

Location:	COLORADO	Slot:	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL, SEC.19)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	CASTLE PINES 19-8HZ
Facility:	SEC.19-T2N-R66W	Wellbore:	CASTLE PINES 19-8HZ PWB



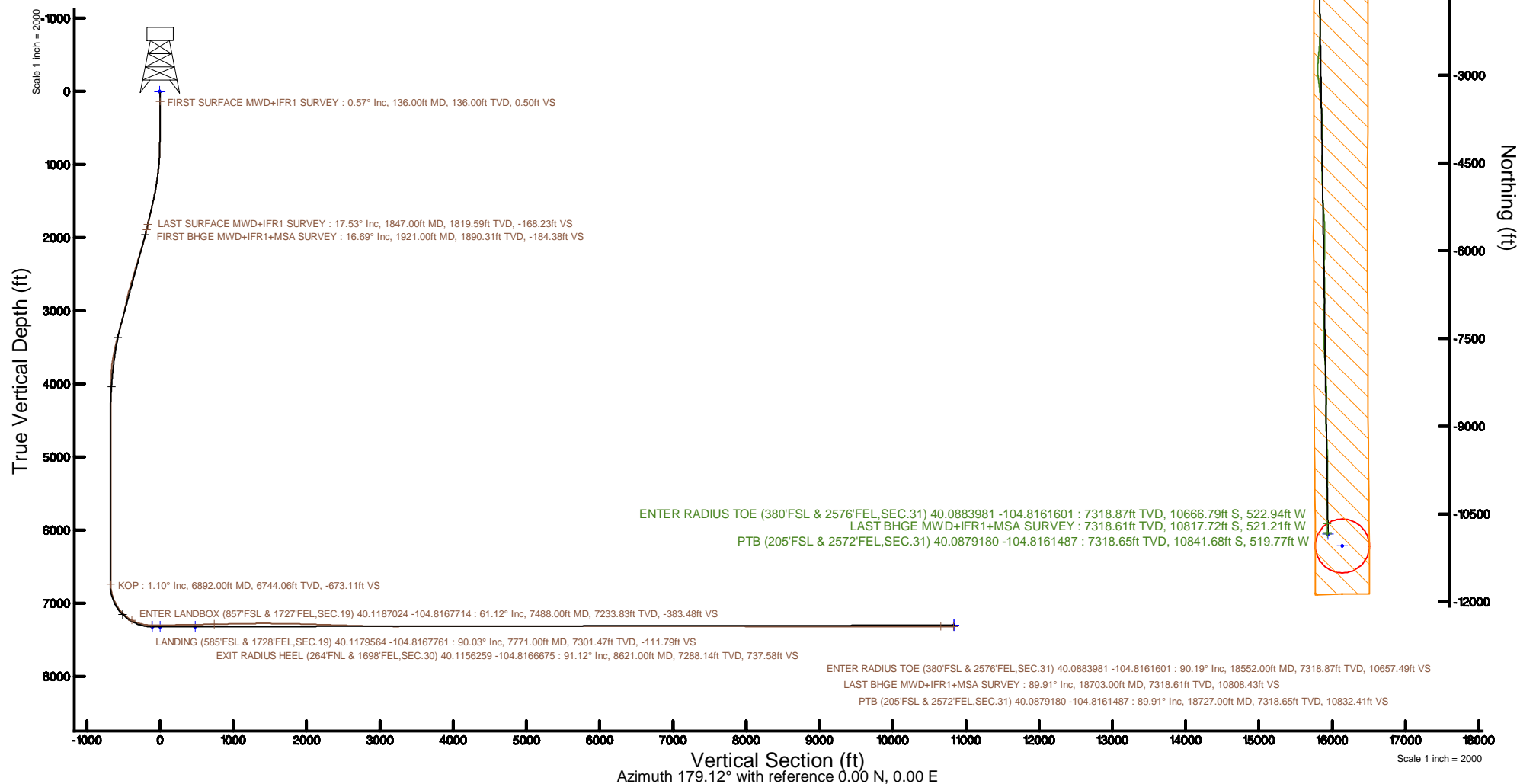
Plot reference wellpit is CASTLE PINES 19-8KZ PWP Rev-B.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD 564 (26) (RT)	* = WellPath was transformed from a different geoidic datum
Measured depths are referenced to PD 564 (26) (RT)	North Reference: True north
PD 564 (26) (RT) to Mean Sea Level: 4902 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#08 CASTLE PINES 19-8KZ(484FSL & 1033FEL,SEC.19)): 0 feet	Depth: in feet
Coordinates are in feet referenced to Slot	Created by: pairsnet on 2018-12-06
	Database: WA DEN Anadarko Defn

Scale 1 inch = 2500

Easting (ft)

SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)

KOP : 6744.06ft TVD, 662.43ft N, 699.97ft W  
ENTER LANDBOX (857\FSL & 1727\FEL,SEC.19) 40.1187024 -104.8167714 : 7233.83ft TVD, 372.85ft N, 693.67ft W  
FIRST BHGE MWD+HFR1+MSA SURVEY : 1890.31ft TVD, 181.91ft N, 161.75ft W  
LAST SURFACE MWD+HFR1 SURVEY : 1819.59ft TVD, 165.99ft N, 146.90ft W  
LANDING (585\FSL & 1728\FEL,SEC.19) 40.1179564 -104.8167761 : 7301.47ft TVD, 101.12ft N, 695.00ft W  
FIRST SURFACE MWD+HFR1 SURVEY : 136.00ft TVD, 0.50ft S, 0.22ft E  
EXIT RADIUS HEEL (264\FNL & 1698\FEL,SEC.30) 40.1156259 -104.8166675 : 7288.14ft TVD, 747.89ft N, 664.67ft W



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ 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	12/6/2018 at 8:40 AM
Convergence at slot	0.12° East	Database/Source file	WA_DEN_Anadarko_Defn/CASTLE_PINES_19-8HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1.11	104.88	1692335.24	14569639.77	40°07'03.644"N	104°48'51.448"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#08 CASTLE PINES 19-8HZ(484'FSL & 1033'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	179.12°

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Area	COLORADO	Well	CASTLE PINES 19-8HZ
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Facility	SEC.19-T2N-R66W		

WELLPATH DATA (251 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	156.100	0.00	0.00	0.00	0.00	1692335.24	14569639.77	40°07'03.644°N	104°48'51.448°W	0.00	
26.00	0.000	156.100	26.00	0.00	0.00	0.00	1692335.24	14569639.77	40°07'03.644°N	104°48'51.448°W	0.00	
136.00	0.570	156.100	136.00	0.50	-0.50	0.22	1692335.47	14569639.27	40°07'03.639°N	104°48'51.445°W	0.52	FIRST SURFACE MWD+IFR1 SURVEY
168.00	0.660	153.020	168.00	0.82	-0.81	0.37	1692335.62	14569638.96	40°07'03.636°N	104°48'51.443°W	0.30	
199.00	0.830	165.330	198.99	1.19	-1.19	0.51	1692335.75	14569638.58	40°07'03.632°N	104°48'51.441°W	0.75	
231.00	0.660	166.380	230.99	1.60	-1.59	0.61	1692335.86	14569638.18	40°07'03.628°N	104°48'51.440°W	0.53	
263.00	0.480	143.270	262.99	1.89	-1.88	0.73	1692335.98	14569637.89	40°07'03.625°N	104°48'51.439°W	0.90	
295.00	0.220	150.120	294.99	2.05	-2.04	0.84	1692336.09	14569637.73	40°07'03.624°N	104°48'51.437°W	0.82	
326.00	0.310	13.800	325.99	2.02	-2.01	0.89	1692336.14	14569637.76	40°07'03.624°N	104°48'51.436°W	1.59	
358.00	0.480	53.790	357.99	1.86	-1.84	1.02	1692336.27	14569637.93	40°07'03.626°N	104°48'51.435°W	0.98	
390.00	0.570	51.070	389.99	1.68	-1.66	1.25	1692336.50	14569638.11	40°07'03.628°N	104°48'51.432°W	0.29	
422.00	0.480	23.650	421.99	1.46	-1.44	1.43	1692336.68	14569638.33	40°07'03.630°N	104°48'51.430°W	0.82	
454.00	0.700	20.920	453.98	1.16	-1.14	1.56	1692336.80	14569638.63	40°07'03.633°N	104°48'51.428°W	0.69	
486.00	0.880	26.990	485.98	0.76	-0.73	1.74	1692336.98	14569639.04	40°07'03.637°N	104°48'51.426°W	0.62	
517.00	0.880	28.740	516.98	0.34	-0.31	1.96	1692337.20	14569639.46	40°07'03.641°N	104°48'51.423°W	0.09	
549.00	0.880	8.440	548.97	-0.11	0.14	2.11	1692337.36	14569639.92	40°07'03.645°N	104°48'51.421°W	0.97	
581.00	1.320	2.550	580.97	-0.72	0.76	2.17	1692337.41	14569640.53	40°07'03.651°N	104°48'51.420°W	1.42	
612.00	0.970	335.390	611.96	-1.32	1.35	2.07	1692337.31	14569641.12	40°07'03.657°N	104°48'51.421°W	2.05	
644.00	0.920	325.900	643.96	-1.78	1.81	1.82	1692337.06	14569641.58	40°07'03.662°N	104°48'51.425°W	0.51	
676.00	1.320	306.480	675.95	-2.22	2.24	1.38	1692336.61	14569642.01	40°07'03.666°N	104°48'51.430°W	1.71	
707.00	1.630	304.110	706.94	-2.69	2.70	0.72	1692335.96	14569642.47	40°07'03.671°N	104°48'51.439°W	1.02	
739.00	1.630	314.390	738.93	-3.27	3.28	0.02	1692335.26	14569643.04	40°07'03.676°N	104°48'51.448°W	0.91	
771.00	1.850	312.720	770.91	-3.95	3.94	-0.68	1692334.55	14569643.71	40°07'03.683°N	104°48'51.457°W	0.71	
803.00	2.420	312.810	802.89	-4.78	4.75	-1.56	1692333.68	14569644.51	40°07'03.691°N	104°48'51.468°W	1.78	
834.00	3.300	311.140	833.85	-5.83	5.79	-2.71	1692332.52	14569645.54	40°07'03.701°N	104°48'51.483°W	2.85	
866.00	3.690	309.380	865.79	-7.11	7.04	-4.20	1692331.03	14569646.80	40°07'03.714°N	104°48'51.502°W	1.26	
898.00	4.220	315.970	897.72	-8.63	8.54	-5.81	1692329.41	14569648.30	40°07'03.728°N	104°48'51.523°W	2.18	
930.00	4.920	323.180	929.61	-10.60	10.49	-7.46	1692327.77	14569650.24	40°07'03.748°N	104°48'51.544°W	2.83	
961.00	5.580	326.520	960.48	-12.95	12.81	-9.08	1692326.14	14569652.55	40°07'03.771°N	104°48'51.565°W	2.35	
993.00	5.710	324.500	992.33	-15.57	15.40	-10.87	1692324.35	14569655.14	40°07'03.796°N	104°48'51.588°W	0.74	

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Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (251 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
1025.00	6.460	324.850	1024.15	-18.37	18.17	-12.83	1692322.38	14569657.90	40°07'03.824"N	104°48'51.613"W	2.35	
1057.00	7.470	327.220	1055.91	-21.62	21.39	-14.99	1692320.22	14569661.12	40°07'03.855"N	104°48'51.641"W	3.28	
1088.00	8.170	325.730	1086.62	-25.17	24.91	-17.32	1692317.88	14569664.63	40°07'03.890"N	104°48'51.671"W	2.35	
1120.00	8.960	325.290	1118.27	-29.14	28.84	-20.02	1692315.17	14569668.55	40°07'03.929"N	104°48'51.706"W	2.48	
1152.00	9.230	322.470	1149.86	-33.27	32.92	-23.00	1692312.18	14569672.62	40°07'03.969"N	104°48'51.744"W	1.63	
1184.00	9.710	321.070	1181.43	-37.45	37.05	-26.26	1692308.92	14569676.75	40°07'04.010"N	104°48'51.786"W	1.66	
1215.00	10.240	320.630	1211.96	-41.67	41.22	-29.65	1692305.52	14569680.91	40°07'04.051"N	104°48'51.830"W	1.73	
1247.00	11.030	320.980	1243.41	-46.30	45.79	-33.38	1692301.78	14569685.47	40°07'04.097"N	104°48'51.878"W	2.48	
1279.00	11.210	319.050	1274.81	-51.09	50.52	-37.35	1692297.80	14569690.19	40°07'04.143"N	104°48'51.929"W	1.29	
1310.00	11.870	319.660	1305.18	-55.86	55.23	-41.39	1692293.76	14569694.89	40°07'04.190"N	104°48'51.981"W	2.17	
1342.00	12.960	321.240	1336.43	-61.23	60.53	-45.77	1692289.37	14569700.18	40°07'04.242"N	104°48'52.037"W	3.57	
1373.00	13.620	318.780	1366.60	-66.76	65.99	-50.35	1692284.78	14569705.63	40°07'04.296"N	104°48'52.096"W	2.80	
1405.00	14.410	316.760	1397.65	-72.57	71.73	-55.56	1692279.56	14569711.35	40°07'04.353"N	104°48'52.163"W	2.90	
1437.00	14.990	316.320	1428.60	-78.55	77.62	-61.14	1692273.96	14569717.23	40°07'04.411"N	104°48'52.235"W	1.85	
1468.00	15.340	314.830	1458.52	-84.43	83.41	-66.82	1692268.28	14569723.00	40°07'04.468"N	104°48'52.308"W	1.69	
1500.00	16.220	314.650	1489.32	-90.65	89.53	-73.00	1692262.08	14569729.11	40°07'04.529"N	104°48'52.388"W	2.75	
1532.00	17.360	315.360	1519.95	-97.28	96.07	-79.54	1692255.54	14569735.63	40°07'04.593"N	104°48'52.472"W	3.62	
1563.00	18.150	316.320	1549.48	-104.17	102.86	-86.12	1692248.94	14569742.40	40°07'04.660"N	104°48'52.557"W	2.72	
1594.00	18.330	316.760	1578.92	-111.31	109.90	-92.79	1692242.26	14569749.43	40°07'04.730"N	104°48'52.642"W	0.73	
1626.00	19.030	317.640	1609.23	-118.94	117.42	-99.76	1692235.28	14569756.93	40°07'04.804"N	104°48'52.732"W	2.36	
1658.00	19.200	316.590	1639.47	-126.73	125.10	-106.89	1692228.14	14569764.59	40°07'04.880"N	104°48'52.824"W	1.20	
1690.00	18.330	316.150	1669.77	-134.29	132.55	-113.99	1692221.02	14569772.02	40°07'04.954"N	104°48'52.915"W	2.75	
1721.00	17.750	315.800	1699.24	-141.29	139.45	-120.66	1692214.34	14569778.91	40°07'05.022"N	104°48'53.001"W	1.90	
1753.00	17.620	314.650	1729.73	-148.30	146.35	-127.51	1692207.48	14569785.79	40°07'05.090"N	104°48'53.089"W	1.16	
1785.00	16.920	315.360	1760.29	-155.11	153.07	-134.23	1692200.75	14569792.49	40°07'05.157"N	104°48'53.176"W	2.28	
1817.00	16.740	314.920	1790.92	-161.78	159.64	-140.76	1692194.21	14569799.05	40°07'05.222"N	104°48'53.260"W	0.69	
1847.00	17.530	317.030	1819.59	-168.23	165.99	-146.90	1692188.06	14569805.39	40°07'05.284"N	104°48'53.339"W	3.35	LAST SURFACE MWD+IFR1 SURVEY
1921.00	16.690	316.960	1890.31	-184.38	181.91	-161.75	1692173.18	14569821.27	40°07'05.442"N	104°48'53.530"W	1.14	FIRST BHGE MWD+IFR1+MSA SURVEY
1966.00	16.910	319.150	1933.39	-194.19	191.59	-170.44	1692164.47	14569830.92	40°07'05.537"N	104°48'53.642"W	1.49	
2056.00	17.200	327.750	2019.45	-215.58	212.75	-186.10	1692148.77	14569852.04	40°07'05.746"N	104°48'53.844"W	2.82	

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Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
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### WELLPATH DATA (251 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
2145.00	19.180	330.900	2104.00	-239.70	236.65	-200.24	1692134.59	14569875.91	40°07'05.983"N	104°48'54.025"W	2.48	
2234.00	19.580	327.390	2187.96	-265.27	261.99	-215.39	1692119.40	14569901.20	40°07'06.233"N	104°48'54.220"W	1.38	
2324.00	19.330	328.390	2272.82	-290.90	287.38	-231.32	1692103.42	14569926.55	40°07'06.484"N	104°48'54.426"W	0.46	
2413.00	19.810	325.360	2356.68	-316.10	312.33	-247.61	1692087.08	14569951.46	40°07'06.730"N	104°48'54.635"W	1.26	
2503.00	19.180	323.720	2441.52	-340.83	336.80	-265.03	1692069.62	14569975.88	40°07'06.972"N	104°48'54.859"W	0.93	
2592.00	19.310	325.150	2525.55	-364.95	360.66	-282.09	1692052.51	14569999.69	40°07'07.208"N	104°48'55.079"W	0.55	
2681.00	19.050	330.150	2609.61	-389.87	385.34	-297.73	1692036.83	14570024.33	40°07'07.452"N	104°48'55.280"W	1.87	
2771.00	19.460	325.340	2694.58	-415.18	410.41	-313.57	1692020.95	14570049.35	40°07'07.700"N	104°48'55.484"W	1.82	
2860.00	19.700	313.720	2778.47	-438.04	432.98	-332.85	1692001.63	14570071.88	40°07'07.923"N	104°48'55.732"W	4.38	
2949.00	19.560	303.040	2862.32	-456.90	451.47	-356.19	1691978.26	14570090.32	40°07'08.105"N	104°48'56.033"W	4.03	
3038.00	19.360	304.990	2946.24	-473.86	468.06	-380.76	1691953.66	14570106.84	40°07'08.269"N	104°48'56.349"W	0.76	
3128.00	19.340	311.670	3031.17	-492.68	486.52	-404.12	1691930.27	14570125.25	40°07'08.452"N	104°48'56.650"W	2.46	
3217.00	18.480	317.640	3115.37	-513.21	506.74	-424.63	1691909.73	14570145.42	40°07'08.652"N	104°48'56.914"W	2.38	
3307.00	19.310	321.890	3200.52	-535.75	528.99	-443.43	1691890.89	14570167.62	40°07'08.872"N	104°48'57.156"W	1.79	
3396.00	18.920	321.550	3284.62	-558.90	551.87	-461.48	1691872.80	14570190.45	40°07'09.098"N	104°48'57.388"W	0.46	
3485.00	19.210	320.580	3368.73	-581.79	574.48	-479.75	1691854.49	14570213.02	40°07'09.321"N	104°48'57.623"W	0.48	
3575.00	19.310	312.450	3453.71	-603.59	595.97	-500.14	1691834.06	14570234.45	40°07'09.533"N	104°48'57.886"W	2.98	
3664.00	19.050	303.440	3537.79	-621.88	613.91	-523.12	1691811.05	14570252.34	40°07'09.711"N	104°48'58.182"W	3.34	
3753.00	18.850	305.910	3621.97	-638.68	630.35	-546.89	1691787.26	14570268.72	40°07'09.873"N	104°48'58.488"W	0.93	
3843.00	17.110	293.690	3707.60	-652.90	644.20	-570.80	1691763.33	14570282.52	40°07'10.010"N	104°48'58.795"W	4.60	
3933.00	15.320	284.050	3794.03	-661.47	652.41	-594.46	1691739.66	14570290.67	40°07'10.091"N	104°48'59.100"W	3.59	
4022.00	13.710	275.270	3880.20	-665.63	656.23	-616.37	1691717.75	14570294.45	40°07'10.129"N	104°48'59.382"W	3.06	
4111.00	11.480	269.420	3967.06	-666.81	657.11	-635.73	1691698.39	14570295.29	40°07'10.138"N	104°48'59.631"W	2.88	
4200.00	9.930	273.690	4054.51	-667.47	657.51	-652.25	1691681.88	14570295.66	40°07'10.142"N	104°48'59.844"W	1.96	
4290.00	8.000	274.110	4143.40	-668.63	658.46	-666.24	1691667.90	14570296.57	40°07'10.151"N	104°49'00.024"W	2.15	
4379.00	5.920	281.780	4231.74	-670.17	659.84	-676.91	1691657.23	14570297.93	40°07'10.165"N	104°49'00.161"W	2.55	
4468.00	4.490	289.560	4320.37	-672.40	661.95	-684.69	1691649.45	14570300.02	40°07'10.185"N	104°49'00.261"W	1.79	
4557.00	2.730	250.790	4409.21	-672.95	662.42	-689.97	1691644.16	14570300.48	40°07'10.190"N	104°49'00.329"W	3.27	
4647.00	0.930	170.150	4499.17	-671.55	660.99	-691.87	1691642.27	14570299.05	40°07'10.176"N	104°49'00.354"W	3.04	
4736.00	0.250	196.350	4588.16	-670.65	660.09	-691.80	1691642.34	14570298.15	40°07'10.167"N	104°49'00.353"W	0.80	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (251 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
4826.00	0.000	8.180	4678.16	-670.46	659.90	-691.86	1691642.28	14570297.96	40°07'10.165"N	104°49'00.354"W	0.28	
4915.00	0.030	6.220	4767.16	-670.49	659.93	-691.86	1691642.29	14570297.99	40°07'10.165"N	104°49'00.354"W	0.03	
5005.00	0.060	322.100	4857.16	-670.55	659.99	-691.88	1691642.26	14570298.05	40°07'10.166"N	104°49'00.354"W	0.05	
5094.00	0.040	238.290	4946.16	-670.57	660.01	-691.94	1691642.21	14570298.07	40°07'10.166"N	104°49'00.355"W	0.08	
5183.00	0.040	238.870	5035.16	-670.54	659.98	-691.99	1691642.15	14570298.03	40°07'10.166"N	104°49'00.355"W	0.00	
5273.00	0.070	273.980	5125.16	-670.53	659.96	-692.07	1691642.07	14570298.02	40°07'10.166"N	104°49'00.356"W	0.05	
5361.00	0.060	235.960	5213.16	-670.51	659.94	-692.16	1691641.98	14570298.00	40°07'10.166"N	104°49'00.358"W	0.05	
5450.00	0.030	47.910	5302.16	-670.50	659.93	-692.19	1691641.96	14570297.99	40°07'10.165"N	104°49'00.358"W	0.10	
5540.00	0.040	295.100	5392.16	-670.53	659.96	-692.20	1691641.95	14570298.02	40°07'10.166"N	104°49'00.358"W	0.07	
5629.00	0.040	331.760	5481.16	-670.57	660.00	-692.24	1691641.90	14570298.06	40°07'10.166"N	104°49'00.359"W	0.03	
5718.00	0.060	278.110	5570.16	-670.60	660.03	-692.30	1691641.84	14570298.09	40°07'10.166"N	104°49'00.359"W	0.05	
5807.00	0.130	272.670	5659.16	-670.62	660.05	-692.45	1691641.70	14570298.10	40°07'10.167"N	104°49'00.361"W	0.08	
5897.00	0.030	297.980	5749.16	-670.63	660.06	-692.57	1691641.57	14570298.12	40°07'10.167"N	104°49'00.363"W	0.12	
5986.00	0.100	294.680	5838.16	-670.68	660.11	-692.66	1691641.48	14570298.16	40°07'10.167"N	104°49'00.364"W	0.08	
6076.00	0.090	255.850	5928.16	-670.70	660.12	-692.80	1691641.34	14570298.18	40°07'10.167"N	104°49'00.366"W	0.07	
6165.00	0.720	288.220	6017.16	-670.86	660.28	-693.40	1691640.74	14570298.33	40°07'10.169"N	104°49'00.374"W	0.73	
6254.00	0.040	267.820	6106.16	-671.04	660.45	-693.96	1691640.18	14570298.51	40°07'10.171"N	104°49'00.381"W	0.77	
6344.00	0.370	245.570	6196.16	-670.93	660.33	-694.26	1691639.89	14570298.38	40°07'10.169"N	104°49'00.385"W	0.37	
6433.00	2.280	299.110	6285.13	-671.70	661.07	-696.07	1691638.08	14570299.12	40°07'10.177"N	104°49'00.408"W	2.34	
6522.00	1.640	274.250	6374.08	-672.70	662.03	-698.88	1691635.26	14570300.07	40°07'10.186"N	104°49'00.444"W	1.18	
6611.00	0.150	13.240	6463.07	-672.92	662.24	-700.13	1691634.01	14570300.28	40°07'10.188"N	104°49'00.460"W	1.88	
6701.00	0.030	66.820	6553.07	-673.05	662.36	-700.08	1691634.06	14570300.40	40°07'10.189"N	104°49'00.459"W	0.15	
6790.00	0.030	97.940	6642.07	-673.05	662.37	-700.03	1691634.11	14570300.41	40°07'10.189"N	104°49'00.459"W	0.02	
6879.00	0.220	11.910	6731.07	-673.22	662.53	-699.98	1691634.17	14570300.57	40°07'10.191"N	104°49'00.458"W	0.25	
6892.00†	1.098	180.135	6744.06	-673.11	662.43	-699.97	1691634.17	14570300.47	40°07'10.190"N	104°49'00.458"W	10.11	KOP
6968.00	8.780	181.850	6819.73	-666.58	655.90	-700.16	1691634.00	14570293.94	40°07'10.126"N	104°49'00.461"W	10.11	
7057.00	17.220	181.780	6906.37	-646.60	635.90	-700.79	1691633.41	14570273.95	40°07'09.928"N	104°49'00.469"W	9.48	
7147.00	25.560	179.460	6990.09	-613.82	603.11	-701.02	1691633.24	14570241.18	40°07'09.604"N	104°49'00.472"W	9.31	
7236.00	34.640	177.170	7067.02	-569.25	558.56	-699.59	1691634.77	14570196.64	40°07'09.164"N	104°49'00.453"W	10.28	
7325.00	44.070	177.840	7135.76	-512.90	502.24	-697.17	1691637.31	14570140.35	40°07'08.607"N	104°49'00.422"W	10.61	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWP
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (251 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
7414.00	53.890	178.020	7194.10	-445.84	435.21	-694.75	1691639.86	14570073.35	40°07'07.945"N	104°49'00.391"W	11.03	
7488.00†	61.121	179.910	7233.83	-383.48	372.85	-693.67	1691641.08	14570011.02	40°07'07.328"N	104°49'00.377"W	10.01	ENTER LANDBOX (857'FSL & 1727'FEL,SEC.19) 40.1187024 -104.8167714
7503.00	62.590	180.260	7240.90	-370.25	359.63	-693.69	1691641.08	14569997.80	40°07'07.198"N	104°49'00.377"W	10.01	
7592.00	72.810	179.630	7274.63	-288.03	277.39	-693.59	1691641.35	14569915.60	40°07'06.385"N	104°49'00.376"W	11.50	
7681.00	81.220	180.140	7294.61	-201.39	190.75	-693.43	1691641.70	14569828.99	40°07'05.529"N	104°49'00.374"W	9.47	
7771.00	90.030	181.860	7301.47	-111.79	101.12	-695.00	1691640.31	14569739.39	40°07'04.643"N	104°49'00.394"W	9.97	LANDING (585'FSL & 1728'FEL,SEC.19) 40.1179564 -104.8167761
7860.00	90.120	179.370	7301.35	-22.83	12.13	-695.95	1691639.55	14569650.44	40°07'03.764"N	104°49'00.406"W	2.80	
7949.00	91.080	176.770	7300.42	66.14	-76.81	-692.96	1691642.73	14569561.54	40°07'02.885"N	104°49'00.368"W	3.11	
8038.00	90.920	175.940	7298.87	155.03	-165.61	-687.30	1691648.57	14569472.78	40°07'02.007"N	104°49'00.295"W	0.95	
8128.00	90.990	176.030	7297.37	244.88	-255.38	-681.00	1691655.05	14569383.07	40°07'01.120"N	104°49'00.214"W	0.13	
8216.00	90.950	176.960	7295.88	332.77	-343.20	-675.62	1691660.61	14569295.29	40°07'00.252"N	104°49'00.144"W	1.06	
8306.00	91.020	177.780	7294.33	422.72	-433.09	-671.49	1691664.93	14569205.44	40°06'59.364"N	104°49'00.091"W	0.91	
8395.00	91.140	180.430	7292.65	511.69	-522.06	-670.10	1691666.50	14569116.52	40°06'58.485"N	104°49'00.073"W	2.98	
8484.00	91.110	179.530	7290.90	600.67	-611.04	-670.07	1691666.72	14569027.57	40°06'57.606"N	104°49'00.073"W	1.01	
8573.00	91.200	177.110	7289.11	689.63	-699.98	-667.46	1691669.51	14568938.68	40°06'56.727"N	104°49'00.039"W	2.72	
8621.00†	91.120	176.214	7288.14	737.58	-747.89	-664.67	1691672.41	14568890.79	40°06'56.253"N	104°49'00.003"W	1.87	EXIT RADIUS HEEL (264'FNL & 1698'FEL,SEC.30) 40.1156259 -104.8166675
8663.00	91.050	175.430	7287.34	779.50	-789.77	-661.61	1691675.55	14568848.94	40°06'55.839"N	104°48'59.964"W	1.87	
8752.00	91.050	176.600	7285.71	868.35	-878.54	-655.42	1691681.92	14568760.22	40°06'54.962"N	104°48'59.884"W	1.31	
8841.00	91.020	178.450	7284.10	957.30	-967.43	-651.58	1691685.94	14568671.36	40°06'54.084"N	104°48'59.835"W	2.08	
8930.00	91.230	179.370	7282.36	1046.28	-1056.40	-649.89	1691687.82	14568582.43	40°06'53.204"N	104°48'59.813"W	1.06	
9020.00	91.170	178.620	7280.47	1136.26	-1146.37	-648.31	1691689.59	14568492.51	40°06'52.315"N	104°48'59.792"W	0.84	
9109.00	90.980	178.220	7278.80	1225.24	-1235.32	-645.86	1691692.23	14568403.60	40°06'51.436"N	104°48'59.761"W	0.50	
9198.00	90.250	179.030	7277.85	1314.23	-1324.28	-643.72	1691694.55	14568314.67	40°06'50.557"N	104°48'59.733"W	1.23	
9287.00	90.250	179.650	7277.46	1403.23	-1413.28	-642.70	1691695.76	14568225.72	40°06'49.678"N	104°48'59.720"W	0.70	
9376.00	89.540	181.050	7277.62	1492.20	-1502.27	-643.24	1691695.40	14568136.75	40°06'48.798"N	104°48'59.727"W	1.76	
9466.00	88.800	181.500	7278.93	1582.13	-1592.24	-645.24	1691693.59	14568046.82	40°06'47.909"N	104°48'59.753"W	0.96	
9555.00	88.770	184.980	7280.81	1670.87	-1681.06	-650.27	1691688.75	14567958.02	40°06'47.031"N	104°48'59.818"W	3.91	
9644.00	89.260	182.240	7282.34	1759.57	-1769.86	-655.87	1691683.33	14567869.24	40°06'46.154"N	104°48'59.890"W	3.13	
9734.00	89.140	178.400	7283.60	1849.53	-1859.84	-656.37	1691683.02	14567779.30	40°06'45.265"N	104°48'59.896"W	4.27	
9823.00	88.950	176.490	7285.08	1938.47	-1948.73	-652.41	1691687.17	14567690.45	40°06'44.386"N	104°48'59.845"W	2.16	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (251 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
9912.00	87.940	177.400	7287.50	2027.37	-2037.57	-647.67	1691692.09	14567601.66	40°06'43.508"N	104°48'59.784"W	1.53	
10002.00	88.150	179.580	7290.57	2117.31	-2127.48	-645.30	1691694.65	14567511.79	40°06'42.620"N	104°48'59.753"W	2.43	
10091.00	88.030	181.230	7293.54	2206.23	-2216.43	-645.92	1691694.21	14567422.88	40°06'41.741"N	104°48'59.761"W	1.86	
10180.00	88.180	181.900	7296.48	2295.10	-2305.35	-648.35	1691691.96	14567333.99	40°06'40.862"N	104°48'59.793"W	0.77	
10270.00	88.210	182.960	7299.31	2384.91	-2395.22	-652.17	1691688.34	14567244.15	40°06'39.974"N	104°48'59.842"W	1.18	
10359.00	88.030	184.290	7302.23	2473.58	-2483.99	-657.79	1691682.90	14567155.40	40°06'39.097"N	104°48'59.914"W	1.51	
10448.00	88.030	184.400	7305.29	2562.16	-2572.68	-664.53	1691676.35	14567066.73	40°06'38.220"N	104°49'00.001"W	0.12	
10538.00	88.580	185.600	7307.96	2651.65	-2662.30	-672.37	1691668.70	14566977.13	40°06'37.335"N	104°49'00.102"W	1.47	
10627.00	88.150	184.410	7310.50	2740.14	-2750.92	-680.13	1691661.13	14566888.53	40°06'36.459"N	104°49'00.202"W	1.42	
10717.00	89.290	184.200	7312.51	2829.75	-2840.64	-686.89	1691654.56	14566798.83	40°06'35.572"N	104°49'00.288"W	1.29	
10806.00	89.320	179.310	7313.59	2918.62	-2929.57	-689.61	1691652.03	14566709.93	40°06'34.694"N	104°49'00.323"W	5.49	
10895.00	89.170	172.190	7314.76	3007.40	-3018.26	-683.02	1691658.80	14566621.29	40°06'33.817"N	104°49'00.239"W	8.00	
10985.00	88.890	171.670	7316.28	3096.68	-3107.35	-670.39	1691671.61	14566532.26	40°06'32.937"N	104°49'00.076"W	0.66	
11074.00	88.920	173.670	7317.98	3185.10	-3195.61	-659.04	1691683.14	14566444.07	40°06'32.065"N	104°48'59.930"W	2.25	
11163.00	91.390	175.620	7317.74	3273.81	-3284.21	-650.73	1691691.63	14566355.52	40°06'31.189"N	104°48'59.823"W	3.54	
11253.00	90.150	174.450	7316.53	3363.57	-3373.86	-642.94	1691699.60	14566265.92	40°06'30.303"N	104°48'59.723"W	1.89	
11342.00	90.220	174.410	7316.25	3452.27	-3462.44	-634.30	1691708.42	14566177.39	40°06'29.428"N	104°48'59.611"W	0.09	
11432.00	90.220	174.080	7315.90	3541.95	-3551.98	-625.28	1691717.63	14566087.90	40°06'28.543"N	104°48'59.495"W	0.37	
11521.00	90.060	175.550	7315.68	3630.69	-3640.61	-617.24	1691725.86	14565999.32	40°06'27.667"N	104°48'59.392"W	1.66	
11611.00	90.090	178.590	7315.57	3720.63	-3730.49	-612.64	1691730.64	14565909.50	40°06'26.779"N	104°48'59.333"W	3.38	
11700.00	90.150	180.380	7315.38	3809.62	-3819.48	-611.84	1691731.63	14565820.54	40°06'25.899"N	104°48'59.322"W	2.01	
11790.00	90.180	179.390	7315.12	3899.61	-3909.48	-611.66	1691732.00	14565730.58	40°06'25.010"N	104°48'59.320"W	1.10	
11879.00	90.150	177.620	7314.86	3988.60	-3998.44	-609.33	1691734.50	14565641.65	40°06'24.131"N	104°48'59.290"W	1.99	
11969.00	90.120	178.020	7314.65	4078.58	-4088.38	-605.91	1691738.11	14565551.76	40°06'23.242"N	104°48'59.246"W	0.45	
12058.00	90.120	180.070	7314.47	4167.57	-4177.36	-604.43	1691739.78	14565462.82	40°06'22.363"N	104°48'59.227"W	2.30	
12148.00	90.180	181.060	7314.23	4257.54	-4267.35	-605.31	1691739.08	14565372.86	40°06'21.473"N	104°48'59.238"W	1.10	
12237.00	90.060	182.030	7314.04	4346.46	-4356.32	-607.71	1691736.87	14565283.92	40°06'20.594"N	104°48'59.269"W	1.10	
12327.00	90.120	181.040	7313.90	4436.38	-4446.29	-610.13	1691734.65	14565193.99	40°06'19.705"N	104°48'59.300"W	1.10	
12416.00	90.150	180.660	7313.69	4525.34	-4535.28	-611.45	1691733.51	14565105.03	40°06'18.826"N	104°48'59.317"W	0.43	
12506.00	90.150	179.930	7313.46	4615.32	-4625.28	-611.91	1691733.24	14565015.07	40°06'17.936"N	104°48'59.323"W	0.81	



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (251 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
12595.00	90.120	179.120	7313.25	4704.32	-4714.27	-611.17	1691734.16	14564926.11	40°06'17.057"N	104°48'59.313"W	0.91	
12685.00	90.030	178.830	7313.13	4794.32	-4804.26	-609.56	1691735.96	14564836.16	40°06'16.168"N	104°48'59.293"W	0.34	
12774.00	89.750	178.300	7313.30	4883.31	-4893.23	-607.33	1691738.37	14564747.23	40°06'15.288"N	104°48'59.264"W	0.67	
12864.00	89.780	178.250	7313.67	4973.30	-4983.19	-604.62	1691741.27	14564657.32	40°06'14.399"N	104°48'59.229"W	0.06	
12953.00	89.780	178.460	7314.01	5062.29	-5072.15	-602.07	1691744.01	14564568.39	40°06'13.520"N	104°48'59.196"W	0.24	
13043.00	89.780	178.380	7314.36	5152.28	-5162.11	-599.59	1691746.67	14564478.47	40°06'12.631"N	104°48'59.164"W	0.09	
13132.00	89.970	176.090	7314.55	5241.23	-5251.00	-595.29	1691751.15	14564389.63	40°06'11.753"N	104°48'59.109"W	2.58	
13222.00	89.820	174.160	7314.72	5331.01	-5340.67	-587.65	1691758.98	14564300.01	40°06'10.867"N	104°48'59.010"W	2.15	
13311.00	89.780	175.300	7315.03	5419.74	-5429.30	-579.47	1691767.34	14564211.44	40°06'09.991"N	104°48'58.905"W	1.28	
13400.00	89.750	177.330	7315.39	5508.63	-5518.11	-573.75	1691773.24	14564122.68	40°06'09.113"N	104°48'58.832"W	2.28	
13490.00	89.850	179.840	7315.71	5598.62	-5608.07	-571.53	1691775.65	14564032.75	40°06'08.224"N	104°48'58.803"W	2.79	
13579.00	89.820	180.390	7315.96	5687.61	-5697.07	-571.71	1691775.66	14563943.79	40°06'07.345"N	104°48'58.805"W	0.62	
13669.00	89.780	178.730	7316.28	5777.60	-5787.06	-571.02	1691776.54	14563853.83	40°06'06.455"N	104°48'58.796"W	1.84	
13758.00	89.660	179.490	7316.71	5866.60	-5876.05	-569.63	1691778.11	14563764.88	40°06'05.576"N	104°48'58.778"W	0.86	
13848.00	89.720	180.600	7317.20	5956.58	-5966.05	-569.71	1691778.22	14563674.92	40°06'04.687"N	104°48'58.779"W	1.24	
13937.00	89.850	181.760	7317.53	6045.52	-6055.03	-571.54	1691776.58	14563585.97	40°06'03.807"N	104°48'58.803"W	1.31	
14026.00	90.120	182.580	7317.56	6134.40	-6143.96	-574.91	1691773.39	14563497.07	40°06'02.928"N	104°48'58.846"W	0.97	
14116.00	90.120	182.300	7317.37	6224.25	-6233.88	-578.74	1691769.75	14563407.18	40°06'02.040"N	104°48'58.895"W	0.31	
14205.00	90.310	179.070	7317.03	6313.20	-6322.86	-579.80	1691768.87	14563318.23	40°06'01.161"N	104°48'58.909"W	3.64	
14294.00	90.280	177.050	7316.58	6402.18	-6411.81	-576.79	1691772.07	14563229.33	40°06'00.282"N	104°48'58.870"W	2.27	
14384.00	89.750	177.060	7316.55	6492.12	-6501.69	-572.17	1691776.88	14563139.49	40°05'59.393"N	104°48'58.811"W	0.59	
14473.00	89.970	179.470	7316.77	6581.10	-6590.64	-569.47	1691779.76	14563050.58	40°05'58.514"N	104°48'58.776"W	2.72	
14562.00	90.000	180.960	7316.79	6670.09	-6679.64	-569.81	1691779.61	14562961.62	40°05'57.635"N	104°48'58.780"W	1.67	
14652.00	89.910	181.540	7316.86	6760.02	-6769.61	-571.77	1691777.84	14562871.67	40°05'56.746"N	104°48'58.806"W	0.65	
14742.00	89.880	181.060	7317.03	6849.96	-6859.59	-573.81	1691775.98	14562781.73	40°05'55.857"N	104°48'58.832"W	0.53	
14831.00	89.940	181.490	7317.17	6938.89	-6948.57	-575.79	1691774.19	14562692.78	40°05'54.977"N	104°48'58.857"W	0.49	
14920.00	90.150	182.410	7317.10	7027.78	-7037.52	-578.82	1691771.35	14562603.87	40°05'54.098"N	104°48'58.896"W	1.06	
15010.00	90.120	181.690	7316.89	7117.67	-7127.46	-582.04	1691768.32	14562513.95	40°05'53.209"N	104°48'58.938"W	0.80	
15099.00	90.150	179.620	7316.68	7206.63	-7216.45	-583.06	1691767.49	14562425.00	40°05'52.330"N	104°48'58.951"W	2.33	
15189.00	90.060	177.940	7316.51	7296.62	-7306.42	-581.14	1691769.59	14562335.06	40°05'51.441"N	104°48'58.926"W	1.87	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
Facility	SEC.19-T2N-R66W		

### WELLPATH DATA (251 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
15279.00	90.120	177.300	7316.37	7386.59	-7396.34	-577.40	1691773.51	14562245.18	40°05'50.552"N	104°48'58.878"W	0.71	
15368.00	90.150	180.320	7316.16	7475.58	-7485.31	-575.56	1691775.55	14562156.25	40°05'49.673"N	104°48'58.854"W	3.39	
15458.00	90.950	180.620	7315.30	7565.55	-7575.31	-576.29	1691775.00	14562066.30	40°05'48.784"N	104°48'58.864"W	0.95	
15547.00	90.520	178.660	7314.15	7654.53	-7664.29	-575.73	1691775.74	14561977.35	40°05'47.904"N	104°48'58.856"W	2.25	
15637.00	89.170	176.440	7314.40	7744.49	-7754.20	-571.89	1691779.77	14561887.48	40°05'47.016"N	104°48'58.807"W	2.89	
15726.00	89.110	175.540	7315.73	7833.35	-7842.97	-565.66	1691786.18	14561798.76	40°05'46.139"N	104°48'58.727"W	1.01	
15815.00	89.200	176.160	7317.05	7922.19	-7931.73	-559.22	1691792.80	14561710.05	40°05'45.261"N	104°48'58.644"W	0.70	
15905.00	89.080	177.910	7318.40	8012.12	-8021.60	-554.57	1691797.64	14561620.23	40°05'44.373"N	104°48'58.584"W	1.95	
15994.00	89.230	178.060	7319.71	8101.09	-8110.53	-551.44	1691800.96	14561531.34	40°05'43.495"N	104°48'58.544"W	0.24	
16084.00	89.170	177.000	7320.97	8191.05	-8200.44	-547.56	1691805.02	14561441.47	40°05'42.606"N	104°48'58.494"W	1.18	
16173.00	89.080	177.420	7322.33	8279.99	-8289.32	-543.23	1691809.54	14561352.64	40°05'41.728"N	104°48'58.438"W	0.48	
16263.00	89.140	178.280	7323.72	8369.96	-8379.25	-539.85	1691813.10	14561262.75	40°05'40.839"N	104°48'58.394"W	0.96	
16352.00	90.090	180.050	7324.32	8458.95	-8468.23	-538.56	1691814.58	14561173.81	40°05'39.960"N	104°48'58.378"W	2.26	
16442.00	90.180	181.280	7324.11	8548.91	-8558.22	-539.60	1691813.73	14561083.85	40°05'39.070"N	104°48'58.391"W	1.37	
16531.00	90.180	182.240	7323.83	8637.82	-8647.18	-542.34	1691811.18	14560994.92	40°05'38.191"N	104°48'58.426"W	1.08	
16621.00	90.250	181.910	7323.49	8727.70	-8737.12	-545.59	1691808.11	14560905.01	40°05'37.302"N	104°48'58.468"W	0.37	
16711.00	90.250	181.630	7323.10	8817.60	-8827.08	-548.37	1691805.52	14560815.09	40°05'36.414"N	104°48'58.504"W	0.31	
16800.00	90.370	179.380	7322.62	8906.57	-8916.07	-549.16	1691804.92	14560726.13	40°05'35.534"N	104°48'58.514"W	2.53	
16889.00	90.150	176.750	7322.21	8995.54	-9005.01	-546.15	1691808.11	14560637.23	40°05'34.655"N	104°48'58.475"W	2.97	
16979.00	89.940	177.460	7322.14	9085.49	-9094.89	-541.61	1691812.84	14560547.39	40°05'33.767"N	104°48'58.417"W	0.82	
17069.00	90.150	176.350	7322.07	9175.42	-9184.76	-536.75	1691817.89	14560457.57	40°05'32.879"N	104°48'58.354"W	1.26	
17158.00	90.090	176.260	7321.89	9264.31	-9273.57	-531.01	1691823.80	14560368.81	40°05'32.001"N	104°48'58.280"W	0.12	
17248.00	90.090	177.700	7321.74	9354.25	-9363.44	-526.27	1691828.73	14560278.98	40°05'31.113"N	104°48'58.219"W	1.60	
17337.00	90.180	179.340	7321.53	9443.24	-9452.41	-523.97	1691831.21	14560190.05	40°05'30.234"N	104°48'58.190"W	1.85	
17427.00	90.120	180.430	7321.30	9533.23	-9542.41	-523.79	1691831.58	14560100.09	40°05'29.344"N	104°48'58.187"W	1.21	
17516.00	90.090	179.660	7321.14	9622.22	-9631.41	-523.86	1691831.70	14560011.13	40°05'28.465"N	104°48'58.188"W	0.87	
17606.00	90.090	179.090	7320.99	9712.21	-9721.40	-522.88	1691832.87	14559921.17	40°05'27.576"N	104°48'58.176"W	0.63	
17695.00	90.000	180.140	7320.92	9801.21	-9810.40	-522.28	1691833.65	14559832.21	40°05'26.696"N	104°48'58.168"W	1.18	
17785.00	89.970	179.940	7320.95	9891.20	-9900.40	-522.35	1691833.78	14559742.25	40°05'25.807"N	104°48'58.169"W	0.22	
17874.00	90.060	181.920	7320.93	9980.15	-9989.38	-523.79	1691832.52	14559653.30	40°05'24.927"N	104°48'58.187"W	2.23	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (251 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
17963.00	90.220	183.720	7320.71	10068.96	-10078.27	-528.17	1691828.33	14559564.43	40°05'24.049"N	104°48'58.244"W	2.03	
18053.00	90.370	181.370	7320.24	10158.79	-10168.18	-532.16	1691824.52	14559474.56	40°05'23.161"N	104°48'58.295"W	2.62	
18142.00	90.520	177.140	7319.55	10247.77	-10257.15	-531.01	1691825.86	14559385.63	40°05'22.281"N	104°48'58.280"W	4.76	
18232.00	90.150	176.010	7319.03	10337.68	-10346.98	-525.63	1691831.42	14559295.84	40°05'21.394"N	104°48'58.211"W	1.32	
18321.00	89.970	177.890	7318.93	10426.61	-10435.85	-520.90	1691836.34	14559207.01	40°05'20.515"N	104°48'58.150"W	2.12	
18411.00	89.880	180.400	7319.05	10516.60	-10525.83	-519.55	1691837.87	14559117.07	40°05'19.626"N	104°48'58.133"W	2.79	
18500.00	90.150	181.990	7319.03	10605.54	-10614.81	-521.41	1691836.20	14559028.12	40°05'18.747"N	104°48'58.157"W	1.81	
18552.00†	90.191	181.388	7318.87	10657.49	-10666.79	-522.94	1691834.78	14558976.16	40°05'18.233"N	104°48'58.176"W	1.16	ENTER RADIUS TOE (380'FSL & 2576'FEL,SEC.31) 40.0883981 -104.8161601
18589.00	90.220	180.960	7318.74	10694.46	-10703.78	-523.70	1691834.10	14558939.19	40°05'17.868"N	104°48'58.186"W	1.16	
18703.00	89.910	176.540	7318.61	10808.43	-10817.72	-521.21	1691836.82	14558825.29	40°05'16.742"N	104°48'58.154"W	3.89	LAST BHGE MWD+IFR1+MSA SURVEY
18727.00	89.910	176.540	7318.65	10832.41	-10841.68	-519.77	1691838.32	14558801.35	40°05'16.505"N	104°48'58.135"W	0.00	PTB (205'FSL & 2572'FEL,SEC.31) 40.0879180 -104.8161487

HOLE & CASING SECTIONS - Ref Wellbore: CASTLE PINES 19-8HZ AWB      Ref Wellpath: CASTLE PINES 19-8HZ 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	1887.00	1861.00	26.00	1857.78	0.00	0.00	174.70	-155.01

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ 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	1.11	-104.88	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
SEC.31-T2N-R66W	2.00	1.11	-104.88	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
CASTLE PINES 19-8HZ BHL REV-1(203'FSL & 1635'FEL,SEC.31)	7302.00	-10843.87	-583.09	1691775.03	14558799.03	40°05'16.483"N	104°48'58.950"W	point
CASTLE PINES 19-8HZ BHL REV-2(203'FSL & 1565'FEL,SEC.31)	7302.00	-10843.87	-513.09	1691845.00	14558799.17	40°05'16.483"N	104°48'58.049"W	point
CASTLE PINES 19-8HZ HEEL REV-2(578'FSL & 1714'FEL,SEC.19)	7322.00	95.13	-681.28	1691654.04	14569733.44	40°07'04.584"N	104°49'00.217"W	point
CASTLE PINES 19-8HZ LANDBOX	7322.00	0.00	0.00	1692335.24	14569639.77	40°07'03.644"N	104°48'51.448"W	polygon
CASTLE PINES 19-8HZ RADIUS 1	7322.00	-483.36	-287.77	1692048.60	14569156.00	40°06'58.867"N	104°48'55.152"W	polygon
CASTLE PINES 19-8HZ RADIUS 2	7322.00	-11047.84	-267.52	1692090.90	14558595.80	40°05'14.468"N	104°48'54.890"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: CASTLE PINES 19-8HZ AWB					Ref Wellpath: CASTLE PINES 19-8HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
26.00	1847.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)		Custom APC ISCWSA Rev-2 MWD+IFR1 <136 - 1847>		CASTLE PINES 19-8HZ AWB
1847.00	18703.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)		BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1921 - 18703>		CASTLE PINES 19-8HZ AWB
18703.00	18727.00	Blind Drilling (std)		Projection to bit		CASTLE PINES 19-8HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#08 CASTLE PINES 19-8HZ(484'FSL & 1033'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-8HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-8HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
136.00	0.570	156.100	136.00	FIRST SURFACE MWD+IFR1 SURVEY
1847.00	17.530	317.030	1819.59	LAST SURFACE MWD+IFR1 SURVEY
1921.00	16.690	316.960	1890.31	FIRST BHGE MWD+IFR1+MSA SURVEY
6892.00	1.098	180.135	6744.06	KOP
7488.00	61.121	179.910	7233.83	ENTER LANDBOX (857'FSL & 1727'FEL,SEC.19) 40.1187024 -104.8167714
7771.00	90.030	181.860	7301.47	LANDING (585'FSL & 1728'FEL,SEC.19) 40.1179564 -104.8167761
8621.00	91.120	176.214	7288.14	EXIT RADIUS HEEL (264'FNL & 1698'FEL,SEC.30) 40.1156259 -104.8166675
18552.00	90.191	181.388	7318.87	ENTER RADIUS TOE (380'FSL & 2576'FEL,SEC.31) 40.0883981 -104.8161601
18703.00	89.910	176.540	7318.61	LAST BHGE MWD+IFR1+MSA SURVEY
18727.00	89.910	176.540	7318.65	PTB (205'FSL & 2572'FEL,SEC.31) 40.0879180 -104.8161487