

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

Received
Office of Oil & Gas
JAN 27 2017

API 47 - 095 - 02210 County Tyler District Centerville
Quad Shirley Pad Name SHR 40 Field/Pool Name NA
Farm name Noble Energy, Inc. Well Number SHR 40 HHS
Operator (as registered with the OOG) Noble Energy, Inc.
Address 1000 Noble Energy Drive 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 4362848.76 Easting 514254.87
Landing Point of Curve Northing 4362799.48 Easting 514824.11
Bottom Hole Northing 4360267.22 Easting 515793.93

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

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 12/18/2014 Date drilling commenced 03/09/2015 Date drilling ceased 06/28/2015
Date completion activities began NA Date completion activities ceased _____
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 357 Open mine(s) (Y/N) depths none
Salt water depth(s) ft None noted for Offsets Void(s) encountered (Y/N) depths none
Coal depth(s) ft no coal Cavern(s) encountered (Y/N) depths none
Is coal being mined in area (Y/N) N

Reviewed by:

APPROVED
NAME: [Signature]
DATE: 2/3/17

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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 below*
Conductor	36	20	40				
Surface	17 1/2	13 3/8	493.6	N	J-55 54.5#		Y
Coal							
Intermediate 1	13 3/8	9 5/8	2228.3	N	HCK-55 36#		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4	5 1/2	16,078.1	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	425	15.6	1.20	69.0	0	8
Coal							
Intermediate 1	Class A	894	15.6	1.18	186.0	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	Lead 720 Tail 2580	Lead 13.5 Tail 14.5	Lead 1.57 Tail 1.27	Lead 201.0 Tail 254.0	3000.0	8
Tubing							

Drillers TD (ft) 16,092 Loggers TD (ft) 16,068
 Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole
 Plug back procedure Not a Pilot Hole

Kick off depth (ft) 6,083

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-
Surface - 4 centralizers used, one every third joint Intermediate - 27 centralizers - bow spring centralizers on every joint to KOP, on every third joint from KOP to 100' from surface.
Production - 308 centex centralizers - 47 hinged bow spring every third joint from KOP to TOC, rigid bow spring every joint to KOP.

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

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	Well has not	Been Comple			

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
	SEE ATTACHED STIMULATION							
	INFORMATION PER STAGE							
	RECORD							
	Well not	Comple	No Data	Available				

Please insert additional pages as applicable.

API 47- 095 - 02210 Farm name Noble Energy, Inc. Well number PEN 2 BHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
	TVD	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 _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ 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 ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
	SEE ATTACHED FORMATION SHEET				

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 #120 City Canonsburg State PA Zip 15317

Cementing Company Allied Cementing Company, LLC
Address 100 Hope Street City Clarksburg State WV Zip 26301

Stimulating Company _____
Address _____ City _____ State _____ Zip _____

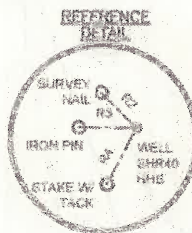
Please insert additional pages as applicable.

Completed by Regina A Logue Telephone 724-820-3559
Signature Regina A. Logue Title Regulatory Analyst Date 01/20/2017

SHR 40 HHS

Formations	Top	Base
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	

Well is located on topo map 594 feet south of Latitude: 39° 26' 00"



SURFACE HOLE LOCATION (SP)
 UTM 17 - NAD83
 N: 4362848.761
 E: 514254.067
 NAD27, WV NORTH
 N: 338047.632
 E: 1622952.940
 LAT/LON DATUM - NAD83
 LAT: 39.415040
 LON: -80.634407

APPROX. LANDING POINT
 UTM 17 - NAD83
 N: 4362799.477
 E: 514824.109
 NAD27, WV NORTH
 N: 335854.689
 E: 1624018.220
 LAT/LON DATUM - NAD83
 LAT: 39.414586
 LON: -80.627795

BOTTOM HOLE LOCATION
 UTM 17 - NAD83
 N: 4360267.218
 E: 515793.930
 NAD27, WV NORTH
 N: 327491.870
 E: 1627862.030
 LAT/LON DATUM - NAD83
 LAT: 39.391752
 LON: -80.816589

LINE	BEARING	DISTANCE
R2	S45°08'11"E	267.98
R3	S88°48'14"E	313.25
R4	N27°45'48"E	341.73
R5	N45°16'44"E	577.98
R6	N51°38'34"W	841.10

LEGEND

- TOPO MAP POINT
- PROPOSED WELL
- WATER SOURCE
- LEASE NUMBER BASED ON ATTACHED WMS#1
- 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



- 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 herein. 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.

PVE Sheffler
 Waterfront Corporate Park III, Suite 101
 2000 Georgetown Drive
 Sewickley, PA 15143-8992
 Phone: 724-444-1100

FILE # SHR 40 HHS
 DRAWING # SHR 40 HHS
 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: *Charles Douglas Davidson*
 R.P.E.: _____ L.L.S.: P.S. NO. 819

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

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: 572.64
 OIL & GAS ROYALTY OWNER: DAVID L. MAPLE, ET AL. ACREAGE: 357.43

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: BURKETT
 WELL OPERATOR: NOBLE ENERGY, INC.
 Address: 333 TECHNOLOGY DRIVE, SUITE 116
 City CANONSBURG State PA Zip Code 15317



DATE: SEPTEMBER 4, 2014
 OPERATOR'S WELL #: SHR 40 HHS
 API WELL # 47 095 02210H6A
 STATE COUNTY PERMIT

ESTIMATED DEPTH: TVD: 8,295'± TMD: 15,110'±
 DESIGNATED AGENT: STEVEN M. GREEN
 Address: 600 VIRGINIA STREET EAST, UNITED CENTER SUITE 580
 City CHARLESTON State WV Zip Code 25301

Well is located on topo map 303 feet west of Longitude: 80° 50' 00"