

Location:	COLORADO	Slot:	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Field:	WELD COUNTY (KERR MCGEE)	Well:	VOLLMAR 4N-11HZ
Facility:	SEC.14-T2N-R67W	Wellbore:	VOLLMAR 4N-11HZ PWB

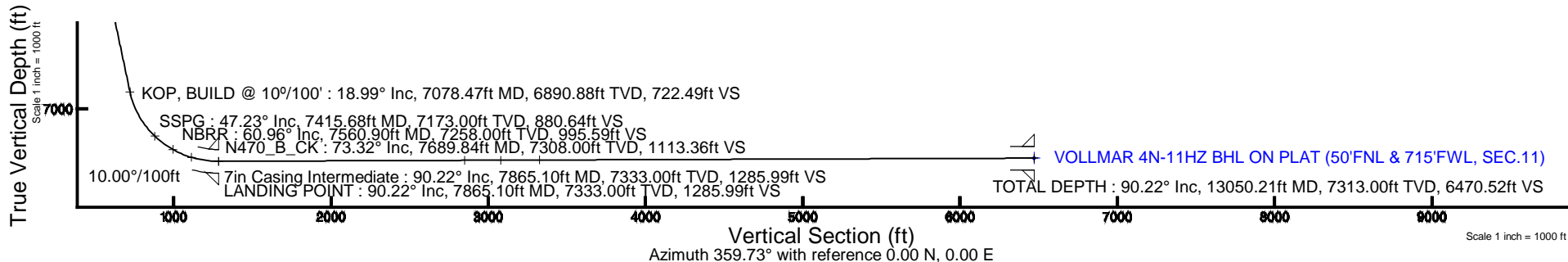
True vertical depths are referenced to PERMIT (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (RKB)	North Reference: True north
PERMIT (RKB) to Mean Sea Level: 4958 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#11 VOLLMAR 4N-11HZ (1231°FNL & 1833°FWL, SEC.14)): 0 feet	Depths are in feet
Coordinates are in feet referenced to SLOT	Created by: amarcir on 9/11/2014

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.14-T2N-R67W			3179914.426	1291732.032	40°07'56.662"N	104°51'23.565"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)	3473.58	-1164.54	3178724.763	1295196.925	40°08'30.988"N	104°51'38.560"W
PERMIT (RKB) to Mud line (At Slot: SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14))					4958ft	
Mean Sea Level to Mud line (At Slot: SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14))					0ft	
PERMIT (RKB) to Mean Sea Level					4958ft	

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	1129.00	Generic gyro - continuous	Generic gyro - continuous (Standard)		VOLLMAR 4N-11HZ PWB
1129.00	7865.10	NaviTrak	NaviTrak (MAGCORR,IFR)		VOLLMAR 4N-11HZ PWB
7865.10	13050.21	NaviTrak	NaviTrak (MAGCORR,IFR)		VOLLMAR 4N-11HZ PWB

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE ON	17.00	0.000	307.706	17.00	0.00	0.00	0.00	0.00
BEGIN NUGDE	3000.00	0.000	307.706	3000.00	0.00	0.00	0.00	0.00
END NUGDE	3949.50	18.990	307.706	3932.21	95.36	-123.35	2.00	95.94
KOP, BUILD @ 10°/100'	7078.47	18.990	307.706	6890.88	718.09	-928.89	0.00	722.49
LANDING POINT	7865.10	90.222	359.727	7333.00	1281.00	-1052.00	10.00	1285.99
BEGIN TURN	9429.38	90.222	359.727	7326.94	2845.25	-1059.47	0.00	2850.26
BEGIN TURN	9659.45	90.222	355.125	7326.05	3075.03	-1069.80	2.00	3080.08
END TURN	9906.39	90.222	0.064	7325.09	3321.68	-1080.16	2.00	3326.78
TOTAL DEPTH	13050.21	90.219	0.064	7313.00	6465.47	-1076.66	0.00	6470.52

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
VOLLMAR SEC.11 SECTION LINES		0.00	0.00	0.00	3187824.76	1295196.93	40°08'30.988"N	104°51'38.560"W
VOLLMAR SEC.14 SECTION LINES		0.00	0.00	0.00	3187824.76	1295196.93	40°08'30.988"N	104°51'38.560"W
VOLLMAR 4N-11HZ BHL ON PLAT (50FWL & 715FWL, SEC.11)	13050.21	7313.00	6465.47	-1076.66	3177601.57	1301654.19	40°09'34.880"N	104°51'52.427"W
VOLLMAR 4N-11HZ LANDBOX		7313.00	0.00	0.00	3187824.76	1295196.93	40°08'30.988"N	104°51'38.560"W
VOLLMAR SEC.11 HARDLINES (460' SETBACKS)		7313.00	0.00	0.00	3187824.76	1295196.93	40°08'30.988"N	104°51'38.560"W
VOLLMAR SEC.14 HARDLINES (460' SETBACKS)		7313.00	0.00	0.00	3187824.76	1295196.93	40°08'30.988"N	104°51'38.560"W



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 4N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 4N-11HZ PWB
Facility	SEC.14-T2N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Amarcar
Scale	0.999959	Report Generated	9/11/2014 at 9:19:37 AM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/VOLLMAR_4N-11HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3473.58	-1164.54	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W
Facility Reference Pt			3179914.43	1291732.03	40°07'56.662"N	104°51'23.565"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PERMIT (RKB) to Facility Vertical Datum	4958.00ft
Horizontal Reference Pt	Slot	PERMIT (RKB) to Mean Sea Level	4958.00ft
Vertical Reference Pt	PERMIT (RKB)	PERMIT (RKB) to Mud Line at Slot (SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14))	4958.00ft
MD Reference Pt	PERMIT (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.73°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 4N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 4N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (148 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	307.706	0.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
17.00	0.000	307.706	17.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	TIE ON
117.00†	0.000	307.706	117.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
217.00†	0.000	307.706	217.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
317.00†	0.000	307.706	317.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
417.00†	0.000	307.706	417.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
517.00†	0.000	307.706	517.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
617.00†	0.000	307.706	617.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
717.00†	0.000	307.706	717.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
801.00†	0.000	307.706	801.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	BASE FOX HILLS
817.00†	0.000	307.706	817.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
917.00†	0.000	307.706	917.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1017.00†	0.000	307.706	1017.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1117.00†	0.000	307.706	1117.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1129.00†	0.000	307.706	1129.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	SURFACE CSG SETTING DEPTH
1217.00†	0.000	307.706	1217.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1317.00†	0.000	307.706	1317.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1417.00†	0.000	307.706	1417.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1517.00†	0.000	307.706	1517.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1617.00†	0.000	307.706	1617.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1717.00†	0.000	307.706	1717.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1817.00†	0.000	307.706	1817.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
1917.00†	0.000	307.706	1917.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2017.00†	0.000	307.706	2017.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2117.00†	0.000	307.706	2117.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2217.00†	0.000	307.706	2217.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2317.00†	0.000	307.706	2317.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2417.00†	0.000	307.706	2417.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2517.00†	0.000	307.706	2517.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2617.00†	0.000	307.706	2617.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2717.00†	0.000	307.706	2717.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2817.00†	0.000	307.706	2817.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
2917.00†	0.000	307.706	2917.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	
3000.00	0.000	307.706	3000.00	0.00	0.00	0.00	40°08'30.988"N	104°51'38.560"W	0.00	BEGIN NUGDE
3017.00†	0.340	307.706	3017.00	0.03	0.03	-0.04	40°08'30.988"N	104°51'38.561"W	2.00	
3117.00†	2.340	307.706	3116.97	1.47	1.46	-1.89	40°08'31.002"N	104°51'38.584"W	2.00	
3217.00†	4.340	307.706	3216.79	5.06	5.02	-6.50	40°08'31.038"N	104°51'38.644"W	2.00	
3317.00†	6.340	307.706	3316.35	10.78	10.72	-13.86	40°08'31.094"N	104°51'38.738"W	2.00	
3417.00†	8.340	307.706	3415.53	18.64	18.53	-23.97	40°08'31.171"N	104°51'38.869"W	2.00	
3517.00†	10.340	307.706	3514.20	28.63	28.45	-36.81	40°08'31.269"N	104°51'39.034"W	2.00	
3617.00†	12.340	307.706	3612.24	40.73	40.48	-52.36	40°08'31.388"N	104°51'39.234"W	2.00	
3717.00†	14.340	307.706	3709.54	54.93	54.59	-70.62	40°08'31.527"N	104°51'39.469"W	2.00	
3817.00†	16.340	307.706	3805.97	71.20	70.77	-91.55	40°08'31.687"N	104°51'39.739"W	2.00	
3917.00†	18.340	307.706	3901.42	89.54	89.00	-115.12	40°08'31.867"N	104°51'40.042"W	2.00	
3949.50	18.990	307.706	3932.21	95.94	95.36	-123.35	40°08'31.930"N	104°51'40.148"W	2.00	END NUGDE

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 4N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 4N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	18.990	307.706	3996.04	109.46	108.79	-140.73	40°08'32.063"N	104°51'40.372"W	0.00	
4066.67†	18.990	307.706	4043.00	119.41	118.68	-153.52	40°08'32.161"N	104°51'40.537"W	0.00	PARKMAN
4117.00†	18.990	307.706	4090.60	129.49	128.69	-166.48	40°08'32.260"N	104°51'40.704"W	0.00	
4217.00†	18.990	307.706	4185.15	149.51	148.60	-192.22	40°08'32.456"N	104°51'41.035"W	0.00	
4317.00†	18.990	307.706	4279.71	169.53	168.50	-217.96	40°08'32.653"N	104°51'41.367"W	0.00	
4417.00†	18.990	307.706	4374.27	189.56	188.40	-243.71	40°08'32.850"N	104°51'41.698"W	0.00	
4511.90†	18.990	307.706	4464.00	208.56	207.29	-268.14	40°08'33.036"N	104°51'42.013"W	0.00	SUSSEX
4517.00†	18.990	307.706	4468.83	209.58	208.30	-269.45	40°08'33.046"N	104°51'42.030"W	0.00	
4617.00†	18.990	307.706	4563.38	229.61	228.20	-295.20	40°08'33.243"N	104°51'42.361"W	0.00	
4717.00†	18.990	307.706	4657.94	249.63	248.11	-320.94	40°08'33.440"N	104°51'42.693"W	0.00	
4817.00†	18.990	307.706	4752.50	269.65	268.01	-346.69	40°08'33.636"N	104°51'43.024"W	0.00	
4917.00†	18.990	307.706	4847.06	289.68	287.91	-372.43	40°08'33.833"N	104°51'43.356"W	0.00	
5017.00†	18.990	307.706	4941.61	309.70	307.81	-398.18	40°08'34.030"N	104°51'43.687"W	0.00	
5117.00†	18.990	307.706	5036.17	329.73	327.71	-423.92	40°08'34.226"N	104°51'44.019"W	0.00	
5217.00†	18.990	307.706	5130.73	349.75	347.62	-449.67	40°08'34.423"N	104°51'44.350"W	0.00	
5317.00†	18.990	307.706	5225.29	369.78	367.52	-475.41	40°08'34.620"N	104°51'44.682"W	0.00	
5417.00†	18.990	307.706	5319.84	389.80	387.42	-501.16	40°08'34.816"N	104°51'45.013"W	0.00	
5517.00†	18.990	307.706	5414.40	409.82	407.32	-526.90	40°08'35.013"N	104°51'45.345"W	0.00	
5617.00†	18.990	307.706	5508.96	429.85	427.22	-552.64	40°08'35.210"N	104°51'45.676"W	0.00	
5717.00†	18.990	307.706	5603.52	449.87	447.13	-578.39	40°08'35.406"N	104°51'46.008"W	0.00	
5817.00†	18.990	307.706	5698.07	469.90	467.03	-604.13	40°08'35.603"N	104°51'46.339"W	0.00	
5917.00†	18.990	307.706	5792.63	489.92	486.93	-629.88	40°08'35.800"N	104°51'46.671"W	0.00	
6017.00†	18.990	307.706	5887.19	509.94	506.83	-655.62	40°08'35.996"N	104°51'47.002"W	0.00	
6117.00†	18.990	307.706	5981.75	529.97	526.73	-681.37	40°08'36.193"N	104°51'47.334"W	0.00	
6217.00†	18.990	307.706	6076.30	549.99	546.64	-707.11	40°08'36.390"N	104°51'47.665"W	0.00	
6317.00†	18.990	307.706	6170.86	570.02	566.54	-732.86	40°08'36.586"N	104°51'47.997"W	0.00	
6417.00†	18.990	307.706	6265.42	590.04	586.44	-758.60	40°08'36.783"N	104°51'48.328"W	0.00	
6505.00†	18.990	307.706	6348.63	607.66	603.95	-781.26	40°08'36.956"N	104°51'48.620"W	0.00	4 1/2" LINER TOP
6517.00†	18.990	307.706	6359.98	610.07	606.34	-784.35	40°08'36.980"N	104°51'48.660"W	0.00	
6617.00†	18.990	307.706	6454.53	630.09	626.24	-810.09	40°08'37.176"N	104°51'48.991"W	0.00	
6717.00†	18.990	307.706	6549.09	650.11	646.15	-835.83	40°08'37.373"N	104°51'49.323"W	0.00	
6817.00†	18.990	307.706	6643.65	670.14	666.05	-861.58	40°08'37.570"N	104°51'49.654"W	0.00	
6917.00†	18.990	307.706	6738.21	690.16	685.95	-887.32	40°08'37.766"N	104°51'49.986"W	0.00	
7017.00†	18.990	307.706	6832.76	710.19	705.85	-913.07	40°08'37.963"N	104°51'50.317"W	0.00	
7078.47	18.990	307.706	6890.88	722.49	718.09	-928.89	40°08'38.084"N	104°51'50.521"W	0.00	KOP, BUILD @ 10°/100'
7117.00†	21.498	316.184	6927.04	731.47	727.02	-938.75	40°08'38.172"N	104°51'50.648"W	10.00	
7217.00†	29.340	330.837	7017.38	766.29	761.72	-963.43	40°08'38.515"N	104°51'50.966"W	10.00	
7317.00†	38.136	339.472	7100.51	816.84	812.16	-986.26	40°08'39.014"N	104°51'51.260"W	10.00	
7415.68†	47.232	345.147	7173.00	880.64	875.86	-1006.28	40°08'39.643"N	104°51'51.518"W	10.00	SSPG
7417.00†	47.355	345.211	7173.89	881.58	876.80	-1006.52	40°08'39.652"N	104°51'51.521"W	10.00	
7517.00†	56.785	349.444	7235.31	958.53	953.68	-1023.62	40°08'40.412"N	104°51'51.741"W	10.00	
7560.90†	60.965	351.013	7258.00	995.59	990.71	-1029.98	40°08'40.778"N	104°51'51.823"W	10.00	NBRR
7617.00†	66.330	352.843	7282.89	1045.38	1040.46	-1037.02	40°08'41.270"N	104°51'51.914"W	10.00	
7689.84†	73.325	355.010	7308.00	1113.36	1108.40	-1044.22	40°08'41.941"N	104°51'52.006"W	10.00	N470_B_CK
7717.00†	75.939	355.774	7315.20	1139.47	1134.50	-1046.32	40°08'42.199"N	104°51'52.033"W	10.00	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 4N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 4N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7817.00†	85.580	358.466	7331.24	1237.94	1232.96	-1051.24	40°08'43.172"N	104°51'52.097"W	10.00	
7865.10	90.222	359.727	7333.00	1285.99	1281.00	-1052.00	40°08'43.647"N	104°51'52.107"W	10.00	LANDING POINT
7917.00†	90.222	359.727	7332.80	1337.89	1332.90	-1052.25	40°08'44.160"N	104°51'52.110"W	0.00	
8017.00†	90.222	359.727	7332.41	1437.89	1432.90	-1052.73	40°08'45.148"N	104°51'52.116"W	0.00	
8117.00†	90.222	359.727	7332.02	1537.89	1532.90	-1053.20	40°08'46.136"N	104°51'52.122"W	0.00	
8217.00†	90.222	359.727	7331.64	1637.89	1632.90	-1053.68	40°08'47.124"N	104°51'52.128"W	0.00	
8317.00†	90.222	359.727	7331.25	1737.89	1732.90	-1054.16	40°08'48.112"N	104°51'52.135"W	0.00	
8417.00†	90.222	359.727	7330.86	1837.89	1832.89	-1054.64	40°08'49.101"N	104°51'52.141"W	0.00	
8517.00†	90.222	359.727	7330.47	1937.89	1932.89	-1055.11	40°08'50.089"N	104°51'52.147"W	0.00	
8617.00†	90.222	359.727	7330.09	2037.89	2032.89	-1055.59	40°08'51.077"N	104°51'52.153"W	0.00	
8717.00†	90.222	359.727	7329.70	2137.89	2132.89	-1056.07	40°08'52.065"N	104°51'52.159"W	0.00	
8817.00†	90.222	359.727	7329.31	2237.89	2232.89	-1056.54	40°08'53.053"N	104°51'52.166"W	0.00	
8917.00†	90.222	359.727	7328.92	2337.88	2332.88	-1057.02	40°08'54.042"N	104°51'52.172"W	0.00	
9017.00†	90.222	359.727	7328.54	2437.88	2432.88	-1057.50	40°08'55.030"N	104°51'52.178"W	0.00	
9117.00†	90.222	359.727	7328.15	2537.88	2532.88	-1057.98	40°08'56.018"N	104°51'52.184"W	0.00	
9217.00†	90.222	359.727	7327.76	2637.88	2632.88	-1058.45	40°08'57.006"N	104°51'52.190"W	0.00	
9317.00†	90.222	359.727	7327.38	2737.88	2732.88	-1058.93	40°08'57.994"N	104°51'52.197"W	0.00	
9417.00†	90.222	359.727	7326.99	2837.88	2832.87	-1059.41	40°08'58.982"N	104°51'52.203"W	0.00	
9429.38	90.222	359.727	7326.94 ²	2850.26	2845.25	-1059.47	40°08'59.105"N	104°51'52.204"W	0.00	BEGIN TURN
9517.00†	90.222	357.974	7326.60	2937.87	2932.85	-1061.23	40°08'59.970"N	104°51'52.226"W	2.00	
9617.00†	90.222	355.974	7326.21	3037.75	3032.71	-1066.50	40°09'00.957"N	104°51'52.294"W	2.00	
9659.45	90.222	355.125	7326.05	3080.08	3075.03	-1069.80	40°09'01.375"N	104°51'52.337"W	2.00	BEGIN TURN
9717.00†	90.222	356.276	7325.82	3137.49	3132.42	-1074.11	40°09'01.943"N	104°51'52.392"W	2.00	
9817.00†	90.222	358.276	7325.44	3237.39	3232.30	-1078.86	40°09'02.930"N	104°51'52.454"W	2.00	
9906.39	90.222	0.064	7325.09	3326.78	3321.68	-1080.16	40°09'03.813"N	104°51'52.470"W	2.00	END TURN
9917.00†	90.222	0.064	7325.05	3337.38	3332.28	-1080.15	40°09'03.918"N	104°51'52.470"W	0.00	
10017.00†	90.222	0.064	7324.66	3437.38	3432.28	-1080.04	40°09'04.906"N	104°51'52.469"W	0.00	
10117.00†	90.222	0.064	7324.28	3537.38	3532.28	-1079.92	40°09'05.894"N	104°51'52.467"W	0.00	
10217.00†	90.222	0.064	7323.89	3637.37	3632.28	-1079.81	40°09'06.882"N	104°51'52.466"W	0.00	
10317.00†	90.222	0.064	7323.50	3737.37	3732.28	-1079.70	40°09'07.870"N	104°51'52.465"W	0.00	
10417.00†	90.221	0.064	7323.11	3837.37	3832.28	-1079.59	40°09'08.859"N	104°51'52.463"W	0.00	
10517.00†	90.221	0.064	7322.73	3937.37	3932.28	-1079.48	40°09'09.847"N	104°51'52.462"W	0.00	
10617.00†	90.221	0.064	7322.34	4037.36	4032.28	-1079.37	40°09'10.835"N	104°51'52.461"W	0.00	
10717.00†	90.221	0.064	7321.96	4137.36	4132.28	-1079.25	40°09'11.823"N	104°51'52.459"W	0.00	
10817.00†	90.221	0.064	7321.57	4237.36	4232.28	-1079.14	40°09'12.811"N	104°51'52.458"W	0.00	
10917.00†	90.221	0.064	7321.18	4337.36	4332.27	-1079.03	40°09'13.800"N	104°51'52.456"W	0.00	
11017.00†	90.221	0.064	7320.80	4437.35	4432.27	-1078.92	40°09'14.788"N	104°51'52.455"W	0.00	
11117.00†	90.221	0.064	7320.41	4537.35	4532.27	-1078.81	40°09'15.776"N	104°51'52.454"W	0.00	
11217.00†	90.221	0.064	7320.03	4637.35	4632.27	-1078.70	40°09'16.764"N	104°51'52.452"W	0.00	
11317.00†	90.221	0.064	7319.64	4737.35	4732.27	-1078.59	40°09'17.752"N	104°51'52.451"W	0.00	
11417.00†	90.220	0.064	7319.26	4837.35	4832.27	-1078.47	40°09'18.741"N	104°51'52.449"W	0.00	
11517.00†	90.220	0.064	7318.87	4937.34	4932.27	-1078.36	40°09'19.729"N	104°51'52.448"W	0.00	
11617.00†	90.220	0.064	7318.49	5037.34	5032.27	-1078.25	40°09'20.717"N	104°51'52.447"W	0.00	
11717.00†	90.220	0.064	7318.11	5137.34	5132.27	-1078.14	40°09'21.705"N	104°51'52.445"W	0.00	
11817.00†	90.220	0.064	7317.72	5237.34	5232.27	-1078.03	40°09'22.693"N	104°51'52.444"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 4N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 4N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11917.00†	90.220	0.064	7317.34	5337.33	5332.27	-1077.92	40°09'23.682"N	104°51'52.443"W	0.00	
12017.00†	90.220	0.064	7316.95	5437.33	5432.27	-1077.81	40°09'24.670"N	104°51'52.441"W	0.00	
12117.00†	90.220	0.064	7316.57	5537.33	5532.27	-1077.69	40°09'25.658"N	104°51'52.440"W	0.00	
12217.00†	90.220	0.064	7316.19	5637.33	5632.26	-1077.58	40°09'26.646"N	104°51'52.438"W	0.00	
12317.00†	90.219	0.064	7315.80	5737.32	5732.26	-1077.47	40°09'27.634"N	104°51'52.437"W	0.00	
12417.00†	90.219	0.064	7315.42	5837.32	5832.26	-1077.36	40°09'28.623"N	104°51'52.436"W	0.00	
12517.00†	90.219	0.064	7315.04	5937.32	5932.26	-1077.25	40°09'29.611"N	104°51'52.434"W	0.00	
12617.00†	90.219	0.064	7314.66	6037.32	6032.26	-1077.14	40°09'30.599"N	104°51'52.433"W	0.00	
12717.00†	90.219	0.064	7314.27	6137.31	6132.26	-1077.03	40°09'31.587"N	104°51'52.432"W	0.00	
12817.00†	90.219	0.064	7313.89	6237.31	6232.26	-1076.92	40°09'32.575"N	104°51'52.430"W	0.00	
12917.00†	90.219	0.064	7313.51	6337.31	6332.26	-1076.80	40°09'33.564"N	104°51'52.429"W	0.00	
13017.00†	90.219	0.064	7313.13	6437.31	6432.26	-1076.69	40°09'34.552"N	104°51'52.427"W	0.00	
13050.21	90.219	0.064	7313.00 ²	6470.52	6465.47	-1076.66	40°09'34.880"N	104°51'52.427"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: VOLLMAR 4N-11HZ PWB				Ref Wellpath: VOLLMAR 4N-11HZ (PERMIT REV-1) 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	17.00	1129.00	1112.00	17.00	1129.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1129.00	1112.00	17.00	1129.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1129.00	7865.10	6736.10	1129.00	7333.00	0.00	0.00	1281.00	-1052.00
7in Casing Intermediate	17.00	7865.10	7848.10	17.00	7333.00	0.00	0.00	1281.00	-1052.00
6.125in Open Hole	7865.10	13050.21	5185.12	7333.00	7313.00	1281.00	-1052.00	6465.47	-1076.66
4.5in Casing Production	17.00	13050.21	13033.21	17.00	7313.00	0.00	0.00	6465.47	-1076.66

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 4N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 4N-11HZ PWB
Facility	SEC.14-T2N-R67W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
VOLLMAR SEC.11 SECTION LINES		0.00	0.00	0.00	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon
VOLLMAR SEC.14 SECTION LINES		0.00	0.00	0.00	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon
2) VOLLMAR 4N-11HZ BHL ON PLAT (50'FNL & 715'FWL, SEC.11)	13050.21	7313.00	6465.47	-1076.66	3177601.57	1301654.19	40°09'34.880"N	104°51'52.427"W	point
VOLLMAR 4N-11HZ LANDBOX		7313.00	0.00	0.00	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon
VOLLMAR SEC.11 HARDLINES (460' SETBACKS)		7313.00	0.00	0.00	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon
VOLLMAR SEC.14 HARDLINES (460' SETBACKS)		7313.00	0.00	0.00	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon

SURVEY PROGRAM - Ref Wellbore: VOLLMAR 4N-11HZ PWB					Ref Wellpath: VOLLMAR 4N-11HZ (PERMIT REV-1) PWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
17.00	1129.00	Generic gyro - continuous (Standard)				VOLLMAR 4N-11HZ PWB
1129.00	7865.10	NaviTrak (MAGCORR,IFR)				VOLLMAR 4N-11HZ PWB
7865.10	13050.21	NaviTrak (MAGCORR,IFR)				VOLLMAR 4N-11HZ PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#11 VOLLMAR 4N-11HZ (1231'FNL & 1833'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 4N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 4N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
801.00	0.000	307.706	801.00	BASE FOX HILLS
1129.00	0.000	307.706	1129.00	SURFACE CSG SETTING DEPTH
4066.67	18.990	307.706	4043.00	PARKMAN
4511.90	18.990	307.706	4464.00	SUSSEX
6505.00	18.990	307.706	6348.63	4 1/2" LINER TOP
7415.68	47.232	345.147	7173.00	SSPG
7560.90	60.965	351.013	7258.00	NBRR
7689.84	73.325	355.010	7308.00	N470_B_CK

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	307.706	17.00	TIE ON
3000.00	0.000	307.706	3000.00	BEGIN NUGDE
3949.50	18.990	307.706	3932.21	END NUGDE
7078.47	18.990	307.706	6890.88	KOP, BUILD @ 10°/100'
7865.10	90.222	359.727	7333.00	LANDING POINT
9429.38	90.222	359.727	7326.94	BEGIN TURN
9659.45	90.222	355.125	7326.05	BEGIN TURN
9906.39	90.222	0.064	7325.09	END TURN
13050.21	90.219	0.064	7313.00	TOTAL DEPTH