

HRM RESOURCES

Location: COLORADO Slot: SLOT#19 ALMA 1S-66-2524-19NH (287°FSL & 1964°FEL, SEC.25)
 Field: ADAMS COUNTY Well: ALMA 1S-66-2524-19NH
 Facility: SEC-25-T01S-R66W Wellbore: ALMA 1S-66-2524-19NH PWB

Plot reference wellpath is ALMA 1S-66-2524-19NH PWP (REV-A.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (RKB)	* - Wellpath was transformed from a different geodetic datum
Measured depths are referenced to RIG (RKB)	North Reference: True north
RIG (RKB) to Mean Sea Level: 5189 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#19 ALMA 1S-66-2524-19NH (287°FSL & 1964°FEL, SEC.25): 2 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: inggrimm on 2016-10-17
	Database: WA_DEN_Downer_Defn

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC-25-T01S-R66W	3218416.711	1218223.151	39°55'47.172"N	104°43'16.176"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
SLOT#19 ALMA 1S-66-2524-19NH (287°FSL & 1964°FEL, SEC.25)	-47.36	-120.59	3218369.341	1218174.736
RIG (RKB) to Mud line (At Slot: SLOT#19 ALMA 1S-66-2524-19NH (287°FSL & 1964°FEL, SEC.25)				5191ft
Mean Sea Level to Mud line (At Slot: SLOT#19 ALMA 1S-66-2524-19NH (287°FSL & 1964°FEL, SEC.25)				2ft
RIG (RKB) to Mean Sea Level				5189ft

Well Profile Data

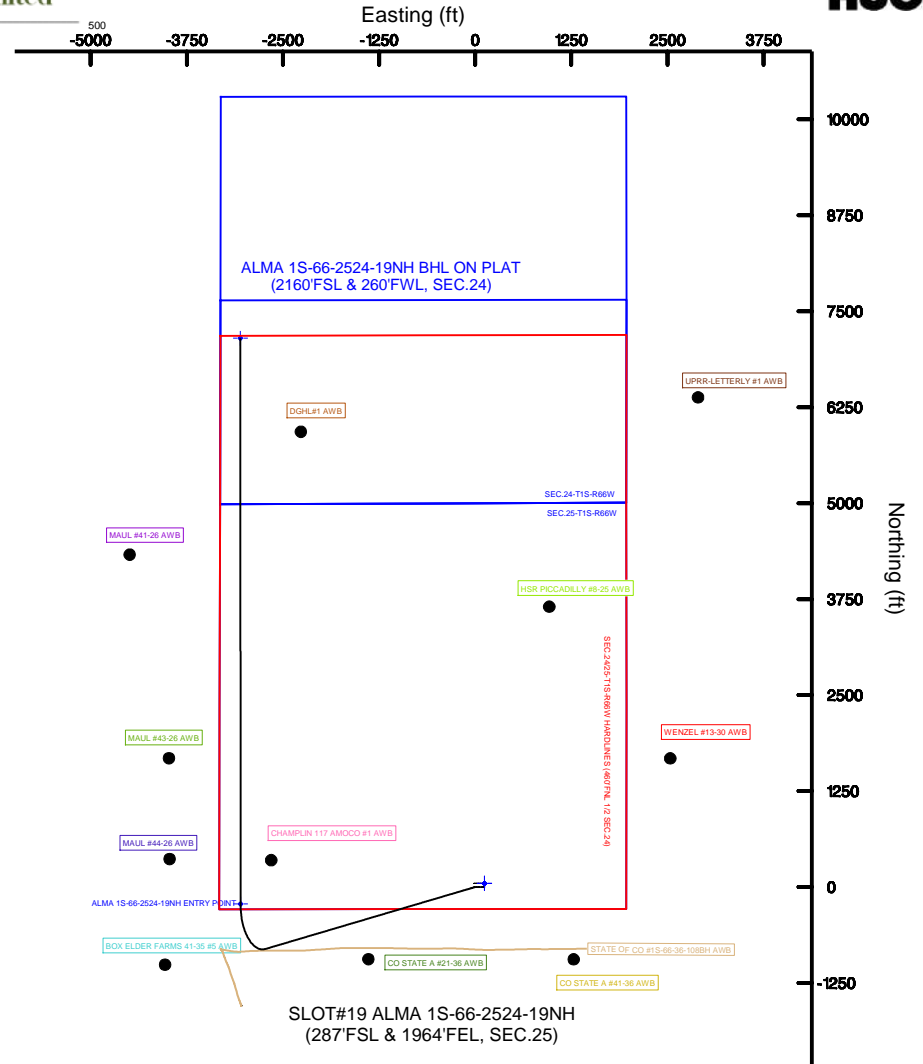
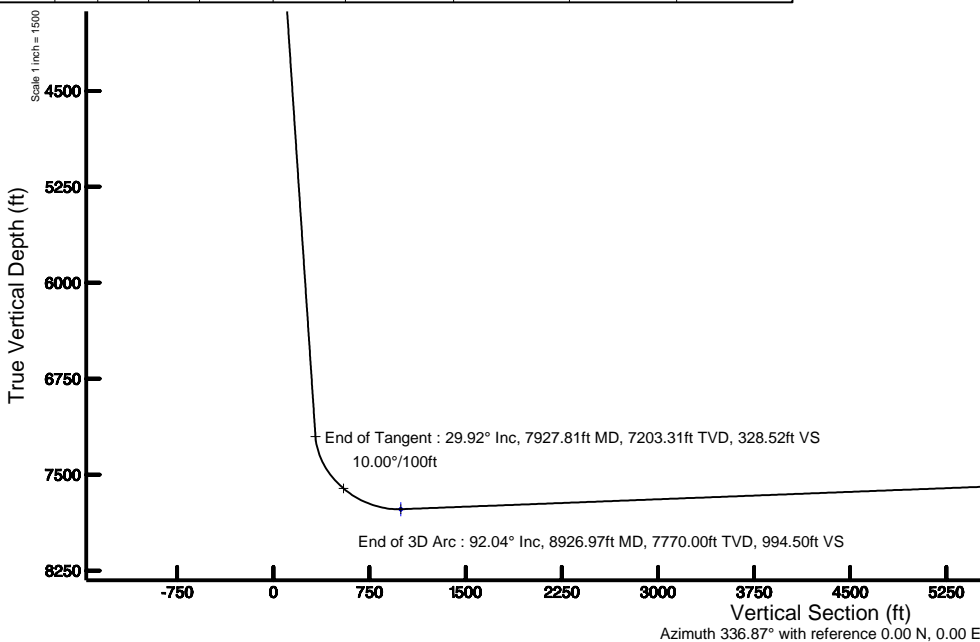
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	14.00	0.000	253.507	14.00	0.00	0.00	0.00	0.00
End of Tangent	1500.00	0.000	253.507	1500.00	0.00	0.00	0.00	0.00
End of Build	2996.15	29.923	253.507	2929.06	-108.42	-366.17	2.00	44.14
End of Tangent	7927.81	29.923	253.507	7203.31	-806.84	-2725.04	0.00	328.52
End of 3D Arc	8926.97	92.036	359.985	7770.00	-222.03	-3051.33	10.00	994.50
End of Tangent	16301.06	92.036	359.985	7508.00	7147.41	-3053.23	0.00	7772.24

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC-24-T1S-R66W	-6.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	
SEC-24-T1S-R66W SOUTH 1/2 SECTION	-6.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	
SEC-25-T1S-R66W	-6.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	
ALMA 1S-66-2524-19NH BHL ON PLAT (2160°FSL & 260°FWL, SEC.24)	16301.06	7508.00	7147.41	-3053.23	3215180.78	1225294.86	39°56'57.336"N	104°43'56.928"W
ALMA 1S-66-2524-19NH ENTRY POINT	8926.97	7770.00	-222.03	-3051.33	3215047.36	1217925.84	39°56'44.508"N	104°43'56.892"W
SEC-24/25-T1S-R66W PARALLELS (460°FN, 1/2 SEC.24)	7794.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	

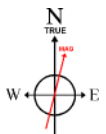
Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
16301.06	92.036	359.985	7508.00	7147.41	-3053.23	3215180.78	1225294.86	39°56'57.336"N	104°43'56.928"W



End of Tangent : 92.04° Inc, 16301.06ft MD, 7508.00ft TVD, 7772.24ft VS

ALMA 1S-66-2524-19NH BHL ON PLAT (2160°FSL & 260°FWL, SEC.24)



BGGM (1900.0 to 2018.0) Dip: 66.55° Field: 52266.2 nT
 Magnetic North is 8.40 degrees East of True North (at 10/7/2016)

To correct azimuth from Magnetic to True add 8.40 degrees

Scale 1 inch = 1500



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Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 1 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH 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 9:22:08 AM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/ALMA_1S-66-2524-19NH_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	-120.59	3218296.54	1218174.74	39°55'46.704"N	104°43'17.724"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	5189.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	5189.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25))	5191.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	336.87°



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Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 2 of 9



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Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (169 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	253.507	0.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
14.00	0.000	253.507	14.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	Tie On
114.00†	0.000	253.507	114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
214.00†	0.000	253.507	214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
314.00†	0.000	253.507	314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
414.00†	0.000	253.507	414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
514.00†	0.000	253.507	514.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
614.00†	0.000	253.507	614.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
714.00†	0.000	253.507	714.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
814.00†	0.000	253.507	814.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
914.00†	0.000	253.507	914.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
1014.00†	0.000	253.507	1014.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
1114.00†	0.000	253.507	1114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
1214.00†	0.000	253.507	1214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
1314.00†	0.000	253.507	1314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
1414.00†	0.000	253.507	1414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	
1500.00	0.000	253.507	1500.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.724"W	0.00	End of Tangent
1514.00†	0.280	253.507	1514.00	0.00	-0.01	-0.03	39°55'46.704"N	104°43'17.724"W	2.00	
1614.00†	2.280	253.507	1613.97	0.26	-0.64	-2.17	39°55'46.698"N	104°43'17.752"W	2.00	
1714.00†	4.280	253.507	1713.80	0.92	-2.27	-7.66	39°55'46.682"N	104°43'17.822"W	2.00	
1814.00†	6.280	253.507	1813.37	1.99	-4.88	-16.48	39°55'46.656"N	104°43'17.936"W	2.00	
1914.00†	8.280	253.507	1912.56	3.45	-8.48	-28.63	39°55'46.620"N	104°43'18.092"W	2.00	
2014.00†	10.280	253.507	2011.25	5.32	-13.06	-44.10	39°55'46.575"N	104°43'18.290"W	2.00	
2114.00†	12.280	253.507	2109.31	7.58	-18.61	-62.85	39°55'46.520"N	104°43'18.531"W	2.00	
2214.00†	14.280	253.507	2206.63	10.23	-25.13	-84.87	39°55'46.456"N	104°43'18.813"W	2.00	
2314.00†	16.280	253.507	2303.09	13.28	-32.61	-110.14	39°55'46.382"N	104°43'19.138"W	2.00	
2414.00†	18.280	253.507	2398.57	16.71	-41.04	-138.62	39°55'46.298"N	104°43'19.503"W	2.00	
2514.00†	20.280	253.507	2492.96	20.53	-50.42	-170.28	39°55'46.206"N	104°43'19.910"W	2.00	
2614.00†	22.280	253.507	2586.14	24.72	-60.72	-205.08	39°55'46.104"N	104°43'20.356"W	2.00	
2714.00†	24.280	253.507	2677.99	29.29	-71.94	-242.97	39°55'45.993"N	104°43'20.843"W	2.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 3 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (169 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2814.00†	26.280	253.507	2768.41	34.23	-84.06	-283.92	39°55'45.873"N	104°43'21.368"W	2.00	
2914.00†	28.280	253.507	2857.28	39.53	-97.08	-327.86	39°55'45.745"N	104°43'21.933"W	2.00	
2996.15	29.923	253.507	2929.06	44.14	-108.42	-366.17	39°55'45.633"N	104°43'22.424"W	2.00	End of Build
3014.00†	29.923	253.507	2944.53	45.17	-110.95	-374.71	39°55'45.608"N	104°43'22.534"W	0.00	
3114.00†	29.923	253.507	3031.20	50.94	-125.11	-422.54	39°55'45.468"N	104°43'23.148"W	0.00	
3214.00†	29.923	253.507	3117.87	56.71	-139.27	-470.37	39°55'45.328"N	104°43'23.762"W	0.00	
3314.00†	29.923	253.507	3204.54	62.47	-153.43	-518.20	39°55'45.188"N	104°43'24.376"W	0.00	
3414.00†	29.923	253.507	3291.21	68.24	-167.59	-566.04	39°55'45.048"N	104°43'24.990"W	0.00	
3514.00†	29.923	253.507	3377.88	74.01	-181.76	-613.87	39°55'44.908"N	104°43'25.604"W	0.00	
3614.00†	29.923	253.507	3464.55	79.77	-195.92	-661.70	39°55'44.768"N	104°43'26.218"W	0.00	
3714.00†	29.923	253.507	3551.22	85.54	-210.08	-709.53	39°55'44.628"N	104°43'26.832"W	0.00	
3814.00†	29.923	253.507	3637.89	91.30	-224.24	-757.36	39°55'44.488"N	104°43'27.446"W	0.00	
3914.00†	29.923	253.507	3724.56	97.07	-238.40	-805.19	39°55'44.348"N	104°43'28.060"W	0.00	
4014.00†	29.923	253.507	3811.23	102.84	-252.57	-853.02	39°55'44.208"N	104°43'28.674"W	0.00	
4114.00†	29.923	253.507	3897.89	108.60	-266.73	-900.85	39°55'44.068"N	104°43'29.288"W	0.00	
4214.00†	29.923	253.507	3984.56	114.37	-280.89	-948.68	39°55'43.928"N	104°43'29.902"W	0.00	
4314.00†	29.923	253.507	4071.23	120.14	-295.05	-996.52	39°55'43.788"N	104°43'30.516"W	0.00	
4414.00†	29.923	253.507	4157.90	125.90	-309.22	-1044.35	39°55'43.648"N	104°43'31.130"W	0.00	
4514.00†	29.923	253.507	4244.57	131.67	-323.38	-1092.18	39°55'43.508"N	104°43'31.744"W	0.00	
4614.00†	29.923	253.507	4331.24	137.44	-337.54	-1140.01	39°55'43.368"N	104°43'32.357"W	0.00	
4714.00†	29.923	253.507	4417.91	143.20	-351.70	-1187.84	39°55'43.228"N	104°43'32.971"W	0.00	
4814.00†	29.923	253.507	4504.58	148.97	-365.86	-1235.67	39°55'43.088"N	104°43'33.585"W	0.00	
4914.00†	29.923	253.507	4591.25	154.73	-380.03	-1283.50	39°55'42.948"N	104°43'34.199"W	0.00	
5014.00†	29.923	253.507	4677.92	160.50	-394.19	-1331.33	39°55'42.808"N	104°43'34.813"W	0.00	
5114.00†	29.923	253.507	4764.59	166.27	-408.35	-1379.16	39°55'42.668"N	104°43'35.427"W	0.00	
5214.00†	29.923	253.507	4851.26	172.03	-422.51	-1427.00	39°55'42.528"N	104°43'36.041"W	0.00	
5314.00†	29.923	253.507	4937.93	177.80	-436.67	-1474.83	39°55'42.388"N	104°43'36.655"W	0.00	
5414.00†	29.923	253.507	5024.60	183.57	-450.84	-1522.66	39°55'42.248"N	104°43'37.269"W	0.00	
5514.00†	29.923	253.507	5111.27	189.33	-465.00	-1570.49	39°55'42.108"N	104°43'37.883"W	0.00	
5614.00†	29.923	253.507	5197.94	195.10	-479.16	-1618.32	39°55'41.968"N	104°43'38.497"W	0.00	



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Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 4 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH 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†	29.923	253.507	5284.61	200.86	-493.32	-1666.15	39°55'41.828"N	104°43'39.111"W	0.00	
5814.00†	29.923	253.507	5371.28	206.63	-507.48	-1713.98	39°55'41.688"N	104°43'39.725"W	0.00	
5914.00†	29.923	253.507	5457.95	212.40	-521.65	-1761.81	39°55'41.548"N	104°43'40.339"W	0.00	
6014.00†	29.923	253.507	5544.62	218.16	-535.81	-1809.65	39°55'41.408"N	104°43'40.953"W	0.00	
6114.00†	29.923	253.507	5631.29	223.93	-549.97	-1857.48	39°55'41.268"N	104°43'41.567"W	0.00	
6214.00†	29.923	253.507	5717.96	229.70	-564.13	-1905.31	39°55'41.128"N	104°43'42.181"W	0.00	
6314.00†	29.923	253.507	5804.63	235.46	-578.29	-1953.14	39°55'40.988"N	104°43'42.795"W	0.00	
6414.00†	29.923	253.507	5891.30	241.23	-592.46	-2000.97	39°55'40.848"N	104°43'43.409"W	0.00	
6514.00†	29.923	253.507	5977.96	247.00	-606.62	-2048.80	39°55'40.708"N	104°43'44.023"W	0.00	
6614.00†	29.923	253.507	6064.63	252.76	-620.78	-2096.63	39°55'40.568"N	104°43'44.637"W	0.00	
6714.00†	29.923	253.507	6151.30	258.53	-634.94	-2144.46	39°55'40.428"N	104°43'45.251"W	0.00	
6814.00†	29.923	253.507	6237.97	264.29	-649.11	-2192.29	39°55'40.288"N	104°43'45.865"W	0.00	
6914.00†	29.923	253.507	6324.64	270.06	-663.27	-2240.13	39°55'40.148"N	104°43'46.479"W	0.00	
7014.00†	29.923	253.507	6411.31	275.83	-677.43	-2287.96	39°55'40.008"N	104°43'47.092"W	0.00	
7114.00†	29.923	253.507	6497.98	281.59	-691.59	-2335.79	39°55'39.868"N	104°43'47.706"W	0.00	
7214.00†	29.923	253.507	6584.65	287.36	-705.75	-2383.62	39°55'39.728"N	104°43'48.320"W	0.00	
7314.00†	29.923	253.507	6671.32	293.13	-719.92	-2431.45	39°55'39.588"N	104°43'48.934"W	0.00	
7414.00†	29.923	253.507	6757.99	298.89	-734.08	-2479.28	39°55'39.448"N	104°43'49.548"W	0.00	
7514.00†	29.923	253.507	6844.66	304.66	-748.24	-2527.11	39°55'39.308"N	104°43'50.162"W	0.00	
7614.00†	29.923	253.507	6931.33	310.43	-762.40	-2574.94	39°55'39.168"N	104°43'50.776"W	0.00	
7714.00†	29.923	253.507	7018.00	316.19	-776.56	-2622.78	39°55'39.028"N	104°43'51.390"W	0.00	
7814.00†	29.923	253.507	7104.67	321.96	-790.73	-2670.61	39°55'38.888"N	104°43'52.004"W	0.00	
7914.00†	29.923	253.507	7191.34	327.72	-804.89	-2718.44	39°55'38.748"N	104°43'52.618"W	0.00	
7927.81	29.923	253.507	7203.31	328.52	-806.84	-2725.04	39°55'38.729"N	104°43'52.703"W	0.00	End of Tangent
8014.00†	29.049	270.981	7278.47	339.57	-812.60	-2766.66	39°55'38.672"N	104°43'53.237"W	10.00	
8114.00†	30.886	290.742	7365.31	367.35	-803.07	-2815.06	39°55'38.766"N	104°43'53.858"W	10.00	
8214.00†	35.304	307.245	7449.24	410.37	-776.42	-2862.18	39°55'39.029"N	104°43'54.463"W	10.00	
8314.00†	41.478	319.964	7527.71	467.32	-733.47	-2906.60	39°55'39.454"N	104°43'55.033"W	10.00	
8414.00†	48.734	329.709	7598.32	536.47	-675.52	-2946.96	39°55'40.027"N	104°43'55.552"W	10.00	
8514.00†	56.642	337.423	7658.95	615.72	-604.32	-2982.04	39°55'40.730"N	104°43'56.002"W	10.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 5 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (169 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8614.00†	64.947	343.817	7707.74	702.67	-522.05	-3010.77	39°55'41.543"N	104°43'56.371"W	10.00	
8714.00†	73.489	349.385	7743.21	794.66	-431.20	-3032.28	39°55'42.441"N	104°43'56.647"W	10.00	
8814.00†	82.167	354.475	7764.29	888.91	-334.53	-3045.91	39°55'43.396"N	104°43'56.822"W	10.00	
8914.00†	90.903	359.356	7770.33	982.56	-234.99	-3051.26	39°55'44.380"N	104°43'56.891"W	10.00	
8926.97	92.036	359.985	7770.00 [†]	994.50	-222.03	-3051.33	39°55'44.508"N	104°43'56.892"W	10.00	End of 3D Arc
9014.00†	92.036	359.985	7766.91	1074.50	-135.05	-3051.36	39°55'45.368"N	104°43'56.892"W	0.00	
9114.00†	92.036	359.985	7763.35	1166.41	-35.11	-3051.38	39°55'46.355"N	104°43'56.893"W	0.00	
9214.00†	92.036	359.985	7759.80	1258.33	64.83	-3051.41	39°55'47.343"N	104°43'56.893"W	0.00	
9314.00†	92.036	359.985	7756.25	1350.24	164.77	-3051.43	39°55'48.330"N	104°43'56.894"W	0.00	
9414.00†	92.036	359.985	7752.70	1442.15	264.70	-3051.46	39°55'49.318"N	104°43'56.894"W	0.00	
9514.00†	92.036	359.985	7749.14	1534.06	364.64	-3051.48	39°55'50.306"N	104°43'56.895"W	0.00	
9614.00†	92.036	359.985	7745.59	1625.98	464.58	-3051.51	39°55'51.293"N	104°43'56.895"W	0.00	
9714.00†	92.036	359.985	7742.04	1717.89	564.51	-3051.54	39°55'52.281"N	104°43'56.896"W	0.00	
9814.00†	92.036	359.985	7738.48	1809.80	664.45	-3051.56	39°55'53.269"N	104°43'56.896"W	0.00	
9914.00†	92.036	359.985	7734.93	1901.72	764.39	-3051.59	39°55'54.256"N	104°43'56.897"W	0.00	
10014.00†	92.036	359.985	7731.38	1993.63	864.32	-3051.61	39°55'55.244"N	104°43'56.897"W	0.00	
10114.00†	92.036	359.985	7727.82	2085.54	964.26	-3051.64	39°55'56.231"N	104°43'56.898"W	0.00	
10214.00†	92.036	359.985	7724.27	2177.45	1064.20	-3051.66	39°55'57.219"N	104°43'56.898"W	0.00	
10314.00†	92.036	359.985	7720.72	2269.37	1164.13	-3051.69	39°55'58.207"N	104°43'56.899"W	0.00	
10414.00†	92.036	359.985	7717.17	2361.28	1264.07	-3051.72	39°55'59.194"N	104°43'56.899"W	0.00	
10514.00†	92.036	359.985	7713.61	2453.19	1364.01	-3051.74	39°56'00.182"N	104°43'56.900"W	0.00	
10614.00†	92.036	359.985	7710.06	2545.10	1463.94	-3051.77	39°56'01.169"N	104°43'56.900"W	0.00	
10714.00†	92.036	359.985	7706.51	2637.02	1563.88	-3051.79	39°56'02.157"N	104°43'56.901"W	0.00	
10814.00†	92.036	359.985	7702.95	2728.93	1663.82	-3051.82	39°56'03.145"N	104°43'56.901"W	0.00	
10914.00†	92.036	359.985	7699.40	2820.84	1763.75	-3051.85	39°56'04.132"N	104°43'56.902"W	0.00	
11014.00†	92.036	359.985	7695.85	2912.76	1863.69	-3051.87	39°56'05.120"N	104°43'56.902"W	0.00	
11114.00†	92.036	359.985	7692.30	3004.67	1963.63	-3051.90	39°56'06.108"N	104°43'56.903"W	0.00	
11214.00†	92.036	359.985	7688.74	3096.58	2063.57	-3051.92	39°56'07.095"N	104°43'56.903"W	0.00	
11314.00†	92.036	359.985	7685.19	3188.49	2163.50	-3051.95	39°56'08.083"N	104°43'56.904"W	0.00	
11414.00†	92.036	359.985	7681.64	3280.41	2263.44	-3051.97	39°56'09.070"N	104°43'56.904"W	0.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 6 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (169 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11514.00†	92.036	359.985	7678.08	3372.32	2363.38	-3052.00	39°56'10.058"N	104°43'56.905"W	0.00	
11614.00†	92.036	359.985	7674.53	3464.23	2463.31	-3052.03	39°56'11.046"N	104°43'56.905"W	0.00	
11714.00†	92.036	359.985	7670.98	3556.15	2563.25	-3052.05	39°56'12.033"N	104°43'56.906"W	0.00	
11814.00†	92.036	359.985	7667.42	3648.06	2663.19	-3052.08	39°56'13.021"N	104°43'56.906"W	0.00	
11914.00†	92.036	359.985	7663.87	3739.97	2763.12	-3052.10	39°56'14.009"N	104°43'56.907"W	0.00	
12014.00†	92.036	359.985	7660.32	3831.88	2863.06	-3052.13	39°56'14.996"N	104°43'56.907"W	0.00	
12114.00†	92.036	359.985	7656.77	3923.80	2963.00	-3052.15	39°56'15.984"N	104°43'56.908"W	0.00	
12214.00†	92.036	359.985	7653.21	4015.71	3062.93	-3052.18	39°56'16.971"N	104°43'56.908"W	0.00	
12314.00†	92.036	359.985	7649.66	4107.62	3162.87	-3052.21	39°56'17.959"N	104°43'56.909"W	0.00	
12414.00†	92.036	359.985	7646.11	4199.54	3262.81	-3052.23	39°56'18.947"N	104°43'56.909"W	0.00	
12514.00†	92.036	359.985	7642.55	4291.45	3362.74	-3052.26	39°56'19.934"N	104°43'56.910"W	0.00	
12614.00†	92.036	359.985	7639.00	4383.36	3462.68	-3052.28	39°56'20.922"N	104°43'56.910"W	0.00	
12714.00†	92.036	359.985	7635.45	4475.27	3562.62	-3052.31	39°56'21.910"N	104°43'56.910"W	0.00	
12814.00†	92.036	359.985	7631.89	4567.19	3662.56	-3052.33	39°56'22.897"N	104°43'56.911"W	0.00	
12914.00†	92.036	359.985	7628.34	4659.10	3762.49	-3052.36	39°56'23.885"N	104°43'56.911"W	0.00	
13014.00†	92.036	359.985	7624.79	4751.01	3862.43	-3052.39	39°56'24.872"N	104°43'56.912"W	0.00	
13114.00†	92.036	359.985	7621.24	4842.93	3962.37	-3052.41	39°56'25.860"N	104°43'56.912"W	0.00	
13214.00†	92.036	359.985	7617.68	4934.84	4062.30	-3052.44	39°56'26.848"N	104°43'56.913"W	0.00	
13314.00†	92.036	359.985	7614.13	5026.75	4162.24	-3052.46	39°56'27.835"N	104°43'56.913"W	0.00	
13414.00†	92.036	359.985	7610.58	5118.66	4262.18	-3052.49	39°56'28.823"N	104°43'56.914"W	0.00	
13514.00†	92.036	359.985	7607.02	5210.58	4362.11	-3052.51	39°56'29.810"N	104°43'56.914"W	0.00	
13614.00†	92.036	359.985	7603.47	5302.49	4462.05	-3052.54	39°56'30.798"N	104°43'56.915"W	0.00	
13714.00†	92.036	359.985	7599.92	5394.40	4561.99	-3052.57	39°56'31.786"N	104°43'56.915"W	0.00	
13814.00†	92.036	359.985	7596.36	5486.32	4661.92	-3052.59	39°56'32.773"N	104°43'56.916"W	0.00	
13914.00†	92.036	359.985	7592.81	5578.23	4761.86	-3052.62	39°56'33.761"N	104°43'56.916"W	0.00	
14014.00†	92.036	359.985	7589.26	5670.14	4861.80	-3052.64	39°56'34.749"N	104°43'56.917"W	0.00	
14114.00†	92.036	359.985	7585.71	5762.05	4961.73	-3052.67	39°56'35.736"N	104°43'56.917"W	0.00	
14214.00†	92.036	359.985	7582.15	5853.97	5061.67	-3052.70	39°56'36.724"N	104°43'56.918"W	0.00	
14314.00†	92.036	359.985	7578.60	5945.88	5161.61	-3052.72	39°56'37.711"N	104°43'56.918"W	0.00	
14414.00†	92.036	359.985	7575.05	6037.79	5261.55	-3052.75	39°56'38.699"N	104°43'56.919"W	0.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 7 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (169 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14514.00†	92.036	359.985	7571.49	6129.71	5361.48	-3052.77	39°56'39.687"N	104°43'56.919"W	0.00	
14614.00†	92.036	359.985	7567.94	6221.62	5461.42	-3052.80	39°56'40.674"N	104°43'56.920"W	0.00	
14714.00†	92.036	359.985	7564.39	6313.53	5561.36	-3052.82	39°56'41.662"N	104°43'56.920"W	0.00	
14814.00†	92.036	359.985	7560.83	6405.44	5661.29	-3052.85	39°56'42.650"N	104°43'56.921"W	0.00	
14914.00†	92.036	359.985	7557.28	6497.36	5761.23	-3052.88	39°56'43.637"N	104°43'56.921"W	0.00	
15014.00†	92.036	359.985	7553.73	6589.27	5861.17	-3052.90	39°56'44.625"N	104°43'56.922"W	0.00	
15114.00†	92.036	359.985	7550.18	6681.18	5961.10	-3052.93	39°56'45.612"N	104°43'56.922"W	0.00	
15214.00†	92.036	359.985	7546.62	6773.09	6061.04	-3052.95	39°56'46.600"N	104°43'56.923"W	0.00	
15314.00†	92.036	359.985	7543.07	6865.01	6160.98	-3052.98	39°56'47.588"N	104°43'56.923"W	0.00	
15414.00†	92.036	359.985	7539.52	6956.92	6260.91	-3053.00	39°56'48.575"N	104°43'56.924"W	0.00	
15514.00†	92.036	359.985	7535.96	7048.83	6360.85	-3053.03	39°56'49.563"N	104°43'56.924"W	0.00	
15614.00†	92.036	359.985	7532.41	7140.75	6460.79	-3053.06	39°56'50.550"N	104°43'56.925"W	0.00	
15714.00†	92.036	359.985	7528.86	7232.66	6560.72	-3053.08	39°56'51.538"N	104°43'56.925"W	0.00	
15814.00†	92.036	359.985	7525.31	7324.57	6660.66	-3053.11	39°56'52.526"N	104°43'56.926"W	0.00	
15914.00†	92.036	359.985	7521.75	7416.48	6760.60	-3053.13	39°56'53.513"N	104°43'56.926"W	0.00	
16014.00†	92.036	359.985	7518.20	7508.40	6860.53	-3053.16	39°56'54.501"N	104°43'56.927"W	0.00	
16114.00†	92.036	359.985	7514.65	7600.31	6960.47	-3053.18	39°56'55.489"N	104°43'56.927"W	0.00	
16214.00†	92.036	359.985	7511.09	7692.22	7060.41	-3053.21	39°56'56.476"N	104°43'56.928"W	0.00	
16301.06	92.036	359.985	7508.00 ²	7772.24	7147.41	-3053.23	39°56'57.336"N	104°43'56.928"W	0.00	End of Tangent



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 8 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH 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		-6.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.24-T1S-R66W SOUTH 1/2 SECTION		-6.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.25-T1S-R66W		-6.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
2) ALMA 1S-66-2524-19NH BHL ON PLAT (2160'FSL & 260'FWL, SEC.24)	16301.06	7508.00	7147.41	-3053.23	3215180.78	1225294.86	39°56'57.336"N	104°43'56.928"W	point
1) ALMA 1S-66-2524-19NH ENTRY POINT	8926.97	7770.00	-222.03	-3051.33	3215247.36	1217925.94	39°55'44.508"N	104°43'56.892"W	point
SEC.24/25-T1S-R66W HARDLINES (460'FNL 1/2 SEC.24)		7794.00	47.36	120.59	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon

SURVEY PROGRAM -

Ref Wellbore: ALMA 1S-66-2524-19NH PWB Ref Wellpath: ALMA 1S-66-2524-19NH PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
14.00	16301.06	Custom BHI AutoTrak Curve (Axial Corr, Short spacing) (Rockies 0.03Gt model)		ALMA 1S- 66-2524- 19NH PWB



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-19NH PWP (REV-A.0)

Page 9 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#19 ALMA 1S-66-2524-19NH (287'FSL & 1964'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-19NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-19NH PWB
Facility	SEC.25-T01S-R66W		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
14.00	0.000	253.507	14.00	Tie On
1500.00	0.000	253.507	1500.00	End of Tangent
2996.15	29.923	253.507	2929.06	End of Build
7927.81	29.923	253.507	7203.31	End of Tangent
8926.97	92.036	359.985	7770.00	End of 3D Arc
16301.06	92.036	359.985	7508.00	End of Tangent