

MARATHON OIL COMPANY

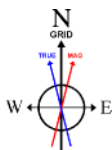
Location: COLORADO Slot: SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Field: WELD COUNTY (NAD 83, GRID NORTH) Well: CROW VALLEY 7-62-24-2H
Facility: SEC.24-T7N-R62W Wellbore: CROW VALLEY 7-62-24-2H PWB

Plot reference wellpath is CROW VALLEY 7-62-24-2H (REV-E.0) PWP

True vertical depths are referenced to H&P 321 (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to H&P 321 (RKB)	North Reference: Grid north
H&P 321 (RKB) to Mean Sea Level: 4899 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: cookdanm on 6/19/2012



Scale 1 inch = 1000 ft
750
1500
2250
3000
3750
4500
5250
6000
6750
9.625in Casing Surface : 0.00° Inc, 716.00ft MD, 716.00ft TVD, -0.00ft VS
TIED INTO SURFACE CASING SHOE : 0.00° Inc, 716.00ft MD, 716.00ft TVD, 0.00ft VS

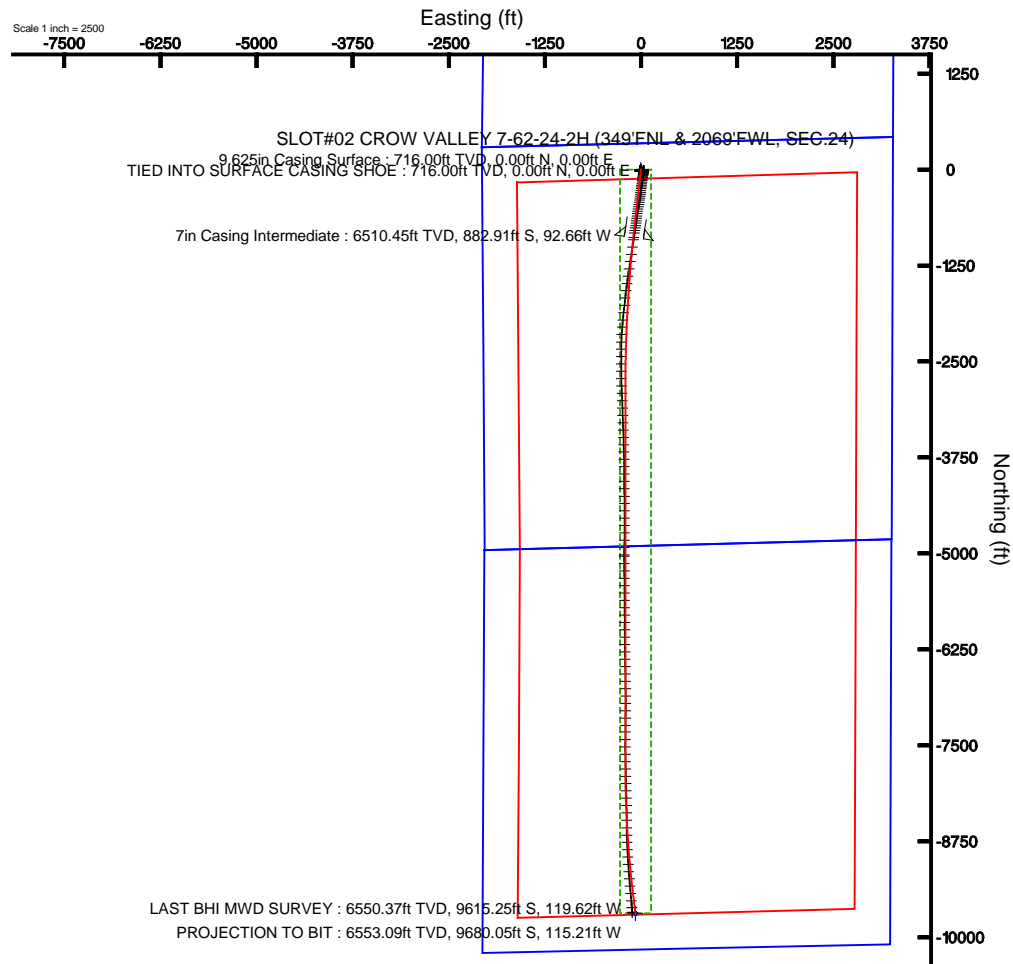


BGGM (1945.0 to 2013.0) Dip: 67.21° Field: 53118.5 nT
Magnetic North is 8.47 degrees East of True North (at 5/24/2012)
Grid North is 0.79 degrees East of True North
To correct azimuth from True to Grid subtract 0.79 degrees
To correct azimuth from Magnetic to Grid add 7.67 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.67 = 97.67

7in Casing Intermediate : 88.90° Inc, 7073.00ft MD, 6510.45ft TVD, 883.56ft VS

LAST BHI MWD SURVEY : 87.60° Inc, 15820.00ft MD, 6550.37ft TVD, 9615.87ft VS
PROJECTION TO BIT : 87.60° Inc, 15885.00ft MD, 6553.09ft TVD, 9680.63ft VS

Vertical Section (ft)
Azimuth 180.42° with reference 0.00 N, 0.00 E



Scale 1 inch = 1500 ft



Actual Wellpath Report

CROW VALLEY 7-62-24-2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Area	COLORADO	Well	CROW VALLEY 7-62-24-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect@ 4.0.0
North Reference	Grid	User	Cookdanm
Scale	0.999972	Report Generated	6/19/2012 at 5:49:57 PM
Convergence at slot	0.79° East	Database/Source file	WA_Denver/CROW_VALLEY_7-62-24-2H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-29.29	-6.47	3341239.75	1451420.12	40°33'57.816"N	104°16'18.193"W
Facility Reference Pt			3341246.22	1451449.41	40°33'58.105"N	104°16'18.104"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	4899.00ft
Horizontal Reference Pt	Slot	H&P 321 (RKB) to Mean Sea Level	4899.00ft
Vertical Reference Pt	H&P 321 (RKB)	H&P 321 (RKB) to Mud Line at Slot (SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24))	4899.00ft
MD Reference Pt	H&P 321 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.42°



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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Area	COLORADO	Well	CROW VALLEY 7-62-24-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

WELLPATH DATA (189 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
716.00	0.000	0.000	716.00	0.00	0.00	0.00	3341239.75	1451420.12	40°33'57.816"N	104°16'18.193"W	0.00	TIED INTO SURFACE CASING SHOE
759.00	0.100	137.700	759.00	0.03	-0.03	0.03	3341239.78	1451420.09	40°33'57.816"N	104°16'18.193"W	0.23	
790.00	0.100	278.100	790.00	0.04	-0.04	0.02	3341239.77	1451420.08	40°33'57.816"N	104°16'18.193"W	0.61	
883.00	0.200	148.700	883.00	0.17	-0.17	0.02	3341239.77	1451419.95	40°33'57.815"N	104°16'18.193"W	0.30	
975.00	0.300	137.100	975.00	0.48	-0.48	0.27	3341240.02	1451419.64	40°33'57.811"N	104°16'18.190"W	0.12	
1068.00	0.200	140.300	1068.00	0.78	-0.79	0.54	3341240.29	1451419.33	40°33'57.808"N	104°16'18.186"W	0.11	
1159.00	0.200	211.200	1159.00	1.04	-1.05	0.56	3341240.31	1451419.07	40°33'57.806"N	104°16'18.186"W	0.25	
1252.00	0.500	236.400	1252.00	1.41	-1.41	0.13	3341239.88	1451418.71	40°33'57.802"N	104°16'18.191"W	0.36	
1345.00	0.700	228.400	1344.99	2.02	-2.01	-0.63	3341239.12	1451418.11	40°33'57.796"N	104°16'18.201"W	0.23	
1438.00	0.800	262.800	1437.98	2.48	-2.47	-1.70	3341238.05	1451417.65	40°33'57.792"N	104°16'18.215"W	0.49	
1531.00	0.500	282.600	1530.98	2.48	-2.46	-2.74	3341237.01	1451417.66	40°33'57.792"N	104°16'18.229"W	0.40	
1623.00	0.300	210.200	1622.98	2.61	-2.58	-3.25	3341236.50	1451417.54	40°33'57.791"N	104°16'18.236"W	0.54	
1716.00	0.600	235.200	1715.97	3.10	-3.07	-3.77	3341235.98	1451417.05	40°33'57.786"N	104°16'18.242"W	0.38	
1809.00	0.800	231.800	1808.97	3.78	-3.75	-4.68	3341235.07	1451416.37	40°33'57.780"N	104°16'18.254"W	0.22	
1905.00	0.600	283.800	1904.96	4.09	-4.05	-5.70	3341234.05	1451416.07	40°33'57.777"N	104°16'18.267"W	0.67	
2000.00	0.900	227.000	1999.95	4.48	-4.44	-6.73	3341233.02	1451415.68	40°33'57.773"N	104°16'18.281"W	0.80	
2095.00	1.500	234.600	2094.93	5.72	-5.66	-8.29	3341231.46	1451414.46	40°33'57.761"N	104°16'18.301"W	0.65	
2191.00	1.400	215.800	2190.90	7.42	-7.34	-10.00	3341229.75	1451412.78	40°33'57.745"N	104°16'18.324"W	0.50	
2287.00	1.000	226.500	2286.88	8.95	-8.87	-11.29	3341228.46	1451411.25	40°33'57.730"N	104°16'18.341"W	0.48	
2383.00	0.700	222.300	2382.87	9.97	-9.88	-12.29	3341227.46	1451410.24	40°33'57.720"N	104°16'18.354"W	0.32	
2479.00	0.700	215.200	2478.86	10.89	-10.80	-13.02	3341226.73	1451409.33	40°33'57.711"N	104°16'18.364"W	0.09	
2575.00	0.500	238.600	2574.86	11.59	-11.49	-13.72	3341226.03	1451408.63	40°33'57.705"N	104°16'18.373"W	0.33	
2670.00	0.400	195.200	2669.85	12.13	-12.03	-14.16	3341225.59	1451408.09	40°33'57.699"N	104°16'18.379"W	0.36	
2766.00	0.500	147.300	2765.85	12.81	-12.70	-14.02	3341225.73	1451407.42	40°33'57.693"N	104°16'18.377"W	0.39	
2862.00	0.500	138.600	2861.85	13.47	-13.37	-13.52	3341226.23	1451406.75	40°33'57.686"N	104°16'18.370"W	0.08	
2958.00	0.400	136.900	2957.84	14.02	-13.93	-13.01	3341226.74	1451406.19	40°33'57.680"N	104°16'18.364"W	0.11	
3054.00	0.400	98.000	3053.84	14.31	-14.22	-12.45	3341227.30	1451405.90	40°33'57.677"N	104°16'18.357"W	0.28	
3150.00	0.400	51.100	3149.84	14.14	-14.06	-11.86	3341227.89	1451406.06	40°33'57.679"N	104°16'18.349"W	0.33	
3245.00	0.500	93.200	3244.84	13.95	-13.87	-11.19	3341228.56	1451406.25	40°33'57.681"N	104°16'18.340"W	0.35	
3342.00	1.000	100.400	3341.83	14.12	-14.05	-9.93	3341229.82	1451406.07	40°33'57.679"N	104°16'18.324"W	0.52	
3437.00	1.000	107.200	3436.81	14.50	-14.44	-8.33	3341231.43	1451405.68	40°33'57.675"N	104°16'18.303"W	0.12	
3533.00	1.300	92.300	3532.80	14.78	-14.73	-6.44	3341233.31	1451405.39	40°33'57.672"N	104°16'18.279"W	0.44	
3628.00	1.200	91.800	3627.77	14.84	-14.81	-4.37	3341235.38	1451405.31	40°33'57.671"N	104°16'18.252"W	0.11	
3724.00	1.100	96.100	3723.75	14.96	-14.94	-2.44	3341237.31	1451405.18	40°33'57.669"N	104°16'18.227"W	0.14	
3819.00	1.000	90.400	3818.74	15.05	-15.04	-0.71	3341239.04	1451405.08	40°33'57.668"N	104°16'18.205"W	0.15	
3914.00	0.900	92.000	3913.72	15.07	-15.07	0.87	3341240.62	1451405.05	40°33'57.667"N	104°16'18.184"W	0.11	
4010.00	0.900	102.000	4009.71	15.24	-15.26	2.36	3341242.11	1451404.86	40°33'57.665"N	104°16'18.165"W	0.16	
4106.00	0.800	102.800	4105.70	15.53	-15.56	3.75	3341243.50	1451404.56	40°33'57.662"N	104°16'18.147"W	0.10	
4203.00	0.700	104.200	4202.69	15.82	-15.86	4.98	3341244.73	1451404.26	40°33'57.659"N	104°16'18.131"W	0.10	
4299.00	0.700	106.600	4298.69	16.12	-16.17	6.11	3341245.86	1451403.95	40°33'57.656"N	104°16'18.117"W	0.03	
4394.00	1.200	123.700	4393.67	16.83	-16.89	7.50	3341247.25	1451403.23	40°33'57.648"N	104°16'18.099"W	0.60	
4490.00	1.400	113.200	4489.65	17.84	-17.91	9.41	3341249.16	1451402.21	40°33'57.638"N	104°16'18.074"W	0.32	
4586.00	1.400	110.300	4585.62	18.69	-18.77	11.59	3341251.34	1451401.35	40°33'57.629"N	104°16'18.046"W	0.07	
4683.00	1.400	102.400	4682.59	19.34	-19.44	13.86	3341253.61	1451400.68	40°33'57.622"N	104°16'18.017"W	0.20	
4778.00	1.400	96.000	4777.56	19.69	-19.81	16.14	3341255.89	1451400.31	40°33'57.618"N	104°16'17.987"W	0.16	



Actual Wellpath Report

CROW VALLEY 7-62-24-2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Area	COLORADO	Well	CROW VALLEY 7-62-24-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

WELLPATH DATA (189 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
4874.00	1.800	76.800	4873.53	19.45	-19.59	18.78	3341258.53	1451400.53	40°33'57.620"N	104°16'17.953"W	0.69	
4970.00	1.700	77.600	4969.48	18.78	-18.94	21.64	3341261.39	1451401.18	40°33'57.626"N	104°16'17.916"W	0.11	
5065.00	1.800	77.600	5064.44	18.14	-18.32	24.47	3341264.22	1451401.80	40°33'57.632"N	104°16'17.879"W	0.11	
5162.00	2.000	86.900	5161.38	17.70	-17.90	27.65	3341267.40	1451402.22	40°33'57.636"N	104°16'17.838"W	0.38	
5257.00	1.500	52.700	5256.34	16.83	-17.05	30.29	3341270.04	1451403.07	40°33'57.644"N	104°16'17.804"W	1.19	
5352.00	1.400	41.300	5351.31	15.20	-15.43	32.05	3341271.80	1451404.69	40°33'57.659"N	104°16'17.780"W	0.32	
5448.00	1.400	38.200	5447.28	13.38	-13.63	33.55	3341273.30	1451406.49	40°33'57.677"N	104°16'17.879"W	0.08	
5543.00	1.200	15.200	5542.26	11.50	-11.75	34.53	3341274.28	1451408.37	40°33'57.695"N	104°16'17.748"W	0.58	
5639.00	1.100	28.400	5638.24	9.72	-9.97	35.23	3341274.98	1451410.15	40°33'57.713"N	104°16'17.738"W	0.29	
5735.00	0.800	12.500	5734.23	8.25	-8.51	35.81	3341275.56	1451411.61	40°33'57.727"N	104°16'17.730"W	0.41	
5766.00	0.700	25.000	5765.22	7.86	-8.13	35.94	3341275.69	1451411.99	40°33'57.731"N	104°16'17.729"W	0.62	
5798.00	0.900	160.600	5797.22	7.92	-8.19	36.10	3341275.85	1451411.93	40°33'57.730"N	104°16'17.727"W	4.64	
5831.00	3.400	177.800	5830.20	9.14	-9.41	36.23	3341275.98	1451410.71	40°33'57.718"N	104°16'17.725"W	7.74	
5862.00	6.900	182.400	5861.07	11.92	-12.19	36.19	3341275.93	1451407.93	40°33'57.691"N	104°16'17.726"W	11.36	
5894.00	9.700	183.000	5892.73	16.54	-16.80	35.96	3341275.71	1451403.32	40°33'57.645"N	104°16'17.730"W	8.75	
5927.00	12.100	183.600	5925.13	22.77	-23.03	35.60	3341275.35	1451397.09	40°33'57.584"N	104°16'17.736"W	7.28	
5958.00	15.000	187.200	5955.27	30.00	-30.26	34.89	3341274.64	1451389.87	40°33'57.513"N	104°16'17.746"W	9.74	
5991.00	17.500	190.000	5986.95	39.14	-39.38	33.50	3341273.25	1451380.74	40°33'57.423"N	104°16'17.766"W	7.94	
6022.00	20.000	191.700	6016.30	48.93	-49.16	31.61	3341271.36	1451370.96	40°33'57.326"N	104°16'17.792"W	8.25	
6054.00	23.600	192.500	6046.00	60.57	-60.78	29.12	3341268.86	1451359.34	40°33'57.212"N	104°16'17.827"W	11.29	
6086.00	26.200	191.300	6075.03	73.77	-73.96	26.34	3341266.09	1451346.16	40°33'57.082"N	104°16'17.865"W	8.28	
6118.00	28.600	189.500	6103.44	88.27	-88.45	23.70	3341263.45	1451331.68	40°33'56.939"N	104°16'17.902"W	7.93	
6150.00	31.900	188.300	6131.08	104.21	-104.37	21.21	3341260.96	1451315.75	40°33'56.782"N	104°16'17.937"W	10.48	
6182.00	34.400	188.100	6157.87	121.55	-121.69	18.72	3341258.47	1451298.43	40°33'56.611"N	104°16'17.972"W	7.82	
6214.00	37.100	187.200	6183.83	140.10	-140.22	16.23	3341255.98	1451279.91	40°33'56.429"N	104°16'18.008"W	8.60	
6245.00	39.400	188.000	6208.18	159.13	-159.24	13.69	3341253.44	1451260.89	40°33'56.241"N	104°16'18.044"W	7.59	
6278.00	41.300	188.000	6233.32	180.31	-180.40	10.72	3341250.47	1451239.73	40°33'56.032"N	104°16'18.086"W	5.76	
6309.00	42.300	188.300	6256.43	200.79	-200.85	7.79	3341247.54	1451219.28	40°33'55.831"N	104°16'18.128"W	3.29	
6341.00	45.200	187.100	6279.55	222.73	-222.78	4.83	3341244.58	1451197.35	40°33'55.614"N	104°16'18.170"W	9.43	
6372.00	47.700	186.200	6300.91	245.07	-245.09	2.23	3341241.98	1451175.04	40°33'55.394"N	104°16'18.208"W	8.33	
6404.00	48.600	186.700	6322.25	268.77	-268.78	-0.45	3341239.30	1451151.35	40°33'55.161"N	104°16'18.247"W	3.04	
6436.00	51.500	187.400	6342.80	293.14	-293.12	-3.46	3341236.29	1451127.01	40°33'54.921"N	104°16'18.290"W	9.22	
6468.00	52.800	188.000	6362.44	318.20	-318.16	-6.85	3341232.90	1451101.97	40°33'54.674"N	104°16'18.339"W	4.32	
6500.00	53.700	189.100	6381.58	343.58	-343.51	-10.66	3341229.09	1451076.62	40°33'54.424"N	104°16'18.393"W	3.94	
6532.00	56.800	189.200	6399.82	369.56	-369.47	-14.84	3341224.91	1451050.66	40°33'54.168"N	104°16'18.452"W	9.69	
6564.00	59.400	189.000	6416.73	396.42	-396.29	-19.14	3341220.61	1451023.84	40°33'53.903"N	104°16'18.512"W	8.14	
6596.00	61.900	189.200	6432.41	423.99	-423.83	-23.55	3341216.20	1450996.30	40°33'53.632"N	104°16'18.574"W	7.83	
6628.00	64.100	190.000	6446.94	452.13	-451.94	-28.31	3341211.45	1450968.19	40°33'53.355"N	104°16'18.641"W	7.23	
6660.00	67.100	188.900	6460.16	480.91	-480.68	-33.09	3341206.66	1450939.45	40°33'53.071"N	104°16'18.708"W	9.88	
6692.00	69.900	188.900	6471.88	510.36	-510.09	-37.69	3341202.06	1450910.04	40°33'52.781"N	104°16'18.773"W	8.75	
6725.00	73.200	188.300	6482.33	541.34	-541.04	-42.37	3341197.38	1450879.09	40°33'52.476"N	104°16'18.839"W	10.15	
6757.00	76.200	188.200	6490.77	571.91	-571.59	-46.80	3341192.95	1450848.55	40°33'52.175"N	104°16'18.902"W	9.38	
6789.00	79.400	187.900	6497.53	602.91	-602.55	-51.18	3341188.57	1450817.59	40°33'51.870"N	104°16'18.964"W	10.04	
6821.00	83.000	188.500	6502.43	634.23	-633.84	-55.69	3341184.06	1450786.29	40°33'51.561"N	104°16'19.028"W	11.40	
6852.00	86.500	188.700	6505.26	664.78	-664.36	-60.30	3341179.45	1450755.78	40°33'51.260"N	104°16'19.093"W	11.31	



Actual Wellpath Report

CROW VALLEY 7-62-24-2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Area	COLORADO	Well	CROW VALLEY 7-62-24-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

WELLPATH DATA (189 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
6884.00	88.900	188.500	6506.55	696.43	-695.98	-65.09	3341174.67	1450724.17	40°33'50.949"N	104°16'19.161"W	7.53	
6916.00	89.000	188.500	6507.13	728.11	-727.62	-69.81	3341169.94	1450692.52	40°33'50.637"N	104°16'19.228"W	0.31	
6948.00	88.800	188.600	6507.75	759.78	-759.26	-74.57	3341165.18	1450660.89	40°33'50.325"N	104°16'19.295"W	0.70	
6981.00	88.700	188.300	6508.47	792.45	-791.89	-79.42	3341160.33	1450628.25	40°33'50.003"N	104°16'19.364"W	0.96	
7013.00	88.700	188.300	6509.19	824.14	-823.55	-84.04	3341155.72	1450596.60	40°33'49.691"N	104°16'19.429"W	0.00	
7103.00	89.000	188.200	6511.00	913.28	-912.60	-96.95	3341142.80	1450507.55	40°33'48.813"N	104°16'19.613"W	0.35	
7198.00	89.500	188.300	6512.24	1007.38	-1006.61	-110.58	3341129.17	1450413.54	40°33'47.886"N	104°16'19.806"W	0.54	
7294.00	89.100	188.100	6513.41	1102.49	-1101.62	-124.27	3341115.48	1450318.54	40°33'46.949"N	104°16'20.001"W	0.47	
7389.00	90.800	188.700	6513.50	1196.57	-1195.59	-138.15	3341101.61	1450224.56	40°33'46.022"N	104°16'20.197"W	1.90	
7486.00	91.100	189.100	6511.89	1292.49	-1291.41	-153.15	3341086.60	1450128.75	40°33'45.078"N	104°16'20.409"W	0.52	
7582.00	90.500	188.400	6510.55	1387.47	-1386.29	-167.76	3341072.00	1450033.88	40°33'44.142"N	104°16'20.615"W	0.96	
7678.00	89.700	187.200	6510.38	1482.67	-1481.40	-180.78	3341058.97	1449938.77	40°33'43.204"N	104°16'20.801"W	1.50	
7774.00	90.300	188.100	6510.38	1577.91	-1576.54	-193.56	3341046.19	1449843.63	40°33'42.266"N	104°16'20.984"W	1.13	
7869.00	88.900	185.600	6511.04	1672.30	-1670.85	-204.89	3341034.86	1449749.32	40°33'41.336"N	104°16'21.147"W	3.02	
7965.00	90.700	186.900	6511.38	1767.79	-1766.27	-215.34	3341024.41	1449653.90	40°33'40.394"N	104°16'21.300"W	2.31	
8061.00	90.000	186.200	6510.79	1863.24	-1861.64	-226.29	3341013.46	1449558.53	40°33'39.453"N	104°16'21.459"W	1.03	
8157.00	89.400	185.300	6511.30	1958.82	-1957.16	-235.91	3341003.85	1449463.02	40°33'38.511"N	104°16'21.600"W	1.13	
8252.00	89.500	183.900	6512.21	2053.56	-2051.84	-243.53	3340996.23	1449368.34	40°33'37.577"N	104°16'21.716"W	1.48	
8348.00	89.900	183.500	6512.71	2149.40	-2147.64	-249.72	3340990.03	1449272.54	40°33'36.631"N	104°16'21.813"W	0.59	
8445.00	89.500	182.200	6513.22	2246.31	-2244.52	-254.55	3340985.21	1449175.67	40°33'35.674"N	104°16'21.893"W	1.40	
8540.00	90.600	179.600	6513.14	2341.30	-2339.50	-256.04	3340983.72	1449080.69	40°33'34.736"N	104°16'21.930"W	2.97	
8636.00	90.300	179.700	6512.38	2437.29	-2435.49	-255.45	3340984.30	1448984.70	40°33'33.788"N	104°16'21.939"W	0.33	
8732.00	90.000	179.500	6512.13	2533.28	-2531.49	-254.78	3340984.98	1448888.71	40°33'32.839"N	104°16'21.948"W	0.38	
8828.00	90.300	180.000	6511.88	2629.27	-2627.49	-254.36	3340985.39	1448792.71	40°33'31.890"N	104°16'21.960"W	0.61	
8923.00	90.200	180.200	6511.46	2724.27	-2722.49	-254.53	3340985.23	1448697.72	40°33'30.952"N	104°16'21.979"W	0.24	
9020.00	88.800	177.700	6512.31	2821.22	-2819.46	-252.75	3340987.01	1448600.75	40°33'29.993"N	104°16'21.973"W	2.95	
9115.00	89.100	177.400	6514.05	2916.09	-2914.35	-248.69	3340991.07	1448505.85	40°33'29.055"N	104°16'21.938"W	0.45	
9211.00	88.700	177.600	6515.89	3011.94	-3010.24	-244.51	3340995.25	1448409.97	40°33'28.107"N	104°16'21.901"W	0.47	
9307.00	89.400	177.700	6517.49	3107.82	-3106.15	-240.57	3340999.19	1448314.06	40°33'27.159"N	104°16'21.867"W	0.74	
9403.00	90.300	178.500	6517.74	3203.74	-3202.09	-237.39	3341002.37	1448218.12	40°33'26.211"N	104°16'21.843"W	1.25	
9499.00	90.700	177.800	6516.90	3299.66	-3298.04	-234.29	3341005.47	1448122.18	40°33'25.262"N	104°16'21.820"W	0.84	
9594.00	89.700	177.100	6516.57	3394.53	-3392.94	-230.06	3341009.70	1448027.28	40°33'24.324"N	104°16'21.782"W	1.28	
9690.00	89.300	179.000	6517.41	3490.44	-3488.88	-226.79	3341012.96	1447931.34	40°33'23.376"N	104°16'21.757"W	2.02	
9786.00	88.800	178.400	6519.00	3586.38	-3584.84	-224.62	3341015.14	1447835.39	40°33'22.427"N	104°16'21.746"W	0.81	
9880.00	89.300	178.600	6520.56	3680.31	-3678.80	-222.16	3341017.60	1447741.43	40°33'21.499"N	104°16'21.731"W	0.57	
9976.00	89.500	178.700	6521.56	3776.26	-3774.76	-219.90	3341019.86	1447645.47	40°33'20.550"N	104°16'21.719"W	0.23	
10071.00	90.500	179.400	6521.56	3871.23	-3869.75	-218.32	3341021.44	1447550.49	40°33'19.611"N	104°16'21.715"W	1.28	
10168.00	90.600	179.700	6520.63	3968.22	-3966.74	-217.56	3341022.20	1447453.50	40°33'18.653"N	104°16'21.723"W	0.33	
10264.00	90.900	180.100	6519.37	4064.21	-4062.73	-217.39	3341022.37	1447357.51	40°33'17.704"N	104°16'21.738"W	0.52	
10360.00	89.700	179.700	6518.87	4160.20	-4158.73	-217.22	3341022.53	1447261.52	40°33'16.756"N	104°16'21.753"W	1.32	
10457.00	88.600	178.800	6520.31	4257.17	-4255.71	-215.95	3341023.80	1447164.54	40°33'15.798"N	104°16'21.754"W	1.47	
10552.00	88.800	178.800	6522.47	4352.10	-4350.66	-213.97	3341025.79	1447069.59	40°33'14.859"N	104°16'21.745"W	0.21	
10648.00	89.300	179.600	6524.06	4448.07	-4446.64	-212.62	3341027.13	1446973.61	40°33'13.911"N	104°16'21.745"W	0.98	
10743.00	90.400	180.300	6524.31	4543.06	-4541.64	-212.54	3341027.21	1446878.62	40°33'12.972"N	104°16'21.761"W	1.37	
10838.00	90.100	180.400	6523.89	4638.06	-4636.63	-213.12	3341026.63	1446783.63	40°33'12.034"N	104°16'21.786"W	0.33	



Actual Wellpath Report

CROW VALLEY 7-62-24-2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Area	COLORADO	Well	CROW VALLEY 7-62-24-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

WELLPATH DATA (189 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
10934.00	89.700	180.000	6524.06	4734.06	-4732.63	-213.46	3341026.30	1446687.63	40°33'11.085"N	104°16'21.807"W	0.59	
11029.00	90.900	181.400	6523.56	4829.05	-4827.62	-214.62	3341025.14	1446592.64	40°33'10.147"N	104°16'21.839"W	1.94	
11124.00	90.600	181.400	6522.32	4924.03	-4922.58	-216.94	3341022.82	1446497.68	40°33'09.209"N	104°16'21.886"W	0.32	
11220.00	90.600	179.800	6521.31	5020.02	-5018.57	-217.94	3341021.81	1446401.70	40°33'08.260"N	104°16'21.917"W	1.67	
11239.00	90.500	179.400	6521.13	5039.02	-5037.57	-217.81	3341021.95	1446382.70	40°33'08.073"N	104°16'21.918"W	2.17	
11335.00	90.600	179.800	6520.21	5135.01	-5133.56	-217.14	3341022.62	1446286.71	40°33'07.124"N	104°16'21.927"W	0.43	
11431.00	90.200	179.600	6519.54	5230.99	-5229.56	-216.64	3341023.12	1446190.72	40°33'06.176"N	104°16'21.937"W	0.47	
11527.00	90.200	179.700	6519.20	5326.99	-5325.56	-216.05	3341023.70	1446094.72	40°33'05.227"N	104°16'21.947"W	0.10	
11623.00	90.600	180.300	6518.53	5422.98	-5421.55	-216.05	3341023.70	1445998.73	40°33'04.279"N	104°16'21.964"W	0.75	
11719.00	88.200	179.400	6519.54	5518.96	-5517.54	-215.80	3341023.96	1445902.75	40°33'03.330"N	104°16'21.978"W	2.67	
11815.00	88.000	179.400	6522.72	5614.89	-5613.48	-214.80	3341024.96	1445806.81	40°33'02.382"N	104°16'21.982"W	0.21	
11912.00	88.700	179.100	6525.51	5711.83	-5710.43	-213.53	3341026.23	1445709.86	40°33'01.424"N	104°16'21.983"W	0.79	
12006.00	89.300	179.200	6527.16	5805.80	-5804.41	-212.13	3341027.62	1445615.89	40°33'00.495"N	104°16'21.982"W	0.65	
12102.00	90.800	180.700	6527.07	5901.79	-5900.40	-212.05	3341027.71	1445519.90	40°32'59.547"N	104°16'21.998"W	2.21	
12198.00	90.100	179.200	6526.32	5997.78	-5996.39	-211.97	3341027.79	1445423.91	40°32'58.598"N	104°16'22.014"W	1.72	
12294.00	89.600	179.200	6526.57	6093.76	-6092.38	-210.62	3341029.13	1445327.92	40°32'57.650"N	104°16'22.014"W	0.52	
12391.00	89.400	179.600	6527.42	6190.74	-6189.38	-209.61	3341030.15	1445230.93	40°32'56.691"N	104°16'22.018"W	0.46	
12486.00	88.800	178.500	6528.91	6285.70	-6284.35	-208.03	3341031.72	1445135.96	40°32'55.753"N	104°16'22.015"W	1.32	
12582.00	89.500	179.000	6530.33	6381.64	-6380.31	-205.94	3341033.82	1445040.00	40°32'54.804"N	104°16'22.005"W	0.90	
12677.00	88.500	178.300	6531.99	6476.58	-6475.27	-203.70	3341036.05	1444945.04	40°32'53.866"N	104°16'21.993"W	1.28	
12773.00	89.800	180.200	6533.41	6572.54	-6571.25	-202.45	3341037.31	1444849.07	40°32'52.917"N	104°16'21.994"W	2.40	
12868.00	91.500	178.800	6532.34	6667.52	-6666.23	-201.62	3341038.14	1444754.09	40°32'51.979"N	104°16'22.000"W	2.32	
12965.00	91.400	178.800	6529.88	6764.45	-6763.18	-199.59	3341040.17	1444657.14	40°32'51.020"N	104°16'22.002"W	0.10	
13061.00	91.300	179.600	6527.62	6860.40	-6859.14	-198.25	3341041.51	1444561.18	40°32'50.072"N	104°16'21.991"W	0.84	
13157.00	90.700	180.600	6525.94	6956.38	-6955.13	-198.41	3341041.34	1444465.20	40°32'49.124"N	104°16'22.011"W	1.21	
13253.00	90.600	180.400	6524.86	7052.38	-7051.12	-199.25	3341040.50	1444369.22	40°32'48.175"N	104°16'22.039"W	0.23	
13349.00	89.000	180.200	6525.19	7148.37	-7147.11	-199.76	3341040.00	1444273.22	40°32'47.227"N	104°16'22.063"W	1.68	
13445.00	89.900	181.200	6526.11	7244.37	-7243.10	-200.93	3341038.83	1444177.24	40°32'46.279"N	104°16'22.095"W	1.40	
13531.00	89.800	180.000	6526.34	7330.36	-7329.09	-201.83	3341037.93	1444091.25	40°32'45.429"N	104°16'22.122"W	1.40	
13628.00	90.200	181.300	6526.34	7427.36	-7426.08	-202.93	3341036.83	1443994.26	40°32'44.471"N	104°16'22.154"W	1.40	
13724.00	89.200	179.900	6526.84	7523.36	-7522.07	-203.93	3341035.82	1443898.27	40°32'43.523"N	104°16'22.184"W	1.79	
13820.00	89.200	179.200	6528.18	7619.33	-7618.06	-203.18	3341036.58	1443802.29	40°32'42.574"N	104°16'22.191"W	0.73	
13916.00	88.500	179.000	6530.11	7715.29	-7714.03	-201.67	3341038.08	1443706.33	40°32'41.626"N	104°16'22.189"W	0.76	
14011.00	88.900	178.300	6532.26	7810.22	-7808.97	-199.43	3341040.32	1443611.38	40°32'40.687"N	104°16'22.177"W	0.85	
14107.00	90.200	179.000	6533.02	7906.17	-7904.94	-197.17	3341042.58	1443515.42	40°32'39.739"N	104°16'22.165"W	1.54	
14202.00	90.600	178.600	6532.35	8001.13	-7999.92	-195.18	3341044.57	1443420.44	40°32'38.800"N	104°16'22.156"W	0.60	
14297.00	89.700	178.100	6532.10	8096.06	-8094.88	-192.45	3341047.31	1443325.49	40°32'37.862"N	104°16'22.138"W	1.08	
14393.00	89.700	178.600	6532.61	8192.00	-8190.84	-189.68	3341050.07	1443229.53	40°32'36.913"N	104°16'22.119"W	0.52	
14490.00	89.700	178.800	6533.11	8288.95	-8287.81	-187.48	3341052.27	1443132.56	40°32'35.955"N	104°16'22.108"W	0.21	
14586.00	89.700	179.200	6533.62	8384.92	-8383.79	-185.81	3341053.95	1443036.58	40°32'35.006"N	104°16'22.104"W	0.42	
14682.00	89.600	179.500	6534.20	8480.91	-8479.79	-184.72	3341055.04	1442940.59	40°32'34.058"N	104°16'22.107"W	0.33	
14779.00	90.100	179.900	6534.46	8577.90	-8576.78	-184.21	3341055.54	1442843.59	40°32'33.099"N	104°16'22.118"W	0.66	
14875.00	89.000	178.500	6535.21	8673.87	-8672.77	-182.87	3341056.88	1442747.61	40°32'32.151"N	104°16'22.117"W	1.85	
14970.00	88.500	178.000	6537.28	8768.78	-8767.70	-179.97	3341059.78	1442652.68	40°32'31.212"N	104°16'22.097"W	0.74	
15066.00	88.400	177.500	6539.88	8864.64	-8863.59	-176.20	3341063.55	1442556.80	40°32'30.264"N	104°16'22.065"W	0.53	



Actual Wellpath Report

CROW VALLEY 7-62-24-2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Area	COLORADO	Well	CROW VALLEY 7-62-24-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

WELLPATH DATA (189 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
15160.00	89.300	176.700	6541.77	8958.46	-8957.45	-171.45	3341068.31	1442462.94	40°32'29.336"N	104°16'22.020"W	1.28	
15256.00	89.300	176.400	6542.94	9054.23	-9053.27	-165.67	3341074.08	1442367.12	40°32'28.389"N	104°16'21.963"W	0.31	
15351.00	89.400	175.100	6544.02	9148.91	-9148.00	-158.63	3341081.12	1442272.40	40°32'27.452"N	104°16'21.889"W	1.37	
15447.00	90.500	174.600	6544.10	9244.46	-9243.61	-150.02	3341089.74	1442176.79	40°32'26.506"N	104°16'21.794"W	1.26	
15543.00	90.200	175.900	6543.52	9340.06	-9339.28	-142.07	3341097.69	1442081.12	40°32'25.560"N	104°16'21.708"W	1.39	
15638.00	88.300	174.400	6544.76	9434.65	-9433.92	-134.04	3341105.72	1441986.48	40°32'24.623"N	104°16'21.621"W	2.55	
15733.00	88.500	175.700	6547.41	9529.19	-9528.53	-125.84	3341113.91	1441891.88	40°32'23.687"N	104°16'21.532"W	1.38	
15820.00	87.600	176.100	6550.37	9615.87	-9615.25	-119.62	3341120.13	1441805.16	40°32'22.830"N	104°16'21.467"W	1.13	LAST BHI MWD SURVEY
15885.00	87.600	176.100	6553.09	9680.63	-9680.05	-115.21	3341124.55	1441740.36	40°32'22.189"N	104°16'21.422"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: CROW VALLEY 7-62-24-2H AWB Ref Wellpath: CROW VALLEY 7-62-24-2H 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	31.00	716.00	685.00	31.00	716.00	0.00	0.00	0.00	0.00
8.75in Open Hole	716.00	7073.00	6357.00	716.00	6510.45	0.00	0.00	-882.91	-92.66
7in Casing Intermediate	31.00	7073.00	7042.00	31.00	6510.45	0.00	0.00	-882.91	-92.66
6in Open Hole	7073.00	105885.00	98812.00	6510.45	NA	-882.91	-92.66	NA	NA



Actual Wellpath Report

CROW VALLEY 7-62-24-2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
Area	COLORADO	Well	CROW VALLEY 7-62-24-2H
Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
CROW VALLEY SECTION 13		62.00	-10649.43	-5512.65	3335727.27	1440771.01	40°32'13.343"N	104°17'31.495"W	polygon
CROW VALLEY SECTION 24		62.00	-10649.43	-5512.65	3335727.27	1440771.01	40°32'13.343"N	104°17'31.495"W	polygon
CROW VALLEY SECTION 25		62.00	0.00	0.00	3341239.75	1451420.12	40°33'57.816"N	104°16'18.193"W	polygon
CROW VALLEY 7-62-24-2H BHL ON PLAT (470'FSL & 1985'FWL, REV-1)		6514.00	-4431.59	-52.68	3341187.07	1446988.66	40°33'14.037"N	104°16'19.671"W	point
CROW VALLEY 7-62-24-2H DRILLING CORRIDOR		6514.00	-9693.74	-70.51	3341169.24	1441726.67	40°32'22.047"N	104°16'20.845"W	polygon
CROW VALLEY 7-62-24-2H HARDLINES (460' SETBACKS)		6514.00	0.00	0.00	3341239.75	1451420.12	40°33'57.816"N	104°16'18.193"W	polygon
CROW VALLEY 7-62-24-2H LANDING (REV-1)		6521.00	-712.73	22.20	3341261.95	1450707.41	40°33'50.771"N	104°16'18.033"W	point
CROW VALLEY 7-62-24-2H PT#2 (REV-1)		6529.00	-2831.82	-24.76	3341214.99	1448588.39	40°33'29.840"N	104°16'19.022"W	point
CROW VALLEY 7-62-24-2H PT#3 (REV-1)		6530.00	-4958.71	-36.91	3341202.84	1446461.56	40°33'08.827"N	104°16'19.561"W	point
CROW VALLEY 7-62-24-2H PT#4 (REV-1)		6544.00	-6892.54	-51.13	3341188.62	1444527.79	40°32'49.722"N	104°16'20.092"W	point
CROW VALLEY 7-62-24-2H BHL ON PLAT (470'FSL & 1988'FWL, SEC.25, REV-2)		6548.00	-9693.74	-70.51	3341169.24	1441726.67	40°32'22.047"N	104°16'20.845"W	point

WELLPATH COMPOSITION - Ref Wellbore: CROW VALLEY 7-62-24-2H AWB Ref Wellpath: CROW VALLEY 7-62-24-2H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
31.00	716.00	Drift Indicator (Standard)	ASSUMED VERTICAL TO SURFACE CASING SHOE <716>	CROW VALLEY 7-62-24-2H AWB
716.00	7294.00	NaviTrak (Standard)	BHI NAVITRAK MWD 8.75" HOLE <759-7294>	CROW VALLEY 7-62-24-2H AWB
7294.00	15820.00	NaviTrak (Standard)	BHI NAVITRAK 6" HOLE <7389-15820>	CROW VALLEY 7-62-24-2H AWB
15820.00	15885.00	Blind Drilling (std)	Projection to bit	CROW VALLEY 7-62-24-2H AWB

**Actual Wellpath Report****CROW VALLEY 7-62-24-2H AWP**

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**REFERENCE WELLPATH IDENTIFICATION**

Operator	MARATHON OIL COMPANY	Slot	SLOT#02 CROW VALLEY 7-62-24-2H (349'FNL & 2069'FWL, SEC.24)
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Field	WELD COUNTY (NAD 83, GRID NORTH)	Wellbore	CROW VALLEY 7-62-24-2H AWB
Facility	SEC.24-T7N-R62W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
716.00	0.000	0.000	716.00	TIED INTO SURFACE CASING SHOE
15820.00	87.600	176.100	6550.37	LAST BHI MWD SURVEY
15885.00	87.600	176.100	6553.09	PROJECTION TO BIT