



Well Completion Print

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

02/01/2024

Operator Name MARATHON OIL PERMIAN LLC	Well Name BLUE STEEL 21 WA FEE	Well Number 2H	US Well Number 3001546069
SHL NWNW Sec 28 23S 29E	County EDDY	State NM	Lease Number(s) NMNM86024
Well Type CONVENTIONAL GAS WELL	Well Status Drilling Well	Agreement Name	Agreement Number(s)
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	APD ID 10400035656

Section 1 - General

Well Completion Report Id: 27929 **Submission Date:** 03-15-2021

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:**

Additional Information

<p>Accepted by BLM - 04/01/2022</p> <p><i>Allison Morency</i></p> <p>Petroleum Engineer - BLM</p>	<p>NOTE: The 3160-4 would not generate due to AFMSS issues.</p>
---	--

Keep this Well Completion Report confidential?: YES

APD Operator: MARATHON OIL PERMIAN LLC

Section 2 - Well

Field/Pool or Exploratory: **Pool Name:** Wolfcamp **Field Name:** PURPLE SAGE

Well Type: CONVENTIONAL GAS

Spud Date: 08-22-2019

Date Total Measured Depth Reached: 01-01-2020

Drill & Abandon or Ready To Produce: READY TO PRODUCE

Well Class: HORIZONTAL

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WA FEE	Well Number 2H	US Well Number 3001546069
	County EDDY	State NM	Lease Number(s) NMNM86024
Well Type CONVENTIONAL GAS WELL	Well Status Drilling Well	Agreement Name	Agreement Number(s)
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	APD ID 10400035656

Section 3 - Geologic

Formation Name	Lithology	Describe Lithology	Elevation	TVD	MD	Mineral Resources	Describe Mineral
BASE OF SALT	LIMESTONE, SANDSTONE		3001	2938	2938	OTHER	Brine
LAMAR	SANDSTONE, SHALES		16	2985	2985	OIL	
BELL CANYON	SANDSTONE, SHALES		-19	3020	3020	OIL	
CHERRY CANYON	SANDSTONE, SHALES		-892	3893	3893	OIL	
BRUSHY CANYON	OTHER, SANDSTONE	Carbonates	-2049	5050	5050	OIL	
BONE SPRING	OTHER, SANDSTONE	Carbonates	-3363	6364	6429	OIL	
WOLFCAMP	OTHER, SANDSTONE, SHALES	Carbonates	-6934	9935	10011	OIL	

Completion and Completed

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		PGW	11-21-2020	12-16-2020	WOLFCAMP	10343	20145	Y	.34	1088	OPEN
00	S1	1	NMNM86024	NMNM86024	NEW		DRG	05-30-2019	12-15-2020	WOLFCAMP	10343	20145	Y	.34	1088	OPEN

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WA FEE	Well Number 2H	US Well Number 3001546069
	County EDDY	State NM	Lease Number(s) NMNM86024
Well Type CONVENTIONAL GAS WELL	Well Status Drilling Well	Agreement Name	Agreement Number(s)
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	APD ID 10400035656

Treatment Data

Wellbore Code	Completion Code	Interval Number	Interval Treated?	Treatment Type	Tottle Fluid (bbbls)	Total Proppant (lbs)	Treatment Remarks
00	S1	1	Y	FRAC	514934		Brackish Water
00	S1	1	Y	FRAC	514934		Brackish Water

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	
00	S1	1			FLows FROM WELL		SOLD	

Test Data

Wellbore Code	Completion Code	Interval Number	Test Date	Hours Tested	24-Hour Rate Oil (bbbls)	24-Hour Rate Gas (MCF)	24-Hour Rate Water(BWPD)	Gas-Oil Ratio (SCF/Bbl)	Choke Size	Tubing Pressure Shut-In (psi)	Casing Pressure (psi)
00	S1	1	12/28/2020	24	1807	3960	6120	2191	40/64		2409
00	S1	1	12/28/2020	24	1807	3960	6120	2191	40/64		2409

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WA FEE	Well Number 2H	US Well Number 3001546069
	County EDDY	State NM	Lease Number(s) NMNM86024
Well Type CONVENTIONAL GAS WELL	Well Status Drilling Well	Agreement Name	Agreement Number(s)
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	APD ID 10400035656

Well Location

Survey Type: RECTANGULAR

Survey Number: 21653

Datum: NAD83

Vertical Datum: NAVD88

Reference Datum:

	State	Meridian	County	Latitude	Longitude	Elevation (MSL)	MD (ft)	TVD (ft)	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	32.2824792	-103.9949044	3001	N/A	N/A	FEDERAL	NMNM086024				270	FNL	1105	FWL	23S	29E	28	NWNW
KOP Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.2835016	-103.9974147	-6571	9645	9572	FEE	FEE				100	FNL	330	FWL	23S	29E	21	SWSW
PPP Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.2841338	-103.9974113	-7030	10178	10031	FEE	FEE				330	FSL	330	FWL	23S	29E	21	SWSW
EXIT Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.3115569	-103.9971569	-7144	20178	10145	FEE	FEE				330	FNL	330	FWL	23S	29E	16	NWNW
BHL Well bore 00	NEW MEXICO	NEW MEXICO PRINCIPAL	EDDY	32.3115569	-103.9971569	-7144	20178	10145	FEE	FEE				330	FNL	330	FWL	23S	29E	16	NWNW

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WA FEE	Well Number 2H	US Well Number 3001546069
	County EDDY	State NM	Lease Number(s) NMNM86024
Well Type CONVENTIONAL GAS WELL	Well Status Drilling Well	Agreement Name	Agreement Number(s)
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	APD ID 10400035656

Casing, Liner and Tubing

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	350	13.375	54.5	J-55		ST&C		
00	INTERMEDIATE	12.25	0	3030	9.625	40	J-55		LT&C		
00	INTERMEDIATE	8.75	0	10550	7.0	29	P-110		BUTT		
00	PRODUCTION	6.125	10250	20178	4.5	13.5	P-110		BUTT		

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
00	SURFACE		N/A, tail cement only.	0	0	0	Class C	356	1.33	0	84.3
00	INTERMEDIATE		Class C	634	1.75	0	Class C	364	1.33		283.8
00	INTERMEDIATE		Class C	641	2.7	2730	Class H	188	1.09		344.7
00	PRODUCTION		N/A, tail only.	0	0	0	Class H	996	1.22	10250	216.4

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WA FEE	Well Number 2H	US Well Number 3001546069
	County EDDY	State NM	Lease Number(s) NMNM86024
Well Type CONVENTIONAL GAS WELL	Well Status Drilling Well	Agreement Name	Agreement Number(s)
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	APD ID 10400035656

Logs

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

Operator

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:** 08/17/2021
Street Address: 990 TOWN & COUNTRY BLVD
City: HOUSTON **State:** TX **Zip:** 77024
Phone: (713)296-3368
Email address: acovarrubias@marathonoil.com

Field

Representative Name:
Street Address:
City: **State:** **Zip:**
Phone: **Extension:**
Email address:

Attachments

Operator Name MARATHON OIL PERMIAN LLC SHL NWNW Sec 28 23S 29E	Well Name BLUE STEEL 21 WA FEE	Well Number 2H	US Well Number 3001546069
	County EDDY	State NM	Lease Number(s) NMNM86024
Well Type CONVENTIONAL GAS WELL	Well Status Drilling Well	Agreement Name	Agreement Number(s)
Allottee/Tribe Name	Well Pad Name BLUE STEEL 21 FEE	Well Pad Number 302-1	APD ID 10400035656

WD_Final1inMDGraphBlueSteel21FeeWA2Ht_2020_01_02_01.24.11_20210201125708.pdf

Certified_Survey_Report_Blue_Steel_21_WA_Fee_No._2H_20210201125855.PDF

Wellbore_Schematic___BLUE_STEEL_21_WA_FEE_2_Dec_2020_20210204102420.pdf

20200306_R3942_001_BLUE_STEEL_21_WA_FEE_2H_REV1_CERT_AS_DRILLED_C102_Signed_20210817104105.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: (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 AS-DRILLED PLAT

¹ API Number 30-015-46069	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp (Gas)
⁴ Property Code 325397	Property Name BLUE STEEL 21 WA FEE	⁶ Well Number 2H
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁹ Elevation 3001'

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	1105	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
D	16	23S	29E		286	NORTH	341	WEST	EDDY

¹² Dedicated Acres 640.0	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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.

CORNER COORDINATES NAD 83, SPCS NM EAST
A - X: 644823.90' / Y: 472250.71'
B - X: 644867.18' / Y: 477568.44'
C - X: 647506.95' / Y: 477578.03'
D - X: 647481.28' / Y: 472260.27'
E - X: 647475.03' / Y: 466934.71'
F - X: 644816.72' / Y: 466932.98'

CORNER COORDINATES NAD 27, SPCS NM EAST
A - X: 603640.77' / Y: 472191.16'
B - X: 603684.20' / Y: 477508.77'
C - X: 606323.97' / Y: 477518.36'
D - X: 606298.14' / Y: 472200.73'
E - X: 606291.75' / Y: 466875.28'
F - X: 603633.45' / Y: 466873.55'

BOTTOM HOLE LOCATION
286' FNL 341' FWL, SECTION 16
20365' MEASURED DEPTH IN FEET
NAD 83, SPCS NM EAST
X: 645206.22' / Y: 477283.93'
LAT: 32.31167855N / LON: 103.99711858W
NAD 27, SPCS NM EAST
X: 604023.23' / Y: 477224.26'
LAT: 32.31155669N / LON: 103.99662613W

LAST TAKE POINT
330' FNL 341' FWL, SECTION 16
20321' MEASURED DEPTH IN FEET
NAD 83, SPCS NM EAST
X: 645205.41' / Y: 477239.67'
LAT: 32.31155689N / LON: 103.99712165W
NAD 27, SPCS NM EAST
X: 604022.42' / Y: 477180.00'
LAT: 32.31143504N / LON: 103.99662920W

FIRST TAKE POINT
330' FSL 292' FWL, SECTION 21
10320' MEASURED DEPTH IN FEET
NAD 83, SPCS NM EAST
X: 645109.53' / Y: 467263.16'
LAT: 32.28413403N / LON: 103.99753310W
NAD 27, SPCS NM EAST
X: 603926.26' / Y: 467203.73'
LAT: 32.284041193N / LON: 103.99704171W

KICK OFF POINT
72' FSL 316' FWL, SECTION 21
9663' MEASURED DEPTH IN FEET
NAD 83, SPCS NM EAST
X: 645132.38' / Y: 467004.84'
LAT: 32.28342374N / LON: 103.99746180W
NAD 27, SPCS NM EAST
X: 603949.10' / Y: 466945.41'
LAT: 32.28330165N / LON: 103.99697043W

SURFACE HOLE LOCATION
270' FNL 1105' FWL, SECTION 28
0' MEASURED DEPTH IN FEET
NAD 83, SPCS NM EAST
X: 645923.78' / Y: 466663.71'
LAT: 32.28247919N / LON: 103.99490442W
NAD 27, SPCS NM EAST
X: 604740.49' / Y: 466604.29'
LAT: 32.28235708N / LON: 103.99441315W

17 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: *Adrian Covarrubias* Date: 4/3/2020
Printed Name: Adrian Covarrubias
E-mail Address:

18 SURVEYOR CERTIFICATION
I hereby certify that the well surface location shown on this plat was plotted from field notes of the as-staked surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Data used for underground measurements were provided by others for reference only and does not constitute field measurements performed by R-Squared Global.
Date of Survey: MARCH 5, 2020
Signature and Seal of Professional Surveyor: *Lloyd P. Short*
Certificate Number: LLOYD P. SHORT 21653

Distances/areas relative to NAD 83 Combined Scale Factor: 0.999782 Convergence Angle: 00°11'10.61002"

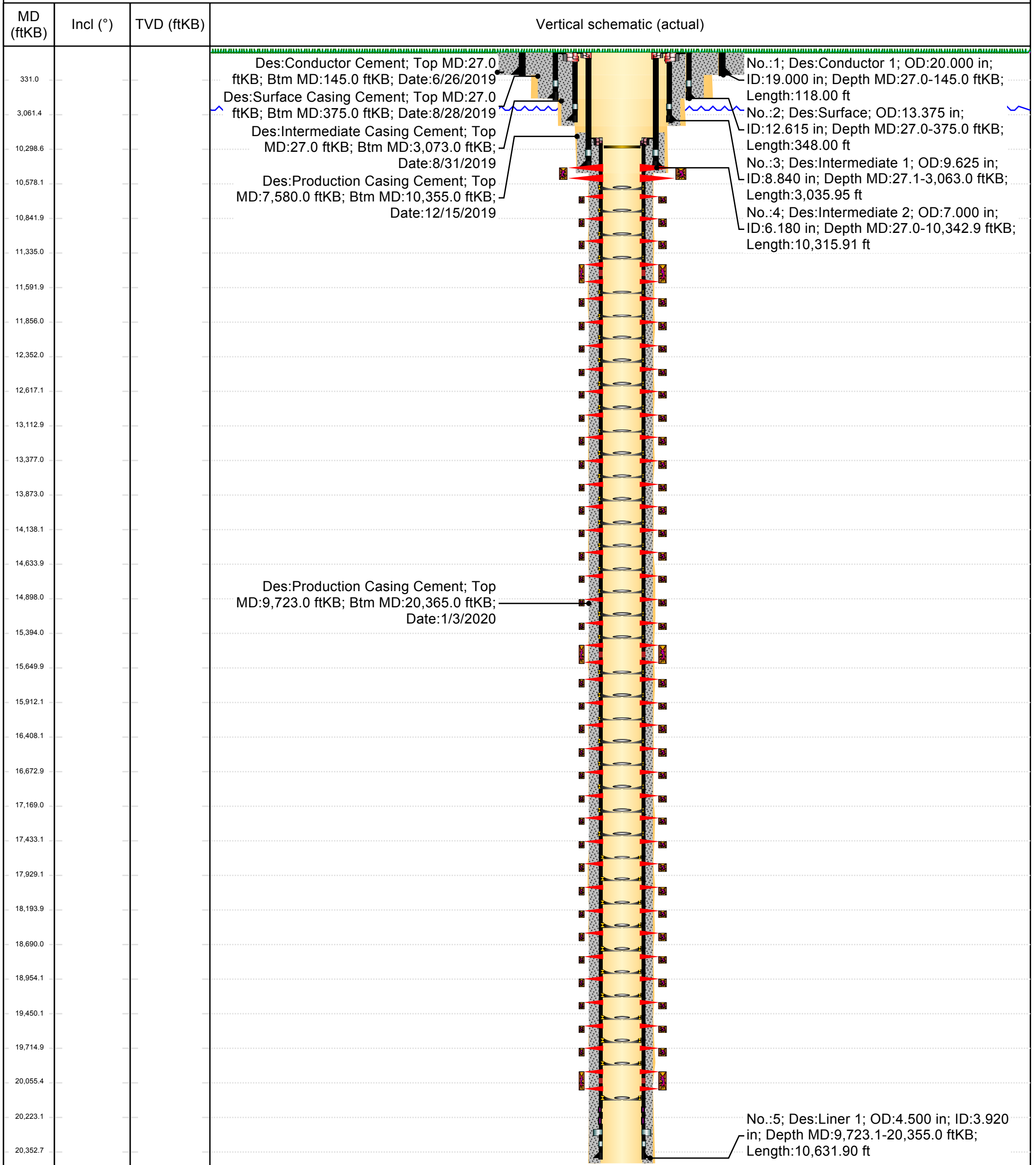


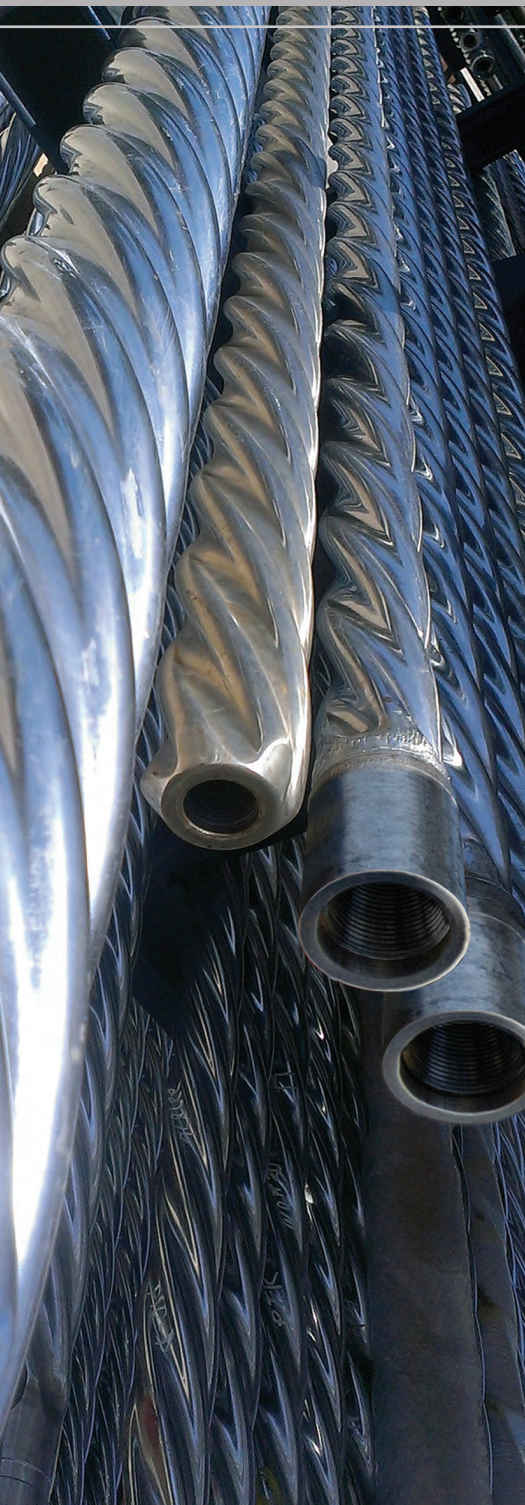
Wellbore Schematic

Well Name: BLUE STEEL 21 WA FEE 002H

State/Province NEW MEXICO	Country UNITED STATES	Field Name MALAGA	Latitude (°) 32.28235710	Longitude (°) -103.99441310	North/South Distance (ft) 270.0	North/South Reference FNL
API/ IPO UWI 3001546069	KB-Ground Distance (ft) 27.00	KB-Mud Line Distance (ft)	Ground Elevation (ft) 3,001.00	Drilling Rig Spud Date 8/27/2019	Well Original Completion Date	Well First Production Date

HORIZONTAL, BLUE STEEL 21 WA FEE 002H, 12/2/2020 1:17:31 PM





Marathon Oil Corporation

**Blue Steel 21 WA Fee No. 2H
Eddy County, NM**

January 21, 2020

**Job# LNM1525919
API# 30-015-46069**

Survey Completion Report



Survey Certification Letter

January 21, 2020



Operator Name: Marathon Oil
 Well Name: Blue Steel 21 WA Fee No. 2H
 County/Parish: Eddy County,
 State: NM
 Rig Name: Precision 582
 Job Number: LNM1525919

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	418' MD – 20,302' MD	20,365' MD	08/30/19 – 12/31/19	MWD

Sincerely,

Mike Coats
 Regulatory Specialist
 Professional Directional

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



Marathon Oil

Marathon Oil

Eddy County, NM
Blue Steel 21 WA Fee
No. 2H
OH

Survey: ProDirectional

Survey Report

21 January, 2020



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 2H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3028.00usft
Site:	Blue Steel 21 WA Fee	MD Reference:	Well @ 3028.00usft
Well:	No. 2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-101-20302', PTB: 20365'	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 WA Fee				
Site Position:		Northing:	466,663.81 usft	Latitude:	32.2824782
From:	Map	Easting:	646,073.65 usft	Longitude:	-103.9944195
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.18 °

Well	No. 2H, LNM1525919					
Well Position	+N/-S	0.00 usft	Northing:	466,663.71 usft	Latitude:	32.2824792
	+E/-W	0.00 usft	Easting:	645,923.78 usft	Longitude:	-103.9949044
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,001.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/1/2019	7.00	60.03	47,903.50

Design	MWD-101-20302', PTB: 20365'				
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	0.27	



ProDirectional
Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WA Fee
Well: No. 2H
Wellbore: OH
Design: MWD-101-20302', PTB: 20365'

Local Co-ordinate Reference: Well No. 2H
TVD Reference: Well @ 3028.00usft
MD Reference: Well @ 3028.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey Program Date 1/21/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
101.00	375.00	Survey #1 (OH)	GYRO-NS-CT	OWSG XYZ Accel with XY Static and Continuous Gyro
418.00	20,365.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HRGM

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	466,663.71	645,923.78
101.00	0.10	176.00	101.00	-0.09	-0.09	0.01	0.09	176.00	466,663.62	645,923.79
185.00	0.60	246.00	185.00	-0.34	-0.34	-0.39	0.52	228.96	466,663.37	645,923.39
284.00	0.60	286.00	283.99	-0.41	-0.41	-1.36	1.42	253.33	466,663.30	645,922.42
375.00	0.60	324.00	374.99	0.10	0.11	-2.10	2.10	272.97	466,663.82	645,921.68
418.00	0.80	344.90	417.99	0.57	0.58	-2.31	2.38	284.11	466,664.29	645,921.47
Pro MWD First Survey: 418' MD										
510.00	0.80	338.00	509.98	1.78	1.80	-2.72	3.26	303.45	466,665.51	645,921.06
603.00	0.40	18.00	602.97	2.69	2.71	-2.86	3.94	313.41	466,666.42	645,920.92
698.00	0.20	2.50	697.97	3.18	3.19	-2.75	4.21	319.20	466,666.90	645,921.03
792.00	0.50	297.50	791.97	3.53	3.54	-3.11	4.71	318.72	466,667.25	645,920.67
887.00	0.50	304.80	886.97	3.95	3.97	-3.82	5.51	316.12	466,667.68	645,919.96
979.00	0.50	274.40	978.96	4.21	4.23	-4.55	6.21	312.93	466,667.94	645,919.23
1,073.00	1.40	262.20	1,072.95	4.08	4.10	-6.09	7.35	303.97	466,667.81	645,917.69
1,163.00	1.90	254.80	1,162.91	3.52	3.56	-8.62	9.33	292.46	466,667.27	645,915.16
1,252.00	1.40	242.50	1,251.87	2.62	2.68	-11.01	11.33	283.66	466,666.39	645,912.77
1,341.00	2.70	260.40	1,340.82	1.76	1.82	-14.04	14.16	277.40	466,665.53	645,909.74
1,431.00	5.10	289.10	1,430.61	2.69	2.78	-19.91	20.11	277.95	466,666.49	645,903.87
1,520.00	6.10	295.20	1,519.18	5.96	6.09	-27.93	28.59	282.30	466,669.80	645,895.85
1,610.00	6.40	298.40	1,608.65	10.34	10.51	-36.67	38.15	285.99	466,674.22	645,887.11
1,700.00	8.00	296.40	1,697.94	15.46	15.68	-46.69	49.25	288.56	466,679.39	645,877.09



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 2H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3028.00usft
Site:	Blue Steel 21 WA Fee	MD Reference:	Well @ 3028.00usft
Well:	No. 2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-101-20302', PTB: 20365'	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)		
1,789.00	8.00	296.70	1,786.07	20.94	21.22	-57.77	61.55	290.17	466,684.93	645,866.01		
1,878.00	7.40	295.90	1,874.27	26.18	26.50	-68.46	73.41	291.16	466,690.21	645,855.32		
1,968.00	7.10	292.70	1,963.55	30.81	31.18	-78.81	84.75	291.59	466,694.89	645,844.97		
2,057.00	6.60	292.70	2,051.91	34.86	35.28	-88.60	95.36	291.71	466,698.99	645,835.18		
2,147.00	6.70	294.50	2,141.31	38.99	39.45	-98.15	105.78	291.90	466,703.16	645,825.63		
2,236.00	7.70	293.50	2,229.60	43.47	43.98	-108.34	116.93	292.09	466,707.69	645,815.44		
2,326.00	7.40	287.60	2,318.82	47.57	48.14	-119.39	128.73	291.96	466,711.85	645,804.39		
2,415.00	8.90	291.70	2,406.92	51.80	52.42	-131.26	141.33	291.77	466,716.13	645,792.52		
2,505.00	9.30	292.50	2,495.79	57.09	57.77	-144.44	155.57	291.80	466,721.48	645,779.34		
2,595.00	10.50	292.80	2,584.45	62.99	63.74	-158.72	171.04	291.88	466,727.45	645,765.06		
2,685.00	10.00	290.40	2,673.01	68.82	69.64	-173.61	187.05	291.86	466,733.35	645,750.17		
2,774.00	9.10	287.90	2,760.78	73.61	74.49	-187.55	201.80	291.66	466,738.20	645,736.23		
2,864.00	9.10	292.20	2,849.65	78.42	79.37	-200.91	216.02	291.56	466,743.08	645,722.87		
2,954.00	10.10	295.40	2,938.39	84.43	85.44	-214.63	231.01	291.71	466,749.15	645,709.15		
3,113.00	9.90	294.50	3,094.97	95.96	97.09	-239.66	258.58	292.05	466,760.80	645,684.12		
3,202.00	10.20	293.80	3,182.61	102.25	103.45	-253.83	274.10	292.17	466,767.16	645,669.95		
3,291.00	10.20	293.00	3,270.20	108.44	109.70	-268.29	289.86	292.24	466,773.41	645,655.49		
3,381.00	10.20	293.50	3,358.78	114.66	116.00	-282.94	305.79	292.29	466,779.71	645,640.84		
3,470.00	10.20	292.90	3,446.37	120.80	122.20	-297.42	321.55	292.34	466,785.91	645,626.36		
3,560.00	10.20	292.80	3,534.95	126.92	128.39	-312.11	337.49	292.36	466,792.10	645,611.67		
3,650.00	10.80	293.30	3,623.44	133.27	134.82	-327.20	353.89	292.39	466,798.53	645,596.58		
3,739.00	10.60	294.90	3,710.89	139.95	141.56	-342.28	370.40	292.47	466,805.27	645,581.50		
3,829.00	10.40	294.60	3,799.39	146.74	148.43	-357.18	386.79	292.57	466,812.14	645,566.60		
3,918.00	10.20	292.80	3,886.95	153.07	154.83	-371.75	402.70	292.61	466,818.54	645,552.03		
4,008.00	10.30	291.60	3,975.52	159.05	160.88	-386.57	418.71	292.60	466,824.59	645,537.21		
4,097.00	10.30	291.10	4,063.08	164.78	166.67	-401.40	434.62	292.55	466,830.38	645,522.38		
4,187.00	11.00	305.60	4,151.55	172.60	174.57	-415.89	451.04	292.77	466,838.28	645,507.89		



ProDirectional
Survey Report



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WA Fee
Well: No. 2H
Wellbore: OH
Design: MWD-101-20302', PTB: 20365'

Local Co-ordinate Reference: Well No. 2H
TVD Reference: Well @ 3028.00usft
MD Reference: Well @ 3028.00usft
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)		
4,277.00	11.00	305.50	4,239.89	182.52	184.55	-429.86	467.80	293.24	466,848.26	645,493.92		
4,366.00	10.70	305.00	4,327.30	192.13	194.22	-443.54	484.20	293.65	466,857.93	645,480.24		
4,456.00	10.70	304.70	4,415.74	201.61	203.77	-457.25	500.60	294.02	466,867.48	645,466.53		
4,545.00	10.20	303.90	4,503.26	210.65	212.87	-470.59	516.49	294.34	466,876.58	645,453.19		
4,635.00	9.40	291.80	4,591.96	217.76	220.04	-484.03	531.70	294.45	466,883.75	645,439.75		
4,725.00	9.50	289.90	4,680.73	222.95	225.30	-497.83	546.44	294.35	466,889.01	645,425.95		
4,815.00	9.80	290.60	4,769.46	228.11	230.52	-511.99	561.49	294.24	466,894.23	645,411.79		
4,904.00	10.30	288.80	4,857.10	233.27	235.75	-526.61	576.97	294.12	466,899.46	645,397.17		
4,993.00	10.30	288.70	4,944.66	238.31	240.87	-541.68	592.82	293.97	466,904.58	645,382.10		
5,083.00	9.50	285.20	5,033.32	242.77	245.39	-556.47	608.17	293.80	466,909.10	645,367.31		
5,173.00	8.60	289.90	5,122.20	246.94	249.63	-569.96	622.23	293.65	466,913.34	645,353.82		
5,262.00	8.00	287.40	5,210.27	251.00	253.75	-582.13	635.03	293.55	466,917.46	645,341.65		
5,352.00	7.80	286.30	5,299.41	254.53	257.34	-593.97	647.32	293.42	466,921.05	645,329.81		
5,442.00	7.30	284.80	5,388.63	257.66	260.51	-605.36	659.03	293.28	466,924.22	645,318.42		
5,531.00	8.30	299.30	5,476.82	262.19	265.10	-616.43	671.02	293.27	466,928.81	645,307.35		
5,621.00	8.30	296.60	5,565.88	268.23	271.19	-627.90	683.96	293.36	466,934.90	645,295.88		
5,710.00	8.30	294.70	5,653.94	273.73	276.75	-639.48	696.80	293.40	466,940.46	645,284.30		
5,800.00	9.50	302.10	5,742.86	280.34	283.41	-651.68	710.64	293.50	466,947.12	645,272.10		
5,890.00	9.30	300.70	5,831.65	287.94	291.07	-664.22	725.20	293.66	466,954.78	645,259.56		
5,980.00	9.90	298.50	5,920.39	295.28	298.47	-677.27	740.13	293.78	466,962.18	645,246.51		
6,069.00	9.90	298.20	6,008.07	302.48	305.74	-690.74	755.38	293.88	466,969.45	645,233.04		
6,159.00	9.50	296.80	6,096.78	309.42	312.74	-704.19	770.51	293.95	466,976.45	645,219.59		
6,248.00	9.10	295.80	6,184.61	315.74	319.12	-717.08	784.88	293.99	466,982.83	645,206.70		
6,338.00	9.10	292.20	6,273.48	321.46	324.91	-730.08	799.11	293.99	466,988.62	645,193.70		
6,428.00	8.70	292.60	6,362.39	326.71	330.21	-742.95	813.03	293.96	466,993.92	645,180.83		
6,517.00	8.50	289.10	6,450.39	331.39	334.95	-755.38	826.31	293.91	466,998.66	645,168.40		
6,607.00	7.40	290.90	6,539.53	335.58	339.19	-767.08	838.73	293.85	467,002.90	645,156.70		



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 2H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3028.00usft
Site:	Blue Steel 21 WA Fee	MD Reference:	Well @ 3028.00usft
Well:	No. 2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-101-20302', PTB: 20365'	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)		
6,697.00	5.80	297.00	6,628.93	339.66	343.33	-776.55	849.06	293.85	467,007.04	645,147.23		
6,787.00	5.00	294.40	6,718.53	343.31	347.01	-784.17	857.52	293.87	467,010.72	645,139.61		
6,876.00	3.10	288.60	6,807.30	345.66	349.38	-789.98	863.80	293.86	467,013.09	645,133.80		
6,966.00	2.20	281.80	6,897.21	346.77	350.51	-793.98	867.91	293.82	467,014.22	645,129.80		
7,056.00	1.90	291.50	6,987.15	347.65	351.41	-797.06	871.09	293.79	467,015.12	645,126.72		
7,145.00	1.10	250.00	7,076.12	347.89	351.66	-799.24	873.18	293.75	467,015.37	645,124.54		
7,235.00	1.00	193.40	7,166.11	346.83	350.60	-800.23	873.66	293.66	467,014.31	645,123.55		
7,324.00	1.00	145.50	7,255.10	345.43	349.20	-799.97	872.87	293.58	467,012.91	645,123.81		
7,413.00	0.80	161.30	7,344.09	344.21	347.98	-799.33	871.79	293.53	467,011.69	645,124.45		
7,503.00	0.30	262.80	7,434.08	343.58	347.35	-799.36	871.57	293.49	467,011.06	645,124.42		
7,593.00	0.70	308.70	7,524.08	343.89	347.67	-800.03	872.30	293.49	467,011.38	645,123.75		
7,683.00	1.00	249.80	7,614.07	343.96	347.74	-801.19	873.40	293.46	467,011.45	645,122.59		
7,772.00	1.40	229.10	7,703.05	342.97	346.76	-802.74	874.44	293.36	467,010.47	645,121.04		
7,862.00	1.10	260.20	7,793.03	342.10	345.89	-804.43	875.64	293.27	467,009.60	645,119.35		
7,951.00	1.20	264.20	7,882.01	341.85	345.65	-806.19	877.17	293.21	467,009.36	645,117.59		
8,041.00	0.60	65.30	7,972.01	341.95	345.75	-806.70	877.68	293.20	467,009.46	645,117.08		
8,130.00	1.60	79.00	8,060.99	342.39	346.19	-805.06	876.34	293.27	467,009.90	645,118.72		
8,220.00	1.50	77.10	8,150.96	342.90	346.69	-802.68	874.35	293.36	467,010.40	645,121.10		
8,309.00	1.10	72.70	8,239.93	343.43	347.20	-800.73	872.76	293.44	467,010.91	645,123.05		
8,399.00	0.90	89.80	8,329.92	343.69	347.46	-799.20	871.46	293.50	467,011.17	645,124.58		
8,488.00	1.50	89.00	8,418.90	343.72	347.48	-797.33	869.76	293.55	467,011.19	645,126.45		
8,578.00	1.60	102.00	8,508.87	343.49	347.24	-794.93	867.46	293.60	467,010.95	645,128.85		
8,668.00	0.80	87.50	8,598.85	343.27	347.01	-793.07	865.66	293.63	467,010.72	645,130.71		
8,758.00	0.90	125.00	8,688.84	342.90	346.63	-791.86	864.41	293.64	467,010.34	645,131.92		
8,847.00	1.00	124.80	8,777.83	342.06	345.79	-790.65	862.96	293.62	467,009.50	645,133.13		
8,937.00	1.10	192.60	8,867.81	340.77	344.50	-790.20	862.03	293.56	467,008.21	645,133.58		
9,027.00	1.10	228.60	8,957.80	339.35	343.08	-791.03	862.23	293.45	467,006.79	645,132.75		



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 2H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3028.00usft
Site:	Blue Steel 21 WA Fee	MD Reference:	Well @ 3028.00usft
Well:	No. 2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-101-20302', PTB: 20365'	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)		
9,116.00	0.30	332.90	9,046.79	338.99	342.72	-791.78	862.77	293.41	467,006.43	645,132.00		
9,206.00	0.30	15.80	9,136.79	339.43	343.16	-791.82	862.98	293.43	467,006.87	645,131.96		
9,295.00	0.20	53.80	9,225.79	339.74	343.48	-791.63	862.94	293.46	467,007.19	645,132.15		
9,385.00	0.30	56.20	9,315.79	339.97	343.70	-791.31	862.73	293.48	467,007.41	645,132.47		
9,474.00	0.40	149.10	9,404.79	339.83	343.56	-790.96	862.35	293.48	467,007.27	645,132.82		
9,564.00	0.60	202.20	9,494.79	339.13	342.86	-790.97	862.09	293.43	467,006.57	645,132.81		
9,648.00	1.40	188.90	9,578.77	337.70	341.44	-791.30	861.82	293.34	467,005.15	645,132.48		
9,741.00	1.10	208.10	9,671.75	335.79	339.53	-791.90	861.61	293.21	467,003.24	645,131.88		
9,830.00	6.50	352.20	9,760.58	340.03	343.77	-792.98	864.29	293.44	467,007.48	645,130.80		
9,920.00	15.10	350.30	9,848.90	356.65	360.40	-795.65	873.47	294.37	467,024.11	645,128.13		
10,009.00	24.50	353.00	9,932.55	386.44	390.21	-799.87	889.97	296.01	467,053.92	645,123.91		
10,099.00	34.70	359.80	10,010.72	430.70	434.48	-802.24	912.34	298.44	467,098.19	645,121.54		
10,188.00	44.80	357.30	10,079.07	487.49	491.29	-803.81	942.06	301.43	467,155.00	645,119.97		
10,277.00	56.40	352.30	10,135.48	555.77	559.60	-810.27	984.73	304.63	467,223.31	645,113.51		
10,294.00	59.20	352.80	10,144.54	570.03	573.86	-812.14	994.43	305.25	467,237.57	645,111.64		
10,362.00	66.81	357.61	10,175.40	630.32	634.18	-817.11	1,034.34	307.82	467,297.89	645,106.67		
10,454.00	71.82	1.74	10,207.90	716.34	720.20	-817.55	1,089.53	311.38	467,383.91	645,106.23		
10,547.00	83.70	1.60	10,227.58	807.03	810.88	-814.91	1,149.61	314.86	467,474.59	645,108.87		
10,639.00	90.90	3.90	10,231.91	898.78	902.61	-810.50	1,213.10	318.08	467,566.32	645,113.28		
10,731.00	91.40	4.40	10,230.06	990.55	994.35	-803.84	1,278.62	321.05	467,658.06	645,119.94		
10,823.00	87.30	4.30	10,231.11	1,082.29	1,086.06	-796.86	1,347.04	323.73	467,749.77	645,126.92		
10,916.00	87.90	4.70	10,235.00	1,174.95	1,178.69	-789.57	1,418.71	326.18	467,842.40	645,134.21		
11,009.00	88.40	2.90	10,238.00	1,267.72	1,271.43	-783.41	1,493.41	328.36	467,935.14	645,140.37		
11,103.00	88.10	358.30	10,240.88	1,361.65	1,365.36	-782.43	1,573.66	330.18	468,029.07	645,141.35		
11,197.00	89.80	356.80	10,242.60	1,455.53	1,459.25	-786.45	1,657.68	331.68	468,122.96	645,137.33		
11,291.00	90.10	356.00	10,242.68	1,549.31	1,553.06	-792.35	1,743.51	332.97	468,216.77	645,131.43		
11,384.00	90.24	356.47	10,242.40	1,642.08	1,645.86	-798.46	1,829.31	334.12	468,309.57	645,125.32		



Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 2H
Project:	Eddy County, NM(NAD 83)	TVD Reference:	Well @ 3028.00usft
Site:	Blue Steel 21 WA Fee	MD Reference:	Well @ 3028.00usft
Well:	No. 2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD-101-20302', PTB: 20365'	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)		
11,480.00	92.57	358.23	10,240.05	1,737.92	1,741.72	-802.89	1,917.87	335.25	468,405.43	645,120.89		
11,575.00	94.29	1.30	10,234.37	1,832.73	1,836.53	-803.28	2,004.52	336.38	468,500.24	645,120.50		
11,669.00	92.26	2.09	10,229.00	1,926.54	1,930.33	-800.51	2,089.74	337.48	468,594.04	645,123.27		
11,754.00	90.24	1.65	10,227.14	2,011.48	2,015.26	-797.74	2,167.41	338.40	468,678.97	645,126.04		
11,858.00	89.49	1.92	10,227.39	2,115.44	2,119.21	-794.50	2,263.24	339.45	468,782.92	645,129.28		
11,953.00	88.79	1.83	10,228.81	2,210.39	2,214.15	-791.39	2,351.33	340.33	468,877.86	645,132.39		
12,048.00	91.12	2.45	10,228.89	2,305.34	2,309.07	-787.84	2,439.78	341.16	468,972.78	645,135.94		
12,142.00	91.78	3.94	10,226.51	2,399.18	2,402.90	-782.60	2,527.13	341.96	469,066.61	645,141.18		
12,237.00	90.51	2.09	10,224.61	2,494.05	2,497.74	-777.61	2,615.98	342.71	469,161.45	645,146.17		
12,331.00	90.02	1.83	10,224.18	2,588.00	2,591.68	-774.39	2,704.90	343.36	469,255.39	645,149.39		
12,426.00	89.19	1.21	10,224.83	2,682.98	2,686.65	-771.87	2,795.33	343.97	469,350.36	645,151.91		
12,520.00	89.54	1.65	10,225.87	2,776.95	2,780.61	-769.53	2,885.13	344.53	469,444.32	645,154.25		
12,614.00	90.02	1.92	10,226.23	2,870.92	2,874.56	-766.60	2,975.03	345.07	469,538.27	645,157.18		
12,708.00	90.20	2.09	10,226.05	2,964.88	2,968.51	-763.31	3,065.07	345.58	469,632.22	645,160.47		
12,803.00	88.53	0.16	10,227.11	3,059.85	3,063.47	-761.45	3,156.69	346.04	469,727.18	645,162.33		
12,898.00	88.92	1.65	10,229.22	3,154.82	3,158.44	-759.95	3,248.57	346.47	469,822.15	645,163.83		
12,992.00	88.97	2.27	10,230.95	3,248.76	3,252.36	-756.73	3,339.24	346.90	469,916.07	645,167.05		
13,087.00	88.75	1.74	10,232.84	3,343.70	3,347.29	-753.41	3,431.03	347.32	470,011.00	645,170.37		
13,181.00	89.89	359.02	10,233.96	3,437.68	3,441.27	-752.79	3,522.64	347.66	470,104.98	645,170.99		
13,275.00	91.78	359.90	10,232.59	3,531.66	3,535.25	-753.67	3,614.69	347.97	470,198.96	645,170.11		
13,369.00	91.74	359.90	10,229.70	3,625.61	3,629.20	-753.84	3,706.67	348.27	470,292.91	645,169.94		
13,464.00	92.44	0.07	10,226.23	3,720.55	3,724.14	-753.86	3,799.67	348.56	470,387.85	645,169.92		
13,559.00	91.03	359.81	10,223.36	3,815.50	3,819.09	-753.96	3,892.81	348.83	470,482.80	645,169.82		
13,653.00	92.26	359.63	10,220.66	3,909.45	3,913.05	-754.42	3,985.11	349.09	470,576.76	645,169.36		
13,747.00	89.10	358.58	10,219.54	4,003.41	4,007.02	-755.89	4,077.69	349.32	470,670.73	645,167.89		
13,842.00	88.75	358.75	10,221.33	4,098.36	4,101.98	-758.10	4,171.44	349.53	470,765.69	645,165.68		
13,937.00	88.04	358.49	10,223.99	4,193.28	4,196.91	-760.39	4,265.24	349.73	470,860.62	645,163.39		

Released to Imaging: 8/5/2025 2:55:08 PM

Received by OCD: 2/5/2024 1:01:41 PM



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WA Fee
Well: No. 2H
Wellbore: OH
Design: MWD-101-20302', PTB: 20365'

Local Co-ordinate Reference: Well No. 2H
TVD Reference: Well @ 3028.00usft
MD Reference: Well @ 3028.00usft
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)	
14,031.00	88.04	358.84	10,227.20	4,287.19	4,290.83	-762.58	4,358.07	349.92	470,954.54	645,161.20	
14,125.00	90.37	359.37	10,228.51	4,381.16	4,384.80	-764.04	4,450.87	350.12	471,048.51	645,159.74	
14,220.00	89.85	1.13	10,228.32	4,476.15	4,479.80	-763.63	4,544.42	350.33	471,143.51	645,160.15	
14,315.00	92.53	2.62	10,226.35	4,571.08	4,574.72	-760.52	4,637.50	350.56	471,238.43	645,163.26	
14,410.00	93.41	3.24	10,221.43	4,665.85	4,669.46	-755.67	4,730.22	350.81	471,333.17	645,168.11	
14,504.00	93.71	3.41	10,215.59	4,759.54	4,763.12	-750.23	4,821.85	351.05	471,426.83	645,173.55	
14,599.00	90.51	1.04	10,212.09	4,854.40	4,857.97	-746.55	4,915.00	351.26	471,521.68	645,177.23	
14,693.00	90.51	0.25	10,211.26	4,948.39	4,951.96	-745.49	5,007.76	351.44	471,615.67	645,178.29	
14,788.00	93.93	359.98	10,207.58	5,043.31	5,046.87	-745.30	5,101.61	351.60	471,710.58	645,178.48	
14,882.00	94.99	359.55	10,200.27	5,137.02	5,140.59	-745.68	5,194.39	351.75	471,804.30	645,178.10	
14,976.00	92.09	359.11	10,194.47	5,230.81	5,234.39	-746.78	5,287.39	351.88	471,898.10	645,177.00	
15,070.00	92.09	358.31	10,191.04	5,324.71	5,328.30	-748.90	5,380.67	352.00	471,992.01	645,174.88	
15,165.00	92.84	358.14	10,186.95	5,419.57	5,423.17	-751.84	5,475.04	352.11	472,086.88	645,171.94	
15,258.00	92.75	359.55	10,182.42	5,512.42	5,516.04	-753.71	5,567.29	352.22	472,179.75	645,170.07	
15,353.00	89.10	358.23	10,180.88	5,607.37	5,610.99	-755.55	5,661.63	352.33	472,274.70	645,168.23	
15,448.00	87.12	357.61	10,184.02	5,702.23	5,705.87	-758.99	5,756.13	352.42	472,369.58	645,164.79	
15,542.00	88.57	359.02	10,187.55	5,796.10	5,799.76	-761.76	5,849.57	352.52	472,463.47	645,162.02	
15,638.00	89.89	358.75	10,188.84	5,892.06	5,895.73	-763.62	5,944.98	352.62	472,559.44	645,160.16	
15,733.00	90.77	359.63	10,188.29	5,987.04	5,990.72	-764.97	6,039.36	352.72	472,654.43	645,158.81	
15,827.00	91.03	0.34	10,186.82	6,081.03	6,084.70	-764.99	6,132.60	352.83	472,748.41	645,158.79	
15,921.00	91.60	0.51	10,184.66	6,175.01	6,178.68	-764.29	6,225.77	352.95	472,842.39	645,159.49	
16,016.00	91.78	0.34	10,181.86	6,269.96	6,273.63	-763.59	6,319.93	353.06	472,937.34	645,160.19	
16,111.00	92.48	0.78	10,178.33	6,364.90	6,368.56	-762.66	6,414.06	353.17	473,032.27	645,161.12	
16,206.00	89.27	1.65	10,176.88	6,459.86	6,463.51	-760.65	6,508.12	353.29	473,127.22	645,163.13	
16,300.00	93.27	5.35	10,174.79	6,553.65	6,557.28	-754.92	6,600.59	353.43	473,220.99	645,168.86	
16,396.00	90.42	4.47	10,171.70	6,649.28	6,652.87	-746.70	6,694.64	353.60	473,316.58	645,177.08	
16,490.00	89.85	4.12	10,171.48	6,743.04	6,746.60	-739.66	6,787.03	353.74	473,410.31	645,184.12	



Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WA Fee
Well: No. 2H
Wellbore: OH
Design: MWD-101-20302', PTB: 20365'

Local Co-ordinate Reference: Well No. 2H
TVD Reference: Well @ 3028.00usft
MD Reference: Well @ 3028.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

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)
16,585.00	88.79	1.04	10,172.61	6,837.95	6,841.49	-735.39	6,880.90	353.86	473,505.20	645,188.39
16,679.00	89.05	0.25	10,174.38	6,931.93	6,935.46	-734.33	6,974.23	353.96	473,599.17	645,189.45
16,774.00	88.40	0.25	10,176.49	7,026.90	7,030.44	-733.92	7,068.64	354.04	473,694.15	645,189.86
16,866.00	88.00	0.42	10,179.38	7,118.86	7,122.39	-733.38	7,160.05	354.12	473,786.10	645,190.40
16,957.00	88.44	359.72	10,182.21	7,209.81	7,213.35	-733.27	7,250.52	354.20	473,877.06	645,190.51
17,050.00	88.66	358.23	10,184.56	7,302.76	7,306.30	-734.93	7,343.17	354.26	473,970.01	645,188.85
17,144.00	89.19	359.63	10,186.33	7,396.71	7,400.26	-736.69	7,436.84	354.32	474,063.97	645,187.09
17,238.00	89.93	0.25	10,187.05	7,490.71	7,494.26	-736.78	7,530.39	354.39	474,157.97	645,187.00
17,332.00	88.92	359.90	10,187.99	7,584.70	7,588.25	-736.66	7,623.93	354.46	474,251.96	645,187.12
17,426.00	89.36	0.16	10,189.40	7,678.69	7,682.24	-736.61	7,717.48	354.52	474,345.95	645,187.17
17,522.00	89.23	0.25	10,190.59	7,774.68	7,778.24	-736.27	7,813.00	354.59	474,441.95	645,187.51
17,617.00	89.76	359.46	10,191.42	7,869.67	7,873.23	-736.51	7,907.60	354.66	474,536.94	645,187.27
17,712.00	90.29	359.55	10,191.38	7,964.66	7,968.23	-737.33	8,002.27	354.71	474,631.94	645,186.45
17,807.00	88.53	0.60	10,192.36	8,059.65	8,063.22	-737.21	8,096.85	354.78	474,726.93	645,186.57
17,902.00	88.88	359.90	10,194.51	8,154.63	8,158.19	-736.79	8,191.39	354.84	474,821.90	645,186.99
17,997.00	88.22	359.02	10,196.91	8,249.59	8,253.15	-737.69	8,286.06	354.89	474,916.86	645,186.09
18,091.00	88.70	359.37	10,199.44	8,343.54	8,347.11	-739.01	8,379.76	354.94	475,010.82	645,184.77
18,186.00	88.48	359.37	10,201.77	8,438.50	8,442.08	-740.05	8,474.45	354.99	475,105.79	645,183.73
18,280.00	89.45	359.19	10,203.47	8,532.46	8,536.05	-741.23	8,568.17	355.04	475,199.76	645,182.55
18,375.00	88.48	359.90	10,205.19	8,627.44	8,631.03	-741.99	8,662.87	355.09	475,294.74	645,181.79
18,469.00	89.45	0.78	10,206.89	8,721.42	8,725.01	-741.43	8,756.46	355.14	475,388.72	645,182.35
18,564.00	90.33	1.65	10,207.07	8,816.41	8,819.99	-739.41	8,850.93	355.21	475,483.70	645,184.37
18,659.00	89.01	1.13	10,207.62	8,911.39	8,914.96	-737.11	8,945.38	355.27	475,578.67	645,186.67
18,752.00	88.88	359.63	10,209.33	9,004.37	9,007.94	-736.49	9,037.99	355.33	475,671.65	645,187.29
18,846.00	88.70	359.81	10,211.31	9,098.34	9,101.91	-736.95	9,131.70	355.37	475,765.62	645,186.83
18,942.00	88.53	359.81	10,213.63	9,194.31	9,197.89	-737.27	9,227.39	355.42	475,861.60	645,186.51
19,036.00	88.70	0.42	10,215.91	9,288.28	9,291.86	-737.08	9,321.05	355.46	475,955.57	645,186.70

Company: Marathon Oil
Project: Eddy County, NM(NAD 83)
Site: Blue Steel 21 WA Fee
Well: No. 2H
Wellbore: OH
Design: MWD-101-20302', PTB: 20365'

Local Co-ordinate Reference: Well No. 2H
TVD Reference: Well @ 3028.00usft
MD Reference: Well @ 3028.00usft
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)	
19,131.00	87.65	359.72	10,218.93	9,383.23	9,386.81	-736.97	9,415.69	355.51	476,050.52	645,186.81	
19,226.00	87.34	0.16	10,223.08	9,478.14	9,481.72	-737.06	9,510.32	355.56	476,145.43	645,186.72	
19,321.00	90.11	1.39	10,225.20	9,573.10	9,576.67	-735.78	9,604.90	355.61	476,240.38	645,188.00	
19,416.00	90.77	1.39	10,224.47	9,668.08	9,671.64	-733.48	9,699.41	355.66	476,335.35	645,190.30	
19,511.00	91.03	1.74	10,222.97	9,763.04	9,766.59	-730.88	9,793.90	355.72	476,430.30	645,192.90	
19,606.00	91.87	1.83	10,220.57	9,857.98	9,861.52	-727.92	9,888.35	355.78	476,525.23	645,195.86	
19,700.00	91.74	1.92	10,217.61	9,951.89	9,955.42	-724.85	9,981.77	355.84	476,619.13	645,198.93	
19,794.00	88.66	359.19	10,217.28	10,045.87	10,049.40	-723.94	10,075.44	355.88	476,713.11	645,199.84	
19,889.00	87.74	359.72	10,220.27	10,140.81	10,144.34	-724.84	10,170.21	355.91	476,808.05	645,198.94	
19,984.00	88.92	0.51	10,223.03	10,235.77	10,239.30	-724.65	10,264.91	355.95	476,903.01	645,199.13	
20,078.00	90.51	1.65	10,223.50	10,329.76	10,333.28	-722.88	10,358.53	356.00	476,996.99	645,200.90	
20,173.00	89.58	0.86	10,223.43	10,424.74	10,428.25	-720.80	10,453.13	356.05	477,091.96	645,202.98	
20,267.00	89.63	0.95	10,224.08	10,518.73	10,522.24	-719.31	10,546.80	356.09	477,185.95	645,204.47	
20,302.00	89.63	1.04	10,224.30	10,553.73	10,557.23	-718.71	10,581.67	356.11	477,220.94	645,205.07	
Last Survey: 20302' MD											
20,365.00	89.63	1.04	10,224.71	10,616.72	10,620.22	-717.56	10,644.43	356.13	477,283.93	645,206.22	
PTB: 20365' MD											

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
418.00	417.99	0.58	-2.31	Pro MWD First Survey: 418' MD	
20,302.00	10,224.30	10,557.23	-718.71	Last Survey: 20302' MD	
20,365.00	10,224.71	10,620.22	-717.56	PTB: 20365' MD	

PRODIRECTIONAL 850 Conroe Park W Dr Conroe, TX 77303 (936) 441-7266	Pro Directional Blue Steel 21 Fee WA 2H Scale 1":100' - MD 1/1/2020 12:24 AM
---	---

Oper. Company: Marathon Oil Well: Blue Steel 21 Fee WA 2H Field: Carlsbad South Rig: PD 582 Well ID: 30-015-46069 Job Number: LNM1525919 State: New Mexico Notes: Gamma Ray Depths are in Reference to RKB	County: Eddy Country: USA Location: Carlsbad, NM Start Date: 12/9/19 EndDate: 12/31/19 Calculation Method: Minimum Curvature
---	---

Latitude: 32° 16' 56.48556 N Longitude: 103° 59' 39.88716 W Site Name: Blue Steel 21 Fee	Elev GL: 3001' Elev DF: 27' Elev KB: 3028'
---	---

Map System: US State Plane 1927 (Exact Solution) Map Datum: NAD 1927 (NADCON CONUS) Ref Datum: Mean Sea Level Map Ellipsoid: Clarke 1866 Map Zone: New Mexico East 3001	Declination: 7.02 Grid Convergence: .18 Total Correction: 6.84 Time Zone: Central Standard Time
--	--

Field Strength (nT): 47900.6 Magnetic Model: HDGM Dip: 60.02 FAC Field Strength: .015 FAC GTotal: .005	FAC Dip: 1.13 IFR Corr: No MSA Corr: No SAG Corr: No
---	---

Day Hand: Remote Ops Center	Night Hand: Jeremy Olson/Mike Remore
------------------------------------	---

Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	3044	3044	3004	3004	3044
Bit Size	8 3/4	8 3/4	6 1/8	6 1/8	6
Cal Factor	4.108	4.108	3.225	3.225	3.225
Survey Offset	69.00	59.00	59.00	59.00	60.00
Gamma Offset	53.00	43.00	49.00	49.00	50.00
Resistivity Offset	0.00	0.00	0.00	0.00	0.00
Start Depth	3073.00	9720.00	10355.00	11816.00	16928.00
StartDate	12/8/2019	12/12/2019	12/16/2019	12/20/2019	12/27/2019
StartTime	20:00	11:00	05:30	13:00	12:00
EndDepth	9720.00	10355.00	11816.00	16928.00	20365.00
EndDate	12/12/2019	12/14/2019	12/20/2019	12/27/2019	12/31/2019
EndTime	09:00	00:30	10:30	10:30	23:30
Mud Type	OBM	OBM	OBM	OBM	OBM
Mud Weight	9.4	10.6	12.5	13.45	13.60
Funnel Viscosity	82	102	80	72	80
Plastic Viscosity	18	19	22	27	26
Yield Point	29	26	19	17	16
Gel Strength	8/9/11	7/9/11	8/11/13	8/11/13	8/11/13
Solids Content	6.8	10.9	18.7	23.2	23.7
Sand Content	N/A	N/A	N/A	N/A	N/A
Mud Alkalinity	N/A	N/A	N/A	N/A	N/A
Filtrate Alkalinity	N/A	N/A	N/A	N/A	N/A
Chlorides	69,000	66,000	58,000	57,000	57,000
Temperature	156	147	165	196	199

Hole Data			Casing Data			
	To		Size	From	To	
	20	0.00	145.00	13 3/8	0.00	370.00

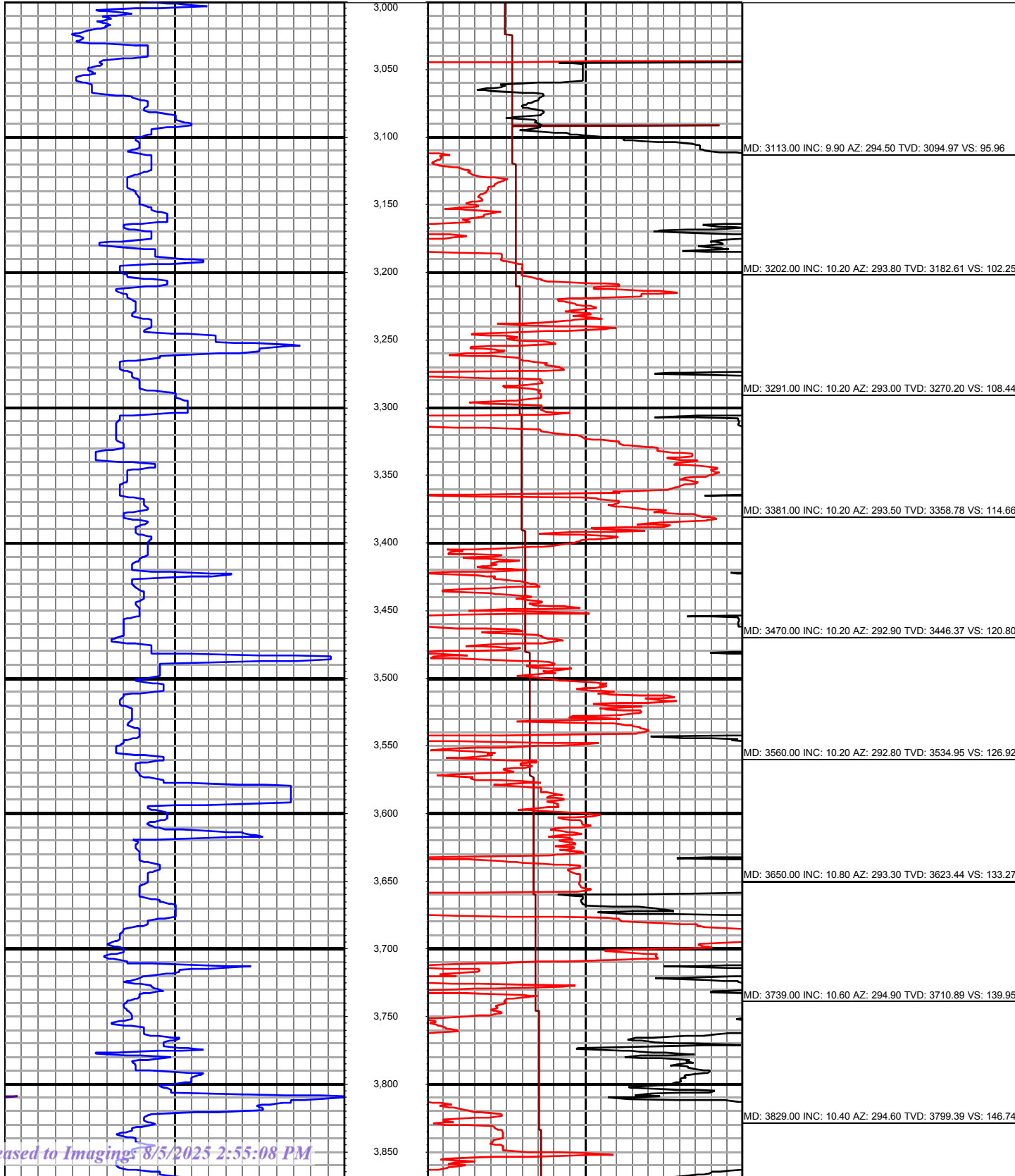
17 1/2	145.00	375.00	9 5/8	0.00	3063.00
12 1/4	375.00	3073.00	7	0.00	10342.00
8 3/4	3073.00	10355.00			
6 1/8	10355.00	16928.00			
6	16928.00	20365.00			

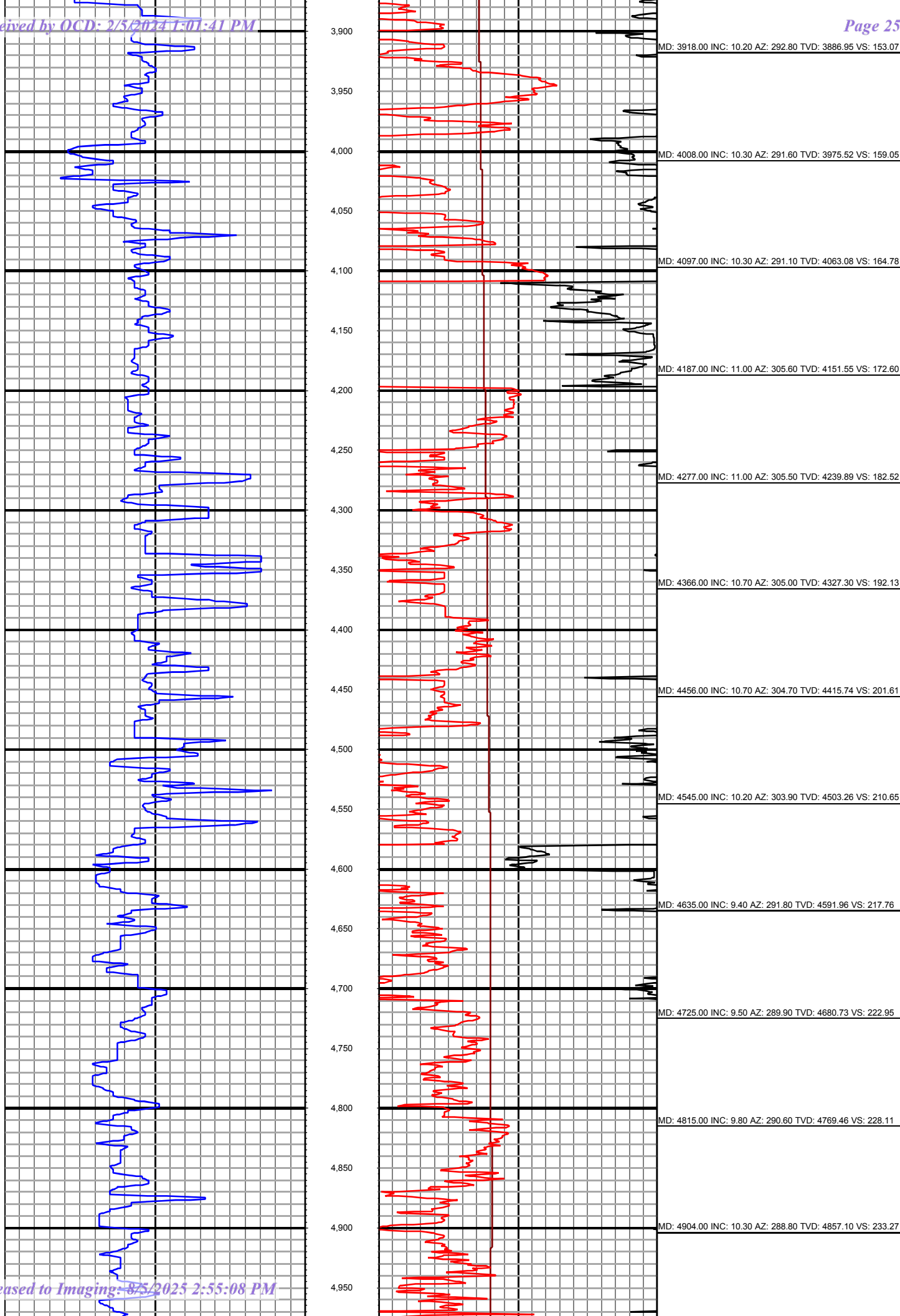
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.

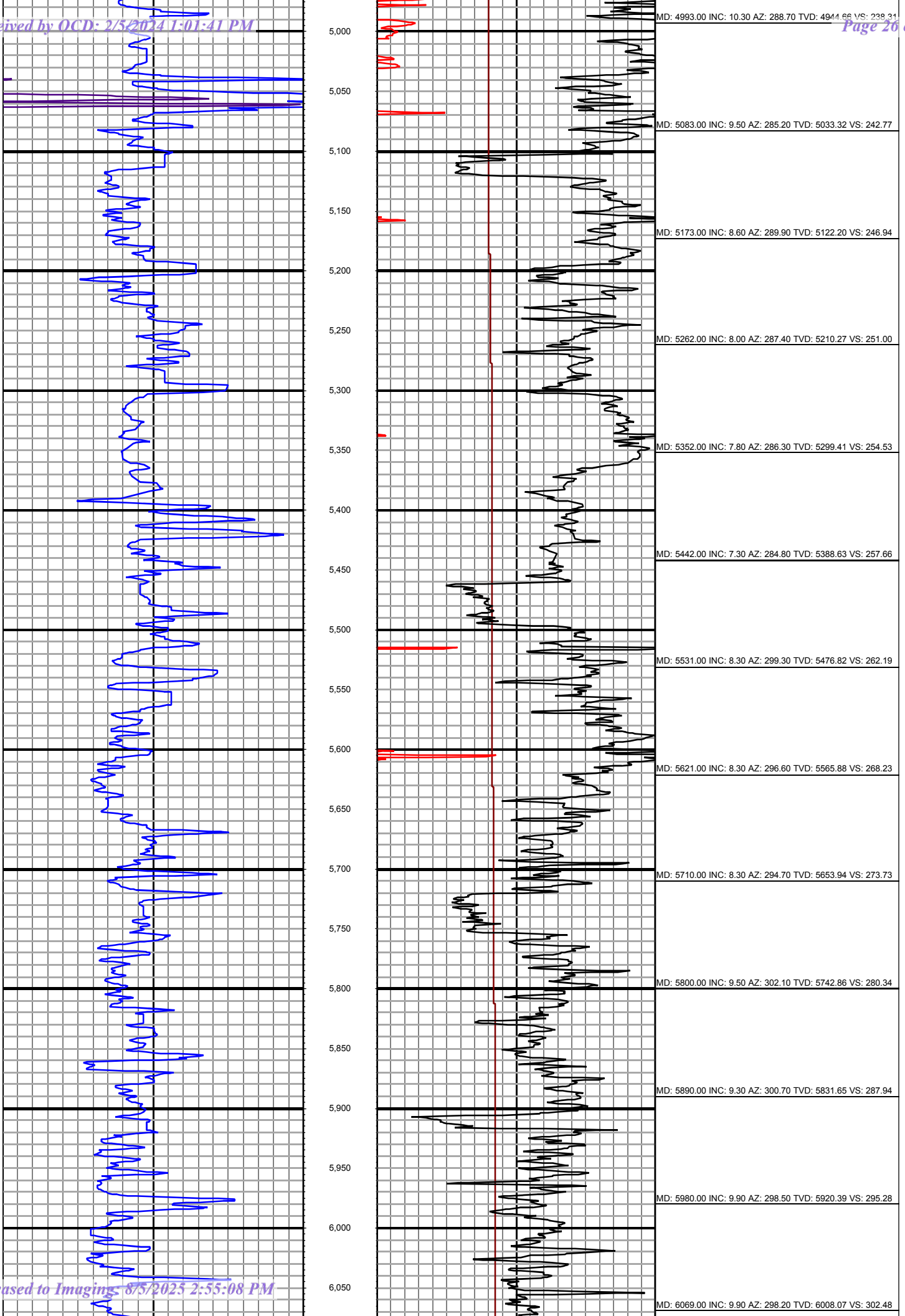
0.00 Gamma(API) 150.00 MD 0.00 ROP(FT/HR) 400.00 Surveys (MD/INC/AZ/TVD/VS)

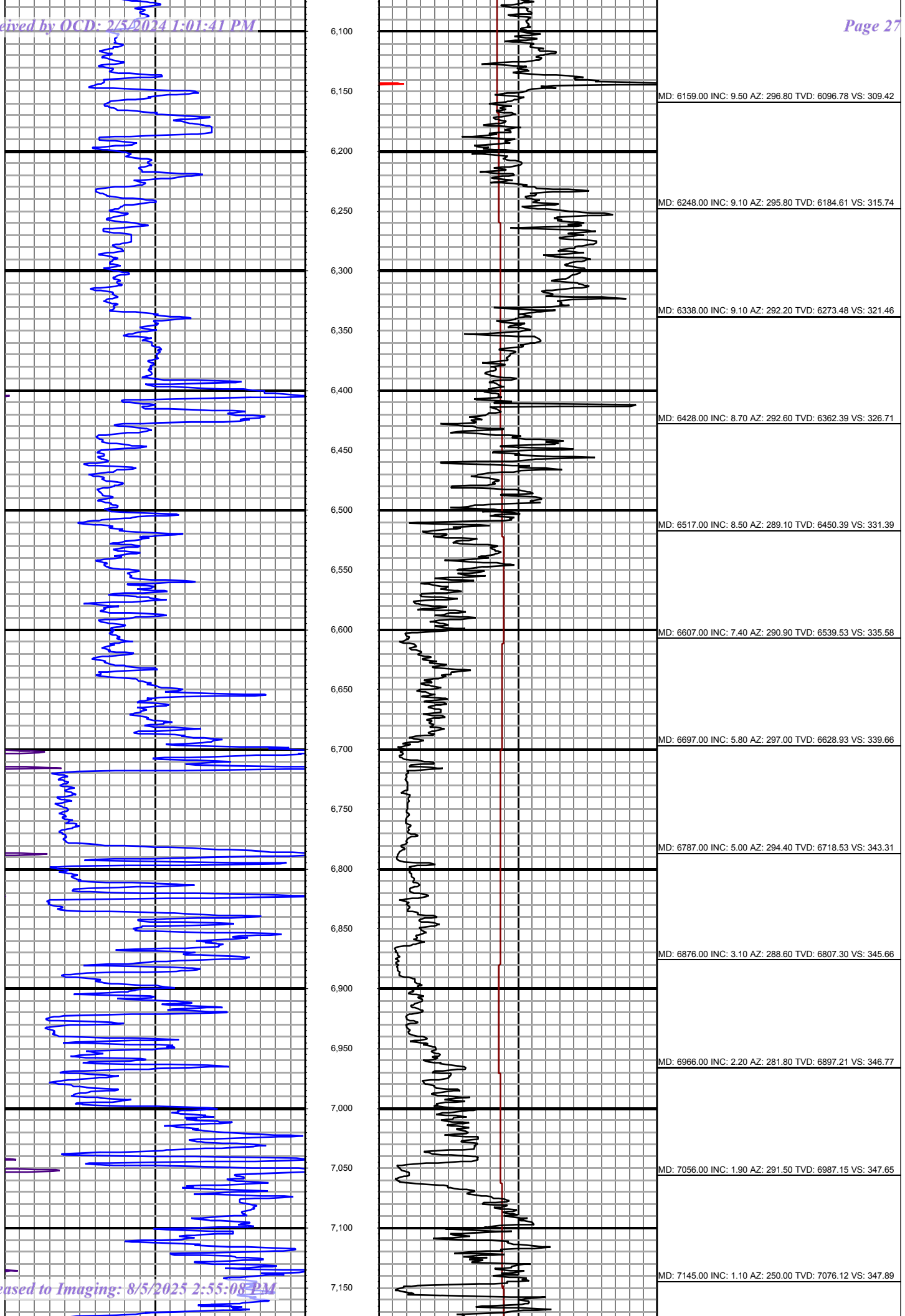
150.00 2 300.00 FT 400.00 2 800.00

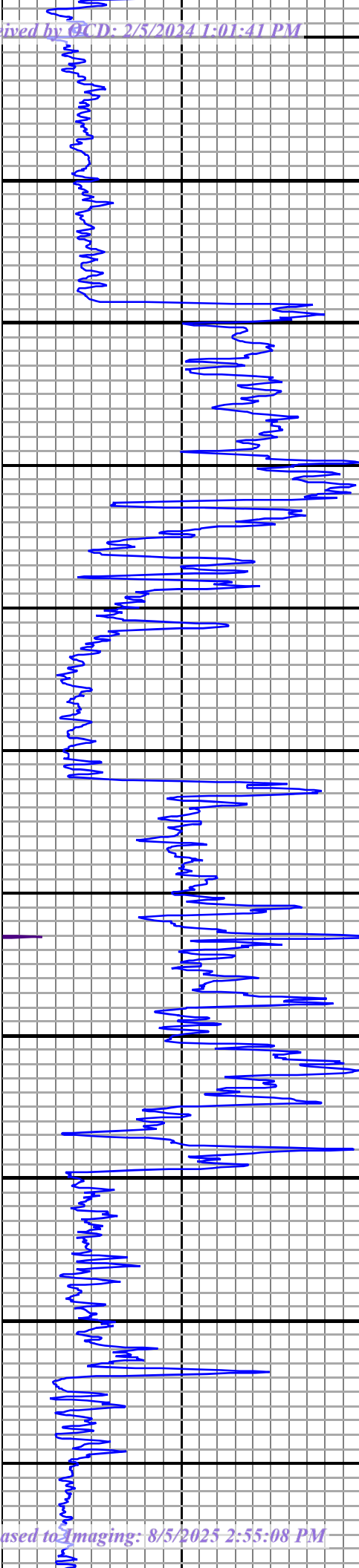
0.00 Temperature(degF) 300.00











7.200

7.250

7.300

7.350

7.400

7.450

7.500

7.550

7.600

7.650

7.700

7.750

7.800

7.850

7.900

7.950

8.000

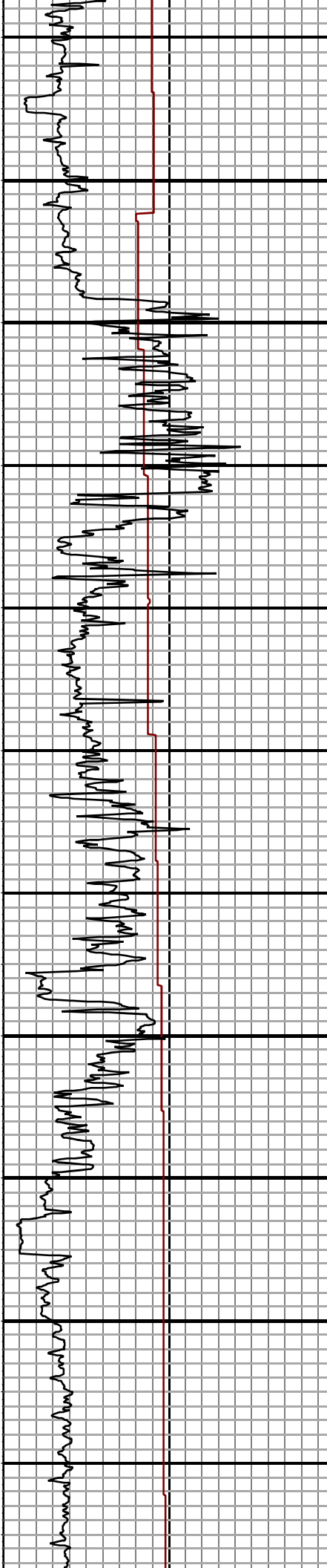
8.050

8.100

8.150

8.200

8.250



MD: 7235.00 INC: 1.00 AZ: 193.40 TVD: 7166.11 VS: 346.83

MD: 7324.00 INC: 1.00 AZ: 145.50 TVD: 7255.10 VS: 345.43

MD: 7413.00 INC: 0.80 AZ: 161.30 TVD: 7344.09 VS: 344.21

MD: 7503.00 INC: 0.30 AZ: 262.80 TVD: 7434.08 VS: 343.58

MD: 7593.00 INC: 0.70 AZ: 308.70 TVD: 7524.08 VS: 343.89

MD: 7683.00 INC: 1.00 AZ: 249.80 TVD: 7614.07 VS: 343.96

MD: 7772.00 INC: 1.40 AZ: 229.10 TVD: 7703.05 VS: 342.97

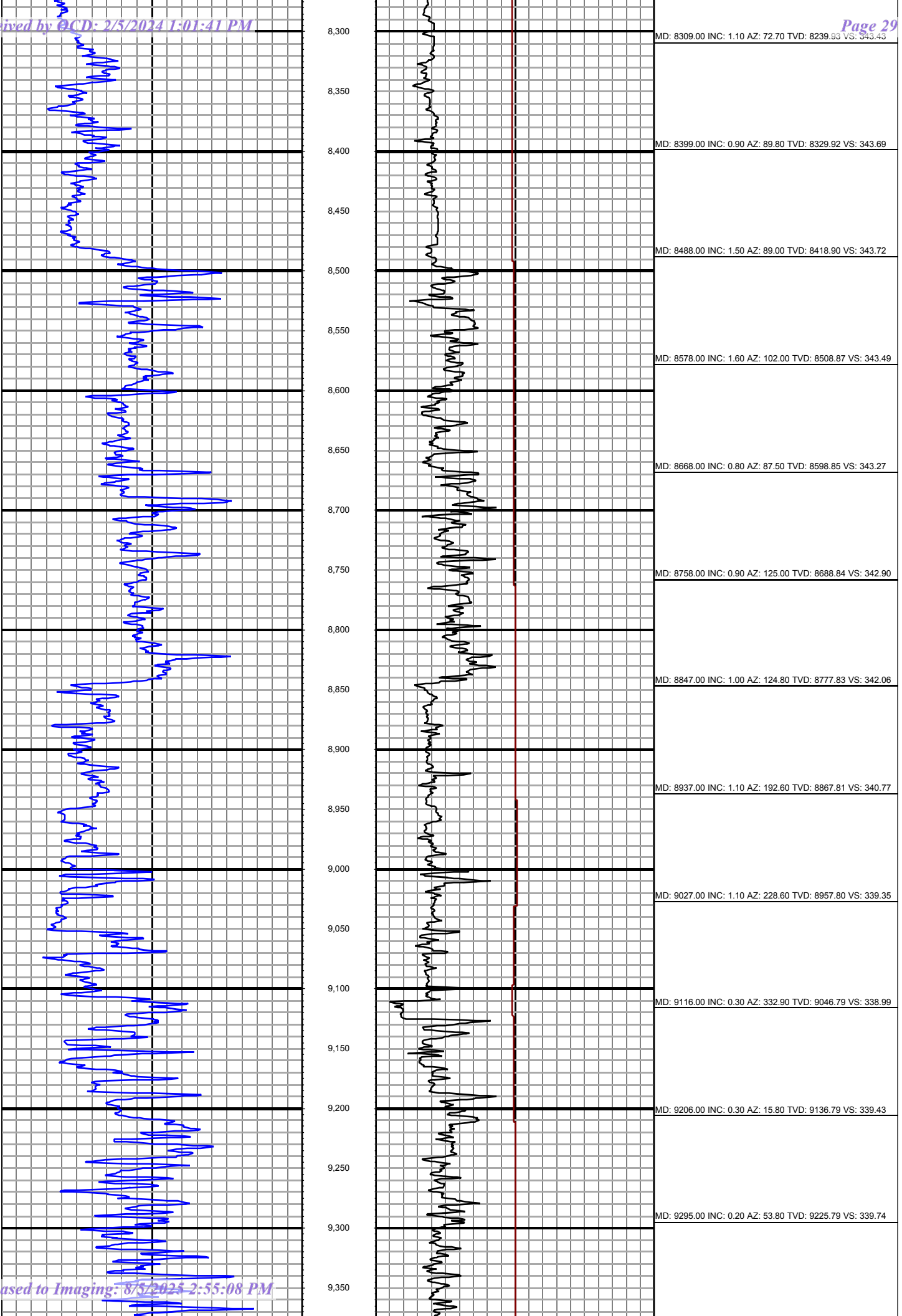
MD: 7862.00 INC: 1.10 AZ: 260.20 TVD: 7793.03 VS: 342.10

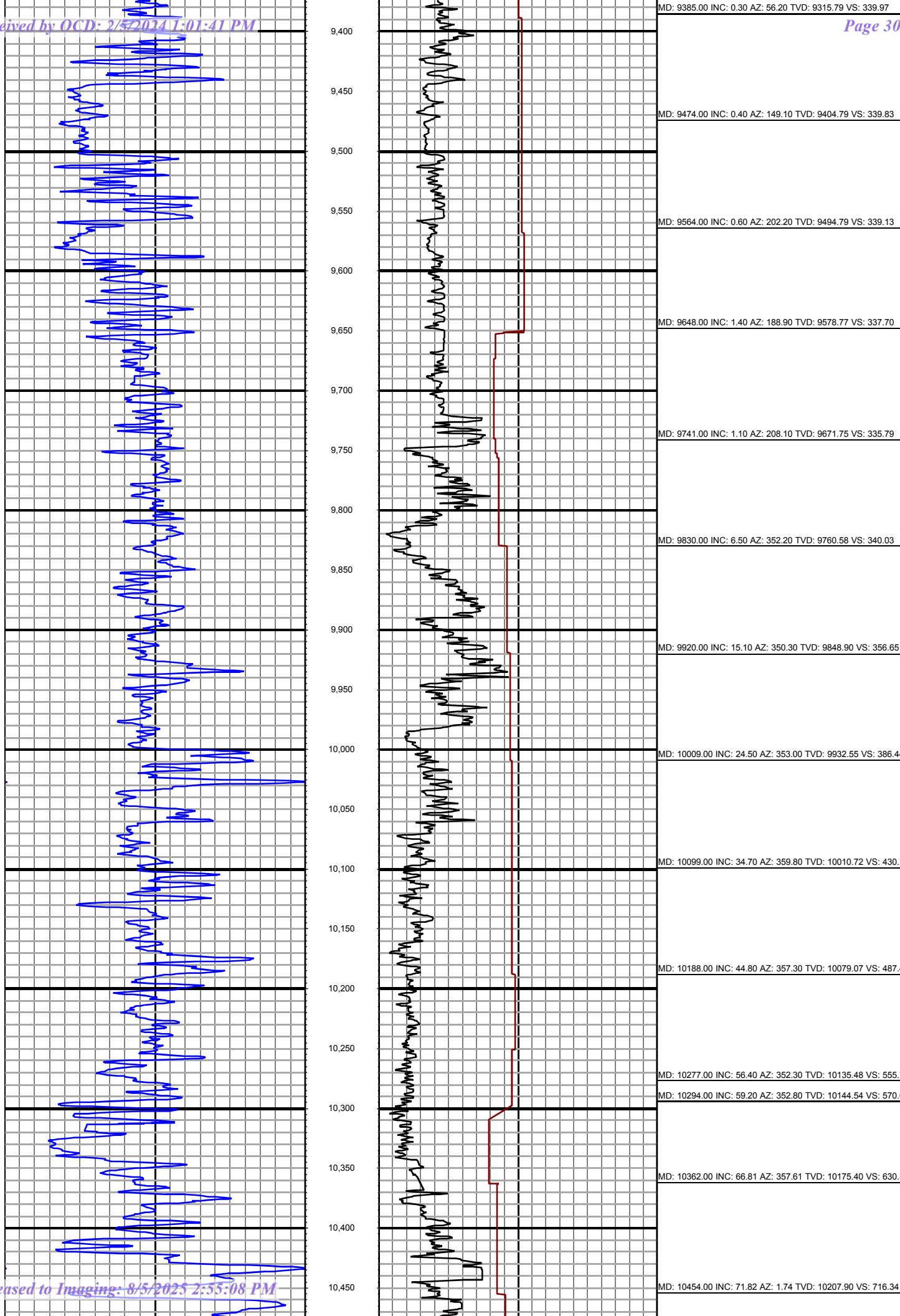
MD: 7951.00 INC: 1.20 AZ: 264.20 TVD: 7882.01 VS: 341.85

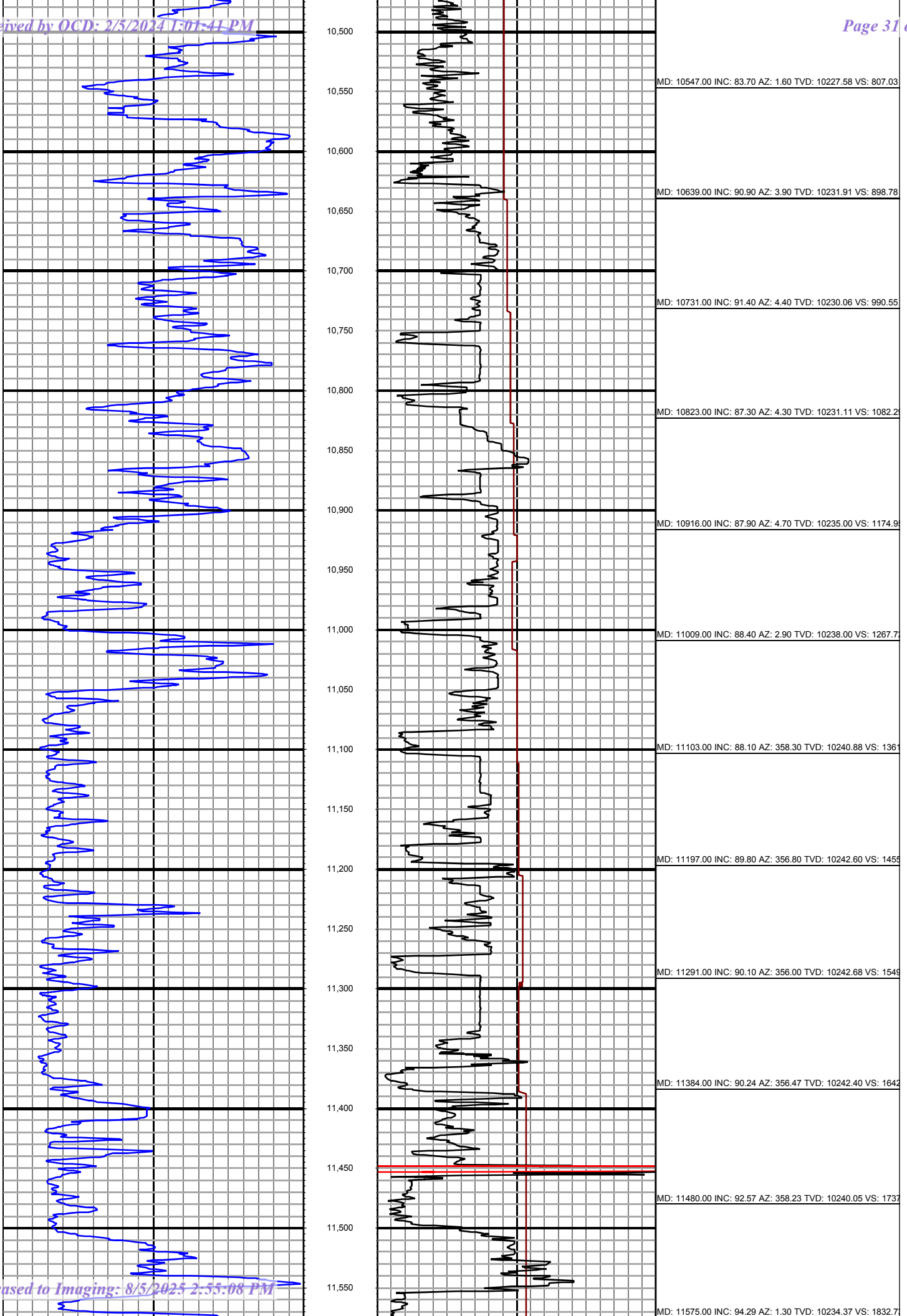
MD: 8041.00 INC: 0.60 AZ: 65.30 TVD: 7972.01 VS: 341.95

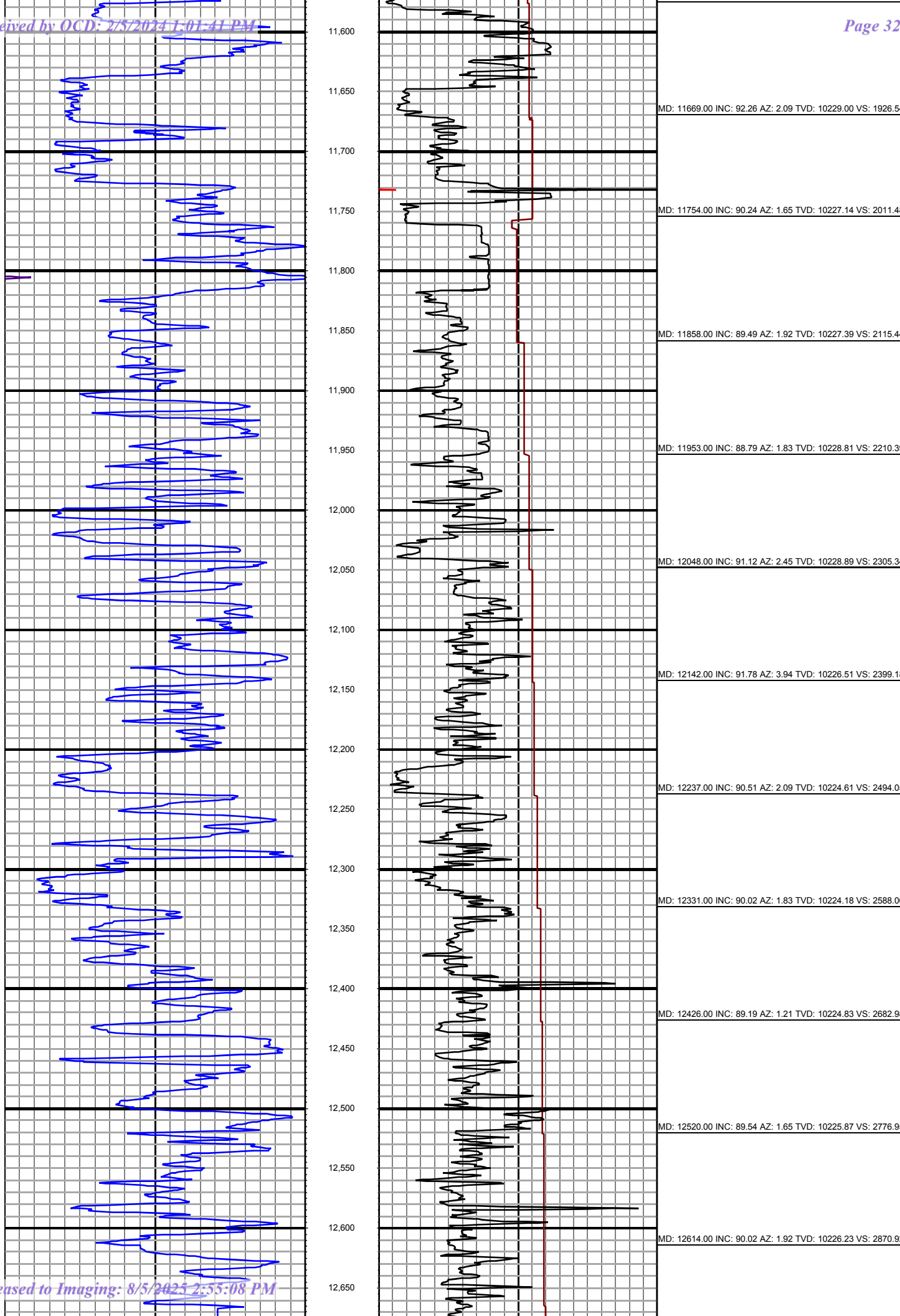
MD: 8130.00 INC: 1.60 AZ: 79.00 TVD: 8060.99 VS: 342.39

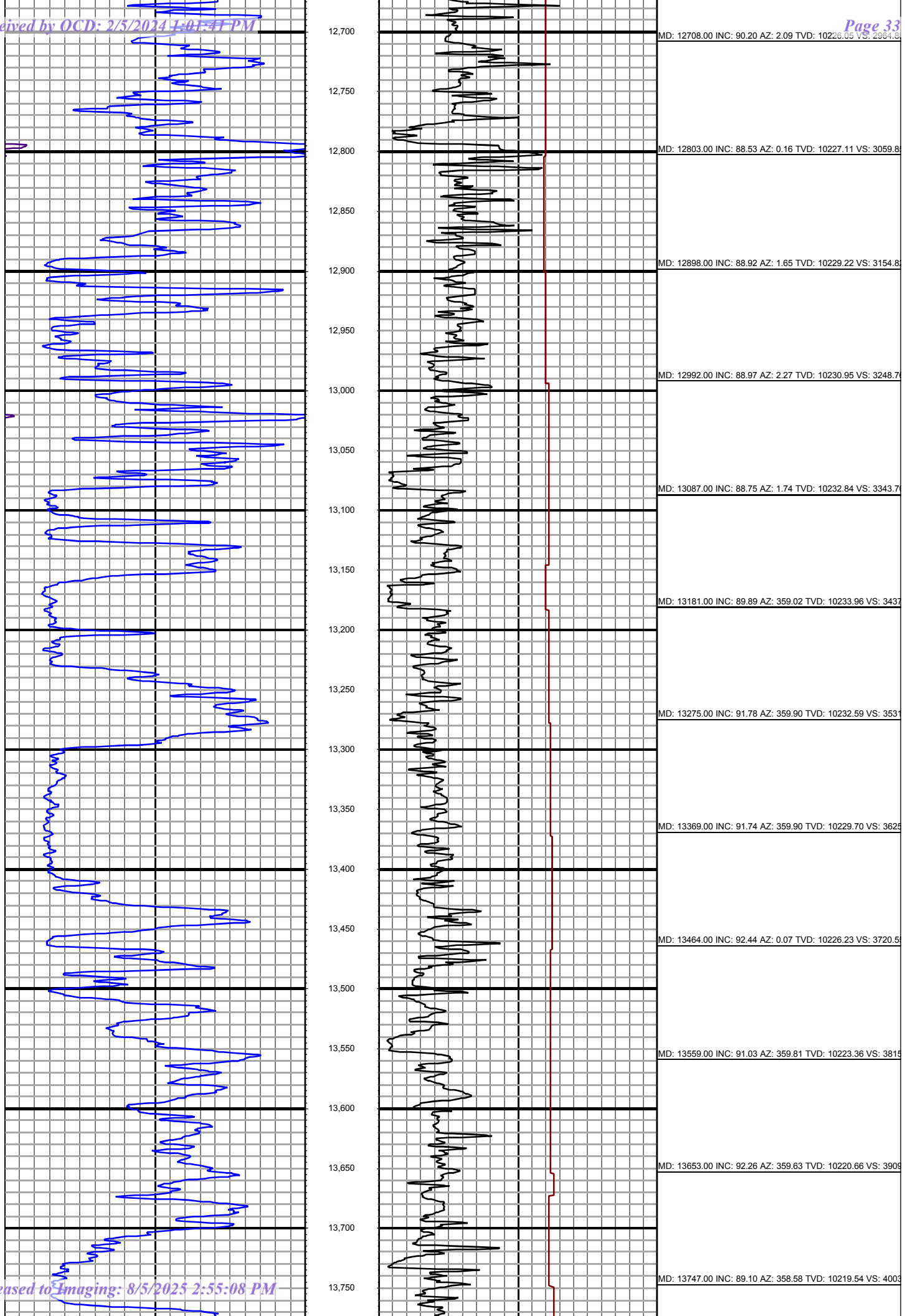
MD: 8220.00 INC: 1.50 AZ: 77.10 TVD: 8150.96 VS: 342.90

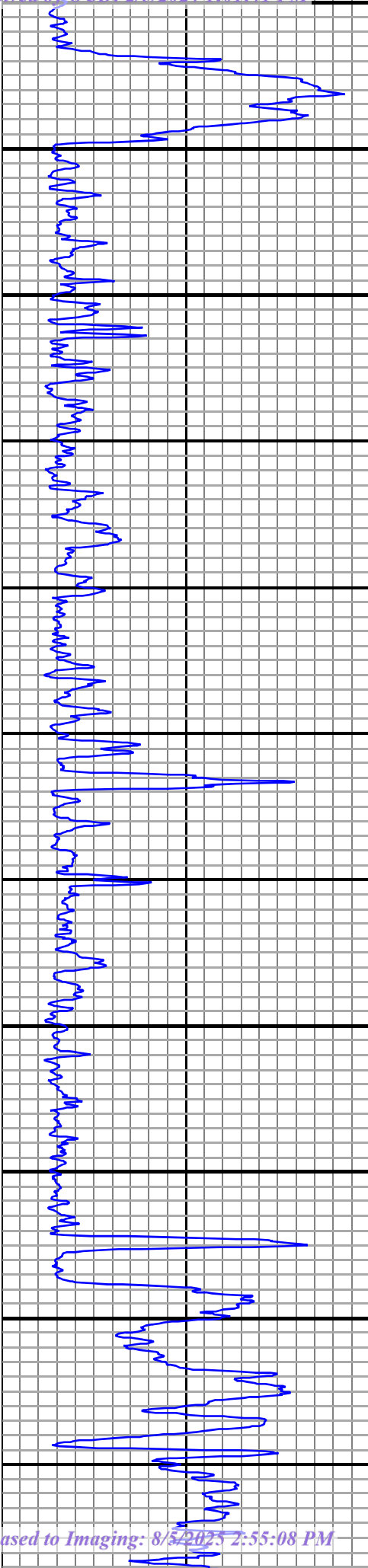




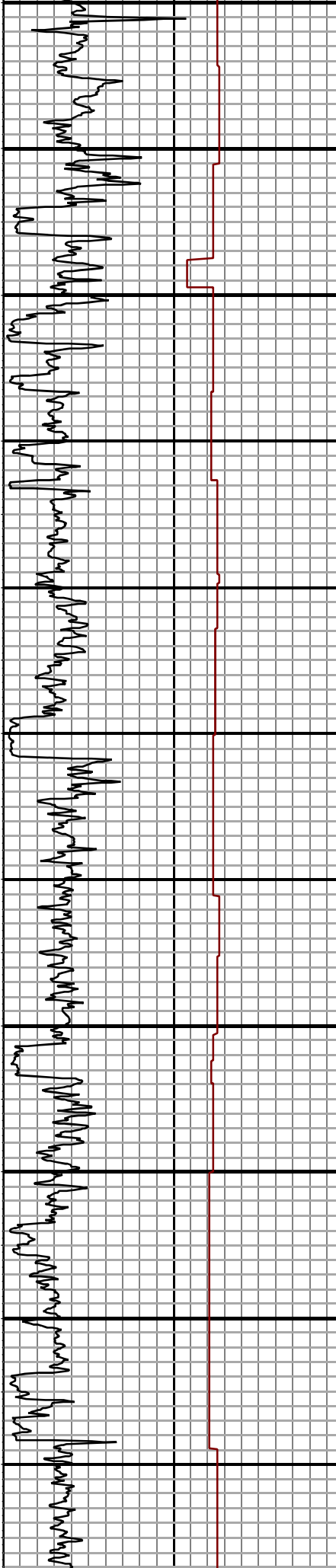




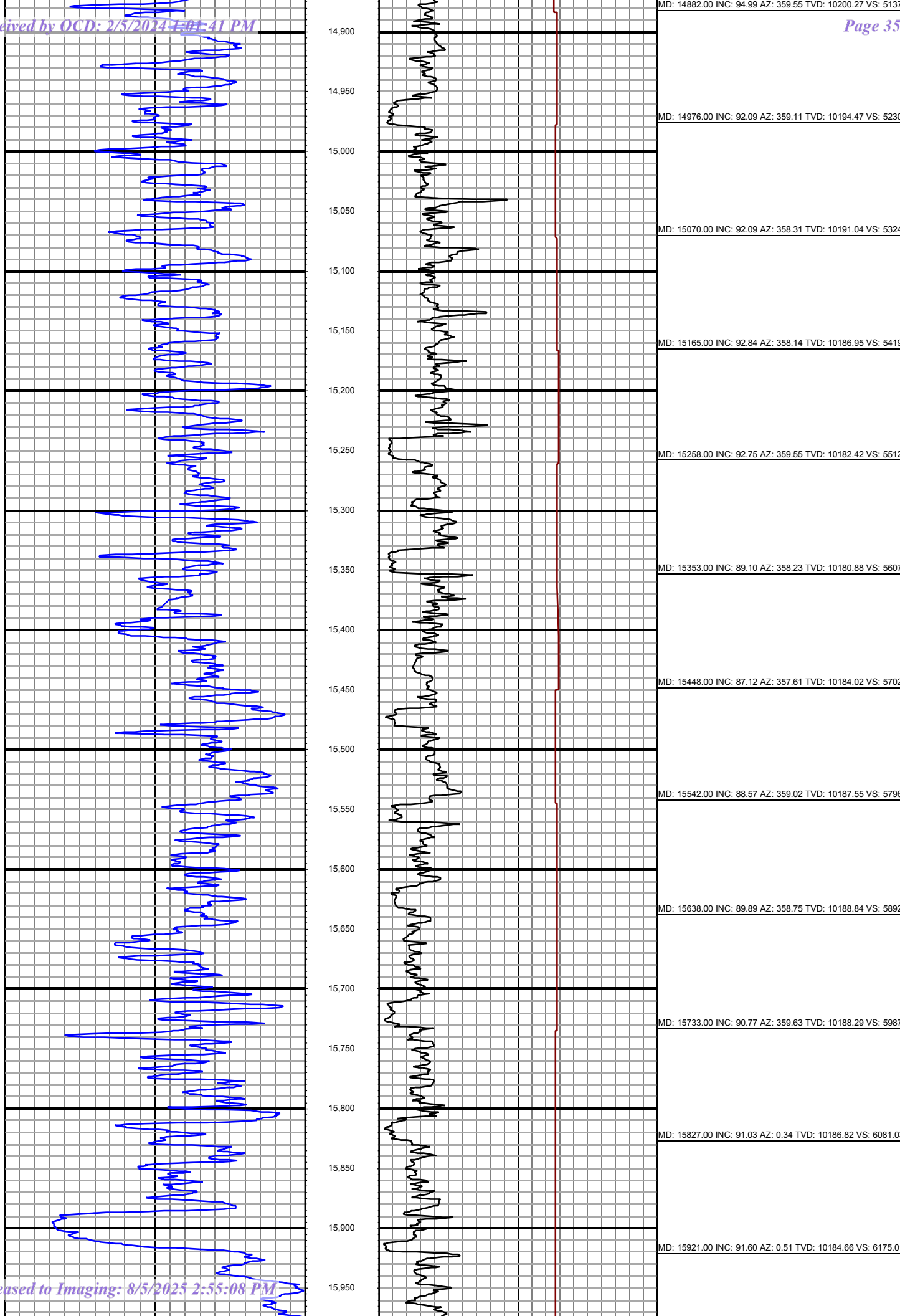


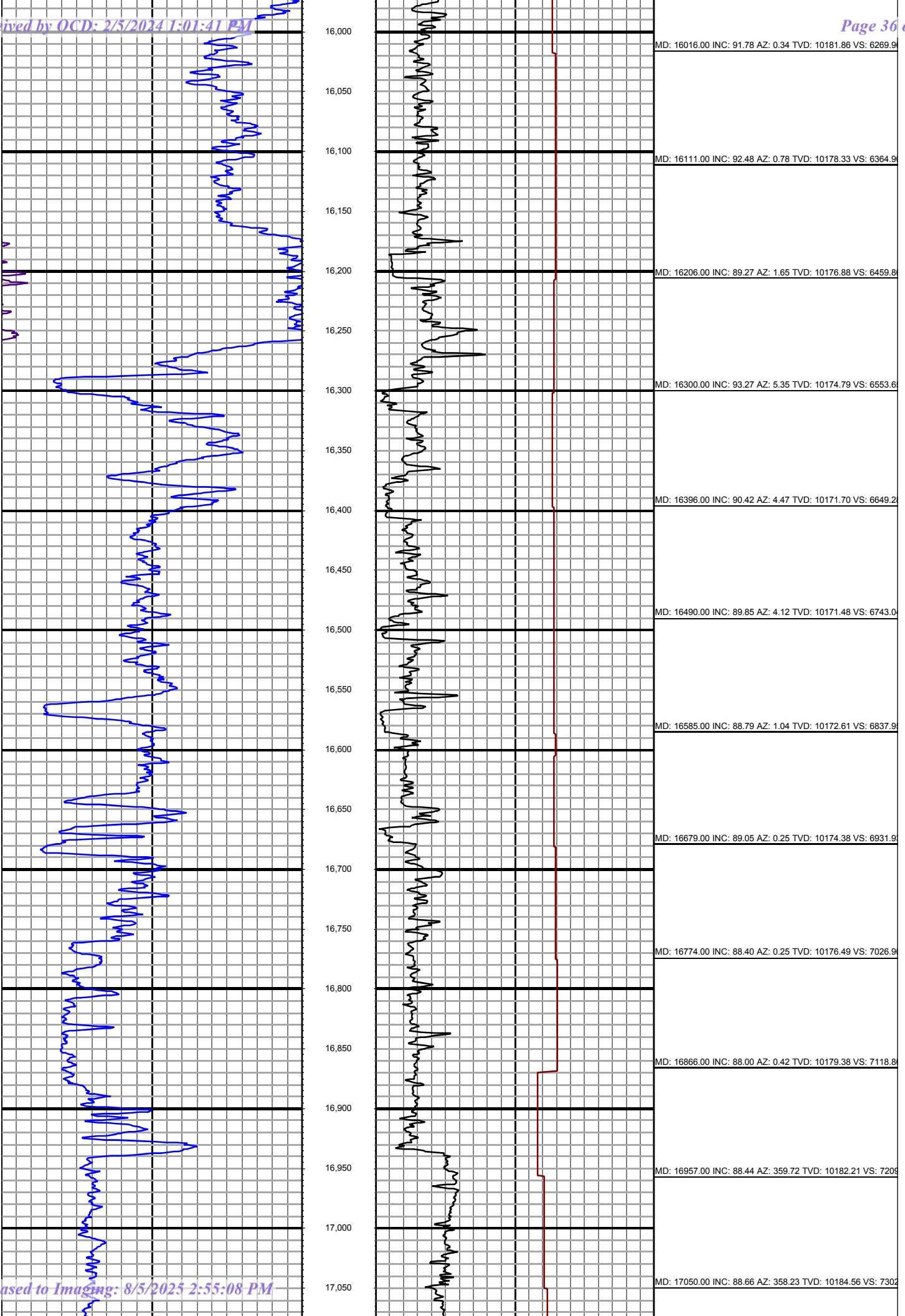


13,800
13,850
13,900
13,950
14,000
14,050
14,100
14,150
14,200
14,250
14,300
14,350
14,400
14,450
14,500
14,550
14,600
14,650
14,700
14,750
14,800
14,850



MD: 13842.00 INC: 88.75 AZ: 358.75 TVD: 10221.33 VS: 4098
MD: 13937.00 INC: 88.04 AZ: 358.49 TVD: 10223.99 VS: 4193
MD: 14031.00 INC: 88.04 AZ: 358.84 TVD: 10227.20 VS: 4287
MD: 14125.00 INC: 90.37 AZ: 359.37 TVD: 10228.51 VS: 4381
MD: 14220.00 INC: 89.85 AZ: 1.13 TVD: 10228.32 VS: 4476.1
MD: 14315.00 INC: 92.53 AZ: 2.62 TVD: 10226.35 VS: 4571.0
MD: 14410.00 INC: 93.41 AZ: 3.24 TVD: 10221.43 VS: 4665.8
MD: 14504.00 INC: 93.71 AZ: 3.41 TVD: 10215.59 VS: 4759.5
MD: 14599.00 INC: 90.51 AZ: 1.04 TVD: 10212.09 VS: 4854.4
MD: 14693.00 INC: 90.51 AZ: 0.25 TVD: 10211.26 VS: 4948.3
MD: 14788.00 INC: 93.93 AZ: 359.98 TVD: 10207.58 VS: 5043





MD: 16016.00 INC: 91.78 AZ: 0.34 TVD: 10181.86 VS: 6269.9

MD: 16111.00 INC: 92.48 AZ: 0.78 TVD: 10178.33 VS: 6364.9

MD: 16206.00 INC: 89.27 AZ: 1.65 TVD: 10176.88 VS: 6459.8

MD: 16300.00 INC: 93.27 AZ: 5.35 TVD: 10174.79 VS: 6553.6

MD: 16396.00 INC: 90.42 AZ: 4.47 TVD: 10171.70 VS: 6649.2

MD: 16490.00 INC: 89.85 AZ: 4.12 TVD: 10171.48 VS: 6743.0

MD: 16585.00 INC: 88.79 AZ: 1.04 TVD: 10172.61 VS: 6837.9

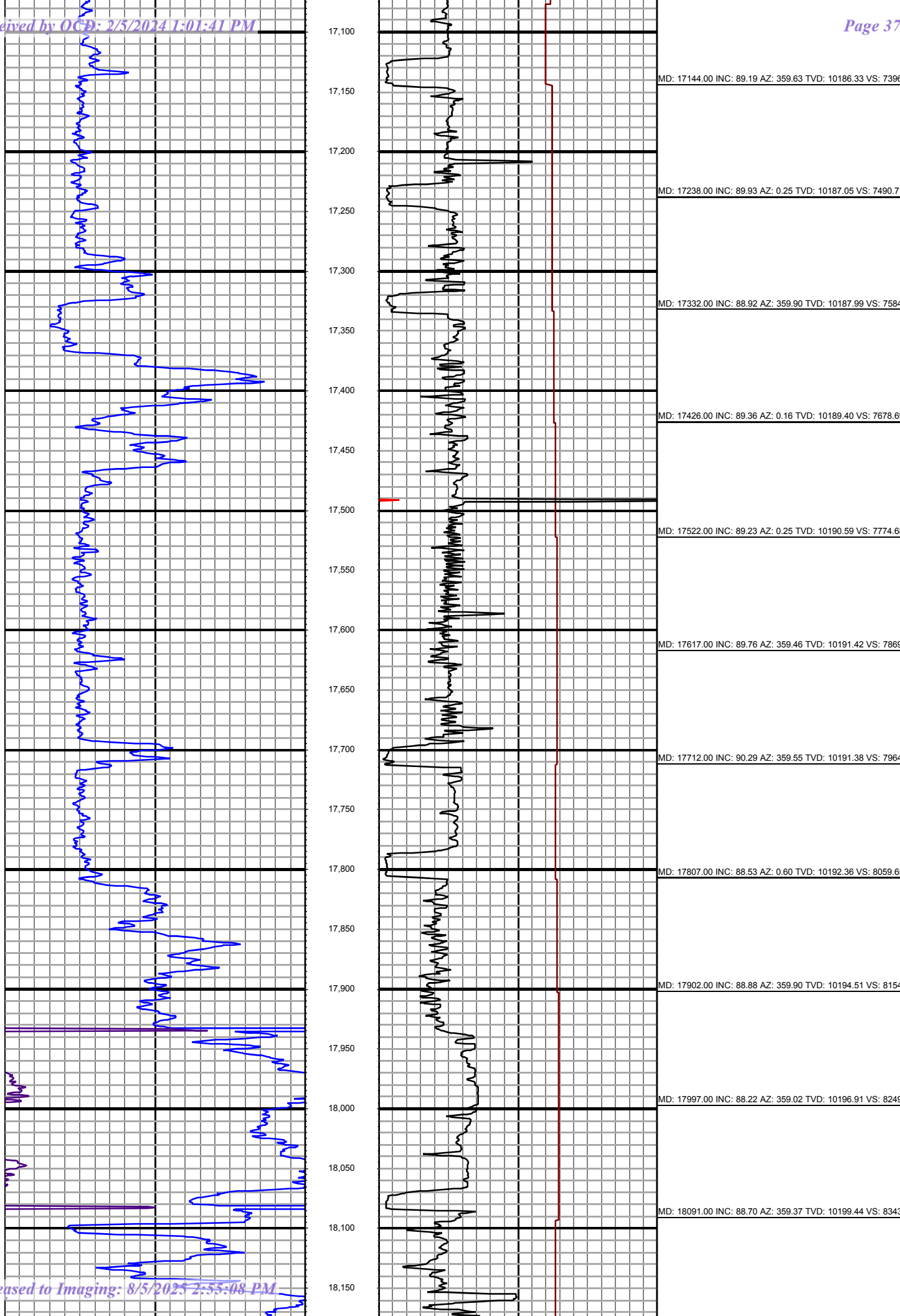
MD: 16679.00 INC: 89.05 AZ: 0.25 TVD: 10174.38 VS: 6931.9

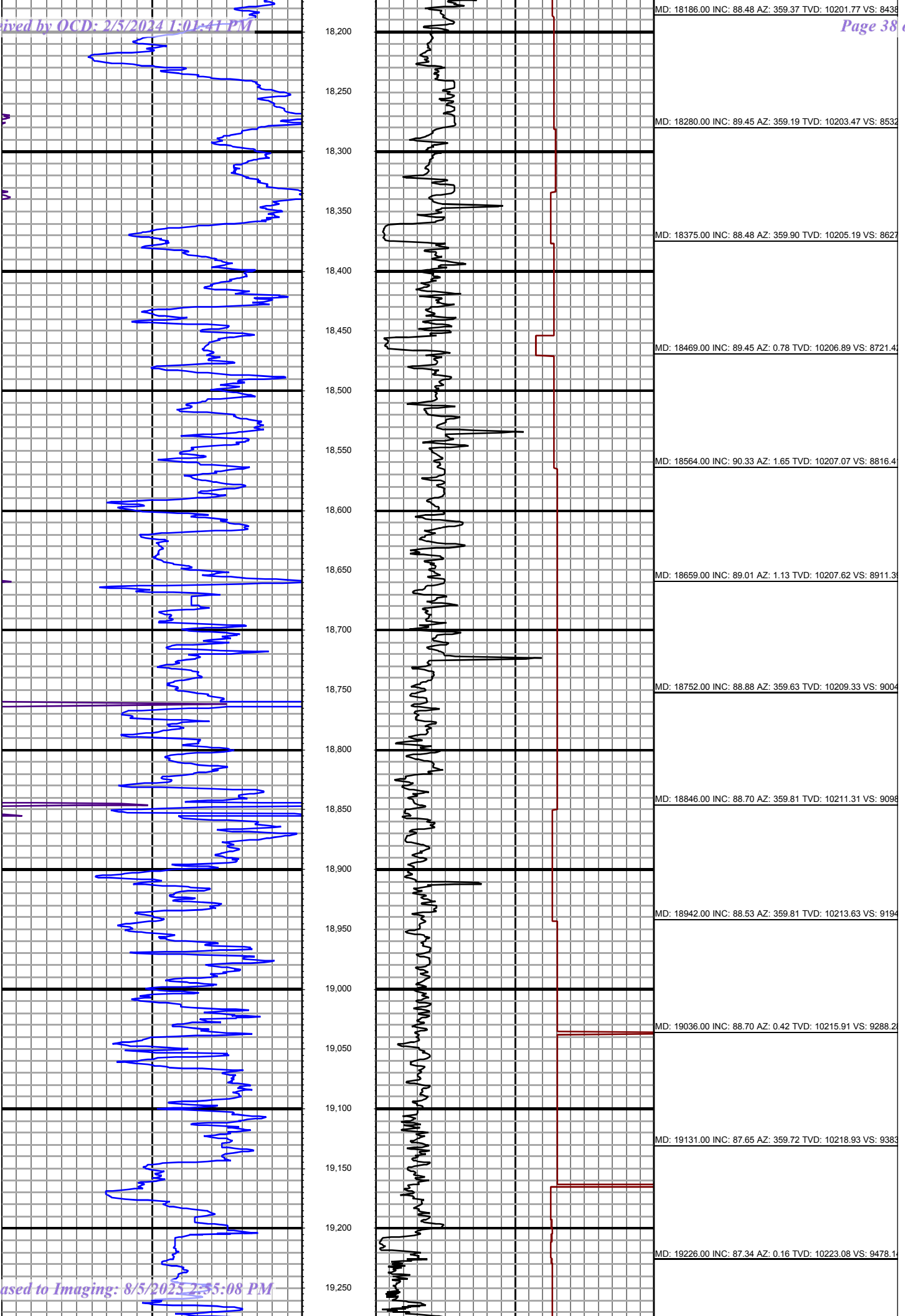
MD: 16774.00 INC: 88.40 AZ: 0.25 TVD: 10176.49 VS: 7026.9

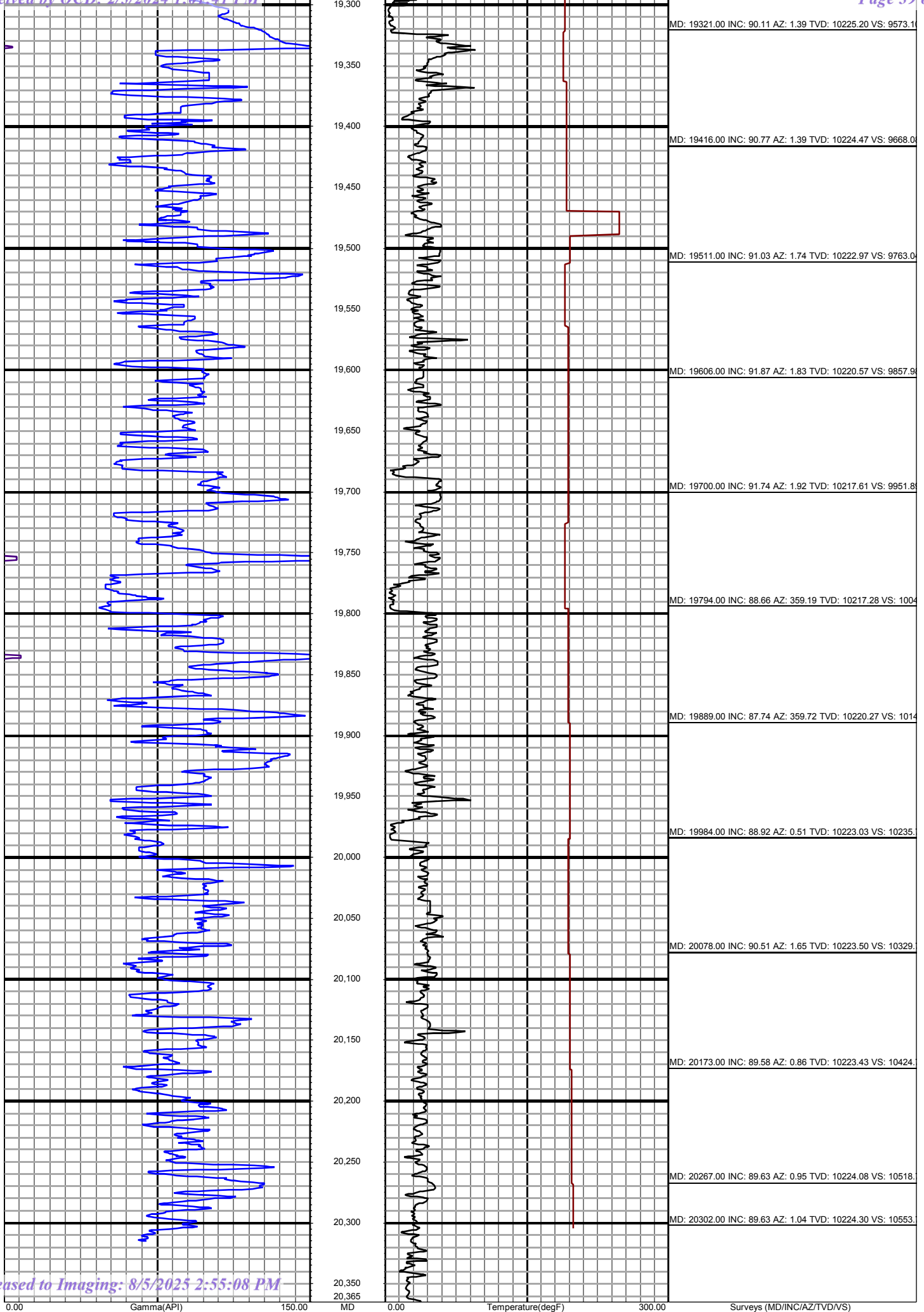
MD: 16866.00 INC: 88.00 AZ: 0.42 TVD: 10179.38 VS: 7118.8

MD: 16957.00 INC: 88.44 AZ: 359.72 TVD: 10182.21 VS: 7209

MD: 17050.00 INC: 88.66 AZ: 358.23 TVD: 10184.56 VS: 7302







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 311292

ACKNOWLEDGMENTS

Operator: MARATHON OIL PERMIAN LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 372098
	Action Number: 311292
	Action Type: [C-105] Well (Re)Completion (C-105)

ACKNOWLEDGMENTS

<input checked="" type="checkbox"/>	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
<input checked="" type="checkbox"/>	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.
<input type="checkbox"/>	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.

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

CONDITIONS

Action 311292

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 372098
	Action Number: 311292
	Action Type: [C-105] Well (Re)Completion (C-105)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	None	8/5/2025