

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

API 47 - 033 - 05945 County Harrison District Union  
Quad West Milford, WV 7.5' Pad Name Nays 1209 Field/Pool Name Fink Kennedy  
Farm name Nays Well Number Nays 1209 S-9H  
Operator (as registered with the OOG) HG Energy II Appalachia, LLC  
Address 5260 Dupont Road 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 4333342.586 Easting 548192.156  
Landing Point of Curve Northing 4333317.239 Easting 548136.107  
Bottom Hole Northing 4330028.169 Easting 549345.010

Elevation (ft) 1007 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, base oil, clay, sulfatone, safevert FLG, safevert WA

Date permit issued 3/28/2019 Date drilling commenced 4/23/2019 Date drilling ceased 12/22/2019  
Date completion activities began 1/11/2020 Date completion activities ceased 4/8/2020  
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 200, 300 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 160, 544 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:

S Dew  
6/30/2020

API 47- 033 - 05945 Farm name Nays Well number Nays 1209 S-9H

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		N
Surface	26"	20"	750	New	94 lbs/ft J-55		Yes
Coal							
Intermediate 1	17.5"	13.375"	1682	New	68 lbs/ft		Yes
Intermediate 2	12.25"	9.625"	2492	New	40 lbs/ft J-55		Yes
Intermediate 3							
Production	8.5	5.5	18433	New	23 lbs/ft P-11		Yes
Tubing	5.5	2.875	6919.25	New	6.5 lbs/ft J55		not cemented
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	1397	15.6	1.20	1671	Surface	8
Coal							
Intermediate 1	Class A	1646/470	16.0/16.4	1.16/1.12	1909/526	Surface	24
Intermediate 2	Class A	776	15.6	1.19	921	Surface	8
Intermediate 3							
Production	Class A	1274/2284	14.8/14.8	1.34/1.34	4250	Surface	8
Tubing							

Drillers TD (ft) 18453 Loggers TD (ft) \_\_\_\_\_

Deepest formation penetrated Marcellus Plug back to (ft) 2948'

Plug back procedure ran 689' of 3.5" fiberglass tubing on drill pipe (bottom of pipe @ 3703') circulate 400 GPMs @ 760 PSI 2 bottoms up pumped 15 ppg tune spacer followed by 52 bbls 278 sks of 16.8 ppg 1.053 yield 9.4 gal/sks water, displace with 7 bbl spacer and 45 bbls obm, pull 2 stands at 30'

Kick off depth (ft) 6700'

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 \_\_\_\_\_

20" casing: Centralizer placed on the shoe joint and every other joint to surface

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****Nays 1209 S-9H****Perforation Record**

Stage #	Date	Perforation From Depth	Perforation To Depth	Number of perforations	Formation
Sleeve / 1	2/3/2020	18328	18283	Sleeves	Marcellus
2	2/3/2020	18,249	18,081	49	Marcellus
3	2/4/2020	18,053	17,885	49	Marcellus
4	2/4/2020	17,857	17,689	49	Marcellus
5	2/4/2020	17,661	17,493	49	Marcellus
6	2/5/2020	17,465	17,297	49	Marcellus
7	2/5/2020	17,269	17,101	49	Marcellus
8	2/5/2020	17,073	16,905	49	Marcellus
9	2/6/2020	16,877	16,709	49	Marcellus
10	2/6/2020	16,681	16,513	49	Marcellus
11	2/6/2020	16,485	16,317	49	Marcellus
12	2/7/2020	16,289	16,121	49	Marcellus
13	2/7/2020	16,093	15,925	49	Marcellus
14	2/7/2020	15,897	15,729	49	Marcellus
15	2/8/2020	15,701	15,533	49	Marcellus
16	2/8/2020	15,505	15,337	49	Marcellus
17	2/8/2020	15,309	15,141	49	Marcellus
18	2/9/2020	15,113	14,945	49	Marcellus
19	2/9/2020	14,912	14,749	49	Marcellus
20	2/9/2020	14,721	14,553	49	Marcellus
21	2/10/2020	14,525	14,357	49	Marcellus
22	2/10/2020	14,329	14,161	49	Marcellus
23	2/22/2020	14,133	13,965	49	Marcellus
24	2/22/2020	13,937	13,769	49	Marcellus
25	2/23/2020	13,741	13,573	49	Marcellus
26	2/23/2020	13,545	13,377	49	Marcellus
27	2/23/2020	13,349	13,181	49	Marcellus
28	2/23/2020	13,153	12,985	49	Marcellus
29	2/24/2020	12,957	12,789	49	Marcellus
30	2/24/2020	12,761	12,593	49	Marcellus
31	2/24/2020	12,565	12,397	49	Marcellus
32	2/25/2020	12,369	12,201	49	Marcellus
33	2/25/2020	12,173	12,005	49	Marcellus
34	2/25/2020	11,977	11,809	49	Marcellus
35	2/25/2020	11,781	11,613	49	Marcellus
36	2/26/2020	11,585	11,417	49	Marcellus
37	2/26/2020	11,389	11,221	49	Marcellus
38	2/26/2020	11,193	11,025	49	Marcellus
39	2/26/2020	10,997	10,829	49	Marcellus
40	2/27/2020	10,801	10,633	49	Marcellus
41	2/27/2020	10,605	10,437	49	Marcellus
42	2/27/2020	10,409	10,241	49	Marcellus
43	2/28/2020	10,213	10,045	49	Marcellus
44	2/28/2020	10,017	9,849	49	Marcellus
45	2/28/2020	9,821	9,653	49	Marcellus
46	2/28/2020	9,625	9,457	49	Marcellus
47	2/29/2020	9,429	9,261	49	Marcellus
48	3/1/2020	9,233	9,065	49	Marcellus
49	3/1/2020	9,038	8,870	49	Marcellus
50	3/1/2020	8,844	8,676	49	Marcellus
51	3/1/2020	8,650	8,482	49	Marcellus
52	3/1/2020	8,456	8,288	49	Marcellus
53	3/3/2020	8,262	8,094	49	Marcellus
54	3/3/2020	8,068	7,900	49	Marcellus
55	3/3/2020	7,874	7,706	49	Marcellus
56	3/4/2020	7,680	7,512	49	Marcellus
57	3/4/2020	7,486	7,318	49	Marcellus
58	3/4/2020	7,292	7,124	49	Marcellus
59	3/4/2020	7,098	6,958	42	Marcellus

**HG Energy II Appalachia, LLC**

**Nays 1209 S-9H  
Stimulation Record**

Stage #	Date	Average Pump Rate (BPM)	Average Treatment Pressure (PSI)	Maximum Breakdown Pressure (PSI)	ISIP (PSI)	Proppant (LBS)	Water (BBLs)
Sleeve / 1	2/3/2020	79.4	8286	9545	3795	270520	7966
2	2/3/2020	84.4	8,367	9,471	4,626	496,820	11,431
3	2/4/2020	86.0	8,701	9,237	5,592	699,240	13,555
4	2/4/2020	84.7	8,341	8,884	4,854	624,980	12,800
5	2/4/2020	86.5	8,482	8,855	4,830	699,920	12,448
6	2/5/2020	76.8	9,180	10,241	5,550	644,820	12,254
7	2/5/2020	89.6	9,180	9,948	4,400	699,540	13,716
8	2/5/2020	88.8	8,848	9,123	5,225	668,900	12,630
9	2/6/2020	88.5	8,825	9,432	5,253	705,340	13,303
10	2/6/2020	90.7	9,085	10,011	4,901	699,240	11,607
11	2/6/2020	97.1	8,970	9,728	6,050	680,260	11,775
12	2/7/2020	87.1	8,916	9,692	5,158	604,620	11,230
13	2/7/2020	89.7	9,142	9,708	5,485	612,360	11,552
14	2/7/2020	87.0	8,520	8,864	4,870	700,460	11,565
15	2/8/2020	90.7	8,916	9,328	5,191	717,840	9,903
16	2/8/2020	89.9	8,654	9,582	4,780	720,760	10,037
17	2/8/2020	90.5	8,301	8,535	5,600	719,980	10,020
18	2/9/2020	88.3	8,440	9,124	4,770	720,840	11,356
19	2/9/2020	89.9	8,453	9,341	5,050	720,240	11,454
20	2/9/2020	85.7	8,541	9,063	4,743	720,840	11,293
21	2/10/2020	91.1	8,747	9,200	5,641	720,620	10,073
22	2/10/2020	90.1	9,100	9,558	7,495	600,840	10,638
23	2/22/2020	91.1	8,905	9,467	5,827	720,500	11,551
24	2/22/2020	89.0	8,683	9,414	6,174	721,140	11,626
25	2/23/2020	91.9	8,903	9,649	4,642	720,000	11,615
26	2/23/2020	81.9	8,944	10,791	4,560	720,000	13,184
27	2/23/2020	88.3	9,096	9,499	4,592	720,620	11,604
28	2/23/2020	91.0	8,883	9,966	5,108	720,140	11,597
29	2/24/2020	90.0	8,931	9,721	4,995	720,000	9,807
30	2/24/2020	93.8	9,293	9,771	5,153	720,760	9,817
31	2/24/2020	90.8	9,063	9,633	4,760	720,680	11,577
32	2/25/2020	94.5	8,798	9,225	5,350	721,000	9,962
33	2/25/2020	95.6	8,796	9,167	4,555	730,800	10,044
34	2/25/2020	93.0	8,613	9,189	5,140	706,800	9,761
35	2/25/2020	92.1	8,515	8,851	4,925	724,000	9,890
36	2/26/2020	95.3	8,600	9,220	4,901	720,600	9,932
37	2/26/2020	94.3	8,777	9,229	5,162	660,040	9,463
38	2/26/2020	95.7	8,581	9,072	5,310	720,200	9,894
39	2/26/2020	95.3	8,462	8,908	5,312	719,600	9,791
40	2/27/2020	94.6	8,617	9,060	4,730	720,920	9,886
41	2/27/2020	94.0	8,866	10,191	5,210	302,240	8,505
42	2/27/2020	95.7	8,445	9,049	5,180	715,680	11,140
43	2/28/2020	92.8	8,403	9,492	5,631	706,960	11,666
44	2/28/2020	93.5	8,586	9,041	6,022	720,640	11,141
45	2/28/2020	92.9	8,315	9,025	5,070	720,140	11,090
46	2/28/2020	87.5	8,455	8,948	5,398	722,680	12,487
47	2/29/2020	92.4	8,992	9,802	5,510	720,020	14,482
48	3/1/2020	96.2	8,535	9,168	5,690	720,240	9,777
49	3/1/2020	90.7	7,974	8,497	5,592	647,520	10,727
50	3/1/2020	95.0	8,076	8,555	5,809	721,360	9,948
51	3/1/2020	95.1	8,132	8,843	5,860	720,620	9,852
52	3/1/2020	94.6	8,469	9,302	5,135	720,620	9,828
53	3/3/2020	95.8	8,174	8,442	5,085	720,500	9,791
54	3/3/2020	92.1	8,331	9,800	5,163	638,880	10,623
55	3/3/2020	92.9	8,531	9,169	5,562	720,920	10,887
56	3/4/2020	95.8	8,507	9,457	5,016	720,320	10,884
57	3/4/2020	91.3	8,650	9,976	5,120	720,560	12,456
58	3/4/2020	89.4	8,293	10,320	5,127	589,000	11,318
59	3/4/2020	93.5	8,186	9,277	5,590	670,420	10,434



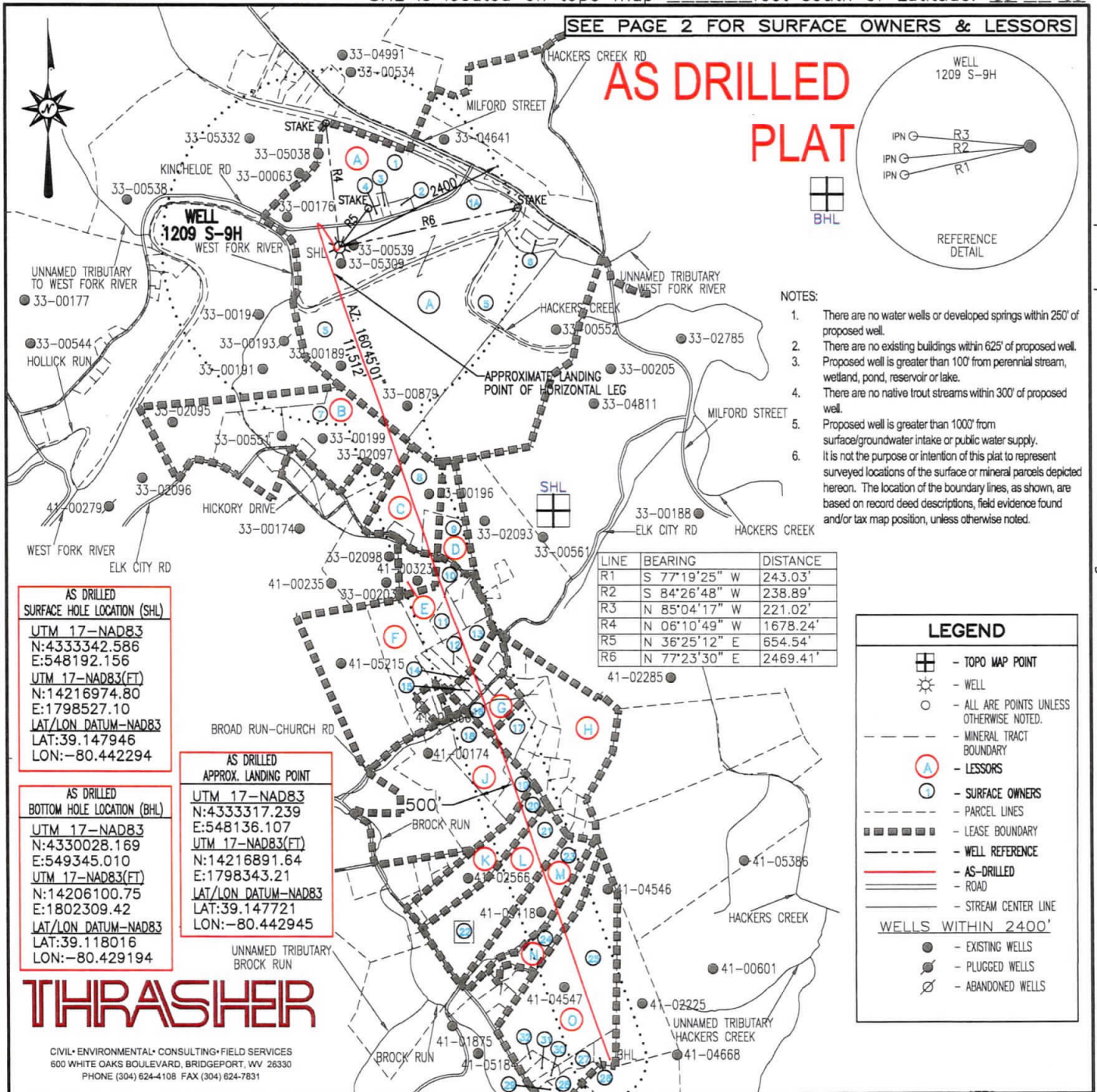
**HG Energy II Appalachia, LLC**  
**Nays 1209 S-9H**  
**Lithology/Formation Information**

Formation	Top Depth TMD	Top Depth TVD	Bottom Depth TMD	Bottom Depth TVD	Rock Type, Type of Fluid, Gas, Oil	Oil, Gas, Water
Coal	160	160	163	163	Coal	
Water show	200	200	202	202	.25" stream, silty shale	Fresh Water
Water show	300	300	301	301	.25" Stream, sand	Fresh Water
Coal	544	544	548	548	Coal	
3rd Salt sand	808	808	905	905	Sand/Siltstone	
Red rock	988	988	1054	1054	Red/brown Shale/Siltstone, sandstone	
Lower Maxton	1058	1058	1118	1118	Sandstone/ Siltstone	
Big lime	1158	1158	1229	1229	Limestone	
Big Injun	1229	1229	1344	1344	Sandstone	
Gantz	1541	1541	1594	1594	Sandstone	
50' sand	1644	1644	1682	1682	Sandstone	
30' Sand	1732	1732	1742	1742	Sandstone	
Gordon Stray	1790	1790	1856	1856	Sandstone	
Gordon Sand	1856	1856	1921	1921	Sandstone	
5th Sand	2051	2051	2076	2076	Sandstone	
Bayard	2126	2126	2138	2138	Sandstone	
Warren	2439	2439	2464	2464	Sandstone/Siltstone	
Speechley	2750	2750	2775	2775	siltstone/Shale	
Balltown	2967	2967	3005	3002	Sandstone	
Benson	4049	4047	4059	4057	Sandstone	
Rhinestreet	5658	5609	6150	6083	Shale	
Cashaqua	6150	6083	6377	6303	shale	
Middlesex	6377	6303	6484	6401	shale	
West River	6484	6401	6599	6598	shale	
Burket	6599	6598	6643	6532	shale	
Tully	6643	6532	6793	6633	Limestone	
Hamilton	6793	6633	6941	6700	shale	
Marcellus	6941	6700	18453	6817	shale	



BHL is located on topo map 2,544 feet south of Latitude: 39°07'30"  
 SHL is located on topo map 6,818 feet south of Latitude: 39°10'00"

BHL is located on topo map 3,555 feet west of Longitude: 80°25'00"  
 SHL is located on topo map 7,268 feet west of Longitude: 80°25'00"



FILE #: 1209 S-9H  
 DRAWING #: 1209 S-9H  
 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: [Signature]  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2346

**JOSEPH H. LOWTHER**  
 LICENSED  
 No. 2346  
 STATE OF  
 WEST VIRGINIA  
 PROFESSIONAL SURVEYOR

PLACE SEAL HERE

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

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

DATE: MAY 21, 2020

OPERATOR'S WELL #: 1209 S-9H

API WELL #: 47 33 05945  
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE WEST FORK CREEK ELEVATION: 1,007±

COUNTY/DISTRICT: HARRISON / UNION QUADRANGLE: WEST MILFORD, WV 7.5'

SURFACE OWNER: HG ENERGY II APPALACHIA, LLC ACREAGE: 95.06±

OIL & GAS ROYALTY OWNER: ANN COVINGTON, ET AL ACREAGE: 483.766±

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: 6,817± TMD: 18,453±

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



# AS DRILLED PLAT

# 1209 S-9H PAGE 2 OF 2

	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA A. STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	ERIC K. & SUSIE G. DECKER	12-444/21
6	ERIC K. & SUSIE G. DECKER	12-444/21.2
7	ROBERT D. & GEORGANNA STARKEY	12-444/29
8	MICHELLE HOPE DENNISON	12-444/31
9	MICHELLE HOPE DENNISON	12-444/31.1
10	WILLARD H. & JUDITH D. MCWHORTER	4-7B/5.4
11	GEORGE N. & REBECCA A. STANSBERRY	4-7B/5.6
12	GARY R. & PAMELA S. TURNER	4-7B/35
13	WILLIAM E. AND JANIS ROGERS	4-8B/2.2
14	GARY R. & PAMELA S. TURNER	4-7B/35.2
15	*CLYDETTE COWGAR	4-7B/35.3
16	JOSEPH C. FRAZIER	4-8B/2.1
17	THELMA R. BAILEY	4-8B/1.3
18	HOWARD E. BAILEY	4-7B/29.2
19	THELMA R. BAILEY	4-8B/8
20	ROBERT G. & ALISA G. GUM	4-7C/30.2
21	ROBERT G. & ALISA G. GUM	4-7C/31
22	ROBERT G. & ALISA G. GUM	4-7C/31.1
23	KEVIN B. & SHERI K. JERDEN	4-8C/1.1
24	KEVIN B. & SHERI K. JERDEN	4-8C/1.4
25	WILLIAM H. TURNER	4-8C/2
26	HENRY A. & PATRICIA E. STRADER	4-8C/6.3
27	LESTER B. & WINIFRED M. BLEVINS	4-8C/6.1
28	LESTER B. & WINIFRED M. BLEVINS	4-8C/6
29	JANICE L. OLDAKER	4-8C/6.2
30	WILLIAM H. TURNER	4-8C/6.4
31	WILLIAM H. TURNER	4-8C/2.1
32	WILLIAM R. & ESTYLEEN KINNEY	4-8C/2.2

\* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

**AS DRILLED  
SURFACE HOLE LOCATION (SHL)**

UTM 17-NAD83  
N:4333342.586  
E:548192.156  
UTM 17-NAD83(FT)  
N:14216974.80  
E:1798527.10  
LAT/LON DATUM-NAD83  
LAT:39.147946  
LON:-80.442294

**AS DRILLED  
BOTTOM HOLE LOCATION (BHL)**

UTM 17-NAD83  
N:4330028.169  
E:549345.010  
UTM 17-NAD83(FT)  
N:14206100.75  
E:1802309.42  
LAT/LON DATUM-NAD83  
LAT:39.118016  
LON:-80.429194

**AS DRILLED  
APPROX. LANDING POINT**

UTM 17-NAD83  
N:4333317.239  
E:548136.107  
UTM 17-NAD83(FT)  
N:14216891.64  
E:1798343.21  
LAT/LON DATUM-NAD83  
LAT:39.147721  
LON:-80.442945

	LESSOR	LEASE NO.	DIST-TM/PAR
A	J. B. GUSMAN ET AL	FK020606	20-444/11.2 12-444/21
B	J. K. MUSSER ET UX	FK002243	12-444/29 12-444/31
C	L. D. REED ET AL	FK008530	12-444/31 12-444/31.1
D	ARLICE REED CHURCHILL ET AL	FK062147	12-444/31 12-444/31.1
E	J. Q. MUSSER ET AL	FK002249	4-7B/5.4
F	S. G. HALL ET UX	FK014031	4-7B/5.4 4-7B/5.6 4-7B/35 4-8B/2.2
G	EARL WIMER ET AL	FK064279	4-7B/35.2 4-7B/35.3 4-8B/2.1
H	W. L. RIFFE ET AL	FK064316	4-8B/1.3
J	ALDA V. HITT	FK077958	4-7B/29.2 4-8B/8
K	J. H. BAILEY ET AL	Q102176000	4-7C/30.2
L	ALISA G. GUM	Q102176000	4-7C/31
	LORI LEE CALDWELL	Q102118000	
	GERALD W. RAMSBURG	Q102123000	
	KARRIE DIANE SIMS	Q102112000	
	DENISE C. CARSON	Q102117000	
	KAREN K. HOBBS	Q102122000	
	KATRINA L. WEST	Q102121000	
	DAVID C. GARVIN	Q102119000	
M	KEVIN B. JERDEN ET UX	Q102115000	4-8C/1.1
N	KEVIN B. JERDEN ET UX	Q097844000	4-8C/1.4
O	HUGH RAMSBURG	FK068456	4-8C/2 4-8C/6.3 4-8C/6.1 4-8C/6 4-8C/6.2 4-8C/6.4 4-8C/2.1 4-8C/2.2



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