

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453FSL & 1947FEL, SEC.11)
 Field: WELD COUNTY (KERR MCGEE) Well: FRONT RANGE FARMS 36N-14HZ
 Facility: SEC.11-T1N-R68W Wellbore: FRONT RANGE FARMS 36N-14HZ PWB

Plot reference wellpath is FRONT RANGE FARMS 36N-14HZ (REV-A.0) PWB
 True vertical depths are referenced to XTREME 20 (16KB) (R9B)
 Measured depths are referenced to XTREME 20 (16KB) (R9B)
 XTREME 20 (16KB) (R9B) to Mean Sea Level: 5066 feet
 Mean Sea Level to Mud line (At Slot: SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453FSL & 1947FEL, SEC.11)): 0 feet
 Depths are in feet
 Coordinates are in feet referenced to Slot
 Grid System: NAD83 / Lambert Colorado 5P, Northern Zone (501), US feet
 North Reference: True north
 Scale: True distance
 Created by: pgrabin on 24/Oct/2014

Location Information

Facility Name	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude		
SEC.11-T1N-R68W	314633.285	106970.682	40°04'17.482"N	104°58'27.744"W		
Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude	
SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453FSL & 1947FEL, SEC.11)	2334.17	2516.38	314665.285	107023.481	40°02'54.914"N	104°58'03.347"W
XTREME 20 (16KB) (R9B) to Mud line (At Slot: SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453FSL & 1947FEL, SEC.11))					5066ft	
Mean Sea Level to Mud line (At Slot: SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453FSL & 1947FEL, SEC.11))					0ft	
XTREME 20 (16KB) (R9B) to Mean Sea Level					5066ft	

Survey Program

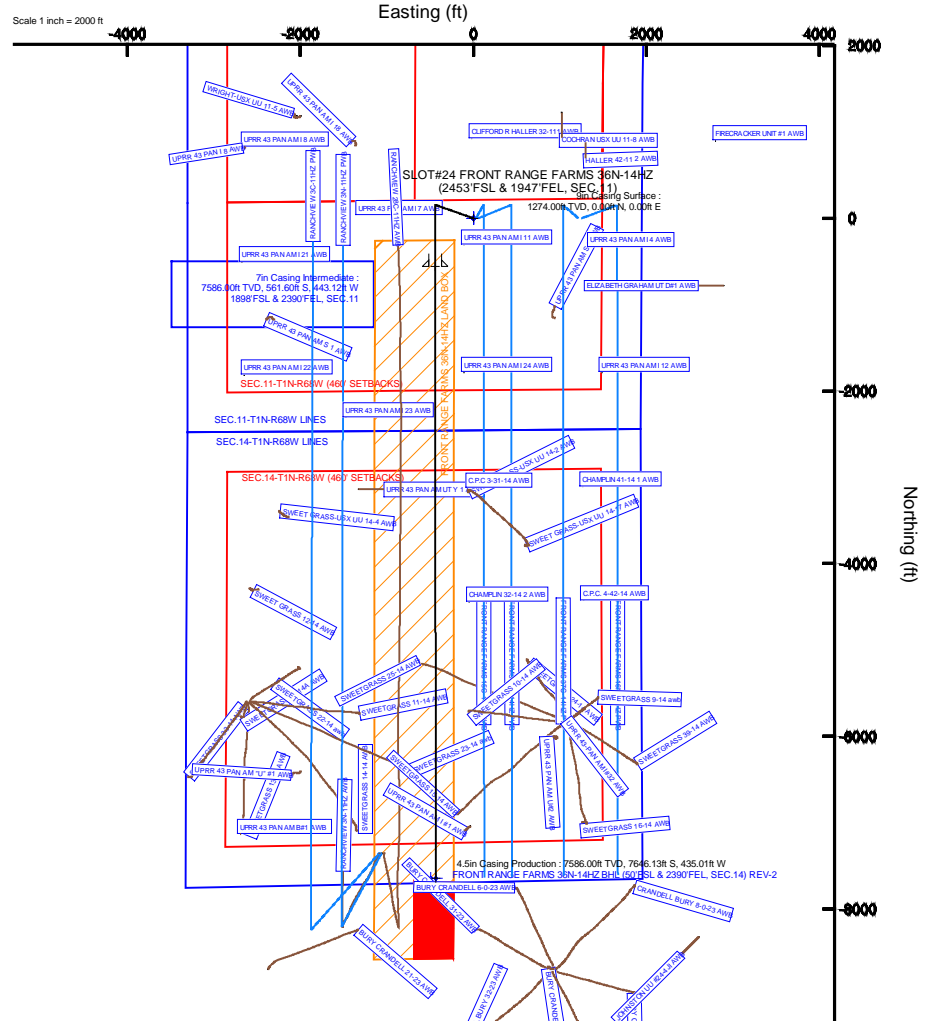
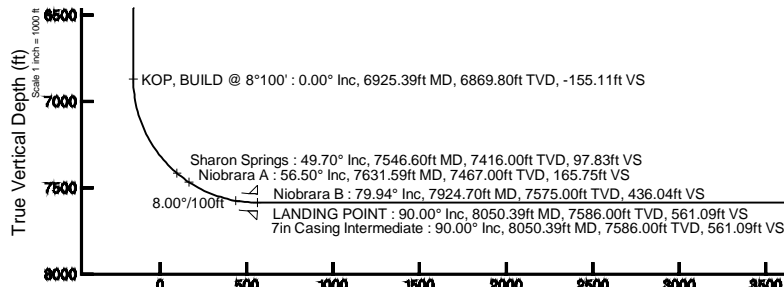
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
16.00	8050.39	NavTrak	NavTrak (MAGCORR_IFR)		FRONT RANGE FARMS 36N-14HZ PWB
8050.39	15134.93	OnTrak	OnTrak (MAGCORR_IFR)		FRONT RANGE FARMS 36N-14HZ PWB

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-ON	16.00	0.000		289.200	0.00	0.00	0.00	0.00
BEGIN NUDDGE	1400.00	0.000		289.200	1400.00	0.00	0.00	0.00
END NUDDGE	2200.00	16.000		289.200	2189.64	36.50	-104.80	-36.62
BEGIN DROP	3100.23	16.000		289.200	3055.00	118.10	-339.14	-118.49
END DROP	3900.23	0.000		179.934	3844.64	154.60	-443.94	-155.11
KOP, BUILD @ 8°100'	6925.39	0.000		179.934	6869.80	154.60	-443.94	-155.11
LANDING POINT	8050.39	90.000		179.934	7586.00	-561.60	-443.12	8.00
TOTAL DEPTH	15134.93	90.000		179.935	7586.00	-7646.13	-435.01	0.00

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
SEC.11-T1N-R68W (48) SETBACKS	5.00	0.00	0.00	0.00	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W
SEC.14-T1N-R68W (48) SETBACKS	5.00	0.00	0.00	0.00	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W
SEC.11-T1N-R68W LINES	21.00	0.00	0.00	0.00	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W
SEC.14-T1N-R68W LINES	21.00	0.00	0.00	0.00	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W
FRONT RANGE FARMS 36N-14HZ BHL (50) FSL & 2390FEL, SEC.14 REV-2	8050.39	7586.00	-561.60	-443.12	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W
FRONT RANGE FARMS 36N-14HZ BHL ON FLAT (50) FSL & 2390FEL, SEC.14 REV-1	7586.00	7586.00	-561.60	-443.12	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W
FRONT RANGE FARMS 36N-14HZ LAND BHL	7586.00	0.00	0.00	0.00	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W
FRONT RANGE FARMS 36N-14HZ INTERNAL HORIZONE	7586.00	0.00	0.00	0.00	314668.285	107003.481	40°02'54.914"N	104°58'03.347"W



4.5in Casing Production : 90.00° Inc, 15134.93ft MD, 7586.00ft TVD, 7645.62ft VS
 TOTAL DEPTH : 90.00° Inc, 15134.93ft MD, 7586.00ft TVD, 7645.62ft VS
 FRONT RANGE FARMS 36N-14HZ BHL (50) FSL & 2390FEL, SEC.14) REV-2

Vertical Section (ft)
 Azimuth 179.93° with reference 0.00 N, 0.00 E

Scale 1 inch = 1000 ft

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11)
Area	COLORADO	Well	FRONT RANGE FARMS 36N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	FRONT RANGE FARMS 36N-14HZ PWB
Facility	SEC.11-T1N-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	0.999962	Report Generated	24/Oct/2014 at 12:57
Convergence at slot	n/a	Database/Source file	WellArchitectDB/FRONT_RANGE_FARMS_36N-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	-2334.17	2519.38	3148856.29	1267053.48	40°03'54.814"N	104°58'05.340"W
Facility Reference Pt			3146323.29	1269372.66	40°04'17.882"N	104°58'37.744"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	XTREME 20 (16'KB) (RKB) to Facility Vertical Datum	5066.00ft
Horizontal Reference Pt	Slot	XTREME 20 (16'KB) (RKB) to Mean Sea Level	5066.00ft
Vertical Reference Pt	XTREME 20 (16'KB) (RKB)	XTREME 20 (16'KB) (RKB) to Mud Line at Slot (SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11))	5066.00ft
MD Reference Pt	XTREME 20 (16'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.93°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11)
Area	COLORADO	Well	FRONT RANGE FARMS 36N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	FRONT RANGE FARMS 36N-14HZ PWB
Facility	SEC.11-T1N-R68W		

WELLPATH DATA (166 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	289.200	0.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
16.00	0.000	289.200	16.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	TIE-ON
116.00†	0.000	289.200	116.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
216.00†	0.000	289.200	216.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
316.00†	0.000	289.200	316.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
416.00†	0.000	289.200	416.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
516.00†	0.000	289.200	516.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
616.00†	0.000	289.200	616.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
716.00†	0.000	289.200	716.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
816.00†	0.000	289.200	816.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
916.00†	0.000	289.200	916.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
1016.00†	0.000	289.200	1016.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
1116.00†	0.000	289.200	1116.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
1216.00†	0.000	289.200	1216.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
1224.00†	0.000	289.200	1224.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	Fox Hills Marker
1316.00†	0.000	289.200	1316.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	
1400.00	0.000	289.200	1400.00	0.00	0.00	0.00	40°03'54.814"N	104°58'05.340"W	0.00	BEGIN NUDGE
1416.00†	0.320	289.200	1416.00	-0.01	0.01	-0.04	40°03'54.814"N	104°58'05.341"W	2.00	
1516.00†	2.320	289.200	1515.97	-0.77	0.77	-2.22	40°03'54.822"N	104°58'05.369"W	2.00	
1616.00†	4.320	289.200	1615.80	-2.69	2.68	-7.69	40°03'54.840"N	104°58'05.439"W	2.00	
1716.00†	6.320	289.200	1715.36	-5.74	5.73	-16.44	40°03'54.871"N	104°58'05.551"W	2.00	
1816.00†	8.320	289.200	1814.54	-9.95	9.92	-28.47	40°03'54.912"N	104°58'05.706"W	2.00	
1916.00†	10.320	289.200	1913.21	-15.29	15.24	-43.77	40°03'54.965"N	104°58'05.903"W	2.00	
2016.00†	12.320	289.200	2011.26	-21.77	21.70	-62.30	40°03'55.028"N	104°58'06.141"W	2.00	
2116.00†	14.320	289.200	2108.57	-29.37	29.27	-84.06	40°03'55.103"N	104°58'06.421"W	2.00	
2200.00	16.000	289.200	2189.64	-36.62	36.50	-104.80	40°03'55.175"N	104°58'06.688"W	2.00	END NUDGE
2216.00†	16.000	289.200	2205.02	-38.07	37.95	-108.97	40°03'55.189"N	104°58'06.742"W	0.00	
2316.00†	16.000	289.200	2301.15	-47.17	47.01	-135.00	40°03'55.279"N	104°58'07.076"W	0.00	
2416.00†	16.000	289.200	2397.28	-56.26	56.08	-161.03	40°03'55.368"N	104°58'07.411"W	0.00	
2516.00†	16.000	289.200	2493.40	-65.36	65.14	-187.06	40°03'55.458"N	104°58'07.746"W	0.00	
2616.00†	16.000	289.200	2589.53	-74.45	74.21	-213.09	40°03'55.547"N	104°58'08.081"W	0.00	
2716.00†	16.000	289.200	2685.65	-83.55	83.27	-239.12	40°03'55.637"N	104°58'08.416"W	0.00	
2816.00†	16.000	289.200	2781.78	-92.64	92.34	-265.15	40°03'55.726"N	104°58'08.750"W	0.00	
2916.00†	16.000	289.200	2877.91	-101.74	101.40	-291.18	40°03'55.816"N	104°58'09.085"W	0.00	
3016.00†	16.000	289.200	2974.03	-110.83	110.47	-317.21	40°03'55.906"N	104°58'09.420"W	0.00	
3100.23	16.000	289.200	3055.00	-118.49	118.10	-339.14	40°03'55.981"N	104°58'09.702"W	0.00	BEGIN DROP
3116.00†	15.685	289.200	3070.17	-119.91	119.52	-343.20	40°03'55.995"N	104°58'09.754"W	2.00	
3216.00†	13.685	289.200	3166.90	-128.28	127.85	-367.14	40°03'56.077"N	104°58'10.062"W	2.00	
3316.00†	11.685	289.200	3264.45	-135.52	135.07	-387.88	40°03'56.149"N	104°58'10.329"W	2.00	
3416.00†	9.685	289.200	3362.71	-141.64	141.17	-405.39	40°03'56.209"N	104°58'10.554"W	2.00	
3516.00†	7.685	289.200	3461.56	-146.62	146.14	-419.65	40°03'56.258"N	104°58'10.737"W	2.00	
3616.00†	5.685	289.200	3560.88	-150.46	149.96	-430.64	40°03'56.296"N	104°58'10.879"W	2.00	
3716.00†	3.685	289.200	3660.54	-153.15	152.65	-438.35	40°03'56.322"N	104°58'10.978"W	2.00	
3816.00†	1.685	289.200	3760.42	-154.70	154.19	-442.77	40°03'56.338"N	104°58'11.035"W	2.00	
3900.23	0.000	179.934	3844.64	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	2.00	END DROP

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11)
Area	COLORADO	Well	FRONT RANGE FARMS 36N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	FRONT RANGE FARMS 36N-14HZ PWB
Facility	SEC.11-T1N-R68W		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3916.00†	0.000	179.934	3860.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4016.00†	0.000	179.934	3960.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4116.00†	0.000	179.934	4060.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4216.00†	0.000	179.934	4160.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4277.59†	0.000	179.934	4222.00	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	Parkman
4316.00†	0.000	179.934	4260.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4416.00†	0.000	179.934	4360.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4516.00†	0.000	179.934	4460.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4616.00†	0.000	179.934	4560.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4652.59†	0.000	179.934	4597.00	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	Sussex
4716.00†	0.000	179.934	4660.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4816.00†	0.000	179.934	4760.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
4916.00†	0.000	179.934	4860.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5016.00†	0.000	179.934	4960.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5116.00†	0.000	179.934	5060.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5216.00†	0.000	179.934	5160.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5316.00†	0.000	179.934	5260.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5416.00†	0.000	179.934	5360.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5516.00†	0.000	179.934	5460.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5616.00†	0.000	179.934	5560.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5716.00†	0.000	179.934	5660.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5816.00†	0.000	179.934	5760.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
5916.00†	0.000	179.934	5860.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6016.00†	0.000	179.934	5960.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6116.00†	0.000	179.934	6060.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6216.00†	0.000	179.934	6160.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6316.00†	0.000	179.934	6260.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6416.00†	0.000	179.934	6360.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6516.00†	0.000	179.934	6460.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6616.00†	0.000	179.934	6560.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6716.00†	0.000	179.934	6660.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6816.00†	0.000	179.934	6760.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6916.00†	0.000	179.934	6860.41	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	
6925.39	0.000	179.934	6869.80	-155.11	154.60	-443.94	40°03'56.342"N	104°58'11.050"W	0.00	KOP, BUILD @ 8°100'
7016.00†	7.249	179.934	6960.17	-149.38	148.87	-443.94	40°03'56.285"N	104°58'11.050"W	8.00	
7116.00†	15.249	179.934	7058.17	-129.89	129.38	-443.91	40°03'56.093"N	104°58'11.050"W	8.00	
7216.00†	23.249	179.934	7152.50	-96.95	96.44	-443.88	40°03'55.767"N	104°58'11.049"W	8.00	
7316.00†	31.249	179.934	7241.33	-51.20	50.69	-443.82	40°03'55.315"N	104°58'11.048"W	8.00	
7416.00†	39.249	179.934	7322.93	6.46	-6.97	-443.76	40°03'54.745"N	104°58'11.048"W	8.00	
7516.00†	47.249	179.934	7395.71	74.92	-75.43	-443.68	40°03'54.069"N	104°58'11.047"W	8.00	
7546.60†	49.697	179.934	7416.00	97.83	-98.34	-443.65	40°03'53.842"N	104°58'11.046"W	8.00	Sharon Springs
7616.00†	55.249	179.934	7458.26	152.85	-153.36	-443.59	40°03'53.298"N	104°58'11.045"W	8.00	
7631.59†	56.496	179.934	7467.00	165.75	-166.26	-443.57	40°03'53.171"N	104°58'11.045"W	8.00	Niobrara A
7716.00†	63.249	179.934	7509.34	238.72	-239.23	-443.49	40°03'52.450"N	104°58'11.044"W	8.00	
7816.00†	71.249	179.934	7547.99	330.86	-331.37	-443.38	40°03'51.539"N	104°58'11.043"W	8.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11)
Area	COLORADO	Well	FRONT RANGE FARMS 36N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	FRONT RANGE FARMS 36N-14HZ PWB
Facility	SEC.11-T1N-R68W		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments	
7916.00†	79.249	179.934	7573.43	427.49	-428.00	-443.27	40°03'50.584"N	104°58'11.041"W	8.00		
7924.70†	79.945	179.934	7575.00	436.04	-436.55	-443.26	40°03'50.500"N	104°58'11.041"W	8.00	Niobrara B	
8016.00†	87.249	179.934	7585.17	526.71	-527.22	-443.16	40°03'49.604"N	104°58'11.040"W	8.00		
8050.39	90.000	179.934	7586.00	561.09	-561.60	-443.12	40°03'49.264"N	104°58'11.039"W	8.00	LANDING POINT	
8116.00†	90.000	179.934	7586.00	626.70	-627.21	-443.04	40°03'48.616"N	104°58'11.038"W	0.00		
8216.00†	90.000	179.934	7586.00	726.70	-727.21	-442.93	40°03'47.628"N	104°58'11.037"W	0.00		
8316.00†	90.000	179.934	7586.00	826.70	-827.21	-442.81	40°03'46.639"N	104°58'11.035"W	0.00		
8416.00†	90.000	179.934	7586.00	926.70	-927.21	-442.70	40°03'45.651"N	104°58'11.034"W	0.00		
8516.00†	90.000	179.934	7586.00	1026.70	-1027.21	-442.58	40°03'44.663"N	104°58'11.032"W	0.00		
8616.00†	90.000	179.934	7586.00	1126.70	-1127.21	-442.47	40°03'43.675"N	104°58'11.031"W	0.00		
8716.00†	90.000	179.934	7586.00	1226.70	-1227.21	-442.35	40°03'42.686"N	104°58'11.029"W	0.00		
8816.00†	90.000	179.934	7586.00	1326.70	-1327.21	-442.24	40°03'41.698"N	104°58'11.028"W	0.00		
8916.00†	90.000	179.934	7586.00	1426.70	-1427.21	-442.12	40°03'40.710"N	104°58'11.026"W	0.00		
9016.00†	90.000	179.934	7586.00	1526.70	-1527.21	-442.01	40°03'39.722"N	104°58'11.025"W	0.00		
9116.00†	90.000	179.934	7586.00	1626.70	-1627.21	-441.89	40°03'38.734"N	104°58'11.023"W	0.00		
9216.00†	90.000	179.934	7586.00	1726.70	-1727.21	-441.78	40°03'37.745"N	104°58'11.022"W	0.00		
9316.00†	90.000	179.934	7586.00	1826.70	-1827.21	-441.66	40°03'36.757"N	104°58'11.020"W	0.00		
9416.00†	90.000	179.934	7586.00	1926.70	-1927.21	-441.55	40°03'35.769"N	104°58'11.019"W	0.00		
9516.00†	90.000	179.934	7586.00	2026.70	-2027.21	-441.43	40°03'34.781"N	104°58'11.017"W	0.00		
9616.00†	90.000	179.934	7586.00	2126.70	-2127.21	-441.32	40°03'33.792"N	104°58'11.016"W	0.00		
9716.00†	90.000	179.934	7586.00	2226.70	-2227.21	-441.20	40°03'32.804"N	104°58'11.014"W	0.00		
9816.00†	90.000	179.934	7586.00	2326.70	-2327.21	-441.09	40°03'31.816"N	104°58'11.013"W	0.00		
9916.00†	90.000	179.934	7586.00	2426.70	-2427.21	-440.97	40°03'30.828"N	104°58'11.011"W	0.00		
10016.00†	90.000	179.934	7586.00	2526.70	-2527.21	-440.86	40°03'29.840"N	104°58'11.010"W	0.00		
10116.00†	90.000	179.934	7586.00	2626.70	-2627.21	-440.74	40°03'28.851"N	104°58'11.008"W	0.00		
10216.00†	90.000	179.934	7586.00	2726.70	-2727.21	-440.63	40°03'27.863"N	104°58'11.007"W	0.00		
10316.00†	90.000	179.934	7586.00	2826.70	-2827.21	-440.51	40°03'26.875"N	104°58'11.005"W	0.00		
10416.00†	90.000	179.934	7586.00	2926.70	-2927.21	-440.40	40°03'25.887"N	104°58'11.004"W	0.00		
10516.00†	90.000	179.934	7586.00	3026.70	-3027.21	-440.28	40°03'24.898"N	104°58'11.002"W	0.00		
10616.00†	90.000	179.934	7586.00	3126.70	-3127.21	-440.17	40°03'23.910"N	104°58'11.001"W	0.00		
10716.00†	90.000	179.934	7586.00	3226.70	-3227.21	-440.06	40°03'22.922"N	104°58'10.999"W	0.00		
10816.00†	90.000	179.934	7586.00	3326.70	-3327.21	-439.94	40°03'21.934"N	104°58'10.998"W	0.00		
10916.00†	90.000	179.934	7586.00	3426.70	-3427.21	-439.83	40°03'20.946"N	104°58'10.996"W	0.00		
11016.00†	90.000	179.934	7586.00	3526.70	-3527.21	-439.71	40°03'19.957"N	104°58'10.995"W	0.00		
11116.00†	90.000	179.934	7586.00	3626.70	-3627.21	-439.60	40°03'18.969"N	104°58'10.993"W	0.00		
11216.00†	90.000	179.934	7586.00	3726.70	-3727.21	-439.48	40°03'17.981"N	104°58'10.992"W	0.00		
11316.00†	90.000	179.934	7586.00	3826.70	-3827.21	-439.37	40°03'16.993"N	104°58'10.990"W	0.00		
11416.00†	90.000	179.934	7586.00	3926.70	-3927.21	-439.25	40°03'16.004"N	104°58'10.989"W	0.00		
11516.00†	90.000	179.934	7586.00	4026.70	-4027.21	-439.14	40°03'15.016"N	104°58'10.987"W	0.00		
11616.00†	90.000	179.934	7586.00	4126.70	-4127.21	-439.02	40°03'14.028"N	104°58'10.986"W	0.00		
11716.00†	90.000	179.934	7586.00	4226.70	-4227.21	-438.91	40°03'13.040"N	104°58'10.984"W	0.00		
11816.00†	90.000	179.934	7586.00	4326.70	-4327.21	-438.80	40°03'12.052"N	104°58'10.983"W	0.00		
11916.00†	90.000	179.934	7586.00	4426.70	-4427.21	-438.68	40°03'11.063"N	104°58'10.981"W	0.00		
12016.00†	90.000	179.934	7586.00	4526.70	-4527.21	-438.57	40°03'10.075"N	104°58'10.980"W	0.00		
12116.00†	90.000	179.934	7586.00	4626.70	-4627.21	-438.45	40°03'09.087"N	104°58'10.978"W	0.00		

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11)
Area	COLORADO	Well	FRONT RANGE FARMS 36N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	FRONT RANGE FARMS 36N-14HZ PWB
Facility	SEC.11-T1N-R68W		

WELLPATH DATA (166 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12216.00†	90.000	179.935	7586.00	4726.70	-4727.21	-438.34	40°03'08.099"N	104°58'10.977"W	0.00	
12316.00†	90.000	179.935	7586.00	4826.70	-4827.21	-438.22	40°03'07.110"N	104°58'10.975"W	0.00	
12416.00†	90.000	179.935	7586.00	4926.70	-4927.21	-438.11	40°03'06.122"N	104°58'10.974"W	0.00	
12516.00†	90.000	179.935	7586.00	5026.70	-5027.21	-438.00	40°03'05.134"N	104°58'10.972"W	0.00	
12616.00†	90.000	179.935	7586.00	5126.70	-5127.21	-437.88	40°03'04.146"N	104°58'10.971"W	0.00	
12716.00†	90.000	179.935	7586.00	5226.70	-5227.21	-437.77	40°03'03.158"N	104°58'10.969"W	0.00	
12816.00†	90.000	179.935	7586.00	5326.70	-5327.21	-437.65	40°03'02.169"N	104°58'10.968"W	0.00	
12916.00†	90.000	179.935	7586.00	5426.70	-5427.21	-437.54	40°03'01.181"N	104°58'10.966"W	0.00	
13016.00†	90.000	179.935	7586.00	5526.70	-5527.21	-437.42	40°03'00.193"N	104°58'10.965"W	0.00	
13116.00†	90.000	179.935	7586.00	5626.70	-5627.21	-437.31	40°02'59.205"N	104°58'10.963"W	0.00	
13216.00†	90.000	179.935	7586.00	5726.70	-5727.21	-437.20	40°02'58.216"N	104°58'10.962"W	0.00	
13316.00†	90.000	179.935	7586.00	5826.70	-5827.21	-437.08	40°02'57.228"N	104°58'10.960"W	0.00	
13416.00†	90.000	179.935	7586.00	5926.70	-5927.21	-436.97	40°02'56.240"N	104°58'10.959"W	0.00	
13516.00†	90.000	179.935	7586.00	6026.70	-6027.21	-436.85	40°02'55.252"N	104°58'10.957"W	0.00	
13616.00†	90.000	179.935	7586.00	6126.70	-6127.21	-436.74	40°02'54.264"N	104°58'10.956"W	0.00	
13716.00†	90.000	179.935	7586.00	6226.70	-6227.21	-436.63	40°02'53.275"N	104°58'10.954"W	0.00	
13816.00†	90.000	179.935	7586.00	6326.70	-6327.21	-436.51	40°02'52.287"N	104°58'10.953"W	0.00	
13916.00†	90.000	179.935	7586.00	6426.70	-6427.21	-436.40	40°02'51.299"N	104°58'10.951"W	0.00	
14016.00†	90.000	179.935	7586.00	6526.70	-6527.20	-436.28	40°02'50.311"N	104°58'10.950"W	0.00	
14116.00†	90.000	179.935	7586.00	6626.70	-6627.20	-436.17	40°02'49.322"N	104°58'10.948"W	0.00	
14216.00†	90.000	179.935	7586.00	6726.70	-6727.20	-436.06	40°02'48.334"N	104°58'10.947"W	0.00	
14316.00†	90.000	179.935	7586.00	6826.70	-6827.20	-435.94	40°02'47.346"N	104°58'10.945"W	0.00	
14416.00†	90.000	179.935	7586.00	6926.70	-6927.20	-435.83	40°02'46.358"N	104°58'10.944"W	0.00	
14516.00†	90.000	179.935	7586.00	7026.70	-7027.20	-435.71	40°02'45.370"N	104°58'10.943"W	0.00	
14616.00†	90.000	179.935	7586.00	7126.70	-7127.20	-435.60	40°02'44.381"N	104°58'10.941"W	0.00	
14716.00†	90.000	179.935	7586.00	7226.70	-7227.20	-435.49	40°02'43.393"N	104°58'10.940"W	0.00	
14816.00†	90.000	179.935	7586.00	7326.70	-7327.20	-435.37	40°02'42.405"N	104°58'10.938"W	0.00	
14916.00†	90.000	179.935	7586.00	7426.70	-7427.20	-435.26	40°02'41.417"N	104°58'10.937"W	0.00	
15016.00†	90.000	179.935	7586.00	7526.70	-7527.20	-435.15	40°02'40.428"N	104°58'10.935"W	0.00	
15116.00†	90.000	179.935	7586.00	7626.70	-7627.20	-435.03	40°02'39.440"N	104°58'10.934"W	0.00	
15134.93	90.000	179.935	7586.00 [†]	7645.62	-7646.13	-435.01	40°02'39.253"N	104°58'10.933"W	0.00	TOTAL DEPTH

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11)
Area	COLORADO	Well	FRONT RANGE FARMS 36N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	FRONT RANGE FARMS 36N-14HZ PWB
Facility	SEC.11-T1N-R68W		

HOLE & CASING SECTIONS -									
Ref Wellbore: FRONT RANGE FARMS 36N-14HZ PWB					Ref Wellpath: FRONT RANGE FARMS 36N-14HZ (REV-A.0) 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	16.00	1274.00	1258.00	16.00	1274.00	0.00	0.00	0.00	0.00
9in Casing Surface	16.00	1274.00	1258.00	16.00	1274.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1274.00	8050.39	6776.39	1274.00	7586.00	0.00	0.00	-561.60	-443.12
7in Casing Intermediate	16.00	8050.39	8034.39	16.00	7586.00	0.00	0.00	-561.60	-443.12
6.125in Open Hole	8050.39	15134.93	7084.54	7586.00	7586.00	-561.60	-443.12	-7646.13	-435.01
4.5in Casing Production	16.00	15134.93	15118.93	16.00	7586.00	0.00	0.00	-7646.13	-435.01

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.11-T1N-R68W (460' SETBACKS)		5.00	0.00	0.00	3148856.29	1267053.48	40°03'54.814"N	104°58'05.340"W	polygon
SEC.14-T1N-R68W (460' SETBACKS)		5.00	0.00	0.00	3148856.29	1267053.48	40°03'54.814"N	104°58'05.340"W	polygon
SEC.11-T1N-R68W LINES		21.00	0.00	0.00	3148856.29	1267053.48	40°03'54.814"N	104°58'05.340"W	polygon
SEC.14-T1N-R68W LINES		21.00	0.00	0.00	3148856.29	1267053.48	40°03'54.814"N	104°58'05.340"W	polygon
1) FRONT RANGE FARMS 36N-14HZ BHL (50'FSL & 2390'FEL, SEC.14) REV-2	15134.93	7586.00	-7646.13	-435.01	3148467.16	1259405.19	40°02'39.253"N	104°58'10.933"W	point
FRONT RANGE FARMS 36N-14HZ BHL ON PLAT (50'FSL & 2450'FEL, SEC.14) REV-1		7586.00	-7646.13	-495.01	3148407.16	1259404.83	40°02'39.253"N	104°58'11.705"W	point
FRONT RANGE FARMS 36N-14HZ LAND BOX		7586.00	0.00	0.00	3148856.29	1267053.48	40°03'54.814"N	104°58'05.340"W	polygon
FRONT RANGE FARMS 36N-14HZ INTERNAL HARDLINE		7856.00	0.00	0.00	3148856.29	1267053.48	40°03'54.814"N	104°58'05.340"W	polygon

SURVEY PROGRAM - Ref Wellbore: FRONT RANGE FARMS 36N-14HZ PWB Ref Wellpath: FRONT RANGE FARMS 36N-14HZ (REV-A.0) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	8050.39	NaviTrak (MAGCORR,IFR)		FRONT RANGE FARMS 36N-14HZ PWB
8050.39	15134.93	OnTrak (MAGCORR,IFR)		FRONT RANGE FARMS 36N-14HZ PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#24 FRONT RANGE FARMS 36N-14HZ (2453'FSL & 1947'FEL, SEC.11)
Area	COLORADO	Well	FRONT RANGE FARMS 36N-14HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	FRONT RANGE FARMS 36N-14HZ PWB
Facility	SEC.11-T1N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1224.00	0.000	289.200	1224.00	Fox Hills Marker
4277.59	0.000	179.934	4222.00	Parkman
4652.59	0.000	179.934	4597.00	Sussex
7546.60	49.697	179.934	7416.00	Sharon Springs
7631.59	56.496	179.934	7467.00	Niobrara A
7924.70	79.945	179.934	7575.00	Niobrara B

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	289.200	16.00	TIE-ON
1400.00	0.000	289.200	1400.00	BEGIN NUDGE
2200.00	16.000	289.200	2189.64	END NUDGE
3100.23	16.000	289.200	3055.00	BEGIN DROP
3900.23	0.000	179.934	3844.64	END DROP
6925.39	0.000	179.934	6869.80	KOP, BUILD @ 8°100'
8050.39	90.000	179.934	7586.00	LANDING POINT
15134.93	90.000	179.935	7586.00	TOTAL DEPTH