



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Well Completion Print Report

04/04/2022

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WXY FEE	Well Number 8H	US Well Number 3001545894
Well Type OIL WELL	County EDDY	State NM	Lease Number(s) NMNM086024, NMNM86024, NMNM86024
Allottee/Tribe Name	Well Status Drilling Well	Agreement Name	Agreement Number(s)
	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	ID 10400035420

Section 1 - General

Well Completion Report Id: 81622	Submission Date: N/A until DB Work	
BLM Office: Carlsbad Field Office	User: ADRIAN COVARRUBIAS	Title: regulatory Compliance
Federal/Indian: FEDERAL	Lease Number: NMNM086024	Lease Acres: 1440
Agreement in place?: NO	Federal or Indian Agreement:	
Agreement Number:	Agreement Name:	
Keep this Well Completion Report confidential?: YES		
APD Operator: MARATHON OIL PERMIAN LLC		

Section 2 - Well Information

Field/Pool or Exploratory: Field/Pool	Pool Name: Wolfcamp	Field Name: PIERCE CROSSING BON
Well Type: OIL WELL		
Spud Date: 08-23-2019		
Date Total Measured Depth Reached: 10-31-2019		
Drill & Abandon or Ready To Produce: READY TO PRODUCE		
Well Class: HORIZONTAL		

Section 3 - Geologic Formations

Formation Name	Lithology	Describe Lithology	Elevation	TVD	MD	Mineral Resources	Describe Mineral Resources
SALADO	ANHYDRITE, DOLOMITE, SALT		2626	374	374	OTHER	Brine
BASE OF SALT	LIMESTONE, SANDSTONE		49	2979	2979	OTHER	Brine

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Section 3 - Geologic Formations

Formation Name	Lithology	Describe Lithology	Elevation	TVD	MD	Mineral Resources	Describe Mineral Resources
LAMAR	OTHER	Sand/Shales	3	3026	3026	OIL	
BELL CANYON	OTHER	Sands/Shale	-32	3061	3061	OIL	
CHERRY CANYON	OTHER	Sands/Carbonates	-905	3934	3934	OIL	
BRUSHY CANYON	OTHER	Sands/Carbonate	-2007	5035	5035	OIL	
BONE SPRING	OTHER	Sands/Carbonate	-3665	6692	6787	OIL	
WOLFCAMP	OTHER, SANDSTONE, SHALE	Carbonates	-6939	9966	10152	OIL	

Completion and Completed Intervals

Completion Data

Wellbore Code	Completion Code	Interval Number	Case Number	Lease Number	Well Completion Type	Describe Well Completion Type	Completion Status	Date Completed	Date First Produced	Formation	Interval Top (MD)	Interval Bottom (MD)	Interval Perforated?	Perforation Size	Number of Holes	Status of Interval
00	S1	1	NMNM86024	NMNM86024	NEW		DRG	10-11-2021	10-16-2021	WOLFCA MP	10183	20133	Y	.35	1005	OPEN

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Treatment Data

Wellbore Code	Completion Code	Interval Number	Interval Treated?	Treatment Type	Total Fluid (bbls)	Total Proppant (lbs)	Treatment Remarks
00	S1	1	Y	FRAC	446924		Total Proppant: 23,990,700 lbs Brackish Water: 446696 bls 15% HCl : 7182 gal

Production Data

Wellbore Code	Completion Code	Interval Number	API Oil Gravity	Gas Gravity	Production Method	Describe Production	Disposition of Gas	Describe Disposition
00	S1	1			FLOWS FROM WELL		SOLD	

Test Data

Wellbore Code	Completion Code	Interval Number	Test Date	Hours Tested	24-Hour Rate Oil (bbls)	24-Hour Rate Gas (MCF)	24-Hour Rate Water(BWPD)	Gas-Oil Ratio (SCF/Bbl)	Choke Size	Tubing Pressure	Tubing Pressure Shut-In (psi)	Casing Pressure (psi)
00	S1	1	10/19/2021	24	178	294	3146	1651	18/64	0		1204

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Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	ID 10400035420

Well Location

Survey Type: RECTANGULAR

Survey Number: 21653

Datum: NAD83

Vertical Datum: NAVD88

Reference Datum:

	State	Meridian	County	Latitude	Longitude	Elevation (MSL)	Lease Type	Lease Number	Plug TVD (ft)	Plug MD (ft)	Plug Type	NS-Foot	NS-Indicator	EW-Foot	EW-Indicator	Township	Range	Section	Aliquot/Lot/Tract
SHL	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.2824782	-103.9944195	3000	FEDERAL	NMNM086024				270	FNL	1255	FWL	23S	29E	28	NWNW
KOP Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.283391	-103.9910999	-6536	FEE	FEE				65	FSL	2281	FWL	23S	29E	21	SESW
PPP Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.284121	-103.9910246	-6976	FEE	FEE				330	FSL	2304	FWL	23S	29E	21	SESW
EXIT Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.3115594	-103.9907746	-7040	FEE	FEE				330	FNL	2301	FWL	23S	29E	16	NENW
BHL Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.3116382	-103.9907802	-7042	FEE	FEE				301	FNL	2299	FWL	23S	29E	16	NENW

Casing, Liner and Tubing

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WXY FEE	Well Number 8H	US Well Number 3001545894
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Casing and Liner

Wellbore Code	Casing String Type	Hole Size	Top Setting Depth (MD)	Bottom Setting Depth (MD)	Casing Size	Wt(lbs/ft)	Casing Grade	Describe Other Casing Grade	Joint	Other Joint	Amount Pulled (ft)
00	SURFACE	17.5	0	364	13.375	54.5	J-55		ST&C		
00	INTERMEDIATE	12.25	0	2983	9.625	40	J-55		LT&C		
00	PRODUCTION	8.75	0	20187	5.5	20	P-110		OTHER	Roughneck	

Cementing

Wellbore Code	Casing String Type	Stage Tool Depth	Cement Lead Type	Cement Lead Qty (sks)	Cement Lead Yield (cu.ft/sks)	Cement Lead Top (MD)	Cement Tail Type	Cement Tail Qty (sks)	Cement Tail Yield (cu.ft/sks)	Cement Tail Top (MD)	Total (Lead + Tail) Cement Slurry Volume (bbls)
00	SURFACE		Class C	490	1.63	0					142.2
00	INTERMEDIATE		25/75 PM Class C	880	1.99	0	25/75 PM Class C	195	1.35		358.8
00	PRODUCTION		25/75 PM Class H	1325	2.76	2073	25/75 PM Class H	3100	1.14		1280.7

Logs

Wellbore Code	Log Upload	Was Well Cored?	Was DST Run?	Directional Survey?	Geologic Report Completed?	Wellbore Diagram
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Logs

Wellbore Code	Log Upload	Was Well Cored?	Was DST Run?	Directional Survey?	Geologic Report Completed?	Wellbore Diagram
00	YES	NO	NO	YES	NO	YES

Operator Certification

I hereby certify that the foregoing and attached information is complete and correct as determined from all available records. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Well Completion Reports through this system satisfies regulations requiring a submission of Form 3160-4 or a Well Completion Report.

Name: MARATHON OIL PERMIAN LLC**Signed By:** ADRIAN COVARRUBIAS**Title:** regulatory Compliance Representative**Signed on:** 03/10/2022**Street Address:** 990 TOWN & COUNTRY BLVD**City:** HOUSTON**State:** TX**Zip:** 77024**Phone:** (713)296-3368**Email address:** acovarrubias@marathonoil.com**Field Representative****Representative Name:****Street Address:****City:****State:****Zip:****Phone:****Extension:****Email address:**

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Well Type OIL WELL			
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	ID 10400035420

Attachments

- WD_Final1inMDGraphBlueSteel21FeeWXY8H_2019_11_01_20.22.40_20211021102206.pdf
- 20200306_R3942_006_BLUE_STEEL_21_WXY_FEE_8H_REV1_CERT_AS_DRILLED_C102_signed_20211021102215.pdf
- Certified_Survey_Report_Blue_Steel_21_WXY_Fee_No._8H_20211021102226.PDF
- Wellbore_Schematic___BLUE_STEEL_21_WXY_FEE_008H___2021_10_11_20211021102232.pdf

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: (505) 748-1283 Fax: (505) 748-9720

District III
1000 Rio Brazos Road, 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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION AS-DRILLED PLAT

¹ API Number 30-015-45894	² Pool Code 98220	³ Pool Name Purple Sage (Wolfcamp)
⁴ Property Code 325396	Property Name Blue Steel 21 WXY Fee	
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁶ Well Number 8H
		⁹ Elevation 3000'

¹⁰ Surface Location

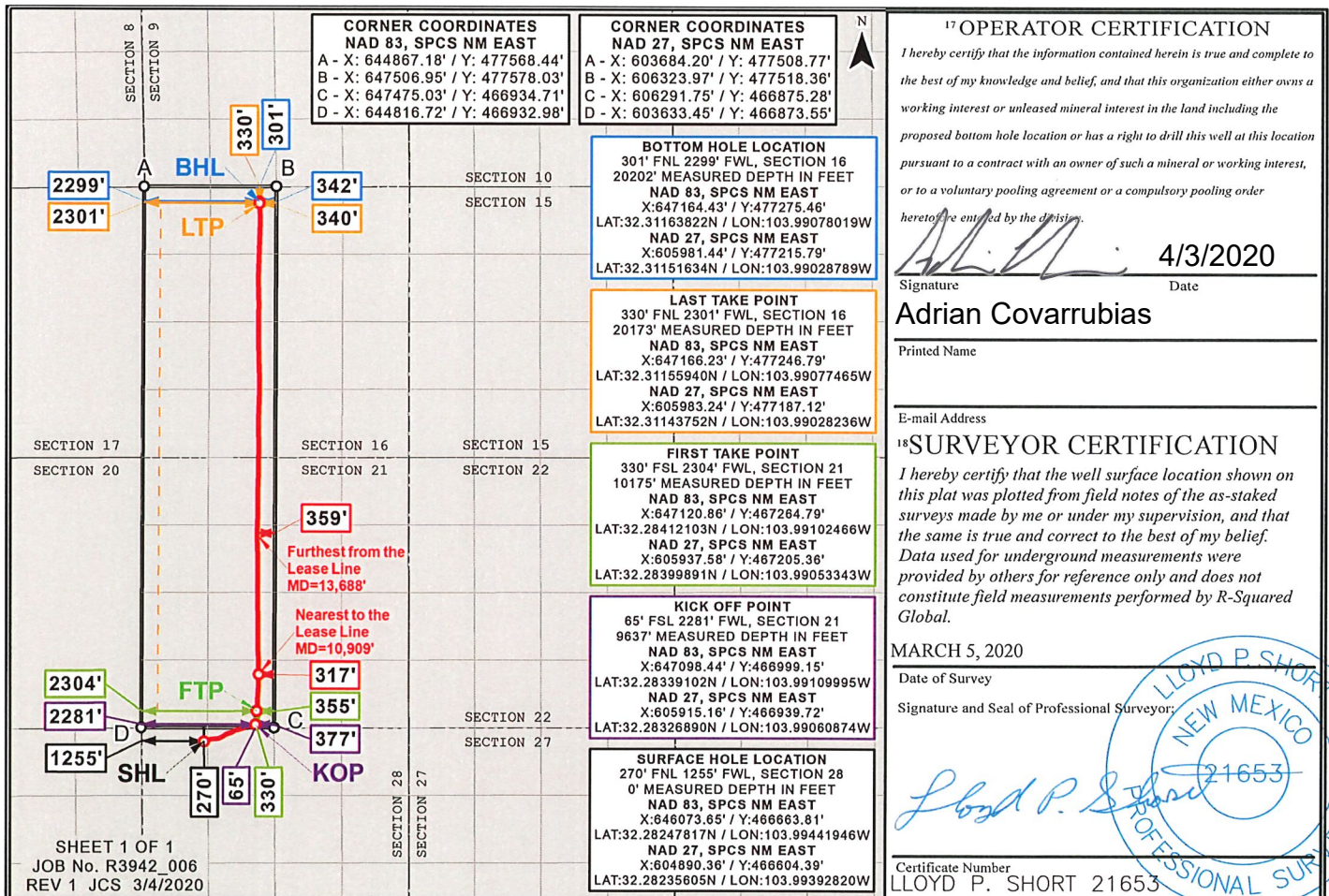
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	28	23S	29E		270	NORTH	1255	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	16	23S	29E		301	NORTH	2299	WEST	EDDY

¹² Dedicated Acres 640.0	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



Distances/areas relative to NAD 83 Combined Scale Factor: 0.999922 Convergence Angle: 0.18084607°



Marathon Oil Corporation

Blue Steel 21 WXY Fee No. 8H
Eddy County, NM

November 21, 2019

Job# LNM1525419
API# 30-015-45894

Survey Completion Report



Survey Certification Letter

November 22, 2019



Operator Name: Marathon Oil
Well Name: Blue Steel 21 WXY Fee No. 8H
County/Parish: Eddy County,
State: NM
Rig Name: Precision 582
Job Number: LNM1525419

This is to certify the surveys performed on the referenced well by Professional Directional Ent., Inc. are true and correct MWD Surveys, data provided as follows:

Surveyor	Surveyed Depths	Projection to Bit	Dates Performed	Type of Survey
ProDirectional	411' MD – 20,146' MD	20,202' MD	10/10/19 – 11/01/19	MWD

Sincerely,

Mike Coats
Regulatory Specialist
Professional Directional

850 Conroe Park West Drive | Conroe, TX 77303 | Phone: 936.441.7266
prodirectional.com



Marathon Oil

**Eddy County, NM
Blue Steel 21 WXY Fee
No. 8H
OH**

Survey: ProDirectional

Survey Report

22 November, 2019





ProDirectional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 8H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3027.00usft
Site:	Blue Steel 21 WXY Fee	MD Reference:	Well @ 3027.00usft
Well:	No. 8H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-162'-20146', PTB: 20202'	Database:	WellPlanner1

Project	Eddy County, NM(NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Blue Steel 21 WXY Fee		
Site Position:		Northing:	466,663.81 usft
From:	Map	Easting:	646,073.65 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.2824782
		Longitude:	-103.9944195
		Grid Convergence:	0.18 °

Well		No. 8H, LNM1525419				
Well Position	+N/-S	0.00 usft	Northing:	466,663.81 usft	Latitude:	32.2824782
	+E/-W	0.00 usft	Easting:	646,073.65 usft	Longitude:	-103.9944195
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,000.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/1/2019	7.02	60.02	47,900.80

Design	MWD-162'-20146', PTB: 20202'			
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	0.17



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey Program **Date** 11/22/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
162.00	375.00	Survey #1 (OH)	MWD+IFR1	OWSG MWD + IFR1
411.00	20,202.00	Survey #2 (OH)	MWD+IFR1	OWSG MWD + IFR1

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	466,663.81	646,073.65
162.00	1.20	232.00	161.99	-1.05	-1.04	-1.34	1.70	232.00	466,662.77	646,072.31
259.00	1.00	213.00	258.97	-2.39	-2.38	-2.60	3.52	227.51	466,661.43	646,071.05
351.00	1.20	218.00	350.95	-3.82	-3.81	-3.63	5.26	223.59	466,660.00	646,070.02
375.00	1.20	218.00	374.95	-4.22	-4.21	-3.94	5.76	223.10	466,659.60	646,069.71
411.00	1.50	214.80	410.94	-4.91	-4.89	-4.44	6.61	222.22	466,658.92	646,069.21
Pro MWD First Survey: 411' MD										
502.00	1.30	171.10	501.91	-6.90	-6.89	-4.96	8.49	215.74	466,656.92	646,068.69
592.00	1.90	134.50	591.88	-8.96	-8.94	-3.74	9.69	202.67	466,654.87	646,069.91
685.00	1.50	123.90	684.84	-10.71	-10.70	-1.63	10.83	188.64	466,653.11	646,072.02
779.00	0.80	122.80	778.82	-11.75	-11.75	-0.05	11.75	180.26	466,652.06	646,073.60
871.00	0.80	151.30	870.81	-12.65	-12.66	0.79	12.68	176.41	466,651.15	646,074.44
965.00	0.80	129.00	964.80	-13.64	-13.65	1.62	13.74	173.23	466,650.16	646,075.27
1,057.00	0.80	77.30	1,056.79	-13.90	-13.91	2.74	14.18	168.84	466,649.90	646,076.39
1,147.00	0.80	49.40	1,146.79	-13.35	-13.36	3.83	13.90	163.99	466,650.45	646,077.48
1,236.00	1.60	56.20	1,235.77	-12.25	-12.27	5.34	13.38	156.48	466,651.54	646,078.99
1,326.00	1.40	55.30	1,325.73	-10.92	-10.94	7.29	13.15	146.33	466,652.87	646,080.94
1,416.00	1.60	58.70	1,415.70	-9.63	-9.66	9.26	13.39	136.20	466,654.15	646,082.91
1,505.00	2.90	56.60	1,504.63	-7.74	-7.78	12.21	14.47	122.50	466,656.03	646,085.86
1,595.00	5.20	59.60	1,594.40	-4.41	-4.46	17.63	18.18	104.20	466,659.35	646,091.28
1,684.00	8.00	60.40	1,682.80	0.72	0.64	26.49	26.50	88.61	466,664.45	646,100.14



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
1,774.00	8.50	61.90	1,771.87	6.98	6.87	37.80	38.42	79.70	466,670.68	646,111.45	
1,863.00	9.90	63.90	1,859.73	13.48	13.33	50.48	52.21	75.21	466,677.14	646,124.13	
1,953.00	9.40	64.00	1,948.45	20.15	19.96	64.03	67.07	72.69	466,683.77	646,137.68	
2,043.00	9.10	66.10	2,037.28	26.29	26.06	77.14	81.43	71.33	466,689.87	646,150.79	
2,132.00	8.90	65.20	2,125.19	32.07	31.80	89.83	95.29	70.50	466,695.61	646,163.48	
2,222.00	9.20	69.80	2,214.07	37.51	37.21	102.90	109.42	70.12	466,701.02	646,176.55	
2,311.00	11.70	78.20	2,301.59	41.86	41.51	118.41	125.48	70.68	466,705.32	646,192.06	
2,401.00	11.70	79.30	2,389.72	45.47	45.07	136.31	143.57	71.70	466,708.88	646,209.96	
2,491.00	11.40	82.60	2,477.90	48.37	47.91	154.10	161.38	72.73	466,711.72	646,227.75	
2,580.00	11.70	86.70	2,565.10	50.07	49.56	171.83	178.84	73.91	466,713.37	646,245.48	
2,670.00	12.20	85.50	2,653.15	51.40	50.83	190.42	197.09	75.05	466,714.64	646,264.07	
2,760.00	12.80	88.20	2,741.01	52.52	51.89	209.87	216.19	76.11	466,715.70	646,283.52	
2,849.00	12.20	81.80	2,827.91	54.22	53.54	229.03	235.21	76.84	466,717.35	646,302.68	
2,904.00	12.20	80.80	2,881.67	56.02	55.30	240.52	246.80	77.05	466,719.11	646,314.17	
3,024.00	11.50	82.50	2,999.11	59.68	58.89	264.90	271.36	77.47	466,722.70	646,338.55	
3,114.00	11.90	76.90	3,087.24	63.00	62.16	282.83	289.58	77.60	466,725.97	646,356.48	
3,204.00	13.10	72.10	3,175.11	68.30	67.40	301.57	309.02	77.40	466,731.21	646,375.22	
3,293.00	13.30	64.70	3,261.76	75.83	74.88	320.43	329.06	76.85	466,738.69	646,394.08	
3,383.00	13.90	60.20	3,349.24	85.68	84.68	339.17	349.58	75.98	466,748.49	646,412.82	
3,472.00	13.80	61.50	3,435.65	96.11	95.05	357.77	370.19	75.12	466,758.86	646,431.42	
3,562.00	13.70	58.40	3,523.08	106.88	105.76	376.29	390.87	74.30	466,769.57	646,449.94	
3,651.00	13.60	58.60	3,609.56	117.90	116.73	394.19	411.12	73.50	466,780.54	646,467.84	
3,741.00	12.90	59.70	3,697.17	128.54	127.32	411.90	431.13	72.82	466,791.13	646,485.55	
3,831.00	11.70	59.70	3,785.10	138.26	136.99	428.45	449.82	72.27	466,800.80	646,502.10	
3,920.00	10.60	65.90	3,872.42	146.20	144.88	443.72	466.77	71.92	466,808.69	646,517.37	
4,010.00	10.20	72.80	3,960.94	151.98	150.62	458.89	482.97	71.83	466,814.43	646,532.54	
4,099.00	10.30	70.90	4,048.52	156.96	155.56	473.93	498.81	71.83	466,819.37	646,547.58	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
4,189.00	10.60	71.50	4,137.03	162.27	160.81	489.39	515.13	71.81	466,824.62	646,563.04	
4,279.00	10.90	71.90	4,225.45	167.58	166.08	505.33	531.92	71.81	466,829.89	646,578.98	
4,369.00	9.70	69.70	4,314.00	172.90	171.36	520.53	548.01	71.78	466,835.17	646,594.18	
4,458.00	9.20	68.30	4,401.79	178.18	176.59	534.17	562.60	71.71	466,840.40	646,607.82	
4,548.00	9.00	68.00	4,490.66	183.51	181.89	547.38	576.81	71.62	466,845.70	646,621.03	
4,637.00	8.80	66.30	4,578.59	188.89	187.23	560.07	590.54	71.52	466,851.04	646,633.72	
4,727.00	8.70	66.30	4,667.54	194.43	192.74	572.60	604.17	71.40	466,856.55	646,646.25	
4,817.00	9.00	66.30	4,756.47	200.04	198.30	585.28	617.96	71.28	466,862.11	646,658.93	
4,906.00	9.40	66.00	4,844.32	205.83	204.06	598.30	632.14	71.17	466,867.87	646,671.95	
4,996.00	9.60	64.80	4,933.09	212.05	210.24	611.80	646.92	71.04	466,874.05	646,685.45	
5,085.00	9.30	62.90	5,020.88	218.53	216.68	624.92	661.42	70.88	466,880.49	646,698.57	
5,175.00	9.30	68.00	5,109.70	224.61	222.71	638.13	675.88	70.76	466,886.52	646,711.78	
5,265.00	10.10	76.70	5,198.42	229.19	227.25	652.56	691.00	70.80	466,891.06	646,726.21	
5,354.00	9.70	75.60	5,286.09	232.89	230.91	667.42	706.23	70.92	466,894.72	646,741.07	
5,444.00	9.00	73.70	5,374.90	236.80	234.77	681.52	720.82	70.99	466,898.58	646,755.17	
5,534.00	8.70	72.90	5,463.83	240.81	238.75	694.78	734.66	71.04	466,902.56	646,768.43	
5,623.00	10.10	76.40	5,551.63	244.67	242.57	708.80	749.15	71.11	466,906.38	646,782.45	
5,713.00	11.20	74.20	5,640.08	248.95	246.80	724.88	765.74	71.20	466,910.61	646,798.53	
5,803.00	12.40	70.00	5,728.18	254.69	252.49	742.37	784.13	71.22	466,916.30	646,816.02	
5,892.00	12.40	69.90	5,815.10	261.29	259.04	760.32	803.24	71.19	466,922.85	646,833.97	
5,982.00	12.00	70.40	5,903.07	267.81	265.50	778.21	822.26	71.16	466,929.31	646,851.86	
6,071.00	11.40	70.40	5,990.22	273.91	271.55	795.21	840.30	71.15	466,935.36	646,868.86	
6,161.00	11.00	70.50	6,078.50	279.81	277.40	811.69	857.78	71.13	466,941.21	646,885.34	
6,250.00	11.00	67.10	6,165.87	286.00	283.54	827.51	874.74	71.09	466,947.35	646,901.16	
6,340.00	12.50	66.00	6,253.98	293.35	290.84	844.32	893.01	70.99	466,954.65	646,917.97	
6,429.00	12.20	67.00	6,340.92	300.99	298.44	861.78	911.99	70.90	466,962.25	646,935.43	
6,519.00	10.90	64.70	6,429.10	308.39	305.79	878.22	929.94	70.80	466,969.60	646,951.87	



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6,609.00	10.30	65.30	6,517.56	315.44	312.79	893.23	946.41	70.70	466,976.60	646,966.88	
6,698.00	11.00	64.90	6,605.03	322.41	319.71	908.15	962.78	70.61	466,983.52	646,981.80	
6,788.00	11.00	65.70	6,693.37	329.63	326.89	923.75	979.88	70.51	466,990.70	646,997.40	
6,878.00	10.20	65.80	6,781.84	336.47	333.69	938.84	996.38	70.43	466,997.50	647,012.49	
6,967.00	8.70	63.10	6,869.63	342.79	339.97	952.03	1,010.91	70.35	467,003.78	647,025.68	
7,057.00	7.20	59.30	6,958.76	348.78	345.93	962.95	1,023.20	70.24	467,009.74	647,036.60	
7,146.00	5.60	54.80	7,047.20	354.16	351.28	971.30	1,032.87	70.12	467,015.09	647,044.95	
7,236.00	5.10	71.10	7,136.82	358.01	355.10	978.67	1,041.10	70.06	467,018.91	647,052.32	
7,325.00	5.30	85.00	7,225.45	359.67	356.74	986.51	1,049.03	70.12	467,020.55	647,060.16	
7,415.00	5.30	84.60	7,315.07	360.45	357.50	994.79	1,057.08	70.23	467,021.31	647,068.44	
7,505.00	3.90	83.10	7,404.78	361.23	358.26	1,001.97	1,064.09	70.33	467,022.07	647,075.62	
7,595.00	2.40	76.00	7,494.64	362.07	359.08	1,006.83	1,068.95	70.37	467,022.89	647,080.48	
7,685.00	1.00	63.00	7,584.60	362.89	359.89	1,009.36	1,071.60	70.38	467,023.70	647,083.01	
7,774.00	0.60	133.80	7,673.59	362.92	359.92	1,010.39	1,072.58	70.39	467,023.73	647,084.04	
7,863.00	0.00	53.60	7,762.59	362.60	359.60	1,010.73	1,072.79	70.42	467,023.41	647,084.38	
7,953.00	0.10	91.80	7,852.59	362.59	359.60	1,010.80	1,072.86	70.42	467,023.41	647,084.45	
8,042.00	0.30	61.00	7,941.59	362.71	359.71	1,011.09	1,073.17	70.42	467,023.52	647,084.74	
8,132.00	0.20	51.10	8,031.59	362.92	359.92	1,011.41	1,073.55	70.41	467,023.73	647,085.06	
8,221.00	0.40	44.80	8,120.59	363.24	360.24	1,011.75	1,073.97	70.40	467,024.05	647,085.40	
8,311.00	0.90	341.40	8,210.58	364.13	361.13	1,011.75	1,074.27	70.36	467,024.94	647,085.40	
8,400.00	0.80	112.10	8,299.58	364.56	361.56	1,012.10	1,074.75	70.34	467,025.37	647,085.75	
8,490.00	1.70	147.00	8,389.55	363.21	360.20	1,013.41	1,075.52	70.43	467,024.01	647,087.06	
8,580.00	2.20	155.60	8,479.50	360.52	357.51	1,014.85	1,075.98	70.59	467,021.32	647,088.50	
8,670.00	2.00	138.40	8,569.44	357.78	354.76	1,016.61	1,076.73	70.76	467,018.57	647,090.26	
8,759.00	1.80	109.40	8,658.40	356.16	353.14	1,018.96	1,078.42	70.89	467,016.95	647,092.61	
8,849.00	2.00	132.40	8,748.35	354.64	351.61	1,021.45	1,080.27	71.01	467,015.42	647,095.10	
8,939.00	2.00	121.60	8,838.29	352.76	349.73	1,023.95	1,082.03	71.14	467,013.54	647,097.60	



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Survey											
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9,028.00	1.60	154.60	8,927.25	350.83	347.79	1,025.80	1,083.16	71.27	467,011.60	647,099.45	
9,118.00	1.30	155.80	9,017.22	348.77	345.73	1,026.76	1,083.40	71.39	467,009.54	647,100.41	
9,207.00	1.20	177.10	9,106.20	346.92	343.87	1,027.22	1,083.25	71.49	467,007.68	647,100.87	
9,296.00	1.10	202.80	9,195.18	345.20	342.16	1,026.94	1,082.44	71.57	467,005.97	647,100.59	
9,386.00	1.70	184.90	9,285.16	343.07	340.03	1,026.49	1,081.34	71.67	467,003.84	647,100.14	
9,475.00	1.80	187.10	9,374.12	340.37	337.33	1,026.20	1,080.22	71.80	467,001.14	647,099.85	
9,547.00	1.90	198.60	9,446.08	338.11	335.07	1,025.68	1,079.03	71.91	466,998.88	647,099.33	
9,637.00	2.20	346.00	9,536.06	338.37	335.34	1,024.79	1,078.26	71.88	466,999.15	647,098.44	
9,727.00	12.80	6.90	9,625.17	349.98	346.94	1,025.57	1,082.67	71.31	467,010.75	647,099.22	
9,816.00	21.60	5.40	9,710.10	376.14	373.09	1,028.30	1,093.89	70.06	467,036.90	647,101.95	
9,906.00	30.40	359.00	9,790.93	415.49	412.44	1,029.47	1,109.01	68.17	467,076.25	647,103.12	
9,996.00	39.80	4.10	9,864.50	467.12	464.06	1,031.13	1,130.75	65.77	467,127.87	647,104.78	
10,085.00	50.50	7.20	9,927.18	529.81	526.73	1,037.49	1,163.55	63.08	467,190.54	647,111.14	
10,174.00	62.20	7.70	9,976.41	603.17	600.06	1,047.10	1,206.86	60.18	467,263.87	647,120.75	
10,264.00	75.20	5.70	10,009.04	686.30	683.16	1,056.80	1,258.39	57.12	467,346.97	647,130.45	
10,353.00	85.60	2.20	10,023.87	773.73	770.58	1,062.80	1,312.76	54.06	467,434.39	647,136.45	
10,443.00	89.70	2.60	10,027.55	863.57	860.40	1,066.56	1,370.35	51.11	467,524.21	647,140.21	
10,536.00	91.90	2.80	10,026.26	956.46	953.29	1,070.94	1,433.76	48.33	467,617.10	647,144.59	
10,629.00	92.40	3.80	10,022.77	1,049.25	1,046.07	1,076.29	1,500.88	45.82	467,709.88	647,149.94	
10,722.00	89.30	3.40	10,021.39	1,142.07	1,138.86	1,082.13	1,570.99	43.54	467,802.67	647,155.78	
10,816.00	90.30	1.60	10,021.72	1,235.98	1,232.76	1,086.23	1,643.05	41.38	467,896.57	647,159.88	
10,909.00	91.10	359.60	10,020.58	1,328.97	1,325.75	1,087.20	1,714.53	39.35	467,989.56	647,160.85	
10,999.00	88.80	358.90	10,020.66	1,418.95	1,415.73	1,086.02	1,784.31	37.49	468,079.54	647,159.67	
11,088.00	88.80	358.40	10,022.52	1,507.90	1,504.69	1,083.93	1,854.45	35.77	468,168.50	647,157.58	
11,178.00	88.00	358.00	10,025.04	1,597.81	1,594.61	1,081.10	1,926.54	34.14	468,258.42	647,154.75	
11,267.00	90.00	358.00	10,026.59	1,686.73	1,683.54	1,078.00	1,999.09	32.63	468,347.35	647,151.65	
11,357.00	92.20	357.90	10,024.86	1,776.64	1,773.46	1,074.78	2,073.72	31.22	468,437.27	647,148.43	



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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
11,447.00	90.70	358.90	10,022.58	1,866.56	1,863.39	1,072.27	2,149.88	29.92	468,527.20	647,145.92	
11,536.00	91.40	359.50	10,020.95	1,955.53	1,952.36	1,071.02	2,226.84	28.75	468,616.17	647,144.67	
11,626.00	92.80	0.70	10,017.65	2,045.47	2,042.30	1,071.18	2,306.17	27.68	468,706.11	647,144.83	
11,716.00	88.60	359.90	10,016.56	2,135.44	2,132.27	1,071.65	2,386.42	26.68	468,796.08	647,145.30	
11,805.00	88.00	359.30	10,019.20	2,224.40	2,221.23	1,071.03	2,465.96	25.74	468,885.04	647,144.68	
11,894.00	91.90	359.50	10,019.27	2,313.37	2,310.21	1,070.10	2,546.01	24.85	468,974.02	647,143.75	
11,984.00	91.50	359.60	10,016.60	2,403.33	2,400.16	1,069.39	2,627.62	24.02	469,063.97	647,143.04	
12,073.00	88.70	359.80	10,016.45	2,492.31	2,489.15	1,068.93	2,708.96	23.24	469,152.96	647,142.58	
12,163.00	88.20	359.50	10,018.88	2,582.28	2,579.12	1,068.38	2,791.65	22.50	469,242.93	647,142.03	
12,254.00	87.20	358.80	10,022.53	2,673.19	2,670.03	1,067.03	2,875.35	21.78	469,333.84	647,140.68	
12,344.00	89.80	358.40	10,024.89	2,763.12	2,759.97	1,064.83	2,958.26	21.10	469,423.78	647,138.48	
12,433.00	89.80	359.10	10,025.20	2,852.09	2,848.95	1,062.89	3,040.76	20.46	469,512.76	647,136.54	
12,523.00	89.40	0.00	10,025.83	2,942.08	2,938.94	1,062.18	3,125.00	19.87	469,602.75	647,135.83	
12,613.00	91.60	0.90	10,025.04	3,032.07	3,028.93	1,062.89	3,210.00	19.34	469,692.74	647,136.54	
12,703.00	93.00	0.70	10,021.43	3,121.99	3,118.84	1,064.14	3,295.39	18.84	469,782.65	647,137.79	
12,792.00	92.30	1.40	10,017.32	3,210.88	3,207.73	1,065.77	3,380.15	18.38	469,871.54	647,139.42	
12,882.00	92.00	0.70	10,013.94	3,300.81	3,297.65	1,067.42	3,466.11	17.94	469,961.46	647,141.07	
12,971.00	91.70	0.40	10,011.07	3,389.76	3,386.60	1,068.28	3,551.10	17.51	470,050.41	647,141.93	
13,061.00	89.30	359.20	10,010.28	3,479.74	3,476.59	1,067.96	3,636.92	17.08	470,140.40	647,141.61	
13,151.00	87.90	358.60	10,012.48	3,569.69	3,566.54	1,066.23	3,722.51	16.64	470,230.35	647,139.88	
13,240.00	88.70	358.20	10,015.12	3,658.61	3,655.47	1,063.75	3,807.10	16.23	470,319.28	647,137.40	
13,330.00	89.40	358.40	10,016.61	3,748.55	3,745.42	1,061.08	3,892.82	15.82	470,409.23	647,134.73	
13,420.00	89.10	357.20	10,017.79	3,838.46	3,835.34	1,057.63	3,978.49	15.42	470,499.15	647,131.28	
13,509.00	93.40	359.20	10,015.85	3,927.36	3,924.25	1,054.83	4,063.55	15.05	470,588.06	647,128.48	
13,599.00	93.20	359.50	10,010.67	4,017.20	4,014.10	1,053.81	4,150.12	14.71	470,677.91	647,127.46	
13,688.00	93.40	0.60	10,005.55	4,106.06	4,102.95	1,053.89	4,236.14	14.41	470,766.76	647,127.54	
13,778.00	91.60	1.80	10,001.62	4,195.95	4,192.84	1,055.77	4,323.72	14.13	470,856.65	647,129.42	



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13,867.00	87.90	1.70	10,002.01	4,284.90	4,281.78	1,058.49	4,410.67	13.89	470,945.59	647,132.14	
13,956.00	88.20	1.60	10,005.04	4,373.82	4,370.69	1,061.05	4,497.64	13.65	471,034.50	647,134.70	
14,046.00	88.30	0.90	10,007.79	4,463.76	4,460.63	1,063.01	4,585.54	13.40	471,124.44	647,136.66	
14,135.00	88.10	0.30	10,010.58	4,552.71	4,549.58	1,063.94	4,672.32	13.16	471,213.39	647,137.59	
14,225.00	88.70	359.70	10,013.09	4,642.68	4,639.54	1,063.94	4,759.97	12.92	471,303.35	647,137.59	
14,314.00	89.10	0.30	10,014.80	4,731.66	4,728.52	1,063.94	4,846.74	12.68	471,392.33	647,137.59	
14,404.00	90.10	0.60	10,015.43	4,821.65	4,818.52	1,064.65	4,934.73	12.46	471,482.33	647,138.30	
14,494.00	90.40	0.60	10,015.04	4,911.65	4,908.51	1,065.59	5,022.84	12.25	471,572.32	647,139.24	
14,584.00	88.00	1.20	10,016.29	5,001.63	4,998.48	1,067.01	5,111.10	12.05	471,662.29	647,140.66	
14,674.00	88.60	2.50	10,018.96	5,091.55	5,088.40	1,069.91	5,199.66	11.87	471,752.21	647,143.56	
14,764.00	86.90	2.00	10,022.50	5,181.41	5,178.25	1,073.44	5,288.34	11.71	471,842.06	647,147.09	
14,854.00	88.20	0.70	10,026.35	5,271.31	5,268.14	1,075.56	5,376.82	11.54	471,931.95	647,149.21	
14,943.00	90.10	0.40	10,027.67	5,360.29	5,357.12	1,076.41	5,464.20	11.36	472,020.93	647,150.06	
15,033.00	88.10	1.00	10,029.08	5,450.27	5,447.10	1,077.51	5,552.65	11.19	472,110.91	647,151.16	
15,122.00	88.30	0.80	10,031.87	5,539.22	5,536.05	1,078.91	5,640.20	11.03	472,199.86	647,152.56	
15,213.00	89.90	0.90	10,033.30	5,630.20	5,627.02	1,080.26	5,729.78	10.87	472,290.83	647,153.91	
15,302.00	90.10	0.60	10,033.30	5,719.20	5,716.01	1,081.43	5,817.41	10.71	472,379.82	647,155.08	
15,392.00	90.50	0.20	10,032.83	5,809.20	5,806.01	1,082.05	5,905.98	10.56	472,469.82	647,155.70	
15,481.00	89.70	359.50	10,032.68	5,898.19	5,895.01	1,081.82	5,993.45	10.40	472,558.82	647,155.47	
15,571.00	88.00	358.50	10,034.48	5,988.15	5,984.97	1,080.25	6,081.68	10.23	472,648.78	647,153.90	
15,661.00	88.10	358.90	10,037.55	6,078.07	6,074.90	1,078.21	6,169.84	10.06	472,738.71	647,151.86	
15,751.00	91.20	359.50	10,038.10	6,168.04	6,164.87	1,076.95	6,258.24	9.91	472,828.68	647,150.60	
15,840.00	92.30	359.90	10,035.38	6,257.00	6,253.83	1,076.49	6,345.80	9.77	472,917.64	647,150.14	
15,929.00	94.60	1.00	10,030.02	6,345.83	6,342.66	1,077.18	6,433.48	9.64	473,006.47	647,150.83	
16,019.00	94.30	1.80	10,023.04	6,435.53	6,432.36	1,079.38	6,522.29	9.53	473,096.17	647,153.03	
16,109.00	92.80	1.40	10,017.47	6,525.33	6,522.15	1,081.88	6,611.27	9.42	473,185.96	647,155.53	
16,198.00	92.70	2.40	10,013.20	6,614.19	6,611.00	1,084.83	6,699.41	9.32	473,274.81	647,158.48	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
16,288.00	93.30	2.40	10,008.49	6,704.00	6,700.79	1,088.60	6,788.64	9.23	473,364.60	647,162.25	
16,377.00	92.00	2.00	10,004.37	6,792.84	6,789.63	1,092.01	6,876.89	9.14	473,453.44	647,165.66	
16,474.00	90.50	1.00	10,002.26	6,889.79	6,886.57	1,094.55	6,973.01	9.03	473,550.38	647,168.20	
16,564.00	88.20	359.60	10,003.28	6,979.77	6,976.56	1,095.02	7,061.97	8.92	473,640.37	647,168.67	
16,654.00	88.90	359.30	10,005.55	7,069.74	7,066.52	1,094.15	7,150.73	8.80	473,730.33	647,167.80	
16,743.00	91.00	359.50	10,005.63	7,158.72	7,155.51	1,093.22	7,238.54	8.69	473,819.32	647,166.87	
16,833.00	87.50	358.80	10,006.81	7,248.69	7,245.48	1,091.89	7,327.29	8.57	473,909.29	647,165.54	
16,923.00	88.20	358.40	10,010.19	7,338.59	7,335.39	1,089.69	7,415.89	8.45	473,999.20	647,163.34	
17,012.00	89.60	358.20	10,011.89	7,427.52	7,424.33	1,087.05	7,503.49	8.33	474,088.14	647,160.70	
17,102.00	88.80	358.70	10,013.15	7,517.47	7,514.29	1,084.62	7,592.16	8.21	474,178.10	647,158.27	
17,191.00	90.20	358.10	10,013.93	7,606.43	7,603.25	1,082.13	7,679.87	8.10	474,267.06	647,155.78	
17,281.00	90.10	358.60	10,013.69	7,696.38	7,693.21	1,079.54	7,768.58	7.99	474,357.02	647,153.19	
17,370.00	89.20	358.70	10,014.24	7,785.35	7,782.18	1,077.44	7,856.42	7.88	474,445.99	647,151.09	
17,460.00	89.40	359.60	10,015.34	7,875.32	7,872.17	1,076.11	7,945.38	7.78	474,535.98	647,149.76	
17,550.00	88.60	0.20	10,016.91	7,965.31	7,962.15	1,075.95	8,034.52	7.70	474,625.96	647,149.60	
17,639.00	88.80	1.70	10,018.93	8,054.27	8,051.11	1,077.43	8,122.89	7.62	474,714.92	647,151.08	
17,729.00	89.00	1.30	10,020.65	8,144.23	8,141.07	1,079.78	8,212.36	7.56	474,804.88	647,153.43	
17,818.00	90.80	359.80	10,020.81	8,233.22	8,230.05	1,080.64	8,300.70	7.48	474,893.86	647,154.29	
17,908.00	87.90	358.90	10,021.83	8,323.20	8,320.03	1,079.62	8,389.79	7.39	474,983.84	647,153.27	
17,997.00	91.20	0.80	10,022.53	8,412.18	8,409.01	1,079.38	8,478.01	7.31	475,072.82	647,153.03	
18,086.00	91.60	0.50	10,020.35	8,501.15	8,497.98	1,080.39	8,566.38	7.25	475,161.79	647,154.04	
18,176.00	94.10	0.30	10,015.88	8,591.03	8,587.86	1,081.02	8,655.63	7.17	475,251.67	647,154.67	
18,265.00	92.20	359.50	10,010.99	8,679.89	8,676.72	1,080.86	8,743.78	7.10	475,340.53	647,154.51	
18,355.00	85.00	358.10	10,013.19	8,769.78	8,766.61	1,078.98	8,832.76	7.02	475,430.42	647,152.63	
18,445.00	86.60	358.00	10,019.78	8,859.47	8,856.32	1,075.93	8,921.43	6.93	475,520.13	647,149.58	
18,534.00	88.80	359.10	10,023.35	8,948.36	8,945.21	1,073.68	9,009.41	6.84	475,609.02	647,147.33	
18,624.00	89.70	359.80	10,024.53	9,038.34	9,035.20	1,072.82	9,098.66	6.77	475,699.01	647,146.47	



ProDirectional Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference: Well No. 8H
TVD Reference: Well @ 3027.00usft
MD Reference: Well @ 3027.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
18,713.00	88.80	0.60	10,025.69	9,127.33	9,124.19	1,073.13	9,187.08	6.71	475,788.00	647,146.78	
18,803.00	90.00	1.20	10,026.63	9,217.32	9,214.17	1,074.54	9,276.61	6.65	475,877.98	647,148.19	
18,892.00	88.90	2.00	10,027.49	9,306.28	9,303.13	1,077.02	9,365.26	6.60	475,966.94	647,150.67	
18,981.00	88.40	1.80	10,029.59	9,395.22	9,392.05	1,079.97	9,453.94	6.56	476,055.86	647,153.62	
19,071.00	90.50	2.20	10,030.45	9,485.16	9,481.99	1,083.12	9,543.65	6.52	476,145.80	647,156.77	
19,161.00	89.20	2.40	10,030.69	9,575.10	9,571.91	1,086.73	9,633.41	6.48	476,235.72	647,160.38	
19,251.00	90.40	1.30	10,031.00	9,665.05	9,661.86	1,089.63	9,723.11	6.43	476,325.67	647,163.28	
19,340.00	91.70	2.00	10,029.37	9,754.01	9,750.81	1,092.19	9,811.79	6.39	476,414.62	647,165.84	
19,430.00	87.50	1.80	10,030.00	9,843.94	9,840.74	1,095.18	9,901.49	6.35	476,504.55	647,168.83	
19,520.00	89.50	1.80	10,032.35	9,933.87	9,930.66	1,098.00	9,991.17	6.31	476,594.47	647,171.65	
19,609.00	92.00	1.90	10,031.19	10,022.82	10,019.60	1,100.88	10,079.89	6.27	476,683.41	647,174.53	
19,699.00	92.00	1.60	10,028.05	10,112.73	10,109.50	1,103.62	10,169.56	6.23	476,773.31	647,177.27	
19,788.00	91.10	1.60	10,025.64	10,201.67	10,198.43	1,106.11	10,258.24	6.19	476,862.24	647,179.76	
19,878.00	87.10	358.90	10,027.05	10,291.63	10,288.39	1,106.50	10,347.72	6.14	476,952.20	647,180.15	
19,968.00	86.90	357.60	10,031.76	10,381.45	10,378.23	1,103.76	10,436.75	6.07	477,042.04	647,177.41	
20,057.00	87.80	356.90	10,035.88	10,470.24	10,467.03	1,099.49	10,524.62	6.00	477,130.84	647,173.14	
20,146.00	87.70	356.40	10,039.37	10,559.01	10,555.81	1,094.29	10,612.38	5.92	477,219.62	647,167.94	
Last Survey: 20146' MD											
20,202.00	87.70	356.40	10,041.62	10,614.84	10,611.65	1,090.78	10,667.56	5.87	477,275.46	647,164.43	
PTB: 20202' MD											



ProDirectional Survey Report

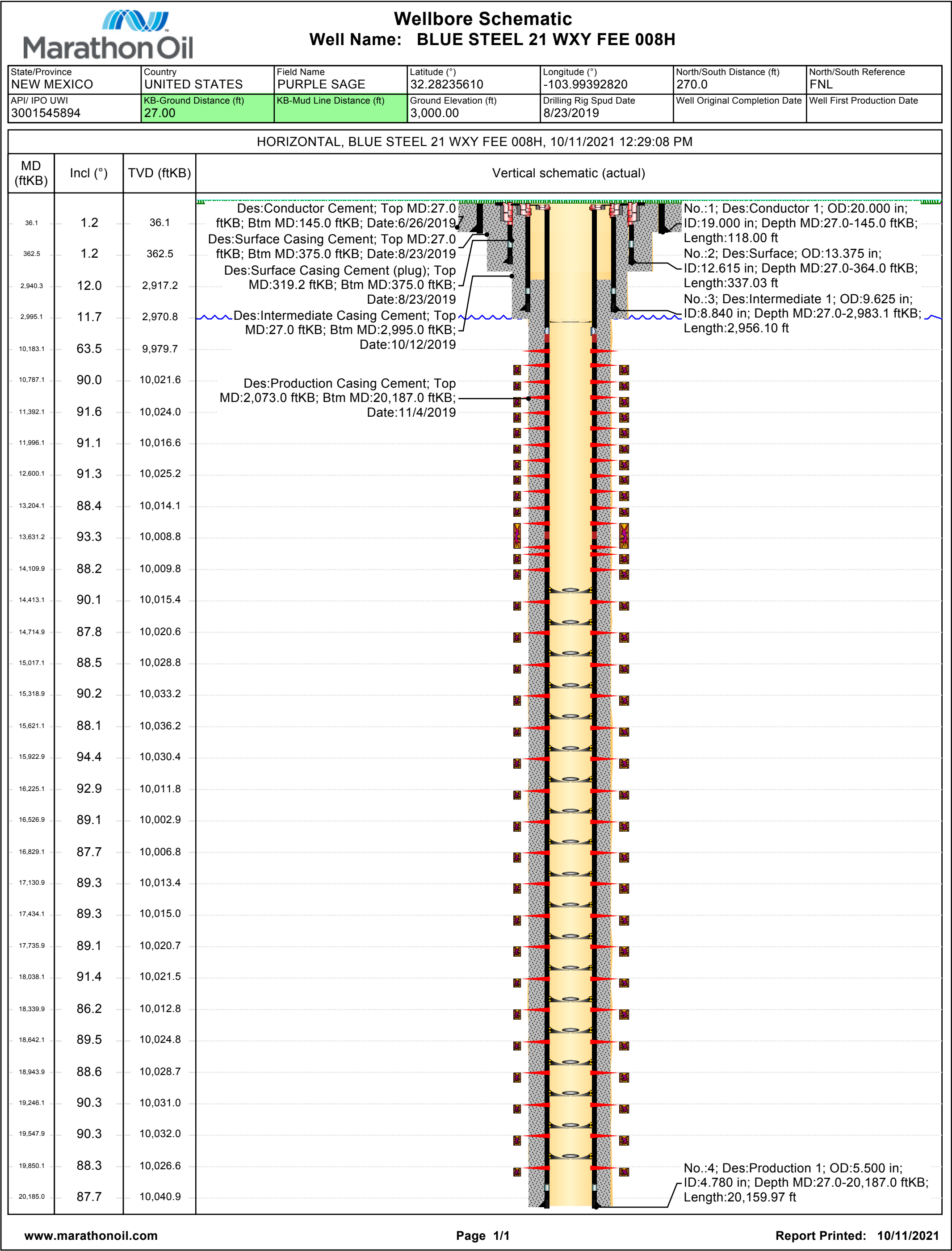


Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WXY Fee
Well: No. 8H
Wellbore: OH
Design: MWD-162'-20146', PTB: 20202'

Local Co-ordinate Reference:
TVD Reference: Well No. 8H
MD Reference: Well @ 3027.00usft
North Reference: Well @ 3027.00usft
Survey Calculation Method: Grid
Database: Minimum Curvature
 WellPlanner1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
411.00	410.94	-4.89	-4.44	Pro MWD First Survey: 411' MD
20,146.00	10,039.37	10,555.81	1,094.29	Last Survey: 20146' MD
20,202.00	10,041.62	10,611.65	1,090.78	PTB: 20202' MD



Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

ACKNOWLEDGMENTS

Action 95450

ACKNOWLEDGMENTS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 95450
	Action Type: [C-105] Well (Re)Completion (C-105)

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.
☐	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.

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

CONDITIONS

Action 95450

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 95450
	Action Type: [C-105] Well (Re)Completion (C-105)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	Future submittal of approved 3160-4 AFMSS Completion Report only requires the approved AFMSS report and not the C-102, Directional Survey, or the Wellbore Schematic as they are already included in the C-104 Completion Packet.	11/18/2024