

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
 Field: WELD COUNTY (KERR MCGEE) Well: WISHBONE 3C-24HZ
 Facility: SEC.24-T2N-R66W Wellbore: WISHBONE 3C-24HZ PWB

Plot reference wellpath is WISHBONE 3C-24HZ (PERMIT) PWB
 True vertical depths are referenced to Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
 Measured depths are referenced to Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) North Reference: True north
 Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) to Mean Sea Level: 5101 feet Scale: True distance
 Mean Sea Level to Mud line (At Slot: SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)): 0 feet Depths are in feet
 Coordinates are in feet referenced to Slot Created by: wlsj#02 on 2/25/2013

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.24-T2N-R66W	3214370.720	1286534.230	40°07'02.589"N	104°44'00.532"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)	9.25	1592.86	3215523.377	1286556.907	40°07'02.880"N	104°43'40.544"W
Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) to Mud line (At Slot: SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24))	5101 ft					
Mean Sea Level to Mud line (At Slot: SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24))	0 ft					
Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) to Mean Sea Level	5101 ft					

Survey Program

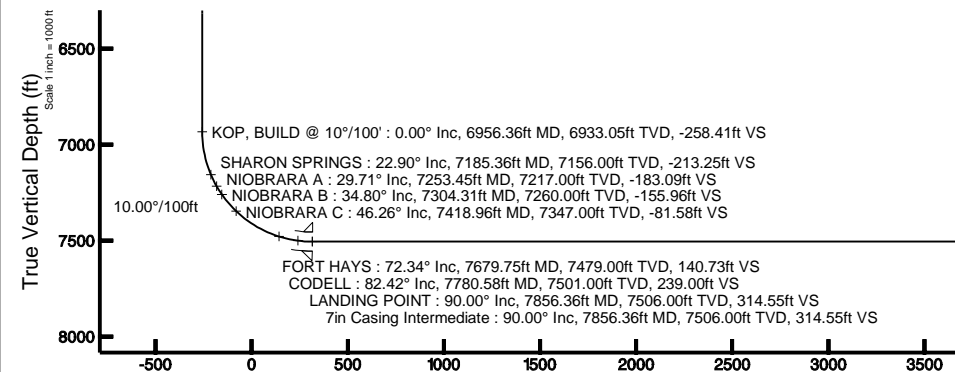
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7856.36	NaviTrak	NaviTrak (MagCorr)		WISHBONE 3C-24HZ PWB
7856.36	12062.05	OnTrak	OnTrak (MagCorr)		WISHBONE 3C-24HZ PWB

Well Profile Data

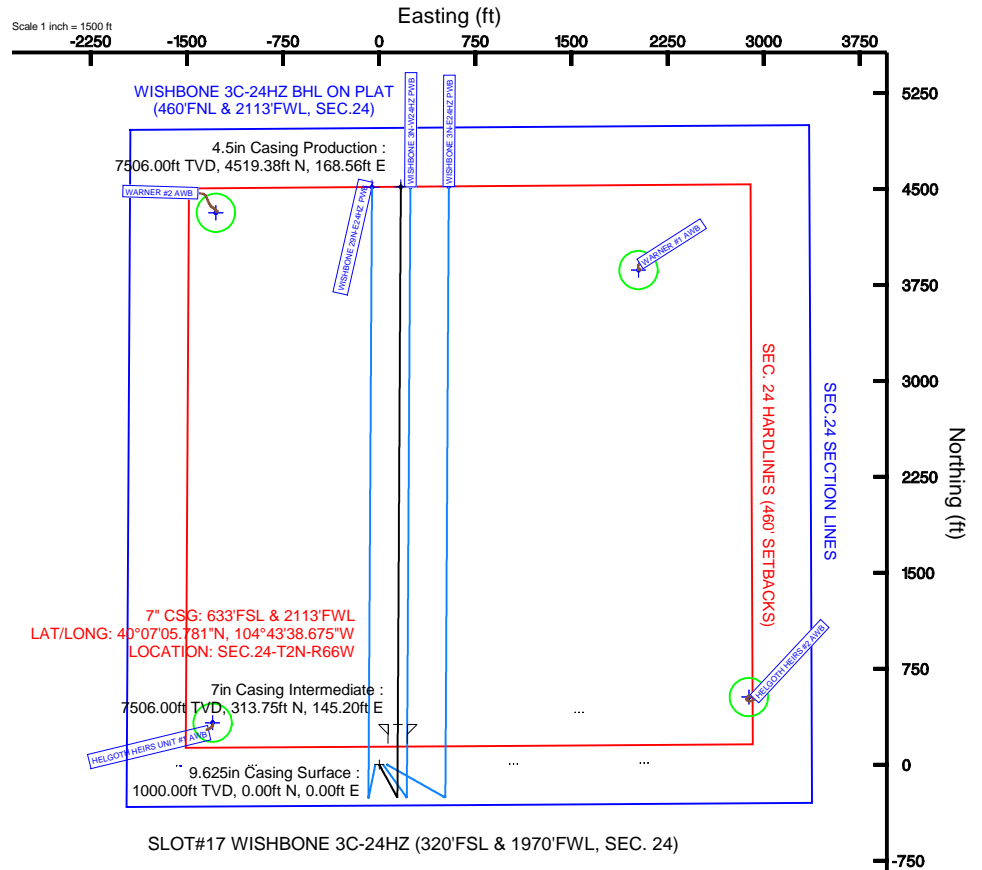
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-ON	17.00	0.000	151.280	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1400.00	0.000	151.280	1400.00	0.00	0.00	0.00	0.00
END NUDGE	1900.00	10.000	151.280	1897.47	-38.17	20.91	2.00	-38.05
BEGIN DROP	3100.78	10.000	151.280	3080.00	-221.03	121.11	0.00	-220.35
END DROP	3600.78	0.000	0.318	3577.47	-259.20	142.02	2.00	-258.41
KOP, BUILD @ 10°/100'	6956.36	0.000	0.318	6933.05	-259.20	142.02	0.00	-258.41
LANDING POINT	7856.36	90.000	0.318	7506.00	313.75	145.20	10.00	314.55
TOTAL DEPTH	12062.05	90.000	0.318	7506.00	4519.38	168.56	0.00	4520.24

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.24 SECTION LINES	24.00	-9.06	-1592.86	3214370.72	1286534.33	40°07'02.590"N	104°44'00.532"W	
HELGOOTH HERS #2 150' RADIUS	41.00	527.99	2885.96	3218804.51	1287109.98	40°07'07.896"N	104°43'03.396"W	
HELGOOTH HERS UNIT #1 150' RADIUS	41.00	327.49	-1300.82	3214619.81	1286873.05	40°07'05.916"N	104°43'57.288"W	
WARNER #1 150' RADIUS	41.00	3868.49	2024.28	3217913.81	1290442.71	40°07'40.908"N	104°43'14.484"W	
WARNER #2 150' RADIUS	41.00	4316.52	-1275.44	3214610.45	1290861.97	40°07'45.336"N	104°43'56.964"W	
WISHBONE 3C-24HZ BHL ON PLAT (460'FNL & 2113'FWL, SEC.24)	12062.05	7506.00	4519.38	168.56	3216052.57	1291077.39	40°07'47.341"N	104°43'38.374"W
SEC. 24 HARDLINES (460' SETBACKS)	7824.00	-9.06	-1592.86	3214370.72	1286534.33	40°07'02.590"N	104°44'00.532"W	



Vertical Section (ft)
 Azimuth 0.32° with reference 0.00 N, 0.00 E



SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)



BGCM (1945.0 to 2014.0) Dip: 66.75° Field: 52758.5 nT
 Magnetic North is 8.65 degrees East of True North (at 2/14/2013)

To correct azimuth from Magnetic to True add 8.65 degrees
 For example: if the Magnetic North Azimuth = 90 degrees, then the True North Azimuth = 90 + 8.65 = 98.65

4.5in Casing Production : 90.00° Inc, 12062.05ft MD, 7506.00ft TVD, 4520.24ft VS
 TOTAL DEPTH : 90.00° Inc, 12062.05ft MD, 7506.00ft TVD, 4520.24ft VS
 WISHBONE 3C-24HZ BHL ON PLAT (460'FNL & 2113'FWL, SEC.24)

Scale 1 inch = 1000 ft



Planned Wellpath Report
 WISHBONE 3C-24HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
Area	COLORADO	Well	WISHBONE 3C-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	WISHBONE 3C-24HZ PWB
Facility	SEC.24-T2N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 3.0.2
North Reference	True	User	Wilsjef02
Scale	0.99996	Report Generated	2/25/2013 at 10:12:02
Convergence at slot	0.50° East	Database/Source file	WellArchitectDB/WISHBONE_3C-24HZ_PWB.xml

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	9.25	1552.86	3215923.38	1286556.91	40°07'02.680"N	104°43'40.544"W
Facility Reference Pt			3214370.72	1286534.23	40°07'02.589"N	104°44'00.532"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM		
Calculation method	Minimum curvature	Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) to Mean Sea Level
Vertical Reference Pt	Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB)	Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB) to Mud Line at Slot (SLOT#17 WISHBON
MD Reference Pt	Rig on SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24) (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth



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 WISHBONE 3C-24HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
Area	COLORADO	Well	WISHBONE 3C-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	WISHBONE 3C-24HZ PWB
Facility	SEC.24-T2N-R66W		

WELLPATH DATA (138 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	151.280	0.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
17.00	0.000	151.280	17.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	TIE-ON
117.00†	0.000	151.280	117.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
217.00†	0.000	151.280	217.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
317.00†	0.000	151.280	317.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
417.00†	0.000	151.280	417.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
517.00†	0.000	151.280	517.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
617.00†	0.000	151.280	617.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
717.00†	0.000	151.280	717.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
817.00†	0.000	151.280	817.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
917.00†	0.000	151.280	917.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
921.00†	0.000	151.280	921.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	FOX HILLS
1017.00†	0.000	151.280	1017.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
1117.00†	0.000	151.280	1117.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
1217.00†	0.000	151.280	1217.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
1317.00†	0.000	151.280	1317.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	
1400.00	0.000	151.280	1400.00	0.00	0.00	0.00	40°07'02.680"N	104°43'40.544"W	0.00	BEGIN NUDGE
1417.00†	0.340	151.280	1417.00	-0.04	-0.04	0.02	40°07'02.680"N	104°43'40.544"W	2.00	
1517.00†	2.340	151.280	1516.97	-2.09	-2.09	1.15	40°07'02.659"N	104°43'40.529"W	2.00	
1617.00†	4.340	151.280	1616.79	-7.18	-7.20	3.95	40°07'02.609"N	104°43'40.493"W	2.00	
1717.00†	6.340	151.280	1716.35	-15.32	-15.37	8.42	40°07'02.528"N	104°43'40.436"W	2.00	
1817.00†	8.340	151.280	1815.53	-26.49	-26.57	14.56	40°07'02.417"N	104°43'40.357"W	2.00	
1900.00	10.000	151.280	1897.47	-38.05	-38.17	20.91	40°07'02.303"N	104°43'40.275"W	2.00	END NUDGE
1917.00†	10.000	151.280	1914.21	-40.63	-40.76	22.33	40°07'02.277"N	104°43'40.257"W	0.00	
2017.00†	10.000	151.280	2012.69	-55.81	-55.99	30.68	40°07'02.127"N	104°43'40.149"W	0.00	
2117.00†	10.000	151.280	2111.17	-71.00	-71.21	39.02	40°07'01.976"N	104°43'40.042"W	0.00	
2217.00†	10.000	151.280	2209.65	-86.18	-86.44	47.37	40°07'01.826"N	104°43'39.934"W	0.00	
2317.00†	10.000	151.280	2308.13	-101.36	-101.67	55.71	40°07'01.675"N	104°43'39.827"W	0.00	
2417.00†	10.000	151.280	2406.61	-116.54	-116.90	64.05	40°07'01.525"N	104°43'39.720"W	0.00	
2517.00†	10.000	151.280	2505.09	-131.72	-132.13	72.40	40°07'01.374"N	104°43'39.612"W	0.00	
2617.00†	10.000	151.280	2603.57	-146.91	-147.36	80.74	40°07'01.224"N	104°43'39.505"W	0.00	
2717.00†	10.000	151.280	2702.05	-162.09	-162.59	89.09	40°07'01.073"N	104°43'39.397"W	0.00	
2817.00†	10.000	151.280	2800.53	-177.27	-177.81	97.43	40°07'00.923"N	104°43'39.290"W	0.00	
2917.00†	10.000	151.280	2899.01	-192.45	-193.04	105.78	40°07'00.772"N	104°43'39.182"W	0.00	
3017.00†	10.000	151.280	2997.50	-207.63	-208.27	114.12	40°07'00.622"N	104°43'39.075"W	0.00	
3100.78	10.000	151.280	3080.00	-220.35	-221.03	121.11	40°07'00.496"N	104°43'38.985"W	0.00	BEGIN DROP
3117.00†	9.676	151.280	3095.98	-222.78	-223.46	122.44	40°07'00.472"N	104°43'38.968"W	2.00	
3217.00†	7.676	151.280	3194.84	-235.96	-236.69	129.69	40°07'00.341"N	104°43'38.875"W	2.00	
3317.00†	5.676	151.280	3294.15	-246.13	-246.88	135.28	40°07'00.240"N	104°43'38.803"W	2.00	
3417.00†	3.676	151.280	3393.81	-253.25	-254.03	139.19	40°07'00.170"N	104°43'38.752"W	2.00	
3517.00†	1.676	151.280	3493.70	-257.33	-258.12	141.44	40°07'00.129"N	104°43'38.723"W	2.00	
3600.78	0.000	0.318	3577.47	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	2.00	END DROP
3617.00†	0.000	0.318	3593.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
3717.00†	0.000	0.318	3693.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
3817.00†	0.000	0.318	3793.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	



Planned Wellpath Report
WISHBONE 3C-24HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
Area	COLORADO	Well	WISHBONE 3C-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	WISHBONE 3C-24HZ PWB
Facility	SEC.24-T2N-R66W		

WELLPATH DATA (138 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3917.00†	0.000	0.318	3893.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4017.00†	0.000	0.318	3993.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4117.00†	0.000	0.318	4093.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4181.31†	0.000	0.318	4158.00	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	PARKMAN
4217.00†	0.000	0.318	4193.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4317.00†	0.000	0.318	4293.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4417.00†	0.000	0.318	4393.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4517.00†	0.000	0.318	4493.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4575.31†	0.000	0.318	4552.00	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	SUSSEX
4617.00†	0.000	0.318	4593.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4717.00†	0.000	0.318	4693.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4817.00†	0.000	0.318	4793.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
4917.00†	0.000	0.318	4893.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5017.00†	0.000	0.318	4993.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5117.00†	0.000	0.318	5093.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5217.00†	0.000	0.318	5193.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5317.00†	0.000	0.318	5293.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5417.00†	0.000	0.318	5393.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5517.00†	0.000	0.318	5493.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5617.00†	0.000	0.318	5593.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5717.00†	0.000	0.318	5693.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5817.00†	0.000	0.318	5793.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
5917.00†	0.000	0.318	5893.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6017.00†	0.000	0.318	5993.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6117.00†	0.000	0.318	6093.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6217.00†	0.000	0.318	6193.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6317.00†	0.000	0.318	6293.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6417.00†	0.000	0.318	6393.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6517.00†	0.000	0.318	6493.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6617.00†	0.000	0.318	6593.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6717.00†	0.000	0.318	6693.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6817.00†	0.000	0.318	6793.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6917.00†	0.000	0.318	6893.69	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	
6956.36	0.000	0.318	6933.05	-258.41	-259.20	142.02	40°07'00.119"N	104°43'38.716"W	0.00	KOP, BUILD @ 10°/100'
7017.00†	6.064	0.318	6993.58	-255.20	-255.99	142.04	40°07'00.150"N	104°43'38.716"W	10.00	
7117.00†	16.064	0.318	7091.59	-236.03	-236.83	142.15	40°07'00.340"N	104°43'38.714"W	10.00	
7185.36†	22.900	0.318	7156.00	-213.25	-214.04	142.27	40°07'00.565"N	104°43'38.713"W	10.00	SHARON SPRINGS
7217.00†	26.064	0.318	7184.79	-200.14	-200.93	142.35	40°07'00.694"N	104°43'38.712"W	10.00	
7253.45†	29.709	0.318	7217.00	-183.09	-183.89	142.44	40°07'00.863"N	104°43'38.711"W	10.00	NIOBRARA A
7304.31†	34.795	0.318	7260.00	-155.96	-156.75	142.59	40°07'01.131"N	104°43'38.709"W	10.00	NIOBRARA B
7317.00†	36.064	0.318	7270.34	-148.60	-149.40	142.63	40°07'01.204"N	104°43'38.708"W	10.00	
7417.00†	46.064	0.318	7345.64	-83.00	-83.79	143.00	40°07'01.852"N	104°43'38.703"W	10.00	
7418.96†	46.260	0.318	7347.00	-81.58	-82.38	143.01	40°07'01.866"N	104°43'38.703"W	10.00	NIOBRARA C
7517.00†	56.064	0.318	7408.41	-5.31	-6.10	143.43	40°07'02.620"N	104°43'38.698"W	10.00	
7617.00†	66.064	0.318	7456.73	82.10	81.30	143.91	40°07'03.483"N	104°43'38.692"W	10.00	



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 WISHBONE 3C-24HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
Area	COLORADO	Well	WISHBONE 3C-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	WISHBONE 3C-24HZ PWB
Facility	SEC.24-T2N-R66W		

WELLPATH DATA (138 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7679.75†	72.339	0.318	7479.00	140.73	139.93	144.24	40°07'04.063"N	104°43'38.687"W	10.00	FORT HAYS
7717.00†	76.064	0.318	7489.14	176.56	175.77	144.44	40°07'04.417"N	104°43'38.685"W	10.00	
7780.58†	82.423	0.318	7501.00	239.00	238.20	144.79	40°07'05.034"N	104°43'38.680"W	10.00	CODELL
7817.00†	86.064	0.318	7504.65	275.23	274.43	144.99	40°07'05.392"N	104°43'38.678"W	10.00	
7856.36	90.000	0.318	7506.00	314.55	313.75	145.20	40°07'05.781"N	104°43'38.675"W	10.00	LANDING POINT
7917.00†	90.000	0.318	7506.00	375.19	374.39	145.54	40°07'06.380"N	104°43'38.671"W	0.00	
8017.00†	90.000	0.318	7506.00	475.19	474.39	146.10	40°07'07.368"N	104°43'38.663"W	0.00	
8117.00†	90.000	0.318	7506.00	575.19	574.39	146.65	40°07'08.356"N	104°43'38.656"W	0.00	
8217.00†	90.000	0.318	7506.00	675.19	674.39	147.21	40°07'09.344"N	104°43'38.649"W	0.00	
8317.00†	90.000	0.318	7506.00	775.19	774.39	147.76	40°07'10.333"N	104°43'38.642"W	0.00	
8417.00†	90.000	0.318	7506.00	875.19	874.39	148.32	40°07'11.321"N	104°43'38.635"W	0.00	
8517.00†	90.000	0.318	7506.00	975.19	974.38	148.87	40°07'12.309"N	104°43'38.628"W	0.00	
8617.00†	90.000	0.318	7506.00	1075.19	1074.38	149.43	40°07'13.297"N	104°43'38.621"W	0.00	
8717.00†	90.000	0.318	7506.00	1175.19	1174.38	149.98	40°07'14.285"N	104°43'38.613"W	0.00	
8817.00†	90.000	0.318	7506.00	1275.19	1274.38	150.54	40°07'15.274"N	104°43'38.606"W	0.00	
8917.00†	90.000	0.318	7506.00	1375.19	1374.38	151.09	40°07'16.262"N	104°43'38.599"W	0.00	
9017.00†	90.000	0.318	7506.00	1475.19	1474.38	151.65	40°07'17.250"N	104°43'38.592"W	0.00	
9117.00†	90.000	0.318	7506.00	1575.19	1574.37	152.20	40°07'18.238"N	104°43'38.585"W	0.00	
9217.00†	90.000	0.318	7506.00	1675.19	1674.37	152.76	40°07'19.226"N	104°43'38.578"W	0.00	
9317.00†	90.000	0.318	7506.00	1775.19	1774.37	153.31	40°07'20.215"N	104°43'38.570"W	0.00	
9417.00†	90.000	0.318	7506.00	1875.19	1874.37	153.87	40°07'21.203"N	104°43'38.563"W	0.00	
9517.00†	90.000	0.318	7506.00	1975.19	1974.37	154.42	40°07'22.191"N	104°43'38.556"W	0.00	
9617.00†	90.000	0.318	7506.00	2075.19	2074.37	154.98	40°07'23.179"N	104°43'38.549"W	0.00	
9717.00†	90.000	0.318	7506.00	2175.19	2174.37	155.53	40°07'24.167"N	104°43'38.542"W	0.00	
9817.00†	90.000	0.318	7506.00	2275.19	2274.36	156.09	40°07'25.156"N	104°43'38.535"W	0.00	
9917.00†	90.000	0.318	7506.00	2375.19	2374.36	156.64	40°07'26.144"N	104°43'38.528"W	0.00	
10017.00†	90.000	0.318	7506.00	2475.19	2474.36	157.20	40°07'27.132"N	104°43'38.520"W	0.00	
10117.00†	90.000	0.318	7506.00	2575.19	2574.36	157.75	40°07'28.120"N	104°43'38.513"W	0.00	
10217.00†	90.000	0.318	7506.00	2675.19	2674.36	158.31	40°07'29.108"N	104°43'38.506"W	0.00	
10317.00†	90.000	0.318	7506.00	2775.19	2774.36	158.86	40°07'30.097"N	104°43'38.499"W	0.00	
10417.00†	90.000	0.318	7506.00	2875.19	2874.35	159.42	40°07'31.085"N	104°43'38.492"W	0.00	
10517.00†	90.000	0.318	7506.00	2975.19	2974.35	159.98	40°07'32.073"N	104°43'38.485"W	0.00	
10617.00†	90.000	0.318	7506.00	3075.19	3074.35	160.53	40°07'33.061"N	104°43'38.477"W	0.00	
10717.00†	90.000	0.318	7506.00	3175.19	3174.35	161.09	40°07'34.049"N	104°43'38.470"W	0.00	
10817.00†	90.000	0.318	7506.00	3275.19	3274.35	161.64	40°07'35.037"N	104°43'38.463"W	0.00	
10917.00†	90.000	0.318	7506.00	3375.19	3374.35	162.20	40°07'36.026"N	104°43'38.456"W	0.00	
11017.00†	90.000	0.318	7506.00	3475.19	3474.35	162.75	40°07'37.014"N	104°43'38.449"W	0.00	
11117.00†	90.000	0.318	7506.00	3575.19	3574.34	163.31	40°07'38.002"N	104°43'38.442"W	0.00	
11217.00†	90.000	0.318	7506.00	3675.19	3674.34	163.86	40°07'38.990"N	104°43'38.434"W	0.00	
11317.00†	90.000	0.318	7506.00	3775.19	3774.34	164.42	40°07'39.978"N	104°43'38.427"W	0.00	
11417.00†	90.000	0.318	7506.00	3875.19	3874.34	164.97	40°07'40.967"N	104°43'38.420"W	0.00	
11517.00†	90.000	0.318	7506.00	3975.19	3974.34	165.53	40°07'41.955"N	104°43'38.413"W	0.00	
11617.00†	90.000	0.318	7506.00	4075.19	4074.34	166.08	40°07'42.943"N	104°43'38.406"W	0.00	
11717.00†	90.000	0.318	7506.00	4175.19	4174.33	166.64	40°07'43.931"N	104°43'38.399"W	0.00	
11817.00†	90.000	0.318	7506.00	4275.19	4274.33	167.19	40°07'44.919"N	104°43'38.392"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
Area	COLORADO	Well	WISHBONE 3C-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	WISHBONE 3C-24HZ PWB
Facility	SEC.24-T2N-R66W		

WELLPATH DATA (138 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11917.00†	90.000	0.318	7506.00	4375.19	4374.33	167.75	40°07'45.908"N	104°43'38.384"W	0.00	
12017.00†	90.000	0.318	7506.00	4475.19	4474.33	168.31	40°07'46.896"N	104°43'38.377"W	0.00	
12062.05	90.000	0.318	7506.00 [†]	4520.24	4519.38	168.56	40°07'47.341"N	104°43'38.374"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS - Ref Wellbore: WISHBONE 3C-24HZ PWB Ref Wellpath: WISHBONE 3C-24HZ (PERMIT) 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	0.00
9.625in Casing Surface	17.00	1000.00	983.00	17.00	1000.00	0.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1000.00	7856.36	6856.36	1000.00	7506.00	0.00	0.00	313.75	145.20	145.20
7in Casing Intermediate	17.00	7856.36	7839.36	17.00	7506.00	0.00	0.00	313.75	145.20	145.20
6.125in Open Hole	7856.36	12062.05	4205.69	7506.00	7506.00	313.75	145.20	4519.38	168.56	168.56
4.5in Casing Production	17.00	12062.05	12045.05	17.00	7506.00	0.00	0.00	4519.38	168.56	168.56



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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
Area	COLORADO	Well	WISHBONE 3C-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	WISHBONE 3C-24HZ PWB
Facility	SEC.24-T2N-R66W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.24 SECTION LINES		24.00	-9.06	-1552.86	3214370.72	1286534.33	40°07'02.590"N	104°44'00.532"W	polygon
HELGOOTH HEIRS #2 150' RADIUS		41.00	527.99	2885.96	3218804.51	1287109.98	40°07'07.896"N	104°43'03.396"W	circle
HELGOOTH HEIRS UNIT #1 150' RADIUS		41.00	327.49	-1300.82	3214619.81	1286873.05	40°07'05.916"N	104°43'57.288"W	circle
WARNER #1 150' RADIUS		41.00	3868.49	2024.28	3217913.81	1290442.71	40°07'40.908"N	104°43'14.484"W	circle
WARNER #2 150' RADIUS		41.00	4316.52	-1275.44	3214610.45	1290861.97	40°07'45.336"N	104°43'56.964"W	circle
1) WISHBONE 3C-24HZ BHL ON PLAT (460'FNL & 2113'FWL, SEC.24)	12062.05	7506.00	4519.38	168.56	3216052.57	1291077.39	40°07'47.341"N	104°43'38.374"W	point
SEC. 24 HARDLINES (460' SETBACKS)		7624.00	-9.06	-1552.86	3214370.72	1286534.33	40°07'02.590"N	104°44'00.532"W	polygon

SURVEY PROGRAM - Ref Wellbore: WISHBONE 3C-24HZ PWB Ref Wellpath: WISHBONE 3C-24HZ (PERMIT) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
17.00	7856.36	NaviTrak (MagCorr)		WISHBONE 3C-24HZ PWB
7856.36	12062.05	OnTrak (MagCorr)		WISHBONE 3C-24HZ PWB



Planned Wellpath Report
 WISHBONE 3C-24HZ (PERMIT) PWP
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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#17 WISHBONE 3C-24HZ (320'FSL & 1970'FWL, SEC. 24)
Area	COLORADO	Well	WISHBONE 3C-24HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	WISHBONE 3C-24HZ PWB
Facility	SEC.24-T2N-R66W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
921.00	0.000	151.280	921.00	FOX HILLS
4181.31	0.000	0.318	4158.00	PARKMAN
4575.31	0.000	0.318	4552.00	SUSSEX
7185.36	22.900	0.318	7156.00	SHARON SPRINGS
7253.45	29.709	0.318	7217.00	NIOBRARA A
7304.31	34.795	0.318	7260.00	NIOBRARA B
7418.96	46.260	0.318	7347.00	NIOBRARA C
7679.75	72.339	0.318	7479.00	FORT HAYS
7780.58	82.423	0.318	7501.00	CODELL