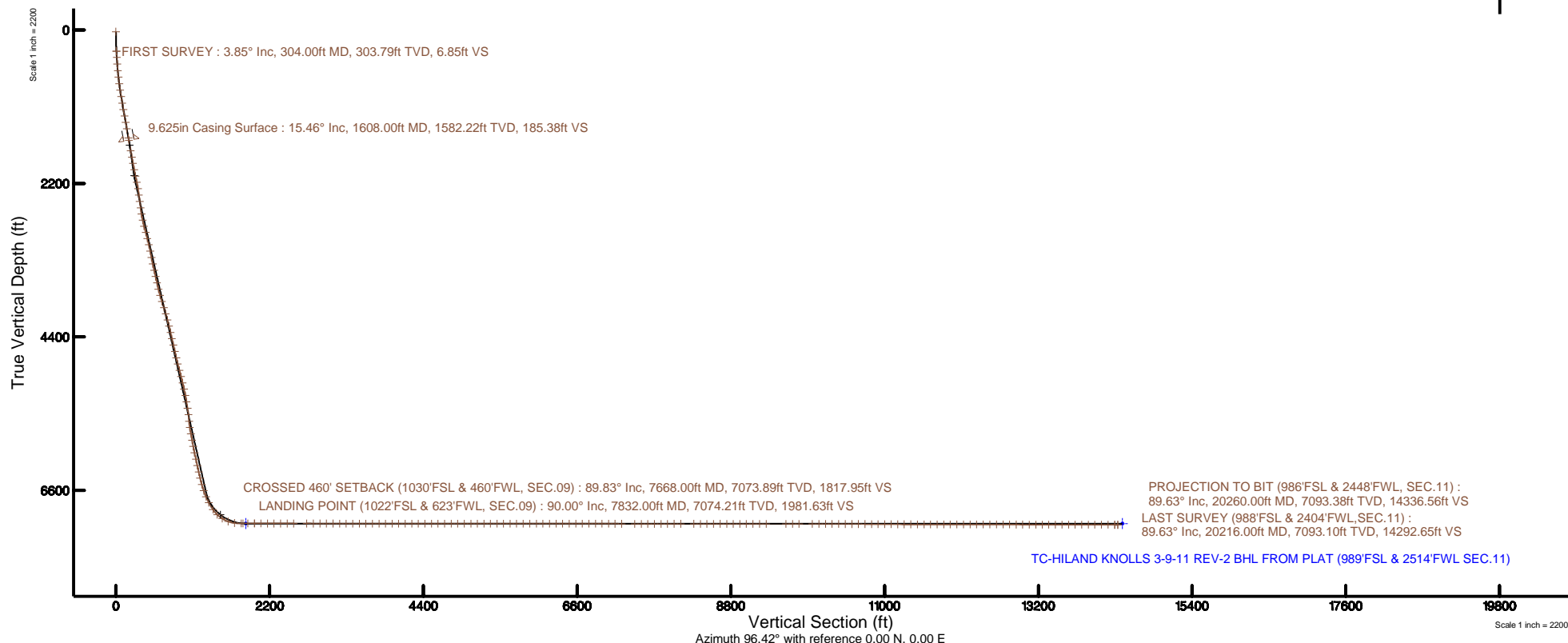
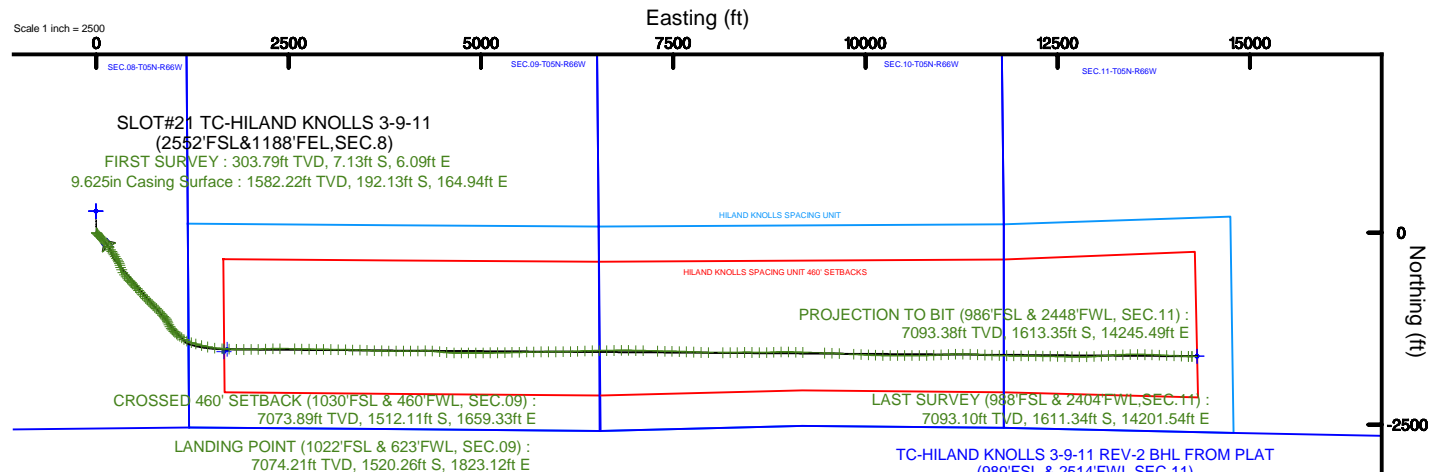


EXTRACTION OIL & GAS

Location: COLORADO Slot: SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Field: WELD COUNTY (NAD83/TRUE NORTH) Well: TC-HILAND KNOLLS 3-9-11
Facility: SEC.08-T05N-R66W Wellbore: TC-HILAND KNOLLS 3-9-11 PWB

Plot reference wellpath is TC-HILAND KNOLLS 3-9-11 (REV-B.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to PATTERSON 341 (25KB) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to PATTERSON 341 (25KB) (RKB)	North Reference: True north
PATTERSON 341 (25KB) (RKB) to Mean Sea Level: 4817 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: ingmjamm on 2017-06-09
	Database: WA_DEN_Denver_Deln





Actual Wellpath Report

TC-HILAND KNOLLS 3-9-11 AWP

Page 1 of 12



REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-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	0.999961	Report Generated	6/9/2017 at 1:05:10 PM
Convergence at slot	0.46° East	Database/Source file	WA_DEN_Denver_Defn/TC-HILAND_KNOLLS_3-9-11_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-240.45	5.57	3195288.51	1394378.19	40°24'49.860"N	104°47'55.176"W
Facility Reference Pt			3195281.04	1394618.58	40°24'52.236"N	104°47'55.248"W
Field Reference Pt			3185481.27	1419166.81	40°28'55.560"N	104°49'59.556"W

WELLPATH DATUM

Calculation method	Minimum curvature	PATTERSON 341 (25'KB) (RKB) to Facility Vertical Datum	4817.00ft
Horizontal Reference Pt	Slot	PATTERSON 341 (25'KB) (RKB) to Mean Sea Level	4817.00ft
Vertical Reference Pt	PATTERSON 341 (25'KB) (RKB)	PATTERSON 341 (25'KB) (RKB) to Mud Line at Slot (SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8))	4817.00ft
MD Reference Pt	PATTERSON 341 (25'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	96.42°

REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH DATA (208 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	139.478	0.00	0.00	0.00	0.00	40°24'49.860"N	104°47'55.176"W	0.00	
25.00	0.000	139.478	25.00	0.00	0.00	0.00	40°24'49.860"N	104°47'55.176"W	0.00	
304.00	3.852	139.478	303.79	6.85	-7.13	6.09	40°24'49.790"N	104°47'55.097"W	1.38	FIRST SURVEY
395.00	4.913	139.677	394.52	11.92	-12.42	10.60	40°24'49.737"N	104°47'55.039"W	1.17	
489.00	6.659	141.974	488.04	18.67	-19.78	16.56	40°24'49.664"N	104°47'54.962"W	1.87	
584.00	7.115	137.586	582.35	26.96	-28.47	23.92	40°24'49.579"N	104°47'54.867"W	0.73	
678.00	8.262	138.124	675.51	36.38	-37.79	32.36	40°24'49.487"N	104°47'54.758"W	1.22	
773.00	9.231	136.094	769.40	47.34	-48.37	42.20	40°24'49.382"N	104°47'54.630"W	1.07	
867.00	10.528	132.730	862.01	60.07	-59.63	53.74	40°24'49.271"N	104°47'54.481"W	1.51	
962.00	11.801	133.892	955.21	74.77	-72.25	67.11	40°24'49.146"N	104°47'54.308"W	1.36	
1057.00	12.722	135.721	1048.04	90.57	-86.48	81.42	40°24'49.005"N	104°47'54.123"W	1.05	
1152.00	12.810	139.987	1140.69	106.30	-102.03	95.49	40°24'48.852"N	104°47'53.941"W	1.00	
1247.00	14.027	138.699	1233.10	122.45	-118.75	109.86	40°24'48.687"N	104°47'53.756"W	1.32	
1342.00	14.577	142.001	1325.16	139.33	-136.82	124.82	40°24'48.508"N	104°47'53.562"W	1.04	
1437.00	14.300	143.540	1417.16	155.68	-155.67	139.15	40°24'48.322"N	104°47'53.377"W	0.50	
1573.00	15.740	145.490	1548.51	179.20	-184.39	159.59	40°24'48.038"N	104°47'53.113"W	1.12	
1762.00	14.220	143.610	1731.08	211.77	-224.20	187.89	40°24'47.645"N	104°47'52.747"W	0.84	
1856.00	15.340	144.260	1821.97	227.96	-243.59	202.00	40°24'47.453"N	104°47'52.565"W	1.20	
1951.00	16.230	149.440	1913.39	244.38	-265.22	216.09	40°24'47.239"N	104°47'52.382"W	1.75	
2045.00	17.040	147.600	2003.45	260.92	-288.16	230.15	40°24'47.013"N	104°47'52.201"W	1.03	
2140.00	17.850	144.940	2094.09	279.28	-311.83	245.97	40°24'46.779"N	104°47'51.996"W	1.20	
2235.00	17.200	143.570	2184.68	298.48	-335.05	262.68	40°24'46.549"N	104°47'51.780"W	0.81	
2330.00	14.930	148.230	2275.96	315.60	-356.76	277.46	40°24'46.335"N	104°47'51.589"W	2.75	
2425.00	14.010	156.490	2367.96	328.91	-377.71	288.49	40°24'46.128"N	104°47'51.446"W	2.38	
2519.00	15.590	156.800	2458.84	340.83	-399.76	298.01	40°24'45.910"N	104°47'51.323"W	1.68	
2614.00	16.500	161.850	2550.14	352.75	-424.31	307.24	40°24'45.667"N	104°47'51.204"W	1.75	
2708.00	20.740	159.050	2639.20	365.95	-452.55	317.36	40°24'45.388"N	104°47'51.073"W	4.61	
2802.00	22.630	158.000	2726.55	382.21	-484.87	330.08	40°24'45.069"N	104°47'50.909"W	2.05	
2897.00	23.800	150.300	2813.87	402.21	-518.47	346.43	40°24'44.737"N	104°47'50.697"W	3.42	
2991.00	21.140	141.310	2900.75	425.41	-548.19	366.43	40°24'44.443"N	104°47'50.439"W	4.62	

REFERENCE WELLPATH IDENTIFICATION

Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH DATA (208 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3086.00	20.000	140.550	2989.70	449.21	-574.11	387.47	40°24'44.187"N	104°47'50.167"W	1.23	
3181.00	18.340	141.920	3079.43	471.35	-598.42	407.01	40°24'43.947"N	104°47'49.914"W	1.81	
3275.00	14.640	136.540	3169.55	490.80	-618.69	424.31	40°24'43.746"N	104°47'49.691"W	4.25	
3370.00	13.500	132.600	3261.70	508.94	-634.91	440.73	40°24'43.586"N	104°47'49.478"W	1.57	
3465.00	13.970	133.320	3353.98	527.06	-650.29	457.23	40°24'43.434"N	104°47'49.265"W	0.53	
3559.00	18.460	140.710	3444.23	546.79	-669.60	474.92	40°24'43.243"N	104°47'49.036"W	5.25	
3654.00	16.290	138.030	3534.89	567.52	-691.15	493.36	40°24'43.030"N	104°47'48.798"W	2.43	
3748.00	15.660	136.100	3625.26	587.14	-710.09	510.97	40°24'42.843"N	104°47'48.570"W	0.88	
3843.00	18.430	138.390	3716.08	608.18	-730.56	529.84	40°24'42.641"N	104°47'48.326"W	3.00	
3938.00	20.930	137.790	3805.52	632.08	-754.36	551.22	40°24'42.406"N	104°47'48.050"W	2.64	
4033.00	22.290	137.860	3893.85	658.32	-780.29	574.71	40°24'42.149"N	104°47'47.746"W	1.43	
4127.00	23.250	137.940	3980.52	685.58	-807.29	599.10	40°24'41.883"N	104°47'47.431"W	1.02	
4221.00	22.080	138.350	4067.26	712.61	-834.26	623.27	40°24'41.616"N	104°47'47.119"W	1.26	
4316.00	18.370	137.470	4156.39	737.19	-858.65	645.26	40°24'41.375"N	104°47'46.834"W	3.92	
4409.00	17.920	134.090	4244.76	759.57	-879.40	665.44	40°24'41.170"N	104°47'46.573"W	1.23	
4503.00	15.660	134.850	4334.75	780.96	-898.41	684.83	40°24'40.982"N	104°47'46.323"W	2.42	
4598.00	15.210	132.750	4426.32	801.04	-915.92	703.07	40°24'40.809"N	104°47'46.087"W	0.76	
4692.00	17.080	134.300	4516.61	821.87	-933.93	722.00	40°24'40.631"N	104°47'45.842"W	2.04	
4787.00	16.200	134.520	4607.63	843.31	-952.96	741.44	40°24'40.443"N	104°47'45.591"W	0.93	
4881.00	15.510	131.030	4698.06	863.97	-970.41	760.27	40°24'40.271"N	104°47'45.348"W	1.25	
4975.00	17.550	134.330	4788.17	885.50	-988.56	779.89	40°24'40.091"N	104°47'45.094"W	2.39	
5070.00	19.200	136.630	4878.33	908.73	-1009.93	800.87	40°24'39.880"N	104°47'44.823"W	1.90	
5165.00	18.760	139.000	4968.16	931.91	-1032.82	821.62	40°24'39.654"N	104°47'44.555"W	0.93	
5259.00	17.650	137.890	5057.46	953.72	-1054.80	841.09	40°24'39.437"N	104°47'44.303"W	1.24	
5353.00	16.170	136.030	5147.39	974.48	-1074.79	859.73	40°24'39.239"N	104°47'44.062"W	1.68	
5448.00	14.210	136.030	5239.07	993.66	-1092.70	877.01	40°24'39.062"N	104°47'43.838"W	2.06	
5542.00	12.650	139.640	5330.49	1010.05	-1108.85	891.69	40°24'38.903"N	104°47'43.649"W	1.88	
5637.00	11.260	136.660	5423.43	1024.71	-1123.52	904.79	40°24'38.758"N	104°47'43.479"W	1.60	
5731.00	10.530	146.140	5515.75	1037.27	-1137.33	915.88	40°24'38.621"N	104°47'43.336"W	2.06	
5825.00	12.150	163.010	5607.93	1046.75	-1153.93	923.56	40°24'38.457"N	104°47'43.237"W	3.91	

REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH DATA (208 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5919.00	15.740	153.620	5699.16	1057.59	-1174.82	932.12	40°24'38.251"N	104°47'43.126"W	4.50	
6014.00	18.820	151.870	5789.86	1073.27	-1199.89	945.07	40°24'38.003"N	104°47'42.959"W	3.29	
6108.00	16.600	151.580	5879.40	1089.54	-1225.07	958.61	40°24'37.754"N	104°47'42.784"W	2.36	
6203.00	15.860	146.280	5970.62	1105.66	-1247.80	972.28	40°24'37.529"N	104°47'42.607"W	1.74	
6296.00	16.240	135.510	6060.01	1123.95	-1267.65	988.45	40°24'37.333"N	104°47'42.398"W	3.22	
6391.00	15.420	132.520	6151.41	1144.46	-1285.67	1007.07	40°24'37.155"N	104°47'42.157"W	1.22	
6486.00	14.520	132.870	6243.19	1164.25	-1302.31	1025.10	40°24'36.991"N	104°47'41.924"W	0.95	
6580.00	15.640	132.360	6333.95	1183.99	-1318.86	1043.10	40°24'36.827"N	104°47'41.691"W	1.20	
6674.00	15.230	126.390	6424.56	1204.94	-1334.72	1062.41	40°24'36.671"N	104°47'41.442"W	1.74	
6769.00	17.610	123.030	6515.68	1228.60	-1349.96	1084.50	40°24'36.520"N	104°47'41.156"W	2.70	
6864.00	21.480	127.450	6605.20	1256.37	-1368.38	1110.37	40°24'36.338"N	104°47'40.822"W	4.36	
6958.00	26.630	128.740	6691.01	1288.94	-1392.04	1140.49	40°24'36.104"N	104°47'40.433"W	5.51	
7053.00	28.360	111.380	6775.41	1328.80	-1413.63	1178.17	40°24'35.891"N	104°47'39.946"W	8.60	
7170.00	34.290	106.130	6875.33	1388.19	-1432.94	1235.77	40°24'35.700"N	104°47'39.201"W	5.58	
7264.00	46.620	106.850	6946.72	1448.12	-1450.26	1294.12	40°24'35.529"N	104°47'38.447"W	13.13	
7359.00	58.330	104.820	7004.49	1522.33	-1470.68	1366.50	40°24'35.327"N	104°47'37.511"W	12.44	
7453.00	70.160	100.910	7045.27	1606.30	-1489.35	1448.90	40°24'35.142"N	104°47'36.446"W	13.13	
7547.00	82.500	96.840	7067.45	1697.36	-1503.33	1538.96	40°24'35.004"N	104°47'35.281"W	13.78	
7642.00	89.820	92.450	7073.81	1792.01	-1510.98	1633.35	40°24'34.928"N	104°47'34.061"W	8.98	
7668.00†	89.828	92.522	7073.89	1817.95	-1512.11	1659.33	40°24'34.917"N	104°47'33.725"W	0.28	CROSSED 460' SETBACK (1030'FSL & 460'FWL, SEC.09)
7736.00	89.850	92.710	7074.08	1885.80	-1515.22	1727.26	40°24'34.887"N	104°47'32.847"W	0.28	
7832.00	90.000	93.310	7074.21	1981.63	-1520.26	1823.12	40°24'34.837"N	104°47'31.608"W	0.64	LANDING POINT (1022'FSL & 623'FWL, SEC.09)
7926.00	90.060	89.350	7074.16	2075.24	-1522.44	1917.08	40°24'34.815"N	104°47'30.393"W	4.21	
8021.00	89.750	89.260	7074.32	2169.51	-1521.29	2012.07	40°24'34.826"N	104°47'29.165"W	0.34	
8115.00	89.850	88.680	7074.65	2262.71	-1519.60	2106.06	40°24'34.843"N	104°47'27.951"W	0.63	
8209.00	90.090	87.610	7074.70	2355.73	-1516.55	2200.01	40°24'34.873"N	104°47'26.736"W	1.17	
8304.00	89.940	88.990	7074.67	2449.78	-1513.74	2294.96	40°24'34.901"N	104°47'25.509"W	1.46	
8398.00	89.910	90.570	7074.79	2543.15	-1513.37	2388.96	40°24'34.904"N	104°47'24.293"W	1.68	
8587.00	90.090	90.470	7074.79	2731.15	-1515.09	2577.95	40°24'34.887"N	104°47'21.850"W	0.11	
8681.00	89.850	91.350	7074.84	2824.71	-1516.58	2671.94	40°24'34.872"N	104°47'20.635"W	0.97	

REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH DATA (208 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8776.00	89.970	90.750	7074.99	2919.29	-1518.32	2766.92	40°24'34.855"N	104°47'19.407"W	0.64	
8870.00	89.850	90.950	7075.14	3012.85	-1519.72	2860.91	40°24'34.841"N	104°47'18.192"W	0.25	
8964.00	89.940	91.150	7075.31	3106.44	-1521.44	2954.89	40°24'34.824"N	104°47'16.977"W	0.23	
9059.00	89.970	90.820	7075.39	3201.01	-1523.07	3049.88	40°24'34.808"N	104°47'15.750"W	0.35	
9153.00	90.000	90.770	7075.41	3294.56	-1524.38	3143.87	40°24'34.795"N	104°47'14.534"W	0.06	
9248.00	89.970	91.000	7075.44	3389.12	-1525.85	3238.86	40°24'34.780"N	104°47'13.307"W	0.24	
9342.00	89.970	91.230	7075.48	3482.71	-1527.67	3332.84	40°24'34.762"N	104°47'12.092"W	0.24	
9436.00	89.880	92.320	7075.61	3576.40	-1530.59	3426.79	40°24'34.733"N	104°47'10.877"W	1.16	
9530.00	89.970	91.630	7075.73	3670.12	-1533.83	3520.74	40°24'34.701"N	104°47'09.663"W	0.74	
9625.00	90.060	91.800	7075.71	3764.80	-1536.67	3615.70	40°24'34.673"N	104°47'08.435"W	0.20	
9719.00	89.880	91.590	7075.76	3858.48	-1539.45	3709.65	40°24'34.645"N	104°47'07.221"W	0.29	
9813.00	89.970	90.980	7075.88	3952.10	-1541.56	3803.63	40°24'34.624"N	104°47'06.006"W	0.66	
9907.00	90.060	90.300	7075.85	4045.63	-1542.61	3897.62	40°24'34.614"N	104°47'04.791"W	0.73	
10002.00	90.000	89.270	7075.80	4139.99	-1542.25	3992.62	40°24'34.617"N	104°47'03.563"W	1.09	
10096.00	89.910	89.850	7075.88	4233.32	-1541.53	4086.62	40°24'34.624"N	104°47'02.347"W	0.62	
10190.00	89.970	88.680	7075.98	4326.58	-1540.32	4180.61	40°24'34.636"N	104°47'01.132"W	1.25	
10285.00	89.880	89.910	7076.10	4420.85	-1539.15	4275.60	40°24'34.647"N	104°46'59.904"W	1.30	
10380.00	89.820	94.110	7076.35	4515.55	-1542.49	4370.52	40°24'34.614"N	104°46'58.677"W	4.42	
10474.00	90.060	96.470	7076.45	4609.52	-1551.15	4464.11	40°24'34.528"N	104°46'57.467"W	2.52	
10568.00	90.000	94.570	7076.40	4703.50	-1560.19	4557.67	40°24'34.439"N	104°46'56.258"W	2.02	
10662.00	89.910	91.520	7076.47	4797.33	-1565.19	4651.53	40°24'34.389"N	104°46'55.045"W	3.25	
10756.00	90.120	89.840	7076.45	4890.86	-1566.30	4745.52	40°24'34.378"N	104°46'53.830"W	1.80	
10850.00	89.910	90.650	7076.42	4984.31	-1566.70	4839.52	40°24'34.374"N	104°46'52.615"W	0.89	
10945.00	90.000	90.110	7076.50	5078.78	-1567.33	4934.51	40°24'34.367"N	104°46'51.387"W	0.58	
11039.00	90.120	89.030	7076.40	5172.11	-1566.63	5028.51	40°24'34.374"N	104°46'50.171"W	1.16	
11134.00	90.150	89.110	7076.18	5266.33	-1565.09	5123.50	40°24'34.389"N	104°46'48.944"W	0.09	
11228.00	89.850	89.520	7076.18	5359.61	-1563.96	5217.49	40°24'34.400"N	104°46'47.728"W	0.54	
11322.00	90.090	88.570	7076.22	5452.83	-1562.40	5311.48	40°24'34.415"N	104°46'46.513"W	1.04	
11417.00	89.880	88.100	7076.25	5546.89	-1559.64	5406.44	40°24'34.442"N	104°46'45.286"W	0.54	
11511.00	90.090	88.850	7076.27	5639.98	-1557.13	5500.40	40°24'34.467"N	104°46'44.071"W	0.83	

REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH DATA (208 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11605.00	90.120	89.010	7076.10	5733.18	-1555.38	5594.39	40°24'34.484"N	104°46'42.856"W	0.17	
11700.00	90.000	89.370	7076.00	5827.43	-1554.04	5689.38	40°24'34.497"N	104°46'41.628"W	0.40	
11795.00	90.030	88.920	7075.98	5921.66	-1552.62	5784.36	40°24'34.511"N	104°46'40.400"W	0.47	
11890.00	89.880	89.920	7076.05	6015.95	-1551.66	5879.36	40°24'34.520"N	104°46'39.172"W	1.06	
11985.00	89.750	89.870	7076.36	6110.34	-1551.48	5974.36	40°24'34.522"N	104°46'37.944"W	0.15	
12079.00	89.910	88.960	7076.64	6203.64	-1550.52	6068.35	40°24'34.531"N	104°46'36.729"W	0.98	
12175.00	89.910	88.650	7076.79	6298.79	-1548.52	6164.33	40°24'34.551"N	104°46'35.488"W	0.32	
12269.00	90.000	87.810	7076.86	6391.83	-1545.62	6258.28	40°24'34.579"N	104°46'34.274"W	0.90	
12364.00	90.060	88.070	7076.81	6485.79	-1542.20	6353.22	40°24'34.612"N	104°46'33.047"W	0.28	
12459.00	89.880	89.020	7076.86	6579.90	-1539.79	6448.19	40°24'34.636"N	104°46'31.819"W	1.02	
12553.00	89.940	89.210	7077.01	6673.13	-1538.34	6542.18	40°24'34.650"N	104°46'30.604"W	0.21	
12648.00	89.850	89.400	7077.18	6767.40	-1537.19	6637.17	40°24'34.661"N	104°46'29.376"W	0.22	
12743.00	90.000	88.670	7077.31	6861.61	-1535.59	6732.16	40°24'34.677"N	104°46'28.148"W	0.78	
12837.00	89.750	89.570	7077.51	6954.85	-1534.14	6826.15	40°24'34.691"N	104°46'26.933"W	0.99	
12931.00	89.780	90.860	7077.90	7048.30	-1534.49	6920.14	40°24'34.687"N	104°46'25.718"W	1.37	
13026.00	89.750	91.250	7078.29	7142.88	-1536.24	7015.13	40°24'34.670"N	104°46'24.490"W	0.41	
13120.00	89.880	91.740	7078.59	7236.53	-1538.70	7109.09	40°24'34.645"N	104°46'23.275"W	0.54	
13309.00	89.780	91.160	7079.15	7424.82	-1543.48	7298.03	40°24'34.597"N	104°46'20.833"W	0.31	
13403.00	89.970	90.820	7079.36	7518.40	-1545.10	7392.02	40°24'34.581"N	104°46'19.618"W	0.41	
13497.00	90.030	90.830	7079.36	7611.95	-1546.46	7486.01	40°24'34.567"N	104°46'18.403"W	0.06	
13591.00	89.820	92.110	7079.48	7705.60	-1548.87	7579.97	40°24'34.543"N	104°46'17.188"W	1.38	
13685.00	90.220	92.140	7079.45	7799.34	-1552.35	7673.91	40°24'34.508"N	104°46'15.974"W	0.43	
13779.00	90.220	92.290	7079.09	7893.08	-1555.99	7767.84	40°24'34.472"N	104°46'14.760"W	0.16	
13874.00	89.970	92.780	7078.93	7987.86	-1560.19	7862.74	40°24'34.430"N	104°46'13.533"W	0.58	
13969.00	90.150	90.770	7078.83	8082.55	-1563.13	7957.69	40°24'34.401"N	104°46'12.305"W	2.12	
14158.00	89.780	89.730	7078.95	8270.45	-1563.95	8146.69	40°24'34.392"N	104°46'09.862"W	0.58	
14253.00	89.910	89.050	7079.20	8364.74	-1562.94	8241.68	40°24'34.402"N	104°46'08.634"W	0.73	
14346.00	90.060	88.970	7079.23	8456.96	-1561.34	8334.67	40°24'34.418"N	104°46'07.432"W	0.18	
14441.00	90.150	89.720	7079.05	8551.24	-1560.25	8429.66	40°24'34.428"N	104°46'06.204"W	0.80	
14536.00	90.060	90.440	7078.88	8645.65	-1560.38	8524.66	40°24'34.426"N	104°46'04.976"W	0.76	

REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH DATA (208 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14631.00	89.600	90.770	7079.16	8740.17	-1561.39	8619.65	40°24'34.416"N	104°46'03.748"W	0.60	
14726.00	89.910	89.130	7079.57	8834.56	-1561.30	8714.65	40°24'34.417"N	104°46'02.520"W	1.76	
14820.00	89.820	86.830	7079.79	8927.53	-1557.99	8808.59	40°24'34.449"N	104°46'01.306"W	2.45	
14915.00	90.060	89.730	7079.89	9021.57	-1555.14	8903.53	40°24'34.477"N	104°46'00.078"W	3.06	
15010.00	90.150	90.220	7079.71	9115.97	-1555.10	8998.53	40°24'34.477"N	104°45'58.850"W	0.52	
15105.00	89.850	91.970	7079.71	9210.55	-1556.91	9093.51	40°24'34.459"N	104°45'57.622"W	1.87	
15200.00	89.880	92.370	7079.94	9305.29	-1560.51	9188.44	40°24'34.423"N	104°45'56.395"W	0.42	
15482.00	90.180	91.120	7079.79	9586.35	-1569.10	9470.31	40°24'34.337"N	104°45'52.751"W	0.46	
15577.00	89.720	91.760	7079.87	9680.99	-1571.48	9565.27	40°24'34.313"N	104°45'51.524"W	0.83	
15672.00	89.750	93.060	7080.31	9775.75	-1575.48	9660.19	40°24'34.273"N	104°45'50.297"W	1.37	
15861.00	89.880	91.840	7080.92	9964.30	-1583.56	9849.01	40°24'34.192"N	104°45'47.856"W	0.65	
15956.00	89.940	92.880	7081.07	10059.06	-1587.47	9943.93	40°24'34.153"N	104°45'46.629"W	1.10	
16051.00	89.820	92.840	7081.27	10153.87	-1592.21	10038.81	40°24'34.106"N	104°45'45.402"W	0.13	
16145.00	90.000	91.700	7081.42	10247.62	-1595.93	10132.73	40°24'34.069"N	104°45'44.188"W	1.23	
16240.00	89.850	91.500	7081.54	10342.29	-1598.59	10227.70	40°24'34.042"N	104°45'42.961"W	0.26	
16335.00	89.940	91.210	7081.72	10436.92	-1600.83	10322.67	40°24'34.020"N	104°45'41.733"W	0.32	
16430.00	90.030	89.410	7081.74	10531.37	-1601.35	10417.66	40°24'34.014"N	104°45'40.505"W	1.90	
16524.00	89.880	89.830	7081.82	10624.71	-1600.72	10511.66	40°24'34.020"N	104°45'39.290"W	0.47	
16619.00	89.720	90.740	7082.15	10719.17	-1601.20	10606.66	40°24'34.015"N	104°45'38.062"W	0.97	
16713.00	89.600	89.520	7082.71	10812.60	-1601.41	10700.66	40°24'34.013"N	104°45'36.847"W	1.30	
16808.00	89.570	87.830	7083.39	10906.73	-1599.21	10795.62	40°24'34.034"N	104°45'35.619"W	1.78	
16902.00	89.450	86.990	7084.20	10999.56	-1594.96	10889.52	40°24'34.075"N	104°45'34.405"W	0.90	
16997.00	89.660	87.350	7084.94	11093.33	-1590.27	10984.41	40°24'34.121"N	104°45'33.179"W	0.44	
17092.00	89.720	87.780	7085.45	11187.19	-1586.24	11079.32	40°24'34.161"N	104°45'31.952"W	0.46	
17186.00	89.720	88.900	7085.91	11280.26	-1583.52	11173.28	40°24'34.187"N	104°45'30.737"W	1.19	
17281.00	89.940	90.430	7086.19	11374.59	-1582.96	11268.27	40°24'34.192"N	104°45'29.509"W	1.63	
17375.00	89.850	92.290	7086.36	11468.22	-1585.19	11362.24	40°24'34.170"N	104°45'28.294"W	1.98	
17470.00	89.660	92.800	7086.77	11563.01	-1589.41	11457.15	40°24'34.128"N	104°45'27.067"W	0.57	
17565.00	89.850	92.370	7087.18	11657.79	-1593.69	11552.05	40°24'34.085"N	104°45'25.841"W	0.49	
17659.00	89.880	91.890	7087.40	11751.53	-1597.19	11645.98	40°24'34.050"N	104°45'24.626"W	0.51	

REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH DATA (208 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17754.00	90.090	90.930	7087.42	11846.17	-1599.53	11740.95	40°24'34.027"N	104°45'23.399"W	1.03	
17848.00	89.970	91.450	7087.37	11939.77	-1601.48	11834.93	40°24'34.007"N	104°45'22.184"W	0.57	
17943.00	90.030	90.330	7087.37	12034.33	-1602.95	11929.92	40°24'33.992"N	104°45'20.956"W	1.18	
18038.00	89.910	90.160	7087.42	12128.78	-1603.36	12024.92	40°24'33.987"N	104°45'19.728"W	0.22	
18133.00	90.000	90.200	7087.50	12223.22	-1603.66	12119.92	40°24'33.984"N	104°45'18.500"W	0.10	
18227.00	89.750	91.540	7087.70	12316.77	-1605.08	12213.90	40°24'33.969"N	104°45'17.285"W	1.45	
18322.00	90.150	91.010	7087.79	12411.39	-1607.20	12308.88	40°24'33.948"N	104°45'16.057"W	0.70	
18416.00	90.060	90.990	7087.61	12504.97	-1608.84	12402.87	40°24'33.931"N	104°45'14.842"W	0.10	
18511.00	89.850	91.870	7087.69	12599.61	-1611.21	12497.83	40°24'33.907"N	104°45'13.614"W	0.95	
18606.00	89.780	91.940	7087.99	12694.32	-1614.37	12592.78	40°24'33.876"N	104°45'12.387"W	0.10	
18700.00	89.660	91.070	7088.45	12787.97	-1616.84	12686.75	40°24'33.851"N	104°45'11.172"W	0.93	
18795.00	89.630	89.680	7089.04	12882.44	-1617.46	12781.74	40°24'33.844"N	104°45'09.944"W	1.46	
18889.00	89.570	87.960	7089.70	12975.61	-1615.52	12875.72	40°24'33.863"N	104°45'08.729"W	1.83	
18985.00	89.910	87.160	7090.13	13070.46	-1611.44	12971.63	40°24'33.903"N	104°45'07.490"W	0.91	
19080.00	90.030	86.350	7090.18	13164.11	-1606.06	13066.47	40°24'33.955"N	104°45'06.263"W	0.86	
19174.00	89.780	86.870	7090.34	13256.74	-1600.50	13160.31	40°24'34.010"N	104°45'05.050"W	0.61	
19268.00	90.060	87.050	7090.47	13349.46	-1595.51	13254.18	40°24'34.059"N	104°45'03.837"W	0.35	
19363.00	89.910	87.440	7090.50	13443.24	-1590.95	13349.07	40°24'34.103"N	104°45'02.610"W	0.44	
19458.00	89.880	89.010	7090.67	13537.27	-1588.01	13444.02	40°24'34.132"N	104°45'01.383"W	1.65	
19553.00	90.090	90.140	7090.69	13631.59	-1587.30	13539.01	40°24'34.138"N	104°45'00.155"W	1.21	
19647.00	90.120	91.970	7090.52	13725.18	-1589.03	13632.99	40°24'34.121"N	104°44'58.940"W	1.95	
19742.00	89.690	92.260	7090.68	13819.91	-1592.54	13727.93	40°24'34.085"N	104°44'57.713"W	0.55	
19837.00	89.630	92.790	7091.24	13914.69	-1596.72	13822.83	40°24'34.044"N	104°44'56.486"W	0.56	
19931.00	89.750	92.330	7091.75	14008.47	-1600.92	13916.74	40°24'34.002"N	104°44'55.272"W	0.51	
20026.00	89.780	91.630	7092.14	14103.19	-1604.20	14011.68	40°24'33.969"N	104°44'54.045"W	0.74	
20121.00	89.720	92.180	7092.56	14197.89	-1607.36	14106.63	40°24'33.937"N	104°44'52.817"W	0.58	
20216.00	89.630	92.620	7093.10	14292.65	-1611.34	14201.54	40°24'33.897"N	104°44'51.590"W	0.47	LAST SURVEY (988'FSL & 2404'FWL, SEC.11)
20260.00	89.630	92.620	7093.38	14336.56	-1613.35	14245.49	40°24'33.877"N	104°44'51.022"W	0.00	PROJECTION TO BIT (986'FSL & 2448'FWL, SEC.11)



Actual Wellpath Report

TC-HILAND KNOLLS 3-9-11 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

HOLE & CASING SECTIONS - Ref Wellbore: TC-HILAND KNOLLS 3-9-11 AWB				Ref Wellpath: TC-HILAND KNOLLS 3-9-11 AWP					
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]
13.5in Open Hole	25.00	1608.00	1583.00	25.00	1582.22	0.00	0.00	-192.13	164.94
9.625in Casing Surface	25.00	1608.00	1583.00	25.00	1582.22	0.00	0.00	-192.13	164.94
8.5in Open Hole	1608.00	20260.00	18652.00	1582.22	7093.38	-192.13	164.94	-1613.35	14245.49



Actual Wellpath Report

TC-HILAND KNOLLS 3-9-11 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HILAND KNOLLS SPACING UNIT	5.00	280.52	-5.57	3195280.72	1394658.65	40°24'52.632"N	104°47'55.248"W	polygon
SEC.08-T05N-R66W	5.00	280.52	-5.57	3195280.72	1394658.65	40°24'52.632"N	104°47'55.248"W	polygon
SEC.09-T05N-R66W	5.00	280.52	-5.57	3195280.72	1394658.65	40°24'52.632"N	104°47'55.248"W	polygon
SEC.10-T05N-R66W	5.00	280.52	-5.57	3195280.72	1394658.65	40°24'52.632"N	104°47'55.248"W	polygon
SEC.11-T05N-R66W	5.00	280.52	-5.57	3195280.72	1394658.65	40°24'52.632"N	104°47'55.248"W	polygon
TC-HILAND KNOLLS 3-9-11 LANDING POINT REV-2 (1022'FSL&500'FWL,SEC.9)	7075.00	-1520.00	1700.00	3197000.41	1392871.75	40°24'34.839"N	104°47'33.200"W	point
TC-HILAND KNOLLS 3-9-11 REV-2 BHL FROM PLAT (989'FSL & 2514'FWL SEC.11)	7075.00	-1609.76	14311.25	3209611.45	1392881.74	40°24'33.912"N	104°44'50.172"W	point
TC-HILAND KNOLLS 3-9-11 LANDING POINT REV-1 (990'FSL&460'FWL,SEC.9)	7255.00	-1551.92	1659.76	3196960.42	1392839.52	40°24'34.524"N	104°47'33.720"W	point
TC-HILAND KNOLLS 3-9-11 REV-1 BHL FROM PLAT (989'FSL & 2514'FWL SEC.11)	7255.00	-1609.76	14311.25	3209611.45	1392881.74	40°24'33.912"N	104°44'50.172"W	point
HILAND KNOLLS SPACING UNIT 460' SETBACKS	7309.00	280.52	-5.57	3195280.72	1394658.65	40°24'52.632"N	104°47'55.248"W	polygon



Actual Wellpath Report

TC-HILAND KNOLLS 3-9-11 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH COMPOSITION - Ref Wellbore: TC-HILAND KNOLLS 3-9-11 AWB				Ref Wellpath: TC-HILAND KNOLLS 3-9-11 AWP
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	1573.00	Custom BHI NaviTrak (Standard Rotating+Axial Corr) (Rockies 0.03Gt model)	BHI NAVITRAK 13.5" (STD ROTATING, AXIAL, ROCKIES GT)<304-1573>	TC-HILAND KNOLLS 3-9-11 AWB
1573.00	7053.00	Custom BHI NaviTrak (Standard Rotating) (Rockies 0.03Gt model)	BHI NAVITRAK 8.75" (STD ROTATING, ROCKIES GT)<1762-7053>	TC-HILAND KNOLLS 3-9-11 AWB
7053.00	20216.00	Custom BHI AutoTrak Curve (Short) (Rockies 0.03Gt model)	BHI ATC 8.75"(SHORT, ROCKIES GT)<7170-20216>	TC-HILAND KNOLLS 3-9-11 AWB
20216.00	20260.00	Blind Drilling (std)	Projection to bit	TC-HILAND KNOLLS 3-9-11 AWB



Actual Wellpath Report

TC-HILAND KNOLLS 3-9-11 AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#21 TC-HILAND KNOLLS 3-9-11 (2552'FSL&1188'FEL,SEC.8)
Area	COLORADO	Well	TC-HILAND KNOLLS 3-9-11
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	TC-HILAND KNOLLS 3-9-11 AWB
Facility	SEC.08-T05N-R66W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
304.00	3.852	139.478	303.79	FIRST SURVEY
7668.00	89.828	92.522	7073.89	CROSSED 460' SETBACK (1030'FSL & 460'FWL, SEC.09)
7832.00	90.000	93.310	7074.21	LANDING POINT (1022'FSL & 623'FWL, SEC.09)
20216.00	89.630	92.620	7093.10	LAST SURVEY (988'FSL & 2404'FWL, SEC.11)
20260.00	89.630	92.620	7093.38	PROJECTION TO BIT (986'FSL & 2448'FWL, SEC.11)