

Location:	COLORADO	Slot:	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Field:	WELD COUNTY (KERR MCGEE) Well:		VOLLMAR 3N-11HZ
Facility:	SEC.14-T2N-R67W	Wellbore:	VOLLMAR 3N-11HZ PWB

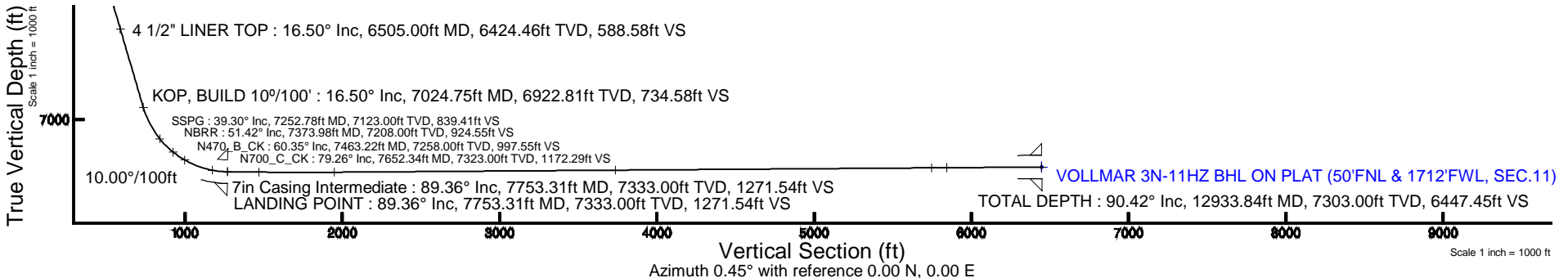
True vertical depths are referenced to PERMIT (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (RKB)	North Reference: True north
PERMIT (RKB) to Mean Sea Level: 4958 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#13 VOLLMAR 3N-11HZ (1223FNL & 1892FWL, SEC.14)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Stot	Created by: amarcar on 9/10/2014

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#13 VOLLMAR 3N-11HZ (1223FWL & 1892FWL, SEC.14)	3481.58	-1104.97	3178784.268	1295205.349	40°08'31.067"N	104°51'37.793"W
PERMIT (RKB) to Mud line (At Slot: SLOT#13 VOLLMAR 3N-11HZ (1223FWL & 1892FWL, SEC.14))					4958ft	
Mean Sea Level to Mud line (At Slot: SLOT#13 VOLLMAR 3N-11HZ (1223FWL & 1892FWL, 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 3N-11HZ PWB
1129.00	7753.31	NaviTrak	NaviTrak (MAGCORR,IFR)		VOLLMAR 3N-11HZ PWB
7753.31	12933.84	NaviTrak	NaviTrak (MAGCORR,IFR)		VOLLMAR 3N-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	351.952	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	4000.00	0.000	351.952	4000.00	0.00	0.00	0.00	0.00
END NUDGE	4825.00	16.500	351.952	4813.64	116.81	-16.52	2.00	116.68
KOP, BUILD 10°/100'	7024.75	16.500	351.952	6922.81	735.42	-103.99	0.00	734.58
LANDING POINT	7753.31	89.356	351.952	7333.00	1273.00	-180.00	10.00	1271.54
BEGIN NUDGE	7953.31	89.356	351.952	7335.25	1471.02	-207.99	0.00	1469.33
END NUDGE	8433.67	90.423	1.500	7336.18	1950.03	-235.40	2.00	1948.11
BEGIN TURN	12233.67	90.423	1.500	7308.16	5748.62	-135.93	0.00	5747.37
END TURN	12328.54	90.422	359.603	7307.46	5843.48	-135.01	2.00	5842.24
TOTAL DEPTH	12933.84	90.422	359.603	7303.00	6448.75	-139.21	0.00	6447.45

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	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W
VOLLMAR SEC.14 SECTION LINES		0.00	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W
VOLLMAR 3N-11H2 LANDBOX		7303.00	0.00	0.00	3178724.27	1292503.35	40°08'31.067"N	104°51'37.793"W
VOLLMAR 3N-11H2 BHL ON PLAT (50FWL & 1712FWL, SEC.11)	12933.84	7303.00	6448.75	-139.21	3178598.56	1301652.65	40°09'34.794"N	104°51'39.586"W
VOLLMAR SEC.11 HARDLINES (460' SETBACKS)		7313.00	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W
VOLLMAR SEC.14 HARDLINES (460' SETBACKS)		7313.00	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 3N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 3N-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	9/10/2014 at 4:57:41 PM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/VOLLMAR_3N-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	3481.58	-1104.97	3178784.27	1295205.35	40°08'31.067"N	104°51'37.793"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#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'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	0.45°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 3N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 3N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (150 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	351.952	0.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
17.00	0.000	351.952	17.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	TIE ON
117.00†	0.000	351.952	117.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
217.00†	0.000	351.952	217.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
317.00†	0.000	351.952	317.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
417.00†	0.000	351.952	417.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
517.00†	0.000	351.952	517.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
617.00†	0.000	351.952	617.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
717.00†	0.000	351.952	717.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
801.00†	0.000	351.952	801.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	BASE FOX HILLS
817.00†	0.000	351.952	817.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
917.00†	0.000	351.952	917.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1017.00†	0.000	351.952	1017.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1117.00†	0.000	351.952	1117.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1129.00†	0.000	351.952	1129.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	SURFACE CSG SETTING DEPTH
1217.00†	0.000	351.952	1217.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1317.00†	0.000	351.952	1317.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1417.00†	0.000	351.952	1417.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1517.00†	0.000	351.952	1517.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1617.00†	0.000	351.952	1617.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1717.00†	0.000	351.952	1717.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1817.00†	0.000	351.952	1817.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
1917.00†	0.000	351.952	1917.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2017.00†	0.000	351.952	2017.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2117.00†	0.000	351.952	2117.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2217.00†	0.000	351.952	2217.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2317.00†	0.000	351.952	2317.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2417.00†	0.000	351.952	2417.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2517.00†	0.000	351.952	2517.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2617.00†	0.000	351.952	2617.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2717.00†	0.000	351.952	2717.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2817.00†	0.000	351.952	2817.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
2917.00†	0.000	351.952	2917.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3017.00†	0.000	351.952	3017.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3117.00†	0.000	351.952	3117.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3217.00†	0.000	351.952	3217.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3317.00†	0.000	351.952	3317.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3417.00†	0.000	351.952	3417.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3517.00†	0.000	351.952	3517.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3617.00†	0.000	351.952	3617.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3717.00†	0.000	351.952	3717.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3817.00†	0.000	351.952	3817.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
3917.00†	0.000	351.952	3917.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	
4000.00	0.000	351.952	4000.00	0.00	0.00	0.00	40°08'31.067"N	104°51'37.793"W	0.00	BEGIN NUDGE
4017.00†	0.340	351.952	4017.00	0.05	0.05	-0.01	40°08'31.067"N	104°51'37.793"W	2.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 3N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 3N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (150 stations)				‡ = interpolated/extrapolated station						
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4043.00‡	0.860	351.952	4043.00	0.32	0.32	-0.05	40°08'31.070"N	104°51'37.794"W	2.00	PARKMAN
4117.00‡	2.340	351.952	4116.97	2.36	2.37	-0.33	40°08'31.090"N	104°51'37.797"W	2.00	
4217.00‡	4.340	351.952	4216.79	8.12	8.13	-1.15	40°08'31.147"N	104°51'37.808"W	2.00	
4317.00‡	6.340	351.952	4316.35	17.33	17.35	-2.45	40°08'31.238"N	104°51'37.825"W	2.00	
4417.00‡	8.340	351.952	4415.53	29.96	30.00	-4.24	40°08'31.363"N	104°51'37.848"W	2.00	
4466.05‡	9.321	351.952	4464.00	37.41	37.45	-5.30	40°08'31.437"N	104°51'37.861"W	2.00	SUSSEX
4517.00‡	10.340	351.952	4514.20	46.01	46.07	-6.51	40°08'31.522"N	104°51'37.877"W	2.00	
4617.00‡	12.340	351.952	4612.24	65.46	65.53	-9.27	40°08'31.715"N	104°51'37.912"W	2.00	
4717.00‡	14.340	351.952	4709.54	88.28	88.38	-12.50	40°08'31.940"N	104°51'37.954"W	2.00	
4817.00‡	16.340	351.952	4805.97	114.44	114.57	-16.20	40°08'32.199"N	104°51'38.002"W	2.00	
4825.00	16.500	351.952	4813.64	116.68	116.81	-16.52	40°08'32.221"N	104°51'38.006"W	2.00	END NUDGE
4917.00‡	16.500	351.952	4901.86	142.52	142.68	-20.17	40°08'32.477"N	104°51'38.053"W	0.00	
5017.00‡	16.500	351.952	4997.74	170.61	170.80	-24.15	40°08'32.755"N	104°51'38.104"W	0.00	
5117.00‡	16.500	351.952	5093.62	198.70	198.93	-28.13	40°08'33.033"N	104°51'38.155"W	0.00	
5217.00‡	16.500	351.952	5189.50	226.79	227.05	-32.10	40°08'33.311"N	104°51'38.206"W	0.00	
5317.00‡	16.500	351.952	5285.38	254.88	255.17	-36.08	40°08'33.589"N	104°51'38.258"W	0.00	
5417.00‡	16.500	351.952	5381.27	282.97	283.29	-40.06	40°08'33.867"N	104°51'38.309"W	0.00	
5517.00‡	16.500	351.952	5477.15	311.06	311.41	-44.03	40°08'34.144"N	104°51'38.360"W	0.00	
5617.00‡	16.500	351.952	5573.03	339.15	339.54	-48.01	40°08'34.422"N	104°51'38.411"W	0.00	
5717.00‡	16.500	351.952	5668.91	367.24	367.66	-51.99	40°08'34.700"N	104°51'38.462"W	0.00	
5817.00‡	16.500	351.952	5764.79	395.33	395.78	-55.96	40°08'34.978"N	104°51'38.514"W	0.00	
5917.00‡	16.500	351.952	5860.68	423.42	423.90	-59.94	40°08'35.256"N	104°51'38.565"W	0.00	
6017.00‡	16.500	351.952	5956.56	451.51	452.02	-63.91	40°08'35.534"N	104°51'38.616"W	0.00	
6117.00‡	16.500	351.952	6052.44	479.59	480.14	-67.89	40°08'35.812"N	104°51'38.667"W	0.00	
6217.00‡	16.500	351.952	6148.32	507.68	508.27	-71.87	40°08'36.090"N	104°51'38.718"W	0.00	
6317.00‡	16.500	351.952	6244.20	535.77	536.39	-75.84	40°08'36.368"N	104°51'38.770"W	0.00	
6417.00‡	16.500	351.952	6340.09	563.86	564.51	-79.82	40°08'36.646"N	104°51'38.821"W	0.00	
6505.00‡	16.500	351.952	6424.46	588.58	589.26	-83.32	40°08'36.890"N	104°51'38.866"W	0.00	4 1/2" LINER TOP
6517.00‡	16.500	351.952	6435.97	591.95	592.63	-83.80	40°08'36.923"N	104°51'38.872"W	0.00	
6617.00‡	16.500	351.952	6531.85	620.04	620.75	-87.77	40°08'37.201"N	104°51'38.923"W	0.00	
6717.00‡	16.500	351.952	6627.73	648.13	648.88	-91.75	40°08'37.479"N	104°51'38.974"W	0.00	
6817.00‡	16.500	351.952	6723.61	676.22	677.00	-95.72	40°08'37.757"N	104°51'39.026"W	0.00	
6917.00‡	16.500	351.952	6819.49	704.31	705.12	-99.70	40°08'38.035"N	104°51'39.077"W	0.00	
7017.00‡	16.500	351.952	6915.38	732.40	733.24	-103.68	40°08'38.313"N	104°51'39.128"W	0.00	
7024.75	16.500	351.952	6922.81	734.58	735.42	-103.99	40°08'38.334"N	104°51'39.132"W	0.00	KOP, BUILD 10°/100'
7117.00‡	25.725	351.952	7008.77	767.41	768.29	-108.63	40°08'38.659"N	104°51'39.192"W	10.00	
7217.00‡	35.725	351.952	7094.63	817.87	818.81	-115.78	40°08'39.159"N	104°51'39.284"W	10.00	
7252.78‡	39.302	351.952	7123.00	839.41	840.38	-118.83	40°08'39.372"N	104°51'39.323"W	10.00	SSPG
7317.00‡	45.725	351.952	7170.32	882.32	883.33	-124.90	40°08'39.796"N	104°51'39.401"W	10.00	
7373.98‡	51.422	351.952	7208.00	924.55	925.61	-130.88	40°08'40.214"N	104°51'39.478"W	10.00	NBRR
7417.00‡	55.725	351.952	7233.54	958.78	959.88	-135.72	40°08'40.553"N	104°51'39.541"W	10.00	
7463.22‡	60.346	351.952	7258.00	997.55	998.69	-141.21	40°08'40.936"N	104°51'39.611"W	10.00	N470_B_CK
7517.00‡	65.725	351.952	7282.38	1044.94	1046.14	-147.92	40°08'41.405"N	104°51'39.698"W	10.00	
7617.00‡	75.725	351.952	7315.35	1138.18	1139.48	-161.12	40°08'42.327"N	104°51'39.868"W	10.00	
7652.34‡	79.258	351.952	7323.00	1172.29	1173.64	-165.95	40°08'42.665"N	104°51'39.930"W	10.00	N700_C_CK

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 3N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 3N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (150 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7717.00†	85.725	351.952	7331.45	1235.66	1237.08	-174.92	40°08'43.292"N	104°51'40.045"W	10.00	
7753.31	89.356	351.952	7333.00	1271.54	1273.00	-180.00	40°08'43.647"N	104°51'40.111"W	10.00	LANDING POINT
7817.00†	89.356	351.952	7333.72	1334.52	1336.05	-188.91	40°08'44.270"N	104°51'40.226"W	0.00	
7917.00†	89.356	351.952	7334.84	1433.42	1435.06	-202.91	40°08'45.248"N	104°51'40.406"W	0.00	
7953.31	89.356	351.952	7335.25 ⁴	1469.33	1471.02	-207.99	40°08'45.604"N	104°51'40.471"W	0.00	BEGIN NUDGE
8017.00†	89.497	353.218	7335.89	1532.41	1534.17	-216.21	40°08'46.228"N	104°51'40.577"W	2.00	
8117.00†	89.719	355.206	7336.57	1631.81	1633.65	-226.30	40°08'47.211"N	104°51'40.707"W	2.00	
8217.00†	89.941	357.193	7336.87	1731.53	1733.42	-232.93	40°08'48.197"N	104°51'40.792"W	2.00	
8317.00†	90.163	359.181	7336.78	1831.45	1833.37	-236.09	40°08'49.184"N	104°51'40.833"W	2.00	
8417.00†	90.386	1.169	7336.30	1931.44	1933.36	-235.78	40°08'50.173"N	104°51'40.829"W	2.00	
8433.67	90.423	1.500	7336.18 ⁴	1948.11	1950.03	-235.40	40°08'50.337"N	104°51'40.824"W	2.00	END NUDGE
8517.00†	90.422	1.500	7335.57	2031.42	2033.33	-233.21	40°08'51.160"N	104°51'40.796"W	0.00	
8617.00†	90.423	1.500	7334.83	2131.40	2133.29	-230.60	40°08'52.148"N	104°51'40.762"W	0.00	
8717.00†	90.423	1.500	7334.09	2231.39	2233.25	-227.98	40°08'53.136"N	104°51'40.729"W	0.00	
8817.00†	90.422	1.500	7333.36	2331.37	2333.21	-225.36	40°08'54.124"N	104°51'40.695"W	0.00	
8917.00†	90.423	1.500	7332.62	2431.35	2433.18	-222.74	40°08'55.112"N	104°51'40.661"W	0.00	
9017.00†	90.423	1.500	7331.88	2531.33	2533.14	-220.13	40°08'56.100"N	104°51'40.628"W	0.00	
9117.00†	90.422	1.500	7331.14	2631.31	2633.10	-217.51	40°08'57.088"N	104°51'40.594"W	0.00	
9217.00†	90.422	1.500	7330.41	2731.29	2733.07	-214.89	40°08'58.075"N	104°51'40.560"W	0.00	
9317.00†	90.423	1.500	7329.67	2831.27	2833.03	-212.27	40°08'59.063"N	104°51'40.527"W	0.00	
9417.00†	90.422	1.500	7328.93	2931.25	2932.99	-209.66	40°09'00.051"N	104°51'40.493"W	0.00	
9517.00†	90.422	1.500	7328.19	3031.23	3032.96	-207.04	40°09'01.039"N	104°51'40.459"W	0.00	
9617.00†	90.423	1.500	7327.46	3131.21	3132.92	-204.42	40°09'02.027"N	104°51'40.426"W	0.00	
9717.00†	90.422	1.500	7326.72	3231.19	3232.88	-201.80	40°09'03.015"N	104°51'40.392"W	0.00	
9817.00†	90.422	1.500	7325.98	3331.17	3332.84	-199.19	40°09'04.002"N	104°51'40.358"W	0.00	
9917.00†	90.423	1.500	7325.24	3431.15	3432.81	-196.57	40°09'04.990"N	104°51'40.324"W	0.00	
10017.00†	90.422	1.500	7324.51	3531.13	3532.77	-193.95	40°09'05.978"N	104°51'40.291"W	0.00	
10117.00†	90.422	1.500	7323.77	3631.11	3632.73	-191.33	40°09'06.966"N	104°51'40.257"W	0.00	
10217.00†	90.423	1.500	7323.03	3731.09	3732.70	-188.71	40°09'07.954"N	104°51'40.223"W	0.00	
10221.29†	90.423	1.500	7323.00	3735.38	3736.98	-188.60	40°09'07.996"N	104°51'40.222"W	0.00	N700_C_CK
10317.00†	90.423	1.500	7322.29	3831.07	3832.66	-186.10	40°09'08.942"N	104°51'40.190"W	0.00	
10417.00†	90.422	1.500	7321.56	3931.05	3932.62	-183.48	40°09'09.929"N	104°51'40.156"W	0.00	
10517.00†	90.423	1.500	7320.82	4031.03	4032.59	-180.86	40°09'10.917"N	104°51'40.122"W	0.00	
10617.00†	90.423	1.500	7320.08	4131.02	4132.55	-178.24	40°09'11.905"N	104°51'40.089"W	0.00	
10717.00†	90.422	1.500	7319.34	4231.00	4232.51	-175.63	40°09'12.893"N	104°51'40.055"W	0.00	
10817.00†	90.423	1.500	7318.61	4330.98	4332.47	-173.01	40°09'13.881"N	104°51'40.021"W	0.00	
10917.00†	90.423	1.500	7317.87	4430.96	4432.44	-170.39	40°09'14.869"N	104°51'39.987"W	0.00	
11017.00†	90.422	1.500	7317.13	4530.94	4532.40	-167.77	40°09'15.856"N	104°51'39.954"W	0.00	
11117.00†	90.422	1.500	7316.40	4630.92	4632.36	-165.16	40°09'16.844"N	104°51'39.920"W	0.00	
11217.00†	90.423	1.500	7315.66	4730.90	4732.33	-162.54	40°09'17.832"N	104°51'39.886"W	0.00	
11317.00†	90.422	1.500	7314.92	4830.88	4832.29	-159.92	40°09'18.820"N	104°51'39.853"W	0.00	
11417.00†	90.422	1.500	7314.18	4930.86	4932.25	-157.30	40°09'19.808"N	104°51'39.819"W	0.00	
11517.00†	90.423	1.500	7313.45	5030.84	5032.22	-154.69	40°09'20.796"N	104°51'39.785"W	0.00	
11617.00†	90.422	1.500	7312.71	5130.82	5132.18	-152.07	40°09'21.784"N	104°51'39.751"W	0.00	
11717.00†	90.422	1.500	7311.97	5230.80	5232.14	-149.45	40°09'22.771"N	104°51'39.718"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 3N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 3N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH DATA (150 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11817.00†	90.423	1.500	7311.23	5330.78	5332.10	-146.83	40°09'23.759"N	104°51'39.684"W	0.00	
11917.00†	90.422	1.500	7310.50	5430.76	5432.07	-144.22	40°09'24.747"N	104°51'39.650"W	0.00	
12017.00†	90.422	1.500	7309.76	5530.74	5532.03	-141.60	40°09'25.735"N	104°51'39.617"W	0.00	
12117.00†	90.423	1.500	7309.02	5630.72	5631.99	-138.98	40°09'26.723"N	104°51'39.583"W	0.00	
12217.00†	90.423	1.500	7308.28	5730.70	5731.96	-136.36	40°09'27.711"N	104°51'39.549"W	0.00	
12233.67	90.423	1.500	7308.16 ⁴	5747.37	5748.62	-135.93	40°09'27.875"N	104°51'39.544"W	0.00	BEGIN TURN
12317.00†	90.422	359.833	7307.55	5830.69	5831.94	-134.96	40°09'28.699"N	104°51'39.531"W	2.00	
12328.54	90.422	359.603	7307.46	5842.24	5843.48	-135.01	40°09'28.813"N	104°51'39.532"W	2.00	END TURN
12417.00†	90.422	359.603	7306.81	5930.68	5931.93	-135.63	40°09'29.687"N	104°51'39.540"W	0.00	
12517.00†	90.422	359.603	7306.07	6030.67	6031.93	-136.32	40°09'30.675"N	104°51'39.549"W	0.00	
12617.00†	90.422	359.603	7305.34	6130.65	6131.92	-137.01	40°09'31.663"N	104°51'39.558"W	0.00	
12717.00†	90.422	359.603	7304.60	6230.64	6231.92	-137.71	40°09'32.651"N	104°51'39.567"W	0.00	
12817.00†	90.422	359.603	7303.86	6330.63	6331.91	-138.40	40°09'33.639"N	104°51'39.576"W	0.00	
12917.00†	90.422	359.603	7303.12	6430.61	6431.91	-139.09	40°09'34.628"N	104°51'39.584"W	0.00	
12933.84	90.422	359.603	7303.00 ⁴	6447.45	6448.75	-139.21	40°09'34.794"N	104°51'39.586"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: VOLLMAR 3N-11HZ PWB				Ref Wellpath: VOLLMAR 3N-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	7753.31	6624.31	1129.00	7333.00	0.00	0.00	1272.99	-180.00
7in Casing Intermediate	17.00	7753.31	7736.31	17.00	7333.00	0.00	0.00	1272.99	-180.00
6.125in Open Hole	7753.31	12933.84	5180.53	7333.00	7303.00	1272.99	-180.00	6448.75	-139.21
4.5in Casing Production	17.00	12933.84	12916.84	17.00	7303.00	0.00	0.00	6448.75	-139.21

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 3N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 3N-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	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon
VOLLMAR SEC.14 SECTION LINES		0.00	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon
VOLLMAR 3N-11HZ LANDBOX		7303.00	0.00	0.00	3178784.27	1295205.35	40°08'31.067"N	104°51'37.793"W	polygon
4) VOLLMAR 3N-11HZ BHL ON PLAT (50'FNL & 1712'FWL, SEC.11)	12933.84	7303.00	6448.75	-139.21	3178598.56	1301652.65	40°09'34.794"N	104°51'39.586"W	point
VOLLMAR SEC.11 HARDLINES (460' SETBACKS)		7313.00	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon
VOLLMAR SEC.14 HARDLINES (460' SETBACKS)		7313.00	-7.99	-59.57	3178724.76	1295196.93	40°08'30.988"N	104°51'38.560"W	polygon

SURVEY PROGRAM - Ref Wellbore: VOLLMAR 3N-11HZ PWB					Ref Wellpath: VOLLMAR 3N-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 3N-11HZ PWB
1129.00	7753.31	NaviTrak (MAGCORR,IFR)				VOLLMAR 3N-11HZ PWB
7753.31	12933.84	NaviTrak (MAGCORR,IFR)				VOLLMAR 3N-11HZ PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#13 VOLLMAR 3N-11HZ (1223'FNL & 1892'FWL, SEC.14)
Area	COLORADO	Well	VOLLMAR 3N-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	VOLLMAR 3N-11HZ PWB
Facility	SEC.14-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
801.00	0.000	351.952	801.00	BASE FOX HILLS
1129.00	0.000	351.952	1129.00	SURFACE CSG SETTING DEPTH
4043.00	0.860	351.952	4043.00	PARKMAN
4466.05	9.321	351.952	4464.00	SUSSEX
6505.00	16.500	351.952	6424.46	4 1/2" LINER TOP
7252.78	39.302	351.952	7123.00	SSPG
7373.98	51.422	351.952	7208.00	NBRR
7463.22	60.346	351.952	7258.00	N470_B_CK
7652.34	79.258	351.952	7323.00	N700_C_CK
10221.29	90.423	1.500	7323.00	N700_C_CK

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	351.952	17.00	TIE ON
4000.00	0.000	351.952	4000.00	BEGIN NUDGE
4825.00	16.500	351.952	4813.64	END NUDGE
7024.75	16.500	351.952	6922.81	KOP, BUILD 10°/100'
7753.31	89.356	351.952	7333.00	LANDING POINT
7953.31	89.356	351.952	7335.25	BEGIN NUDGE
8433.67	90.423	1.500	7336.18	END NUDGE
12233.67	90.423	1.500	7308.16	BEGIN TURN
12328.54	90.422	359.603	7307.46	END TURN
12933.84	90.422	359.603	7303.00	TOTAL DEPTH