

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

API 47-085-10068 County Ritche District Clay
Quad Pennsboro Pad Name PEN 2 Field/Pool Name NA
Farm name Terry & Helen Kiessling Well Number PEN 2 BHS
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 4354128.50 Easting 498913.29
Landing Point of Curve Northing 4353803.95 Easting 498684.15
Bottom Hole Northing 4351692.85 Easting 500491.60

Elevation (ft) 1084 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

RECEIVED
Office of Oil and Gas

JAN 06 2017

Date permit issued 10/30/2013 Date drilling commenced 01/16/2014 Date drilling ceased 07/07/2014
Date completion activities began _____ 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) 454 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: Michael Saff

DATE: 1/30/17

03/31/2017

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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	30	40				
Surface	17 1/2	13 3/8	579.4	N	J-55 54.5#		Y
Coal							
Intermediate 1	12 3/8	9 5/8	5,562.5	N	K-55 36#		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4	5 1/2	15,996.0	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 1	535	15.6	1.20	114.5	0	8
Coal							
Intermediate 1	Class A	Lead 1012 Tail 290	Lead 12.0 Tail 15.6	Lead 1.93 Tail 1.19	Lead 202 Tail 167	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	Lead 400 Tail 2035	Lead 12.3 Tail 14.8	Lead 1.61 Tail 1.36	Lead 167 Tail 207	5249	8
Tubing							

Drillers TD (ft) 16,145 Loggers TD (ft) 16,010
 Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole
 Plug back procedure Not a Pilot Hole

Kick off depth (ft) 6,942

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 - 5 centralizers used, one every third joint Intermediate - 67 centralizers - bow spring centralizers on every joint to KOP, on every third joint from KOP to 100' from surface.
Production - 272 centralizers - rigid 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							

Please insert additional pages as applicable.

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<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 NOMAC
 Address 171 Locust Avenue Ext. City Mt. Morris State PA Zip 15349

Logging Company _____
 Address _____ City _____ State _____ Zip _____

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

Stimulating Company _____
 Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Dee Swiger Telephone 724-820-3061
 Signature *Dee Swiger* Title Regulatory Analyst, III Date 01/03/2017

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

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale and Sandstone	0	1309	0	1309	
Sandstone	1309	1433	1309	1423	
Shale and Sandstone	1423	1593	1423	1593	
Sandstone	1593	1635	1593	1635	
Shale and Sandstone	1635	1737	1635	1737	
Maxton Sand	1737	1820	1737	1820	
Shale and Sandstone	1820	1943	1820	1943	
Big Lime	1943	1998	1943	1998	
Big Injun	1998	2133	1998	2133	
Price	2133	2405	2133	2405	
Weir	2405	2444	2405	2444	
Shale	2444	2724	2444	2724	
Gordon	2724	2741	2724	6301	
Shale and Sandstone	2741	2921	2741	6302	
5th Sand	2921	2933	2921	6371	
Shale	2933	3076	2933	not encountered	
Sandstone	3076	3090	3076	not encountered	
Shale	3090	3498	3090	not encountered	
Warren	3498	3560	3500	6300	
Shale	3560	3894	3562	6301	
Sandstone	3894	3931	3900	6302	
Shale and Sandstone	3931	4925	3937	6371	
Benson	4925	4987	4941	not encountered	
Shale	4987	5147	5004	not encountered	
Alexander	5147	5215	5166	not encountered	
Shale	5215	5725	5234	not encountered	
Rheinstreet	5725	6051	5750	not encountered	
Cashaqua	6051	6143	6080	not encountered	
Middlesex	6143	6172	6176	not encountered	
West River	6172	6216	6206	not encountered	
Burkett	6216	6259	6253	not encountered	
Tully Limestone	6259	6260	6300	not encountered	
Hamilton	6260	6261	6301	6302	Gas
Marcellus	6261	6320	6302	6371	
Onondaga	6320		6371	not encountered	

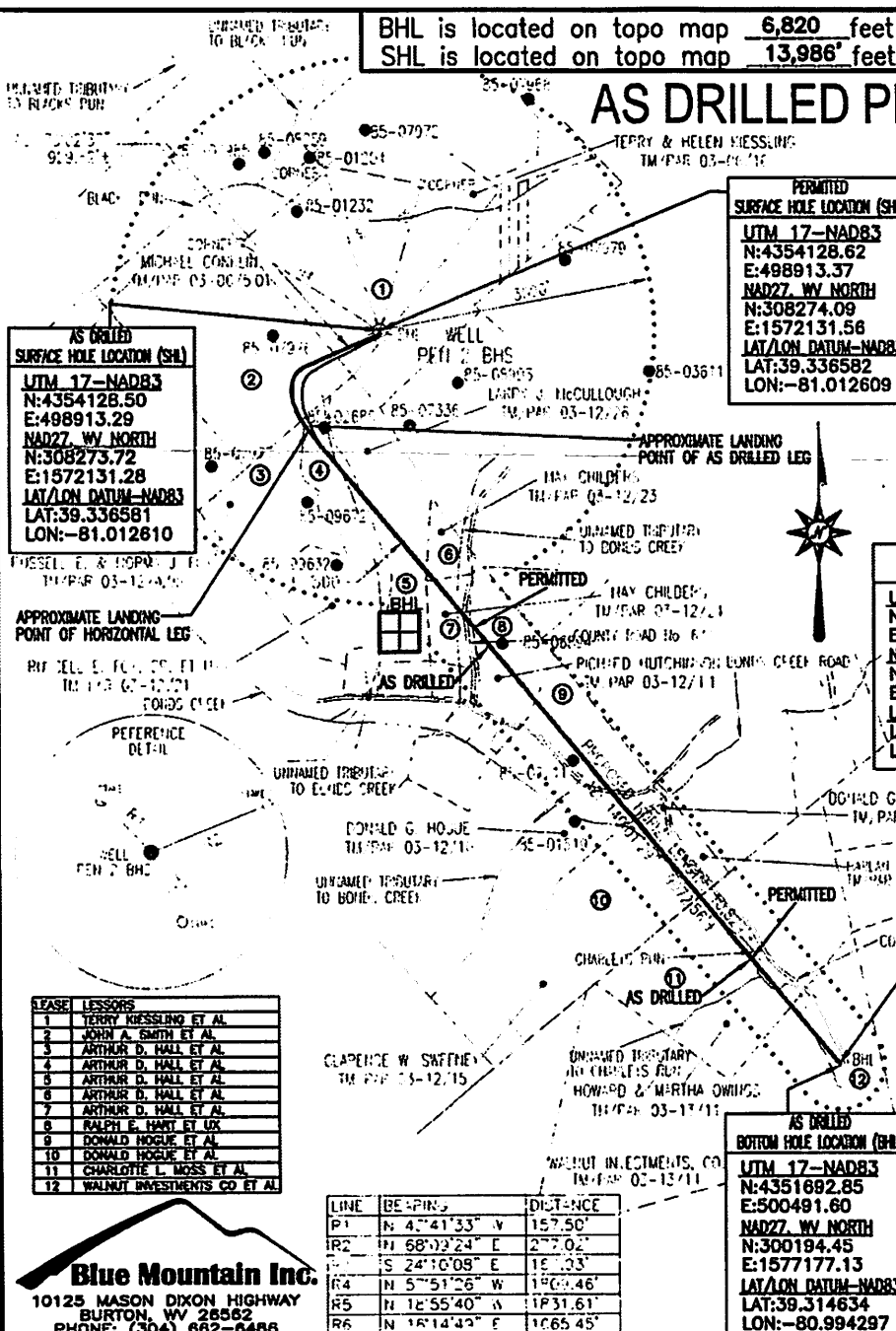
BHL is located on topo map 6,820 feet south of Latitude: 39° 20' 00"
 SHL is located on topo map 13,986 feet south of Latitude: 39° 22' 30"

AS DRILLED PLAT

BHL is located on topo map 10,233 feet west of Longitude: 80° 57' 30"
 SHL is located on topo map 3,575 feet west of Longitude: 81° 00' 00"

LEGEND

- TOPO WATER
- WELL
- ALL ASSESSMENTS ARE TO BE CONSIDERED
- LEASE NUMBER
- UNNAMED TRAIL
- FENCE LINES
- WELL DEPTH
- PROPOSED HORIZONTAL WELL
- FENCE
- SURVEY CENTER LINE
- AS DRILLED
- EXISTING WELL
- PLUGGED WELL



AS DRILLED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4354128.50
 E:498913.29
 NAD27 WV NORTH
 N:308273.72
 E:1572131.28
 LAT/LON DATUM-NAD83
 LAT:39.336581
 LON:-81.012610

PERMITTED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4354128.62
 E:498913.37
 NAD27 WV NORTH
 N:308274.09
 E:1572131.56
 LAT/LON DATUM-NAD83
 LAT:39.336582
 LON:-81.012609

PERMITTED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4353787.31
 E:498677.54
 NAD27 WV NORTH
 N:307167.02
 E:1571338.97
 LAT/LON DATUM-NAD83
 LAT:39.333506
 LON:-81.015345

AS DRILLED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4353803.95
 E:498684.15
 NAD27 WV NORTH
 N:307221.26
 E:1571361.57
 LAT/LON DATUM-NAD83
 LAT:39.333658
 LON:-81.015268

PERMITTED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4351688.92
 E:500488.63
 NAD27 WV NORTH
 N:300214.54
 E:1577187.73
 LAT/LON DATUM-NAD83
 LAT:39.314689
 LON:-80.994332

AS DRILLED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4351692.85
 E:500491.60
 NAD27 WV NORTH
 N:300194.45
 E:1577177.13
 LAT/LON DATUM-NAD83
 LAT:39.314634
 LON:-80.994297

LEASE	LESSORS
1	TERRY KIESSLING ET AL
2	JOHN A. SMITH ET AL
3	ARTHUR D. HALL ET AL
4	ARTHUR D. HALL ET AL
5	ARTHUR D. HALL ET AL
6	ARTHUR D. HALL ET AL
7	ARTHUR D. HALL ET AL
8	RALPH E. HART ET AL
9	DONALD HOGUE ET AL
10	DONALD HOGUE ET AL
11	CHARLOTTE L. MOSS ET AL
12	WALNUT INVESTMENTS CO ET AL

LINE	BEARING	DISTANCE
P1	N 4° 41' 33" W	157.50'
P2	N 68° 02' 24" E	272.02'
P3	S 24° 16' 08" E	157.03'
P4	N 5° 51' 26" W	1909.46'
P5	N 12° 55' 40" W	1931.61'
P6	N 16° 14' 49" E	1065.45'

- 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.

Blue Mountain Inc.
 10125 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 682-6486

FILE #: PEN 2 BHS-AS DRILLED
 DRAWING #: PEN 2 BHS-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: [Signature]
 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

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

WATERSHED: NORTH FORK HUGHES RIVER ELEVATION: 1084'±
 COUNTY/DISTRICT: RITCHIE / CLAY QUADRANGLE: ELLENBORO, WV 7.5'
 SURFACE OWNER: TERRY & HELEN KIESSLING ACREAGE: 79.242±
 OIL & GAS ROYALTY OWNER: TERRY KIESSLING ET AL ACREAGE: 716.083±

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: 6,324'± TMD: 16,145'±

WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT CHRIS TURNER
 Address 1000 CONSOL ENERGY DRIVE Address 1 DOMINION DR.
 City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378



03/31/2017