



Company: ConocoPhillips
Site: MCA Unit
Well: 564
Project: Lea County, New Mexico (NAD 27)
Rig Name: Precision 194



ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
1853.60	0.00	0.00	1853.60	0.00	0.00	0.00	0.00	KOP, 2.00"/100' Build
2626.94	15.47	153.71	2617.59	-93.02	45.96	103.75	103.75	Begin 15.47° Tangent
4485.26	15.47	153.71	4408.60	-537.32	265.48	599.33	599.33	PBHL

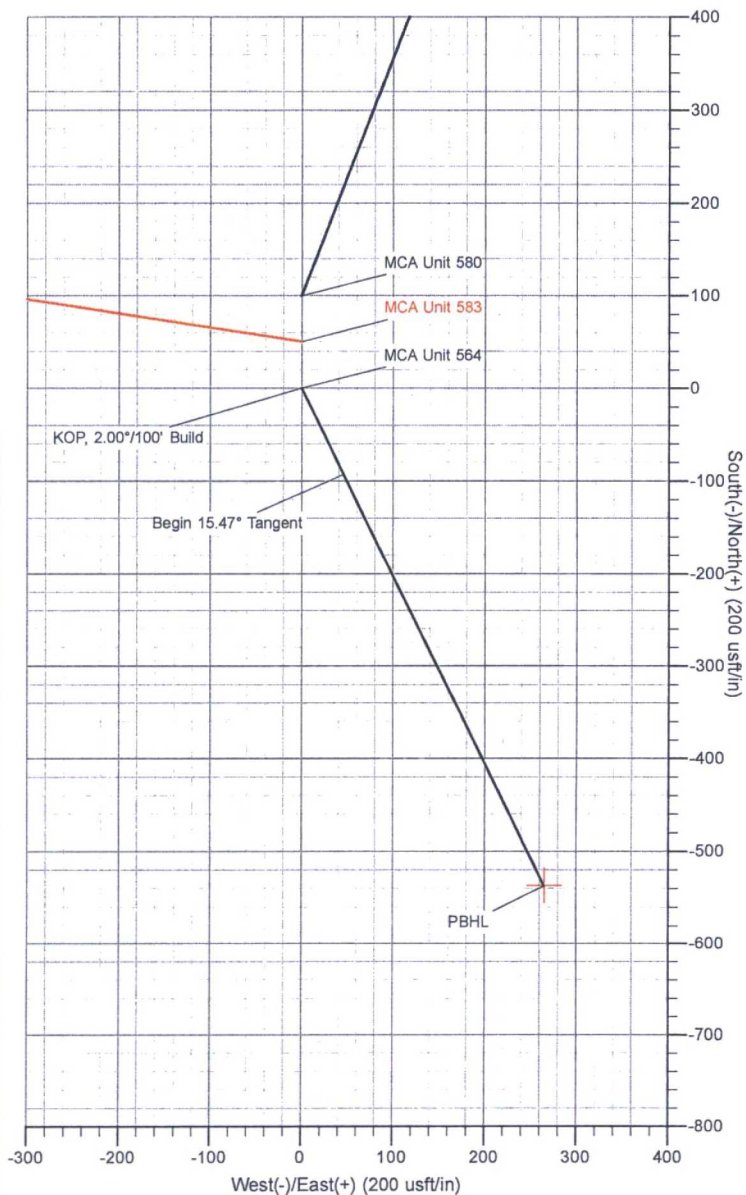
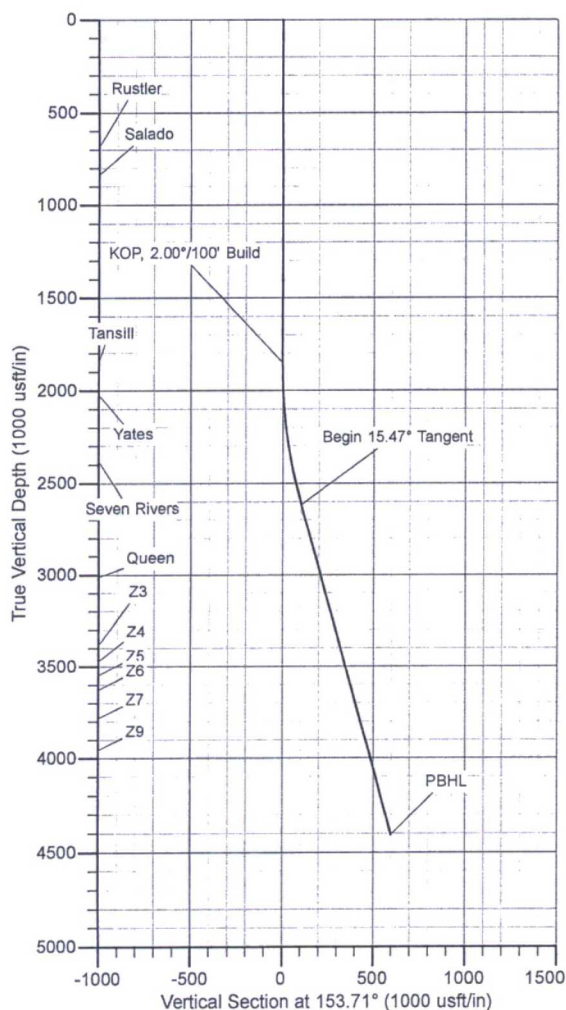


Azimuths to Grid North
True North: -0.29°
Magnetic North: 7.11°

Magnetic Field
Strength: 48549.3snT
Dip Angle: 60.64°
Date: 06/04/2015
Model: BGGM2015

US State Plane 1927 (Exact solution)
New Mexico East 3001

Created By: HLH
Date: 15:14, June 05 2015
Plan: Design #1



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented.
Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer.
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ConocoPhillips

Lea County, New Mexico (NAD 27)

MCA Unit

564

Wellbore #1

Plan: Design #1

Standard Planning Report

05 June, 2015

Database:	EDM 5000.1 Conroe DB	Local Co-ordinate Reference:	Well 564
Company:	ConocoPhillips	TVD Reference:	WELL @ 3948.60usft (Precision 194)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3948.60usft (Precision 194)
Site:	MCA Unit	North Reference:	Grid
Well:	564	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Lea 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		

Well	564					
Well Position	+N/-S	659,050.10 usft	Northing:	659,050.10 usft	Latitude:	32° 48' 38.381 N
	+E/-W	665,276.54 usft	Easting:	665,276.54 usft	Longitude:	103° 47' 43.407 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,934.60 usft

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	06/04/15	7.40	60.64	48,549

Design	Design #1				
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Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	153.71	

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	0.00	
1,853.60	0.00	0.00	1,853.60	0.00	0.00	0.00	0.00	0.00	0.00	
2,626.94	15.47	153.71	2,617.59	-93.02	45.96	2.00	2.00	0.00	153.71	
4,485.26	15.47	153.71	4,408.60	-537.32	265.48	0.00	0.00	0.00	0.00	PBHL - MCA Unit 5

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Site:	MCA Unit	North Reference:	Grid
Well:	564	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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
686.60	0.00	0.00	686.60	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
838.60	0.00	0.00	838.60	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
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
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,853.60	0.00	0.00	1,853.60	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 2.00°/100' Build - Tansill									
1,900.00	0.93	153.71	1,900.00	-0.34	0.17	0.38	2.00	2.00	0.00
2,000.00	2.93	153.71	1,999.94	-3.35	1.66	3.74	2.00	2.00	0.00
2,023.70	3.40	153.71	2,023.60	-4.53	2.24	5.05	2.00	2.00	0.00
Yates									
2,100.00	4.93	153.71	2,099.70	-9.49	4.69	10.59	2.00	2.00	0.00
2,200.00	6.93	153.71	2,199.16	-18.75	9.27	20.92	2.00	2.00	0.00
2,300.00	8.93	153.71	2,298.20	-31.12	15.37	34.71	2.00	2.00	0.00
2,381.58	10.56	153.71	2,378.60	-43.50	21.49	48.52	2.00	2.00	0.00
Seven Rivers									
2,400.00	10.93	153.71	2,396.69	-46.57	23.01	51.95	2.00	2.00	0.00
2,500.00	12.93	153.71	2,494.53	-65.10	32.17	72.62	2.00	2.00	0.00
2,600.00	14.93	153.71	2,591.58	-86.68	42.83	96.69	2.00	2.00	0.00
2,626.94	15.47	153.71	2,617.59	-93.02	45.96	103.75	2.00	2.00	0.00
Begin 15.47° Tangent									
2,700.00	15.47	153.71	2,688.00	-110.48	54.59	123.23	0.00	0.00	0.00
2,800.00	15.47	153.71	2,784.37	-134.39	66.40	149.90	0.00	0.00	0.00
2,900.00	15.47	153.71	2,880.75	-158.30	78.21	176.57	0.00	0.00	0.00
3,000.00	15.47	153.71	2,977.13	-182.21	90.03	203.24	0.00	0.00	0.00
3,037.84	15.47	153.71	3,013.60	-191.26	94.50	213.33	0.00	0.00	0.00
Queen									
3,100.00	15.47	153.71	3,073.51	-206.12	101.84	229.90	0.00	0.00	0.00
3,200.00	15.47	153.71	3,169.89	-230.03	113.65	256.57	0.00	0.00	0.00
3,300.00	15.47	153.71	3,266.27	-253.94	125.47	283.24	0.00	0.00	0.00
3,400.00	15.47	153.71	3,362.65	-277.85	137.28	309.91	0.00	0.00	0.00
3,426.93	15.47	153.71	3,388.60	-284.28	140.46	317.09	0.00	0.00	0.00
Z3									
3,500.00	15.47	153.71	3,459.02	-301.75	149.09	336.58	0.00	0.00	0.00
3,515.12	15.47	153.71	3,473.60	-305.37	150.88	340.61	0.00	0.00	0.00

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Local Co-ordinate Reference: Well 564
TVD Reference: WELL @ 3948.60usft (Precision 194)
MD Reference: WELL @ 3948.60usft (Precision 194)
North Reference: Grid
Survey Calculation Method: 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)
Z4									
3,592.94	15.47	153.71	3,548.60	-323.98	160.07	361.36	0.00	0.00	0.00
Z5									
3,600.00	15.47	153.71	3,555.40	-325.66	160.90	363.24	0.00	0.00	0.00
3,675.95	15.47	153.71	3,628.60	-343.82	169.88	383.50	0.00	0.00	0.00
Z6									
3,700.00	15.47	153.71	3,651.78	-349.57	172.72	389.91	0.00	0.00	0.00
3,800.00	15.47	153.71	3,748.16	-373.48	184.53	416.58	0.00	0.00	0.00
3,836.77	15.47	153.71	3,783.60	-382.27	188.87	426.39	0.00	0.00	0.00
Z7									
3,900.00	15.47	153.71	3,844.54	-397.39	196.34	443.25	0.00	0.00	0.00
4,000.00	15.47	153.71	3,940.92	-421.30	208.16	469.92	0.00	0.00	0.00
4,018.35	15.47	153.71	3,958.60	-425.69	210.32	474.81	0.00	0.00	0.00
Z9									
4,100.00	15.47	153.71	4,037.29	-445.21	219.97	496.59	0.00	0.00	0.00
4,200.00	15.47	153.71	4,133.67	-469.12	231.78	523.25	0.00	0.00	0.00
4,300.00	15.47	153.71	4,230.05	-493.03	243.60	549.92	0.00	0.00	0.00
4,400.00	15.47	153.71	4,326.43	-516.94	255.41	576.59	0.00	0.00	0.00
4,485.26	15.47	153.71	4,408.60	-537.32	265.48	599.33	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
- hit/miss target									
- Shape									
PBHL - MCA Unit 564	0.00	0.00	4,408.60	-537.32	265.48	658,512.78	665,542.02	32° 48' 33.051 N	103° 47' 40.328 W
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
4,485.26	4,408.60	5 1/2"	5-1/2	6

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Local Co-ordinate Reference: Well 564
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MD Reference: WELL @ 3948.60usft (Precision 194)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
686.60	686.60	Rustler		0.00	153.71
838.60	838.60	Salado		0.00	153.71
1,853.60	1,853.60	Tansill		0.00	153.71
2,023.70	2,023.60	Yates		0.00	153.71
2,381.58	2,378.60	Seven Rivers		0.00	153.71
3,037.84	3,013.60	Queen		0.00	153.71
3,426.93	3,388.60	Z3		0.00	153.71
3,515.12	3,473.60	Z4		0.00	153.71
3,592.94	3,548.60	Z5		0.00	153.71
3,675.95	3,628.60	Z6		0.00	153.71
3,836.77	3,783.60	Z7		0.00	153.71
4,018.35	3,958.60	Z9		0.00	153.71

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,853.60	1,853.60	0.00	0.00	KOP, 2.00°/100' Build
2,626.94	2,617.59	-93.02	45.96	Begin 15.47° Tangent
4,485.26	4,408.60	-537.32	265.48	PBHL