

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

API 47 - 051 - 01806 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 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 4429041.742 Easting 536116.120
Landing Point of Curve Northing 4428791.263 Easting 536119.958
Bottom Hole Northing 4427120.348 Easting 537340.994

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 03/20/2015 Date drilling ceased 06/30/2015
Date completion activities began 11/15/2016 Date completion activities ceased 02/20/2017
Verbal plugging (Y/N) N Date permission granted _____
RECEIVED
Office of Oil and Gas

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug **APR 07 2017**

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) _____

APPROVED
NAME: Justin Wheeler
DATE: 5/2/17

Reviewed by: Jr 05/26/2017

WV Department of
Environmental Protection

API 47-051 - 01806 Farm name Consol Mining Co. (CONSOL) Well number SHL 22 AHS

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	1236.1	N	J-55 54.5#		Y
Coal							
Intermediate 1	12 3/8	9 5/8	3160.2	N	HCK-55 36.0#		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4	5 1/2	13,884.6	N	P-110 ICY 20#		Y
Tubing							
<u>Packer type and depth set</u>		Water String - Casing Size 20 - Depth 417.8 New Grade J-55 94.0# Cement Circulated					

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 ³ /sks)	Volume (ft ³)	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 113.0 Surf 232.0	0	8/8
Coal							
Intermediate 1	Class A	1195	15.6	1.18	251.0	0	8
Intermediate 2							
Intermediate 3							
Production	Class A	2340	14.5	1.32	566.0	792.0	8
Tubing							

Drillers TD (ft) 13,740 Loggers TD (ft) 13,651

Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole

Plug back procedure Not a Pilot Hole

Kick off depth (ft) 5,767

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 Bow Spring Centralizers used. Fresh Water:

Surface - 10 centralizers used, one every third joint Intermediate - 36 Bow Spring centralizers - bow spring centralizers on every joint to KOP, on every third joint from KOP to 100' from surface.

Production - 40-8 3/4 Bow Spring Centralizers and 119-8 1/2 Bow Spring Centralizers 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 _____

API 47- 051 - 01806 Farm name Consol Mining Co. (CONSOL) Well number SHL 22 AHS

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					See attached sheets

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.

Perforations SHL 22 AHS

API	Well Name	Date	Top (ftKB)	Btm (ftKB)	Com	Entered Shot Total	Est Hole Dia (in)
47-051-01806	SHL-22A-HS	2/12/2017	7,005.00	7,282.00	TCP STG #78	60	0.45
47-051-01806	SHL-22A-HS	1/18/2017	10,188.00	10,445.00	TCP STG #41	50	
47-051-01806	SHL-22A-HS	1/17/2017	10,510.00	10,792.00	TCP STG #38	50	

Well Header
 API: 47-051-01806

Well Name: SHL-22A-HS

WR-35 - Stimulation Information Per Stage		Start Date	Slurry Rate Avg (bbl/min)	P Treat Avg (psi)	P Breakdown (psi)	ISIP (psi)	Proplant Deliver (lb)	Vol Slurry Total (gal)
Int Des								
STG #1 INJ TEST #1		11/15/2016	3	5,511.00				2,310.00
STG #1 Acidization		11/18/2016	11.3					5,254.20
STG #1 INJ TEST #2		11/18/2016	4.1	8,035.00				6,778.80
STG #1		11/19/2016	73.4	6,826.00	7,115.00		174,217.00	388,155.60
STG #1 INJ TEST #3		11/20/2016	14.1	7,844.00		4,746.00		55,347.60
STG #2		11/21/2016	85.4	5,613.00	3,295.00		177,356.00	323,143.80
STG #3		11/21/2016	81.8	5,530.00	2,938.00	2,790.00	151,807.00	291,513.60
STG #4		11/21/2016	88.7	6,774.00	3,468.00		149,297.00	233,112.60
STG #5		11/21/2016	88.5	6,425.00	3,159.00		176,718.00	248,488.80
STG #6		11/21/2016	88	6,616.00	2,887.00	4,550.00	132,847.00	220,411.80
STG #7		11/21/2016	73.8	7,823.00	4,813.00		175,966.00	245,784.00
STG #8		11/21/2016	69.1	7,037.00	4,003.00	4,448.00	158,621.00	323,761.20
STG #9		11/22/2016	83.1	7,550.00	4,616.00		128,725.00	406,845.60
STG #10		11/22/2016	84.4	7,396.00	3,974.00	4,314.00	176,779.00	256,670.40
STG #11		11/22/2016	82.6	7,581.00	4,512.00		165,478.00	237,300.00
STG #12		11/22/2016	81.8	7,637.00	4,642.00		187,088.00	246,838.20
STG #13		11/22/2016	81.9	7,594.00	5,202.00	4,730.00	168,924.00	235,817.40
STG #14		11/22/2016	83.3	7,659.00	4,835.00		175,907.00	230,139.00
STG #15		11/22/2016	82.3	7,817.00	4,578.00		176,970.00	334,244.40
STG #16		11/22/2016	78.7	7,696.00	3,968.00	4,889.00	176,410.00	365,001.00
STG #17		11/23/2016	79.5	7,952.00	6,374.00		172,158.00	306,146.40
STG #18		11/23/2016	80.8	8,144.00	4,952.00		175,560.00	303,790.20
STG #19		11/23/2016	79.3	7,905.00	3,981.00	4,857.00	144,479.00	221,839.80
STG #20		11/23/2016	82	7,857.00	3,993.00		126,836.00	205,249.80
STG #21		11/23/2016	83.5	7,795.00	3,843.00		143,545.00	261,983.40
STG #22		11/23/2016	82.4	7,924.00	3,602.00	4,428.00	206,531.00	335,941.20
STG #23		11/23/2016	79.2	8,114.00	5,924.00		173,784.00	298,515.00
STG #24		11/23/2016	80.4	8,072.00	5,191.00		174,381.00	248,627.40
STG #25		11/23/2016	72.2	8,128.00	4,498.00	4,991.00	176,649.00	249,408.60
STG #26		11/24/2016	63.1	8,339.00	5,508.00		91,210.00	387,214.80
STG #27		11/24/2016	65.7	7,987.00	6,410.00		174,132.00	241,638.60
STG #28		11/24/2016	62.8	7,655.00	5,157.00	4,918.00	173,930.00	536,461.80
STG #29		11/24/2016	65.5	8,579.00	6,740.00		171,357.00	322,896.00
STG #30		11/24/2016	64	8,490.00	6,127.00		176,532.00	257,628.00
STG #31		11/24/2016	55.7	8,527.00	6,089.00	7,512.00	120,351.00	261,912.00
STG #32		11/24/2016	57.9	8,781.00	8,069.00		121,898.00	307,620.60
STG #33		11/24/2016	40.1	8,545.00	6,732.00		24,791.00	152,338.20
STG #34		11/24/2016	42.5	8,608.00	7,146.00	6,536.00	56,158.00	166,080.60
STG #35		1/18/2017	86.5	7,364.00	8,241.00	3,904.00	568,496.00	474,679.80
STG #38		1/18/2017	82.7	7,274.00	6,116.00	3,731.00	522,427.00	458,409.00
STG #42		1/19/2017	79.9	7,592.00	6,641.00	4,335.00	172,760.00	289,048.20

STG #43	1/19/2017	82	7,636.00	5,616.00	4,566.00	178,440.00	242,138.40
STG #44	1/20/2017	82.4	7,941.00	6,564.00		174,414.00	288,859.20
STG #45	1/20/2017	85.7	7,816.00	4,618.00	4,839.00	174,977.00	211,226.40
STG #46	1/21/2017	68.6	7,942.00	8,288.00		173,151.00	226,871.40
STG #47	1/21/2017	74.8	8,040.00	8,292.00	4,742.00	172,929.00	243,251.40
STG #48	1/21/2017	75.8	8,200.00	7,564.00		176,331.00	241,806.60
STG #49	1/21/2017	78.6	8,258.00	5,784.00	5,242.00	180,440.00	228,480.00
STG #50	1/21/2017	66	8,436.00	8,308.00		173,031.00	270,954.60
STG #51	1/21/2017	83.3	8,038.00	8,270.00	4,602.00	173,056.00	251,084.40
STG #52	1/22/2017	82.2	7,192.00	5,993.00		197,344.00	244,864.20
STG #53	1/22/2017	78.6	7,652.00	4,068.00	4,252.00	173,936.00	271,399.80
STG #54	1/22/2017	87	7,605.00	6,751.00	4,487.00	172,300.00	334,651.80
STG #55	1/22/2017	80.1	7,611.00	6,358.00	4,582.00	174,680.00	225,456.00
STG #56	1/23/2017	78.7	7,817.00	6,335.00		177,199.00	220,046.40
STG #57	1/23/2017	81.6	7,488.00	4,728.00	4,700.00	173,737.00	224,687.40
STG #58	2/4/2017	72.7	7,963.00	7,129.00	4,960.00	177,781.00	216,741.00
STG #59	2/4/2017	71.9	7,965.00	6,522.00	4,902.00	175,114.00	219,450.00
STG #60	2/4/2017	64	8,404.00	6,234.00	5,559.00	174,275.00	302,194.20
STG #61	2/6/2017	52.5	8,090.00	8,289.00	5,228.00	177,178.00	234,511.20
STG #62	2/6/2017	60.3	8,036.00	8,554.00	5,124.00	173,991.00	215,283.60
STG #63	2/6/2017	59.8	8,159.00	8,485.00	5,437.00	174,757.00	238,673.40
STG #64	2/6/2017	48.8	7,998.00	7,833.00	5,224.00	172,713.00	220,269.00
STG #65	2/7/2017	63.6	8,240.00	7,428.00	5,541.00	176,255.00	212,935.80
STG #66	2/7/2017	59	8,128.00	8,000.00	5,967.00	174,031.00	349,948.20
STG #67	2/7/2017	53.9	8,033.00	7,962.00	5,687.00	171,699.00	239,685.60
STG #68	2/7/2017	55.4	8,139.00	8,235.00	6,007.00	180,187.00	237,946.80
STG #69	2/8/2017	57.4	7,967.00	8,349.00	5,697.00	172,797.00	257,229.00
STG #70	2/8/2017	51.6	8,469.00	8,701.00	7,957.00	91,319.00	199,600.80
STG #71	2/8/2017	42.2	8,420.00	9,206.00	5,908.00	191,016.00	289,207.80
STG #72	2/8/2017	51.5	8,459.00	9,424.00	5,956.00	213,019.00	390,776.40
STG #73	2/9/2017	42.3	8,618.00	8,495.00	7,267.00	151,950.00	300,237.00
STG #74	2/9/2017	29.1	8,782.00	8,983.00	8,357.00	54,253.00	205,921.80
STG #75	2/9/2017	11.8	8,342.00	8,819.00	8,435.00		31,542.00
STG #76	2/9/2017	24.8	8,748.00	8,783.00	7,967.00	36,051.00	166,987.80
STG #78	2/12/2017	95.9	6,636.00	5,793.00	5,354.00	818,624.00	605,060.40

API 47- 051 - 01806 Farm name Consol Mining Co. (CONSOL) Well number SHL 22 AHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6670</u>	<u>TVD</u>	<u>13740</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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 Oil NGL Water GAS MEASURED BY
 3324 mcfpd 54.56 bpd 185.42 bpd 529 bpd 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				See attached 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 _____
 Address _____ City _____ State _____ Zip _____

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

Stimulating Company Halliburton Energy Services
 Address 121 Champion Way, Suite 110 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Regina A Logue Telephone 724-820-3559
 Signature Regina A. Logue Title Regulatory Analyst Date 3/29/17

SHL 22 AHS

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	2017-02-20
State:	West Virginia
County:	Marshall
API Number:	4705101806
Operator Name:	NOBLE ENERGY
Well Name and Number:	SHL 22 A
Longitude:	-80.570826
Latitude:	40.009016
Long/Lat Projection:	NAD27
Indian/Federal Production Type:	none
Gas	6.670
True Vertical Depth (TVD):	6,670
Total Water Volume (gal):	18,830,948

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration (% 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%	91.79063%	158661284	Density = 8.330					
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Listed Below	Listed Below			0	NA					
FR-78	Halliburton	Friction Reducer	Listed Below	Listed Below			0	NA					
FR-A12	Halliburton	Additive	Listed Below	Listed Below			0	NA					
HA-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Listed Below	Listed Below			0	NA					
HYDROCHLORIC ACID	Halliburton	Solvent	Listed Below	Listed Below			0	NA					
OILPERM A	Halliburton	Non-ionic Surfactant	Listed Below	Listed Below			0	NA					
SAND-COMMON	Halliburton	Proppant	Listed Below	Listed Below			0	NA					
WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant	Listed Below	Listed Below			0	NA					
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant	Listed Below	Listed Below			0	NA					
*MSDS and Non-MSDS ingredients are listed below (line green line)													
Ingredients	Listed Above	Listed Above	1,2,4 Trimethylbenzene	95-63-6	1.00%	0.00001%	18						
			Acetic acid	64-19-7	60.00%	0.00185%	3162						
			Acetic anhydride	108-24-7	100.00%	0.00308%	5269						
			Alcohols, C12-16, ethoxylated	68551-12-2	5.00%	0.00311%	5322						
			Amide	Proprietary	5.00%	0.00311%	5322	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
			Ammonium chloride	12125-02-9	1.00%	0.00062%	1065						
			Crystalline silica, quartz	14808-60-7	100.00%	7.48266%	12787139						
			Ethanol	64-17-5	60.00%	0.00062%	1062						
			Ethoxylated alcohols	Proprietary	30.00%	0.00015%	263		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Fatty acid ester	Proprietary	1.00%	0.00062%	1065		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Fatty acids, tall oil	Proprietary	30.00%	0.00015%	263		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Glycerine	56-81-5	5.00%	0.00117%	2001						
			Heavy aromatic petroleum naphtha	64742-94-5	30.00%	0.00031%	531						
			Hydrochloric acid	7647-01-0	15.00%	0.03546%	163130.5						
			Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.01868%	31931						
			Inorganic salt	Proprietary	5.00%	0.00311%	5322		Halliburton	Denise	Tuck	Denise.Tuck@Halliburton.com	281-871-6226
			Methanol	67-56-1	60.00%	0.00031%	525						
			Naphthalene	91-20-3	5.00%	0.00005%	89						

05/26/2017

	Olefins	Proprietary	5.00%	0.000006%	106	Halliburton	Denise.Tuck@Halliburton.co	281-871-6226
	Oxyalkylated phenolic resin	Proprietary	30.00%	0.00041%	708	Halliburton	Denise.Tuck@Halliburton.co	281-871-6226
	Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00%	0.000005%	89			
	Polyacrylate	Proprietary	30.00%	0.01568%	31931	Halliburton	Denise.Tuck@Halliburton.co	281-871-6226
	Propargyl alcohol	107-19-7	10.00%	0.000005%	88			
	Proprietary Component	Proprietary	60.00%	0.01405%	24004	Halliburton	Denise.Tuck@Halliburton.co	281-871-6226
	Reaction product of acetophenone, formaldehyde, thiourea and dielic acid in dimethyl formamide	68527-49-1	30.00%	0.00015%	263			
	Sodium chloride	7647-14-5	10.00%	0.00234%	4001			
	Water	7732-18-5	100.00%	0.69717%	1191405			

* 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.

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

SURFACE HOLE LOCATION (SHL)

UTM 17 - NAD83
 N: 4429041.742
 E: 536116.120
 NAD27, WV NORTH
 N: 552058.500
 E: 1698312.770
 LAT/LON DATUM-NAD83
 LAT: 40.010801
 LON: -80.576829

APPROX. LANDING POINT

UTM 17 - NAD83
 N: 4428791.263
 E: 536119.958
 NAD27, WV NORTH
 N: 551236.340
 E: 1698311.610
 LAT/LON DATUM-NAD83
 LAT: 40.008544
 LON: -80.576798

BOTTOM HOLE LOCATION

UTM 17 - NAD83
 N: 4427120.348
 E: 537340.994
 NAD27, WV NORTH
 N: 545686.100
 E: 1702226.610
 LAT/LON DATUM-NAD83
 LAT: 39.993437
 LON: -80.562588

Well is located on topo map 11,245 feet south of Latitude: 40° 02' 30"

SURFACE HOLE LOCATION (SHL)

UTM 17 - NAD83
 N: 4429041.724
 E: 536116.14
 NAD27, WV NORTH
 N: 552058.437
 E: 1698312.838
 LAT/LON DATUM-NAD83
 LAT: 40.010801
 LON: -80.576829

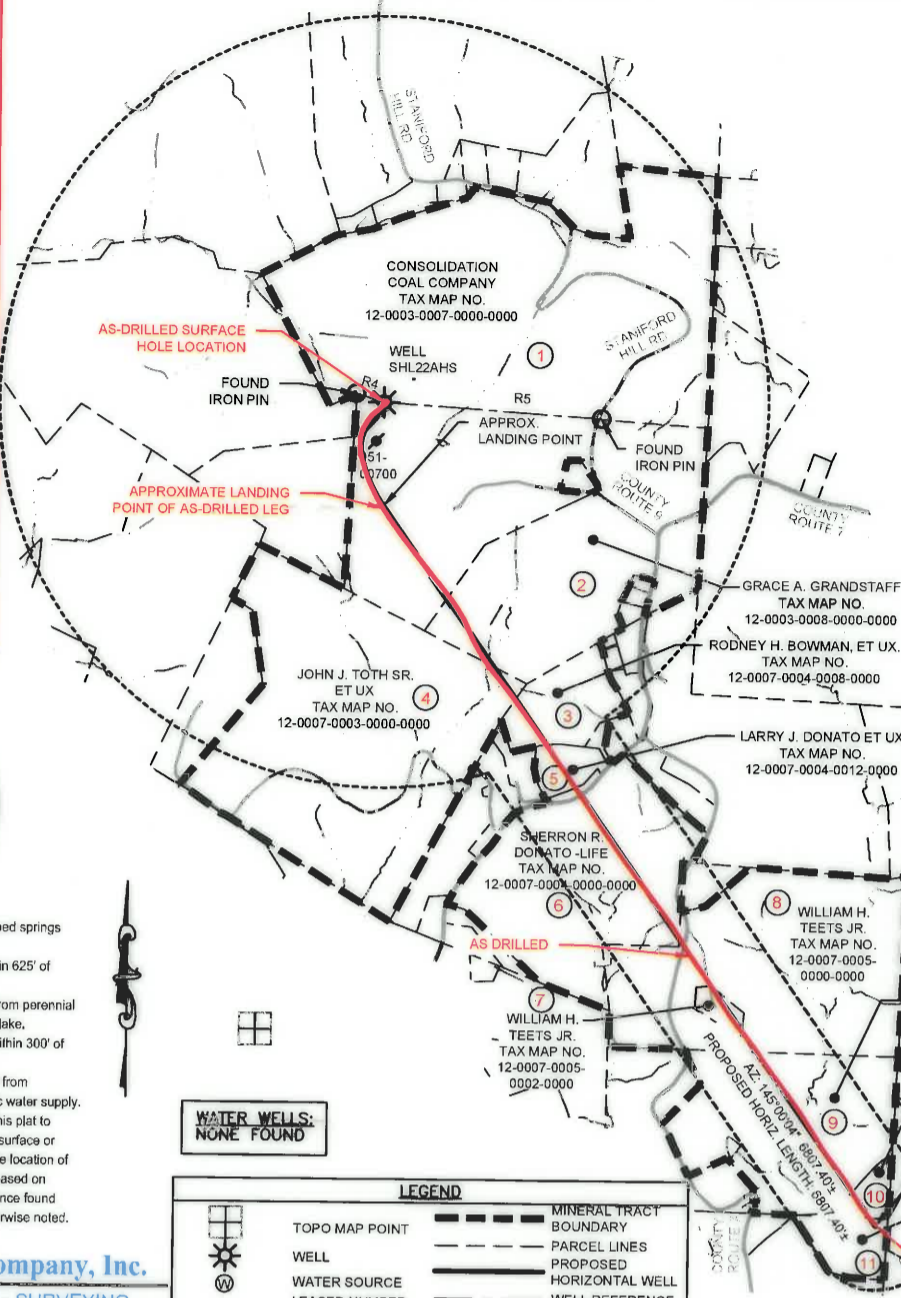
APPROX. LANDING POINT

UTM 17 - NAD83
 N: 4428797.137
 E: 536120.850
 NAD27, WV NORTH
 N: 551255.566
 E: 1698314.860
 LAT/LON DATUM-NAD83
 LAT: 40.008597
 LON: -80.576787

BOTTOM HOLE LOCATION

UTM 17 - NAD83
 N: 4427118.190
 E: 537338.785
 NAD27, WV NORTH
 N: 545679.140
 E: 1702219.244
 LAT/LON DATUM-NAD83
 LAT: 39.993417
 LON: -80.562614

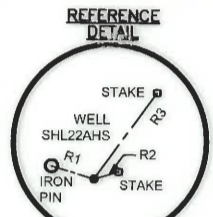
Well is located on topo map 9,853 feet west of Longitude: 80° 32' 30"



LINE TABLE

LINE	BEARING	DISTANCE
R1	S73°11'15"E	230.94'
R2	S73°34'46"W	133.49'
R3	S35°40'59"W	552.78'
R4	S73°11'15"E	230.94'
R5	N86°09'13"W	1698.11'

WELLS WITHIN 3000'
 PLUGGED 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.
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 Sewickley, PA 15143-8780
 Phone: 412-219-4509
 E-mail: info@shefflerco.com

**WATER WELLS:
 NONE FOUND**

LEGEND

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

AS-DRILLED PLAT

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

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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 AHS - AS DRILLED
 API WELL # 47 051 01806
 STATE COUNTY PERMIT

ESTIMATED DEPTH: TVD: 6,680' ± TMD: 13,890' ±
 DESIGNATED AGENT: STEVEN M. GREEN
 Address: 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CHARLESTON State WV Zip Code 25301

05/26/2017

SURFACE HOLE LOCATION (SHL)

UTM 17 - NAD83
 N: 4429041.742
 E: 536116.120
 NAD27, WV NORTH
 N: 552058.500
 E: 1698312.770
 LAT/LON DATUM-NAD83
 LAT: 40.010801
 LON: -80.576829

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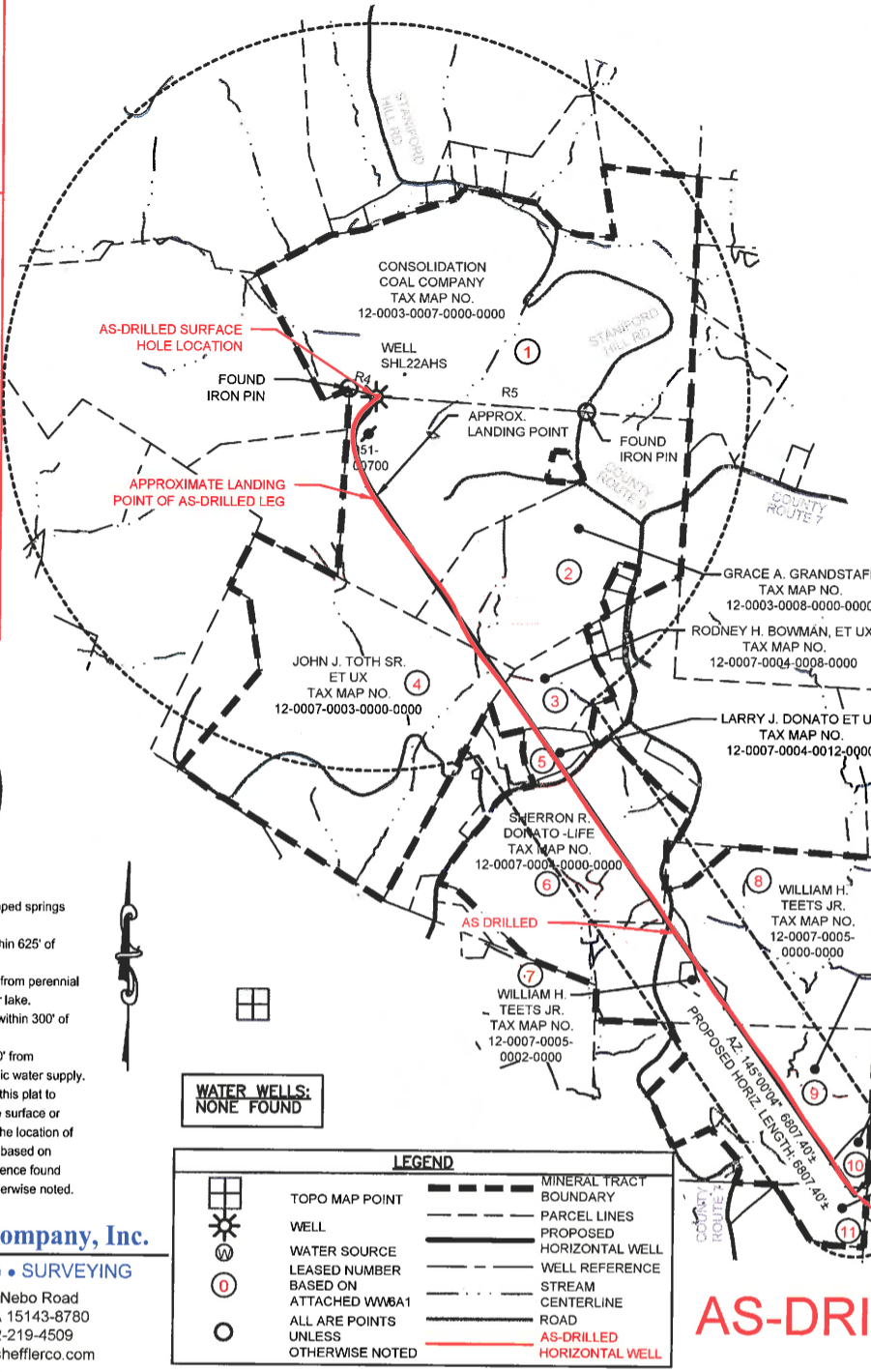
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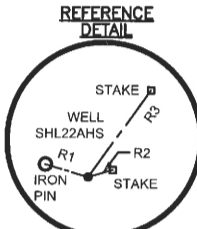


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WELLS WITHIN 3000'

- PLUGGED WELL
- GARY A. MCGLUMPHY, ET UX. TAX MAP NO. 12-0007-0012-0000-1200
- WAYLAND W. HARRIS, ET UX. TAX MAP NO. 12-0007-0012-0001-1200
- WAYLAND W. HARRIS, ET UX. TAX MAP NO. 12-0007-0011-0002-1200
- AS-DRILLED BOTTOM HOLE LOCATION



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WATER WELLS:
 NONE FOUND

LEGEND

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- WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WVA81
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE CENTERLINE
- STREAM
- ROAD
- AS-DRILLED HORIZONTAL WELL

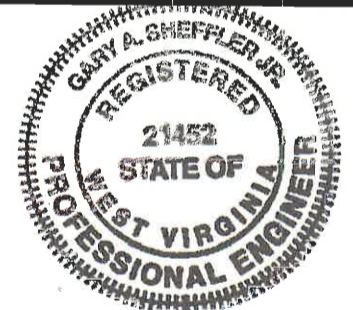
Sheffler & Company, Inc.
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AS-DRILLED PLAT

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 DRAWING #: SHL 22 AHS
 SCALE: 1"=1500'
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 Gas Liquid Injection Storage Shallow

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 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



DATE: MARCH 13, 2017
 OPERATOR'S WELL #: SHL 22 AHS - AS DRILLED
 API WELL # 47 051 01806
 STATE COUNTY PERMIT

05/26/2017

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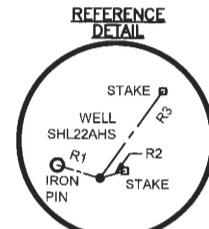
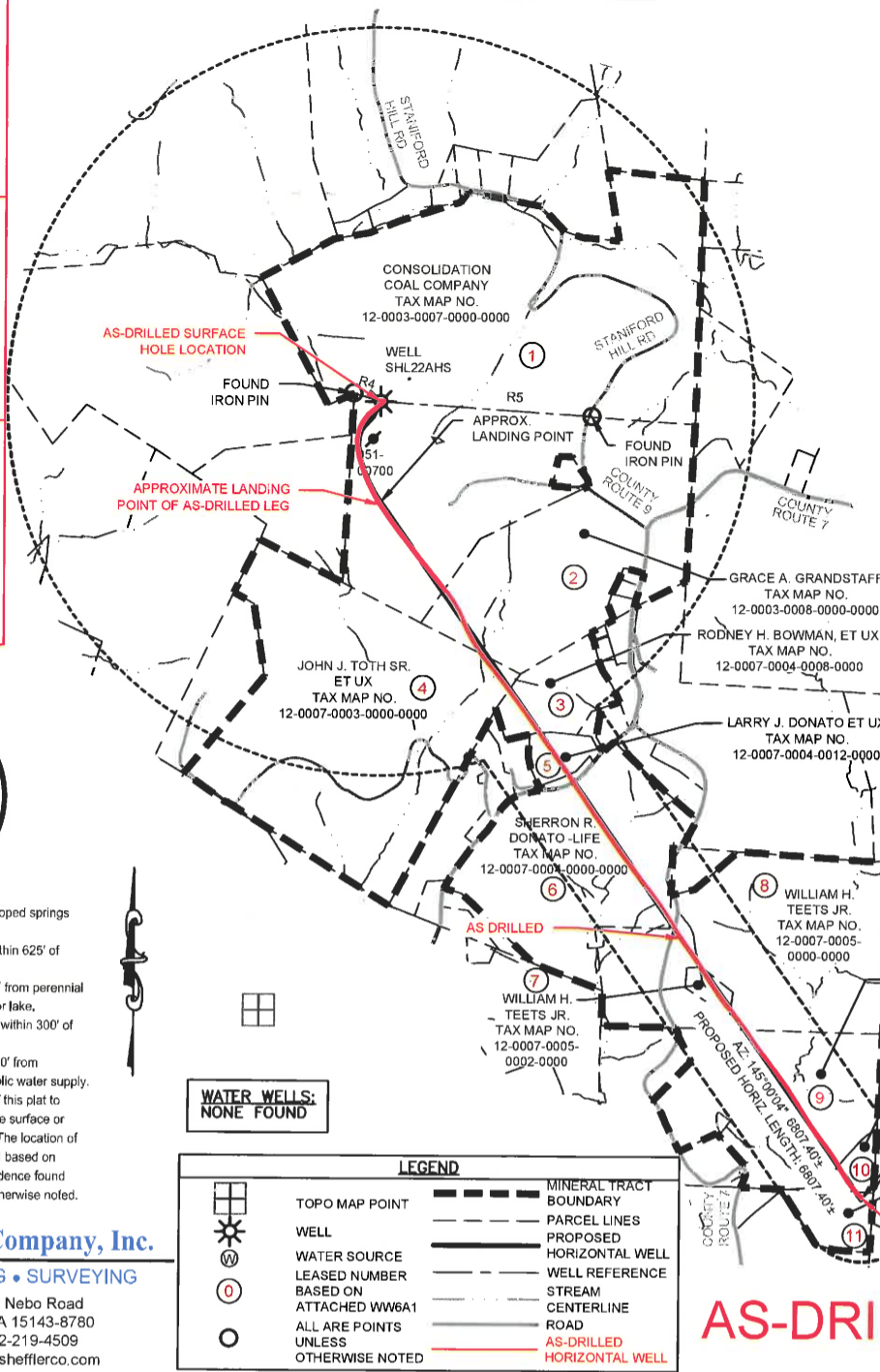
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