

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.5. Lease Serial No.
NMNM119272

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.
BLUE STEEL 21 WXY FED COM 18H9. API Well No.
30-015-46209-00-X110. Field and Pool or Exploratory Area
PURPLE SAGE-WOLFCAMP (GAS)11. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

MARATHON OIL PERMIAN LLC

Contact: MELISSA SZUDERA

E-Mail: mszudera@marathonoil.com

3a. Address

5555 SAN FELIPE ST
HOUSTON, TX 77056

3b. Phone No. (include area code)

Ph: 713.296.3179

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 28 T23S R29E NENE 1220FNL 937FEL
32.279873 N Lat, 103.984047 W Lon

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Marathon Oil respectfully requests the following changes to the Approved APD for the above listed well:

- SHL Move: from 1220'FNL 937' FEL to 1219' FNL 1057' FEL
- Drilling Mud: Swap Bring for Oil Based Mud (400'-3040' depth) and Cut Brine for Oil Based Mud (3040'-10550')

Please see attached Revised Certified C-102, Planned Directional Survey Report, and Revised Drill Plan with revisions highlighted.

OCD Accepted for Record 9/17/2020 - JAG

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #500400 verified by the BLM Well Information System
For MARATHON OIL PERMIAN LLC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 01/24/2020 (20PP1012SE)

Name (Printed/Typed) MELISSA SZUDERA

Title REGULATORY COMPLIANCE REP

Signature (Electronic Submission)

Date 01/23/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By CODY LAYTON

Title ASSIST FIELD MANAGER LANDS MINERALS

Date 02/11/2020

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Carlsbad

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 to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

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 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 PLAT

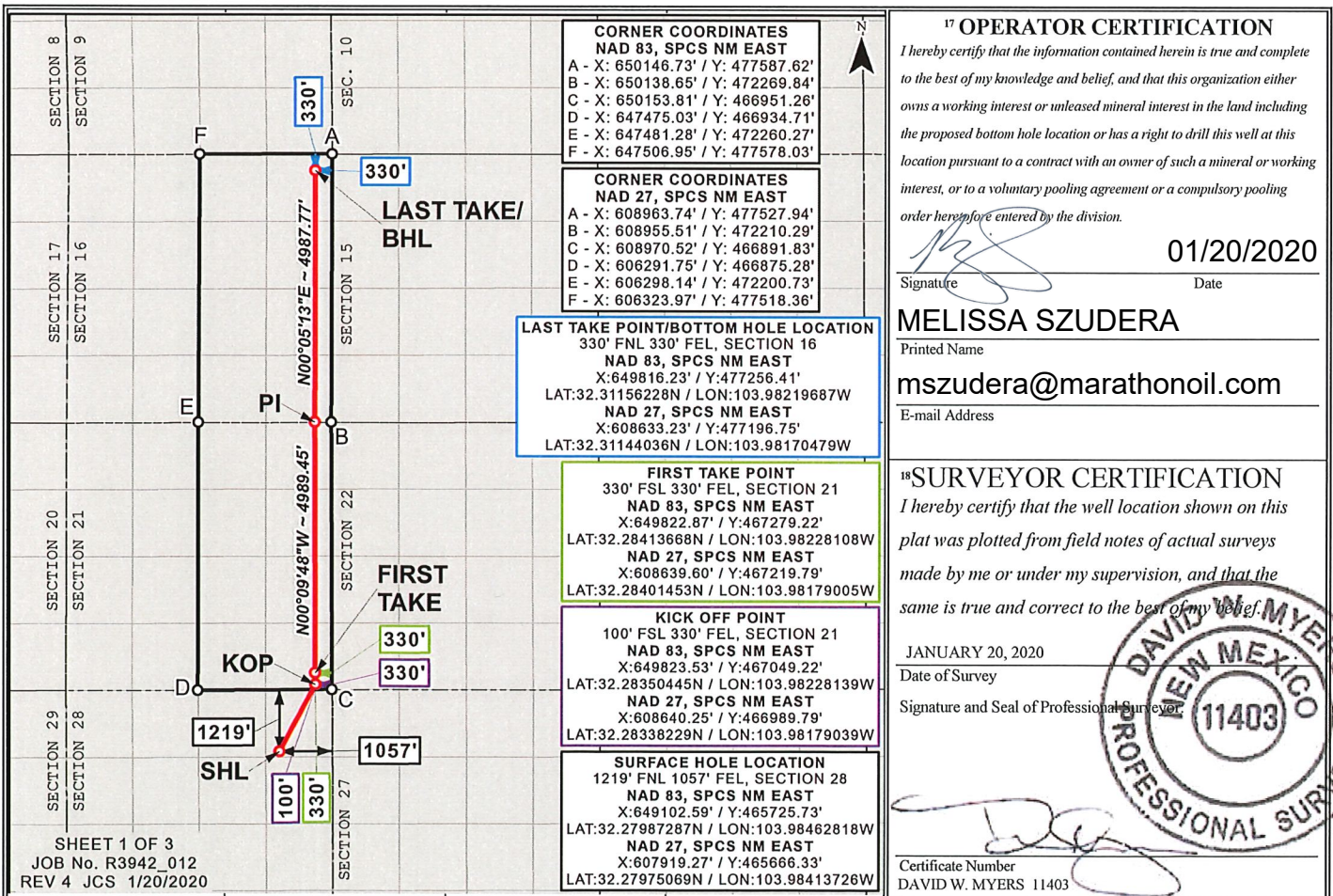
¹ API Number 30-015-46209	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP (GAS)
⁴ Property Code	⁵ Property Name BLUE STEEL 21 WXY FED COM	⁶ Well Number 18H
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁹ Elevation 2998'

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	28	23S	29E		1219	NORTH	1057	EAST	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
A	16	23S	29E		330	NORTH	330	EAST	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: 0.9997823 Convergence Angle: 00°11'10.61002"

Revisions to Operator-Submitted EC Data for Sundry Notice #500400

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM119272	NMNM119272
Agreement:		
Operator:	MARATHON OIL PERMIAN 5555 SAN FELIPE STREET HOUSTON, TX 77056 Ph: 713-296-3179	MARATHON OIL PERMIAN LLC 5555 SAN FELIPE ST HOUSTON, TX 77056 Ph: 713.629 6600
Admin Contact:	MELISSA SZUDERA ADV REGULATORY COMPLIANCE REP E-Mail: mszudera@marathonoil.com Ph: 713-296-3179	MELISSA SZUDERA REGULATORY COMPLIANCE REP E-Mail: mszudera@marathonoil.com Ph: 713.296.3179
Tech Contact:	MELISSA SZUDERA ADV REGULATORY COMPLIANCE REP E-Mail: mszudera@marathonoil.com Ph: 713-296-3179	MELISSA SZUDERA REGULATORY COMPLIANCE REP E-Mail: mszudera@marathonoil.com Ph: 713.296.3179
Location:		
State:	NM	NM
County:	EDDY	EDDY
Field/Pool:	PURPLESAGE; WOLFCAMP	PURPLE SAGE-WOLFCAMP (GAS)
Well/Facility:	BLUE STEEL 21 WXY FED COM 18H Sec 28 T23S R29E Mer 5PM NENE 1220FNL 937FEL	BLUE STEEL 21 WXY FED COM 18H Sec 28 T23S R29E NENE 1220FNL 937FEL 32.279873 N Lat, 103.984047 W Lon

From: jmedrano@blm.gov
To: [Szudera, Melissa \(MRO\)](#)
Subject: [External] Well BLUE STEEL 21 WXY FED COM 18H
Date: Thursday, February 20, 2020 1:35:37 PM
Attachments: [EC500400.pdf](#)

Beware of links/attachments.

The sundry for Change to Original APD you submitted has been approved by the BLM. Your original Electronic Commerce (EC) transmission was assigned ID 500400. Please be sure to open and save all attachments to this message, since they contain important information.

Approved by Cody R. Layton 02/11/2020.

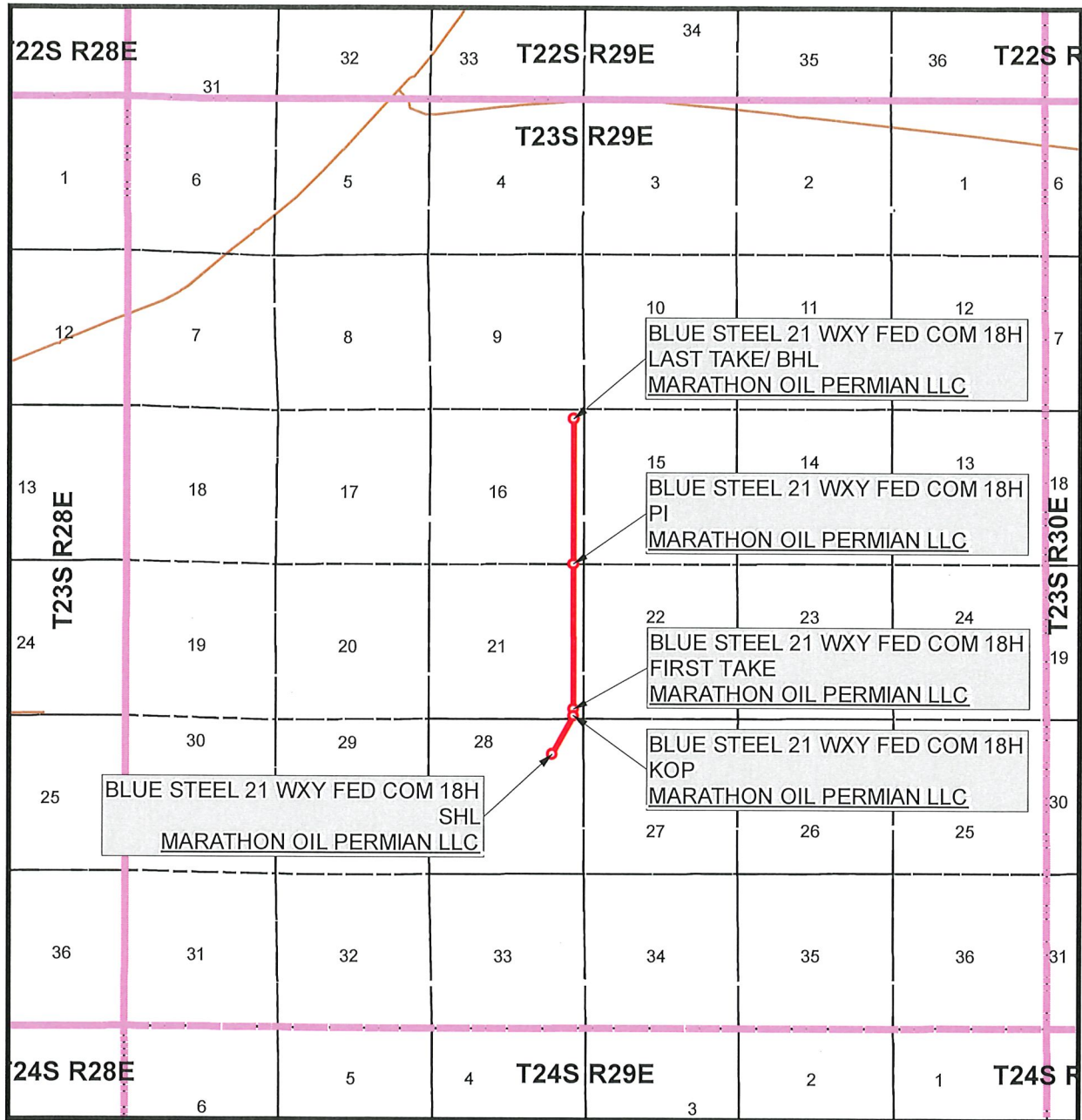
[illegible]

1" = 2,000'
CONTOUR INTERVAL = 10'



PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3942_012

VICINITY MAP



SEC. 28 TWP. 23-S RGE. 29-E
 SURVEY: N.M.P.M.
 COUNTY: EDDY
 OPERATOR: MARATHON OIL PERMIAN LLC
 DESCRIPTION: 1219' FNL & 1057' FEL
 ELEVATION: 2998'
 LEASE: BLUE STEEL 21 FED COM
 U.S.G.S. TOPOGRAPHIC MAP: REMUDA BASIN, NM.

1" = 1 MILE



SHEET 3 OF 3

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-6900 OFFICE
 JOB No. R3942_012

MARATHON OIL PERMIAN LLC

DRILLING AND OPERATIONS PLAN

WELL NAME / NUMBER: BLUE STEEL 21 WXY FED COM 18H

API NUMBER: 30-015-46209

STATE: NEW MEXICO

COUNTY: EDDY

REQUESTED DRILL PLAN REVISIONS HIGHLIGHTED BELOW

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	TWSP	Range	Section	Aliquot/Lot/Trac	Latitude (NAD 83)	Longitude (NAD 83)	County	State	Meridian	Lease Type	Lease Number	Elevation (ft SS)	MD (RKB)	TVD (RKB)
SHL	1220	FNL	937	FEL	23S	29E	28	NENE	32.27987111	-103.98424076	EDDY	NM	NMP	F	NMNM136211	2998	0	0
EXIT	0	FNL	371	FEL	23S	29E	28	NENE	32.28322903	-103.9824152	EDDY	NM	NMP	F	NMNM136211	-4709	7838	7702
ENTER	0	FNL	371	FEL	23S	29E	28	NENE	32.28322903	-103.9824152	EDDY	NM	NMP	F	NMNM119272	-4709	7838	7702
KOP	100	FSL	330	FEL	23S	29E	21	SESE	32.28350445	-103.9822814	EDDY	NM	NMP	F	NMNM119272	-6506	9645	9499
PPP1	330	FSL	330	FEL	23S	29E	21	SESE	32.28413668	-103.9822811	EDDY	NM	NMP	F	NMNM119272	-6963	10173	9956
PPP2	1330	FSL	330	FEL	23S	29E	21	SESE	32.28688557	-103.9822797	EDDY	NM	NMP	Fee		-7079	11199	10072
PPP3	0	FSL	330	FEL	23S	29E	16	SESE	32.29784948	-103.982239	EDDY	NM	NMP	State	V040750	-7079	15176	10072
BHL	330	FNL	330	FEL	23S	29E	16	NENE	32.31156228	-103.9821969	EDDY	NM	NMP	State	V040750	-7079	20179	10072

1. GEOLOGIC NAME OF SURFACE FORMATION

- Permian/Quaternary Alluvium

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS

Formation	True Vertical Depth (ft)	Measured Depth (ft)	Lithologies	Mineral Resources	Producing Formation
Salado	374.0	374.0	Salt/Anhydrite	BRINE	N
Base of Salt	2964.0	2994.5	Limy Sands	BRINE	N
Lamar	3010.0	3041.5	Sand/Shales	OIL	Y
Bell Canyon	3045.0	3077.3	Sands/Shale	OIL	Y
Cherry Canyon	3918.0	3969.8	Sands/Shale	OIL	Y
Brushy Canyon	5075.0	5152.6	Sands/Carbonates	OIL	Y
Bone Spring	6704.0	6818.0	Sands/Carbonates	OIL	Y
Wolfcamp	9942.0	10151.3	Carbonates/Shales/Sands	OIL	Y

DEEPEST EXPECTED FRESH WATER: 275' TVD

ANTICIPATED BOTTOM HOLE PRESSURE: 6,546 psi

ANTICIPATED BOTTOM HOLE TEMPERATURE: 195°F

ANTICIPATED ABNORMAL PRESSURE: N

ANTICIPATED ABNORMAL TEMPERATURE: N

3. CASING PROGRAM

String Type	Hole Size	Csg Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Weight (lbs/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
Surface	<u>17 1/2</u>	<u>13 3/8</u>	<u>0</u>	<u>400</u>	<u>0</u>	<u>400</u>	<u>54.5</u>	<u>J55</u>	<u>STC</u>	<u>5.52</u>	<u>2.5</u>	<u>2.5</u>
Intermediate I	<u>12 1/4</u>	<u>9 5/8</u>	<u>0</u>	<u>3040</u>	<u>0</u>	<u>3009</u>	<u>40</u>	<u>J55</u>	<u>LTC</u>	<u>1.74</u>	<u>1.15</u>	<u>2.19</u>
Intermediate II	<u>8 3/4</u>	<u>7</u>	<u>0</u>	<u>10550</u>	<u>0</u>	<u>10072</u>	<u>29</u>	<u>P110</u>	<u>BTC</u>	<u>2.21</u>	<u>1.18</u>	<u>1.9</u>
Production Liner	<u>6 1/8</u>	<u>4 1/2</u>	<u>10250</u>	<u>20179</u>	<u>9998</u>	<u>10072</u>	<u>13.5</u>	<u>P110</u>	<u>BTC</u>	<u>1.33</u>	<u>1.56</u>	<u>1.88</u>

Minimum safety factors: Burst 1.125 Collapse 1.125 Tension 1.8 Wet/1.6 Dry

OR:

String Type	Hole Size	Csg Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Weight (lbs/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
Surface	<u>17 1/2</u>	<u>13 3/8</u>	<u>0</u>	<u>400</u>	<u>0</u>	<u>400</u>	<u>54.5</u>	<u>J55</u>	<u>STC</u>	<u>5.52</u>	<u>2.5</u>	<u>2.5</u>
Intermediate I	<u>12 1/4</u>	<u>9 5/8</u>	<u>0</u>	<u>3040</u>	<u>0</u>	<u>3009</u>	<u>40</u>	<u>J55</u>	<u>LTC</u>	<u>1.74</u>	<u>1.15</u>	<u>2.19</u>
Production	<u>8 3/4</u>	<u>5.5</u>	<u>0</u>	<u>20179</u>	<u>0</u>	<u>10072</u>	<u>20</u>	<u>P110</u>	<u>BTC</u>	<u>1.65</u>	<u>1.29</u>	<u>2.08</u>

Minimum safety factors: Burst 1.125 Collapse 1.125 Tension 1.8 Wet/1.6 Dry

Will deploy 3 string casing assuming hole conditions are favorable with planned mud weight.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	

Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

4. CEMENT PROGRAM:

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sks)	Yield (ft3/sks)	Density (ppg)	Slurry Volume (ft3)	Excess (%)	Cement Type	Additives
Surface	Lead	--	0	0	0	1.75	13.5	0	100	Class C	
Surface	Tail	--	0	400	407	1.33	14.8	556	100	Class C	0.02 Gal/Sk Defoamer + 0.5% Extender + 1% Accelerator
Intermediate I	Lead	--	0	2000	634	1.75	12.8	1096	75	Class C	0.02 Gal/Sk Defoamer + 0.5% Extender + 1% Accelerator
Intermediate I	Tail	--	2000	3040	367	1.33	14.8	489	50	Class C	0.3 % Retarder
Intermediate II	Lead	--	2740	9500	640	2.7	11	1728	70	Class C	0.85% retarder + 10% extender + 0.02 gal/sk defoamer + 2.0% Extender + 0.15% Viscosifier
Intermediate II	Tail	--	9500	10550	188	1.09	15.6	205	30	Class H	3% extender + 0.15% Dispersant + 0.03 gal/sk retarder
Production Liner	Tail	--	10250	20179	996	1.22	14.5	1216	30	Class H	0.1% retarder + 3.5% extender + 0.3% fluid loss + 0.1% Dispersant

Stage tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Stage tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Or:

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity (sx)	Yield (ft3/sx)	Density (ppg)	Slurry Volume (ft3)	Excess (%)	Cement Type	Additives
Surface	Lead	--	0	0	0	1.73	13.5	0	100	Class C	LCM
Surface	Tail	--	0	400	407	1.33	14.8	556	100	Class C	Accelerator
Intermediate I	Lead	--	0	2000	634	2.21	12.8	1096	75	Class C	Extender, Accelerator
Intermediate I	Tail	--	2000	3040	367	1.33	14.8	489	50	Class C	Retarder
Production	Lead	--	0	9530	1516	3.21	11	4092	70	Class H	Viscosifier, Retarder
Production	Tail	--	9530	20179	2870	1.22	14.5	3500	30	Class H	Extender, Fluid Loss, Dispersant

Pilot hole depth: N/A TVD/MD

KOP: N/A TVD/MD

Plug top	Plug Bottom	Excess (%)	Quantity (sx)	Density (ppg)	Yield (ft3/sx)	Water gal/sk	Slurry Description and Cement Type

Attach plugging procedure for pilot hole.

N/A

5. PRESSURE CONTROL EQUIPMENT

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
--	-------	------------------	------	---	------------

12 ¼"	13 5/8	5000	Annular	x	70% of working pressure
			Blind Ram	x	5000
			Pipe Ram		
			Double Ram	x	
			Other*		
8 ¾"	13 5/8	5000	Annular	x	70% of working pressure
			Blind Ram	x	5000
			Pipe Ram		
			Double Ram	x	
			Other*		
6 1/8"	13 5/8	5000	Annular	x	70% of working pressure
			Blind Ram	x	5000
			Pipe Ram		
			Double Ram	x	
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock, full opening safety valve / inside BOP and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. See attached schematic.	

6. MUD PROGRAM:

Top Depth	Bottom Depth	Mud Type	Min. Weight (ppg)	Max. Weight (ppg)	Additional Characteristics
0	400	Water Based Mud	8.4	8.8	
400	3040	Oil Based mud	9.9	10.2	

<u>3040</u>	<u>10550</u>	<u>Oil Based mud</u>	<u>8.8</u>	<u>9.8</u>	
<u>10550</u>	<u>20250</u>	<u>Oil Based mud</u>	<u>11.0</u>	<u>12.5</u>	

Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. **If Hydrogen Sulfide is encountered , measured amounts and formations will be reported to the BLM**

8. LOGGING / CORING AND TESTING PROGRAM:

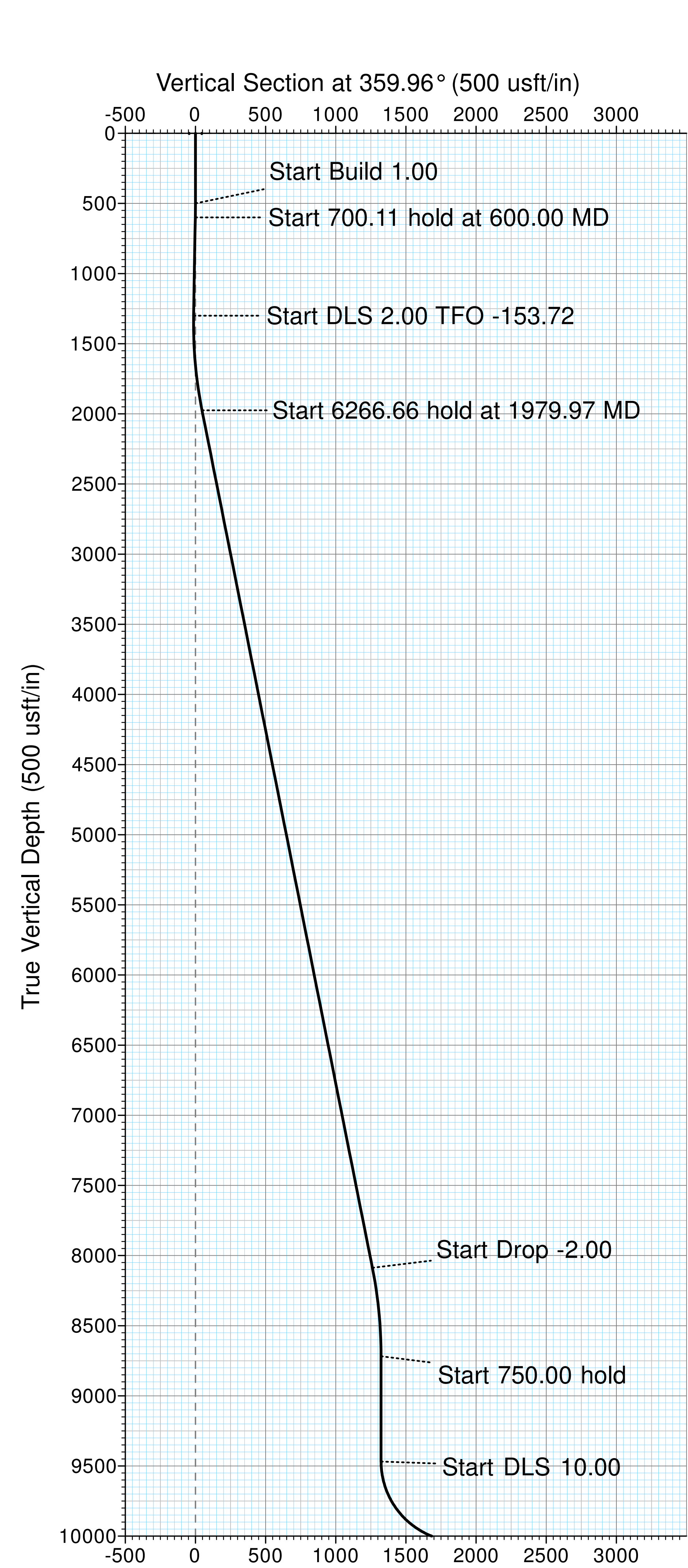
- A. Mud Logger: None.
- B. DST's: None.
- C. Open Hole Logs: GR while drilling from Intermediate casing shoe to TD.

9. POTENTIAL HAZARDS:

- A. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.
- B. No abnormal temperatures or pressures are anticipated. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.
- C. No losses are anticipated at this time.
- D. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.
- E. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.



Marathon Oil
Eddy County, NM
Blue Steel 21 Fed Com
WXY #18H
Plan #2
GL: 2998' + KB: 27' (PD582)

US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level

RKB Elevation: Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))

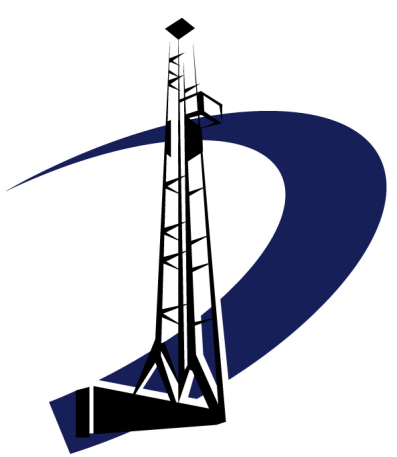
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	465666.33	607919.27	32.2797507	-103.9841373	

SECTION DETAILS

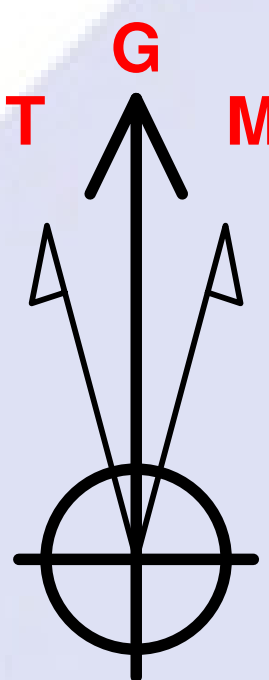
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
3	600.00	1.00	180.00	599.99	-0.87	0.00	1.00	-0.87
4	1300.11	1.00	180.00	1300.00	-13.09	0.00	0.00	-13.09
5	1979.97	12.71	28.24	1974.64	47.14	35.55	2.00	47.11
6	8246.63	12.71	28.24	8087.80	1261.64	687.78	0.00	1261.15
7	8882.03	0.00	0.00	8718.00	1323.46	720.98	2.00	1322.96
8	9632.03	0.00	0.00	9468.00	1323.46	720.98	0.00	1322.96
9	10532.02	90.00	359.96	10040.96	1896.42	720.59	10.00	1895.91
10	20166.03	90.00	359.96	10041.00	11530.42	713.96	0.00	11529.92

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[BlueSteelWXY#18H]FTP	0.00	1553.46	720.33	467219.79	608639.60
[BlueSteelWXY#18H]KOP	9468.00	1323.46	720.98	466989.79	608640.25
[BlueSteelWXY#18H]LTP/BHL	10041.00	11530.42	713.96	477196.75	608633.23



PRODIRECTIONAL



Azimuths to Grid North
True North: -0.19°
Magnetic North: 6.75°

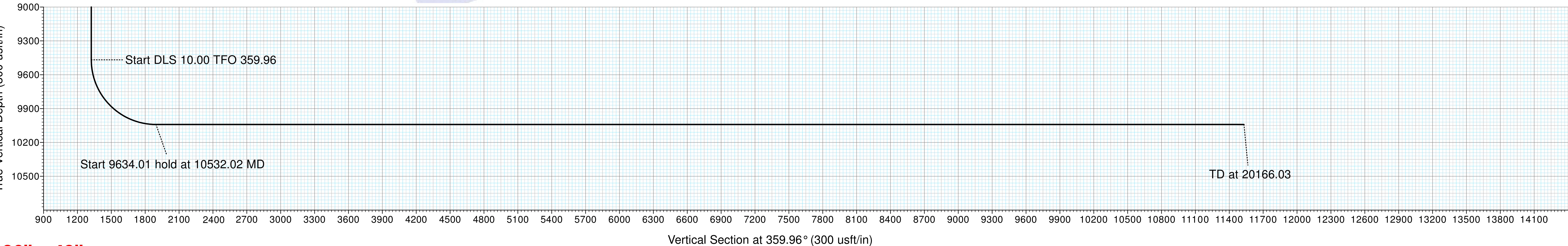
Magnetic Field
Strength: 47845.5snT
Dip Angle: 60.02°
Date: 2/21/2020
Model: HDGM

Azimuth Corrections

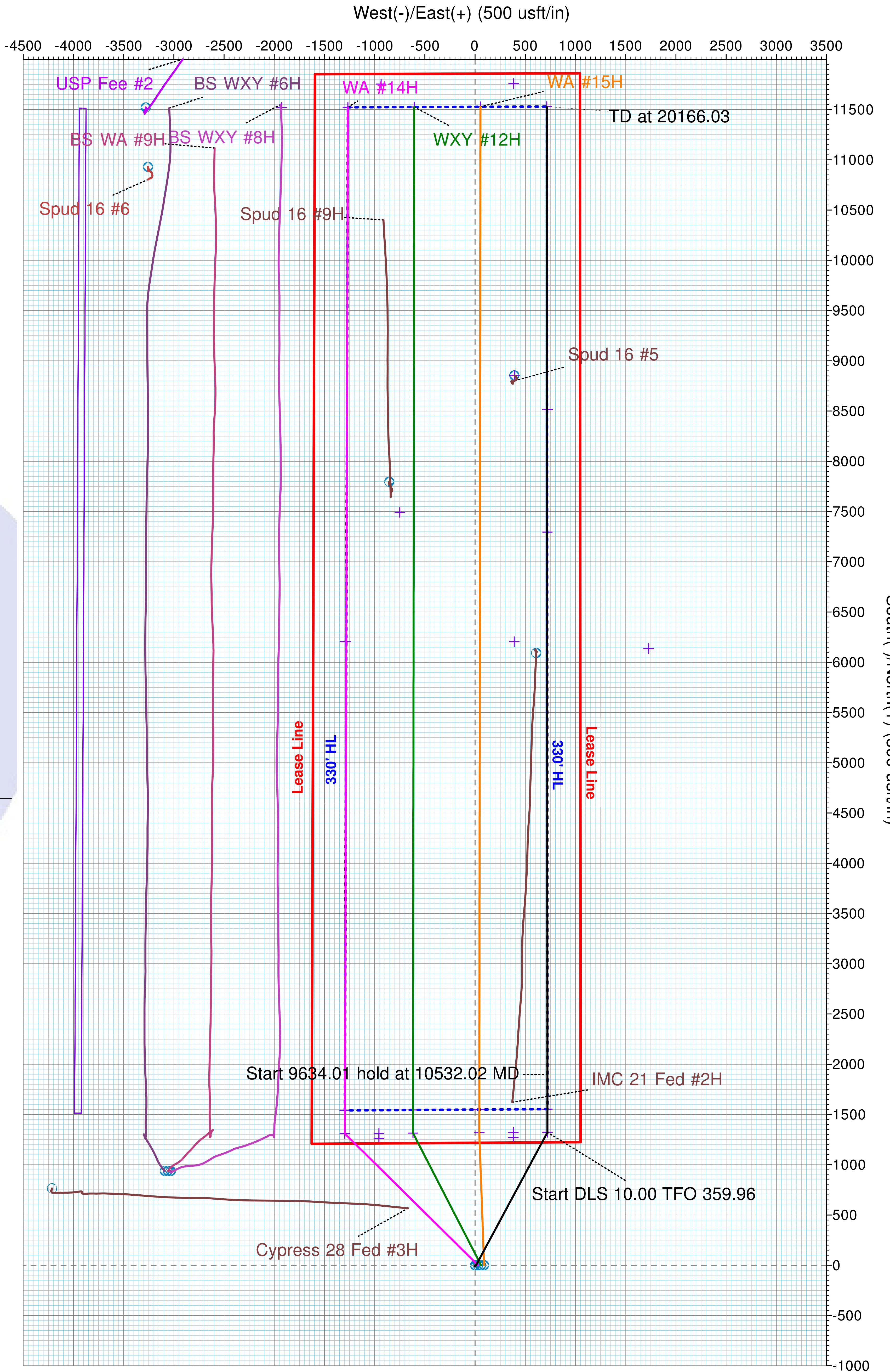
Total Magnetic Corr. (M to G): 6.75°

Declination (M to T): 6.93° East

Target Line: 10041' TVD @ 0' VS: 90° INC



36" x 48"



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #18H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Site:	Blue Steel 21 Fed Com	MD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Well:	WXY #18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WellPlanner1

Project	Eddy County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Blue Steel 21 Fed Com							
Site Position:		Northing:	465,666.39	usft	Latitude:	32.2797498		
From:	Map	Easting:	608,039.11	usft	Longitude:	-103.9837495		
Position Uncertainty:	0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.19	°

Well	WXY #18H					
Well Position	+N/-S	0.00 usft	Northing:	465,666.33 usft	Latitude:	32.2797507
	+E/-W	0.00 usft	Easting:	607,919.27 usft	Longitude:	-103.9841372
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,998.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/21/2020	6.93	60.02	47,845.50

Design	Plan #2				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.96	

Survey Tool Program	Date	1/20/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	5,000.00	Plan #2 (OH)	MWD+HDGM	OWSG MWD + HRGM	
5,000.00	10,000.00	Plan #2 (OH)	MWD+HDGM	OWSG MWD + HRGM	
10,000.00	15,000.00	Plan #2 (OH)	MWD+HDGM	OWSG MWD + HRGM	
15,000.00	20,166.03	Plan #2 (OH)	MWD+HDGM	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
[BlueSteelWXY#18H]FTP									
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

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #18H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Site:	Blue Steel 21 Fed Com	MD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Well:	WXY #18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WellPlanner1

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)
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	1.00	180.00	599.99	-0.87	0.00	-0.87	1.00	1.00	0.00
700.00	1.00	180.00	699.98	-2.62	0.00	-2.62	0.00	0.00	0.00
800.00	1.00	180.00	799.96	-4.36	0.00	-4.36	0.00	0.00	0.00
900.00	1.00	180.00	899.95	-6.11	0.00	-6.11	0.00	0.00	0.00
1,000.00	1.00	180.00	999.93	-7.85	0.00	-7.85	0.00	0.00	0.00
1,100.00	1.00	180.00	1,099.92	-9.60	0.00	-9.60	0.00	0.00	0.00
1,200.00	1.00	180.00	1,199.90	-11.34	0.00	-11.34	0.00	0.00	0.00
1,300.11	1.00	180.00	1,300.00	-13.09	0.00	-13.09	0.00	0.00	0.00
1,400.00	1.19	48.17	1,399.88	-13.27	0.77	-13.27	2.00	0.19	-131.97
1,500.00	3.13	34.39	1,499.80	-10.33	3.09	-10.33	2.00	1.95	-13.78
1,600.00	5.12	31.22	1,599.54	-4.26	6.94	-4.26	2.00	1.99	-3.17
1,700.00	7.11	29.82	1,698.97	4.93	12.34	4.92	2.00	1.99	-1.40
1,800.00	9.11	29.04	1,797.96	17.23	19.26	17.22	2.00	2.00	-0.79
1,900.00	11.11	28.53	1,896.40	32.62	27.70	32.60	2.00	2.00	-0.51
1,979.97	12.71	28.24	1,974.64	47.14	35.55	47.11	2.00	2.00	-0.36
2,000.00	12.71	28.24	1,994.19	51.02	37.63	50.99	0.00	0.00	0.00
2,100.00	12.71	28.24	2,091.74	70.40	48.04	70.37	0.00	0.00	0.00
2,200.00	12.71	28.24	2,189.29	89.78	58.45	89.74	0.00	0.00	0.00
2,300.00	12.71	28.24	2,286.84	109.16	68.86	109.11	0.00	0.00	0.00
2,400.00	12.71	28.24	2,384.39	128.54	79.26	128.49	0.00	0.00	0.00
2,500.00	12.71	28.24	2,481.94	147.92	89.67	147.86	0.00	0.00	0.00
2,600.00	12.71	28.24	2,579.49	167.30	100.08	167.23	0.00	0.00	0.00
2,700.00	12.71	28.24	2,677.04	186.68	110.49	186.61	0.00	0.00	0.00
2,800.00	12.71	28.24	2,774.59	206.06	120.90	205.98	0.00	0.00	0.00
2,900.00	12.71	28.24	2,872.14	225.44	131.30	225.35	0.00	0.00	0.00
3,000.00	12.71	28.24	2,969.69	244.82	141.71	244.72	0.00	0.00	0.00
3,100.00	12.71	28.24	3,067.24	264.20	152.12	264.10	0.00	0.00	0.00
3,200.00	12.71	28.24	3,164.79	283.58	162.53	283.47	0.00	0.00	0.00
3,300.00	12.71	28.24	3,262.34	302.96	172.94	302.84	0.00	0.00	0.00
3,400.00	12.71	28.24	3,359.89	322.34	183.34	322.22	0.00	0.00	0.00
3,500.00	12.71	28.24	3,457.44	341.73	193.75	341.59	0.00	0.00	0.00
3,600.00	12.71	28.24	3,554.99	361.11	204.16	360.96	0.00	0.00	0.00
3,700.00	12.71	28.24	3,652.54	380.49	214.57	380.34	0.00	0.00	0.00
3,800.00	12.71	28.24	3,750.10	399.87	224.97	399.71	0.00	0.00	0.00
3,900.00	12.71	28.24	3,847.65	419.25	235.38	419.08	0.00	0.00	0.00
4,000.00	12.71	28.24	3,945.20	438.63	245.79	438.45	0.00	0.00	0.00
4,100.00	12.71	28.24	4,042.75	458.01	256.20	457.83	0.00	0.00	0.00
4,200.00	12.71	28.24	4,140.30	477.39	266.61	477.20	0.00	0.00	0.00
4,300.00	12.71	28.24	4,237.85	496.77	277.01	496.57	0.00	0.00	0.00
4,400.00	12.71	28.24	4,335.40	516.15	287.42	515.95	0.00	0.00	0.00
4,500.00	12.71	28.24	4,432.95	535.53	297.83	535.32	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #18H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Site:	Blue Steel 21 Fed Com	MD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Well:	WXY #18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WellPlanner1

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)
4,600.00	12.71	28.24	4,530.50	554.91	308.24	554.69	0.00	0.00	0.00
4,700.00	12.71	28.24	4,628.05	574.29	318.65	574.07	0.00	0.00	0.00
4,800.00	12.71	28.24	4,725.60	593.67	329.05	593.44	0.00	0.00	0.00
4,900.00	12.71	28.24	4,823.15	613.05	339.46	612.81	0.00	0.00	0.00
5,000.00	12.71	28.24	4,920.70	632.43	349.87	632.19	0.00	0.00	0.00
5,100.00	12.71	28.24	5,018.25	651.81	360.28	651.56	0.00	0.00	0.00
5,200.00	12.71	28.24	5,115.80	671.19	370.69	670.93	0.00	0.00	0.00
5,300.00	12.71	28.24	5,213.35	690.57	381.09	690.30	0.00	0.00	0.00
5,400.00	12.71	28.24	5,310.90	709.95	391.50	709.68	0.00	0.00	0.00
5,500.00	12.71	28.24	5,408.45	729.33	401.91	729.05	0.00	0.00	0.00
5,600.00	12.71	28.24	5,506.00	748.71	412.32	748.42	0.00	0.00	0.00
5,700.00	12.71	28.24	5,603.55	768.09	422.73	767.80	0.00	0.00	0.00
5,800.00	12.71	28.24	5,701.10	787.47	433.13	787.17	0.00	0.00	0.00
5,900.00	12.71	28.24	5,798.65	806.85	443.54	806.54	0.00	0.00	0.00
6,000.00	12.71	28.24	5,896.20	826.23	453.95	825.92	0.00	0.00	0.00
6,100.00	12.71	28.24	5,993.75	845.61	464.36	845.29	0.00	0.00	0.00
6,200.00	12.71	28.24	6,091.30	864.99	474.77	864.66	0.00	0.00	0.00
6,300.00	12.71	28.24	6,188.86	884.37	485.17	884.03	0.00	0.00	0.00
6,400.00	12.71	28.24	6,286.41	903.75	495.58	903.41	0.00	0.00	0.00
6,500.00	12.71	28.24	6,383.96	923.13	505.99	922.78	0.00	0.00	0.00
6,600.00	12.71	28.24	6,481.51	942.51	516.40	942.15	0.00	0.00	0.00
6,700.00	12.71	28.24	6,579.06	961.89	526.81	961.53	0.00	0.00	0.00
6,800.00	12.71	28.24	6,676.61	981.27	537.21	980.90	0.00	0.00	0.00
6,900.00	12.71	28.24	6,774.16	1,000.65	547.62	1,000.27	0.00	0.00	0.00
7,000.00	12.71	28.24	6,871.71	1,020.04	558.03	1,019.65	0.00	0.00	0.00
7,100.00	12.71	28.24	6,969.26	1,039.42	568.44	1,039.02	0.00	0.00	0.00
7,200.00	12.71	28.24	7,066.81	1,058.80	578.85	1,058.39	0.00	0.00	0.00
7,300.00	12.71	28.24	7,164.36	1,078.18	589.25	1,077.76	0.00	0.00	0.00
7,400.00	12.71	28.24	7,261.91	1,097.56	599.66	1,097.14	0.00	0.00	0.00
7,500.00	12.71	28.24	7,359.46	1,116.94	610.07	1,116.51	0.00	0.00	0.00
7,600.00	12.71	28.24	7,457.01	1,136.32	620.48	1,135.88	0.00	0.00	0.00
7,700.00	12.71	28.24	7,554.56	1,155.70	630.89	1,155.26	0.00	0.00	0.00
7,800.00	12.71	28.24	7,652.11	1,175.08	641.29	1,174.63	0.00	0.00	0.00
7,900.00	12.71	28.24	7,749.66	1,194.46	651.70	1,194.00	0.00	0.00	0.00
8,000.00	12.71	28.24	7,847.21	1,213.84	662.11	1,213.38	0.00	0.00	0.00
8,100.00	12.71	28.24	7,944.76	1,233.22	672.52	1,232.75	0.00	0.00	0.00
8,200.00	12.71	28.24	8,042.31	1,252.60	682.92	1,252.12	0.00	0.00	0.00
8,246.63	12.71	28.24	8,087.80	1,261.64	687.78	1,261.15	0.00	0.00	0.00
8,300.00	11.64	28.24	8,139.97	1,271.55	693.10	1,271.07	2.00	-2.00	0.00
8,400.00	9.64	28.24	8,238.24	1,287.82	701.84	1,287.33	2.00	-2.00	0.00
8,500.00	7.64	28.24	8,337.10	1,301.05	708.95	1,300.56	2.00	-2.00	0.00
8,600.00	5.64	28.24	8,436.43	1,311.24	714.42	1,310.74	2.00	-2.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #18H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Site:	Blue Steel 21 Fed Com	MD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Well:	WXY #18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WellPlanner1

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)	
8,700.00	3.64	28.24	8,536.10	1,318.37	718.24	1,317.87	2.00	-2.00	0.00	
8,800.00	1.64	28.24	8,635.98	1,322.43	720.42	1,321.92	2.00	-2.00	0.00	
8,882.03	0.00	0.00	8,718.00	1,323.46	720.98	1,322.96	2.00	-2.00	0.00	
8,900.00	0.00	0.00	8,735.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,835.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,100.00	0.00	0.00	8,935.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,035.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,135.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,235.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,335.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,435.97	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
9,632.03	0.00	0.00	9,468.00	1,323.46	720.98	1,322.96	0.00	0.00	0.00	
[BlueSteelWXY#18H]KOP										
9,650.00	1.80	359.96	9,485.97	1,323.74	720.98	1,323.24	10.00	10.00	0.00	
9,700.00	6.80	359.96	9,535.81	1,327.49	720.98	1,326.98	10.00	10.00	0.00	
9,750.00	11.80	359.96	9,585.14	1,335.56	720.97	1,335.06	10.00	10.00	0.00	
9,800.00	16.80	359.96	9,633.58	1,347.91	720.96	1,347.40	10.00	10.00	0.00	
9,850.00	21.80	359.96	9,680.75	1,364.42	720.95	1,363.92	10.00	10.00	0.00	
9,900.00	26.80	359.96	9,726.31	1,384.99	720.94	1,384.49	10.00	10.00	0.00	
9,950.00	31.80	359.96	9,769.90	1,409.45	720.92	1,408.95	10.00	10.00	0.00	
10,000.00	36.80	359.96	9,811.19	1,437.62	720.90	1,437.11	10.00	10.00	0.00	
10,050.00	41.80	359.96	9,849.88	1,469.27	720.88	1,468.77	10.00	10.00	0.00	
10,100.00	46.80	359.96	9,885.65	1,504.18	720.86	1,503.68	10.00	10.00	0.00	
10,150.00	51.80	359.96	9,918.25	1,542.07	720.83	1,541.57	10.00	10.00	0.00	
10,200.00	56.80	359.96	9,947.42	1,582.66	720.80	1,582.16	10.00	10.00	0.00	
10,250.00	61.80	359.96	9,972.94	1,625.64	720.77	1,625.14	10.00	10.00	0.00	
10,300.00	66.80	359.96	9,994.62	1,670.68	720.74	1,670.18	10.00	10.00	0.00	
10,350.00	71.80	359.96	10,012.29	1,717.44	720.71	1,716.93	10.00	10.00	0.00	
10,400.00	76.80	359.96	10,025.81	1,765.56	720.68	1,765.05	10.00	10.00	0.00	
10,450.00	81.80	359.96	10,035.10	1,814.67	720.64	1,814.17	10.00	10.00	0.00	
10,500.00	86.80	359.96	10,040.06	1,864.41	720.61	1,863.90	10.00	10.00	0.00	
10,532.02	90.00	359.96	10,040.96	1,896.42	720.59	1,895.91	10.00	10.00	0.00	
10,600.00	90.00	359.96	10,040.96	1,964.39	720.54	1,963.89	0.00	0.00	0.00	
10,700.00	90.00	359.96	10,040.96	2,064.39	720.47	2,063.89	0.00	0.00	0.00	
10,800.00	90.00	359.96	10,040.96	2,164.39	720.40	2,163.89	0.00	0.00	0.00	
10,900.00	90.00	359.96	10,040.96	2,264.39	720.33	2,263.89	0.00	0.00	0.00	
11,000.00	90.00	359.96	10,040.96	2,364.39	720.26	2,363.89	0.00	0.00	0.00	
11,100.00	90.00	359.96	10,040.96	2,464.39	720.20	2,463.89	0.00	0.00	0.00	
11,200.00	90.00	359.96	10,040.96	2,564.39	720.13	2,563.89	0.00	0.00	0.00	
11,300.00	90.00	359.96	10,040.96	2,664.39	720.06	2,663.89	0.00	0.00	0.00	
11,400.00	90.00	359.96	10,040.96	2,764.39	719.99	2,763.89	0.00	0.00	0.00	
11,500.00	90.00	359.96	10,040.96	2,864.39	719.92	2,863.89	0.00	0.00	0.00	

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #18H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Site:	Blue Steel 21 Fed Com	MD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Well:	WXY #18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WellPlanner1

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)	
11,600.00	90.00	359.96	10,040.96	2,964.39	719.85	2,963.89	0.00	0.00	0.00	
11,700.00	90.00	359.96	10,040.96	3,064.39	719.78	3,063.89	0.00	0.00	0.00	
11,800.00	90.00	359.96	10,040.96	3,164.39	719.71	3,163.89	0.00	0.00	0.00	
11,900.00	90.00	359.96	10,040.96	3,264.39	719.65	3,263.89	0.00	0.00	0.00	
12,000.00	90.00	359.96	10,040.96	3,364.39	719.58	3,363.89	0.00	0.00	0.00	
12,100.00	90.00	359.96	10,040.96	3,464.39	719.51	3,463.89	0.00	0.00	0.00	
12,200.00	90.00	359.96	10,040.97	3,564.39	719.44	3,563.89	0.00	0.00	0.00	
12,300.00	90.00	359.96	10,040.97	3,664.39	719.37	3,663.89	0.00	0.00	0.00	
12,400.00	90.00	359.96	10,040.97	3,764.39	719.30	3,763.89	0.00	0.00	0.00	
12,500.00	90.00	359.96	10,040.97	3,864.39	719.23	3,863.89	0.00	0.00	0.00	
12,600.00	90.00	359.96	10,040.97	3,964.39	719.16	3,963.89	0.00	0.00	0.00	
12,700.00	90.00	359.96	10,040.97	4,064.39	719.09	4,063.89	0.00	0.00	0.00	
12,800.00	90.00	359.96	10,040.97	4,164.39	719.03	4,163.89	0.00	0.00	0.00	
12,900.00	90.00	359.96	10,040.97	4,264.39	718.96	4,263.89	0.00	0.00	0.00	
13,000.00	90.00	359.96	10,040.97	4,364.39	718.89	4,363.89	0.00	0.00	0.00	
13,100.00	90.00	359.96	10,040.97	4,464.39	718.82	4,463.89	0.00	0.00	0.00	
13,200.00	90.00	359.96	10,040.97	4,564.39	718.75	4,563.89	0.00	0.00	0.00	
13,300.00	90.00	359.96	10,040.97	4,664.39	718.68	4,663.89	0.00	0.00	0.00	
13,400.00	90.00	359.96	10,040.97	4,764.39	718.61	4,763.89	0.00	0.00	0.00	
13,500.00	90.00	359.96	10,040.97	4,864.39	718.54	4,863.89	0.00	0.00	0.00	
13,600.00	90.00	359.96	10,040.97	4,964.39	718.48	4,963.89	0.00	0.00	0.00	
13,700.00	90.00	359.96	10,040.97	5,064.39	718.41	5,063.89	0.00	0.00	0.00	
13,800.00	90.00	359.96	10,040.97	5,164.39	718.34	5,163.89	0.00	0.00	0.00	
13,900.00	90.00	359.96	10,040.97	5,264.39	718.27	5,263.89	0.00	0.00	0.00	
14,000.00	90.00	359.96	10,040.97	5,364.39	718.20	5,363.89	0.00	0.00	0.00	
14,100.00	90.00	359.96	10,040.97	5,464.39	718.13	5,463.89	0.00	0.00	0.00	
14,200.00	90.00	359.96	10,040.97	5,564.39	718.06	5,563.89	0.00	0.00	0.00	
14,300.00	90.00	359.96	10,040.97	5,664.39	717.99	5,663.89	0.00	0.00	0.00	
14,400.00	90.00	359.96	10,040.97	5,764.39	717.93	5,763.89	0.00	0.00	0.00	
14,500.00	90.00	359.96	10,040.98	5,864.39	717.86	5,863.89	0.00	0.00	0.00	
14,600.00	90.00	359.96	10,040.98	5,964.39	717.79	5,963.89	0.00	0.00	0.00	
14,700.00	90.00	359.96	10,040.98	6,064.39	717.72	6,063.89	0.00	0.00	0.00	
14,800.00	90.00	359.96	10,040.98	6,164.39	717.65	6,163.89	0.00	0.00	0.00	
14,900.00	90.00	359.96	10,040.98	6,264.39	717.58	6,263.89	0.00	0.00	0.00	
15,000.00	90.00	359.96	10,040.98	6,364.39	717.51	6,363.89	0.00	0.00	0.00	
15,100.00	90.00	359.96	10,040.98	6,464.39	717.44	6,463.89	0.00	0.00	0.00	
15,200.00	90.00	359.96	10,040.98	6,564.39	717.38	6,563.89	0.00	0.00	0.00	
15,300.00	90.00	359.96	10,040.98	6,664.39	717.31	6,663.89	0.00	0.00	0.00	
15,400.00	90.00	359.96	10,040.98	6,764.39	717.24	6,763.89	0.00	0.00	0.00	
15,500.00	90.00	359.96	10,040.98	6,864.39	717.17	6,863.89	0.00	0.00	0.00	
15,600.00	90.00	359.96	10,040.98	6,964.39	717.10	6,963.89	0.00	0.00	0.00	
15,700.00	90.00	359.96	10,040.98	7,064.39	717.03	7,063.89	0.00	0.00	0.00	

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #18H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Site:	Blue Steel 21 Fed Com	MD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Well:	WXY #18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WellPlanner1

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)
15,800.00	90.00	359.96	10,040.98	7,164.39	716.96	7,163.89	0.00	0.00	0.00
15,900.00	90.00	359.96	10,040.98	7,264.39	716.89	7,263.89	0.00	0.00	0.00
16,000.00	90.00	359.96	10,040.98	7,364.39	716.83	7,363.89	0.00	0.00	0.00
16,100.00	90.00	359.96	10,040.98	7,464.39	716.76	7,463.89	0.00	0.00	0.00
16,200.00	90.00	359.96	10,040.98	7,564.39	716.69	7,563.89	0.00	0.00	0.00
16,300.00	90.00	359.96	10,040.98	7,664.39	716.62	7,663.89	0.00	0.00	0.00
16,400.00	90.00	359.96	10,040.98	7,764.39	716.55	7,763.89	0.00	0.00	0.00
16,500.00	90.00	359.96	10,040.98	7,864.39	716.48	7,863.89	0.00	0.00	0.00
16,600.00	90.00	359.96	10,040.98	7,964.39	716.41	7,963.89	0.00	0.00	0.00
16,700.00	90.00	359.96	10,040.99	8,064.39	716.34	8,063.89	0.00	0.00	0.00
16,800.00	90.00	359.96	10,040.99	8,164.39	716.28	8,163.89	0.00	0.00	0.00
16,900.00	90.00	359.96	10,040.99	8,264.39	716.21	8,263.89	0.00	0.00	0.00
17,000.00	90.00	359.96	10,040.99	8,364.39	716.14	8,363.89	0.00	0.00	0.00
17,100.00	90.00	359.96	10,040.99	8,464.39	716.07	8,463.89	0.00	0.00	0.00
17,200.00	90.00	359.96	10,040.99	8,564.39	716.00	8,563.89	0.00	0.00	0.00
17,300.00	90.00	359.96	10,040.99	8,664.39	715.93	8,663.89	0.00	0.00	0.00
17,400.00	90.00	359.96	10,040.99	8,764.39	715.86	8,763.89	0.00	0.00	0.00
17,500.00	90.00	359.96	10,040.99	8,864.39	715.79	8,863.89	0.00	0.00	0.00
17,600.00	90.00	359.96	10,040.99	8,964.39	715.72	8,963.89	0.00	0.00	0.00
17,700.00	90.00	359.96	10,040.99	9,064.39	715.66	9,063.89	0.00	0.00	0.00
17,800.00	90.00	359.96	10,040.99	9,164.39	715.59	9,163.89	0.00	0.00	0.00
17,900.00	90.00	359.96	10,040.99	9,264.39	715.52	9,263.89	0.00	0.00	0.00
18,000.00	90.00	359.96	10,040.99	9,364.39	715.45	9,363.89	0.00	0.00	0.00
18,100.00	90.00	359.96	10,040.99	9,464.39	715.38	9,463.89	0.00	0.00	0.00
18,200.00	90.00	359.96	10,040.99	9,564.39	715.31	9,563.89	0.00	0.00	0.00
18,300.00	90.00	359.96	10,040.99	9,664.39	715.24	9,663.89	0.00	0.00	0.00
18,400.00	90.00	359.96	10,040.99	9,764.39	715.17	9,763.89	0.00	0.00	0.00
18,500.00	90.00	359.96	10,040.99	9,864.39	715.11	9,863.89	0.00	0.00	0.00
18,600.00	90.00	359.96	10,040.99	9,964.39	715.04	9,963.89	0.00	0.00	0.00
18,700.00	90.00	359.96	10,040.99	10,064.39	714.97	10,063.89	0.00	0.00	0.00
18,800.00	90.00	359.96	10,040.99	10,164.39	714.90	10,163.89	0.00	0.00	0.00
18,900.00	90.00	359.96	10,040.99	10,264.39	714.83	10,263.89	0.00	0.00	0.00
19,000.00	90.00	359.96	10,041.00	10,364.39	714.76	10,363.89	0.00	0.00	0.00
19,100.00	90.00	359.96	10,041.00	10,464.39	714.69	10,463.89	0.00	0.00	0.00
19,200.00	90.00	359.96	10,041.00	10,564.39	714.62	10,563.89	0.00	0.00	0.00
19,300.00	90.00	359.96	10,041.00	10,664.39	714.56	10,663.89	0.00	0.00	0.00
19,400.00	90.00	359.96	10,041.00	10,764.39	714.49	10,763.89	0.00	0.00	0.00
19,500.00	90.00	359.96	10,041.00	10,864.39	714.42	10,863.89	0.00	0.00	0.00
19,600.00	90.00	359.96	10,041.00	10,964.39	714.35	10,963.89	0.00	0.00	0.00
19,700.00	90.00	359.96	10,041.00	11,064.39	714.28	11,063.89	0.00	0.00	0.00
19,800.00	90.00	359.96	10,041.00	11,164.39	714.21	11,163.89	0.00	0.00	0.00
19,900.00	90.00	359.96	10,041.00	11,264.39	714.14	11,263.89	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY #18H
Project:	Eddy County, NM	TVD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Site:	Blue Steel 21 Fed Com	MD Reference:	Well @ 3025.00usft (GL: 2998' + KB: 27' (PD582))
Well:	WXY #18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WellPlanner1

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)
20,000.00	90.00	359.96	10,041.00	11,364.39	714.07	11,363.89	0.00	0.00	0.00
20,100.00	90.00	359.96	10,041.00	11,464.39	714.01	11,463.89	0.00	0.00	0.00
20,166.03	90.00	359.96	10,041.00	11,530.42	713.96	11,529.92	0.00	0.00	0.00
[BlueSteelWXY#18H]LTP/BHL									

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
[BlueSteelWXY#18H]FT - plan misses target center by 1712.34usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	1,553.46	720.33	467,219.79	608,639.60	32.2840146	-103.9817900
[BlueSteelWXY#18H]KC - plan hits target center - Point	0.00	0.00	9,468.00	1,323.46	720.98	466,989.79	608,640.25	32.2833823	-103.9817904
[BlueSteelWXY#18H]LTI - plan hits target center - Point	0.00	0.00	10,041.00	11,530.42	713.96	477,196.75	608,633.23	32.3114404	-103.9817048

Checked By: _____	Approved By: _____	Date: _____
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