WR-35
Rev. 8/23/13

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

API 47 - 033 - 05823 County Harrison District Clark
Quad Wolf Summit Pad Name Goff East Field/Pool Name
Farm name Cather, H Dotson Trustee Well Number 21HM
Operator (as registered with the OOG) PDC Mountaineer, LLC
Address 6031 Wallace Road Extension, Suite 300 City Wexford State PA Zip 15090

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,347,785 Easting 553,877
Landing Point of Curve Northing 4,347,383 Easting 554,130
Bottom Hole Northing 4,345,768 Easting 554,855

Elevation (ft) 1129' 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 Mud

Date permit issued 9/26/2015 Date drilling commenced 2/1/2015 Date drilling ceased 2/22/2015
Date completion activities began 5/10/2015 Date completion activities ceased 5/19/2015
Verbal plugging (Y/N) N Date permission granted NA Granted by NA

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

Freshwater depth(s) ft 25' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 749' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 500' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) Y

Reviewed by:

APPROVED
NAME: Sam Ward
DATE: 8/17/2017

09/15/2017

API 47- 033 - 05823 Farm name Cather, H Dotson Trustee Well number 21HM

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"	24"	60'	New	94.00	N/A	Y
Surface	17.5"	13 3/8"	632'	New	54.50	N/A	Y
Coal							
Intermediate 1	12 1/4"	9 5/8"	2619'	New	40.00	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	13912'	New	20.00	N/A	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	Grout						
Surface	Class A 2% CaCl2	487	15.6	1.18	231.60	Surface	8
Coal							
Intermediate 1	Class A	534/172	14.5/15.7	1.55/1.29	1049.58	Surface	8
Intermediate 2							
Intermediate 3							
Production	Type 1 4% Gel/Type 1 2% Gel	713/1443	13.8/15.0	1.64/1.32	3074.08	2700'	8
Tubing							

Drillers TD (ft) 13931' Loggers TD (ft) 13931'

Deepest formation penetrated Marcellus Plug back to (ft) NA

Plug back procedure None

Kick off depth (ft) 6484' MD

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 3/8": 1 bow spring centralizer placed on every joint

9 5/8": 1 bow spring centralizer placed on every third joint

5 1/2": 1 rigid poly centralizer every joint in the lateral, 1 rigid poly centralizer every other joint through the curve, 1 rigid poly centralizer every third joint from kick off point to estimated TOC

WAS WELL COMPLETED AS SHOT HOLE ■ Yes ☐ No DETAILS 33 Stages, 1,320 perforations

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ■ No DETAILS

WERE TRACERS USED ☐ Yes ■ No TYPE OF TRACER(S) USED

09/15/2017

API 47- 033 - 05823 Farm name Cather, H Dotson Trustee Well number 21HM

PERFORATION RECORD

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

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
			See Attached					

Please insert additional pages as applicable.

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
33	5/19/2015	7,339.00	7,341.00	40	Marcellus Shale
33	5/19/2015	7,378.00	7,380.00	40	Marcellus Shale
33	5/19/2015	7,417.00	7,419.00	40	Marcellus Shale
33	5/19/2015	7,456.00	7,458.00	40	Marcellus Shale
33	5/19/2015	7,495.00	7,497.00	40	Marcellus Shale
32	5/19/2015	7,535.00	7,537.00	40	Marcellus Shale
32	5/19/2015	7,574.00	7,576.00	40	Marcellus Shale
32	5/19/2015	7,613.00	7,615.00	40	Marcellus Shale
32	5/19/2015	7,652.00	7,654.00	40	Marcellus Shale
32	5/19/2015	7,691.00	7,693.00	40	Marcellus Shale
31	5/19/2015	7,731.00	7,733.00	40	Marcellus Shale
31	5/19/2015	7,770.00	7,772.00	40	Marcellus Shale
31	5/19/2015	7,809.00	7,811.00	40	Marcellus Shale
31	5/19/2015	7,848.00	7,850.00	40	Marcellus Shale
31	5/19/2015	7,887.00	7,889.00	40	Marcellus Shale
30	5/18/2015	7,927.00	7,929.00	40	Marcellus Shale
30	5/18/2015	7,966.00	7,968.00	40	Marcellus Shale
30	5/18/2015	8,005.00	8,007.00	40	Marcellus Shale
30	5/18/2015	8,044.00	8,046.00	40	Marcellus Shale
30	5/18/2015	8,083.00	8,085.00	40	Marcellus Shale
29	5/17/2015	8,123.00	8,125.00	40	Marcellus Shale
29	5/17/2015	8,162.00	8,164.00	40	Marcellus Shale
29	5/17/2015	8,201.00	8,203.00	40	Marcellus Shale
29	5/17/2015	8,240.00	8,242.00	40	Marcellus Shale
29	5/17/2015	8,279.00	8,281.00	40	Marcellus Shale
28	5/17/2015	8,319.00	8,321.00	40	Marcellus Shale
28	5/17/2015	8,358.00	8,360.00	40	Marcellus Shale
28	5/17/2015	8,397.00	8,399.00	40	Marcellus Shale
28	5/17/2015	8,436.00	8,438.00	40	Marcellus Shale
28	5/17/2015	8,475.00	8,477.00	40	Marcellus Shale
27	5/17/2015	8,515.00	8,517.00	40	Marcellus Shale
27	5/17/2015	8,554.00	8,556.00	40	Marcellus Shale
27	5/17/2015	8,593.00	8,595.00	40	Marcellus Shale
27	5/17/2015	8,632.00	8,634.00	40	Marcellus Shale
27	5/17/2015	8,671.00	8,673.00	40	Marcellus Shale
26	5/17/2015	8,711.00	8,713.00	40	Marcellus Shale
26	5/17/2015	8,750.00	8,752.00	40	Marcellus Shale
26	5/17/2015	8,789.00	8,791.00	40	Marcellus Shale
26	5/17/2015	8,828.00	8,830.00	40	Marcellus Shale
26	5/17/2015	8,867.00	8,869.00	40	Marcellus Shale
25	5/16/2015	8,907.00	8,909.00	40	Marcellus Shale
25	5/16/2015	8,946.00	8,948.00	40	Marcellus Shale
25	5/16/2015	8,985.00	8,987.00	40	Marcellus Shale
25	5/16/2015	9,024.00	9,025.00	40	Marcellus Shale
25	5/16/2015	9,063.00	9,065.00	40	Marcellus Shale

24	5/16/2015	9,103.00	9,105.00	40	Marcellus Shale
24	5/16/2015	9,142.00	9,144.00	40	Marcellus Shale
24	5/16/2015	9,181.00	9,183.00	40	Marcellus Shale
24	5/16/2015	9,220.00	222	40	Marcellus Shale
24	5/16/2015	9,259.00	9,261.00	40	Marcellus Shale
23	5/16/2015	9,299.00	9,301.00	40	Marcellus Shale
23	5/16/2015	9,338.00	9,340.00	40	Marcellus Shale
23	5/16/2015	9,377.00	9,379.00	40	Marcellus Shale
23	5/16/2015	9,416.00	9,418.00	40	Marcellus Shale
23	5/16/2015	9,455.00	9,457.00	40	Marcellus Shale
22	5/16/2015	9,495.00	9,497.00	40	Marcellus Shale
22	5/16/2015	9,534.00	9,536.00	40	Marcellus Shale
22	5/16/2015	9,573.00	9,575.00	40	Marcellus Shale
22	5/16/2015	9,612.00	9,614.00	40	Marcellus Shale
22	5/16/2015	9,651.00	9,653.00	40	Marcellus Shale
21	5/16/2015	9,691.00	9,693.00	40	Marcellus Shale
21	5/16/2015	9,730.00	9,732.00	40	Marcellus Shale
21	5/16/2015	9,769.00	9,771.00	40	Marcellus Shale
21	5/16/2015	9,808.00	9,810.00	40	Marcellus Shale
21	5/16/2015	9,847.00	9,849.00	40	Marcellus Shale
20	5/15/2015	9,887.00	9,889.00	40	Marcellus Shale
20	5/15/2015	9,926.00	9,928.00	40	Marcellus Shale
20	5/15/2015	9,965.00	9,967.00	40	Marcellus Shale
20	5/15/2015	10,004.00	10,006.00	40	Marcellus Shale
20	5/15/2015	10,043.00	10,045.00	40	Marcellus Shale
19	5/15/2015	10,083.00	10,085.00	40	Marcellus Shale
19	5/15/2015	10,122.00	10,124.00	40	Marcellus Shale
19	5/15/2015	10,161.00	10,163.00	40	Marcellus Shale
19	5/15/2015	10,200.00	10,202.00	40	Marcellus Shale
19	5/15/2015	10,239.00	10,241.00	40	Marcellus Shale
18	5/15/2015	10,279.00	10,281.00	40	Marcellus Shale
18	5/15/2015	10,318.00	10,320.00	40	Marcellus Shale
18	5/15/2015	10,357.00	10,359.00	40	Marcellus Shale
18	5/15/2015	10,396.00	10,398.00	40	Marcellus Shale
18	5/15/2015	10,435.00	10,437.00	40	Marcellus Shale
17	5/15/2015	10,475.00	10,477.00	40	Marcellus Shale
17	5/15/2015	10,514.00	10,516.00	40	Marcellus Shale
17	5/15/2015	10,553.00	10,555.00	40	Marcellus Shale
17	5/15/2015	10,592.00	10,594.00	40	Marcellus Shale
17	5/15/2015	10,631.00	10,633.00	40	Marcellus Shale
16	5/14/2015	10,671.00	10,673.00	40	Marcellus Shale
16	5/14/2015	10,710.00	10,712.00	40	Marcellus Shale
16	5/14/2015	10,749.00	10,751.00	40	Marcellus Shale
16	5/14/2015	10,788.00	10,790.00	40	Marcellus Shale
16	5/14/2015	10,827.00	10,829.00	40	Marcellus Shale
15	5/14/2015	10,867.00	10,869.00	40	Marcellus Shale
15	5/14/2015	10,906.00	10,908.00	40	Marcellus Shale

15	5/14/2015	10,945.00	10,947.00	40	Marcellus Shale
15	5/14/2015	10,984.00	10,986.00	40	Marcellus Shale
15	5/14/2015	11,023.00	11,025.00	40	Marcellus Shale
14	5/14/2015	11,063.00	11,065.00	40	Marcellus Shale
14	5/14/2015	11,102.00	11,104.00	40	Marcellus Shale
14	5/14/2015	11,141.00	11,143.00	40	Marcellus Shale
14	5/14/2015	11,180.00	11,182.00	40	Marcellus Shale
14	5/14/2015	11,219.00	11,221.00	40	Marcellus Shale
13	5/14/2015	11,259.00	11,261.00	40	Marcellus Shale
13	5/14/2015	11,298.00	11,300.00	40	Marcellus Shale
13	5/14/2015	11,337.00	11,339.00	40	Marcellus Shale
13	5/14/2015	11,376.00	11,378.00	40	Marcellus Shale
13	5/14/2015	11,415.00	11,417.00	40	Marcellus Shale
12	5/13/2015	11,455.00	11,457.00	40	Marcellus Shale
12	5/13/2015	11,494.00	11,496.00	40	Marcellus Shale
12	5/13/2015	11,533.00	11,535.00	40	Marcellus Shale
12	5/13/2015	11,572.00	11,574.00	40	Marcellus Shale
12	5/13/2015	11,611.00	11,613.00	40	Marcellus Shale
11	5/13/2015	11,651.00	11,653.00	40	Marcellus Shale
11	5/13/2015	11,690.00	11,692.00	40	Marcellus Shale
11	5/13/2015	11,729.00	11,731.00	40	Marcellus Shale
11	5/13/2015	11,768.00	11,770.00	40	Marcellus Shale
11	5/13/2015	11,807.00	11,809.00	40	Marcellus Shale
10	5/13/2015	11,847.00	11,849.00	40	Marcellus Shale
10	5/13/2015	11,886.00	11,888.00	40	Marcellus Shale
10	5/13/2015	11,925.00	11,927.00	40	Marcellus Shale
10	5/13/2015	11,964.00	11,966.00	40	Marcellus Shale
10	5/13/2015	12,003.00	12,005.00	40	Marcellus Shale
9	5/12/2015	12,043.00	12,045.00	40	Marcellus Shale
9	5/12/2015	12,082.00	12,084.00	40	Marcellus Shale
9	5/12/2015	12,121.00	12,123.00	40	Marcellus Shale
9	5/12/2015	12,160.00	12,162.00	40	Marcellus Shale
9	5/12/2015	12,199.00	12,201.00	40	Marcellus Shale
8	5/12/2015	12,239.00	12,241.00	40	Marcellus Shale
8	5/12/2015	12,278.00	12,280.00	40	Marcellus Shale
8	5/12/2015	12,317.00	12,319.00	40	Marcellus Shale
8	5/12/2015	12,356.00	12,358.00	40	Marcellus Shale
8	5/12/2015	12,395.00	12,397.00	40	Marcellus Shale
7	5/12/2015	12,435.00	12,437.00	40	Marcellus Shale
7	5/12/2015	12,474.00	12,476.00	40	Marcellus Shale
7	5/12/2015	12,513.00	12,515.00	40	Marcellus Shale
7	5/12/2015	12,552.00	12,554.00	40	Marcellus Shale
7	5/12/2015	12,591.00	12,593.00	40	Marcellus Shale
6	5/11/2015	12,631.00	12,633.00	40	Marcellus Shale
6	5/11/2015	12,670.00	12,672.00	40	Marcellus Shale
6	5/11/2015	12,709.00	12,711.00	40	Marcellus Shale
6	5/11/2015	12,748.00	12,750.00	40	Marcellus Shale

6	5/11/2015	12,787.00	12,789.00	40	Marcellus Shale
5	5/11/2015	12,827.00	12,829.00	40	Marcellus Shale
5	5/11/2015	12,866.00	12,868.00	40	Marcellus Shale
5	5/11/2015	12,905.00	12,907.00	40	Marcellus Shale
5	5/11/2015	12,944.00	12,946.00	40	Marcellus Shale
5	5/11/2015	12,983.00	12,985.00	40	Marcellus Shale
4	5/11/2015	13,023.00	13,025.00	40	Marcellus Shale
4	5/11/2015	13,062.00	13,064.00	40	Marcellus Shale
4	5/11/2015	13,101.00	13,103.00	40	Marcellus Shale
4	5/11/2015	13,140.00	13,142.00	40	Marcellus Shale
4	5/11/2015	13,179.00	13,181.00	40	Marcellus Shale
3	5/10/2015	13,219.00	13,221.00	40	Marcellus Shale
3	5/10/2015	13,258.00	13,260.00	40	Marcellus Shale
3	5/10/2015	13,297.00	13,299.00	40	Marcellus Shale
3	5/10/2015	13,336.00	13,338.00	40	Marcellus Shale
3	5/10/2015	13,375.00	13,377.00	40	Marcellus Shale
2	5/10/2015	13,415.00	13,417.00	40	Marcellus Shale
2	5/10/2015	13,454.00	13,456.00	40	Marcellus Shale
2	5/10/2015	13,493.00	13,495.00	40	Marcellus Shale
2	5/10/2015	13,532.00	13,534.00	40	Marcellus Shale
2	5/10/2015	13,571.00	13,573.00	40	Marcellus Shale
1	5/10/2015	13,617.00	13,623.00	40	Marcellus Shale
1	5/10/2015	13,670.00	13,675.00	40	Marcellus Shale
1	5/10/2015	13,717.00	13,722.00	40	Marcellus Shale
1	5/10/2015	13,775.00	13,777.00	40	Marcellus Shale

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of N/Other (units)
1	5/10/2015	71	7372	0	4123	400600	11549	NA
2	5/10/2015	69.8	7769	6537	4342	334760	8890	NA
3	5/10/2015	67.1	7587	6451	4989	354442	8826	NA
4	5/11/2015	79	7963	6126	5708	400060	8482	NA
5	5/11/2015	77.5	8064	6312	5239	400340	8524	NA
6	5/11/2015	74.6	7670	5901	5254	400640	8817	NA
7	5/12/2015	77.9	8086	6981	4642	400460	8460	NA
8	5/12/2015	70.2	7586	6330	5068	377200	10716	NA
9	5/13/2015	75.6	7980	6012	4846	281260	6501	NA
10	5/13/2015	78.2	8012	5912	5322	400660	8316	NA
11	5/13/2015	75.1	7951	6319	5060	400280	8950	NA
12	5/13/2015	74.4	7802	6849	5565	280500	7888	NA
13	5/14/2015	79.7	7776	6047	5096	400660	9894	NA
14	5/14/2015	79	7855	6448	5790	400480	7890	NA
15	5/14/2015	78.1	7793	6824	5171	345080	8162	NA
16	5/14/2015	89.4	7510	5990	4910	400260	8473	NA
17	5/15/2015	82.8	7609	6623	5107	400080	8565	NA
18	5/15/2015	81.2	7733	6616	5568	400050	7983	NA
19	5/15/2015	80.5	7673	6602	5804	400090	7925	NA
20	5/15/2015	89.9	7769	6802	5418	400060	7815	NA
21	5/16/2015	83.2	7697	6244	5261	400130	8360	NA
22	5/16/2015	81.7	7381	6444	4892	400760	7635	NA
23	5/16/2015	81.3	7133	6380	5311	400140	7080	NA
24	5/16/2015	87.2	7287	6287	5697	399400	7292	NA
25	5/16/2015	88.5	7316	6695	6051	400260	6911	NA
26	5/17/2015	88.9	7133	6670	5726	400960	6935	NA
27	5/17/2015	83.3	7215	6999	5064	400100	6871	NA
28	5/17/2015	86	7496	6520	4588	400240	7598	NA
29	5/18/2015	90.4	7259	7253	5347	400640	6819	NA
30	5/19/2015	88.6	7215	6881	5550	400440	6980	NA
31	5/19/2015	88.7	7063	6936	5289	401120	7002	NA
32	5/19/2015	82.4	6776	5944	5007	402840	6846	NA
33	5/19/2015	82.7	6794	6241	5304	397640	6739	NA

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	7134 TVD	13931 MD	

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☐ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY ☐ Estimated ☐ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H_2S, ETC)
Sands, Silts, and Coals	0	1817	0	1820	Sand, Silts, and Coal
Big Lime	1817	1876	1820	1879	Sandstone
Balltown	3599	3641	3608	3650	Sandstone
Bradford	4332	4361	4341	4371	Sandstone
Benson	4906	4973	4915	4982	Sandstone
Elk	5190	5248	5199	5257	Siltstone
Burkett	6822	6842	6848	6873	Shale- Gas show at 6850' MD
Tully	6842	6906	6873	6956	Limestone
Mahantango	6906	7040	6956	7189	Shale- Gas show at 6960' MD
Marcellus	7040	7134	7189	13931	Shale- Gas shows through lateral
Purcell	7099	7102	7358	7365	Limestone
Onondaga	7134		N/A*		Limestone
					* Onondaga MD not listed- Lateral drilled in Marcellus**Onondaga TVD is estimated off offset 4703305741
					**Big Lime-Elk tops taken from offset 4703305741 Plot, Burkett-Purcell taken from Golf East 21HM mudlog

Please insert additional pages as applicable.

Drilling Contractor Sidewinder Drilling
Address 952 Echo Land, Suite 460 City Houston State TX Zip 77024

Logging Company NA
Address _____ City _____ State _____ Zip _____

Cementing Company Universal Well Services
Address 18360 Technology Dr Box 4 City Meadville State PA Zip 16335

Stimulating Company USWS
Address 2121 Sage Road City Houston State TX Zip 77056
Please insert additional pages as applicable.

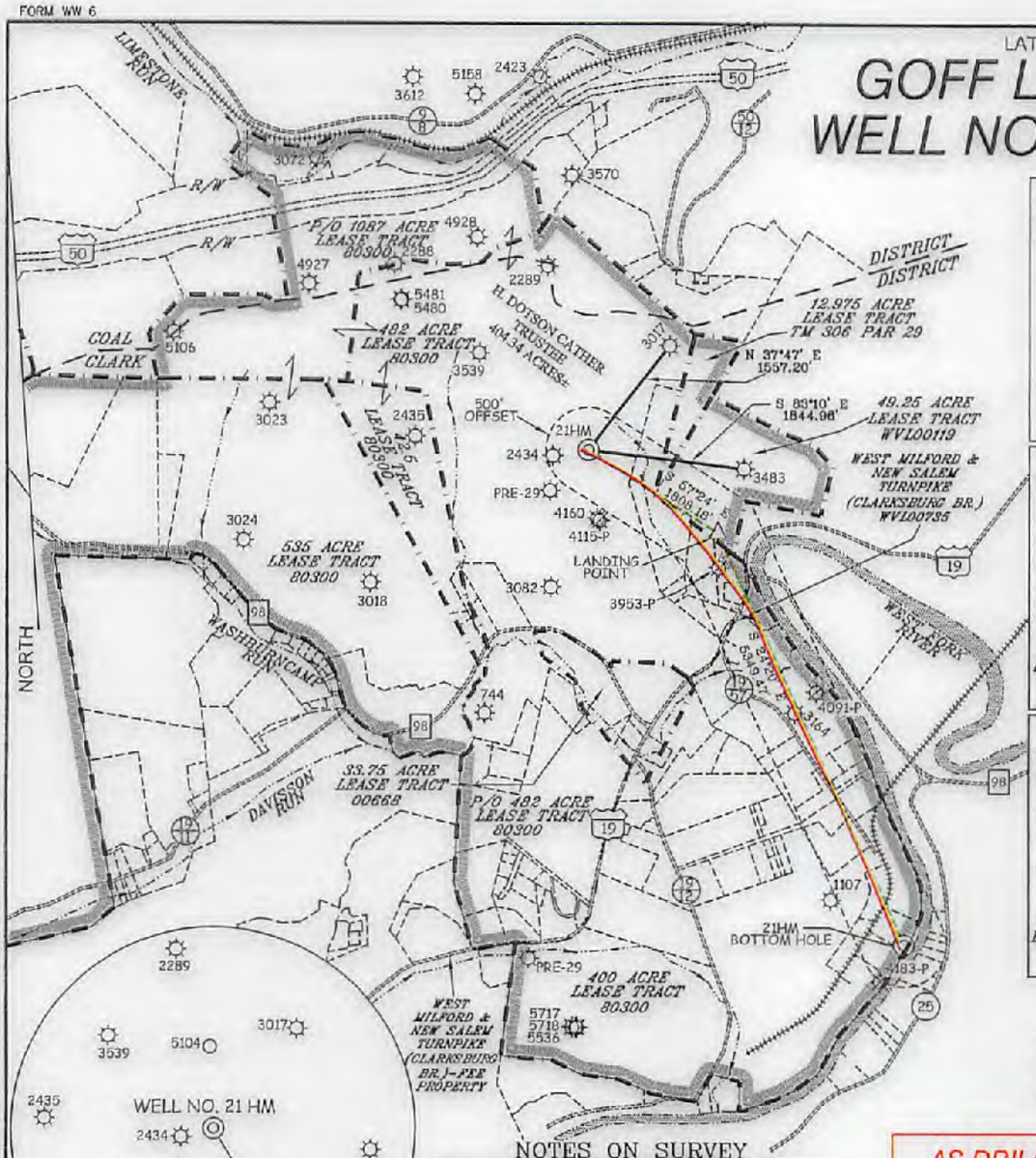
Completed by Zach Allman Telephone 724-940-1200
Signature _____ Title Senior Completions Engineer Date 8/15/17

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

09/15/2017

FORM WW 6

GOFF LEASE
WELL NO. 21 HM



WELL NO. 21 HM TOP HOLE STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 284,444
E. 1,752,147

TOP HOLE (NAD 27)
LAT=(N) 39°16'39.5"
LONG=(W) 80°22'32.0"

TOP HOLE (NAD 83)
LAT=(N) 39°16'39.9"
LONG=(W) 80°22'31.3"

TOP HOLE UTM (NAD 83)
(N) 4,347,785
(E) 553,877

WELL NO. 21 HM LANDING POINT STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 283,470
E. 1,753,670

LANDING POINT (NAD 27)
LAT=(N) 39°16'30.1"
LONG=(W) 80°22'12.5"

LANDING POINT (NAD 83)
LAT=(N) 39°16'30.4"
LONG=(W) 80°22'11.8"

LANDING POINT UTM (NAD 83)
(N) 4,347,496
(E) 554,346

WELL NO. 21 HM BOTTOM HOLE STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 278,596
E. 1,755,874

BOTTOM HOLE (NAD 27)
LAT=(N) 39°15'42.1"
LONG=(W) 80°21'43.8"

BOTTOM HOLE (NAD 83)
LAT=(N) 39°15'42.4"
LONG=(W) 80°21'43.2"

BOTTOM HOLE UTM (NAD 83)
(N) 4,346,022
(E) 555,042

LEGEND
AS DRILLED
PROPOSED

NOTES ON SURVEY

1. TIES TO WELLS, REFERENCES, AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 70 PAGE 152 AND ADJOINING DEEDS.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN JULY, 2013.
4. WELL COORDINATES ESTABLISHED BY DGPS(SURVEY GRADE).
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250'. NO APPLICABLE DWELLINGS OR BUILDINGS WITHIN 625'.
6. PLAT UPDATED 05-05-17 TO SHOW AS DRILLED DATA PROVIDED BY ARSENAL RESOURCES.

AS DRILLED COORDINATES FOR WELL NO. 21HM

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 284,445.8	E. 1,752,147.4
NAD'27 GEO	LAT-(N) 39°16'39.6"	LONG-(W) 80°22'32.0"
NAD'83 GEO	LAT-(N) 39°16'39.9"	LONG-(W) 80°22'31.3"
NAD'83 UTM (M)	N. 4,347,785.0	E. 553,677.0
	BOTTOM HOLE	
NAD'27 S.P.C.(FT)	N. 278,590.1	E. 1,755,832.4
NAD'27 GEO	LAT-(N) 39°15'42.0"	LONG-(W) 80°21'44.4"
NAD'83 GEO	LAT-(N) 39°15'42.4"	LONG-(W) 80°21'43.7"
NAD'83 UTM (M)	N. 4,346,019.7	E. 555,029.4

SLS

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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith

GREGORY A. SMITH LICENSED No. 677 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE MAY 21 , 20 14

REVISED 06/05/14 & 05/05/17

OPERATORS WELL NO. GOFF 21HM

API WELL NO. 47 — 33 — 05823
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE)

FILE NO. 8099P21R3(475-70)

SCALE 1" = 2,000'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ IF "GAS" PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

LOCATION: ELEVATION PRE 1,126.70' POST 1126.30' WATERSHED WEST FORK RIVER

DISTRICT CLARK COUNTY HARRISON QUADRANGLE WOLF SUMMIT 7.5'

SURFACE OWNER H. DOTSON CATHER TRUSTEE ACREAGE 404.34±

ROYALTY OWNER H. DOTSON CATHER TRUSTEE ETAL & STATE OF W.V.(TURNPIKE) ACREAGE 1087±, 12.975±, & 49.25±

PROPOSED WORK: LEASE NO. 80300, TM 306 P 29, WVL00735, & WVL00119

DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD

FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___

PHYSICAL CHANGE IN WELL (SPECIFY) ___ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 7,089' TVD / TMD 13,897'

WELL OPERATOR PDC MOUNTAINEER, LLC DESIGNATED AGENT STEVEN P. JOHNSON

ADDRESS 120 GENESIS BOULEVARD ADDRESS 120 GENESIS BOULEVARD

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

09/15/2017

COUNTY NAME PERMIT

LATITUDE 39°17'30"

LONGITUDE 80°22'30"

GOFF LEASE
WELL NO. 21 HM

WELL NO. 21 HM
TOP HOLE
STATE PLANE COORDINATES
(NORTH ZONE NAD '27)
N. 284,444
E. 1,752,147

TOP HOLE (NAD 27)
LAT=(N) 39°16'39.5"
LONG=(W) 80°22'32.0"

TOP HOLE (NAD 83)
LAT=(N) 39°16'39.9"
LONG=(W) 80°22'31.3"

TOP HOLE UTM (NAD 83)
(N) 4,347,785
(E) 553,877

WELL NO. 21 HM
LANDING POINT
STATE PLANE COORDINATES
(NORTH ZONE NAD '27)
N. 283,470
E. 1,753,670

LANDING POINT (NAD 27)
LAT=(N) 39°16'30.1"
LONG=(W) 80°22'12.5"

LANDING POINT (NAD 83)
LAT=(N) 39°16'30.4"
LONG=(W) 80°22'11.8"

LANDING POINT UTM (NAD 83)
(N) 4,347,495
(E) 554,346

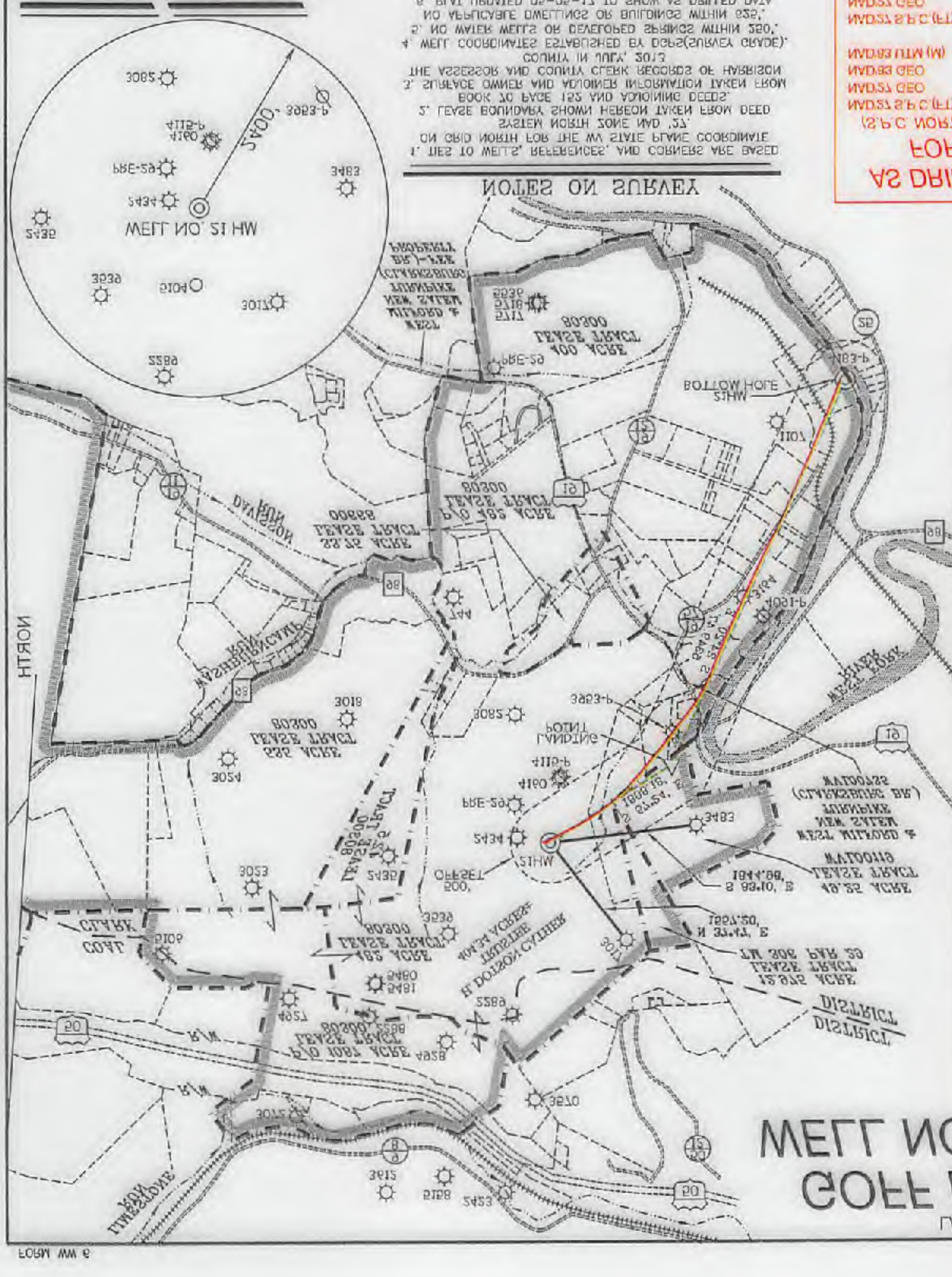
WELL NO. 21 HM
BOTTOM HOLE
STATE PLANE COORDINATES
(NORTH ZONE NAD '27)
N. 278,596
E. 1,755,874

BOTTOM HOLE (NAD 27)
LAT=(N) 39°15'42.1"
LONG=(W) 80°21'43.8"

BOTTOM HOLE (NAD 83)
LAT=(N) 39°15'42.4"
LONG=(W) 80°21'43.2"

BOTTOM HOLE UTM (NAD 83)
(N) 4,346,022
(E) 555,042

LEGEND
AS DRILLED
PROPOSED



09/15/2017

AS DRILLED COORDINATES FOR WELL NO. 21HM

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD27 S.P.C.(FT)	N 284,445.8	E 1,752,147.4
NAD27 GEO	LAT-(N) 39°16'39.8"	LONG-(W) 80°22'32.0"
NAD83 GEO	LAT-(N) 39°16'39.8"	LONG-(W) 80°22'31.3"
NAD83 UTM (M)	N 4,347,785.0	E 553,877.0
BOTTOM HOLE		
NAD27 S.P.C.(FT)	N 278,600.1	E 1,755,832.4
NAD27 GEO	LAT-(N) 39°15'42.0"	LONG-(W) 80°21'44.4"
NAD83 GEO	LAT-(N) 39°15'42.4"	LONG-(W) 80°21'43.7"
NAD83 UTM (M)	N 4,346,019.7	E 555,028.4

NOTES ON SURVEY

1. TIES TO WELLS, REFERENCES, AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 70 PAGE 132 AND ADJOINING DEEDS.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN JULY, 2013.
4. WELL COORDINATES ESTABLISHED BY DGPS(SURVEY GRADE).
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250'. NO APPLICABLE DWELLINGS OR BUILDINGS WITHIN 625'.
6. PLAT UPDATED 05-05-17 TO SHOW AS DRILLED DATA PROVIDED BY ARSENAL RESOURCES.

SLS

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P.S. 677 Gregory A. Smith

GREGORY A. SMITH LICENSED No. 677 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE MAY 21, 20 14

REVISED 06/05/14 & 05/05/17

OPERATORS WELL NO. GOFF 21HM

API WELL NO. 47 — 33 — 05893
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

FILE NO. 8099P21R3(475-70)

SCALE 1" = 2,000'

PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE)

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ IF "GAS" PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

LOCATION: ELEVATION PRE 1,126.70' POST 1126.30' WATERSHED WEST FORK RIVER

DISTRICT CLARK COUNTY HARRISON QUADRANGLE WOLF SUMMIT 7.5'

SURFACE OWNER H. DOTSON CATHER TRUSTEE ACREAGE 404.34±

ROYALTY OWNER H. DOTSON CATHER TRUSTEE ETAL & STATE OF W.V.(TURNPIKE) ACREAGE 1087±, 12.975±, & 49.25±

PROPOSED WORK: LEASE NO. 80300, TM 308 P 29, WVL00735, & WVL00118

DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___

PHYSICAL CHANGE IN WELL (SPECIFY) ___ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 7,089' TVD / TMD 13,897'

WELL OPERATOR PDC MOUNTAINEER, LLC DESIGNATED AGENT STEVEN P. JOHNSON

ADDRESS 120 GENESIS BOULEVARD BRIDGEPORT, WV 26330 ADDRESS 120 GENESIS BOULEVARD BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

FORM WW-6

154'

FORM WW 6

GOFF LEASE
WELL NO. 21 HM

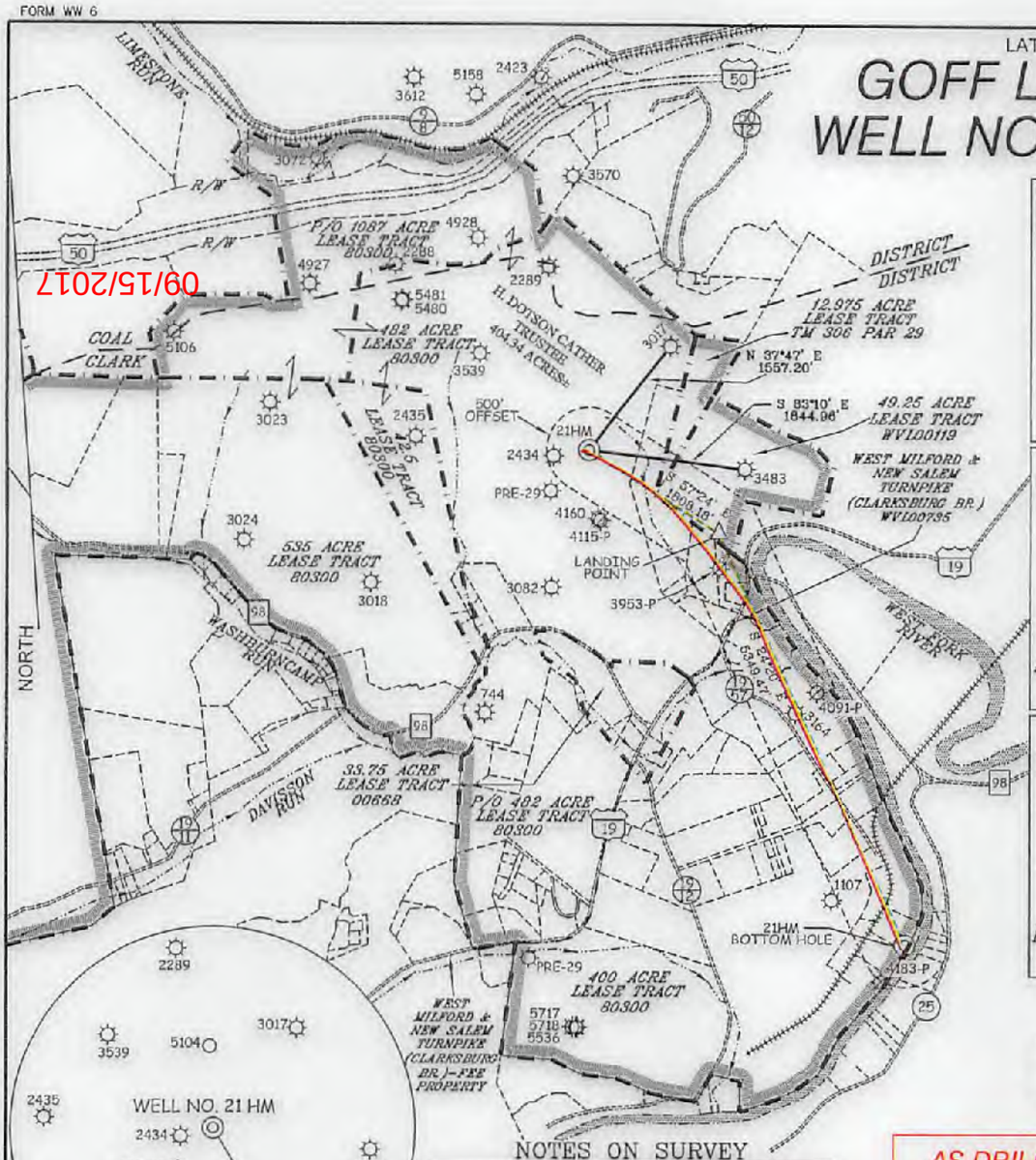
LATITUDE 39°17'30"

154'

LONGITUDE 80°22'30"

5,104'

09/15/2017



WELL NO. 21 HM TOP HOLE STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 284,444 E. 1,752,147
TOP HOLE (NAD 27) LAT=(N) 39°16'39.5" LONG=(W) 80°22'32.0"
TOP HOLE (NAD 83) LAT=(N) 39°16'39.9" LONG=(W) 80°22'31.3"
TOP HOLE UTM (NAD 83) (N) 4,347,785 (E) 553,677

WELL NO. 21 HM LANDING POINT STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 283,470 E. 1,753,670
LANDING POINT (NAD 27) LAT=(N) 39°16'30.1" LONG=(W) 80°22'12.5"
LANDING POINT (NAD 83) LAT=(N) 39°16'30.4" LONG=(W) 80°22'11.8"
LANDING POINT UTM (NAD 83) (N) 4,347,495 (E) 554,346

WELL NO. 21 HM BOTTOM HOLE STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 278,596 E. 1,755,874
BOTTOM HOLE (NAD 27) LAT=(N) 39°15'42.1" LONG=(W) 80°21'43.8"
BOTTOM HOLE (NAD 83) LAT=(N) 39°15'42.4" LONG=(W) 80°21'43.2"
BOTTOM HOLE UTM (NAD 83) (N) 4,346,022 (E) 555,042

LEGEND

AS DRILLED ——

PROPOSED - - - - -

NOTES ON SURVEY

1. TIES TO WELLS, REFERENCES, AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 70 PAGE 152 AND ADJOINING DEEDS.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN JULY, 2013.
4. WELL COORDINATES ESTABLISHED BY DGPS(SURVEY GRADE).
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250'. NO APPLICABLE DWELLINGS OR BUILDINGS WITHIN 625'.
6. PLAT UPDATED 05-05-17 TO SHOW AS DRILLED DATA PROVIDED BY ARSENAL RESOURCES.

AS DRILLED COORDINATES FOR WELL NO. 21HM

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 284,445.9	E. 1,752,147.4
NAD'27 GEO	LAT-(N) 39°16'39.6"	LONG-(W) 80°22'32.0"
NAD'83 GEO	LAT-(N) 39°16'39.9"	LONG-(W) 80°22'31.3"
NAD'83 UTM (M)	N. 4,347,785.0	E. 553,677.0
	BOTTOM HOLE	
NAD'27 S.P.C.(FT)	N. 278,590.1	E. 1,755,832.4
NAD'27 GEO	LAT-(N) 39°15'42.0"	LONG-(W) 80°21'44.4"
NAD'83 GEO	LAT-(N) 39°15'42.4"	LONG-(W) 80°21'43.7"
NAD'83 UTM (M)	N. 4,346,019.7	E. 555,029.4

SLS

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P.S. 677 Gregory A. Smith

GREGORY A. SMITH LICENSED No. 677 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE MAY 21 , 20 14

REVISED 06/05/14 & 05/05/17

OPERATORS WELL NO. GOFF 21HM

API WELL NO. 47 — 33 — 05823

STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE)

FILE NO. 8099P21R3(475-70)

SCALE 1" = 2,000'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE : OIL ____ GAS X LIQUID INJECTION ____ WASTE DISPOSAL ____ IF "GAS" PRODUCTION X STORAGE ____ DEEP ____ SHALLOW X

LOCATION : ELEVATION PRE 1,126.70' POST 1126.30' WATERSHED WEST FORK RIVER

DISTRICT CLARK COUNTY HARRISON QUADRANGLE WOLF SUMMIT 7.5'

SURFACE OWNER H. DOTSON CATHER TRUSTEE ACREAGE 404.34±

ROYALTY OWNER H. DOTSON CATHER TRUSTEE ETAL & STATE OF W.V.(TURNPIKE) ACREAGE 1087±, 12.975±, & 49.25±

PROPOSED WORK : LEASE NO. 80300, TM 306 P 29, WVL00735 , & WVL00119

DRILL X CONVERT ____ DRILL DEEPER ____ REDRILL ____ FRACTURE OR STIMULATE X PLUG OFF OLD

FORMATION ____ PERFORATE NEW FORMATION ____ PLUG AND ABANDON ____ CLEAN OUT AND REPLUG ____ OTHER ____

PHYSICAL CHANGE IN WELL (SPECIFY) ____ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 7,089' TVD / TMD 13,897'

COUNTY NAME

PERMIT

WELL OPERATOR PDC MOUNTAINEER, LLC DESIGNATED AGENT STEVEN P. JOHNSON

ADDRESS 120 GENESIS BOULEVARD ADDRESS 120 GENESIS BOULEVARD

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

GOFF LEASE
WELL NO. 21 HM

LATITUDE 39°17'30"

LONGITUDE 80°22'30"

WELL NO. 21 HM TOP HOLE STATE PLANE COORDINATES (NORTH ZONE NAD 27)
N. 284,444 E. 1,752,147
TOP HOLE (NAD 27) LAT=(N) 39°16'33.5" LONG=(W) 80°22'32.0"
TOP HOLE (NAD 83) LAT=(N) 39°16'33.7" LONG=(W) 80°22'31.3"
TOP HOLE UTM (NAD 83) (N) 4,347,785 (E) 553,877

WELL NO. 21 HM LANDING POINT STATE PLANE COORDINATES (NORTH ZONE NAD 27)
N. 283,470 E. 1,753,670
LANDING POINT (NAD 27) LAT=(N) 39°16'30.1" LONG=(W) 80°22'12.0"
LANDING POINT (NAD 83) LAT=(N) 39°16'30.4" LONG=(W) 80°22'11.8"
LANDING POINT UTM (NAD 83) (N) 4,347,495 (E) 554,346

WELL NO. 21 HM BOTTOM HOLE STATE PLANE COORDINATES (NORTH ZONE NAD 27)
N. 279,596 E. 1,755,874
BOTTOM HOLE (NAD 27) LAT=(N) 39°15'42.1" LONG=(W) 80°21'43.8"
BOTTOM HOLE (NAD 83) LAT=(N) 39°15'42.4" LONG=(W) 80°21'43.2"
BOTTOM HOLE UTM (NAD 83) (N) 4,346,022 (E) 555,042

LEGEND

AS DRILLED

PROPOSED

AS DRILLED COORDINATES FOR WELL NO. 21HM

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)		
NAD27 S.P.C.(FT)	N. 284,445.9	E. 1,752,147.4
NAD27 GEO	LAT-(N) 39°16'33.8"	LONG-(W) 80°22'32.0"
NAD83 GEO	LAT-(N) 39°16'33.9"	LONG-(W) 80°22'31.3"
NAD83 UTM (M)	N. 4,347,785.0	E. 553,877.0
BOTTOM HOLE		
NAD27 S.P.C.(FT)	N. 279,595.7	E. 1,755,822.4
NAD27 GEO	LAT-(N) 39°15'42.0"	LONG-(W) 80°21'44.4"
NAD83 GEO	LAT-(N) 39°15'42.4"	LONG-(W) 80°21'43.7"
NAD83 UTM (M)	N. 4,346,019.7	E. 555,029.4

NOTES ON SURVEY

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2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 70 PAGE 152 AND ADJOINING DEEDS.
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SLS

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P.S. 877

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

DATE MAY 21 , 20 14

REVISED 06/05/14 & 05/05/17

OPERATORS WELL NO. GOFF 21HM

API WELL NO. STATE 47 — COUNTY 33 — PERMIT 0523

GREGORY A. SMITH — LICENSED — No. 677 — STATE OF — WEST VIRGINIA — PROFESSIONAL SURVEYOR

MINIMUM DEGREE OF ACCURACY 1 / 200

PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE)

FILE NO. 8099P21R3(475-70)

SCALE 1" = 2,000'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE: OIL ____ GAS X LIQUID INJECTION ____ WASTE DISPOSAL ____ IF "GAS" PRODUCTION X STORAGE ____ DEEP ____ SHALLOW X

LOCATION: ELEVATION 1,126.70' POST 1126.30' WATERSHED WEST FORK RIVER

DISTRICT CLARK COUNTY HARRISON QUADRANGLE WOLF SUMMIT 7.5'

SURFACE OWNER H. DOTSON CATHER TRUSTEE ACREAGE 404.34±

ROYALTY OWNER H. DOTSON CATHER TRUSTEE ETAL & STATE OF W.V.(TURNPIKE) ACREAGE 1087±, 12.975±, & 49.25±

PROPOSED WORK: LEASE NO 8099O, TM 39B P 29, WVL007255 , & WVL00116

DRILL X CONVERT ____ DRILL DEEPER ____ REDRILL ____ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ____

PERFORATE NEW FORMATION ____ PLUG AND ABANDON ____ CLEAN OUT AND REPLUG ____ OTHER ____

PHYSICAL CHANGE IN WELL (SPECIFY) ____

TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 7,089' TVD / TMD 13,897'

WELL OPERATOR PDC MOUNTAINEER, LLC DESIGNATED AGENT STEVEN P. JOHNSON

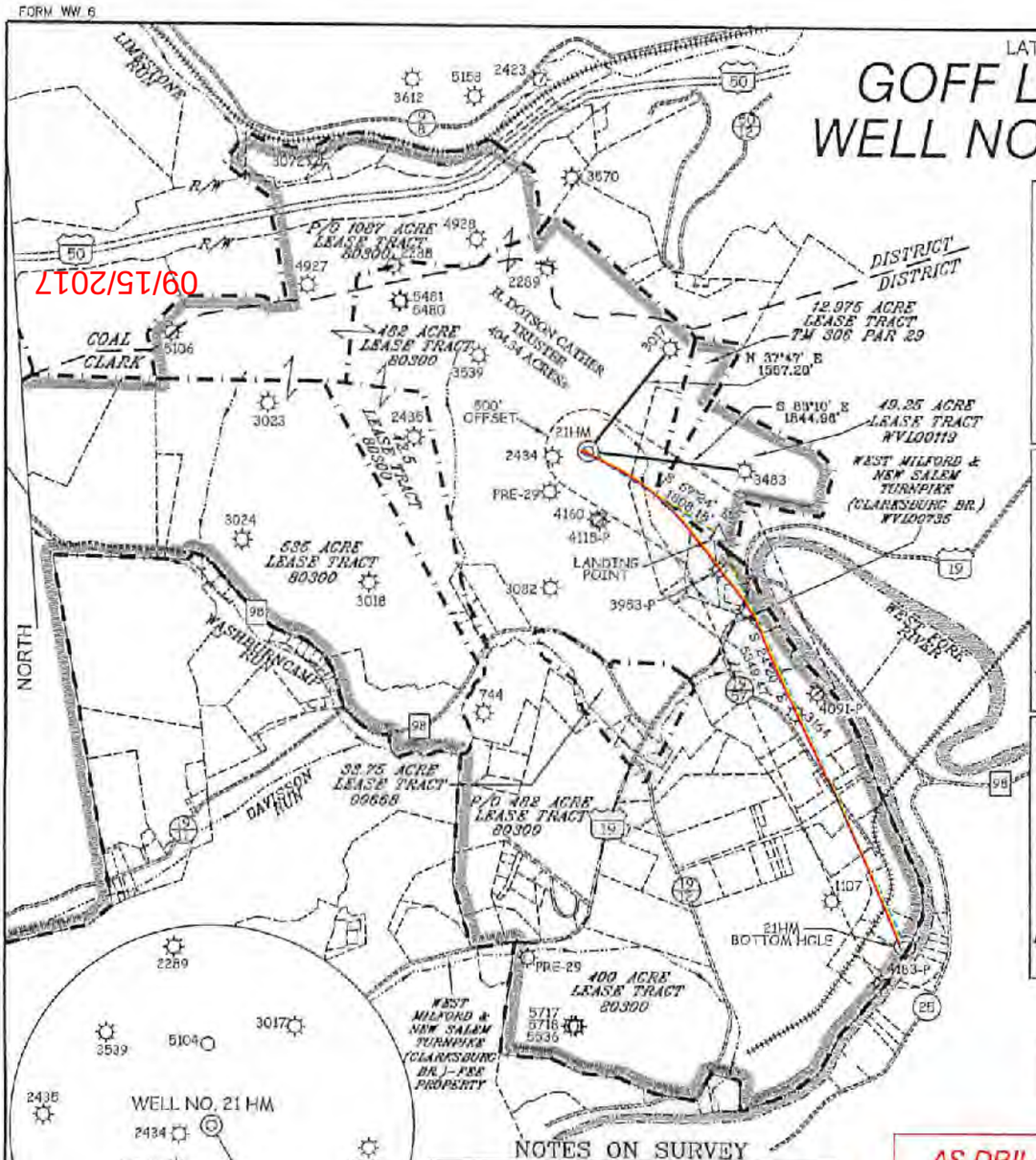
ADDRESS 120 GENESIS BOULEVARD ADDRESS 120 GENESIS BOULEVARD

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

09/15/2017

FORM WW-6

GOFF LEASE
WELL NO. 21 HM



09/15/2017

WELL NO. 21 HM TOP HOLE STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 284,444
E. 1,752,147
TOP HOLE (NAD 27)
LAT=(N) 39°16'39.5"
LONG=(W) 80°22'32.0"
TOP HOLE (NAD 83)
LAT=(N) 39°16'39.9"
LONG=(W) 80°22'31.8"
TOP HOLE UTM (NAD 83)
(N) 4,347,785
(E) 553,877

WELL NO. 21 HM LANDING POINT STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 283,470
E. 1,753,670
LANDING POINT (NAD 27)
LAT=(N) 39°16'30.1"
LONG=(W) 80°22'12.5"
LANDING POINT (NAD 83)
LAT=(N) 39°16'30.4"
LONG=(W) 80°22'11.8"
LANDING POINT UTM (NAD 83)
(N) 4,347,495
(E) 554,346

WELL NO. 21 HM BOTTOM HOLE STATE PLANE COORDINATES (NORTH ZONE NAD '27)
N. 278,596
E. 1,755,874
BOTTOM HOLE (NAD 27)
LAT=(N) 39°15'42.1"
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BOTTOM HOLE (NAD 83)
LAT=(N) 39°15'42.4"
LONG=(W) 80°21'43.2"
BOTTOM HOLE UTM (NAD 83)
(N) 4,346,022
(E) 555,042

LEGEND

AS DRILLED ——

PROPOSED - - - - -

NOTES ON SURVEY

1. TIES TO WELLS, REFERENCES, AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 70 PAGE 152 AND ADJOINING DEEDS.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN JULY, 2013.
4. WELL COORDINATES ESTABLISHED BY DGPS(SURVEY GRADE).
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250'. NO APPLICABLE DWELLINGS OR BUILDINGS WITHIN 625'.
6. PLAT UPDATED 05-05-17 TO SHOW AS DRILLED DATA PROVIDED BY ARSENAL RESOURCES.

AS DRILLED COORDINATES FOR WELL NO. 21HM

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 284,445.9	E. 1,752,147.4
NAD'27 GEO	LAT-(N) 39°16'39.6"	LONG-(W) 80°22'32.0"
NAD'83 GEO	LAT-(N) 39°16'39.9"	LONG-(W) 80°22'31.3"
NAD'83 UTM (M)	N. 4,347,785.0	E. 553,877.0
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 278,590.1	E. 1,755,832.4
NAD'27 GEO	LAT-(N) 39°15'42.0"	LONG-(W) 80°21'44.4"
NAD'83 GEO	LAT-(N) 39°15'42.4"	LONG-(W) 80°21'43.7"
NAD'83 UTM (M)	N. 4,346,010.7	E. 555,029.4

SLS

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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith

GREGORY A. SMITH LICENSED No. 677 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE MAY 21 , 20 14

REVISED 06/05/14 & 05/05/17

OPERATORS WELL NO. GOFF 21HM

API WELL NO. 47 — 33 — 05823

STATE — COUNTY — PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE)

FILE NO. 8099P21R3(475-70)

SCALE 1" = 2,000'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ IF "GAS" PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

LOCATION: ELEVATION PRE 1,126.70' POST 1126.30' WATERSHED WEST FORK RIVER

DISTRICT CLARK COUNTY HARRISON QUADRANGLE WOLF SUMMIT 7.5'

SURFACE OWNER H. DOTSON CATHER TRUSTEE ACREAGE 404.34±

ROYALTY OWNER H. DOTSON CATHER TRUSTEE ETAL & STATE OF W.V.(TURNPIKE) ACREAGE 1087±, 12.975±, & 49.25±

PROPOSED WORK: LEASE NO. 80300, TM 306 P 29, WVL00735, & WVL00119

DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___

PHYSICAL CHANGE IN WELL (SPECIFY) ___ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 7,089' TVD / TMD 13,887'

RECEIVED
Office of Oil and Gas
JUN 30 2017
WV Department of Environmental Protection

WELL OPERATOR PDC MOUNTAINEER, LLC DESIGNATED AGENT STEVEN P. JOHNSON

ADDRESS 120 GENESIS BOULEVARD ADDRESS 120 GENESIS BOULEVARD

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT