20.22	-4.63	1.10	0.65	-69.56
5,641.00	1.45	165.50	5,639.63	-6.41	20.73	-6.69	0.33	0.33	-1.12
5,736.00	1.76	156.62	5,734.59	-8.92	21.61	-9.21	0.42	0.33	-9.35
5,830.00	1.98	160.58	5,828.54	-11.77	22.73	-12.08	0.27	0.23	4.21

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 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)	
5,924.00	2.02	163.48	5,922.48	-14.89	23.74	-15.21	0.12	0.04	3.09	
6,018.00	1.89	156.88	6,016.43	-17.91	24.82	-18.24	0.28	-0.14	-7.02	
6,113.00	1.85	156.36	6,111.38	-20.75	26.05	-21.10	0.05	-0.04	-0.55	
6,207.00	1.93	156.97	6,205.33	-23.60	27.28	-23.97	0.09	0.09	0.65	
6,301.00	1.85	163.74	6,299.27	-26.51	28.32	-26.89	0.25	-0.09	7.20	
6,395.00	1.98	164.88	6,393.22	-29.54	29.17	-29.93	0.14	0.14	1.21	
6,490.00	1.67	167.96	6,488.17	-32.47	29.88	-32.88	0.34	-0.33	3.24	
6,584.00	1.49	167.08	6,582.14	-35.00	30.44	-35.42	0.19	-0.19	-0.94	
6,678.00	1.41	175.34	6,676.11	-37.35	30.81	-37.76	0.24	-0.09	8.79	
6,773.00	1.05	175.61	6,771.09	-39.38	30.97	-39.80	0.38	-0.38	0.28	
6,867.00	1.01	170.68	6,865.07	-41.06	31.17	-41.48	0.10	-0.04	-5.24	
6,962.00	0.84	199.16	6,960.06	-42.54	31.08	-42.96	0.51	-0.18	29.98	
7,056.00	2.29	179.12	7,054.02	-45.07	30.88	-45.49	1.63	1.54	-21.32	
7,150.00	2.42	166.29	7,147.94	-48.88	31.38	-49.30	0.58	0.14	-13.65	
7,245.00	2.20	169.01	7,242.87	-52.61	32.20	-53.05	0.26	-0.23	2.86	
7,340.00	2.33	166.03	7,337.79	-56.28	33.02	-56.72	0.18	0.14	-3.14	
7,434.00	2.51	172.97	7,431.71	-60.18	33.73	-60.63	0.37	0.19	7.38	
7,529.00	1.10	194.50	7,526.66	-63.12	33.76	-63.58	1.62	-1.48	22.66	
7,623.00	0.88	205.66	7,620.65	-64.65	33.22	-65.09	0.31	-0.23	11.87	
7,718.00	1.14	177.19	7,715.63	-66.25	32.95	-66.69	0.59	0.27	-29.97	
7,812.00	1.10	165.41	7,809.61	-68.06	33.22	-68.50	0.25	-0.04	-12.53	
7,907.00	1.01	170.95	7,904.60	-69.77	33.58	-70.22	0.14	-0.09	5.83	
8,001.00	0.57	283.27	7,998.59	-70.48	33.26	-70.92	1.42	-0.47	119.49	
8,095.00	0.84	315.26	8,092.58	-69.88	32.32	-70.31	0.50	0.29	34.03	
8,189.00	0.22	315.09	8,186.58	-69.26	31.71	-69.69	0.66	-0.66	-0.18	
8,283.00	0.09	258.49	8,280.58	-69.15	31.51	-69.57	0.20	-0.14	-60.21	
8,378.00	0.22	209.97	8,375.58	-69.32	31.34	-69.74	0.18	0.14	-51.07	
8,472.00	0.31	218.14	8,469.58	-69.68	31.10	-70.10	0.10	0.10	8.69	
8,566.00	0.57	246.27	8,563.58	-70.07	30.51	-70.48	0.35	0.28	29.93	
8,660.00	0.70	219.29	8,657.57	-70.70	29.72	-71.10	0.34	0.14	-28.70	
8,754.00	0.62	238.27	8,751.56	-71.41	28.92	-71.80	0.25	-0.09	20.19	
8,849.00	0.79	231.94	8,846.56	-72.08	27.97	-72.46	0.20	0.18	-6.66	
8,943.00	1.41	273.69	8,940.54	-72.41	26.31	-72.76	1.04	0.66	44.41	
9,037.00	1.10	314.47	9,034.52	-71.70	24.51	-72.03	0.98	-0.33	43.38	
9,132.00	1.10	310.25	9,129.50	-70.48	23.16	-70.78	0.09	0.00	-4.44	
9,226.00	1.45	333.19	9,223.48	-68.83	21.94	-69.12	0.65	0.37	24.40	
9,321.00	1.63	306.56	9,318.45	-66.95	20.31	-67.22	0.77	0.19	-28.03	
9,415.00	0.48	280.55	9,412.43	-66.08	18.85	-66.34	1.29	-1.22	-27.67	
9,509.00	0.31	296.37	9,506.43	-65.90	18.23	-66.14	0.21	-0.18	16.83	
9,604.00	0.57	306.21	9,601.42	-65.51	17.62	-65.74	0.28	0.27	10.36	
9,698.00	0.88	294.26	9,695.42	-64.93	16.59	-65.15	0.37	0.33	-12.71	
9,793.00	1.01	55.37	9,790.41	-64.16	16.61	-64.38	1.73	0.14	127.48	
9,887.00	1.67	67.06	9,884.38	-63.15	18.55	-63.40	0.76	0.70	12.44	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 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)
9,981.00	1.32	79.37	9,978.35	-62.42	20.88	-62.70	0.50	-0.37	13.10
10,076.00	1.49	94.83	10,073.32	-62.32	23.18	-62.63	0.44	0.18	16.27
10,170.00	1.10	86.92	10,167.30	-62.38	25.30	-62.72	0.46	-0.41	-8.41
10,264.00	0.79	90.70	10,261.29	-62.34	26.85	-62.70	0.34	-0.33	4.02
10,359.00	1.89	97.12	10,356.26	-62.54	29.06	-62.93	1.17	1.16	6.76
10,453.00	1.93	91.93	10,450.21	-62.78	32.18	-63.22	0.19	0.04	-5.52
10,547.00	1.89	95.89	10,544.16	-63.00	35.31	-63.47	0.15	-0.04	4.21
10,641.00	2.02	111.88	10,638.10	-63.77	38.39	-64.29	0.59	0.14	17.01
10,736.00	1.71	142.03	10,733.05	-65.51	40.81	-66.06	1.07	-0.33	31.74
10,830.00	2.33	143.70	10,826.99	-68.16	42.80	-68.74	0.66	0.66	1.78
10,925.00	2.81	160.49	10,921.90	-71.91	44.73	-72.51	0.93	0.51	17.67
11,019.00	2.02	189.76	11,015.82	-75.72	45.21	-76.32	1.53	-0.84	31.14
11,113.00	1.54	196.08	11,109.77	-78.56	44.58	-79.16	0.55	-0.51	6.72
11,170.00	1.85	199.25	11,166.75	-80.17	44.07	-80.76	0.57	0.54	5.56
Tie-on to OH Surveys									
11,258.00	2.42	184.04	11,254.69	-83.36	43.47	-83.94	0.91	0.65	-17.28
First Sidetrack Survey									
11,270.00	3.25	173.50	11,266.67	-83.95	43.49	-84.54	8.14	6.92	-87.83
11,364.00	4.00	138.08	11,360.50	-89.04	45.98	-89.66	2.46	0.80	-37.68
11,409.00	4.26	106.96	11,405.38	-90.69	48.63	-91.35	4.95	0.58	-69.16
11,459.00	5.80	82.62	11,455.20	-90.91	52.91	-91.62	5.20	3.08	-48.68
11,504.00	11.08	53.96	11,499.71	-88.07	58.67	-88.86	14.66	11.73	-63.69
11,553.00	18.37	44.74	11,547.08	-79.81	67.93	-80.72	15.58	14.88	-18.82
11,598.00	24.75	29.27	11,588.94	-66.53	77.54	-67.58	18.88	14.18	-34.38
11,647.00	28.31	12.39	11,632.83	-46.20	85.06	-47.35	16.95	7.27	-34.45
11,692.00	32.62	358.77	11,671.66	-23.61	87.09	-24.79	18.04	9.58	-30.27
11,742.00	39.78	352.44	11,712.00	5.77	84.70	4.62	16.14	14.32	-12.66
11,836.00	49.67	352.88	11,778.70	71.30	76.28	70.25	10.53	10.52	0.47
11,881.00	57.36	354.81	11,805.44	107.24	72.43	106.25	17.43	17.09	4.29
11,930.00	64.31	354.37	11,829.30	149.81	68.39	148.87	14.21	14.18	-0.90
11,975.00	72.35	354.46	11,845.91	191.40	64.33	190.51	17.87	17.87	0.20
12,010.00	78.51	353.67	11,854.71	225.08	60.82	224.23	17.73	17.60	-2.26
12,118.00	87.08	356.84	11,868.24	331.74	52.00	331.01	8.45	7.94	2.94
12,213.00	89.27	356.31	11,871.27	426.52	46.33	425.85	2.37	2.31	-0.56
12,307.00	89.49	356.57	11,872.28	520.33	40.49	519.73	0.36	0.23	0.28
12,401.00	90.46	357.98	11,872.33	614.22	36.02	613.68	1.82	1.03	1.50
12,496.00	90.29	357.80	11,871.70	709.16	32.52	708.65	0.26	-0.18	-0.19
12,591.00	90.51	357.45	11,871.04	804.07	28.59	803.61	0.44	0.23	-0.37
12,685.00	89.98	357.10	11,870.64	897.96	24.12	897.55	0.68	-0.56	-0.37
12,780.00	90.55	0.44	11,870.20	992.93	22.08	992.54	3.57	0.60	3.52
12,875.00	90.07	0.53	11,869.69	1,087.92	22.88	1,087.51	0.51	-0.51	0.09
12,969.00	88.84	359.03	11,870.58	1,181.91	22.52	1,181.50	2.06	-1.31	-1.60
13,064.00	88.75	359.12	11,872.58	1,276.88	20.99	1,276.48	0.13	-0.09	0.09
13,158.00	87.65	358.77	11,875.53	1,370.82	19.26	1,370.43	1.23	-1.17	-0.37

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 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)
13,252.00	87.12	358.59	11,879.82	1,464.69	17.10	1,464.32	0.60	-0.56	-0.19
13,346.00	85.67	357.89	11,885.73	1,558.46	14.22	1,558.12	1.71	-1.54	-0.74
13,441.00	87.38	359.21	11,891.49	1,653.25	11.82	1,652.94	2.27	1.80	1.39
13,535.00	87.65	358.86	11,895.56	1,747.15	10.24	1,746.85	0.47	0.29	-0.37
13,630.00	88.75	359.65	11,898.55	1,842.09	9.00	1,841.80	1.43	1.16	0.83
13,724.00	91.60	359.30	11,898.26	1,936.08	8.14	1,935.79	3.05	3.03	-0.37
13,818.00	91.65	358.15	11,895.59	2,030.01	6.05	2,029.74	1.22	0.05	-1.22
13,912.00	89.76	358.15	11,894.44	2,123.95	3.01	2,123.71	2.01	-2.01	0.00
14,007.00	89.10	357.63	11,895.38	2,218.88	-0.48	2,218.68	0.88	-0.69	-0.55
14,101.00	90.33	358.86	11,895.85	2,312.83	-3.36	2,312.67	1.85	1.31	1.31
14,195.00	90.37	358.15	11,895.28	2,406.80	-5.81	2,406.66	0.76	0.04	-0.76
14,290.00	90.11	357.54	11,894.88	2,501.73	-9.39	2,501.63	0.70	-0.27	-0.64
14,384.00	90.24	359.21	11,894.59	2,595.69	-12.05	2,595.61	1.78	0.14	1.78
14,478.00	90.73	359.38	11,893.80	2,689.68	-13.21	2,689.61	0.55	0.52	0.18
14,573.00	90.64	358.59	11,892.66	2,784.66	-14.89	2,784.60	0.84	-0.09	-0.83
14,667.00	91.30	358.68	11,891.07	2,878.62	-17.13	2,878.58	0.71	0.70	0.10
14,761.00	92.40	0.09	11,888.03	2,972.56	-18.14	2,972.53	1.90	1.17	1.50
14,855.00	92.53	0.26	11,883.99	3,066.47	-17.85	3,066.43	0.23	0.14	0.18
14,950.00	92.04	359.91	11,880.20	3,161.39	-17.71	3,161.34	0.63	-0.52	-0.37
15,044.00	92.04	359.82	11,876.86	3,255.33	-17.93	3,255.28	0.10	0.00	-0.10
15,139.00	92.18	359.12	11,873.36	3,350.26	-18.81	3,350.21	0.75	0.15	-0.74
15,233.00	91.82	358.86	11,870.08	3,444.19	-20.47	3,444.15	0.47	-0.38	-0.28
15,328.00	92.35	358.86	11,866.62	3,539.11	-22.35	3,539.09	0.56	0.56	0.00
15,422.00	92.44	358.77	11,862.69	3,633.01	-24.30	3,633.00	0.14	0.10	-0.10
15,516.00	92.18	357.98	11,858.91	3,726.89	-26.96	3,726.92	0.88	-0.28	-0.84
15,611.00	91.52	356.66	11,855.84	3,821.74	-31.40	3,821.81	1.55	-0.69	-1.39
15,705.00	91.87	358.15	11,853.06	3,915.60	-35.65	3,915.72	1.63	0.37	1.59
15,800.00	91.78	358.42	11,850.03	4,010.51	-38.50	4,010.66	0.30	-0.09	0.28
15,896.00	93.93	359.56	11,845.25	4,106.37	-40.19	4,106.53	2.53	2.24	1.19
15,988.00	93.76	359.56	11,839.08	4,198.16	-40.89	4,198.32	0.18	-0.18	0.00
16,083.00	94.73	359.30	11,832.05	4,292.89	-41.83	4,293.06	1.06	1.02	-0.27
16,177.00	95.08	1.67	11,824.01	4,386.53	-41.04	4,386.69	2.54	0.37	2.52
16,271.00	93.14	1.58	11,817.27	4,480.25	-38.38	4,480.36	2.07	-2.06	-0.10
16,365.00	93.41	0.62	11,811.90	4,574.08	-36.58	4,574.15	1.06	0.29	-1.02
16,460.00	96.22	0.09	11,803.93	4,668.73	-35.99	4,668.79	3.01	2.96	-0.56
16,554.00	96.35	359.65	11,793.64	4,762.17	-36.21	4,762.22	0.49	0.14	-0.47
16,649.00	95.38	359.47	11,783.93	4,856.66	-36.93	4,856.72	1.04	-1.02	-0.19
16,743.00	94.90	359.74	11,775.51	4,950.28	-37.58	4,950.34	0.59	-0.51	0.29
16,837.00	95.34	359.47	11,767.12	5,043.91	-38.22	5,043.96	0.55	0.47	-0.29
16,932.00	95.30	358.95	11,758.31	5,138.49	-39.53	5,138.55	0.55	-0.04	-0.55
17,026.00	94.90	358.24	11,749.96	5,232.09	-41.82	5,232.17	0.86	-0.43	-0.76
17,121.00	94.24	357.71	11,742.39	5,326.72	-45.17	5,326.85	0.89	-0.69	-0.56
17,215.00	94.42	358.33	11,735.29	5,420.40	-48.41	5,420.56	0.69	0.19	0.66

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 605H
Project:	Lea County, New Mexico	TVD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Site:	Wool Head 20 State Com 605H	MD Reference:	3715'GL+26.5'KB @ 3741.50usft (H&P 620)
Well:	#605H	North Reference:	Grid
Wellbore:	Lateral 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)	
17,309.00	94.46	357.98	11,728.01	5,514.07	-51.43	5,514.26	0.37	0.04	-0.37	
17,403.00	94.02	357.36	11,721.06	5,607.73	-55.24	5,607.97	0.81	-0.47	-0.66	
17,498.00	93.27	356.22	11,715.02	5,702.39	-60.55	5,702.69	1.43	-0.79	-1.20	
17,592.00	93.14	357.80	11,709.77	5,796.11	-65.44	5,796.47	1.68	-0.14	1.68	
17,686.00	93.54	357.28	11,704.29	5,889.87	-69.47	5,890.27	0.70	0.43	-0.55	
17,781.00	94.11	358.95	11,697.95	5,984.60	-72.59	5,985.03	1.85	0.60	1.76	
17,875.00	94.55	0.00	11,690.86	6,078.33	-73.45	6,078.76	1.21	0.47	1.12	
17,970.00	93.85	359.82	11,683.90	6,173.07	-73.59	6,173.50	0.76	-0.74	-0.19	
18,064.00	93.71	358.86	11,677.70	6,266.86	-74.68	6,267.29	1.03	-0.15	-1.02	
18,159.00	94.77	0.26	11,670.68	6,361.59	-75.40	6,362.03	1.85	1.12	1.47	
18,253.00	93.89	359.30	11,663.58	6,455.32	-75.76	6,455.75	1.38	-0.94	-1.02	
18,348.00	95.25	1.32	11,656.01	6,550.01	-75.25	6,550.43	2.56	1.43	2.13	
18,442.00	95.34	0.88	11,647.34	6,643.59	-73.46	6,643.98	0.48	0.10	-0.47	
18,537.00	95.12	0.35	11,638.68	6,738.19	-72.44	6,738.55	0.60	-0.23	-0.56	
18,631.00	94.90	0.26	11,630.47	6,831.83	-71.94	6,832.18	0.25	-0.23	-0.10	
18,726.00	93.01	1.14	11,623.92	6,926.59	-70.78	6,926.91	2.19	-1.99	0.93	
18,820.00	93.01	0.70	11,618.98	7,020.45	-69.28	7,020.74	0.47	0.00	-0.47	
18,914.00	93.14	0.09	11,613.94	7,114.31	-68.63	7,114.59	0.66	0.14	-0.65	
19,009.00	93.41	359.65	11,608.51	7,209.16	-68.84	7,209.42	0.54	0.28	-0.46	
19,103.00	92.79	359.03	11,603.43	7,303.01	-69.93	7,303.29	0.93	-0.66	-0.66	
19,198.00	92.75	358.59	11,598.84	7,397.88	-71.90	7,398.17	0.46	-0.04	-0.46	
19,292.00	92.57	358.33	11,594.47	7,491.74	-74.42	7,492.06	0.34	-0.19	-0.28	
19,386.00	92.62	358.15	11,590.22	7,585.60	-77.30	7,585.95	0.20	0.05	-0.19	
19,481.00	92.09	357.54	11,586.31	7,680.45	-80.87	7,680.84	0.85	-0.56	-0.64	
Last Aim MWD Survey										
19,551.00	92.09	357.54	11,583.76	7,750.34	-83.88	7,750.77	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	
11,170.00	11,166.75	-80.17	44.07	Tie-on to OH Surveys	
11,258.00	11,254.69	-83.36	43.47	First Sidetrack Survey	
19,481.00	11,586.31	7,680.45	-80.87	Last Aim MWD Survey	
19,551.00	11,583.76	7,750.34	-83.88	Projection to BHL	



BHA Reports Original Hole

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #1 - BHA #1 (Surface) (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-08-12 13:30
Lobe/Stage	7/8, 4.0	Depth In (ft)	0.00
Bend Angle	1.50	Date Out	2019-08-12 23:10
Speed (rev/gal)	0.16	Depth Out (ft)	1232.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00
Incident	No	Distance Rotated (ft)	1232.00
Motor Results		% Distance Sliding	0.00%
Average Total ROP (ft/h)	278.94	% Distance Rotating	100.00%
Average Slide ROP (ft/h)	0.00	BHA Objective	
Average Rotating ROP (ft/h)	278.94	Drill Surface	

Bit Details	
OD (in)	17.500
Vendor	Baker
S/N	5294782
Nozzles	9x12
Total Flow Area (in²)	0.994

MWD	
Max Downhole Temp (°F)	N/A

Bit Distances	
Bit To Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.20 ft	
Mud Properties	
Type	Water
WT	10.00
VIS	30.00
PV	1.00
YP	1.00

Incident Notes	
Directional: Surface inspection of bha showed a severely balled up bit with 4 out of 6 junk slots on bit packed off solid.	
MWD:	

Comments	
Directional: Motor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5294782, TFA: 0.994, Bit Runs: 1	

Parameters	
Flow Rate (gpm)	550.00 - 900.00
On Bottom Pressure (psi)	1000.00 - 2900.00
Off Bottom Pressure (psi)	550.00 - 2100.00
Stall Pressure (psi)	899.96
Stalls	0
NPT	0.0
Motor RPM	80.00 - 144.00
Surface RPM	40.00 - 50.00
Rotating WOB (klbs)	15.00 - 25.00
Sliding WOB (klbs)	0.00 - 0.00
Temp (°F)	80.00 - 120.00

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DP606S, Style: PDC, Gauge Length (in): 5.00, Size (in): 17.50	Baker	5294782	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 1.5 FBH 7/8 4.0 W/ Slick sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	AIM	800-40-002	6 5/8" Reg Box	6 5/8" Reg Box		8.000		29.75	31.50
Stabilizer Description: 17" Stab	DTI	DR39217	6 5/8" Reg Box	6 5/8" Reg Pin	3.000	8.250		7.74	39.24
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	AIM800216	6 5/8" Reg Box	6 5/8" Reg Pin	3.063	8.000		2.73	41.97
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	73.67
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	103.77
Crossover Sub Description: X-O (6 5/8 Reg Pin x 4 1/2 IF Box), Type: Steel	DTI	DR38083	4 1/2" IF Box	6 5/8" Reg Pin	2.875	8.000		4.02	107.79
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1203.30





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #2 - BHA #2 Surface (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-08-12 23:10
Lobe/Stage	7/8, 4.0	Depth In (ft)	1232.00
Bend Angle	1.50	Date Out	2019-08-13 05:45
Speed (rev/gal)	0.16	Depth Out (ft)	1392.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00
Incident	No	Distance Rotated (ft)	160.00
Motor Results		% Distance Sliding	0.00%
Average Total ROP (ft/h)	43.64	% Distance Rotating	100.00%
Average Slide ROP (ft/h)	0.00		
Average Rotating ROP (ft/h)	43.64		

BHA Objective
Drill surface

Bit Details		POOH Reason/Notes
OD (in)	17.500	Pump Pressure: Pooh due to Pressure Loss
Vendor	Baker	
S/N	5294782	
Nozzles	9x12	
Total Flow Area (in²)	0.994	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: Once out of the hole, noticed set screw on UBHO had washed out.
		MWD:

Bit Distances		Comments
Bit To Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.20 ft		Directional: otor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5294782, TFA: 0.994, Bit Runs: 1

Mud Properties		Parameters
Type	Water	Flow Rate (gpm)
WT	10.00	On Bottom Pressure (psi)
VIS	38.00	Off Bottom Pressure (psi)
PV	8.00	Stall Pressure (psi)
YP	32.00	Stalls
		NPT

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DP606S, Style: PDC, Gauge Length (in): 5.00, Size (in): 17.50	Baker	5294782	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 1.5 FBH 7/8 4.0 W/ Slick sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	AIM	800-40-002	6 5/8" Reg Box	6 5/8" Reg Box		8.000		29.75	31.50
Stabilizer Description: 17" Stab	DTI	DR39217	6 5/8" Reg Box	6 5/8" Reg Pin	3.000	8.250		7.74	39.24
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	AIM800216	6 5/8" Reg Box	6 5/8" Reg Pin	3.063	8.000		2.73	41.97
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	73.67
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	103.77
Crossover Sub Description: X-O (6 5/8 Reg Pin x 4 1/2 IF Box), Type: Steel	DTI	DR38083	4 1/2" IF Box	6 5/8" Reg Pin	2.875	8.000		4.02	107.79
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1203.30





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #3 - BHA # 3 (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-08-13 05:45
Lobe/Stage	7/8, 4.0	Depth In (ft)	1392.00
Bend Angle	1.50	Date Out	2019-08-13 16:00
Speed (rev/gal)	0.16	Depth Out (ft)	1817.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00
Incident	No	Distance Rotated (ft)	425.00
Motor Results		% Distance Sliding	0.00%
Average Total ROP (ft/h)	89.47	% Distance Rotating	100.00%
Average Slide ROP (ft/h)	0.00		
Average Rotating ROP (ft/h)	89.47		

BHA Objective
Finish drilling surface hole

Bit Details		POOH Reason/Notes
OD (in)	17.500	Total Depth/Casing Point: POOH and TD of Surface section. Motor Performed well.
Vendor	Baker	
S/N	7046740	
Nozzles	9x12	
Total Flow Area (in²)	0.994	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: N/a
		MWD:

Bit Distances		Comments
Bit To Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.16 ft		Directional: Motor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5293469, TFA: 0.994, Bit Runs: ?

Mud Properties		Parameters	
Type	Water	Flow Rate (gpm)	900.00 - 900.00
WT	10.20	On Bottom Pressure (psi)	2900.00 - 2900.00
VIS	30.00	Off Bottom Pressure (psi)	2100.00 - 2100.00
PV	1.00	Stall Pressure (psi)	899.96
YP	12.00	Stalls	0
		NPT	0.0

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DP606S, Style: PDC, Gauge Length (in): 5.00, Size (in): 17.50	Baker	7046740	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 1.5 FBH 7/8 4.0 W/ Slick sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4	AIM	800-40-002	6 5/8" Reg Box	6 5/8" Reg Box		8.000		29.75	31.50
Stabilizer Description: 17" Stab	DTI	DR39217	6 5/8" Reg Box	6 5/8" Reg Pin	3.000	8.250		7.74	39.24
UBHO Sub Description: UBHO Sub, Type: Steel	DTI	DR33129	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		3.02	42.26
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	73.96
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	104.06
Crossover Sub Description: X-O (6 5/8 Reg Pin x 4 1/2 IF Box), Type: Steel	DTI	DR38083	4 1/2" IF Box	6 5/8" Reg Pin	2.875	8.000		4.02	108.08
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1203.59





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #4 - BHA #4 (12.25 Intermediate) (Directional)

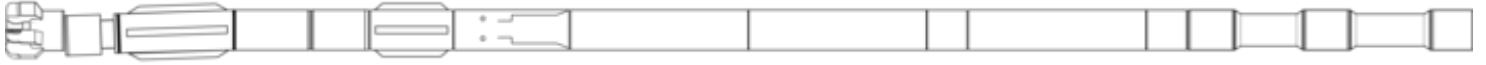
Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-08-18 20:05
Lobe/Stage	7/8, 5.9	Depth In (ft)	1817.00
Bend Angle	1.50	Date Out	2019-08-20 04:00
Speed (rev/gal)	0.17	Depth Out (ft)	5257.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	85.00
Incident	No	Distance Rotated (ft)	3355.00
Motor Results		% Distance Sliding	2.47%
Average Total ROP (ft/h)	192.90	% Distance Rotating	97.53%
Average Slide ROP (ft/h)	78.46		
Average Rotating ROP (ft/h)	200.30		

Bit Details		BHA Objective
OD (in)	12.250	Drill 12.25" Intermediate Section
Vendor	Baker Hughes	
S/N	5273010	
Nozzles	6x12	
Total Flow Area (in²)	0.663	

Bit Details	
OD (in)	12.250
Vendor	Baker Hughes
S/N	5273010
Nozzles	6x12
Total Flow Area (in²)	0.663

POOH Reason/Notes	
Total Depth/Casing Point: Motor performed well. no slack in bearings. motor drained well.	

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: T606FX, Style: PDC, Gauge Length (in): 4.00, Size (in): 12.25	Baker Hughes	5273010	6 5/8" Reg Pin			12.250		1.60	1.60
Mud Motor Description: 1.5 FBH 7/8 5.9 Stg Mtr W/ 12" NB Stabalizer, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	Butches	BDT800-017	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.57	39.17
Stabilizer Description: 12" Stabilizer	DTI	DR39406	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.250		7.92	47.09
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	800604	6 5/8" Reg Box	6 5/8" Reg Pin	3.256	8.000		3.10	50.19
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	81.89
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	111.99
Crossover Sub Description: X-Over (6 5/8 Reg Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR32366	4 1/2" XH Box	6 5/8" Reg Pin	2.813	7.875		2.60	114.59
Drill Collar Description: (21 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		612.86	727.45
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR37313	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.625		2.72	730.17
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1825.68





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
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		Company Man

BHA #5 - BHA #5 Intermediate (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2019-09-14 22:30
Lobe/Stage	7/8, 8.5	Depth In (ft)	5257.00
Bend Angle	1.50	Date Out	2019-09-17 19:10
Speed (rev/gal)	0.26	Depth Out (ft)	11234.00
Wear Pad OD (in)	7.000	Distance Slid (ft)	230.00
Incident	No	Distance Rotated (ft)	5747.00
Motor Results		% Distance Sliding	3.85%
Average Total ROP (ft/h)	140.25	% Distance Rotating	96.15%
Average Slide ROP (ft/h)	37.30		
Average Rotating ROP (ft/h)	157.67		

Bit Details		BHA Objective
OD (in)	8.500	Drill intermediate to KOP

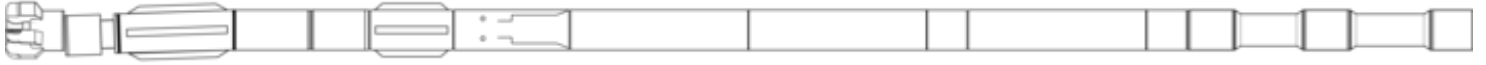
Vendor	Halliburton	POOH Reason/Notes
S/N	13271296	Total Depth/Casing Point: Drilled to KOP. POOH for curve assembly. motor performed well
Nozzles	6x12	
Total Flow Area (in²)	0.663	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: N/a
		MWD:

Bit Distances		Comments
Bit To Survey: 64.00 ft, Gamma: 54.00 ft		Directional: Contender: 1.50 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 400-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.50 / Bit; Halliburton 8.5" " Type: MM65DRM , SN:, New Bit TFA: .663 , Jets: 6 x 12s, Bit Runs: 0

Mud Properties		Parameters
Type	Water	Flow Rate (gpm)
WT	9.10	On Bottom Pressure (psi)
VIS	23.00	Off Bottom Pressure (psi)
PV	1.00	Stall Pressure (psi)
YP	1.00	Stalls
		NPT

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: MM65DRM, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Halliburton	13271296	4 1/2" Reg Pin			8.500		0.97	0.97
Mud Motor Description: 1.5 FBH 7/8 8.5 Stg Mtr W/ 8.25" NB Stabilizer, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-004	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.19	37.16
Stabilizer Description: 8.25" Stabilizer	Gator	GT67271	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.750		4.91	42.07
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.58
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	74.11
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	103.48
Crossover Sub Description: X-Over (4 1/2 IF Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR5523	4 1/2" XH Box	4 1/2" IF Pin	2.813	6.750		3.05	106.53
Drill Collar Description: (18 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		531.96	638.49
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR19241	4 1/2" IF Box	4 1/2" XH Pin	2.813	6.750		2.65	641.14
HWDP Description: (30 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		914.14	1555.28





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #6 - BHA #6 Curve (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	6.75	Date In	2019-09-18 01:40
Lobe/Stage	4/5, 7.0	Depth In (ft)	11234.00
Bend Angle	2.25	Date Out	2019-09-19 18:50
Speed (rev/gal)	0.50	Depth Out (ft)	11975.00
Wear Pad OD (in)	7.000	Distance Slid (ft)	525.00
Incident	No	Distance Rotated (ft)	216.00
Motor Results		% Distance Sliding	70.85%
Average Total ROP (ft/h)	28.41	% Distance Rotating	29.15%
Average Slide ROP (ft/h)	25.61		
Average Rotating ROP (ft/h)	38.69		

Bit Details		BHA Objective
OD (in)	8.500	Drill Curve
Vendor	Baker	

POOH Reason/Notes	
S/N	5286260
Nozzles	6x22
Total Flow Area (in²)	2.227
MWD	
Max Downhole Temp (°F)	N/A

Incident Notes	
Directional: while inspecting BHA at surface the bit was observed to have the upper section of the heel and part of the gauge row wiped out. motor selection was likely to fast RPG.	
MWD:	

Bit Distances	Comments
Bit To Survey: 63.00 ft, Gamma: 54.00 ft	Directional: Contender: 2.25 FBH 4/5 7.0 Stg Mtr, Rev/Gal: 0.49, Flow Range: 300-600, Max Diff: 1580 psi, Max Operating Torque: 9,090 ft/lbs, Protracted Angle: 2.25 / Bit; Baker 8.5" " Type: DD406TX , SN: 5286260, TFA: 2.227 , Jets: 6 x 22s, Bit Runs: 4

Mud Properties	Parameters
Type	Oil Based
WT	9.00
VIS	54.00
PV	14.00
YP	6.00
Flow Rate (gpm)	500.00 - 600.00
On Bottom Pressure (psi)	2750.00 - 3200.00
Off Bottom Pressure (psi)	2250.00 - 2700.00
Stall Pressure (psi)	899.96
Stalls	10
NPT	0.0
Motor RPM	245.00 - 294.00
Surface RPM	20.00 - 20.00
Rotating WOB (klbs)	40.00 - 40.00
Sliding WOB (klbs)	35.00 - 45.00
Temp (°F)	120.00 - 160.00

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DD406TX, Style: PDC, Gauge Length (in): 2.75, Size (in): 8.50	Baker	5286260	4 1/2" Reg Pin			8.500		0.87	0.87
Mud Motor Description: 2.25 FBH 4/5 7.0 Stg Mtr True Slick, Size (in): 6.75, Bend Angle (°): 2.25, Rotor Lobe: 4, Stator Lobe: 5, Stator Stage: 7.0	Contender	CDM650-019	4 1/2" IF Box	4 1/2" Reg Pin		6.750		27.57	28.44
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	41.85
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.36
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	74.73
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	103.26





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #7 - BHA #7 Curve/ Lateral (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2019-09-19 18:50
Lobe/Stage	7/8, 8.5	Depth In (ft)	11975.00
Bend Angle	1.75	Date Out	2019-09-20 16:00
Speed (rev/gal)	0.26	Depth Out (ft)	11975.00
Wear Pad OD (in)	7.188	Distance Slid (ft)	0.00
Incident	Yes	Distance Rotated (ft)	0.00
Motor Results		% Distance Sliding	0%
Average Total ROP (ft/h)	0.00	% Distance Rotating	0%
Average Slide ROP (ft/h)	0.00		
Average Rotating ROP (ft/h)	0.00		

BHA Objective
Land Curve / Drill Lateral

Bit Details		POOH Reason/Notes
OD (in)	8.500	Downhole Motor Incident: After TIH with BHA #7 curve / lateral hit tight spot @11354' washed and reamed to 11973' attempt to pump & rotate to btm @11975 no success. pressuring up and torquing up to 28k after numerous attempt working pipe up and down. Noticed chuck of rubber coming out thru shaker. POOH to inspect BHA
Vendor	Baker	
S/N	5300717	
Nozzles	6x22	
Total Flow Area (in²)	2.227	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: ON surface motor parted at bottom connection of fixed bend housing
		MWD:

Bit Distances		Comments
Bit To Survey: 67.00 ft, Gamma: 62.00 ft		Directional: Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" Type: DD506TWX, SN: 5300717, TFA: 2.227, Jets: 6 x 22s, Bit Runs: 1

Mud Properties		Parameters	
Type	Oil Based	Flow Rate (gpm)	450.00 - 700.00
WT	9.40	On Bottom Pressure (psi)	4500.00 - 6000.00
VIS	59.00	Off Bottom Pressure (psi)	2700.00 - 2800.00
PV	14.00	Stall Pressure (psi)	1750.03
YP	6.00	Stalls	20
		NPT	0.0

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5300717	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-017	4 1/2" IF Box	4 1/2" Reg Pin		6.780		36.24	37.24
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.65
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.16
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.53
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.06





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #8 - BHA # 8 (Fishing BHA) (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	N/A	Date In 2019-09-20 16:00	Downhole Hours 19.00
Lobe/Stage	N/A	Depth In (ft) 11975.00	Drilling/Circulating Hours 6.00
Bend Angle	N/A	Date Out 2019-09-21 11:00	Drilling Hours 0.00
Speed (rev/gal)	N/A	Depth Out (ft) 11975.00	Circulating Hours 6.00
Wear Pad OD (in)	N/A	Distance Slid (ft) 0.00	Sliding Hours 0.00
Incident	No	Distance Rotated (ft) 0.00	Rotating Hours 0.00
Motor Results		% Distance Sliding 0%	% Hours Sliding 0.00%
Average Total ROP (ft/h)	0.00	% Distance Rotating 0%	% Hours Rotating 0.00%
Average Slide ROP (ft/h)	0.00	BHA Objective	
Average Rotating ROP (ft/h)	0.00	Latch on to fish in hole	

Bit Details		POOH Reason/Notes	
OD (in)	N/A	Other: Fishing, first attempt unsuccessful	
Vendor	N/A		
S/N	N/A		
Nozzles	N/A		
Total Flow Area (in²)	N/A		

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional:
		MWD:

Bit Distances		Comments
Bit To Survey: 67.00 ft, Gamma: 62.00 ft		Directional: N/A

Mud Properties		Parameters	
Type	Oil Based	Flow Rate (gpm) 0.00 - 0.00	Motor RPM -
WT	9.40	On Bottom Pressure (psi) 0.00 - 0.00	Surface RPM 0.00 - 0.00
VIS	59.00	Off Bottom Pressure (psi) 0.00 - 0.00	Rotating WOB (klbs) 0.00 - 0.00
PV	14.00	Stall Pressure (psi) 0.00	Sliding WOB (klbs) 0.00 - 0.00
YP	6.00	Stalls 0	Temp (°F) -0.00 - -0.00
		NPT 0.0	

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Other Description: Overshot 8 1/8" OD w/ 6 7/8" Grapple	Yellow Jacket	OS150818			6.875	8.125		2.93	2.93
Other Description: Bushing	Yellow Jacket	A25098						1.00	3.93
Other Description: Wash pipe	Yellow jacket	A3520			5.250	6.000		32.33	36.26
Other Description: Top sub	Yellow jacket	A6473						2.24	38.50
Crossover Sub Description: Top Sub (XO), Type: Steel	Yellow jacket	A25960	4 1/2" IF Box	3 1/2" IF Pin	2.375	6.125		2.24	40.74
Drill Pipe Description: 1 Joint 5" DP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		31.40	72.14
Other Description: Lubricated bumper jat	yellow jacket	A21857	4 1/2" IF Box	4 1/2" IF Pin	2.250	6.250		10.33	82.47
Jars Description: Dual action jar, Size (in): 6.50, Type: Hydraulic	Yellow jacket	A28094	4 1/2" IF Box	4 1/2" IF Pin	2.250	6.500		29.89	112.36
HWDP Description: 9 Joints HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		273.73	386.09
Other Description: Accelerator	Yellow jacket	A21694	4 1/2" IF Box	4 1/2" IF Pin	2.250	6.250		13.03	399.12





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #9 - BHA #9 Hole Opener (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	N/A	Date In 2019-09-21 14:00	Downhole Hours 32.17
Lobe/Stage	N/A	Depth In (ft) 11975.00	Drilling/Circulating Hours 2.50
Bend Angle	N/A	Date Out 2019-09-22 22:10	Drilling Hours 0.00
Speed (rev/gal)	N/A	Depth Out (ft) 11975.00	Circulating Hours 2.50
Wear Pad OD (in)	N/A	Distance Slid (ft) 0.00	Sliding Hours 0.00
Incident	No	Distance Rotated (ft) 0.00	Rotating Hours 0.00
Motor Results		% Distance Sliding 0%	% Hours Sliding 0.00%
Average Total ROP (ft/h)	0.00	% Distance Rotating 0%	% Hours Rotating 0.00%
Average Slide ROP (ft/h)	0.00	BHA Objective	
Average Rotating ROP (ft/h)	0.00	Hole Opener	

Bit Details		POOH Reason/Notes	
OD (in)	8.500	Other: Hole Opener	
Vendor	Baker		
S/N	5289431		
Nozzles	3x22's		
Total Flow Area (in²)	1.114		

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional:
		MWD:

Bit Distances		Comments
Bit To N/A		Directional: N/A

Mud Properties		Parameters	
Type	Oil Based	Flow Rate (gpm) 0.00 - 0.00	Motor RPM -
WT	9.40	On Bottom Pressure (psi) 0.00 - 0.00	Surface RPM 0.00 - 0.00
VIS	59.00	Off Bottom Pressure (psi) 0.00 - 0.00	Rotating WOB (klbs) 0.00 - 0.00
PV	14.00	Stall Pressure (psi) 0.00	Sliding WOB (klbs) 0.00 - 0.00
YP	6.00	Stalls 0	Temp (°F) -0.00 - -0.00
		NPT 0.0	

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker GX117, Style: Tooth Bit, Gauge Length (in): 0.00, Size (in): 8.50	Baker	5289431	4 1/2" Reg Pin			8.500		0.90	0.90
Other Description: Bit Sub	YJ	Yellow Jacket	4 1/2" IF Box	4 1/2" Reg Box	2.375	6.125		3.00	3.90
Other Description: Float Sub	DTI	DR19268	4 1/2" IF Box	4 1/2" IF Pin	2.938	6.750		2.49	6.39
HWDP Description: 4 Stds HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		365.33	371.72





BHA Reports

Lateral #1

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #10 - Aim BHA #10 (ST/Curve) - AEP BHA #9 (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	6.50	Date In	2019-09-22 22:10
Lobe/Stage	7/8, 5.7	Depth In (ft)	11250.00
Bend Angle	2.12	Date Out	2019-09-24 13:30
Speed (rev/gal)	0.24	Depth Out (ft)	11471.00
Wear Pad OD (in)	6.875	Distance Slid (ft)	176.00
Incident	No	Distance Rotated (ft)	45.00
Motor Results		% Distance Sliding	79.64%
Average Total ROP (ft/h)	9.02	% Distance Rotating	20.36%
Average Slide ROP (ft/h)	7.62		
Average Rotating ROP (ft/h)	31.76		

Bit Details		BHA Objective
OD (in)	8.500	Side Track / Drill Curve
Vendor	Baker	

S/N	5304972	POOH Reason/Notes
Nozzles	4x18	Build Rate: While starting the curve, having trouble holding TF do to diff. spikes (50-100 psi) kicking TF from 180 to 270. & low ROP. POOH to inspect BHA
Total Flow Area (in²)	0.994	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: On surface motor drained, no visible damage, 1" squat . Kymera bit had chipped teeth on a roller
		MWD:

Bit Distances		Comments
Bit To Survey: 62.00 ft, Gamma: 57.00 ft		Directional: Contender:6.5" 2.12 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.10 / Bit; Baker 8.5" " Type: KMX624 , SN: 5304972, TFA: .994 , Jets: 4 x 18's, Bit Runs: 0

Mud Properties		Parameters			
Type	Oil Based	Flow Rate (gpm)	500.00 - 600.00	Motor RPM	120.00 - 144.00
WT	9.70	On Bottom Pressure (psi)	2550.00 - 3600.00	Surface RPM	20.00 - 20.00
VIS	70.00	Off Bottom Pressure (psi)	2550.00 - 3300.00	Rotating WOB (klbs)	40.00 - 40.00
PV	21.00	Stall Pressure (psi)	0.00	Sliding WOB (klbs)	1.00 - 48.00
YP	7.00	Stalls	0	Temp (°F)	147.00 - 152.00
		NPT	0.0		

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 8.5 Kymera KMX624, Style: PDC, Gauge Length (in): 6.00, Size (in): 8.50	Baker	5304972	4 1/2" Reg Pin			8.500		0.85	0.85
Mud Motor Description: 2.12 FBH 7/8 5.7 Stg Mtr True Slick, Size (in): 6.50, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.7	Contender	CDM-650-016	4 1/2" IF Box	4 1/2" Reg Pin		6.625		31.41	32.26
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	45.67
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	49.18
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	78.55
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	107.08





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #11 - BHA #11 (Curve) AEP BHA #10 (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	6.50	Date In	2019-09-24 13:30
Lobe/Stage	7/8, 5.7	Depth In (ft)	11471.00
Bend Angle	2.25	Date Out	2019-09-25 20:10
Speed (rev/gal)	0.24	Depth Out (ft)	12072.00
Wear Pad OD (in)	6.938	Distance Slid (ft)	581.00
Incident	No	Distance Rotated (ft)	20.00
Motor Results		% Distance Sliding	96.67%
Average Total ROP (ft/h)	36.24	% Distance Rotating	3.33%
Average Slide ROP (ft/h)	35.57		
Average Rotating ROP (ft/h)	80.00		

BHA Objective
Drill Curve

Bit Details		POOH Reason/Notes
OD (in)	8.500	Change Bottom Hole Assembly: Motor performed well. yielded 15-18. drained well but and around 1/2" play in bearings
Vendor	Halliburton	
S/N	13243076	
Nozzles	6x22's	
Total Flow Area (in²)	2.227	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: N/a
		MWD:

Bit Distances		Comments
Bit To Survey: 62.00 ft, Gamma: 57.00 ft		Directional: Contender: 6.5" 2.25 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.30 / Bit; Halliburton 8.5" " Type: GTD64C , SN: 13243076, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 2

Mud Properties		Parameters	
Type	Oil Based	Flow Rate (gpm)	507.00 - 507.00
WT	9.40	On Bottom Pressure (psi)	2700.00 - 2900.00
VIS	61.00	Off Bottom Pressure (psi)	2400.00 - 2400.00
PV	18.00	Stall Pressure (psi)	1210.05
YP	7.00	Stalls	0
		NPT	0.0

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Halliburton 8.5 GTD64C, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Halliburton	13243076	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: 2.25 FBH 7/8 5.7 Stg Mtr True Slick, Size (in): 6.50, Bend Angle (°): 2.25, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.7	Contender	CDM-650-001	4 1/2" IF Box	4 1/2" Reg Pin		6.656		31.58	32.53
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	45.94
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	49.45
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	78.82
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	107.35





Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #12 - BHA #12 Lateral (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2019-09-25 20:10
Lobe/Stage	7/8, 8.5	Depth In (ft)	12072.00
Bend Angle	1.75	Date Out	2019-09-30 10:00
Speed (rev/gal)	0.26	Depth Out (ft)	19551.00
Wear Pad OD (in)	6.875	Distance Slid (ft)	516.00
Incident	No	Distance Rotated (ft)	6963.00
Motor Results		% Distance Sliding	6.90%
Average Total ROP (ft/h)	114.33	% Distance Rotating	93.10%
Average Slide ROP (ft/h)	23.82		
Average Rotating ROP (ft/h)	159.15		

Bit Details		BHA Objective
OD (in)	8.500	Drill lateral
Vendor	Baker	

S/N	5302653	POOH Reason/Notes
Nozzles	6x22's	Total Depth/Casing Point: TD'd Well @ 19551' MD
Total Flow Area (in²)	2.227	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: Motor Drained good with 1/4" squat in the bearings
		MWD:

Bit Distances		Comments
Bit To Survey: 67.00 ft, Gamma: 62.00 ft		Directional: Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.80	On Bottom Pressure (psi)
VIS	56.00	Off Bottom Pressure (psi)
PV	18.00	Stall Pressure (psi)
YP	7.00	Stalls
		NPT

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker DD506TWX PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5302653	4 1/2" Reg Pin			8.500		1.07	1.07
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-031	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.22	37.29
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.70
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.21
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.58
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.11





Mud Motor Reports Original Hole

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 1 (BHA #1 (Surface))

Motor Details		Date/Depth/Distances	Hours
S/N	800-40-002	Date In	2019-08-12 13:30
Size (in)	8.0	Depth In (ft)	0.00
Lobe/Stage	7/8, 4.00	Date Out	2019-08-12 23:10
Bend Angle	1.5	Depth Out (ft)	1232.00
Speed (rev/gal)	0.16	Total Drilled (ft)	1232.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00
Manufacturer	N/A	Distance Rotated (ft)	1232.00
Motor Results		% Distance Sliding	0.00%
Motor Incident	No	% Distance Rotating	100.00%
Average Total ROP (ft/h)	278.94	BHA Parameters	
Average Slide ROP (ft/h)	0.00	Flow Rate (gpm)	550.00 - 900.00
Average Rotating ROP (ft/h)	278.94	Stalls	0
Bit Details		Stall Pressure (psi)	899.96
OD (in)	17.500	On Bottom Pressure (psi)	1000.00 - 2900.00
Vendor	Baker	Off Bottom Pressure (psi)	550.00 - 2100.00
S/N	5294782	NPT	0.0
Nozzles	9x12	BHA Objective	
Total Flow Area (in²)	0.994	Drill Surface	
Bit Type	PDC		
Bit Distances			
Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.20 ft			
Mud Properties			
Type	Water		
WT	10.00		
VIS	30.00		
PV	1.00		
YP	1.00		
POOH Reason/Notes			
Penetration Rate: After Dropping flow back from 900 GPM to 740 GPM top decrease drastically after 10 Ft. No drilling parameters were changed after backing of flow rate. decision was made my advance to POOH and inspect BHA for damage. After finding bit to be balled up decision was made to trip back in with same BHA.			
Incident Notes			
Directional: Surface inspection of bha showed a severely balled up bit with 4 out of 6 junk slots on bit packed off solid.			
MWD:			
Comments			
Directional: Motor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5294782, TFA: 0.994, Bit Runs: 1			
MWD:			



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 2 (BHA #2 Surface)

Motor Details		Date/Depth/Distances	Hours
S/N	800-40-002	Date In	2019-08-12 23:10
Size (in)	8.0	Depth In (ft)	1232.00
Lobe/Stage	7/8, 4.00	Date Out	2019-08-13 05:45
Bend Angle	1.5	Depth Out (ft)	1392.00
Speed (rev/gal)	0.16	Total Drilled (ft)	160.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00
Manufacturer	N/A	Distance Rotated (ft)	160.00
Motor Results		% Distance Sliding	0.00%
Motor Incident	No	% Distance Rotating	100.00%
Average Total ROP (ft/h)	43.64		
Average Slide ROP (ft/h)	0.00		
Average Rotating ROP (ft/h)	43.64		
Bit Details			
OD (in)	17.500	On Bottom Pressure (psi)	2900.00 - 2900.00
Vendor	Baker	Off Bottom Pressure (psi)	2100.00 - 2100.00
S/N	5294782	NPT	0.0
Nozzles	9x12		
Total Flow Area (in²)	0.994		
Bit Type	PDC		
Bit Distances			
Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.20 ft			
Mud Properties			
Type	Water		
WT	10.00		
VIS	38.00		
PV	8.00		
YP	32.00		
POOH Reason/Notes			
Pump Pressure: Pooh due to Pressure Loss			
Incident Notes			
Directional: Once out of the hole, noticed set screw on UBHO had washed out.			
MWD:			
Comments			
Directional: otor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5294782, TFA: 0.994, Bit Runs: 1			
MWD:			



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 3 (BHA # 3)

Motor Details		Date/Depth/Distances	Hours
S/N	800-40-002	Date In	2019-08-13 05:45
Size (in)	8.0	Depth In (ft)	1392.00
Lobe/Stage	7/8, 4.00	Date Out	2019-08-13 16:00
Bend Angle	1.5	Depth Out (ft)	1817.00
Speed (rev/gal)	0.16	Total Drilled (ft)	425.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00
Manufacturer	N/A	Distance Rotated (ft)	425.00
Motor Results		% Distance Sliding	0.00%
Motor Incident	No	% Distance Rotating	100.00%
Average Total ROP (ft/h)	89.47		
Average Slide ROP (ft/h)	0.00		
Average Rotating ROP (ft/h)	89.47		
Bit Details			
OD (in)	17.500		
Vendor	Baker		
S/N	7046740		
Nozzles	9x12		
Total Flow Area (in ²)	0.994		
Bit Type	PDC		
Bit Distances			
Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.16 ft			
Mud Properties			
Type	Water		
WT	10.20		
VIS	30.00		
PV	1.00		
YP	12.00		
POOH Reason/Notes			
Total Depth/Casing Point: POOH and TD of Surface section. Motor Performed well.			
Incident Notes			
Directional: N/a			
MWD:			
Comments			
Directional: Motor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5293469, TFA: 0.994, Bit Runs: ?			
MWD:			



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 4 (BHA #4 (12.25 Intermediate))

Motor Details		Date/Depth/Distances		Hours	
S/N	BDT800-017	Date In	2019-08-18 20:05	Downhole Hours	31.92
Size (in)	8.0	Depth In (ft)	1817.00	Drilling/Circulating Hours	20.08
Lobe/Stage	7/8, 5.90	Date Out	2019-08-20 04:00		
Bend Angle	1.5	Depth Out (ft)	5257.00	Circulating Hours	2.25
Speed (rev/gal)	0.17	Total Drilled (ft)	3440.00	Drilling Hours	17.83
Wear Pad OD (in)	8.375	Distance Slid (ft)	85.00	Sliding Hours	1.08
Manufacturer	N/A	Distance Rotated (ft)	3355.00	Rotating Hours	16.75
Motor Results		% Distance Sliding	2.47%	% Hours Rotating	93.93%
Motor Incident	No	% Distance Rotating	97.53%	% Hours Sliding	6.07%
Average Total ROP (ft/h)	192.90	BHA Parameters			
Average Slide ROP (ft/h)	78.46	Flow Rate (gpm)	680.00 - 900.00	Motor RPM	104.00 - 144.00
Average Rotating ROP (ft/h)	200.30	Stalls	0	Surface RPM	40.00 - 100.00
Bit Details		Stall Pressure (psi)	1299.97	Rotating WOB (klbs)	25.00 - 62.00
OD (in)	12.250	On Bottom Pressure (psi)	2800.00 - 4800.00	Sliding WOB (klbs)	18.00 - 32.00
Vendor	Baker Hughes	Off Bottom Pressure (psi)	2400.00 - 4150.00	Temp (°F)	80.00 - 150.00
S/N	5273010	NPT	1.0833333333333333		
Nozzles	6x12	BHA Objective			
Total Flow Area (in²)	0.663	Drill 12.25" Intermediate Section			
Bit Type	PDC				
Bit Distances					
Survey: 73.00 ft					
Mud Properties					
Type	Brine				
WT	10.45				
VIS	29.00				
PV	1.00				
YP	10.00				
POOH Reason/Notes					
Total Depth/Casing Point: Motor performed well. no slack in bearings. motor drained well.					
Incident Notes					
Directional: N/a					
MWD:					
Comments					
Directional: Butchesr: 1.50 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.16, Max Diff: 1390 psi, Max Operating Torque: 21,870 ft/lbs, Protracted Angle: 1.55 / Bit; Baker Hughes 12.25" Type: T606FX, SN:5273010, TFA: 0.663, Jets:6 x 12's, Bit Runs: 4					
MWD:					



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 5 (BHA #5 Intermediate)

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-004	Date In	2019-09-14 22:30	Downhole Hours	68.67
Size (in)	7.0	Depth In (ft)	5257.00	Drilling/Circulating Hours	45.95
Lobe/Stage	7/8, 8.50	Date Out	2019-09-17 19:10		
Bend Angle	1.5	Depth Out (ft)	11234.00	Circulating Hours	3.33
Speed (rev/gal)	0.26	Total Drilled (ft)	5977.00	Drilling Hours	42.62
Wear Pad OD (in)	7.000	Distance Slid (ft)	230.00	Sliding Hours	6.17
Manufacturer	N/A	Distance Rotated (ft)	5747.00	Rotating Hours	36.45
Motor Results		% Distance Sliding	3.85%	% Hours Rotating	85.53%
Motor Incident	No	% Distance Rotating	96.15%	% Hours Sliding	14.47%
Average Total ROP (ft/h)	140.25	BHA Parameters			
Average Slide ROP (ft/h)	37.30	Flow Rate (gpm)	700.00 - 750.00	Motor RPM	117.00 - 195.00
Average Rotating ROP (ft/h)	157.67	Stalls	0	Surface RPM	35.00 - 60.00
Bit Details		Stall Pressure (psi)	1910.00	Rotating WOB (klbs)	22.00 - 43.00
OD (in)	8.500	On Bottom Pressure (psi)	2600.00 - 4000.00	Sliding WOB (klbs)	25.00 - 30.00
Vendor	Halliburton	Off Bottom Pressure (psi)	2500.00 - 3350.00	Temp (°F)	125.00 - 170.00
S/N	13271296	NPT	0.0		
Nozzles	6x12	BHA Objective			
Total Flow Area (in²)	0.663	Drill intermediate to KOP			
Bit Type	PDC				
Bit Distances					
Survey: 64.00 ft, Gamma: 54.00 ft					
Mud Properties					
Type	Water				
WT	9.10				
VIS	23.00				
PV	1.00				
YP	1.00				
POOH Reason/Notes					
Total Depth/Casing Point: Drilled to KOP. POOH for curve assembly. motor performed well					
Incident Notes					
Directional: N/a					
MWD:					
Comments					
Directional: Contender: 1.50 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 400-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.50 / Bit; Halliburton 8.5" " Type: MM65DRM , SN:., New Bit TFA: .663 , Jets: 6 x 12s, Bit Runs: 0					
MWD:					



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 6 (BHA #6 Curve)

Motor Details		Date/Depth/Distances	Hours
S/N	CDM650-019	Date In	2019-09-18 01:40
Size (in)	6.75	Depth In (ft)	11234.00
Lobe/Stage	4/5, 7.00	Date Out	2019-09-19 18:50
Bend Angle	2.25	Depth Out (ft)	11975.00
Speed (rev/gal)	0.50	Total Drilled (ft)	741.00
Wear Pad OD (in)	7.000	Distance Slid (ft)	525.00
Manufacturer	N/A	Distance Rotated (ft)	216.00
Motor Results		% Distance Sliding	70.85%
Motor Incident		% Distance Rotating	29.15%
Average Total ROP (ft/h)	28.41	BHA Parameters	
Average Slide ROP (ft/h)	25.61	Flow Rate (gpm)	500.00 - 600.00
Average Rotating ROP (ft/h)	38.69	Stalls	10
Bit Details		Stall Pressure (psi)	899.96
OD (in)	8.500	On Bottom Pressure (psi)	2750.00 - 3200.00
Vendor	Baker	Off Bottom Pressure (psi)	2250.00 - 2700.00
S/N	5286260	NPT	0.0
Nozzles	6x22	BHA Objective	
Total Flow Area (in ²)	2.227	Drill Curve	
Bit Type	PDC		
Bit Distances			
Survey: 63.00 ft, Gamma: 54.00 ft			
Mud Properties			
Type	Oil Based		
WT	9.00		
VIS	54.00		
PV	14.00		
YP	6.00		

POOH Reason/Notes

Change Bottom Hole Assembly: Motor yields were inconsistent but yielded 8's - 18's, motor selection seemed to weak in top section of curve. motor stalled multiple times while drilling with 400 -500 Diff. Rop was low due to motor stalling. Motor drained well with minimal slack in bearings.

Incident Notes

Directional: while inspecting BHA at surface the bit was observed to have the upper section of the heel and part of the gauge row wiped out. motor selection was likely to fast RPG.

MWD:

Comments

Directional: Contender: 2.25 FBH 4/5 7.0 Stg Mtr, Rev/Gal: 0.49, Flow Range: 300-600, Max Diff: 1580 psi, Max Operating Torque: 9,090 ft/lbs, Protracted Angle: 2.25 / Bit; Baker 8.5" " Type: DD406TX , SN: 5286260, TFA: 2.227 , Jets: 6 x 22s, Bit Runs: 4

MWD:



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 7 (BHA #7 Curve/ Lateral)

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-017	Date In	2019-09-19 18:50	Downhole Hours	21.17
Size (in)	7.0	Depth In (ft)	11975.00	Drilling/Circulating Hours	8.08
Lobe/Stage	7/8, 8.50	Date Out	2019-09-20 16:00		
Bend Angle	1.75	Depth Out (ft)	11975.00	Circulating Hours	8.08
Speed (rev/gal)	0.26	Total Drilled (ft)	0.00	Drilling Hours	0.00
Wear Pad OD (in)	7.188	Distance Slid (ft)	0.00	Sliding Hours	0.00
Manufacturer	N/A	Distance Rotated (ft)	0.00	Rotating Hours	0.00
Motor Results		% Distance Sliding	0	% Hours Rotating	0%
Motor Incident	Yes	% Distance Rotating	0	% Hours Sliding	0%
Average Total ROP (ft/h)	0.00	BHA Parameters			
Average Slide ROP (ft/h)	0.00	Flow Rate (gpm)	450.00 - 700.00	Motor RPM	104.00 - 144.00
Average Rotating ROP (ft/h)	0.00	Stalls	20	Surface RPM	20.00 - 50.00
Bit Details		Stall Pressure (psi)	1750.03	Rotating WOB (klbs)	0.00 - 0.00
OD (in)	8.500	On Bottom Pressure (psi)	4500.00 - 6000.00	Sliding WOB (klbs)	0.00 - 0.00
Vendor	Baker	Off Bottom Pressure (psi)	2700.00 - 2800.00	Temp (°F)	120.00 - 120.00
S/N	5300717	NPT	0.0		
Nozzles	6x22	BHA Objective			
Total Flow Area (in²)	2.227	Land Curve / Drill Lateral			
Bit Type	PDC				
Bit Distances					
Survey: 67.00 ft, Gamma: 62.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.40				
VIS	59.00				
PV	14.00				
YP	6.00				

POOH Reason/Notes

Downhole Motor Incident: After TIH with BHA #7 curve / lateral hit tight spot @11354' washed and reamed to 11973' attempt to pump & rotate to btm @11975 no success. pressuring up and torquing up to 28k after numerous attempt working pipe up and down. Noticed chuck of rubber coming out thru shaker. POOH to inspect BHA

Incident Notes

Directional: ON surface motor parted at bottom connection of fixed bend housing

MWD:

Comments

Directional: Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5300717, TFA: 2.227 , Jets: 6 x 22s, Bit Runs: 1

MWD:



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 8 (BHA # 8 (Fishing BHA))

Motor Details		Date/Depth/Distances		Hours	
S/N		Date In	2019-09-20 16:00	Downhole Hours	19.00
Size (in)		Depth In (ft)	11975.00	Drilling/Circulating Hours	6.00
Lobe/Stage	N/A	Date Out	2019-09-21 11:00		
Bend Angle		Depth Out (ft)	11975.00	Circulating Hours	6.00
Speed (rev/gal)		Total Drilled (ft)	0.00	Drilling Hours	0.00
Wear Pad OD (in)	N/A	Distance Slid (ft)	0.00	Sliding Hours	0.00
Manufacturer		Distance Rotated (ft)	0.00	Rotating Hours	0.00
Motor Results		% Distance Sliding	0	% Hours Rotating	0%
Motor Incident	No	% Distance Rotating	0	% Hours Sliding	0%
Average Total ROP (ft/h)	0.00	BHA Parameters			
Average Slide ROP (ft/h)	0.00	Flow Rate (gpm)	0.00 - 0.00	Motor RPM	-
Average Rotating ROP (ft/h)	0.00	Stalls	0	Surface RPM	0.00 - 0.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	0.00 - 0.00
OD (in)	N/A	On Bottom Pressure (psi)	0.00 - 0.00	Sliding WOB (klbs)	0.00 - 0.00
Vendor	N/A	Off Bottom Pressure (psi)	0.00 - 0.00	Temp (°F)	-0.00 - -0.00
S/N	N/A	NPT	0.0		
Nozzles	N/A	BHA Objective			
Total Flow Area (in²)	N/A	Latch on to fish in hole			
Bit Type	N/A				
Bit Distances					
Survey: 67.00 ft, Gamma: 62.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.40				
VIS	59.00				
PV	14.00				
YP	6.00				
POOH Reason/Notes					
Other: Fishing, first attempt unsuccessful					
Incident Notes					
Directional:					
MWD:					
Comments					
Directional:					
MWD:					



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 9 (BHA #9 Hole Opener)

Motor Details		Date/Depth/Distances		Hours	
S/N		Date In	2019-09-21 14:00	Downhole Hours	32.17
Size (in)		Depth In (ft)	11975.00	Drilling/Circulating Hours	2.50
Lobe/Stage	N/A	Date Out	2019-09-22 22:10		
Bend Angle		Depth Out (ft)	11975.00	Circulating Hours	2.50
Speed (rev/gal)		Total Drilled (ft)	0.00	Drilling Hours	0.00
Wear Pad OD (in)	N/A	Distance Slid (ft)	0.00	Sliding Hours	0.00
Manufacturer		Distance Rotated (ft)	0.00	Rotating Hours	0.00
Motor Results		% Distance Sliding	0	% Hours Rotating	0%
Motor Incident	No	% Distance Rotating	0	% Hours Sliding	0%
Average Total ROP (ft/h)	0.00	BHA Parameters			
Average Slide ROP (ft/h)	0.00	Flow Rate (gpm)	0.00 - 0.00	Motor RPM	-
Average Rotating ROP (ft/h)	0.00	Stalls	0	Surface RPM	0.00 - 0.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	0.00 - 0.00
OD (in)	8.500	On Bottom Pressure (psi)	0.00 - 0.00	Sliding WOB (klbs)	0.00 - 0.00
Vendor	Baker	Off Bottom Pressure (psi)	0.00 - 0.00	Temp (°F)	-0.00 - -0.00
S/N	5289431	NPT	0.0		
Nozzles	3x22's	BHA Objective			
Total Flow Area (in²)	1.114	Hole Opener			
Bit Type	Tooth Bit				
Bit Distances					
N/A					
Mud Properties					
Type	Oil Based				
WT	9.40				
VIS	59.00				
PV	14.00				
YP	6.00				
POOH Reason/Notes					
Other: Hole Opener					
Incident Notes					
Directional:					
MWD:					
Comments					
Directional:					
MWD:					



Daily Reports

Lateral #1

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 10 (Aim BHA #10 (ST/Curve) - AEP BHA #9)

Motor Details		Date/Depth/Distances		Hours	
S/N	CDM-650-016	Date In	2019-09-22 22:10	Downhole Hours	39.33
Size (in)	6.5	Depth In (ft)	11250.00	Drilling/Circulating Hours	29.42
Lobe/Stage	7/8, 5.70	Date Out	2019-09-24 13:30		
Bend Angle	2.12	Depth Out (ft)	11471.00	Circulating Hours	4.92
Speed (rev/gal)	0.24	Total Drilled (ft)	221.00	Drilling Hours	24.50
Wear Pad OD (in)	6.875	Distance Slid (ft)	176.00	Sliding Hours	23.08
Manufacturer	N/A	Distance Rotated (ft)	45.00	Rotating Hours	1.42
Motor Results		% Distance Sliding	79.64%	% Hours Rotating	5.78%
Motor Incident	No	% Distance Rotating	20.36%	% Hours Sliding	94.22%
Average Total ROP (ft/h)	9.02	BHA Parameters			
Average Slide ROP (ft/h)	7.62	Flow Rate (gpm)	500.00 - 600.00	Motor RPM	120.00 - 144.00
Average Rotating ROP (ft/h)	31.76	Stalls	0	Surface RPM	20.00 - 20.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	40.00 - 40.00
OD (in)	8.500	On Bottom Pressure (psi)	2550.00 - 3600.00	Sliding WOB (klbs)	1.00 - 48.00
Vendor	Baker	Off Bottom Pressure (psi)	2550.00 - 3300.00	Temp (°F)	147.00 - 152.00
S/N	5304972	NPT	0.0		
Nozzles	4x18	BHA Objective			
Total Flow Area (in²)	0.994	Side Track / Drill Curve			
Bit Type	PDC				
Bit Distances					
Survey: 62.00 ft, Gamma: 57.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.70				
VIS	70.00				
PV	21.00				
YP	7.00				
POOH Reason/Notes					
Build Rate: While starting the curve, having trouble holding TF do to diff. spikes (50-100 psi) kicking TF from 180 to 270. & low ROP. POOH to inspect BHA					
Incident Notes					
Directional: On surface motor drained, no visible damage, 1" squat . Kymera bit had chipped teeth on a roller					
MWD:					
Comments					
Directional: Contender:6.5" 2.12 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.10 / Bit; Baker 8.5" " Type: KMX624 , SN: 5304972, TFA: .994 , Jets: 4 x 18's, Bit Runs: 0					
MWD:					



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 11 (BHA #11 (Curve) AEP BHA #10)

Motor Details		Date/Depth/Distances	Hours
S/N	CDM-650-001	Date In	2019-09-24 13:30
Size (in)	6.5	Depth In (ft)	11471.00
Lobe/Stage	7/8, 5.70	Date Out	2019-09-25 20:10
Bend Angle	2.25	Depth Out (ft)	12072.00
Speed (rev/gal)	0.24	Total Drilled (ft)	601.00
Wear Pad OD (in)	6.938	Distance Slid (ft)	581.00
Manufacturer	N/A	Distance Rotated (ft)	20.00
Motor Results		% Distance Sliding	96.67%
Motor Incident	No	% Distance Rotating	3.33%
Average Total ROP (ft/h)	36.24	BHA Parameters	
Average Slide ROP (ft/h)	35.57	Flow Rate (gpm)	507.00 - 507.00
Average Rotating ROP (ft/h)	80.00	Stalls	0
Bit Details		Stall Pressure (psi)	1210.05
OD (in)	8.500	On Bottom Pressure (psi)	2700.00 - 2900.00
Vendor	Halliburton	Off Bottom Pressure (psi)	2400.00 - 2400.00
S/N	13243076	NPT	0.0
Nozzles	6x22's	BHA Objective	
Total Flow Area (in ²)	2.227	Drill Curve	
Bit Type	PDC		
Bit Distances			
Survey: 62.00 ft, Gamma: 57.00 ft			
Mud Properties			
Type	Oil Based		
WT	9.40		
VIS	61.00		
PV	18.00		
YP	7.00		
POOH Reason/Notes			
Change Bottom Hole Assembly: Motor performed well. yielded 15-18. drained well but and around 1/2" play in bearings			
Incident Notes			
Directional: N/a			
MWD:			
Comments			
Directional: Contender:6.5" 2.25 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.30 / Bit; Halliburton 8.5" " Type: GTD64C , SN: 13243076, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 2			
MWD:			



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 12 (BHA #12 Lateral)

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-031	Date In	2019-09-25 20:10	Downhole Hours	109.83
Size (in)	7.0	Depth In (ft)	12072.00	Drilling/Circulating Hours	81.25
Lobe/Stage	7/8, 8.50	Date Out	2019-09-30 10:00		
Bend Angle	1.75	Depth Out (ft)	19551.00	Circulating Hours	15.83
Speed (rev/gal)	0.26	Total Drilled (ft)	7479.00	Drilling Hours	65.42
Wear Pad OD (in)	6.875	Distance Slid (ft)	516.00	Sliding Hours	21.67
Manufacturer	N/A	Distance Rotated (ft)	6963.00	Rotating Hours	43.75
Motor Results		% Distance Sliding	6.90%	% Hours Rotating	66.88%
Motor Incident	No	% Distance Rotating	93.10%	% Hours Sliding	33.12%
Average Total ROP (ft/h)	114.33	BHA Parameters			
Average Slide ROP (ft/h)	23.82	Flow Rate (gpm)	507.00 - 750.00	Motor RPM	104.00 - 144.00
Average Rotating ROP (ft/h)	159.15	Stalls	0	Surface RPM	20.00 - 70.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	30.00 - 50.00
OD (in)	8.500	On Bottom Pressure (psi)	2850.00 - 5700.00	Sliding WOB (klbs)	40.00 - 50.00
Vendor	Baker	Off Bottom Pressure (psi)	2400.00 - 4800.00	Temp (°F)	175.00 - 204.00
S/N	5302653	NPT	0.0		
Nozzles	6x22's	BHA Objective			
Total Flow Area (in²)	2.227	Drill lateral			
Bit Type	PDC				
Bit Distances					
Survey: 67.00 ft, Gamma: 62.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.80				
VIS	56.00				
PV	18.00				
YP	7.00				
POOH Reason/Notes					
Total Depth/Casing Point: TD'd Well @ 19551' MD					
Incident Notes					
Directional: Motor Drained good with 1/4" squat in the bearings					
MWD:					
Comments					
Directional: Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1					
MWD:					



Slide/Rotate Reports

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #1 (BHA #1 (Surface))

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	08-12	15:45	16:20	08-12	0.58	0.00	260.00	260.00	445.71	N/A	550.00	40.0	15.00	1000.00	550.00	
Rotate	08-12	16:30	16:45	08-12	0.25	260.00	382.00	122.00	488.00	N/A	900.00	50.0	20.00	1450.00	1800.00	
Rotate	08-12	16:50	17:10	08-12	0.33	382.00	563.00	181.00	543.00	N/A	900.00	50.0	20.00	1450.00	1800.00	
Rotate	08-12	17:20	17:45	08-12	0.42	563.00	747.00	184.00	441.60	N/A	900.00	50.0	20.00	1450.00	1800.00	
Rotate	08-12	17:55	18:45	08-12	0.83	747.00	929.00	182.00	218.40	N/A	900.00	50.0	25.00	2900.00	2100.00	
Rotate	08-12	18:50	19:40	08-12	0.83	929.00	1111.00	182.00	218.40	N/A	900.00	50.0	25.00	2900.00	2100.00	
Rotate	08-12	19:45	20:55	08-12	1.17	1111.00	1232.00	121.00	103.71	N/A	900.00	50.0	25.00	2900.00	2100.00	

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620	
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H	
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man	

Slide/Rotate Report - BHA #2 (BHA #2 Surface)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	08-13	00:25	01:10	08-13	0.75	1232.00	1297.00	65.00	86.67	N/A	900.00	70.0	30.00	2900.00	2100.00	
Rotate	08-13	01:15	04:10	08-13	2.92	1297.00	1392.00	95.00	32.57	N/A	900.00	70.0	30.00	2900.00	2100.00	

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620	
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H	
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man	

Slide/Rotate Report - BHA #3 (BHA # 3)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	08-13	08:05	09:15	08-13	1.17	1392.00	1486.00	94.00	80.57	N/A	900.00	70.0	30.00	2900.00	2100.00	
Rotate	08-13	09:20	10:00	08-13	0.67	1486.00	1580.00	94.00	141.00	N/A	900.00	70.0	30.00	2900.00	2100.00	
Rotate	08-13	10:05	11:00	08-13	0.92	1580.00	1675.00	95.00	103.64	N/A	900.00	70.0	30.00	2900.00	2100.00	
Rotate	08-13	11:05	12:30	08-13	1.42	1675.00	1769.00	94.00	66.35	N/A	900.00	70.0	30.00	2900.00	2100.00	
Rotate	08-13	12:45	13:20	08-13	0.58	1769.00	1817.00	48.00	82.29	N/A	900.00	70.0	30.00	2900.00	2100.00	



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #4 (BHA #4 (12.25 Intermediate))

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	08-18	23:10	23:40	08-18	0.5	1817.00	1919.00	102.00	204.00	N/A	680.00	40.0	25.00	2800.00	2400.00	
Rotate	08-18	23:45	00:00	08-19	0.25	1919.00	1985.00	66.00	264.00	N/A	680.00	40.0	25.00	2800.00	2400.00	
Rotate	08-19	00:55	01:05	08-19	0.17	1985.00	2014.00	29.00	174.00	N/A	680.00	40.0	25.00	2800.00	2400.00	
Rotate	08-19	01:10	01:15	08-19	0.08	2014.00	2023.00	9.00	108.00	N/A	680.00	80.0	25.00	2800.00	2400.00	
Slide	08-19	01:15	01:20	08-19	0.08	2023.00	2043.00	20.00	240.00	110.0	900.00	N/A	18.00	4300.00	2900.00	
Rotate	08-19	01:20	01:40	08-19	0.33	2043.00	2108.00	65.00	195.00	N/A	900.00	80.0	25.00	4400.00	3900.00	
Rotate	08-19	01:50	02:20	08-19	0.5	2108.00	2190.00	82.00	164.00	N/A	900.00	80.0	25.00	4400.00	3900.00	
Rotate	08-19	02:30	02:35	08-19	0.08	2190.00	2203.00	13.00	156.00	N/A	900.00	80.0	25.00	4400.00	3900.00	
Rotate	08-19	02:40	02:45	08-19	0.08	2203.00	2213.00	10.00	120.00	N/A	734.00	100.0	25.00	3200.00	2700.00	
Slide	08-19	02:45	03:05	08-19	0.33	2213.00	2238.00	25.00	75.00	80.0	734.00	N/A	32.00	3200.00	2700.00	
Rotate	08-19	03:05	03:25	08-19	0.33	2238.00	2297.00	59.00	177.00	N/A	734.00	100.0	25.00	3200.00	2700.00	
Rotate	08-19	03:30	04:00	08-19	0.5	2297.00	2391.00	94.00	188.00	N/A	900.00	100.0	25.00	4300.00	3900.00	
Rotate	08-19	04:05	04:30	08-19	0.42	2391.00	2486.00	95.00	228.00	N/A	900.00	100.0	25.00	4300.00	3900.00	
Rotate	08-19	04:35	05:00	08-19	0.42	2486.00	2580.00	94.00	225.60	N/A	900.00	100.0	25.00	4300.00	3900.00	
Rotate	08-19	05:05	05:10	08-19	0.08	2580.00	2589.00	9.00	108.00	N/A	900.00	100.0	25.00	4300.00	3900.00	
Slide	08-19	05:10	05:15	08-19	0.08	2589.00	2609.00	20.00	240.00	45.0	900.00	N/A	28.00	4300.00	3700.00	
Rotate	08-19	05:15	05:40	08-19	0.42	2609.00	2674.00	65.00	156.00	N/A	900.00	100.0	25.00	4300.00	3900.00	
Rotate	08-19	05:45	06:10	08-19	0.42	2674.00	2768.00	94.00	225.60	N/A	900.00	100.0	25.00	4300.00	3900.00	
Rotate	08-19	06:15	06:40	08-19	0.42	2768.00	2862.00	94.00	225.60	N/A	900.00	100.0	25.00	4300.00	3900.00	
Rotate	08-19	06:45	07:00	08-19	0.25	2862.00	2957.00	95.00	380.00	N/A	900.00	100.0	25.00	4300.00	3900.00	
Rotate	08-19	07:05	07:20	08-19	0.25	2957.00	3051.00	94.00	376.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	07:35	08:05	08-19	0.5	3051.00	3240.00	189.00	378.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	08:10	08:30	08-19	0.33	3240.00	3334.00	94.00	282.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	08:35	08:50	08-19	0.25	3334.00	3428.00	94.00	376.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	08:55	09:25	08-19	0.5	3428.00	3522.00	94.00	188.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	09:30	10:00	08-19	0.5	3522.00	3617.00	95.00	190.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	10:15	10:25	08-19	0.17	3617.00	3711.00	94.00	564.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	10:30	11:00	08-19	0.5	3711.00	3806.00	95.00	190.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	11:05	11:30	08-19	0.42	3806.00	3900.00	94.00	225.60	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	11:35	12:15	08-19	0.67	3900.00	3994.00	94.00	141.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	12:20	12:45	08-19	0.42	3994.00	4089.00	95.00	228.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	12:50	13:20	08-19	0.5	4089.00	4183.00	94.00	188.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	13:25	13:50	08-19	0.42	4183.00	4277.00	94.00	225.60	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	14:10	14:35	08-19	0.42	4277.00	4372.00	95.00	228.00	N/A	900.00	100.0	40.00	4800.00	4150.00	
Rotate	08-19	14:40	15:05	08-19	0.42	4372.00	4466.00	94.00	225.60	N/A	900.00	100.0	40.00	4800.00	4150.00	
Slide	08-19	15:05	15:40	08-19	0.58	4466.00	4486.00	20.00	34.29	250.0	733.00	N/A	20.00	3400.00	3100.00	
Rotate	08-19	15:40	16:15	08-19	0.58	4486.00	4560.00	74.00	126.86	N/A	733.00	100.0	50.00	4200.00	3150.00	
Rotate	08-19	16:20	16:50	08-19	0.5	4560.00	4655.00	95.00	190.00	N/A	733.00	100.0	50.00	4200.00	3150.00	
Rotate	08-19	16:55	17:10	08-19	0.25	4655.00	4749.00	94.00	376.00	N/A	733.00	100.0	50.00	4200.00	3150.00	
Rotate	08-19	17:15	18:10	08-19	0.92	4749.00	4843.00	94.00	102.55	N/A	733.00	80.0	60.00	3900.00	3150.00	
Rotate	08-19	18:15	19:00	08-19	0.75	4843.00	4938.00	95.00	126.67	N/A	733.00	80.0	62.00	3900.00	3150.00	
Rotate	08-19	19:05	19:40	08-19	0.58	4938.00	5032.00	94.00	161.14	N/A	733.00	80.0	62.00	3900.00	3150.00	
Rotate	08-19	19:45	20:30	08-19	0.75	5032.00	5127.00	95.00	126.67	N/A	733.00	80.0	62.00	3900.00	3150.00	
Rotate	08-19	20:35	21:10	08-19	0.58	5127.00	5221.00	94.00	161.14	N/A	733.00	80.0	62.00	3900.00	3150.00	
Rotate	08-19	21:20	21:40	08-19	0.33	5221.00	5257.00	36.00	108.00	N/A	733.00	80.0	62.00	3900.00	3150.00	



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #5 (BHA #5 Intermediate)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	09-15	03:30	04:05	09-15	0.58	5257.00	5328.00	71.00	121.71	N/A	700.00	40.0	22.00	3100.00	2500.00	
Rotate	09-15	04:10	04:25	09-15	0.25	5328.00	5422.00	94.00	376.00	N/A	700.00	40.0	22.00	3100.00	2500.00	
Rotate	09-15	04:30	04:55	09-15	0.42	5422.00	5517.00	95.00	228.00	N/A	700.00	40.0	22.00	3100.00	2500.00	
Rotate	09-15	05:00	05:05	09-15	0.08	5517.00	5527.00	10.00	120.00	N/A	700.00	40.0	22.00	3100.00	2500.00	
Slide	09-15	05:05	05:20	09-15	0.25	5527.00	5542.00	15.00	60.00	160.0	700.00	N/A	30.00	3000.00	2700.00	
Rotate	09-15	05:20	05:55	09-15	0.58	5542.00	5611.00	69.00	118.29	N/A	700.00	40.0	22.00	3100.00	2500.00	
Rotate	09-15	06:00	06:30	09-15	0.5	5611.00	5705.00	94.00	188.00	N/A	700.00	40.0	22.00	3100.00	2500.00	
Rotate	09-15	06:35	06:40	09-15	0.08	5705.00	5715.00	10.00	120.00	N/A	750.00	40.0	25.00	3300.00	3000.00	
Slide	09-15	06:40	06:50	09-15	0.17	5715.00	5730.00	15.00	90.00	170.0	750.00	N/A	29.00	3300.00	3000.00	
Rotate	09-15	06:50	07:05	09-15	0.25	5730.00	5800.00	70.00	280.00	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	07:10	07:25	09-15	0.25	5800.00	5894.00	94.00	376.00	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	07:30	07:40	09-15	0.17	5894.00	5988.00	94.00	564.00	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	07:45	07:52	09-15	0.12	5988.00	6082.00	94.00	805.71	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	07:55	08:10	09-15	0.25	6082.00	6177.00	95.00	380.00	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	08:13	08:22	09-15	0.15	6177.00	6271.00	94.00	626.67	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	08:25	08:35	09-15	0.17	6271.00	6365.00	94.00	564.00	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	08:37	08:49	09-15	0.2	6365.00	6459.00	94.00	470.00	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	08:52	09:03	09-15	0.18	6459.00	6554.00	95.00	518.18	N/A	750.00	40.0	35.00	3600.00	3000.00	
Rotate	09-15	09:06	09:19	09-15	0.22	6554.00	6648.00	94.00	433.85	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	09:21	09:33	09-15	0.2	6648.00	6742.00	94.00	470.00	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	09:36	09:47	09-15	0.18	6742.00	6837.00	95.00	518.18	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	09:50	10:04	09-15	0.23	6837.00	6931.00	94.00	402.86	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	10:07	10:23	09-15	0.27	6931.00	7026.00	95.00	356.25	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	10:26	10:30	09-15	0.07	7026.00	7040.00	14.00	210.00	N/A	750.00	40.0	35.00	4000.00	3100.00	
Slide	09-15	10:30	10:45	09-15	0.25	7040.00	7055.00	15.00	60.00	150.0	750.00	N/A	30.00	4000.00	3100.00	
Rotate	09-15	10:45	10:57	09-15	0.2	7055.00	7120.00	65.00	325.00	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	11:00	11:19	09-15	0.32	7120.00	7214.00	94.00	296.84	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	11:22	11:37	09-15	0.25	7214.00	7309.00	95.00	380.00	N/A	750.00	40.0	35.00	4000.00	3100.00	
Rotate	09-15	11:40	12:02	09-15	0.37	7309.00	7404.00	95.00	259.09	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	12:05	12:25	09-15	0.33	7404.00	7498.00	94.00	282.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	12:30	12:35	09-15	0.08	7498.00	7509.00	11.00	132.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Slide	09-15	12:35	12:50	09-15	0.25	7509.00	7529.00	20.00	80.00	0.0	750.00	N/A	30.00	4000.00	3100.00	
Rotate	09-15	12:50	13:05	09-15	0.25	7529.00	7593.00	64.00	256.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	13:10	13:40	09-15	0.5	7593.00	7687.00	94.00	188.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	13:45	14:05	09-15	0.33	7687.00	7782.00	95.00	285.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	14:10	14:30	09-15	0.33	7782.00	7876.00	94.00	282.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	14:35	14:55	09-15	0.33	7876.00	7971.00	95.00	285.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	15:00	15:10	09-15	0.17	7971.00	7981.00	10.00	60.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Slide	09-15	15:10	15:30	09-15	0.33	7981.00	7996.00	15.00	45.00	0.0	750.00	N/A	30.00	4000.00	3100.00	
Rotate	09-15	15:30	15:50	09-15	0.33	7996.00	8065.00	69.00	207.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	16:10	16:35	09-15	0.42	8065.00	8159.00	94.00	225.60	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	16:40	17:10	09-15	0.5	8159.00	8253.00	94.00	188.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	17:15	17:35	09-15	0.33	8253.00	8347.00	94.00	282.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	17:40	17:55	09-15	0.25	8347.00	8442.00	95.00	380.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	18:00	18:30	09-15	0.5	8442.00	8536.00	94.00	188.00	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	18:35	19:10	09-15	0.58	8536.00	8630.00	94.00	161.14	N/A	750.00	35.0	35.00	4000.00	3100.00	
Rotate	09-15	19:15	19:50	09-15	0.58	8630.00	8724.00	94.00	161.14	N/A	750.00	35.0	41.00	3600.00	3100.00	
Rotate	09-15	19:55	20:00	09-15	0.08	8724.00	8734.00	10.00	120.00	N/A	750.00	35.0	41.00	3600.00	3100.00	
Slide	09-15	20:00	20:20	09-15	0.33	8734.00	8749.00	15.00	45.00	60.0	750.00	N/A	25.00	3300.00	3100.00	
Rotate	09-15	20:20	21:05	09-15	0.75	8749.00	8818.00	69.00	92.00	N/A	750.00	35.0	41.00	3600.00	3100.00	
Rotate	09-15	21:10	22:05	09-15	0.92	8818.00	8913.00	95.00	103.64	N/A	750.00	45.0	41.00	3500.00	3200.00	
Rotate	09-15	22:10	22:45	09-15	0.58	8913.00	9007.00	94.00	161.14	N/A	750.00	45.0	41.00	3500.00	3200.00	
Rotate	09-15	22:50	22:55	09-15	0.08	9007.00	9017.00	10.00	120.00	N/A	750.00	45.0	41.00	3500.00	3200.00	
Slide	09-15	22:55	23:20	09-15	0.42	9017.00	9037.00	20.00	48.00	90.0	750.00	N/A	25.00	3300.00	3100.00	
Rotate	09-15	23:20	00:00	09-16	0.67	9037.00	9101.00	64.00	96.00	N/A	750.00	45.0	41.00	3500.00	3200.00	
Rotate	09-16	00:05	00:40	09-16	0.58	9101.00	9196.00	95.00	162.86	N/A	750.00	45.0	41.00	3500.00	3200.00	
Rotate	09-16	00:45	00:50	09-16	0.08	9196.00	9206.00	10.00	120.00	N/A	750.00	45.0	41.00	3500.00	3200.00	
Slide	09-16	00:50	01:10	09-16	0.33	9206.00	9226.00	20.00	60.00	100.0	750.00	N/A	25.00	3300.00	3100.00	
Rotate	09-16	01:10	01:50	09-16	0.67	9226.00	9290.00	64.00	96.00	N/A	750.00	45.0	41.00	3100.00	2800.00	
Rotate	09-16	02:00	03:00	09-16	1.0	9290.00	9385.00	95.00	95.00	N/A	750.00	45.0	41.00	3000.00	2700.00	
Rotate	09-16	03:10	03:15	09-16	0.08	9385.00	9395.00	10.00	120.00	N/A	750.00	45.0	41.00	2900.00	2600.00	
Slide	09-16	03:15	04:15	09-16	1.0	9395.00	9415.00	20.00	20.00	125.0	750.00	N/A	25.00	2600.00	2500.00	
Rotate	09-16	10:00	10:45	09-16	0.75	9415.00	9479.00	64.00	85.33	N/A	750.00	45.0	41.00	3600.00	3350.00	
Rotate	09-16	10:50	11:35	09-16	0.75	9479.00	9573.00	94.00	125.33	N/A	750.00	45.0	41.00	3600.00	3350.00	

Rotate	09-16	11:40	12:30	09-16	0.83	9573.00	9668.00	95.00	114.00	N/A	750.00	45.0	41.00	3600.00	3350.00
Rotate	09-16	12:35	12:45	09-16	0.17	9668.00	9678.00	10.00	60.00	N/A	750.00	45.0	41.00	3600.00	3350.00
Slide	09-16	12:45	13:20	09-16	0.58	9678.00	9698.00	20.00	34.29	80.0	750.00	N/A	25.00	2600.00	2500.00
Rotate	09-16	13:20	14:00	09-16	0.67	9698.00	9762.00	64.00	96.00	N/A	750.00	45.0	41.00	3600.00	3350.00
Rotate	09-16	14:05	14:15	09-16	0.17	9762.00	9772.00	10.00	60.00	N/A	750.00	45.0	41.00	3600.00	3350.00
Slide	09-16	14:15	15:30	09-16	1.25	9772.00	9797.00	25.00	20.00	90.0	750.00	N/A	25.00	2600.00	2500.00
Rotate	09-16	15:30	16:15	09-16	0.75	9797.00	9857.00	60.00	80.00	N/A	750.00	45.0	41.00	3600.00	3350.00
Rotate	09-16	16:35	17:30	09-16	0.92	9857.00	9951.00	94.00	102.55	N/A	750.00	45.0	41.00	3600.00	3350.00
Rotate	09-16	17:35	18:40	09-16	1.08	9951.00	10045.00	94.00	86.77	N/A	750.00	45.0	41.00	3600.00	3350.00
Rotate	09-16	18:45	19:55	09-16	1.17	10045.00	10140.00	95.00	81.43	N/A	750.00	35.0	41.00	3750.00	3200.00
Rotate	09-16	20:00	21:10	09-16	1.17	10140.00	10234.00	94.00	80.57	N/A	750.00	35.0	41.00	3750.00	3200.00
Rotate	09-16	21:15	22:20	09-16	1.08	10234.00	10328.00	94.00	86.77	N/A	750.00	35.0	41.00	3750.00	3200.00
Rotate	09-16	22:25	23:20	09-16	0.92	10328.00	10423.00	95.00	103.64	N/A	750.00	35.0	41.00	3750.00	3200.00
Rotate	09-16	23:25	00:00	09-17	0.58	10423.00	10461.00	38.00	65.14	N/A	750.00	35.0	41.00	3750.00	3200.00
Rotate	09-17	00:00	00:40	09-17	0.67	10461.00	10517.00	56.00	84.00	N/A	750.00	35.0	41.00	3750.00	3200.00
Rotate	09-17	00:45	01:45	09-17	1.0	10517.00	10611.00	94.00	94.00	N/A	750.00	35.0	43.00	3800.00	3350.00
Rotate	09-17	01:50	02:50	09-17	1.0	10611.00	10705.00	94.00	94.00	N/A	750.00	35.0	43.00	3800.00	3350.00
Rotate	09-17	02:55	03:50	09-17	0.92	10705.00	10800.00	95.00	103.64	N/A	750.00	35.0	43.00	3800.00	3350.00
Rotate	09-17	03:55	04:35	09-17	0.67	10800.00	10894.00	94.00	141.00	N/A	750.00	35.0	43.00	3800.00	3350.00
Rotate	09-17	04:40	05:30	09-17	0.83	10894.00	10989.00	95.00	114.00	N/A	750.00	60.0	43.00	3800.00	3350.00
Rotate	09-17	05:35	05:40	09-17	0.08	10989.00	10999.00	10.00	120.00	N/A	750.00	60.0	43.00	3800.00	3350.00
Slide	09-17	05:40	06:40	09-17	1.0	10999.00	11029.00	30.00	30.00	0.0	735.00	N/A	30.00	3550.00	3300.00
Rotate	09-17	06:40	07:10	09-17	0.5	11029.00	11083.00	54.00	108.00	N/A	750.00	60.0	43.00	3800.00	3350.00
Rotate	09-17	07:15	08:20	09-17	1.08	11083.00	11177.00	94.00	86.77	N/A	750.00	60.0	43.00	3800.00	3350.00
Rotate	09-17	08:25	09:15	09-17	0.83	11177.00	11234.00	57.00	68.40	N/A	750.00	60.0	43.00	3800.00	3350.00



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #6 (BHA #6 Curve)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Slide	09-18	07:40	11:00	09-18	3.33	11234.00	11329.00	95.00	28.50	0.0	550.00	N/A	35.00	2800.00	2300.00	
Rotate	09-18	11:45	12:45	09-18	1.0	11329.00	11354.00	25.00	25.00	N/A	550.00	20.0	40.00	2750.00	2250.00	
Slide	09-18	12:45	15:45	09-18	3.0	11354.00	11422.00	68.00	22.67	15.0	550.00	N/A	35.00	2800.00	2300.00	
Rotate	09-18	15:50	16:05	09-18	0.25	11422.00	11437.00	15.00	60.00	N/A	550.00	20.0	40.00	2750.00	2250.00	
Slide	09-18	16:05	17:45	09-18	1.67	11437.00	11487.00	50.00	30.00	15.0	550.00	N/A	35.00	2800.00	2300.00	
Rotate	09-18	17:45	18:35	09-18	0.83	11487.00	11517.00	30.00	36.00	N/A	550.00	20.0	40.00	2750.00	2250.00	
Rotate	09-18	18:45	19:30	09-18	0.75	11517.00	11547.00	30.00	40.00	N/A	550.00	20.0	40.00	2750.00	2250.00	
Slide	09-18	19:30	22:15	09-18	2.75	11547.00	11611.00	64.00	23.27	50.0	600.00	N/A	40.00	3200.00	2700.00	
Slide	09-18	22:25	00:00	09-19	1.58	11611.00	11640.00	29.00	18.32	10.0	600.00	N/A	40.00	3200.00	2700.00	
Slide	09-19	00:00	03:45	09-19	3.75	11640.00	11705.00	65.00	17.33	10.0	600.00	N/A	40.00	3200.00	2700.00	
Slide	09-19	03:55	05:55	09-19	2.0	11705.00	11799.00	94.00	47.00	345.0	600.00	N/A	45.00	3200.00	2700.00	
Rotate	09-19	06:00	06:25	09-19	0.42	11799.00	11824.00	25.00	60.00	N/A	550.00	20.0	40.00	2750.00	2250.00	
Slide	09-19	06:25	08:50	09-19	2.42	11824.00	11884.00	60.00	24.83	10.0	500.00	N/A	45.00	3200.00	2700.00	
Rotate	09-19	08:50	09:00	09-19	0.17	11884.00	11894.00	10.00	60.00	N/A	550.00	20.0	40.00	2750.00	2250.00	
Rotate	09-19	09:05	11:15	09-19	2.17	11894.00	11975.00	81.00	37.38	N/A	550.00	20.0	40.00	2750.00	2250.00	

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620	
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H	
	Play Delaware Basin	State/Province and Country New Mexico, US		County Lea	Company Man

Slide/Rotate Report - BHA #7 (BHA #7 Curve/ Lateral)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
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	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620	
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H	
	Play Delaware Basin	State/Province and Country New Mexico, US		County Lea	Company Man

Slide/Rotate Report - BHA #8 (BHA # 8 (Fishing BHA))

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
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	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620	
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H	
	Play Delaware Basin	State/Province and Country New Mexico, US		County Lea	Company Man

Slide/Rotate Report - BHA #9 (BHA #9 Hole Opener)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
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Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #10 (Aim BHA #10 (ST/Curve) - AEP BHA #9)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Slide	09-23	08:00	16:30	09-23	8.5	11250.00	11258.00	8.00	0.94	160.0	500.00	N/A	1.00	2550.00	2550.00	
Slide	09-23	16:30	20:00	09-23	3.5	11258.00	11265.00	7.00	2.00	160.0	500.00	N/A	6.00	2550.00	2550.00	
Slide	09-23	20:00	22:30	09-23	2.5	11265.00	11275.00	10.00	4.00	160.0	500.00	N/A	14.00	2550.00	2550.00	
Rotate	09-23	22:30	23:55	09-23	1.42	11275.00	11320.00	45.00	31.76	N/A	550.00	20.0	40.00	3300.00	3100.00	
Slide	09-24	00:00	00:30	09-24	0.5	11320.00	11332.00	12.00	24.00	30.0	600.00	N/A	48.00	3600.00	3300.00	
Slide	09-24	00:50	05:25	09-24	4.58	11332.00	11426.00	94.00	20.51	280.0	550.00	N/A	23.00	3000.00	2800.00	
Slide	09-24	05:30	09:00	09-24	3.5	11426.00	11471.00	45.00	12.86	280.0	550.00	N/A	23.00	3000.00	2800.00	



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #11 (BHA #11 (Curve) AEP BHA #10)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Slide	09-24	20:05	22:10	09-24	2.08	11471.00	11521.00	50.00	24.00	290.0	507.00	N/A	40.00	2700.00	2400.00	
Slide	09-24	22:25	23:55	09-24	1.5	11521.00	11566.00	45.00	30.00	315.0	507.00	N/A	40.00	2700.00	2400.00	
Slide	09-25	00:00	01:30	09-25	1.5	11566.00	11615.00	49.00	32.67	310.0	507.00	N/A	40.00	2700.00	2400.00	
Slide	09-25	01:50	03:40	09-25	1.83	11615.00	11660.00	45.00	24.55	295.0	507.00	N/A	40.00	2700.00	2400.00	
Slide	09-25	03:45	05:05	09-25	1.33	11660.00	11709.00	49.00	36.75	320.0	507.00	N/A	40.00	2700.00	2400.00	
Slide	09-25	05:15	06:10	09-25	0.92	11709.00	11754.00	45.00	49.09	345.0	507.00	N/A	40.00	2850.00	2400.00	
Rotate	09-25	06:20	06:30	09-25	0.17	11754.00	11764.00	10.00	60.00	N/A	507.00	20.0	30.00	2900.00	2400.00	
Slide	09-25	06:30	07:20	09-25	0.83	11764.00	11804.00	40.00	48.00	15.0	507.00	N/A	40.00	2850.00	2400.00	
Rotate	09-25	07:35	07:40	09-25	0.08	11804.00	11814.00	10.00	120.00	N/A	507.00	20.0	30.00	2900.00	2400.00	
Slide	09-25	07:40	09:30	09-25	1.83	11814.00	11898.00	84.00	45.82	15.0	507.00	N/A	40.00	2850.00	2400.00	
Slide	09-25	09:35	11:00	09-25	1.42	11898.00	11943.00	45.00	31.76	15.0	507.00	N/A	40.00	2850.00	2400.00	
Slide	09-25	11:05	12:10	09-25	1.08	11943.00	11992.00	49.00	45.23	5.0	507.00	N/A	40.00	2850.00	2400.00	
Slide	09-25	12:15	13:25	09-25	1.17	11992.00	12037.00	45.00	38.57	5.0	507.00	N/A	40.00	2850.00	2400.00	
Slide	09-25	13:30	14:20	09-25	0.83	12037.00	12072.00	35.00	42.00	30.0	507.00	N/A	40.00	2850.00	2400.00	



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #12 (BHA #12 Lateral)

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	09-26	05:00	06:00	09-26	1.0	12072.00	12185.00	113.00	113.00	N/A	507.00	20.0	30.00	2900.00	2400.00	
Rotate	09-26	06:05	06:10	09-26	0.08	12185.00	12195.00	10.00	120.00	N/A	507.00	20.0	30.00	2900.00	2400.00	
Slide	09-26	06:10	06:40	09-26	0.5	12195.00	12220.00	25.00	50.00	45.0	507.00	N/A	40.00	2850.00	2400.00	
Rotate	09-26	06:40	06:55	09-26	0.25	12220.00	12280.00	60.00	240.00	N/A	507.00	20.0	30.00	2900.00	2400.00	
Rotate	09-26	07:00	07:35	09-26	0.58	12280.00	12374.00	94.00	161.14	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	07:40	07:45	09-26	0.08	12374.00	12384.00	10.00	120.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Slide	09-26	07:45	08:05	09-26	0.33	12384.00	12409.00	25.00	75.00	60.0	750.00	N/A	40.00	4800.00	4500.00	
Rotate	09-26	08:05	08:30	09-26	0.42	12409.00	12468.00	59.00	141.60	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	08:40	09:10	09-26	0.5	12468.00	12563.00	95.00	190.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	09:15	09:35	09-26	0.33	12563.00	12658.00	95.00	285.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	09:40	10:10	09-26	0.5	12658.00	12752.00	94.00	188.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	10:20	10:25	09-26	0.08	12752.00	12762.00	10.00	120.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Slide	09-26	10:25	11:00	09-26	0.58	12762.00	12787.00	25.00	42.86	90.0	750.00	N/A	40.00	4800.00	4500.00	
Rotate	09-26	11:00	11:15	09-26	0.25	12787.00	12847.00	60.00	240.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	11:20	11:55	09-26	0.58	12847.00	12942.00	95.00	162.86	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	12:00	12:20	09-26	0.33	12942.00	13036.00	94.00	282.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	12:25	13:00	09-26	0.58	13036.00	13131.00	95.00	162.86	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	13:05	13:30	09-26	0.42	13131.00	13225.00	94.00	225.60	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	13:35	14:05	09-26	0.5	13225.00	13319.00	94.00	188.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	14:10	14:40	09-26	0.5	13319.00	13413.00	94.00	188.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Rotate	09-26	14:45	14:50	09-26	0.08	13413.00	13423.00	10.00	120.00	N/A	750.00	40.0	44.00	5000.00	4500.00	
Slide	09-26	14:50	15:20	09-26	0.5	13423.00	13448.00	25.00	50.00	30.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-26	15:20	15:35	09-26	0.25	13448.00	13508.00	60.00	240.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	16:00	16:05	09-26	0.08	13508.00	13517.00	9.00	108.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	16:15	16:30	09-26	0.25	13517.00	13559.00	42.00	168.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	17:05	17:15	09-26	0.17	13559.00	13602.00	43.00	258.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	17:20	17:25	09-26	0.08	13602.00	13612.00	10.00	120.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Slide	09-26	17:25	18:00	09-26	0.58	13612.00	13632.00	20.00	34.29	30.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-26	18:00	18:40	09-26	0.67	13632.00	13697.00	65.00	97.50	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	18:45	18:50	09-26	0.08	13697.00	13707.00	10.00	120.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Slide	09-26	18:50	19:15	09-26	0.42	13707.00	13727.00	20.00	48.00	0.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-26	19:15	19:30	09-26	0.25	13727.00	13791.00	64.00	256.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	19:35	20:00	09-26	0.42	13791.00	13885.00	94.00	225.60	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	20:05	20:10	09-26	0.08	13885.00	13895.00	10.00	120.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Slide	09-26	20:10	20:30	09-26	0.33	13895.00	13905.00	10.00	30.00	165.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-26	20:30	20:45	09-26	0.25	13905.00	13979.00	74.00	296.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	20:50	21:05	09-26	0.25	13979.00	14074.00	95.00	380.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	21:10	21:15	09-26	0.08	14074.00	14084.00	10.00	120.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Slide	09-26	21:15	21:45	09-26	0.5	14084.00	14099.00	15.00	30.00	60.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-26	21:45	22:10	09-26	0.42	14099.00	14168.00	69.00	165.60	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	22:15	22:35	09-26	0.33	14168.00	14262.00	94.00	282.00	N/A	733.00	40.0	45.00	4800.00	4200.00	
Rotate	09-26	22:40	23:00	09-26	0.33	14262.00	14357.00	95.00	285.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-26	23:05	23:10	09-26	0.08	14357.00	14367.00	10.00	120.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Slide	09-26	23:10	23:30	09-26	0.33	14367.00	14387.00	20.00	60.00	75.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-26	23:30	23:55	09-26	0.42	14387.00	14451.00	64.00	153.60	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	00:05	00:25	09-27	0.33	14451.00	14545.00	94.00	282.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	00:30	01:00	09-27	0.5	14545.00	14640.00	95.00	190.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	01:05	01:10	09-27	0.08	14640.00	14650.00	10.00	120.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Slide	09-27	01:10	02:30	09-27	1.33	14650.00	14672.00	22.00	16.50	45.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-27	02:30	03:00	09-27	0.5	14672.00	14734.00	62.00	124.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	03:05	03:15	09-27	0.17	14734.00	14744.00	10.00	60.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Slide	09-27	03:15	03:45	09-27	0.5	14744.00	14759.00	15.00	30.00	45.0	733.00	N/A	45.00	4800.00	4200.00	
Rotate	09-27	03:45	04:10	09-27	0.42	14759.00	14828.00	69.00	165.60	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	04:15	04:45	09-27	0.5	14828.00	14922.00	94.00	188.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	04:50	05:15	09-27	0.42	14922.00	15017.00	95.00	228.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	05:20	05:45	09-27	0.42	15017.00	15111.00	94.00	225.60	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	05:50	06:15	09-27	0.42	15111.00	15206.00	95.00	228.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	06:20	06:45	09-27	0.42	15206.00	15300.00	94.00	225.60	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	06:50	07:20	09-27	0.5	15300.00	15395.00	95.00	190.00	N/A	733.00	60.0	45.00	4800.00	4200.00	
Rotate	09-27	07:25	07:50	09-27	0.42	15395.00	15489.00	94.00	225.60	N/A	750.00	60.0	50.00	5700.00	4800.00	
Rotate	09-27	07:55	08:40	09-27	0.75	15489.00	15583.00	94.00	125.33	N/A	750.00	60.0	50.00	5700.00	4800.00	
Rotate	09-27	09:00	09:40	09-27	0.67	15583.00	15678.00	95.00	142.50	N/A	750.00	60.0	50.00	5700.00	4800.00	
Rotate	09-27	09:45	09:50	09-27	0.08	15678.00	15688.00	10.00	120.00	N/A	750.00	60.0	50.00	5700.00	4800.00	
Slide	09-27	09:50	10:40	09-27	0.83	15688.00	15713.00	25.00	30.00	60.0	750.00	N/A	50.00	5100.00	4800.00	

Rotate	09-27	10:40	11:05	09-27	0.42	15713.00	15772.00	59.00	141.60	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	11:10	11:35	09-27	0.42	15772.00	15867.00	95.00	228.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	11:40	11:45	09-27	0.08	15867.00	15877.00	10.00	120.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-27	11:45	12:35	09-27	0.83	15877.00	15902.00	25.00	30.00	45.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-27	12:35	12:50	09-27	0.25	15902.00	15961.00	59.00	236.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	12:55	13:20	09-27	0.42	15961.00	16002.00	41.00	98.40	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	13:55	14:15	09-27	0.33	16002.00	16055.00	53.00	159.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	14:40	15:10	09-27	0.5	16055.00	16150.00	95.00	190.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	15:15	15:25	09-27	0.17	16150.00	16167.00	17.00	102.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-27	15:25	15:50	09-27	0.42	16167.00	16184.00	17.00	40.80	150.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-27	15:50	16:10	09-27	0.33	16184.00	16244.00	60.00	180.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	16:15	16:25	09-27	0.17	16244.00	16254.00	10.00	60.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-27	16:45	17:15	09-27	0.5	16254.00	16267.00	13.00	26.00	180.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-27	17:15	17:55	09-27	0.67	16267.00	16338.00	71.00	106.50	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	18:00	18:15	09-27	0.25	16338.00	16348.00	10.00	40.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-27	18:15	19:45	09-27	1.5	16348.00	16374.00	26.00	17.33	0.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-27	19:45	20:00	09-27	0.25	16374.00	16432.00	58.00	232.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	20:05	20:15	09-27	0.17	16432.00	16447.00	15.00	90.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-27	20:15	20:50	09-27	0.58	16447.00	16467.00	20.00	34.29	0.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-27	20:50	21:20	09-27	0.5	16467.00	16527.00	60.00	120.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	21:25	22:00	09-27	0.58	16527.00	16621.00	94.00	161.14	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	22:05	22:45	09-27	0.67	16621.00	16716.00	95.00	142.50	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	22:50	23:25	09-27	0.58	16716.00	16810.00	94.00	161.14	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-27	23:30	23:35	09-27	0.08	16810.00	16820.00	10.00	120.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-27	23:35	00:25	09-28	0.83	16820.00	16832.00	12.00	14.40	0.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-28	00:25	00:55	09-28	0.5	16832.00	16904.00	72.00	144.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	01:00	01:30	09-28	0.5	16904.00	16999.00	95.00	190.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	01:35	02:05	09-28	0.5	16999.00	17093.00	94.00	188.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	02:10	02:40	09-28	0.5	17093.00	17188.00	95.00	190.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	02:45	02:55	09-28	0.17	17188.00	17198.00	10.00	60.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-28	02:55	03:55	09-28	1.0	17198.00	17215.00	17.00	17.00	75.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-28	03:55	04:30	09-28	0.58	17215.00	17282.00	67.00	114.86	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	04:35	05:15	09-28	0.67	17282.00	17376.00	94.00	141.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	05:20	06:00	09-28	0.67	17376.00	17470.00	94.00	141.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	06:05	06:35	09-28	0.5	17470.00	17565.00	95.00	190.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	06:40	06:45	09-28	0.08	17565.00	17579.00	14.00	168.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-28	07:00	07:15	09-28	0.25	17579.00	17581.00	2.00	8.00	60.0	750.00	N/A	50.00	5100.00	4800.00
Slide	09-28	08:00	08:45	09-28	0.75	17581.00	17590.00	9.00	12.00	60.0	750.00	N/A	50.00	5100.00	4800.00
Slide	09-28	10:00	11:00	09-28	1.0	17590.00	17603.00	13.00	13.00	60.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-28	11:00	11:15	09-28	0.25	17603.00	17659.00	56.00	224.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	11:20	11:55	09-28	0.58	17659.00	17753.00	94.00	161.14	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	12:00	12:05	09-28	0.08	17753.00	17764.00	11.00	132.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-28	12:05	13:20	09-28	1.25	17764.00	17786.00	22.00	17.60	70.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-28	13:20	13:40	09-28	0.33	17786.00	17848.00	62.00	186.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	13:45	13:50	09-28	0.08	17848.00	17860.00	12.00	144.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-28	14:15	15:40	09-28	1.42	17860.00	17881.00	21.00	14.82	80.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-28	15:40	16:05	09-28	0.42	17881.00	17942.00	61.00	146.40	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	16:10	16:55	09-28	0.75	17942.00	18037.00	95.00	126.67	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	17:00	17:35	09-28	0.58	18037.00	18131.00	94.00	161.14	N/A	750.00	60.0	50.00	5700.00	4800.00
Rotate	09-28	17:40	17:45	09-28	0.08	18131.00	18141.00	10.00	120.00	N/A	750.00	60.0	50.00	5700.00	4800.00
Slide	09-28	17:45	19:00	09-28	1.25	18141.00	18166.00	25.00	20.00	75.0	750.00	N/A	50.00	5100.00	4800.00
Rotate	09-28	19:00	19:40	09-28	0.67	18166.00	18226.00	60.00	90.00	N/A	750.00	60.0	48.00	5700.00	4800.00
Rotate	09-28	19:45	20:45	09-28	1.0	18226.00	18320.00	94.00	94.00	N/A	750.00	60.0	48.00	5700.00	4800.00
Rotate	09-28	20:50	21:00	09-28	0.17	18320.00	18330.00	10.00	60.00	N/A	700.00	60.0	48.00	5450.00	4800.00
Slide	09-28	21:00	22:30	09-28	1.5	18330.00	18354.00	24.00	16.00	60.0	700.00	N/A	50.00	5100.00	4800.00
Rotate	09-28	22:30	23:00	09-28	0.5	18354.00	18415.00	61.00	122.00	N/A	700.00	60.0	48.00	5450.00	4800.00
Rotate	09-28	23:05	23:50	09-28	0.75	18415.00	18509.00	94.00	125.33	N/A	700.00	60.0	48.00	5450.00	4800.00
Rotate	09-28	23:55	00:30	09-29	0.58	18509.00	18604.00	95.00	162.86	N/A	700.00	60.0	48.00	5450.00	4800.00
Rotate	09-29	00:35	00:45	09-29	0.17	18604.00	18614.00	10.00	60.00	N/A	700.00	60.0	48.00	5450.00	4800.00
Slide	09-29	00:45	01:40	09-29	0.92	18614.00	18625.00	11.00	12.00	160.0	700.00	N/A	50.00	5100.00	4800.00
Rotate	09-29	01:40	02:20	09-29	0.67	18625.00	18698.00	73.00	109.50	N/A	700.00	60.0	48.00	5450.00	4800.00
Rotate	09-29	02:25	02:35	09-29	0.17	18698.00	18708.00	10.00	60.00	N/A	700.00	70.0	48.00	5450.00	4800.00
Slide	09-29	02:35	03:30	09-29	0.92	18708.00	18720.00	12.00	13.09	180.0	700.00	N/A	50.00	5100.00	4800.00
Rotate	09-29	03:30	04:15	09-29	0.75	18720.00	18793.00	73.00	97.33	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	04:20	05:20	09-29	1.0	18793.00	18887.00	94.00	94.00	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	05:25	06:10	09-29	0.75	18887.00	18981.00	94.00	125.33	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	06:15	06:50	09-29	0.58	18981.00	19076.00	95.00	162.86	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	07:00	07:35	09-29	0.58	19076.00	19170.00	94.00	161.14	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	07:40	08:25	09-29	0.75	19170.00	19265.00	95.00	126.67	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	08:30	09:05	09-29	0.58	19265.00	19359.00	94.00	161.14	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	09:10	09:45	09-29	0.58	19359.00	19453.00	94.00	161.14	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	09:50	10:25	09-29	0.58	19453.00	19548.00	95.00	162.86	N/A	700.00	70.0	48.00	5450.00	4800.00
Rotate	09-29	10:30	10:35	09-29	0.08	19548.00	19551.00	3.00	36.00	N/A	700.00	70.0	48.00	5450.00	4800.00



Daily Reports

Original Hole

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Monday, Aug 12 00:00 - 23:59 (Day 1 of 52)

Billing: \$14,600.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	0.00	Downhole Hours	10.50	Rotating WOB (klbs)	15.00 - 25.00
Bit Depth (ft)	1232.00	Drilling Hours	4.42	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	1232.00	Hours Circulating	0.58	Rotating SPM	163.00 - 278.00
Total Distance (ft)	1232.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	1232.00	Hours Rotating	4.42	Motor RPM	80.00 - 144.00
Distance Slid (ft)	0.00			Surface RPM	40.00 - 50.00
Inclination In	0.26			Flow Rate (gpm)	550.00 - 900.00
Inclination Out	0.35			On Bottom Pressure (psi)	1000.00 - 2900.00
Azimuth In	105.29	% Hours Rotating	100%	Off Bottom Pressure (psi)	550.00 - 2100.00
Azimuth Out	197.14	% Hours Sliding	0%		
AVG Total ROP (ft/h)	278.94	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	278.94	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #1 - BHA #1 (Surface)

Date In: Aug 12, 2019, 13:30 Date Out: Aug 12, 2019, 23:10

Bit Details		Motor Details		Directional Comments
OD (in)	17.500	Size (in)	8.0	Motor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5294782, TFA: 0.994, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 4.0	
S/N	5294782	Bend Angle	1.5	
Nozzles	9x12	Speed (rev/gal)	0.16	MWD Comments
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	
Drilling Hours for Day	4.42	Bit Distances		
Total Drilled for Day (ft)	1232.00	Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.20 ft		POOH Reason
Drilling Hours for BHA	4.42			
Total Drilled for BHA (ft)	1232.00			
				Penetration Rate: After Dropping flow back from 900 GPM to 740 GPM top decrease drastically after 10 Ft. No drilling parameters were changed after backing of flow rate. decision was made my advance to POOH and inspect BHA for damage. After finding bit to be balled up decision was made to trip back in with same BHA.

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DP606S, Style: PDC, Gauge Length (in): 5.00, Size (in): 17.50	Baker	5294782	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 1.5 FBH 7/8 4.0 W/ Slick sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	AIM	800-40-002	6 5/8" Reg Box	6 5/8" Reg Box		8.000		29.75	31.50
Stabilizer Description: 17" Stab	DTI	DR39217	6 5/8" Reg Box	6 5/8" Reg Pin	3.000	8.250		7.74	39.24
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	AIM800216	6 5/8" Reg Box	6 5/8" Reg Pin	3.063	8.000		2.73	41.97
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	73.67
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	103.77
Crossover Sub Description: X-O (6 5/8 Reg Pin x 4 1/2 IF Box), Type: Steel	DTI	DR38083	4 1/2" IF Box	6 5/8" Reg Pin	2.875	8.000		4.02	107.79
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1203.30

MWD Items

No Items

BHA #2 - BHA #2 Surface

Date In: Aug 12, 2019, 23:10 Date Out: Aug 13, 2019, 5:45

Bit Details		Motor Details		Directional Comments	
OD (in)	17.500	Size (in)	8.0	otor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5294782, TFA: 0.994, Bit Runs: 1	
Vendor	Baker	Lobe/Stage	7/8, 4.0		
S/N	5294782	Bend Angle	1.5		
Nozzles	9x12	Speed (rev/gal)	0.16	MWD Comments	
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	POOH Reason Pump Pressure: Pooh due to Pressure Loss	
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.20 ft			
Drilling Hours for BHA	3.67				
Total Drilled for BHA (ft)	160.00				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DP606S, Style: PDC, Gauge Length (in): 5.00, Size (in): 17.50	Baker	5294782	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 1.5 FBH 7/8 4.0 W/ Slick sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	AIM	800-40-002	6 5/8" Reg Box	6 5/8" Reg Box		8.000		29.75	31.50
Stabilizer Description: 17" Stab	DTI	DR39217	6 5/8" Reg Box	6 5/8" Reg Pin	3.000	8.250		7.74	39.24
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	AIM800216	6 5/8" Reg Box	6 5/8" Reg Pin	3.063	8.000		2.73	41.97
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	73.67
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	103.77
Crossover Sub Description: X-O (6 5/8 Reg Pin x 4 1/2 IF Box), Type: Steel	DTI	DR38083	4 1/2" IF Box	6 5/8" Reg Pin	2.875	8.000		4.02	107.79
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1203.30

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	08-12	00:00	13:30	08-12			Standby while running casing on 606H, walking rig and making ready to spud
Change BHA	6	08-12	13:30	15:45	08-12			Change out bit on BHA #1
Rotary Drill	1	08-12	15:45	16:20	08-12	0.00	260.00	Pressure On (psi): 1000.00, Pressure Off (psi): 550.00, Weight On Bit (klbs): 15.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 163.00
Survey	46	08-12	16:20	16:30	08-12	260.00	260.00	Inclination (°): 0.260, Azimuth (°): 105.290, TVD (ft): 198.00, Dogleg (°/100 ft): 0.13, Sensor Depth (ft): 198.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-12	16:30	16:45	08-12	260.00	382.00	Pressure On (psi): 1450.00, Pressure Off (psi): 1800.00, Weight On Bit (klbs): 20.00, Surface RPM: 50, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-12	16:45	16:50	08-12	382.00	382.00	Inclination (°): 0.220, Azimuth (°): 61.170, TVD (ft): 320.00, Dogleg (°/100 ft): 0.15, Sensor Depth (ft): 320.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-12	16:50	17:10	08-12	382.00	563.00	Pressure On (psi): 1450.00, Pressure Off (psi): 1800.00, Weight On Bit (klbs): 20.00, Surface RPM: 50, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-12	17:10	17:20	08-12	563.00	563.00	Inclination (°): 0.220, Azimuth (°): 45.530, TVD (ft): 501.00, Dogleg (°/100 ft): 0.03, Sensor Depth (ft): 501.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-12	17:20	17:45	08-12	563.00	747.00	Pressure On (psi): 1450.00, Pressure Off (psi): 1800.00, Weight On Bit (klbs): 20.00, Surface RPM: 50, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-12	17:45	17:55	08-12	747.00	747.00	Inclination (°): 0.220, Azimuth (°): 358.860, TVD (ft): 685.00, Dogleg (°/100 ft): 0.09, Sensor Depth (ft): 685.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-12	17:55	18:45	08-12	747.00	929.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-12	18:45	18:50	08-12	929.00	929.00	Inclination (°): 0.310, Azimuth (°): 279.490, TVD (ft): 866.99, Dogleg (°/100 ft): 0.19, Sensor Depth (ft): 867.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-12	18:50	19:40	08-12	929.00	1111.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-12	19:40	19:45	08-12	1111.00	1111.00	Inclination (°): 0.350, Azimuth (°): 197.140, TVD (ft): 1048.99, Dogleg (°/100 ft): 0.24, Sensor Depth (ft): 1049.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-12	19:45	20:55	08-12	1111.00	1232.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Circulating	3	08-12	20:55	21:20	08-12			Circulate hole clean to pooh due to reduced ROP

Poon	7	08-12	21:20	22:15	08-12			POOH to inspect BHA due to reduced ROP
Change BHA	6	08-12	22:15	23:10	08-12			Inspect and Clean BHA (Bit was severely balled with 4 out of 6 junk slots packed off solid)
Circulating	3	08-12	23:10	23:20	08-12			Test mwd
TIH	8	08-12	23:20	00:00	08-13			TIH W/ BHA # 2

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Tuesday, Aug 13 00:00 - 23:59 (Day 2 of 52)

Billing: \$6,100.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	1232.00	Downhole Hours	16.00	Rotating WOB (klbs)	30.00 - 30.00
Bit Depth (ft)	1817.00	Drilling Hours	8.42	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	1817.00	Hours Circulating	2.42	Rotating SPM	278.00 - 278.00
Total Distance (ft)	585.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	585.00	Hours Rotating	8.42	Motor RPM	80.00 - 144.00
Distance Slid (ft)	0.00			Surface RPM	70.00 - 70.00
Inclination In	0.57			Flow Rate (gpm)	900.00 - 900.00
Inclination Out	2.02			On Bottom Pressure (psi)	2900.00 - 2900.00
Azimuth In	265.96	% Hours Rotating	100%	Off Bottom Pressure (psi)	2100.00 - 2100.00
Azimuth Out	255.59	% Hours Sliding	0%		
AVG Total ROP (ft/h)	69.50	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	69.50	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #2 - BHA #2 Surface

Date In: Aug 12, 2019, 23:10 Date Out: Aug 13, 2019, 5:45

Bit Details		Motor Details		Directional Comments
OD (in)	17.500	Size (in)	8.0	otor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit; Baker Hughes DP606S, SN: 5294782, TFA: 0.994, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 4.0	
S/N	5294782	Bend Angle	1.5	
Nozzles	9x12	Speed (rev/gal)	0.16	
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	MWD Comments
Drilling Hours for Day	3.67	Bit Distances		
Total Drilled for Day (ft)	160.00	Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.20 ft		
Drilling Hours for BHA	3.67			
Total Drilled for BHA (ft)	160.00			
				POOH Reason
				Pump Pressure: Pooh due to Pressure Loss

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DP606S, Style: PDC, Gauge Length (in): 5.00, Size (in): 17.50	Baker	5294782	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 1.5 FBH 7/8 4.0 W/ Slick sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	AIM	800-40-002	6 5/8" Reg Box	6 5/8" Reg Box		8.000		29.75	31.50
Stabilizer Description: 17" Stab	DTI	DR39217	6 5/8" Reg Box	6 5/8" Reg Pin	3.000	8.250		7.74	39.24
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	AIM800216	6 5/8" Reg Box	6 5/8" Reg Pin	3.063	8.000		2.73	41.97
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	73.67
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	103.77
Crossover Sub Description: X-O (6 5/8 Reg Pin x 4 1/2 IF Box), Type: Steel	DTI	DR38083	4 1/2" IF Box	6 5/8" Reg Pin	2.875	8.000		4.02	107.79
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1203.30

MWD Items

No Items

BHA #3 - BHA # 3

Date In: Aug 13, 2019, 5:45 Date Out: Aug 13, 2019, 16:00

Bit Details		Motor Details		Directional Comments
OD (in)	17.500	Size (in)	8.0	Motor & Bit Info: Contender: 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle: 1.53 / Bit: Baker Hughes DP606S, SN: 5293469, TFA: 0.994, Bit Runs: ?
Vendor	Baker	Lobe/Stage	7/8, 4.0	
S/N	7046740	Bend Angle	1.5	
Nozzles	9x12	Speed (rev/gal)	0.16	
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	
Drilling Hours for Day	4.75	Bit Distances		MWD Comments
Total Drilled for Day (ft)	425.00	Survey (Bit to SVY): 62.00 ft, Bend (Bit to Bend): 6.16 ft		POOH Reason
Drilling Hours for BHA	4.75			Total Depth/Casing Point: POOH and TD of Surface section. Motor Performed well.
Total Drilled for BHA (ft)	425.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DP606S, Style: PDC, Gauge Length (in): 5.00, Size (in): 17.50	Baker	7046740	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 1.5 FBH 7/8 4.0 W/ Slick sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4	AIM	800-40-002	6 5/8" Reg Box	6 5/8" Reg Box		8.000		29.75	31.50
Stabilizer Description: 17" Stab	DTI	DR39217	6 5/8" Reg Box	6 5/8" Reg Pin	3.000	8.250		7.74	39.24
UBHO Sub Description: UBHO Sub, Type: Steel	DTI	DR33129	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		3.02	42.26
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	73.96
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	104.06
Crossover Sub Description: X-O (6 5/8 Reg Pin x 4 1/2 IF Box), Type: Steel	DTI	DR38083	4 1/2" IF Box	6 5/8" Reg Pin	2.875	8.000		4.02	108.08
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1203.59

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
TIH	8	08-12	23:20	00:00	08-13			TIH W/ BHA # 2
TIH	8	08-13	00:00	00:25	08-13			TIH W/ BHA # 2
Rotary Drill	1	08-13	00:25	01:10	08-13	1232.00	1297.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 30.00, Surface RPM: 70, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-13	01:10	01:15	08-13	1297.00	1297.00	Inclination (°): 0.570, Azimuth (°): 265.960, TVD (ft): 1234.99, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 1235.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-13	01:15	04:10	08-13	1297.00	1392.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 30.00, Surface RPM: 70, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Circulating	3	08-13	04:10	05:45	08-13			Circulate to POOH for ROP
Change BHA	6	08-13	05:45	07:25	08-13			P/U BHA # 2 / Replace Washed out UBHO Sub
TIH	8	08-13	07:25	08:05	08-13			TIH W/ BHA #3
Rotary Drill	1	08-13	08:05	09:15	08-13	1392.00	1486.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 30.00, Surface RPM: 70, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-13	09:15	09:20	08-13	1486.00	1486.00	Inclination (°): 1.490, Azimuth (°): 254.710, TVD (ft): 1423.95, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 1424.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-13	09:20	10:00	08-13	1486.00	1580.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 30.00, Surface RPM: 70, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-13	10:00	10:05	08-13	1580.00	1580.00	Inclination (°): 1.630, Azimuth (°): 260.240, TVD (ft): 1517.92, Dogleg (°/100 ft): 0.22, Sensor Depth (ft): 1518.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-13	10:05	11:00	08-13	1580.00	1675.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 30.00, Surface RPM: 70, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-13	11:00	11:05	08-13	1675.00	1675.00	Inclination (°): 1.540, Azimuth (°): 249.960, TVD (ft): 1612.88, Dogleg (°/100 ft): 0.31, Sensor Depth (ft): 1613.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-13	11:05	12:30	08-13	1675.00	1769.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 30.00, Surface RPM: 70, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00
Survey	46	08-13	12:30	12:45	08-13	1769.00	1769.00	Inclination (°): 2.240, Azimuth (°): 257.520, TVD (ft): 1706.83, Dogleg (°/100 ft): 0.79, Sensor Depth (ft): 1707.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	08-13	12:45	13:20	08-13	1769.00	1817.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 30.00, Surface RPM: 70, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 278.00

Survey	46	08-13	13:20	13:25	08-13	1817.00	1817.00	Inclination (°): 2.020, Azimuth (°): 255.590, TVD (ft): 1754.80, Dogleg (°/100 ft): 0.48, Sensor Depth (ft): 1755.00, Bit To Sensor (ft): 62.00
Circulating	3	08-13	13:25	14:15	08-13			
Pooh	7	08-13	14:15	15:30	08-13			POOH for Surface casing at TD
Change BHA	6	08-13	15:30	16:00	08-13			Rack back BHA # 3
Standby	15	08-13	16:00	00:00	08-14			Standby while running casing and walking rig to 703H

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Wednesday, Aug 14 00:00 - 23:59 (Day 3 of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM
Total Distance (ft)	Hours Sliding			Sliding SPM
Distance Rotated (ft)	Hours Rotating			Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities								
Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	08-13	16:00	00:00	08-14			Standby while running casing and walking rig to 703H

MWD Activities								
No Activities								

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Thursday, Aug 15 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Friday, Aug 16 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller
Kyle Kusak	MWD Engineer
No BHAs	

Directional Activities
No Activities
MWD Activities
No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Saturday, Aug 17 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters
Start Depth (ft)		Downhole Hours	0.00
Bit Depth (ft)		Drilling Hours	
Bottom Hole Depth (ft)		Hours Circulating	
Total Distance (ft)		Hours Sliding	
Distance Rotated (ft)		Hours Rotating	
Distance Slid (ft)			
Inclination In			
Inclination Out			
Azimuth In		% Hours Rotating	
Azimuth Out		% Hours Sliding	
AVG Total ROP (ft/h)	0.00	% Distance Sliding	
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating	
AVG Sliding ROP (ft/h)	0.00		

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Sunday, Aug 18 00:00 - 23:59 (Day 4 of 52)

Billing: \$24,725.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	1817.00	Downhole Hours	3.92	Rotating WOB (klbs)	25.00 - 25.00
Bit Depth (ft)	1985.00	Drilling Hours	0.75	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	1985.00	Hours Circulating	1.00	Rotating SPM	210.00 - 210.00
Total Distance (ft)	168.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	168.00	Hours Rotating	0.75	Motor RPM	104.00 - 144.00
Distance Slid (ft)	0.00			Surface RPM	40.00 - 40.00
Inclination In	2.29			Flow Rate (gpm)	680.00 - 680.00
Inclination Out	2.29			On Bottom Pressure (psi)	2800.00 - 2800.00
Azimuth In	281.16	% Hours Rotating	100%	Off Bottom Pressure (psi)	2400.00 - 2400.00
Azimuth Out	281.16	% Hours Sliding	0%		
AVG Total ROP (ft/h)	224.00	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	224.00	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #4 - BHA #4 (12.25 Intermediate)

Date In: Aug 18, 2019, 20:05 Date Out: Aug 20, 2019, 4:00

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Butchesr: 1.50 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.16, Max Diff: 1390 psi, Max Operating Torque: 21,870 ft/lbs, Protracted Angle: 1.55 / Bit; Baker Hughes 12.25" Type: T606FX, SN:5273010, TFA: 0.663, Jets:6 x 12's, Bit Runs: 4
Vendor	Baker Hughes	Lobe/Stage	7/8, 5.9	
S/N	5273010	Bend Angle	1.5	
Nozzles	6x12	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	8.375	
Drilling Hours for Day	0.75	Bit Distances		
Total Drilled for Day (ft)	168.00	Survey: 73.00 ft		
Drilling Hours for BHA	17.83			POOH Reason
Total Drilled for BHA (ft)	3440.00			Total Depth/Casing Point: Motor performed well. no slack in bearings. motor drained well.

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: T606FX, Style: PDC, Gauge Length (in): 4.00, Size (in): 12.25	Baker Hughes	5273010	6 5/8" Reg Pin			12.250		1.60	1.60
Mud Motor Description: 1.5 FBH 7/8 5.9 Stg Mtr W/ 12" NB Stabilizer, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	Butches	BDT800-017	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.57	39.17
Stabilizer Description: 12" Stabilizer	DTI	DR39406	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.250		7.92	47.09
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	800604	6 5/8" Reg Box	6 5/8" Reg Pin	3.256	8.000		3.10	50.19
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	81.89
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	111.99
Crossover Sub Description: X-Over (6 5/8 Reg Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR32366	4 1/2" XH Box	6 5/8" Reg Pin	2.813	7.875		2.60	114.59
Drill Collar Description: (21 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		612.86	727.45
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR37313	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.625		2.72	730.17
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1825.68

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	08-18	00:00	19:00	08-18			Standby while/ Skidding Rig , Nipple Up & Test Same
Change BHA	6	08-18	19:00	20:05	08-18			P/U BHA # 4
Circulating	3	08-18	20:05	20:10	08-18			Test MWD
TIH	8	08-18	20:10	22:15	08-18			TIH W/ BHA #4
Circulating	3	08-18	22:15	23:10	08-18			Drill shoe track
Rotary Drill	1	08-18	23:10	23:40	08-18	1817.00	1919.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 25.00, Surface RPM: 40, Surface Torque (ft lbf): 9000.00, Flow Rate (gpm): 680.00, Strokes Per Minute: 210.00
Survey	46	08-18	23:40	23:45	08-18	1919.00	1919.00	Inclination (°): 2.290, Azimuth (°): 281.160, TVD (ft): 1845.74, Dogleg (°/100 ft): 1.09, Sensor Depth (ft): 1846.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-18	23:45	00:00	08-19	1919.00	1985.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 25.00, Surface RPM: 40, Surface Torque (ft lbf): 9000.00, Flow Rate (gpm): 680.00, Strokes Per Minute: 210.00

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Aug 19 00:00 - 23:59 (Day 5 of 52)

Billing: \$7,600.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	1985.00	Downhole Hours	24.00	Rotating WOB (klbs)	25.00 - 62.00
Bit Depth (ft)	5257.00	Drilling Hours	17.08	Sliding WOB (klbs)	18.00 - 32.00
Bottom Hole Depth (ft)	5257.00	Hours Circulating	1.25	Rotating SPM	210.00 - 279.00
Total Distance (ft)	3272.00	Hours Sliding	1.08	Sliding SPM	228.00 - 279.00
Distance Rotated (ft)	3187.00	Hours Rotating	16.00	Motor RPM	104.00 - 144.00
Distance Slid (ft)	85.00			Surface RPM	40.00 - 100.00
Inclination In	2.68			Flow Rate (gpm)	680.00 - 900.00
Inclination Out	0.35			On Bottom Pressure (psi)	2800.00 - 4800.00
Azimuth In	274.75	% Hours Rotating	94%	Off Bottom Pressure (psi)	2400.00 - 4150.00
Azimuth Out	155.65	% Hours Sliding	6%		
AVG Total ROP (ft/h)	192.58	% Distance Sliding	3%		
AVG Rotating ROP (ft/h)	200.18	% Distance Rotating	97%		
AVG Sliding ROP (ft/h)	78.46				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #4 - BHA #4 (12.25 Intermediate)

Date In: Aug 18, 2019, 20:05 Date Out: Aug 20, 2019, 4:00

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Butchesr: 1.50 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.16, Max Diff: 1390 psi, Max Operating Torque: 21,870 ft/lbs, Protracted Angle: 1.55 / Bit; Baker Hughes 12.25" Type: T606FX, SN:5273010, TFA: 0.663, Jets:6 x 12's, Bit Runs: 4
Vendor	Baker Hughes	Lobe/Stage	7/8, 5.9	
S/N	5273010	Bend Angle	1.5	
Nozzles	6x12	Speed (rev/gal)	0.17	
Total Flow Area (in²)	0.663	Wear Pad OD (in)	8.375	MWD Comments
Drilling Hours for Day	17.08	Bit Distances		POOH Reason Total Depth/Casing Point: Motor performed well. no slack in bearings. motor drained well.
Total Drilled for Day (ft)	3272.00	Survey: 73.00 ft		
Drilling Hours for BHA	17.83			
Total Drilled for BHA (ft)	3440.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: T606FX, Style: PDC, Gauge Length (in): 4.00, Size (in): 12.25	Baker Hughes	5273010	6 5/8" Reg Pin			12.250		1.60	1.60
Mud Motor Description: 1.5 FBH 7/8 5.9 Stg Mtr W/ 12" NB Stabilizer, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	Butches	BDT800-017	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.57	39.17
Stabilizer Description: 12" Stabilizer	DTI	DR39406	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.250		7.92	47.09
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	800604	6 5/8" Reg Box	6 5/8" Reg Pin	3.256	8.000		3.10	50.19
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	81.89
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	111.99
Crossover Sub Description: X-Over (6 5/8 Reg Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR32366	4 1/2" XH Box	6 5/8" Reg Pin	2.813	7.875		2.60	114.59
Drill Collar Description: (21 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		612.86	727.45
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR37313	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.625		2.72	730.17
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1825.68

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Rotary Drill	1	08-18	23:45	00:00	08-19	1919.00	1985.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 25.00, Surface RPM: 40, Surface Torque (ft lbf): 9000.00, Flow Rate (gpm): 680.00, Strokes Per Minute: 210.00
Other	16	08-19	00:00	00:55	08-19			install Rotating head
Rotary Drill	1	08-19	00:55	01:05	08-19	1985.00	2014.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 25.00, Surface RPM: 40, Surface Torque (ft lbf): 9000.00, Flow Rate (gpm): 680.00, Strokes Per Minute: 210.00
Survey	46	08-19	01:05	01:10	08-19	2014.00	2014.00	Inclination (°): 2.680, Azimuth (°): 274.750, TVD (ft): 1940.65, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 1941.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	01:10	01:15	08-19	2014.00	2023.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 25.00, Surface RPM: 80, Surface Torque (ft lbf): 9000.00, Flow Rate (gpm): 680.00, Strokes Per Minute: 210.00
Slide Drill	2	08-19	01:15	01:20	08-19	2023.00	2043.00	Pressure On (psi): 4300.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 18.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279, Toolface: 110, Toolface Type: magnetic
Rotary Drill	1	08-19	01:20	01:40	08-19	2043.00	2108.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 80, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	01:40	01:50	08-19	2108.00	2108.00	Inclination (°): 2.070, Azimuth (°): 275.980, TVD (ft): 2034.57, Dogleg (°/100 ft): 0.65, Sensor Depth (ft): 2035.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	01:50	02:20	08-19	2108.00	2190.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 80, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Other	16	08-19	02:20	02:30	08-19			Rig black out
Rotary Drill	1	08-19	02:30	02:35	08-19	2190.00	2203.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 80, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	02:35	02:40	08-19	2203.00	2203.00	Inclination (°): 2.240, Azimuth (°): 249.960, TVD (ft): 2129.50, Dogleg (°/100 ft): 1.04, Sensor Depth (ft): 2130.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	02:40	02:45	08-19	2203.00	2213.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 734.00, Strokes Per Minute: 228.00
Slide Drill	2	08-19	02:45	03:05	08-19	2213.00	2238.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 32.00, Flow Rate (gpm): 734.00, Strokes Per Minute: 228, Toolface: 80, Toolface Type: magnetic
Rotary Drill	1	08-19	03:05	03:25	08-19	2238.00	2297.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 734.00, Strokes Per Minute: 228.00
Survey	46	08-19	03:25	03:30	08-19	2297.00	2297.00	Inclination (°): 1.450, Azimuth (°): 196.170, TVD (ft): 2223.46, Dogleg (°/100 ft): 1.93, Sensor Depth (ft): 2224.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	03:30	04:00	08-19	2297.00	2391.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	04:00	04:05	08-19	2391.00	2391.00	Inclination (°): 1.050, Azimuth (°): 168.490, TVD (ft): 2317.44, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 2318.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	04:05	04:30	08-19	2391.00	2486.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	04:30	04:35	08-19	2486.00	2486.00	Inclination (°): 1.230, Azimuth (°): 147.660, TVD (ft): 2412.42, Dogleg (°/100 ft): 0.47, Sensor Depth (ft): 2413.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	04:35	05:00	08-19	2486.00	2580.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	05:00	05:05	08-19	2580.00	2580.00	Inclination (°): 1.410, Azimuth (°): 170.950, TVD (ft): 2506.39, Dogleg (°/100 ft): 0.60, Sensor Depth (ft): 2507.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	05:05	05:10	08-19	2580.00	2589.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Slide Drill	2	08-19	05:10	05:15	08-19	2589.00	2609.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 28.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279, Toolface: 45, Toolface Type: magnetic
Rotary Drill	1	08-19	05:15	05:40	08-19	2609.00	2674.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	05:40	05:45	08-19	2674.00	2674.00	Inclination (°): 1.710, Azimuth (°): 135.260, TVD (ft): 2600.36, Dogleg (°/100 ft): 1.06, Sensor Depth (ft): 2601.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	05:45	06:10	08-19	2674.00	2768.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	06:10	06:15	08-19	2768.00	2768.00	Inclination (°): 1.980, Azimuth (°): 114.350, TVD (ft): 2694.31, Dogleg (°/100 ft): 0.77, Sensor Depth (ft): 2695.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	06:15	06:40	08-19	2768.00	2862.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	06:40	06:45	08-19	2862.00	2862.00	Inclination (°): 1.850, Azimuth (°): 108.810, TVD (ft): 2788.26, Dogleg (°/100 ft): 0.24, Sensor Depth (ft): 2789.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	06:45	07:00	08-19	2862.00	2957.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 25.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	07:00	07:05	08-19	2957.00	2957.00	Inclination (°): 1.850, Azimuth (°): 104.590, TVD (ft): 2883.21, Dogleg (°/100 ft): 0.14, Sensor Depth (ft): 2884.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	07:05	07:20	08-19	2957.00	3051.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00

Survey	46	08-19	07:20	07:35	08-19	3051.00	3051.00	Inclination (°): 1.670, Azimuth (°): 83.320, TVD (ft): 2977.17, Dogleg (°/100 ft): 0.72, Sensor Depth (ft): 2978.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	07:35	08:05	08-19	3051.00	3240.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	08:05	08:10	08-19	3240.00	3240.00	Inclination (°): 1.760, Azimuth (°): 81.210, TVD (ft): 3166.08, Dogleg (°/100 ft): 0.06, Sensor Depth (ft): 3167.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	08:10	08:30	08-19	3240.00	3334.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	08:30	08:35	08-19	3334.00	3334.00	Inclination (°): 1.710, Azimuth (°): 75.590, TVD (ft): 3260.04, Dogleg (°/100 ft): 0.19, Sensor Depth (ft): 3261.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	08:35	08:50	08-19	3334.00	3428.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	08:50	08:55	08-19	3428.00	3428.00	Inclination (°): 1.190, Azimuth (°): 81.650, TVD (ft): 3354.01, Dogleg (°/100 ft): 0.58, Sensor Depth (ft): 3355.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	08:55	09:25	08-19	3428.00	3522.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	09:25	09:30	08-19	3522.00	3522.00	Inclination (°): 1.190, Azimuth (°): 73.480, TVD (ft): 3447.99, Dogleg (°/100 ft): 0.18, Sensor Depth (ft): 3449.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	09:30	10:00	08-19	3522.00	3617.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	10:00	10:15	08-19	3617.00	3617.00	Inclination (°): 1.140, Azimuth (°): 73.830, TVD (ft): 3542.97, Dogleg (°/100 ft): 0.05, Sensor Depth (ft): 3544.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	10:15	10:25	08-19	3617.00	3711.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	10:25	10:30	08-19	3711.00	3711.00	Inclination (°): 1.140, Azimuth (°): 69.960, TVD (ft): 3636.95, Dogleg (°/100 ft): 0.08, Sensor Depth (ft): 3638.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	10:30	11:00	08-19	3711.00	3806.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	11:00	11:05	08-19	3806.00	3806.00	Inclination (°): 1.890, Azimuth (°): 66.530, TVD (ft): 3731.92, Dogleg (°/100 ft): 0.79, Sensor Depth (ft): 3733.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	11:05	11:30	08-19	3806.00	3900.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	11:30	11:35	08-19	3900.00	3900.00	Inclination (°): 1.670, Azimuth (°): 72.950, TVD (ft): 3825.87, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 3827.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	11:35	12:15	08-19	3900.00	3994.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	12:15	12:20	08-19	3994.00	3994.00	Inclination (°): 1.580, Azimuth (°): 61.440, TVD (ft): 3919.83, Dogleg (°/100 ft): 0.36, Sensor Depth (ft): 3921.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	12:20	12:45	08-19	3994.00	4089.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	12:45	12:50	08-19	4089.00	4089.00	Inclination (°): 2.110, Azimuth (°): 55.990, TVD (ft): 4014.79, Dogleg (°/100 ft): 0.59, Sensor Depth (ft): 4016.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	12:50	13:20	08-19	4089.00	4183.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	13:20	13:25	08-19	4183.00	4183.00	Inclination (°): 1.320, Azimuth (°): 57.570, TVD (ft): 4108.74, Dogleg (°/100 ft): 0.84, Sensor Depth (ft): 4110.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	13:25	13:50	08-19	4183.00	4277.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Rig Service - In Hole	19	08-19	13:50	14:05	08-19			Rig Service
Survey	46	08-19	14:05	14:10	08-19	4277.00	4277.00	Inclination (°): 1.190, Azimuth (°): 56.600, TVD (ft): 4202.72, Dogleg (°/100 ft): 0.14, Sensor Depth (ft): 4204.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	14:10	14:35	08-19	4277.00	4372.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	08-19	14:35	14:40	08-19	4372.00	4372.00	Inclination (°): 1.230, Azimuth (°): 51.590, TVD (ft): 4297.70, Dogleg (°/100 ft): 0.12, Sensor Depth (ft): 4299.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	14:40	15:05	08-19	4372.00	4466.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 40.00, Surface RPM: 100, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Slide Drill	2	08-19	15:05	15:40	08-19	4466.00	4486.00	Pressure On (psi): 3400.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 250, Toolface Type: magnetic
Rotary Drill	1	08-19	15:40	16:15	08-19	4486.00	4560.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 50.00, Surface RPM: 100, Surface Torque (ft lbf): 22000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	08-19	16:15	16:20	08-19	4560.00	4560.00	Inclination (°): 0.220, Azimuth (°): 65.390, TVD (ft): 4485.68, Dogleg (°/100 ft): 0.54, Sensor Depth (ft): 4487.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	16:20	16:50	08-19	4560.00	4655.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 50.00, Surface RPM: 100, Surface Torque (ft lbf): 22000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	08-19	16:50	16:55	08-19	4655.00	4655.00	Inclination (°): 0.480, Azimuth (°): 41.310, TVD (ft): 4580.68, Dogleg (°/100 ft): 0.31, Sensor Depth (ft): 4582.00, Bit To Sensor (ft): 73.00

Rotary Drill	1	08-19	16:55	17:10	08-19	4655.00	4749.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 50.00, Surface RPM: 100, Surface Torque (ft lbf): 22000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	08-19	17:10	17:15	08-19	4749.00	4749.00	Inclination (°): 0.620, Azimuth (°): 82.620, TVD (ft): 4674.68, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 4676.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	17:15	18:10	08-19	4749.00	4843.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 60.00, Surface RPM: 80, Surface Torque (ft lbf): 17000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Connection	33	08-19	18:10	18:15	08-19			
Rotary Drill	1	08-19	18:15	19:00	08-19	4843.00	4938.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 62.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	08-19	19:00	19:05	08-19	4938.00	4938.00	Inclination (°): 0.440, Azimuth (°): 67.410, TVD (ft): 4863.67, Dogleg (°/100 ft): 0.12, Sensor Depth (ft): 4865.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	19:05	19:40	08-19	4938.00	5032.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 62.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	08-19	19:40	19:45	08-19	5032.00	5032.00	Inclination (°): 0.350, Azimuth (°): 143.790, TVD (ft): 4957.67, Dogleg (°/100 ft): 0.53, Sensor Depth (ft): 4959.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	19:45	20:30	08-19	5032.00	5127.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 62.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Connection	33	08-19	20:30	20:35	08-19			
Rotary Drill	1	08-19	20:35	21:10	08-19	5127.00	5221.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 62.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	08-19	21:10	21:20	08-19	5221.00	5221.00	Inclination (°): 0.180, Azimuth (°): 71.630, TVD (ft): 5146.66, Dogleg (°/100 ft): 0.18, Sensor Depth (ft): 5148.00, Bit To Sensor (ft): 73.00
Rotary Drill	1	08-19	21:20	21:40	08-19	5221.00	5257.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3150.00, Weight On Bit (klbs): 62.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	08-19	21:40	21:45	08-19	5257.00	5257.00	Inclination (°): 0.350, Azimuth (°): 155.650, TVD (ft): 5182.66, Dogleg (°/100 ft): 1.05, Sensor Depth (ft): 5184.00, Bit To Sensor (ft): 73.00
Circulating	3	08-19	21:45	23:00	08-19			Circulate hole clean
Pooh	7	08-19	23:00	00:00	08-20			POOH @ TD to run intermediate casing

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Tuesday, Aug 20 00:00 - 23:59 (Day 6 of 52)

Billing: \$8,663.75 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)		Downhole Hours	4.00	Rotating WOB (klbs)	
Bit Depth (ft)		Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)		Hours Circulating	0.00	Rotating SPM	
Total Distance (ft)	0.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	0.00	Hours Rotating	0.00	Motor RPM	104.00 - 144.00
Distance Slid (ft)	0.00			Surface RPM	
Inclination In				Flow Rate (gpm)	
Inclination Out				On Bottom Pressure (psi)	
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out		% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding			
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating			
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #4 - BHA #4 (12.25 Intermediate)

Date In: Aug 18, 2019, 20:05 Date Out: Aug 20, 2019, 4:00

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Butchesr: 1.50 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.16, Max Diff: 1390 psi, Max Operating Torque: 21,870 ft/lbs, Protracted Angle: 1.55 / Bit; Baker Hughes 12.25" Type: T606FX, SN:5273010, TFA: 0.663, Jets:6 x 12's, Bit Runs: 4
Vendor	Baker Hughes	Lobe/Stage	7/8, 5.9	
S/N	5273010	Bend Angle	1.5	
Nozzles	6x12	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	8.375	
Drilling Hours for Day	0.00	Bit Distances		
Total Drilled for Day (ft)		Survey: 73.00 ft		
Drilling Hours for BHA	17.83			
Total Drilled for BHA (ft)	3440.00			POOH Reason
				Total Depth/Casing Point: Motor performed well. no slack in bearings. motor drained well.

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: T606FX, Style: PDC, Gauge Length (in): 4.00, Size (in): 12.25	Baker Hughes	5273010	6 5/8" Reg Pin			12.250		1.60	1.60
Mud Motor Description: 1.5 FBH 7/8 5.9 Stg Mtr W/ 12" NB Stabilizer, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	Butches	BDT800-017	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.57	39.17
Stabilizer Description: 12" Stabilizer	DTI	DR39406	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.250		7.92	47.09
UBHO Sub Description: UBHO Sub, Type: Steel	AIM	800604	6 5/8" Reg Box	6 5/8" Reg Pin	3.256	8.000		3.10	50.19
Drill Collar Description: 8" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	AIM	AIM80001018	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		31.70	81.89
Drill Collar Description: 8" NMDC (Spacer), Style: Slick Drill, Type: NM	AIM	AIM80001012	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.10	111.99
Crossover Sub Description: X-Over (6 5/8 Reg Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR32366	4 1/2" XH Box	6 5/8" Reg Pin	2.813	7.875		2.60	114.59
Drill Collar Description: (21 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		612.86	727.45
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR37313	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.625		2.72	730.17
HWDP Description: (36 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		1095.51	1825.68

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Pooh	7	08-19	23:00	00:00	08-20			POOH @ TD to run intermediate casing
Pooh	7	08-20	00:00	03:10	08-20			POOH @ TD to run intermediate casing
Change BHA	6	08-20	03:10	04:00	08-20			L/d BHA #4
Standby	15	08-20	04:00	00:00	08-21			Standby while running casing, walking to 703H, and prepping rig to drill.

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Wednesday, Aug 21 00:00 - 23:59 (Day 7 of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)	
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)	
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM	
Total Distance (ft)		Hours Sliding		Sliding SPM	
Distance Rotated (ft)		Hours Rotating		Motor RPM	-
Distance Slid (ft)				Surface RPM	
Inclination In				Flow Rate (gpm)	
Inclination Out				On Bottom Pressure (psi)	
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out		% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding			
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating			
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs**Directional Activities**

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	08-20	04:00	00:00	08-21			Standby while running casing, walking to 703H, and prepping rig to drill.

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Thursday, Aug 22 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM
Total Distance (ft)	Hours Sliding			Sliding SPM
Distance Rotated (ft)	Hours Rotating			Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Friday, Aug 23 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Saturday, Aug 24 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM
Total Distance (ft)	Hours Sliding			Sliding SPM
Distance Rotated (ft)	Hours Rotating			Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Sunday, Aug 25 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Monday, Aug 26 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Tuesday, Aug 27 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM
Total Distance (ft)	Hours Sliding			Sliding SPM
Distance Rotated (ft)	Hours Rotating			Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Wednesday, Aug 28 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Thursday, Aug 29 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM
Total Distance (ft)	Hours Sliding			Sliding SPM
Distance Rotated (ft)	Hours Rotating			Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Friday, Aug 30 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Saturday, Aug 31 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM
Total Distance (ft)	Hours Sliding			Sliding SPM
Distance Rotated (ft)	Hours Rotating			Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Sunday, Sep 01 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Monday, Sep 02 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Tuesday, Sep 03 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Wednesday, Sep 04 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Thursday, Sep 05 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)			Downhole Hours	0.00
Bit Depth (ft)			Drilling Hours	
Bottom Hole Depth (ft)			Hours Circulating	
Total Distance (ft)			Hours Sliding	
Distance Rotated (ft)			Hours Rotating	
Distance Slid (ft)				
Inclination In				
Inclination Out				
Azimuth In			% Hours Rotating	
Azimuth Out			% Hours Sliding	
AVG Total ROP (ft/h)	0.00		% Distance Sliding	
AVG Rotating ROP (ft/h)	0.00		% Distance Rotating	
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Friday, Sep 06 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM
Total Distance (ft)	Hours Sliding			Sliding SPM
Distance Rotated (ft)	Hours Rotating			Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Saturday, Sep 07 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Sunday, Sep 08 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Monday, Sep 09 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Tuesday, Sep 10 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Wednesday, Sep 11 00:00 - 23:59 (Day of 52) Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Thursday, Sep 12 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities

	Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Friday, Sep 13 00:00 - 23:59 (Day of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)
Bit Depth (ft)		Drilling Hours		Sliding WOB (klbs)
Bottom Hole Depth (ft)		Hours Circulating		Rotating SPM
Total Distance (ft)		Hours Sliding		Sliding SPM
Distance Rotated (ft)		Hours Rotating		Motor RPM
Distance Slid (ft)				Surface RPM
Inclination In				Flow Rate (gpm)
Inclination Out				On Bottom Pressure (psi)
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)
Azimuth Out		% Hours Sliding		
AVG Total ROP (ft/h)	0.00	% Distance Sliding		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating		
AVG Sliding ROP (ft/h)	0.00			

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

No Activities

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Saturday, Sep 14 00:00 - 23:59 (Day 8 of 52)

Billing: N/A (\$276,206.74 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours	1.50	Rotating WOB (klbs)	
Bit Depth (ft)	Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	Hours Circulating	0.25	Rotating SPM	
Total Distance (ft)	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	Hours Rotating	0.00	Motor RPM	117.00 - 195.00
Distance Slid (ft)			Surface RPM	
Inclination In			Flow Rate (gpm)	
Inclination Out			On Bottom Pressure (psi)	
Azimuth In	% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	% Distance Sliding			
AVG Rotating ROP (ft/h)	% Distance Rotating			
AVG Sliding ROP (ft/h)				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #5 - BHA #5 Intermediate

Date In: Sep 14, 2019, 22:30 Date Out: Sep 17, 2019, 19:10

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 1.50 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0..26, Flow Range: 400-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.50 / Bit; Halliburton 8.5" " Type: MM65DRM , SN:, New Bit TFA: .663 , Jets: 6 x 12s, Bit Runs: 0
Vendor	Halliburton	Lobe/Stage	7/8, 8.5	
S/N	13271296	Bend Angle	1.5	
Nozzles	6x12	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.000	
Drilling Hours for Day	0.00	Bit Distances		
Total Drilled for Day (ft)		Survey: 64.00 ft, Gamma: 54.00 ft		
Drilling Hours for BHA	42.62			
Total Drilled for BHA (ft)	5977.00			
				POOH Reason
				Total Depth/Casing Point: Drilled to KOP. POOH for curve assembly. motor performed well

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: MM65DRM, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Halliburton	13271296	4 1/2" Reg Pin			8.500		0.97	0.97
Mud Motor Description: 1.5 FBH 7/8 8.5 Stg Mtr W/ 8.25" NB Stabilizer, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-004	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.19	37.16
Stabilizer Description: 8.25" Stabilizer	Gator	GT67271	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.750		4.91	42.07
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.58
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	74.11
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	103.48
Crossover Sub Description: X-Over (4 1/2 IF Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR5523	4 1/2" XH Box	4 1/2" IF Pin	2.813	6.750		3.05	106.53
Drill Collar Description: (18 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		531.96	638.49
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR19241	4 1/2" IF Box	4 1/2" XH Pin	2.813	6.750		2.65	641.14
HWDP Description: (30 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		914.14	1555.28

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	09-14	00:00	22:30	09-14			Standby while / Skidding Rig to 605 & Nipple Up , Testing same
Change BHA	6	09-14	22:30	23:30	09-14			P/U BHA # 5
Circulating	3	09-14	23:30	23:45	09-14			Shallow Test Tools
TIH	8	09-14	23:45	01:15	09-15			TIH W/ BHA #5
MWD Activities								
No Activities								



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Sunday, Sep 15 00:00 - 23:59 (Day 9 of 52)

Billing: \$23,762.50 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	5257.00	Downhole Hours	24.00	Rotating WOB (klbs)	22.00 - 41.00
Bit Depth (ft)	9101.00	Drilling Hours	17.45	Sliding WOB (klbs)	25.00 - 30.00
Bottom Hole Depth (ft)	9101.00	Hours Circulating	1.25	Rotating SPM	218.00 - 231.00
Total Distance (ft)	3844.00	Hours Sliding	2.00	Sliding SPM	216.00 - 231.00
Distance Rotated (ft)	3729.00	Hours Rotating	15.45	Motor RPM	117.00 - 195.00
Distance Slid (ft)	115.00			Surface RPM	35.00 - 45.00
Inclination In	0.18			Flow Rate (gpm)	700.00 - 750.00
Inclination Out	1.41			On Bottom Pressure (psi)	3000.00 - 4000.00
Azimuth In	244.07	% Hours Rotating	89%	Off Bottom Pressure (psi)	2500.00 - 3200.00
Azimuth Out	273.69	% Hours Sliding	11%		
AVG Total ROP (ft/h)	220.29	% Distance Sliding	3%		
AVG Rotating ROP (ft/h)	241.36	% Distance Rotating	97%		
AVG Sliding ROP (ft/h)	57.50				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #5 - BHA #5 Intermediate

Date In: Sep 14, 2019, 22:30 Date Out: Sep 17, 2019, 19:10

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 1.50 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0..26, Flow Range: 400-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.50 / Bit; Halliburton 8.5" " Type: MM65DRM , SN:, New Bit TFA: .663 , Jets: 6 x 12s, Bit Runs: 0
Vendor	Halliburton	Lobe/Stage	7/8, 8.5	
S/N	13271296	Bend Angle	1.5	
Nozzles	6x12	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.000	
Drilling Hours for Day	17.45	Bit Distances		
Total Drilled for Day (ft)	3844.00	Survey: 64.00 ft, Gamma: 54.00 ft		
Drilling Hours for BHA	42.62			
Total Drilled for BHA (ft)	5977.00			
				POOH Reason
				Total Depth/Casing Point: Drilled to KOP. POOH for curve assembly. motor performed well

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: MM65DRM, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Halliburton	13271296	4 1/2" Reg Pin			8.500		0.97	0.97
Mud Motor Description: 1.5 FBH 7/8 8.5 Stg Mtr W/ 8.25" NB Stabilizer, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-004	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.19	37.16
Stabilizer Description: 8.25" Stabilizer	Gator	GT67271	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.750		4.91	42.07
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.58
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	74.11
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	103.48
Crossover Sub Description: X-Over (4 1/2 IF Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR5523	4 1/2" XH Box	4 1/2" IF Pin	2.813	6.750		3.05	106.53
Drill Collar Description: (18 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		531.96	638.49
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR19241	4 1/2" IF Box	4 1/2" XH Pin	2.813	6.750		2.65	641.14
HWDP Description: (30 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		914.14	1555.28

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
TIH	8	09-14	23:45	01:15	09-15			TIH W/ BHA #5
Circulating	3	09-15	01:15	02:00	09-15			Drill DV Tool & Test Casing
TIH	8	09-15	02:00	03:00	09-15			TIH W/ BHA #5
Circulating	3	09-15	03:00	03:30	09-15			Drill Out Shoe Track
Rotary Drill	1	09-15	03:30	04:05	09-15	5257.00	5328.00	Pressure On (psi): 3100.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Surface RPM: 40, Surface Torque (ft lbf): 8000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 218.00
Survey	46	09-15	04:05	04:10	09-15	5328.00	5328.00	Inclination (°): 0.180, Azimuth (°): 244.070, TVD (ft): 5262.66, Dogleg (°/100 ft): 0.49, Sensor Depth (ft): 5264.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	04:10	04:25	09-15	5328.00	5422.00	Pressure On (psi): 3100.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Surface RPM: 40, Surface Torque (ft lbf): 8000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 218.00
Survey	46	09-15	04:25	04:30	09-15	5422.00	5422.00	Inclination (°): 0.350, Azimuth (°): 229.920, TVD (ft): 5356.66, Dogleg (°/100 ft): 0.19, Sensor Depth (ft): 5358.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	04:30	04:55	09-15	5422.00	5517.00	Pressure On (psi): 3100.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Surface RPM: 40, Surface Torque (ft lbf): 8000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 218.00
Survey	46	09-15	04:55	05:00	09-15	5517.00	5517.00	Inclination (°): 0.530, Azimuth (°): 231.940, TVD (ft): 5451.66, Dogleg (°/100 ft): 0.19, Sensor Depth (ft): 5453.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	05:00	05:05	09-15	5517.00	5527.00	Pressure On (psi): 3100.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Surface RPM: 40, Surface Torque (ft lbf): 8000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 218.00
Slide Drill	2	09-15	05:05	05:20	09-15	5527.00	5542.00	Pressure On (psi): 3000.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 160, Toolface Type: magnetic
Rotary Drill	1	09-15	05:20	05:55	09-15	5542.00	5611.00	Pressure On (psi): 3100.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Surface RPM: 40, Surface Torque (ft lbf): 8000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 218.00
Survey	46	09-15	05:55	06:00	09-15	5611.00	5611.00	Inclination (°): 1.140, Azimuth (°): 166.550, TVD (ft): 5545.65, Dogleg (°/100 ft): 1.10, Sensor Depth (ft): 5547.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	06:00	06:30	09-15	5611.00	5705.00	Pressure On (psi): 3100.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Surface RPM: 40, Surface Torque (ft lbf): 8000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 218.00
Survey	46	09-15	06:30	06:35	09-15	5705.00	5705.00	Inclination (°): 1.450, Azimuth (°): 165.500, TVD (ft): 5639.63, Dogleg (°/100 ft): 0.33, Sensor Depth (ft): 5641.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	06:35	06:40	09-15	5705.00	5715.00	Pressure On (psi): 3300.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 25.00, Surface RPM: 40, Surface Torque (ft lbf): 7000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-15	06:40	06:50	09-15	5715.00	5730.00	Pressure On (psi): 3300.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 29.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 170, Toolface Type: magnetic
Rotary Drill	1	09-15	06:50	07:05	09-15	5730.00	5800.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 7000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	07:05	07:10	09-15	5800.00	5800.00	Inclination (°): 1.760, Azimuth (°): 156.620, TVD (ft): 5734.59, Dogleg (°/100 ft): 0.42, Sensor Depth (ft): 5736.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	07:10	07:25	09-15	5800.00	5894.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	07:25	07:30	09-15	5894.00	5894.00	Inclination (°): 1.980, Azimuth (°): 160.580, TVD (ft): 5828.54, Dogleg (°/100 ft): 0.27, Sensor Depth (ft): 5830.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	07:30	07:40	09-15	5894.00	5988.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	07:40	07:45	09-15	5988.00	5988.00	Inclination (°): 2.020, Azimuth (°): 163.480, TVD (ft): 5922.48, Dogleg (°/100 ft): 0.12, Sensor Depth (ft): 5924.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	07:45	07:52	09-15	5988.00	6082.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	07:52	07:55	09-15	6082.00	6082.00	Inclination (°): 1.890, Azimuth (°): 156.880, TVD (ft): 6016.43, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 6018.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	07:55	08:10	09-15	6082.00	6177.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	08:10	08:13	09-15	6177.00	6177.00	Inclination (°): 1.850, Azimuth (°): 156.360, TVD (ft): 6111.38, Dogleg (°/100 ft): 0.05, Sensor Depth (ft): 6113.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	08:13	08:22	09-15	6177.00	6271.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	08:22	08:25	09-15	6271.00	6271.00	Inclination (°): 1.930, Azimuth (°): 156.970, TVD (ft): 6205.33, Dogleg (°/100 ft): 0.09, Sensor Depth (ft): 6207.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	08:25	08:35	09-15	6271.00	6365.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	08:35	08:37	09-15	6365.00	6365.00	Inclination (°): 1.850, Azimuth (°): 163.740, TVD (ft): 6299.27, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 6301.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	08:37	08:49	09-15	6365.00	6459.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	08:49	08:52	09-15	6459.00	6459.00	Inclination (°): 1.980, Azimuth (°): 164.880, TVD (ft): 6393.22, Dogleg (°/100 ft): 0.14, Sensor Depth (ft): 6395.00, Bit To Sensor (ft): 64.00

Rotary Drill	1	09-15	08:52	09:03	09-15	6459.00	6554.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3000.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 8500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	09:03	09:06	09-15	6554.00	6554.00	Inclination (°): 1.670, Azimuth (°): 167.960, TVD (ft): 6488.17, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 6490.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	09:06	09:19	09-15	6554.00	6648.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	09:19	09:21	09-15	6648.00	6648.00	Inclination (°): 1.490, Azimuth (°): 167.080, TVD (ft): 6582.14, Dogleg (°/100 ft): 0.19, Sensor Depth (ft): 6584.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	09:21	09:33	09-15	6648.00	6742.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	09:33	09:36	09-15	6742.00	6742.00	Inclination (°): 1.410, Azimuth (°): 175.340, TVD (ft): 6676.11, Dogleg (°/100 ft): 0.24, Sensor Depth (ft): 6678.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	09:36	09:47	09-15	6742.00	6837.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	09:47	09:50	09-15	6837.00	6837.00	Inclination (°): 1.050, Azimuth (°): 175.610, TVD (ft): 6771.09, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 6773.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	09:50	10:04	09-15	6837.00	6931.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	10:04	10:07	09-15	6931.00	6931.00	Inclination (°): 1.010, Azimuth (°): 170.680, TVD (ft): 6865.07, Dogleg (°/100 ft): 0.10, Sensor Depth (ft): 6867.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	10:07	10:23	09-15	6931.00	7026.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	10:23	10:26	09-15	7026.00	7026.00	Inclination (°): 0.840, Azimuth (°): 199.160, TVD (ft): 6960.06, Dogleg (°/100 ft): 0.51, Sensor Depth (ft): 6962.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	10:26	10:30	09-15	7026.00	7040.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-15	10:30	10:45	09-15	7040.00	7055.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 150, Toolface Type: magnetic
Rotary Drill	1	09-15	10:45	10:57	09-15	7055.00	7120.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	10:57	11:00	09-15	7120.00	7120.00	Inclination (°): 2.290, Azimuth (°): 179.120, TVD (ft): 7054.02, Dogleg (°/100 ft): 1.63, Sensor Depth (ft): 7056.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	11:00	11:19	09-15	7120.00	7214.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	11:19	11:22	09-15	7214.00	7214.00	Inclination (°): 2.420, Azimuth (°): 166.290, TVD (ft): 7147.94, Dogleg (°/100 ft): 0.58, Sensor Depth (ft): 7150.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	11:22	11:37	09-15	7214.00	7309.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 40, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	11:37	11:40	09-15	7309.00	7309.00	Inclination (°): 2.200, Azimuth (°): 169.010, TVD (ft): 7242.87, Dogleg (°/100 ft): 0.26, Sensor Depth (ft): 7245.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	11:40	12:02	09-15	7309.00	7404.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	12:02	12:05	09-15	7404.00	7404.00	Inclination (°): 2.330, Azimuth (°): 166.030, TVD (ft): 7337.79, Dogleg (°/100 ft): 0.18, Sensor Depth (ft): 7340.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	12:05	12:25	09-15	7404.00	7498.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	12:25	12:30	09-15	7498.00	7498.00	Inclination (°): 2.510, Azimuth (°): 172.970, TVD (ft): 7431.71, Dogleg (°/100 ft): 0.37, Sensor Depth (ft): 7434.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	12:30	12:35	09-15	7498.00	7509.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-15	12:35	12:50	09-15	7509.00	7529.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 0, Toolface Type: magnetic
Rotary Drill	1	09-15	12:50	13:05	09-15	7529.00	7593.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	13:05	13:10	09-15	7593.00	7593.00	Inclination (°): 1.100, Azimuth (°): 194.500, TVD (ft): 7526.66, Dogleg (°/100 ft): 1.62, Sensor Depth (ft): 7529.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	13:10	13:40	09-15	7593.00	7687.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	13:40	13:45	09-15	7687.00	7687.00	Inclination (°): 0.880, Azimuth (°): 205.660, TVD (ft): 7620.65, Dogleg (°/100 ft): 0.31, Sensor Depth (ft): 7623.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	13:45	14:05	09-15	7687.00	7782.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	14:05	14:10	09-15	7782.00	7782.00	Inclination (°): 1.140, Azimuth (°): 177.190, TVD (ft): 7715.63, Dogleg (°/100 ft): 0.59, Sensor Depth (ft): 7718.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	14:10	14:30	09-15	7782.00	7876.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	14:30	14:35	09-15	7876.00	7876.00	Inclination (°): 1.100, Azimuth (°): 165.410, TVD (ft): 7809.61, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 7812.00, Bit To Sensor (ft): 64.00

Rotary Drill	1	09-15	14:35	14:55	09-15	7876.00	7971.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	14:55	15:00	09-15	7971.00	7971.00	Inclination (°): 1.010, Azimuth (°): 170.950, TVD (ft): 7904.60, Dogleg (°/100 ft): 0.14, Sensor Depth (ft): 7907.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	15:00	15:10	09-15	7971.00	7981.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-15	15:10	15:30	09-15	7981.00	7996.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 0, Toolface Type: magnetic
Rotary Drill	1	09-15	15:30	15:50	09-15	7996.00	8065.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Rig Service - In Hole	19	09-15	15:50	16:05	09-15			Rig Service
Survey	46	09-15	16:05	16:10	09-15	8065.00	8065.00	Inclination (°): 0.570, Azimuth (°): 283.270, TVD (ft): 7998.59, Dogleg (°/100 ft): 1.42, Sensor Depth (ft): 8001.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	16:10	16:35	09-15	8065.00	8159.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	16:35	16:40	09-15	8159.00	8159.00	Inclination (°): 0.840, Azimuth (°): 315.260, TVD (ft): 8092.58, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 8095.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	16:40	17:10	09-15	8159.00	8253.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	17:10	17:15	09-15	8253.00	8253.00	Inclination (°): 0.220, Azimuth (°): 315.090, TVD (ft): 8186.58, Dogleg (°/100 ft): 0.66, Sensor Depth (ft): 8189.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	17:15	17:35	09-15	8253.00	8347.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	17:35	17:40	09-15	8347.00	8347.00	Inclination (°): 0.090, Azimuth (°): 258.490, TVD (ft): 8280.58, Dogleg (°/100 ft): 0.20, Sensor Depth (ft): 8283.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	17:40	17:55	09-15	8347.00	8442.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	17:55	18:00	09-15	8442.00	8442.00	Inclination (°): 0.220, Azimuth (°): 209.970, TVD (ft): 8375.58, Dogleg (°/100 ft): 0.18, Sensor Depth (ft): 8378.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	18:00	18:30	09-15	8442.00	8536.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	18:30	18:35	09-15	8536.00	8536.00	Inclination (°): 0.310, Azimuth (°): 218.140, TVD (ft): 8469.58, Dogleg (°/100 ft): 0.10, Sensor Depth (ft): 8472.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	18:35	19:10	09-15	8536.00	8630.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 35.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	19:10	19:15	09-15	8630.00	8630.00	Inclination (°): 0.570, Azimuth (°): 246.270, TVD (ft): 8563.58, Dogleg (°/100 ft): 0.35, Sensor Depth (ft): 8566.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	19:15	19:50	09-15	8630.00	8724.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	19:50	19:55	09-15	8724.00	8724.00	Inclination (°): 0.700, Azimuth (°): 219.290, TVD (ft): 8657.57, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 8660.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	19:55	20:00	09-15	8724.00	8734.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-15	20:00	20:20	09-15	8734.00	8749.00	Pressure On (psi): 3300.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 25.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 60, Toolface Type: magnetic
Rotary Drill	1	09-15	20:20	21:05	09-15	8749.00	8818.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	21:05	21:10	09-15	8818.00	8818.00	Inclination (°): 0.620, Azimuth (°): 238.270, TVD (ft): 8751.56, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 8754.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	21:10	22:05	09-15	8818.00	8913.00	Pressure On (psi): 3500.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	22:05	22:10	09-15	8913.00	8913.00	Inclination (°): 0.790, Azimuth (°): 231.940, TVD (ft): 8846.56, Dogleg (°/100 ft): 0.20, Sensor Depth (ft): 8849.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	22:10	22:45	09-15	8913.00	9007.00	Pressure On (psi): 3500.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-15	22:45	22:50	09-15	9007.00	9007.00	Inclination (°): 1.410, Azimuth (°): 273.690, TVD (ft): 8940.54, Dogleg (°/100 ft): 1.04, Sensor Depth (ft): 8943.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-15	22:50	22:55	09-15	9007.00	9017.00	Pressure On (psi): 3500.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-15	22:55	23:20	09-15	9017.00	9037.00	Pressure On (psi): 3300.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 25.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 90, Toolface Type: magnetic
Rotary Drill	1	09-15	23:20	00:00	09-16	9037.00	9101.00	Pressure On (psi): 3500.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Sep 16 00:00 - 23:59 (Day 10 of 52)

Billing: \$8,200.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	9101.00	Downhole Hours	24.00	Rotating WOB (klbs)	41.00 - 41.00
Bit Depth (ft)	10461.00	Drilling Hours	16.58	Sliding WOB (klbs)	25.00 - 25.00
Bottom Hole Depth (ft)	10461.00	Hours Circulating	0.33	Rotating SPM	231.00 - 231.00
Total Distance (ft)	1360.00	Hours Sliding	3.17	Sliding SPM	231.00 - 231.00
Distance Rotated (ft)	1275.00	Hours Rotating	13.42	Motor RPM	117.00 - 195.00
Distance Slid (ft)	85.00			Surface RPM	35.00 - 45.00
Inclination In	1.10			Flow Rate (gpm)	750.00 - 750.00
Inclination Out	1.89			On Bottom Pressure (psi)	2600.00 - 3750.00
Azimuth In	314.47	% Hours Rotating	81%	Off Bottom Pressure (psi)	2500.00 - 3350.00
Azimuth Out	97.12	% Hours Sliding	19%		
AVG Total ROP (ft/h)	82.55	% Distance Sliding	6%		
AVG Rotating ROP (ft/h)	95.08	% Distance Rotating	94%		
AVG Sliding ROP (ft/h)	26.84				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #5 - BHA #5 Intermediate

Date In: Sep 14, 2019, 22:30 Date Out: Sep 17, 2019, 19:10

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 1.50 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0..26, Flow Range: 400-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.50 / Bit; Halliburton 8.5" " Type: MM65DRM , SN:, New Bit TFA: .663 , Jets: 6 x 12s, Bit Runs: 0
Vendor	Halliburton	Lobe/Stage	7/8, 8.5	
S/N	13271296	Bend Angle	1.5	
Nozzles	6x12	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.000	POOH Reason Total Depth/Casing Point: Drilled to KOP. POOH for curve assembly. motor performed well
Drilling Hours for Day	16.58	Bit Distances		
Total Drilled for Day (ft)	1360.00	Survey: 64.00 ft, Gamma: 54.00 ft		
Drilling Hours for BHA	42.62			
Total Drilled for BHA (ft)	5977.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: MM65DRM, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Halliburton	13271296	4 1/2" Reg Pin			8.500		0.97	0.97
Mud Motor Description: 1.50 FBH 7/8 8.5 Stg Mtr W/ 8.25" NB Stabilizer, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-004	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.19	37.16
Stabilizer Description: 8.25" Stabilizer	Gator	GT67271	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.750		4.91	42.07
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.58
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	74.11
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	103.48
Crossover Sub Description: X-Over (4 1/2 IF Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR5523	4 1/2" XH Box	4 1/2" IF Pin	2.813	6.750		3.05	106.53
Drill Collar Description: (18 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		531.96	638.49
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR19241	4 1/2" IF Box	4 1/2" XH Pin	2.813	6.750		2.65	641.14
HWDP Description: (30 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		914.14	1555.28

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Rotary Drill	1	09-15	23:20	00:00	09-16	9037.00	9101.00	Pressure On (psi): 3500.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	00:00	00:05	09-16	9101.00	9101.00	Inclination (°): 1.100, Azimuth (°): 314.470, TVD (ft): 9034.52, Dogleg (°/100 ft): 0.98, Sensor Depth (ft): 9037.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	00:05	00:40	09-16	9101.00	9196.00	Pressure On (psi): 3500.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	00:40	00:45	09-16	9196.00	9196.00	Inclination (°): 1.100, Azimuth (°): 310.250, TVD (ft): 9129.50, Dogleg (°/100 ft): 0.09, Sensor Depth (ft): 9132.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	00:45	00:50	09-16	9196.00	9206.00	Pressure On (psi): 3500.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-16	00:50	01:10	09-16	9206.00	9226.00	Pressure On (psi): 3300.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 25.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 100, Toolface Type: magnetic
Rotary Drill	1	09-16	01:10	01:50	09-16	9226.00	9290.00	Pressure On (psi): 3100.00, Pressure Off (psi): 2800.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	01:50	02:00	09-16	9290.00	9290.00	Inclination (°): 1.450, Azimuth (°): 333.190, TVD (ft): 9223.48, Dogleg (°/100 ft): 0.65, Sensor Depth (ft): 9226.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	02:00	03:00	09-16	9290.00	9385.00	Pressure On (psi): 3000.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	03:00	03:10	09-16	9385.00	9385.00	Inclination (°): 1.630, Azimuth (°): 306.560, TVD (ft): 9318.45, Dogleg (°/100 ft): 0.77, Sensor Depth (ft): 9321.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	03:10	03:15	09-16	9385.00	9395.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2600.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-16	03:15	04:15	09-16	9395.00	9415.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 125, Toolface Type: magnetic
Other	16	09-16	04:15	04:30	09-16			Trouble shoot PSI loss. Close annular and choke, open kill line and pump down back side @ 20 SPM. mud began flowing out of pipe as soon as pumps kicked in. Decision was made to POOH @ 90' Min looking for wash out.
Pooh	7	09-16	04:30	07:15	09-16			POOH Wet @ 90' / Min looking for wash out due to pressure loss t/ 5951'
Other	16	09-16	07:15	07:45	09-16			C/O 2 Jts wash out
TIH	8	09-16	07:45	08:00	09-16			TIH t/ Shoe
Circulating	3	09-16	08:00	08:20	09-16			Check pressure & Test MWD (good)
TIH	8	09-16	08:20	10:00	09-16			TIH W/ BHA #5
Rotary Drill	1	09-16	10:00	10:45	09-16	9415.00	9479.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	10:45	10:50	09-16	9479.00	9479.00	Inclination (°): 0.480, Azimuth (°): 280.550, TVD (ft): 9412.43, Dogleg (°/100 ft): 1.29, Sensor Depth (ft): 9415.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	10:50	11:35	09-16	9479.00	9573.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	11:35	11:40	09-16	9573.00	9573.00	Inclination (°): 0.310, Azimuth (°): 296.370, TVD (ft): 9506.43, Dogleg (°/100 ft): 0.21, Sensor Depth (ft): 9509.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	11:40	12:30	09-16	9573.00	9668.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	12:30	12:35	09-16	9668.00	9668.00	Inclination (°): 0.570, Azimuth (°): 306.210, TVD (ft): 9601.42, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 9604.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	12:35	12:45	09-16	9668.00	9678.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-16	12:45	13:20	09-16	9678.00	9698.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 80, Toolface Type: magnetic
Rotary Drill	1	09-16	13:20	14:00	09-16	9698.00	9762.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	14:00	14:05	09-16	9762.00	9762.00	Inclination (°): 0.880, Azimuth (°): 294.260, TVD (ft): 9695.42, Dogleg (°/100 ft): 0.37, Sensor Depth (ft): 9698.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	14:05	14:15	09-16	9762.00	9772.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-16	14:15	15:30	09-16	9772.00	9797.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231, Toolface: 90, Toolface Type: magnetic
Rotary Drill	1	09-16	15:30	16:15	09-16	9797.00	9857.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Rig Service - In Hole	19	09-16	16:15	16:30	09-16			Rig Service
Survey	46	09-16	16:30	16:35	09-16	9857.00	9857.00	Inclination (°): 1.010, Azimuth (°): 55.370, TVD (ft): 9790.41, Dogleg (°/100 ft): 1.73, Sensor Depth (ft): 9793.00, Bit To Sensor (ft): 64.00

Rotary Drill	1	09-16	16:35	17:30	09-16	9857.00	9951.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	17:30	17:35	09-16	9951.00	9951.00	Inclination (°): 1.670, Azimuth (°): 67.060, TVD (ft): 9884.38, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 9887.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	17:35	18:40	09-16	9951.00	10045.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 41.00, Surface RPM: 45, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	18:40	18:45	09-16	10045.00	10045.00	Inclination (°): 1.320, Azimuth (°): 79.370, TVD (ft): 9978.35, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 9981.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	18:45	19:55	09-16	10045.00	10140.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	19:55	20:00	09-16	10140.00	10140.00	Inclination (°): 1.490, Azimuth (°): 94.830, TVD (ft): 10073.32, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 10076.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	20:00	21:10	09-16	10140.00	10234.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	21:10	21:15	09-16	10234.00	10234.00	Inclination (°): 1.100, Azimuth (°): 86.920, TVD (ft): 10167.30, Dogleg (°/100 ft): 0.46, Sensor Depth (ft): 10170.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	21:15	22:20	09-16	10234.00	10328.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	22:20	22:25	09-16	10328.00	10328.00	Inclination (°): 0.790, Azimuth (°): 90.700, TVD (ft): 10261.29, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 10264.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	22:25	23:20	09-16	10328.00	10423.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-16	23:20	23:25	09-16	10423.00	10423.00	Inclination (°): 1.890, Azimuth (°): 97.120, TVD (ft): 10356.26, Dogleg (°/100 ft): 1.17, Sensor Depth (ft): 10359.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-16	23:25	00:00	09-17	10423.00	10461.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Tuesday, Sep 17 00:00 - 23:59 (Day 11 of 52)

Billing: \$8,200.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	10461.00	Downhole Hours	19.17	Rotating WOB (klbs)	41.00 - 43.00
Bit Depth (ft)	11234.00	Drilling Hours	8.58	Sliding WOB (klbs)	30.00 - 30.00
Bottom Hole Depth (ft)	11234.00	Hours Circulating	1.50	Rotating SPM	231.00 - 231.00
Total Distance (ft)	773.00	Hours Sliding	1.00	Sliding SPM	228.00 - 228.00
Distance Rotated (ft)	743.00	Hours Rotating	7.58	Motor RPM	117.00 - 195.00
Distance Slid (ft)	30.00			Surface RPM	35.00 - 60.00
Inclination In	1.93			Flow Rate (gpm)	735.00 - 750.00
Inclination Out	1.85			On Bottom Pressure (psi)	3550.00 - 3800.00
Azimuth In	91.93	% Hours Rotating	88%	Off Bottom Pressure (psi)	3200.00 - 3350.00
Azimuth Out	199.25	% Hours Sliding	12%		
AVG Total ROP (ft/h)	88.47	% Distance Sliding	4%		
AVG Rotating ROP (ft/h)	95.63	% Distance Rotating	96%		
AVG Sliding ROP (ft/h)	30.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #5 - BHA #5 Intermediate

Date In: Sep 14, 2019, 22:30 Date Out: Sep 17, 2019, 19:10

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 1.50 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0..26, Flow Range: 400-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.50 / Bit; Halliburton 8.5" " Type: MM65DRM , SN:, New Bit TFA: .663 , Jets: 6 x 12s, Bit Runs: 0
Vendor	Halliburton	Lobe/Stage	7/8, 8.5	
S/N	13271296	Bend Angle	1.5	
Nozzles	6x12	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.000	POOH Reason Total Depth/Casing Point: Drilled to KOP. POOH for curve assembly. motor performed well
Drilling Hours for Day	8.58	Bit Distances		
Total Drilled for Day (ft)	773.00	Survey: 64.00 ft, Gamma: 54.00 ft		
Drilling Hours for BHA	42.62			
Total Drilled for BHA (ft)	5977.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: MM65DRM, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Halliburton	13271296	4 1/2" Reg Pin			8.500		0.97	0.97
Mud Motor Description: 1.5 FBH 7/8 8.5 Stg Mtr W/ 8.25" NB Stabilizer, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-004	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.19	37.16
Stabilizer Description: 8.25" Stabilizer	Gator	GT67271	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.750		4.91	42.07
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.58
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	74.11
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	103.48
Crossover Sub Description: X-Over (4 1/2 IF Pin x 4 1/2 X/H Box), Type: Steel	DTI	DR5523	4 1/2" XH Box	4 1/2" IF Pin	2.813	6.750		3.05	106.53
Drill Collar Description: (18 Joints) 6.5" DC, Style: Slick Drill, Type: Steel	Rig	Rig	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		531.96	638.49
Crossover Sub Description: X-Over (4 1/2 IF Box x 4 1/2 XH Pin), Type: Steel	DTI	DR19241	4 1/2" IF Box	4 1/2" XH Pin	2.813	6.750		2.65	641.14
HWDP Description: (30 Joints) 5" HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		914.14	1555.28

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Rotary Drill	1	09-16	23:25	00:00	09-17	10423.00	10461.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Rotary Drill	1	09-17	00:00	00:40	09-17	10461.00	10517.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 41.00, Surface RPM: 35, Surface Torque (ft lbf): 11000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	00:40	00:45	09-17	10517.00	10517.00	Inclination (°): 1.930, Azimuth (°): 91.930, TVD (ft): 10450.21, Dogleg (°/100 ft): 0.19, Sensor Depth (ft): 10453.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	00:45	01:45	09-17	10517.00	10611.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	01:45	01:50	09-17	10611.00	10611.00	Inclination (°): 1.890, Azimuth (°): 95.890, TVD (ft): 10544.15, Dogleg (°/100 ft): 0.15, Sensor Depth (ft): 10547.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	01:50	02:50	09-17	10611.00	10705.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	02:50	02:55	09-17	10705.00	10705.00	Inclination (°): 2.020, Azimuth (°): 111.880, TVD (ft): 10638.10, Dogleg (°/100 ft): 0.59, Sensor Depth (ft): 10641.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	02:55	03:50	09-17	10705.00	10800.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	03:50	03:55	09-17	10800.00	10800.00	Inclination (°): 1.710, Azimuth (°): 142.030, TVD (ft): 10733.05, Dogleg (°/100 ft): 1.07, Sensor Depth (ft): 10736.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	03:55	04:35	09-17	10800.00	10894.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	04:35	04:40	09-17	10894.00	10894.00	Inclination (°): 2.330, Azimuth (°): 143.700, TVD (ft): 10826.99, Dogleg (°/100 ft): 0.66, Sensor Depth (ft): 10830.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	04:40	05:30	09-17	10894.00	10989.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 60, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	05:30	05:35	09-17	10989.00	10989.00	Inclination (°): 2.810, Azimuth (°): 160.490, TVD (ft): 10921.90, Dogleg (°/100 ft): 0.93, Sensor Depth (ft): 10925.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	05:35	05:40	09-17	10989.00	10999.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 60, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Slide Drill	2	09-17	05:40	06:40	09-17	10999.00	11029.00	Pressure On (psi): 3550.00, Pressure Off (psi): 3300.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 735.00, Strokes Per Minute: 228, Toolface: 0, Toolface Type: magnetic
Rotary Drill	1	09-17	06:40	07:10	09-17	11029.00	11083.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 60, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	07:10	07:15	09-17	11083.00	11083.00	Inclination (°): 2.020, Azimuth (°): 189.760, TVD (ft): 11015.82, Dogleg (°/100 ft): 1.53, Sensor Depth (ft): 11019.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	07:15	08:20	09-17	11083.00	11177.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 60, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	08:20	08:25	09-17	11177.00	11177.00	Inclination (°): 1.540, Azimuth (°): 196.080, TVD (ft): 11109.77, Dogleg (°/100 ft): 0.55, Sensor Depth (ft): 11113.00, Bit To Sensor (ft): 64.00
Rotary Drill	1	09-17	08:25	09:15	09-17	11177.00	11234.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3350.00, Weight On Bit (klbs): 43.00, Surface RPM: 60, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	09-17	09:15	09:20	09-17	11234.00	11234.00	Inclination (°): 1.850, Azimuth (°): 199.250, TVD (ft): 11166.75, Dogleg (°/100 ft): 0.57, Sensor Depth (ft): 11170.00, Bit To Sensor (ft): 64.00
Circulating	3	09-17	09:20	10:50	09-17			Circ. BTU @ KOP
Pooh	7	09-17	10:50	18:30	09-17			POOH f/ Curve BHA
Change BHA	6	09-17	18:30	19:10	09-17			L/D BHA #5
Test BOP's	30	09-17	19:10	00:00	09-18			

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Wednesday, Sep 18 00:00 - 23:59 (Day 12 of 52)

Billing: \$17,900.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11234.00	Downhole Hours	22.33	Rotating WOB (klbs)	40.00 - 40.00
Bit Depth (ft)	11640.00	Drilling Hours	15.17	Sliding WOB (klbs)	35.00 - 40.00
Bottom Hole Depth (ft)	11640.00	Hours Circulating	0.08	Rotating SPM	171.00 - 171.00
Total Distance (ft)	406.00	Hours Sliding	12.33	Sliding SPM	170.00 - 189.00
Distance Rotated (ft)	100.00	Hours Rotating	2.83	Motor RPM	245.00 - 294.00
Distance Slid (ft)	306.00			Surface RPM	20.00 - 20.00
Inclination In	3.52			Flow Rate (gpm)	550.00 - 600.00
Inclination Out	27.56			On Bottom Pressure (psi)	2750.00 - 3200.00
Azimuth In	336.18	% Hours Rotating	19%	Off Bottom Pressure (psi)	2250.00 - 2700.00
Azimuth Out	352.62	% Hours Sliding	81%		
AVG Total ROP (ft/h)	26.77	% Distance Sliding	75%		
AVG Rotating ROP (ft/h)	35.29	% Distance Rotating	25%		
AVG Sliding ROP (ft/h)	24.81				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #6 - BHA #6 Curve

Date In: Sep 18, 2019, 1:40 Date Out: Sep 19, 2019, 18:50

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	6.75	Contender: 2.25 FBH 4/5 7.0 Stg Mtr, Rev/Gal: 0.49, Flow Range: 300-600, Max Diff: 1580 psi, Max Operating Torque: 9,090 ft/lbs, Protracted Angle: 2.25 / Bit; Baker 8.5" " Type: DD406TX , SN: 5286260, TFA: 2.227 , Jets: 6 x 22s, Bit Runs: 4
Vendor	Baker	Lobe/Stage	4/5, 7.0	
S/N	5286260	Bend Angle	2.25	
Nozzles	6x22	Speed (rev/gal)	0.50	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.000	MWD Comments
Drilling Hours for Day	15.17	Bit Distances		
Total Drilled for Day (ft)	406.00	Survey: 63.00 ft, Gamma: 54.00 ft		
Drilling Hours for BHA	26.08			
Total Drilled for BHA (ft)	741.00			POOH Reason
				Change Bottom Hole Assembly: Motor yields were inconsistent but yielded 8's - 18's, motor selection seemed to weak in top section of curve. motor stalled multiple times while drilling with 400 -500 Diff. Rop was low due to motor stalling. Motor drained well with minimal slack in bearings.

Change Bottom Hole Assembly: Motor yields were inconsistent but yielded 8's - 18's, motor selection seemed to weak in top section of curve. motor stalled multiple times while drilling with 400 -500 Diff. Rop was low due to motor stalling. Motor drained well with minimal slack in bearings.

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DD406TX, Style: PDC, Gauge Length (in): 2.75, Size (in): 8.50	Baker	5286260	4 1/2" Reg Pin			8.500		0.87	0.87
Mud Motor Description: 2.25 FBH 4/5 7.0 Stg Mtr True Slick, Size (in): 6.75, Bend Angle (°): 2.25, Rotor Lobe: 4, Stator Lobe: 5, Stator Stage: 7.0	Contender	CDM650-019	4 1/2" IF Box	4 1/2" Reg Pin		6.750		27.57	28.44
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	41.85
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.36
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	74.73
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	103.26

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Test BOP's	30	09-17	19:10	00:00	09-18			
Test BOP's	30	09-18	00:00	00:30	09-18			
Change BHA	6	09-18	00:30	01:40	09-18			P/U BHA # 6
TIH	8	09-18	01:40	03:40	09-18			TIH W/ BHA # 6

Other	16	09-18	03:40	04:25	09-18			Slip and cut drill line
TIH	8	09-18	04:25	07:40	09-18			TIH W/ BHA #6 Curve
Slide Drill	2	09-18	07:40	11:00	09-18	11234.00	11329.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2300.00, Weight On Bit (klbs): 35.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170, Toolface: 0, Toolface Type: magnetic
Survey	46	09-18	11:00	11:05	09-18	11329.00	11329.00	Inclination (°): 3.520, Azimuth (°): 336.180, TVD (ft): 11262.69, Dogleg (°/100 ft): 5.24, Sensor Depth (ft): 11266.00, Bit To Sensor (ft): 63.00
Other	16	09-18	11:05	11:45	09-18			Work on TD
Rotary Drill	1	09-18	11:45	12:45	09-18	11329.00	11354.00	Pressure On (psi): 2750.00, Pressure Off (psi): 2250.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 8.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 171.00
Slide Drill	2	09-18	12:45	15:45	09-18	11354.00	11422.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2300.00, Weight On Bit (klbs): 35.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170, Toolface: 15, Toolface Type: gravity
Survey	46	09-18	15:45	15:50	09-18	11422.00	11422.00	Inclination (°): 14.860, Azimuth (°): 351.740, TVD (ft): 11354.36, Dogleg (°/100 ft): 12.37, Sensor Depth (ft): 11359.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	09-18	15:50	16:05	09-18	11422.00	11437.00	Pressure On (psi): 2750.00, Pressure Off (psi): 2250.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 8.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 171.00
Slide Drill	2	09-18	16:05	17:45	09-18	11437.00	11487.00	Pressure On (psi): 2800.00, Pressure Off (psi): 2300.00, Weight On Bit (klbs): 35.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170, Toolface: 15, Toolface Type: magnetic
Rotary Drill	1	09-18	17:45	18:35	09-18	11487.00	11517.00	Pressure On (psi): 2750.00, Pressure Off (psi): 2250.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 8.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 171.00
Circulating	3	09-18	18:35	18:40	09-18			Slow pump rates
Survey	46	09-18	18:40	18:45	09-18	11517.00	11517.00	Inclination (°): 25.580, Azimuth (°): 351.740, TVD (ft): 11443.37, Dogleg (°/100 ft): 11.28, Sensor Depth (ft): 11454.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	09-18	18:45	19:30	09-18	11517.00	11547.00	Pressure On (psi): 2750.00, Pressure Off (psi): 2250.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 8.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 171.00
Slide Drill	2	09-18	19:30	22:15	09-18	11547.00	11611.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189, Toolface: 50, Toolface Type: gravity
Survey	46	09-18	22:15	22:25	09-18	11611.00	11611.00	Inclination (°): 27.560, Azimuth (°): 352.620, TVD (ft): 11527.44, Dogleg (°/100 ft): 2.15, Sensor Depth (ft): 11548.00, Bit To Sensor (ft): 63.00
Slide Drill	2	09-18	22:25	00:00	09-19	11611.00	11640.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189, Toolface: 10, Toolface Type: gravity

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Thursday, Sep 19 00:00 - 23:59 (Day 13 of 52)

Billing: \$22,245.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11640.00	Downhole Hours	24.00	Rotating WOB (klbs)	40.00 - 40.00
Bit Depth (ft)	11975.00	Drilling Hours	10.92	Sliding WOB (klbs)	40.00 - 45.00
Bottom Hole Depth (ft)	11975.00	Hours Circulating	1.33	Rotating SPM	171.00 - 171.00
Total Distance (ft)	335.00	Hours Sliding	8.17	Sliding SPM	156.00 - 189.00
Distance Rotated (ft)	116.00	Hours Rotating	2.75	Motor RPM	104.00 - 294.00
Distance Slid (ft)	219.00			Surface RPM	20.00 - 20.00
Inclination In	34.77			Flow Rate (gpm)	500.00 - 600.00
Inclination Out	59.69			On Bottom Pressure (psi)	2750.00 - 3200.00
Azimuth In	4.48	% Hours Rotating	25%	Off Bottom Pressure (psi)	2250.00 - 2700.00
Azimuth Out	357.10	% Hours Sliding	75%		
AVG Total ROP (ft/h)	29.12	% Distance Sliding	65%		
AVG Rotating ROP (ft/h)	42.18	% Distance Rotating	35%		
AVG Sliding ROP (ft/h)	25.44				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #6 - BHA #6 Curve

Date In: Sep 18, 2019, 1:40 Date Out: Sep 19, 2019, 18:50

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	6.75	Contender: 2.25 FBH 4/5 7.0 Stg Mtr, Rev/Gal: 0.49, Flow Range: 300-600, Max Diff: 1580 psi, Max Operating Torque: 9,090 ft/lbs, Protracted Angle: 2.25 / Bit; Baker 8.5" " Type: DD406TX , SN: 5286260, TFA: 2.227 , Jets: 6 x 22s, Bit Runs: 4
Vendor	Baker	Lobe/Stage	4/5, 7.0	
S/N	5286260	Bend Angle	2.25	
Nozzles	6x22	Speed (rev/gal)	0.50	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.000	
Drilling Hours for Day	10.92	Bit Distances		
Total Drilled for Day (ft)	335.00	Survey: 63.00 ft, Gamma: 54.00 ft		
Drilling Hours for BHA	26.08			POOH Reason
Total Drilled for BHA (ft)	741.00			
		Change Bottom Hole Assembly: Motor yields were inconsistent but yielded 8's - 18's, motor selection seemed to weak in top section of curve. motor stalled multiple times while drilling with 400 -500 Diff. Rop was low due to motor stalling. Motor drained well with minimal slack in bearings.		

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DD406TX, Style: PDC, Gauge Length (in): 2.75, Size (in): 8.50	Baker	5286260	4 1/2" Reg Pin			8.500		0.87	0.87
Mud Motor Description: 2.25 FBH 4/5 7.0 Stg Mtr True Slick, Size (in): 6.75, Bend Angle (°): 2.25, Rotor Lobe: 4, Stator Lobe: 5, Stator Stage: 7.0	Contender	CDM650-019	4 1/2" IF Box	4 1/2" Reg Pin		6.750		27.57	28.44
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	41.85
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	45.36
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	74.73
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	103.26

MWD Items

No Items

BHA #7 - BHA #7 Curve/ Lateral

Date In: Sep 19, 2019, 18:50 Date Out: Sep 20, 2019, 16:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5300717, TFA: 2.227 , Jets: 6 x 22s, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5300717	Bend Angle	1.75	
Nozzles	6x22	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.188	
Drilling Hours for Day	0.00	Bit Distances		
Total Drilled for Day (ft)		Survey: 67.00 ft, Gamma: 62.00 ft		
Drilling Hours for BHA	0.00			
Total Drilled for BHA (ft)				POOH Reason
				Downhole Motor Incident: After TIH with BHA #7 curve / lateral hit tight spot @11354' washed and reamed to 11973' attempt to pump & rotate to btm @11975 no success. pressuring up and torquing up to 28k after numerous attempt working pipe up and down. Noticed chuck of rubber coming out thru shaker. POOH to inspect BHA

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5300717	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-017	4 1/2" IF Box	4 1/2" Reg Pin		6.780		36.24	37.24
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.65
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.16
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.53
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.06

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Slide Drill	2	09-18	22:25	00:00	09-19	11611.00	11640.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189, Toolface: 10, Toolface Type: gravity
Slide Drill	2	09-19	00:00	03:45	09-19	11640.00	11705.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189, Toolface: 10, Toolface Type: gravity
Survey	46	09-19	03:45	03:55	09-19	11705.00	11705.00	Inclination (°): 34.770, Azimuth (°): 4.480, TVD (ft): 11607.90, Dogleg (°/100 ft): 10.04, Sensor Depth (ft): 11642.00, Bit To Sensor (ft): 63.00
Slide Drill	2	09-19	03:55	05:55	09-19	11705.00	11799.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189, Toolface: 345, Toolface Type: gravity
Survey	46	09-19	05:55	06:00	09-19	11799.00	11799.00	Inclination (°): 47.380, Azimuth (°): 358.860, TVD (ft): 11678.64, Dogleg (°/100 ft): 13.97, Sensor Depth (ft): 11736.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	09-19	06:00	06:25	09-19	11799.00	11824.00	Pressure On (psi): 2750.00, Pressure Off (psi): 2250.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 8.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 171.00
Slide Drill	2	09-19	06:25	08:50	09-19	11824.00	11884.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2700.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 500.00, Strokes Per Minute: 156, Toolface: 10, Toolface Type: gravity
Rotary Drill	1	09-19	08:50	09:00	09-19	11884.00	11894.00	Pressure On (psi): 2750.00, Pressure Off (psi): 2250.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 8.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 171.00
Survey	46	09-19	09:00	09:05	09-19	11894.00	11894.00	Inclination (°): 59.690, Azimuth (°): 357.100, TVD (ft): 11735.00, Dogleg (°/100 ft): 13.04, Sensor Depth (ft): 11831.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	09-19	09:05	11:15	09-19	11894.00	11975.00	Pressure On (psi): 2750.00, Pressure Off (psi): 2250.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 8.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 171.00
Circulating	3	09-19	11:15	12:30	09-19			Circ. BTU
Pooh	7	09-19	12:30	17:30	09-19			POOH for curve/lateral assembly
Change BHA	6	09-19	17:30	18:50	09-19			L/D BHA #6 / P/U BHA # 7
Circulating	3	09-19	18:50	18:55	09-19			Test MWD
Rig Service - Out Hole	20	09-19	18:55	19:30	09-19			
TIH	8	09-19	19:30	00:00	09-20			TIH W/ BHA #7

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Friday, Sep 20 00:00 - 23:59 (Day 14 of 52)

Billing: \$7,700.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)		Downhole Hours	24.00	Rotating WOB (klbs)	
Bit Depth (ft)		Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)		Hours Circulating	8.00	Rotating SPM	
Total Distance (ft)	0.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	0.00	Hours Rotating	0.00	Motor RPM	104.00 - 144.00
Distance Slid (ft)	0.00			Surface RPM	
Inclination In				Flow Rate (gpm)	
Inclination Out				On Bottom Pressure (psi)	
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out		% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding			
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating			
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #7 - BHA #7 Curve/ Lateral

Date In: Sep 19, 2019, 18:50 Date Out: Sep 20, 2019, 16:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5300717, TFA: 2.227 , Jets: 6 x 22s, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5300717	Bend Angle	1.75	
Nozzles	6x22	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.188	POOH Reason Downhole Motor Incident: After TIH with BHA #7 curve / lateral hit tight spot @11354' washed and reamed to 11973' attempt to pump & rotate to btm @11975 no success. pressuring up and torquing up to 28k after numerous attempt working pipe up and down. Noticed chuck of rubber coming out thru shaker. POOH to inspect BHA
Drilling Hours for Day	0.00	Bit Distances		
Total Drilled for Day (ft)		Survey: 67.00 ft, Gamma: 62.00 ft		
Drilling Hours for BHA	0.00			
Total Drilled for BHA (ft)				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5300717	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-017	4 1/2" IF Box	4 1/2" Reg Pin		6.780		36.24	37.24
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.65
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.16
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.53
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.06

MWD Items

No Items

BHA #8 - BHA # 8 (Fishing BHA)

Date In: Sep 20, 2019, 16:00 Date Out: Sep 21, 2019, 11:00

Bit Details		Motor Details		Directional Comments	
OD (in)		Size (in)			
Vendor		Lobe/Stage			
S/N		Bend Angle			
Nozzles		Speed (rev/gal)		MWD Comments	
Total Flow Area (in²)	N/A	Wear Pad OD (in)	N/A		
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		Survey: 67.00 ft, Gamma: 62.00 ft			
Drilling Hours for BHA	0.00			POOH Reason	
Total Drilled for BHA (ft)				Other: Fishing, first attempt unsuccessful	

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Other Description: <i>Overshot 8 1/8" OD w/ 6 7/8" Grapple</i>	Yellow Jacket	OS150818			6.875	8.125		2.93	2.93
Other Description: <i>Bushing</i>	Yellow Jacket	A25098						1.00	3.93
Other Description: <i>Wash pipe</i>	Yellow jacket	A3520			5.250	6.000		32.33	36.26
Other Description: <i>Top sub</i>	Yellow jacket	A6473						2.24	38.50
Crossover Sub Description: <i>Top Sub (XO), Type: Steel</i>	Yellow jacket	A25960	4 1/2" IF Box	3 1/2" IF Pin	2.375	6.125		2.24	40.74
Drill Pipe Description: <i>1 Joint 5" DP, Style: Slick</i>			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		31.40	72.14
Other Description: <i>Lubricated bumper jar</i>	yellow jacket	A21857	4 1/2" IF Box	4 1/2" IF Pin	2.250	6.250		10.33	82.47
Jars Description: <i>Dual action jar, Size (in): 6.50, Type: Hydraulic</i>	Yellow jacket	A28094	4 1/2" IF Box	4 1/2" IF Pin	2.250	6.500		29.89	112.36
HWDP Description: <i>9 Joints HWDP, Style: Slick</i>			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		273.73	386.09
Other Description: <i>Accelerator</i>	Yellow jacket	A21694	4 1/2" IF Box	4 1/2" IF Pin	2.250	6.250		13.03	399.12

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
TIH	8	09-19	19:30	00:00	09-20			TIH W/ BHA #7
TIH	8	09-20	00:00	01:00	09-20			TIH W/ BHA #7
Reaming	4	09-20	01:00	06:00	09-20			Reaming F/ 11351 - T/ 11970 [GPM = 600, RPM = 20]
Circulating	3	09-20	06:00	09:00	09-20			Work Pipe f/ 11955' t/ 11976' (GPM = 500-700, RPM= 20-50) Pressuring up & torquing up
Pooh	7	09-20	09:00	15:00	09-20			POOH to Inspect BHA after getting chucks of rubber in shakers
Pooh	7	09-20	15:00	16:00	09-20			On surface motor parted below bend/pad housing , L/D parted motor
Change BHA	6	09-20	16:00	17:00	09-20			P/U BHA # 8
Rig Service - Out Hole	20	09-20	17:00	17:30	09-20			
Standby	15	09-20	17:30	21:00	09-20			Standby while making up fishing tool BHA
Standby	15	09-20	21:00	00:00	09-21			Standby while TIH with fishing tools

MWD Activities

No Activities

BHA #9 - BHA #9 Hole Opener

Date In: Sep 21, 2019, 14:00 Date Out: Sep 22, 2019, 22:10

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)			
Vendor	Baker	Lobe/Stage			
S/N	5289431	Bend Angle			
Nozzles	3x22's	Speed (rev/gal)		MWD Comments	
Total Flow Area (in²)	1.114	Wear Pad OD (in)	N/A		
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		N/A			
Drilling Hours for BHA	0.00			POOH Reason	
Total Drilled for BHA (ft)				Other: Hole Opener	

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: <i>Baker GX117</i> , Style: <i>Tooth Bit</i> , Gauge Length (in): <i>0.00</i> , Size (in): <i>8.50</i>	Baker	5289431	4 1/2" Reg Pin			8.500		0.90	0.90
Other Description: <i>Bit Sub</i>	YJ	Yellow Jacket	4 1/2" IF Box	4 1/2" Reg Box	2.375	6.125		3.00	3.90
Other Description: <i>Float Sub</i>	DTI	DR19268	4 1/2" IF Box	4 1/2" IF Pin	2.938	6.750		2.49	6.39
HWDP Description: <i>4 Stds HWDP</i> , Style: <i>Slick</i>			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		365.33	371.72

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	09-20	21:00	00:00	09-21			Standby while TIH with fishing tools
Standby	15	09-21	00:00	06:00	09-21			Standby while TIH with fishing tools
Standby	15	09-21	06:00	09:30	09-21			Standby while POOH with fishing tools
Standby	15	09-21	09:30	11:00	09-21			Standby while laying down fishing tools
Standby	15	09-21	11:00	11:30	09-21			Standby while service rig
Standby	15	09-21	11:30	14:00	09-21			Standby while gathering subs for reamer run and m/u same
Standby	15	09-21	14:00	18:30	09-21			Standby while TIH with Bit and bit sub.
Standby	15	09-21	18:30	21:00	09-21			Standby while washing and reaming F/ 11216 T/11944
Standby	15	09-21	21:00	22:00	09-21			Standby while circulating B/u
Standby	15	09-21	22:00	00:00	09-22			Standby while POOH

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Sunday, Sep 22 00:00 - 23:59 (Day 16 of 52)

Billing: \$18,400.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)		Downhole Hours	24.00	Rotating WOB (klbs)	
Bit Depth (ft)		Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)		Hours Circulating	2.58	Rotating SPM	
Total Distance (ft)	0.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	0.00	Hours Rotating	0.00	Motor RPM	120.00 - 144.00
Distance Slid (ft)	0.00			Surface RPM	
Inclination In				Flow Rate (gpm)	
Inclination Out				On Bottom Pressure (psi)	
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out		% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding			
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating			
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #9 - BHA #9 Hole Opener

Date In: Sep 21, 2019, 14:00 Date Out: Sep 22, 2019, 22:10

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)			
Vendor	Baker	Lobe/Stage			
S/N	5289431	Bend Angle			
Nozzles	3x22's	Speed (rev/gal)		MWD Comments	
Total Flow Area (in²)	1.114	Wear Pad OD (in)	N/A		
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		N/A			
Drilling Hours for BHA	0.00			POOH Reason	
Total Drilled for BHA (ft)				Other: Hole Opener	

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker GX117, Style: Tooth Bit, Gauge Length (in): 0.00, Size (in): 8.50	Baker	5289431	4 1/2" Reg Pin			8.500		0.90	0.90
Other Description: Bit Sub	YJ	Yellow Jacket	4 1/2" IF Box	4 1/2" Reg Box	2.375	6.125		3.00	3.90
Other Description: Float Sub	DTI	DR19268	4 1/2" IF Box	4 1/2" IF Pin	2.938	6.750		2.49	6.39
HWDP Description: 4 Stds HWDP, Style: Slick			4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		365.33	371.72

MWD Items

No Items

BHA #10 - Aim BHA #10 (ST/Curve) - AEP BHA #9

Date In: Sep 22, 2019, 22:10 Date Out: Sep 24, 2019, 13:30

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)	6.5	Contender:6.5" 2.12 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.10 / Bit; Baker 8.5" " Type: KMX624 , SN: 5304972, TFA: .994 , Jets: 4 x 18's, Bit Runs: 0	
Vendor	Baker	Lobe/Stage	7/8, 5.7		
S/N	5304972	Bend Angle	2.12		
Nozzles	4x18	Speed (rev/gal)	0.24	MWD Comments	
Total Flow Area (in²)	0.994	Wear Pad OD (in)	6.875		
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		Survey: 62.00 ft, Gamma: 57.00 ft			
Drilling Hours for BHA	24.50			POOH Reason	
Total Drilled for BHA (ft)	221.00			Build Rate: While starting the curve, having trouble holding TF do to diff. spikes (50-100 psi) kicking TF from 180 to 270. & low ROP. POOH to inspect BHA	

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
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Bit Description: <i>Baker 8.5 Kymera KMX624</i> , Style: <i>PDC</i> , Gauge Length (in): <i>6.00</i> , Size (in): <i>8.50</i>	Baker	5304972	4 1/2" Reg Pin			8.500		0.85	0.85
Mud Motor Description: <i>2.12 FBH 7/8 5.7 Stg Mtr True Slick</i> , Size (in): <i>6.50</i> , Bend Angle (°): <i>2.12</i> , Rotor Lobe: <i>7</i> , Stator Lobe: <i>8</i> , Stator Stage: <i>5.7</i>	Contender	CDM-650-016	4 1/2" IF Box	4 1/2" Reg Pin		6.625		31.41	32.26
Drill Collar Description: <i>6.75" Non Mag Pony Collar</i> , Style: <i>Pony</i> , Type: <i>NM</i>	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	45.67
UBHO Sub Description: <i>UBHO Sub</i> , Type: <i>NM</i>	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	49.18
Drill Collar Description: <i>6.75" NMDC (Tool Carrier)</i> , Style: <i>Slick Drill</i> , Type: <i>NM</i>	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	78.55
Drill Collar Description: <i>6.75" NMDC (Spacer)</i> , Style: <i>Slick Drill</i> , Type: <i>NM</i>	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	107.08

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	09-21	22:00	00:00	09-22			Standby while POOH
Standby	15	09-22	00:00	02:30	09-22			Standby while POOH to bha. Remove bit and bit sub
Standby	15	09-22	02:30	08:00	09-22			Standby while TIH open ended to pump cement plug
Other	16	09-22	08:00	14:00	09-22			Circulate, Rig up cement equip. , Pump cement plug
Pooh	7	09-22	14:00	15:00	09-22			POOH to 10,471'
Circulating	3	09-22	15:00	17:30	09-22			Circulating @10,471' open ended
Pooh	7	09-22	17:30	22:10	09-22			POOH for Side Track/Curve assembly
Change BHA	6	09-22	22:10	23:20	09-22			P/U BHA # 10 (Side Track / Curve assembly)
Circulating	3	09-22	23:20	23:25	09-22			Test MWD
TIH	8	09-22	23:25	00:00	09-23			TIH W/ BHA #10

MWD Activities

No Activities



Daily Reports

Lateral #1

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Sep 23 00:00 - 23:59 (Day 17 of 52)

Billing: \$7,700.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11250.00	Downhole Hours	24.00	Rotating WOB (klbs)	40.00 - 40.00
Bit Depth (ft)	11320.00	Drilling Hours	15.92	Sliding WOB (klbs)	1.00 - 14.00
Bottom Hole Depth (ft)	11320.00	Hours Circulating	3.75	Rotating SPM	174.00 - 174.00
Total Distance (ft)	70.00	Hours Sliding	14.50	Sliding SPM	156.00 - 156.00
Distance Rotated (ft)	45.00	Hours Rotating	1.42	Motor RPM	120.00 - 144.00
Distance Slid (ft)	25.00			Surface RPM	20.00 - 20.00
Inclination In	2.42			Flow Rate (gpm)	500.00 - 550.00
Inclination Out	2.42			On Bottom Pressure (psi)	2550.00 - 3300.00
Azimuth In	184.04	% Hours Rotating	9%	Off Bottom Pressure (psi)	2550.00 - 3100.00
Azimuth Out	184.04	% Hours Sliding	91%		
AVG Total ROP (ft/h)	4.40	% Distance Sliding	36%		
AVG Rotating ROP (ft/h)	31.76	% Distance Rotating	64%		
AVG Sliding ROP (ft/h)	1.72				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #10 - Aim BHA #10 (ST/Curve) - AEP BHA #9

Date In: Sep 22, 2019, 22:10 Date Out: Sep 24, 2019, 13:30

Bit Details		Motor Details	Directional Comments
OD (in)	8.500	Size (in)	Contender: 6.5" 2.12 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.10 / Bit; Baker 8.5" " Type: KMX624 , SN: 5304972, TFA: .994 , Jets: 4 x 18's, Bit Runs: 0
Vendor	Baker	Lobe/Stage	
		5.7	
S/N	5304972	Bend Angle	2.12
Nozzles	4x18	Speed (rev/gal)	0.24
Total Flow Area (in²)	0.994	Wear Pad OD (in)	6.875
Drilling Hours for Day	15.92	Bit Distances	
Total Drilled for Day (ft)	70.00	Survey: 62.00 ft,	
Drilling Hours for BHA	24.50	Gamma: 57.00 ft	
Total Drilled for BHA (ft)	221.00		
			POOH Reason
			Build Rate: While starting the curve, having trouble holding TF do to diff. spikes (50-100 psi) kicking TF from 180 to 270. & low ROP. POOH to inspect BHA

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 8.5 Kymera KMX624, Style: PDC, Gauge Length (in): 6.00, Size (in): 8.50	Baker	5304972	4 1/2" Reg Pin			8.500		0.85	0.85
Mud Motor Description: 2.12 FBH 7/8 5.7 Stg Mtr True Slick, Size (in): 6.50, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.7	Contender	CDM-650-016	4 1/2" IF Box	4 1/2" Reg Pin		6.625		31.41	32.26
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	45.67
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	49.18
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	78.55
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	107.08

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
TIH	8	09-22	23:25	00:00	09-23			TIH W/ BHA #10
TIH	8	09-23	00:00	04:15	09-23			TIH W/ BHA #10 T/ 10,861
Circulating	3	09-23	04:15	04:55	09-23			wash F/ 10,861 to find top of cement plug (500 GPM... 156 SPM... 2700 PSI...) (Top of plug @ 11,138)

Reaming	4	09-23	04:55	06:00	09-23			Drill cement and dress plug F/ 11138 - T/ 11250 [GPM = 600, RPM = 20 WOB = 18]
Circulating	3	09-23	06:00	08:00	09-23			Build Trough @160 Azm
Slide Drill	2	09-23	08:00	16:30	09-23	11250.00	11258.00	Pressure On (psi): 2550.00, Pressure Off (psi): 2550.00, Weight On Bit (klbs): 1.00, Flow Rate (gpm): 500.00, Strokes Per Minute: 156, Toolface: 160, Toolface Type: magnetic
Slide Drill	2	09-23	16:30	20:00	09-23	11258.00	11265.00	Pressure On (psi): 2550.00, Pressure Off (psi): 2550.00, Weight On Bit (klbs): 6.00, Flow Rate (gpm): 500.00, Strokes Per Minute: 156, Toolface: 160, Toolface Type: magnetic
Slide Drill	2	09-23	20:00	22:30	09-23	11265.00	11275.00	Pressure On (psi): 2550.00, Pressure Off (psi): 2550.00, Weight On Bit (klbs): 14.00, Flow Rate (gpm): 500.00, Strokes Per Minute: 156, Toolface: 160, Toolface Type: magnetic
Rotary Drill	1	09-23	22:30	23:55	09-23	11275.00	11320.00	Pressure On (psi): 3300.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 40.00, Surface RPM: 20, Surface Torque (ft lbf): 9000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 174.00
Survey	46	09-23	23:55	00:00	09-24	11320.00	11320.00	Inclination (°): 2.420, Azimuth (°): 184.040, TVD (ft): 11254.69, Dogleg (°/100 ft): 0.91, Sensor Depth (ft): 11258.00, Bit To Sensor (ft): 62.00

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Tuesday, Sep 24 00:00 - 23:59 (Day 18 of 52)

Billing: \$18,400.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11320.00	Downhole Hours	24.00	Rotating WOB (klbs)	
Bit Depth (ft)	11566.00	Drilling Hours	12.17	Sliding WOB (klbs)	23.00 - 48.00
Bottom Hole Depth (ft)	11566.00	Hours Circulating	1.50	Rotating SPM	
Total Distance (ft)	246.00	Hours Sliding	12.17	Sliding SPM	159.00 - 188.00
Distance Rotated (ft)	0.00	Hours Rotating	0.00	Motor RPM	72.00 - 144.00
Distance Slid (ft)	246.00			Surface RPM	
Inclination In	3.25			Flow Rate (gpm)	507.00 - 600.00
Inclination Out	11.08			On Bottom Pressure (psi)	2700.00 - 3600.00
Azimuth In	173.50	% Hours Rotating	0%	Off Bottom Pressure (psi)	2400.00 - 3300.00
Azimuth Out	53.96	% Hours Sliding	100%		
AVG Total ROP (ft/h)	20.22	% Distance Sliding	100%		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating	0%		
AVG Sliding ROP (ft/h)	20.22				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #10 - Aim BHA #10 (ST/Curve) - AEP BHA #9

Date In: Sep 22, 2019, 22:10 Date Out: Sep 24, 2019, 13:30

Bit Details		Motor Details	Directional Comments
OD (in)	8.500	Size (in)	Contender: 6.5" 2.12 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.10 / Bit; Baker 8.5" " Type: KMX624 , SN: 5304972, TFA: .994 , Jets: 4 x 18's, Bit Runs: 0
Vendor	Baker	Lobe/Stage	
		7/8, 5.7	
S/N	5304972	Bend Angle	2.12
Nozzles	4x18	Speed (rev/gal)	0.24
Total Flow Area (in²)	0.994	Wear Pad OD (in)	6.875
Drilling Hours for Day	8.58	Bit Distances	
Total Drilled for Day (ft)	151.00	Survey: 62.00 ft,	
Drilling Hours for BHA	24.50	Gamma: 57.00 ft	
Total Drilled for BHA (ft)	221.00		

MWD Comments

POOH Reason

Build Rate: While starting the curve, having trouble holding TF do to diff. spikes (50-100 psi) kicking TF from 180 to 270. & low ROP. POOH to inspect BHA

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 8.5 Kymera KMX624, Style: PDC, Gauge Length (in): 6.00, Size (in): 8.50	Baker	5304972	4 1/2" Reg Pin			8.500		0.85	0.85
Mud Motor Description: 2.12 FBH 7/8 5.7 Stg Mtr True Slick, Size (in): 6.50, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.7	Contender	CDM-650-016	4 1/2" IF Box	4 1/2" Reg Pin		6.625		31.41	32.26
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	45.67
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	49.18
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	78.55
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	107.08

MWD Items

No Items

BHA #11 - BHA #11 (Curve) AEP BHA #10

Date In: Sep 24, 2019, 13:30 Date Out: Sep 25, 2019, 20:10

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)	6.5	Contender:6.5" 2.25 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.30 / Bit; Halliburton 8.5" " Type: GTD64C , SN: 13243076, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 2	
Vendor	Halliburton	Lobe/Stage	7/8, 5.7		
S/N	13243076	Bend Angle	2.25		
Nozzles	6x22's	Speed (rev/gal)	0.24	MWD Comments	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.938	POOH Reason Change Bottom Hole Assembly: Motor performed well. yielded 15-18. drained well but and around 1/2" play in bearings	
Drilling Hours for Day	3.58	Bit Distances			
Total Drilled for Day (ft)	95.00	Survey: 62.00 ft,			
Drilling Hours for BHA	16.58	Gamma: 57.00 ft			
Total Drilled for BHA (ft)	601.00				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: <i>Halliburton 8.5 GTD64C</i> , Style: <i>PDC</i> , Gauge Length (in): <i>3.00</i> , Size (in): <i>8.50</i>	Halliburton	13243076	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: <i>2.25 FBH 7/8 5.7 Stg Mtr True Slick</i> , Size (in): <i>6.50</i> , Bend Angle (°): <i>2.25</i> , Rotor Lobe: <i>7</i> , Stator Lobe: <i>8</i> , Stator Stage: <i>5.7</i>	Contender	CDM-650-001	4 1/2" IF Box	4 1/2" Reg Pin		6.656		31.58	32.53
Drill Collar Description: <i>6.75" Non Mag Pony Collar</i> , Style: <i>Pony</i> , Type: <i>NM</i>	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	45.94
UBHO Sub Description: <i>UBHO Sub</i> , Type: <i>NM</i>	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	49.45
Drill Collar Description: <i>6.75" NMDC (Tool Carrier)</i> , Style: <i>Slick Drill</i> , Type: <i>NM</i>	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	78.82
Drill Collar Description: <i>6.75" NMDC (Spacer)</i> , Style: <i>Slick Drill</i> , Type: <i>NM</i>	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	107.35

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Survey	46	09-23	23:55	00:00	09-24	11320.00	11320.00	Inclination (°): <i>2.420</i> , Azimuth (°): <i>184.040</i> , TVD (ft): <i>11254.69</i> , Dogleg (°/100 ft): <i>0.91</i> , Sensor Depth (ft): <i>11258.00</i> , Bit To Sensor (ft): <i>62.00</i>
Slide Drill	2	09-24	00:00	00:30	09-24	11320.00	11332.00	Pressure On (psi): <i>3600.00</i> , Pressure Off (psi): <i>3300.00</i> , Weight On Bit (klbs): <i>48.00</i> , Flow Rate (gpm): <i>600.00</i> , Strokes Per Minute: <i>188</i> , Toolface: <i>30</i> , Toolface Type: <i>gravity</i>
Circulating	3	09-24	00:30	00:40	09-24			Slow pump rates
Survey	46	09-24	00:40	00:50	09-24	11332.00	11332.00	Inclination (°): <i>3.250</i> , Azimuth (°): <i>173.500</i> , TVD (ft): <i>11266.67</i> , Dogleg (°/100 ft): <i>8.14</i> , Sensor Depth (ft): <i>11270.00</i> , Bit To Sensor (ft): <i>62.00</i>
Slide Drill	2	09-24	00:50	05:25	09-24	11332.00	11426.00	Pressure On (psi): <i>3000.00</i> , Pressure Off (psi): <i>2800.00</i> , Weight On Bit (klbs): <i>23.00</i> , Flow Rate (gpm): <i>550.00</i> , Strokes Per Minute: <i>171</i> , Toolface: <i>280</i> , Toolface Type: <i>gravity</i>
Survey	46	09-24	05:25	05:30	09-24	11426.00	11426.00	Inclination (°): <i>4.000</i> , Azimuth (°): <i>138.080</i> , TVD (ft): <i>11360.50</i> , Dogleg (°/100 ft): <i>2.46</i> , Sensor Depth (ft): <i>11364.00</i> , Bit To Sensor (ft): <i>62.00</i>
Slide Drill	2	09-24	05:30	09:00	09-24	11426.00	11471.00	Pressure On (psi): <i>3000.00</i> , Pressure Off (psi): <i>2800.00</i> , Weight On Bit (klbs): <i>23.00</i> , Flow Rate (gpm): <i>550.00</i> , Strokes Per Minute: <i>171</i> , Toolface: <i>280</i> , Toolface Type: <i>gravity</i>
Survey	46	09-24	09:00	09:05	09-24	11471.00	11471.00	Inclination (°): <i>4.260</i> , Azimuth (°): <i>106.960</i> , TVD (ft): <i>11405.38</i> , Dogleg (°/100 ft): <i>4.95</i> , Sensor Depth (ft): <i>11409.00</i> , Bit To Sensor (ft): <i>62.00</i>
Circulating	3	09-24	09:05	10:00	09-24			Circulate BTU
Pooh	7	09-24	10:00	13:30	09-24			POOH to inspect BHA
Change BHA	6	09-24	13:30	14:30	09-24			C/O Bit & Motor
Circulating	3	09-24	14:30	14:45	09-24			Shallow Test MWD
TIH	8	09-24	14:45	15:00	09-24			M/U Bit & NMDC
TIH	8	09-24	15:00	20:05	09-24			TIH W/ BHA #11
Slide Drill	2	09-24	20:05	22:10	09-24	11471.00	11521.00	Pressure On (psi): <i>2700.00</i> , Pressure Off (psi): <i>2400.00</i> , Weight On Bit (klbs): <i>40.00</i> , Flow Rate (gpm): <i>507.00</i> , Strokes Per Minute: <i>159</i> , Toolface: <i>290</i> , Toolface Type: <i>gravity</i>
Circulating	3	09-24	22:10	22:20	09-24			SPR
Survey	46	09-24	22:20	22:25	09-24	11521.00	11521.00	Inclination (°): <i>5.800</i> , Azimuth (°): <i>82.620</i> , TVD (ft): <i>11455.20</i> , Dogleg (°/100 ft): <i>5.20</i> , Sensor Depth (ft): <i>11459.00</i> , Bit To Sensor (ft): <i>62.00</i>
Slide Drill	2	09-24	22:25	23:55	09-24	11521.00	11566.00	Pressure On (psi): <i>2700.00</i> , Pressure Off (psi): <i>2400.00</i> , Weight On Bit (klbs): <i>40.00</i> , Flow Rate (gpm): <i>507.00</i> , Strokes Per Minute: <i>159</i> , Toolface: <i>315</i> , Toolface Type: <i>gravity</i>
Survey	46	09-24	23:55	00:00	09-25	11566.00	11566.00	Inclination (°): <i>11.080</i> , Azimuth (°): <i>53.960</i> , TVD (ft): <i>11499.71</i> , Dogleg (°/100 ft): <i>14.66</i> , Sensor Depth (ft): <i>11504.00</i> , Bit To Sensor

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Wednesday, Sep 25 00:00 - 23:59 (Day 19 of 52)

Billing: \$22,245.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11566.00	Downhole Hours	24.00	Rotating WOB (klbs)	30.00 - 30.00
Bit Depth (ft)	12072.00	Drilling Hours	13.00	Sliding WOB (klbs)	40.00 - 40.00
Bottom Hole Depth (ft)	12072.00	Hours Circulating	1.00	Rotating SPM	159.00 - 159.00
Total Distance (ft)	506.00	Hours Sliding	12.75	Sliding SPM	159.00 - 159.00
Distance Rotated (ft)	20.00	Hours Rotating	0.25	Motor RPM	72.00 - 144.00
Distance Slid (ft)	486.00			Surface RPM	20.00 - 20.00
Inclination In	18.37			Flow Rate (gpm)	507.00 - 507.00
Inclination Out	78.51			On Bottom Pressure (psi)	2700.00 - 2900.00
Azimuth In	44.74	% Hours Rotating	2%	Off Bottom Pressure (psi)	2400.00 - 2400.00
Azimuth Out	353.67	% Hours Sliding	98%		
AVG Total ROP (ft/h)	38.92	% Distance Sliding	96%		
AVG Rotating ROP (ft/h)	80.00	% Distance Rotating	4%		
AVG Sliding ROP (ft/h)	38.12				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #11 - BHA #11 (Curve) AEP BHA #10

Date In: Sep 24, 2019, 13:30 Date Out: Sep 25, 2019, 20:10

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	6.5	Contender:6.5" 2.25 FBH 7/8 5.7 Stg Mtr, Rev/Gal: 0.24, Flow Range: 300-600, Max Diff: 1280 psi, Max Operating Torque: 13,720 ft/lbs, Protracted Angle: 2.30 / Bit; Halliburton 8.5" " Type: GTD64C , SN: 13243076, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 2
Vendor	Halliburton	Lobe/Stage	7/8, 5.7	
S/N	13243076	Bend Angle	2.25	
Nozzles	6x22's	Speed (rev/gal)	0.24	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.938	POOH Reason Change Bottom Hole Assembly: Motor performed well. yielded 15-18. drained well but and around 1/2" play in bearings
Drilling Hours for Day	13.00	Bit Distances		
Total Drilled for Day (ft)	506.00	Survey: 62.00 ft, Gamma: 57.00 ft		
Drilling Hours for BHA	16.58			
Total Drilled for BHA (ft)	601.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Halliburton 8.5 GTD64C, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Halliburton	13243076	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: 2.25 FBH 7/8 5.7 Stg Mtr True Slick, Size (in): 6.50, Bend Angle (°): 2.25, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.7	Contender	CDM-650-001	4 1/2" IF Box	4 1/2" Reg Pin		6.656		31.58	32.53
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	45.94
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	49.45
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	78.82
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	107.35

MWD Items

No Items

BHA #12 - BHA #12 Lateral

Date In: Sep 25, 2019, 20:10 Date Out: Sep 30, 2019, 10:00

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1	
Vendor	Baker	Lobe/Stage	7/8, 8.5		
S/N	5302653	Bend Angle	1.75		
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.875	POOH Reason Total Depth/Casing Point: TD'd Well @ 19551' MD	
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		Survey: 67.00 ft, Gamma: 62.00 ft			
Drilling Hours for BHA	65.42				
Total Drilled for BHA (ft)	7479.00				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: <i>Baker DD506TWX PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50</i>	Baker	5302653	4 1/2" Reg Pin			8.500		1.07	1.07
Mud Motor Description: <i>1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5</i>	Contender	700-40-031	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.22	37.29
Drill Collar Description: <i>6.75" Non Mag Pony Collar, Style: Pony, Type: NM</i>	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.70
UBHO Sub Description: <i>UBHO Sub, Type: NM</i>	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.21
Drill Collar Description: <i>6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM</i>	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.58
Drill Collar Description: <i>6.75" NMDC (Spacer), Style: Slick Drill, Type: NM</i>	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.11

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Survey	46	09-24	23:55	00:00	09-25	11566.00	11566.00	Inclination (°): 11.080, Azimuth (°): 53.960, TVD (ft): 11499.71, Dogleg (°/100 ft): 14.66, Sensor Depth (ft): 11504.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	00:00	01:30	09-25	11566.00	11615.00	Pressure On (psi): 2700.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 310, Toolface Type: gravity
Survey	46	09-25	01:30	01:50	09-25	11615.00	11615.00	Inclination (°): 18.370, Azimuth (°): 44.740, TVD (ft): 11547.07, Dogleg (°/100 ft): 15.58, Sensor Depth (ft): 11553.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	01:50	03:40	09-25	11615.00	11660.00	Pressure On (psi): 2700.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 295, Toolface Type: gravity
Survey	46	09-25	03:40	03:45	09-25	11660.00	11660.00	Inclination (°): 24.750, Azimuth (°): 29.270, TVD (ft): 11588.94, Dogleg (°/100 ft): 18.88, Sensor Depth (ft): 11598.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	03:45	05:05	09-25	11660.00	11709.00	Pressure On (psi): 2700.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 320, Toolface Type: gravity
Survey	46	09-25	05:05	05:15	09-25	11709.00	11709.00	Inclination (°): 28.310, Azimuth (°): 12.390, TVD (ft): 11632.83, Dogleg (°/100 ft): 16.95, Sensor Depth (ft): 11647.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	05:15	06:10	09-25	11709.00	11754.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 345, Toolface Type: gravity
Survey	46	09-25	06:10	06:20	09-25	11754.00	11754.00	Inclination (°): 32.620, Azimuth (°): 358.770, TVD (ft): 11671.66, Dogleg (°/100 ft): 18.04, Sensor Depth (ft): 11692.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	09-25	06:20	06:30	09-25	11754.00	11764.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 30.00, Surface RPM: 20, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159.00
Slide Drill	2	09-25	06:30	07:20	09-25	11764.00	11804.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 15, Toolface Type: gravity
Survey	46	09-25	07:20	07:35	09-25	11804.00	11804.00	Inclination (°): 39.780, Azimuth (°): 352.440, TVD (ft): 11712.00, Dogleg (°/100 ft): 16.14, Sensor Depth (ft): 11742.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	09-25	07:35	07:40	09-25	11804.00	11814.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 30.00, Surface RPM: 20, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159.00
Slide Drill	2	09-25	07:40	09:30	09-25	11814.00	11898.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 15, Toolface Type: gravity

Survey	46	09-25	09:30	09:35	09-25	11898.00	11898.00	Inclination (°): 49.670, Azimuth (°): 352.880, TVD (ft): 11778.70, Dogleg (°/100 ft): 10.53, Sensor Depth (ft): 11836.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	09:35	11:00	09-25	11898.00	11943.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 15, Toolface Type: gravity
Survey	46	09-25	11:00	11:05	09-25	11943.00	11943.00	Inclination (°): 57.360, Azimuth (°): 354.810, TVD (ft): 11805.44, Dogleg (°/100 ft): 17.43, Sensor Depth (ft): 11881.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	11:05	12:10	09-25	11943.00	11992.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 5, Toolface Type: gravity
Survey	46	09-25	12:10	12:15	09-25	11992.00	11992.00	Inclination (°): 64.310, Azimuth (°): 354.370, TVD (ft): 11829.30, Dogleg (°/100 ft): 14.21, Sensor Depth (ft): 11930.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	12:15	13:25	09-25	11992.00	12037.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 5, Toolface Type: gravity
Survey	46	09-25	13:25	13:30	09-25	12037.00	12037.00	Inclination (°): 72.350, Azimuth (°): 354.460, TVD (ft): 11845.91, Dogleg (°/100 ft): 17.87, Sensor Depth (ft): 11975.00, Bit To Sensor (ft): 62.00
Slide Drill	2	09-25	13:30	14:20	09-25	12037.00	12072.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 30, Toolface Type: gravity
Survey	46	09-25	14:20	14:25	09-25	12072.00	12072.00	Inclination (°): 78.510, Azimuth (°): 353.670, TVD (ft): 11854.71, Dogleg (°/100 ft): 17.73, Sensor Depth (ft): 12010.00, Bit To Sensor (ft): 62.00
Circulating	3	09-25	14:25	15:20	09-25			Circulate hole clean to pooh for lateral assembly
Pooh	7	09-25	15:20	19:10	09-25			POOH for lateral assembly
Change BHA	6	09-25	19:10	20:10	09-25			P/U BHA # 12
Circulating	3	09-25	20:10	20:15	09-25			Test MWD 100 SPM... 322 GPM... 583 PSI... 114#...
TIH	8	09-25	20:15	22:20	09-25			TIH W/ BHA #12
Other	16	09-25	22:20	23:55	09-25			Slip & Cut Drill Line

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Thursday, Sep 26 00:00 - 23:59 (Day 20 of 52)

Billing: \$7,200.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	12072.00	Downhole Hours	24.00	Rotating WOB (klbs)	30.00 - 45.00
Bit Depth (ft)	14451.00	Drilling Hours	15.67	Sliding WOB (klbs)	40.00 - 45.00
Bottom Hole Depth (ft)	14451.00	Hours Circulating	2.58	Rotating SPM	159.00 - 234.00
Total Distance (ft)	2379.00	Hours Sliding	4.08	Sliding SPM	159.00 - 234.00
Distance Rotated (ft)	2194.00	Hours Rotating	11.58	Motor RPM	104.00 - 144.00
Distance Slid (ft)	185.00			Surface RPM	20.00 - 60.00
Inclination In	87.08			Flow Rate (gpm)	507.00 - 750.00
Inclination Out	90.11			On Bottom Pressure (psi)	2850.00 - 5000.00
Azimuth In	356.84	% Hours Rotating	74%	Off Bottom Pressure (psi)	2400.00 - 4500.00
Azimuth Out	357.54	% Hours Sliding	26%		
AVG Total ROP (ft/h)	151.85	% Distance Sliding	8%		
AVG Rotating ROP (ft/h)	189.41	% Distance Rotating	92%		
AVG Sliding ROP (ft/h)	45.31				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #12 - BHA #12 Lateral

Date In: Sep 25, 2019, 20:10 Date Out: Sep 30, 2019, 10:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5302653	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.875	MWD Comments
Drilling Hours for Day	15.67	Bit Distances		
Total Drilled for Day (ft)	2379.00	Survey: 67.00 ft, Gamma: 62.00 ft		
Drilling Hours for BHA	65.42			
Total Drilled for BHA (ft)	7479.00			
				POOH Reason
				Total Depth/Casing Point: TD'd Well @ 19551' MD

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker DD506TWX PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5302653	4 1/2" Reg Pin			8.500		1.07	1.07
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-031	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.22	37.29
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.70
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.21
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.58
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.11

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
TIH	8	09-26	00:00	03:00	09-26			TIH W/ BHA #12 t/ 11250'
Circulating	3	09-26	03:00	05:00	09-26			Wash f/ 11250' t/ Btm
Rotary Drill	1	09-26	05:00	06:00	09-26	12072.00	12185.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 30.00, Surface RPM: 20, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159.00

Survey	46	09-26	06:00	06:05	09-26	12185.00	12185.00	Inclination (°): 87.080, Azimuth (°): 356.840, TVD (ft): 11868.24, Dogleg (°/100 ft): 8.45, Sensor Depth (ft): 12118.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	06:05	06:10	09-26	12185.00	12195.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 30.00, Surface RPM: 20, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159.00
Slide Drill	2	09-26	06:10	06:40	09-26	12195.00	12220.00	Pressure On (psi): 2850.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	09-26	06:40	06:55	09-26	12220.00	12280.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 30.00, Surface RPM: 20, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 507.00, Strokes Per Minute: 159.00
Survey	46	09-26	06:55	07:00	09-26	12280.00	12280.00	Inclination (°): 89.270, Azimuth (°): 356.310, TVD (ft): 11871.27, Dogleg (°/100 ft): 2.37, Sensor Depth (ft): 12213.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	07:00	07:35	09-26	12280.00	12374.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	07:35	07:40	09-26	12374.00	12374.00	Inclination (°): 89.490, Azimuth (°): 356.570, TVD (ft): 11872.28, Dogleg (°/100 ft): 0.36, Sensor Depth (ft): 12307.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	07:40	07:45	09-26	12374.00	12384.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-26	07:45	08:05	09-26	12384.00	12409.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 60, Toolface Type: gravity
Rotary Drill	1	09-26	08:05	08:30	09-26	12409.00	12468.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Rig Service - In Hole	19	09-26	08:30	08:35	09-26			Reset PLC
Survey	46	09-26	08:35	08:40	09-26	12468.00	12468.00	Inclination (°): 90.460, Azimuth (°): 357.980, TVD (ft): 11872.33, Dogleg (°/100 ft): 1.82, Sensor Depth (ft): 12401.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	08:40	09:10	09-26	12468.00	12563.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	09:10	09:15	09-26	12563.00	12563.00	Inclination (°): 90.290, Azimuth (°): 357.800, TVD (ft): 11871.70, Dogleg (°/100 ft): 0.26, Sensor Depth (ft): 12496.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	09:15	09:35	09-26	12563.00	12658.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	09:35	09:40	09-26	12658.00	12658.00	Inclination (°): 90.510, Azimuth (°): 357.450, TVD (ft): 11871.04, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 12591.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	09:40	10:10	09-26	12658.00	12752.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	10:10	10:20	09-26	12752.00	12752.00	Inclination (°): 89.980, Azimuth (°): 357.100, TVD (ft): 11870.64, Dogleg (°/100 ft): 0.68, Sensor Depth (ft): 12685.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	10:20	10:25	09-26	12752.00	12762.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-26	10:25	11:00	09-26	12762.00	12787.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 90, Toolface Type: gravity
Rotary Drill	1	09-26	11:00	11:15	09-26	12787.00	12847.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	11:15	11:20	09-26	12847.00	12847.00	Inclination (°): 90.550, Azimuth (°): 0.440, TVD (ft): 11870.20, Dogleg (°/100 ft): 3.57, Sensor Depth (ft): 12780.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	11:20	11:55	09-26	12847.00	12942.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	11:55	12:00	09-26	12942.00	12942.00	Inclination (°): 90.070, Azimuth (°): 0.530, TVD (ft): 11869.69, Dogleg (°/100 ft): 0.51, Sensor Depth (ft): 12875.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	12:00	12:20	09-26	12942.00	13036.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	12:20	12:25	09-26	13036.00	13036.00	Inclination (°): 88.840, Azimuth (°): 359.030, TVD (ft): 11870.58, Dogleg (°/100 ft): 2.06, Sensor Depth (ft): 12969.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	12:25	13:00	09-26	13036.00	13131.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	13:00	13:05	09-26	13131.00	13131.00	Inclination (°): 88.750, Azimuth (°): 359.120, TVD (ft): 11872.58, Dogleg (°/100 ft): 0.13, Sensor Depth (ft): 13064.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	13:05	13:30	09-26	13131.00	13225.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	13:30	13:35	09-26	13225.00	13225.00	Inclination (°): 87.650, Azimuth (°): 358.770, TVD (ft): 11875.53, Dogleg (°/100 ft): 1.23, Sensor Depth (ft): 13158.00, Bit To Sensor (ft): 67.00

Rotary Drill	1	09-26	13:35	14:05	09-26	13225.00	13319.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	14:05	14:10	09-26	13319.00	13319.00	Inclination (°): 87.120, Azimuth (°): 358.590, TVD (ft): 11879.82, Dogleg (°/100 ft): 0.60, Sensor Depth (ft): 13252.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	14:10	14:40	09-26	13319.00	13413.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-26	14:40	14:45	09-26	13413.00	13413.00	Inclination (°): 85.670, Azimuth (°): 357.890, TVD (ft): 11885.73, Dogleg (°/100 ft): 1.71, Sensor Depth (ft): 13346.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	14:45	14:50	09-26	13413.00	13423.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-26	14:50	15:20	09-26	13423.00	13448.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 30, Toolface Type: gravity
Rotary Drill	1	09-26	15:20	15:35	09-26	13448.00	13508.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	15:35	16:00	09-26	13508.00	13508.00	Inclination (°): 87.380, Azimuth (°): 359.210, TVD (ft): 11891.49, Dogleg (°/100 ft): 2.27, Sensor Depth (ft): 13441.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	16:00	16:05	09-26	13508.00	13517.00	Recycled 5 Times due to Pump Noise Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Troubleshoot	34	09-26	16:05	16:15	09-26			Down Link from .5 Pulse width to .6
Rotary Drill	1	09-26	16:15	16:30	09-26	13517.00	13559.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Circulating	3	09-26	16:30	17:05	09-26			Circulate on 1 pump while rig crew work on pumps 2 & 3
Rotary Drill	1	09-26	17:05	17:15	09-26	13559.00	13602.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	17:15	17:20	09-26	13602.00	13602.00	Inclination (°): 87.650, Azimuth (°): 358.860, TVD (ft): 11895.56, Dogleg (°/100 ft): 0.47, Sensor Depth (ft): 13535.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	17:20	17:25	09-26	13602.00	13612.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Slide Drill	2	09-26	17:25	18:00	09-26	13612.00	13632.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 30, Toolface Type: gravity
Rotary Drill	1	09-26	18:00	18:40	09-26	13632.00	13697.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	18:40	18:45	09-26	13697.00	13697.00	Inclination (°): 88.750, Azimuth (°): 359.650, TVD (ft): 11898.55, Dogleg (°/100 ft): 1.43, Sensor Depth (ft): 13630.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	18:45	18:50	09-26	13697.00	13707.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Slide Drill	2	09-26	18:50	19:15	09-26	13707.00	13727.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	09-26	19:15	19:30	09-26	13727.00	13791.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	19:30	19:35	09-26	13791.00	13791.00	Inclination (°): 91.600, Azimuth (°): 359.300, TVD (ft): 11898.26, Dogleg (°/100 ft): 3.05, Sensor Depth (ft): 13724.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	19:35	20:00	09-26	13791.00	13885.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	20:00	20:05	09-26	13885.00	13885.00	Inclination (°): 91.650, Azimuth (°): 358.150, TVD (ft): 11895.59, Dogleg (°/100 ft): 1.22, Sensor Depth (ft): 13818.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	20:05	20:10	09-26	13885.00	13895.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Slide Drill	2	09-26	20:10	20:30	09-26	13895.00	13905.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 165, Toolface Type: gravity
Rotary Drill	1	09-26	20:30	20:45	09-26	13905.00	13979.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	20:45	20:50	09-26	13979.00	13979.00	Inclination (°): 89.760, Azimuth (°): 358.150, TVD (ft): 11894.44, Dogleg (°/100 ft): 2.01, Sensor Depth (ft): 13912.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	20:50	21:05	09-26	13979.00	14074.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	21:05	21:10	09-26	14074.00	14074.00	Inclination (°): 89.100, Azimuth (°): 357.630, TVD (ft): 11895.38, Dogleg (°/100 ft): 0.88, Sensor Depth (ft): 14007.00, Bit To Sensor (ft): 67.00

Rotary Drill	1	09-26	21:10	21:15	09-26	14074.00	14084.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Slide Drill	2	09-26	21:15	21:45	09-26	14084.00	14099.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 60, Toolface Type: gravity
Rotary Drill	1	09-26	21:45	22:10	09-26	14099.00	14168.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	22:10	22:15	09-26	14168.00	14168.00	Inclination (°): 90.330, Azimuth (°): 358.860, TVD (ft): 11895.85, Dogleg (°/100 ft): 1.85, Sensor Depth (ft): 14101.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	22:15	22:35	09-26	14168.00	14262.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 18500.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	22:35	22:40	09-26	14262.00	14262.00	Inclination (°): 90.370, Azimuth (°): 358.150, TVD (ft): 11895.28, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 14195.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	22:40	23:00	09-26	14262.00	14357.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	23:00	23:05	09-26	14357.00	14357.00	Inclination (°): 90.110, Azimuth (°): 357.540, TVD (ft): 11894.88, Dogleg (°/100 ft): 0.70, Sensor Depth (ft): 14290.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-26	23:05	23:10	09-26	14357.00	14367.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Slide Drill	2	09-26	23:10	23:30	09-26	14367.00	14387.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 75, Toolface Type: gravity
Rotary Drill	1	09-26	23:30	23:55	09-26	14387.00	14451.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-26	23:55	00:05	09-27	14451.00	14451.00	Inclination (°): 90.240, Azimuth (°): 359.210, TVD (ft): 11894.59, Dogleg (°/100 ft): 1.78, Sensor Depth (ft): 14384.00, Bit To Sensor (ft): 67.00

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Friday, Sep 27 00:00 - 23:59 (Day 21 of 52)

Billing: \$7,200.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	14451.00	Downhole Hours	24.00	Rotating WOB (klbs)	45.00 - 50.00
Bit Depth (ft)	16820.00	Drilling Hours	19.92	Sliding WOB (klbs)	45.00 - 50.00
Bottom Hole Depth (ft)	16820.00	Hours Circulating	0.00	Rotating SPM	228.00 - 234.00
Total Distance (ft)	2369.00	Hours Sliding	6.50	Sliding SPM	228.00 - 234.00
Distance Rotated (ft)	2206.00	Hours Rotating	13.42	Motor RPM	104.00 - 144.00
Distance Slid (ft)	163.00			Surface RPM	60.00 - 60.00
Inclination In	90.24			Flow Rate (gpm)	733.00 - 750.00
Inclination Out	94.90			On Bottom Pressure (psi)	4800.00 - 5700.00
Azimuth In	359.21	% Hours Rotating	67%	Off Bottom Pressure (psi)	4200.00 - 4800.00
Azimuth Out	359.74	% Hours Sliding	33%		
AVG Total ROP (ft/h)	114.75	% Distance Sliding	7%		
AVG Rotating ROP (ft/h)	164.42	% Distance Rotating	93%		
AVG Sliding ROP (ft/h)	23.86				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #12 - BHA #12 Lateral

Date In: Sep 25, 2019, 20:10 Date Out: Sep 30, 2019, 10:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5302653	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.875	
Drilling Hours for Day	19.92	Bit Distances		MWD Comments
Total Drilled for Day (ft)	2369.00	Survey: 67.00 ft, Gamma: 62.00 ft		
Drilling Hours for BHA	65.42			
Total Drilled for BHA (ft)	7479.00			
				POOH Reason
				Total Depth/Casing Point: TD'd Well @ 19551' MD

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker DD506TWX PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5302653	4 1/2" Reg Pin			8.500		1.07	1.07
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-031	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.22	37.29
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.70
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.21
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.58
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.11

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Survey	46	09-26	23:55	00:05	09-27	14451.00	14451.00	Inclination (°): 90.240, Azimuth (°): 359.210, TVD (ft): 11894.59, Dogleg (°/100 ft): 1.78, Sensor Depth (ft): 14384.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	00:05	00:25	09-27	14451.00	14545.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	00:25	00:30	09-27	14545.00	14545.00	Inclination (°): 90.730, Azimuth (°): 359.380, TVD (ft): 11893.79, Dogleg (°/100 ft): 0.55, Sensor Depth (ft): 14478.00, Bit To Sensor (ft): 67.00

Rotary Drill	1	09-27	00:30	01:00	09-27	14545.00	14640.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	01:00	01:05	09-27	14640.00	14640.00	Inclination (°): 90.640, Azimuth (°): 358.590, TVD (ft): 11892.66, Dogleg (°/100 ft): 0.84, Sensor Depth (ft): 14573.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	01:05	01:10	09-27	14640.00	14650.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Slide Drill	2	09-27	01:10	02:30	09-27	14650.00	14672.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	09-27	02:30	03:00	09-27	14672.00	14734.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	03:00	03:05	09-27	14734.00	14734.00	Inclination (°): 91.300, Azimuth (°): 358.680, TVD (ft): 11891.07, Dogleg (°/100 ft): 0.71, Sensor Depth (ft): 14667.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	03:05	03:15	09-27	14734.00	14744.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Slide Drill	2	09-27	03:15	03:45	09-27	14744.00	14759.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	09-27	03:45	04:10	09-27	14759.00	14828.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	04:10	04:15	09-27	14828.00	14828.00	Inclination (°): 92.400, Azimuth (°): 0.090, TVD (ft): 11888.03, Dogleg (°/100 ft): 1.90, Sensor Depth (ft): 14761.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	04:15	04:45	09-27	14828.00	14922.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	04:45	04:50	09-27	14922.00	14922.00	Inclination (°): 92.530, Azimuth (°): 0.260, TVD (ft): 11883.99, Dogleg (°/100 ft): 0.23, Sensor Depth (ft): 14855.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	04:50	05:15	09-27	14922.00	15017.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	05:15	05:20	09-27	15017.00	15017.00	Inclination (°): 92.040, Azimuth (°): 359.910, TVD (ft): 11880.20, Dogleg (°/100 ft): 0.63, Sensor Depth (ft): 14950.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	05:20	05:45	09-27	15017.00	15111.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	05:45	05:50	09-27	15111.00	15111.00	Inclination (°): 92.040, Azimuth (°): 359.820, TVD (ft): 11876.86, Dogleg (°/100 ft): 0.10, Sensor Depth (ft): 15044.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	05:50	06:15	09-27	15111.00	15206.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	06:15	06:20	09-27	15206.00	15206.00	Inclination (°): 92.180, Azimuth (°): 359.120, TVD (ft): 11873.36, Dogleg (°/100 ft): 0.75, Sensor Depth (ft): 15139.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	06:20	06:45	09-27	15206.00	15300.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	06:45	06:50	09-27	15300.00	15300.00	Inclination (°): 91.820, Azimuth (°): 358.860, TVD (ft): 11870.08, Dogleg (°/100 ft): 0.47, Sensor Depth (ft): 15233.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	06:50	07:20	09-27	15300.00	15395.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 45.00, Surface RPM: 60, Surface Torque (ft lbf): 2350.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228.00
Survey	46	09-27	07:20	07:25	09-27	15395.00	15395.00	Inclination (°): 92.350, Azimuth (°): 358.860, TVD (ft): 11866.62, Dogleg (°/100 ft): 0.56, Sensor Depth (ft): 15328.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	07:25	07:50	09-27	15395.00	15489.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	07:50	07:55	09-27	15489.00	15489.00	Inclination (°): 92.440, Azimuth (°): 358.770, TVD (ft): 11862.69, Dogleg (°/100 ft): 0.14, Sensor Depth (ft): 15422.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	07:55	08:40	09-27	15489.00	15583.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Rig Service - In Hole	19	09-27	08:40	08:55	09-27			Restart PLC and Reactors
Survey	46	09-27	08:55	09:00	09-27	15583.00	15583.00	Inclination (°): 92.180, Azimuth (°): 357.980, TVD (ft): 11858.90, Dogleg (°/100 ft): 0.88, Sensor Depth (ft): 15516.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	09:00	09:40	09-27	15583.00	15678.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	09:40	09:45	09-27	15678.00	15678.00	Inclination (°): 91.520, Azimuth (°): 356.660, TVD (ft): 11855.84, Dogleg (°/100 ft): 1.55, Sensor Depth (ft): 15611.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	09:45	09:50	09-27	15678.00	15688.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-27	09:50	10:40	09-27	15688.00	15713.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 60, Toolface Type: gravity
Rotary Drill	1	09-27	10:40	11:05	09-27	15713.00	15772.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	11:05	11:10	09-27	15772.00	15772.00	Inclination (°): 91.870, Azimuth (°): 358.150, TVD (ft): 11853.06, Dogleg (°/100 ft): 1.63, Sensor Depth (ft): 15705.00, Bit To Sensor (ft): 67.00

Rotary Drill	1	09-27	11:10	11:35	09-27	15772.00	15867.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	11:35	11:40	09-27	15867.00	15867.00	Inclination (°): 91.780, Azimuth (°): 358.420, TVD (ft): 11850.03, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 15800.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	11:40	11:45	09-27	15867.00	15877.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-27	11:45	12:35	09-27	15877.00	15902.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	09-27	12:35	12:50	09-27	15902.00	15961.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	12:50	12:55	09-27	15963.00	15963.00	Inclination (°): 93.930, Azimuth (°): 359.560, TVD (ft): 11845.25, Dogleg (°/100 ft): 2.53, Sensor Depth (ft): 15896.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	12:55	13:20	09-27	15961.00	16002.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Rig Service - In Hole	19	09-27	13:20	13:55	09-27			Rig Power issues
Rotary Drill	1	09-27	13:55	14:15	09-27	16002.00	16055.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	14:15	14:40	09-27	16055.00	16055.00	Inclination (°): 93.760, Azimuth (°): 359.560, TVD (ft): 11839.08, Dogleg (°/100 ft): 0.18, Sensor Depth (ft): 15988.00, Bit To Sensor (ft): 67.00 Down Link MWD tool to a 0.8 Pulse width
Rotary Drill	1	09-27	14:40	15:10	09-27	16055.00	16150.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	15:10	15:15	09-27	16150.00	16150.00	Inclination (°): 94.730, Azimuth (°): 359.300, TVD (ft): 11832.05, Dogleg (°/100 ft): 1.06, Sensor Depth (ft): 16083.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	15:15	15:25	09-27	16150.00	16167.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-27	15:25	15:50	09-27	16167.00	16184.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	09-27	15:50	16:10	09-27	16184.00	16244.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	16:10	16:15	09-27	16244.00	16244.00	Inclination (°): 95.080, Azimuth (°): 1.670, TVD (ft): 11824.01, Dogleg (°/100 ft): 2.54, Sensor Depth (ft): 16177.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	16:15	16:25	09-27	16244.00	16254.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Rig Repair	14	09-27	16:25	16:45	09-27			L/D bad Joint of Drill Pipe
Slide Drill	2	09-27	16:45	17:15	09-27	16254.00	16267.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	09-27	17:15	17:55	09-27	16267.00	16338.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	17:55	18:00	09-27	16338.00	16338.00	Inclination (°): 93.140, Azimuth (°): 1.580, TVD (ft): 11817.27, Dogleg (°/100 ft): 2.07, Sensor Depth (ft): 16271.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	18:00	18:15	09-27	16338.00	16348.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-27	18:15	19:45	09-27	16348.00	16374.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	09-27	19:45	20:00	09-27	16374.00	16432.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	20:00	20:05	09-27	16432.00	16432.00	Inclination (°): 93.410, Azimuth (°): 0.620, TVD (ft): 11811.90, Dogleg (°/100 ft): 1.06, Sensor Depth (ft): 16365.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	20:05	20:15	09-27	16432.00	16447.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-27	20:15	20:50	09-27	16447.00	16467.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	09-27	20:50	21:20	09-27	16467.00	16527.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	21:20	21:25	09-27	16527.00	16527.00	Inclination (°): 96.220, Azimuth (°): 0.090, TVD (ft): 11803.93, Dogleg (°/100 ft): 3.01, Sensor Depth (ft): 16460.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	21:25	22:00	09-27	16527.00	16621.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	22:00	22:05	09-27	16621.00	16621.00	Inclination (°): 96.350, Azimuth (°): 359.650, TVD (ft): 11793.64, Dogleg (°/100 ft): 0.49, Sensor Depth (ft): 16554.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	22:05	22:45	09-27	16621.00	16716.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

Survey	46	09-27	22:45	22:50	09-27	16716.00	16716.00	Inclination (°): 95.380, Azimuth (°): 359.470, TVD (ft): 11783.93, Dogleg (°/100 ft): 1.04, Sensor Depth (ft): 16649.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	22:50	23:25	09-27	16716.00	16810.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-27	23:25	23:30	09-27	16810.00	16810.00	Inclination (°): 94.900, Azimuth (°): 359.740, TVD (ft): 11775.51, Dogleg (°/100 ft): 0.59, Sensor Depth (ft): 16743.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-27	23:30	23:35	09-27	16810.00	16820.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-27	23:35	00:25	09-28	16820.00	16832.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 0, Toolface Type: gravity

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Saturday, Sep 28 00:00 - 23:59 (Day 22 of 52)

Billing: \$7,200.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	16820.00	Downhole Hours	24.00	Rotating WOB (klbs)	48.00 - 50.00
Bit Depth (ft)	18509.00	Drilling Hours	20.17	Sliding WOB (klbs)	50.00 - 50.00
Bottom Hole Depth (ft)	18509.00	Hours Circulating	2.00	Rotating SPM	216.00 - 234.00
Total Distance (ft)	1689.00	Hours Sliding	9.25	Sliding SPM	216.00 - 234.00
Distance Rotated (ft)	1544.00	Hours Rotating	10.92	Motor RPM	104.00 - 144.00
Distance Slid (ft)	145.00			Surface RPM	60.00 - 60.00
Inclination In	95.34			Flow Rate (gpm)	700.00 - 750.00
Inclination Out	95.34			On Bottom Pressure (psi)	5100.00 - 5700.00
Azimuth In	359.47	% Hours Rotating	54%	Off Bottom Pressure (psi)	4800.00 - 4800.00
Azimuth Out	0.88	% Hours Sliding	46%		
AVG Total ROP (ft/h)	85.98	% Distance Sliding	9%		
AVG Rotating ROP (ft/h)	142.52	% Distance Rotating	91%		
AVG Sliding ROP (ft/h)	15.68				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #12 - BHA #12 Lateral

Date In: Sep 25, 2019, 20:10 Date Out: Sep 30, 2019, 10:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5302653	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.875	MWD Comments
Drilling Hours for Day	20.17	Bit Distances		POOH Reason Total Depth/Casing Point: TD'd Well @ 19551' MD
Total Drilled for Day (ft)	1689.00	Survey: 67.00 ft, Gamma: 62.00 ft		
Drilling Hours for BHA	65.42			
Total Drilled for BHA (ft)	7479.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker DD506TWX PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5302653	4 1/2" Reg Pin			8.500		1.07	1.07
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-031	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.22	37.29
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.70
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.21
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.58
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.11

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Slide Drill	2	09-27	23:35	00:25	09-28	16820.00	16832.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	09-28	00:25	00:55	09-28	16832.00	16904.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

Survey	46	09-28	00:55	01:00	09-28	16904.00	16904.00	Inclination (°): 95.340, Azimuth (°): 359.470, TVD (ft): 11767.12, Dogleg (°/100 ft): 0.55, Sensor Depth (ft): 16837.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	01:00	01:30	09-28	16904.00	16999.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	01:30	01:35	09-28	16999.00	16999.00	Inclination (°): 95.300, Azimuth (°): 358.950, TVD (ft): 11758.31, Dogleg (°/100 ft): 0.55, Sensor Depth (ft): 16932.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	01:35	02:05	09-28	16999.00	17093.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	02:05	02:10	09-28	17093.00	17093.00	Inclination (°): 94.900, Azimuth (°): 358.240, TVD (ft): 11749.96, Dogleg (°/100 ft): 0.86, Sensor Depth (ft): 17026.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	02:10	02:40	09-28	17093.00	17188.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	02:40	02:45	09-28	17188.00	17188.00	Inclination (°): 94.240, Azimuth (°): 357.710, TVD (ft): 11742.39, Dogleg (°/100 ft): 0.89, Sensor Depth (ft): 17121.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	02:45	02:55	09-28	17188.00	17198.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-28	02:55	03:55	09-28	17198.00	17215.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 75, Toolface Type: gravity
Rotary Drill	1	09-28	03:55	04:30	09-28	17215.00	17282.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	04:30	04:35	09-28	17282.00	17282.00	Inclination (°): 94.420, Azimuth (°): 358.330, TVD (ft): 11735.29, Dogleg (°/100 ft): 0.68, Sensor Depth (ft): 17215.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	04:35	05:15	09-28	17282.00	17376.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	05:15	05:20	09-28	17376.00	17376.00	Inclination (°): 94.460, Azimuth (°): 357.980, TVD (ft): 11728.01, Dogleg (°/100 ft): 0.37, Sensor Depth (ft): 17309.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	05:20	06:00	09-28	17376.00	17470.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	06:00	06:05	09-28	17470.00	17470.00	Inclination (°): 94.020, Azimuth (°): 357.360, TVD (ft): 11721.06, Dogleg (°/100 ft): 0.81, Sensor Depth (ft): 17403.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	06:05	06:35	09-28	17470.00	17565.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	06:35	06:40	09-28	17565.00	17565.00	Inclination (°): 93.270, Azimuth (°): 356.220, TVD (ft): 11715.02, Dogleg (°/100 ft): 1.43, Sensor Depth (ft): 17498.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	06:40	06:45	09-28	17565.00	17579.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Rig Repair	14	09-28	06:45	07:00	09-28			P/U for leaking Swab
Slide Drill	2	09-28	07:00	07:15	09-28	17579.00	17581.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 60, Toolface Type: gravity
Circulating	3	09-28	07:15	08:00	09-28			P/U Circulate on 1 pump while working on other 2 pumps
Slide Drill	2	09-28	08:00	08:45	09-28	17581.00	17590.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 60, Toolface Type: gravity
Circulating	3	09-28	08:45	10:00	09-28			Circulate on 1 pump while working on other two pumps
Slide Drill	2	09-28	10:00	11:00	09-28	17590.00	17603.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 60, Toolface Type: gravity
Rotary Drill	1	09-28	11:00	11:15	09-28	17603.00	17659.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	11:15	11:20	09-28	17659.00	17659.00	Inclination (°): 93.140, Azimuth (°): 357.800, TVD (ft): 11709.77, Dogleg (°/100 ft): 1.68, Sensor Depth (ft): 17592.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	11:20	11:55	09-28	17659.00	17753.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	11:55	12:00	09-28	17753.00	17753.00	Inclination (°): 93.540, Azimuth (°): 357.280, TVD (ft): 11704.29, Dogleg (°/100 ft): 0.70, Sensor Depth (ft): 17686.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	12:00	12:05	09-28	17753.00	17764.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-28	12:05	13:20	09-28	17764.00	17786.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 70, Toolface Type: gravity
Rotary Drill	1	09-28	13:20	13:40	09-28	17786.00	17848.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

Survey	46	09-28	13:40	13:45	09-28	17848.00	17848.00	Inclination (°): 94.110, Azimuth (°): 358.950, TVD (ft): 11697.95, Dogleg (°/100 ft): 1.85, Sensor Depth (ft): 17781.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	13:45	13:50	09-28	17848.00	17860.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Rig Service - In Hole	19	09-28	13:50	14:15	09-28			Rig Service
Slide Drill	2	09-28	14:15	15:40	09-28	17860.00	17881.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 80, Toolface Type: gravity
Rotary Drill	1	09-28	15:40	16:05	09-28	17881.00	17942.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	16:05	16:10	09-28	17942.00	17942.00	Inclination (°): 94.550, Azimuth (°): 0.000, TVD (ft): 11690.86, Dogleg (°/100 ft): 1.21, Sensor Depth (ft): 17875.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	16:10	16:55	09-28	17942.00	18037.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	16:55	17:00	09-28	18037.00	18037.00	Inclination (°): 93.850, Azimuth (°): 359.820, TVD (ft): 11683.90, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 17970.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	17:00	17:35	09-28	18037.00	18131.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	17:35	17:40	09-28	18131.00	18131.00	Inclination (°): 93.710, Azimuth (°): 358.860, TVD (ft): 11677.70, Dogleg (°/100 ft): 1.03, Sensor Depth (ft): 18064.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	17:40	17:45	09-28	18131.00	18141.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	09-28	17:45	19:00	09-28	18141.00	18166.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 75, Toolface Type: gravity
Rotary Drill	1	09-28	19:00	19:40	09-28	18166.00	18226.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	19:40	19:45	09-28	18226.00	18226.00	Inclination (°): 94.770, Azimuth (°): 0.260, TVD (ft): 11670.68, Dogleg (°/100 ft): 1.85, Sensor Depth (ft): 18159.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	19:45	20:45	09-28	18226.00	18320.00	Pressure On (psi): 5700.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	09-28	20:45	20:50	09-28	18320.00	18320.00	Inclination (°): 93.890, Azimuth (°): 359.300, TVD (ft): 11663.58, Dogleg (°/100 ft): 1.38, Sensor Depth (ft): 18253.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	20:50	21:00	09-28	18320.00	18330.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Slide Drill	2	09-28	21:00	22:30	09-28	18330.00	18354.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 60, Toolface Type: gravity
Rotary Drill	1	09-28	22:30	23:00	09-28	18354.00	18415.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-28	23:00	23:05	09-28	18415.00	18415.00	Inclination (°): 95.250, Azimuth (°): 1.320, TVD (ft): 11656.01, Dogleg (°/100 ft): 2.56, Sensor Depth (ft): 18348.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	23:05	23:50	09-28	18415.00	18509.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-28	23:50	23:55	09-28	18509.00	18509.00	Inclination (°): 95.340, Azimuth (°): 0.880, TVD (ft): 11647.34, Dogleg (°/100 ft): 0.48, Sensor Depth (ft): 18442.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-28	23:55	00:30	09-29	18509.00	18604.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Sunday, Sep 29 00:00 - 23:59 (Day 23 of 52)

Billing: \$7,200.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	18509.00	Downhole Hours	24.00	Rotating WOB (klbs)	48.00 - 48.00
Bit Depth (ft)	19551.00	Drilling Hours	9.67	Sliding WOB (klbs)	50.00 - 50.00
Bottom Hole Depth (ft)	19551.00	Hours Circulating	11.17	Rotating SPM	216.00 - 216.00
Total Distance (ft)	1042.00	Hours Sliding	1.83	Sliding SPM	216.00 - 216.00
Distance Rotated (ft)	1019.00	Hours Rotating	7.83	Motor RPM	104.00 - 144.00
Distance Slid (ft)	23.00			Surface RPM	60.00 - 70.00
Inclination In	95.12			Flow Rate (gpm)	700.00 - 700.00
Inclination Out	92.09			On Bottom Pressure (psi)	5100.00 - 5450.00
Azimuth In	0.35	% Hours Rotating	81%	Off Bottom Pressure (psi)	4800.00 - 4800.00
Azimuth Out	357.54	% Hours Sliding	19%		
AVG Total ROP (ft/h)	107.79	% Distance Sliding	2%		
AVG Rotating ROP (ft/h)	130.09	% Distance Rotating	98%		
AVG Sliding ROP (ft/h)	12.55				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #12 - BHA #12 Lateral

Date In: Sep 25, 2019, 20:10 Date Out: Sep 30, 2019, 10:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5302653	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.875	MWD Comments
Drilling Hours for Day	9.67	Bit Distances		POOH Reason
Total Drilled for Day (ft)	1042.00	Survey: 67.00 ft, Gamma: 62.00 ft		
Drilling Hours for BHA	65.42			
Total Drilled for BHA (ft)	7479.00			
				Total Depth/Casing Point: TD'd Well @ 19551' MD

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker DD506TWX PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5302653	4 1/2" Reg Pin			8.500		1.07	1.07
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-031	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.22	37.29
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.70
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.21
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.58
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.11

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Rotary Drill	1	09-28	23:55	00:30	09-29	18509.00	18604.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	00:30	00:35	09-29	18604.00	18604.00	Inclination (°): 95.120, Azimuth (°): 0.350, TVD (ft): 11638.68, Dogleg (°/100 ft): 0.60, Sensor Depth (ft): 18537.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	00:35	00:45	09-29	18604.00	18614.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00

Slide Drill	2	09-29	00:45	01:40	09-29	18614.00	18625.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	09-29	01:40	02:20	09-29	18625.00	18698.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 60, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	02:20	02:25	09-29	18698.00	18698.00	Inclination (°): 94.900, Azimuth (°): 0.260, TVD (ft): 11630.47, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 18631.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	02:25	02:35	09-29	18698.00	18708.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Slide Drill	2	09-29	02:35	03:30	09-29	18708.00	18720.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	09-29	03:30	04:15	09-29	18720.00	18793.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	04:15	04:20	09-29	18793.00	18793.00	Inclination (°): 93.010, Azimuth (°): 1.140, TVD (ft): 11623.92, Dogleg (°/100 ft): 2.19, Sensor Depth (ft): 18726.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	04:20	05:20	09-29	18793.00	18887.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	05:20	05:25	09-29	18887.00	18887.00	Inclination (°): 93.010, Azimuth (°): 0.700, TVD (ft): 11618.98, Dogleg (°/100 ft): 0.47, Sensor Depth (ft): 18820.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	05:25	06:10	09-29	18887.00	18981.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	06:10	06:15	09-29	18981.00	18981.00	Inclination (°): 93.140, Azimuth (°): 0.090, TVD (ft): 11613.94, Dogleg (°/100 ft): 0.66, Sensor Depth (ft): 18914.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	06:15	06:50	09-29	18981.00	19076.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	06:50	07:00	09-29	19076.00	19076.00	Inclination (°): 93.410, Azimuth (°): 359.650, TVD (ft): 11608.51, Dogleg (°/100 ft): 0.54, Sensor Depth (ft): 19009.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	07:00	07:35	09-29	19076.00	19170.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	07:35	07:40	09-29	19170.00	19170.00	Inclination (°): 92.790, Azimuth (°): 359.030, TVD (ft): 11603.43, Dogleg (°/100 ft): 0.93, Sensor Depth (ft): 19103.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	07:40	08:25	09-29	19170.00	19265.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	08:25	08:30	09-29	19265.00	19265.00	Inclination (°): 92.750, Azimuth (°): 358.590, TVD (ft): 11598.84, Dogleg (°/100 ft): 0.46, Sensor Depth (ft): 19198.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	08:30	09:05	09-29	19265.00	19359.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	09:05	09:10	09-29	19359.00	19359.00	Inclination (°): 92.570, Azimuth (°): 358.330, TVD (ft): 11594.47, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 19292.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	09:10	09:45	09-29	19359.00	19453.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	09:45	09:50	09-29	19453.00	19453.00	Inclination (°): 92.620, Azimuth (°): 358.150, TVD (ft): 11590.22, Dogleg (°/100 ft): 0.20, Sensor Depth (ft): 19386.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	09:50	10:25	09-29	19453.00	19548.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	10:25	10:30	09-29	19548.00	19548.00	Inclination (°): 92.090, Azimuth (°): 357.540, TVD (ft): 11586.31, Dogleg (°/100 ft): 0.85, Sensor Depth (ft): 19481.00, Bit To Sensor (ft): 67.00
Rotary Drill	1	09-29	10:30	10:35	09-29	19548.00	19551.00	Pressure On (psi): 5450.00, Pressure Off (psi): 4800.00, Weight On Bit (klbs): 48.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	09-29	10:35	10:50	09-29	19551.00	19551.00	Inclination (°): 92.090, Azimuth (°): 357.540, TVD (ft): 11583.76, Dogleg (°/100 ft): 0.00, Sensor Depth (ft): 19551.00, Bit To Sensor (ft): 0.00
								Straight Line Projection to 19551' TD
Circulating	3	09-29	10:50	14:00	09-29			Circ BTU @ TD
Pooh	7	09-29	14:00	16:00	09-29			POOH t/ 16443
Circulating	3	09-29	16:00	00:00	09-30			Circulate & Condition Mud / Work pipe f/ 16799 t/ 16148

MWD Activities

No Activities



Job Number WT-19-115	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H	Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Sep 30 00:00 - 23:59 (Day 24 of 52)

Billing: \$7,200.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)		Downhole Hours	10.00	Rotating WOB (klbs)	
Bit Depth (ft)		Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)		Hours Circulating	0.00	Rotating SPM	
Total Distance (ft)	0.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	0.00	Hours Rotating	0.00	Motor RPM	104.00 - 144.00
Distance Slid (ft)	0.00			Surface RPM	
Inclination In				Flow Rate (gpm)	
Inclination Out				On Bottom Pressure (psi)	
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out		% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding			
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating			
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

BHA #12 - BHA #12 Lateral

Date In: Sep 25, 2019, 20:10 Date Out: Sep 30, 2019, 10:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow Range: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle: 1.75 / Bit; Baker 8.5" " Type: DD506TWX , SN: 5302653, TFA: 2.227 , Jets: 6 x 22's, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5302653	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	6.875	POOH Reason Total Depth/Casing Point: TD'd Well @ 19551' MD
Drilling Hours for Day	0.00	Bit Distances		
Total Drilled for Day (ft)		Survey: 67.00 ft, Gamma: 62.00 ft		
Drilling Hours for BHA	65.42			
Total Drilled for BHA (ft)	7479.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker DD506TWX PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5302653	4 1/2" Reg Pin			8.500		1.07	1.07
Mud Motor Description: 1.75 FBH 7/8 8.5 Stg Mtr True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Contender	700-40-031	4 1/2" IF Box	4 1/2" Reg Pin		7.000		36.22	37.29
Drill Collar Description: 6.75" Non Mag Pony Collar, Style: Pony, Type: NM	DTI	DR38337	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		13.41	50.70
UBHO Sub Description: UBHO Sub, Type: NM	AIM	6751558	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.51	54.21
Drill Collar Description: 6.75" NMDC (Tool Carrier), Style: Slick Drill, Type: NM	DTI	DR33220	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		29.37	83.58
Drill Collar Description: 6.75" NMDC (Spacer), Style: Slick Drill, Type: NM	DTI	DR41281	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		28.53	112.11

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Circulating	3	09-29	16:00	00:00	09-30			Circulate & Condition Mud / Work pipe f/ 16799 t/ 16148
Pooh	7	09-30	00:00	10:00	09-30			POOH to run casing / L/D Directional tools
Standby	15	09-30	10:00	14:30	10-02			Standby while / Running Casing, Cementing Same

MWD Activities

No Activities

	Job Number	Operator		Rig Name
	WT-19-115	Advance Energy Partners		H&P #620
	Start Date	Well Name		Legal Well Name AFE
	2019-08-12	Wool Head 20 State Com 605H		Wool Head 20 State Com 605H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Tuesday, Oct 01 00:00 - 23:59 (Day 25 of 52) Billing: \$3,100.00 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	Downhole Hours		0.00	Rotating WOB (klbs)	
Bit Depth (ft)	Drilling Hours			Sliding WOB (klbs)	
Bottom Hole Depth (ft)	Hours Circulating			Rotating SPM	
Total Distance (ft)	Hours Sliding			Sliding SPM	
Distance Rotated (ft)	Hours Rotating			Motor RPM	
Distance Slid (ft)				Surface RPM	
Inclination In				Flow Rate (gpm)	
Inclination Out				On Bottom Pressure (psi)	
Azimuth In	% Hours Rotating			Off Bottom Pressure (psi)	
Azimuth Out	% Hours Sliding				
AVG Total ROP (ft/h)	0.00	% Distance Sliding			
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating			
AVG Sliding ROP (ft/h)	0.00				

Personnel	
Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities								
Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	09-30	10:00	14:30	10-02			Standby while / Running Casing, Cementing Same

MWD Activities
No Activities



Job Number WT-19-115	Operator Advance Energy Partners		Rig Name H&P #620
Start Date 2019-08-12	Well Name Wool Head 20 State Com 605H		Legal Well Name AFE Wool Head 20 State Com 605H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Wednesday, Oct 02 00:00 - 23:59 (Day 26 of 52) Billing: \$16,565.49 (\$276,206.74 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)		Downhole Hours	0.00	Rotating WOB (klbs)	
Bit Depth (ft)		Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)		Hours Circulating	0.00	Rotating SPM	
Total Distance (ft)	0.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	0.00	Hours Rotating	0.00	Motor RPM	-
Distance Slid (ft)	0.00			Surface RPM	
Inclination In				Flow Rate (gpm)	
Inclination Out				On Bottom Pressure (psi)	
Azimuth In		% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out		% Hours Sliding			
AVG Total ROP (ft/h)	0.00	% Distance Sliding			
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating			
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Kyle Kusak	MWD Engineer
Shawn Flores	MWD Engineer
Orey Meredith	Directional Driller
Omar Alaniz	Directional Driller
Joel Johnson	Directional Driller

No BHAs

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	09-30	10:00	14:30	10-02			Standby while / Running Casing, Cementing Same
Standby	15	10-02	14:30	17:30	10-02			Standby while / Nipple Down BOP's
Standby	15	10-02	17:30	18:30	10-02			Standby while / Skid Rig to 606H
Standby	15	10-02	18:30	23:55	10-02			Standby while/ Nipple up BOP's on 606H

MWD Activities

No Activities



Surface Plat

Wool Head 20 State Com 605H (WT-19-115)

2019-08-12 to 2019-10-02

Lea, New Mexico, US (32.46, -103.59)

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3480 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 4, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name	Well Number
	WOOL HEAD 20 STATE COM	605H
OGRID No.	Operator Name	Elevation
	ADVANCE ENERGY PARTNERS HAT MESA	3715'

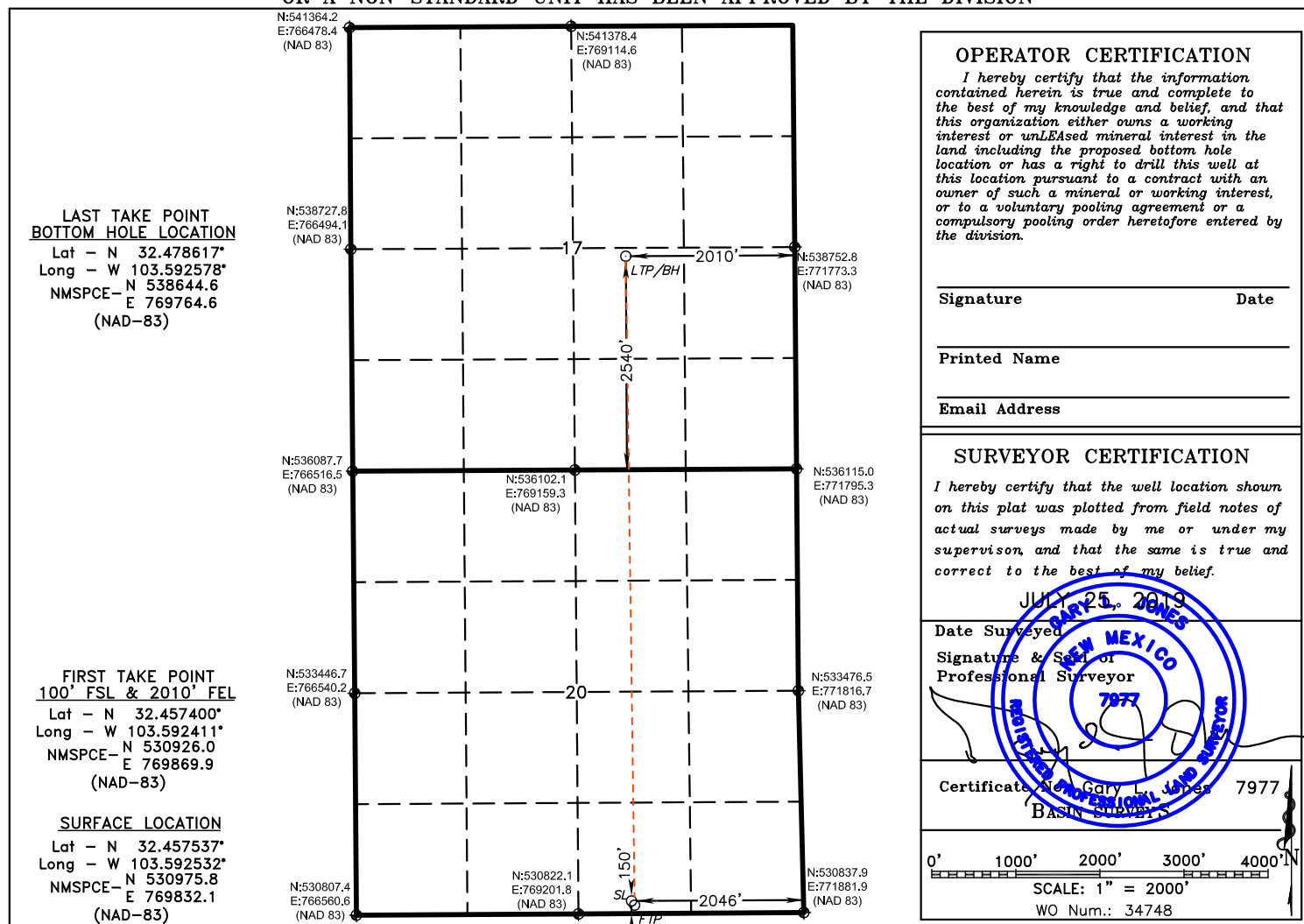
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
O	20	21 S	33 E		150	SOUTH	2046	EAST	LEA

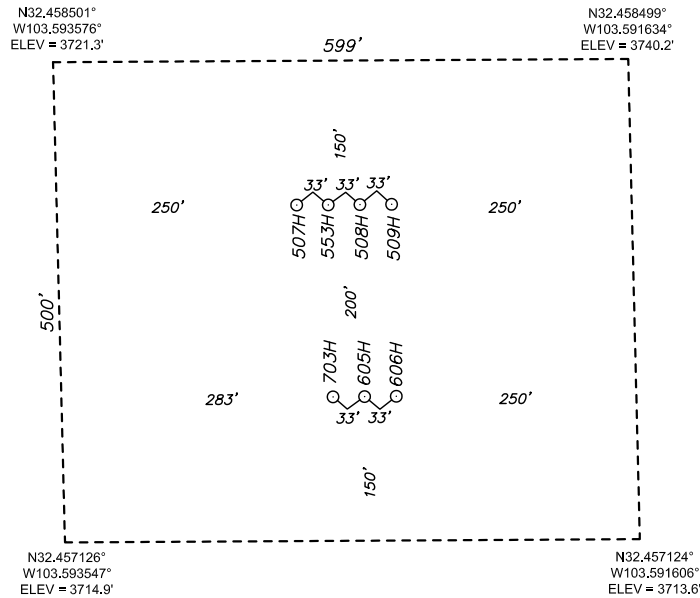
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
J	17	21 S	33 E		2540	SOUTH	2010	EAST	LEA
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						

**NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION**



**SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



**ADVANCE ENERGY PARTNERS HAT MESA
WOOL HEAD 20 STATE COM 605H
ELEV. - 3715'**

Lat - N 32.457537°
Long - W 103.592532°
NMSPCE - N 530975.8
E 769832.1
(NAD-83)



200 0 200 400 FEET
SCALE: 1" = 200'

ADVANCE ENERGY PARTNERS HAT MESA

REF: WOOL HEAD 20 STATE COM 605H / WELL PAD TOPO

THE WOOL HEAD 20 STATE COM 605H LOCATED 150' FROM
THE SOUTH LINE AND 2046' FROM THE EAST LINE OF
SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST.

N.M.P.M., LEA COUNTY, NEW MEXICO.

basin
surveys
focused on excellence
in the oilfield

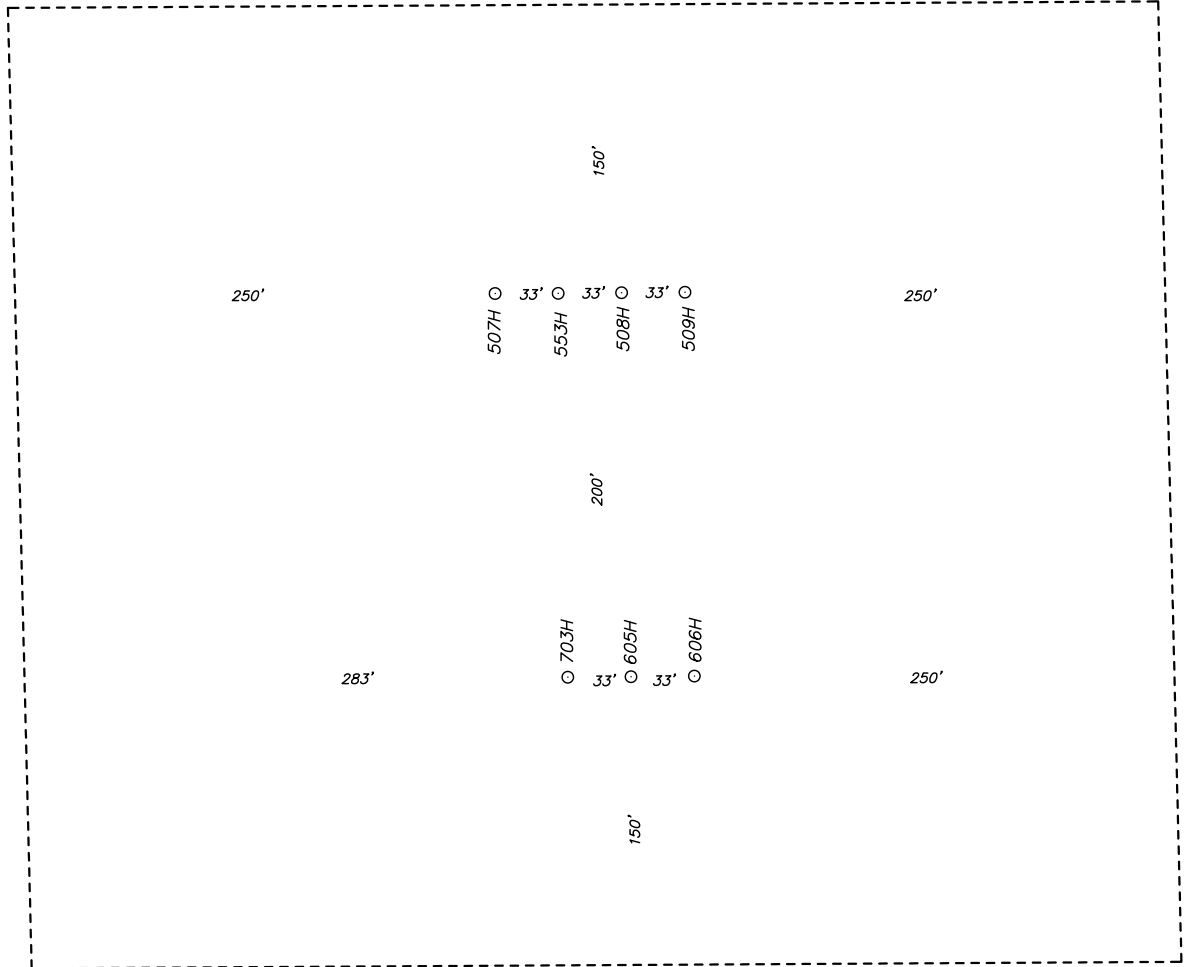
P.O. Box 1786 (575) 393-7316 - Office
1120 N. West County Rd. (575) 392-2206 - Fax
Hobbs, New Mexico 88241 basin-surveys.com

W.O. Number: 34748 Drawn By: K. GOAD Date: 07-26-2019 Survey Date: 07-25-2019 Sheet 1 of 1 Sheets

**SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.**

N32.458501°
W103.593576°
ELEV = 3721.3'

N32.458499°
W103.591634°
ELEV = 3740.2'



N32.457126°
W103.593547°
ELEV = 3714.9'

N32.457124°
W103.591606°
ELEV = 3713.6'



100 0 100 200 FEET
SCALE: 1" = 100'

ADVANCE ENERGY PARTNERS HAT MESA

REF: WOOL HEAD 20 STATE COM 605H / WELL PAD TOPO

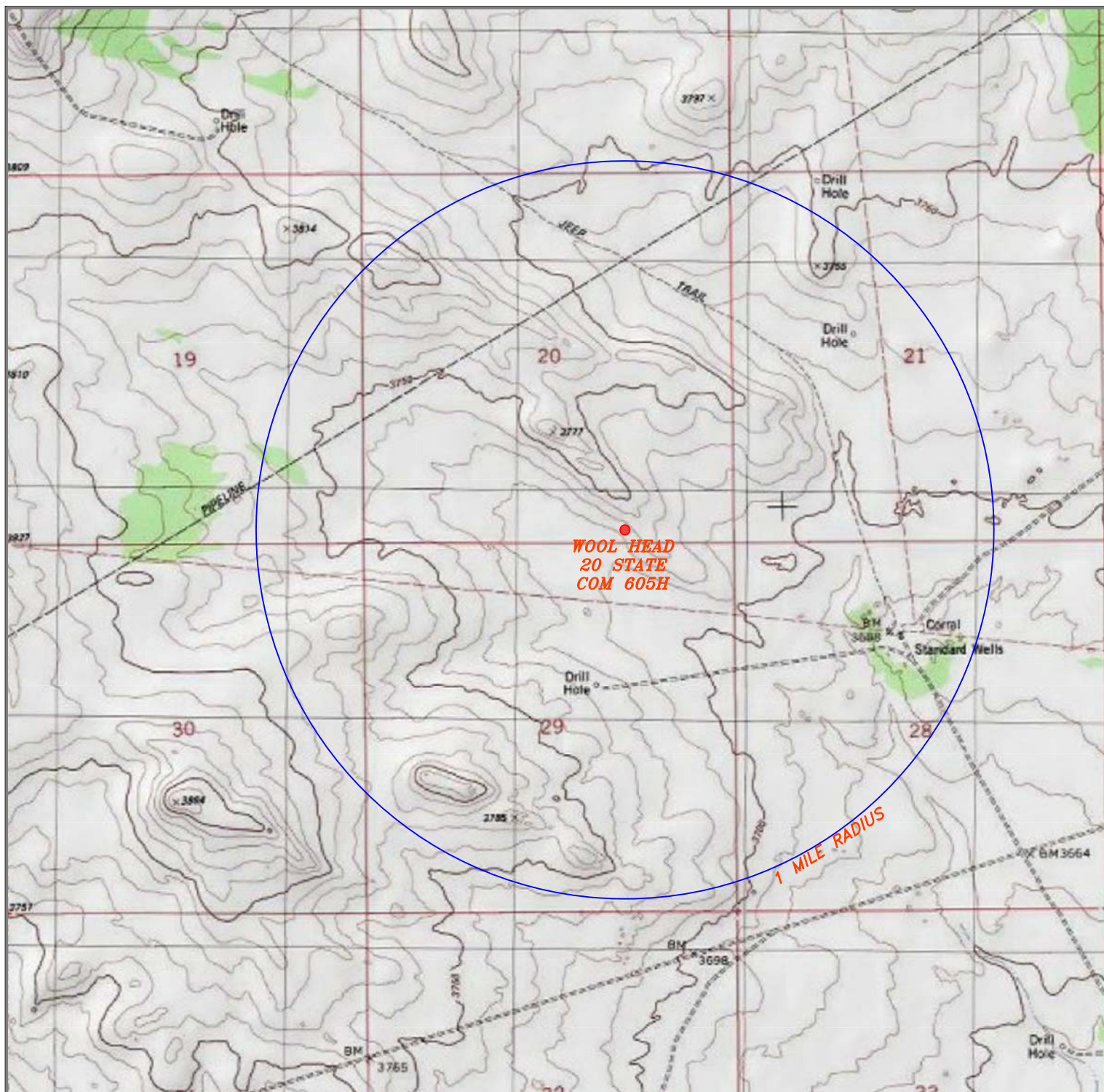
THE WOOL HEAD 20 STATE COM 605H LOCATED 150' FROM
THE SOUTH LINE AND 2046' FROM THE EAST LINE OF
SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST.

N.M.P.M., LEA COUNTY, NEW MEXICO.

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Hobbs, New Mexico 88241 basin-surveys.com

W.O. Number: 34748 Drawn By: K. GOAD Date: 07-26-2019 Survey Date: 07-25-2019 Sheet 1 of 1 Sheets



WOOL HEAD 20 STATE COM 605H

Located 150' FSL and 2046' FEL
 Section 20, Township 21 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basinsurveys.com

0' 1000' 2000' 3000' 4000'
 SCALE: 1" = 2000'

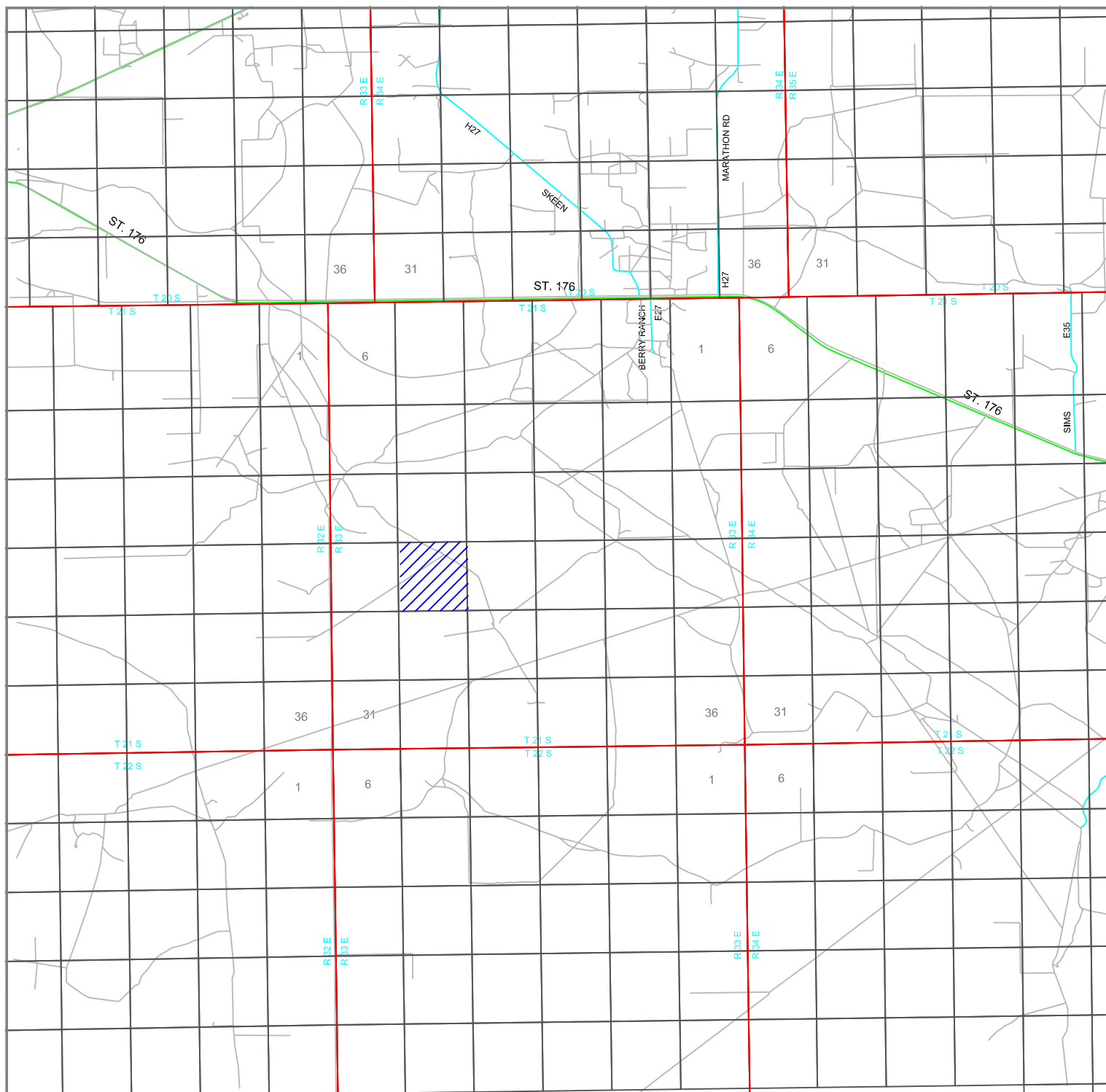
W.O. Number: KJG 34748

Survey Date: 07-26-2019

YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



**ADVANCE
 ENERGY
 PARTNERS
 HAT MESA**



WOOL HEAD 20 STATE COM 605H

Located 150' FSL and 2046' FEL
Section 20, Township 21 South, Range 33 East,
N.M.P.M., Lea County, New Mexico.



P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com



SCALE: 1" = 2 MILES

W.O. Number: KJG 34748

Survey Date: 07-26-2019

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND



**ADVANCE
ENERGY
PARTNERS
HAT MESA**



WOOL HEAD 20 STATE COM 605H

Located 150' FSL and 2046' FEL
 Section 20, Township 21 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basinsurveys.com

0' 1000' 2000' 3000' 4000'
 SCALE: 1" = 2000'

W.O. Number: KJG 34748

Survey Date: 07-26-2019

YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



**ADVANCE
 ENERGY
 PARTNERS
 HAT MESA**

Submit 1 Copy To Appropriate District Office
 District I – (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II – (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III – (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV – (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103

Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		WELL API NO. 30-025-46266
2. Name of Operator Advance Energy Partners Hat Mesa		5. Indicate Type of Lease STATE ☒ FEE ☐
3. Address of Operator 11490 Westheimer Rd, Houston, TX 77077		6. State Oil & Gas Lease No.
4. Well Location Unit Letter <u>O</u> : <u>150</u> feet from the <u>S</u> line and <u>2046</u> feet from the <u>E</u> line Section <u>20</u> Township <u>21S</u> Range <u>33E</u> NMPM County <u>LEA</u>		7. Lease Name or Unit Agreement Name Wool Head 20 State Com
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3715'		8. Well Number 605H
		9. OGRID Number 372417
		10. Pool name or Wildcat WC-025 G-08 S213304D;BONE SPRING

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO: PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐ TEMPORARILY ABANDON ☐ CHANGE PLANS ☐ PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐ DOWNHOLE COMMINGLE ☐ CLOSED-LOOP SYSTEM ☐ OTHER: ☐		SUBSEQUENT REPORT OF: REMEDIAL WORK ☐ ALTERING CASING ☐ COMMENCE DRILLING OPNS. ☐ P AND A ☐ CASING/CEMENT JOB ☐ OTHER: ☒	
--	--	--	--

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

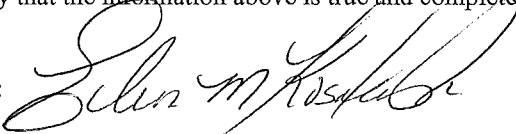
- 3/1/20: Pressure test casing to 10,000 psi for 30 minutes.
- 3/7/20 – 3/26/20: Perforate from 12,118' – 19,423' (2100). Frac with 17,720,360 lbs sand and 22,669,080 gal fluid.
- 5/21/20 – 5/22/20: Drill all plugs out and clean out to a PBTD of 19,453'.
- 5/23/20 – Set packer at 11,216'. Run 2-7/8" production tubing and gas lift valves
- 6/27/20 – Ready to Produce
- 2/14/22 - CORRECTION to casing depths filed on 7/17/2020. **Correct depths are as follows;**
 13.375 Surface Casing depth is 1,802'
 9.63 Intermediate Casing depth is 5,240'
 7.875 Production Casing depth is 19,536'

Spud Date: 08/12/2019

Rig Release Date: 10/02/2019

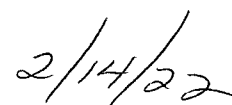
I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE:



TITLE: Sr. Eng. Tech

DATE:



PRINT NAME: Eileen M Kosakowski

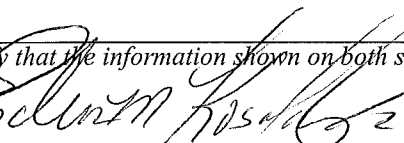
E-mail address: ekosakowski@advanceenergypartners.com

PHONE: (832) 672-4604

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____

Conditions of Approval (if any): _____

Submit To Appropriate District Office Two Copies District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Rd., Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505		State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505			Form C-105 Revised April 3, 2017					
		1. WELL API NO. 30-025-46266								
		2. Type of Lease ☒ STATE ☐ FEE ☐ FED/INDIAN								
		3. State Oil & Gas Lease No.								
WELL COMPLETION OR RECOMPLETION REPORT AND LOG										
4. Reason for filing: ☒ COMPLETION REPORT (Fill in boxes #1 through #31 for State and Fee wells only) ☐ C-144 CLOSURE ATTACHMENT (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)				5. Lease Name or Unit Agreement Name Wool Head 20 State Com						
7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER				6. Well Number: 605H						
8. Name of Operator Advance Energy Partners Hat Mesa, LLC				9. OGRID 372417						
10. Address of Operator 11490 Westheimer RD, Suite 950 Houston, TX 77077				11. Pool name or Wildcat WC-025 G-08 S213304D;BONE SPRING						
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	O	20	21S	33E		150	SOUTH	2046	EAST	LEA
BH:	J	17	21S	33E		2570	SOUTH	2023	EAST	LEA
13. Date Spudded 08/12/19	14. Date T.D. Reached 10/01/19	15. Date Rig Released 10/02/19		16. Date Completed (Ready to Produce) 06/27/20		17. Elevations (DF and RKB, RT, GR, etc.) 3715'				
18. Total Measured Depth of Well 19,551'		19. Plug Back Measured Depth 19,453'		20. Was Directional Survey Made? YES			21. Type Electric and Other Logs Run Gamma Ray			
22. Producing Interval(s), of this completion - Top, Bottom, Name 12,118'-19,423'										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
13.375"		54.4#		1802		17.5		865		
9.625"		40#		5240		12.25		1325		
5.5"		20#		19536		8.5		2555		
24. LINER RECORD										
SIZE	TOP	BOTTOM		SACKS CEMENT		SCREEN				
26. Perforation record (interval, size, and number) 12,118'-19,423'						27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 12,118'-19,423' 17,720,360 lbs sand, 22,669,080 bbls water				
28. PRODUCTION										
Date First Production 06/27/20		Production Method (<i>Flowing, gas lift, pumping - Size and type pump</i>) Flowing				Well Status (<i>Prod. or Shut-in</i>)				
Date of Test 07/25/20	Hours Tested 24 Hrs	Choke Size 60/64	Prod'n For Test Period	Oil - Bbl 951	Gas - MCF 1690	Water - Bbl. 3480	Gas - Oil Ratio 1777			
Flow Tubing Press. 643	Casing Pressure 398	Calculated 24-Hour Rate	Oil - Bbl. 951	Gas - MCF 1690	Water - Bbl. 3480	Oil Gravity - API - (<i>Corr.</i>) 43				
29. Disposition of Gas (<i>Sold, used for fuel, vented, etc.</i>) Sold							30. Test Witnessed By Barron Chandler			
31. List Attachments										
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.						33. Rig Release Date: 10/02/2019				
34. If an on-site burial was used at the well, report the exact location of the on-site burial:										
Latitude _____						Longitude _____ NAD83				
I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief										
Signature 						Date: 2/14/22				
Printed Name Eileen M Kosakowski				Title: Sr. Eng. Tech.		E-mail Address: ekosakowski@advanceenergypartners.com				

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. 7 Rivers	T. Devonian	T. Cliff House	T. Leadville
T. Queen	T. Silurian	T. Menefee	T. Madison
T. Grayburg	T. Montoya	T. Point Lookout	T. Elbert
T. San Andres	T. Simpson	T. Mancos	T. McCracken
T. Glorieta	T. McKee	T. Gallup	T. Ignacio Otzte
T. Paddock	T. Ellenburger	Base Greenhorn	T. Granite
T. Blinebry	T. Gr. Wash	T. Dakota	
T. Tubb	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T. Todilto	
T. Abo	T. ISS 9942 MD 9939 TVD	T. Entrada	
T. Wolfcamp	T. 2SS 10533 MD 10530 TVD	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

No. 1, from.....to.....
No. 2, from.....to.....
No. 3, from.....to.....
No. 4, from.....to.....

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....
 No. 2, from.....to.....feet.....
 No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Action 81330

ACKNOWLEDGMENTS

Operator: ADVANCE ENERGY PARTNERS HAT MESA, LLC 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	OGRID: 372417
	Action Number: 81330
	Action Type: [C-104] Completion Packet (C-104C)

ACKNOWLEDGMENTS

☒	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☒	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 81330

CONDITIONS

Operator: ADVANCE ENERGY PARTNERS HAT MESA, LLC 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	OGRID: 372417
	Action Number: 81330
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	None	6/12/2024