

# HRM RESOURCES

Location: COLORADO Slot: SLOT#17 ALMA 1S-66-2524-17CDH (287°FSL & 1934°FEL, SEC.25)  
Field: ADAMS COUNTY Well: ALMA 1S-66-2524-17CDH  
Facility: SEC-25-T01S-R66W Wellbore: ALMA 1S-66-2524-17CDH PWB

Plot reference wellpath is ALMA 1S-66-2524-17CDH PWP (REV-A.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (5011), US feet
True vertical depths are referenced to RIG (RKB)	* - Wellpath was transformed from a different geoidic datum
Measured depths are referenced to RIG (RKB)	North Reference: True north
RIG (RKB) to Mean Sea Level: 5193 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#17 ALMA 1S-66-2524-17CDH (287°FSL & 1934°FEL, SEC.25): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: Ingersoll on 2016-10-17
	Database: WA, DEN, Denver, Datto

## 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#17 ALMA 1S-66-2524-17CDH (287°FSL & 1934°FEL, SEC.25)	47.36	-89.74	3218327.389	1218175.009
RIG (RKB) to Mud line (At Slot: SLOT#17 ALMA 1S-66-2524-17CDH (287°FSL & 1934°FEL, SEC.25)				5193R
Mean Sea Level to Mud line (At Slot: SLOT#17 ALMA 1S-66-2524-17CDH (287°FSL & 1934°FEL, SEC.25)				0R
RIG (RKB) to Mean Sea Level				5193R

## Well Profile Data

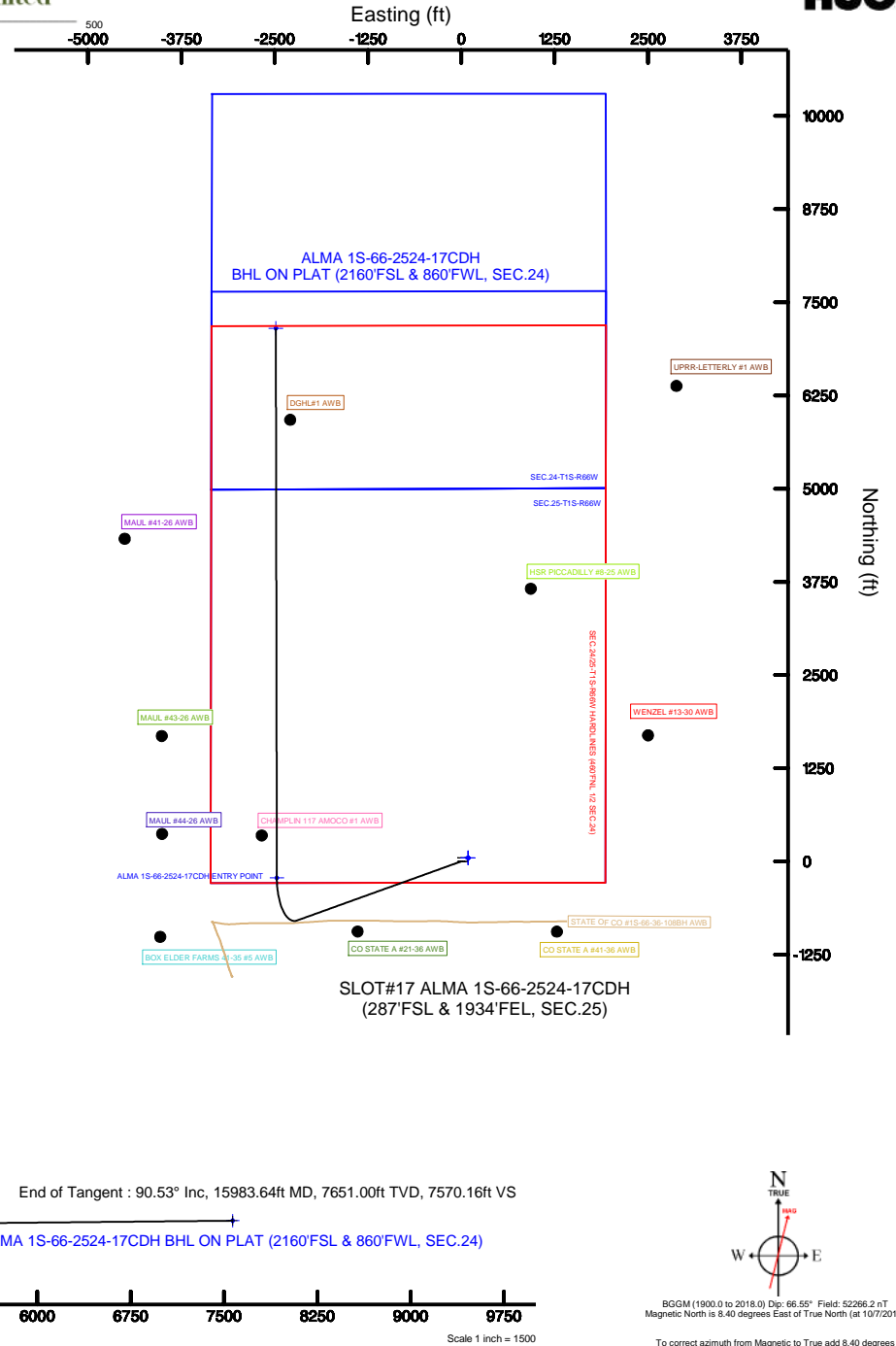
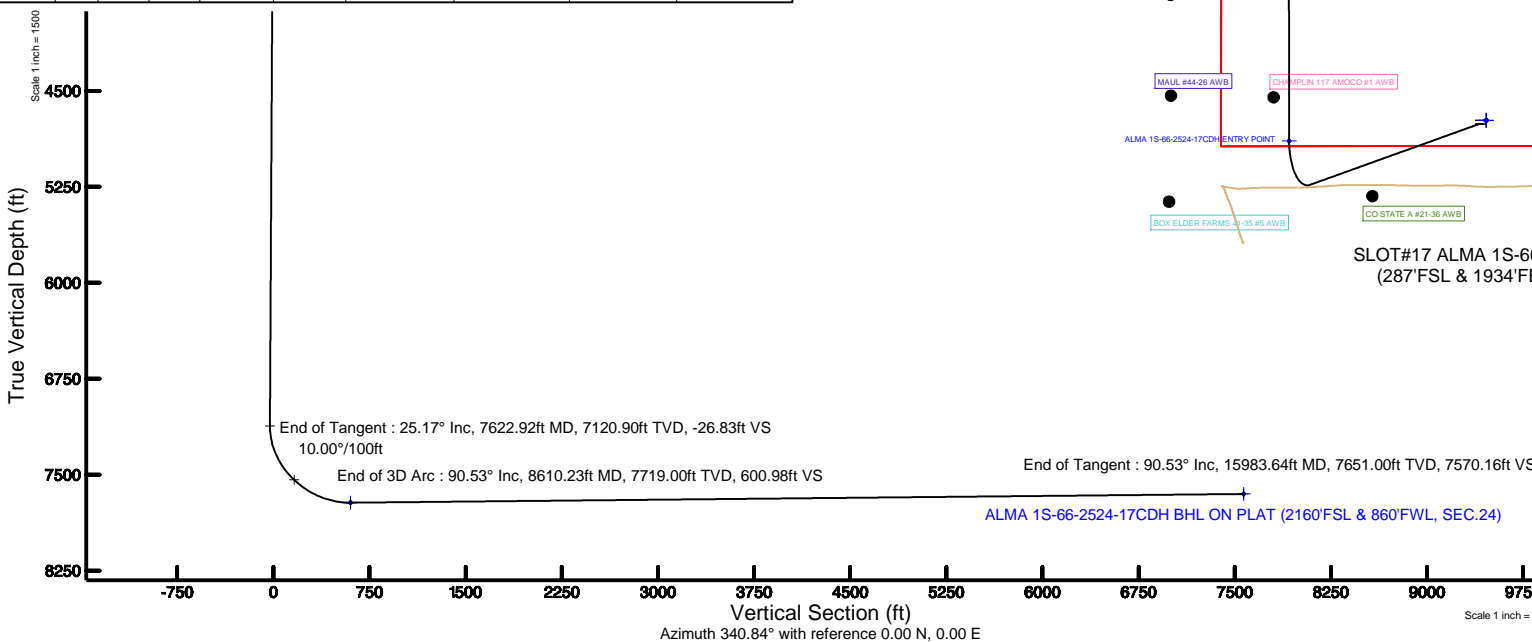
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	14.00	0.000	250.187	14.00	0.00	0.00	0.00	0.00
End of Tangent	1500.00	0.000	250.187	1500.00	0.00	0.00	0.00	0.00
End of Build	2758.58	25.172	250.187	2718.48	-92.21	-255.94	2.00	-3.12
End of Tangent	7622.92	25.172	250.187	7120.90	-793.47	-2202.43	0.00	-26.83
End of 3D Arc	8610.23	90.528	359.897	7719.00	-222.09	-2470.79	10.00	600.98
End of Tangent	15983.64	90.528	359.897	7651.00	7150.99	-2484.08	0.00	7570.16

## 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		-2.00	47.36	89.74	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC-24-T1S-R66W SOUTH 1/2 SECTION		-2.00	47.36	89.74	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC-25-T1S-R66W		-2.00	47.36	89.74	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
ALMA 1S-66-2524-17CDH BHL ON PLAT (2160°FSL & 860°FWL, SEC.24)	15983.64	7651.00	7150.99	-2484.08	3218327.37	1218175.01	39°55'47.172"N	104°43'16.176"W
ALMA 1S-66-2524-17CDH ENTRY POINT	8610.23	7719.00	-222.09	-2470.79	3218688.71	1217931.24	39°55'44.508"N	104°43'49.044"W
SEC-24/25-T1S-R66W HORIZON LINES (460°FN, 1/2 SEC.24)		7798.00	47.36	89.74	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
15983.64	90.528	359.897	7651.00	7150.99	-2484.08	3215780.70	1225303.71	39°56'57.372"N	104°43'49.224"W





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# Planned Wellpath Report

ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH 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 9:10:23 AM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/ALMA_1S-66-2524-17CDH_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	-89.74	3218327.39	1218175.01	39°55'46.704"N	104°43'17.328"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	5193.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	5193.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25))	5193.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	340.84°



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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (166 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	250.187	0.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
14.00	0.000	250.187	14.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	Tie On
114.00†	0.000	250.187	114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
214.00†	0.000	250.187	214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
314.00†	0.000	250.187	314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
414.00†	0.000	250.187	414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
514.00†	0.000	250.187	514.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
614.00†	0.000	250.187	614.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
714.00†	0.000	250.187	714.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
814.00†	0.000	250.187	814.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
914.00†	0.000	250.187	914.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
1014.00†	0.000	250.187	1014.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
1114.00†	0.000	250.187	1114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
1214.00†	0.000	250.187	1214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
1314.00†	0.000	250.187	1314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
1414.00†	0.000	250.187	1414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	
1500.00	0.000	250.187	1500.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.328"W	0.00	End of Tangent
1514.00†	0.280	250.187	1514.00	0.00	-0.01	-0.03	39°55'46.704"N	104°43'17.328"W	2.00	
1614.00†	2.280	250.187	1613.97	-0.03	-0.77	-2.13	39°55'46.696"N	104°43'17.355"W	2.00	
1714.00†	4.280	250.187	1713.80	-0.09	-2.71	-7.52	39°55'46.677"N	104°43'17.424"W	2.00	
1814.00†	6.280	250.187	1813.37	-0.20	-5.83	-16.17	39°55'46.646"N	104°43'17.536"W	2.00	
1914.00†	8.280	250.187	1912.56	-0.34	-10.12	-28.09	39°55'46.604"N	104°43'17.689"W	2.00	
2014.00†	10.280	250.187	2011.25	-0.53	-15.59	-43.27	39°55'46.550"N	104°43'17.883"W	2.00	
2114.00†	12.280	250.187	2109.31	-0.75	-22.22	-61.67	39°55'46.484"N	104°43'18.120"W	2.00	
2214.00†	14.280	250.187	2206.63	-1.01	-30.00	-83.28	39°55'46.408"N	104°43'18.397"W	2.00	
2314.00†	16.280	250.187	2303.09	-1.32	-38.93	-108.07	39°55'46.319"N	104°43'18.715"W	2.00	
2414.00†	18.280	250.187	2398.57	-1.66	-49.00	-136.01	39°55'46.220"N	104°43'19.074"W	2.00	
2514.00†	20.280	250.187	2492.96	-2.03	-60.19	-167.08	39°55'46.109"N	104°43'19.473"W	2.00	
2614.00†	22.280	250.187	2586.14	-2.45	-72.49	-201.22	39°55'45.988"N	104°43'19.911"W	2.00	
2714.00†	24.280	250.187	2677.99	-2.90	-85.89	-238.40	39°55'45.855"N	104°43'20.388"W	2.00	



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# Planned Wellpath Report

ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2758.58	25.172	250.187	2718.48	-3.12	-92.21	-255.94	39°55'45.793"N	104°43'20.613"W	2.00	End of Build
2814.00†	25.172	250.187	2768.64	-3.39	-100.20	-278.12	39°55'45.714"N	104°43'20.898"W	0.00	
2914.00†	25.172	250.187	2859.14	-3.87	-114.61	-318.13	39°55'45.571"N	104°43'21.412"W	0.00	
3014.00†	25.172	250.187	2949.65	-4.36	-129.03	-358.15	39°55'45.429"N	104°43'21.925"W	0.00	
3114.00†	25.172	250.187	3040.15	-4.85	-143.45	-398.17	39°55'45.286"N	104°43'22.439"W	0.00	
3214.00†	25.172	250.187	3130.66	-5.34	-157.86	-438.18	39°55'45.144"N	104°43'22.953"W	0.00	
3314.00†	25.172	250.187	3221.16	-5.82	-172.28	-478.20	39°55'45.001"N	104°43'23.466"W	0.00	
3414.00†	25.172	250.187	3311.66	-6.31	-186.70	-518.21	39°55'44.859"N	104°43'23.980"W	0.00	
3514.00†	25.172	250.187	3402.17	-6.80	-201.11	-558.23	39°55'44.716"N	104°43'24.494"W	0.00	
3614.00†	25.172	250.187	3492.67	-7.29	-215.53	-598.24	39°55'44.574"N	104°43'25.007"W	0.00	
3714.00†	25.172	250.187	3583.17	-7.77	-229.94	-638.26	39°55'44.432"N	104°43'25.521"W	0.00	
3814.00†	25.172	250.187	3673.68	-8.26	-244.36	-678.27	39°55'44.289"N	104°43'26.035"W	0.00	
3914.00†	25.172	250.187	3764.18	-8.75	-258.78	-718.29	39°55'44.147"N	104°43'26.548"W	0.00	
4014.00†	25.172	250.187	3854.69	-9.24	-273.19	-758.30	39°55'44.004"N	104°43'27.062"W	0.00	
4114.00†	25.172	250.187	3945.19	-9.72	-287.61	-798.32	39°55'43.862"N	104°43'27.575"W	0.00	
4214.00†	25.172	250.187	4035.69	-10.21	-302.03	-838.33	39°55'43.719"N	104°43'28.089"W	0.00	
4314.00†	25.172	250.187	4126.20	-10.70	-316.44	-878.35	39°55'43.577"N	104°43'28.603"W	0.00	
4414.00†	25.172	250.187	4216.70	-11.19	-330.86	-918.36	39°55'43.434"N	104°43'29.116"W	0.00	
4514.00†	25.172	250.187	4307.21	-11.67	-345.27	-958.38	39°55'43.292"N	104°43'29.630"W	0.00	
4614.00†	25.172	250.187	4397.71	-12.16	-359.69	-998.40	39°55'43.149"N	104°43'30.144"W	0.00	
4714.00†	25.172	250.187	4488.21	-12.65	-374.11	-1038.41	39°55'43.007"N	104°43'30.657"W	0.00	
4814.00†	25.172	250.187	4578.72	-13.14	-388.52	-1078.43	39°55'42.864"N	104°43'31.171"W	0.00	
4914.00†	25.172	250.187	4669.22	-13.62	-402.94	-1118.44	39°55'42.722"N	104°43'31.685"W	0.00	
5014.00†	25.172	250.187	4759.72	-14.11	-417.36	-1158.46	39°55'42.579"N	104°43'32.198"W	0.00	
5114.00†	25.172	250.187	4850.23	-14.60	-431.77	-1198.47	39°55'42.437"N	104°43'32.712"W	0.00	
5214.00†	25.172	250.187	4940.73	-15.08	-446.19	-1238.49	39°55'42.294"N	104°43'33.226"W	0.00	
5314.00†	25.172	250.187	5031.24	-15.57	-460.61	-1278.50	39°55'42.152"N	104°43'33.739"W	0.00	
5414.00†	25.172	250.187	5121.74	-16.06	-475.02	-1318.52	39°55'42.009"N	104°43'34.253"W	0.00	
5514.00†	25.172	250.187	5212.24	-16.55	-489.44	-1358.53	39°55'41.867"N	104°43'34.766"W	0.00	
5614.00†	25.172	250.187	5302.75	-17.03	-503.85	-1398.55	39°55'41.724"N	104°43'35.280"W	0.00	



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# Planned Wellpath Report

ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5714.00†	25.172	250.187	5393.25	-17.52	-518.27	-1438.56	39°55'41.582"N	104°43'35.794"W	0.00	
5814.00†	25.172	250.187	5483.76	-18.01	-532.69	-1478.58	39°55'41.439"N	104°43'36.307"W	0.00	
5914.00†	25.172	250.187	5574.26	-18.50	-547.10	-1518.59	39°55'41.297"N	104°43'36.821"W	0.00	
6014.00†	25.172	250.187	5664.76	-18.98	-561.52	-1558.61	39°55'41.154"N	104°43'37.335"W	0.00	
6114.00†	25.172	250.187	5755.27	-19.47	-575.94	-1598.62	39°55'41.012"N	104°43'37.848"W	0.00	
6214.00†	25.172	250.187	5845.77	-19.96	-590.35	-1638.64	39°55'40.869"N	104°43'38.362"W	0.00	
6314.00†	25.172	250.187	5936.27	-20.45	-604.77	-1678.66	39°55'40.727"N	104°43'38.875"W	0.00	
6414.00†	25.172	250.187	6026.78	-20.93	-619.18	-1718.67	39°55'40.584"N	104°43'39.389"W	0.00	
6514.00†	25.172	250.187	6117.28	-21.42	-633.60	-1758.69	39°55'40.442"N	104°43'39.903"W	0.00	
6614.00†	25.172	250.187	6207.79	-21.91	-648.02	-1798.70	39°55'40.299"N	104°43'40.416"W	0.00	
6714.00†	25.172	250.187	6298.29	-22.40	-662.43	-1838.72	39°55'40.157"N	104°43'40.930"W	0.00	
6814.00†	25.172	250.187	6388.79	-22.88	-676.85	-1878.73	39°55'40.014"N	104°43'41.444"W	0.00	
6914.00†	25.172	250.187	6479.30	-23.37	-691.27	-1918.75	39°55'39.872"N	104°43'41.957"W	0.00	
7014.00†	25.172	250.187	6569.80	-23.86	-705.68	-1958.76	39°55'39.729"N	104°43'42.471"W	0.00	
7114.00†	25.172	250.187	6660.30	-24.34	-720.10	-1998.78	39°55'39.587"N	104°43'42.985"W	0.00	
7214.00†	25.172	250.187	6750.81	-24.83	-734.51	-2038.79	39°55'39.444"N	104°43'43.498"W	0.00	
7314.00†	25.172	250.187	6841.31	-25.32	-748.93	-2078.81	39°55'39.302"N	104°43'44.012"W	0.00	
7414.00†	25.172	250.187	6931.82	-25.81	-763.35	-2118.82	39°55'39.159"N	104°43'44.525"W	0.00	
7514.00†	25.172	250.187	7022.32	-26.29	-777.76	-2158.84	39°55'39.017"N	104°43'45.039"W	0.00	
7614.00†	25.172	250.187	7112.82	-26.78	-792.18	-2198.85	39°55'38.874"N	104°43'45.553"W	0.00	
7622.92	25.172	250.187	7120.90	-26.83	-793.47	-2202.43	39°55'38.862"N	104°43'45.598"W	0.00	End of Tangent
7714.00†	23.915	272.020	7203.92	-20.37	-799.39	-2239.17	39°55'38.803"N	104°43'46.070"W	10.00	
7814.00†	26.154	295.203	7294.74	2.42	-789.27	-2279.47	39°55'38.903"N	104°43'46.587"W	10.00	
7914.00†	31.372	313.055	7382.53	40.96	-762.04	-2318.53	39°55'39.172"N	104°43'47.089"W	10.00	
8014.00†	38.367	325.629	7464.63	94.07	-718.55	-2355.17	39°55'39.602"N	104°43'47.559"W	10.00	
8114.00†	46.332	334.642	7538.55	160.14	-660.10	-2388.26	39°55'40.179"N	104°43'47.984"W	10.00	
8214.00†	54.835	341.474	7602.03	237.16	-588.48	-2416.81	39°55'40.887"N	104°43'48.351"W	10.00	
8314.00†	63.649	346.985	7653.15	322.80	-505.86	-2439.95	39°55'41.704"N	104°43'48.648"W	10.00	
8414.00†	72.642	351.702	7690.35	414.45	-414.75	-2456.97	39°55'42.604"N	104°43'48.866"W	10.00	
8514.00†	81.736	355.973	7712.51	509.32	-317.92	-2467.36	39°55'43.561"N	104°43'49.000"W	10.00	



Resources Limited

# Planned Wellpath Report

ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8610.23	90.528	359.897	7719.00†	600.98	-222.09	-2470.79	39°55'44.508"N	104°43'49.044"W	10.00	End of 3D Arc
8614.00†	90.528	359.897	7718.97	604.54	-218.32	-2470.80	39°55'44.545"N	104°43'49.044"W	0.00	
8714.00†	90.528	359.897	7718.04	699.06	-118.32	-2470.98	39°55'45.533"N	104°43'49.047"W	0.00	
8814.00†	90.528	359.897	7717.12	793.58	-18.33	-2471.16	39°55'46.522"N	104°43'49.049"W	0.00	
8914.00†	90.528	359.897	7716.20	888.10	81.67	-2471.34	39°55'47.510"N	104°43'49.051"W	0.00	
9014.00†	90.528	359.897	7715.28	982.61	181.67	-2471.52	39°55'48.498"N	104°43'49.054"W	0.00	
9114.00†	90.528	359.897	7714.35	1077.13	281.66	-2471.70	39°55'49.486"N	104°43'49.056"W	0.00	
9214.00†	90.528	359.897	7713.43	1171.65	381.66	-2471.88	39°55'50.474"N	104°43'49.059"W	0.00	
9314.00†	90.528	359.897	7712.51	1266.17	481.65	-2472.06	39°55'51.463"N	104°43'49.061"W	0.00	
9414.00†	90.528	359.897	7711.59	1360.69	581.65	-2472.24	39°55'52.451"N	104°43'49.064"W	0.00	
9514.00†	90.528	359.897	7710.67	1455.20	681.64	-2472.42	39°55'53.439"N	104°43'49.066"W	0.00	
9614.00†	90.528	359.897	7709.74	1549.72	781.64	-2472.60	39°55'54.427"N	104°43'49.068"W	0.00	
9714.00†	90.528	359.897	7708.82	1644.24	881.64	-2472.78	39°55'55.415"N	104°43'49.071"W	0.00	
9814.00†	90.528	359.897	7707.90	1738.76	981.63	-2472.96	39°55'56.404"N	104°43'49.073"W	0.00	
9914.00†	90.528	359.897	7706.98	1833.28	1081.63	-2473.14	39°55'57.392"N	104°43'49.076"W	0.00	
10014.00†	90.528	359.897	7706.05	1927.79	1181.62	-2473.32	39°55'58.380"N	104°43'49.078"W	0.00	
10114.00†	90.528	359.897	7705.13	2022.31	1281.62	-2473.50	39°55'59.368"N	104°43'49.081"W	0.00	
10214.00†	90.528	359.897	7704.21	2116.83	1381.61	-2473.68	39°56'00.356"N	104°43'49.083"W	0.00	
10314.00†	90.528	359.897	7703.29	2211.35	1481.61	-2473.86	39°56'01.345"N	104°43'49.086"W	0.00	
10414.00†	90.528	359.897	7702.37	2305.86	1581.60	-2474.04	39°56'02.333"N	104°43'49.088"W	0.00	
10514.00†	90.528	359.897	7701.44	2400.38	1681.60	-2474.22	39°56'03.321"N	104°43'49.090"W	0.00	
10614.00†	90.528	359.897	7700.52	2494.90	1781.60	-2474.41	39°56'04.309"N	104°43'49.093"W	0.00	
10714.00†	90.528	359.897	7699.60	2589.42	1881.59	-2474.59	39°56'05.297"N	104°43'49.095"W	0.00	
10814.00†	90.528	359.897	7698.68	2683.94	1981.59	-2474.77	39°56'06.286"N	104°43'49.098"W	0.00	
10914.00†	90.528	359.897	7697.75	2778.45	2081.58	-2474.95	39°56'07.274"N	104°43'49.100"W	0.00	
11014.00†	90.528	359.897	7696.83	2872.97	2181.58	-2475.13	39°56'08.262"N	104°43'49.103"W	0.00	
11114.00†	90.528	359.897	7695.91	2967.49	2281.57	-2475.31	39°56'09.250"N	104°43'49.105"W	0.00	
11214.00†	90.528	359.897	7694.99	3062.01	2381.57	-2475.49	39°56'10.238"N	104°43'49.108"W	0.00	
11314.00†	90.528	359.897	7694.06	3156.52	2481.56	-2475.67	39°56'11.227"N	104°43'49.110"W	0.00	
11414.00†	90.528	359.897	7693.14	3251.04	2581.56	-2475.85	39°56'12.215"N	104°43'49.112"W	0.00	





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ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11514.00†	90.528	359.897	7692.22	3345.56	2681.56	-2476.03	39°56'13.203"N	104°43'49.115"W	0.00	
11614.00†	90.528	359.897	7691.30	3440.08	2781.55	-2476.21	39°56'14.191"N	104°43'49.117"W	0.00	
11714.00†	90.528	359.897	7690.38	3534.60	2881.55	-2476.39	39°56'15.179"N	104°43'49.120"W	0.00	
11814.00†	90.528	359.897	7689.45	3629.11	2981.54	-2476.57	39°56'16.168"N	104°43'49.122"W	0.00	
11914.00†	90.528	359.897	7688.53	3723.63	3081.54	-2476.75	39°56'17.156"N	104°43'49.125"W	0.00	
12014.00†	90.528	359.897	7687.61	3818.15	3181.53	-2476.93	39°56'18.144"N	104°43'49.127"W	0.00	
12114.00†	90.528	359.897	7686.69	3912.67	3281.53	-2477.11	39°56'19.132"N	104°43'49.130"W	0.00	
12214.00†	90.528	359.897	7685.76	4007.19	3381.52	-2477.29	39°56'20.120"N	104°43'49.132"W	0.00	
12314.00†	90.528	359.897	7684.84	4101.70	3481.52	-2477.47	39°56'21.109"N	104°43'49.134"W	0.00	
12414.00†	90.528	359.897	7683.92	4196.22	3581.52	-2477.65	39°56'22.097"N	104°43'49.137"W	0.00	
12514.00†	90.528	359.897	7683.00	4290.74	3681.51	-2477.83	39°56'23.085"N	104°43'49.139"W	0.00	
12614.00†	90.528	359.897	7682.08	4385.26	3781.51	-2478.01	39°56'24.073"N	104°43'49.142"W	0.00	
12714.00†	90.528	359.897	7681.15	4479.77	3881.50	-2478.19	39°56'25.061"N	104°43'49.144"W	0.00	
12814.00†	90.528	359.897	7680.23	4574.29	3981.50	-2478.37	39°56'26.050"N	104°43'49.147"W	0.00	
12914.00†	90.528	359.897	7679.31	4668.81	4081.49	-2478.55	39°56'27.038"N	104°43'49.149"W	0.00	
13014.00†	90.528	359.897	7678.39	4763.33	4181.49	-2478.73	39°56'28.026"N	104°43'49.151"W	0.00	
13114.00†	90.528	359.897	7677.46	4857.85	4281.48	-2478.91	39°56'29.014"N	104°43'49.154"W	0.00	
13214.00†	90.528	359.897	7676.54	4952.36	4381.48	-2479.09	39°56'30.002"N	104°43'49.156"W	0.00	
13314.00†	90.528	359.897	7675.62	5046.88	4481.48	-2479.27	39°56'30.991"N	104°43'49.159"W	0.00	
13414.00†	90.528	359.897	7674.70	5141.40	4581.47	-2479.45	39°56'31.979"N	104°43'49.161"W	0.00	
13514.00†	90.528	359.897	7673.78	5235.92	4681.47	-2479.63	39°56'32.967"N	104°43'49.164"W	0.00	
13614.00†	90.528	359.897	7672.85	5330.43	4781.46	-2479.81	39°56'33.955"N	104°43'49.166"W	0.00	
13714.00†	90.528	359.897	7671.93	5424.95	4881.46	-2479.99	39°56'34.943"N	104°43'49.169"W	0.00	
13814.00†	90.528	359.897	7671.01	5519.47	4981.45	-2480.17	39°56'35.932"N	104°43'49.171"W	0.00	
13914.00†	90.528	359.897	7670.09	5613.99	5081.45	-2480.35	39°56'36.920"N	104°43'49.173"W	0.00	
14014.00†	90.528	359.897	7669.16	5708.51	5181.45	-2480.53	39°56'37.908"N	104°43'49.176"W	0.00	
14114.00†	90.528	359.897	7668.24	5803.02	5281.44	-2480.71	39°56'38.896"N	104°43'49.178"W	0.00	
14214.00†	90.528	359.897	7667.32	5897.54	5381.44	-2480.89	39°56'39.884"N	104°43'49.181"W	0.00	
14314.00†	90.528	359.897	7666.40	5992.06	5481.43	-2481.07	39°56'40.873"N	104°43'49.183"W	0.00	
14414.00†	90.528	359.897	7665.48	6086.58	5581.43	-2481.25	39°56'41.861"N	104°43'49.186"W	0.00	



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# Planned Wellpath Report

ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH PWB
Facility	SEC.25-T01S-R66W		

## WELLPATH DATA (166 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14514.00†	90.528	359.897	7664.55	6181.10	5681.42	-2481.43	39°56'42.849"N	104°43'49.188"W	0.00	
14614.00†	90.528	359.897	7663.63	6275.61	5781.42	-2481.61	39°56'43.837"N	104°43'49.191"W	0.00	
14714.00†	90.528	359.897	7662.71	6370.13	5881.41	-2481.79	39°56'44.825"N	104°43'49.193"W	0.00	
14814.00†	90.528	359.897	7661.79	6464.65	5981.41	-2481.97	39°56'45.814"N	104°43'49.195"W	0.00	
14914.00†	90.528	359.897	7660.86	6559.17	6081.41	-2482.15	39°56'46.802"N	104°43'49.198"W	0.00	
15014.00†	90.528	359.897	7659.94	6653.68	6181.40	-2482.33	39°56'47.790"N	104°43'49.200"W	0.00	
15114.00†	90.528	359.897	7659.02	6748.20	6281.40	-2482.51	39°56'48.778"N	104°43'49.203"W	0.00	
15214.00†	90.528	359.897	7658.10	6842.72	6381.39	-2482.69	39°56'49.766"N	104°43'49.205"W	0.00	
15314.00†	90.528	359.897	7657.18	6937.24	6481.39	-2482.87	39°56'50.755"N	104°43'49.208"W	0.00	
15414.00†	90.528	359.897	7656.25	7031.76	6581.38	-2483.05	39°56'51.743"N	104°43'49.210"W	0.00	
15514.00†	90.528	359.897	7655.33	7126.27	6681.38	-2483.23	39°56'52.731"N	104°43'49.213"W	0.00	
15614.00†	90.528	359.897	7654.41	7220.79	6781.37	-2483.41	39°56'53.719"N	104°43'49.215"W	0.00	
15714.00†	90.528	359.897	7653.49	7315.31	6881.37	-2483.59	39°56'54.707"N	104°43'49.217"W	0.00	
15814.00†	90.528	359.897	7652.56	7409.83	6981.37	-2483.77	39°56'55.696"N	104°43'49.220"W	0.00	
15914.00†	90.528	359.897	7651.64	7504.35	7081.36	-2483.96	39°56'56.684"N	104°43'49.222"W	0.00	
15983.64	90.528	359.897	7651.00 <sup>2</sup>	7570.16	7150.99	-2484.08	39°56'57.372"N	104°43'49.224"W	0.00	End of Tangent





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## Planned Wellpath Report

ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH 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		-2.00	47.36	89.74	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.24-T1S-R66W SOUTH 1/2 SECTION		-2.00	47.36	89.74	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.25-T1S-R66W		-2.00	47.36	89.74	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
2) ALMA 1S-66-2524-17CDH BHL ON PLAT (2160'FSL & 860'FWL, SEC.24)	15983.64	7651.00	7150.99	-2484.08	3215780.70	1225303.71	39°56'57.372"N	104°43'49.224"W	point
1) ALMA 1S-66-2524-17CDH ENTRY POINT	8610.23	7719.00	-222.09	-2470.79	3215858.71	1217931.24	39°55'44.508"N	104°43'49.044"W	point
SEC.24/25-T1S-R66W HARDLINES (460'FNL 1/2 SEC.24)		7798.00	47.36	89.74	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon

## SURVEY PROGRAM -

Ref Wellbore: ALMA 1S-66-2524-17CDH PWB Ref Wellpath: ALMA 1S-66-2524-17CDH PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
14.00	15983.64	Custom BHI AutoTrak Curve (Axial Corr, Short spacing) (Rockies 0.03Gt model)		ALMA 1S-66- 2524-17CDH PWB



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# Planned Wellpath Report

ALMA 1S-66-2524-17CDH PWP (REV-A.0)

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#17 ALMA 1S-66-2524-17CDH (287'FSL & 1934'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-17CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-17CDH PWB
Facility	SEC.25-T01S-R66W		

## DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
14.00	0.000	250.187	14.00	Tie On
1500.00	0.000	250.187	1500.00	End of Tangent
2758.58	25.172	250.187	2718.48	End of Build
7622.92	25.172	250.187	7120.90	End of Tangent
8610.23	90.528	359.897	7719.00	End of 3D Arc
15983.64	90.528	359.897	7651.00	End of Tangent