



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP

Closest Approach

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 3.0.2
North Reference	Grid	User	Cookdanm
Scale	0.999969	Report Generated	2/6/2012 at 5:00:24 PM
Convergence at slot	0.73° East	Database/Source file	WA_Denver/CROW_VALLEY_7-62-31-2H_PWB_CR.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	3314856.91	1441100.96	40°32'19.325"N	104°22'01.733"W
Facility Reference Pt			3314856.91	1441100.96	40°32'19.325"N	104°22'01.733"W
Field Reference Pt			3476081.76	1512960.14	40°43'43.704"N	103°46'55.829"W

WELLPATH DATUM

Calculation method	Minimum Curvature	H&P 321 (RKB) to Facility Vertical Datum	4842.00ft
Horizontal Reference Pt	Slot	H&P 321 (RKB) to Mean Sea Level	4842.00ft
Vertical Reference Pt	H&P 321 (RKB)	H&P 321 (RKB) to Mud Line at Slot (SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30))	4842.00ft
MD Reference Pt	H&P 321 (RKB)		
Field Vertical Reference	Mean Sea Level		

POSITIONAL UNCERTAINTY CALCULATION SETTINGS

Ellipse Confidence Limit	3.00 Std Dev	Ellipse Start MD	31.00ft	Surface Position Uncertainty	included
Declination	8.56° East of TN	Dip Angle	67.19°	Mag Field Strength	53173 nT
Slot Surface Uncertainty @ 1SD		Horizontal	0.100ft	Vertical	1.000ft
Facility Surface Uncertainty @ 1SD		Horizontal	8.200ft	Vertical	3.000ft

ANTI-COLLISION RULE

Rule Name	Separation Factor : R-type Closest Approach w/Hole&Csg Limit:1.5, StdDev:3.00 w/Surface Uncert R=D/(PU+HnC)	Rule Based On	Ratio
Plane of Rule	Closest Approach	Threshold Value	1.50
Subtract Casing & Hole Size	yes	Apply Cone of Safety	no

HOLE & CASING SECTIONS - Ref Wellbore: CROW VALLEY 7-62-31-2H PWB Ref Wellpath: CROW VALLEY 7-62-31-2H (REV-A.0) PWP

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]
7in Casing Intermediate	31.00	6949.00	6918.00	31.00	6620.00	0.00	0.00	-609.94	-16.23



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Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

SURVEY PROGRAM - Ref Wellbore: CROW VALLEY 7-62-31-2H PWB Ref Wellpath: CROW VALLEY 7-62-31-2H (REV-A.0) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
31.00	11623.53	NaviTrak (Standard)		CROW VALLEY 7-62-31-2H PWB

CALCULATION RANGE & CUTOFF

From: 31.00ft MD	To: 11623.53ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (3 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	C-C Clearance Distance			ACR Separation Ratio			
					Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	ACR Status
SEC.30-T7N-R62W	SLOT#02 CROW VALLEY 7-62-30-2H (437'FSL & 2137'FWL, SEC. 30)	CROW VALLEY 7-62-30-2H	CROW VALLEY 7-62-30-2H PWB	CROW VALLEY 7-62-30-2H (REV-A.0) PWP	31.00	30.00	6048.41	2731.00	1.51	6048.41	PASS
SEC.32-T7N-R62W	SLOT#01 CROW VALLEY 7-62-32-1A (465'FSL & 465'FEL, SEC.32)	CROW VALLEY 7-62-32-1A	CROW VALLEY 7-62-32-1A AWB	CROW VALLEY 7-62-32-1A AWP	7093.50	3564.29	7093.50	8980.19	13.23	8980.19	PASS
SEC.32-T7N-R62W	SLOT#02 CROW VALLEY 7-62-32-1M (1390'FSL & 2374'FEL, SEC.32)	CROW VALLEY 7-62-32-1M	CROW VALLEY 7-62-32-1M AWB	CROW VALLEY 7-62-32-1M AWP	10368.50	6185.00	10368.50	11623.53	30.32	11623.53	PASS



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Closest Approach

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-30-2H PWB Offset Wellpath: CROW VALLEY 7-62-30-2H (REV-A.0) PWP

Facility: SEC.30-T7N-R62W Slot: SLOT#02 CROW VALLEY 7-62-30-2H (437'FSL & 2137'FWL, SEC. 30) Well: CROW VALLEY 7-62-30-2H Threshold Value=1.50
 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
31.00	31.00	0.00	0.00	31.00	31.00	29.52	-5.34	-10.25	30.00	25.35	1.78	PASS
131.00†	131.00	0.00	0.00	131.00	131.00	29.52	-5.34	-10.25	30.00	19.74	2.28	PASS
231.00†	231.00	0.00	0.00	231.00	231.00	29.52	-5.34	-10.25	30.00	14.01	3.21	PASS
331.00†	331.00	0.00	0.00	331.00	331.00	29.52	-5.34	-10.25	30.00	10.63	4.23	PASS
431.00†	431.00	0.00	0.00	431.00	431.00	29.52	-5.34	-10.25	30.00	8.52	5.28	PASS
531.00†	531.00	0.00	0.00	531.00	531.00	29.52	-5.34	-10.25	30.00	7.10	6.34	PASS
631.00†	631.00	0.00	0.00	631.00	631.00	29.52	-5.34	-10.25	30.00	6.08	7.40	PASS
731.00†	731.00	0.00	0.00	731.00	731.00	29.52	-5.34	-10.25	30.00	5.31	8.47	PASS
831.00†	831.00	0.00	0.00	831.00	831.00	29.52	-5.34	-10.25	30.00	4.71	9.55	PASS
931.00†	931.00	0.00	0.00	931.00	931.00	29.52	-5.34	-10.25	30.00	4.24	10.62	PASS
1031.00†	1031.00	0.00	0.00	1031.00	1031.00	29.52	-5.34	-10.25	30.00	3.85	11.69	PASS
1131.00†	1131.00	0.00	0.00	1131.00	1131.00	29.52	-5.34	-10.25	30.00	3.52	12.77	PASS
1231.00†	1231.00	0.00	0.00	1231.00	1231.00	29.52	-5.34	-10.25	30.00	3.25	13.84	PASS
1331.00†	1331.00	0.00	0.00	1331.00	1331.00	29.52	-5.34	-10.25	30.00	3.02	14.92	PASS
1431.00†	1431.00	0.00	0.00	1431.00	1431.00	29.52	-5.34	-10.25	30.00	2.81	15.99	PASS
1531.00†	1531.00	0.00	0.00	1531.00	1531.00	29.52	-5.34	-10.25	30.00	2.64	17.07	PASS
1631.00†	1631.00	0.00	0.00	1631.00	1631.00	29.52	-5.34	-10.25	30.00	2.48	18.15	PASS
1731.00†	1731.00	0.00	0.00	1731.00	1731.00	29.52	-5.34	-10.25	30.00	2.34	19.22	PASS
1831.00†	1831.00	0.00	0.00	1831.00	1831.00	29.52	-5.34	-10.25	30.00	2.22	20.30	PASS
1931.00†	1931.00	0.00	0.00	1931.00	1931.00	29.52	-5.34	-10.25	30.00	2.11	21.38	PASS
2031.00†	2031.00	0.00	0.00	2031.00	2031.00	29.52	-5.34	-10.25	30.00	2.00	22.45	PASS
2131.00†	2131.00	0.00	0.00	2131.00	2131.00	29.52	-5.34	-10.25	30.00	1.91	23.53	PASS
2231.00†	2231.00	0.00	0.00	2231.00	2231.00	29.52	-5.34	-10.25	30.00	1.83	24.61	PASS
2331.00†	2331.00	0.00	0.00	2331.00	2331.00	29.52	-5.34	-10.25	30.00	1.75	25.68	PASS
2431.00†	2431.00	0.00	0.00	2431.00	2431.00	29.52	-5.34	-10.25	30.00	1.68	26.76	PASS
2531.00†	2531.00	0.00	0.00	2531.00	2531.00	29.52	-5.34	-10.25	30.00	1.62	27.84	PASS
2631.00†	2631.00	0.00	0.00	2631.00	2631.00	29.52	-5.34	-10.25	30.00	1.56	28.92	PASS
2731.00†	2731.00	0.00	0.00	2730.68	2730.68	29.69	-5.35	-10.21	30.16	1.51	29.99	PASS
2831.00†	2831.00	0.00	0.00	2829.56	2829.50	32.45	-5.50	-9.61	32.94	1.59	31.11	PASS
2900.00	2900.00	0.00	0.00	2897.63	2897.47	36.33	-5.70	-8.92	36.86	1.73	31.97	PASS
2931.00†	2931.00	-0.17	0.00	2928.13	2927.87	38.59	-5.82	169.93	39.31	1.82	32.35	PASS
3031.00†	3030.95	-2.99	-0.08	3026.27	3025.58	47.93	-6.32	171.44	51.59	2.31	33.55	PASS
3131.00†	3130.75	-9.30	-0.25	3126.66	3125.51	57.39	-6.82	172.78	67.23	2.89	34.89	PASS
3200.00	3199.45	-15.69	-0.42	3196.57	3195.27	61.98	-7.06	173.51	78.07	3.27	35.84	PASS
3231.00†	3230.28	-18.93	-0.50	3228.10	3226.75	63.49	-7.14	173.81	82.76	3.43	36.24	PASS
3250.00	3249.18	-20.91	-0.56	3247.47	3246.12	64.25	-7.18	173.97	85.48	3.51	36.48	PASS
3331.00†	3329.84	-28.24	-0.75	3330.57	3329.19	66.02	-7.28	174.50	94.48	3.78	37.52	PASS
3431.00†	3429.66	-34.13	-0.91	3431.03	3429.67	66.08	-7.28	174.83	100.42	3.89	38.72	PASS
3531.00†	3529.63	-36.54	-0.97	3531.00	3529.94	66.08	-7.28	174.96	102.81	3.86	39.94	PASS
3550.00	3548.63	-36.60	-0.97	3550.00	3548.63	66.08	-7.28	-3.52	102.88	3.84	40.15	PASS
3631.00†	3629.63	-36.60	-0.97	3631.00	3629.63	66.08	-7.28	-3.52	102.88	3.76	41.00	PASS
3731.00†	3729.63	-36.60	-0.97	3731.00	3729.63	66.08	-7.28	-3.52	102.88	3.67	42.04	PASS
3831.00†	3829.63	-36.60	-0.97	3831.00	3829.63	66.08	-7.28	-3.52	102.88	3.58	43.08	PASS
3931.00†	3929.63	-36.60	-0.97	3931.00	3929.63	66.08	-7.28	-3.52	102.88	3.50	44.13	PASS
4031.00†	4029.63	-36.60	-0.97	4031.00	4029.63	66.08	-7.28	-3.52	102.88	3.42	45.18	PASS



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Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-30-2H PWB Offset Wellpath: CROW VALLEY 7-62-30-2H (REV-A.0) PWP

Facility: SEC.30-T7N-R62W Slot: SLOT#02 CROW VALLEY 7-62-30-2H (437'FSL & 2137'FWL, SEC. 30) Well: CROW VALLEY 7-62-30-2H Threshold Value=1.50
† = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
4131.00†	4129.63	-36.60	-0.97	4131.00	4129.63	66.08	-7.28	-3.52	102.88	3.34	46.23	PASS
4231.00†	4229.63	-36.60	-0.97	4231.00	4229.63	66.08	-7.28	-3.52	102.88	3.26	47.28	PASS
4331.00†	4329.63	-36.60	-0.97	4331.00	4329.63	66.08	-7.28	-3.52	102.88	3.19	48.33	PASS
4431.00†	4429.63	-36.60	-0.97	4431.00	4429.63	66.08	-7.28	-3.52	102.88	3.13	49.38	PASS
4531.00†	4529.63	-36.60	-0.97	4531.00	4529.63	66.08	-7.28	-3.52	102.88	3.06	50.43	PASS
4631.00†	4629.63	-36.60	-0.97	4631.00	4629.63	66.08	-7.28	-3.52	102.88	3.00	51.49	PASS
4731.00†	4729.63	-36.60	-0.97	4731.00	4729.63	66.08	-7.28	-3.52	102.88	2.94	52.55	PASS
4831.00†	4829.63	-36.60	-0.97	4831.00	4829.63	66.08	-7.28	-3.52	102.88	2.88	53.60	PASS
4931.00†	4929.63	-36.60	-0.97	4931.00	4929.63	66.08	-7.28	-3.52	102.88	2.82	54.66	PASS
5031.00†	5029.63	-36.60	-0.97	5031.00	5029.63	66.08	-7.28	-3.52	102.88	2.77	55.72	PASS
5131.00†	5129.63	-36.60	-0.97	5131.00	5129.63	66.08	-7.28	-3.52	102.88	2.72	56.78	PASS
5231.00†	5229.63	-36.60	-0.97	5231.00	5229.63	66.08	-7.28	-3.52	102.88	2.67	57.84	PASS
5331.00†	5329.63	-36.60	-0.97	5331.00	5329.63	66.08	-7.28	-3.52	102.88	2.62	58.90	PASS
5431.00†	5429.63	-36.60	-0.97	5431.00	5429.63	66.08	-7.28	-3.52	102.88	2.57	59.96	PASS
5531.00†	5529.63	-36.60	-0.97	5531.00	5529.63	66.08	-7.28	-3.52	102.88	2.53	61.02	PASS
5631.00†	5629.63	-36.60	-0.97	5631.00	5629.63	66.08	-7.28	-3.52	102.88	2.49	62.08	PASS
5731.00†	5729.63	-36.60	-0.97	5731.00	5729.63	66.08	-7.28	-3.52	102.88	2.44	63.15	PASS
5831.00†	5829.63	-36.60	-0.97	5831.00	5829.63	66.08	-7.28	-3.52	102.88	2.40	64.21	PASS
5931.00†	5929.63	-36.60	-0.97	5931.00	5929.63	66.08	-7.28	-3.52	102.88	2.36	65.27	PASS
6031.00†	6029.63	-36.60	-0.97	6031.00	6029.63	66.08	-7.28	-3.52	102.88	2.33	66.34	PASS
6048.41	6047.04	-36.60	-0.97	6048.41	6047.05	66.08	-7.28	-3.52	102.88	2.32	66.52	PASS
6131.00†	6129.34	-42.54	-1.13	6126.51	6125.13	66.51	-7.30	175.16	109.30	2.42	67.64	PASS
6231.00†	6226.56	-65.44	-1.74	6203.84	6201.97	74.68	-7.74	175.56	142.38	3.05	70.02	PASS
6331.00†	6318.31	-104.86	-2.79	6265.81	6262.31	88.63	-8.48	175.69	201.52	4.18	72.28	PASS
6431.00†	6401.83	-159.62	-4.25	6309.56	6303.84	102.37	-9.21	175.29	279.75	5.70	73.67	PASS
6531.00†	6474.56	-228.03	-6.07	6336.43	6328.76	112.35	-9.74	173.83	370.32	7.48	74.26	PASS
6631.00†	6534.30	-308.04	-8.20	6349.37	6340.60	117.58	-10.02	167.46	467.63	9.42	74.47	PASS
6731.00†	6579.24	-397.20	-10.57	6351.40	6342.45	118.43	-10.06	24.47	567.40	11.41	74.61	PASS
6831.00†	6608.01	-492.80	-13.12	6345.06	6336.67	115.81	-9.92	5.24	666.37	13.36	74.83	PASS
6931.00†	6619.74	-591.95	-15.76	6332.34	6324.99	110.76	-9.65	2.64	762.04	15.20	75.21	PASS
6948.41	6620.00	-609.36	-16.22	6329.59	6322.48	109.71	-9.60	2.41	778.21	15.51	75.26	PASS
7031.00†	6620.00	-691.91	-18.42	6316.92	6310.71	104.99	-9.35	2.25	854.87	17.10	75.01	PASS
7131.00†	6620.00	-791.88	-21.08	6303.30	6297.96	100.21	-9.09	2.09	948.51	18.92	75.20	PASS
7231.00†	6620.00	-891.84	-23.74	6291.26	6286.60	96.24	-8.88	1.97	1042.92	20.76	75.37	PASS
7331.00†	6620.00	-991.81	-26.40	6280.55	6276.42	92.91	-8.71	1.86	1137.97	22.60	75.52	PASS
7431.00†	6620.00	-1091.77	-29.06	6270.96	6267.25	90.08	-8.56	1.78	1233.55	24.46	75.65	PASS
7531.00†	6620.00	-1191.74	-31.72	6262.34	6258.99	87.68	-8.43	1.71	1329.58	26.32	75.77	PASS
7631.00†	6620.00	-1291.70	-34.38	6254.55	6251.48	85.62	-8.32	1.65	1426.01	28.19	75.88	PASS
7731.00†	6620.00	-1391.67	-37.04	6247.48	6244.63	83.83	-8.22	1.60	1522.77	30.06	75.99	PASS
7831.00†	6620.00	-1491.63	-39.70	6241.03	6238.37	82.27	-8.14	1.55	1619.82	31.94	76.08	PASS
7931.00†	6620.00	-1591.60	-42.36	6235.13	6232.62	80.91	-8.07	1.51	1717.12	33.81	76.17	PASS
8031.00†	6620.00	-1691.56	-45.02	6229.71	6227.35	79.71	-8.00	1.48	1814.65	35.68	76.28	PASS
8131.00†	6620.00	-1791.52	-47.68	6224.71	6222.47	78.65	-7.95	1.45	1912.37	37.52	76.45	PASS
8231.00†	6620.00	-1891.49	-50.34	6220.10	6217.95	77.71	-7.90	1.42	2010.27	39.36	76.61	PASS
8331.00†	6620.00	-1991.45	-53.00	6215.81	6213.74	76.86	-7.85	1.40	2108.32	41.20	76.76	PASS



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CROW VALLEY 7-62-31-2H (REV-A.0) PWP

Closest Approach

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-30-2H PWB Offset Wellpath: CROW VALLEY 7-62-30-2H (REV-A.0) PWP

Facility: SEC.30-T7N-R62W Slot: SLOT#02 CROW VALLEY 7-62-30-2H (437'FSL & 2137'FWL, SEC. 30) Well: CROW VALLEY 7-62-30-2H Threshold Value=1.50
 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
8431.00†	6620.00	-2091.42	-55.66	6211.84	6209.84	76.11	-7.81	1.37	2206.51	43.03	76.91	PASS
8531.00†	6620.00	-2191.38	-58.32	6208.13	6206.18	75.43	-7.78	1.35	2304.83	44.87	77.05	PASS
8631.00†	6620.00	-2291.35	-60.99	6204.67	6202.79	74.82	-7.75	1.34	2403.26	46.70	77.19	PASS
8731.00†	6620.00	-2391.31	-63.65	6201.43	6199.59	74.26	-7.72	1.32	2501.79	48.53	77.32	PASS
8831.00†	6620.00	-2491.28	-66.31	6198.39	6196.60	73.76	-7.69	1.31	2600.41	50.36	77.45	PASS
8931.00†	6620.00	-2591.24	-68.97	6195.53	6193.78	73.30	-7.66	1.29	2699.12	52.18	77.58	PASS
9031.00†	6620.00	-2691.21	-71.63	6192.84	6191.11	72.88	-7.64	1.28	2797.90	54.01	77.71	PASS
9131.00†	6620.00	-2791.17	-74.29	6190.30	6188.60	72.50	-7.62	1.27	2896.75	55.82	77.84	PASS
9231.00†	6620.00	-2891.14	-76.95	6187.91	6186.24	72.15	-7.60	1.26	2995.66	57.64	77.96	PASS
9331.00†	6620.00	-2991.10	-79.61	6185.64	6184.00	71.82	-7.59	1.25	3094.64	59.45	78.09	PASS
9431.00†	6620.00	-3091.06	-82.27	6183.49	6181.88	71.53	-7.57	1.24	3193.67	61.25	78.21	PASS
9531.00†	6620.00	-3191.03	-84.93	6181.45	6179.85	71.25	-7.56	1.23	3292.74	63.05	78.33	PASS
9631.00†	6620.00	-3290.99	-87.59	6179.52	6177.93	70.99	-7.54	1.22	3391.87	64.85	78.46	PASS
9731.00†	6620.00	-3390.96	-90.25	6177.68	6176.11	70.75	-7.53	1.21	3491.04	66.64	78.58	PASS
9831.00†	6620.00	-3490.92	-92.91	6175.92	6174.36	70.53	-7.52	1.21	3590.24	68.43	78.70	PASS
9931.00†	6620.00	-3590.89	-95.57	6174.25	6172.71	70.33	-7.51	1.20	3689.49	70.21	78.83	PASS
10031.00†	6620.00	-3690.85	-98.23	6172.66	6171.12	70.14	-7.50	1.20	3788.77	71.98	78.95	PASS
10131.00†	6620.00	-3790.82	-100.89	6171.13	6169.60	69.96	-7.49	1.19	3888.08	73.75	79.08	PASS
10231.00†	6620.00	-3890.78	-103.55	6169.67	6168.16	69.79	-7.48	1.18	3987.42	75.52	79.20	PASS
10331.00†	6620.00	-3990.75	-106.22	6168.27	6166.77	69.63	-7.47	1.18	4086.79	77.27	79.33	PASS
10431.00†	6620.00	-4090.71	-108.88	6166.94	6165.44	69.49	-7.46	1.17	4186.19	79.03	79.46	PASS
10531.00†	6620.00	-4190.68	-111.54	6165.65	6164.17	69.35	-7.45	1.17	4285.61	80.77	79.59	PASS
10631.00†	6620.00	-4290.64	-114.20	6164.42	6162.94	69.22	-7.45	1.16	4385.05	82.51	79.72	PASS
10731.00†	6620.00	-4390.60	-116.86	6163.24	6161.76	69.10	-7.44	1.16	4484.52	84.25	79.85	PASS
10831.00†	6620.00	-4490.57	-119.52	6162.10	6160.64	68.98	-7.44	1.16	4584.00	85.97	79.98	PASS
10931.00†	6620.00	-4590.53	-122.18	6161.00	6159.54	68.87	-7.43	1.15	4683.51	87.69	80.11	PASS
11031.00†	6620.00	-4690.50	-124.84	6159.95	6158.49	68.77	-7.42	1.15	4783.03	89.40	80.25	PASS
11131.00†	6620.00	-4790.46	-127.50	6158.93	6157.48	68.67	-7.42	1.15	4882.57	91.11	80.38	PASS
11231.00†	6620.00	-4890.43	-130.16	6157.95	6156.50	68.58	-7.41	1.14	4982.13	92.81	80.52	PASS
11331.00†	6620.00	-4990.39	-132.82	6157.01	6155.56	68.49	-7.41	1.14	5081.71	94.50	80.66	PASS
11431.00†	6620.00	-5090.36	-135.48	6156.10	6154.65	68.41	-7.40	1.14	5181.29	96.19	80.80	PASS
11531.00†	6620.00	-5190.32	-138.14	6155.22	6153.78	68.33	-7.40	1.13	5280.90	97.86	80.94	PASS
11623.53	6620.00	-5282.82	-140.60	6154.42	6153.00	68.26	-7.40	1.13	5373.07	99.41	81.08	PASS

POSITIONAL UNCERTAINTY - Offset Wellbore: CROW VALLEY 7-62-30-2H PWB Offset Wellpath: CROW VALLEY 7-62-30-2H (REV-A.0) PWP

Slot Surface Uncertainty @ 1SD	Horizontal	0.100ft	Vertical	1.000ft
Facility Surface Uncertainty @ 1SD	Horizontal	8.200ft	Vertical	3.000ft

HOLE & CASING SECTIONS - Offset Wellbore: CROW VALLEY 7-62-30-2H PWB Offset Wellpath: CROW VALLEY 7-62-30-2H (REV-A.0) PWP

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]
7in Casing Intermediate	31.00	7005.00	6974.00	31.00	6676.00	18.00	-3.26	203.71	-13.11



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP
Closest Approach
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**REFERENCE WELLPATH IDENTIFICATION**

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

SURVEY PROGRAM - Offset Wellbore: CROW VALLEY 7-62-30-2H PWB Offset Wellpath: CROW VALLEY 7-62-30-2H (REV-A.0) PWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
31.00	10895.76	NaviTrak (Standard)		CROW VALLEY 7-62-30-2H PWB

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: CROW VALLEY 7-62-30-2H PWB Offset Wellpath: CROW VALLEY 7-62-30-2H (REV-A.0) PWP

MD Reference: H&P 321 (RKB)	<i>Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)</i>
Ellipse Start MD	



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP

Closest Approach

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-32-1A AWB Offset Wellpath: CROW VALLEY 7-62-32-1A AWP

Facility: SEC.32-T7N-R62W Slot: SLOT#01 CROW VALLEY 7-62-32-1A (465'FSL & 465'FEL, SEC.32) Well: CROW VALLEY 7-62-32-1A Threshold Value=1.50
 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
31.00	31.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	7535.07	75.33	150.05	PASS
131.00†	131.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	7447.70	74.13	150.70	PASS
231.00†	231.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	7360.64	72.94	151.37	PASS
331.00†	331.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	7273.92	71.75	152.06	PASS
431.00†	431.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	7187.54	70.57	152.78	PASS
531.00†	531.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	7101.52	69.39	153.52	PASS
631.00†	631.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	7015.87	68.21	154.29	PASS
731.00†	731.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6930.61	67.04	155.08	PASS
831.00†	831.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6845.74	65.87	155.90	PASS
931.00†	931.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6761.29	64.70	156.74	PASS
1031.00†	1031.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6677.27	63.55	157.61	PASS
1131.00†	1131.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6593.69	62.39	158.52	PASS
1231.00†	1231.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6510.58	61.25	159.44	PASS
1331.00†	1331.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6427.95	60.11	160.40	PASS
1431.00†	1431.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6345.81	58.98	161.39	PASS
1531.00†	1531.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6264.20	57.85	162.41	PASS
1631.00†	1631.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6183.13	56.74	163.46	PASS
1731.00†	1731.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6102.62	55.63	164.54	PASS
1831.00†	1831.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	6022.69	54.53	165.66	PASS
1931.00†	1931.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5943.37	53.45	166.81	PASS
2031.00†	2031.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5864.68	52.37	167.99	PASS
2131.00†	2131.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5786.65	51.30	169.20	PASS
2231.00†	2231.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5709.31	50.24	170.45	PASS
2331.00†	2331.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5632.68	49.20	171.73	PASS
2431.00†	2431.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5556.79	48.17	173.05	PASS
2531.00†	2531.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5481.68	47.15	174.40	PASS
2631.00†	2631.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5407.37	46.14	175.79	PASS
2731.00†	2731.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5333.90	45.15	177.21	PASS
2831.00†	2831.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5261.31	44.17	178.66	PASS
2900.00	2900.00	0.00	0.00	12391.00	6626.71	-849.41	3542.94	103.48	5211.75	43.51	179.69	PASS
2931.00†	2931.00	-0.17	0.00	12391.00	6626.71	-849.41	3542.94	-78.66	5189.60	43.21	180.16	PASS
3031.00†	3030.95	-2.99	-0.08	12391.00	6626.71	-849.41	3542.94	-80.65	5118.48	42.23	181.81	PASS
3131.00†	3130.75	-9.30	-0.25	12391.00	6626.71	-849.41	3542.94	-82.62	5047.94	41.23	183.66	PASS
3200.00	3199.45	-15.69	-0.42	12391.00	6626.71	-849.41	3542.94	-83.97	4999.66	40.53	185.06	PASS
3231.00†	3230.28	-18.93	-0.50	12391.00	6626.71	-849.41	3542.94	-83.97	4978.09	40.21	185.71	PASS
3250.00	3249.18	-20.91	-0.56	12391.00	6626.71	-849.41	3542.94	-83.97	4964.93	40.02	186.11	PASS
3331.00†	3329.84	-28.24	-0.75	12391.00	6626.71	-849.41	3542.94	-82.45	4909.32	39.21	187.79	PASS
3431.00†	3429.66	-34.13	-0.91	12391.00	6626.71	-849.41	3542.94	-80.64	4841.97	38.27	189.76	PASS
3531.00†	3529.63	-36.54	-0.97	12391.00	6626.71	-849.41	3542.94	-78.92	4776.19	37.39	191.60	PASS
3550.00	3548.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4763.88	37.23	191.93	PASS
3631.00†	3629.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4711.95	36.55	193.35	PASS
3731.00†	3729.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4648.99	35.74	195.13	PASS
3831.00†	3829.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4587.34	34.94	196.93	PASS
3931.00†	3929.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4527.06	34.17	198.75	PASS
4031.00†	4029.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4468.20	33.41	200.59	PASS



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP
Closest Approach
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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-32-1A AWB Offset Wellpath: CROW VALLEY 7-62-32-1A AWP

Facility: SEC.32-T7N-R62W Slot: SLOT#01 CROW VALLEY 7-62-32-1A (465'FSL & 465'FEL, SEC.32) Well: CROW VALLEY 7-62-32-1A Threshold Value=1.50
 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
4131.00†	4129.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4410.83	32.68	202.44	PASS
4231.00†	4229.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4354.99	31.97	204.31	PASS
4331.00†	4329.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4300.76	31.29	206.18	PASS
4431.00†	4429.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4248.19	30.63	208.06	PASS
4531.00†	4529.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4197.35	29.99	209.93	PASS
4631.00†	4629.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4148.29	29.38	211.80	PASS
4731.00†	4729.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4101.08	28.79	213.66	PASS
4831.00†	4829.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4055.80	28.23	215.49	PASS
4931.00†	4929.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	4012.49	27.70	217.31	PASS
5031.00†	5029.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3971.23	27.19	219.09	PASS
5131.00†	5129.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3932.08	26.71	220.83	PASS
5231.00†	5229.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3895.10	26.26	222.53	PASS
5331.00†	5329.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3860.36	25.83	224.18	PASS
5431.00†	5429.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3827.92	25.43	225.77	PASS
5531.00†	5529.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3797.84	25.06	227.29	PASS
5631.00†	5629.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3770.16	24.72	228.73	PASS
5731.00†	5729.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3744.96	24.41	230.10	PASS
5831.00†	5829.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3722.27	24.13	231.37	PASS
5931.00†	5929.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3702.15	23.88	232.55	PASS
6031.00†	6029.63	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3684.63	23.66	233.64	PASS
6048.41	6047.04	-36.60	-0.97	12391.00	6626.71	-849.41	3542.94	102.92	3681.85	23.62	233.81	PASS
6131.00†	6129.34	-42.54	-1.13	12391.00	6626.71	-849.41	3542.94	-79.92	3668.63	23.41	235.08	PASS
6231.00†	6226.56	-65.44	-1.74	12391.00	6626.71	-849.41	3542.94	-81.55	3652.33	23.04	237.77	PASS
6331.00†	6318.31	-104.86	-2.79	12391.00	6626.71	-849.41	3542.94	-83.18	3636.16	22.57	241.69	PASS
6431.00†	6401.83	-159.62	-4.25	12391.00	6626.71	-849.41	3542.94	-84.74	3620.62	22.00	246.82	PASS
6531.00†	6474.56	-228.03	-6.07	12391.00	6626.71	-849.41	3542.94	-86.19	3606.20	21.37	253.12	PASS
6631.00†	6534.30	-308.04	-8.20	12391.00	6626.71	-849.41	3542.94	-87.49	3593.35	20.69	260.52	PASS
6731.00†	6579.24	-397.20	-10.57	12391.00	6626.71	-849.41	3542.94	-88.58	3582.48	19.99	268.89	PASS
6831.00†	6608.01	-492.80	-13.12	12391.00	6626.71	-849.41	3542.94	-89.44	3573.94	19.28	278.01	PASS
6931.00†	6619.74	-591.95	-15.76	12391.00	6626.71	-849.41	3542.94	-90.03	3568.00	18.61	287.63	PASS
6948.41	6620.00	-609.36	-16.22	12391.00	6626.71	-849.41	3542.94	-90.11	3567.25	18.49	289.33	PASS
7031.00†	6620.00	-691.91	-18.42	12391.00	6626.71	-849.41	3542.94	-90.11	3564.84	18.00	297.02	PASS
7093.50†	6620.00	-754.39	-20.08	12391.00	6626.71	-849.41	3542.94	-90.11	3564.29	17.63	303.25	PASS
7131.00†	6620.00	-791.88	-21.08	12391.00	6626.71	-849.41	3542.94	-90.11	3564.48	17.42	306.95	PASS
7231.00†	6620.00	-891.84	-23.74	12391.00	6626.71	-849.41	3542.94	-90.11	3566.93	16.88	316.93	PASS
7331.00†	6620.00	-991.81	-26.40	12391.00	6626.71	-849.41	3542.94	-90.11	3572.18	16.39	326.88	PASS
7431.00†	6620.00	-1091.77	-29.06	12391.00	6626.71	-849.41	3542.94	-90.11	3580.22	15.95	336.76	PASS
7531.00†	6620.00	-1191.74	-31.72	12391.00	6626.71	-849.41	3542.94	-90.11	3591.02	15.55	346.51	PASS
7631.00†	6620.00	-1291.70	-34.38	12391.00	6626.71	-849.41	3542.94	-90.11	3604.56	15.18	356.09	PASS
7731.00†	6620.00	-1391.67	-37.04	12391.00	6626.71	-849.41	3542.94	-90.11	3620.82	14.86	365.46	PASS
7831.00†	6620.00	-1491.63	-39.70	12391.00	6626.71	-849.41	3542.94	-90.11	3639.75	14.57	374.59	PASS
7931.00†	6620.00	-1591.60	-42.36	12391.00	6626.71	-849.41	3542.94	-90.11	3661.32	14.32	383.46	PASS
8031.00†	6620.00	-1691.56	-45.02	12391.00	6626.71	-849.41	3542.94	-90.11	3685.47	14.10	392.04	PASS
8131.00†	6620.00	-1791.52	-47.68	12391.00	6626.71	-849.41	3542.94	-90.11	3712.17	13.91	400.32	PASS
8231.00†	6620.00	-1891.49	-50.34	12391.00	6626.71	-849.41	3542.94	-90.11	3741.34	13.75	408.28	PASS



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP

Closest Approach

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-32-1A AWB Offset Wellpath: CROW VALLEY 7-62-32-1A AWP

Facility: SEC.32-T7N-R62W Slot: SLOT#01 CROW VALLEY 7-62-32-1A (465'FSL & 465'FEL, SEC.32) Well: CROW VALLEY 7-62-32-1A Threshold Value=1.50

† = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
8331.00†	6620.00	-1991.45	-53.00	12391.00	6626.71	-849.41	3542.94	-90.11	3772.94	13.61	415.90	PASS
8431.00†	6620.00	-2091.42	-55.66	12391.00	6626.71	-849.41	3542.94	-90.11	3806.91	13.49	423.20	PASS
8531.00†	6620.00	-2191.38	-58.32	12391.00	6626.71	-849.41	3542.94	-90.11	3843.18	13.40	430.15	PASS
8631.00†	6620.00	-2291.35	-60.99	12391.00	6626.71	-849.41	3542.94	-90.11	3881.69	13.33	436.77	PASS
8731.00†	6620.00	-2391.31	-63.65	12391.00	6626.71	-849.41	3542.94	-90.11	3922.37	13.28	443.05	PASS
8831.00†	6620.00	-2491.28	-66.31	12391.00	6626.71	-849.41	3542.94	-90.11	3965.15	13.25	449.00	PASS
8931.00†	6620.00	-2591.24	-68.97	12391.00	6626.71	-849.41	3542.94	-90.11	4009.97	13.23	454.62	PASS
8980.19†	6620.00	-2640.42	-70.28	12391.00	6626.71	-849.41	3542.94	-90.11	4032.75	13.23	457.27	PASS
9031.00†	6620.00	-2691.21	-71.63	12391.00	6626.71	-849.41	3542.94	-90.11	4056.77	13.23	459.92	PASS
9131.00†	6620.00	-2791.17	-74.29	12391.00	6626.71	-849.41	3542.94	-90.11	4105.46	13.25	464.91	PASS
9231.00†	6620.00	-2891.14	-76.95	12391.00	6626.71	-849.41	3542.94	-90.11	4155.99	13.27	469.60	PASS
9331.00†	6620.00	-2991.10	-79.61	12391.00	6626.71	-849.41	3542.94	-90.11	4208.29	13.32	474.00	PASS
9431.00†	6620.00	-3091.06	-82.27	12391.00	6626.71	-849.41	3542.94	-90.11	4262.30	13.37	478.12	PASS
9531.00†	6620.00	-3191.03	-84.93	12391.00	6626.71	-849.41	3542.94	-90.11	4317.95	13.44	481.97	PASS
9631.00†	6620.00	-3290.99	-87.59	12391.00	6626.71	-849.41	3542.94	-90.11	4375.17	13.52	485.57	PASS
9731.00†	6620.00	-3390.96	-90.25	12391.00	6626.71	-849.41	3542.94	-90.11	4433.91	13.60	488.92	PASS
9831.00†	6620.00	-3490.92	-92.91	12391.00	6626.71	-849.41	3542.94	-90.11	4494.11	13.70	492.03	PASS
9931.00†	6620.00	-3590.89	-95.57	12391.00	6626.71	-849.41	3542.94	-90.11	4555.71	13.81	494.93	PASS
10031.00†	6620.00	-3690.85	-98.23	12391.00	6626.71	-849.41	3542.94	-90.11	4618.66	13.92	497.61	PASS
10131.00†	6620.00	-3790.82	-100.89	12391.00	6626.71	-849.41	3542.94	-90.11	4682.89	14.05	500.10	PASS
10231.00†	6620.00	-3890.78	-103.55	12391.00	6626.71	-849.41	3542.94	-90.11	4748.36	14.18	502.40	PASS
10331.00†	6620.00	-3990.75	-106.22	12391.00	6626.71	-849.41	3542.94	-90.11	4815.02	14.32	504.52	PASS
10431.00†	6620.00	-4090.71	-108.88	12391.00	6626.71	-849.41	3542.94	-90.11	4882.81	14.46	506.47	PASS
10531.00†	6620.00	-4190.68	-111.54	12391.00	6626.71	-849.41	3542.94	-90.11	4951.70	14.61	508.27	PASS
10631.00†	6620.00	-4290.64	-114.20	12391.00	6626.71	-849.41	3542.94	-90.11	5021.63	14.77	509.92	PASS
10731.00†	6620.00	-4390.60	-116.86	12391.00	6626.71	-849.41	3542.94	-90.11	5092.57	14.94	511.43	PASS
10831.00†	6620.00	-4490.57	-119.52	12391.00	6626.71	-849.41	3542.94	-90.11	5164.46	15.11	512.81	PASS
10931.00†	6620.00	-4590.53	-122.18	12391.00	6626.71	-849.41	3542.94	-90.11	5237.29	15.28	514.07	PASS
11031.00†	6620.00	-4690.50	-124.84	12391.00	6626.71	-849.41	3542.94	-90.11	5310.99	15.46	515.21	PASS
11131.00†	6620.00	-4790.46	-127.50	12391.00	6626.71	-849.41	3542.94	-90.11	5385.54	15.65	516.25	PASS
11231.00†	6620.00	-4890.43	-130.16	12391.00	6626.71	-849.41	3542.94	-90.11	5460.91	15.84	517.19	PASS
11331.00†	6620.00	-4990.39	-132.82	12391.00	6626.71	-849.41	3542.94	-90.11	5537.06	16.03	518.03	PASS
11431.00†	6620.00	-5090.36	-135.48	12391.00	6626.71	-849.41	3542.94	-90.11	5613.95	16.23	518.79	PASS
11531.00†	6620.00	-5190.32	-138.14	12390.87	6626.72	-849.49	3543.04	-90.11	5691.57	16.43	519.47	PASS
11623.53	6620.00	-5282.82	-140.60	12332.92	6627.42	-886.96	3587.22	-90.12	5763.71	16.66	518.96	PASS

POSITIONAL UNCERTAINTY - Offset Wellbore: CROW VALLEY 7-62-32-1A AWB Offset Wellpath: CROW VALLEY 7-62-32-1A AWP

Slot Surface Uncertainty @ 1SD	Horizontal	8.200ft	Vertical	3.000ft
Facility Surface Uncertainty @ 1SD	Horizontal	0.100ft	Vertical	1.000ft

HOLE & CASING SECTIONS - Offset Wellbore: CROW VALLEY 7-62-32-1A AWB Offset Wellpath: CROW VALLEY 7-62-32-1A 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]
7in Casing Intermediate	31.00	7033.00	7002.00	31.00	6532.25	-3105.78	4867.22	-2951.19	4679.56
6in Open Hole	7033.00	12391.00	5358.00	6532.25	6626.71	-2951.19	4679.56	-1811.79	3513.50



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP
Closest Approach
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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

WELLPATH COMPOSITION - Offset Wellbore: CROW VALLEY 7-62-32-1A AWB Offset Wellpath: CROW VALLEY 7-62-32-1A AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
766.00	12323.00	NaviTrak (Standard)	BHI MWD SURVEYS<937-12323>	CROW VALLEY 7-62-32-1A AWB
12323.00	12391.00	Blind Drilling (std)	Projection to bit	CROW VALLEY 7-62-32-1A AWB

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: CROW VALLEY 7-62-32-1A AWB Offset Wellpath: CROW VALLEY 7-62-32-1A AWP

MD Reference: Rig on SLOT#01 CROW VALLEY 7-62-32-1A (465'FSL & 465'FEL, SEC.32) (RKB)	<i>Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)</i>
Ellipse Start MD	



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP
Closest Approach
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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-32-1M AWB Offset Wellpath: CROW VALLEY 7-62-32-1M AWP

Facility: SEC.32-T7N-R62W Slot: SLOT#02 CROW VALLEY 7-62-32-1M (1390'FSL & 2374'FEL, SEC.32) Well: CROW VALLEY 7-62-32-1M Threshold Value=1.50

† = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
31.00	31.00	0.00	0.00	758.00	649.00	-4218.64	6071.42	124.79	7418.96	149.44	74.47	PASS
131.00†	131.00	0.00	0.00	758.00	649.00	-4218.64	6071.42	124.79	7411.30	149.15	74.53	PASS
231.00†	231.00	0.00	0.00	758.00	649.00	-4218.64	6071.42	124.79	7404.98	148.90	74.60	PASS
331.00†	331.00	0.00	0.00	758.00	649.00	-4218.64	6071.42	124.79	7400.01	148.68	74.66	PASS
431.00†	431.00	0.00	0.00	758.00	649.00	-4218.64	6071.42	124.79	7396.39	148.49	74.72	PASS
531.00†	531.00	0.00	0.00	758.00	649.00	-4218.64	6071.42	124.79	7394.12	148.34	74.77	PASS
631.00†	631.00	0.00	0.00	758.00	649.00	-4218.64	6071.42	124.79	7393.20	148.22	74.82	PASS
731.00†	731.00	0.00	0.00	824.93	715.93	-4218.51	6071.59	124.79	7393.26	148.11	74.88	PASS
831.00†	831.00	0.00	0.00	913.55	804.55	-4217.95	6072.32	124.79	7393.57	147.98	74.94	PASS
931.00†	931.00	0.00	0.00	1020.49	911.48	-4217.04	6073.36	124.77	7393.88	147.82	75.03	PASS
1031.00†	1031.00	0.00	0.00	1124.30	1015.27	-4216.06	6074.33	124.76	7394.11	147.63	75.13	PASS
1131.00†	1131.00	0.00	0.00	1225.30	1116.27	-4215.26	6075.14	124.76	7394.32	147.40	75.25	PASS
1231.00†	1231.00	0.00	0.00	1337.36	1228.32	-4214.46	6075.88	124.75	7394.46	147.14	75.38	PASS
1331.00†	1331.00	0.00	0.00	1455.32	1346.27	-4213.22	6076.62	124.74	7394.37	146.84	75.54	PASS
1431.00†	1431.00	0.00	0.00	1547.49	1438.43	-4212.11	6077.22	124.73	7394.22	146.52	75.70	PASS
1531.00†	1531.00	0.00	0.00	1639.66	1530.59	-4211.04	6077.91	124.72	7394.17	146.18	75.87	PASS
1631.00†	1631.00	0.00	0.00	1752.10	1643.02	-4209.65	6078.77	124.70	7394.10	145.79	76.08	PASS
1731.00†	1731.00	0.00	0.00	1862.81	1753.72	-4208.04	6079.55	124.69	7393.85	145.37	76.29	PASS
1831.00†	1831.00	0.00	0.00	1966.46	1857.36	-4206.50	6080.20	124.68	7393.52	144.93	76.52	PASS
1931.00†	1931.00	0.00	0.00	2063.57	1954.46	-4205.13	6080.72	124.67	7393.16	144.48	76.75	PASS
2031.00†	2031.00	0.00	0.00	2152.51	2043.39	-4204.06	6081.20	124.66	7392.92	144.03	76.99	PASS
2131.00†	2131.00	0.00	0.00	2243.21	2134.08	-4203.19	6081.69	124.65	7392.82	143.55	77.25	PASS
2231.00†	2231.00	0.00	0.00	2338.02	2228.89	-4202.55	6082.12	124.64	7392.81	143.05	77.52	PASS
2331.00†	2331.00	0.00	0.00	2432.86	2323.72	-4202.18	6082.46	124.64	7392.88	142.53	77.81	PASS
2431.00†	2431.00	0.00	0.00	2527.73	2418.60	-4201.91	6082.79	124.64	7393.01	141.98	78.10	PASS
2531.00†	2531.00	0.00	0.00	2625.38	2516.25	-4201.70	6083.18	124.63	7393.21	141.42	78.42	PASS
2631.00†	2631.00	0.00	0.00	2730.14	2621.01	-4201.44	6083.57	124.63	7393.37	140.82	78.76	PASS
2731.00†	2731.00	0.00	0.00	2836.40	2727.27	-4201.10	6083.92	124.63	7393.47	140.19	79.11	PASS
2831.00†	2831.00	0.00	0.00	2944.37	2835.23	-4200.63	6084.25	124.62	7393.47	139.53	79.48	PASS
2900.00	2900.00	0.00	0.00	3011.66	2902.52	-4200.28	6084.43	124.62	7393.42	139.09	79.73	PASS
2931.00†	2931.00	-0.17	0.00	3039.63	2930.49	-4200.17	6084.51	-56.91	7393.33	138.89	79.84	PASS
3031.00†	3030.95	-2.99	-0.08	3129.82	3020.69	-4199.92	6084.76	-56.95	7391.86	138.22	80.22	PASS
3131.00†	3130.75	-9.30	-0.25	3224.11	3114.97	-4199.84	6085.03	-57.05	7388.60	137.45	80.63	PASS
3200.00	3199.45	-15.69	-0.42	3290.99	3181.85	-4199.82	6085.23	-57.15	7385.28	136.90	80.92	PASS
3231.00†	3230.28	-18.93	-0.50	3321.00	3211.86	-4199.82	6085.31	-57.17	7383.59	136.65	81.05	PASS
3250.00	3249.18	-20.91	-0.56	3339.39	3230.25	-4199.83	6085.37	-57.18	7382.56	136.50	81.13	PASS
3331.00†	3329.84	-28.24	-0.75	3424.57	3315.43	-4199.87	6085.58	-57.17	7378.77	135.87	81.46	PASS
3431.00†	3429.66	-34.13	-0.91	3532.18	3423.03	-4199.98	6085.69	-57.16	7375.71	135.10	81.89	PASS
3531.00†	3529.63	-36.54	-0.97	3662.78	3553.64	-4200.05	6085.49	-57.15	7374.30	134.33	82.34	PASS
3550.00	3548.63	-36.60	-0.97	3688.29	3579.15	-4200.03	6085.38	124.37	7374.20	134.19	82.43	PASS
3631.00†	3629.63	-36.60	-0.97	3786.73	3677.59	-4199.87	6084.83	124.38	7373.74	133.62	82.78	PASS
3731.00†	3729.63	-36.60	-0.97	3897.91	3788.76	-4199.66	6083.99	124.38	7373.02	132.92	83.20	PASS
3831.00†	3829.63	-36.60	-0.97	4013.44	3904.29	-4199.35	6082.95	124.38	7372.12	132.19	83.65	PASS
3931.00†	3929.63	-36.60	-0.97	4129.60	4020.44	-4198.73	6081.78	124.38	7370.99	131.44	84.12	PASS
4031.00†	4029.63	-36.60	-0.97	4237.59	4128.42	-4197.95	6080.63	124.38	7369.70	130.68	84.59	PASS



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP

Closest Approach

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-32-1M AWB Offset Wellpath: CROW VALLEY 7-62-32-1M AWP

Facility: SEC.32-T7N-R62W Slot: SLOT#02 CROW VALLEY 7-62-32-1M (1390'FSL & 2374'FEL, SEC.32) Well: CROW VALLEY 7-62-32-1M Threshold Value=1.50

† = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
4131.00†	4129.63	-36.60	-0.97	4345.58	4236.41	-4197.02	6079.44	124.38	7368.31	129.91	85.08	PASS
4231.00†	4229.63	-36.60	-0.97	4443.06	4333.88	-4196.06	6078.36	124.38	7366.84	129.16	85.56	PASS
4331.00†	4329.63	-36.60	-0.97	4528.15	4418.95	-4195.09	6077.67	124.38	7365.52	128.42	86.03	PASS
4431.00†	4429.63	-36.60	-0.97	4627.03	4517.83	-4193.79	6077.20	124.37	7364.39	127.64	86.55	PASS
4531.00†	4529.63	-36.60	-0.97	4776.41	4667.18	-4191.14	6076.24	124.36	7362.86	126.66	87.20	PASS
4631.00†	4629.63	-36.60	-0.97	4865.36	4756.11	-4189.36	6075.50	124.35	7361.04	125.87	87.72	PASS
4731.00†	4729.63	-36.60	-0.97	4950.62	4841.35	-4187.88	6074.84	124.34	7359.42	125.10	88.24	PASS
4831.00†	4829.63	-36.60	-0.97	5059.72	4950.44	-4186.09	6074.03	124.34	7357.89	124.25	88.83	PASS
4931.00†	4929.63	-36.60	-0.97	5174.50	5065.20	-4183.81	6073.14	124.32	7356.12	123.37	89.44	PASS
5031.00†	5029.63	-36.60	-0.97	5258.98	5149.64	-4182.08	6072.54	124.32	7354.39	122.60	89.98	PASS
5131.00†	5129.63	-36.60	-0.97	5343.45	5234.10	-4180.50	6072.06	124.31	7352.86	121.83	90.53	PASS
5231.00†	5229.63	-36.60	-0.97	5435.98	5326.62	-4179.05	6071.52	124.30	7351.50	121.04	91.11	PASS
5331.00†	5329.63	-36.60	-0.97	5529.79	5420.42	-4178.10	6070.72	124.30	7350.22	120.25	91.69	PASS
5431.00†	5429.63	-36.60	-0.97	5619.96	5510.59	-4177.59	6069.79	124.30	7349.05	119.49	92.25	PASS
5531.00†	5529.63	-36.60	-0.97	5709.37	5599.98	-4177.34	6068.85	124.30	7348.02	118.75	92.82	PASS
5631.00†	5629.63	-36.60	-0.97	5784.52	5675.13	-4177.30	6068.12	124.30	7347.20	118.07	93.34	PASS
5731.00†	5729.63	-36.60	-0.97	5853.62	5744.23	-4177.36	6067.74	124.31	7346.79	117.43	93.84	PASS
5831.00†	5829.63	-36.60	-0.97	5922.72	5813.33	-4177.51	6067.65	124.31	7346.80	116.80	94.35	PASS
5931.00†	5929.63	-36.60	-0.97	5990.88	5881.49	-4177.84	6067.78	124.31	7347.24	116.19	94.85	PASS
6031.00†	6029.63	-36.60	-0.97	6059.00	5949.60	-4178.47	6068.07	124.31	7348.11	115.59	95.36	PASS
6048.41	6047.04	-36.60	-0.97	6070.86	5961.47	-4178.61	6068.13	124.31	7348.31	115.49	95.44	PASS
6131.00†	6129.34	-42.54	-1.13	6129.07	6019.67	-4179.44	6068.52	-57.42	7346.20	114.85	95.95	PASS
6231.00†	6226.56	-65.44	-1.74	6207.15	6097.74	-4180.77	6069.15	-58.45	7335.41	113.55	96.90	PASS
6331.00†	6318.31	-104.86	-2.79	6281.24	6171.80	-4182.25	6069.83	-60.35	7315.96	111.96	98.02	PASS
6431.00†	6401.83	-159.62	-4.25	6349.68	6240.23	-4183.78	6070.54	-63.12	7288.56	110.24	99.17	PASS
6531.00†	6474.56	-228.03	-6.07	6410.07	6300.60	-4185.24	6071.25	-66.75	7254.21	108.39	100.39	PASS
6631.00†	6534.30	-308.04	-8.20	6460.30	6350.81	-4186.52	6071.90	-71.15	7214.15	106.37	101.74	PASS
6731.00†	6579.24	-397.20	-10.57	6499.68	6390.17	-4187.57	6072.45	-76.19	7169.79	104.15	103.27	PASS
6831.00†	6608.01	-492.80	-13.12	6530.98	6421.45	-4188.42	6072.90	-81.70	7122.63	101.72	105.03	PASS
6931.00†	6619.74	-591.95	-15.76	6545.34	6435.80	-4188.80	6073.10	-87.33	7074.27	99.17	107.01	PASS
6948.41	6620.00	-609.36	-16.22	6546.07	6436.53	-4188.82	6073.11	-88.30	7065.85	98.71	107.37	PASS
7031.00†	6620.00	-691.91	-18.42	6548.26	6438.73	-4188.88	6073.14	-88.32	7026.29	97.28	108.34	PASS
7131.00†	6620.00	-791.88	-21.08	6550.93	6441.39	-4188.96	6073.18	-88.35	6979.40	94.46	110.84	PASS
7231.00†	6620.00	-891.84	-23.74	6553.59	6444.04	-4189.03	6073.22	-88.37	6933.63	91.56	113.59	PASS
7331.00†	6620.00	-991.81	-26.40	6556.25	6446.70	-4189.10	6073.26	-88.39	6889.01	88.63	116.60	PASS
7431.00†	6620.00	-1091.77	-29.06	6558.92	6449.18	-4189.17	6073.29	-88.42	6845.56	85.70	119.82	PASS
7531.00†	6620.00	-1191.74	-31.72	6559.00	6449.46	-4189.17	6073.30	-88.42	6803.30	82.80	123.25	PASS
7631.00†	6620.00	-1291.70	-34.38	6559.00	6449.46	-4189.17	6073.30	-88.42	6762.26	79.96	126.86	PASS
7731.00†	6620.00	-1391.67	-37.04	6559.00	6449.46	-4189.17	6073.30	-88.42	6722.45	77.19	130.64	PASS
7831.00†	6620.00	-1491.63	-39.70	6559.00	6449.46	-4189.17	6073.30	-88.42	6683.90	74.50	134.57	PASS
7931.00†	6620.00	-1591.60	-42.36	6559.00	6449.46	-4189.17	6073.30	-88.42	6646.63	71.91	138.64	PASS
8031.00†	6620.00	-1691.56	-45.02	6559.00	6449.46	-4189.17	6073.30	-88.42	6610.67	69.42	142.84	PASS
8131.00†	6620.00	-1791.52	-47.68	6559.00	6449.46	-4189.17	6073.30	-88.42	6576.03	67.03	147.16	PASS
8231.00†	6620.00	-1891.49	-50.34	6559.00	6449.46	-4189.17	6073.30	-88.42	6542.74	64.75	151.58	PASS
8331.00†	6620.00	-1991.45	-53.00	6559.00	6449.46	-4189.17	6073.30	-88.42	6510.81	62.57	156.09	PASS



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP
Closest Approach
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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

CLEARANCE DATA - Offset Wellbore: CROW VALLEY 7-62-32-1M AWB Offset Wellpath: CROW VALLEY 7-62-32-1M AWP

Facility: SEC.32-T7N-R62W Slot: SLOT#02 CROW VALLEY 7-62-32-1M (1390'FSL & 2374'FEL, SEC.32) Well: CROW VALLEY 7-62-32-1M Threshold Value=1.50

† = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Angle from Highside [°]	C-C Clear Dist [ft]	Sep Ratio	ACR MASD [ft]	ACR Status
8431.00†	6620.00	-2091.42	-55.66	6559.00	6449.46	-4189.17	6073.30	-88.42	6480.26	60.49	160.69	PASS
8531.00†	6620.00	-2191.38	-58.32	6559.00	6449.46	-4189.17	6073.30	-88.42	6451.13	58.52	165.36	PASS
8631.00†	6620.00	-2291.35	-60.99	6559.00	6449.46	-4189.17	6073.30	-88.42	6423.41	56.64	170.11	PASS
8731.00†	6620.00	-2391.31	-63.65	6559.00	6449.46	-4189.17	6073.30	-88.42	6397.14	54.86	174.91	PASS
8831.00†	6620.00	-2491.28	-66.31	6559.00	6449.46	-4189.17	6073.30	-88.42	6372.33	53.17	179.76	PASS
8931.00†	6620.00	-2591.24	-68.97	6559.00	6449.46	-4189.17	6073.30	-88.42	6349.00	51.57	184.66	PASS
9031.00†	6620.00	-2691.21	-71.63	6559.00	6449.46	-4189.17	6073.30	-88.42	6327.17	50.06	189.59	PASS
9131.00†	6620.00	-2791.17	-74.29	6559.00	6449.46	-4189.17	6073.30	-88.42	6306.84	48.62	194.56	PASS
9231.00†	6620.00	-2891.14	-76.95	6559.00	6449.46	-4189.17	6073.30	-88.42	6288.04	47.27	199.55	PASS
9331.00†	6620.00	-2991.10	-79.61	6559.00	6449.46	-4189.17	6073.30	-88.42	6270.78	45.98	204.56	PASS
9431.00†	6620.00	-3091.06	-82.27	6559.00	6449.46	-4189.17	6073.30	-88.42	6255.07	44.77	209.58	PASS
9531.00†	6620.00	-3191.03	-84.93	6559.00	6449.46	-4189.17	6073.30	-88.42	6240.92	43.62	214.61	PASS
9631.00†	6620.00	-3290.99	-87.59	6559.00	6449.46	-4189.17	6073.30	-88.42	6228.35	42.54	219.64	PASS
9731.00†	6620.00	-3390.96	-90.25	6559.00	6449.46	-4189.17	6073.30	-88.42	6217.36	41.51	224.66	PASS
9831.00†	6620.00	-3490.92	-92.91	6559.00	6449.46	-4189.17	6073.30	-88.42	6207.96	40.54	229.68	PASS
9931.00†	6620.00	-3590.89	-95.57	6559.00	6449.46	-4189.17	6073.30	-88.42	6200.16	39.63	234.67	PASS
10031.00†	6620.00	-3690.85	-98.23	6559.00	6449.46	-4189.17	6073.30	-88.42	6193.96	38.77	239.65	PASS
10131.00†	6620.00	-3790.82	-100.89	6559.00	6449.46	-4189.17	6073.30	-88.42	6189.38	37.96	244.59	PASS
10231.00†	6620.00	-3890.78	-103.55	6559.00	6449.46	-4189.17	6073.30	-88.42	6186.40	37.19	249.51	PASS
10331.00†	6620.00	-3990.75	-106.22	6559.00	6449.46	-4189.17	6073.30	-88.42	6185.05	36.47	254.39	PASS
10368.50†	6620.00	-4028.23	-107.21	6555.80	6446.26	-4189.09	6073.25	-88.39	6185.00	36.21	256.20	PASS
10431.00†	6620.00	-4090.71	-108.88	6559.00	6449.46	-4189.17	6073.30	-88.42	6185.31	35.79	259.22	PASS
10531.00†	6620.00	-4190.68	-111.54	6559.00	6449.46	-4189.17	6073.30	-88.42	6187.18	35.15	264.01	PASS
10631.00†	6620.00	-4290.64	-114.20	6559.00	6449.46	-4189.17	6073.30	-88.42	6190.67	34.55	268.75	PASS
10731.00†	6620.00	-4390.60	-116.86	6559.00	6449.46	-4189.17	6073.30	-88.42	6195.78	33.99	273.44	PASS
10831.00†	6620.00	-4490.57	-119.52	6559.00	6449.46	-4189.17	6073.30	-88.42	6202.49	33.46	278.07	PASS
10931.00†	6620.00	-4590.53	-122.18	6559.00	6449.46	-4189.17	6073.30	-88.42	6210.80	32.96	282.63	PASS
11031.00†	6620.00	-4690.50	-124.84	6559.00	6449.46	-4189.17	6073.30	-88.42	6220.71	32.50	287.13	PASS
11131.00†	6620.00	-4790.46	-127.50	6559.00	6449.46	-4189.17	6073.30	-88.42	6232.21	32.06	291.56	PASS
11231.00†	6620.00	-4890.43	-130.16	6559.00	6449.46	-4189.17	6073.30	-88.42	6245.30	31.66	295.92	PASS
11331.00†	6620.00	-4990.39	-132.82	6559.00	6449.46	-4189.17	6073.30	-88.42	6259.95	31.28	300.20	PASS
11431.00†	6620.00	-5090.36	-135.48	6559.00	6449.46	-4189.17	6073.30	-88.42	6276.16	30.93	304.41	PASS
11531.00†	6620.00	-5190.32	-138.14	6559.00	6449.46	-4189.17	6073.30	-88.42	6293.91	30.60	308.53	PASS
11623.53	6620.00	-5282.82	-140.60	6559.00	6449.46	-4189.17	6073.30	-88.42	6311.71	30.32	312.27	PASS

POSITIONAL UNCERTAINTY - Offset Wellbore: CROW VALLEY 7-62-32-1M AWB Offset Wellpath: CROW VALLEY 7-62-32-1M AWP

Slot Surface Uncertainty @ 1SD	Horizontal	8.200ft	Vertical	3.000ft
Facility Surface Uncertainty @ 1SD	Horizontal	0.100ft	Vertical	1.000ft

WELLPATH COMPOSITION - Offset Wellbore: CROW VALLEY 7-62-32-1M AWB Offset Wellpath: CROW VALLEY 7-62-32-1M AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
758.00	6495.00	NaviTrak (Standard)	SURVEYS FROM MARATHON <884-6495>	CROW VALLEY 7-62-32-1M AWB
6495.00	6559.00	Blind Drilling (std)	Projection to bit	CROW VALLEY 7-62-32-1M AWB



Clearance Report

CROW VALLEY 7-62-31-2H (REV-A.0) PWP
Closest Approach
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**REFERENCE WELLPATH IDENTIFICATION**

Operator	MARATHON OIL COMPANY	Slot	SLOT#01 CROW VALLEY 7-62-31-2H (407'FSL & 2142'FWL, SEC.30)
Area	COLORADO	Well	CROW VALLEY 7-62-31-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-31-2H PWB
Facility	SEC.30-T7N-R62W		

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: CROW VALLEY 7-62-32-1M AWB Offset Wellpath: CROW VALLEY 7-62-32-1M AWP

MD Reference: Rig on SLOT#02 CROW VALLEY 7-62-32-1M (1390'FSL & 2374'FEL, SEC.32) (RKB)	<i>Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)</i>
Ellipse Start MD	