

DISTRICT I

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

DISTRICT II

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

DISTRICT III

1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3480 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

OIL CONSERVATION DIVISION

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

Submit one copy to appropriate
District Office

☐ AMENDED REPORT☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30167	² Pool Code 71629	³ Pool Name BASIN FRIUTLAND COAL
⁴ Property Code 329019	⁵ Property Name CARRACAS 21A	
⁷ GRID No. 330132	⁶ Operator Name MORNINGSTAR OPERATING LLC	⁸ Well Number 1-1ST
		⁹ Elevation 7064'

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
0	21	32N	5W		698'	SOUTH	2020'	EAST	RIO ARRIBA

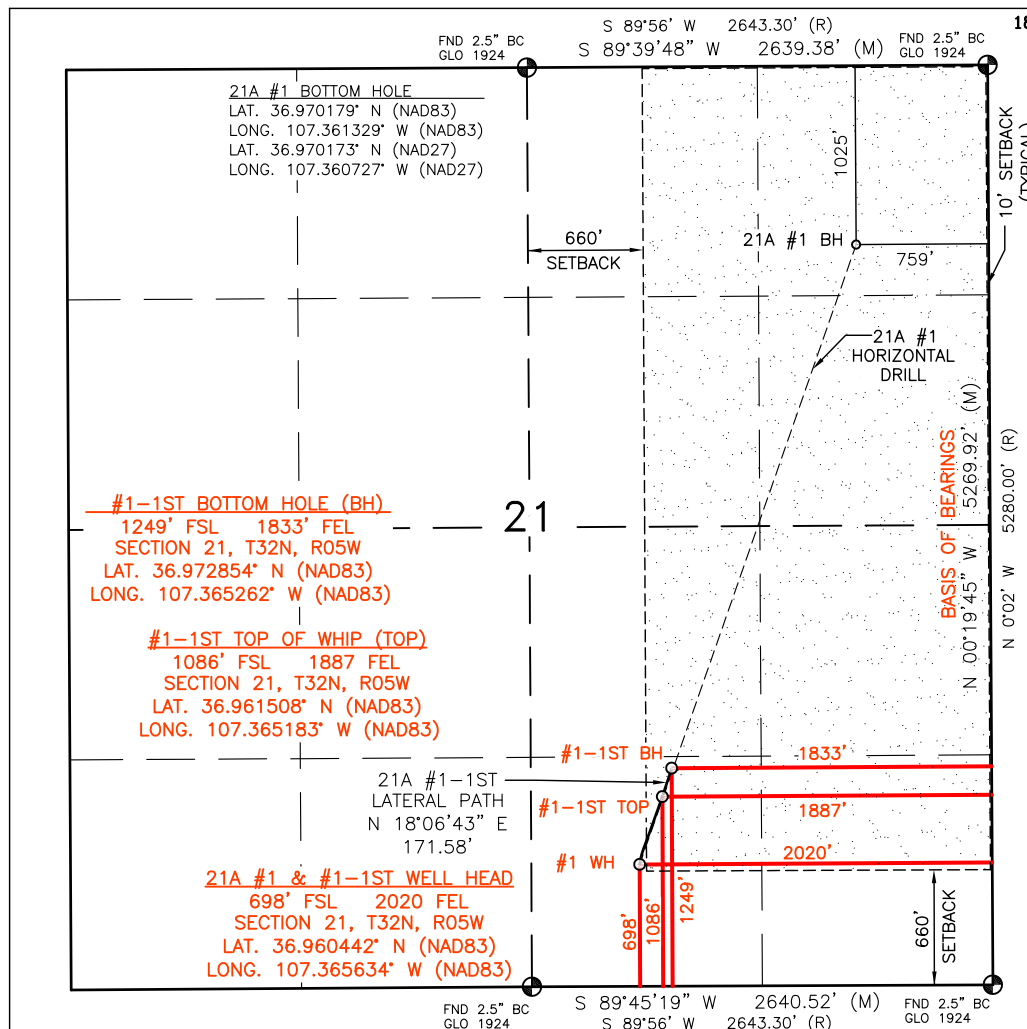
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	21	32N	5W		1249'	SOUTH	1833'	EAST	RIO ARRIBA

¹² Dedicated Acres E/2 SEC. 21 320.00 ACRES	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

16



18	17	OPERATOR CERTIFICATION
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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 Connie Blaylock Date 11/7/2022

Connie Blaylock
Printed Name

cblaylock@mspartner.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

NOVEMBER 3, 2022

Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number	11393
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⁴ Property Code 329019	⁵ Property Name CARRACAS 21A	⁶ Well Number 1-2ST
⁷ OGRID No. 330132	⁸ Operator Name MORNINGSTAR OPERATING LLC	⁹ Elevation 7064'

¹⁰ Surface Location

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O	21	32N	5W		698'	SOUTH	2020'	EAST	RIO ARRIBA

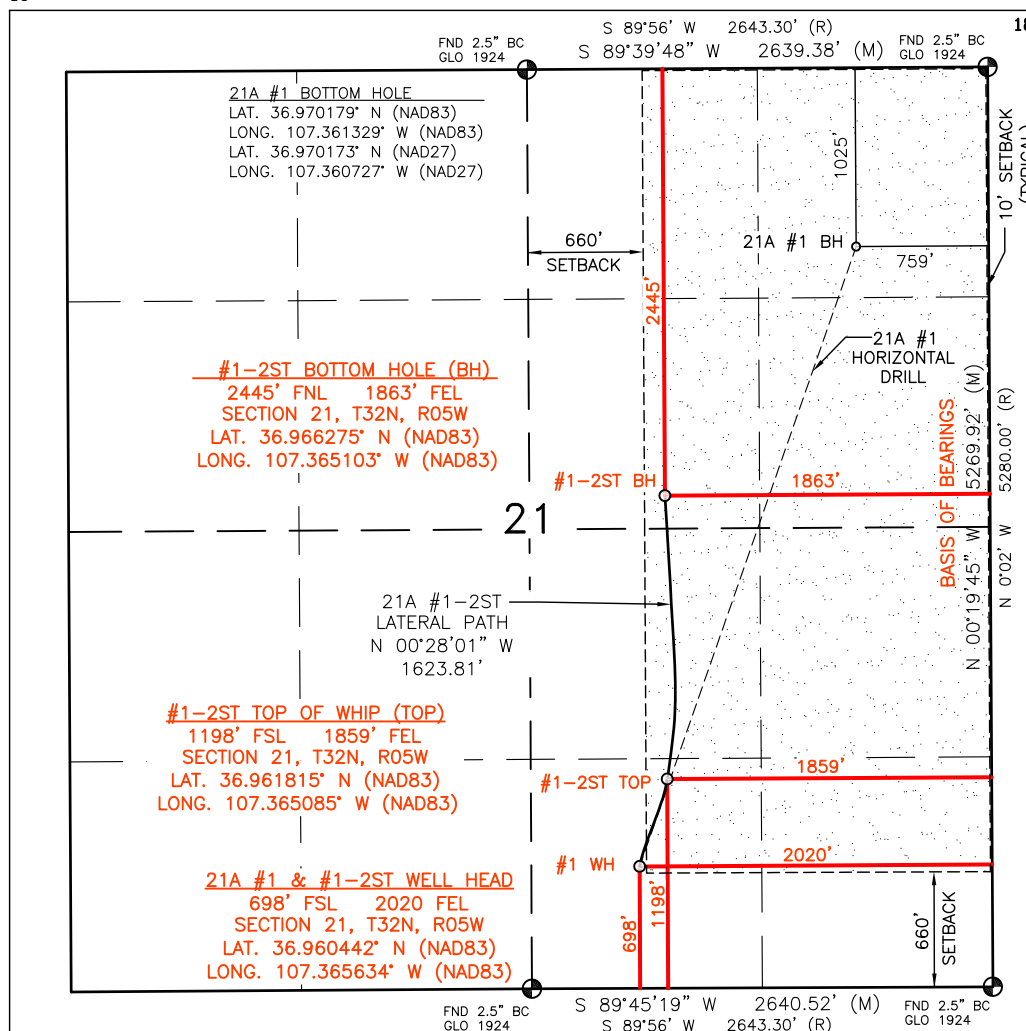
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	21	32N	5W		2445'	NORTH	1863'	EAST	RIO ARRIBA

¹² Dedicated Acres E/2 SEC. 21 320.00 ACRES	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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Connie Blaylock 11/7/2022
Signature Date

Connie Blaylock
Printed Name

cblaylock@mspartners.com
E-mail Address

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Signature and Seal of Professional Surveyor:



Certificate Number 11393

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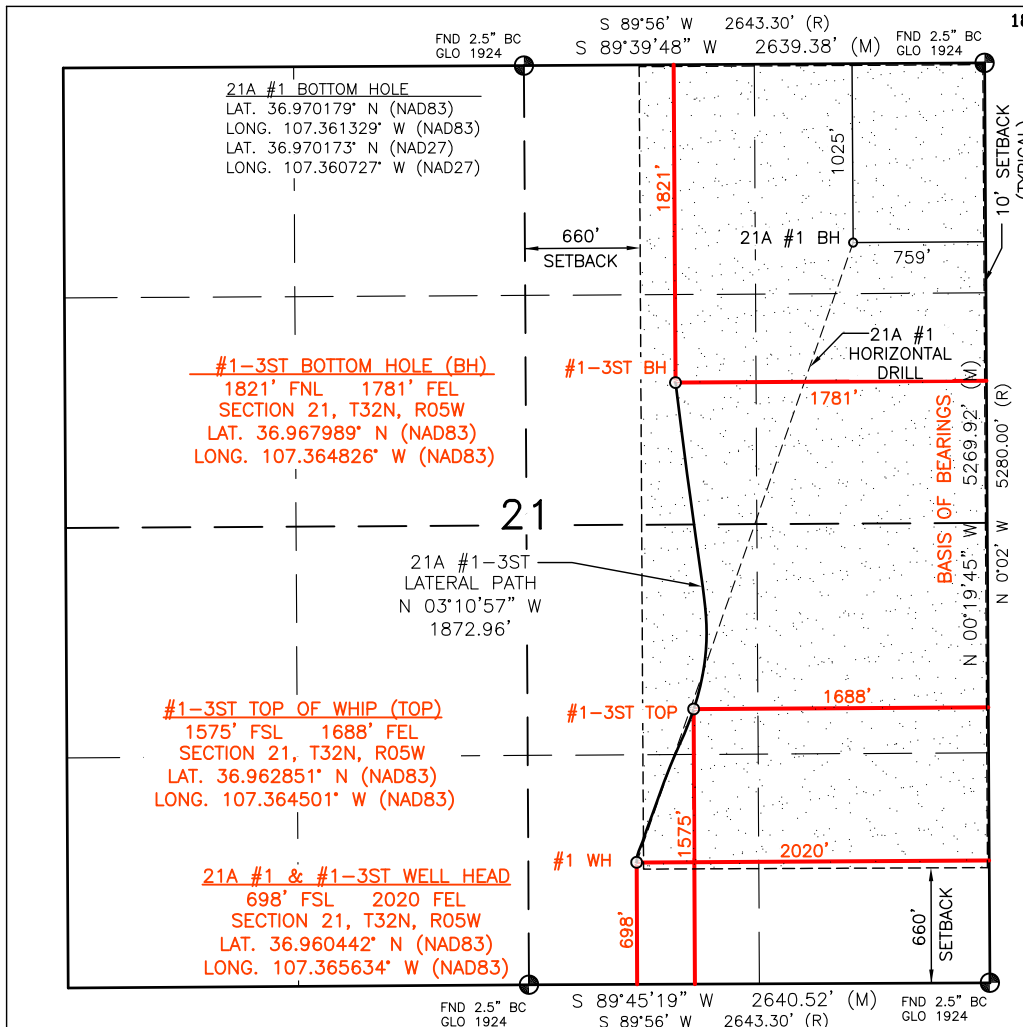
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UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	21	32N	5W		1821'	NORTH	1781'	EAST	RIO ARriba

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Certificate Number

11393

MorningStar Operating, LLC

Post Sidetrack Current WBD 10/31/2022

Carracas 21 A 1
Rio Arriba County, NM
32N-5W Section 21

Sidetrack TD – 7,848' MD; 3,657' TVD
Lower TD – 7,080' MD; 3,685' TVD

12 1/4" hole to 230'
Csg: 5 jts – 9 5/8" 32.3# H-40 ST&C
Setting Depth: 223'

Cement
125 sx Class G (148 ft³)
Circ. 10 bbls cmt to surface

8 3/4" hole to 4,380'
Csg: 99 jts – 7" 23# J-55 LT&C
Setting Depth: 4,355'

Cement
Lead: 550 sx Halliburton Light
Tail: 125 sx Class G (1422 ft³)
Circ. 20 bbls cmt to surface

6 1/8" Upper lateral hole to 6,303' md; 3,675' tvd
Liner: Est. 47 jts – 4 1/2" 11.6# J-55 LT&C
TOL: 4,250' MD (8' drop off outside window)
Setting Depth: 6,252' MD; 3,xxx' TVD
Perforations: 4,288'-6,206'
every other jt perf'd 24blank 23perf'd
4' blank on each end. 4spf; 90° ph
~ 3,404 total perforations

6 1/4" Lower lateral hole to 7,080' md; 3,657' tvd
Liner: 66 jts- 4 1/2" 11.6# J-55 LT&C
Setting Depth: 7,080'
16,092 – 1/2" holes @ 6 spf from 4,349'-7,031'
TOL: 4,298'
No cement

Csg issue @ 3,783.2'
with IB showing csg issue

Milled smooth 6" on 9/25/2022

Whipstock @ 4234-52' ~ 92°

RBP top @ 4,252 ~ 93°

4.5" Liner Top
4,298' md

7" Set @ 4,355' MD

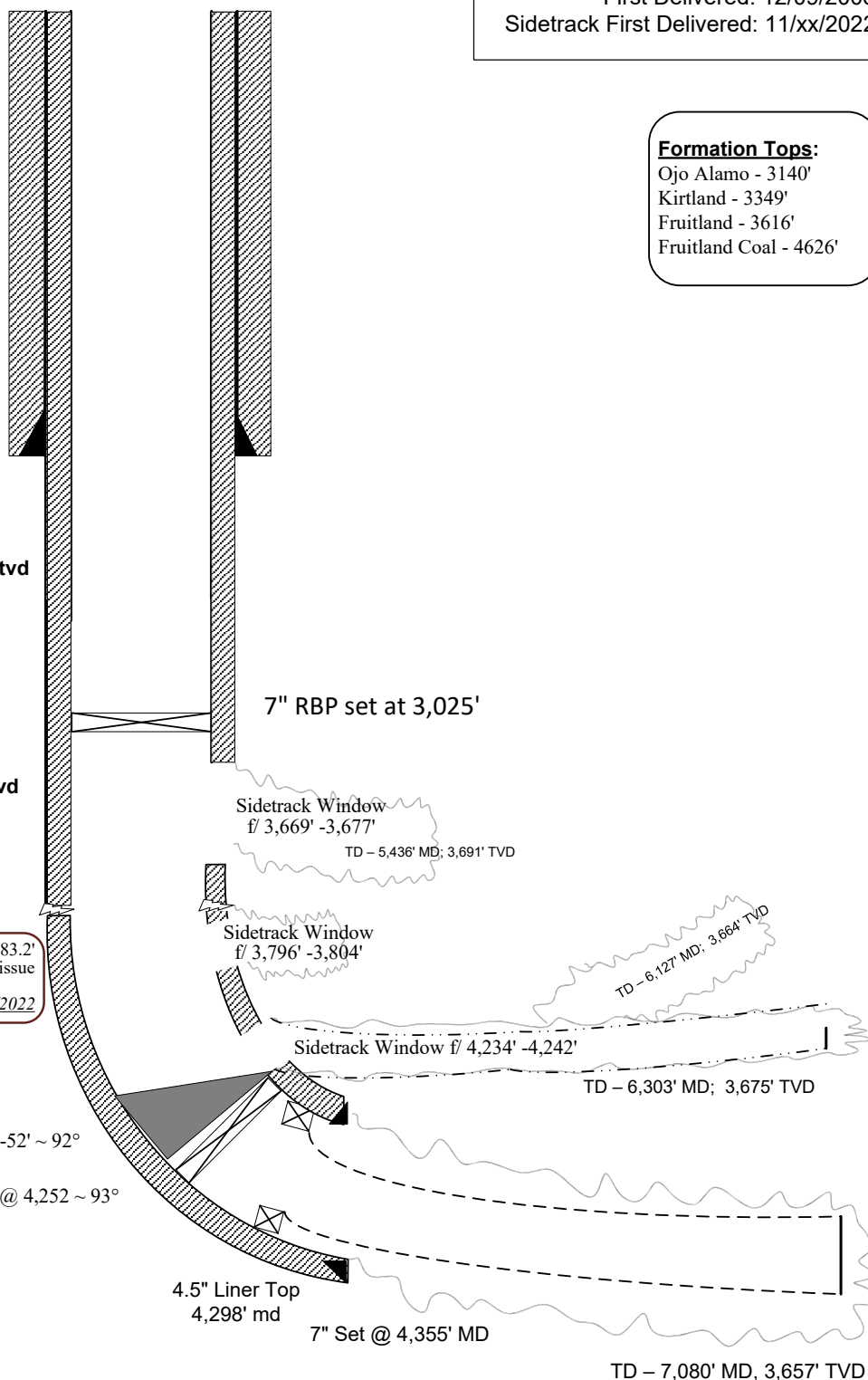
TD – 7,080' MD, 3,657' TVD

Prepared by: CArnold
Date: 02/18/2019
Updated: B.Savage 06/14/2021
Updated: J Marschall 11/09/2021
Updated: B.Savage 10/31/2022
KB = 18'
GL = 7,064'
API# 30-039-30167

Spud Date: 09/30/2008
First Delivered: 12/09/2008
Sidetrack First Delivered: 11/xx/2022

Formation Tops:

Ojo Alamo - 3140'
Kirtland - 3349'
Fruitland - 3616'
Fruitland Coal - 4626'



MorningStar Operating, LLC

Post Sidetrack Proposed Corod RTP

Carracas 21 A 1
Rio Arriba County, NM
32N-5W Section 21

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Prepared by: CArnold

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Updated: J Marshall 11/09/2021

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Formation Tops:

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Fruitland - 3616'

Fruitland Coal - 4626'

PROPOSED

2-3/8" 4.7# J-55 Prod Tbg:

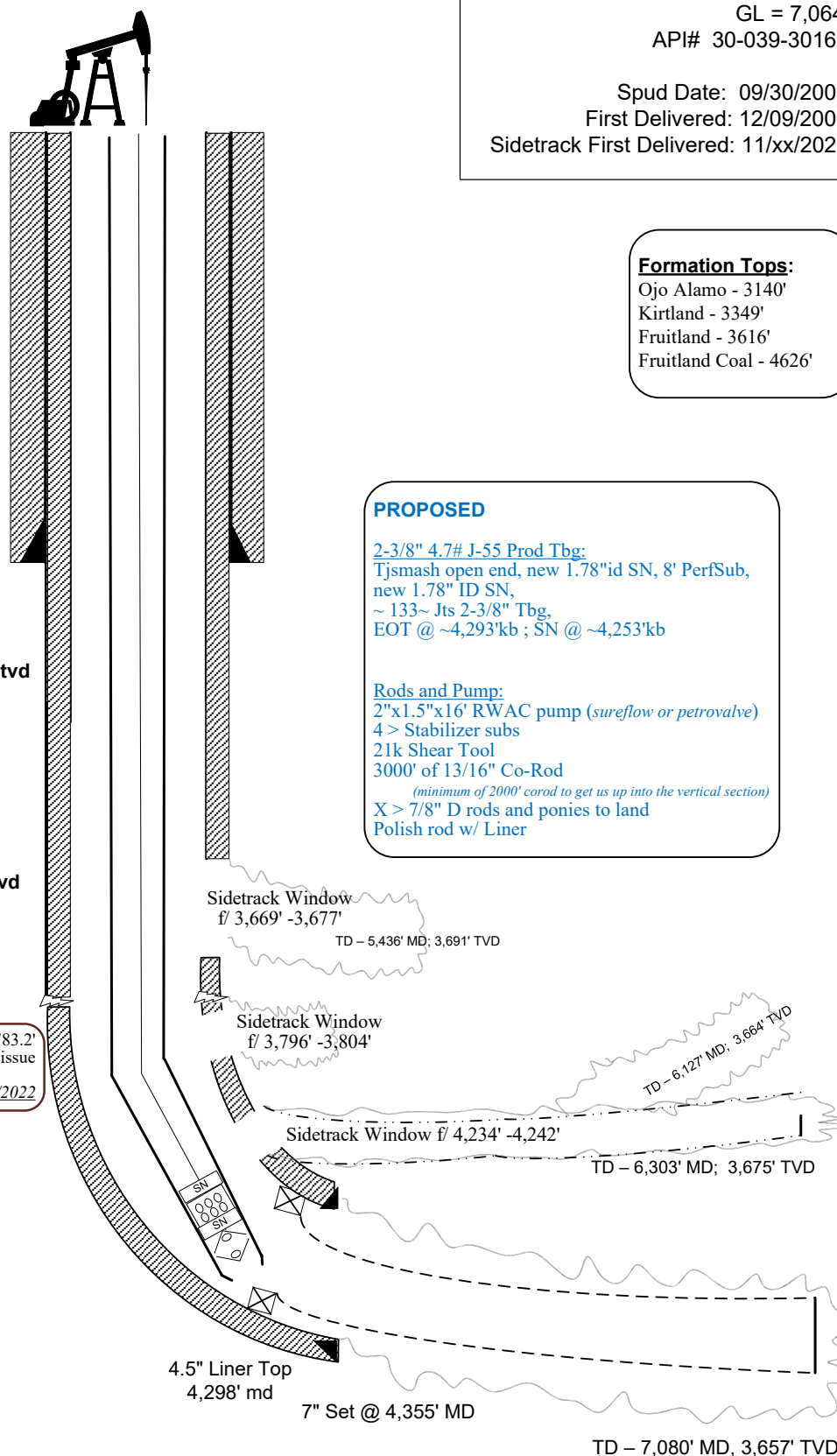
Tj smash open end, new 1.78" id SN, 8' PerfSub,
new 1.78" ID SN,
~ 133~ Jts 2-3/8" Tbg,
EOT @ ~4,293' kb; SN @ ~4,253' kb

Rods and Pump:

2"x1.5"x16' RWAC pump (sureflow or petrovalve)
4 > Stabilizer subs
21k Shear Tool
3000' of 13/16" Co-Rod

(minimum of 2000' corod to get us up into the vertical section)

X > 7/8" D rods and ponies to land
Polish rod w/ Liner





MorningStar Partners

Rio Arriba County, NM (NAD 27 - True North)

Carracas 21A 1

Carracas 21A 1

ST01

Design: ST01

Standard Survey Report

09 September, 2022

This survey is correct to the best of my knowledge and is supported by actual field data.

Cameron Stevens

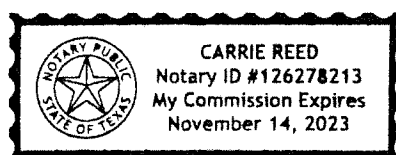
Notarized this date 9th of September, 2022.

Carrie Reed

Notary Signature

County of Midland

State of Texas





Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM5000

Project	Rio Arriba County, NM (NAD 27 - True North)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	Carracas 21A 1		
Site Position:		Northing:	2,169,202.24 usft
From:	Lat/Long	Easting:	636,822.37 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	36.960436
		Longitude:	-107.365032

Well	Carracas 21A 1		
Well Position	+N/-S	0.00 usft	Northing: 2,169,202.24 usft
	+E/-W	0.00 usft	Easting: 636,822.37 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
Grid Convergence:	0.28 °	Ground Level:	7,064.00 usft

Wellbore	ST01		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2020	8/26/2022	8.60
			Dip Angle (°)
			63.41
			Field Strength (nT)
			49,645.38723859

Design	ST01		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	3,764.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			357.72

Survey Program	Date	9/9/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
101.00	3,764.00	Original Hole Surveys (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM
3,867.00	3,867.00	Legacy MWD (ST01)	MWD+IGRF	OWSG MWD + IGRF or WMM

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	
101.00	0.11	356.15	101.00	0.10	-0.01	0.10	0.11	0.11	0.00	
201.00	0.22	356.15	201.00	0.38	-0.03	0.38	0.11	0.11	0.00	
301.00	0.32	356.15	301.00	0.85	-0.06	0.86	0.10	0.10	0.00	
401.00	0.43	356.15	401.00	1.51	-0.10	1.51	0.11	0.11	0.00	
493.00	0.53	356.15	492.99	2.28	-0.15	2.28	0.11	0.11	0.00	
501.00	0.52	356.91	500.99	2.35	-0.16	2.35	0.15	-0.13	9.50	
601.00	0.44	8.48	600.99	3.18	-0.13	3.18	0.13	-0.08	11.57	
701.00	0.38	24.38	700.99	3.86	0.07	3.86	0.13	-0.06	15.90	



Survey Report

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Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM5000

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)	
801.00	0.36	43.80	800.98	4.39	0.42	4.37	0.13	-0.02	19.42	
901.00	0.39	63.03	900.98	4.77	0.94	4.73	0.13	0.03	19.23	
993.00	0.44	77.50	992.98	4.99	1.57	4.93	0.13	0.05	15.73	
1,001.00	0.44	78.02	1,000.98	5.01	1.63	4.94	0.05	0.00	6.50	
1,101.00	0.49	83.83	1,100.98	5.13	2.43	5.03	0.07	0.05	5.81	
1,201.00	0.54	88.60	1,200.97	5.19	3.32	5.05	0.07	0.05	4.77	
1,301.00	0.59	92.54	1,300.97	5.18	4.31	5.00	0.06	0.05	3.94	
1,401.00	0.65	95.82	1,400.96	5.10	5.39	4.88	0.07	0.06	3.28	
1,491.00	0.70	98.32	1,490.96	4.97	6.44	4.71	0.06	0.06	2.78	
1,501.00	0.69	96.84	1,500.95	4.95	6.56	4.68	0.21	-0.10	-14.80	
1,601.00	0.57	78.25	1,600.95	4.98	7.65	4.67	0.24	-0.12	-18.59	
1,701.00	0.53	54.07	1,700.94	5.35	8.51	5.01	0.23	-0.04	-24.18	
1,801.00	0.60	31.07	1,800.94	6.07	9.15	5.70	0.24	0.07	-23.00	
1,901.00	0.73	14.51	1,900.93	7.14	9.58	6.75	0.23	0.13	-16.56	
1,987.00	0.88	4.96	1,986.92	8.33	9.78	7.93	0.23	0.17	-11.10	
2,001.00	0.94	3.97	2,000.92	8.55	9.79	8.15	0.44	0.43	-7.07	
2,101.00	1.36	359.38	2,100.90	10.55	9.84	10.15	0.43	0.42	-4.59	
2,201.00	1.79	356.99	2,200.86	13.30	9.74	12.90	0.43	0.43	-2.39	
2,301.00	2.23	355.52	2,300.80	16.80	9.51	16.41	0.44	0.44	-1.47	
2,401.00	2.66	354.53	2,400.71	21.05	9.13	20.67	0.43	0.43	-0.99	
2,477.00	2.99	353.97	2,476.62	24.77	8.76	24.41	0.44	0.43	-0.74	
2,501.00	3.13	352.04	2,500.58	26.05	8.60	25.68	0.72	0.58	-8.04	
2,601.00	3.74	345.59	2,600.40	31.91	7.41	31.59	0.72	0.61	-6.45	
2,661.00	4.13	342.66	2,660.26	35.87	6.28	35.59	0.73	0.65	-4.88	
2,691.00	3.93	343.80	2,690.19	37.88	5.67	37.63	0.72	-0.67	3.80	
2,701.00	4.02	344.08	2,700.17	38.55	5.48	38.30	0.92	0.90	2.80	
2,722.00	4.22	344.64	2,721.11	40.00	5.07	39.77	0.97	0.95	2.67	
2,752.00	3.96	353.34	2,751.03	42.10	4.66	41.88	2.24	-0.87	29.00	
2,783.00	3.52	8.11	2,781.97	44.10	4.67	43.88	3.40	-1.42	47.65	
2,801.00	3.74	17.33	2,799.93	45.21	4.92	44.98	3.46	1.22	51.22	
2,814.00	3.96	23.24	2,812.90	46.03	5.23	45.78	3.49	1.69	45.46	
2,845.00	4.13	26.00	2,843.83	48.01	6.14	47.73	0.83	0.55	8.90	
2,875.00	5.19	28.60	2,873.73	50.18	7.26	49.85	3.60	3.53	8.67	
2,906.00	6.95	27.67	2,904.55	53.07	8.81	52.68	5.69	5.68	-3.00	
2,938.00	8.71	26.44	2,936.25	56.95	10.78	56.48	5.52	5.50	-3.84	
2,970.00	9.94	19.91	2,967.83	61.72	12.80	61.16	5.06	3.84	-20.41	
3,001.00	11.34	19.82	2,998.30	67.10	14.75	66.46	4.52	4.52	-0.29	
3,033.00	13.28	18.89	3,029.56	73.54	17.00	72.81	6.09	6.06	-2.91	
3,064.00	15.04	18.84	3,059.62	80.72	19.46	79.88	5.68	5.68	-0.16	
3,096.00	16.80	20.54	3,090.39	88.98	22.42	88.01	5.69	5.50	5.31	
3,101.00	17.16	20.57	3,095.17	90.34	22.93	89.36	7.20	7.20	0.60	
3,128.00	19.08	20.72	3,120.83	98.20	25.89	97.09	7.11	7.11	0.56	
3,151.00	20.65	20.20	3,142.46	105.52	28.62	104.30	6.87	6.83	-2.26	



Survey Report

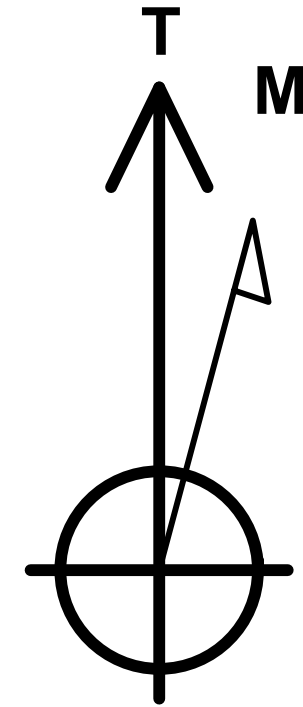
Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ST01	Database:	EDM5000

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)	
3,159.00	21.19	20.04	3,149.93	108.21	29.61	106.94	6.79	6.75	-2.00	
3,191.00	23.21	20.14	3,179.56	119.56	33.76	118.12	6.31	6.31	0.31	
3,201.00	23.95	20.10	3,188.72	123.32	35.14	121.82	7.40	7.40	-0.40	
3,223.00	25.59	20.01	3,208.70	131.98	38.30	130.35	7.46	7.45	-0.41	
3,255.00	28.14	20.89	3,237.24	145.52	43.35	143.68	8.06	7.97	2.75	
3,287.00	29.99	20.06	3,265.21	160.08	48.79	158.02	5.92	5.78	-2.59	
3,301.00	30.79	20.19	3,277.29	166.73	51.22	164.56	5.73	5.71	0.93	
3,319.00	31.83	20.34	3,292.67	175.51	54.46	173.20	5.79	5.78	0.83	
3,350.00	33.41	20.55	3,318.78	191.17	60.30	188.62	5.11	5.10	0.68	
3,382.00	35.00	20.32	3,345.24	208.02	66.58	205.21	4.99	4.97	-0.72	
3,401.00	35.36	20.76	3,360.77	218.27	70.42	215.30	2.32	1.89	2.32	
3,414.00	35.61	21.06	3,371.36	225.32	73.12	222.24	2.34	1.92	2.31	
3,446.00	36.76	21.08	3,397.18	242.95	79.91	239.58	3.59	3.59	0.06	
3,451.00	37.06	21.02	3,401.18	245.76	80.99	242.34	6.04	6.00	-1.20	
3,478.00	38.69	20.70	3,422.49	261.24	86.89	257.58	6.08	6.04	-1.19	
3,509.00	40.10	19.64	3,446.45	279.71	93.67	275.76	5.04	4.55	-3.42	
3,541.00	41.94	19.19	3,470.59	299.52	100.65	295.28	5.82	5.75	-1.41	
3,551.00	42.60	19.17	3,477.99	305.87	102.86	301.54	6.60	6.60	-0.20	
3,573.00	44.05	19.14	3,494.00	320.13	107.81	315.59	6.59	6.59	-0.14	
3,605.00	46.69	19.04	3,516.47	341.65	115.26	336.80	8.25	8.25	-0.31	
3,637.00	50.21	19.65	3,537.70	364.24	123.19	359.05	11.09	11.00	1.91	
3,651.00	52.06	19.95	3,546.48	374.50	126.89	369.15	13.32	13.21	2.14	
3,669.00	54.43	20.31	3,557.25	388.04	131.85	382.48	13.26	13.17	2.00	
3,701.00	57.77	21.29	3,575.10	412.86	141.28	406.91	10.74	10.44	3.06	
3,732.00	58.92	21.77	3,591.36	437.41	150.97	431.05	3.94	3.71	1.55	
3,764.00	59.62	21.85	3,607.72	462.94	161.19	456.17	2.20	2.19	0.25	
3,867.00	66.00	10.00	3,654.89	550.85	185.99	543.02	11.95	6.19	-11.50	
Last Survey 3867.00' MD/3654.89' TVD										

Checked By: _____	Approved By: _____	Date: _____
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Company: MorningStar Partners
Field: Rio Arriba County, NM (NAD 27 - True North)
Location: Carracas 21A 1
Well Location: Carracas 21A 1
Wellbore: ST01
Plan: Plan 5
GL: GL 7064 + KB 16 @ 7080.00usft



Azimuths to True North
Magnetic North: 8.60°

Magnetic Field
Strength: 49645.4nT
Dip Angle: 63.41°
Date: 8/26/2022
Model: IGRF2020



To convert a Magnetic Direction to a True Direction, Add 8.60° East

PROJECT DETAILS: Rio Arriba County, NM (NAD 27 - True North)

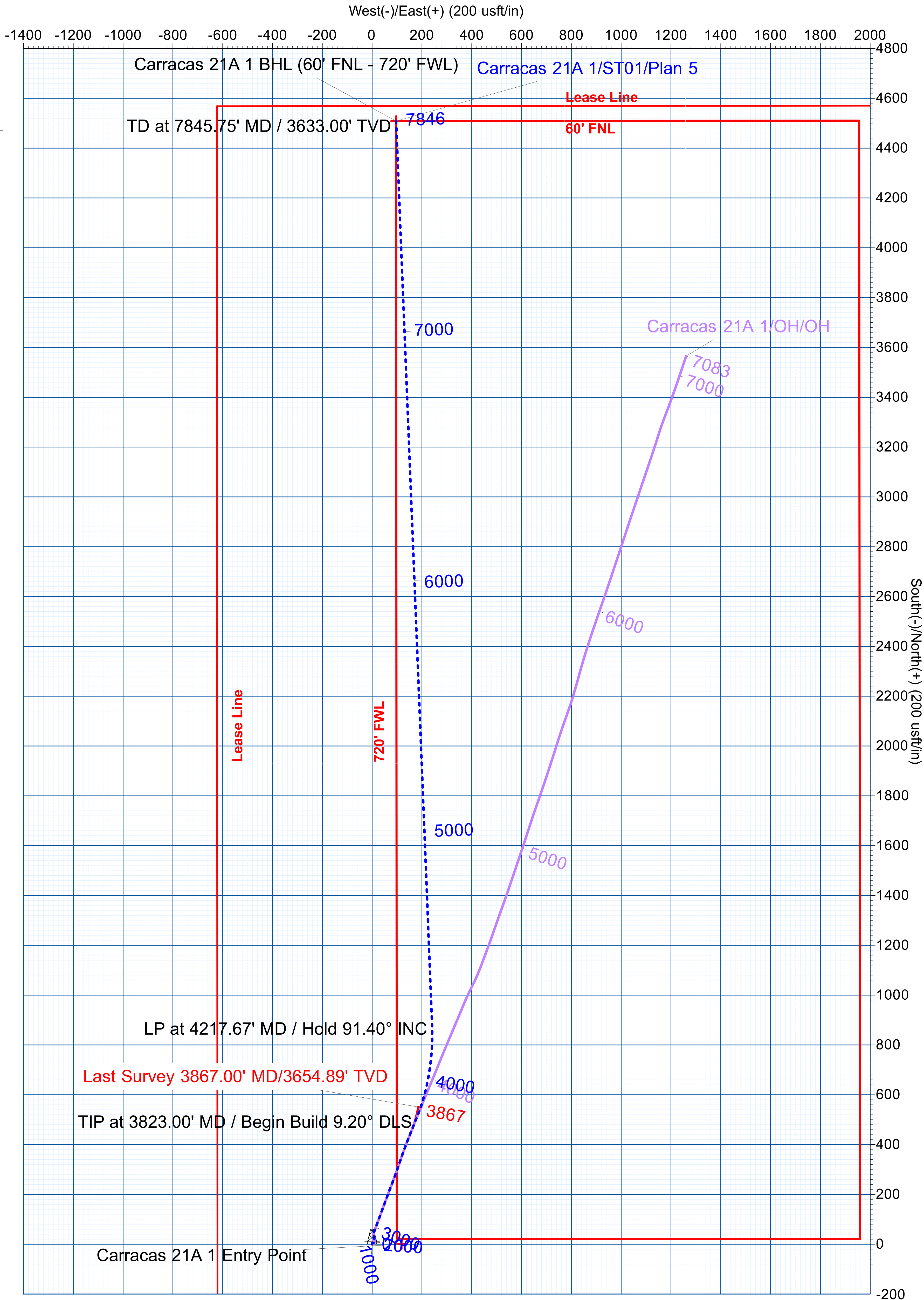
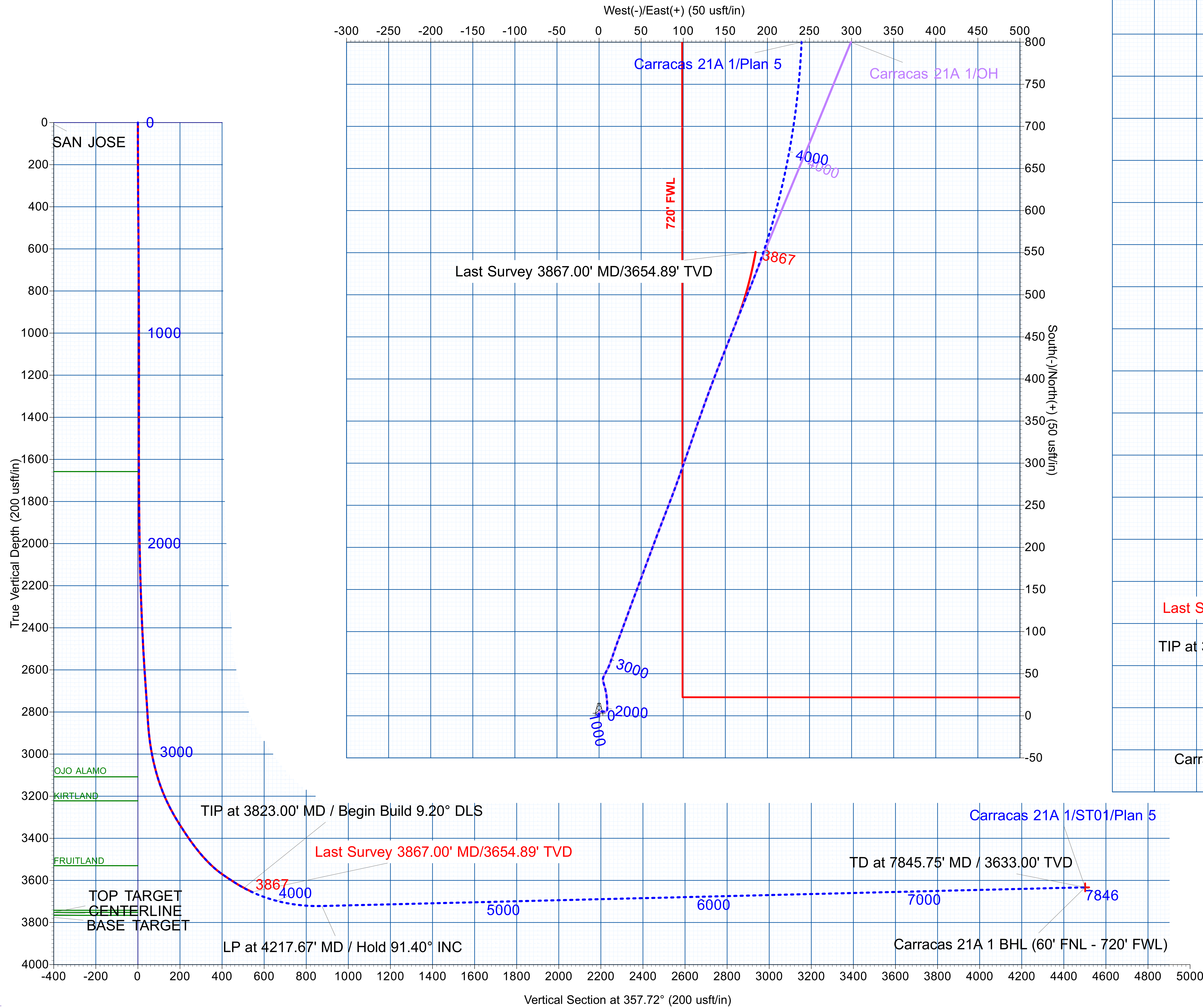
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level

WELL DETAILS: Carracas 21A 1

			GL 7064 + KB 16 @ 7080.00usft		7064.00	
			Northing	Easting	Latitude	Longitude
			2169202.24	636822.37	36.960436	-107.365032

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
3823.00	63.63	21.97	3636.06	510.95	180.48	0.00	0.00	503.36	TIP at 3823.00' MD / Begin Build 9.20° DLS
4217.67	91.40	357.72	3721.76	884.63	240.80	9.20	-43.89	874.35	LP at 4217.67' MD / Hold 91.40° INC
7845.75	91.40	357.72	3633.00	4508.75	96.45	0.00	0.00	4501.34	TD at 7845.75' MD / 3633.00' TVD



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1657.88	1657.94	NACIMIENTO
3105.74	3112.09	OJO ALAMO
3218.71	3234.14	KIRTLAND
3521.66	3612.62	FRUITLAND
3721.68	4175.95	TOP TARGET



MorningStar Partners

Rio Arriba County, NM (NAD 27 - True North)

Carracas 21A 1

Carracas 21A 1

ST02

Design: ST02

Standard Survey Report

14 September, 2022

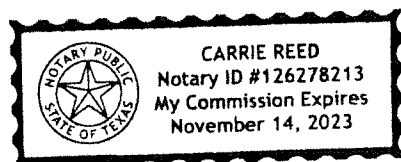
This survey is correct to the best of my knowledge and is supported by actual field data.

Cameron Stevens

Notarized this date 14th of September, 2022.

Carrie Reed

Notary Signature
County of Midland
State of Texas





Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	ST02	Database:	EDM5000

Project	Rio Arriba County, NM (NAD 27 - True North)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	Carracas 21A 1		
Site Position:		Northing:	2,169,202.24 usft
From:	Lat/Long	Easting:	636,822.37 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	36.960436
		Longitude:	-107.365032

Well		Carracas 21A 1				
Well Position	+N/-S	0.00 usft	Northing:	2,169,202.24 usft	Latitude:	36.960436
	+E/-W	0.00 usft	Easting:	636,822.37 usft	Longitude:	-107.365032
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	7,064.00 usft
Grid Convergence:		0.28 °				

Wellbore	ST02				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/10/2022	8.60	63.41	49,641.15609160

Design	ST02				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	3,669.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	357.72	

Survey Program	Date	9/14/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
101.00	3,669.00	Original Hole Surveys (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM
3,715.00	5,334.00	Survey #1 (ST02)	MWD+IGRF	OWSG MWD + IGRF or WMM

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	
101.00	0.11	356.15	101.00	0.10	-0.01	0.10	0.11	0.11	0.00	
201.00	0.22	356.15	201.00	0.38	-0.03	0.38	0.11	0.11	0.00	
301.00	0.32	356.15	301.00	0.85	-0.06	0.86	0.10	0.10	0.00	
401.00	0.43	356.15	401.00	1.51	-0.10	1.51	0.11	0.11	0.00	
493.00	0.53	356.15	492.99	2.28	-0.15	2.28	0.11	0.11	0.00	
501.00	0.52	356.91	500.99	2.35	-0.16	2.35	0.15	-0.13	9.50	
601.00	0.44	8.48	600.99	3.18	-0.13	3.18	0.13	-0.08	11.57	
701.00	0.38	24.38	700.99	3.86	0.07	3.86	0.13	-0.06	15.90	



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	ST02	Database:	EDM5000

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)	
801.00	0.36	43.80	800.98	4.39	0.42	4.37	0.13	-0.02	19.42	
901.00	0.39	63.03	900.98	4.77	0.94	4.73	0.13	0.03	19.23	
993.00	0.44	77.50	992.98	4.99	1.57	4.93	0.13	0.05	15.73	
1,001.00	0.44	78.02	1,000.98	5.01	1.63	4.94	0.05	0.00	6.50	
1,101.00	0.49	83.83	1,100.98	5.13	2.43	5.03	0.07	0.05	5.81	
1,201.00	0.54	88.60	1,200.97	5.19	3.32	5.05	0.07	0.05	4.77	
1,301.00	0.59	92.54	1,300.97	5.18	4.31	5.00	0.06	0.05	3.94	
1,401.00	0.65	95.82	1,400.96	5.10	5.39	4.88	0.07	0.06	3.28	
1,491.00	0.70	98.32	1,490.96	4.97	6.44	4.71	0.06	0.06	2.78	
1,501.00	0.69	96.84	1,500.95	4.95	6.56	4.68	0.21	-0.10	-14.80	
1,601.00	0.57	78.25	1,600.95	4.98	7.65	4.67	0.24	-0.12	-18.59	
1,701.00	0.53	54.07	1,700.94	5.35	8.51	5.01	0.23	-0.04	-24.18	
1,801.00	0.60	31.07	1,800.94	6.07	9.15	5.70	0.24	0.07	-23.00	
1,901.00	0.73	14.51	1,900.93	7.14	9.58	6.75	0.23	0.13	-16.56	
1,987.00	0.88	4.96	1,986.92	8.33	9.78	7.93	0.23	0.17	-11.10	
2,001.00	0.94	3.97	2,000.92	8.55	9.79	8.15	0.44	0.43	-7.07	
2,101.00	1.36	359.38	2,100.90	10.55	9.84	10.15	0.43	0.42	-4.59	
2,201.00	1.79	356.99	2,200.86	13.30	9.74	12.90	0.43	0.43	-2.39	
2,301.00	2.23	355.52	2,300.80	16.80	9.51	16.41	0.44	0.44	-1.47	
2,401.00	2.66	354.53	2,400.71	21.05	9.13	20.67	0.43	0.43	-0.99	
2,477.00	2.99	353.97	2,476.62	24.77	8.76	24.41	0.44	0.43	-0.74	
2,501.00	3.13	352.04	2,500.58	26.05	8.60	25.68	0.72	0.58	-8.04	
2,601.00	3.74	345.59	2,600.40	31.91	7.41	31.59	0.72	0.61	-6.45	
2,661.00	4.13	342.66	2,660.26	35.87	6.28	35.59	0.73	0.65	-4.88	
2,691.00	3.93	343.80	2,690.19	37.88	5.67	37.63	0.72	-0.67	3.80	
2,701.00	4.02	344.08	2,700.17	38.55	5.48	38.30	0.92	0.90	2.80	
2,722.00	4.22	344.64	2,721.11	40.00	5.07	39.77	0.97	0.95	2.67	
2,752.00	3.96	353.34	2,751.03	42.10	4.66	41.88	2.24	-0.87	29.00	
2,783.00	3.52	8.11	2,781.97	44.10	4.67	43.88	3.40	-1.42	47.65	
2,801.00	3.74	17.33	2,799.93	45.21	4.92	44.98	3.46	1.22	51.22	
2,814.00	3.96	23.24	2,812.90	46.03	5.23	45.78	3.49	1.69	45.46	
2,845.00	4.13	26.00	2,843.83	48.01	6.14	47.73	0.83	0.55	8.90	
2,875.00	5.19	28.60	2,873.73	50.18	7.26	49.85	3.60	3.53	8.67	
2,906.00	6.95	27.67	2,904.55	53.07	8.81	52.68	5.69	5.68	-3.00	
2,938.00	8.71	26.44	2,936.25	56.95	10.78	56.48	5.52	5.50	-3.84	
2,970.00	9.94	19.91	2,967.83	61.72	12.80	61.16	5.06	3.84	-20.41	
3,001.00	11.34	19.82	2,998.30	67.10	14.75	66.46	4.52	4.52	-0.29	
3,033.00	13.28	18.89	3,029.56	73.54	17.00	72.81	6.09	6.06	-2.91	
3,064.00	15.04	18.84	3,059.62	80.72	19.46	79.88	5.68	5.68	-0.16	
3,096.00	16.80	20.54	3,090.39	88.98	22.42	88.01	5.69	5.50	5.31	
3,101.00	17.16	20.57	3,095.17	90.34	22.93	89.36	7.20	7.20	0.60	
3,128.00	19.08	20.72	3,120.83	98.20	25.89	97.09	7.11	7.11	0.56	
3,151.00	20.65	20.20	3,142.46	105.52	28.62	104.30	6.87	6.83	-2.26	



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	ST02	Database:	EDM5000

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)
3,159.00	21.19	20.04	3,149.93	108.21	29.61	106.94	6.79	6.75	-2.00
3,191.00	23.21	20.14	3,179.56	119.56	33.76	118.12	6.31	6.31	0.31
3,201.00	23.95	20.10	3,188.72	123.32	35.14	121.82	7.40	7.40	-0.40
3,223.00	25.59	20.01	3,208.70	131.98	38.30	130.35	7.46	7.45	-0.41
3,255.00	28.14	20.89	3,237.24	145.52	43.35	143.68	8.06	7.97	2.75
3,287.00	29.99	20.06	3,265.21	160.08	48.79	158.02	5.92	5.78	-2.59
3,301.00	30.79	20.19	3,277.29	166.73	51.22	164.56	5.73	5.71	0.93
3,319.00	31.83	20.34	3,292.67	175.51	54.46	173.20	5.79	5.78	0.83
3,350.00	33.41	20.55	3,318.78	191.17	60.30	188.62	5.11	5.10	0.68
3,382.00	35.00	20.32	3,345.24	208.02	66.58	205.21	4.99	4.97	-0.72
3,401.00	35.36	20.76	3,360.77	218.27	70.42	215.30	2.32	1.89	2.32
3,414.00	35.61	21.06	3,371.36	225.32	73.12	222.24	2.34	1.92	2.31
3,446.00	36.76	21.08	3,397.18	242.95	79.91	239.58	3.59	3.59	0.06
3,451.00	37.06	21.02	3,401.18	245.76	80.99	242.34	6.04	6.00	-1.20
3,478.00	38.69	20.70	3,422.49	261.24	86.89	257.58	6.08	6.04	-1.19
3,509.00	40.10	19.64	3,446.45	279.71	93.67	275.76	5.04	4.55	-3.42
3,541.00	41.94	19.19	3,470.59	299.52	100.65	295.28	5.82	5.75	-1.41
3,551.00	42.60	19.17	3,477.99	305.87	102.86	301.54	6.60	6.60	-0.20
3,573.00	44.05	19.14	3,494.00	320.13	107.81	315.59	6.59	6.59	-0.14
3,605.00	46.69	19.04	3,516.47	341.65	115.26	336.80	8.25	8.25	-0.31
3,637.00	50.21	19.65	3,537.70	364.24	123.19	359.05	11.09	11.00	1.91
3,651.00	52.06	19.95	3,546.48	374.50	126.89	369.15	13.32	13.21	2.14
3,669.00	54.43	20.31	3,557.25	388.04	131.85	382.48	13.26	13.17	2.00
3,715.00	64.86	13.15	3,580.49	426.00	143.12	419.97	26.33	22.67	-15.57
3,746.00	69.08	15.44	3,592.61	453.63	150.17	447.30	15.21	13.61	7.39
3,775.00	72.60	10.69	3,602.13	480.31	156.35	473.71	19.66	12.14	-16.38
3,806.00	72.60	11.75	3,611.41	509.32	162.11	502.47	3.26	0.00	3.42
3,869.00	73.87	10.16	3,629.58	568.54	173.57	561.19	3.15	2.02	-2.52
3,933.00	74.27	8.05	3,647.15	629.31	183.30	621.52	3.23	0.63	-3.30
3,965.00	74.49	7.18	3,655.76	659.85	187.39	651.88	2.71	0.69	-2.72
3,997.00	76.46	6.65	3,663.79	690.60	191.12	682.45	6.36	6.16	-1.66
4,029.00	78.79	5.51	3,670.65	721.68	194.42	713.38	8.07	7.28	-3.56
4,060.00	79.67	4.45	3,676.44	752.02	197.07	743.58	4.40	2.84	-3.42
4,092.00	80.07	4.01	3,682.07	783.43	199.39	774.88	1.84	1.25	-1.38
4,124.00	82.40	3.66	3,686.94	814.99	201.51	806.33	7.36	7.28	-1.09
4,156.00	83.98	2.69	3,690.74	846.71	203.26	837.96	5.78	4.94	-3.03
4,188.00	84.68	3.75	3,693.90	878.50	205.05	869.65	3.96	2.19	3.31
4,220.00	85.47	2.96	3,696.65	910.33	206.92	901.38	3.48	2.47	-2.47
4,252.00	85.56	2.69	3,699.15	942.19	208.49	933.15	0.89	0.28	-0.84
4,284.00	87.98	2.08	3,700.95	974.11	209.82	964.99	7.80	7.56	-1.91
4,315.00	88.37	359.18	3,701.94	1,005.09	210.16	995.94	9.43	1.26	-9.35
4,347.00	88.99	358.65	3,702.68	1,037.08	209.56	1,027.92	2.55	1.94	-1.66
4,379.00	90.79	358.56	3,702.74	1,069.07	208.78	1,059.92	5.63	5.63	-0.28



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST02	Survey Calculation Method:	Minimum Curvature
Design:	ST02	Database:	EDM5000

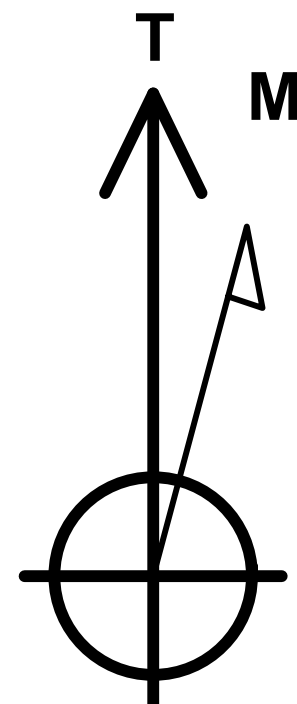
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,411.00	91.58	358.83	3,702.08	1,101.05	208.05	1,091.90	2.61	2.47	0.84
4,443.00	91.19	359.00	3,701.30	1,133.04	207.44	1,123.89	1.33	-1.22	0.53
4,506.00	91.76	359.71	3,699.68	1,196.01	206.73	1,186.84	1.44	0.90	1.13
4,570.00	91.49	356.19	3,697.86	1,259.93	204.45	1,250.80	5.51	-0.42	-5.50
4,634.00	91.89	356.45	3,695.98	1,323.77	200.34	1,314.76	0.75	0.63	0.41
4,697.00	88.68	356.98	3,695.66	1,386.66	196.73	1,377.74	5.16	-5.10	0.84
4,761.00	85.87	356.37	3,698.71	1,450.47	193.02	1,441.65	4.49	-4.39	-0.95
4,825.00	86.88	357.07	3,702.75	1,514.24	189.37	1,505.51	1.92	1.58	1.09
4,888.00	88.77	357.68	3,705.14	1,577.13	186.49	1,568.46	3.15	3.00	0.97
4,952.00	89.87	358.03	3,705.90	1,641.08	184.09	1,632.45	1.80	1.72	0.55
5,016.00	90.57	357.51	3,705.66	1,705.03	181.60	1,696.45	1.36	1.09	-0.81
5,079.00	92.07	358.83	3,704.21	1,767.97	179.59	1,759.43	3.17	2.38	2.10
5,143.00	91.58	358.30	3,702.17	1,831.92	177.99	1,823.39	1.13	-0.77	-0.83
5,207.00	92.07	356.63	3,700.13	1,895.82	175.16	1,887.35	2.72	0.77	-2.61
5,270.00	91.58	354.26	3,698.12	1,958.59	170.16	1,950.27	3.84	-0.78	-3.76
5,334.00	92.46	354.87	3,695.87	2,022.26	164.10	2,014.13	1.67	1.38	0.95
Last Survey 5334.00' MD/3695.87' TVD									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,334.00	3,695.87	2,022.26	164.10	Last Survey 5334.00' MD/3695.87' TVD

Checked By: _____ Approved By: _____ Date: _____



Company: MorningStar Partners
Field: Rio Arriba County, NM (NAD 27 - True North)
Location: Carracas 21A 1
Well Location: Carracas 21A 1
Wellbore: ST02
Plan: Plan 7
GL: GL 7064 + KB 16 @ 7080.00usft



Azimuths to True North
Magnetic North: 8.60°

Magnetic Field
Strength: 49641.2nT
Dip Angle: 63.41°
Date: 9/10/2022
Model: IGRF2020



To convert a Magnetic Direction to a True Direction, Add 8.60° East

PROJECT DETAILS: Rio Arriba County, NM (NAD 27 - True North)

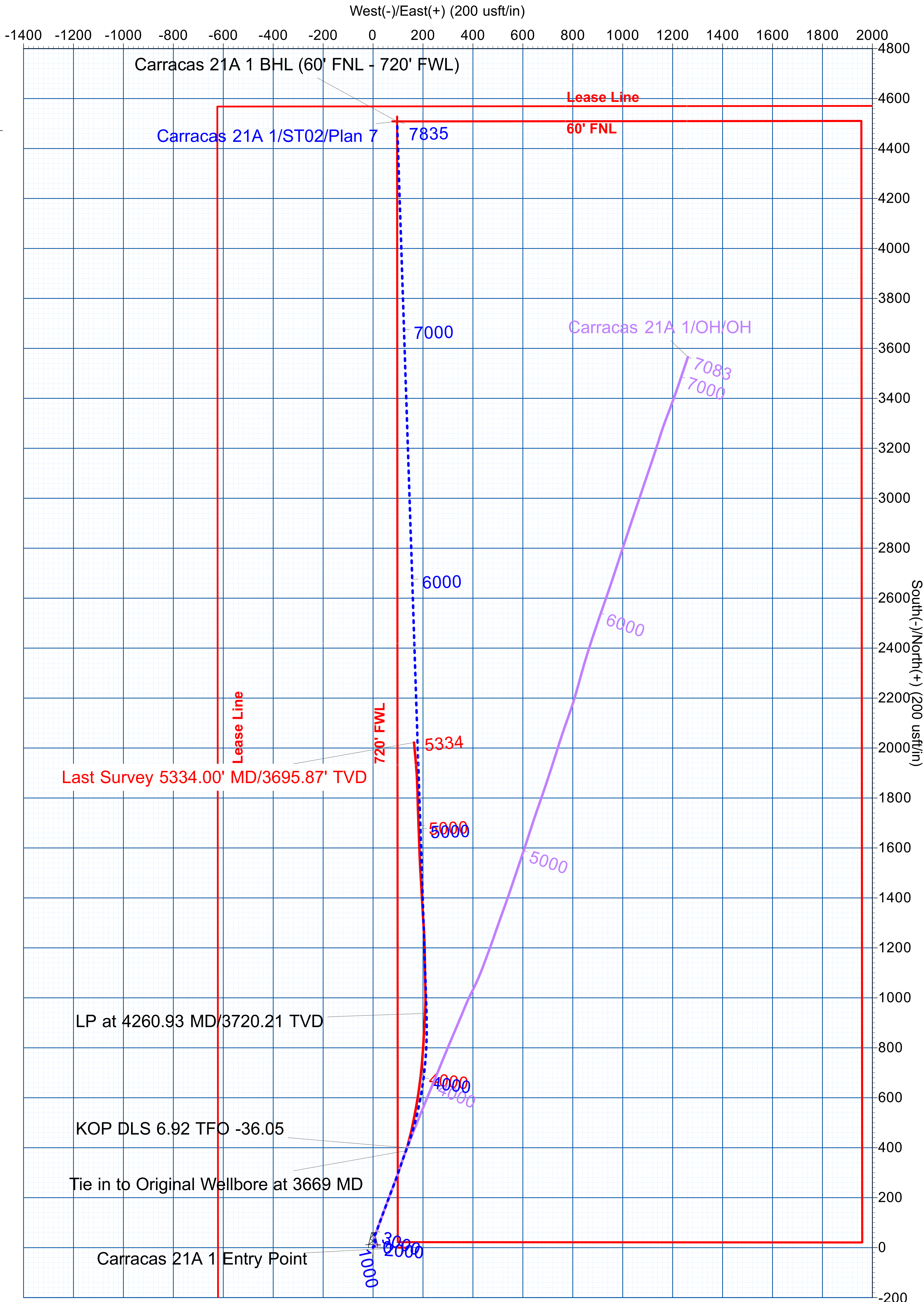
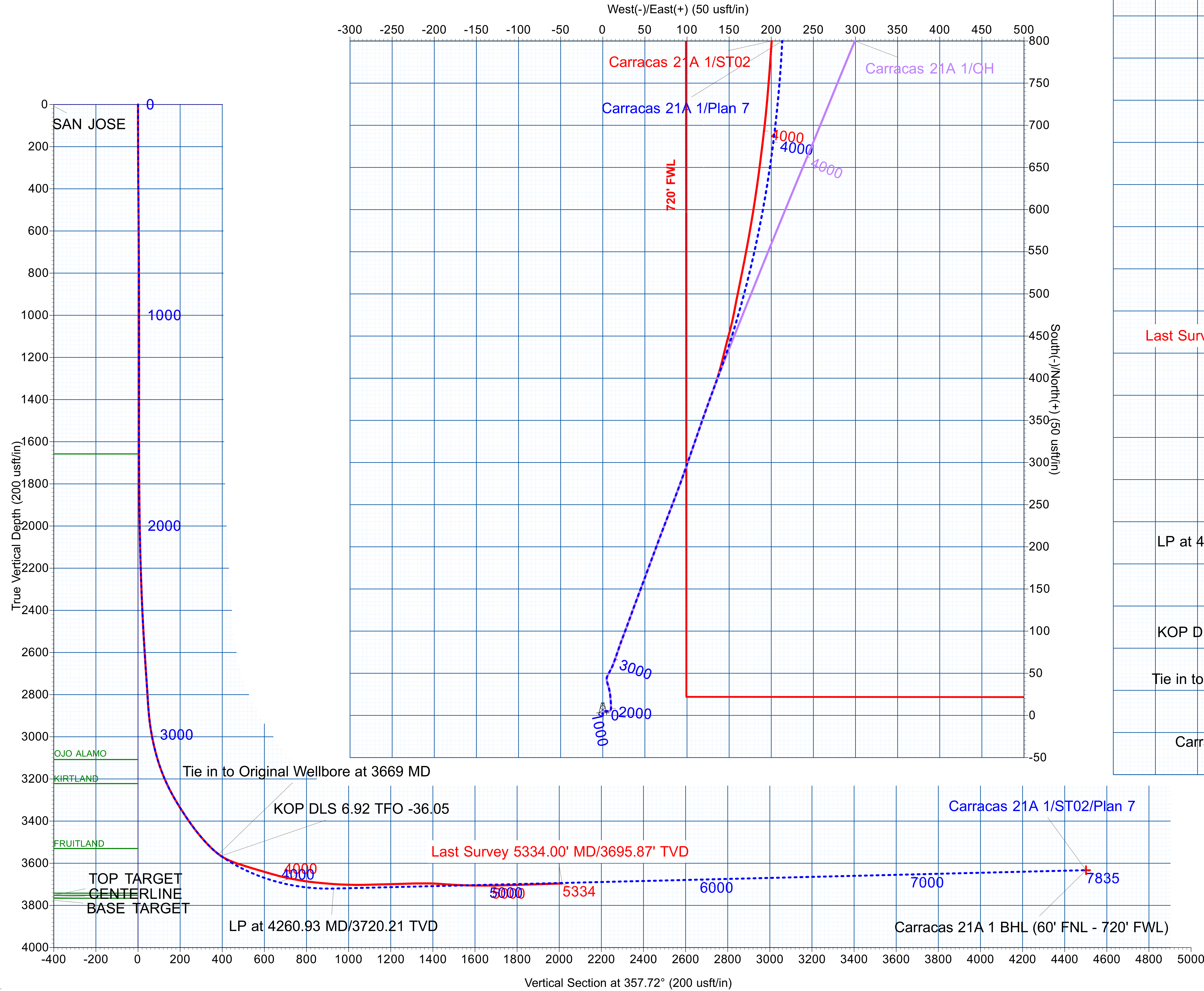
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level

WELL DETAILS: Carracas 21A 1

			GL 7064 + KB 16 @ 7080.00usft		7064.00
			Northing	Easting	Latitude
+N/-S	+E/-W		2169202.24	636822.37	36.960436
0.00	0.00				-107.365032

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
3669.00	54.43	20.31	3557.25	388.04	131.85	0.00	0.00	382.49	Tie in to Original Wellbore at 3669 MD
3684.00	57.43	20.31	3565.65	399.69	136.16	20.00	0.00	393.96	KOP DLS 6.92 TFO -36.05
4260.93	91.40	358.11	3720.21	937.85	214.22	6.92	-36.05	928.59	LP at 4260.93 MD/3720.21 TVD
7834.83	91.40	358.11	3633.00	4508.75	96.45	0.00	0.00	4501.34	TD at 7834.83



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1657.88	1657.94	NACIMIENTO
3105.74	3112.09	OJO ALAMO
3218.71	3234.14	KIRTLAND
3521.66	3612.62	FRUITLAND
3720.33	4220.18	TOP TARGET



MorningStar Partners

Rio Arriba County, NM (NAD 27 - True North)

Carracas 21A 1

Carracas 21A 1

ST03

Design: ST03

Standard Survey Report

02 November, 2022

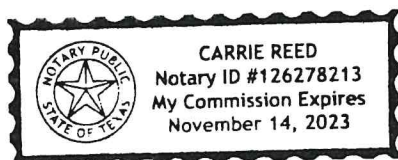
This survey is correct to the best of my knowledge and is supported by actual field data.

Cameron Stevens

Notarized this date 2nd of November, 2022.

Carrie Reed

Notary Signature
County of Midland
State of Texas





Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM5000

Project	Rio Arriba County, NM (NAD 27 - True North)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	Carracas 21A 1		
Site Position:		Northing:	2,169,202.24 usft
From:	Lat/Long	Easting:	636,822.37 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	36.960436
		Longitude:	-107.365032

Well	Carracas 21A 1		
Well Position	+N/-S	0.00 usft	Northing: 2,169,202.24 usft
	+E/-W	0.00 usft	Easting: 636,822.37 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
Grid Convergence:	0.28 °	Ground Level:	7,064.00 usft

Wellbore	ST03		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2020	9/28/2022	8.59
			Dip Angle (°)
			63.40
			Field Strength (nT)
			49,636.07986133

Design	ST03		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	4,210.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			357.72

Survey Program	Date	11/2/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
101.00	4,210.00	Original Hole Surveys (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM
4,318.00	6,127.00	Survey #1 (ST03)	MWD+IGRF	OWSG MWD + IGRF or WMM

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	
101.00	0.11	356.15	101.00	0.10	-0.01	0.10	0.11	0.11	0.00	
201.00	0.22	356.15	201.00	0.38	-0.03	0.38	0.11	0.11	0.00	
301.00	0.32	356.15	301.00	0.85	-0.06	0.86	0.10	0.10	0.00	
401.00	0.43	356.15	401.00	1.51	-0.10	1.51	0.11	0.11	0.00	
493.00	0.53	356.15	492.99	2.28	-0.15	2.28	0.11	0.11	0.00	
501.00	0.52	356.91	500.99	2.35	-0.16	2.35	0.15	-0.13	9.50	
601.00	0.44	8.48	600.99	3.18	-0.13	3.18	0.13	-0.08	11.57	
701.00	0.38	24.38	700.99	3.86	0.07	3.86	0.13	-0.06	15.90	



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM5000

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)	
801.00	0.36	43.80	800.98	4.39	0.42	4.37	0.13	-0.02	19.42	
901.00	0.39	63.03	900.98	4.77	0.94	4.73	0.13	0.03	19.23	
993.00	0.44	77.50	992.98	4.99	1.57	4.93	0.13	0.05	15.73	
1,001.00	0.44	78.02	1,000.98	5.01	1.63	4.94	0.05	0.00	6.50	
1,101.00	0.49	83.83	1,100.98	5.13	2.43	5.03	0.07	0.05	5.81	
1,201.00	0.54	88.60	1,200.97	5.19	3.32	5.05	0.07	0.05	4.77	
1,301.00	0.59	92.54	1,300.97	5.18	4.31	5.00	0.06	0.05	3.94	
1,401.00	0.65	95.82	1,400.96	5.10	5.39	4.88	0.07	0.06	3.28	
1,491.00	0.70	98.32	1,490.96	4.97	6.44	4.71	0.06	0.06	2.78	
1,501.00	0.69	96.84	1,500.95	4.95	6.56	4.68	0.21	-0.10	-14.80	
1,601.00	0.57	78.25	1,600.95	4.98	7.65	4.67	0.24	-0.12	-18.59	
1,701.00	0.53	54.07	1,700.94	5.35	8.51	5.01	0.23	-0.04	-24.18	
1,801.00	0.60	31.07	1,800.94	6.07	9.15	5.70	0.24	0.07	-23.00	
1,901.00	0.73	14.51	1,900.93	7.14	9.58	6.75	0.23	0.13	-16.56	
1,987.00	0.88	4.96	1,986.92	8.33	9.78	7.93	0.23	0.17	-11.10	
2,001.00	0.94	3.97	2,000.92	8.55	9.79	8.15	0.44	0.43	-7.07	
2,101.00	1.36	359.38	2,100.90	10.55	9.84	10.15	0.43	0.42	-4.59	
2,201.00	1.79	356.99	2,200.86	13.30	9.74	12.90	0.43	0.43	-2.39	
2,301.00	2.23	355.52	2,300.80	16.80	9.51	16.41	0.44	0.44	-1.47	
2,401.00	2.66	354.53	2,400.71	21.05	9.13	20.67	0.43	0.43	-0.99	
2,477.00	2.99	353.97	2,476.62	24.77	8.76	24.41	0.44	0.43	-0.74	
2,501.00	3.13	352.04	2,500.58	26.05	8.60	25.68	0.72	0.58	-8.04	
2,601.00	3.74	345.59	2,600.40	31.91	7.41	31.59	0.72	0.61	-6.45	
2,661.00	4.13	342.66	2,660.26	35.87	6.28	35.59	0.73	0.65	-4.88	
2,691.00	3.93	343.80	2,690.19	37.88	5.67	37.63	0.72	-0.67	3.80	
2,701.00	4.02	344.08	2,700.17	38.55	5.48	38.30	0.92	0.90	2.80	
2,722.00	4.22	344.64	2,721.11	40.00	5.07	39.77	0.97	0.95	2.67	
2,752.00	3.96	353.34	2,751.03	42.10	4.66	41.88	2.24	-0.87	29.00	
2,783.00	3.52	8.11	2,781.97	44.10	4.67	43.88	3.40	-1.42	47.65	
2,801.00	3.74	17.33	2,799.93	45.21	4.92	44.98	3.46	1.22	51.22	
2,814.00	3.96	23.24	2,812.90	46.03	5.23	45.78	3.49	1.69	45.46	
2,845.00	4.13	26.00	2,843.83	48.01	6.14	47.73	0.83	0.55	8.90	
2,875.00	5.19	28.60	2,873.73	50.18	7.26	49.85	3.60	3.53	8.67	
2,906.00	6.95	27.67	2,904.55	53.07	8.81	52.68	5.69	5.68	-3.00	
2,938.00	8.71	26.44	2,936.25	56.95	10.78	56.48	5.52	5.50	-3.84	
2,970.00	9.94	19.91	2,967.83	61.72	12.80	61.16	5.06	3.84	-20.41	
3,001.00	11.34	19.82	2,998.30	67.10	14.75	66.46	4.52	4.52	-0.29	
3,033.00	13.28	18.89	3,029.56	73.54	17.00	72.81	6.09	6.06	-2.91	
3,064.00	15.04	18.84	3,059.62	80.72	19.46	79.88	5.68	5.68	-0.16	
3,096.00	16.80	20.54	3,090.39	88.98	22.42	88.01	5.69	5.50	5.31	
3,101.00	17.16	20.57	3,095.17	90.34	22.93	89.36	7.20	7.20	0.60	
3,128.00	19.08	20.72	3,120.83	98.20	25.89	97.09	7.11	7.11	0.56	
3,151.00	20.65	20.20	3,142.46	105.52	28.62	104.30	6.87	6.83	-2.26	



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM5000

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)
3,159.00	21.19	20.04	3,149.93	108.21	29.61	106.94	6.79	6.75	-2.00
3,191.00	23.21	20.14	3,179.56	119.56	33.76	118.12	6.31	6.31	0.31
3,201.00	23.95	20.10	3,188.72	123.32	35.14	121.82	7.40	7.40	-0.40
3,223.00	25.59	20.01	3,208.70	131.98	38.30	130.35	7.46	7.45	-0.41
3,255.00	28.14	20.89	3,237.24	145.52	43.35	143.68	8.06	7.97	2.75
3,287.00	29.99	20.06	3,265.21	160.08	48.79	158.02	5.92	5.78	-2.59
3,301.00	30.79	20.19	3,277.29	166.73	51.22	164.56	5.73	5.71	0.93
3,319.00	31.83	20.34	3,292.67	175.51	54.46	173.20	5.79	5.78	0.83
3,350.00	33.41	20.55	3,318.78	191.17	60.30	188.62	5.11	5.10	0.68
3,382.00	35.00	20.32	3,345.24	208.02	66.58	205.21	4.99	4.97	-0.72
3,401.00	35.36	20.76	3,360.77	218.27	70.42	215.30	2.32	1.89	2.32
3,414.00	35.61	21.06	3,371.36	225.32	73.12	222.24	2.34	1.92	2.31
3,446.00	36.76	21.08	3,397.18	242.95	79.91	239.58	3.59	3.59	0.06
3,451.00	37.06	21.02	3,401.18	245.76	80.99	242.34	6.04	6.00	-1.20
3,478.00	38.69	20.70	3,422.49	261.24	86.89	257.58	6.08	6.04	-1.19
3,509.00	40.10	19.64	3,446.45	279.71	93.67	275.76	5.04	4.55	-3.42
3,541.00	41.94	19.19	3,470.59	299.52	100.65	295.28	5.82	5.75	-1.41
3,551.00	42.60	19.17	3,477.99	305.87	102.86	301.54	6.60	6.60	-0.20
3,573.00	44.05	19.14	3,494.00	320.13	107.81	315.59	6.59	6.59	-0.14
3,605.00	46.69	19.04	3,516.47	341.65	115.26	336.80	8.25	8.25	-0.31
3,637.00	50.21	19.65	3,537.70	364.24	123.19	359.05	11.09	11.00	1.91
3,651.00	52.06	19.95	3,546.48	374.50	126.89	369.15	13.32	13.21	2.14
3,669.00	54.43	20.31	3,557.25	388.04	131.85	382.48	13.26	13.17	2.00
3,701.00	57.77	21.29	3,575.10	412.86	141.28	406.91	10.74	10.44	3.06
3,732.00	58.92	21.77	3,591.36	437.41	150.97	431.05	3.94	3.71	1.55
3,764.00	59.62	21.85	3,607.72	462.94	161.19	456.17	2.20	2.19	0.25
3,796.00	61.11	21.89	3,623.54	488.76	171.55	481.54	4.66	4.66	0.13
3,801.00	61.58	21.90	3,625.94	492.83	173.18	485.55	9.40	9.40	0.20
3,828.00	64.10	21.98	3,638.26	515.11	182.16	507.45	9.34	9.33	0.30
3,851.00	66.38	21.99	3,647.89	534.47	189.98	526.49	9.91	9.91	0.04
3,860.00	67.27	21.99	3,651.43	542.15	193.08	534.04	9.89	9.89	0.00
3,892.00	69.12	22.28	3,663.32	569.67	204.27	561.09	5.84	5.78	0.91
3,901.00	69.51	22.32	3,666.50	577.46	207.47	568.74	4.35	4.33	0.44
3,924.00	70.52	22.43	3,674.36	597.44	215.69	588.39	4.41	4.39	0.48
3,956.00	71.67	22.43	3,684.73	625.43	227.24	615.89	3.59	3.59	0.00
3,989.00	73.25	22.65	3,694.67	654.49	239.31	644.45	4.83	4.79	0.67
4,001.00	73.88	22.63	3,698.07	665.11	243.74	654.89	5.25	5.25	-0.17
4,021.00	74.92	22.59	3,703.45	682.89	251.14	672.36	5.20	5.20	-0.20
4,053.00	75.89	22.08	3,711.51	711.54	262.91	700.51	3.40	3.03	-1.59
4,084.00	77.29	22.14	3,718.70	739.47	274.26	727.98	4.52	4.52	0.19
4,101.00	78.97	22.32	3,722.20	754.87	280.55	743.11	9.94	9.88	1.06
4,116.00	80.46	22.47	3,724.87	768.52	286.18	756.52	9.98	9.93	1.00
4,126.00	81.67	22.53	3,726.43	777.64	289.96	765.49	12.11	12.10	0.60



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM5000

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)
4,148.00	84.33	22.66	3,729.11	797.80	298.35	785.30	12.11	12.09	0.59
4,151.00	84.73	22.69	3,729.39	800.56	299.50	788.01	13.37	13.33	1.00
4,178.00	88.37	22.95	3,731.02	825.39	309.95	812.41	13.52	13.48	0.96
4,201.00	90.52	23.08	3,731.24	846.56	318.94	833.20	9.36	9.35	0.57
4,210.00	91.36	23.13	3,731.09	854.84	322.47	841.33	9.35	9.33	0.56
4,318.00	95.67	17.91	3,724.47	955.73	360.25	940.64	6.26	3.99	-4.83
4,382.00	93.30	12.98	3,719.46	1,017.21	377.23	1,001.40	8.53	-3.70	-7.70
4,445.00	92.07	10.08	3,716.51	1,078.86	389.80	1,062.50	5.00	-1.95	-4.60
4,509.00	92.86	7.27	3,713.76	1,142.07	399.45	1,125.27	4.56	1.23	-4.39
4,573.00	93.56	3.05	3,710.17	1,205.69	405.19	1,188.62	6.67	1.09	-6.59
4,636.00	94.26	359.80	3,705.87	1,268.52	406.76	1,251.33	5.27	1.11	-5.16
4,700.00	92.37	356.90	3,702.17	1,332.37	404.92	1,315.21	5.40	-2.95	-4.53
4,764.00	91.36	355.41	3,700.09	1,396.19	400.63	1,379.15	2.81	-1.58	-2.33
4,824.00	89.17	355.41	3,699.81	1,456.00	395.83	1,439.10	3.65	-3.65	0.00
4,885.00	88.20	355.67	3,701.21	1,516.79	391.08	1,500.04	1.65	-1.59	0.43
4,946.00	87.76	354.18	3,703.36	1,577.52	385.69	1,560.92	2.55	-0.72	-2.44
5,008.00	90.79	352.07	3,704.15	1,639.05	378.27	1,622.71	5.95	4.89	-3.40
5,069.00	91.76	351.36	3,702.79	1,699.40	369.48	1,683.36	1.97	1.59	-1.16
5,131.00	92.07	351.80	3,700.72	1,760.70	360.41	1,744.97	0.87	0.50	0.71
5,192.00	92.59	354.18	3,698.24	1,821.19	352.97	1,805.70	3.99	0.85	3.90
5,252.00	91.27	352.15	3,696.22	1,880.72	345.83	1,865.48	4.03	-2.20	-3.38
5,314.00	90.57	352.51	3,695.22	1,942.16	337.56	1,927.19	1.27	-1.13	0.58
5,375.00	90.40	351.28	3,694.71	2,002.55	328.96	1,987.88	2.04	-0.28	-2.02
5,437.00	90.66	351.80	3,694.13	2,063.87	319.84	2,049.51	0.94	0.42	0.84
5,498.00	91.58	351.19	3,692.94	2,124.19	310.82	2,110.14	1.81	1.51	-1.00
5,558.00	92.68	354.00	3,690.71	2,183.64	303.09	2,169.85	5.03	1.83	4.68
5,619.00	91.58	353.65	3,688.44	2,244.24	296.54	2,230.67	1.89	-1.80	-0.57
5,680.00	91.49	354.26	3,686.81	2,304.88	290.11	2,291.51	1.01	-0.15	1.00
5,740.00	92.86	355.23	3,684.53	2,364.58	284.62	2,351.39	2.80	2.28	1.62
5,802.00	91.89	354.26	3,681.96	2,426.27	278.95	2,413.25	2.21	-1.56	-1.56
5,862.00	91.58	353.82	3,680.14	2,485.92	272.72	2,473.10	0.90	-0.52	-0.73
5,923.00	92.29	352.33	3,678.08	2,546.43	265.37	2,533.86	2.70	1.16	-2.44
5,984.00	95.10	352.07	3,674.15	2,606.74	257.11	2,594.45	4.63	4.61	-0.43
6,045.00	94.00	351.36	3,669.32	2,666.91	248.35	2,654.92	2.14	-1.80	-1.16
6,127.00	94.00	351.36	3,663.60	2,747.78	236.06	2,736.22	0.00	0.00	0.00
PTB 6127.00' MD/3663.59' TVD									

Design Annotations

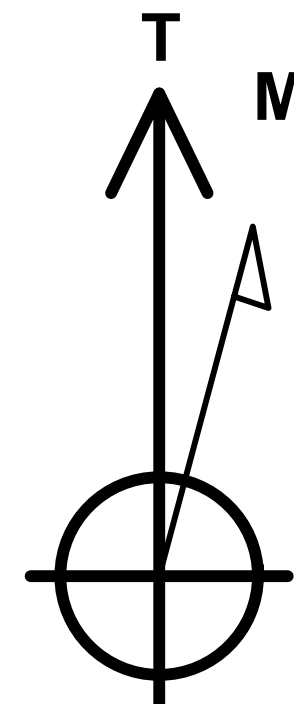
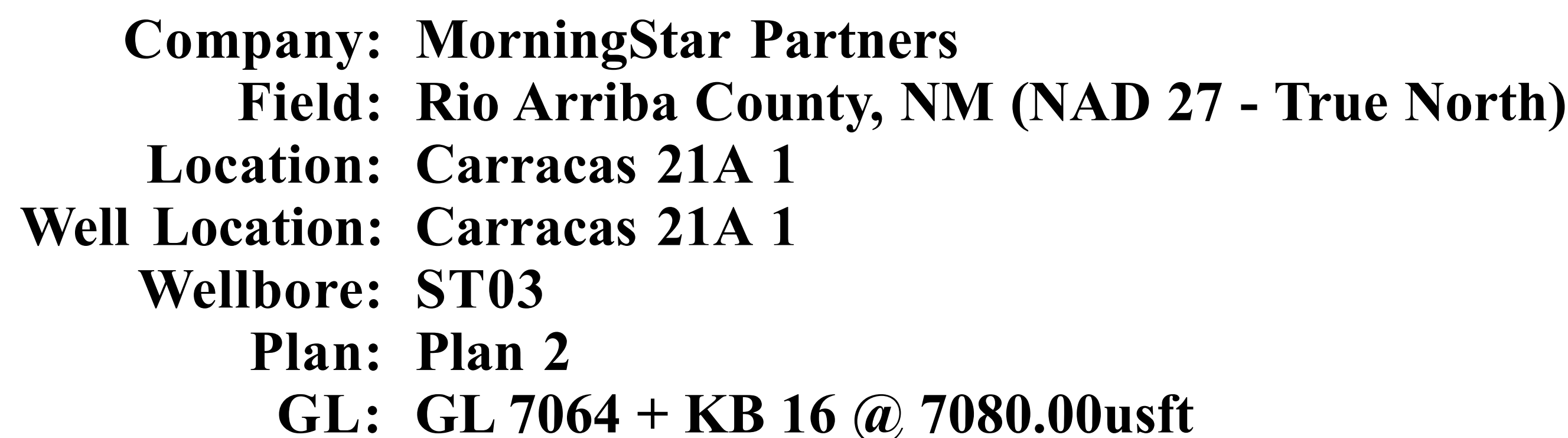
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,127.00	3,663.60	2,747.78	236.06	PTB 6127.00' MD/3663.59' TVD



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST03	Survey Calculation Method:	Minimum Curvature
Design:	ST03	Database:	EDM5000

Checked By: _____ Approved By: _____ Date: _____



Magnetic Field
Strength: 49636.1nT
Dip Angle: 63.40°
Date: 9/28/2022
Model: IGRF2020



LEGACY
DIRECTIONAL

To convert a Magnetic Direction to a True Direction, Add 8.59° East

Rig: Drake #3

PROJECT DETAILS: Rio Arriba County, NM (NAD 27 - True North)

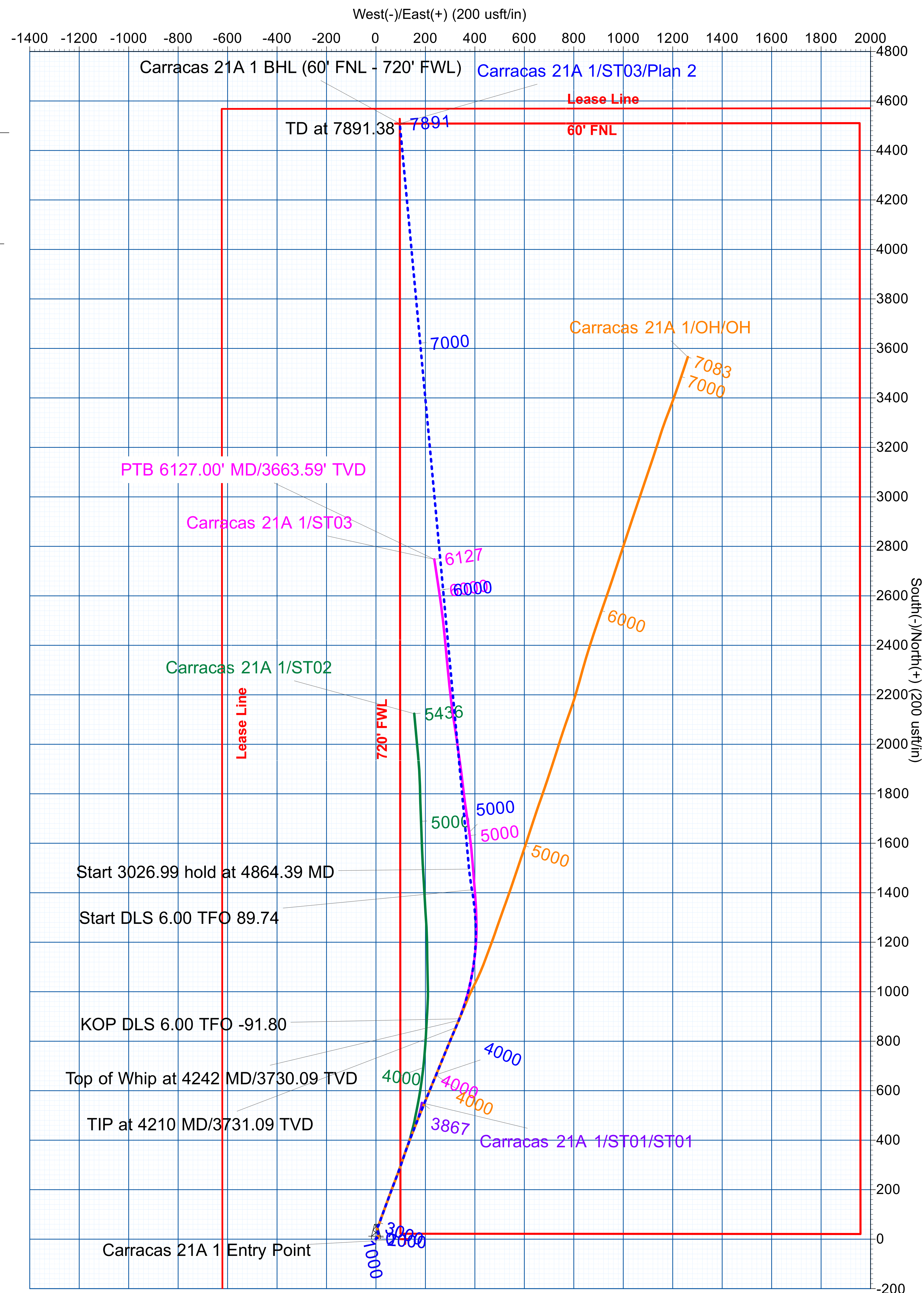
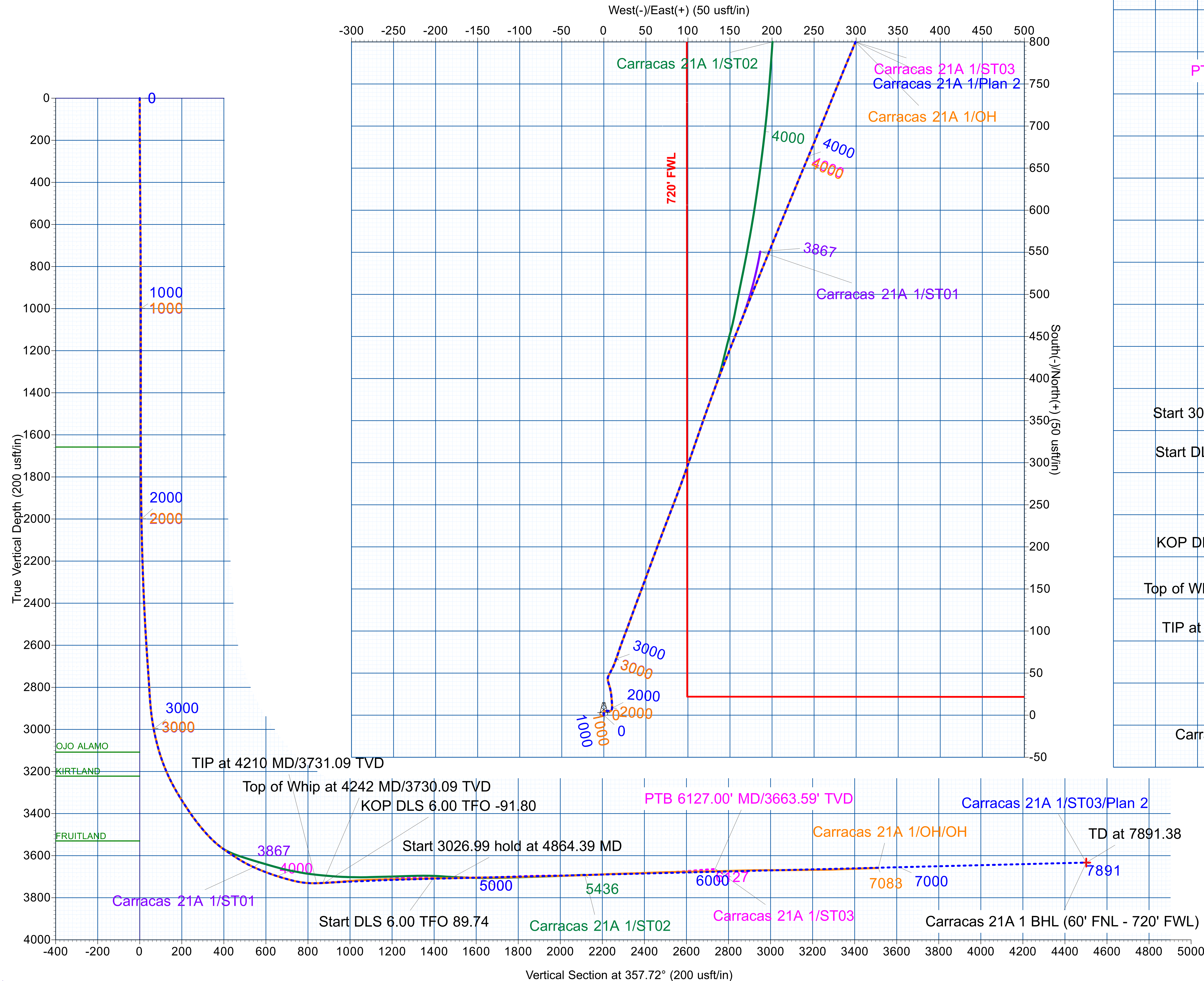
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level

WELL DETAILS: Carracas 21A 1

		GL 7064 + KB 16 @ 7080.00usft		7064.00
+N/-S	+E/-W	Northing	Easting	Latitude
0.00	0.00	2169202.24	636822.37	36.960436
				Longitude
				-107.365032

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
4210.00	91.36	23.13	3731.09	854.84	322.47	0.00	0.00	841.33	TIP at 4210 MD/3731.09 TVD
4242.00	92.24	22.91	3730.09	884.28	334.98	2.83	-14.03	870.25	Top of Whip at 4242 MD/3730.09 TVD
4249.00	92.77	21.46	3729.78	890.75	337.62	22.00	-70.00	876.62	KOP DLS 6.00 TFO -91.80
4779.87	91.40	349.62	3709.98	1412.00	388.10	6.00	-91.80	1395.44	Start DLS 6.00 TFO 89.74
4864.39	91.42	354.69	3707.90	1495.67	376.57	6.00	89.74	1479.51	Start 3026.99 hold at 4864.39 MD
7891.38	91.42	354.69	3633.00	4508.75	96.45	0.00	0.00	4501.34	TD at 7891.38



FORMATION TOP DETAILS		
TVDPATH	MDPATH	FORMATION
1658.00	1658.05	Nacimiento
3108.00	3114.46	Ojo Alamo
3222.00	3237.82	Kirtland
3530.00	3625.14	Fruitland

From: John Marschall <JMarschall@mspartners.com>
Sent: Monday, October 31, 2022 8:40 AM
To: Connie Blaylock <cblaylock@mspartners.com>
Subject: RE: OCD and BLM ok with NOT getting a survey for the 58' extra.

Yes

From: Connie Blaylock <cblaylock@mspartners.com>
Sent: Monday, October 31, 2022 8:38 AM
To: John Marschall <JMarschall@mspartners.com>
Subject: RE: OCD and BLM ok with NOT getting a survey for the 58' extra.

Hi John – I guess this is for the Carr 21A 1?
Connie

From: John Marschall <JMarschall@mspartners.com>
Sent: Friday, October 28, 2022 11:03 AM
To: Bill Frey <bfrey@mspartners.com>
Cc: Connie Blaylock <cblaylock@mspartners.com>
Subject: OCD and BLM ok with NOT getting a survey for the 58' extra.

I talked with Dave Mankiewicz (contact on approved AFMSS) with the BLM and he just laughed and said no problem.

I talked Katherine (Kate) Pickford with the OCD. She is the contact on the COIs. She said no problem, just note on the submittals.

Thank you,

John Marschall
Drilling/Operations Engineer
Cross Timbers Energy LLC
Morningstar Operating LLC
940-389-9992 Cell

Well Name: CARRACAS 21A	Well Location: T32N / R5W / SEC 21 / SWSE / 36.96042 / -107.36562	County or Parish/State: RIO ARRIBA / NM
Well Number: 1	Type of Well: OTHER	Allottee or Tribe Name:
Lease Number: NMNM30351	Unit or CA Name:	Unit or CA Number:
US Well Number: 300393016700S1	Well Status: Producing Gas Well	Operator: MORNINGSTAR OPERATING LLC

Subsequent Report

Sundry ID: 2701707

Type of Submission: Subsequent Report

Date Sundry Submitted: 11/10/2022

Date Operation Actually Began: 10/19/2022

Type of Action: Drilling Operations

Time Sundry Submitted: 09:16

Actual Procedure: MorningStar Operating LLC has drilled a sidetrack on the Carracas 21A 1 to produce from the existing Fruitand Coal zone. Drilling issues were encountered and it was the 4th attempt that was successful, resulting in 3 unsuccessful sidetracks and one successful sidetrack in addition to the original drill. Attached are the C-102 plats for each sidetrack, Subsequent Procedure, and Directional Surveys. A Completion Report was filed separately including the WBDs.

SR Attachments

PActual Procedure

- CARRACAS_21A_1_ALL_ST_ASDRILLED_20221110091602.pdf
- Directional_Surveys_ST01__ST02__ST03_Unsuccessful_Carr_21A1_20221110091529.pdf
- MorningStar_Partners_Carracas_Unit_21A_1_ST04_AD_Svy_20221110091520.pdf
- CARRACAS_21A_1_4ST_ASDRILLED_20221110091456.pdf
- Subsequent_Procedure_Sidetrack_Carracas_21A_1_20221107141126.pdf
- C_102_Plats_ST01__ST02__ST03_Unsuccessful_Carracas_21A_1_20221107140938.pdf

Well Name: CARRACAS 21A	Well Location: T32N / R5W / SEC 21 / SWSE / 36.96042 / -107.36562	County or Parish/State: RIO ARRIBA / NM
Well Number: 1	Type of Well: OTHER	Allottee or Tribe Name:
Lease Number: NMNM30351	Unit or CA Name:	Unit or CA Number:
US Well Number: 300393016700S1	Well Status: Producing Gas Well	Operator: MORNINGSTAR OPERATING LLC

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: CONNIE BLAYLOCK	Signed on: NOV 10, 2022 09:16 AM
Name: MORNINGSTAR OPERATING LLC	
Title: Regulatory Technician	
Street Address: 400 W 7th St.	
City: Forth Worth	State: TX
Phone: (817) 334-7882	
Email address: CBLAYLOCK@MSPARTNERS.COM	

Field

Representative Name: Amy Byars		
Street Address:		
City:	State:	Zip:
Phone:		
Email address: abyars@mspartners.com		

BLM Point of Contact

BLM POC Name: KENNETH G RENNICK	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5055647742	BLM POC Email Address: krennick@blm.gov
Disposition: Accepted	Disposition Date: 11/10/2022
Signature: Kenneth Rennick	

SUBSEQUENT PROCEDURE -SIDETRACK

CARRACAS 21A 1

8/01/2022: Ran GR CCL. Set RBP 3860' and another at 3823'. Pressure test csg 2000psig 15min, good.

9/03/2022: MIRU Drilling Rig.

Set Whipstock. Cut window 3,796'-3,804'. Encountered drilling issues through curve build. POOH.

Set another RBP and Whipstock and cut 2nd window 3,669'-3,677'. Drill to 5436' md but encountered more drilling issues.

Set RBP at 3,000'

9/16/2022 RDMO Drilling Rig

9/23/2022 MIRU WOR

Pull RBP. Pull first whipstock and RBP.

RIH 6" string mill to 3782'-3790' and cleaned likely csg burr.

RIH 6 1/8" taper mill and cleaned on top of lower whipstock through window.

Pull second whipstock and RBPs.

Set RBP 4,253'.

9/30/2022 RDMO WOR

10/19/2022: MIRU Drilling Rig

Set whipstock. Cut window 4,234'-4,242'. Drill to 6,127' and determined likely drilled into fault and out of desired coal seam target.

POOH to 5436' and begin time drill sidetrack and continue drilling. Drill to TD 6,303'.

Drop 4.5" pre-perf liner. Liner top at 4,250'. Liner btm at 6,252'. Perfs 4288'-6206'. Set RBP at 3025'.

10/29/2022: RDMO Drilling Rig

~11/07/2022 (Expected Date): MIRU WOR.

Pull RBP, Whipstock and RBP. RIH Prod tbg. Swab well cleaning up.

If approved for gas sales before MIRU WOR, will swab and sell gas as efficiently as possible to clean up well.

If not approved for gas sales during completion will swab while building csg pressure until tbg shows signs of gas shows.

Install rods and pump.

~11/11/2022 (Expected Date): RDMO WOR.

DISTRICT I1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720**DISTRICT II**811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720**DISTRICT III**1000 Rio Brazos Rd., Aztec, N.M. 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) 476-3462State of New Mexico
Energy, Minerals & Natural Resources DepartmentForm C-102
Revised August 1, 2011

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505Submit one copy to appropriate
District Office☐ AMENDED REPORT☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30167	² Pool Code 71629	³ Pool Name BASIN FRIUTLAND COAL
⁴ Property Code 329019	⁵ Property Name CARRACAS 21A	⁶ Well Number 1-4ST
⁷ GRID No. 330132	⁸ Operator Name MORNINGSTAR OPERATING LLC	⁹ Elevation 7064'

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
O	21	32N	5W		698'	SOUTH	2020'	EAST	RIO ARRIBA

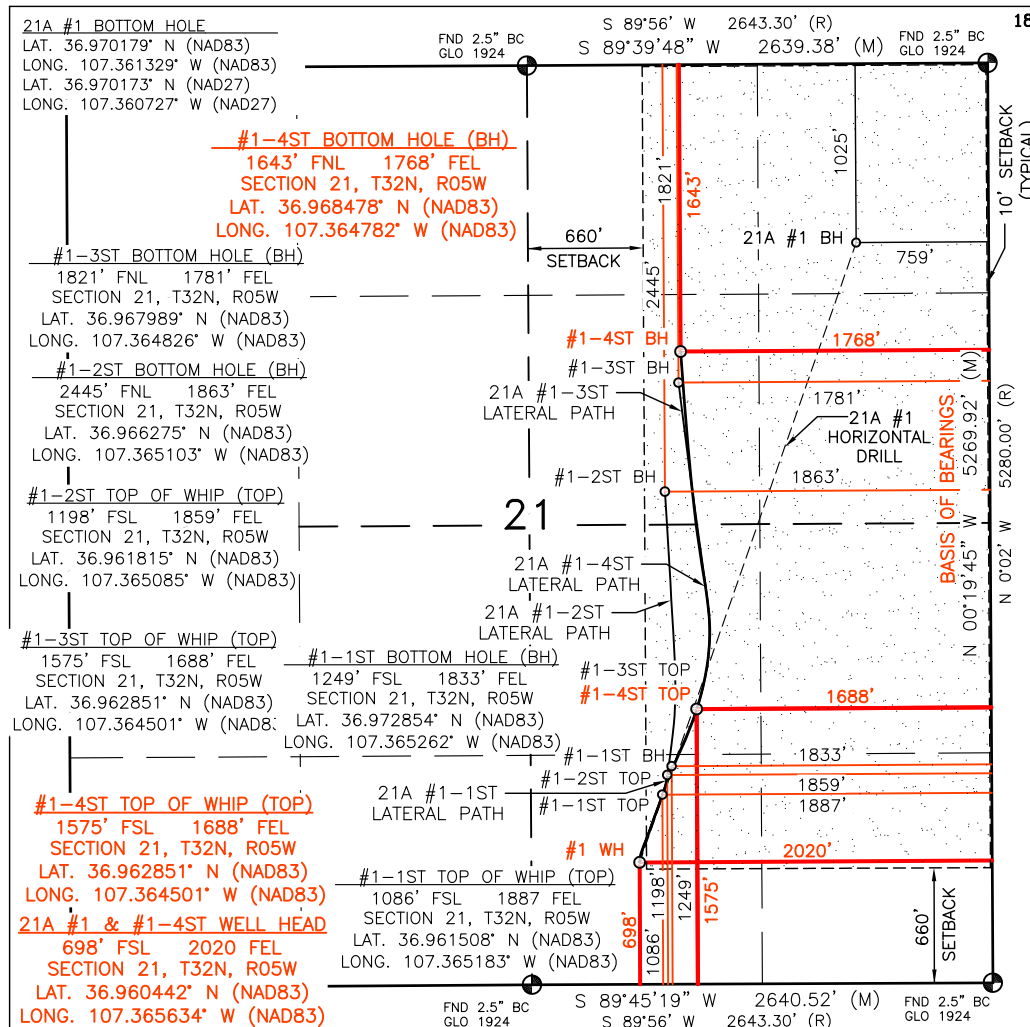
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	21	32N	5W		1643'	NORTH	1768'	EAST	RIO ARRIBA

¹² Dedicated Acres E/2 SEC. 21 320.00 ACRES	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

16



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.

Connie Blaylock 11/07/2022
Signature Date

Connie Blaylock
Printed Name

cblaylock@mspartners.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

NOVEMBER 3, 2022

Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number 11393

DISTRICT I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 748-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
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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
☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30167	² Pool Code 71629	³ Pool Name BASIN FRIUTLAND COAL
⁴ Property Code 329019	⁵ Property Name CARRACAS 21A	⁶ Well Number 1-4ST
⁷ OGRID No. 330132	⁸ Operator Name MORNINGSTAR OPERATING LLC	⁹ Elevation 7064'

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
O	21	32N	5W		698'	SOUTH	2020'	EAST	RIO ARRIBA

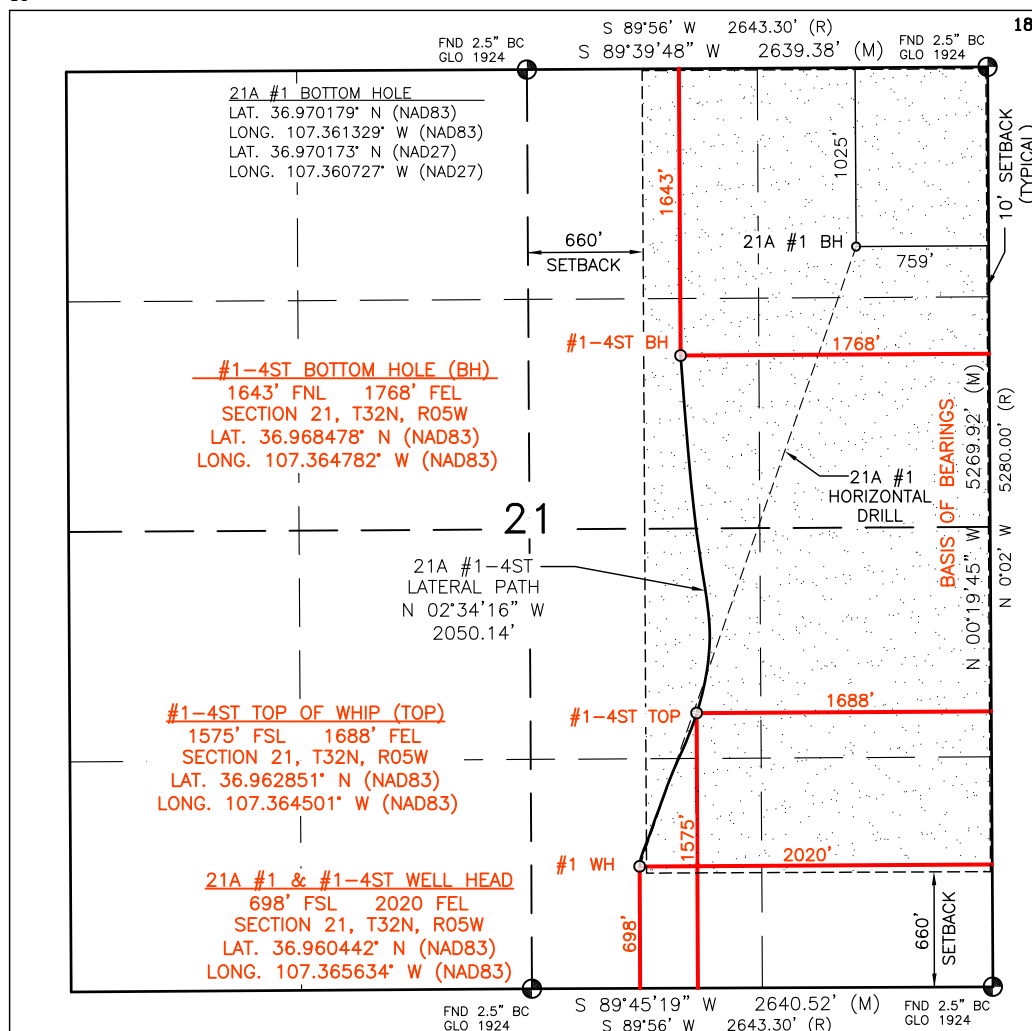
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	21	32N	5W		1643'	NORTH	1768'	EAST	RIO ARRIBA

¹² Dedicated Acres E/2 SEC. 21 320.00 ACRES	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

16

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.

Connie Blaylock 11/07/2022
Signature Date

Connie Blaylock
Printed Name

cblaylock@mspartners.com
E-mail Address

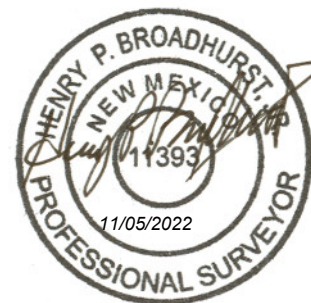
SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

NOVEMBER 3, 2022

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

11393



MorningStar Partners

Rio Arriba County, NM (NAD 27 - True North)

Carracas 21A 1

Carracas 21A 1

ST04

Design: ST04

Standard Survey Report

02 November, 2022

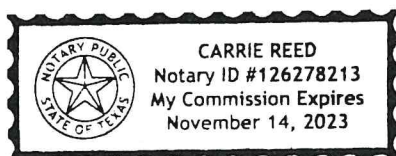
This survey is correct to the best of my knowledge and is supported by actual field data.

Cameron Stevens

Notarized this date 2nd of November, 2022.

Carrie Reed

Notary Signature
County of Midland
State of Texas





Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST04	Survey Calculation Method:	Minimum Curvature
Design:	ST04	Database:	EDM5000

Project	Rio Arriba County, NM (NAD 27 - True North)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site	Carracas 21A 1		
Site Position:		Northing:	2,169,202.24 usft
From:	Lat/Long	Easting:	636,822.37 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	36.960436
		Longitude:	-107.365032

Well	Carracas 21A 1		
Well Position	+N/-S	0.00 usft	Northing: 2,169,202.24 usft
	+E/-W	0.00 usft	Easting: 636,822.37 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
Grid Convergence:	0.28 °	Ground Level:	7,064.00 usft

Wellbore	ST04		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2020	10/24/2022	8.59
			Dip Angle (°)
			63.40
			Field Strength (nT)
			49,628.74557487

Design	ST04		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	4,210.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			357.72

Survey Program	Date	11/2/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
101.00	4,210.00	Original Hole Surveys (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM
4,318.00	6,303.00	Survey #1 (ST04)	MWD+IGRF	OWSG MWD + IGRF or WMM

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	
101.00	0.11	356.15	101.00	0.10	-0.01	0.10	0.11	0.11	0.00	
201.00	0.22	356.15	201.00	0.38	-0.03	0.38	0.11	0.11	0.00	
301.00	0.32	356.15	301.00	0.85	-0.06	0.86	0.10	0.10	0.00	
401.00	0.43	356.15	401.00	1.51	-0.10	1.51	0.11	0.11	0.00	
493.00	0.53	356.15	492.99	2.28	-0.15	2.28	0.11	0.11	0.00	
501.00	0.52	356.91	500.99	2.35	-0.16	2.35	0.15	-0.13	9.50	
601.00	0.44	8.48	600.99	3.18	-0.13	3.18	0.13	-0.08	11.57	
701.00	0.38	24.38	700.99	3.86	0.07	3.86	0.13	-0.06	15.90	



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST04	Survey Calculation Method:	Minimum Curvature
Design:	ST04	Database:	EDM5000

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)	
801.00	0.36	43.80	800.98	4.39	0.42	4.37	0.13	-0.02	19.42	
901.00	0.39	63.03	900.98	4.77	0.94	4.73	0.13	0.03	19.23	
993.00	0.44	77.50	992.98	4.99	1.57	4.93	0.13	0.05	15.73	
1,001.00	0.44	78.02	1,000.98	5.01	1.63	4.94	0.05	0.00	6.50	
1,101.00	0.49	83.83	1,100.98	5.13	2.43	5.03	0.07	0.05	5.81	
1,201.00	0.54	88.60	1,200.97	5.19	3.32	5.05	0.07	0.05	4.77	
1,301.00	0.59	92.54	1,300.97	5.18	4.31	5.00	0.06	0.05	3.94	
1,401.00	0.65	95.82	1,400.96	5.10	5.39	4.88	0.07	0.06	3.28	
1,491.00	0.70	98.32	1,490.96	4.97	6.44	4.71	0.06	0.06	2.78	
1,501.00	0.69	96.84	1,500.95	4.95	6.56	4.68	0.21	-0.10	-14.80	
1,601.00	0.57	78.25	1,600.95	4.98	7.65	4.67	0.24	-0.12	-18.59	
1,701.00	0.53	54.07	1,700.94	5.35	8.51	5.01	0.23	-0.04	-24.18	
1,801.00	0.60	31.07	1,800.94	6.07	9.15	5.70	0.24	0.07	-23.00	
1,901.00	0.73	14.51	1,900.93	7.14	9.58	6.75	0.23	0.13	-16.56	
1,987.00	0.88	4.96	1,986.92	8.33	9.78	7.93	0.23	0.17	-11.10	
2,001.00	0.94	3.97	2,000.92	8.55	9.79	8.15	0.44	0.43	-7.07	
2,101.00	1.36	359.38	2,100.90	10.55	9.84	10.15	0.43	0.42	-4.59	
2,201.00	1.79	356.99	2,200.86	13.30	9.74	12.90	0.43	0.43	-2.39	
2,301.00	2.23	355.52	2,300.80	16.80	9.51	16.41	0.44	0.44	-1.47	
2,401.00	2.66	354.53	2,400.71	21.05	9.13	20.67	0.43	0.43	-0.99	
2,477.00	2.99	353.97	2,476.62	24.77	8.76	24.41	0.44	0.43	-0.74	
2,501.00	3.13	352.04	2,500.58	26.05	8.60	25.68	0.72	0.58	-8.04	
2,601.00	3.74	345.59	2,600.40	31.91	7.41	31.59	0.72	0.61	-6.45	
2,661.00	4.13	342.66	2,660.26	35.87	6.28	35.59	0.73	0.65	-4.88	
2,691.00	3.93	343.80	2,690.19	37.88	5.67	37.63	0.72	-0.67	3.80	
2,701.00	4.02	344.08	2,700.17	38.55	5.48	38.30	0.92	0.90	2.80	
2,722.00	4.22	344.64	2,721.11	40.00	5.07	39.77	0.97	0.95	2.67	
2,752.00	3.96	353.34	2,751.03	42.10	4.66	41.88	2.24	-0.87	29.00	
2,783.00	3.52	8.11	2,781.97	44.10	4.67	43.88	3.40	-1.42	47.65	
2,801.00	3.74	17.33	2,799.93	45.21	4.92	44.98	3.46	1.22	51.22	
2,814.00	3.96	23.24	2,812.90	46.03	5.23	45.78	3.49	1.69	45.46	
2,845.00	4.13	26.00	2,843.83	48.01	6.14	47.73	0.83	0.55	8.90	
2,875.00	5.19	28.60	2,873.73	50.18	7.26	49.85	3.60	3.53	8.67	
2,906.00	6.95	27.67	2,904.55	53.07	8.81	52.68	5.69	5.68	-3.00	
2,938.00	8.71	26.44	2,936.25	56.95	10.78	56.48	5.52	5.50	-3.84	
2,970.00	9.94	19.91	2,967.83	61.72	12.80	61.16	5.06	3.84	-20.41	
3,001.00	11.34	19.82	2,998.30	67.10	14.75	66.46	4.52	4.52	-0.29	
3,033.00	13.28	18.89	3,029.56	73.54	17.00	72.81	6.09	6.06	-2.91	
3,064.00	15.04	18.84	3,059.62	80.72	19.46	79.88	5.68	5.68	-0.16	
3,096.00	16.80	20.54	3,090.39	88.98	22.42	88.01	5.69	5.50	5.31	
3,101.00	17.16	20.57	3,095.17	90.34	22.93	89.36	7.20	7.20	0.60	
3,128.00	19.08	20.72	3,120.83	98.20	25.89	97.09	7.11	7.11	0.56	
3,151.00	20.65	20.20	3,142.46	105.52	28.62	104.30	6.87	6.83	-2.26	



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST04	Survey Calculation Method:	Minimum Curvature
Design:	ST04	Database:	EDM5000

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)
3,159.00	21.19	20.04	3,149.93	108.21	29.61	106.94	6.79	6.75	-2.00
3,191.00	23.21	20.14	3,179.56	119.56	33.76	118.12	6.31	6.31	0.31
3,201.00	23.95	20.10	3,188.72	123.32	35.14	121.82	7.40	7.40	-0.40
3,223.00	25.59	20.01	3,208.70	131.98	38.30	130.35	7.46	7.45	-0.41
3,255.00	28.14	20.89	3,237.24	145.52	43.35	143.68	8.06	7.97	2.75
3,287.00	29.99	20.06	3,265.21	160.08	48.79	158.02	5.92	5.78	-2.59
3,301.00	30.79	20.19	3,277.29	166.73	51.22	164.56	5.73	5.71	0.93
3,319.00	31.83	20.34	3,292.67	175.51	54.46	173.20	5.79	5.78	0.83
3,350.00	33.41	20.55	3,318.78	191.17	60.30	188.62	5.11	5.10	0.68
3,382.00	35.00	20.32	3,345.24	208.02	66.58	205.21	4.99	4.97	-0.72
3,401.00	35.36	20.76	3,360.77	218.27	70.42	215.30	2.32	1.89	2.32
3,414.00	35.61	21.06	3,371.36	225.32	73.12	222.24	2.34	1.92	2.31
3,446.00	36.76	21.08	3,397.18	242.95	79.91	239.58	3.59	3.59	0.06
3,451.00	37.06	21.02	3,401.18	245.76	80.99	242.34	6.04	6.00	-1.20
3,478.00	38.69	20.70	3,422.49	261.24	86.89	257.58	6.08	6.04	-1.19
3,509.00	40.10	19.64	3,446.45	279.71	93.67	275.76	5.04	4.55	-3.42
3,541.00	41.94	19.19	3,470.59	299.52	100.65	295.28	5.82	5.75	-1.41
3,551.00	42.60	19.17	3,477.99	305.87	102.86	301.54	6.60	6.60	-0.20
3,573.00	44.05	19.14	3,494.00	320.13	107.81	315.59	6.59	6.59	-0.14
3,605.00	46.69	19.04	3,516.47	341.65	115.26	336.80	8.25	8.25	-0.31
3,637.00	50.21	19.65	3,537.70	364.24	123.19	359.05	11.09	11.00	1.91
3,651.00	52.06	19.95	3,546.48	374.50	126.89	369.15	13.32	13.21	2.14
3,669.00	54.43	20.31	3,557.25	388.04	131.85	382.48	13.26	13.17	2.00
3,701.00	57.77	21.29	3,575.10	412.86	141.28	406.91	10.74	10.44	3.06
3,732.00	58.92	21.77	3,591.36	437.41	150.97	431.05	3.94	3.71	1.55
3,764.00	59.62	21.85	3,607.72	462.94	161.19	456.17	2.20	2.19	0.25
3,796.00	61.11	21.89	3,623.54	488.76	171.55	481.54	4.66	4.66	0.13
3,801.00	61.58	21.90	3,625.94	492.83	173.18	485.55	9.40	9.40	0.20
3,828.00	64.10	21.98	3,638.26	515.11	182.16	507.45	9.34	9.33	0.30
3,851.00	66.38	21.99	3,647.89	534.47	189.98	526.49	9.91	9.91	0.04
3,860.00	67.27	21.99	3,651.43	542.15	193.08	534.04	9.89	9.89	0.00
3,892.00	69.12	22.28	3,663.32	569.67	204.27	561.09	5.84	5.78	0.91
3,901.00	69.51	22.32	3,666.50	577.46	207.47	568.74	4.35	4.33	0.44
3,924.00	70.52	22.43	3,674.36	597.44	215.69	588.39	4.41	4.39	0.48
3,956.00	71.67	22.43	3,684.73	625.43	227.24	615.89	3.59	3.59	0.00
3,989.00	73.25	22.65	3,694.67	654.49	239.31	644.45	4.83	4.79	0.67
4,001.00	73.88	22.63	3,698.07	665.11	243.74	654.89	5.25	5.25	-0.17
4,021.00	74.92	22.59	3,703.45	682.89	251.14	672.36	5.20	5.20	-0.20
4,053.00	75.89	22.08	3,711.51	711.54	262.91	700.51	3.40	3.03	-1.59
4,084.00	77.29	22.14	3,718.70	739.47	274.26	727.98	4.52	4.52	0.19
4,101.00	78.97	22.32	3,722.20	754.87	280.55	743.11	9.94	9.88	1.06
4,116.00	80.46	22.47	3,724.87	768.52	286.18	756.52	9.98	9.93	1.00
4,126.00	81.67	22.53	3,726.43	777.64	289.96	765.49	12.11	12.10	0.60



Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST04	Survey Calculation Method:	Minimum Curvature
Design:	ST04	Database:	EDM5000

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)
4,148.00	84.33	22.66	3,729.11	797.80	298.35	785.30	12.11	12.09	0.59
4,151.00	84.73	22.69	3,729.39	800.56	299.50	788.01	13.37	13.33	1.00
4,178.00	88.37	22.95	3,731.02	825.39	309.95	812.41	13.52	13.48	0.96
4,201.00	90.52	23.08	3,731.24	846.56	318.94	833.20	9.36	9.35	0.57
4,210.00	91.36	23.13	3,731.09	854.84	322.47	841.33	9.35	9.33	0.56
4,318.00	95.67	17.91	3,724.47	955.73	360.25	940.64	6.26	3.99	-4.83
4,382.00	93.30	12.98	3,719.46	1,017.21	377.23	1,001.40	8.53	-3.70	-7.70
4,445.00	92.07	10.08	3,716.51	1,078.86	389.80	1,062.50	5.00	-1.95	-4.60
4,509.00	92.86	7.27	3,713.76	1,142.07	399.45	1,125.27	4.56	1.23	-4.39
4,573.00	93.56	3.05	3,710.17	1,205.69	405.19	1,188.62	6.67	1.09	-6.59
4,636.00	94.26	359.80	3,705.87	1,268.52	406.76	1,251.33	5.27	1.11	-5.16
4,700.00	92.37	356.90	3,702.17	1,332.37	404.92	1,315.21	5.40	-2.95	-4.53
4,764.00	91.36	355.41	3,700.09	1,396.19	400.63	1,379.15	2.81	-1.58	-2.33
4,824.00	89.17	355.41	3,699.81	1,456.00	395.83	1,439.10	3.65	-3.65	0.00
4,885.00	88.20	355.67	3,701.21	1,516.79	391.08	1,500.04	1.65	-1.59	0.43
4,946.00	87.76	354.18	3,703.36	1,577.52	385.69	1,560.92	2.55	-0.72	-2.44
5,008.00	90.79	352.07	3,704.15	1,639.05	378.27	1,622.71	5.95	4.89	-3.40
5,069.00	91.76	351.36	3,702.79	1,699.40	369.48	1,683.36	1.97	1.59	-1.16
5,131.00	92.07	351.80	3,700.72	1,760.70	360.41	1,744.97	0.87	0.50	0.71
5,192.00	92.59	354.18	3,698.24	1,821.19	352.97	1,805.70	3.99	0.85	3.90
5,252.00	91.27	352.15	3,696.22	1,880.72	345.83	1,865.48	4.03	-2.20	-3.38
5,314.00	90.57	352.51	3,695.22	1,942.16	337.56	1,927.19	1.27	-1.13	0.58
5,375.00	90.40	351.28	3,694.71	2,002.55	328.96	1,987.88	2.04	-0.28	-2.02
5,437.00	90.66	351.80	3,694.13	2,063.87	319.84	2,049.51	0.94	0.42	0.84
5,467.00	85.87	351.10	3,695.04	2,093.51	315.38	2,079.31	16.14	-15.97	-2.33
5,498.00	85.78	350.92	3,697.30	2,124.05	310.55	2,110.02	0.65	-0.29	-0.58
5,558.00	88.59	352.77	3,700.24	2,183.37	302.05	2,169.62	5.60	4.68	3.08
5,619.00	89.87	355.06	3,701.06	2,244.01	295.59	2,230.48	4.30	2.10	3.75
5,680.00	90.57	357.43	3,700.83	2,304.88	291.59	2,291.45	4.05	1.15	3.89
5,740.00	90.88	357.16	3,700.07	2,364.80	288.76	2,351.44	0.69	0.52	-0.45
5,802.00	91.19	356.11	3,698.95	2,426.69	285.12	2,413.42	1.77	0.50	-1.69
5,862.00	91.98	355.76	3,697.29	2,486.51	280.87	2,473.37	1.44	1.32	-0.58
5,923.00	91.89	354.18	3,695.23	2,547.24	275.53	2,534.26	2.59	-0.15	-2.59
5,983.00	92.07	354.18	3,693.16	2,606.89	269.45	2,594.11	0.30	0.30	0.00
6,045.00	93.30	356.55	3,690.25	2,668.62	264.44	2,655.99	4.30	1.98	3.82
6,303.00	93.30	356.55	3,675.40	2,925.72	248.94	2,913.50	0.00	0.00	0.00
PTB 6303.00' MD/3675.40' TVD									



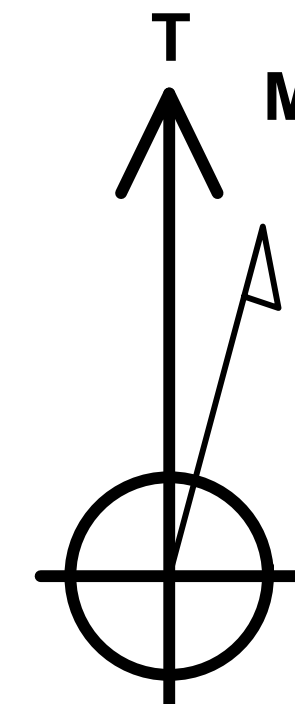
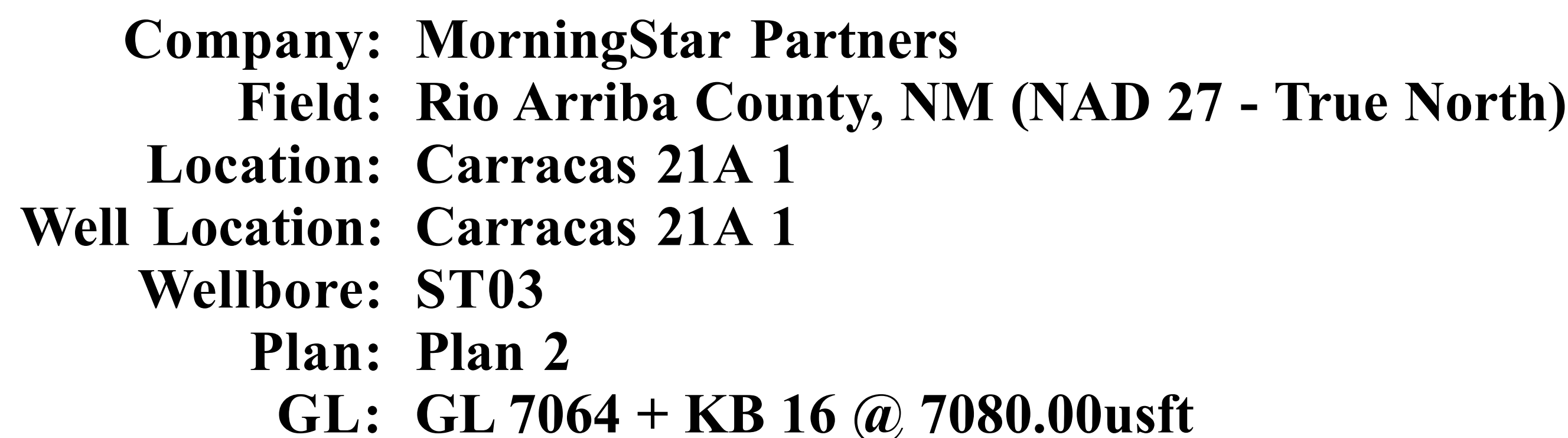
Survey Report

Company:	MorningStar Partners	Local Co-ordinate Reference:	Well Carracas 21A 1
Project:	Rio Arriba County, NM (NAD 27 - True North)	TVD Reference:	GL 7064 + KB 16 @ 7080.00usft
Site:	Carracas 21A 1	MD Reference:	GL 7064 + KB 16 @ 7080.00usft
Well:	Carracas 21A 1	North Reference:	True
Wellbore:	ST04	Survey Calculation Method:	Minimum Curvature
Design:	ST04	Database:	EDM5000

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,303.00	3,675.40	2,925.72	248.94	PTB 6303.00' MD/3675.40' TVD

Checked By: _____ Approved By: _____ Date: _____



Magnetic Field
Strength: 49636.1nT
Dip Angle: 63.40°
Date: 9/28/2022
Model: IGRF2020



LEGACY

DIRECTIONAL

To convert a Magnetic Direction to a True Direction, Add 8.59° East

Rig: Drake #3

PROJECT DETAILS: Rio Arriba County, NM (NAD 27 - True North)

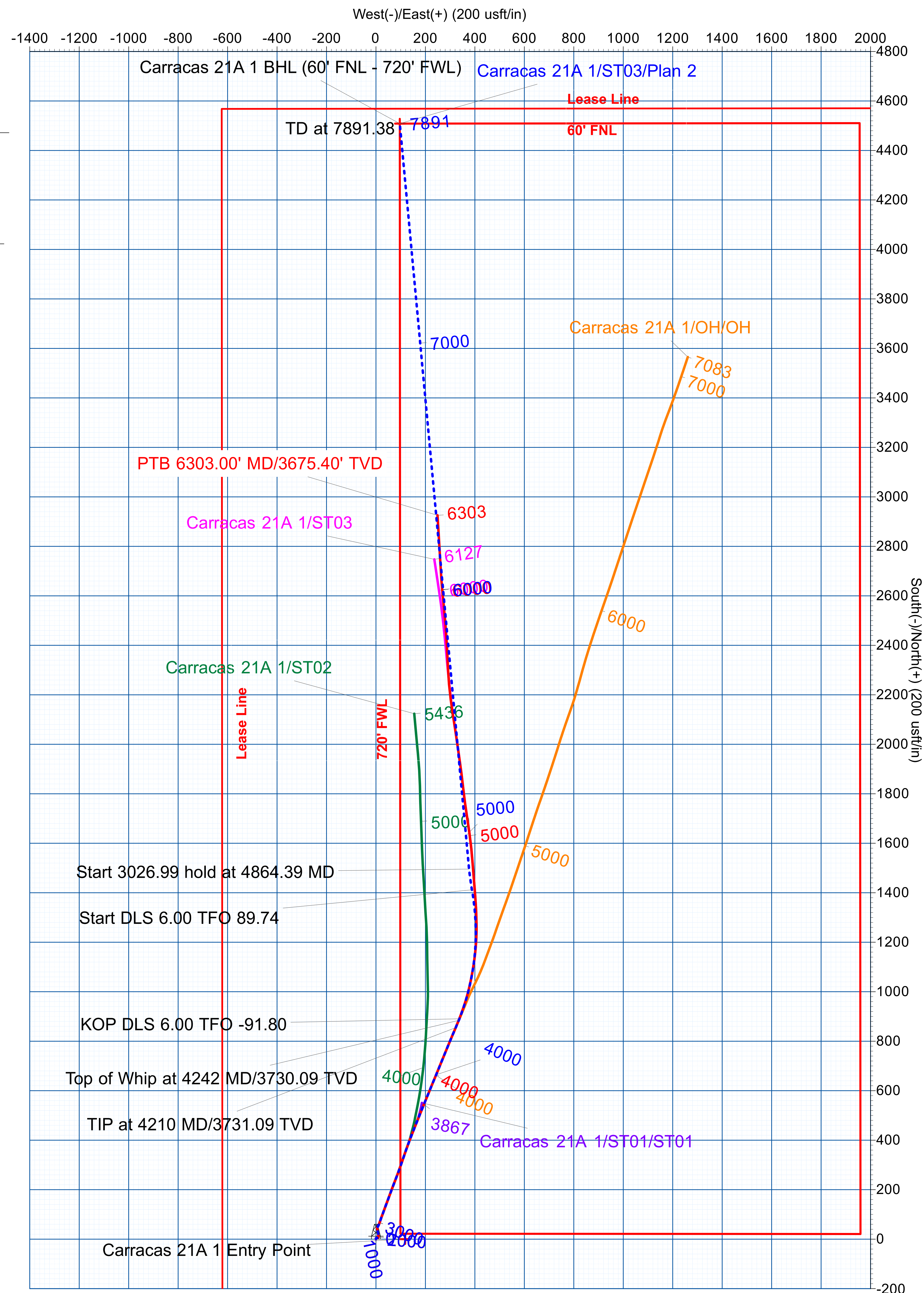
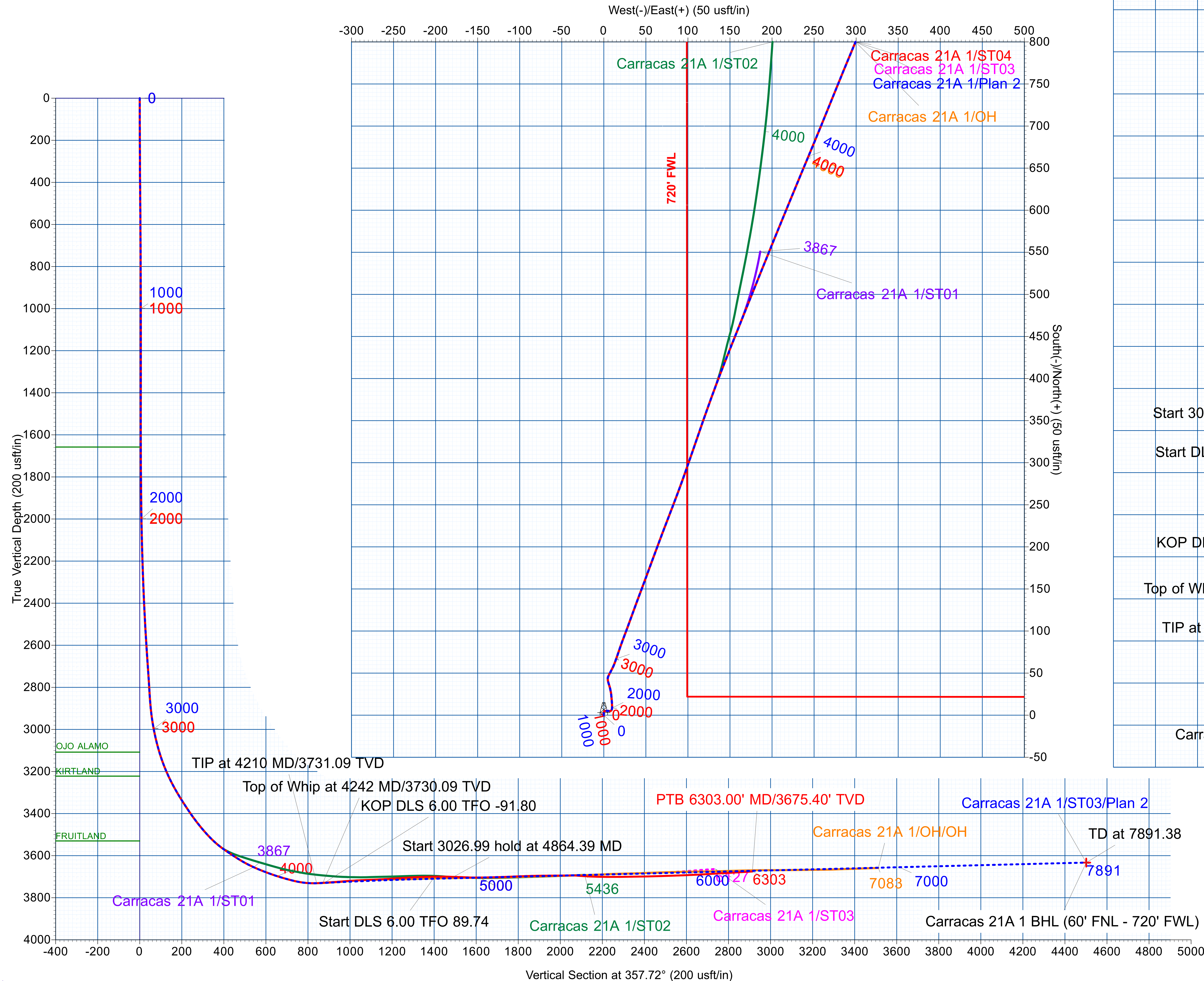
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico West 3003
System Datum: Mean Sea Level

WELL DETAILS: Carracas 21A 1

		GL 7064 + KB 16 @ 7080.00usft		7064.00
+N/-S	+E/-W	Northing	Easting	Latitude
0.00	0.00	2169202.24	636822.37	36.960436
				Longitude
				-107.365032

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
4210.00	91.36	23.13	3731.09	854.84	322.47	0.00	0.00	841.33	TIP at 4210 MD/3731.09 TVD
4242.00	92.24	22.91	3730.09	884.28	334.98	2.83	-14.03	870.25	Top of Whip at 4242 MD/3730.09 TVD
4249.00	92.77	21.46	3729.78	890.75	337.62	22.00	-70.00	876.62	KOP DLS 6.00 TFO -91.80
4779.87	91.40	349.62	3709.98	1412.00	388.10	6.00	-91.80	1395.44	Start DLS 6.00 TFO 89.74
4864.39	91.42	354.69	3707.90	1495.67	376.57	6.00	89.74	1479.51	Start 3026.99 hold at 4864.39 MD
7891.38	91.42	354.69	3633.00	4508.75	96.45	0.00	0.00	4501.34	TD at 7891.38



FORMATION TOP DETAILS		
TVDPATH	MDPATH	FORMATION
1658.00	1658.05	Nacimiento
3108.00	3114.46	Ojo Alamo
3222.00	3237.82	Kirtland
3530.00	3625.14	Fruitland

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

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

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

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 158033

CONDITIONS

Operator: MorningStar Operating LLC 400 W 7th St Fort Worth, TX 76102	OGRID: 330132
	Action Number: 158033
	Action Type: [C-103] Sub. Drilling (C-103N)

CONDITIONS

Created By	Condition	Condition Date
jagarcia	None	11/17/2022