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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		² OGRID Number 372417
		³ Reason for Filing Code/ Effective Date NW
⁴ API Number 30-025-46662	⁵ Pool Name WC-025 G-06 S213326D; BONE SPRING	⁶ Pool Code 97929
⁷ Property Code 319603	⁸ Property Name Merchant State Unit	⁹ Well Number 554H

II. ¹⁰ Surface Location

Ul or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
A	35	21S	33E		100	North	677	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
P	2	22S	33E		42	South	816	EAST	Lea
¹² Lse Code S	¹³ Producing Method Code F	¹⁴ Gas Connection Date	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date				

III. Oil and Gas Transporters

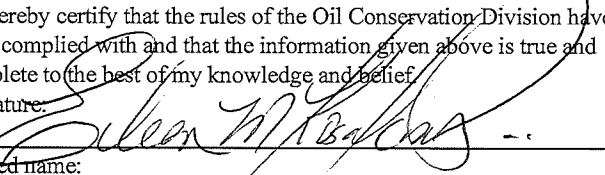
¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
214984	Plains Marketing, L.P. 10 Desta Drive, Suite 200E Midland, TX 79705	O
018180	Versado Gas Processors, LLC 1000 Louisiana, Suite 4300 Houston, TX 77022	G

IV. Well Completion Data

²¹ Spud Date 12/29/2019	²² Ready Date 12/23/2020	²³ TD 21,480	²⁴ PBDT 21,390'	²⁵ Perforations 11,457-21,376	²⁶ DHC, MC
²⁷ Hole Size	²⁸ Casing & Tubing Size	²⁹ Depth Set	³⁰ Sacks Cement		
17.5"	13.375"	1786	830		
12.25"	9.625"	5261/3873	2100		
8.5"	5.5"	21,464	3035		

V. Well Test Data

³¹ Date New Oil 12/24/20	³² Gas Delivery Date 12/24/20	³³ Test Date 01/06/21	³⁴ Test Length 24 Hrs	³⁵ Tbg. Pressure 800	³⁶ Csg. Pressure 300
³⁷ Choke Size 64	³⁸ Oil 1874	³⁹ Water 4180	⁴⁰ Gas 1833		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: 		OIL CONSERVATION DIVISION	
Printed name: Eileen M Kosakowski		Approved by: PATRICIA MARTINEZ	
Title: Sr. Eng Tech,		Title: PETROLEUM SPECIALIST	
ekosakowski@advanceenergypartners.com		Approval Date: 7/25/2024	
Date: 2/17/22	Phone: 832-672-4604		

Received by OCD: 2/17/2022 11:02:09 AM

DISTRICT I

1625 N. French Dr., Hobbs, NM 88240
Phone (505) 393-8161 Fax: (505) 393-0720

DISTRICT II

811 S. First St., Artesia, NM 88210
Phone (505) 748-1283 Fax: (505) 748-0720

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-8178 Fax: (505) 334-5170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3450 Fax: (505) 476-3452State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102

Revised August 4, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT
As Drilled

API Number 30-025-46662	Pool Code 97929	Pool Name WC-025 G-06 S213326D; BONE SPRING
Property Code 319603	Property Name MERCHANT STATE UNIT	Well Number 554H
GRID No. 372417	Operator Name ADVANCE ENERGY PARTNERS HAT MESA	Elevation 3656'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
A	35	21 S	33 E		100	NORTH	677	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
P	2	22 S	33 E		42	SOUTH	816	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

	SURFACE LOCATION Lat - N 32.442253° Long - W 103.536849° NMSPCE- N 525539.0 E 787048.9 (NAD-83) KICK OFF POINT 77' FNL & 823' FEL Lat - N 32.442316° Long - W 103.537323° NMSPCE- N 525560.8 E 786902.8 (NAD-83) FIRST TAKE POINT 525' FNL & 813' FEL Lat - N 32.441087° Long - W 103.537291° NMSPCE- N 525113.7 E 786915.9 (NAD-83) LAST TAKE POINT 129' FSL & 819' FEL Lat - N 32.413850° Long - W 103.537300° NMSPCE- N 515204.8 E 786987.0 (NAD-83) BOTTOM HOLE LOCATION Lat - N 32.413609° Long - W 103.537293° NMSPCE- N 515117.0 E 786989.8 (NAD-83)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature <u>Debbie Moughon</u> Date <u>4-22-21</u> Printed Name <u>dmoughon@advanceenergypartners.com</u> Email Address <u>dmoughon@advanceenergypartners.com</u>
	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date Surveyed <u>MARCH 22, 2021</u> Signature & Seal of Professional Surveyor <u>[Signature]</u> Certificate No. <u>7977</u> Scale: 1" = 2000' WO Num.: 35337	



End of Well Report

Advance Energy Partners, LLC Merchant State Unit, Well No. 554H Lea County, New Mexico

Rig: H&P #620

Job No.: WT-19-193

Start Date: 12/29/2019

End Date: 02/25/2020

Directional Drillers:

Omar Alaniz, Stephen Long

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

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)

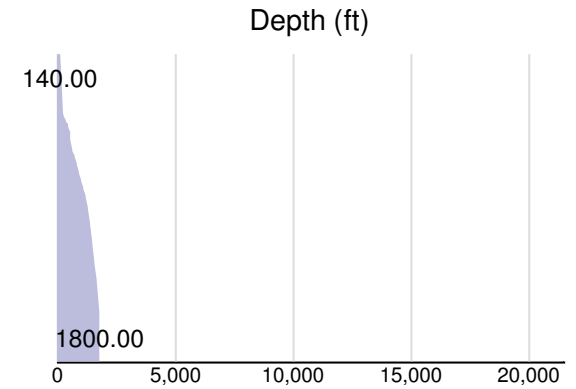
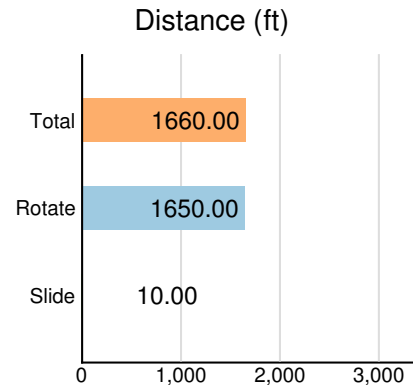
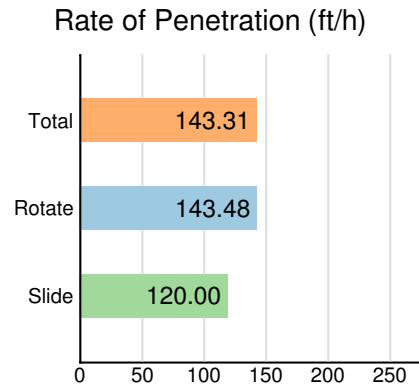
BHA Performance

BHA 1

BHA #1 (Surface)

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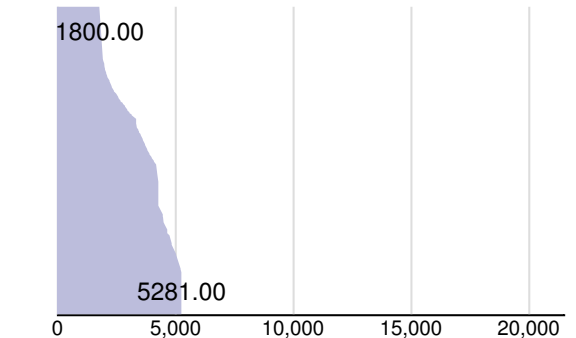
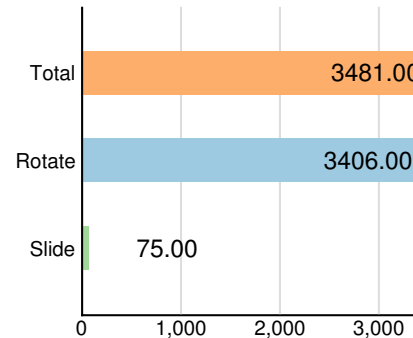
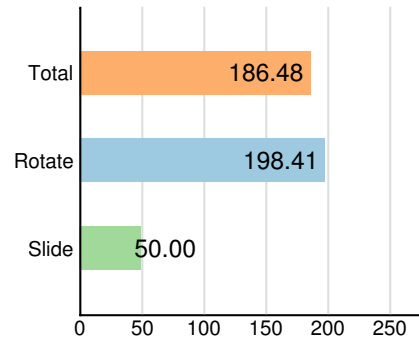


BHA 2

BHA #2 Int 1

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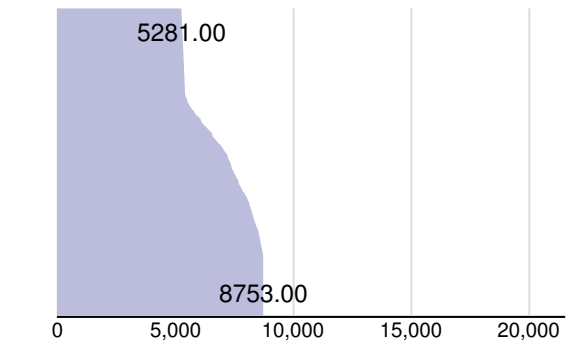
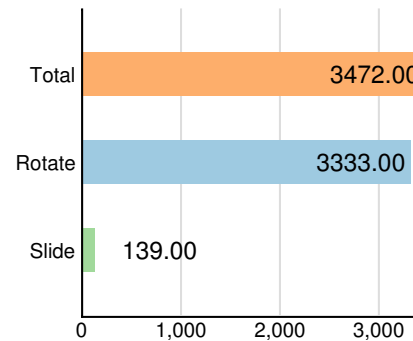
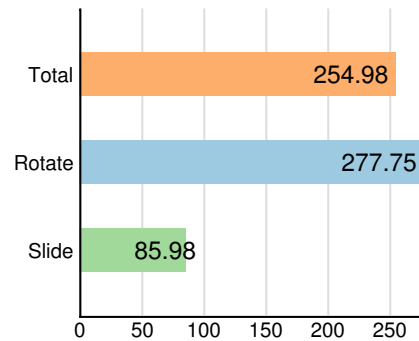


BHA 3

BHA #3
intermediate 2

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Out: 01/15/2020 15:30

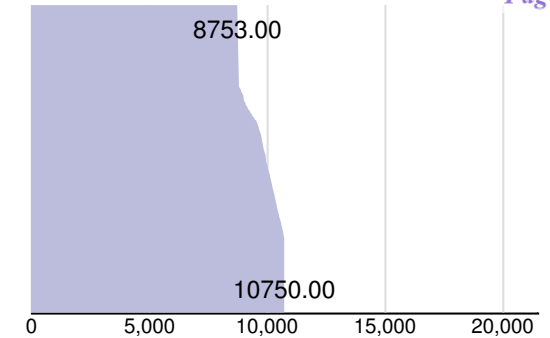
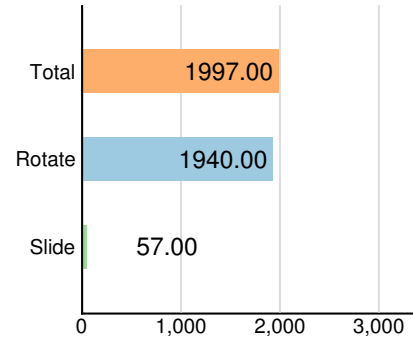
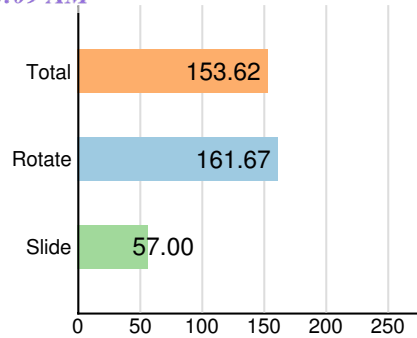


BHA 4

BHA #4
Intermediate 2

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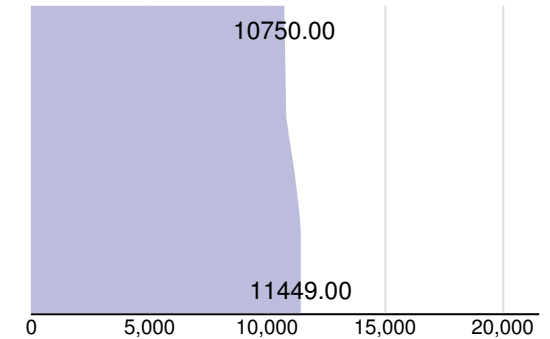
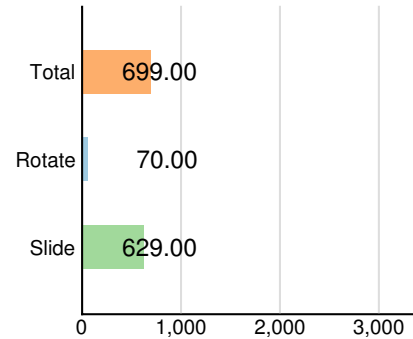
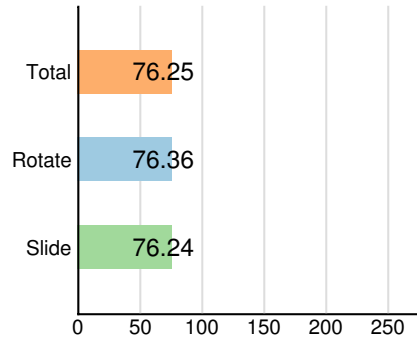


BHA 5

BHA #5 Curve

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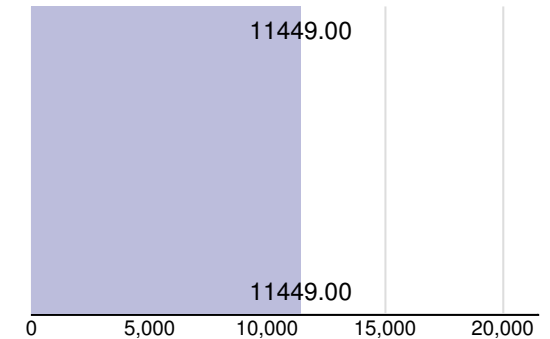
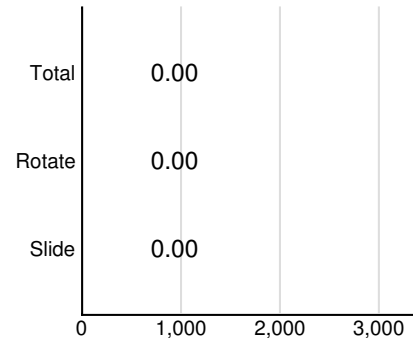
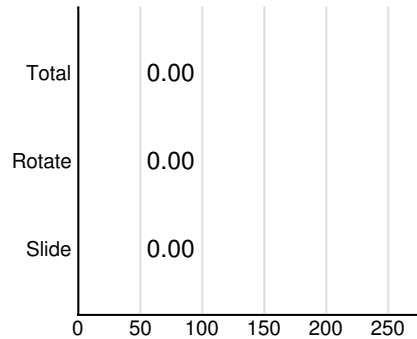


BHA 6

BHA #6 Lateral

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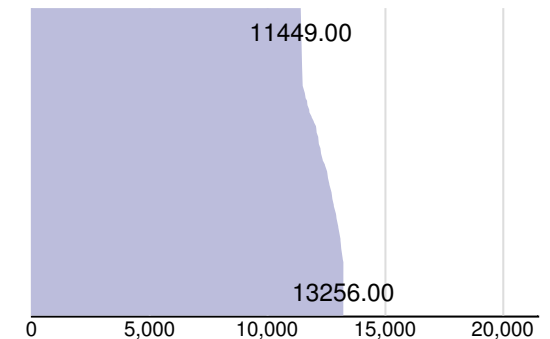
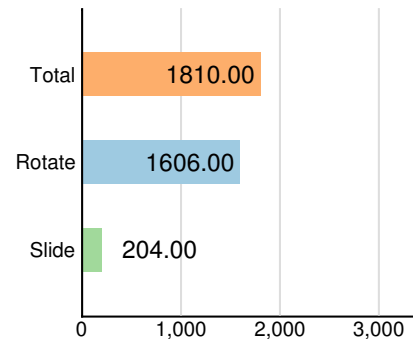
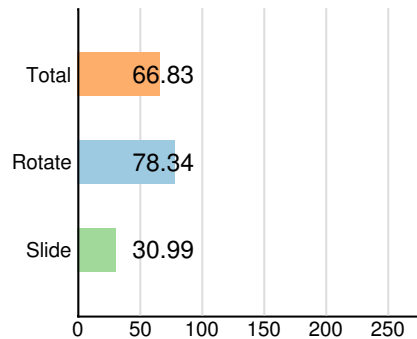


BHA 7

BHA #7 (Lateral #2)

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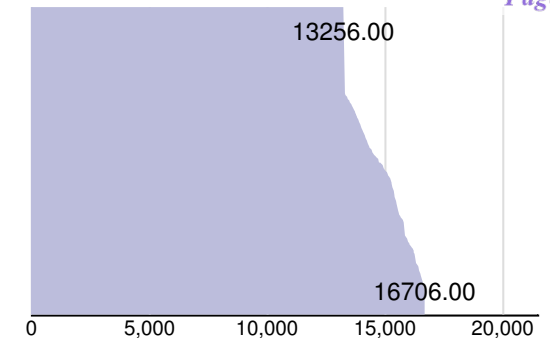
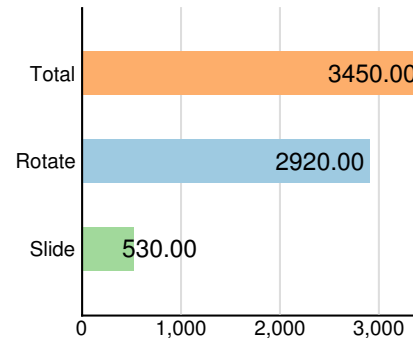
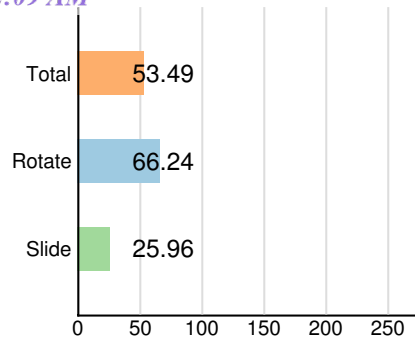


BHA 8

BHA #8 (lateral 3)

In: 02/07/2020 18:00

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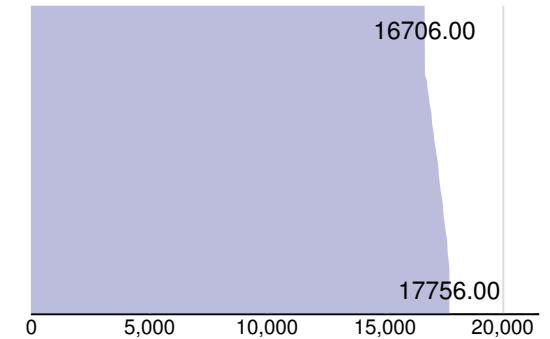
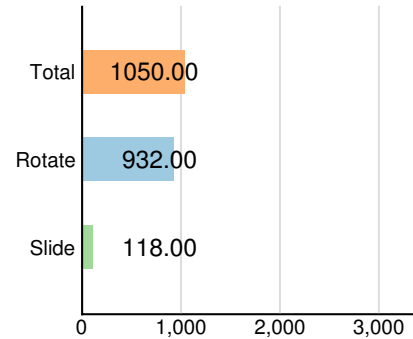
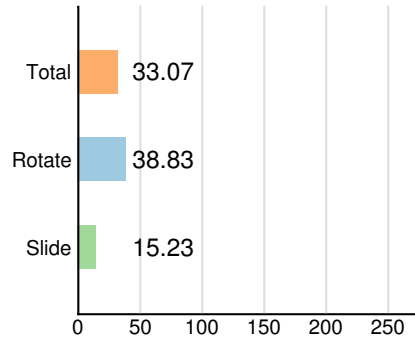


BHA 9

BHA #9 Lateral 4

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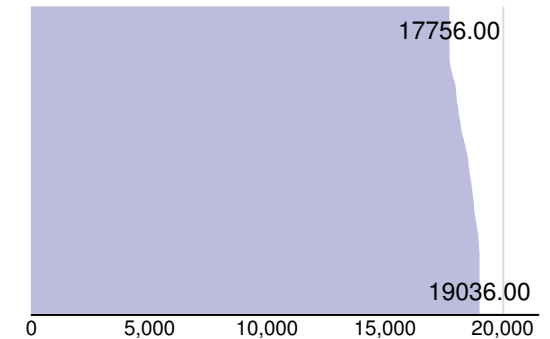
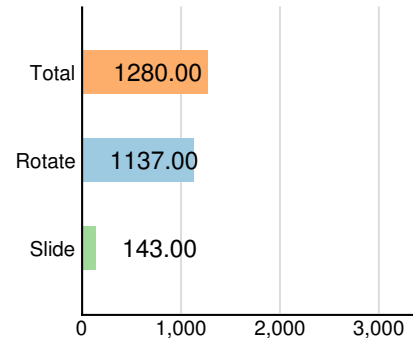
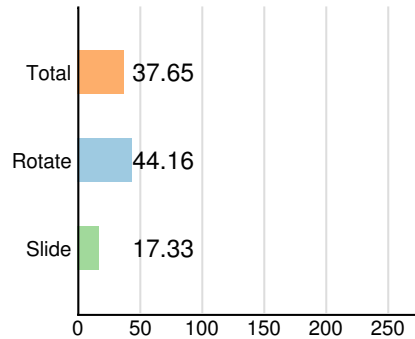


BHA 10

BHA #10 Lateral 5

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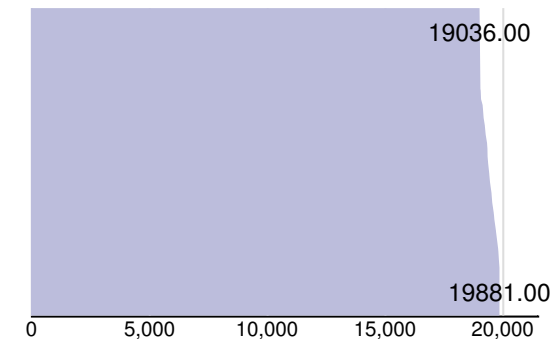
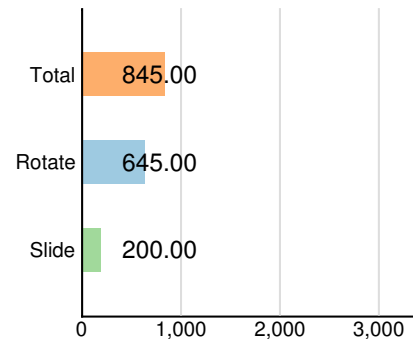
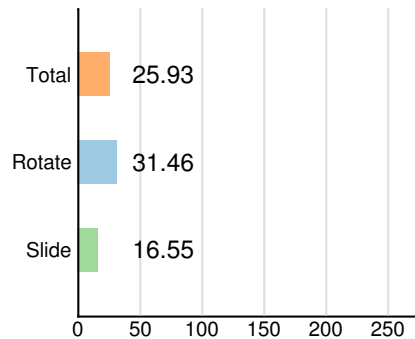


BHA 11

BHA #11 Lateral 6

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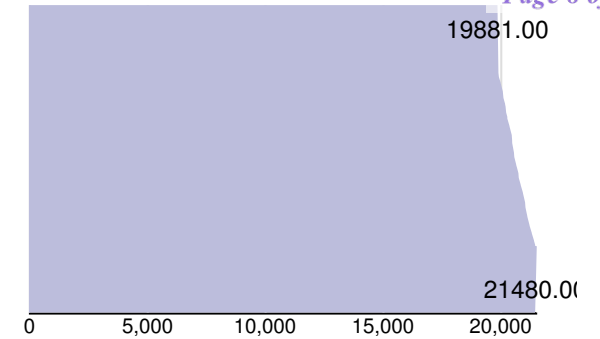
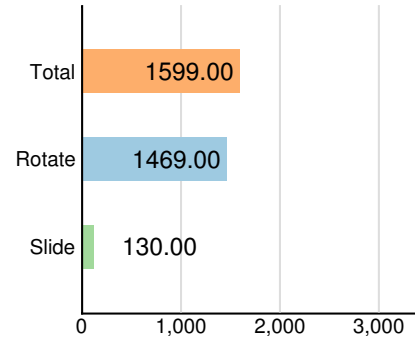
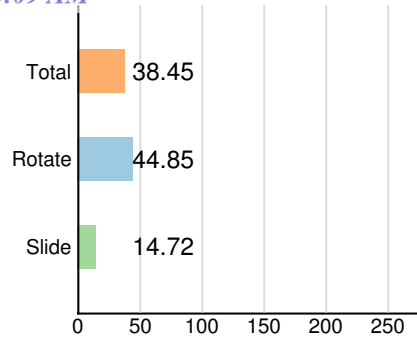


BHA 12

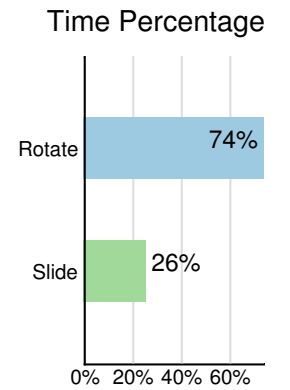
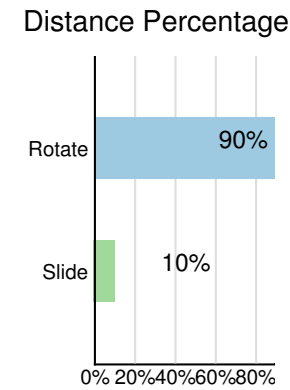
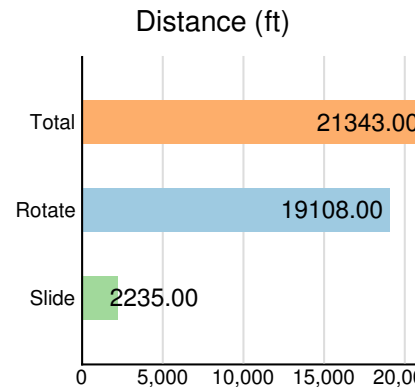
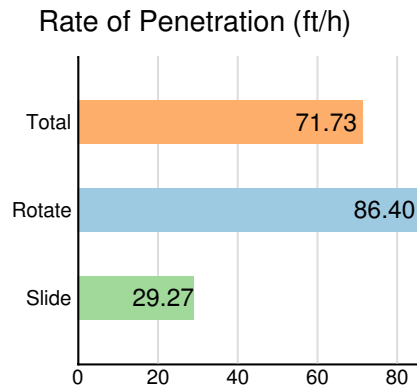
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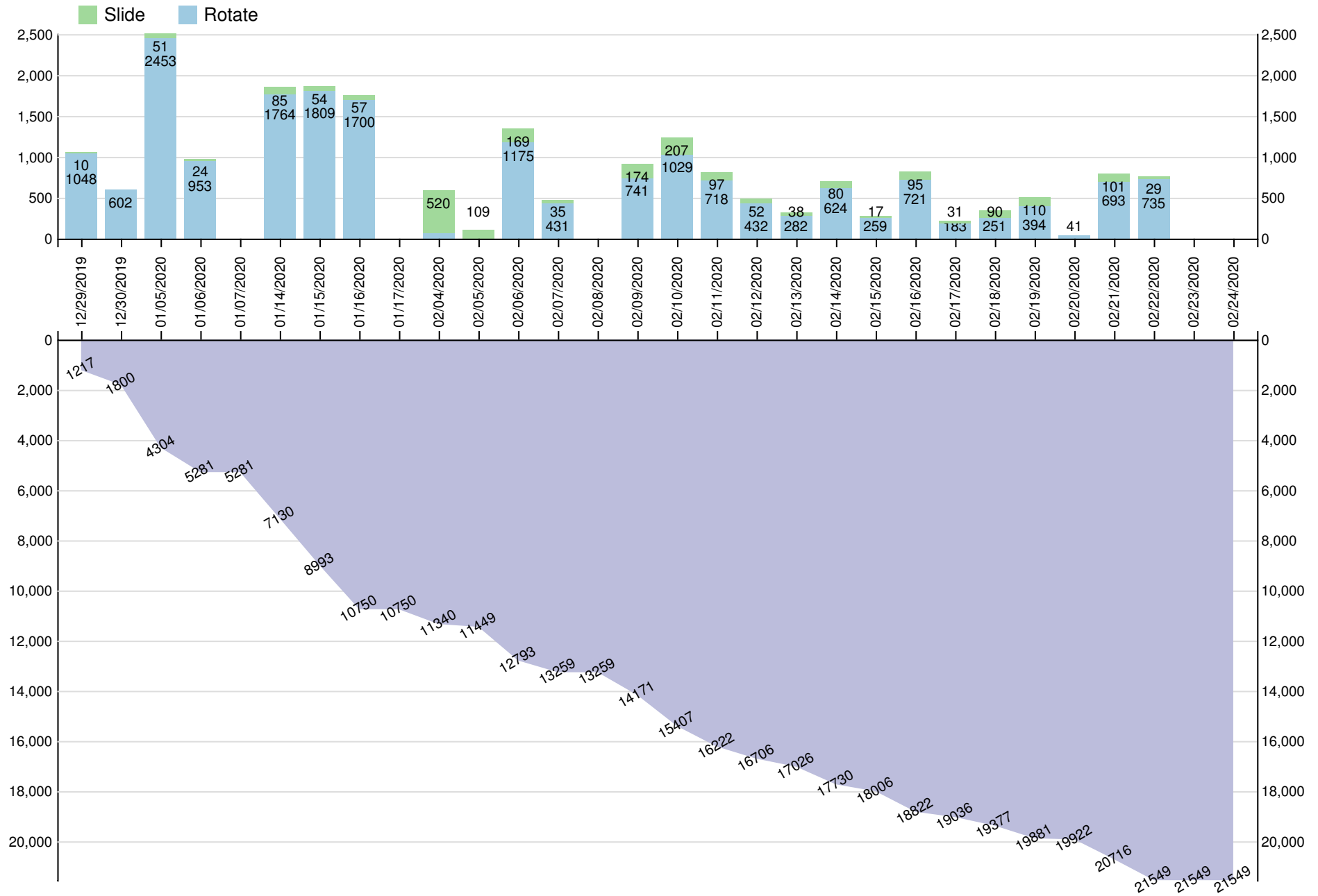
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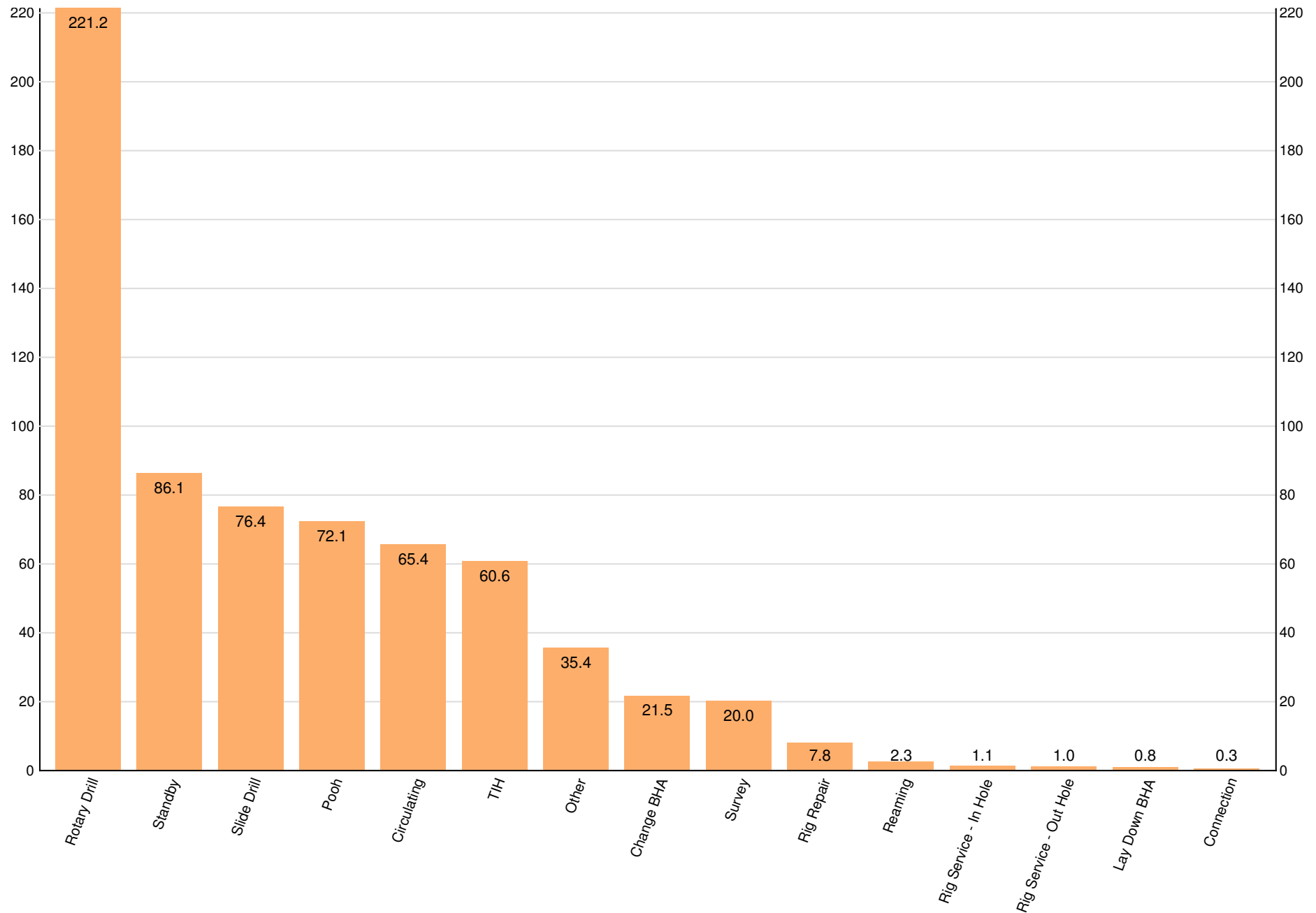
Total



Days vs. Depth



Directional Activity Hours





Proposed vs. As Drilled

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)

Advance Energy Partners, LLC

Merchant State Unit 554H

Lea County, New Mexico

Job No. WT-19-193

H&P 620

Plan 1.0



Referred to Imaging: 7/25/2024 9:04:29 AM

Received by OCD: 2/17/2022 11:02:09 AM



SITE DETAILS: Merchant State Unit 554H	
Site Centre Northing:	525539.00
Easting:	787048.90
Positional Uncertainty:	0.00
Convergence:	0.43
Local North:	Grid

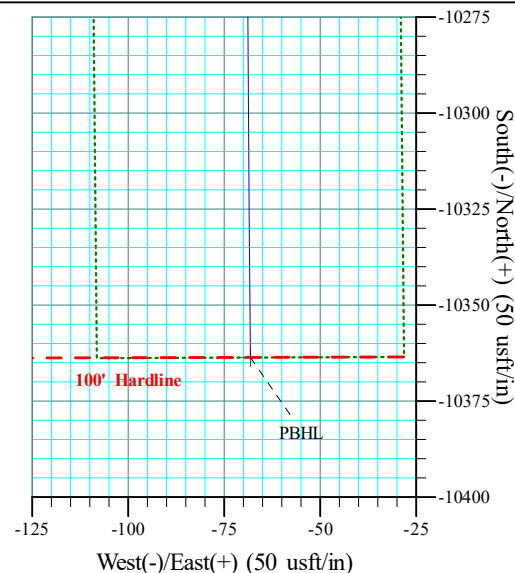


Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.14°

Magnetic Field
Strength: 48033.5nT
Dip Angle: 60.20°
Date: 12/27/2019
Model: MVHD

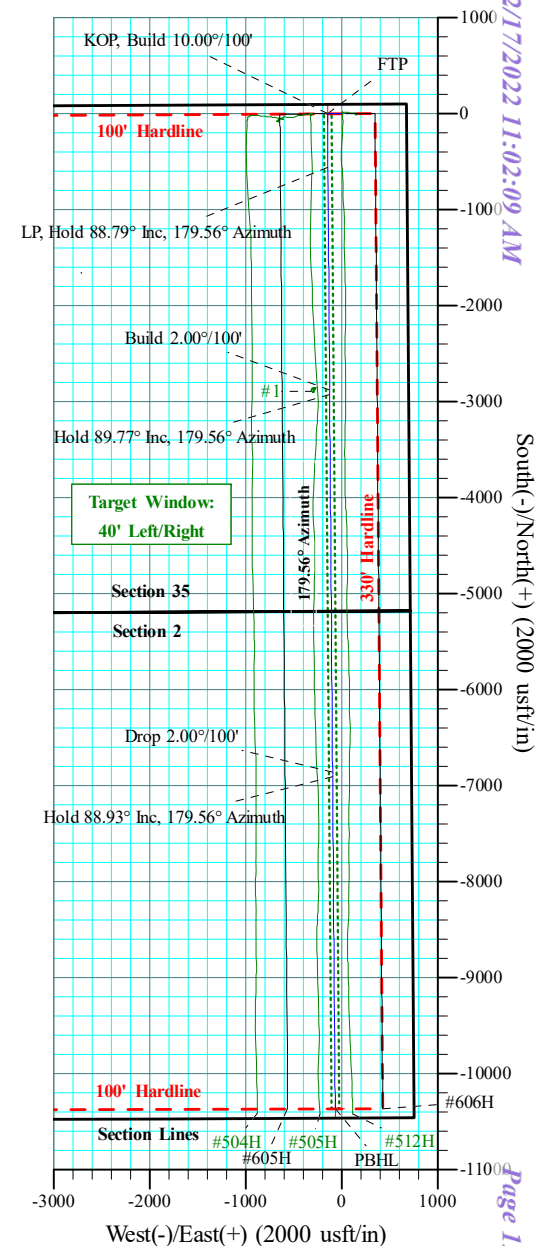
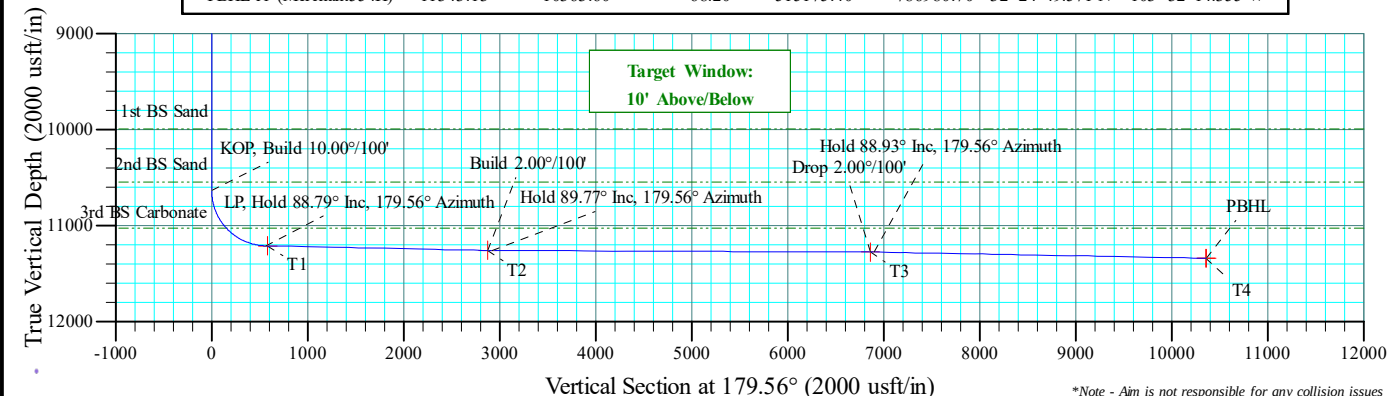
Magnetic North: 6.14° to Grid North

PROJECT DETAILS: Lea County, New Mexico	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level
Depth Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	0.00	0.00	Build 1.00°/100'
3	6700.00	5.00	269.69	6699.37	-0.12	-21.80	1.00	269.69	-0.05	Hold 5.0° Inc, 269.69° Azimuth
4	7898.96	5.00	269.69	7893.77	-0.68	-126.30	0.00	0.00	-0.29	Drop 1.00°/100'
5	8398.96	0.00	0.00	8393.13	-0.80	-148.10	1.00	180.00	-0.34	Hold Vertical
6	10645.65	0.00	0.00	10639.82	-0.80	-148.10	0.00	0.00	-0.34	KOP, Build 10.00°/100'
7	11533.55	88.79	179.56	11212.65	-561.64	-143.78	10.00	179.56	560.52	LP, Hold 88.79° Inc, 179.56° Azimuth
8	13847.55	88.79	179.56	11261.51	-2875.05	-125.94	0.00	0.00	2874.00	Build 2.00°/100'
9	13896.68	89.77	179.56	11262.13	-2924.18	-125.56	2.00	0.00	2923.13	Hold 89.77° Inc, 179.56° Azimuth
10	17833.58	89.77	179.56	11277.75	-6860.93	-95.21	0.00	0.00	6860.00	Drop 2.00°/100'
11	17875.94	88.93	179.56	11278.23	-6903.29	-94.88	2.00	180.00	6902.35	Hold 88.93° Inc, 179.56° Azimuth
12	21336.96	88.93	179.56	11343.13	-10363.60	-68.20	0.00	0.00	10362.77	PBHL

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Merchant554H)	0.00	-0.80	-148.10	525538.20	786900.80	32° 26' 32.115 N	103° 32' 14.386 W
PBHL r1 (Merchant554H)	11343.13	-10363.60	-68.20	515175.40	786980.70	32° 24' 49.571 N	103° 32' 14.355 W



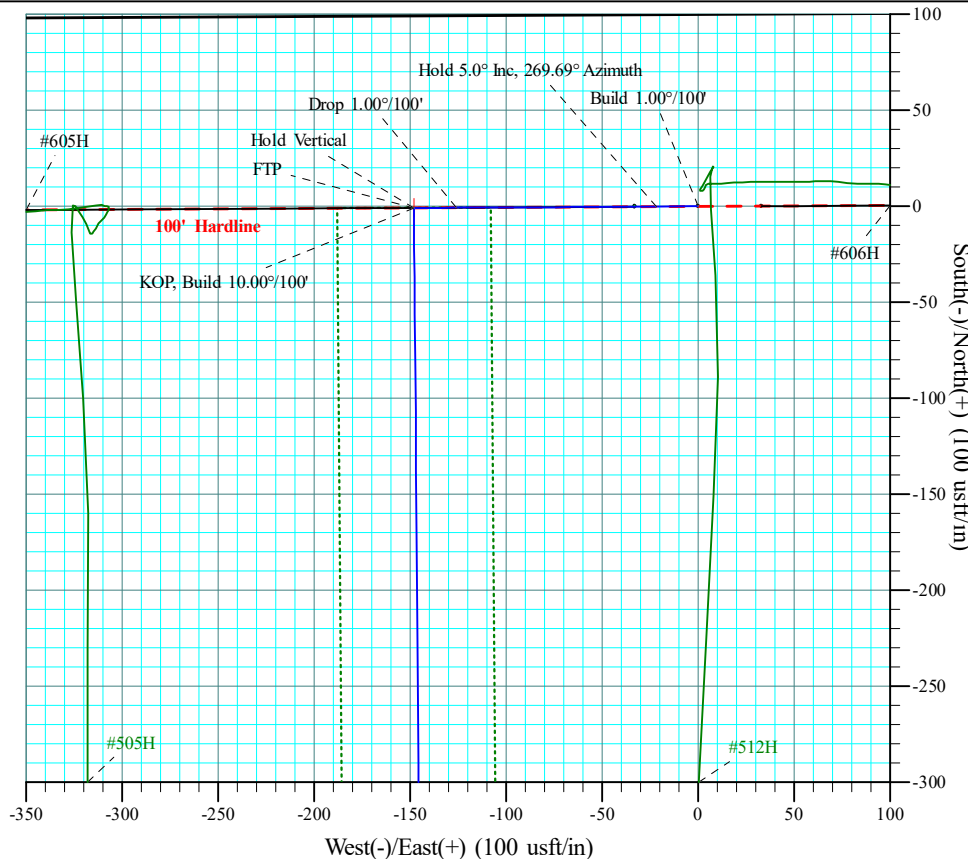
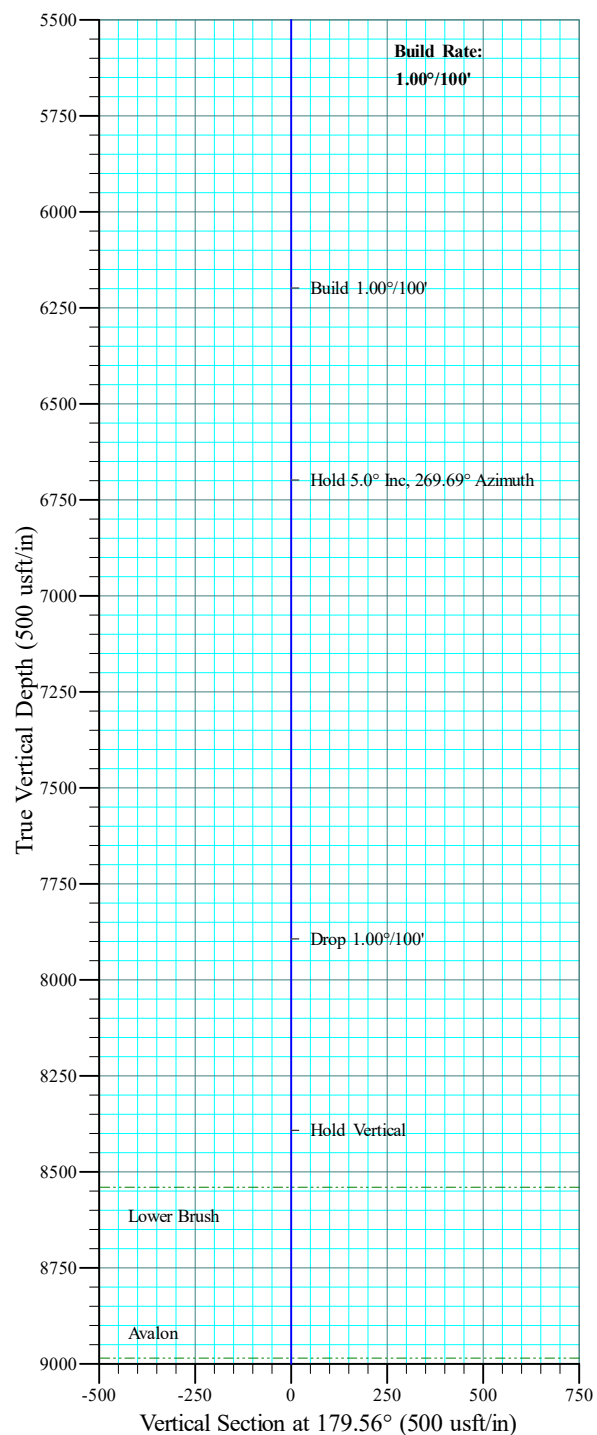
South(-)/North(+) (2000 usft/in)

Page 12 of 12

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



Merchant State Unit 554H
Lea County, New Mexico
Job No. WT-19-193
H&P 620
Plan 1.0



Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.14°

Magnetic Field
Strength: 48033.5nT
Dip Angle: 60.20°
Date: 12/27/2019
Model: MVHD

Magnetic North: 6.14° to Grid North

SITE DETAILS: Merchant State Unit 554H

Site Centre Northing: 525539.00
Easting: 787048.90

Positional Uncertainty: 0.00
Convergence: 0.43
Local North: Grid

Depth Reference:
3656'GL+26.5'KB @ 3682.50usft (H&P 620)

SLOTS

Slot Name	+N/-S	+E/-W
#1	-2870.67	-292.08
504H	-53.80	-657.70
505H	-53.30	-627.50
512H	0.40	136.80
554H	0.00	0.00
605H	-0.18	-33.12
606H	0.10	32.90

CASING DETAILS

TVD	Name
1805.00	13 3/8"
5250.00	9 5/8"

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

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

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Merchant554H)	0.00	-0.80	-148.10	525538.20	786900.80	32° 26' 32.115 N	103° 32' 14.386 W
PBHL r1 (Merchant554H)	11343.13	-10363.60	-68.20	515175.40	786980.70	32° 24' 49.571 N	103° 32' 14.355 W

Drawn By: IG

Date Created: 12/16/2019

Date Revised: 12/27/2019

File: Advance Energy - Merchant State Unit 554H Plan 1.0 Surface.wpc

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	0.00	0.00	Build 1.00°/100'
3	6700.00	5.00	269.69	6699.37	-0.12	-21.80	1.00	269.69	-0.05	Hold 5.0° Inc, 269.69° Azimuth
4	7898.96	5.00	269.69	7893.77	-0.68	-126.30	0.00	0.00	-0.29	Drop 1.00°/100'
5	8398.96	0.00	0.00	8393.13	-0.80	-148.10	1.00	180.00	-0.34	Hold Vertical
6	10645.65	0.00	0.00	10639.82	-0.80	-148.10	0.00	0.00	-0.34	KOP, Build 10.00°/100'
7	11533.55	88.79	179.56	11212.65	-561.64	-143.78	10.00	179.56	560.52	LP, Hold 88.79° Inc, 179.56° Azimuth
8	13847.55	88.79	179.56	11261.51	-2875.05	-125.94	0.00	0.00	2874.00	Build 2.00°/100'
9	13896.68	89.77	179.56	11262.13	-2924.18	-125.56	2.00	0.00	2923.13	Hold 89.77° Inc, 179.56° Azimuth
10	17833.58	89.77	179.56	11277.75	-6860.93	-95.21	0.00	0.00	6860.00	Drop 2.00°/100'
11	18833.58	88.93	179.56	11278.23	-6903.29	-94.88	2.00	180.00	6902.35	Hold 88.93° Inc, 179.56° Azimuth
12	21336.96	88.93	179.56	11343.13	-10363.60	-68.20	0.00	0.00	10362.77	PBHL

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

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

Site		Merchant State Unit 554H			
Site Position:		Northing:	525,539.00 usft	Latitude:	32° 26' 32.112 N
From:	Map	Easting:	787,048.90 usft	Longitude:	103° 32' 12.658 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	#554H - Slot 554H					
Well Position	+N/-S	0.00 usft	Northing:	525,539.00 usft	Latitude:	32° 26' 32.112 N
	+E/-W	0.00 usft	Easting:	787,048.90 usft	Longitude:	103° 32' 12.658 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,656.00 usft

Wellbore	Lateral 1r1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	12/27/2019	6.57	60.20	48,033.51937160

Design	Plan 1.0				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.56	

Survey Tool Program	Date	12/27/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	21,336.96	Plan 1.0 (Lateral 1r1)	B001Mb_MWD+HRGM	OWSG MWD + HRGM	

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FTP (Merchant554H)									
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 Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,677.00	0.00	0.00	1,677.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
1,805.00	0.00	0.00	1,805.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8"									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,175.00	0.00	0.00	5,175.00	0.00	0.00	0.00	0.00	0.00	0.00	
Limestone Base										
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,250.00	0.00	0.00	5,250.00	0.00	0.00	0.00	0.00	0.00	0.00	
9 5/8"										
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
Build 1.00°/100'										
6,300.00	1.00	269.69	6,300.00	0.00	-0.87	0.00	1.00	1.00	0.00	
6,400.00	2.00	269.69	6,399.96	-0.02	-3.49	-0.01	1.00	1.00	0.00	
6,500.00	3.00	269.69	6,499.86	-0.04	-7.85	-0.02	1.00	1.00	0.00	
6,600.00	4.00	269.69	6,599.68	-0.08	-13.96	-0.03	1.00	1.00	0.00	
6,700.00	5.00	269.69	6,699.37	-0.12	-21.80	-0.05	1.00	1.00	0.00	
Hold 5.0° Inc, 269.69° Azimuth										
6,800.00	5.00	269.69	6,798.99	-0.16	-30.52	-0.07	0.00	0.00	0.00	
6,900.00	5.00	269.69	6,898.60	-0.21	-39.23	-0.09	0.00	0.00	0.00	
7,000.00	5.00	269.69	6,998.22	-0.26	-47.95	-0.11	0.00	0.00	0.00	
7,100.00	5.00	269.69	7,097.84	-0.31	-56.66	-0.13	0.00	0.00	0.00	
7,200.00	5.00	269.69	7,197.46	-0.35	-65.38	-0.15	0.00	0.00	0.00	
7,300.00	5.00	269.69	7,297.08	-0.40	-74.10	-0.17	0.00	0.00	0.00	
7,400.00	5.00	269.69	7,396.70	-0.45	-82.81	-0.19	0.00	0.00	0.00	
7,500.00	5.00	269.69	7,496.32	-0.49	-91.53	-0.21	0.00	0.00	0.00	
7,600.00	5.00	269.69	7,595.94	-0.54	-100.24	-0.23	0.00	0.00	0.00	
7,700.00	5.00	269.69	7,695.56	-0.59	-108.96	-0.25	0.00	0.00	0.00	
7,800.00	5.00	269.69	7,795.18	-0.64	-117.67	-0.27	0.00	0.00	0.00	
7,898.96	5.00	269.69	7,893.77	-0.68	-126.30	-0.29	0.00	0.00	0.00	
Drop 1.00°/100'										
7,900.00	4.99	269.69	7,894.80	-0.68	-126.39	-0.29	1.00	-1.00	0.00	
8,000.00	3.99	269.69	7,994.49	-0.72	-134.22	-0.31	1.00	-1.00	0.00	
8,100.00	2.99	269.69	8,094.30	-0.76	-140.30	-0.32	1.00	-1.00	0.00	
8,200.00	1.99	269.69	8,194.21	-0.78	-144.65	-0.33	1.00	-1.00	0.00	
8,300.00	0.99	269.69	8,294.17	-0.80	-147.25	-0.34	1.00	-1.00	0.00	
8,398.96	0.00	0.00	8,393.13	-0.80	-148.10	-0.34	1.00	-1.00	91.25	
Hold Vertical										

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,400.00	0.00	0.00	8,394.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
8,500.00	0.00	0.00	8,494.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
8,546.83	0.00	0.00	8,541.00	-0.80	-148.10	-0.34	0.00	0.00	0.00
Lower Brush									
8,600.00	0.00	0.00	8,594.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
8,700.00	0.00	0.00	8,694.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
8,800.00	0.00	0.00	8,794.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
8,900.00	0.00	0.00	8,894.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
8,990.83	0.00	0.00	8,985.00	-0.80	-148.10	-0.34	0.00	0.00	0.00
Avalon									
9,000.00	0.00	0.00	8,994.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,100.00	0.00	0.00	9,094.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,200.00	0.00	0.00	9,194.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,300.00	0.00	0.00	9,294.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,400.00	0.00	0.00	9,394.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,500.00	0.00	0.00	9,494.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,600.00	0.00	0.00	9,594.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,700.00	0.00	0.00	9,694.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,800.00	0.00	0.00	9,794.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
9,900.00	0.00	0.00	9,894.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,000.00	0.00	0.00	9,994.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,001.83	0.00	0.00	9,996.00	-0.80	-148.10	-0.34	0.00	0.00	0.00
1st BS Sand									
10,100.00	0.00	0.00	10,094.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,200.00	0.00	0.00	10,194.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,300.00	0.00	0.00	10,294.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,400.00	0.00	0.00	10,394.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,500.00	0.00	0.00	10,494.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,557.83	0.00	0.00	10,552.00	-0.80	-148.10	-0.34	0.00	0.00	0.00
2nd BS Sand									
10,600.00	0.00	0.00	10,594.17	-0.80	-148.10	-0.34	0.00	0.00	0.00
10,645.65	0.00	0.00	10,639.82	-0.80	-148.10	-0.34	0.00	0.00	0.00
KOP, Build 10.00°/100'									
10,650.00	0.43	179.56	10,644.17	-0.82	-148.10	-0.32	10.00	10.00	0.00
10,700.00	5.43	179.56	10,694.09	-3.38	-148.08	2.24	10.00	10.00	0.00
10,750.00	10.43	179.56	10,743.59	-10.28	-148.03	9.14	10.00	10.00	0.00
10,800.00	15.43	179.56	10,792.31	-21.46	-147.94	20.33	10.00	10.00	0.00
10,850.00	20.43	179.56	10,839.86	-36.86	-147.82	35.72	10.00	10.00	0.00
10,900.00	25.43	179.56	10,885.90	-56.33	-147.67	55.20	10.00	10.00	0.00
10,950.00	30.43	179.56	10,930.06	-79.75	-147.49	78.61	10.00	10.00	0.00
11,000.00	35.43	179.56	10,972.01	-106.92	-147.28	105.79	10.00	10.00	0.00
11,050.00	40.43	179.56	11,011.43	-137.65	-147.04	136.52	10.00	10.00	0.00
11,076.23	43.06	179.56	11,031.00	-155.11	-146.91	153.98	10.00	10.00	0.00
3rd BS Carbonate									

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,100.00	45.43	179.56	11,048.03	-171.70	-146.78	170.56	10.00	10.00	0.00	
11,150.00	50.43	179.56	11,081.51	-208.80	-146.50	207.67	10.00	10.00	0.00	
11,200.00	55.43	179.56	11,111.64	-248.69	-146.19	247.56	10.00	10.00	0.00	
11,250.00	60.43	179.56	11,138.18	-291.04	-145.86	289.92	10.00	10.00	0.00	
11,300.00	65.43	179.56	11,160.92	-335.55	-145.52	334.43	10.00	10.00	0.00	
11,350.00	70.43	179.56	11,179.70	-381.88	-145.16	380.75	10.00	10.00	0.00	
11,400.00	75.43	179.56	11,194.36	-429.66	-144.79	428.53	10.00	10.00	0.00	
11,450.00	80.43	179.56	11,204.81	-478.54	-144.42	477.41	10.00	10.00	0.00	
11,500.00	85.43	179.56	11,210.96	-528.14	-144.03	527.02	10.00	10.00	0.00	
11,533.55	88.79	179.56	11,212.65	-561.64	-143.78	560.52	10.00	10.00	0.00	
LP, Hold 88.79° Inc, 179.56° Azimuth										
11,556.10	88.79	179.56	11,213.13	-584.18	-143.60	583.06	0.00	0.00	0.00	
T1 (Merchant554H)										
11,600.00	88.79	179.56	11,214.05	-628.07	-143.26	626.96	0.00	0.00	0.00	
11,700.00	88.79	179.56	11,216.17	-728.05	-142.49	726.93	0.00	0.00	0.00	
11,800.00	88.79	179.56	11,218.28	-828.02	-141.72	826.91	0.00	0.00	0.00	
11,900.00	88.79	179.56	11,220.39	-928.00	-140.95	926.89	0.00	0.00	0.00	
12,000.00	88.79	179.56	11,222.50	-1,027.97	-140.18	1,026.87	0.00	0.00	0.00	
12,100.00	88.79	179.56	11,224.61	-1,127.95	-139.41	1,126.84	0.00	0.00	0.00	
12,200.00	88.79	179.56	11,226.72	-1,227.92	-138.64	1,226.82	0.00	0.00	0.00	
12,300.00	88.79	179.56	11,228.84	-1,327.90	-137.87	1,326.80	0.00	0.00	0.00	
12,400.00	88.79	179.56	11,230.95	-1,427.87	-137.10	1,426.78	0.00	0.00	0.00	
12,500.00	88.79	179.56	11,233.06	-1,527.85	-136.33	1,526.75	0.00	0.00	0.00	
12,600.00	88.79	179.56	11,235.17	-1,627.82	-135.56	1,626.73	0.00	0.00	0.00	
12,700.00	88.79	179.56	11,237.28	-1,727.80	-134.78	1,726.71	0.00	0.00	0.00	
12,800.00	88.79	179.56	11,239.39	-1,827.77	-134.01	1,826.69	0.00	0.00	0.00	
12,900.00	88.79	179.56	11,241.51	-1,927.75	-133.24	1,926.67	0.00	0.00	0.00	
13,000.00	88.79	179.56	11,243.62	-2,027.72	-132.47	2,026.64	0.00	0.00	0.00	
13,100.00	88.79	179.56	11,245.73	-2,127.70	-131.70	2,126.62	0.00	0.00	0.00	
13,200.00	88.79	179.56	11,247.84	-2,227.67	-130.93	2,226.60	0.00	0.00	0.00	
13,300.00	88.79	179.56	11,249.95	-2,327.64	-130.16	2,326.58	0.00	0.00	0.00	
13,400.00	88.79	179.56	11,252.06	-2,427.62	-129.39	2,426.55	0.00	0.00	0.00	
13,500.00	88.79	179.56	11,254.18	-2,527.59	-128.62	2,526.53	0.00	0.00	0.00	
13,600.00	88.79	179.56	11,256.29	-2,627.57	-127.85	2,626.51	0.00	0.00	0.00	
13,700.00	88.79	179.56	11,258.40	-2,727.54	-127.08	2,726.49	0.00	0.00	0.00	
13,800.00	88.79	179.56	11,260.51	-2,827.52	-126.31	2,826.46	0.00	0.00	0.00	
13,847.55	88.79	179.56	11,261.51	-2,875.05	-125.94	2,874.00	0.00	0.00	0.00	
Build 2.00°/100'										
13,847.61	88.79	179.56	11,261.52	-2,875.12	-125.94	2,874.06	0.00	0.00	0.00	
T2 (Merchant554H)										
13,896.68	89.77	179.56	11,262.13	-2,924.18	-125.56	2,923.13	2.00	2.00	0.00	
Hold 89.77° Inc, 179.56° Azimuth										
13,900.00	89.77	179.56	11,262.14	-2,927.50	-125.53	2,926.45	0.00	0.00	0.00	
14,000.00	89.77	179.56	11,262.54	-3,027.50	-124.76	3,026.45	0.00	0.00	0.00	

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,100.00	89.77	179.56	11,262.94	-3,127.49	-123.99	3,126.45	0.00	0.00	0.00	
14,200.00	89.77	179.56	11,263.33	-3,227.49	-123.22	3,226.45	0.00	0.00	0.00	
14,300.00	89.77	179.56	11,263.73	-3,327.49	-122.45	3,326.45	0.00	0.00	0.00	
14,400.00	89.77	179.56	11,264.13	-3,427.48	-121.68	3,426.45	0.00	0.00	0.00	
14,500.00	89.77	179.56	11,264.52	-3,527.48	-120.91	3,526.45	0.00	0.00	0.00	
14,600.00	89.77	179.56	11,264.92	-3,627.47	-120.14	3,626.44	0.00	0.00	0.00	
14,700.00	89.77	179.56	11,265.32	-3,727.47	-119.37	3,726.44	0.00	0.00	0.00	
14,800.00	89.77	179.56	11,265.71	-3,827.47	-118.60	3,826.44	0.00	0.00	0.00	
14,900.00	89.77	179.56	11,266.11	-3,927.46	-117.82	3,926.44	0.00	0.00	0.00	
15,000.00	89.77	179.56	11,266.51	-4,027.46	-117.05	4,026.44	0.00	0.00	0.00	
15,100.00	89.77	179.56	11,266.90	-4,127.46	-116.28	4,126.44	0.00	0.00	0.00	
15,200.00	89.77	179.56	11,267.30	-4,227.45	-115.51	4,226.44	0.00	0.00	0.00	
15,300.00	89.77	179.56	11,267.70	-4,327.45	-114.74	4,326.44	0.00	0.00	0.00	
15,400.00	89.77	179.56	11,268.09	-4,427.44	-113.97	4,426.44	0.00	0.00	0.00	
15,500.00	89.77	179.56	11,268.49	-4,527.44	-113.20	4,526.44	0.00	0.00	0.00	
15,600.00	89.77	179.56	11,268.89	-4,627.44	-112.43	4,626.44	0.00	0.00	0.00	
15,700.00	89.77	179.56	11,269.28	-4,727.43	-111.66	4,726.44	0.00	0.00	0.00	
15,800.00	89.77	179.56	11,269.68	-4,827.43	-110.89	4,826.43	0.00	0.00	0.00	
15,900.00	89.77	179.56	11,270.08	-4,927.42	-110.11	4,926.43	0.00	0.00	0.00	
16,000.00	89.77	179.56	11,270.48	-5,027.42	-109.34	5,026.43	0.00	0.00	0.00	
16,100.00	89.77	179.56	11,270.87	-5,127.42	-108.57	5,126.43	0.00	0.00	0.00	
16,200.00	89.77	179.56	11,271.27	-5,227.41	-107.80	5,226.43	0.00	0.00	0.00	
16,300.00	89.77	179.56	11,271.67	-5,327.41	-107.03	5,326.43	0.00	0.00	0.00	
16,400.00	89.77	179.56	11,272.06	-5,427.41	-106.26	5,426.43	0.00	0.00	0.00	
16,500.00	89.77	179.56	11,272.46	-5,527.40	-105.49	5,526.43	0.00	0.00	0.00	
16,600.00	89.77	179.56	11,272.86	-5,627.40	-104.72	5,626.43	0.00	0.00	0.00	
16,700.00	89.77	179.56	11,273.25	-5,727.39	-103.95	5,726.43	0.00	0.00	0.00	
16,800.00	89.77	179.56	11,273.65	-5,827.39	-103.18	5,826.43	0.00	0.00	0.00	
16,900.00	89.77	179.56	11,274.05	-5,927.39	-102.40	5,926.43	0.00	0.00	0.00	
17,000.00	89.77	179.56	11,274.44	-6,027.38	-101.63	6,026.43	0.00	0.00	0.00	
17,100.00	89.77	179.56	11,274.84	-6,127.38	-100.86	6,126.42	0.00	0.00	0.00	
17,200.00	89.77	179.56	11,275.24	-6,227.38	-100.09	6,226.42	0.00	0.00	0.00	
17,300.00	89.77	179.56	11,275.63	-6,327.37	-99.32	6,326.42	0.00	0.00	0.00	
17,400.00	89.77	179.56	11,276.03	-6,427.37	-98.55	6,426.42	0.00	0.00	0.00	
17,500.00	89.77	179.56	11,276.43	-6,527.36	-97.78	6,526.42	0.00	0.00	0.00	
17,600.00	89.77	179.56	11,276.82	-6,627.36	-97.01	6,626.42	0.00	0.00	0.00	
17,700.00	89.77	179.56	11,277.22	-6,727.36	-96.24	6,726.42	0.00	0.00	0.00	
17,800.00	89.77	179.56	11,277.62	-6,827.35	-95.47	6,826.42	0.00	0.00	0.00	
17,833.58	89.77	179.56	11,277.75	-6,860.93	-95.21	6,860.00	0.00	0.00	0.00	
Drop 2.00°/100'										
17,833.76	89.77	179.56	11,277.75	-6,861.11	-95.21	6,860.17	0.00	0.00	0.00	
T3 (Merchant554H)										
17,875.94	88.93	179.56	11,278.23	-6,903.29	-94.88	6,902.35	2.01	-2.01	0.00	
Hold 88.93° Inc, 179.56° Azimuth										

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,900.00	88.93	179.56	11,278.68	-6,927.34	-94.69	6,926.41	0.00	0.00	0.00
18,000.00	88.93	179.56	11,280.56	-7,027.32	-93.92	7,026.39	0.00	0.00	0.00
18,100.00	88.93	179.56	11,282.43	-7,127.30	-93.15	7,126.38	0.00	0.00	0.00
18,200.00	88.93	179.56	11,284.31	-7,227.28	-92.38	7,226.36	0.00	0.00	0.00
18,300.00	88.93	179.56	11,286.18	-7,327.26	-91.61	7,326.34	0.00	0.00	0.00
18,400.00	88.93	179.56	11,288.06	-7,427.24	-90.84	7,426.32	0.00	0.00	0.00
18,500.00	88.93	179.56	11,289.93	-7,527.22	-90.07	7,526.31	0.00	0.00	0.00
18,600.00	88.93	179.56	11,291.81	-7,627.20	-89.30	7,626.29	0.00	0.00	0.00
18,700.00	88.93	179.56	11,293.68	-7,727.18	-88.53	7,726.27	0.00	0.00	0.00
18,800.00	88.93	179.56	11,295.56	-7,827.16	-87.76	7,826.25	0.00	0.00	0.00
18,900.00	88.93	179.56	11,297.43	-7,927.14	-86.99	7,926.24	0.00	0.00	0.00
19,000.00	88.93	179.56	11,299.31	-8,027.12	-86.21	8,026.22	0.00	0.00	0.00
19,100.00	88.93	179.56	11,301.18	-8,127.10	-85.44	8,126.20	0.00	0.00	0.00
19,200.00	88.93	179.56	11,303.06	-8,227.08	-84.67	8,226.18	0.00	0.00	0.00
19,300.00	88.93	179.56	11,304.93	-8,327.06	-83.90	8,326.17	0.00	0.00	0.00
19,400.00	88.93	179.56	11,306.81	-8,427.03	-83.13	8,426.15	0.00	0.00	0.00
19,500.00	88.93	179.56	11,308.68	-8,527.01	-82.36	8,526.13	0.00	0.00	0.00
19,600.00	88.93	179.56	11,310.56	-8,626.99	-81.59	8,626.11	0.00	0.00	0.00
19,700.00	88.93	179.56	11,312.43	-8,726.97	-80.82	8,726.10	0.00	0.00	0.00
19,800.00	88.93	179.56	11,314.31	-8,826.95	-80.05	8,826.08	0.00	0.00	0.00
19,900.00	88.93	179.56	11,316.18	-8,926.93	-79.28	8,926.06	0.00	0.00	0.00
20,000.00	88.93	179.56	11,318.06	-9,026.91	-78.51	9,026.04	0.00	0.00	0.00
20,100.00	88.93	179.56	11,319.94	-9,126.89	-77.74	9,126.02	0.00	0.00	0.00
20,200.00	88.93	179.56	11,321.81	-9,226.87	-76.96	9,226.01	0.00	0.00	0.00
20,300.00	88.93	179.56	11,323.69	-9,326.85	-76.19	9,325.99	0.00	0.00	0.00
20,400.00	88.93	179.56	11,325.56	-9,426.83	-75.42	9,425.97	0.00	0.00	0.00
20,500.00	88.93	179.56	11,327.44	-9,526.81	-74.65	9,525.95	0.00	0.00	0.00
20,600.00	88.93	179.56	11,329.31	-9,626.79	-73.88	9,625.94	0.00	0.00	0.00
20,700.00	88.93	179.56	11,331.19	-9,726.77	-73.11	9,725.92	0.00	0.00	0.00
20,800.00	88.93	179.56	11,333.06	-9,826.75	-72.34	9,825.90	0.00	0.00	0.00
20,900.00	88.93	179.56	11,334.94	-9,926.73	-71.57	9,925.88	0.00	0.00	0.00
21,000.00	88.93	179.56	11,336.81	-10,026.71	-70.80	10,025.87	0.00	0.00	0.00
21,100.00	88.93	179.56	11,338.69	-10,126.69	-70.03	10,125.85	0.00	0.00	0.00
21,200.00	88.93	179.56	11,340.56	-10,226.66	-69.26	10,225.83	0.00	0.00	0.00
21,300.00	88.93	179.56	11,342.44	-10,326.64	-68.48	10,325.81	0.00	0.00	0.00
21,329.01	88.93	179.56	11,342.98	-10,355.64	-68.26	10,354.81	0.00	0.00	0.00
T4 (Merchant554H)									
21,336.96	88.93	179.56	11,343.13	-10,363.60	-68.20	10,362.77	0.00	0.00	0.00
PBHL - PBHL r1 (Merchant554H)									

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Lateral 1r1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1.0	Database:	EDM 5000.1 Aim Database

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Merchant554H) - plan misses target center by 148.10usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-0.80	-148.10	525,538.20	786,900.80	32° 26' 32.115 N	103° 32' 14.386 W
PBHL r1 (Merchant554H) - plan hits target center - Point	0.00	0.00	11,343.13	-10,363.60	-68.20	515,175.40	786,980.70	32° 24' 49.571 N	103° 32' 14.355 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,805.00	1,805.00	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 (°)	
1,677.00	1,677.00	Rustler		0.00		
5,175.00	5,175.00	Limestone Base		0.00		
8,546.83	8,541.00	Lower Brush		0.00		
8,990.83	8,985.00	Avalon		0.00		
10,001.83	9,996.00	1st BS Sand		0.00		
10,557.83	10,552.00	2nd BS Sand		0.00		
11,076.23	11,031.00	3rd BS Carbonate		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
6200	6200	0	0	Build 1.00°/100'	
6700	6699	0	-22	Hold 5.0° Inc, 269.69° Azimuth	
7899	7894	-1	-126	Drop 1.00°/100'	
8399	8393	-1	-148	Hold Vertical	
10,646	10,640	-1	-148	KOP, Build 10.00°/100'	
11,534	11,213	-562	-144	LP, Hold 88.79° Inc, 179.56° Azimuth	
13,848	11,262	-2875	-126	Build 2.00°/100'	
13,897	11,262	-2924	-126	Hold 89.77° Inc, 179.56° Azimuth	
17,834	11,278	-6861	-95	Drop 2.00°/100'	
17,876	11,278	-6903	-95	Hold 88.93° Inc, 179.56° Azimuth	
21,337	11,343	-10,364	-68	PBHL	

Advance Energy Partners, LLC

Merchant State Unit 554H

Lea County, New Mexico

Job No. WT-19-193

H&P 620

Plan 1.0 Final PVA



Received by OCD: 2/17/2022 11:02:09 AM

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

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Released to Imaging: 7/25/2024 9:04:29 AM



SITE DETAILS: Merchant State Unit 554H
Site Centre Northing: 525539.00 Easting: 787048.90
Positional Uncertainty: 0.00 Convergence: 0.43 Local North: Grid

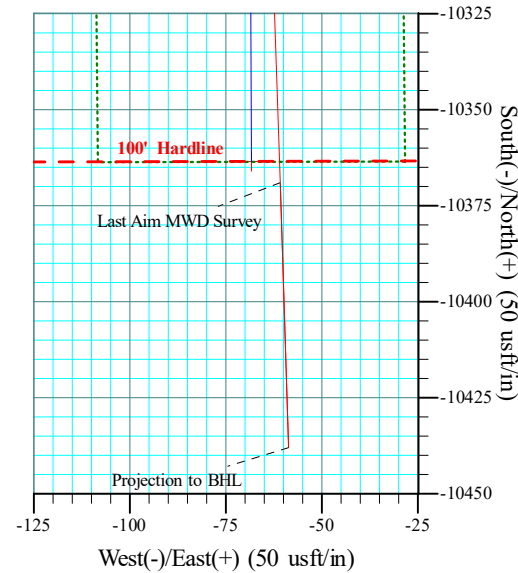


Azimuths to Grid North
True North: -0.43°
Magnetic North: 6.15°

Magnetic Field
Strength: 48034.7nT
Dip Angle: 60.20°
Date: 12/23/2019
Model: MVHD

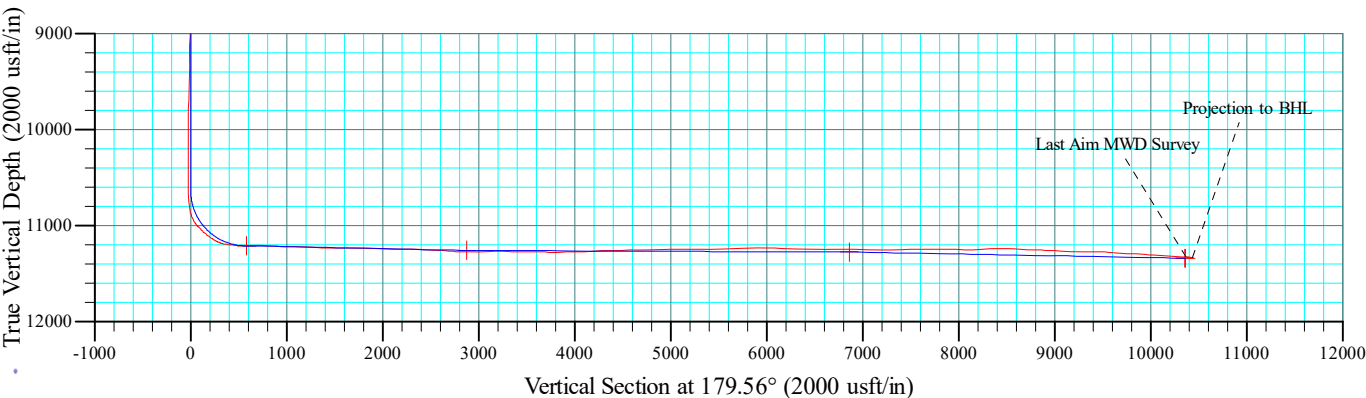
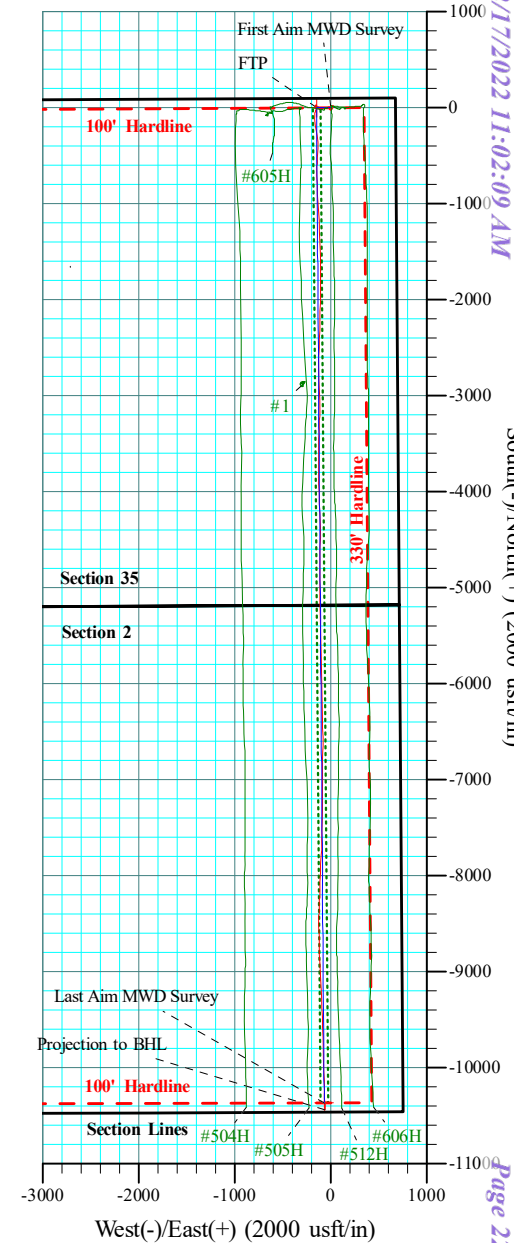
Magnetic North: 6.15° to Grid North

PROJECT DETAILS: Lea County, New Mexico
Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Depth Reference: 3656'GL+26.5'KB @ 3682.50usft (H&P 620)



SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation	
1	21411.00	86.99	178.23	11329.72	-10369.14	-60.77	0.00	0.00	10368.36	Last Aim MWD Survey	
2	21480.00	86.99	178.23	11333.35	-10438.01	-58.64	0.00	0.00	10437.25	Projection to BHL	

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP (Merchant554H)	0.00	-0.80	-148.10	525538.20	786900.80	32° 26' 32.115 N	103° 32' 14.386 W
PBHL r1 (Merchant554H)	11343.13	-10363.60	-68.20	515175.40	786980.70	32° 24' 49.571 N	103° 32' 14.355 W





Survey Reports

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	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	Merchant State Unit 554H		
Site Position:		Northing:	525,539.00 usft
From:	Map	Easting:	787,048.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 26' 32.112 N
		Longitude:	103° 32' 12.658 W
		Grid Convergence:	0.43 °

Well	#554H - Slot 554H		
Well Position	+N/-S	0.00 usft	Northing: 525,539.00 usft
	+E/-W	0.00 usft	Easting: 787,048.90 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 26' 32.112 N
		Longitude:	103° 32' 12.658 W
		Ground Level:	3,656.00 usft

Wellbore	Aim MWD Surveys				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	12/27/2019	6.57	60.20	48,033.51937160

Design	Aim MWD Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.56	

Survey Program	Date	2/24/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
196.00	21,480.00	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
196.00	1.01	276.84	195.99	0.21	-1.72	-0.22	0.52	0.52	0.00
First Aim MWD Survey									
226.00	0.97	281.50	225.99	0.29	-2.23	-0.30	0.30	-0.13	15.53
318.00	1.10	286.34	317.97	0.69	-3.84	-0.72	0.17	0.14	5.26
410.00	0.92	288.36	409.96	1.17	-5.39	-1.21	0.20	-0.20	2.20
502.00	0.18	122.60	501.95	1.33	-5.96	-1.37	1.19	-0.80	-180.17
596.00	0.79	125.23	595.95	0.87	-5.31	-0.91	0.65	0.65	2.80
687.00	0.84	124.70	686.94	0.13	-4.25	-0.17	0.06	0.05	-0.58
781.00	0.84	122.86	780.93	-0.63	-3.10	0.61	0.03	0.00	-1.96
874.00	0.92	139.82	873.92	-1.57	-2.05	1.56	0.29	0.09	18.24

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Well:	#554H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.1 Aim Database

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)
967.00	0.97	149.05	966.91	-2.82	-1.16	2.81	0.17	0.05	9.92
1,061.00	0.79	164.52	1,060.90	-4.13	-0.58	4.12	0.32	-0.19	16.46
1,155.00	0.70	183.42	1,154.89	-5.32	-0.44	5.32	0.28	-0.10	20.11
1,250.00	0.66	211.98	1,249.88	-6.37	-0.77	6.36	0.36	-0.04	30.06
1,344.00	0.48	232.11	1,343.88	-7.07	-1.37	7.06	0.28	-0.19	21.41
1,439.00	0.70	246.70	1,438.87	-7.54	-2.21	7.53	0.28	0.23	15.36
1,533.00	0.92	245.73	1,532.86	-8.08	-3.43	8.05	0.23	0.23	-1.03
1,627.00	1.23	244.68	1,626.85	-8.82	-5.03	8.78	0.33	0.33	-1.12
1,722.00	1.41	241.60	1,721.82	-9.81	-6.98	9.76	0.20	0.19	-3.24
1,876.00	1.76	250.21	1,875.76	-11.52	-10.87	11.43	0.27	0.23	5.59
1,939.00	0.84	223.32	1,938.74	-12.18	-12.10	12.09	1.71	-1.46	-42.68
1,971.00	0.48	193.26	1,970.74	-12.48	-12.29	12.39	1.52	-1.13	-93.94
2,019.00	1.10	145.62	2,018.74	-13.06	-12.07	12.96	1.78	1.29	-99.25
2,065.00	1.32	142.63	2,064.73	-13.84	-11.50	13.75	0.50	0.48	-6.50
2,160.00	1.14	138.50	2,159.71	-15.42	-10.21	15.34	0.21	-0.19	-4.35
2,254.00	1.32	145.80	2,253.68	-17.01	-8.98	16.95	0.25	0.19	7.77
2,348.00	1.10	145.53	2,347.66	-18.65	-7.87	18.59	0.23	-0.23	-0.29
2,537.00	1.01	118.64	2,536.63	-20.95	-5.38	20.91	0.26	-0.05	-14.23
2,631.00	0.88	123.39	2,630.62	-21.74	-4.05	21.71	0.16	-0.14	5.05
2,725.00	0.79	114.77	2,724.61	-22.41	-2.86	22.39	0.16	-0.10	-9.17
2,820.00	0.66	110.20	2,819.60	-22.87	-1.75	22.86	0.15	-0.14	-4.81
2,913.00	0.48	83.13	2,912.60	-23.01	-0.86	23.01	0.34	-0.19	-29.11
3,008.00	0.75	76.01	3,007.59	-22.81	0.14	22.82	0.29	0.28	-7.49
3,102.00	1.05	88.32	3,101.58	-22.64	1.60	22.65	0.38	0.32	13.10
3,291.00	2.02	80.67	3,290.51	-22.05	6.62	22.10	0.52	0.51	-4.05
3,385.00	1.32	60.54	3,384.47	-21.25	9.19	21.32	0.96	-0.74	-21.41
3,479.00	1.05	44.72	3,478.45	-20.10	10.74	20.19	0.45	-0.29	-16.83
3,573.00	0.79	38.40	3,572.44	-18.98	11.75	19.07	0.30	-0.28	-6.72
3,668.00	0.92	55.18	3,667.43	-18.04	12.78	18.13	0.30	0.14	17.66
3,762.00	0.53	33.91	3,761.42	-17.24	13.65	17.35	0.50	-0.41	-22.63
3,855.00	0.48	30.66	3,854.42	-16.55	14.08	16.66	0.06	-0.05	-3.49
3,950.00	0.84	25.39	3,949.41	-15.58	14.59	15.69	0.38	0.38	-5.55
4,044.00	0.57	14.58	4,043.40	-14.51	15.00	14.62	0.32	-0.29	-11.50
4,233.00	1.27	26.18	4,232.38	-11.72	16.16	11.84	0.38	0.37	6.14
4,422.00	2.46	19.76	4,421.27	-6.02	18.46	6.16	0.64	0.63	-3.40
4,611.00	1.32	351.02	4,610.17	-0.05	19.49	0.20	0.77	-0.60	-15.21
4,799.00	1.36	7.90	4,798.12	4.30	19.46	-4.15	0.21	0.02	8.98
4,988.00	1.63	14.75	4,987.06	9.12	20.45	-8.96	0.17	0.14	3.62
5,177.00	2.02	25.30	5,175.96	14.73	22.56	-14.56	0.27	0.21	5.58
5,364.00	1.85	14.40	5,362.86	20.63	24.72	-20.44	0.22	-0.09	-5.83
5,459.00	0.18	234.22	5,457.84	22.03	24.98	-21.84	2.10	-1.76	-147.56
5,553.00	2.55	239.14	5,551.81	20.87	23.06	-20.69	2.52	2.52	5.23
5,647.00	3.52	246.52	5,645.67	18.65	18.62	-18.51	1.11	1.03	7.85

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Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.1 Aim Database

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)	
5,742.00	3.65	251.00	5,740.49	16.50	13.08	-16.40	0.32	0.14	4.72	
5,836.00	3.38	245.38	5,834.31	14.37	7.74	-14.31	0.47	-0.29	-5.98	
5,930.00	3.56	247.75	5,928.14	12.11	2.52	-12.10	0.24	0.19	2.52	
6,024.00	3.21	246.08	6,021.98	9.94	-2.59	-9.96	0.39	-0.37	-1.78	
6,118.00	4.53	259.88	6,115.76	8.22	-8.65	-8.29	1.71	1.40	14.68	
6,213.00	5.05	263.84	6,210.43	7.12	-16.50	-7.24	0.65	0.55	4.17	
6,307.00	5.14	263.13	6,304.06	6.17	-24.80	-6.36	0.12	0.10	-0.76	
6,401.00	4.88	262.96	6,397.70	5.17	-32.94	-5.43	0.28	-0.28	-0.18	
6,495.00	4.70	258.83	6,491.37	3.94	-40.69	-4.25	0.41	-0.19	-4.39	
6,589.00	5.63	268.93	6,584.99	3.11	-49.08	-3.48	1.38	0.99	10.74	
6,684.00	6.64	271.57	6,679.44	3.17	-59.23	-3.62	1.10	1.06	2.78	
6,778.00	6.46	270.69	6,772.83	3.38	-69.95	-3.92	0.22	-0.19	-0.94	
6,872.00	6.29	273.68	6,866.25	3.78	-80.38	-4.39	0.40	-0.18	3.18	
6,967.00	6.07	273.24	6,960.70	4.39	-90.58	-5.09	0.24	-0.23	-0.46	
7,061.00	5.49	272.18	7,054.22	4.85	-100.04	-5.61	0.63	-0.62	-1.13	
7,155.00	5.45	268.67	7,147.79	4.91	-108.99	-5.75	0.36	-0.04	-3.73	
7,250.00	3.56	264.98	7,242.49	4.55	-116.44	-5.44	2.01	-1.99	-3.88	
7,344.00	2.73	269.90	7,336.35	4.29	-121.59	-5.22	0.93	-0.88	5.23	
7,438.00	2.73	264.01	7,430.25	4.05	-126.05	-5.02	0.30	0.00	-6.27	
7,533.00	2.68	259.09	7,525.14	3.40	-130.49	-4.40	0.25	-0.05	-5.18	
7,627.00	2.77	259.79	7,619.03	2.58	-134.88	-3.61	0.10	0.10	0.74	
7,721.00	2.59	280.01	7,712.93	2.55	-139.21	-3.61	1.02	-0.19	21.51	
7,816.00	2.02	291.26	7,807.86	3.53	-142.88	-4.62	0.76	-0.60	11.84	
7,910.00	1.45	271.22	7,901.81	4.15	-145.61	-5.27	0.88	-0.61	-21.32	
8,004.00	1.23	264.98	7,995.79	4.09	-147.81	-5.22	0.28	-0.23	-6.64	
8,099.00	0.92	248.19	8,090.77	3.72	-149.53	-4.86	0.46	-0.33	-17.67	
8,193.00	0.70	227.18	8,184.76	3.05	-150.65	-4.20	0.39	-0.23	-22.35	
8,287.00	0.92	230.26	8,278.75	2.17	-151.65	-3.34	0.24	0.23	3.28	
8,381.00	1.14	237.20	8,372.74	1.18	-153.02	-2.36	0.27	0.23	7.38	
8,475.00	1.49	243.36	8,466.71	0.13	-154.90	-1.32	0.40	0.37	6.55	
8,570.00	0.35	352.52	8,561.70	-0.14	-156.04	-1.06	1.72	-1.20	114.91	
8,664.00	0.75	24.60	8,655.70	0.71	-155.82	-1.90	0.52	0.43	34.13	
8,758.00	0.57	355.15	8,749.69	1.73	-155.61	-2.93	0.40	-0.19	-31.33	
8,852.00	0.48	311.65	8,843.69	2.46	-155.94	-3.66	0.42	-0.10	-46.28	
8,947.00	0.97	281.59	8,938.68	2.89	-157.02	-4.09	0.64	0.52	-31.64	
9,041.00	1.54	342.06	9,032.66	4.25	-158.19	-5.46	1.44	0.61	64.33	
9,135.00	1.89	7.72	9,126.62	6.99	-158.37	-8.20	0.89	0.37	27.30	
9,230.00	1.32	17.57	9,221.58	9.58	-157.83	-10.79	0.66	-0.60	10.37	
9,324.00	0.75	10.97	9,315.57	11.22	-157.39	-12.43	0.62	-0.61	-7.02	
9,419.00	0.66	42.53	9,410.56	12.23	-156.90	-13.44	0.41	-0.09	33.22	
9,513.00	1.05	6.05	9,504.55	13.49	-156.44	-14.69	0.69	0.41	-38.81	
9,607.00	1.58	343.38	9,598.53	15.58	-156.72	-16.79	0.78	0.56	-24.12	
9,701.00	2.68	344.08	9,692.46	18.94	-157.70	-20.15	1.17	1.17	0.74	

Aim Directional Services, LLC

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Well:	#554H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.1 Aim Database

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)
9,796.00	1.80	13.17	9,787.39	22.53	-157.97	-23.74	1.49	-0.93	30.62
9,890.00	1.58	14.75	9,881.35	25.22	-157.30	-26.43	0.24	-0.23	1.68
9,984.00	0.66	60.81	9,975.33	26.74	-156.50	-27.94	1.30	-0.98	49.00
10,078.00	0.79	109.06	10,069.32	26.79	-155.41	-27.98	0.64	0.14	51.33
10,173.00	0.70	92.18	10,164.32	26.55	-154.21	-27.74	0.25	-0.09	-17.77
10,267.00	0.92	104.23	10,258.31	26.35	-152.91	-27.52	0.29	0.23	12.82
10,361.00	1.10	91.31	10,352.29	26.14	-151.27	-27.30	0.31	0.19	-13.74
10,456.00	0.75	99.39	10,447.28	26.02	-149.75	-27.17	0.39	-0.37	8.51
10,550.00	0.66	123.82	10,541.27	25.62	-148.69	-26.76	0.33	-0.10	25.99
10,645.00	0.75	123.56	10,636.27	24.97	-147.72	-26.10	0.09	0.09	-0.27
10,681.00	1.01	141.67	10,672.26	24.59	-147.33	-25.72	1.05	0.72	50.31
10,772.00	4.53	159.86	10,763.14	20.58	-145.59	-21.70	3.94	3.87	19.99
10,866.00	14.77	193.96	10,855.74	5.42	-147.21	-6.55	12.02	10.89	36.28
10,960.00	28.92	197.39	10,942.77	-28.07	-156.94	26.86	15.11	15.05	3.65
11,054.00	43.74	184.38	11,018.40	-82.54	-166.28	81.26	17.70	15.77	-13.84
11,149.00	49.98	173.40	11,083.43	-151.60	-164.61	150.33	10.67	6.57	-11.56
11,243.00	56.00	170.50	11,140.00	-225.87	-154.03	224.68	6.86	6.40	-3.09
11,290.00	62.55	169.53	11,164.00	-265.63	-147.01	264.50	14.05	13.94	-2.06
11,338.00	70.73	171.11	11,183.02	-309.04	-139.63	307.95	17.31	17.04	3.29
11,388.00	78.99	175.07	11,196.07	-356.90	-133.86	355.86	18.20	16.52	7.92
11,457.00	86.90	183.42	11,204.55	-425.26	-133.00	424.22	16.60	11.46	12.10
11,552.00	89.23	183.50	11,207.76	-520.02	-138.73	518.94	2.45	2.45	0.08
11,646.00	90.29	181.39	11,208.15	-613.93	-142.74	612.82	2.51	1.13	-2.24
11,741.00	87.96	178.76	11,209.61	-708.90	-142.87	707.79	3.70	-2.45	-2.77
11,835.00	86.42	178.23	11,214.21	-802.75	-140.40	801.65	1.73	-1.64	-0.56
11,929.00	87.52	176.91	11,219.18	-896.54	-136.42	895.46	1.83	1.17	-1.40
12,023.00	89.01	176.03	11,222.03	-990.31	-130.64	989.28	1.84	1.59	-0.94
12,118.00	89.63	175.42	11,223.16	-1,085.04	-123.56	1,084.06	0.92	0.65	-0.64
12,212.00	89.14	177.61	11,224.16	-1,178.85	-117.84	1,177.91	2.39	-0.52	2.33
12,306.00	87.30	180.34	11,227.09	-1,272.78	-116.16	1,271.85	3.50	-1.96	2.90
12,400.00	86.64	179.28	11,232.05	-1,366.65	-115.85	1,365.72	1.33	-0.70	-1.13
12,495.00	88.57	177.53	11,236.02	-1,461.52	-113.21	1,460.61	2.74	2.03	-1.84
12,589.00	90.11	177.61	11,237.11	-1,555.42	-109.22	1,554.54	1.64	1.64	0.09
12,684.00	89.89	178.05	11,237.11	-1,650.36	-105.63	1,649.50	0.52	-0.23	0.46
12,778.00	88.53	179.11	11,238.40	-1,744.31	-103.30	1,743.47	1.83	-1.45	1.13
12,873.00	88.35	180.60	11,240.99	-1,839.28	-103.06	1,838.43	1.58	-0.19	1.57
12,967.00	88.35	181.83	11,243.70	-1,933.21	-105.05	1,932.35	1.31	0.00	1.31
13,061.00	89.05	181.13	11,245.83	-2,027.16	-107.48	2,026.27	1.05	0.74	-0.74
13,155.00	88.92	182.01	11,247.49	-2,121.11	-110.05	2,120.20	0.95	-0.14	0.94
13,255.00	90.00	181.10	11,248.44	-2,221.06	-112.76	2,220.13	1.41	1.08	-0.91
13,349.00	89.70	181.80	11,248.68	-2,315.03	-115.14	2,314.08	0.81	-0.32	0.74
13,443.00	88.20	182.30	11,250.40	-2,408.95	-118.50	2,407.97	1.68	-1.60	0.53
13,537.00	86.50	181.60	11,254.75	-2,502.79	-121.70	2,501.79	1.96	-1.81	-0.74
13,632.00	86.20	180.90	11,260.80	-2,597.58	-123.77	2,596.55	0.80	-0.32	-0.74

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.1 Aim Database

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)
13,726.00	84.90	180.60	11,268.09	-2,691.28	-124.99	2,690.25	1.42	-1.38	-0.32
13,820.00	87.40	178.20	11,274.40	-2,785.05	-124.01	2,784.02	3.68	2.66	-2.55
13,915.00	90.40	177.40	11,276.23	-2,879.95	-120.36	2,878.94	3.27	3.16	-0.84
14,008.00	91.40	178.60	11,274.77	-2,972.88	-117.12	2,971.90	1.68	1.08	1.29
14,102.00	90.90	179.20	11,272.88	-3,066.85	-115.31	3,065.87	0.83	-0.53	0.64
14,196.00	90.90	180.60	11,271.40	-3,160.83	-115.15	3,159.85	1.49	0.00	1.49
14,291.00	89.50	182.00	11,271.07	-3,255.80	-117.31	3,254.81	2.08	-1.47	1.47
14,385.00	89.30	181.10	11,272.06	-3,349.76	-119.85	3,348.74	0.98	-0.21	-0.96
14,480.00	89.00	181.90	11,273.47	-3,444.72	-122.33	3,443.68	0.90	-0.32	0.84
14,574.00	88.40	181.60	11,275.60	-3,538.65	-125.20	3,537.58	0.71	-0.64	-0.32
14,668.00	88.00	179.80	11,278.55	-3,632.59	-126.35	3,631.51	1.96	-0.43	-1.91
14,763.00	90.20	180.10	11,280.04	-3,727.57	-126.27	3,726.49	2.34	2.32	0.32
14,857.00	89.80	179.00	11,280.04	-3,821.57	-125.53	3,820.49	1.25	-0.43	-1.17
14,951.00	90.90	178.70	11,279.47	-3,915.55	-123.64	3,914.48	1.21	1.17	-0.32
15,045.00	91.30	177.60	11,277.66	-4,009.48	-120.61	4,008.43	1.24	0.43	-1.17
15,140.00	92.10	178.10	11,274.85	-4,104.37	-117.05	4,103.35	0.99	0.84	0.53
15,234.00	93.30	178.10	11,270.42	-4,198.21	-113.93	4,197.21	1.28	1.28	0.00
15,328.00	92.50	178.10	11,265.66	-4,292.04	-110.82	4,291.06	0.85	-0.85	0.00
15,423.00	90.90	180.00	11,262.84	-4,386.98	-109.25	4,386.01	2.61	-1.68	2.00
15,517.00	91.10	180.40	11,261.20	-4,480.96	-109.58	4,479.99	0.48	0.21	0.43
15,611.00	91.10	180.80	11,259.40	-4,574.94	-110.56	4,573.96	0.43	0.00	0.43
15,705.00	91.30	181.00	11,257.43	-4,668.91	-112.04	4,667.91	0.30	0.21	0.21
15,800.00	91.60	180.50	11,255.03	-4,763.87	-113.28	4,762.86	0.61	0.32	-0.53
15,894.00	91.50	179.50	11,252.48	-4,857.83	-113.28	4,856.82	1.07	-0.11	-1.06
15,988.00	90.60	180.10	11,250.76	-4,951.81	-112.95	4,950.80	1.15	-0.96	0.64
16,083.00	90.20	179.80	11,250.10	-5,046.81	-112.87	5,045.80	0.53	-0.42	-0.32
16,177.00	90.30	179.20	11,249.69	-5,140.81	-112.05	5,139.79	0.65	0.11	-0.64
16,271.00	90.50	178.70	11,249.03	-5,234.79	-110.33	5,233.79	0.57	0.21	-0.53
16,365.00	90.80	178.60	11,247.96	-5,328.76	-108.11	5,327.77	0.34	0.32	-0.11
16,460.00	89.90	178.20	11,247.38	-5,423.72	-105.46	5,422.75	1.04	-0.95	-0.42
16,554.00	90.50	177.80	11,247.06	-5,517.66	-102.18	5,516.71	0.77	0.64	-0.43
16,648.00	91.60	179.10	11,245.33	-5,611.60	-99.64	5,610.67	1.81	1.17	1.38
16,743.00	92.20	179.10	11,242.18	-5,706.54	-98.15	5,705.62	0.63	0.63	0.00
16,837.00	90.70	179.30	11,239.81	-5,800.50	-96.83	5,799.58	1.61	-1.60	0.21
16,931.00	91.50	179.40	11,238.00	-5,894.47	-95.77	5,893.56	0.86	0.85	0.11
17,026.00	90.10	179.10	11,236.67	-5,989.45	-94.52	5,988.55	1.51	-1.47	-0.32
17,120.00	88.00	179.00	11,238.23	-6,083.42	-92.97	6,082.53	2.24	-2.23	-0.11
17,214.00	88.00	178.90	11,241.51	-6,177.35	-91.24	6,176.47	0.11	0.00	-0.11
17,308.00	88.60	178.60	11,244.30	-6,271.29	-89.19	6,270.42	0.71	0.64	-0.32
17,403.00	87.90	178.10	11,247.20	-6,366.20	-86.46	6,365.35	0.91	-0.74	-0.53
17,497.00	89.70	178.50	11,249.17	-6,460.13	-83.67	6,459.30	1.96	1.91	0.43
17,591.00	90.30	178.80	11,249.17	-6,554.11	-81.46	6,553.29	0.71	0.64	0.32
17,686.00	90.80	180.60	11,248.26	-6,649.10	-80.96	6,648.28	1.97	0.53	1.89

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.1 Aim Database

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)
17,780.00	89.00	181.00	11,248.42	-6,743.08	-82.27	6,742.25	1.96	-1.91	0.43
17,874.00	88.90	180.40	11,250.15	-6,837.06	-83.42	6,836.22	0.65	-0.11	-0.64
17,968.00	88.88	179.02	11,251.97	-6,931.04	-82.95	6,930.20	1.47	-0.02	-1.47
18,063.00	88.92	180.25	11,253.79	-7,026.02	-82.34	7,025.18	1.30	0.04	1.29
18,157.00	88.22	180.87	11,256.14	-7,119.98	-83.26	7,119.14	0.99	-0.74	0.66
18,251.00	90.42	181.04	11,257.25	-7,213.96	-84.83	7,213.09	2.35	2.34	0.18
18,346.00	90.77	181.13	11,256.27	-7,308.94	-86.62	7,308.06	0.38	0.37	0.09
18,440.00	91.60	181.31	11,254.32	-7,402.89	-88.63	7,402.00	0.90	0.88	0.19
18,534.00	92.22	180.87	11,251.19	-7,496.82	-90.41	7,495.91	0.81	0.66	-0.47
18,628.00	89.54	180.95	11,249.75	-7,590.79	-91.90	7,589.86	2.85	-2.85	0.09
18,723.00	90.46	181.39	11,249.75	-7,685.77	-93.84	7,684.82	1.07	0.97	0.46
18,817.00	89.49	182.98	11,249.79	-7,779.70	-97.43	7,778.72	1.98	-1.03	1.69
18,912.00	89.93	183.77	11,250.27	-7,874.53	-103.02	7,873.51	0.95	0.46	0.83
19,003.00	88.66	181.66	11,251.39	-7,965.42	-107.33	7,964.36	2.71	-1.40	-2.32
19,098.00	89.27	181.83	11,253.10	-8,060.36	-110.22	8,059.27	0.67	0.64	0.18
19,192.00	90.90	181.48	11,252.96	-8,154.31	-112.94	8,153.21	1.77	1.73	-0.37
19,286.00	94.64	182.80	11,248.42	-8,248.12	-116.44	8,246.98	4.22	3.98	1.40
19,380.00	92.66	182.18	11,242.44	-8,341.84	-120.52	8,340.66	2.21	-2.11	-0.66
19,475.00	90.20	179.90	11,240.07	-8,436.78	-122.24	8,435.59	3.53	-2.59	-2.40
19,569.00	87.21	179.99	11,242.19	-8,530.74	-122.15	8,529.55	3.18	-3.18	0.10
19,663.00	86.86	179.37	11,247.05	-8,624.61	-121.62	8,623.43	0.76	-0.37	-0.66
19,758.00	85.63	179.90	11,253.28	-8,719.41	-121.02	8,718.22	1.41	-1.29	0.56
19,853.00	88.79	177.79	11,257.90	-8,814.26	-119.11	8,813.08	4.00	3.33	-2.22
19,947.00	87.69	176.65	11,260.79	-8,908.10	-114.55	8,906.96	1.68	-1.17	-1.21
20,041.00	88.09	176.12	11,264.25	-9,001.85	-108.63	9,000.75	0.71	0.43	-0.56
20,136.00	86.95	177.70	11,268.36	-9,096.62	-103.51	9,095.55	2.05	-1.20	1.66
20,230.00	87.82	177.35	11,272.65	-9,190.43	-99.45	9,189.39	1.00	0.93	-0.37
20,324.00	89.27	177.70	11,275.03	-9,284.31	-95.40	9,283.30	1.59	1.54	0.37
20,419.00	89.71	177.88	11,275.88	-9,379.23	-91.73	9,378.25	0.50	0.46	0.19
20,513.00	88.26	177.70	11,277.54	-9,473.15	-88.11	9,472.19	1.55	-1.54	-0.19
20,607.00	86.51	177.88	11,281.83	-9,566.98	-84.49	9,566.04	1.87	-1.86	0.19
20,702.00	87.03	177.70	11,287.19	-9,661.75	-80.83	9,660.85	0.58	0.55	-0.19
20,796.00	86.46	179.20	11,292.52	-9,755.56	-78.29	9,754.68	1.70	-0.61	1.60
20,890.00	85.76	179.46	11,298.90	-9,849.34	-77.20	9,848.46	0.79	-0.74	0.28
20,985.00	85.71	178.05	11,305.97	-9,944.05	-75.14	9,943.18	1.48	-0.05	-1.48
21,080.00	87.03	177.79	11,311.98	-10,038.80	-71.70	10,037.95	1.42	1.39	-0.27
21,174.00	87.25	177.97	11,316.67	-10,132.62	-68.22	10,131.79	0.30	0.23	0.19
21,268.00	86.46	178.41	11,321.83	-10,226.43	-65.26	10,225.62	0.96	-0.84	0.47
21,363.00	87.03	178.05	11,327.22	-10,321.23	-62.33	10,320.45	0.71	0.60	-0.38
21,411.00	86.99	178.23	11,329.73	-10,369.14	-60.77	10,368.37	0.38	-0.08	0.38
Last Aim MWD Survey									
21,480.00	86.99	178.23	11,333.35	-10,438.01	-58.64	10,437.25	0.00	0.00	0.00
Projection to BHL									

Aim Directional Services, LLC

Survey Report

Company:	Advance Energy Partners, LLC	Local Co-ordinate Reference:	Site Merchant State Unit 554H
Project:	Lea County, New Mexico	TVD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Site:	Merchant State Unit 554H	MD Reference:	3656'GL+26.5'KB @ 3682.50usft (H&P 620)
Well:	#554H	North Reference:	Grid
Wellbore:	Aim MWD Surveys	Survey Calculation Method:	Minimum Curvature
Design:	Aim MWD Surveys	Database:	EDM 5000.1 Aim Database

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
196.00	195.99	0.21	-1.72	First Aim MWD Survey
21,411.00	11,329.73	-10,369.14	-60.77	Last Aim MWD Survey
21,480.00	11,333.35	-10,438.01	-58.64	Projection to BHL



BHA Reports

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

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

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2019-12-29 15:00
Lobe/Stage	7/8, 4.0	Depth In (ft)	140.00
Bend Angle	1.50	Date Out	2019-12-30 10:45
Speed (rev/gal)	0.16	Depth Out (ft)	1800.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	10.00
Incident	No	Distance Rotated (ft)	1650.00
Motor Results		% Distance Sliding	0.60%
Average Total ROP (ft/h)	143.31	% Distance Rotating	99.40%
Average Slide ROP (ft/h)	120.00		
Average Rotating ROP (ft/h)	143.48		

Bit Details		BHA Objective
OD (in)	17.500	Drill Surface
Vendor	Baker	
S/N	5302410	
Nozzles	9x12'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 Survey: 62.00 ft		Directional: Aim Motor: 8" 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Flow: 400-900, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle 1.45, Bit; Baker Hughes DP606S, SN: 5302410, Jets 9x12's TFA: 0.994, Bit Runs:
Mud Properties		Parameters

Type	Water	Flow Rate (gpm)	455.00 - 900.00	Motor RPM	66.00 - 125.00
WT	8.50	On Bottom Pressure (psi)	1150.00 - 2600.00	Surface RPM	40.00 - 80.00
VIS	28.00	Off Bottom Pressure (psi)	600.00 - 1770.00	Rotating WOB (klbs)	18.00 - 24.00
PV	0.00	Stall Pressure (psi)	0.00	Sliding WOB (klbs)	15.00 - 15.00
YP	0.00	Stalls	0	Temp (°F)	57.00 - 100.00
		NPT	0.0		

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 17.5 DP606S, Style: PDC, Gauge Length (in): 4.00, Size (in): 17.50	Baker	5302410	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 8" 7/8 4.0@1.5 Fix Slick Sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	Aim	CDM800-001	6 5/8" Reg Box	6 5/8" Reg Box		8.000		28.77	30.52
Stabilizer Description: 17" Steel IB Nortrack Stabilizer	Gator	GT801163	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.375		8.02	38.54
UBHO Sub Description: NM UBHO, Type: NM	Gator	GT8066847	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		4.00	42.54
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT80-30-395	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.500		30.66	73.20
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gatpr	GT80-30-563	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.375		30.70	103.90
Crossover Sub Description: X-Over 4 1/2 IF B x 6 5/8 Reg P, Type: Steel	Gator	GT10333	4 1/2" IF Box	6 5/8" Reg Pin	2.750	8.250		4.10	108.00
HWDP Description: (30 Jts) 5" HWDP, Style: Spiral	HP		4 1/2" IF Box	4 1/2" IF Pin	5.000	5.000		921.31	1029.31





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #2 - BHA #2 Int 1 (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	8.00	Date In	2020-01-05 03:05
Lobe/Stage	7/8, 5.9	Depth In (ft)	1800.00
Bend Angle	1.50	Date Out	2020-01-06 14:30
Speed (rev/gal)	0.17	Depth Out (ft)	5281.00
Wear Pad OD (in)	8.375	Distance Slid (ft)	75.00
Incident	No	Distance Rotated (ft)	3406.00
Motor Results		% Distance Sliding	2.15%
Average Total ROP (ft/h)	186.48	% Distance Rotating	97.85%
Average Slide ROP (ft/h)	50.00		
Average Rotating ROP (ft/h)	198.41		

BHA Objective
Drill 12.25" Intermediate

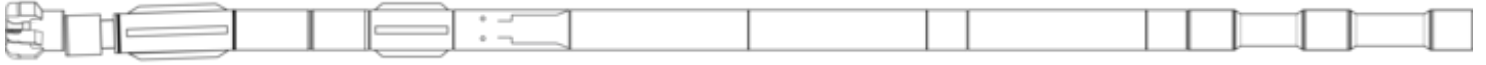
Bit Details		POOH Reason/Notes
OD (in)	12.250	
Vendor	Baker	
S/N	5298513	Total Depth/Casing Point
Nozzles	6x12's	
Total Flow Area (in²)	0.663	

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

Bit Distances		Comments
Bit To Survey: 71.00 ft		Directional: Butch's Motor: 8" 12" stab 1.5 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.166, Flow: 400-900, Max Diff: 1330psi, Max Operating Torque: 22,020 ft/lbs, Protracted Angle 1.54, Bit: Baker Hughes D506TWX, SN: 5298513, Jets 6x12's TFA: 0.633, Bit Runs: 1

Mud Properties		Parameters	
Type	Water	Flow Rate (gpm)	500.00 - 900.00
WT	10.00	On Bottom Pressure (psi)	1100.00 - 4350.00
VIS	28.00	Off Bottom Pressure (psi)	700.00 - 3300.00
PV	1.00	Stall Pressure (psi)	0.00
YP	2.00	Stalls	0
		NPT	0.0

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 12.25 D506TWX, Style: PDC, Gauge Length (in): 7.00, Size (in): 12.25	Baker	5298513	6 5/8" Reg Pin			12.250		1.55	1.55
Mud Motor Description: 8" 7/8 5.9@1.5 Fix W/12" Stab, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	Butch's	BDT800-020	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.54	39.09
Stabilizer Description: 12" Steel IB Nortrack Stabilizer	Gator	GT801181	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		7.97	47.06
UBHO Sub Description: NM UBHO, Type: NM	Gator	GT8066846	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	7.937		3.95	51.01
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT80-30-366	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.29	81.30
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT80-30-365	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.52	111.82
Crossover Sub Description: X-Over 4 1/2 XH B x 6 5/8 Reg P, Type: Steel	Gator	GT10369	4 1/2" XH Box	6 5/8" Reg Pin	2.750	8.250		4.18	116.00
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	645.09
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	649.26
HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	5.000	5.000		921.31	1570.57





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #3 - BHA #3 intermediate 2 (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-01-14 10:30
Lobe/Stage	7/8, 8.5	Depth In (ft)	5281.00
Bend Angle	1.50	Date Out	2020-01-15 15:30
Speed (rev/gal)	0.17	Depth Out (ft)	8753.00
Wear Pad OD (in)	7.250	Distance Slid (ft)	139.00
Incident	Yes	Distance Rotated (ft)	3333.00
Motor Results		% Distance Sliding	4.00%
Average Total ROP (ft/h)	254.98	% Distance Rotating	96.00%
Average Slide ROP (ft/h)	85.98		
Average Rotating ROP (ft/h)	277.75		

BHA Objective
Build 5 degree tangent and drill to KOP.

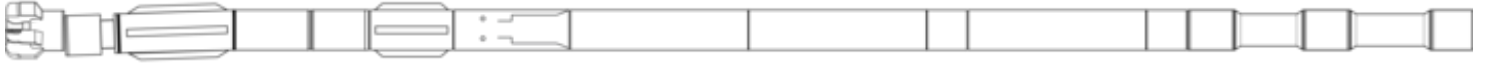
Bit Details		POOH Reason/Notes
OD (in)	8.500	Downhole Tool Incident: While drilling ahead indeterminate #2 @8700' diff. pressure started going from -200 to +400. Continue to drill ahead @100 ROP, while inspecting surface equipment for wash outs (OK). After making hook @8733 pressure stable , rotated to 8753' diff pressure increased to 1400 PSI picking up off bottom pressure held at 1200 psi . POOH to inspect BHA .
Vendor	Security	
S/N	13385832	
Nozzles	6x12's	
Total Flow Area (in²)	0.663	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: On surface bit box on motor was extended 4.5 inches, caught mandrel set , Bit had chipped 1-2 MWD:

Bit Distances		Comments
Bit To Survey: 69.00 ft, Gamma: 54.00 ft, Bend: 5.40 ft		Directional: Contender Motor: 7" 1.5 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.48, Bit; Security GT65DRM, SN: 13385832, Jets 6x12's TFA: 0.663, Bit Runs: 0

Mud Properties		Parameters
Type	Brine	Flow Rate (gpm)
WT	9.40	On Bottom Pressure (psi)
VIS	29.00	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: 8.5" Security GT65DRM PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Security	13385832	4 1/2" Reg Pin			8.500		1.05	1.05
Mud Motor Description: 7" 7/8 8.5 @1.5 Fix 8.25" STAB, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Aim	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.27
Stabilizer Description: 8.25" NM Nortrac	Stabilizer	GT20445	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		5.28	42.55
UBHO Sub Description: NM UBHO, Type: NM	Aim	675-361	4 1/2" IF Box	4 1/2" IF Pin	3.500	6.750		3.50	46.05
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT67-30-490	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.813		31.42	77.47
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT67-30-493	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.37	108.84
Crossover Sub Description: X-Over 4 1/2 XH B x 4 1/2 IF pin, Type: Steel	Gator	GT10408	4 1/2" XH Box	4 1/2" IF Pin	2.875	6.500		4.19	113.03
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	642.12
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	646.29
HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		921.31	1567.60





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #4 - BHA #4 Intermediate 2 (Directional)

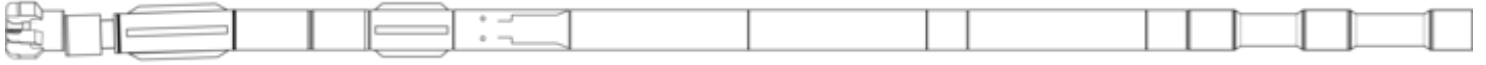
Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-01-15 15:30
Lobe/Stage	7/8, 8.5	Depth In (ft)	8753.00
Bend Angle	1.50	Date Out	2020-01-16 20:40
Speed (rev/gal)	0.26	Depth Out (ft)	10750.00
Wear Pad OD (in)	7.250	Distance Slid (ft)	57.00
Incident	No	Distance Rotated (ft)	1940.00
Motor Results		% Distance Sliding	2.85%
Average Total ROP (ft/h)	153.62	% Distance Rotating	97.15%
Average Slide ROP (ft/h)	57.00		
Average Rotating ROP (ft/h)	161.67		

Bit Details		BHA Objective
OD (in)	8.500	Drill Intermediate 2
Vendor	Security	
S/N	13383540	
Nozzles	6x12's	
Total Flow Area (in²)	0.663	

Bit Details		POOH Reason/Notes
OD (in)	8.500	
Vendor	Security	
S/N	13383540	
Nozzles	6x12's	
Total Flow Area (in²)	0.663	Total Depth/Casing Point: Motor performed as expected. Yielded 9-10's. Surface inspection showed motor was still tight with minimal slack in bearings. Drained well. Bit showed signs of too much WOB and was beginning to core. Bit graded 2-2

Motor RPM	156.00 - 195.00
Surface RPM	30.00 - 45.00
Rotating WOB (klbs)	30.00 - 48.00
Sliding WOB (klbs)	25.00 - 32.00
Temp (°F)	131.00 - 158.00

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Security GT65DRM PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Security	13383540	4 1/2" Reg Pin			8.500		1.05	1.05
Mud Motor Description: 7" 7/8 8.5 @1.5 Fix 8.25" STAB, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Aim	700-40-014	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.27
Stabilizer Description: 8.25" NM Nortrac	Stabilizer	GT20445	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		5.28	42.55
UBHO Sub Description: NM UBHO, Type: NM	Aim	675-361	4 1/2" IF Box	4 1/2" IF Pin	3.500	6.750		3.50	46.05
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT67-30-490	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.813		31.42	77.47
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT67-30-493	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.37	108.84
Crossover Sub Description: X-Over 4 1/2 XH B x 4 1/2 IF pin, Type: Steel	Gator	GT10408	4 1/2" XH Box	4 1/2" IF Pin	2.875	6.500		4.19	113.03
Drill Collar Description: 6 1/2 DC'S (6 STANDS) , Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	642.12
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	646.29
HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		921.31	1567.60





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #5 - BHA #5 Curve (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	6.75	Date In	2020-02-04 09:00
Lobe/Stage	7/8, 5.0	Depth In (ft)	10750.00
Bend Angle	2.12	Date Out	2020-02-05 08:30
Speed (rev/gal)	0.28	Depth Out (ft)	11449.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	629.00
Incident	No	Distance Rotated (ft)	70.00
Motor Results		% Distance Sliding	89.99%
Average Total ROP (ft/h)	76.25	% Distance Rotating	10.01%
Average Slide ROP (ft/h)	76.24		
Average Rotating ROP (ft/h)	76.36		

BHA Objective
Drill Curve on 12's

Bit Details		POOH Reason/Notes
OD (in)	8.500	
Vendor	Ultra	
S/N	51717	Change Bottom Hole Assembly: TD CURVE
Nozzles	6x22's	
Total Flow Area (in²)	2.227	

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

Bit Distances		Comments
Bit To Survey: 61.00 ft, Gamma: 55.00 ft, Bend: 4.10 ft, Resistivity: 35.00 ft		Directional: Contender Motor: 6 3/4" 2.12 FBH 7/8 5.0 Stg Mtr, Rev/Gal: 0.28, Flow: 300-600, Max Diff: 1,180 psi, Max Operating Torque: 11,150 ft/lbs, Protracted Angle 2.21; Ulterra CF611, SN: 51717, Jets 6x22's TFA: 2.227, Bit Runs: 1

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.80	On Bottom Pressure (psi)
VIS	60.00	Off Bottom Pressure (psi)
PV	2.00	Stall Pressure (psi)
YP	3.00	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: 8.5" Ulterra CF611, Style: PDC, Gauge Length (in): 2.00, Size (in): 8.50	Ultra	51717	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 6.75" 7/8 5.0 @ 2.12 Fix Slick Sleeve, Size (in): 6.75, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.0	Aim	CDM650022	4 1/2" IF Box	4 1/2" Reg Box		6.750		25.75	26.75
Other Description: Resistivity Collar	Tolteq	102205	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		19.98	46.73
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	56.45
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	67.80
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	73.00
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	104.06





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #6 - BHA #6 Lateral (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-02-05 10:00
Lobe/Stage	7/8, 8.5	Depth In (ft)	11449.00
Bend Angle	1.75	Date Out	2020-02-05 18:30
Speed (rev/gal)	0.26	Depth Out (ft)	11449.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	0.00
Incident	No	Distance Rotated (ft)	0.00
Motor Results		% Distance Sliding	0%
Average Total ROP (ft/h)	0.00	% Distance Rotating	0%
Average Slide ROP (ft/h)	0.00		
Average Rotating ROP (ft/h)	0.00		

BHA Objective
Drill 8.5" Lateral

Bit Details		POOH Reason/Notes
OD (in)	8.500	
Vendor	Baker	
S/N	530889	
Nozzles	6x22's	
Total Flow Area (in²)	2.227	

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

Bit Distances		Comments
Bit To Survey: 74.00 ft, Gamma: 68.00 ft, Bend: 4.15 ft, Resistivity: 48.00 ft		Directional: Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWW, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.80	On Bottom Pressure (psi)
VIS	55.00	Off Bottom Pressure (psi)
PV	2.00	Stall Pressure (psi)
YP	3.00	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: 8.5" Hughes DD506TWW, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Baker	530889	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Discovery	700-DDS-018	4 1/2" IF Box	4 1/2" Reg Box		7.000		33.90	34.90
Other Description: Resistivity Collar	Tolteq	102070	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		24.80	59.70
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	69.42
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	80.77
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0021	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.52	2593.21
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.39
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.57





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #7 - BHA #7 (Lateral #2) (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-02-05 18:30
Lobe/Stage	7/8, 8.5	Depth In (ft)	11449.00
Bend Angle	1.75	Date Out	2020-02-07 18:00
Speed (rev/gal)	0.26	Depth Out (ft)	13256.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	204.00
Incident	No	Distance Rotated (ft)	1606.00
Motor Results		% Distance Sliding	11.27%
Average Total ROP (ft/h)	66.83	% Distance Rotating	88.73%
Average Slide ROP (ft/h)	30.99		
Average Rotating ROP (ft/h)	78.34		

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

S/N	530889	POOH Reason/Notes
Nozzles	6x22's	MWD Incident: Resistivity stopped working / MTR Drained fine but asked to be changed out
Total Flow Area (in²)	2.227	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: Tool was missing outer tread protectors
		MWD:

Bit Distances		Comments
Bit To Bend: 5.32 ft		Directional: Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWTX, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.60	On Bottom Pressure (psi)
VIS	54.00	Off Bottom Pressure (psi)
PV	2.00	Stall Pressure (psi)
YP	3.00	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: 8.5" Hughes DD506TWTX, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Baker	530889	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Discovery	700-DDS-018	4 1/2" IF Box	4 1/2" Reg Box		7.000		33.90	34.90
Other Description: Resistivity Collar	Tolteq	102070	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		24.80	59.70
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	69.42
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	80.77
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0021	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.52	2593.21
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.39
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.57





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #8 - BHA #8 (lateral 3) (Directional)

Motor Details		Date/Depth/Distances		Hours	
Size(in)	7.00	Date In	2020-02-07 18:00	Downhole Hours	129.25
Lobe/Stage	7/8, 8.5	Depth In (ft)	13256.00	Drilling/Circulating Hours	94.50
Bend Angle	1.75	Date Out	2020-02-13 03:15	Drilling Hours	64.50
Speed (rev/gal)	0.26	Depth Out (ft)	16706.00	Circulating Hours	30.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	530.00	Sliding Hours	20.42
Incident	No	Distance Rotated (ft)	2920.00	Rotating Hours	44.08
Motor Results		% Distance Sliding	15.36%	% Hours Sliding	31.65%
Average Total ROP (ft/h)	53.49	% Distance Rotating	84.64%	% Hours Rotating	68.35%
Average Slide ROP (ft/h)	25.96	BHA Objective			
Average Rotating ROP (ft/h)	66.24	Drill lateral			

Bit Details		POOH Reason/Notes	
OD (in)	8.500	Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor drained well with .25" slack in bearings. Bit had Heel row and gauge row wiped out with slight damage to the matrix of the bit.	
Vendor	HALLIBURTON		
S/N	13418528		

Nozzles	6x22's	MWD:
Total Flow Area (in²)	2.227	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: Bit had Heel row and gauge row wiped out with slight damage to the matrix of the bit.
		MWD:

Bit Distances		Comments
Bit To Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft		Directional: Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:

Mud Properties		Parameters	
Type	Oil Based	Flow Rate (gpm)	640.00 - 650.00
WT	9.50	On Bottom Pressure (psi)	4400.00 - 5200.00
VIS	56.00	Off Bottom Pressure (psi)	4100.00 - 4700.00
PV	10.00	Stall Pressure (psi)	1910.00
YP	7.00	Stalls	0
		NPT	0.0

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #9 - BHA #9 Lateral 4 (Directional)

Motor Details		Date/Depth/Distances		Hours	
Size(in)	7.00	Date In	2020-02-13 03:15	Downhole Hours	53.75
Lobe/Stage	7/8, 8.5	Depth In (ft)	16706.00	Drilling/Circulating Hours	34.92
Bend Angle	1.75	Date Out	2020-02-15 09:00	Drilling Hours	31.75
Speed (rev/gal)	0.26	Depth Out (ft)	17756.00	Circulating Hours	3.17
Wear Pad OD (in)	7.187	Distance Slid (ft)	118.00	Sliding Hours	7.75
Incident	No	Distance Rotated (ft)	932.00	Rotating Hours	24.00
Motor Results		% Distance Sliding	11.24%	% Hours Sliding	24.41%
Average Total ROP (ft/h)	33.07	% Distance Rotating	88.76%	% Hours Rotating	75.59%
Average Slide ROP (ft/h)	15.23	BHA Objective			
Average Rotating ROP (ft/h)	38.83	Drill 8.5" Lateral			

Bit Details

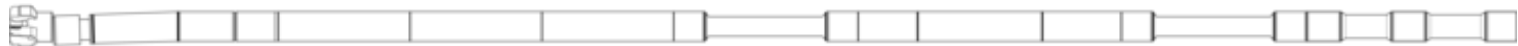
OD (in)	8.500	POOH Reason/Notes Penetration Rate: POOH do to Low ROP
Vendor	HALLIBURTON	
S/N	13048007	
Nozzles	7x20's	
Total Flow Area (in²)	2.148	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: On surface motor drained good, no visible damage, Bit had worn down cutters grade 2
		MWD:

Bit Distances		Comments
Bit To Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD74D , SN: 13048007 , Jets 7x20's TFA: 2.148, Bit Runs: 1

Mud Properties		Parameters	
Type	Oil Based	Flow Rate (gpm)	600.00 - 650.00
WT	9.40	On Bottom Pressure (psi)	4450.00 - 5000.00
VIS	58.00	Off Bottom Pressure (psi)	4150.00 - 4650.00
PV	12.00	Stall Pressure (psi)	0.00
YP	6.00	Stalls	0
		NPT	0.0

Items (Directional)									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: GTD74D PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	HALLIBURTON	13048007	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #10 - BHA #10 Lateral 5 (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-02-15 09:00
Lobe/Stage	7/8, 8.5	Depth In (ft)	17756.00
Bend Angle	1.75	Date Out	2020-02-17 19:05
Speed (rev/gal)	0.26	Depth Out (ft)	19036.00
Wear Pad OD (in)	7.187	Distance Slid (ft)	143.00
Incident	No	Distance Rotated (ft)	1137.00
Motor Results		% Distance Sliding	11.17%
Average Total ROP (ft/h)	37.65	% Distance Rotating	88.83%
Average Slide ROP (ft/h)	17.33		
Average Rotating ROP (ft/h)	44.16		

Bit Details		BHA Objective
OD (in)	8.500	Drill 8.5" lateral
Vendor	HALLIBURTON	

POOH Reason/Notes	
Penetration Rate: While Drilling ahead ROP dropped to 0 and lost all drilling Diff. POOH to inspect BHA.	
S/N	13184329
Nozzles	6x22's
Total Flow Area (in²)	2.227

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: Motor did not drain but bit box did spin while attempting to drain. Minimal slack in bearings. Bit had Gauge and heel damage. graded 3-5
		MWD:

Bit Distances		Comments
Bit To Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD65DM, SN: 13184329, Jets 6x22's TFA: 2.227, Bit Runs: 0

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.50	On Bottom Pressure (psi)
VIS	56.00	Off Bottom Pressure (psi)
PV	13.00	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: GTD65DM PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	HALLIBURTON	13184329	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

BHA #11 - BHA #11 Lateral 6 (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-02-17 19:05
Lobe/Stage	7/8, 8.5	Depth In (ft)	19036.00
Bend Angle	1.75	Date Out	2020-02-20 07:00
Speed (rev/gal)	0.26	Depth Out (ft)	19881.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	200.00
Incident	No	Distance Rotated (ft)	645.00
Motor Results		% Distance Sliding	23.67%
Average Total ROP (ft/h)	25.93	% Distance Rotating	76.33%
Average Slide ROP (ft/h)	16.55		
Average Rotating ROP (ft/h)	31.46		

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

S/N	5293547	POOH Reason/Notes
Nozzles	6x22's	Penetration Rate: POOH do to Low ROP
Total Flow Area (in²)	2.227	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: On surface motor drained good, no visible damaged , motor scribe was 180 out, Bit DBR , Rerun Motor
		MWD:

Bit Distances		Comments
Bit To Bend: 5.29 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Baker DD506TWX , SN: 5293547 , Jets 6x22's TFA: 2.227, Bit Runs: 1

Mud Properties		Parameters
Type	Oil Based	Flow Rate (gpm)
WT	9.60	On Bottom Pressure (psi)
VIS	66.00	Off Bottom Pressure (psi)
PV	14.00	Stall Pressure (psi)
YP	6.00	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: 8.5 Baker DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5293547	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11435.98





Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

BHA #12 - BHA # 12 Lateral (Directional)

Motor Details		Date/Depth/Distances	Hours
Size(in)	7.00	Date In	2020-02-20 07:00
Lobe/Stage	7/8, 8.5	Depth In (ft)	19881.00
Bend Angle	1.75	Date Out	2020-02-23 12:15
Speed (rev/gal)	0.26	Depth Out (ft)	21480.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	130.00
Incident	No	Distance Rotated (ft)	1469.00
Motor Results		% Distance Sliding	8.13%
Average Total ROP (ft/h)	38.45	% Distance Rotating	91.87%
Average Slide ROP (ft/h)	14.72		
Average Rotating ROP (ft/h)	44.85		

Bit Details		BHA Objective
OD (in)	8.500	Drill 8.5" Lateral
Vendor	Security	
S/N	12948610	
Nozzles	7x20's	
Total Flow Area (in²)	2.148	

MWD		Incident Notes
Max Downhole Temp (°F)	N/A	Directional: N/A
		MWD:
Bit Distances		Comments
Bit To Bend: 5.29 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft		Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Security GTD74D , SN: 12948610 , Jets 7x20's TFA: 2.148, Bit Runs: 5
Mud Properties		Parameters

Type	Oil Based	Flow Rate (gpm)	550.00 - 650.00	Motor RPM	156.00 - 195.00
WT	9.70	On Bottom Pressure (psi)	4500.00 - 5550.00	Surface RPM	40.00 - 40.00
VIS	55.00	Off Bottom Pressure (psi)	4300.00 - 5400.00	Rotating WOB (klbs)	36.00 - 48.00
PV	15.00	Stall Pressure (psi)	0.00	Sliding WOB (klbs)	60.00 - 70.00
YP	6.00	Stalls	0	Temp (°F)	188.00 - 194.00
		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: 8.5 Security GTD74D, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Security	12948610	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1010	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		31.31	68.48
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.49	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.15
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.33
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11436.01





Mud Motor Reports

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

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

Motor Details		Date/Depth/Distances		Hours	
S/N	CDM800-001	Date In	2019-12-29 15:00	Downhole Hours	19.75
Size (in)	8.0	Depth In (ft)	140.00	Drilling/Circulating Hours	12.58
Lobe/Stage	7/8, 4.00	Date Out	2019-12-30 10:45		
Bend Angle	1.5	Depth Out (ft)	1800.00	Circulating Hours	1.00
Speed (rev/gal)	0.16	Total Drilled (ft)	1660.00	Drilling Hours	11.58
Wear Pad OD (in)	8.375	Distance Slid (ft)	10.00	Sliding Hours	0.08
Manufacturer	N/A	Distance Rotated (ft)	1650.00	Rotating Hours	11.50
Motor Results		% Distance Sliding	0.60%	% Hours Rotating	99.28%
Motor Incident	No	% Distance Rotating	99.40%	% Hours Sliding	0.72%
Average Total ROP (ft/h)	143.31	BHA Parameters			
Average Slide ROP (ft/h)	120.00	Flow Rate (gpm)	455.00 - 900.00	Motor RPM	66.00 - 125.00
Average Rotating ROP (ft/h)	143.48	Stalls	0	Surface RPM	40.00 - 80.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	18.00 - 24.00
OD (in)	17.500	On Bottom Pressure (psi)	1150.00 - 2600.00	Sliding WOB (klbs)	15.00 - 15.00
Vendor	Baker	Off Bottom Pressure (psi)	600.00 - 1770.00	Temp (°F)	57.00 - 100.00
S/N	5302410	NPT	0.0		
Nozzles	9x12's	BHA Objective			
Total Flow Area (in²)	0.994	Drill Surface			
Bit Type	PDC				
Bit Distances					
Survey: 62.00 ft					
Mud Properties					
Type	Water				
WT	8.50				
VIS	28.00				
PV	0.00				
YP	0.00				
POOH Reason/Notes					
Total Depth/Casing Point: TD surface					
Incident Notes					
Directional: N/A					
MWD:					
Comments					
Directional: Aim Motor: 8" 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Flow: 400-900, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle 1.45, Bit; Baker Hughes DP606S, SN: 5302410, Jets 9x12's TFA: 0.994, Bit Runs:					
MWD:					



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 2 (BHA #2 Int 1)

Motor Details		Date/Depth/Distances		Hours	
S/N	BDT800-020	Date In	2020-01-05 03:05	Downhole Hours	35.42
Size (in)	8.0	Depth In (ft)	1800.00	Drilling/Circulating Hours	21.50
Lobe/Stage	7/8, 5.90	Date Out	2020-01-06 14:30		
Bend Angle	1.5	Depth Out (ft)	5281.00	Circulating Hours	2.83
Speed (rev/gal)	0.17	Total Drilled (ft)	3481.00	Drilling Hours	18.67
Wear Pad OD (in)	8.375	Distance Slid (ft)	75.00	Sliding Hours	1.50
Manufacturer	N/A	Distance Rotated (ft)	3406.00	Rotating Hours	17.17
Motor Results		% Distance Sliding	2.15%	% Hours Rotating	91.96%
Motor Incident	No	% Distance Rotating	97.85%	% Hours Sliding	8.04%
Average Total ROP (ft/h)	186.48	BHA Parameters			
Average Slide ROP (ft/h)	50.00	Flow Rate (gpm)	500.00 - 900.00	Motor RPM	66.00 - 125.00
Average Rotating ROP (ft/h)	198.41	Stalls	0	Surface RPM	40.00 - 80.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	20.00 - 55.00
OD (in)	12.250	On Bottom Pressure (psi)	1100.00 - 4350.00	Sliding WOB (klbs)	17.00 - 20.00
Vendor	Baker	Off Bottom Pressure (psi)	700.00 - 3300.00	Temp (°F)	86.00 - 124.00
S/N	5298513	NPT	0.0		
Nozzles	6x12's	BHA Objective			
Total Flow Area (in²)	0.663	Drill 12.25" Intermediate			
Bit Type	PDC				
Bit Distances					
Survey: 71.00 ft					
Mud Properties					
Type	Water				
WT	10.00				
VIS	28.00				
PV	1.00				
YP	2.00				
POOH Reason/Notes					
Total Depth/Casing Point					
Incident Notes					
Directional:					
MWD:					
Comments					
Directional: Butch's Motor: 8" 12" stab 1.5 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.166, Flow: 400-900, Max Diff: 1330psi, Max Operating Torque: 22,020 ft/lbs, Protracted Angle 1.54, Bit; Baker Hughes D506TWX, SN: 5298513, Jets 6x12's TFA: 0.633, Bit Runs: 1					
MWD:					



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 3 (BHA #3 intermediate 2)

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-031	Date In	2020-01-14 10:30	Downhole Hours	29.00
Size (in)	7.0	Depth In (ft)	5281.00	Drilling/Circulating Hours	16.45
Lobe/Stage	7/8, 8.50	Date Out	2020-01-15 15:30		
Bend Angle	1.5	Depth Out (ft)	8753.00	Circulating Hours	2.83
Speed (rev/gal)	0.17	Total Drilled (ft)	3472.00	Drilling Hours	13.62
Wear Pad OD (in)	7.250	Distance Slid (ft)	139.00	Sliding Hours	1.62
Manufacturer	N/A	Distance Rotated (ft)	3333.00	Rotating Hours	12.00
Motor Results		% Distance Sliding	4.00%	% Hours Rotating	88.13%
Motor Incident	Yes	% Distance Rotating	96.00%	% Hours Sliding	11.87%
Average Total ROP (ft/h)	254.98	BHA Parameters			
Average Slide ROP (ft/h)	85.98	Flow Rate (gpm)	700.00 - 750.00	Motor RPM	66.00 - 125.00
Average Rotating ROP (ft/h)	277.75	Stalls	2	Surface RPM	30.00 - 45.00
Bit Details		Stall Pressure (psi)	1449.94	Rotating WOB (klbs)	30.00 - 45.00
OD (in)	8.500	On Bottom Pressure (psi)	3550.00 - 44200.02	Sliding WOB (klbs)	24.00 - 45.00
Vendor	Security	Off Bottom Pressure (psi)	3200.00 - 3900.00	Temp (°F)	92.00 - 149.00
S/N	13385832	NPT	0.0		
Nozzles		BHA Objective			
Total Flow Area (in²)	0.663	Build 5 degree tangent and drill to KOP.			
Bit Type	PDC				
Bit Distances					
Survey: 69.00 ft, Gamma: 54.00 ft, Bend: 5.40 ft					
Mud Properties					
Type	Brine				
WT	9.40				
VIS	29.00				
PV	2.00				
YP	1.00				

POOH Reason/Notes

Downhole Tool Incident: While drilling ahead indeterminate #2 @8700' diff. pressure started going from -200 to +400. Continue to drill ahead @100 ROP, while inspecting surface equipment for wash outs (OK). After making hook @8733 pressure stable , rotated to 8753' diff pressure increased to 1400 PSI picking up off bottom pressure held at 1200 psi . POOH to inspect BHA .

Incident Notes

Directional: On surface bit box on motor was extended 4.5 inches, caught mandrel set , Bit had chipped 1-2

MWD:

Comments

Directional: Contender Motor: 7" 1.5 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.48, Bit: Security GT65DRM, SN: 13385832, Jets 6x12's TFA: 0.663, Bit Runs: 0

MWD:



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 4 (BHA #4 Intermediate 2)

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-014	Date In	2020-01-15 15:30	Downhole Hours	29.17
Size (in)	7.0	Depth In (ft)	8753.00	Drilling/Circulating Hours	13.75
Lobe/Stage	7/8, 8.50	Date Out	2020-01-16 20:40		
Bend Angle	1.5	Depth Out (ft)	10750.00	Circulating Hours	0.75
Speed (rev/gal)	0.26	Total Drilled (ft)	1997.00	Drilling Hours	13.00
Wear Pad OD (in)	7.250	Distance Slid (ft)	57.00	Sliding Hours	1.00
Manufacturer	N/A	Distance Rotated (ft)	1940.00	Rotating Hours	12.00
Motor Results		% Distance Sliding	2.85%	% Hours Rotating	92.31%
Motor Incident	No	% Distance Rotating	97.15%	% Hours Sliding	7.69%
Average Total ROP (ft/h)	153.62	BHA Parameters			
Average Slide ROP (ft/h)	57.00	Flow Rate (gpm)	600.00 - 750.00	Motor RPM	156.00 - 195.00
Average Rotating ROP (ft/h)	161.67	Stalls	0	Surface RPM	30.00 - 45.00
Bit Details		Stall Pressure (psi)	1910.00	Rotating WOB (klbs)	30.00 - 48.00
OD (in)	8.500	On Bottom Pressure (psi)	3250.00 - 4400.00	Sliding WOB (klbs)	25.00 - 32.00
Vendor	Security	Off Bottom Pressure (psi)	2800.00 - 3900.00	Temp (°F)	131.00 - 158.00
S/N	13383540	NPT	0.0		
Nozzles	6x12's	BHA Objective			
Total Flow Area (in²)	0.663	Drill Intermediate 2			
Bit Type	PDC				
Bit Distances					
Survey: 69.00 ft, Gamma: 54.00 ft, Bend: 5.40 ft					
Mud Properties					
Type	Brine				
WT	9.30				
VIS	29.00				
PV	2.00				
YP	1.00				

POOH Reason/Notes

Total Depth/Casing Point: Motor performed as expected. Yielded 9-10's. Surface inspection showed motor was still tight with minimal slack in bearings. Drained well. Bit showed signs of too much WOB and was beginning to core. Bit graded 2-2

Incident Notes

Directional: N/a

MWD:

Comments

Directional: Contender Motor: 7" 1.5 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.46, Bit: Security GT65DRM, SN: 13383540, Jets 6x12's TFA: 0.663, Bit Runs: 0

MWD:

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

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

Motor Details		Date/Depth/Distances		Hours	
S/N	CDM650022	Date In	2020-02-04 09:00	Downhole Hours	23.50
Size (in)	6.75	Depth In (ft)	10750.00	Drilling/Circulating Hours	10.92
Lobe/Stage	7/8, 5.00	Date Out	2020-02-05 08:30		
Bend Angle	2.12	Depth Out (ft)	11449.00	Circulating Hours	1.75
Speed (rev/gal)	0.28	Total Drilled (ft)	699.00	Drilling Hours	9.17
Wear Pad OD (in)	7.125	Distance Slid (ft)	629.00	Sliding Hours	8.25
Manufacturer	N/A	Distance Rotated (ft)	70.00	Rotating Hours	0.92
Motor Results		% Distance Sliding	89.99%	% Hours Rotating	10.00%
Motor Incident	No	% Distance Rotating	10.01%	% Hours Sliding	90.00%
Average Total ROP (ft/h)	76.25	BHA Parameters			
Average Slide ROP (ft/h)	76.24	Flow Rate (gpm)	595.00 - 595.00	Motor RPM	156.00 - 195.00
Average Rotating ROP (ft/h)	76.36	Stalls	0	Surface RPM	45.00 - 45.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	30.00 - 30.00
OD (in)	8.500	On Bottom Pressure (psi)	4000.00 - 4300.00	Sliding WOB (klbs)	50.00 - 75.00
Vendor	Ultra	Off Bottom Pressure (psi)	3500.00 - 3600.00	Temp (°F)	125.00 - 125.00
S/N	51717	NPT	0.0		
Nozzles	6x22's	BHA Objective			
Total Flow Area (in²)	2.227	Drill Curve on 12's			
Bit Type	PDC				
Bit Distances					
Survey: 61.00 ft, Gamma: 55.00 ft, Bend: 4.10 ft, Resistivity: 35.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.80				
VIS	60.00				
PV	2.00				
YP	3.00				
POOH Reason/Notes					
Change Bottom Hole Assembly: TD CURVE					
Incident Notes					
Directional:					
MWD:					
Comments					
Directional: Contender Motor: 6 3/4" 2.12 FBH 7/8 5.0 Stg Mtr, Rev/Gal: 0.28, Flow: 300-600, Max Diff: 1,180 psi, Max Operating Torque: 11,150 ft/lbs, Protracted Angle 2.21; Ulterra CF611, SN: 51717, Jets 6x22's TFA: 2.227, Bit Runs: 1					
MWD:					

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

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

Motor Details		Date/Depth/Distances		Hours	
S/N	700-DDS-018	Date In	2020-02-05 10:00	Downhole Hours	8.50
Size (in)	7.0	Depth In (ft)	11449.00	Drilling/Circulating Hours	2.50
Lobe/Stage	7/8, 8.50	Date Out	2020-02-05 18:30		
Bend Angle	1.75	Depth Out (ft)	11449.00	Circulating Hours	2.50
Speed (rev/gal)	0.26	Total Drilled (ft)	0.00	Drilling Hours	0.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	0.00	Sliding Hours	0.00
Manufacturer	N/A	Distance Rotated (ft)	0.00	Rotating Hours	0.00
Motor Results		% Distance Sliding	0	% Hours Rotating	0%
Motor Incident	No	% Distance Rotating	0	% Hours Sliding	0%
Average Total ROP (ft/h)	0.00	BHA Parameters			
Average Slide ROP (ft/h)	0.00	Flow Rate (gpm)	350.00 - 650.00	Motor RPM	156.00 - 195.00
Average Rotating ROP (ft/h)	0.00	Stalls	0	Surface RPM	0.00 - 0.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	0.00 - 0.00
OD (in)	8.500	On Bottom Pressure (psi)	2100.00 - 2100.00	Sliding WOB (klbs)	0.00 - 0.00
Vendor	Baker	Off Bottom Pressure (psi)	2100.00 - 2600.00	Temp (°F)	-0.00 - 547.00
S/N	530889	NPT	0.0		
Nozzles	6x22's	BHA Objective			
Total Flow Area (in²)	2.227	Drill 8.5" Lateral			
Bit Type	PDC				
Bit Distances					
Survey: 74.00 ft, Gamma: 68.00 ft, Bend: 4.15 ft, Resistivity: 48.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.80				
VIS	55.00				
PV	2.00				
YP	3.00				
POOH Reason/Notes					
MWD Incident: MWD WOULD NOT TEST AFTER PICKIN UP AGITATOR					
Incident Notes					
Directional: mwd failed					
MWD:					
Comments					
Directional: Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWX, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0					
MWD:					

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Mud Motor Report - BHA 7 (BHA #7 (Lateral #2))

Motor Details		Date/Depth/Distances		Hours	
S/N	700-DDS-018	Date In	2020-02-05 18:30	Downhole Hours	47.50
Size (in)	7.0	Depth In (ft)	11449.00	Drilling/Circulating Hours	30.92
Lobe/Stage	7/8, 8.50	Date Out	2020-02-07 18:00		
Bend Angle	1.75	Depth Out (ft)	13256.00	Circulating Hours	3.83
Speed (rev/gal)	0.26	Total Drilled (ft)	1810.00	Drilling Hours	27.08
Wear Pad OD (in)	7.125	Distance Slid (ft)	204.00	Sliding Hours	6.58
Manufacturer	N/A	Distance Rotated (ft)	1606.00	Rotating Hours	20.50
Motor Results		% Distance Sliding	11.27%	% Hours Rotating	75.69%
Motor Incident	No	% Distance Rotating	88.73%	% Hours Sliding	24.31%
Average Total ROP (ft/h)	66.83	BHA Parameters			
Average Slide ROP (ft/h)	30.99	Flow Rate (gpm)	595.00 - 643.00	Motor RPM	156.00 - 195.00
Average Rotating ROP (ft/h)	78.34	Stalls	0	Surface RPM	30.00 - 45.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	30.00 - 52.00
OD (in)	8.500	On Bottom Pressure (psi)	4300.00 - 5200.00	Sliding WOB (klbs)	65.00 - 75.00
Vendor	Baker	Off Bottom Pressure (psi)	3500.00 - 4700.00	Temp (°F)	147.00 - 147.00
S/N	530889	NPT	0.0		
Nozzles	6x22's	BHA Objective			
Total Flow Area (in²)	2.227	Drill lateral			
Bit Type	PDC				
Bit Distances					
Bend: 5.32 ft					
Mud Properties					
Type	Oil Based				
WT	9.60				
VIS	54.00				
PV	2.00				
YP	3.00				
POOH Reason/Notes					
MWD Incident: Resistivity stopped working / MTR Drained fine but asked to be changed out					
Incident Notes					
Directional: Tool was missing outer tread protectors					
MWD:					
Comments					
Directional: Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWX, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0					
MWD:					



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 8 (BHA #8 (lateral 3))

Motor Details		Date/Depth/Distances	Hours
S/N	700-40-036	Date In	2020-02-07 18:00
Size (in)	7.0	Depth In (ft)	13256.00
Lobe/Stage	7/8, 8.50	Date Out	2020-02-13 03:15
Bend Angle	1.75	Depth Out (ft)	16706.00
Speed (rev/gal)	0.26	Total Drilled (ft)	3450.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	530.00
Manufacturer	N/A	Distance Rotated (ft)	2920.00
Motor Results		% Distance Sliding	15.36%
Motor Incident	No	% Distance Rotating	84.64%
Average Total ROP (ft/h)	53.49	BHA Parameters	
Average Slide ROP (ft/h)	25.96	Flow Rate (gpm)	640.00 - 650.00
Average Rotating ROP (ft/h)	66.24	Stalls	0
Bit Details		Stall Pressure (psi)	1910.00
OD (in)	8.500	On Bottom Pressure (psi)	4400.00 - 5200.00
Vendor	HALLIBURTON	Off Bottom Pressure (psi)	4100.00 - 4700.00
S/N	13418528	NPT	0.0
Nozzles	6x22's	BHA Objective	
Total Flow Area (in²)	2.227	Drill lateral	
Bit Type	PDC		
Bit Distances			
Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft			
Mud Properties			
Type	Oil Based		
WT	9.50		
VIS	56.00		
PV	10.00		
YP	7.00		
POOH Reason/Notes			
Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor drained well with .25" slack in bearings. Bit had Heel row and gauge row wiped out with slight damage to the matrix of the bit.			
Incident Notes			
Directional: Bit had Heel row and gauge row wiped out with slight damage to the matrix of the bit.			
MWD:			
Comments			
Directional: Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:			
MWD:			

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Mud Motor Report - BHA 9 (BHA #9 Lateral 4)

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-031	Date In	2020-02-13 03:15	Downhole Hours	53.75
Size (in)	7.0	Depth In (ft)	16706.00	Drilling/Circulating Hours	34.92
Lobe/Stage	7/8, 8.50	Date Out	2020-02-15 09:00		
Bend Angle	1.75	Depth Out (ft)	17756.00	Circulating Hours	3.17
Speed (rev/gal)	0.26	Total Drilled (ft)	1050.00	Drilling Hours	31.75
Wear Pad OD (in)	7.187	Distance Slid (ft)	118.00	Sliding Hours	7.75
Manufacturer	N/A	Distance Rotated (ft)	932.00	Rotating Hours	24.00
Motor Results		% Distance Sliding	11.24%	% Hours Rotating	75.59%
Motor Incident	No	% Distance Rotating	88.76%	% Hours Sliding	24.41%
Average Total ROP (ft/h)	33.07	BHA Parameters			
Average Slide ROP (ft/h)	15.23	Flow Rate (gpm)	600.00 - 650.00	Motor RPM	156.00 - 195.00
Average Rotating ROP (ft/h)	38.83	Stalls	0	Surface RPM	45.00 - 50.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	35.00 - 56.00
OD (in)	8.500	On Bottom Pressure (psi)	4450.00 - 5000.00	Sliding WOB (klbs)	50.00 - 50.00
Vendor	HALLIBURTON	Off Bottom Pressure (psi)	4150.00 - 4650.00	Temp (°F)	183.20 - 194.00
S/N	13048007	NPT	0.0		
Nozzles	7x20's	BHA Objective			
Total Flow Area (in²)	2.148	Drill 8.5" Lateral			
Bit Type	PDC				
Bit Distances					
Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.40				
VIS	58.00				
PV	12.00				
YP	6.00				
POOH Reason/Notes					
Penetration Rate: POOH do to Low ROP					
Incident Notes					
Directional: On surface motor drained good, no visible damage, Bit had worn down cutters grade 2					
MWD:					
Comments					
Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD74D , SN: 13048007 , Jets 7x20's TFA: 2.148, Bit Runs: 1					
MWD:					



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 10 (BHA #10 Lateral 5)

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-031	Date In	2020-02-15 09:00	Downhole Hours	58.08
Size (in)	7.0	Depth In (ft)	17756.00	Drilling/Circulating Hours	36.17
Lobe/Stage	7/8, 8.50	Date Out	2020-02-17 19:05		
Bend Angle	1.75	Depth Out (ft)	19036.00	Circulating Hours	2.17
Speed (rev/gal)	0.26	Total Drilled (ft)	1280.00	Drilling Hours	34.00
Wear Pad OD (in)	7.187	Distance Slid (ft)	143.00	Sliding Hours	8.25
Manufacturer	N/A	Distance Rotated (ft)	1137.00	Rotating Hours	25.75
Motor Results		% Distance Sliding	11.17%	% Hours Rotating	75.74%
Motor Incident	No	% Distance Rotating	88.83%	% Hours Sliding	24.26%
Average Total ROP (ft/h)	37.65	BHA Parameters			
Average Slide ROP (ft/h)	17.33	Flow Rate (gpm)	600.00 - 650.00	Motor RPM	156.00 - 195.00
Average Rotating ROP (ft/h)	44.16	Stalls	0	Surface RPM	50.00 - 50.00
Bit Details		Stall Pressure (psi)	1910.00	Rotating WOB (klbs)	43.00 - 56.00
OD (in)	8.500	On Bottom Pressure (psi)	4500.00 - 5300.00	Sliding WOB (klbs)	38.00 - 65.00
Vendor	HALLIBURTON	Off Bottom Pressure (psi)	4200.00 - 4900.00	Temp (°F)	174.00 - 194.00
S/N	13184329	NPT	0.0		
Nozzles	6x22's	BHA Objective			
Total Flow Area (in²)	2.227	Drill 8.5" lateral			
Bit Type	PDC				
Bit Distances					
Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.50				
VIS	56.00				
PV	13.00				
YP	7.00				
POOH Reason/Notes					
Penetration Rate: While Drilling ahead ROP dropped to 0 and lost all drilling Diff.POOH to inspect BHA.					
Incident Notes					
Directional: Motor did not drain but bit box did spin while attempting to drain. Minimal slack in bearings. Bit had Gauge and heel damage. graded 3-5					
MWD:					
Comments					
Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD65DM , SN: 13184329 , Jets 6x22's TFA: 2.227, Bit Runs: 0					
MWD:					



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Mud Motor Report - BHA 11 (BHA #11 Lateral 6)

Motor Details		Date/Depth/Distances	Hours
S/N	700-40-032	Date In	2020-02-17 19:05
Size (in)	7.0	Depth In (ft)	19036.00
Lobe/Stage	7/8, 8.50	Date Out	2020-02-20 07:00
Bend Angle	1.75	Depth Out (ft)	19881.00
Speed (rev/gal)	0.26	Total Drilled (ft)	845.00
Wear Pad OD (in)	7.125	Distance Slid (ft)	200.00
Manufacturer	N/A	Distance Rotated (ft)	645.00
Motor Results		% Distance Sliding	23.67%
Motor Incident	No	% Distance Rotating	76.33%
Average Total ROP (ft/h)	25.93		
Average Slide ROP (ft/h)	16.55		
Average Rotating ROP (ft/h)	31.46		
Bit Details			
OD (in)	8.500	On Bottom Pressure (psi)	4475.00 - 5400.00
Vendor	Baker	Off Bottom Pressure (psi)	3900.00 - 5100.00
S/N	5293547	NPT	0.0
Nozzles	6x22's		
Total Flow Area (in²)	2.227		
Bit Type	PDC		
Bit Distances			
Bend: 5.29 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft			
Mud Properties			
Type	Oil Based		
WT	9.60		
VIS	66.00		
PV	14.00		
YP	6.00		
POOH Reason/Notes			
Penetration Rate: POOH do to Low ROP			
Incident Notes			
Directional: On surface motor drained good, no visible damaged , motor scribe was 180 out, Bit DBR , Rerun Motor			
MWD:			
Comments			
Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Baker DD506TWX , SN: 5293547 , Jets 6x22's TFA: 2.227, Bit Runs: 1			
MWD:			

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

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

Motor Details		Date/Depth/Distances		Hours	
S/N	700-40-032	Date In	2020-02-20 07:00	Downhole Hours	77.25
Size (in)	7.0	Depth In (ft)	19881.00	Drilling/Circulating Hours	49.83
Lobe/Stage	7/8, 8.50	Date Out	2020-02-23 12:15		
Bend Angle	1.75	Depth Out (ft)	21480.00	Circulating Hours	8.25
Speed (rev/gal)	0.26	Total Drilled (ft)	1599.00	Drilling Hours	41.58
Wear Pad OD (in)	7.125	Distance Slid (ft)	130.00	Sliding Hours	8.83
Manufacturer	N/A	Distance Rotated (ft)	1469.00	Rotating Hours	32.75
Motor Results		% Distance Sliding	8.13%	% Hours Rotating	78.76%
Motor Incident	No	% Distance Rotating	91.87%	% Hours Sliding	21.24%
Average Total ROP (ft/h)	38.45	BHA Parameters			
Average Slide ROP (ft/h)	14.72	Flow Rate (gpm)	550.00 - 650.00	Motor RPM	156.00 - 195.00
Average Rotating ROP (ft/h)	44.85	Stalls	0	Surface RPM	40.00 - 40.00
Bit Details		Stall Pressure (psi)	0.00	Rotating WOB (klbs)	36.00 - 48.00
OD (in)	8.500	On Bottom Pressure (psi)	4500.00 - 5550.00	Sliding WOB (klbs)	60.00 - 70.00
Vendor	Security	Off Bottom Pressure (psi)	4300.00 - 5400.00	Temp (°F)	188.00 - 194.00
S/N	12948610	NPT	0.0		
Nozzles	7x20's	BHA Objective			
Total Flow Area (in²)	2.148	Drill 8.5" Lateral			
Bit Type	PDC				
Bit Distances					
Bend: 5.29 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft					
Mud Properties					
Type	Oil Based				
WT	9.70				
VIS	55.00				
PV	15.00				
YP	6.00				
POOH Reason/Notes					
Total Depth/Casing Point: TD well					
Incident Notes					
Directional: N/A					
MWD:					
Comments					
Directional: Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Security GTD74D , SN: 12948610 , Jets 7x20's TFA: 2.148, Bit Runs: 5					
MWD:					



Slide/Rotate Reports

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

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

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	12-29	18:00	18:45	12-29	0.75	140.00	258.00	118.00	157.33	N/A	455.00	40.0	18.00	1150.00	600.00	
Rotate	12-29	18:50	18:55	12-29	0.08	258.00	288.00	30.00	360.00	N/A	455.00	40.0	18.00	1150.00	600.00	
Rotate	12-29	19:00	19:15	12-29	0.25	288.00	380.00	92.00	368.00	N/A	455.00	40.0	18.00	1150.00	600.00	
Rotate	12-29	19:20	19:30	12-29	0.17	380.00	472.00	92.00	552.00	N/A	455.00	40.0	18.00	1150.00	600.00	
Rotate	12-29	19:35	19:40	12-29	0.08	472.00	482.00	10.00	120.00	N/A	900.00	70.0	24.00	2600.00	1770.00	
Slide	12-29	19:40	19:45	12-29	0.08	482.00	492.00	10.00	120.00	90.0	900.00	N/A	15.00	2300.00	1700.00	
Rotate	12-29	19:45	20:00	12-29	0.25	492.00	564.00	72.00	288.00	N/A	900.00	70.0	24.00	2600.00	1770.00	
Rotate	12-29	20:30	21:10	12-29	0.67	564.00	658.00	94.00	141.00	N/A	900.00	70.0	24.00	2600.00	1770.00	
Rotate	12-29	21:15	21:30	12-29	0.25	658.00	749.00	91.00	364.00	N/A	900.00	70.0	24.00	2600.00	1770.00	
Rotate	12-29	21:35	22:00	12-29	0.42	749.00	843.00	94.00	225.60	N/A	900.00	70.0	24.00	2600.00	1770.00	
Rotate	12-29	22:05	22:35	12-29	0.5	843.00	936.00	93.00	186.00	N/A	900.00	70.0	24.00	2600.00	1770.00	
Rotate	12-29	22:40	23:05	12-29	0.42	936.00	1029.00	93.00	223.20	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-29	23:10	23:35	12-29	0.42	1029.00	1123.00	94.00	225.60	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-29	23:40	00:05	12-30	0.42	1123.00	1217.00	94.00	225.60	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-30	00:10	00:50	12-30	0.67	1217.00	1312.00	95.00	142.50	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-30	00:55	01:50	12-30	0.92	1312.00	1406.00	94.00	102.55	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-30	01:55	03:05	12-30	1.17	1406.00	1501.00	95.00	81.43	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-30	03:10	04:25	12-30	1.25	1501.00	1595.00	94.00	75.20	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-30	04:30	05:30	12-30	1.0	1595.00	1689.00	94.00	94.00	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-30	05:35	07:15	12-30	1.67	1689.00	1784.00	95.00	57.00	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	12-30	07:20	07:30	12-30	0.17	1784.00	1800.00	16.00	96.00	N/A	900.00	80.0	24.00	2600.00	1770.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #2 (BHA #2 Int 1)

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	01-05	07:00	09:00	01-05	2.0	1800.00	1947.00	147.00	73.50	N/A	900.00	80.0	24.00	2600.00	1770.00	
Rotate	01-05	09:05	09:10	01-05	0.08	1947.00	1955.00	8.00	96.00	N/A	900.00	80.0	24.00	2600.00	1770.00	
Slide	01-05	09:10	09:20	01-05	0.17	1955.00	1970.00	15.00	90.00	90.0	850.00	N/A	20.00	3200.00	2900.00	
Rotate	01-05	09:20	09:40	01-05	0.33	1970.00	2012.00	42.00	126.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Slide	01-05	09:45	10:00	01-05	0.25	2012.00	2020.00	8.00	32.00	120.0	850.00	N/A	20.00	3200.00	2900.00	
Rotate	01-05	10:00	10:15	01-05	0.25	2020.00	2042.00	22.00	88.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	10:20	10:40	01-05	0.33	2042.00	2090.00	48.00	144.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	10:45	11:05	01-05	0.33	2090.00	2136.00	46.00	138.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	11:10	11:35	01-05	0.42	2136.00	2231.00	95.00	228.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	11:40	12:15	01-05	0.58	2231.00	2325.00	94.00	161.14	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	12:20	12:45	01-05	0.42	2325.00	2419.00	94.00	225.60	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	12:50	13:05	01-05	0.25	2419.00	2514.00	95.00	380.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	13:05	13:30	01-05	0.42	2514.00	2608.00	94.00	225.60	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	13:35	13:55	01-05	0.33	2608.00	2702.00	94.00	282.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	14:00	14:10	01-05	0.17	2702.00	2796.00	94.00	564.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	14:15	14:30	01-05	0.25	2796.00	2891.00	95.00	380.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	14:35	14:55	01-05	0.33	2891.00	2984.00	93.00	279.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	15:00	15:15	01-05	0.25	2984.00	3079.00	95.00	380.00	N/A	850.00	70.0	35.00	3400.00	2900.00	
Rotate	01-05	15:20	15:30	01-05	0.17	3079.00	3173.00	94.00	564.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	15:35	16:00	01-05	0.42	3173.00	3362.00	189.00	453.60	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	16:35	16:40	01-05	0.08	3362.00	3373.00	11.00	132.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Slide	01-05	16:40	17:00	01-05	0.33	3373.00	3391.00	18.00	54.00	285.0	850.00	N/A	20.00	3400.00	3100.00	
Rotate	01-05	17:00	17:15	01-05	0.25	3391.00	3456.00	65.00	260.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	17:20	17:25	01-05	0.08	3456.00	3480.00	24.00	288.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Slide	01-05	17:25	17:35	01-05	0.17	3480.00	3490.00	10.00	60.00	250.0	850.00	N/A	20.00	3400.00	3100.00	
Rotate	01-05	17:35	17:45	01-05	0.17	3490.00	3550.00	60.00	360.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	17:50	18:20	01-05	0.5	3550.00	3644.00	94.00	188.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	18:25	18:55	01-05	0.5	3644.00	3739.00	95.00	190.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	19:00	19:30	01-05	0.5	3739.00	3833.00	94.00	188.00	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	19:35	20:00	01-05	0.42	3833.00	3926.00	93.00	223.20	N/A	850.00	55.0	43.00	4100.00	3140.00	
Rotate	01-05	20:05	20:25	01-05	0.33	3926.00	4021.00	95.00	285.00	N/A	850.00	50.0	55.00	4350.00	3300.00	
Rotate	01-05	20:30	20:50	01-05	0.33	4021.00	4115.00	94.00	282.00	N/A	850.00	50.0	55.00	4350.00	3300.00	
Rotate	01-05	20:55	21:15	01-05	0.33	4115.00	4209.00	94.00	282.00	N/A	850.00	50.0	55.00	4350.00	3300.00	
Rotate	01-05	22:10	22:20	01-05	0.17	4209.00	4258.00	49.00	294.00	N/A	500.00	40.0	20.00	1100.00	700.00	
Rotate	01-05	23:00	23:15	01-05	0.25	4258.00	4304.00	46.00	184.00	N/A	700.00	50.0	20.00	2400.00	2100.00	
Rotate	01-06	02:00	02:30	01-06	0.5	4304.00	4398.00	94.00	188.00	N/A	700.00	50.0	20.00	2400.00	2100.00	
Rotate	01-06	02:35	03:00	01-06	0.42	4398.00	4493.00	95.00	228.00	N/A	700.00	50.0	20.00	2400.00	2100.00	
Rotate	01-06	03:15	03:20	01-06	0.08	4493.00	4503.00	10.00	120.00	N/A	550.00	50.0	30.00	1500.00	1000.00	
Slide	01-06	03:20	03:55	01-06	0.58	4503.00	4527.00	24.00	41.14	150.0	550.00	N/A	17.00	1500.00	1000.00	
Rotate	01-06	03:55	04:15	01-06	0.33	4527.00	4587.00	60.00	180.00	N/A	550.00	50.0	30.00	1500.00	1000.00	
Rotate	01-06	04:15	04:45	01-06	0.5	4587.00	4682.00	95.00	190.00	N/A	550.00	50.0	30.00	1500.00	1000.00	
Rotate	01-06	05:10	05:25	01-06	0.25	4682.00	4776.00	94.00	376.00	N/A	550.00	50.0	30.00	1500.00	1000.00	
Rotate	01-06	05:30	06:20	01-06	0.83	4776.00	4870.00	94.00	112.80	N/A	550.00	50.0	30.00	1500.00	1000.00	
Rotate	01-06	06:30	07:35	01-06	1.08	4870.00	5059.00	189.00	174.46	N/A	550.00	50.0	30.00	1500.00	1000.00	
Rotate	01-06	07:40	09:15	01-06	1.58	5059.00	5248.00	189.00	119.37	N/A	550.00	50.0	30.00	1500.00	1000.00	
Rotate	01-06	09:20	09:40	01-06	0.33	5248.00	5281.00	33.00	99.00	N/A	550.00	50.0	30.00	1500.00	1000.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #3 (BHA #3 intermediate 2)

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	01-14	17:20	18:10	01-14	0.83	5281.00	5433.00	152.00	182.40	N/A	750.00	30.0	30.00	3800.00	3200.00	
Rotate	01-14	18:30	18:35	01-14	0.08	5433.00	5444.00	11.00	132.00	N/A	750.00	30.0	32.00	3800.00	3200.00	
Slide	01-14	18:35	18:50	01-14	0.25	5444.00	5464.00	20.00	80.00	200.0	750.00	N/A	26.00	3550.00	3200.00	
Rotate	01-14	18:50	19:05	01-14	0.25	5464.00	5528.00	64.00	256.00	N/A	750.00	35.0	36.00	3800.00	3200.00	
Rotate	01-14	19:10	19:15	01-14	0.08	5528.00	5540.00	12.00	144.00	N/A	750.00	35.0	36.00	3800.00	3200.00	
Slide	01-14	19:15	19:25	01-14	0.17	5540.00	5560.00	20.00	120.00	270.0	750.00	N/A	26.00	3550.00	3200.00	
Rotate	01-14	19:25	19:35	01-14	0.17	5560.00	5622.00	62.00	372.00	N/A	750.00	35.0	36.00	3800.00	3200.00	
Rotate	01-14	19:40	19:55	01-14	0.25	5622.00	5716.00	94.00	376.00	N/A	750.00	35.0	36.00	3800.00	3200.00	
Rotate	01-14	20:00	20:10	01-14	0.17	5716.00	5811.00	95.00	570.00	N/A	750.00	38.0	36.00	3800.00	3200.00	
Rotate	01-14	20:15	20:30	01-14	0.25	5811.00	5905.00	94.00	376.00	N/A	750.00	38.0	38.00	3800.00	3200.00	
Rotate	01-14	20:35	20:40	01-14	0.08	5905.00	5999.00	94.00	1128.00	N/A	750.00	38.0	38.00	3800.00	3200.00	
Rotate	01-14	20:44	20:54	01-14	0.17	5999.00	6093.00	94.00	564.00	N/A	750.00	38.0	38.00	4100.00	3200.00	
Rotate	01-14	20:57	21:00	01-14	0.05	6093.00	6103.00	10.00	200.00	N/A	750.00	38.0	38.00	4100.00	3200.00	
Slide	01-14	21:00	21:11	01-14	0.18	6103.00	6123.00	20.00	109.09	300.0	750.00	N/A	26.00	3550.00	3200.00	
Rotate	01-14	21:11	21:21	01-14	0.17	6123.00	6187.00	64.00	384.00	N/A	750.00	38.0	38.00	4100.00	3200.00	
Rotate	01-14	21:24	21:34	01-14	0.17	6187.00	6282.00	95.00	570.00	N/A	750.00	38.0	38.00	4100.00	3200.00	
Rotate	01-14	21:36	21:46	01-14	0.17	6282.00	6376.00	94.00	564.00	N/A	750.00	40.0	38.00	4100.00	3200.00	
Rotate	01-14	21:49	22:00	01-14	0.18	6376.00	6470.00	94.00	512.73	N/A	750.00	40.0	38.00	4100.00	3200.00	
Rotate	01-14	22:02	22:13	01-14	0.18	6470.00	6564.00	94.00	512.73	N/A	750.00	40.0	38.00	4100.00	3200.00	
Rotate	01-14	22:15	22:18	01-14	0.05	6564.00	6578.00	14.00	280.00	N/A	750.00	40.0	38.00	4100.00	3200.00	
Slide	01-14	22:18	22:33	01-14	0.25	6578.00	6603.00	25.00	100.00	330.0	750.00	N/A	26.00	3550.00	3200.00	
Rotate	01-14	22:33	22:41	01-14	0.13	6603.00	6658.00	55.00	412.50	N/A	750.00	40.0	38.00	4100.00	3200.00	
Rotate	01-14	22:43	22:55	01-14	0.2	6658.00	6753.00	95.00	475.00	N/A	750.00	40.0	38.00	4100.00	3200.00	
Rotate	01-14	22:57	23:09	01-14	0.2	6753.00	6847.00	94.00	470.00	N/A	750.00	40.0	38.00	4100.00	3200.00	
Rotate	01-14	23:12	23:22	01-14	0.17	6847.00	6941.00	94.00	564.00	N/A	750.00	40.0	38.00	4100.00	3200.00	
Rotate	01-14	23:24	23:40	01-14	0.27	6941.00	7036.00	95.00	356.25	N/A	750.00	40.0	40.00	4100.00	3200.00	
Rotate	01-14	23:42	00:00	01-15	0.3	7036.00	7130.00	94.00	313.33	N/A	750.00	40.0	44.00	4100.00	3200.00	
Rotate	01-15	00:02	00:15	01-15	0.22	7130.00	7224.00	94.00	433.85	N/A	750.00	40.0	45.00	4100.00	3200.00	
Rotate	01-15	00:18	00:21	01-15	0.05	7224.00	7239.00	15.00	300.00	N/A	750.00	40.0	45.00	4100.00	3200.00	
Slide	01-15	00:21	00:37	01-15	0.27	7239.00	7255.00	16.00	60.00	45.0	750.00	N/A	24.00	4100.00	3900.00	
Rotate	01-15	00:37	00:50	01-15	0.22	7255.00	7319.00	64.00	295.38	N/A	750.00	40.0	45.00	4700.00	3900.00	
Rotate	01-15	00:53	01:05	01-15	0.2	7319.00	7370.00	51.00	255.00	N/A	750.00	40.0	45.00	4700.00	3900.00	
Rotate	01-15	01:20	01:30	01-15	0.17	7370.00	7413.00	43.00	258.00	N/A	750.00	40.0	45.00	4700.00	3900.00	
Rotate	01-15	01:35	01:55	01-15	0.33	7413.00	7507.00	94.00	282.00	N/A	750.00	40.0	45.00	4700.00	3900.00	
Rotate	01-15	02:00	02:20	01-15	0.33	7507.00	7602.00	95.00	285.00	N/A	750.00	40.0	40.00	4700.00	3900.00	
Rotate	01-15	02:25	02:40	01-15	0.25	7602.00	7696.00	94.00	376.00	N/A	750.00	40.0	40.00	4700.00	3900.00	
Rotate	01-15	02:45	02:50	01-15	0.08	7696.00	7708.00	12.00	144.00	N/A	750.00	40.0	40.00	4700.00	3900.00	
Slide	01-15	02:50	03:05	01-15	0.25	7708.00	7728.00	20.00	80.00	50.0	750.00	N/A	26.00	4100.00	3900.00	
Rotate	01-15	03:05	03:15	01-15	0.17	7728.00	7790.00	62.00	372.00	N/A	750.00	40.0	40.00	4700.00	3900.00	
Rotate	01-15	03:20	03:40	01-15	0.33	7790.00	7885.00	95.00	285.00	N/A	750.00	40.0	40.00	4700.00	3900.00	
Rotate	01-15	03:45	04:00	01-15	0.25	7885.00	7979.00	94.00	376.00	N/A	750.00	40.0	40.00	4700.00	3900.00	
Rotate	01-15	04:05	04:20	01-15	0.25	7979.00	8073.00	94.00	376.00	N/A	700.00	45.0	40.00	44200.02	3400.00	
Rotate	01-15	04:25	04:55	01-15	0.5	8073.00	8168.00	95.00	190.00	N/A	700.00	40.0	40.00	44200.02	3400.00	
Rotate	01-15	05:00	05:35	01-15	0.58	8168.00	8262.00	94.00	161.14	N/A	700.00	40.0	40.00	44200.02	3400.00	
Rotate	01-15	05:40	06:20	01-15	0.67	8262.00	8356.00	94.00	141.00	N/A	700.00	40.0	40.00	44200.02	3400.00	
Rotate	01-15	06:25	06:55	01-15	0.5	8356.00	8450.00	94.00	188.00	N/A	700.00	40.0	42.00	44200.02	3400.00	
Rotate	01-15	07:00	07:25	01-15	0.42	8450.00	8544.00	94.00	225.60	N/A	700.00	40.0	42.00	44200.02	3400.00	
Rotate	01-15	07:30	07:35	01-15	0.08	8544.00	8554.00	10.00	120.00	N/A	700.00	40.0	42.00	44200.02	3400.00	
Slide	01-15	07:35	07:50	01-15	0.25	8554.00	8572.00	18.00	72.00	60.0	733.00	N/A	45.00	4125.00	3850.00	
Rotate	01-15	07:50	08:30	01-15	0.67	8572.00	8639.00	67.00	100.50	N/A	700.00	40.0	42.00	44200.02	3400.00	
Rotate	01-15	08:35	09:30	01-15	0.92	8639.00	8733.00	94.00	102.55	N/A	700.00	40.0	42.00	4200.00	3400.00	
Rotate	01-15	09:35	09:50	01-15	0.25	8733.00	8753.00	20.00	80.00	N/A	700.00	40.0	42.00	4200.00	3400.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #4 (BHA #4 Intermediate 2)

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	01-15	22:50	23:10	01-15	0.33	8753.00	8827.00	74.00	222.00	N/A	700.00	40.0	40.00	4050.00	3500.00	
Rotate	01-15	23:15	23:35	01-15	0.33	8827.00	8921.00	94.00	282.00	N/A	700.00	40.0	40.00	4050.00	3500.00	
Rotate	01-15	23:40	00:00	01-16	0.33	8921.00	8993.00	72.00	216.00	N/A	700.00	40.0	40.00	4050.00	3500.00	
Rotate	01-16	00:00	00:05	01-16	0.08	8993.00	9016.00	23.00	276.00	N/A						
Rotate	01-16	00:10	00:15	01-16	0.08	9016.00	9026.00	10.00	120.00	N/A	700.00	35.0	40.00	4100.00	3500.00	
Slide	01-16	00:15	00:35	01-16	0.33	9026.00	9046.00	20.00	60.00	60.0	700.00	N/A	25.00	3750.00	3500.00	
Rotate	01-16	00:35	00:50	01-16	0.25	9046.00	9110.00	64.00	256.00	N/A	700.00	35.0	40.00	4100.00	3500.00	
Rotate	01-16	00:55	01:15	01-16	0.33	9110.00	9204.00	94.00	282.00	N/A	700.00	40.0	40.00	4100.00	3500.00	
Rotate	01-16	01:20	01:35	01-16	0.25	9204.00	9299.00	95.00	380.00	N/A	700.00	40.0	40.00	4100.00	3500.00	
Rotate	01-16	01:40	01:55	01-16	0.25	9299.00	9393.00	94.00	376.00	N/A	700.00	40.0	40.00	4100.00	3500.00	
Rotate	01-16	02:00	02:15	01-16	0.25	9393.00	9488.00	95.00	380.00	N/A	700.00	40.0	40.00	4100.00	3500.00	
Rotate	01-16	02:20	02:30	01-16	0.17	9488.00	9582.00	94.00	564.00	N/A	700.00	45.0	40.00	4100.00	3500.00	
Rotate	01-16	02:35	03:10	01-16	0.58	9582.00	9676.00	94.00	161.14	N/A	600.00	30.0	30.00	3250.00	2800.00	
Rotate	01-16	03:15	03:50	01-16	0.58	9676.00	9770.00	94.00	161.14	N/A	600.00	30.0	30.00	3250.00	2800.00	
Rotate	01-16	03:55	04:00	01-16	0.08	9770.00	9780.00	10.00	120.00	N/A	700.00	30.0	36.00	3700.00	3400.00	
Slide	01-16	04:00	04:20	01-16	0.33	9780.00	9802.00	22.00	66.00	160.0	700.00	N/A	32.00	3600.00	3400.00	
Rotate	01-16	04:20	05:00	01-16	0.67	9802.00	9865.00	63.00	94.50	N/A	700.00	30.0	36.00	3700.00	3400.00	
Rotate	01-16	05:05	05:45	01-16	0.67	9865.00	9959.00	94.00	141.00	N/A	700.00	45.0	42.00	3700.00	3400.00	
Rotate	01-16	05:50	06:00	01-16	0.17	9959.00	9969.00	10.00	60.00	N/A	700.00	45.0	42.00	3700.00	3400.00	
Slide	01-16	06:00	06:20	01-16	0.33	9969.00	9984.00	15.00	45.00	180.0	700.00	N/A	32.00	3600.00	3400.00	
Rotate	01-16	06:20	06:55	01-16	0.58	9984.00	10053.00	69.00	118.29	N/A	700.00	45.0	42.00	3700.00	3400.00	
Rotate	01-16	07:00	07:40	01-16	0.67	10053.00	10147.00	94.00	141.00	N/A	700.00	45.0	42.00	3700.00	3400.00	
Rotate	01-16	07:45	08:40	01-16	0.92	10147.00	10242.00	95.00	103.64	N/A	700.00	45.0	42.00	3700.00	3400.00	
Rotate	01-16	08:45	09:30	01-16	0.75	10242.00	10336.00	94.00	125.33	N/A	700.00	45.0	42.00	3700.00	3400.00	
Rotate	01-16	09:35	10:30	01-16	0.92	10336.00	10430.00	94.00	102.55	N/A	750.00	45.0	48.00	4400.00	3900.00	
Rotate	01-16	10:35	11:25	01-16	0.83	10430.00	10525.00	95.00	114.00	N/A	750.00	45.0	48.00	4400.00	3900.00	
Rotate	01-16	11:30	12:10	01-16	0.67	10525.00	10619.00	94.00	141.00	N/A	750.00	45.0	48.00	4400.00	3900.00	
Rotate	01-16	12:15	13:10	01-16	0.92	10619.00	10714.00	95.00	103.64	N/A	750.00	45.0	48.00	4400.00	3900.00	
Rotate	01-16	13:15	13:35	01-16	0.33	10714.00	10750.00	36.00	108.00	N/A	750.00	45.0	48.00	4400.00	3900.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

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

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Slide	02-04	16:10	17:25	02-04	1.25	10750.00	10833.00	83.00	66.40	180.0	595.00	N/A	50.00	4000.00	3500.00	
Slide	02-04	17:30	18:35	02-04	1.08	10833.00	10927.00	94.00	86.77	20.0	595.00	N/A	65.00	4300.00	3500.00	
Slide	02-04	18:45	19:45	02-04	1.0	10927.00	11021.00	94.00	94.00	340.0	595.00	N/A	65.00	4300.00	3500.00	
Slide	02-04	19:50	20:50	02-04	1.0	11021.00	11115.00	94.00	94.00	315.0	595.00	N/A	65.00	4300.00	3500.00	
Rotate	02-04	20:55	21:20	02-04	0.42	11115.00	11150.00	35.00	84.00	N/A	595.00	45.0	30.00	4200.00	3600.00	
Slide	02-04	21:20	22:00	02-04	0.67	11150.00	11210.00	60.00	90.00	0.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-04	22:05	22:35	02-04	0.5	11210.00	11245.00	35.00	70.00	N/A	595.00	45.0	30.00	4200.00	3600.00	
Slide	02-04	22:35	23:25	02-04	0.83	11245.00	11304.00	59.00	70.80	10.0	595.00	N/A	75.00	4300.00	3500.00	
Slide	02-04	23:30	00:00	02-05	0.5	11304.00	11340.00	36.00	72.00	10.0	595.00	N/A	75.00	4300.00	3500.00	
Slide	02-05	00:00	00:10	02-05	0.17	11340.00	11351.00	11.00	66.00	10.0	595.00	N/A	75.00	4300.00	3500.00	
Slide	02-05	00:15	00:55	02-05	0.67	11351.00	11399.00	48.00	72.00	15.0	595.00	N/A	75.00	4300.00	3500.00	
Slide	02-05	01:00	02:05	02-05	1.08	11399.00	11449.00	50.00	46.15	45.0	595.00	N/A	75.00	4300.00	3500.00	

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620	
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H	
	Play Delaware Basin	State/Province and Country New Mexico, US		County Lea	Company Man

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

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
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Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #7 (BHA #7 (Lateral #2))

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	02-06	02:15	03:25	02-06	1.17	11449.00	11505.00	56.00	48.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Rotate	02-06	05:55	06:25	02-06	0.5	11505.00	11531.00	26.00	52.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Rotate	02-06	06:30	07:40	02-06	1.17	11531.00	11626.00	95.00	81.43	N/A	643.00	30.0	30.00	5200.00	4600.00	
Rotate	02-06	07:45	07:55	02-06	0.17	11626.00	11636.00	10.00	60.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Slide	02-06	07:55	08:25	02-06	0.5	11636.00	11656.00	20.00	40.00	230.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-06	08:25	08:50	02-06	0.42	11656.00	11720.00	64.00	153.60	N/A	643.00	30.0	30.00	5200.00	4600.00	
Slide	02-06	09:00	09:30	02-06	0.5	11720.00	11735.00	15.00	30.00	205.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-06	09:30	10:10	02-06	0.67	11735.00	11807.00	72.00	108.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Slide	02-06	10:10	10:30	02-06	0.33	11807.00	11815.00	8.00	24.00	205.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-06	10:35	11:15	02-06	0.67	11815.00	11909.00	94.00	141.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Rotate	02-06	11:20	12:00	02-06	0.67	11909.00	12003.00	94.00	141.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Rotate	02-06	12:05	12:45	02-06	0.67	12003.00	12097.00	94.00	141.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Rotate	02-06	12:50	13:00	02-06	0.17	12097.00	12106.00	9.00	54.00	N/A	643.00	30.0	30.00	5200.00	4600.00	
Slide	02-06	13:00	13:45	02-06	0.75	12106.00	12126.00	20.00	26.67	130.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-06	13:45	14:25	02-06	0.67	12126.00	12192.00	66.00	99.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-06	14:30	14:40	02-06	0.17	12192.00	12196.00	4.00	24.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Slide	02-06	14:40	15:30	02-06	0.83	12196.00	12219.00	23.00	27.60	125.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-06	15:30	16:10	02-06	0.67	12219.00	12286.00	67.00	100.50	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-06	16:15	16:20	02-06	0.08	12286.00	12290.00	4.00	48.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Slide	02-06	16:20	17:00	02-06	0.67	12290.00	12313.00	23.00	34.50	145.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-06	17:00	17:55	02-06	0.92	12313.00	12380.00	67.00	73.09	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-06	18:00	18:40	02-06	0.67	12380.00	12474.00	94.00	141.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-06	18:45	19:45	02-06	1.0	12474.00	12569.00	95.00	95.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-06	19:50	19:55	02-06	0.08	12569.00	12575.00	6.00	72.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Slide	02-06	19:55	20:45	02-06	0.83	12575.00	12605.00	30.00	36.00	100.0	595.00	N/A	75.00	4300.00	3500.00	
Rotate	02-06	20:45	21:40	02-06	0.92	12605.00	12663.00	58.00	63.27	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-06	21:45	23:00	02-06	1.25	12663.00	12758.00	95.00	76.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-06	23:05	23:10	02-06	0.08	12758.00	12763.00	5.00	60.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Slide	02-06	23:10	00:00	02-07	0.83	12763.00	12793.00	30.00	36.00	110.0	640.00	N/A	75.00	4900.00	4500.00	
Rotate	02-07	00:00	00:55	02-07	0.92	12793.00	12852.00	59.00	64.36	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-07	01:05	02:20	02-07	1.25	12852.00	12947.00	95.00	76.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Rotate	02-07	02:25	02:30	02-07	0.08	12947.00	12953.00	6.00	72.00	N/A	643.00	45.0	50.00	5200.00	4700.00	
Slide	02-07	02:30	03:00	02-07	0.5	12953.00	12968.00	15.00	30.00	60.0	640.00	N/A	65.00	4800.00	4500.00	
Rotate	02-07	03:00	04:15	02-07	1.25	12968.00	13041.00	73.00	58.40	N/A	643.00	45.0	52.00	5200.00	4700.00	
Rotate	02-07	04:20	06:10	02-07	1.83	13041.00	13135.00	94.00	51.27	N/A	643.00	45.0	52.00	5200.00	4700.00	
Rotate	02-07	06:25	06:50	02-07	0.42	13135.00	13148.00	13.00	31.20	N/A	643.00	45.0	52.00	5200.00	4700.00	
Slide	02-07	06:50	07:40	02-07	0.83	13148.00	13168.00	20.00	24.00	140.0	640.00	N/A	65.00	4800.00	4500.00	
Rotate	02-07	07:40	09:10	02-07	1.5	13168.00	13229.00	61.00	40.67	N/A	643.00	45.0	52.00	5200.00	4700.00	
Rotate	02-07	09:15	09:45	02-07	0.5	13229.00	13259.00	30.00	60.00	N/A	643.00	45.0	52.00	5200.00	4700.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #8 (BHA #8 (lateral 3))

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	02-09	05:30	06:00	02-09	0.5	13256.00	13324.00	68.00	136.00	N/A	643.00	45.0	52.00	5200.00	4700.00	
Slide	02-09	06:10	07:00	02-09	0.83	13324.00	13346.00	22.00	26.40	145.0	640.00	N/A	65.00	4800.00	4500.00	
Rotate	02-09	07:00	07:45	02-09	0.75	13346.00	13418.00	72.00	96.00	N/A	643.00	45.0	52.00	5200.00	4700.00	
Slide	02-09	07:50	08:40	02-09	0.83	13418.00	13446.00	28.00	33.60	180.0	640.00	N/A	65.00	4800.00	4500.00	
Rotate	02-09	08:40	09:20	02-09	0.67	13446.00	13512.00	66.00	99.00	N/A	643.00	45.0	52.00	5200.00	4700.00	
Slide	02-09	09:25	10:00	02-09	0.58	13512.00	13530.00	18.00	30.86	215.0	640.00	N/A	65.00	4800.00	4500.00	
Rotate	02-09	10:00	11:00	02-09	1.0	13530.00	13606.00	76.00	76.00	N/A	643.00	45.0	52.00	5200.00	4700.00	
Rotate	02-09	11:10	13:00	02-09	1.83	13606.00	13701.00	95.00	51.82	N/A	643.00	45.0	52.00	5200.00	4700.00	
Rotate	02-09	13:05	13:45	02-09	0.67	13701.00	13743.00	42.00	63.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-09	13:45	14:40	02-09	0.92	13743.00	13770.00	27.00	29.45	0.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-09	14:40	15:00	02-09	0.33	13770.00	13795.00	25.00	75.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-09	15:20	15:45	02-09	0.42	13795.00	13822.00	27.00	64.80	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-09	15:45	16:30	02-09	0.75	13822.00	13845.00	23.00	30.67	0.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-09	16:30	17:10	02-09	0.67	13845.00	13889.00	44.00	66.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-09	17:15	17:30	02-09	0.25	13889.00	13900.00	11.00	44.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-09	17:30	18:10	02-09	0.67	13900.00	13920.00	20.00	30.00	65.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-09	18:10	19:30	02-09	1.33	13920.00	13984.00	64.00	48.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-09	19:35	19:45	02-09	0.17	13984.00	13989.00	5.00	30.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-09	19:45	20:50	02-09	1.08	13989.00	14025.00	36.00	33.23	110.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-09	20:50	21:55	02-09	1.08	14025.00	14077.00	52.00	48.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-09	22:00	00:00	02-10	2.0	14077.00	14171.00	94.00	47.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	00:05	00:15	02-10	0.17	14171.00	14177.00	6.00	36.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	00:15	01:05	02-10	0.83	14177.00	14202.00	25.00	30.00	120.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-10	01:05	02:20	02-10	1.25	14202.00	14265.00	63.00	50.40	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	02:30	02:40	02-10	0.17	14265.00	14272.00	7.00	42.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	02:40	03:20	02-10	0.67	14272.00	14294.00	22.00	33.00	160.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-10	03:20	04:45	02-10	1.42	14294.00	14360.00	66.00	46.59	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	05:00	05:55	02-10	0.92	14360.00	14454.00	94.00	102.55	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	06:00	06:15	02-10	0.25	14454.00	14465.00	11.00	44.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	06:15	07:05	02-10	0.83	14465.00	14489.00	24.00	28.80	100.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-10	07:05	07:55	02-10	0.83	14489.00	14549.00	60.00	72.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	08:00	08:55	02-10	0.92	14549.00	14643.00	94.00	102.55	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	09:00	09:50	02-10	0.83	14643.00	14737.00	94.00	112.80	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	09:55	11:20	02-10	1.42	14737.00	14767.00	30.00	21.18	70.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-10	11:20	11:25	02-10	0.08	14767.00	14832.00	65.00	780.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	11:30	12:25	02-10	0.92	14832.00	14926.00	94.00	102.55	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	12:30	12:45	02-10	0.25	14926.00	14936.00	10.00	40.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	12:45	13:45	02-10	1.0	14936.00	14967.00	31.00	31.00	90.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-10	13:45	14:30	02-10	0.75	14967.00	15020.00	53.00	70.67	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	14:35	15:30	02-10	0.92	15020.00	15114.00	94.00	102.55	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	15:35	15:50	02-10	0.25	15114.00	15125.00	11.00	44.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	15:50	16:50	02-10	1.0	15125.00	15160.00	35.00	35.00	100.0	640.00	N/A	47.00	4400.00	4100.00	
Rotate	02-10	16:50	17:25	02-10	0.58	15160.00	15209.00	49.00	84.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	17:30	17:55	02-10	0.42	15209.00	15242.00	33.00	79.20	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	19:20	19:50	02-10	0.5	15242.00	15303.00	61.00	122.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	20:10	21:45	02-10	1.58	15303.00	15338.00	35.00	22.11	140.0		N/A				
Rotate	02-10	21:45	23:15	02-10	1.5	15338.00	15397.00	59.00	39.33	N/A	643.00	45.0	52.00	4700.00	4100.00	
Rotate	02-10	23:20	23:30	02-10	0.17	15397.00	15402.00	5.00	30.00	N/A	643.00	45.0	52.00	4700.00	4100.00	
Slide	02-10	23:30	00:00	02-11	0.5	15402.00	15407.00	5.00	10.00	135.0	650.00	N/A	70.00	4400.00	4200.00	
Slide	02-11	00:00	00:40	02-11	0.67	15407.00	15419.00	12.00	18.00	135.0	650.00	N/A	70.00	4400.00	4200.00	
Slide	02-11	00:50	01:50	02-11	1.0	15419.00	15432.00	13.00	13.00	135.0	650.00	N/A	70.00	4400.00	4200.00	
Rotate	02-11	01:50	03:30	02-11	1.67	15432.00	15492.00	60.00	36.00	N/A	643.00	45.0	55.00	4600.00	4200.00	
Rotate	02-11	03:35	03:50	02-11	0.25	15492.00	15500.00	8.00	32.00	N/A	643.00	45.0	58.00	4600.00	4200.00	
Slide	02-11	04:10	04:35	02-11	0.42	15500.00	15512.00	12.00	28.80	170.0	650.00	N/A	70.00	4400.00	4200.00	
Rotate	02-11	06:30	07:45	02-11	1.25	15512.00	15586.00	74.00	59.20	N/A	643.00	45.0	58.00	4600.00	4200.00	
Rotate	02-11	07:50	08:00	02-11	0.17	15586.00	15596.00	10.00	60.00	N/A	643.00	45.0	58.00	4600.00	4200.00	
Slide	02-11	08:00	09:15	02-11	1.25	15596.00	15626.00	30.00	24.00	150.0	650.00	N/A	70.00	4400.00	4200.00	
Rotate	02-11	09:15	10:00	02-11	0.75	15626.00	15680.00	54.00	72.00	N/A	643.00	45.0	58.00	4600.00	4200.00	
Rotate	02-11	10:15	11:20	02-11	1.08	15680.00	15774.00	94.00	86.77	N/A	643.00	45.0	58.00	4600.00	4200.00	
Rotate	02-11	11:25	11:30	02-11	0.08	15774.00	15783.00	9.00	108.00	N/A	643.00	45.0	58.00	4600.00	4200.00	
Rotate	02-11	12:00	12:30	02-11	0.5	15783.00	15817.00	34.00	68.00	N/A	643.00	45.0	58.00	4600.00	4200.00	
Rotate	02-11	17:00	17:45	02-11	0.75	15817.00	15869.00	52.00	69.33	N/A	643.00	45.0	58.00	4600.00	4200.00	
Rotate	02-11	18:00	19:20	02-11	1.33	15869.00	15963.00	94.00	70.50	N/A	643.00	65.0	53.00	4600.00	4200.00	
Rotate	02-11	19:25	19:40	02-11	0.25	15963.00	15973.00	10.00	40.00	N/A	643.00	65.0	53.00	4600.00	4200.00	

Slide	02-11	19:40	20:40	02-11	1.0	15973.00	16003.00	30.00	30.00	150.0	650.00	N/A	40.00	4550.00	4200.00
Rotate	02-11	20:40	21:20	02-11	0.67	16003.00	16057.00	54.00	81.00	N/A	643.00	65.0	53.00	4600.00	4200.00
Rotate	02-11	21:40	22:55	02-11	1.25	16057.00	16152.00	95.00	76.00	N/A	643.00	65.0	53.00	4600.00	4200.00
Rotate	02-11	23:00	23:25	02-11	0.42	16152.00	16194.00	42.00	100.80	N/A	643.00	65.0	53.00	4600.00	4200.00
Rotate	02-11	23:40	00:00	02-12	0.33	16194.00	16222.00	28.00	84.00	N/A	643.00	65.0	53.00	4600.00	4200.00
Rotate	02-12	00:00	00:15	02-12	0.25	16222.00	16238.00	16.00	64.00	N/A	643.00	65.0	53.00	4600.00	4200.00
Rotate	02-12	01:05	01:15	02-12	0.17	16238.00	16246.00	8.00	48.00	N/A	643.00	65.0	53.00	4600.00	4200.00
Rotate	02-12	01:20	01:40	02-12	0.33	16246.00	16276.00	30.00	90.00	N/A	643.00	65.0	53.00	4600.00	4200.00
Rotate	02-12	04:30	05:30	02-12	1.0	16276.00	16340.00	64.00	64.00	N/A	643.00	65.0	50.00	4600.00	4200.00
Rotate	02-12	05:35	06:55	02-12	1.33	16340.00	16434.00	94.00	70.50	N/A	643.00	65.0	50.00	4600.00	4200.00
Rotate	02-12	07:00	07:20	02-12	0.33	16434.00	16445.00	11.00	33.00	N/A	643.00	65.0	50.00	4600.00	4200.00
Slide	02-12	07:20	08:45	02-12	1.42	16445.00	16470.00	25.00	17.65	150.0	650.00	N/A	20.00	4650.00	4400.00
Rotate	02-12	08:45	10:10	02-12	1.42	16470.00	16529.00	59.00	41.65	N/A	643.00	65.0	50.00	4600.00	4200.00
Rotate	02-12	10:15	10:45	02-12	0.5	16529.00	16540.00	11.00	22.00	N/A	643.00	65.0	50.00	4600.00	4200.00
Rotate	02-12	11:45	13:30	02-12	1.75	16540.00	16623.00	83.00	47.43	N/A	643.00	65.0	50.00	4600.00	4200.00
Rotate	02-12	13:35	13:45	02-12	0.17	16623.00	16626.00	3.00	18.00	N/A	643.00	65.0	50.00	4600.00	4200.00
Rotate	02-12	14:30	14:40	02-12	0.17	16626.00	16633.00	7.00	42.00	N/A	643.00	65.0	50.00	4600.00	4200.00
Slide	02-12	14:40	15:50	02-12	1.17	16633.00	16660.00	27.00	23.14	135.0	650.00	N/A	20.00	4650.00	4400.00
Rotate	02-12	15:50	17:00	02-12	1.17	16660.00	16706.00	46.00	39.43	N/A	643.00	65.0	50.00	4600.00	4200.00



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #9 (BHA #9 Lateral 4)

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	02-13	15:00	15:10	02-13	0.17	16706.00	16718.00	12.00	72.00	N/A	600.00	45.0	35.00	4600.00	4200.00	
Rotate	02-13	15:15	16:35	02-13	1.33	16718.00	16813.00	95.00	71.25	N/A	600.00	45.0	35.00	4600.00	4200.00	
Slide	02-13	16:40	17:30	02-13	0.83	16813.00	16826.00	13.00	15.60	150.0	650.00	N/A	50.00	4650.00	4400.00	
Rotate	02-13	17:30	19:55	02-13	2.42	16826.00	16907.00	81.00	33.52	N/A	600.00	45.0	45.00	4450.00	4150.00	
Rotate	02-13	20:00	22:15	02-13	2.25	16907.00	17001.00	94.00	41.78	N/A	600.00	45.0	53.00	4450.00	4150.00	
Slide	02-13	22:30	00:00	02-14	1.5	17001.00	17026.00	25.00	16.67	160.0	650.00	N/A	50.00	4650.00	4400.00	
Rotate	02-14	00:00	01:40	02-14	1.67	17026.00	17096.00	70.00	42.00	N/A	650.00	45.0	56.00	5000.00	4650.00	
Rotate	02-14	01:45	01:50	02-14	0.08	17096.00	17099.00	3.00	36.00	N/A	650.00	45.0	56.00	5000.00	4650.00	
Slide	02-14	01:50	02:50	02-14	1.0	17099.00	17116.00	17.00	17.00	160.0	650.00	N/A	50.00	4650.00	4400.00	
Rotate	02-14	02:50	04:35	02-14	1.75	17116.00	17190.00	74.00	42.29	N/A	650.00	50.0	55.00	5000.00	4650.00	
Rotate	02-14	04:40	07:10	02-14	2.5	17190.00	17284.00	94.00	37.60	N/A	650.00	50.0	55.00	5000.00	4650.00	
Rotate	02-14	07:15	07:35	02-14	0.33	17284.00	17294.00	10.00	30.00	N/A	650.00	50.0	55.00	5000.00	4650.00	
Slide	02-14	07:35	09:00	02-14	1.42	17294.00	17309.00	15.00	10.59	45.0	650.00	N/A	50.00	4650.00	4400.00	
Rotate	02-14	09:00	11:15	02-14	2.25	17309.00	17378.00	69.00	30.67	N/A	650.00	50.0	55.00	5000.00	4650.00	
Rotate	02-14	11:20	13:40	02-14	2.33	17378.00	17473.00	95.00	40.71	N/A	650.00	50.0	55.00	5000.00	4650.00	
Rotate	02-14	13:45	14:15	02-14	0.5	17473.00	17483.00	10.00	20.00	N/A	650.00	50.0	55.00	5000.00	4650.00	
Slide	02-14	14:15	16:00	02-14	1.75	17483.00	17513.00	30.00	17.14	45.0	650.00	N/A	50.00	4650.00	4400.00	
Rotate	02-14	16:00	17:40	02-14	1.67	17513.00	17567.00	54.00	32.40	N/A	650.00	50.0	55.00	5000.00	4650.00	
Rotate	02-14	17:45	20:15	02-14	2.5	17567.00	17661.00	94.00	37.60	N/A	650.00	50.0	55.00	5000.00	4650.00	
Rotate	02-14	20:20	20:35	02-14	0.25	17661.00	17667.00	6.00	24.00	N/A	650.00	50.0	55.00	5000.00	4650.00	
Slide	02-14	20:35	20:50	02-14	0.25	17667.00	17669.00	2.00	8.00	100.0	650.00	N/A	50.00	4650.00	4400.00	
Slide	02-14	21:35	22:35	02-14	1.0	17669.00	17685.00	16.00	16.00	110.0	650.00	N/A	50.00	4650.00	4400.00	
Rotate	02-14	22:50	00:00	02-15	1.17	17685.00	17730.00	45.00	38.57	N/A	650.00	50.0	55.00	5000.00	4650.00	
Rotate	02-15	00:25	01:15	02-15	0.83	17730.00	17756.00	26.00	31.20	N/A	650.00	50.0	55.00	5000.00	4650.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #10 (BHA #10 Lateral 5)

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	02-15	18:50	18:55	02-15	0.08	17756.00	17765.00	9.00	108.00	N/A	600.00	50.0	43.00	4850.00	4300.00	
Slide	02-15	19:20	19:55	02-15	0.58	17765.00	17782.00	17.00	29.14	160.0	600.00	N/A	38.00	4600.00	4300.00	
Rotate	02-15	19:55	21:15	02-15	1.33	17782.00	17850.00	68.00	51.00	N/A	600.00	50.0	43.00	4850.00	4300.00	
Rotate	02-15	21:20	22:50	02-15	1.5	17850.00	17944.00	94.00	62.67	N/A						
Rotate	02-15	22:55	23:40	02-15	0.75	17944.00	18006.00	62.00	82.67	N/A	600.00	50.0	44.00	4600.00	4200.00	
Rotate	02-16	00:10	00:40	02-16	0.5	18006.00	18038.00	32.00	64.00	N/A	600.00	50.0	44.00	4600.00	4200.00	
Rotate	02-16	01:15	01:30	02-16	0.25	18038.00	18050.00	12.00	48.00	N/A	600.00	50.0	44.00	4600.00	4200.00	
Slide	02-16	01:30	03:00	02-16	1.5	18050.00	18075.00	25.00	16.67	70.0	600.00	N/A	63.00	4500.00	4300.00	
Rotate	02-16	03:00	04:00	02-16	1.0	18075.00	18133.00	58.00	58.00	N/A	600.00	50.0	44.00	4600.00	4200.00	
Rotate	02-16	04:05	04:20	02-16	0.25	18133.00	18137.00	4.00	16.00	N/A	600.00	50.0	44.00	4600.00	4200.00	
Slide	02-16	04:20	05:15	02-16	0.92	18137.00	18152.00	15.00	16.36	160.0	600.00	N/A	63.00	4500.00	4300.00	
Rotate	02-16	05:15	06:55	02-16	1.67	18152.00	18227.00	75.00	45.00	N/A	600.00	50.0	44.00	4600.00	4200.00	
Rotate	02-16	07:00	07:20	02-16	0.33	18227.00	18236.00	9.00	27.00	N/A	600.00	50.0	44.00	4600.00	4200.00	
Slide	02-16	07:20	08:10	02-16	0.83	18236.00	18253.00	17.00	20.40	45.0	650.00	N/A	65.00	5100.00	4900.00	
Rotate	02-16	08:10	09:20	02-16	1.17	18253.00	18321.00	68.00	58.29	N/A	650.00	50.0	46.00	5300.00	4900.00	
Rotate	02-16	09:25	11:00	02-16	1.58	18321.00	18416.00	95.00	60.00	N/A	650.00	50.0	46.00	5300.00	4900.00	
Rotate	02-16	11:05	12:50	02-16	1.75	18416.00	18510.00	94.00	53.71	N/A	650.00	50.0	46.00	5300.00	4900.00	
Rotate	02-16	12:55	13:40	02-16	0.75	18510.00	18550.00	40.00	53.33	N/A	650.00	50.0	46.00	5300.00	4900.00	
Slide	02-16	13:40	15:00	02-16	1.33	18550.00	18570.00	20.00	15.00	180.0	650.00	N/A	65.00	5100.00	4900.00	
Rotate	02-16	15:00	16:05	02-16	1.08	18570.00	18604.00	34.00	31.38	N/A	650.00	50.0	46.00	5300.00	4900.00	
Rotate	02-16	16:10	18:45	02-16	2.58	18604.00	18698.00	94.00	36.39	N/A	650.00	50.0	46.00	5300.00	4900.00	
Rotate	02-16	18:50	22:05	02-16	3.25	18698.00	18793.00	95.00	29.23	N/A	600.00	50.0	56.00	4700.00	4200.00	
Rotate	02-16	22:10	22:20	02-16	0.17	18793.00	18796.00	3.00	18.00	N/A	600.00	50.0	56.00	4700.00	4200.00	
Slide	02-16	22:20	23:40	02-16	1.33	18796.00	18814.00	18.00	13.50	170.0	600.00	N/A	55.00	4850.00	4250.00	
Rotate	02-16	23:40	00:00	02-17	0.33	18814.00	18822.00	8.00	24.00	N/A	600.00	50.0	56.00	4700.00	4200.00	
Rotate	02-17	00:00	01:35	02-17	1.58	18822.00	18887.00	65.00	41.05	N/A	600.00	50.0	56.00	4700.00	4200.00	
Rotate	02-17	01:40	04:15	02-17	2.58	18887.00	18982.00	95.00	36.77	N/A	600.00	50.0	56.00	4700.00	4200.00	
Slide	02-17	04:35	06:20	02-17	1.75	18982.00	19013.00	31.00	17.71	230.0	600.00	N/A	55.00	4850.00	4250.00	
Rotate	02-17	06:20	07:35	02-17	1.25	19013.00	19036.00	23.00	18.40	N/A	600.00	50.0	56.00	4700.00	4200.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Slide/Rotate Report - BHA #11 (BHA #11 Lateral 6)

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	02-18	10:00	10:45	02-18	0.75	19036.00	19073.00	37.00	49.33	N/A	550.00	40.0	32.00	4475.00	3900.00	
Rotate	02-18	10:50	11:05	02-18	0.25	19073.00	19083.00	10.00	40.00	N/A	550.00	40.0	32.00	4475.00	3900.00	
Slide	02-18	11:05	11:20	02-18	0.25	19083.00	19087.00	4.00	16.00	230.0	650.00	N/A	60.00	5400.00	5100.00	
Slide	02-18	12:00	12:50	02-18	0.83	19087.00	19100.00	13.00	15.60	220.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-18	12:50	14:00	02-18	1.17	19100.00	19168.00	68.00	58.29	N/A	550.00	40.0	32.00	4475.00	3900.00	
Rotate	02-18	14:05	14:35	02-18	0.5	19168.00	19178.00	10.00	20.00	N/A	550.00	40.0	32.00	4475.00	3900.00	
Slide	02-18	14:35	16:30	02-18	1.92	19178.00	19210.00	32.00	16.70	210.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-18	16:30	18:00	02-18	1.5	19210.00	19262.00	52.00	34.67	N/A	550.00	40.0	32.00	4475.00	3900.00	
Slide	02-18	18:05	19:45	02-18	1.67	19262.00	19297.00	35.00	21.00	200.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-18	19:45	21:25	02-18	1.67	19297.00	19356.00	59.00	35.40	N/A	550.00	40.0	32.00	4475.00	3900.00	
Rotate	02-18	22:15	22:30	02-18	0.25	19356.00	19371.00	15.00	60.00	N/A	550.00	40.0	32.00	4475.00	3900.00	
Slide	02-18	23:00	00:00	02-19	1.0	19371.00	19377.00	6.00	6.00	20.0	650.00	N/A	60.00	5400.00	5100.00	
Slide	02-19	00:00	00:50	02-19	0.83	19377.00	19392.00	15.00	18.00	20.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-19	00:50	01:15	02-19	0.42	19392.00	19399.00	7.00	16.80	N/A	550.00	40.0	32.00	4475.00	3900.00	
Rotate	02-19	01:40	03:25	02-19	1.75	19399.00	19450.00	51.00	29.14	N/A	550.00	40.0	38.00	4475.00	3900.00	
Slide	02-19	03:30	05:00	02-19	1.5	19450.00	19480.00	30.00	20.00	45.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-19	05:00	07:10	02-19	2.17	19480.00	19545.00	65.00	30.00	N/A	550.00	40.0	38.00	4475.00	3900.00	
Slide	02-19	07:15	09:00	02-19	1.75	19545.00	19575.00	30.00	17.14	190.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-19	09:00	11:00	02-19	2.0	19575.00	19639.00	64.00	32.00	N/A	550.00	40.0	38.00	4475.00	3900.00	
Rotate	02-19	11:05	11:25	02-19	0.33	19639.00	19649.00	10.00	30.00	N/A	550.00	40.0	38.00	4475.00	3900.00	
Slide	02-19	11:25	12:15	02-19	0.83	19649.00	19664.00	15.00	18.00	240.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-19	12:15	14:30	02-19	2.25	19664.00	19733.00	69.00	30.67	N/A	550.00	40.0	38.00	4475.00	3900.00	
Rotate	02-19	14:35	18:05	02-19	3.5	19733.00	19828.00	95.00	27.14	N/A	550.00	40.0	38.00	4475.00	3900.00	
Rotate	02-19	18:10	18:30	02-19	0.33	19828.00	19835.00	7.00	21.00	N/A	550.00	40.0	38.00	4475.00	3900.00	
Slide	02-19	18:30	20:00	02-19	1.5	19835.00	19855.00	20.00	13.33	290.0	650.00	N/A	60.00	5400.00	5100.00	
Rotate	02-19	20:00	21:40	02-19	1.67	19855.00	19881.00	26.00	15.60	N/A	550.00	40.0	38.00	4475.00	3900.00	



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

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

Activity	Start Date	Start Time	End Time	End Date	Hours	Start Depth (ft)	End Depth (ft)	Distance (ft)	RoP (ft/h)	Toolface	Flow Rate (gpm)	Surface RPM	WOB (klbs)	Press On (psi)	Press Off (psi)	Hole Section Type
Rotate	02-20	23:15	23:55	02-20	0.67	19881.00	19922.00	41.00	61.50	N/A	550.00	40.0	42.00	4700.00	4300.00	
Slide	02-21	00:00	01:05	02-21	1.08	19922.00	19942.00	20.00	18.46	180.0	550.00	N/A	60.00	4500.00	4300.00	
Rotate	02-21	01:05	02:30	02-21	1.42	19942.00	20016.00	74.00	52.24	N/A	550.00	40.0	36.00	4700.00	4300.00	
Rotate	02-21	02:35	04:45	02-21	2.17	20016.00	20110.00	94.00	43.38	N/A	550.00	40.0	36.00	4700.00	4300.00	
Slide	02-21	04:50	06:20	02-21	1.5	20110.00	20135.00	25.00	16.67	120.0	550.00	N/A	60.00	4500.00	4300.00	
Rotate	02-21	06:20	07:50	02-21	1.5	20135.00	20205.00	70.00	46.67	N/A	550.00	40.0	36.00	4700.00	4300.00	
Rotate	02-21	07:55	08:30	02-21	0.58	20205.00	20225.00	20.00	34.29	N/A	550.00	40.0	36.00	4700.00	4300.00	
Slide	02-21	08:30	10:00	02-21	1.5	20225.00	20250.00	25.00	16.67	45.0	550.00	N/A	60.00	4500.00	4300.00	
Rotate	02-21	10:00	11:05	02-21	1.08	20250.00	20299.00	49.00	45.23	N/A	550.00	40.0	36.00	4700.00	4300.00	
Rotate	02-21	11:30	13:25	02-21	1.92	20299.00	20393.00	94.00	49.04	N/A	550.00	40.0	36.00	4700.00	4300.00	
Rotate	02-21	13:30	15:40	02-21	2.17	20393.00	20488.00	95.00	43.85	N/A	550.00	40.0	36.00	4700.00	4300.00	
Slide	02-21	15:45	16:55	02-21	1.17	20488.00	20503.00	15.00	12.86	180.0	650.00	N/A	70.00	5550.00	5400.00	
Slide	02-21	17:20	17:40	02-21	0.33	20503.00	20506.00	3.00	9.00	180.0	650.00	N/A	70.00	5550.00	5400.00	
Rotate	02-21	17:55	20:05	02-21	2.17	20506.00	20582.00	76.00	35.08	N/A	550.00	40.0	36.00	4700.00	4300.00	
Slide	02-21	20:10	21:10	02-21	1.0	20582.00	20595.00	13.00	13.00	150.0	650.00	N/A	70.00	5550.00	5400.00	
Rotate	02-21	21:10	23:05	02-21	1.92	20595.00	20676.00	81.00	42.26	N/A	550.00	40.0	36.00	4700.00	4300.00	
Rotate	02-21	23:10	00:00	02-22	0.83	20676.00	20716.00	40.00	48.00	N/A	550.00	40.0	36.00	4700.00	4300.00	
Rotate	02-22	00:00	01:15	02-22	1.25	20716.00	20771.00	55.00	44.00	N/A	550.00	40.0	36.00	4700.00	4300.00	
Slide	02-22	01:20	02:25	02-22	1.08	20771.00	20785.00	14.00	12.92	140.0	650.00	N/A	70.00	5550.00	5400.00	
Rotate	02-22	02:25	04:05	02-22	1.67	20785.00	20865.00	80.00	48.00	N/A	550.00	40.0	36.00	4700.00	4300.00	
Rotate	02-22	04:10	06:05	02-22	1.92	20865.00	20959.00	94.00	49.04	N/A	550.00	40.0	48.00	4700.00	4300.00	
Rotate	02-22	06:10	08:35	02-22	2.42	20959.00	21054.00	95.00	39.31	N/A	550.00	40.0	48.00	4700.00	4300.00	
Slide	02-22	08:40	09:50	02-22	1.17	21054.00	21069.00	15.00	12.86	30.0	650.00	N/A	70.00	5550.00	5400.00	
Rotate	02-22	09:50	12:05	02-22	2.25	21069.00	21149.00	80.00	35.56	N/A	550.00	40.0	48.00	4700.00	4300.00	
Rotate	02-22	12:10	14:20	02-22	2.17	21149.00	21243.00	94.00	43.38	N/A	550.00	40.0	48.00	4700.00	4300.00	
Rotate	02-22	14:25	16:15	02-22	1.83	21243.00	21337.00	94.00	51.27	N/A	550.00	40.0	48.00	4700.00	4300.00	
Rotate	02-22	16:20	18:10	02-22	1.83	21337.00	21432.00	95.00	51.82	N/A	550.00	40.0	48.00	4700.00	4300.00	
Rotate	02-22	18:15	19:15	02-22	1.0	21432.00	21480.00	48.00	48.00	N/A	550.00	40.0	48.00	4700.00	4300.00	



Daily Reports

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Sunday, Dec 29 00:00 - 23:59 (Day 1 of 30)

Billing: \$17,187.50 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	140.00	Downhole Hours	9.00	Rotating WOB (klbs)	18.00 - 24.00
Bit Depth (ft)	1123.00	Drilling Hours	4.33	Sliding WOB (klbs)	15.00 - 15.00
Bottom Hole Depth (ft)	1123.00	Hours Circulating	0.00	Rotating SPM	140.00 - 279.00
Total Distance (ft)	983.00	Hours Sliding	0.08	Sliding SPM	279.00 - 279.00
Distance Rotated (ft)	973.00	Hours Rotating	4.25	Motor RPM	66.00 - 125.00
Distance Slid (ft)	10.00			Surface RPM	40.00 - 80.00
Inclination In	1.01			Flow Rate (gpm)	455.00 - 900.00
Inclination Out	0.79			On Bottom Pressure (psi)	1150.00 - 2600.00
Azimuth In	276.84	% Hours Rotating	98%	Off Bottom Pressure (psi)	600.00 - 1770.00
Azimuth Out	164.52	% Hours Sliding	2%		
AVG Total ROP (ft/h)	226.74	% Distance Sliding	1%		
AVG Rotating ROP (ft/h)	228.64	% Distance Rotating	99%		
AVG Sliding ROP (ft/h)	120.00				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #1 - BHA #1 (Surface)

Date In: Dec 29, 2019, 15:00 Date Out: Dec 30, 2019, 10:45

Bit Details		Motor Details		Directional Comments
OD (in)	17.500	Size (in)	8.0	Aim Motor: 8" 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Flow: 400-900, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle 1.45, Bit: Baker Hughes DP606S, SN: 5302410, Jets 9x12's TFA: 0.994, Bit Runs:
Vendor	Baker	Lobe/Stage	7/8, 4.0	
S/N	5302410	Bend Angle	1.5	
Nozzles	9x12's	Speed (rev/gal)	0.16	
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	MWD Comments
Drilling Hours for Day	4.33	Bit Distances		
Total Drilled for Day (ft)	983.00	Survey: 62.00 ft		
Drilling Hours for BHA	11.58			
Total Drilled for BHA (ft)	1660.00			
				POOH Reason
				Total Depth/Casing Point: TD surface

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 17.5 DP606S, Style: PDC, Gauge Length (in): 4.00, Size (in): 17.50	Baker	5302410	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 8" 7/8 4.0@1.5 Fix Slick Sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	Aim	CDM800-001	6 5/8" Reg Box	6 5/8" Reg Box		8.000		28.77	30.52
Stabilizer Description: 17" Steel IB Nortrack Stabilizer	Gator	GT801163	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.375		8.02	38.54
UBHO Sub Description: NM UBHO, Type: NM	Gator	GT8066847	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		4.00	42.54
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT80-30-395	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.500		30.66	73.20
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gatpr	GT80-30-563	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.375		30.70	103.90
Crossover Sub Description: X-Over 4 1/2 IF B x 6 5/8 Reg P, Type: Steel	Gator	GT10333	4 1/2" IF Box	6 5/8" Reg Pin	2.750	8.250		4.10	108.00
HWDP Description: (30 Jts) 5" HWDP, Style: Spiral	HP		4 1/2" IF Box	4 1/2" IF Pin	5.000	5.000		921.31	1029.31

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	12-29	00:00	15:00	12-29			Standby while skid rig

TIH	8	12-29	15:00	16:00	12-29			C/O bit and P/U MWD BHA #1
Other	16	12-29	16:00	18:00	12-29			Work on thrash pump
Rotary Drill	1	12-29	18:00	18:45	12-29	140.00	258.00	Pressure On (psi): 1150.00, Pressure Off (psi): 600.00, Weight On Bit (klbs): 18.00, Surface RPM: 40, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 455.00, Strokes Per Minute: 140.00
Survey	46	12-29	18:45	18:50	12-29	258.00	258.00	Inclination (°): 1.010, Azimuth (°): 276.840, TVD (ft): 195.99, Dogleg (°/100 ft): 0.52, Sensor Depth (ft): 196.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	18:50	18:55	12-29	258.00	288.00	Pressure On (psi): 1150.00, Pressure Off (psi): 600.00, Weight On Bit (klbs): 18.00, Surface RPM: 40, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 455.00, Strokes Per Minute: 140.00
Survey	46	12-29	18:55	19:00	12-29	288.00	288.00	Inclination (°): 0.970, Azimuth (°): 281.500, TVD (ft): 225.99, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 226.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	19:00	19:15	12-29	288.00	380.00	Pressure On (psi): 1150.00, Pressure Off (psi): 600.00, Weight On Bit (klbs): 18.00, Surface RPM: 40, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 455.00, Strokes Per Minute: 140.00
Survey	46	12-29	19:15	19:20	12-29	380.00	380.00	Inclination (°): 1.100, Azimuth (°): 286.340, TVD (ft): 317.97, Dogleg (°/100 ft): 0.17, Sensor Depth (ft): 318.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	19:20	19:30	12-29	380.00	472.00	Pressure On (psi): 1150.00, Pressure Off (psi): 600.00, Weight On Bit (klbs): 18.00, Surface RPM: 40, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 455.00, Strokes Per Minute: 140.00
Survey	46	12-29	19:30	19:35	12-29	472.00	472.00	Inclination (°): 0.920, Azimuth (°): 288.360, TVD (ft): 409.96, Dogleg (°/100 ft): 0.20, Sensor Depth (ft): 410.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	19:35	19:40	12-29	472.00	482.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 70, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Slide Drill	2	12-29	19:40	19:45	12-29	482.00	492.00	Pressure On (psi): 2300.00, Pressure Off (psi): 1700.00, Weight On Bit (klbs): 15.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279, Toolface: 90, Toolface Type: magnetic
Rotary Drill	1	12-29	19:45	20:00	12-29	492.00	564.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 70, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Other	16	12-29	20:00	20:25	12-29			W/O Flow Line, Leaking
Survey	46	12-29	20:25	20:30	12-29	564.00	564.00	Inclination (°): 0.180, Azimuth (°): 122.600, TVD (ft): 501.95, Dogleg (°/100 ft): 1.19, Sensor Depth (ft): 502.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	20:30	21:10	12-29	564.00	658.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 70, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-29	21:10	21:15	12-29	658.00	658.00	Inclination (°): 0.790, Azimuth (°): 125.230, TVD (ft): 595.95, Dogleg (°/100 ft): 0.65, Sensor Depth (ft): 596.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	21:15	21:30	12-29	658.00	749.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 70, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-29	21:30	21:35	12-29	749.00	749.00	Inclination (°): 0.840, Azimuth (°): 124.700, TVD (ft): 686.94, Dogleg (°/100 ft): 0.06, Sensor Depth (ft): 687.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	21:35	22:00	12-29	749.00	843.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 70, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-29	22:00	22:05	12-29	843.00	843.00	Inclination (°): 0.840, Azimuth (°): 122.860, TVD (ft): 780.93, Dogleg (°/100 ft): 0.03, Sensor Depth (ft): 781.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	22:05	22:35	12-29	843.00	936.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 70, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-29	22:35	22:40	12-29	936.00	936.00	Inclination (°): 0.920, Azimuth (°): 139.820, TVD (ft): 873.92, Dogleg (°/100 ft): 0.29, Sensor Depth (ft): 874.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	22:40	23:05	12-29	936.00	1029.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-29	23:05	23:10	12-29	1029.00	1029.00	Inclination (°): 0.970, Azimuth (°): 149.050, TVD (ft): 966.91, Dogleg (°/100 ft): 0.17, Sensor Depth (ft): 967.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	23:10	23:35	12-29	1029.00	1123.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-29	23:35	23:40	12-29	1123.00	1123.00	Inclination (°): 0.790, Azimuth (°): 164.520, TVD (ft): 1060.90, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 1061.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-29	23:40	00:05	12-30	1123.00	1217.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Dec 30 00:00 - 23:59 (Day 2 of 30)

Billing: \$6,100.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	1123.00	Downhole Hours	10.75	Rotating WOB (klbs)	24.00 - 24.00
Bit Depth (ft)	1800.00	Drilling Hours	7.25	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	1800.00	Hours Circulating	1.00	Rotating SPM	279.00 - 279.00
Total Distance (ft)	677.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	677.00	Hours Rotating	7.25	Motor RPM	66.00 - 125.00
Distance Slid (ft)	0.00			Surface RPM	80.00 - 80.00
Inclination In	0.70			Flow Rate (gpm)	900.00 - 900.00
Inclination Out	1.41			On Bottom Pressure (psi)	2600.00 - 2600.00
Azimuth In	183.42	% Hours Rotating	100%	Off Bottom Pressure (psi)	1770.00 - 1770.00
Azimuth Out	241.60	% Hours Sliding	0%		
AVG Total ROP (ft/h)	93.38	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	93.38	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #1 - BHA #1 (Surface)

Date In: Dec 29, 2019, 15:00 Date Out: Dec 30, 2019, 10:45

Bit Details		Motor Details		Directional Comments	
OD (in)	17.500	Size (in)	8.0	Aim Motor: 8" 1.5 FBH 7/8 4.0 Stg Mtr, Rev/Gal: 0.16, Flow: 400-900, Max Diff: 900psi, Max Operating Torque: 14,994 ft/lbs, Protracted Angle 1.45, Bit: Baker Hughes DP606S, SN: 5302410, Jets 9x12's TFA: 0.994, Bit Runs:	
Vendor	Baker	Lobe/Stage	7/8, 4.0		
S/N	5302410	Bend Angle	1.5		
Nozzles	9x12's	Speed (rev/gal)	0.16		
Total Flow Area (in²)	0.994	Wear Pad OD (in)	8.375	MWD Comments	
Drilling Hours for Day	7.25	Bit Distances			
Total Drilled for Day (ft)	677.00	Survey: 62.00 ft			
Drilling Hours for BHA	11.58				
Total Drilled for BHA (ft)	1660.00				
				POOH Reason	
				Total Depth/Casing Point: TD surface	

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 17.5 DP606S, Style: PDC, Gauge Length (in): 4.00, Size (in): 17.50	Baker	5302410	6 5/8" Reg Pin			17.500		1.75	1.75
Mud Motor Description: 8" 7/8 4.0@1.5 Fix Slick Sleeve, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 4.0	Aim	CDM800-001	6 5/8" Reg Box	6 5/8" Reg Box		8.000		28.77	30.52
Stabilizer Description: 17" Steel IB Nortrack Stabilizer	Gator	GT801163	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.375		8.02	38.54
UBHO Sub Description: NM UBHO, Type: NM	Gator	GT8066847	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		4.00	42.54
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT80-30-395	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.500		30.66	73.20
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gatpr	GT80-30-563	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.375		30.70	103.90
Crossover Sub Description: X-Over 4 1/2 IF B x 6 5/8 Reg P, Type: Steel	Gator	GT10333	4 1/2" IF Box	6 5/8" Reg Pin	2.750	8.250		4.10	108.00
HWDP Description: (30 Jts) 5" HWDP, Style: Spiral	HP		4 1/2" IF Box	4 1/2" IF Pin	5.000	5.000		921.31	1029.31

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
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Rotary Drill	1	12-29	23:40	00:05	12-30	1123.00	1217.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-30	00:05	00:10	12-30	1217.00	1217.00	Inclination (°): 0.700, Azimuth (°): 183.420, TVD (ft): 1154.89, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 1155.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-30	00:10	00:50	12-30	1217.00	1312.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-30	00:50	00:55	12-30	1312.00	1312.00	Inclination (°): 0.660, Azimuth (°): 211.980, TVD (ft): 1249.88, Dogleg (°/100 ft): 0.36, Sensor Depth (ft): 1250.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-30	00:55	01:50	12-30	1312.00	1406.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-30	01:50	01:55	12-30	1406.00	1406.00	Inclination (°): 0.480, Azimuth (°): 232.110, TVD (ft): 1343.88, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 1344.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-30	01:55	03:05	12-30	1406.00	1501.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-30	03:05	03:10	12-30	1501.00	1501.00	Inclination (°): 0.700, Azimuth (°): 246.700, TVD (ft): 1438.87, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 1439.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-30	03:10	04:25	12-30	1501.00	1595.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-30	04:25	04:30	12-30	1595.00	1595.00	Inclination (°): 0.920, Azimuth (°): 245.730, TVD (ft): 1532.86, Dogleg (°/100 ft): 0.23, Sensor Depth (ft): 1533.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-30	04:30	05:30	12-30	1595.00	1689.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-30	05:30	05:35	12-30	1689.00	1689.00	Inclination (°): 1.230, Azimuth (°): 244.680, TVD (ft): 1626.85, Dogleg (°/100 ft): 0.33, Sensor Depth (ft): 1627.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-30	05:35	07:15	12-30	1689.00	1784.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	12-30	07:15	07:20	12-30	1784.00	1784.00	Inclination (°): 1.410, Azimuth (°): 241.600, TVD (ft): 1721.82, Dogleg (°/100 ft): 0.20, Sensor Depth (ft): 1722.00, Bit To Sensor (ft): 62.00
Rotary Drill	1	12-30	07:20	07:30	12-30	1784.00	1800.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Circulating	3	12-30	07:30	08:30	12-30			
Pooh	7	12-30	08:30	10:45	12-30			POOH for [TD SURFACE]
Change BHA	6	12-30	10:45	11:30	12-30			RACK BACK BHA #1
Standby	15	12-30	11:30	23:55	12-30			Standby while running surface casing & skid rig to 606H

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Sunday, Jan 05 00:00 - 23:59 (Day 3 of 30)

Billing: \$12,282.50 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	1800.00	Downhole Hours	20.92	Rotating WOB (klbs)	20.00 - 55.00
Bit Depth (ft)	4304.00	Drilling Hours	12.17	Sliding WOB (klbs)	20.00 - 20.00
Bottom Hole Depth (ft)	4304.00	Hours Circulating	1.50	Rotating SPM	156.00 - 279.00
Total Distance (ft)	2504.00	Hours Sliding	0.92	Sliding SPM	265.00 - 265.00
Distance Rotated (ft)	2453.00	Hours Rotating	11.25	Motor RPM	66.00 - 125.00
Distance Slid (ft)	51.00			Surface RPM	40.00 - 80.00
Inclination In	1.76			Flow Rate (gpm)	500.00 - 900.00
Inclination Out	0.57			On Bottom Pressure (psi)	1100.00 - 4350.00
Azimuth In	250.21	% Hours Rotating	92%	Off Bottom Pressure (psi)	700.00 - 3300.00
Azimuth Out	14.58	% Hours Sliding	8%		
AVG Total ROP (ft/h)	205.81	% Distance Sliding	2%		
AVG Rotating ROP (ft/h)	218.04	% Distance Rotating	98%		
AVG Sliding ROP (ft/h)	55.64				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #2 - BHA #2 Int 1

Date In: Jan 5, 2020, 3:05 Date Out: Jan 6, 2020, 14:30

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Butch's Motor: 8" 12" stab 1.5 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.166, Flow: 400-900, Max Diff: 1330psi, Max Operating Torque: 22,020 ft/lbs, Protracted Angle 1.54, Bit: Baker Hughes D506TWTX, SN: 5298513, Jets 6x12's TFA: 0.633, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 5.9	
S/N	5298513	Bend Angle	1.5	
Nozzles	6x12's	Speed (rev/gal)	0.17	
Total Flow Area (in²)	0.663	Wear Pad OD (in)	8.375	MWD Comments
Drilling Hours for Day	12.17	Bit Distances		
Total Drilled for Day (ft)	2504.00	Survey: 71.00 ft		
Drilling Hours for BHA	18.67			
Total Drilled for BHA (ft)	3481.00			
				POOH Reason
				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: Baker 12.25 D506TWTX, Style: PDC, Gauge Length (in): 7.00, Size (in): 12.25	Baker	5298513	6 5/8" Reg Pin			12.250		1.55	1.55
Mud Motor Description: 8" 7/8 5.9@1.5 Fix W/12" Stab, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	Butch's	BDT800-020	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.54	39.09
Stabilizer Description: 12" Steel IB Nortrack Stabilizer	Gator	GT801181	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		7.97	47.06
UBHO Sub Description: NM UBHO, Type: NM	Gator	GT8066846	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	7.937		3.95	51.01
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT80-30-366	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.29	81.30
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT80-30-365	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.52	111.82
Crossover Sub Description: X-Over 4 1/2 XH B x 6 5/8 Reg P, Type: Steel	Gator	GT10369	4 1/2" XH Box	6 5/8" Reg Pin	2.750	8.250		4.18	116.00
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	645.09
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	649.26
HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	5.000	5.000		921.31	1570.57

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	01-05	00:00	02:25	01-05			Standby while skidding rig to 554H and prepping to drill
Change BHA	6	01-05	02:25	03:05	01-05			P/U BHA # 2
TIH	8	01-05	03:05	04:30	01-05			TIH W/ BHA #2
Other	16	01-05	04:30	05:30	01-05			test casing
Circulating	3	01-05	05:30	07:00	01-05			Drill float and shoe
Rotary Drill	1	01-05	07:00	09:00	01-05	1800.00	1947.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Survey	46	01-05	09:00	09:05	01-05	1947.00	1947.00	Inclination (°): 1.760, Azimuth (°): 250.210, TVD (ft): 1875.76, Dogleg (°/100 ft): 0.27, Sensor Depth (ft): 1876.00, Bit To Sensor (ft): 71.00, Temperature (°F): 86.00
Rotary Drill	1	01-05	09:05	09:10	01-05	1947.00	1955.00	Pressure On (psi): 2600.00, Pressure Off (psi): 1770.00, Weight On Bit (klbs): 24.00, Surface RPM: 80, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 900.00, Strokes Per Minute: 279.00
Slide Drill	2	01-05	09:10	09:20	01-05	1955.00	1970.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 265, Toolface: 90, Toolface Type: magnetic
Rotary Drill	1	01-05	09:20	09:40	01-05	1970.00	2012.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	09:40	09:45	01-05	2010.00	2010.00	Inclination (°): 0.840, Azimuth (°): 223.320, TVD (ft): 1938.74, Dogleg (°/100 ft): 1.71, Sensor Depth (ft): 1939.00, Bit To Sensor (ft): 71.00
Slide Drill	2	01-05	09:45	10:00	01-05	2012.00	2020.00	Pressure On (psi): 3200.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 265, Toolface: 120, Toolface Type: magnetic
Rotary Drill	1	01-05	10:00	10:15	01-05	2020.00	2042.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	10:15	10:20	01-05	2042.00	2042.00	Inclination (°): 0.480, Azimuth (°): 193.260, TVD (ft): 1970.74, Dogleg (°/100 ft): 1.52, Sensor Depth (ft): 1971.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	10:20	10:40	01-05	2042.00	2090.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	10:40	10:45	01-05	2090.00	2090.00	Inclination (°): 1.100, Azimuth (°): 145.620, TVD (ft): 2018.74, Dogleg (°/100 ft): 1.78, Sensor Depth (ft): 2019.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	10:45	11:05	01-05	2090.00	2136.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	11:05	11:10	01-05	2136.00	2136.00	Inclination (°): 1.320, Azimuth (°): 142.630, TVD (ft): 2064.73, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 2065.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	11:10	11:35	01-05	2136.00	2231.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	11:35	11:40	01-05	2231.00	2231.00	Inclination (°): 1.140, Azimuth (°): 138.500, TVD (ft): 2159.71, Dogleg (°/100 ft): 0.21, Sensor Depth (ft): 2160.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	11:40	12:15	01-05	2231.00	2325.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	12:15	12:20	01-05	2325.00	2325.00	Inclination (°): 1.320, Azimuth (°): 145.800, TVD (ft): 2253.68, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 2254.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	12:20	12:45	01-05	2325.00	2419.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	12:45	12:50	01-05	2419.00	2419.00	Inclination (°): 1.100, Azimuth (°): 145.530, TVD (ft): 2347.66, Dogleg (°/100 ft): 0.23, Sensor Depth (ft): 2348.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	12:50	13:05	01-05	2419.00	2514.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Rotary Drill	1	01-05	13:05	13:30	01-05	2514.00	2608.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	13:30	13:35	01-05	2608.00	2608.00	Inclination (°): 1.010, Azimuth (°): 118.640, TVD (ft): 2536.63, Dogleg (°/100 ft): 0.26, Sensor Depth (ft): 2537.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	13:35	13:55	01-05	2608.00	2702.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	13:55	14:00	01-05	2702.00	2702.00	Inclination (°): 0.880, Azimuth (°): 123.390, TVD (ft): 2630.62, Dogleg (°/100 ft): 0.16, Sensor Depth (ft): 2631.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	14:00	14:10	01-05	2702.00	2796.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	14:10	14:15	01-05	2796.00	2796.00	Inclination (°): 0.790, Azimuth (°): 114.770, TVD (ft): 2724.61, Dogleg (°/100 ft): 0.16, Sensor Depth (ft): 2725.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	14:15	14:30	01-05	2796.00	2891.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	14:30	14:35	01-05	2891.00	2891.00	Inclination (°): 0.660, Azimuth (°): 110.200, TVD (ft): 2819.60, Dogleg (°/100 ft): 0.15, Sensor Depth (ft): 2820.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	14:35	14:55	01-05	2891.00	2984.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00

Survey	46	01-05	14:55	15:00	01-05	2984.00	2984.00	Inclination (°): 0.480, Azimuth (°): 83.130, TVD (ft): 2912.60, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 2913.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	15:00	15:15	01-05	2984.00	3079.00	Pressure On (psi): 3400.00, Pressure Off (psi): 2900.00, Weight On Bit (klbs): 35.00, Surface RPM: 70, Surface Torque (ft lbf): 100000.01, Flow Rate (gpm): 850.00, Strokes Per Minute: 265.00
Survey	46	01-05	15:15	15:20	01-05	3079.00	3079.00	Inclination (°): 0.750, Azimuth (°): 76.010, TVD (ft): 3007.59, Dogleg (°/100 ft): 0.29, Sensor Depth (ft): 3008.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	15:20	15:30	01-05	3079.00	3173.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	15:30	15:35	01-05	3173.00	3173.00	Inclination (°): 1.050, Azimuth (°): 88.320, TVD (ft): 3101.58, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 3102.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	15:35	16:00	01-05	3173.00	3362.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Rig Service - In Hole	19	01-05	16:00	16:30	01-05			
Survey	46	01-05	16:30	16:35	01-05	3362.00	3362.00	Inclination (°): 2.020, Azimuth (°): 80.670, TVD (ft): 3290.51, Dogleg (°/100 ft): 0.52, Sensor Depth (ft): 3291.00, Bit To Sensor (ft): 71.00, Temperature (°F): 124.00
Rotary Drill	1	01-05	16:35	16:40	01-05	3362.00	3373.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Slide Drill	2	01-05	16:40	17:00	01-05	3373.00	3391.00	Pressure On (psi): 3400.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 265, Toolface: 285, Toolface Type: magnetic
Rotary Drill	1	01-05	17:00	17:15	01-05	3391.00	3456.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	17:15	17:20	01-05	3456.00	3456.00	Inclination (°): 1.320, Azimuth (°): 60.540, TVD (ft): 3384.47, Dogleg (°/100 ft): 0.96, Sensor Depth (ft): 3385.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	17:20	17:25	01-05	3456.00	3480.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Slide Drill	2	01-05	17:25	17:35	01-05	3480.00	3490.00	Pressure On (psi): 3400.00, Pressure Off (psi): 3100.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 265, Toolface: 250, Toolface Type: magnetic
Rotary Drill	1	01-05	17:35	17:45	01-05	3490.00	3550.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	17:45	17:50	01-05	3550.00	3550.00	Inclination (°): 1.050, Azimuth (°): 44.720, TVD (ft): 3478.45, Dogleg (°/100 ft): 0.45, Sensor Depth (ft): 3479.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	17:50	18:20	01-05	3550.00	3644.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	18:20	18:25	01-05	3644.00	3644.00	Inclination (°): 0.790, Azimuth (°): 38.400, TVD (ft): 3572.44, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 3573.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	18:25	18:55	01-05	3644.00	3739.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	18:55	19:00	01-05	3739.00	3739.00	Inclination (°): 0.920, Azimuth (°): 55.180, TVD (ft): 3667.43, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 3668.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	19:00	19:30	01-05	3739.00	3833.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	19:30	19:35	01-05	3833.00	3833.00	Inclination (°): 0.530, Azimuth (°): 33.910, TVD (ft): 3761.42, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 3762.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	19:35	20:00	01-05	3833.00	3926.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3140.00, Weight On Bit (klbs): 43.00, Surface RPM: 55, Surface Torque (ft lbf): 16.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	20:00	20:05	01-05	3926.00	3926.00	Inclination (°): 0.480, Azimuth (°): 30.660, TVD (ft): 3854.42, Dogleg (°/100 ft): 0.06, Sensor Depth (ft): 3855.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	20:05	20:25	01-05	3926.00	4021.00	Pressure On (psi): 4350.00, Pressure Off (psi): 3300.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 19.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	20:25	20:30	01-05	4021.00	4021.00	Inclination (°): 0.840, Azimuth (°): 25.390, TVD (ft): 3949.41, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 3950.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	20:30	20:50	01-05	4021.00	4115.00	Pressure On (psi): 4350.00, Pressure Off (psi): 3300.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 19.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Survey	46	01-05	20:50	20:55	01-05	4115.00	4115.00	Inclination (°): 0.570, Azimuth (°): 14.580, TVD (ft): 4043.40, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 4044.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-05	20:55	21:15	01-05	4115.00	4209.00	Pressure On (psi): 4350.00, Pressure Off (psi): 3300.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 19.00, Flow Rate (gpm): 850.00, Strokes Per Minute: 264.00
Connection	33	01-05	21:15	21:20	01-05			
Other	16	01-05	21:20	22:10	01-05			Lost circulation try to establish circulation and continue to drill at a lower pump rate.
Rotary Drill	1	01-05	22:10	22:20	01-05	4209.00	4258.00	Pressure On (psi): 1100.00, Pressure Off (psi): 700.00, Weight On Bit (klbs): 20.00, Surface RPM: 40, Surface Torque (ft lbf): 11.00, Flow Rate (gpm): 500.00, Strokes Per Minute: 156.00
Other	16	01-05	22:20	23:00	01-05			fill tanks
Rotary Drill	1	01-05	23:00	23:15	01-05	4258.00	4304.00	Pressure On (psi): 2400.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 20.00, Surface RPM: 50, Surface Torque (ft lbf): 7.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Other	16	01-05	23:15	00:00	01-06			Hole packed off rotating and working to free.

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Monday, Jan 06 00:00 - 23:59 (Day 4 of 30)

Billing: \$7,491.25 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	4304.00	Downhole Hours	14.50	Rotating WOB (klbs)	20.00 - 30.00
Bit Depth (ft)	5281.00	Drilling Hours	6.50	Sliding WOB (klbs)	17.00 - 17.00
Bottom Hole Depth (ft)	5281.00	Hours Circulating	1.33	Rotating SPM	170.00 - 216.00
Total Distance (ft)	977.00	Hours Sliding	0.58	Sliding SPM	170.00 - 170.00
Distance Rotated (ft)	953.00	Hours Rotating	5.92	Motor RPM	66.00 - 125.00
Distance Slid (ft)	24.00			Surface RPM	50.00 - 50.00
Inclination In	1.27			Flow Rate (gpm)	550.00 - 700.00
Inclination Out	2.02			On Bottom Pressure (psi)	1500.00 - 2400.00
Azimuth In	26.18	% Hours Rotating	91%	Off Bottom Pressure (psi)	1000.00 - 2100.00
Azimuth Out	25.30	% Hours Sliding	9%		
AVG Total ROP (ft/h)	150.31	% Distance Sliding	2%		
AVG Rotating ROP (ft/h)	161.07	% Distance Rotating	98%		
AVG Sliding ROP (ft/h)	41.14				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #2 - BHA #2 Int 1

Date In: Jan 5, 2020, 3:05 Date Out: Jan 6, 2020, 14:30

Bit Details		Motor Details		Directional Comments
OD (in)	12.250	Size (in)	8.0	Butch's Motor: 8" 12" stab 1.5 FBH 7/8 5.9 Stg Mtr, Rev/Gal: 0.166, Flow: 400-900, Max Diff: 1330psi, Max Operating Torque: 22,020 ft/lbs, Protracted Angle 1.54, Bit: Baker Hughes D506TWW, SN: 5298513, Jets 6x12's TFA: 0.633, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 5.9	
S/N	5298513	Bend Angle	1.5	
Nozzles	6x12's	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	8.375	POOH Reason Total Depth/Casing Point
Drilling Hours for Day	6.50	Bit Distances		
Total Drilled for Day (ft)	977.00	Survey: 71.00 ft		
Drilling Hours for BHA	18.67			
Total Drilled for BHA (ft)	3481.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: Baker 12.25 D506TWW, Style: PDC, Gauge Length (in): 7.00, Size (in): 12.25	Baker	5298513	6 5/8" Reg Pin			12.250		1.55	1.55
Mud Motor Description: 8" 7/8 5.9@1.5 Fix W/12" Stab, Size (in): 8.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.9	Butch's	BDT800-020	6 5/8" Reg Box	6 5/8" Reg Box		8.000		37.54	39.09
Stabilizer Description: 12" Steel IB Nortrack Stabilizer	Gator	GT801181	6 5/8" Reg Box	6 5/8" Reg Pin	2.875	8.000		7.97	47.06
UBHO Sub Description: NM UBHO, Type: NM	Gator	GT8066846	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	7.937		3.95	51.01
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT80-30-366	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.29	81.30
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT80-30-365	6 5/8" Reg Box	6 5/8" Reg Pin	3.250	8.000		30.52	111.82
Crossover Sub Description: X-Over 4 1/2 XH B x 6 5/8 Reg P, Type: Steel	Gator	GT10369	4 1/2" XH Box	6 5/8" Reg Pin	2.750	8.250		4.18	116.00
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	645.09
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	649.26
HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	5.000	5.000		921.31	1570.57

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	01-05	23:15	00:00	01-06			Hole packed off rotating and working to free.
Other	16	01-06	00:00	01:55	01-06			Continue working packed off hole losing circulation hole on vacuum making it difficult to take survey.
Survey	46	01-06	01:55	02:00	01-06	4304.00	4304.00	Inclination (°): 1.270, Azimuth (°): 26.180, TVD (ft): 4232.38, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 4233.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-06	02:00	02:30	01-06	4304.00	4398.00	Pressure On (psi): 2400.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 20.00, Surface RPM: 50, Surface Torque (ft lbf): 7.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Connection	33	01-06	02:30	02:35	01-06			
Rotary Drill	1	01-06	02:35	03:00	01-06	4398.00	4493.00	Pressure On (psi): 2400.00, Pressure Off (psi): 2100.00, Weight On Bit (klbs): 20.00, Surface RPM: 50, Surface Torque (ft lbf): 7.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-06	03:00	03:15	01-06	4493.00	4493.00	Inclination (°): 2.460, Azimuth (°): 19.760, TVD (ft): 4421.27, Dogleg (°/100 ft): 0.64, Sensor Depth (ft): 4422.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-06	03:15	03:20	01-06	4493.00	4503.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Slide Drill	2	01-06	03:20	03:55	01-06	4503.00	4527.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 17.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170, Toolface: 150, Toolface Type: magnetic
Rotary Drill	1	01-06	03:55	04:15	01-06	4527.00	4587.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Rotary Drill	1	01-06	04:15	04:45	01-06	4587.00	4682.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	01-06	04:45	05:10	01-06	4682.00	4682.00	Inclination (°): 1.320, Azimuth (°): 351.020, TVD (ft): 4610.17, Dogleg (°/100 ft): 0.77, Sensor Depth (ft): 4611.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-06	05:10	05:25	01-06	4682.00	4776.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Connection	33	01-06	05:25	05:30	01-06			
Rotary Drill	1	01-06	05:30	06:20	01-06	4776.00	4870.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	01-06	06:20	06:30	01-06	4870.00	4870.00	Inclination (°): 1.360, Azimuth (°): 7.900, TVD (ft): 4798.12, Dogleg (°/100 ft): 0.21, Sensor Depth (ft): 4799.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-06	06:30	07:35	01-06	4870.00	5059.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	01-06	07:35	07:40	01-06	5059.00	5059.00	Inclination (°): 1.630, Azimuth (°): 14.750, TVD (ft): 4987.06, Dogleg (°/100 ft): 0.17, Sensor Depth (ft): 4988.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-06	07:40	09:15	01-06	5059.00	5248.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	01-06	09:15	09:20	01-06	5248.00	5248.00	Inclination (°): 2.020, Azimuth (°): 25.300, TVD (ft): 5175.96, Dogleg (°/100 ft): 0.27, Sensor Depth (ft): 5177.00, Bit To Sensor (ft): 71.00
Rotary Drill	1	01-06	09:20	09:40	01-06	5248.00	5281.00	Pressure On (psi): 1500.00, Pressure Off (psi): 1000.00, Weight On Bit (klbs): 30.00, Surface RPM: 50, Surface Torque (ft lbf): 12.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Circulating	3	01-06	09:40	11:00	01-06			
Pooh	7	01-06	11:00	13:30	01-06			POOH for [TD INTERMEDIATE]
Change BHA	6	01-06	13:30	14:30	01-06			Break bit / Rack back tools
Standby	15	01-06	14:30	00:00	01-07			Standby while rigging up casing crew and running casing.

MWD Activities

No Activities

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Tuesday, Jan 07 00:00 - 23:59 (Day 5 of 30)

Billing: N/A (\$394,148.32 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
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

No BHAs

Directional Activities								
Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	01-06	14:30	00:00	01-07			Standby while rigging up casing crew and running casing.

MWD Activities								
No Activities								



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Tuesday, Jan 14 00:00 - 23:59 (Day 6 of 30)

Billing: \$12,584.50 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	5281.00	Downhole Hours	13.50	Rotating WOB (klbs)	30.00 - 44.00
Bit Depth (ft)	7130.00	Drilling Hours	5.42	Sliding WOB (klbs)	26.00 - 26.00
Bottom Hole Depth (ft)	7130.00	Hours Circulating	2.42	Rotating SPM	234.00 - 235.00
Total Distance (ft)	1849.00	Hours Sliding	0.85	Sliding SPM	235.00 - 235.00
Distance Rotated (ft)	1764.00	Hours Rotating	4.57	Motor RPM	66.00 - 125.00
Distance Slid (ft)	85.00			Surface RPM	30.00 - 40.00
Inclination In	1.85			Flow Rate (gpm)	750.00 - 750.00
Inclination Out	6.07			On Bottom Pressure (psi)	3550.00 - 4100.00
Azimuth In	14.40	% Hours Rotating	84%	Off Bottom Pressure (psi)	3200.00 - 3200.00
Azimuth Out	273.24	% Hours Sliding	16%		
AVG Total ROP (ft/h)	341.35	% Distance Sliding	5%		
AVG Rotating ROP (ft/h)	386.28	% Distance Rotating	95%		
AVG Sliding ROP (ft/h)	100.00				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #3 - BHA #3 intermediate 2

Date In: Jan 14, 2020, 10:30 Date Out: Jan 15, 2020, 15:30

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.5 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.48, Bit; Security GT65DRM, SN: 13385832, Jets 6x12's TFA: 0.663, Bit Runs: 0
Vendor	Security	Lobe/Stage	7/8, 8.5	
S/N	13385832	Bend Angle	1.5	
Nozzles	6x12's	Speed (rev/gal)	0.17	MWD Comments
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.250	POOH Reason Downhole Tool Incident: While drilling ahead indeterminate #2 @8700' diff. pressure started going from -200 to +400. Continue to drill ahead @100 ROP, while inspecting surface equipment for wash outs (OK). After making hook @8733 pressure stable, rotated to 8753' diff pressure increased to 1400 PSI picking up off bottom pressure held at 1200 psi. POOH to inspect BHA.
Drilling Hours for Day	5.42	Bit Distances		
Total Drilled for Day (ft)	1849.00	Survey: 69.00 ft, Gamma: 54.00 ft, Bend: 5.40 ft		
Drilling Hours for BHA	13.62			
Total Drilled for BHA (ft)	3472.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Security GT65DRM PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Security	13385832	4 1/2" Reg Pin			8.500		1.05	1.05
Mud Motor Description: 7" 7/8 8.5 @1.5 Fix 8.25" STAB, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Aim	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.27
Stabilizer Description: 8.25" NM Nortrac	Stabilizer	GT20445	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		5.28	42.55
UBHO Sub Description: NM UBHO, Type: NM	Aim	675-361	4 1/2" IF Box	4 1/2" IF Pin	3.500	6.750		3.50	46.05
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT67-30-490	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.813		31.42	77.47
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT67-30-493	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.37	108.84
Crossover Sub Description: X-Over 4 1/2 XH B x 4 1/2 IF pin, Type: Steel	Gator	GT10408	4 1/2" XH Box	4 1/2" IF Pin	2.875	6.500		4.19	113.03
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	642.12
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	646.29

HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP	4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000	921.31	1567.60
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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	01-14	00:00	10:30	01-14			Standby while / Nipple Up & Test
Change BHA	6	01-14	10:30	11:30	01-14			P/U BHA # 3
Circulating	3	01-14	11:30	11:45	01-14			Shallow Test Tools
TIH	8	01-14	11:45	13:40	01-14			TIH W/ BHA #3 TO 2800'
Circulating	3	01-14	13:40	14:30	01-14			Test Casing & Drill out DV Tool
TIH	8	01-14	14:30	16:00	01-14			TIH W/ BHA #3 to 5150'
Circulating	3	01-14	16:00	16:30	01-14			Test Casing
Circulating	3	01-14	16:30	17:20	01-14			Drill Shoe Track
Rotary Drill	1	01-14	17:20	18:10	01-14	5281.00	5433.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 234.00
Other	16	01-14	18:10	18:25	01-14			C/o rotating head gasket
Survey	46	01-14	18:25	18:30	01-14	5433.00	5433.00	Inclination (°): 1.850, Azimuth (°): 14.400, TVD (ft): 5362.86, Dogleg (°/100 ft): 0.22, Sensor Depth (ft): 5364.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	18:30	18:35	01-14	5433.00	5444.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 32.00, Surface RPM: 30, Surface Torque (ft lbf): 10000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Slide Drill	2	01-14	18:35	18:50	01-14	5444.00	5464.00	Pressure On (psi): 3550.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 26.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235, Toolface: 200, Toolface Type: magnetic
Rotary Drill	1	01-14	18:50	19:05	01-14	5464.00	5528.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 36.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	19:05	19:10	01-14	5528.00	5528.00	Inclination (°): 0.180, Azimuth (°): 234.220, TVD (ft): 5457.84, Dogleg (°/100 ft): 2.10, Sensor Depth (ft): 5459.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	19:10	19:15	01-14	5528.00	5540.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 36.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Slide Drill	2	01-14	19:15	19:25	01-14	5540.00	5560.00	Pressure On (psi): 3550.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 26.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235, Toolface: 270, Toolface Type: magnetic
Rotary Drill	1	01-14	19:25	19:35	01-14	5560.00	5622.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 36.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	19:35	19:40	01-14	5622.00	5622.00	Inclination (°): 2.550, Azimuth (°): 239.140, TVD (ft): 5551.81, Dogleg (°/100 ft): 2.52, Sensor Depth (ft): 5553.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	19:40	19:55	01-14	5622.00	5716.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 36.00, Surface RPM: 35, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	19:55	20:00	01-14	5716.00	5716.00	Inclination (°): 3.520, Azimuth (°): 246.520, TVD (ft): 5645.67, Dogleg (°/100 ft): 1.11, Sensor Depth (ft): 5647.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	20:00	20:10	01-14	5716.00	5811.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 36.00, Surface RPM: 38, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	20:10	20:15	01-14	5811.00	5811.00	Inclination (°): 3.650, Azimuth (°): 251.000, TVD (ft): 5740.49, Dogleg (°/100 ft): 0.32, Sensor Depth (ft): 5742.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	20:15	20:30	01-14	5811.00	5905.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 38, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	20:30	20:35	01-14	5905.00	5905.00	Inclination (°): 3.380, Azimuth (°): 245.380, TVD (ft): 5834.31, Dogleg (°/100 ft): 0.47, Sensor Depth (ft): 5836.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	20:35	20:40	01-14	5905.00	5999.00	Pressure On (psi): 3800.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 38, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	20:40	20:44	01-14	5999.00	5999.00	Inclination (°): 3.560, Azimuth (°): 247.750, TVD (ft): 5928.14, Dogleg (°/100 ft): 0.24, Sensor Depth (ft): 5930.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	20:44	20:54	01-14	5999.00	6093.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 38, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	20:54	20:57	01-14	6093.00	6093.00	Inclination (°): 3.210, Azimuth (°): 246.080, TVD (ft): 6021.98, Dogleg (°/100 ft): 0.39, Sensor Depth (ft): 6024.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	20:57	21:00	01-14	6093.00	6103.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 38, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Slide Drill	2	01-14	21:00	21:11	01-14	6103.00	6123.00	Pressure On (psi): 3550.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 26.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235, Toolface: 300, Toolface Type: magnetic
Rotary Drill	1	01-14	21:11	21:21	01-14	6123.00	6187.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 38, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	21:21	21:24	01-14	6187.00	6187.00	Inclination (°): 4.530, Azimuth (°): 259.880, TVD (ft): 6115.76, Dogleg (°/100 ft): 1.71, Sensor Depth (ft): 6118.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	21:24	21:34	01-14	6187.00	6282.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 38, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00

Survey	46	01-14	21:34	21:36	01-14	6282.00	6282.00	Inclination (°): 5.050, Azimuth (°): 263.840, TVD (ft): 6210.43, Dogleg (°/100 ft): 0.65, Sensor Depth (ft): 6213.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	21:36	21:46	01-14	6282.00	6376.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	21:46	21:49	01-14	6376.00	6376.00	Inclination (°): 5.140, Azimuth (°): 263.130, TVD (ft): 6304.06, Dogleg (°/100 ft): 0.12, Sensor Depth (ft): 6307.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	21:49	22:00	01-14	6376.00	6470.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	22:00	22:02	01-14	6470.00	6470.00	Inclination (°): 4.880, Azimuth (°): 262.960, TVD (ft): 6397.70, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 6401.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	22:02	22:13	01-14	6470.00	6564.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	22:13	22:15	01-14	6564.00	6564.00	Inclination (°): 4.700, Azimuth (°): 258.830, TVD (ft): 6491.37, Dogleg (°/100 ft): 0.41, Sensor Depth (ft): 6495.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	22:15	22:18	01-14	6564.00	6578.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Slide Drill	2	01-14	22:18	22:33	01-14	6578.00	6603.00	Pressure On (psi): 3550.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 26.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235, Toolface: 330, Toolface Type: magnetic
Rotary Drill	1	01-14	22:33	22:41	01-14	6603.00	6658.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	22:41	22:43	01-14	6658.00	6658.00	Inclination (°): 5.630, Azimuth (°): 268.930, TVD (ft): 6584.99, Dogleg (°/100 ft): 1.38, Sensor Depth (ft): 6589.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	22:43	22:55	01-14	6658.00	6753.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	22:55	22:57	01-14	6753.00	6753.00	Inclination (°): 6.640, Azimuth (°): 271.570, TVD (ft): 6679.44, Dogleg (°/100 ft): 1.10, Sensor Depth (ft): 6684.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	22:57	23:09	01-14	6753.00	6847.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	23:09	23:12	01-14	6847.00	6847.00	Inclination (°): 6.460, Azimuth (°): 270.690, TVD (ft): 6772.83, Dogleg (°/100 ft): 0.22, Sensor Depth (ft): 6778.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	23:12	23:22	01-14	6847.00	6941.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	23:22	23:24	01-14	6941.00	6941.00	Inclination (°): 6.290, Azimuth (°): 273.680, TVD (ft): 6866.25, Dogleg (°/100 ft): 0.40, Sensor Depth (ft): 6872.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	23:24	23:40	01-14	6941.00	7036.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-14	23:40	23:42	01-14	7036.00	7036.00	Inclination (°): 6.070, Azimuth (°): 273.240, TVD (ft): 6960.70, Dogleg (°/100 ft): 0.24, Sensor Depth (ft): 6967.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-14	23:42	00:00	01-15	7036.00	7130.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Wednesday, Jan 15 00:00 - 23:59 (Day 7 of 30)

Billing: \$11,400.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	7130.00	Downhole Hours	24.00	Rotating WOB (klbs)	40.00 - 45.00
Bit Depth (ft)	8993.00	Drilling Hours	9.20	Sliding WOB (klbs)	24.00 - 45.00
Bottom Hole Depth (ft)	8993.00	Hours Circulating	0.67	Rotating SPM	216.00 - 235.00
Total Distance (ft)	1863.00	Hours Sliding	0.77	Sliding SPM	228.00 - 235.00
Distance Rotated (ft)	1809.00	Hours Rotating	8.43	Motor RPM	66.00 - 195.00
Distance Slid (ft)	54.00			Surface RPM	40.00 - 45.00
Inclination In	5.49			Flow Rate (gpm)	700.00 - 750.00
Inclination Out	0.48			On Bottom Pressure (psi)	4050.00 - 44200.02
Azimuth In	272.18	% Hours Rotating	92%	Off Bottom Pressure (psi)	3200.00 - 3900.00
Azimuth Out	311.65	% Hours Sliding	8%		
AVG Total ROP (ft/h)	206.00	% Distance Sliding	3%		
AVG Rotating ROP (ft/h)	217.90	% Distance Rotating	97%		
AVG Sliding ROP (ft/h)	70.43				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #3 - BHA #3 intermediate 2

Date In: Jan 14, 2020, 10:30 Date Out: Jan 15, 2020, 15:30

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.5 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.48, Bit; Security GT65DRM, SN: 13385832, Jets 6x12's TFA: 0.663, Bit Runs: 0
Vendor	Security	Lobe/Stage	7/8, 8.5	
S/N	13385832	Bend Angle	1.5	
Nozzles	6x12's	Speed (rev/gal)	0.17	
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.250	MWD Comments
Drilling Hours for Day	8.20	Bit Distances		
Total Drilled for Day (ft)	1623.00	Survey: 69.00 ft, Gamma: 54.00 ft, Bend: 5.40 ft		POOH Reason
Drilling Hours for BHA	13.62			
Total Drilled for BHA (ft)	3472.00			
				Downhole Tool Incident: While drilling ahead indeterminate #2 @8700' diff. pressure started going from -200 to +400. Continue to drill ahead.

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Security GT65DRM PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Security	13385832	4 1/2" Reg Pin			8.500		1.05	1.05
Mud Motor Description: 7" 7/8 8.5 @1.5 Fix 8.25" STAB, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Aim	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.27
Stabilizer Description: 8.25" NM Nortrac	Stabilizer	GT20445	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		5.28	42.55
UBHO Sub Description: NM UBHO, Type: NM	Aim	675-361	4 1/2" IF Box	4 1/2" IF Pin	3.500	6.750		3.50	46.05
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT67-30-490	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.813		31.42	77.47
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT67-30-493	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.37	108.84
Crossover Sub Description: X-Over 4 1/2 XH B x 4 1/2 IF pin, Type: Steel	Gator	GT10408	4 1/2" XH Box	4 1/2" IF Pin	2.875	6.500		4.19	113.03
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	642.12
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	646.29

HWDP Description: (30 Jts) 5" HWDP, Style: Slick		HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		921.31	1567.60
MWD Items										
No Items										
BHA #4 - BHA #4 Intermediate 2					Date In: Jan 15, 2020, 15:30 Date Out: Jan 16, 2020, 20:40					
Bit Details			Motor Details			Directional Comments				
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.5 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.46, Bit; Security GT65DRM, SN: 13383540, Jets 6x12's TFA: 0.663, Bit Runs: 0						
Vendor	Security	Lobe/Stage	7/8, 8.5							
S/N	13383540	Bend Angle	1.5							
Nozzles	6x12's	Speed (rev/gal)	0.26	MWD Comments						
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.250	POOH Reason Total Depth/Casing Point: Motor performed as expected. Yielded 9-10's. Surface inspection showed motor was still tight with minimal slack in bearings. Drained well. Bit showed signs of too much WOB and was beginning to core. Bit graded 2-2						
Drilling Hours for Day	1.00	Bit Distances								
Total Drilled for Day (ft)	240.00	Survey: 69.00 ft, Gamma: 54.00 ft,								
Drilling Hours for BHA	13.00	Bend: 5.40 ft								
Total Drilled for BHA (ft)	1997.00									

Directional Items									
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Security GT65DRM PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Security	13383540	4 1/2" Reg Pin			8.500		1.05	1.05
Mud Motor Description: 7" 7/8 8.5 @1.5 Fix 8.25" STAB, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Aim	700-40-014	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.27
Stabilizer Description: 8.25" NM Nortrac	Stabilizer	GT20445	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		5.28	42.55
UBHO Sub Description: NM UBHO, Type: NM	Aim	675-361	4 1/2" IF Box	4 1/2" IF Pin	3.500	6.750		3.50	46.05
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT67-30-490	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.813		31.42	77.47
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT67-30-493	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.37	108.84
Crossover Sub Description: X-Over 4 1/2 XH B x 4 1/2 IF pin, Type: Steel	Gator	GT10408	4 1/2" XH Box	4 1/2" IF Pin	2.875	6.500		4.19	113.03
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	642.12
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	646.29
HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		921.31	1567.60

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	01-14	23:42	00:00	01-15	7036.00	7130.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 44.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00	
Survey	46	01-15	00:00	00:02	01-15	7130.00	7130.00	Inclination (°): 5.490, Azimuth (°): 272.180, TVD (ft): 7054.22, Dogleg (°/100 ft): 0.63, Sensor Depth (ft): 7061.00, Bit To Sensor (ft): 69.00	
Rotary Drill	1	01-15	00:02	00:15	01-15	7130.00	7224.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00	
Survey	46	01-15	00:15	00:18	01-15	7224.00	7224.00	Inclination (°): 5.450, Azimuth (°): 268.670, TVD (ft): 7147.79, Dogleg (°/100 ft): 0.36, Sensor Depth (ft): 7155.00, Bit To Sensor (ft): 69.00	
Rotary Drill	1	01-15	00:18	00:21	01-15	7224.00	7239.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3200.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00	
Slide Drill	2	01-15	00:21	00:37	01-15	7239.00	7255.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 24.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235, Toolface: 45, Toolface Type: magnetic	
Rotary Drill	1	01-15	00:37	00:50	01-15	7255.00	7319.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00	
Survey	46	01-15	00:50	00:53	01-15	7319.00	7319.00	Inclination (°): 3.560, Azimuth (°): 264.980, TVD (ft): 7242.49, Dogleg (°/100 ft): 2.01, Sensor Depth (ft): 7250.00, Bit To Sensor (ft): 69.00	
Rotary Drill	1	01-15	00:53	01:05	01-15	7319.00	7370.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00	

Other	16	01-15	01:05	01:20	01-15			inspect top drive saver sub for wash.
Rotary Drill	1	01-15	01:20	01:30	01-15	7370.00	7413.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-15	01:30	01:35	01-15	7413.00	7413.00	Inclination (°): 2.730, Azimuth (°): 269.900, TVD (ft): 7336.35, Dogleg (°/100 ft): 0.93, Sensor Depth (ft): 7344.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	01:35	01:55	01-15	7413.00	7507.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 45.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-15	01:55	02:00	01-15	7507.00	7507.00	Inclination (°): 2.730, Azimuth (°): 264.010, TVD (ft): 7430.25, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 7438.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	02:00	02:20	01-15	7507.00	7602.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-15	02:20	02:25	01-15	7602.00	7602.00	Inclination (°): 2.680, Azimuth (°): 259.090, TVD (ft): 7525.14, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 7533.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	02:25	02:40	01-15	7602.00	7696.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-15	02:40	02:45	01-15	7696.00	7696.00	Inclination (°): 2.770, Azimuth (°): 259.790, TVD (ft): 7619.03, Dogleg (°/100 ft): 0.10, Sensor Depth (ft): 7627.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	02:45	02:50	01-15	7696.00	7708.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Slide Drill	2	01-15	02:50	03:05	01-15	7708.00	7728.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 26.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235, Toolface: 50, Toolface Type: magnetic
Rotary Drill	1	01-15	03:05	03:15	01-15	7728.00	7790.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-15	03:15	03:20	01-15	7790.00	7790.00	Inclination (°): 2.590, Azimuth (°): 280.010, TVD (ft): 7712.93, Dogleg (°/100 ft): 1.02, Sensor Depth (ft): 7721.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	03:20	03:40	01-15	7790.00	7885.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-15	03:40	03:45	01-15	7885.00	7885.00	Inclination (°): 2.020, Azimuth (°): 291.260, TVD (ft): 7807.86, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 7816.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	03:45	04:00	01-15	7885.00	7979.00	Pressure On (psi): 4700.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 235.00
Survey	46	01-15	04:00	04:05	01-15	7979.00	7979.00	Inclination (°): 1.450, Azimuth (°): 271.220, TVD (ft): 7901.81, Dogleg (°/100 ft): 0.88, Sensor Depth (ft): 7910.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	04:05	04:20	01-15	7979.00	8073.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 40.00, Surface RPM: 45, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	04:20	04:25	01-15	8073.00	8073.00	Inclination (°): 1.230, Azimuth (°): 264.980, TVD (ft): 7995.79, Dogleg (°/100 ft): 0.28, Sensor Depth (ft): 8004.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	04:25	04:55	01-15	8073.00	8168.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	04:55	05:00	01-15	8168.00	8168.00	Inclination (°): 0.920, Azimuth (°): 248.190, TVD (ft): 8090.77, Dogleg (°/100 ft): 0.46, Sensor Depth (ft): 8099.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	05:00	05:35	01-15	8168.00	8262.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	05:35	05:40	01-15	8262.00	8262.00	Inclination (°): 0.700, Azimuth (°): 227.180, TVD (ft): 8184.76, Dogleg (°/100 ft): 0.39, Sensor Depth (ft): 8193.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	05:40	06:20	01-15	8262.00	8356.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	06:20	06:25	01-15	8356.00	8356.00	Inclination (°): 0.920, Azimuth (°): 230.260, TVD (ft): 8278.75, Dogleg (°/100 ft): 0.24, Sensor Depth (ft): 8287.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	06:25	06:55	01-15	8356.00	8450.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	06:55	07:00	01-15	8450.00	8450.00	Inclination (°): 1.140, Azimuth (°): 237.200, TVD (ft): 8372.74, Dogleg (°/100 ft): 0.27, Sensor Depth (ft): 8381.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	07:00	07:25	01-15	8450.00	8544.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	07:25	07:30	01-15	8544.00	8544.00	Inclination (°): 1.490, Azimuth (°): 243.360, TVD (ft): 8466.71, Dogleg (°/100 ft): 0.40, Sensor Depth (ft): 8475.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	07:30	07:35	01-15	8544.00	8554.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Slide Drill	2	01-15	07:35	07:50	01-15	8554.00	8572.00	Pressure On (psi): 4125.00, Pressure Off (psi): 3850.00, Weight On Bit (klbs): 45.00, Flow Rate (gpm): 733.00, Strokes Per Minute: 228, Toolface: 60, Toolface Type: magnetic
Rotary Drill	1	01-15	07:50	08:30	01-15	8572.00	8639.00	Pressure On (psi): 44200.02, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	08:30	08:35	01-15	8639.00	8639.00	Inclination (°): 0.350, Azimuth (°): 352.520, TVD (ft): 8561.70, Dogleg (°/100 ft): 1.72, Sensor Depth (ft): 8570.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	08:35	09:30	01-15	8639.00	8733.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00

Survey	46	01-15	09:30	09:35	01-15	8733.00	8733.00	Inclination (°): 0.750, Azimuth (°): 24.600, TVD (ft): 8655.70, Dogleg (°/100 ft): 0.52, Sensor Depth (ft): 8664.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	09:35	09:50	01-15	8733.00	8753.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 40, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Circulating	3	01-15	09:50	10:15	01-15			Circ. / Build Slug
Pooh	7	01-15	10:15	15:30	01-15			POOH to Inspect BHA do to Diff. Increase
Change BHA	6	01-15	15:30	17:00	01-15			P/U BHA # 4 / C/O Motor & Bit
Circulating	3	01-15	17:00	17:15	01-15			Shallow Test Tools
TIH	8	01-15	17:15	22:50	01-15			TIH W/ BHA #4
Rotary Drill	1	01-15	22:50	23:10	01-15	8753.00	8827.00	Pressure On (psi): 4050.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	23:10	23:15	01-15	8827.00	8827.00	Inclination (°): 0.570, Azimuth (°): 355.150, TVD (ft): 8749.69, Dogleg (°/100 ft): 0.40, Sensor Depth (ft): 8758.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	23:15	23:35	01-15	8827.00	8921.00	Pressure On (psi): 4050.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-15	23:35	23:40	01-15	8921.00	8921.00	Inclination (°): 0.480, Azimuth (°): 311.650, TVD (ft): 8843.69, Dogleg (°/100 ft): 0.42, Sensor Depth (ft): 8852.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-15	23:40	00:00	01-16	8921.00	8993.00	Pressure On (psi): 4050.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Thursday, Jan 16 00:00 - 23:59 (Day 8 of 30)

Billing: \$12,678.95 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	8993.00	Downhole Hours	20.67	Rotating WOB (klbs)	30.00 - 48.00
Bit Depth (ft)	10750.00	Drilling Hours	12.00	Sliding WOB (klbs)	25.00 - 32.00
Bottom Hole Depth (ft)	10750.00	Hours Circulating	0.50	Rotating SPM	186.00 - 232.00
Total Distance (ft)	1757.00	Hours Sliding	1.00	Sliding SPM	216.00 - 216.00
Distance Rotated (ft)	1700.00	Hours Rotating	11.00	Motor RPM	156.00 - 195.00
Distance Slid (ft)	57.00			Surface RPM	30.00 - 45.00
Inclination In	0.97			Flow Rate (gpm)	600.00 - 750.00
Inclination Out	1.01			On Bottom Pressure (psi)	3250.00 - 4400.00
Azimuth In	281.59	% Hours Rotating	92%	Off Bottom Pressure (psi)	2800.00 - 3900.00
Azimuth Out	141.67	% Hours Sliding	8%		
AVG Total ROP (ft/h)	148.30	% Distance Sliding	3%		
AVG Rotating ROP (ft/h)	156.35	% Distance Rotating	97%		
AVG Sliding ROP (ft/h)	57.00				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #4 - BHA #4 Intermediate 2

Date In: Jan 15, 2020, 15:30 Date Out: Jan 16, 2020, 20:40

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.5 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 500-750, Max Diff: 1910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.46, Bit; Security GT65DRM, SN: 13383540, Jets 6x12's TFA: 0.663, Bit Runs: 0
Vendor	Security	Lobe/Stage	7/8, 8.5	
S/N	13383540	Bend Angle	1.5	
Nozzles	6x12's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	0.663	Wear Pad OD (in)	7.250	MWD Comments
Drilling Hours for Day	12.00	Bit Distances		POOH Reason Total Depth/Casing Point: Motor performed as expected. Yielded 9-10's. Surface inspection showed motor was still tight with minimal slack in bearings. Drained well. Bit showed signs of too much WOB and was beginning to core. Bit graded 2-2
Total Drilled for Day (ft)	1757.00	Survey: 69.00 ft, Gamma: 54.00 ft,		
Drilling Hours for BHA	13.00	Bend: 5.40 ft		
Total Drilled for BHA (ft)	1997.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Security GT65DRM PDC Bit, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Security	13383540	4 1/2" Reg Pin			8.500		1.05	1.05
Mud Motor Description: 7" 7/8 8.5 @1.5 Fix 8.25" STAB, Size (in): 7.00, Bend Angle (°): 1.5, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Aim	700-40-014	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.27
Stabilizer Description: 8.25" NM Nortrac	Stabilizer	GT20445	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		5.28	42.55
UBHO Sub Description: NM UBHO, Type: NM	Aim	675-361	4 1/2" IF Box	4 1/2" IF Pin	3.500	6.750		3.50	46.05
Drill Collar Description: NMDC (MWD Tool), Style: Slick Drill, Type: NM	Gator	GT67-30-490	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.813		31.42	77.47
Drill Collar Description: NMDC (MWD Spacer), Style: Slick Drill, Type: NM	Gator	GT67-30-493	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.37	108.84
Crossover Sub Description: X-Over 4 1/2 XH B x 4 1/2 IF pin, Type: Steel	Gator	GT10408	4 1/2" XH Box	4 1/2" IF Pin	2.875	6.500		4.19	113.03
Drill Collar Description: 6 1/2 DC'S (6 STANDS), Style: Spiral Drill, Type: Steel	RIG	RIG	4 1/2" XH Box	4 1/2" XH Pin	2.875	6.500		529.09	642.12
Crossover Sub Description: X-OVER 4 1/2 IF B X 4 1/2 XH P, Type: Steel	Gator	GT10424	4 1/2" IF Box	4 1/2" XH Pin	2.875	6.750		4.17	646.29
HWDP Description: (30 Jts) 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		921.31	1567.60

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	01-15	23:40	00:00	01-16	8921.00	8993.00	Pressure On (psi): 4050.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Rotary Drill	1	01-16	00:00	00:05	01-16	8993.00	9016.00	
Survey	46	01-16	00:05	00:10	01-16	9016.00	9016.00	Inclination (°): 0.970, Azimuth (°): 281.590, TVD (ft): 8938.68, Dogleg (°/100 ft): 0.64, Sensor Depth (ft): 8947.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	00:10	00:15	01-16	9016.00	9026.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 35, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Slide Drill	2	01-16	00:15	00:35	01-16	9026.00	9046.00	Pressure On (psi): 3750.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 25.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 60, Toolface Type: magnetic
Rotary Drill	1	01-16	00:35	00:50	01-16	9046.00	9110.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 35, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	00:50	00:55	01-16	9110.00	9110.00	Inclination (°): 1.540, Azimuth (°): 342.060, TVD (ft): 9032.66, Dogleg (°/100 ft): 1.44, Sensor Depth (ft): 9041.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	00:55	01:15	01-16	9110.00	9204.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	01:15	01:20	01-16	9204.00	9204.00	Inclination (°): 1.890, Azimuth (°): 7.720, TVD (ft): 9126.62, Dogleg (°/100 ft): 0.89, Sensor Depth (ft): 9135.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	01:20	01:35	01-16	9204.00	9299.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	01:35	01:40	01-16	9299.00	9299.00	Inclination (°): 1.320, Azimuth (°): 17.570, TVD (ft): 9221.58, Dogleg (°/100 ft): 0.66, Sensor Depth (ft): 9230.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	01:40	01:55	01-16	9299.00	9393.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	01:55	02:00	01-16	9393.00	9393.00	Inclination (°): 0.750, Azimuth (°): 10.970, TVD (ft): 9315.57, Dogleg (°/100 ft): 0.62, Sensor Depth (ft): 9324.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	02:00	02:15	01-16	9393.00	9488.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 40, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	02:15	02:20	01-16	9488.00	9488.00	Inclination (°): 0.660, Azimuth (°): 42.530, TVD (ft): 9410.56, Dogleg (°/100 ft): 0.41, Sensor Depth (ft): 9419.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	02:20	02:30	01-16	9488.00	9582.00	Pressure On (psi): 4100.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 40.00, Surface RPM: 45, Surface Torque (ft lbf): 15000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	02:30	02:35	01-16	9582.00	9582.00	Inclination (°): 1.050, Azimuth (°): 6.050, TVD (ft): 9504.55, Dogleg (°/100 ft): 0.69, Sensor Depth (ft): 9513.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	02:35	03:10	01-16	9582.00	9676.00	Pressure On (psi): 3250.00, Pressure Off (psi): 2800.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	01-16	03:10	03:15	01-16	9676.00	9676.00	Inclination (°): 1.580, Azimuth (°): 343.380, TVD (ft): 9598.53, Dogleg (°/100 ft): 0.78, Sensor Depth (ft): 9607.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	03:15	03:50	01-16	9676.00	9770.00	Pressure On (psi): 3250.00, Pressure Off (psi): 2800.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 12000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	01-16	03:50	03:55	01-16	9770.00	9770.00	Inclination (°): 2.680, Azimuth (°): 344.080, TVD (ft): 9692.46, Dogleg (°/100 ft): 1.17, Sensor Depth (ft): 9701.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	03:55	04:00	01-16	9770.00	9780.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 36.00, Surface RPM: 30, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Slide Drill	2	01-16	04:00	04:20	01-16	9780.00	9802.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 32.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 160, Toolface Type: magnetic
Rotary Drill	1	01-16	04:20	05:00	01-16	9802.00	9865.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 36.00, Surface RPM: 30, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	05:00	05:05	01-16	9865.00	9865.00	Inclination (°): 1.800, Azimuth (°): 13.170, TVD (ft): 9787.39, Dogleg (°/100 ft): 1.49, Sensor Depth (ft): 9796.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	05:05	05:45	01-16	9865.00	9959.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 45, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	05:45	05:50	01-16	9959.00	9959.00	Inclination (°): 1.580, Azimuth (°): 14.750, TVD (ft): 9881.35, Dogleg (°/100 ft): 0.24, Sensor Depth (ft): 9890.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	05:50	06:00	01-16	9959.00	9969.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 45, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Slide Drill	2	01-16	06:00	06:20	01-16	9969.00	9984.00	Pressure On (psi): 3600.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 32.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	01-16	06:20	06:55	01-16	9984.00	10053.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 45, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	06:55	07:00	01-16	10053.00	10053.00	Inclination (°): 0.660, Azimuth (°): 60.810, TVD (ft): 9975.33, Dogleg (°/100 ft): 1.30, Sensor Depth (ft): 9984.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	07:00	07:40	01-16	10053.00	10147.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 45, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00

Survey	46	01-16	07:40	07:45	01-16	10147.00	10147.00	Inclination (°): 0.790, Azimuth (°): 109.060, TVD (ft): 10069.32, Dogleg (°/100 ft): 0.64, Sensor Depth (ft): 10078.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	07:45	08:40	01-16	10147.00	10242.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 45, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	08:40	08:45	01-16	10242.00	10242.00	Inclination (°): 0.700, Azimuth (°): 92.180, TVD (ft): 10164.32, Dogleg (°/100 ft): 0.25, Sensor Depth (ft): 10173.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	08:45	09:30	01-16	10242.00	10336.00	Pressure On (psi): 3700.00, Pressure Off (psi): 3400.00, Weight On Bit (klbs): 42.00, Surface RPM: 45, Surface Torque (ft lbf): 13000.00, Flow Rate (gpm): 700.00, Strokes Per Minute: 216.00
Survey	46	01-16	09:30	09:35	01-16	10336.00	10336.00	Inclination (°): 0.920, Azimuth (°): 104.230, TVD (ft): 10258.31, Dogleg (°/100 ft): 0.29, Sensor Depth (ft): 10267.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	09:35	10:30	01-16	10336.00	10430.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 48.00, Surface RPM: 45, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 232.00
Survey	46	01-16	10:30	10:35	01-16	10430.00	10430.00	Inclination (°): 1.100, Azimuth (°): 91.310, TVD (ft): 10352.29, Dogleg (°/100 ft): 0.31, Sensor Depth (ft): 10361.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	10:35	11:25	01-16	10430.00	10525.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 48.00, Surface RPM: 45, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 232.00
Survey	46	01-16	11:25	11:30	01-16	10525.00	10525.00	Inclination (°): 0.750, Azimuth (°): 99.390, TVD (ft): 10447.28, Dogleg (°/100 ft): 0.39, Sensor Depth (ft): 10456.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	11:30	12:10	01-16	10525.00	10619.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 48.00, Surface RPM: 45, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 232.00
Survey	46	01-16	12:10	12:15	01-16	10619.00	10619.00	Inclination (°): 0.660, Azimuth (°): 123.820, TVD (ft): 10541.27, Dogleg (°/100 ft): 0.33, Sensor Depth (ft): 10550.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	12:15	13:10	01-16	10619.00	10714.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 48.00, Surface RPM: 45, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 232.00
Survey	46	01-16	13:10	13:15	01-16	10714.00	10714.00	Inclination (°): 0.750, Azimuth (°): 123.560, TVD (ft): 10636.26, Dogleg (°/100 ft): 0.09, Sensor Depth (ft): 10645.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	01-16	13:15	13:35	01-16	10714.00	10750.00	Pressure On (psi): 4400.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 48.00, Surface RPM: 45, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 750.00, Strokes Per Minute: 232.00
Survey	46	01-16	13:35	13:40	01-16	10750.00	10750.00	Inclination (°): 1.010, Azimuth (°): 141.670, TVD (ft): 10672.26, Dogleg (°/100 ft): 1.05, Sensor Depth (ft): 10681.00, Bit To Sensor (ft): 69.00
Circulating	3	01-16	13:40	14:10	01-16			Circ. BTU @ KOP
Pooh	7	01-16	14:10	19:40	01-16			POOH @KOP
Change BHA	6	01-16	19:40	20:40	01-16			L/D BHA # 4
Standby	15	01-16	20:40	00:00	01-17			Standby while rig runs packer, nipples down and skids rig to 606H

MWD Activities

No Activities

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Friday, Jan 17 00:00 - 23:59 (Day 9 of 30) Billing: N/A (\$394,148.32 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
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

No BHAs

Directional Activities								
Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	01-16	20:40	00:00	01-17			Standby while rig runs packer, nipples down and skids rig to 606H

MWD Activities								
No Activities								



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Tuesday, Feb 04 00:00 - 23:59 (Day 10 of 30)

Billing: \$16,400.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	10750.00	Downhole Hours	15.00	Rotating WOB (klbs)	30.00 - 30.00
Bit Depth (ft)	11340.00	Drilling Hours	7.25	Sliding WOB (klbs)	50.00 - 75.00
Bottom Hole Depth (ft)	11340.00	Hours Circulating	0.42	Rotating SPM	186.00 - 186.00
Total Distance (ft)	590.00	Hours Sliding	6.33	Sliding SPM	186.00 - 186.00
Distance Rotated (ft)	70.00	Hours Rotating	0.92	Motor RPM	156.00 - 195.00
Distance Slid (ft)	520.00			Surface RPM	45.00 - 45.00
Inclination In	4.53			Flow Rate (gpm)	595.00 - 595.00
Inclination Out	56.00			On Bottom Pressure (psi)	4000.00 - 4300.00
Azimuth In	159.86	% Hours Rotating	13%	Off Bottom Pressure (psi)	3500.00 - 3600.00
Azimuth Out	170.50	% Hours Sliding	87%		
AVG Total ROP (ft/h)	81.38	% Distance Sliding	88%		
AVG Rotating ROP (ft/h)	76.36	% Distance Rotating	12%		
AVG Sliding ROP (ft/h)	82.11				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #5 - BHA #5 Curve

Date In: Feb 4, 2020, 9:00 Date Out: Feb 5, 2020, 8:30

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	6.75	Contender Motor: 6 3/4" 2.12 FBH 7/8 5.0 Stg Mtr, Rev/Gal: 0.28, Flow: 300-600, Max Diff: 1,180 psi, Max Operating Torque: 11,150 ft/lbs, Protracted Angle 2.21; Ulterra CF611, SN: 51717, Jets 6x22's TFA: 2.227, Bit Runs: 1
Vendor	Ultra	Lobe/Stage	7/8, 5.0	
S/N	51717	Bend Angle	2.12	
Nozzles	6x22's	Speed (rev/gal)	0.28	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	POOH Reason Change Bottom Hole Assembly: TD CURVE
Drilling Hours for Day	7.25	Bit Distances		
Total Drilled for Day (ft)	590.00	Survey: 61.00 ft, Gamma: 55.00 ft, Bend: 4.10 ft, Resistivity: 35.00 ft		
Drilling Hours for BHA	9.17			
Total Drilled for BHA (ft)	699.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Ulterra CF611, Style: PDC, Gauge Length (in): 2.00, Size (in): 8.50	Ultra	51717	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 6.75" 7/8 5.0 @ 2.12 Fix Slick Sleeve, Size (in): 6.75, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.0	Aim	CDM650022	4 1/2" IF Box	4 1/2" Reg Box		6.750		25.75	26.75
Other Description: Resistivity Collar	Tolteq	102205	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		19.98	46.73
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	56.45
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	67.80
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	73.00
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	104.06

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	02-04	00:00	09:00	02-04			Standby while testing BOPs and making ready to drill
Change BHA	6	02-04	09:00	11:30	02-04			P/U BHA # 5
TIH	8	02-04	11:30	15:45	02-04			TIH W/ BHA #5
Circulating	3	02-04	15:45	16:10	02-04			Displace to OBM

Slide Drill	2	02-04	16:10	17:25	02-04	10750.00	10833.00	Pressure On (psi): 4000.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 180, Toolface Type: magnetic
Survey	46	02-04	17:25	17:30	02-04	10833.00	10833.00	Inclination (°): 4.530, Azimuth (°): 159.860, TVD (ft): 10763.14, Dogleg (°/100 ft): 3.94, Sensor Depth (ft): 10772.00, Bit To Sensor (ft): 61.00
Slide Drill	2	02-04	17:30	18:35	02-04	10833.00	10927.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 20, Toolface Type: gravity
Survey	46	02-04	18:35	18:45	02-04	10927.00	10927.00	Inclination (°): 14.770, Azimuth (°): 193.960, TVD (ft): 10855.74, Dogleg (°/100 ft): 12.02, Sensor Depth (ft): 10866.00, Bit To Sensor (ft): 61.00 Pump through choke line on connection.
Slide Drill	2	02-04	18:45	19:45	02-04	10927.00	11021.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 340, Toolface Type: gravity
Survey	46	02-04	19:45	19:50	02-04	11021.00	11021.00	Inclination (°): 28.920, Azimuth (°): 197.390, TVD (ft): 10942.77, Dogleg (°/100 ft): 15.11, Sensor Depth (ft): 10960.00, Bit To Sensor (ft): 61.00
Slide Drill	2	02-04	19:50	20:50	02-04	11021.00	11115.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 315, Toolface Type: gravity
Survey	46	02-04	20:50	20:55	02-04	11115.00	11115.00	Inclination (°): 43.740, Azimuth (°): 184.380, TVD (ft): 11018.40, Dogleg (°/100 ft): 17.70, Sensor Depth (ft): 11054.00, Bit To Sensor (ft): 61.00
Rotary Drill	1	02-04	20:55	21:20	02-04	11115.00	11150.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3600.00, Weight On Bit (klbs): 30.00, Surface RPM: 45, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186.00
Slide Drill	2	02-04	21:20	22:00	02-04	11150.00	11210.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 0, Toolface Type: gravity
Survey	46	02-04	22:00	22:05	02-04	11210.00	11210.00	Inclination (°): 49.980, Azimuth (°): 173.400, TVD (ft): 11083.43, Dogleg (°/100 ft): 10.67, Sensor Depth (ft): 11149.00, Bit To Sensor (ft): 61.00
Rotary Drill	1	02-04	22:05	22:35	02-04	11210.00	11245.00	Pressure On (psi): 4200.00, Pressure Off (psi): 3600.00, Weight On Bit (klbs): 30.00, Surface RPM: 45, Surface Torque (ft lbf): 14000.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186.00
Slide Drill	2	02-04	22:35	23:25	02-04	11245.00	11304.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 10, Toolface Type: gravity
Survey	46	02-04	23:25	23:30	02-04	11304.00	11304.00	Inclination (°): 56.000, Azimuth (°): 170.500, TVD (ft): 11140.00, Dogleg (°/100 ft): 6.86, Sensor Depth (ft): 11243.00, Bit To Sensor (ft): 61.00
Slide Drill	2	02-04	23:30	00:00	02-05	11304.00	11340.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 10, Toolface Type: gravity

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Wednesday, Feb 05 00:00 - 23:59 (Day 11 of 30)

Billing: \$21,245.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11340.00	Downhole Hours	22.50	Rotating WOB (klbs)	
Bit Depth (ft)	11449.00	Drilling Hours	1.92	Sliding WOB (klbs)	75.00 - 75.00
Bottom Hole Depth (ft)	11449.00	Hours Circulating	4.00	Rotating SPM	
Total Distance (ft)	109.00	Hours Sliding	1.92	Sliding SPM	186.00 - 186.00
Distance Rotated (ft)	0.00	Hours Rotating	0.00	Motor RPM	156.00 - 195.00
Distance Slid (ft)	109.00			Surface RPM	
Inclination In	62.55			Flow Rate (gpm)	595.00 - 595.00
Inclination Out	78.99			On Bottom Pressure (psi)	4300.00 - 4300.00
Azimuth In	169.53	% Hours Rotating	0%	Off Bottom Pressure (psi)	3500.00 - 3500.00
Azimuth Out	175.07	% Hours Sliding	100%		
AVG Total ROP (ft/h)	60.00	% Distance Sliding	100%		
AVG Rotating ROP (ft/h)	0.00	% Distance Rotating	0%		
AVG Sliding ROP (ft/h)	60.00				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #5 - BHA #5 Curve

Date In: Feb 4, 2020, 9:00 Date Out: Feb 5, 2020, 8:30

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	6.75	Contender Motor: 6 3/4" 2.12 FBH 7/8 5.0 Stg Mtr, Rev/Gal: 0.28, Flow: 300-600, Max Diff: 1,180 psi, Max Operating Torque: 11,150 ft/lbs, Protracted Angle 2.21; Ulterra CF611, SN: 51717, Jets 6x22's TFA: 2.227, Bit Runs: 1
Vendor	Ultra	Lobe/Stage	7/8, 5.0	
S/N	51717	Bend Angle	2.12	
Nozzles	6x22's	Speed (rev/gal)	0.28	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	POOH Reason Change Bottom Hole Assembly: TD CURVE
Drilling Hours for Day	1.92	Bit Distances		
Total Drilled for Day (ft)	109.00	Survey: 61.00 ft, Gamma: 55.00 ft, Bend: 4.10 ft, Resistivity: 35.00 ft		
Drilling Hours for BHA	9.17			
Total Drilled for BHA (ft)	699.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Ulterra CF611, Style: PDC, Gauge Length (in): 2.00, Size (in): 8.50	Ultra	51717	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 6.75" 7/8 5.0 @ 2.12 Fix Slick Sleeve, Size (in): 6.75, Bend Angle (°): 2.12, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 5.0	Aim	CDM650022	4 1/2" IF Box	4 1/2" Reg Box		6.750		25.75	26.75
Other Description: Resistivity Collar	Tolteq	102205	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		19.98	46.73
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	56.45
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	67.80
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	73.00
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	104.06

MWD Items

No Items

BHA #6 - BHA #6 Lateral

Date In: Feb 5, 2020, 10:00 Date Out: Feb 5, 2020, 18:30

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWX, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	530889	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	POOH Reason MWD Incident: MWD WOULD NOT TEST AFTER PICKIN UP AGITATOR
Drilling Hours for Day	0.00	Bit Distances		
Total Drilled for Day (ft)		Survey: 74.00 ft, Gamma: 68.00 ft, Bend: 4.15 ft, Resistivity: 48.00 ft		
Drilling Hours for BHA	0.00			
Total Drilled for BHA (ft)				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Hughes DD506TWX, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Baker	530889	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Discovery	700-DDS-018	4 1/2" IF Box	4 1/2" Reg Box		7.000		33.90	34.90
Other Description: Resistivity Collar	Tolteq	102070	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		24.80	59.70
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	69.42
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	80.77
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0021	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.52	2593.21
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.39
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.57

MWD Items

No Items

BHA #7 - BHA #7 (Lateral #2)

Date In: Feb 5, 2020, 18:30 Date Out: Feb 7, 2020, 18:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWX, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	530889	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	MWD Comments
Drilling Hours for Day	0.00	Bit Distances		POOH Reason MWD Incident: Resistivity stopped working / MTR Drained fine but asked to be changed out
Total Drilled for Day (ft)		Bend: 5.32 ft		
Drilling Hours for BHA	27.08			
Total Drilled for BHA (ft)	1810.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Hughes DD506TWX, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Baker	530889	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Discovery	700-DDS-018	4 1/2" IF Box	4 1/2" Reg Box		7.000		33.90	34.90
Other Description: Resistivity Collar	Tolteq	102070	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		24.80	59.70

Drill Collar Description: <i>NM Pony Collar</i> , Style: <i>Slick Drill</i> , Type: <i>NM</i>	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	69.42
Drill Collar Description: <i>NM Pony Collar</i> , Style: <i>Slick Drill</i> , Type: <i>NM</i>	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	80.77
MWD Hangoff Sub Description: <i>MWD Hangoff Sub</i> , Type: <i>NM</i>	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	85.97
Drill Collar Description: <i>NMDC</i> , Style: <i>Slick Drill</i> , Type: <i>NM</i>	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: <i>26 Stand 5" DP</i> , Style: <i>Slick</i>	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: <i>6.75" Agitator</i> , Size (in): <i>6.75</i>	NOV	AGHF0675-0021	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.52	2593.21
Drill Pipe Description: <i>85 Stands 5" DP</i> , Style: <i>Slick</i>	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.39
HWDP Description: <i>9 Stands 5" HWDP</i> , Style: <i>Slick</i>	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.57

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Slide Drill	2	02-04	23:30	00:00	02-05	11304.00	11340.00	Pressure On (psi): <i>4300.00</i> , Pressure Off (psi): <i>3500.00</i> , Weight On Bit (klbs): <i>75.00</i> , Flow Rate (gpm): <i>595.00</i> , Strokes Per Minute: <i>186</i> , Toolface: <i>10</i> , Toolface Type: <i>gravity</i>
Slide Drill	2	02-05	00:00	00:10	02-05	11340.00	11351.00	Pressure On (psi): <i>4300.00</i> , Pressure Off (psi): <i>3500.00</i> , Weight On Bit (klbs): <i>75.00</i> , Flow Rate (gpm): <i>595.00</i> , Strokes Per Minute: <i>186</i> , Toolface: <i>10</i> , Toolface Type: <i>gravity</i>
Survey	46	02-05	00:10	00:15	02-05	11351.00	11351.00	Inclination (°): <i>62.550</i> , Azimuth (°): <i>169.530</i> , TVD (ft): <i>11164.00</i> , Dogleg (°/100 ft): <i>14.05</i> , Sensor Depth (ft): <i>11290.00</i> , Bit To Sensor (ft): <i>61.00</i>
Slide Drill	2	02-05	00:15	00:55	02-05	11351.00	11399.00	Pressure On (psi): <i>4300.00</i> , Pressure Off (psi): <i>3500.00</i> , Weight On Bit (klbs): <i>75.00</i> , Flow Rate (gpm): <i>595.00</i> , Strokes Per Minute: <i>186</i> , Toolface: <i>15</i> , Toolface Type: <i>gravity</i>
Survey	46	02-05	00:55	01:00	02-05	11399.00	11399.00	Inclination (°): <i>70.730</i> , Azimuth (°): <i>171.110</i> , TVD (ft): <i>11183.02</i> , Dogleg (°/100 ft): <i>17.31</i> , Sensor Depth (ft): <i>11338.00</i> , Bit To Sensor (ft): <i>61.00</i>
Slide Drill	2	02-05	01:00	02:05	02-05	11399.00	11449.00	Pressure On (psi): <i>4300.00</i> , Pressure Off (psi): <i>3500.00</i> , Weight On Bit (klbs): <i>75.00</i> , Flow Rate (gpm): <i>595.00</i> , Strokes Per Minute: <i>186</i> , Toolface: <i>45</i> , Toolface Type: <i>gravity</i>
Survey	46	02-05	02:05	02:10	02-05	11449.00	11449.00	Inclination (°): <i>78.990</i> , Azimuth (°): <i>175.070</i> , TVD (ft): <i>11196.07</i> , Dogleg (°/100 ft): <i>18.20</i> , Sensor Depth (ft): <i>11388.00</i> , Bit To Sensor (ft): <i>61.00</i>
Circulating	3	02-05	02:10	03:30	02-05			Circulate B/u to POOH for lateral assembly
Pooh	7	02-05	03:30	08:30	02-05			POOH for [change BHA]
Other	16	02-05	08:30	10:00	02-05			L/D tools
Change BHA	6	02-05	10:00	12:00	02-05			P/U BHA # 6
TIH	8	02-05	12:00	13:00	02-05			TIH W/ BHA #6
Circulating	3	02-05	13:00	15:30	02-05			
Pooh	7	02-05	15:30	17:00	02-05			POOH for [MWD]
Change BHA	6	02-05	17:00	18:30	02-05			P/U BHA # 7
TIH	8	02-05	18:30	20:05	02-05			TIH W/ BHA #7
Circulating	3	02-05	20:05	20:15	02-05			Test Agitator
TIH	8	02-05	20:15	00:00	02-06			TIH W/ BHA #7

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Thursday, Feb 06 00:00 - 23:59 (Day 12 of 30)

Billing: \$7,200.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	11449.00	Downhole Hours	24.00	Rotating WOB (klbs)	30.00 - 50.00
Bit Depth (ft)	12793.00	Drilling Hours	18.00	Sliding WOB (klbs)	75.00 - 75.00
Bottom Hole Depth (ft)	12793.00	Hours Circulating	2.50	Rotating SPM	200.00 - 200.00
Total Distance (ft)	1344.00	Hours Sliding	5.25	Sliding SPM	186.00 - 198.00
Distance Rotated (ft)	1175.00	Hours Rotating	12.75	Motor RPM	156.00 - 195.00
Distance Slid (ft)	169.00			Surface RPM	30.00 - 45.00
Inclination In	86.90			Flow Rate (gpm)	595.00 - 643.00
Inclination Out	89.89			On Bottom Pressure (psi)	4300.00 - 5200.00
Azimuth In	183.42	% Hours Rotating	71%	Off Bottom Pressure (psi)	3500.00 - 4700.00
Azimuth Out	178.05	% Hours Sliding	29%		
AVG Total ROP (ft/h)	74.67	% Distance Sliding	13%		
AVG Rotating ROP (ft/h)	92.16	% Distance Rotating	87%		
AVG Sliding ROP (ft/h)	32.19				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #7 - BHA #7 (Lateral #2)

Date In: Feb 5, 2020, 18:30 Date Out: Feb 7, 2020, 18:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWX, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	530889	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	
Drilling Hours for Day	18.00	Bit Distances		
Total Drilled for Day (ft)	1344.00	Bend: 5.32 ft		
Drilling Hours for BHA	27.08			
Total Drilled for BHA (ft)	1810.00			
				POOH Reason
				MWD Incident: Resistivity stopped working / MTR Drained fine but asked to be changed out

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Hughes DD506TWX, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Baker	530889	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Discovery	700-DDS-018	4 1/2" IF Box	4 1/2" Reg Box		7.000		33.90	34.90
Other Description: Resistivity Collar	Tolteq	102070	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		24.80	59.70
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	69.42
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	80.77
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0021	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.52	2593.21
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.39

HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP	4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000	828.18	11437.57
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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	02-05	20:15	00:00	02-06			TIH W/ BHA #7
TIH	8	02-06	00:00	02:15	02-06			TIH W/ BHA #7
Rotary Drill	1	02-06	02:15	03:25	02-06	11449.00	11505.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-06	03:25	05:55	02-06			Circulate on 1 pump while working on other 2 pumps.
Rotary Drill	1	02-06	05:55	06:25	02-06	11505.00	11531.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	06:25	06:30	02-06	11531.00	11531.00	Inclination (°): 86.900, Azimuth (°): 183.420, TVD (ft): 11204.55, Dogleg (°/100 ft): 16.60, Sensor Depth (ft): 11457.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	06:30	07:40	02-06	11531.00	11626.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	07:40	07:45	02-06	11626.00	11626.00	Inclination (°): 89.230, Azimuth (°): 183.500, TVD (ft): 11207.76, Dogleg (°/100 ft): 2.45, Sensor Depth (ft): 11552.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	07:45	07:55	02-06	11626.00	11636.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-06	07:55	08:25	02-06	11636.00	11656.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 230, Toolface Type: gravity
Rotary Drill	1	02-06	08:25	08:50	02-06	11656.00	11720.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	08:50	09:00	02-06	11720.00	11720.00	Inclination (°): 90.290, Azimuth (°): 181.390, TVD (ft): 11208.15, Dogleg (°/100 ft): 2.51, Sensor Depth (ft): 11646.00, Bit To Sensor (ft): 74.00
Slide Drill	2	02-06	09:00	09:30	02-06	11720.00	11735.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 205, Toolface Type: gravity
Rotary Drill	1	02-06	09:30	10:10	02-06	11735.00	11807.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-06	10:10	10:30	02-06	11807.00	11815.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 205, Toolface Type: gravity
Survey	46	02-06	10:30	10:35	02-06	11815.00	11815.00	Inclination (°): 87.960, Azimuth (°): 178.760, TVD (ft): 11209.60, Dogleg (°/100 ft): 3.70, Sensor Depth (ft): 11741.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	10:35	11:15	02-06	11815.00	11909.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	11:15	11:20	02-06	11909.00	11909.00	Inclination (°): 86.420, Azimuth (°): 178.230, TVD (ft): 11214.21, Dogleg (°/100 ft): 1.73, Sensor Depth (ft): 11835.00, Bit To Sensor (ft): 74.00, Temperature (°F): 147.00
Rotary Drill	1	02-06	11:20	12:00	02-06	11909.00	12003.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	12:00	12:05	02-06	12003.00	12003.00	Inclination (°): 87.520, Azimuth (°): 176.910, TVD (ft): 11219.18, Dogleg (°/100 ft): 1.83, Sensor Depth (ft): 11929.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	12:05	12:45	02-06	12003.00	12097.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	12:45	12:50	02-06	12097.00	12097.00	Inclination (°): 89.010, Azimuth (°): 176.030, TVD (ft): 11222.03, Dogleg (°/100 ft): 1.84, Sensor Depth (ft): 12023.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	12:50	13:00	02-06	12097.00	12106.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4600.00, Weight On Bit (klbs): 30.00, Surface RPM: 30, Surface Torque (ft lbf): 16000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-06	13:00	13:45	02-06	12106.00	12126.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 130, Toolface Type: gravity
Rotary Drill	1	02-06	13:45	14:25	02-06	12126.00	12192.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	14:25	14:30	02-06	12192.00	12192.00	Inclination (°): 89.630, Azimuth (°): 175.420, TVD (ft): 11223.16, Dogleg (°/100 ft): 0.92, Sensor Depth (ft): 12118.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	14:30	14:40	02-06	12192.00	12196.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-06	14:40	15:30	02-06	12196.00	12219.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 125, Toolface Type: gravity

Rotary Drill	1	02-06	15:30	16:10	02-06	12219.00	12286.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	16:10	16:15	02-06	12286.00	12286.00	Inclination (°): 89.140, Azimuth (°): 177.610, TVD (ft): 11224.16, Dogleg (°/100 ft): 2.39, Sensor Depth (ft): 12212.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	16:15	16:20	02-06	12286.00	12290.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-06	16:20	17:00	02-06	12290.00	12313.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 145, Toolface Type: gravity
Rotary Drill	1	02-06	17:00	17:55	02-06	12313.00	12380.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	17:55	18:00	02-06	12380.00	12380.00	Inclination (°): 87.300, Azimuth (°): 180.340, TVD (ft): 11227.08, Dogleg (°/100 ft): 3.50, Sensor Depth (ft): 12306.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	18:00	18:40	02-06	12380.00	12474.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	18:40	18:45	02-06	12474.00	12474.00	Inclination (°): 86.640, Azimuth (°): 179.280, TVD (ft): 11232.05, Dogleg (°/100 ft): 1.33, Sensor Depth (ft): 12400.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	18:45	19:45	02-06	12474.00	12569.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	19:45	19:50	02-06	12569.00	12569.00	Inclination (°): 88.570, Azimuth (°): 177.530, TVD (ft): 11236.02, Dogleg (°/100 ft): 2.74, Sensor Depth (ft): 12495.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	19:50	19:55	02-06	12569.00	12575.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-06	19:55	20:45	02-06	12575.00	12605.00	Pressure On (psi): 4300.00, Pressure Off (psi): 3500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 595.00, Strokes Per Minute: 186, Toolface: 100, Toolface Type: gravity
Rotary Drill	1	02-06	20:45	21:40	02-06	12605.00	12663.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	21:40	21:45	02-06	12663.00	12663.00	Inclination (°): 90.110, Azimuth (°): 177.610, TVD (ft): 11237.11, Dogleg (°/100 ft): 1.64, Sensor Depth (ft): 12589.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	21:45	23:00	02-06	12663.00	12758.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-06	23:00	23:05	02-06	12758.00	12758.00	Inclination (°): 89.890, Azimuth (°): 178.050, TVD (ft): 11237.11, Dogleg (°/100 ft): 0.52, Sensor Depth (ft): 12684.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-06	23:05	23:10	02-06	12758.00	12763.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-06	23:10	00:00	02-07	12763.00	12793.00	Pressure On (psi): 4900.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 110, Toolface Type: gravity

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Friday, Feb 07 00:00 - 23:59 (Day 13 of 30)

Billing: \$29,050.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	12793.00	Downhole Hours	24.00	Rotating WOB (klbs)	50.00 - 52.00
Bit Depth (ft)	13259.00	Drilling Hours	9.08	Sliding WOB (klbs)	65.00 - 65.00
Bottom Hole Depth (ft)	13259.00	Hours Circulating	1.92	Rotating SPM	200.00 - 200.00
Total Distance (ft)	466.00	Hours Sliding	1.33	Sliding SPM	198.00 - 198.00
Distance Rotated (ft)	431.00	Hours Rotating	7.75	Motor RPM	156.00 - 195.00
Distance Slid (ft)	35.00			Surface RPM	45.00 - 45.00
Inclination In	88.53			Flow Rate (gpm)	640.00 - 643.00
Inclination Out	88.92			On Bottom Pressure (psi)	4800.00 - 5200.00
Azimuth In	179.11	% Hours Rotating	85%	Off Bottom Pressure (psi)	4500.00 - 4700.00
Azimuth Out	182.01	% Hours Sliding	15%		
AVG Total ROP (ft/h)	50.02	% Distance Sliding	8%		
AVG Rotating ROP (ft/h)	55.61	% Distance Rotating	92%		
AVG Sliding ROP (ft/h)	30.00				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #7 - BHA #7 (Lateral #2)

Date In: Feb 5, 2020, 18:30 Date Out: Feb 7, 2020, 18:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.75; Baker DD506TWX, SN: 530889, Jets 6x22's TFA: 2.227, Bit Runs: 0
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	530889	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	</

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" Hughes DD506TWX, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Baker	530889	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	Discovery	700-DDS-018	4 1/2" IF Box	4 1/2" Reg Box		7.000		33.90	34.90
Other Description: Resistivity Collar	Tolteq	102070	4 1/2" IF Box	4 1/2" IF Pin	3.250	7.250		24.80	59.70
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	B&T	BT650486	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.563		9.72	69.42
Drill Collar Description: NM Pony Collar, Style: Slick Drill, Type: NM	StabilDrill	SD55347	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		11.35	80.77
MWD Hangoff Sub Description: MWD Hangoff Sub, Type: NM	Tolteq	102017	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		5.20	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0021	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.52	2593.21
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.39

HWDP Description: 9 Stands 5" HWDP, Style: Slick		HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.57
MWD Items										
No Items										
BHA #8 - BHA #8 (lateral 3)						Date In: Feb 7, 2020, 18:00 Date Out: Feb 13, 2020, 3:15				
Bit Details			Motor Details			Directional Comments				
OD (in)	8.500		Size (in)	7.0		Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:				
Vendor	HALLIBURTON		Lobe/Stage	7/8, 8.5						
S/N	13418528		Bend Angle	1.75						
Nozzles	6x22's		Speed (rev/gal)	0.26		MWD Comments				
Total Flow Area (in²)	2.227		Wear Pad OD (in)	7.125		POOH Reason Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor drained well with .25" slack in bearings. Bit had Heel row and gauge row wiped out with slight damage to the matrix of the bit.				
Drilling Hours for Day	0.00		Bit Distances							
Total Drilled for Day (ft)			Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft							
Drilling Hours for BHA	64.50									
Total Drilled for BHA (ft)	3450.00									

Directional Items										
Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)	
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00	
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17	
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36	
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72	
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78	
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44	
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90	
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08	
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26	

MWD Items										
No Items										
Directional Activities										
Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details		
Slide Drill	2	02-06	23:10	00:00	02-07	12763.00	12793.00	Pressure On (psi): 4900.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 75.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 110, Toolface Type: gravity		
Rotary Drill	1	02-07	00:00	00:55	02-07	12793.00	12852.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00		
Survey	46	02-07	00:55	01:05	02-07	12852.00	12852.00	Inclination (°): 88.530, Azimuth (°): 179.110, TVD (ft): 11238.40, Dogleg (°/100 ft): 1.83, Sensor Depth (ft): 12778.00, Bit To Sensor (ft): 74.00		
Rotary Drill	1	02-07	01:05	02:20	02-07	12852.00	12947.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00		
Survey	46	02-07	02:20	02:25	02-07	12947.00	12947.00	Inclination (°): 88.350, Azimuth (°): 180.600, TVD (ft): 11240.99, Dogleg (°/100 ft): 1.58, Sensor Depth (ft): 12873.00, Bit To Sensor (ft): 74.00		
Rotary Drill	1	02-07	02:25	02:30	02-07	12947.00	12953.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 50.00, Surface RPM: 45, Surface Torque (ft lbf): 20000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00		
Slide Drill	2	02-07	02:30	03:00	02-07	12953.00	12968.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 60, Toolface Type: gravity		
Rotary Drill	1	02-07	03:00	04:15	02-07	12968.00	13041.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00		

Survey	46	02-07	04:15	04:20	02-07	13041.00	13041.00	Inclination (°): 88.350, Azimuth (°): 181.830, TVD (ft): 11243.70, Dogleg (°/100 ft): 1.31, Sensor Depth (ft): 12967.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-07	04:20	06:10	02-07	13041.00	13135.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-07	06:10	06:20	02-07			Slow pump rates
Survey	46	02-07	06:20	06:25	02-07	13135.00	13135.00	Inclination (°): 89.050, Azimuth (°): 181.130, TVD (ft): 11245.83, Dogleg (°/100 ft): 1.05, Sensor Depth (ft): 13061.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-07	06:25	06:50	02-07	13135.00	13148.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-07	06:50	07:40	02-07	13148.00	13168.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 140, Toolface Type: gravity
Rotary Drill	1	02-07	07:40	09:10	02-07	13168.00	13229.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-07	09:10	09:15	02-07	13229.00	13229.00	Inclination (°): 88.920, Azimuth (°): 182.010, TVD (ft): 11247.49, Dogleg (°/100 ft): 0.95, Sensor Depth (ft): 13155.00, Bit To Sensor (ft): 74.00
Rotary Drill	1	02-07	09:15	09:45	02-07	13229.00	13259.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-07	09:45	10:45	02-07			
Pooh	7	02-07	10:45	16:30	02-07			POOH for [Resistivity]
Other	16	02-07	16:30	18:00	02-07			L/D BHA #7
Change BHA	6	02-07	18:00	21:10	02-07			P/U BHA # 8
TIH	8	02-07	21:10	22:30	02-07			TIH W/ BHA #8
Circulating	3	02-07	22:30	23:15	02-07			Pick up agitator and test before and after
TIH	8	02-07	23:15	00:00	02-08			TIH W/ BHA #8 to shoe

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Saturday, Feb 08 00:00 - 23:59 (Day 14 of 30)

Billing: \$11,000.00 (\$394,148.32 total)

Drilling Summary			Drilling Parameters	
Start Depth (ft)	Downhole Hours	24.00	Rotating WOB (klbs)	
Bit Depth (ft)	Drilling Hours	0.00	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	Hours Circulating	18.00	Rotating SPM	
Total Distance (ft)	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	Hours Rotating	0.00	Motor RPM	156.00 - 195.00
Distance Slid (ft)			Surface RPM	
Inclination In			Flow Rate (gpm)	
Inclination Out			On Bottom Pressure (psi)	
Azimuth In	% Hours Rotating		Off Bottom Pressure (psi)	
Azimuth Out	% Hours Sliding			
AVG Total ROP (ft/h)	% Distance Sliding			
AVG Rotating ROP (ft/h)	% Distance Rotating			
AVG Sliding ROP (ft/h)				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #8 - BHA #8 (lateral 3)

Date In: Feb 7, 2020, 18:00 Date Out: Feb 13, 2020, 3:15

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13418528	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	
Drilling Hours for Day	0.00	Bit Distances		POOH Reason Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor drained well with .25" slack in bearings. Bit had Heel row and gauge row wiped out with slight damage to the matrix of the bit.
Total Drilled for Day (ft)		Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft		
Drilling Hours for BHA	64.50			
Total Drilled for BHA (ft)	3450.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26

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	02-07	23:15	00:00	02-08			TIH W/ BHA #8 to shoe
Other	16	02-08	00:00	01:30	02-08			Slip and cut drill line
TIH	8	02-08	01:30	03:00	02-08			TIH W/ BHA #8 to 9,038 Ft
Circulating	3	02-08	03:00	07:30	02-08			Begin Re logging with resistivity per GEO F / 9,038 T / 9,600
Rig Repair	14	02-08	07:30	08:30	02-08			C/O Swivel Packing
Circulating	3	02-08	08:30	13:30	02-08			Relog 9600 - 10043
TIH	8	02-08	13:30	14:30	02-08			TIH W/ BHA #8
Pooh	7	02-08	14:30	15:30	02-08			POOH for [Relog]
Circulating	3	02-08	15:30	00:00	02-09			Relog 10,043 - 10785

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Sunday, Feb 09 00:00 - 23:59 (Day 15 of 30)

Billing: \$11,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	13256.00	Downhole Hours	24.00	Rotating WOB (klbs)	52.00 - 52.00
Bit Depth (ft)	14171.00	Drilling Hours	17.33	Sliding WOB (klbs)	47.00 - 65.00
Bottom Hole Depth (ft)	14171.00	Hours Circulating	4.50	Rotating SPM	200.00 - 200.00
Total Distance (ft)	915.00	Hours Sliding	5.67	Sliding SPM	198.00 - 198.00
Distance Rotated (ft)	741.00	Hours Rotating	11.67	Motor RPM	156.00 - 195.00
Distance Slid (ft)	174.00			Surface RPM	45.00 - 45.00
Inclination In	90.00			Flow Rate (gpm)	640.00 - 643.00
Inclination Out	91.40			On Bottom Pressure (psi)	4400.00 - 5200.00
Azimuth In	181.10	% Hours Rotating	67%	Off Bottom Pressure (psi)	4100.00 - 4700.00
Azimuth Out	178.60	% Hours Sliding	33%		
AVG Total ROP (ft/h)	52.79	% Distance Sliding	19%		
AVG Rotating ROP (ft/h)	63.51	% Distance Rotating	81%		
AVG Sliding ROP (ft/h)	30.71				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #8 - BHA #8 (lateral 3)

Date In: Feb 7, 2020, 18:00 Date Out: Feb 13, 2020, 3:15

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13418528	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	
Drilling Hours for Day	17.33	Bit Distances		MWD Comments
Total Drilled for Day (ft)	915.00	Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft		
Drilling Hours for BHA	64.50			
Total Drilled for BHA (ft)	3450.00			
				POOH Reason
				Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26

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	02-08	15:30	00:00	02-09			Relog 10,043 - 10785
Circulating	3	02-09	00:00	00:40	02-09			Relog 10,785 - 10,806
TIH	8	02-09	00:40	01:00	02-09			TIH W/ BHA #8 T / 11,346
Circulating	3	02-09	01:00	02:20	02-09			Wash and ream F / 11,346 T / 11,431 Due to tight hole
TIH	8	02-09	02:20	03:00	02-09			TIH W/ BHA #8 T / 13,056
Circulating	3	02-09	03:00	05:30	02-09			Re log F / 13,056 T / 13,256
Rotary Drill	1	02-09	05:30	06:00	02-09	13256.00	13324.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	06:00	06:10	02-09	13324.00	13324.00	Inclination (°): 90.000, Azimuth (°): 181.100, TVD (ft): 11248.44, Dogleg (°/100 ft): 1.41, Sensor Depth (ft): 13255.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-09	06:10	07:00	02-09	13324.00	13346.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 145, Toolface Type: gravity
Rotary Drill	1	02-09	07:00	07:45	02-09	13346.00	13418.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	07:45	07:50	02-09	13418.00	13418.00	Inclination (°): 89.700, Azimuth (°): 181.800, TVD (ft): 11248.68, Dogleg (°/100 ft): 0.81, Sensor Depth (ft): 13349.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-09	07:50	08:40	02-09	13418.00	13446.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	02-09	08:40	09:20	02-09	13446.00	13512.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	09:20	09:25	02-09	13512.00	13512.00	Inclination (°): 88.200, Azimuth (°): 182.300, TVD (ft): 11250.40, Dogleg (°/100 ft): 1.68, Sensor Depth (ft): 13443.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-09	09:25	10:00	02-09	13512.00	13530.00	Pressure On (psi): 4800.00, Pressure Off (psi): 4500.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 215, Toolface Type: gravity
Rotary Drill	1	02-09	10:00	11:00	02-09	13530.00	13606.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	11:00	11:10	02-09	13606.00	13606.00	Inclination (°): 86.500, Azimuth (°): 181.600, TVD (ft): 11254.75, Dogleg (°/100 ft): 1.96, Sensor Depth (ft): 13537.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-09	11:10	13:00	02-09	13606.00	13701.00	Pressure On (psi): 5200.00, Pressure Off (psi): 4700.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	13:00	13:05	02-09	13701.00	13701.00	Inclination (°): 86.200, Azimuth (°): 180.900, TVD (ft): 11260.80, Dogleg (°/100 ft): 0.80, Sensor Depth (ft): 13632.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-09	13:05	13:45	02-09	13701.00	13743.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-09	13:45	14:40	02-09	13743.00	13770.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	02-09	14:40	15:00	02-09	13770.00	13795.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Rig Service - In Hole	19	02-09	15:00	15:15	02-09			
Survey	46	02-09	15:15	15:20	02-09	13795.00	13795.00	Inclination (°): 84.900, Azimuth (°): 180.600, TVD (ft): 11268.09, Dogleg (°/100 ft): 1.42, Sensor Depth (ft): 13726.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-09	15:20	15:45	02-09	13795.00	13822.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-09	15:45	16:30	02-09	13822.00	13845.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 0, Toolface Type: gravity
Rotary Drill	1	02-09	16:30	17:10	02-09	13845.00	13889.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	17:10	17:15	02-09	13889.00	13889.00	Inclination (°): 87.400, Azimuth (°): 178.200, TVD (ft): 11274.40, Dogleg (°/100 ft): 3.68, Sensor Depth (ft): 13820.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-09	17:15	17:30	02-09	13889.00	13900.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-09	17:30	18:10	02-09	13900.00	13920.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 65, Toolface Type: gravity
Rotary Drill	1	02-09	18:10	19:30	02-09	13920.00	13984.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	19:30	19:35	02-09	13984.00	13984.00	Inclination (°): 90.400, Azimuth (°): 177.400, TVD (ft): 11276.23, Dogleg (°/100 ft): 3.27, Sensor Depth (ft): 13915.00, Bit To Sensor (ft): 69.00

Rotary Drill	1	02-09	19:35	19:45	02-09	13984.00	13989.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-09	19:45	20:50	02-09	13989.00	14025.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 110, Toolface Type: gravity
Rotary Drill	1	02-09	20:50	21:55	02-09	14025.00	14077.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-09	21:55	22:00	02-09	14077.00	14077.00	Inclination (°): 91.400, Azimuth (°): 178.600, TVD (ft): 11274.77, Dogleg (°/100 ft): 1.68, Sensor Depth (ft): 14008.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-09	22:00	00:00	02-10	14077.00	14171.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Monday, Feb 10 00:00 - 23:59 (Day 16 of 30)

Billing: \$11,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	14171.00	Downhole Hours	24.00	Rotating WOB (klbs)	52.00 - 52.00
Bit Depth (ft)	15407.00	Drilling Hours	20.92	Sliding WOB (klbs)	47.00 - 70.00
Bottom Hole Depth (ft)	15407.00	Hours Circulating	1.58	Rotating SPM	200.00 - 200.00
Total Distance (ft)	1236.00	Hours Sliding	7.83	Sliding SPM	198.00 - 200.00
Distance Rotated (ft)	1029.00	Hours Rotating	13.08	Motor RPM	156.00 - 195.00
Distance Slid (ft)	207.00			Surface RPM	45.00 - 45.00
Inclination In	90.90			Flow Rate (gpm)	640.00 - 650.00
Inclination Out	92.50			On Bottom Pressure (psi)	4400.00 - 4700.00
Azimuth In	179.20	% Hours Rotating	63%	Off Bottom Pressure (psi)	4100.00 - 4200.00
Azimuth Out	178.10	% Hours Sliding	37%		
AVG Total ROP (ft/h)	58.04	% Distance Sliding	17%		
AVG Rotating ROP (ft/h)	74.45	% Distance Rotating	83%		
AVG Sliding ROP (ft/h)	26.43				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #8 - BHA #8 (lateral 3)

Date In: Feb 7, 2020, 18:00 Date Out: Feb 13, 2020, 3:15

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13418528	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	MWD Comments
Drilling Hours for Day	20.92	Bit Distances		POOH Reason Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor
Total Drilled for Day (ft)	1236.00	Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity:		
Drilling Hours for BHA	64.50	56.00 ft, Survey: 69.00 ft		
Total Drilled for BHA (ft)	3450.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26

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	02-09	22:00	00:00	02-10	14077.00	14171.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	00:00	00:05	02-10	14171.00	14171.00	Inclination (°): 90.900, Azimuth (°): 179.200, TVD (ft): 11272.88, Dogleg (°/100 ft): 0.83, Sensor Depth (ft): 14102.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	00:05	00:15	02-10	14171.00	14177.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-10	00:15	01:05	02-10	14177.00	14202.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 120, Toolface Type: gravity
Rotary Drill	1	02-10	01:05	02:20	02-10	14202.00	14265.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	02:20	02:30	02-10	14265.00	14265.00	Inclination (°): 90.900, Azimuth (°): 180.600, TVD (ft): 11271.40, Dogleg (°/100 ft): 1.49, Sensor Depth (ft): 14196.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	02:30	02:40	02-10	14265.00	14272.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-10	02:40	03:20	02-10	14272.00	14294.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	02-10	03:20	04:45	02-10	14294.00	14360.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	04:45	05:00	02-10	14360.00	14360.00	Inclination (°): 89.500, Azimuth (°): 182.000, TVD (ft): 11271.07, Dogleg (°/100 ft): 2.08, Sensor Depth (ft): 14291.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	05:00	05:55	02-10	14360.00	14454.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	05:55	06:00	02-10	14454.00	14454.00	Inclination (°): 89.300, Azimuth (°): 181.100, TVD (ft): 11272.06, Dogleg (°/100 ft): 0.98, Sensor Depth (ft): 14385.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	06:00	06:15	02-10	14454.00	14465.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-10	06:15	07:05	02-10	14465.00	14489.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 100, Toolface Type: gravity
Rotary Drill	1	02-10	07:05	07:55	02-10	14489.00	14549.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	07:55	08:00	02-10	14549.00	14549.00	Inclination (°): 89.000, Azimuth (°): 181.900, TVD (ft): 11273.46, Dogleg (°/100 ft): 0.90, Sensor Depth (ft): 14480.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	08:00	08:55	02-10	14549.00	14643.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	08:55	09:00	02-10	14643.00	14643.00	Inclination (°): 88.400, Azimuth (°): 181.600, TVD (ft): 11275.60, Dogleg (°/100 ft): 0.71, Sensor Depth (ft): 14574.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	09:00	09:50	02-10	14643.00	14737.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	09:50	09:55	02-10	14737.00	14737.00	Inclination (°): 88.000, Azimuth (°): 179.800, TVD (ft): 11278.55, Dogleg (°/100 ft): 1.96, Sensor Depth (ft): 14668.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-10	09:55	11:20	02-10	14737.00	14767.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 70, Toolface Type: gravity
Rotary Drill	1	02-10	11:20	11:25	02-10	14767.00	14832.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	11:25	11:30	02-10	14832.00	14832.00	Inclination (°): 90.200, Azimuth (°): 180.100, TVD (ft): 11280.04, Dogleg (°/100 ft): 2.34, Sensor Depth (ft): 14763.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	11:30	12:25	02-10	14832.00	14926.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	12:25	12:30	02-10	14926.00	14926.00	Inclination (°): 89.800, Azimuth (°): 179.000, TVD (ft): 11280.04, Dogleg (°/100 ft): 1.25, Sensor Depth (ft): 14857.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	12:30	12:45	02-10	14926.00	14936.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-10	12:45	13:45	02-10	14936.00	14967.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 90, Toolface Type: gravity
Rotary Drill	1	02-10	13:45	14:30	02-10	14967.00	15020.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00

Survey	46	02-10	14:30	14:35	02-10	15020.00	15020.00	Inclination (°): 90.900, Azimuth (°): 178.700, TVD (ft): 11279.47, Dogleg (°/100 ft): 1.21, Sensor Depth (ft): 14951.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	14:35	15:30	02-10	15020.00	15114.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	15:30	15:35	02-10	15114.00	15114.00	Inclination (°): 91.300, Azimuth (°): 177.600, TVD (ft): 11277.66, Dogleg (°/100 ft): 1.24, Sensor Depth (ft): 15045.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	15:35	15:50	02-10	15114.00	15125.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-10	15:50	16:50	02-10	15125.00	15160.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 47.00, Flow Rate (gpm): 640.00, Strokes Per Minute: 198, Toolface: 100, Toolface Type: gravity
Rotary Drill	1	02-10	16:50	17:25	02-10	15160.00	15209.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	17:25	17:30	02-10	15209.00	15209.00	Inclination (°): 92.100, Azimuth (°): 178.100, TVD (ft): 11274.85, Dogleg (°/100 ft): 0.99, Sensor Depth (ft): 15140.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	17:30	17:55	02-10	15209.00	15242.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-10	17:55	19:20	02-10			Circulate while trouble shoot mwd tool
Rotary Drill	1	02-10	19:20	19:50	02-10	15242.00	15303.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-10	19:50	20:00	02-10			Re log 15236 - 15266
Survey	46	02-10	20:00	20:10	02-10	15303.00	15303.00	Inclination (°): 93.300, Azimuth (°): 178.100, TVD (ft): 11270.42, Dogleg (°/100 ft): 1.28, Sensor Depth (ft): 15234.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-10	20:10	21:45	02-10	15303.00	15338.00	Toolface: 140, Toolface Type: gravity
Rotary Drill	1	02-10	21:45	23:15	02-10	15338.00	15397.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-10	23:15	23:20	02-10	15397.00	15397.00	Inclination (°): 92.500, Azimuth (°): 178.100, TVD (ft): 11265.66, Dogleg (°/100 ft): 0.85, Sensor Depth (ft): 15328.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-10	23:20	23:30	02-10	15397.00	15402.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4100.00, Weight On Bit (klbs): 52.00, Surface RPM: 45, Surface Torque (ft lbf): 24000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-10	23:30	00:00	02-11	15402.00	15407.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 135, Toolface Type: gravity

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Tuesday, Feb 11 00:00 - 23:59 (Day 17 of 30)

Billing: \$11,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	15407.00	Downhole Hours	24.00	Rotating WOB (klbs)	53.00 - 58.00
Bit Depth (ft)	16222.00	Drilling Hours	15.08	Sliding WOB (klbs)	40.00 - 70.00
Bottom Hole Depth (ft)	16222.00	Hours Circulating	0.50	Rotating SPM	200.00 - 200.00
Total Distance (ft)	815.00	Hours Sliding	4.33	Sliding SPM	200.00 - 200.00
Distance Rotated (ft)	718.00	Hours Rotating	10.75	Motor RPM	156.00 - 195.00
Distance Slid (ft)	97.00			Surface RPM	45.00 - 65.00
Inclination In	90.90			Flow Rate (gpm)	643.00 - 650.00
Inclination Out	90.20			On Bottom Pressure (psi)	4400.00 - 4600.00
Azimuth In	180.00	% Hours Rotating	71%	Off Bottom Pressure (psi)	4200.00 - 4200.00
Azimuth Out	179.80	% Hours Sliding	29%		
AVG Total ROP (ft/h)	52.62	% Distance Sliding	12%		
AVG Rotating ROP (ft/h)	66.79	% Distance Rotating	88%		
AVG Sliding ROP (ft/h)	21.10				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #8 - BHA #8 (lateral 3)

Date In: Feb 7, 2020, 18:00 Date Out: Feb 13, 2020, 3:15

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:	
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5		
S/N	13418528	Bend Angle	1.75		
Nozzles	6x22's	Speed (rev/gal)	0.26		
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	MWD Comments	
Drilling Hours for Day	15.08	Bit Distances		POOH Reason Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor	
Total Drilled for Day (ft)	815.00	Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft			
Drilling Hours for BHA	64.50				
Total Drilled for BHA (ft)	3450.00				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Slide Drill	2	02-10	23:30	00:00	02-11	15402.00	15407.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 135, Toolface Type: gravity
Slide Drill	2	02-11	00:00	00:40	02-11	15407.00	15419.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 135, Toolface Type: gravity
Other	16	02-11	00:40	00:50	02-11			VFD Fault (Recycle due to pumps and draw works shut down)
Slide Drill	2	02-11	00:50	01:50	02-11	15419.00	15432.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 135, Toolface Type: gravity
Rotary Drill	1	02-11	01:50	03:30	02-11	15432.00	15492.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 55.00, Surface RPM: 45, Surface Torque (ft lbf): 28000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-11	03:30	03:35	02-11	15492.00	15492.00	Inclination (°): 90.900, Azimuth (°): 180.000, TVD (ft): 11262.84, Dogleg (°/100 ft): 2.61, Sensor Depth (ft): 15423.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-11	03:35	03:50	02-11	15492.00	15500.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Other	16	02-11	03:50	04:10	02-11			VFD Fault (Recycle due to pumps and draw works shut down)
Slide Drill	2	02-11	04:10	04:35	02-11	15500.00	15512.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 170, Toolface Type: gravity
Other	16	02-11	04:35	05:30	02-11			Trouble shoot loss coms to PLC
Other	16	02-11	05:30	06:30	02-11			TS PLC
Rotary Drill	1	02-11	06:30	07:45	02-11	15512.00	15586.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-11	07:45	07:50	02-11	15586.00	15586.00	Inclination (°): 91.100, Azimuth (°): 180.400, TVD (ft): 11261.20, Dogleg (°/100 ft): 0.48, Sensor Depth (ft): 15517.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-11	07:50	08:00	02-11	15586.00	15596.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-11	08:00	09:15	02-11	15596.00	15626.00	Pressure On (psi): 4400.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	02-11	09:15	10:00	02-11	15626.00	15680.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-11	10:00	10:15	02-11	15680.00	15680.00	Inclination (°): 91.100, Azimuth (°): 180.800, TVD (ft): 11259.40, Dogleg (°/100 ft): 0.43, Sensor Depth (ft): 15611.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-11	10:15	11:20	02-11	15680.00	15774.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-11	11:20	11:25	02-11	15774.00	15774.00	Inclination (°): 91.300, Azimuth (°): 181.000, TVD (ft): 11257.43, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 15705.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-11	11:25	11:30	02-11	15774.00	15783.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Rig Repair	14	02-11	11:30	12:00	02-11			
Rotary Drill	1	02-11	12:00	12:30	02-11	15783.00	15817.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Rig Repair	14	02-11	12:30	17:00	02-11			
Rotary Drill	1	02-11	17:00	17:45	02-11	15817.00	15869.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 58.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-11	17:45	18:00	02-11	15869.00	15869.00	Inclination (°): 91.600, Azimuth (°): 180.500, TVD (ft): 11255.03, Dogleg (°/100 ft): 0.61, Sensor Depth (ft): 15800.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-11	18:00	19:20	02-11	15869.00	15963.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-11	19:20	19:25	02-11	15963.00	15963.00	Inclination (°): 91.500, Azimuth (°): 179.500, TVD (ft): 11252.48, Dogleg (°/100 ft): 1.07, Sensor Depth (ft): 15894.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-11	19:25	19:40	02-11	15963.00	15973.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-11	19:40	20:40	02-11	15973.00	16003.00	Pressure On (psi): 4550.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 40.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	02-11	20:40	21:20	02-11	16003.00	16057.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-11	21:20	21:35	02-11			Circulate on 1 pump while trouble shooting 2 Gens shutting down
Survey	46	02-11	21:35	21:40	02-11	16057.00	16057.00	Inclination (°): 90.600, Azimuth (°): 180.100, TVD (ft): 11250.76, Dogleg (°/100 ft): 1.15, Sensor Depth (ft): 15988.00, Bit To Sensor (ft): 69.00

Rotary Drill	1	02-11	21:40	22:55	02-11	16057.00	16152.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-11	22:55	23:00	02-11	16152.00	16152.00	Inclination (°): 90.200, Azimuth (°): 179.800, TVD (ft): 11250.10, Dogleg (°/100 ft): 0.53, Sensor Depth (ft): 16083.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-11	23:00	23:25	02-11	16152.00	16194.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-11	23:25	23:40	02-11			Circulate on 1 pump while trouble shooting 2 Gens shutting down
Rotary Drill	1	02-11	23:40	00:00	02-12	16194.00	16222.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Wednesday, Feb 12 00:00 - 23:59 (Day 18 of 30)

Billing: \$11,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	16222.00	Downhole Hours	24.00	Rotating WOB (klbs)	50.00 - 53.00
Bit Depth (ft)	16706.00	Drilling Hours	11.17	Sliding WOB (klbs)	20.00 - 20.00
Bottom Hole Depth (ft)	16706.00	Hours Circulating	4.67	Rotating SPM	200.00 - 200.00
Total Distance (ft)	484.00	Hours Sliding	2.58	Sliding SPM	200.00 - 200.00
Distance Rotated (ft)	432.00	Hours Rotating	8.58	Motor RPM	156.00 - 195.00
Distance Slid (ft)	52.00			Surface RPM	65.00 - 65.00
Inclination In	90.30			Flow Rate (gpm)	643.00 - 650.00
Inclination Out	90.50			On Bottom Pressure (psi)	4600.00 - 4650.00
Azimuth In	179.20	% Hours Rotating	77%	Off Bottom Pressure (psi)	4200.00 - 4400.00
Azimuth Out	177.80	% Hours Sliding	23%		
AVG Total ROP (ft/h)	44.52	% Distance Sliding	11%		
AVG Rotating ROP (ft/h)	51.59	% Distance Rotating	89%		
AVG Sliding ROP (ft/h)	20.13				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #8 - BHA #8 (lateral 3)

Date In: Feb 7, 2020, 18:00 Date Out: Feb 13, 2020, 3:15

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:	
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5		
S/N	13418528	Bend Angle	1.75		
Nozzles	6x22's	Speed (rev/gal)	0.26		
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	MWD Comments	
Drilling Hours for Day	11.17	Bit Distances		POOH Reason Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor	
Total Drilled for Day (ft)	484.00	Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft			
Drilling Hours for BHA	64.50				
Total Drilled for BHA (ft)	3450.00				

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26

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	02-11	23:40	00:00	02-12	16194.00	16222.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Rotary Drill	1	02-12	00:00	00:15	02-12	16222.00	16238.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-12	00:15	01:05	02-12			Circulate on 1 pump while trouble shooting 2 Gens shutting down
Rotary Drill	1	02-12	01:05	01:15	02-12	16238.00	16246.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-12	01:15	01:20	02-12	16246.00	16246.00	Inclination (°): 90.300, Azimuth (°): 179.200, TVD (ft): 11249.69, Dogleg (°/100 ft): 0.65, Sensor Depth (ft): 16177.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-12	01:20	01:40	02-12	16246.00	16276.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 53.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-12	01:40	04:30	02-12			Circulate on 1 pump while trouble shooting 2 Gens shutting down
Rotary Drill	1	02-12	04:30	05:30	02-12	16276.00	16340.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-12	05:30	05:35	02-12	16340.00	16340.00	Inclination (°): 90.500, Azimuth (°): 178.700, TVD (ft): 11249.03, Dogleg (°/100 ft): 0.57, Sensor Depth (ft): 16271.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-12	05:35	06:55	02-12	16340.00	16434.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-12	06:55	07:00	02-12	16434.00	16434.00	Inclination (°): 90.800, Azimuth (°): 178.600, TVD (ft): 11247.96, Dogleg (°/100 ft): 0.34, Sensor Depth (ft): 16365.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-12	07:00	07:20	02-12	16434.00	16445.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-12	07:20	08:45	02-12	16445.00	16470.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	02-12	08:45	10:10	02-12	16470.00	16529.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-12	10:10	10:15	02-12	16529.00	16529.00	Inclination (°): 89.900, Azimuth (°): 178.200, TVD (ft): 11247.38, Dogleg (°/100 ft): 1.04, Sensor Depth (ft): 16460.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-12	10:15	10:45	02-12	16529.00	16540.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Rig Repair	14	02-12	10:45	11:45	02-12			
Rotary Drill	1	02-12	11:45	13:30	02-12	16540.00	16623.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Survey	46	02-12	13:30	13:35	02-12	16623.00	16623.00	Inclination (°): 90.500, Azimuth (°): 177.800, TVD (ft): 11247.06, Dogleg (°/100 ft): 0.77, Sensor Depth (ft): 16554.00, Bit To Sensor (ft): 69.00, Temperature (°F): 152.00
Rotary Drill	1	02-12	13:35	13:45	02-12	16623.00	16626.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Rig Repair	14	02-12	13:45	14:30	02-12			
Rotary Drill	1	02-12	14:30	14:40	02-12	16626.00	16633.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Slide Drill	2	02-12	14:40	15:50	02-12	16633.00	16660.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 20.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 135, Toolface Type: gravity
Rotary Drill	1	02-12	15:50	17:00	02-12	16660.00	16706.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 50.00, Surface RPM: 65, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 643.00, Strokes Per Minute: 200.00
Circulating	3	02-12	17:00	18:00	02-12			Circulate B/u to POOH for Diff and TQ spikes
Pooh	7	02-12	18:00	00:00	02-13			POOH for Diff and TQ spikes

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Thursday, Feb 13 00:00 - 23:59 (Day 19 of 30)

Billing: \$30,050.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	16706.00	Downhole Hours	24.00	Rotating WOB (klbs)	35.00 - 53.00
Bit Depth (ft)	17026.00	Drilling Hours	8.50	Sliding WOB (klbs)	50.00 - 50.00
Bottom Hole Depth (ft)	17026.00	Hours Circulating	1.75	Rotating SPM	186.00 - 186.00
Total Distance (ft)	320.00	Hours Sliding	2.33	Sliding SPM	200.00 - 200.00
Distance Rotated (ft)	282.00	Hours Rotating	6.17	Motor RPM	156.00 - 195.00
Distance Slid (ft)	38.00			Surface RPM	45.00 - 45.00
Inclination In	91.60			Flow Rate (gpm)	600.00 - 650.00
Inclination Out	91.50			On Bottom Pressure (psi)	4450.00 - 4650.00
Azimuth In	179.10	% Hours Rotating	73%	Off Bottom Pressure (psi)	4150.00 - 4400.00
Azimuth Out	179.40	% Hours Sliding	27%		
AVG Total ROP (ft/h)	37.65	% Distance Sliding	12%		
AVG Rotating ROP (ft/h)	45.73	% Distance Rotating	88%		
AVG Sliding ROP (ft/h)	16.29				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #8 - BHA #8 (lateral 3)

Date In: Feb 7, 2020, 18:00 Date Out: Feb 13, 2020, 3:15

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Discovery Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; Security GT65D, SN: 134418528, Jets 6x22's TFA: 2.227, Bit Runs:
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13418528	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	MWD Comments
Drilling Hours for Day	0.00	Bit Distances		POOH Reason Torque: While drilling ahead pressure and torque spikes began to occur followed by reduced ROP. On surface motor
Total Drilled for Day (ft)		Bend: 5.32 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft		
Drilling Hours for BHA	64.50			
Total Drilled for BHA (ft)	3450.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5" HALLIBURTON GT65D, Style: PDC, Gauge Length (in): 4.50, Size (in): 8.50	HALLIBURTON	13418528	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-036	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.17	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.19	68.36
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.500		17.36	85.72
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	116.78
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.44
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2592.90
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.08
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.26

MWD Items

No Items

BHA #9 - BHA #9 Lateral 4

Date In: Feb 13, 2020, 3:15 Date Out: Feb 15, 2020, 9:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD74D , SN: 13048007 , Jets 7x20's TFA: 2.148, Bit Runs: 1
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13048007	Bend Angle	1.75	
Nozzles	7x20's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.148	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	8.50	Bit Distances		POOH Reason Penetration Rate: POOH do to Low ROP
Total Drilled for Day (ft)	320.00	Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		
Drilling Hours for BHA	31.75			
Total Drilled for BHA (ft)	1050.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: <i>GTD74D PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50</i>	HALLIBURTON	13048007	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: <i>7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5</i>	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: <i>Resistivity Collar</i>	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: <i>NM Pony Collar (Batteries, Style: Slick Drill, Type: NM</i>	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: <i>NMDC, Style: Slick Drill, Type: NM</i>	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: <i>26 Stand 5" DP, Style: Slick</i>	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: <i>6.75" Agitator, Size (in): 6.75</i>	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: <i>85 Stands 5" DP, Style: Slick</i>	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: <i>9 Stands 5" HWDP, Style: Slick</i>	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Pooh	7	02-12	18:00	00:00	02-13			POOH for Diff and TQ spikes
Pooh	7	02-13	00:00	02:20	02-13			POOH for Diff and TQ spikes
Change BHA	6	02-13	02:20	03:15	02-13			L/d BHA #8
Change BHA	6	02-13	03:15	05:20	02-13			P/U BHA # 9, Program resistivity tool, Test
TIH	8	02-13	05:20	13:15	02-13			TIH W/ BHA #9 to 16,592'
Circulating	3	02-13	13:15	13:30	02-13			Fill DP
Circulating	3	02-13	13:30	14:00	02-13			Reprogram MWD Tool
Circulating	3	02-13	14:00	15:00	02-13			Relog F/ 16592 T/ 16706
Rotary Drill	1	02-13	15:00	15:10	02-13	16706.00	16718.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 35.00, Surface RPM: 45, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-13	15:10	15:15	02-13	16718.00	16718.00	Inclination (°): 91.600, Azimuth (°): 179.100, TVD (ft): 11245.33, Dogleg (°/100 ft): 1.81, Sensor Depth (ft): 16648.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-13	15:15	16:35	02-13	16718.00	16813.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 35.00, Surface RPM: 45, Surface Torque (ft lbf): 23000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-13	16:35	16:40	02-13	16813.00	16813.00	Inclination (°): 92.200, Azimuth (°): 179.100, TVD (ft): 11242.18, Dogleg (°/100 ft): 0.63, Sensor Depth (ft): 16743.00, Bit To Sensor (ft): 70.00
Slide Drill	2	02-13	16:40	17:30	02-13	16813.00	16826.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	02-13	17:30	19:55	02-13	16826.00	16907.00	Pressure On (psi): 4450.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 45.00, Surface RPM: 45, Surface Torque (ft lbf): 29000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-13	19:55	20:00	02-13	16907.00	16907.00	Inclination (°): 90.700, Azimuth (°): 179.300, TVD (ft): 11239.81, Dogleg (°/100 ft): 1.61, Sensor Depth (ft): 16837.00, Bit To Sensor (ft): 70.00

Rotary Drill	1	02-13	20:00	22:15	02-13	16907.00	17001.00	Pressure On (psi): 4450.00, Pressure Off (psi): 4150.00, Weight On Bit (klbs): 53.00, Surface RPM: 45, Surface Torque (ft lbf): 29000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-13	22:15	22:30	02-13	17001.00	17001.00	Inclination (°): 91.500, Azimuth (°): 179.400, TVD (ft): 11238.00, Dogleg (°/100 ft): 0.86, Sensor Depth (ft): 16931.00, Bit To Sensor (ft): 70.00
Slide Drill	2	02-13	22:30	00:00	02-14	17001.00	17026.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 160, Toolface Type: gravity
MWD Activities								
No Activities								



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Friday, Feb 14 00:00 - 23:59 (Day 20 of 30)

Billing: \$12,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	17026.00	Downhole Hours	24.00	Rotating WOB (klbs)	55.00 - 56.00
Bit Depth (ft)	17730.00	Drilling Hours	22.42	Sliding WOB (klbs)	50.00 - 50.00
Bottom Hole Depth (ft)	17730.00	Hours Circulating	1.00	Rotating SPM	200.00 - 200.00
Total Distance (ft)	704.00	Hours Sliding	5.42	Sliding SPM	200.00 - 200.00
Distance Rotated (ft)	624.00	Hours Rotating	17.00	Motor RPM	156.00 - 195.00
Distance Slid (ft)	80.00			Surface RPM	45.00 - 50.00
Inclination In	90.10			Flow Rate (gpm)	650.00 - 650.00
Inclination Out	90.30			On Bottom Pressure (psi)	4650.00 - 5000.00
Azimuth In	179.10	% Hours Rotating	76%	Off Bottom Pressure (psi)	4400.00 - 4650.00
Azimuth Out	178.80	% Hours Sliding	24%		
AVG Total ROP (ft/h)	30.48	% Distance Sliding	11%		
AVG Rotating ROP (ft/h)	36.71	% Distance Rotating	89%		
AVG Sliding ROP (ft/h)	15.18				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #9 - BHA #9 Lateral 4

Date In: Feb 13, 2020, 3:15 Date Out: Feb 15, 2020, 9:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD74D , SN: 13048007 , Jets 7x20's TFA: 2.148, Bit Runs: 1
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13048007	Bend Angle	1.75	
Nozzles	7x20's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.148	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	22.42	Bit Distances		
Total Drilled for Day (ft)	704.00	Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		
Drilling Hours for BHA	31.75			
Total Drilled for BHA (ft)	1050.00			
				POOH Reason
				Penetration Rate: POOH do to Low ROP

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: GTD74D PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	HALLIBURTON	13048007	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Slide Drill	2	02-13	22:30	00:00	02-14	17001.00	17026.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	02-14	00:00	01:40	02-14	17026.00	17096.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 56.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-14	01:40	01:45	02-14	17096.00	17096.00	Inclination (°): 90.100, Azimuth (°): 179.100, TVD (ft): 11236.67, Dogleg (°/100 ft): 1.51, Sensor Depth (ft): 17026.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-14	01:45	01:50	02-14	17096.00	17099.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 56.00, Surface RPM: 45, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Slide Drill	2	02-14	01:50	02:50	02-14	17099.00	17116.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	02-14	02:50	04:35	02-14	17116.00	17190.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-14	04:35	04:40	02-14	17190.00	17190.00	Inclination (°): 88.000, Azimuth (°): 179.000, TVD (ft): 11238.23, Dogleg (°/100 ft): 2.24, Sensor Depth (ft): 17120.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-14	04:40	07:10	02-14	17190.00	17284.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-14	07:10	07:15	02-14	17284.00	17284.00	Inclination (°): 88.000, Azimuth (°): 178.900, TVD (ft): 11241.51, Dogleg (°/100 ft): 0.11, Sensor Depth (ft): 17214.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-14	07:15	07:35	02-14	17284.00	17294.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Slide Drill	2	02-14	07:35	09:00	02-14	17294.00	17309.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	02-14	09:00	11:15	02-14	17309.00	17378.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-14	11:15	11:20	02-14	17378.00	17378.00	Inclination (°): 88.600, Azimuth (°): 178.600, TVD (ft): 11244.30, Dogleg (°/100 ft): 0.71, Sensor Depth (ft): 17308.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-14	11:20	13:40	02-14	17378.00	17473.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-14	13:40	13:45	02-14	17473.00	17473.00	Inclination (°): 87.900, Azimuth (°): 178.100, TVD (ft): 11247.20, Dogleg (°/100 ft): 0.91, Sensor Depth (ft): 17403.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-14	13:45	14:15	02-14	17473.00	17483.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Slide Drill	2	02-14	14:15	16:00	02-14	17483.00	17513.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	02-14	16:00	17:40	02-14	17513.00	17567.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-14	17:40	17:45	02-14	17567.00	17567.00	Inclination (°): 89.700, Azimuth (°): 178.500, TVD (ft): 11249.17, Dogleg (°/100 ft): 1.96, Sensor Depth (ft): 17497.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-14	17:45	20:15	02-14	17567.00	17661.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-14	20:15	20:20	02-14	17661.00	17661.00	Inclination (°): 90.300, Azimuth (°): 178.800, TVD (ft): 11249.17, Dogleg (°/100 ft): 0.71, Sensor Depth (ft): 17591.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-14	20:20	20:35	02-14	17661.00	17667.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Slide Drill	2	02-14	20:35	20:50	02-14	17667.00	17669.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 100, Toolface Type: gravity
Circulating	3	02-14	20:50	21:35	02-14			2 Pumps down circulate while working on pumps
Slide Drill	2	02-14	21:35	22:35	02-14	17669.00	17685.00	Pressure On (psi): 4650.00, Pressure Off (psi): 4400.00, Weight On Bit (klbs): 50.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 110, Toolface Type: gravity
Circulating	3	02-14	22:35	22:50	02-14			Pump down Swap pumps
Rotary Drill	1	02-14	22:50	00:00	02-15	17685.00	17730.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Saturday, Feb 15 00:00 - 23:59 (Day 21 of 30)

Billing: \$12,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	17730.00	Downhole Hours	24.00	Rotating WOB (klbs)	43.00 - 55.00
Bit Depth (ft)	18006.00	Drilling Hours	5.08	Sliding WOB (klbs)	38.00 - 38.00
Bottom Hole Depth (ft)	18006.00	Hours Circulating	1.00	Rotating SPM	186.00 - 200.00
Total Distance (ft)	276.00	Hours Sliding	0.58	Sliding SPM	186.00 - 186.00
Distance Rotated (ft)	259.00	Hours Rotating	4.50	Motor RPM	156.00 - 195.00
Distance Slid (ft)	17.00			Surface RPM	50.00 - 50.00
Inclination In	90.80			Flow Rate (gpm)	600.00 - 650.00
Inclination Out	88.90			On Bottom Pressure (psi)	4600.00 - 5000.00
Azimuth In	180.60	% Hours Rotating	89%	Off Bottom Pressure (psi)	4200.00 - 4650.00
Azimuth Out	180.40	% Hours Sliding	11%		
AVG Total ROP (ft/h)	51.36	% Distance Sliding	6%		
AVG Rotating ROP (ft/h)	53.65	% Distance Rotating	94%		
AVG Sliding ROP (ft/h)	29.14				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #9 - BHA #9 Lateral 4

Date In: Feb 13, 2020, 3:15 Date Out: Feb 15, 2020, 9:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD74D , SN: 13048007 , Jets 7x20's TFA: 2.148, Bit Runs: 1
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13048007	Bend Angle	1.75	
Nozzles	7x20's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.148	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	0.83	Bit Distances		
Total Drilled for Day (ft)	26.00	Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		
Drilling Hours for BHA	31.75	POOH Reason		
Total Drilled for BHA (ft)	1050.00	Penetration Rate: POOH do to Low ROP		

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: GTD74D PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	HALLIBURTON	13048007	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48

MWD Items

No Items

BHA #10 - BHA #10 Lateral 5

Date In: Feb 15, 2020, 9:00 Date Out: Feb 17, 2020, 19:05

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD65DM , SN: 13184329 , Jets 6x22's TFA: 2.227, Bit Runs: 0	
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5		
S/N	13184329	Bend Angle	1.75		
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.187		
Drilling Hours for Day	4.25	Bit Distances		POOH Reason	
Total Drilled for Day (ft)	250.00	Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft			
Drilling Hours for BHA	34.00				
Total Drilled for BHA (ft)	1280.00				
				Penetration Rate: While Drilling ahead ROP dropped to 0 and lost all drilling Diff.POOH to inspect BHA.	

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: GTD65DM PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	HALLIBURTON	13184329	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48

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	02-14	22:50	00:00	02-15	17685.00	17730.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Circulating	3	02-15	00:00	00:25	02-15			2 Pumps down circulate while working on pumps
Rotary Drill	1	02-15	00:25	01:15	02-15	17730.00	17756.00	Pressure On (psi): 5000.00, Pressure Off (psi): 4650.00, Weight On Bit (klbs): 55.00, Surface RPM: 50, Surface Torque (ft lbf): 30000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-15	01:15	01:20	02-15	17756.00	17756.00	Inclination (°): 90.800, Azimuth (°): 180.600, TVD (ft): 11248.26, Dogleg (°/100 ft): 1.97, Sensor Depth (ft): 17686.00, Bit To Sensor (ft): 70.00
Pooh	7	02-15	01:20	08:30	02-15			POOH for ROP
Change BHA	6	02-15	08:30	09:00	02-15			P/U BHA #10 (C/O Bit, Rerun Motor)
Other	16	02-15	09:00	10:15	02-15			Reprogram AWR Tool
Circulating	3	02-15	10:15	10:30	02-15			Shallow Test Tools (OK)
TIH	8	02-15	10:30	12:30	02-15			TIH W/ BHA #10 to Casing Shoe
Other	16	02-15	12:30	13:30	02-15			Slip & Cut Drill Line
TIH	8	02-15	13:30	18:50	02-15			TIH W/ BHA #10
Rotary Drill	1	02-15	18:50	18:55	02-15	17756.00	17765.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 43.00, Surface RPM: 50, Surface Torque (ft lbf): 28000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Other	16	02-15	18:55	19:20	02-15			Down link MWD Tool
Slide Drill	2	02-15	19:20	19:55	02-15	17765.00	17782.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 38.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	02-15	19:55	21:15	02-15	17782.00	17850.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 43.00, Surface RPM: 50, Surface Torque (ft lbf): 28000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-15	21:15	21:20	02-15	17850.00	17850.00	Inclination (°): 89.000, Azimuth (°): 181.000, TVD (ft): 11248.42, Dogleg (°/100 ft): 1.96, Sensor Depth (ft): 17780.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-15	21:20	22:50	02-15	17850.00	17944.00	

Survey	46	02-15	22:50	22:55	02-15	17944.00	17944.00	Inclination (°): 88.900, Azimuth (°): 180.400, TVD (ft): 11250.15, Dogleg (°/100 ft): 0.65, Sensor Depth (ft): 17874.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-15	22:55	23:40	02-15	17944.00	18006.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 44.00, Surface RPM: 50, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Circulating	3	02-15	23:40	00:00	02-16			T/s MWD logging computer
MWD Activities								
No Activities								



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Sunday, Feb 16 00:00 - 23:59 (Day 22 of 30)

Billing: \$12,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	18006.00	Downhole Hours	24.00	Rotating WOB (klbs)	44.00 - 56.00
Bit Depth (ft)	18822.00	Drilling Hours	22.58	Sliding WOB (klbs)	55.00 - 65.00
Bottom Hole Depth (ft)	18822.00	Hours Circulating	0.67	Rotating SPM	186.00 - 200.00
Total Distance (ft)	816.00	Hours Sliding	5.92	Sliding SPM	186.00 - 200.00
Distance Rotated (ft)	721.00	Hours Rotating	16.67	Motor RPM	156.00 - 195.00
Distance Slid (ft)	95.00			Surface RPM	50.00 - 50.00
Inclination In	88.88			Flow Rate (gpm)	600.00 - 650.00
Inclination Out	90.46			On Bottom Pressure (psi)	4500.00 - 5300.00
Azimuth In	179.02	% Hours Rotating	74%	Off Bottom Pressure (psi)	4200.00 - 4900.00
Azimuth Out	181.39	% Hours Sliding	26%		
AVG Total ROP (ft/h)	36.13	% Distance Sliding	12%		
AVG Rotating ROP (ft/h)	43.26	% Distance Rotating	88%		
AVG Sliding ROP (ft/h)	16.06				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #10 - BHA #10 Lateral 5

Date In: Feb 15, 2020, 9:00 Date Out: Feb 17, 2020, 19:05

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD65DM , SN: 13184329 , Jets 6x22's TFA: 2.227, Bit Runs: 0
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13184329	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	22.58	Bit Distances		
Total Drilled for Day (ft)	816.00	Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		POOH Reason
Drilling Hours for BHA	34.00			
Total Drilled for BHA (ft)	1280.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: GTD65DM PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	HALLIBURTON	13184329	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48

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	02-15	23:40	00:00	02-16			T/s MWD logging computer
Circulating	3	02-16	00:00	00:10	02-16			T/s MWD logging computer
Rotary Drill	1	02-16	00:10	00:40	02-16	18006.00	18038.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 44.00, Surface RPM: 50, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Circulating	3	02-16	00:40	01:10	02-16			Re-log F/ 17,982 T/ 18,038
Survey	46	02-16	01:10	01:15	02-16	18038.00	18038.00	Inclination (°): 88.880, Azimuth (°): 179.020, TVD (ft): 11251.97, Dogleg (°/100 ft): 1.47, Sensor Depth (ft): 17968.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	01:15	01:30	02-16	18038.00	18050.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 44.00, Surface RPM: 50, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	02-16	01:30	03:00	02-16	18050.00	18075.00	Pressure On (psi): 4500.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 63.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 70, Toolface Type: gravity
Rotary Drill	1	02-16	03:00	04:00	02-16	18075.00	18133.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 44.00, Surface RPM: 50, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-16	04:00	04:05	02-16	18133.00	18133.00	Inclination (°): 88.920, Azimuth (°): 180.250, TVD (ft): 11253.79, Dogleg (°/100 ft): 1.30, Sensor Depth (ft): 18063.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	04:05	04:20	02-16	18133.00	18137.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 44.00, Surface RPM: 50, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	02-16	04:20	05:15	02-16	18137.00	18152.00	Pressure On (psi): 4500.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 63.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 160, Toolface Type: gravity
Rotary Drill	1	02-16	05:15	06:55	02-16	18152.00	18227.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 44.00, Surface RPM: 50, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-16	06:55	07:00	02-16	18227.00	18227.00	Inclination (°): 88.220, Azimuth (°): 180.870, TVD (ft): 11256.14, Dogleg (°/100 ft): 0.99, Sensor Depth (ft): 18157.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	07:00	07:20	02-16	18227.00	18236.00	Pressure On (psi): 4600.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 44.00, Surface RPM: 50, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Slide Drill	2	02-16	07:20	08:10	02-16	18236.00	18253.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	02-16	08:10	09:20	02-16	18253.00	18321.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 46.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-16	09:20	09:25	02-16	18321.00	18321.00	Inclination (°): 90.420, Azimuth (°): 181.040, TVD (ft): 11257.25, Dogleg (°/100 ft): 2.35, Sensor Depth (ft): 18251.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	09:25	11:00	02-16	18321.00	18416.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 46.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-16	11:00	11:05	02-16	18416.00	18416.00	Inclination (°): 90.770, Azimuth (°): 181.130, TVD (ft): 11256.27, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 18346.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	11:05	12:50	02-16	18416.00	18510.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 46.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-16	12:50	12:55	02-16	18510.00	18510.00	Inclination (°): 91.600, Azimuth (°): 181.310, TVD (ft): 11254.32, Dogleg (°/100 ft): 0.90, Sensor Depth (ft): 18440.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	12:55	13:40	02-16	18510.00	18550.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 46.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Slide Drill	2	02-16	13:40	15:00	02-16	18550.00	18570.00	Pressure On (psi): 5100.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 65.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	02-16	15:00	16:05	02-16	18570.00	18604.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 46.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-16	16:05	16:10	02-16	18604.00	18604.00	Inclination (°): 92.220, Azimuth (°): 180.870, TVD (ft): 11251.19, Dogleg (°/100 ft): 0.81, Sensor Depth (ft): 18534.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	16:10	18:45	02-16	18604.00	18698.00	Pressure On (psi): 5300.00, Pressure Off (psi): 4900.00, Weight On Bit (klbs): 46.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 200.00
Survey	46	02-16	18:45	18:50	02-16	18698.00	18698.00	Inclination (°): 89.540, Azimuth (°): 180.950, TVD (ft): 11249.75, Dogleg (°/100 ft): 2.85, Sensor Depth (ft): 18628.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	18:50	22:05	02-16	18698.00	18793.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 56.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-16	22:05	22:10	02-16	18793.00	18793.00	Inclination (°): 90.460, Azimuth (°): 181.390, TVD (ft): 11249.75, Dogleg (°/100 ft): 1.07, Sensor Depth (ft): 18723.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-16	22:10	22:20	02-16	18793.00	18796.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 56.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00

Slide Drill	2	02-16	22:20	23:40	02-16	18796.00	18814.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4250.00, Weight On Bit (klbs): 55.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 170, Toolface Type: gravity
Rotary Drill	1	02-16	23:40	00:00	02-17	18814.00	18822.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 56.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Monday, Feb 17 00:00 - 23:59 (Day 23 of 30)

Billing: \$26,045.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	18822.00	Downhole Hours	24.00	Rotating WOB (klbs)	56.00 - 56.00
Bit Depth (ft)	19036.00	Drilling Hours	7.17	Sliding WOB (klbs)	55.00 - 55.00
Bottom Hole Depth (ft)	19036.00	Hours Circulating	1.83	Rotating SPM	186.00 - 186.00
Total Distance (ft)	214.00	Hours Sliding	1.75	Sliding SPM	186.00 - 186.00
Distance Rotated (ft)	183.00	Hours Rotating	5.42	Motor RPM	156.00 - 195.00
Distance Slid (ft)	31.00			Surface RPM	50.00 - 50.00
Inclination In	89.49			Flow Rate (gpm)	600.00 - 600.00
Inclination Out	89.93			On Bottom Pressure (psi)	4700.00 - 4850.00
Azimuth In	182.98	% Hours Rotating	76%	Off Bottom Pressure (psi)	4200.00 - 4250.00
Azimuth Out	183.77	% Hours Sliding	24%		
AVG Total ROP (ft/h)	29.60	% Distance Sliding	14%		
AVG Rotating ROP (ft/h)	33.22	% Distance Rotating	86%		
AVG Sliding ROP (ft/h)	17.71				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #10 - BHA #10 Lateral 5

Date In: Feb 15, 2020, 9:00 Date Out: Feb 17, 2020, 19:05

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.73; BIT - Halliburton GTD65DM , SN: 13184329 , Jets 6x22's TFA: 2.227, Bit Runs: 0
Vendor	HALLIBURTON	Lobe/Stage	7/8, 8.5	
S/N	13184329	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.187	MWD Comments
Drilling Hours for Day	7.17	Bit Distances		
Total Drilled for Day (ft)	214.00	Bend: 5.30 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 70.00 ft		
Drilling Hours for BHA	34.00			
Total Drilled for BHA (ft)	1280.00			
				POOH Reason
				Penetration Rate: While Drilling ahead ROP dropped to 0 and lost all drilling Diff. POOH to inspect BHA.

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: GTD65DM PDC Bit, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	HALLIBURTON	13184329	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-031	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		828.18	11437.48

MWD Items

No Items

BHA #11 - BHA #11 Lateral 6

Date In: Feb 17, 2020, 19:05 Date Out: Feb 20, 2020, 7:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1.910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Baker DD506TWX , SN: 5293547 , Jets 6x22's TFA: 2.227, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5293547	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	
Drilling Hours for Day	0.00	Bit Distances		MWD Comments
Total Drilled for Day (ft)		Bend: 5.29 ft, Gamma: 46.00 ft,		
Drilling Hours for BHA	32.58	Resistivity: 56.00 ft, Survey: 70.00 ft		
Total Drilled for BHA (ft)	845.00			
				POOH Reason
				Penetration Rate: POOH do to Low ROP

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Baker DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5293547	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11435.98

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	02-16	23:40	00:00	02-17	18814.00	18822.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 56.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Rotary Drill	1	02-17	00:00	01:35	02-17	18822.00	18887.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 56.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-17	01:35	01:40	02-17	18887.00	18887.00	Inclination (°): 89.490, Azimuth (°): 182.980, TVD (ft): 11249.79, Dogleg (°/100 ft): 1.98, Sensor Depth (ft): 18817.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-17	01:40	04:15	02-17	18887.00	18982.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 56.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Survey	46	02-17	04:15	04:20	02-17	18982.00	18982.00	Inclination (°): 89.930, Azimuth (°): 183.770, TVD (ft): 11250.27, Dogleg (°/100 ft): 0.95, Sensor Depth (ft): 18912.00, Bit To Sensor (ft): 70.00
Other	16	02-17	04:20	04:35	02-17			Pump Down
Slide Drill	2	02-17	04:35	06:20	02-17	18982.00	19013.00	Pressure On (psi): 4850.00, Pressure Off (psi): 4250.00, Weight On Bit (klbs): 55.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186, Toolface: 230, Toolface Type: gravity
Rotary Drill	1	02-17	06:20	07:35	02-17	19013.00	19036.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4200.00, Weight On Bit (klbs): 56.00, Surface RPM: 50, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 600.00, Strokes Per Minute: 186.00
Circulating	3	02-17	07:35	08:30	02-17			Circ./ Build Plug
Pooh	7	02-17	08:30	18:00	02-17			POOH to Inspect / ROP & Diff Drop
Change BHA	6	02-17	18:00	19:05	02-17			L/D BHA # 10 P/U BHA # 11
Change BHA	6	02-17	19:05	19:55	02-17			Dump and Re-program MWD
Circulating	3	02-17	19:55	20:10	02-17			Surface test MWD
Rig Service - Out Hole	20	02-17	20:10	21:10	02-17			Rig Service
TIH	8	02-17	21:10	22:05	02-17			TIH W/ BHA #11 T/ 2500
Circulating	3	02-17	22:05	22:45	02-17			Agitator test Before - 600 GPM, 186 SPM, 9.5 MW, 1575 PSI, 255 Pulse Amplitude After - 600 GPM, 186 SPM, 9.5 MW, 2100 PSI, 163 Pulse Amplitude

TIH	8	02-17	22:45	00:00	02-18		TIH W/ BHA #11 T/ 6400
MWD Activities							
No Activities							



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Tuesday, Feb 18 00:00 - 23:59 (Day 24 of 30)

Billing: \$12,000.00 (\$394,148.32 total)

Drilling Summary

Start Depth (ft)	19036.00	Downhole Hours	24.00	Rotating WOB (klbs)	32.00 - 32.00
Bit Depth (ft)	19377.00	Drilling Hours	11.75	Sliding WOB (klbs)	60.00 - 60.00
Bottom Hole Depth (ft)	19377.00	Hours Circulating	6.42	Rotating SPM	170.00 - 170.00
Total Distance (ft)	341.00	Hours Sliding	5.67	Sliding SPM	204.00 - 204.00
Distance Rotated (ft)	251.00	Hours Rotating	6.08	Motor RPM	156.00 - 195.00
Distance Slid (ft)	90.00			Surface RPM	40.00 - 40.00
Inclination In	88.66			Flow Rate (gpm)	550.00 - 650.00
Inclination Out	94.64			On Bottom Pressure (psi)	4475.00 - 5400.00
Azimuth In	181.66	% Hours Rotating	52%	Off Bottom Pressure (psi)	3900.00 - 5100.00
Azimuth Out	182.80	% Hours Sliding	48%		
AVG Total ROP (ft/h)	29.02	% Distance Sliding	26%		
AVG Rotating ROP (ft/h)	41.26	% Distance Rotating	74%		
AVG Sliding ROP (ft/h)	15.88				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #11 - BHA #11 Lateral 6

Date In: Feb 17, 2020, 19:05 Date Out: Feb 20, 2020, 7:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Baker DD506TWX , SN: 5293547 , Jets 6x22's TFA: 2.227, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5293547	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	MWD Comments
Drilling Hours for Day	11.75	Bit Distances		
Total Drilled for Day (ft)	341.00	Bend: 5.29 ft, Gamma: 46.00 ft,		
Drilling Hours for BHA	32.58	Resistivity: 56.00 ft, Survey: 70.00 ft		
Total Drilled for BHA (ft)	845.00			
				POOH Reason
				Penetration Rate: POOH do to Low ROP

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Baker DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5293547	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11435.98

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	02-17	22:45	00:00	02-18			TIH W/ BHA #11 T/ 6400
TIH	8	02-18	00:00	05:30	02-18			TIH W/ BHA #11
Circulating	3	02-18	05:30	08:00	02-18			W/R F/18000 T/18979
Circulating	3	02-18	08:00	08:30	02-18			Down Link AWR
Circulating	3	02-18	08:30	09:30	02-18			Circ. Gas
Circulating	3	02-18	09:30	09:45	02-18			W/R F/18979 T/19036
Circulating	3	02-18	09:45	10:00	02-18			Down Link AWR
Rotary Drill	1	02-18	10:00	10:45	02-18	19036.00	19073.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-18	10:45	10:50	02-18	19073.00	19073.00	Inclination (°): 88.660, Azimuth (°): 181.660, TVD (ft): 11251.39, Dogleg (°/100 ft): 2.71, Sensor Depth (ft): 19003.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-18	10:50	11:05	02-18	19073.00	19083.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Slide Drill	2	02-18	11:05	11:20	02-18	19083.00	19087.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 230, Toolface Type: gravity
Circulating	3	02-18	11:20	12:00	02-18			Down Link AWR
Slide Drill	2	02-18	12:00	12:50	02-18	19087.00	19100.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 220, Toolface Type: gravity
Rotary Drill	1	02-18	12:50	14:00	02-18	19100.00	19168.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-18	14:00	14:05	02-18	19168.00	19168.00	Inclination (°): 89.270, Azimuth (°): 181.830, TVD (ft): 11253.10, Dogleg (°/100 ft): 0.67, Sensor Depth (ft): 19098.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-18	14:05	14:35	02-18	19168.00	19178.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Slide Drill	2	02-18	14:35	16:30	02-18	19178.00	19210.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 210, Toolface Type: gravity
Rotary Drill	1	02-18	16:30	18:00	02-18	19210.00	19262.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-18	18:00	18:05	02-18	19262.00	19262.00	Inclination (°): 90.900, Azimuth (°): 181.480, TVD (ft): 11252.96, Dogleg (°/100 ft): 1.77, Sensor Depth (ft): 19192.00, Bit To Sensor (ft): 70.00
Slide Drill	2	02-18	18:05	19:45	02-18	19262.00	19297.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 200, Toolface Type: gravity
Rotary Drill	1	02-18	19:45	21:25	02-18	19297.00	19356.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-18	21:25	21:30	02-18	19356.00	19356.00	Inclination (°): 94.640, Azimuth (°): 182.800, TVD (ft): 11248.42, Dogleg (°/100 ft): 4.22, Sensor Depth (ft): 19286.00, Bit To Sensor (ft): 70.00
Circulating	3	02-18	21:30	22:15	02-18			Circulate and consult with advance over INC and AZ.
Rotary Drill	1	02-18	22:15	22:30	02-18	19356.00	19371.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Circulating	3	02-18	22:30	23:00	02-18			MWD Check shot @ 19371 MD 19301 Svy Depth - 95.0 Inc 182.9 Az. Calculated TF shows 20 R when slide was 160 L Consult with Advance
Slide Drill	2	02-18	23:00	00:00	02-19	19371.00	19377.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 20, Toolface Type: gravity

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Wednesday, Feb 19 00:00 - 23:59 (Day 25 of 30)

Billing: \$12,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	19377.00	Downhole Hours	24.00	Rotating WOB (klbs)	32.00 - 38.00
Bit Depth (ft)	19881.00	Drilling Hours	20.83	Sliding WOB (klbs)	60.00 - 60.00
Bottom Hole Depth (ft)	19881.00	Hours Circulating	1.33	Rotating SPM	170.00 - 170.00
Total Distance (ft)	504.00	Hours Sliding	6.42	Sliding SPM	204.00 - 204.00
Distance Rotated (ft)	394.00	Hours Rotating	14.42	Motor RPM	156.00 - 195.00
Distance Slid (ft)	110.00			Surface RPM	40.00 - 40.00
Inclination In	92.66			Flow Rate (gpm)	550.00 - 650.00
Inclination Out	85.63			On Bottom Pressure (psi)	4475.00 - 5400.00
Azimuth In	182.18	% Hours Rotating	69%	Off Bottom Pressure (psi)	3900.00 - 5100.00
Azimuth Out	179.90	% Hours Sliding	31%		
AVG Total ROP (ft/h)	23.36	% Distance Sliding	22%		
AVG Rotating ROP (ft/h)	27.33	% Distance Rotating	78%		
AVG Sliding ROP (ft/h)	15.64				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #11 - BHA #11 Lateral 6

Date In: Feb 17, 2020, 19:05 Date Out: Feb 20, 2020, 7:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Baker DD506TWX , SN: 5293547 , Jets 6x22's TFA: 2.227, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5293547	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	MWD Comments
Drilling Hours for Day	20.83	Bit Distances		POOH Reason Penetration Rate: POOH do to Low ROP
Total Drilled for Day (ft)	504.00	Bend: 5.29 ft, Gamma: 46.00 ft,		
Drilling Hours for BHA	32.58	Resistivity: 56.00 ft, Survey: 70.00 ft		
Total Drilled for BHA (ft)	845.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Baker DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5293547	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11435.98

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Slide Drill	2	02-18	23:00	00:00	02-19	19371.00	19377.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 20, Toolface Type: gravity
Slide Drill	2	02-19	00:00	00:50	02-19	19377.00	19392.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 20, Toolface Type: gravity
Rotary Drill	1	02-19	00:50	01:15	02-19	19392.00	19399.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 32.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Circulating	3	02-19	01:15	01:40	02-19			2 Pumps down. Circulate on 1 pump while working on others.
Rotary Drill	1	02-19	01:40	03:25	02-19	19399.00	19450.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-19	03:25	03:30	02-19	19450.00	19450.00	Inclination (°): 92.660, Azimuth (°): 182.180, TVD (ft): 11242.44, Dogleg (°/100 ft): 2.21, Sensor Depth (ft): 19380.00, Bit To Sensor (ft): 70.00
Slide Drill	2	02-19	03:30	05:00	02-19	19450.00	19480.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	02-19	05:00	07:10	02-19	19480.00	19545.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-19	07:10	07:15	02-19	19545.00	19545.00	Inclination (°): 90.200, Azimuth (°): 179.900, TVD (ft): 11240.07, Dogleg (°/100 ft): 3.53, Sensor Depth (ft): 19475.00, Bit To Sensor (ft): 70.00
Slide Drill	2	02-19	07:15	09:00	02-19	19545.00	19575.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 190, Toolface Type: gravity
Rotary Drill	1	02-19	09:00	11:00	02-19	19575.00	19639.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-19	11:00	11:05	02-19	19639.00	19639.00	Inclination (°): 87.210, Azimuth (°): 179.990, TVD (ft): 11242.19, Dogleg (°/100 ft): 3.18, Sensor Depth (ft): 19569.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-19	11:05	11:25	02-19	19639.00	19649.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Slide Drill	2	02-19	11:25	12:15	02-19	19649.00	19664.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 240, Toolface Type: gravity
Rotary Drill	1	02-19	12:15	14:30	02-19	19664.00	19733.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-19	14:30	14:35	02-19	19733.00	19733.00	Inclination (°): 86.860, Azimuth (°): 179.370, TVD (ft): 11247.05, Dogleg (°/100 ft): 0.76, Sensor Depth (ft): 19663.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-19	14:35	18:05	02-19	19733.00	19828.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-19	18:05	18:10	02-19	19828.00	19828.00	Inclination (°): 85.630, Azimuth (°): 179.900, TVD (ft): 11253.27, Dogleg (°/100 ft): 1.41, Sensor Depth (ft): 19758.00, Bit To Sensor (ft): 70.00
Rotary Drill	1	02-19	18:10	18:30	02-19	19828.00	19835.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Slide Drill	2	02-19	18:30	20:00	02-19	19835.00	19855.00	Pressure On (psi): 5400.00, Pressure Off (psi): 5100.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 290, Toolface Type: gravity
Rotary Drill	1	02-19	20:00	21:40	02-19	19855.00	19881.00	Pressure On (psi): 4475.00, Pressure Off (psi): 3900.00, Weight On Bit (klbs): 38.00, Surface RPM: 40, Surface Torque (ft lbf): 27000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Circulating	3	02-19	21:40	22:35	02-19			Circulate B/u to POOH for ROP
Pooh	7	02-19	22:35	00:00	02-20			POOH for low ROP

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Thursday, Feb 20 00:00 - 23:59 (Day 26 of 30)

Billing: \$16,005.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	19881.00	Downhole Hours	24.00	Rotating WOB (klbs)	42.00 - 42.00
Bit Depth (ft)	19922.00	Drilling Hours	0.67	Sliding WOB (klbs)	
Bottom Hole Depth (ft)	19922.00	Hours Circulating	3.33	Rotating SPM	170.00 - 170.00
Total Distance (ft)	41.00	Hours Sliding	0.00	Sliding SPM	
Distance Rotated (ft)	41.00	Hours Rotating	0.67	Motor RPM	156.00 - 195.00
Distance Slid (ft)	0.00			Surface RPM	40.00 - 40.00
Inclination In	88.79			Flow Rate (gpm)	550.00 - 550.00
Inclination Out	88.79			On Bottom Pressure (psi)	4700.00 - 4700.00
Azimuth In	177.79	% Hours Rotating	100%	Off Bottom Pressure (psi)	4300.00 - 4300.00
Azimuth Out	177.79	% Hours Sliding	0%		
AVG Total ROP (ft/h)	61.50	% Distance Sliding	0%		
AVG Rotating ROP (ft/h)	61.50	% Distance Rotating	100%		
AVG Sliding ROP (ft/h)	0.00				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #11 - BHA #11 Lateral 6

Date In: Feb 17, 2020, 19:05 Date Out: Feb 20, 2020, 7:00

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Baker DD506TWX, SN: 5293547, Jets 6x22's TFA: 2.227, Bit Runs: 1
Vendor	Baker	Lobe/Stage	7/8, 8.5	
S/N	5293547	Bend Angle	1.75	
Nozzles	6x22's	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.227	Wear Pad OD (in)	7.125	
Drilling Hours for Day	0.00	Bit Distances		
Total Drilled for Day (ft)		Bend: 5.29 ft, Gamma: 46.00 ft,		
Drilling Hours for BHA	32.58	Resistivity: 56.00 ft, Survey: 70.00 ft		POOH Reason
Total Drilled for BHA (ft)	845.00			Penetration Rate: POOH do to Low ROP

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Baker DD506TWX, Style: PDC, Gauge Length (in): 4.00, Size (in): 8.50	Baker	5293547	4 1/2" Reg Pin			8.500		1.00	1.00
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.22
Other Description: Resistivity Collar	Benchtree	HPR 650-1001	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.750		31.41	68.63
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-6002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.31	85.94
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.00
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.66
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.12
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.30
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11435.98

MWD Items

No Items

BHA #12 - BHA # 12 Lateral

Date In: Feb 20, 2020, 7:00 Date Out: Feb 23, 2020, 12:15

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Security GTD74D , SN: 12948610 , Jets 7x20's TFA: 2.148, Bit Runs: 5
Vendor	Security	Lobe/Stage	7/8, 8.5	
S/N	12948610	Bend Angle	1.75	
Nozzles	7x20's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.148	Wear Pad OD (in)	7.125	MWD Comments
Drilling Hours for Day	0.67	Bit Distances		POOH Reason Total Depth/Casing Point: TD well
Total Drilled for Day (ft)	41.00	Bend: 5.29 ft, Gamma: 46.00 ft,		
Drilling Hours for BHA	41.58	Resistivity: 56.00 ft, Survey: 69.00 ft		
Total Drilled for BHA (ft)	1668.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Security GTD74D, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Security	12948610	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1010	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		31.31	68.48
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.49	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.15
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.33
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11436.01

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Pooh	7	02-19	22:35	00:00	02-20			POOH for low ROP
Pooh	7	02-20	00:00	03:10	02-20			POOH for low ROP
Other	16	02-20	03:10	04:15	02-20			Repair ST-80 Hose
Pooh	7	02-20	04:15	07:00	02-20			POOH for low ROP
Change BHA	6	02-20	07:00	08:00	02-20			P/U BHA # 12 , Check motor scribe (180 out), C/O Bit , Rerun Motor
Other	16	02-20	08:00	09:00	02-20			Reprogram MWD Tools
Circulating	3	02-20	09:00	09:40	02-20			Shallow Test Tool (MWD not pulsing)Bad Test
Other	16	02-20	09:40	10:40	02-20			C/O Resistivity & Battery
Other	16	02-20	10:40	11:40	02-20			Reprogram MWD Tools
Circulating	3	02-20	11:40	12:00	02-20			Shallow Test Tools (Good Test)
TIH	8	02-20	12:00	14:15	02-20			TIH W/ BHA #12 t/ Casing Shoe
Other	16	02-20	14:15	15:20	02-20			Slip & Cut Drill Line
TIH	8	02-20	15:20	20:55	02-20			TIH W/ BHA #12
Reaming	4	02-20	20:55	23:15	02-20			Reaming F/ 19002 - T/ 19881 [GPM = 550, RPM = 30]
Rotary Drill	1	02-20	23:15	23:55	02-20	19881.00	19922.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 42.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 170.00
Survey	46	02-20	23:55	00:00	02-21	19922.00	19922.00	Inclination (°): 88.790, Azimuth (°): 177.790, TVD (ft): 11257.90, Dogleg (°/100 ft): 4.00, Sensor Depth (ft): 19853.00, Bit To Sensor (ft): 69.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Friday, Feb 21 00:00 - 23:59 (Day 27 of 30)

Billing: \$12,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	19922.00	Downhole Hours	24.00	Rotating WOB (klbs)	36.00 - 36.00
Bit Depth (ft)	20716.00	Drilling Hours	22.33	Sliding WOB (klbs)	60.00 - 70.00
Bottom Hole Depth (ft)	20716.00	Hours Circulating	0.00	Rotating SPM	182.00 - 182.00
Total Distance (ft)	794.00	Hours Sliding	6.58	Sliding SPM	182.00 - 204.00
Distance Rotated (ft)	693.00	Hours Rotating	15.75	Motor RPM	156.00 - 195.00
Distance Slid (ft)	101.00			Surface RPM	40.00 - 40.00
Inclination In	87.69			Flow Rate (gpm)	550.00 - 650.00
Inclination Out	86.51			On Bottom Pressure (psi)	4500.00 - 5550.00
Azimuth In	176.65	% Hours Rotating	71%	Off Bottom Pressure (psi)	4300.00 - 5400.00
Azimuth Out	177.88	% Hours Sliding	29%		
AVG Total ROP (ft/h)	35.55	% Distance Sliding	13%		
AVG Rotating ROP (ft/h)	44.00	% Distance Rotating	87%		
AVG Sliding ROP (ft/h)	15.34				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #12 - BHA # 12 Lateral

Date In: Feb 20, 2020, 7:00 Date Out: Feb 23, 2020, 12:15

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Security GTD74D , SN: 12948610 , Jets 7x20's TFA: 2.148, Bit Runs: 5
Vendor	Security	Lobe/Stage	7/8, 8.5	
S/N	12948610	Bend Angle	1.75	
Nozzles	7x20's	Speed (rev/gal)	0.26	MWD Comments
Total Flow Area (in²)	2.148	Wear Pad OD (in)	7.125	POOH Reason Total Depth/Casing Point: TD well
Drilling Hours for Day	22.33	Bit Distances		
Total Drilled for Day (ft)	794.00	Bend: 5.29 ft, Gamma: 46.00 ft,		
Drilling Hours for BHA	41.58	Resistivity: 56.00 ft, Survey: 69.00 ft		
Total Drilled for BHA (ft)	1668.00			

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Security GTD74D, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Security	12948610	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1010	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		31.31	68.48
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.49	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.15
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.33
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11436.01

MWD Items

No Items

Directional Activities

Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Survey	46	02-20	23:55	00:00	02-21	19922.00	19922.00	Inclination (°): 88.790, Azimuth (°): 177.790, TVD (ft): 11257.90, Dogleg (°/100 ft): 4.00, Sensor Depth (ft): 19853.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-21	00:00	01:05	02-21	19922.00	19942.00	Pressure On (psi): 4500.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182, Toolface: 180, Toolface Type: gravity
Rotary Drill	1	02-21	01:05	02:30	02-21	19942.00	20016.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-21	02:30	02:35	02-21	20016.00	20016.00	Inclination (°): 87.690, Azimuth (°): 176.650, TVD (ft): 11260.79, Dogleg (°/100 ft): 1.68, Sensor Depth (ft): 19947.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-21	02:35	04:45	02-21	20016.00	20110.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-21	04:45	04:50	02-21	20110.00	20110.00	Inclination (°): 88.090, Azimuth (°): 176.120, TVD (ft): 11264.25, Dogleg (°/100 ft): 0.71, Sensor Depth (ft): 20041.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-21	04:50	06:20	02-21	20110.00	20135.00	Pressure On (psi): 4500.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182, Toolface: 120, Toolface Type: gravity
Rotary Drill	1	02-21	06:20	07:50	02-21	20135.00	20205.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-21	07:50	07:55	02-21	20205.00	20205.00	Inclination (°): 86.950, Azimuth (°): 177.700, TVD (ft): 11268.36, Dogleg (°/100 ft): 2.05, Sensor Depth (ft): 20136.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-21	07:55	08:30	02-21	20205.00	20225.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Slide Drill	2	02-21	08:30	10:00	02-21	20225.00	20250.00	Pressure On (psi): 4500.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 60.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182, Toolface: 45, Toolface Type: gravity
Rotary Drill	1	02-21	10:00	11:05	02-21	20250.00	20299.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Rig Service - In Hole	19	02-21	11:05	11:25	02-21			Rig Service
Survey	46	02-21	11:25	11:30	02-21	20299.00	20299.00	Inclination (°): 87.820, Azimuth (°): 177.350, TVD (ft): 11272.65, Dogleg (°/100 ft): 1.00, Sensor Depth (ft): 20230.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-21	11:30	13:25	02-21	20299.00	20393.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-21	13:25	13:30	02-21	20393.00	20393.00	Inclination (°): 89.270, Azimuth (°): 177.700, TVD (ft): 11275.03, Dogleg (°/100 ft): 1.59, Sensor Depth (ft): 20324.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-21	13:30	15:40	02-21	20393.00	20488.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-21	15:40	15:45	02-21	20488.00	20488.00	Inclination (°): 89.710, Azimuth (°): 177.880, TVD (ft): 11275.88, Dogleg (°/100 ft): 0.50, Sensor Depth (ft): 20419.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-21	15:45	16:55	02-21	20488.00	20503.00	Pressure On (psi): 5550.00, Pressure Off (psi): 5400.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 180, Toolface Type: gravity
Other	16	02-21	16:55	17:20	02-21			C/O DP Stand (Re torque)
Slide Drill	2	02-21	17:20	17:40	02-21	20503.00	20506.00	Pressure On (psi): 5550.00, Pressure Off (psi): 5400.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 180, Toolface Type: gravity
Other	16	02-21	17:40	17:55	02-21			C/o DP Stand (Re Torque)
Rotary Drill	1	02-21	17:55	20:05	02-21	20506.00	20582.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-21	20:05	20:10	02-21	20582.00	20582.00	Inclination (°): 88.260, Azimuth (°): 177.700, TVD (ft): 11277.54, Dogleg (°/100 ft): 1.55, Sensor Depth (ft): 20513.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-21	20:10	21:10	02-21	20582.00	20595.00	Pressure On (psi): 5550.00, Pressure Off (psi): 5400.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 150, Toolface Type: gravity
Rotary Drill	1	02-21	21:10	23:05	02-21	20595.00	20676.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-21	23:05	23:10	02-21	20676.00	20676.00	Inclination (°): 86.510, Azimuth (°): 177.880, TVD (ft): 11281.83, Dogleg (°/100 ft): 1.87, Sensor Depth (ft): 20607.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-21	23:10	00:00	02-22	20676.00	20716.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00

MWD Activities

No Activities



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
Company Man		

Saturday, Feb 22 00:00 - 23:59 (Day 28 of 30)

Billing: \$12,000.00 (\$394,148.32 total)

Drilling Summary				Drilling Parameters	
Start Depth (ft)	20716.00	Downhole Hours	24.00	Rotating WOB (klbs)	36.00 - 48.00
Bit Depth (ft)	21549.00	Drilling Hours	18.58	Sliding WOB (klbs)	70.00 - 70.00
Bottom Hole Depth (ft)	21549.00	Hours Circulating	0.00	Rotating SPM	182.00 - 182.00
Total Distance (ft)	764.00	Hours Sliding	2.25	Sliding SPM	204.00 - 204.00
Distance Rotated (ft)	735.00	Hours Rotating	16.33	Motor RPM	156.00 - 195.00
Distance Slid (ft)	29.00			Surface RPM	40.00 - 40.00
Inclination In	87.03			Flow Rate (gpm)	550.00 - 650.00
Inclination Out	86.99			On Bottom Pressure (psi)	4700.00 - 5550.00
Azimuth In	177.70	% Hours Rotating	88%	Off Bottom Pressure (psi)	4300.00 - 5400.00
Azimuth Out	178.23	% Hours Sliding	12%		
AVG Total ROP (ft/h)	41.41	% Distance Sliding	4%		
AVG Rotating ROP (ft/h)	45.15	% Distance Rotating	96%		
AVG Sliding ROP (ft/h)	12.89				

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #12 - BHA # 12 Lateral

Date In: Feb 20, 2020, 7:00 Date Out: Feb 23, 2020, 12:15

Bit Details		Motor Details		Directional Comments
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Security GTD74D , SN: 12948610 , Jets 7x20's TFA: 2.148, Bit Runs: 5
Vendor	Security	Lobe/Stage	7/8, 8.5	
S/N	12948610	Bend Angle	1.75	
Nozzles	7x20's	Speed (rev/gal)	0.26	
Total Flow Area (in²)	2.148	Wear Pad OD (in)	7.125	MWD Comments
Drilling Hours for Day	18.58	Bit Distances		
Total Drilled for Day (ft)	833.00	Bend: 5.29 ft, Gamma: 46.00 ft, Resistivity: 56.00 ft, Survey: 69.00 ft		POOH Reason
Drilling Hours for BHA	41.58			
Total Drilled for BHA (ft)	1668.00			
				Total Depth/Casing Point: TD well

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Security GTD74D, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Security	12948610	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1010	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		31.31	68.48
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.49	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.15
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.33
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11436.01

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	02-21	23:10	00:00	02-22	20676.00	20716.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Rotary Drill	1	02-22	00:00	01:15	02-22	20716.00	20771.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	01:15	01:20	02-22	20771.00	20771.00	Inclination (°): 87.030, Azimuth (°): 177.700, TVD (ft): 11287.18, Dogleg (°/100 ft): 0.58, Sensor Depth (ft): 20702.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-22	01:20	02:25	02-22	20771.00	20785.00	Pressure On (psi): 5550.00, Pressure Off (psi): 5400.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 140, Toolface Type: gravity
Rotary Drill	1	02-22	02:25	04:05	02-22	20785.00	20865.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 36.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	04:05	04:10	02-22	20865.00	20865.00	Inclination (°): 86.460, Azimuth (°): 179.200, TVD (ft): 11292.52, Dogleg (°/100 ft): 1.70, Sensor Depth (ft): 20796.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-22	04:10	06:05	02-22	20865.00	20959.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 48.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	06:05	06:10	02-22	20959.00	20959.00	Inclination (°): 85.760, Azimuth (°): 179.460, TVD (ft): 11298.90, Dogleg (°/100 ft): 0.79, Sensor Depth (ft): 20890.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-22	06:10	08:35	02-22	20959.00	21054.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 48.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	08:35	08:40	02-22	21054.00	21054.00	Inclination (°): 85.710, Azimuth (°): 178.050, TVD (ft): 11305.96, Dogleg (°/100 ft): 1.48, Sensor Depth (ft): 20985.00, Bit To Sensor (ft): 69.00
Slide Drill	2	02-22	08:40	09:50	02-22	21054.00	21069.00	Pressure On (psi): 5550.00, Pressure Off (psi): 5400.00, Weight On Bit (klbs): 70.00, Flow Rate (gpm): 650.00, Strokes Per Minute: 204, Toolface: 30, Toolface Type: gravity
Rotary Drill	1	02-22	09:50	12:05	02-22	21069.00	21149.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 48.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	12:05	12:10	02-22	21149.00	21149.00	Inclination (°): 87.030, Azimuth (°): 177.790, TVD (ft): 11311.98, Dogleg (°/100 ft): 1.42, Sensor Depth (ft): 21080.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-22	12:10	14:20	02-22	21149.00	21243.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 48.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	14:20	14:25	02-22	21243.00	21243.00	Inclination (°): 87.250, Azimuth (°): 177.970, TVD (ft): 11316.67, Dogleg (°/100 ft): 0.30, Sensor Depth (ft): 21174.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-22	14:25	16:15	02-22	21243.00	21337.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 48.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	16:15	16:20	02-22	21337.00	21337.00	Inclination (°): 86.460, Azimuth (°): 178.410, TVD (ft): 11321.83, Dogleg (°/100 ft): 0.96, Sensor Depth (ft): 21268.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-22	16:20	18:10	02-22	21337.00	21432.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 48.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	18:10	18:15	02-22	21432.00	21432.00	Inclination (°): 87.030, Azimuth (°): 178.050, TVD (ft): 11327.22, Dogleg (°/100 ft): 0.71, Sensor Depth (ft): 21363.00, Bit To Sensor (ft): 69.00
Rotary Drill	1	02-22	18:15	19:15	02-22	21432.00	21480.00	Pressure On (psi): 4700.00, Pressure Off (psi): 4300.00, Weight On Bit (klbs): 48.00, Surface RPM: 40, Surface Torque (ft lbf): 32000.00, Flow Rate (gpm): 550.00, Strokes Per Minute: 182.00
Survey	46	02-22	19:15	19:30	02-22	21480.00	21480.00	Inclination (°): 86.990, Azimuth (°): 178.230, TVD (ft): 11329.72, Dogleg (°/100 ft): 0.38, Sensor Depth (ft): 21411.00, Bit To Sensor (ft): 69.00
Survey	46	02-22	19:30	19:35	02-22	21549.00	21549.00	Inclination (°): 86.990, Azimuth (°): 178.230, TVD (ft): 11333.35, Dogleg (°/100 ft): 0.00, Sensor Depth (ft): 21480.00, Bit To Sensor (ft): 69.00
								Straight Line Projection to 21,480' TD
Circulating	3	02-22	19:35	00:30	02-23			Circulating BTU @ TD
MWD Activities								
No Activities								



Job Number WT-19-193	Operator Advance Energy Partners	Rig Name H&P #620
Start Date 2019-12-29	Well Name Merchant State Unit 554H	Legal Well Name AFE Merchant State Unit 554H
Play Delaware Basin	State/Province and Country New Mexico, US	County Lea
		Company Man

Sunday, Feb 23 00:00 - 23:59 (Day 29 of 30)

Billing: \$11,000.00 (\$394,148.32 total)

Drilling Summary

Start Depth (ft)	Downhole Hours	12.25	Rotating WOB (klbs)
Bit Depth (ft)	Drilling Hours	0.00	Sliding WOB (klbs)
Bottom Hole Depth (ft)	Hours Circulating	4.92	Rotating SPM
Total Distance (ft)	0.00	Hours Sliding	0.00
Distance Rotated (ft)	0.00	Hours Rotating	0.00
Distance Slid (ft)	0.00		Motor RPM
Inclination In			156.00 - 195.00
Inclination Out			Surface RPM
Azimuth In			Flow Rate (gpm)
Azimuth Out			On Bottom Pressure (psi)
AVG Total ROP (ft/h)	0.00	% Hours Rotating	Off Bottom Pressure (psi)
AVG Rotating ROP (ft/h)	0.00	% Hours Sliding	
AVG Sliding ROP (ft/h)	0.00	% Distance Sliding	
		% Distance Rotating	

Personnel

Name	Position
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

BHA #12 - BHA # 12 Lateral

Date In: Feb 20, 2020, 7:00 Date Out: Feb 23, 2020, 12:15

Bit Details		Motor Details		Directional Comments	
OD (in)	8.500	Size (in)	7.0	Contender Motor: 7" 1.75 FBH 7/8 8.5 Stg Mtr, Rev/Gal: 0.26, Flow: 400-750, Max Diff: 1,910 psi, Max Operating Torque: 18,710 ft/lbs, Protracted Angle 1.76; BIT - Security GTD74D , SN: 12948610 , Jets 7x20's TFA: 2.148, Bit Runs: 5	
Vendor	Security	Lobe/Stage	7/8, 8.5		
S/N	12948610	Bend Angle	1.75		
Nozzles	7x20's	Speed (rev/gal)	0.26	MWD Comments	
Total Flow Area (in²)	2.148	Wear Pad OD (in)	7.125		
Drilling Hours for Day	0.00	Bit Distances			
Total Drilled for Day (ft)		Bend: 5.29 ft, Gamma: 46.00 ft,			
Drilling Hours for BHA	41.58	Resistivity: 56.00 ft, Survey: 69.00 ft			
Total Drilled for BHA (ft)	1668.00			POOH Reason	
				Total Depth/Casing Point: TD well	

Directional Items

Description	Vendor	SN#	Top Conn	Btm Conn	ID (in)	OD (in)	Fn Len. (ft)	Len (ft)	Aggr. Len (ft)
Bit Description: 8.5 Security GTD74D, Style: PDC, Gauge Length (in): 3.00, Size (in): 8.50	Security	12948610	4 1/2" Reg Pin			8.500		0.95	0.95
Mud Motor Description: 7" 7/8 8.5 @ 1.75 Fix True Slick, Size (in): 7.00, Bend Angle (°): 1.75, Rotor Lobe: 7, Stator Lobe: 8, Stator Stage: 8.5	AIM	700-40-032	4 1/2" IF Box	4 1/2" Reg Box		7.000		36.22	37.17
Other Description: Resistivity Collar	Benchtree	HPR 650-1010	4 1/2" IF Box	4 1/2" IF Pin	2.875	6.625		31.31	68.48
Drill Collar Description: NM Pony Collar (Batteries, Style: Slick Drill, Type: NM	Benchtree	B-1002	4 1/2" IF Box	4 1/2" IF Pin	2.750	6.375		17.49	85.97
Drill Collar Description: NMDC, Style: Slick Drill, Type: NM	Gator	GT67-30-232	4 1/2" IF Box	4 1/2" IF Pin	3.250	6.750		31.06	117.03
Drill Pipe Description: 26 Stand 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		2450.66	2567.69
Agitator Description: 6.75" Agitator, Size (in): 6.75	NOV	AGHF0675-0178	4 1/2" IF Box	4 1/2" IF Pin		6.750		25.46	2593.15
Drill Pipe Description: 85 Stands 5" DP, Style: Slick	Rig		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		8016.18	10609.33
HWDP Description: 9 Stands 5" HWDP, Style: Slick	HP		4 1/2" IF Box	4 1/2" IF Pin	3.000	5.000		826.68	11436.01

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	02-22	19:35	00:30	02-23			Circulating BTU @ TD
Pooh	7	02-23	00:30	04:00	02-23			POOH to LD BHA @ TD
Pooh	7	02-23	04:00	11:30	02-23			POOH
Lay Down BHA	65	02-23	11:30	12:15	02-23			L/D Tools
Other	16	02-23	12:15	23:55	02-23			Rig up casing crew/ Run Casing

MWD Activities

No Activities

	Job Number WT-19-193	Operator Advance Energy Partners		Rig Name H&P #620
	Start Date 2019-12-29	Well Name Merchant State Unit 554H		Legal Well Name AFE Merchant State Unit 554H
	Play Delaware Basin	State/Province and Country New Mexico, US	County Lea	Company Man

Monday, Feb 24 00:00 - 23:59 (Day 30 of 30) Billing: \$18,428.62 (\$394,148.32 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
Stephen Long	Directional Driller
Omar Alaniz	Directional Driller
Kyle Kusak	MWD Engineer
Shawn Lawson	MWD Engineer
Orey Meredith	Directional Driller

No BHAs

Directional Activities								
Activity Type	Code	Start Date	Start Time	End Time	End Date	Start (ft)	End (ft)	Comments/Details
Standby	15	02-24	00:00	09:00	02-24			Standby while, Running Casing
Standby	15	02-24	09:00	19:00	02-24			Standby while / Cementing
Standby	15	02-24	19:00	23:55	02-24			Standby while/ Nippling Down, Prepare for Skid to 605H

MWD Activities	
No Activities	



Surface Plat

Merchant State Unit 554H (WT-19-193)

2019-12-29 to 2020-02-25

Lea, New Mexico, US (32.44, -103.54)

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

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

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

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 4, 2011

Submit one copy to appropriate
District Office

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name MERCHANT STATE UNIT	Well Number 554H
OGRID No.	Operator Name ADVANCE ENERGY PARTNERS HAT MESA	Elevation 3656'

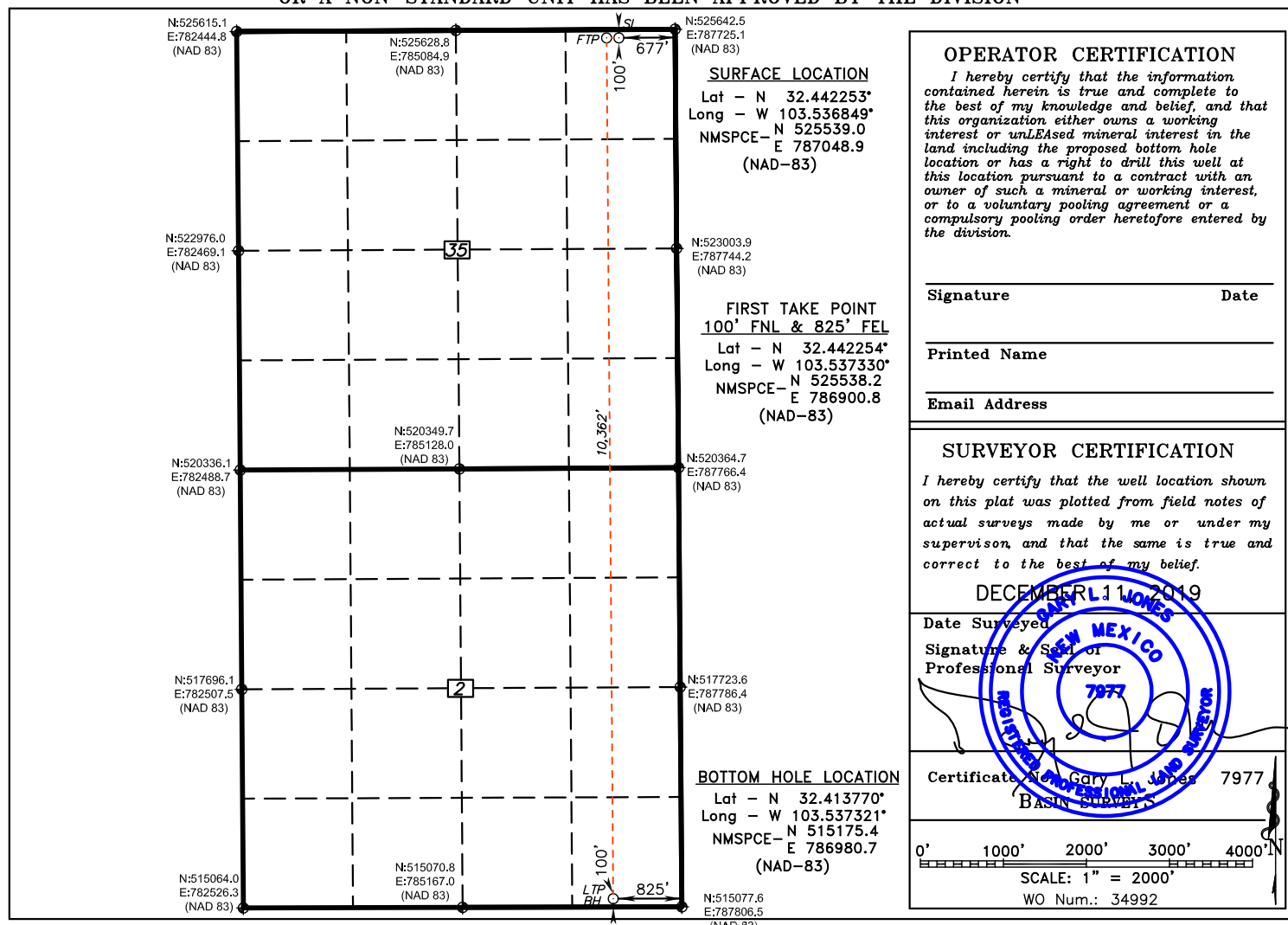
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
A	35	21 S	33 E		100	NORTH	677	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
P	2	22 S	33 E		100	SOUTH	825	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**

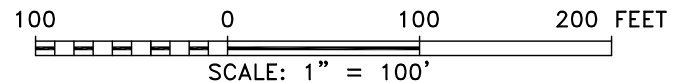
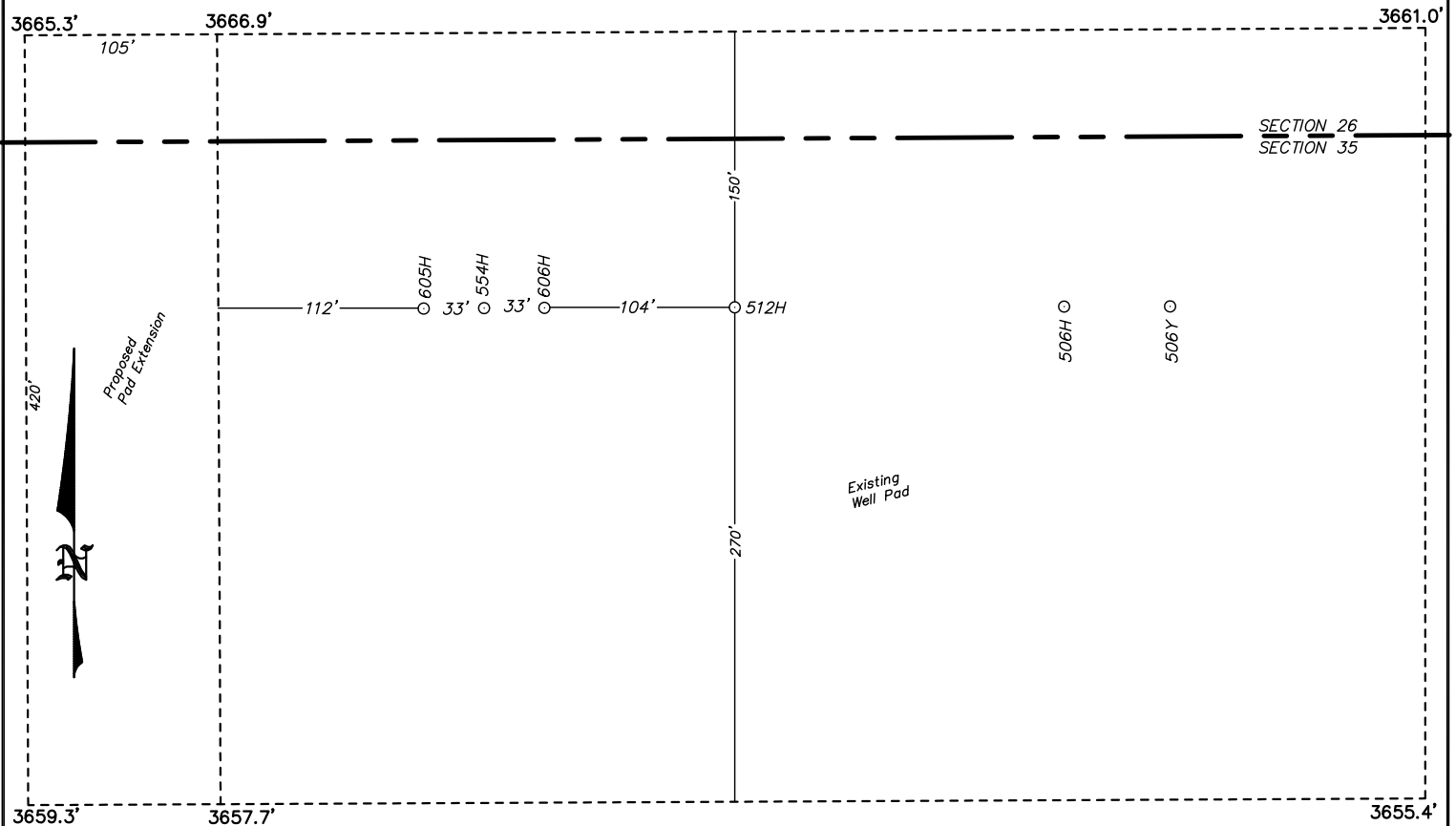


State Hwy 176



Sheet 1 of 1 Sheets

**SECTION 35, TOWNSHIP 21 SOUTH, RANGE 33 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



ADVANCE ENERGY PARTNERS HAT MESA

REF: MERCHANT STATE UNIT 554H / WELL PAD TOPO

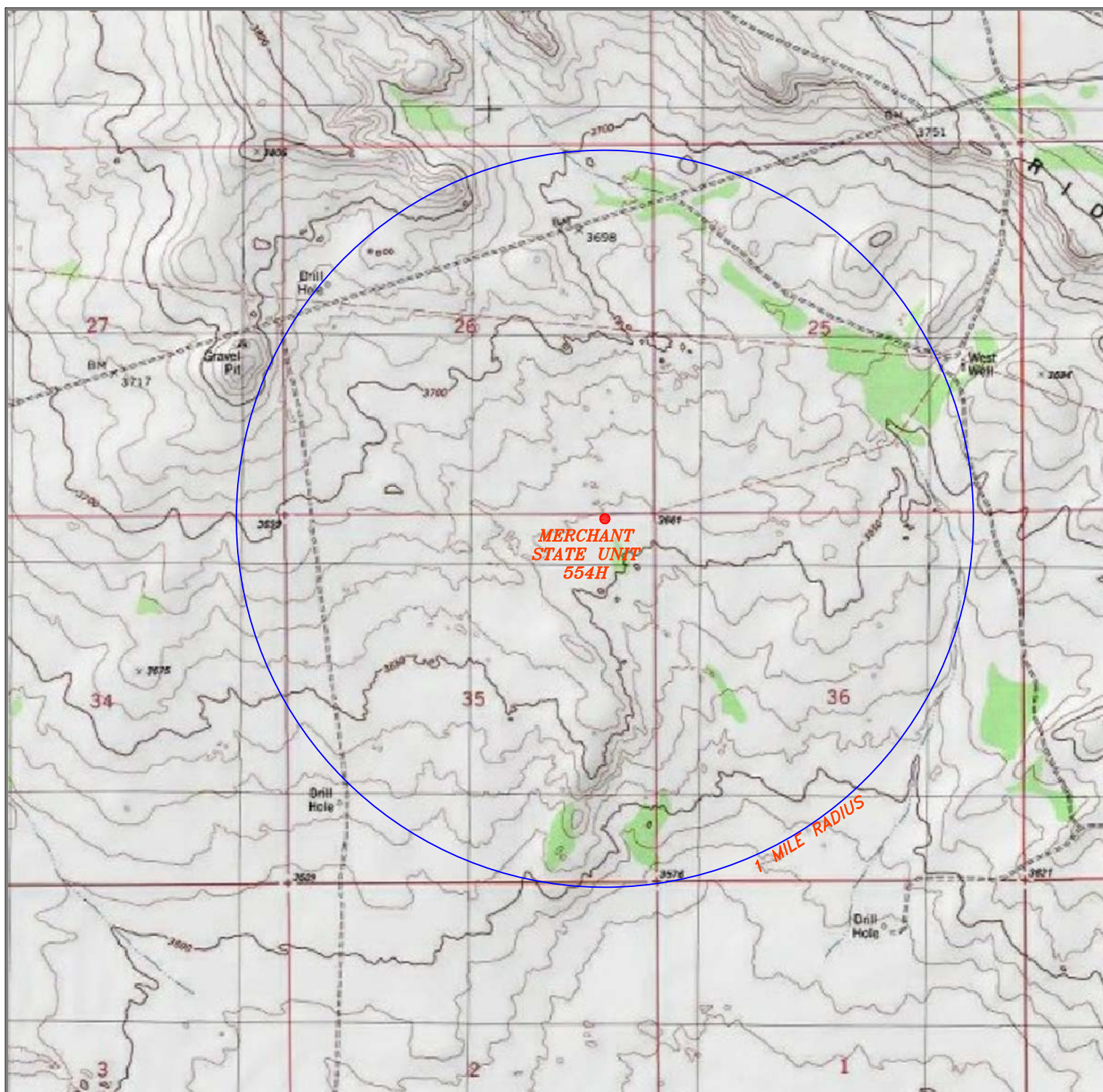
THE MERCHANT STATE UNIT 554H LOCATED 100' FROM
THE NORTH LINE AND 677' FROM THE EAST LINE OF
SECTION 35, TOWNSHIP 21 SOUTH, RANGE 33 EAST.

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

**basin
surveys**
focused on excellence
in the oilfield

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

W.O. Number: 34992	Drawn By: K. GOAD	Date: 12-13-2019	Survey Date: 12-11-2019	Sheet 1 of 1 Sheets
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MERCHANT STATE UNIT 554H

Located 100' FNL and 677' FEL
Section 35, Township 21 South, Range 33 East,
N.M.P.M., Lea County, New Mexico.



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

0' 1000' 2000' 3000' 1500'
SCALE: 1" = 2000'

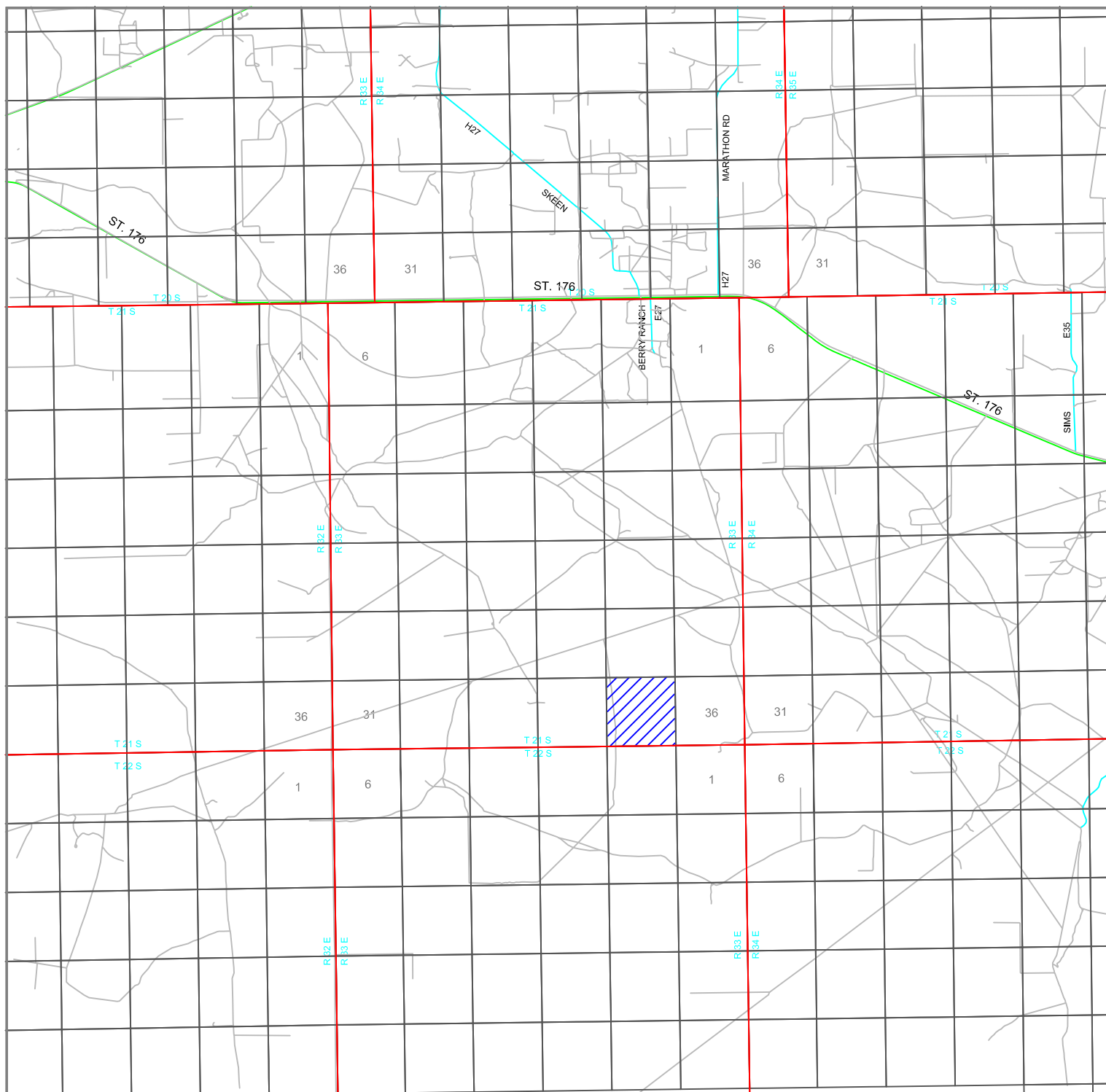
W.O. Number: KJG 34992

Survey Date: 12-13-2019

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



**ADVANCE
ENERGY
PARTNERS
HAT MESA**



MERCHANT STATE UNIT 554H

Located 100' FNL and 677' FEL
Section 35, Township 21 South, Range 33 East,
N.M.P.M., Lea County, New Mexico.



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

0 1 MI 2 MI 3 MI 4 MI

SCALE: 1" = 2 MILES

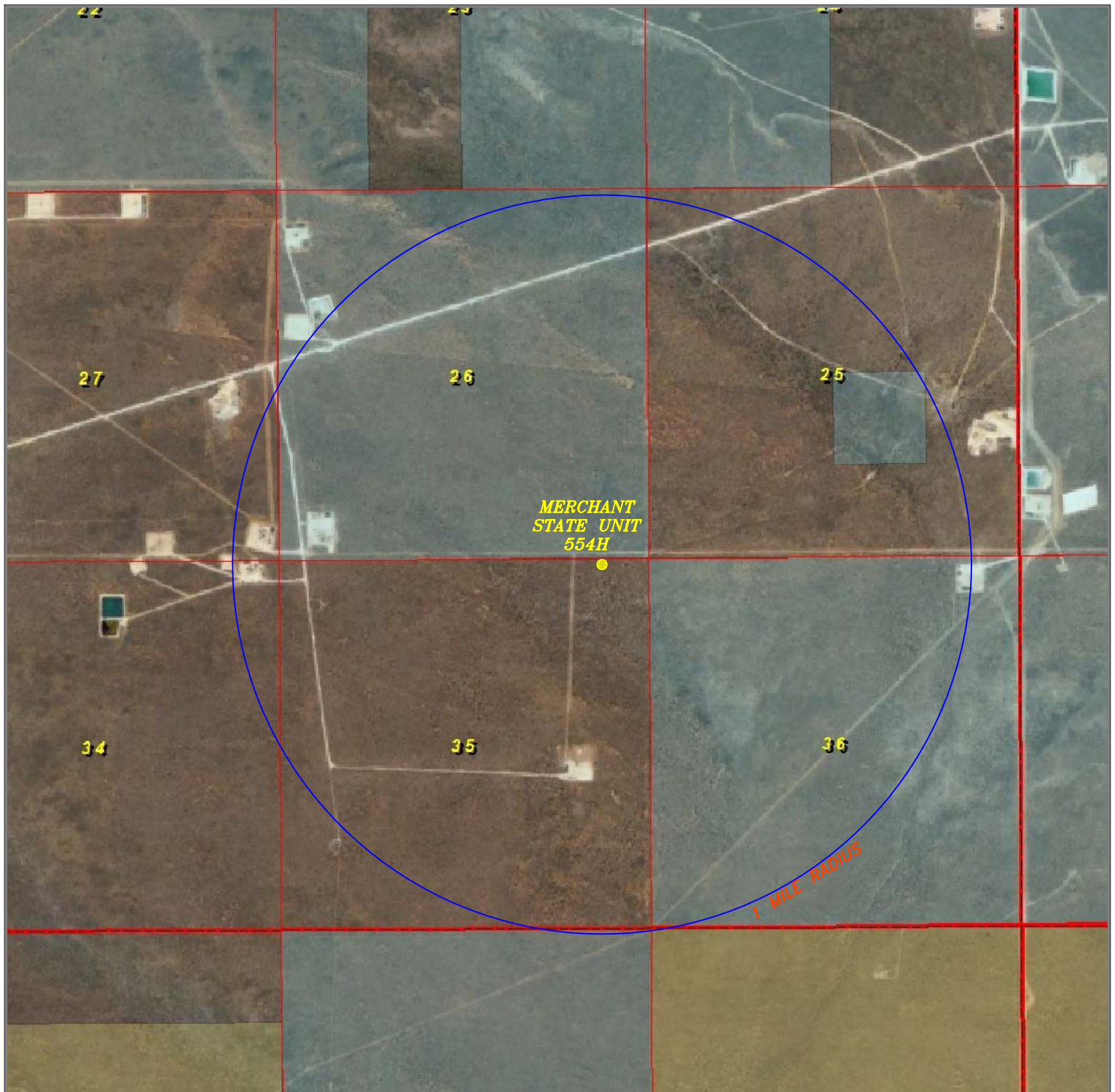
W.O. Number: KJG 34992

Survey Date: 12-13-2019

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



**ADVANCE
ENERGY
PARTNERS
HAT MESA**



MERCHANT STATE UNIT 554H

Located 100' FNL and 677' FEL
Section 35, Township 21 South, Range 33 East,
N.M.P.M., Lea County, New Mexico.



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

0' 1000' 2000' 3000' 1500'
SCALE: 1" = 2000'

W.O. Number: KJG 34992

Survey Date: 12-13-2019

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



**ADVANCE
ENERGY
PARTNERS
HAT MESA**

Submit 1 copy to Appropriate District Office

District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240

District II – (575) 748-1283
811 S. First St., Artesia, NM 88210

District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410

District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103

Revised July 18, 2013

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. 30-025-46662	
5. Indicate Type of Lease STATE ☒ FEE ☐	
6. State Oil & Gas Lease No.	
7. Lease Name or Unit Agreement Name MERCHANT STATE UNIT	
8. Well Number 554H	
9. OGRID Number 372417	
10. Pool name or Wildcat WC-025 G-06 S213326D; BONE SPRING	
677 feet from the E line NMPM County LEA	

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator

Advance Energy Partners Hat Mesa

3. Address of Operator

11490 Westheimer Rd, Houston, TX 77077

4. Well Location

Unit Letter A : 100 feet from the N line and 677 feet from the E line
 Section 35 Township 21S Range 33E NMPM County LEA

11. Elevation (*Show whether DR, RKB, RT, GR, etc.*)
3656'

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.

- 10/11/20: Pressure test casing to 9,800 psi for 30 minutes.
- 11/18/20 – 12/9/20: Perforate from 11,457' – 21,376' (3024). Frac with 24,935,120 lbs sand and 25,755,786 gal fluid.
- 12/17/20 – 12/18/20: Drill all plugs out and clean out to a PBTD of 21,390'.
- 12/23/20 - Ready to Produce

Spud Date:

12/29/19

Rig Release Date:

2/24/20

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

SIGNATURE:

TITLE: Sr. Eng. Tech.

DATE: 2/17/22

PRINT NAME: Eileen M Kosakowski

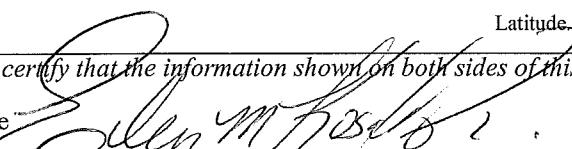
E-mail address: ekosakowski@advanceenergypartners.com

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. 30-025-46662							
			2. Type of Lease ☒ STATE ☐ FEE ☐ FED/INDIAN							
			3. State Oil & Gas Lease No.							
WELL COMPLETION OR RECOMPLETION REPORT AND LOG										
4. Reason for filing: ☒ COMPLETION REPORT (Fill in boxes #1 through #31 for State and Fee wells only) ☐ C-144 CLOSURE ATTACHMENT (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)						5. Lease Name or Unit Agreement Name Merchant State Unit				
						6. Well Number: # 554H				
7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER										
8. Name of Operator Advance Energy Partners Hat Mesa, LLC						9. OGRID 372417				
10. Address of Operator 11490 Westheimer RD, Suite 950 Houston, TX 77077						11. Pool name or Wildcat WC-025 G-06 S213326D; BONE SPRING				
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	A	35	21S	33E		100	N	677	E	LEA
BH:	P	2	22S	33E		42	S	816	E	LEA
13. Date Spudded 12/29/2019	14. Date T.D. Reached 02/22/20	15. Date Rig Released 02/24/20		16. Date Completed (Ready to Produce) 12/23/20		17. Elevations (DF and RKB, RT, GR, etc.) 3,656'				
18. Total Measured Depth of Well 21,480		19. Plug Back Measured Depth 21,390		20. Was Directional Survey Made? YES			21. Type Electric and Other Logs Run Gamma Ray			
22. Producing Interval(s), of this completion - Top, Bottom, Name 11,457-21,376' Bone Spring										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
13.375"		54.4#		1786		17.5		830		
9.625"		40#		5261/3873		12.25		2100		
5.5"		20#		21,464		8.5		3035		
24. LINER RECORD										
SIZE		TOP		BOTTOM		SACKS CEMENT		SCREEN		
25. TUBING RECORD										
SIZE		DEPTH SET		PACKER SET						
2 7/8		10,460		N/A						
26. Perforation record (interval, size, and number)										
11,457-21,376'' - 3024 holes										
27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.										
DEPTH INTERVAL					AMOUNT AND KIND MATERIAL USED					
11,457-21,376					24,935,120 lbs sand, 25,755,786 bbls water					
28. PRODUCTION										
Date First Production 12/24/2020		Production Method (<i>Flowing, gas lift, pumping - Size and type pump</i>) FLOWING				Well Status (<i>Prod. or Shut-in</i>) Prod				
Date of Test 01/06/2021	Hours Tested 24 Hrs	Choke Size 64	Prod'n For Test Period	Oil - Bbl 1874	Gas - MCF 1833	Water - Bbl. 4180	Gas - Oil Ratio 4313			
Flow Tubing Press. 800	Casing Press 300	Calculated 24-Hour Rate	Oil - Bbl. 1874	Gas - MCF 1833	Water - Bbl. 4180	Oil Gravity - API - (<i>Corr.</i>) 43.6				
29. Disposition of Gas (<i>Sold, used for fuel, vented, etc.</i>) Sold							30. Test Witnessed By 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: 02/25/20				
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: 2/17/22				
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 8535 MD	T. Entrada	
T. Wolfcamp	T. AV 9036 MD	T. Wingate	
T. Penn	T. 1SS 9982 MD	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.....

From	To	Thickness In Feet	Lithology

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

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

ACKNOWLEDGMENTS

Action 82340

ACKNOWLEDGMENTS

Operator: ADVANCE ENERGY PARTNERS HAT MESA, LLC 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	OGRID: 372417
	Action Number: 82340
	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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CONDITIONS

Action 82340

CONDITIONS

Operator: ADVANCE ENERGY PARTNERS HAT MESA, LLC 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	OGRID: 372417
	Action Number: 82340
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	None	7/25/2024