

Released to Imaging: 3/10/2022 7:48:08 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 30-025-46329	⁵ Pool Name WC-025 G-10 S213328O;WOLFCAMP	⁶ Pool Code 98033
⁷ Property Code 325948	⁸ Property Name Wool Head 20 State Com	⁹ Well Number 607H

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
P	20	21S	33E		150	SOUTH	924	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
I	17	21S	33E		2585	SOUTH	994	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

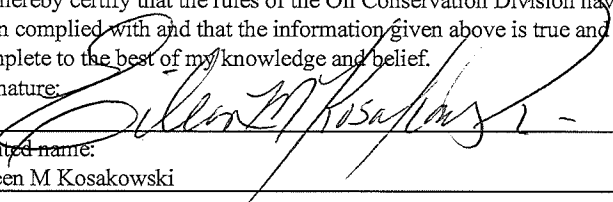
¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
214984	Plains Marketing, L.P. 10 Desta Drive, Suite 200E Midland, TX 79705	O
330291	3 Bear Energy-Cottonwood, LLC 1512 Larimer St. Suite 540 Denver, CO. 80202	G

IV. Well Completion Data

²¹ Spud Date 11/21/2019	²² Ready Date 06/27/20	²³ TD 19,418	²⁴ PBTB 19,354	²⁵ Perforations 12,323'-19,107'	²⁶ DHC, MC
²⁷ Hole Size	²⁸ Casing & Tubing Size	²⁹ Depth Set	³⁰ Sacks Cement		
17.5"	13.375"	1851	1225		
12.25"	9.625"	5267	1660		
8.5"	5.5"	19,403	2645		

V. Well Test Data

³¹ Date New Oil 06/27/20	³² Gas Delivery Date 06/27/20	³³ Test Date 07/05/20	³⁴ Test Length 24 Hrs	³⁵ Tbg. Pressure 1300	³⁶ Csg. Pressure 1190
³⁷ Choke Size 24/64	³⁸ Oil 428	³⁹ Water 2635	⁴⁰ Gas 626		⁴¹ Test Method F

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: 	IL CONSERVATION DIVISION
Printed name: Eileen M Kosakowski	Approved by: PATRICIA MARTINEZ
Title: Sr Engineer Tech	Title: PETROLEUM SPECIALIST
E-mail Address: ekosakowski@advanceenergypartners.com	Approval Date: 3/10/2022
Date: 2/11/22	
Phone: 832-672-4604	

Received by OCD: 2/14/2022 8:43:56 AM

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) 746-1285 Fax: (575) 746-9720

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 834-6178 Fax: (505) 834-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462State of New Mexico
Energy, Minerals and Natural Resources DepartmentForm C-102
Revised August 4, 2011Submit 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

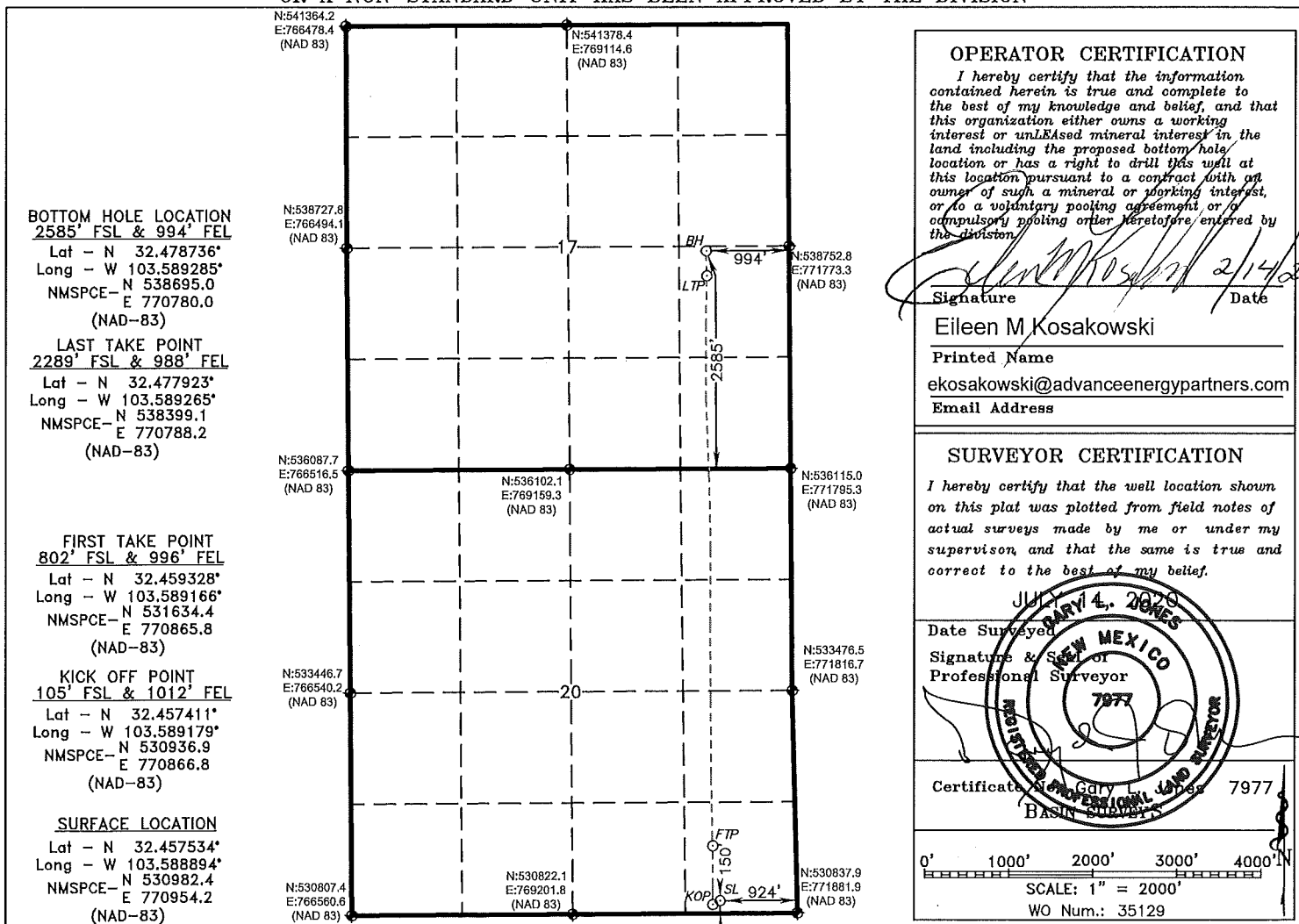
API Number 30-025-46329	Pool Code 98033	Pool Name WC-025 G-10 S2133280;WOLFCAMP
Property Code 325948	Property Name WOOL HEAD 20 STATE COM	Well Number 607H
GRID No. 372417	Operator Name ADVANCE ENERGY PARTNERS HAT MESA	Elevation 3728'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
P	20	21 S	33 E		150	SOUTH	924	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
I	17	21 S	33 E		2585	SOUTH	994	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



End of Well Report

Advance Energy Partners, LLC Wool Head 20 State Com, Well No. 607H Lea County, New Mexico

Rig: H&P #389

Job No.: WT-19-180

Start Date: 11/19/2019

End Date: 01/09/2020

Directional Drillers:

Advance Directional

Office Support:

Javier Alvarez

Directional Coordinator

E-mail: Javier.Alvarez@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 607H (WT-19-180)

2019-11-19 to 2020-01-09

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

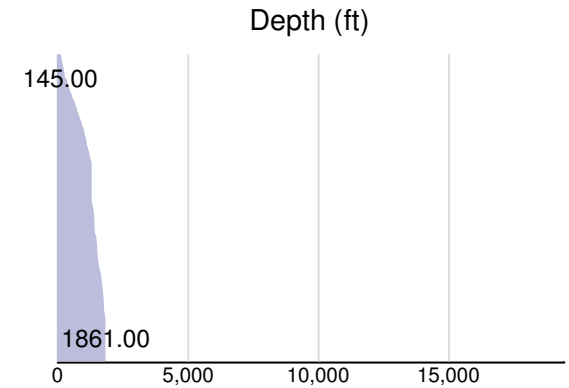
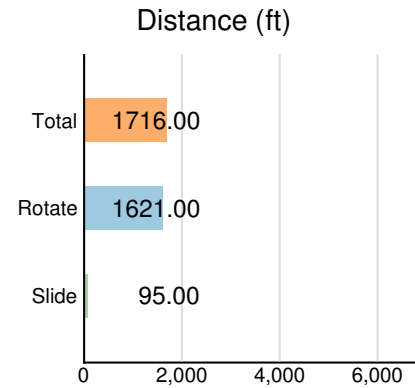
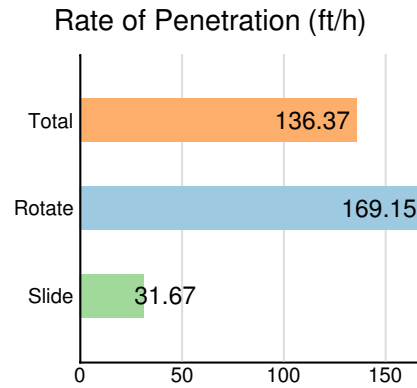
BHA Performance

BHA 1

17.5" SURFACE

In: 11/21/2019 17:30

Out: 11/22/2019 12:45

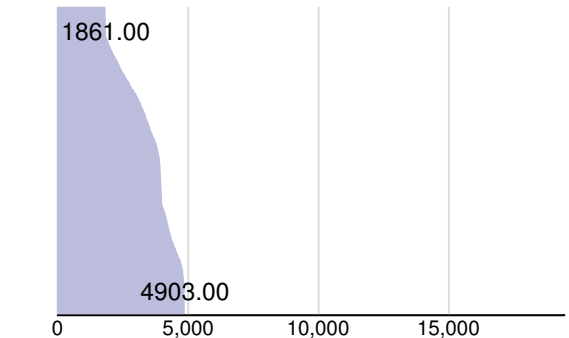
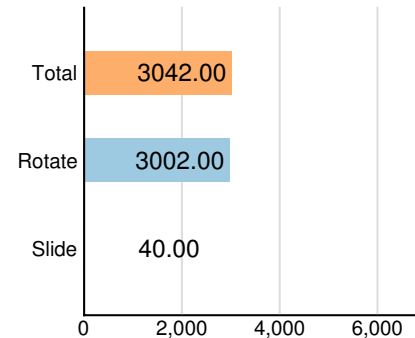
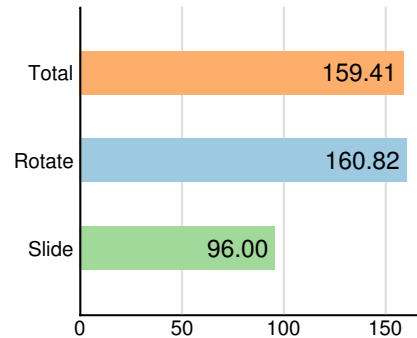


BHA 2

Intermediate 12.25"

In: 11/25/2019 13:00

Out: 11/26/2019 19:15

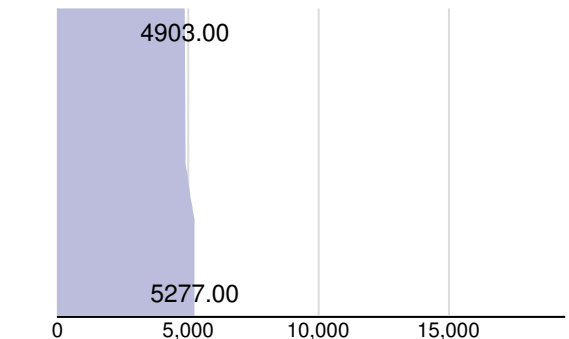
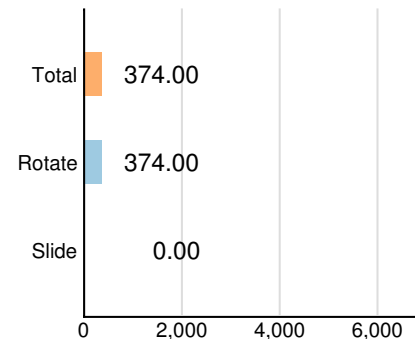
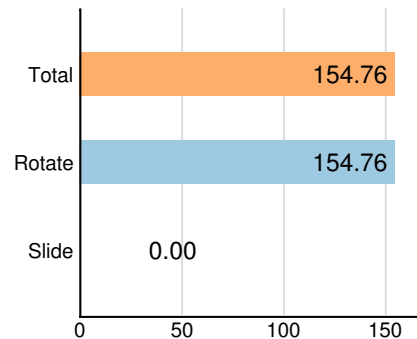


BHA 3

Intermediate 12.25"

In: 11/26/2019 19:15

Out: 11/27/2019 08:45

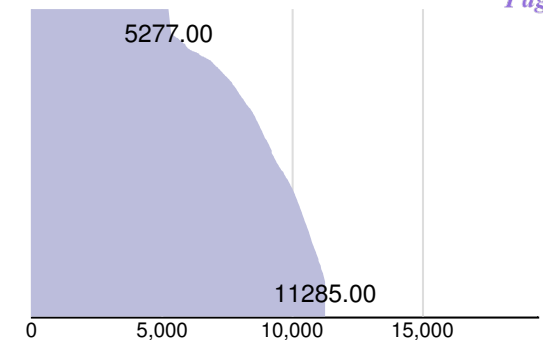
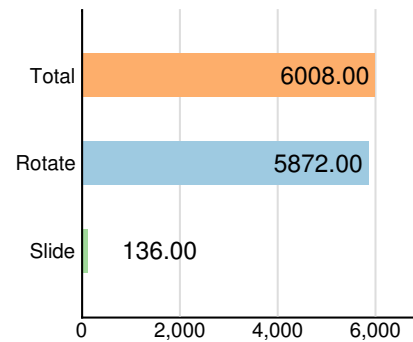
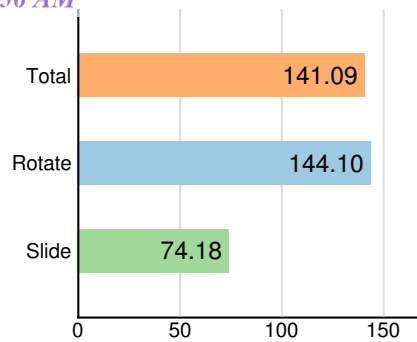


BHA 4

BHA #4 (8.5"
Intermediate)

In: 12/06/2019 02:15

Out: 12/08/2019 14:00

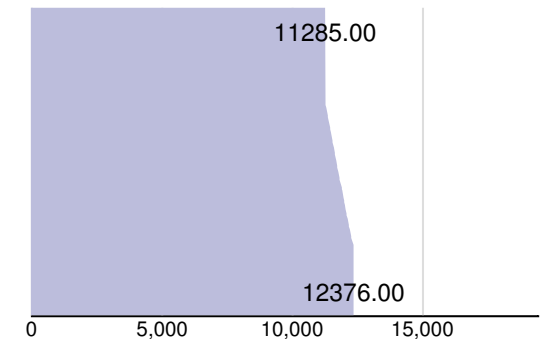
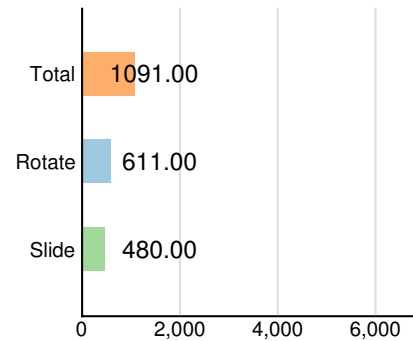
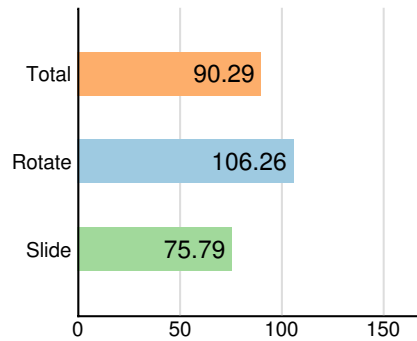


BHA 5

BHA #5 (Curve
Assembly)

In: 12/31/2019 06:30

Out: 01/01/2020 12:00

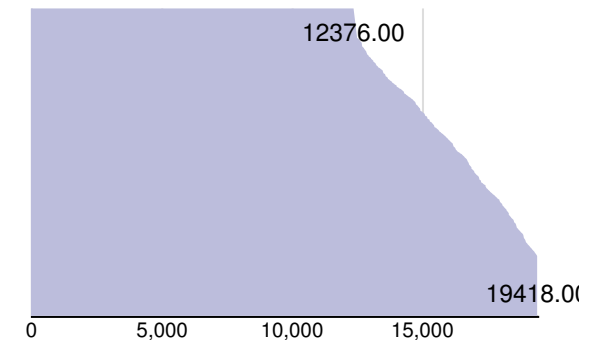
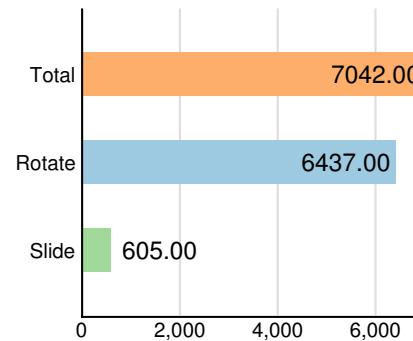
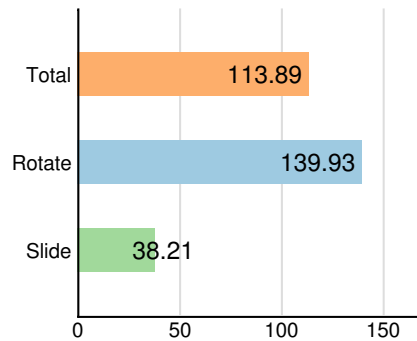


BHA 6

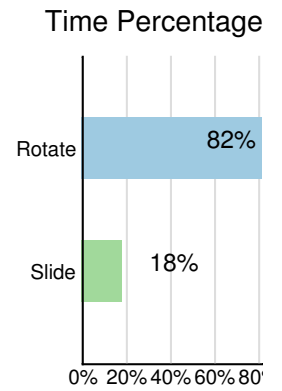
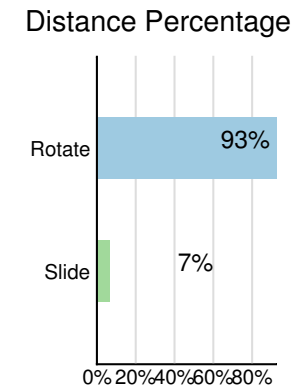
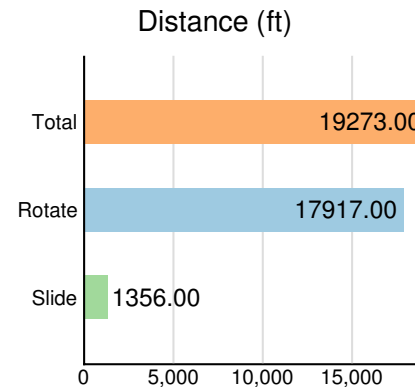
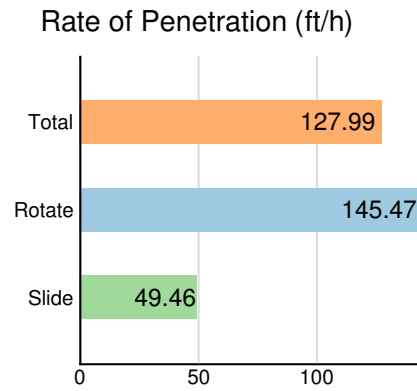
BHA #6 (Lateral
Assembly)

In: 01/02/2020 17:00

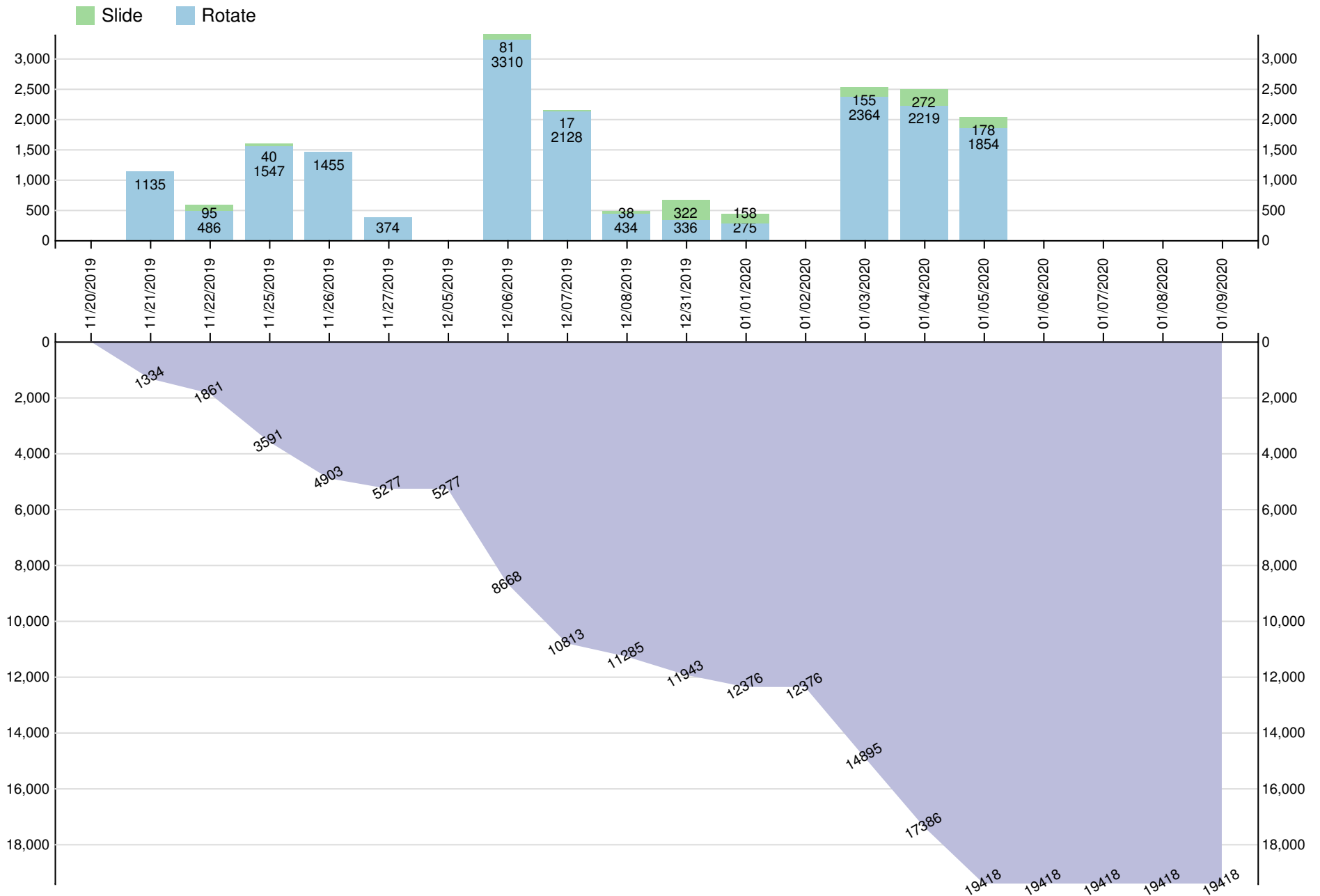
Out: 01/06/2020 17:00



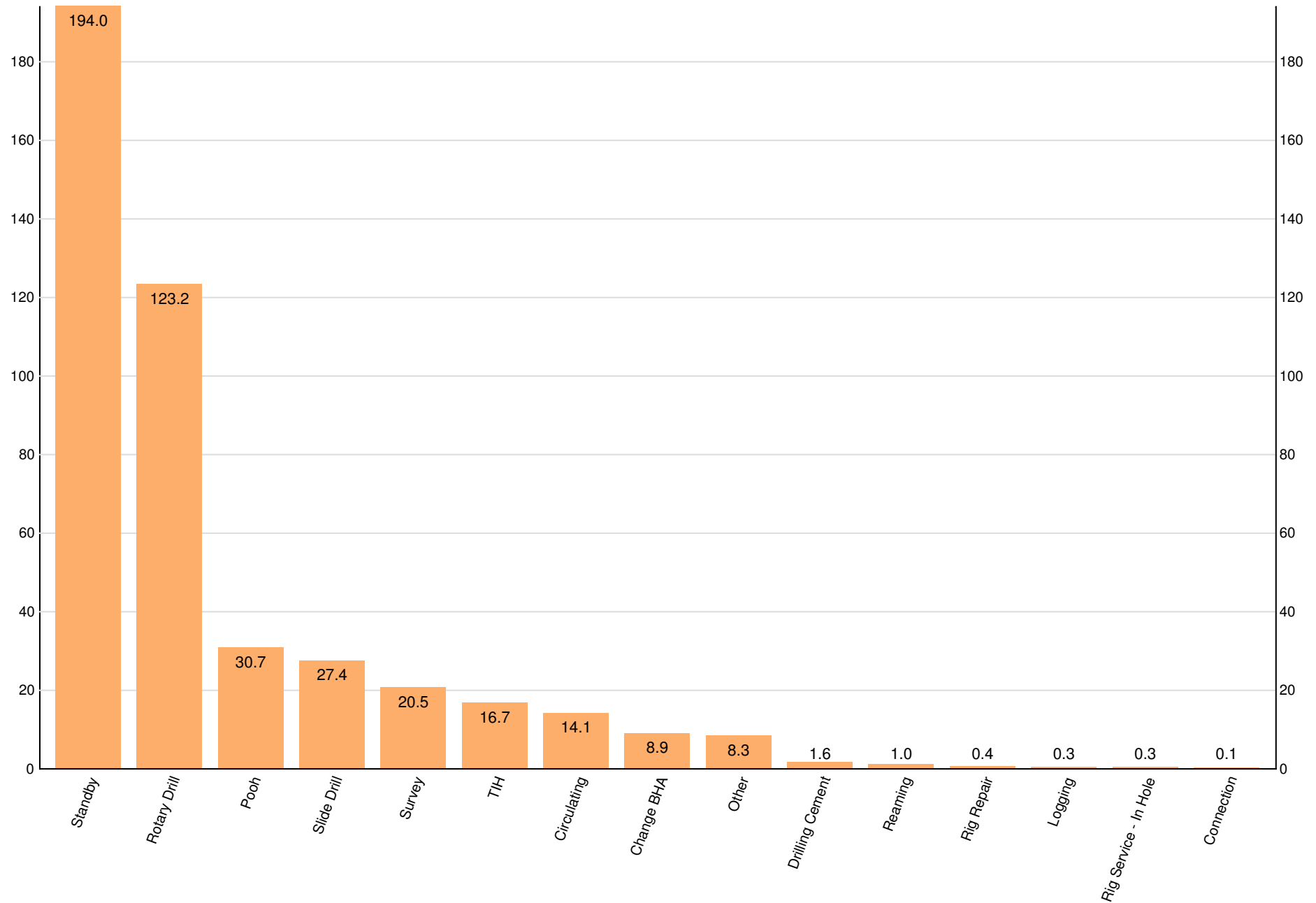
Total



Days vs. Depth



Directional Activity Hours





Proposed vs. As Drilled

Wool Head 20 State Com 607H (WT-19-180)

2019-11-19 to 2020-01-09

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

Advance Energy Partners, LLC

Wool Head 20 State Com 607H
Lea County, New Mexico
Job No. WT-19-180
H&P 389
Plan 2.0



Received to Imaging: 3/10/2022 7:48:08 AM

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Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.19°

Magnetic Field
Strength: 48055.2nT
Dip Angle: 60.23°
Date: 12/30/2019
Model: MVHD

Magnetic North: 6.19° to Grid North

SITE DETAILS: Wool Head 20 State Com 607H

Site Centre Northing: 530982.40
Easting: 770954.20

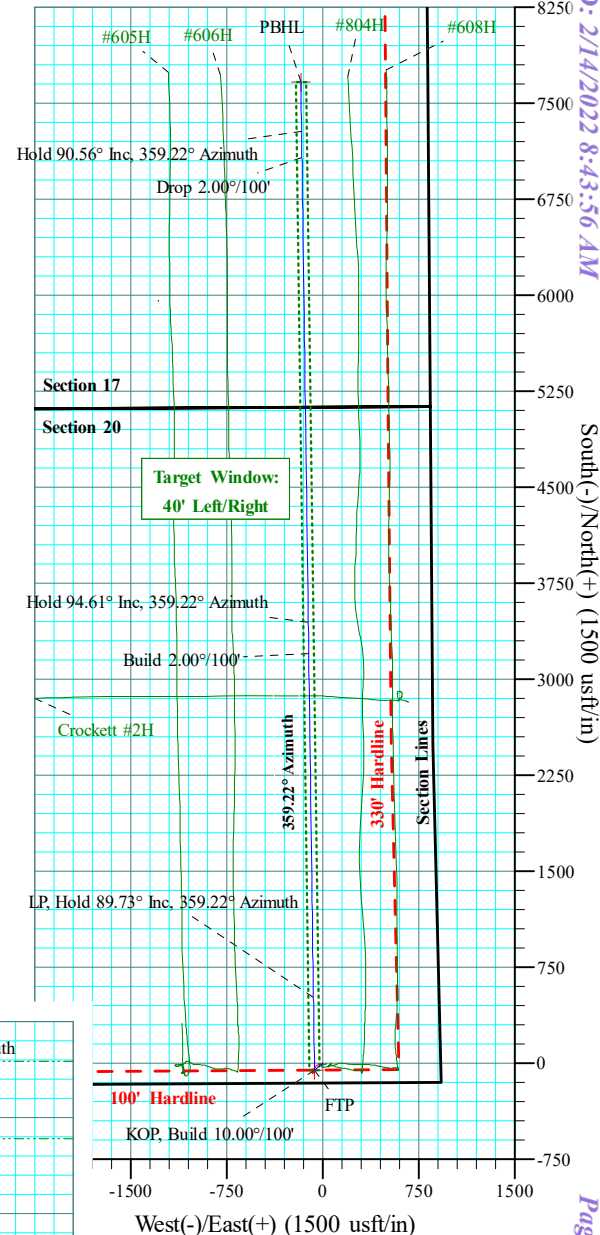
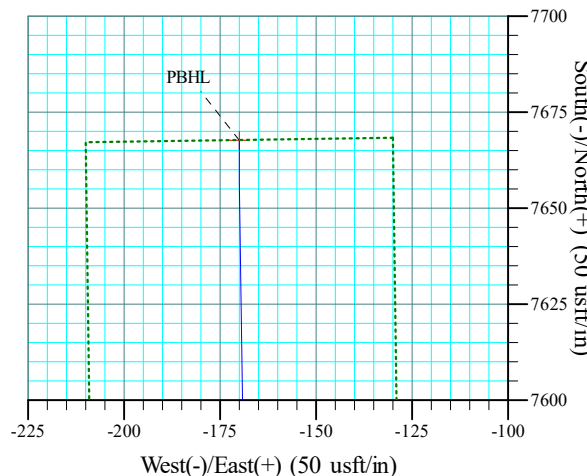
Positional Uncertainty: 0.00
Convergence: 0.40
Local North: Grid

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

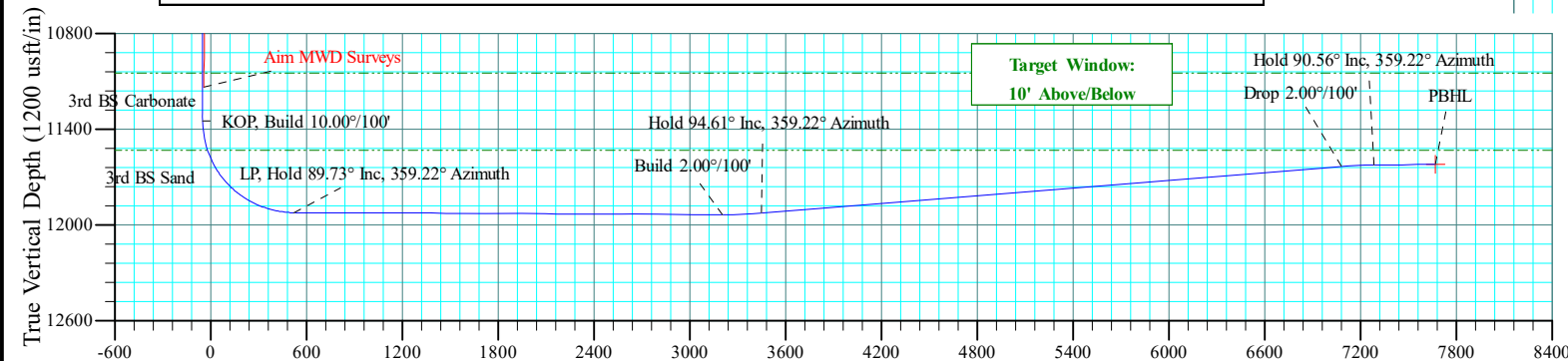
System Datum: Mean Sea Level

Depth Reference:
3728'GL+26.5'KB @ 3754.50usft (H&P 389)



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	5900.00	5.00	232.22	5899.37	-13.36	-17.23	1.00	232.22	-13.12	Hold 5.0° Inc, 232.22° Azimuth
4	6341.79	5.00	232.22	6339.48	-36.94	-47.67	0.00	0.00	-36.29	Drop 1.00°/100'
5	6841.79	0.00	0.00	6838.84	-50.30	-64.90	1.00	180.00	-49.41	Hold Vertical
6	11352.73	0.00	0.00	11349.78	-50.30	-64.90	0.00	0.00	-49.41	KOP, Build 10.00°/100'
7	12250.03	89.73	359.22	11922.73	519.90	-72.67	10.00	359.22	520.85	LP, Hold 89.73° Inc, 359.22° Azimuth
8	14935.21	89.73	359.22	11935.39	3204.81	-109.27	0.00	0.00	3206.00	Build 2.00°/100'
9	15179.22	94.61	359.22	11926.15	3448.55	-112.59	2.00	0.00	3449.76	Hold 94.61° Inc, 359.22° Azimuth
10	18822.25	94.61	359.22	11633.33	7079.45	-162.08	0.00	0.00	7081.00	Drop 2.00°/100'
11	19024.69	90.56	359.22	11624.20	7281.62	-164.84	2.00	-180.00	7283.19	Hold 90.56° Inc, 359.22° Azimuth
12	19410.82	90.56	359.22	11620.42	7667.70	-170.10	0.00	0.00	7669.31	PBHL

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (WH607H)	0.00	-50.30	-64.90	530932.10	770889.30	32° 27' 26.629 N	103° 35' 20.781 W
PBHL r2 (WH607H)	11620.42	7667.70	-170.10	538650.10	770784.10	32° 28' 43.005 N	103° 35' 21.381 W



Vertical Section at 359.22° (1200 usft/in)

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

File: Advance Energy - Wool Head 20 State Com 607H Plan 2.0.wpc

Page 11 of 11

Drawn: IG
Date Created: 11/15/2019
Date Revised: 12/30/2019

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	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 607H					
Site Position:		Northing:	530,982.40	usft	Latitude:	32° 27' 27.122 N	
From:	Map	Easting:	770,954.20	usft	Longitude:	103° 35' 20.019 W	
Position Uncertainty:	0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.40 °

Well	#607H - Slot 607H					
Well Position	+N/-S	0.00 usft	Northing:	530,982.40 usft	Latitude:	32° 27' 27.122 N
	+E/-W	0.00 usft	Easting:	770,954.20 usft	Longitude:	103° 35' 20.019 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,728.00 usft

Wellbore	Lateral 1r2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	12/30/2019	6.59	60.23	48,055.24631315

Design	Plan 2.0				
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	12/30/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,410.82	Plan 2.0 (Lateral 1r2)	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 (WH607H)										
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 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	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
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
1,803.00	0.00	0.00	1,803.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
4,900.00	0.00	0.00	4,900.00	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 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	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)	
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	
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,206.00	0.00	0.00	5,206.00	0.00	0.00	0.00	0.00	0.00	0.00	
Limestone Base										
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	232.22	5,500.00	-0.53	-0.69	-0.53	1.00	1.00	0.00	
5,600.00	2.00	232.22	5,599.96	-2.14	-2.76	-2.10	1.00	1.00	0.00	
5,700.00	3.00	232.22	5,699.86	-4.81	-6.21	-4.73	1.00	1.00	0.00	
5,800.00	4.00	232.22	5,799.68	-8.55	-11.03	-8.40	1.00	1.00	0.00	
5,900.00	5.00	232.22	5,899.37	-13.36	-17.23	-13.12	1.00	1.00	0.00	
Hold 5.0° Inc, 232.22° Azimuth										
6,000.00	5.00	232.22	5,998.99	-18.70	-24.12	-18.37	0.00	0.00	0.00	
6,100.00	5.00	232.22	6,098.60	-24.03	-31.01	-23.61	0.00	0.00	0.00	
6,200.00	5.00	232.22	6,198.22	-29.37	-37.90	-28.85	0.00	0.00	0.00	
6,300.00	5.00	232.22	6,297.84	-34.71	-44.79	-34.10	0.00	0.00	0.00	
6,341.79	5.00	232.22	6,339.48	-36.94	-47.67	-36.29	0.00	0.00	0.00	
Drop 1.00°/100'										
6,400.00	4.42	232.22	6,397.49	-39.87	-51.44	-39.17	1.00	-1.00	0.00	
6,500.00	3.42	232.22	6,497.25	-44.06	-56.84	-43.28	1.00	-1.00	0.00	
6,600.00	2.42	232.22	6,597.12	-47.18	-60.87	-46.34	1.00	-1.00	0.00	
6,700.00	1.42	232.22	6,697.06	-49.23	-63.51	-48.36	1.00	-1.00	0.00	
6,800.00	0.42	232.22	6,797.05	-50.21	-64.78	-49.32	1.00	-1.00	0.00	
6,841.79	0.00	0.00	6,838.84	-50.30	-64.90	-49.41	1.00	-1.00	305.74	
Hold Vertical										
6,900.00	0.00	0.00	6,897.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,997.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,097.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,197.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,297.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,397.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,497.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,597.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,697.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,797.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,897.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,997.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,097.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,197.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,297.05	-50.30	-64.90	-49.41	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,397.05	-50.30	-64.90	-49.41	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 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	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)
8,431.95	0.00	0.00	8,429.00	-50.30	-64.90	-49.41	0.00	0.00	0.00
Lower Brushy									
8,500.00	0.00	0.00	8,497.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
8,600.00	0.00	0.00	8,597.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
8,700.00	0.00	0.00	8,697.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
8,800.00	0.00	0.00	8,797.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
8,900.00	0.00	0.00	8,897.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
8,901.95	0.00	0.00	8,899.00	-50.30	-64.90	-49.41	0.00	0.00	0.00
Avalon									
9,000.00	0.00	0.00	8,997.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,100.00	0.00	0.00	9,097.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,200.00	0.00	0.00	9,197.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,300.00	0.00	0.00	9,297.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,400.00	0.00	0.00	9,397.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,500.00	0.00	0.00	9,497.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,600.00	0.00	0.00	9,597.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,700.00	0.00	0.00	9,697.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,800.00	0.00	0.00	9,797.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,900.00	0.00	0.00	9,897.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
9,924.95	0.00	0.00	9,922.00	-50.30	-64.90	-49.41	0.00	0.00	0.00
1st BS Sand									
10,000.00	0.00	0.00	9,997.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,100.00	0.00	0.00	10,097.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,200.00	0.00	0.00	10,197.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,300.00	0.00	0.00	10,297.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,400.00	0.00	0.00	10,397.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,500.00	0.00	0.00	10,497.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,530.95	0.00	0.00	10,528.00	-50.30	-64.90	-49.41	0.00	0.00	0.00
2nd BS Sand									
10,600.00	0.00	0.00	10,597.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,700.00	0.00	0.00	10,697.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,800.00	0.00	0.00	10,797.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
10,900.00	0.00	0.00	10,897.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
11,000.00	0.00	0.00	10,997.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
11,051.95	0.00	0.00	11,049.00	-50.30	-64.90	-49.41	0.00	0.00	0.00
3rd BS Carbonate									
11,100.00	0.00	0.00	11,097.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
11,200.00	0.00	0.00	11,197.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
11,300.00	0.00	0.00	11,297.05	-50.30	-64.90	-49.41	0.00	0.00	0.00
11,352.73	0.00	0.00	11,349.78	-50.30	-64.90	-49.41	0.00	0.00	0.00
KOP, Build 10.00°/100'									
11,400.00	4.73	359.22	11,397.00	-48.35	-64.93	-47.46	10.00	10.00	0.00
11,450.00	9.73	359.22	11,446.58	-42.06	-65.01	-41.17	10.00	10.00	0.00
11,500.00	14.73	359.22	11,495.43	-31.48	-65.16	-30.59	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 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	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)	
11,540.28	18.76	359.22	11,534.00	-19.88	-65.31	-18.99	10.00	10.00	0.00	
3rd BS Sand										
11,550.00	19.73	359.22	11,543.18	-16.68	-65.36	-15.79	10.00	10.00	0.00	
11,600.00	24.73	359.22	11,589.45	2.23	-65.62	3.12	10.00	10.00	0.00	
11,650.00	29.73	359.22	11,633.89	25.10	-65.93	25.99	10.00	10.00	0.00	
11,700.00	34.73	359.22	11,676.18	51.75	-66.29	52.65	10.00	10.00	0.00	
11,750.00	39.73	359.22	11,715.98	81.98	-66.70	82.89	10.00	10.00	0.00	
11,800.00	44.73	359.22	11,752.99	115.57	-67.16	116.48	10.00	10.00	0.00	
11,850.00	49.73	359.22	11,786.93	152.26	-67.66	153.17	10.00	10.00	0.00	
11,900.00	54.73	359.22	11,817.55	191.77	-68.20	192.68	10.00	10.00	0.00	
11,950.00	59.73	359.22	11,844.61	233.79	-68.77	234.71	10.00	10.00	0.00	
12,000.00	64.73	359.22	11,867.90	278.01	-69.38	278.93	10.00	10.00	0.00	
12,050.00	69.73	359.22	11,887.24	324.10	-70.00	325.02	10.00	10.00	0.00	
12,100.00	74.73	359.22	11,902.50	371.69	-70.65	372.62	10.00	10.00	0.00	
12,150.00	79.73	359.22	11,913.55	420.43	-71.32	421.37	10.00	10.00	0.00	
12,200.00	84.73	359.22	11,920.31	469.95	-71.99	470.89	10.00	10.00	0.00	
12,250.03	89.73	359.22	11,922.73	519.90	-72.67	520.85	10.00	10.00	0.00	
LP, Hold 89.73° Inc, 359.22° Azimuth										
12,300.00	89.73	359.22	11,922.97	569.87	-73.35	570.82	0.00	0.00	0.00	
12,400.00	89.73	359.22	11,923.44	669.86	-74.72	670.81	0.00	0.00	0.00	
12,500.00	89.73	359.22	11,923.91	769.85	-76.08	770.81	0.00	0.00	0.00	
12,600.00	89.73	359.22	11,924.38	869.84	-77.44	870.81	0.00	0.00	0.00	
12,700.00	89.73	359.22	11,924.85	969.83	-78.80	970.81	0.00	0.00	0.00	
12,800.00	89.73	359.22	11,925.32	1,069.82	-80.17	1,070.81	0.00	0.00	0.00	
12,900.00	89.73	359.22	11,925.79	1,169.81	-81.53	1,170.81	0.00	0.00	0.00	
13,000.00	89.73	359.22	11,926.27	1,269.80	-82.89	1,270.81	0.00	0.00	0.00	
13,100.00	89.73	359.22	11,926.74	1,369.79	-84.26	1,370.81	0.00	0.00	0.00	
13,200.00	89.73	359.22	11,927.21	1,469.78	-85.62	1,470.81	0.00	0.00	0.00	
13,300.00	89.73	359.22	11,927.68	1,569.77	-86.98	1,570.80	0.00	0.00	0.00	
13,400.00	89.73	359.22	11,928.15	1,669.76	-88.35	1,670.80	0.00	0.00	0.00	
13,500.00	89.73	359.22	11,928.62	1,769.74	-89.71	1,770.80	0.00	0.00	0.00	
13,600.00	89.73	359.22	11,929.09	1,869.73	-91.07	1,870.80	0.00	0.00	0.00	
13,700.00	89.73	359.22	11,929.56	1,969.72	-92.43	1,970.80	0.00	0.00	0.00	
13,800.00	89.73	359.22	11,930.04	2,069.71	-93.80	2,070.80	0.00	0.00	0.00	
13,900.00	89.73	359.22	11,930.51	2,169.70	-95.16	2,170.80	0.00	0.00	0.00	
14,000.00	89.73	359.22	11,930.98	2,269.69	-96.52	2,270.80	0.00	0.00	0.00	
14,100.00	89.73	359.22	11,931.45	2,369.68	-97.89	2,370.80	0.00	0.00	0.00	
14,200.00	89.73	359.22	11,931.92	2,469.67	-99.25	2,470.79	0.00	0.00	0.00	
14,300.00	89.73	359.22	11,932.39	2,569.66	-100.61	2,570.79	0.00	0.00	0.00	
14,400.00	89.73	359.22	11,932.86	2,669.65	-101.97	2,670.79	0.00	0.00	0.00	
14,500.00	89.73	359.22	11,933.33	2,769.64	-103.34	2,770.79	0.00	0.00	0.00	
14,600.00	89.73	359.22	11,933.81	2,869.63	-104.70	2,870.79	0.00	0.00	0.00	
14,700.00	89.73	359.22	11,934.28	2,969.62	-106.06	2,970.79	0.00	0.00	0.00	
14,800.00	89.73	359.22	11,934.75	3,069.61	-107.43	3,070.79	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 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	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)
14,900.00	89.73	359.22	11,935.22	3,169.60	-108.79	3,170.79	0.00	0.00	0.00
14,935.21	89.73	359.22	11,935.39	3,204.81	-109.27	3,206.00	0.00	0.00	0.00
Build 2.00°/100'									
15,000.00	91.03	359.22	11,934.96	3,269.59	-110.15	3,270.78	2.00	2.00	0.00
15,100.00	93.03	359.22	11,931.42	3,369.51	-111.51	3,370.72	2.00	2.00	0.00
15,179.22	94.61	359.22	11,926.15	3,448.55	-112.59	3,449.76	2.00	2.00	0.00
Hold 94.61° Inc, 359.22° Azimuth									
15,200.00	94.61	359.22	11,924.48	3,469.26	-112.87	3,470.47	0.00	0.00	0.00
15,300.00	94.61	359.22	11,916.44	3,568.92	-114.23	3,570.15	0.00	0.00	0.00
15,400.00	94.61	359.22	11,908.40	3,668.59	-115.59	3,669.82	0.00	0.00	0.00
15,500.00	94.61	359.22	11,900.37	3,768.26	-116.95	3,769.50	0.00	0.00	0.00
15,600.00	94.61	359.22	11,892.33	3,867.92	-118.31	3,869.18	0.00	0.00	0.00
15,700.00	94.61	359.22	11,884.29	3,967.59	-119.67	3,968.85	0.00	0.00	0.00
15,800.00	94.61	359.22	11,876.25	4,067.26	-121.02	4,068.53	0.00	0.00	0.00
15,900.00	94.61	359.22	11,868.21	4,166.93	-122.38	4,168.21	0.00	0.00	0.00
16,000.00	94.61	359.22	11,860.18	4,266.59	-123.74	4,267.88	0.00	0.00	0.00
16,100.00	94.61	359.22	11,852.14	4,366.26	-125.10	4,367.56	0.00	0.00	0.00
16,200.00	94.61	359.22	11,844.10	4,465.93	-126.46	4,467.23	0.00	0.00	0.00
16,300.00	94.61	359.22	11,836.06	4,565.59	-127.82	4,566.91	0.00	0.00	0.00
16,400.00	94.61	359.22	11,828.03	4,665.26	-129.18	4,666.59	0.00	0.00	0.00
16,500.00	94.61	359.22	11,819.99	4,764.93	-130.53	4,766.26	0.00	0.00	0.00
16,600.00	94.61	359.22	11,811.95	4,864.60	-131.89	4,865.94	0.00	0.00	0.00
16,700.00	94.61	359.22	11,803.91	4,964.26	-133.25	4,965.62	0.00	0.00	0.00
16,800.00	94.61	359.22	11,795.88	5,063.93	-134.61	5,065.29	0.00	0.00	0.00
16,900.00	94.61	359.22	11,787.84	5,163.60	-135.97	5,164.97	0.00	0.00	0.00
17,000.00	94.61	359.22	11,779.80	5,263.26	-137.33	5,264.65	0.00	0.00	0.00
17,100.00	94.61	359.22	11,771.76	5,362.93	-138.68	5,364.32	0.00	0.00	0.00
17,200.00	94.61	359.22	11,763.73	5,462.60	-140.04	5,464.00	0.00	0.00	0.00
17,300.00	94.61	359.22	11,755.69	5,562.27	-141.40	5,563.68	0.00	0.00	0.00
17,400.00	94.61	359.22	11,747.65	5,661.93	-142.76	5,663.35	0.00	0.00	0.00
17,500.00	94.61	359.22	11,739.61	5,761.60	-144.12	5,763.03	0.00	0.00	0.00
17,600.00	94.61	359.22	11,731.58	5,861.27	-145.48	5,862.71	0.00	0.00	0.00
17,700.00	94.61	359.22	11,723.54	5,960.94	-146.84	5,962.38	0.00	0.00	0.00
17,800.00	94.61	359.22	11,715.50	6,060.60	-148.19	6,062.06	0.00	0.00	0.00
17,900.00	94.61	359.22	11,707.46	6,160.27	-149.55	6,161.73	0.00	0.00	0.00
18,000.00	94.61	359.22	11,699.42	6,259.94	-150.91	6,261.41	0.00	0.00	0.00
18,100.00	94.61	359.22	11,691.39	6,359.60	-152.27	6,361.09	0.00	0.00	0.00
18,200.00	94.61	359.22	11,683.35	6,459.27	-153.63	6,460.76	0.00	0.00	0.00
18,300.00	94.61	359.22	11,675.31	6,558.94	-154.99	6,560.44	0.00	0.00	0.00
18,400.00	94.61	359.22	11,667.27	6,658.61	-156.35	6,660.12	0.00	0.00	0.00
18,500.00	94.61	359.22	11,659.24	6,758.27	-157.70	6,759.79	0.00	0.00	0.00
18,600.00	94.61	359.22	11,651.20	6,857.94	-159.06	6,859.47	0.00	0.00	0.00
18,700.00	94.61	359.22	11,643.16	6,957.61	-160.42	6,959.15	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 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	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)	
18,800.00	94.61	359.22	11,635.12	7,057.27	-161.78	7,058.82	0.00	0.00	0.00	
18,822.25	94.61	359.22	11,633.34	7,079.45	-162.08	7,081.00	0.00	0.00	0.00	
Drop 2.00°/100'										
18,900.00	93.06	359.22	11,628.14	7,157.02	-163.14	7,158.57	2.00	-2.00	0.00	
19,000.00	91.06	359.22	11,624.55	7,256.94	-164.50	7,258.51	2.00	-2.00	0.00	
19,024.69	90.56	359.22	11,624.20	7,281.62	-164.84	7,283.19	2.00	-2.00	0.00	
Hold 90.56° Inc, 359.22° Azimuth										
19,100.00	90.56	359.22	11,623.47	7,356.92	-165.86	7,358.50	0.00	0.00	0.00	
19,200.00	90.56	359.22	11,622.49	7,456.91	-167.23	7,458.49	0.00	0.00	0.00	
19,300.00	90.56	359.22	11,621.51	7,556.89	-168.59	7,558.49	0.00	0.00	0.00	
19,400.00	90.56	359.22	11,620.53	7,656.88	-169.95	7,658.48	0.00	0.00	0.00	
19,410.82	90.56	359.22	11,620.42	7,667.70	-170.10	7,669.31	0.00	0.00	0.00	
PBHL - PBHL r2 (WH607H)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FTP (WH607H)	0.00	0.00	0.00	-50.30	-64.90	530,932.10	770,889.30	32° 27' 26.629 N	103° 35' 20.781 W	
- hit/miss target										
- Shape										
- plan misses target center by 82.11usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Point										
PBHL r2 (WH607H)	0.00	0.00	11,620.42	7,667.70	-170.10	538,650.10	770,784.10	32° 28' 43.005 N	103° 35' 21.381 W	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,800.00	1,800.00	13 3/8"	13-3/8	17-1/2	
5,250.00	5,250.00	9 5/8"	9-5/8	12-1/4	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,803.00	1,803.00	Rustler		0.00		
5,206.00	5,206.00	Limestone Base		0.00		
8,431.95	8,429.00	Lower Brushy		0.00		
8,901.95	8,899.00	Avalon		0.00		
9,924.95	9,922.00	1st BS Sand		0.00		
10,530.95	10,528.00	2nd BS Sand		0.00		
11,051.95	11,049.00	3rd BS Carbonate		0.00		
11,540.28	11,534.00	3rd BS Sand		0.00		

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Lateral 1r2	Survey Calculation Method:	Minimum Curvature
Design:	Plan 2.0	Database:	EDM 5000.1 Aim Database

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5400	5400	0	0	Build 1.00°/100'
5900	5899	-13	-17	Hold 5.0° Inc, 232.22° Azimuth
6342	6339	-37	-48	Drop 1.00°/100'
6842	6839	-50	-65	Hold Vertical
11,353	11,350	-50	-65	KOP, Build 10.00°/100'
12,250	11,923	520	-73	LP, Hold 89.73° Inc, 359.22° Azimuth
14,935	11,935	3205	-109	Build 2.00°/100'
15,179	11,926	3449	-113	Hold 94.61° Inc, 359.22° Azimuth
18,822	11,633	7079	-162	Drop 2.00°/100'
19,025	11,624	7282	-165	Hold 90.56° Inc, 359.22° Azimuth
19,411	11,620	7668	-170	PBHL

Advance Energy Partners, LLC

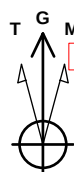
Wool Head 20 State Com 607H

Lea County, New Mexico

Job No. WT-19-180

H&P 389

Plan 2.0 Final PVA



Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.19°

Magnetic Field
Strength: 48055.2nT
Dip Angle: 60.23°
Date: 12/30/2019
Model: MVHD

Magnetic North: 6.19° to Grid North

SITE DETAILS: Wool Head 20 State Com 607H

Site Centre Northing: 530982.40
Easting: 770954.20

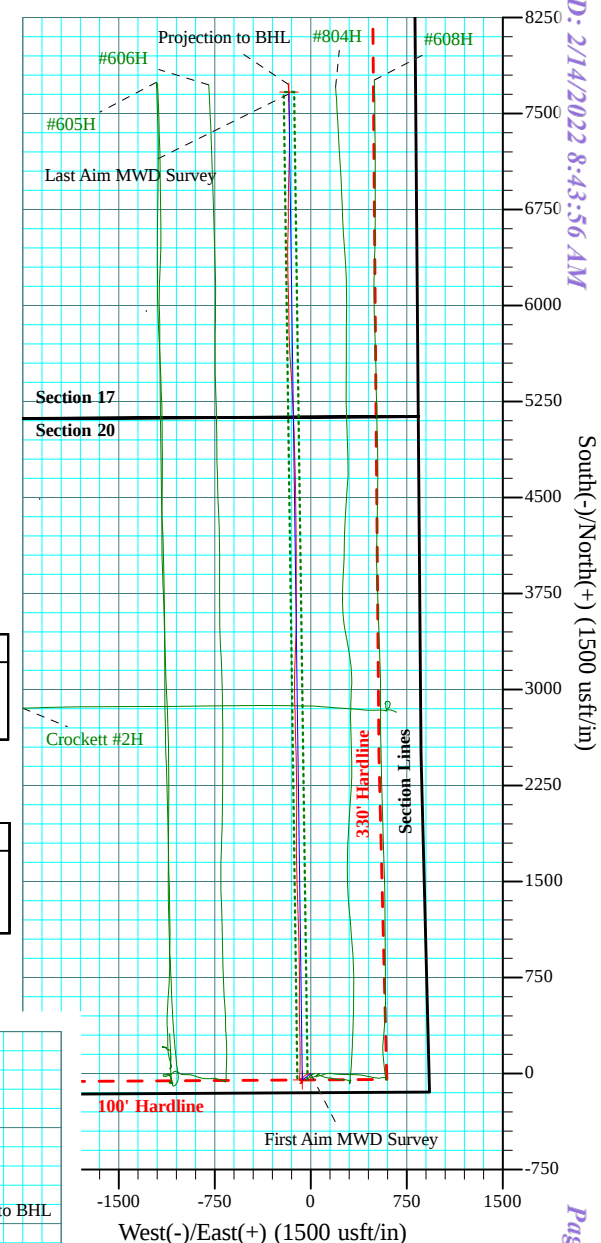
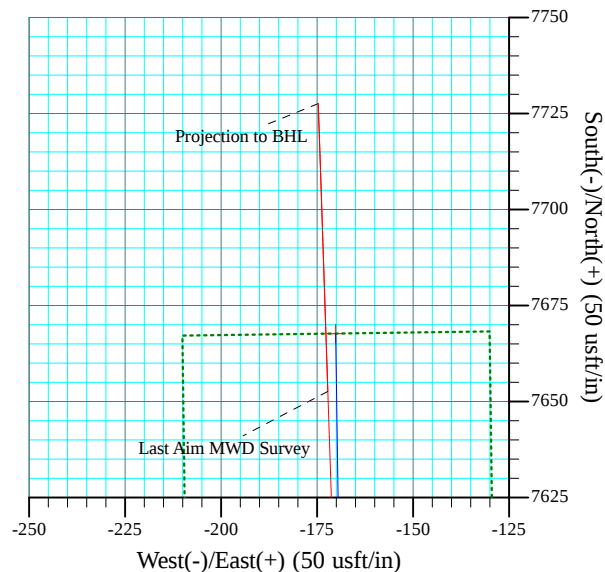
Positional Uncertainty: 0.00
Convergence: 0.40
Local North: Grid

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:
3728'GL+26.5'KB @ 3754.50usft (H&P 389)

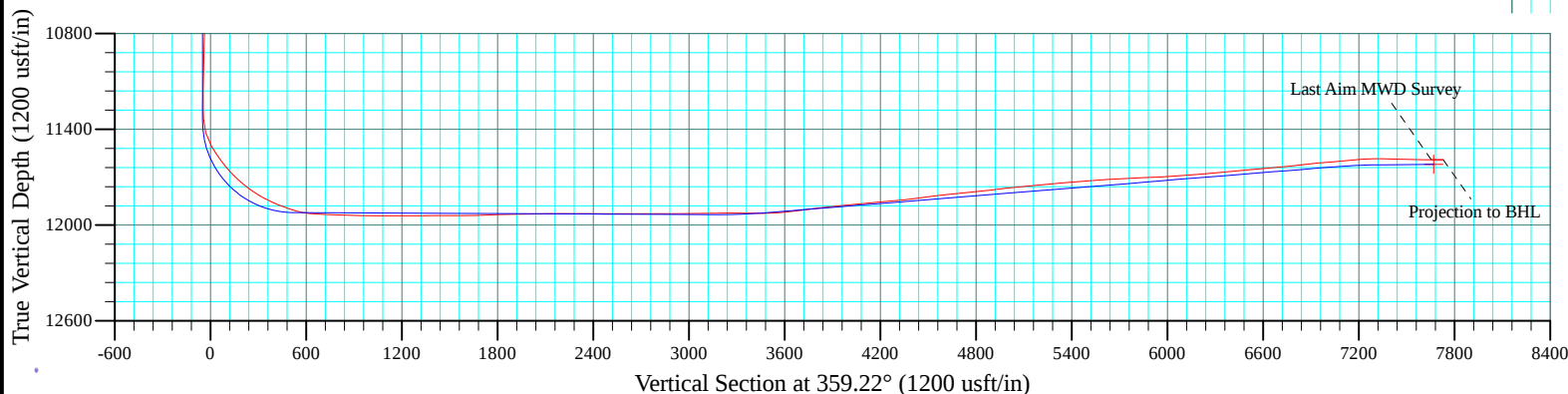


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	19343.00	90.07	358.10	11591.15	7652.62	-172.20	0.00	0.00	7654.26	Last Aim MWD Survey
2	19418.00	90.07	358.10	11591.06	7727.58	-174.68	0.00	0.00	7729.25	Projection to BHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (WH607H)	0.00	-50.30	-64.90	530932.10	770889.30	32° 27' 26.629 N	103° 35' 20.781 W
PBHL r2 (WH607H)	11620.42	7667.70	-170.10	538650.10	770784.10	32° 28' 43.005 N	103° 35' 21.381 W



Received by OGD: 2/14/2022 8:43:56 AM

South(-)/North(+) (1500 usft/in)

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Survey Reports

Wool Head 20 State Com 607H (WT-19-180)

2019-11-19 to 2020-01-09

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 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

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

Site		Wool Head 20 State Com 607H					
Site Position:		Northing:	530,982.40	usft	Latitude:	32° 27' 27.122 N	
From:	Map	Easting:	770,954.20	usft	Longitude:	103° 35' 20.019 W	
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#607H - Slot 607H					
Well Position	+N/-S	0.00 usft	Northing:	530,982.40 usft	Latitude:	32° 27' 27.122 N
	+E/-W	0.00 usft	Easting:	770,954.20 usft	Longitude:	103° 35' 20.019 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,728.00 usft

Wellbore	Aim MWD Surveys				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	11/22/2019	6.60	60.23	48,066.62125967

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	1/6/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
235.00	19,418.00	Aim MWD Surveys (Aim MWD Surveys)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
235.00	0.79	245.00	234.99	-0.68	-1.47	-0.66	0.34	0.34	0.00
First Aim MWD Survey									
329.00	1.23	250.45	328.98	-1.30	-3.01	-1.26	0.48	0.47	5.80
424.00	1.41	258.53	423.95	-1.87	-5.11	-1.80	0.27	0.19	8.51
518.00	1.14	257.48	517.93	-2.30	-7.16	-2.20	0.29	-0.29	-1.12
707.00	1.19	269.87	706.89	-2.71	-10.96	-2.57	0.14	0.03	6.56
896.00	1.54	266.62	895.84	-2.87	-15.45	-2.66	0.19	0.19	-1.72
991.00	1.89	260.47	990.79	-3.20	-18.27	-2.95	0.42	0.37	-6.47
1,084.00	2.11	251.59	1,083.74	-4.00	-21.41	-3.71	0.41	0.24	-9.55
1,178.00	2.59	250.80	1,177.66	-5.24	-25.06	-4.90	0.51	0.51	-0.84

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,272.00	3.16	246.05	1,271.54	-6.99	-29.43	-6.59	0.66	0.61	-5.05
1,365.00	3.56	246.23	1,364.38	-9.20	-34.42	-8.73	0.43	0.43	0.19
1,459.00	3.74	242.36	1,458.19	-11.80	-39.80	-11.25	0.32	0.19	-4.12
1,548.00	3.43	234.98	1,547.02	-14.67	-44.56	-14.06	0.62	-0.35	-8.29
1,638.00	3.43	227.42	1,636.85	-18.04	-48.74	-17.37	0.50	0.00	-8.40
1,727.00	3.74	224.34	1,725.68	-21.91	-52.73	-21.19	0.41	0.35	-3.46
1,799.00	3.87	222.41	1,797.52	-25.39	-56.01	-24.62	0.25	0.18	-2.68
1,908.00	3.87	224.52	1,906.27	-30.73	-61.07	-29.89	0.13	0.00	1.94
1,998.00	2.68	219.60	1,996.12	-34.51	-64.54	-33.63	1.36	-1.32	-5.47
2,087.00	1.76	213.01	2,085.06	-37.26	-66.61	-36.35	1.07	-1.03	-7.40
2,177.00	1.58	210.72	2,175.02	-39.49	-68.00	-38.56	0.21	-0.20	-2.54
2,267.00	1.41	204.66	2,264.99	-41.56	-69.10	-40.62	0.26	-0.19	-6.73
2,356.00	1.19	200.97	2,353.97	-43.42	-69.88	-42.46	0.26	-0.25	-4.15
2,446.00	0.84	188.05	2,443.95	-44.95	-70.31	-43.98	0.46	-0.39	-14.36
2,536.00	0.75	189.36	2,533.94	-46.18	-70.50	-45.22	0.10	-0.10	1.46
2,625.00	0.62	184.88	2,622.94	-47.23	-70.63	-46.27	0.16	-0.15	-5.03
2,715.00	0.66	172.31	2,712.93	-48.23	-70.61	-47.27	0.16	0.04	-13.97
2,805.00	0.48	159.04	2,802.93	-49.10	-70.40	-48.14	0.25	-0.20	-14.74
2,894.00	0.92	131.09	2,891.92	-49.92	-69.73	-48.96	0.61	0.49	-31.40
2,984.00	0.97	107.01	2,981.91	-50.61	-68.46	-49.68	0.44	0.06	-26.76
3,073.00	1.67	104.29	3,070.88	-51.16	-66.48	-50.25	0.79	0.79	-3.06
3,163.00	2.02	95.41	3,160.84	-51.63	-63.63	-50.76	0.50	0.39	-9.87
3,253.00	0.70	98.31	3,250.81	-51.86	-61.51	-51.02	1.47	-1.47	3.22
3,342.00	0.18	28.08	3,339.81	-51.81	-60.90	-50.98	0.74	-0.58	-78.91
3,521.00	0.35	66.41	3,518.80	-51.35	-60.27	-50.52	0.13	0.09	21.41
3,611.00	0.13	26.06	3,608.80	-51.14	-59.97	-50.32	0.29	-0.24	-44.83
3,700.00	0.31	28.35	3,697.80	-50.84	-59.81	-50.02	0.20	0.20	2.57
3,790.00	0.44	27.12	3,787.80	-50.32	-59.54	-49.50	0.14	0.14	-1.37
3,880.00	0.79	28.17	3,877.80	-49.46	-59.09	-48.66	0.39	0.39	1.17
3,970.00	0.53	44.70	3,967.79	-48.62	-58.51	-47.82	0.36	-0.29	18.37
4,149.00	0.31	77.30	4,146.79	-47.93	-57.45	-47.14	0.18	-0.12	18.21
4,238.00	0.35	75.11	4,235.78	-47.80	-56.95	-47.02	0.05	0.04	-2.46
4,328.00	0.57	108.07	4,325.78	-47.87	-56.26	-47.10	0.37	0.24	36.62
4,418.00	0.57	107.98	4,415.78	-48.15	-55.41	-47.39	0.00	0.00	-0.10
4,508.00	0.40	177.59	4,505.77	-48.60	-54.97	-47.85	0.63	-0.19	77.34
4,597.00	0.70	224.08	4,594.77	-49.30	-55.34	-48.54	0.58	0.34	52.24
4,687.00	1.19	220.65	4,684.76	-50.41	-56.33	-49.64	0.55	0.54	-3.81
4,776.00	0.97	219.51	4,773.74	-51.69	-57.41	-50.90	0.25	-0.25	-1.28
4,866.00	1.36	221.36	4,863.72	-53.08	-58.60	-52.28	0.44	0.43	2.06
4,956.00	1.36	219.60	4,953.70	-54.70	-59.99	-53.88	0.05	0.00	-1.96
5,045.00	1.54	210.02	5,042.67	-56.55	-61.26	-55.71	0.34	0.20	-10.76
5,135.00	1.71	221.80	5,132.63	-58.60	-62.76	-57.74	0.42	0.19	13.09
5,207.00	2.02	220.57	5,204.60	-60.37	-64.30	-59.48	0.43	0.43	-1.71

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,311.00	1.76	215.64	5,308.54	-63.06	-66.42	-62.15	0.29	-0.25	-4.74
5,401.00	1.63	206.77	5,398.50	-65.32	-67.80	-64.39	0.32	-0.14	-9.86
5,490.00	1.76	206.68	5,487.46	-67.67	-68.99	-66.73	0.15	0.15	-0.10
5,580.00	1.63	194.11	5,577.42	-70.15	-69.92	-69.19	0.44	-0.14	-13.97
5,670.00	1.89	208.26	5,667.38	-72.70	-70.93	-71.73	0.56	0.29	15.72
5,759.00	2.46	247.11	5,756.32	-74.73	-73.39	-73.73	1.73	0.64	43.65
5,849.00	1.85	257.22	5,846.26	-75.81	-76.59	-74.76	0.80	-0.68	11.23
5,939.00	1.23	287.27	5,936.22	-75.84	-78.93	-74.76	1.11	-0.69	33.39
6,028.00	0.70	322.52	6,025.21	-75.13	-80.17	-74.03	0.87	-0.60	39.61
6,118.00	0.79	294.48	6,115.20	-74.43	-81.07	-73.32	0.41	0.10	-31.16
6,208.00	0.62	272.60	6,205.20	-74.15	-82.12	-73.03	0.35	-0.19	-24.31
6,297.00	0.48	301.42	6,294.19	-73.94	-82.92	-72.80	0.34	-0.16	32.38
6,387.00	0.53	239.46	6,384.19	-73.95	-83.60	-72.81	0.58	0.06	-68.84
6,477.00	0.48	67.37	6,474.19	-74.02	-83.61	-72.87	1.12	-0.06	-191.21
6,567.00	0.53	81.87	6,564.19	-73.81	-82.85	-72.68	0.15	0.06	16.11
6,656.00	0.88	80.20	6,653.18	-73.64	-81.77	-72.52	0.39	0.39	-1.88
6,746.00	0.66	97.87	6,743.17	-73.59	-80.57	-72.49	0.36	-0.24	19.63
6,836.00	0.53	84.95	6,833.17	-73.63	-79.64	-72.54	0.21	-0.14	-14.36
6,925.00	0.79	82.14	6,922.16	-73.51	-78.63	-72.43	0.29	0.29	-3.16
7,015.00	0.57	113.69	7,012.15	-73.60	-77.60	-72.54	0.47	-0.24	35.06
7,104.00	0.62	109.56	7,101.15	-73.94	-76.74	-72.89	0.07	0.06	-4.64
7,194.00	0.70	76.51	7,191.14	-73.98	-75.75	-72.94	0.43	0.09	-36.72
7,284.00	0.92	67.99	7,281.14	-73.58	-74.55	-72.56	0.28	0.24	-9.47
7,373.00	0.70	55.07	7,370.13	-73.00	-73.44	-71.99	0.32	-0.25	-14.52
7,463.00	0.79	58.85	7,460.12	-72.36	-72.46	-71.37	0.11	0.10	4.20
7,553.00	0.92	78.45	7,550.11	-71.90	-71.22	-70.92	0.35	0.14	21.78
7,643.00	1.01	77.74	7,640.10	-71.58	-69.73	-70.63	0.10	0.10	-0.79
7,733.00	1.10	54.72	7,730.08	-70.92	-68.25	-69.98	0.48	0.10	-25.58
7,822.00	1.63	25.71	7,819.06	-69.28	-67.01	-68.36	0.96	0.60	-32.60
7,912.00	1.36	27.91	7,909.03	-67.19	-65.95	-66.28	0.31	-0.30	2.44
8,002.00	0.97	31.60	7,999.01	-65.59	-65.05	-64.70	0.44	-0.43	4.10
8,091.00	0.88	13.93	8,088.00	-64.29	-64.49	-63.40	0.33	-0.10	-19.85
8,181.00	0.88	18.77	8,177.99	-62.96	-64.10	-62.08	0.08	0.00	5.38
8,271.00	0.57	340.80	8,267.98	-61.89	-64.03	-61.01	0.62	-0.34	-42.19
8,360.00	0.75	353.81	8,356.97	-60.89	-64.24	-60.01	0.26	0.20	14.62
8,450.00	0.44	332.89	8,446.97	-60.00	-64.46	-59.11	0.42	-0.34	-23.24
8,540.00	0.84	321.73	8,536.96	-59.17	-65.02	-58.28	0.46	0.44	-12.40
8,630.00	0.62	327.18	8,626.95	-58.24	-65.70	-57.34	0.26	-0.24	6.06
8,720.00	0.53	283.93	8,716.95	-57.73	-66.36	-56.82	0.48	-0.10	-48.06
8,809.00	0.66	269.70	8,805.95	-57.64	-67.28	-56.72	0.22	0.15	-15.99
8,899.00	0.70	253.26	8,895.94	-57.80	-68.32	-56.86	0.22	0.04	-18.27
8,989.00	0.70	229.44	8,985.93	-58.31	-69.27	-57.37	0.32	0.00	-26.47
9,078.00	0.66	223.73	9,074.93	-59.04	-70.03	-58.08	0.09	-0.04	-6.42

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,168.00	0.48	251.24	9,164.92	-59.53	-70.75	-58.56	0.36	-0.20	30.57
9,258.00	0.57	274.27	9,254.92	-59.62	-71.55	-58.64	0.25	0.10	25.59
9,347.00	1.19	258.09	9,343.91	-59.78	-72.90	-58.78	0.74	0.70	-18.18
9,437.00	1.27	276.20	9,433.89	-59.86	-74.80	-58.84	0.44	0.09	20.12
9,527.00	1.58	294.66	9,523.86	-59.24	-76.92	-58.19	0.61	0.34	20.51
9,617.00	1.93	319.71	9,613.82	-57.56	-79.03	-56.48	0.93	0.39	27.83
9,706.00	1.10	20.88	9,702.79	-55.62	-79.70	-54.53	1.91	-0.93	68.73
9,796.00	1.76	39.42	9,792.76	-53.75	-78.51	-52.67	0.89	0.73	20.60
9,886.00	1.71	27.38	9,882.72	-51.49	-77.01	-50.44	0.41	-0.06	-13.38
9,975.00	1.80	15.08	9,971.68	-48.96	-76.04	-47.92	0.43	0.10	-13.82
10,065.00	1.49	7.52	10,061.64	-46.43	-75.52	-45.40	0.42	-0.34	-8.40
10,155.00	1.27	340.45	10,151.62	-44.33	-75.70	-43.30	0.76	-0.24	-30.08
10,244.00	1.01	326.39	10,240.60	-42.75	-76.46	-41.71	0.43	-0.29	-15.80
10,334.00	0.44	322.34	10,330.59	-41.82	-77.11	-40.76	0.64	-0.63	-4.50
10,424.00	0.48	331.13	10,420.59	-41.21	-77.51	-40.16	0.09	0.04	9.77
10,513.00	0.57	344.14	10,509.59	-40.46	-77.81	-39.40	0.17	0.10	14.62
10,603.00	0.48	315.58	10,599.58	-39.76	-78.19	-38.69	0.30	-0.10	-31.73
10,692.00	0.75	279.63	10,688.58	-39.40	-79.03	-38.32	0.51	0.30	-40.39
10,782.00	0.57	253.08	10,778.57	-39.43	-80.04	-38.34	0.39	-0.20	-29.50
10,872.00	1.14	212.48	10,868.56	-40.32	-80.95	-39.21	0.89	0.63	-45.11
10,961.00	1.80	210.99	10,957.53	-42.26	-82.14	-41.14	0.74	0.74	-1.67
11,051.00	1.49	206.06	11,047.50	-44.52	-83.39	-43.38	0.38	-0.34	-5.48
11,141.00	0.79	231.29	11,137.48	-45.96	-84.38	-44.81	0.94	-0.78	28.03
11,248.00	1.05	263.81	11,244.47	-46.53	-85.93	-45.36	0.54	0.24	30.39
11,337.00	1.67	329.37	11,333.44	-45.50	-87.41	-44.31	1.76	0.70	73.66
11,427.00	17.32	5.23	11,421.96	-30.94	-86.85	-29.75	17.77	17.39	39.84
11,516.00	28.79	1.63	11,503.72	3.80	-85.03	4.95	12.98	12.89	-4.04
11,606.00	36.35	0.93	11,579.51	52.20	-83.97	53.34	8.41	8.40	-0.78
11,695.00	40.62	359.87	11,649.16	107.57	-83.61	108.70	4.85	4.80	-1.19
11,785.00	46.99	359.61	11,714.08	169.83	-83.90	170.96	7.08	7.08	-0.29
11,875.00	54.46	359.70	11,771.02	239.45	-84.32	240.58	8.30	8.30	0.10
11,964.00	59.12	358.99	11,819.75	313.89	-85.18	315.02	5.28	5.24	-0.80
12,054.00	66.99	358.99	11,860.50	394.04	-86.60	395.19	8.74	8.74	0.00
12,143.00	69.76	359.17	11,893.29	476.76	-87.92	477.91	3.12	3.11	0.20
12,233.00	77.05	359.70	11,918.98	562.95	-88.76	564.11	8.12	8.10	0.59
12,323.00	87.16	0.84	11,931.33	651.98	-88.33	653.12	11.30	11.23	1.27
12,445.00	88.04	359.42	11,936.44	773.87	-88.06	774.99	1.37	0.72	-1.16
12,534.00	88.09	359.25	11,939.44	862.81	-89.09	863.94	0.20	0.06	-0.19
12,713.00	89.49	358.63	11,943.22	1,041.73	-92.40	1,042.90	0.86	0.78	-0.35
12,803.00	90.11	357.49	11,943.54	1,131.68	-95.45	1,132.88	1.44	0.69	-1.27
12,892.00	90.15	358.28	11,943.33	1,220.62	-98.73	1,221.85	0.89	0.04	0.89
12,982.00	90.73	358.98	11,942.64	1,310.59	-100.88	1,311.84	1.01	0.64	0.78
13,071.00	89.89	358.28	11,942.16	1,399.56	-103.01	1,400.83	1.23	-0.94	-0.79
13,161.00	89.85	357.75	11,942.37	1,489.51	-106.13	1,490.81	0.59	-0.04	-0.59

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,250.00	90.37	358.72	11,942.20	1,578.46	-108.87	1,579.80	1.24	0.58	1.09
13,340.00	90.95	359.16	11,941.16	1,668.44	-110.54	1,669.79	0.81	0.64	0.49
13,429.00	92.70	0.04	11,938.32	1,757.39	-111.16	1,758.74	2.20	1.97	0.99
13,519.00	92.31	359.42	11,934.39	1,847.30	-111.58	1,848.65	0.81	-0.43	-0.69
13,609.00	90.95	0.21	11,931.83	1,937.26	-111.87	1,938.61	1.75	-1.51	0.88
13,698.00	90.55	1.18	11,930.67	2,026.25	-110.79	2,027.57	1.18	-0.45	1.09
13,788.00	90.29	0.65	11,930.01	2,116.23	-109.35	2,117.53	0.66	-0.29	-0.59
13,877.00	90.20	359.95	11,929.63	2,205.23	-108.89	2,206.51	0.79	-0.10	-0.79
13,966.00	90.37	359.16	11,929.18	2,294.23	-109.58	2,295.50	0.91	0.19	-0.89
14,056.00	89.71	358.63	11,929.12	2,384.21	-111.31	2,385.50	0.94	-0.73	-0.59
14,145.00	89.49	358.37	11,929.74	2,473.18	-113.64	2,474.49	0.38	-0.25	-0.29
14,235.00	89.93	357.75	11,930.20	2,563.12	-116.69	2,564.47	0.84	0.49	-0.69
14,325.00	89.71	359.07	11,930.48	2,653.08	-119.19	2,654.46	1.49	-0.24	1.47
14,414.00	89.93	359.51	11,930.76	2,742.08	-120.29	2,743.46	0.55	0.25	0.49
14,504.00	90.07	358.63	11,930.76	2,832.06	-121.75	2,833.46	0.99	0.16	-0.98
14,593.00	90.42	358.19	11,930.38	2,921.03	-124.22	2,922.45	0.63	0.39	-0.49
14,683.00	91.38	358.10	11,928.96	3,010.97	-127.13	3,012.42	1.07	1.07	-0.10
14,772.00	90.77	1.71	11,927.29	3,099.94	-127.28	3,101.38	4.11	-0.69	4.06
14,862.00	91.30	3.20	11,925.67	3,189.84	-123.43	3,191.22	1.76	0.59	1.66
14,952.00	88.84	2.06	11,925.56	3,279.74	-119.30	3,281.06	3.01	-2.73	-1.27
15,041.00	88.53	1.27	11,927.60	3,368.67	-116.71	3,369.95	0.95	-0.35	-0.89
15,131.00	91.69	1.44	11,927.43	3,458.64	-114.58	3,459.88	3.52	3.51	0.19
15,221.00	93.58	1.09	11,923.29	3,548.52	-112.60	3,549.72	2.14	2.10	-0.39
15,310.00	95.91	359.69	11,915.93	3,637.20	-111.99	3,638.39	3.05	2.62	-1.57
15,400.00	97.63	359.51	11,905.32	3,726.57	-112.62	3,727.75	1.92	1.91	-0.20
15,490.00	96.70	359.95	11,894.09	3,815.86	-113.04	3,817.05	1.14	-1.03	0.49
15,579.00	96.53	359.69	11,883.84	3,904.27	-113.32	3,905.45	0.35	-0.19	-0.29
15,669.00	95.34	0.65	11,874.54	3,993.78	-113.05	3,994.95	1.70	-1.32	1.07
15,759.00	94.68	359.77	11,866.68	4,083.44	-112.72	4,084.59	1.22	-0.73	-0.98
15,848.00	95.03	359.16	11,859.14	4,172.11	-113.55	4,173.27	0.79	0.39	-0.69
15,938.00	95.21	359.25	11,851.11	4,261.75	-114.79	4,262.91	0.22	0.20	0.10
16,028.00	96.53	359.25	11,841.91	4,351.26	-115.97	4,352.44	1.47	1.47	0.00
16,117.00	97.05	358.63	11,831.39	4,439.62	-117.60	4,440.81	0.91	0.58	-0.70
16,207.00	97.71	0.13	11,819.82	4,528.87	-118.57	4,530.07	1.81	0.73	1.67
16,296.00	95.82	359.95	11,809.34	4,617.25	-118.51	4,618.43	2.13	-2.12	-0.20
16,386.00	95.43	358.63	11,800.52	4,706.80	-119.62	4,708.00	1.52	-0.43	-1.47
16,476.00	96.13	358.54	11,791.45	4,796.32	-121.83	4,797.53	0.78	0.78	-0.10
16,565.00	96.04	357.93	11,782.02	4,884.78	-124.55	4,886.02	0.69	-0.10	-0.69
16,655.00	96.35	356.96	11,772.31	4,974.16	-128.54	4,975.45	1.13	0.34	-1.08
16,744.00	96.88	357.40	11,762.06	5,062.46	-132.89	5,063.80	0.77	0.60	0.49
16,834.00	93.76	357.31	11,753.71	5,151.97	-137.03	5,153.35	3.47	-3.47	-0.10
16,923.00	95.69	357.75	11,746.38	5,240.58	-140.85	5,242.01	2.22	2.17	0.49
17,013.00	94.77	357.23	11,738.18	5,330.11	-144.77	5,331.59	1.17	-1.02	-0.58

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Wool Head 20 State Com 607H
Project:	Lea County, New Mexico	TVD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Site:	Wool Head 20 State Com 607H	MD Reference:	3728'GL+26.5'KB @ 3754.50usft (H&P 389)
Well:	#607H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
17,102.00	94.90	356.35	11,730.68	5,418.66	-149.74	5,420.19	1.00	0.15	-0.99	
17,192.00	95.12	355.99	11,722.82	5,508.11	-155.73	5,509.72	0.47	0.24	-0.40	
17,282.00	92.84	357.40	11,716.57	5,597.74	-160.90	5,599.41	2.98	-2.53	1.57	
17,371.00	93.19	356.79	11,711.89	5,686.50	-165.41	5,688.23	0.79	0.39	-0.69	
17,461.00	92.70	358.54	11,707.26	5,776.30	-169.07	5,778.07	2.02	-0.54	1.94	
17,550.00	92.44	359.69	11,703.27	5,865.20	-170.44	5,866.98	1.32	-0.29	1.29	
17,640.00	93.01	359.25	11,698.99	5,955.10	-171.27	5,956.88	0.80	0.63	-0.49	
17,729.00	93.63	358.98	11,693.84	6,043.93	-172.64	6,045.72	0.76	0.70	-0.30	
17,819.00	94.20	358.63	11,687.69	6,133.70	-174.52	6,135.51	0.74	0.63	-0.39	
17,909.00	95.08	357.84	11,680.41	6,223.37	-177.28	6,225.20	1.31	0.98	-0.88	
17,998.00	94.99	358.72	11,672.60	6,311.98	-179.94	6,313.85	0.99	-0.10	0.99	
18,088.00	95.16	0.83	11,664.64	6,401.62	-180.29	6,403.48	2.34	0.19	2.34	
18,178.00	95.43	1.44	11,656.34	6,491.22	-178.52	6,493.05	0.74	0.30	0.68	
18,267.00	94.95	1.09	11,648.28	6,579.83	-176.56	6,581.63	0.67	-0.54	-0.39	
18,357.00	94.81	0.48	11,640.63	6,669.50	-175.33	6,671.27	0.69	-0.16	-0.68	
18,446.00	96.35	0.30	11,631.97	6,758.07	-174.73	6,759.82	1.74	1.73	-0.20	
18,536.00	96.04	0.13	11,622.26	6,847.55	-174.39	6,849.29	0.39	-0.34	-0.19	
18,626.00	95.43	1.00	11,613.27	6,937.09	-173.51	6,938.81	1.18	-0.68	0.97	
18,715.00	94.90	1.88	11,605.26	7,025.70	-171.28	7,027.38	1.15	-0.60	0.99	
18,805.00	95.52	1.71	11,597.08	7,115.28	-168.47	7,116.92	0.71	0.69	-0.19	
18,895.00	94.77	1.18	11,589.01	7,204.89	-166.21	7,206.49	1.02	-0.83	-0.59	
18,984.00	90.11	0.30	11,585.22	7,293.78	-165.07	7,295.35	5.33	-5.24	-0.99	
19,074.00	88.53	359.25	11,586.29	7,383.77	-165.42	7,385.33	2.11	-1.76	-1.17	
19,163.00	88.75	358.72	11,588.41	7,472.73	-167.00	7,474.31	0.64	0.25	-0.60	
19,253.00	88.84	358.28	11,590.30	7,562.68	-169.35	7,564.28	0.50	0.10	-0.49	
19,343.00	90.07	358.10	11,591.15	7,652.62	-172.20	7,654.26	1.38	1.37	-0.20	
Last Aim MWD Survey										
19,418.00	90.07	358.10	11,591.06	7,727.58	-174.68	7,729.25	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	
235.00	234.99	-0.68	-1.47	First Aim MWD Survey	
19,343.00	11,591.15	7,652.62	-172.20	Last Aim MWD Survey	
19,418.00	11,591.06	7,727.58	-174.68	Projection to BHL	



BHA Reports

Wool Head 20 State Com 607H (WT-19-180)

2019-11-19 to 2020-01-09

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



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #1 - 17.5" SURFACE (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-11-21 17:30
Lobe/Stage	7/8, 4.0	Depth In (ft)	145.00
Bend Angle	1.50	Date Out	2019-11-22 12:45
Speed (rev/gal)	0.17	Depth Out (ft)	1861.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	95.00
Incident	No	Distance Rotated (ft)	1621.00
Motor Results		% Distance Sliding	5.54%
Average Total ROP (ft/h)	136.37	% Distance Rotating	94.46%
Average Slide ROP (ft/h)	31.67		
Average Rotating ROP (ft/h)	169.15		

BHA Objective
DRILL SURFACE

Bit Details		POOH Reason/Notes
OD (in)	17.500	
Vendor	BAKER	
S/N	7046740	Total Depth/Casing Point: N/A
Nozzles	9-12's	
Total Flow Area (in²)	0.994	

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

Bit Distances		Comments
Bit To Bend ('): 4.70 ft, Survey ('): 62.00 ft		Directional: Flow Rate: 400-900, Max Diff: 900 psi, Max Torque: 14,930 ft-lbs, BIT Runs:

Mud Properties		Parameters
Type	Water	Flow Rate (gpm)
WT	8.40	On Bottom Pressure (psi)
VIS	32.00	Off Bottom Pressure (psi)
PV	0.00	Stall Pressure (psi)
YP	0.00	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: 17.5" DP606S, Style: PDC, Gauge Length (in): 3.00, Size (in): 17.50	BAKER	7046740	6 5/8" Reg Pin			17.500		1.50	1.50
Mud Motor Description: 8" 7/8, 4.0 FXD @ 1.5° w/ SS, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4	AIM	800-003 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		28.66	30.16
Stabilizer Description: 17" IB NORTRAK STAB	GTI	GT 801166	6 5/8" Reg Box	6 5/8" Reg Pin	2.750	8.000		8.02	38.18
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066774	6 5/8" Reg Box	6 5/8" Reg Pin	3.500	8.000		3.48	41.66
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	72.14
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	103.30
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	107.20
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1521.40





Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #2 - Intermediate 12.25" (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-11-25 13:00
Lobe/Stage	7/8, 5.9	Depth In (ft)	1861.00
Bend Angle	1.50	Date Out	2019-11-26 19:15
Speed (rev/gal)	0.17	Depth Out (ft)	4903.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	40.00
Incident	No	Distance Rotated (ft)	3002.00
Motor Results		% Distance Sliding	1.31%
Average Total ROP (ft/h)	159.41	% Distance Rotating	98.69%
Average Slide ROP (ft/h)	96.00		
Average Rotating ROP (ft/h)	160.82		

BHA Objective
Drill Intermediate

Bit Details		POOH Reason/Notes
OD (in)	12.250	
Vendor	BAKER	
S/N	7163628	Penetration Rate
Nozzles	6-12's	
Total Flow Area (in²)	0.662	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: Bit was Rung Out
		MWD:

Bit Distances		Comments
Bit To Bend ('): 6.16 ft, Survey ('): 70.00 ft		Directional: Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:

Mud Properties		Parameters
Type	Brine	Flow Rate (gpm)
WT	10.10	On Bottom Pressure (psi)
VIS	30.00	Off Bottom Pressure (psi)
PV	0.00	Stall Pressure (psi)
YP	0.00	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: 12.25" T806FX, Style: PDC, Gauge Length (in): 3.00, Size (in): 12.25	BAKER	7163628	6 5/8" Reg Pin			12.250		1.50	1.50
Mud Motor Description: 8" 7/8, 5.9 FXD @ 1.5° w/ 12" STAB, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	AIM	800-40-002 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.96	39.46
Stabilizer Description: 12" IB NORTRAK STAB	GTI	GT 801178	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		8.03	47.49
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066145	6 5/8" Reg Box	6 5/8" Reg Pin	3.313	8.000		3.18	50.67
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	81.15
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	112.31
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	116.21
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1530.41





Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #3 - Intermediate 12.25" (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-11-26 19:15
Lobe/Stage	7/8, 5.9	Depth In (ft)	4903.00
Bend Angle	1.50	Date Out	2019-11-27 08:45
Speed (rev/gal)	0.17	Depth Out (ft)	5277.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00
Incident	No	Distance Rotated (ft)	374.00
Motor Results		% Distance Sliding	0.00%
Average Total ROP (ft/h)	154.76	% Distance Rotating	100.00%
Average Slide ROP (ft/h)	0.00		
Average Rotating ROP (ft/h)	154.76		

BHA Objective
Drill Intermediate

Bit Details		POOH Reason/Notes
OD (in)	12.250	
Vendor	BAKER	
S/N	5274456	
Nozzles	6-12's	
Total Flow Area (in²)	0.662	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: NONE
		MWD:

Bit Distances		Comments
Bit To Bend ('): 6.16 ft, Survey ('): 70.00 ft		Directional: Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:

Mud Properties		Parameters
Type	Brine	Flow Rate (gpm)
WT	10.00	On Bottom Pressure (psi)
VIS	28.00	Off Bottom Pressure (psi)
PV	2.00	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: 12.25" T606FX, Style: PDC, Gauge Length (in): 3.00, Size (in): 12.25	BAKER	5274456	6 5/8" Reg Pin			12.250		1.50	1.50
Mud Motor Description: 8" 7/8, 5.9 FXD @ 1.5° w/ 12" STAB, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	AIM	800-40-002 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.96	39.46
Stabilizer Description: 12" IB NORTRAK STAB	GTI	GT 801178	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		8.03	47.49
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066145	6 5/8" Reg Box	6 5/8" Reg Pin	3.313	8.000		3.18	50.67
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	81.15
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	112.31
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	116.21
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1530.41





Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #4 - BHA #4 (8.5" Intermediate) (Directional)

Motor Details		Date/Depth/Distances		Hours	
Size(in)	7.00	Date In	2019-12-06 02:15	Downhole Hours	59.75
Lobe/Stage	7/8, 8.5	Depth In (ft)	5277.00	Drilling/Circulating Hours	44.67
Bend Angle	1.50	Date Out	2019-12-08 14:00	Drilling Hours	42.58
Speed (rev/gal)	0.26	Depth Out (ft)	11285.00	Circulating Hours	2.08
Wear Pad OD (in)	7.187	Distance Slid (ft)	136.00	Sliding Hours	1.83
Incident	Yes	Distance Rotated (ft)	5872.00	Rotating Hours	40.75
Motor Results		% Distance Sliding	2.26%	% Hours Sliding	4.31%
Average Total ROP (ft/h)	141.09	% Distance Rotating	97.74%	% Hours Rotating	95.69%
Average Slide ROP (ft/h)	74.18	BHA Objective			
Average Rotating ROP (ft/h)	144.10	Drill down to KOP			
Bit Details		POOH Reason/Notes Total Depth/Casing Point: TD section, Pooh called 40' early due to loss of ROP. Lost all diff and ROP.			
OD (in)	8.500				
Vendor	NOV				
S/N	A269255				
Nozzles	6 x 16				
Total Flow Area (in²)	1.178				
MWD		Incident Notes			
Max Downhole Temp (°F)	N/A	Directional: Once on surface Motor would not drain. Bearing squat was 1/2"			
		MWD:			
Bit Distances		Comments			
Bit To Bend (Bit to Bend): 5.45 ft, Survey (Bit to Survey): 68.00 ft, Gamma (Bit to Gamma): 53.00 ft		Directional: Aim Motor: 1.5 FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab. Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: NOV, SN: A269255 Type: TKC66Q1, Jets: 6 x 16, TFA: 1.178 Runs: 0			
Mud Properties		Parameters			
Type	Brine	Flow Rate (gpm)	550.00 - 750.00	Motor RPM	169.00 - 195.00
WT	10.00	On Bottom Pressure (psi)	500.00 - 3300.00	Surface RPM	45.00 - 60.00
VIS	32.00	Off Bottom Pressure (psi)	1600.00 - 2500.00	Rotating WOB (klbs)	25.00 - 43.00
PV	3.00	Stall Pressure (psi)	0.00	Sliding WOB (klbs)	22.00 - 42.00
YP	1.00	Stalls	0	Temp (°F)	82.00 - 158.00
		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: TKC66Q1, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	NOV	A269255	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 1.5° FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	AIM 700-40-033	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.27	37.27
Stabilizer Description: 8.25" Spiral IBS (Non-Mag)	GTI	CD2043NM	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		4.41	41.68
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-360	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.13	44.81
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-120	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.56	76.37
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-250	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.92	107.29
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15114	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.63	110.92
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1525.12





Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #5 - BHA #5 (Curve Assembly) (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	6.75	Date In	2019-12-31 06:30
Lobe/Stage	7/8, 5.0	Depth In (ft)	11285.00
Bend Angle	2.12	Date Out	2020-01-01 12:00
Speed (rev/gal)	0.29	Depth Out (ft)	12376.00
Wear Pad OD (in)	7.000	Distance Slid (ft)	480.00
Incident	No	Distance Rotated (ft)	611.00
Motor Results		% Distance Sliding	44.00%
Average Total ROP (ft/h)	90.29	% Distance Rotating	56.00%
Average Slide ROP (ft/h)	75.79		
Average Rotating ROP (ft/h)	106.26		

BHA Objective
Drill Curve 10°/100'

Bit Details		POOH Reason/Notes
OD (in)	8.500	
Vendor	Ulterra	
S/N	51320	
Nozzles	6 x 22	
Total Flow Area (in²)	2.227	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: Motor Drained as expected with a slight knocking noise at the bent housing. Squat with about 1/8"
		MWD:

Bit Distances		Comments
Bit To Bend (Bit to Bend): 4.07 ft, Survey (Bit to Survey): 53.00 ft, Gamma (Bit to Gamma): 38.00 ft		Directional: Aim Motor: 2.12° FBH 7/8 5.0 Stg Mtr w/ Slick Sleeve Flow Rate: 300 - 600 gpm, Max Diff: 1130 psi, Max Operating Torque: 10,460 ft-lbs, Bit Info: Ulterra, SN: 51320 Type: CF611, Jets: 6 x 22, TFA: 2.227 Runs: 0

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.50	On Bottom Pressure (psi)
VIS	67.00	Off Bottom Pressure (psi)
PV	19.00	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: CF611, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Ulterra	51320	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 2.12° FBH 7/8 5.0 Stg Mtr w/ Slick Sleeve, Size (in): 6.75, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5	AIM	CDM 650-013	4 1/2" IF Box	4 1/2" Reg Box		6.750		26.01	27.01
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-360	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	30.06
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-137	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.96	61.02
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	92.02
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	95.68





Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #6 - BHA #6 (Lateral Assembly) (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-01-02 17:00
Lobe/Stage	7/8, 8.5	Depth In (ft)	12376.00
Bend Angle	1.75	Date Out	2020-01-06 17:00
Speed (rev/gal)	0.26	Depth Out (ft)	19418.00
Wear Pad OD (in)	7.250	Distance Slid (ft)	605.00
Incident	No	Distance Rotated (ft)	6437.00
Motor Results		% Distance Sliding	8.59%
Average Total ROP (ft/h)	113.89	% Distance Rotating	91.41%
Average Slide ROP (ft/h)	38.21		
Average Rotating ROP (ft/h)	139.93		

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

S/N	5305827	POOH Reason/Notes
Nozzles	6 x 22	Total Depth/Casing Point
Total Flow Area (in²)	2.227	

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

Bit Distances		Comments
Bit To Bend (Bit to Bend): 5.30 ft, Survey (Bit to Survey): 63.00 ft, Gamma (Bit to Gamma): 48.00 ft		Directional: Aim Motor: 1.75° FBH 7/8 8.5 Stg Mtr. Slick Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: Baker, SN: 5305827 Type: DD506TWX, Jets: 6 x 22, TFA: 2.227 Runs: 0

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.00	On Bottom Pressure (psi)
VIS	50.00	Off Bottom Pressure (psi)
PV	0.00	Stall Pressure (psi)
YP	0.00	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: DD506TWX, Style: PDC, Gauge Length (in): 3.50, Size (in): 8.50	Baker	5305827	4 1/2" Reg Pin			8.500		1.10	1.10
Mud Motor Description: 1.75° FBH 7/8 8.5 Stg Mtr, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-025	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.32
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-362	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	40.37
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-202	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.01	70.38
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	101.38
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	105.04
Drill Pipe Description: (38 Stands) 5.5" Drill Pipe, Style: Slick	BD		EverDrlg54 Box	EverDrlg54 Pin	3.500	5.500		3406.18	3511.22
Crossover Sub Description: X-over (ED54 Pin x 4 1/2" IF Box), Type: Steel	BD	BD15901	4 1/2" IF Box	EverDrlg54 Pin	3.500	6.750		3.74	3514.96
Agitator Description: Agitator, Size (in): 6.75	NOV	W-1815034-77	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.43	3540.39
Crossover Sub Description: X-Over (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD12360	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.65	3544.04





Mud Motor Reports

Wool Head 20 State Com 607H (WT-19-180)

2019-11-19 to 2020-01-09

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



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 1 (17.5" SURFACE)

Motor Details		Date/Depth/Distances	Hours
S/N	800-003 AIM	Date In	2019-11-21 17:30
Size (in)	8.0	Depth In (ft)	145.00
Lobe/Stage	7/8, 4.00	Date Out	2019-11-22 12:45
Bend Angle	1.5	Depth Out (ft)	1861.00
Speed (rev/gal)	0.17	Total Drilled (ft)	1716.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	95.00
Manufacturer	N/A	Distance Rotated (ft)	1621.00
Motor Results		% Distance Sliding	5.54%
Motor Incident	No	% Distance Rotating	94.46%
Average Total ROP (ft/h)	136.37	BHA Parameters	
Average Slide ROP (ft/h)	31.67	Flow Rate (gpm)	500.00 - 840.00
Average Rotating ROP (ft/h)	169.15	Stalls	0
Bit Details		Stall Pressure (psi)	0.00
OD (in)	17.500	On Bottom Pressure (psi)	1450.00 - 2600.00
Vendor	BAKER	Off Bottom Pressure (psi)	850.00 - 2000.00
S/N	7046740	NPT	0.0
Nozzles	9-12's	BHA Objective	
Total Flow Area (in ²)	0.994	DRILL SURFACE	
Bit Type	PDC		
Bit Distances			
Bend (°): 4.70 ft, Survey (°): 62.00 ft			
Mud Properties			
Type	Water		
WT	8.40		
VIS	32.00		
PV	0.00		
YP	0.00		
POOH Reason/Notes			
Total Depth/Casing Point: N/A			
Incident Notes			
Directional: N/A			
MWD:			
Comments			
Directional: Flow Rate: 400-900, Max Diff: 900 psi, Max Torque: 14,930 ft-lbs, BIT Runs:			
MWD:			

	Job Number WT-19-180	Operator Advance Energy Partners		Rig Name H&P #389
	Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H		Legal Well Name AFE Wool Head 20 State Com 607H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Mud Motor Report - BHA 2 (Intermediate 12.25")

Motor Details		Date/Depth/Distances		Hours	
S/N	800-40-002 AIM	Date In	2019-11-25 13:00	Downhole Hours	30.25
Size (in)	8.0	Depth In (ft)	1861.00	Drilling/Circulating Hours	21.17
Lobe/Stage	7/8, 5.90	Date Out	2019-11-26 19:15		
Bend Angle	1.5	Depth Out (ft)	4903.00	Circulating Hours	2.08
Speed (rev/gal)	0.17	Total Drilled (ft)	3042.00	Drilling Hours	19.08
Wear Pad OD (in)	8.375	Distance Slid (ft)	40.00	Sliding Hours	0.42
Manufacturer	N/A	Distance Rotated (ft)	3002.00	Rotating Hours	18.67
Motor Results		% Distance Sliding	1.31%	% Hours Rotating	97.82%
Motor Incident	No	% Distance Rotating	98.69%	% Hours Sliding	2.18%
Average Total ROP (ft/h)	159.41	BHA Parameters			
Average Slide ROP (ft/h)	96.00	Flow Rate (gpm)	600.00 - 840.00	Motor RPM	85.00 - 143.00
Average Rotating ROP (ft/h)	160.82	Stalls	0	Surface RPM	50.00 - 80.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	25.00 - 40.00
OD (in)	12.250	On Bottom Pressure (psi)	2050.00 - 3900.00	Sliding WOB (klbs)	17.00 - 20.00
Vendor	BAKER	Off Bottom Pressure (psi)	1400.00 - 3200.00	Temp (°F)	98.60 - 98.60
S/N	7163628	NPT	0.0		
Nozzles	6-12's	BHA Objective			
Total Flow Area (in²)	0.662	Drill Intermediate			
Bit Type	PDC				
Bit Distances					
Bend (°): 6.16 ft, Survey (°): 70.00 ft					
Mud Properties					
Type	Brine				
WT	10.10				
VIS	30.00				
PV	0.00				
YP	0.00				
POOH Reason/Notes					
Penetration Rate					
Incident Notes					
Directional: Bit was Rung Out					
MWD:					
Comments					
Directional: Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:					
MWD:					

	Job Number	Operator		Rig Name
	WT-19-180	Advance Energy Partners		H&P #389
	Start Date	Well Name		Legal Well Name AFE
	2019-11-19	Wool Head 20 State Com 607H		Wool Head 20 State Com 607H
Play		State/Province and Country	County	Company Man
Delaware Basin		New Mexico, US	Lea	

Mud Motor Report - BHA 3 (Intermediate 12.25")

Motor Details		Date/Depth/Distances		Hours	
S/N	800-40-002 AIM	Date In	2019-11-26 19:15	Downhole Hours	13.50
Size (in)	8.0	Depth In (ft)	4903.00	Drilling/Circulating Hours	7.42
Lobe/Stage	7/8, 5.90	Date Out	2019-11-27 08:45		
Bend Angle	1.5	Depth Out (ft)	5277.00	Circulating Hours	5.00
Speed (rev/gal)	0.17	Total Drilled (ft)	374.00	Drilling Hours	2.42
Wear Pad OD (in)	8.375	Distance Slid (ft)	0.00	Sliding Hours	0.00
Manufacturer	N/A	Distance Rotated (ft)	374.00	Rotating Hours	2.42
Motor Results		% Distance Sliding	0.00%	% Hours Rotating	100.00%
Motor Incident	No	% Distance Rotating	100.00%	% Hours Sliding	0.00%
Average Total ROP (ft/h)	154.76	BHA Parameters			
Average Slide ROP (ft/h)	0.00	Flow Rate (gpm)	800.00 - 800.00	Motor RPM	0.00 - 0.00
Average Rotating ROP (ft/h)	154.76	Stalls	0	Surface RPM	80.00 - 80.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	40.00 - 40.00
OD (in)	12.250	On Bottom Pressure (psi)	3700.00 - 3700.00	Sliding WOB (klbs)	17.00 - 20.00
Vendor	BAKER	Off Bottom Pressure (psi)	2850.00 - 2850.00	Temp (°F)	95.00 - 99.00
S/N	5274456	NPT	0.0		
Nozzles	6-12's	BHA Objective			
Total Flow Area (in²)	0.662	Drill Intermediate			
Bit Type	PDC				
Bit Distances					
Bend (°): 6.16 ft, Survey (°): 70.00 ft					
Mud Properties					
Type	Brine				
WT	10.00				
VIS	28.00				
PV	2.00				
YP	1.00				
POOH Reason/Notes					
Total Depth/Casing Point: Pooh to run Casing					
Incident Notes					
Directional: NONE					
MWD:					
Comments					
Directional: Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:					
MWD:					



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 4 (BHA #4 (8.5" Intermediate))

Motor Details		Date/Depth/Distances	Hours
S/N	AIM 700-40-033	Date In	2019-12-06 02:15
Size (in)	7.0	Depth In (ft)	5277.00
Lobe/Stage	7/8, 8.50	Date Out	2019-12-08 14:00
Bend Angle	1.5	Depth Out (ft)	11285.00
Speed (rev/gal)	0.26	Total Drilled (ft)	6008.00
Wear Pad OD (in)	7.187	Distance Slid (ft)	136.00
Manufacturer	N/A	Distance Rotated (ft)	5872.00
Motor Results		% Distance Sliding	2.26%
Motor Incident	Yes	% Distance Rotating	97.74%
Average Total ROP (ft/h)	141.09		
Average Slide ROP (ft/h)	74.18		
Average Rotating ROP (ft/h)	144.10		
Bit Details			
OD (in)	8.500	On Bottom Pressure (psi)	500.00 - 3300.00
Vendor	NOV	Off Bottom Pressure (psi)	1600.00 - 2500.00
S/N	A269255	NPT	0.0
Nozzles	6 x 16		
Total Flow Area (in ²)	1.178		
Bit Type	PDC		
Bit Distances			
Bend (Bit to Bend): 5.45 ft, Survey (Bit to Survey): 68.00 ft, Gamma (Bit to Gamma): 53.00 ft			
Mud Properties			
Type	Brine		
WT	10.00		
VIS	32.00		
PV	3.00		
YP	1.00		
POOH Reason/Notes			
Total Depth/Casing Point: TD section, Pooh called 40' early due to loss of ROP. Lost all diff and ROP.			
Incident Notes			
Directional: Once on surface Motor would not drain. Bearing squat was 1/2"			
MWD:			
Comments			
Directional: Aim Motor: 1.5 FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab. Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: NOV, SN: A269255 Type: TKC66Q1, Jets: 6 x 16, TFA: 1.178 Runs: 0			
MWD:			



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 5 (BHA #5 (Curve Assembly))

Motor Details		Date/Depth/Distances		Hours	
S/N	CDM 650-013	Date In	2019-12-31 06:30	Downhole Hours	29.50
Size (in)	6.75	Depth In (ft)	11285.00	Drilling/Circulating Hours	14.67
Lobe/Stage	7/8, 5.00	Date Out	2020-01-01 12:00		
Bend Angle	2.12	Depth Out (ft)	12376.00	Circulating Hours	2.58
Speed (rev/gal)	0.29	Total Drilled (ft)	1091.00	Drilling Hours	12.08
Wear Pad OD (in)	7.000	Distance Slid (ft)	480.00	Sliding Hours	6.33
Manufacturer	N/A	Distance Rotated (ft)	611.00	Rotating Hours	5.75
Motor Results		% Distance Sliding	44.00%	% Hours Rotating	47.59%
Motor Incident	No	% Distance Rotating	56.00%	% Hours Sliding	52.41%
Average Total ROP (ft/h)	90.29	BHA Parameters			
Average Slide ROP (ft/h)	75.79	Flow Rate (gpm)	600.00 - 600.00	Motor RPM	173.00 - 173.00
Average Rotating ROP (ft/h)	106.26	Stalls	0	Surface RPM	40.00 - 40.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	25.00 - 40.00
OD (in)	8.500	On Bottom Pressure (psi)	3150.00 - 3300.00	Sliding WOB (klbs)	45.00 - 50.00
Vendor	Ultrerra	Off Bottom Pressure (psi)	2400.00 - 2850.00	Temp (°F)	85.00 - 141.00
S/N	51320	NPT	0.0		
Nozzles	6 x 22	BHA Objective			
Total Flow Area (in²)	2.227	Drill Curve 10°/100'			
Bit Type	PDC				
Bit Distances					
Bend (Bit to Bend): 4.07 ft, Survey (Bit to Survey): 53.00 ft, Gamma (Bit to Gamma): 38.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.50				
VIS	67.00				
PV	19.00				
YP	7.00				
POOH Reason/Notes					
Change Bottom Hole Assembly: Landed Curve / Pooh to Log Curve					
Incident Notes					
Directional: Motor Drained as expected with a slight knocking noise at the bent housing. Squat with about 1/8"					
MWD:					
Comments					
Directional: Aim Motor: 2.12° FBH 7/8 5.0 Stg Mtr w/ Slick Sleeve Flow Rate: 300 - 600 gpm, Max Diff: 1130 psi, Max Operating Torque: 10,460 ft-lbs, Bit Info: Ultrerra, SN: 51320 Type: CF611, Jets: 6 x 22, TFA: 2.227 Runs: 0					
MWD:					



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 6 (BHA #6 (Lateral Assembly))

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-025	Date In	2020-01-02 17:00	Downhole Hours	96.00
Size (in)	7.0	Depth In (ft)	12376.00	Drilling/Circulating Hours	65.75
Lobe/Stage	7/8, 8.50	Date Out	2020-01-06 17:00		
Bend Angle	1.75	Depth Out (ft)	19418.00	Circulating Hours	3.92
Speed (rev/gal)	0.26	Total Drilled (ft)	7042.00	Drilling Hours	61.83
Wear Pad OD (in)	7.250	Distance Slid (ft)	605.00	Sliding Hours	15.83
Manufacturer	N/A	Distance Rotated (ft)	6437.00	Rotating Hours	46.00
Motor Results		% Distance Sliding	8.59%	% Hours Rotating	74.39%
Motor Incident	No	% Distance Rotating	91.41%	% Hours Sliding	25.61%
Average Total ROP (ft/h)	113.89	BHA Parameters			
Average Slide ROP (ft/h)	38.21	Flow Rate (gpm)	650.00 - 750.00	Motor RPM	0.00 - 0.00
Average Rotating ROP (ft/h)	139.93	Stalls	0	Surface RPM	50.00 - 80.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	45.00 - 55.00
OD (in)	8.500	On Bottom Pressure (psi)	4000.00 - 5330.00	Sliding WOB (klbs)	20.00 - 45.00
Vendor	Baker	Off Bottom Pressure (psi)	3700.00 - 4500.00	Temp (°F)	200.00 - 215.00
S/N	5305827	NPT	0.0		
Nozzles	6 x 22	BHA Objective			
Total Flow Area (in²)	2.227	Drill Lateral			
Bit Type	PDC				
Bit Distances					
Bend (Bit to Bend): 5.30 ft, Survey (Bit to Survey): 63.00 ft, Gamma (Bit to Gamma): 48.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.00				
VIS	50.00				
PV	0.00				
YP	0.00				
POOH Reason/Notes					
Total Depth/Casing Point					
Incident Notes					
Directional:					
MWD:					
Comments					
Directional: Aim Motor: 1.75° FBH 7/8 8.5 Stg Mtr. Slick Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: Baker, SN: 5305827 Type: DD506TWX, Jets: 6 x 22, TFA: 2.227 Runs: 0					
MWD:					



Slide/Rotate Reports

Wool Head 20 State Com 607H (WT-19-180)

2019-11-19 to 2020-01-09

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



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #1 (17.5" 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	11-21	17:45	18:45	11-21	1.0	145.00	297.00	152.00	152.00	N/A	500.00	40.0	20.00	1450.00	850.00	Surface
Rotate	11-21	18:55	19:10	11-21	0.25	297.00	391.00	94.00	376.00	N/A	600.00	40.0	15.00	1450.00	850.00	Surface
Rotate	11-21	19:15	19:40	11-21	0.42	391.00	486.00	95.00	228.00	N/A	750.00	50.0	15.00	1900.00	1500.00	Surface
Rotate	11-21	19:45	20:05	11-21	0.33	486.00	580.00	94.00	282.00	N/A	750.00	50.0	15.00	1900.00	1500.00	Surface
Rotate	11-21	20:10	20:30	11-21	0.33	580.00	675.00	95.00	285.00	N/A	750.00	50.0	15.00	1900.00	1500.00	Surface
Rotate	11-21	20:30	20:55	11-21	0.42	675.00	769.00	94.00	225.60	N/A	750.00	50.0	15.00	1900.00	1500.00	Surface
Rotate	11-21	21:00	21:50	11-21	0.83	769.00	958.00	189.00	226.80	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-21	21:55	22:20	11-21	0.42	958.00	1053.00	95.00	228.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-21	22:25	23:00	11-21	0.58	1053.00	1146.00	93.00	159.43	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-21	23:10	23:40	11-21	0.5	1146.00	1240.00	94.00	188.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-21	23:45	00:20	11-22	0.58	1240.00	1334.00	94.00	161.14	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-22	02:40	03:30	11-22	0.83	1334.00	1427.00	93.00	111.60	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Slide	11-22	03:35	04:40	11-22	1.08	1427.00	1457.00	30.00	27.69	65.0	700.00	N/A	17.00	2050.00	1700.00	Surface
Rotate	11-22	04:40	05:00	11-22	0.33	1457.00	1521.00	64.00	192.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-22	05:05	05:10	11-22	0.08	1521.00	1526.00	5.00	60.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Slide	11-22	05:10	06:20	11-22	1.17	1526.00	1571.00	45.00	38.57	60.0	700.00	N/A	17.00	2050.00	1700.00	Surface
Rotate	11-22	06:20	06:40	11-22	0.33	1571.00	1610.00	39.00	117.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-22	06:45	07:20	11-22	0.58	1610.00	1700.00	90.00	154.29	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-22	07:25	08:40	11-22	1.25	1700.00	1789.00	89.00	71.20	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Rotate	11-22	08:45	08:50	11-22	0.08	1789.00	1794.00	5.00	60.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface
Slide	11-22	08:50	09:35	11-22	0.75	1794.00	1814.00	20.00	26.67	45.0	700.00	N/A	17.00	2050.00	1700.00	Surface
Rotate	11-22	09:35	10:00	11-22	0.42	1814.00	1861.00	47.00	112.80	N/A	840.00	50.0	25.00	2600.00	2000.00	Surface, Intermediate



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #2 (Intermediate 12.25")

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	11-25	15:45	15:55	11-25	0.17	1861.00	1888.00	27.00	162.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Intermediate
Rotate	11-25	16:00	16:25	11-25	0.42	1888.00	1978.00	90.00	216.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Intermediate
Rotate	11-25	16:30	16:35	11-25	0.08	1978.00	1991.00	13.00	156.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Intermediate
Slide	11-25	16:35	16:45	11-25	0.17	1991.00	2011.00	20.00	120.00	45.0	700.00	N/A	17.00	2050.00	1700.00	Intermediate
Rotate	11-25	16:45	17:00	11-25	0.25	2011.00	2068.00	57.00	228.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Intermediate
Rotate	11-25	17:05	17:30	11-25	0.42	2068.00	2157.00	89.00	213.60	N/A	840.00	50.0	25.00	2600.00	2000.00	Intermediate
Rotate	11-25	17:35	17:55	11-25	0.33	2157.00	2247.00	90.00	270.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Intermediate
Rotate	11-25	18:00	18:20	11-25	0.33	2247.00	2337.00	90.00	270.00	N/A	840.00	50.0	25.00	2600.00	2000.00	Intermediate
Rotate	11-25	18:25	18:50	11-25	0.42	2337.00	2426.00	89.00	213.60	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	18:55	19:20	11-25	0.42	2426.00	2516.00	90.00	216.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	19:25	19:40	11-25	0.25	2516.00	2606.00	90.00	360.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	19:45	20:05	11-25	0.33	2606.00	2695.00	89.00	267.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	20:10	20:25	11-25	0.25	2695.00	2785.00	90.00	360.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	20:30	20:55	11-25	0.42	2785.00	2875.00	90.00	216.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	21:00	21:15	11-25	0.25	2875.00	2964.00	89.00	356.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	21:20	21:35	11-25	0.25	2964.00	3054.00	90.00	360.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	21:40	22:05	11-25	0.42	3054.00	3143.00	89.00	213.60	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Rotate	11-25	22:10	22:30	11-25	0.33	3143.00	3233.00	90.00	270.00	N/A	840.00	80.0	40.00	3200.00	2400.00	Intermediate
Slide	11-25	22:35	22:50	11-25	0.25	3233.00	3253.00	20.00	80.00	280.0	840.00	N/A	20.00	3600.00	3200.00	Intermediate
Rotate	11-25	22:50	23:05	11-25	0.25	3253.00	3323.00	70.00	280.00	N/A	840.00	80.0	35.00	3900.00	3200.00	Intermediate
Rotate	11-25	23:10	23:40	11-25	0.5	3323.00	3412.00	89.00	178.00	N/A	840.00	80.0	35.00	3900.00	3200.00	Intermediate
Rotate	11-25	23:45	01:00	11-26	1.25	3412.00	3591.00	179.00	143.20	N/A	840.00	80.0	35.00	3900.00	3200.00	Intermediate
Rotate	11-26	01:05	01:35	11-26	0.5	3591.00	3681.00	90.00	180.00	N/A	840.00	80.0	35.00	3900.00	3200.00	Intermediate
Rotate	11-26	01:40	02:05	11-26	0.42	3681.00	3770.00	89.00	213.60	N/A	840.00	80.0	35.00	3900.00	3200.00	Intermediate
Rotate	11-26	02:10	02:45	11-26	0.58	3770.00	3860.00	90.00	154.29	N/A	840.00	80.0	35.00	3900.00	3200.00	Intermediate
Rotate	11-26	02:50	03:55	11-26	1.08	3860.00	3950.00	90.00	83.08	N/A	840.00	80.0	35.00	3900.00	3200.00	Intermediate
Rotate	11-26	04:00	04:30	11-26	0.5	3950.00	3969.00	19.00	38.00	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	07:15	08:20	11-26	1.08	3969.00	4040.00	71.00	65.54	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	08:25	09:05	11-26	0.67	4040.00	4129.00	89.00	133.50	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	09:05	09:50	11-26	0.75	4129.00	4219.00	90.00	120.00	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	09:55	10:50	11-26	0.92	4219.00	4308.00	89.00	97.09	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	10:55	11:40	11-26	0.75	4308.00	4398.00	90.00	120.00	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	11:50	12:20	11-26	0.5	4398.00	4488.00	90.00	180.00	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	12:25	12:55	11-26	0.5	4488.00	4578.00	90.00	180.00	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	13:00	13:30	11-26	0.5	4578.00	4667.00	89.00	178.00	N/A	600.00	80.0	40.00	2200.00	1400.00	Intermediate
Rotate	11-26	13:35	14:00	11-26	0.42	4667.00	4757.00	90.00	216.00	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate
Rotate	11-26	14:05	15:00	11-26	0.92	4757.00	4846.00	89.00	97.09	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate
Rotate	11-26	15:15	16:30	11-26	1.25	4846.00	4903.00	57.00	45.60	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #3 (Intermediate 12.25")

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	11-27	01:45	02:00	11-27	0.25	4903.00	4936.00	33.00	132.00	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate
Rotate	11-27	02:05	02:40	11-27	0.58	4936.00	5026.00	90.00	154.29	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate
Rotate	11-27	02:45	03:25	11-27	0.67	5026.00	5115.00	89.00	133.50	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate
Rotate	11-27	03:30	04:00	11-27	0.5	5115.00	5205.00	90.00	180.00	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate
Rotate	11-27	04:05	04:30	11-27	0.42	5205.00	5277.00	72.00	172.80	N/A	800.00	80.0	40.00	3700.00	2850.00	Intermediate



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #4 (BHA #4 (8.5" 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	12-06	06:45	07:00	12-06	0.25	5277.00	5379.00	102.00	408.00	N/A	550.00	50.0	25.00	3300.00	1600.00	Intermediate
Rotate	12-06	07:05	07:20	12-06	0.25	5379.00	5469.00	90.00	360.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	07:25	07:40	12-06	0.25	5469.00	5558.00	89.00	356.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	07:45	07:55	12-06	0.17	5558.00	5648.00	90.00	540.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	08:00	08:05	12-06	0.08	5648.00	5680.00	32.00	384.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Slide	12-06	08:05	08:15	12-06	0.17	5680.00	5695.00	15.00	90.00	20.0	750.00	N/A	22.00	2900.00	2500.00	Intermediate
Rotate	12-06	08:15	08:20	12-06	0.08	5695.00	5738.00	43.00	516.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	08:25	08:40	12-06	0.25	5738.00	5827.00	89.00	356.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	08:45	08:50	12-06	0.08	5827.00	5835.00	8.00	96.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Slide	12-06	08:50	08:55	12-06	0.08	5835.00	5845.00	10.00	120.00	90.0	750.00	N/A	22.00	2900.00	2500.00	Intermediate
Rotate	12-06	08:55	09:00	12-06	0.08	5845.00	5917.00	72.00	864.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	09:05	09:15	12-06	0.17	5917.00	5932.00	15.00	90.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Slide	12-06	09:15	09:25	12-06	0.17	5932.00	5942.00	10.00	60.00	150.0	750.00	N/A	22.00	2900.00	2500.00	Intermediate
Rotate	12-06	09:25	09:45	12-06	0.33	5942.00	6007.00	65.00	195.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	09:50	10:05	12-06	0.25	6007.00	6096.00	89.00	356.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	10:10	10:20	12-06	0.17	6096.00	6186.00	90.00	540.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	10:25	10:30	12-06	0.08	6186.00	6276.00	90.00	1080.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	10:35	10:40	12-06	0.08	6276.00	6365.00	89.00	1068.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	10:45	10:55	12-06	0.17	6365.00	6455.00	90.00	540.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	11:00	11:05	12-06	0.08	6455.00	6462.00	7.00	84.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Slide	12-06	11:05	11:10	12-06	0.08	6462.00	6477.00	15.00	180.00	65.0	750.00	N/A	22.00	2900.00	2500.00	Intermediate
Rotate	12-06	11:10	11:20	12-06	0.17	6477.00	6545.00	68.00	408.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	11:25	11:30	12-06	0.08	6545.00	6635.00	90.00	1080.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	11:35	11:45	12-06	0.17	6635.00	6724.00	89.00	534.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	11:50	12:00	12-06	0.17	6724.00	6814.00	90.00	540.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	12:05	12:15	12-06	0.17	6814.00	6904.00	90.00	540.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	12:20	12:45	12-06	0.42	6904.00	6993.00	89.00	213.60	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	12:50	13:15	12-06	0.42	6993.00	7083.00	90.00	216.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	13:20	13:35	12-06	0.25	7083.00	7172.00	89.00	356.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	13:40	13:45	12-06	0.08	7172.00	7185.00	13.00	156.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Slide	12-06	13:45	13:50	12-06	0.08	7185.00	7200.00	15.00	180.00	20.0	750.00	N/A	26.00	2900.00	2500.00	Intermediate
Rotate	12-06	13:50	14:05	12-06	0.25	7200.00	7262.00	62.00	248.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	14:10	14:35	12-06	0.42	7262.00	7352.00	90.00	216.00	N/A	750.00	50.0	25.00	3300.00	2500.00	Intermediate
Rotate	12-06	14:40	15:05	12-06	0.42	7352.00	7441.00	89.00	213.60	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	15:10	15:30	12-06	0.33	7441.00	7531.00	90.00	270.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	15:35	16:00	12-06	0.42	7531.00	7621.00	90.00	216.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	16:05	16:30	12-06	0.42	7621.00	7711.00	90.00	216.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	16:35	16:45	12-06	0.17	7711.00	7732.00	21.00	126.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Slide	12-06	16:45	17:00	12-06	0.25	7732.00	7748.00	16.00	64.00	340.0	750.00	N/A	26.00	2900.00	2500.00	Intermediate
Rotate	12-06	17:00	17:10	12-06	0.17	7748.00	7801.00	53.00	318.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	17:15	17:50	12-06	0.58	7801.00	7890.00	89.00	152.57	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	17:55	18:35	12-06	0.67	7890.00	7980.00	90.00	135.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	18:40	19:15	12-06	0.58	7980.00	8070.00	90.00	154.29	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	19:20	19:50	12-06	0.5	8070.00	8159.00	89.00	178.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	19:55	20:35	12-06	0.67	8159.00	8249.00	90.00	135.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	20:40	21:10	12-06	0.5	8249.00	8339.00	90.00	180.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	21:15	21:40	12-06	0.42	8339.00	8428.00	89.00	213.60	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	21:45	22:25	12-06	0.67	8428.00	8518.00	90.00	135.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	22:30	23:15	12-06	0.75	8518.00	8608.00	90.00	120.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-06	23:20	00:00	12-07	0.67	8608.00	8668.00	60.00	90.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	00:00	00:10	12-07	0.17	8668.00	8698.00	30.00	180.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	00:15	01:10	12-07	0.92	8698.00	8788.00	90.00	98.18	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	01:15	02:05	12-07	0.83	8788.00	8877.00	89.00	106.80	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	02:10	03:10	12-07	1.0	8877.00	8967.00	90.00	90.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	03:15	03:50	12-07	0.58	8967.00	9057.00	90.00	154.29	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	03:55	04:45	12-07	0.83	9057.00	9146.00	89.00	106.80	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	04:50	05:45	12-07	0.92	9146.00	9236.00	90.00	98.18	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	06:15	07:00	12-07	0.75	9236.00	9326.00	90.00	120.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	07:05	07:55	12-07	0.83	9326.00	9415.00	89.00	106.80	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	08:00	08:40	12-07	0.67	9415.00	9505.00	90.00	135.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	08:45	09:25	12-07	0.67	9505.00	9595.00	90.00	135.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	09:30	09:55	12-07	0.42	9595.00	9685.00	90.00	216.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	10:00	10:05	12-07	0.08	9685.00	9695.00	10.00	120.00	N/A	750.00	60.0	40.00	3300.00	2500.00	Intermediate
Slide	12-07	10:05	10:20	12-07	0.25	9695.00	9712.00	17.00	68.00	90.0	750.00	N/A	42.00	2900.00	2500.00	Intermediate

Rotate	12-07	10:20	10:50	12-07	0.5	9712.00	9774.00	62.00	124.00	N/A	750.00	45.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	10:55	11:30	12-07	0.58	9774.00	9864.00	90.00	154.29	N/A	750.00	45.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	11:35	12:25	12-07	0.83	9864.00	9954.00	90.00	108.00	N/A	750.00	45.0	40.00	3300.00	2500.00	Intermediate
Rotate	12-07	12:30	13:15	12-07	0.75	9954.00	10043.00	89.00	118.67	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	13:20	14:20	12-07	1.0	10043.00	10133.00	90.00	90.00	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	14:25	15:30	12-07	1.08	10133.00	10223.00	90.00	83.08	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	15:35	16:40	12-07	1.08	10223.00	10312.00	89.00	82.15	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	16:45	17:55	12-07	1.17	10312.00	10402.00	90.00	77.14	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	18:00	19:15	12-07	1.25	10402.00	10492.00	90.00	72.00	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	19:20	20:25	12-07	1.08	10492.00	10581.00	89.00	82.15	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	20:30	21:40	12-07	1.17	10581.00	10671.00	90.00	77.14	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	21:45	23:10	12-07	1.42	10671.00	10760.00	89.00	62.82	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-07	23:15	00:00	12-08	0.75	10760.00	10813.00	53.00	70.67	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-08	00:00	00:25	12-08	0.42	10813.00	10850.00	37.00	88.80	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-08	00:30	01:35	12-08	1.08	10850.00	10940.00	90.00	83.08	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-08	01:40	02:50	12-08	1.17	10940.00	11029.00	89.00	76.29	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-08	02:55	03:10	12-08	0.25	11029.00	11032.00	3.00	12.00	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Slide	12-08	03:10	03:25	12-08	0.25	11032.00	11050.00	18.00	72.00	90.0	750.00	N/A	40.00	500.00	2500.00	Intermediate
Rotate	12-08	03:25	04:10	12-08	0.75	11050.00	11119.00	69.00	92.00	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-08	04:15	04:20	12-08	0.08	11119.00	11120.00	1.00	12.00	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Slide	12-08	04:20	04:50	12-08	0.5	11120.00	11140.00	20.00	40.00	30.0	750.00	N/A	40.00	500.00	2500.00	Intermediate
Rotate	12-08	04:50	05:40	12-08	0.83	11140.00	11209.00	69.00	82.80	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate
Rotate	12-08	05:45	07:15	12-08	1.5	11209.00	11285.00	76.00	50.67	N/A	750.00	45.0	43.00	3300.00	2500.00	Intermediate, Curve



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #5 (BHA #5 (Curve Assembly))

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	12-31	15:15	15:45	12-31	0.5	11285.00	11301.00	16.00	32.00	N/A	600.00	40.0	25.00	3300.00	2850.00	Curve
Rotate	12-31	15:50	16:05	12-31	0.25	11301.00	11331.00	30.00	120.00	N/A	600.00	40.0	25.00	3300.00	2850.00	Curve
Slide	12-31	16:05	16:50	12-31	0.75	11331.00	11390.00	59.00	78.67	0.0	600.00	N/A	45.00	3200.00	2850.00	Curve
Slide	12-31	17:00	18:00	12-31	1.0	11390.00	11480.00	90.00	90.00	0.0	600.00	N/A	45.00	3200.00	2850.00	Curve
Rotate	12-31	18:10	18:25	12-31	0.25	11480.00	11505.00	25.00	100.00	N/A	600.00	40.0	30.00	3300.00	2850.00	Curve
Slide	12-31	18:25	19:15	12-31	0.83	11505.00	11569.00	64.00	76.80	350.0	600.00	N/A	50.00	3200.00	2850.00	Curve
Rotate	12-31	19:25	19:55	12-31	0.5	11569.00	11624.00	55.00	110.00	N/A	600.00	40.0	30.00	3300.00	2850.00	Curve
Slide	12-31	19:55	20:25	12-31	0.5	11624.00	11659.00	35.00	70.00	0.0	600.00	N/A	50.00	3200.00	2850.00	Curve
Rotate	12-31	20:35	21:10	12-31	0.58	11659.00	11714.00	55.00	94.29	N/A	600.00	40.0	30.00	3300.00	2850.00	Curve
Slide	12-31	21:10	21:40	12-31	0.5	11714.00	11748.00	34.00	68.00	0.0	600.00	N/A	50.00	3200.00	2850.00	Curve
Rotate	12-31	21:50	22:15	12-31	0.42	11748.00	11793.00	45.00	108.00	N/A	600.00	40.0	30.00	3300.00	2850.00	Curve
Slide	12-31	22:15	22:45	12-31	0.5	11793.00	11833.00	40.00	80.00	0.0	600.00	N/A	50.00	3200.00	2850.00	Curve
Rotate	12-31	22:45	22:50	12-31	0.08	11833.00	11838.00	5.00	60.00	N/A	600.00	40.0	30.00	3300.00	2850.00	Curve
Rotate	12-31	23:00	23:45	12-31	0.75	11838.00	11928.00	90.00	120.00	N/A	600.00	40.0	40.00	3300.00	2850.00	Curve
Rotate	12-31	23:55	00:00	01-01	0.08	11928.00	11943.00	15.00	180.00	N/A	600.00	40.0	40.00	3300.00	2850.00	Curve
Slide	01-01	00:00	00:45	01-01	0.75	11943.00	11993.00	50.00	66.67	0.0	600.00	N/A	50.00	3150.00	2400.00	Curve
Rotate	01-01	00:45	01:00	01-01	0.25	11993.00	12017.00	24.00	96.00	N/A	600.00	40.0	40.00	3150.00	2400.00	Curve
Rotate	01-01	01:10	01:25	01-01	0.25	12017.00	12044.00	27.00	108.00	N/A	600.00	40.0	40.00	3150.00	2400.00	Curve
Slide	01-01	01:25	01:50	01-01	0.42	12044.00	12069.00	25.00	60.00	15.0	600.00	N/A	50.00	3150.00	2400.00	Curve
Rotate	01-01	01:50	02:15	01-01	0.42	12069.00	12107.00	38.00	91.20	N/A	600.00	40.0	40.00	3150.00	2400.00	Curve
Rotate	01-01	02:25	02:45	01-01	0.33	12107.00	12153.00	46.00	138.00	N/A	600.00	40.0	40.00	3150.00	2400.00	Curve
Slide	01-01	02:45	03:10	01-01	0.42	12153.00	12183.00	30.00	72.00	15.0	600.00	N/A	50.00	3150.00	2400.00	Curve
Rotate	01-01	03:10	03:20	01-01	0.17	12183.00	12196.00	13.00	78.00	N/A	600.00	40.0	40.00	3150.00	2400.00	Curve
Rotate	01-01	03:30	03:45	01-01	0.25	12196.00	12233.00	37.00	148.00	N/A	600.00	40.0	40.00	3150.00	2400.00	Curve
Slide	01-01	03:45	04:25	01-01	0.67	12233.00	12286.00	53.00	79.50	15.0	600.00	N/A	50.00	3150.00	2400.00	Curve
Rotate	01-01	04:35	05:15	01-01	0.67	12286.00	12376.00	90.00	135.00	N/A	600.00	40.0	40.00	3150.00	2400.00	Curve, Lateral



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #6 (BHA #6 (Lateral Assembly))

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	01-03	00:00	01:55	01-03	1.92	12376.00	12508.00	132.00	68.87	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	02:10	02:45	01-03	0.58	12508.00	12597.00	89.00	152.57	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	02:50	03:45	01-03	0.92	12597.00	12690.00	93.00	101.45	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Slide	01-03	03:45	04:50	01-03	1.08	12690.00	12705.00	15.00	13.85	60.0	650.00	N/A	30.00	4200.00	3800.00	Lateral
Rotate	01-03	04:50	05:25	01-03	0.58	12705.00	12776.00	71.00	121.71	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	05:30	06:30	01-03	1.0	12776.00	12866.00	90.00	90.00	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	06:40	06:50	01-03	0.17	12866.00	12878.00	12.00	72.00	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Slide	01-03	06:50	07:20	01-03	0.5	12878.00	12898.00	20.00	40.00	90.0	650.00	N/A	30.00	4200.00	3800.00	Lateral
Rotate	01-03	07:20	07:45	01-03	0.42	12898.00	12955.00	57.00	136.80	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	07:55	08:30	01-03	0.58	12955.00	13045.00	90.00	154.29	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	08:40	09:20	01-03	0.67	13045.00	13134.00	89.00	133.50	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	09:35	10:10	01-03	0.58	13134.00	13224.00	90.00	154.29	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Rotate	01-03	10:20	10:30	01-03	0.17	13224.00	13238.00	14.00	84.00	N/A	750.00	50.0	45.00	4850.00	4000.00	Lateral
Slide	01-03	10:30	10:50	01-03	0.33	13238.00	13260.00	22.00	66.00	80.0	750.00	N/A	30.00	4650.00	4300.00	Lateral
Rotate	01-03	10:50	11:10	01-03	0.33	13260.00	13313.00	53.00	159.00	N/A	750.00	60.0	50.00	4900.00	4300.00	Lateral
Rotate	01-03	11:20	11:45	01-03	0.42	13313.00	13403.00	90.00	216.00	N/A	750.00	60.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	11:50	12:20	01-03	0.5	13403.00	13492.00	89.00	178.00	N/A	750.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	12:30	12:40	01-03	0.17	13492.00	13502.00	10.00	60.00	N/A	750.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-03	12:40	13:15	01-03	0.58	13502.00	13525.00	23.00	39.43	150.0	700.00	N/A	35.00	4650.00	4300.00	Lateral
Rotate	01-03	13:15	13:30	01-03	0.25	13525.00	13582.00	57.00	228.00	N/A	750.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	13:35	13:40	01-03	0.08	13582.00	13592.00	10.00	120.00	N/A	750.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-03	13:40	14:10	01-03	0.5	13592.00	13607.00	15.00	30.00	140.0	700.00	N/A	35.00	4650.00	4300.00	Lateral
Rotate	01-03	14:10	14:30	01-03	0.33	13607.00	13672.00	65.00	195.00	N/A	750.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	14:35	14:40	01-03	0.08	13672.00	13687.00	15.00	180.00	N/A	750.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-03	14:40	15:00	01-03	0.33	13687.00	13697.00	10.00	30.00	130.0	700.00	N/A	35.00	4650.00	4300.00	Lateral
Rotate	01-03	15:00	15:20	01-03	0.33	13697.00	13761.00	64.00	192.00	N/A	750.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	15:25	15:55	01-03	0.5	13761.00	13851.00	90.00	180.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	16:05	16:35	01-03	0.5	13851.00	13940.00	89.00	178.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	16:40	17:05	01-03	0.42	13940.00	14029.00	89.00	213.60	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	17:25	17:50	01-03	0.42	14029.00	14119.00	90.00	216.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	17:55	18:15	01-03	0.33	14119.00	14208.00	89.00	267.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	18:20	18:55	01-03	0.58	14208.00	14298.00	90.00	154.29	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	19:00	19:05	01-03	0.08	14298.00	14305.00	7.00	84.00	N/A	725.00	50.0	50.00	5100.00	4300.00	Lateral
Slide	01-03	19:05	19:35	01-03	0.5	14305.00	14325.00	20.00	40.00	90.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-03	19:35	19:50	01-03	0.25	14325.00	14388.00	63.00	252.00	N/A	725.00	50.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	19:55	20:25	01-03	0.5	14388.00	14477.00	89.00	178.00	N/A	725.00	50.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	20:30	20:55	01-03	0.42	14477.00	14567.00	90.00	216.00	N/A	725.00	50.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	21:00	21:30	01-03	0.5	14567.00	14656.00	89.00	178.00	N/A	725.00	50.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	21:35	22:15	01-03	0.67	14656.00	14746.00	90.00	135.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-03	22:20	23:00	01-03	0.67	14746.00	14776.00	30.00	45.00	135.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-03	23:00	23:20	01-03	0.33	14776.00	14835.00	59.00	177.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-03	23:25	00:00	01-04	0.58	14835.00	14895.00	60.00	102.86	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	00:00	00:15	01-04	0.25	14895.00	14925.00	30.00	120.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	00:20	00:25	01-04	0.08	14925.00	14930.00	5.00	60.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	00:25	01:00	01-04	0.58	14930.00	14945.00	15.00	25.71	215.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-04	01:00	01:15	01-04	0.25	14945.00	15015.00	70.00	280.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	01:20	01:55	01-04	0.58	15015.00	15104.00	89.00	152.57	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	02:00	02:05	01-04	0.08	15104.00	15106.00	2.00	24.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	02:05	02:35	01-04	0.5	15106.00	15131.00	25.00	50.00	0.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-04	02:35	02:45	01-04	0.17	15131.00	15194.00	63.00	378.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	02:50	03:30	01-04	0.67	15194.00	15219.00	25.00	37.50	0.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-04	03:30	03:40	01-04	0.17	15219.00	15284.00	65.00	390.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	03:45	04:20	01-04	0.58	15284.00	15309.00	25.00	42.86	0.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-04	04:20	04:35	01-04	0.25	15309.00	15373.00	64.00	256.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	04:40	05:30	01-04	0.83	15373.00	15463.00	90.00	108.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	05:35	06:05	01-04	0.5	15463.00	15483.00	20.00	40.00	180.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-04	06:05	06:20	01-04	0.25	15483.00	15553.00	70.00	280.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	06:25	07:00	01-04	0.58	15553.00	15642.00	89.00	152.57	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	07:05	07:15	01-04	0.17	15642.00	15657.00	15.00	90.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	07:15	07:25	01-04	0.17	15657.00	15670.00	13.00	78.00	150.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-04	07:25	07:45	01-04	0.33	15670.00	15732.00	62.00	186.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	07:50	08:20	01-04	0.5	15732.00	15822.00	90.00	180.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	08:25	09:00	01-04	0.58	15822.00	15911.00	89.00	152.57	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	09:05	09:45	01-04	0.67	15911.00	16001.00	90.00	135.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral

Rotate	01-04	09:50	10:30	01-04	0.67	16001.00	16091.00	90.00	135.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	10:35	11:10	01-04	0.58	16091.00	16180.00	89.00	152.57	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	11:20	11:30	01-04	0.17	16180.00	16190.00	10.00	60.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	11:30	12:05	01-04	0.58	16190.00	16210.00	20.00	34.29	160.0	650.00	N/A	20.00	4000.00	3700.00	Lateral
Rotate	01-04	12:05	12:30	01-04	0.42	16210.00	16270.00	60.00	144.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	12:35	12:40	01-04	0.08	16270.00	16280.00	10.00	120.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	12:40	13:05	01-04	0.42	16280.00	16300.00	20.00	48.00	180.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-04	13:05	13:35	01-04	0.5	16300.00	16359.00	59.00	118.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	13:40	14:05	01-04	0.42	16359.00	16449.00	90.00	216.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	14:10	14:35	01-04	0.42	16449.00	16539.00	90.00	216.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	14:40	15:20	01-04	0.67	16539.00	16628.00	89.00	133.50	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	15:25	16:05	01-04	0.67	16628.00	16718.00	90.00	135.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	16:10	16:20	01-04	0.17	16718.00	16733.00	15.00	90.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	16:20	16:50	01-04	0.5	16733.00	16758.00	25.00	50.00	140.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-04	16:50	17:10	01-04	0.33	16758.00	16788.00	30.00	90.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	17:10	17:40	01-04	0.5	16788.00	16807.00	19.00	38.00	170.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-04	17:45	18:35	01-04	0.83	16807.00	16897.00	90.00	108.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	19:00	19:40	01-04	0.67	16897.00	16986.00	89.00	133.50	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	19:45	19:50	01-04	0.08	16986.00	17000.00	14.00	168.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	19:50	20:20	01-04	0.5	17000.00	17020.00	20.00	40.00	160.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-04	20:20	20:45	01-04	0.42	17020.00	17076.00	56.00	134.40	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	20:50	21:25	01-04	0.58	17076.00	17165.00	89.00	152.57	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	21:30	21:35	01-04	0.08	17165.00	17179.00	14.00	168.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	21:35	22:30	01-04	0.92	17179.00	17209.00	30.00	32.73	120.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-04	22:30	22:40	01-04	0.17	17209.00	17255.00	46.00	276.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	22:45	22:50	01-04	0.08	17255.00	17259.00	4.00	48.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-04	22:50	23:20	01-04	0.5	17259.00	17274.00	15.00	30.00	135.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-04	23:20	23:40	01-04	0.33	17274.00	17345.00	71.00	213.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-04	23:45	00:00	01-05	0.25	17345.00	17386.00	41.00	164.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-05	00:00	00:10	01-05	0.17	17386.00	17434.00	48.00	288.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-05	00:15	00:35	01-05	0.33	17434.00	17439.00	5.00	15.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Slide	01-05	00:35	01:10	01-05	0.58	17439.00	17479.00	40.00	68.57	120.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-05	01:10	01:25	01-05	0.25	17479.00	17524.00	45.00	180.00	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-05	01:30	02:10	01-05	0.67	17524.00	17613.00	89.00	133.50	N/A	725.00	70.0	50.00	5100.00	4300.00	Lateral
Rotate	01-05	02:15	02:50	01-05	0.58	17613.00	17703.00	90.00	154.29	N/A	725.00	80.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	02:55	03:25	01-05	0.5	17703.00	17792.00	89.00	178.00	N/A	725.00	80.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	03:30	04:10	01-05	0.67	17792.00	17882.00	90.00	135.00	N/A	725.00	80.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	04:15	04:45	01-05	0.5	17882.00	17972.00	90.00	180.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	04:50	05:05	01-05	0.25	17972.00	17976.00	4.00	16.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Slide	01-05	05:05	05:35	01-05	0.5	17976.00	18012.00	36.00	72.00	120.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-05	05:35	05:55	01-05	0.33	18012.00	18061.00	49.00	147.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	06:00	06:05	01-05	0.08	18061.00	18074.00	13.00	156.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Slide	01-05	06:05	06:35	01-05	0.5	18074.00	18094.00	20.00	40.00	90.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-05	06:35	07:00	01-05	0.42	18094.00	18151.00	57.00	136.80	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	07:05	07:50	01-05	0.75	18151.00	18241.00	90.00	120.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	08:00	08:55	01-05	0.92	18241.00	18330.00	89.00	97.09	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	09:25	10:15	01-05	0.83	18330.00	18420.00	90.00	108.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	10:20	11:00	01-05	0.67	18420.00	18509.00	89.00	133.50	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	11:05	11:15	01-05	0.17	18509.00	18522.00	13.00	78.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Slide	01-05	11:15	11:45	01-05	0.5	18522.00	18534.00	12.00	24.00	150.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-05	11:45	12:15	01-05	0.5	18534.00	18599.00	65.00	130.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	12:20	12:45	01-05	0.42	18599.00	18616.00	17.00	40.80	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Slide	01-05	12:45	13:30	01-05	0.75	18616.00	18641.00	25.00	33.33	140.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-05	13:30	13:50	01-05	0.33	18641.00	18689.00	48.00	144.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	13:55	14:40	01-05	0.75	18689.00	18778.00	89.00	118.67	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	14:45	15:25	01-05	0.67	18778.00	18868.00	90.00	135.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	15:30	15:40	01-05	0.17	18868.00	18885.00	17.00	102.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Slide	01-05	15:40	16:40	01-05	1.0	18885.00	18910.00	25.00	25.00	180.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-05	16:40	17:15	01-05	0.58	18910.00	18958.00	48.00	82.29	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	17:20	17:25	01-05	0.08	18958.00	18968.00	10.00	120.00	N/A	725.00	60.0	55.00	5300.00	4400.00	Lateral
Slide	01-05	17:25	18:00	01-05	0.58	18968.00	18988.00	20.00	34.29	180.0	725.00	N/A	45.00	4700.00	4300.00	Lateral
Rotate	01-05	18:00	18:30	01-05	0.5	18988.00	19047.00	59.00	118.00	N/A	725.00	70.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	18:35	19:20	01-05	0.75	19047.00	19137.00	90.00	120.00	N/A	725.00	70.0	55.00	5300.00	4400.00	Lateral
Rotate	01-05	19:25	20:10	01-05	0.75	19137.00	19226.00	89.00	118.67	N/A						Lateral
Rotate	01-05	20:15	21:00	01-05	0.75	19226.00	19316.00	90.00	120.00	N/A	725.00	75.0	55.00	5330.00	4500.00	Lateral
Rotate	01-05	21:05	22:05	01-05	1.0	19316.00	19406.00	90.00	90.00	N/A	725.00	75.0	55.00	5330.00	4500.00	Lateral
Rotate	01-05	22:10	22:20	01-05	0.17	19406.00	19418.00	12.00	72.00	N/A	725.00	75.0	55.00	5330.00	4500.00	Lateral



Daily Reports

Wool Head 20 State Com 607H (WT-19-180)

2019-11-19 to 2020-01-09

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



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Wednesday, Nov 20 00:00 - 23:59 (Day 1 of 20)

Billing: \$10,600.00 (\$140,534.25 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
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer
Wes Highnote	MWD Engineer

No BHAs**Directional Activities**

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	11-20	00:00	16:30	11-21			Standby while Rig Up

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Thursday, Nov 21 00:00 - 23:59 (Day 2 of 20)

Billing: \$10,087.50 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	145.00	Downhole Hours	6.50	Rotating WOB (klbs)	15.00 - 25.00
Bit Depth (ft)	1240.00	Drilling Hours	5.08	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	1240.00	Hours Circulating	0.00	Rotating SPM	150.00 - 261.00
Total Distance (ft)	1095.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	1095.00	Hours Rotating	5.08	Motor RPM	40.00 - 40.00
Distance Slid (ft)	0.00			Surface RPM	40.00 - 50.00
Inclination In	0.79			Flow Rate (gpm)	500.00 - 840.00
Inclination Out	2.59			On Bottom Pressure (psi)	1450.00 - 2600.00
Azimuth In	245.00	% Hours Rotating	100%	Off Bottom Pressure (psi)	850.00 - 2000.00
Azimuth Out	250.80	% Hours Sliding	0%		
AVG Total ROP (ft/h)	209.82	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	209.82	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #1 - 17.5" SURFACE

Date In: Nov 21, 2019, 17:30 Date Out: Nov 22, 2019, 12:45

Bit Details		Motor Details		Directional Comments
OD (in)	17.500	Size (in)	8.0	Flow Rate: 400-900, Max Diff: 900 psi, Max Torque: 14,930 ft-lbs, BIT Runs:
Vendor	BAKER	Lobe/Stage	7/8, 4.0	
S/N	7046740	Bend Angle	1.5	
Nozzles	9-12's	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	
Drilling Hours for Day	5.08	Bit Distances		
Total Drilled for Day (ft)	1095.00	Bend (°): 4.70 ft, Survey (°): 62.00 ft		POOH Reason Total Depth/Casing Point: N/A
Drilling Hours for BHA	12.58			
Total Drilled for BHA (ft)	1716.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 17.5" DP606S, Style: PDC, Gauge Length (in): 3.00, Size (in): 17.50	BAKER	7046740	6 5/8" Reg Pin			17.500		1.50	1.50
Mud Motor Description: 8" 7/8, 4.0 FXD @ 1.5° w/ SS, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4	AIM	800-003 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		28.66	30.16
Stabilizer Description: 17" IB NORTRAK STAB	GTI	GT 801166	6 5/8" Reg Box	6 5/8" Reg Pin	2.750	8.000		8.02	38.18
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066774	6 5/8" Reg Box	6 5/8" Reg Pin	3.500	8.000		3.48	41.66
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	72.14
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	103.30
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	107.20
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1521.40

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	11-20	00:00	16:30	11-21			Standby while Rig Up
Change BHA	6	11-21	16:30	17:30	11-21			P/U BHA # 1
Other	16	11-21	17:30	17:45	11-21			M/U STAND OF HWDP & SPUD IN (TAG & 145')

Rotary Drill	1	11-21	17:45	18:45	11-21	145.00	297.00	Pressure On (psi): 1450.00, Pressure Off (psi): 850.00, Weight On Bit (klbs): 20.00, Surface RPM: 40, Surface Torque (ft lbf): 6000.00, Flow Rate (gpm): 500.00, Strokes Per Minute: 150.00
Survey	46	11-21	18:45	18:55	11-21	297.00	297.00	Inclination (°): 0.790, Azimuth (°): 245.000, TVD (ft): 234.99, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 235.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	18:55	19:10	11-21	297.00	391.00	Pressure On (psi): 1450.00, Pressure Off (psi): 850.00, Weight On Bit (klbs): 15.00, Surface RPM: 40, Surface Torque (ft lbf): 6000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-21	19:10	19:15	11-21	391.00	391.00	Inclination (°): 1.230, Azimuth (°): 250.450, TVD (ft): 328.98, Dogleg (°/100 ft): 0.48, Sensor Depth (ft): 329.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	19:15	19:40	11-21	391.00	486.00	Pressure On (psi): 1900.00, Pressure Off (psi): 1500.00, Weight On Bit (klbs): 15.00, Surface RPM: 50, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	11-21	19:40	19:45	11-21	486.00	486.00	Inclination (°): 1.410, Azimuth (°): 258.530, TVD (ft): 423.95, Dogleg (°/100 ft): 0.27, Sensor Depth (ft): 424.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	19:45	20:05	11-21	486.00	580.00	Pressure On (psi): 1900.00, Pressure Off (psi): 1500.00, Weight On Bit (klbs): 15.00, Surface RPM: 50, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	11-21	20:05	20:10	11-21	580.00	580.00	Inclination (°): 1.140, Azimuth (°): 257.480, TVD (ft): 517.93, Dogleg (°/100 ft): 0.29, Sensor Depth (ft): 518.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	20:10	20:30	11-21	580.00	675.00	Pressure On (psi): 1900.00, Pressure Off (psi): 1500.00, Weight On Bit (klbs): 15.00, Surface RPM: 50, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Rotary Drill	1	11-21	20:30	20:55	11-21	675.00	769.00	Pressure On (psi): 1900.00, Pressure Off (psi): 1500.00, Weight On Bit (klbs): 15.00, Surface RPM: 50, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 231.00
Survey	46	11-21	20:55	21:00	11-21	769.00	769.00	Inclination (°): 1.190, Azimuth (°): 269.870, TVD (ft): 706.89, Dogleg (°/100 ft): 0.14, Sensor Depth (ft): 707.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	21:00	21:50	11-21	769.00	958.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-21	21:50	21:55	11-21	958.00	958.00	Inclination (°): 1.540, Azimuth (°): 266.620, TVD (ft): 895.84, Dogleg (°/100 ft): 0.19, Sensor Depth (ft): 896.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	21:55	22:20	11-21	958.00	1053.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-21	22:20	22:25	11-21	1053.00	1053.00	Inclination (°): 1.890, Azimuth (°): 260.470, TVD (ft): 990.79, Dogleg (°/100 ft): 0.42, Sensor Depth (ft): 991.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	22:25	23:00	11-21	1053.00	1146.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-21	23:00	23:10	11-21	1146.00	1146.00	Inclination (°): 2.110, Azimuth (°): 251.590, TVD (ft): 1083.74, Dogleg (°/100 ft): 0.41, Sensor Depth (ft): 1084.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	23:10	23:40	11-21	1146.00	1240.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-21	23:40	23:45	11-21	1240.00	1240.00	Inclination (°): 2.590, Azimuth (°): 250.800, TVD (ft): 1177.66, Dogleg (°/100 ft): 0.51, Sensor Depth (ft): 1178.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-21	23:45	00:20	11-22	1240.00	1334.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Friday, Nov 22 00:00 - 23:59 (Day 3 of 20)

Billing: \$5,100.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	1240.00	Downhole Hours	12.75	Rotating WOB (klbs)	25.00 - 25.00
Bit Depth (ft)	1861.00	Drilling Hours	7.50	Sliding WOB (klbs)	17.00 - 17.00
Bottom Hole Depth (ft)	1861.00	Hours Circulating	1.00	Rotating SPM	261.00 - 261.00
Total Distance (ft)	621.00	Hours Sliding	3.00	Sliding SPM	216.00 - 216.00
Distance Rotated (ft)	526.00	Hours Rotating	4.50	Motor RPM	40.00 - 40.00
Distance Slid (ft)	95.00			Surface RPM	50.00 - 50.00
Inclination In	3.16			Flow Rate (gpm)	700.00 - 840.00
Inclination Out	3.87			On Bottom Pressure (psi)	2050.00 - 2600.00
Azimuth In	246.05	% Hours Rotating	60%	Off Bottom Pressure (psi)	1700.00 - 2000.00
Azimuth Out	222.41	% Hours Sliding	40%		
AVG Total ROP (ft/h)	82.80	% Distance Sliding	15%		
AVG Rotating ROP (ft/h)	116.89	% Distance Rotating	85%		
AVG Sliding ROP (ft/h)	31.67				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #1 - 17.5" SURFACE

Date In: Nov 21, 2019, 17:30 Date Out: Nov 22, 2019, 12:45

Bit Details		Motor Details		Directional Comments
OD (in)	17.500	Size (in)	8.0	Flow Rate: 400-900, Max Diff: 900 psi, Max Torque: 14,930 ft-lbs, BIT Runs:
Vendor	BAKER	Lobe/Stage	7/8, 4.0	
S/N	7046740	Bend Angle	1.5	
Nozzles	9-12's	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	POOH Reason Total Depth/Casing Point: N/A
Drilling Hours for Day	7.50	Bit Distances		
Total Drilled for Day (ft)	621.00	Bend (°): 4.70 ft, Survey (°): 62.00 ft		
Drilling Hours for BHA	12.58			
Total Drilled for BHA (ft)	1716.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 17.5" DP606S, Style: PDC, Gauge Length (in): 3.00, Size (in): 17.50	BAKER	7046740	6 5/8" Reg Pin			17.500		1.50	1.50
Mud Motor Description: 8" 7/8, 4.0 FXD @ 1.5° w/ SS, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4	AIM	800-003 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		28.66	30.16
Stabilizer Description: 17" IB NORTRAK STAB	GTI	GT 801166	6 5/8" Reg Box	6 5/8" Reg Pin	2.750	8.000		8.02	38.18
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066774	6 5/8" Reg Box	6 5/8" Reg Pin	3.500	8.000		3.48	41.66
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	72.14
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	103.30
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	107.20
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1521.40

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	11-21	23:45	00:20	11-22	1240.00	1334.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Other	16	11-22	00:20	02:35	11-22			Wait on Mud

Survey	46	11-22	02:35	02:40	11-22	1334.00	1334.00	Inclination (°): 3.160, Azimuth (°): 246.050, TVD (ft): 1271.54, Dogleg (°/100 ft): 0.66, Sensor Depth (ft): 1272.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-22	02:40	03:30	11-22	1334.00	1427.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-22	03:30	03:35	11-22	1427.00	1427.00	Inclination (°): 3.560, Azimuth (°): 246.230, TVD (ft): 1364.38, Dogleg (°/100 ft): 0.43, Sensor Depth (ft): 1365.00, Bit To Sensor (ft): 62.00
Slide Drill	2	11-22	03:35	04:40	11-22	1427.00	1457.00	Pressure On (psi): 2050.00, Pressure Off (psi): 1700.00, Weight On Bit (klbs): 17.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 65, Toolface Type: magnetic
Rotary Drill	1	11-22	04:40	05:00	11-22	1457.00	1521.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-22	05:00	05:05	11-22	1521.00	1521.00	Inclination (°): 3.740, Azimuth (°): 242.360, TVD (ft): 1458.19, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 1459.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-22	05:05	05:10	11-22	1521.00	1526.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Slide Drill	2	11-22	05:10	06:20	11-22	1526.00	1571.00	Pressure On (psi): 2050.00, Pressure Off (psi): 1700.00, Weight On Bit (klbs): 17.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 60, Toolface Type: magnetic
Rotary Drill	1	11-22	06:20	06:40	11-22	1571.00	1610.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-22	06:40	06:45	11-22	1610.00	1610.00	Inclination (°): 3.430, Azimuth (°): 234.980, TVD (ft): 1547.02, Dogleg (°/100 ft): 0.62, Sensor Depth (ft): 1548.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-22	06:45	07:20	11-22	1610.00	1700.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-22	07:20	07:25	11-22	1700.00	1700.00	Inclination (°): 3.430, Azimuth (°): 227.420, TVD (ft): 1636.85, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 1638.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-22	07:25	08:40	11-22	1700.00	1789.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-22	08:40	08:45	11-22	1789.00	1789.00	Inclination (°): 3.740, Azimuth (°): 224.340, TVD (ft): 1725.68, Dogleg (°/100 ft): 0.41, Sensor Depth (ft): 1727.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	11-22	08:45	08:50	11-22	1789.00	1794.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Slide Drill	2	11-22	08:50	09:35	11-22	1794.00	1814.00	Pressure On (psi): 2050.00, Pressure Off (psi): 1700.00, Weight On Bit (klbs): 17.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 45, Toolface Type: magnetic
Rotary Drill	1	11-22	09:35	10:00	11-22	1814.00	1861.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-22	10:00	10:05	11-22	1861.00	1861.00	Inclination (°): 3.870, Azimuth (°): 222.410, TVD (ft): 1797.52, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 1799.00, Bit To Sensor (ft): 62.00
Circulating	3	11-22	10:05	11:05	11-22			CIRC
Pooh	7	11-22	11:05	12:15	11-22			POOH for CASING POINT
Change BHA	6	11-22	12:15	12:45	11-22			DRAIN MOTOR, BREAK BIT, & RACK BACK BHA
Standby	15	11-22	12:45	18:00	11-22			Standby - CASING OPS

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Nov 25 00:00 - 23:59 (Day 4 of 20)

Billing: \$12,173.75 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	1861.00	Downhole Hours	11.00	Rotating WOB (klbs)	25.00 - 40.00
Bit Depth (ft)	3412.00	Drilling Hours	6.50	Sliding WOB (klbs)	17.00 - 20.00
Bottom Hole Depth (ft)	3412.00	Hours Circulating	1.58	Rotating SPM	261.00 - 261.00
Total Distance (ft)	1551.00	Hours Sliding	0.42	Sliding SPM	216.00 - 261.00
Distance Rotated (ft)	1511.00	Hours Rotating	6.08	Motor RPM	85.00 - 143.00
Distance Slid (ft)	40.00			Surface RPM	50.00 - 80.00
Inclination In	3.87			Flow Rate (gpm)	700.00 - 840.00
Inclination Out	0.18			On Bottom Pressure (psi)	2050.00 - 3900.00
Azimuth In	224.52	% Hours Rotating	94%	Off Bottom Pressure (psi)	1700.00 - 3200.00
Azimuth Out	28.08	% Hours Sliding	6%		
AVG Total ROP (ft/h)	223.23	% Distance Sliding	3%		
AVG Rotating ROP (ft/h)	230.45	% Distance Rotating	97%		
AVG Sliding ROP (ft/h)	96.00				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #2 - Intermediate 12.25"

Date In: Nov 25, 2019, 13:00 Date Out: Nov 26, 2019, 19:15

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:
Vendor	BAKER	Lobe/Stage	7/8, 5.9	
S/N	7163628	Bend Angle	1.5	
Nozzles	6-12's	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.662	Wear Pad OD (in)	8.375	
Drilling Hours for Day	6.50	Bit Distances		
Total Drilled for Day (ft)	1551.00	Bend (°): 6.16 ft, Survey (°): 70.00 ft		POOH Reason
Drilling Hours for BHA	19.08			
Total Drilled for BHA (ft)	3042.00			
				Penetration Rate

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 12.25" T806FX, Style: PDC, Gauge Length (in): 3.00, Size (in): 12.25	BAKER	7163628	6 5/8" Reg Pin			12.250		1.50	1.50
Mud Motor Description: 8" 7/8, 5.9 FXD @ 1.5° w/ 12" STAB, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	AIM	800-40-002 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.96	39.46
Stabilizer Description: 12" IB NORTRAK STAB	GTI	GT 801178	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		8.03	47.49
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066145	6 5/8" Reg Box	6 5/8" Reg Pin	3.313	8.000		3.18	50.67
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	81.15
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	112.31
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	116.21
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1530.41

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	11-25	00:00	11:30	11-25			Standby while NIPPLE UP & TEST BOP's
Change BHA	6	11-25	11:30	13:00	11-25			P/U BHA #2
TIH	8	11-25	13:00	14:10	11-25			TIH W/ BHA #2
Drilling Cement	17	11-25	14:10	15:45	11-25	1861.00	1861.00	Drilling Cement and Float Equipment

Rotary Drill	1	11-25	15:45	15:55	11-25	1861.00	1888.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Connection	33	11-25	15:55	16:00	11-25			CONN
Rotary Drill	1	11-25	16:00	16:25	11-25	1888.00	1978.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	16:25	16:30	11-25	1978.00	1978.00	Inclination (°): 3.870, Azimuth (°): 224.520, TVD (ft): 1906.27, Dogleg (°/100 ft): 0.13, Sensor Depth (ft): 1908.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	16:30	16:35	11-25	1978.00	1991.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Slide Drill	2	11-25	16:35	16:45	11-25	1991.00	2011.00	Pressure On (psi): 2050.00, Pressure Off (psi): 1700.00, Weight On Bit (klbs): 17.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 45, Toolface Type: magnetic
Rotary Drill	1	11-25	16:45	17:00	11-25	2011.00	2068.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	17:00	17:05	11-25	2068.00	2068.00	Inclination (°): 2.680, Azimuth (°): 219.600, TVD (ft): 1996.12, Dogleg (°/100 ft): 1.36, Sensor Depth (ft): 1998.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	17:05	17:30	11-25	2068.00	2157.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	17:30	17:35	11-25	2157.00	2157.00	Inclination (°): 1.760, Azimuth (°): 213.010, TVD (ft): 2085.06, Dogleg (°/100 ft): 1.07, Sensor Depth (ft): 2087.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	17:35	17:55	11-25	2157.00	2247.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	17:55	18:00	11-25	2247.00	2247.00	Inclination (°): 1.580, Azimuth (°): 210.720, TVD (ft): 2175.02, Dogleg (°/100 ft): 0.21, Sensor Depth (ft): 2177.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	18:00	18:20	11-25	2247.00	2337.00	Pressure On (psi): 2600.00, Pressure Off (psi): 2000.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	18:20	18:25	11-25	2337.00	2337.00	Inclination (°): 1.410, Azimuth (°): 204.660, TVD (ft): 2264.99, Dogleg (°/100 ft): 0.26, Sensor Depth (ft): 2267.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	18:25	18:50	11-25	2337.00	2426.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	18:50	18:55	11-25	2426.00	2426.00	Inclination (°): 1.190, Azimuth (°): 200.970, TVD (ft): 2353.97, Dogleg (°/100 ft): 0.26, Sensor Depth (ft): 2356.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	18:55	19:20	11-25	2426.00	2516.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	19:20	19:25	11-25	2516.00	2516.00	Inclination (°): 0.840, Azimuth (°): 188.050, TVD (ft): 2443.95, Dogleg (°/100 ft): 0.46, Sensor Depth (ft): 2446.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	19:25	19:40	11-25	2516.00	2606.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	19:40	19:45	11-25	2606.00	2606.00	Inclination (°): 0.750, Azimuth (°): 189.360, TVD (ft): 2533.94, Dogleg (°/100 ft): 0.10, Sensor Depth (ft): 2536.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	19:45	20:05	11-25	2606.00	2695.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	20:05	20:10	11-25	2695.00	2695.00	Inclination (°): 0.620, Azimuth (°): 184.880, TVD (ft): 2622.94, Dogleg (°/100 ft): 0.16, Sensor Depth (ft): 2625.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	20:10	20:25	11-25	2695.00	2785.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	20:25	20:30	11-25	2785.00	2785.00	Inclination (°): 0.660, Azimuth (°): 172.310, TVD (ft): 2712.93, Dogleg (°/100 ft): 0.16, Sensor Depth (ft): 2715.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	20:30	20:55	11-25	2785.00	2875.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	20:55	21:00	11-25	2875.00	2875.00	Inclination (°): 0.480, Azimuth (°): 159.040, TVD (ft): 2802.93, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 2805.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	21:00	21:15	11-25	2875.00	2964.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	21:15	21:20	11-25	2964.00	2964.00	Inclination (°): 0.920, Azimuth (°): 131.090, TVD (ft): 2891.92, Dogleg (°/100 ft): 0.61, Sensor Depth (ft): 2894.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	21:20	21:35	11-25	2964.00	3054.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	21:35	21:40	11-25	3054.00	3054.00	Inclination (°): 0.970, Azimuth (°): 107.010, TVD (ft): 2981.91, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 2984.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	21:40	22:05	11-25	3054.00	3143.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	22:05	22:10	11-25	3143.00	3143.00	Inclination (°): 1.670, Azimuth (°): 104.290, TVD (ft): 3070.88, Dogleg (°/100 ft): 0.79, Sensor Depth (ft): 3073.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	22:10	22:30	11-25	3143.00	3233.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	22:30	22:35	11-25	3233.00	3233.00	Inclination (°): 2.020, Azimuth (°): 95.410, TVD (ft): 3160.84, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 3163.00, Bit To Sensor (ft): 70.00

Slide Drill	2	11-25	22:35	22:50	11-25	3233.00	3253.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261, Toolface: 280, Toolface Type: magnetic
Rotary Drill	1	11-25	22:50	23:05	11-25	3253.00	3323.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	23:05	23:10	11-25	3323.00	3323.00	Inclination (°): 0.700, Azimuth (°): 98.310, TVD (ft): 3250.81, Dogleg (°/100 ft): 1.47, Sensor Depth (ft): 3253.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	23:10	23:40	11-25	3323.00	3412.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-25	23:40	23:45	11-25	3412.00	3412.00	Inclination (°): 0.180, Azimuth (°): 28.080, TVD (ft): 3339.81, Dogleg (°/100 ft): 0.74, Sensor Depth (ft): 3342.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-25	23:45	01:00	11-26	3412.00	3591.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Tuesday, Nov 26 00:00 - 23:59 (Day 5 of 20)

Billing: \$5,600.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	3412.00	Downhole Hours	24.00	Rotating WOB (klbs)	35.00 - 40.00
Bit Depth (ft)	4903.00	Drilling Hours	12.58	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	4903.00	Hours Circulating	0.50	Rotating SPM	189.00 - 261.00
Total Distance (ft)	1491.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	1491.00	Hours Rotating	12.58	Motor RPM	0.00 - 143.00
Distance Slid (ft)	0.00			Surface RPM	80.00 - 80.00
Inclination In	0.35			Flow Rate (gpm)	600.00 - 840.00
Inclination Out	0.97			On Bottom Pressure (psi)	2200.00 - 3900.00
Azimuth In	66.41	% Hours Rotating	100%	Off Bottom Pressure (psi)	1400.00 - 3200.00
Azimuth Out	219.51	% Hours Sliding	0%		
AVG Total ROP (ft/h)	118.49	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	118.49	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #2 - Intermediate 12.25"

Date In: Nov 25, 2019, 13:00 Date Out: Nov 26, 2019, 19:15

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:
Vendor	BAKER	Lobe/Stage	7/8, 5.9	
S/N	7163628	Bend Angle	1.5	
Nozzles	6-12's	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.662	Wear Pad OD (in)	8.375	
Drilling Hours for Day	12.58	Bit Distances		
Total Drilled for Day (ft)	1491.00	Bend (): 6.16 ft, Survey (): 70.00 ft		POOH Reason
Drilling Hours for BHA	19.08			
Total Drilled for BHA (ft)	3042.00			
				Penetration Rate

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 12.25" T806FX, Style: PDC, Gauge Length (in): 3.00, Size (in): 12.25	BAKER	7163628	6 5/8" Reg Pin			12.250		1.50	1.50
Mud Motor Description: 8" 7/8, 5.9 FXD @ 1.5° w/ 12" STAB, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	AIM	800-40-002 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.96	39.46
Stabilizer Description: 12" IB NORTRAK STAB	GTI	GT 801178	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		8.03	47.49
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066145	6 5/8" Reg Box	6 5/8" Reg Pin	3.313	8.000		3.18	50.67
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	81.15
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	112.31
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	116.21
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1530.41

MWD Items

No Items

BHA #3 - Intermediate 12.25"

Date In: Nov 26, 2019, 19:15 Date Out: Nov 27, 2019, 8:45

Bit Details		Motor Details		Directional Comments	
OD (in)	12.250	Size (in)	8.0	Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:	
Vendor	BAKER	Lobe/Stage	7/8, 5.9		
S/N	5274456	Bend Angle	1.5		
Nozzles	6-12's	Speed (rev/gal)	0.17	MWD Comments	
Total Flow Area (in²)	0.662	Wear Pad OD (in)	8.375	POOH Reason Total Depth/Casing Point: Pooh to run Casing	
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		Bend (°): 6.16 ft, Survey (°): 70.00 ft			
Drilling Hours for BHA	2.42				
Total Drilled for BHA (ft)	374.00				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 12.25" T606FX, Style: PDC, Gauge Length (in): 3.00, Size (in): 12.25	BAKER	5274456	6 5/8" Reg Pin			12.250		1.50	1.50
Mud Motor Description: 8" 7/8, 5.9 FXD @ 1.5° w/ 12" STAB, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	AIM	800-40-002 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.96	39.46
Stabilizer Description: 12" IB NORTRAK STAB	GTI	GT 801178	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		8.03	47.49
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066145	6 5/8" Reg Box	6 5/8" Reg Pin	3.313	8.000		3.18	50.67
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	81.15
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	112.31
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	116.21
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1530.41

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	11-25	23:45	01:00	11-26	3412.00	3591.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-26	01:00	01:05	11-26	3591.00	3591.00	Inclination (°): 0.350, Azimuth (°): 66.410, TVD (ft): 3518.80, Dogleg (°/100 ft): 0.13, Sensor Depth (ft): 3521.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	01:05	01:35	11-26	3591.00	3681.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-26	01:35	01:40	11-26	3681.00	3681.00	Inclination (°): 0.130, Azimuth (°): 26.060, TVD (ft): 3608.80, Dogleg (°/100 ft): 0.29, Sensor Depth (ft): 3611.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	01:40	02:05	11-26	3681.00	3770.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-26	02:05	02:10	11-26	3770.00	3770.00	Inclination (°): 0.310, Azimuth (°): 28.350, TVD (ft): 3697.80, Dogleg (°/100 ft): 0.20, Sensor Depth (ft): 3700.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	02:10	02:45	11-26	3770.00	3860.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-26	02:45	02:50	11-26	3860.00	3860.00	Inclination (°): 0.440, Azimuth (°): 27.120, TVD (ft): 3787.80, Dogleg (°/100 ft): 0.14, Sensor Depth (ft): 3790.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	02:50	03:55	11-26	3860.00	3950.00	Pressure On (psi): 3900.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 35.00, Surface RPM: 80, Surface Torque (ft lbf): 19000.00, Flow Rate (gpm): 840.00, Strokes Per Minute: 261.00
Survey	46	11-26	03:55	04:00	11-26	3950.00	3950.00	Inclination (°): 0.790, Azimuth (°): 28.170, TVD (ft): 3877.80, Dogleg (°/100 ft): 0.39, Sensor Depth (ft): 3880.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	04:00	04:30	11-26	3950.00	3969.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Other	16	11-26	04:30	07:15	11-26			Wait on Brine water
Rotary Drill	1	11-26	07:15	08:20	11-26	3969.00	4040.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-26	08:20	08:25	11-26	4040.00	4040.00	Inclination (°): 0.530, Azimuth (°): 44.700, TVD (ft): 3967.79, Dogleg (°/100 ft): 0.36, Sensor Depth (ft): 3970.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	08:25	09:05	11-26	4040.00	4129.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00

Rotary Drill	1	11-26	09:05	09:50	11-26	4129.00	4219.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-26	09:50	09:55	11-26	4219.00	4219.00	Inclination (°): 0.310, Azimuth (°): 77.300, TVD (ft): 4146.79, Dogleg (°/100 ft): 0.18, Sensor Depth (ft): 4149.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	09:55	10:50	11-26	4219.00	4308.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-26	10:50	10:55	11-26	4308.00	4308.00	Inclination (°): 0.350, Azimuth (°): 75.110, TVD (ft): 4235.78, Dogleg (°/100 ft): 0.05, Sensor Depth (ft): 4238.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	10:55	11:40	11-26	4308.00	4398.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-26	11:40	11:50	11-26	4398.00	4398.00	Inclination (°): 0.570, Azimuth (°): 108.070, TVD (ft): 4325.78, Dogleg (°/100 ft): 0.37, Sensor Depth (ft): 4328.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	11:50	12:20	11-26	4398.00	4488.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-26	12:20	12:25	11-26	4488.00	4488.00	Inclination (°): 0.570, Azimuth (°): 107.980, TVD (ft): 4415.78, Dogleg (°/100 ft): 0.00, Sensor Depth (ft): 4418.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	12:25	12:55	11-26	4488.00	4578.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-26	12:55	13:00	11-26	4578.00	4578.00	Inclination (°): 0.400, Azimuth (°): 177.590, TVD (ft): 4505.77, Dogleg (°/100 ft): 0.63, Sensor Depth (ft): 4508.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	13:00	13:30	11-26	4578.00	4667.00	Pressure On (psi): 2200.00, Pressure Off (psi): 1400.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 189.00
Survey	46	11-26	13:30	13:35	11-26	4667.00	4667.00	Inclination (°): 0.700, Azimuth (°): 224.080, TVD (ft): 4594.77, Dogleg (°/100 ft): 0.58, Sensor Depth (ft): 4597.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	13:35	14:00	11-26	4667.00	4757.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00
Survey	46	11-26	14:00	14:05	11-26	4757.00	4757.00	Inclination (°): 1.190, Azimuth (°): 220.650, TVD (ft): 4684.76, Dogleg (°/100 ft): 0.55, Sensor Depth (ft): 4687.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	14:05	15:00	11-26	4757.00	4846.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00
Survey	46	11-26	15:00	15:15	11-26	4846.00	4846.00	Inclination (°): 0.970, Azimuth (°): 219.510, TVD (ft): 4773.74, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 4776.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-26	15:15	16:30	11-26	4846.00	4903.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00
Circulating	3	11-26	16:30	17:00	11-26			Circulate
Pooh	7	11-26	17:00	19:15	11-26			POOH for Bit
Change BHA	6	11-26	19:15	20:15	11-26			P/U BHA # 3, New Bit
TIH	8	11-26	20:15	21:45	11-26			TIH W/ BHA #3
Circulating	3	11-26	21:45	01:45	11-27			Wash & Ream F/ 3714' T/ 4903'

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Wednesday, Nov 27 00:00 - 23:59 (Day 6 of 20)

Billing: \$5,600.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	4903.00	Downhole Hours	8.75	Rotating WOB (klbs)	40.00 - 40.00
Bit Depth (ft)	5277.00	Drilling Hours	2.42	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	5277.00	Hours Circulating	5.00	Rotating SPM	249.00 - 249.00
Total Distance (ft)	374.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	374.00	Hours Rotating	2.42	Motor RPM	0.00 - 0.00
Distance Slid (ft)	0.00			Surface RPM	80.00 - 80.00
Inclination In	1.36			Flow Rate (gpm)	800.00 - 800.00
Inclination Out	2.02			On Bottom Pressure (psi)	3700.00 - 3700.00
Azimuth In	221.36	% Hours Rotating	100%	Off Bottom Pressure (psi)	2850.00 - 2850.00
Azimuth Out	220.57	% Hours Sliding	0%		
AVG Total ROP (ft/h)	154.76	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	154.76	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #3 - Intermediate 12.25"

Date In: Nov 26, 2019, 19:15 Date Out: Nov 27, 2019, 8:45

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Flow Rate: 400-900, Max Diff: 1330 psi, Max Torque: 22,020 ft-lbs, BIT Runs:
Vendor	BAKER	Lobe/Stage	7/8, 5.9	
S/N	5274456	Bend Angle	1.5	
Nozzles	6-12's	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.662	Wear Pad OD (in)	8.375	
Drilling Hours for Day	2.42	Bit Distances		
Total Drilled for Day (ft)	374.00	Bend (°): 6.16 ft, Survey (°): 70.00 ft		POOH Reason Total Depth/Casing Point: Pooh to run Casing
Drilling Hours for BHA	2.42			
Total Drilled for BHA (ft)	374.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 12.25" T606FX, Style: PDC, Gauge Length (in): 3.00, Size (in): 12.25	BAKER	5274456	6 5/8" Reg Pin			12.250		1.50	1.50
Mud Motor Description: 8" 7/8, 5.9 FXD @ 1.5° w/ 12" STAB, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	AIM	800-40-002 AIM	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.96	39.46
Stabilizer Description: 12" IB NORTRAK STAB	GTI	GT 801178	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		8.03	47.49
UBHO Sub Description: 8" UBHO SUB, Type: NM	GTI	GT8066145	6 5/8" Reg Box	6 5/8" Reg Pin	3.313	8.000		3.18	50.67
Drill Collar Description: 8" MWD NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-399	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.063		30.48	81.15
Drill Collar Description: 8" NMDC, Style: Slick Drill, Type: NM	GTI	GT 80-30-285	6 5/8" Reg Box	6 5/8" Reg Pin	3.188	8.063		31.16	112.31
Crossover Sub Description: CROSSOVER SUB, Type: Steel	BD	BD15381	EverDrlg54 Box	6 5/8" Reg Pin	2.875	8.250		3.90	116.21
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1530.41

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	11-26	21:45	01:45	11-27			Wash & Ream F/ 3714' T/ 4903'
Rotary Drill	1	11-27	01:45	02:00	11-27	4903.00	4936.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00

Survey	46	11-27	02:00	02:05	11-27	4936.00	4936.00	Inclination (°): 1.360, Azimuth (°): 221.360, TVD (ft): 4863.72, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 4866.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-27	02:05	02:40	11-27	4936.00	5026.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00
Survey	46	11-27	02:40	02:45	11-27	5026.00	5026.00	Inclination (°): 1.360, Azimuth (°): 219.600, TVD (ft): 4953.70, Dogleg (°/100 ft): 0.05, Sensor Depth (ft): 4956.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-27	02:45	03:25	11-27	5026.00	5115.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00
Survey	46	11-27	03:25	03:30	11-27	5115.00	5115.00	Inclination (°): 1.540, Azimuth (°): 210.020, TVD (ft): 5042.67, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 5045.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-27	03:30	04:00	11-27	5115.00	5205.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00
Survey	46	11-27	04:00	04:05	11-27	5205.00	5205.00	Inclination (°): 1.710, Azimuth (°): 221.800, TVD (ft): 5132.63, Dogleg (°/100 ft): 0.42, Sensor Depth (ft): 5135.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	11-27	04:05	04:30	11-27	5205.00	5277.00	Pressure On (psi): 3700.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 80, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 800.00, Strokes Per Minute: 249.00
Survey	46	11-27	04:30	04:35	11-27	5277.00	5277.00	Inclination (°): 2.020, Azimuth (°): 220.570, TVD (ft): 5204.60, Dogleg (°/100 ft): 0.43, Sensor Depth (ft): 5207.00, Bit To Sensor (ft): 70.00
Circulating	3	11-27	04:35	05:35	11-27			Circulate
Pooh	7	11-27	05:35	08:45	11-27			POOH to Run Casing / Pull MWD tool, break off bit, and rack back BHA
Standby	15	11-27	08:45	21:15	11-27			Standby while Run Casing and Skid to #804

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Thursday, Dec 05 00:00 - 23:59 (Day 7 of 20)

Billing: N/A (\$140,534.25 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
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

No BHAs**Directional Activities**

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	12-05	00:00	23:00	12-05			Standby.
Other	16	12-05	23:00	00:00	12-06			M/U Tools in Mouse Hole.

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Friday, Dec 06 00:00 - 23:59 (Day 8 of 20)

Billing: \$11,176.75 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	5277.00	Downhole Hours	21.75	Rotating WOB (klbs)	25.00 - 40.00
Bit Depth (ft)	8668.00	Drilling Hours	14.17	Sliding WOB (klbs)	22.00 - 26.00
Bottom Hole Depth (ft)	8668.00	Hours Circulating	1.00	Rotating SPM	170.00 - 234.00
Total Distance (ft)	3391.00	Hours Sliding	0.83	Sliding SPM	234.00 - 234.00
Distance Rotated (ft)	3310.00	Hours Rotating	13.33	Motor RPM	169.00 - 195.00
Distance Slid (ft)	81.00			Surface RPM	50.00 - 60.00
Inclination In	1.76			Flow Rate (gpm)	550.00 - 750.00
Inclination Out	0.84			On Bottom Pressure (psi)	2900.00 - 3300.00
Azimuth In	215.64	% Hours Rotating	94%	Off Bottom Pressure (psi)	1600.00 - 2500.00
Azimuth Out	321.73	% Hours Sliding	6%		
AVG Total ROP (ft/h)	239.36	% Distance Sliding	2%		
AVG Rotating ROP (ft/h)	248.25	% Distance Rotating	98%		
AVG Sliding ROP (ft/h)	97.20				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #4 - BHA #4 (8.5" Intermediate)

Date In: Dec 6, 2019, 2:15 Date Out: Dec 8, 2019, 14:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Aim Motor: 1.5 FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab. Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: NOV, SN: A269255 Type: TKC66Q1, Jets: 6 x 16, TFA: 1.178 Runs: 0
Vendor	NOV	Lobe/Stage	7/8, 8.5	
S/N	A269255	Bend Angle	1.5	
Nozzles	6 x 16	Speed (rev/gal)	0.26	
Total Flow Area (in²)	1.178	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	14.17	Bit Distances		
Total Drilled for Day (ft)	3391.00	Bend (Bit to Bend): 5.45 ft, Survey (Bit to Survey): 68.00 ft, Gamma (Bit to Gamma): 53.00 ft		POOH Reason
Drilling Hours for BHA	42.58			
Total Drilled for BHA (ft)	6008.00			
		Total Depth/Casing Point: TD section, Pooh called 40' early due to loss of ROP. Lost all diff and ROP		

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: TKC66Q1, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	NOV	A269255	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 1.5° FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	AIM 700-40-033	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.27	37.27
Stabilizer Description: 8.25" Spiral IBS (Non-Mag)	GTI	CD2043NM	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		4.41	41.68
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-360	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.13	44.81
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-120	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.56	76.37
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-250	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.92	107.29
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15114	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.63	110.92
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1525.12

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Other	16	12-05	23:00	00:00	12-06			M/U Tools in Mouse Hole.
Standby	15	12-06	00:00	01:30	12-06			Finish N/U

Change BHA	6	12-06	01:30	02:15	12-06			P/U BHA # 4
TIH	8	12-06	02:15	03:30	12-06			TIH W/ BHA #4
Other	16	12-06	03:30	03:50	12-06			Drill DV Tool
Other	16	12-06	03:50	04:50	12-06			Test Casing
TIH	8	12-06	04:50	05:45	12-06			TIH W/ BHA #4
Reaming	4	12-06	05:45	06:45	12-06			Drill out plug, Cement
Rotary Drill	1	12-06	06:45	07:00	12-06	5277.00	5379.00	Pressure On (psi): 3300.00, Pressure Off (psi): 1600.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 14500.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	12-06	07:00	07:05	12-06	5379.00	5379.00	Inclination (°): 1.760, Azimuth (°): 215.640, TVD (ft): 5308.54, Dogleg (°/100 ft): 0.29, Sensor Depth (ft): 5311.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	07:05	07:20	12-06	5379.00	5469.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	07:20	07:25	12-06	5469.00	5469.00	Inclination (°): 1.630, Azimuth (°): 206.770, TVD (ft): 5398.50, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 5401.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	07:25	07:40	12-06	5469.00	5558.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	07:40	07:45	12-06	5558.00	5558.00	Inclination (°): 1.760, Azimuth (°): 206.680, TVD (ft): 5487.46, Dogleg (°/100 ft): 0.15, Sensor Depth (ft): 5490.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	07:45	07:55	12-06	5558.00	5648.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	07:55	08:00	12-06	5648.00	5648.00	Inclination (°): 1.630, Azimuth (°): 194.110, TVD (ft): 5577.42, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 5580.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	08:00	08:05	12-06	5648.00	5680.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-06	08:05	08:15	12-06	5680.00	5695.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 20, Toolface Type: magnetic
Rotary Drill	1	12-06	08:15	08:20	12-06	5695.00	5738.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	08:20	08:25	12-06	5738.00	5738.00	Inclination (°): 1.890, Azimuth (°): 208.260, TVD (ft): 5667.38, Dogleg (°/100 ft): 0.56, Sensor Depth (ft): 5670.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	08:25	08:40	12-06	5738.00	5827.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	08:40	08:45	12-06	5827.00	5827.00	Inclination (°): 2.460, Azimuth (°): 247.110, TVD (ft): 5756.32, Dogleg (°/100 ft): 1.73, Sensor Depth (ft): 5759.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	08:45	08:50	12-06	5827.00	5835.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-06	08:50	08:55	12-06	5835.00	5845.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 90, Toolface Type: magnetic
Rotary Drill	1	12-06	08:55	09:00	12-06	5845.00	5917.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	09:00	09:05	12-06	5917.00	5917.00	Inclination (°): 1.850, Azimuth (°): 257.220, TVD (ft): 5846.26, Dogleg (°/100 ft): 0.80, Sensor Depth (ft): 5849.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	09:05	09:15	12-06	5917.00	5932.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-06	09:15	09:25	12-06	5932.00	5942.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 150, Toolface Type: magnetic
Rotary Drill	1	12-06	09:25	09:45	12-06	5942.00	6007.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	09:45	09:50	12-06	6007.00	6007.00	Inclination (°): 1.230, Azimuth (°): 287.270, TVD (ft): 5936.22, Dogleg (°/100 ft): 1.11, Sensor Depth (ft): 5939.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	09:50	10:05	12-06	6007.00	6096.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	10:05	10:10	12-06	6096.00	6096.00	Inclination (°): 0.700, Azimuth (°): 322.520, TVD (ft): 6025.21, Dogleg (°/100 ft): 0.87, Sensor Depth (ft): 6028.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	10:10	10:20	12-06	6096.00	6186.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	10:20	10:25	12-06	6186.00	6186.00	Inclination (°): 0.790, Azimuth (°): 294.480, TVD (ft): 6115.20, Dogleg (°/100 ft): 0.41, Sensor Depth (ft): 6118.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	10:25	10:30	12-06	6186.00	6276.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	10:30	10:35	12-06	6276.00	6276.00	Inclination (°): 0.620, Azimuth (°): 272.600, TVD (ft): 6205.20, Dogleg (°/100 ft): 0.35, Sensor Depth (ft): 6208.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	10:35	10:40	12-06	6276.00	6365.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	10:40	10:45	12-06	6365.00	6365.00	Inclination (°): 0.480, Azimuth (°): 301.420, TVD (ft): 6294.19, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 6297.00, Bit To Sensor (ft): 68.00

Rotary Drill	1	12-06	10:45	10:55	12-06	6365.00	6455.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	10:55	11:00	12-06	6455.00	6455.00	Inclination (°): 0.530, Azimuth (°): 239.460, TVD (ft): 6384.19, Dogleg (°/100 ft): 0.58, Sensor Depth (ft): 6387.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	11:00	11:05	12-06	6455.00	6462.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-06	11:05	11:10	12-06	6462.00	6477.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 22.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 65, Toolface Type: magnetic
Rotary Drill	1	12-06	11:10	11:20	12-06	6477.00	6545.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	11:20	11:25	12-06	6545.00	6545.00	Inclination (°): 0.480, Azimuth (°): 67.370, TVD (ft): 6474.19, Dogleg (°/100 ft): 1.12, Sensor Depth (ft): 6477.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	11:25	11:30	12-06	6545.00	6635.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	11:30	11:35	12-06	6635.00	6635.00	Inclination (°): 0.530, Azimuth (°): 81.870, TVD (ft): 6564.19, Dogleg (°/100 ft): 0.15, Sensor Depth (ft): 6567.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	11:35	11:45	12-06	6635.00	6724.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	11:45	11:50	12-06	6724.00	6724.00	Inclination (°): 0.880, Azimuth (°): 80.200, TVD (ft): 6653.18, Dogleg (°/100 ft): 0.39, Sensor Depth (ft): 6656.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	11:50	12:00	12-06	6724.00	6814.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	12:00	12:05	12-06	6814.00	6814.00	Inclination (°): 0.660, Azimuth (°): 97.870, TVD (ft): 6743.17, Dogleg (°/100 ft): 0.36, Sensor Depth (ft): 6746.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	12:05	12:15	12-06	6814.00	6904.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	12:15	12:20	12-06	6904.00	6904.00	Inclination (°): 0.530, Azimuth (°): 84.950, TVD (ft): 6833.17, Dogleg (°/100 ft): 0.21, Sensor Depth (ft): 6836.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	12:20	12:45	12-06	6904.00	6993.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	12:45	12:50	12-06	6993.00	6993.00	Inclination (°): 0.790, Azimuth (°): 82.140, TVD (ft): 6922.16, Dogleg (°/100 ft): 0.29, Sensor Depth (ft): 6925.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	12:50	13:15	12-06	6993.00	7083.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	13:15	13:20	12-06	7083.00	7083.00	Inclination (°): 0.570, Azimuth (°): 113.690, TVD (ft): 7012.15, Dogleg (°/100 ft): 0.47, Sensor Depth (ft): 7015.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	13:20	13:35	12-06	7083.00	7172.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	13:35	13:40	12-06	7172.00	7172.00	Inclination (°): 0.620, Azimuth (°): 109.560, TVD (ft): 7101.15, Dogleg (°/100 ft): 0.07, Sensor Depth (ft): 7104.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	13:40	13:45	12-06	7172.00	7185.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-06	13:45	13:50	12-06	7185.00	7200.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 26.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 20, Toolface Type: magnetic
Rotary Drill	1	12-06	13:50	14:05	12-06	7200.00	7262.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	14:05	14:10	12-06	7262.00	7262.00	Inclination (°): 0.700, Azimuth (°): 76.510, TVD (ft): 7191.14, Dogleg (°/100 ft): 0.43, Sensor Depth (ft): 7194.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	14:10	14:35	12-06	7262.00	7352.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 25.00, Surface RPM: 50, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	14:35	14:40	12-06	7352.00	7352.00	Inclination (°): 0.920, Azimuth (°): 67.990, TVD (ft): 7281.14, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 7284.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	14:40	15:05	12-06	7352.00	7441.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	15:05	15:10	12-06	7441.00	7441.00	Inclination (°): 0.700, Azimuth (°): 55.070, TVD (ft): 7370.13, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 7373.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	15:10	15:30	12-06	7441.00	7531.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	15:30	15:35	12-06	7531.00	7531.00	Inclination (°): 0.790, Azimuth (°): 58.850, TVD (ft): 7460.12, Dogleg (°/100 ft): 0.11, Sensor Depth (ft): 7463.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	15:35	16:00	12-06	7531.00	7621.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	16:00	16:05	12-06	7621.00	7621.00	Inclination (°): 0.920, Azimuth (°): 78.450, TVD (ft): 7550.11, Dogleg (°/100 ft): 0.35, Sensor Depth (ft): 7553.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	16:05	16:30	12-06	7621.00	7711.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

Survey	46	12-06	16:30	16:35	12-06	7711.00	7711.00	Inclination (°): 1.010, Azimuth (°): 77.740, TVD (ft): 7640.10, Dogleg (°/100 ft): 0.10, Sensor Depth (ft): 7643.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	16:35	16:45	12-06	7711.00	7732.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-06	16:45	17:00	12-06	7732.00	7748.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 26.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 340, Toolface Type: magnetic
Rotary Drill	1	12-06	17:00	17:10	12-06	7748.00	7801.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	17:10	17:15	12-06	7801.00	7801.00	Inclination (°): 1.100, Azimuth (°): 54.720, TVD (ft): 7730.08, Dogleg (°/100 ft): 0.48, Sensor Depth (ft): 7733.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	17:15	17:50	12-06	7801.00	7890.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	17:50	17:55	12-06	7890.00	7890.00	Inclination (°): 1.630, Azimuth (°): 25.710, TVD (ft): 7819.06, Dogleg (°/100 ft): 0.96, Sensor Depth (ft): 7822.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	17:55	18:35	12-06	7890.00	7980.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	18:35	18:40	12-06	7980.00	7980.00	Inclination (°): 1.360, Azimuth (°): 27.910, TVD (ft): 7909.03, Dogleg (°/100 ft): 0.31, Sensor Depth (ft): 7912.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	18:40	19:15	12-06	7980.00	8070.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	19:15	19:20	12-06	8070.00	8070.00	Inclination (°): 0.970, Azimuth (°): 31.600, TVD (ft): 7999.01, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 8002.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	19:20	19:50	12-06	8070.00	8159.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	19:50	19:55	12-06	8159.00	8159.00	Inclination (°): 0.880, Azimuth (°): 13.930, TVD (ft): 8088.00, Dogleg (°/100 ft): 0.33, Sensor Depth (ft): 8091.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	19:55	20:35	12-06	8159.00	8249.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	20:35	20:40	12-06	8249.00	8249.00	Inclination (°): 0.880, Azimuth (°): 18.770, TVD (ft): 8177.99, Dogleg (°/100 ft): 0.08, Sensor Depth (ft): 8181.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	20:40	21:10	12-06	8249.00	8339.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	21:10	21:15	12-06	8339.00	8339.00	Inclination (°): 0.570, Azimuth (°): 340.800, TVD (ft): 8267.98, Dogleg (°/100 ft): 0.62, Sensor Depth (ft): 8271.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	21:15	21:40	12-06	8339.00	8428.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	21:40	21:45	12-06	8428.00	8428.00	Inclination (°): 0.750, Azimuth (°): 353.810, TVD (ft): 8356.97, Dogleg (°/100 ft): 0.26, Sensor Depth (ft): 8360.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	21:45	22:25	12-06	8428.00	8518.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	22:25	22:30	12-06	8518.00	8518.00	Inclination (°): 0.440, Azimuth (°): 332.890, TVD (ft): 8446.97, Dogleg (°/100 ft): 0.42, Sensor Depth (ft): 8450.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	22:30	23:15	12-06	8518.00	8608.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-06	23:15	23:20	12-06	8608.00	8608.00	Inclination (°): 0.840, Azimuth (°): 321.730, TVD (ft): 8536.96, Dogleg (°/100 ft): 0.46, Sensor Depth (ft): 8540.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-06	23:20	00:00	12-07	8608.00	8668.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Saturday, Dec 07 00:00 - 23:59 (Day 9 of 20)

Billing: \$9,610.07 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	8668.00	Downhole Hours	24.00	Rotating WOB (klbs)	40.00 - 43.00
Bit Depth (ft)	10813.00	Drilling Hours	21.58	Sliding WOB (klbs)	42.00 - 42.00
Bottom Hole Depth (ft)	10813.00	Hours Circulating	0.00	Rotating SPM	234.00 - 234.00
Total Distance (ft)	2145.00	Hours Sliding	0.25	Sliding SPM	234.00 - 234.00
Distance Rotated (ft)	2128.00	Hours Rotating	21.33	Motor RPM	169.00 - 195.00
Distance Slid (ft)	17.00			Surface RPM	45.00 - 60.00
Inclination In	0.62			Flow Rate (gpm)	750.00 - 750.00
Inclination Out	0.75			On Bottom Pressure (psi)	2900.00 - 3300.00
Azimuth In	327.18	% Hours Rotating	99%	Off Bottom Pressure (psi)	2500.00 - 2500.00
Azimuth Out	279.63	% Hours Sliding	1%		
AVG Total ROP (ft/h)	99.10	% Distance Sliding	1%		
AVG Rotating ROP (ft/h)	99.45	% Distance Rotating	99%		
AVG Sliding ROP (ft/h)	68.00				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #4 - BHA #4 (8.5" Intermediate)

Date In: Dec 6, 2019, 2:15 Date Out: Dec 8, 2019, 14:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Aim Motor: 1.5 FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab. Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: NOV, SN: A269255 Type: TKC66Q1, Jets: 6 x 16, TFA: 1.178 Runs: 0
Vendor	NOV	Lobe/Stage	7/8, 8.5	
S/N	A269255	Bend Angle	1.5	
Nozzles	6 x 16	Speed (rev/gal)	0.26	
Total Flow Area (in²)	1.178	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	21.58	Bit Distances		
Total Drilled for Day (ft)	2145.00	Bend (Bit to Bend): 5.45 ft, Survey (Bit to Survey): 68.00 ft, Gamma (Bit to Gamma): 53.00 ft		POOH Reason
Drilling Hours for BHA	42.58			
Total Drilled for BHA (ft)	6008.00			
				Total Depth/Casing Point: TD section, Pooh called 40' early due to loss of ROP. Lost all diff and ROP

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: TKC66Q1, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	NOV	A269255	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 1.5° FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	AIM 700-40-033	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.27	37.27
Stabilizer Description: 8.25" Spiral IBS (Non-Mag)	GTI	CD2043NM	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		4.41	41.68
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-360	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.13	44.81
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-120	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.56	76.37
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-250	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.92	107.29
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15114	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.63	110.92
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1525.12

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	12-06	23:20	00:00	12-07	8608.00	8668.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

Rotary Drill	1	12-07	00:00	00:10	12-07	8668.00	8698.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	00:10	00:15	12-07	8698.00	8698.00	Inclination (°): 0.620, Azimuth (°): 327.180, TVD (ft): 8626.95, Dogleg (°/100 ft): 0.26, Sensor Depth (ft): 8630.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	00:15	01:10	12-07	8698.00	8788.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	01:10	01:15	12-07	8788.00	8788.00	Inclination (°): 0.530, Azimuth (°): 283.930, TVD (ft): 8716.95, Dogleg (°/100 ft): 0.48, Sensor Depth (ft): 8720.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	01:15	02:05	12-07	8788.00	8877.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	02:05	02:10	12-07	8877.00	8877.00	Inclination (°): 0.660, Azimuth (°): 269.700, TVD (ft): 8805.95, Dogleg (°/100 ft): 0.22, Sensor Depth (ft): 8809.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	02:10	03:10	12-07	8877.00	8967.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	03:10	03:15	12-07	8967.00	8967.00	Inclination (°): 0.700, Azimuth (°): 253.260, TVD (ft): 8895.94, Dogleg (°/100 ft): 0.22, Sensor Depth (ft): 8899.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	03:15	03:50	12-07	8967.00	9057.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	03:50	03:55	12-07	9057.00	9057.00	Inclination (°): 0.700, Azimuth (°): 229.440, TVD (ft): 8985.93, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 8989.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	03:55	04:45	12-07	9057.00	9146.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	04:45	04:50	12-07	9146.00	9146.00	Inclination (°): 0.660, Azimuth (°): 223.730, TVD (ft): 9074.93, Dogleg (°/100 ft): 0.09, Sensor Depth (ft): 9078.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	04:50	05:45	12-07	9146.00	9236.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Rig Repair	14	12-07	05:45	06:10	12-07			Work on Pumps
Survey	46	12-07	06:10	06:15	12-07	9236.00	9236.00	Inclination (°): 0.480, Azimuth (°): 251.240, TVD (ft): 9164.92, Dogleg (°/100 ft): 0.36, Sensor Depth (ft): 9168.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	06:15	07:00	12-07	9236.00	9326.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	07:00	07:05	12-07	9326.00	9326.00	Inclination (°): 0.570, Azimuth (°): 274.270, TVD (ft): 9254.92, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 9258.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	07:05	07:55	12-07	9326.00	9415.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	07:55	08:00	12-07	9415.00	9415.00	Inclination (°): 1.190, Azimuth (°): 258.090, TVD (ft): 9343.91, Dogleg (°/100 ft): 0.74, Sensor Depth (ft): 9347.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	08:00	08:40	12-07	9415.00	9505.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	08:40	08:45	12-07	9505.00	9505.00	Inclination (°): 1.270, Azimuth (°): 276.200, TVD (ft): 9433.89, Dogleg (°/100 ft): 0.44, Sensor Depth (ft): 9437.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	08:45	09:25	12-07	9505.00	9595.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	09:25	09:30	12-07	9595.00	9595.00	Inclination (°): 1.580, Azimuth (°): 294.660, TVD (ft): 9523.86, Dogleg (°/100 ft): 0.61, Sensor Depth (ft): 9527.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	09:30	09:55	12-07	9595.00	9685.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	09:55	10:00	12-07	9685.00	9685.00	Inclination (°): 1.930, Azimuth (°): 319.710, TVD (ft): 9613.82, Dogleg (°/100 ft): 0.93, Sensor Depth (ft): 9617.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	10:00	10:05	12-07	9685.00	9695.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 60, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-07	10:05	10:20	12-07	9695.00	9712.00	Pressure On (psi): 2900.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 42.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 90, Toolface Type: magnetic
Rotary Drill	1	12-07	10:20	10:50	12-07	9712.00	9774.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	10:50	10:55	12-07	9774.00	9774.00	Inclination (°): 1.100, Azimuth (°): 20.880, TVD (ft): 9702.79, Dogleg (°/100 ft): 1.91, Sensor Depth (ft): 9706.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	10:55	11:30	12-07	9774.00	9864.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	11:30	11:35	12-07	9864.00	9864.00	Inclination (°): 1.760, Azimuth (°): 39.420, TVD (ft): 9792.76, Dogleg (°/100 ft): 0.89, Sensor Depth (ft): 9796.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	11:35	12:25	12-07	9864.00	9954.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	12:25	12:30	12-07	9954.00	9954.00	Inclination (°): 1.710, Azimuth (°): 27.380, TVD (ft): 9882.72, Dogleg (°/100 ft): 0.41, Sensor Depth (ft): 9886.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	12:30	13:15	12-07	9954.00	10043.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	13:15	13:20	12-07	10043.00	10043.00	Inclination (°): 1.800, Azimuth (°): 15.080, TVD (ft): 9971.68, Dogleg (°/100 ft): 0.43, Sensor Depth (ft): 9975.00, Bit To Sensor (ft): 68.00

Rotary Drill	1	12-07	13:20	14:20	12-07	10043.00	10133.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	14:20	14:25	12-07	10133.00	10133.00	Inclination (°): 1.490, Azimuth (°): 7.520, TVD (ft): 10061.64, Dogleg (°/100 ft): 0.42, Sensor Depth (ft): 10065.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	14:25	15:30	12-07	10133.00	10223.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	15:30	15:35	12-07	10223.00	10223.00	Inclination (°): 1.270, Azimuth (°): 340.450, TVD (ft): 10151.62, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 10155.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	15:35	16:40	12-07	10223.00	10312.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	16:40	16:45	12-07	10312.00	10312.00	Inclination (°): 1.010, Azimuth (°): 326.390, TVD (ft): 10240.60, Dogleg (°/100 ft): 0.43, Sensor Depth (ft): 10244.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	16:45	17:55	12-07	10312.00	10402.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	17:55	18:00	12-07	10402.00	10402.00	Inclination (°): 0.440, Azimuth (°): 322.340, TVD (ft): 10330.59, Dogleg (°/100 ft): 0.64, Sensor Depth (ft): 10334.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	18:00	19:15	12-07	10402.00	10492.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	19:15	19:20	12-07	10492.00	10492.00	Inclination (°): 0.480, Azimuth (°): 331.130, TVD (ft): 10420.59, Dogleg (°/100 ft): 0.09, Sensor Depth (ft): 10424.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	19:20	20:25	12-07	10492.00	10581.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	20:25	20:30	12-07	10581.00	10581.00	Inclination (°): 0.570, Azimuth (°): 344.140, TVD (ft): 10509.59, Dogleg (°/100 ft): 0.17, Sensor Depth (ft): 10513.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	20:30	21:40	12-07	10581.00	10671.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	21:40	21:45	12-07	10671.00	10671.00	Inclination (°): 0.480, Azimuth (°): 315.580, TVD (ft): 10599.58, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 10603.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	21:45	23:10	12-07	10671.00	10760.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-07	23:10	23:15	12-07	10760.00	10760.00	Inclination (°): 0.750, Azimuth (°): 279.630, TVD (ft): 10688.58, Dogleg (°/100 ft): 0.51, Sensor Depth (ft): 10692.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-07	23:15	00:00	12-08	10760.00	10813.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Sunday, Dec 08 00:00 - 23:59 (Day 10 of 20)

Billing: N/A (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	10813.00	Downhole Hours	14.00	Rotating WOB (klbs)	43.00 - 43.00
Bit Depth (ft)	11285.00	Drilling Hours	6.83	Sliding WOB (klbs)	40.00 - 40.00
Bottom Hole Depth (ft)	11285.00	Hours Circulating	1.08	Rotating SPM	234.00 - 234.00
Total Distance (ft)	472.00	Hours Sliding	0.75	Sliding SPM	234.00 - 234.00
Distance Rotated (ft)	434.00	Hours Rotating	6.08	Motor RPM	169.00 - 195.00
Distance Slid (ft)	38.00			Surface RPM	45.00 - 45.00
Inclination In	0.57			Flow Rate (gpm)	750.00 - 750.00
Inclination Out	0.79			On Bottom Pressure (psi)	500.00 - 3300.00
Azimuth In	253.08	% Hours Rotating	89%	Off Bottom Pressure (psi)	2500.00 - 2500.00
Azimuth Out	231.29	% Hours Sliding	11%		
AVG Total ROP (ft/h)	69.23	% Distance Sliding	8%		
AVG Rotating ROP (ft/h)	71.27	% Distance Rotating	92%		
AVG Sliding ROP (ft/h)	50.67				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #4 - BHA #4 (8.5" Intermediate)

Date In: Dec 6, 2019, 2:15 Date Out: Dec 8, 2019, 14:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Aim Motor: 1.5 FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab. Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: NOV, SN: A269255 Type: TKC66Q1, Jets: 6 x 16, TFA: 1.178 Runs: 0
Vendor	NOV	Lobe/Stage	7/8, 8.5	
S/N	A269255	Bend Angle	1.5	
Nozzles	6 x 16	Speed (rev/gal)	0.26	
Total Flow Area (in²)	1.178	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	6.83	Bit Distances		
Total Drilled for Day (ft)	472.00	Bend (Bit to Bend): 5.45 ft, Survey (Bit to Survey): 68.00 ft, Gamma (Bit to Gamma): 53.00 ft		POOH Reason
Drilling Hours for BHA	42.58			
Total Drilled for BHA (ft)	6008.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: TKC66Q1, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	NOV	A269255	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 1.5° FBH 7/8 8.5 Stg Mtr w/ 8.25" Stab, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	AIM 700-40-033	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.27	37.27
Stabilizer Description: 8.25" Spiral IBS (Non-Mag)	GTI	CD2043NM	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		4.41	41.68
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-360	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.13	44.81
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-120	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.56	76.37
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-250	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.92	107.29
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15114	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.63	110.92
HWDP Description: 15 STANDS 5.5" HWDP, Style: Slick			EverDrlg54 Box	EverDrlg54 Pin	3.875	6.688		1414.20	1525.12

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	12-07	23:15	00:00	12-08	10760.00	10813.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00

Rotary Drill	1	12-08	00:00	00:25	12-08	10813.00	10850.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-08	00:25	00:30	12-08	10850.00	10850.00	Inclination (°): 0.570, Azimuth (°): 253.080, TVD (ft): 10778.57, Dogleg (°/100 ft): 0.39, Sensor Depth (ft): 10782.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-08	00:30	01:35	12-08	10850.00	10940.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-08	01:35	01:40	12-08	10940.00	10940.00	Inclination (°): 1.140, Azimuth (°): 212.480, TVD (ft): 10868.56, Dogleg (°/100 ft): 0.89, Sensor Depth (ft): 10872.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-08	01:40	02:50	12-08	10940.00	11029.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-08	02:50	02:55	12-08	11029.00	11029.00	Inclination (°): 1.800, Azimuth (°): 210.990, TVD (ft): 10957.53, Dogleg (°/100 ft): 0.74, Sensor Depth (ft): 10961.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-08	02:55	03:10	12-08	11029.00	11032.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-08	03:10	03:25	12-08	11032.00	11050.00	Pressure On (psi): 500.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 90, Toolface Type: magnetic
Rotary Drill	1	12-08	03:25	04:10	12-08	11050.00	11119.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-08	04:10	04:15	12-08	11119.00	11119.00	Inclination (°): 1.490, Azimuth (°): 206.060, TVD (ft): 11047.50, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 11051.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-08	04:15	04:20	12-08	11119.00	11120.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Slide Drill	2	12-08	04:20	04:50	12-08	11120.00	11140.00	Pressure On (psi): 500.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234, Toolface: 30, Toolface Type: magnetic
Rotary Drill	1	12-08	04:50	05:40	12-08	11140.00	11209.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Survey	46	12-08	05:40	05:45	12-08	11209.00	11209.00	Inclination (°): 0.790, Azimuth (°): 231.290, TVD (ft): 11137.48, Dogleg (°/100 ft): 0.94, Sensor Depth (ft): 11141.00, Bit To Sensor (ft): 68.00
Rotary Drill	1	12-08	05:45	07:15	12-08	11209.00	11285.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2500.00, Weight On Bit (klbs): 43.00, Surface RPM: 45, Surface Torque (ft lbf): 16500.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Circulating Pooh	3	12-08	07:15	08:20	12-08			Circulate Sweep / Pump Slug
	7	12-08	08:20	13:20	12-08			POOH / Called TD 40' early due to Motor failure / L/D MWD tool / Break off bit and rack back BHA
Change BHA	6	12-08	13:20	14:00	12-08			L/D MWD & Bit / Rack back BHA
Standby	15	12-08	14:00	18:00	12-08			Standby while Rig sets bridge plug and skids to the 608H

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Tuesday, Dec 31 00:00 - 23:59 (Day 11 of 20)

Billing: \$15,400.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11285.00	Downhole Hours	17.50	Rotating WOB (klbs)	25.00 - 40.00
Bit Depth (ft)	11943.00	Drilling Hours	7.50	Sliding WOB (klbs)	45.00 - 50.00
Bottom Hole Depth (ft)	11943.00	Hours Circulating	1.25	Rotating SPM	186.00 - 186.00
Total Distance (ft)	658.00	Hours Sliding	4.08	Sliding SPM	186.00 - 186.00
Distance Rotated (ft)	336.00	Hours Rotating	3.42	Motor RPM	173.00 - 173.00
Distance Slid (ft)	322.00			Surface RPM	40.00 - 40.00
Inclination In	1.05			Flow Rate (gpm)	600.00 - 600.00
Inclination Out	54.46			On Bottom Pressure (psi)	3200.00 - 3300.00
Azimuth In	263.81	% Hours Rotating	46%	Off Bottom Pressure (psi)	2850.00 - 2850.00
Azimuth Out	359.70	% Hours Sliding	54%		
AVG Total ROP (ft/h)	87.73	% Distance Sliding	49%		
AVG Rotating ROP (ft/h)	98.34	% Distance Rotating	51%		
AVG Sliding ROP (ft/h)	78.86				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #5 - BHA #5 (Curve Assembly)

Date In: Dec 31, 2019, 6:30 Date Out: Jan 1, 2020, 12:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	6.75	Aim Motor: 2.12° FBH 7/8 5.0 Stg Mtr w/ Slick Sleeve Flow Rate: 300 - 600 gpm, Max Diff: 1130 psi, Max Operating Torque: 10,460 ft-lbs, Bit Info: Ulterra, SN: 51320 Type: CF611, Jets: 6 x 22, TFA: 2.227 Runs: 0
Vendor	Ulterra	Lobe/Stage	7/8, 5.0	
S/N	51320	Bend Angle	2.12	
Nozzles	6 x 22	Speed (rev/gal)	0.29	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.000	POOH Reason Change Bottom Hole Assembly: Landed Curve / Pooh to Log Curve
Drilling Hours for Day	7.50	Bit Distances		
Total Drilled for Day (ft)	658.00	Bend (Bit to Bend): 4.07 ft, Survey (Bit to Survey): 53.00 ft, Gamma (Bit to Gamma): 38.00 ft		
Drilling Hours for BHA	12.08			
Total Drilled for BHA (ft)	1091.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: CF611, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Ulterra	51320	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 2.12° FBH 7/8 5.0 Stg Mtr w/ Slick Sleeve, Size (in): 6.75, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5	AIM	CDM 650-013	4 1/2" IF Box	4 1/2" Reg Box		6.750		26.01	27.01
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-360	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	30.06
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-137	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.96	61.02
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	92.02
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	95.68

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	12-31	00:00	06:30	12-31			Standby- Skid to 607H, N/U BOPs and Test
Change BHA	6	12-31	06:30	07:45	12-31			P/U BHA #5 (Curve Assembly)
Circulating	3	12-31	07:45	08:00	12-31			Test Mwd Tool & Motor (Test Good) Testing PSI @ 450psi @ 300 GPM
TIH	8	12-31	08:00	14:00	12-31			TIH W/ BHA #5
Logging	11	12-31	14:00	14:15	12-31			Re-Log gamma F/ 11,211' - T/ 11,285'
Circulating	3	12-31	14:15	15:15	12-31			Displace with OBM

Rotary Drill	1	12-31	15:15	15:45	12-31	11285.00	11301.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 25.00, Surface RPM: 40, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	12-31	15:45	15:50	12-31	11301.00	11301.00	Inclination (°): 1.050, Azimuth (°): 263.810, TVD (ft): 11244.47, Dogleg (°/100 ft): 0.54, Sensor Depth (ft): 11248.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	12-31	15:50	16:05	12-31	11301.00	11331.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 25.00, Surface RPM: 40, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	12-31	16:05	16:50	12-31	11331.00	11390.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 0, Toolface Type: magnetic
Survey	46	12-31	16:50	17:00	12-31	11390.00	11390.00	Inclination (°): 1.670, Azimuth (°): 329.370, TVD (ft): 11333.44, Dogleg (°/100 ft): 1.76, Sensor Depth (ft): 11337.00, Bit To Sensor (ft): 53.00
Slide Drill	2	12-31	17:00	18:00	12-31	11390.00	11480.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 0, Toolface Type: magnetic
Survey	46	12-31	18:00	18:10	12-31	11480.00	11480.00	Inclination (°): 17.320, Azimuth (°): 5.230, TVD (ft): 11421.96, Dogleg (°/100 ft): 17.77, Sensor Depth (ft): 11427.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	12-31	18:10	18:25	12-31	11480.00	11505.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 30.00, Surface RPM: 40, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	12-31	18:25	19:15	12-31	11505.00	11569.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 350, Toolface Type: gravity
Survey	46	12-31	19:15	19:25	12-31	11569.00	11569.00	Inclination (°): 28.790, Azimuth (°): 1.630, TVD (ft): 11503.72, Dogleg (°/100 ft): 12.98, Sensor Depth (ft): 11516.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	12-31	19:25	19:55	12-31	11569.00	11624.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 30.00, Surface RPM: 40, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	12-31	19:55	20:25	12-31	11624.00	11659.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 0, Toolface Type: gravity
Survey	46	12-31	20:25	20:35	12-31	11659.00	11659.00	Inclination (°): 36.350, Azimuth (°): 0.930, TVD (ft): 11579.51, Dogleg (°/100 ft): 8.41, Sensor Depth (ft): 11606.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	12-31	20:35	21:10	12-31	11659.00	11714.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 30.00, Surface RPM: 40, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	12-31	21:10	21:40	12-31	11714.00	11748.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 0, Toolface Type: gravity
Survey	46	12-31	21:40	21:50	12-31	11748.00	11748.00	Inclination (°): 40.620, Azimuth (°): 359.870, TVD (ft): 11649.16, Dogleg (°/100 ft): 4.85, Sensor Depth (ft): 11695.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	12-31	21:50	22:15	12-31	11748.00	11793.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 30.00, Surface RPM: 40, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	12-31	22:15	22:45	12-31	11793.00	11833.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	12-31	22:45	22:50	12-31	11833.00	11838.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 30.00, Surface RPM: 40, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	12-31	22:50	23:00	12-31	11838.00	11838.00	Inclination (°): 46.990, Azimuth (°): 359.610, TVD (ft): 11714.08, Dogleg (°/100 ft): 7.08, Sensor Depth (ft): 11785.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	12-31	23:00	23:45	12-31	11838.00	11928.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	12-31	23:45	23:55	12-31	11928.00	11928.00	Inclination (°): 54.460, Azimuth (°): 359.700, TVD (ft): 11771.02, Dogleg (°/100 ft): 8.30, Sensor Depth (ft): 11875.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	12-31	23:55	00:00	01-01	11928.00	11943.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Wednesday, Jan 01 00:00 - 23:59 (Day 12 of 20)

Billing: \$5,700.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11943.00	Downhole Hours	12.00	Rotating WOB (klbs)	40.00 - 40.00
Bit Depth (ft)	12376.00	Drilling Hours	4.58	Sliding WOB (klbs)	50.00 - 50.00
Bottom Hole Depth (ft)	12376.00	Hours Circulating	1.33	Rotating SPM	186.00 - 186.00
Total Distance (ft)	433.00	Hours Sliding	2.25	Sliding SPM	186.00 - 186.00
Distance Rotated (ft)	275.00	Hours Rotating	2.33	Motor RPM	173.00 - 173.00
Distance Slid (ft)	158.00			Surface RPM	40.00 - 40.00
Inclination In	59.12			Flow Rate (gpm)	600.00 - 600.00
Inclination Out	87.16			On Bottom Pressure (psi)	3150.00 - 3150.00
Azimuth In	358.99	% Hours Rotating	51%	Off Bottom Pressure (psi)	2400.00 - 2400.00
Azimuth Out	0.84	% Hours Sliding	49%		
AVG Total ROP (ft/h)	96.00	% Distance Sliding	36%		
AVG Rotating ROP (ft/h)	120.00	% Distance Rotating	64%		
AVG Sliding ROP (ft/h)	70.22				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #5 - BHA #5 (Curve Assembly)

Date In: Dec 31, 2019, 6:30 Date Out: Jan 1, 2020, 12:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	6.75	Aim Motor: 2.12° FBH 7/8 5.0 Stg Mtr w/ Slick Sleeve Flow Rate: 300 - 600 gpm, Max Diff: 1130 psi, Max Operating Torque: 10,460 ft-lbs, Bit Info: Ulterra, SN: 51320 Type: CF611, Jets: 6 x 22, TFA: 2.227 Runs: 0
Vendor	Ulterra	Lobe/Stage	7/8, 5.0	
S/N	51320	Bend Angle	2.12	
Nozzles	6 x 22	Speed (rev/gal)	0.29	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.000	MWD Comments
Drilling Hours for Day	4.58	Bit Distances		
Total Drilled for Day (ft)	433.00	Bend (Bit to Bend): 4.07 ft, Survey (Bit to Survey): 53.00 ft, Gamma (Bit to Gamma): 38.00 ft		
Drilling Hours for BHA	12.08			
Total Drilled for BHA (ft)	1091.00			
				POOH Reason
				Change Bottom Hole Assembly: Landed Curve / Pooh to Log Curve

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: CF611, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Ulterra	51320	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 2.12° FBH 7/8 5.0 Stg Mtr w/ Slick Sleeve, Size (in): 6.75, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5	AIM	CDM 650-013	4 1/2" IF Box	4 1/2" Reg Box		6.750		26.01	27.01
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-360	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	30.06
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-137	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.96	61.02
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	92.02
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	95.68

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	12-31	23:55	00:00	01-01	11928.00	11943.00	Pressure On (psi): 3300.00, Pressure Off (psi): 2850.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	01-01	00:00	00:45	01-01	11943.00	11993.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	01-01	00:45	01:00	01-01	11993.00	12017.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00

Survey	46	01-01	01:00	01:10	01-01	12017.00	12017.00	Inclination (°): 59.120, Azimuth (°): 358.990, TVD (ft): 11819.75, Dogleg (°/100 ft): 5.28, Sensor Depth (ft): 11964.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	01-01	01:10	01:25	01-01	12017.00	12044.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	01-01	01:25	01:50	01-01	12044.00	12069.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 15, Toolface Type: gravity
Rotary Drill	1	01-01	01:50	02:15	01-01	12069.00	12107.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	01-01	02:15	02:25	01-01	12107.00	12107.00	Inclination (°): 66.990, Azimuth (°): 358.990, TVD (ft): 11860.50, Dogleg (°/100 ft): 8.74, Sensor Depth (ft): 12054.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	01-01	02:25	02:45	01-01	12107.00	12153.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	01-01	02:45	03:10	01-01	12153.00	12183.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 15, Toolface Type: gravity
Rotary Drill	1	01-01	03:10	03:20	01-01	12183.00	12196.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	01-01	03:20	03:30	01-01	12196.00	12196.00	Inclination (°): 69.760, Azimuth (°): 359.170, TVD (ft): 11893.29, Dogleg (°/100 ft): 3.12, Sensor Depth (ft): 12143.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	01-01	03:30	03:45	01-01	12196.00	12233.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	01-01	03:45	04:25	01-01	12233.00	12286.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 15, Toolface Type: gravity
Survey	46	01-01	04:25	04:35	01-01	12286.00	12286.00	Inclination (°): 77.050, Azimuth (°): 359.700, TVD (ft): 11918.98, Dogleg (°/100 ft): 8.12, Sensor Depth (ft): 12233.00, Bit To Sensor (ft): 53.00
Rotary Drill	1	01-01	04:35	05:15	01-01	12286.00	12376.00	Pressure On (psi): 3150.00, Pressure Off (psi): 2400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	01-01	05:15	05:20	01-01	12376.00	12376.00	Inclination (°): 87.160, Azimuth (°): 0.840, TVD (ft): 11931.33, Dogleg (°/100 ft): 11.30, Sensor Depth (ft): 12323.00, Bit To Sensor (ft): 53.00
Circulating Pooh	3	01-01	05:20	06:40	01-01			CIRCULATE HOLE CLEAN TO POOH TO RUN LOGS
Pooh	7	01-01	06:40	12:00	01-01			POOH after landing curve / Pull MWD tool, break off bit and rack back BHA
Standby	15	01-01	12:00	16:15	01-02			Wireline Logging

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Thursday, Jan 02 00:00 - 23:59 (Day 13 of 20)

Billing: \$20,245.00 (\$140,534.25 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours	7.00	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)	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	Hours Rotating	0.00	Motor RPM	0.00 - 0.00
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
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #6 - BHA #6 (Lateral Assembly)

Date In: Jan 2, 2020, 17:00 Date Out: Jan 6, 2020, 17:00

Bit Details		Motor Details	Directional Comments
OD (in)	8.500	Size (in)	7.0
Vendor	Baker	Lobe/Stage	7/8, 8.5
S/N	5305827	Bend Angle	1.75
Nozzles	6 x 22	Speed (rev/gal)	0.26
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.250
Drilling Hours for Day	0.00	Bit Distances	
Total Drilled for Day (ft)		Bend (Bit to Bend): 5.30 ft, Survey (Bit to Survey): 63.00 ft, Gamma (Bit to Gamma): 48.00 ft	
Drilling Hours for BHA	61.83	POOH Reason	
Total Drilled for BHA (ft)	7042.00	Total Depth/Casing Point	

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): 3.50, Size (in): 8.50	Baker	5305827	4 1/2" Reg Pin			8.500		1.10	1.10
Mud Motor Description: 1.75° FBH 7/8 8.5 Stg Mtr, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-025	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.32
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-362	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	40.37
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-202	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.01	70.38
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	101.38
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	105.04
Drill Pipe Description: (38 Stands) 5.5" Drill Pipe, Style: Slick	BD		EverDrlg54 Box	EverDrlg54 Pin	3.500	5.500		3406.18	3511.22
Crossover Sub Description: X-over (ED54 Pin x 4 1/2" IF Box), Type: Steel	BD	BD15901	4 1/2" IF Box	EverDrlg54 Pin	3.500	6.750		3.74	3514.96
Agitator Description: Agitator, Size (in): 6.75	NOV	W-1815034-77	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.43	3540.39
Crossover Sub Description: X-Over (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD12360	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.65	3544.04

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	01-01	12:00	16:15	01-02			Wireline Logging
Change BHA	6	01-02	16:15	17:30	01-02			P/U BHA # 6 / C/O Motor, P/U bit and MWD tool
TIH	8	01-02	17:30	19:20	01-02			TIH W/ BHA #??
Other	16	01-02	19:20	20:00	01-02			Test w/out Agitator, P/U Agitator, Test
TIH	8	01-02	20:00	00:00	01-03			TIH W/ BHA #6

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Friday, Jan 03 00:00 - 23:59 (Day 14 of 20)

Billing: \$6,200.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	12376.00	Downhole Hours	24.00	Rotating WOB (klbs)	45.00 - 50.00
Bit Depth (ft)	14895.00	Drilling Hours	20.67	Sliding WOB (klbs)	20.00 - 35.00
Bottom Hole Depth (ft)	14895.00	Hours Circulating	0.00	Rotating SPM	222.00 - 238.00
Total Distance (ft)	2519.00	Hours Sliding	4.50	Sliding SPM	204.00 - 220.00
Distance Rotated (ft)	2364.00	Hours Rotating	16.17	Motor RPM	0.00 - 0.00
Distance Slid (ft)	155.00			Surface RPM	50.00 - 70.00
Inclination In	88.04			Flow Rate (gpm)	650.00 - 750.00
Inclination Out	90.77			On Bottom Pressure (psi)	4000.00 - 5100.00
Azimuth In	359.42	% Hours Rotating	78%	Off Bottom Pressure (psi)	3700.00 - 4300.00
Azimuth Out	1.71	% Hours Sliding	22%		
AVG Total ROP (ft/h)	121.89	% Distance Sliding	6%		
AVG Rotating ROP (ft/h)	146.23	% Distance Rotating	94%		
AVG Sliding ROP (ft/h)	34.44				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #6 - BHA #6 (Lateral Assembly)

Date In: Jan 2, 2020, 17:00 Date Out: Jan 6, 2020, 17:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Aim Motor: 1.75° FBH 7/8 8.5 Stg Mtr. Slick Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs., Bit Info: Baker, SN: 5305827 Type: DD506TWX, Jets: 6 x 22, TFA: 2.227 Runs: 0
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5305827	Bend Angle	1.75	
Nozzles	6 x 22	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.250	MWD Comments
Drilling Hours for Day	20.67	Bit Distances		
Total Drilled for Day (ft)	2519.00	Bend (Bit to Bend): 5.30 ft, Survey (Bit to		
Drilling Hours for BHA	61.83	Survey): 63.00 ft, Gamma (Bit to		POOH Reason
Total Drilled for BHA (ft)	7042.00	Gamma): 48.00 ft		
				Total Depth/Casing Point

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): 3.50, Size (in): 8.50	Baker	5305827	4 1/2" Reg Pin			8.500		1.10	1.10
Mud Motor Description: 1.75° FBH 7/8 8.5 Stg Mtr, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-025	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.32
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-362	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	40.37
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-202	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.01	70.38
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	101.38
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	105.04
Drill Pipe Description: (38 Stands) 5.5" Drill Pipe, Style: Slick	BD		EverDrlg54 Box	EverDrlg54 Pin	3.500	5.500		3406.18	3511.22
Crossover Sub Description: X-over (ED54 Pin x 4 1/2" IF Box), Type: Steel	BD	BD15901	4 1/2" IF Box	EverDrlg54 Pin	3.500	6.750		3.74	3514.96
Agitator Description: Agitator, Size (in): 6.75	NOV	W-1815034-77	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.43	3540.39
Crossover Sub Description: X-Over (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD12360	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.65	3544.04

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	01-02	20:00	00:00	01-03			TIH W/ BHA #6
Rotary Drill	1	01-03	00:00	01:55	01-03	12376.00	12508.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	01:55	02:10	01-03	12508.00	12508.00	Inclination (°): 88.040, Azimuth (°): 359.420, TVD (ft): 11936.44, Dogleg (°/100 ft): 1.37, Sensor Depth (ft): 12445.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	02:10	02:45	01-03	12508.00	12597.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	02:45	02:50	01-03	12597.00	12597.00	Inclination (°): 88.090, Azimuth (°): 359.250, TVD (ft): 11939.44, Dogleg (°/100 ft): 0.20, Sensor Depth (ft): 12534.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	02:50	03:45	01-03	12597.00	12690.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Slide Drill	2	01-03	03:45	04:50	01-03	12690.00	12705.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3800.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 220, Toolface: 60, Toolface Type: gravity
Rotary Drill	1	01-03	04:50	05:25	01-03	12705.00	12776.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	05:25	05:30	01-03	12776.00	12776.00	Inclination (°): 89.490, Azimuth (°): 358.630, TVD (ft): 11943.22, Dogleg (°/100 ft): 0.86, Sensor Depth (ft): 12713.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	05:30	06:30	01-03	12776.00	12866.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	06:30	06:40	01-03	12866.00	12866.00	Inclination (°): 90.110, Azimuth (°): 357.490, TVD (ft): 11943.54, Dogleg (°/100 ft): 1.44, Sensor Depth (ft): 12803.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	06:40	06:50	01-03	12866.00	12878.00	RECYCLE Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Slide Drill	2	01-03	06:50	07:20	01-03	12878.00	12898.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3800.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 220, Toolface: 90, Toolface Type: gravity
Rotary Drill	1	01-03	07:20	07:45	01-03	12898.00	12955.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	07:45	07:55	01-03	12955.00	12955.00	Inclination (°): 90.150, Azimuth (°): 358.280, TVD (ft): 11943.33, Dogleg (°/100 ft): 0.89, Sensor Depth (ft): 12892.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	07:55	08:30	01-03	12955.00	13045.00	RECYCLE Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	08:30	08:40	01-03	13045.00	13045.00	Inclination (°): 90.730, Azimuth (°): 358.980, TVD (ft): 11942.64, Dogleg (°/100 ft): 1.01, Sensor Depth (ft): 12982.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	08:40	09:20	01-03	13045.00	13134.00	RECYCLE Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	09:20	09:35	01-03	13134.00	13134.00	Inclination (°): 89.890, Azimuth (°): 358.280, TVD (ft): 11942.16, Dogleg (°/100 ft): 1.23, Sensor Depth (ft): 13071.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	09:35	10:10	01-03	13134.00	13224.00	RECYCLE / DOWNLINK Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	10:10	10:20	01-03	13224.00	13224.00	Inclination (°): 89.850, Azimuth (°): 357.750, TVD (ft): 11942.37, Dogleg (°/100 ft): 0.59, Sensor Depth (ft): 13161.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	10:20	10:30	01-03	13224.00	13238.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4000.00, Weight On Bit (klbs): 45.00, Surface RPM: 50, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Slide Drill	2	01-03	10:30	10:50	01-03	13238.00	13260.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 30.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 220, Toolface: 80, Toolface Type: gravity
Rotary Drill	1	01-03	10:50	11:10	01-03	13260.00	13313.00	Pressure On (psi): 4900.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	11:10	11:20	01-03	13313.00	13313.00	Inclination (°): 90.370, Azimuth (°): 358.720, TVD (ft): 11942.20, Dogleg (°/100 ft): 1.24, Sensor Depth (ft): 13250.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	11:20	11:45	01-03	13313.00	13403.00	RECYCLE Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 60, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	11:45	11:50	01-03	13403.00	13403.00	Inclination (°): 90.950, Azimuth (°): 359.160, TVD (ft): 11941.16, Dogleg (°/100 ft): 0.81, Sensor Depth (ft): 13340.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	11:50	12:20	01-03	13403.00	13492.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00

Survey	46	01-03	12:20	12:30	01-03	13492.00	13492.00	Inclination (°): 92.700, Azimuth (°): 0.040, TVD (ft): 11938.32, Dogleg (°/100 ft): 2.20, Sensor Depth (ft): 13429.00, Bit To Sensor (ft): 63.00 RECYCLE
Rotary Drill	1	01-03	12:30	12:40	01-03	13492.00	13502.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Slide Drill	2	01-03	12:40	13:15	01-03	13502.00	13525.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 35.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 220, Toolface: 150, Toolface Type: gravity RECYCLE IN THE MIDDLE OF SLIDE
Rotary Drill	1	01-03	13:15	13:30	01-03	13525.00	13582.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	13:30	13:35	01-03	13582.00	13582.00	Inclination (°): 92.310, Azimuth (°): 359.420, TVD (ft): 11934.39, Dogleg (°/100 ft): 0.81, Sensor Depth (ft): 13519.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	13:35	13:40	01-03	13582.00	13592.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Slide Drill	2	01-03	13:40	14:10	01-03	13592.00	13607.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 35.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 220, Toolface: 140, Toolface Type: gravity
Rotary Drill	1	01-03	14:10	14:30	01-03	13607.00	13672.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	14:30	14:35	01-03	13672.00	13672.00	Inclination (°): 90.950, Azimuth (°): 0.210, TVD (ft): 11931.83, Dogleg (°/100 ft): 1.75, Sensor Depth (ft): 13609.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	14:35	14:40	01-03	13672.00	13687.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Slide Drill	2	01-03	14:40	15:00	01-03	13687.00	13697.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 35.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 220, Toolface: 130, Toolface Type: gravity
Rotary Drill	1	01-03	15:00	15:20	01-03	13697.00	13761.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 238.00
Survey	46	01-03	15:20	15:25	01-03	13761.00	13761.00	Inclination (°): 90.550, Azimuth (°): 1.180, TVD (ft): 11930.67, Dogleg (°/100 ft): 1.18, Sensor Depth (ft): 13698.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	15:25	15:55	01-03	13761.00	13851.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	15:55	16:05	01-03	13851.00	13851.00	Inclination (°): 90.290, Azimuth (°): 0.650, TVD (ft): 11930.01, Dogleg (°/100 ft): 0.66, Sensor Depth (ft): 13788.00, Bit To Sensor (ft): 63.00 RECYCLE
Rotary Drill	1	01-03	16:05	16:35	01-03	13851.00	13940.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	16:35	16:40	01-03	13940.00	13940.00	Inclination (°): 90.200, Azimuth (°): 359.950, TVD (ft): 11929.63, Dogleg (°/100 ft): 0.79, Sensor Depth (ft): 13877.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	16:40	17:05	01-03	13940.00	14029.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Rig Service - In Hole	19	01-03	17:05	17:20	01-03			RIG SERVICE
Survey	46	01-03	17:20	17:25	01-03	14029.00	14029.00	Inclination (°): 90.370, Azimuth (°): 359.160, TVD (ft): 11929.18, Dogleg (°/100 ft): 0.91, Sensor Depth (ft): 13966.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	17:25	17:50	01-03	14029.00	14119.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	17:50	17:55	01-03	14119.00	14119.00	Inclination (°): 89.710, Azimuth (°): 358.630, TVD (ft): 11929.12, Dogleg (°/100 ft): 0.94, Sensor Depth (ft): 14056.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	17:55	18:15	01-03	14119.00	14208.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	18:15	18:20	01-03	14208.00	14208.00	Inclination (°): 89.490, Azimuth (°): 358.370, TVD (ft): 11929.74, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 14145.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	18:20	18:55	01-03	14208.00	14298.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	18:55	19:00	01-03	14298.00	14298.00	Inclination (°): 89.930, Azimuth (°): 357.750, TVD (ft): 11930.20, Dogleg (°/100 ft): 0.84, Sensor Depth (ft): 14235.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	19:00	19:05	01-03	14298.00	14305.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 50, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Slide Drill	2	01-03	19:05	19:35	01-03	14305.00	14325.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 90, Toolface Type: gravity
Rotary Drill	1	01-03	19:35	19:50	01-03	14325.00	14388.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 50, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	19:50	19:55	01-03	14388.00	14388.00	Inclination (°): 89.710, Azimuth (°): 359.070, TVD (ft): 11930.48, Dogleg (°/100 ft): 1.49, Sensor Depth (ft): 14325.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	19:55	20:25	01-03	14388.00	14477.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 50, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00

Survey	46	01-03	20:25	20:30	01-03	14477.00	14477.00	Inclination (°): 89.930, Azimuth (°): 359.510, TVD (ft): 11930.76, Dogleg (%/100 ft): 0.55, Sensor Depth (ft): 14414.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	20:30	20:55	01-03	14477.00	14567.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 50, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	20:55	21:00	01-03	14567.00	14567.00	Inclination (°): 90.070, Azimuth (°): 358.630, TVD (ft): 11930.76, Dogleg (%/100 ft): 0.99, Sensor Depth (ft): 14504.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	21:00	21:30	01-03	14567.00	14656.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 50, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	21:30	21:35	01-03	14656.00	14656.00	Inclination (°): 90.420, Azimuth (°): 358.190, TVD (ft): 11930.38, Dogleg (%/100 ft): 0.63, Sensor Depth (ft): 14593.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	21:35	22:15	01-03	14656.00	14746.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	22:15	22:20	01-03	14746.00	14746.00	Inclination (°): 91.380, Azimuth (°): 358.100, TVD (ft): 11928.96, Dogleg (%/100 ft): 1.07, Sensor Depth (ft): 14683.00, Bit To Sensor (ft): 63.00
Slide Drill	2	01-03	22:20	23:00	01-03	14746.00	14776.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 135, Toolface Type: gravity
Rotary Drill	1	01-03	23:00	23:20	01-03	14776.00	14835.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-03	23:20	23:25	01-03	14835.00	14835.00	Inclination (°): 90.770, Azimuth (°): 1.710, TVD (ft): 11927.29, Dogleg (%/100 ft): 4.11, Sensor Depth (ft): 14772.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-03	23:25	00:00	01-04	14835.00	14895.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Saturday, Jan 04 00:00 - 23:59 (Day 15 of 20)

Billing: \$6,200.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	14895.00	Downhole Hours	24.00	Rotating WOB (klbs)	50.00 - 50.00
Bit Depth (ft)	17386.00	Drilling Hours	21.25	Sliding WOB (klbs)	20.00 - 45.00
Bottom Hole Depth (ft)	17386.00	Hours Circulating	0.00	Rotating SPM	222.00 - 225.00
Total Distance (ft)	2491.00	Hours Sliding	6.92	Sliding SPM	204.00 - 225.00
Distance Rotated (ft)	2219.00	Hours Rotating	14.33	Motor RPM	0.00 - 0.00
Distance Slid (ft)	272.00			Surface RPM	70.00 - 70.00
Inclination In	91.30			Flow Rate (gpm)	650.00 - 725.00
Inclination Out	92.84			On Bottom Pressure (psi)	4000.00 - 5100.00
Azimuth In	3.20	% Hours Rotating	67%	Off Bottom Pressure (psi)	3700.00 - 4300.00
Azimuth Out	357.40	% Hours Sliding	33%		
AVG Total ROP (ft/h)	116.84	% Distance Sliding	11%		
AVG Rotating ROP (ft/h)	152.78	% Distance Rotating	89%		
AVG Sliding ROP (ft/h)	39.33				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #6 - BHA #6 (Lateral Assembly)

Date In: Jan 2, 2020, 17:00 Date Out: Jan 6, 2020, 17:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Aim Motor: 1.75° FBH 7/8 8.5 Stg Mtr. Slick Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: Baker, SN: 5305827 Type: DD506TWX, Jets: 6 x 22, TFA: 2.227 Runs: 0
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5305827	Bend Angle	1.75	
Nozzles	6 x 22	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.250	MWD Comments
Drilling Hours for Day	21.25	Bit Distances		
Total Drilled for Day (ft)	2491.00	Bend (Bit to Bend): 5.30 ft, Survey (Bit to Survey): 63.00 ft, Gamma (Bit to Gamma): 48.00 ft		
Drilling Hours for BHA	61.83			POOH Reason
Total Drilled for BHA (ft)	7042.00			
				Total Depth/Casing Point

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): 3.50, Size (in): 8.50	Baker	5305827	4 1/2" Reg Pin			8.500		1.10	1.10
Mud Motor Description: 1.75° FBH 7/8 8.5 Stg Mtr, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-025	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.32
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-362	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	40.37
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-202	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.01	70.38
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	101.38
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	105.04
Drill Pipe Description: (38 Stands) 5.5" Drill Pipe, Style: Slick	BD		EverDrlg54 Box	EverDrlg54 Pin	3.500	5.500		3406.18	3511.22
Crossover Sub Description: X-over (ED54 Pin x 4 1/2" IF Box), Type: Steel	BD	BD15901	4 1/2" IF Box	EverDrlg54 Pin	3.500	6.750		3.74	3514.96
Agitator Description: Agitator, Size (in): 6.75	NOV	W-1815034-77	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.43	3540.39
Crossover Sub Description: X-Over (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD12360	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.65	3544.04

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	01-03	23:25	00:00	01-04	14835.00	14895.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Rotary Drill	1	01-04	00:00	00:15	01-04	14895.00	14925.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	00:15	00:20	01-04	14925.00	14925.00	Inclination (°): 91.300, Azimuth (°): 3.200, TVD (ft): 11925.67, Dogleg (°/100 ft): 1.76, Sensor Depth (ft): 14862.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	00:20	00:25	01-04	14925.00	14930.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Slide Drill	2	01-04	00:25	01:00	01-04	14930.00	14945.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 215, Toolface Type: gravity
Rotary Drill	1	01-04	01:00	01:15	01-04	14945.00	15015.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	01:15	01:20	01-04	15015.00	15015.00	Inclination (°): 88.840, Azimuth (°): 2.060, TVD (ft): 11925.56, Dogleg (°/100 ft): 3.01, Sensor Depth (ft): 14952.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	01:20	01:55	01-04	15015.00	15104.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	01:55	02:00	01-04	15104.00	15104.00	Inclination (°): 88.530, Azimuth (°): 1.270, TVD (ft): 11927.60, Dogleg (°/100 ft): 0.95, Sensor Depth (ft): 15041.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	02:00	02:05	01-04	15104.00	15106.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Slide Drill	2	01-04	02:05	02:35	01-04	15106.00	15131.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	01-04	02:35	02:45	01-04	15131.00	15194.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	02:45	02:50	01-04	15194.00	15194.00	Inclination (°): 91.690, Azimuth (°): 1.440, TVD (ft): 11927.43, Dogleg (°/100 ft): 3.52, Sensor Depth (ft): 15131.00, Bit To Sensor (ft): 63.00
Slide Drill	2	01-04	02:50	03:30	01-04	15194.00	15219.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	01-04	03:30	03:40	01-04	15219.00	15284.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	03:40	03:45	01-04	15284.00	15284.00	Inclination (°): 93.580, Azimuth (°): 1.090, TVD (ft): 11923.29, Dogleg (°/100 ft): 2.14, Sensor Depth (ft): 15221.00, Bit To Sensor (ft): 63.00
Slide Drill	2	01-04	03:45	04:20	01-04	15284.00	15309.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	01-04	04:20	04:35	01-04	15309.00	15373.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	04:35	04:40	01-04	15373.00	15373.00	Inclination (°): 95.910, Azimuth (°): 359.690, TVD (ft): 11915.93, Dogleg (°/100 ft): 3.05, Sensor Depth (ft): 15310.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	04:40	05:30	01-04	15373.00	15463.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	05:30	05:35	01-04	15463.00	15463.00	Inclination (°): 97.630, Azimuth (°): 359.510, TVD (ft): 11905.32, Dogleg (°/100 ft): 1.92, Sensor Depth (ft): 15400.00, Bit To Sensor (ft): 63.00
Slide Drill	2	01-04	05:35	06:05	01-04	15463.00	15483.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	01-04	06:05	06:20	01-04	15483.00	15553.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	06:20	06:25	01-04	15553.00	15553.00	Inclination (°): 96.700, Azimuth (°): 359.950, TVD (ft): 11894.09, Dogleg (°/100 ft): 1.14, Sensor Depth (ft): 15490.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	06:25	07:00	01-04	15553.00	15642.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	07:00	07:05	01-04	15642.00	15642.00	Inclination (°): 96.530, Azimuth (°): 359.690, TVD (ft): 11883.84, Dogleg (°/100 ft): 0.35, Sensor Depth (ft): 15579.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	07:05	07:15	01-04	15642.00	15657.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Slide Drill	2	01-04	07:15	07:25	01-04	15657.00	15670.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	01-04	07:25	07:45	01-04	15670.00	15732.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	07:45	07:50	01-04	15732.00	15732.00	Inclination (°): 95.340, Azimuth (°): 0.650, TVD (ft): 11874.54, Dogleg (°/100 ft): 1.70, Sensor Depth (ft): 15669.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	07:50	08:20	01-04	15732.00	15822.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	08:20	08:25	01-04	15822.00	15822.00	Inclination (°): 94.680, Azimuth (°): 359.770, TVD (ft): 11866.68, Dogleg (°/100 ft): 1.22, Sensor Depth (ft): 15759.00, Bit To Sensor (ft): 63.00

Rotary Drill	1	01-04	08:25	09:00	01-04	15822.00	15911.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	09:00	09:05	01-04	15911.00	15911.00	Inclination (°): 95.030, Azimuth (°): 359.160, TVD (ft): 11859.14, Dogleg (°/100 ft): 0.79, Sensor Depth (ft): 15848.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	09:05	09:45	01-04	15911.00	16001.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	09:45	09:50	01-04	16001.00	16001.00	Inclination (°): 95.210, Azimuth (°): 359.250, TVD (ft): 11851.11, Dogleg (°/100 ft): 0.22, Sensor Depth (ft): 15938.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	09:50	10:30	01-04	16001.00	16091.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	10:30	10:35	01-04	16091.00	16091.00	Inclination (°): 96.530, Azimuth (°): 359.250, TVD (ft): 11841.91, Dogleg (°/100 ft): 1.47, Sensor Depth (ft): 16028.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	10:35	11:10	01-04	16091.00	16180.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	11:10	11:20	01-04	16180.00	16180.00	Inclination (°): 97.050, Azimuth (°): 358.630, TVD (ft): 11831.38, Dogleg (°/100 ft): 0.91, Sensor Depth (ft): 16117.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	11:20	11:30	01-04	16180.00	16190.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Slide Drill	2	01-04	11:30	12:05	01-04	16190.00	16210.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3700.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	01-04	12:05	12:30	01-04	16210.00	16270.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Survey	46	01-04	12:30	12:35	01-04	16270.00	16270.00	Inclination (°): 97.710, Azimuth (°): 0.130, TVD (ft): 11819.82, Dogleg (°/100 ft): 1.81, Sensor Depth (ft): 16207.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	12:35	12:40	01-04	16270.00	16280.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 222.00
Slide Drill	2	01-04	12:40	13:05	01-04	16280.00	16300.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	01-04	13:05	13:35	01-04	16300.00	16359.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	13:35	13:40	01-04	16359.00	16359.00	Inclination (°): 95.820, Azimuth (°): 359.950, TVD (ft): 11809.34, Dogleg (°/100 ft): 2.13, Sensor Depth (ft): 16296.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	13:40	14:05	01-04	16359.00	16449.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	14:05	14:10	01-04	16449.00	16449.00	Inclination (°): 95.430, Azimuth (°): 358.630, TVD (ft): 11800.52, Dogleg (°/100 ft): 1.52, Sensor Depth (ft): 16386.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	14:10	14:35	01-04	16449.00	16539.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	14:35	14:40	01-04	16539.00	16539.00	Inclination (°): 96.130, Azimuth (°): 358.540, TVD (ft): 11791.45, Dogleg (°/100 ft): 0.78, Sensor Depth (ft): 16476.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	14:40	15:20	01-04	16539.00	16628.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	15:20	15:25	01-04	16628.00	16628.00	Inclination (°): 96.040, Azimuth (°): 357.930, TVD (ft): 11782.02, Dogleg (°/100 ft): 0.69, Sensor Depth (ft): 16565.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	15:25	16:05	01-04	16628.00	16718.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	16:05	16:10	01-04	16718.00	16718.00	Inclination (°): 96.350, Azimuth (°): 356.960, TVD (ft): 11772.31, Dogleg (°/100 ft): 1.13, Sensor Depth (ft): 16655.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	16:10	16:20	01-04	16718.00	16733.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-04	16:20	16:50	01-04	16733.00	16758.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 140, Toolface Type: gravity
Rotary Drill	1	01-04	16:50	17:10	01-04	16758.00	16788.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-04	17:10	17:40	01-04	16788.00	16807.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 170, Toolface Type: gravity
Survey	46	01-04	17:40	17:45	01-04	16807.00	16807.00	Inclination (°): 96.880, Azimuth (°): 357.400, TVD (ft): 11762.06, Dogleg (°/100 ft): 0.77, Sensor Depth (ft): 16744.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	17:45	18:35	01-04	16807.00	16897.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	18:35	19:00	01-04	16897.00	16897.00	Inclination (°): 93.760, Azimuth (°): 357.310, TVD (ft): 11753.71, Dogleg (°/100 ft): 3.47, Sensor Depth (ft): 16834.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	19:00	19:40	01-04	16897.00	16986.00	Recycled 4x Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	19:40	19:45	01-04	16986.00	16986.00	Inclination (°): 95.690, Azimuth (°): 357.750, TVD (ft): 11746.38, Dogleg (°/100 ft): 2.22, Sensor Depth (ft): 16923.00, Bit To Sensor (ft): 63.00

Rotary Drill	1	01-04	19:45	19:50	01-04	16986.00	17000.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-04	19:50	20:20	01-04	17000.00	17020.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	01-04	20:20	20:45	01-04	17020.00	17076.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	20:45	20:50	01-04	17076.00	17076.00	Inclination (°): 94.770, Azimuth (°): 357.230, TVD (ft): 11738.18, Dogleg (°/100 ft): 1.17, Sensor Depth (ft): 17013.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	20:50	21:25	01-04	17076.00	17165.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	21:25	21:30	01-04	17165.00	17165.00	Inclination (°): 94.900, Azimuth (°): 356.350, TVD (ft): 11730.68, Dogleg (°/100 ft): 1.00, Sensor Depth (ft): 17102.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	21:30	21:35	01-04	17165.00	17179.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-04	21:35	22:30	01-04	17179.00	17209.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 120, Toolface Type: gravity
Rotary Drill	1	01-04	22:30	22:40	01-04	17209.00	17255.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	22:40	22:45	01-04	17255.00	17255.00	Inclination (°): 95.120, Azimuth (°): 355.990, TVD (ft): 11722.82, Dogleg (°/100 ft): 0.47, Sensor Depth (ft): 17192.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	22:45	22:50	01-04	17255.00	17259.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-04	22:50	23:20	01-04	17259.00	17274.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 135, Toolface Type: gravity
Rotary Drill	1	01-04	23:20	23:40	01-04	17274.00	17345.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-04	23:40	23:45	01-04	17345.00	17345.00	Inclination (°): 92.840, Azimuth (°): 357.400, TVD (ft): 11716.57, Dogleg (°/100 ft): 2.98, Sensor Depth (ft): 17282.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-04	23:45	00:00	01-05	17345.00	17386.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Sunday, Jan 05 00:00 - 23:59 (Day 16 of 20)

Billing: \$6,200.00 (\$140,534.25 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	17386.00	Downhole Hours	24.00	Rotating WOB (klbs)	50.00 - 55.00
Bit Depth (ft)	19418.00	Drilling Hours	19.92	Sliding WOB (klbs)	45.00 - 45.00
Bottom Hole Depth (ft)	19418.00	Hours Circulating	0.00	Rotating SPM	225.00 - 225.00
Total Distance (ft)	2032.00	Hours Sliding	4.42	Sliding SPM	225.00 - 225.00
Distance Rotated (ft)	1854.00	Hours Rotating	15.50	Motor RPM	0.00 - 0.00
Distance Slid (ft)	178.00			Surface RPM	60.00 - 80.00
Inclination In	93.19			Flow Rate (gpm)	725.00 - 725.00
Inclination Out	90.07			On Bottom Pressure (psi)	4700.00 - 5330.00
Azimuth In	356.79	% Hours Rotating	78%	Off Bottom Pressure (psi)	4300.00 - 4500.00
Azimuth Out	358.10	% Hours Sliding	22%		
AVG Total ROP (ft/h)	102.79	% Distance Sliding	9%		
AVG Rotating ROP (ft/h)	120.32	% Distance Rotating	91%		
AVG Sliding ROP (ft/h)	40.30				

Personnel

Name	Position
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #6 - BHA #6 (Lateral Assembly)

Date In: Jan 2, 2020, 17:00 Date Out: Jan 6, 2020, 17:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Aim Motor: 1.75° FBH 7/8 8.5 Stg Mtr. Slick Flow Rate: 500 - 750gpm, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft-lbs, Bit Info: Baker, SN: 5305827 Type: DD506TWX, Jets: 6 x 22, TFA: 2.227 Runs: 0
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5305827	Bend Angle	1.75	
Nozzles	6 x 22	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.250	MWD Comments
Drilling Hours for Day	19.92	Bit Distances		
Total Drilled for Day (ft)	2032.00	Bend (Bit to Bend): 5.30 ft, Survey (Bit to		
Drilling Hours for BHA	61.83	Survey): 63.00 ft, Gamma (Bit to		POOH Reason
Total Drilled for BHA (ft)	7042.00	Gamma): 48.00 ft		
				Total Depth/Casing Point

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): 3.50, Size (in): 8.50	Baker	5305827	4 1/2" Reg Pin			8.500		1.10	1.10
Mud Motor Description: 1.75° FBH 7/8 8.5 Stg Mtr, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-025	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.32
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-362	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	40.37
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-202	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.01	70.38
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	101.38
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	105.04
Drill Pipe Description: (38 Stands) 5.5" Drill Pipe, Style: Slick	BD		EverDrg54 Box	EverDrg54 Pin	3.500	5.500		3406.18	3511.22
Crossover Sub Description: X-over (ED54 Pin x 4 1/2" IF Box), Type: Steel	BD	BD15901	4 1/2" IF Box	EverDrg54 Pin	3.500	6.750		3.74	3514.96
Agitator Description: Agitator, Size (in): 6.75	NOV	W-1815034-77	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.43	3540.39
Crossover Sub Description: X-Over (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD12360	EverDrg54 Box	4 1/2" IF Pin	3.000	6.750		3.65	3544.04

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	01-04	23:45	00:00	01-05	17345.00	17386.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Rotary Drill	1	01-05	00:00	00:10	01-05	17386.00	17434.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	00:10	00:15	01-05	17434.00	17434.00	Inclination (°): 93.190, Azimuth (°): 356.790, TVD (ft): 11711.89, Dogleg (°/100 ft): 0.79, Sensor Depth (ft): 17371.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	00:15	00:35	01-05	17434.00	17439.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-05	00:35	01:10	01-05	17439.00	17479.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 120, Toolface Type: gravity
Rotary Drill	1	01-05	01:10	01:25	01-05	17479.00	17524.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	01:25	01:30	01-05	17524.00	17524.00	Inclination (°): 92.700, Azimuth (°): 358.540, TVD (ft): 11707.26, Dogleg (°/100 ft): 2.02, Sensor Depth (ft): 17461.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	01:30	02:10	01-05	17524.00	17613.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 50.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	02:10	02:15	01-05	17613.00	17613.00	Inclination (°): 92.440, Azimuth (°): 359.690, TVD (ft): 11703.27, Dogleg (°/100 ft): 1.32, Sensor Depth (ft): 17550.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	02:15	02:50	01-05	17613.00	17703.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 80, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	02:50	02:55	01-05	17703.00	17703.00	Inclination (°): 93.010, Azimuth (°): 359.250, TVD (ft): 11698.99, Dogleg (°/100 ft): 0.80, Sensor Depth (ft): 17640.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	02:55	03:25	01-05	17703.00	17792.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 80, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	03:25	03:30	01-05	17792.00	17792.00	Inclination (°): 93.630, Azimuth (°): 358.980, TVD (ft): 11693.84, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 17729.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	03:30	04:10	01-05	17792.00	17882.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 80, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	04:10	04:15	01-05	17882.00	17882.00	Inclination (°): 94.200, Azimuth (°): 358.630, TVD (ft): 11687.69, Dogleg (°/100 ft): 0.74, Sensor Depth (ft): 17819.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	04:15	04:45	01-05	17882.00	17972.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	04:45	04:50	01-05	17972.00	17972.00	Inclination (°): 95.080, Azimuth (°): 357.840, TVD (ft): 11680.41, Dogleg (°/100 ft): 1.31, Sensor Depth (ft): 17909.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	04:50	05:05	01-05	17972.00	17976.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-05	05:05	05:35	01-05	17976.00	18012.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 120, Toolface Type: gravity
Rotary Drill	1	01-05	05:35	05:55	01-05	18012.00	18061.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	05:55	06:00	01-05	18061.00	18061.00	Inclination (°): 94.990, Azimuth (°): 358.720, TVD (ft): 11672.60, Dogleg (°/100 ft): 0.99, Sensor Depth (ft): 17998.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	06:00	06:05	01-05	18061.00	18074.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-05	06:05	06:35	01-05	18074.00	18094.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 90, Toolface Type: gravity
Rotary Drill	1	01-05	06:35	07:00	01-05	18094.00	18151.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	07:00	07:05	01-05	18151.00	18151.00	Inclination (°): 95.160, Azimuth (°): 0.830, TVD (ft): 11664.64, Dogleg (°/100 ft): 2.34, Sensor Depth (ft): 18088.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	07:05	07:50	01-05	18151.00	18241.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	07:50	08:00	01-05	18241.00	18241.00	Inclination (°): 95.430, Azimuth (°): 1.440, TVD (ft): 11656.34, Dogleg (°/100 ft): 0.74, Sensor Depth (ft): 18178.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	08:00	08:55	01-05	18241.00	18330.00	RECYCLE (2 Times) Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00

Survey	46	01-05	08:55	09:25	01-05	18330.00	18330.00	Inclination (°): 94.950, Azimuth (°): 1.090, TVD (ft): 11648.28, Dogleg (°/100 ft): 0.67, Sensor Depth (ft): 18267.00, Bit To Sensor (ft): 63.00 RECYCLE / DOWN LINK TOOL TO A 1.0 PULSE WIDTH
Rotary Drill	1	01-05	09:25	10:15	01-05	18330.00	18420.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	10:15	10:20	01-05	18420.00	18420.00	Inclination (°): 94.810, Azimuth (°): 0.480, TVD (ft): 11640.63, Dogleg (°/100 ft): 0.69, Sensor Depth (ft): 18357.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	10:20	11:00	01-05	18420.00	18509.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	11:00	11:05	01-05	18509.00	18509.00	Inclination (°): 96.350, Azimuth (°): 0.300, TVD (ft): 11631.97, Dogleg (°/100 ft): 1.74, Sensor Depth (ft): 18446.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	11:05	11:15	01-05	18509.00	18522.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-05	11:15	11:45	01-05	18522.00	18534.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	01-05	11:45	12:15	01-05	18534.00	18599.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	12:15	12:20	01-05	18599.00	18599.00	Inclination (°): 96.040, Azimuth (°): 0.130, TVD (ft): 11622.26, Dogleg (°/100 ft): 0.39, Sensor Depth (ft): 18536.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	12:20	12:45	01-05	18599.00	18616.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00 COULD NOT GET SLIPS OUT OF THE BUSHINGS
Slide Drill	2	01-05	12:45	13:30	01-05	18616.00	18641.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 140, Toolface Type: gravity
Rotary Drill	1	01-05	13:30	13:50	01-05	18641.00	18689.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	13:50	13:55	01-05	18689.00	18689.00	Inclination (°): 95.430, Azimuth (°): 1.000, TVD (ft): 11613.27, Dogleg (°/100 ft): 1.18, Sensor Depth (ft): 18626.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	13:55	14:40	01-05	18689.00	18778.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	14:40	14:45	01-05	18778.00	18778.00	Inclination (°): 94.900, Azimuth (°): 1.880, TVD (ft): 11605.26, Dogleg (°/100 ft): 1.15, Sensor Depth (ft): 18715.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	14:45	15:25	01-05	18778.00	18868.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	15:25	15:30	01-05	18868.00	18868.00	Inclination (°): 95.520, Azimuth (°): 1.710, TVD (ft): 11597.08, Dogleg (°/100 ft): 0.71, Sensor Depth (ft): 18805.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	15:30	15:40	01-05	18868.00	18885.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-05	15:40	16:40	01-05	18885.00	18910.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	01-05	16:40	17:15	01-05	18910.00	18958.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	17:15	17:20	01-05	18958.00	18958.00	Inclination (°): 94.770, Azimuth (°): 1.180, TVD (ft): 11589.01, Dogleg (°/100 ft): 1.02, Sensor Depth (ft): 18895.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	17:20	17:25	01-05	18958.00	18968.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 60, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Slide Drill	2	01-05	17:25	18:00	01-05	18968.00	18988.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	01-05	18:00	18:30	01-05	18988.00	19047.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	18:30	18:35	01-05	19047.00	19047.00	Inclination (°): 90.110, Azimuth (°): 0.300, TVD (ft): 11585.22, Dogleg (°/100 ft): 5.33, Sensor Depth (ft): 18984.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	18:35	19:20	01-05	19047.00	19137.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 55.00, Surface RPM: 70, Surface Torque (ft lbf): 25000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	19:20	19:25	01-05	19137.00	19137.00	Inclination (°): 88.530, Azimuth (°): 359.250, TVD (ft): 11586.29, Dogleg (°/100 ft): 2.11, Sensor Depth (ft): 19074.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	19:25	20:10	01-05	19137.00	19226.00	
Survey	46	01-05	20:10	20:15	01-05	19226.00	19226.00	Inclination (°): 88.750, Azimuth (°): 358.720, TVD (ft): 11588.41, Dogleg (°/100 ft): 0.64, Sensor Depth (ft): 19163.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	20:15	21:00	01-05	19226.00	19316.00	Pressure On (psi): 5330.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 55.00, Surface RPM: 75, Surface Torque (ft lbf): 31000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	21:00	21:05	01-05	19316.00	19316.00	Inclination (°): 88.840, Azimuth (°): 358.280, TVD (ft): 11590.30, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 19253.00, Bit To Sensor (ft): 63.00

Rotary Drill	1	01-05	21:05	22:05	01-05	19316.00	19406.00	Pressure On (psi): 5330.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 55.00, Surface RPM: 75, Surface Torque (ft lbf): 31000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Survey	46	01-05	22:05	22:10	01-05	19406.00	19406.00	Inclination (°): 90.070, Azimuth (°): 358.100, TVD (ft): 11591.15, Dogleg (°/100 ft): 1.38, Sensor Depth (ft): 19343.00, Bit To Sensor (ft): 63.00
Rotary Drill	1	01-05	22:10	22:20	01-05	19406.00	19418.00	Pressure On (psi): 5330.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 55.00, Surface RPM: 75, Surface Torque (ft lbf): 31000.00, Flow Rate (gpm): 725.00, Strokes Per Minute: 225.00
Circulating	3	01-05	22:20	02:15	01-06			

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Jan 06 00:00 - 23:59 (Day 17 of 20)

Billing: \$6,200.00 (\$140,534.25 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours	17.00	Rotating WOB (klbs)	
Bit Depth (ft)	Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	Hours Circulating	3.92	Rotating SPM	
Total Distance (ft)	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	Hours Rotating	0.00	Motor RPM	0.00 - 0.00
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
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

BHA #6 - BHA #6 (Lateral Assembly)

Date In: Jan 2, 2020, 17:00 Date Out: Jan 6, 2020, 17:00

Bit Details		Motor Details	Directional Comments
OD (in)	8.500	Size (in)	7.0
Vendor	Baker	Lobe/Stage	7/8, 8.5
S/N	5305827	Bend Angle	1.75
Nozzles	6 x 22	Speed (rev/gal)	0.26
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.250
Drilling Hours for Day	0.00	Bit Distances	
Total Drilled for Day (ft)		Bend (Bit to Bend): 5.30 ft, Survey (Bit to Survey): 63.00 ft, Gamma (Bit to Gamma): 48.00 ft	
Drilling Hours for BHA	61.83	POOH Reason	
Total Drilled for BHA (ft)	7042.00	Total Depth/Casing Point	

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): 3.50, Size (in): 8.50	Baker	5305827	4 1/2" Reg Pin			8.500		1.10	1.10
Mud Motor Description: 1.75° FBH 7/8 8.5 Stg Mtr, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-025	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.32
UBHO Sub Description: UBHO (Keyway), Type: NM	AIM	675-362	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		3.05	40.37
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	GTI	GT 67-30-202	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		30.01	70.38
Drill Collar Description: NMDC (Spacer), Style: Slick Drill, Type: NM	GTI	GT 67-30-322	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.880		31.00	101.38
Crossover Sub Description: X-Over Sub (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD15115	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.66	105.04
Drill Pipe Description: (38 Stands) 5.5" Drill Pipe, Style: Slick	BD		EverDrlg54 Box	EverDrlg54 Pin	3.500	5.500		3406.18	3511.22
Crossover Sub Description: X-over (ED54 Pin x 4 1/2" IF Box), Type: Steel	BD	BD15901	4 1/2" IF Box	EverDrlg54 Pin	3.500	6.750		3.74	3514.96
Agitator Description: Agitator, Size (in): 6.75	NOV	W-1815034-77	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.43	3540.39
Crossover Sub Description: X-Over (4 1/2 IF Pin x ED54 Box), Type: Steel	BD	BD12360	EverDrlg54 Box	4 1/2" IF Pin	3.000	6.750		3.65	3544.04

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	01-05	22:20	02:15	01-06			
Pooh	7	01-06	02:15	16:00	01-06			POOH
Change BHA	6	01-06	16:00	17:00	01-06			L/D BHA
Standby	15	01-06	17:00	06:00	01-09			Standby during Casing Ops & Rig Move
MWD Activities								
No Activities								



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Tuesday, Jan 07 00:00 - 23:59 (Day 18 of 20)

Billing: \$500.00 (\$140,534.25 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
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

No BHAs**Directional Activities**

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	01-06	17:00	06:00	01-09			Standby during Casing Ops & Rig Move

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Wednesday, Jan 08 00:00 - 23:59 (Day 19 of 20)

Billing: \$3,941.18 (\$140,534.25 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
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

No BHAs**Directional Activities**

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	01-06	17:00	06:00	01-09			Standby during Casing Ops & Rig Move

MWD Activities

No Activities



Job Number WT-19-180	Operator Advance Energy Partners	Rig Name H&P #389
Start Date 2019-11-19	Well Name Wool Head 20 State Com 607H	Legal Well Name AFE Wool Head 20 State Com 607H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Thursday, Jan 09 00:00 - 23:59 (Day 20 of 20)

Billing: N/A (\$140,534.25 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
Wes Highnote	MWD Engineer
Advance Directional	Directional Driller
Robert Olivarez	MWD Engineer

No BHAs**Directional Activities**

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	01-06	17:00	06:00	01-09			Standby during Casing Ops & Rig Move

MWD Activities

No Activities



Surface Plat

Wool Head 20 State Com 607H (WT-19-180)

2019-11-19 to 2020-01-09

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. 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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name	Well Number
	WOOL HEAD 20 STATE COM	607H
OGRID No.	Operator Name	Elevation
	ADVANCE ENERGY PARTNERS HAT MESA	3728'

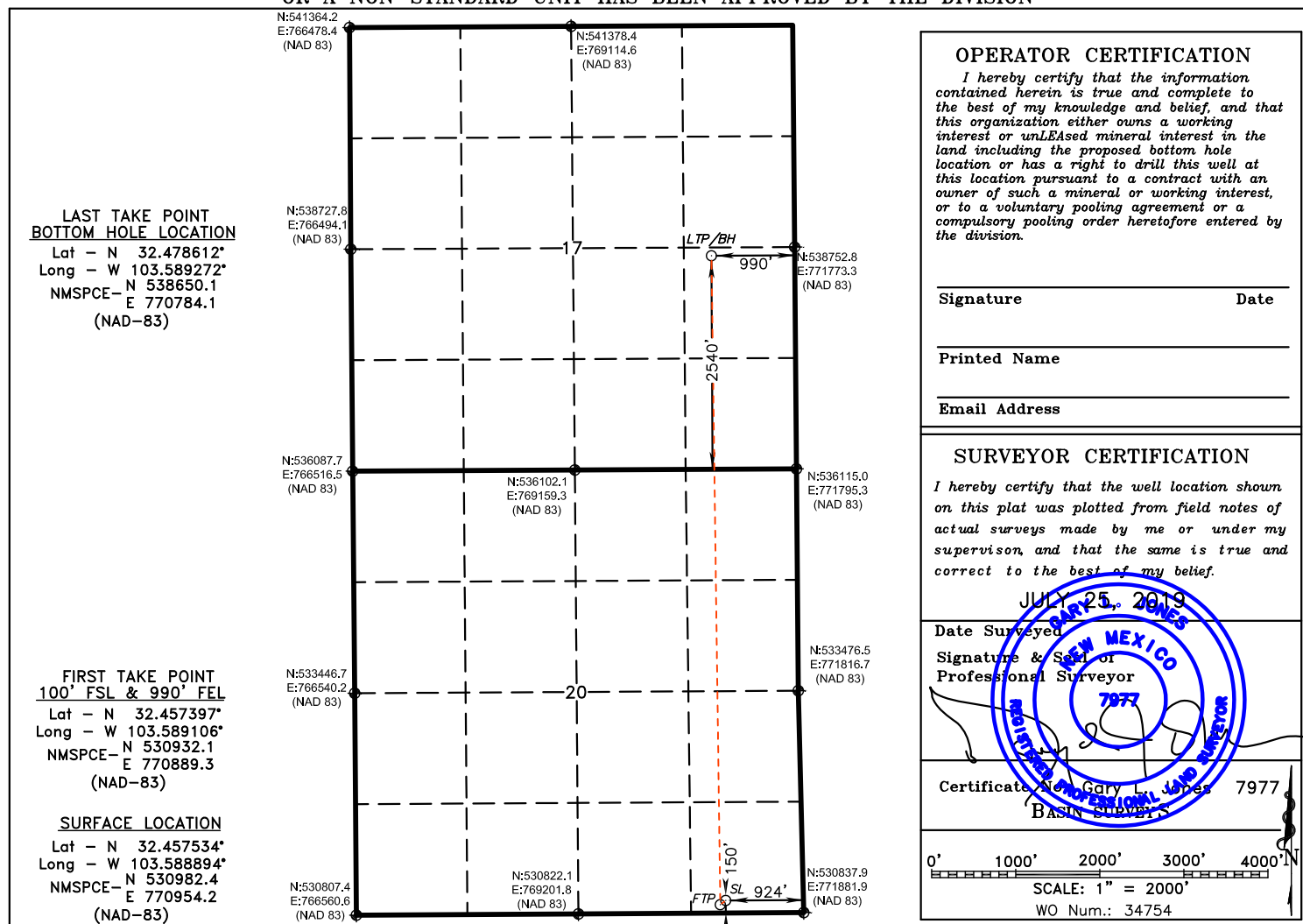
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
P	20	21 S	33 E		150	SOUTH	924	EAST	LEA

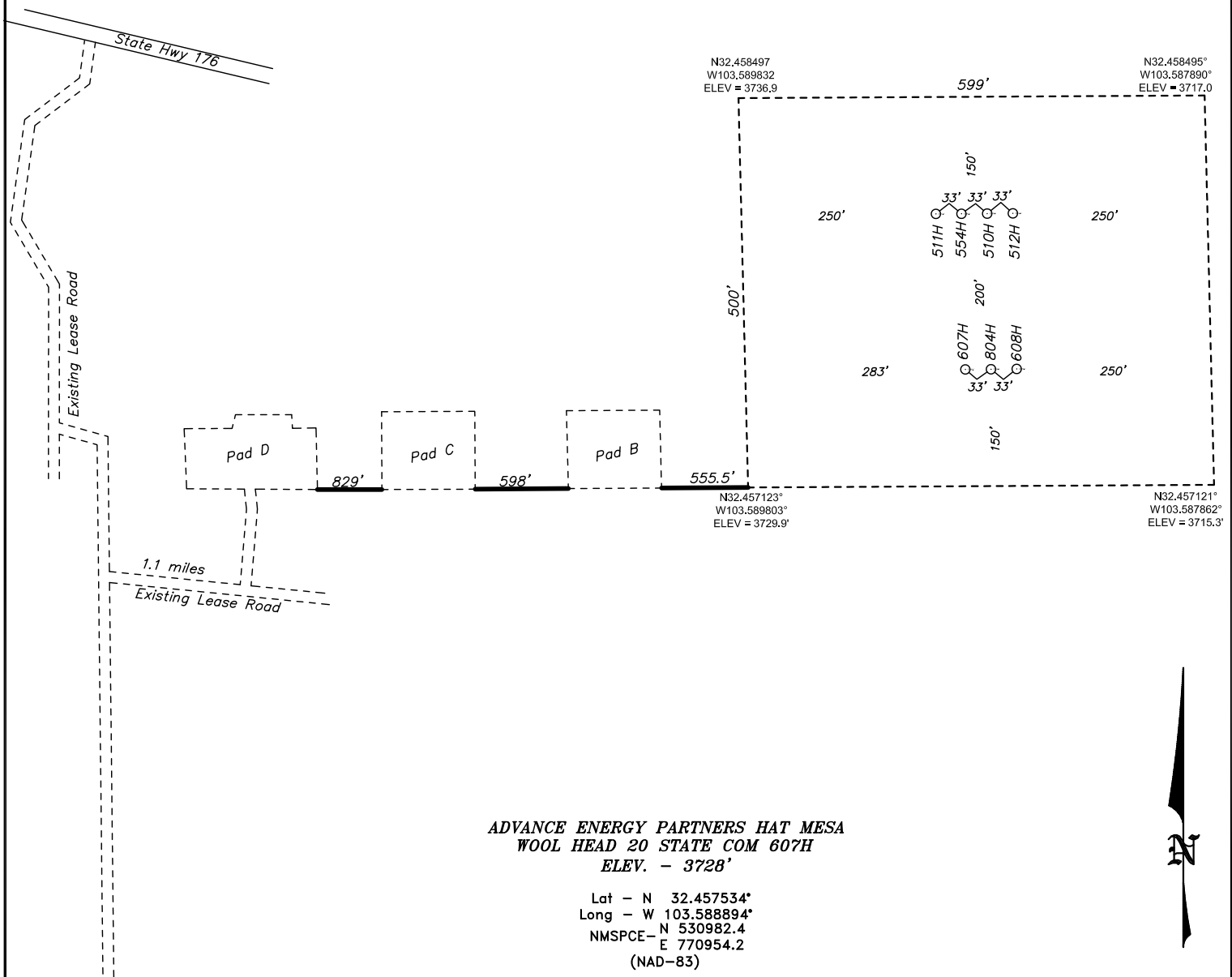
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
I	17	21 S	33 E		2540	SOUTH	990	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.**



DIRECTIONS TO LOCATION:
FROM THE JUNCTION OF STATE 176 AND US
HWY 62/180, EAST FOR ±7 MILES TO LEASE
ROAD. THEN SOUTH ON LEASE ROAD FOR ±4.5
MILES. THEN EASTERLY ON LEASE ROAD FOR 1.5
MILES TO PROPOSED LEASE ROAD.

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

ADVANCE ENERGY PARTNERS HAT MESA

REF: WOOL HEAD 20 STATE COM 607H / WELL PAD TOPO

THE WOOL HEAD 20 STATE COM 607H LOCATED 150' FROM
THE SOUTH LINE AND 924' 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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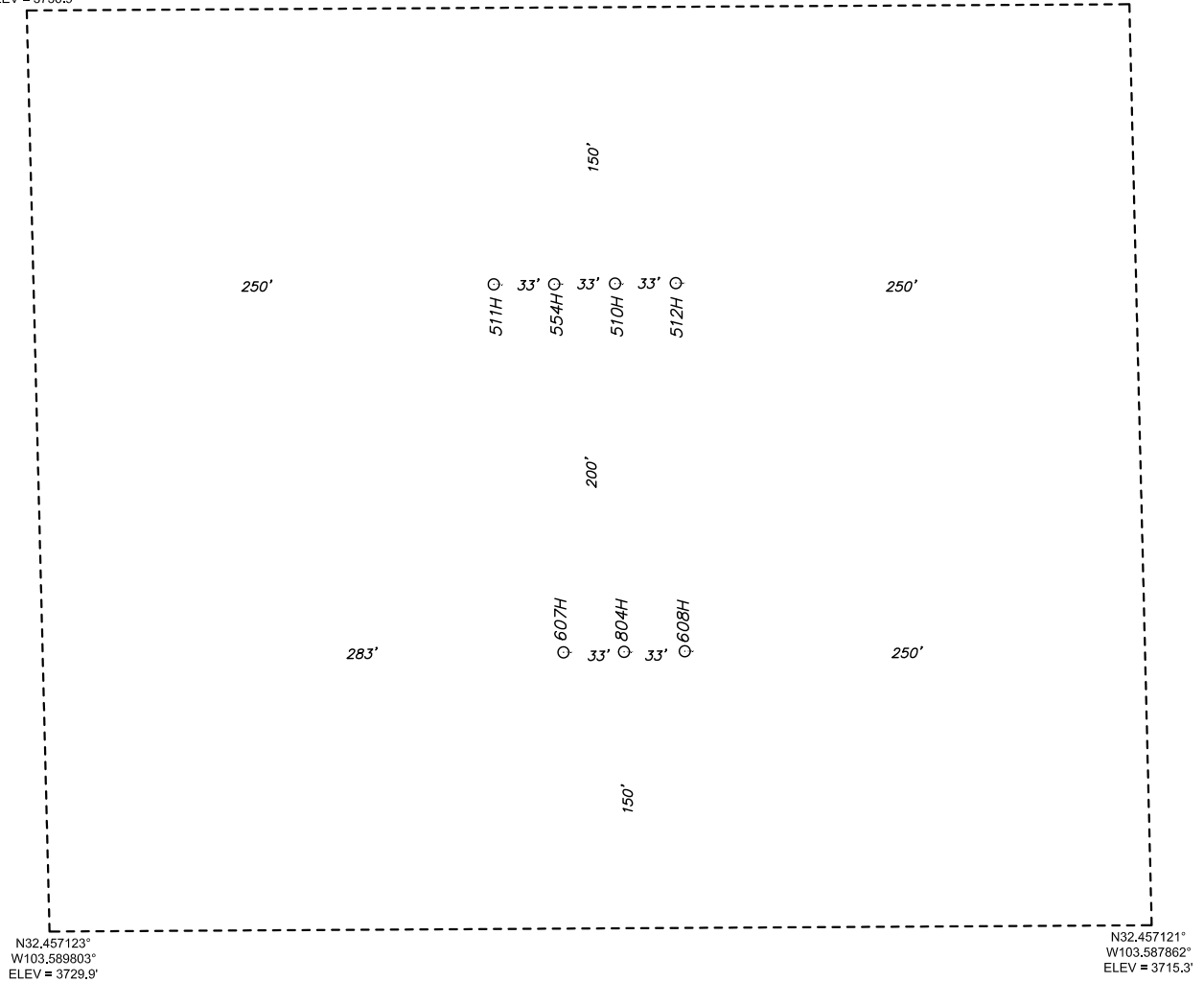
P.O. Box 1786 (575) 393-7316 - Office
1120 N. West County Rd. (575) 392-2206 - Fax
Hobbs, New Mexico 88241 basin-surveys.com

W.O. Number: 34754 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.**

N32.458497
W103.589832
ELEV = 3736.9

N32.458495°
W103.587890°
ELEV = 3717.0



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

ADVANCE ENERGY PARTNERS HAT MESA

REF: WOOL HEAD 20 STATE COM 607H / WELL PAD TOPO

THE WOOL HEAD 20 STATE COM 607H LOCATED 150' FROM
THE SOUTH LINE AND 924' FROM THE EAST LINE OF
SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST.

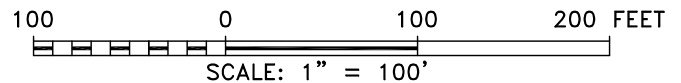
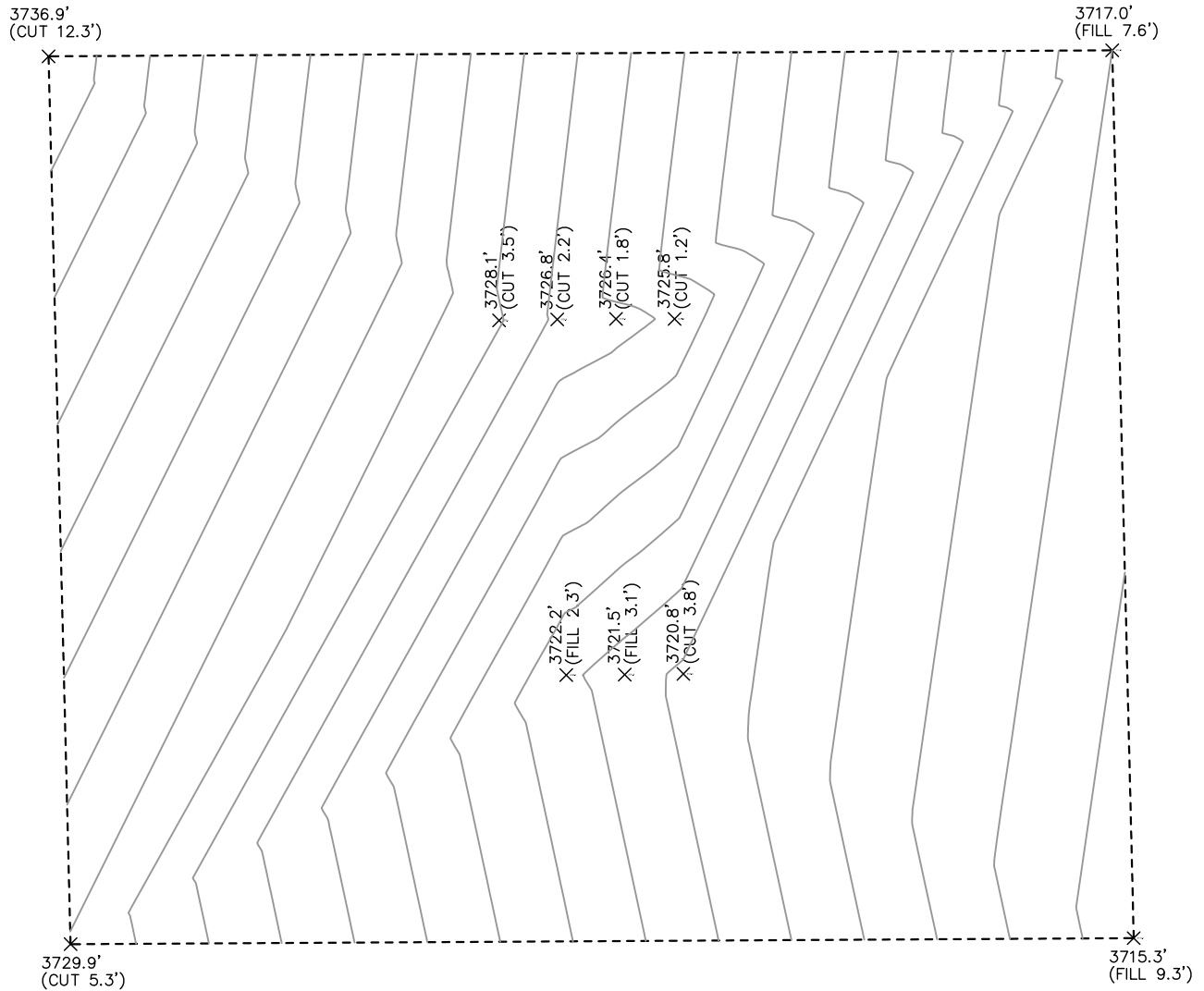
N.M.P.M., LEA COUNTY, NEW MEXICO.

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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: 34754 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.**



ADVANCE ENERGY PARTNERS HAT MESA

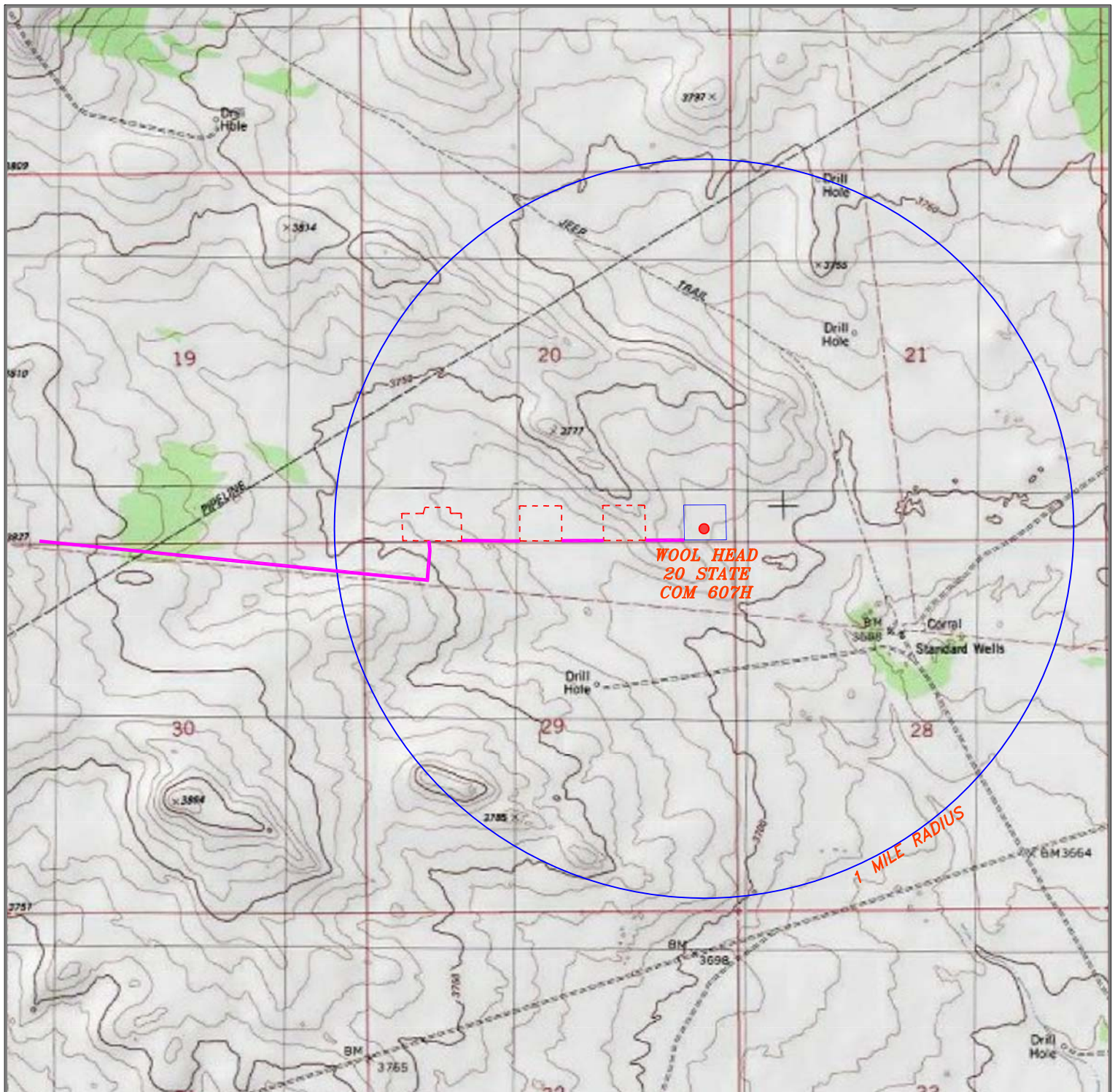
REF: WOOL HEAD 20 STATE COM WELL PAD A / CUT & FILL

THE WOOL HEAD 20 STATE COM WELL PAD
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 basinsurveys.com

W.O. Number: 34747	Drawn By: K. GOAD	Date: 07-26-2019	Survey Date: 07-25-2019	Sheet 1 of 1 Sheets
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WOOL HEAD 20 STATE COM 607H

Located 150' FSL and 924' FEL
 Section 20, Township 21 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.



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 Hobbs, New Mexico 88241
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 basinsurveys.com

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

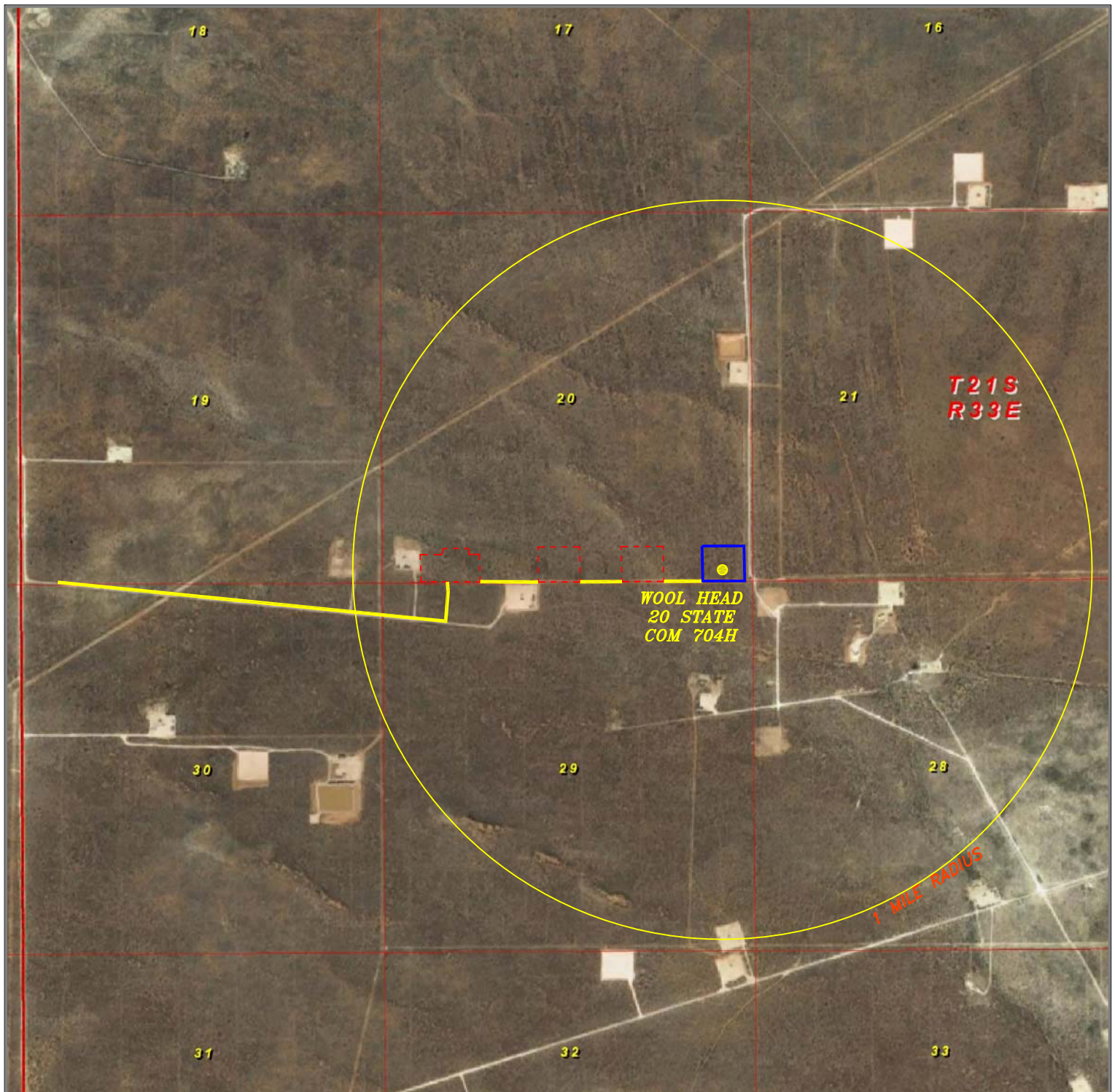
W.O. Number: KJG 34754

Survey Date: 07-26-2019

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



**ADVANCE
 ENERGY
 PARTNERS
 HAT MESA**



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

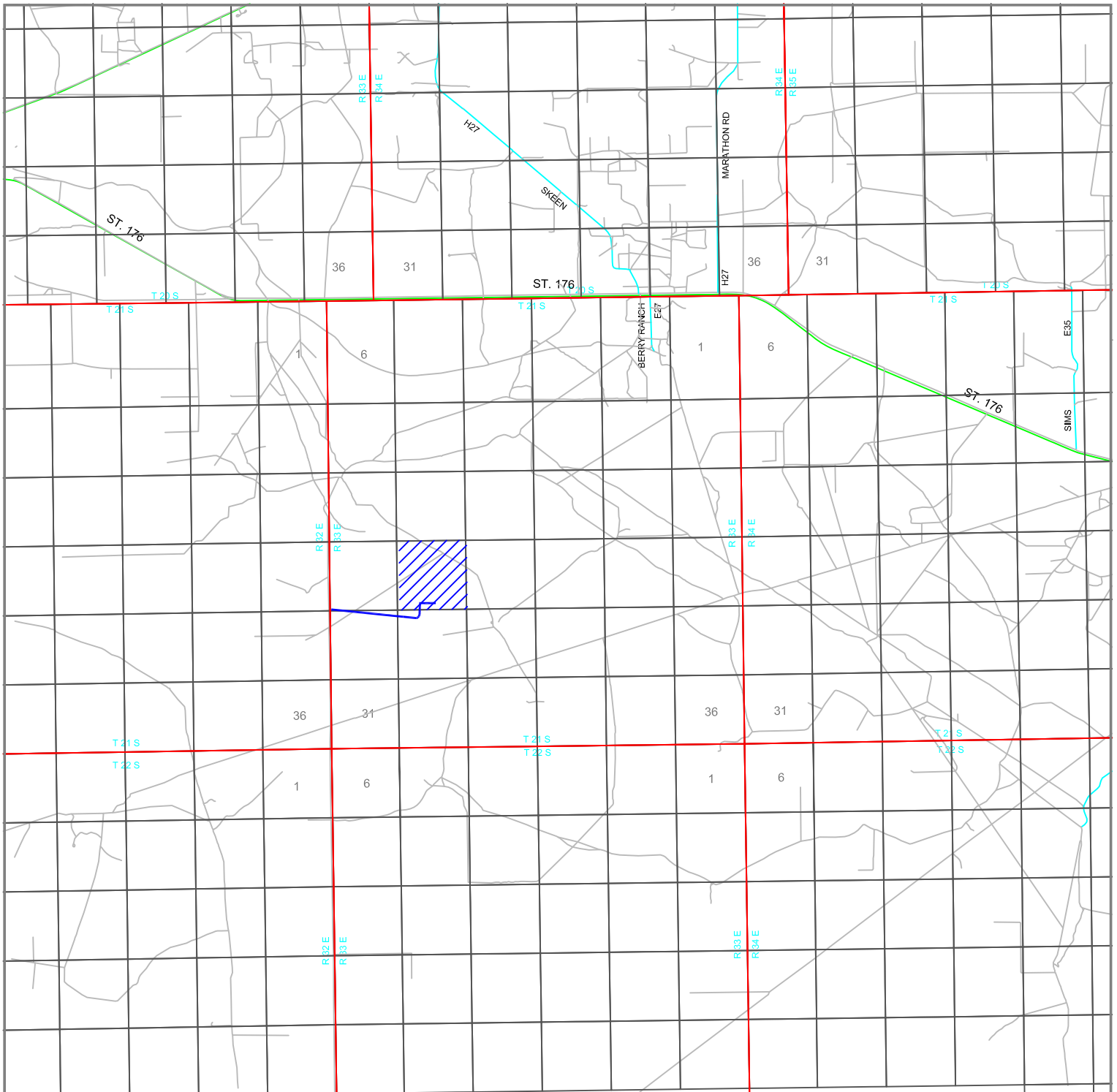
W.O. Number: KJG 34754

Survey Date: 07-26-2019

YELLOW TINT - USA LAND
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0 1 MI 2 MI 3 MI 4 MI

SCALE: 1" = 2 MILES

W.O. Number: KJG 34754

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

Form C-103

Revised July 18, 2013

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.)		WELL API NO. 30-025-46329
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator Advance Energy Partners Hat Mesa		6. State Oil & Gas Lease No.
3. Address of Operator 11490 Westheimer Rd, Houston, TX 77077		7. Lease Name or Unit Agreement Name Wool Head 20 State Com
4. Well Location Unit Letter <u>P</u> : <u>150</u> feet from the <u>S</u> line and <u>924</u> feet from the <u>E</u> line Section <u>20</u> Township <u>21S</u> Range <u>33E</u> NMPM County LEA		8. Well Number 607H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3728'		9. OGRID Number 372417
10. Pool name or Wildcat WC-025 G-10 S213328O;WOLFCAMP		

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.

- 11/19/19 - Correction to Surface casing set depth. Correct depth set for the 13.375 J-55 casing is 1,851'.
- 3/1/20: Pressure test casing to 10,000 psi for 30 minutes.
- 3/5/20 – 3/25/20: Perforate from 12,323' – 19,107' (2040). Frac with 17,200,995 lbs sand and 22,415,820 gal fluid.
- 5/23/20 – 5/24/20: Drill all plugs out and clean out to a PBTD of 19,354'.
- 5/27/20 – Set packer at 11,269'. Run 2-7/8" production tubing and gas lift valves
- 6/27/20- Ready to produce

Spud Date:

11/21/2019

Rig Release Date:

01/08/2020

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

SIGNATURE:

TITLE: Sr. Engineer Tech

DATE:

2/14/22

PRINT NAME: Eileen M Kosakowski

E-mail address: ekosakowski@advanceenergypartners.com

PHONE: (832)672-4604

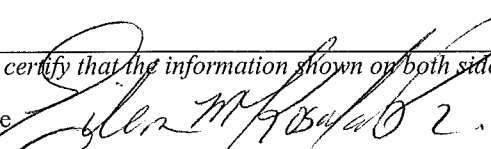
For State Use Only

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.			30-025-46329		
		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:				5. Lease Name or Unit Agreement Name			
☒ 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)				6. Well Number:			
				607H			
7. Type of Completion:							
☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER							
8. Name of Operator				9. OGRID			
Advance Energy Partners Hat Mesa, LLC				372417			
10. Address of Operator				11. Pool name or Wildcat			
11490 Westheimer RD, Suite 950				WC-025 G-10 S213328O;WOLFCAMP			
Houston, TX 77077							
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	
Surface:	P	20	21S	33E		150	
BH:	I	17	21S	33E		2585	
13. Date Spudded	14. Date T.D. Reached	15. Date Rig Released		16. Date Completed (Ready to Produce)		17. Elevations (DF and RKB, RT, GR, etc.)	
11/21/2019	12/23/2019	01/08/2020		06/27/20		3728'	
18. Total Measured Depth of Well		19. Plug Back Measured Depth		20. Was Directional Survey Made?		21. Type Electric and Other Logs Run	
19,418		19,354'		YES		Gamma Ray	
22. Producing Interval(s), of this completion - Top, Bottom, Name							
12,323-19,107'							
23. CASING RECORD (Report all strings set in well)							
CASING SIZE	WEIGHT LB./FT.		DEPTH SET		HOLE SIZE	CEMENTING RECORD	
13.375"	54.4#		1851		17.5	1225	
9.625"	40#		5267		12.25	1660	
5.5"	20#		19403		8.5	2645	
24. LINER RECORD							
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	25. TUBING RECORD		
					SIZE	DEPTH SET	
					2 7/8	11,287'	
						11,269'	
26. Perforation record (interval, size, and number)				27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.			
12,323'-19,107'				DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED			
				12,323-19,107' 17,200,995 lbs sand, 22,415,820 bbls water			
28. PRODUCTION							
Date First Production		Production Method (Flowing, gas lift, pumping - Size and type pump)			Well Status (Prod. or Shut-in)		
06/27/20		Flowing			PROD		
Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water - Bbl.	
07/05/20	24 hrs	24/64		428	626	2635	
Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)	
1300	1190		428	626	2635	43	
29. Disposition of Gas (Sold, used for fuel, vented, etc.)					30. Test Witnessed By		
SOLD					Baron 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:			
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. LB 8456 MD 8450 TVD	T. Entrada	
T. Wolfcamp	T. 1SS 10009 MD 9970 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

From	To	Thickness In Feet	Lithology

District I

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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 81228

ACKNOWLEDGMENTS

Operator: ADVANCE ENERGY PARTNERS HAT MESA, LLC 11490 Westheimer Rd., Ste 950 Houston, TX 77077	OGRID: 372417
	Action Number: 81228
	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.

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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 81228

CONDITIONS

Operator: ADVANCE ENERGY PARTNERS HAT MESA, LLC 11490 Westheimer Rd., Ste 950 Houston, TX 77077	OGRID: 372417
	Action Number: 81228
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	None	3/10/2022