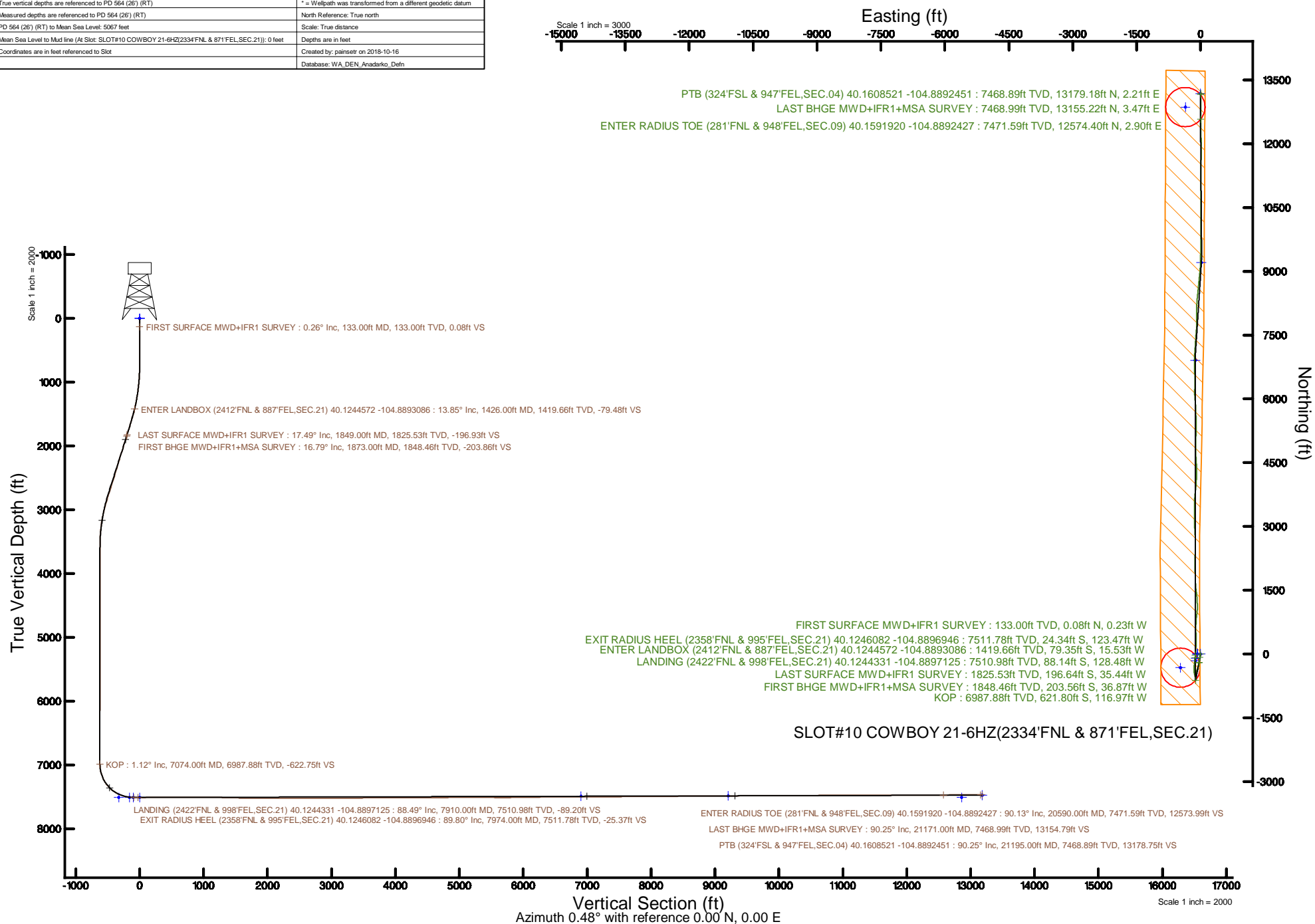


Location:	COLORADO	Slot:	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	COWBOY 21-6HZ
Facility:	SEC.21-T2N-R67W	Wellbore:	COWBOY 21-6HZ PWB



Plot reference wellpath is COWBOY 21-6HZ PWP Rev-A.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: 5067 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#10 COWBOY 21-6HZ(2334FNL & 871FEL, SEC.21)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsest on 2018-10-16
	Database: WA DEN Anadarko Defn



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWB
Facility	SEC.21-T2N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999601	Report Generated	10/16/2018 at 9:52 AM
Convergence at slot	0.08° East	Database/Source file	WA_DEN_Anadarko_Defn/COWBOY_21-6HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1881.58	-210.59	1671374.98	14572152.45	40°07'28.830"N	104°53'21.311"W
Facility Reference Pt			1671583.13	14574033.54	40°07'47.424"N	104°53'18.600"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	5067.00ft
Horizontal Reference Pt	Slot	PD 564 (26') (RT) to Mean Sea Level	5067.00ft
Vertical Reference Pt	PD 564 (26') (RT)	PD 564 (26') (RT) to Mud Line at Slot (SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21))	5067.00ft
MD Reference Pt	PD 564 (26') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.48°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWP
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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	290.360	0.00	0.00	0.00	0.00	1671374.98	14572152.45	40°07'28.830"N	104°53'21.311"W	0.00	
26.00	0.000	290.360	26.00	0.00	0.00	0.00	1671374.98	14572152.45	40°07'28.830"N	104°53'21.311"W	0.00	
133.00	0.260	290.360	133.00	0.08	0.08	-0.23	1671374.75	14572152.54	40°07'28.831"N	104°53'21.314"W	0.24	FIRST SURFACE MWD+IFR1 SURVEY
165.00	0.130	308.640	165.00	0.13	0.13	-0.32	1671374.65	14572152.58	40°07'28.831"N	104°53'21.315"W	0.45	
196.00	0.260	305.830	196.00	0.19	0.20	-0.41	1671374.57	14572152.65	40°07'28.832"N	104°53'21.316"W	0.42	
228.00	0.440	303.010	228.00	0.30	0.30	-0.57	1671374.41	14572152.76	40°07'28.833"N	104°53'21.318"W	0.56	
260.00	0.440	297.920	260.00	0.42	0.43	-0.78	1671374.19	14572152.88	40°07'28.834"N	104°53'21.321"W	0.12	
292.00	0.620	311.360	292.00	0.59	0.60	-1.02	1671373.96	14572153.05	40°07'28.836"N	104°53'21.324"W	0.68	
323.00	0.750	316.900	322.99	0.85	0.86	-1.29	1671373.69	14572153.31	40°07'28.839"N	104°53'21.328"W	0.47	
355.00	0.530	320.500	354.99	1.11	1.13	-1.52	1671373.45	14572153.58	40°07'28.841"N	104°53'21.331"W	0.70	
387.00	0.260	327.800	386.99	1.29	1.30	-1.66	1671373.32	14572153.75	40°07'28.843"N	104°53'21.332"W	0.86	
419.00	0.220	25.720	418.99	1.41	1.42	-1.67	1671373.31	14572153.87	40°07'28.844"N	104°53'21.332"W	0.73	
451.00	0.220	51.120	450.99	1.50	1.51	-1.59	1671373.38	14572153.96	40°07'28.845"N	104°53'21.332"W	0.30	
483.00	0.220	57.800	482.99	1.57	1.59	-1.49	1671373.48	14572154.03	40°07'28.846"N	104°53'21.330"W	0.08	
514.00	0.220	98.140	513.99	1.60	1.61	-1.38	1671373.59	14572154.06	40°07'28.846"N	104°53'21.329"W	0.49	
546.00	0.350	98.140	545.99	1.58	1.59	-1.23	1671373.75	14572154.04	40°07'28.846"N	104°53'21.327"W	0.41	
578.00	0.440	107.460	577.99	1.53	1.54	-1.01	1671373.96	14572153.99	40°07'28.845"N	104°53'21.324"W	0.34	
609.00	0.830	108.770	608.99	1.42	1.43	-0.69	1671374.29	14572153.88	40°07'28.844"N	104°53'21.320"W	1.26	
641.00	0.970	118.350	640.98	1.22	1.22	-0.23	1671374.75	14572153.68	40°07'28.842"N	104°53'21.314"W	0.64	
673.00	0.700	126.530	672.98	0.98	0.98	0.17	1671375.14	14572153.43	40°07'28.840"N	104°53'21.309"W	0.92	
704.00	0.660	155.270	703.98	0.71	0.70	0.39	1671375.37	14572153.16	40°07'28.837"N	104°53'21.306"W	1.10	
736.00	0.570	202.110	735.98	0.39	0.39	0.41	1671375.39	14572152.84	40°07'28.834"N	104°53'21.306"W	1.55	
768.00	0.790	214.330	767.97	0.06	0.06	0.23	1671375.20	14572152.51	40°07'28.831"N	104°53'21.308"W	0.82	
800.00	1.140	213.980	799.97	-0.39	-0.39	-0.08	1671374.90	14572152.07	40°07'28.826"N	104°53'21.312"W	1.09	
831.00	2.330	199.480	830.95	-1.24	-1.24	-0.46	1671374.52	14572151.22	40°07'28.818"N	104°53'21.317"W	4.06	
863.00	3.160	199.040	862.92	-2.69	-2.68	-0.96	1671374.02	14572149.77	40°07'28.803"N	104°53'21.323"W	2.59	
895.00	3.740	194.120	894.86	-4.54	-4.53	-1.50	1671373.48	14572147.92	40°07'28.785"N	104°53'21.330"W	2.03	
927.00	4.130	188.490	926.78	-6.70	-6.68	-1.93	1671373.06	14572145.77	40°07'28.764"N	104°53'21.336"W	1.71	
958.00	4.610	186.210	957.69	-9.04	-9.02	-2.23	1671372.76	14572143.43	40°07'28.741"N	104°53'21.340"W	1.65	
990.00	5.190	187.350	989.58	-11.76	-11.74	-2.55	1671372.44	14572140.72	40°07'28.714"N	104°53'21.344"W	1.84	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWP
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
1022.00	5.630	186.210	1021.43	-14.76	-14.73	-2.91	1671372.09	14572137.72	40°07'28.684"N	104°53'21.348"W	1.42	
1054.00	6.110	188.670	1053.27	-18.00	-17.98	-3.33	1671371.67	14572134.48	40°07'28.652"N	104°53'21.354"W	1.69	
1085.00	6.420	188.840	1084.08	-21.35	-21.32	-3.85	1671371.16	14572131.13	40°07'28.619"N	104°53'21.361"W	1.00	
1117.00	7.210	192.100	1115.86	-25.09	-25.05	-4.55	1671370.46	14572127.40	40°07'28.582"N	104°53'21.370"W	2.75	
1149.00	7.470	194.030	1147.59	-29.08	-29.03	-5.47	1671369.54	14572123.42	40°07'28.543"N	104°53'21.381"W	1.12	
1181.00	8.310	193.330	1179.29	-33.36	-33.30	-6.51	1671368.51	14572119.16	40°07'28.501"N	104°53'21.395"W	2.64	
1212.00	9.180	193.150	1209.93	-37.95	-37.89	-7.59	1671367.44	14572114.57	40°07'28.456"N	104°53'21.409"W	2.81	
1244.00	10.020	191.570	1241.48	-43.17	-43.10	-8.73	1671366.31	14572109.36	40°07'28.404"N	104°53'21.423"W	2.75	
1276.00	10.500	191.660	1272.97	-48.77	-48.69	-9.87	1671365.17	14572103.77	40°07'28.349"N	104°53'21.438"W	1.50	
1307.00	10.810	192.100	1303.43	-54.38	-54.29	-11.05	1671363.99	14572098.17	40°07'28.293"N	104°53'21.453"W	1.03	
1339.00	11.510	191.220	1334.83	-60.46	-60.36	-12.30	1671362.75	14572092.10	40°07'28.234"N	104°53'21.469"W	2.25	
1370.00	12.520	190.070	1365.15	-66.81	-66.70	-13.49	1671361.57	14572085.76	40°07'28.171"N	104°53'21.485"W	3.35	
1402.00	13.360	189.020	1396.34	-73.89	-73.77	-14.68	1671360.39	14572078.69	40°07'28.101"N	104°53'21.500"W	2.73	
1426.00†	13.855	188.284	1419.66	-79.48	-79.35	-15.53	1671359.55	14572073.11	40°07'28.046"N	104°53'21.511"W	2.18	ENTER LANDBOX (2412'FNL & 887'FEL, SEC.21) 40.1244572 -104.8893086
1434.00	14.020	188.050	1427.43	-81.39	-81.26	-15.80	1671359.28	14572071.21	40°07'28.027"N	104°53'21.514"W	2.18	
1465.00	14.680	188.490	1457.46	-89.00	-88.86	-16.91	1671358.19	14572063.60	40°07'27.952"N	104°53'21.529"W	2.16	
1497.00	15.340	188.490	1488.37	-97.21	-97.06	-18.13	1671356.97	14572055.41	40°07'27.871"N	104°53'21.544"W	2.06	
1529.00	16.130	188.580	1519.17	-105.80	-105.64	-19.42	1671355.70	14572046.83	40°07'27.786"N	104°53'21.561"W	2.47	
1560.00	16.740	188.760	1548.90	-114.48	-114.31	-20.74	1671354.39	14572038.16	40°07'27.700"N	104°53'21.578"W	1.97	
1591.00	16.440	189.280	1578.61	-123.23	-123.05	-22.13	1671353.01	14572029.42	40°07'27.614"N	104°53'21.596"W	1.08	
1623.00	16.570	189.720	1609.29	-132.21	-132.02	-23.63	1671351.52	14572020.46	40°07'27.525"N	104°53'21.615"W	0.56	
1655.00	17.050	190.250	1639.93	-141.34	-141.13	-25.24	1671349.93	14572011.34	40°07'27.435"N	104°53'21.636"W	1.57	
1687.00	16.260	189.190	1670.58	-150.39	-150.17	-26.79	1671348.39	14572002.31	40°07'27.346"N	104°53'21.656"W	2.64	
1718.00	16.480	189.630	1700.33	-159.02	-158.79	-28.21	1671346.97	14571993.69	40°07'27.261"N	104°53'21.674"W	0.81	
1750.00	16.830	190.160	1730.98	-168.07	-167.83	-29.79	1671345.41	14571984.66	40°07'27.172"N	104°53'21.694"W	1.19	
1782.00	17.050	190.510	1761.60	-177.25	-177.00	-31.46	1671343.75	14571975.49	40°07'27.081"N	104°53'21.716"W	0.76	
1809.00	17.490	191.660	1787.38	-185.13	-184.86	-33.01	1671342.21	14571967.62	40°07'27.003"N	104°53'21.736"W	2.06	
1849.00	17.490	191.660	1825.53	-196.93	-196.64	-35.44	1671339.80	14571955.85	40°07'26.887"N	104°53'21.767"W	0.00	LAST SURFACE MWD+IFR1 SURVEY
1873.00	16.790	191.800	1848.46	-203.86	-203.56	-36.87	1671338.37	14571948.92	40°07'26.818"N	104°53'21.786"W	2.92	FIRST BHGE MWD+IFR1+MSA SURVEY
1963.00	17.970	189.640	1934.35	-230.32	-229.98	-41.86	1671333.42	14571922.52	40°07'26.557"N	104°53'21.850"W	1.49	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWP
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
2052.00	17.980	191.770	2019.01	-257.34	-256.96	-46.96	1671328.36	14571895.54	40°07'26.291"N	104°53'21.915"W	0.74	
2142.00	17.680	195.150	2104.69	-284.18	-283.75	-53.36	1671321.99	14571868.75	40°07'26.026"N	104°53'21.998"W	1.20	
2231.00	17.920	197.060	2189.43	-310.38	-309.89	-60.91	1671314.48	14571842.62	40°07'25.768"N	104°53'22.095"W	0.71	
2320.00	17.650	197.900	2274.18	-336.38	-335.81	-69.08	1671306.35	14571816.69	40°07'25.511"N	104°53'22.200"W	0.42	
2410.00	17.480	203.060	2359.99	-361.88	-361.24	-78.56	1671296.89	14571791.26	40°07'25.260"N	104°53'22.322"W	1.74	
2499.00	18.370	202.760	2444.66	-387.20	-386.47	-89.23	1671286.27	14571766.03	40°07'25.011"N	104°53'22.460"W	1.01	
2589.00	18.350	200.790	2530.08	-413.60	-412.79	-99.74	1671275.79	14571739.70	40°07'24.751"N	104°53'22.595"W	0.69	
2679.00	18.450	199.900	2615.48	-440.32	-439.43	-109.62	1671265.95	14571713.07	40°07'24.488"N	104°53'22.722"W	0.33	
2768.00	18.410	192.180	2699.93	-467.37	-466.41	-117.38	1671258.23	14571686.08	40°07'24.221"N	104°53'22.822"W	2.74	
2857.00	16.730	181.690	2784.80	-493.95	-492.96	-120.72	1671254.92	14571659.54	40°07'23.959"N	104°53'22.865"W	4.02	
2947.00	16.190	178.700	2871.11	-519.44	-518.45	-120.82	1671254.85	14571634.06	40°07'23.707"N	104°53'22.866"W	1.12	
3036.00	15.720	177.870	2956.68	-543.88	-542.91	-120.09	1671255.61	14571609.62	40°07'23.465"N	104°53'22.857"W	0.59	
3126.00	13.170	178.260	3043.83	-566.31	-565.34	-119.32	1671256.40	14571587.19	40°07'23.243"N	104°53'22.847"W	2.84	
3215.00	10.430	177.820	3130.94	-584.49	-583.53	-118.71	1671257.04	14571569.01	40°07'23.064"N	104°53'22.839"W	3.08	
3304.00	7.550	174.400	3218.84	-598.36	-597.40	-117.83	1671257.94	14571555.14	40°07'22.926"N	104°53'22.828"W	3.29	
3394.00	5.340	169.470	3308.26	-608.35	-607.40	-116.49	1671259.29	14571545.15	40°07'22.828"N	104°53'22.811"W	2.53	
3483.00	3.480	163.300	3397.00	-615.00	-614.06	-114.96	1671260.83	14571538.49	40°07'22.762"N	104°53'22.791"W	2.15	
3573.00	1.600	149.400	3486.91	-618.68	-617.76	-113.53	1671262.26	14571534.80	40°07'22.725"N	104°53'22.772"W	2.18	
3662.00	0.370	45.300	3575.89	-619.54	-618.63	-112.70	1671263.10	14571533.93	40°07'22.717"N	104°53'22.762"W	1.94	
3751.00	0.330	259.870	3664.89	-619.39	-618.47	-112.74	1671263.05	14571534.09	40°07'22.718"N	104°53'22.762"W	0.75	
3841.00	0.250	262.860	3754.89	-619.46	-618.54	-113.19	1671262.60	14571534.02	40°07'22.717"N	104°53'22.768"W	0.09	
3930.00	0.100	233.050	3843.89	-619.53	-618.61	-113.45	1671262.34	14571533.95	40°07'22.717"N	104°53'22.771"W	0.19	
4020.00	0.220	219.460	3933.89	-619.72	-618.79	-113.62	1671262.17	14571533.77	40°07'22.715"N	104°53'22.774"W	0.14	
4109.00	0.390	276.490	4022.89	-619.82	-618.89	-114.03	1671261.76	14571533.67	40°07'22.714"N	104°53'22.779"W	0.37	
4198.00	0.190	219.070	4111.89	-619.90	-618.97	-114.42	1671261.37	14571533.59	40°07'22.713"N	104°53'22.784"W	0.37	
4288.00	0.030	199.660	4201.89	-620.04	-619.11	-114.53	1671261.27	14571533.45	40°07'22.712"N	104°53'22.785"W	0.18	
4467.00	0.130	246.070	4380.89	-620.17	-619.24	-114.73	1671261.07	14571533.32	40°07'22.711"N	104°53'22.788"W	0.06	
4556.00	0.090	247.960	4469.89	-620.24	-619.30	-114.88	1671260.91	14571533.25	40°07'22.710"N	104°53'22.790"W	0.05	
4646.00	0.110	249.200	4559.89	-620.29	-619.36	-115.03	1671260.76	14571533.20	40°07'22.709"N	104°53'22.792"W	0.02	
4735.00	0.110	264.640	4648.89	-620.33	-619.40	-115.20	1671260.60	14571533.16	40°07'22.709"N	104°53'22.794"W	0.03	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWP
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
4825.00	0.040	210.600	4738.89	-620.37	-619.43	-115.30	1671260.50	14571533.12	40°07'22.709"N	104°53'22.795"W	0.10	
4914.00	0.110	181.790	4827.89	-620.48	-619.55	-115.32	1671260.48	14571533.01	40°07'22.708"N	104°53'22.795"W	0.09	
5003.00	0.220	213.530	4916.89	-620.71	-619.77	-115.41	1671260.38	14571532.78	40°07'22.705"N	104°53'22.797"W	0.16	
5093.00	0.100	198.090	5006.89	-620.93	-619.99	-115.53	1671260.26	14571532.56	40°07'22.703"N	104°53'22.798"W	0.14	
5182.00	0.060	242.610	5095.89	-621.03	-620.09	-115.60	1671260.20	14571532.47	40°07'22.702"N	104°53'22.799"W	0.08	
5272.00	0.120	250.870	5185.89	-621.08	-620.14	-115.73	1671260.07	14571532.42	40°07'22.702"N	104°53'22.801"W	0.07	
5361.00	0.000	8.310	5274.89	-621.11	-620.17	-115.82	1671259.98	14571532.39	40°07'22.701"N	104°53'22.802"W	0.13	
5451.00	0.000	8.310	5364.89	-621.11	-620.17	-115.82	1671259.98	14571532.39	40°07'22.701"N	104°53'22.802"W	0.00	
5540.00	0.030	351.910	5453.89	-621.09	-620.15	-115.82	1671259.97	14571532.41	40°07'22.702"N	104°53'22.802"W	0.03	
5630.00	0.060	253.540	5543.89	-621.08	-620.14	-115.87	1671259.93	14571532.42	40°07'22.702"N	104°53'22.803"W	0.08	
5719.00	0.090	212.850	5632.89	-621.15	-620.21	-115.95	1671259.84	14571532.35	40°07'22.701"N	104°53'22.804"W	0.07	
5808.00	0.060	91.680	5721.89	-621.21	-620.27	-115.94	1671259.85	14571532.29	40°07'22.700"N	104°53'22.804"W	0.15	
5898.00	0.060	137.220	5811.89	-621.25	-620.31	-115.86	1671259.93	14571532.25	40°07'22.700"N	104°53'22.802"W	0.05	
5987.00	0.060	88.910	5900.89	-621.28	-620.34	-115.79	1671260.01	14571532.22	40°07'22.700"N	104°53'22.801"W	0.06	
6077.00	0.100	30.950	5990.89	-621.21	-620.27	-115.70	1671260.10	14571532.29	40°07'22.700"N	104°53'22.800"W	0.09	
6166.00	0.150	216.220	6079.89	-621.24	-620.30	-115.73	1671260.07	14571532.26	40°07'22.700"N	104°53'22.801"W	0.28	
6256.00	0.680	209.500	6169.88	-621.80	-620.86	-116.06	1671259.74	14571531.70	40°07'22.695"N	104°53'22.805"W	0.59	
6345.00	0.070	259.550	6258.88	-622.27	-621.33	-116.37	1671259.42	14571531.23	40°07'22.690"N	104°53'22.809"W	0.72	
6435.00	0.090	237.090	6348.88	-622.32	-621.38	-116.49	1671259.31	14571531.18	40°07'22.689"N	104°53'22.811"W	0.04	
6613.00	0.000	8.320	6526.88	-622.40	-621.45	-116.60	1671259.19	14571531.10	40°07'22.689"N	104°53'22.812"W	0.05	
6703.00	0.070	186.450	6616.88	-622.45	-621.51	-116.61	1671259.19	14571531.05	40°07'22.688"N	104°53'22.812"W	0.08	
6792.00	0.100	254.360	6705.88	-622.53	-621.58	-116.69	1671259.11	14571530.97	40°07'22.687"N	104°53'22.813"W	0.11	
6882.00	0.070	242.890	6795.88	-622.58	-621.63	-116.82	1671258.98	14571530.93	40°07'22.687"N	104°53'22.815"W	0.04	
6971.00	0.070	218.430	6884.88	-622.64	-621.70	-116.90	1671258.90	14571530.86	40°07'22.686"N	104°53'22.816"W	0.03	
7061.00	0.210	185.830	6974.88	-622.85	-621.90	-116.95	1671258.85	14571530.65	40°07'22.684"N	104°53'22.816"W	0.17	
7074.00†	1.116	352.932	6987.88	-622.75	-621.80	-116.97	1671258.83	14571530.76	40°07'22.685"N	104°53'22.817"W	10.16	KOP
7150.00	8.840	354.710	7063.54	-616.20	-615.24	-117.60	1671258.19	14571537.31	40°07'22.750"N	104°53'22.825"W	10.16	
7240.00	17.450	354.960	7151.10	-595.85	-594.87	-119.42	1671256.34	14571557.67	40°07'22.951"N	104°53'22.848"W	9.57	
7329.00	27.540	349.840	7233.23	-562.25	-561.24	-124.24	1671251.49	14571591.28	40°07'23.284"N	104°53'22.910"W	11.54	
7418.00	37.810	346.090	7308.05	-515.47	-514.38	-134.45	1671241.22	14571638.12	40°07'23.747"N	104°53'23.042"W	11.76	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWP
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
7508.00	47.950	348.940	7373.92	-455.85	-454.64	-147.53	1671228.07	14571697.81	40°07'24.337"N	104°53'23.210"W	11.47	
7597.00	57.610	358.310	7427.77	-385.66	-384.39	-155.01	1671220.51	14571768.03	40°07'25.031"N	104°53'23.306"W	13.70	
7686.00	68.040	4.670	7468.39	-306.67	-305.41	-152.75	1671222.67	14571846.98	40°07'25.812"N	104°53'23.277"W	13.32	
7776.00	77.180	7.070	7495.26	-221.26	-220.08	-143.93	1671231.38	14571932.29	40°07'26.655"N	104°53'23.164"W	10.47	
7865.00	85.530	6.800	7508.63	-133.91	-132.81	-133.32	1671241.88	14572019.53	40°07'27.518"N	104°53'23.027"W	9.39	
7910.00	88.490	5.550	7510.98	-89.20	-88.14	-128.48	1671246.65	14572064.19	40°07'27.959"N	104°53'22.965"W	7.14	LANDING (2422'FNL & 998'FEL,SEC.21) 40.1244331 -104.8897125
7954.00	89.660	3.920	7511.69	-45.33	-44.29	-124.85	1671250.23	14572108.02	40°07'28.392"N	104°53'22.918"W	4.56	
7974.00†	89.804	4.022	7511.78	-25.37	-24.34	-123.47	1671251.59	14572127.97	40°07'28.589"N	104°53'22.900"W	0.88	EXIT RADIUS HEEL (2358'FNL & 995'FEL,SEC.21) 40.1246082 -104.8896946
8044.00	90.310	4.380	7511.71	44.49	45.47	-118.34	1671256.63	14572197.76	40°07'29.279"N	104°53'22.834"W	0.88	
8133.00	90.680	5.040	7510.94	133.24	134.17	-111.03	1671263.82	14572286.43	40°07'30.156"N	104°53'22.740"W	0.85	
8222.00	89.850	1.870	7510.53	222.11	222.99	-105.67	1671269.07	14572375.22	40°07'31.034"N	104°53'22.671"W	3.68	
8311.00	89.880	359.420	7510.74	311.10	311.98	-104.67	1671269.96	14572464.17	40°07'31.913"N	104°53'22.658"W	2.75	
8401.00	90.460	358.550	7510.47	401.07	401.96	-106.26	1671268.26	14572554.12	40°07'32.802"N	104°53'22.679"W	1.16	
8490.00	90.400	358.340	7509.80	490.01	490.93	-108.68	1671265.73	14572643.05	40°07'33.681"N	104°53'22.710"W	0.25	
8580.00	90.090	0.830	7509.42	579.99	580.92	-109.33	1671264.97	14572733.00	40°07'34.571"N	104°53'22.718"W	2.79	
8669.00	90.060	359.660	7509.30	668.99	669.91	-108.95	1671265.24	14572821.96	40°07'35.450"N	104°53'22.714"W	1.32	
8758.00	90.400	2.230	7508.95	757.97	758.89	-107.48	1671266.59	14572910.91	40°07'36.329"N	104°53'22.695"W	2.91	
8848.00	90.580	6.480	7508.18	847.74	848.61	-100.65	1671273.31	14573000.60	40°07'37.216"N	104°53'22.607"W	4.73	
8937.00	90.800	8.640	7507.10	936.05	936.82	-88.94	1671284.91	14573088.79	40°07'38.088"N	104°53'22.456"W	2.44	
9027.00	89.260	3.980	7507.06	1025.56	1026.25	-79.05	1671294.68	14573178.19	40°07'38.972"N	104°53'22.329"W	5.45	
9116.00	89.050	359.250	7508.37	1114.51	1115.18	-76.54	1671297.07	14573267.09	40°07'39.850"N	104°53'22.296"W	5.32	
9206.00	89.050	357.020	7509.86	1204.41	1205.12	-79.47	1671294.04	14573356.99	40°07'40.739"N	104°53'22.334"W	2.48	
9296.00	88.950	356.320	7511.43	1294.20	1294.95	-84.70	1671288.70	14573446.78	40°07'41.627"N	104°53'22.401"W	0.79	
9385.00	88.250	354.150	7513.61	1382.80	1383.61	-92.09	1671281.20	14573535.39	40°07'42.503"N	104°53'22.497"W	2.56	
9474.00	88.400	352.750	7516.21	1471.09	1471.99	-102.24	1671270.95	14573623.72	40°07'43.376"N	104°53'22.627"W	1.58	
9564.00	89.260	354.760	7518.05	1560.45	1561.43	-112.03	1671261.05	14573713.12	40°07'44.260"N	104°53'22.753"W	2.43	
9653.00	88.800	357.080	7519.55	1649.15	1650.19	-118.36	1671254.61	14573801.83	40°07'45.137"N	104°53'22.835"W	2.66	
9743.00	88.830	357.630	7521.42	1738.99	1740.07	-122.51	1671250.35	14573891.67	40°07'46.026"N	104°53'22.888"W	0.61	
9832.00	90.000	358.000	7522.32	1827.89	1829.00	-125.90	1671246.85	14573980.56	40°07'46.904"N	104°53'22.932"W	1.38	
9922.00	89.940	358.110	7522.37	1917.81	1918.95	-128.96	1671243.68	14574070.47	40°07'47.793"N	104°53'22.971"W	0.14	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWB
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
10011.00	90.150	358.080	7522.30	2006.73	2007.90	-131.91	1671240.61	14574159.38	40°07'48.672"N	104°53'23.009"W	0.24	
10100.00	90.000	358.830	7522.18	2095.68	2096.87	-134.31	1671238.11	14574248.31	40°07'49.551"N	104°53'23.040"W	0.86	
10190.00	90.340	1.120	7521.92	2185.67	2186.86	-134.35	1671237.95	14574338.27	40°07'50.441"N	104°53'23.041"W	2.57	
10279.00	90.890	2.270	7520.96	2274.64	2275.81	-131.72	1671240.47	14574427.19	40°07'51.320"N	104°53'23.007"W	1.43	
10369.00	90.090	2.980	7520.19	2364.57	2365.71	-127.60	1671244.48	14574517.06	40°07'52.208"N	104°53'22.954"W	1.19	
10458.00	90.060	0.590	7520.08	2453.54	2454.66	-124.83	1671247.14	14574605.98	40°07'53.087"N	104°53'22.918"W	2.69	
10548.00	90.490	0.230	7519.64	2543.54	2544.66	-124.18	1671247.67	14574695.94	40°07'53.977"N	104°53'22.910"W	0.62	
10637.00	90.400	359.940	7518.95	2632.54	2633.66	-124.05	1671247.70	14574784.90	40°07'54.856"N	104°53'22.908"W	0.34	
10726.00	89.910	358.260	7518.71	2721.51	2722.64	-125.45	1671246.19	14574873.85	40°07'55.735"N	104°53'22.926"W	1.97	
10816.00	89.910	355.580	7518.85	2811.33	2812.50	-130.28	1671241.24	14574963.66	40°07'56.623"N	104°53'22.988"W	2.98	
10905.00	90.150	356.700	7518.81	2900.07	2901.30	-136.28	1671235.14	14575052.42	40°07'57.501"N	104°53'23.065"W	1.29	
10995.00	90.030	358.280	7518.67	2989.94	2991.21	-140.22	1671231.09	14575142.29	40°07'58.389"N	104°53'23.116"W	1.76	
11084.00	90.120	358.540	7518.55	3078.89	3080.18	-142.69	1671228.51	14575231.21	40°07'59.269"N	104°53'23.148"W	0.31	
11174.00	90.000	358.890	7518.45	3168.84	3170.15	-144.71	1671226.38	14575321.15	40°08'00.158"N	104°53'23.174"W	0.41	
11263.00	90.030	358.730	7518.43	3257.81	3259.14	-146.55	1671224.42	14575410.10	40°08'01.037"N	104°53'23.198"W	0.18	
11352.00	89.970	359.690	7518.43	3346.78	3348.13	-147.78	1671223.09	14575499.05	40°08'01.917"N	104°53'23.214"W	1.08	
11442.00	90.150	0.280	7518.34	3436.78	3438.13	-147.80	1671222.95	14575589.01	40°08'02.806"N	104°53'23.214"W	0.69	
11531.00	90.650	0.710	7517.72	3525.78	3527.12	-147.04	1671223.61	14575677.97	40°08'03.685"N	104°53'23.204"W	0.74	
11621.00	90.430	3.750	7516.87	3615.72	3617.04	-143.53	1671227.00	14575767.86	40°08'04.574"N	104°53'23.159"W	3.39	
11710.00	90.460	5.800	7516.18	3704.46	3705.72	-136.13	1671234.29	14575856.51	40°08'05.450"N	104°53'23.064"W	2.30	
11799.00	90.770	7.480	7515.22	3792.94	3794.12	-125.84	1671244.47	14575944.89	40°08'06.324"N	104°53'22.931"W	1.92	
11889.00	90.090	7.410	7514.55	3882.27	3883.35	-114.17	1671256.01	14576034.10	40°08'07.206"N	104°53'22.781"W	0.76	
11978.00	90.060	3.830	7514.43	3970.90	3971.91	-105.46	1671264.61	14576122.64	40°08'08.081"N	104°53'22.669"W	4.02	
12067.00	90.370	2.650	7514.10	4059.79	4060.77	-100.43	1671269.53	14576211.46	40°08'08.959"N	104°53'22.604"W	1.37	
12157.00	89.850	2.010	7513.92	4149.74	4150.69	-96.77	1671273.08	14576301.36	40°08'09.848"N	104°53'22.557"W	0.92	
12246.00	90.120	0.850	7513.95	4238.73	4239.66	-94.55	1671275.19	14576390.29	40°08'10.727"N	104°53'22.528"W	1.34	
12336.00	90.220	359.260	7513.68	4328.72	4329.66	-94.46	1671275.16	14576480.25	40°08'11.616"N	104°53'22.527"W	1.77	
12425.00	90.150	358.220	7513.39	4417.68	4418.64	-96.42	1671273.09	14576569.19	40°08'12.495"N	104°53'22.552"W	1.17	
12515.00	89.880	356.340	7513.37	4507.54	4508.53	-100.69	1671268.71	14576659.05	40°08'13.384"N	104°53'22.607"W	2.11	
12604.00	89.940	355.340	7513.51	4596.25	4597.29	-107.15	1671262.15	14576747.77	40°08'14.261"N	104°53'22.691"W	1.13	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWB
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
12693.00	90.550	356.690	7513.13	4684.97	4686.08	-113.33	1671255.86	14576836.50	40°08'15.138"N	104°53'22.770"W	1.66	
12783.00	90.860	358.800	7512.02	4774.86	4775.99	-116.87	1671252.20	14576926.38	40°08'16.027"N	104°53'22.816"W	2.37	
12872.00	90.650	0.330	7510.85	4863.84	4864.98	-117.55	1671251.42	14577015.33	40°08'16.906"N	104°53'22.825"W	1.74	
12962.00	90.340	1.700	7510.07	4953.83	4954.96	-115.95	1671252.90	14577105.28	40°08'17.795"N	104°53'22.804"W	1.56	
13051.00	90.650	1.710	7509.30	5042.80	5043.92	-113.31	1671255.44	14577194.20	40°08'18.674"N	104°53'22.770"W	0.35	
13141.00	90.550	3.860	7508.36	5132.72	5133.80	-108.93	1671259.69	14577284.06	40°08'19.563"N	104°53'22.714"W	2.39	
13231.00	89.320	2.580	7508.46	5222.61	5223.66	-103.88	1671264.64	14577373.88	40°08'20.451"N	104°53'22.649"W	1.97	
13320.00	89.320	359.630	7509.52	5311.59	5312.62	-102.16	1671266.24	14577462.81	40°08'21.330"N	104°53'22.626"W	3.31	
13409.00	89.720	358.750	7510.26	5400.56	5401.61	-103.42	1671264.87	14577551.76	40°08'22.209"N	104°53'22.643"W	1.09	
13498.00	89.630	359.070	7510.77	5489.53	5490.59	-105.11	1671263.07	14577640.71	40°08'23.089"N	104°53'22.664"W	0.37	
13588.00	89.320	357.870	7511.59	5579.47	5580.56	-107.52	1671260.55	14577730.63	40°08'23.978"N	104°53'22.695"W	1.38	
13678.00	89.600	357.540	7512.44	5669.36	5670.48	-111.12	1671256.84	14577820.51	40°08'24.866"N	104°53'22.742"W	0.48	
13767.00	90.800	358.340	7512.13	5758.27	5759.42	-114.32	1671253.53	14577909.41	40°08'25.745"N	104°53'22.783"W	1.62	
13857.00	90.920	357.720	7510.78	5848.18	5849.35	-117.41	1671250.33	14577999.31	40°08'26.634"N	104°53'22.823"W	0.70	
13946.00	90.830	352.510	7509.42	5936.75	5937.99	-124.99	1671242.64	14578087.90	40°08'27.510"N	104°53'22.920"W	5.85	
14036.00	90.920	354.780	7508.04	6026.09	6027.42	-134.95	1671232.58	14578177.28	40°08'28.394"N	104°53'23.049"W	2.52	
14125.00	90.740	358.800	7506.75	6114.88	6116.25	-139.93	1671227.49	14578266.07	40°08'29.271"N	104°53'23.113"W	4.52	
14215.00	90.710	1.620	7505.61	6204.86	6206.24	-139.60	1671227.70	14578356.02	40°08'30.161"N	104°53'23.109"W	3.13	
14304.00	90.990	2.080	7504.29	6293.83	6295.18	-136.73	1671230.46	14578444.93	40°08'31.040"N	104°53'23.072"W	0.61	
14394.00	90.520	0.670	7503.11	6383.81	6385.14	-134.57	1671232.51	14578534.86	40°08'31.929"N	104°53'23.044"W	1.65	
14483.00	90.680	358.120	7502.18	6472.78	6474.13	-135.51	1671231.46	14578623.81	40°08'32.808"N	104°53'23.056"W	2.87	
14573.00	90.340	358.260	7501.37	6562.70	6564.08	-138.35	1671228.51	14578713.72	40°08'33.697"N	104°53'23.092"W	0.41	
14662.00	90.220	359.400	7500.94	6651.66	6653.06	-140.17	1671226.58	14578802.66	40°08'34.576"N	104°53'23.116"W	1.29	
14751.00	90.090	359.130	7500.70	6740.64	6742.05	-141.31	1671225.33	14578891.62	40°08'35.456"N	104°53'23.131"W	0.34	
14841.00	90.120	358.760	7500.53	6830.61	6832.03	-142.97	1671223.56	14578981.56	40°08'36.345"N	104°53'23.152"W	0.41	
14930.00	90.310	0.150	7500.20	6919.59	6921.03	-143.81	1671222.60	14579070.52	40°08'37.224"N	104°53'23.163"W	1.58	
15020.00	90.180	2.580	7499.82	7009.58	7010.99	-141.67	1671224.63	14579160.45	40°08'38.113"N	104°53'23.135"W	2.70	
15109.00	90.340	3.820	7499.41	7098.47	7099.85	-136.70	1671229.49	14579249.28	40°08'38.991"N	104°53'23.071"W	1.40	
15198.00	90.090	3.980	7499.08	7187.31	7188.65	-130.65	1671235.43	14579338.05	40°08'39.869"N	104°53'22.993"W	0.33	
15288.00	90.280	3.790	7498.79	7277.15	7278.44	-124.55	1671241.41	14579427.81	40°08'40.756"N	104°53'22.915"W	0.30	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWB
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
15377.00	90.180	3.800	7498.43	7366.00	7367.24	-118.66	1671247.19	14579516.59	40°08'41.634"N	104°53'22.839"W	0.11	
15467.00	89.910	4.520	7498.36	7455.82	7457.00	-112.13	1671253.61	14579606.32	40°08'42.521"N	104°53'22.755"W	0.85	
15556.00	90.620	4.580	7497.95	7544.59	7545.72	-105.07	1671260.55	14579695.01	40°08'43.398"N	104°53'22.664"W	0.80	
15646.00	90.310	4.370	7497.22	7634.37	7635.45	-98.05	1671267.46	14579784.71	40°08'44.284"N	104°53'22.574"W	0.42	
15735.00	90.150	2.010	7496.86	7723.26	7724.30	-93.10	1671272.30	14579873.53	40°08'45.162"N	104°53'22.510"W	2.66	
15824.00	90.430	357.430	7496.41	7812.23	7813.27	-93.53	1671271.75	14579962.47	40°08'46.041"N	104°53'22.515"W	5.16	
15914.00	90.770	357.360	7495.47	7902.09	7903.18	-97.62	1671267.55	14580052.33	40°08'46.930"N	104°53'22.568"W	0.39	
16003.00	90.580	2.790	7494.42	7991.05	7992.14	-97.51	1671267.56	14580141.26	40°08'47.809"N	104°53'22.567"W	6.10	
16093.00	90.340	1.190	7493.69	8081.01	8082.08	-94.38	1671270.57	14580231.16	40°08'48.698"N	104°53'22.526"W	1.80	
16182.00	90.370	2.370	7493.14	8169.99	8171.03	-91.62	1671273.22	14580320.09	40°08'49.577"N	104°53'22.491"W	1.33	
16272.00	90.120	3.540	7492.76	8259.90	8260.91	-86.98	1671277.75	14580409.93	40°08'50.465"N	104°53'22.431"W	1.33	
16361.00	90.620	5.700	7492.18	8348.66	8349.61	-79.81	1671284.80	14580498.61	40°08'51.342"N	104°53'22.339"W	2.49	
16450.00	90.620	4.920	7491.22	8437.34	8438.22	-71.57	1671292.93	14580587.20	40°08'52.217"N	104°53'22.233"W	0.88	
16540.00	90.220	5.820	7490.56	8527.01	8527.83	-63.15	1671301.23	14580676.77	40°08'53.103"N	104°53'22.124"W	1.09	
16629.00	90.400	5.970	7490.08	8615.61	8616.35	-54.01	1671310.26	14580765.28	40°08'53.978"N	104°53'22.006"W	0.26	
16719.00	90.490	5.790	7489.38	8705.20	8705.88	-44.79	1671319.36	14580854.78	40°08'54.862"N	104°53'21.888"W	0.22	
16808.00	90.280	6.410	7488.78	8793.77	8794.37	-35.33	1671328.71	14580943.25	40°08'55.737"N	104°53'21.766"W	0.74	
16897.00	90.430	5.250	7488.23	8882.38	8882.91	-26.29	1671337.63	14581031.76	40°08'56.612"N	104°53'21.650"W	1.31	
16987.00	90.460	5.090	7487.53	8972.08	8972.54	-18.18	1671345.63	14581121.36	40°08'57.497"N	104°53'21.545"W	0.18	
17076.00	90.430	5.640	7486.84	9060.75	9061.15	-9.86	1671353.84	14581209.95	40°08'58.373"N	104°53'21.438"W	0.62	
17166.00	90.280	3.070	7486.28	9150.53	9150.88	-3.03	1671360.56	14581299.65	40°08'59.260"N	104°53'21.350"W	2.86	
17255.00	90.340	0.350	7485.80	9239.50	9239.83	-0.37	1671363.10	14581388.57	40°09'00.139"N	104°53'21.316"W	3.06	
17345.00	90.520	0.400	7485.13	9329.50	9329.82	0.22	1671363.58	14581478.53	40°09'01.028"N	104°53'21.308"W	0.21	
17434.00	90.310	0.980	7484.48	9418.50	9418.81	1.29	1671364.54	14581567.48	40°09'01.908"N	104°53'21.294"W	0.69	
17524.00	90.400	359.980	7483.92	9508.50	9508.81	2.04	1671365.18	14581657.44	40°09'02.797"N	104°53'21.285"W	1.12	
17613.00	90.460	359.980	7483.26	9597.49	9597.80	2.01	1671365.04	14581746.40	40°09'03.676"N	104°53'21.285"W	0.07	
17703.00	90.340	0.240	7482.63	9687.49	9687.80	2.18	1671365.10	14581836.37	40°09'04.566"N	104°53'21.283"W	0.32	
17792.00	90.650	0.190	7481.86	9776.48	9776.80	2.52	1671365.32	14581925.33	40°09'05.445"N	104°53'21.279"W	0.35	
17882.00	90.250	0.040	7481.15	9866.48	9866.79	2.70	1671365.39	14582015.29	40°09'06.335"N	104°53'21.276"W	0.47	
17971.00	90.520	0.890	7480.55	9955.47	9955.79	3.42	1671366.00	14582104.25	40°09'07.214"N	104°53'21.267"W	1.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWP
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
18061.00	90.310	2.250	7479.90	10045.45	10045.75	5.89	1671368.35	14582194.17	40°09'08.103"N	104°53'21.235"W	1.53	
18150.00	90.060	1.450	7479.61	10134.43	10134.70	8.76	1671371.11	14582283.09	40°09'08.982"N	104°53'21.198"W	0.94	
18240.00	90.060	0.640	7479.52	10224.42	10224.69	10.40	1671372.64	14582373.05	40°09'09.871"N	104°53'21.177"W	0.90	
18329.00	90.250	359.450	7479.28	10313.42	10313.69	10.47	1671372.60	14582462.01	40°09'10.751"N	104°53'21.176"W	1.35	
18419.00	90.220	359.450	7478.91	10403.40	10403.68	9.61	1671371.63	14582551.97	40°09'11.640"N	104°53'21.187"W	0.03	
18508.00	90.250	0.370	7478.54	10492.39	10492.68	9.47	1671371.38	14582640.93	40°09'12.520"N	104°53'21.189"W	1.03	
18598.00	90.280	359.840	7478.13	10582.39	10582.68	9.63	1671371.43	14582730.89	40°09'13.409"N	104°53'21.187"W	0.59	
18687.00	90.000	358.740	7477.91	10671.37	10671.67	8.53	1671370.21	14582819.84	40°09'14.288"N	104°53'21.201"W	1.28	
18776.00	90.340	359.010	7477.65	10760.34	10760.65	6.78	1671368.36	14582908.79	40°09'15.168"N	104°53'21.224"W	0.49	
18866.00	89.970	0.890	7477.40	10850.33	10850.65	6.70	1671368.17	14582998.75	40°09'16.057"N	104°53'21.225"W	2.13	
18955.00	90.150	0.440	7477.31	10939.33	10939.64	7.74	1671369.09	14583087.71	40°09'16.936"N	104°53'21.211"W	0.54	
19044.00	90.680	0.810	7476.67	11028.32	11028.63	8.71	1671369.95	14583176.66	40°09'17.816"N	104°53'21.199"W	0.73	
19134.00	90.250	0.760	7475.94	11118.32	11118.62	9.94	1671371.07	14583266.62	40°09'18.705"N	104°53'21.183"W	0.48	
19223.00	90.180	359.710	7475.60	11207.32	11207.62	10.30	1671371.32	14583355.58	40°09'19.585"N	104°53'21.178"W	1.18	
19313.00	90.310	358.810	7475.22	11297.29	11297.61	9.14	1671370.05	14583445.53	40°09'20.474"N	104°53'21.193"W	1.01	
19402.00	90.280	359.740	7474.76	11386.27	11386.60	8.02	1671368.81	14583534.49	40°09'21.353"N	104°53'21.208"W	1.05	
19491.00	90.030	0.530	7474.52	11475.27	11475.60	8.23	1671368.91	14583623.45	40°09'22.233"N	104°53'21.205"W	0.93	
19580.00	90.060	1.230	7474.45	11564.27	11564.59	9.59	1671370.17	14583712.41	40°09'23.112"N	104°53'21.187"W	0.79	
19670.00	90.000	1.750	7474.40	11654.25	11654.56	11.93	1671372.39	14583802.34	40°09'24.001"N	104°53'21.157"W	0.58	
19759.00	90.180	1.090	7474.26	11743.24	11743.53	14.14	1671374.49	14583891.28	40°09'24.880"N	104°53'21.129"W	0.77	
19849.00	90.180	359.980	7473.98	11833.24	11833.52	14.98	1671375.22	14583981.24	40°09'25.770"N	104°53'21.118"W	1.23	
19939.00	90.180	359.810	7473.70	11923.23	11923.52	14.81	1671374.94	14584071.20	40°09'26.659"N	104°53'21.120"W	0.19	
20028.00	90.250	358.860	7473.36	12012.21	12012.51	13.78	1671373.80	14584160.16	40°09'27.539"N	104°53'21.133"W	1.07	
20118.00	90.150	358.760	7473.05	12102.18	12102.49	11.91	1671371.81	14584250.10	40°09'28.428"N	104°53'21.158"W	0.16	
20207.00	90.220	358.650	7472.76	12191.13	12191.47	9.90	1671369.69	14584339.04	40°09'29.307"N	104°53'21.183"W	0.15	
20297.00	90.220	358.840	7472.41	12281.09	12281.45	7.93	1671367.61	14584428.98	40°09'30.196"N	104°53'21.209"W	0.21	
20386.00	90.220	359.540	7472.07	12370.07	12370.44	6.67	1671366.24	14584517.93	40°09'31.076"N	104°53'21.225"W	0.79	
20476.00	90.120	358.240	7471.81	12460.03	12460.42	4.93	1671364.39	14584607.87	40°09'31.965"N	104°53'21.247"W	1.45	
20565.00	90.090	359.390	7471.64	12548.99	12549.40	3.09	1671362.44	14584696.81	40°09'32.844"N	104°53'21.271"W	1.29	
20590.00†	90.134	359.732	7471.59	12573.99	12574.40	2.90	1671362.21	14584721.80	40°09'33.091"N	104°53'21.274"W	1.38	ENTER RADIUS TOE (281'FNL & 948'FEL,SEC.09) 40.1591920 -104.8892427

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWB
Facility	SEC.21-T2N-R67W		

WELLPATH DATA (278 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
20655.00	90.250	0.620	7471.38	12638.99	12639.40	3.10	1671362.33	14584786.78	40°09'33.734"N	104°53'21.271"W	1.38	
20744.00	90.340	2.000	7470.92	12727.97	12728.37	5.13	1671364.26	14584875.72	40°09'34.613"N	104°53'21.245"W	1.55	
20834.00	90.370	1.750	7470.36	12817.94	12818.32	8.07	1671367.09	14584965.63	40°09'35.502"N	104°53'21.207"W	0.28	
20923.00	90.250	359.830	7469.88	12906.94	12907.31	9.30	1671368.20	14585054.58	40°09'36.381"N	104°53'21.191"W	2.16	
21013.00	90.370	358.700	7469.39	12996.91	12997.30	8.15	1671366.94	14585144.54	40°09'37.270"N	104°53'21.206"W	1.26	
21102.00	89.970	358.660	7469.13	13085.87	13086.27	6.10	1671364.78	14585233.47	40°09'38.150"N	104°53'21.232"W	0.45	
21171.00	90.250	356.980	7468.99	13154.79	13155.22	3.47	1671362.07	14585302.39	40°09'38.831"N	104°53'21.266"W	2.47	LAST BHGE MWD+IFR1+MSA SURVEY
21195.00	90.250	356.980	7468.89	13178.75	13179.18	2.21	1671360.77	14585326.35	40°09'39.068"N	104°53'21.282"W	0.00	PTB (324'FSL & 947'FEL,SEC.04) 40.1608521 -104.8892451

HOLE & CASING SECTIONS - Ref Wellbore: COWBOY 21-6HZ AWB      Ref Wellpath: COWBOY 21-6HZ 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	1848.00	1822.00	26.00	1824.57	0.00	0.00	-196.34	-35.37

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWB
Facility	SEC.21-T2N-R67W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.09-T2N-R67W	0.00	0.40	-74.96	1671300.04	14572152.76	40°07'28.834"N	104°53'22.276"W	polygon
SEC.16-T2N-R67W	0.00	0.40	-74.96	1671300.04	14572152.76	40°07'28.834"N	104°53'22.276"W	polygon
SEC.21-T2N-R67W	0.00	0.40	-74.96	1671300.04	14572152.76	40°07'28.834"N	104°53'22.276"W	polygon
COWBOY 21-6HZ BHL REV-1(326'FSL & 958'FEL,SEC.04)	7474.00	13180.59	-8.93	1671349.63	14585327.73	40°09'39.082"N	104°53'21.426"W	point
COWBOY 21-6HZ LAT. TARGET 2	7485.07	9207.03	18.00	1671381.51	14581355.81	40°08'59.815"N	104°53'21.079"W	point
COWBOY 21-6HZ LAT. TARGET 1	7491.48	6906.98	-124.25	1671242.18	14579056.50	40°08'37.085"N	104°53'22.911"W	point
COWBOY 21-6HZ HEEL REV-1(2495'FNL & 990'FEL,SEC.21)	7511.00	-158.47	-119.68	1671255.55	14571993.90	40°07'27.264"N	104°53'22.852"W	point
COWBOY 21-6HZ HEEL REV-2(2435'FNL & 990'FEL,SEC.21)	7511.00	-98.47	-119.68	1671255.47	14572053.87	40°07'27.857"N	104°53'22.852"W	point
COWBOY 21-6HZ LANDBOX	7511.00	0.00	0.00	1671374.98	14572152.45	40°07'28.830"N	104°53'21.311"W	polygon
COWBOY 21-6HZ RADIUS 1	7511.00	12862.56	-358.00	1671001.10	14585009.40	40°09'35.939"N	104°53'25.922"W	polygon
COWBOY 21-6HZ RADIUS 2	7511.00	-322.39	-472.87	1670902.70	14571829.60	40°07'25.644"N	104°53'27.398"W	polygon

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWB
Facility	SEC.21-T2N-R67W		

WELLPATH COMPOSITION - Ref Wellbore: COWBOY 21-6HZ AWB      Ref Wellpath: COWBOY 21-6HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	1849.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <133 - 1849>	COWBOY 21-6HZ AWB
1849.00	21171.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1873 - 21171>	COWBOY 21-6HZ AWB
21171.00	21195.00	Blind Drilling (std)	Projection to bit	COWBOY 21-6HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#10 COWBOY 21-6HZ(2334'FNL & 871'FEL,SEC.21)
Area	COLORADO	Well	COWBOY 21-6HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	COWBOY 21-6HZ AWP
Facility	SEC.21-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
133.00	0.260	290.360	133.00	FIRST SURFACE MWD+IFR1 SURVEY
1426.00	13.855	188.284	1419.66	ENTER LANDBOX (2412'FNL & 887'FEL,SEC.21) 40.1244572 -104.8893086
1849.00	17.490	191.660	1825.53	LAST SURFACE MWD+IFR1 SURVEY
1873.00	16.790	191.800	1848.46	FIRST BHGE MWD+IFR1+MSA SURVEY
7074.00	1.116	352.932	6987.88	KOP
7910.00	88.490	5.550	7510.98	LANDING (2422'FNL & 998'FEL,SEC.21) 40.1244331 -104.8897125
7974.00	89.804	4.022	7511.78	EXIT RADIUS HEEL (2358'FNL & 995'FEL,SEC.21) 40.1246082 -104.8896946
20590.00	90.134	359.732	7471.59	ENTER RADIUS TOE (281'FNL & 948'FEL,SEC.09) 40.1591920 -104.8892427
21171.00	90.250	356.980	7468.99	LAST BHGE MWD+IFR1+MSA SURVEY
21195.00	90.250	356.980	7468.89	PTB (324'FSL & 947'FEL,SEC.04) 40.1608521 -104.8892451