

NICKEL ROAD OPERATING

Location: COLORADO Slot: SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL, SEC.17)
Field: WELD COUNTY (NAD83/GRID NORTH) Well: DEHAAN SOUTH 5X-HNC-16-07-65
Facility: SEC.17-07N-R65W Wellbore: DEHAAN SOUTH 5X-HNC-16-07-65 PWB

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

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#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL, SEC.17)): 0 feet	Created by: nobiale01 on 2019-02-13
Coordinates are in feet referenced to Slot	Database: WADENVER

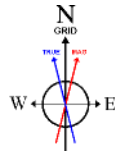
Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.17-07N-R65W			322378.714	1451814.732	40°34'15.038"N	104°41'40.355"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL, SEC.17)	-23.98	7.16	322378.677	1451790.751	40°34'14.790"N	104°41'40.265"W
RIG (16) (RKB) to Ground level (At Slot: SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL, SEC.17))					4923ft	
Mean Sea Level to Ground level (At Slot: SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL, SEC.17))					0ft	
RIG (16) (RKB) to Mean Sea Level					4923ft	

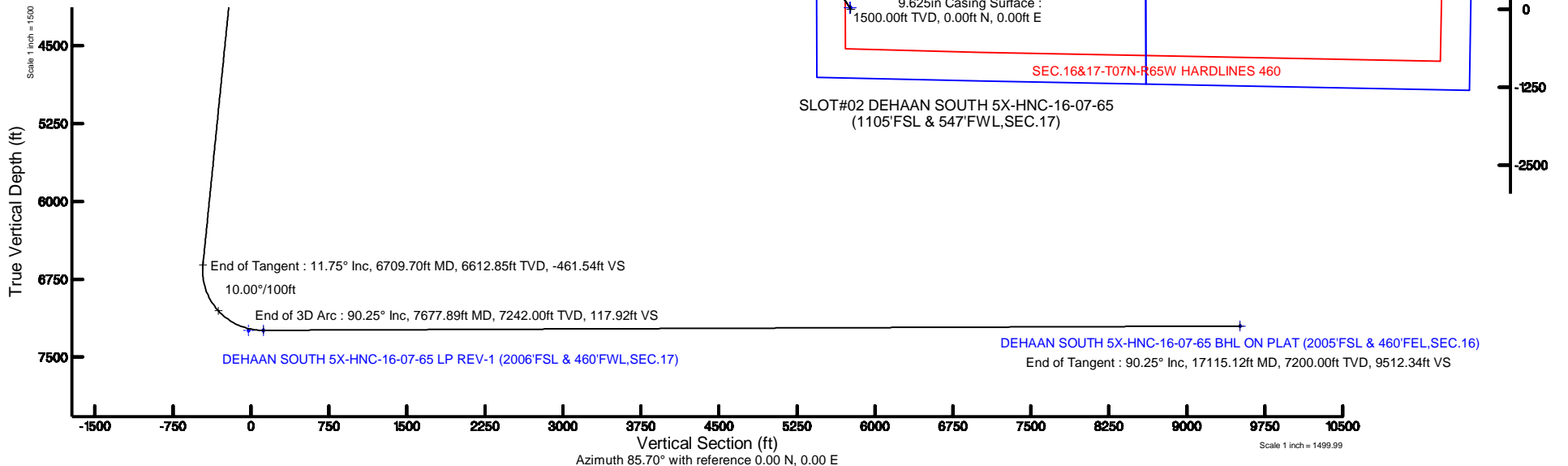
Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
16.00	17115.12	BHI NaviTrak	BHI NaviTrak (Rotating)		DEHAAN SOUTH 5X-HNC-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





Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION

Operator	NICKEL ROAD OPERATING	Slot	SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HNC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HNC-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 10:21:27 AM
Convergence at slot	0.52° East	Database/Source file	WA DENVER/DEHAAN_SOUTH_5X-HNC-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	-23.98	7.16	3223766.88	1451790.75	40°34'14.790"N	104°41'40.265"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#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'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	85.70°



Planned Wellpath Report

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Area	COLORADO	Well	DEHAAN SOUTH 5X-HNC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HNC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (177 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	326.994	0.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
16.00	0.000	326.994	16.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	Tie On
116.00†	0.000	326.994	116.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
216.00†	0.000	326.994	216.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
316.00†	0.000	326.994	316.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
416.00†	0.000	326.994	416.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
516.00†	0.000	326.994	516.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
616.00†	0.000	326.994	616.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
716.00†	0.000	326.994	716.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
816.00†	0.000	326.994	816.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
916.00†	0.000	326.994	916.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1016.00†	0.000	326.994	1016.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1116.00†	0.000	326.994	1116.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1216.00†	0.000	326.994	1216.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1316.00†	0.000	326.994	1316.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1416.00†	0.000	326.994	1416.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1516.00†	0.000	326.994	1516.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1616.00†	0.000	326.994	1616.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	
1700.00	0.000	326.994	1700.00	0.00	0.00	0.00	40°34'14.790"N	104°41'40.265"W	0.00	End of Tangent
1716.00†	0.320	326.994	1716.00	-0.02	0.04	-0.02	40°34'14.790"N	104°41'40.265"W	2.00	
1816.00†	2.320	326.994	1815.97	-1.13	1.97	-1.28	40°34'14.810"N	104°41'40.281"W	2.00	
1916.00†	4.320	326.994	1915.80	-3.91	6.83	-4.43	40°34'14.858"N	104°41'40.321"W	2.00	
2016.00†	6.320	326.994	2015.36	-8.36	14.60	-9.48	40°34'14.935"N	104°41'40.386"W	2.00	
2116.00†	8.320	326.994	2114.54	-14.48	25.29	-16.42	40°34'15.041"N	104°41'40.475"W	2.00	
2216.00†	10.320	326.994	2213.21	-22.26	38.87	-25.25	40°34'15.176"N	104°41'40.587"W	2.00	
2287.73	11.755	326.994	2283.62	-28.86	50.38	-32.73	40°34'15.291"N	104°41'40.683"W	2.00	End of Build
2316.00†	11.755	326.994	2311.29	-31.62	55.21	-35.86	40°34'15.339"N	104°41'40.723"W	0.00	
2416.00†	11.755	326.994	2409.20	-41.41	72.30	-46.96	40°34'15.509"N	104°41'40.865"W	0.00	
2516.00†	11.755	326.994	2507.10	-51.19	89.38	-58.06	40°34'15.678"N	104°41'41.007"W	0.00	
2616.00†	11.755	326.994	2605.00	-60.98	106.46	-69.15	40°34'15.848"N	104°41'41.148"W	0.00	
2716.00†	11.755	326.994	2702.90	-70.76	123.55	-80.25	40°34'16.018"N	104°41'41.290"W	0.00	
2816.00†	11.755	326.994	2800.81	-80.55	140.63	-91.35	40°34'16.188"N	104°41'41.432"W	0.00	
2916.00†	11.755	326.994	2898.71	-90.33	157.72	-102.44	40°34'16.358"N	104°41'41.574"W	0.00	
3016.00†	11.755	326.994	2996.61	-100.12	174.80	-113.54	40°34'16.527"N	104°41'41.715"W	0.00	
3116.00†	11.755	326.994	3094.52	-109.90	191.89	-124.64	40°34'16.697"N	104°41'41.857"W	0.00	
3216.00†	11.755	326.994	3192.42	-119.69	208.97	-135.74	40°34'16.867"N	104°41'41.999"W	0.00	

WELLPATH DATA (177 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3316.00†	11.755	326.994	3290.32	-129.47	226.05	-146.83	40°34'17.037"N	104°41'42.141"W	0.00	
3416.00†	11.755	326.994	3388.23	-139.26	243.14	-157.93	40°34'17.207"N	104°41'42.283"W	0.00	
3516.00†	11.755	326.994	3486.13	-149.04	260.22	-169.03	40°34'17.376"N	104°41'42.424"W	0.00	
3616.00†	11.755	326.994	3584.03	-158.83	277.31	-180.12	40°34'17.546"N	104°41'42.566"W	0.00	
3716.00†	11.755	326.994	3681.93	-168.61	294.39	-191.22	40°34'17.716"N	104°41'42.708"W	0.00	
3816.00†	11.755	326.994	3779.84	-178.40	311.48	-202.32	40°34'17.886"N	104°41'42.850"W	0.00	
3916.00†	11.755	326.994	3877.74	-188.18	328.56	-213.42	40°34'18.056"N	104°41'42.992"W	0.00	
4016.00†	11.755	326.994	3975.64	-197.97	345.65	-224.51	40°34'18.225"N	104°41'43.133"W	0.00	
4116.00†	11.755	326.994	4073.55	-207.75	362.73	-235.61	40°34'18.395"N	104°41'43.275"W	0.00	



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HNC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HNC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (177 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4216.00†	11.755	326.994	4171.45	-217.54	379.81	-246.71	40°34'18.565"N	104°41'43.417"W	0.00	
4316.00†	11.755	326.994	4269.35	-227.32	396.90	-257.80	40°34'18.735"N	104°41'43.559"W	0.00	
4416.00†	11.755	326.994	4367.25	-237.11	413.98	-268.90	40°34'18.905"N	104°41'43.700"W	0.00	
4516.00†	11.755	326.994	4465.16	-246.89	431.07	-280.00	40°34'19.074"N	104°41'43.842"W	0.00	
4616.00†	11.755	326.994	4563.06	-256.68	448.15	-291.10	40°34'19.244"N	104°41'43.984"W	0.00	
4716.00†	11.755	326.994	4660.96	-266.46	465.24	-302.19	40°34'19.414"N	104°41'44.126"W	0.00	
4816.00†	11.755	326.994	4758.87	-276.25	482.32	-313.29	40°34'19.584"N	104°41'44.268"W	0.00	
4916.00†	11.755	326.994	4856.77	-286.03	499.40	-324.39	40°34'19.754"N	104°41'44.409"W	0.00	
5016.00†	11.755	326.994	4954.67	-295.81	516.49	-335.48	40°34'19.923"N	104°41'44.551"W	0.00	
5116.00†	11.755	326.994	5052.57	-305.60	533.57	-346.58	40°34'20.093"N	104°41'44.693"W	0.00	
5216.00†	11.755	326.994	5150.48	-315.38	550.66	-357.68	40°34'20.263"N	104°41'44.835"W	0.00	
5316.00†	11.755	326.994	5248.38	-325.17	567.74	-368.77	40°34'20.433"N	104°41'44.977"W	0.00	
5416.00†	11.755	326.994	5346.28	-334.95	584.83	-379.87	40°34'20.603"N	104°41'45.118"W	0.00	
5516.00†	11.755	326.994	5444.19	-344.74	601.91	-390.97	40°34'20.772"N	104°41'45.260"W	0.00	
5616.00†	11.755	326.994	5542.09	-354.52	618.99	-402.07	40°34'20.942"N	104°41'45.402"W	0.00	
5716.00†	11.755	326.994	5639.99	-364.31	636.08	-413.16	40°34'21.112"N	104°41'45.544"W	0.00	
5816.00†	11.755	326.994	5737.89	-374.09	653.16	-424.26	40°34'21.282"N	104°41'45.685"W	0.00	
5916.00†	11.755	326.994	5835.80	-383.88	670.25	-435.36	40°34'21.452"N	104°41'45.827"W	0.00	
6016.00†	11.755	326.994	5933.70	-393.66	687.33	-446.45	40°34'21.622"N	104°41'45.969"W	0.00	
6116.00†	11.755	326.994	6031.60	-403.45	704.42	-457.55	40°34'21.791"N	104°41'46.111"W	0.00	
6216.00†	11.755	326.994	6129.51	-413.23	721.50	-468.65	40°34'21.961"N	104°41'46.253"W	0.00	
6316.00†	11.755	326.994	6227.41	-423.02	738.59	-479.75	40°34'22.131"N	104°41'46.394"W	0.00	
6416.00†	11.755	326.994	6325.31	-432.80	755.67	-490.84	40°34'22.301"N	104°41'46.536"W	0.00	
6516.00†	11.755	326.994	6423.22	-442.59	772.75	-501.94	40°34'22.471"N	104°41'46.678"W	0.00	
6616.00†	11.755	326.994	6521.12	-452.37	789.84	-513.04	40°34'22.640"N	104°41'46.820"W	0.00	
6709.70	11.755	326.994	6612.85	-461.54	805.85	-523.43	40°34'22.799"N	104°41'46.953"W	0.00	End of Tangent
6716.00†	11.418	329.648	6619.02	-462.12	806.92	-524.10	40°34'22.810"N	104°41'46.961"W	10.00	
6816.00†	10.580	23.845	6717.44	-462.14	823.90	-525.39	40°34'22.978"N	104°41'46.976"W	10.00	
6916.00†	17.075	56.994	6814.63	-444.89	840.34	-509.33	40°34'23.139"N	104°41'46.766"W	10.00	
7016.00†	25.869	70.299	6907.65	-410.89	855.73	-476.39	40°34'23.288"N	104°41'46.337"W	10.00	
7116.00†	35.280	77.017	6993.68	-361.19	869.61	-427.59	40°34'23.421"N	104°41'45.703"W	10.00	
7216.00†	44.922	81.162	7070.09	-297.28	881.55	-364.40	40°34'23.533"N	104°41'44.883"W	10.00	
7316.00†	54.670	84.095	7134.57	-221.12	891.20	-288.75	40°34'23.622"N	104°41'43.902"W	10.00	
7416.00†	64.473	86.390	7185.16	-135.01	898.25	-202.92	40°34'23.684"N	104°41'42.789"W	10.00	
7516.00†	74.307	88.335	7220.32	-41.57	902.50	-109.54	40°34'23.717"N	104°41'41.578"W	10.00	
7616.00†	84.156	90.099	7238.98	56.36	903.82	-11.44	40°34'23.722"N	104°41'40.307"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
7677.89	90.255	91.153	7242.00 [†]	117.92	903.14	50.35	40°34'23.709"N	104°41'39.506"W	10.00	End of 3D Arc
7716.00†	90.255	91.153	7241.83	155.86	902.38	88.45	40°34'23.698"N	104°41'39.012"W	0.00	
7816.00†	90.255	91.153	7241.39	255.40	900.36	188.43	40°34'23.670"N	104°41'37.717"W	0.00	
7916.00†	90.255	91.153	7240.94	354.95	898.35	288.41	40°34'23.641"N	104°41'36.422"W	0.00	
8016.00†	90.255	91.153	7240.50	454.50	896.34	388.38	40°34'23.612"N	104°41'35.127"W	0.00	
8116.00†	90.255	91.153	7240.05	554.04	894.32	488.36	40°34'23.583"N	104°41'33.831"W	0.00	
8216.00†	90.255	91.153	7239.61	653.59	892.31	588.34	40°34'23.554"N	104°41'32.536"W	0.00	
8316.00†	90.255	91.153	7239.16	753.13	890.30	688.32	40°34'23.525"N	104°41'31.241"W	0.00	
8416.00†	90.255	91.153	7238.72	852.68	888.29	788.30	40°34'23.496"N	104°41'29.945"W	0.00	



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION			
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Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HNC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8516.00†	90.255	91.153	7238.27	952.23	886.27	888.28	40°34'23.467"N	104°41'28.650"W	0.00	
8616.00†	90.255	91.153	7237.82	1051.77	884.26	988.26	40°34'23.438"N	104°41'27.355"W	0.00	
8716.00†	90.255	91.153	7237.38	1151.32	882.25	1088.24	40°34'23.410"N	104°41'26.059"W	0.00	
8816.00†	90.255	91.153	7236.93	1250.87	880.24	1188.21	40°34'23.381"N	104°41'24.764"W	0.00	
8916.00†	90.255	91.153	7236.49	1350.41	878.22	1288.19	40°34'23.352"N	104°41'23.469"W	0.00	
9016.00†	90.255	91.153	7236.04	1449.96	876.21	1388.17	40°34'23.323"N	104°41'22.174"W	0.00	
9116.00†	90.255	91.153	7235.60	1549.51	874.20	1488.15	40°34'23.294"N	104°41'20.878"W	0.00	
9216.00†	90.255	91.153	7235.15	1649.05	872.18	1588.13	40°34'23.265"N	104°41'19.583"W	0.00	
9316.00†	90.255	91.153	7234.71	1748.60	870.17	1688.11	40°34'23.236"N	104°41'18.288"W	0.00	
9416.00†	90.255	91.153	7234.26	1848.15	868.16	1788.09	40°34'23.207"N	104°41'16.992"W	0.00	
9516.00†	90.255	91.153	7233.82	1947.69	866.15	1888.07	40°34'23.178"N	104°41'15.697"W	0.00	
9616.00†	90.255	91.153	7233.37	2047.24	864.13	1988.04	40°34'23.149"N	104°41'14.402"W	0.00	
9716.00†	90.255	91.153	7232.93	2146.78	862.12	2088.02	40°34'23.120"N	104°41'13.107"W	0.00	
9816.00†	90.255	91.153	7232.48	2246.33	860.11	2188.00	40°34'23.091"N	104°41'11.811"W	0.00	
9916.00†	90.255	91.153	7232.04	2345.88	858.10	2287.98	40°34'23.062"N	104°41'10.516"W	0.00	
10016.00†	90.255	91.153	7231.59	2445.42	856.08	2387.96	40°34'23.033"N	104°41'09.221"W	0.00	
10116.00†	90.255	91.153	7231.15	2544.97	854.07	2487.94	40°34'23.004"N	104°41'07.925"W	0.00	
10216.00†	90.255	91.153	7230.70	2644.52	852.06	2587.92	40°34'22.975"N	104°41'06.630"W	0.00	
10316.00†	90.255	91.153	7230.26	2744.06	850.04	2687.90	40°34'22.947"N	104°41'05.335"W	0.00	
10416.00†	90.255	91.153	7229.81	2843.61	848.03	2787.87	40°34'22.918"N	104°41'04.040"W	0.00	
10516.00†	90.255	91.153	7229.37	2943.16	846.02	2887.85	40°34'22.889"N	104°41'02.744"W	0.00	
10616.00†	90.255	91.153	7228.92	3042.70	844.01	2987.83	40°34'22.860"N	104°41'01.449"W	0.00	
10716.00†	90.255	91.153	7228.48	3142.25	841.99	3087.81	40°34'22.831"N	104°41'00.154"W	0.00	
10816.00†	90.255	91.153	7228.03	3241.80	839.98	3187.79	40°34'22.802"N	104°40'58.858"W	0.00	
10916.00†	90.255	91.153	7227.59	3341.34	837.97	3287.77	40°34'22.773"N	104°40'57.563"W	0.00	
11016.00†	90.255	91.153	7227.14	3440.89	835.96	3387.75	40°34'22.744"N	104°40'56.268"W	0.00	
11116.00†	90.255	91.153	7226.70	3540.43	833.94	3487.73	40°34'22.715"N	104°40'54.972"W	0.00	
11216.00†	90.255	91.153	7226.25	3639.98	831.93	3587.70	40°34'22.686"N	104°40'53.677"W	0.00	
11316.00†	90.255	91.153	7225.81	3739.53	829.92	3687.68	40°34'22.657"N	104°40'52.382"W	0.00	
11416.00†	90.255	91.153	7225.36	3839.07	827.90	3787.66	40°34'22.628"N	104°40'51.087"W	0.00	
11516.00†	90.255	91.153	7224.92	3938.62	825.89	3887.64	40°34'22.599"N	104°40'49.791"W	0.00	
11616.00†	90.255	91.153	7224.47	4038.17	823.88	3987.62	40°34'22.570"N	104°40'48.496"W	0.00	
11716.00†	90.255	91.153	7224.03	4137.71	821.87	4087.60	40°34'22.541"N	104°40'47.201"W	0.00	
11816.00†	90.255	91.153	7223.58	4237.26	819.85	4187.58	40°34'22.512"N	104°40'45.905"W	0.00	
11916.00†	90.255	91.153	7223.14	4336.81	817.84	4287.56	40°34'22.482"N	104°40'44.610"W	0.00	
12016.00†	90.255	91.153	7222.69	4436.35	815.83	4387.53	40°34'22.453"N	104°40'43.315"W	0.00	

WELLPATH DATA (177 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12116.00†	90.255	91.153	7222.25	4535.90	813.82	4487.51	40°34'22.424"N	104°40'42.020"W	0.00	
12216.00†	90.255	91.153	7221.80	4635.45	811.80	4587.49	40°34'22.395"N	104°40'40.724"W	0.00	
12316.00†	90.255	91.153	7221.36	4734.99	809.79	4687.47	40°34'22.366"N	104°40'39.429"W	0.00	
12416.00†	90.255	91.153	7220.91	4834.54	807.78	4787.45	40°34'22.337"N	104°40'38.134"W	0.00	
12516.00†	90.255	91.153	7220.47	4934.09	805.76	4887.43	40°34'22.308"N	104°40'36.838"W	0.00	
12616.00†	90.255	91.153	7220.02	5033.63	803.75	4987.41	40°34'22.279"N	104°40'35.543"W	0.00	
12716.00†	90.255	91.153	7219.58	5133.18	801.74	5087.39	40°34'22.250"N	104°40'34.248"W	0.00	
12816.00†	90.255	91.153	7219.13	5232.72	799.73	5187.36	40°34'22.221"N	104°40'32.953"W	0.00	
12916.00†	90.255	91.153	7218.69	5332.27	797.71	5287.34	40°34'22.192"N	104°40'31.657"W	0.00	



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HNC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HNC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

WELLPATH DATA (177 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13016.00†	90.255	91.153	7218.24	5431.82	795.70	5387.32	40°34'22.163"N	104°40'30.362"W	0.00	
13116.00†	90.255	91.153	7217.80	5531.36	793.69	5487.30	40°34'22.134"N	104°40'29.067"W	0.00	
13216.00†	90.255	91.153	7217.35	5630.91	791.68	5587.28	40°34'22.105"N	104°40'27.771"W	0.00	
13316.00†	90.255	91.153	7216.91	5730.46	789.66	5687.26	40°34'22.076"N	104°40'26.476"W	0.00	
13416.00†	90.255	91.153	7216.46	5830.00	787.65	5787.24	40°34'22.047"N	104°40'25.181"W	0.00	
13516.00†	90.255	91.153	7216.02	5929.55	785.64	5887.22	40°34'22.017"N	104°40'23.886"W	0.00	
13616.00†	90.255	91.153	7215.57	6029.10	783.62	5987.19	40°34'21.988"N	104°40'22.590"W	0.00	
13716.00†	90.255	91.153	7215.13	6128.64	781.61	6087.17	40°34'21.959"N	104°40'21.295"W	0.00	
13816.00†	90.255	91.153	7214.68	6228.19	779.60	6187.15	40°34'21.930"N	104°40'20.000"W	0.00	
13916.00†	90.255	91.153	7214.24	6327.74	777.59	6287.13	40°34'21.901"N	104°40'18.705"W	0.00	
14016.00†	90.255	91.153	7213.79	6427.28	775.57	6387.11	40°34'21.872"N	104°40'17.409"W	0.00	
14116.00†	90.255	91.153	7213.35	6526.83	773.56	6487.09	40°34'21.843"N	104°40'16.114"W	0.00	
14216.00†	90.255	91.153	7212.90	6626.37	771.55	6587.07	40°34'21.814"N	104°40'14.819"W	0.00	
14316.00†	90.255	91.153	7212.46	6725.92	769.54	6687.05	40°34'21.785"N	104°40'13.523"W	0.00	
14416.00†	90.255	91.153	7212.01	6825.47	767.52	6787.02	40°34'21.755"N	104°40'12.228"W	0.00	
14516.00†	90.255	91.153	7211.57	6925.01	765.51	6887.00	40°34'21.726"N	104°40'10.933"W	0.00	
14616.00†	90.255	91.153	7211.12	7024.56	763.50	6986.98	40°34'21.697"N	104°40'09.638"W	0.00	
14716.00†	90.255	91.153	7210.68	7124.11	761.48	7086.96	40°34'21.668"N	104°40'08.342"W	0.00	
14816.00†	90.255	91.153	7210.23	7223.65	759.47	7186.94	40°34'21.639"N	104°40'07.047"W	0.00	
14916.00†	90.255	91.153	7209.79	7323.20	757.46	7286.92	40°34'21.610"N	104°40'05.752"W	0.00	
15016.00†	90.255	91.153	7209.34	7422.75	755.45	7386.90	40°34'21.581"N	104°40'04.456"W	0.00	
15116.00†	90.255	91.153	7208.90	7522.29	753.43	7486.88	40°34'21.551"N	104°40'03.161"W	0.00	
15216.00†	90.255	91.153	7208.45	7621.84	751.42	7586.85	40°34'21.522"N	104°40'01.866"W	0.00	
15316.00†	90.255	91.153	7208.01	7721.39	749.41	7686.83	40°34'21.493"N	104°40'00.571"W	0.00	
15416.00†	90.255	91.153	7207.56	7820.93	747.40	7786.81	40°34'21.464"N	104°39'59.275"W	0.00	
15516.00†	90.255	91.153	7207.12	7920.48	745.38	7886.79	40°34'21.435"N	104°39'57.980"W	0.00	
15616.00†	90.255	91.153	7206.67	8020.02	743.37	7986.77	40°34'21.406"N	104°39'56.685"W	0.00	
15716.00†	90.255	91.153	7206.23	8119.57	741.36	8086.75	40°34'21.376"N	104°39'55.390"W	0.00	
15816.00†	90.255	91.153	7205.78	8219.12	739.35	8186.73	40°34'21.347"N	104°39'54.094"W	0.00	
15916.00†	90.255	91.153	7205.34	8318.66	737.33	8286.71	40°34'21.318"N	104°39'52.799"W	0.00	
16016.00†	90.255	91.153	7204.89	8418.21	735.32	8386.68	40°34'21.289"N	104°39'51.504"W	0.00	
16116.00†	90.255	91.153	7204.45	8517.76	733.31	8486.66	40°34'21.260"N	104°39'50.208"W	0.00	
16216.00†	90.255	91.153	7204.00	8617.30	731.29	8586.64	40°34'21.230"N	104°39'48.913"W	0.00	
16316.00†	90.255	91.153	7203.56	8716.85	729.28	8686.62	40°34'21.201"N	104°39'47.618"W	0.00	
16416.00†	90.255	91.153	7203.11	8816.40	727.27	8786.60	40°34'21.172"N	104°39'46.323"W	0.00	
16516.00†	90.255	91.153	7202.67	8915.94	725.26	8886.58	40°34'21.143"N	104°39'45.027"W	0.00	

WELLPATH DATA (177 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16616.00†	90.255	91.153	7202.22	9015.49	723.24	8986.56	40°34'21.114"N	104°39'43.732"W	0.00	
16716.00†	90.255	91.153	7201.78	9115.04	721.23	9086.54	40°34'21.084"N	104°39'42.437"W	0.00	
16816.00†	90.255	91.153	7201.33	9214.58	719.22	9186.51	40°34'21.055"N	104°39'41.142"W	0.00	
16916.00†	90.255	91.153	7200.89	9314.13	717.21	9286.49	40°34'21.026"N	104°39'39.846"W	0.00	
17016.00†	90.255	91.153	7200.44	9413.67	715.19	9386.47	40°34'20.997"N	104°39'38.551"W	0.00	
17115.12	90.255	91.153	7200.00 ²	9512.34	713.20	9485.57	40°34'20.968"N	104°39'37.267"W	0.00	End of Tangent



Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HNC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HNC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

HOLE & CASING SECTIONS - Ref Wellbore: DEHAAN SOUTH 5X-HNC-16-07-65 PWB Ref Wellpath: DEHAAN SOUTH 5X-HNC-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	23.98	-7.16	3223759.71	1451814.73	40°34'15.028"N	104°41'40.355"W	polygon
SEC.16-T07N-R65W		-1.00	23.98	-7.16	3223759.71	1451814.73	40°34'15.028"N	104°41'40.355"W	polygon
SEC.17-T07N-R65W		-1.00	23.98	-7.16	3223759.71	1451814.73	40°34'15.028"N	104°41'40.355"W	polygon
2) DEHAAN SOUTH 5X-HNC-16-07-65 BHL ON PLAT (2005'FSL & 460'FEL,SEC.16)	17115.12	7200.00	713.20	9485.57	3233252.16	1452503.93	40°34'20.968"N	104°39'37.267"W	point
DEHAAN SOUTH 5X-HNC-16-07-65 LP ON PLAT (2006'FSL & 460'FWL,SEC.17)		7242.00	903.14	-90.41	3223676.47	1452693.87	40°34'23.722"N	104°41'41.330"W	point
1) DEHAAN SOUTH 5X-HNC-16-07-65 LP REV-1 (2006'FSL & 601'FWL,SEC.17)	7677.89	7242.00	903.14	50.35	3223817.23	1452693.87	40°34'23.709"N	104°41'39.506"W	point

SURVEY PROGRAM - Ref Wellbore: DEHAAN SOUTH 5X-HNC-16-07-65 PWB Ref Wellpath: DEHAAN SOUTH 5X-HNC-16-07-65 PWP (REV-B.0)									
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore		
16.00	17115.12	BHI NaviTrak (Rotating)					DEHAAN SOUTH 5X-HNC-16-07-65 PWB		

Planned Wellpath Report

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

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NICKEL ROAD OPERATING	Slot	SLOT#02 DEHAAN SOUTH 5X-HNC-16-07-65 (1105'FSL & 547'FWL,SEC.17)
Area	COLORADO	Well	DEHAAN SOUTH 5X-HNC-16-07-65
Field	WELD COUNTY (NAD83/GRID NORTH)	Wellbore	DEHAAN SOUTH 5X-HNC-16-07-65 PWB
Facility	SEC.17-07N-R65W		

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	326.994	16.00	Tie On
1700.00	0.000	326.994	1700.00	End of Tangent
2287.73	11.755	326.994	2283.62	End of Build
6709.70	11.755	326.994	6612.85	End of Tangent
7677.89	90.255	91.153	7242.00	End of 3D Arc
17115.12	90.255	91.153	7200.00	End of Tangent