

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

RECEIVED  
Office Of Oil and Gas

OCT 10 2023

API 47-051-01835 County Marshall District Clay **WV Department of Environmental Protection**  
Quad Powhatan Point Pad Name MND1 Field/Pool Name \_\_\_\_\_  
Farm name Murray Energy Corp Well Number MND1CHS  
Operator (as registered with the OOG) HG Energy II Appalachia, 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 4411125.7 Easting 519305.9  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing 4413510.0 Easting 517968.0

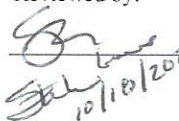
Elevation (ft) 1150 GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary 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  
Barite, Lime, CaCL, base oil, Gilsonite, Asphalt, clay, Emulsifier, sulfatone, safevert FLG, safevert WA

Date permit issued 01/18/2019 Date drilling commenced 9/16/2022 Date drilling ceased 1/24/2022  
Date completion activities began 2/25/2022 Date completion activities ceased 5/20/2022  
Verbal plugging (Y/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 521' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft Not observed Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 622,694 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:  
  
10/10/2023

API 47-051 - 01835 Farm name Murray Energy Corp Well number MND1CHS

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	New	LS/117#		* Previous operator
Surface	18.5"	13.375"	1103	New	54.5 lbs/ft J-55		Yes, 64 bbl to surface
Coal							
Intermediate 1	12.25"	9.625"	2605	New	40 lbs/ft J55		Yes, 45 bbl to surface
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	15362	New	20 lbs/ft P-110 CDC HTQ		Yes, 135 bbl to surface
Tubing	4.67	2.375	6680	New	4.7 lbs/ft J55		
Packer type and depth set							

Comment Details \* Conductor set by previous operator, permit date 5/27/2015, conductor set 8/1/2015

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	1182	15.6	1.19	1179.5	Surface	8
Coal							
Intermediate 1	Class A	937	15.6	1.18	937.34	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A	3735	15.6	1.19	3727.3	Surface	8
Tubing							

Drillers TD (ft) <sup>15389</sup> \_\_\_\_\_ Loggers TD (ft) \_\_\_\_\_  
 Deepest formation penetrated Marcellus \_\_\_\_\_ Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) <sup>5570</sup> \_\_\_\_\_

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 \_\_\_\_\_

13.375" casing: centralizer run every joint to 20" casing then placed every 3 joints to surface  
 9.625" casing: Centralizers run every other joint to 13.375" casing then placed every 3 joints to surface  
 5.5" casing: Centralizer run every joint to top of curve (KOP) then centralizers placed every 3 joints to surface

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 \_\_\_\_\_







**HG Energy II Appalachia, LLC**

**MND1 CHS**

**Stimulation Record**

Stage #	Date	Ave pump rate (BPM)	Ave Treatment Press (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Proppant (LBS)	Water (BBLs)
Sleeve/1	3/19/2022	73.0	7362	7530	8310	240100	6,957
2	3/24/2022	91.0	7,481	6,085	3,548	660740	13,414
3	3/25/2022	93.0	7,256	5,563	4,461	660640	12,225
4	3/25/2022	99.0	7,772	5,494	4,236	662240	11,725
5	3/26/2022	99.0	8,013	5,345	5,188	663820	9,583
6	3/26/2022	94.0	7,635	4,897	4,668	641890	10,429
7	3/26/2022	95.0	7,369	5,359	4,756	654910	9,641
8	3/26/2022	99.0	7,711	5,484	4,511	653280	10,596
9	3/26/2022	101.0	7,696	5,519	4,545	656710	9,773
10	3/27/2022	95.0	7,894	6,495	4,073	655760	9,555
11	3/27/2022	97.0	7,556	5,267	4,860	654200	9,156
12	3/27/2022	99.0	7,949	5,490	4,936	655610	9,558
13A	3/27/2022	53.0	7,887	5,028	4,325	192590	4,034
13 B	3/28/2022	98.0	7,353	4,829	4,809	677510	9,568
14	3/28/2022	96.0	8,289	4,948	5,446	634680	9,371
15	3/28/2022	100.0	7,717	4,943	4,908	630700	9,271
16	3/29/2022	95.0	7,493	5,034	4,960	632480	9,446
17	3/29/2022	97.0	7,301	5,033	5,176	638340	9,133
18	3/29/2022	100.0	7,307	5,207	5,093	633640	7,799
19	3/30/2022	96.0	7,260	5,304	5,102	631470	9,034
20	3/30/2022	96.0	7,113	5,409	4,899	634800	10,681
21	3/30/2022	96.0	7,553	5,493	4,367	630940	9,313
22	3/31/2022	90.0	6,000	5,002	5,020	633620	9,601
23	3/31/2022	100.0	7,256	5,234	4,785	656160	9,111
24	3/31/2022	100.0	7,364	5,226	5,188	629880	9,043
25	4/1/2022	96.0	7,143	4,920	5,059	630890	9,316
26	4/1/2022	100.0	7,177	5,361	4,558	632010	9,183
27	4/1/2022	98.0	7,142	5,596	4,836	630010	9,214
28	4/2/2022	97.0	7,038	5,345	5,056	631970	9,725
29	4/2/2022	100.0	7,260	5,588	4,974	632080	9,149
30	4/2/2022	100.0	7,296	5,182	5,156	633170	9,543
31	4/3/2022	98.0	6,944	4,922	5,059	630290	9,795
32	4/3/2022	100.0	7,021	5,398	5,143	630990	9,185
33A	4/3/2022	65.0	8,411	5,129	7,936	194760	1,290
33B	4/3/2022	100.0	6,902	5,322	4,888	630580	8,946
34	4/4/2022	99.0	7,333	5,324	5,514	629250	9,164
35	4/4/2022	100.0	6,925	5,302	5,126	629750	9,760
36	4/4/2022	101.0	6,702	4,208	4,756	630980	9,355
37	4/4/2022	100.0	6,749	4,437	5,168	633040	9,238
38	4/5/2022	100.0	7,511	5,132	4,471	630510	9,353
39	4/5/2022	98.0	7,026	5,136	5,108	635740	8,740
40	4/5/2022	99.0	6,791	4,917	5,114	620290	9,584
41	4/5/2022	97.0	7,083	5,147	4,788	634540	12,036
42	4/6/2022	99.0	6,920	4,814	5,435	632270	9,232
43	4/6/2022	97.0	6,978	4,742	3,938	632120	9,857
44	4/6/2022	86.0	6,481	5,178	4,151	629580	9,690
45	4/7/2022	94.0	6,834	5,524	5,252	629100	9,945



**HG Energy II Appalachia, LLC**

**MND1 CHS**

**Perforation Record**

Stage #	Perforation Date	Perorate from Depth	Perforations to Depth	Number of perfs	Formation
Sleeve/1	3/19/2022	15310	15284	2	Marcellus
2	3/24/2022	15257	15152	28	Marcellus
3	3/25/2022	15054	14886	28	Marcellus
4	3/25/2022	14858	14690	28	Marcellus
5	3/26/2022	14662	14494	28	Marcellus
6	3/26/2022	14466	14298	28	Marcellus
7	3/26/2022	14270	14102	28	Marcellus
8	3/26/2022	14074	13906	28	Marcellus
9	3/26/2022	13878	13710	28	Marcellus
10	3/27/2022	13682	13514	28	Marcellus
11	3/27/2022	13486	13318	28	Marcellus
12	3/27/2022	13290	13122	28	Marcellus
13A	3/27/2022	13094	12926	28	Marcellus
13 B	3/28/2022	13094	12886	56	Marcellus
14	3/28/2022	12860	12710	28	Marcellus
15	3/28/2022	12684	12534	28	Marcellus
16	3/29/2022	12506	12338	28	Marcellus
17	3/29/2022	12310	12142	28	Marcellus
18	3/29/2022	12114	11946	28	Marcellus
19	3/30/2022	11918	11750	28	Marcellus
20	3/30/2022	11722	11554	28	Marcellus
21	3/30/2022	11526	11358	28	Marcellus
22	3/31/2022	11330	11162	28	Marcellus
23	3/31/2022	11134	10966	28	Marcellus
24	3/31/2022	10938	10770	28	Marcellus
25	4/1/2022	10742	10574	28	Marcellus
26	4/1/2022	10546	10378	28	Marcellus
27	4/1/2022	10350	10182	28	Marcellus
28	4/2/2022	10154	9986	28	Marcellus
29	4/2/2022	9958	9790	28	Marcellus
30	4/2/2022	9762	9594	28	Marcellus
31	4/3/2022	9566	9398	28	Marcellus
32	4/3/2022	9370	9202	28	Marcellus
33A	4/3/2022	9174	9006	28	Marcellus
33B	4/3/2022	9174	8974	56	Marcellus
34	4/4/2022	8946	8794	28	Marcellus
35	4/4/2022	8766	8614	28	Marcellus
36	4/4/2022	8586	8418	28	Marcellus
37	4/4/2022	8390	8222	28	Marcellus
38	4/5/2022	8194	8026	28	Marcellus
39	4/5/2022	7999	7831	28	Marcellus
40	4/5/2022	7805	7637	28	Marcellus
41	4/5/2022	7611	7443	28	Marcellus
42	4/6/2022	7417	7249	28	Marcellus
43	4/6/2022	7223	7055	28	Marcellus
44	4/6/2022	7029	6861	28	Marcellus
45	4/7/2022	6835	6691	25	Marcellus

**HG Energy II Appalachia, LLC**  
**MND1 CHS**  
**Geological Information**

Elevation - 1177 Formation	Tops			Base	
	MD	TVD		MD	TVD
Pittsburgh Coal	694	694		699	699
Surface casing set	1143		drill	1103	
Greenbrier Big Lime	1731	1731		1758	1758
Loyalhanna Big Injun	1821	1821		1861	1861
Pocono Big Injun (Price F)	1909	1908		2056	2055
5th sand/Weir	2159	2158		2175	2174
Intermdiate casing set	2645		drill	2605	
Speechley	3269	3262		3392	3381
Java	4863	4781		4969	4883
Angola	5066	4975	5535' air TD	5326	5220
Rhinestreet	5854	5720		6189	6015
Cashaqua	6189	6015		6280	6083
Middlesex	6280	6083		6313	6106
West River	6313	6106		6418	6169
Burket	6418	6169		6453	6186
Tully	6453	6186		6515	6217
Hamilton	6515	6217		6615	6255
Marcellus shale	6615	6255		15389	6198



**AS DRILLED PLAT**

6,880' to Top Hole

39° 52' 30"

WELL: MND1 CHS Coordinates

WV SPC North (NAD 27)

SURFACE LOCATION  
N - 494,189.9  
E - 1,642,169.4

LANDING POINT  
N - 495,899  
E - 1,642,923

BOTTOM HOLE  
N - 502,089  
E - 1,637,909

UTM NAD 83 (mtr)

SURFACE LOCATION  
N - 4,411,125.7  
E - 519,305.9

BOTTOM HOLE  
N - 4,413,510  
E - 517,968

LAT/LONG (NAD 83)

SURFACE LOCATION  
39.849932°  
80.774322°

BOTTOM HOLE  
39.871447°  
80.789899°

11,250' to Bottom Hole

**NOTES ON SURVEY**

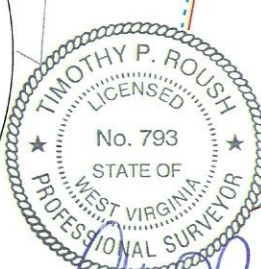
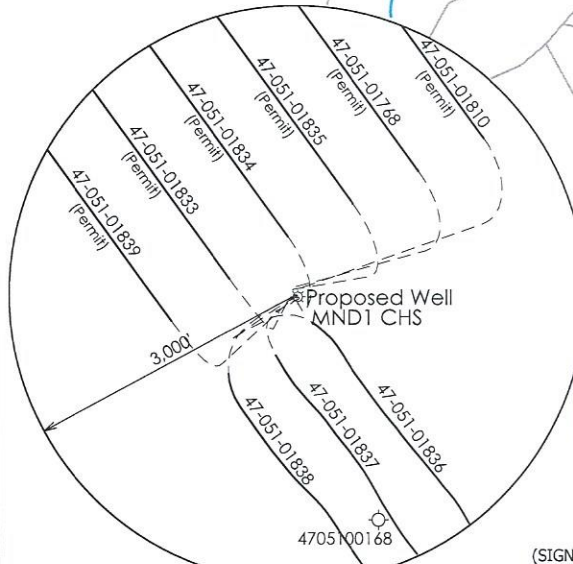
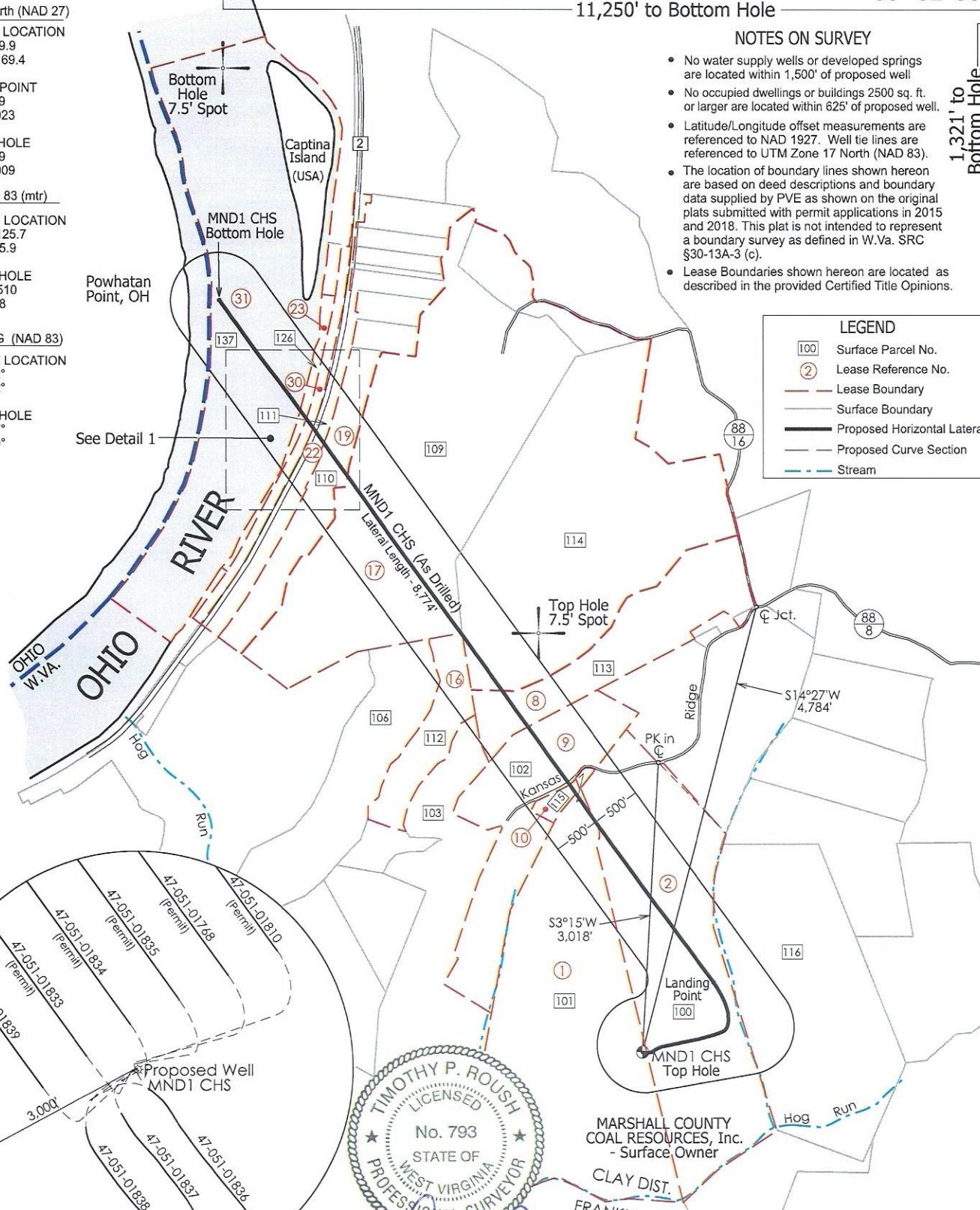
- No water supply wells or developed springs are located within 1,500' of proposed well
- No occupied dwellings or buildings 2500 sq. ft. or larger are located within 625' of proposed well.
- Latitude/Longitude offset measurements are referenced to NAD 1927. Well tie lines are referenced to UTM Zone 17 North (NAD 83).
- The location of boundary lines shown hereon are based on deed descriptions and boundary data supplied by PVE as shown on the original plats submitted with permit applications in 2015 and 2018. This plat is not intended to represent a boundary survey as defined in W.Va. SRC §30-13A-3 (c).
- Lease Boundaries shown hereon are located as described in the provided Certified Title Opinions.

1,321' to Bottom Hole  
80° 45' 00"

**LEGEND**

- 100 Surface Parcel No.
- ② Lease Reference No.
- - - Lease Boundary
- Surface Boundary
- Proposed Horizontal Lateral
- - - Proposed Curve Section
- Stream

North



(SIGNED) *Timothy P. Roush*  
**TIMOTHY P. ROUSH PS 793**

**MARSHALL COUNTY COAL RESOURCES, Inc.**  
- Surface Owner  
CLAY DIST.  
FRANKLIN DIST.

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.

— DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

FILE NO. \_\_\_\_\_  
SCALE: **1" = 1,500'**  
MINIMUM DEGREE OF ACCURACY: **Sub-Meter**  
PROVEN SOURCE OF ELEVATION: **DGPS Survey**



**WEST VIRGINIA**  
Department of Environmental Protection  
Office of Oil and Gas  
601 57th Street  
Charleston, West Virginia 25301

DATE **March 3, 2023**  
WELL NAME **MND1 CHS**  
API WELL NO.  
**47 - 051 - 01835**  
State County Permit

WELL TYPE: OIL \_\_\_ GAS **X** LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ (IF "GAS") PRODUCTION **X** STORAGE \_\_\_ DEEP \_\_\_ SHALLOW **X**

LOCATION: ELEVATION **1,150'** WATERSHED **Hog Run - Ohio River**  
DISTRICT: **Clay** COUNTY: **Marshall** QUADRANGLE: **Powhatan Point 7.5'**  
SURFACE OWNER: **Marshall County Coal Resources, Inc.** ACREAGE: **128.32 Ac.**  
OIL & GAS ROYALTY OWNER: **HG Energy II Appalachia, LLC** LEASE ACREAGE: **128.32 Ac.** LEASE NO. \_\_\_\_\_  
PROPOSED WORK: DRILL **X** CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE **X** PLUG OFF OLD FORMATION \_\_\_  
PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) **As Drilled Plat**  
PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_ TARGET FORMATION **Marcellus Shale** ESTIMATED DEPTH **6,198' TVD**  
**15,389' TMD**

WELL OPERATOR: **HG Energy II Appalachia, LLC** ADDRESS: **5260 DuPont Road Parkersburg, WV 26101**  
DESIGNATED AGENT: **Diane White** ADDRESS: **5260 DuPont Road Parkersburg, WV 26101**



WELL: MND1 CHS Coordinates

# AS DRILLED PLAT

WV SPC North (NAD 27)

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N - 494,189.9  
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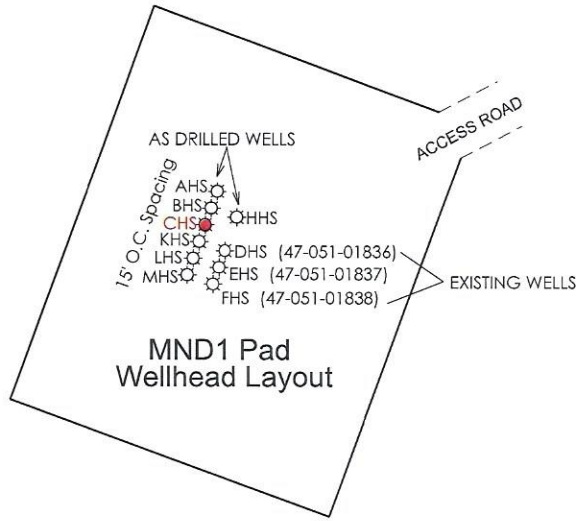
LAT/LONG (NAD 83)

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39.849932°  
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BOTTOM HOLE  
39.871447°  
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## LEASE TABLE

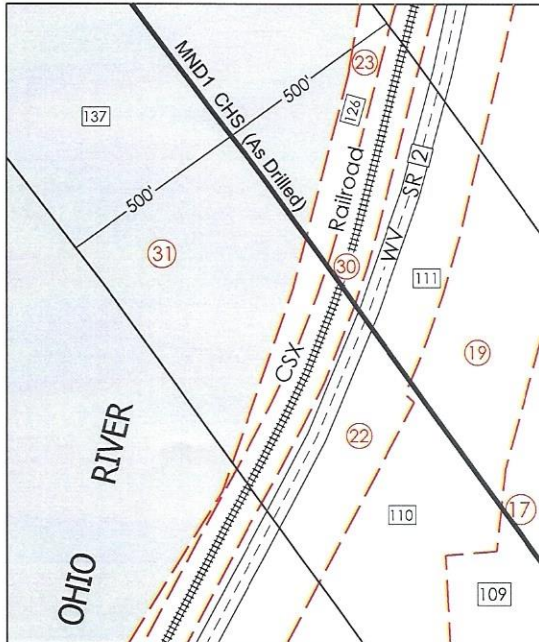
1	HG ENERGY II APPALACHIA, LLC	TMP 04-14-10
2	HG ENERGY II APPALACHIA, LLC	TMP 04-14-09
8	MOUNTAINEER NATURAL GAS CO.	TMP 04-07-18
9	ROBERT E. TSCHAPPAT SR. et ux.	TMP 04-14-06
10	ROBERT E. TSCHAPPAT JR. et ux.	TMP 04-14-06.1
16	HG ENERGY II APPALACHIA, LLC	TMP 04-14-04
17	PAUL J. & JULIE D. MAIDENS	TMP 04-07-14; 07-17
19	NYLA J. BELL	TMP 04-07-15
22	NYLA J. BELL	TMP 04-07-16
23	JIM ARRITT et al.	TMP 04-07-15.9
30	CSX TRANSPORTATION, INC.	NA
31	WV DIVISION OF NATURAL RESOURCES	OHIO RIVER



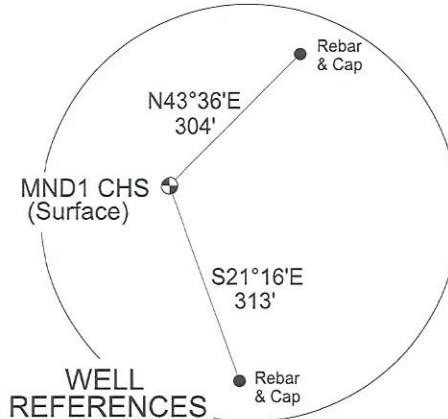
## SURFACE PARCEL TABLE

100	Marshall County Coal Resources, Inc.	TMP 04-14-09
101	Marshall County Coal Resources, Inc.	TMP 04-14-10
102	Robert E. Tschappat Sr. et ux.	TMP 04-14-06
103	Marshall County Coal Resources, Inc.	TMP 04-14-11
106	Marshall County Coal Resources, Inc.	TMP 04-14-03
109	Paul J. & Julie D. Maidens	TMP 04-07-14
110	W.Va. Department of Highways	TMP 04-07-15
111	State Road Commission	TMP 04-07-16
112	Edison A. Barlow et ux.	TMP 04-14-04
113	Carmella Faye & Michael Rose	TMP 04-07-18
114	Paul J. & Julie D. Maidens	TMP 04-07-17
115	Robert E. Tschappat Jr. et ux.	TMP 04-14-06.1
116	Marshall County Coal Resources, Inc.	TMP 04-14-08
126	Jim Arritt et al.	TMP 04-07-15.09
137	WV Division of Natural Resources	-

North



DETAIL 1  
Scale: 1"=500'



⊕ - DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

FILE NO. \_\_\_\_\_  
SCALE: 1" = 1,500'  
MINIMUM DEGREE OF ACCURACY: Sub-Meter  
PROVEN SOURCE OF ELEVATION: DGPS Survey



WEST VIRGINIA  
Department of Environmental Protection  
Office of Oil and Gas  
601 57th Street  
Charleston, West Virginia 25301

DATE March 3, 2023  
WELL NAME MND1 CHS  
API WELL NO.  
47 - 051 - 01835  
State County Permit

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X

LOCATION: ELEVATION 1,150' WATERSHED Hog Run - Ohio River  
DISTRICT: Clay COUNTY: Marshall QUADRANGLE: Powhatan Point 7.5'  
SURFACE OWNER: Marshall County Coal Resources, Inc. ACREAGE: 128.32 Ac.  
OIL & GAS ROYALTY OWNER: HG Energy II Appalachia, LLC LEASE ACREAGE: 128.32 Ac. LEASE NO. \_\_\_\_\_  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_  
PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As Drilled Plat  
PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_ TARGET FORMATION Marcellus Shale ESTIMATED DEPTH 6,198' TVD  
15,389' TMD

WELL OPERATOR: HG Energy II Appalachia, LLC DESIGNATED AGENT: Diane White  
ADDRESS: 5260 DuPont Road Parkersburg, WV 26101 ADDRESS: 5260 DuPont Road Parkersburg, WV 26101 PAGE 2 OF 2