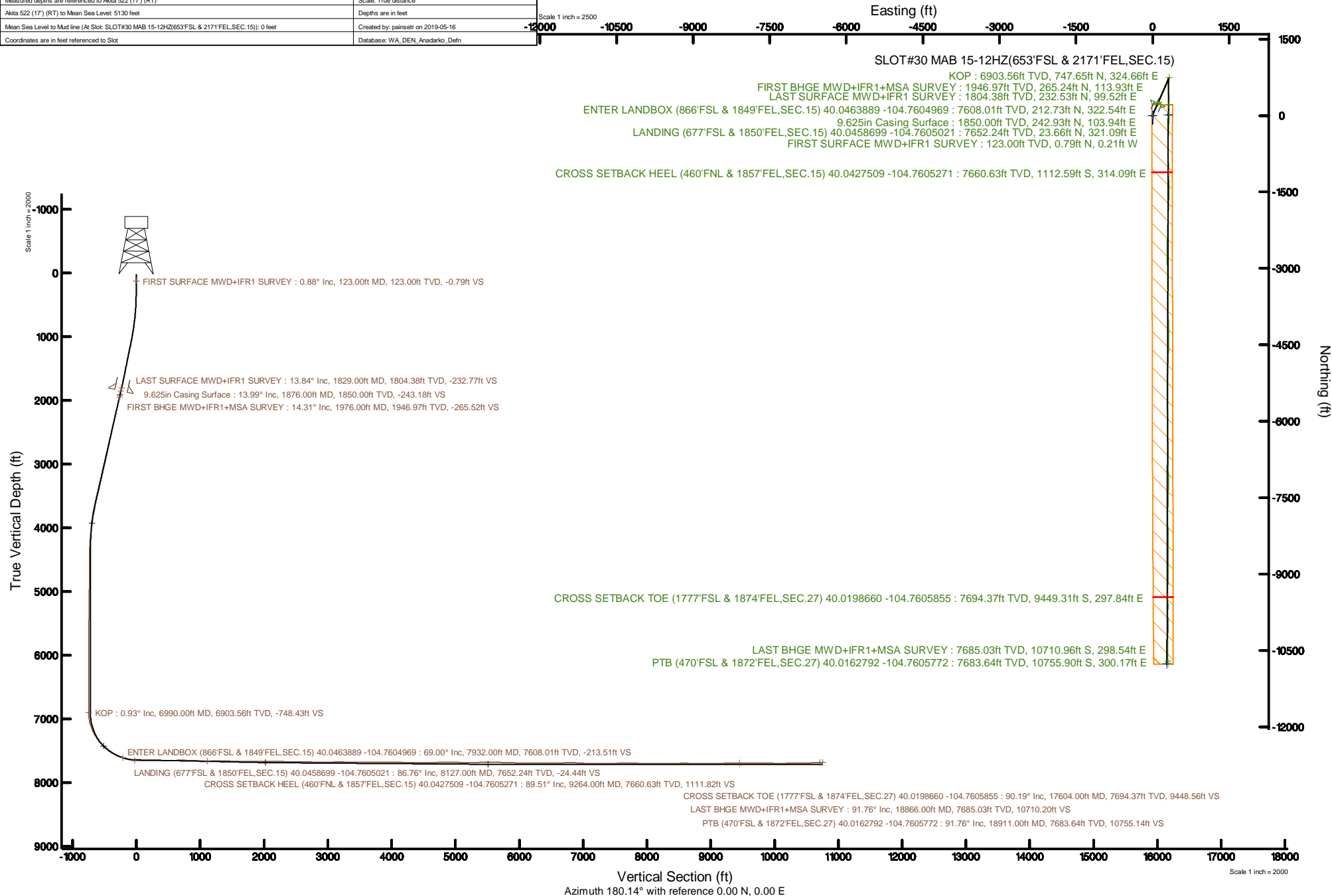


Location:	COLORADO	Slot:	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	MAB 15-12HZ
Facility:	SEC.15-T1N-R66W	Wellbore:	MAB 15-12HZ PWB



Plot reference wellpath is MAB 15-12H2 PWP Rev-A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to Akita 522 (17) (RT)	North Reference: True north
Measured depths are referenced to Akita 522 (17) (RT)	Scale: True distance
Akita 522 (17) (RT) to Mean Sea Level: 5130 feet	Depths are in feet
Mean Sea Level to Mud line (A Slot: SLOT#30 MAB 15-12H2(653FSL & 2171FEL,SEC.15)): 0 feet	Created by: painstr on 2019-05-16
Coordinates are in feet referenced to Slot	Database: WA_DEN_Anadarko_Defn



# Actual Wellpath Report

MAB 15-12HZ AWP

Page 1 of 8

## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWB
Facility	SEC.15-T1N-R66W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.1
North Reference	True	User	Painsetr
Scale	0.999605	Report Generated	5/16/2019 at 10:38:27 AM
Convergence at slot	0.15° East	Database/Source file	WA_DEN_Anadarko_Defn/MAB_15-12HZ_AWP.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-614.38	1679.70	1707122.53	14543502.26	40°02'44.898"N	104°45'41.936"W
Facility Reference Pt			1705441.90	14544112.02	40°02'50.970"N	104°46'03.534"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Akita 522 (17') (RT) to Facility Vertical Datum	5130.00ft
Horizontal Reference Pt	Slot	Akita 522 (17') (RT) to Mean Sea Level	5130.00ft
Vertical Reference Pt	Akita 522 (17') (RT)	Akita 522 (17') (RT) to Mud Line at Slot (SLOT#30 MAB 15-12HZ (653'FSL & 2171'FEL,SEC.15))	5130.00ft
MD Reference Pt	Akita 522 (17') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.14°

# Actual Wellpath Report

MAB 15-12HZ AWP

Page 2 of 8

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (218 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	345.250	0.00	0.00	0.00	0.00	1707122.53	14543502.26	40°02'44.898"N	104°45'41.936"W	0.00	
17.00	0.000	345.250	17.00	0.00	0.00	0.00	1707122.53	14543502.26	40°02'44.898"N	104°45'41.936"W	0.00	
123.00	0.880	345.250	123.00	-0.79	0.79	-0.21	1707122.32	14543503.05	40°02'44.906"N	104°45'41.939"W	0.83	FIRST SURFACE MWD+HFR1 SURVEY
217.00	0.750	338.210	216.99	-2.05	2.06	-0.62	1707121.91	14543504.32	40°02'44.918"N	104°45'41.944"W	0.17	
313.00	1.050	36.490	312.98	-3.35	3.35	-0.33	1707122.19	14543505.61	40°02'44.931"N	104°45'41.940"W	0.95	
407.00	1.410	20.310	406.95	-5.13	5.12	0.58	1707123.10	14543507.39	40°02'44.949"N	104°45'41.928"W	0.53	
502.00	2.900	18.560	501.88	-8.50	8.50	1.75	1707124.26	14543510.76	40°02'44.982"N	104°45'41.913"W	1.57	
597.00	4.750	21.900	596.67	-14.44	14.43	3.99	1707126.48	14543516.70	40°02'45.041"N	104°45'41.885"W	1.96	
693.00	7.380	24.880	692.12	-23.73	23.71	8.06	1707130.53	14543525.99	40°02'45.132"N	104°45'41.832"W	2.76	
787.00	7.430	23.740	785.34	-34.78	34.75	13.05	1707135.49	14543537.03	40°02'45.241"N	104°45'41.768"W	0.17	
882.00	9.490	24.530	879.30	-47.54	47.50	18.78	1707141.17	14543549.79	40°02'45.367"N	104°45'41.695"W	2.17	
978.00	10.900	22.600	973.78	-63.14	63.08	25.55	1707147.90	14543565.39	40°02'45.521"N	104°45'41.607"W	1.51	
1073.00	11.690	21.630	1066.94	-80.40	80.32	32.55	1707154.85	14543582.64	40°02'45.692"N	104°45'41.517"W	0.86	
1168.00	13.010	24.090	1159.74	-99.13	99.03	40.46	1707162.71	14543601.36	40°02'45.877"N	104°45'41.416"W	1.50	
1263.00	12.880	23.740	1252.33	-118.60	118.48	49.09	1707171.29	14543620.83	40°02'46.069"N	104°45'41.305"W	0.16	
1359.00	12.350	22.510	1346.01	-137.90	137.76	57.33	1707179.47	14543640.12	40°02'46.259"N	104°45'41.199"W	0.62	
1454.00	11.950	22.340	1438.88	-156.40	156.24	64.96	1707187.04	14543658.62	40°02'46.442"N	104°45'41.101"W	0.42	
1548.00	12.080	24.800	1530.82	-174.35	174.17	72.78	1707194.82	14543676.56	40°02'46.619"N	104°45'41.000"W	0.56	
1643.00	13.230	25.410	1623.51	-193.21	193.02	81.61	1707203.60	14543695.42	40°02'46.805"N	104°45'40.887"W	1.22	
1738.00	13.450	24.710	1715.95	-213.09	212.87	90.90	1707212.82	14543715.29	40°02'47.002"N	104°45'40.767"W	0.29	
1829.00	13.840	22.690	1804.38	-232.77	232.53	99.52	1707221.39	14543734.97	40°02'47.196"N	104°45'40.656"W	0.68	LAST SURFACE MWD+HFR1 SURVEY
1976.00	14.310	24.820	1946.97	-265.52	265.24	113.93	1707235.71	14543767.70	40°02'47.519"N	104°45'40.471"W	0.48	
2063.00	13.980	23.930	2031.33	-284.90	284.60	122.70	1707244.43	14543787.08	40°02'47.711"N	104°45'40.358"W	0.45	
2150.00	13.860	23.500	2115.78	-304.08	303.77	131.12	1707252.79	14543806.26	40°02'47.900"N	104°45'40.250"W	0.18	
2237.00	13.770	22.370	2200.26	-323.23	322.90	139.22	1707260.83	14543825.40	40°02'48.089"N	104°45'40.146"W	0.33	
2325.00	14.320	26.490	2285.63	-342.68	342.32	148.06	1707269.62	14543844.85	40°02'48.281"N	104°45'40.032"W	1.30	
2412.00	14.000	26.130	2369.99	-361.78	361.40	157.49	1707278.99	14543863.94	40°02'48.469"N	104°45'39.911"W	0.38	
2500.00	13.570	25.400	2455.45	-380.69	380.28	166.61	1707288.06	14543882.84	40°02'48.656"N	104°45'39.794"W	0.53	
2587.00	13.400	24.790	2540.06	-399.08	398.66	175.21	1707296.61	14543901.23	40°02'48.838"N	104°45'39.683"W	0.25	
2675.00	12.550	23.530	2625.81	-417.12	416.68	183.31	1707304.65	14543919.27	40°02'49.016"N	104°45'39.579"W	1.02	
2763.00	13.600	26.740	2711.53	-435.15	434.69	191.78	1707313.07	14543937.29	40°02'49.194"N	104°45'39.470"W	1.45	
2851.00	13.300	24.890	2797.11	-453.59	453.11	200.69	1707321.93	14543955.73	40°02'49.376"N	104°45'39.355"W	0.60	
2939.00	13.430	23.120	2882.73	-472.19	471.69	208.97	1707330.15	14543974.32	40°02'49.559"N	104°45'39.249"W	0.49	
3026.00	14.380	25.020	2967.18	-491.30	490.77	217.50	1707338.64	14543993.42	40°02'49.748"N	104°45'39.139"W	1.21	
3114.00	13.920	24.150	3052.51	-510.88	510.33	226.46	1707347.53	14544013.00	40°02'49.941"N	104°45'39.024"W	0.58	
3201.00	13.270	23.010	3137.07	-529.64	529.07	234.64	1707355.66	14544031.75	40°02'50.126"N	104°45'38.919"W	0.81	
3288.00	14.550	24.540	3221.52	-548.79	548.20	243.08	1707364.05	14544050.90	40°02'50.315"N	104°45'38.810"W	1.53	
3376.00	13.730	23.880	3306.85	-568.42	567.81	251.90	1707372.81	14544070.52	40°02'50.509"N	104°45'38.697"W	0.95	
3463.00	14.990	24.640	3391.13	-588.11	587.48	260.77	1707381.63	14544090.20	40°02'50.704"N	104°45'38.583"W	1.46	
3551.00	14.070	23.400	3476.32	-608.29	607.64	269.77	1707390.56	14544110.38	40°02'50.903"N	104°45'38.467"W	1.10	
3638.00	13.100	21.690	3560.88	-627.18	626.50	277.61	1707398.35	14544129.26	40°02'51.089"N	104°45'38.366"W	1.21	
3726.00	12.340	20.240	3646.72	-645.28	644.59	284.55	1707405.24	14544147.36	40°02'51.268"N	104°45'38.277"W	0.94	
3813.00	11.060	18.200	3731.91	-661.95	661.24	290.37	1707411.02	14544164.02	40°02'51.433"N	104°45'38.202"W	1.55	
3900.00	10.080	14.860	3817.44	-677.25	676.53	294.93	1707415.53	14544179.31	40°02'51.584"N	104°45'38.144"W	1.33	
3988.00	9.320	12.050	3904.18	-691.67	690.94	298.39	1707418.96	14544193.73	40°02'51.726"N	104°45'38.099"W	1.02	

# Actual Wellpath Report

MAB 15-12HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWP
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (218 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
4075.00	7.050	16.940	3990.29	-703.67	702.94	301.42	1707421.95	14544205.73	40°02'51.845"N	104°45'38.060"W	2.73	
4163.00	6.640	11.650	4077.66	-713.83	713.09	304.02	1707424.52	14544215.88	40°02'51.945"N	104°45'38.027"W	0.85	
4250.00	4.770	13.290	4164.23	-722.28	721.54	305.87	1707426.35	14544224.33	40°02'52.028"N	104°45'38.003"W	2.16	
4337.00	2.640	15.400	4251.04	-727.74	726.99	307.23	1707427.70	14544229.79	40°02'52.082"N	104°45'37.985"W	2.45	
4425.00	2.340	8.010	4338.96	-731.47	730.73	308.02	1707428.47	14544233.52	40°02'52.119"N	104°45'37.975"W	0.50	
4513.00	0.870	244.980	4426.93	-732.97	732.22	307.67	1707428.12	14544235.02	40°02'52.134"N	104°45'37.980"W	3.30	
4601.00	0.730	258.070	4514.93	-732.56	731.82	306.51	1707426.96	14544234.61	40°02'52.130"N	104°45'37.995"W	0.26	
4688.00	0.770	290.080	4601.92	-732.65	731.91	305.42	1707425.87	14544234.70	40°02'52.131"N	104°45'38.009"W	0.48	
4776.00	0.660	306.280	4689.91	-733.15	732.41	304.46	1707424.91	14544235.20	40°02'52.136"N	104°45'38.021"W	0.26	
4864.00	0.670	322.940	4777.91	-733.86	733.12	303.74	1707424.19	14544235.91	40°02'52.143"N	104°45'38.030"W	0.22	
4977.00	1.070	344.380	4890.89	-735.40	734.67	303.06	1707423.50	14544237.45	40°02'52.158"N	104°45'38.039"W	0.45	
5064.00	1.050	339.220	4977.88	-736.93	736.19	302.55	1707423.00	14544238.97	40°02'52.173"N	104°45'38.046"W	0.11	
5152.00	0.980	337.900	5065.86	-738.38	737.64	301.98	1707422.42	14544240.42	40°02'52.188"N	104°45'38.053"W	0.08	
5239.00	1.330	338.420	5152.85	-740.00	739.27	301.33	1707421.77	14544242.05	40°02'52.204"N	104°45'38.061"W	0.40	
5327.00	0.460	72.340	5240.84	-741.06	740.33	301.29	1707421.73	14544243.10	40°02'52.214"N	104°45'38.062"W	1.63	
5415.00	0.840	46.500	5328.83	-741.61	740.88	302.10	1707422.53	14544243.66	40°02'52.220"N	104°45'38.051"W	0.54	
5503.00	1.200	42.020	5416.82	-742.74	742.01	303.18	1707423.61	14544244.79	40°02'52.231"N	104°45'38.037"W	0.42	
5590.00	1.500	34.280	5503.79	-744.36	743.63	304.43	1707424.86	14544246.41	40°02'52.247"N	104°45'38.021"W	0.40	
5678.00	1.850	22.010	5591.76	-746.64	745.90	305.62	1707426.03	14544248.68	40°02'52.269"N	104°45'38.006"W	0.57	
5766.00	0.900	124.350	5679.74	-747.57	746.82	306.72	1707427.13	14544249.61	40°02'52.278"N	104°45'37.992"W	2.53	
5853.00	1.080	113.730	5766.73	-746.85	746.11	308.03	1707428.45	14544248.90	40°02'52.271"N	104°45'37.975"W	0.29	
5940.00	1.470	114.270	5853.70	-746.07	745.32	309.80	1707430.22	14544248.11	40°02'52.263"N	104°45'37.952"W	0.45	
6028.00	1.230	99.740	5941.68	-745.45	744.70	311.76	1707432.18	14544247.49	40°02'52.257"N	104°45'37.927"W	0.47	
6115.00	1.390	91.150	6028.66	-745.28	744.52	313.74	1707434.15	14544247.32	40°02'52.255"N	104°45'37.902"W	0.29	
6202.00	1.380	84.290	6115.63	-745.36	744.60	315.83	1707436.25	14544247.41	40°02'52.256"N	104°45'37.875"W	0.19	
6290.00	0.490	176.730	6203.62	-745.10	744.33	316.91	1707437.32	14544247.14	40°02'52.254"N	104°45'37.861"W	1.69	
6377.00	0.160	92.580	6290.62	-744.72	743.95	317.05	1707437.47	14544246.77	40°02'52.250"N	104°45'37.859"W	0.57	
6464.00	0.580	73.020	6377.62	-744.84	744.08	317.60	1707438.01	14544246.89	40°02'52.251"N	104°45'37.852"W	0.50	
6552.00	0.790	59.560	6465.61	-745.28	744.51	318.54	1707438.96	14544247.33	40°02'52.255"N	104°45'37.840"W	0.30	
6640.00	0.870	63.420	6553.60	-745.89	745.12	319.66	1707440.08	14544247.94	40°02'52.261"N	104°45'37.826"W	0.11	
6727.00	0.790	68.420	6640.60	-746.41	745.64	320.81	1707441.22	14544248.46	40°02'52.267"N	104°45'37.811"W	0.12	
6815.00	0.990	64.160	6728.58	-746.97	746.19	322.06	1707442.47	14544249.02	40°02'52.272"N	104°45'37.795"W	0.24	
6902.00	0.990	59.070	6815.57	-747.69	746.90	323.38	1707443.79	14544249.73	40°02'52.279"N	104°45'37.778"W	0.10	
6990.00	0.930	60.420	6903.56	-748.43	747.65	324.66	1707445.06	14544250.48	40°02'52.286"N	104°45'37.761"W	0.07	KOP
7078.00	8.900	186.830	6991.22	-742.01	741.23	324.47	1707444.89	14544244.06	40°02'52.223"N	104°45'37.764"W	10.77	
7165.00	15.020	186.360	7076.29	-724.10	723.32	322.42	1707442.88	14544226.16	40°02'52.046"N	104°45'37.790"W	7.04	
7252.00	22.640	185.250	7158.58	-696.18	695.40	319.63	1707440.17	14544198.24	40°02'51.770"N	104°45'37.826"W	8.77	
7340.00	28.360	185.410	7237.97	-658.46	657.70	316.11	1707436.75	14544160.54	40°02'51.398"N	104°45'37.871"W	6.50	
7427.00	33.700	184.100	7312.50	-613.78	613.02	312.43	1707433.20	14544115.87	40°02'50.956"N	104°45'37.919"W	6.19	
7515.00	43.500	180.060	7381.20	-558.99	558.24	310.65	1707431.56	14544061.11	40°02'50.415"N	104°45'37.942"W	11.49	
7602.00	49.340	177.450	7441.15	-496.03	495.27	312.09	1707433.17	14543998.17	40°02'49.792"N	104°45'37.923"W	7.05	
7689.00	54.870	176.940	7494.57	-427.49	426.72	315.46	1707436.72	14543929.66	40°02'49.115"N	104°45'37.880"W	6.37	
7777.00	59.890	177.060	7541.99	-353.50	352.73	319.33	1707440.79	14543855.71	40°02'48.384"N	104°45'37.830"W	5.71	
7865.00	65.700	179.050	7582.21	-275.33	274.55	321.95	1707443.62	14543777.56	40°02'47.611"N	104°45'37.796"W	6.90	
7932.00†	68.996	179.856	7608.01	-213.51	212.73	322.54	1707444.37	14543715.77	40°02'47.000"N	104°45'37.789"W	5.04	ENTER LANDBOX (866'FSL & 1849'FEL,SEC.15) 40.0463889 -104.7604969

# Actual Wellpath Report

MAB 15-12HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH DATA (218 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
7952.00	69.980	180.090	7615.02	-194.78	194.00	822.55	1707444.43	14543697.05	40°02'46.815"N	104°45'37.789"W	5.04	
8039.00	76.930	180.220	7639.78	-111.43	110.65	822.32	1707444.43	14543613.73	40°02'45.991"N	104°45'37.792"W	7.99	
8127.00	86.760	181.390	7652.24	-24.44	23.66	821.09	1707443.43	14543526.77	40°02'45.132"N	104°45'37.807"W	11.25	LANDING (677'FSL & 1850'FEL,SEC.15) 40.0458699 -104.7605021
8214.00	90.150	181.600	7654.59	62.49	-63.27	818.82	1707441.39	14543439.87	40°02'44.273"N	104°45'37.837"W	3.90	
8302.00	90.710	181.970	7653.93	150.46	-151.22	816.08	1707438.89	14543351.95	40°02'43.404"N	104°45'37.872"W	0.76	
8389.00	91.020	181.510	7652.62	237.41	-238.17	813.43	1707436.48	14543265.03	40°02'42.544"N	104°45'37.906"W	0.64	
8476.00	89.480	182.080	7652.24	324.37	-325.13	810.71	1707433.99	14543178.10	40°02'41.685"N	104°45'37.941"W	1.89	
8564.00	89.880	181.960	7652.73	412.32	-413.07	807.61	1707431.12	14543090.18	40°02'40.816"N	104°45'37.981"W	0.47	
8651.00	90.310	181.570	7652.58	499.29	-500.03	804.93	1707428.68	14543003.25	40°02'39.957"N	104°45'38.015"W	0.67	
8739.00	91.050	180.970	7651.54	587.26	-588.00	802.98	1707426.96	14542915.31	40°02'39.087"N	104°45'38.040"W	1.08	
8825.00	90.430	180.300	7650.43	673.25	-673.99	802.02	1707426.24	14542829.36	40°02'38.237"N	104°45'38.053"W	1.06	
8913.00	89.420	179.330	7650.54	761.25	-761.98	802.31	1707426.76	14542741.39	40°02'37.368"N	104°45'38.049"W	1.59	
9001.00	86.860	177.200	7653.40	849.14	-849.88	804.97	1707429.65	14542653.54	40°02'36.499"N	104°45'38.015"W	3.78	
9088.00	88.090	177.680	7657.23	935.96	-936.71	808.85	1707433.77	14542566.75	40°02'35.641"N	104°45'37.965"W	1.52	
9175.00	88.980	177.910	7659.46	1022.86	-1023.62	812.20	1707437.34	14542479.89	40°02'34.782"N	104°45'37.922"W	1.06	
9263.00	89.510	179.630	7660.62	1110.82	-1111.59	814.09	1707439.47	14542391.96	40°02'33.913"N	104°45'37.898"W	2.05	
9264.00†	89.513	179.626	7660.63	1111.82	-1112.59	814.09	1707439.48	14542390.96	40°02'33.903"N	104°45'37.897"W	0.55	CROSS SETBACK HEEL (460'FNL & 1857'FEL,SEC.15) 40.0427509 -104.7605271
9350.00	89.780	179.240	7661.16	1197.81	-1198.58	814.94	1707440.56	14542305.01	40°02'33.053"N	104°45'37.887"W	0.55	
9438.00	89.140	179.010	7661.99	1285.79	-1286.56	816.29	1707442.14	14542217.06	40°02'32.184"N	104°45'37.869"W	0.77	
9525.00	89.480	177.970	7663.03	1372.75	-1373.53	818.58	1707444.66	14542130.14	40°02'31.324"N	104°45'37.840"W	1.26	
9612.00	89.350	179.490	7663.92	1459.72	-1460.50	820.51	1707446.82	14542043.21	40°02'30.465"N	104°45'37.815"W	1.75	
9700.00	89.050	181.650	7665.15	1547.70	-1548.48	819.63	1707446.18	14541955.26	40°02'29.596"N	104°45'37.826"W	2.48	
9787.00	89.450	181.960	7666.29	1634.66	-1635.43	816.89	1707443.67	14541868.34	40°02'28.736"N	104°45'37.862"W	0.58	
9875.00	90.030	182.170	7666.69	1722.60	-1723.37	813.72	1707440.74	14541780.42	40°02'27.867"N	104°45'37.902"W	0.70	
9962.00	90.960	182.520	7665.94	1809.54	-1810.29	810.16	1707437.41	14541693.52	40°02'27.008"N	104°45'37.948"W	1.14	
10050.00	89.780	181.210	7665.37	1897.49	-1898.24	807.30	1707434.79	14541605.60	40°02'26.139"N	104°45'37.985"W	2.00	
10137.00	90.620	182.010	7665.07	1984.46	-1985.21	804.86	1707432.58	14541518.67	40°02'25.280"N	104°45'38.016"W	1.33	
10225.00	89.010	182.210	7665.35	2072.40	-2073.14	801.62	1707429.57	14541430.76	40°02'24.411"N	104°45'38.058"W	1.84	
10312.00	88.740	181.880	7667.06	2159.34	-2160.07	298.51	1707426.70	14541343.86	40°02'23.552"N	104°45'38.098"W	0.49	
10399.00	88.740	181.940	7668.97	2246.28	-2247.00	295.61	1707424.04	14541256.95	40°02'22.693"N	104°45'38.135"W	0.07	
10487.00	88.650	181.560	7670.97	2334.22	-2334.94	292.93	1707421.59	14541169.05	40°02'21.824"N	104°45'38.170"W	0.44	
10574.00	88.460	181.000	7673.17	2421.17	-2421.89	290.98	1707419.88	14541082.13	40°02'20.964"N	104°45'38.195"W	0.68	
10662.00	89.080	180.910	7675.06	2509.14	-2509.85	289.52	1707418.65	14540994.19	40°02'20.095"N	104°45'38.214"W	0.71	
10749.00	89.510	180.740	7676.13	2596.13	-2596.84	288.26	1707417.63	14540907.24	40°02'19.235"N	104°45'38.230"W	0.53	
10837.00	89.540	180.220	7676.86	2684.13	-2684.83	287.53	1707417.13	14540819.28	40°02'18.366"N	104°45'38.239"W	0.59	
10924.00	89.510	179.420	7677.58	2771.12	-2771.83	287.80	1707417.63	14540732.32	40°02'17.506"N	104°45'38.236"W	0.92	
11012.00	88.610	178.360	7679.02	2859.09	-2859.80	289.50	1707419.57	14540644.39	40°02'16.637"N	104°45'38.214"W	1.58	
11100.00	90.180	178.910	7679.95	2947.05	-2947.76	291.60	1707421.90	14540556.46	40°02'15.767"N	104°45'38.187"W	1.89	
11187.00	91.540	179.810	7678.65	3034.03	-3034.75	292.57	1707423.11	14540469.52	40°02'14.908"N	104°45'38.174"W	1.87	
11275.00	90.310	179.850	7677.23	3122.01	-3122.73	292.83	1707423.60	14540381.57	40°02'14.038"N	104°45'38.171"W	1.40	
11362.00	89.720	178.160	7677.20	3208.99	-3209.72	294.34	1707425.35	14540294.62	40°02'13.179"N	104°45'38.152"W	2.06	
11450.00	89.690	179.290	7677.66	3296.96	-3297.69	296.30	1707427.54	14540206.69	40°02'12.309"N	104°45'38.127"W	1.28	
11537.00	89.380	177.920	7678.36	3383.93	-3384.66	298.42	1707429.89	14540119.76	40°02'11.450"N	104°45'38.099"W	1.61	
11625.00	89.690	179.050	7679.08	3471.89	-3472.62	300.75	1707432.45	14540031.83	40°02'10.581"N	104°45'38.069"W	1.33	
11712.00	90.620	180.490	7678.84	3558.88	-3559.62	301.10	1707433.03	14539944.87	40°02'09.721"N	104°45'38.065"W	1.97	

# Actual Wellpath Report

MAB 15-12HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWB
Facility	SEC.15-T1N-R66W		

## WELLPATH DATA (218 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
11799.00	90.370	179.750	7678.09	3645.88	-3646.62	300.91	1707433.08	14539857.91	40°02'08.861"N	104°45'38.067"W	0.90	
11887.00	89.110	177.590	7678.49	3733.84	-3734.58	302.96	1707435.36	14539769.98	40°02'07.992"N	104°45'38.041"W	2.84	
11975.00	89.540	179.000	7679.52	3821.78	-3822.54	305.57	1707438.21	14539682.07	40°02'07.123"N	104°45'38.007"W	1.68	
12062.00	89.480	179.760	7680.27	3908.77	-3909.53	306.52	1707439.38	14539595.12	40°02'06.263"N	104°45'37.995"W	0.88	
12150.00	89.660	178.580	7680.93	3996.76	-3997.52	307.79	1707440.89	14539507.17	40°02'05.394"N	104°45'37.979"W	1.36	
12237.00	88.670	179.620	7682.20	4083.73	-4084.49	309.16	1707442.49	14539420.23	40°02'04.534"N	104°45'37.961"W	1.65	
12325.00	88.830	180.660	7684.12	4171.71	-4172.47	308.94	1707442.51	14539332.29	40°02'03.665"N	104°45'37.964"W	1.20	
12412.00	88.680	180.240	7686.01	4258.69	-4259.45	308.26	1707442.06	14539245.35	40°02'02.805"N	104°45'37.973"W	0.51	
12500.00	90.180	180.150	7686.88	4346.68	-4347.44	307.96	1707442.00	14539157.39	40°02'01.935"N	104°45'37.977"W	1.71	
12588.00	88.370	178.370	7688.00	4434.66	-4435.42	309.09	1707443.37	14539069.45	40°02'01.066"N	104°45'37.962"W	2.88	
12675.00	89.850	179.530	7689.35	4521.62	-4522.39	310.69	1707445.20	14538982.52	40°02'00.207"N	104°45'37.942"W	2.16	
12763.00	91.940	182.000	7687.97	4609.59	-4610.36	309.51	1707444.26	14538894.58	40°01'59.337"N	104°45'37.957"W	3.68	
12851.00	92.250	181.650	7684.76	4697.50	-4698.26	306.71	1707441.69	14538806.71	40°01'58.469"N	104°45'37.993"W	0.53	
12938.00	90.710	182.410	7682.51	4784.42	-4785.17	303.63	1707438.85	14538719.82	40°01'57.610"N	104°45'38.033"W	1.97	
13113.00	89.260	182.750	7682.55	4959.25	-4959.99	295.76	1707431.44	14538545.06	40°01'55.882"N	104°45'38.134"W	0.85	
13201.00	89.080	182.170	7683.83	5047.17	-5047.90	291.98	1707427.90	14538457.17	40°01'55.013"N	104°45'38.182"W	0.69	
13288.00	89.320	182.080	7685.04	5134.11	-5134.83	288.75	1707424.91	14538370.27	40°01'54.154"N	104°45'38.224"W	0.29	
13375.00	89.970	181.470	7685.58	5221.07	-5221.78	286.06	1707422.45	14538283.34	40°01'53.295"N	104°45'38.259"W	1.02	
13463.00	90.740	181.050	7685.04	5309.05	-5309.76	284.12	1707420.75	14538195.39	40°01'52.426"N	104°45'38.283"W	1.00	
13550.00	91.390	180.120	7683.42	5396.03	-5396.74	283.24	1707420.09	14538108.44	40°01'51.566"N	104°45'38.295"W	1.30	
13638.00	90.370	180.040	7682.07	5484.02	-5484.73	283.11	1707420.21	14538020.49	40°01'50.697"N	104°45'38.296"W	1.16	
13725.00	90.060	179.270	7681.74	5571.02	-5571.72	283.64	1707420.96	14537933.53	40°01'49.837"N	104°45'38.290"W	0.95	
13813.00	88.430	177.210	7682.90	5658.96	-5659.67	286.34	1707423.90	14537845.63	40°01'48.968"N	104°45'38.255"W	2.98	
13900.00	89.140	178.620	7684.75	5745.87	-5746.59	289.50	1707427.29	14537758.75	40°01'48.109"N	104°45'38.214"W	1.81	
13988.00	87.940	178.410	7686.99	5833.80	-5834.53	291.78	1707429.81	14537670.85	40°01'47.240"N	104°45'38.185"W	1.38	
14075.00	87.720	177.100	7690.28	5920.66	-5921.40	295.19	1707433.44	14537584.03	40°01'46.381"N	104°45'38.141"W	1.53	
14163.00	89.230	179.260	7692.63	6008.57	-6009.31	297.98	1707436.47	14537496.15	40°01'45.512"N	104°45'38.105"W	2.99	
14250.00	90.430	180.920	7692.88	6095.57	-6096.31	297.84	1707436.57	14537409.19	40°01'44.653"N	104°45'38.107"W	2.35	
14337.00	90.030	180.220	7692.54	6182.56	-6183.30	296.98	1707435.94	14537322.23	40°01'43.793"N	104°45'38.118"W	0.93	
14425.00	90.400	179.490	7692.20	6270.56	-6271.30	297.20	1707436.39	14537234.27	40°01'42.923"N	104°45'38.115"W	0.93	
14513.00	90.580	178.930	7691.45	6358.55	-6359.29	298.41	1707437.84	14537146.32	40°01'42.054"N	104°45'38.100"W	0.67	
14600.00	89.850	177.420	7691.13	6445.49	-6446.24	301.19	1707440.84	14537059.41	40°01'41.195"N	104°45'38.064"W	1.93	
14687.00	89.510	178.810	7691.61	6532.43	-6533.19	304.05	1707443.94	14536972.50	40°01'40.335"N	104°45'38.027"W	1.64	
14775.00	90.430	178.560	7691.66	6620.40	-6621.17	306.07	1707446.19	14536884.57	40°01'39.466"N	104°45'38.002"W	1.08	
14863.00	90.860	180.280	7690.67	6708.39	-6709.15	306.96	1707447.32	14536796.62	40°01'38.596"N	104°45'37.990"W	2.01	
14950.00	91.170	179.890	7689.13	6795.37	-6796.14	306.83	1707447.42	14536709.67	40°01'37.737"N	104°45'37.992"W	0.57	
15038.00	87.690	180.150	7690.00	6883.36	-6884.12	306.80	1707447.63	14536621.72	40°01'36.867"N	104°45'37.992"W	3.97	
15125.00	85.740	178.860	7694.99	6970.20	-6970.97	307.55	1707448.61	14536534.91	40°01'36.009"N	104°45'37.983"W	2.69	
15213.00	88.550	179.690	7699.37	7058.07	-7058.84	308.66	1707449.95	14536447.07	40°01'35.141"N	104°45'37.968"W	3.33	
15300.00	88.770	179.200	7701.40	7145.04	-7145.81	309.50	1707451.03	14536360.14	40°01'34.281"N	104°45'37.957"W	0.62	
15388.00	90.490	179.910	7701.97	7233.03	-7233.80	310.18	1707451.95	14536272.19	40°01'33.412"N	104°45'37.949"W	2.11	
15475.00	91.390	181.780	7700.54	7320.01	-7320.78	308.90	1707450.90	14536185.24	40°01'32.552"N	104°45'37.965"W	2.39	
15563.00	90.430	181.360	7699.15	7407.97	-7408.73	306.49	1707448.72	14536097.32	40°01'31.683"N	104°45'37.996"W	1.19	
15650.00	90.960	181.780	7698.09	7494.93	-7495.69	304.11	1707446.57	14536010.38	40°01'30.824"N	104°45'38.027"W	0.78	
15738.00	91.600	181.000	7696.13	7582.89	-7583.65	301.97	1707444.67	14535922.46	40°01'29.954"N	104°45'38.054"W	1.15	

# Actual Wellpath Report

MAB 15-12HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWB
Facility	SEC.15-T1N-R66W		

## WELLPATH DATA (218 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
15825.00	89.850	181.600	7695.03	7669.86	-7670.61	300.00	1707442.93	14535835.53	40°01'29.095"N	104°45'38.080"W	2.13	
15912.00	89.450	180.710	7695.56	7756.85	-7757.59	298.25	1707441.41	14535748.58	40°01'28.235"N	104°45'38.102"W	1.12	
16000.00	88.610	179.780	7697.05	7844.83	-7845.58	297.87	1707441.27	14535660.63	40°01'27.366"N	104°45'38.107"W	1.42	
16087.00	88.980	178.990	7698.88	7931.80	-7932.55	298.80	1707442.44	14535573.69	40°01'26.506"N	104°45'38.095"W	1.00	
16174.00	90.120	180.100	7699.56	8018.79	-8019.54	299.49	1707443.36	14535486.73	40°01'25.647"N	104°45'38.086"W	1.83	
16263.00	90.180	179.650	7699.33	8107.79	-8108.54	299.69	1707443.79	14535397.77	40°01'24.767"N	104°45'38.084"W	0.51	
16350.00	90.220	178.060	7699.02	8194.77	-8195.52	301.43	1707445.77	14535310.83	40°01'23.908"N	104°45'38.061"W	1.83	
16437.00	90.680	179.880	7698.34	8281.74	-8282.50	302.99	1707447.56	14535223.89	40°01'23.048"N	104°45'38.041"W	2.16	
16525.00	89.780	180.010	7697.99	8369.74	-8370.50	303.07	1707447.88	14535135.93	40°01'22.179"N	104°45'38.040"W	1.03	
16612.00	90.120	179.900	7698.06	8456.74	-8457.50	303.14	1707448.18	14535048.96	40°01'21.319"N	104°45'38.039"W	0.41	
16699.00	90.920	180.970	7697.27	8543.73	-8544.49	302.48	1707447.75	14534962.00	40°01'20.459"N	104°45'38.048"W	1.54	
16787.00	89.200	180.940	7697.18	8631.72	-8632.48	301.02	1707446.52	14534874.05	40°01'19.590"N	104°45'38.067"W	1.95	
16874.00	89.380	180.410	7698.26	8718.71	-8719.46	299.99	1707445.73	14534787.10	40°01'18.730"N	104°45'38.080"W	0.64	
16961.00	89.010	179.230	7699.48	8805.70	-8806.45	300.26	1707446.24	14534700.14	40°01'17.870"N	104°45'38.076"W	1.42	
17049.00	88.830	179.290	7701.14	8893.67	-8894.43	301.40	1707447.61	14534612.20	40°01'17.001"N	104°45'38.062"W	0.22	
17137.00	90.460	180.420	7701.68	8981.66	-8982.42	301.62	1707448.07	14534524.25	40°01'16.131"N	104°45'38.059"W	2.25	
17225.00	90.710	179.670	7700.79	9069.66	-9070.42	301.55	1707448.23	14534436.29	40°01'15.262"N	104°45'38.060"W	0.90	
17312.00	91.720	181.260	7698.94	9156.63	-9157.39	300.85	1707447.76	14534349.34	40°01'14.402"N	104°45'38.069"W	2.16	
17399.00	90.830	181.560	7697.01	9243.59	-9244.34	298.71	1707445.85	14534262.42	40°01'13.543"N	104°45'38.096"W	1.08	
17487.00	90.800	180.340	7695.75	9331.57	-9332.32	297.25	1707444.63	14534174.48	40°01'12.674"N	104°45'38.115"W	1.39	
17574.00	90.710	179.350	7694.61	9418.56	-9419.31	297.48	1707445.10	14534087.52	40°01'11.814"N	104°45'38.112"W	1.14	
17604.00†	90.185	179.282	7694.37	9448.56	-9449.31	297.84	1707445.54	14534057.54	40°01'11.517"N	104°45'38.108"W	1.76	CROSS SETBACK TOE (1777'FSL & 1874'FEL,SEC.27) 40.0198660 -104.7605855
17662.00	89.170	179.150	7694.70	9506.55	-9507.30	298.64	1707446.49	14533999.57	40°01'10.944"N	104°45'38.097"W	1.76	
17749.00	90.490	179.380	7694.96	9593.54	-9594.29	299.75	1707447.83	14533912.62	40°01'10.085"N	104°45'38.083"W	1.54	
17837.00	90.460	180.740	7694.23	9681.53	-9682.29	299.66	1707447.98	14533824.66	40°01'09.215"N	104°45'38.084"W	1.55	
17924.00	89.510	180.240	7694.25	9768.53	-9769.28	298.92	1707447.47	14533737.69	40°01'08.355"N	104°45'38.094"W	1.23	
18011.00	88.610	178.820	7695.68	9855.51	-9856.26	299.63	1707448.41	14533650.75	40°01'07.496"N	104°45'38.085"W	1.93	
18099.00	89.480	180.010	7697.14	9943.49	-9944.24	300.53	1707449.55	14533562.81	40°01'06.626"N	104°45'38.073"W	1.67	
18186.00	89.970	179.350	7697.56	10030.48	-10031.24	301.01	1707450.26	14533475.85	40°01'05.767"N	104°45'38.067"W	0.94	
18274.00	89.720	181.490	7697.80	10118.47	-10119.23	300.37	1707449.85	14533387.89	40°01'04.897"N	104°45'38.075"W	2.45	
18361.00	90.950	181.130	7697.29	10205.45	-10206.21	298.38	1707448.10	14533300.94	40°01'04.038"N	104°45'38.101"W	1.47	
18448.00	90.280	181.060	7696.36	10292.44	-10293.19	296.72	1707446.67	14533213.99	40°01'03.178"N	104°45'38.122"W	0.77	
18536.00	91.020	180.800	7695.36	10380.42	-10381.17	295.29	1707445.48	14533126.04	40°01'02.309"N	104°45'38.141"W	0.89	
18623.00	91.570	179.630	7693.39	10467.40	-10468.14	294.96	1707445.38	14533039.10	40°01'01.449"N	104°45'38.145"W	1.49	
18711.00	91.660	179.730	7690.91	10555.36	-10556.11	295.45	1707446.11	14532951.17	40°01'00.580"N	104°45'38.138"W	0.15	
18798.00	92.650	178.780	7687.64	10642.28	-10643.04	296.58	1707447.47	14532864.28	40°00'59.721"N	104°45'38.124"W	1.58	
18866.00	91.760	177.920	7685.03	10710.20	-10710.96	298.54	1707449.61	14532796.40	40°00'59.049"N	104°45'38.099"W	1.82	LAST BHGE MWD+IFR1+MSA SURVEY
18911.00	91.760	177.920	7683.64	10755.14	-10755.90	300.17	1707451.36	14532751.47	40°00'58.605"N	104°45'38.078"W	0.00	PTB (470'FSL & 1872'FEL,SEC.27) 40.0162792 -104.7605772

## HOLE & CASING SECTIONS - Ref Wellbore: MAB 15-12HZ AWB Ref Wellpath: MAB 15-12HZ 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	17.00	1876.00	1859.00	17.00	1850.00	0.00	0.00	242.93	103.94



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWB
Facility	SEC.15-T1N-R66W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.22-T1N-R66W	34.00	614.59	-1679.58	1705441.98	14544112.12	40°02'50.971"N	104°46'03.533"W	polygon
SEC.27-T1N-R66W	34.00	614.59	-1679.58	1705441.98	14544112.12	40°02'50.971"N	104°46'03.533"W	polygon
MAB 15-12HZ HEEL REV-1(670'FSL & 1863'FEL,SEC.15)	7642.00	16.80	307.97	1707430.34	14543519.88	40°02'45.064"N	104°45'37.976"W	point
MAB 15-12HZ LANDBOX	7701.00	0.00	0.00	1707122.53	14543502.26	40°02'44.898"N	104°45'41.936"W	polygon
MAB 15-12HZ SETBACK 1	7701.00	0.00	0.00	1707122.53	14543502.26	40°02'44.898"N	104°45'41.936"W	polygon
MAB 15-12HZ SETBACK 2	7701.00	0.00	0.00	1707122.53	14543502.26	40°02'44.898"N	104°45'41.936"W	polygon
MAB 15-12HZ BHL REV-1(470'FSL & 1890'FEL,SEC.27)	7713.00	-10756.33	281.72	1707432.92	14532750.99	40°00'58.601"N	104°45'38.315"W	point

WELLPATH COMPOSITION - Ref Wellbore: MAB 15-12HZ AWB					Ref Wellpath: MAB 15-12HZ AWP			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment			Wellbore	
17.00	1829.00	Custom APC_ISCWSA REV 2 MWD+IFR1 (approximation)		Custom APC ISCWSA Rev-2 MWD+IFR1 <123 - 1829>			MAB 15-12HZ AWB	
1829.00	18866.00	Custom APC_ISCWSA REV 2 MWD+IFR1+MSA (approximation)		BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1976 - 18866>			MAB 15-12HZ AWB	
18866.00	18911.00	Blind Drilling (std)		Projection to bit			MAB 15-12HZ AWB	



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#30 MAB 15-12HZ(653'FSL & 2171'FEL,SEC.15)
Area	COLORADO	Well	MAB 15-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	MAB 15-12HZ AWB
Facility	SEC.15-T1N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
123.00	0.880	345.250	123.00	FIRST SURFACE MWD+IFR1 SURVEY
1829.00	13.840	22.690	1804.38	LAST SURFACE MWD+IFR1 SURVEY
1976.00	14.310	24.820	1946.97	FIRST BHGE MWD+IFR1+MSA SURVEY
6990.00	0.930	60.420	6903.56	KOP
7932.00	68.996	179.856	7608.01	ENTER LANDBOX (866'FSL & 1849'FEL,SEC.15) 40.0463889 -104.7604969
8127.00	86.760	181.390	7652.24	LANDING (677'FSL & 1850'FEL,SEC.15) 40.0458699 -104.7605021
9264.00	89.513	179.626	7660.63	CROSS SETBACK HEEL (460'FNL & 1857'FEL,SEC.15) 40.0427509 -104.7605271
17604.00	90.185	179.282	7694.37	CROSS SETBACK TOE (1777'FSL & 1874'FEL,SEC.27) 40.0198660 -104.7605855
18866.00	91.760	177.920	7685.03	LAST BHGE MWD+IFR1+MSA SURVEY
18911.00	91.760	177.920	7683.64	PTB (470'FSL & 1872'FEL,SEC.27) 40.0162792 -104.7605772