

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

API 47-095-02214FH6A County Tyler District Centerville
Quad Shirley Pad Name SHR40HS Field/Pool Name SHR40HS
Farm Name MAPLE, DAVID L. ET AL Well Number SHR40FHS - Fracture
Operator (as registered with the OOG) CNX Gas Company LLC
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

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As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top Hole Northing 4,362,838.304m Easting 514,248.618m
Landing Point of Curve Northing 4,362,918.086m Easting 515,113.870m
Bottom Hole Northing 4,360,517.940m Easting 516,029.745m

FEB 20 2018

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Elevation (ft) 771" 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.

Date Permit Issued 08/01/2017 Date drilling commenced 03/15/2015 Date drilling ceased 07/13/2015
Date completion activities began 08/28/2017 Date completion activities ceased 09/06/2017
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 357 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
JOB 3/14/2018

Reviewed by: MS

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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	36"	20"	40'					
Surface	17 1/2"	13 3/8"	501.0'	New	J-55 54.5# / 501.0'		Y	
Coal								
Intermediate 1	13 3/8"	9 5/8"	2238.7'	New	HCK-55 36# / 501.0'		Y	
Intermediate 2								
Intermediate 3								
Production	8 3/4"	5 1/2"	16172.6'	New	P-110 20# / 16172.6'			
Tubing	5 1/2"	2 3/8"	7496.10'	New	P-110 4.7# / 7496.10'			
Packer Type and Depth Set							None	

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Comment Details _____

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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 (Lead) / Class A (Tail)	60 sks / 421 sks	15.60 / 15.60	1.57 / 1.20	30.0 / 90.0	0'	8
Coal							
Intermediate 1	Class A (Lead) / Class A (Tail)	900 sks	15.60	1.18	169.0	0'	8
Intermediate 2							
Intermediate 3							
Production	Class A (Lead) / Class A (Tail)	712 sks / 2475 sks	13.50 / 14.50	1.58 / 1.27	560.0 / 365.0	3000'	8
Tubing							

Drillers TD (ft) 6385'

Loggers TD (ft) 6381'

Deepest formation penetrated: Marcellus

Plug back to (ft) Not a Pilot Hole

Plug back procedure: Not a Pilot Hole

Kick Off Depth (ft) 6027'

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. Fresh Water / Surface - 4 centralizers used, one every third joint. Intermediate - 26 centralizers used. Bow spring centralizers on every joint to KOP, on every third joint from KOP to 100' from surface casing. Production - 351 centralizers used. Rigid Bow spring centralizer every third joint from KOP to TOC, rigid bow spring centralizer every joint to KOP.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Plug And Perforation Shot Hole *JOB 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)
					SEE ATTACHED
					RECEIVED Office of Oil and Gas
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Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation 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)
								See Attached

Please insert additional pages as applicable.

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PERFORATION RECORD

FEB 20 2018

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)
1	8/28/2017	15859	15961	40	Marcellus
2	8/29/2017	15668	15826	40	Marcellus
3	8/29/2017	15446	15628	40	Marcellus
4	8/29/2017	15221	15403	40	Marcellus
5	8/29/2017	14996	15178	40	Marcellus
6	8/30/2017	14771	14953	40	Marcellus
7	8/30/2017	14546	14728	40	Marcellus
8	8/30/2017	14321	14503	40	Marcellus
9	8/30/2017	14096	14278	40	Marcellus
10	8/30/2017	13871	14053	40	Marcellus
11	8/31/2017	13646	13828	40	Marcellus
12	8/31/2017	13421	13603	40	Marcellus
13	8/31/2017	13196	13378	40	Marcellus
14	9/1/2017	12971	13153	40	Marcellus
15	9/1/2017	12746	12928	40	Marcellus
16	9/1/2017	12521	12703	40	Marcellus
17	9/1/2017	12296	12478	40	Marcellus
18	9/1/2017	12071	12253	40	Marcellus
19	9/2/2017	11846	12028	40	Marcellus
20	9/2/2017	11621	11803	40	Marcellus
21	9/2/2017	10871	11054	40	Marcellus
22	9/2/2017	11171	11353	40	Marcellus
23	9/3/2017	10946	11128	40	Marcellus
24	9/3/2017	10721	10903	40	Marcellus
25	9/3/2017	10496	10678	40	Marcellus
26	9/3/2017	10271	10453	40	Marcellus
27	9/4/2017	10046	10228	40	Marcellus
28	9/4/2017	9821	10003	40	Marcellus
29	9/4/2017	9596	9778	40	Marcellus
30	9/4/2017	9371	9553	40	Marcellus
31	9/5/2017	9146	9328	40	Marcellus
32	9/5/2017	8921	9103	40	Marcellus
33	9/5/2017	8696	8878	40	Marcellus
34	9/5/2017	8471	8653	40	Marcellus
35	9/5/2017	8246	8428	40	Marcellus
36	9/6/2017	8021	8203	40	Marcellus
37	9/6/2017	7796	7978	40	Marcellus
38	9/6/2017	7571	7753	40	Marcellus

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STIMULATION INFORMATION PER STAGE

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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	8/28/2017	85	8270	6088	4009	400820	8686	3443
2	8/29/2017	77	8100	6425	4223	400320	7901	3363
3	8/29/2017	77	7997	6507	4039	396160	7962	3388
4	8/29/2017	76	8097	7436	4015	402420	7094	3347
5	8/29/2017	79	8255	6631	3983	400300	6560	3329
6	8/30/2017	68	7863	7351	4213	400340	8945	3513
7	8/30/2017	85	7777	6608	4358	400000	7714	3257
8	8/30/2017	80	7956	6823	3879	403220	7231	3311
9	8/30/2017	83	8061	6744	4037	400620	7000	3390
10	8/31/2017	86	7931	6280	4077	400880	6507	3252
11	8/31/2017	87	8183	6098	4050	400000	7742	3643
12	8/31/2017	87	8313	6691	4649	354200	6617	3225
13	8/31/2017	82	8041	6448	4549	388800	8593	3499
14	9/1/2017	83	7750	6225	4958	401280	6591	3404
15	9/1/2017	83	7933	6733	4220	400660	6655	3424
16	9/1/2017	82	7985	7057	4151	396320	6621	3395
17	9/1/2017	83	7787	6296	3622	400940	6552	3292
18	9/1/2017	86	7858	5878	4595	400820	6521	3441
19	9/2/2017	88	7720	5827	4451	400680	6461	3319
20	9/2/2017	85	7785	7037	4068	401260	6460	3282
21	9/2/2017	88	7862	6473	3923	405960	6475	3368
22	9/2/2017	94	7841	5765	4627	400380	6424	3210
23	9/3/2017	92	8004	5919	4421	399780	6232	3246
24	9/3/2017	88	7902	6543	4126	404320	6266	3302
25	9/3/2017	88	7844	6283	4533	404560	7825	3334
26	9/3/2017	90	7734	6635	4341	400540	6239	3194
27	9/4/2017	89	7862	6827	4262	401320	6211	3113
28	9/4/2017	81	7861	6053	4562	319200	5804	3321
29	9/4/2017	90	7513	6291	3864	404820	6331	3190
30	9/4/2017	84	7562	7302	4022	398900	8152	3395
31	9/5/2017	95	7738	6403	4412	400780	6131	3120
32	9/5/2017	92	7897	6814	4039	404020	7390	3313
33	9/5/2017	96	7741	6709	4126	399860	6206	3191
34	9/5/2017	97	7750	6217	4824	400880	6157	3295
35	9/5/2017	91	7609	6083	4471	403320	5980	3253
36	9/6/2017	92	7386	5648	4923	407800	5751	3253
37	9/6/2017	92	7376	5652	4549	403260	5672	3310
38	9/6/2017	95	7536	5908	5230	399800	6209	3260

Amount of Nitrogen / other (gals)
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PRODUCING FORMATION(S)	DEPTHS			
MARCELLUS	6385' - ' TVD	16181' - ' MD		

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 500 psi Bottom Hole 3036 psi DURATION OF TEST 5 hrs
 OPEN FLOW Gas 11054.40 mcfpd Oil 96 bpd NGL N/A bpd Water 384 bpd GAS MEASURED BY 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, H2S, 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 Allied Cementing Company, LLC
 Address 100 Hope Street City Clarksburg State WV Zip 26301
 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 [Signature] 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 TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
SHALE	0	1020			
SHALE AND SANDSTONE	1020	1743			
BIG LIME	1743	1871			
BIG INJUN	1871	1978			
PRICE	1978	2129			
WEIR	2129	2233			
SHALE	2233	2320			
BEREA	2320	2328			
SHALE	2328	2509			
SANDSTONE	2509	2611			
SHALE	2611	2747			
SANDSTONE	2747	2765			
SHALE	2765	3239			
WARREN	3239	3285			
SHALE AND SANDSTONE	3285	3637			
LOWER HURON	3637	4395			
SANDSTONE	4395	4433			
SHALE	4433	4627			
SANDSTONE	4627	4683			
SHALE	4683	4807			
BENSON	4807	4851			
SHALE	4851	5051			
ALEXANDER	5051	5109			
SHALE	5109	6050			
CASHAQUA	6050	6161			
MIDDLESEX	6161	6195			
WEST RIVER	6195	6263			
BURKETT	6263	6297			
TULLY	6297	6300			
HAMILTON	6300	6317			
MARCELLUS	6317	6381			
ONONDAGA	6381				

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ACTUAL WELLPATH REPORT (CSV version)
 Prepared by Baker Hughes
 Software System: WellArchitect® 4.0.1

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 M D D
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REFERENCE WELLPATH IDENTIFICATION

Operator NOBLE ENERGY
 Area Tyler County, WV
 Field Tyler
 Facility SHR-4D Pad
 Slot Slot F
 Well SHR-40F-HS
 Wellbore SHR-40F-HS AWB
 Wellpath SHR-40F-HS AWP Proj: 16181'
 Sidetrack (none)

REPORT SETUP INFORMATION

Projection NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet
 North Refe Grid
 Scale 0.999947
 Convergen 0.85° West
 Software S WellArchitect® 4.0.1
 User Edsaryar
 Report Ger 14/Jul/2015 at 17:03
 DataBase:/ WellArchitectEasternDB/ev3839.xml

WELLPATH	Local North	Local East	Easting	Northing	Latitude	Longitude
	[ft]	[ft]	[US ft]	[US ft]		
Slot Locatir	-28.8	9.27	1622932	336013.7	39°24'53.5	80°50'04.746°W
Facility Ref			1622923	336042.5	39°24'53.8	80°50'04.870°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 5 788.80ft
 Precision 5 788.80ft
 Precision 5 19.40ft
 Section Ori N 0.00, E 0.00 ft
 Section Azi 160.00°

WELLPATH DATA † = interpolated/extrapolated station

	MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dis	Closure Dir	DLS	Build Rate	Turn Rate
	[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
†	0	0	209.14	0	0	0	0	0	1622932	336013.7	39°24'53.5	80°50'04.7	0	0	0	0
SHL	19.4	0	209.14	19.4	0	0	0	0	1622932	336013.7	39°24'53.5	80°50'04.7	0	0	0	0
	119.4	0.28	209.14	119.4	0.16	-0.21	-0.12	1622932	336013.5	39°24'53.5	80°50'04.7	0.24	209.14	0.28	0.28	0
	219.4	0.25	256.29	219.4	0.3	-0.48	-0.45	1622931	336013.2	39°24'53.5	80°50'04.7	0.66	223.234	0.21	-0.03	47.15
	319.4	0.26	295.81	319.4	0.11	-0.43	-0.87	1622931	336013.2	39°24'53.5	80°50'04.7	0.97	243.519	0.17	0.01	39.52
	419.4	0.28	110.57	419.4	0.11	-0.42	-0.84	1622931	336013.2	39°24'53.5	80°50'04.7	0.94	243.559	0.54	0.02	174.76
	519.4	0.43	114.26	519.4	0.53	-0.66	-0.27	1622932	336013	39°24'53.5	80°50'04.7	0.71	202.348	0.15	0.15	3.69
	619.4	0.6	132.05	619.39	1.25	-1.16	0.46	1622932	336012.5	39°24'53.5	80°50'04.7	1.25	158.42	0.23	0.17	17.79

KOP 1

719.4	0.7	146.21	719.39	2.31	-2.02	1.19	1622933	3360116	3924534	805004.7	2.35	149.547	0.19	0.1	14.16	
819.4	0.8	142.37	819.38	3.56	-3.08	1.95	1622934	3360106	3924534	805004.7	3.65	147.619	0.11	0.1	-3.84	
919.4	0.88	151.43	919.37	4.99	-4.31	2.75	1622935	3360094	3924534	805004.7	5.11	147.476	0.15	0.08	9.06	
1019.4	0.93	175.37	1019.35	6.53	-5.79	3.18	1622935	3360079	3924534	805004.7	6.61	151.229	0.38	0.05	23.94	
1119.4	1.01	184.7	1119.34	8.11	-7.48	3.17	1622935	3360062	3924534	805004.7	8.13	157.006	0.18	0.08	9.33	
1219.4	0.93	192.16	1219.33	9.6	-9.15	2.93	1622935	3360045	3924534	805004.7	9.61	162.242	0.15	-0.08	7.46	
1319.4	0.68	187.57	1319.32	10.82	-10.53	2.68	1622935	3360031	3924534	805004.7	10.87	165.716	0.26	-0.25	-4.59	
1419.4	0.67	183.63	1419.31	11.88	-11.71	2.57	1622934	336002	3924534	805004.7	11.98	167.632	0.05	-0.01	-3.94	
1519.4	0.72	181.68	1519.3	13	-12.92	2.51	1622934	3360004	3924534	805004.7	13.16	168.998	0.06	0.05	-1.95	
1619.4	0.84	170.75	1619.29	14.3	-14.27	2.61	1622934	3359994	3924534	805004.7	14.51	169.631	0.19	0.12	-10.93	
1719.4	0.81	154.06	1719.28	15.72	-15.63	3.04	1622935	335998	3924534	805004.7	15.92	169	0.24	-0.03	-16.69	
1819.4	0.59	139.63	1819.27	16.91	-16.66	3.68	1622936	335997	3924534	805004.6	17.06	167.539	0.28	-0.22	-14.43	
1919.4	0.31	164.68	1919.27	17.66	-17.31	4.09	1622936	3359964	3924534	805004.6	17.78	166.719	0.34	-0.28	25.05	
2019.4	0.83	176.01	2019.27	18.63	-18.29	4.21	1622936	3359954	3924534	805004.6	18.77	167.047	0.53	0.52	11.33	
2119.4	0.81	163.76	2119.26	20.03	-19.69	4.46	1622936	335994	3924534	805004.6	20.19	167.252	0.18	-0.02	-12.25	
2264	0.75	172.93	2263.84	21.97	-21.61	4.86	1622937	335992.1	3924534	805004.6	22.15	167.333	0.1	-0.04	6.34	
2354	2.86	76.69	2353.8	22.81	-21.68	7.12	1622939	335992	3924534	805004.6	22.82	161.831	3.37	2.34	-106.93	
2443	6.09	66.2	2442.52	22.75	-19.26	13.6	1622945	3359944	3924534	805004.5	23.58	144.784	3.73	3.63	-11.79	
2533	8.51	63.15	2531.79	21.64	-14.33	23.91	1622956	3359993	3924534	805004.4	27.87	120.936	2.72	2.69	-3.39	
2623	9.91	68.71	2620.62	20.67	-8.51	37.07	1622969	336005	2	3924534	805004.2	38.03	102.929	1.84	1.56	6.18
2712	13.15	72.75	2707.82	20.99	-2.72	53.88	1622986	336010.9	3924534	805004.0	53.94	92.895	3.75	3.64	4.54	
2802	16.92	74.9	2794.72	22.6	3.73	76.31	1623008	3360174	3924534	805003.7	76.4	87.205	4.23	4.19	2.39	
2891	20.89	76.57	2878.91	25.52	10.79	104.25	1623036	3360245	3924534	805003.4	104.81	84.093	4.5	4.46	1.88	
2981	25.1	74.27	2961.74	28.78	19.69	138.25	1623070	3360334	3924534	805002.9	139.65	81.893	4.78	4.68	-2.56	
3071	28.88	71.3	3041.92	30.69	31.84	177.23	1623109	336045.5	3924534	805002.4	180.07	79.815	4.46	4.2	-3.3	
3161	31.89	71.96	3119.55	32	46.18	220.43	1623152	336059.8	3924534	805001.9	225.21	78.169	3.36	3.34	0.73	
3250	34.96	73.9	3193.83	34.54	60.53	267.29	1623199	336074.2	3924534	805001.3	274.06	77.24	3.65	3.45	2.18	
3340	38.5	76.52	3265.95	39.48	74.22	319.33	1623251	336087.9	3924534	805000.6	327.84	76.916	4.3	3.93	2.91	
3430	43.05	75.69	3334.09	45.71	88.35	376.37	1623308	336102	3924534	805000.9	386.6	76.79	5.09	5.06	-0.92	
3519	45.76	72.75	3397.67	50.25	105.31	436.27	1623368	336119	3924534	805000.9	448.8	76.429	3.82	3.04	-5.1	
3609	46.3	68.16	3460.18	50.75	126.98	497.27	1623429	336140.6	3924534	805000.9	513.23	75.675	3.72	0.6	-3.05	
3789	30.55	62.67	3600.79	42.77	172.49	598.98	1623531	336186.1	3924534	805000.9	623.32	75.935	8.95	-8.75	0.67	
3878	30.96	63.27	3677.27	37.2	193.17	639.52	1623571	336206.8	3924534	805000.9	668.06	73.192	0.58	0.46	5.56	
3967	31.55	64.52	3753.29	32.29	213.53	681.08	1623613	336227.2	3924534	805000.9	713.77	72.593	1.12	0.84	1.4	
4057	31.55	69.52	3829.93	29.83	231.95	724.5	1623656	336245.6	3924534	805000.9	780.72	72.247	2.92	-0.18	5.56	
4147	30.42	71.38	3907.09	30.58	247.09	768.28	1623700	336260.7	3924534	805000.9	807.03	72.172	2.06	-1.26	3.18	
4236	30.89	67.63	3983.67	30.57	262.6	810.88	1623743	336276.3	3924534	805000.9	852.35	72.055	2.77	0.53	-5.34	
4326	33.22	68.53	4059.94	28.98	280.42	852.2	1623787	336294.1	3924534	805000.9	900	71.845	2.64	2.59	1	
4415	36.68	69.78	4132.88	28.26	298.54	902.84	1623835	336312.2	3924534	805000.9	950.92	71.703	3.97	3.89	1.4	
4505	37.74	69.93	4204.56	28.12	317.28	953.94	1623886	336330.9	3924534	805000.9	1005.32	71.603	1.18	1.18	0.17	
4594	37.01	70.23	4275.28	28.19	335.69	1004.73	1623937	336349.3	3924534	805000.9	1059.33	71.525	0.85	-0.82	0.34	
4684	35.71	72.99	4347.77	29.67	352.54	1055.35	1623987	336366.2	3924534	805000.9	1112.67	71.528	2.32	-1.44	3.07	
4773	36.42	72.82	4419.71	33.33	385.19	1105.42	1624037	336383.8	3924534	805000.9	1165.05	71.59	0.81	0.8	-0.19	
4863	36.04	69.31	4492.31	31.81	404.15	1155.42	1624088	336401.6	3924534	805000.9	1218.22	71.567	2.34	-0.42	-3.9	
4952	34.38	67.27	4565.03	31.81	423.15	1203.4	1624135	336417.8	3924534	805000.9	1269.45	71.436	2.29	-1.87	-2.29	
5042	31.7	67.16	4640.47	29.43	439.9	1248.64	1624180	336436.8	3924534	805000.9	1318.39	71.279	2.98	-2.98	-0.12	
5132	32.04	47.16	4716.91	28.88	452.2	1298.16	1624225	336455.8	3924534	805000.9	1365.85	71.212	3.92	-0.72	7.34	
5221	31.4	78.04	4792.64	33.75	461.07	1338.16	1624270	336465.8	3924534	805000.9	1412.5	71.329	3.92	-0.72	7.34	
5311	32.22	80.38	4869.13	40.35	461.07	1384.75	1624317	336474.7	3924534	805000.9	1459.49	71.584	1.65	0.91	2.6	
5400	34.2	75.64	4943.6	47.09	471.24	1432.39	1624364	336484.9	3924534	805000.9	1507.91	71.789	3.67	2.22	-5.33	
5490	35.51	68.77	5017.48	49.01	486.98	1481.28	1624413	336500.6	3924534	805000.9	1559.27	71.801	4.6	1.46	-7.63	
5580	37.56	66.31	5089.79	46.69	507.47	1530.77	1624463	336521.1	3924534	805000.9	1612.7	71.659	2.8	2.28	-2.73	
5669	37.58	67.8	5160.34	43.9	528.63	1580.74	1624513	336542.3	3924534	805000.9	1666.79	71.509	1.02	0.02	1.67	
5759	36.9	69.74	5231.99	42.72	548.35	1631.5	1624563	336562	3924534	805000.9	1721.19	71.422	1.51	-0.76	2.16	
5848	35.55	65.25	5303.8	40.46	568.44	1680.07	1624612	336582.1	3924534	805000.9	1773.63	71.307	3.34	-1.52	-5.04	

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	15712	89.75	158.8	6385.4	8734.08	-7271.43	5558.63	1628490	328742.6	39°23'42.4	80°48'52.5	9152.71	142.604	0.29	-0.08	0.28
	15801	89.75	158.86	6385.79	8823.06	-7354.43	5590.77	1628522	328659.6	39°23'41.6	80°48'52.1	9238.2	142.758	0.07	0	0.07
	15891	89.97	160.1	6386.01	8913.05	-7438.72	5622.32	1628554	328575.4	39°23'40.8	80°48'51.7	9324.43	142.917	1.4	0.24	1.38
	15980	90.31	162.76	6385.79	9002.01	-7523.07	5650.66	1628582	328491	39°23'39.9	80°48'51.3	9408.85	143.089	3.01	0.38	2.99
	16070	90.22	160.07	6385.38	9091.98	-7608.37	5679.34	1628611	328405.7	39°23'39.1	80°48'50.9	9494.32	143.26	2.99	-0.1	-2.99
	16157	90.31	159.28	6384.98	9178.97	-7689.95	5709.56	1628641	328324.1	39°23'38.3	80°48'50.5	9577.81	143.407	0.91	0.1	-0.91
BHL	16181	90.31	159.28	6384.85	9202.97	-7712.4	5718.05	1628650	328301.7	39°23'38.1	80°48'50.4	9600.89	143.446	0	0	0

T A R G E T S

Name	MD	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape	Comment
	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]				
SHR-40F-HS BHL Rev-1		6376	-7710.47	5720.81	1628652	328303.6	39°23'38.1	80°48'50.4	point	
SHR-40F-HS LP Rev-1		6376	269.39	2816.37	1625748	336283	39°24'56.5	80°49'28.9	point	
SHR-40F-HS BHL Rev-2		6378.18	-7710.47	5720.81	1628652	328303.6	39°23'38.1	80°48'50.4	point	
SHR-40F-HS LP Rev-2		6393	269.39	2816.37	1625748	336283	39°24'56.5	80°49'28.9	point	
SHR-40 Pad LL		6599.3	28.8	-9.27	1622923	336042.5	39°24'53.8	80°50'04.8	polygon	

WELLPATH COMPOSITION Ref Wellbore: SHR-40F-HS AWB Ref Wellpath: SHR-40F-HS AWP Proj: 16181'

Log Name/	Start MD	End MD	Pos	Unc	Model
	[ft]	[ft]			
02_MS Rat	19.4	2119.4	Generic	gyro	- continuous (Standard)
03_BHI Mv	2119.4	6027	NaviTrak	(MagCorr)	
04_BHI AT	6027	16157	NaviTrak	(MagCorr)	
Projection	16157	16181	Blind	Drilling	(std)

C O M M E N T S

Wellpath general comments

API: 47-095-02214-0000

BHI Job #: 7238988

Rig: Precision 542

Duration: 6/29/2015-7/9/2015

MS Gyro <12-1/4> (100'-2100")

BHI MWD <8-3/4> (2119.4')(2264'-6027")

BHI AT Curve <8-1/2> (6027')(6085'-16157")

Projected MD at TD: 16181'

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	8/28/2017
Job End Date:	9/6/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02214-00-00
Operator Name:	CONSOL Energy Inc.
Well Name and Number:	SHRL40FHS
Latitude:	39.41494610
Longitude:	-80.83447960
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,396
Total Base Water Volume (gal):	11,315,136
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	85.34475	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	13.65658	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor	Water	7732-18-5	92.50000	0.69736	None
			Hydrochloric Acid	7647-01-0	7.50000	0.05654	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.12341	None
			Hydrochloric Acid	7647-01-0	15.00000	0.02178	None
KFR-23	Keane	Friction Reducer	Distillates (petroleum), hydrotreated light	64742-47-8	45.00000	0.03394	None
			copolymer of 2-propenamides	Proprietary	10.00000	0.00754	None
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00151	None
			oleic acid diethanolamide	93-83-4	2.00000	0.00151	None
KFEAC-30	Keane	Iron Control					

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			acetic acid	64-19-7	60.00000	0.00328	None
			Citric acid	77-92-9	40.00000	0.00219	None
MBC-516	Keane	Biocide					
			glutaral	111-30-8	26.70000	0.00237	None
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00071	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00047	None
KSI-19	Keane	Scale Inhibitor					
			Methanol	67-56-1	30.00000	0.00250	None
KAI-12	Keane	Acid Inhibitor					
			Methanol	67-56-1	90.00000	0.00118	None
			Fatty imidazoline	61790-69-0	5.00000	0.00007	None
			xylene	1330-20-7	5.00000	0.00007	None
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00007	None
			prop-2-yn-1-ol	107-19-7	5.00000	0.00007	None
			isoproyl alcohol	67-63-0	5.00000	0.00007	None
			ethylbenzene	100-41-4	1.00000	0.00001	None
KWG-111LS	Keane	Gel					
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00009	None
			Guar gum	9000-30-0	55.00000	0.00009	None
KWBO-2	Keane	Breaker					
			Sodium persulfate	7775-27-1	99.00000	0.00000	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	0.69736	
			Water	7732-18-5	85.00000	0.12341	
			copolymer of 2-propenamide	Proprietary	10.00000	0.00754	
			Citric acid	77-92-9	40.00000	0.00219	
			oleic acid diethanolamide	93-83-4	2.00000	0.00151	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00151	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00071	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00047	
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00009	
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00007	
			prop-2-yn-1-ol	107-19-7	5.00000	0.00007	
			isoproyl alcohol	67-63-0	5.00000	0.00007	
			xylene	1330-20-7	5.00000	0.00007	
			Fatty imidazoline	61790-69-0	5.00000	0.00007	
			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 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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SURFACE HOLE LOCATION (SHL)
 UTM 17 - NAD83
 N: 4362838.297
 E: 514248.618
 NAD27 WV NORTH
 N: 336013.637
 E: 1622931.860
 LAT/LON - NAD83
 LAT: 39.4149461
 LON: W80.8344480

BOTTOM HOLE LOCATION
 UTM 17 - NAD83
 N: 4360518.542
 E: 516029.745
 NAD27 WV NORTH
 N: 328303.610
 E: 1622948.590
 LAT/LON - NAD83
 LAT: 39.4158000
 LON: W80.8138350

Well is located on topo map 630 feet south of Latitude: 39° 25' 00"

APPROX. LANDING POINT
 UTM 17 - NAD83
 N: 4362934.714
 E: 515105.215
 NAD27 WV NORTH
 N: 336283.040
 E: 1625748.080
 LAT/LON - NAD83
 LAT: 39.4158000
 LON: W80.8245270



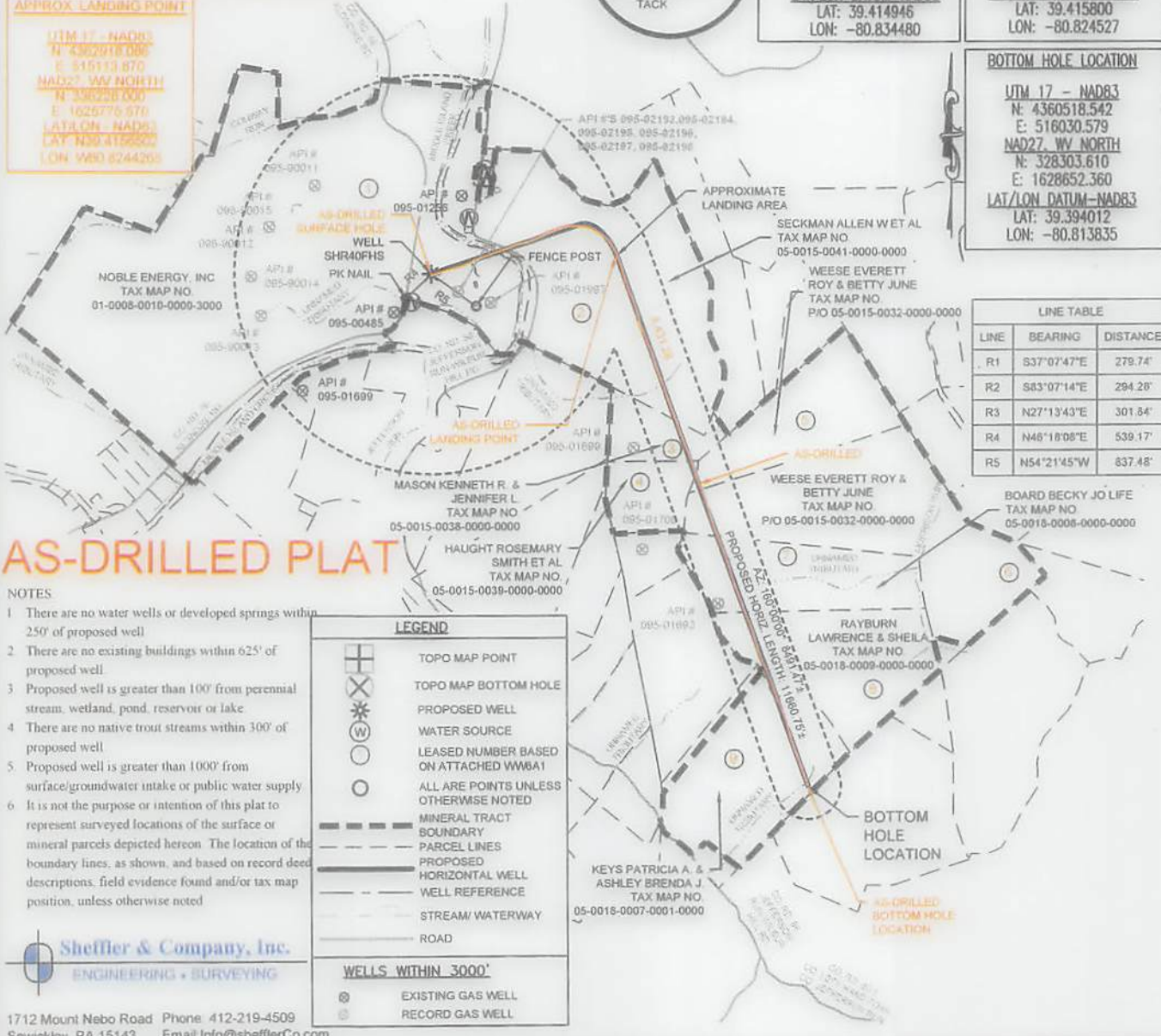
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 UTM 17 - NAD83
 N: 4362838.297
 E: 514248.618
 NAD27 WV NORTH
 N: 336013.637
 E: 1622931.860
 LAT/LON DATUM - NAD83
 LAT: 39.414946
 LON: -80.834480

APPROX. LANDING POINT
 UTM 17 - NAD83
 N: 4362934.714
 E: 515105.215
 NAD27 WV NORTH
 N: 336283.040
 E: 1625748.080
 LAT/LON DATUM - NAD83
 LAT: 39.415800
 LON: -80.824527

BOTTOM HOLE LOCATION
 UTM 17 - NAD83
 N: 4360518.542
 E: 516029.745
 NAD27 WV NORTH
 N: 328303.610
 E: 1622948.590
 LAT/LON DATUM - NAD83
 LAT: 39.415800
 LON: -80.813835

LINE TABLE

LINE	BEARING	DISTANCE
R1	S37°07'47"E	279.74'
R2	S83°07'14"E	294.26'
R3	N27°13'43"E	301.84'
R4	N48°18'08"E	539.17'
R5	N54°21'45"W	637.48'



AS-DRILLED PLAT

- NOTES**
- There are no water wells or developed springs within 250' of proposed well
 - There are no existing buildings within 625' of proposed well
 - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake
 - There are no native trout streams within 300' of proposed well
 - Proposed well is greater than 1000' from surface/groundwater intake or public water supply
 - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, and based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted

LEGEND

- TOPO MAP POINT
- TOPO MAP BOTTOM HOLE
- PROPOSED WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WM6A1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM WATERWAY
- ROAD

WELLS WITHIN 3000'

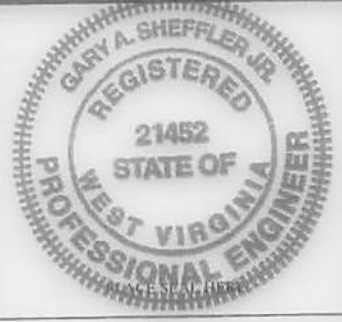
- EXISTING GAS WELL
- RECORD GAS WELL

Sheffler & Company, Inc.
 ENGINEERING • SURVEYING
 1712 Mount Nebo Road Phone 412-219-4509
 Sewickley, PA 15143 Email: info@shefflerCo.com

FILE # SHR 40 FHS
 DRAWING # SHR 40 FHS
 SCALE 1"=2500'
 MINIMUM DEGREE OF ACCURACY 1/2500
 PROVEN SOURCE USGS MONUMENT
 OF ELEVATION A 142: 724.61'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT 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: [Signature]
 R.P.E.: _____ L.L.S.: P.S. NO. _____



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

DATE: SEPTEMBER 4, 2014, OCTOBER 27, 2017

OPERATOR'S WELL #: SHR 40 FHS

API WELL # 47 095 2212
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: MIDDLE ISLAND CREEK ELEVATION: 771'
 COUNTY/DISTRICT: CENTERVILLE / TYLER QUADRANGLE: SHIRLEY, W. VA
 SURFACE OWNER: NOBLE ENERGY, INC ACREAGE: 543.35
 OIL & GAS ROYALTY OWNER: DAVID L. MAPLE, ET AL. ACREAGE: 351.16

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

TARGET FORMATION: MARCELLUS
 WELL OPERATOR: CNX GAS COMPANY, LLC
 Address: 1000 CONSOL ENERGY DRIVE, CANNONSBURG, PA 15317
 City: CANONSBURG State: PA Zip Code: 15317

ESTIMATED DEPTH: TVD: 6,385' ± TMD: 16,181' ±
 DESIGNATED AGENT: CHRIS TURNER
 Address: 1 DOMINION DRIVE
 City: JANE LEW State: WV Zip Code: 26378

Well is located on topo map 8,258 feet south of Latitude: 39° 25' 00"

Well is located on topo map 6,265 feet west of Longitude: 80° 47' 30"



1712 Mount Nebo Road Phone: 412-219-4509
Sewickley, PA 15143 Email: Info@shefflerCo.com

FILE # SHR 40 FHS
DRAWING # SHR 40 FHS
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PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
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Address: 1000 CONSOL ENERGY DRIVE, CANNONBURG, PA 15317 Address: 1 DOMINION DRIVE
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