

**RAYLE COAL OHI 406H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	2/20/2019	21,842	21,749	36
2	3/7/2019	21,689	21,541	36
3	3/8/2019	21,508	21,331	36
4	3/8/2019	21,296	21,121	36
5	3/8/2019	21,088	20,911	36
6	3/8/2019	20,878	20,705	36
7	3/9/2019	20,668	20,491	36
8	3/9/2019	20,454	20,281	36
9	3/9/2019	20,248	20,071	36
10	3/10/2019	20,038	19,861	36
11	3/10/2019	19,828	19,651	36
12	3/11/2019	19,618	19,445	36
13	3/11/2019	19,408	19,231	36
14	3/11/2019	19,218	19,021	36
15	3/12/2019	18,985	18,811	36
16	3/12/2019	18,778	18,601	36
17	3/12/2019	18,568	18,391	36
18	3/13/2019	18,358	18,181	36
19	3/13/2019	18,142	17,971	36
20	3/13/2019	17,938	17,761	36
21	3/14/2019	17,728	17,551	36
22	3/14/2019	17,518	17,347	36
23	3/15/2019	17,308	17,131	36
24	3/15/2019	17,092	16,921	36
25	3/15/2019	16,887	16,711	36
26	3/16/2019	16,677	16,501	36
27	3/16/2019	16,468	16,291	36
28	3/16/2019	16,258	16,081	36
29	3/16/2019	16,048	15,871	60
30	3/17/2019	15,836	15,661	36
31	3/17/2019	15,628	15,452	36
32	3/18/2019	15,418	15,241	36
33	3/18/2019	15,208	15,031	36
34	3/18/2019	14,998	14,821	36
35	3/19/2019	14,788	14,611	36
36	3/19/2019	14,572	14,401	36
37	3/19/2019	14,368	14,191	36
38	3/20/2019	14,152	13,981	36
39	3/20/2019	13,948	13,771	36
40	3/21/2019	13,732	13,561	36
41	3/21/2019	13,528	13,351	36

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STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
42	3/22/2019	13,318	13,141	36
43	3/22/2019	13,105	12,935	36
44	3/22/2019	12,898	12,721	36
45	3/22/2019	12,686	12,511	36
46	3/22/2019	12,478	12,301	36
47	3/23/2019	12,268	12,090	36
48	3/23/2019	12,052	11,881	36
49	3/23/2019	11,848	11,671	36
50	3/23/2019	11,638	11,461	36
51	3/23/2019	11,428	11,251	36
52	3/24/2019	11,218	11,041	36
53	3/24/2019	11,005	10,831	36
54	3/24/2019	10,798	10,621	36
55	3/24/2019	10,586	10,409	36
56	3/25/2019	10,377	10,201	36
57	3/25/2019	10,168	9,998	36
58	3/25/2019	9,959	9,781	36
59	3/26/2019	9,748	9,571	36
60	3/26/2019	9,538	9,361	36
61	3/26/2019	9,328	9,151	54
62	3/27/2019	9,118	8,941	36
63	3/27/2019	8,908	8,732	36
64	3/27/2019	8,698	8,519	36
65	3/27/2019	8,492	8,311	36
66	3/27/2019	8,278	8,101	36
67	3/27/2019	8,068	7,891	36
68	3/28/2019	7,858	7,685	36
69	3/28/2019	7,648	7,471	36
70	3/28/2019	7,436	7,261	36
71	3/28/2019	7,228	7,051	36

RAYLE COAL OHI 406H

ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	3/6/2019	68	7,691	7,856	4,408	245,860	6,628	0
2	3/7/2019	72	7,928	5,109	4,647	409,485	9,904	0
3	3/8/2019	71	7,938	4,536	4,947	409,485	9,310	0
4	3/8/2019	79	7,527	4,476	5,244	409,580	8,606	0
5	3/8/2019	55	8,113	4,560	4,596	426,390	12,545	0
6	3/8/2019	77	7,886	5,046	4,702	414,684	9,021	0
7	3/9/2019	70	8,106	6,470	4,906	409,250	8,564	0
8	3/9/2019	78	7,994	5,368	5,151	418,106	8,119	0
9	3/10/2019	75	8,087	5,311	4,919	416,482	7,929	0
10	3/10/2019	79	8,170	4,458	5,110	419,382	8,242	0
11	3/10/2019	86	8,164	4,958	5,105	410,646	7,945	0
12	3/11/2019	85	8,130	5,450	4,792	410,646	7,989	0
13	3/11/2019	79	8,056	4,424	5,029	414,365	8,030	0
14	3/11/2019	81	8,095	5,353	5,048	413,622	8,349	0
15	3/12/2019	84	8,025	4,332	5,341	417,689	7,798	0
16	3/12/2019	77	7,965	5,453	5,121	417,350	7,073	0
17	3/12/2019	83	8,253	4,438	4,912	409,196	8,479	0
18	3/13/2019	78	7,762	4,168	4,934	418,198	7,597	0
19	3/13/2019	80	8,002	5,336	4,562	417,793	8,187	0
20	3/14/2019	84	8,057	4,623	4,602	426,380	7,448	0
21	3/14/2019	83	7,801	5,519	5,113	424,684	7,773	0
22	3/14/2019	82	7,991	5,471	4,567	423,853	7,575	0
23	3/15/2019	89	8,168	5,742	4,521	428,114	7,701	0
24	3/15/2019	80	7,692	5,256	4,618	416,622	7,501	0
25	3/15/2019	83	8,025	4,562	4,966	417,594	6,956	0
26	3/16/2019	88	8,063	5,354	4,564	444,520	7,517	0
27	3/16/2019	85	7,899	5,132	5,502	423,380	7,514	0
28	3/16/2019	84	7,496	5,222	5,037	424,550	9,423	0
29	3/17/2019	82	7,809	5,449	4,604	413,426	10,153	0
30	3/17/2019	91	7,944	5,039	5,224	418,864	7,808	0
31	3/17/2019	92	7,930	5,547	4,545	410,160	7,753	0
32	3/18/2019	87	7,651	5,687	4,887	418,928	7,290	0
33	3/18/2019	80	7,677	5,251	4,937	420,875	7,150	0
34	3/18/2019	89	8,221	5,763	4,723	416,238	7,364	0
35	3/19/2019	88	7,675	5,611	5,026	418,133	8,470	0
36	3/19/2019	85	7,810	5,523	4,503	418,390	6,683	0
37	3/19/2019	94	8,189	5,603	5,159	425,130	7,394	0
38	3/20/2019	93	8,039	5,287	4,925	424,905	7,355	0
39	3/21/2019	92	7,806	5,616	4,735	427,580	6,670	0
40	3/21/2019	91	7,911	5,841	4,572	424,230	7,482	0
41	3/22/2019	91	7,905	5,732	4,638	426,030	7,117	0
42	3/22/2019	94	7,863	6,027	5,088	427,020	6,879	0
43	3/22/2019	93	7,809	6,664	4,971	429,820	6,733	0
44	3/22/2019	94	7,796	5,460	5,066	405,020	6,585	0
45	3/22/2019	93	7,792	5,566	4,307	427,370	7,061	0
46	3/23/2019	90	7,851	5,570	4,547	431,750	7,082	0
47	3/23/2019	92	7,763	5,576	4,528	408,480	6,724	0
48	3/23/2019	94	7,817	5,402	5,127	411,020	6,513	0
49	3/23/2019	95	7,784	5,012	4,893	409,780	6,514	0
50	3/23/2019	94	7,649	5,504	5,086	423,420	6,593	0
51	3/23/2019	89	7,483	5,910	4,334	429,710	6,414	0
52	3/24/2019	89	7,685	6,057	4,208	428,270	6,349	0



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ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
53	3/24/2019	95	7,618	6,116	4,709	410,780	6,591	0
54	3/24/2019	96	7,603	4,725	4,747	401,780	6,508	0
55	3/24/2019	94	7,467	5,961	4,340	424,190	6,688	0
56	3/25/2019	94	7,593	5,450	4,862	420,830	6,369	0
57	3/25/2019	94	7,526	5,665	4,872	403,600	6,429	0
58	3/26/2019	93	7,716	6,001	4,317	384,891	6,796	0
59	3/26/2019	94	7,826	4,590	4,983	408,830	6,441	0
60	3/26/2019	97	7,742	5,920	4,725	419,270	6,464	0
61	3/26/2019	91	7,546	5,809	4,224	407,100	9,848	0
62	3/27/2019	91	7,195	5,592	4,524	412,130	7,204	0
63	3/27/2019	94	7,605	5,556	4,782	411,520	6,611	0
64	3/27/2019	89	7,442	5,314	4,851	403,700	6,743	0
65	3/27/2019	94	7,561	4,863	4,523	413,845	6,719	0
66	3/27/2019	94	7,159	5,745	4,458	422,940	6,849	0
67	3/28/2019	93	7,305	5,778	4,526	423,430	6,825	0
68	3/28/2019	97	6,935	6,098	4,417	430,050	6,662	0
69	3/28/2019	97	6,903	5,692	4,675	423,200	6,423	0
70	3/28/2019	95	6,982	4,844	4,652	407,710	6,494	0
71	3/28/2019	95	6,951	4,985	4,917	401,640	6,243	0





Well Name: Rayle Coal OHI 406H

LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	290.00	290.00	
Top of Salt Water	555.00	555.00	NA	NA	
Pittsburgh Coal	242.00	242.00	248.00	248.00	
Big Injun (ss)	1329.00	1329.00	1812.00	1812.00	
Berea (siltstone)	1812.00	1812.00	5943.00	5243.00	
Rhinstreet (shale)	5943.00	5243.00	6277.00	5500.00	
Cashaqua (shale)	6277.00	5500.00	6352.00	5552.00	
Middlesex (shale)	6352.00	5552.00	6449.00	5614.00	
Burket (shale)	6449.00	5614.00	6476.00	5630.00	
Tully (ls)	6476.00	5630.00	6574.00	5686.00	
Mahantango (shale)	6574.00	5686.00	6788.00	5773.00	
Marcellus (shale)	6788.00	5773.00	NA	NA	GAS

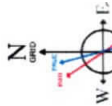
# SOUTHWESTERN ENERGY

Location: Ohio County, WV  
 Field: Ohio  
 Facility: Rayle Coal OHI Pad Wellbore: Rayle Coal OHI 406H PWB

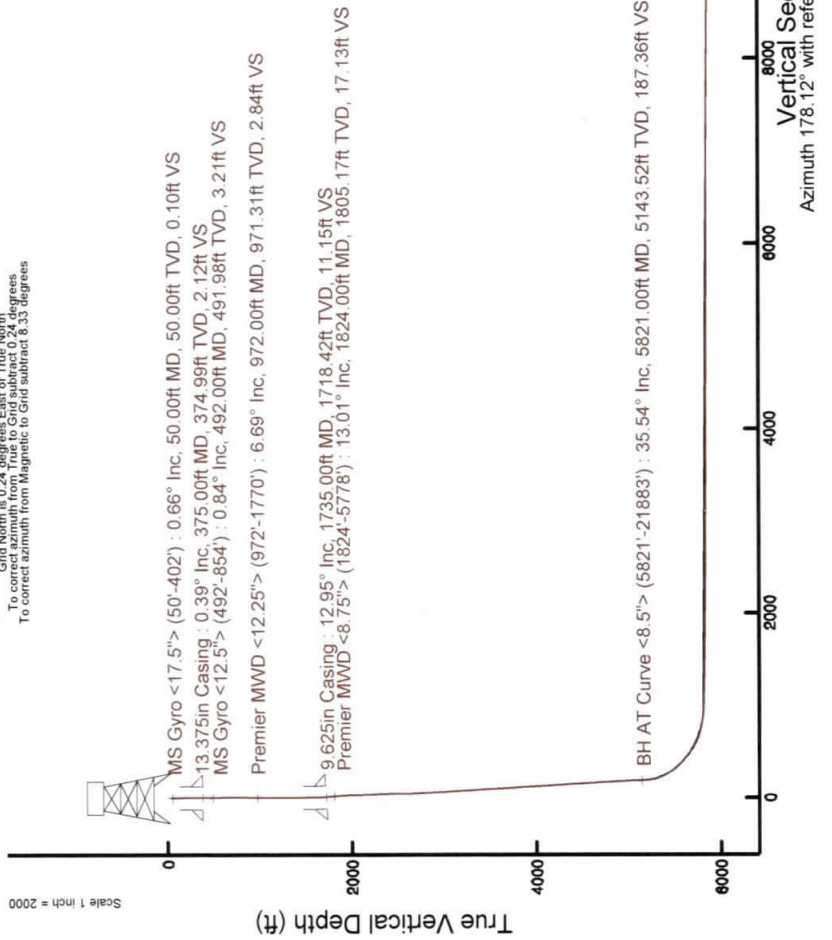
Slot: Slot 406H  
 Well: Rayle Coal OHI 406H

## Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Rayle Coal OHI Pad	1744351.331	14585677.739	40°09'40.581"N	80°37'40.786"W
Slot 406H	106.22	314.08	40°09'41.618"N	80°37'36.735"W
SDC 41 (RKB) to Ground level (At Slot: Slot 406H) Mean Sea Level to Ground level (At Slot: Slot 406H) SDC 41 (RKB) to Mean Sea Level				
			-1063.8 ft	
			1089.8 ft	



User specified Dip 67.54° Ficht 52637 °T  
 Magnetic North 8.09 degrees West of True North (at 19/Sep/2018)  
 To correct azimuth from True to Grid subtract 0.24 degrees  
 To correct azimuth from Magnetic to Grid subtract 6.33 degrees



MS Gyro <17.5°> (50°-402') : 0.66° Inc, 50.00ft MD, 50.00ft TVD, 0.10ft VS  
 13.375in Casing : 0.39° Inc, 375.00ft MD, 374.99ft TVD, 2.12ft VS  
 MS Gyro <12.25°> (492'-854') : 0.84° Inc, 492.00ft MD, 491.98ft TVD, 3.21ft VS  
 Premier MWD <12.25°> (972'-1770') : 6.69° Inc, 972.00ft MD, 971.31ft TVD, 2.84ft VS  
 9.625in Casing : 12.95° Inc, 1735.00ft MD, 1718.42ft TVD, 11.15ft VS  
 Premier MWD <8.75°> (1824'-5778') : 13.01° Inc, 1824.00ft MD, 1805.17ft TVD, 17.13ft VS

BH AT Curve <8.5°> (5821'-21883') : 35.54° Inc, 5821.00ft MD, 5143.52ft TVD, 187.36ft VS

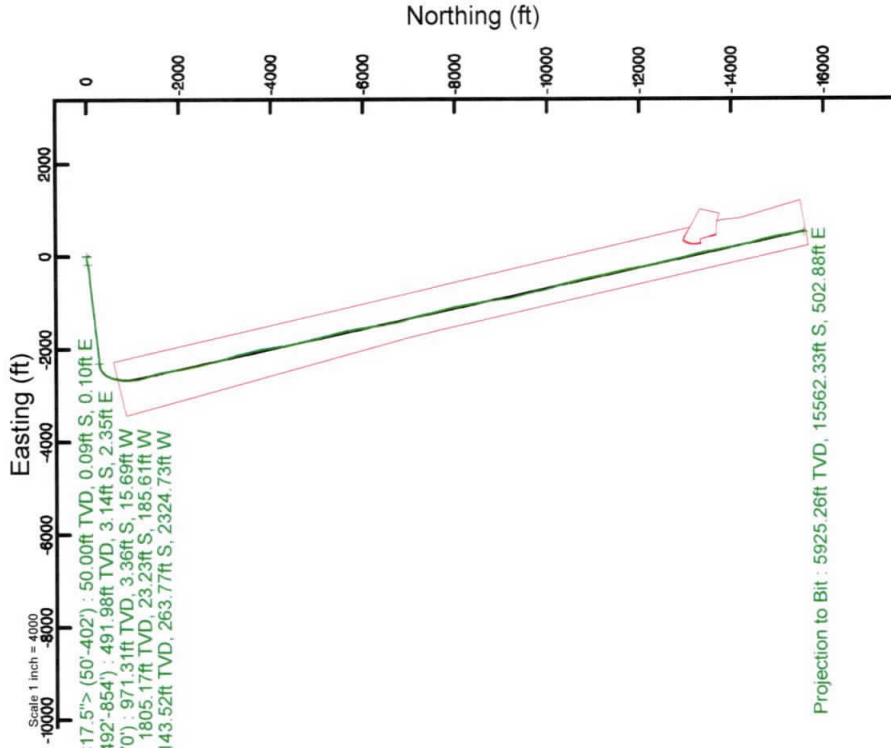
Projection to Bit : 89.38° Inc, 21908.00ft MD, 5925.26ft TVD, 15570.45ft VS



Plot reference wellpath is Rayle Coal OHI 406H PWB Rev-B.0  
 Grid System: NAD83 / UTM Zone 17 North, US feet  
 True vertical depths are referenced to SDC 41 (RKB)  
 Measured depths are referenced to SDC 41 (RKB)  
 Scale: True distance  
 SDC 41 (RKB) to Mean Sea Level: 1089.8 feet  
 Depths are in feet  
 Mean Sea Level to Ground level (At Slot: Slot 406H) : -1063.8 feet  
 Created by: atenjen on 2018-10-04  
 Coordinates are in feet referenced to Slot  
 Database: WA\_MPL\_EASTERNUS\_Defn

## Comments

API 47-069-00282-0000  
 BH Job # : 109387204  
 Rig: SDC 41  
 Duration: 09/19/2018 - 09/26/2018



# Actual Wellpath Report

Rayle Coal OHI 406H AWP Proj: 21908'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 406H
Area	Ohio County, WV	Well	Rayle Coal OHI 406H
Field	Ohio	Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad		

## REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Atenjen
Scale	0.999612	Report Generated	04/Oct/2018 at 14:17
Convergence at slot	0.24° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Rayle_Coal_OHI_406H_AWP_Proj_21908_.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	106.22	314.08	1744665.28	14585783.92	40°09'41.618"N	80°37'36.735"W
Facility Reference Pt			1744351.33	14585677.74	40°09'40.581"N	80°37'40.786"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

## WELLPATH DATUM

Calculation method	Minimum curvature	SDC 41 (RKB) to Facility Vertical Datum	1089.80ft
Horizontal Reference Pt	Slot	SDC 41 (RKB) to Mean Sea Level	1089.80ft
Vertical Reference Pt	SDC 41 (RKB)	SDC 41 (RKB) to Ground Level at Slot (Slot 406H)	26.00ft
MD Reference Pt	SDC 41 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	178.12°



# Actual Wellpath Report

Rayle Coal OHI 406H AWP Proj: 21908'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 406H
Area	Ohio County, WV	Well	Rayle Coal OHI 406H
Field	Ohio	Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad		

## WELLPATH DATA (243 stations) + = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00	0.000	132.970	0.00	0.00	0.00	0.00	1744665.28	14585783.92	40°09'41.618"N	80°37'36.735"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	132.970	26.00	0.00	0.00	0.00	1744665.28	14585783.92	40°09'41.618"N	80°37'36.735"W	0.00	0.000	0.00	0.00	0.00
50.00	0.660	132.970	50.00	0.10	-0.09	0.10	1744665.38	14585783.83	40°09'41.617"N	80°37'36.734"W	0.14	132.970	2.75	2.75	554.04
100.00	0.610	131.450	100.00	0.48	-0.47	0.51	1744665.79	14585783.45	40°09'41.613"N	80°37'36.728"W	0.69	132.386	0.11	-0.10	-3.04
150.00	0.640	130.440	149.99	0.85	-0.82	0.92	1744666.21	14585783.10	40°09'41.609"N	80°37'36.723"W	1.24	131.746	0.06	0.06	-2.02
200.00	0.510	128.920	199.99	1.19	-1.14	1.31	1744666.59	14585782.78	40°09'41.606"N	80°37'36.718"W	1.74	131.175	0.26	-0.26	-3.04
250.00	0.330	137.250	249.99	1.44	-1.39	1.58	1744666.86	14585782.53	40°09'41.604"N	80°37'36.715"W	2.10	131.351	0.38	-0.36	16.66
300.00	0.380	135.550	299.99	1.67	-1.61	1.79	1744667.08	14585782.31	40°09'41.602"N	80°37'36.712"W	2.41	131.991	0.10	0.10	-3.40
350.00	0.420	152.730	349.99	1.96	-1.90	1.99	1744667.28	14585782.02	40°09'41.599"N	80°37'36.709"W	2.75	133.557	0.25	0.08	34.36
402.00	0.370	176.310	401.99	2.30	-2.23	2.09	1744667.37	14585781.69	40°09'41.596"N	80°37'36.707"W	3.06	136.865	0.32	-0.10	45.35
492.00	0.840	158.880	491.98	3.21	-3.14	2.35	1744667.63	14585780.78	40°09'41.587"N	80°37'36.705"W	3.92	143.192	0.55	0.52	-19.37
583.00	0.610	180.550	582.97	4.33	-4.24	2.58	1744667.87	14585779.68	40°09'41.576"N	80°37'36.702"W	4.97	148.668	0.39	-0.25	23.81
673.00	0.900	254.670	672.97	4.97	-4.91	1.90	1744667.18	14585779.01	40°09'41.569"N	80°37'36.711"W	5.26	158.871	1.04	0.32	82.36
766.00	2.020	273.380	765.94	4.99	-5.01	-0.44	1744664.84	14585778.91	40°09'41.568"N	80°37'36.741"W	5.03	185.055	1.29	1.20	20.12
854.00	3.850	277.680	853.82	4.36	-4.52	-4.92	1744660.37	14585779.40	40°09'41.573"N	80°37'36.799"W	6.68	227.417	2.09	2.08	4.89
972.00	6.690	275.260	971.31	2.84	-3.36	-15.69	1744649.60	14585780.56	40°09'41.585"N	80°37'36.937"W	16.05	257.910	2.41	2.41	-2.05
1062.00	8.390	269.820	1060.53	2.00	-2.90	-27.48	1744637.82	14585781.02	40°09'41.590"N	80°37'37.089"W	27.63	263.973	2.05	1.89	-6.04
1153.00	9.510	268.190	1150.42	1.79	-3.16	-41.63	1744623.67	14585780.76	40°09'41.588"N	80°37'37.271"W	41.75	265.660	1.26	1.23	-1.79
1246.00	10.870	265.560	1241.95	2.17	-4.08	-58.05	1744607.25	14585779.84	40°09'41.580"N	80°37'37.483"W	58.20	265.979	1.55	1.46	-2.83
1339.00	12.770	266.680	1332.97	2.82	-5.36	-77.06	1744588.25	14585778.57	40°09'41.568"N	80°37'37.728"W	77.25	266.025	2.06	2.04	1.20
1432.00	12.930	266.530	1423.64	3.37	-6.58	-97.71	1744567.61	14585777.34	40°09'41.557"N	80°37'37.994"W	97.93	266.147	0.18	0.17	-0.16
1524.00	13.540	265.130	1513.20	4.22	-8.12	-118.71	1744546.62	14585775.81	40°09'41.542"N	80°37'38.264"W	118.99	266.088	0.75	0.66	-1.52
1617.00	13.790	262.770	1603.57	5.82	-10.44	-140.56	1744524.78	14585773.49	40°09'41.520"N	80°37'38.546"W	140.94	265.753	0.66	0.27	-2.54
1682.00	13.150	254.910	1666.78	8.23	-13.34	-155.38	1744509.96	14585770.59	40°09'41.492"N	80°37'38.737"W	155.95	265.094	2.98	-0.98	-12.09
1770.00	12.820	251.890	1752.54	13.25	-18.98	-174.33	1744491.03	14585764.95	40°09'41.437"N	80°37'38.981"W	175.36	263.787	0.86	-0.37	-3.43
1824.00	13.010	246.830	1805.17	17.13	-23.23	-185.61	1744479.75	14585760.70	40°09'41.396"N	80°37'39.127"W	187.06	262.866	2.12	0.35	-9.37
1915.00	15.440	253.560	1893.38	23.90	-30.69	-206.65	1744458.72	14585753.24	40°09'41.323"N	80°37'39.398"W	208.91	261.552	3.23	2.67	7.40
2008.00	17.010	258.660	1982.68	29.24	-36.87	-231.86	1744433.51	14585747.06	40°09'41.263"N	80°37'39.723"W	234.78	260.964	2.28	1.69	5.48
2101.00	18.540	262.470	2071.24	32.94	-41.48	-259.86	1744405.52	14585742.45	40°09'41.219"N	80°37'40.084"W	263.15	260.930	2.07	1.65	4.10
2194.00	20.910	263.150	2158.78	35.83	-45.40	-291.00	1744374.40	14585738.54	40°09'41.181"N	80°37'40.486"W	294.52	261.132	2.56	2.55	0.73



# Actual Wellpath Report

Rayle Coal OHI 406H AWP Proj: 21908'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 406H
SOUTHWESTERN ENERGY	Well	Rayle Coal OHI 406H
Ohio County, WV	Wellbore	Rayle Coal OHI 406H AWB
Ohio		
Rayle Coal OHI Pad		

## WELLPATH DATA (243 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2287.00	23.010	262.390	2245.02	39.08	-49.79	-325.50	1744339.91	14585734.15	40°09'41.139"N	80°37'40.930"W	329.28	261.303	2.28	2.26	-0.82
2380.00	25.190	263.510	2329.91	42.49	-54.43	-363.18	1744302.24	14585729.51	40°09'41.095"N	80°37'41.416"W	367.24	261.476	2.40	2.34	1.20
2473.00	26.190	267.190	2413.72	44.41	-57.68	-403.35	1744262.09	14585726.27	40°09'41.064"N	80°37'41.933"W	407.45	261.862	2.02	1.08	3.96
2565.00	27.310	267.610	2495.88	44.93	-59.55	-444.72	1744220.74	14585724.39	40°09'41.048"N	80°37'42.466"W	448.68	262.373	1.23	1.22	0.46
2658.00	28.500	266.450	2578.06	45.77	-61.82	-488.18	1744177.30	14585722.13	40°09'41.027"N	80°37'43.026"W	492.08	262.783	1.41	1.28	-1.25
2751.00	30.310	264.770	2659.08	47.78	-65.33	-533.70	1744131.79	14585718.62	40°09'40.994"N	80°37'43.613"W	537.68	263.021	2.14	1.95	-1.81
2843.00	31.930	263.930	2737.84	50.92	-70.02	-581.01	1744084.50	14585713.93	40°09'40.950"N	80°37'44.222"W	585.22	263.128	1.82	1.76	-0.91
2936.00	33.690	263.960	2816.00	54.59	-75.33	-631.12	1744034.41	14585708.62	40°09'40.899"N	80°37'44.868"W	635.60	263.193	1.89	1.89	0.03
3029.00	35.950	263.340	2892.34	58.73	-81.21	-683.89	1743981.66	14585702.74	40°09'40.843"N	80°37'45.548"W	688.70	263.228	2.46	2.43	-0.67
3122.00	36.630	265.120	2967.30	62.46	-86.74	-738.65	1743926.92	14585697.21	40°09'40.791"N	80°37'46.253"W	743.73	263.302	1.35	0.73	1.91
3214.00	36.340	263.290	3041.28	66.19	-92.26	-793.07	1743872.52	14585691.70	40°09'40.739"N	80°37'46.955"W	798.42	263.364	1.22	-0.32	-1.99
3307.00	35.360	263.130	3116.66	70.85	-98.70	-847.16	1743818.46	14585685.26	40°09'40.677"N	80°37'47.652"W	852.89	263.355	1.06	-1.05	-0.17
3400.00	35.550	264.100	3192.41	75.09	-104.70	-900.77	1743764.87	14585679.26	40°09'40.620"N	80°37'48.342"W	906.83	263.370	0.64	0.20	1.04
3492.00	36.970	264.370	3266.59	78.77	-110.16	-954.91	1743710.75	14585673.80	40°09'40.569"N	80°37'49.040"W	961.24	263.419	1.55	1.54	0.29
3585.00	36.360	261.720	3341.20	83.68	-116.87	-1010.02	1743655.66	14585667.09	40°09'40.504"N	80°37'49.750"W	1016.76	263.399	1.82	-0.66	-2.85
3678.00	34.900	263.650	3416.79	88.82	-123.79	-1063.75	1743601.95	14585660.18	40°09'40.438"N	80°37'50.443"W	1070.92	263.362	1.98	-1.57	2.08
3771.00	36.000	264.250	3492.55	92.74	-129.47	-1117.38	1743548.33	14585654.50	40°09'40.384"N	80°37'51.134"W	1124.86	263.391	1.24	1.18	0.65
3863.00	36.870	263.350	3566.56	96.86	-135.37	-1171.70	1743494.04	14585648.60	40°09'40.328"N	80°37'51.834"W	1179.50	263.409	1.11	0.95	-0.98
3956.00	36.420	264.560	3641.18	100.90	-141.22	-1226.90	1743438.86	14585642.75	40°09'40.273"N	80°37'52.545"W	1235.00	263.434	0.91	-0.48	1.30
4049.00	36.370	263.410	3716.04	104.87	-147.00	-1281.77	1743384.01	14585636.97	40°09'40.218"N	80°37'53.252"W	1290.18	263.457	0.74	-0.05	-1.24
4142.00	36.480	261.590	3790.88	110.28	-154.21	-1336.52	1743329.29	14585629.77	40°09'40.149"N	80°37'53.957"W	1345.38	263.418	1.17	0.12	-1.96
4235.00	36.320	261.170	3865.73	116.76	-162.48	-1391.08	1743274.74	14585621.50	40°09'40.069"N	80°37'54.661"W	1400.54	263.338	0.32	-0.17	-0.45
4327.00	36.340	263.780	3939.85	122.12	-169.62	-1445.10	1743220.74	14585614.37	40°09'40.001"N	80°37'55.357"W	1455.03	263.306	1.68	0.02	2.84
4420.00	36.720	265.340	4014.58	125.55	-174.86	-1500.21	1743165.66	14585609.12	40°09'39.951"N	80°37'56.067"W	1510.37	263.352	1.08	0.41	1.68
4513.00	35.310	262.550	4089.81	129.51	-180.61	-1554.58	1743111.31	14585603.38	40°09'39.897"N	80°37'56.767"W	1565.03	263.373	2.33	-1.52	-3.00
4606.00	35.580	263.400	4165.58	134.35	-187.20	-1608.10	1743057.81	14585596.79	40°09'39.834"N	80°37'57.457"W	1618.96	263.360	0.60	0.29	0.91
4698.00	35.550	262.760	4240.41	139.05	-193.65	-1661.22	1743004.71	14585590.35	40°09'39.772"N	80°37'58.142"W	1672.47	263.351	0.41	-0.03	-0.70
4791.00	36.570	261.570	4315.60	144.73	-201.12	-1715.45	1742950.50	14585582.88	40°09'39.701"N	80°37'58.841"W	1727.20	263.313	1.33	1.10	-1.28
4883.00	36.900	264.320	4389.33	149.69	-207.87	-1770.05	1742895.92	14585576.13	40°09'39.636"N	80°37'59.544"W	1782.21	263.302	1.82	0.36	2.99
4976.00	36.570	265.700	4463.86	152.71	-212.71	-1825.46	1742840.54	14585571.29	40°09'39.591"N	80°38'00.258"W	1837.81	263.354	0.96	-0.35	1.48





# Actual Wellpath Report

Rayle Coal OHI 406H AWP Proj: 21908'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 406H
Area	Ohio County, WV	Well	Rayle Coal OHI 406H
Field	Ohio	Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad		

## WELLPATH DATA (243 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
5069.00	36.920	264.370	4538.39	155.71	-217.53	-1880.89	1742785.13	14585566.48	40°09'39.545"N	80°38'00.972"W	1893.42	263.403	0.93	0.38	-1.43
5161.00	37.240	261.880	4611.79	160.54	-224.17	-1935.95	1742730.09	14585559.84	40°09'39.482"N	80°38'01.682"W	1948.88	263.395	1.67	0.35	-2.71
5254.00	36.620	263.580	4686.13	165.79	-231.25	-1991.37	1742674.69	14585552.76	40°09'39.414"N	80°38'02.396"W	2004.75	263.376	1.28	-0.67	1.83
5347.00	36.100	264.560	4761.02	169.69	-236.95	-2046.21	1742619.87	14585547.07	40°09'39.360"N	80°38'03.103"W	2059.88	263.395	0.84	-0.56	1.05
5440.00	35.480	264.520	4836.46	173.09	-242.12	-2100.35	1742565.75	14585541.89	40°09'39.311"N	80°38'03.800"W	2114.26	263.424	0.67	-0.67	-0.04
5532.00	35.230	262.990	4911.50	177.14	-247.91	-2153.26	1742512.86	14585536.11	40°09'39.256"N	80°38'04.482"W	2167.49	263.432	1.00	-0.27	-1.66
5625.00	35.890	263.580	4987.15	181.69	-254.23	-2206.98	1742459.17	14585529.79	40°09'39.196"N	80°38'05.174"W	2221.57	263.429	0.80	0.71	0.63
5718.00	38.300	266.580	5061.33	184.63	-259.00	-2262.85	1742403.32	14585525.02	40°09'39.151"N	80°38'05.894"W	2277.62	263.470	3.24	2.59	3.23
5778.00	36.980	265.490	5108.84	185.95	-261.53	-2299.80	1742366.78	14585522.49	40°09'39.128"N	80°38'06.365"W	2314.22	263.511	2.46	-2.20	-1.82
5821.00	35.540	264.380	5143.52	187.36	-263.77	-2324.73	1742341.46	14585520.25	40°09'39.107"N	80°38'06.691"W	2339.65	263.527	3.68	-3.35	-2.58
5883.00	34.790	260.360	5194.21	190.93	-268.50	-2360.11	1742306.10	14585515.53	40°09'39.061"N	80°38'07.147"W	2375.33	263.510	3.92	-1.21	-6.48
5975.00	36.820	251.090	5268.87	202.55	-281.84	-2412.11	1742254.12	14585502.19	40°09'38.932"N	80°38'07.818"W	2428.52	263.336	6.29	2.21	-10.08
6067.00	38.070	239.510	5342.01	224.24	-305.19	-2462.69	1742203.55	14585478.84	40°09'38.703"N	80°38'08.470"W	2481.53	262.936	7.76	1.36	-12.59
6160.00	40.650	227.460	5414.01	257.76	-340.28	-2509.80	1742156.46	14585443.77	40°09'38.358"N	80°38'09.079"W	2532.76	262.279	8.66	2.77	-12.96
6253.00	43.550	218.080	5483.08	302.11	-386.04	-2551.93	1742114.35	14585398.03	40°09'37.908"N	80°38'09.624"W	2580.96	261.398	7.44	3.12	-10.09
6345.00	47.890	210.000	5547.35	355.45	-440.61	-2588.59	1742077.70	14585343.48	40°09'37.370"N	80°38'10.099"W	2625.82	260.340	7.85	4.72	-8.78
6438.00	51.720	201.060	5607.43	418.46	-504.65	-2619.00	1742047.30	14585279.47	40°09'36.738"N	80°38'10.494"W	2667.18	259.094	8.41	4.12	-9.61
6531.00	55.020	196.290	5662.93	488.32	-575.33	-2642.82	1742023.49	14585208.82	40°09'36.041"N	80°38'10.805"W	2704.72	257.719	5.43	3.55	-5.13
6624.00	61.900	193.130	5711.56	564.24	-651.95	-2662.85	1742003.47	14585132.22	40°09'35.284"N	80°38'11.067"W	2741.50	256.243	7.94	7.40	-3.40
6716.00	68.380	186.100	5750.25	645.96	-734.16	-2676.64	1741989.68	14585050.04	40°09'34.472"N	80°38'11.249"W	2775.50	254.662	9.88	7.04	-7.64
6809.00	75.370	180.170	5779.19	733.91	-822.32	-2681.38	1741984.95	14584961.92	40°09'33.601"N	80°38'11.314"W	2804.64	252.950	9.65	7.52	-6.38
6902.00	80.670	178.110	5798.49	824.83	-913.24	-2680.00	1741986.33	14584871.03	40°09'32.703"N	80°38'11.301"W	2831.33	251.183	6.10	5.70	-2.22
6995.00	84.860	175.270	5810.20	917.03	-1005.32	-2674.66	1741991.66	14584778.99	40°09'31.793"N	80°38'11.237"W	2857.36	249.400	5.43	4.51	-3.05
7087.00	88.180	169.630	5815.79	1008.36	-1096.30	-2662.60	1742003.72	14584688.04	40°09'30.893"N	80°38'11.087"W	2879.46	247.621	7.10	3.61	-6.13
7180.00	88.830	164.140	5818.22	1099.51	-1186.81	-2641.51	1742024.80	14584597.57	40°09'29.998"N	80°38'10.820"W	2895.87	245.806	5.94	0.70	-5.90
7273.00	88.860	161.480	5820.09	1189.19	-1275.63	-2614.03	1742052.27	14584508.79	40°09'29.119"N	80°38'10.471"W	2908.68	243.988	2.86	0.03	-2.86
7374.00	88.770	162.550	5822.18	1286.20	-1371.67	-2582.85	1742083.44	14584412.78	40°09'28.169"N	80°38'10.074"W	2924.49	242.029	1.06	-0.09	1.06
7467.00	88.710	163.960	5824.23	1376.06	-1460.71	-2556.07	1742110.21	14584323.78	40°09'27.288"N	80°38'09.734"W	2944.00	240.253	1.52	-0.06	1.52
7560.00	89.380	167.330	5825.78	1466.84	-1550.78	-2533.02	1742133.25	14584233.75	40°09'26.397"N	80°38'09.442"W	2970.03	238.524	3.69	0.72	3.62
7652.00	89.630	170.630	5826.57	1557.66	-1641.06	-2515.43	1742150.83	14584143.50	40°09'25.504"N	80°38'09.220"W	3003.41	236.880	3.60	0.27	3.59



## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 406H
SOUTHWESTERN ENERGY	Well	Rayle Coal OHI 406H
Area	Wellbore	Rayle Coal OHI 406H AWB
Field		
Facility		

## WELLPATH DATA (243 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]	[°]	[°]	[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
7745.00	88.950	170.480	5827.72	1649.84	-1732.80	-2500.17	1742166.08	14584051.80	40°09'24.597"N	80°38'09.029"W	3041.95	235.275	0.75	-0.73	-0.16
7838.00	88.770	169.890	5829.58	1741.93	-1824.42	-2484.32	1742181.93	14583960.21	40°09'23.691"N	80°38'08.829"W	3082.26	233.707	0.66	-0.19	-0.63
7930.00	89.380	169.600	5831.06	1832.94	-1914.93	-2487.95	1742198.30	14583869.73	40°09'22.796"N	80°38'08.623"W	3123.74	232.191	0.73	0.66	-0.32
8023.00	89.540	169.240	5831.94	1924.86	-2006.35	-2450.87	1742215.37	14583778.35	40°09'21.892"N	80°38'08.408"W	3167.37	230.695	0.42	0.17	-0.39
8116.00	89.570	168.770	5832.66	2016.69	-2097.64	-2433.13	1742233.10	14583687.10	40°09'20.989"N	80°38'08.184"W	3212.51	229.235	0.51	0.03	-0.51
8208.00	89.450	168.220	5833.45	2107.39	-2187.79	-2414.79	1742251.44	14583596.99	40°09'20.097"N	80°38'07.953"W	3258.47	227.824	0.61	-0.13	-0.60
8301.00	89.510	168.160	5834.29	2198.99	-2278.81	-2395.75	1742270.46	14583505.99	40°09'19.197"N	80°38'07.713"W	3306.45	226.433	0.09	0.06	-0.06
8394.00	89.450	168.250	5835.13	2290.60	-2369.85	-2376.74	1742289.47	14583415.00	40°09'18.296"N	80°38'07.473"W	3356.35	225.083	0.12	-0.06	0.10
8486.00	89.480	168.000	5835.99	2381.20	-2459.87	-2357.81	1742308.39	14583325.00	40°09'17.406"N	80°38'07.234"W	3407.38	223.786	0.27	0.03	-0.27
8579.00	89.420	166.950	5836.89	2472.59	-2550.65	-2337.65	1742328.55	14583234.26	40°09'16.508"N	80°38'06.979"W	3459.83	222.505	1.13	-0.06	-1.13
8672.00	89.540	165.710	5837.73	2563.62	-2641.01	-2315.67	1742350.52	14583143.93	40°09'15.614"N	80°38'06.700"W	3512.45	221.245	1.34	0.13	-1.33
8765.00	89.510	165.940	5838.50	2654.49	-2731.18	-2292.89	1742373.28	14583053.80	40°09'14.722"N	80°38'06.412"W	3566.05	220.014	0.25	-0.03	0.25
8858.00	89.450	165.970	5839.34	2745.40	-2821.40	-2270.33	1742395.84	14582963.62	40°09'13.830"N	80°38'06.126"W	3621.42	218.823	0.07	-0.06	0.03
8951.00	89.450	164.370	5840.24	2836.02	-2911.29	-2246.52	1742419.63	14582873.76	40°09'12.941"N	80°38'05.824"W	3677.29	217.656	1.72	0.00	-1.72
9043.00	89.420	164.220	5841.14	2925.35	-2999.85	-2221.62	1742444.53	14582785.24	40°09'12.064"N	80°38'05.508"W	3732.92	216.523	0.17	-0.03	-0.16
9136.00	89.420	163.390	5842.09	3015.46	-3089.16	-2195.69	1742470.45	14582695.97	40°09'11.181"N	80°38'05.179"W	3789.98	215.404	0.89	0.00	-0.89
9229.00	89.350	162.650	5843.08	3105.24	-3178.10	-2168.53	1742497.60	14582607.06	40°09'10.301"N	80°38'04.834"W	3847.44	214.307	0.80	-0.08	-0.80
9320.00	89.380	164.190	5844.09	3193.26	-3265.31	-2142.56	1742523.56	14582519.89	40°09'09.438"N	80°38'04.504"W	3905.48	213.271	1.69	0.03	1.69
9413.00	89.350	165.530	5845.12	3283.77	-3355.07	-2118.28	1742547.83	14582430.16	40°09'08.550"N	80°38'04.196"W	3967.82	212.267	1.44	-0.03	1.44
9506.00	89.660	166.550	5845.93	3374.71	-3445.32	-2095.84	1742570.26	14582349.94	40°09'07.657"N	80°38'03.912"W	4032.71	211.313	1.15	0.33	1.10
9599.00	89.720	166.100	5846.43	3465.74	-3535.68	-2073.85	1742592.24	14582249.62	40°09'06.763"N	80°38'03.634"W	4099.01	210.394	0.49	0.06	-0.48
9692.00	89.570	166.590	5847.01	3556.78	-3626.05	-2051.90	1742614.18	14582159.28	40°09'05.869"N	80°38'03.356"W	4166.36	209.505	0.55	-0.16	0.53
9784.00	89.690	168.690	5847.60	3647.24	-3715.91	-2032.21	1742633.87	14582069.46	40°09'04.981"N	80°38'03.107"W	4235.31	208.674	2.29	0.13	2.28
9877.00	89.850	171.100	5847.97	3739.28	-3807.46	-2015.89	1742650.18	14581977.94	40°09'04.075"N	80°38'02.902"W	4308.20	207.899	2.60	0.17	2.59
9969.00	89.970	172.050	5848.12	3830.68	-3898.47	-2002.41	1742663.65	14581886.97	40°09'03.175"N	80°38'02.733"W	4382.66	207.187	1.04	0.13	1.03
10062.00	89.910	170.940	5848.22	3923.05	-3990.44	-1988.66	1742677.40	14581795.03	40°09'02.266"N	80°38'02.561"W	4458.52	206.490	1.20	-0.06	-1.19
10155.00	89.850	171.480	5848.41	4015.38	-4082.35	-1974.45	1742691.60	14581703.16	40°09'01.357"N	80°38'02.382"W	4534.76	205.811	0.58	-0.06	0.58
10247.00	89.880	171.570	5848.63	4106.77	-4173.34	-1960.89	1742705.16	14581612.20	40°09'00.457"N	80°38'02.213"W	4611.06	205.167	0.10	0.03	0.10
10340.00	89.910	170.430	5848.80	4199.05	-4265.20	-1946.34	1742719.70	14581520.38	40°08'59.549"N	80°38'02.030"W	4688.30	204.529	1.23	0.03	-1.23
10433.00	89.850	169.990	5848.99	4291.16	-4356.84	-1930.53	1742735.51	14581428.77	40°08'58.643"N	80°38'01.831"W	4765.40	203.898	0.48	-0.06	-0.47



# Actual Wellpath Report

Rayle Coal OHI 406H AWP Proj: 21908'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 406H
Area	Ohio County, WV	Well	Rayle Coal OHI 406H
Field	Ohio	Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad		

## WELLPATH DATA (243 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
10526.00	89.910	168.730	5849.19	4383.08	-4448.24	-1913.36	1742752.67	14581337.41	40°08'57.739"N	80°38'01.615"W	4842.29	203.274	1.36	0.06	-1.35
10619.00	89.880	167.460	5849.36	4474.66	-4539.24	-1894.17	1742771.85	14581246.45	40°08'56.839"N	80°38'01.373"W	4918.60	202.650	1.37	-0.03	-1.37
10711.00	89.880	166.680	5849.55	4564.95	-4628.91	-1873.59	1742792.43	14581156.82	40°08'55.952"N	80°38'01.113"W	4993.71	202.036	0.85	0.00	-0.85
10804.00	89.940	166.370	5849.70	4656.05	-4719.35	-1851.92	1742814.09	14581066.41	40°08'55.057"N	80°38'00.838"W	5069.70	201.426	0.34	0.06	-0.33
10897.00	89.750	164.710	5849.95	4746.81	-4809.40	-1828.69	1742837.30	14580976.40	40°08'54.167"N	80°38'00.544"W	5145.33	200.818	1.80	-0.20	-1.78
10989.00	89.540	164.640	5850.52	4836.29	-4898.12	-1804.38	1742861.61	14580887.71	40°08'53.289"N	80°38'00.236"W	5219.90	200.223	0.24	-0.23	-0.08
11082.00	89.780	166.120	5851.07	4927.00	-4988.11	-1780.91	1742885.07	14580797.76	40°08'52.399"N	80°37'59.938"W	5296.49	199.648	1.61	0.26	1.59
11175.00	89.820	166.320	5851.40	5018.00	-5078.43	-1758.75	1742907.21	14580707.47	40°08'51.505"N	80°37'59.658"W	5374.35	199.102	0.22	0.04	0.22
11267.00	89.940	166.130	5851.59	5108.02	-5167.78	-1736.85	1742929.11	14580618.15	40°08'50.621"N	80°37'59.380"W	5451.85	198.577	0.24	0.13	-0.21
11360.00	89.850	165.920	5851.76	5198.96	-5258.03	-1714.39	1742951.56	14580527.92	40°08'49.729"N	80°37'59.096"W	5530.46	198.059	0.25	-0.10	-0.23
11453.00	89.750	166.140	5852.08	5289.89	-5348.28	-1691.94	1742974.00	14580437.74	40°08'48.836"N	80°37'58.812"W	5609.52	197.555	0.26	-0.11	0.24
11545.00	89.720	166.660	5852.51	5379.98	-5437.70	-1670.31	1742995.63	14580348.34	40°08'47.951"N	80°37'58.538"W	5688.45	197.075	0.57	-0.03	0.57
11638.00	89.850	166.820	5852.86	5471.15	-5528.22	-1648.97	1743016.95	14580257.86	40°08'47.056"N	80°37'58.268"W	5768.91	196.609	0.22	0.14	0.17
11731.00	89.780	167.020	5853.16	5562.37	-5618.81	-1627.93	1743037.99	14580167.30	40°08'46.160"N	80°37'58.002"W	5849.88	196.158	0.23	-0.08	0.22
11824.00	89.880	167.910	5853.43	5653.77	-5709.59	-1607.74	1743058.17	14580076.56	40°08'45.262"N	80°37'57.747"W	5931.63	195.727	0.96	0.11	0.96
11917.00	89.750	170.220	5853.73	5745.60	-5800.89	-1590.10	1743075.80	14579985.29	40°08'44.359"N	80°37'57.524"W	6014.88	195.329	2.49	-0.14	2.48
12009.00	89.850	171.670	5854.06	5836.88	-5891.74	-1575.62	1743090.27	14579894.47	40°08'43.461"N	80°37'57.343"W	6098.79	194.972	1.58	0.11	1.58
12102.00	89.820	170.710	5854.32	5929.20	-5983.64	-1561.38	1743104.51	14579802.61	40°08'42.552"N	80°37'57.164"W	6184.00	194.625	1.03	-0.03	-1.03
12195.00	89.880	170.290	5854.57	6021.38	-6075.37	-1546.03	1743119.85	14579710.92	40°08'41.645"N	80°37'56.971"W	6269.00	194.277	0.46	0.06	-0.45
12288.00	90.340	172.330	5854.39	6113.72	-6167.29	-1531.98	1743133.90	14579619.03	40°08'40.736"N	80°37'56.795"W	6354.72	193.950	2.25	0.49	2.19
12381.00	90.150	172.680	5853.99	6206.27	-6259.50	-1519.85	1743146.03	14579526.86	40°08'39.824"N	80°37'56.644"W	6441.37	193.648	0.43	-0.20	0.38
12473.00	90.250	172.130	5853.67	6297.81	-6350.69	-1507.69	1743158.18	14579435.70	40°08'38.922"N	80°37'56.492"W	6527.21	193.355	0.61	0.11	-0.60
12566.00	90.280	168.800	5853.24	6389.97	-6442.39	-1492.29	1743173.58	14579344.04	40°08'38.016"N	80°37'56.299"W	6612.97	193.042	3.58	0.03	-3.58
12659.00	89.970	168.440	5853.04	6481.69	-6533.56	-1473.94	1743191.92	14579252.90	40°08'37.114"N	80°37'56.068"W	6697.76	192.713	0.51	-0.33	-0.39
12751.00	90.090	168.440	5852.99	6572.38	-6623.70	-1455.50	1743210.35	14579162.80	40°08'36.222"N	80°37'55.835"W	6781.73	192.393	0.13	0.13	0.00
12844.00	90.030	166.880	5852.89	6663.83	-6714.55	-1435.63	1743230.22	14579071.99	40°08'35.324"N	80°37'55.584"W	6866.31	192.069	1.68	-0.06	-1.68
12937.00	89.660	165.450	5853.14	6754.81	-6804.84	-1413.39	1743252.45	14578981.73	40°08'34.431"N	80°37'55.302"W	6950.08	191.734	1.59	-0.40	-1.54
13029.00	89.750	165.050	5853.62	6844.50	-6893.81	-1389.97	1743275.86	14578892.79	40°08'33.550"N	80°37'55.005"W	7032.54	191.399	0.45	0.10	-0.43
13122.00	89.600	164.510	5854.14	6934.99	-6983.55	-1365.55	1743300.26	14578803.09	40°08'32.663"N	80°37'54.696"W	7115.80	191.064	0.60	-0.16	-0.58
13212.00	89.660	164.220	5854.72	7022.41	-7070.22	-1341.30	1743324.51	14578716.46	40°08'31.805"N	80°37'54.388"W	7196.32	190.742	0.33	0.07	-0.32



## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 406H
Area	Ohio County, WV	Well	Rayle Coal OHI 406H
Field	Ohio	Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad		

## WELLPATH DATA (243 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[°]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
13305.00	89.630	163.790	5855.30	7112.60	-7159.61	-1315.67	1743350.13	14578627.10	40°08'30.921"N	80°37'54.063"W	7279.50	190.413	0.46	-0.03	-0.46
13397.00	89.750	166.100	5855.80	7202.17	-7248.45	-1291.78	1743374.01	14578538.30	40°08'30.042"N	80°37'53.760"W	7362.65	190.105	2.51	0.13	2.51
13490.00	89.850	167.510	5856.12	7293.36	-7338.99	-1270.55	1743395.23	14578447.79	40°08'29.146"N	80°37'53.492"W	7448.16	189.822	1.52	0.11	1.52
13583.00	89.780	167.230	5856.42	7384.73	-7429.74	-1250.21	1743415.56	14578357.08	40°08'28.249"N	80°37'53.235"W	7534.19	189.552	0.31	-0.08	-0.30
13675.00	89.510	167.130	5856.99	7475.05	-7519.44	-1229.80	1743435.96	14578267.41	40°08'27.361"N	80°37'52.977"W	7619.35	189.288	0.31	-0.29	-0.11
13768.00	89.570	166.150	5857.74	7566.19	-7609.92	-1208.31	1743457.44	14578176.96	40°08'26.466"N	80°37'52.705"W	7705.25	189.022	1.06	0.06	-1.05
13861.00	89.480	165.080	5858.51	7656.98	-7700.00	-1185.21	1743480.54	14578086.92	40°08'25.575"N	80°37'52.412"W	7790.68	188.750	1.15	-0.10	-1.15
13953.00	89.540	164.940	5859.30	7746.57	-7788.87	-1161.41	1743504.32	14577998.09	40°08'24.696"N	80°37'52.110"W	7874.98	188.481	0.17	0.07	-0.15
14046.00	89.380	166.110	5860.17	7837.33	-7878.91	-1138.17	1743527.56	14577908.08	40°08'23.805"N	80°37'51.816"W	7960.70	188.220	1.27	-0.17	1.26
14139.00	89.420	167.490	5861.15	7928.51	-7969.45	-1116.93	1743548.79	14577817.58	40°08'22.910"N	80°37'51.547"W	8047.34	187.978	1.48	0.04	1.48
14231.00	89.480	168.730	5862.03	8019.11	-8059.47	-1097.98	1743567.73	14577727.59	40°08'22.019"N	80°37'51.308"W	8133.91	187.758	1.35	0.07	1.35
14324.00	89.420	169.790	5862.92	8110.99	-8150.83	-1080.65	1743585.06	14577636.26	40°08'21.116"N	80°37'51.090"W	8222.16	187.552	1.14	-0.06	1.14
14417.00	89.510	170.790	5863.79	8203.12	-8242.50	-1064.96	1743600.73	14577544.64	40°08'20.209"N	80°37'50.893"W	8311.01	187.362	1.08	0.10	1.08
14510.00	89.630	170.560	5864.49	8295.33	-8334.26	-1049.90	1743615.80	14577452.90	40°08'19.302"N	80°37'50.704"W	8400.13	187.180	0.28	0.13	-0.25
14603.00	89.600	169.570	5865.12	8387.41	-8425.87	-1033.85	1743631.84	14577361.34	40°08'18.396"N	80°37'50.502"W	8489.06	186.995	1.06	-0.03	-1.06
14696.00	89.570	169.210	5865.79	8479.33	-8517.27	-1016.73	1743648.95	14577269.96	40°08'17.492"N	80°37'50.286"W	8577.74	186.807	0.39	-0.03	-0.39
14788.00	89.570	169.700	5866.48	8570.28	-8607.72	-999.89	1743665.78	14577179.56	40°08'16.598"N	80°37'50.074"W	8665.60	186.626	0.53	0.00	0.53
14881.00	89.510	170.960	5867.23	8662.42	-8699.39	-984.27	1743681.40	14577087.92	40°08'15.691"N	80°37'49.878"W	8754.89	186.455	1.36	-0.06	1.35
14974.00	89.540	171.920	5868.00	8754.78	-8791.35	-970.43	1743695.23	14576995.99	40°08'14.782"N	80°37'49.705"W	8844.75	186.299	1.03	0.03	1.03
15066.00	89.450	173.210	5868.81	8846.34	-8882.57	-958.52	1743707.13	14576904.81	40°08'13.880"N	80°37'49.557"W	8934.14	186.159	1.41	-0.10	1.40
15159.00	89.780	172.680	5869.43	8938.96	-8974.86	-947.10	1743718.55	14576812.55	40°08'12.967"N	80°37'49.414"W	9024.70	186.024	0.67	0.35	-0.57
15254.00	89.750	170.100	5869.82	9033.30	-9068.79	-932.88	1743732.77	14576718.67	40°08'12.039"N	80°37'49.236"W	9116.64	185.873	2.72	-0.03	-2.72
15349.00	90.220	168.050	5869.85	9127.11	-9162.06	-914.88	1743750.76	14576625.43	40°08'11.116"N	80°37'49.010"W	9207.62	185.702	2.21	0.49	-2.16
15443.00	89.080	166.010	5870.42	9219.35	-9253.65	-893.78	1743771.85	14576533.87	40°08'10.210"N	80°37'48.743"W	9296.72	185.517	2.49	-1.21	-2.17
15538.00	89.050	165.930	5871.97	9312.21	-9345.81	-870.75	1743794.87	14576441.75	40°08'09.299"N	80°37'48.451"W	9386.28	185.323	0.09	-0.03	-0.08
15633.00	89.020	165.930	5873.57	9405.05	-9437.94	-847.66	1743817.95	14576349.65	40°08'08.387"N	80°37'48.159"W	9475.93	185.132	0.03	-0.03	0.00
15729.00	89.690	167.140	5874.65	9499.09	-9531.30	-825.31	1743840.29	14576256.34	40°08'07.464"N	80°37'47.876"W	9566.96	184.949	1.44	0.70	1.26
15826.00	90.180	166.120	5874.76	9594.14	-9625.67	-802.88	1743862.71	14576162.00	40°08'06.530"N	80°37'47.592"W	9659.09	184.768	1.17	0.51	-1.05
15921.00	89.260	167.830	5875.23	9687.35	-9718.22	-781.47	1743884.12	14576069.49	40°08'05.615"N	80°37'47.322"W	9749.59	184.597	2.04	-0.97	1.80
16016.00	89.230	168.110	5876.48	9780.85	-9811.12	-761.67	1743903.91	14575976.62	40°08'04.696"N	80°37'47.072"W	9840.64	184.439	0.30	-0.03	0.29



## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 406H
Area	Ohio County, WV	Well	Rayle Coal OHI 406H
Field	Ohio	Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad		

## WELLPATH DATA (243 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	DLS	Build Rate	Turn Rate	
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°/100ft]	[°/100ft]	[°/100ft]	
16110.00	89.320	167.940	5877.67	9873.39	-9903.07	-742.17	1743923.40	14575884.71	40°08'03.786"N	80°37'46.826"W	9930.84	184.286	0.20	0.10	-0.18
16205.00	89.170	165.130	5878.92	9966.44	-9995.44	-720.05	1743945.51	14575792.37	40°08'02.873"N	80°37'46.546"W	10021.34	184.120	2.96	-0.16	-2.96
16300.00	89.350	164.190	5880.15	10058.82	-10087.05	-694.93	1743970.63	14575700.80	40°08'01.966"N	80°37'46.227"W	10110.96	183.941	1.01	0.19	-0.99
16395.00	89.350	163.440	5881.22	10150.87	-10178.27	-668.45	1743997.10	14575609.61	40°08'01.064"N	80°37'45.891"W	10200.20	183.757	0.79	0.00	-0.79
16489.00	89.320	162.890	5882.32	10241.68	-10268.24	-641.22	1744024.31	14575519.68	40°08'00.174"N	80°37'45.546"W	10288.24	183.573	0.59	-0.03	-0.59
16585.00	89.050	165.310	5883.68	10334.80	-10360.55	-614.93	1744050.59	14575427.41	40°07'59.260"N	80°37'45.212"W	10378.78	183.397	2.54	-0.28	2.52
16679.00	89.230	165.810	5885.09	10426.54	-10451.57	-591.49	1744074.02	14575336.42	40°07'58.360"N	80°37'44.915"W	10468.29	183.239	0.57	0.19	0.53
16774.00	89.350	166.000	5886.27	10519.40	-10543.72	-568.44	1744097.07	14575244.30	40°07'57.448"N	80°37'44.623"W	10559.03	183.086	0.33	0.13	0.31
16868.00	89.420	166.080	5887.28	10611.33	-10634.96	-545.84	1744119.65	14575153.10	40°07'56.546"N	80°37'44.337"W	10648.96	182.938	0.08	0.07	-0.02
16963.00	89.230	166.660	5888.40	10704.33	-10727.28	-523.46	1744142.03	14575060.82	40°07'55.633"N	80°37'44.054"W	10740.04	182.794	0.64	-0.20	0.61
17058.00	89.510	168.210	5889.44	10797.68	-10820.00	-502.79	1744162.69	14574968.14	40°07'54.715"N	80°37'43.793"W	10831.67	182.661	1.66	0.29	1.63
17153.00	89.540	169.100	5890.23	10891.38	-10913.13	-484.10	1744181.37	14574875.04	40°07'53.794"N	80°37'43.557"W	10923.87	182.540	0.94	0.03	0.94
17249.00	89.450	168.630	5891.08	10986.13	-11007.32	-465.57	1744199.90	14574780.88	40°07'52.863"N	80°37'43.324"W	11017.16	182.422	0.50	-0.09	-0.49
17334.00	89.880	169.080	5891.57	11070.01	-11090.72	-449.14	1744216.32	14574697.52	40°07'52.038"N	80°37'43.117"W	11099.81	182.319	0.73	0.51	0.53
17439.00	89.630	167.750	5892.02	11173.51	-11193.58	-428.05	1744237.40	14574594.70	40°07'51.021"N	80°37'42.851"W	11201.76	182.190	1.29	-0.24	-1.27
17534.00	89.820	166.460	5892.48	11266.76	-11286.18	-406.85	1744258.59	14574502.14	40°07'50.105"N	80°37'42.583"W	11293.51	182.065	1.37	0.20	-1.36
17629.00	89.570	167.010	5892.98	11359.88	-11378.64	-385.05	1744280.38	14574409.71	40°07'49.190"N	80°37'42.307"W	11385.15	181.938	0.64	-0.26	0.58
17725.00	89.720	166.940	5893.58	11454.07	-11472.17	-363.42	1744302.01	14574316.22	40°07'48.265"N	80°37'42.034"W	11477.92	181.814	0.17	0.16	-0.07
17819.00	89.600	167.500	5894.14	11546.37	-11563.84	-342.62	1744322.79	14574224.59	40°07'47.358"N	80°37'41.771"W	11568.91	181.697	0.61	-0.13	0.60
17913.00	89.630	168.530	5894.77	11638.91	-11655.79	-323.11	1744342.30	14574132.67	40°07'46.449"N	80°37'41.525"W	11660.26	181.588	1.10	0.03	1.10
18009.00	89.660	169.190	5895.36	11733.66	-11749.98	-304.56	1744360.84	14574038.52	40°07'45.517"N	80°37'41.291"W	11753.92	181.485	0.69	0.03	0.69
18105.00	89.350	169.300	5896.19	11828.51	-11844.29	-286.64	1744378.75	14573944.25	40°07'44.584"N	80°37'41.065"W	11847.75	181.386	0.34	-0.32	0.11
18199.00	89.600	170.080	5897.05	11921.49	-11936.76	-269.82	1744395.57	14573851.81	40°07'43.670"N	80°37'40.854"W	11939.81	181.295	0.87	0.27	0.83
18294.00	89.570	169.340	5897.74	12015.46	-12030.23	-252.85	1744412.53	14573758.37	40°07'42.746"N	80°37'40.640"W	12032.89	181.204	0.78	-0.03	-0.78
18390.00	89.510	168.660	5898.51	12110.24	-12124.46	-234.54	1744430.84	14573664.18	40°07'41.814"N	80°37'40.410"W	12126.73	181.108	0.71	-0.06	-0.71
18484.00	89.320	167.400	5899.47	12202.78	-12216.41	-215.04	1744450.33	14573572.27	40°07'40.904"N	80°37'40.164"W	12218.31	181.008	1.36	-0.20	-1.34
18580.00	89.350	168.120	5900.59	12297.21	-12310.22	-194.69	1744470.67	14573478.49	40°07'39.976"N	80°37'39.907"W	12311.76	180.906	0.75	0.03	0.75
18675.00	89.110	166.330	5901.86	12390.49	-12402.86	-173.69	1744491.67	14573385.89	40°07'39.060"N	80°37'39.641"W	12404.08	180.802	1.90	-0.25	-1.88
18769.00	89.230	166.720	5903.22	12482.56	-12494.26	-151.78	1744513.56	14573294.52	40°07'38.156"N	80°37'39.364"W	12495.19	180.696	0.43	0.13	0.41
18863.00	89.230	167.290	5904.49	12574.79	-12585.85	-130.65	1744534.69	14573202.98	40°07'37.250"N	80°37'39.097"W	12586.53	180.595	0.61	0.00	0.61



## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 406H
Area	Ohio County, WV	Well	Rayle Coal OHI 406H
Field	Ohio	Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad		

## WELLPATH DATA (243 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[°]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]	[°]	[°]	[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
18958.00	89.080	166.960	5905.89	12668.03	-12678.45	-109.48	1744555.84	14573110.41	40°07'36.334"N	80°37'38.830"W	12678.92	180.495	0.38	-0.16	-0.35
19054.00	89.140	166.610	5907.38	12762.15	-12771.89	-87.54	1744577.78	14573017.00	40°07'35.410"N	80°37'38.552"W	12772.19	180.393	0.37	0.06	-0.36
19150.00	89.200	166.820	5908.77	12856.24	-12865.32	-65.48	1744599.83	14572923.62	40°07'34.485"N	80°37'38.273"W	12865.48	180.292	0.23	0.06	0.22
19245.00	89.570	167.100	5909.79	12949.44	-12957.86	-44.05	1744621.25	14572831.11	40°07'33.570"N	80°37'38.002"W	12957.94	180.195	0.49	0.39	0.29
19340.00	89.690	166.320	5910.40	13042.56	-13050.31	-22.21	1744643.08	14572738.69	40°07'32.656"N	80°37'37.726"W	13050.33	180.098	0.83	0.13	-0.82
19434.00	89.720	165.870	5910.89	13134.50	-13141.56	0.38	1744665.66	14572647.48	40°07'31.753"N	80°37'37.440"W	13141.56	179.998	0.48	0.03	-0.48
19529.00	89.660	166.980	5911.40	13227.52	-13233.90	22.68	1744687.95	14572555.17	40°07'30.839"N	80°37'37.158"W	13233.92	179.902	1.17	-0.06	1.17
19623.00	89.600	167.030	5912.01	13319.76	-13325.49	43.81	1744709.08	14572463.62	40°07'29.933"N	80°37'36.891"W	13325.56	179.812	0.08	-0.06	0.05
19718.00	89.720	168.040	5912.57	13413.14	-13418.25	64.32	1744729.58	14572370.90	40°07'29.016"N	80°37'36.632"W	13418.40	179.725	1.07	0.13	1.06
19812.00	89.850	169.180	5912.93	13505.84	-13510.40	82.88	1744748.13	14572278.79	40°07'28.105"N	80°37'36.398"W	13510.65	179.649	1.22	0.14	1.21
19907.00	89.910	169.480	5913.12	13599.73	-13603.75	100.47	1744765.72	14572185.47	40°07'27.181"N	80°37'36.177"W	13604.12	179.577	0.32	0.06	0.32
20001.00	89.970	169.070	5913.22	13692.61	-13696.11	117.96	1744783.20	14572093.14	40°07'26.268"N	80°37'35.957"W	13696.62	179.507	0.44	0.06	-0.44
20096.00	89.880	168.770	5913.35	13786.39	-13789.34	136.22	1744801.45	14571999.95	40°07'25.346"N	80°37'35.727"W	13790.01	179.434	0.33	-0.09	-0.32
20192.00	89.940	169.160	5913.50	13881.16	-13883.56	154.60	1744819.82	14571905.76	40°07'24.414"N	80°37'35.495"W	13884.43	179.362	0.41	0.06	0.41
20287.00	89.600	171.490	5913.88	13975.28	-13977.21	170.56	1744835.78	14571812.16	40°07'23.488"N	80°37'35.295"W	13978.25	179.301	2.48	-0.36	2.45
20381.00	89.970	171.470	5914.23	14068.65	-14070.17	184.49	1744849.70	14571719.23	40°07'22.569"N	80°37'35.121"W	14071.38	179.249	0.39	0.39	-0.02
20476.00	89.720	167.620	5914.49	14162.57	-14163.57	201.72	1744866.93	14571625.87	40°07'21.645"N	80°37'34.904"W	14165.01	179.184	4.06	-0.26	-4.05
20572.00	89.720	165.870	5914.96	14256.68	-14257.01	223.73	1744888.93	14571532.46	40°07'20.721"N	80°37'34.626"W	14258.77	179.101	1.82	0.00	-1.82
20668.00	89.660	165.230	5915.48	14350.37	-14349.97	247.69	1744912.87	14571439.54	40°07'19.801"N	80°37'34.322"W	14352.11	179.011	0.67	-0.06	-0.67
20764.00	89.720	164.150	5916.00	14443.75	-14442.56	273.03	1744938.21	14571346.98	40°07'18.885"N	80°37'34.001"W	14445.14	178.917	1.13	0.06	-1.12
20860.00	89.690	164.050	5916.49	14536.88	-14534.89	299.33	1744964.50	14571254.69	40°07'17.972"N	80°37'33.667"W	14537.97	178.820	0.11	-0.03	-0.10
20957.00	89.350	166.000	5917.30	14631.35	-14628.59	324.40	1744989.55	14571161.03	40°07'17.045"N	80°37'33.350"W	14632.18	178.730	2.04	-0.35	2.01
21052.00	89.600	167.520	5918.17	14724.49	-14721.05	346.15	1745011.30	14571068.60	40°07'16.130"N	80°37'33.075"W	14725.12	178.653	1.62	0.26	1.60
21147.00	89.720	167.810	5918.74	14817.91	-14813.86	366.45	1745031.59	14570975.83	40°07'15.212"N	80°37'32.819"W	14818.39	178.583	0.33	0.13	0.31
21243.00	89.720	167.580	5919.21	14912.32	-14907.65	386.92	1745052.06	14570882.08	40°07'14.284"N	80°37'32.560"W	14912.67	178.513	0.26	0.00	-0.26
21338.00	89.660	168.660	5919.72	15005.87	-15000.61	406.50	1745071.62	14570789.16	40°07'13.365"N	80°37'32.313"W	15006.11	178.448	1.16	-0.06	1.16
21435.00	89.420	169.420	5920.50	15101.65	-15095.83	424.94	1745090.05	14570693.97	40°07'12.423"N	80°37'32.081"W	15101.81	178.388	0.82	-0.25	0.78
21530.00	89.420	170.220	5921.46	15195.65	-15189.33	441.73	1745106.84	14570600.50	40°07'11.498"N	80°37'31.870"W	15195.76	178.334	0.84	0.00	0.84
21625.00	89.380	170.950	5922.46	15289.82	-15283.05	457.27	1745122.37	14570506.83	40°07'10.572"N	80°37'31.675"W	15289.89	178.286	0.77	-0.04	0.77
21722.00	89.450	171.250	5923.45	15386.09	-15378.88	472.27	1745137.37	14570411.04	40°07'09.624"N	80°37'31.487"W	15386.12	178.241	0.32	0.07	0.31



### REFERENCE WELLPATH IDENTIFICATION

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Field	Ohio			Wellbore	Rayle Coal OHI 406H AWB
Facility	Rayle Coal OHI Pad				

### WELLPATH DATA (243 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]	[ft]	[ft]	[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
21817.00	89.480	170.390	5924.33	15480.32	-15472.65	487.43	1745152.52	14570317.29	40°07'08.697"N	80°37'31.297"W	15480.33	178.196	0.91	0.03	-0.91
21883.00	89.380	170.130	5924.99	15545.69	-15537.70	498.59	1745163.68	14570252.27	40°07'08.053"N	80°37'31.157"W	15545.70	178.162	0.42	-0.15	-0.39
21908.00	89.380	170.130	5925.26	15570.45	-15562.33	502.88	1745167.96	14570227.66	40°07'07.810"N	80°37'31.103"W	15570.45	178.149	0.00	0.00	0.00

### HOLE & CASING SECTIONS - Ref Wellbore: Rayle Coal OHI 406H AWB Ref Wellpath: Rayle Coal OHI 406H AWP Proj: 21908'

String/Diameter	Start MD	End MD	Interval	Start TVD	End TVD	Start N/S	End N/S	Start E/W	End E/W	End E/W
	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]
17.5in Open Hole	26.00	375.00	349.00	26.00	374.99	0.00	0.00	0.00	-2.06	2.06
13.375in Casing	26.00	375.00	349.00	26.00	374.99	0.00	0.00	0.00	-2.06	2.06
12.25in Open Hole	375.00	1735.00	1360.00	374.99	1718.42	-2.06	-2.06	2.06	-16.63	-166.88
9.625in Casing	26.00	1735.00	1709.00	26.00	1718.42	0.00	0.00	0.00	-16.63	-166.88
8.75in Open Hole	1735.00	5850.00	4115.00	1718.42	5167.17	-16.63	-16.63	-166.88	-2341.40	-2341.40
8.5in Open Hole	5850.00	21908.00	16058.00	5167.17	5925.26	-265.68	-265.68	-2341.40	-15562.33	502.88

### TARGETS

Name	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape
	[ft]	[ft]	[ft]	[US ft]	[US ft]	[ft]	[ft]	
Rayle Coal OHI 406H LP Rev-5	5810.00	-918.19	-2681.35	1741984.98	14584866.09	40°09'32.654"N	80°38'11.319"W	point
Rayle Coal OHI 406H LP Rev-7	5810.00	-1065.02	-2648.41	1742017.91	14584719.31	40°09'31.202"N	80°38'10.903"W	point
Rayle Coal OHI 406H BHL Rev-6	5919.00	-15561.57	512.20	1745177.28	14570228.41	40°07'07.817"N	80°37'30.983"W	point





**REFERENCE WELLPATH IDENTIFICATION**

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Facility	Rayle Coal OHI Pad		

**COMMENTS**

Wellpath general comments  
 API: 47-069-00282-0000  
 BH Job #: 109387204  
 Rig: SDC 41  
 Duration: 09/19/2018 - 09/26/2018