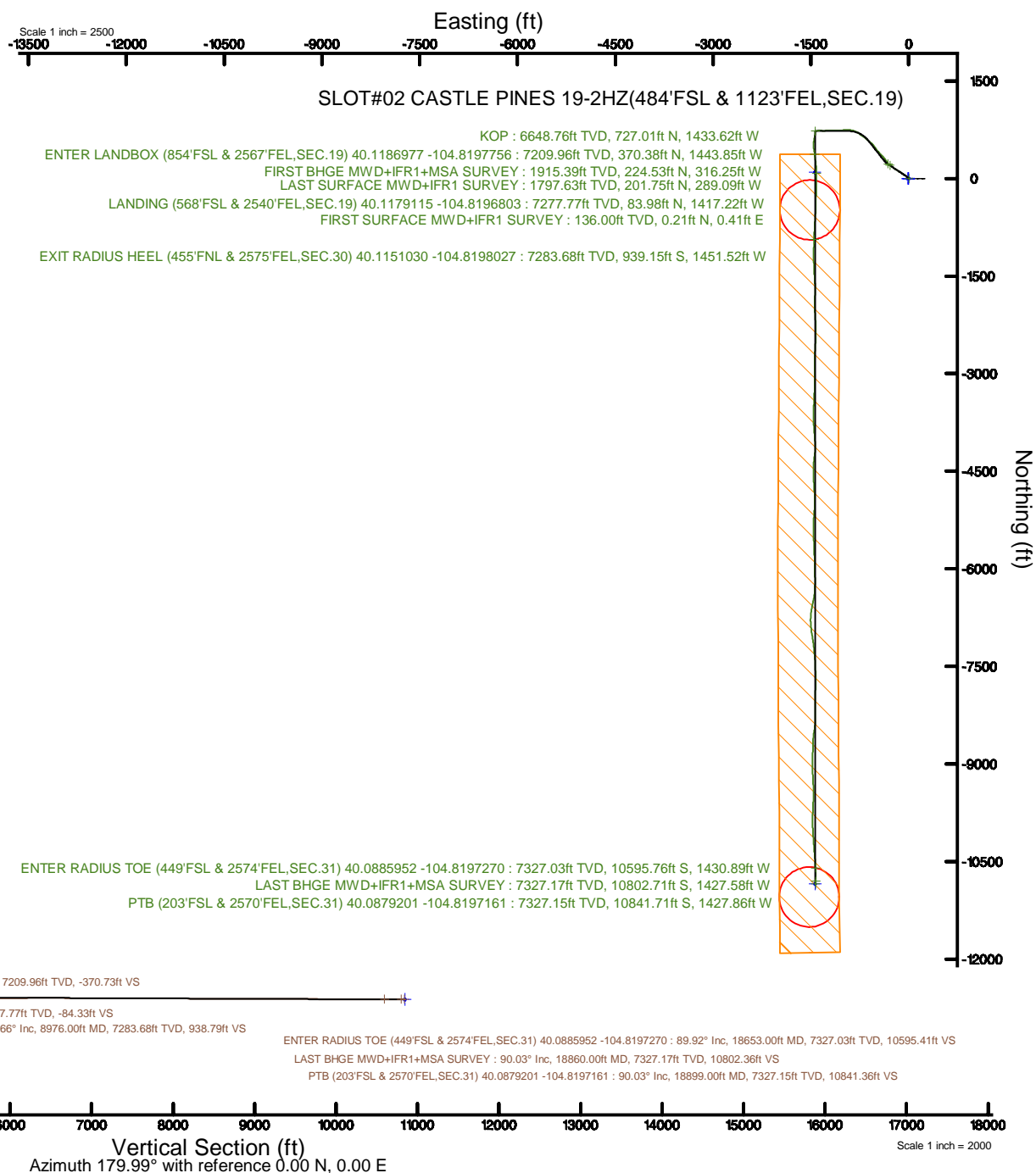


Location:	COLORADO	Well:	SLOT#02 CASTLE PINES 19-2HZ(484FSL & 1123FEL,SEC.19)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Slot:	CASTLE PINES 19-2HZ
Facility:	SEC.19-T2N-R66W	Wellbore:	CASTLE PINES 19-2HZ PWB
Plot reference wellpath is CASTLE PINES 19-2HZ PIWP Rev-B		Grid System: NAD83 / UTM Zone 13 North, US feet	
True vertical depths are referenced to PD 564 (26) (RT)		* = Wellpath was transformed from a different geodetic 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 (As Slot: SLOT#02 CASTLE PINES 19-2HZ(484FSL & 1123FEL,SEC.19): 0 feet		Depths are in feet	
Coordinates are in feet referenced to Slot		Created by: painsear on 2018-11-09	
		Database: WA DEN Anadarko Defn	



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ 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	11/9/2018 at 9:11 AM
Convergence at slot	0.12° East	Database/Source file	WA_DEN_Anadarko_Defn/CASTLE_PINES_19-2HZ_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	14.84	1692245.24	14569640.39	40°07'03.652"N	104°48'52.607"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#02 CASTLE PINES 19-2HZ(484'FSL & 1123'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#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWP
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 stations) † = interpolated/extrapolated station												
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS	Comments
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[°/100ft]	
0.00†	0.000	62.320	0.00	0.00	0.00	0.00	1692245.24	14569640.39	40°07'03.652°N	104°48'52.607°W	0.00	
26.00	0.000	62.320	26.00	0.00	0.00	0.00	1692245.24	14569640.39	40°07'03.652°N	104°48'52.607°W	0.00	
136.00	0.480	62.320	136.00	-0.21	0.21	0.41	1692245.64	14569640.60	40°07'03.654°N	104°48'52.602°W	0.44	FIRST SURFACE MWD+IFR1 SURVEY
168.00	0.570	66.450	168.00	-0.34	0.34	0.67	1692245.91	14569640.73	40°07'03.655°N	104°48'52.598°W	0.30	
199.00	0.350	37.090	199.00	-0.48	0.48	0.87	1692246.11	14569640.87	40°07'03.657°N	104°48'52.596°W	1.02	
231.00	0.310	5.100	231.00	-0.64	0.64	0.94	1692246.17	14569641.03	40°07'03.658°N	104°48'52.595°W	0.58	
263.00	0.620	340.230	262.99	-0.89	0.89	0.89	1692246.12	14569641.28	40°07'03.661°N	104°48'52.596°W	1.13	
295.00	1.230	341.370	294.99	-1.38	1.38	0.72	1692245.95	14569641.77	40°07'03.666°N	104°48'52.598°W	1.91	
326.00	1.630	329.420	325.98	-2.07	2.07	0.39	1692245.62	14569642.46	40°07'03.672°N	104°48'52.602°W	1.60	
358.00	2.550	326.340	357.96	-3.06	3.06	-0.24	1692244.99	14569643.44	40°07'03.682°N	104°48'52.610°W	2.90	
390.00	3.030	324.060	389.92	-4.34	4.34	-1.13	1692244.10	14569644.72	40°07'03.695°N	104°48'52.622°W	1.54	
422.00	4.090	321.680	421.86	-5.92	5.92	-2.33	1692242.89	14569646.30	40°07'03.710°N	104°48'52.637°W	3.34	
454.00	4.570	319.490	453.77	-7.78	7.78	-3.87	1692241.35	14569648.16	40°07'03.729°N	104°48'52.657°W	1.59	
486.00	5.360	317.030	485.65	-9.84	9.84	-5.72	1692239.50	14569650.21	40°07'03.749°N	104°48'52.681°W	2.56	
517.00	6.240	315.180	516.49	-12.10	12.10	-7.89	1692237.32	14569652.46	40°07'03.772°N	104°48'52.709°W	2.90	
549.00	6.940	310.430	548.28	-14.59	14.58	-10.59	1692234.62	14569654.94	40°07'03.796°N	104°48'52.743°W	2.77	
581.00	7.780	305.250	580.01	-17.09	17.09	-13.83	1692231.38	14569657.44	40°07'03.821°N	104°48'52.785°W	3.34	
612.00	8.220	304.810	610.71	-19.57	19.56	-17.36	1692227.84	14569659.91	40°07'03.845°N	104°48'52.830°W	1.43	
644.00	8.750	305.340	642.36	-22.28	22.28	-21.22	1692223.97	14569662.61	40°07'03.872°N	104°48'52.880°W	1.67	
676.00	9.140	304.900	673.97	-25.15	25.14	-25.29	1692219.90	14569665.47	40°07'03.900°N	104°48'52.933°W	1.24	
707.00	9.800	305.950	704.55	-28.11	28.10	-29.45	1692215.74	14569668.41	40°07'03.930°N	104°48'52.986°W	2.20	
739.00	9.980	305.250	736.07	-31.31	31.30	-33.92	1692211.27	14569671.60	40°07'03.961°N	104°48'53.044°W	0.68	
771.00	10.330	304.630	767.57	-34.54	34.53	-38.54	1692206.64	14569674.82	40°07'03.993°N	104°48'53.103°W	1.15	
803.00	10.280	305.070	799.06	-37.81	37.80	-43.24	1692201.93	14569678.08	40°07'04.026°N	104°48'53.164°W	0.29	
834.00	10.150	305.070	829.56	-40.97	40.96	-47.74	1692197.43	14569681.23	40°07'04.057°N	104°48'53.222°W	0.42	
898.00	10.330	304.110	892.55	-47.43	47.42	-57.11	1692188.05	14569687.67	40°07'04.121°N	104°48'53.342°W	0.39	
930.00	10.990	303.930	923.99	-50.74	50.73	-62.01	1692183.14	14569690.97	40°07'04.153°N	104°48'53.405°W	2.07	
961.00	11.290	302.880	954.41	-54.04	54.02	-67.01	1692178.14	14569694.25	40°07'04.186°N	104°48'53.470°W	1.17	
993.00	12.220	302.790	985.74	-57.58	57.56	-72.49	1692172.65	14569697.77	40°07'04.221°N	104°48'53.540°W	2.91	
1025.00	13.230	303.050	1016.95	-61.41	61.39	-78.41	1692166.73	14569701.59	40°07'04.259°N	104°48'53.616°W	3.16	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 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	14.410	303.140	1048.02	-65.58	65.56	-84.81	1692160.32	14569705.75	40°07'04.300"N	104°48'53.699"W	3.69	
1088.00	15.600	303.050	1077.97	-69.97	69.95	-91.54	1692153.59	14569710.12	40°07'04.343"N	104°48'53.785"W	3.84	
1120.00	16.440	303.310	1108.72	-74.80	74.78	-98.93	1692146.19	14569714.93	40°07'04.391"N	104°48'53.880"W	2.63	
1152.00	16.440	303.670	1139.42	-79.80	79.78	-106.48	1692138.63	14569719.91	40°07'04.440"N	104°48'53.978"W	0.32	
1184.00	16.040	303.490	1170.14	-84.75	84.73	-113.94	1692131.17	14569724.84	40°07'04.489"N	104°48'54.074"W	1.26	
1215.00	16.520	303.140	1199.90	-89.53	89.50	-121.20	1692123.90	14569729.60	40°07'04.536"N	104°48'54.167"W	1.58	
1247.00	18.020	304.190	1230.45	-94.80	94.77	-129.10	1692115.99	14569734.85	40°07'04.589"N	104°48'54.269"W	4.79	
1279.00	19.160	304.460	1260.78	-100.55	100.52	-137.53	1692107.56	14569740.58	40°07'04.645"N	104°48'54.377"W	3.57	
1310.00	19.290	303.750	1290.05	-106.28	106.24	-145.98	1692099.10	14569746.29	40°07'04.702"N	104°48'54.486"W	0.86	
1342.00	19.070	302.700	1320.28	-112.04	112.01	-154.77	1692090.29	14569752.03	40°07'04.759"N	104°48'54.599"W	1.28	
1373.00	18.900	302.790	1349.59	-117.50	117.46	-163.25	1692081.80	14569757.46	40°07'04.813"N	104°48'54.708"W	0.56	
1405.00	19.250	301.910	1379.83	-123.10	123.06	-172.09	1692072.96	14569763.04	40°07'04.868"N	104°48'54.822"W	1.42	
1437.00	19.780	301.560	1410.00	-128.72	128.68	-181.18	1692063.86	14569768.64	40°07'04.924"N	104°48'54.939"W	1.70	
1468.00	20.350	301.820	1439.11	-134.31	134.26	-190.23	1692054.80	14569774.20	40°07'04.979"N	104°48'55.056"W	1.86	
1500.00	19.160	302.610	1469.23	-140.08	140.03	-199.38	1692045.64	14569779.95	40°07'05.036"N	104°48'55.173"W	3.81	
1532.00	18.850	303.230	1499.49	-145.74	145.69	-208.13	1692036.89	14569785.59	40°07'05.092"N	104°48'55.286"W	1.16	
1563.00	19.340	304.190	1528.78	-151.37	151.32	-216.57	1692028.44	14569791.20	40°07'05.147"N	104°48'55.395"W	1.88	
1594.00	18.240	304.460	1558.13	-157.01	156.95	-224.81	1692020.19	14569796.81	40°07'05.203"N	104°48'55.501"W	3.56	
1626.00	17.580	304.980	1588.58	-162.61	162.55	-232.90	1692012.09	14569802.39	40°07'05.258"N	104°48'55.605"W	2.12	
1658.00	17.580	305.250	1619.08	-168.17	168.11	-240.81	1692004.18	14569807.93	40°07'05.313"N	104°48'55.707"W	0.25	
1690.00	17.890	304.550	1649.56	-173.75	173.69	-248.80	1691996.17	14569813.49	40°07'05.368"N	104°48'55.810"W	1.18	
1721.00	18.370	304.630	1679.02	-179.23	179.17	-256.74	1691988.22	14569818.95	40°07'05.423"N	104°48'55.912"W	1.55	
1753.00	18.680	304.810	1709.36	-185.02	184.96	-265.10	1691979.86	14569824.72	40°07'05.480"N	104°48'56.019"W	0.99	
1785.00	18.720	305.070	1739.67	-190.90	190.83	-273.51	1691971.44	14569830.58	40°07'05.538"N	104°48'56.128"W	0.29	
1817.00	18.190	305.070	1770.03	-196.72	196.65	-281.80	1691963.14	14569836.38	40°07'05.595"N	104°48'56.234"W	1.66	
1846.00	17.530	304.900	1797.63	-201.82	201.75	-289.09	1691955.85	14569841.46	40°07'05.646"N	104°48'56.328"W	2.28	LAST SURFACE MWD+IFR1 SURVEY
1969.00	16.110	315.500	1915.39	-224.61	224.53	-316.25	1691928.65	14569864.17	40°07'05.871"N	104°48'56.678"W	2.74	FIRST BHGE MWD+IFR1+MSA SURVEY
2059.00	22.360	328.470	2000.37	-248.14	248.06	-333.98	1691910.88	14569887.66	40°07'06.103"N	104°48'56.906"W	8.37	
2148.00	23.150	326.420	2082.44	-277.15	277.07	-352.51	1691892.29	14569916.61	40°07'06.390"N	104°48'57.144"W	1.26	
2238.00	23.240	321.990	2165.17	-305.89	305.80	-373.23	1691871.52	14569945.29	40°07'06.674"N	104°48'57.411"W	1.94	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL, SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2327.00	23.020	319.530	2247.02	-332.97	332.87	-395.34	1691849.36	14569972.30	40°07'06.941"N	104°48'57.696"W	1.11	
2417.00	23.240	315.530	2329.79	-359.04	358.93	-419.20	1691825.46	14569998.30	40°07'07.199"N	104°48'58.003"W	1.76	
2506.00	23.070	314.600	2411.62	-383.82	383.71	-443.92	1691800.70	14570023.02	40°07'07.444"N	104°48'58.321"W	0.45	
2595.00	18.990	317.630	2494.68	-406.77	406.66	-466.10	1691778.48	14570045.91	40°07'07.671"N	104°48'58.607"W	4.74	
2684.00	18.300	322.940	2579.01	-428.63	428.51	-484.28	1691760.26	14570067.72	40°07'07.887"N	104°48'58.841"W	2.06	
2773.00	22.640	327.190	2662.38	-454.19	454.07	-501.99	1691742.50	14570093.23	40°07'08.139"N	104°48'59.069"W	5.15	
2863.00	22.970	322.420	2745.35	-482.68	482.55	-522.09	1691722.35	14570121.66	40°07'08.421"N	104°48'59.327"W	2.09	
2952.00	22.990	316.260	2827.30	-509.01	508.87	-544.70	1691699.69	14570147.92	40°07'08.681"N	104°48'59.618"W	2.70	
3041.00	22.830	313.870	2909.28	-533.54	533.40	-569.17	1691675.19	14570172.39	40°07'08.923"N	104°48'59.933"W	1.06	
3131.00	22.940	313.100	2992.19	-557.63	557.48	-594.56	1691649.75	14570196.41	40°07'09.161"N	104°49'00.260"W	0.35	
3220.00	22.830	311.690	3074.19	-580.97	580.82	-620.12	1691624.16	14570219.68	40°07'09.392"N	104°49'00.589"W	0.63	
3310.00	22.950	309.390	3157.10	-603.72	603.56	-646.72	1691597.52	14570242.36	40°07'09.616"N	104°49'00.932"W	1.00	
3399.00	22.860	307.480	3239.09	-625.26	625.10	-673.85	1691570.36	14570263.83	40°07'09.829"N	104°49'01.281"W	0.84	
3488.00	22.800	307.730	3321.12	-646.34	646.17	-701.20	1691542.97	14570284.83	40°07'10.037"N	104°49'01.633"W	0.13	
3578.00	20.440	304.570	3404.78	-665.94	665.76	-727.94	1691516.20	14570304.36	40°07'10.231"N	104°49'01.977"W	2.92	
3667.00	20.900	305.970	3488.05	-684.09	683.90	-753.59	1691490.53	14570322.44	40°07'10.410"N	104°49'02.307"W	0.76	
3757.00	20.860	301.520	3572.15	-701.90	701.71	-780.24	1691463.85	14570340.19	40°07'10.586"N	104°49'02.650"W	1.76	
3846.00	20.970	296.300	3655.29	-717.25	717.05	-808.03	1691436.04	14570355.47	40°07'10.738"N	104°49'03.008"W	2.10	
3936.00	20.940	290.270	3739.35	-729.96	729.76	-837.56	1691406.50	14570368.11	40°07'10.863"N	104°49'03.388"W	2.40	
4025.00	21.770	284.900	3822.24	-739.73	739.51	-868.43	1691375.62	14570377.80	40°07'10.960"N	104°49'03.786"W	2.39	
4114.00	21.860	277.990	3904.88	-746.28	746.06	-900.79	1691343.25	14570384.27	40°07'11.025"N	104°49'04.202"W	2.89	
4203.00	23.210	272.510	3987.10	-749.36	749.13	-934.72	1691309.33	14570387.27	40°07'11.055"N	104°49'04.639"W	2.80	
4293.00	23.220	265.620	4069.83	-748.79	748.55	-970.14	1691273.93	14570386.62	40°07'11.049"N	104°49'05.095"W	3.02	
4382.00	23.050	260.140	4151.68	-744.48	744.23	-1004.80	1691239.29	14570382.23	40°07'11.006"N	104°49'05.541"W	2.43	
4471.00	22.820	262.230	4233.64	-739.17	738.91	-1039.07	1691205.04	14570376.84	40°07'10.954"N	104°49'05.982"W	0.95	
4561.00	22.240	271.160	4316.80	-737.16	736.90	-1073.40	1691170.73	14570374.75	40°07'10.934"N	104°49'06.424"W	3.85	
4650.00	23.130	273.610	4398.91	-738.61	738.34	-1107.69	1691136.46	14570376.12	40°07'10.948"N	104°49'06.865"W	1.46	
4739.00	23.080	271.930	4480.78	-740.31	740.03	-1142.57	1691101.58	14570377.74	40°07'10.965"N	104°49'07.314"W	0.74	
4829.00	23.100	269.780	4563.57	-740.84	740.55	-1177.85	1691066.31	14570378.19	40°07'10.970"N	104°49'07.769"W	0.94	
4918.00	23.080	267.250	4645.44	-739.95	739.65	-1212.74	1691031.44	14570377.21	40°07'10.961"N	104°49'08.218"W	1.11	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL, SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 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
5008.00	21.110	265.040	4728.83	-737.71	737.40	-1246.51	1690997.69	14570374.90	40°07'10.939"N	104°49'08.652"W	2.38	
5097.00	19.020	266.300	4812.42	-735.39	735.08	-1276.95	1690967.26	14570372.51	40°07'10.916"N	104°49'09.044"W	2.40	
5186.00	17.080	269.590	4897.04	-734.37	734.05	-1304.50	1690939.73	14570371.43	40°07'10.906"N	104°49'09.399"W	2.46	
5275.00	15.590	273.650	4982.45	-735.04	734.72	-1329.50	1690914.73	14570372.04	40°07'10.912"N	104°49'09.721"W	2.11	
5364.00	13.380	274.050	5068.61	-736.54	736.21	-1351.71	1690892.53	14570373.48	40°07'10.927"N	104°49'10.006"W	2.49	
5453.00	12.040	272.900	5155.43	-737.74	737.41	-1371.26	1690872.99	14570374.64	40°07'10.939"N	104°49'10.258"W	1.53	
5543.00	10.560	261.960	5243.69	-737.07	736.73	-1388.80	1690855.46	14570373.92	40°07'10.932"N	104°49'10.484"W	2.89	
5632.00	8.600	254.380	5331.45	-734.14	733.79	-1403.29	1690840.98	14570370.96	40°07'10.903"N	104°49'10.670"W	2.61	
5721.00	7.020	254.720	5419.62	-730.91	730.57	-1414.94	1690829.34	14570367.71	40°07'10.871"N	104°49'10.820"W	1.78	
5811.00	5.920	259.730	5509.05	-728.64	728.29	-1424.82	1690819.47	14570365.42	40°07'10.849"N	104°49'10.947"W	1.37	
5900.00	2.520	256.090	5597.80	-727.35	727.00	-1431.23	1690813.06	14570364.12	40°07'10.836"N	104°49'11.030"W	3.83	
5989.00	0.070	300.020	5686.77	-726.91	726.56	-1433.18	1690811.12	14570363.67	40°07'10.832"N	104°49'11.055"W	2.78	
6079.00	0.070	310.780	5776.77	-726.97	726.62	-1433.27	1690811.03	14570363.73	40°07'10.832"N	104°49'11.056"W	0.01	
6168.00	0.130	326.750	5865.77	-727.09	726.74	-1433.37	1690810.93	14570363.85	40°07'10.833"N	104°49'11.057"W	0.07	
6257.00	0.090	292.460	5954.77	-727.20	726.85	-1433.49	1690810.81	14570363.96	40°07'10.834"N	104°49'11.059"W	0.08	
6346.00	0.070	326.690	6043.77	-727.28	726.93	-1433.58	1690810.72	14570364.03	40°07'10.835"N	104°49'11.060"W	0.06	
6436.00	0.090	317.880	6133.77	-727.37	727.02	-1433.66	1690810.64	14570364.13	40°07'10.836"N	104°49'11.061"W	0.03	
6525.00	0.030	17.190	6222.77	-727.45	727.10	-1433.70	1690810.60	14570364.21	40°07'10.837"N	104°49'11.062"W	0.09	
6614.00	0.090	38.980	6311.77	-727.53	727.18	-1433.65	1690810.65	14570364.28	40°07'10.838"N	104°49'11.061"W	0.07	
6703.00	0.070	22.320	6400.77	-727.63	727.28	-1433.58	1690810.71	14570364.39	40°07'10.839"N	104°49'11.060"W	0.03	
6793.00	0.140	337.880	6490.77	-727.78	727.43	-1433.60	1690810.69	14570364.54	40°07'10.840"N	104°49'11.061"W	0.11	
6882.00	0.140	358.410	6579.77	-727.99	727.64	-1433.65	1690810.65	14570364.75	40°07'10.842"N	104°49'11.061"W	0.06	
6951.00†	1.186	177.620	6648.76	-727.36	727.01	-1433.62	1690810.68	14570364.12	40°07'10.836"N	104°49'11.061"W	1.92	KOP
6971.00	1.570	177.640	6668.76	-726.88	726.53	-1433.60	1690810.70	14570363.64	40°07'10.831"N	104°49'11.060"W	1.92	
7060.00	10.740	178.610	6757.15	-717.35	717.00	-1433.35	1690810.97	14570354.12	40°07'10.737"N	104°49'11.057"W	10.30	
7149.00	18.830	188.160	6843.14	-694.81	694.46	-1435.19	1690809.18	14570331.57	40°07'10.514"N	104°49'11.081"W	9.46	
7239.00	26.570	190.610	6926.11	-660.59	660.24	-1440.96	1690803.47	14570297.36	40°07'10.176"N	104°49'11.155"W	8.66	
7328.00	34.930	189.990	7002.53	-615.86	615.50	-1449.06	1690795.47	14570252.63	40°07'09.734"N	104°49'11.259"W	9.40	
7417.00	43.120	185.350	7071.63	-560.38	560.02	-1456.33	1690788.32	14570197.15	40°07'09.186"N	104°49'11.353"W	9.76	
7506.00	51.180	178.470	7132.14	-495.28	494.93	-1458.25	1690786.54	14570132.08	40°07'08.543"N	104°49'11.378"W	10.67	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 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
7595.00	59.860	171.480	7182.52	-422.36	422.01	-1451.60	1690793.34	14570059.20	40°07'07.822"N	104°49'11.292"W	11.70	
7654.00†	64.686	171.439	7209.96	-370.73	370.38	-1443.85	1690801.19	14570007.61	40°07'07.312"N	104°49'11.192"W	8.18	ENTER LANDBOX (854'FSL & 2567'FEL,SEC.19) 40.1186977 -104.8197756
7684.00	67.140	171.420	7222.21	-343.65	343.30	-1439.77	1690805.33	14569980.55	40°07'07.044"N	104°49'11.140"W	8.18	
7774.00	74.600	173.080	7251.68	-259.45	259.10	-1428.34	1690816.93	14569896.41	40°07'06.212"N	104°49'10.992"W	8.47	
7863.00	80.910	176.770	7270.55	-172.87	172.53	-1420.68	1690824.76	14569809.89	40°07'05.357"N	104°49'10.894"W	8.16	
7952.00	89.780	178.740	7277.77	-84.33	83.98	-1417.22	1690828.41	14569721.38	40°07'04.482"N	104°49'10.849"W	10.21	LANDING (568'FSL & 2540'FEL,SEC.19) 40.1179115 -104.8196803
8041.00	89.660	179.770	7278.20	4.66	-5.01	-1416.06	1690829.75	14569632.43	40°07'03.602"N	104°49'10.834"W	1.17	
8130.00	89.820	181.000	7278.61	93.66	-94.00	-1416.66	1690829.34	14569543.47	40°07'02.723"N	104°49'10.842"W	1.39	
8219.00	89.540	182.520	7279.11	182.61	-182.96	-1419.40	1690826.79	14569454.55	40°07'01.844"N	104°49'10.877"W	1.74	
8309.00	89.540	181.740	7279.83	272.54	-272.89	-1422.74	1690823.64	14569364.64	40°07'00.955"N	104°49'10.920"W	0.87	
8398.00	89.780	180.900	7280.36	361.52	-361.87	-1424.79	1690821.77	14569275.70	40°07'00.076"N	104°49'10.946"W	0.98	
8487.00	89.480	181.850	7280.93	450.49	-450.84	-1426.93	1690819.82	14569186.76	40°06'59.196"N	104°49'10.974"W	1.12	
8576.00	89.910	183.390	7281.41	539.39	-539.74	-1430.99	1690815.94	14569097.88	40°06'58.318"N	104°49'11.026"W	1.80	
8665.00	89.540	184.360	7281.83	628.18	-628.53	-1437.01	1690810.11	14569009.11	40°06'57.440"N	104°49'11.103"W	1.17	
8755.00	89.540	183.520	7282.55	717.97	-718.32	-1443.19	1690804.12	14568919.35	40°06'56.553"N	104°49'11.183"W	0.93	
8844.00	89.720	182.100	7283.13	806.85	-807.21	-1447.56	1690799.94	14568830.49	40°06'55.675"N	104°49'11.239"W	1.61	
8933.00	89.820	181.400	7283.49	895.81	-896.16	-1450.27	1690797.41	14568741.56	40°06'54.796"N	104°49'11.274"W	0.79	
8976.00†	89.656	181.917	7283.68	938.79	-939.15	-1451.52	1690796.26	14568698.59	40°06'54.371"N	104°49'11.290"W	1.26	EXIT RADIUS HEEL (455'FNL & 2575'FEL,SEC.30) 40.1151030 -104.8198027
9022.00	89.480	182.470	7284.03	984.75	-985.11	-1453.28	1690794.59	14568652.64	40°06'53.917"N	104°49'11.313"W	1.26	
9112.00	89.910	182.380	7284.51	1074.67	-1075.03	-1457.09	1690790.98	14568562.75	40°06'53.028"N	104°49'11.361"W	0.49	
9201.00	90.180	179.780	7284.44	1163.65	-1164.00	-1458.76	1690789.48	14568473.81	40°06'52.149"N	104°49'11.383"W	2.94	
9290.00	90.280	178.770	7284.08	1252.64	-1253.00	-1457.64	1690790.80	14568384.86	40°06'51.269"N	104°49'11.368"W	1.14	
9379.00	89.820	177.560	7284.00	1341.59	-1341.95	-1454.79	1690793.83	14568295.95	40°06'50.390"N	104°49'11.332"W	1.45	
9469.00	89.230	176.880	7284.75	1431.48	-1431.84	-1450.42	1690798.38	14568206.10	40°06'49.502"N	104°49'11.275"W	1.00	
9558.00	90.090	175.630	7285.28	1520.29	-1520.64	-1444.61	1690804.38	14568117.34	40°06'48.624"N	104°49'11.201"W	1.70	
9647.00	89.690	177.760	7285.45	1609.14	-1609.49	-1439.48	1690809.69	14568028.54	40°06'47.746"N	104°49'11.134"W	2.44	
9737.00	90.430	179.660	7285.36	1699.11	-1699.46	-1437.45	1690811.90	14567938.61	40°06'46.857"N	104°49'11.108"W	2.27	
9826.00	89.820	182.190	7285.16	1788.09	-1788.44	-1438.89	1690810.65	14567849.66	40°06'45.978"N	104°49'11.127"W	2.92	
9915.00	90.030	180.570	7285.28	1877.06	-1877.41	-1441.03	1690808.69	14567760.72	40°06'45.099"N	104°49'11.154"W	1.84	
10005.00	89.850	180.400	7285.37	1967.06	-1967.41	-1441.79	1690808.12	14567670.76	40°06'44.209"N	104°49'11.164"W	0.28	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 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	89.850	176.980	7285.61	2056.02	-2056.37	-1439.76	1690810.34	14567581.84	40°06'43.330"N	104°49'11.138"W	3.84	
10183.00	89.750	175.100	7285.92	2144.81	-2145.16	-1433.61	1690816.67	14567493.10	40°06'42.453"N	104°49'11.059"W	2.12	
10273.00	88.890	176.170	7286.98	2234.54	-2234.89	-1426.77	1690823.70	14567403.42	40°06'41.566"N	104°49'10.970"W	1.53	
10362.00	88.830	179.710	7288.76	2323.45	-2323.80	-1423.57	1690827.08	14567314.56	40°06'40.688"N	104°49'10.929"W	3.98	
10451.00	89.200	182.300	7290.29	2412.42	-2412.76	-1425.13	1690825.71	14567225.62	40°06'39.808"N	104°49'10.949"W	2.94	
10541.00	89.200	183.240	7291.54	2502.30	-2502.65	-1429.48	1690821.55	14567135.76	40°06'38.920"N	104°49'11.005"W	1.04	
10630.00	88.830	184.330	7293.07	2591.09	-2591.44	-1435.35	1690815.86	14567047.00	40°06'38.043"N	104°49'11.081"W	1.29	
10720.00	89.260	183.210	7294.57	2680.88	-2681.23	-1441.27	1690810.14	14566957.23	40°06'37.155"N	104°49'11.157"W	1.33	
10809.00	89.260	180.540	7295.72	2769.81	-2770.17	-1444.18	1690807.41	14566868.32	40°06'36.276"N	104°49'11.194"W	3.00	
10898.00	89.290	178.390	7296.85	2858.80	-2859.15	-1443.35	1690808.43	14566779.38	40°06'35.397"N	104°49'11.183"W	2.42	
10988.00	89.480	179.070	7297.81	2948.77	-2949.12	-1441.35	1690810.61	14566689.44	40°06'34.508"N	104°49'11.158"W	0.78	
11077.00	89.200	180.020	7298.84	3037.76	-3038.11	-1440.65	1690811.50	14566600.49	40°06'33.629"N	104°49'11.148"W	1.11	
11167.00	88.830	181.300	7300.39	3127.74	-3128.09	-1441.68	1690810.65	14566510.55	40°06'32.739"N	104°49'11.162"W	1.48	
11256.00	89.050	182.270	7302.03	3216.68	-3217.03	-1444.46	1690808.07	14566421.63	40°06'31.860"N	104°49'11.197"W	1.12	
11345.00	89.110	182.130	7303.46	3305.60	-3305.96	-1447.87	1690804.84	14566332.74	40°06'30.982"N	104°49'11.241"W	0.17	
11435.00	88.980	182.640	7304.96	3395.51	-3395.87	-1451.62	1690801.28	14566242.86	40°06'30.093"N	104°49'11.289"W	0.58	
11524.00	89.110	183.130	7306.45	3484.38	-3484.74	-1456.09	1690796.99	14566154.01	40°06'29.215"N	104°49'11.347"W	0.57	
11614.00	88.830	181.120	7308.06	3574.30	-3574.66	-1459.43	1690793.84	14566064.12	40°06'28.326"N	104°49'11.390"W	2.25	
11703.00	89.050	179.640	7309.71	3663.28	-3663.64	-1460.02	1690793.44	14565975.18	40°06'27.447"N	104°49'11.397"W	1.68	
11793.00	89.080	177.840	7311.18	3753.25	-3753.60	-1458.04	1690795.60	14565885.25	40°06'26.558"N	104°49'11.372"W	2.00	
11882.00	89.260	176.080	7312.47	3842.11	-3842.46	-1453.32	1690800.50	14565796.44	40°06'25.680"N	104°49'11.311"W	1.99	
11972.00	89.480	175.110	7313.46	3931.84	-3932.19	-1446.41	1690807.60	14565706.76	40°06'24.793"N	104°49'11.222"W	1.11	
12062.00	89.380	176.980	7314.35	4021.62	-4021.97	-1440.20	1690813.99	14565617.03	40°06'23.906"N	104°49'11.142"W	2.08	
12151.00	89.940	178.150	7314.88	4110.53	-4110.88	-1436.42	1690817.96	14565528.16	40°06'23.027"N	104°49'11.093"W	1.46	
12240.00	90.310	184.630	7314.69	4199.46	-4199.81	-1438.58	1690815.99	14565439.26	40°06'22.149"N	104°49'11.121"W	7.29	
12330.00	89.010	188.110	7315.22	4288.88	-4289.24	-1448.56	1690806.19	14565349.85	40°06'21.265"N	104°49'11.249"W	4.13	
12420.00	89.290	183.690	7316.56	4378.37	-4378.73	-1457.81	1690797.13	14565260.38	40°06'20.380"N	104°49'11.368"W	4.92	
12509.00	89.350	182.350	7317.61	4467.24	-4467.60	-1462.50	1690792.63	14565171.54	40°06'19.502"N	104°49'11.429"W	1.51	
12598.00	89.850	179.830	7318.23	4556.21	-4556.57	-1464.19	1690791.13	14565082.59	40°06'18.623"N	104°49'11.450"W	2.89	
12688.00	89.880	174.250	7318.45	4646.06	-4646.42	-1459.55	1690795.96	14564992.79	40°06'17.735"N	104°49'11.390"W	6.20	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 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	90.090	176.540	7318.47	4734.77	-4735.12	-1452.40	1690803.28	14564904.14	40°06'16.858"N	104°49'11.298"W	2.58	
12867.00	89.910	177.450	7318.47	4824.64	-4825.00	-1447.68	1690808.19	14564814.31	40°06'15.970"N	104°49'11.238"W	1.03	
12956.00	89.750	178.520	7318.73	4913.59	-4913.94	-1444.56	1690811.50	14564725.41	40°06'15.091"N	104°49'11.197"W	1.22	
13136.00	90.060	183.210	7319.03	5093.52	-5093.87	-1447.27	1690809.16	14564545.55	40°06'13.313"N	104°49'11.232"W	2.61	
13225.00	90.000	185.710	7318.99	5182.24	-5182.59	-1454.19	1690802.43	14564456.84	40°06'12.437"N	104°49'11.321"W	2.81	
13314.00	90.650	181.650	7318.48	5271.03	-5271.39	-1459.90	1690796.90	14564368.07	40°06'11.559"N	104°49'11.395"W	4.62	
13402.00	90.490	179.200	7317.61	5359.02	-5359.38	-1460.56	1690796.44	14564280.12	40°06'10.690"N	104°49'11.403"W	2.79	
13492.00	90.580	179.300	7316.77	5449.01	-5449.36	-1459.38	1690797.80	14564190.17	40°06'09.800"N	104°49'11.388"W	0.15	
13581.00	90.340	177.850	7316.05	5537.97	-5538.33	-1457.17	1690800.20	14564101.24	40°06'08.921"N	104°49'11.359"W	1.65	
13671.00	90.400	177.940	7315.47	5627.91	-5628.27	-1453.86	1690803.69	14564011.35	40°06'08.032"N	104°49'11.316"W	0.12	
13760.00	90.800	178.310	7314.54	5716.86	-5717.22	-1450.95	1690806.79	14563922.44	40°06'07.153"N	104°49'11.279"W	0.61	
13849.00	90.740	177.400	7313.34	5805.79	-5806.14	-1447.62	1690810.30	14563833.56	40°06'06.274"N	104°49'11.236"W	1.02	
13939.00	90.490	177.930	7312.38	5895.71	-5896.06	-1443.95	1690814.15	14563743.68	40°06'05.386"N	104°49'11.189"W	0.65	
14028.00	90.000	178.900	7312.00	5984.68	-5985.03	-1441.49	1690816.80	14563654.76	40°06'04.507"N	104°49'11.157"W	1.22	
14117.00	90.150	179.420	7311.88	6073.67	-6074.02	-1440.18	1690818.29	14563565.81	40°06'03.627"N	104°49'11.140"W	0.61	
14207.00	90.310	179.160	7311.52	6163.66	-6164.01	-1439.07	1690819.59	14563475.85	40°06'02.738"N	104°49'11.126"W	0.34	
14296.00	90.460	181.550	7310.92	6252.65	-6253.00	-1439.62	1690819.23	14563386.90	40°06'01.859"N	104°49'11.133"W	2.69	
14386.00	90.340	183.980	7310.29	6342.53	-6342.89	-1443.96	1690815.07	14563297.04	40°06'00.970"N	104°49'11.189"W	2.70	
14475.00	90.000	188.900	7310.03	6430.94	-6431.30	-1453.94	1690805.28	14563208.64	40°06'00.097"N	104°49'11.317"W	5.54	
14565.00	89.660	190.560	7310.29	6519.64	-6520.00	-1469.15	1690790.26	14563119.94	40°05'59.220"N	104°49'11.513"W	1.88	
14654.00	89.660	192.850	7310.82	6606.78	-6607.14	-1487.20	1690772.40	14563032.80	40°05'58.359"N	104°49'11.745"W	2.57	
14743.00	89.630	185.570	7311.37	6694.56	-6694.93	-1501.44	1690758.35	14562945.01	40°05'57.491"N	104°49'11.928"W	8.18	
14833.00	89.750	180.440	7311.86	6784.41	-6784.78	-1506.16	1690753.82	14562855.19	40°05'56.603"N	104°49'11.989"W	5.70	
14922.00	89.850	174.670	7312.17	6873.29	-6873.66	-1502.36	1690757.80	14562766.36	40°05'55.725"N	104°49'11.940"W	6.48	
15012.00	89.690	171.630	7312.53	6962.64	-6963.00	-1491.63	1690768.72	14562677.07	40°05'54.842"N	104°49'11.801"W	3.38	
15102.00	89.570	170.330	7313.11	7051.53	-7051.89	-1477.52	1690783.01	14562588.25	40°05'53.964"N	104°49'11.620"W	1.45	
15191.00	89.850	172.400	7313.57	7139.51	-7139.87	-1464.16	1690796.55	14562500.33	40°05'53.094"N	104°49'11.448"W	2.35	
15281.00	89.630	174.890	7313.97	7228.96	-7229.31	-1454.20	1690806.69	14562410.95	40°05'52.211"N	104°49'11.320"W	2.78	
15370.00	89.910	174.730	7314.33	7317.59	-7317.95	-1446.14	1690814.92	14562322.36	40°05'51.335"N	104°49'11.216"W	0.36	
15460.00	89.720	176.180	7314.62	7407.31	-7407.66	-1439.01	1690822.24	14562232.70	40°05'50.448"N	104°49'11.124"W	1.62	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 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
15549.00	89.690	177.220	7315.08	7496.16	-7496.51	-1433.89	1690827.54	14562143.90	40°05'49.570"N	104°49'11.058"W	1.17	
15639.00	89.880	177.860	7315.42	7586.08	-7586.43	-1430.03	1690831.59	14562054.02	40°05'48.681"N	104°49'11.008"W	0.74	
15728.00	89.660	179.350	7315.77	7675.05	-7675.40	-1427.86	1690833.94	14561965.09	40°05'47.802"N	104°49'10.980"W	1.69	
15818.00	89.570	180.930	7316.38	7765.04	-7765.39	-1428.08	1690833.91	14561875.14	40°05'46.913"N	104°49'10.983"W	1.76	
15907.00	89.820	182.160	7316.85	7854.01	-7854.36	-1430.48	1690831.70	14561786.20	40°05'46.034"N	104°49'11.014"W	1.41	
15996.00	89.780	182.550	7317.16	7942.93	-7943.28	-1434.14	1690828.23	14561697.31	40°05'45.155"N	104°49'11.061"W	0.44	
16086.00	89.910	180.150	7317.41	8032.90	-8033.25	-1436.26	1690826.30	14561607.37	40°05'44.266"N	104°49'11.088"W	2.67	
16175.00	89.850	180.360	7317.59	8121.90	-8122.25	-1436.65	1690826.09	14561518.41	40°05'43.386"N	104°49'11.093"W	0.25	
16265.00	89.540	181.260	7318.07	8211.88	-8212.24	-1437.93	1690825.00	14561428.45	40°05'42.497"N	104°49'11.109"W	1.06	
16354.00	89.750	178.080	7318.62	8300.87	-8301.22	-1437.41	1690825.70	14561339.50	40°05'41.618"N	104°49'11.103"W	3.58	
16444.00	89.880	183.370	7318.92	8390.83	-8391.18	-1438.55	1690824.75	14561249.57	40°05'40.729"N	104°49'11.117"W	5.88	
16534.00	90.030	189.330	7318.99	8480.23	-8480.59	-1448.50	1690814.99	14561160.18	40°05'39.845"N	104°49'11.245"W	6.62	
16623.00	89.720	187.700	7319.18	8568.25	-8568.60	-1461.68	1690802.00	14561072.17	40°05'38.975"N	104°49'11.415"W	1.86	
16713.00	89.420	180.200	7319.86	8657.96	-8658.32	-1467.87	1690796.00	14560982.48	40°05'38.089"N	104°49'11.494"W	8.34	
16802.00	90.120	181.730	7320.21	8746.95	-8747.31	-1469.37	1690794.68	14560893.53	40°05'37.209"N	104°49'11.514"W	1.89	
16892.00	89.600	184.760	7320.43	8836.79	-8837.15	-1474.47	1690789.78	14560803.71	40°05'36.322"N	104°49'11.579"W	3.42	
16981.00	89.630	181.300	7321.03	8925.65	-8926.01	-1479.17	1690785.26	14560714.87	40°05'35.443"N	104°49'11.640"W	3.89	
17071.00	89.780	178.900	7321.50	9015.64	-9016.00	-1479.33	1690785.29	14560624.92	40°05'34.554"N	104°49'11.642"W	2.67	
17160.00	89.720	177.070	7321.88	9104.58	-9104.94	-1476.20	1690788.61	14560536.02	40°05'33.675"N	104°49'11.601"W	2.06	
17250.00	89.750	175.140	7322.30	9194.37	-9194.73	-1470.09	1690794.90	14560446.28	40°05'32.788"N	104°49'11.523"W	2.14	
17339.00	89.780	178.590	7322.67	9283.23	-9283.58	-1465.22	1690799.95	14560357.47	40°05'31.910"N	104°49'11.460"W	3.88	
17429.00	89.630	178.720	7323.13	9373.20	-9373.56	-1463.11	1690802.25	14560267.54	40°05'31.021"N	104°49'11.433"W	0.22	
17518.00	89.600	180.320	7323.73	9462.19	-9462.55	-1462.36	1690803.18	14560178.59	40°05'30.141"N	104°49'11.423"W	1.80	
17608.00	89.880	181.210	7324.14	9552.18	-9552.54	-1463.56	1690802.17	14560088.63	40°05'29.252"N	104°49'11.438"W	1.04	
17697.00	89.880	182.600	7324.32	9641.13	-9641.49	-1466.52	1690799.40	14559999.71	40°05'28.373"N	104°49'11.476"W	1.56	
17787.00	89.910	183.350	7324.49	9731.01	-9731.37	-1471.19	1690794.92	14559909.86	40°05'27.485"N	104°49'11.536"W	0.83	
17876.00	89.750	181.670	7324.75	9819.92	-9820.28	-1475.09	1690791.21	14559820.98	40°05'26.606"N	104°49'11.586"W	1.90	
17965.00	89.750	178.610	7325.14	9908.90	-9909.27	-1475.31	1690791.17	14559732.02	40°05'25.727"N	104°49'11.589"W	3.44	
18055.00	89.880	177.130	7325.43	9998.84	-9999.20	-1471.96	1690794.70	14559642.13	40°05'24.838"N	104°49'11.546"W	1.65	
18144.00	89.540	176.110	7325.88	10087.68	-10088.04	-1466.71	1690800.13	14559553.33	40°05'23.960"N	104°49'11.478"W	1.21	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH DATA (250 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
18234.00	90.000	176.150	7326.24	10177.48	-10177.84	-1460.64	1690806.39	14559463.59	40°05'23.073"N	104°49'11.400"W	0.51	
18323.00	89.750	175.690	7326.44	10266.26	-10266.61	-1454.31	1690812.91	14559374.86	40°05'22.195"N	104°49'11.319"W	0.59	
18412.00	89.910	175.440	7326.70	10354.99	-10355.34	-1447.43	1690819.97	14559286.18	40°05'21.319"N	104°49'11.230"W	0.33	
18501.00	89.910	175.500	7326.84	10443.71	-10444.07	-1440.40	1690827.18	14559197.51	40°05'20.442"N	104°49'11.140"W	0.07	
18591.00	89.940	176.520	7326.96	10533.50	-10533.85	-1434.13	1690833.63	14559107.78	40°05'19.555"N	104°49'11.059"W	1.13	
18653.00†	89.919	177.484	7327.03	10595.41	-10595.76	-1430.89	1690837.00	14559045.90	40°05'18.943"N	104°49'11.017"W	1.56	ENTER RADIUS TOE (449'FSL & 2574'FEL,SEC.31) 40.0885952 -104.8197270
18681.00	89.910	177.920	7327.08	10623.39	-10623.74	-1429.77	1690838.18	14559017.93	40°05'18.666"N	104°49'11.003"W	1.56	
18770.00	89.970	179.420	7327.17	10712.36	-10712.71	-1427.70	1690840.43	14558929.00	40°05'17.787"N	104°49'10.976"W	1.69	
18860.00	90.030	180.420	7327.17	10802.36	-10802.71	-1427.58	1690840.75	14558839.04	40°05'16.898"N	104°49'10.974"W	1.11	LAST BHGE MWD+IFR1+MSA SURVEY
18899.00	90.030	180.420	7327.15	10841.36	-10841.71	-1427.86	1690840.54	14558800.05	40°05'16.512"N	104°49'10.978"W	0.00	PTB (203'FSL & 2570'FEL,SEC.31) 40.0879201 -104.8197161

HOLE & CASING SECTIONS - Ref Wellbore: CASTLE PINES 19-2HZ AWB Ref Wellpath: CASTLE PINES 19-2HZ 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	1886.00	1860.00	26.00	1835.83	0.00	0.00	208.82	-298.63	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ 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	-14.84	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
SEC.31-T2N-R66W	2.00	0.30	-14.84	1692230.40	14569640.66	40°07'03.655"N	104°48'52.798"W	polygon
CASTLE PINES 19-2HZ HEEL REV-1(578'FSL & 2562'FEL,SEC.19)	7280.00	95.08	-1439.22	1690806.39	14569732.43	40°07'04.591"N	104°49'11.132"W	point
CASTLE PINES 19-2HZ BHL REV-1(200'FSL & 2579'FEL,SEC.31)	7330.00	-10844.65	-1436.50	1690831.91	14558797.10	40°05'16.483"N	104°49'11.089"W	point
CASTLE PINES 19-2HZ LANDBOX	7330.00	0.00	0.00	1692245.24	14569640.39	40°07'03.652"N	104°48'52.607"W	polygon
CASTLE PINES 19-2HZ RADIUS 1	7330.00	0.00	0.00	1692245.24	14569640.39	40°07'03.652"N	104°48'52.607"W	polygon
CASTLE PINES 19-2HZ RADIUS 2	7330.00	0.00	0.00	1692245.24	14569640.39	40°07'03.652"N	104°48'52.607"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: CASTLE PINES 19-2HZ AWB				Ref Wellpath: CASTLE PINES 19-2HZ AWP		
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
26.00	1846.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <136 - 1846>		CASTLE PINES 19-2HZ AWB	
1846.00	18860.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1969 - 18860>		CASTLE PINES 19-2HZ AWB	
18860.00	18899.00	Blind Drilling (std)	Projection to bit		CASTLE PINES 19-2HZ AWB	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#02 CASTLE PINES 19-2HZ(484'FSL & 1123'FEL,SEC.19)
Area	COLORADO	Well	CASTLE PINES 19-2HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	CASTLE PINES 19-2HZ AWB
Facility	SEC.19-T2N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
136.00	0.480	62.320	136.00	FIRST SURFACE MWD+IFR1 SURVEY
1846.00	17.530	304.900	1797.63	LAST SURFACE MWD+IFR1 SURVEY
1969.00	16.110	315.500	1915.39	FIRST BHGE MWD+IFR1+MSA SURVEY
6951.00	1.186	177.620	6648.76	KOP
7654.00	64.686	171.439	7209.96	ENTER LANDBOX (854'FSL & 2567'FEL,SEC.19) 40.1186977 -104.8197756
7952.00	89.780	178.740	7277.77	LANDING (568'FSL & 2540'FEL,SEC.19) 40.1179115 -104.8196803
8976.00	89.656	181.917	7283.68	EXIT RADIUS HEEL (455'FNL & 2575'FEL,SEC.30) 40.1151030 -104.8198027
18653.00	89.919	177.484	7327.03	ENTER RADIUS TOE (449'FSL & 2574'FEL,SEC.31) 40.0885952 -104.8197270
18860.00	90.030	180.420	7327.17	LAST BHGE MWD+IFR1+MSA SURVEY
18899.00	90.030	180.420	7327.15	PTB (203'FSL & 2570'FEL,SEC.31) 40.0879201 -104.8197161