

JK

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

API 47-051-01663 County Marshall District Webster
Quad Majorsville Pad Name WEB13 Field/Pool Name NA
Farm name Lucille Hartley Well Number WEB13 BHS
Operator (as registered with the OOG) Noble Energy, Inc.
Address 333 Technology Drive, Suite 116 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4422745.74 Easting 538475.30
Landing Point of Curve Northing 4422817.67 Easting 538797.78
Bottom Hole Northing 4421518.88 Easting 539818.81

Elevation (ft) 1265.72 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

Drilling 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 8/14/2013 Date drilling commenced 12/13/2013 Date drilling ceased 4/20/2014
Date completion activities began 7/6/2014 Date completion activities ceased 10/4/2014
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

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

Freshwater depth(s) ft 128', 200', 300' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None noted for Offsets Void(s) encountered (Y/N) depths None noted for Offsets
Coal depth(s) ft 703' - Pittsburgh Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) _____

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Reviewed by: _____

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API 47-051 - 01663

Farm name Lucille Hartley

Well number WEB13 BHS

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	36	30	40	N			
Surface	24	20	411.5	N	J-55 94#		Y
Coal							
Intermediate 1	17 1/2	13 3/8	1184.1	N	J-55 54.5#		Y
Intermediate 2	12 3.8	9 5/8	3125.7	N	J-55 36#		Y
Intermediate 3							
Production	8 3/4	5 1/2	12715.7	N	P-110 20#		Y
Tubing							
Packer type and depth set							

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	Type I	625	15.6	1.19	131	0	8
Coal	Type I	1018	15.8	1.16	210	0	8
Intermediate 1	Type I	1190	15.8	1.15	243	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	Lead - 647 Tail 1324	Lead - 14.2 Tail - 14.8	Lead - 1.56 Tail - 1.39	Lead - 180 Tail 328	2900	8
Tubing							

Drillers TD (ft) 12725 Loggers TD (ft) 12700

Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole

Plug back procedure Not a Pilot Hole

Kick off depth (ft) 7226 ft

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 _____

4 Centralizers on Surface (1 every 3rd joint) 10 Centralizers on Coal String (1 every 3rd joint) 59 Centralizers on Intermediate 1 (1 every 3rd Joint)
183 Centralizers on Production (1 every 3rd to Curve, then 1 every joint to TD)

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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Perforation Record

API: 47-051-01663

Farm name
Hartley, Lucille

Well Name: WEB-13 B-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Sleeve	6/13/2014	12588	12594		
1	8/18/2014	12454	12592	48	Marcellus
1 Reperf	8/20/2014	12469	12534	48	Marcellus
1C	8/22/2014	12358	12424	36	Marcellus
2	8/24/2014	12180	12310	50	Marcellus
3	8/24/2014	12002	12132	50	Marcellus
4	8/25/2014	11824	11954	50	Marcellus
5	8/26/2014	11646	11776	50	Marcellus
6	8/27/2014	11452	11606	50	Marcellus
7	8/28/2014	11252	11406	50	Marcellus
8	8/28/2014	11052	11206	50	Marcellus
8 Reperf	8/28/2014	11071	11188	48	Marcellus
8C	9/9/2014	10956	11022	28	Marcellus
9	9/10/2014	10786	10924	48	Marcellus
10	9/10/2014	10614	10752	48	Marcellus
11	9/11/2014	10442	10580	48	Marcellus
12 + Inj Test	9/14/2014	10244	10410	58	Marcellus
13	9/14/2014	10044	10211	58	Marcellus
14	9/14/2014	9844	10011	48	Marcellus
15	9/15/2014	9644	9811	48	Marcellus
16	9/15/2014	9444	9611	48	Marcellus
17	9/15/2014	9244	9411	48	Marcellus
18	9/15/2014	9044	9211	48	Marcellus
19	9/16/2014	8844	9011	48	Marcellus
20	9/16/2014	8644	8811	48	Marcellus
21	9/16/2014	8444	8611	48	Marcellus
22	9/16/2014	8244	8411	48	Marcellus
23	9/16/2014	8044	8211	48	Marcellus
24	9/17/2014	7844	8011	48	Marcellus
25	9/17/2014	7644	7811	48	Marcellus
26	9/17/2014	7444	7611	48	Marcellus
27	9/18/2014	7244	7411	48	Marcellus
28	9/18/2014	7044	7211	48	Marcellus

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STIMULATION INFORMATION PER STAGE

API: 47-051-01663

Farm name
Hartley, Lucille

Well Name: WEB-13 B-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLS)	Amount of N ² / other (units)
1	8/18/2014	49	8,606	-	4,420	14,467	7560.95	
1 Reperf	8/20/2014	42.3	8,273	-	4,543	23,537	8643.76	
1C	8/22/2014	65.2	7,985	7,450	7,245	435,980	17402.86	
2	8/24/2014	70.2	7,883	7,165	4,861	588,787	17580.38	
3	8/24/2014	89.5	7,921	6,595	4,694	608,979	13647.38	
4	8/25/2014	84.7	7,724	6,210	4,735	606,863	21973.38	
5	8/26/2014	81.2	7,935	7,048	5,085	602,092	13274.38	
6	8/27/2014	81.6	7,834	6,437	5,194	594,224	18753.38	
7	8/28/2014	85.9	8,186	6,280	5,089	602,003	15392.38	
8	8/28/2014	55.1	9,148	5,987	5,068	7,373	7872.96	
8 Reperf	8/28/2014	82.3	8,426	-	4,914	241,104	12368.98	
8C	9/9/2014	88.3	7,450	5,988	4,664	384,446	12418.38	
9	9/10/2014	89.9	7,271	5,563	5,055	600,465	12243.98	
10	9/10/2014	87.5	7,563	6,559	4,909	607,055	14946.38	
11	9/11/2014	84.8	7,233	6,570	4,920	489,335	11824.04	
12 + Inj Test	9/14/2014	88.9	7,338	6,083	5,210	605,436	14581.38	
13	9/14/2014	89.5	7,355	6,098	5,156	492,260	12300.38	
14	9/14/2014	89.4	7,412	6,492	7,168	579,670	11427.38	
15	9/15/2014	84.2	7,395	6,792	4,790	560,718	16460.38	
16	9/15/2014	89.7	7,460	6,405	5,048	602,809	14103.38	
17	9/15/2014	89.2	7,701	6,447	5,030	600,454	12803.38	
18	9/15/2014	88	7,122	5,712	4,987	605,332	15972.98	
19	9/16/2014	88.8	7,099	6,323	4,466	606,080	14017.38	
20	9/16/2014	89.5	7,116	6,533	4,649	600,516	12450.38	
21	9/16/2014	87.2	7,476	6,211	5,119	528,263	11786.98	
22	9/16/2014	89.1	7,043	6,225	4,881	582,022	11564.38	
23	9/16/2014	86.5	7,129	6,950	4,743	600,782	15739.38	
24	9/17/2014	88.2	7,055	6,322	4,950	600,736	16574.38	
25	9/17/2014	89.9	6,873	5,908	4,922	543,432	11173.98	
26	9/17/2014	89.9	6,969	6,328	4,813	600,147	11622.98	
27	9/18/2014	88.3	6,923	5,794	4,459	608,785	12586.38	
28	9/18/2014	86.3	6,547	6,177	4,424	591,064	11983.18	

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WEB 13 BHS

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Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	729	0	729	
Pittsburgh Coal	729	739	729	739	
Shale and Sandstone	739	1355	739	1355	
Gas Sand	1355	1418	1355	1418	
Shale	1418	1490	1418	1490	
1st Salt Sand	1490	1514	1490	1514	
Shale	1514	1640	1514	3181	
Maxton Sand	1640	1756	1640	3201	
Shale	1756	1786	1756	4282	
Big Lime	1786	1861	1786	4287	
Big Injun	1861	2010	1861	4960	
Price	2010	2361	2010	5068	
Murrysville	2361	2374	2361	5170	
Shale	2374	2834	2374	5824	
Fifth Sand	2834	2871	2834	6299	
Shale	2871	3181	2871	6429	
Speechley Sand	3181	3201	3181	3201	
Shale	3201	4272	3201	4282	
Warren Sand	4272	4277	4282	4287	
Shale	4277	4943	4287	4960	
Java Shale	4943	5050	4960	5068	
Pipe Creek Shale	5050	5151	5068	5170	
Angola Shale	5151	5798	5170	5824	
Rhinestreet	5798	6258	5824	6299	
Cashaqua	6258	6366	6299	6429	
Middlesex	6366	6397	6429	6471	
West River	6397	6468	6471	6584	
Burkett	6468	6487	6584	6620	
Tully Limestone	6487	6517	6620	6686	
Hamilton	6517	6634	6686	7145	Gas
Marcellus	6634	6685	7145	not encountered	
Onondaga	6685	6693	not encountered	not encountered	
Huntersville	6693		not encountered	not encountered	

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/18/2014
Job End Date:	9/18/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01663-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	WEB-13B
Longitude:	-80.54971400
Latitude:	39.95388100
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,728
Total Base Water Volume (gal):	18,188,362
Total Base Non Water Volume:	0

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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	Operator	Carrier					
			Water	7732-18-5	100.00000	89.76382	
40/70 White	FTSI	proppant					
			Silica, Quartz	14808-60-7	100.00000	7.61594	
100 Mesh Sand	FTSI	proppant					
			Silica, Quartz	14808-60-7	100.00000	2.03867	
Hydrochloric Acid (HCl)	FTSI	Acid					
			Water	7732-18-5	63.00000	0.26841	
			Hydrogen Chloride	7647-01-0	37.00000	0.15764	
FRW-600	FTSI	Friction Reducer					
			Acrylamide Polymer	Trade Secret	100.00000	0.05627	
			Hydrotreated light distillate	64742-47-8	30.00000	0.01688	
			Ammonium acetate	631-61-8	6.00000	0.00338	
CS-500 SI	FTSI	Scale inhibitor					
			Water	7732-18-5	55.00000	0.02722	
			Acrylic Polymer	Proprietary	24.00000	0.01188	
			Ethylene glycol	107-21-1	10.00000	0.00495	
			Sodium chloride	7647-14-5	6.00000	0.00297	
			Sodium Polyacrylate	9003-04-7	5.00000	0.00247	

CI-3240	FTSI	Biocide				
			Water	7732-18-5	55.00000	0.02200
			Dazomet (Tetrahydro-3, 5-dimethyl-2H-1, 3, 5-thiadiazine-2-thione.	533-74-4	24.00000	0.00960
			Sodium Hydroxide	1310-73-2	23.00000	0.00920
HVG-1	FTSI	Water Gelling Agent				
			Guar Gum	9000-30-0	55.00000	0.00384
			Petroleum Distillate	64742-47-8	55.00000	0.00384
			Raffinates (Petroleum), Sorption Process	64741-85-1	50.00000	0.00349
			Clay	1302-78-9	5.00000	0.00035
			Clay	14808-60-7	2.00000	0.00014
			Surfactant	Proprietary	2.00000	0.00014
			Surfactant	154518-36-2	1.00000	0.00007
			Surfactant	9043-30-5	1.00000	0.00007
			Surfactant	24938-91-8	1.00000	0.00007
FE-100L	FTSI	Iron control				
			Water	7732-18-5	60.00000	0.00081
			Citric acid	77-92-9	55.00000	0.00074
CI-150	FTSI	Acid Corrosion Inhibitor				
			Organic amine resin salt	Proprietary	30.00000	0.00023
			Isopropanol	67-63-0	30.00000	0.00023
			Ethylene Glycol	107-21-1	30.00000	0.00023
			Dimethylformamide	68-12-2	10.00000	0.00008
			Alkylene Oxide Block Polymer	Proprietary	10.00000	0.00008
			Quaternary ammonium compound	Proprietary	10.00000	0.00008
			Aromatic aldehyde	Proprietary	10.00000	0.00008
			Water	7732-18-5	5.00000	0.00004
			Diethylene glycol	111-46-6	1.00000	0.00001
			Fatty Acid	Proprietary	0.10000	0.00000
			Aliphatic alcohol	Proprietary	0.10000	0.00000
			Fatty Acid Salt	Proprietary	0.10000	0.00000
NE-100	FTSI	Non-emulsifier				
			Water	7732-18-5	90.00000	0.00034
			2-Butoxyethanol	111-76-2	10.00000	0.00004
			2-Propanol	67-63-0	10.00000	0.00004
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00002
			Benzene, C10-16 Alkyl Derivatives	68648-87-3	0.04000	0.00000
			Unsulphonated Matter	Proprietary	0.03000	0.00000
			Sulfuric Acid	7664-93-9	0.01000	0.00000
			Sulfur Dioxide	7446-09-5		0.00000
APB-1	FTSI	Gel breaker				

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		Ammonium Persulfate	7727-54-0	100.00000	0.00027
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.					

* 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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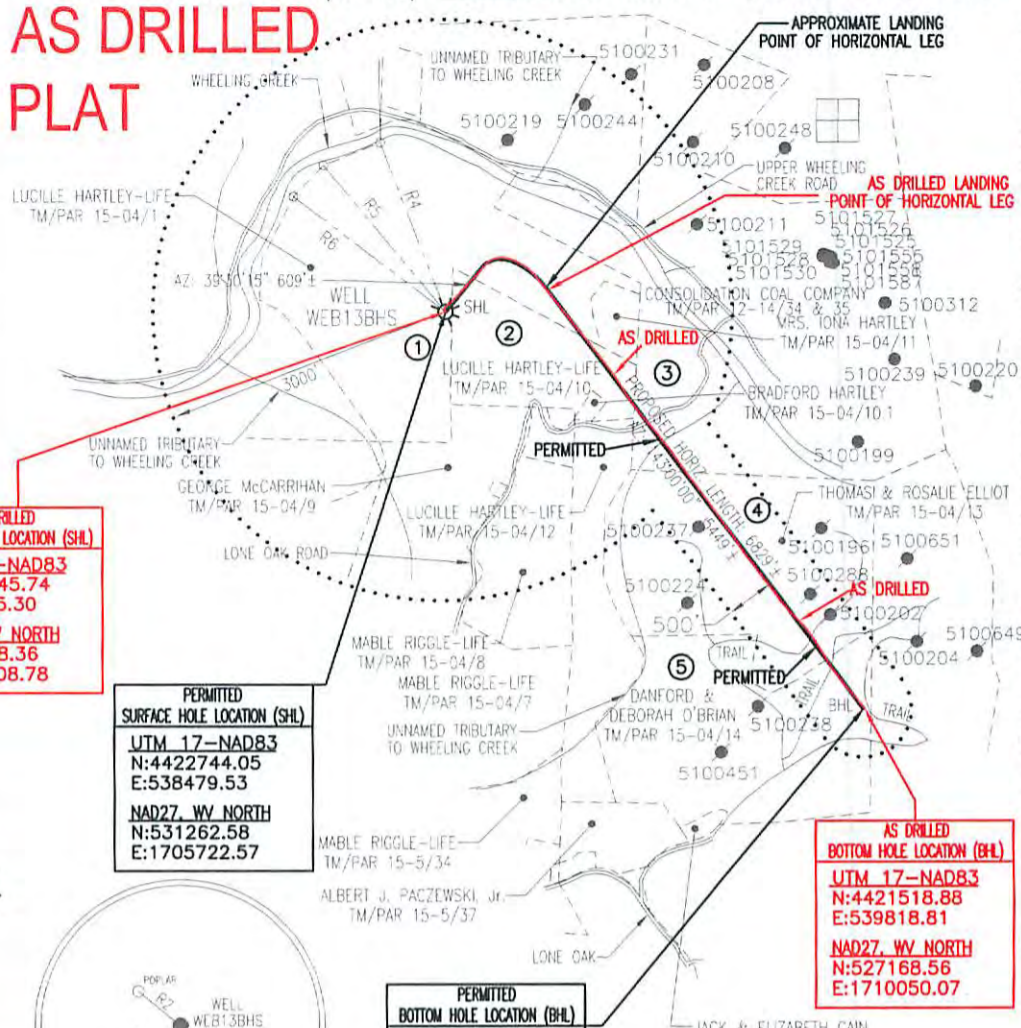
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Well is located on topo map 1,609' feet south of Latitude: 39° 57' 30"

Well is located on topo map 2,313' feet west of Longitude: 80° 32' 30"

AS DRILLED PLAT

LEGEND	
	- TOPO MAP POINT
	- WELL
	- ALL ARE POINTS UNLESS OTHERWISE NOTED
	- LEASE NUMBER
	- MINERAL TRACT BOUNDARY
	- PARCEL LINES
	- WELL REFERENCE
	- PROPOSED HORIZONTAL WELL
	- ROAD
	- STREAM CENTER LINE
	- AS DRILLED
WELLS WITHIN 3000'	
	- EXISTING WELLS
	- PLUGGED WELLS



AS DRILLED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4422745.74
 E:538475.30
 NAD27_WV NORTH
 N:531268.36
 E:1705708.78

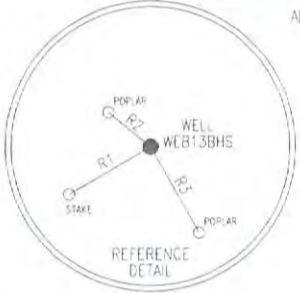
PERMITTED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4422825.50
 E:538794.48
 NAD27_WV NORTH
 N:531512.57
 E:1706760.52

AS DRILLED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4422817.67
 E:538797.78
 NAD27_WV NORTH
 N:531486.68
 E:1706770.92

PERMITTED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4422744.05
 E:538479.53
 NAD27_WV NORTH
 N:531262.58
 E:1705722.57

PERMITTED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4421517.48
 E:539814.93
 NAD27_WV NORTH
 N:527164.20
 E:1710037.25

AS DRILLED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4421518.88
 E:539818.81
 NAD27_WV NORTH
 N:527168.56
 E:1710050.07



LINE	BEARING	DISTANCE
R1	S 59°58'42" W	202.91'
R2	N 51°08'15" W	116.62'
R3	S 29°16'47" E	211.93'
R4	N 19°31'59" W	1828.47'
R5	N 38°56'00" W	1913.66'
R6	N 52°24'55" W	1909.93'

- 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, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

PARCEL	LESSOR
1	LUCILLE HARTLEY, LIFE TENANT, ET AL.
2	GEORGE MCCARRIHAN ET AL.
3	MABEL L. RIGGLE, LIFE TENANT
4	ELLSWORTH SCHERICH ET UX., ET AL.
5	ELLSWORTH SCHERICH ET UX., ET AL.

Blue Mountain Inc.
 10125 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

FILE #: WEB13BHS-AS DRILLED
 DRAWING #: WEB13BHS-AS DRILLED
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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



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



DATE: DECEMBER 8, 2014
 OPERATOR'S WELL #: WEB13BHS-AS DRILLED
 API WELL #: 47 51 01663
 STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK ELEVATION: 1264.27'

COUNTY/DISTRICT: MARSHALL / WEBSTER QUADRANGLE: MAJORSVILLE, WV-PA 7.5'

SURFACE OWNER: LUCILLE HARTLEY-LIFE (BRADFORD W. HARTLEY) ACREAGE: 153.408±

OIL & GAS ROYALTY OWNER: LUCILLE HARTLEY, LIFE TENANT, ET AL. ACREAGE: 700.629±

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,668'± TMD: 12,749'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
 Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301