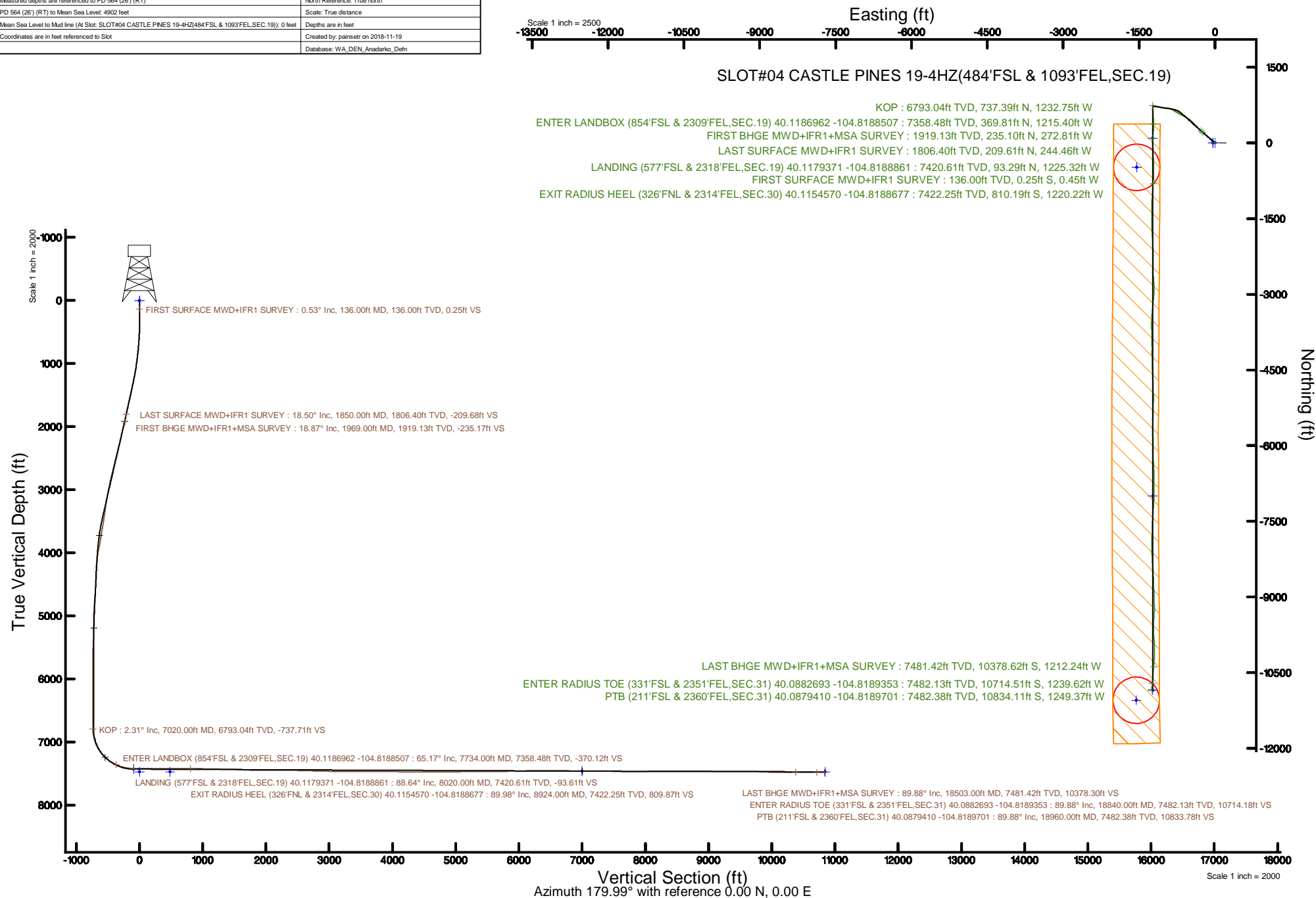


Location:	COLORADO	Well:	SLOT#04 CASTLE PINES 19-4HZ/484FSL & 1093FSEL,SEC.19
Field:	WELD COUNTY (UTM/T RUE NORTH)	Slot:	CASTLE PINES 19-4HZ
Facility:	SEC.19-T2N-R66W	Wellbore:	CASTLE PINES 19-4HZ PWB
Plot reference wellpath is CASTLE PINES 19-4HZ PWP Rev-C.0		Grid System: NAD83 / UTM Zone 13 North, US feet	
True vertical depths are referenced to PD 564 (26) (RT)		* = Wellpath was transformed from a different geoidic datum	
Measured depths are referenced to PD 564 (26) (RT)		North Reference: True north	
PD 564 (26) (RT) to Mean Sea Level: 4902 feet		Scale: True distance	
Mean Sea Level to Mud line (At Slot: SLOT#04 CASTLE PINES 19-4HZ/484FSL & 1093FSEL,SEC.19): 0 feet		Depths are in feet	
Coordinates are in feet referenced to Slot		Created by: painstmr on 2018-11-19	
		Database: WA_DFN_Anadrinho_Defn	



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999603	Report Generated	11/19/2018 at 9:12 AM
Convergence at slot	0.12° East	Database/Source file	WA_DEN_Anadarko_Defn/CASTLE_PINES_19-4HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-0.30	45.06	1692275.45	14569640.45	40°07'03.652"N	104°48'52.218"W
Facility Reference Pt			1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PD 564 (26') (RT) to Facility Vertical Datum	4902.00ft
Horizontal Reference Pt	Slot	PD 564 (26') (RT) to Mean Sea Level	4902.00ft
Vertical Reference Pt	PD 564 (26') (RT)	PD 564 (26') (RT) to Mud Line at Slot (SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19))	4902.00ft
MD Reference Pt	PD 564 (26') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.99°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (247 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	241.180	0.00	0.00	0.00	0.00	1692275.45	14569640.45	40°07'03.652"N	104°48'52.218"W	0.00	
26.00	0.000	241.180	26.00	0.00	0.00	0.00	1692275.45	14569640.45	40°07'03.652"N	104°48'52.218"W	0.00	
136.00	0.530	241.180	136.00	0.25	-0.25	-0.45	1692275.00	14569640.20	40°07'03.650"N	104°48'52.224"W	0.48	FIRST SURFACE MWD+IFR1 SURVEY
168.00	0.570	214.720	168.00	0.45	-0.45	-0.67	1692274.78	14569640.00	40°07'03.648"N	104°48'52.227"W	0.80	
199.00	0.620	233.350	199.00	0.67	-0.67	-0.89	1692274.56	14569639.78	40°07'03.645"N	104°48'52.229"W	0.64	
231.00	0.260	221.400	230.99	0.83	-0.83	-1.08	1692274.37	14569639.62	40°07'03.644"N	104°48'52.232"W	1.15	
263.00	0.130	278.090	262.99	0.88	-0.88	-1.16	1692274.29	14569639.57	40°07'03.643"N	104°48'52.233"W	0.68	
295.00	0.180	290.480	294.99	0.86	-0.86	-1.24	1692274.21	14569639.59	40°07'03.644"N	104°48'52.234"W	0.19	
326.00	0.040	98.090	325.99	0.84	-0.84	-1.28	1692274.17	14569639.61	40°07'03.644"N	104°48'52.234"W	0.71	
358.00	0.180	329.860	357.99	0.80	-0.80	-1.29	1692274.16	14569639.65	40°07'03.644"N	104°48'52.235"W	0.65	
390.00	0.620	321.330	389.99	0.62	-0.62	-1.42	1692274.02	14569639.83	40°07'03.646"N	104°48'52.236"W	1.38	
422.00	0.920	328.360	421.99	0.27	-0.27	-1.67	1692273.78	14569640.18	40°07'03.649"N	104°48'52.239"W	0.98	
454.00	1.580	331.790	453.98	-0.34	0.34	-2.01	1692273.43	14569640.79	40°07'03.655"N	104°48'52.244"W	2.07	
486.00	2.070	322.910	485.97	-1.19	1.19	-2.57	1692272.88	14569641.63	40°07'03.664"N	104°48'52.251"W	1.76	
517.00	2.720	318.430	516.94	-2.19	2.19	-3.39	1692272.05	14569642.63	40°07'03.674"N	104°48'52.262"W	2.18	
549.00	3.870	319.750	548.89	-3.58	3.58	-4.60	1692270.84	14569644.02	40°07'03.687"N	104°48'52.277"W	3.60	
581.00	4.830	317.730	580.79	-5.40	5.40	-6.20	1692269.24	14569645.83	40°07'03.705"N	104°48'52.298"W	3.04	
612.00	5.540	314.920	611.67	-7.42	7.42	-8.14	1692267.30	14569647.85	40°07'03.725"N	104°48'52.323"W	2.43	
676.00	6.370	315.530	675.32	-12.14	12.14	-12.81	1692262.61	14569652.56	40°07'03.772"N	104°48'52.383"W	1.30	
707.00	6.860	313.510	706.11	-14.64	14.64	-15.36	1692260.06	14569655.05	40°07'03.797"N	104°48'52.416"W	1.75	
739.00	7.690	309.380	737.86	-17.32	17.31	-18.40	1692257.02	14569657.72	40°07'03.823"N	104°48'52.455"W	3.06	
771.00	8.310	306.740	769.54	-20.06	20.05	-21.91	1692253.50	14569660.45	40°07'03.850"N	104°48'52.500"W	2.25	
803.00	8.920	305.510	801.18	-22.89	22.88	-25.78	1692249.63	14569663.27	40°07'03.878"N	104°48'52.550"W	1.99	
834.00	9.270	306.650	831.79	-25.77	25.76	-29.74	1692245.66	14569666.14	40°07'03.907"N	104°48'52.601"W	1.27	
866.00	10.060	307.880	863.34	-29.03	29.02	-34.01	1692241.38	14569669.39	40°07'03.939"N	104°48'52.656"W	2.55	
898.00	10.330	308.940	894.83	-32.55	32.54	-38.45	1692236.94	14569672.90	40°07'03.974"N	104°48'52.713"W	1.03	
930.00	11.210	309.380	926.27	-36.33	36.32	-43.09	1692232.30	14569676.66	40°07'04.011"N	104°48'52.773"W	2.76	
961.00	12.080	309.730	956.63	-40.31	40.30	-47.91	1692227.47	14569680.64	40°07'04.050"N	104°48'52.835"W	2.82	
993.00	12.790	308.850	987.88	-44.68	44.66	-53.25	1692222.13	14569684.99	40°07'04.093"N	104°48'52.903"W	2.30	
1025.00	13.400	308.940	1019.05	-49.23	49.22	-58.89	1692216.48	14569689.52	40°07'04.138"N	104°48'52.976"W	1.91	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (247 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1057.00	13.710	309.290	1050.16	-53.96	53.95	-64.71	1692210.65	14569694.24	40°07'04.185"N	104°48'53.051"W	1.00	
1088.00	13.840	310.430	1080.27	-58.70	58.68	-70.37	1692204.98	14569698.96	40°07'04.232"N	104°48'53.124"W	0.97	
1120.00	14.630	309.910	1111.28	-63.77	63.75	-76.39	1692198.96	14569704.02	40°07'04.282"N	104°48'53.201"W	2.50	
1152.00	15.730	310.960	1142.17	-69.21	69.19	-82.76	1692192.57	14569709.44	40°07'04.336"N	104°48'53.283"W	3.54	
1184.00	16.130	310.170	1172.94	-74.92	74.90	-89.43	1692185.89	14569715.13	40°07'04.392"N	104°48'53.369"W	1.42	
1215.00	16.390	310.520	1202.70	-80.54	80.52	-96.05	1692179.27	14569720.74	40°07'04.448"N	104°48'53.454"W	0.90	
1247.00	16.480	310.790	1233.39	-86.45	86.42	-102.92	1692172.39	14569726.62	40°07'04.506"N	104°48'53.543"W	0.37	
1279.00	16.700	310.520	1264.06	-92.40	92.37	-109.85	1692165.45	14569732.56	40°07'04.565"N	104°48'53.632"W	0.73	
1310.00	17.010	310.870	1293.73	-98.26	98.23	-116.66	1692158.62	14569738.40	40°07'04.623"N	104°48'53.720"W	1.05	
1342.00	17.270	310.700	1324.30	-104.42	104.39	-123.80	1692151.47	14569744.54	40°07'04.684"N	104°48'53.812"W	0.83	
1373.00	17.620	310.870	1353.88	-110.50	110.46	-130.84	1692144.43	14569750.60	40°07'04.744"N	104°48'53.902"W	1.14	
1405.00	17.970	310.350	1384.35	-116.86	116.83	-138.27	1692136.99	14569756.94	40°07'04.807"N	104°48'53.998"W	1.20	
1437.00	18.190	310.260	1414.77	-123.29	123.25	-145.84	1692129.41	14569763.35	40°07'04.870"N	104°48'54.095"W	0.69	
1468.00	18.680	310.520	1444.18	-129.64	129.60	-153.31	1692121.93	14569769.68	40°07'04.933"N	104°48'54.191"W	1.60	
1500.00	19.200	311.050	1474.44	-136.43	136.39	-161.17	1692114.06	14569776.45	40°07'05.000"N	104°48'54.293"W	1.71	
1532.00	18.280	310.430	1504.75	-143.14	143.10	-168.96	1692106.26	14569783.14	40°07'05.066"N	104°48'54.393"W	2.94	
1563.00	18.190	311.050	1534.19	-149.48	149.43	-176.31	1692098.90	14569789.45	40°07'05.129"N	104°48'54.487"W	0.69	
1594.00	18.370	311.220	1563.63	-155.87	155.83	-183.63	1692091.56	14569795.83	40°07'05.192"N	104°48'54.582"W	0.61	
1626.00	18.590	311.310	1593.98	-162.57	162.52	-191.26	1692083.93	14569802.50	40°07'05.258"N	104°48'54.680"W	0.69	
1658.00	18.760	311.930	1624.29	-169.37	169.32	-198.91	1692076.26	14569809.29	40°07'05.325"N	104°48'54.778"W	0.82	
1690.00	19.250	312.190	1654.55	-176.36	176.30	-206.65	1692068.51	14569816.25	40°07'05.394"N	104°48'54.878"W	1.55	
1721.00	18.280	311.250	1683.90	-183.00	182.94	-214.09	1692061.06	14569822.87	40°07'05.460"N	104°48'54.974"W	3.28	
1753.00	17.930	311.220	1714.31	-189.55	189.50	-221.57	1692053.57	14569829.41	40°07'05.525"N	104°48'55.070"W	1.09	
1817.00	18.500	311.310	1775.11	-202.75	202.69	-236.61	1692038.51	14569842.57	40°07'05.655"N	104°48'55.264"W	0.89	
1850.00	18.500	311.490	1806.40	-209.68	209.61	-244.46	1692030.64	14569849.47	40°07'05.723"N	104°48'55.365"W	0.17	LAST SURFACE MWD+IFR1 SURVEY
1969.00	18.870	312.410	1919.13	-235.17	235.10	-272.81	1692002.25	14569874.89	40°07'05.975"N	104°48'55.730"W	0.40	FIRST BHGE MWD+IFR1+MSA SURVEY
2058.00	18.990	312.180	2003.32	-254.61	254.53	-294.17	1691980.86	14569894.27	40°07'06.167"N	104°48'56.005"W	0.16	
2148.00	18.420	314.560	2088.56	-274.42	274.34	-315.15	1691959.85	14569914.02	40°07'06.363"N	104°48'56.275"W	1.06	
2237.00	18.510	315.210	2172.98	-294.32	294.23	-335.13	1691939.84	14569933.87	40°07'06.560"N	104°48'56.532"W	0.25	
2327.00	18.070	316.340	2258.43	-314.56	314.47	-354.83	1691920.11	14569954.05	40°07'06.760"N	104°48'56.785"W	0.63	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL, SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (247 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2416.00	19.620	318.020	2342.66	-335.66	335.56	-374.35	1691900.54	14569975.10	40°07'06.968"N	104°48'57.037"W	1.85	
2506.00	18.300	314.450	2427.78	-356.80	356.69	-394.55	1691880.31	14569996.18	40°07'07.177"N	104°48'57.297"W	1.95	
2595.00	19.300	313.890	2512.03	-376.78	376.68	-415.12	1691859.71	14570016.11	40°07'07.374"N	104°48'57.561"W	1.14	
2684.00	18.540	316.570	2596.22	-397.26	397.15	-435.45	1691839.34	14570036.53	40°07'07.577"N	104°48'57.823"W	1.30	
2773.00	19.390	316.630	2680.39	-418.28	418.16	-455.32	1691819.43	14570057.50	40°07'07.784"N	104°48'58.079"W	0.96	
2862.00	19.430	313.690	2764.34	-439.25	439.13	-476.17	1691798.55	14570078.41	40°07'07.991"N	104°48'58.347"W	1.10	
2952.00	19.490	307.770	2849.20	-458.80	458.67	-498.87	1691775.82	14570097.89	40°07'08.185"N	104°48'58.639"W	2.19	
3041.00	19.670	304.730	2933.06	-476.43	476.30	-522.91	1691751.75	14570115.47	40°07'08.359"N	104°48'58.949"W	1.16	
3130.00	19.550	304.590	3016.90	-493.43	493.28	-547.48	1691727.15	14570132.39	40°07'08.527"N	104°48'59.265"W	0.14	
3220.00	18.960	301.230	3101.86	-509.56	509.41	-572.38	1691702.23	14570148.47	40°07'08.686"N	104°48'59.586"W	1.39	
3309.00	19.480	297.900	3185.91	-524.01	523.85	-597.86	1691676.73	14570162.85	40°07'08.829"N	104°48'59.914"W	1.36	
3398.00	18.730	293.760	3270.01	-536.72	536.56	-624.06	1691650.52	14570175.49	40°07'08.954"N	104°49'00.251"W	1.74	
3488.00	17.970	293.660	3355.43	-548.12	547.95	-650.00	1691624.57	14570186.82	40°07'09.067"N	104°49'00.585"W	0.85	
3577.00	18.000	298.510	3440.09	-560.20	560.02	-674.66	1691599.89	14570198.84	40°07'09.186"N	104°49'00.902"W	1.68	
3667.00	19.170	298.260	3525.39	-573.84	573.66	-699.89	1691574.64	14570212.42	40°07'09.321"N	104°49'01.227"W	1.30	
3756.00	19.050	297.300	3609.49	-587.43	587.24	-725.67	1691548.84	14570225.94	40°07'09.455"N	104°49'01.559"W	0.38	
3846.00	18.980	298.720	3694.58	-601.20	601.01	-751.56	1691522.94	14570239.65	40°07'09.591"N	104°49'01.892"W	0.52	
3935.00	17.260	301.630	3779.16	-615.09	614.89	-775.50	1691498.98	14570253.47	40°07'09.728"N	104°49'02.200"W	2.18	
4025.00	19.090	304.170	3864.67	-630.37	630.16	-799.04	1691475.41	14570268.69	40°07'09.879"N	104°49'02.503"W	2.22	
4114.00	19.170	303.380	3948.75	-646.59	646.37	-823.29	1691451.14	14570284.85	40°07'10.039"N	104°49'02.815"W	0.30	
4203.00	19.220	298.710	4032.81	-661.67	661.45	-848.34	1691426.07	14570299.87	40°07'10.188"N	104°49'03.138"W	1.73	
4292.00	19.330	290.400	4116.84	-673.85	673.62	-875.00	1691399.39	14570311.98	40°07'10.309"N	104°49'03.481"W	3.08	
4382.00	19.150	283.920	4201.82	-682.60	682.37	-903.29	1691371.09	14570320.66	40°07'10.395"N	104°49'03.845"W	2.38	
4471.00	19.130	277.120	4285.91	-687.93	687.69	-931.93	1691342.45	14570325.92	40°07'10.448"N	104°49'04.214"W	2.50	
4560.00	18.310	272.210	4370.21	-690.29	690.03	-960.38	1691314.01	14570328.21	40°07'10.471"N	104°49'04.580"W	2.00	
4650.00	18.450	273.210	4455.62	-691.64	691.38	-988.72	1691285.68	14570329.49	40°07'10.484"N	104°49'04.945"W	0.38	
4739.00	18.810	278.300	4539.96	-694.50	694.24	-1016.98	1691257.42	14570332.29	40°07'10.512"N	104°49'05.309"W	1.87	
4829.00	18.940	280.760	4625.12	-699.33	699.06	-1045.69	1691228.72	14570337.05	40°07'10.560"N	104°49'05.678"W	0.90	
4918.00	18.770	283.060	4709.35	-705.27	704.99	-1073.83	1691200.58	14570342.92	40°07'10.619"N	104°49'06.040"W	0.86	
5007.00	17.710	283.860	4793.87	-711.76	711.47	-1100.92	1691173.48	14570349.34	40°07'10.683"N	104°49'06.389"W	1.22	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL, SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (247 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5097.00	15.960	282.920	4880.01	-717.81	717.52	-1126.27	1691148.13	14570355.33	40°07'10.742"N	104°49'06.716"W	1.97	
5186.00	13.840	279.590	4966.02	-722.33	722.02	-1148.70	1691125.70	14570359.79	40°07'10.787"N	104°49'07.004"W	2.57	
5275.00	12.010	270.530	5052.77	-724.19	723.88	-1168.46	1691105.95	14570361.61	40°07'10.805"N	104°49'07.259"W	3.06	
5364.00	10.440	266.470	5140.06	-723.78	723.47	-1185.77	1691088.65	14570361.16	40°07'10.801"N	104°49'07.481"W	1.97	
5453.00	8.600	272.440	5227.84	-723.57	723.26	-1200.47	1691073.95	14570360.92	40°07'10.799"N	104°49'07.671"W	2.34	
5542.00	6.610	289.960	5316.06	-725.61	725.29	-1211.93	1691062.49	14570362.93	40°07'10.819"N	104°49'07.818"W	3.41	
5632.00	6.040	301.490	5405.52	-729.85	729.53	-1220.84	1691053.58	14570367.15	40°07'10.861"N	104°49'07.933"W	1.54	
5721.00	3.880	300.130	5494.18	-733.81	733.49	-1227.44	1691046.97	14570371.09	40°07'10.900"N	104°49'08.018"W	2.43	
5810.00	1.490	303.840	5583.07	-735.97	735.65	-1231.00	1691043.40	14570373.24	40°07'10.921"N	104°49'08.064"W	2.69	
5899.00	0.190	301.110	5672.06	-736.69	736.37	-1232.09	1691042.31	14570373.96	40°07'10.929"N	104°49'08.078"W	1.46	
5989.00	0.250	319.260	5762.06	-736.92	736.59	-1232.35	1691042.06	14570374.18	40°07'10.931"N	104°49'08.081"W	0.10	
6078.00	0.220	342.250	5851.06	-737.23	736.90	-1232.52	1691041.88	14570374.49	40°07'10.934"N	104°49'08.083"W	0.11	
6168.00	0.610	33.590	5941.06	-737.79	737.47	-1232.31	1691042.09	14570375.05	40°07'10.939"N	104°49'08.080"W	0.56	
6257.00	0.430	251.520	6030.06	-738.08	737.76	-1232.37	1691042.03	14570375.34	40°07'10.942"N	104°49'08.081"W	1.11	
6346.00	0.160	248.920	6119.05	-737.93	737.61	-1232.80	1691041.60	14570375.19	40°07'10.941"N	104°49'08.087"W	0.30	
6435.00	0.110	338.190	6208.05	-737.96	737.64	-1232.95	1691041.45	14570375.23	40°07'10.941"N	104°49'08.089"W	0.22	
6525.00	0.040	49.250	6298.05	-738.06	737.74	-1232.96	1691041.45	14570375.33	40°07'10.942"N	104°49'08.089"W	0.12	
6614.00	0.110	31.660	6387.05	-738.16	737.84	-1232.89	1691041.51	14570375.42	40°07'10.943"N	104°49'08.088"W	0.08	
6703.00	0.150	24.570	6476.05	-738.34	738.01	-1232.79	1691041.61	14570375.60	40°07'10.945"N	104°49'08.087"W	0.05	
6792.00	0.070	19.760	6565.05	-738.49	738.17	-1232.73	1691041.67	14570375.76	40°07'10.946"N	104°49'08.086"W	0.09	
6882.00	0.090	349.050	6655.05	-738.61	738.29	-1232.72	1691041.68	14570375.88	40°07'10.948"N	104°49'08.086"W	0.05	
6971.00	0.070	277.420	6744.05	-738.69	738.37	-1232.79	1691041.61	14570375.95	40°07'10.948"N	104°49'08.087"W	0.11	
7020.00†	2.306	175.814	6793.04	-737.71	737.39	-1232.75	1691041.66	14570374.97	40°07'10.939"N	104°49'08.086"W	4.74	KOP
7060.00	4.200	175.050	6832.97	-735.45	735.13	-1232.56	1691041.85	14570372.71	40°07'10.916"N	104°49'08.084"W	4.74	
7149.00	11.140	177.020	6921.12	-723.60	723.28	-1231.83	1691042.60	14570360.87	40°07'10.799"N	104°49'08.074"W	7.80	
7238.00	19.700	176.540	7006.84	-700.00	699.68	-1230.48	1691044.00	14570337.28	40°07'10.566"N	104°49'08.057"W	9.62	
7328.00	28.180	177.090	7089.02	-663.57	663.24	-1228.48	1691046.08	14570300.87	40°07'10.206"N	104°49'08.031"W	9.43	
7416.00	36.700	177.110	7163.22	-616.46	616.14	-1226.09	1691048.56	14570253.79	40°07'09.740"N	104°49'08.000"W	9.68	
7505.00	45.230	176.560	7230.37	-558.26	557.94	-1222.85	1691051.92	14570195.62	40°07'09.165"N	104°49'07.959"W	9.59	
7595.00	53.620	176.720	7288.85	-490.08	489.76	-1218.86	1691056.06	14570127.47	40°07'08.492"N	104°49'07.907"W	9.32	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (247 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7684.00	61.990	178.610	7336.23	-414.89	414.57	-1215.85	1691059.22	14570052.32	40°07'07.749"N	104°49'07.868"W	9.57	
7734.00†	65.175	180.221	7358.48	-370.12	369.81	-1215.40	1691059.76	14570007.57	40°07'07.306"N	104°49'07.863"W	6.99	ENTER LANDBOX (854'FSL & 2309'FEL,SEC.19) 40.1186962 -104.8188507
7773.00	67.670	181.420	7374.08	-334.39	334.07	-1215.91	1691059.32	14569971.85	40°07'06.953"N	104°49'07.869"W	6.99	
7862.00	75.720	182.330	7402.01	-250.01	249.69	-1218.69	1691056.72	14569887.50	40°07'06.119"N	104°49'07.905"W	9.10	
7952.00	85.160	182.320	7416.94	-161.43	161.11	-1222.29	1691053.31	14569798.95	40°07'05.244"N	104°49'07.951"W	10.49	
8020.00†	88.644	182.802	7420.61	-93.61	93.29	-1225.32	1691050.42	14569731.15	40°07'04.574"N	104°49'07.990"W	5.17	LANDING (577'FSL & 2318'FEL,SEC.19) 40.1179371 -104.8188861
8041.00	89.720	182.950	7420.91	-72.64	72.32	-1226.38	1691049.41	14569710.18	40°07'04.366"N	104°49'08.004"W	5.17	
8130.00	90.030	179.940	7421.11	16.32	-16.64	-1228.62	1691047.35	14569621.25	40°07'03.487"N	104°49'08.032"W	3.40	
8219.00	90.000	177.620	7421.08	105.29	-105.62	-1226.72	1691049.43	14569532.32	40°07'02.608"N	104°49'08.008"W	2.61	
8308.00	89.820	177.810	7421.22	194.22	-194.55	-1223.18	1691053.17	14569443.43	40°07'01.729"N	104°49'07.962"W	0.29	
8397.00	90.060	177.250	7421.32	283.14	-283.46	-1219.34	1691057.19	14569354.56	40°07'00.850"N	104°49'07.913"W	0.68	
8487.00	89.780	177.590	7421.44	373.05	-373.37	-1215.29	1691061.42	14569264.70	40°06'59.962"N	104°49'07.861"W	0.49	
8576.00	89.780	178.900	7421.78	462.01	-462.33	-1212.56	1691064.33	14569175.78	40°06'59.083"N	104°49'07.826"W	1.47	
8665.00	89.850	180.710	7422.07	551.00	-551.32	-1212.26	1691064.82	14569086.82	40°06'58.203"N	104°49'07.822"W	2.04	
8754.00	89.880	182.860	7422.28	639.95	-640.27	-1215.03	1691062.24	14568997.90	40°06'57.324"N	104°49'07.857"W	2.42	
8844.00	90.090	180.910	7422.30	729.90	-730.22	-1217.99	1691059.46	14568907.98	40°06'56.436"N	104°49'07.895"W	2.18	
8924.00†	89.982	182.276	7422.25	809.87	-810.19	-1220.22	1691057.41	14568828.04	40°06'55.645"N	104°49'07.924"W	1.71	EXIT RADIUS HEEL (326'FNL & 2314'FEL,SEC.30) 40.1154570 -104.8188677
8933.00	89.970	182.430	7422.26	818.86	-819.18	-1220.59	1691057.06	14568819.06	40°06'55.556"N	104°49'07.929"W	1.71	
9022.00	89.380	184.740	7422.76	907.68	-908.00	-1226.15	1691051.68	14568730.26	40°06'54.679"N	104°49'08.000"W	2.68	
9111.00	88.520	185.660	7424.39	996.29	-996.61	-1234.22	1691043.80	14568641.66	40°06'53.803"N	104°49'08.104"W	1.41	
9200.00	88.550	184.080	7426.67	1084.94	-1085.26	-1241.77	1691036.44	14568553.04	40°06'52.927"N	104°49'08.201"W	1.78	
9290.00	88.740	182.020	7428.80	1174.78	-1175.10	-1246.56	1691031.84	14568463.22	40°06'52.039"N	104°49'08.263"W	2.30	
9379.00	88.710	181.140	7430.78	1263.72	-1264.05	-1249.01	1691029.57	14568374.31	40°06'51.160"N	104°49'08.294"W	0.99	
9468.00	87.780	178.260	7433.50	1352.67	-1352.99	-1248.54	1691030.22	14568285.40	40°06'50.281"N	104°49'08.288"W	3.40	
9558.00	88.740	179.330	7436.24	1442.60	-1442.93	-1246.65	1691032.30	14568195.50	40°06'49.392"N	104°49'08.264"W	1.60	
9647.00	88.650	181.090	7438.26	1531.58	-1531.90	-1246.98	1691032.16	14568106.56	40°06'48.513"N	104°49'08.268"W	1.98	
9736.00	88.060	180.730	7440.82	1620.53	-1620.85	-1248.39	1691030.93	14568017.64	40°06'47.634"N	104°49'08.286"W	0.78	
9826.00	88.090	177.030	7443.84	1710.44	-1710.77	-1246.63	1691032.88	14567927.77	40°06'46.746"N	104°49'08.263"W	4.11	
9915.00	88.770	175.530	7446.28	1799.22	-1799.55	-1240.86	1691038.83	14567839.04	40°06'45.868"N	104°49'08.189"W	1.85	
10004.00	89.570	177.270	7447.57	1888.03	-1888.36	-1235.27	1691044.60	14567750.27	40°06'44.991"N	104°49'08.117"W	2.15	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (247 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10094.00	89.450	177.220	7448.34	1977.93	-1978.25	-1230.95	1691049.12	14567660.43	40°06'44.102"N	104°49'08.061"W	0.14	
10183.00	89.720	178.100	7448.98	2066.85	-2067.17	-1227.31	1691052.93	14567571.55	40°06'43.224"N	104°49'08.014"W	1.03	
10272.00	89.690	178.020	7449.44	2155.80	-2156.12	-1224.30	1691056.13	14567482.64	40°06'42.345"N	104°49'07.976"W	0.10	
10362.00	89.780	179.440	7449.86	2245.78	-2246.10	-1222.31	1691058.31	14567392.71	40°06'41.456"N	104°49'07.950"W	1.58	
10451.00	89.690	181.140	7450.27	2334.77	-2335.09	-1222.76	1691058.05	14567303.75	40°06'40.576"N	104°49'07.956"W	1.91	
10541.00	89.630	181.530	7450.80	2424.74	-2425.06	-1224.85	1691056.14	14567213.81	40°06'39.687"N	104°49'07.982"W	0.44	
10630.00	89.540	179.200	7451.45	2513.73	-2514.05	-1225.42	1691055.76	14567124.85	40°06'38.808"N	104°49'07.990"W	2.62	
10720.00	88.060	175.450	7453.34	2603.60	-2603.92	-1221.22	1691060.14	14567035.03	40°06'37.919"N	104°49'07.936"W	4.48	
10809.00	88.210	175.820	7456.23	2692.29	-2692.61	-1214.45	1691067.09	14566946.39	40°06'37.043"N	104°49'07.848"W	0.45	
10898.00	88.310	177.320	7458.93	2781.09	-2781.41	-1209.13	1691072.60	14566857.64	40°06'36.165"N	104°49'07.780"W	1.69	
10988.00	88.000	180.150	7461.83	2871.01	-2871.33	-1207.15	1691074.77	14566767.75	40°06'35.277"N	104°49'07.754"W	3.16	
11077.00	89.230	181.420	7463.98	2959.98	-2960.29	-1208.36	1691073.74	14566678.83	40°06'34.398"N	104°49'07.770"W	1.99	
11166.00	89.110	184.740	7465.27	3048.82	-3049.14	-1213.15	1691069.15	14566590.00	40°06'33.520"N	104°49'07.831"W	3.73	
11256.00	89.480	185.890	7466.38	3138.43	-3138.75	-1221.48	1691061.00	14566500.42	40°06'32.634"N	104°49'07.939"W	1.34	
11345.00	89.540	184.860	7467.14	3227.03	-3227.35	-1229.82	1691052.85	14566411.83	40°06'31.759"N	104°49'08.046"W	1.16	
11435.00	89.510	184.830	7467.89	3316.70	-3317.03	-1237.42	1691045.44	14566322.17	40°06'30.872"N	104°49'08.144"W	0.05	
11524.00	90.220	184.960	7468.10	3405.38	-3405.70	-1245.01	1691038.03	14566233.52	40°06'29.996"N	104°49'08.241"W	0.81	
11614.00	89.570	182.410	7468.26	3495.18	-3495.51	-1250.80	1691032.44	14566143.74	40°06'29.109"N	104°49'08.316"W	2.92	
11703.00	90.060	180.340	7468.55	3584.15	-3584.48	-1252.93	1691030.49	14566054.80	40°06'28.229"N	104°49'08.343"W	2.39	
11793.00	89.910	179.220	7468.57	3674.15	-3674.47	-1252.59	1691031.02	14565964.84	40°06'27.340"N	104°49'08.339"W	1.26	
11882.00	89.820	177.650	7468.78	3763.11	-3763.44	-1250.16	1691033.64	14565875.92	40°06'26.461"N	104°49'08.307"W	1.77	
11972.00	89.720	178.300	7469.14	3853.05	-3853.38	-1246.98	1691037.00	14565786.02	40°06'25.572"N	104°49'08.266"W	0.73	
12061.00	89.600	179.070	7469.67	3942.03	-3942.35	-1244.93	1691039.23	14565697.08	40°06'24.693"N	104°49'08.240"W	0.88	
12151.00	89.290	179.360	7470.54	4032.02	-4032.34	-1243.70	1691040.65	14565607.13	40°06'23.804"N	104°49'08.224"W	0.47	
12240.00	89.380	180.610	7471.58	4121.01	-4121.33	-1243.68	1691040.86	14565518.18	40°06'22.924"N	104°49'08.224"W	1.41	
12330.00	89.660	179.470	7472.33	4211.00	-4211.33	-1243.74	1691040.99	14565428.22	40°06'22.035"N	104°49'08.224"W	1.30	
12419.00	89.380	178.960	7473.08	4299.99	-4300.32	-1242.52	1691042.39	14565339.27	40°06'21.155"N	104°49'08.209"W	0.65	
12509.00	89.200	178.120	7474.19	4389.96	-4390.28	-1240.23	1691044.87	14565249.35	40°06'20.266"N	104°49'08.179"W	0.95	
12598.00	90.030	177.250	7474.79	4478.88	-4479.20	-1236.63	1691048.65	14565160.46	40°06'19.388"N	104°49'08.133"W	1.35	
12688.00	90.520	177.980	7474.36	4568.80	-4569.12	-1232.89	1691052.58	14565070.59	40°06'18.499"N	104°49'08.085"W	0.98	



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (247 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12777.00	90.120	176.850	7473.86	4657.71	-4658.03	-1228.87	1691056.78	14564981.73	40°06'17.620"N	104°49'08.033"W	1.35	
12867.00	90.520	178.040	7473.36	4747.62	-4747.94	-1224.86	1691060.98	14564891.86	40°06'16.732"N	104°49'07.981"W	1.39	
12956.00	90.430	177.820	7472.62	4836.56	-4836.88	-1221.65	1691064.37	14564802.97	40°06'15.853"N	104°49'07.940"W	0.27	
13046.00	90.090	179.250	7472.21	4926.52	-4926.84	-1219.35	1691066.86	14564713.04	40°06'14.964"N	104°49'07.910"W	1.63	
13135.00	90.520	179.450	7471.74	5015.52	-5015.84	-1218.34	1691068.06	14564624.09	40°06'14.085"N	104°49'07.897"W	0.53	
13225.00	90.220	180.610	7471.16	5105.51	-5105.83	-1218.38	1691068.20	14564534.13	40°06'13.195"N	104°49'07.898"W	1.33	
13314.00	90.520	180.780	7470.58	5194.51	-5194.82	-1219.46	1691067.30	14564445.17	40°06'12.316"N	104°49'07.911"W	0.39	
13403.00	90.490	181.900	7469.80	5283.48	-5283.80	-1221.55	1691065.41	14564356.23	40°06'11.437"N	104°49'07.938"W	1.26	
13493.00	89.970	182.190	7469.44	5373.42	-5373.74	-1224.76	1691062.39	14564266.32	40°06'10.548"N	104°49'07.979"W	0.66	
13582.00	89.600	180.900	7469.77	5462.38	-5462.70	-1227.16	1691060.17	14564177.38	40°06'09.669"N	104°49'08.010"W	1.51	
13672.00	89.510	180.670	7470.47	5552.37	-5552.69	-1228.39	1691059.13	14564087.43	40°06'08.779"N	104°49'08.026"W	0.27	
13761.00	91.630	180.160	7469.58	5641.36	-5641.68	-1229.03	1691058.67	14563998.47	40°06'07.900"N	104°49'08.034"W	2.45	
13851.00	91.540	178.900	7467.10	5731.32	-5731.64	-1228.30	1691059.59	14563908.55	40°06'07.011"N	104°49'08.025"W	1.40	
13940.00	91.540	179.520	7464.70	5820.28	-5820.60	-1227.07	1691061.01	14563819.63	40°06'06.132"N	104°49'08.009"W	0.70	
14029.00	91.750	178.950	7462.15	5909.23	-5909.55	-1225.88	1691062.38	14563730.71	40°06'05.253"N	104°49'07.993"W	0.68	
14119.00	91.510	180.270	7459.59	5999.19	-5999.51	-1225.27	1691063.18	14563640.79	40°06'04.364"N	104°49'07.986"W	1.49	
14208.00	90.310	179.250	7458.17	6088.18	-6088.50	-1224.90	1691063.74	14563551.84	40°06'03.484"N	104°49'07.981"W	1.77	
14297.00	90.370	178.600	7457.65	6177.16	-6177.48	-1223.23	1691065.59	14563462.90	40°06'02.605"N	104°49'07.959"W	0.73	
14387.00	90.370	177.800	7457.07	6267.11	-6267.43	-1220.40	1691068.60	14563372.99	40°06'01.716"N	104°49'07.923"W	0.89	
14476.00	89.820	177.420	7456.92	6356.04	-6356.36	-1216.69	1691072.50	14563284.11	40°06'00.837"N	104°49'07.875"W	0.75	
14565.00	89.970	176.940	7457.08	6444.93	-6445.25	-1212.31	1691077.06	14563195.26	40°05'59.959"N	104°49'07.818"W	0.57	
14655.00	89.880	177.760	7457.20	6534.83	-6535.15	-1208.15	1691081.41	14563105.40	40°05'59.070"N	104°49'07.765"W	0.92	
14745.00	89.820	178.980	7457.43	6624.80	-6625.11	-1205.59	1691084.16	14563015.48	40°05'58.181"N	104°49'07.732"W	1.36	
14834.00	89.780	179.370	7457.74	6713.79	-6714.10	-1204.31	1691085.62	14562926.53	40°05'57.302"N	104°49'07.715"W	0.44	
14923.00	89.910	179.670	7457.99	6802.78	-6803.10	-1203.56	1691086.55	14562837.57	40°05'56.423"N	104°49'07.706"W	0.37	
15013.00	89.290	180.710	7458.61	6892.78	-6893.09	-1203.86	1691086.44	14562747.61	40°05'55.533"N	104°49'07.709"W	1.35	
15102.00	89.260	181.550	7459.74	6981.75	-6982.07	-1205.62	1691084.87	14562658.67	40°05'54.654"N	104°49'07.732"W	0.94	
15192.00	89.200	182.540	7460.95	7071.68	-7072.00	-1208.83	1691081.85	14562568.77	40°05'53.765"N	104°49'07.773"W	1.10	
15282.00	89.450	183.620	7462.01	7161.55	-7161.86	-1213.66	1691077.21	14562478.93	40°05'52.877"N	104°49'07.835"W	1.23	
15371.00	89.380	184.150	7462.92	7250.33	-7250.65	-1219.69	1691071.36	14562390.16	40°05'52.000"N	104°49'07.913"W	0.60	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (247 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15461.00	89.230	184.120	7464.01	7340.09	-7340.41	-1226.18	1691065.06	14562300.42	40°05'51.113"N	104°49'07.996"W	0.17	
15550.00	90.000	183.050	7464.61	7428.91	-7429.24	-1231.75	1691059.69	14562211.63	40°05'50.235"N	104°49'08.068"W	1.48	
15640.00	89.880	182.270	7464.70	7518.81	-7519.14	-1235.92	1691055.70	14562121.75	40°05'49.347"N	104°49'08.122"W	0.88	
15729.00	89.970	182.150	7464.82	7607.75	-7608.07	-1239.35	1691052.45	14562032.85	40°05'48.468"N	104°49'08.166"W	0.17	
15818.00	89.110	180.970	7465.53	7696.71	-7697.03	-1241.78	1691050.22	14561943.92	40°05'47.589"N	104°49'08.197"W	1.64	
15908.00	89.540	182.210	7466.59	7786.66	-7786.99	-1244.27	1691047.91	14561853.99	40°05'46.700"N	104°49'08.229"W	1.46	
15997.00	90.520	181.830	7466.55	7875.61	-7875.93	-1247.41	1691044.96	14561765.07	40°05'45.821"N	104°49'08.269"W	1.18	
16087.00	90.740	180.030	7465.56	7965.59	-7965.91	-1248.87	1691043.69	14561675.13	40°05'44.931"N	104°49'08.288"W	2.01	
16176.00	90.580	178.730	7464.53	8054.57	-8054.90	-1247.91	1691044.83	14561586.18	40°05'44.052"N	104°49'08.276"W	1.47	
16266.00	89.940	177.620	7464.12	8144.53	-8144.85	-1245.04	1691047.89	14561496.27	40°05'43.163"N	104°49'08.239"W	1.42	
16355.00	89.880	176.950	7464.26	8233.43	-8233.75	-1240.83	1691052.29	14561407.42	40°05'42.285"N	104°49'08.184"W	0.76	
16445.00	89.910	176.680	7464.43	8323.29	-8323.61	-1235.83	1691057.47	14561317.60	40°05'41.397"N	104°49'08.120"W	0.30	
16534.00	90.220	176.240	7464.33	8412.12	-8412.44	-1230.33	1691063.15	14561228.82	40°05'40.519"N	104°49'08.049"W	0.60	
16624.00	90.180	175.580	7464.01	8501.89	-8502.21	-1223.91	1691069.75	14561139.10	40°05'39.632"N	104°49'07.966"W	0.73	
16714.00	90.060	177.790	7463.83	8591.74	-8592.05	-1218.71	1691075.14	14561049.30	40°05'38.744"N	104°49'07.899"W	2.46	
16803.00	89.940	178.980	7463.83	8680.70	-8681.02	-1216.20	1691077.84	14560960.38	40°05'37.865"N	104°49'07.867"W	1.34	
16892.00	89.970	177.860	7463.90	8769.66	-8769.98	-1213.75	1691080.47	14560871.46	40°05'36.985"N	104°49'07.835"W	1.26	
16982.00	89.880	177.730	7464.01	8859.60	-8859.92	-1210.28	1691084.12	14560781.57	40°05'36.097"N	104°49'07.791"W	0.18	
17072.00	89.880	178.340	7464.20	8949.55	-8949.86	-1207.20	1691087.40	14560691.66	40°05'35.208"N	104°49'07.751"W	0.68	
17161.00	89.660	178.430	7464.56	9038.51	-9038.83	-1204.69	1691090.09	14560602.74	40°05'34.329"N	104°49'07.719"W	0.27	
17251.00	89.720	178.250	7465.05	9128.47	-9128.79	-1202.08	1691092.88	14560512.82	40°05'33.440"N	104°49'07.685"W	0.21	
17340.00	89.820	179.780	7465.40	9217.46	-9217.77	-1200.55	1691094.60	14560423.87	40°05'32.560"N	104°49'07.665"W	1.72	
17430.00	89.820	182.440	7465.69	9307.43	-9307.74	-1202.30	1691093.04	14560333.93	40°05'31.671"N	104°49'07.688"W	2.96	
17519.00	89.850	184.800	7465.94	9396.24	-9396.56	-1207.91	1691087.61	14560245.14	40°05'30.794"N	104°49'07.760"W	2.65	
17609.00	89.820	183.010	7466.20	9486.03	-9486.35	-1214.04	1691081.67	14560155.38	40°05'29.906"N	104°49'07.839"W	1.99	
17698.00	89.660	181.370	7466.61	9574.96	-9575.28	-1217.44	1691078.46	14560066.47	40°05'29.027"N	104°49'07.883"W	1.85	
17788.00	88.310	177.320	7468.20	9664.92	-9665.24	-1216.42	1691079.67	14559976.55	40°05'28.138"N	104°49'07.869"W	4.74	
17877.00	88.860	176.300	7470.40	9753.75	-9754.07	-1211.47	1691084.81	14559887.77	40°05'27.261"N	104°49'07.806"W	1.30	
17966.00	86.890	174.540	7473.70	9842.40	-9842.72	-1204.37	1691092.09	14559799.17	40°05'26.385"N	104°49'07.714"W	2.97	
18056.00	88.310	176.190	7477.47	9932.03	-9932.34	-1197.10	1691099.54	14559709.60	40°05'25.499"N	104°49'07.621"W	2.42	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (247 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS ["/100ft]	Comments
18145.00	88.490	180.040	7479.95	10020.93	-10021.24	-1194.17	1691102.65	14559620.74	40°05'24.620"N	104°49'07.583"W	4.33	
18235.00	89.910	181.740	7481.21	10110.90	-10111.22	-1195.57	1691101.44	14559530.80	40°05'23.731"N	104°49'07.601"W	2.46	
18324.00	90.090	182.180	7481.21	10199.85	-10200.16	-1198.62	1691098.58	14559441.88	40°05'22.852"N	104°49'07.640"W	0.53	
18414.00	89.880	185.320	7481.23	10289.64	-10289.96	-1204.50	1691092.88	14559352.11	40°05'21.965"N	104°49'07.716"W	3.50	
18503.00	89.880	184.660	7481.42	10378.30	-10378.62	-1212.24	1691085.33	14559263.47	40°05'21.089"N	104°49'07.815"W	0.74	LAST BHGE MWD+IFR1+MSA SURVEY
18840.00†	89.880	184.660	7482.13	10714.18	-10714.51	-1239.62	1691058.66	14558927.66	40°05'17.769"N	104°49'08.167"W	0.00	ENTER RADIUS TOE (331'FSL & 2351'FEL,SEC.31) 40.0882693 -104.8189353
18960.00	89.880	184.660	7482.38	10833.78	-10834.11	-1249.37	1691049.17	14558808.08	40°05'16.587"N	104°49'08.293"W	0.00	PTB (211'FSL & 2360'FEL,SEC.31) 40.0879410 -104.8189701

HOLE & CASING SECTIONS - Ref Wellbore: CASTLE PINES 19-4HZ AWB Ref Wellpath: CASTLE PINES 19-4HZ AWP									
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]
9.625in Casing Surface	26.00	1893.00	1867.00	26.00	1847.16	0.00	0.00	218.72	-254.69

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.30-T2N-R66W	2.00	0.30	-45.06	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
SEC.31-T2N-R66W	2.00	0.30	-45.06	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
CASTLE PINES 19-4HZ HEEL REV-1(577'FSL & 2324'FEL,SEC.19)	7430.00	93.61	-1231.44	1691044.31	14569731.46	40°07'04.577"N	104°49'08.069"W	point
CASTLE PINES 19-4HZ INT. TARGET@7000"VS	7463.00	-7000.32	-1229.61	1691060.93	14562640.37	40°05'54.474"N	104°49'08.041"W	point
CASTLE PINES 19-4HZ BHL REV-1(201'FSL & 2340'FEL,SEC.31)	7473.00	-10844.29	-1228.63	1691069.93	14558797.95	40°05'16.487"N	104°49'08.026"W	point
CASTLE PINES 19-4HZ LANDBOX	7473.00	0.00	0.00	1692275.45	14569640.45	40°07'03.652"N	104°48'52.218"W	polygon
CASTLE PINES 19-4HZ RADIUS 1	7473.00	-483.02	-1546.97	1690730.10	14569154.40	40°06'58.878"N	104°49'12.130"W	polygon
CASTLE PINES 19-4HZ RADIUS 2	7473.00	-11044.63	-1557.40	1690741.70	14558597.00	40°05'14.507"N	104°49'12.256"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: CASTLE PINES 19-4HZ AWB					Ref Wellpath: CASTLE PINES 19-4HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
26.00	1850.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)		Custom APC ISCWSA Rev-2 MWD+IFR1 <136 - 1850>		CASTLE PINES 19-4HZ AWB
1850.00	18503.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)		BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1969 - 18503>		CASTLE PINES 19-4HZ AWB
18503.00	18960.00	Blind Drilling (std)		Projection to bit		CASTLE PINES 19-4HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#04 CASTLE PINES 19-4HZ(484'FSL & 1093'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-4HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-4HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
136.00	0.530	241.180	136.00	FIRST SURFACE MWD+IFR1 SURVEY
1850.00	18.500	311.490	1806.40	LAST SURFACE MWD+IFR1 SURVEY
1969.00	18.870	312.410	1919.13	FIRST BHGE MWD+IFR1+MSA SURVEY
7020.00	2.306	175.814	6793.04	KOP
7734.00	65.175	180.221	7358.48	ENTER LANDBOX (854'FSL & 2309'FEL,SEC.19) 40.1186962 -104.8188507
8020.00	88.644	182.802	7420.61	LANDING (577'FSL & 2318'FEL,SEC.19) 40.1179371 -104.8188861
8924.00	89.982	182.276	7422.25	EXIT RADIUS HEEL (326'FNL & 2314'FEL,SEC.30) 40.1154570 -104.8188677
18503.00	89.880	184.660	7481.42	LAST BHGE MWD+IFR1+MSA SURVEY
18840.00	89.880	184.660	7482.13	ENTER RADIUS TOE (331'FSL & 2351'FEL,SEC.31) 40.0882693 -104.8189353
18960.00	89.880	184.660	7482.38	PTB (211'FSL & 2360'FEL,SEC.31) 40.0879410 -104.8189701