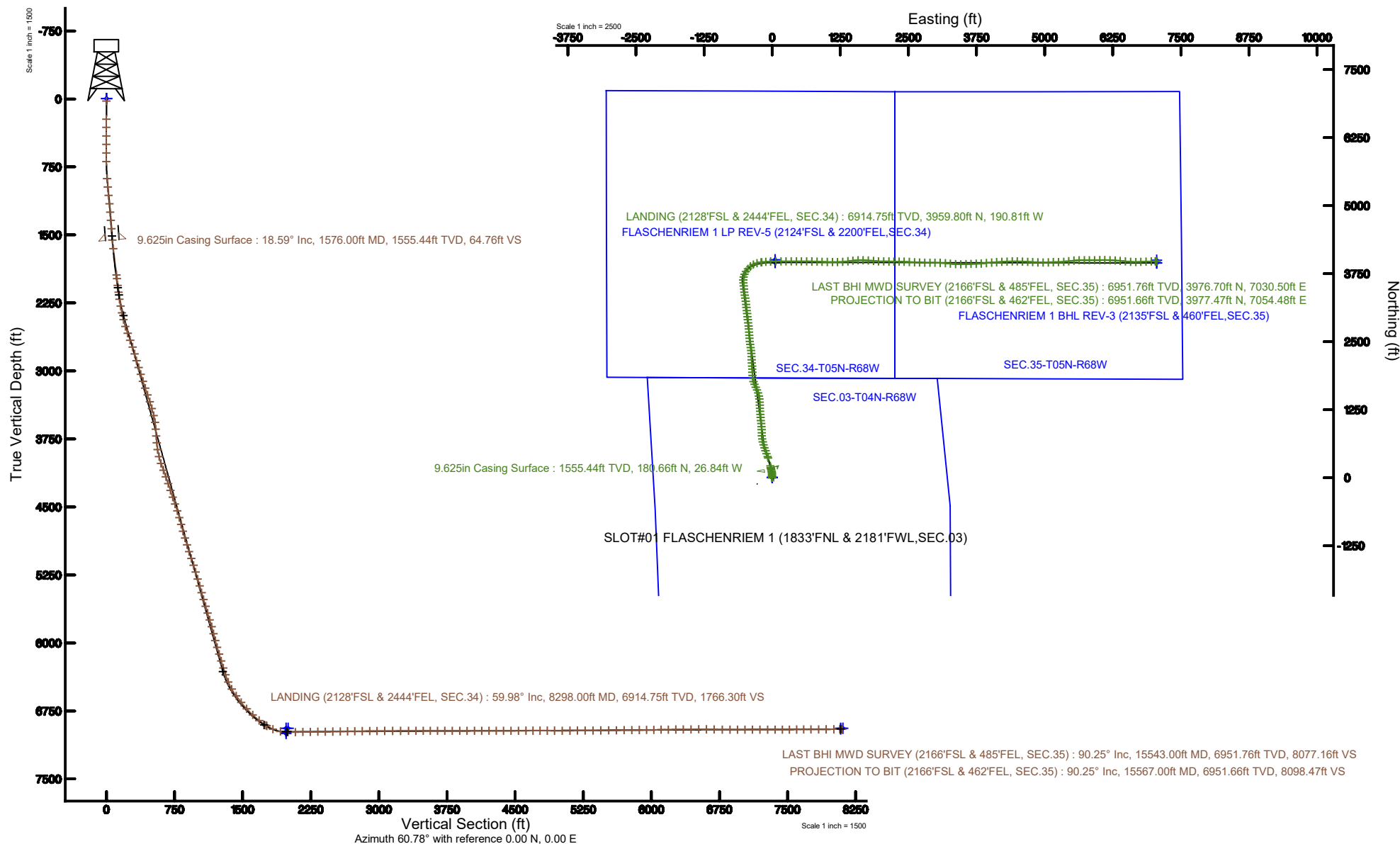


# PETRO OPERATING CO, LLC

Location: COLORADO Slot: SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)  
Field: WELD COUNTY (NAD83/TRUE NORTH) Well: FLASCHENRIEM 1  
Facility: SEC.03-T04N-R68W Wellbore: FLASCHENRIEM 1 PWB



Plot reference wellpath is FLASCHENRIEM 1 PWP (REV-E.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB)	North Reference: True north
Measured depths are referenced to ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB)	Scale: True distance
ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB) to Mean Sea Level: 5091 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)): 0 feet	Created by: doddanna on 2019-06-20
Coordinates are in feet referenced to Slot	Database: WellArchitectDB



# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWP
Facility	SEC.03-T04N-R68W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	True	User	Doddanna
Scale	0.999958	Report Generated	6/20/2019 at 1:19:05 PM
Convergence at slot	0.33° East	Database/Source file	WellArchitectDB/FLASCHENRIEM_1_AWP.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	0.00	3141726.57	1368630.22	40°20'39.033"N	104°59'29.552"W
Facility Reference Pt			3141726.57	1368630.22	40°20'39.033"N	104°59'29.552"W
Field Reference Pt			3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W

## WELLPATH DATUM

Calculation method	Minimum curvature	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB) to Facility Vertical Datum	5091.00ft
Horizontal Reference Pt	Slot	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB) to Mean Sea Level	5091.00ft
Vertical Reference Pt	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB)	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB) to Mud Line at Slot (SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03))	5091.00ft
MD Reference Pt	ENSIGN 140 (5068'GL+23'KB@5091'RKB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	60.78°

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWP
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (164 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	215.690	0.00	0.00	0.00	0.00	40°20'39.032"N	104°59'29.552"W	0.00	
23.00	0.000	215.690	23.00	0.00	0.00	0.00	40°20'39.032"N	104°59'29.552"W	0.00	
223.00	0.280	215.690	223.00	-0.44	-0.40	-0.29	40°20'39.029"N	104°59'29.556"W	0.14	
313.00	0.160	176.080	313.00	-0.70	-0.70	-0.40	40°20'39.026"N	104°59'29.558"W	0.21	
408.00	0.520	283.960	408.00	-1.07	-0.73	-0.81	40°20'39.025"N	104°59'29.563"W	0.62	
502.00	0.650	298.760	501.99	-1.66	-0.37	-1.70	40°20'39.029"N	104°59'29.574"W	0.21	
597.00	1.460	334.080	596.98	-1.88	0.98	-2.70	40°20'39.042"N	104°59'29.587"W	1.06	
691.00	3.390	349.820	690.89	-0.90	4.79	-3.71	40°20'39.080"N	104°59'29.600"W	2.15	
879.00	7.960	0.710	877.92	7.41	23.29	-4.53	40°20'39.263"N	104°59'29.611"W	2.49	
973.00	10.000	1.700	970.77	14.85	37.96	-4.21	40°20'39.408"N	104°59'29.607"W	2.18	
1068.00	11.530	0.710	1064.09	23.83	55.70	-3.85	40°20'39.583"N	104°59'29.602"W	1.62	
1162.00	12.500	356.170	1156.03	32.88	75.24	-4.41	40°20'39.776"N	104°59'29.609"W	1.44	
1256.00	12.430	350.180	1247.82	40.60	95.36	-6.82	40°20'39.975"N	104°59'29.640"W	1.38	
1350.00	15.140	349.150	1339.10	47.83	117.39	-10.85	40°20'40.192"N	104°59'29.692"W	2.89	
1445.00	16.580	345.360	1430.49	55.15	142.69	-16.61	40°20'40.443"N	104°59'29.767"W	1.87	
1530.00	17.660	344.160	1511.72	61.18	166.83	-23.20	40°20'40.681"N	104°59'29.852"W	1.34	
1679.00	20.750	350.440	1652.43	75.29	214.61	-33.76	40°20'41.153"N	104°59'29.988"W	2.49	
2006.00	34.940	340.740	1940.97	111.17	360.95	-74.49	40°20'42.599"N	104°59'30.514"W	4.54	
2056.00	35.160	338.630	1981.90	115.61	387.88	-84.46	40°20'42.865"N	104°59'30.643"W	2.46	
2150.00	37.170	340.410	2057.79	124.06	439.84	-103.85	40°20'43.379"N	104°59'30.893"W	2.41	
2244.00	37.090	340.980	2132.73	133.82	493.39	-122.61	40°20'43.908"N	104°59'31.136"W	0.38	
2339.00	36.940	340.800	2208.59	143.86	547.43	-141.33	40°20'44.442"N	104°59'31.378"W	0.19	
2433.00	37.040	343.770	2283.68	155.14	601.30	-158.53	40°20'44.974"N	104°59'31.600"W	1.90	
2528.00	37.040	347.490	2359.52	169.79	656.71	-172.73	40°20'45.522"N	104°59'31.783"W	2.36	
2622.00	37.000	350.180	2434.57	187.33	712.22	-183.69	40°20'46.070"N	104°59'31.925"W	1.72	
2716.00	36.930	356.030	2509.70	208.77	768.28	-190.47	40°20'46.624"N	104°59'32.012"W	3.74	
2810.00	36.740	359.370	2584.94	234.27	824.57	-192.73	40°20'47.181"N	104°59'32.041"W	2.14	
2905.00	36.940	359.750	2660.97	261.69	881.53	-193.17	40°20'47.744"N	104°59'32.047"W	0.32	
2999.00	36.950	356.170	2736.11	287.49	937.97	-195.18	40°20'48.301"N	104°59'32.073"W	2.29	
3094.00	37.050	352.570	2811.99	310.36	994.85	-200.79	40°20'48.863"N	104°59'32.146"W	2.28	

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWP
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (164 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3188.00	36.630	353.200	2887.22	331.56	1050.77	-207.77	40°20'49.416"N	104°59'32.236"W	0.60	
3282.00	36.950	356.050	2962.50	354.31	1106.81	-213.04	40°20'49.970"N	104°59'32.304"W	1.85	
3376.00	36.990	355.160	3037.60	378.05	1163.17	-217.37	40°20'50.527"N	104°59'32.360"W	0.57	
3471.00	35.800	356.410	3114.07	401.86	1219.38	-221.52	40°20'51.082"N	104°59'32.413"W	1.48	
3566.00	36.990	357.280	3190.54	426.63	1275.67	-224.62	40°20'51.638"N	104°59'32.453"W	1.37	
3660.00	36.900	358.120	3265.67	452.20	1332.12	-226.89	40°20'52.196"N	104°59'32.483"W	0.55	
3754.00	36.980	356.390	3340.80	477.38	1388.54	-229.59	40°20'52.754"N	104°59'32.518"W	1.11	
3848.00	37.020	353.460	3415.88	500.51	1444.87	-234.60	40°20'53.310"N	104°59'32.582"W	1.88	
3943.00	36.990	349.150	3491.76	520.55	1501.37	-243.23	40°20'53.869"N	104°59'32.694"W	2.73	
4038.00	37.570	341.160	3567.39	534.78	1556.88	-257.98	40°20'54.417"N	104°59'32.884"W	5.13	
4132.00	37.140	337.210	3642.12	543.12	1610.17	-278.22	40°20'54.944"N	104°59'33.146"W	2.59	
4226.00	37.040	335.160	3717.11	548.46	1662.03	-301.11	40°20'55.456"N	104°59'33.441"W	1.32	
4321.00	37.160	337.980	3792.88	554.23	1714.59	-323.89	40°20'55.976"N	104°59'33.736"W	1.79	
4415.00	36.740	342.830	3868.02	563.66	1767.79	-342.84	40°20'56.501"N	104°59'33.980"W	3.13	
4510.00	36.650	350.190	3944.23	579.02	1822.90	-356.06	40°20'57.046"N	104°59'34.151"W	4.63	
4604.00	36.960	357.760	4019.54	601.17	1878.81	-361.95	40°20'57.598"N	104°59'34.227"W	4.83	
4698.00	37.900	358.420	4094.18	627.38	1935.91	-363.85	40°20'58.163"N	104°59'34.252"W	1.09	
4792.00	37.880	358.030	4168.36	653.99	1993.61	-365.64	40°20'58.733"N	104°59'34.275"W	0.26	
4886.00	38.270	356.160	4242.36	679.68	2051.50	-368.58	40°20'59.305"N	104°59'34.313"W	1.30	
4981.00	37.560	354.790	4317.31	704.07	2109.69	-373.18	40°20'59.880"N	104°59'34.372"W	1.16	
5076.00	37.310	358.370	4392.76	729.18	2167.32	-376.63	40°21'00.449"N	104°59'34.417"W	2.31	
5170.00	37.470	357.680	4467.44	755.31	2224.36	-378.60	40°21'01.013"N	104°59'34.442"W	0.48	
5264.00	36.770	355.010	4542.40	779.79	2280.96	-382.20	40°21'01.572"N	104°59'34.489"W	1.87	
5357.00	36.960	352.960	4616.81	801.77	2336.44	-388.05	40°21'02.121"N	104°59'34.564"W	1.34	
5451.00	36.940	351.710	4691.93	822.52	2392.44	-395.59	40°21'02.674"N	104°59'34.662"W	0.80	
5545.00	36.840	351.510	4767.11	842.59	2448.26	-403.82	40°21'03.226"N	104°59'34.768"W	0.17	
5640.00	36.660	354.150	4843.23	863.92	2504.65	-410.92	40°21'03.783"N	104°59'34.860"W	1.67	
5734.00	37.130	355.150	4918.41	886.75	2560.83	-416.17	40°21'04.338"N	104°59'34.928"W	0.81	
5828.00	37.220	355.880	4993.31	910.51	2617.46	-420.62	40°21'04.897"N	104°59'34.985"W	0.48	
5922.00	37.200	355.280	5068.17	934.35	2674.13	-425.00	40°21'05.458"N	104°59'35.042"W	0.39	

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL, SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
6017.00	37.400	356.270	5143.74	958.68	2731.54	-429.24	40°21'06.025"N	104°59'35.096"W	0.67	
6112.00	37.120	354.390	5219.35	982.57	2788.86	-433.92	40°21'06.591"N	104°59'35.157"W	1.23	
6207.00	37.120	353.220	5295.11	1004.99	2845.86	-440.10	40°21'07.154"N	104°59'35.237"W	0.74	
6301.00	36.960	352.870	5370.14	1026.44	2902.06	-446.96	40°21'07.710"N	104°59'35.325"W	0.28	
6395.00	37.020	353.190	5445.22	1047.86	2958.20	-453.82	40°21'08.265"N	104°59'35.414"W	0.21	
6490.00	37.030	353.710	5521.07	1069.90	3015.04	-460.35	40°21'08.826"N	104°59'35.498"W	0.33	
6584.00	37.050	354.290	5596.10	1092.22	3071.35	-466.27	40°21'09.383"N	104°59'35.575"W	0.37	
6678.00	36.940	353.370	5671.18	1114.37	3127.58	-472.34	40°21'09.938"N	104°59'35.653"W	0.60	
6773.00	37.050	354.110	5747.05	1136.66	3184.41	-478.58	40°21'10.500"N	104°59'35.734"W	0.48	
6867.00	37.260	353.080	5821.97	1158.67	3240.82	-484.91	40°21'11.057"N	104°59'35.816"W	0.70	
6963.00	37.180	349.900	5898.42	1179.20	3298.24	-493.50	40°21'11.625"N	104°59'35.927"W	2.01	
7057.00	37.020	350.470	5973.40	1198.03	3354.11	-503.17	40°21'12.177"N	104°59'36.051"W	0.40	
7151.00	36.680	353.350	6048.62	1218.34	3409.91	-511.10	40°21'12.728"N	104°59'36.154"W	1.87	
7246.00	36.980	354.940	6124.66	1240.93	3466.55	-516.91	40°21'13.288"N	104°59'36.229"W	1.05	
7340.00	37.240	355.330	6199.63	1264.31	3523.06	-521.72	40°21'13.846"N	104°59'36.291"W	0.37	
7435.00	36.970	353.900	6275.39	1287.47	3580.12	-527.10	40°21'14.410"N	104°59'36.361"W	0.95	
7529.00	34.460	359.880	6351.73	1311.51	3634.84	-530.16	40°21'14.951"N	104°59'36.400"W	4.57	
7624.00	32.510	12.340	6431.06	1341.55	3686.73	-524.75	40°21'15.464"N	104°59'36.330"W	7.51	
7719.00	35.650	22.130	6509.79	1380.15	3737.36	-508.85	40°21'15.964"N	104°59'36.125"W	6.64	
7813.00	41.030	31.610	6583.56	1428.56	3789.10	-482.32	40°21'16.475"N	104°59'35.782"W	8.47	
7908.00	39.680	41.300	6656.02	1484.43	3838.49	-445.92	40°21'16.963"N	104°59'35.312"W	6.75	
8002.00	43.230	51.880	6726.55	1544.62	3880.97	-400.71	40°21'17.383"N	104°59'34.728"W	8.34	
8096.00	46.390	63.620	6793.34	1610.55	3916.03	-344.79	40°21'17.730"N	104°59'34.006"W	9.41	
8191.00	52.650	73.190	6855.07	1681.94	3942.30	-277.68	40°21'17.989"N	104°59'33.139"W	10.09	
8285.00	58.710	82.500	6908.12	1755.92	3958.38	-201.91	40°21'18.148"N	104°59'32.160"W	10.41	
8298.00†	59.979	82.977	6914.75	1766.30	3959.80	-190.81	40°21'18.162"N	104°59'32.017"W	10.26	LANDING (2128'FSL & 2444'FEL, SEC.34)
8380.00	68.020	85.740	6950.67	1833.76	3966.97	-117.53	40°21'18.233"N	104°59'31.070"W	10.26	
8474.00	79.730	86.640	6976.74	1915.17	3972.94	-27.59	40°21'18.292"N	104°59'29.909"W	12.49	
8568.00	90.830	89.560	6984.46	1998.26	3976.02	65.89	40°21'18.322"N	104°59'28.701"W	12.21	
8663.00	90.800	90.120	6983.11	2081.29	3976.29	160.88	40°21'18.325"N	104°59'27.474"W	0.59	

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWP
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (164 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8757.00	90.710	89.760	6981.87	2163.38	3976.39	254.87	40°21'18.326"N	104°59'26.260"W	0.39	
8851.00	90.740	89.970	6980.68	2245.52	3976.61	348.86	40°21'18.328"N	104°59'25.046"W	0.23	
8946.00	90.710	90.340	6979.48	2328.30	3976.35	443.85	40°21'18.326"N	104°59'23.819"W	0.39	
9040.00	90.680	90.660	6978.34	2409.93	3975.53	537.84	40°21'18.318"N	104°59'22.605"W	0.34	
9135.00	90.680	90.500	6977.21	2492.37	3974.57	632.83	40°21'18.308"N	104°59'21.378"W	0.17	
9229.00	90.680	91.130	6976.10	2573.74	3973.23	726.81	40°21'18.295"N	104°59'20.164"W	0.67	
9324.00	90.740	92.030	6974.92	2655.34	3970.61	821.77	40°21'18.269"N	104°59'18.938"W	0.95	
9418.00	90.550	91.990	6973.86	2735.71	3967.32	915.70	40°21'18.236"N	104°59'17.724"W	0.21	
9512.00	90.680	91.440	6972.85	2816.34	3964.50	1009.66	40°21'18.208"N	104°59'16.511"W	0.60	
9607.00	90.620	90.490	6971.77	2898.45	3962.90	1104.64	40°21'18.193"N	104°59'15.284"W	1.00	
9701.00	90.740	90.670	6970.66	2980.02	3961.95	1198.62	40°21'18.183"N	104°59'14.070"W	0.23	
9796.00	89.750	84.910	6970.25	3064.62	3965.61	1293.51	40°21'18.219"N	104°59'12.844"W	6.15	
9891.00	90.280	81.350	6970.23	3152.48	3976.98	1387.81	40°21'18.331"N	104°59'11.626"W	3.79	
9985.00	90.310	84.170	6969.74	3239.64	3988.82	1481.05	40°21'18.448"N	104°59'10.422"W	3.00	
10080.00	90.090	88.240	6969.41	3325.42	3995.11	1575.83	40°21'18.511"N	104°59'09.198"W	4.29	
10174.00	90.370	91.300	6969.03	3407.63	3995.49	1669.81	40°21'18.514"N	104°59'07.984"W	3.27	
10268.00	90.030	94.640	6968.70	3487.17	3990.62	1763.67	40°21'18.466"N	104°59'06.771"W	3.57	
10363.00	90.370	95.150	6968.37	3565.83	3982.51	1858.33	40°21'18.386"N	104°59'05.549"W	0.65	
10457.00	90.030	92.320	6968.04	3644.70	3976.39	1952.12	40°21'18.325"N	104°59'04.337"W	3.03	
10552.00	90.030	90.650	6968.00	3726.38	3973.92	2047.08	40°21'18.301"N	104°59'03.111"W	1.76	
10646.00	89.850	90.100	6968.09	3808.12	3973.31	2141.08	40°21'18.295"N	104°59'01.896"W	0.62	
10740.00	89.910	90.830	6968.29	3889.78	3972.55	2235.07	40°21'18.287"N	104°59'00.682"W	0.78	
10834.00	89.880	91.150	6968.46	3971.02	3970.92	2329.06	40°21'18.271"N	104°58'59.468"W	0.34	
10928.00	90.120	91.630	6968.46	4051.92	3968.64	2423.03	40°21'18.248"N	104°58'58.255"W	0.57	
11023.00	90.120	93.330	6968.26	4132.75	3964.53	2517.94	40°21'18.208"N	104°58'57.029"W	1.79	
11117.00	90.060	93.610	6968.12	4211.86	3958.84	2611.77	40°21'18.151"N	104°58'55.817"W	0.30	
11211.00	90.000	92.310	6968.07	4291.42	3953.99	2705.64	40°21'18.103"N	104°58'54.604"W	1.38	
11305.00	89.970	91.510	6968.09	4371.89	3950.86	2799.59	40°21'18.072"N	104°58'53.391"W	0.85	
11400.00	90.000	90.630	6968.12	4453.92	3949.08	2894.57	40°21'18.055"N	104°58'52.164"W	0.93	
11494.00	90.030	88.940	6968.09	4536.13	3949.43	2988.56	40°21'18.058"N	104°58'50.950"W	1.80	

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (164 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11589.00	90.400	92.850	6967.73	4618.30	3947.95	3083.53	40°21'18.043"N	104°58'49.723"W	4.13	
11684.00	90.090	95.140	6967.33	4697.77	3941.33	3178.29	40°21'17.978"N	104°58'48.499"W	2.43	
11778.00	89.970	95.590	6967.28	4775.16	3932.54	3271.88	40°21'17.891"N	104°58'47.290"W	0.50	
11873.00	89.780	94.180	6967.49	4853.83	3924.45	3366.54	40°21'17.811"N	104°58'46.068"W	1.50	
11967.00	89.850	89.610	6967.79	4934.28	3921.35	3460.46	40°21'17.780"N	104°58'44.854"W	4.86	
12062.00	89.820	86.700	6968.06	5018.64	3924.40	3555.40	40°21'17.810"N	104°58'43.628"W	3.06	
12156.00	90.680	88.330	6967.65	5102.59	3928.48	3649.31	40°21'17.850"N	104°58'42.415"W	1.96	
12251.00	90.430	88.640	6966.73	5186.69	3930.99	3744.27	40°21'17.875"N	104°58'41.188"W	0.42	
12345.00	89.720	85.250	6966.61	5271.05	3936.00	3838.12	40°21'17.924"N	104°58'39.976"W	3.68	
12440.00	90.740	84.850	6966.23	5357.66	3944.20	3932.76	40°21'18.005"N	104°58'38.754"W	1.15	
12534.00	90.740	85.010	6965.02	5443.42	3952.50	4026.39	40°21'18.087"N	104°58'37.544"W	0.17	
12629.00	90.590	85.500	6963.91	5529.88	3960.36	4121.05	40°21'18.164"N	104°58'36.322"W	0.54	
12724.00	90.490	86.830	6963.02	5615.71	3966.72	4215.84	40°21'18.227"N	104°58'35.097"W	1.40	
12819.00	90.680	87.300	6962.05	5700.88	3971.58	4310.71	40°21'18.275"N	104°58'33.872"W	0.53	
12913.00	90.580	88.540	6961.01	5784.53	3974.99	4404.64	40°21'18.308"N	104°58'32.659"W	1.32	
13008.00	90.550	91.120	6960.08	5867.57	3975.27	4499.62	40°21'18.311"N	104°58'31.432"W	2.72	
13102.00	90.550	93.350	6959.17	5947.75	3971.61	4593.54	40°21'18.275"N	104°58'30.219"W	2.37	
13197.00	90.650	92.730	6958.18	6028.08	3966.57	4688.40	40°21'18.225"N	104°58'28.993"W	0.66	
13291.00	90.680	93.160	6957.09	6107.65	3961.74	4782.27	40°21'18.177"N	104°58'27.781"W	0.46	
13386.00	90.650	92.480	6955.99	6188.18	3957.07	4877.15	40°21'18.130"N	104°58'26.555"W	0.72	
13480.00	90.680	90.650	6954.89	6268.93	3954.50	4971.10	40°21'18.105"N	104°58'25.342"W	1.95	
13575.00	90.430	87.420	6953.97	6352.60	3956.10	5066.07	40°21'18.120"N	104°58'24.115"W	3.41	
13670.00	90.830	86.750	6952.93	6437.75	3960.93	5160.94	40°21'18.168"N	104°58'22.890"W	0.82	
13764.00	90.370	89.780	6951.95	6521.13	3963.78	5254.88	40°21'18.196"N	104°58'21.676"W	3.26	
13859.00	89.290	85.530	6952.23	6605.85	3967.66	5349.78	40°21'18.234"N	104°58'20.450"W	4.62	
13953.00	88.370	81.970	6954.15	6692.37	3977.89	5443.19	40°21'18.335"N	104°58'19.244"W	3.91	
14048.00	90.000	83.900	6955.50	6780.34	3989.57	5537.45	40°21'18.450"N	104°58'18.026"W	2.66	
14143.00	89.750	87.920	6955.71	6866.33	3996.35	5632.19	40°21'18.517"N	104°58'16.802"W	4.24	
14238.00	89.690	91.520	6956.17	6949.46	3996.81	5727.17	40°21'18.521"N	104°58'15.576"W	3.79	
14332.00	90.090	90.850	6956.35	7030.53	3994.87	5821.15	40°21'18.502"N	104°58'14.362"W	0.83	

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH DATA (164 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14427.00	90.030	88.370	6956.25	7113.75	3995.51	5916.14	40°21'18.508"N	104°58'13.135"W	2.61	
14521.00	89.820	89.010	6956.37	7196.82	3997.66	6010.11	40°21'18.529"N	104°58'11.921"W	0.72	
14616.00	89.880	89.820	6956.62	7280.20	3998.63	6105.11	40°21'18.538"N	104°58'10.694"W	0.85	
14711.00	90.180	92.040	6956.57	7362.35	3997.09	6200.09	40°21'18.523"N	104°58'09.467"W	2.36	
14805.00	90.150	93.980	6956.30	7441.86	3992.16	6293.95	40°21'18.474"N	104°58'08.255"W	2.06	
14900.00	90.520	95.030	6955.75	7520.88	3984.69	6388.66	40°21'18.400"N	104°58'07.031"W	1.17	
14995.00	90.520	95.980	6954.88	7598.96	3975.58	6483.21	40°21'18.310"N	104°58'05.810"W	1.00	
15090.00	90.310	94.420	6954.20	7677.32	3966.97	6577.82	40°21'18.224"N	104°58'04.588"W	1.66	
15184.00	90.220	89.240	6953.76	7757.83	3963.97	6671.74	40°21'18.194"N	104°58'03.375"W	5.51	
15279.00	90.280	87.690	6953.35	7841.95	3966.52	6766.70	40°21'18.219"N	104°58'02.148"W	1.63	
15373.00	90.310	87.950	6952.86	7925.68	3970.09	6860.63	40°21'18.254"N	104°58'00.935"W	0.28	
15468.00	90.460	87.490	6952.22	8010.37	3973.87	6955.55	40°21'18.292"N	104°57'59.709"W	0.51	
15543.00	90.250	88.180	6951.76	8077.16	3976.70	7030.50	40°21'18.319"N	104°57'58.741"W	0.96	LAST BHI MWD SURVEY (2166'FSL & 485'FEL, SEC.35)
15567.00	90.250	88.180	6951.66	8098.47	3977.47	7054.48	40°21'18.327"N	104°57'58.431"W	0.00	PROJECTION TO BIT (2166'FSL & 462'FEL, SEC.35)

HOLE & CASING SECTIONS - Ref Wellbore: FLASCHENRIEM 1 AWB      Ref Wellpath: FLASCHENRIEM 1 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]
9.625in Casing Surface	23.00	1576.00	1553.00	23.00	1555.44	0.00	0.00	180.66	-26.84



# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWP
Facility	SEC.03-T04N-R68W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.03-T04N-R68W	-5.00	1.57	0.64	3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W	polygon
SEC.34-T05N-R68W	-5.00	1.57	0.64	3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W	polygon
SEC.35-T05N-R68W	-5.00	1.57	0.64	3141727.20	1368631.79	40°20'39.048"N	104°59'29.544"W	polygon
FLASCHENRIEM 1 BHL ON PLAT (2185'FSL & 460'FEL,SEC.35)	6941.00	3995.98	7055.47	3148758.69	1372666.42	40°21'18.510"N	104°57'58.418"W	point
FLASCHENRIEM 1 BHL REV-2 (2135'FSL & 460'FEL,SEC.35)	6941.00	3946.11	7055.90	3148759.41	1372616.55	40°21'18.017"N	104°57'58.413"W	point
FLASCHENRIEM 1 LP ON PLAT (2174'FSL & 2200'FEL,SEC.34)	6941.00	4006.42	52.18	3141755.77	1372636.69	40°21'18.623"N	104°59'28.878"W	point
FLASCHENRIEM 1 LP REV-2 (2124'FSL & 2200'FEL,SEC.34)	6941.00	3956.40	52.65	3141756.53	1372586.68	40°21'18.129"N	104°59'28.872"W	point
FLASCHENRIEM 1 BHL REV-3 (2135'FSL & 460'FEL,SEC.35)	6950.00	3946.11	7055.90	3148759.41	1372616.55	40°21'18.017"N	104°57'58.413"W	point
FLASCHENRIEM 1 LP REV-3 (2124'FSL & 2200'FEL,SEC.34)	6980.00	3956.40	52.65	3141756.53	1372586.68	40°21'18.129"N	104°59'28.872"W	point
FLASCHENRIEM 1 LP REV-5 (2124'FSL & 2200'FEL,SEC.34)	6980.00	3956.40	52.65	3141756.53	1372586.68	40°21'18.129"N	104°59'28.872"W	point
FLASCHENRIEM 1 LP REV-4 (2124'FSL & 2200'FEL,SEC.34)	7000.00	3956.40	52.65	3141756.53	1372586.68	40°21'18.129"N	104°59'28.872"W	point

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH COMPOSITION - Ref Wellbore: FLASCHENRIEM 1 AWB      Ref Wellpath: FLASCHENRIEM 1 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
23.00	1530.00	BHI NaviTrak (Rotating+Axial Corr)	BHI NAVITRAK 13.5" (ROTATING & AXIAL)<223-1530>	FLASCHENRIEM 1 AWB
1530.00	15543.00	BHI AutoTrak Curve (Short)	BHI ATC 8.5" (SHORT)<1679-15543>	FLASCHENRIEM 1 AWB
15543.00	15567.00	Blind Drilling (std)	Projection to bit	FLASCHENRIEM 1 AWB

# Actual Wellpath Report

FLASCHENRIEM 1 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	PETRO OPERATING CO, LLC	Slot	SLOT#01 FLASCHENRIEM 1 (1833'FNL & 2181'FWL,SEC.03)
Area	COLORADO	Well	FLASCHENRIEM 1
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	FLASCHENRIEM 1 AWB
Facility	SEC.03-T04N-R68W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
8298.00	59.979	82.977	6914.75	LANDING (2128'FSL & 2444'FEL, SEC.34)
15543.00	90.250	88.180	6951.76	LAST BHI MWD SURVEY (2166'FSL & 485'FEL, SEC.35)
15567.00	90.250	88.180	6951.66	PROJECTION TO BIT (2166'FSL & 462'FEL, SEC.35)