

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

API 47-051-01739 County Marshall District Franklin
Quad Powhatan Point Pad Name MND 3 Field/Pool Name NA
Farm name Consol Mining Co., LLC Well Number MND 3 CHS
Operator (as registered with the OOG) Noble Energy, Inc.
Address 333 Technology Drive, Suite 116 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 4411183.42 Easting 517795.82
Landing Point of Curve Northing 4411294.76 Easting 518083.50
Bottom Hole Northing 4409742.53 Easting 519214.93

Elevation (ft) 1498.81' 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 3/25/2014 Date drilling commenced 4/14/2014 Date drilling ceased 7/2/2014
Date completion activities began 11/14/2014 Date completion activities ceased 12/6/2014
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 165' and 298' 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 612' Pittsburgh Base Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) Y - Ireland Mine

RECEIVED
Office of Oil and Gas

FEB 02 2015

Reviewed by: _____

API 47-051 - 01739 Farm name Consol Mining Co., LLC Well number MND 3 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	N			
Surface	24	20	435	N	J-55 94#		Y
Coal							
Intermediate 1	17 1/2	13 3/8	1,087	N	J-55 54.5#		Y
Intermediate 2	12 3/8	9 5/8	2,623	N	J 55 36#		Y
Intermediate 3							
Production	8 3/4	5 1/2	13,276	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 I	555	15.6	1.19	115.0	0	8
Coal							
Intermediate 1	Class A	955	15.6	1.19	202.0	0	8
Intermediate 2	Class A	884	15.6	1.19	184.7	0	
Intermediate 3							
Production	Class A	Lead - 558 Tail - 1459	Lead 14.2 Tail 14.8	Lead - 1.54 Tail - 1.37	Lead 153 - Tail 357.2	4,643	8
Tubing							

Drillers TD (ft) 13,276 Loggers TD (ft) 13,189
 Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole
 Plug back procedure Not a Pilot Hole

Kick off depth (ft) 7,024

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 _____
4 Centralizers on Surface Casing, 9 Centralizers on Intermediate 1 Casing, 22 Centralizer used on the Intermediate 2 String, and on the Production 213 Centralizers were utilized.
 On the Surface and Intermediate strings the centralizers are on every 3 joint of casing.
 On the Production String, they are on every 3rd joint from the Surface to Top of Curve, then every joint until TD.

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 _____

Perforation Record

API: 47-051-01739

Farm name:

Consol Mining
Co. LLC.

Well Name: MND-3C-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Prep Inj Test	11/14/2014	13,141	13,143	-	Marcellus
1	11/14/2014	12,844	13,118	50	Marcellus
2	11/15/2014	12,545	12,818	50	Marcellus
2 Inj Test I	11/15/2014	-	-	-	Marcellus
2 Inj Test II	11/16/2014	-	-	-	Marcellus
2 Inj Test III	11/16/2014	-	-	-	Marcellus
2 Inj Test IIII	11/18/2014	-	-	-	Marcellus
3	11/18/2014	12,246	12,520	50	Marcellus
4	11/19/2014	11,947	12,221	50	Marcellus
5	11/19/2014	11,648	11,922	50	Marcellus
6	11/19/2014	11,349	11,623	50	Marcellus
7	11/20/2014	11,050	11,324	50	Marcellus
8	11/20/2014	10,751	11,025	50	Marcellus
9	11/20/2014	10,452	10,726	50	Marcellus
10	11/21/2014	10,153	10,427	50	Marcellus
11	11/21/2014	9,854	10,128	50	Marcellus
12	11/21/2014	9,555	9,829	50	Marcellus
13	11/22/2014	9,256	9,530	50	Marcellus
14	11/22/2014	8,957	9,231	50	Marcellus
15	11/22/2014	8,658	8,932	50	Marcellus
16	11/23/2014	8,359	8,633	50	Marcellus
17	11/23/2014	8,060	8,334	50	Marcellus
18	11/23/2014	7,761	8,035	50	Marcellus
19	11/23/2014	7,462	7,736	50	Marcellus
20	11/24/2014	7,163	7,437	50	Marcellus
21	11/24/2014	6,864	7,138	50	Marcellus
22	11/24/2014	6,605	6,839	50	Marcellus

STIMULATION INFORMATION PER STAGE

API: 47-051-01739

Farm name:

Consol Mining Co.
LLC.

Well Name: MDN-3C-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N ² / other (units)
Toe Prep Inj Test	11/14/2014	18.5	7,992	-	-	-	470.69	
1	11/14/2014	86.0	7,436	5,751	3,770	600,569	13,233.65	
2	11/15/2014	88.7	7,638	5,701	-	482,046	11,875.36	
2 Inj Test I	11/15/2014	5.0	7,510	-	-	-	367.76	
2 Inj Test II	11/16/2014	2.9	3,793	-	-	-	358.52	
2 Inj Test III	11/16/2014	4.0	11,143	-	-	-	574.40	
2 Inj Test IIII	11/18/2014	17.5	7,745	-	5,408	-	642.40	
3	11/18/2014	83.1	7,997	6,197	3,741	601,027	13,994.15	
4	11/19/2014	87.5	7,963	5,772	3,720	599,015	13,023.41	
5	11/19/2014	87.9	7,962	6,174	3,702	603,101	14,252.17	
6	11/19/2014	86.0	7,724	5,691	3,605	600,972	13,015.42	
7	11/20/2014	87.1	7,514	5,726	3,698	601,524	13,027.92	
8	11/20/2014	89.4	7,562	6,323	4,322	592,892	12,491.58	
9	11/20/2014	87.9	7,659	6,025	4,123	607,913	13,192.70	
10	11/21/2014	85.1	7,159	5,781	4,581	600,999	13,183.74	
11	11/21/2014	89.8	6,939	6,021	5,035	600,098	12,600.91	
12	11/21/2014	86.5	7,078	6,029	4,748	599,435	13,794.23	
13	11/22/2014	87.9	6,857	6,006	4,443	601,867	12,590.00	
14	11/22/2014	89.1	6,698	6,082	4,358	601,780	12,506.95	
15	11/22/2014	88.1	6,718	6,131	4,749	600,248	12,644.05	
16	11/23/2014	87.7	6,615	5,723	4,570	600,546	12,593.23	
17	11/23/2014	90.1	6,714	5,789	4,673	599,954	12,422.28	
18	11/23/2014	87.0	6,702	6,227	4,649	601,082	13,564.74	
19	11/23/2014	86.2	6,636	5,635	4,554	602,531	12,622.50	
20	11/24/2014	87.9	6,310	6,532	4,278	600,862	12,448.72	
21	11/24/2014	88.9	6,205	6,011	4,375	602,113	12,207.92	
22	11/24/2014	87.7	6,447	6,331	3,653	601,944	12,158.65	

MND 3C 47-051-01739

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale and Sandstone	0	606	0	606	
Pittsburgh Coal	606	616	606	616	
Shale and Sandstone	616	1069	616	1069	
Dunkard Sand	1069	1090	1069	1090	
Shale	1090	1239	1090	1239	
Gas Sand	1239	1310	1239	1310	
Shale	1310	1379	1310	1379	
1st Salt Sand	1379	1395	1379	1395	
Shale	1395	1502	1395	1502	
2nd Salt Sand	1502	1531	1502	1531	
Shale and Sandstone	1531	1661	1531	1661	
Maxton Sand	1661	1708	1661	1708	
Shale	1708	1726	1708	5044	
Big Lime	1726	1798	1726	5120	
Big Injun	1798	2068	1798	5711	
Price	2068	2166	2068	6033	
Murrysville	2166	2273	2166	6107	
Shale and Sandstone	2273	2811	2273	6131	
Gordon	2811	2841	2811	6194	
Shale and Sandstone	2841	3362	2841	6220	
Fifth Sand	3362	3415	3363	6247	
Shale and Sandstone	3415	4217	3416	not encountered	
Warren Sand	4217	4226	4226	not encountered	
Shale	4226	4943	4236	not encountered	
Java Shale	4943	5027	4960	not encountered	
Pipe Creek Shale	5027	5102	5044	5120	
Angola Shale	5102	5686	5120	5711	
Rhinestreet	5686	6005	5711	6033	
Cashaqua	6005	6077	6033	6107	
Middlesex	6077	6100	6107	6131	
West River	6100	6161	6131	6194	
Burkett	6161	6185	6194	6220	
Tully Limestone	6185	6211	6220	6247	Gas
Hamilton	6211	6246	6247	not encountered	
Marcellus	6246	6299	not encountered	not encountered	
Onondaga	6299		not encountered	not encountered	

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/14/2014
Job End Date:	11/24/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01739-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	MND 3 C
Longitude:	-80.79216100
Latitude:	39.85040800
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,282
Total Base Water Volume (gal):	12,006,051
Total Base Non Water Volume:	79,500



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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)**	Comments
Fresh Water	Operator	Base Fluid					
			Fresh Water	7732-18-5	100.00000	87.74613	Density = 8.330
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	9.17774	
SAND - COMMON WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	2.33236	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	10.00000	0.05913	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02045	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
			Acetic anhydride	108-24-7	100.00000	0.00318	
			Acetic acid	64-19-7	60.00000	0.00191	
HYDROCHLORIC ACID 10-30%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	30.00000	0.00353	
BE-9W	Halliburton	Biocide					

			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00250	
Scalechek® LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor					
			Ammonium chloride	12125-02-9	10.00000	0.00243	
BE-9	Halliburton	Biocide					
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00151	
LoSurf-300D	Halliburton	Non-ionic Surfactant					
			Ethanol	64-17-5	60.00000	0.00064	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00032	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00005	
			Naphthalene	91-20-3	5.00000	0.00005	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00001	
LGC-36 UC	Halliburton	Liquid Gel Concentrate					
			Guar gum	9000-30-0	60.00000	0.00025	
			Naphtha, hydrotreated heavy	64742-48-9	60.00000	0.00025	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00032	
			Propargyl alcohol	107-19-7	10.00000	0.00005	
SP BREAKER	Halliburton	Breaker					
			Sodium persulfate	7775-27-1	100.00000	0.00001	
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
		Other Ingredient(s)					
			Water	7732-18-5		0.69949	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.02045	
		Other Ingredient(s)					
			Propylene glycol	57-55-6		0.01498	
		Other Ingredient(s)					
			Organic phosphonate	Confidential		0.01459	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00341	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00341	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00341	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00341	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
		Other Ingredient(s)					

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		Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00068
	Other Ingredient(s)				
		Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00068
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00032
	Other Ingredient(s)				
		Formaldehyde	50-00-0		0.00024
	Other Ingredient(s)				
		Alcohols, C14-C15, ethoxylated	68951-67-7		0.00016
	Other Ingredient(s)				
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00016
	Other Ingredient(s)				
		Fatty acids, tall oil	Confidential		0.00016
	Other Ingredient(s)				
		Strontium chloride	10476-85-4		0.00015
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00011
	Other Ingredient(s)				
		Olefins	Confidential		0.00003
	Other Ingredient(s)				
		Olefins	Confidential		0.00003
	Other Ingredient(s)				
		Quaternary ammonium compounds, bis(hydrogenated tallow alkyl) dimethyl, salts with bentonite	68953-58-2		0.00002
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Fatty alcohol polyglycol ether surfactant	9043-30-5		0.00000
	Other Ingredient(s)				
		Crystalline silica, quartz	14808-60-7		0.00000
	Other Ingredient(s)				
		Sodium sulfate	7757-82-6		0.00000

* 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.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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Noble Energy MND-3C-HS Gyro+MWD Off to 13276ft MD Survey Report



(Def Survey)

Report Date: June 30, 2014 - 09:09 AM
Client: Noble Energy
Field: WV Marshall County (NAD 27)
Structure / Slot: Noble Energy MND-3 Pad / MND-3C-HS
Well: MND-3C-HS
Original Borehole: 1115.730 ft above NSL
UWI / API#: Unknown
Survey Name: Noble Energy MND-3C-HS Gyro+MWD Off to 13276ft MD
Survey Date: June 17, 2014
Tort / AMD / ODI / ERO Ratio: 250.046 / 1.0027 876.9 / 6.441 / 1.278
Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
Location Lat / Long: N 35° 51' 1.47404", W 80° 47' 31.79056"
Location Grid NE YX: N 494462.249 IUUS, E 1637217.218 IUUS
CRS Grid Convergence Angle: -9.9241°
Grid Scale Factor: 0.99994839
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 134.457° (Grid Norm)
TVD Reference Datum: 0.000 ft, 0.000 ft
TVD Reference Elevation: 1124.230 ft above NSL
Seabed / Ground Elevation: 1115.730 ft above NSL
Magnetic Declination: -7.805°
Total Gravity Field Strength: 969.3559mgm (8.80955 Beesd)
Gravity Model: GARM
Total Magnetic Field Strength: 52779.246 nT
Magnetic Dip Angle: 67.31°
Magnetic Declination Model: June 17, 2014
North Reference: HDM2013
Grid Convergence Used: Grid North
Total Corr Mag North-to-Grid: -0.8281°
Local Coord Referenced To: Well Head

Table with columns: Comments, MD (ft), Incl (°), Azim Grid (°), TVD (ft), TVDSS (ft), VSEC (ft), NS (ft), EW (ft), DLS (ft/100ft), BR (ft/100ft), TR (ft/100ft), Northing (ftUS), Easting (ftUS), Latitude (NS/°), Longitude (EW/°), Directional Difficulty Index. The table contains multiple rows of data representing survey points.

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Comments	MD (ft)	Incl (°)	Azim Grad (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLs (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S °'")	Longitude (E/W °'")	Directional Difficulty Index
	6118.00	40.73	77.77	5836.93	4702.40	-285.19	749.58	374.72	9.49	5.24	12.42	495211.79	1637591.92	N 39 51 8.93 W	80 47 27.11	5.12
	6163.00	43.22	83.90	5870.98	4735.86	-288.19	704.33	404.32	10.53	5.32	12.09	495216.34	1637621.50	N 39 51 8.99 W	80 47 25.79	5.15
	6207.00	45.74	89.32	5901.49	4767.26	-248.30	756.12	435.16	10.35	5.73	12.32	495218.33	1637652.35	N 39 51 9.01 W	80 47 28.34	5.17
	6252.00	47.45	94.80	5932.43	4798.20	-224.98	754.98	467.81	9.33	5.80	11.73	495217.19	1637685.00	N 39 51 9.00 W	80 47 25.62	5.20
	6296.00	49.16	100.85	5961.71	4827.48	-199.39	750.54	500.33	11.29	5.89	14.20	495212.05	1637717.52	N 39 51 8.96 W	80 47 25.50	5.23
	6341.00	51.25	107.33	5990.53	4856.30	-170.17	742.11	533.82	12.03	4.64	14.40	495204.32	1637751.01	N 39 51 8.88 W	80 47 25.07	5.26
	6386.00	53.92	112.91	6017.88	4887.65	-138.15	729.79	567.35	11.49	5.53	12.40	495192.05	1637784.54	N 39 51 8.77 W	80 47 24.64	5.29
	6431.00	56.88	117.42	6043.44	4909.21	-103.65	714.03	600.84	10.55	6.58	10.02	495176.24	1637818.03	N 39 51 8.62 W	80 47 24.21	5.32
	6475.00	59.94	122.22	6068.49	4932.26	-67.75	695.38	633.33	11.60	6.95	10.91	495157.59	1637850.51	N 39 51 8.44 W	80 47 23.79	5.35
	6520.00	61.67	126.51	6098.45	4954.22	-29.35	673.20	665.74	9.17	3.84	9.53	495135.41	1637882.92	N 39 51 8.22 W	80 47 23.37	5.37
	6565.00	64.85	129.71	6108.70	4974.47	10.40	648.39	697.34	9.50	7.07	7.11	495110.61	1637914.52	N 39 51 7.98 W	80 47 22.96	5.40
	6610.00	69.06	132.57	6126.32	4992.09	51.62	621.15	728.50	11.03	9.36	6.36	495083.68	1637945.68	N 39 51 7.72 W	80 47 22.56	5.42
	6655.00	73.12	134.69	6140.90	5006.67	94.13	591.78	759.30	10.06	9.02	4.71	495053.99	1637976.48	N 39 51 7.43 W	80 47 22.16	5.45
	6699.00	75.68	137.47	6152.77	5018.54	136.49	561.26	788.68	8.26	5.59	6.32	495023.48	1638005.86	N 39 51 7.13 W	80 47 21.77	5.47
	6744.00	77.41	139.35	6163.28	5029.05	180.21	528.53	817.72	5.75	4.07	4.18	494990.78	1638034.89	N 39 51 6.81 W	80 47 21.39	5.49
	6789.00	80.84	142.11	6171.77	5037.54	224.27	494.33	845.68	9.71	7.62	6.13	494956.55	1638062.85	N 39 51 6.48 W	80 47 21.03	5.52
	6834.00	84.97	143.92	6177.33	5043.10	268.62	458.66	872.54	10.01	9.18	4.02	494920.89	1638089.71	N 39 51 6.13 W	80 47 20.68	5.54
	6879.00	87.67	144.55	6180.15	5045.92	312.12	423.04	898.20	6.30	6.14	1.43	494885.27	1638115.37	N 39 51 5.78 W	80 47 20.34	5.56
	6924.00	89.57	144.90	6182.32	5048.09	401.16	349.59	950.15	2.15	2.11	0.39	494811.82	1638167.32	N 39 51 5.06 W	80 47 19.66	5.60
	7018.00	89.16	141.24	6182.87	5048.64	459.81	306.63	980.19	7.37	-0.82	-7.32	494771.86	1638197.35	N 39 51 4.67 W	80 47 19.27	5.62
	7107.00	88.55	142.38	6184.65	5050.42	530.41	239.69	1035.20	1.45	-0.89	1.28	494701.93	1638252.37	N 39 51 3.99 W	80 47 18.55	5.65
	7197.00	88.90	146.54	6188.85	5052.42	628.49	168.49	1087.49	4.84	0.39	4.62	494628.73	1638304.85	N 39 51 3.27 W	80 47 17.87	5.68
	7287.00	87.93	148.33	6189.14	5054.91	716.80	90.68	1135.91	2.26	-1.08	1.99	494552.92	1638353.07	N 39 51 2.50 W	80 47 17.23	5.71
	7376.00	87.67	147.23	6192.56	5058.33	804.00	15.44	1183.33	1.27	-0.29	-1.24	494477.69	1638400.49	N 39 51 1.78 W	80 47 16.61	5.74
	7466.00	87.76	147.11	6196.15	5061.92	892.37	-80.13	1232.09	0.17	0.10	-0.13	494402.13	1638449.24	N 39 51 1.05 W	80 47 15.97	5.78
	7555.00	88.29	148.59	6199.21	5064.98	979.85	-134.60	1280.72	0.83	0.60	-0.58	494327.66	1638497.87	N 39 51 0.33 W	80 47 15.34	5.79
	7645.00	88.25	146.65	6201.56	5067.33	1068.41	-209.72	1330.22	0.48	0.48	0.07	494252.54	1638546.37	N 39 50 59.59 W	80 47 14.69	5.81
	7734.00	88.81	148.22	6203.48	5069.25	1156.04	-283.67	1379.42	0.49	0.10	-0.48	494178.40	1638596.56	N 39 50 58.86 W	80 47 14.04	5.83
	7824.00	89.87	149.38	6204.52	5070.29	1244.27	-380.01	1427.37	3.70	1.18	3.51	494102.26	1638644.51	N 39 50 58.12 W	80 47 13.42	5.86
	7914.00	89.78	148.77	6204.79	5070.56	1332.41	-436.39	1474.96	2.90	-0.10	-2.90	494025.88	1638692.10	N 39 50 57.37 W	80 47 12.79	5.88
	8004.00	89.87	146.29	6205.07	5070.84	1421.03	-511.46	1524.59	0.54	0.10	-0.58	493950.81	1638741.01	N 39 50 56.64 W	80 47 12.14	5.93
	8093.00	89.78	143.10	6205.34	5071.11	1509.10	-584.08	1578.02	3.58	-0.10	3.58	493878.20	1638793.15	N 39 50 55.93 W	80 47 11.47	5.93
	8183.00	89.87	143.31	6205.61	5071.38	1598.47	-656.16	1628.93	0.25	0.10	0.23	493806.13	1638847.06	N 39 50 55.22 W	80 47 10.76	5.95
	8272.00	89.60	142.65	6208.03	5071.80	1688.90	-727.21	1683.51	0.80	-0.30	-0.74	493735.07	1638900.64	N 39 50 54.53 W	80 47 10.08	5.97
	8362.00	89.87	143.49	6206.44	5072.21	1776.29	-795.16	1737.59	0.94	0.30	0.93	493663.14	1638958.92	N 39 50 53.13 W	80 47 9.38	5.97
	8451.00	89.96	142.87	6208.57	5072.34	1864.67	-870.45	1790.88	0.59	0.10	-0.10	493591.85	1639007.98	N 39 50 53.13 W	80 47 8.68	6.00
	8541.00	89.78	143.10	6208.78	5072.55	1954.08	-942.36	1844.98	0.25	0.00	0.14	493519.94	1639062.10	N 39 50 52.42 W	80 47 7.95	6.02
	8630.00	89.78	143.01	6207.12	5072.89	2042.49	-1013.49	1898.47	0.10	-0.20	-0.10	493448.82	1639115.59	N 39 50 51.73 W	80 47 7.26	6.04
	8720.00	89.25	144.87	6207.88	5073.65	2131.01	-1085.92	1952.02	1.22	-0.59	1.07	493378.49	1639169.13	N 39 50 51.02 W	80 47 6.58	6.05
	8810.00	89.43	143.23	6208.92	5074.69	2221.00	-1158.72	2004.76	0.35	0.20	0.29	493303.59	1639223.00	N 39 50 50.31 W	80 47 5.87	6.07
	8899.00	89.25	143.16	6209.94	5075.71	2309.29	-1230.44	2057.48	1.22	-0.20	-1.20	493231.88	1639274.59	N 39 50 49.61 W	80 47 5.18	6.09
	8889.00	89.34	143.96	6211.05	5076.82	2398.59	-1302.83	2110.93	0.89	0.10	0.89	493159.48	1639328.04	N 39 50 48.90 W	80 47 4.48	6.10
	9078.00	89.25	144.53	6212.15	5077.92	2486.76	-1375.05	2162.93	0.65	-0.10	0.64	493087.27	1639380.03	N 39 50 48.19 W	80 47 3.80	6.12
	9167.00	89.25	143.77	6213.31	5079.08	2574.95	-1447.19	2215.05	0.85	0.00	-0.85	493015.14	1639432.15	N 39 50 47.49 W	80 47 3.12	6.13
	9257.00	89.43	144.37	6214.35	5080.12	2664.15	-1520.06	2267.86	0.70	0.20	0.67	492942.27	1639484.96	N 39 50 46.77 W	80 47 2.43	6.15
	9346.00	89.43	144.02	6215.23	5081.00	2752.34	-1592.23	2319.92	0.39	0.00	-0.39	492870.10	1639537.02	N 39 50 46.07 W	80 47 1.75	6.16
	9436.00	89.34	144.63	6216.20	5081.97	2841.48	-1665.34	2372.41	0.89	-0.10	0.68	492797.00	1639589.50	N 39 50 45.35 W	80 47 1.08	6.18
	9525.00	89.25	143.68	6217.29	5083.06	2929.66	-1737.56	2424.41	0.87	-0.10	-0.87	492724.78	1639641.50	N 39 50 44.65 W	80 47 0.39	6.19
	9615.00	89.25	142.88	6218.47	5084.24	3018.99	-1809.77	2478.11	1.11	0.00	-1.11	492652.58	1639695.20	N 39 50 43.94 W	80 46 59.68	6.21
	9705.00	89.25	142.54	6219.65	5085.42	3108.45	-1881.36	2532.65	0.36	0.00	-0.36	492580.99	1639749.73	N 39 50 43.24 W	80 46 58.97	6.22
	9794.00	89.08	142.99	6220.95	5086.72	3198.90	-1952.21	2586.49	0.54	-0.19	0.51	492510.15	1639803.57	N 39 50 42.55 W	80 46 58.26	6.23
	9884.00	89.34	143.92	6222.19	5087.96	3289.28	-2024.21	2640.47	0.45	0.23	0.23	492436.14	1639857.04	N 39 50 41.85 W	80 46 57.56	6.25
	9973.00	89.93	143.71	6223.40	5089.29	3374.60	-2095.75	2693.40	0.61	-0.39	0.46	492366.61	1639910.47	N 39 50 41.15 W	80 46 56.87	6.26
	10063.00	89.34	145.78	6224.80	5090.57	3463.65	-2169.23	2745.34	2.33	0.30	2.30	492293.13	1639962.41	N 39 50 40.43 W	80 46 56.19	6.28
	10152.00	89.43	146.68	6225.75	5091.52	3551.35	-2243.20	2794.82	0.99	0.10	0.99	492219.17	1640011.89	N 39 50 39.70 W	80 46 55.54	6.29
	10242.00	89.43	146.96	6226.65	5092.42	3640.02	-2318.09	2844.73	0.76	0.00	-0.76	492144.29	1640061.79	N 39 50 38.97 W	80 46 54.89	6.30
	10332.00	89.25	145.48	6227.68	5093.45	3728.45	-2392.46	2894.40	0.59	-0.10	0.58	492070.91	1640112.46	N 39 50 38.24 W	80 46 54.22	6.31
	10421.00	88.72	145.74	6228.26	5095.03	3816.69	-2465.90	2945.66	0.66	-0.60	0.29	491996.49	1640162.72	N 39 50 37.52 W	80 46 53.57	6.33
	10511.00	88.72	145.87	6231.27	5097.04	3905.47	-2540.32	2996.23	0.14	0.00	0.14	491922.07	1640213.29	N 39 50 36.80 W	80 46 52.90	6.34
	10600.00	88.90	146.11	6233.12	5098.89	3993.22	-2614.08	3046.00	0.34	0.20	0.27	491848.31	1640263.06	N 39 50 36.07 W	80 46 52.25	6.35
	10690.00	88.81	146.40	6234.92	5100.69	4081.89	-2688.90	3095.99	0.34	0.10	0.32	491773.49	1640313.04	N		

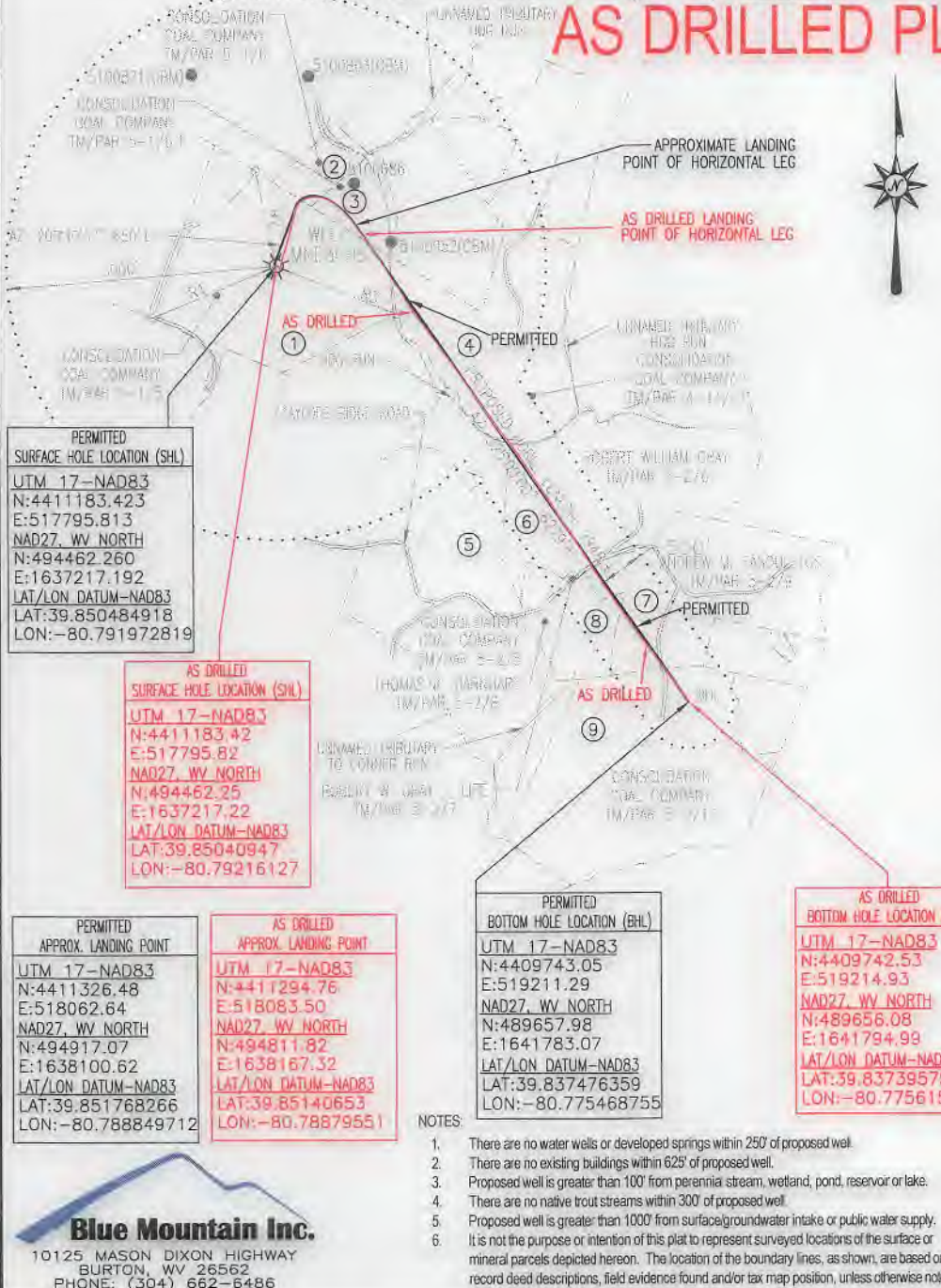
51-01739

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')	Directional Difficulty Index	
		1	7107.000	13189.000	Act Stns	30.000	30.000	SLB_MWD+DMAG									
		1	13189.000	13276.000	Act Stns	30.000	30.000	SLB_BLIND+TREND									

Well is located on topo map 8,963' feet south of Latitude: 39° 52' 30"

AS DRILLED PLAT

Well is located on topo map 137' feet west of Longitude: 80° 47' 30"



LINE	BEARING	DISTANCE
R1	S 81° 18' 47" W	1446.00
R2	N 1° 18' 54" W	106.47
W1	E 85° 21' 07" W	1435.87
E1	N 89° 42' 17" E	17.81
N2	S 89° 42' 17" E	25.09
R3	S 89° 42' 17" E	163.17

PARCEL	LESSOR
1	BARBARA G. MATTHEWS, ET AL
2	WILLIAM GARY MESSNER, ET UX, ET AL
3	PHYLLIS LEE MESSNER, ET AL
4	CNX GAS COMPANY LLC ET AL
5	CNX GAS COMPANY LLC ET AL
6	ROBERT W. GRAY JR., ET AL
7	ANDREW M. FASOULETOS, ET UX, ET AL
8	THOMAS A. BARNHART, ET UX
9	WESBANCO BANK, TRUSTEE

LEGEND	
	LEASE NUMBER
	MINERAL TRACT BOUNDARY
	PARCEL LINES
	WELL REFERENCE
	PROPOSED HORIZONTAL WELL
	WELL
	EXISTING WELLS
	WORKING WELL
	ABANDONED WELL

PERMITTED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4411183.423
 E:517795.813
 NAD27, WV NORTH
 N:494462.260
 E:1637217.192
 LAT/LON DATUM-NAD83
 LAT:39.850484918
 LON:-80.791972819

AS DRILLED SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4411183.42
 E:517795.82
 NAD27, WV NORTH
 N:494462.25
 E:1637217.22
 LAT/LON DATUM-NAD83
 LAT:39.85040947
 LON:-80.79216127

PERMITTED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4411326.48
 E:518062.64
 NAD27, WV NORTH
 N:494917.07
 E:1638100.62
 LAT/LON DATUM-NAD83
 LAT:39.851768266
 LON:-80.788849712

AS DRILLED APPROX. LANDING POINT
 UTM 17-NAD83
 N:4411294.76
 E:518083.50
 NAD27, WV NORTH
 N:494811.82
 E:1638167.32
 LAT/LON DATUM-NAD83
 LAT:39.85140653
 LON:-80.78879551

PERMITTED BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4409743.05
 E:519211.29
 NAD27, WV NORTH
 N:489657.98
 E:1641783.07
 LAT/LON DATUM-NAD83
 LAT:39.837476359
 LON:-80.775468755

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 UTM 17-NAD83
 N:4409742.53
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 N:489656.08
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 LAT/LON DATUM-NAD83
 LAT:39.83739575
 LON:-80.77561528

- 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.

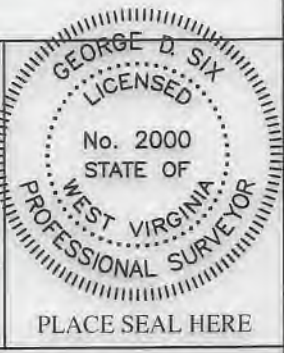


FILE #: MND3CHS-AS DRILLED
 DRAWING #: MND3CHS-AS DRILLED
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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:

R.P.E.: _____ L.L.S.: P.S. No. 2000



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304

DATE: JANUARY 6, 2015

OPERATOR'S WELL #: MND3CHS-AS DRILLED

API WELL #: 47 51 01739

STATE COUNTY PERMIT

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

WATERSHED: SHORT CREEK ELEVATION: 1124.42'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, OH-WV 7.5'

SURFACE OWNER: CONSOLIDATION COAL COMPANY - CONSOL MINING CO. ACREAGE: 180.214±

OIL & GAS ROYALTY OWNER: BARBARA G. MATTHEWS, ET AL ACREAGE: 606.597±

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

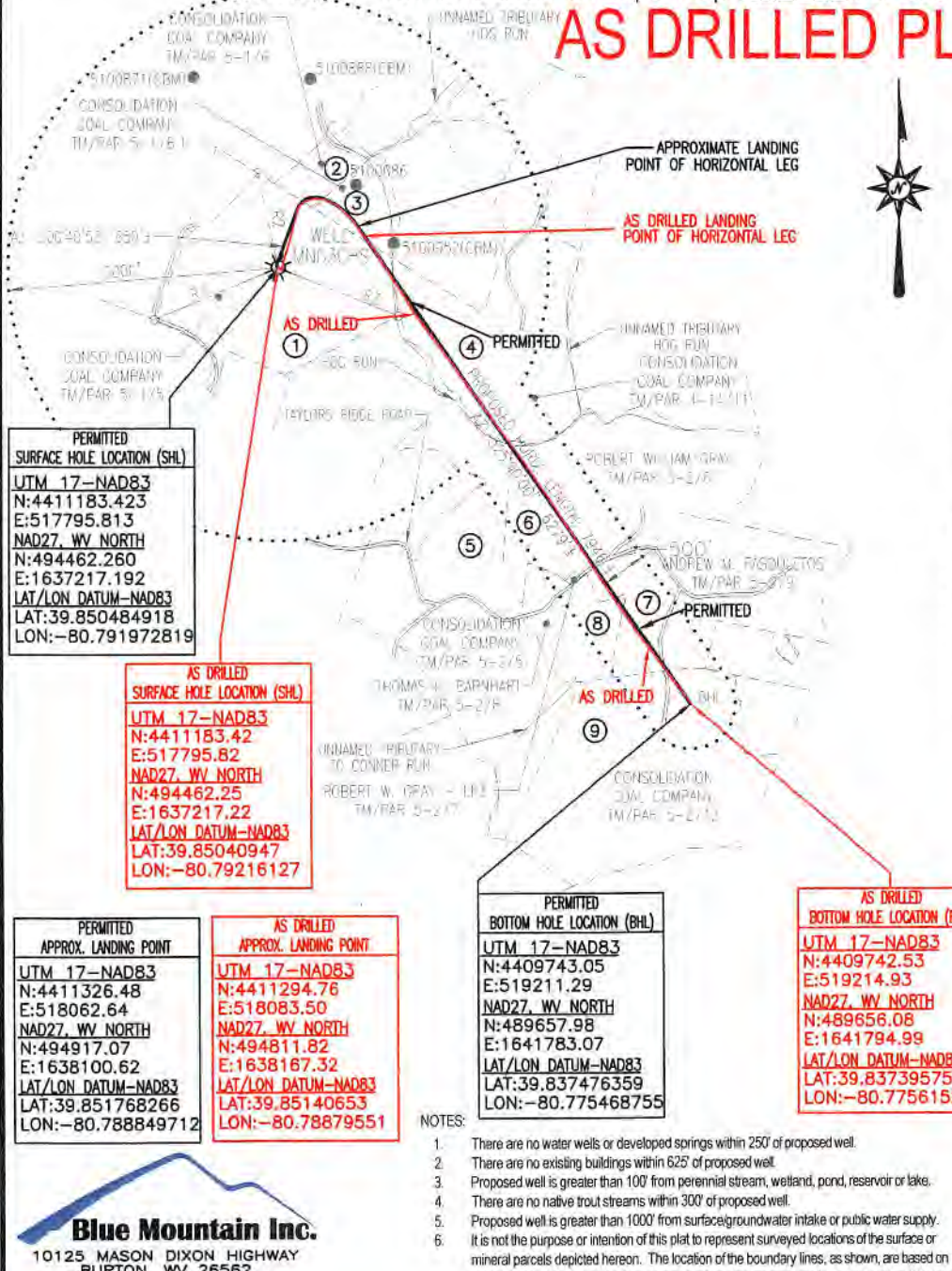
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,279'± TMD: 13,380'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
 Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

Well is located on topo map 8,963' feet south of Latitude: 39° 52' 30"

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R2	N 12°18'54" W	1064.47'
R3	S 68°27'5" E	1438.81'
R4	N 90°47'0" E	172.43'
R5	S 42°37'03" E	232.63'
R6	S 03°07'01" E	269.17'

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Blue Mountain Inc.
 10125 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

LEGEND

- TOPO MAP POINT
- WELL
- ALL API POINTS UNLESS OTHERWISE NOTED
- LEASE NUMBER
- MINERAL TRAC BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- AS DRILLED
- EXISTING WELLS
 - EXISTING WELLS
 - PLUGGED WELLS

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PLACE SEAL HERE

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 Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301