

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

*pm*

API 47-051-01639 County Marshall District Sandhill  
Quad Valley Grove Pad Name SHL-13 Field/Pool Name \_\_\_\_\_  
Farm name Paul H. and Annette Hemsley Well Number SHL13BHS  
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 4428322.04 Easting 539642.75  
Landing Point of Curve Northing 4428313.46 Easting 539408.86  
Bottom Hole Northing 4429869.29 Easting 538236.57

Elevation (ft) 1288.91 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 6/13/2013 Date drilling commenced 8/11/2013 Date drilling ceased 11/10/2013  
Date completion activities began 5/24/14 Date completion activities ceased 7/9/14  
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 561', 763' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1600' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 763 - 785.04', 1266.74' - 1269.77' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) Y

Reviewed by: \_\_\_\_\_

10/31/2014

API 47-051 - 01639 Farm name Paul H. and Annette Hemsley Well number SHL13BHS

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			Y
Surface	24	20	418	N	J-55 94#		Y
Coal							
Intermediate 1	17-1/2	13-3/8	1197	N	J-55 54.5#		Y
Intermediate 2	12-3/8	9-5/8	3191	N	J-55 36#		Y
Intermediate 3							
Production	8-3/4	5-1/2	13664	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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Type 1	484	15.6	1.19	110	0	8
Coal							
Intermediate 1	Type 1	1029	15.6	1.19	225	0	8
Intermediate 2	Type 1	1264	15.6	1.19	268	0	8
Intermediate 3							
Production	Class A	2010	14.8	1.39	508	2900	8
Tubing							

Drillers TD (ft) <sup>13885</sup> \_\_\_\_\_ Loggers TD (ft) <sup>13850</sup> \_\_\_\_\_

Deepest formation penetrated Marcellus Plug back to (ft) \_\_\_\_\_

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

Kick off depth (ft) <sup>6097</sup> \_\_\_\_\_

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 (Every third joint), 10 on Intermediate 1 (Every third joint), 80 on Intermediate 2 (Every third joint), and 207 on Production casing (Every third joint, till Curve, then Every Joint).

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 \_\_\_\_\_



Perforation Record

API: 47-051-01639

Farm name: \_\_\_\_\_

Paul H & Annette A  
Hemsley

Well Name: SHL-13B-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
1	5/24/2014	13363	13517	40	Marcellus
2	5/24/2014	13073	13327	48	Marcellus
3	5/25/2014	12773	13027	40	Marcellus
4	5/27/2014	12536	12727	40	Marcellus
5	5/28/2014	11673	11927	40	Marcellus
6	5/28/2014	11373	11627	40	Marcellus
7	5/29/2014	11125	11327	40	Marcellus
8	5/29/2014	10875	11077	40	Marcellus
9	5/29/2014	10625	10827	40	Marcellus
10	5/30/2014	10323	10577	40	Marcellus
11	5/30/2014	10023	10277	40	Marcellus
12	5/30/2014	9723	9977	40	Marcellus
13	5/31/2014	9423	9677	40	Marcellus
14	5/31/2014	9123	9377	40	Marcellus
15	6/1/2014	8823	9077	40	Marcellus
16	6/1/2014	8523	8777	40	Marcellus
17	6/1/2014	8223	8477	40	Marcellus
18	6/2/2014	7923	8177	40	Marcellus
19	6/2/2014	7623	7877	40	Marcellus
20	6/2/2014	7375	7577	40	Marcellus
21	6/3/2014	7125	7327	40	Marcellus

STIMULATION INFORMATION PER STAGE

API: 47-051-01639

Farm name:

Paul H & Annette A Hemsley

Well Name: SHL-13B-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N <sup>2</sup> / other
1 Inj Test							-	
1.1	5/24/2014	85.1	8,112	6,921	4,896	7007	7,287.77	
1.2	5/24/2014	89.1	7,976	6,276		6366	5,935.81	
1.3	5/24/2014	88.6	7,689	5,716		5806	5,732.43	
2.1	5/24/2014	86.3	8,178	6,259	3,892	6347	6,248.47	
2.2	5/24/2014	83.1	7,957	6,222		6307	5,636.40	
2.3	5/24/2014	77.4	7,522	5,745		5825	5,433.60	
3.1	5/26/2014	83.4	8,168	6,706	4,249	6793	6,363.06	
3.2	5/26/2014	78.9	8,149	6,974		7056	5,277.95	
3.3	5/26/2014	47.1	8,728	8,333		8383	7,416.90	
4.1	5/27/2014	85.3	7,657	6,498	4,813	6587	6,954.17	
4.2	5/27/2014	80.7	7,596	6,183		6268	5,935.26	
4.3	5/27/2014	77.5	8,025	8,028		8110	5,936.33	
5.1	5/28/2014	84.9	7,880	6,014	4,400	6104	6,429.24	
5.2	5/28/2014	81.4	8,371	5,799		5886	5,910.43	
5.3	5/28/2014	74.1	8,133	9,257		9336	6,463.48	
6.1	5/28/2014	84.4	7,625	5,996	4,307	6087	6,191.26	
6.2	5/28/2014	82	8,449	7,083		7171	5,741.55	
6.3	5/28/2014	62	8,150	7,788		7856	5,906.02	
7.1	5/29/2014	87.1	7,575	6,015	4,358	6109	5,978.98	
7.2	5/29/2014	86.9	8,517	6,792		6886	4,583.50	
7.3	5/29/2014	79.2	8,518	6,880		6967	5,053.57	
8.1	5/29/2014	84.1	7,582	5,477	4,230	5569	6,575.12	
8.2	5/29/2014	86.3	8,173	5,993		6088	5,399.24	
8.3	5/29/2014	81.7	8,307	6,200		6290	4,748.14	
9.1	5/29/2014	84.6	7,531	5,822	4,373	5916	5,305.71	
9.2	5/29/2014	85.7	7,738	6,449		6544	4,785.17	
9.3	5/29/2014	84	7,743	6,325		6418	4,769.45	
10.1	5/30/2014	85.6	7,716	5,717	4,294	5813	6,107.69	
10.2	5/30/2014	88.7	8,188	6,135		6234	5,172.48	
10.3	5/30/2014	89.3	8,078	5,915		6015	5,233.36	
11.1	5/30/2014	86.5	7,669	6,239	4,498	6337	5,476.87	
11.2	5/30/2014	84.6	7,848	7,772		7868	5,402.48	
11.3	5/30/2014	85.8	7,830	6,328		6425	5,360.79	
12.1	5/31/2014	85.8	7,783	6,542	4,236	6640	6,537.44	
12.2	5/31/2014	81.2	7,986	6,210		6303	5,640.57	
12.3	5/31/2014	88.8	8,512	7,272		7373	5,368.74	
13.1	5/31/2014	84.5	7,638	6,354	4,697	6452	5,848.29	
13.2	5/31/2014	87.6	8,247	7,010		7111	5,128.90	
13.3	5/31/2014	86.3	8,404	6,682		6782	5,016.55	
14.1	5/31/2014	82	7,328	5,846	4,164	5942	6,171.79	

10/31/2014

STIMULATION INFORMATION PER STAGE

API: 47-051-01639

Farm name:

Paul H & Annette A Hemsley

Well Name: SHL-13B-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N <sup>2</sup> / other
14.2	5/31/2014	84.3	8,627	7,709		7808	5,137.21	
14.3	6/1/2014	82.7	8,121	7,248		7345	5,556.19	
15.1	6/1/2014	85.1	7,434	5,381	4,703	5481	6,079.21	
15.2	6/1/2014	89.3	8,381	6,067		6172	5,252.19	
15.3	6/1/2014	89.9	7,641	5,792		5897	4,961.02	
16.1	6/1/2014	84.9	7,229	5,829	4,515	5930	5,669.86	
16.2	6/1/2014	86.3	8,220	6,348		6451	4,899.33	
16.3	6/1/2014	83.7	8,308	7,125		7225	5,020.67	
17.1	6/1/2014	85.9	7,409	5,492	4,553	5595	5,975.84	
17.2	6/1/2014	73	8,165	8,599		8689	5,310.31	
17.3	6/1/2014	39.2	8,656	8,403		8460	10,504.36	
18.1	6/2/2014	85.6	7,208	5,423	4,941	5527	6,062.73	
18.2	41792	89.1	8341	5819		5926	5509.1457	
18.3	41792	88.1	9084	6236		6342	5421.7857	
19.1	41792	84.9	7102	6225	4543	6329	5794.3738	
19.2	41792	89.3	7269	5847		5956	5180.3095	
19.3	41792	90	7609	6211		6320	5226.9286	
20.1	41792	85.3	6987	6093	4537	6198	4746.9762	
20.2	41793	88.4	7388	5905		6014	4357.3095	
20.3	41793	86	7636	7359		7465	4497.381	
21.1	41793	84.3	6957	5958	4584	6063	4684.8524	
21.2	41793	83.7	8001	7230		7335	4712.7143	
21.3	41793	70.6	8492	7770		7862	4719.8095	



API 47- 051 - 01639 Farm name Paul H. and Annette Hemsley Well number SHL13BHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6695.0</u> TVD	<u>13685</u> 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 4608 mcfpd Oil 96 bpd NGL 292 bpd Water 528 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
		PLEASE SEE			
		FORMATION SHEET			

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling  
Address 5400 D Big Tyler Road City Charleston State WV Zip 25313

Logging Company Diversified Well Logging  
Address 711 West 10th Street City Reserve State LA Zip 70084

Cementing Company Schlumberger  
Address 4600 J. Barry Court, Suite 200 City Canonsburg State PA Zip 15317

Stimulating Company Halliburton Energy SRCS  
Address 121 Champion Way, Suite 110 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Regina A. Logue Telephone 724-820-3559  
Signature Regina A. Logue Title Regulatory Analyst Date 10/31/14

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

## SHL 13B

47-051-01639

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	732	0	732	
Pittsburgh Coal	732	742	732	742	
Shale and Sandstone	742	1516	742	1516	
Gas Sand	1516	1574	1516	1574	
Shale	1574	1693	1574	1693	
1st Salt Sand	1693	1756	1693	1756	
2nd Salt Sand	1756	1765	1756	1765	
3rd Salt Sand	1765	1815	1765	1815	
Shale	1815	1841	1815	1841	
Maxton Sand	1841	1958	1841	1958	
Shale	1958	1978	1958	2509	
Big Lime	1978	2023	1978	2023	
Big Injun	2023	2165	2023	2165	
Price	2165	2509	2165	2509	
Murrysville	2509	2522	2509	2872	
Shale	2522	2726	2522	2726	
50' Sand	2726	2743	2726	2743	
Shale	2743	2829	2743	2829	
Gordon Stray	2829	2841	2829	2841	
Shale	2841	2872	2841	2872	
Gordon	2872	2890	2872	2890	
Shale	2890	2985	2890	2985	
Fifth Sand	2985	3023	2985	3023	
Shale	3023	3423	3023	3423	
Speechley Sand	3423	3447	3423	3447	
Shale	3447	4331	3447	4333	
Warren Sand	4331	4345	4333	4347	
Shale	4345	5252	4347	5255	
Java Shale	5252	5322	5255	5325	
Pipe Creek Shale	5322	5366	5325	5369	
Angola Shale	5366	5992	5369	6012	
Rhinestreet	5992	6406	6012	6522	
Cashaqua	6406	6498	6522	6644	
Middlesex	6498	6535	6644	6697	
West River	6535	6576	6697	6759	
Burkett	6576	6609	6759	6813	
Tully Limestone	6609	6637	6813	6863	
Hamilton	6637	6751	6863	7153	
Marcellus	6751	6802	7153	not encountered	Gas
Onondaga	6802	not encountered	not encountered	not encountered	
Huntersville	6807	not encountered	not encountered	not encountered	

10/31/2014



# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/24/2014
Job End Date:	6/3/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01639-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	SHL13 B
Longitude:	-80.53576250
Latitude:	40.00410000
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,695
Total Base Water Volume (gal):	14,937,224
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
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100.00000	96.45191	Density = 8.340
SAND - COMMON WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	1.89067	
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	0.55787	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent	Hydrochloric acid	7647-01-0	10.00000	0.09160	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.03052	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic anhydride	108-24-7	100.00000	0.00475	
			Acetic acid	64-19-7	60.00000	0.00285	
BE-9	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00430	
LP-65	Halliburton	Scale Inhibitor					

			Ammonium chloride	12125-02-9	10.00000	0.00262
Biovert NWB	Halliburton	Viscosifier				
			Poly lactide resin	Confidential	100.00000	0.00219
WG-36 GELLING AGENT	Halliburton	Gelling Agent				
			Guar gum	9000-30-0	100.00000	0.00210
LoSurf-300D	Halliburton	Non-ionic Surfactant				
			Ethanol	64-17-5	60.00000	0.00096
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00048
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00008
			Naphthalene	91-20-3	5.00000	0.00008
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00002
LGC-36 UC	Halliburton	Liquid Gel Concentrate				
			Guar gum	9000-30-0	60.00000	0.00047
			Naphtha, hydrotreated heavy	64742-48-9	60.00000	0.00047
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor				
			Methanol	67-56-1	60.00000	0.00047
			Propargyl alcohol	107-19-7	10.00000	0.00008
LCA-1	Halliburton	Solvent				
			Paraffinic solvent	Confidential	100.00000	0.00031
SP BREAKER	Halliburton	Breaker				
			Sodium persulfate	7775-27-1	100.00000	0.00011
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 Ingredient(s)				
			Water	7732-18-5		1.03576
		Other Ingredient(s)				
			Polyacrylamide copolymer	Confidential		0.03052
		Other Ingredient(s)				
			Organic phosphonate	Confidential		0.01570
		Other Ingredient(s)				
			Fatty acid tall oil amide	Confidential		0.00509
		Other Ingredient(s)				
			Sodium chloride	7647-14-5		0.00509
		Other Ingredient(s)				
			Ammonium chloride	12125-02-9		0.00509
		Other Ingredient(s)				
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00509
		Other Ingredient(s)				
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00102
		Other Ingredient(s)				
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00102
		Other Ingredient(s)				

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		Oxyalkylated phenolic resin	Confidential		0.00048
	Other Ingredient(s)				
		Formaldehyde	50-00-0		0.00026
	Other Ingredient(s)				
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00024
	Other Ingredient(s)				
		Alcohols, C14-C15, ethoxylated	68951-67-7		0.00024
	Other Ingredient(s)				
		Fatty acids, tall oil	Confidential		0.00024
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00016
	Other Ingredient(s)				
		Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		0.00011
	Other Ingredient(s)				
		Quaternary ammonium compounds, bis(hydrogenated tallow alkyl) dimethyl, salts with bentonite	68953-58-2		0.00004
	Other Ingredient(s)				
		Olefins	Confidential		0.00004
	Other Ingredient(s)				
		Olefins	Confidential		0.00004
	Other Ingredient(s)				
		Surfactant mixture	Confidential		0.00002
	Other Ingredient(s)				
		Silica gel	112926-00-8		0.00002
	Other Ingredient(s)				
		Surfactant mixture	Confidential		0.00002
	Other Ingredient(s)				
		Fatty alcohol polyglycol ether surfactant	9043-30-5		0.00001
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Crystalline silica, quartz	14808-60-7		0.00000
	Other Ingredient(s)				
		Sodium sulfate	7757-82-6		0.00000

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\* 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.

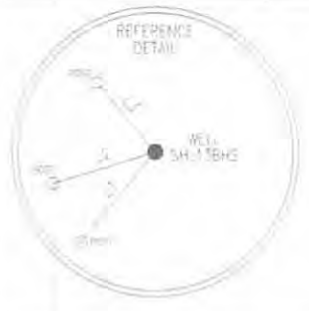
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



47051-9639

Well is located on topo map 13,683' feet south of Latitude: 40° 02' 30"

Well is located on topo map 10,019' feet west of Longitude: 80° 30' 00"



LINE	BEARING	DISTANCE
L1	S 59°46'05" W	252.11'
L2	S 3°06'50" W	231.46'
L3	N 30°06'24" W	195.94'

**AS DRILLED  
BOTTOM HOLE LOCATION (BHL)**  
UTM 17-NAD83  
N:4429869.29  
E:538236.57  
**NAD27, WV NORTH**  
N:554657.55  
E:1705316.29

**PERMITTED  
BOTTOM HOLE LOCATION (BHL)**  
UTM 17-NAD83  
N:4429880.49  
E:538272.02  
**NAD27, WV NORTH**  
N:554692.36  
E:1705433.22

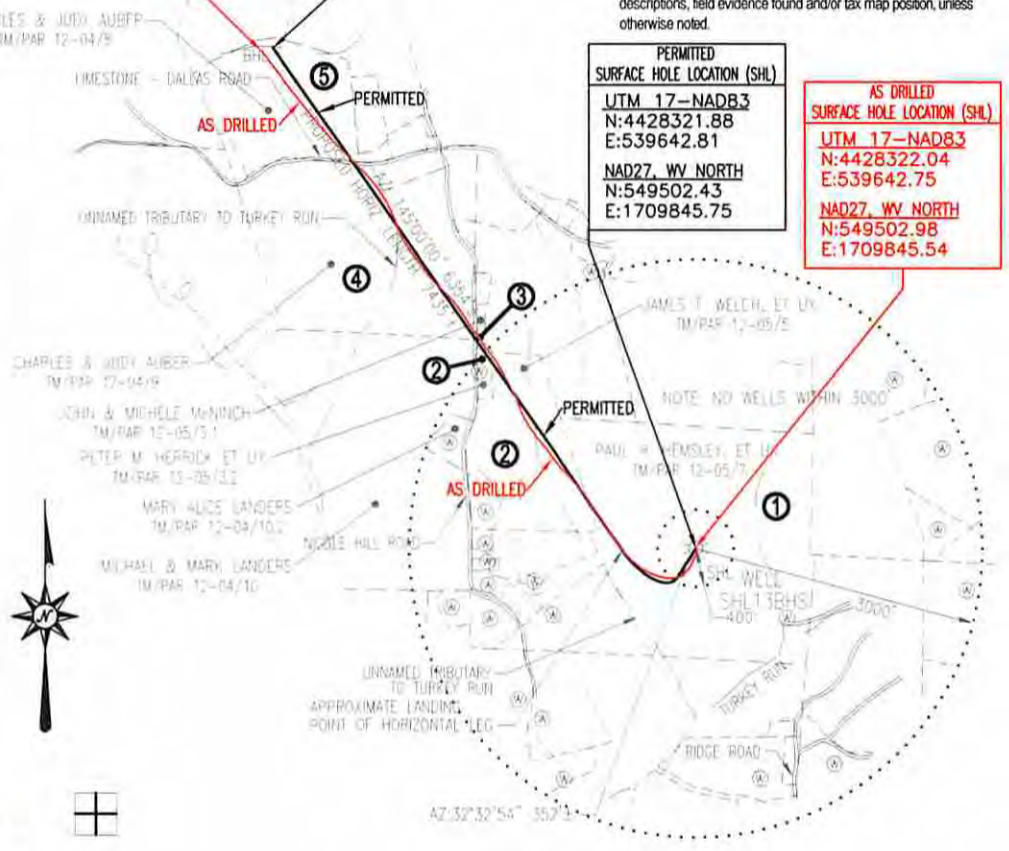
APPROX. LANDING POINT
UTM 17-NAD83 N:4428313.46 E:539408.86
<b>NAD27, WV NORTH</b> N:549502.43 E:1709845.75

**NOTES:**

1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
4. There are no native trout streams within 300' of proposed well.
5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
6. 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.

**LEGEND**

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- WATER SOURCE
- LEASE NUMBER BASED ON ATTACHED WW-6A1
- MINERAL TRACT BOUNDARY
- PARCEL LINE
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED
- WELLS WITHIN 3000'
- EXISTING WELLS
- PROPOSED WELLS



**PERMITTED  
SURFACE HOLE LOCATION (SHL)**  
UTM 17-NAD83  
N:4428321.88  
E:539642.81  
**NAD27, WV NORTH**  
N:549502.43  
E:1709845.75

**AS DRILLED  
SURFACE HOLE LOCATION (SHL)**  
UTM 17-NAD83  
N:4428322.04  
E:539642.75  
**NAD27, WV NORTH**  
N:549502.98  
E:1709845.54

**Blue Mountain Inc.**  
11023 MASON DIXON HIGHWAY  
BURTON, WV 26562  
PHONE: (304) 662-6486

FILE #: SHL13BHS-AS DRILLED  
DRAWING #: SHL13BHS-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

**GEORGE D. SIX  
LICENSED  
No. 2000  
STATE OF  
WEST VIRGINIA  
PROFESSIONAL SURVEYOR**

PLACE SEAL HERE

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



DATE: OCTOBER 2, 2014  
OPERATOR'S WELL #: SHL13BHS-AS DRILLED  
API WELL #: 47 51  
STATE COUNTY PERMIT

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

WATERSHED: TURKEY RUN ELEVATION: 1288.91'  
COUNTY/DISTRICT: MARSHALL / SAND HILL QUADRANGLE: VALLEY GROVE, WV 7.5'  
SURFACE OWNER: PAUL H. & ANNETTE A. HEMSLEY ACREAGE: 121.65±  
OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 386.088±

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: 6781'± TMD: 13620'±  
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

10/31/2014