

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

API 47 - 051 - 01808 County Marshall District Sandhill  
Quad Valley Grove Pad Name SHL 22 Field/Pool Name NA  
Farm name Consol Mining Co. (CONSOL) Well Number SHL 22 CHS  
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 4429050.443 Easting 536124.668  
Landing Point of Curve Northing 4428757.825 Easting 535691.998  
Bottom Hole Northing 4426762.057 Easting 537149.668

Elevation (ft) 1322 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 02/25/2015 Date drilling commenced 03/31/2015 Date drilling ceased 07/17/2015  
Date completion activities began 10.24.2016 Date completion activities ceased 01/11/2017  
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 granted.

Freshwater depth(s) ft 210 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

RECEIVED  
Office of Oil and Gas  
APR 07 2017  
WV Department of  
Environmental Protection

**APPROVED**  
NAME: Jim Trebolser  
DATE: 5/2/17

Reviewed by: JT  
05/26/2017

API 47-051 - 01808 Farm name Consol Mining Co. (CONSOL) Well number SHL 22 CHS

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	1221.0	N	J-55 54.5#		Y
Coal							
Intermediate 1	12 3/8	9 5/8	3160.0	N	HCK-55 36#		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4	5 1/2	15,839.8	N	P-110 20#		Y
Tubing							
Packer type and depth set							

Comment Details Water String -Casing Size 20, 413.4 Depth, J-55 94#

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	Class A	Water String 527 Surface 1084	Water String 15.6 Surface 15.6	Water String 1.20 Surface 1.20	Water String 112.0 Surf 225.0	0	8/8
Coal							
Intermediate 1	Class A	1089	15.6	1.18	228.9	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	2790	14.5	1.32	650.0	27.0	8
Tubing							

Drillers TD (ft) 15,849 Loggers TD (ft) 15,824  
 Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole  
 Plug back procedure Not a Pilot Hole

Kick off depth (ft) 5,043

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. Water String 4 Centralizer used. Fresh Water/Surface-Surface - 9 centralizers used, one every third joint Intermediate - 38 centralizers -176 Centralizers and 96 Frack Sleeves to KOP, on every third joint from KOP to 100' from surface. Production - 235 Bow 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 \_\_\_\_\_



Perforations SHI 22 CHS

API	Well Name	Date	Top (ftKB)	Btm (ftKB)	Com	Entered Shot Total	Est Hole Dia (in)
47-051-01808	SHL-22C-HS	12/30/2016	13,148.00	13,451.00	STAGE #13	50	0.54
47-051-01808	SHL-22C-HS	12/29/2016	13,522.00	13,668.00	STAGE #14	50	0.54

Well Header  
 API: 47-051-01808

Well Name: SHL-22C-HS

WR-35 - Stimulation Information Per Stage		Start Date	Slurry Rate Avg (bbl/min)	P Treat Avg (psi)	P Breakdown (psi)	ISIP (psi)	Propanant Deliver (lb)	Vol Slurry Total (gal)
Int Des								
INJ TEST #1		11/15/2016	9.4	6,974.00	7,060.00	7,703.00		5,527.20
INJ TEST #2		11/15/2016	15.8	8,330.00	7,619.00	7,082.00		25,250.40
STG #1		11/16/2016	68.8	7,905.00	8,102.00	3,153.00	349,450.00	454,868.40
STG #2		11/18/2016	70.5	8,363.00	4,099.00	9,451.00	303,564.00	387,399.60
STG #3 - INJ TEST #1		11/18/2016	4.5	4,808.00		8,630.00		4,968.60
STG #3 - INJ TEST #2		11/20/2016	2.6	5,350.00				3,477.60
STG #3 - INJ TEST #3		11/22/2016	13.6	6,138.00				24,318.00
STG #3		11/25/2016	49.2	8,360.00	7,820.00		342,375.00	832,427.40
STG #4		11/25/2016	66.1	8,266.00	4,199.00		345,851.00	416,572.80
STG #5		11/25/2016	68.7	8,367.00	3,829.00	3,959.00	319,152.00	422,688.00
STG #6		11/25/2016	56.3	8,406.00	6,098.00		326,035.00	599,449.20
STG #7		11/25/2016	52.7	8,463.00	4,438.00		342,862.00	776,307.00
STG #8		11/26/2016	53.2	8,653.00	4,241.00	6,396.00	227,255.00	650,987.40
STG #9		11/26/2016	48.6	8,645.00	6,923.00		343,175.00	814,094.40
STG #10		11/26/2016	49.4	8,475.00	8,955.00		214,221.00	443,133.60
STG #11		11/27/2016	43.5	8,751.00	8,069.00	7,412.00	83,187.00	425,166.00
STG #12A		11/27/2016	36	8,971.00	7,439.00	7,404.00	67,040.00	328,175.40
STG #12B		11/28/2016	37.8	8,890.00		7,366.00	73,265.00	278,250.00
STG #13		12/29/2016	76.9	8,053.00	6,166.00	3,860.00	302,288.00	316,764.00
STG #14		12/30/2016	84	7,858.00	5,731.00	3,781.00	601,788.00	613,435.20
STG #16		12/31/2016	81.6	7,795.00	6,320.00	4,125.00	344,002.00	458,614.80
STG #17		12/31/2016	80.7	7,837.00	5,976.00	4,268.00	350,853.00	462,462.00
STG #18		12/31/2016	82.4	8,200.00	4,986.00	4,463.00	345,089.00	531,900.60
STG #19		1/1/2017	81.9	8,070.00	5,204.00		344,778.00	435,544.20
STG #20		1/1/2017	76.1	8,009.00	5,648.00		344,696.00	389,550.00
STG #21		1/1/2017	79.3	7,887.00	5,648.00	3,922.00	346,416.00	416,661.00
STG #22		1/2/2017	81.7	8,182.00	6,371.00		343,666.00	427,240.80
STG #23		1/2/2017	81	8,043.00	4,837.00	4,449.00	342,590.00	396,312.00
STG #24		1/5/2017	80.9	8,034.00	5,734.00		343,474.00	407,211.00
STG #25		1/5/2017	80.9	7,894.00	6,857.00	4,778.00	343,944.00	373,871.40
STG #26		1/5/2017	81.5	8,012.00	5,888.00	4,784.00	380,885.00	395,329.20
STG #27		1/5/2017	74.7	7,848.00	6,386.00	4,806.00	346,093.00	327,591.60
STG #28		1/5/2017	75.7	7,747.00	7,503.00	5,089.00	346,267.00	472,563.00
STG #29		1/6/2017	79.8	7,923.00	6,739.00	5,056.00	346,470.00	346,718.40
STG #30		1/6/2017	74.6	7,727.00	7,027.00	4,717.00	383,479.00	378,499.80
STG #31		1/6/2017	73.1	7,753.00	7,198.00	4,941.00	356,423.00	332,329.20
STG #32		1/6/2017	83.6	8,345.00	7,283.00	5,145.00	346,958.00	360,028.20
STG #33		1/8/2017	81.2	8,036.00	5,085.00	4,713.00	349,580.00	325,945.20
STG #34		1/8/2017	76.3	8,113.00	8,288.00	8,288.00	352,311.00	321,325.20
STG #35		1/9/2017	75.1	8,117.00	7,731.00	4,939.00	348,379.00	324,765.00
STG #36		1/9/2017	77.6	8,203.00	6,999.00	5,063.00	348,230.00	321,001.80

05/26/2017

STG #37	1/9/2017	77.4	8,230.00	7,208.00	5,131.00	351,603.00	318,851.40
STG #38	1/9/2017	80	7,811.00	6,490.00	3,008.00	348,094.00	319,326.00
STG #39	1/9/2017	88.6	6,927.00	5,466.00	2,907.00	348,538.00	315,474.60
STG #40	1/10/2017	88.5	6,919.00	6,390.00	3,137.00	344,869.00	322,623.00
STG #41	1/10/2017	79.5	6,881.00	6,013.00	3,347.00	284,552.00	302,857.80
STG #42	1/10/2017	87.6	7,426.00	6,358.00	3,594.00	357,400.00	321,371.40
STG #43	1/10/2017	88.8	7,575.00	6,564.00	3,330.00	346,292.00	320,842.20
STG #44	1/10/2017	89.3	7,185.00	6,009.00	3,246.00	345,099.00	322,039.20
STG #45	1/10/2017	47.2	7,537.00	5,506.00	5,881.00	8,939.00	135,689.40
STG #46	1/10/2017	72.8	7,961.00	9,152.00	4,387.00	627,073.00	710,640.00
STG #47	1/11/2017	78.3	7,888.00	7,077.00	4,352.00	376,364.00	433,120.80
STG #48	1/11/2017	73.1	7,954.00	7,016.00	4,660.00	372,058.00	402,691.80



## SHL 22 CHS

Formations	Top	Base
Shale	0	782
Pittsburgh Coal	782	792
Shale and Sandstone	792	1253
Gas Sand	1253	1282
Shale	1282	1383
1st Salt Sand	1383	1464
Shale	1464	1570
2nd Salt Sand	1570	1584
Shale	1584	1616
3rd Salt Sand	1616	1634
Shale	1634	1663
Maxton Sand	1663	1794
Shale	1794	1850
Big Lime	1850	1968
Big Injun	1968	2095
Price	2095	2449
Murrysville	2449	2457
Shale	2457	2731
Gordon	2731	2738
Shale	2738	2839
Fifth Sand	2839	2866
Shale	2866	3266
Speechley Sand	3266	3290
Shale	3290	4174
Warren Sand	4174	4188
Shale	4188	5095
Java Shale	5095	5165
Pipe Creek Shale	5165	5209
Angola Shale	5209	5835
Rhinestreet	5835	6249
Cashaqua	6249	6341
Middlesex	6341	6378
West River	6378	6419
Burkett	6419	6452
Tully Limestone	6452	6480
Hamilton	6480	6594
Marcellus	6594	6645
Onondaga	6645	



**Hydraulic Fracturing Fluid Product Component Information Disclosure**

Fracture Date:	2017-01-11
State:	West Virginia
County:	Marshall
API Number:	4705101808
Operator Name:	NOBLE ENERGY
Well Name and Number:	SHL22 C
Longitude:	-80.57
Latitude:	40.01
Long/Lat Projection:	NAD83
Indian/Federal:	none
Production Type:	Gas
True Vertical Depth (TVD):	6,656
Total Water Volume (gal):	19,553,208

**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)**	Ingredient Mass lbs	Comments	Company	First Name	Last Name	Email	Phone
Fresh Water	Operator	Base Fluid	Water	7732-18-5	100.00%	91.03134%	162877673	Density = 8.330					
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Listed Below				0	NA					
FR-76	Halliburton	Friction Reducer	Listed Below				0	NA					
FR-78	Halliburton	Friction Reducer	Listed Below				0	NA					
FR-A12	Halliburton	Additive	Listed Below				0	NA					
HA-FOS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Listed Below				0	NA					
HYDROCHLORIC ACID	Halliburton	Solvent	Listed Below				0	NA					
OILPERMA	Halliburton	Non-ionic Surfactant	Listed Below				0	NA					
SAND-COMMON	Halliburton	Proppant	Listed Below				0	NA					
WHITE-100	Halliburton	Proppant	Listed Below				0	NA					
MESH, SSA-2, BULK (100003676)	Halliburton	Proppant	Listed Below				0	NA					
SAND-PREMIUM	Halliburton	Proppant	Listed Below				0	NA					
WHITE-4070, BULK	Halliburton	Proppant	Listed Below				0	NA					
SP BREAKER	Halliburton	Breaker	Listed Below				0	NA					
WG-36 GELLING AGENT	Halliburton	Gelling Agent	Listed Below				0	NA					
<b>MSDS and Non-MSDS Ingredients are listed below this green line</b>													
Ingredients	Listed Above		1,2,4 Trimethylbenzene	95-63-6	1.00%	0.00001%	18						
			Acetic acid	64-19-7	60.00%	0.00172%	3081						
			Acetic anhydride	108-24-7	100.00%	0.00287%	5135						
			Acrylamide acrylate copolymer	Proprietary	30.00%	0.00072%	1280	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226	Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Alcohols, C12-16, ethoxylated	68551-12-2	5.00%	0.00307%	5501						
			Amide	Proprietary	5.00%	0.00307%	5501		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Ammonium chloride	12125-02-9	1.00%	0.00061%	1101						
			Crystalline silica, quartz	14908-60-7	100.00%	8.74481%	15646628						
			Ethanol	64-17-5	60.00%	0.00058%	1036						
			Ethoxylated alcohols	Proprietary	30.00%	0.00014%	255		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Fatty acid ester	Proprietary	1.00%	0.00061%	1101		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Fatty acids, tall oil	Proprietary	30.00%	0.00014%	255		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Glycerine	56-81-5	5.00%	0.00112%	2006						
			Guar gum	9000-30-0	100.00%	0.0014%	2662						
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.00029%	518						
			Hydrochloric acid	7647-01-0	7.50%	0.00988%	14144						

05/26/2017





# AS-DRILLED PLAT

Well is located on topo map 11,216

feet south of Latitude: 40° 02' 30"

Well is located on topo map 9,824 feet west of Longitude: 80° 32' 30"



**SURFACE HOLE LOCATION (SHL)**  
 UTM 17 - NAD83  
 N: 4429050.443  
 E: 536124.668  
**NAD27, WV NORTH**  
 N: 552086.580  
 E: 1698341.300  
**LAT/LON DATUM-NAD83**  
 LAT: 40.010879  
 LON: -80.576728

**SURFACE HOLE LOCATION (SHL)**  
 UTM 17 - NAD83  
 N: 4429050.208  
 E: 536124.889  
**NAD27, WV NORTH**  
 N: 552085.798  
 E: 1698342.013  
**LAT/LON DATUM-NAD83**  
 LAT: 40.010877  
 LON: -80.576726

**APPROX. LANDING POINT**  
 UTM 17 - NAD83  
 N: 4428757.825  
 E: 535691.998  
**NAD27, WV NORTH**  
 N: 551150.130  
 E: 1696905.460  
**LAT/LON DATUM-NAD83**  
 LAT: 40.008261  
 LON: -80.581814

**APPROX. LANDING POINT**  
 UTM 17 - NAD83  
 N: 4428780.972  
 E: 535680.862  
**NAD27, WV NORTH**  
 N: 551226.698  
 E: 1696870.188  
**LAT/LON DATUM-NAD83**  
 LAT: 40.00847  
 LON: -80.581943

**BOTTOM HOLE LOCATION**  
 UTM 17 - NAD83  
 N: 4426762.057  
 E: 537149.668  
**NAD27, WV NORTH**  
 N: 544520.870  
 E: 1701579.140  
**LAT/LON DATUM-NAD83**  
 LAT: 39.990217  
 LON: -80.564850

**BOTTOM HOLE LOCATION**  
 UTM 17 - NAD83  
 N: 4426760.056  
 E: 537146.857  
**NAD27, WV NORTH**  
 N: 544514.459  
 E: 1701569.806  
**LAT/LON DATUM-NAD83**  
 LAT: 39.990199  
 LON: -80.564883

**WELLS WITHIN 3000'**  
 PLUGGED WELL

**WATER WELLS:**  
 NONE FOUND

LINE TABLE		
LINE	BEARING	DISTANCE
R1	S81°02'20"E	253.35'
R2	S83°59'43"W	99.41'
R3	S34°49'03"W	513.61'
R4	S81°02'20"E	253.35'
R5	N85°09'04"W	1671.08'

**LEGEND**

- TOPO MAP POINT
- WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WW6A1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM CENTERLINE
- ROAD
- AS-DRILLED HORIZONTAL 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 hereon. 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.

**Sheffler & Company, Inc.**  
 ENGINEERING • SURVEYING  
 1712 Mount Nebo Road  
 Sewickley, PA 15143-8780  
 Phone: 412-219-4509  
 E-mail: info@shefflerco.com

FILE #: SHL 22 CHS  
 DRAWING #: SHL 22 CHS  
 SCALE: 1"=1500'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT WILSON KNOB 1462.02

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.: 21452 L.L.S.: P.S. NO.



(+) 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: WHEELING CREEK ELEVATION: 1322'  
 COUNTY/DISTRICT: MARSHALL / SAND HILL QUADRANGLE: VALLEY GROVE, W. VA.  
 SURFACE OWNER: CONSOL MINING CO. (CONSOL ENERGY) ACREAGE: 170.55  
 OIL & GAS ROYALTY OWNER: CNX GAS COMPANY, LLC, ET AL. ACREAGE: 170.55

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: MARCELLUS  
 WELL OPERATOR: NOBLE ENERGY, INC.  
 Address: 1000 NOBLE ENERGY DRIVE, CANONSBURG, PA 15317  
 City CANONSBURG State PA Zip Code 15317

DATE: MARCH 13, 2017

OPERATOR'S WELL #: SHL 22 CHS - AS DRILLED

API WELL #	47	051	01808
	STATE	COUNTY	PERMIT

ESTIMATED DEPTH: TVD: 6,680' ± TMD: 15,685' ±  
 DESIGNATED AGENT: STEVEN M. GREEN  
 Address: 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590  
 City CHARLESTON State WV Zip Code 25301

05/26/2017

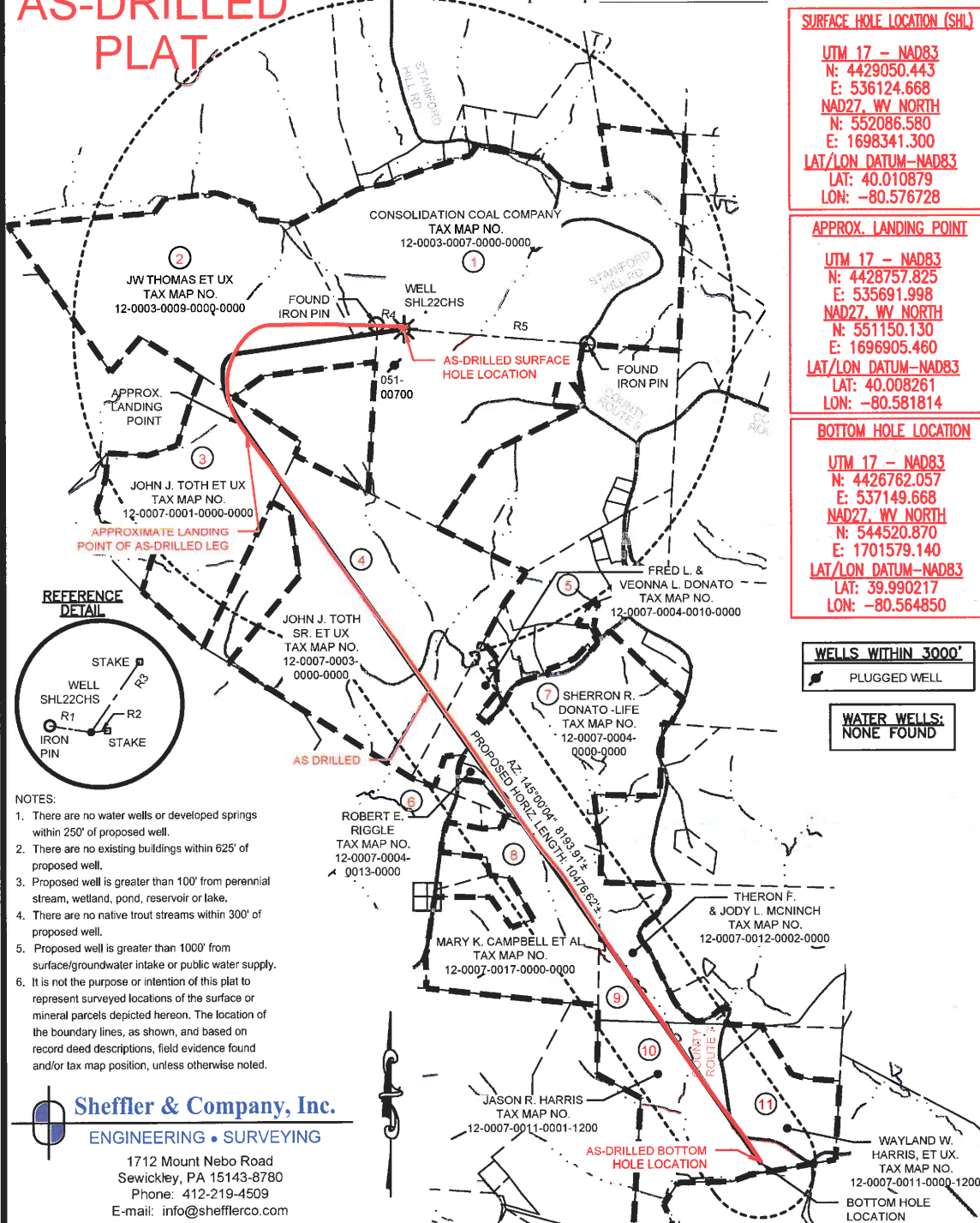


# AS-DRILLED PLAT

Well is located on topo map 11,216

feet south of Latitude: 40° 02' 30"

Well is located on topo map 9,824 feet west of Longitude: 80° 32' 30"



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LAT: 40.010877  
LON: -80.576726

**APPROX. LANDING POINT**

UTM 17 - NAD83  
N: 4428757.825  
E: 535691.998  
NAD27, WV NORTH  
N: 551150.130  
E: 1696905.460  
LAT/LON DATUM-NAD83  
LAT: 40.008261  
LON: -80.581814

**APPROX. LANDING POINT**

UTM 17 - NAD83  
N: 4428780.972  
E: 535680.862  
NAD27, WV NORTH  
N: 551226.698  
E: 1696870.188  
LAT/LON DATUM-NAD83  
LAT: 40.00847  
LON: -80.581943

**BOTTOM HOLE LOCATION**

UTM 17 - NAD83  
N: 4426762.057  
E: 537149.668  
NAD27, WV NORTH  
N: 544520.870  
E: 1701579.140  
LAT/LON DATUM-NAD83  
LAT: 39.990217  
LON: -80.564850

**BOTTOM HOLE LOCATION**

UTM 17 - NAD83  
N: 4426760.056  
E: 537146.857  
NAD27, WV NORTH  
N: 544514.459  
E: 1701569.806  
LAT/LON DATUM-NAD83  
LAT: 39.990199  
LON: -80.564883

**WELLS WITHIN 3000'**  
PLUGGED WELL

**WATER WELLS:**  
NONE FOUND

**LINE TABLE**

LINE	BEARING	DISTANCE
R1	S81°02'20"E	253.35'
R2	S83°59'43"W	99.41'
R3	S34°49'03"W	513.61'
R4	S81°02'20"E	253.35'
R5	N85°09'04"W	1671.08'

**LEGEND**

- TOPO MAP POINT
- WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WW6A1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM CENTERLINE
- ROAD
- AS-DRILLED HORIZONTAL WELL

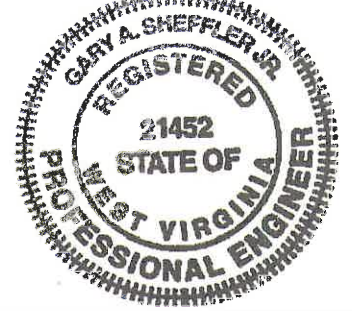
- NOTES:**
- There are no water wells or developed springs within 250' of proposed well.
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**Sheffler & Company, Inc.**  
ENGINEERING • SURVEYING  
1712 Mount Nebo Road  
Sewickley, PA 15143-8780  
Phone: 412-219-4509  
E-mail: info@shefflerco.com

FILE #: SHL 22 CHS  
DRAWING #: SHL 22 CHS  
SCALE: 1"=1500'  
MINIMUM DEGREE OF ACCURACY: 1/2500  
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT WILSON KNOB 1462.02

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.: 21452 L.L.S.: P.S. NO.



(+) 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: WHEELING CREEK ELEVATION: 1322'  
COUNTY/DISTRICT: MARSHALL / SAND HILL QUADRANGLE: VALLEY GROVE, W. VA.  
SURFACE OWNER: CONSOL MINING CO. (CONSOL ENERGY) ACREAGE: 170.55  
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY, LLC, ET AL. ACREAGE: 170.55



DATE: MARCH 13, 2017  
OPERATOR'S WELL #: SHL 22 CHS - AS DRILLED  
API WELL # 47 051 01808  
STATE COUNTY PERMIT

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: MARCELLUS ESTIMATED DEPTH: TVD: 6,680' ± TMD: 15,685' ±  
WELL OPERATOR: NOBLE ENERGY, INC. DESIGNATED AGENT: STEVEN M. GREEN  
Address: 1000 NOBLE ENERGY DRIVE, CANONSBURG, PA 15317 Address: 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590  
City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

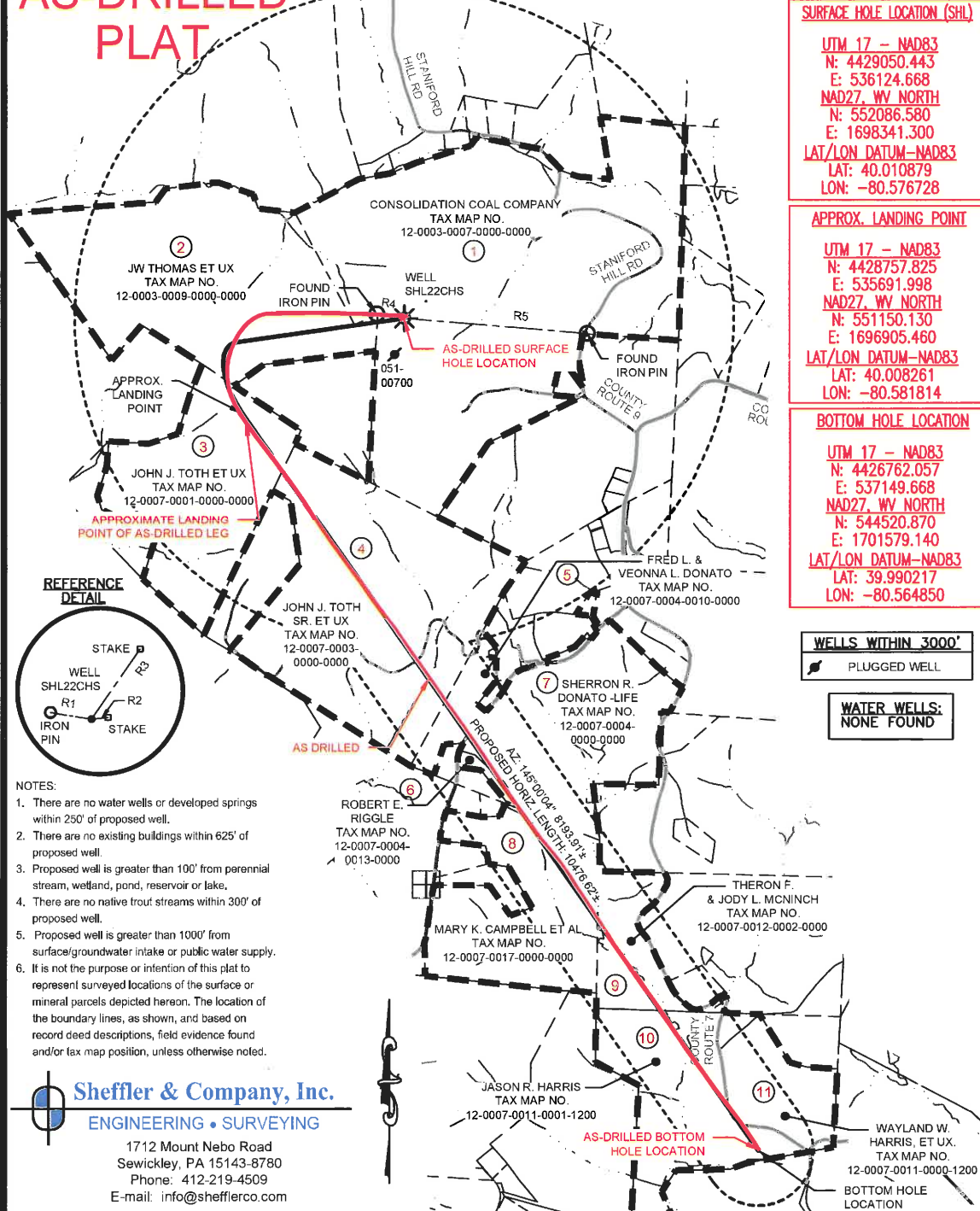
05/26/2017

# AS-DRILLED PLAT

Well is located on topo map 11,216

feet south of Latitude: 40° 02' 30"

Well is located on topo map 9,824 feet west of Longitude: 80° 32' 30"



**SURFACE HOLE LOCATION (SHL)**

UTM 17 - NAD83  
 N: 4429050.443  
 E: 536124.668  
 NAD27, WV NORTH  
 N: 552086.580  
 E: 1698341.300  
 LAT/LON DATUM-NAD83  
 LAT: 40.010879  
 LON: -80.576728

**SURFACE HOLE LOCATION (SHL)**

UTM 17 - NAD83  
 N: 4429050.208  
 E: 536124.889  
 NAD27, WV NORTH  
 N: 552085.798  
 E: 1698342.013  
 LAT/LON DATUM-NAD83  
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 LON: -80.576726

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 E: 535691.998  
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05/26/2017