

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-095-02124FH6A County Tyler District Centerville  
Quad Shirley 7.5' Pad Name SHR3HS Field/Pool Name SHR3HS  
Farm Name NOBLE ENERGY, INC. Well Number SHR3BHS - Fracture  
Operator (as registered with the OOG) CNX Gas Company LLC  
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top Hole Northing 4,362,757.24 m Easting 514,367.53 m  
Landing Point of Curve Northing 4,362,512.81 m Easting 514,219.88 m  
Bottom Hole Northing 4,360,054.88 m Easting 515,167.22 m

Elevation (ft) 751" GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilled Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s) \_\_\_\_\_  
Synthetic Oil Based. \_\_\_\_\_  
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Date Permit Issued 09/01/2017 Date drilling commenced 09/11/2014 Date drilling ceased 04/24/2015  
Date completion activities began 09/19/2017 Date completion activities ceased 10/01/2017  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 342' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft None Noted for Offsets Void(s) encountered (Y/N) depths N  
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by: AS  
**Reviewed**  
QUB 3/14/2018

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CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement Circulate (Y/N) * Provide details to the right *
Conductor	24"	20"	59.4	New	J-55 / 59.4'		
Surface	17 1/2"	13 5/8"	479.4'	New	J-55 / 479.4'		Y
Coal							
Intermediate 1	13 3/8"	9 5/8"	2176.7'	New	K-55 / 2176.7'		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	15565.2'	New	P-110 / 15565.2'		Y
Tubing	5 1/2"	2 3/8"	6647.70'	New	P-110 4.7# / 6647.70'		
Packer Type and Depth Set		None					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft 3/sks)	Volume (ft 3)	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Class A	374 sks	15.60	1.18	441.32		8
Coal							
Intermediate 1	Class A	854 sks	15.60	1.18	1007.72		8
Intermediate 2							
Intermediate 3							
Production	Class A	3580 sks	12.50	1.32	4725.6	855.0	8
Tubing							

Drillers TD (ft) 6647'

Loggers TD (ft) 6664'

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Deepest formation penetrated: Marcellus

Plug back to (ft) \_\_\_\_\_

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Plug back procedure: \_\_\_\_\_

Kick Off Depth (ft) 5731'

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Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well Cored  Yes  No  Conventional  Sidewall Were Cuttings Collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

Conductor - No centralizers used. Surface - 3 centralizers used. Bow spring centralizers on the first two joints and then every third joint to 100' from surface. Intermediate - 26 centralizers used. Bow spring centralizers on the first two joints and then every third joint to 100' from surface. Production - 276 centralizers used. Rigid Bow spring centralizer every joint to KOP, rigid bow spring centralizer every third joint from KOP to top of cement.

WAS WELL COMPLETED AS SHOT HOLE  Yes  No

DETAILS Plug And Perforation Shot Hole

*JPB 3/14/2018*

WAS WELL COMPLETED OPEN HOLE  Yes  No

DETAILS \_\_\_\_\_

WERE TRACERS USE  Yes  No TYPES OF TRACER(S) USED \_\_\_\_\_



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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
1	9/19/2017	15275	15432	40	Marcellus
2	9/19/2017	15055	15240	40	Marcellus
3	9/20/2017	14827	15012	40	Marcellus
4	9/20/2017	14599	14784	40	Marcellus
5	9/20/2017	14371	14556	40	Marcellus
6	9/20/2017	14143	14328	40	Marcellus
7	9/21/2017	13915	14100	40	Marcellus
7	9/21/2017	13915	14100	40	Marcellus
8	9/24/2017	13687	13872	40	Marcellus
9	9/24/2017	13459	13644	40	Marcellus
10	9/24/2017	13231	13416	40	Marcellus
11	9/24/2017	13003	13188	40	Marcellus
12	9/24/2017	12775	12960	40	Marcellus
13	9/25/2017	12547	12732	40	Marcellus
14	9/25/2017	12319	12504	40	Marcellus
15	9/25/2017	12091	12276	40	Marcellus
16	9/25/2017	11863	12048	40	Marcellus
17	9/26/2017	11635	11820	40	Marcellus
18	9/26/2017	11407	11592	40	Marcellus
19	9/26/2017	11179	11364	40	Marcellus
20	9/26/2017	10951	11136	40	Marcellus
21	9/26/2017	10724	10908	40	Marcellus
22	9/27/2017	10497	10681	40	Marcellus
23	9/27/2017	10270	10454	40	Marcellus
24	9/27/2017	10043	10227	40	Marcellus
25	9/27/2017	9816	10000	40	Marcellus
26	9/28/2017	9589	9773	40	Marcellus
27	9/28/2017	9362	9546	40	Marcellus
28	9/28/2017	9135	9319	40	Marcellus
29	9/29/2017	8908	9092	40	Marcellus
30	9/29/2017	8681	8865	40	Marcellus
31	9/29/2017	8454	8638	40	Marcellus
32	9/29/2017	8227	8411	40	Marcellus
33	9/29/2017	8000	8184	40	Marcellus
34	9/30/2017	7773	7957	40	Marcellus
35	9/30/2017	7546	7730	40	Marcellus
36	9/30/2017	7319	7503	40	Marcellus
37	9/30/2017	7109	7278	40	Marcellus
38	9/30/2017	6901	7070	40	Marcellus

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
39	10/1/2017	6693	6862	40	Marcellus

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## STIMULATION INFORMATION PER STAGE

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
1	9/19/2017	85	7816	7492	3894	401600	9197	3508
2	9/20/2017	78	7672	7291	3981	402000	9759	3597
3	9/20/2017	80	7614	7119	4988	331020	7668	3381
4	9/20/2017	81	7698	6344	4338	400020	7706	3478
5	9/20/2017	82	7929	6455	4387	390100	7320	3359
6	9/21/2017	80	7684	7444	4736	400560	8164	3390
7	9/21/2017	81	7738	6807	4673	334060	9572	3525
7	9/21/2017	81	7738	6807	4673	334060	9572	3525
8	9/24/2017	82	7739	7035	4438	401140	8191	3501
9	9/24/2017	85	7699	6520	4475	399440	7794	3458
10	9/24/2017	83.2	7765	6791	4410	398560	7832	3632
11	9/24/2017	80	7503	7089	4446	399180	7945	3388
12	9/25/2017	81	7716	7298	4765	395500	7459	3471
13	9/25/2017	79	7683	7669	4375	397980	7533	3586
14	9/25/2017	81	7898	7266	5310	347140	7544	3508
15	9/25/2017	79	7662	7012	4142	405640	8084	3403
16	9/25/2017	84	7536	6631	4155	399440	7431	3281
17	9/26/2017	84	7441	6550	4300	399880	7469	3259
18	9/26/2017	83	7550	4047	4757	336760	7030	3443
19	9/26/2017	85	7392	6568	4283	401520	7534	3327
20	9/26/2017	87	7405	7919	4155	397300	7383	3347
21	9/27/2017	82	7575	6988	4736	401940	8053	3493
22	9/27/2017	82	7193	6169	4707	337360	6696	3480
23	9/27/2017	87	7402	7323	4533	399260	8409	3488
24	9/27/2017	87	7456	6574	4213	400560	8626	3445
25	9/27/2017	89	7365	6404	4155	399100	8374	3438
26	9/28/2017	89	7093	6974	4300	399500	7778	3393
27	9/28/2017	88	7090	6831	4138	401620	8476	3521
28	9/28/2017	89	7056	5564	4184	400460	8534	3436
29	9/28/2017	85	7345	7019	4126	397880	7544	3321
30	9/29/2017	87	7526	6614	4155	397640	7500	3350
31	9/29/2017	88	7257	6496	3977	402400	8442	3475
32	9/29/2017	89	7225	6562	4058	400620	7966	3402
33	9/29/2017	89	7241	6771	4155	401300	7362	3176
34	9/30/2017	88	7334	6581	3952	403260	7772	3119
35	9/30/2017	90	7352	6075	4184	405220	8239	3348
36	9/30/2017	89	6877	6368	4104	402120	7889	3338
37	9/30/2017	90	6791	6026	4192	399700	7565	3291
38	9/30/2017	89	7069	6402	5143	393680	7372	3246

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STIMULATION INFORMATION PER STAGE

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)
39	10/1/2017	88	7215	6559	4039	401260	7828	3439

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PRODUCING FORMATION(S)	DEPTHS			
MARCELLUS	6337'-	TVD	15583'-	MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs  
 OPEN FLOW Gas \_\_\_\_\_ Oil \_\_\_\_\_ NGL \_\_\_\_\_ Water \_\_\_\_\_ GAS MEASURED BY  
 \_\_\_\_\_ mcfpd \_\_\_\_\_ bpd \_\_\_\_\_ bpd \_\_\_\_\_ bpd  Estimated  Orifice  Pilot

LITHOLOGY / FORMATION	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER, BRINE, GAS, H <sub>2</sub> S, ETC)
					SEE ATTACHED

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Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company  
 Address 5400 D Big Tyler Road City Charleston State WV Zip 25313  
 Logging Company Baker Hughes  
 Address 400 Technology Drive City Canonsburg State PA Zip 15317  
 Cementing Company Schlumberger  
 Address 4600 J. Barry Ct., Suite 200 City Canonsburg State PA Zip 15317  
 Stimulating Company Keane  
 Address 14235 US Route 6 City Mansfield State PA Zip 16933

Please insert additional pages as applicable.

Completed by CNX Gas WV Operations Company, LLC - Drilling and Completions Telephone 304-884-2000  
 Signature ASlll Title Adam Shutler- Completions Superintendent-Gas WV Date 1/12/18



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LITHOLOGY / FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)
	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
SHALE	0	766			
PITTSBURGH COAL	766	775			
SHALE/SANDSTONE	775	1222			
DUNKARD SAND	1222	1233			
SHALE	1233	1404			
GAS SAND	1404	1443			
SHALE	1443	1535			
1ST SALT SAND	1535	1559			
SHALE	1559	1568			
2ND SALT SAND	1568	1613			
SHALE	1613	1696			
MAXTON SAND	1696	1708			
SHALE	1708	1751			
BIG LIME	1751	1831			
BIG INJUN	1831	2025			
PRICE	2025	2383			
MURRYSVILLE	2383	2397			
SHALE	2397	2594			
50' SAND	2594	2596			
SHALE	2596	2649			
30' SAND	2649	2658			
SHALE	2658	2700			
GORDON STRAY	2700	2715			
SHALE	2715	2751			
GORDON	2751	2764			
SHALE	2764	2860			
FIFTH SAND	2860	2894			
SHALE	2894	3300			
SPEECHLEY SAND	3300	3328			
SHALE	3328	4336			
WARREN SAND	4336	4345			
SHALE	4345	5003			
JAVA SHALE	5003	5174			
PIPE CREEK SHALE	5174	5231			
ANGOLA SHALE	5231	5856			
RHINESTREET	5856	6272			
CASHAQUA	6272	6363			
MIDDLESEX	6363	6396			

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LITHOLOGY / FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)
	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
WEST RIVER	6396	6440			
BURKETT	6440	6472			
TULLY LIMESTONE	6472	6503			
HAMILTON	6503	6614			
MARCELLUS	6614	6664			
ONONDAGA	6664	6667			

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# NOBLE ENERGY

Location: Tyler County, WV  
 Field: Tyler  
 Facility: SHR-3 Pad

Slot: Slot B  
 Well: SHR-3B-HS  
 Wellbore: SHR-3B-HS PWB

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Plot reference wellpath is SHR-3B-HS PWB New-A-D

This vertical depth are referenced to Precision 542 (RKB)

Measured depths are referenced to Precision 542 (RKB)

Precision 542 (RKB) is Mean Sea Lr of 770.81 feet

Mean Sea Level to Slot B (At Slot: Slot B) -782.11 feet

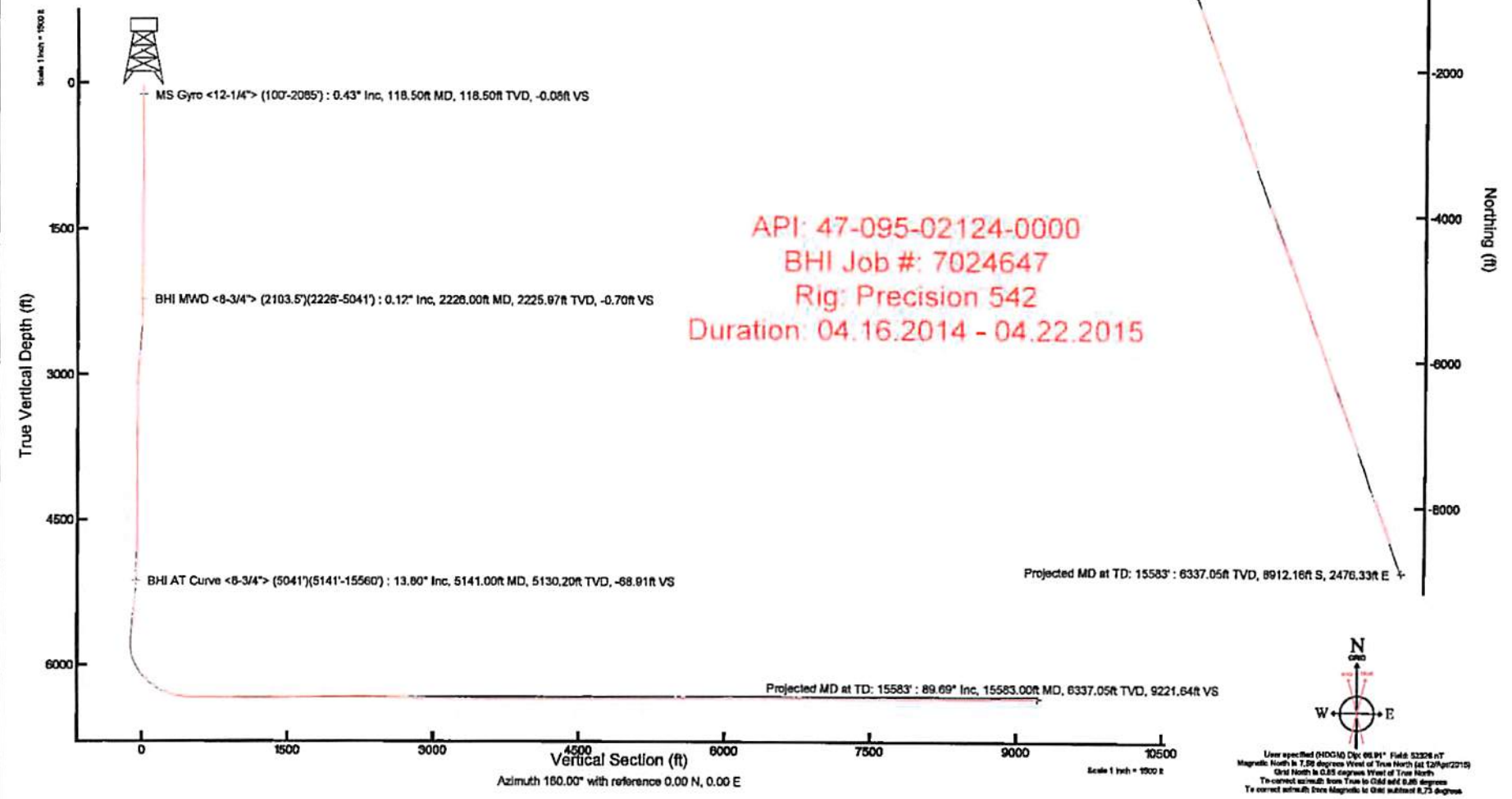
Coordinates are as listed referenced to Slot B

Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4770), US feet
North Reference: Grid system
Scale: True distance
Depth: sea to feet
Created by: gottel on 2/20/2015

**Location Information**

Facility Name	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude		
SHR-3 Pad	1823208.030	335743.440	39°24'50.800"N	80°50'00.030"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
Slot B	-2.30	18.61	1823317.840	335741.140	39°24'50.880"N	80°49'58.780"W

Precision 542 (RKB) to Mud line (At Slot: Slot B)	18.0ft
Mean Sea Level to Mud line (At Slot: Slot B)	-782.11ft
Precision 542 (RKB) to Mean Sea Level	770.81ft



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**ACTUAL WELLPATH REPORT (CSV version)**

Prepared by Baker Hughes  
 Software System: WellArchitect® 4.0.1

**REFERENCE WELLPATH IDENTIFICATION**

Operator NOBLE ENERGY  
 Area Tyler County, WV  
 Field Tyler  
 Facility SHR-3 Pad  
 Slot Slot B  
 Well SHR-3B-HS  
 Wellbore SHR-3B-HS AWB  
 Wellpath SHR-3B-HS AWP Proj: 15583'  
 Sidetrack (none)

**REPORT SETUP INFORMATION**

Projection NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet  
 North Refe Grid  
 Scale 0.999948  
 Convergen 0.85° West  
 Software S WellArchitect® 4.0.1  
 User Gotfbral  
 Report Ger 23/Apr/2015 at 11:25  
 DataBase/! WNorthEast/ev7677.xml

WELLPATH	Local North [ft]	Local East [ft]	Easting [US ft]	Northing [US ft]	Latitude	Longitude
Slot Locati	-2.3	19.61	1623318	335741.1	39°24'50.8"	80°49'59.780"W
Facility Ref			1623298	335743.4	39°24'50.9"	80°50'00.030"W
Field Refer			609601.2	0	38°23'48.7"	84°21'09.765"W

**WELLPATH DATUM**

Calculation Minimum curvature  
 Horizontal Slot  
 Vertical Re Precision 542 (RKB)  
 MD Refere Precision 542 (RKB)  
 Field Vertic Mean Sea Level  
 Precision S 770.61ft  
 Precision S 770.61ft  
 Precision S 18.50ft  
 Section Ori N 0.00, E 0.00 ft  
 Section Azl 160.00°

**WELLPATH DATA † = 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 Dis [ft]	Closure Dir [°]	DLS ["/100ft]
0	0	58.08	0	0	0	0	0 1623318	335741.1	39°24'50.8"	80°49'59.7"	0	0	0
18.5	0	58.08	18.5	0	0	0	0 1623318	335741.1	39°24'50.8"	80°49'59.7"	0	0	0

118.5	0.43	58.08	118.5	-0.08	0.2	0.32	1623318	335741.3	39°24'50.8:80°49'59.7	0.38	58.08	0.43
218.5	0.22	73.22	218.5	-0.14	0.45	0.82	1623318	335741.6	39°24'50.8:80°49'59.7	0.94	61.147	0.23
318.5	0.43	34.28	318.5	-0.35	0.82	1.22	1623319	335742	39°24'50.8:80°49'59.7	1.47	56.08	0.29
418.5	0.6	19.29	418.49	-0.98	1.62	1.6	1623319	335742.8	39°24'50.8:80°49'59.7	2.28	44.614	0.22
518.5	0.56	26.42	518.49	-1.72	2.55	1.99	1623320	335743.7	39°24'50.9:80°49'59.7	3.24	37.936	0.08
618.5	0.38	88.46	618.48	-1.95	3	2.54	1623320	335744.1	39°24'50.9:80°49'59.7	3.93	40.246	0.51
718.5	0.16	157.89	718.48	-1.71	2.88	2.92	1623321	335744	39°24'50.9:80°49'59.7	4.1	45.432	0.36
818.5	0.12	195.83	818.48	-1.48	2.65	2.95	1623321	335743.8	39°24'50.9:80°49'59.7	3.96	48.046	0.1
918.5	0.1	105.4	918.48	-1.35	2.53	3	1623321	335743.7	39°24'50.9:80°49'59.7	3.92	49.934	0.16
1018.5	0.18	44.44	1018.48	-1.36	2.61	3.2	1623321	335743.8	39°24'50.9:80°49'59.7	4.13	50.723	0.16
1118.5	0.2	164.65	1118.48	-1.26	2.56	3.35	1623321	335743.7	39°24'50.9:80°49'59.7	4.22	52.657	0.33
1218.5	0.33	244.41	1218.48	-1.06	2.27	3.14	1623321	335743.4	39°24'50.9:80°49'59.7	3.87	54.183	0.35
1318.5	0.2	294.69	1318.48	-1.15	2.21	2.72	1623320	335743.4	39°24'50.9:80°49'59.7	3.51	50.866	0.25
1418.5	0.17	273.49	1418.48	-1.33	2.3	2.42	1623320	335743.4	39°24'50.9:80°49'59.7	3.33	46.441	0.07
1518.5	0.43	178.56	1518.48	-1.04	1.93	2.28	1623320	335743.1	39°24'50.8:80°49'59.7	2.98	49.702	0.48
1618.5	0.28	188.5	1618.48	-0.46	1.31	2.25	1623320	335742.5	39°24'50.8:80°49'59.7	2.61	59.719	0.16
1718.5	0.12	252.98	1718.48	-0.26	1.04	2.11	1623320	335742.2	39°24'50.8:80°49'59.7	2.36	63.771	0.25
1818.5	0.36	39.83	1818.48	-0.42	1.25	2.21	1623320	335742.4	39°24'50.8:80°49'59.7	2.54	60.52	0.47
1918.5	0.27	32.98	1918.47	-0.72	1.69	2.54	1623320	335742.8	39°24'50.8:80°49'59.7	3.05	56.391	0.1
2018.5	0.37	51.57	2018.47	-0.96	2.09	2.93	1623321	335743.2	39°24'50.9:80°49'59.7	3.59	54.466	0.14
2103.5	0.27	99.72	2103.47	-0.95	2.23	3.34	1623321	335743.4	39°24'50.9:80°49'59.7	4.01	56.3	0.33
2226	0.12	127.81	2225.97	-0.7	2.1	3.72	1623321	335743.2	39°24'50.9:80°49'59.7	4.27	60.594	0.14
2264	0.09	324.41	2263.97	-0.69	2.1	3.74	1623321	335743.2	39°24'50.9:80°49'59.7	4.29	60.688	0.55
2353	2.5	339.65	2352.94	-2.7	3.98	3.02	1623321	335745.1	39°24'50.9:80°49'59.7	4.99	37.238	2.71
2443	4.16	340.96	2442.79	-7.93	8.9	1.27	1623319	335750	39°24'50.9:80°49'59.7	8.99	8.145	1.85
2533	7.24	339.82	2532.33	-16.87	17.31	-1.75	1623316	335758.5	39°24'51.0:80°49'59.8	17.4	354.235	3.42
2622	5.73	335.32	2620.76	-26.9	26.61	-5.54	1623312	335767.8	39°24'51.1:80°49'59.8	27.18	348.245	1.79
2712	4.37	2.75	2710.42	-34.54	34.12	-7.25	1623310	335775.3	39°24'51.2:80°49'59.8	34.88	348.005	3.04
2802	2.78	1.23	2800.24	-39.74	39.73	-7.04	1623311	335780.9	39°24'51.2:80°49'59.8	40.35	349.954	1.77
2891	4.42	9.51	2889.06	-44.74	45.27	-6.43	1623311	335786.4	39°24'51.3:80°49'59.8	45.72	351.922	1.93
2981	3.55	3.18	2978.85	-50.32	51.47	-5.7	1623312	335792.6	39°24'51.3:80°49'59.8	51.79	353.683	1.08
3071	1.13	350.55	3068.76	-53.75	55.13	-5.69	1623312	335796.3	39°24'51.4:80°49'59.8	55.42	354.109	2.73
3160	0.76	21.71	3157.75	-55.06	56.55	-5.61	1623312	335797.7	39°24'51.4:80°49'59.8	56.82	354.329	0.7
3250	0.4	316.13	3247.75	-55.79	57.33	-5.61	1623312	335798.5	39°24'51.4:80°49'59.8	57.6	354.409	0.77
3340	0.37	340.45	3337.75	-56.37	57.83	-5.93	1623312	335799	39°24'51.4:80°49'59.8	58.13	354.148	0.18
3429	1.02	75.41	3426.74	-56.58	58.3	-5.26	1623312	335799.4	39°24'51.4:80°49'59.8	58.53	354.848	1.25
3519	0.8	45.64	3516.73	-56.76	58.94	-4.03	1623314	335800.1	39°24'51.4:80°49'59.8	59.08	356.087	0.57
3608	0.55	84.76	3605.73	-56.91	59.41	-3.16	1623314	335800.6	39°24'51.4:80°49'59.8	59.5	356.953	0.57
3698	0.24	65.48	3695.72	-56.82	59.53	-2.56	1623315	335800.7	39°24'51.4:80°49'59.8	59.58	357.537	0.37
3787	0.26	98.97	3784.72	-56.73	59.58	-2.19	1623315	335800.7	39°24'51.4:80°49'59.8	59.62	357.893	0.16
3877	0.67	140.63	3874.72	-56.14	59.14	-1.66	1623316	335800.3	39°24'51.4:80°49'59.8	59.16	358.396	0.56
3966	0.41	127.77	3963.72	-55.38	58.54	-1.07	1623317	335799.7	39°24'51.4:80°49'59.8	58.55	358.949	0.32
4056	0.4	70.05	4053.71	-55.1	58.45	-0.52	1623317	335799.6	39°24'51.4:80°49'59.7	58.45	359.486	0.43
4145	0.37	69.44	4142.71	-55.11	58.66	0.04	1623318	335799.8	39°24'51.4:80°49'59.7	58.66	0.036	0.03
4235	0.39	14.8	4232.71	-55.36	59.05	0.39	1623318	335800.2	39°24'51.4:80°49'59.7	59.06	0.376	0.39
4325	0.11	34.9	4322.71	-55.66	59.42	0.51	1623318	335800.6	39°24'51.4:80°49'59.7	59.42	0.496	0.32
4414	0.55	274.16	4411.71	-55.89	59.52	0.14	1623318	335800.7	39°24'51.4:80°49'59.7	59.52	0.133	0.69
4504	0.32	301.77	4501.71	-56.26	59.69	-0.51	1623317	335800.8	39°24'51.4:80°49'59.7	59.69	359.513	0.34
4593	0.52	255.21	4590.7	-56.49	59.71	-1.11	1623317	335800.9	39°24'51.4:80°49'59.8	59.72	358.936	0.43

4683	1.99	221.18	4680.68	-55.78	58.43	-2.53	1623315	335799.6	39°24'51.4'	80°49'59.8'	58.49	3357.518				
4772	6.31	244.77	4769.43	-54.58	55.18	-7.98	1623310	335796.3	39°24'51.4'	80°49'59.8'	55.76	3357.775				
4862	9.61	248.1	4858.55	-53.88	50.27	-19.42	1623298	335791.4	39°24'51.3'	80°50'00.0'	53.89	3358.874				
4952	12.66	261.73	4946.86	-55.64	46.05	-36.16	1623281	335787.2	39°24'51.3'	80°50'00.2'	58.55	3359.859				
5041	14.86	269.14	5033.31	-61.37	44.48	-57.23	1623260	335785.6	39°24'51.3'	80°50'00.5'	72.48	307.853				
5141	13.8	266.24	5130.2	-68.91	43.5	-81.95	1623236	335784.6	39°24'51.2'	80°50'00.8'	92.78	297.96				
5231	20.81	261.45	5216.07	-75.09	40.42	-108.51	1623209	335781.6	39°24'51.2'	80°50'01.1'	115.79	290.429				
5321	24.53	256.03	5299.12	-80.23	33.53	-142.46	1623175	335774.7	39°24'51.1'	80°50'01.6'	146.35	283.243				
5410	29.94	254.83	5378.22	-84.04	23.25	-181.86	1623136	335764.4	39°24'51.0'	80°50'02.1'	183.34	277.285				
5500	31.22	254.65	5455.7	-87.82	11.19	-226.03	1623092	335752.3	39°24'50.9'	80°50'02.6'	226.3	272.835				
5589	31.31	255.67	5531.78	-91.98	-0.64	-270.68	1623047	335740.5	39°24'50.8'	80°50'03.2'	270.68	269.866				
5679	31.63	257.32	5608.54	-97.3	-11.6	-316.36	1623001	335729.5	39°24'50.7'	80°50'03.8'	316.57	267.899				
5768	31.59	258.63	5684.34	-103.77	-21.32	-361.98	1622956	335719.8	39°24'50.6'	80°50'04.3'	362.61	266.629				
5858	31.66	255.58	5760.98	-109.6	-31.85	-407.97	1622910	335709.3	39°24'50.5'	80°50'04.9'	409.21	265.536				
5948	31.7	240.1	5837.69	-107.83	-49.55	-451.41	1622866	335691.6	39°24'50.3'	80°50'05.5'	454.13	263.736				
6038	33.24	222.7	5913.79	-92.42	-79.53	-488.73	1622829	335661.6	39°24'50.0'	80°50'05.9'	495.16	260.757				
6128	35.94	208.17	5988	-63.43	-121.02	-517.98	1622800	335620.1	39°24'49.6'	80°50'06.3'	531.93	256.849				
6217	39.15	198.23	6058.62	-23.9	-170.79	-539.12	1622779	335570.4	39°24'49.1'	80°50'06.6'	565.53	252.422				
6307	46.8	190.93	6124.46	26.67	-230.11	-554.26	1622763	335511	39°24'48.5'	80°50'06.7'	600.13	247.453				
6396	53.3	185.92	6181.6	86.67	-297.55	-564.11	1622754	335443.6	39°24'47.8'	80°50'06.9'	637.77	242.19				
6486	59.22	180.97	6231.59	155.31	-372.19	-568.49	1622749	335369	39°24'47.1'	80°50'06.9'	679.49	236.787	8.01	Top perf	Bottom per LL	# of Stgs
6576	66.35	176.01	6272.75	231.17	-452.11	-566.27	1622751	335289.1	39°24'46.3'	80°50'06.9'	724.61	231.396	9.31	6710	15583	8873 44.365
6665	72.89	171.92	6303.73	312.08	-535	-557.44	1622760	335206.2	39°24'45.5'	80°50'06.7'	772.64	226.177	8.52			
6755	81.23	168.8	6323.87	398.28	-621.38	-542.73	1622775	335119.8	39°24'44.6'	80°50'06.5'	825.03	221.135	9.86			
6844	87.94	166.18	6332.27	486.07	-707.82	-523.54	1622794	335033.4	39°24'43.8'	80°50'06.3'	880.4	216.488	8.09			
6934	89.91	160.74	6333.96	575.86	-794.05	-497.93	1622820	334947.1	39°24'42.9'	80°50'05.9'	937.26	212.091	6.43			
7024	89.6	159.43	6334.34	665.85	-878.66	-467.28	1622850	334862.5	39°24'42.1'	80°50'05.5'	995.19	208.004	1.5			
7113	89.63	158.63	6334.94	754.84	-961.77	-435.43	1622882	334779.4	39°24'41.3'	80°50'05.1'	1055.74	204.358	0.9			
7203	89.6	158.16	6335.55	844.8	-1045.44	-402.29	1622915	334695.8	39°24'40.4'	80°50'04.7'	1120.17	201.047	0.52			
7292	89.17	157.63	6336.5	933.74	-1127.89	-368.8	1622949	334613.3	39°24'39.6'	80°50'04.2'	1186.66	198.107	0.77			
7382	89.17	157.1	6337.81	1023.63	-1210.95	-334.17	1622983	334530.3	39°24'38.8'	80°50'03.8'	1256.21	195.427	0.59			
7471	89.54	157.46	6338.81	1112.52	-1293.04	-299.8	1623018	334448.2	39°24'38.0'	80°50'03.3'	1327.34	193.054	0.58			
7561	89.97	158.14	6339.19	1202.46	-1376.37	-265.79	1623052	334364.9	39°24'37.2'	80°50'02.9'	1401.8	190.93	0.89			
7651	90.83	160.57	6338.56	1292.44	-1460.58	-234.06	1623084	334280.6	39°24'36.4'	80°50'02.4'	1479.21	189.104	2.86			
7740	91.54	160.38	6336.72	1381.42	-1544.44	-204.32	1623113	334196.8	39°24'35.5'	80°50'02.0'	1557.9	187.536	0.83			
7830	91.17	162.54	6334.6	1471.36	-1629.74	-175.72	1623142	334111.5	39°24'34.7'	80°50'01.7'	1639.19	186.154	2.43			
7919	91.11	160.96	6332.82	1560.3	-1714.25	-147.85	1623170	334027	39°24'33.9'	80°50'01.3'	1720.61	184.929	1.78			
8009	91.11	158.68	6331.08	1650.27	-1798.7	-116.81	1623201	333942.5	39°24'33.0'	80°50'00.9'	1802.49	183.716	2.53			
8098	91.11	159.35	6329.36	1739.24	-1881.78	-84.94	1623233	333859.5	39°24'32.2'	80°50'00.5'	1883.7	182.585	0.75			
8188	91.14	160.56	6327.59	1829.22	-1966.31	-54.1	1623264	333774.9	39°24'31.4'	80°50'00.0'	1967.05	181.576	1.34			
8277	90.37	160.45	6326.42	1918.21	-2050.2	-24.4	1623293	333691.1	39°24'30.6'	80°49'59.7'	2050.35	180.682	0.87			
8367	90.4	159.99	6325.81	2008.21	-2134.89	6.05	1623324	333606.4	39°24'29.7'	80°49'59.2'	2134.9	179.838	0.51			
8456	90.46	160.58	6325.14	2097.2	-2218.67	36.07	1623354	333522.6	39°24'28.9'	80°49'58.9'	2218.96	179.068	0.67			
8546	90.46	159.65	6324.42	2187.2	-2303.3	66.69	1623384	333438	39°24'28.1'	80°49'58.4'	2304.26	178.342	1.03			
8635	90	158.89	6324.06	2276.19	-2386.54	98.19	1623416	333354.7	39°24'27.3'	80°49'58.0'	2388.55	177.644	1			
8725	89.45	159.13	6324.5	2366.18	-2470.56	130.43	1623448	333270.7	39°24'26.4'	80°49'57.6'	2474	176.978	0.67			
8814	88.92	160.03	6325.76	2455.16	-2553.96	161.47	1623479	333187.3	39°24'25.6'	80°49'57.2'	2559.06	176.382	1.17			
8904	88.92	162.38	6327.46	2545.12	-2639.14	190.46	1623508	333102.1	39°24'24.8'	80°49'56.8'	2646	175.872	2.61			
8993	88.86	162.31	6329.18	2634.03	-2723.93	217.45	1623535	333017.4	39°24'23.9'	80°49'56.4'	2732.6	175.436	0.1			

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9083	88.52	160.81	6331.24	2723.97	-2809.29	245.91	1623564	332932	39°24'23.1:80°49'56.1:	2820.03	174.997
9172	88.52	159.15	6333.54	2812.94	-2892.88	276.37	1623594	332848.4	39°24'22.3:80°49'55.7:	2906.05	174.543
9261	88.52	158.75	6335.84	2901.89	-2975.91	308.32	1623626	332765.4	39°24'21.5:80°49'55.2:	2991.84	174.085
9351	88.98	159	6337.8	2991.85	-3059.84	340.75	1623658	332681.5	39°24'20.6:80°49'54.8:	3078.76	173.646
9441	89.17	160.03	6339.25	3081.84	-3144.14	372.24	1623690	332597.2	39°24'19.8:80°49'54.4:	3166.1	173.248
9530	89.11	159	6340.59	3170.82	-3227.5	403.39	1623721	332513.8	39°24'19.0:80°49'54.0:	3252.61	172.876
9620	89.2	158.02	6341.92	3260.78	-3311.23	436.35	1623754	332430.1	39°24'18.2:80°49'53.5:	3339.86	172.493
9709	89.14	159.13	6343.21	3349.74	-3394.07	468.86	1623786	332347.3	39°24'17.4:80°49'53.1:	3426.3	172.135
9799	89.14	159.91	6344.56	3439.73	-3478.37	500.35	1623818	332263	39°24'16.5:80°49'52.7:	3514.18	171.814
9889	89.54	160.1	6345.59	3529.72	-3562.94	531.12	1623849	332178.4	39°24'15.7:80°49'52.3:	3602.31	171.522
9978	90.12	160.63	6345.86	3618.72	-3646.77	561.02	1623879	332094.6	39°24'14.9:80°49'51.9:	3689.67	171.254
10068	90.31	160.07	6345.52	3708.72	-3731.52	591.29	1623909	332009.8	39°24'14.0:80°49'51.5:	3778.08	170.996
10157	90.46	160.89	6344.92	3797.71	-3815.41	621.03	1623939	331925.9	39°24'13.2:80°49'51.1:	3865.62	170.755
10247	90.34	162.51	6344.29	3887.67	-3900.85	649.28	1623967	331840.5	39°24'12.4:80°49'50.7:	3954.52	170.55
10336	90.55	163.8	6343.6	3976.53	-3986.03	675.07	1623993	331755.3	39°24'11.5:80°49'50.4:	4042.79	170.388
10426	90.34	162.46	6342.9	4066.39	-4072.15	701.19	1624019	331669.2	39°24'10.7:80°49'50.0:	4132.08	170.23
10515	90.28	160.53	6342.42	4155.35	-4156.54	729.44	1624047	331584.8	39°24'09.9:80°49'49.7:	4220.06	170.046
10605	90.25	159.43	6342.01	4245.35	-4241.1	760.25	1624078	331500.3	39°24'09.0:80°49'49.2:	4308.7	169.837
10695	90.28	157.42	6341.59	4335.31	-4324.79	793.34	1624111	331416.6	39°24'08.2:80°49'48.8:	4396.95	169.605
10784	90.31	156.9	6341.13	4424.2	-4406.81	827.88	1624145	331334.6	39°24'07.4:80°49'48.4:	4483.9	169.36
10874	90.25	158.23	6340.69	4514.12	-4490	862.23	1624180	331251.4	39°24'06.6:80°49'47.9:	4572.04	169.13
10964	90.25	158.98	6340.3	4604.09	-4573.79	895.06	1624213	331167.6	39°24'05.8:80°49'47.5:	4660.55	168.928
11053	90.28	159.2	6339.89	4693.08	-4656.93	926.82	1624244	331084.5	39°24'04.9:80°49'47.0:	4748.26	168.744
11143	90.25	159.99	6339.47	4783.07	-4741.28	958.2	1624276	331000.1	39°24'04.1:80°49'46.6:	4837.14	168.575
11232	90.31	160.48	6339.04	4872.07	-4825.04	988.3	1624306	330916.4	39°24'03.3:80°49'46.2:	4925.21	168.424
11322	90.31	161.28	6338.55	4962.06	-4910.07	1017.78	1624335	330831.3	39°24'02.5:80°49'45.8:	5014.45	168.289
11411	90.37	161.01	6338.02	5051.04	-4994.29	1046.54	1624364	330747.1	39°24'01.6:80°49'45.5:	5102.76	168.165
11501	90.28	159.53	6337.51	5141.03	-5079.01	1076.92	1624395	330662.4	39°24'00.8:80°49'45.1:	5191.92	168.029
11591	90.22	158.88	6337.12	5231.02	-5163.14	1108.87	1624426	330578.3	39°24'00.0:80°49'44.6:	5280.87	167.879
11680	90.4	160.5	6336.64	5320.02	-5246.6	1139.76	1624457	330494.8	39°23'59.1:80°49'44.2:	5368.98	167.744
11770	90.34	161.65	6336.06	5410	-5331.74	1168.95	1624487	330409.7	39°23'58.3:80°49'43.8:	5458.37	167.634
11859	90.31	163.08	6335.55	5498.92	-5416.55	1195.91	1624513	330324.9	39°23'57.5:80°49'43.5:	5547	167.549
11949	90.71	160.97	6334.75	5588.85	-5502.15	1223.68	1624541	330239.3	39°23'56.6:80°49'43.1:	5636.58	167.461
12039	90.58	158.44	6333.74	5678.84	-5586.55	1254.9	1624572	330154.9	39°23'55.8:80°49'42.7:	5725.76	167.34
12128	90.65	156.44	6332.78	5767.74	-5668.73	1289.04	1624607	330072.7	39°23'55.0:80°49'42.2:	5813.44	167.189
12218	90.92	157.45	6331.55	5857.6	-5751.53	1324.28	1624642	329989.9	39°23'54.2:80°49'41.8:	5902.02	167.034
12308	90.86	161.05	6330.15	5947.57	-5835.67	1356.16	1624674	329905.8	39°23'53.4:80°49'41.4:	5991.18	166.917
12397	90.99	161.39	6328.71	6036.54	-5919.92	1384.81	1624702	329821.5	39°23'52.5:80°49'41.0:	6079.73	166.834
12487	90.28	160.17	6327.72	6126.52	-6004.9	1414.43	1624732	329736.6	39°23'51.7:80°49'40.6:	6169.23	166.746
12576	89.91	160.42	6327.57	6215.52	-6088.69	1444.44	1624762	329652.8	39°23'50.9:80°49'40.2:	6257.67	166.654
12666	89.91	160.41	6327.71	6305.52	-6173.48	1474.61	1624792	329568	39°23'50.0:80°49'39.8:	6347.15	166.566
12755	89.48	162.5	6328.18	6394.48	-6257.85	1502.91	1624820	329483.6	39°23'49.2:80°49'39.4:	6435.79	166.495
12845	89.48	163.5	6329	6484.35	-6343.91	1529.22	1624847	329397.6	39°23'48.4:80°49'39.1:	6525.62	166.447
12935	89.38	160.69	6329.89	6574.28	-6429.54	1556.89	1624874	329312	39°23'47.5:80°49'38.7:	6615.35	166.388
13024	88.89	156.76	6331.24	6663.23	-6512.45	1589.17	1624907	329229	39°23'46.7:80°49'38.3:	6703.54	166.287
13113	89.38	158.32	6332.58	6752.14	-6594.69	1623.17	1624941	329146.8	39°23'45.9:80°49'37.8:	6791.51	166.172
13203	89.42	160.96	6333.53	6842.12	-6679.05	1654.48	1624972	329062.5	39°23'45.1:80°49'37.4:	6880.92	166.087
13293	89.45	160.24	6334.41	6932.11	-6763.94	1684.37	1625002	328977.6	39°23'44.2:80°49'37.0:	6970.51	166.017
13382	89.91	158.53	6334.91	7021.1	-6847.23	1715.7	1625033	328894.3	39°23'43.4:80°49'36.6:	7058.91	165.933

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13472	89.91	158.5	6335.05	7111.07	-6930.98	1748.67	1625066	328810.5	39°23'42.6"	80°49'36.1"	7148.17	165.84
13561	89.85	159.14	6335.24	7200.05	-7013.97	1780.82	1625098	328727.6	39°23'41.8"	80°49'35.7"	7236.51	165.754
13651	89.97	159.57	6335.38	7290.05	-7098.19	1812.55	1625130	328643.3	39°23'40.9"	80°49'35.3"	7325.96	165.675
13741	90	159.11	6335.4	7380.04	-7182.4	1844.31	1625162	328559.1	39°23'40.1"	80°49'34.9"	7415.41	165.599
13830	89.97	157.93	6335.43	7469.01	-7265.22	1876.9	1625194	328476.3	39°23'39.3"	80°49'34.5"	7503.74	165.515
13920	89.97	157.83	6335.47	7558.95	-7348.59	1910.79	1625228	328393	39°23'38.5"	80°49'34.0"	7592.95	165.425
14009	89.91	159.84	6335.57	7647.92	-7431.59	1942.92	1625260	328310	39°23'37.7"	80°49'33.6"	7681.37	165.348
14099	90.03	161.06	6335.61	7737.92	-7516.4	1973.03	1625291	328225.2	39°23'36.8"	80°49'33.2"	7771.04	165.292
14189	90.28	160.6	6335.37	7827.91	-7601.4	2002.59	1625320	328140.2	39°23'36.0"	80°49'32.8"	7860.77	165.241
14278	90.15	160.83	6335.04	7916.9	-7685.41	2031.98	1625350	328056.2	39°23'35.2"	80°49'32.4"	7949.49	165.19
14368	90.25	161.17	6334.72	8006.89	-7770.51	2061.28	1625379	327971.1	39°23'34.3"	80°49'32.0"	8039.26	165.143
14458	90.18	160.7	6334.38	8096.87	-7855.57	2090.68	1625408	327886	39°23'33.5"	80°49'31.6"	8129.01	165.097
14547	89.78	160.03	6334.42	8185.87	-7939.39	2120.59	1625438	327802.2	39°23'32.7"	80°49'31.2"	8217.71	165.046
14637	89.63	160.13	6334.88	8275.87	-8024.01	2151.25	1625469	327717.6	39°23'31.8"	80°49'30.8"	8307.38	164.992
14726	89.63	160.69	6335.45	8364.87	-8107.85	2181.09	1625499	327633.7	39°23'31.0"	80°49'30.4"	8396.1	164.943
14816	89.57	161.51	6336.08	8454.85	-8193	2210.24	1625528	327548.6	39°23'30.2"	80°49'30.0"	8485.89	164.903
14906	89.6	160.53	6336.73	8544.83	-8278.1	2239.51	1625557	327463.5	39°23'29.4"	80°49'29.6"	8575.68	164.862
14995	90.15	158.08	6336.93	8633.81	-8361.35	2270.96	1625588	327380.2	39°23'28.5"	80°49'29.2"	8664.26	164.805
15085	90.06	156.85	6336.76	8723.72	-8444.48	2305.45	1625623	327297.1	39°23'27.7"	80°49'28.8"	8753.53	164.73
15174	90.22	159.79	6336.55	8812.68	-8527.17	2338.33	1625656	327214.4	39°23'26.9"	80°49'28.3"	8841.97	164.665
15264	89.66	160.38	6336.64	8902.67	-8611.79	2368.98	1625686	327129.8	39°23'26.1"	80°49'27.9"	8931.69	164.619
15353	90.55	160.36	6336.48	8991.67	-8695.62	2398.88	1625716	327046	39°23'25.2"	80°49'27.5"	9020.44	164.577
15443	89.6	159.19	6336.36	9081.67	-8780.06	2429.99	1625748	326961.6	39°23'24.4"	80°49'27.1"	9110.13	164.53
15532	89.82	161.14	6336.81	9170.66	-8863.78	2460.19	1625778	326877.8	39°23'23.6"	80°49'26.7"	9198.87	164.488
15560	89.69	161.71	6336.93	9198.65	-8890.32	2469.11	1625787	326851.3	39°23'23.3"	80°49'26.6"	9226.82	164.478
15583	89.69	161.71	6337.05	9221.64	-8912.16	2476.33	1625794	326829.5	39°23'23.1"	80°49'26.5"	9249.8	164.472

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**TARGETS**

Name	MD	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape	Comment
	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]				
SHR-3B-HS BHL Rev-1		6318.82	-8913.89	2472.35	1625790	326827.7	39°23'23.1"	80°49'26.6"	point	
SHR-3B-HS LP Rev-1		6334	-738.57	-503.21	1622814	335002.6	39°24'43.5"	80°50'06.0"	point	
SHR-3B-HS LP Plat		6339	-610	-550.01	1622768	335131.2	39°24'44.7"	80°50'06.6"	point	

WELLPATH COMPOSITION Ref Wellbore: SHR-3B-HS AWB Ref Wellpath: SHR-3B-HS AWP Proj: 15583'

Log Name/	Start MD	End MD	Pos	Unc	Model
	[ft]	[ft]			
01_MS Gyr	18.5	2103.5	Generic	gyro	- northseeking (Standard)
02_BHI MV	2103.5	5041	NaviTrak		(MagCorr)
03_BHI AT	5041	15560	NaviTrak		(AT Curve Short Spaced)
Projection	15560	15583	Blind		Drilling (std)

**COMMENTS**

Wellpath general comments  
 API: 47-095-02124-0000  
 BHI Job #: 7024647  
 Rig: Precision 542  
 Duration: 04.16.2014 - 04.22.2015



MS Gyro <12-1/4> (100'-2085')"  
BH1 MWD <8-3/4> (2103.5)|(2226'-5041')"  
BH1 AT Curve <8-3/4> (5041)|(5141'-15560')"  
Projected MID at TD: 15583'

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	9/19/2017
Job End Date:	10/1/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02124-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	SHRL3BHS
Latitude:	39.41421400
Longitude:	-80.83310000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,647
Total Base Water Volume (gal):	13,421,646
Total Base Non Water Volume:	0

## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Ascent	Carrier/Base Fluid	Water	7732-18-5	100.00000	87.19682	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	11.89868	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor	Water	7732-18-5	92.50000	0.69357	None
			Hydrochloric Acid	7647-01-0	7.50000	0.05624	None
KFR-23	Keane	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-47-8	45.00000	0.03956	None
			copolymer of 2-propenamide	Proprietary	10.00000	0.00879	None
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00176	None
			oleic acid diethanolamide	93-83-4	2.00000	0.00176	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.03585	None
			Hydrochloric Acid	7647-01-0	15.00000	0.00633	None
KFEAC-30	Keane	Iron Control					

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			acetic acid	64-19-7	60.00000	0.00256	None
			Citric acid	77-92-9	40.00000	0.00173	None
MBC-516	Keane	Biocide					
			glutaral	111-30-8	26.70000	0.00231	None
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00069	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00046	None
KSI-19	Keane	Scale Inhibitor					
			Methanol	67-56-1	30.00000	0.00256	None
KWG-111LS	Keane	Gel					
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00117	None
			Guar gum	9000-30-0	55.00000	0.00117	None
KAI-12	Keane	Acid Inhibitor					
			Methanol	67-56-1	90.00000	0.00084	None
			isoproyl alcohol	67-63-0	5.00000	0.00005	None
			Fatty imidazoline	61790-69-0	5.00000	0.00005	None
			xylene	1330-20-7	5.00000	0.00005	None
			prop-2-yn-1-ol	107-19-7	5.00000	0.00005	None
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00005	None
			ethylbenzene	100-41-4	1.00000	0.00001	None
KWBO-2	Keane	Breaker					
			Sodium persulfate	7775-27-1	99.00000	0.00002	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	92.50000	0.69357	
			Water	7732-18-5	85.00000	0.03585	
			copolymer of 2-propenamide	Proprietary	10.00000	0.00879	
			oleic acid diethanolamide	93-83-4	2.00000	0.00176	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00176	
			Citric acid	77-92-9	40.00000	0.00173	
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00117	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00069	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00046	
			prop-2-yn-1-ol	107-19-7	5.00000	0.00005	
			xylene	1330-20-7	5.00000	0.00005	
			isoproyl alcohol	67-63-0	5.00000	0.00005	
			Fatty imidazoline	61790-69-0	5.00000	0.00005	
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00005	
			ethylbenzene	100-41-4	1.00000	0.00001	

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.  
Ingredient information for chemicals subject to 29 CFR 19.10.1200(f) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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WELL OPERATOR: CNX GAS COMPANY LLC  
 ADDRESS: 1000 CONSOL ENERGY DRIVE  
 CITY: CANONSBURG  
 STATE: PA  
 ZIP CODE: 15317

DESIGNATED AGENT: CHRIS TURNER  
 ADDRESS: 1 DOMINION DR.  
 CITY: JANE LEW  
 STATE: WV  
 ZIP CODE: 26378

TARGET FORMATION: MARCELLUS  
 ESTIMATED DEPTH: TVD: 6,337' ± TMD: 15,583' ±

CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): AS DRILLED  
 PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE

OIL & GAS ROYALTY OWNER: DANIEL A. WEEKLEY & SUZANNE L. WEEKLEY, AMP FUND III, LP  
 SURFACE OWNER: NOBLE ENERGY INC.  
 COUNTY/DISTRICT: TYLER / CENTERVILLE  
 QUADRANGLE: SHIRLEY, W 7.5'  
 WATERSHED: HEADWATERS MIDDLE ISLAND CREEK  
 ELEVATION: 751' ±

WVDEP OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

DATE: NOVEMBER 2, 2017  
 OPERATOR'S WELL #: SHR 3 BHS-AS DRILLED  
 API WELL #: 47  
 STATE: 95  
 COUNTY: PERMIT 02124



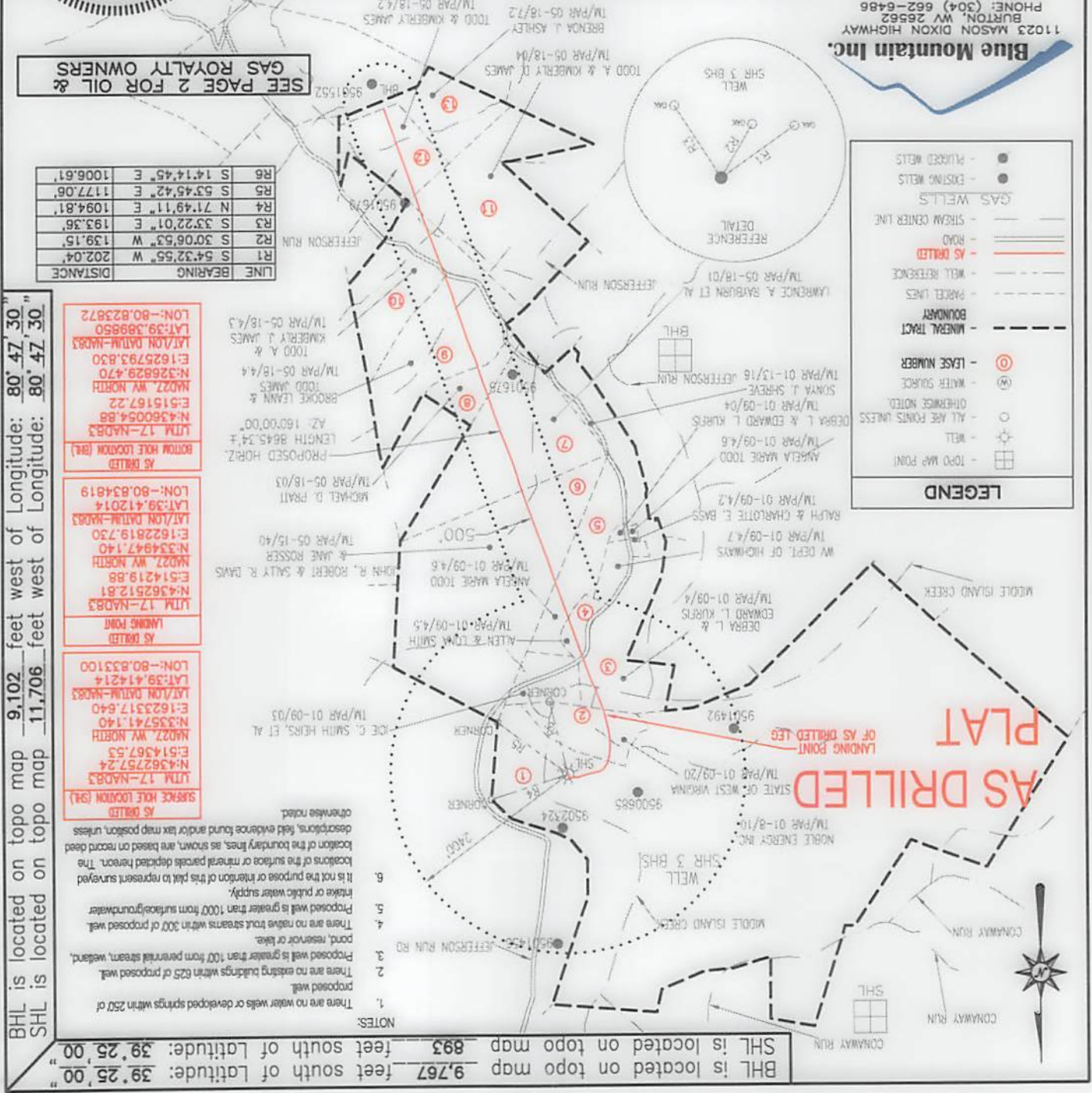
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WDEP OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

FILE #: SHR 3 BHS-AS DRILLED  
 DRAWING #: SHR 3 BHS-AS DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE: U.S.G.S. MONUMENT THOMAS 1498.81'  
 OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'  
 R.P.E.: L.L.S.: P.S. No. 2000

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *George D. Six*  
 R.P.E.: L.L.S.: P.S. No. 2000

PLACE SEAL HERE



BHL is located on topo map 9.102 feet west of Longitude: 80° 47' 30"  
 SHL is located on topo map 11,706 feet west of Longitude: 80° 47' 30"

BHL is located on topo map 9.767 feet south of Latitude: 39° 25' 00"  
 SHL is located on topo map 893 feet south of Latitude: 39° 25' 00"

**SHR 3 BHS**  
**PAGE 2 OF 2**  
**AS DRILLED PLAT**

TRACT	PARCEL #	OIL & GAS ROYALTY OWNER
1	1-8-10	DAVID H. WEEKLEY & LINDA C. WEEKLEY
		DANIEL A. WEEKLEY & SUZANNE L. WEEKLEY
		AMP FUND III, LP
2	1-9-20	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION - DIVISION OF HIGHWAYS
3	1-9-4	WALTON SMITH & KAY SMITH ET AL
4	1-9-4.5	WALTON SMITH & KAY SMITH ET AL
5	1-9-4.6	WALTON SMITH & KAY SMITH ET AL
6	5-15-40	JOSEPH CLIFFORD STRATON, ET AL
7	5-18-1	DONALD SECKMAN
8	5-18-3	MICHAEL PRATT, ET AL
9	5-18-4.4	TODD A. JAMES, ET AL
10	5-18-4.3	TODD A. JAMES, ET AL
11	5-18-4	TODD A. JAMES, ET AL
12	5-18-4.2	TODD A. JAMES, ET AL
13	5-18-7.2	OK NAN KEYS, ET AL

NOVEMBER 2, 2017

**AS DRILLED  
SURFACE HOLE LOCATION (SHL)**

UTM 17-NAD83  
N:4362757.24  
E:514367.53  
NAD27, WV NORTH  
N:335741.140  
E:1623317.640  
LAT/LON DATUM-NAD83  
LAT:39.414214  
LON:-80.833100

**AS DRILLED  
LANDING POINT**

UTM 17-NAD83  
N:4362512.81  
E:514219.88  
NAD27, WV NORTH  
N:334947.140  
E:1622819.730  
LAT/LON DATUM-NAD83  
LAT:39.412014  
LON:-80.834819

**AS DRILLED  
BOTTOM HOLE LOCATION (BHL)**

UTM 17-NAD83  
N:4360054.88  
E:515167.22  
NAD27, WV NORTH  
N:326829.470  
E:1625793.830  
LAT/LON DATUM-NAD83  
LAT:39.389850  
LON:-80.823872