

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)
Field: WELD COUNTY (KERR MCGEE) Well: KERBS 31N-14HZ
Facility: SEC.13-T3N-R68W Wellbore: KERBS 31N-14HZ PWB

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

True vertical depths are referenced to PERMIT (17KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17KB) (RKB)	North Reference: True north
PERMIT (17KB) (RKB) to Mean Sea Level: 4901 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#08 KERBS 31N-14HZ (944'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 R)	Grid North (US R)	Latitude	Longitude
SEC.13-T3N-R68W				3155503.948	1323690.531	40°13'14.116"N	104°56'35.262"W
Slot	Local N (R)	Local E (R)	Grid East (US R)	Grid North (US R)	Latitude	Longitude	
SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)	3828.20	-233.92	3155246.002	1327517.013	40°13'51.946"N	104°56'38.278"W	
PERMIT (17KB) (RKB) to Mud line (At Slot: SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13))						4901R	
Mean Sea Level to Mud line (At Slot: SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13))						0R	
PERMIT (17KB) (RKB) to Mean Sea Level						4901R	

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US R)	Grid North (US R)	Latitude	Longitude
SEC.13-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	30.16	0.00	3155246.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.13-T3N-R68W SECTION LINES		4901.00	30.16	0.00	3155246.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.14-T3N-R68W HARD LINES (460' SETBACKS)		4901.00	30.16	0.00	3155246.81	1327547.17	40°13'52.244"N	104°56'38.278"W
SEC.14-T3N-R68W SECTION LINES		4901.00	30.16	0.00	3155246.81	1327547.17	40°13'52.244"N	104°56'38.278"W
KERBS 31N-14HZ BHL ON PLAT (1000'FNL & 50'FWL, SEC.14) REV-1	17330.50	7061.00	-131.02	-9927.30	3145320.17	1327323.76	40°13'50.632"N	104°56'46.272"W

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	95.250	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1100.00	0.000	95.250	1100.00	0.00	0.00	0.00	0.00
END NUDGE	1600.00	10.000	95.250	1597.47	-3.98	43.34	2.00	-43.31
BEGIN DROP	4364.53	10.000	95.250	4320.00	-47.91	521.38	0.00	-521.02
END DROP	4864.53	0.000	269.568	4817.47	-51.89	564.72	2.00	-564.33
KOP, BUILD @ 10°/100'	6511.11	0.000	269.568	6464.05	-51.89	564.72	0.00	-564.33
LANDING POINT	7409.73	89.861	269.568	7037.00	-56.20	-6.83	10.00	7.24
TOTAL DEPTH	17330.50	89.861	269.568	7061.00	-131.02	-9927.30	0.00	9927.99

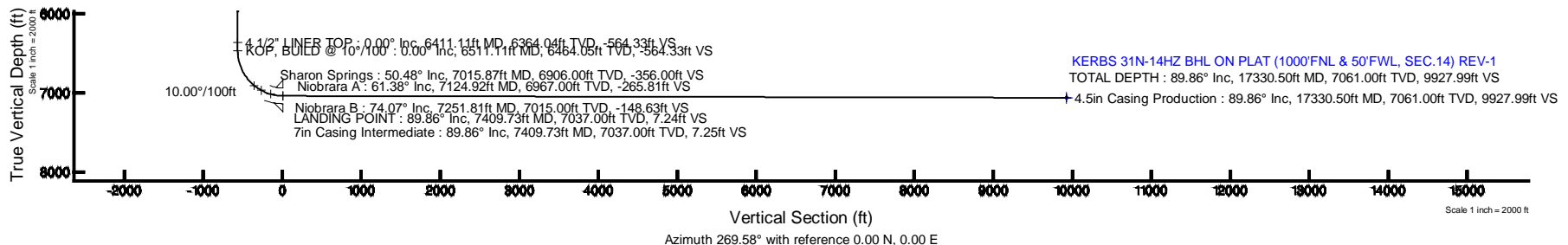
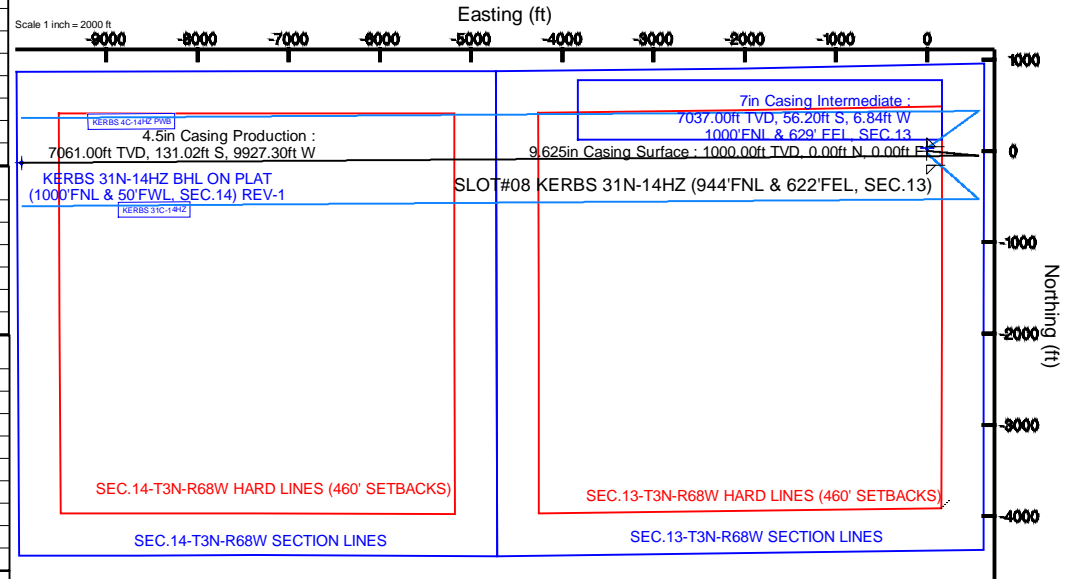
Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7409.73	NaviTrak	NaviTrak (Standard)		KERBS 31N-14HZ PWB
7409.73	17330.50	OnTrak	OnTrak (Standard)		KERBS 31N-14HZ PWB



BGGM (1945.0 to 2014.0) Dip: 66.78° Field: 52704.3 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





Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB
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 08:34
Convergence at slot	n/a	Database/Source file	WellArchitectDB/_KERBS_31N-14HZ_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3828.20	-233.92	3155246.00	1327517.01	40°13'51.946"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#08 KERBS 31N-14HZ (944'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	269.58°



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

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (189 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	95.250	0.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
17.00	0.000	95.250	17.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	TIE-ON
117.00†	0.000	95.250	117.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
217.00†	0.000	95.250	217.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
317.00†	0.000	95.250	317.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
417.00†	0.000	95.250	417.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
517.00†	0.000	95.250	517.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
617.00†	0.000	95.250	617.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
717.00†	0.000	95.250	717.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
817.00†	0.000	95.250	817.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
917.00†	0.000	95.250	917.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
949.00†	0.000	95.250	949.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	Fox Hills Base
1017.00†	0.000	95.250	1017.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	
1100.00	0.000	95.250	1100.00	0.00	0.00	0.00	40°13'51.946"N	104°56'38.278"W	0.00	BEGIN NUDGE
1117.00†	0.340	95.250	1117.00	-0.05	0.00	0.05	40°13'51.946"N	104°56'38.277"W	2.00	
1217.00†	2.340	95.250	1216.97	-2.38	-0.22	2.38	40°13'51.944"N	104°56'38.247"W	2.00	
1317.00†	4.340	95.250	1316.79	-8.17	-0.75	8.18	40°13'51.939"N	104°56'38.173"W	2.00	
1417.00†	6.340	95.250	1416.35	-17.44	-1.60	17.45	40°13'51.930"N	104°56'38.053"W	2.00	
1517.00†	8.340	95.250	1515.53	-30.15	-2.77	30.17	40°13'51.919"N	104°56'37.889"W	2.00	
1600.00	10.000	95.250	1597.47	-43.31	-3.98	43.34	40°13'51.907"N	104°56'37.719"W	2.00	END NUDGE
1617.00†	10.000	95.250	1614.21	-46.25	-4.25	46.28	40°13'51.904"N	104°56'37.681"W	0.00	
1717.00†	10.000	95.250	1712.69	-63.53	-5.84	63.57	40°13'51.888"N	104°56'37.458"W	0.00	
1817.00†	10.000	95.250	1811.17	-80.81	-7.43	80.86	40°13'51.873"N	104°56'37.235"W	0.00	
1917.00†	10.000	95.250	1909.65	-98.09	-9.02	98.16	40°13'51.857"N	104°56'37.012"W	0.00	
2017.00†	10.000	95.250	2008.13	-115.37	-10.61	115.45	40°13'51.841"N	104°56'36.790"W	0.00	
2117.00†	10.000	95.250	2106.61	-132.65	-12.20	132.74	40°13'51.825"N	104°56'36.567"W	0.00	
2217.00†	10.000	95.250	2205.09	-149.93	-13.79	150.03	40°13'51.810"N	104°56'36.344"W	0.00	
2317.00†	10.000	95.250	2303.57	-167.21	-15.37	167.32	40°13'51.794"N	104°56'36.121"W	0.00	
2417.00†	10.000	95.250	2402.05	-184.49	-16.96	184.62	40°13'51.778"N	104°56'35.898"W	0.00	
2517.00†	10.000	95.250	2500.53	-201.77	-18.55	201.91	40°13'51.763"N	104°56'35.675"W	0.00	
2617.00†	10.000	95.250	2599.01	-219.05	-20.14	219.20	40°13'51.747"N	104°56'35.452"W	0.00	
2717.00†	10.000	95.250	2697.50	-236.33	-21.73	236.49	40°13'51.731"N	104°56'35.229"W	0.00	
2817.00†	10.000	95.250	2795.98	-253.61	-23.32	253.78	40°13'51.716"N	104°56'35.006"W	0.00	
2917.00†	10.000	95.250	2894.46	-270.89	-24.91	271.08	40°13'51.700"N	104°56'34.783"W	0.00	
3017.00†	10.000	95.250	2992.94	-288.17	-26.50	288.37	40°13'51.684"N	104°56'34.560"W	0.00	
3117.00†	10.000	95.250	3091.42	-305.45	-28.09	305.66	40°13'51.668"N	104°56'34.337"W	0.00	
3217.00†	10.000	95.250	3189.90	-322.72	-29.68	322.95	40°13'51.653"N	104°56'34.114"W	0.00	
3317.00†	10.000	95.250	3288.38	-340.00	-31.26	340.24	40°13'51.637"N	104°56'33.891"W	0.00	
3417.00†	10.000	95.250	3386.86	-357.28	-32.85	357.54	40°13'51.621"N	104°56'33.668"W	0.00	
3517.00†	10.000	95.250	3485.34	-374.56	-34.44	374.83	40°13'51.606"N	104°56'33.445"W	0.00	
3617.00†	10.000	95.250	3583.82	-391.84	-36.03	392.12	40°13'51.590"N	104°56'33.222"W	0.00	
3643.58†	10.000	95.250	3610.00	-396.44	-36.45	396.72	40°13'51.586"N	104°56'33.163"W	0.00	Parkman
3717.00†	10.000	95.250	3682.30	-409.12	-37.62	409.41	40°13'51.574"N	104°56'32.999"W	0.00	
3817.00†	10.000	95.250	3780.78	-426.40	-39.21	426.70	40°13'51.559"N	104°56'32.776"W	0.00	
3917.00†	10.000	95.250	3879.26	-443.68	-40.80	443.99	40°13'51.543"N	104°56'32.553"W	0.00	



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)	
Area	COLORADO	Well	KERBS 31N-14HZ	
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB	
Facility	SEC.13-T3N-R68W			

WELLPATH DATA (189 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	10.000	95.250	3977.75	-460.96	-42.39	461.29	40°13'51.527"N	104°56'32.331"W	0.00	
4117.00†	10.000	95.250	4076.23	-478.24	-43.98	478.58	40°13'51.511"N	104°56'32.108"W	0.00	
4127.94†	10.000	95.250	4087.00	-480.13	-44.15	480.47	40°13'51.510"N	104°56'32.083"W	0.00	Sussex
4217.00†	10.000	95.250	4174.71	-495.52	-45.56	495.87	40°13'51.496"N	104°56'31.885"W	0.00	
4317.00†	10.000	95.250	4273.19	-512.80	-47.15	513.16	40°13'51.480"N	104°56'31.662"W	0.00	
4364.53	10.000	95.250	4320.00	-521.02	-47.91	521.38	40°13'51.473"N	104°56'31.556"W	0.00	BEGIN DROP
4417.00†	8.951	95.250	4371.75	-529.61	-48.70	529.98	40°13'51.465"N	104°56'31.445"W	2.00	
4517.00†	6.951	95.250	4470.78	-543.38	-49.96	543.76	40°13'51.452"N	104°56'31.267"W	2.00	
4617.00†	4.951	95.250	4570.24	-553.69	-50.91	554.08	40°13'51.443"N	104°56'31.134"W	2.00	
4717.00†	2.951	95.250	4670.00	-560.55	-51.54	560.94	40°13'51.437"N	104°56'31.046"W	2.00	
4817.00†	0.951	95.250	4769.93	-563.93	-51.85	564.33	40°13'51.434"N	104°56'31.002"W	2.00	
4864.53	0.000	269.568	4817.47	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	2.00	END DROP
4917.00†	0.000	269.568	4869.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5017.00†	0.000	269.568	4969.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5117.00†	0.000	269.568	5069.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5217.00†	0.000	269.568	5169.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5317.00†	0.000	269.568	5269.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5417.00†	0.000	269.568	5369.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5517.00†	0.000	269.568	5469.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5617.00†	0.000	269.568	5569.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5717.00†	0.000	269.568	5669.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5817.00†	0.000	269.568	5769.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
5917.00†	0.000	269.568	5869.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
6017.00†	0.000	269.568	5969.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
6117.00†	0.000	269.568	6069.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
6217.00†	0.000	269.568	6169.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
6317.00†	0.000	269.568	6269.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
6411.11†	0.000	269.568	6364.04	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	4 1/2" LINER TOP
6417.00†	0.000	269.568	6369.93	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	
6511.11	0.000	269.568	6464.05	-564.33	-51.89	564.72	40°13'51.433"N	104°56'30.997"W	0.00	KOP, BUILD @ 10°/100'
6517.00†	0.589	269.568	6469.93	-564.30	-51.89	564.69	40°13'51.433"N	104°56'30.997"W	10.00	
6617.00†	10.589	269.568	6569.33	-554.57	-51.96	554.97	40°13'51.432"N	104°56'31.123"W	10.00	
6717.00†	20.589	269.568	6665.53	-527.73	-52.17	528.13	40°13'51.430"N	104°56'31.469"W	10.00	
6817.00†	30.589	269.568	6755.61	-484.60	-52.49	484.99	40°13'51.427"N	104°56'32.025"W	10.00	
6917.00†	40.589	269.568	6836.82	-426.47	-52.93	426.87	40°13'51.423"N	104°56'32.774"W	10.00	
7015.87†	50.476	269.568	6906.00	-356.00	-53.46	356.40	40°13'51.418"N	104°56'33.683"W	10.00	Sharon Springs
7017.00†	50.589	269.568	6906.72	-355.13	-53.47	355.53	40°13'51.418"N	104°56'33.694"W	10.00	
7117.00†	60.589	269.568	6963.16	-272.74	-54.09	273.14	40°13'51.411"N	104°56'34.756"W	10.00	
7124.92†	61.381	269.568	6967.00	-265.81	-54.14	266.21	40°13'51.411"N	104°56'34.846"W	10.00	Niobrara A
7217.00†	70.589	269.568	7004.43	-181.79	-54.78	182.20	40°13'51.405"N	104°56'35.929"W	10.00	
7251.81†	74.070	269.568	7015.00	-148.63	-55.03	149.03	40°13'51.402"N	104°56'36.356"W	10.00	Niobrara B
7317.00†	80.589	269.568	7029.29	-85.06	-55.51	85.47	40°13'51.398"N	104°56'37.176"W	10.00	
7409.73	89.861	269.568	7037.00	7.24	-56.20	-6.83	40°13'51.391"N	104°56'38.366"W	10.00	LANDING POINT
7417.00†	89.861	269.568	7037.02	14.52	-56.26	-14.10	40°13'51.390"N	104°56'38.460"W	0.00	
7517.00†	89.861	269.568	7037.26	114.52	-57.01	-114.10	40°13'51.383"N	104°56'39.749"W	0.00	



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (189 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7617.00†	89.861	269.568	7037.50	214.52	-57.76	-214.10	40°13'51.375"N	104°56'41.038"W	0.00	
7717.00†	89.861	269.568	7037.74	314.52	-58.52	-314.10	40°13'51.368"N	104°56'42.328"W	0.00	
7817.00†	89.861	269.568	7037.99	414.52	-59.27	-414.09	40°13'51.360"N	104°56'43.617"W	0.00	
7917.00†	89.861	269.568	7038.23	514.52	-60.03	-514.09	40°13'51.353"N	104°56'44.906"W	0.00	
8017.00†	89.861	269.568	7038.47	614.52	-60.78	-614.09	40°13'51.345"N	104°56'46.196"W	0.00	
8117.00†	89.861	269.568	7038.71	714.51	-61.54	-714.08	40°13'51.338"N	104°56'47.485"W	0.00	
8217.00†	89.861	269.568	7038.95	814.51	-62.29	-814.08	40°13'51.330"N	104°56'48.774"W	0.00	
8317.00†	89.861	269.568	7039.20	914.51	-63.04	-914.08	40°13'51.323"N	104°56'50.063"W	0.00	
8417.00†	89.861	269.568	7039.44	1014.51	-63.80	-1014.07	40°13'51.315"N	104°56'51.353"W	0.00	
8517.00†	89.861	269.568	7039.68	1114.51	-64.55	-1114.07	40°13'51.308"N	104°56'52.642"W	0.00	
8617.00†	89.861	269.568	7039.92	1214.51	-65.31	-1214.07	40°13'51.300"N	104°56'53.931"W	0.00	
8717.00†	89.861	269.568	7040.16	1314.51	-66.06	-1314.06	40°13'51.293"N	104°56'55.220"W	0.00	
8817.00†	89.861	269.568	7040.41	1414.51	-66.81	-1414.06	40°13'51.285"N	104°56'56.510"W	0.00	
8917.00†	89.861	269.568	7040.65	1514.51	-67.57	-1514.06	40°13'51.278"N	104°56'57.799"W	0.00	
9017.00†	89.861	269.568	7040.89	1614.51	-68.32	-1614.05	40°13'51.270"N	104°56'59.088"W	0.00	
9117.00†	89.861	269.568	7041.13	1714.51	-69.08	-1714.05	40°13'51.263"N	104°57'00.378"W	0.00	
9217.00†	89.861	269.568	7041.37	1814.51	-69.83	-1814.05	40°13'51.255"N	104°57'01.667"W	0.00	
9317.00†	89.861	269.568	7041.62	1914.51	-70.59	-1914.05	40°13'51.248"N	104°57'02.956"W	0.00	
9417.00†	89.861	269.568	7041.86	2014.51	-71.34	-2014.04	40°13'51.240"N	104°57'04.245"W	0.00	
9517.00†	89.861	269.568	7042.10	2114.51	-72.09	-2114.04	40°13'51.233"N	104°57'05.535"W	0.00	
9617.00†	89.861	269.568	7042.34	2214.51	-72.85	-2214.04	40°13'51.225"N	104°57'06.824"W	0.00	
9717.00†	89.861	269.568	7042.58	2314.51	-73.60	-2314.03	40°13'51.218"N	104°57'08.113"W	0.00	
9817.00†	89.861	269.568	7042.82	2414.51	-74.36	-2414.03	40°13'51.210"N	104°57'09.402"W	0.00	
9917.00†	89.861	269.568	7043.07	2514.51	-75.11	-2514.03	40°13'51.203"N	104°57'10.692"W	0.00	
10017.00†	89.861	269.568	7043.31	2614.51	-75.86	-2614.02	40°13'51.195"N	104°57'11.981"W	0.00	
10117.00†	89.861	269.568	7043.55	2714.51	-76.62	-2714.02	40°13'51.187"N	104°57'13.270"W	0.00	
10217.00†	89.861	269.568	7043.79	2814.51	-77.37	-2814.02	40°13'51.180"N	104°57'14.560"W	0.00	
10317.00†	89.861	269.568	7044.03	2914.51	-78.13	-2914.01	40°13'51.172"N	104°57'15.849"W	0.00	
10417.00†	89.861	269.568	7044.28	3014.51	-78.88	-3014.01	40°13'51.165"N	104°57'17.138"W	0.00	
10517.00†	89.861	269.568	7044.52	3114.51	-79.64	-3114.01	40°13'51.157"N	104°57'18.427"W	0.00	
10617.00†	89.861	269.568	7044.76	3214.51	-80.39	-3214.00	40°13'51.150"N	104°57'19.717"W	0.00	
10717.00†	89.861	269.568	7045.00	3314.51	-81.14	-3314.00	40°13'51.142"N	104°57'21.006"W	0.00	
10817.00†	89.861	269.568	7045.24	3414.51	-81.90	-3414.00	40°13'51.134"N	104°57'22.295"W	0.00	
10917.00†	89.861	269.568	7045.49	3514.51	-82.65	-3513.99	40°13'51.127"N	104°57'23.585"W	0.00	
11017.00†	89.861	269.568	7045.73	3614.51	-83.41	-3613.99	40°13'51.119"N	104°57'24.874"W	0.00	
11117.00†	89.861	269.568	7045.97	3714.51	-84.16	-3713.99	40°13'51.112"N	104°57'26.163"W	0.00	
11217.00†	89.861	269.568	7046.21	3814.51	-84.91	-3813.99	40°13'51.104"N	104°57'27.452"W	0.00	
11317.00†	89.861	269.568	7046.45	3914.51	-85.67	-3913.98	40°13'51.096"N	104°57'28.742"W	0.00	
11417.00†	89.861	269.568	7046.70	4014.50	-86.42	-4013.98	40°13'51.089"N	104°57'30.031"W	0.00	
11517.00†	89.861	269.568	7046.94	4114.50	-87.18	-4113.98	40°13'51.081"N	104°57'31.320"W	0.00	
11617.00†	89.861	269.568	7047.18	4214.50	-87.93	-4213.97	40°13'51.074"N	104°57'32.609"W	0.00	
11717.00†	89.861	269.568	7047.42	4314.50	-88.69	-4313.97	40°13'51.066"N	104°57'33.899"W	0.00	
11817.00†	89.861	269.568	7047.66	4414.50	-89.44	-4413.97	40°13'51.058"N	104°57'35.188"W	0.00	
11917.00†	89.861	269.568	7047.90	4514.50	-90.19	-4513.96	40°13'51.051"N	104°57'36.477"W	0.00	
12017.00†	89.861	269.568	7048.15	4614.50	-90.95	-4613.96	40°13'51.043"N	104°57'37.767"W	0.00	



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (189 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12117.00†	89.861	269.568	7048.39	4714.50	-91.70	-4713.96	40°13'51.035"N	104°57'39.056"W	0.00	
12217.00†	89.861	269.568	7048.63	4814.50	-92.46	-4813.95	40°13'51.028"N	104°57'40.345"W	0.00	
12317.00†	89.861	269.568	7048.87	4914.50	-93.21	-4913.95	40°13'51.020"N	104°57'41.634"W	0.00	
12417.00†	89.861	269.568	7049.11	5014.50	-93.96	-5013.95	40°13'51.012"N	104°57'42.924"W	0.00	
12517.00†	89.861	269.568	7049.36	5114.50	-94.72	-5113.94	40°13'51.005"N	104°57'44.213"W	0.00	
12617.00†	89.861	269.568	7049.60	5214.50	-95.47	-5213.94	40°13'50.997"N	104°57'45.502"W	0.00	
12717.00†	89.861	269.568	7049.84	5314.50	-96.23	-5313.94	40°13'50.989"N	104°57'46.791"W	0.00	
12817.00†	89.861	269.568	7050.08	5414.50	-96.98	-5413.94	40°13'50.982"N	104°57'48.081"W	0.00	
12917.00†	89.861	269.568	7050.32	5514.50	-97.74	-5513.93	40°13'50.974"N	104°57'49.370"W	0.00	
13017.00†	89.861	269.568	7050.57	5614.50	-98.49	-5613.93	40°13'50.966"N	104°57'50.659"W	0.00	
13117.00†	89.861	269.568	7050.81	5714.50	-99.24	-5713.93	40°13'50.959"N	104°57'51.949"W	0.00	
13217.00†	89.861	269.568	7051.05	5814.50	-100.00	-5813.92	40°13'50.951"N	104°57'53.238"W	0.00	
13317.00†	89.861	269.568	7051.29	5914.50	-100.75	-5913.92	40°13'50.943"N	104°57'54.527"W	0.00	
13417.00†	89.861	269.568	7051.53	6014.50	-101.51	-6013.92	40°13'50.936"N	104°57'55.816"W	0.00	
13517.00†	89.861	269.568	7051.78	6114.50	-102.26	-6113.91	40°13'50.928"N	104°57'57.106"W	0.00	
13617.00†	89.861	269.568	7052.02	6214.50	-103.01	-6213.91	40°13'50.920"N	104°57'58.395"W	0.00	
13717.00†	89.861	269.568	7052.26	6314.50	-103.77	-6313.91	40°13'50.913"N	104°57'59.684"W	0.00	
13817.00†	89.861	269.568	7052.50	6414.50	-104.52	-6413.90	40°13'50.905"N	104°58'00.973"W	0.00	
13917.00†	89.861	269.568	7052.74	6514.50	-105.28	-6513.90	40°13'50.897"N	104°58'02.263"W	0.00	
14017.00†	89.861	269.568	7052.98	6614.50	-106.03	-6613.90	40°13'50.889"N	104°58'03.552"W	0.00	
14117.00†	89.861	269.568	7053.23	6714.50	-106.79	-6713.89	40°13'50.882"N	104°58'04.841"W	0.00	
14217.00†	89.861	269.568	7053.47	6814.50	-107.54	-6813.89	40°13'50.874"N	104°58'06.131"W	0.00	
14317.00†	89.861	269.568	7053.71	6914.50	-108.29	-6913.89	40°13'50.866"N	104°58'07.420"W	0.00	
14417.00†	89.861	269.568	7053.95	7014.50	-109.05	-7013.89	40°13'50.859"N	104°58'08.709"W	0.00	
14517.00†	89.861	269.568	7054.19	7114.50	-109.80	-7113.88	40°13'50.851"N	104°58'09.998"W	0.00	
14617.00†	89.861	269.568	7054.44	7214.50	-110.56	-7213.88	40°13'50.843"N	104°58'11.288"W	0.00	
14717.00†	89.861	269.568	7054.68	7314.50	-111.31	-7313.88	40°13'50.835"N	104°58'12.577"W	0.00	
14817.00†	89.861	269.568	7054.92	7414.49	-112.06	-7413.87	40°13'50.828"N	104°58'13.866"W	0.00	
14917.00†	89.861	269.568	7055.16	7514.49	-112.82	-7513.87	40°13'50.820"N	104°58'15.155"W	0.00	
15017.00†	89.861	269.568	7055.40	7614.49	-113.57	-7613.87	40°13'50.812"N	104°58'16.445"W	0.00	
15117.00†	89.861	269.568	7055.65	7714.49	-114.33	-7713.86	40°13'50.804"N	104°58'17.734"W	0.00	
15217.00†	89.861	269.568	7055.89	7814.49	-115.08	-7813.86	40°13'50.797"N	104°58'19.023"W	0.00	
15317.00†	89.861	269.568	7056.13	7914.49	-115.84	-7913.86	40°13'50.789"N	104°58'20.313"W	0.00	
15417.00†	89.861	269.568	7056.37	8014.49	-116.59	-8013.85	40°13'50.781"N	104°58'21.602"W	0.00	
15517.00†	89.861	269.568	7056.61	8114.49	-117.34	-8113.85	40°13'50.773"N	104°58'22.891"W	0.00	
15617.00†	89.861	269.568	7056.86	8214.49	-118.10	-8213.85	40°13'50.766"N	104°58'24.180"W	0.00	
15717.00†	89.861	269.568	7057.10	8314.49	-118.85	-8313.84	40°13'50.758"N	104°58'25.470"W	0.00	
15817.00†	89.861	269.568	7057.34	8414.49	-119.61	-8413.84	40°13'50.750"N	104°58'26.759"W	0.00	
15917.00†	89.861	269.568	7057.58	8514.49	-120.36	-8513.84	40°13'50.742"N	104°58'28.048"W	0.00	
16017.00†	89.861	269.568	7057.82	8614.49	-121.11	-8613.84	40°13'50.734"N	104°58'29.337"W	0.00	
16117.00†	89.861	269.568	7058.06	8714.49	-121.87	-8713.83	40°13'50.727"N	104°58'30.627"W	0.00	
16217.00†	89.861	269.568	7058.31	8814.49	-122.62	-8813.83	40°13'50.719"N	104°58'31.916"W	0.00	
16317.00†	89.861	269.568	7058.55	8914.49	-123.38	-8913.83	40°13'50.711"N	104°58'33.205"W	0.00	
16417.00†	89.861	269.568	7058.79	9014.49	-124.13	-9013.82	40°13'50.703"N	104°58'34.494"W	0.00	
16517.00†	89.861	269.568	7059.03	9114.49	-124.89	-9113.82	40°13'50.695"N	104°58'35.784"W	0.00	



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH DATA (189 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16617.00†	89.861	269.568	7059.27	9214.49	-125.64	-9213.82	40°13'50.687"N	104°58'37.073"W	0.00	
16717.00†	89.861	269.568	7059.52	9314.49	-126.39	-9313.81	40°13'50.680"N	104°58'38.362"W	0.00	
16817.00†	89.861	269.568	7059.76	9414.49	-127.15	-9413.81	40°13'50.672"N	104°58'39.652"W	0.00	
16917.00†	89.861	269.568	7060.00	9514.49	-127.90	-9513.81	40°13'50.664"N	104°58'40.941"W	0.00	
17017.00†	89.861	269.568	7060.24	9614.49	-128.66	-9613.80	40°13'50.656"N	104°58'42.230"W	0.00	
17117.00†	89.861	269.568	7060.48	9714.49	-129.41	-9713.80	40°13'50.648"N	104°58'43.519"W	0.00	
17217.00†	89.861	269.568	7060.73	9814.49	-130.16	-9813.80	40°13'50.641"N	104°58'44.809"W	0.00	
17317.00†	89.861	269.568	7060.97	9914.49	-130.92	-9913.79	40°13'50.633"N	104°58'46.098"W	0.00	
17330.50	89.861	269.568	7061.00 ¹	9927.99	-131.02	-9927.30	40°13'50.632"N	104°58'46.272"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: KERBS 31N-14HZ PWB Ref Wellpath: KERBS 31N-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	7409.73	6409.73	1000.00	7037.00	0.00	0.00	-56.20	-6.84
7in Casing Intermediate	17.00	7409.73	7392.73	17.00	7037.00	0.00	0.00	-56.20	-6.84
6.125in Open Hole	7409.73	17330.50	9920.77	7037.00	7061.00	-56.20	-6.84	-131.02	-9927.30
4.5in Casing Production	17.00	17330.50	17313.50	17.00	7061.00	0.00	0.00	-131.02	-9927.30



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)	
Area	COLORADO	Well	KERBS 31N-14HZ	
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB	
Facility	SEC.13-T3N-R68W			

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	30.16	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	30.16	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	30.16	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	30.16	0.00	3155245.81	1327547.17	40°13'52.244"N	104°56'38.278"W	polygon
1) KERBS 31N-14HZ BHL ON PLAT (1000'FNL & 50'FWL, SEC.14) REV- 1	17330.50	7061.00	-131.02	-9927.30	3145320.17	1327323.76	40°13'50.632"N	104°58'46.272"W	point

SURVEY PROGRAM - Ref Wellbore: KERBS 31N-14HZ PWB Ref Wellpath: KERBS 31N-14HZ (PERMIT REV-1) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7409.73	NaviTrak (Standard)		KERBS 31N-14HZ PWB
7409.73	17330.50	OnTrak (Standard)		KERBS 31N-14HZ PWB



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#08 KERBS 31N-14HZ (944'FNL & 622'FEL, SEC.13)
Area	COLORADO	Well	KERBS 31N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	KERBS 31N-14HZ PWB
Facility	SEC.13-T3N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
949.00	0.000	95.250	949.00	Fox Hills Base
3643.58	10.000	95.250	3610.00	Parkman
4127.94	10.000	95.250	4087.00	Sussex
6411.11	0.000	269.568	6364.04	4 1/2" LINER TOP
7015.87	50.476	269.568	6906.00	Sharon Springs
7124.92	61.381	269.568	6967.00	Niobrara A
7251.81	74.070	269.568	7015.00	Niobrara B

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	95.250	17.00	TIE-ON
1100.00	0.000	95.250	1100.00	BEGIN NUDGE
1600.00	10.000	95.250	1597.47	END NUDGE
4364.53	10.000	95.250	4320.00	BEGIN DROP
4864.53	0.000	269.568	4817.47	END DROP
6511.11	0.000	269.568	6464.05	KOP, BUILD @ 10°/100'
7409.73	89.861	269.568	7037.00	LANDING POINT
17330.50	89.861	269.568	7061.00	TOTAL DEPTH