

NICKEL ROAD OPERATING

Location: COLORADO Slot: SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082°FSL & 554°FWL, SEC.17)
Field: WELD COUNTY (NAD83/GRID NORTH) Well: DEHAAN SOUTH 5X-HC-16-07-65
Facility: SEC.17-07N-R65W Wellbore: DEHAAN SOUTH 5X-HC-16-07-65 PWB

Plot reference wellpath is DEHAAN SOUTH 5X-HC-16-07-65 PWB (REV-B.0)

Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	
True vertical depths are referenced to RIG (16) (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (16) (RKB)	Scale: True distance
RIG (16) (RKB) to Mean Sea Level: 4923 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082°FSL & 554°FWL, SEC.17)): 0 feet	Created by: robale01 on 2019-02-13
Coordinates are in feet referenced to Slot	Database: WADENVER

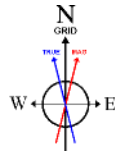
Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.17-07N-R65W	322379.714	1451814.732	40°34'15.028"N	104°41'40.355"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082°FSL & 554°FWL, SEC.17)	-47.36	14.33	322379.714	1451766.771
RIG (16) (RKB) to Ground level (At Slot: SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082°FSL & 554°FWL, SEC.17))				4923ft
Mean Sea Level to Ground level (At Slot: SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082°FSL & 554°FWL, SEC.17))				0ft
RIG (16) (RKB) to Mean Sea Level				4923ft

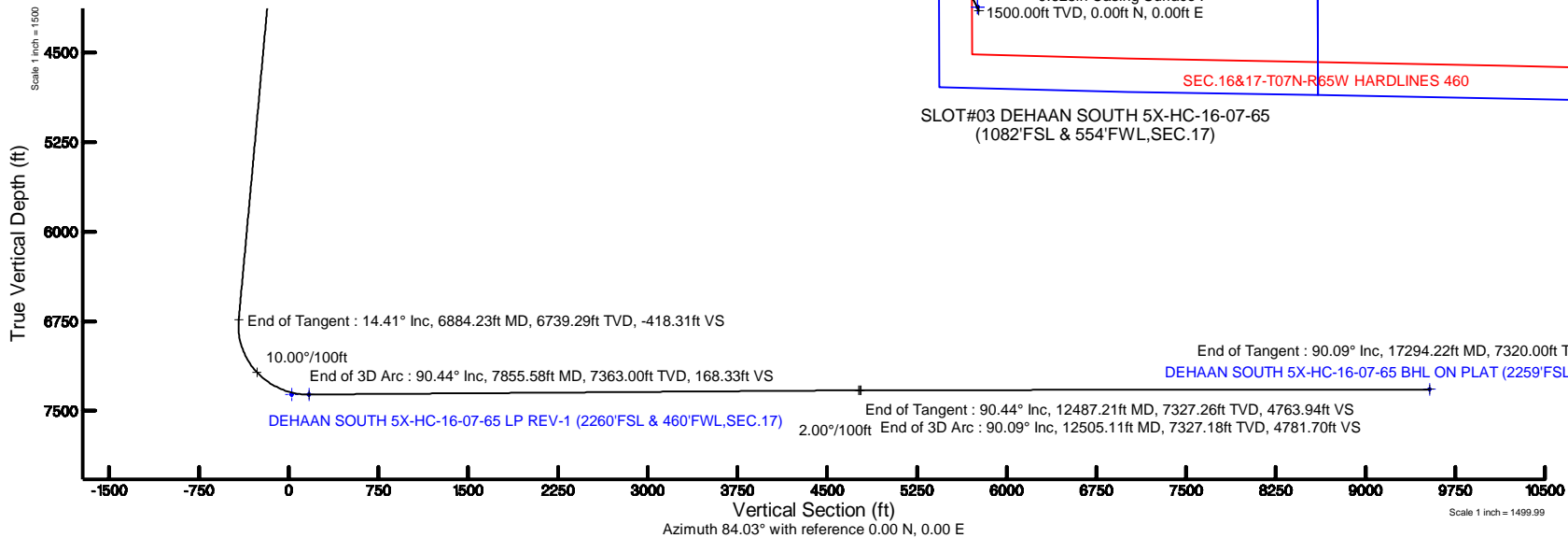
Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
16.00	17294.22	BHI NavTrak	BHI NavTrak (Rotating)		DEHAAN SOUTH 5X-HC-16-07-65 PWB

NICKEL ROAD
OPERATING



BGGM (1900.0 to 2020.0) Dip: 66.92° Field: 52339 nT
Magnetic North is 8.19 degrees East of True North (at 27/2019)
Grid North is 0.52 degrees East of True North
To correct azimuth from True to Grid subtract 0.52 degrees
To correct azimuth from Magnetic to Grid add 7.67 degrees

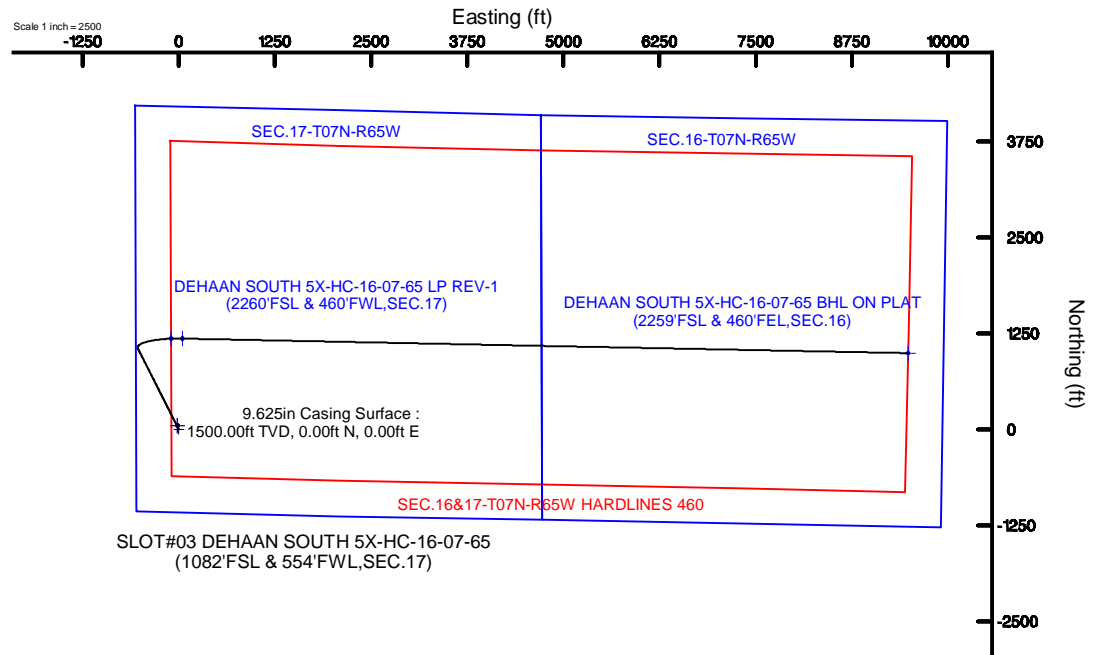


Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.16-17-T07N-R65W HARDLINES 460		-1.00	47.36	-14.33	322379.71	1451814.73	40°34'15.028"N	104°41'40.355"W
SEC.16-T07N-R65W		-1.00	47.36	-14.33	322379.71	1451814.73	40°34'15.028"N	104°41'40.355"W
SEC.17-T07N-R65W		-1.00	47.36	-14.33	322379.71	1451814.73	40°34'15.028"N	104°41'40.355"W
DEHAAN SOUTH 5X-HC-16-07-65 BHL ON PLAT (2259°FSL & 460°FWL, SEC.16)	17294.22	7320.00	991.16	9482.39	322380.15	1452757.86	40°34'23.477"N	104°39'27.184"W
DEHAAN SOUTH 5X-HC-16-07-65 LP ON PLAT (2260°FSL & 460°FWL, SEC.17)		7363.00	1181.04	-86.52	322380.53	1452947.75	40°34'28.231"N	104°41'41.312"W
DEHAAN SOUTH 5X-HC-16-07-65 LP REV-1 (2260°FSL & 460°FWL, SEC.17)	7855.58	7363.00	1181.04	45.80	322380.84	1452947.77	40°34'28.218"N	104°41'38.442"W

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	16.00	0.000	333.203	16.00	0.00	0.00	0.00	0.00
End of Tangent	1800.00	0.000	333.203	1800.00	0.00	0.00	0.00	0.00
End of Build	2520.71	14.414	333.203	2513.13	80.50	-40.66	2.00	-32.07
End of Tangent	6884.23	14.414	333.203	6739.29	1050.06	-530.35	0.00	-418.31
End of 3D Arc	7855.58	90.442	91.171	7363.00	1181.04	45.80	10.00	168.33
End of Tangent	12487.21	90.442	91.171	7327.26	1086.42	4676.33	0.00	4763.94
End of 3D Arc	12505.11	90.086	91.135	7327.18	1086.06	4694.23	2.00	4781.70
End of Tangent	17294.22	90.086	91.135	7320.00	991.16	9482.39	0.00	9534.05





Planned Wellpath Report

DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	NICKEL ROAD OPERATING	Slot	SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Robiale01
Scale	0.999972	Report Generated	2/13/2019 at 10:30:46 AM
Convergence at slot	0.52° East	Database/Source file	WA DENVER/DEHAAN_SOUTH_5X-HC-16-07-65_PWP__REV-B.0_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-47.96	14.33	3223774.04	1451766.77	40°34'14.552"N	104°41'40.175"W
Facility Reference Pt			3223759.71	1451814.73	40°34'15.028"N	104°41'40.355"W
Field Reference Pt			3183871.85	1457749.61	40°35'16.933"N	104°50'16.656"W

WELLPATH DATUM

Calculation method	Minimum curvature	RIG (16') (RKB) to Facility Vertical Datum	4923.00ft
Horizontal Reference Pt	Slot	RIG (16') (RKB) to Mean Sea Level	4923.00ft
Vertical Reference Pt	RIG (16') (RKB)	RIG (16') (RKB) to Ground Level at Slot (SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17))	4923.00ft
MD Reference Pt	RIG (16') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	84.03°



Planned Wellpath Report

DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (181 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	333.203	0.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
16.00	0.000	333.203	16.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	Tie On
116.00†	0.000	333.203	116.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
216.00†	0.000	333.203	216.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
316.00†	0.000	333.203	316.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
416.00†	0.000	333.203	416.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
516.00†	0.000	333.203	516.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
616.00†	0.000	333.203	616.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
716.00†	0.000	333.203	716.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
816.00†	0.000	333.203	816.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
916.00†	0.000	333.203	916.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1016.00†	0.000	333.203	1016.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1116.00†	0.000	333.203	1116.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1216.00†	0.000	333.203	1216.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1316.00†	0.000	333.203	1316.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1416.00†	0.000	333.203	1416.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1516.00†	0.000	333.203	1516.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1616.00†	0.000	333.203	1616.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1716.00†	0.000	333.203	1716.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	
1800.00	0.000	333.203	1800.00	0.00	0.00	0.00	40°34'14.552"N	104°41'40.175"W	0.00	End of Tangent
1816.00†	0.320	333.203	1816.00	-0.02	0.04	-0.02	40°34'14.553"N	104°41'40.175"W	2.00	
1916.00†	2.320	333.203	1915.97	-0.83	2.10	-1.06	40°34'14.573"N	104°41'40.188"W	2.00	
2016.00†	4.320	333.203	2015.80	-2.89	7.27	-3.67	40°34'14.625"N	104°41'40.221"W	2.00	
2116.00†	6.320	333.203	2115.36	-6.19	15.54	-7.85	40°34'14.707"N	104°41'40.275"W	2.00	
2216.00†	8.320	333.203	2214.54	-10.72	26.91	-13.59	40°34'14.820"N	104°41'40.348"W	2.00	
2316.00†	10.320	333.203	2313.21	-16.48	41.37	-20.89	40°34'14.963"N	104°41'40.441"W	2.00	
2416.00†	12.320	333.203	2411.26	-23.46	58.89	-29.74	40°34'15.137"N	104°41'40.553"W	2.00	
2516.00†	14.320	333.203	2508.57	-31.65	79.45	-40.13	40°34'15.341"N	104°41'40.685"W	2.00	
2520.71	14.414	333.203	2513.13	-32.07	80.50	-40.66	40°34'15.351"N	104°41'40.692"W	2.00	End of Build
2616.00†	14.414	333.203	2605.42	-40.50	101.67	-51.35	40°34'15.562"N	104°41'40.828"W	0.00	
2716.00†	14.414	333.203	2702.27	-49.35	123.89	-62.57	40°34'15.782"N	104°41'40.971"W	0.00	
2816.00†	14.414	333.203	2799.13	-58.20	146.11	-73.79	40°34'16.003"N	104°41'41.114"W	0.00	
2916.00†	14.414	333.203	2895.98	-67.06	168.33	-85.02	40°34'16.223"N	104°41'41.257"W	0.00	
3016.00†	14.414	333.203	2992.83	-75.91	190.55	-96.24	40°34'16.444"N	104°41'41.399"W	0.00	
3116.00†	14.414	333.203	3089.68	-84.76	212.77	-107.46	40°34'16.664"N	104°41'41.542"W	0.00	
3216.00†	14.414	333.203	3186.54	-93.61	234.99	-118.68	40°34'16.885"N	104°41'41.685"W	0.00	

WELLPATH DATA (181 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3316.00†	14.414	333.203	3283.39	-102.46	257.21	-129.91	40°34'17.106"N	104°41'41.828"W	0.00	
3416.00†	14.414	333.203	3380.24	-111.31	279.43	-141.13	40°34'17.326"N	104°41'41.971"W	0.00	
3516.00†	14.414	333.203	3477.09	-120.17	301.65	-152.35	40°34'17.547"N	104°41'42.113"W	0.00	
3616.00†	14.414	333.203	3573.94	-129.02	323.87	-163.57	40°34'17.767"N	104°41'42.256"W	0.00	
3716.00†	14.414	333.203	3670.80	-137.87	346.09	-174.80	40°34'17.988"N	104°41'42.399"W	0.00	
3816.00†	14.414	333.203	3767.65	-146.72	368.31	-186.02	40°34'18.208"N	104°41'42.542"W	0.00	
3916.00†	14.414	333.203	3864.50	-155.57	390.53	-197.24	40°34'18.429"N	104°41'42.685"W	0.00	
4016.00†	14.414	333.203	3961.35	-164.42	412.75	-208.46	40°34'18.649"N	104°41'42.827"W	0.00	
4116.00†	14.414	333.203	4058.20	-173.28	434.97	-219.69	40°34'18.870"N	104°41'42.970"W	0.00	



Planned Wellpath Report

DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (181 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4216.00†	14.414	333.203	4155.06	-182.13	457.19	-230.91	40°34'19.091"N	104°41'43.113"W	0.00	
4316.00†	14.414	333.203	4251.91	-190.98	479.40	-242.13	40°34'19.311"N	104°41'43.256"W	0.00	
4416.00†	14.414	333.203	4348.76	-199.83	501.62	-253.35	40°34'19.532"N	104°41'43.399"W	0.00	
4516.00†	14.414	333.203	4445.61	-208.68	523.84	-264.57	40°34'19.752"N	104°41'43.541"W	0.00	
4616.00†	14.414	333.203	4542.47	-217.53	546.06	-275.80	40°34'19.973"N	104°41'43.684"W	0.00	
4716.00†	14.414	333.203	4639.32	-226.39	568.28	-287.02	40°34'20.193"N	104°41'43.827"W	0.00	
4816.00†	14.414	333.203	4736.17	-235.24	590.50	-298.24	40°34'20.414"N	104°41'43.970"W	0.00	
4916.00†	14.414	333.203	4833.02	-244.09	612.72	-309.46	40°34'20.634"N	104°41'44.113"W	0.00	
5016.00†	14.414	333.203	4929.87	-252.94	634.94	-320.69	40°34'20.855"N	104°41'44.256"W	0.00	
5116.00†	14.414	333.203	5026.73	-261.79	657.16	-331.91	40°34'21.076"N	104°41'44.398"W	0.00	
5216.00†	14.414	333.203	5123.58	-270.64	679.38	-343.13	40°34'21.296"N	104°41'44.541"W	0.00	
5316.00†	14.414	333.203	5220.43	-279.50	701.60	-354.35	40°34'21.517"N	104°41'44.684"W	0.00	
5416.00†	14.414	333.203	5317.28	-288.35	723.82	-365.58	40°34'21.737"N	104°41'44.827"W	0.00	
5516.00†	14.414	333.203	5414.13	-297.20	746.04	-376.80	40°34'21.958"N	104°41'44.970"W	0.00	
5616.00†	14.414	333.203	5510.99	-306.05	768.26	-388.02	40°34'22.178"N	104°41'45.112"W	0.00	
5716.00†	14.414	333.203	5607.84	-314.90	790.48	-399.24	40°34'22.399"N	104°41'45.255"W	0.00	
5816.00†	14.414	333.203	5704.69	-323.75	812.70	-410.47	40°34'22.619"N	104°41'45.398"W	0.00	
5916.00†	14.414	333.203	5801.54	-332.60	834.92	-421.69	40°34'22.840"N	104°41'45.541"W	0.00	
6016.00†	14.414	333.203	5898.40	-341.46	857.14	-432.91	40°34'23.061"N	104°41'45.684"W	0.00	
6116.00†	14.414	333.203	5995.25	-350.31	879.36	-444.13	40°34'23.281"N	104°41'45.826"W	0.00	
6216.00†	14.414	333.203	6092.10	-359.16	901.58	-455.36	40°34'23.502"N	104°41'45.969"W	0.00	
6316.00†	14.414	333.203	6188.95	-368.01	923.80	-466.58	40°34'23.722"N	104°41'46.112"W	0.00	
6416.00†	14.414	333.203	6285.80	-376.86	946.02	-477.80	40°34'23.943"N	104°41'46.255"W	0.00	
6516.00†	14.414	333.203	6382.66	-385.71	968.24	-489.02	40°34'24.163"N	104°41'46.398"W	0.00	
6616.00†	14.414	333.203	6479.51	-394.57	990.46	-500.25	40°34'24.384"N	104°41'46.540"W	0.00	
6716.00†	14.414	333.203	6576.36	-403.42	1012.68	-511.47	40°34'24.604"N	104°41'46.683"W	0.00	
6816.00†	14.414	333.203	6673.21	-412.27	1034.90	-522.69	40°34'24.825"N	104°41'46.826"W	0.00	
6884.23	14.414	333.203	6739.29	-418.31	1050.06	-530.35	40°34'24.976"N	104°41'46.924"W	0.00	End of Tangent
6916.00†	13.264	345.620	6770.15	-420.25	1057.12	-533.04	40°34'25.046"N	104°41'46.958"W	10.00	
7016.00†	14.330	28.267	6867.51	-414.95	1079.19	-530.02	40°34'25.263"N	104°41'46.916"W	10.00	
7116.00†	20.770	54.266	6962.94	-392.54	1100.50	-509.71	40°34'25.472"N	104°41'46.650"W	10.00	
7216.00†	29.223	67.106	7053.56	-353.70	1120.40	-472.74	40°34'25.665"N	104°41'46.169"W	10.00	
7316.00†	38.379	74.398	7136.60	-299.60	1138.29	-420.22	40°34'25.837"N	104°41'45.486"W	10.00	
7416.00†	47.833	79.194	7209.55	-231.90	1153.63	-353.75	40°34'25.983"N	104°41'44.623"W	10.00	
7516.00†	57.433	82.726	7270.18	-152.64	1165.94	-275.35	40°34'26.098"N	104°41'43.606"W	10.00	
7616.00†	67.113	85.566	7316.66	-64.24	1174.86	-187.40	40°34'26.178"N	104°41'42.465"W	10.00	

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7716.00†	76.837	88.024	7347.57	30.61	1180.12	-92.57	40°34'26.221"N	104°41'41.235"W	10.00	
7816.00†	86.583	90.293	7361.97	129.05	1181.54	6.25	40°34'26.227"N	104°41'39.955"W	10.00	
7855.58	90.442	91.171	7363.00 [†]	168.33	1181.04	45.80	40°34'26.218"N	104°41'39.442"W	10.00	End of 3D Arc
7916.00†	90.442	91.171	7362.53	228.28	1179.80	106.21	40°34'26.200"N	104°41'38.660"W	0.00	
8016.00†	90.442	91.171	7361.76	327.51	1177.76	206.18	40°34'26.171"N	104°41'37.364"W	0.00	
8116.00†	90.442	91.171	7360.99	426.73	1175.72	306.16	40°34'26.142"N	104°41'36.069"W	0.00	
8216.00†	90.442	91.171	7360.22	525.95	1173.68	406.14	40°34'26.113"N	104°41'34.774"W	0.00	
8316.00†	90.442	91.171	7359.45	625.17	1171.63	506.11	40°34'26.084"N	104°41'33.479"W	0.00	
8416.00†	90.442	91.171	7358.68	724.39	1169.59	606.09	40°34'26.055"N	104°41'32.183"W	0.00	



Planned Wellpath Report

DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (181 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8516.00†	90.442	91.171	7357.90	823.62	1167.55	706.06	40°34'26.025"N	104°41'30.888"W	0.00	
8616.00†	90.442	91.171	7357.13	922.84	1165.50	806.04	40°34'25.996"N	104°41'29.593"W	0.00	
8716.00†	90.442	91.171	7356.36	1022.06	1163.46	906.02	40°34'25.967"N	104°41'28.297"W	0.00	
8816.00†	90.442	91.171	7355.59	1121.28	1161.42	1005.99	40°34'25.938"N	104°41'27.002"W	0.00	
8916.00†	90.442	91.171	7354.82	1220.50	1159.38	1105.97	40°34'25.909"N	104°41'25.707"W	0.00	
9016.00†	90.442	91.171	7354.05	1319.73	1157.33	1205.94	40°34'25.879"N	104°41'24.412"W	0.00	
9116.00†	90.442	91.171	7353.27	1418.95	1155.29	1305.92	40°34'25.850"N	104°41'23.116"W	0.00	
9216.00†	90.442	91.171	7352.50	1518.17	1153.25	1405.90	40°34'25.821"N	104°41'21.821"W	0.00	
9316.00†	90.442	91.171	7351.73	1617.39	1151.20	1505.87	40°34'25.792"N	104°41'20.526"W	0.00	
9416.00†	90.442	91.171	7350.96	1716.62	1149.16	1605.85	40°34'25.763"N	104°41'19.231"W	0.00	
9516.00†	90.442	91.171	7350.19	1815.84	1147.12	1705.83	40°34'25.733"N	104°41'17.935"W	0.00	
9616.00†	90.442	91.171	7349.42	1915.06	1145.08	1805.80	40°34'25.704"N	104°41'16.640"W	0.00	
9716.00†	90.442	91.171	7348.64	2014.28	1143.03	1905.78	40°34'25.675"N	104°41'15.345"W	0.00	
9816.00†	90.442	91.171	7347.87	2113.50	1140.99	2005.75	40°34'25.646"N	104°41'14.049"W	0.00	
9916.00†	90.442	91.171	7347.10	2212.73	1138.95	2105.73	40°34'25.616"N	104°41'12.754"W	0.00	
10016.00†	90.442	91.171	7346.33	2311.95	1136.90	2205.71	40°34'25.587"N	104°41'11.459"W	0.00	
10116.00†	90.442	91.171	7345.56	2411.17	1134.86	2305.68	40°34'25.558"N	104°41'10.164"W	0.00	
10216.00†	90.442	91.171	7344.79	2510.39	1132.82	2405.66	40°34'25.529"N	104°41'08.868"W	0.00	
10316.00†	90.442	91.171	7344.01	2609.61	1130.78	2505.63	40°34'25.499"N	104°41'07.573"W	0.00	
10416.00†	90.442	91.171	7343.24	2708.84	1128.73	2605.61	40°34'25.470"N	104°41'06.278"W	0.00	
10516.00†	90.442	91.171	7342.47	2808.06	1126.69	2705.59	40°34'25.441"N	104°41'04.983"W	0.00	
10616.00†	90.442	91.171	7341.70	2907.28	1124.65	2805.56	40°34'25.412"N	104°41'03.687"W	0.00	
10716.00†	90.442	91.171	7340.93	3006.50	1122.60	2905.54	40°34'25.382"N	104°41'02.392"W	0.00	
10816.00†	90.442	91.171	7340.16	3105.72	1120.56	3005.52	40°34'25.353"N	104°41'01.097"W	0.00	
10916.00†	90.442	91.171	7339.38	3204.95	1118.52	3105.49	40°34'25.324"N	104°40'59.802"W	0.00	
11016.00†	90.442	91.171	7338.61	3304.17	1116.48	3205.47	40°34'25.294"N	104°40'58.506"W	0.00	
11116.00†	90.442	91.171	7337.84	3403.39	1114.43	3305.44	40°34'25.265"N	104°40'57.211"W	0.00	
11216.00†	90.442	91.171	7337.07	3502.61	1112.39	3405.42	40°34'25.236"N	104°40'55.916"W	0.00	
11316.00†	90.442	91.171	7336.30	3601.83	1110.35	3505.40	40°34'25.207"N	104°40'54.620"W	0.00	
11416.00†	90.442	91.171	7335.53	3701.06	1108.30	3605.37	40°34'25.177"N	104°40'53.325"W	0.00	
11516.00†	90.442	91.171	7334.75	3800.28	1106.26	3705.35	40°34'25.148"N	104°40'52.030"W	0.00	
11616.00†	90.442	91.171	7333.98	3899.50	1104.22	3805.32	40°34'25.119"N	104°40'50.735"W	0.00	
11716.00†	90.442	91.171	7333.21	3998.72	1102.17	3905.30	40°34'25.089"N	104°40'49.439"W	0.00	
11816.00†	90.442	91.171	7332.44	4097.94	1100.13	4005.28	40°34'25.060"N	104°40'48.144"W	0.00	
11916.00†	90.442	91.171	7331.67	4197.17	1098.09	4105.25	40°34'25.031"N	104°40'46.849"W	0.00	
12016.00†	90.442	91.171	7330.90	4296.39	1096.05	4205.23	40°34'25.001"N	104°40'45.554"W	0.00	

WELLPATH DATA (181 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12116.00†	90.442	91.171	7330.12	4395.61	1094.00	4305.21	40°34'24.972"N	104°40'44.258"W	0.00	
12216.00†	90.442	91.171	7329.35	4494.83	1091.96	4405.18	40°34'24.943"N	104°40'42.963"W	0.00	
12316.00†	90.442	91.171	7328.58	4594.05	1089.92	4505.16	40°34'24.913"N	104°40'41.668"W	0.00	
12416.00†	90.442	91.171	7327.81	4693.28	1087.87	4605.13	40°34'24.884"N	104°40'40.373"W	0.00	
12487.21	90.442	91.171	7327.26	4763.94	1086.42	4676.33	40°34'24.863"N	104°40'39.450"W	0.00	End of Tangent
12505.11	90.086	91.135	7327.18	4781.70	1086.06	4694.23	40°34'24.858"N	104°40'39.218"W	2.00	End of 3D Arc
12516.00†	90.086	91.135	7327.16	4792.50	1085.84	4705.11	40°34'24.855"N	104°40'39.077"W	0.00	
12616.00†	90.086	91.135	7327.01	4891.73	1083.86	4805.09	40°34'24.826"N	104°40'37.782"W	0.00	
12716.00†	90.086	91.135	7326.86	4990.97	1081.88	4905.07	40°34'24.797"N	104°40'36.487"W	0.00	

Planned Wellpath Report

DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (181 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12816.00†	90.086	91.135	7326.71	5090.20	1079.90	5005.05	40°34'24.769"N	104°40'35.191"W	0.00	
12916.00†	90.086	91.135	7326.56	5189.43	1077.92	5105.03	40°34'24.740"N	104°40'33.896"W	0.00	
13016.00†	90.086	91.135	7326.41	5288.66	1075.94	5205.01	40°34'24.711"N	104°40'32.601"W	0.00	
13116.00†	90.086	91.135	7326.26	5387.90	1073.95	5304.99	40°34'24.682"N	104°40'31.305"W	0.00	
13216.00†	90.086	91.135	7326.11	5487.13	1071.97	5404.97	40°34'24.653"N	104°40'30.010"W	0.00	
13316.00†	90.086	91.135	7325.96	5586.36	1069.99	5504.95	40°34'24.625"N	104°40'28.715"W	0.00	
13416.00†	90.086	91.135	7325.81	5685.59	1068.01	5604.93	40°34'24.596"N	104°40'27.419"W	0.00	
13516.00†	90.086	91.135	7325.66	5784.83	1066.03	5704.91	40°34'24.567"N	104°40'26.124"W	0.00	
13616.00†	90.086	91.135	7325.51	5884.06	1064.05	5804.89	40°34'24.538"N	104°40'24.829"W	0.00	
13716.00†	90.086	91.135	7325.36	5983.29	1062.07	5904.87	40°34'24.510"N	104°40'23.534"W	0.00	
13816.00†	90.086	91.135	7325.21	6082.52	1060.08	6004.85	40°34'24.481"N	104°40'22.238"W	0.00	
13916.00†	90.086	91.135	7325.06	6181.76	1058.10	6104.83	40°34'24.452"N	104°40'20.943"W	0.00	
14016.00†	90.086	91.135	7324.91	6280.99	1056.12	6204.81	40°34'24.423"N	104°40'19.648"W	0.00	
14116.00†	90.086	91.135	7324.76	6380.22	1054.14	6304.80	40°34'24.394"N	104°40'18.352"W	0.00	
14216.00†	90.086	91.135	7324.61	6479.45	1052.16	6404.78	40°34'24.366"N	104°40'17.057"W	0.00	
14316.00†	90.086	91.135	7324.46	6578.69	1050.18	6504.76	40°34'24.337"N	104°40'15.762"W	0.00	
14416.00†	90.086	91.135	7324.31	6677.92	1048.19	6604.74	40°34'24.308"N	104°40'14.466"W	0.00	
14516.00†	90.086	91.135	7324.16	6777.15	1046.21	6704.72	40°34'24.279"N	104°40'13.171"W	0.00	
14616.00†	90.086	91.135	7324.01	6876.38	1044.23	6804.70	40°34'24.250"N	104°40'11.876"W	0.00	
14716.00†	90.086	91.135	7323.86	6975.62	1042.25	6904.68	40°34'24.221"N	104°40'10.580"W	0.00	
14816.00†	90.086	91.135	7323.71	7074.85	1040.27	7004.66	40°34'24.193"N	104°40'09.285"W	0.00	
14916.00†	90.086	91.135	7323.56	7174.08	1038.29	7104.64	40°34'24.164"N	104°40'07.990"W	0.00	
15016.00†	90.086	91.135	7323.41	7273.31	1036.31	7204.62	40°34'24.135"N	104°40'06.694"W	0.00	
15116.00†	90.086	91.135	7323.26	7372.55	1034.32	7304.60	40°34'24.106"N	104°40'05.399"W	0.00	
15216.00†	90.086	91.135	7323.11	7471.78	1032.34	7404.58	40°34'24.077"N	104°40'04.104"W	0.00	
15316.00†	90.086	91.135	7322.96	7571.01	1030.36	7504.56	40°34'24.048"N	104°40'02.808"W	0.00	
15416.00†	90.086	91.135	7322.81	7670.24	1028.38	7604.54	40°34'24.020"N	104°40'01.513"W	0.00	
15516.00†	90.086	91.135	7322.67	7769.48	1026.40	7704.52	40°34'23.991"N	104°40'00.218"W	0.00	
15616.00†	90.086	91.135	7322.52	7868.71	1024.42	7804.50	40°34'23.962"N	104°39'58.923"W	0.00	
15716.00†	90.086	91.135	7322.37	7967.94	1022.43	7904.48	40°34'23.933"N	104°39'57.627"W	0.00	
15816.00†	90.086	91.135	7322.22	8067.17	1020.45	8004.46	40°34'23.904"N	104°39'56.332"W	0.00	
15916.00†	90.086	91.135	7322.07	8166.41	1018.47	8104.44	40°34'23.875"N	104°39'55.037"W	0.00	
16016.00†	90.086	91.135	7321.92	8265.64	1016.49	8204.42	40°34'23.846"N	104°39'53.741"W	0.00	
16116.00†	90.086	91.135	7321.77	8364.87	1014.51	8304.40	40°34'23.817"N	104°39'52.446"W	0.00	
16216.00†	90.086	91.135	7321.62	8464.10	1012.53	8404.38	40°34'23.789"N	104°39'51.151"W	0.00	
16316.00†	90.086	91.135	7321.47	8563.34	1010.55	8504.36	40°34'23.760"N	104°39'49.855"W	0.00	

WELLPATH DATA (181 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16416.00†	90.086	91.135	7321.32	8662.57	1008.56	8604.34	40°34'23.731"N	104°39'48.560"W	0.00	
16516.00†	90.086	91.135	7321.17	8761.80	1006.58	8704.32	40°34'23.702"N	104°39'47.265"W	0.00	
16616.00†	90.086	91.135	7321.02	8861.03	1004.60	8804.30	40°34'23.673"N	104°39'45.969"W	0.00	
16716.00†	90.086	91.135	7320.87	8960.27	1002.62	8904.28	40°34'23.644"N	104°39'44.674"W	0.00	
16816.00†	90.086	91.135	7320.72	9059.50	1000.64	9004.26	40°34'23.615"N	104°39'43.379"W	0.00	
16916.00†	90.086	91.135	7320.57	9158.73	998.66	9104.24	40°34'23.586"N	104°39'42.084"W	0.00	
17016.00†	90.086	91.135	7320.42	9257.96	996.67	9204.22	40°34'23.557"N	104°39'40.788"W	0.00	
17116.00†	90.086	91.135	7320.27	9357.20	994.69	9304.20	40°34'23.528"N	104°39'39.493"W	0.00	
17216.00†	90.086	91.135	7320.12	9456.43	992.71	9404.18	40°34'23.499"N	104°39'38.198"W	0.00	

Planned Wellpath Report

DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	NICKEL ROAD OPERATING	Slot	SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (181 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17294.22	90.086	91.135	7320.00 ²	9534.05	991.16	9482.39	40°34'23.477"N	104°39'37.184"W	0.00	End of Tangent

HOLE & CASING SECTIONS - Ref Wellbore: DEHAAN SOUTH 5X-HC-16-07-65 PWB Ref Wellpath: DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing Surface	16.00	1500.00	1484.00	16.00	1500.00	0.00	0.00	0.00	0.00

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.16&17-T07N-R65W HARDLINES 460'		-1.00	47.96	-14.33	3223759.71	1451814.73	40°34'15.028"N	104°41'40.355"W	polygon
SEC.16-T07N-R65W		-1.00	47.96	-14.33	3223759.71	1451814.73	40°34'15.028"N	104°41'40.355"W	polygon
SEC.17-T07N-R65W		-1.00	47.96	-14.33	3223759.71	1451814.73	40°34'15.028"N	104°41'40.355"W	polygon
2) DEHAAN SOUTH 5X-HC-16-07-65 BHL ON PLAT (2259'FSL & 460'FEL,SEC.16)	17294.22	7320.00	991.16	9482.39	3233256.15	1452757.90	40°34'23.477"N	104°39'37.184"W	point
DEHAAN SOUTH 5X-HC-16-07-65 LP ON PLAT (2260'FSL & 460'FWL,SEC.17)		7363.00	1181.02	-98.52	3223675.53	1452947.75	40°34'26.231"N	104°41'41.312"W	point
1) DEHAAN SOUTH 5X-HC-16-07-65 LP REV-1 (2260'FSL & 604'FWL,SEC.17)	7855.58	7363.00	1181.04	45.80	3223819.84	1452947.77	40°34'26.218"N	104°41'39.442"W	point

SURVEY PROGRAM - Ref Wellbore: DEHAAN SOUTH 5X-HC-16-07-65 PWB Ref Wellpath: DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	17294.22	BHI NaviTrak (Rotating)		DEHAAN SOUTH 5X-HC-16-07-65 PWB

Planned Wellpath Report

DEHAAN SOUTH 5X-HC-16-07-65 PWP (REV-B.0)

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#03 DEHAAN SOUTH 5X-HC-16-07-65 (1082'FSL & 554'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	333.203	16.00	Tie On
1800.00	0.000	333.203	1800.00	End of Tangent
2520.71	14.414	333.203	2513.13	End of Build
6884.23	14.414	333.203	6739.29	End of Tangent
7855.58	90.442	91.171	7363.00	End of 3D Arc
12487.21	90.442	91.171	7327.26	End of Tangent
12505.11	90.086	91.135	7327.18	End of 3D Arc
17294.22	90.086	91.135	7320.00	End of Tangent