

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)
Field: WELD COUNTY (KERR MCGEE) Well: UNDERHILL 2C-17HZ
Facility: SEC.17-T1N-R67W Wellbore: UNDERHILL 2C-17HZ PWB

Plot reference wellpath is UNDERHILL 2C-17HZ (PERMIT REV-2) PWP

True vertical depths are referenced to ENSIGN 145 (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to ENSIGN 145 (RKB)	North Reference: True north
ENSGN 145 (RKB) to Mean Sea Level: 5125 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: precin on 5/6/2013

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.17-T1N-R67W			3163889.720	1261989.210	40°03'03.831"N	104°54'52.408"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)	-1769.69	1139.44	3165040.775	1260227.147	40°02'46.342"N	104°54'37.757"W
ENSGN 145 (RKB) to Mud line (At Slot: SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17))						5125R
Mean Sea Level to Mud line (At Slot: SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17))						0R
ENSGN 145 (RKB) to Mean Sea Level						5125R

Survey Program

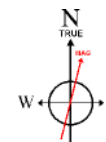
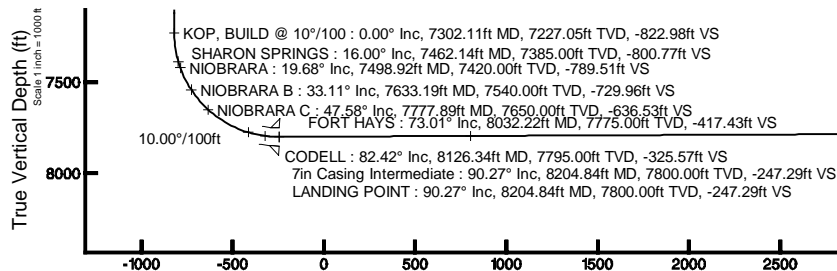
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
13.00	8204.84	NaviTrak	NaviTrak (MagCorr)		UNDERHILL 2C-17HZ PWB
8204.84	12402.86	OnTrak	OnTrak (MagCorr)		UNDERHILL 2C-17HZ PWB

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-ON	13.00	0.000	201.800	13.00	0.00	0.00	0.00	0.00
BEGIN BUILD	1250.00	0.000	201.800	1250.00	0.00	0.00	0.00	0.00
END BUILD	1750.00	10.000	201.800	1747.47	-40.41	-16.16	2.00	-40.38
BEGIN DROP	6357.53	10.000	201.800	6285.00	-783.28	-313.29	0.00	-782.60
END DROP	6857.53	0.000	359.876	6782.47	-823.69	-329.45	2.00	-822.98
KOP, BUILD @ 10°/100	7302.11	0.000	359.876	7227.05	-823.69	-329.45	0.00	-822.98
LANDING POINT	8204.84	90.273	359.876	7800.00	-248.01	-330.70	10.00	-247.29
TOTAL DEPTH	12402.86	90.273	359.876	7780.00	3949.96	-339.82	0.00	3950.68

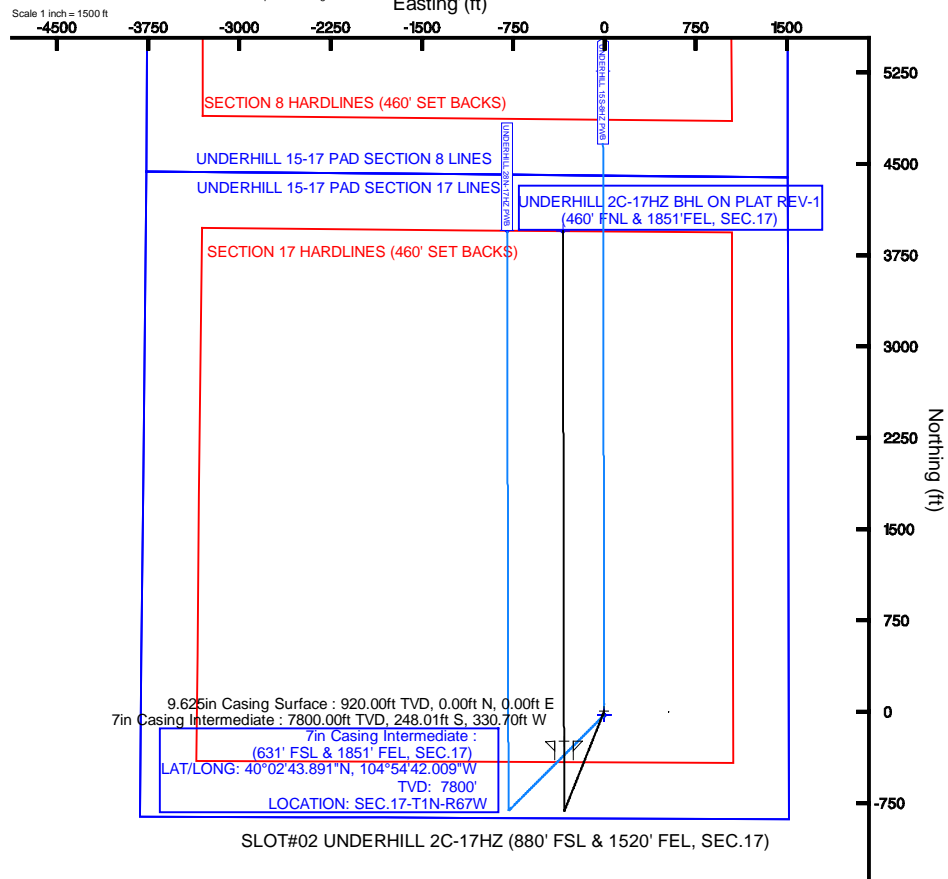
Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
UNDERHILL 15-17 PAD SECTION 17 HARDLINES (460' SET BACKS)	5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	
UNDERHILL 15-17 PAD SECTION 17 LINES	5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	
UNDERHILL 15-17 PAD SECTION 8 HARDLINES (460' SET BACKS)	5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	
UNDERHILL 15-17 PAD SECTION 8 LINES	5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	
UNDERHILL 2C-17HZ BHL ON PLAT REV-1 (460' FNL & 1851' FEL, SEC.17)	12402.86	7780.00	3949.96	-339.82	3164674.72	1261474.61	40°03'25.376"N	104°54'42.127"W



BGGM (1945.0 to 2014.0) Dip: 66.65° Field: 52630.1 nT
Magnetic North is 8.71 degrees East of True North (at 5/6/2013)

To correct azimuth from Magnetic to True add 8.71 degrees
For example: if the Magnetic North Azimuth = 90.00 degrees, the True North Azimuth = 90 + 8.71 = 98.71



UNDERHILL 2C-17HZ BHL ON PLAT REV-1 (460' FNL & 1851' FEL, SEC.17)
TOTAL DEPTH : 90.27° Inc, 12402.86ft MD, 7780.00ft TVD, 3950.68ft VS



Planned Wellpath Report

UNDERHILL 2C-17HZ (PERMIT REV-2) PWP

Page 1 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)
Area	COLORADO	Well	UNDERHILL 2C-17HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	UNDERHILL 2C-17HZ PWB
Facility	SEC.17-T1N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect@ 3.0.2
North Reference	True	User	Precain
Scale	0.999963	Report Generated	5/6/2013 at 2:32:55 PM
Convergence at slot	0.38° East	Database/Source file	WellArchitectDB/UNDERHILL_2C-17HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1769.69	1139.44	3165040.78	1260227.15	40°02'46.342"N	104°54'37.757"W
Facility Reference Pt			3163889.72	1261989.21	40°03'03.831"N	104°54'52.408"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	ENSIGN 145 (RKB) to Facility Vertical Datum	5125.00ft
Horizontal Reference Pt	Slot	ENSIGN 145 (RKB) to Mean Sea Level	5125.00ft
Vertical Reference Pt	ENSIGN 145 (RKB)	ENSIGN 145 (RKB) to Mud Line at Slot (SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17))	5125.00ft
MD Reference Pt	ENSIGN 145 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.88°



Planned Wellpath Report

UNDERHILL 2C-17HZ (PERMIT REV-2) PWP

Page 2 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)
Area	COLORADO	Well	UNDERHILL 2C-17HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	UNDERHILL 2C-17HZ PWB
Facility	SEC.17-T1N-R67W		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	201.800	0.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
13.00	0.000	201.800	13.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	TIE-ON
113.00†	0.000	201.800	113.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
213.00†	0.000	201.800	213.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
313.00†	0.000	201.800	313.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
413.00†	0.000	201.800	413.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
513.00†	0.000	201.800	513.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
613.00†	0.000	201.800	613.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
713.00†	0.000	201.800	713.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
813.00†	0.000	201.800	813.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
913.00†	0.000	201.800	913.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
1013.00†	0.000	201.800	1013.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
1113.00†	0.000	201.800	1113.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
1213.00†	0.000	201.800	1213.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	
1250.00	0.000	201.800	1250.00	0.00	0.00	0.00	40°02'46.342"N	104°54'37.757"W	0.00	BEGIN BUILD
1313.00†	1.260	201.800	1312.99	-0.64	-0.64	-0.26	40°02'46.336"N	104°54'37.760"W	2.00	
1413.00†	3.260	201.800	1412.91	-4.30	-4.30	-1.72	40°02'46.299"N	104°54'37.779"W	2.00	
1513.00†	5.260	201.800	1512.63	-11.19	-11.20	-4.48	40°02'46.231"N	104°54'37.815"W	2.00	
1613.00†	7.260	201.800	1612.03	-21.31	-21.32	-8.53	40°02'46.131"N	104°54'37.867"W	2.00	
1713.00†	9.260	201.800	1710.99	-34.63	-34.66	-13.86	40°02'45.999"N	104°54'37.935"W	2.00	
1750.00	10.000	201.800	1747.47	-40.38	-40.41	-16.16	40°02'45.943"N	104°54'37.965"W	2.00	END BUILD
1813.00†	10.000	201.800	1809.51	-50.52	-50.57	-20.23	40°02'45.842"N	104°54'38.017"W	0.00	
1913.00†	10.000	201.800	1907.99	-66.63	-66.69	-26.67	40°02'45.683"N	104°54'38.100"W	0.00	
2013.00†	10.000	201.800	2006.47	-82.74	-82.81	-33.12	40°02'45.524"N	104°54'38.183"W	0.00	
2113.00†	10.000	201.800	2104.95	-98.85	-98.94	-39.57	40°02'45.364"N	104°54'38.266"W	0.00	
2213.00†	10.000	201.800	2203.43	-114.96	-115.06	-46.02	40°02'45.205"N	104°54'38.349"W	0.00	
2313.00†	10.000	201.800	2301.91	-131.07	-131.18	-52.47	40°02'45.046"N	104°54'38.432"W	0.00	
2413.00†	10.000	201.800	2400.39	-147.18	-147.31	-58.92	40°02'44.886"N	104°54'38.515"W	0.00	
2513.00†	10.000	201.800	2498.87	-163.29	-163.43	-65.37	40°02'44.727"N	104°54'38.598"W	0.00	
2613.00†	10.000	201.800	2597.35	-179.40	-179.55	-71.82	40°02'44.568"N	104°54'38.680"W	0.00	
2713.00†	10.000	201.800	2695.84	-195.50	-195.67	-78.26	40°02'44.408"N	104°54'38.763"W	0.00	
2813.00†	10.000	201.800	2794.32	-211.61	-211.80	-84.71	40°02'44.249"N	104°54'38.846"W	0.00	
2913.00†	10.000	201.800	2892.80	-227.72	-227.92	-91.16	40°02'44.090"N	104°54'38.929"W	0.00	
3013.00†	10.000	201.800	2991.28	-243.83	-244.04	-97.61	40°02'43.930"N	104°54'39.012"W	0.00	
3113.00†	10.000	201.800	3089.76	-259.94	-260.17	-104.06	40°02'43.771"N	104°54'39.095"W	0.00	
3213.00†	10.000	201.800	3188.24	-276.05	-276.29	-110.51	40°02'43.612"N	104°54'39.178"W	0.00	
3313.00†	10.000	201.800	3286.72	-292.16	-292.41	-116.96	40°02'43.452"N	104°54'39.261"W	0.00	
3413.00†	10.000	201.800	3385.20	-308.27	-308.54	-123.41	40°02'43.293"N	104°54'39.344"W	0.00	
3513.00†	10.000	201.800	3483.68	-324.38	-324.66	-129.85	40°02'43.134"N	104°54'39.427"W	0.00	
3613.00†	10.000	201.800	3582.16	-340.49	-340.78	-136.30	40°02'42.974"N	104°54'39.510"W	0.00	
3713.00†	10.000	201.800	3680.64	-356.59	-356.90	-142.75	40°02'42.815"N	104°54'39.593"W	0.00	
3813.00†	10.000	201.800	3779.12	-372.70	-373.03	-149.20	40°02'42.656"N	104°54'39.675"W	0.00	
3913.00†	10.000	201.800	3877.60	-388.81	-389.15	-155.65	40°02'42.496"N	104°54'39.758"W	0.00	
4013.00†	10.000	201.800	3976.09	-404.92	-405.27	-162.10	40°02'42.337"N	104°54'39.841"W	0.00	
4113.00†	10.000	201.800	4074.57	-421.03	-421.40	-168.55	40°02'42.178"N	104°54'39.924"W	0.00	



Planned Wellpath Report

UNDERHILL 2C-17HZ (PERMIT REV-2) PWP

Page 3 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)
Area	COLORADO	Well	UNDERHILL 2C-17HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	UNDERHILL 2C-17HZ PWB
Facility	SEC.17-T1N-R67W		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4213.00†	10.000	201.800	4173.05	-437.14	-437.52	-175.00	40°02'42.018"N	104°54'40.007"W	0.00	
4313.00†	10.000	201.800	4271.53	-453.25	-453.64	-181.44	40°02'41.859"N	104°54'40.090"W	0.00	
4413.00†	10.000	201.800	4370.01	-469.36	-469.77	-187.89	40°02'41.700"N	104°54'40.173"W	0.00	
4513.00†	10.000	201.800	4468.49	-485.47	-485.89	-194.34	40°02'41.540"N	104°54'40.256"W	0.00	
4613.00†	10.000	201.800	4566.97	-501.58	-502.01	-200.79	40°02'41.381"N	104°54'40.339"W	0.00	
4697.31†	10.000	201.800	4650.00	-515.16	-515.60	-206.23	40°02'41.247"N	104°54'40.409"W	0.00	SUSSEX
4713.00†	10.000	201.800	4665.45	-517.68	-518.13	-207.24	40°02'41.222"N	104°54'40.422"W	0.00	
4813.00†	10.000	201.800	4763.93	-533.79	-534.26	-213.69	40°02'41.062"N	104°54'40.505"W	0.00	
4913.00†	10.000	201.800	4862.41	-549.90	-550.38	-220.14	40°02'40.903"N	104°54'40.588"W	0.00	
5013.00†	10.000	201.800	4960.89	-566.01	-566.50	-226.59	40°02'40.744"N	104°54'40.670"W	0.00	
5113.00†	10.000	201.800	5059.37	-582.12	-582.63	-233.03	40°02'40.584"N	104°54'40.753"W	0.00	
5213.00†	10.000	201.800	5157.85	-598.23	-598.75	-239.48	40°02'40.425"N	104°54'40.836"W	0.00	
5313.00†	10.000	201.800	5256.34	-614.34	-614.87	-245.93	40°02'40.266"N	104°54'40.919"W	0.00	
5315.71†	10.000	201.800	5259.00	-614.77	-615.31	-246.11	40°02'40.261"N	104°54'40.921"W	0.00	SHANNON
5413.00†	10.000	201.800	5354.82	-630.45	-631.00	-252.38	40°02'40.106"N	104°54'41.002"W	0.00	
5513.00†	10.000	201.800	5453.30	-646.56	-647.12	-258.83	40°02'39.947"N	104°54'41.085"W	0.00	
5613.00†	10.000	201.800	5551.78	-662.67	-663.24	-265.28	40°02'39.788"N	104°54'41.168"W	0.00	
5713.00†	10.000	201.800	5650.26	-678.77	-679.36	-271.73	40°02'39.628"N	104°54'41.251"W	0.00	
5813.00†	10.000	201.800	5748.74	-694.88	-695.49	-278.17	40°02'39.469"N	104°54'41.334"W	0.00	
5913.00†	10.000	201.800	5847.22	-710.99	-711.61	-284.62	40°02'39.310"N	104°54'41.417"W	0.00	
6013.00†	10.000	201.800	5945.70	-727.10	-727.73	-291.07	40°02'39.150"N	104°54'41.500"W	0.00	
6113.00†	10.000	201.800	6044.18	-743.21	-743.86	-297.52	40°02'38.991"N	104°54'41.583"W	0.00	
6213.00†	10.000	201.800	6142.66	-759.32	-759.98	-303.97	40°02'38.832"N	104°54'41.665"W	0.00	
6313.00†	10.000	201.800	6241.14	-775.43	-776.10	-310.42	40°02'38.672"N	104°54'41.748"W	0.00	
6357.53	10.000	201.800	6285.00	-782.60	-783.28	-313.29	40°02'38.601"N	104°54'41.785"W	0.00	BEGIN DROP
6413.00†	8.891	201.800	6339.71	-791.05	-791.73	-316.67	40°02'38.518"N	104°54'41.829"W	2.00	
6513.00†	6.891	201.800	6438.76	-803.78	-804.48	-321.77	40°02'38.392"N	104°54'41.894"W	2.00	
6613.00†	4.891	201.800	6538.23	-813.30	-814.01	-325.58	40°02'38.298"N	104°54'41.943"W	2.00	
6713.00†	2.891	201.800	6637.99	-819.60	-820.31	-328.10	40°02'38.235"N	104°54'41.976"W	2.00	
6813.00†	0.891	201.800	6737.93	-822.66	-823.37	-329.32	40°02'38.205"N	104°54'41.991"W	2.00	
6857.53	0.000	359.876	6782.47	-822.98	-823.69	-329.45	40°02'38.202"N	104°54'41.993"W	2.00	END DROP
6913.00†	0.000	359.876	6837.93	-822.98	-823.69	-329.45	40°02'38.202"N	104°54'41.993"W	0.00	
7013.00†	0.000	359.876	6937.93	-822.98	-823.69	-329.45	40°02'38.202"N	104°54'41.993"W	0.00	
7113.00†	0.000	359.876	7037.93	-822.98	-823.69	-329.45	40°02'38.202"N	104°54'41.993"W	0.00	
7213.00†	0.000	359.876	7137.93	-822.98	-823.69	-329.45	40°02'38.202"N	104°54'41.993"W	0.00	
7302.11	0.000	359.876	7227.05	-822.98	-823.69	-329.45	40°02'38.202"N	104°54'41.993"W	0.00	KOP, BUILD @ 10°/100
7313.00†	1.089	359.876	7237.93	-822.87	-823.59	-329.45	40°02'38.203"N	104°54'41.993"W	10.00	
7413.00†	11.089	359.876	7337.24	-812.28	-813.00	-329.48	40°02'38.308"N	104°54'41.993"W	10.00	
7462.14†	16.003	359.876	7385.00	-800.77	-801.49	-329.50	40°02'38.421"N	104°54'41.994"W	10.00	SHARON SPRINGS
7498.92†	19.680	359.876	7420.00	-789.51	-790.22	-329.53	40°02'38.533"N	104°54'41.994"W	10.00	NIOBRARA
7513.00†	21.089	359.876	7433.20	-784.60	-785.32	-329.54	40°02'38.581"N	104°54'41.994"W	10.00	
7613.00†	31.089	359.876	7522.90	-740.68	-741.40	-329.63	40°02'39.015"N	104°54'41.995"W	10.00	
7633.19†	33.107	359.876	7540.00	-729.96	-730.67	-329.66	40°02'39.121"N	104°54'41.996"W	10.00	NIOBRARA B
7713.00†	41.089	359.876	7603.61	-681.85	-682.57	-329.76	40°02'39.597"N	104°54'41.997"W	10.00	
7777.89†	47.578	359.876	7650.00	-636.53	-637.24	-329.86	40°02'40.045"N	104°54'41.998"W	10.00	NIOBRARA C



Planned Wellpath Report

UNDERHILL 2C-17HZ (PERMIT REV-2) PWP

Page 4 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)
Area	COLORADO	Well	UNDERHILL 2C-17HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	UNDERHILL 2C-17HZ PWB
Facility	SEC.17-T1N-R67W		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7813.00†	51.089	359.876	7672.87	-609.90	-610.62	-329.92	40°02'40.308"N	104°54'41.999"W	10.00	
7913.00†	61.089	359.876	7728.59	-527.02	-527.73	-330.10	40°02'41.127"N	104°54'42.001"W	10.00	
8013.00†	71.089	359.876	7769.08	-435.72	-436.43	-330.29	40°02'42.029"N	104°54'42.004"W	10.00	
8032.22†	73.011	359.876	7775.00	-417.43	-418.15	-330.33	40°02'42.210"N	104°54'42.004"W	10.00	FORT HAYS
8113.00†	81.089	359.876	7793.09	-338.77	-339.49	-330.50	40°02'42.987"N	104°54'42.007"W	10.00	
8126.34†	82.423	359.876	7795.00	-325.57	-326.29	-330.53	40°02'43.118"N	104°54'42.007"W	10.00	CODELL
8204.84	90.273	359.876	7800.00	-247.29	-248.01	-330.70	40°02'43.891"N	104°54'42.009"W	10.00	LANDING POINT
8213.00†	90.273	359.876	7799.96	-239.13	-239.85	-330.72	40°02'43.972"N	104°54'42.009"W	0.00	
8313.00†	90.273	359.876	7799.48	-139.13	-139.85	-330.94	40°02'44.960"N	104°54'42.012"W	0.00	
8413.00†	90.273	359.876	7799.01	-39.14	-39.85	-331.16	40°02'45.948"N	104°54'42.015"W	0.00	
8513.00†	90.273	359.876	7798.53	60.86	60.15	-331.37	40°02'46.936"N	104°54'42.018"W	0.00	
8613.00†	90.273	359.876	7798.05	160.86	160.15	-331.59	40°02'47.925"N	104°54'42.021"W	0.00	
8713.00†	90.273	359.876	7797.58	260.86	260.14	-331.81	40°02'48.913"N	104°54'42.024"W	0.00	
8813.00†	90.273	359.876	7797.10	360.86	360.14	-332.02	40°02'49.901"N	104°54'42.026"W	0.00	
8913.00†	90.273	359.876	7796.62	460.86	460.14	-332.24	40°02'50.889"N	104°54'42.029"W	0.00	
9013.00†	90.273	359.876	7796.15	560.86	560.14	-332.46	40°02'51.877"N	104°54'42.032"W	0.00	
9113.00†	90.273	359.876	7795.67	660.86	660.14	-332.68	40°02'52.866"N	104°54'42.035"W	0.00	
9213.00†	90.273	359.876	7795.19	760.86	760.14	-332.89	40°02'53.854"N	104°54'42.038"W	0.00	
9313.00†	90.273	359.876	7794.72	860.85	860.14	-333.11	40°02'54.842"N	104°54'42.040"W	0.00	
9413.00†	90.273	359.876	7794.24	960.85	960.13	-333.33	40°02'55.830"N	104°54'42.043"W	0.00	
9513.00†	90.273	359.876	7793.77	1060.85	1060.13	-333.54	40°02'56.818"N	104°54'42.046"W	0.00	
9613.00†	90.273	359.876	7793.29	1160.85	1160.13	-333.76	40°02'57.807"N	104°54'42.049"W	0.00	
9713.00†	90.273	359.876	7792.81	1260.85	1260.13	-333.98	40°02'58.795"N	104°54'42.052"W	0.00	
9813.00†	90.273	359.876	7792.34	1360.85	1360.13	-334.20	40°02'59.783"N	104°54'42.054"W	0.00	
9913.00†	90.273	359.876	7791.86	1460.85	1460.13	-334.41	40°03'00.771"N	104°54'42.057"W	0.00	
10013.00†	90.273	359.876	7791.38	1560.85	1560.13	-334.63	40°03'01.760"N	104°54'42.060"W	0.00	
10113.00†	90.273	359.876	7790.91	1660.85	1660.12	-334.85	40°03'02.748"N	104°54'42.063"W	0.00	
10213.00†	90.273	359.876	7790.43	1760.84	1760.12	-335.06	40°03'03.736"N	104°54'42.066"W	0.00	
10313.00†	90.273	359.876	7789.95	1860.84	1860.12	-335.28	40°03'04.724"N	104°54'42.068"W	0.00	
10413.00†	90.273	359.876	7789.48	1960.84	1960.12	-335.50	40°03'05.712"N	104°54'42.071"W	0.00	
10513.00†	90.273	359.876	7789.00	2060.84	2060.12	-335.72	40°03'06.701"N	104°54'42.074"W	0.00	
10613.00†	90.273	359.876	7788.53	2160.84	2160.12	-335.93	40°03'07.689"N	104°54'42.077"W	0.00	
10713.00†	90.273	359.876	7788.05	2260.84	2260.12	-336.15	40°03'08.677"N	104°54'42.080"W	0.00	
10813.00†	90.273	359.876	7787.57	2360.84	2360.12	-336.37	40°03'09.665"N	104°54'42.083"W	0.00	
10913.00†	90.273	359.876	7787.10	2460.84	2460.11	-336.58	40°03'10.653"N	104°54'42.085"W	0.00	
11013.00†	90.273	359.876	7786.62	2560.84	2560.11	-336.80	40°03'11.642"N	104°54'42.088"W	0.00	
11113.00†	90.273	359.876	7786.14	2660.83	2660.11	-337.02	40°03'12.630"N	104°54'42.091"W	0.00	
11213.00†	90.273	359.876	7785.67	2760.83	2760.11	-337.24	40°03'13.618"N	104°54'42.094"W	0.00	
11313.00†	90.273	359.876	7785.19	2860.83	2860.11	-337.45	40°03'14.606"N	104°54'42.097"W	0.00	
11413.00†	90.273	359.876	7784.72	2960.83	2960.11	-337.67	40°03'15.594"N	104°54'42.099"W	0.00	
11513.00†	90.273	359.876	7784.24	3060.83	3060.11	-337.89	40°03'16.583"N	104°54'42.102"W	0.00	
11613.00†	90.273	359.876	7783.76	3160.83	3160.10	-338.10	40°03'17.571"N	104°54'42.105"W	0.00	
11713.00†	90.273	359.876	7783.29	3260.83	3260.10	-338.32	40°03'18.559"N	104°54'42.108"W	0.00	
11813.00†	90.273	359.876	7782.81	3360.83	3360.10	-338.54	40°03'19.547"N	104°54'42.111"W	0.00	
11913.00†	90.273	359.876	7782.33	3460.83	3460.10	-338.76	40°03'20.536"N	104°54'42.113"W	0.00	



Planned Wellpath Report

UNDERHILL 2C-17HZ (PERMIT REV-2) PWP

Page 5 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)
Area	COLORADO	Well	UNDERHILL 2C-17HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	UNDERHILL 2C-17HZ PWB
Facility	SEC.17-T1N-R67W		

WELLPATH DATA (140 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12013.00†	90.273	359.876	7781.86	3560.82	3560.10	-338.97	40°03'21.524"N	104°54'42.116"W	0.00	
12113.00†	90.273	359.876	7781.38	3660.82	3660.10	-339.19	40°03'22.512"N	104°54'42.119"W	0.00	
12213.00†	90.273	359.876	7780.90	3760.82	3760.10	-339.41	40°03'23.500"N	104°54'42.122"W	0.00	
12313.00†	90.273	359.876	7780.43	3860.82	3860.09	-339.62	40°03'24.488"N	104°54'42.125"W	0.00	
12402.86	90.273	359.876	7780.00 ¹	3950.68	3949.96	-339.82	40°03'25.376"N	104°54'42.127"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: UNDERHILL 2C-17HZ PWB Ref Wellpath: UNDERHILL 2C-17HZ (PERMIT REV-2) PWP									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	13.00	920.00	907.00	13.00	920.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	13.00	920.00	907.00	13.00	920.00	0.00	0.00	0.00	0.00
8.75in Open Hole	920.00	8204.84	7284.84	920.00	7800.00	0.00	0.00	-248.01	-330.70
7in Casing Intermediate	13.00	8204.84	8191.84	13.00	7800.00	0.00	0.00	-248.01	-330.70
6.125in Open Hole	8204.84	12402.86	4198.02	7800.00	7780.00	-248.01	-330.70	3949.96	-339.82
4.5in Casing Production	13.00	12402.86	12389.86	13.00	7780.00	0.00	0.00	3949.96	-339.82

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
UNDERHILL 15-17 PAD SECTION 17 HARDLINES (460' SET BACKS)		5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	polygon
UNDERHILL 15-17 PAD SECTION 17 LINES		5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	polygon
UNDERHILL 15-17 PAD SECTION 8 HARDLINES (460' SET BACKS)		5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	polygon
UNDERHILL 15-17 PAD SECTION 8 LINES		5125.00	-30.64	-0.26	3165040.71	1260196.51	40°02'46.039"N	104°54'37.760"W	polygon
1) UNDERHILL 2C-17HZ BHL ON PLAT REV-1 (460' FNL & 1851' FEL, SEC.17)	12402.86	7780.00	3949.96	-339.82	3164674.72	1264174.61	40°03'25.376"N	104°54'42.127"W	point

SURVEY PROGRAM - Ref Wellbore: UNDERHILL 2C-17HZ PWB Ref Wellpath: UNDERHILL 2C-17HZ (PERMIT REV-2) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
13.00	8204.84	NaviTrak (MagCorr)		UNDERHILL 2C-17HZ PWB
8204.84	12402.86	OnTrak (MagCorr)		UNDERHILL 2C-17HZ PWB



Planned Wellpath Report

UNDERHILL 2C-17HZ (PERMIT REV-2) PWP

Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 UNDERHILL 2C-17HZ (880' FSL & 1520' FEL, SEC.17)
Area	COLORADO	Well	UNDERHILL 2C-17HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	UNDERHILL 2C-17HZ PWB
Facility	SEC.17-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
4697.31	10.000	201.800	4650.00	SUSSEX
5315.71	10.000	201.800	5259.00	SHANNON
7462.14	16.003	359.876	7385.00	SHARON SPRINGS
7498.92	19.680	359.876	7420.00	NIOBRARA
7633.19	33.107	359.876	7540.00	NIOBRARA B
7777.89	47.578	359.876	7650.00	NIOBRARA C
8032.22	73.011	359.876	7775.00	FORT HAYS
8126.34	82.423	359.876	7795.00	CODELL