





Resources Limited

# Planned Wellpath Report

ALMA 1S-66-2524-15NH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#15 ALMA 1S-66-2524-15NH (287'FSL & 1904'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-15NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-15NH PWB
Facility	SEC.25-T01S-R66W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Ingmjmr
Scale	0.999972	Report Generated	10/17/2016 at 8:52:56 AM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/ALMA_1S-66-2524-15NH_PWP_REV-A.0_.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-47.36	-58.89	3218358.24	1218175.28	39°55'46.704"N	104°43'16.932"W
Facility Reference Pt			3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
Field Reference Pt			3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W

## WELLPATH DATUM

Calculation method	Minimum curvature	RIG (RKB) to Facility Vertical Datum	5194.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	5194.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#15 ALMA 1S-66-2524-15NH (287'FSL & 1904'FEL, SEC.25))	5194.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	344.55°



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Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (162 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	245.464	0.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
14.00	0.000	245.464	14.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	Tie On
114.00†	0.000	245.464	114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
214.00†	0.000	245.464	214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
314.00†	0.000	245.464	314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
414.00†	0.000	245.464	414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
514.00†	0.000	245.464	514.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
614.00†	0.000	245.464	614.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
714.00†	0.000	245.464	714.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
814.00†	0.000	245.464	814.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
914.00†	0.000	245.464	914.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
1014.00†	0.000	245.464	1014.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
1114.00†	0.000	245.464	1114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
1214.00†	0.000	245.464	1214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
1314.00†	0.000	245.464	1314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
1414.00†	0.000	245.464	1414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	
1500.00	0.000	245.464	1500.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.932"W	0.00	End of Tangent
1514.00†	0.280	245.464	1514.00	-0.01	-0.01	-0.03	39°55'46.704"N	104°43'16.932"W	2.00	
1614.00†	2.280	245.464	1613.97	-0.36	-0.94	-2.06	39°55'46.695"N	104°43'16.958"W	2.00	
1714.00†	4.280	245.464	1713.80	-1.26	-3.32	-7.27	39°55'46.671"N	104°43'17.025"W	2.00	
1814.00†	6.280	245.464	1813.37	-2.71	-7.14	-15.64	39°55'46.633"N	104°43'17.133"W	2.00	
1914.00†	8.280	245.464	1912.56	-4.71	-12.40	-27.17	39°55'46.581"N	104°43'17.281"W	2.00	
2014.00†	10.280	245.464	2011.25	-7.26	-19.10	-41.83	39°55'46.515"N	104°43'17.469"W	2.00	
2114.00†	12.280	245.464	2109.31	-10.35	-27.22	-59.63	39°55'46.435"N	104°43'17.697"W	2.00	
2214.00†	14.280	245.464	2206.63	-13.98	-36.76	-80.52	39°55'46.341"N	104°43'17.966"W	2.00	
2314.00†	16.280	245.464	2303.09	-18.14	-47.70	-104.50	39°55'46.233"N	104°43'18.273"W	2.00	
2414.00†	18.280	245.464	2398.57	-22.83	-60.03	-131.52	39°55'46.111"N	104°43'18.620"W	2.00	
2514.00†	20.280	245.464	2492.96	-28.04	-73.75	-161.55	39°55'45.975"N	104°43'19.006"W	2.00	
2577.55	21.551	245.464	2552.32	-31.62	-83.17	-182.19	39°55'45.882"N	104°43'19.271"W	2.00	End of Build
2614.00†	21.551	245.464	2586.22	-33.73	-88.73	-194.37	39°55'45.827"N	104°43'19.427"W	0.00	



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Area	COLORADO	Well	ALMA 1S-66-2524-15NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-15NH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (162 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2714.00†	21.551	245.464	2679.23	-39.53	-103.98	-227.79	39°55'45.676"N	104°43'19.856"W	0.00	
2814.00†	21.551	245.464	2772.24	-45.33	-119.23	-261.20	39°55'45.526"N	104°43'20.285"W	0.00	
2914.00†	21.551	245.464	2865.25	-51.13	-134.49	-294.62	39°55'45.375"N	104°43'20.714"W	0.00	
3014.00†	21.551	245.464	2958.26	-56.93	-149.74	-328.04	39°55'45.224"N	104°43'21.143"W	0.00	
3114.00†	21.551	245.464	3051.27	-62.73	-164.99	-361.45	39°55'45.073"N	104°43'21.572"W	0.00	
3214.00†	21.551	245.464	3144.28	-68.53	-180.25	-394.87	39°55'44.923"N	104°43'22.001"W	0.00	
3314.00†	21.551	245.464	3237.29	-74.33	-195.50	-428.28	39°55'44.772"N	104°43'22.430"W	0.00	
3414.00†	21.551	245.464	3330.30	-80.13	-210.75	-461.70	39°55'44.621"N	104°43'22.859"W	0.00	
3514.00†	21.551	245.464	3423.30	-85.93	-226.01	-495.12	39°55'44.470"N	104°43'23.287"W	0.00	
3614.00†	21.551	245.464	3516.31	-91.73	-241.26	-528.53	39°55'44.320"N	104°43'23.716"W	0.00	
3714.00†	21.551	245.464	3609.32	-97.53	-256.52	-561.95	39°55'44.169"N	104°43'24.145"W	0.00	
3814.00†	21.551	245.464	3702.33	-103.33	-271.77	-595.36	39°55'44.018"N	104°43'24.574"W	0.00	
3914.00†	21.551	245.464	3795.34	-109.13	-287.02	-628.78	39°55'43.867"N	104°43'25.003"W	0.00	
4014.00†	21.551	245.464	3888.35	-114.93	-302.28	-662.20	39°55'43.717"N	104°43'25.432"W	0.00	
4114.00†	21.551	245.464	3981.36	-120.73	-317.53	-695.61	39°55'43.566"N	104°43'25.861"W	0.00	
4214.00†	21.551	245.464	4074.37	-126.53	-332.78	-729.03	39°55'43.415"N	104°43'26.290"W	0.00	
4314.00†	21.551	245.464	4167.38	-132.33	-348.04	-762.44	39°55'43.264"N	104°43'26.719"W	0.00	
4414.00†	21.551	245.464	4260.39	-138.13	-363.29	-795.86	39°55'43.114"N	104°43'27.148"W	0.00	
4514.00†	21.551	245.464	4353.40	-143.93	-378.55	-829.28	39°55'42.963"N	104°43'27.577"W	0.00	
4614.00†	21.551	245.464	4446.40	-149.73	-393.80	-862.69	39°55'42.812"N	104°43'28.006"W	0.00	
4714.00†	21.551	245.464	4539.41	-155.52	-409.05	-896.11	39°55'42.661"N	104°43'28.435"W	0.00	
4814.00†	21.551	245.464	4632.42	-161.32	-424.31	-929.52	39°55'42.511"N	104°43'28.864"W	0.00	
4914.00†	21.551	245.464	4725.43	-167.12	-439.56	-962.94	39°55'42.360"N	104°43'29.293"W	0.00	
5014.00†	21.551	245.464	4818.44	-172.92	-454.81	-996.36	39°55'42.209"N	104°43'29.721"W	0.00	
5114.00†	21.551	245.464	4911.45	-178.72	-470.07	-1029.77	39°55'42.058"N	104°43'30.150"W	0.00	
5214.00†	21.551	245.464	5004.46	-184.52	-485.32	-1063.19	39°55'41.908"N	104°43'30.579"W	0.00	
5314.00†	21.551	245.464	5097.47	-190.32	-500.57	-1096.60	39°55'41.757"N	104°43'31.008"W	0.00	
5414.00†	21.551	245.464	5190.48	-196.12	-515.83	-1130.02	39°55'41.606"N	104°43'31.437"W	0.00	
5514.00†	21.551	245.464	5283.49	-201.92	-531.08	-1163.44	39°55'41.455"N	104°43'31.866"W	0.00	
5614.00†	21.551	245.464	5376.50	-207.72	-546.34	-1196.85	39°55'41.305"N	104°43'32.295"W	0.00	



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Area	COLORADO	Well	ALMA 1S-66-2524-15NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-15NH PWB
Facility	SEC.25-T01S-R66W		

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5714.00†	21.551	245.464	5469.50	-213.52	-561.59	-1230.27	39°55'41.154"N	104°43'32.724"W	0.00	
5814.00†	21.551	245.464	5562.51	-219.32	-576.84	-1263.69	39°55'41.003"N	104°43'33.153"W	0.00	
5914.00†	21.551	245.464	5655.52	-225.12	-592.10	-1297.10	39°55'40.852"N	104°43'33.582"W	0.00	
6014.00†	21.551	245.464	5748.53	-230.92	-607.35	-1330.52	39°55'40.702"N	104°43'34.011"W	0.00	
6114.00†	21.551	245.464	5841.54	-236.72	-622.60	-1363.93	39°55'40.551"N	104°43'34.440"W	0.00	
6214.00†	21.551	245.464	5934.55	-242.52	-637.86	-1397.35	39°55'40.400"N	104°43'34.869"W	0.00	
6314.00†	21.551	245.464	6027.56	-248.32	-653.11	-1430.77	39°55'40.249"N	104°43'35.298"W	0.00	
6414.00†	21.551	245.464	6120.57	-254.12	-668.36	-1464.18	39°55'40.099"N	104°43'35.726"W	0.00	
6514.00†	21.551	245.464	6213.58	-259.92	-683.62	-1497.60	39°55'39.948"N	104°43'36.155"W	0.00	
6614.00†	21.551	245.464	6306.59	-265.72	-698.87	-1531.01	39°55'39.797"N	104°43'36.584"W	0.00	
6714.00†	21.551	245.464	6399.60	-271.52	-714.13	-1564.43	39°55'39.646"N	104°43'37.013"W	0.00	
6814.00†	21.551	245.464	6492.60	-277.32	-729.38	-1597.85	39°55'39.495"N	104°43'37.442"W	0.00	
6914.00†	21.551	245.464	6585.61	-283.12	-744.63	-1631.26	39°55'39.345"N	104°43'37.871"W	0.00	
7014.00†	21.551	245.464	6678.62	-288.91	-759.89	-1664.68	39°55'39.194"N	104°43'38.300"W	0.00	
7114.00†	21.551	245.464	6771.63	-294.71	-775.14	-1698.09	39°55'39.043"N	104°43'38.729"W	0.00	
7214.00†	21.551	245.464	6864.64	-300.51	-790.39	-1731.51	39°55'38.892"N	104°43'39.158"W	0.00	
7230.12	21.551	245.464	6879.63	-301.45	-792.85	-1736.90	39°55'38.868"N	104°43'39.227"W	0.00	End of Tangent
7314.00†	19.806	268.860	6958.24	-300.37	-799.54	-1765.17	39°55'38.802"N	104°43'39.590"W	10.00	
7414.00†	21.971	296.511	7051.89	-283.63	-791.51	-1798.93	39°55'38.881"N	104°43'40.023"W	10.00	
7514.00†	27.659	316.312	7142.78	-250.59	-766.31	-1831.79	39°55'39.130"N	104°43'40.445"W	10.00	
7614.00†	35.198	329.013	7228.14	-202.25	-724.72	-1862.74	39°55'39.541"N	104°43'40.842"W	10.00	
7714.00†	43.633	337.519	7305.38	-140.08	-667.98	-1890.84	39°55'40.102"N	104°43'41.203"W	10.00	
7814.00†	52.527	343.687	7372.16	-65.97	-597.84	-1915.24	39°55'40.795"N	104°43'41.516"W	10.00	
7914.00†	61.672	348.517	7426.44	17.83	-516.42	-1935.20	39°55'41.600"N	104°43'41.773"W	10.00	
8014.00†	70.960	352.572	7466.58	108.76	-426.19	-1950.11	39°55'42.491"N	104°43'41.964"W	10.00	
8114.00†	80.326	356.192	7491.36	204.08	-329.90	-1959.52	39°55'43.443"N	104°43'42.085"W	10.00	
8214.00†	89.729	359.613	7500.02	300.89	-230.47	-1963.14	39°55'44.426"N	104°43'42.132"W	10.00	
8222.33	90.513	359.896	7500.00†	308.93	-222.13	-1963.17	39°55'44.508"N	104°43'42.132"W	10.00	End of 3D Arc
8314.00†	90.513	359.896	7499.18	397.32	-130.47	-1963.34	39°55'45.414"N	104°43'42.134"W	0.00	
8414.00†	90.513	359.896	7498.28	493.75	-30.48	-1963.52	39°55'46.402"N	104°43'42.137"W	0.00	



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8514.00†	90.513	359.896	7497.39	590.18	69.52	-1963.71	39°55'47.390"N	104°43'42.139"W	0.00	
8614.00†	90.513	359.896	7496.49	686.61	169.52	-1963.89	39°55'48.378"N	104°43'42.142"W	0.00	
8714.00†	90.513	359.896	7495.60	783.04	269.51	-1964.07	39°55'49.367"N	104°43'42.144"W	0.00	
8814.00†	90.513	359.896	7494.70	879.47	369.51	-1964.25	39°55'50.355"N	104°43'42.146"W	0.00	
8914.00†	90.513	359.896	7493.81	975.90	469.50	-1964.43	39°55'51.343"N	104°43'42.149"W	0.00	
9014.00†	90.513	359.896	7492.91	1072.33	569.50	-1964.62	39°55'52.331"N	104°43'42.151"W	0.00	
9114.00†	90.513	359.896	7492.02	1168.76	669.50	-1964.80	39°55'53.319"N	104°43'42.154"W	0.00	
9214.00†	90.513	359.896	7491.12	1265.19	769.49	-1964.98	39°55'54.308"N	104°43'42.156"W	0.00	
9314.00†	90.513	359.896	7490.23	1361.62	869.49	-1965.16	39°55'55.296"N	104°43'42.159"W	0.00	
9414.00†	90.513	359.896	7489.33	1458.05	969.48	-1965.35	39°55'56.284"N	104°43'42.161"W	0.00	
9514.00†	90.513	359.896	7488.44	1554.48	1069.48	-1965.53	39°55'57.272"N	104°43'42.164"W	0.00	
9614.00†	90.513	359.896	7487.54	1650.91	1169.47	-1965.71	39°55'58.260"N	104°43'42.166"W	0.00	
9714.00†	90.513	359.896	7486.65	1747.34	1269.47	-1965.89	39°55'59.249"N	104°43'42.168"W	0.00	
9814.00†	90.513	359.896	7485.75	1843.77	1369.47	-1966.07	39°56'00.237"N	104°43'42.171"W	0.00	
9914.00†	90.513	359.896	7484.86	1940.20	1469.46	-1966.26	39°56'01.225"N	104°43'42.173"W	0.00	
10014.00†	90.513	359.896	7483.96	2036.63	1569.46	-1966.44	39°56'02.213"N	104°43'42.176"W	0.00	
10114.00†	90.513	359.896	7483.07	2133.06	1669.45	-1966.62	39°56'03.202"N	104°43'42.178"W	0.00	
10214.00†	90.513	359.896	7482.17	2229.49	1769.45	-1966.80	39°56'04.190"N	104°43'42.181"W	0.00	
10314.00†	90.513	359.896	7481.28	2325.92	1869.45	-1966.99	39°56'05.178"N	104°43'42.183"W	0.00	
10414.00†	90.513	359.896	7480.38	2422.35	1969.44	-1967.17	39°56'06.166"N	104°43'42.185"W	0.00	
10514.00†	90.513	359.896	7479.49	2518.79	2069.44	-1967.35	39°56'07.154"N	104°43'42.188"W	0.00	
10614.00†	90.513	359.896	7478.59	2615.22	2169.43	-1967.53	39°56'08.143"N	104°43'42.190"W	0.00	
10714.00†	90.513	359.896	7477.70	2711.65	2269.43	-1967.71	39°56'09.131"N	104°43'42.193"W	0.00	
10814.00†	90.513	359.896	7476.80	2808.08	2369.42	-1967.90	39°56'10.119"N	104°43'42.195"W	0.00	
10914.00†	90.513	359.896	7475.91	2904.51	2469.42	-1968.08	39°56'11.107"N	104°43'42.198"W	0.00	
11014.00†	90.513	359.896	7475.01	3000.94	2569.42	-1968.26	39°56'12.095"N	104°43'42.200"W	0.00	
11114.00†	90.513	359.896	7474.12	3097.37	2669.41	-1968.44	39°56'13.084"N	104°43'42.203"W	0.00	
11214.00†	90.513	359.896	7473.22	3193.80	2769.41	-1968.63	39°56'14.072"N	104°43'42.205"W	0.00	
11314.00†	90.513	359.896	7472.33	3290.23	2869.40	-1968.81	39°56'15.060"N	104°43'42.207"W	0.00	
11414.00†	90.513	359.896	7471.43	3386.66	2969.40	-1968.99	39°56'16.048"N	104°43'42.210"W	0.00	





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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#15 ALMA 1S-66-2524-15NH (287'FSL & 1904'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-15NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-15NH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (162 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11514.00†	90.513	359.896	7470.54	3483.09	3069.39	-1969.17	39°56'17.036"N	104°43'42.212"W	0.00	
11614.00†	90.513	359.896	7469.64	3579.52	3169.39	-1969.35	39°56'18.025"N	104°43'42.215"W	0.00	
11714.00†	90.513	359.896	7468.75	3675.95	3269.39	-1969.54	39°56'19.013"N	104°43'42.217"W	0.00	
11814.00†	90.513	359.896	7467.85	3772.38	3369.38	-1969.72	39°56'20.001"N	104°43'42.220"W	0.00	
11914.00†	90.513	359.896	7466.96	3868.81	3469.38	-1969.90	39°56'20.989"N	104°43'42.222"W	0.00	
12014.00†	90.513	359.896	7466.06	3965.24	3569.37	-1970.08	39°56'21.977"N	104°43'42.225"W	0.00	
12114.00†	90.513	359.896	7465.17	4061.67	3669.37	-1970.27	39°56'22.966"N	104°43'42.227"W	0.00	
12214.00†	90.513	359.896	7464.27	4158.10	3769.37	-1970.45	39°56'23.954"N	104°43'42.229"W	0.00	
12314.00†	90.513	359.896	7463.38	4254.53	3869.36	-1970.63	39°56'24.942"N	104°43'42.232"W	0.00	
12414.00†	90.513	359.896	7462.48	4350.96	3969.36	-1970.81	39°56'25.930"N	104°43'42.234"W	0.00	
12514.00†	90.513	359.896	7461.58	4447.39	4069.35	-1970.99	39°56'26.918"N	104°43'42.237"W	0.00	
12614.00†	90.513	359.896	7460.69	4543.82	4169.35	-1971.18	39°56'27.907"N	104°43'42.239"W	0.00	
12714.00†	90.513	359.896	7459.79	4640.25	4269.34	-1971.36	39°56'28.895"N	104°43'42.242"W	0.00	
12814.00†	90.513	359.896	7458.90	4736.68	4369.34	-1971.54	39°56'29.883"N	104°43'42.244"W	0.00	
12914.00†	90.513	359.896	7458.00	4833.11	4469.34	-1971.72	39°56'30.871"N	104°43'42.247"W	0.00	
13014.00†	90.513	359.896	7457.11	4929.54	4569.33	-1971.91	39°56'31.859"N	104°43'42.249"W	0.00	
13114.00†	90.513	359.896	7456.21	5025.97	4669.33	-1972.09	39°56'32.848"N	104°43'42.251"W	0.00	
13214.00†	90.513	359.896	7455.32	5122.40	4769.32	-1972.27	39°56'33.836"N	104°43'42.254"W	0.00	
13314.00†	90.513	359.896	7454.42	5218.83	4869.32	-1972.45	39°56'34.824"N	104°43'42.256"W	0.00	
13414.00†	90.513	359.896	7453.53	5315.26	4969.32	-1972.63	39°56'35.812"N	104°43'42.259"W	0.00	
13514.00†	90.513	359.896	7452.63	5411.69	5069.31	-1972.82	39°56'36.800"N	104°43'42.261"W	0.00	
13614.00†	90.513	359.896	7451.74	5508.12	5169.31	-1973.00	39°56'37.789"N	104°43'42.264"W	0.00	
13714.00†	90.513	359.896	7450.84	5604.55	5269.30	-1973.18	39°56'38.777"N	104°43'42.266"W	0.00	
13814.00†	90.513	359.896	7449.95	5700.98	5369.30	-1973.36	39°56'39.765"N	104°43'42.268"W	0.00	
13914.00†	90.513	359.896	7449.05	5797.41	5469.29	-1973.55	39°56'40.753"N	104°43'42.271"W	0.00	
14014.00†	90.513	359.896	7448.16	5893.84	5569.29	-1973.73	39°56'41.741"N	104°43'42.273"W	0.00	
14114.00†	90.513	359.896	7447.26	5990.27	5669.29	-1973.91	39°56'42.730"N	104°43'42.276"W	0.00	
14214.00†	90.513	359.896	7446.37	6086.70	5769.28	-1974.09	39°56'43.718"N	104°43'42.278"W	0.00	
14314.00†	90.513	359.896	7445.47	6183.13	5869.28	-1974.27	39°56'44.706"N	104°43'42.281"W	0.00	
14414.00†	90.513	359.896	7444.58	6279.56	5969.27	-1974.46	39°56'45.694"N	104°43'42.283"W	0.00	



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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#15 ALMA 1S-66-2524-15NH (287'FSL & 1904'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-15NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-15NH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (162 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14514.00†	90.513	359.896	7443.68	6375.99	6069.27	-1974.64	39°56'46.682"N	104°43'42.286"W	0.00	
14614.00†	90.513	359.896	7442.79	6472.42	6169.27	-1974.82	39°56'47.671"N	104°43'42.288"W	0.00	
14714.00†	90.513	359.896	7441.89	6568.85	6269.26	-1975.00	39°56'48.659"N	104°43'42.290"W	0.00	
14814.00†	90.513	359.896	7441.00	6665.28	6369.26	-1975.19	39°56'49.647"N	104°43'42.293"W	0.00	
14914.00†	90.513	359.896	7440.10	6761.71	6469.25	-1975.37	39°56'50.635"N	104°43'42.295"W	0.00	
15014.00†	90.513	359.896	7439.21	6858.14	6569.25	-1975.55	39°56'51.623"N	104°43'42.298"W	0.00	
15114.00†	90.513	359.896	7438.31	6954.57	6669.24	-1975.73	39°56'52.612"N	104°43'42.300"W	0.00	
15214.00†	90.513	359.896	7437.42	7051.00	6769.24	-1975.91	39°56'53.600"N	104°43'42.303"W	0.00	
15314.00†	90.513	359.896	7436.52	7147.43	6869.24	-1976.10	39°56'54.588"N	104°43'42.305"W	0.00	
15414.00†	90.513	359.896	7435.63	7243.86	6969.23	-1976.28	39°56'55.576"N	104°43'42.308"W	0.00	
15514.00†	90.513	359.896	7434.73	7340.29	7069.23	-1976.46	39°56'56.564"N	104°43'42.310"W	0.00	
15595.72	90.513	359.896	7434.00 <sup>2</sup>	7419.10	7150.95	-1976.61	39°56'57.372"N	104°43'42.312"W	0.00	End of Tangent





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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#15 ALMA 1S-66-2524-15NH (287'FSL & 1904'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-15NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-15NH PWB
Facility	SEC.25-T01S-R66W		

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.24-T1S-R66W		-1.00	47.36	58.89	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.24-T1S-R66W SOUTH 1/2 SECTION		-1.00	47.36	58.89	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.25-T1S-R66W		-1.00	47.36	58.89	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
2) ALMA 1S-66-2524-15NH BHL ON PLAT (2160'FSL & 1400'FWL, SEC.24)	15595.72	7434.00	7150.95	-1976.61	3216318.97	1225308.39	39°56'57.372"N	104°43'42.312"W	point
1) ALMA 1S-66-2524-15NH ENTRY POINT	8222.33	7500.00	-222.13	-1963.17	3216397.15	1217935.92	39°55'44.508"N	104°43'42.132"W	point
SEC.24/25-T1S-R66W HARDLINES (460'FNL 1/2 SEC.24)		7799.00	47.36	58.89	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon

## SURVEY PROGRAM -

Ref Wellbore: ALMA 1S-66-2524-15NH PWB Ref Wellpath: ALMA 1S-66-2524-15NH PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
14.00	15595.72	Custom BHI AutoTrak Curve (Axial Corr, Short spacing) (Rockies 0.03Gt model)		ALMA 1S- 66-2524- 15NH PWB



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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#15 ALMA 1S-66-2524-15NH (287'FSL & 1904'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-15NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-15NH PWB
Facility	SEC.25-T01S-R66W		

## DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
14.00	0.000	245.464	14.00	Tie On
1500.00	0.000	245.464	1500.00	End of Tangent
2577.55	21.551	245.464	2552.32	End of Build
7230.12	21.551	245.464	6879.63	End of Tangent
8222.33	90.513	359.896	7500.00	End of 3D Arc
15595.72	90.513	359.896	7434.00	End of Tangent