

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

API 47-095-02113 County Tyler District Centerville
Quad Shirley Pad Name SHR 1 Field/Pool Name _____
Farm name Noble Energy, Inc Well Number SHR 1EHS
Operator (as registered with the OOG) Noble Energy, Inc
Address 333 Technology Drive Suite 110 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 4362835.97 Easting 513263.95
Landing Point of Curve Northing 4362728.61 Easting 513456.08
Bottom Hole Northing 4360120.69 Easting 514455.53

Elevation (ft) 1013.30' 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 5/23/2013 Date drilling commenced 9/19/2013 Date drilling ceased 12/30/2013
Date completion activities began 5/5/2014 Date completion activities ceased 6/21/2014
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 321', 351', 599' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1501' Void(s) encountered (Y/N) depths N
Coal depth(s) ft _____ Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

RECEIVED
Office of Oil and Gas

SEP 15 2014

Reviewed by: _____

API 47-095-02113

Farm name Noble Energy, Inc

Well number SHR 1EHS

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	24	20	120	N	J-55 133#		
Surface	17-1/2	13-3/8	723	N	J-55 54.5#		Y
Coal							
Intermediate 1	12-3/8	9-5/8	2432	N	J-55 36#		Y
Intermediate 2							
Intermediate 3							
Production	8-3/4	5-1/2	15960	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	Class A	608	15.6	1.19	129	0	8
Coal							
Intermediate 1	Class A	930	15.6	1.19	197	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	2686	14.8	1.41	688	0	8
Tubing							

Drillers TD (ft) 15976 Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 5326

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 Surface: 6 Centralizers, On every 3 joints of casing;
 Intermediate: 36 Centralizers, On every 3 joints of casing; Production: 280 Centralizers On every 3rd joint from surface to Top of Curve, then a centralizer on 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 _____

API 47- 095 - 02113 Farm name Noble Energy, Inc Well number SHR 1EHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6538.9'</u> TVD	<u>15976'</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 6611 mcfpd Oil 198 bpd NGL 413 bpd Water 730 bpd GAS MEASURED BY
 Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<u>0</u>		<u>0</u>		

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Rig #542
 Address 10350 Richmond Ave City Houston State TX Zip 77042

Logging Company Diversified Well Logging
 Address 10350 Richmond Ave City Eighty Four State PA Zip 15330

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

Stimulating Company FTS International
 Address 6000 Town Center Boulevard, Suite 120 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Regina Loque Telephone 724-820-3559
 Signature Regina Loque Title Regulatory Analyst Date 9/11/14

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

SHR 1E
47-095-02113

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	1205	0	1205	
Shale and Sandstone	1205	1928	1205	1928	
Big Lime	1928	2056	1928	2056	
Big Injun	2056	2163	2056	2163	
Price	2163	2314	2163	3473	
Weir	2314	2418	2314	2418	
Shale	2418	2505	2418	2505	
Berea	2505	2513	2505	2513	
Shale	2513	2694	2513	2694	
Sandstone	2694	2796	2694	2796	
Shale	2796	2932	2796	2932	
Sandstone	2932	2950	2932	2950	
Shale	2950	3424	2950	3427	
Warren	3424	3470	3427	3473	
Shale and Sandstone	3470	3822	3473	3829	
Lower Huron	3822	4580	3829	4595	
Sandstone	4580	4618	4595	4633	
Shale	4618	4812	4633	4829	
Sandstone	4812	4868	4829	4886	
Shale	4868	4992	4886	5011	
Benson	4992	5036	5011	5055	
Shale	5036	5236	5055	5257	
Alexander	5236	5294	5257	5315	
Shale	5294	6235	5315	6277	
Cashaqua	6235	6346	6277	6412	
Middlesex	6346	6380	6412	6459	
West River	6380	6448	6459	6571	
Burkett	6448	6482	6571	6641	
Tully	6482	6485	6641	6647	
Hamilton	6485	6502	6647	6690	
Marcellus	6502	6566	6690	not encountered	Gas
Onondaga	6566	6573	not encountered	not encountered	
Huntersville	6573	not encountered	not encountered	not encountered	

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/5/2014
Job End Date:	6/3/2014
State:	West Virginia
County:	Tyler
API Number:	47-095-02113-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	SHR 1E
Longitude:	-80.84613200
Latitude:	39.41479700
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,538
Total Base Water Volume (gal):	14,489,166
Total Base Non Water Volume:	0



95-02113

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	88.26999	
40/70 White	FTSI	proppant					
			Silica, Quartz	14808-60-7	100.00000	8.63504	
100 Mesh Sand	FTSI	proppant					
			Silica, Quartz	14808-60-7	100.00000	2.20737	
Hydrochloric Acid (HCl)	FTSI	Acid					
			Water	7732-18-5	92.50000	0.65910	
			Hydrogen Chloride	7647-01-0	7.50000	0.05344	
FRW-600	FTSI	Friction Reducer					
			Acrylamide Polymer	Trade Secret	75.00000	0.05867	
			Hydrotreated light distillate	64742-47-8	20.00000	0.01565	
			Ammonium acetate	631-61-8	5.00000	0.00391	
CS-500 SI	FTSI	Scale inhibitor					
			Water	7732-18-5	55.00000	0.02660	
			Acrylic Polymer	Proprietary	24.00000	0.01161	
			Ethylene glycol	107-21-1	10.00000	0.00484	
			Sodium chloride	7647-14-5	6.00000	0.00290	
			Sodium Polyacrylate	9003-04-7	5.00000	0.00242	

CI-3240	FTSI	Biocide	Water	7732-18-5	53.00000	0.02095
			Dazomet (Tetrahydro-3, 5-dimethyl-2H-1, 3, 5-thiadiazine-2-thione.	533-74-4	24.00000	0.00949
			Sodium Hydroxide	1310-73-2	23.00000	0.00909
HVG-1	FTSI	Water Gelling Agent	Guar Gum	9000-30-0	35.00000	0.00160
			Petroleum Distillate	64742-47-8	30.00000	0.00137
			Raffinates (Petroleum), Sorption Process	64741-85-1	25.00000	0.00114
			Clay	1302-78-9	3.00000	0.00014
			Surfactant	Proprietary	2.00000	0.00009
			Clay	14808-60-7	2.00000	0.00009
			Surfactant	154518-36-2	1.00000	0.00005
			Surfactant	9043-30-5	1.00000	0.00005
			Surfactant	24938-91-8	1.00000	0.00005
FE-100L	FTSI	Iron control	Citric acid	77-92-9	55.00000	0.00124
			Water	7732-18-5	45.00000	0.00102
CI-150	FTSI	Acid Corrosion Inhibitor	Isopropanol	67-63-0	24.70000	0.00031
			Organic amine resin salt	Proprietary	24.00000	0.00030
			Ethylene Glycol	107-21-1	20.00000	0.00029
			Alkylene Oxide Block Polymer	Proprietary	10.00000	0.00013
			Water	7732-18-5	5.00000	0.00006
			Aromatic aldehyde	Proprietary	5.00000	0.00006
			Dimethylformamide	68-12-2	5.00000	0.00006
			Quaternary ammonium compound	Proprietary	5.00000	0.00006
			Diethylene glycol	111-46-6	1.00000	0.00001
			Fatty Acid	Proprietary	0.10000	0.00000
			Fatty Acid Salt	Proprietary	0.10000	0.00000
			Aliphatic alcohol	Proprietary	0.10000	0.00000
NE-100	FTSI	Non-emulsifier	Water	7732-18-5	71.50000	0.00045
			2-Butoxyethanol	111-76-2	10.00000	0.00006
			2-Propanol	67-63-0	10.00000	0.00006
			Dodecylbenzenesulfonic acid	27176-87-0	5.00000	0.00003
			Benzene, C10-16 Alkyl Derivatives	68648-87-3	1.00000	0.00001
			Sulfur Dioxide	7446-09-5	1.00000	0.00001
			Unsulphonated Matter	Proprietary	1.00000	0.00001
			Sulfuric Acid	7664-93-9	0.50000	0.00000
APB-1	FTSI	Gel breaker				

95-02/13

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	Ammonium Persulfate	7727-54-0	100.00000	0.00023
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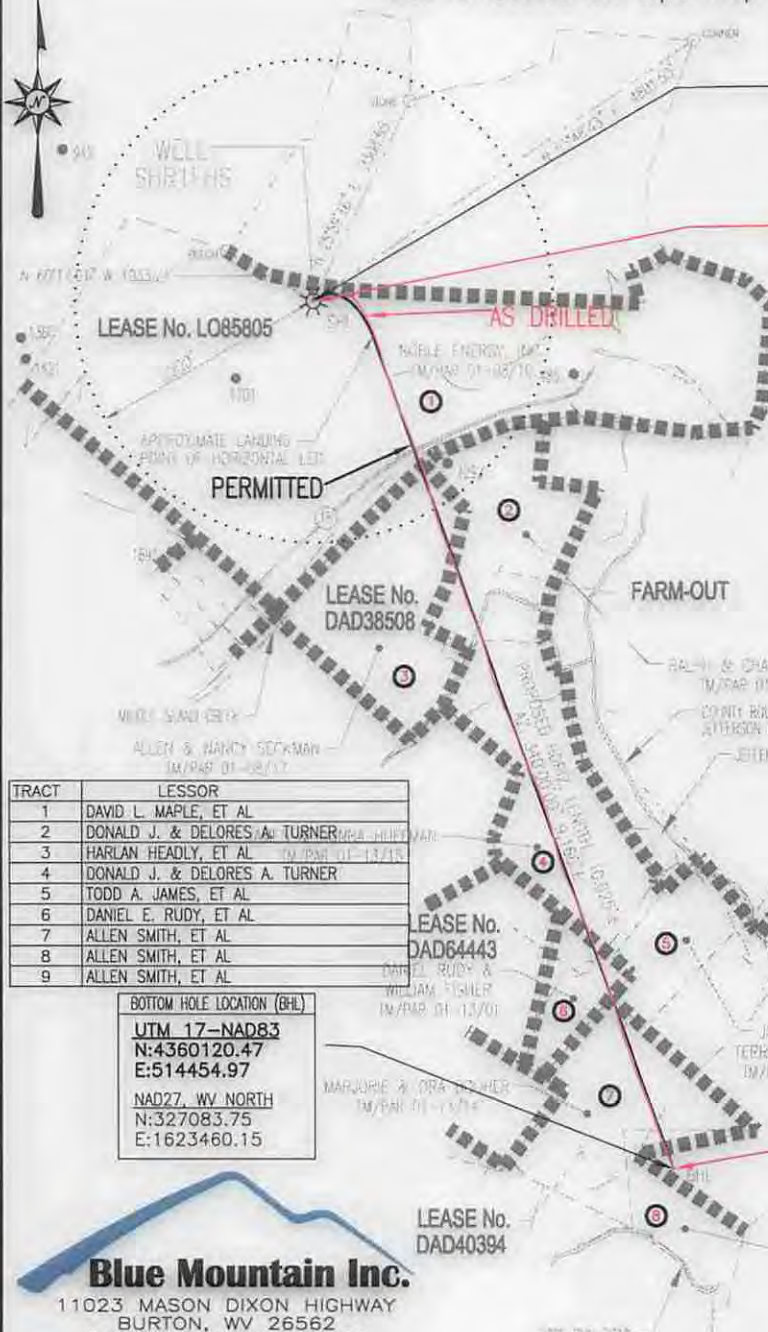
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* 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)

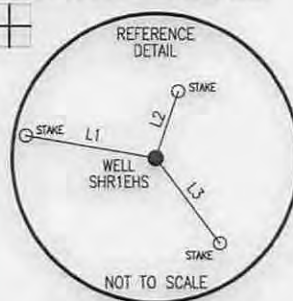
Well is located on topo map 661' feet south of Latitude: 39° 25' 00"



SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
 N:4362835.975
 E:513263.946
NAD27, WV NORTH
 N:336060.027
 E:1619700.513

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
 N:4362835.97
 E:513263.95
NAD27, WV NORTH
 N:336060.030
 E:1619700.510

WELL LOCATION POINT
UTM 17-NAD83
 N:4362835.97
 E:513263.95
NAD27, WV NORTH
 N:336060.030
 E:1619700.510



LINE	BEARING	DISTANCE
L1	S 83°15'45" E	288.34'
L2	S 14°12'09" W	129.75'
L3	N 31°57'21" W	223.50'

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 plot 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
- PROPOSED GAS WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- WATER SOURCE
- SURFACE BOUNDARY
- LEASE BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED
- EXISTING WELLS
- PLUGGED WELLS

WELLS WITHIN 3000'

TRACT	LESSOR
1	DAVID L. MAPLE, ET AL
2	DONALD J. & DELORES A. TURNER
3	HARLAN HEADLY, ET AL
4	DONALD J. & DELORES A. TURNER
5	TODD A. JAMES, ET AL
6	DANIEL E. RUDY, ET AL
7	ALLEN SMITH, ET AL
8	ALLEN SMITH, ET AL
9	ALLEN SMITH, ET AL

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
 N:4360120.47
 E:514454.97
NAD27, WV NORTH
 N:327083.75
 E:1623460.15

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
 N:4360120.69
 E:514455.53
NAD27, WV NORTH
 N:327084.439
 E:1623462.010

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

FILE #: SHR1EHS-AS DRILLED
 DRAWING #: SHR1EHS-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:

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: AUGUST 26, 2014
 OPERATOR'S WELL #: SHR1EHS-AS DRILLED
 API WELL #: 47 95 02113H6A
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE ISLAND CREEK ELEVATION: 1012.17'

COUNTY/DISTRICT: TYLER COUNTY / CENTERVILLE DISTRICT QUADRANGLE: SHIRLEY, WV 7.5'

SURFACE OWNER: NOBLE ENERGY, INC. ACREAGE: 580.207±

OIL & GAS ROYALTY OWNER: SEE TABLE IN DRAWING ACREAGE: 981.847±

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: 6,621'± TMD: 16,243'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
 Address 333 TECHNOLOGY DRIVE, SUITE 110 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

Well is located on topo map 3,559' feet west of Longitude: 80° 50' 00"

10/03/2014