

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

API 47-051-02014 County Marshall District Franklin  
Quad Powhatan Point Pad Name MND20 Field/Pool Name \_\_\_\_\_  
Farm name CCC/Murray Energy Well Number MND20 DU  
Operator (as registered with the OOG) HG Energy LLC  
Address 5260 Dupont Rd City Parkersburg State WV Zip 26101

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4411319.6 Easting 516852.6  
Landing Point of Curve Northing 4411385.2 Easting 517521.4  
Bottom Hole Northing 4407578.8 Easting 520270.8

Elevation (ft) 1058 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)  
Air/ OBM  
KCL, Barite, Lime, CaCL, graphite, base oil, clay, sulfatone, petrogel

Date permit issued 6/29/18 Date drilling commenced 8/20/2018 Date drilling ceased 2/8/2019  
Date completion activities began 3/12/2019 Date completion activities ceased 7/17/2019  
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 450 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 545 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) Y

Reviewed by:  
Justin Nicholas  
6/15/2020

API 47-051 - 02014 Farm name CCC/Murray Energy Well number MND20 DU

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	30"	30"	100'	New	154.5 lbs/ft		No
Surface	26"	20"	949'	New	94 lbs/ft J-55		Yes
Coal							
Intermediate 1	17.5"	13.375"	2694'	New	68 lbs/ft		Yes
Intermediate 2	12.25"	9.625"	9994'	New	47 lbs/ft P-11C		Yes
Intermediate 3							
Production	8.5"	6.625/5.5"	27066'	New	Q125 28.6/P		Yes
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						Drilled in	
Surface	Class A	1765	15.6	1.19	2077	Surface	8
Coal							
Intermediate 1	Class A	1380/600	15.2/15.8	1.23/1.33	1740/797	Surface	8
Intermediate 2	Class H	1405/1645	13.5/15	1.66/1.14	2330/1875	Surface	8
Intermediate 3							
Production	Class H	648/3445	15.3/16.0	1.24/1.44	803/4957	Surface	8
Tubing							

Drillers TD (ft) 27200 Loggers TD (ft) \_\_\_\_\_  
 Deepest formation penetrated Point Pleasant Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 10677

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 30": N/A 20" centralizers every 3 joints to surface, 13.375" bow springs on first 2 joints then every 100' from surface 9.625" Bow spring on first 8 joints then every 3rd joint from surface 6.625/5.5" 1 spiral centralizer every 5 joints from top of curve to surface 1 spiral centralizer every 3 joints from 1st 5.5 long joint to the top of the curve.

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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HG Energy II Appalachia, LLC  
MND20 DU  
Lithology Report

Formation	Top MD	TVD		Base MD	TVD	Formation Description
Coal	213	213		216	216	
Other Coals	465	465		470	470	
Freshwater show	450	450		452	452	1/2" stream only observed water show
Pittsburgh Coal	545	545		553	553	
Greenbrier Big Lime	1583	1583		1600	1600	Limestone
Loyalhanna Big Injun	1673	1673		1712	1712	Sandstone
Pocono Big Injun	1763	1763		1916	1916	Sandstone
Price	2260	2260		2290	2290	Sandstone
50' sand	2386	2386		2416	2416	Sandstone
Gordon Stray	2464	2464		2481	2481	sandstone
Speechley	3248	3247		3368	3366	shale
Java	4768	4765		4807	4805	shale
Rhinestreet	5547	5542		5845	5840	shale
Cashaqua	5845	5840		5916	5911	shale
MiddleSex	5916	5911		5947	5942	shale
West River	5947	5942		5977	5972	shale
Burket	5977	5972		6004	5998	shale
Tully	6004	5998		6020	6014	Limestone
Hamilton	6020	6014		6053	6047	shale
Marcellus	6053	6047		6107	6101	shale, 1800 units peak gas
Onondaga	6107	6101		6167	6160	Limestone
Huntersville	6167	6160		6226	6218	chert,shale
Oriskany	6226	6218		6432	6418	sandstone, siltstone,limestone
Helderburg	6432	6418		6639	6616	Limestone
Bass Island	6639	6616		6823	6785	Dolomite
Salina	6823	6785		7910	7794	salt, dolomite, anhydrite
Lockport	7910	7794		8118	7989	Dolomite
Newburg	8118	7989		8340	8195	Dolomite, mudstone
Rochester	8340	8195		8600	8435	shale
Dayton/Packer	8600	8435		8730	8555	fossiliferous shale/Dolomite/Limestone
Rose Hill	8730	8555		8802	8621	shale
Clinton	8802	8621		8934	8743	Sandstone,shale
Medina	8934	8743		8980	8785	shale,sandstone
Queenston	8980	8785		9860	9606	red shale
Reedsville	9860	9606		10371	10087	grey shale
Utica	10371	10087		11221	10677	Limey shale
PP	11221	10677		27200	11077	Limey shale

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**HG Energy II Appalachia, LLC**  
**MND20 DU**  
**Perforation Record**

Stage #	Perforation Date	Perforation From Depth	Perforation to depth	Number of perforations	Formation Description
1	3/24/2019	27057	27005	0	Point Pleasant
2	3/24/2019	26,915	26,750	45	Point Pleasant
3	3/25/2019	26,765	26,605	45	Point Pleasant
4	3/26/2019	26,565	26,405	45	Point Pleasant
5	3/26/2019	26,365	26,205	45	Point Pleasant
6	3/27/2019	26,165	26,005	45	Point Pleasant
7	3/27/2019	25,965	25,805	45	Point Pleasant
8	3/27/2019	25,765	25,605	45	Point Pleasant
9	3/28/2019	25,565	25,405	45	Point Pleasant
10	3/29/2019	25,365	25,205	45	Point Pleasant
11	3/29/2019	25,165	25,005	45	Point Pleasant
12	3/29/2019	24,965	24,805	45	Point Pleasant
13	3/30/2019	24,765	24,605	45	Point Pleasant
14	3/30/2019	24,565	24,405	45	Point Pleasant
15	3/30/2019	24,365	24,205	45	Point Pleasant
16	3/31/2019	24,165	24,005	45	Point Pleasant
17	3/31/2019	23,965	23,805	45	Point Pleasant
18	4/1/2019	23,765	23,605	45	Point Pleasant
19	4/1/2019	23,565	23,405	45	Point Pleasant
20	4/1/2019	23,365	23,205	45	Point Pleasant
21	4/2/2019	23,165	23,005	45	Point Pleasant
22	4/2/2019	22,965	22,805	45	Point Pleasant
23	4/3/2019	22,765	22,605	45	Point Pleasant
24	4/3/2019	22,565	22,405	45	Point Pleasant
25	4/4/2019	22,365	22,205	45	Point Pleasant
26	4/4/2019	22,165	22,005	45	Point Pleasant
27	4/4/2019	21,965	21,805	45	Point Pleasant
28	4/5/2019	21,765	21,605	45	Point Pleasant
29	4/5/2019	21,565	21,405	45	Point Pleasant
30	4/5/2019	21,365	21,205	45	Point Pleasant
31	4/6/2019	21,165	21,005	45	Point Pleasant
32	4/6/2019	20,965	20,805	45	Point Pleasant
33	4/6/2019	20,765	20,605	45	Point Pleasant
34	4/6/2019	20,565	20,405	45	Point Pleasant
35	4/7/2019	20,365	20,205	45	Point Pleasant
36	4/7/2019	20,165	20,005	45	Point Pleasant
37	4/7/2019	19,965	19,805	45	Point Pleasant
38	4/8/2019	19,765	19,605	45	Point Pleasant
39	4/8/2019	19,565	19,405	45	Point Pleasant
40	4/9/2019	19,365	19,205	45	Point Pleasant
41	4/9/2019	19,165	19,005	45	Point Pleasant
42	4/9/2019	18,965	18,805	45	Point Pleasant
43	4/9/2019	18,765	18,605	45	Point Pleasant
44	4/10/2019	18,565	18,405	45	Point Pleasant
45	4/10/2019	18,365	18,205	45	Point Pleasant
46	4/10/2019	18,165	18,005	45	Point Pleasant
47	4/11/2019	17,965	17,805	45	Point Pleasant
48	4/11/2019	17,765	17,605	45	Point Pleasant
49	4/11/2019	17,565	17,405	45	Point Pleasant
50	4/12/2019	17,365	17,205	45	Point Pleasant
51	4/12/2019	17,165	17,005	45	Point Pleasant
52	4/12/2019	16,965	16,805	45	Point Pleasant
53	4/12/2019	16,765	16,605	45	Point Pleasant
54	4/13/2019	16,565	16,405	45	Point Pleasant
55	4/13/2019	16,365	16,205	45	Point Pleasant
56	4/13/2019	16,165	16,005	45	Point Pleasant
57	4/14/2019	15,965	15,805	45	Point Pleasant
58	4/14/2019	15,765	15,605	45	Point Pleasant
59	4/14/2019	15,565	15,405	45	Point Pleasant
60	4/15/2019	15,366	15,206	45	Point Pleasant
61	4/15/2019	15,168	15,008	45	Point Pleasant
62	4/15/2019	14,970	14,810	45	Point Pleasant
63	4/15/2019	14,772	14,612	45	Point Pleasant
64	4/16/2019	14,574	14,414	45	Point Pleasant
65	4/16/2019	14,376	14,216	45	Point Pleasant
66	4/16/2019	14,178	14,018	45	Point Pleasant
67	4/17/2019	13,980	13,820	45	Point Pleasant
68	4/17/2019	13,782	13,622	45	Point Pleasant
69	4/17/2019	13,584	13,424	45	Point Pleasant
70	4/17/2019	13,386	13,226	45	Point Pleasant
71	4/18/2019	13,188	13,028	45	Point Pleasant
72	4/19/2019	12,990	12,830	45	Point Pleasant
73	4/19/2019	12,792	12,632	45	Point Pleasant
74	4/19/2019	12,594	12,434	45	Point Pleasant
75	4/20/2019	12,396	12,236	45	Point Pleasant
76	4/20/2019	12,198	12,038	45	Point Pleasant
77	4/20/2019	12,000	11,840	45	Point Pleasant
78	4/20/2019	11,802	11,642	45	Point Pleasant
79	4/21/2019	11,604	11,444	45	Point Pleasant
80	4/21/2019	11,406	11,246	45	Point Pleasant

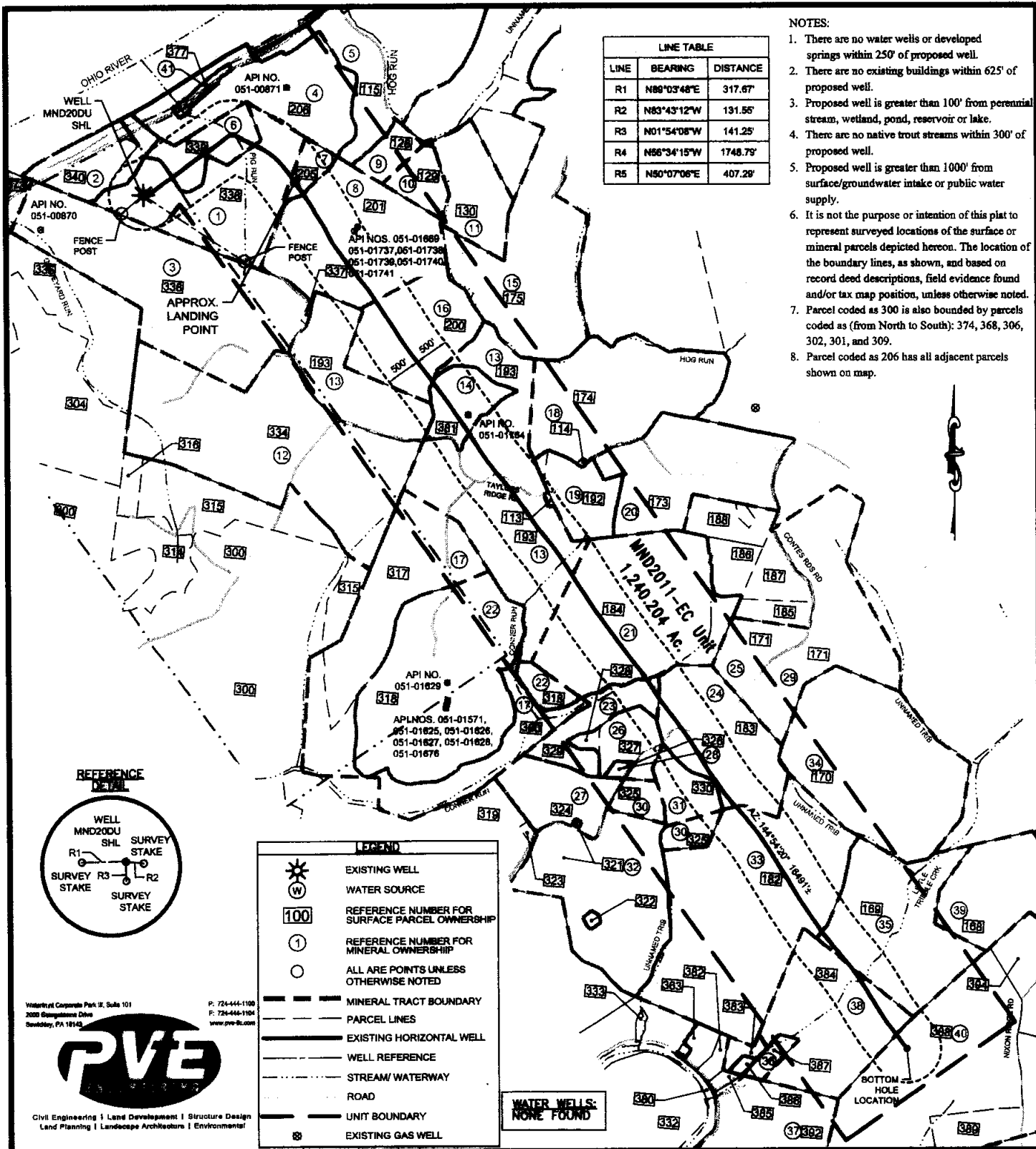
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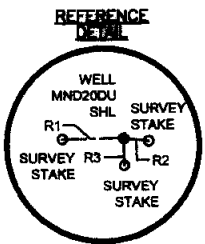
**HG Energy II Appalachia, LLC**  
**MND20 DU**  
**Stimulation Record**

Stage #	Perforation Date	Average Pump Rate (BPM)	Average Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Proppant (LBS)	Water (BBLs)
1	3/24/2019	67.0	11445	13045	7631	52700	5989
2	3/24/2019	67.0	10,794	13,047	8,143	325100	9,857
3	3/25/2019	65.0	9,884	10,338	7,987	427000	9,544
4	3/26/2019	71.0	10,207	10,387	8,094	455200	10,714
5	3/26/2019	67.0	10,384	11,201	7,884	447540	10,410
6	3/27/2019	68.0	10,414	10,815	8,501	466900	11,903
7	3/27/2019	74.0	10,604	11,648	7,865	448000	11,677
8	3/27/2019	68.0	10,358	11,025	8,321	490200	10,950
9	3/28/2019	68.0	10,490	11,202	8,620	520200	12,569
10	3/29/2019	69.0	10,549	11,446	8,656	507900	10,336
11	3/29/2019	67.0	10,945	11,551	8,390	511300	12,318
12	3/29/2019	69.0	10,747	11,962	8,239	516900	10,601
13	3/30/2019	70.0	10,947	12,042	7,340	503600	10,816
14	3/30/2019	68.0	10,662	11,520	8,370	509400	11,103
15	3/30/2019	72.0	10,876	11,799	7,480	502400	10,151
16	3/31/2019	67.0	10,925	11,529	8,310	493200	10,125
17	3/31/2019	72.0	10,831	12,123	8,077	494300	10,058
18	4/1/2019	69.0	10,877	12,262	7,426	506900	10,127
19	4/1/2019	70.0	10,841	11,428	8,490	553000	10,937
20	4/1/2019	70.0	10,947	12,283	8,405	544200	10,800
21	4/2/2019	72.0	10,817	11,367	7,532	541200	10,569
22	4/2/2019	69.0	10,992	11,467	8,110	542100	10,741
23	4/3/2019	67.0	10,754	11,976	8,210	544000	9,716
24	4/3/2019	69.0	10,680	11,497	7,164	573000	10,438
25	4/4/2019	72.0	10,780	11,361	7,978	505700	9,378
26	4/4/2019	72.0	10,843	12,028	8,132	548400	9,734
27	4/4/2019	72.0	10,797	11,299	8,370	550800	10,284
28	4/5/2019	73.0	10,556	11,677	8,024	528300	9,642
29	4/5/2019	74.0	10,542	11,181	8,324	530000	9,585
30	4/5/2019	79.0	10,805	11,204	8,001	526400	9,819
31	4/6/2019	78.0	10,768	11,920	8,281	535600	9,527
32	4/6/2019	78.0	10,520	11,849	7,565	526600	9,304
33	4/6/2019	81.0	10,722	11,443	8,201	520900	9,646
34	4/6/2019	80.0	10,392	11,877	7,664	535600	9,541
35	4/7/2019	78.0	10,778	12,361	7,946	535900	9,567
36	4/7/2019	78.0	10,583	11,541	7,791	524800	9,535
37	4/7/2019	78.0	10,205	11,066	7,785	521600	9,480
38	4/8/2019	79.0	10,268	11,575	7,612	549500	9,645
39	4/8/2019	80.0	10,447	11,504	8,394	519400	9,511
40	4/9/2019	80.0	10,230	11,725	7,520	518500	9,198
41	4/9/2019	80.0	10,170	11,741	8,004	551200	9,519
42	4/9/2019	79.0	10,313	11,228	8,234	521500	9,336
43	4/9/2019	81.0	10,277	11,731	6,791	525300	9,259
44	4/10/2019	80.0	9,923	10,998	6,646	542900	9,564
45	4/10/2019	80.0	10,140	11,145	8,095	523600	9,271
46	4/10/2019	78.3	10,037	11,931	7,792	517900	9,505
47	4/11/2019	80.0	10,256	11,196	8,202	546700	9,709
48	4/11/2019	81.0	9,995	10,686	8,103	524200	9,277
49	4/11/2019	81.0	9,593	10,177	7,660	524800	9,232
50	4/12/2019	79.0	9,986	11,412	7,612	549100	9,593
51	4/12/2019	81.0	9,632	10,462	7,858	548500	9,638
52	4/12/2019	81.0	9,733	10,267	7,922	526300	9,363
53	4/12/2019	82.0	9,574	10,113	7,764	550400	9,567
54	4/13/2019	78.0	9,802	10,819	7,609	526600	9,261
55	4/13/2019	80.0	9,878	11,292	7,687	521900	9,200
56	4/13/2019	80.0	9,631	10,761	7,744	529500	9,355
57	4/14/2019	80.0	9,693	10,464	7,716	522100	9,245
58	4/14/2019	80.0	9,590	10,818	7,401	522500	9,363
59	4/14/2019	81.0	9,639	10,700	7,599	521400	9,156
60	4/15/2019	80.0	9,721	10,943	7,893	518700	9,215
61	4/15/2019	80.0	9,658	10,397	7,713	530800	9,366
62	4/15/2019	80.0	9,500	10,708	7,567	530400	9,363
63	4/15/2019	85.0	9,894	11,033	7,596	519500	9,274
64	4/16/2019	86.0	9,595	10,625	7,908	522700	9,266
65	4/16/2019	86.0	9,473	10,423	7,387	523800	9,388
66	4/16/2019	85.0	9,775	10,975	7,736	523800	9,047
67	4/17/2019	84.0	9,682	10,830	7,917	546600	9,406
68	4/17/2019	87.0	9,630	10,913	7,201	523800	9,221
69	4/17/2019	85.0	9,433	11,148	7,595	522400	9,247
70	4/17/2019	86.0	8,905	10,308	7,587	523200	9,120
71	4/18/2019	84.0	9,383	10,631	7,630	539000	9,267
72	4/19/2019	86.0	9,675	10,823	7,764	536500	9,471
73	4/19/2019	91.0	9,724	11,232	8,001	528100	9,008
74	4/19/2019	92.0	9,525	10,090	7,790	526400	9,135
75	4/20/2019	86.0	9,677	10,488	8,040	523300	9,042
76	4/20/2019	89.0	9,360	10,692	7,724	522700	8,990
77	4/20/2019	90.0	9,570	10,463	7,452	523700	10,205
78	4/20/2019	89.0	9,682	10,869	7,903	526800	9,101
79	4/21/2019	87.0	9,529	10,201	7,078	548800	9,456
80	4/21/2019	90.0	9,097	9,797	7,052	522000	9,115



LINE	BEARING	DISTANCE
R1	N80°03'48"E	317.67'
R2	N83°43'12"W	131.55'
R3	N01°54'08"W	141.25'
R4	N66°34'15"W	1748.73'
R5	N80°07'06"E	407.29'

- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
  2. There are no existing buildings within 625' of proposed well.
  3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  4. There are no native trout streams within 300' of proposed well.
  5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
  6. 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.
  7. Parcel coded as 300 is also bounded by parcels coded as (from North to South): 374, 368, 306, 302, 301, and 309.
  8. Parcel coded as 206 has all adjacent parcels shown on map.



SYMBOL	DESCRIPTION
☼	EXISTING WELL
W	WATER SOURCE
100	REFERENCE NUMBER FOR SURFACE PARCEL OWNERSHIP
1	REFERENCE NUMBER FOR MINERAL OWNERSHIP
○	ALL ARE POINTS UNLESS OTHERWISE NOTED
---	MINERAL TRACT BOUNDARY
---	PARCEL LINES
---	EXISTING HORIZONTAL WELL
---	WELL REFERENCE
---	STREAM/WATERWAY
---	ROAD
---	UNIT BOUNDARY
⊗	EXISTING GAS WELL

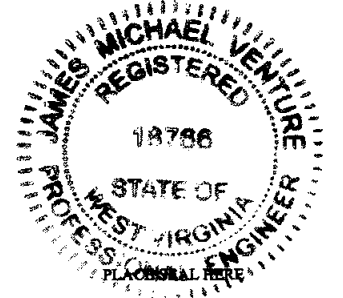
P: 724-444-1100  
 F: 724-444-1104  
 www.pve-llc.com

Civil Engineering | Land Development | Structure Design  
 Land Planning | Landscape Architecture | Environmental

FILE #: MND 20 DU - AS DRILLED  
 DRAWING #: MND 20 DU - AS DRILLED  
 SCALE: 1"=2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 638.58'

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: SHORT CREEK-OHIO RIVER ELEVATION: 1058'  
 COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO  
 SURFACE OWNER: CONSOLIDATION COAL COMPANY/ MURRAY ENERGY ACREAGE: 70.55  
 OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 70.55

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: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,077' TMD: 27,200 LATERAL: 15,434  
 WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE  
 Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD  
 City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

DATE: MARCH 27, 2020  
 OPERATOR'S WELL #: MND 20 DU  
 API WELL # 47 051 02014  
 STATE COUNTY PERMIT  
 PAGE: 1 OF 4



Bottom Hole is located on topo map 5,598 feet south of Latitude: 39° 50' 00"

Well is located on topo map 8,482 feet south of Latitude: 39° 52' 30"

**AS DRILLED**

**SURFACE HOLE LOCATION (SHL)**

UTM 17 - NAD83  
N: 4411319.6  
E: 518852.6  
NAD27, WV NORTH  
N: 484880.8  
E: 1634129.6  
LAT/LON DATUM - NAD83  
LAT: 38.851731  
LON: -80.802985

**APPROX. LANDING POINT**

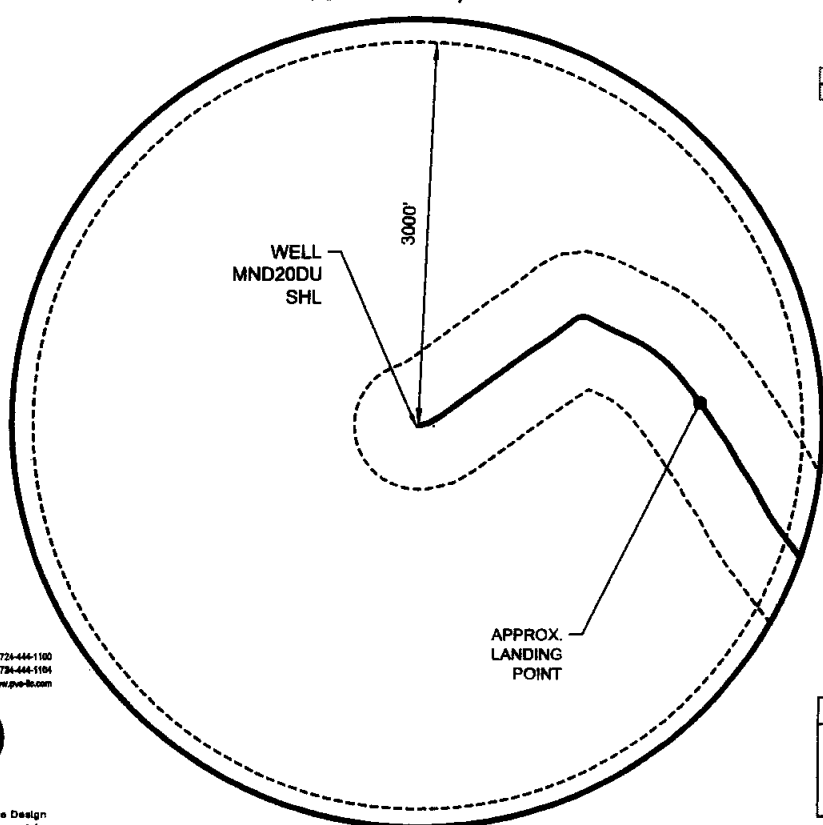
UTM 17 - NAD83  
N: 4411385.2  
E: 517521.4  
NAD27, WV NORTH  
N: 485138.6  
E: 1636327.7  
LAT/LON DATUM - NAD83  
LAT: 38.852308  
LON: -80.795176

**BOTTOM HOLE LOCATION**

UTM 17 - NAD83  
N: 4407578.8  
E: 520270.8  
NAD27, WV NORTH  
N: 482487.8  
E: 1645141.2  
LAT/LON DATUM - NAD83  
LAT: 38.817952  
LON: -80.783153

Bottom Hole is located on topo map 3,686 feet west of Longitude: 80° 45' 00"  
Well is located on topo map 3,181 feet west of Longitude: 80° 47' 30"

DETAIL:  
SCALE: 1"=1,500'



LEGEND	
	TOPO MAP POINT
	TOPO MAP BOTTOM HOLE

Waterford Corporate Park III, Suite 101  
2003 Chesapeake Drive  
Newberry, PA 15143

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Land Planning | Landscape Architecture | Environmental

FILE #: MND 20 DU - AS DRILLED

DRAWING #: MND 20 DU - AS DRILLED

SCALE: 1"=2000'

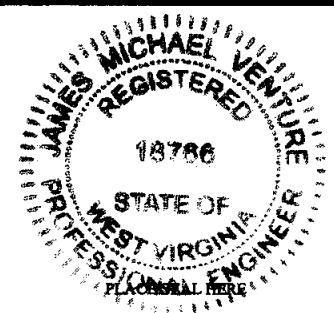
MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 638.58'

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.: 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



DATE: MARCH 27, 2020

OPERATOR'S WELL #: MND 20 DU

API WELL # 47 051 02014

STATE COUNTY PERMIT

PAGE: 2 OF 4

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

WATERSHED: SHORT CREEK-OHIO RIVER ELEVATION: 1058'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA/OHIO

SURFACE OWNER: CONSOLIDATION COAL COMPANY/ MURRAY ENERGY ACREAGE: 70.55

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 70.55

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: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,077' TMD: 27,200 LATERAL: 15,434

WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101

1	05-0001-0001-0000-0000	Hubbly Eddy Ben Hubbs Pegg Heuser	336
		Steve Messer and Douglas D. Messer	
		Jessie McElhine Ben Janta Pegg Heuser	
		Cheryl Sullivan, a single woman	
		George H. White and Nancy Ethel White	
		William C.M. Wilson and Miriam C. Wilson	
		Wayward W. Bower	
		Richard G. Matthews, by Gay L. Matthews, Her Attorney in Fact	
		CNX Gas Company, LLC	
2	05-0001-0001-0000-0000	Noble Energy, Inc.	340
3	05-0001-0001-0000-0000	Keith Ann Potts	336
		Larry F. Johnson	
		Noble Marcellus, LP	
		Arcepsa Holdings, LLC	
		Consolidation Coal Company	
		CNX Gas Company, LLC	
		Noble Energy, Inc.	
4	05-0001-0001-0000-0000	Noble Energy, Inc.	335
5	05-0001-0001-0000-0000	Consolidation Coal Company	
		CNX Gas Company, LLC	
		Noble Energy, Inc.	
6	05-0001-0001-0000-0000	CNX Gas Company, LLC	338
		Noble Energy, Inc.	
7	05-0001-0001-0000-0000	CNX Gas Company, LLC	205
		Noble Energy, Inc.	
8	05-0001-0001-0000-0000	Wayward W. Bower	201
		Mary L. Whitstagen	
		Keith Ann Potts	
		Larry F. Johnson	
		Cheryl Sullivan	
		Richard G. Matthews, by Gay L. Matthews,	
		Hubbly Eddy Ben Hubbs Pegg Heuser	
		Sarah Knapman, et al	
		Steve Messer and Douglas D. Messer	
		Jessie McElhine Ben Janta Pegg Heuser	
		George H. White and Nancy Ethel White	
		William C.M. Wilson and Miriam C. Wilson	
		Wayward W. Bower	
		Consolidation Coal Company	
		CNX Gas Company, LLC	
		Noble Energy, Inc.	
9	05-0001-0001-0000-0000	James Ray Flowers & Robert L. Flowers	128
		Clara Lynn Gill	
		William Gray & Nancy L. Messer	
		George Mitchell & Patricia S. Messer	
		Edith Marie Mohon	
		Marilyn Ann Brown	
		CNX Gas Company, LLC	
		Noble Energy, Inc.	
10	05-0001-0001-0000-0000	James Ray Flowers & Robert L. Flowers	128
		Clara Lynn Gill	
		William Gray & Nancy L. Messer	
		George Mitchell & Patricia S. Messer	
		Edith Marie Mohon	
		Marilyn Ann Brown	
		CNX Gas Company, LLC	
		Noble Energy, Inc.	
11	05-0001-0001-0000-0000	Noble Energy, Inc.	130
		Noble Energy, Inc.	
12	05-0001-0001-0000-0000	Noble Energy, Inc.	334
13	05-0001-0001-0000-0000	Noble Energy, Inc.	193
14	05-0001-0001-0000-0000	Noble Energy, Inc.	381
15	05-0001-0001-0000-0000	Noble Energy, Inc.	175
16	05-0001-0001-0000-0000	John Alfred Tynney and Susan Tynney, both individually and as husband and wife	200
		Alan A. Tynney aka Alan Albert Tynney, and Mary L. Tynney, both individually and as husband and wife	
		Deloris Kathleen Anderson and Raymond H. Anderson, both individually and as wife and husband	
		Consolidation Coal Company	
		CNX Gas Company, LLC	
		Noble Energy, Inc.	
17	05-0001-0001-0000-0000	Consolidation Coal Company	300
		CNX Gas Company, LLC	317
		Noble Energy, Inc.	
18	05-0001-0001-0000-0000	Robert W. Gray, Jr., et al	174
		Chevron U.S.A. Inc.	114
		Noble Energy, Inc.	
19	05-0001-0001-0000-0000	Thomas R. Barnhart	192
		TriEnergy Holdings	113
		Chevron USA INC	
20	05-0001-0001-0000-0000	Andrew M. Fasouletos, et ux	173
		Michael Andrew Fasouletos	
		Tena Marie Stidm	

21	05-0002-0002-0000-0000	All the above lesses from NOBLE ENERGY INC Weasanco Bank, Trustee John T. Gallaheer EST	184
		James D. Potts and Nancy C. Potts	
		NOBLE ENERGY INC	
		CNX Gas Company, LLC	
22	05-0005-0002-0000-0000	NOBLE ENERGY INC	318
		Margaret Gaines	
		Elizabeth Patterson	
		Charles J. Wiesner	
		John Wiesner	
		Kenneth Schmitt	
		Mary Ellen Sedon	
		Alfred Kaczorowski, Jr., & Sharon M. Kaczorowski, his wife	
		CNX Gas Company, LLC	
		NOBLE ENERGY INC	
23	05-0005-0009-0001-0000	Consolidation Coal Company	329
		CNX Gas Company, LLC	
		NOBLE ENERGY INC	
24	05-0005-0011-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	183
		NOBLE ENERGY INC	
25	05-0002-0013-0001-0000	AEP Generation Resources Inc. and Kentucky Power Company	171
		NOBLE ENERGY INC	
26	05-0005-0009-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	327
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27	05-0005-0006-0001-0000	AEP Generation Resources Inc. and Kentucky Power Company	324
		NOBLE ENERGY INC	
28	05-0005-0008-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	326
		NOBLE ENERGY INC	
29	05-0002-0013-0005-0000	AEP Generation Resources Inc. and Kentucky Power Company	171
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30	05-0005-0007-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	325
		NOBLE ENERGY INC	
31	05-0005-0011-0001-0000	AEP Generation Resources Inc. and Kentucky Power Company	330
		NOBLE ENERGY INC	
32	05-0005-0006-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	321
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33	05-0005-0012-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	182
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34	05-0004-0001-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	170
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35	05-0004-0015-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	169
		NOBLE ENERGY INC	
36	05-0004-0017-0000-0000	Terry Holman	387
		TriEnergy Holdings	
		Chevron USA INC	
37	05-0009-0001-0000-0000	Jessal Gladys Ruckman Et Al	392
		NOBLE ENERGY INC	
38	05-0004-0016-0000-0000	Terry Holman	384
		TriEnergy Holdings	
		Chevron USA INC	
39	05-0004-0013-0000-0000	MCCURTUCK DALE ET UX	168
		CHEVRON USA INC	
		MILLER CHARLES W	
40	05-0004-0014-0000-0000	PARSONS PAUL ET UX RUSSELL SHARON LYNN HUFF TIMOTHY ET UX ANNOLD LLOYD C ET UX CHORON MARY JO KURPIL RICHARD ET UX CLIFTON CLARA MAE EDWARDS GEORGE ET UX KYLE DONNA FAE CONNER JUDITH MAY SCHMIDT PAUL ET AL AII RESOURCES LLC NPAR LLC Chevron USA INC SLOUGH ANITA L ET AL AII RESOURCES LLC NPAR LLC Chevron USA INC	388
41	05-0001-0001-0000-0000	NOBLE ENERGY INC	377

FILE #: MND 20 DU - AS DRILLED

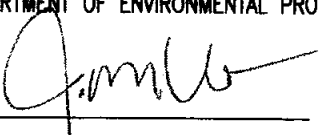
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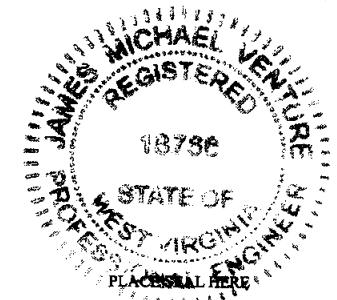
SCALE: 1"=2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 638.58'

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SIGNED:   
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: SHORT CREEK-OHIO RIVER

COUNTY/DISTRICT: MARSHALL / FRANKLIN

SURFACE OWNER: CONSOLIDATION COAL COMPANY/  
MURRAY ENERGY

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY

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: POINT PLEASANT

WELL OPERATOR: HG ENERGY II APPALACHIA, LLC

Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101

DATE: MARCH 27, 2020

OPERATOR'S WELL #: MND 20 DU

API WELL # 47 051 02014

STATE COUNTY PERMIT

PAGE: 4 OF 4

ELEVATION: 1058'

QUADRANGLE: POWHATAN POINT, W. VA/OHIO

ACREAGE: 70.55

ACREAGE: 70.55

ESTIMATED DEPTH: TVD: 11,077' TMD: 27,200' LATERAL: 15,434'

DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101

113 ZION M.E. CHURCH  
 114 GRAY ROBERT WILLIAM - LIFE  
 115 CONSOLIDATION COAL COMPANY, ET AL.  
 116 CONSOLIDATION COAL COMPANY, ET AL.  
 117 CONSOLIDATION COAL COMPANY, ET AL.  
 118 CONSOLIDATION COAL COMPANY, ET AL.  
 119 CONSOLIDATION COAL COMPANY, ET AL.  
 120 CNX LAND RESOURCES INC.  
 121 AEP GENERATION RESOURCES, INC.  
 122 AEP GENERATION RESOURCES, INC.  
 123 AEP GENERATION RESOURCES INC.  
 124 FASOULETOS ANDREW M. ET. AL.  
 125 GRAY ROBERT WILLIAM - LIFE  
 126 CONSOLIDATION COAL COMPANY, ET AL.  
 127 AEP GENERATION RESOURCES, INC.  
 128 AEP GENERATION RESOURCES, INC.  
 129 CONSOLIDATION COAL COMPANY, ET AL.  
 130 HARTLEY PEGGY S.  
 131 POTTS JAMES D. ET. UX.  
 132 POTTS JAMES D. ET. UX.  
 133 POTTS JAMES D. ET. UX.  
 134 POTTS JAMES D. ET. UX.  
 135 BARNHART THOMAS K. ET. UX.  
 136 CONSOLIDATION COAL COMPANY, ET AL.  
 137 CONSOLIDATION COAL COMPANY  
 138 CONSOLIDATION COAL COMPANY  
 139 CONSOLIDATION COAL COMPANY  
 140 CONSOLIDATION COAL COMPANY  
 141 OHIO POWER CO.  
 142 CONSOLIDATION COAL COMPANY  
 143 CONSOLIDATION COAL COMPANY  
 144 CONSOLIDATION COAL COMPANY  
 145 CONSOLIDATION COAL COMPANY  
 146 OHIO POWER CO.  
 147 CNX GAS COMPANY LLC.  
 148 CONSOLIDATION COAL COMPANY  
 149 WV ECONOMIC DEV. AUTHORITY  
 150 CONSOLIDATION COAL COMPANY  
 151 CONSOLIDATION COAL COMPANY  
 152 CONSOLIDATION COAL COMPANY  
 153 CONSOLIDATION COAL COMPANY  
 154 CONSOLIDATION COAL COMPANY  
 155 OHIO POWER CO.  
 156 SANCHEZ GENEVA BASSETT  
 157 OHIO POWER CO.  
 158 AEP GENERATION RESOURCES INC.  
 159 AEP GENERATION RESOURCES INC.  
 160 CONSOLIDATION COAL COMPANY  
 161 AEP GENERATION RESOURCES INC.

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326 AEP GENERATION RESOURCES INC.  
 327 AEP GENERATION RESOURCES INC.  
 328 CONSOLIDATION COAL COMPANY  
 329 CONSOL MINING COMPANY LLC.  
 330 AEP GENERATION RESOURCES INC.  
 331 GATTS RICHARD L. - LIFE  
 332 MILLER EDWIN C.  
 333 GATTS RICHARD L. - LIFE  
 334 MURRAY ENERGY CO LAND DEPT.  
 335 CONSOLIDATION COAL COMPANY  
 336 CONSOLIDATION COAL COMPANY  
 337 CONSOLIDATION COAL COMPANY  
 338 CONSOLIDATION COAL COMPANY  
 339 CONSOLIDATION COAL COMPANY  
 340 RUCKMAN SHELDON R. ET. AL.  
 341 OHIO POWER COMPANY  
 342 OHIO POWER COMPANY  
 343 OHIO POWER COMPANY  
 344 OHIO POWER COMPANY  
 345 CONSOLIDATION COAL COMPANY  
 346 CONSOLIDATION COAL COMPANY  
 347 CONSOLIDATION COAL COMPANY  
 348 WV DIVISION OF NATURAL RESOURCES  
 349 CONSOLIDATION COAL COMPANY  
 350 RUCKMAN MARVIN E. ET. UX.  
 351 MAXWELL WILLIAM L. JR.  
 352 JPM PROPERTIES LLC.  
 353 RUCKMAN MARVIN E.  
 354 MAXWELL WILLIAM JR.  
 355 JPM PROPERTIES LLC.  
 356 HOLSTINE BERNARD W. & ROXANN L.  
 357 HOLSTINE BERNARD W. & ROXANN L.  
 358 LEGG JAMES R. EST.  
 359 MCCLINTOCK PATRICIA A.  
 360 RUCKMAN JESSIE GLADYS - LIFE  
 361 LEGG JEFFERY L.  
 362 ANDERSON RHONDA MARIE

TAX MAP NO. 05-0005-0008-0000-0000  
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 TAX MAP NO. 05-0008-0002-0001-0000  
 TAX MAP NO. 05-0004-0014-0001-0000

Waterford Corporate Park II, Suite 101  
 2500 Georgetown Drive  
 Sockley, PA 19146

P: 724-444-1100  
 F: 724-444-1194  
 www.pve-llc.com



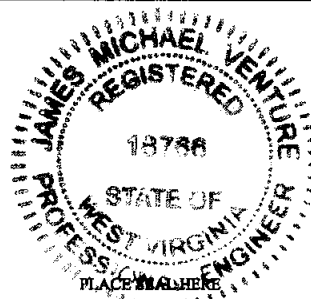
Civil Engineering | Land Development | Structure Design  
 Land Planning | Landscape Architecture | Environmental

LEGEND	
100	REFERENCE NUMBER FOR SURFACE PARCEL OWNERSHIP
①	REFERENCE NUMBER FOR MINERAL OWNERSHIP

FILE #: MND 20 DU - AS DRILLED  
 DRAWING #: MND 20 DU - AS DRILLED  
 SCALE: 1"=2000'  
 MINIMUM DEGREE  
 OF ACCURACY: 1/2500  
 PROVEN SOURCE U.S.G.S. MONUMENT  
 OF ELEVATION: H 138: 638.58'

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



DATE: MARCH 27, 2020  
 OPERATOR'S WELL #: MND 20 DU  
 API WELL # 47 051 02014  
 STATE COUNTY PERMIT  
 PAGE: 3 OF 4

Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow  
 WATERSHED: SHORT CREEK-OHIO RIVER ELEVATION: 1058'  
 COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO  
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 OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 70.55  
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 TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,077' TMD: 27,200 LATERAL: 15,434  
 WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE  
 Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD  
 City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

