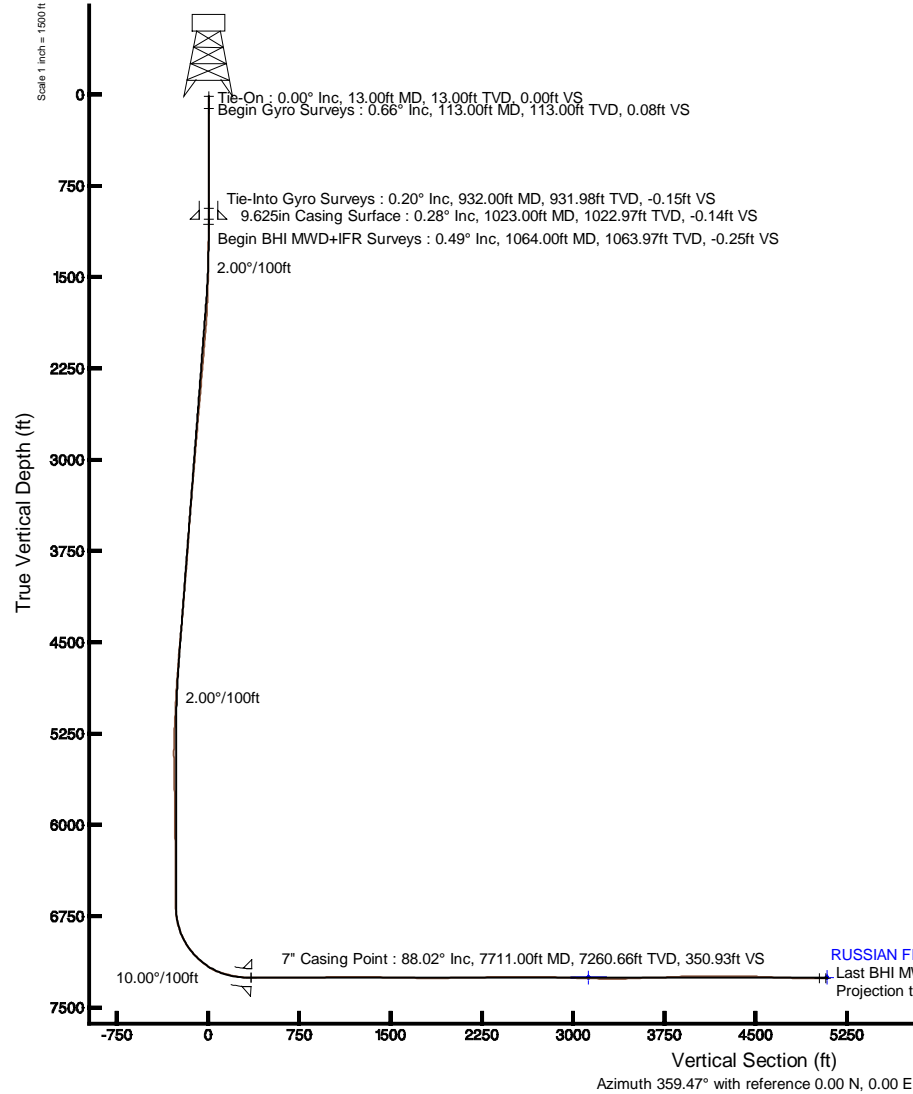


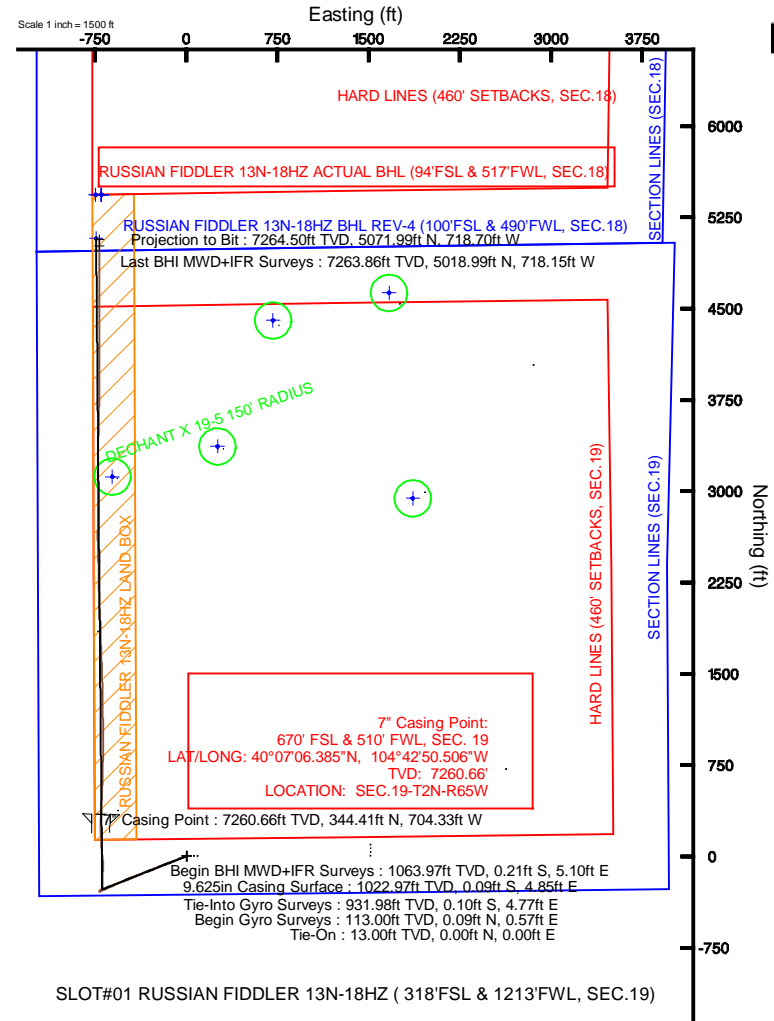
KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
 Field: WELD COUNTY (KERR MCGEE) Well: RUSSIAN FIDDLER 13N-18HZ
 Facility: SEC.19-T2N-R6SW Wellbore: RUSSIAN FIDDLER 13N-18HZ PWB



Plot reference wellpath is RUSSIAN FIDDLER 13N-18HZ (REV-D.0) PWB

True vertical depths are referenced to ENSIGN 145 (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to ENSIGN 145 (RKB)	North Reference: True north
ENSGIN 145 (RKB) to Mean Sea Level: 5013 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: precain on 5/7/2013



SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)

RUSSIAN FIDDLER 13N-18HZ BHL REV-4 (100'FSL & 490'FWL, SEC.18)

Last BHI MWD+IFR Surveys : 89.31° Inc, 12388.00ft MD, 7263.86ft TVD, 5025.45ft VS
 Projection to Bit : 89.31° Inc, 12441.00ft MD, 7264.50ft TVD, 5078.44ft VS

Scale 1 inch = 1500 ft



Actual Wellpath Report

RUSSIAN FIDDLER 13N-18HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
Area	COLORADO	Well	RUSSIAN FIDDLER 13N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	RUSSIAN FIDDLER 13N-18HZ AWB
Facility	SEC.19-T2N-R65W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 3.0.2
North Reference	True	User	Precain
Scale	0.99996	Report Generated	5/7/2013 at 10:59:09 AM
Convergence at slot	0.51° East	Database/Source file	WellArchitectDB/RUSSIAN_FIDDLER_13N-18HZ_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-5008.97	-1284.90	3220514.51	1286627.87	40°07'02.982"N	104°42'41.440"W
Facility Reference Pt			3221754.51	1291647.91	40°07'52.481"N	104°42'24.901"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	ENSIGN 145 (RKB) to Facility Vertical Datum	5013.00ft
Horizontal Reference Pt	Slot	ENSIGN 145 (RKB) to Mean Sea Level	5013.00ft
Vertical Reference Pt	ENSIGN 145 (RKB)	ENSIGN 145 (RKB) to Mud Line at Slot (SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19))	5013.00ft
MD Reference Pt	ENSIGN 145 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.47°

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
Area	COLORADO	Well	RUSSIAN FIDDLER 13N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	RUSSIAN FIDDLER 13N-18HZ AWB
Facility	SEC.19-T2N-R65W		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	81.020	0.00	0.00	0.00	0.00	40°07'02.982"N	104°42'41.440"W	0.00	
13.00	0.000	81.020	13.00	0.00	0.00	0.00	40°07'02.982"N	104°42'41.440"W	0.00	Tie-On
113.00	0.660	81.020	113.00	0.08	0.09	0.57	40°07'02.983"N	104°42'41.433"W	0.66	Begin Gyro Surveys
213.00	0.880	89.030	212.99	0.18	0.19	1.91	40°07'02.984"N	104°42'41.415"W	0.24	
313.00	0.250	74.510	312.98	0.24	0.26	2.88	40°07'02.985"N	104°42'41.403"W	0.64	
413.00	0.600	94.840	412.98	0.24	0.28	3.62	40°07'02.985"N	104°42'41.393"W	0.38	
513.00	0.110	141.370	512.98	0.12	0.16	4.20	40°07'02.984"N	104°42'41.386"W	0.53	
613.00	0.340	29.840	612.98	0.30	0.34	4.40	40°07'02.985"N	104°42'41.383"W	0.39	
713.00	0.330	120.220	712.98	0.41	0.45	4.80	40°07'02.986"N	104°42'41.378"W	0.48	
813.00	0.290	198.630	812.98	0.02	0.07	4.97	40°07'02.983"N	104°42'41.376"W	0.39	
913.00	0.100	296.340	912.98	-0.18	-0.13	4.81	40°07'02.981"N	104°42'41.378"W	0.32	
932.00	0.200	307.820	931.98	-0.15	-0.10	4.77	40°07'02.981"N	104°42'41.379"W	0.55	Tie-Into Gyro Surveys
1064.00	0.490	115.460	1063.97	-0.25	-0.21	5.10	40°07'02.980"N	104°42'41.374"W	0.52	Begin BHI MWD+IFR Surveys
1188.00	0.730	221.020	1187.97	-1.08	-1.03	5.06	40°07'02.972"N	104°42'41.375"W	0.79	
1248.00	1.450	254.970	1247.96	-1.55	-1.51	4.07	40°07'02.967"N	104°42'41.388"W	1.56	
1339.00	2.350	253.060	1338.91	-2.37	-2.36	1.18	40°07'02.959"N	104°42'41.425"W	0.99	
1431.00	3.770	251.640	1430.77	-3.83	-3.86	-3.50	40°07'02.944"N	104°42'41.485"W	1.55	
1522.00	5.170	253.590	1521.50	-5.86	-5.96	-10.27	40°07'02.923"N	104°42'41.572"W	1.55	
1614.00	6.560	255.380	1613.01	-8.28	-8.46	-19.33	40°07'02.898"N	104°42'41.689"W	1.52	
1706.00	8.150	252.410	1704.25	-11.47	-11.76	-30.64	40°07'02.866"N	104°42'41.834"W	1.78	
1797.00	10.400	252.660	1794.06	-15.74	-16.15	-44.63	40°07'02.822"N	104°42'42.014"W	2.47	
1889.00	11.640	248.310	1884.36	-21.49	-22.06	-61.18	40°07'02.764"N	104°42'42.227"W	1.62	
1984.00	12.890	246.380	1977.19	-29.10	-29.85	-79.79	40°07'02.687"N	104°42'42.467"W	1.38	
2078.00	13.840	249.420	2068.64	-37.07	-38.00	-99.92	40°07'02.606"N	104°42'42.726"W	1.26	
2173.00	12.950	247.620	2161.06	-44.93	-46.05	-120.41	40°07'02.527"N	104°42'42.990"W	1.03	
2268.00	13.630	249.510	2253.52	-52.71	-54.02	-140.73	40°07'02.448"N	104°42'43.251"W	0.85	
2363.00	13.430	250.940	2345.88	-60.04	-61.54	-161.65	40°07'02.374"N	104°42'43.521"W	0.41	
2458.00	13.340	247.710	2438.30	-67.60	-69.30	-182.22	40°07'02.297"N	104°42'43.785"W	0.79	
2553.00	13.880	249.280	2530.63	-75.60	-77.49	-203.01	40°07'02.216"N	104°42'44.053"W	0.69	
2647.00	13.150	248.000	2622.03	-83.40	-85.48	-223.47	40°07'02.137"N	104°42'44.316"W	0.84	
2742.00	12.970	246.690	2714.57	-91.49	-93.75	-243.28	40°07'02.056"N	104°42'44.571"W	0.36	
2837.00	12.520	245.430	2807.23	-99.81	-102.25	-262.44	40°07'01.972"N	104°42'44.818"W	0.56	
2932.00	12.260	248.940	2900.02	-107.54	-110.16	-281.22	40°07'01.893"N	104°42'45.060"W	0.84	
3026.00	12.910	248.910	2991.76	-114.73	-117.52	-300.33	40°07'01.821"N	104°42'45.306"W	0.69	
3121.00	14.010	248.870	3084.15	-122.50	-125.48	-320.96	40°07'01.742"N	104°42'45.571"W	1.16	
3216.00	13.400	248.770	3176.44	-130.44	-133.62	-341.94	40°07'01.662"N	104°42'45.841"W	0.64	
3311.00	13.920	249.540	3268.76	-138.22	-141.60	-362.91	40°07'01.583"N	104°42'46.111"W	0.58	
3406.00	12.850	248.170	3361.18	-145.95	-149.52	-383.42	40°07'01.504"N	104°42'46.375"W	1.17	
3501.00	12.610	248.030	3453.84	-153.58	-157.33	-402.85	40°07'01.427"N	104°42'46.625"W	0.25	
3596.00	10.910	248.490	3546.84	-160.59	-164.50	-420.83	40°07'01.356"N	104°42'46.857"W	1.79	
3691.00	11.190	252.030	3640.08	-166.57	-170.64	-437.96	40°07'01.296"N	104°42'47.077"W	0.77	
3785.00	11.050	248.270	3732.32	-172.56	-176.79	-455.01	40°07'01.235"N	104°42'47.297"W	0.79	
3880.00	10.990	246.040	3825.57	-179.45	-183.84	-471.74	40°07'01.165"N	104°42'47.512"W	0.45	
3975.00	11.220	244.610	3918.79	-186.94	-191.48	-488.36	40°07'01.090"N	104°42'47.726"W	0.38	
4070.00	11.360	245.230	4011.95	-194.67	-199.36	-505.21	40°07'01.012"N	104°42'47.943"W	0.20	



Actual Wellpath Report

RUSSIAN FIDDLER 13N-18HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
Area	COLORADO	Well	RUSSIAN FIDDLER 13N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	RUSSIAN FIDDLER 13N-18HZ AWB
Facility	SEC.19-T2N-R65W		

WELLPATH DATA (155 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4165.00	11.540	244.620	4105.06	-202.50	-207.36	-522.29	40°07'00.933"N	104°42'48.163"W	0.23	
4260.00	12.740	250.460	4197.94	-209.90	-214.93	-540.75	40°07'00.858"N	104°42'48.400"W	1.81	
4355.00	12.500	248.730	4290.64	-216.96	-222.17	-560.20	40°07'00.786"N	104°42'48.651"W	0.47	
4450.00	12.510	245.360	4383.39	-224.80	-230.19	-579.13	40°07'00.707"N	104°42'48.894"W	0.77	
4545.00	11.290	243.360	4476.35	-233.10	-238.65	-596.80	40°07'00.624"N	104°42'49.122"W	1.36	
4639.00	11.910	246.780	4568.43	-240.89	-246.60	-613.94	40°07'00.545"N	104°42'49.342"W	0.98	
4734.00	11.100	247.230	4661.52	-248.13	-254.00	-631.38	40°07'00.472"N	104°42'49.567"W	0.86	
4829.00	10.390	246.740	4754.85	-254.90	-260.92	-647.68	40°07'00.403"N	104°42'49.777"W	0.75	
4924.00	9.940	245.870	4848.36	-261.49	-267.66	-663.03	40°07'00.337"N	104°42'49.974"W	0.50	
5019.00	8.430	248.090	4942.14	-267.31	-273.61	-676.98	40°07'00.278"N	104°42'50.154"W	1.63	
5113.00	8.190	249.750	5035.15	-272.08	-278.50	-689.65	40°07'00.230"N	104°42'50.317"W	0.36	
5208.00	6.500	242.760	5129.37	-276.78	-283.30	-700.78	40°07'00.182"N	104°42'50.460"W	2.01	
5303.00	4.100	228.560	5223.96	-281.42	-288.01	-708.11	40°07'00.136"N	104°42'50.555"W	2.86	
5398.00	2.280	237.360	5318.81	-284.65	-291.28	-712.25	40°07'00.103"N	104°42'50.608"W	1.98	
5493.00	1.390	270.110	5413.77	-285.64	-292.30	-714.99	40°07'00.093"N	104°42'50.643"W	1.41	
5588.00	1.040	332.640	5508.75	-284.86	-291.53	-716.54	40°07'00.101"N	104°42'50.663"W	1.36	
5683.00	1.440	12.470	5603.73	-282.93	-289.60	-716.68	40°07'00.120"N	104°42'50.665"W	0.97	
5777.00	1.880	54.600	5697.69	-280.90	-287.55	-715.17	40°07'00.140"N	104°42'50.645"W	1.34	
5872.00	1.720	44.690	5792.64	-279.00	-285.63	-712.90	40°07'00.159"N	104°42'50.616"W	0.37	
5967.00	0.800	35.000	5887.62	-277.46	-284.08	-711.51	40°07'00.175"N	104°42'50.598"W	0.99	
6062.00	1.710	76.070	5982.60	-276.59	-283.19	-709.76	40°07'00.183"N	104°42'50.576"W	1.29	
6157.00	1.480	56.750	6077.56	-275.60	-282.18	-707.35	40°07'00.193"N	104°42'50.545"W	0.61	
6252.00	1.420	66.090	6172.53	-274.47	-281.03	-705.25	40°07'00.205"N	104°42'50.518"W	0.26	
6347.00	1.380	60.560	6267.50	-273.45	-279.99	-703.18	40°07'00.215"N	104°42'50.491"W	0.15	
6442.00	1.010	74.430	6362.48	-272.68	-279.20	-701.38	40°07'00.223"N	104°42'50.468"W	0.49	
6537.00	0.800	78.380	6457.47	-272.33	-278.84	-699.92	40°07'00.226"N	104°42'50.449"W	0.23	
6631.00	0.980	71.990	6551.46	-271.97	-278.46	-698.51	40°07'00.230"N	104°42'50.431"W	0.22	
6701.00	0.630	85.890	6621.45	-271.76	-278.25	-697.56	40°07'00.232"N	104°42'50.419"W	0.57	
6725.00	0.920	83.040	6645.45	-271.73	-278.22	-697.24	40°07'00.233"N	104°42'50.415"W	1.22	
6819.00	5.360	18.650	6739.30	-267.50	-273.96	-695.08	40°07'00.275"N	104°42'50.387"W	5.35	
6851.00	9.690	6.400	6771.02	-263.41	-269.87	-694.30	40°07'00.315"N	104°42'50.377"W	14.36	
6883.00	13.850	6.240	6802.34	-256.93	-263.38	-693.59	40°07'00.379"N	104°42'50.368"W	13.00	
6914.00	16.570	7.140	6832.25	-248.86	-255.31	-692.63	40°07'00.459"N	104°42'50.355"W	8.81	
6946.00	17.950	4.440	6862.81	-239.43	-245.86	-691.69	40°07'00.552"N	104°42'50.343"W	4.99	
6978.00	21.550	1.490	6892.92	-228.64	-235.07	-691.15	40°07'00.659"N	104°42'50.336"W	11.67	
7009.00	24.100	1.140	6921.49	-216.62	-223.05	-690.88	40°07'00.778"N	104°42'50.333"W	8.24	
7041.00	28.100	0.940	6950.22	-202.55	-208.97	-690.62	40°07'00.917"N	104°42'50.329"W	12.50	
7072.00	31.750	358.670	6977.09	-187.09	-193.51	-690.69	40°07'01.070"N	104°42'50.330"W	12.33	
7104.00	33.840	0.070	7003.98	-169.76	-176.18	-690.88	40°07'01.241"N	104°42'50.333"W	6.95	
7136.00	36.420	1.560	7030.15	-151.36	-157.77	-690.61	40°07'01.423"N	104°42'50.329"W	8.50	
7167.00	40.820	3.220	7054.37	-132.04	-138.45	-689.79	40°07'01.614"N	104°42'50.319"W	14.58	
7199.00	44.160	1.420	7077.96	-110.46	-116.86	-688.92	40°07'01.827"N	104°42'50.308"W	11.11	
7231.00	46.710	1.740	7100.42	-87.67	-94.07	-688.29	40°07'02.052"N	104°42'50.299"W	8.00	
7262.00	47.750	359.160	7121.47	-64.92	-71.32	-688.12	40°07'02.277"N	104°42'50.297"W	6.97	
7294.00	50.730	357.140	7142.36	-40.70	-47.10	-688.91	40°07'02.516"N	104°42'50.307"W	10.47	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
Area	COLORADO	Well	RUSSIAN FIDDLER 13N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	RUSSIAN FIDDLER 13N-18HZ AWB
Facility	SEC.19-T2N-R65W		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7326.00	54.620	354.650	7161.76	-15.31	-21.72	-690.75	40°07'02.767"N	104°42'50.331"W	13.64	
7357.00	59.020	354.040	7178.72	10.52	4.09	-693.31	40°07'03.022"N	104°42'50.364"W	14.29	
7389.00	63.270	354.340	7194.16	38.43	31.96	-696.14	40°07'03.298"N	104°42'50.401"W	13.31	
7420.00	68.040	355.030	7206.94	66.56	60.08	-698.75	40°07'03.576"N	104°42'50.434"W	15.52	
7452.00	71.600	356.730	7217.98	96.53	90.03	-700.91	40°07'03.872"N	104°42'50.462"W	12.19	
7484.00	74.050	356.990	7227.42	127.07	120.56	-702.58	40°07'04.173"N	104°42'50.483"W	7.70	
7515.00	76.550	355.810	7235.29	157.01	150.48	-704.46	40°07'04.469"N	104°42'50.508"W	8.87	
7547.00	78.740	358.590	7242.14	188.24	181.70	-705.99	40°07'04.777"N	104°42'50.527"W	10.90	
7579.00	80.160	359.750	7248.00	219.70	213.15	-706.44	40°07'05.088"N	104°42'50.533"W	5.69	
7610.00	82.390	0.460	7252.70	250.34	243.79	-706.39	40°07'05.391"N	104°42'50.532"W	7.54	
7642.00	84.330	0.990	7256.40	282.11	275.57	-705.98	40°07'05.705"N	104°42'50.527"W	6.28	
7667.00	86.240	1.140	7258.45	307.02	300.48	-705.52	40°07'05.951"N	104°42'50.521"W	7.66	
7711.00†	88.024	1.966	7260.66	350.93	344.41	-704.33	40°07'06.385"N	104°42'50.506"W	4.47	7" Casing Point
7739.00	89.160	2.490	7261.34	378.89	372.38	-703.24	40°07'06.662"N	104°42'50.492"W	4.47	
7802.00	90.120	2.800	7261.74	441.79	435.31	-700.33	40°07'07.284"N	104°42'50.455"W	1.60	
7897.00	90.600	2.240	7261.14	536.65	530.21	-696.16	40°07'08.222"N	104°42'50.401"W	0.78	
7992.00	90.250	1.450	7260.44	631.57	625.16	-693.10	40°07'09.160"N	104°42'50.362"W	0.91	
8087.00	89.680	1.410	7260.50	726.51	720.13	-690.73	40°07'10.098"N	104°42'50.331"W	0.60	
8181.00	90.950	1.860	7259.98	820.44	814.09	-688.05	40°07'11.027"N	104°42'50.297"W	1.43	
8276.00	91.570	358.840	7257.89	915.40	909.05	-687.47	40°07'11.965"N	104°42'50.289"W	3.24	
8371.00	91.410	359.700	7255.42	1010.36	1004.01	-688.68	40°07'12.904"N	104°42'50.305"W	0.92	
8466.00	89.900	359.850	7254.33	1105.35	1099.00	-689.05	40°07'13.842"N	104°42'50.310"W	1.60	
8561.00	89.470	359.300	7254.86	1200.35	1194.00	-689.75	40°07'14.781"N	104°42'50.319"W	0.73	
8655.00	89.650	359.170	7255.58	1294.35	1287.99	-691.01	40°07'15.710"N	104°42'50.335"W	0.24	
8750.00	89.410	358.340	7256.36	1389.33	1382.96	-693.07	40°07'16.648"N	104°42'50.362"W	0.91	
8845.00	88.880	358.230	7257.77	1484.30	1477.91	-695.92	40°07'17.587"N	104°42'50.398"W	0.57	
8940.00	89.040	357.930	7259.50	1579.26	1572.84	-699.10	40°07'18.525"N	104°42'50.439"W	0.36	
9035.00	88.700	357.900	7261.37	1674.21	1667.75	-702.55	40°07'19.463"N	104°42'50.484"W	0.36	
9130.00	88.910	358.440	7263.35	1769.16	1762.69	-705.59	40°07'20.401"N	104°42'50.523"W	0.61	
9225.00	90.090	358.770	7264.18	1864.14	1857.65	-707.90	40°07'21.339"N	104°42'50.553"W	1.29	
9319.00	91.560	357.340	7262.83	1958.10	1951.58	-711.09	40°07'22.268"N	104°42'50.594"W	2.18	
9414.00	90.980	357.190	7260.72	2053.01	2046.45	-715.62	40°07'23.205"N	104°42'50.652"W	0.63	
9509.00	91.200	357.670	7258.92	2147.93	2141.34	-719.88	40°07'24.143"N	104°42'50.707"W	0.56	
9604.00	90.800	359.050	7257.26	2242.89	2236.28	-722.60	40°07'25.081"N	104°42'50.742"W	1.51	
9699.00	90.760	358.990	7255.96	2337.88	2331.26	-724.22	40°07'26.020"N	104°42'50.763"W	0.08	
9794.00	90.920	358.520	7254.57	2432.87	2426.23	-726.29	40°07'26.958"N	104°42'50.789"W	0.52	
9888.00	90.920	357.820	7253.06	2526.83	2520.17	-729.29	40°07'27.886"N	104°42'50.828"W	0.74	
9983.00	90.300	359.600	7252.05	2621.81	2615.13	-731.43	40°07'28.825"N	104°42'50.856"W	1.98	
10078.00	88.780	0.950	7252.81	2716.79	2710.12	-730.97	40°07'29.764"N	104°42'50.850"W	2.14	
10173.00	88.450	0.170	7255.11	2811.75	2805.09	-730.04	40°07'30.702"N	104°42'50.838"W	0.89	
10268.00	88.110	0.070	7257.96	2906.70	2900.05	-729.84	40°07'31.640"N	104°42'50.835"W	0.37	
10363.00	87.780	359.560	7261.37	3001.63	2994.98	-730.15	40°07'32.579"N	104°42'50.839"W	0.64	
10458.00	88.360	0.230	7264.57	3096.58	3089.93	-730.32	40°07'33.517"N	104°42'50.842"W	0.93	
10553.00	88.550	0.460	7267.13	3191.53	3184.89	-729.75	40°07'34.455"N	104°42'50.834"W	0.31	
10647.00	89.530	1.170	7268.70	3285.49	3278.87	-728.41	40°07'35.384"N	104°42'50.817"W	1.29	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
Area	COLORADO	Well	RUSSIAN FIDDLER 13N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	RUSSIAN FIDDLER 13N-18HZ AWB
Facility	SEC.19-T2N-R65W		

WELLPATH DATA (155 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10742.00	90.800	0.530	7268.43	3380.46	3373.86	-727.01	40°07'36.323"N	104°42'50.799"W	1.50	
10837.00	92.250	1.120	7265.90	3475.40	3468.81	-725.64	40°07'37.261"N	104°42'50.782"W	1.65	
10932.00	92.580	1.670	7261.90	3570.26	3563.70	-723.33	40°07'38.199"N	104°42'50.752"W	0.67	
11027.00	91.070	0.720	7258.87	3665.16	3658.62	-721.35	40°07'39.137"N	104°42'50.726"W	1.88	
11122.00	91.290	0.670	7256.92	3760.12	3753.60	-720.20	40°07'40.075"N	104°42'50.712"W	0.24	
11217.00	93.420	2.080	7253.01	3854.98	3848.48	-717.92	40°07'41.013"N	104°42'50.682"W	2.69	
11311.00	91.960	359.930	7248.60	3948.84	3942.35	-716.27	40°07'41.941"N	104°42'50.661"W	2.76	
11406.00	89.750	359.810	7247.18	4043.82	4037.34	-716.49	40°07'42.879"N	104°42'50.664"W	2.33	
11501.00	89.750	358.840	7247.60	4138.81	4132.33	-717.61	40°07'43.818"N	104°42'50.678"W	1.02	
11596.00	89.690	359.240	7248.06	4233.81	4227.31	-719.20	40°07'44.757"N	104°42'50.699"W	0.43	
11691.00	90.860	0.050	7247.61	4328.81	4322.31	-719.79	40°07'45.695"N	104°42'50.707"W	1.50	
11786.00	88.270	0.370	7248.33	4423.79	4417.30	-719.44	40°07'46.634"N	104°42'50.702"W	2.75	
11881.00	87.750	0.590	7251.63	4518.71	4512.24	-718.64	40°07'47.572"N	104°42'50.692"W	0.59	
11975.00	87.740	0.690	7255.33	4612.62	4606.16	-717.60	40°07'48.500"N	104°42'50.678"W	0.11	
12070.00	87.550	0.770	7259.23	4707.52	4701.07	-716.39	40°07'49.438"N	104°42'50.663"W	0.22	
12165.00	88.860	359.900	7262.20	4802.46	4796.02	-715.83	40°07'50.377"N	104°42'50.656"W	1.66	
12260.00	89.900	359.500	7263.23	4897.45	4891.01	-716.33	40°07'51.315"N	104°42'50.662"W	1.17	
12355.00	89.690	358.890	7263.57	4992.45	4986.00	-717.66	40°07'52.254"N	104°42'50.679"W	0.68	
12388.00	89.310	359.410	7263.86	5025.45	5018.99	-718.15	40°07'52.580"N	104°42'50.686"W	1.95	Last BHI MWD+IFR Surveys
12441.00	89.310	359.410	7264.50	5078.44	5071.99	-718.70	40°07'53.104"N	104°42'50.693"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: RUSSIAN FIDDLER 13N-18HZ AWB Ref Wellpath: RUSSIAN FIDDLER 13N-18HZ 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]
13.5in Open Hole	13.00	1023.00	1010.00	13.00	1022.97	0.00	0.00	-0.09	4.85
9.625in Casing Surface	13.00	1023.00	1010.00	13.00	1022.97	0.00	0.00	-0.09	4.85
8.75in Open Hole	1023.00	7721.00	6698.00	1022.97	7260.96	-0.09	4.85	354.39	-703.97
7in Casing Intermediate	13.00	7711.00	7698.00	13.00	7260.66	0.00	0.00	344.41	-704.33
6.125in Open Hole	7711.00	12441.00	4730.00	7260.66	7264.50	344.41	-704.33	5071.99	-718.70

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
Area	COLORADO	Well	RUSSIAN FIDDLER 13N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	RUSSIAN FIDDLER 13N-18HZ AWB
Facility	SEC.19-T2N-R65W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
RUSSIAN FIDDLER 13N-18HZ LAND BOX		0.00	5440.04	-699.83	3219766.37	1292061.24	40°07'56.741"N	104°42'50.450"W	polygon
RUSSIAN FIDDLER 5 PAD HARD LINES (460' SETBACKS, SEC.18)		0.00	5440.04	-699.83	3219766.37	1292061.24	40°07'56.741"N	104°42'50.450"W	polygon
RUSSIAN FIDDLER 5 PAD HARD LINES (460' SETBACKS, SEC.19)		0.00	5440.04	-699.83	3219766.37	1292061.24	40°07'56.741"N	104°42'50.450"W	polygon
RUSSIAN FIDDLER 5 PAD SECTION LINES (SEC.18)		0.00	5440.02	-699.83	3219766.37	1292061.22	40°07'56.741"N	104°42'50.450"W	polygon
RUSSIAN FIDDLER 5 PAD SECTION LINES (SEC.19)		0.00	5440.04	-699.83	3219766.37	1292061.24	40°07'56.741"N	104°42'50.450"W	polygon
DECHANT 31-19 150' RADIUS		6954.48	4632.01	1667.26	3222140.45	1291274.32	40°07'48.755"N	104°42'19.975"W	circle
RUSSIAN FIDDLER 13N-18HZ BHL REV-1 (460'FSL & 535'FWL, SEC.18)		7248.00	5440.04	-699.83	3219766.37	1292061.24	40°07'56.741"N	104°42'50.450"W	point
RUSSIAN FIDDLER 13N-18HZ BHL REV-2 (460'FSL & 485'FWL, SEC.18)		7248.00	5440.25	-749.85	3219716.35	1292061.00	40°07'56.743"N	104°42'51.094"W	point
HARRIS RED X19-2J 150' RADIUS		7257.50	3369.87	254.79	3220739.31	1289999.73	40°07'36.283"N	104°42'38.160"W	circle
RUSSIAN FIDDLER 13N-18HZ BHL ON PLAT REV-3 (460'FSL & 487'FWL, SEC.18)		7258.00	5440.04	-747.83	3219718.37	1292060.81	40°07'56.741"N	104°42'51.068"W	point
RUSSIAN FIDDLER 13N-18HZ BHL REV-4 (100'FSL & 490'FWL, SEC.18)		7258.00	5080.10	-744.58	3219724.82	1291700.93	40°07'53.184"N	104°42'51.026"W	point
DECHANT X 19-3 150' RADIUS		7258.34	4406.43	712.09	3221187.36	1291040.27	40°07'46.527"N	104°42'32.273"W	circle
DECHANT X 19-5 150' RADIUS		7258.43	3120.88	-611.29	3219875.52	1289743.06	40°07'33.823"N	104°42'49.309"W	circle
DECHANT 32-19 150' RADIUS		7298.51	2942.42	1863.91	3222352.10	1289586.62	40°07'32.059"N	104°42'17.445"W	circle

WELLPATH COMPOSITION - Ref Wellbore: RUSSIAN FIDDLER 13N-18HZ AWB Ref Wellpath: RUSSIAN FIDDLER 13N-18HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
13.00	932.00	Generic gyro - continuous (Standard)	MS ENERGY SERVICES GYRO SURVEY <113-932>	RUSSIAN FIDDLER 13N-18HZ AWB
932.00	7667.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 8 3/4" HOLE <1064-7667>	RUSSIAN FIDDLER 13N-18HZ AWB
7667.00	12388.00	OnTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 6 1/8" HOLE <7739-12388>	RUSSIAN FIDDLER 13N-18HZ AWB
12388.00	12441.00	Blind Drilling (std)	Projection to bit	RUSSIAN FIDDLER 13N-18HZ AWB



Actual Wellpath Report

RUSSIAN FIDDLER 13N-18HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#01 RUSSIAN FIDDLER 13N-18HZ (318'FSL & 1213'FWL, SEC.19)
Area	COLORADO	Well	RUSSIAN FIDDLER 13N-18HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	RUSSIAN FIDDLER 13N-18HZ AWB
Facility	SEC.19-T2N-R65W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
13.00	0.000	81.020	13.00	Tie-On
113.00	0.660	81.020	113.00	Begin Gyro Surveys
932.00	0.200	307.820	931.98	Tie-Into Gyro Surveys
1064.00	0.490	115.460	1063.97	Begin BHI MWD+IFR Surveys
7711.00	88.024	1.966	7260.66	7" Casing Point
12388.00	89.310	359.410	7263.86	Last BHI MWD+IFR Surveys
12441.00	89.310	359.410	7264.50	Projection to Bit