

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#09 KERBS 31C-14HZ (974' FNL & 622' FEL, SEC.13)
 Field: WELD COUNTY (KERR MCGEE) Well: KERBS 31C-14HZ
 Facility: SEC.13-T3N-R68W Wellbore: KERBS 31C-14HZ

Plot reference wellpath is KERBS 31C-14HZ (PERMIT REV-1) PWP

True vertical depths are referenced to PERMT (17KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMT (17KB) (RKB)	North Reference: True north
PERMT (17KB) (RKB) to Mean Sea Level: 4901 feet	Scale: True distance
Mean Sea Level to Mud line (N Slot: SLOT#09 KERBS 31C-14HZ (974' FNL & 622' FEL, SEC.13)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: pccain on 03/Jul/2013

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.13-T3N-R68W	3155503.948	1323690.531	40°13'14.316"N	104°56'35.262"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#09 KERBS 31C-14HZ (974' FNL & 622' FEL, SEC.13)	3798.24	-233.92	3155246.190	1327487.061	40°13'51.650"N	104°56'38.278"W
PERMT (17KB) (RKB) to Mud line (N Slot: SLOT#09 KERBS 31C-14HZ (974' FNL & 622' FEL, SEC.13))				4901ft		
Mean Sea Level to Mud line (N Slot: SLOT#09 KERBS 31C-14HZ (974' FNL & 622' FEL, SEC.13))				0ft		
PERMT (17KB) (RKB) to Mean Sea Level				4901ft		

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7635.29	NavitTrak	NavitTrak (Standard)		KERBS 31C-14HZ
7635.29	17550.56	OnTrak	OnTrak (Standard)		KERBS 31C-14HZ

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-ON	17.00	0.000	131.500	17.00	0.00	0.00	0.00	0.00
BEGIN NUJGE	1100.00	0.000	131.500	1100.00	0.00	0.00	0.00	0.00
END NUJGE	1600.00	10.000	131.500	1597.47	-28.84	32.60	2.00	-32.38
BEGIN DROP	5420.58	10.000	131.500	5360.00	-468.45	529.48	0.00	-525.94
END DROP	5920.58	0.000	269.569	5857.47	-497.28	562.08	2.00	-558.32
KOP, BUILD @ 10°/100'	6736.16	0.000	269.569	6673.05	-497.28	562.08	0.00	-558.32
LANDING POINT	7635.29	89.913	269.569	7246.00	-501.58	-10.00	10.00	13.77
TOTAL DEPTH	17550.56	89.913	269.569	7261.00	-576.12	-9924.97	0.00	9929.03

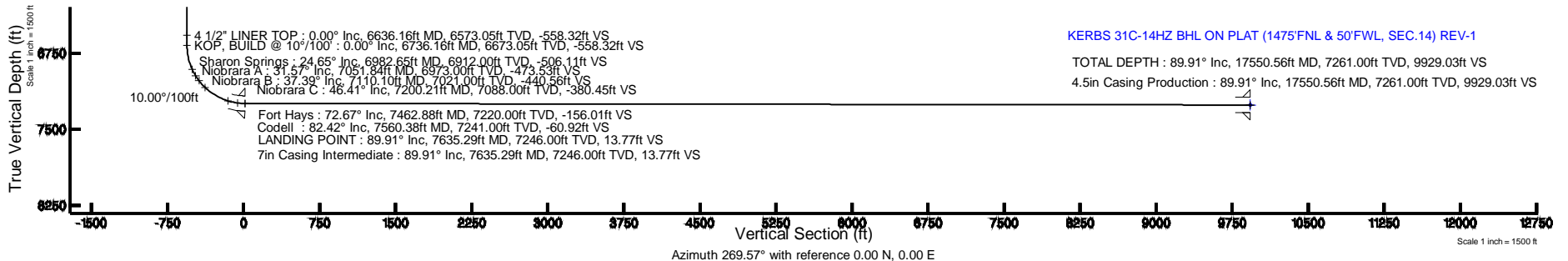
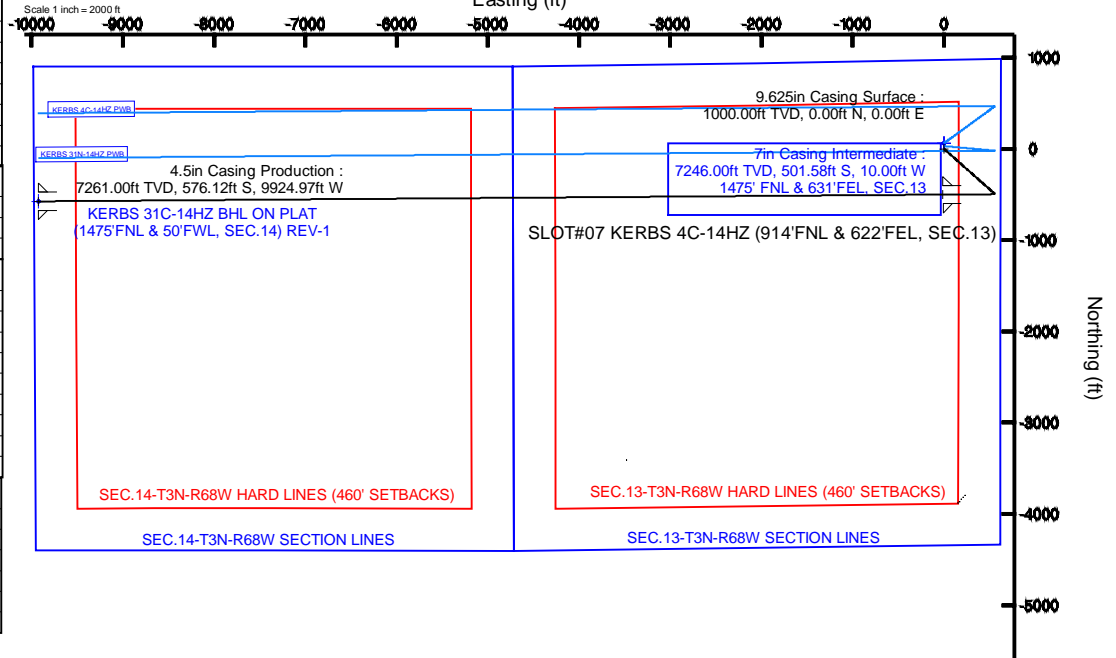
Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.13-T3N-R68W HARD LINES (460' SETBACKS)	4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	
SEC.13-T3N-R68W SECTION LINES	4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	
SEC.14-T3N-R68W HARD LINES (460' SETBACKS)	4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	
SEC.14-T3N-R68W SECTION LINES	4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	
KERBS 31C-14HZ BHL ON PLAT (1475'FNL & 50'FWL, SEC.14) REV-1	17550.56	7261.00	-576.12	-9924.97	3145325.47	1326848.75	40°13'45.937"N	104°58'46.240"W



BGGM (1945.0 to 2014.0) Dip: 66.78° Field: 52704.2 nT
 Magnetic North is 8.72 degrees East of True North (at 02/Jul/2013)

To correct azimuth from Magnetic to True add 8.72 degrees



KERBS 31C-14HZ BHL ON PLAT (1475'FNL & 50'FWL, SEC.14) REV-1
 TOTAL DEPTH : 89.91° Inc, 17550.56ft MD, 7261.00ft TVD, 9929.03ft VS
 4.5in Casing Production : 89.91° Inc, 17550.56ft MD, 7261.00ft TVD, 9929.03ft VS

Azimuth 269.57° with reference 0.00 N, 0.00 E



Planned Wellpath Report

KERBS 31C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31C-14HZ
Facility	SEC.13-T3N-R68W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Precain
Scale	0.999957	Report Generated	03/Jul/2013 at 08:56
Convergence at slot	n/a	Database/Source file	WellArchitectDB/_KERBS_31C-14HZ.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3798.24	-233.92	3155246.19	1327487.06	40°13'51.650"N	104°56'38.278"W
Facility Reference Pt			3155503.95	1323690.53	40°13'14.116"N	104°56'35.262"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 (17'KB) (RKB) to Facility Vertical Datum	4901.00ft
Horizontal Reference Pt	Slot	PERMIT (17'KB) (RKB) to Mean Sea Level	4901.00ft
Vertical Reference Pt	PERMIT (17'KB) (RKB)	PERMIT (17'KB) (RKB) to Mud Line at Slot (SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13))	4901.00ft
MD Reference Pt	PERMIT (17'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	269.57°



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KERBS 31C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31C-14HZ
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (184 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	131.500	0.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
17.00	0.000	131.500	17.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	TIE-ON
117.00†	0.000	131.500	117.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
217.00†	0.000	131.500	217.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
317.00†	0.000	131.500	317.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
417.00†	0.000	131.500	417.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
517.00†	0.000	131.500	517.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
617.00†	0.000	131.500	617.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
717.00†	0.000	131.500	717.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
817.00†	0.000	131.500	817.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
917.00†	0.000	131.500	917.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
1017.00†	0.000	131.500	1017.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	
1100.00	0.000	131.500	1100.00	0.00	0.00	0.00	40°13'51.650"N	104°56'38.278"W	0.00	BEGIN NUDGE
1117.00†	0.340	131.500	1117.00	-0.04	-0.03	0.04	40°13'51.650"N	104°56'38.278"W	2.00	
1217.00†	2.340	131.500	1216.97	-1.78	-1.58	1.79	40°13'51.634"N	104°56'38.255"W	2.00	
1317.00†	4.340	131.500	1316.79	-6.11	-5.44	6.15	40°13'51.596"N	104°56'38.199"W	2.00	
1417.00†	6.340	131.500	1416.35	-13.03	-11.61	13.12	40°13'51.535"N	104°56'38.109"W	2.00	
1517.00†	8.340	131.500	1515.53	-22.54	-20.07	22.69	40°13'51.452"N	104°56'37.985"W	2.00	
1600.00	10.000	131.500	1597.47	-32.38	-28.84	32.60	40°13'51.365"N	104°56'37.858"W	2.00	END NUDGE
1617.00†	10.000	131.500	1614.21	-34.57	-30.80	34.81	40°13'51.346"N	104°56'37.829"W	0.00	
1717.00†	10.000	131.500	1712.69	-47.49	-42.30	47.81	40°13'51.232"N	104°56'37.662"W	0.00	
1817.00†	10.000	131.500	1811.17	-60.41	-53.81	60.82	40°13'51.118"N	104°56'37.494"W	0.00	
1917.00†	10.000	131.500	1909.65	-73.33	-65.31	73.82	40°13'51.005"N	104°56'37.326"W	0.00	
2017.00†	10.000	131.500	2008.13	-86.25	-76.82	86.83	40°13'50.891"N	104°56'37.158"W	0.00	
2117.00†	10.000	131.500	2106.61	-99.17	-88.33	99.83	40°13'50.777"N	104°56'36.991"W	0.00	
2217.00†	10.000	131.500	2205.09	-112.09	-99.83	112.84	40°13'50.663"N	104°56'36.823"W	0.00	
2317.00†	10.000	131.500	2303.57	-125.00	-111.34	125.85	40°13'50.550"N	104°56'36.655"W	0.00	
2417.00†	10.000	131.500	2402.05	-137.92	-122.85	138.85	40°13'50.436"N	104°56'36.488"W	0.00	
2517.00†	10.000	131.500	2500.53	-150.84	-134.35	151.86	40°13'50.322"N	104°56'36.320"W	0.00	
2617.00†	10.000	131.500	2599.01	-163.76	-145.86	164.86	40°13'50.209"N	104°56'36.152"W	0.00	
2717.00†	10.000	131.500	2697.50	-176.68	-157.36	177.87	40°13'50.095"N	104°56'35.985"W	0.00	
2817.00†	10.000	131.500	2795.98	-189.60	-168.87	190.87	40°13'49.981"N	104°56'35.817"W	0.00	
2917.00†	10.000	131.500	2894.46	-202.52	-180.38	203.88	40°13'49.868"N	104°56'35.649"W	0.00	
3017.00†	10.000	131.500	2992.94	-215.43	-191.88	216.88	40°13'49.754"N	104°56'35.482"W	0.00	
3117.00†	10.000	131.500	3091.42	-228.35	-203.39	229.89	40°13'49.640"N	104°56'35.314"W	0.00	
3217.00†	10.000	131.500	3189.90	-241.27	-214.90	242.90	40°13'49.526"N	104°56'35.146"W	0.00	
3317.00†	10.000	131.500	3288.38	-254.19	-226.40	255.90	40°13'49.413"N	104°56'34.979"W	0.00	
3417.00†	10.000	131.500	3386.86	-267.11	-237.91	268.91	40°13'49.299"N	104°56'34.811"W	0.00	
3517.00†	10.000	131.500	3485.34	-280.03	-249.41	281.91	40°13'49.185"N	104°56'34.643"W	0.00	
3617.00†	10.000	131.500	3583.82	-292.95	-260.92	294.92	40°13'49.072"N	104°56'34.476"W	0.00	
3717.00†	10.000	131.500	3682.30	-305.86	-272.43	307.92	40°13'48.958"N	104°56'34.308"W	0.00	
3817.00†	10.000	131.500	3780.78	-318.78	-283.93	320.93	40°13'48.844"N	104°56'34.140"W	0.00	
3917.00†	10.000	131.500	3879.26	-331.70	-295.44	333.93	40°13'48.730"N	104°56'33.973"W	0.00	
4017.00†	10.000	131.500	3977.75	-344.62	-306.95	346.94	40°13'48.617"N	104°56'33.805"W	0.00	
4117.00†	10.000	131.500	4076.23	-357.54	-318.45	359.94	40°13'48.503"N	104°56'33.637"W	0.00	



Planned Wellpath Report

KERBS 31C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31C-14HZ
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4217.00†	10.000	131.500	4174.71	-370.46	-329.96	372.95	40°13'48.389"N	104°56'33.470"W	0.00	
4317.00†	10.000	131.500	4273.19	-383.38	-341.46	385.96	40°13'48.276"N	104°56'33.302"W	0.00	
4417.00†	10.000	131.500	4371.67	-396.29	-352.97	398.96	40°13'48.162"N	104°56'33.134"W	0.00	
4517.00†	10.000	131.500	4470.15	-409.21	-364.48	411.97	40°13'48.048"N	104°56'32.967"W	0.00	
4617.00†	10.000	131.500	4568.63	-422.13	-375.98	424.97	40°13'47.935"N	104°56'32.799"W	0.00	
4717.00†	10.000	131.500	4667.11	-435.05	-387.49	437.98	40°13'47.821"N	104°56'32.631"W	0.00	
4817.00†	10.000	131.500	4765.59	-447.97	-399.00	450.98	40°13'47.707"N	104°56'32.463"W	0.00	
4917.00†	10.000	131.500	4864.07	-460.89	-410.50	463.99	40°13'47.593"N	104°56'32.296"W	0.00	
5017.00†	10.000	131.500	4962.55	-473.81	-422.01	476.99	40°13'47.480"N	104°56'32.128"W	0.00	
5117.00†	10.000	131.500	5061.03	-486.72	-433.51	490.00	40°13'47.366"N	104°56'31.960"W	0.00	
5217.00†	10.000	131.500	5159.52	-499.64	-445.02	503.00	40°13'47.252"N	104°56'31.793"W	0.00	
5317.00†	10.000	131.500	5258.00	-512.56	-456.53	516.01	40°13'47.139"N	104°56'31.625"W	0.00	
5417.00†	10.000	131.500	5356.48	-525.48	-468.03	529.02	40°13'47.025"N	104°56'31.457"W	0.00	
5420.58	10.000	131.500	5360.00	-525.94	-468.45	529.48	40°13'47.021"N	104°56'31.451"W	0.00	BEGIN DROP
5517.00†	8.072	131.500	5455.22	-537.21	-478.48	540.82	40°13'46.922"N	104°56'31.305"W	2.00	
5617.00†	6.072	131.500	5554.46	-546.37	-486.64	550.04	40°13'46.841"N	104°56'31.186"W	2.00	
5717.00†	4.072	131.500	5654.06	-552.94	-492.49	556.66	40°13'46.783"N	104°56'31.101"W	2.00	
5817.00†	2.072	131.500	5753.91	-556.93	-496.04	560.68	40°13'46.748"N	104°56'31.049"W	2.00	
5917.00†	0.072	131.500	5853.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	2.00	
5920.58	0.000	269.569	5857.47	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	2.00	END DROP
6017.00†	0.000	269.569	5953.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6117.00†	0.000	269.569	6053.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6217.00†	0.000	269.569	6153.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6317.00†	0.000	269.569	6253.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6417.00†	0.000	269.569	6353.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6517.00†	0.000	269.569	6453.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6617.00†	0.000	269.569	6553.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6717.00†	0.000	269.569	6653.89	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	
6736.16	0.000	269.569	6673.05	-558.32	-497.28	562.08	40°13'46.736"N	104°56'31.031"W	0.00	KOP, BUILD @ 10°/100'
6817.00†	8.084	269.569	6753.62	-552.63	-497.33	556.38	40°13'46.735"N	104°56'31.105"W	10.00	
6917.00†	18.084	269.569	6850.90	-530.02	-497.50	533.77	40°13'46.734"N	104°56'31.396"W	10.00	
7017.00†	28.084	269.569	6942.78	-490.86	-497.79	494.62	40°13'46.731"N	104°56'31.901"W	10.00	
7117.00†	38.084	269.569	7026.46	-436.34	-498.20	440.10	40°13'46.727"N	104°56'32.604"W	10.00	
7217.00†	48.084	269.569	7099.40	-368.12	-498.71	371.88	40°13'46.722"N	104°56'33.483"W	10.00	
7317.00†	58.084	269.569	7159.39	-288.27	-499.31	292.03	40°13'46.716"N	104°56'34.513"W	10.00	
7417.00†	68.084	269.569	7204.60	-199.22	-499.98	202.98	40°13'46.709"N	104°56'35.661"W	10.00	
7517.00†	78.084	269.569	7233.66	-103.66	-500.70	107.43	40°13'46.702"N	104°56'36.893"W	10.00	
7617.00†	88.084	269.569	7245.68	-4.52	-501.45	8.29	40°13'46.695"N	104°56'38.171"W	10.00	
7635.29	89.913	269.569	7246.00	13.77	-501.58	-10.00	40°13'46.693"N	104°56'38.407"W	10.00	LANDING POINT
7717.00†	89.913	269.569	7246.13	95.48	-502.20	-91.70	40°13'46.687"N	104°56'39.460"W	0.00	
7817.00†	89.913	269.569	7246.28	195.48	-502.95	-191.70	40°13'46.680"N	104°56'40.750"W	0.00	
7917.00†	89.913	269.569	7246.43	295.48	-503.70	-291.70	40°13'46.672"N	104°56'42.039"W	0.00	
8017.00†	89.913	269.569	7246.58	395.48	-504.45	-391.70	40°13'46.665"N	104°56'43.328"W	0.00	
8117.00†	89.913	269.569	7246.73	495.48	-505.21	-491.69	40°13'46.658"N	104°56'44.617"W	0.00	
8217.00†	89.913	269.569	7246.88	595.48	-505.96	-591.69	40°13'46.650"N	104°56'45.907"W	0.00	



Planned Wellpath Report

KERBS 31C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31C-14HZ
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8317.00†	89.913	269.569	7247.03	695.48	-506.71	-691.69	40°13'46.643"N	104°56'47.196"W	0.00	
8417.00†	89.913	269.569	7247.18	795.48	-507.46	-791.68	40°13'46.635"N	104°56'48.485"W	0.00	
8517.00†	89.913	269.569	7247.34	895.48	-508.21	-891.68	40°13'46.628"N	104°56'49.774"W	0.00	
8617.00†	89.913	269.569	7247.49	995.48	-508.96	-991.68	40°13'46.620"N	104°56'51.064"W	0.00	
8717.00†	89.913	269.569	7247.64	1095.48	-509.72	-1091.67	40°13'46.613"N	104°56'52.353"W	0.00	
8817.00†	89.913	269.569	7247.79	1195.48	-510.47	-1191.67	40°13'46.605"N	104°56'53.642"W	0.00	
8917.00†	89.913	269.569	7247.94	1295.48	-511.22	-1291.67	40°13'46.598"N	104°56'54.931"W	0.00	
9017.00†	89.913	269.569	7248.09	1395.48	-511.97	-1391.67	40°13'46.590"N	104°56'56.221"W	0.00	
9117.00†	89.913	269.569	7248.24	1495.48	-512.72	-1491.66	40°13'46.583"N	104°56'57.510"W	0.00	
9217.00†	89.913	269.569	7248.39	1595.48	-513.47	-1591.66	40°13'46.575"N	104°56'58.799"W	0.00	
9317.00†	89.913	269.569	7248.55	1695.48	-514.23	-1691.66	40°13'46.568"N	104°57'00.088"W	0.00	
9417.00†	89.913	269.569	7248.70	1795.48	-514.98	-1791.65	40°13'46.560"N	104°57'01.378"W	0.00	
9517.00†	89.913	269.569	7248.85	1895.48	-515.73	-1891.65	40°13'46.553"N	104°57'02.667"W	0.00	
9617.00†	89.913	269.569	7249.00	1995.48	-516.48	-1991.65	40°13'46.545"N	104°57'03.956"W	0.00	
9717.00†	89.913	269.569	7249.15	2095.48	-517.23	-2091.65	40°13'46.538"N	104°57'05.245"W	0.00	
9817.00†	89.913	269.569	7249.30	2195.48	-517.98	-2191.64	40°13'46.530"N	104°57'06.535"W	0.00	
9917.00†	89.913	269.569	7249.45	2295.48	-518.74	-2291.64	40°13'46.523"N	104°57'07.824"W	0.00	
10017.00†	89.913	269.569	7249.61	2395.48	-519.49	-2391.64	40°13'46.515"N	104°57'09.113"W	0.00	
10117.00†	89.913	269.569	7249.76	2495.48	-520.24	-2491.63	40°13'46.508"N	104°57'10.402"W	0.00	
10217.00†	89.913	269.569	7249.91	2595.48	-520.99	-2591.63	40°13'46.500"N	104°57'11.692"W	0.00	
10317.00†	89.913	269.569	7250.06	2695.48	-521.74	-2691.63	40°13'46.493"N	104°57'12.981"W	0.00	
10417.00†	89.913	269.569	7250.21	2795.48	-522.49	-2791.62	40°13'46.485"N	104°57'14.270"W	0.00	
10517.00†	89.913	269.569	7250.36	2895.48	-523.25	-2891.62	40°13'46.478"N	104°57'15.559"W	0.00	
10617.00†	89.913	269.569	7250.51	2995.48	-524.00	-2991.62	40°13'46.470"N	104°57'16.849"W	0.00	
10717.00†	89.913	269.569	7250.66	3095.48	-524.75	-3091.62	40°13'46.463"N	104°57'18.138"W	0.00	
10817.00†	89.913	269.569	7250.82	3195.48	-525.50	-3191.61	40°13'46.455"N	104°57'19.427"W	0.00	
10917.00†	89.913	269.569	7250.97	3295.48	-526.25	-3291.61	40°13'46.447"N	104°57'20.716"W	0.00	
11017.00†	89.913	269.569	7251.12	3395.48	-527.00	-3391.61	40°13'46.440"N	104°57'22.006"W	0.00	
11117.00†	89.913	269.569	7251.27	3495.48	-527.76	-3491.60	40°13'46.432"N	104°57'23.295"W	0.00	
11217.00†	89.913	269.569	7251.42	3595.48	-528.51	-3591.60	40°13'46.425"N	104°57'24.584"W	0.00	
11317.00†	89.913	269.569	7251.57	3695.47	-529.26	-3691.60	40°13'46.417"N	104°57'25.873"W	0.00	
11417.00†	89.913	269.569	7251.72	3795.47	-530.01	-3791.60	40°13'46.410"N	104°57'27.163"W	0.00	
11517.00†	89.913	269.569	7251.87	3895.47	-530.76	-3891.59	40°13'46.402"N	104°57'28.452"W	0.00	
11617.00†	89.913	269.569	7252.03	3995.47	-531.51	-3991.59	40°13'46.394"N	104°57'29.741"W	0.00	
11717.00†	89.913	269.569	7252.18	4095.47	-532.27	-4091.59	40°13'46.387"N	104°57'31.030"W	0.00	
11817.00†	89.913	269.569	7252.33	4195.47	-533.02	-4191.58	40°13'46.379"N	104°57'32.320"W	0.00	
11917.00†	89.913	269.569	7252.48	4295.47	-533.77	-4291.58	40°13'46.372"N	104°57'33.609"W	0.00	
12017.00†	89.913	269.569	7252.63	4395.47	-534.52	-4391.58	40°13'46.364"N	104°57'34.898"W	0.00	
12117.00†	89.913	269.569	7252.78	4495.47	-535.27	-4491.57	40°13'46.356"N	104°57'36.187"W	0.00	
12217.00†	89.913	269.569	7252.93	4595.47	-536.02	-4591.57	40°13'46.349"N	104°57'37.477"W	0.00	
12317.00†	89.913	269.569	7253.08	4695.47	-536.78	-4691.57	40°13'46.341"N	104°57'38.766"W	0.00	
12417.00†	89.913	269.569	7253.24	4795.47	-537.53	-4791.57	40°13'46.334"N	104°57'40.055"W	0.00	
12517.00†	89.913	269.569	7253.39	4895.47	-538.28	-4891.56	40°13'46.326"N	104°57'41.344"W	0.00	
12617.00†	89.913	269.569	7253.54	4995.47	-539.03	-4991.56	40°13'46.318"N	104°57'42.634"W	0.00	
12717.00†	89.913	269.569	7253.69	5095.47	-539.78	-5091.56	40°13'46.311"N	104°57'43.923"W	0.00	



Planned Wellpath Report

KERBS 31C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31C-14HZ
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12817.00†	89.913	269.569	7253.84	5195.47	-540.53	-5191.55	40°13'46.303"N	104°57'45.212"W	0.00	
12917.00†	89.913	269.569	7253.99	5295.47	-541.29	-5291.55	40°13'46.295"N	104°57'46.501"W	0.00	
13017.00†	89.913	269.569	7254.14	5395.47	-542.04	-5391.55	40°13'46.288"N	104°57'47.791"W	0.00	
13117.00†	89.913	269.569	7254.29	5495.47	-542.79	-5491.55	40°13'46.280"N	104°57'49.080"W	0.00	
13217.00†	89.913	269.569	7254.45	5595.47	-543.54	-5591.54	40°13'46.273"N	104°57'50.369"W	0.00	
13317.00†	89.913	269.569	7254.60	5695.47	-544.29	-5691.54	40°13'46.265"N	104°57'51.658"W	0.00	
13417.00†	89.913	269.569	7254.75	5795.47	-545.05	-5791.54	40°13'46.257"N	104°57'52.948"W	0.00	
13517.00†	89.913	269.569	7254.90	5895.47	-545.80	-5891.53	40°13'46.250"N	104°57'54.237"W	0.00	
13617.00†	89.913	269.569	7255.05	5995.47	-546.55	-5991.53	40°13'46.242"N	104°57'55.526"W	0.00	
13717.00†	89.913	269.569	7255.20	6095.47	-547.30	-6091.53	40°13'46.234"N	104°57'56.815"W	0.00	
13817.00†	89.913	269.569	7255.35	6195.47	-548.05	-6191.52	40°13'46.227"N	104°57'58.105"W	0.00	
13917.00†	89.913	269.569	7255.50	6295.47	-548.80	-6291.52	40°13'46.219"N	104°57'59.394"W	0.00	
14017.00†	89.913	269.569	7255.66	6395.47	-549.56	-6391.52	40°13'46.211"N	104°58'00.683"W	0.00	
14117.00†	89.913	269.569	7255.81	6495.47	-550.31	-6491.52	40°13'46.203"N	104°58'01.972"W	0.00	
14217.00†	89.913	269.569	7255.96	6595.47	-551.06	-6591.51	40°13'46.196"N	104°58'03.262"W	0.00	
14317.00†	89.913	269.569	7256.11	6695.47	-551.81	-6691.51	40°13'46.188"N	104°58'04.551"W	0.00	
14417.00†	89.913	269.569	7256.26	6795.47	-552.56	-6791.51	40°13'46.180"N	104°58'05.840"W	0.00	
14517.00†	89.913	269.569	7256.41	6895.47	-553.31	-6891.50	40°13'46.173"N	104°58'07.129"W	0.00	
14617.00†	89.913	269.569	7256.56	6995.47	-554.07	-6991.50	40°13'46.165"N	104°58'08.419"W	0.00	
14717.00†	89.913	269.569	7256.71	7095.47	-554.82	-7091.50	40°13'46.157"N	104°58'09.708"W	0.00	
14817.00†	89.913	269.569	7256.87	7195.47	-555.57	-7191.50	40°13'46.150"N	104°58'10.997"W	0.00	
14917.00†	89.913	269.569	7257.02	7295.47	-556.32	-7291.49	40°13'46.142"N	104°58'12.286"W	0.00	
15017.00†	89.913	269.569	7257.17	7395.47	-557.07	-7391.49	40°13'46.134"N	104°58'13.576"W	0.00	
15117.00†	89.913	269.569	7257.32	7495.47	-557.82	-7491.49	40°13'46.126"N	104°58'14.865"W	0.00	
15217.00†	89.913	269.569	7257.47	7595.47	-558.58	-7591.48	40°13'46.119"N	104°58'16.154"W	0.00	
15317.00†	89.913	269.569	7257.62	7695.47	-559.33	-7691.48	40°13'46.111"N	104°58'17.443"W	0.00	
15417.00†	89.913	269.569	7257.77	7795.47	-560.08	-7791.48	40°13'46.103"N	104°58'18.733"W	0.00	
15517.00†	89.913	269.569	7257.92	7895.47	-560.83	-7891.47	40°13'46.095"N	104°58'20.022"W	0.00	
15617.00†	89.913	269.569	7258.08	7995.47	-561.58	-7991.47	40°13'46.088"N	104°58'21.311"W	0.00	
15717.00†	89.913	269.569	7258.23	8095.47	-562.33	-8091.47	40°13'46.080"N	104°58'22.600"W	0.00	
15817.00†	89.913	269.569	7258.38	8195.47	-563.09	-8191.47	40°13'46.072"N	104°58'23.890"W	0.00	
15917.00†	89.913	269.569	7258.53	8295.47	-563.84	-8291.46	40°13'46.064"N	104°58'25.179"W	0.00	
16017.00†	89.913	269.569	7258.68	8395.47	-564.59	-8391.46	40°13'46.057"N	104°58'26.468"W	0.00	
16117.00†	89.913	269.569	7258.83	8495.47	-565.34	-8491.46	40°13'46.049"N	104°58'27.757"W	0.00	
16217.00†	89.913	269.569	7258.98	8595.47	-566.09	-8591.45	40°13'46.041"N	104°58'29.047"W	0.00	
16317.00†	89.913	269.569	7259.13	8695.47	-566.84	-8691.45	40°13'46.033"N	104°58'30.336"W	0.00	
16417.00†	89.913	269.569	7259.29	8795.47	-567.60	-8791.45	40°13'46.026"N	104°58'31.625"W	0.00	
16517.00†	89.913	269.569	7259.44	8895.47	-568.35	-8891.45	40°13'46.018"N	104°58'32.914"W	0.00	
16617.00†	89.913	269.569	7259.59	8995.47	-569.10	-8991.44	40°13'46.010"N	104°58'34.204"W	0.00	
16717.00†	89.913	269.569	7259.74	9095.47	-569.85	-9091.44	40°13'46.002"N	104°58'35.493"W	0.00	
16817.00†	89.913	269.569	7259.89	9195.47	-570.60	-9191.44	40°13'45.994"N	104°58'36.782"W	0.00	
16917.00†	89.913	269.569	7260.04	9295.47	-571.35	-9291.43	40°13'45.987"N	104°58'38.071"W	0.00	
17017.00†	89.913	269.569	7260.19	9395.47	-572.11	-9391.43	40°13'45.979"N	104°58'39.361"W	0.00	
17117.00†	89.913	269.569	7260.34	9495.47	-572.86	-9491.43	40°13'45.971"N	104°58'40.650"W	0.00	
17217.00†	89.913	269.569	7260.50	9595.47	-573.61	-9591.42	40°13'45.963"N	104°58'41.939"W	0.00	



Planned Wellpath Report

KERBS 31C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31C-14HZ
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (184 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17317.00†	89.913	269.569	7260.65	9695.47	-574.36	-9691.42	40°13'45.955"N	104°58'43.228"W	0.00	
17417.00†	89.913	269.569	7260.80	9795.47	-575.11	-9791.42	40°13'45.948"N	104°58'44.518"W	0.00	
17517.00†	89.913	269.569	7260.95	9895.47	-575.86	-9891.42	40°13'45.940"N	104°58'45.807"W	0.00	
17550.56	89.913	269.569	7261.00 ¹	9929.03	-576.12	-9924.97	40°13'45.937"N	104°58'46.240"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: KERBS 31C-14HZ Ref Wellpath: KERBS 31C-14HZ (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	1000.00	983.00	17.00	1000.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1000.00	983.00	17.00	1000.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1000.00	7635.29	6635.29	1000.00	7246.00	0.00	0.00	-501.58	-10.00
7in Casing Intermediate	17.00	7635.29	7618.29	17.00	7246.00	0.00	0.00	-501.58	-10.00
6.125in Open Hole	7635.29	17550.56	9915.27	7246.00	7261.00	-501.58	-10.00	-576.12	-9924.97
4.5in Casing Production	17.00	17550.56	17533.56	17.00	7261.00	0.00	0.00	-576.12	-9924.97

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.13-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.13-T3N-R68W SECTION LINES		4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.14-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
SEC.14-T3N-R68W SECTION LINES		4901.00	60.11	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
1) KERBS 31C-14HZ BHL ON PLAT (1475'FNL & 50'FWL, SEC.14) REV-1	17550.56	7261.00	-576.12	-9924.97	3145325.47	1326848.75	40°13'45.937"N	104°58'46.240"W	point

SURVEY PROGRAM - Ref Wellbore: KERBS 31C-14HZ Ref Wellpath: KERBS 31C-14HZ (PERMIT REV-1) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7635.29	NaviTrak (Standard)		KERBS 31C-14HZ
7635.29	17550.56	OnTrak (Standard)		KERBS 31C-14HZ



Planned Wellpath Report

KERBS 31C-14HZ (PERMIT REV-1) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#09 KERBS 31C-14HZ (974' FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31C-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31C-14HZ
Facility	SEC.13-T3N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
949.00	0.000	131.500	949.00	Fox Hills Base
3649.67	10.000	131.500	3616.00	Parkman
4134.03	10.000	131.500	4093.00	Sussex
6636.16	0.000	269.569	6573.05	4 1/2" LINER TOP
6982.65	24.649	269.569	6912.00	Sharon Springs
7051.84	31.569	269.569	6973.00	Niobrara A
7110.10	37.394	269.569	7021.00	Niobrara B
7200.21	46.405	269.569	7088.00	Niobrara C
7462.88	72.672	269.569	7220.00	Fort Hays
7560.38	82.423	269.569	7241.00	Codell

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	131.500	17.00	TIE-ON
1100.00	0.000	131.500	1100.00	BEGIN NUDGE
1600.00	10.000	131.500	1597.47	END NUDGE
5420.58	10.000	131.500	5360.00	BEGIN DROP
5920.58	0.000	269.569	5857.47	END DROP
6736.16	0.000	269.569	6673.05	KOP, BUILD @ 10°/100'
7635.29	89.913	269.569	7246.00	LANDING POINT
17550.56	89.913	269.569	7261.00	TOTAL DEPTH