

HRM RESOURCES

Location: COLORADO Slot: SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
 Field: ADAMS COUNTY Well: ALMA 1S-66-2524-10CDH
 Facility: SEC.25-T01S-R66W Wellbore: ALMA 1S-66-2524-10CDH PWB

Plot reference wellpath is ALMA 1S-66-2524-10CDH 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 geoidetic datum
Measured depths are referenced to RIG (RKB)	North Reference: True north
RIG (RKB) to Mean Sea Level: 5192 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: Ingersoll on 2016-10-14
	Database: WA, DEN, Denver, Data

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#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)	0.00	-134.62	3218382.104	1218221.969
RIG (RKB) to Mud line (At Slot: SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25))				5192R
Mean Sea Level to Mud line (At Slot: SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25))				0R
RIG (RKB) to Mean Sea Level				5192R

Well Profile Data

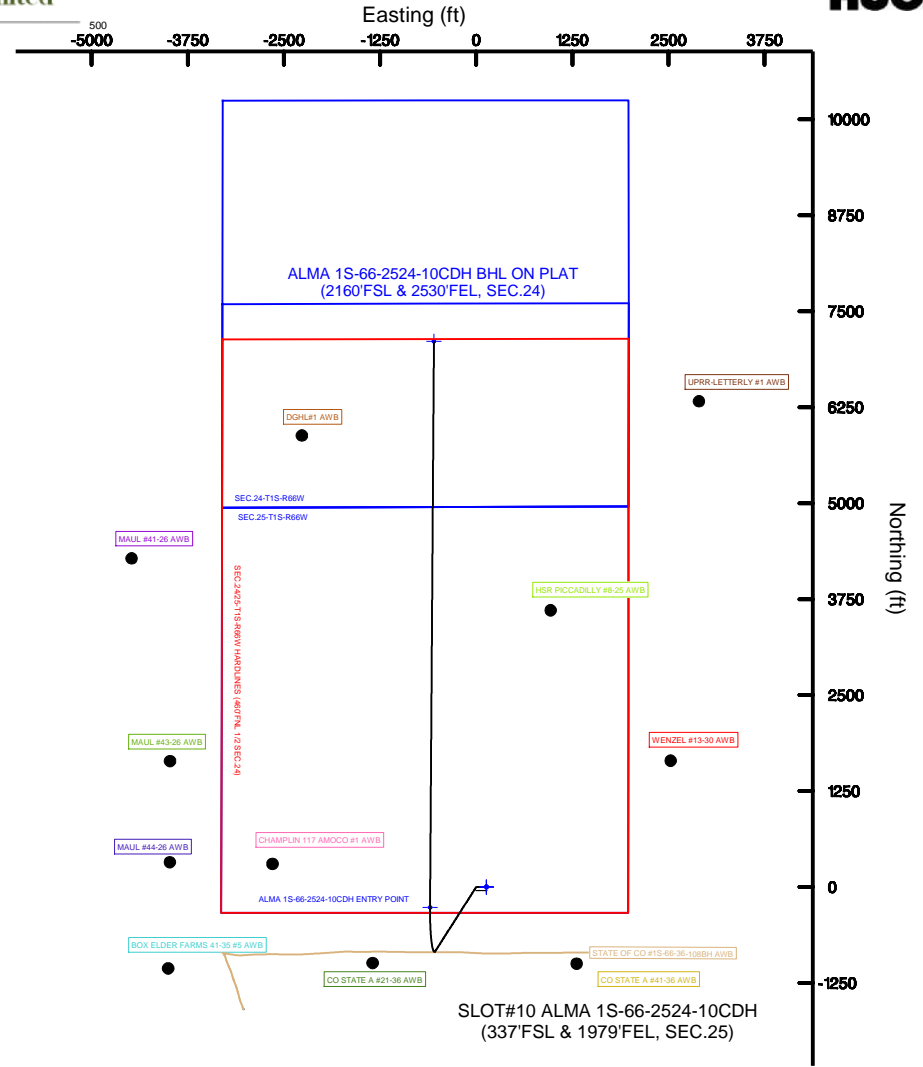
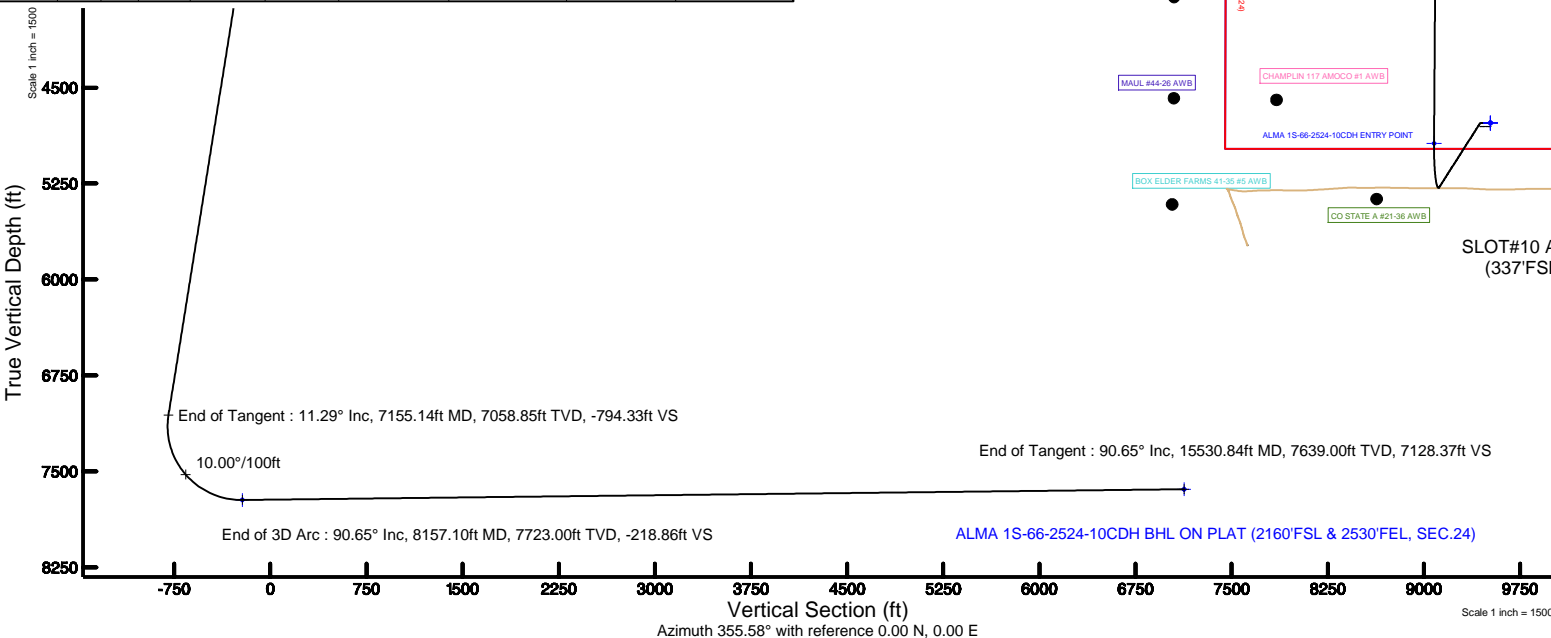
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	14.00	0.000	212.456	14.00	0.00	0.00	0.00	0.00
End of Tangent	1800.00	0.000	212.456	1800.00	0.00	0.00	0.00	0.00
End of Build	2364.31	11.286	212.456	2360.67	-46.75	-29.73	2.00	-44.32
End of Tangent	7155.14	11.286	212.456	7058.85	-837.91	-532.91	0.00	-794.33
End of 3D Arc	8157.10	90.653	0.394	7723.00	-265.92	-600.17	10.00	-218.86
End of Tangent	15530.84	90.653	0.394	7639.00	7107.16	-549.53	0.00	7128.37

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		-3.00	0.00	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC.24-T1S-R66W SOUTH 1/2 SECTION		-3.00	0.00	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC.25-T1S-R66W		-3.00	0.00	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
ALMA 1S-66-2524-10CDH BHL ON PLAT (2160'FSL & 2530'FEL, SEC.24)	10530.84	7639.00	7107.16	-549.53	3217670.23	1225323.82	39°56'57.408"N	104°43'24.960"W
ALMA 1S-66-2524-10CDH ENTRY POINT	8157.10	7723.00	-265.92	-600.17	3217884.31	1217950.80	39°55'44.544"N	104°43'25.888"W
SEC.24-25-T1S-R66W HORIZONES (400'FN, 1/2 SEC.24)	7797.00	0.00	0.00	134.62	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
15530.84	90.653	0.394	7639.00	7107.16	-549.53	3217670.23	1225323.82	39°56'57.408"N	104°43'24.960"W



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



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Planned Wellpath Report

ALMA 1S-66-2524-10CDH PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-10CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-10CDH 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	10/14/2016 at 12:46:59 PM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/ALMA_1S-66-2524-10CDH_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	0.00	-134.62	3218282.10	1218221.97	39°55'47.172"N	104°43'17.904"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	5192.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	5192.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25))	5192.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	355.58°



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ALMA 1S-66-2524-10CDH PWP (REV-A.0)

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**BAKER
HUGHES****REFERENCE WELLPATH IDENTIFICATION**

Operator	HRM RESOURCES	Slot	SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-10CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-10CDH 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
0.00†	0.000	212.456	0.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
14.00	0.000	212.456	14.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	Tie On
114.00†	0.000	212.456	114.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
214.00†	0.000	212.456	214.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
314.00†	0.000	212.456	314.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
414.00†	0.000	212.456	414.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
514.00†	0.000	212.456	514.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
614.00†	0.000	212.456	614.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
714.00†	0.000	212.456	714.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
814.00†	0.000	212.456	814.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
914.00†	0.000	212.456	914.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1014.00†	0.000	212.456	1014.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1114.00†	0.000	212.456	1114.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1214.00†	0.000	212.456	1214.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1314.00†	0.000	212.456	1314.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1414.00†	0.000	212.456	1414.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1514.00†	0.000	212.456	1514.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1614.00†	0.000	212.456	1614.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1714.00†	0.000	212.456	1714.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	
1800.00	0.000	212.456	1800.00	0.00	0.00	0.00	39°55'47.172"N	104°43'17.904"W	0.00	End of Tangent
1814.00†	0.280	212.456	1814.00	-0.03	-0.03	-0.02	39°55'47.172"N	104°43'17.904"W	2.00	
1914.00†	2.280	212.456	1913.97	-1.81	-1.91	-1.22	39°55'47.153"N	104°43'17.920"W	2.00	
2014.00†	4.280	212.456	2013.80	-6.39	-6.74	-4.29	39°55'47.105"N	104°43'17.959"W	2.00	
2114.00†	6.280	212.456	2113.37	-13.75	-14.51	-9.23	39°55'47.029"N	104°43'18.022"W	2.00	
2214.00†	8.280	212.456	2212.56	-23.89	-25.20	-16.03	39°55'46.923"N	104°43'18.110"W	2.00	
2314.00†	10.280	212.456	2311.25	-36.79	-38.80	-24.68	39°55'46.789"N	104°43'18.221"W	2.00	
2364.31	11.286	212.456	2360.67	-44.32	-46.75	-29.73	39°55'46.710"N	104°43'18.286"W	2.00	End of Build
2414.00†	11.286	212.456	2409.40	-52.09	-54.95	-34.95	39°55'46.629"N	104°43'18.353"W	0.00	
2514.00†	11.286	212.456	2507.46	-67.75	-71.47	-45.45	39°55'46.466"N	104°43'18.487"W	0.00	
2614.00†	11.286	212.456	2605.53	-83.40	-87.98	-55.96	39°55'46.303"N	104°43'18.622"W	0.00	
2714.00†	11.286	212.456	2703.60	-99.06	-104.49	-66.46	39°55'46.139"N	104°43'18.757"W	0.00	
2814.00†	11.286	212.456	2801.66	-114.72	-121.01	-76.96	39°55'45.976"N	104°43'18.892"W	0.00	
2914.00†	11.286	212.456	2899.73	-130.37	-137.52	-87.46	39°55'45.813"N	104°43'19.027"W	0.00	
3014.00†	11.286	212.456	2997.79	-146.03	-154.04	-97.97	39°55'45.650"N	104°43'19.162"W	0.00	
3114.00†	11.286	212.456	3095.86	-161.68	-170.55	-108.47	39°55'45.487"N	104°43'19.296"W	0.00	
3214.00†	11.286	212.456	3193.93	-177.34	-187.06	-118.97	39°55'45.323"N	104°43'19.431"W	0.00	
3314.00†	11.286	212.456	3291.99	-192.99	-203.58	-129.48	39°55'45.160"N	104°43'19.566"W	0.00	
3414.00†	11.286	212.456	3390.06	-208.65	-220.09	-139.98	39°55'44.997"N	104°43'19.701"W	0.00	
3514.00†	11.286	212.456	3488.12	-224.30	-236.61	-150.48	39°55'44.834"N	104°43'19.836"W	0.00	
3614.00†	11.286	212.456	3586.19	-239.96	-253.12	-160.99	39°55'44.671"N	104°43'19.970"W	0.00	
3714.00†	11.286	212.456	3684.26	-255.61	-269.63	-171.49	39°55'44.507"N	104°43'20.105"W	0.00	
3814.00†	11.286	212.456	3782.32	-271.27	-286.15	-181.99	39°55'44.344"N	104°43'20.240"W	0.00	
3914.00†	11.286	212.456	3880.39	-286.92	-302.66	-192.49	39°55'44.181"N	104°43'20.375"W	0.00	
4014.00†	11.286	212.456	3978.46	-302.58	-319.18	-203.00	39°55'44.018"N	104°43'20.510"W	0.00	
4114.00†	11.286	212.456	4076.52	-318.23	-335.69	-213.50	39°55'43.855"N	104°43'20.645"W	0.00	



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Planned Wellpath Report

ALMA 1S-66-2524-10CDH PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-10CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-10CDH 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
4214.00†	11.286	212.456	4174.59	-333.89	-352.21	-224.00	39°55'43.691"N	104°43'20.779"W	0.00	
4314.00†	11.286	212.456	4272.65	-349.54	-368.72	-234.51	39°55'43.528"N	104°43'20.914"W	0.00	
4414.00†	11.286	212.456	4370.72	-365.20	-385.23	-245.01	39°55'43.365"N	104°43'21.049"W	0.00	
4514.00†	11.286	212.456	4468.79	-380.85	-401.75	-255.51	39°55'43.202"N	104°43'21.184"W	0.00	
4614.00†	11.286	212.456	4566.85	-396.51	-418.26	-266.01	39°55'43.039"N	104°43'21.319"W	0.00	
4714.00†	11.286	212.456	4664.92	-412.16	-434.78	-276.52	39°55'42.875"N	104°43'21.453"W	0.00	
4814.00†	11.286	212.456	4762.98	-427.82	-451.29	-287.02	39°55'42.712"N	104°43'21.588"W	0.00	
4914.00†	11.286	212.456	4861.05	-443.48	-467.80	-297.52	39°55'42.549"N	104°43'21.723"W	0.00	
5014.00†	11.286	212.456	4959.12	-459.13	-484.32	-308.03	39°55'42.386"N	104°43'21.858"W	0.00	
5114.00†	11.286	212.456	5057.18	-474.79	-500.83	-318.53	39°55'42.223"N	104°43'21.993"W	0.00	
5214.00†	11.286	212.456	5155.25	-490.44	-517.35	-329.03	39°55'42.059"N	104°43'22.128"W	0.00	
5314.00†	11.286	212.456	5253.32	-506.10	-533.86	-339.54	39°55'41.896"N	104°43'22.262"W	0.00	
5414.00†	11.286	212.456	5351.38	-521.75	-550.37	-350.04	39°55'41.733"N	104°43'22.397"W	0.00	
5514.00†	11.286	212.456	5449.45	-537.41	-566.89	-360.54	39°55'41.570"N	104°43'22.532"W	0.00	
5614.00†	11.286	212.456	5547.51	-553.06	-583.40	-371.04	39°55'41.407"N	104°43'22.667"W	0.00	
5714.00†	11.286	212.456	5645.58	-568.72	-599.92	-381.55	39°55'41.243"N	104°43'22.802"W	0.00	
5814.00†	11.286	212.456	5743.65	-584.37	-616.43	-392.05	39°55'41.080"N	104°43'22.936"W	0.00	
5914.00†	11.286	212.456	5841.71	-600.03	-632.94	-402.55	39°55'40.917"N	104°43'23.071"W	0.00	
6014.00†	11.286	212.456	5939.78	-615.68	-649.46	-413.06	39°55'40.754"N	104°43'23.206"W	0.00	
6114.00†	11.286	212.456	6037.85	-631.34	-665.97	-423.56	39°55'40.591"N	104°43'23.341"W	0.00	
6214.00†	11.286	212.456	6135.91	-646.99	-682.49	-434.06	39°55'40.427"N	104°43'23.476"W	0.00	
6314.00†	11.286	212.456	6233.98	-662.65	-699.00	-444.56	39°55'40.264"N	104°43'23.610"W	0.00	
6414.00†	11.286	212.456	6332.04	-678.30	-715.51	-455.07	39°55'40.101"N	104°43'23.745"W	0.00	
6514.00†	11.286	212.456	6430.11	-693.96	-732.03	-465.57	39°55'39.938"N	104°43'23.880"W	0.00	
6614.00†	11.286	212.456	6528.18	-709.61	-748.54	-476.07	39°55'39.775"N	104°43'24.015"W	0.00	
6714.00†	11.286	212.456	6626.24	-725.27	-765.06	-486.58	39°55'39.611"N	104°43'24.150"W	0.00	
6814.00†	11.286	212.456	6724.31	-740.92	-781.57	-497.08	39°55'39.448"N	104°43'24.285"W	0.00	
6914.00†	11.286	212.456	6822.37	-756.58	-798.08	-507.58	39°55'39.285"N	104°43'24.419"W	0.00	
7014.00†	11.286	212.456	6920.44	-772.24	-814.60	-518.09	39°55'39.122"N	104°43'24.554"W	0.00	
7114.00†	11.286	212.456	7018.51	-787.89	-831.11	-528.59	39°55'38.959"N	104°43'24.689"W	0.00	
7155.14	11.286	212.456	7058.85	-794.33	-837.91	-532.91	39°55'38.891"N	104°43'24.744"W	0.00	End of Tangent
7214.00†	7.072	239.150	7116.97	-800.56	-844.63	-539.12	39°55'38.825"N	104°43'24.824"W	10.00	
7314.00†	8.765	316.820	7216.26	-797.35	-842.22	-549.64	39°55'38.849"N	104°43'24.959"W	10.00	
7414.00†	17.404	340.531	7313.63	-776.91	-822.52	-559.87	39°55'39.043"N	104°43'25.090"W	10.00	
7514.00†	26.985	348.292	7406.13	-739.87	-786.11	-569.48	39°55'39.403"N	104°43'25.214"W	10.00	
7614.00†	36.779	352.161	7490.95	-687.35	-734.10	-578.19	39°55'39.917"N	104°43'25.326"W	10.00	
7714.00†	46.651	354.574	7565.51	-620.94	-668.08	-585.73	39°55'40.570"N	104°43'25.423"W	10.00	
7814.00†	56.559	356.305	7627.55	-542.67	-590.05	-591.87	39°55'41.341"N	104°43'25.501"W	10.00	
7914.00†	66.486	357.677	7675.17	-454.91	-502.39	-596.43	39°55'42.207"N	104°43'25.560"W	10.00	
8014.00†	76.424	358.855	7706.94	-360.33	-407.74	-599.27	39°55'43.142"N	104°43'25.596"W	10.00	
8114.00†	86.366	359.938	7721.88	-261.80	-309.00	-600.30	39°55'44.118"N	104°43'25.610"W	10.00	
8157.10	90.653	0.394	7723.00†	-218.86	-265.92	-600.17	39°55'44.544"N	104°43'25.608"W	10.00	End of 3D Arc
8214.00†	90.653	0.394	7722.35	-162.17	-209.03	-599.78	39°55'45.106"N	104°43'25.603"W	0.00	
8314.00†	90.653	0.394	7721.21	-62.53	-109.04	-599.09	39°55'46.094"N	104°43'25.594"W	0.00	
8414.00†	90.653	0.394	7720.07	37.11	-9.05	-598.41	39°55'47.083"N	104°43'25.585"W	0.00	



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Planned Wellpath Report

ALMA 1S-66-2524-10CDH PWP (REV-A.0)

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**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-10CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-10CDH 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
8514.00†	90.653	0.394	7718.93	136.75	90.95	-597.72	39°55'48.071"N	104°43'25.577"W	0.00	
8614.00†	90.653	0.394	7717.80	236.39	190.94	-597.03	39°55'49.059"N	104°43'25.568"W	0.00	
8714.00†	90.653	0.394	7716.66	336.03	290.93	-596.35	39°55'50.047"N	104°43'25.559"W	0.00	
8814.00†	90.653	0.394	7715.52	435.68	390.92	-595.66	39°55'51.035"N	104°43'25.550"W	0.00	
8914.00†	90.653	0.394	7714.38	535.32	490.91	-594.97	39°55'52.023"N	104°43'25.542"W	0.00	
9014.00†	90.653	0.394	7713.24	634.96	590.90	-594.28	39°55'53.011"N	104°43'25.533"W	0.00	
9114.00†	90.653	0.394	7712.10	734.60	690.89	-593.60	39°55'54.000"N	104°43'25.524"W	0.00	
9214.00†	90.653	0.394	7710.96	834.24	790.88	-592.91	39°55'54.988"N	104°43'25.515"W	0.00	
9314.00†	90.653	0.394	7709.82	933.88	890.88	-592.22	39°55'55.976"N	104°43'25.506"W	0.00	
9414.00†	90.653	0.394	7708.68	1033.52	990.87	-591.54	39°55'56.964"N	104°43'25.498"W	0.00	
9514.00†	90.653	0.394	7707.54	1133.16	1090.86	-590.85	39°55'57.952"N	104°43'25.489"W	0.00	
9614.00†	90.653	0.394	7706.40	1232.80	1190.85	-590.16	39°55'58.940"N	104°43'25.480"W	0.00	
9714.00†	90.653	0.394	7705.26	1332.44	1290.84	-589.48	39°55'59.929"N	104°43'25.471"W	0.00	
9814.00†	90.653	0.394	7704.12	1432.08	1390.83	-588.79	39°56'00.917"N	104°43'25.462"W	0.00	
9914.00†	90.653	0.394	7702.99	1531.72	1490.82	-588.10	39°56'01.905"N	104°43'25.454"W	0.00	
10014.00†	90.653	0.394	7701.85	1631.36	1590.81	-587.42	39°56'02.893"N	104°43'25.445"W	0.00	
10114.00†	90.653	0.394	7700.71	1731.00	1690.80	-586.73	39°56'03.881"N	104°43'25.436"W	0.00	
10214.00†	90.653	0.394	7699.57	1830.64	1790.80	-586.04	39°56'04.869"N	104°43'25.427"W	0.00	
10314.00†	90.653	0.394	7698.43	1930.29	1890.79	-585.36	39°56'05.858"N	104°43'25.418"W	0.00	
10414.00†	90.653	0.394	7697.29	2029.93	1990.78	-584.67	39°56'06.846"N	104°43'25.410"W	0.00	
10514.00†	90.653	0.394	7696.15	2129.57	2090.77	-583.98	39°56'07.834"N	104°43'25.401"W	0.00	
10614.00†	90.653	0.394	7695.01	2229.21	2190.76	-583.30	39°56'08.822"N	104°43'25.392"W	0.00	
10714.00†	90.653	0.394	7693.87	2328.85	2290.75	-582.61	39°56'09.810"N	104°43'25.383"W	0.00	
10814.00†	90.653	0.394	7692.73	2428.49	2390.74	-581.92	39°56'10.798"N	104°43'25.375"W	0.00	
10914.00†	90.653	0.394	7691.59	2528.13	2490.73	-581.24	39°56'11.786"N	104°43'25.366"W	0.00	
11014.00†	90.653	0.394	7690.45	2627.77	2590.72	-580.55	39°56'12.775"N	104°43'25.357"W	0.00	
11114.00†	90.653	0.394	7689.32	2727.41	2690.72	-579.86	39°56'13.763"N	104°43'25.348"W	0.00	
11214.00†	90.653	0.394	7688.18	2827.05	2790.71	-579.17	39°56'14.751"N	104°43'25.339"W	0.00	
11314.00†	90.653	0.394	7687.04	2926.69	2890.70	-578.49	39°56'15.739"N	104°43'25.331"W	0.00	
11414.00†	90.653	0.394	7685.90	3026.33	2990.69	-577.80	39°56'16.727"N	104°43'25.322"W	0.00	
11514.00†	90.653	0.394	7684.76	3125.97	3090.68	-577.11	39°56'17.715"N	104°43'25.313"W	0.00	
11614.00†	90.653	0.394	7683.62	3225.61	3190.67	-576.43	39°56'18.704"N	104°43'25.304"W	0.00	
11714.00†	90.653	0.394	7682.48	3325.25	3290.66	-575.74	39°56'19.692"N	104°43'25.295"W	0.00	
11814.00†	90.653	0.394	7681.34	3424.89	3390.65	-575.05	39°56'20.680"N	104°43'25.287"W	0.00	
11914.00†	90.653	0.394	7680.20	3524.54	3490.65	-574.37	39°56'21.668"N	104°43'25.278"W	0.00	
12014.00†	90.653	0.394	7679.06	3624.18	3590.64	-573.68	39°56'22.656"N	104°43'25.269"W	0.00	
12114.00†	90.653	0.394	7677.92	3723.82	3690.63	-572.99	39°56'23.644"N	104°43'25.260"W	0.00	
12214.00†	90.653	0.394	7676.78	3823.46	3790.62	-572.31	39°56'24.632"N	104°43'25.252"W	0.00	
12314.00†	90.653	0.394	7675.65	3923.10	3890.61	-571.62	39°56'25.621"N	104°43'25.243"W	0.00	
12414.00†	90.653	0.394	7674.51	4022.74	3990.60	-570.93	39°56'26.609"N	104°43'25.234"W	0.00	
12514.00†	90.653	0.394	7673.37	4122.38	4090.59	-570.25	39°56'27.597"N	104°43'25.225"W	0.00	
12614.00†	90.653	0.394	7672.23	4222.02	4190.58	-569.56	39°56'28.585"N	104°43'25.216"W	0.00	
12714.00†	90.653	0.394	7671.09	4321.66	4290.57	-568.87	39°56'29.573"N	104°43'25.208"W	0.00	
12814.00†	90.653	0.394	7669.95	4421.30	4390.57	-568.19	39°56'30.561"N	104°43'25.199"W	0.00	
12914.00†	90.653	0.394	7668.81	4520.94	4490.56	-567.50	39°56'31.550"N	104°43'25.190"W	0.00	



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HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-10CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-10CDH 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
13014.00†	90.653	0.394	7667.67	4620.58	4590.55	-566.81	39°56'32.538"N	104°43'25.181"W	0.00	
13114.00†	90.653	0.394	7666.53	4720.22	4690.54	-566.13	39°56'33.526"N	104°43'25.172"W	0.00	
13214.00†	90.653	0.394	7665.39	4819.86	4790.53	-565.44	39°56'34.514"N	104°43'25.164"W	0.00	
13314.00†	90.653	0.394	7664.25	4919.50	4890.52	-564.75	39°56'35.502"N	104°43'25.155"W	0.00	
13414.00†	90.653	0.394	7663.11	5019.15	4990.51	-564.06	39°56'36.490"N	104°43'25.146"W	0.00	
13514.00†	90.653	0.394	7661.98	5118.79	5090.50	-563.38	39°56'37.479"N	104°43'25.137"W	0.00	
13614.00†	90.653	0.394	7660.84	5218.43	5190.49	-562.69	39°56'38.467"N	104°43'25.128"W	0.00	
13714.00†	90.653	0.394	7659.70	5318.07	5290.49	-562.00	39°56'39.455"N	104°43'25.120"W	0.00	
13814.00†	90.653	0.394	7658.56	5417.71	5390.48	-561.32	39°56'40.443"N	104°43'25.111"W	0.00	
13914.00†	90.653	0.394	7657.42	5517.35	5490.47	-560.63	39°56'41.431"N	104°43'25.102"W	0.00	
14014.00†	90.653	0.394	7656.28	5616.99	5590.46	-559.94	39°56'42.419"N	104°43'25.093"W	0.00	
14114.00†	90.653	0.394	7655.14	5716.63	5690.45	-559.26	39°56'43.407"N	104°43'25.085"W	0.00	
14214.00†	90.653	0.394	7654.00	5816.27	5790.44	-558.57	39°56'44.396"N	104°43'25.076"W	0.00	
14314.00†	90.653	0.394	7652.86	5915.91	5890.43	-557.88	39°56'45.384"N	104°43'25.067"W	0.00	
14414.00†	90.653	0.394	7651.72	6015.55	5990.42	-557.20	39°56'46.372"N	104°43'25.058"W	0.00	
14514.00†	90.653	0.394	7650.58	6115.19	6090.42	-556.51	39°56'47.360"N	104°43'25.049"W	0.00	
14614.00†	90.653	0.394	7649.44	6214.83	6190.41	-555.82	39°56'48.348"N	104°43'25.041"W	0.00	
14714.00†	90.653	0.394	7648.31	6314.47	6290.40	-555.14	39°56'49.336"N	104°43'25.032"W	0.00	
14814.00†	90.653	0.394	7647.17	6414.11	6390.39	-554.45	39°56'50.325"N	104°43'25.023"W	0.00	
14914.00†	90.653	0.394	7646.03	6513.75	6490.38	-553.76	39°56'51.313"N	104°43'25.014"W	0.00	
15014.00†	90.653	0.394	7644.89	6613.40	6590.37	-553.08	39°56'52.301"N	104°43'25.005"W	0.00	
15114.00†	90.653	0.394	7643.75	6713.04	6690.36	-552.39	39°56'53.289"N	104°43'24.997"W	0.00	
15214.00†	90.653	0.394	7642.61	6812.68	6790.35	-551.70	39°56'54.277"N	104°43'24.988"W	0.00	
15314.00†	90.653	0.394	7641.47	6912.32	6890.34	-551.01	39°56'55.265"N	104°43'24.979"W	0.00	
15414.00†	90.653	0.394	7640.33	7011.96	6990.34	-550.33	39°56'56.253"N	104°43'24.970"W	0.00	
15514.00†	90.653	0.394	7639.19	7111.60	7090.33	-549.64	39°56'57.242"N	104°43'24.961"W	0.00	
15530.84	90.653	0.394	7639.00 ²	7128.37	7107.16	-549.53	39°56'57.408"N	104°43'24.960"W	0.00	End of Tangent



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-10CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-10CDH 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		-3.00	0.00	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.24-T1S-R66W SOUTH 1/2 SECTION		-3.00	0.00	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.25-T1S-R66W		-3.00	0.00	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
2) ALMA 1S-66-2524-10CDH BHL ON PLAT (2160'FSL & 2530'FEL, SEC.24)	15530.84	7639.00	7107.16	-549.53	3217670.23	1225323.82	39°56'57.408"N	104°43'24.960"W	point
1) ALMA 1S-66-2524-10CDH ENTRY POINT	8157.10	7723.00	-265.92	-600.17	3217684.31	1217950.80	39°55'44.544"N	104°43'25.608"W	point
SEC.24/25-T1S-R66W HARDLINES (460'FNL 1/2 SEC.24)		7797.00	0.00	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon

SURVEY PROGRAM -

Ref Wellbore: ALMA 1S-66-2524-10CDH PWB Ref Wellpath: ALMA 1S-66-2524-10CDH PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
14.00	15530.84	Custom BHI AutoTrak Curve (Axial Corr, Short spacing) (Rockies 0.03Gt model)		ALMA 1S-66- 2524-10CDH PWB



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**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#10 ALMA 1S-66-2524-10CDH (337'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-10CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-10CDH PWB
Facility	SEC.25-T01S-R66W		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
14.00	0.000	212.456	14.00	Tie On
1800.00	0.000	212.456	1800.00	End of Tangent
2364.31	11.286	212.456	2360.67	End of Build
7155.14	11.286	212.456	7058.85	End of Tangent
8157.10	90.653	0.394	7723.00	End of 3D Arc
15530.84	90.653	0.394	7639.00	End of Tangent