

# AUGUSTUS

Location: COLORADO Slot: SLOT#02 BHR FED O23-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA  
Field: RIO BLANCO COUNTY Well: BHR FED O23-14-397-4RH  
Facility: SEC.23-T03N-R97W Wellbore: BHR FED O23-14-397-4RH PWB

Plot reference wellpath is BHR FED O23-14-397-4RH (REV-D.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (24.5KB) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to RIG (24.5KB) (RKB)	North Reference: True north
RIG (24.5KB) (RKB) to Mean Sea Level: 6102 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#02 BHR FED O23-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: adamkat on 2017-06-14
	Database: WA_DEN_Denver_Defn

## Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.23-T03N-R97W	2234560.635	1331098.795	40°12'35.230"N	108°14'27.890"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
SLOT#02 BHR FED O23-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA	-426.07	153.16	2234700.545	1330668.210
			40°12'31.020"N	108°14'25.916"W
RIG (24.5KB) (RKB) to Mud line (At Slot: SLOT#02 BHR FED O23-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA)				6102ft
Mean Sea Level to Mud line (At Slot: SLOT#02 BHR FED O23-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA)				0ft
RIG (24.5KB) (RKB) to Mean Sea Level				6102ft

## Well Profile Data

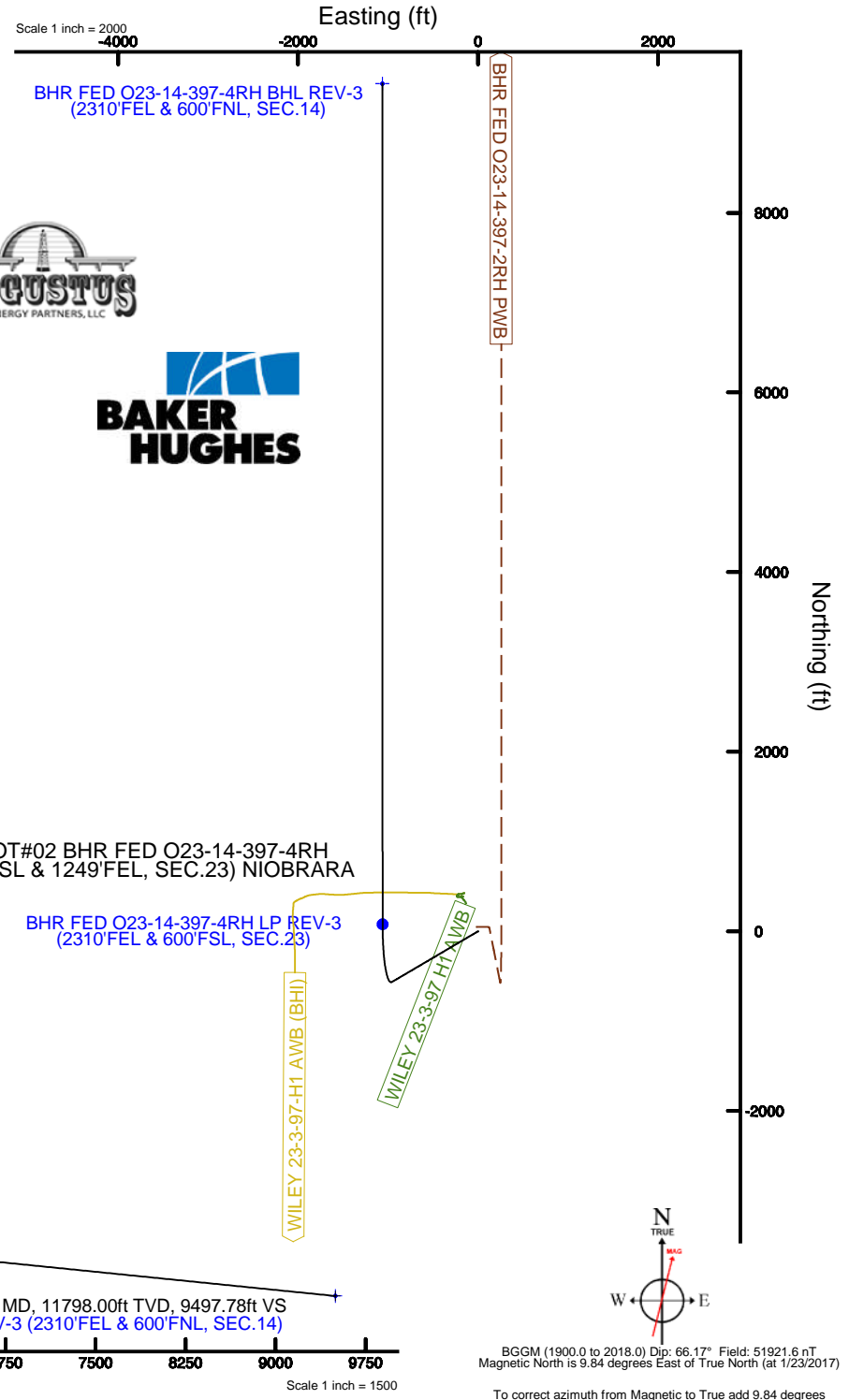
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	24.50	0.000	239.470	24.50	0.00	0.00	0.00	0.00
End of Tangent	3400.00	0.000	239.470	3400.00	0.00	0.00	0.00	0.00
End of Build	3889.06	9.781	239.470	3886.69	-21.15	-35.87	2.00	-17.01
End of Tangent	10184.30	9.781	239.470	10090.41	-564.44	-957.09	0.00	-453.76
End of 3D Arc	11300.24	84.265	359.985	10858.00	78.19	-1060.75	8.00	196.44
End of Tangent	20707.22	84.265	359.985	11798.00	9438.09	-1063.15	0.00	9497.78

## Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
20707.22	84.265	359.985	11798.00	9438.09	-1063.15	2233929.58	1340134.22	40°14'04.286"N	108°14'39.624"W

## Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
24.50	20707.22	BHI NavTrak	Custom BHI NavTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)		BHR FED O23-14-397-4RH PWB





# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	AUGUSTUS	Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO	Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY	Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Adamkat
Scale	0.999957	Report Generated	6/14/2017 at 3:09:01 PM
Convergence at slot	1.78° West	Database/Source file	WA_DEN_Denver_Defn/BHR_FED_023-14-397-4RH_REV-D.0_PWP.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-426.07	153.16	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W
Facility Reference Pt			2234560.64	1331098.80	40°12'35.230"N	108°14'27.890"W
Field Reference Pt			2234560.64	1331098.80	40°12'35.230"N	108°14'27.890"W

## WELLPATH DATUM

Calculation method	Minimum curvature	RIG (24.5'KB) (RKB) to Facility Vertical Datum	6102.00ft
Horizontal Reference Pt	Slot	RIG (24.5'KB) (RKB) to Mean Sea Level	6102.00ft
Vertical Reference Pt	RIG (24.5'KB) (RKB)	RIG (24.5'KB) (RKB) to Mud Line at Slot (SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA)	6102.00ft
MD Reference Pt	RIG (24.5'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	353.57°



# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	AUGUSTUS	Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO	Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY	Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W		

## WELLPATH DATA (222 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	239.470	0.00	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
24.50	0.000	239.470	24.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	Tie On
124.50†	0.000	239.470	124.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
224.50†	0.000	239.470	224.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
324.50†	0.000	239.470	324.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
424.50†	0.000	239.470	424.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
524.50†	0.000	239.470	524.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
624.50†	0.000	239.470	624.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
724.50†	0.000	239.470	724.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
824.50†	0.000	239.470	824.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
924.50†	0.000	239.470	924.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1024.50†	0.000	239.470	1024.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1124.50†	0.000	239.470	1124.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1224.50†	0.000	239.470	1224.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1324.50†	0.000	239.470	1324.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1424.50†	0.000	239.470	1424.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1524.50†	0.000	239.470	1524.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1624.50†	0.000	239.470	1624.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1724.50†	0.000	239.470	1724.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1824.50†	0.000	239.470	1824.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
1847.00†	0.000	239.470	1847.00	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	MESAVERDE
1924.50†	0.000	239.470	1924.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2024.50†	0.000	239.470	2024.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2124.50†	0.000	239.470	2124.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2224.50†	0.000	239.470	2224.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2324.50†	0.000	239.470	2324.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2424.50†	0.000	239.470	2424.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2524.50†	0.000	239.470	2524.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2624.50†	0.000	239.470	2624.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2724.50†	0.000	239.470	2724.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2824.50†	0.000	239.470	2824.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
2924.50†	0.000	239.470	2924.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
3024.50†	0.000	239.470	3024.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
3124.50†	0.000	239.470	3124.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
3224.50†	0.000	239.470	3224.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
3324.50†	0.000	239.470	3324.50	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	
3400.00	0.000	239.470	3400.00	0.00	0.00	0.00	2234700.55	1330668.21	40°12'31.020"N	108°14'25.916"W	0.00	End of Tangent
3424.50†	0.490	239.470	3424.50	-0.04	-0.05	-0.09	2234700.45	1330668.16	40°12'31.019"N	108°14'25.917"W	2.00	
3524.50†	2.490	239.470	3524.46	-1.10	-1.37	-2.33	2234698.17	1330666.91	40°12'31.006"N	108°14'25.946"W	2.00	
3624.50†	4.490	239.470	3624.27	-3.59	-4.47	-7.57	2234692.84	1330663.98	40°12'30.975"N	108°14'26.014"W	2.00	
3724.50†	6.490	239.470	3723.81	-7.50	-9.33	-15.81	2234684.45	1330659.38	40°12'30.927"N	108°14'26.120"W	2.00	
3824.50†	8.490	239.470	3822.95	-12.82	-15.95	-27.04	2234673.03	1330653.11	40°12'30.862"N	108°14'26.264"W	2.00	
3889.06	9.781	239.470	3886.69	-17.01	-21.15	-35.87	2234664.04	1330648.17	40°12'30.810"N	108°14'26.378"W	2.00	End of Build
3924.50†	9.781	239.470	3921.61	-19.46	-24.21	-41.06	2234658.76	1330645.28	40°12'30.780"N	108°14'26.445"W	0.00	
4024.50†	9.781	239.470	4020.16	-26.40	-32.84	-55.69	2234643.87	1330637.10	40°12'30.695"N	108°14'26.634"W	0.00	



# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	AUGUSTUS	Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO	Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY	Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W		

## WELLPATH DATA (222 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4124.50†	9.781	239.470	4118.71	-33.34	-41.47	-70.32	2234628.98	1330628.93	40°12'30.610"N	108°14'26.822"W	0.00	
4224.50†	9.781	239.470	4217.25	-40.28	-50.10	-84.96	2234614.08	1330620.76	40°12'30.524"N	108°14'27.011"W	0.00	
4324.50†	9.781	239.470	4315.80	-47.22	-58.73	-99.59	2234599.19	1330612.58	40°12'30.439"N	108°14'27.200"W	0.00	
4424.50†	9.781	239.470	4414.34	-54.15	-67.36	-114.22	2234584.30	1330604.41	40°12'30.354"N	108°14'27.388"W	0.00	
4524.50†	9.781	239.470	4512.89	-61.09	-75.99	-128.86	2234569.41	1330596.24	40°12'30.269"N	108°14'27.577"W	0.00	
4624.50†	9.781	239.470	4611.44	-68.03	-84.62	-143.49	2234554.51	1330588.06	40°12'30.183"N	108°14'27.765"W	0.00	
4724.50†	9.781	239.470	4709.98	-74.97	-93.25	-158.12	2234539.62	1330579.89	40°12'30.098"N	108°14'27.954"W	0.00	
4824.50†	9.781	239.470	4808.53	-81.91	-101.88	-172.76	2234524.73	1330571.72	40°12'30.013"N	108°14'28.143"W	0.00	
4924.50†	9.781	239.470	4907.08	-88.84	-110.51	-187.39	2234509.84	1330563.54	40°12'29.927"N	108°14'28.331"W	0.00	
5024.50†	9.781	239.470	5005.62	-95.78	-119.14	-202.03	2234494.94	1330555.37	40°12'29.842"N	108°14'28.520"W	0.00	
5124.50†	9.781	239.470	5104.17	-102.72	-127.77	-216.66	2234480.05	1330547.20	40°12'29.757"N	108°14'28.708"W	0.00	
5224.50†	9.781	239.470	5202.72	-109.66	-136.40	-231.29	2234465.16	1330539.02	40°12'29.672"N	108°14'28.897"W	0.00	
5324.50†	9.781	239.470	5301.26	-116.59	-145.03	-245.93	2234450.27	1330530.85	40°12'29.586"N	108°14'29.086"W	0.00	
5369.90†	9.781	239.470	5346.00	-119.74	-148.95	-252.57	2234443.51	1330527.14	40°12'29.548"N	108°14'29.171"W	0.00	ROLLINS
5424.50†	9.781	239.470	5399.81	-123.53	-153.66	-260.56	2234435.37	1330522.68	40°12'29.501"N	108°14'29.274"W	0.00	
5524.50†	9.781	239.470	5498.35	-130.47	-162.29	-275.19	2234420.48	1330514.50	40°12'29.416"N	108°14'29.463"W	0.00	
5624.50†	9.781	239.470	5596.90	-137.41	-170.92	-289.83	2234405.59	1330506.33	40°12'29.330"N	108°14'29.651"W	0.00	
5724.50†	9.781	239.470	5695.45	-144.35	-179.55	-304.46	2234390.70	1330498.16	40°12'29.245"N	108°14'29.840"W	0.00	
5824.50†	9.781	239.470	5793.99	-151.28	-188.18	-319.09	2234375.80	1330489.98	40°12'29.160"N	108°14'30.029"W	0.00	
5924.50†	9.781	239.470	5892.54	-158.22	-196.81	-333.73	2234360.91	1330481.81	40°12'29.075"N	108°14'30.217"W	0.00	
6024.50†	9.781	239.470	5991.09	-165.16	-205.44	-348.36	2234346.02	1330473.64	40°12'28.989"N	108°14'30.406"W	0.00	
6124.50†	9.781	239.470	6089.63	-172.10	-214.07	-362.99	2234331.13	1330465.46	40°12'28.904"N	108°14'30.595"W	0.00	
6224.50†	9.781	239.470	6188.18	-179.03	-222.70	-377.63	2234316.23	1330457.29	40°12'28.819"N	108°14'30.783"W	0.00	
6324.50†	9.781	239.470	6286.73	-185.97	-231.33	-392.26	2234301.34	1330449.12	40°12'28.733"N	108°14'30.972"W	0.00	
6424.50†	9.781	239.470	6385.27	-192.91	-239.96	-406.89	2234286.45	1330440.94	40°12'28.648"N	108°14'31.160"W	0.00	
6524.50†	9.781	239.470	6483.82	-199.85	-248.59	-421.53	2234271.56	1330432.77	40°12'28.563"N	108°14'31.349"W	0.00	
6624.50†	9.781	239.470	6582.36	-206.79	-257.22	-436.16	2234256.66	1330424.60	40°12'28.478"N	108°14'31.538"W	0.00	
6668.78†	9.781	239.470	6626.00	-209.86	-261.05	-442.64	2234250.07	1330420.98	40°12'28.440"N	108°14'31.621"W	0.00	SEGO-LOWER
6724.50†	9.781	239.470	6680.91	-213.72	-265.85	-450.80	2234241.77	1330416.42	40°12'28.392"N	108°14'31.726"W	0.00	
6824.50†	9.781	239.470	6779.46	-220.66	-274.48	-465.43	2234226.88	1330408.25	40°12'28.307"N	108°14'31.915"W	0.00	
6924.50†	9.781	239.470	6878.00	-227.60	-283.11	-480.06	2234211.99	1330400.08	40°12'28.222"N	108°14'32.103"W	0.00	
7024.50†	9.781	239.470	6976.55	-234.54	-291.74	-494.70	2234197.09	1330391.90	40°12'28.136"N	108°14'32.292"W	0.00	
7095.99†	9.781	239.470	7047.00	-239.50	-297.91	-505.16	2234186.45	1330386.06	40°12'28.076"N	108°14'32.427"W	0.00	CASTLEGATE
7124.50†	9.781	239.470	7075.10	-241.47	-300.37	-509.33	2234182.20	1330383.73	40°12'28.051"N	108°14'32.481"W	0.00	
7224.50†	9.781	239.470	7173.64	-248.41	-309.00	-523.96	2234167.31	1330375.56	40°12'27.966"N	108°14'32.669"W	0.00	
7324.50†	9.781	239.470	7272.19	-255.35	-317.63	-538.60	2234152.42	1330367.38	40°12'27.881"N	108°14'32.858"W	0.00	
7424.50†	9.781	239.470	7370.73	-262.29	-326.26	-553.23	2234137.52	1330359.21	40°12'27.795"N	108°14'33.046"W	0.00	
7524.50†	9.781	239.470	7469.28	-269.23	-334.89	-567.86	2234122.63	1330351.04	40°12'27.710"N	108°14'33.235"W	0.00	
7624.50†	9.781	239.470	7567.83	-276.16	-343.53	-582.50	2234107.74	1330342.86	40°12'27.625"N	108°14'33.424"W	0.00	
7724.50†	9.781	239.470	7666.37	-283.10	-352.16	-597.13	2234092.84	1330334.69	40°12'27.539"N	108°14'33.612"W	0.00	
7824.50†	9.781	239.470	7764.92	-290.04	-360.79	-611.76	2234077.95	1330326.52	40°12'27.454"N	108°14'33.801"W	0.00	
7924.50†	9.781	239.470	7863.47	-296.98	-369.42	-626.40	2234063.06	1330318.34	40°12'27.369"N	108°14'33.989"W	0.00	
8024.50†	9.781	239.470	7962.01	-303.91	-378.05	-641.03	2234048.17	1330310.17	40°12'27.284"N	108°14'34.178"W	0.00	
8124.50†	9.781	239.470	8060.56	-310.85	-386.68	-655.67	2234033.27	1330302.00	40°12'27.198"N	108°14'34.367"W	0.00	
8224.50†	9.781	239.470	8159.11	-317.79	-395.31	-670.30	2234018.38	1330293.82	40°12'27.113"N	108°14'34.555"W	0.00	



# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	AUGUSTUS	Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO	Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY	Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W		

## WELLPATH DATA (222 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8324.50†	9.781	239.470	8257.65	-324.73	-403.94	-684.93	2234003.49	1330285.65	40°12'27.028"N	108°14'34.744"W	0.00	
8424.50†	9.781	239.470	8356.20	-331.67	-412.57	-699.57	2233988.60	1330277.48	40°12'26.942"N	108°14'34.932"W	0.00	
8473.01†	9.781	239.470	8404.00	-335.03	-416.75	-706.66	2233981.37	1330273.51	40°12'26.901"N	108°14'35.024"W	0.00	MANCOS - MARKER 6 - CONDENSED SECTION
8524.50†	9.781	239.470	8454.74	-338.60	-421.20	-714.20	2233973.70	1330269.30	40°12'26.857"N	108°14'35.121"W	0.00	
8624.50†	9.781	239.470	8553.29	-345.54	-429.83	-728.83	2233958.81	1330261.13	40°12'26.772"N	108°14'35.310"W	0.00	
8724.50†	9.781	239.470	8651.84	-352.48	-438.46	-743.47	2233943.92	1330252.96	40°12'26.687"N	108°14'35.498"W	0.00	
8824.50†	9.781	239.470	8750.38	-359.42	-447.09	-758.10	2233929.03	1330244.78	40°12'26.601"N	108°14'35.687"W	0.00	
8924.50†	9.781	239.470	8848.93	-366.35	-455.72	-772.73	2233914.13	1330236.61	40°12'26.516"N	108°14'35.875"W	0.00	
9024.50†	9.781	239.470	8947.48	-373.29	-464.35	-787.37	2233899.24	1330228.44	40°12'26.431"N	108°14'36.064"W	0.00	
9124.50†	9.781	239.470	9046.02	-380.23	-472.98	-802.00	2233884.35	1330220.26	40°12'26.345"N	108°14'36.253"W	0.00	
9224.50†	9.781	239.470	9144.57	-387.17	-481.61	-816.63	2233869.46	1330212.09	40°12'26.260"N	108°14'36.441"W	0.00	
9324.50†	9.781	239.470	9243.12	-394.11	-490.24	-831.27	2233854.56	1330203.92	40°12'26.175"N	108°14'36.630"W	0.00	
9424.50†	9.781	239.470	9341.66	-401.04	-498.87	-845.90	2233839.67	1330195.74	40°12'26.090"N	108°14'36.819"W	0.00	
9524.50†	9.781	239.470	9440.21	-407.98	-507.50	-860.53	2233824.78	1330187.57	40°12'26.004"N	108°14'37.007"W	0.00	
9624.50†	9.781	239.470	9538.75	-414.92	-516.13	-875.17	2233809.89	1330179.39	40°12'25.919"N	108°14'37.196"W	0.00	
9724.50†	9.781	239.470	9637.30	-421.86	-524.76	-889.80	2233794.99	1330171.22	40°12'25.834"N	108°14'37.384"W	0.00	
9821.61†	9.781	239.470	9733.00	-428.59	-533.14	-904.01	2233780.53	1330163.28	40°12'25.751"N	108°14'37.567"W	0.00	BUCK PEAK
9824.50†	9.781	239.470	9735.85	-428.80	-533.39	-904.44	2233780.10	1330163.05	40°12'25.748"N	108°14'37.573"W	0.00	
9924.50†	9.781	239.470	9834.39	-435.73	-542.02	-919.07	2233765.21	1330154.87	40°12'25.663"N	108°14'37.762"W	0.00	
10024.50†	9.781	239.470	9932.94	-442.67	-550.65	-933.70	2233750.32	1330146.70	40°12'25.578"N	108°14'37.950"W	0.00	
10124.50†	9.781	239.470	10031.49	-449.61	-559.28	-948.34	2233735.42	1330138.53	40°12'25.493"N	108°14'38.139"W	0.00	
10184.30	9.781	239.470	10090.41	-453.76	-564.44	-957.09	2233726.52	1330133.64	40°12'25.442"N	108°14'38.252"W	0.00	End of Tangent
10224.50†	8.576	258.286	10130.11	-455.43	-566.78	-962.96	2233720.57	1330131.48	40°12'25.418"N	108°14'38.327"W	8.00	
10288.09†	8.972	292.021	10193.00	-453.50	-565.88	-972.21	2233711.36	1330132.66	40°12'25.427"N	108°14'38.446"W	8.00	TOW CREEK
10324.50†	10.373	307.301	10228.89	-449.88	-562.83	-977.45	2233706.21	1330135.87	40°12'25.457"N	108°14'38.514"W	8.00	
10424.50†	16.393	330.807	10326.20	-430.62	-545.03	-991.52	2233692.70	1330154.10	40°12'25.633"N	108°14'38.695"W	8.00	
10524.50†	23.600	341.141	10420.14	-398.00	-513.72	-1004.89	2233680.30	1330185.81	40°12'25.943"N	108°14'38.868"W	8.00	
10624.50†	31.180	346.753	10508.88	-352.68	-469.50	-1017.31	2233669.25	1330230.38	40°12'26.380"N	108°14'39.028"W	8.00	
10698.27†	36.877	349.516	10570.00	-311.60	-429.11	-1025.73	2233662.10	1330271.01	40°12'26.779"N	108°14'39.136"W	8.00	WOLF MTN
10724.50†	38.915	350.327	10590.70	-295.53	-413.25	-1028.54	2233659.77	1330286.95	40°12'26.936"N	108°14'39.173"W	8.00	
10824.50†	46.728	352.866	10663.99	-227.65	-346.06	-1038.36	2233652.04	1330354.42	40°12'27.600"N	108°14'39.299"W	8.00	
10924.50†	54.584	354.824	10727.34	-150.39	-269.23	-1046.57	2233646.21	1330431.46	40°12'28.359"N	108°14'39.405"W	8.00	
11024.50†	62.466	356.431	10779.52	-65.23	-184.26	-1053.01	2233642.39	1330516.59	40°12'29.198"N	108°14'39.488"W	8.00	
11124.50†	70.364	357.822	10819.50	26.16	-92.80	-1057.57	2233640.66	1330608.14	40°12'30.102"N	108°14'39.547"W	8.00	
11224.50†	78.272	359.081	10846.51	122.01	3.36	-1060.15	2233641.05	1330704.33	40°12'31.053"N	108°14'39.580"W	8.00	
11300.24	84.265	359.985	10858.00†	196.44	78.19	-1060.75	2233642.76	1330779.14	40°12'31.792"N	108°14'39.588"W	8.00	End of 3D Arc; LANDING POINT
11324.50†	84.265	359.985	10860.42	220.42	102.33	-1060.76	2233643.50	1330803.26	40°12'32.031"N	108°14'39.588"W	0.00	
11424.50†	84.265	359.985	10870.42	319.30	201.83	-1060.79	2233646.55	1330902.71	40°12'33.014"N	108°14'39.588"W	0.00	
11524.50†	84.265	359.985	10880.41	418.18	301.33	-1060.81	2233649.60	1331002.16	40°12'33.997"N	108°14'39.589"W	0.00	
11624.50†	84.265	359.985	10890.40	517.05	400.83	-1060.84	2233652.65	1331101.61	40°12'34.980"N	108°14'39.589"W	0.00	
11724.50†	84.265	359.985	10900.39	615.93	500.33	-1060.86	2233655.70	1331201.05	40°12'35.964"N	108°14'39.590"W	0.00	
11750.58†	84.265	359.985	10903.00	641.71	526.27	-1060.87	2233656.49	1331226.99	40°12'36.220"N	108°14'39.590"W	0.00	HOT WOLF MTN - RANGELY BENCH
11824.50†	84.265	359.985	10910.39	714.81	599.83	-1060.89	2233658.75	1331300.50	40°12'36.947"N	108°14'39.590"W	0.00	
11924.50†	84.265	359.985	10920.38	813.68	699.32	-1060.91	2233661.79	1331399.95	40°12'37.930"N	108°14'39.590"W	0.00	
12024.50†	84.265	359.985	10930.37	912.56	798.82	-1060.94	2233664.84	1331499.40	40°12'38.913"N	108°14'39.591"W	0.00	



# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	AUGUSTUS	Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO	Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY	Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W		

## WELLPATH DATA (222 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12124.50†	84.265	359.985	10940.36	1011.44	898.32	-1060.96	2233667.89	1331598.85	40°12'39.897"N	108°14'39.591"W	0.00	
12224.50†	84.265	359.985	10950.36	1110.32	997.82	-1060.99	2233670.94	1331698.30	40°12'40.880"N	108°14'39.592"W	0.00	
12324.50†	84.265	359.985	10960.35	1209.19	1097.32	-1061.01	2233673.99	1331797.74	40°12'41.863"N	108°14'39.592"W	0.00	
12424.50†	84.265	359.985	10970.34	1308.07	1196.82	-1061.04	2233677.04	1331897.19	40°12'42.846"N	108°14'39.592"W	0.00	
12524.50†	84.265	359.985	10980.33	1406.95	1296.32	-1061.07	2233680.09	1331996.64	40°12'43.830"N	108°14'39.593"W	0.00	
12624.50†	84.265	359.985	10990.33	1505.82	1395.82	-1061.09	2233683.14	1332096.09	40°12'44.813"N	108°14'39.593"W	0.00	
12724.50†	84.265	359.985	11000.32	1604.70	1495.32	-1061.12	2233686.19	1332195.54	40°12'45.796"N	108°14'39.593"W	0.00	
12824.50†	84.265	359.985	11010.31	1703.58	1594.82	-1061.14	2233689.24	1332294.99	40°12'46.779"N	108°14'39.594"W	0.00	
12924.50†	84.265	359.985	11020.31	1802.45	1694.32	-1061.17	2233692.29	1332394.43	40°12'47.763"N	108°14'39.594"W	0.00	
13024.50†	84.265	359.985	11030.30	1901.33	1793.82	-1061.19	2233695.33	1332493.88	40°12'48.746"N	108°14'39.595"W	0.00	
13124.50†	84.265	359.985	11040.29	2000.21	1893.32	-1061.22	2233698.38	1332593.33	40°12'49.729"N	108°14'39.595"W	0.00	
13224.50†	84.265	359.985	11050.28	2099.09	1992.82	-1061.24	2233701.43	1332692.78	40°12'50.712"N	108°14'39.595"W	0.00	
13324.50†	84.265	359.985	11060.28	2197.96	2092.32	-1061.27	2233704.48	1332792.23	40°12'51.696"N	108°14'39.596"W	0.00	
13424.50†	84.265	359.985	11070.27	2296.84	2191.82	-1061.29	2233707.53	1332891.67	40°12'52.679"N	108°14'39.596"W	0.00	
13524.50†	84.265	359.985	11080.26	2395.72	2291.32	-1061.32	2233710.58	1332991.12	40°12'53.662"N	108°14'39.597"W	0.00	
13624.50†	84.265	359.985	11090.25	2494.59	2390.82	-1061.35	2233713.63	1333090.57	40°12'54.645"N	108°14'39.597"W	0.00	
13724.50†	84.265	359.985	11100.25	2593.47	2490.32	-1061.37	2233716.68	1333190.02	40°12'55.629"N	108°14'39.597"W	0.00	
13824.50†	84.265	359.985	11110.24	2692.35	2589.82	-1061.40	2233719.73	1333289.47	40°12'56.612"N	108°14'39.598"W	0.00	
13924.50†	84.265	359.985	11120.23	2791.22	2689.31	-1061.42	2233722.78	1333388.92	40°12'57.595"N	108°14'39.598"W	0.00	
14024.50†	84.265	359.985	11130.22	2890.10	2788.81	-1061.45	2233725.82	1333488.36	40°12'58.578"N	108°14'39.598"W	0.00	
14124.50†	84.265	359.985	11140.22	2988.98	2888.31	-1061.47	2233728.87	1333587.81	40°12'59.562"N	108°14'39.599"W	0.00	
14224.50†	84.265	359.985	11150.21	3087.86	2987.81	-1061.50	2233731.92	1333687.26	40°13'00.545"N	108°14'39.599"W	0.00	
14324.50†	84.265	359.985	11160.20	3186.73	3087.31	-1061.52	2233734.97	1333786.71	40°13'01.528"N	108°14'39.600"W	0.00	
14424.50†	84.265	359.985	11170.19	3285.61	3186.81	-1061.55	2233738.02	1333886.16	40°13'02.511"N	108°14'39.600"W	0.00	
14524.50†	84.265	359.985	11180.19	3384.49	3286.31	-1061.57	2233741.07	1333985.61	40°13'03.495"N	108°14'39.600"W	0.00	
14624.50†	84.265	359.985	11190.18	3483.36	3385.81	-1061.60	2233744.12	1334085.05	40°13'04.478"N	108°14'39.601"W	0.00	
14724.50†	84.265	359.985	11200.17	3582.24	3485.31	-1061.62	2233747.17	1334184.50	40°13'05.461"N	108°14'39.601"W	0.00	
14824.50†	84.265	359.985	11210.16	3681.12	3584.81	-1061.65	2233750.22	1334283.95	40°13'06.444"N	108°14'39.601"W	0.00	
14924.50†	84.265	359.985	11220.16	3779.99	3684.31	-1061.68	2233753.27	1334383.40	40°13'07.428"N	108°14'39.602"W	0.00	
15024.50†	84.265	359.985	11230.15	3878.87	3783.81	-1061.70	2233756.31	1334482.85	40°13'08.411"N	108°14'39.602"W	0.00	
15124.50†	84.265	359.985	11240.14	3977.75	3883.31	-1061.73	2233759.36	1334582.30	40°13'09.394"N	108°14'39.603"W	0.00	
15224.50†	84.265	359.985	11250.13	4076.63	3982.81	-1061.75	2233762.41	1334681.74	40°13'10.377"N	108°14'39.603"W	0.00	
15324.50†	84.265	359.985	11260.13	4175.50	4082.31	-1061.78	2233765.46	1334781.19	40°13'11.360"N	108°14'39.603"W	0.00	
15424.50†	84.265	359.985	11270.12	4274.38	4181.81	-1061.80	2233768.51	1334880.64	40°13'12.344"N	108°14'39.604"W	0.00	
15524.50†	84.265	359.985	11280.11	4373.26	4281.31	-1061.83	2233771.56	1334980.09	40°13'13.327"N	108°14'39.604"W	0.00	
15624.50†	84.265	359.985	11290.10	4472.13	4380.81	-1061.85	2233774.61	1335079.54	40°13'14.310"N	108°14'39.605"W	0.00	
15724.50†	84.265	359.985	11300.10	4571.01	4480.31	-1061.88	2233777.66	1335178.99	40°13'15.293"N	108°14'39.605"W	0.00	
15824.50†	84.265	359.985	11310.09	4669.89	4579.80	-1061.90	2233780.71	1335278.43	40°13'16.277"N	108°14'39.605"W	0.00	
15924.50†	84.265	359.985	11320.08	4768.77	4679.30	-1061.93	2233783.76	1335377.88	40°13'17.260"N	108°14'39.606"W	0.00	
16024.50†	84.265	359.985	11330.08	4867.64	4778.80	-1061.96	2233786.81	1335477.33	40°13'18.243"N	108°14'39.606"W	0.00	
16124.50†	84.265	359.985	11340.07	4966.52	4878.30	-1061.98	2233789.85	1335576.78	40°13'19.226"N	108°14'39.606"W	0.00	
16224.50†	84.265	359.985	11350.06	5065.40	4977.80	-1062.01	2233792.90	1335676.23	40°13'20.210"N	108°14'39.607"W	0.00	
16324.50†	84.265	359.985	11360.05	5164.27	5077.30	-1062.03	2233795.95	1335775.68	40°13'21.193"N	108°14'39.607"W	0.00	
16424.50†	84.265	359.985	11370.05	5263.15	5176.80	-1062.06	2233799.00	1335875.12	40°13'22.176"N	108°14'39.608"W	0.00	
16524.50†	84.265	359.985	11380.04	5362.03	5276.30	-1062.08	2233802.05	1335974.57	40°13'23.159"N	108°14'39.608"W	0.00	





# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	AUGUSTUS	Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO	Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY	Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W		

## WELLPATH DATA (222 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16624.50†	84.265	359.985	11390.03	5460.90	5375.80	-1062.11	2233805.10	1336074.02	40°13'24.143"N	108°14'39.608"W	0.00	
16724.50†	84.265	359.985	11400.02	5559.78	5475.30	-1062.13	2233808.15	1336173.47	40°13'25.126"N	108°14'39.609"W	0.00	
16824.50†	84.265	359.985	11410.02	5658.66	5574.80	-1062.16	2233811.20	1336272.92	40°13'26.109"N	108°14'39.609"W	0.00	
16924.50†	84.265	359.985	11420.01	5757.54	5674.30	-1062.18	2233814.25	1336372.37	40°13'27.092"N	108°14'39.610"W	0.00	
17024.50†	84.265	359.985	11430.00	5856.41	5773.80	-1062.21	2233817.30	1336471.81	40°13'28.076"N	108°14'39.610"W	0.00	
17124.50†	84.265	359.985	11439.99	5955.29	5873.30	-1062.23	2233820.34	1336571.26	40°13'29.059"N	108°14'39.610"W	0.00	
17224.50†	84.265	359.985	11449.99	6054.17	5972.80	-1062.26	2233823.39	1336670.71	40°13'30.042"N	108°14'39.611"W	0.00	
17324.50†	84.265	359.985	11459.98	6153.04	6072.30	-1062.29	2233826.44	1336770.16	40°13'31.025"N	108°14'39.611"W	0.00	
17424.50†	84.265	359.985	11469.97	6251.92	6171.80	-1062.31	2233829.49	1336869.61	40°13'32.009"N	108°14'39.611"W	0.00	
17524.50†	84.265	359.985	11479.96	6350.80	6271.30	-1062.34	2233832.54	1336969.05	40°13'32.992"N	108°14'39.612"W	0.00	
17624.50†	84.265	359.985	11489.96	6449.67	6370.80	-1062.36	2233835.59	1337068.50	40°13'33.975"N	108°14'39.612"W	0.00	
17724.50†	84.265	359.985	11499.95	6548.55	6470.30	-1062.39	2233838.64	1337167.95	40°13'34.958"N	108°14'39.613"W	0.00	
17824.50†	84.265	359.985	11509.94	6647.43	6569.79	-1062.41	2233841.69	1337267.40	40°13'35.942"N	108°14'39.613"W	0.00	
17924.50†	84.265	359.985	11519.93	6746.31	6669.29	-1062.44	2233844.74	1337366.85	40°13'36.925"N	108°14'39.613"W	0.00	
18024.50†	84.265	359.985	11529.93	6845.18	6768.79	-1062.46	2233847.79	1337466.30	40°13'37.908"N	108°14'39.614"W	0.00	
18124.50†	84.265	359.985	11539.92	6944.06	6868.29	-1062.49	2233850.84	1337565.74	40°13'38.891"N	108°14'39.614"W	0.00	
18224.50†	84.265	359.985	11549.91	7042.94	6967.79	-1062.51	2233853.88	1337665.19	40°13'39.875"N	108°14'39.614"W	0.00	
18324.50†	84.265	359.985	11559.90	7141.81	7067.29	-1062.54	2233856.93	1337764.64	40°13'40.858"N	108°14'39.615"W	0.00	
18424.50†	84.265	359.985	11569.90	7240.69	7166.79	-1062.57	2233859.98	1337864.09	40°13'41.841"N	108°14'39.615"W	0.00	
18524.50†	84.265	359.985	11579.89	7339.57	7266.29	-1062.59	2233863.03	1337963.54	40°13'42.824"N	108°14'39.616"W	0.00	
18624.50†	84.265	359.985	11589.88	7438.44	7365.79	-1062.62	2233866.08	1338062.99	40°13'43.808"N	108°14'39.616"W	0.00	
18724.50†	84.265	359.985	11599.87	7537.32	7465.29	-1062.64	2233869.13	1338162.43	40°13'44.791"N	108°14'39.616"W	0.00	
18824.50†	84.265	359.985	11609.87	7636.20	7564.79	-1062.67	2233872.18	1338261.88	40°13'45.774"N	108°14'39.617"W	0.00	
18924.50†	84.265	359.985	11619.86	7735.08	7664.29	-1062.69	2233875.23	1338361.33	40°13'46.757"N	108°14'39.617"W	0.00	
19024.50†	84.265	359.985	11629.85	7833.95	7763.79	-1062.72	2233878.28	1338460.78	40°13'47.741"N	108°14'39.618"W	0.00	
19124.50†	84.265	359.985	11639.85	7932.83	7863.29	-1062.74	2233881.33	1338560.23	40°13'48.724"N	108°14'39.618"W	0.00	
19224.50†	84.265	359.985	11649.84	8031.71	7962.79	-1062.77	2233884.37	1338659.68	40°13'49.707"N	108°14'39.618"W	0.00	
19324.50†	84.265	359.985	11659.83	8130.58	8062.29	-1062.79	2233887.42	1338759.12	40°13'50.690"N	108°14'39.619"W	0.00	
19424.50†	84.265	359.985	11669.82	8229.46	8161.79	-1062.82	2233890.47	1338858.57	40°13'51.674"N	108°14'39.619"W	0.00	
19524.50†	84.265	359.985	11679.82	8328.34	8261.29	-1062.85	2233893.52	1338958.02	40°13'52.657"N	108°14'39.619"W	0.00	
19624.50†	84.265	359.985	11689.81	8427.21	8360.79	-1062.87	2233896.57	1339057.47	40°13'53.640"N	108°14'39.620"W	0.00	
19724.50†	84.265	359.985	11699.80	8526.09	8460.28	-1062.90	2233899.62	1339156.92	40°13'54.623"N	108°14'39.620"W	0.00	
19824.50†	84.265	359.985	11709.79	8624.97	8559.78	-1062.92	2233902.67	1339256.37	40°13'55.607"N	108°14'39.621"W	0.00	
19924.50†	84.265	359.985	11719.79	8723.85	8659.28	-1062.95	2233905.72	1339355.81	40°13'56.590"N	108°14'39.621"W	0.00	
20024.50†	84.265	359.985	11729.78	8822.72	8758.78	-1062.97	2233908.77	1339455.26	40°13'57.573"N	108°14'39.621"W	0.00	
20124.50†	84.265	359.985	11739.77	8921.60	8858.28	-1063.00	2233911.82	1339554.71	40°13'58.556"N	108°14'39.622"W	0.00	
20224.50†	84.265	359.985	11749.76	9020.48	8957.78	-1063.02	2233914.86	1339654.16	40°13'59.540"N	108°14'39.622"W	0.00	
20324.50†	84.265	359.985	11759.76	9119.35	9057.28	-1063.05	2233917.91	1339753.61	40°14'00.523"N	108°14'39.623"W	0.00	
20424.50†	84.265	359.985	11769.75	9218.23	9156.78	-1063.07	2233920.96	1339853.06	40°14'01.506"N	108°14'39.623"W	0.00	
20524.50†	84.265	359.985	11779.74	9317.11	9256.28	-1063.10	2233924.01	1339952.50	40°14'02.489"N	108°14'39.623"W	0.00	
20624.50†	84.265	359.985	11789.73	9415.98	9355.78	-1063.12	2233927.06	1340051.95	40°14'03.473"N	108°14'39.624"W	0.00	
20707.22	84.265	359.985	11798.00	9497.78	9438.09	-1063.15	2233929.58	1340134.22	40°14'04.286"N	108°14'39.624"W	0.00	End of Tangent; WELL PLAN TD / BOTTOM HOLE



# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	AUGUSTUS	Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO	Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY	Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W		

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
BHR FED 023-14-397-4RH LP REV-1 (2310'FEL & 600'FSL, SEC.23)		10833.50	103.99	-868.03	2233836.18	1330798.97	40°12'32.047"N	108°14'37.104"W	point
BHR FED 023-14-397-4RH LP REV-2 (2310'FEL & 600'FSL, SEC.23)		10833.50	78.15	-1060.75	2233642.76	1330779.10	40°12'31.792"N	108°14'39.588"W	point
1) BHR FED 023-14-397-4RH LP REV-3 (2310'FEL & 600'FSL, SEC.23)	11300.24	10858.00	78.19	-1060.75	2233642.76	1330779.14	40°12'31.792"N	108°14'39.588"W	point
BHR FED 023-14-397-4RH BHL REV-1 (2310'FEL & 600'FNL, SEC.14)		11773.50	9458.12	-872.20	2234121.05	1340148.34	40°14'04.484"N	108°14'37.162"W	point
BHR FED 023-14-397-4RH BHL REV-2 (2310'FEL & 600'FNL, SEC.14)		11773.50	9438.13	-1063.15	2233929.58	1340134.26	40°14'04.286"N	108°14'39.624"W	point
2) BHR FED 023-14-397-4RH BHL REV-3 (2310'FEL & 600'FNL, SEC.14)	20707.22	11798.00	9438.09	-1063.15	2233929.58	1340134.22	40°14'04.286"N	108°14'39.624"W	point

## SURVEY PROGRAM - Ref Wellbore: BHR FED 023-14-397-4RH PWB Ref Wellpath: BHR FED 023-14-397-4RH (REV-D.0) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	20707.22	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)		BHR FED 023-14-397-4RH PWB





# Planned Wellpath Report

BHR FED 023-14-397-4RH (REV-D.0) PWP  
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REFERENCE WELLPATH IDENTIFICATION					
Operator	AUGUSTUS			Slot	SLOT#02 BHR FED 023-14-397-4RH (523'FSL & 1249'FEL, SEC.23) NIOBRARA
Area	COLORADO			Well	BHR FED 023-14-397-4RH
Field	RIO BLANCO COUNTY			Wellbore	BHR FED 023-14-397-4RH PWB
Facility	SEC.23-T03N-R97W				

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
1847.00	0.000	239.470	1847.00	MESAVERDE	
5369.90	9.781	239.470	5346.00	ROLLINS	
6668.78	9.781	239.470	6626.00	SEGO-LOWER	
7095.99	9.781	239.470	7047.00	CASTLEGATE	
8473.01	9.781	239.470	8404.00	MANCOS - MARKER 6 - CONDENSED SECTOR	
9821.61	9.781	239.470	9733.00	BUCK PEAK	
10288.09	8.972	292.021	10193.00	TOW CREEK	
10698.27	36.877	349.516	10570.00	WOLF MTN	
11300.24	84.265	359.985	10858.00	LANDING POINT	
11750.58	84.265	359.985	10903.00	HOT WOLF MTN - RANGELY BENCH	
20707.22	84.265	359.985	11798.00	WELL PLAN TD / BOTTOM HOLE	

DESIGN COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
24.50	0.000	239.470	24.50	Tie On	
3400.00	0.000	239.470	3400.00	End of Tangent	
3889.06	9.781	239.470	3886.69	End of Build	
10184.30	9.781	239.470	10090.41	End of Tangent	
11300.24	84.265	359.985	10858.00	End of 3D Arc	
20707.22	84.265	359.985	11798.00	End of Tangent	