

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

API 47- \_\_\_\_\_ - \_\_\_\_\_ County \_\_\_\_\_ District \_\_\_\_\_  
Quad \_\_\_\_\_ Pad Name \_\_\_\_\_ Field/Pool Name \_\_\_\_\_  
Farm name \_\_\_\_\_ Well Number \_\_\_\_\_  
Operator (as registered with the OOG) \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) \_\_\_\_\_ 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)  
\_\_\_\_\_  
\_\_\_\_\_

Date permit issued \_\_\_\_\_ Date drilling commenced \_\_\_\_\_ Date drilling ceased \_\_\_\_\_  
Date completion activities began \_\_\_\_\_ Date completion activities ceased \_\_\_\_\_  
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 \_\_\_\_\_ Open mine(s) (Y/N) depths \_\_\_\_\_  
Salt water depth(s) ft \_\_\_\_\_ Void(s) encountered (Y/N) depths \_\_\_\_\_  
Coal depth(s) ft \_\_\_\_\_ Cavern(s) encountered (Y/N) depths \_\_\_\_\_  
Is coal being mined in area (Y/N) \_\_\_\_\_

Reviewed by:  
\_\_\_\_\_

API 47- \_\_\_\_\_ - \_\_\_\_\_ Farm name \_\_\_\_\_ Well number \_\_\_\_\_

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							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
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							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							

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

Kick off depth (ft) \_\_\_\_\_

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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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 \_\_\_\_\_



API 47- \_\_\_\_\_ - \_\_\_\_\_ Farm name \_\_\_\_\_ Well number \_\_\_\_\_

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
_____	_____ TVD	_____ 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	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

**\*PLEASE SEE ATTACHED EXHIBIT 3**


Please insert additional pages as applicable.

Drilling Contractor \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Logging Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Cementing Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Stimulating Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please insert additional pages as applicable.

Completed by \_\_\_\_\_ Telephone \_\_\_\_\_  
 Signature \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

API 47-095-02373 Farm Name Terry L. Snider Well Number Dillon Unit 1H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/3/2018	15784	15954	60	Marcellus
2	1/3/2018	15582	15752	60	Marcellus
3	1/4/2018	15380	15550	60	Marcellus
4	1/5/2018	15178	15348	60	Marcellus
5	1/6/2018	14976	15146	60	Marcellus
6	1/8/2018	14774	14945	60	Marcellus
7	1/8/2018	14572	14743	60	Marcellus
8	1/9/2018	14371	14541	60	Marcellus
9	1/12/2018	14169	14339	60	Marcellus
10	1/14/2018	13967	14137	60	Marcellus
11	1/15/2018	13765	13935	60	Marcellus
12	1/16/2018	13563	13733	60	Marcellus
13	1/16/2018	13361	13531	60	Marcellus
14	1/16/2018	13159	13329	60	Marcellus
15	1/17/2018	12957	13128	60	Marcellus
16	1/19/2018	12755	12926	60	Marcellus
17	1/20/2018	12554	12724	60	Marcellus
18	1/20/2018	12352	12522	60	Marcellus
19	1/21/2018	12150	12320	60	Marcellus
20	1/21/2018	11948	12118	60	Marcellus
21	1/22/2018	11746	11916	60	Marcellus
22	1/22/2018	11544	11714	60	Marcellus
23	1/22/2018	11342	11512	60	Marcellus
24	1/23/2018	11140	11311	60	Marcellus
25	1/23/2018	10938	11109	60	Marcellus
26	1/23/2018	10737	10907	60	Marcellus
27	1/24/2018	10535	10705	60	Marcellus
28	1/24/2018	10333	10503	60	Marcellus
29	1/25/2018	10131	10301	60	Marcellus
30	1/25/2018	9929	10099	60	Marcellus
31	1/25/2018	9727	9897	60	Marcellus
32	1/26/2018	9525	9695	60	Marcellus
33	1/26/2018	9323	9494	60	Marcellus
34	1/27/2018	9121	9292	60	Marcellus
35	1/27/2018	8920	9090	60	Marcellus
36	1/27/2018	8718	8888	60	Marcellus
37	1/28/2018	8516	8686	60	Marcellus
38	1/28/2018	8314	8484	60	Marcellus
39	1/28/2018	8112	8282	60	Marcellus
40	1/29/2018	7910	8080	60	Marcellus
41	1/29/2018	7708	7878	60	Marcellus
42	1/30/2018	7506	7677	60	Marcellus
43	1/30/2018	7304	7475	60	Marcellus
44	1/30/2018	7103	7273	60	Marcellus
45	1/31/2018	6901	7071	60	Marcellus
46	1/31/2018	6699	6869	60	Marcellus

**API 47-095-02373 Farm Name Terry L. Snider Well Number Dillon Unit 1H**

**EXHIBIT 2**

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	1/3/2018	71.7	7928		4009	11937	11059	N/A
2	1/3/2018	78	7730	5313	3630	16673	9037	N/A
3	1/4/2018	79.6	7714	5454	3320	16488	9295	N/A
4	1/5/2018	71.1	7930	5730	4110	17770	11691	N/A
5	1/6/2018	78.9	7840	5270	4199	17309	9430	N/A
6	1/8/2018	73	7264	5247	4055	16566	9202	N/A
7	1/8/2018	78	7627	5285	4114	17026	8906	N/A
8	1/9/2018	75.5	7696	5383	3867	16946	8776	N/A
9	1/12/2018	67.8	7881	5044	4309	17234	16536	N/A
10	1/14/2018	75.9	7677	5101	4213	16991	11117	N/A
11	1/15/2018	72.8	7455	5000	5782	18237	8612	N/A
12	1/16/2018	75	7289	5145	5021	17455	9633	N/A
13	1/16/2018	75.2	6848	5209	4265	16322	8606	N/A
14	1/16/2018	75.7	7307	5309	4969	17585	8759	N/A
15	1/17/2018	76	7217	5525	4965	17707	9221	N/A
16	1/19/2018	76.5	7182	5553	3489	16224	8810	N/A
17	1/20/2018	71.4	7155	5521	4775	17451	9408	N/A
18	1/20/2018	76.6	7173	5252	5065	17490	9057	N/A
19	1/21/2018	73.4	7112	5706	4024	16842	9414	N/A
20	1/21/2018	75.9	7168	5088	4429	16685	9130	N/A
21	1/22/2018	73.4	7052	5269	4479	16800	8732	N/A
22	1/22/2018	76.6	7207	5524	4794	17525	9522	N/A
23	1/22/2018	72.9	6904	5269	5014	17187	8970	N/A
24	1/23/2018	75.9	6790	5131	4260	16181	9757	N/A
25	1/23/2018	76	7197	5360	4844	17401	9987	N/A
26	1/23/2018	73.4	6782	5296	4627	16705	8792	N/A
27	1/24/2018	78.3	6936	5025	4009	15970	9495	N/A
28	1/24/2018	75.2	6902	5190	4435	16527	8878	N/A
29	1/25/2018	79.3	7182	5092	4504	16778	9489	N/A
30	1/25/2018	74	7164	5171	4094	16429	10350	N/A
31	1/25/2018	78.2	6999	5175	4369	16543	9151	N/A
32	1/26/2018	78.7	7153	5221	4224	16598	9164	N/A
33	1/26/2018	77.7	6974	5077	3629	15680	9713	N/A
34	1/27/2018	78.3	6966	5362	3633	15961	8829	N/A
35	1/27/2018	79.6	6946	5160	4489	16595	8592	N/A
36	1/27/2018	78.7	6845	5237	4578	16660	8714	N/A
37	1/28/2018	75	7141	5285	3638	16064	12041	N/A
38	1/28/2018	78.3	6691	5353	3951	15995	8635	N/A
39	1/28/2018	79.2	6891	5485	4075	16451	9276	N/A
40	1/29/2018	79.4	6877	5471	4509	16857	10531	N/A
41	1/29/2018	79.3	6666	5505	3951	16122	9280	N/A
42	1/30/2018	78.6	6551	5808	4435	16794	9277	N/A
43	1/30/2018	80	6666	5437	4181	16284	8894	N/A
44	1/30/2018	76.9	6478	5282	4422	16182	8951	N/A
45	1/31/2018	73.8	6428	4950	3730	15108	8922	N/A
46	1/31/2018	74.4	6256	5404	3884	15544	8710	N/A
	<b>AVG=</b>	<b>76.1</b>	<b>7,127</b>	<b>5,304</b>	<b>4,291</b>	<b>763,879</b>	<b>438,351</b>	<b>TOTAL</b>

**EXHIBIT 3**

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandstone	0	N/A	0	N/A
Silty Sandstone	260	N/A	260	N/A
Shale w/trace Coal	560	N/A	560	N/A
Silty Sandstone	740	N/A	740	N/A
Limey Shale	880	N/A	880	N/A
Silty Shale w/trace Coal	1,080	N/A	1,080	N/A
Silty Sandstone	1,240	N/A	1,240	N/A
Silty Shale w/trace Coal	1,380	N/A	1,380	N/A
Silty Sandstone	1,520	N/A	1,520	N/A
Sandstone w/trace Coal	1,600	N/A	1,600	N/A
Silty Sandstone	1,680	N/A	1,680	N/A
Shale w/trace Coal	1,740	N/A	1,740	N/A
Silty Sandstone	1,840	N/A	1,840	N/A
Big Lime	2,047	N/A	2,049	N/A
Big Injun	2,156	N/A	2,158	N/A
Gantz Sand	2,568	N/A	2,569	N/A
Fifty Food Sandstone	2,858	N/A	2,860	N/A
Gordon	2,933	N/A	2,935	N/A
Fifht Sandstone	3,205	N/A	3,210	N/A
Bayard	3,290	N/A	3,295	N/A
Warren	3,670	N/A	3,680	N/A
Speechley	4,024	N/A	4,041	N/A
Balltown	4,305	N/A	4,327	N/A
Bradford	4,687	N/A	4,717	N/A
Benson	5,080	N/A	5,117	N/A
Alexander	5,304	N/A	5,344	N/A
Rhinestreet	5,857	N/A	5,907	N/A
Sycamore	6,189	N/A	6,270	N/A
Middlesex	6,284	N/A	6,407	N/A
Burkett	6,375	N/A	6,589	N/A
Tully	6,398	N/A	6,651	N/A
Marcellus	6,408	N/A	6,679	N/A

\*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.



LATITUDE 39°22'30" 1,631'

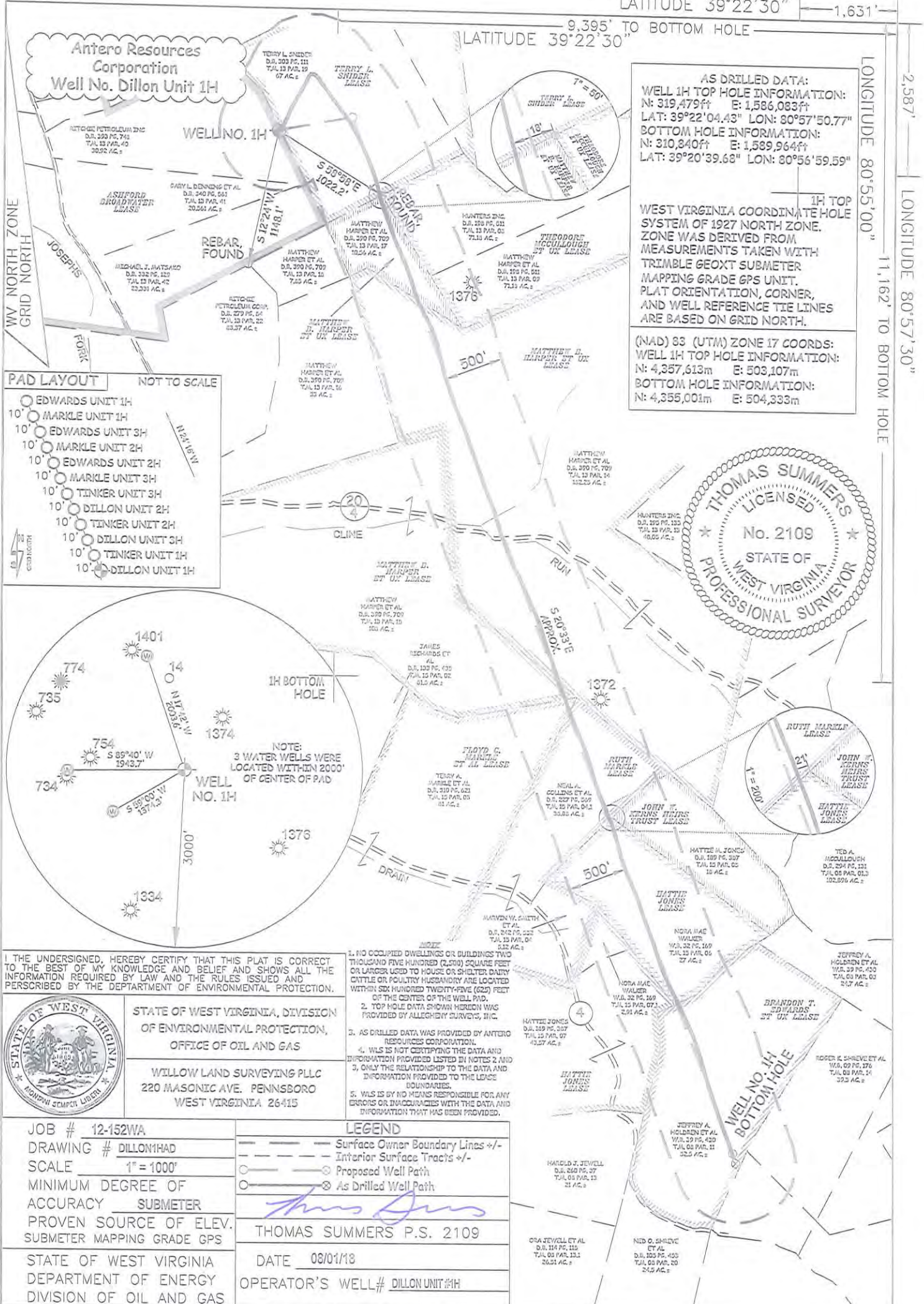
9,395' TO BOTTOM HOLE  
LATITUDE 39°22'30"

LONGITUDE 80°55'00"

2,587'

LONGITUDE 80°57'30"

11,162' TO BOTTOM HOLE



AS DRILLED DATA:  
 WELL 1H TOP HOLE INFORMATION:  
 N: 319,479ft E: 1,586,083ft  
 LAT: 39°22'04.43" LON: 80°57'50.77"  
 BOTTOM HOLE INFORMATION:  
 N: 310,840ft E: 1,589,964ft  
 LAT: 39°20'39.68" LON: 80°56'59.59"

1H TOP  
 WEST VIRGINIA COORDINATE HOLE  
 SYSTEM OF 1927 NORTH ZONE.  
 ZONE WAS DERIVED FROM  
 MEASUREMENTS TAKEN WITH  
 TRIMBLE GEOXT SUBMETER  
 MAPPING GRADE GPS UNIT.  
 PLAT ORIENTATION, CORNER,  
 AND WELL REFERENCE TIE LINES  
 ARE BASED ON GRID NORTH.

(NAD 83 (UTM) ZONE 17 COORDS:  
 WELL 1H TOP HOLE INFORMATION:  
 N: 4,357,613m E: 503,107m  
 BOTTOM HOLE INFORMATION:  
 N: 4,355,001m E: 504,333m

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 RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVE. PENNSBORO  
 WEST VIRGINIA 26415

1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,000) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

JOB # 12-152WA  
 DRAWING # DILLON1HAD  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND  
 - - - Surface Owner Boundary Lines +/-  
 - - - Interior Surface Tracts +/-  
 ○ Proposed Well Path  
 ⊗ As Drilled Well Path

THOMAS SUMMERS P.S. 2109  
 DATE 09/01/18  
 OPERATOR'S WELL# DILLON UNIT 1H

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  47 - 095 - 02373  
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW  STATE COUNTY PERMIT  
 LOCATION: ELEVATION 1,146.5' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK  
 QUADRANGLE PENNSBORO 7.5' DISTRICT MEADE COUNTY TYLER  
 SURFACE OWNER RITCHIE PETROLEUM INC. ACREAGE 30.92 ACRES +/-  
 OIL & GAS ROYALTY OWNER ASHFORD BROADWATER; TERRY L. SNIDER; THEODORE MCCULLOUGH ET UX; LEASE ACREAGE 583.712 AC±; 67 AC±; 188.72 AC±;  
 MATTHEW B. HARPER ET UX; MATTHEW B. HARPER ET UX; MATTHEW B. HARPER ET UX; FLOYD C. MARBLE ET AL; RUTH MARBLE; HATTIE JONES; BRANDON T. EDWARDS ET UX 10.55 AC±; 182.25 AC±; 108 AC±; 81 AC±; 44 AC±; 27 AC±; 52.5 AC±;  
 PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL  
 (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG  
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,459' TVD 16,055' MD  
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 DENVER, CO 80202 CHARLESTON, WV 25313