

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

API 47-051-01746 County Marshall District Franklin  
Quad Powhatan Point Pad Name MND 06 Field/Pool Name N/A  
Farm name Consolidated Coal Company Well Number MND 06 AHS  
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 39.817733 Easting 80.791521  
Landing Point of Curve Northing 39.821217 Easting 80.789294  
Bottom Hole Northing 39.848214 Easting 80.814545

Elevation (ft) 722 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 05/21/2014 Date drilling commenced 09/15/2014 Date drilling completed 02/02/2014  
Date completion activities began Not completed Date completion activities ceased \_\_\_\_\_  
Verbal plugging (Y/N) \_\_\_\_\_ Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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

Freshwater depth(s) ft 128' and 265' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft none noted for offsets Void(s) encountered (Y/N) depths N  
Coal depth(s) ft NA Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) No

**APPROVED**  
Reviewed by: [Signature]  
NAME: Jane Tushnet  
DATE: 2/1/17  
02/03/2017

API 47-051 - 01746

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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	26"	20"	40'	New	DH-36		
Surface	18"	16"	110'	New	H-40		
Coal	17.5"	13 3/8"	746'	New	J-55		Y
Intermediate 1	12.38"	9 5/8"	2020'	New	HCK-55		Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5 1/2"	18,674'	New	P-110		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							
Coal	Type 1 / Class A	481	15.6	1.39	668.59	25.9	8
Intermediate 1	Type 1 / Class A	691	15.6	1.18	815.38	25.9	8
Intermediate 2							
Intermediate 3							
Production	Type 1 / Class A	lead 685 tail 2475	14.8	Lead 1.54 tail 1.37	total 4,445.65	855	9
Tubing							

Drillers TD (ft) 18,674'      Loggers TD (ft) 18,515.76  
 Deepest formation penetrated Marcellus      Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 4125'

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    No centralizers used on conductor.

17 Centralizers on Intermediate String (Bow string centralizers on first two joints then every third joint to 100' from surface).

320 Centralizers on Production String (rigid bow string every joint to KOP, rigid bow spring every third joint from KOP to top of cement)

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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 not complete				

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)

Please insert additional pages as applicable.

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Farm name Consolidated Coal Company Well number MND 06 AHS

PRODUCING FORMATION(S)

DEPTHS

	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		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 insert additional pages as applicable.

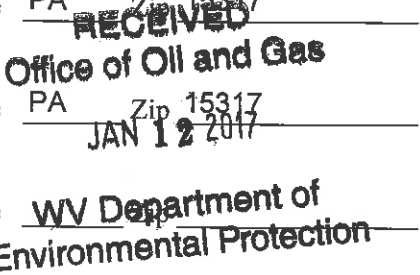
Drilling Contractor Nomac 79 Drilling  
Address 171 Locust Ave. Ext. City Mt. Morris State PA Zip 15349

Logging Company Baker Hughes  
Address 400 Technology Drive City Canonsburg State PA Zip 15317

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

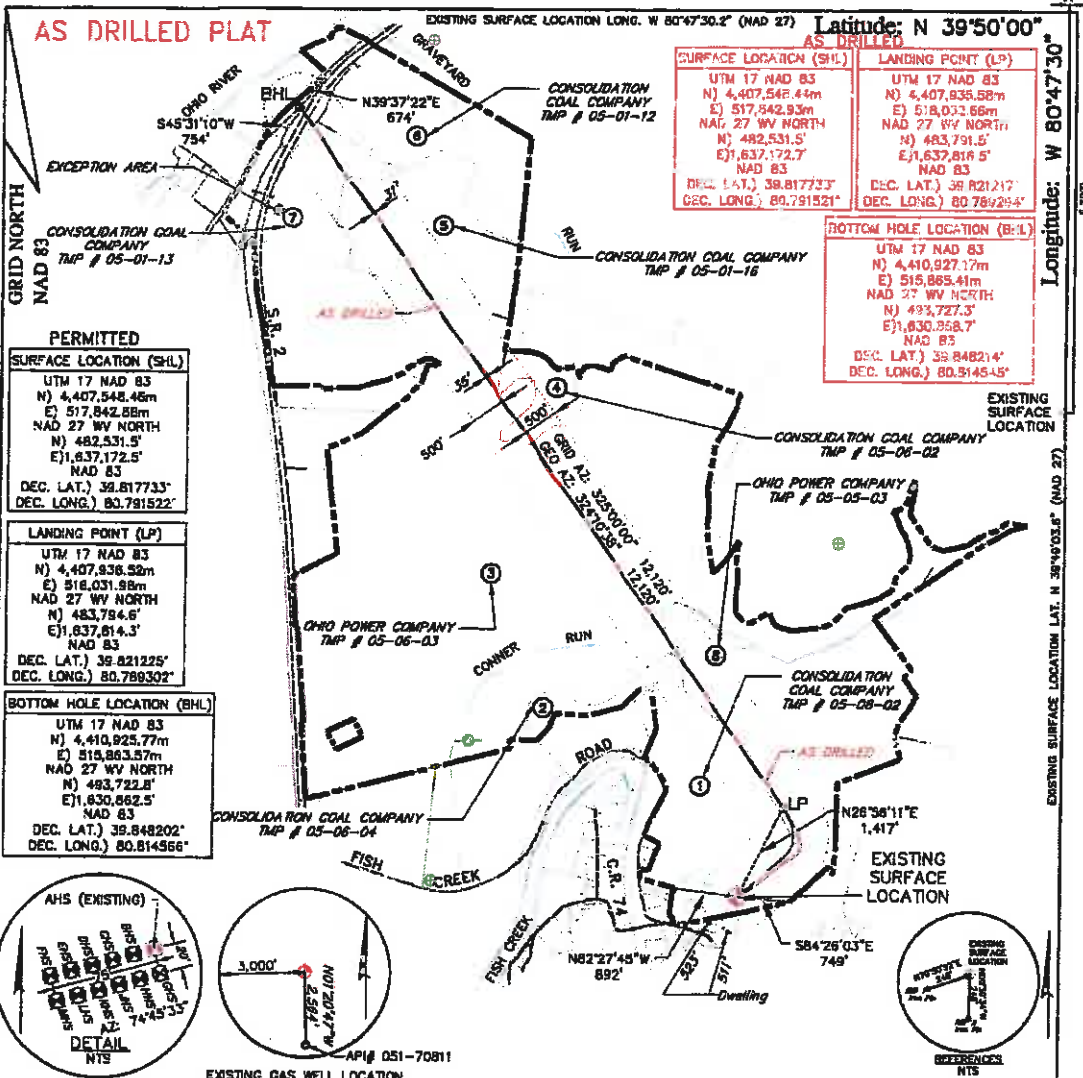
Stimulating Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please insert additional pages as applicable.



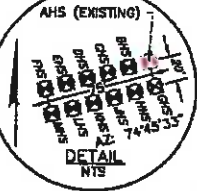
Completed by Dee Swiger Telephone 724-820-3061  
Signature [Signature] Title Regulatory Analyst, III Date 01/04/2017

02/03/2017



AS DRILLED	
SURFACE LOCATION (SHL)	LANDING POINT (LP)
UTM 17 NAD 83 N) 4,407,546.44m E) 517,842.93m NAD 27 WV NORTH N) 482,531.5' E) 1,637,172.7' NAD 83 DEC. LAT.) 39.817733' DEC. LONG.) 80.791522'	UTM 17 NAD 83 N) 4,407,836.58m E) 518,032.68m NAD 27 WV NORTH N) 483,791.5' E) 1,637,816.5' NAD 83 DEC. LAT.) 39.821214' DEC. LONG.) 80.791521'
BOTTOM HOLE LOCATION (BHL)	
UTM 17 NAD 83 N) 4,410,925.77m E) 515,863.57m NAD 27 WV NORTH N) 483,722.8' E) 1,630,862.5' NAD 83 DEC. LAT.) 39.848202' DEC. LONG.) 80.814566'	

PERMITTED	
SURFACE LOCATION (SHL)	LANDING POINT (LP)
UTM 17 NAD 83 N) 4,407,546.44m E) 517,842.93m NAD 27 WV NORTH N) 482,531.5' E) 1,637,172.5' NAD 83 DEC. LAT.) 39.817733' DEC. LONG.) 80.791522'	UTM 17 NAD 83 N) 4,407,836.52m E) 518,031.98m NAD 27 WV NORTH N) 483,794.6' E) 1,637,814.3' NAD 83 DEC. LAT.) 39.821225' DEC. LONG.) 80.799302'
BOTTOM HOLE LOCATION (BHL)	
UTM 17 NAD 83 N) 4,410,925.77m E) 515,863.57m NAD 27 WV NORTH N) 483,722.8' E) 1,630,862.5' NAD 83 DEC. LAT.) 39.848202' DEC. LONG.) 80.814566'	



**GENERAL NOTES:**

1. THE LOCATION OF BOUNDARY LINES SHOWN HEREON ARE BASED ON RECORD DEED, PLATS, AND TAX MAPS BEST FIT TO FOUND FIELD EVIDENCE AND AERIAL PHOTOS, UNLESS OTHERWISE NOTED.
2. THIS PLAT DOES NOT REPRESENT AN ACTUAL BOUNDARY SURVEY OF THE INDIVIDUAL PARCELS.
3. THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' OF PROPOSED WELL.
4. PROPOSED WELL IS GREATER THAN 100' FROM PERENNIAL STREAM, WETLAND, POND, RESERVOIR OR LAKE.
5. THERE ARE NO NATIVE TROUT STREAMS WITHIN 300' OF PROPOSED WELL.
6. THERE ARE TWO DWELLINGS LOCATED WITHIN 850' OF PROPOSED WELLBORE.
7. THE SURROUNDING LANDS ARE BEING SERVED BY PUBLIC WATER BY THE GRAND VIEW DOOLIN WATER SYSTEM PROVIDED BY MARSHALL COUNTY PUBLIC HEALTH AND SANITATION DIVISION.

FILE #: 093842010  
DRAWING #: 093842010\_SV-Plat  
SCALE: PLAT & TICK: 1" = 2,000'  
MINIMUM DEGREE OF ACCURACY: 1/200  
PROVEN SOURCE OF ELEVATION: NGS (CORS)

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNED: *Cyril R. White*  
R.P.E.: \_\_\_\_\_ L.L.S.: 2241

**LEGEND**

- EXISTING GAS WELL
- AS-DRILLED BORE
- PROPOSED BORE
- THE LINE
- UNIT BOUNDARY
- PROPERTY LINE
- STREAM LINE
- BUFFER LINE
- GAS WELL
- PLUGGED GAS WELL

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
WVDEP  
OFFICE OF OIL & GAS  
601 5TH STREET  
CHARLESTON, WV 25304

DATE: OCTOBER 7, 2016  
OPERATOR'S WELL #: MND 05 AHS  
API WELL #: 47 051 01746  
STATE: \_\_\_\_\_ COUNTY: \_\_\_\_\_ PERMIT: \_\_\_\_\_

WELL TYPE:  OIL  GAS  WASTE DISPOSAL  LIQUID INJECTION  PRODUCTION  STORAGE  DEEP  SHALLOW  
WATERSHED: FISH CREEK  
COUNTY/DISTRICT: MARSHALL / FRANKLIN  
SURFACE OWNER: CONSOLIDATION COAL COMPANY  
OIL & GAS ROYALTY OWNER: GNX GAS COMPANY LLC and NOBLE ENERGY, INC.

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 5,940'± TMD: 18,804'±  
WELL OPERATOR: NOBLE ENERGY, INC. DESIGNATED AGENT: STEVEN GREEN  
ADDRESS: 333 TECHNOLOGY DRIVE, SUITE 118 ADDRESS: 1000 NOBLE ENERGY DRIVE  
CITY: CANONSBURG STATE: PA ZIP CODE: 15317 CITY: CANONSBURG STATE: PA ZIP CODE: 15317

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MND 6

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale and Sandstone	0	284	0	284	
Pittsburgh Coal	284	294	284	294	
Shale and Sandstone	294	706	294	706	
Dunkard Sand	706	727	706	727	
Shale	727	876	727	876	
Gas Sand	876	947	876	5972	
Shale	947	1016	947	6191	
1st Salt Sand	1016	1032	1016	6313	
Shale	1032	1139	1032	6719	
2nd Salt Sand	1139	1168	1139	7118	
Shale and Sandstone	1168	1298	1168	7333	
Maxton Sand	1298	1345	1298	8194	
Shale	1345	1363	1345	8194	
Big Lime	1363	1435	1363	8541	
Big Injun	1435	1705	1435	8869	
Price	1705	1803	1705	8890	
Murrysville	1803	1910	1803	8983	
Shale and Sandstone	1910	2448	1910	8998	
Gordon	2448	2478	2448	9073	
Shale and Sandstone	2478	2999	2478	9179	
Fifth Sand	2999	3052	2999	9995	
Shale and Sandstone	3052	3854	3052	9179	
Warren Sand	3854	3863	3860	9995	
Shale	3863	4580	3869	10660	
Java Shale	4580	4664	4593	not encountered	
Pipe Creek Shale	4664	4739	4678	not encountered	
Angola Shale	4739	5323	4754	not encountered	
Rhinestreet	5323	5642	5344	not encountered	
Cashaqua	5642	5714	5666	not encountered	
Middlesex	5714	5737	5739	not encountered	
West River	5737	5798	5762	not encountered	
Burkett	5798	5822	5824	not encountered	
Tully Limestone	5822	5848	5848	not encountered	
Hamilton	5848	5883	5875	not encountered	
Marcellus	5883	5936	5910	not encountered	
Onondaga	5936	5944	5964	not encountered	
Huntersville	5944	6158	5972	6191	
Oriskany	6158	6270	6191	6313	
Helderburg	6270	6530	6313	6719	
Bass Island Dolomite	6530	6609	6719	7118	
Salina G Big Lime	6609	6809	7118	7333	
Salina F	6809	7608	7333	8194	
Lockport Dolomite	7608	7930	8194	8541	
Rochester Shale	7930	8235	8541	8869	
Dayton Fm/Packer Shell	8235	8254	8869	8890	

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Shale	8254	8341	8890	8983	
Clinton Sand	8341	8355	8983	8998	
Shale	8355	8424	8998	9073	
Medina Sand	8424	8523	9073	9179	
Queenston Shale	8523	9280	9179	9995	
Reedsville Shale	9280	9898	9995	10660	Gas
Utica Shale	9898	10511	10660	not encountered	
Point Pleasant	10511	10631	not encountered	not encountered	
Trenton Limestone	10631		not encountered	not encountered	

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