

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

Form C-101

August 1, 2011

Permit 282489

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240		2. OGRID Number 228937
		3. API Number 30-015-47098
4. Property Code 326434	5. Property Name RAY STATE COM	6. Well No. 113H

7. Surface Location

UL - Lot O	Section 36	Township 23S	Range 28E	Lot Idn	Feet From 216	N/S Line S	Feet From 2580	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot B	Section 25	Township 23S	Range 28E	Lot Idn B	Feet From 60	N/S Line N	Feet From 1980	E/W Line E	County Eddy
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9. Pool Information

CULEBRA BLUFF;BONE SPRING, SOUTH	15011
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 2963
16. Multiple N	17. Proposed Depth 17900	18. Formation 1st Bone Spring Sand	19. Contractor	20. Spud Date 5/17/2020
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	225	300	0
Int1	12.25	9.625	40	2750	755	0
Prod	8.75	5.5	20	17800	2600	2550

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	3000	Cameron
Double Ram	10000	5000	Cameron
Pipe	10000	5000	Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☒, if applicable.

Signature:

Printed Name: Electronically filed by Ava Monroe

Title: Sr. Regulatory Analyst

Email Address: amonroe@matadorresources.com

Date: 5/14/2020

Phone: 972-371-5218

OIL CONSERVATION DIVISION

Approved By: Raymond Podany

Title: Geologist

Approved Date: 5/15/2020

Expiration Date: 5/15/2022

Conditions of Approval Attached

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State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code 15011	³ Pool Name Culebra Bluff; Bone Spring, South
⁴ Property Code 326434	⁵ Property Name RAY STATE COM	⁶ Well Number 113H
⁷ OGRID No. 228937	⁸ Operator Name MATADOR PRODUCTION COMPANY	⁹ Elevation 2963'

¹⁰Surface Location

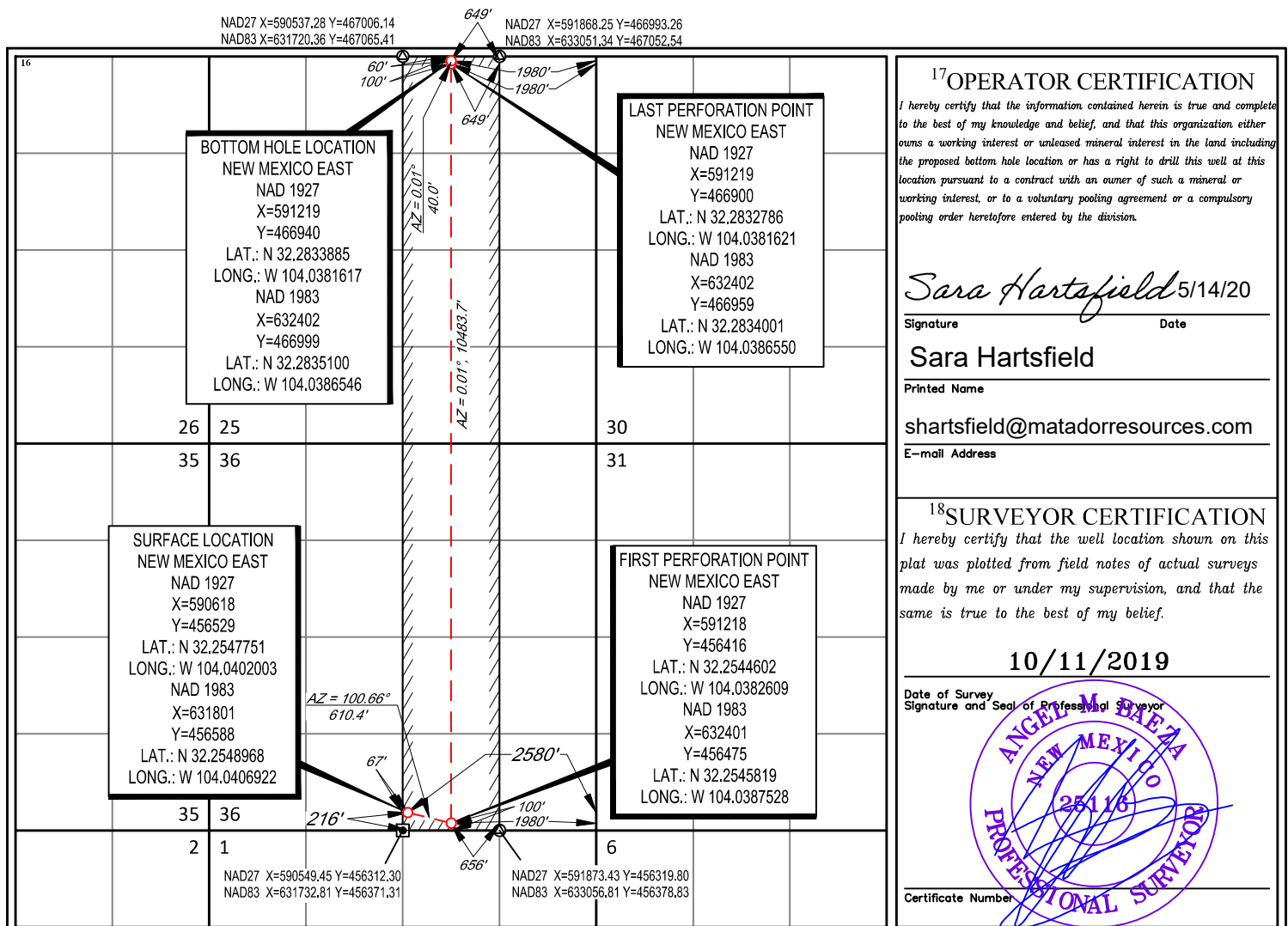
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	36	23-S	28-E	-	216'	SOUTH	2580'	EAST	EDDY

¹¹Bottom 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
B	25	23-S	28-E	-	60'	NORTH	1980'	EAST	EDDY

¹² Dedicated Acres 320	¹³ Joint or Infill Y	¹⁴ Consolidation Code C	¹⁵ Order No. Pooling Order No. R-20964
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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.



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GAS CAPTURE PLAN

Date: 5/15/2020

☒ Original

Operator & OGRID No.: [228937] MATADOR PRODUCTION COMPANY

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
RAY STATE COM #113H	30-015-47098	O-36-23S-28E	0216S 2580E	5	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LONGWOOD RB PIPELINE, LLC and will be connected to LONGWOOD RB PIPELINE, LLC High Pressure gathering system located in Eddy County, New Mexico. It will require 4500' of pipeline to connect the facility to High Pressure gathering system. MATADOR PRODUCTION COMPANY provides (periodically) to LONGWOOD RB PIPELINE, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, MATADOR PRODUCTION COMPANY and LONGWOOD RB PIPELINE, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LONGWOOD RB PIPELINE, LLC Processing Plant located in Sec. 31, Twn. 23S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on LONGWOOD RB PIPELINE, LLC system at that time. Based on current information, it is MATADOR PRODUCTION COMPANY's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 282489

PERMIT COMMENTS

Operator Name and Address: MATADOR PRODUCTION COMPANY [228937] One Lincoln Centre Dallas, TX 75240		API Number: 30-015-47098
		Well: RAY STATE COM #113H
Created By	Comment	Comment Date

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Form APD Conditions

Permit 282489

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: MATADOR PRODUCTION COMPANY [228937] One Lincoln Centre Dallas, TX 75240	API Number: 30-015-47098
	Well: RAY STATE COM #113H
OCD Reviewer	Condition



Matador Resources

Eddy County, New Mexico (NAD 27)

Ray State Com 113H/123H

Ray State Com 113H

Wellbore #1

Plan: Design #2

Standard Planning Report

12 May, 2020





MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Ray State Com 113H
Company:	Matador Resources	TVD Reference:	WELL @ 2991.50usft (Patterson 297)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 2991.50usft (Patterson 297)
Site:	Ray State Com 113H/123H	North Reference:	Grid
Well:	Ray State Com 113H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project	Eddy County, New Mexico (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Ray State Com 113H/123H		
Site Position:		Northing:	456,529.00 usft
From:	Map	Easting:	590,618.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 15' 17.190 N
		Longitude:	104° 2' 24.718 W
		Grid Convergence:	0.156 °

Well	Ray State Com 113H		
Well Position	+N/-S	0.00 usft	Northing: 456,529.00 usft
	+E/-W	0.00 usft	Easting: 590,618.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Latitude: 32° 15' 17.190 N
			Longitude: 104° 2' 24.718 W
			Ground Level: 2,963.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2020	5/20/2020	6.967	59.967	47,803.90

Design	Design #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.01

Plan Survey Tool Program	Date	5/12/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,690.01	Design #2 (Wellbore #1)	MWD+HRGM
				OWSG MWD + HRGM

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,769.00	0.00	0.00	1,769.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,569.00	8.00	90.00	2,566.40	0.00	55.76	1.00	1.00	0.00	90.000	
5,069.00	8.00	90.00	5,042.07	0.00	403.69	0.00	0.00	0.00	0.000	
5,412.93	8.00	114.90	5,382.76	-10.08	449.36	1.00	0.00	7.24	102.265	
6,338.36	8.00	114.90	6,299.17	-64.33	566.24	0.00	0.00	0.00	0.000	
6,871.96	0.00	0.00	6,831.04	-80.00	600.00	1.50	-1.50	0.00	180.000	VP v2 - Ray State C
7,771.96	90.00	0.01	7,404.00	492.96	600.05	10.00	10.00	0.00	0.005	
17,690.01	90.00	0.01	7,404.00	10,411.00	601.00	0.00	0.00	0.00	0.000	PBHL - Ray State C



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Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 2991.50usft (Patterson 297)
Site:	Ray State Com 113H/123H	North Reference:	Grid
Well:	Ray State Com 113H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,769.00	0.00	0.00	1,769.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 1.00°/100' Build									
1,800.00	0.31	90.00	1,800.00	0.00	0.08	0.00	1.00	1.00	0.00
1,900.00	1.31	90.00	1,899.99	0.00	1.50	0.00	1.00	1.00	0.00
2,000.00	2.31	90.00	1,999.94	0.00	4.66	0.00	1.00	1.00	0.00
2,100.00	3.31	90.00	2,099.82	0.00	9.56	0.00	1.00	1.00	0.00
2,200.00	4.31	90.00	2,199.59	0.00	16.20	0.00	1.00	1.00	0.00
2,300.00	5.31	90.00	2,299.24	0.00	24.59	0.00	1.00	1.00	0.00
2,400.00	6.31	90.00	2,398.73	0.00	34.71	0.01	1.00	1.00	0.00
2,500.00	7.31	90.00	2,498.02	0.00	46.57	0.01	1.00	1.00	0.00
2,569.00	8.00	90.00	2,566.40	0.00	55.76	0.01	1.00	1.00	0.00
Hold 8.00° Inc, 90.00° Azm									
2,600.00	8.00	90.00	2,597.10	0.00	60.07	0.01	0.00	0.00	0.00
2,700.00	8.00	90.00	2,696.13	0.00	73.99	0.01	0.00	0.00	0.00
2,800.00	8.00	90.00	2,795.16	0.00	87.91	0.02	0.00	0.00	0.00
2,900.00	8.00	90.00	2,894.18	0.00	101.83	0.02	0.00	0.00	0.00
3,000.00	8.00	90.00	2,993.21	0.00	115.74	0.02	0.00	0.00	0.00
3,100.00	8.00	90.00	3,092.24	0.00	129.66	0.02	0.00	0.00	0.00
3,200.00	8.00	90.00	3,191.26	0.00	143.58	0.03	0.00	0.00	0.00
3,300.00	8.00	90.00	3,290.29	0.00	157.50	0.03	0.00	0.00	0.00
3,400.00	8.00	90.00	3,389.32	0.00	171.41	0.03	0.00	0.00	0.00
3,500.00	8.00	90.00	3,488.34	0.00	185.33	0.03	0.00	0.00	0.00
3,600.00	8.00	90.00	3,587.37	0.00	199.25	0.03	0.00	0.00	0.00
3,700.00	8.00	90.00	3,686.40	0.00	213.16	0.04	0.00	0.00	0.00
3,800.00	8.00	90.00	3,785.42	0.00	227.08	0.04	0.00	0.00	0.00
3,900.00	8.00	90.00	3,884.45	0.00	241.00	0.04	0.00	0.00	0.00
4,000.00	8.00	90.00	3,983.48	0.00	254.92	0.04	0.00	0.00	0.00
4,100.00	8.00	90.00	4,082.50	0.00	268.83	0.05	0.00	0.00	0.00
4,200.00	8.00	90.00	4,181.53	0.00	282.75	0.05	0.00	0.00	0.00
4,300.00	8.00	90.00	4,280.56	0.00	296.67	0.05	0.00	0.00	0.00
4,400.00	8.00	90.00	4,379.58	0.00	310.59	0.05	0.00	0.00	0.00
4,500.00	8.00	90.00	4,478.61	0.00	324.50	0.06	0.00	0.00	0.00
4,600.00	8.00	90.00	4,577.64	0.00	338.42	0.06	0.00	0.00	0.00
4,700.00	8.00	90.00	4,676.66	0.00	352.34	0.06	0.00	0.00	0.00
4,800.00	8.00	90.00	4,775.69	0.00	366.26	0.06	0.00	0.00	0.00



MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Ray State Com 113H
Company:	Matador Resources	TVD Reference:	WELL @ 2991.50usft (Patterson 297)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 2991.50usft (Patterson 297)
Site:	Ray State Com 113H/123H	North Reference:	Grid
Well:	Ray State Com 113H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.00	8.00	90.00	4,874.72	0.00	380.17	0.07	0.00	0.00	0.00
5,000.00	8.00	90.00	4,973.74	0.00	394.09	0.07	0.00	0.00	0.00
5,069.00	8.00	90.00	5,042.07	0.00	403.69	0.07	0.00	0.00	0.00
Begin 1.00°/100' Turn									
5,100.00	7.94	92.19	5,072.77	-0.08	407.99	-0.01	1.00	-0.19	7.08
5,200.00	7.83	99.44	5,171.83	-1.46	421.61	-1.39	1.00	-0.11	7.25
5,300.00	7.84	106.78	5,270.90	-4.55	434.85	-4.47	1.00	0.01	7.34
5,400.00	7.98	113.99	5,369.95	-9.34	447.72	-9.26	1.00	0.14	7.20
5,412.93	8.00	114.90	5,382.76	-10.08	449.36	-10.01	1.00	0.21	7.04
Hold 102.23° Azm									
5,500.00	8.00	114.90	5,468.98	-15.19	460.36	-15.11	0.00	0.00	0.00
5,600.00	8.00	114.90	5,568.00	-21.05	472.99	-20.97	0.00	0.00	0.00
5,700.00	8.00	114.90	5,667.03	-26.91	485.62	-26.83	0.00	0.00	0.00
5,800.00	8.00	114.90	5,766.06	-32.77	498.25	-32.69	0.00	0.00	0.00
5,900.00	8.00	114.90	5,865.08	-38.64	510.88	-38.55	0.00	0.00	0.00
6,000.00	8.00	114.90	5,964.11	-44.50	523.51	-44.41	0.00	0.00	0.00
6,100.00	8.00	114.90	6,063.13	-50.36	536.14	-50.27	0.00	0.00	0.00
6,200.00	8.00	114.90	6,162.16	-56.22	548.77	-56.13	0.00	0.00	0.00
6,300.00	8.00	114.90	6,261.19	-62.09	561.40	-61.99	0.00	0.00	0.00
6,338.36	8.00	114.90	6,299.17	-64.33	566.24	-64.24	0.00	0.00	0.00
Begin 1.50°/100' Drop									
6,400.00	7.08	114.90	6,360.28	-67.74	573.58	-67.64	1.50	-1.50	0.00
6,500.00	5.58	114.90	6,459.67	-72.38	583.58	-72.28	1.50	-1.50	0.00
6,600.00	4.08	114.90	6,559.31	-75.93	591.22	-75.82	1.50	-1.50	0.00
6,700.00	2.58	114.90	6,659.14	-78.37	596.48	-78.27	1.50	-1.50	0.00
6,800.00	1.08	114.90	6,759.08	-79.71	599.38	-79.61	1.50	-1.50	0.00
6,871.96	0.00	0.00	6,831.04	-80.00	600.00	-79.90	1.50	-1.50	-159.67
Begin 10.00°/100' Build									
6,900.00	2.80	0.01	6,859.07	-79.31	600.00	-79.21	10.00	10.00	0.02
7,000.00	12.80	0.01	6,958.01	-65.75	600.00	-65.65	10.00	10.00	0.00
7,100.00	22.80	0.01	7,053.10	-35.22	600.00	-35.11	10.00	10.00	0.00
7,200.00	32.80	0.01	7,141.45	11.37	600.00	11.47	10.00	10.00	0.00
7,300.00	42.80	0.01	7,220.36	72.59	600.01	72.69	10.00	10.00	0.00
7,400.00	52.80	0.01	7,287.44	146.58	600.02	146.68	10.00	10.00	0.00
7,500.00	62.80	0.01	7,340.66	231.09	600.03	231.20	10.00	10.00	0.00
7,600.00	72.80	0.01	7,378.39	323.57	600.03	323.67	10.00	10.00	0.00
7,700.00	82.80	0.01	7,399.48	421.18	600.04	421.29	10.00	10.00	0.00
7,771.96	90.00	0.01	7,404.00	492.96	600.05	493.06	10.00	10.00	0.00
Begin 90.00° Lateral									
7,800.00	90.00	0.01	7,404.00	521.00	600.05	521.10	0.00	0.00	0.00
7,900.00	90.00	0.01	7,404.00	621.00	600.06	621.10	0.00	0.00	0.00
8,000.00	90.00	0.01	7,404.00	721.00	600.07	721.10	0.00	0.00	0.00
8,100.00	90.00	0.01	7,404.00	821.00	600.08	821.10	0.00	0.00	0.00
8,200.00	90.00	0.01	7,404.00	921.00	600.09	921.10	0.00	0.00	0.00
8,300.00	90.00	0.01	7,404.00	1,021.00	600.10	1,021.10	0.00	0.00	0.00
8,400.00	90.00	0.01	7,404.00	1,121.00	600.11	1,121.10	0.00	0.00	0.00
8,500.00	90.00	0.01	7,404.00	1,221.00	600.12	1,221.10	0.00	0.00	0.00
8,600.00	90.00	0.01	7,404.00	1,321.00	600.13	1,321.10	0.00	0.00	0.00
8,700.00	90.00	0.01	7,404.00	1,421.00	600.14	1,421.10	0.00	0.00	0.00
8,800.00	90.00	0.01	7,404.00	1,521.00	600.15	1,521.10	0.00	0.00	0.00
8,900.00	90.00	0.01	7,404.00	1,621.00	600.16	1,621.10	0.00	0.00	0.00
9,000.00	90.00	0.01	7,404.00	1,721.00	600.17	1,721.10	0.00	0.00	0.00
9,100.00	90.00	0.01	7,404.00	1,821.00	600.18	1,821.10	0.00	0.00	0.00
9,200.00	90.00	0.01	7,404.00	1,921.00	600.19	1,921.10	0.00	0.00	0.00



MS Directional Planning Report



Database:	EDM 5000.15 Conroe DB	Local Co-ordinate Reference:	Well Ray State Com 113H
Company:	Matador Resources	TVD Reference:	WELL @ 2991.50usft (Patterson 297)
Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 2991.50usft (Patterson 297)
Site:	Ray State Com 113H/123H	North Reference:	Grid
Well:	Ray State Com 113H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.00	90.00	0.01	7,404.00	2,021.00	600.20	2,021.10	0.00	0.00	0.00
9,400.00	90.00	0.01	7,404.00	2,121.00	600.21	2,121.10	0.00	0.00	0.00
9,500.00	90.00	0.01	7,404.00	2,221.00	600.22	2,221.10	0.00	0.00	0.00
9,600.00	90.00	0.01	7,404.00	2,321.00	600.23	2,321.10	0.00	0.00	0.00
9,700.00	90.00	0.01	7,404.00	2,421.00	600.23	2,421.10	0.00	0.00	0.00
9,800.00	90.00	0.01	7,404.00	2,521.00	600.24	2,521.10	0.00	0.00	0.00
9,900.00	90.00	0.01	7,404.00	2,621.00	600.25	2,621.10	0.00	0.00	0.00
10,000.00	90.00	0.01	7,404.00	2,721.00	600.26	2,721.10	0.00	0.00	0.00
10,100.00	90.00	0.01	7,404.00	2,821.00	600.27	2,821.10	0.00	0.00	0.00
10,200.00	90.00	0.01	7,404.00	2,921.00	600.28	2,921.10	0.00	0.00	0.00
10,300.00	90.00	0.01	7,404.00	3,021.00	600.29	3,021.10	0.00	0.00	0.00
10,400.00	90.00	0.01	7,404.00	3,121.00	600.30	3,121.10	0.00	0.00	0.00
10,500.00	90.00	0.01	7,404.00	3,221.00	600.31	3,221.10	0.00	0.00	0.00
10,600.00	90.00	0.01	7,404.00	3,321.00	600.32	3,321.10	0.00	0.00	0.00
10,700.00	90.00	0.01	7,404.00	3,421.00	600.33	3,421.10	0.00	0.00	0.00
10,800.00	90.00	0.01	7,404.00	3,521.00	600.34	3,521.10	0.00	0.00	0.00
10,900.00	90.00	0.01	7,404.00	3,621.00	600.35	3,621.10	0.00	0.00	0.00
11,000.00	90.00	0.01	7,404.00	3,721.00	600.36	3,721.10	0.00	0.00	0.00
11,100.00	90.00	0.01	7,404.00	3,821.00	600.37	3,821.10	0.00	0.00	0.00
11,200.00	90.00	0.01	7,404.00	3,921.00	600.38	3,921.10	0.00	0.00	0.00
11,300.00	90.00	0.01	7,404.00	4,021.00	600.39	4,021.10	0.00	0.00	0.00
11,400.00	90.00	0.01	7,404.00	4,121.00	600.40	4,121.10	0.00	0.00	0.00
11,500.00	90.00	0.01	7,404.00	4,221.00	600.41	4,221.10	0.00	0.00	0.00
11,600.00	90.00	0.01	7,404.00	4,321.00	600.42	4,321.10	0.00	0.00	0.00
11,700.00	90.00	0.01	7,404.00	4,421.00	600.43	4,421.10	0.00	0.00	0.00
11,800.00	90.00	0.01	7,404.00	4,521.00	600.44	4,521.10	0.00	0.00	0.00
11,900.00	90.00	0.01	7,404.00	4,621.00	600.45	4,621.10	0.00	0.00	0.00
12,000.00	90.00	0.01	7,404.00	4,721.00	600.46	4,721.10	0.00	0.00	0.00
12,100.00	90.00	0.01	7,404.00	4,821.00	600.46	4,821.10	0.00	0.00	0.00
12,200.00	90.00	0.01	7,404.00	4,921.00	600.47	4,921.10	0.00	0.00	0.00
12,300.00	90.00	0.01	7,404.00	5,021.00	600.48	5,021.10	0.00	0.00	0.00
12,400.00	90.00	0.01	7,404.00	5,121.00	600.49	5,121.10	0.00	0.00	0.00
12,500.00	90.00	0.01	7,404.00	5,221.00	600.50	5,221.10	0.00	0.00	0.00
12,600.00	90.00	0.01	7,404.00	5,321.00	600.51	5,321.10	0.00	0.00	0.00
12,700.00	90.00	0.01	7,404.00	5,421.00	600.52	5,421.10	0.00	0.00	0.00
12,800.00	90.00	0.01	7,404.00	5,521.00	600.53	5,521.10	0.00	0.00	0.00
12,900.00	90.00	0.01	7,404.00	5,621.00	600.54	5,621.10	0.00	0.00	0.00
13,000.00	90.00	0.01	7,404.00	5,721.00	600.55	5,721.10	0.00	0.00	0.00
13,100.00	90.00	0.01	7,404.00	5,821.00	600.56	5,821.10	0.00	0.00	0.00
13,200.00	90.00	0.01	7,404.00	5,921.00	600.57	5,921.10	0.00	0.00	0.00
13,300.00	90.00	0.01	7,404.00	6,021.00	600.58	6,021.10	0.00	0.00	0.00
13,400.00	90.00	0.01	7,404.00	6,121.00	600.59	6,121.10	0.00	0.00	0.00
13,500.00	90.00	0.01	7,404.00	6,221.00	600.60	6,221.10	0.00	0.00	0.00
13,600.00	90.00	0.01	7,404.00	6,321.00	600.61	6,321.10	0.00	0.00	0.00
13,700.00	90.00	0.01	7,404.00	6,421.00	600.62	6,421.10	0.00	0.00	0.00
13,800.00	90.00	0.01	7,404.00	6,521.00	600.63	6,521.10	0.00	0.00	0.00
13,900.00	90.00	0.01	7,404.00	6,621.00	600.64	6,621.10	0.00	0.00	0.00
14,000.00	90.00	0.01	7,404.00	6,721.00	600.65	6,721.10	0.00	0.00	0.00
14,100.00	90.00	0.01	7,404.00	6,821.00	600.66	6,821.10	0.00	0.00	0.00
14,200.00	90.00	0.01	7,404.00	6,921.00	600.67	6,921.10	0.00	0.00	0.00
14,300.00	90.00	0.01	7,404.00	7,021.00	600.68	7,021.10	0.00	0.00	0.00
14,400.00	90.00	0.01	7,404.00	7,121.00	600.68	7,121.10	0.00	0.00	0.00
14,500.00	90.00	0.01	7,404.00	7,221.00	600.69	7,221.10	0.00	0.00	0.00
14,600.00	90.00	0.01	7,404.00	7,321.00	600.70	7,321.10	0.00	0.00	0.00



MS Directional Planning Report



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Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 2991.50usft (Patterson 297)
Site:	Ray State Com 113H/123H	North Reference:	Grid
Well:	Ray State Com 113H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,700.00	90.00	0.01	7,404.00	7,421.00	600.71	7,421.10	0.00	0.00	0.00
14,800.00	90.00	0.01	7,404.00	7,521.00	600.72	7,521.10	0.00	0.00	0.00
14,900.00	90.00	0.01	7,404.00	7,621.00	600.73	7,621.10	0.00	0.00	0.00
15,000.00	90.00	0.01	7,404.00	7,721.00	600.74	7,721.10	0.00	0.00	0.00
15,100.00	90.00	0.01	7,404.00	7,821.00	600.75	7,821.10	0.00	0.00	0.00
15,200.00	90.00	0.01	7,404.00	7,921.00	600.76	7,921.10	0.00	0.00	0.00
15,300.00	90.00	0.01	7,404.00	8,021.00	600.77	8,021.10	0.00	0.00	0.00
15,400.00	90.00	0.01	7,404.00	8,121.00	600.78	8,121.10	0.00	0.00	0.00
15,500.00	90.00	0.01	7,404.00	8,221.00	600.79	8,221.10	0.00	0.00	0.00
15,600.00	90.00	0.01	7,404.00	8,321.00	600.80	8,321.10	0.00	0.00	0.00
15,700.00	90.00	0.01	7,404.00	8,421.00	600.81	8,421.10	0.00	0.00	0.00
15,800.00	90.00	0.01	7,404.00	8,521.00	600.82	8,521.10	0.00	0.00	0.00
15,900.00	90.00	0.01	7,404.00	8,621.00	600.83	8,621.10	0.00	0.00	0.00
16,000.00	90.00	0.01	7,404.00	8,721.00	600.84	8,721.10	0.00	0.00	0.00
16,100.00	90.00	0.01	7,404.00	8,821.00	600.85	8,821.10	0.00	0.00	0.00
16,200.00	90.00	0.01	7,404.00	8,921.00	600.86	8,921.10	0.00	0.00	0.00
16,300.00	90.00	0.01	7,404.00	9,021.00	600.87	9,021.10	0.00	0.00	0.00
16,400.00	90.00	0.01	7,404.00	9,121.00	600.88	9,121.10	0.00	0.00	0.00
16,500.00	90.00	0.01	7,404.00	9,221.00	600.89	9,221.10	0.00	0.00	0.00
16,600.00	90.00	0.01	7,404.00	9,321.00	600.90	9,321.10	0.00	0.00	0.00
16,700.00	90.00	0.01	7,404.00	9,421.00	600.91	9,421.10	0.00	0.00	0.00
16,800.00	90.00	0.01	7,404.00	9,521.00	600.91	9,521.10	0.00	0.00	0.00
16,900.00	90.00	0.01	7,404.00	9,621.00	600.92	9,621.10	0.00	0.00	0.00
17,000.00	90.00	0.01	7,404.00	9,721.00	600.93	9,721.10	0.00	0.00	0.00
17,100.00	90.00	0.01	7,404.00	9,821.00	600.94	9,821.10	0.00	0.00	0.00
17,200.00	90.00	0.01	7,404.00	9,921.00	600.95	9,921.10	0.00	0.00	0.00
17,300.00	90.00	0.01	7,404.00	10,021.00	600.96	10,021.10	0.00	0.00	0.00
17,400.00	90.00	0.01	7,404.00	10,121.00	600.97	10,121.10	0.00	0.00	0.00
17,500.00	90.00	0.01	7,404.00	10,221.00	600.98	10,221.10	0.00	0.00	0.00
17,600.00	90.00	0.01	7,404.00	10,321.00	600.99	10,321.10	0.00	0.00	0.00
17,690.00	90.00	0.01	7,404.00	10,411.00	601.00	10,411.10	0.00	0.00	0.00
PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
VP v2 - Ray State Cor - plan hits target center - Point	0.00	0.00	6,831.04	-80.00	600.00	456,449.00	591,218.00	32° 15' 16.382 N	104° 2' 17.733 W
FTP - Ray State Com - plan misses target center by 261.09usft at 7300.00usft MD (7220.36 TVD, 72.59 N, 600.01 E) - Point	0.00	0.00	7,404.00	-113.00	600.00	456,416.00	591,218.00	32° 15' 16.056 N	104° 2' 17.734 W
LTP - Ray State Com - plan hits target center - Point	0.00	0.00	7,404.00	10,371.00	601.00	466,900.00	591,219.00	32° 16' 59.807 N	104° 2' 17.387 W
PBHL - Ray State Cor - plan hits target center - Point	0.00	0.00	7,404.00	10,411.00	601.00	466,940.00	591,219.00	32° 17' 0.203 N	104° 2' 17.385 W



MS Directional Planning Report



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Project:	Eddy County, New Mexico (NAD 27)	MD Reference:	WELL @ 2991.50usft (Patterson 297)
Site:	Ray State Com 113H/123H	North Reference:	Grid
Well:	Ray State Com 113H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,769.00	1,769.00	0.00	0.00	KOP, 1.00°/100' Build
2,569.00	2,566.40	0.00	55.76	Hold 8.00° Inc, 90.00° Azm
5,069.00	5,042.07	0.00	403.69	Begin 1.00°/100' Turn
5,412.93	5,382.76	-10.08	449.36	Hold 102.23° Azm
6,338.36	6,299.17	-64.33	566.24	Begin 1.50°/100' Drop
6,871.96	6,831.04	-80.00	600.00	Begin 10.00°/100' Build
7,771.96	7,404.00	492.96	600.05	Begin 90.00° Lateral
17,690.00	7,404.00	10,411.00	601.00	PBHL