

Mack Energy

Eddy County, NM
Sec 21 T16S R 28E
Rudolf Fed #2

30-015- 44499

Lateral

Plan: Plan #1

Standard Planning Report

06 December, 2017

Planning Report

Database: EDM 5000.1
 Company: Mack Energy
 Project: Eddy County, NM
 Site: Sec 21 T16S R 28E
 Well: Rudolf Fed #2
 Wellbore: Lateral
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Site Sec 21 T16S R 28E
 KB=17.5 @ 3623.1usft
 KB=17.5 @ 3623.1usft
 Grid
 Minimum Curvature

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

Site	Sec 21 T16S R 28E				
Site Position:		Northing:	692,271.67 usft	Latitude:	32° 54' 10.755 N
From:	Map	Easting:	585,828.84 usft	Longitude:	104° 11' 18.127 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.08 °

Well	Rudolf Fed #2					
Well Position	+N-S	0.0 usft	Northing:	692,271.67 usft	Latitude:	32° 54' 10.755 N
	+E-W	0.0 usft	Easting:	585,828.84 usft	Longitude:	104° 11' 18.127 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,605.6 usft

Wellbore	Lateral				
Magnetics	Modal Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/6/2017	7.40	60.58	48,194

Design	Plan #1				
Audit Notes:		Phase:	PLAN	Tie On Depth:	1,446.8
Version:					
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	89.58	

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
1,446.8	0.86	213.09	1,446.7	-2.9	-2.5	0.00	0.00	0.00	0.00	
2,075.6	87.55	89.38	1,859.0	-3.6	389.3	14.00	13.79	-19.68	-123.74	
2,686.9	87.55	89.38	1,885.1	3.1	1,000.0	0.00	0.00	0.00	0.00	
2,798.4	89.78	89.38	1,887.7	4.3	1,111.4	2.00	2.00	0.00	0.00	
3,687.0	89.78	89.38	1,891.1	13.9	2,000.0	0.00	0.00	0.00	0.00	
3,689.0	89.82	89.41	1,891.1	13.9	2,002.0	2.39	1.93	1.42	36.30	
3,969.1	89.82	89.41	1,892.0	16.8	2,282.1	0.00	0.00	0.00	0.00	Rudolf Fed #2 Lateral

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 Minimum Curvature

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)
1,446.8	0.86	213.09	1,446.7	-2.9	-2.5	-2.5	0.00	0.00	0.00
Tie-On Point BLD 14°/100'									
2,075.6	87.55	89.38	1,859.0	-3.6	389.3	389.3	14.00	13.79	-19.68
EOB HLD 87.55° Inc.									
2,686.9	87.55	89.38	1,885.1	3.1	1,000.0	1,000.0	0.00	0.00	0.00
BLD 2°/100'									
2,798.4	89.78	89.38	1,887.7	4.3	1,111.4	1,111.4	2.00	2.00	0.00
EOB HLD 89.78° Inc.									
3,687.0	89.78	89.38	1,891.1	13.9	2,000.0	2,000.0	0.00	0.00	0.00
BLD 2.39°/100'									
3,689.0	89.82	89.41	1,891.1	13.9	2,002.0	2,002.0	2.39	1.93	1.42
EOB HLD 89.82° Inc.									
3,969.1	89.82	89.41	1,892.0	16.8	2,282.1	2,282.1	0.00	0.00	0.00
TD at 3969.1									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Rudolf Fed #2 Lateral	0.00	0.00	1,892.0	16.8	2,282.1	692,288.46	588,110.92	32° 54' 10.890 N	104° 10' 51.359 W
- hit/miss target									
- Shape									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Comment
1,446.8	1,446.7	-2.9	-2.5	Tie-On Point BLD 14°/100'
2,075.6	1,859.0	-3.6	389.3	EOB HLD 87.55° Inc.
2,686.9	1,885.1	3.1	1,000.0	BLD 2°/100'
2,798.4	1,887.7	4.3	1,111.4	EOB HLD 89.78° Inc.
3,687.0	1,891.1	13.9	2,000.0	BLD 2.39°/100'
3,689.0	1,891.1	13.9	2,002.0	EOB HLD 89.82° Inc.
3,969.1	1,892.0	16.8	2,282.1	TD at 3969.1



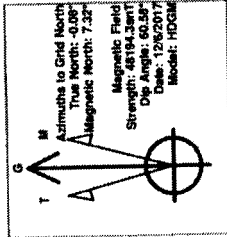
Mack Energy
Project: Eddy County, NM
Site: Sec 21 T16S R 28E
Well: Rudolf Fed #2
Wellbore: Lateral
Plan: Plan #1 (Rudolf Fed #2/Lateral)

WELL DETAILS: Rudolf Fed #2

Ground Elevation: 3605.6
RKB Elevation: KB=17.5 @ 3623.1uett
Rig Name:

Northings
692271.87
Easting
585828.84
Latitude
32° 54' 10.755 N
Longitude
104° 11' 18.127 W

PROJECT DETAILS: Eddy County, NM
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid



INTEGRITY
Directional Services

SECTION MODEL DETAILS	
Section Name	KB=17.5
Section Date	12/6/2017
Section User	2756.1

SECTION DATA	
MD	Log
1448.0	0.00
1448.5	0.00
1449.0	0.00
1449.5	0.00
1450.0	0.00
1450.5	0.00
1451.0	0.00
1451.5	0.00
1452.0	0.00
1452.5	0.00
1453.0	0.00
1453.5	0.00
1454.0	0.00
1454.5	0.00
1455.0	0.00
1455.5	0.00
1456.0	0.00
1456.5	0.00
1457.0	0.00
1457.5	0.00
1458.0	0.00
1458.5	0.00
1459.0	0.00
1459.5	0.00
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1463.0	0.00
1463.5	0.00
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1466.0	0.00
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1467.5	0.00
1468.0	0.00
1468.5	0.00
1469.0	0.00
1469.5	0.00
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1471.5	0.00
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1489.5	0.00
1490.0	0.00
1490.5	0.00
1491.0	0.00
1491.5	0.00
1492.0	0.00
1492.5	0.00
1493.0	0.00
1493.5	0.00
1494.0	0.00
1494.5	0.00
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1495.5	0.00
1496.0	0.00
1496.5	0.00
1497.0	0.00
1497.5	0.00
1498.0	0.00
1498.5	0.00
1499.0	0.00
1499.5	0.00
1500.0	0.00

