

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

API 47-001-03291H6A County Barbour District Pleasant
Quad Philippi Pad Name PHL10HS Field/Pool Name Philippi
Farm Name WATSON, MARY LOU Well Number PHL10FHS
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 4,340,935.93 m Easting 583,166.68 m
Landing Point of Curve Northing 4,340,365.02 m Easting 582,891.13 m
Bottom Hole Northing 4,338,921.74 m Easting 583,746.92 m

Elevation (ft) 1618.50' 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)
Mineral Oil Based Mud, Bactericide, Polymers and Weighting Agents.

Date Permit Issued 03/21/2013 Date drilling commenced 10/08/2013 Date drilling ceased 03/08/2014
Date completion activities began 06/25/2014 Date completion activities ceased 07/16/2014
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 plu

Freshwater depth(s) ft 310', 580' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1825' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 573' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) Y

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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	26"	20"	100'	N	J-55 96# / 100'	N/A	Y
Surface	17 1/2"	13 3/8"	673'	N	J-55 54.5# / 673'	42'/121'	Y
Coal	-	-	-	-	-	-	-
Intermediate 1	12 1/4"	9 5/8"	2037'	N	J-55 36# / 2037'	43'/122'	Y
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	8 3/4"	5 1/2"	14248'	N	P-110 20# / 14248'	N/A	N
Tubing	5 1/2"	2 3/8"	8565'	N	P-110 4.7# / 8565'	N/A	N
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	Class A	148	16.2	1.20	177	Surface	8
Surface	Class A	480	15.2	1.26	605	Surface	8
Coal	-	-	-	-	-	-	-
Intermediate 1	Class A	555	15.2	1.25	694	Surface	8
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	Class A (Lead) / Class A (Tail)	1016 / 1681	14.21 / 14.8	1.26 / 1.25	1281 / 2101	1837' / 6534'	8
Tubing	-	-	-	-	-	-	-

Drillers TD (ft) 7712' Loggers TD (ft) 7881'
 Deepest formation penetrated: Lower Marcellus Plug back to (ft) N/A
 Plug back procedure: N/A

Kick Off Depth (ft) 5139'

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 - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface.. Coal - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface.. Intermediate - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing.. Production - Rigid bow spring centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve. (Note: cementing the 5 1/2" casing completely in open hole lateral and curve.)

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Plug and Perforation Shot Hole

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	6/25/2014	14220	14150	48	Marcellus
2	6/25/2014	14126	14002	40	Marcellus
3	6/26/2014	13974	13850	40	Marcellus
4	6/26/2014	13822	13698	40	Marcellus
5	6/27/2014	13670	13546	40	Marcellus
6	6/28/2014	13518	13394	40	Marcellus
7	6/29/2014	13366	13242	40	Marcellus
8	6/29/2014	13214	13090	40	Marcellus
9	6/29/2014	13062	12938	40	Marcellus
10	6/30/2014	12910	12786	40	Marcellus
11	6/30/2014	12758	12634	40	Marcellus
12	7/1/2014	12606	12482	40	Marcellus
13	7/1/2014	12454	12330	40	Marcellus
14	7/2/2014	12302	12178	40	Marcellus
15	7/3/2014	12150	12026	40	Marcellus
16	7/3/2014	11998	11874	40	Marcellus
17	7/4/2014	11846	11722	40	Marcellus
18	7/5/2014	11694	11570	40	Marcellus
19	7/6/2014	11542	11418	40	Marcellus
20	7/7/2014	11390	11266	40	Marcellus
21	7/7/2014	11238	11114	40	Marcellus
22	7/8/2014	11086	10962	40	Marcellus
23	7/9/2014	10934	10810	40	Marcellus
24	7/10/2014	10782	10658	40	Marcellus
25	7/10/2014	10630	10506	40	Marcellus
26	7/11/2014	10478	10354	40	Marcellus
27	7/11/2014	10326	10201	40	Marcellus
28	7/12/2014	10173	10048	40	Marcellus
29	7/12/2014	10020	9895	40	Marcellus
30	7/13/2014	9867	9742	40	Marcellus
31	7/14/2014	9714	9589	40	Marcellus
32	7/15/2014	9561	9436	40	Marcellus
33	7/16/2014	9408	9283	40	Marcellus
34					Stage 34 was abandoned
35	7/16/2014	9102	8977	40	Marcellus
36	7/16/2014	8949	8824	40	Marcellus
37	7/16/2014	8796	8671	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	6/25/2014	68.1	8397	8867	4594	225400	6295	3363
2	6/25/2014	73	8287	8344	5366	333640	7806	3522
3	6/26/2014	64.4	8427	7119	5726	325160	9655	3731
4	6/26/2014	57.1	8445	7729	6119	325600	14519	7808
5	6/27/2014	68	8503	7157	5842	325070	16442	5346
6	6/28/2014	72	8425	7111	5236	325200	14053	7148
7	6/29/2014	78.1	8487	6813	5618	325510	7302	3814
8	6/29/2014	66	7951	6488	5001	325290	10545	4194
9	6/29/2014	88.1	8443	6450	5230	326410	6755	3786
10	6/30/2014	86.1	8141	6239	5149	326120	6499	3561
11	6/30/2014	82.8	8231	8705	5826	326870	6928	3532
12	7/1/2014	75	8457	6323	6323	325900	8335	3983
13	7/1/2014	76	8063	7142	6018	299670	9301	3861
14	7/2/2014	81	8078	6780	5974	311000	7312	3618
15	7/3/2014	77.7	8532	9047	5469	331180	7192	3573
16	7/3/2014	76.6	8411	7073	5581	327940	8107	3731
17	7/4/2014	83.8	8447	6851	5380	325980	6819	3501
18	7/5/2014	88.4	8508	6681	5613	325920	6701	3772
19	7/6/2014	84.8	8420	7003	5661	329310	8194	3808
20	7/7/2014	86.6	8460	6776	6140	316520	6707	3466
21	7/7/2014	76.6	8497	6605	6431	325270	8492	3795
22	7/8/2014	83.3	8246	6416	5949	326440	6524	3493
23	7/9/2014	81.8	8228	6738	5734	327790	6489	3523
24	7/10/2014	76	8309	6889	5512	327820	8329	3741
25	7/10/2014	82.4	8174	6804	5880	326630	6670	3416
26	7/11/2014	83	7991	6347	6037	318000	6656	3483
27	7/11/2014	84.8	9056	6192	6000	285480	6269	3392
28	7/12/2014	88	8079	6529	5962	333300	7654	3433
29	7/12/2014	87	8355	6416	5107	324990	8665	3614
30	7/13/2014	88	7825	5962	5274	326380	7635	3518
31	7/14/2014	94	8010	6080	5704	320720	10778	3541
32	7/15/2014	88.8	7855	6222	5741	325260	7378	3474
33	7/16/2014	84	7969	6510	6018	328340	8172	3612
34								
35	7/16/2014	98.1	7870	5981	5296	327300	6799	3702
36	7/16/2014	92	7614	5829	5404	324440	6567	3404
37	7/16/2014	85	7589	6308	5185	327720	6845	3534

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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	
FILL	0	112			
SHALE	112	250			Gray
SHALE	250	330			Dark Gray
SAND	330	573			Light Gray
COAL	573	580			Black
SHALE	580	630			Black
SAND	630	700			Gray
SHALE	700	733			Black
SHALE	733	890			Black
SAND	890	950			Brown
SAND	950	1200			Light Brown
SHALE	1200	1350			Black
SAND	1350	1492			Gray
LIME	1492	1630			White
SAND	1630	2200			Gray
SHALE	2200				Black
FOURTH SAND	2348	2381			
SPEECHLEY	3201	3212			
BALLTOWN	3386	3422			
BRADFORD	3688	3930			
RILEY	4118	4299			
BENSON	4512	4578			
FIRST ELK	4744	4802			
SECOND ELK	4896	4976			
THIRD ELK	5155	5193			
FOURTH ELK	5426	5464			
SYCAMORE GRIT	6752	7156			
FRIB	7156	7611			
BURKETT	7611	7633			
TULLY LIMESTONE	7633	7690			
HAMILTON SHALE	7690	7850			
UPPER MARCELLUS	7850	7868			
MIDDLE MARCELLUS	7868	7879			
LOWER MARCELLUS	7879	7881			

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