

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

API 47-085-10220 County RITCHIE District UNION
Quad PULLMAN Pad Name PUL96 Field/Pool Name N/A
Farm name JAMES H. & WILMA J. WILSON Well Number 515885
Operator (as registered with the OOG) EQT Production Company
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,340,209.74 Easting 501,217.10
Landing Point of Curve Northing 4,339,950.19 Easting 500,422.88
Bottom Hole Northing 4,337,971.61 Easting 500,999.03

Elevation (ft) 1183' 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)
Water base Mud 11.5 ppg & Synthetic Base Mud 11.5 ppg, barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phosphates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 08/06/2015 Date drilling commenced 09/24/2015 Date drilling ceased 1/25/2016
Date completion activities began 8/24/2016 Date completion activities ceased 9/3/2016
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug a gas well.
Freshwater depth(s) ft 342,368,399,556 Open mine(s) (Y/N) depths N
Salt water depth(s) ft No salt water shows Void(s) encountered (Y/N) depths N
Coal depth(s) ft No coal seams Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVE
NAME: Michael Hoff
DATE: 12-21-2016

Reviewed by: _____

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API 47-085 - 10220

Farm name JAMES H. & WILMA J. WILSON Well number 515885

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	24"	20"	40'	NEW	A-500	N/A	Y
Surface	17 1/2"	13 3/8"	671'	NEW	J-55	209'	Y
Coal							
Intermediate 1	12 3/8"	9 5/8"	2568'	NEW	A-500	715', 2018'	Y
Intermediate 2							
Intermediate 3							
Production	8 1/2"	5 1/2"	14,958'	NEW	P-110	N/A	N
Tubing							
Packer type and depth set							

Comment Details N/A

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	CLASS A	38	15.6	1.18	44.84	0	8
Surface	CLASS A	599	15.6	1.20	718.80	0	8
Coal							
Intermediate 1	CLASS A	988	15.6	1.18	1165.84	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H / CLASS H	989 / 916	15.2 / 15.6	1.25 / 2.06	3,123.2	1,775'	72
Tubing							

Drillers TD (ft) 14,965' Loggers TD (ft) N/A
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 2,722'

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
 CONDUCTOR: NONE
 SURFACE: 2 CENTRALIZERS AT JOINTS 1 AND 12
 INTERMEDIATE: 8 CENTRALIZERS PLACED EVERY 500'
 PRODUCTION: 289 Composite body spiral centralizers installed every joint from TD to 2,532'

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- 085 - 10220 Farm name JAMES H. & WILMA J. WILSON Well number 515885

Drilling Contractor Savanna Drilling
Address 125 Industry Road City Waynesburg State PA Zip 15370

Logging Company Phoenix Technology Services
Address 1805 Brittmoore Road City Houston State TX Zip 77043

515885 Final Formations API #47-08510220

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
SAND/SHALE	1	1	1060	1060
MAXTON	1060	1060	1086	1086
SAND/SHALE	1086	1086	1117	1117
BIG LIME	1117	1117	1242	1242
SAND/SHALE	1242	1242	2319	2319
BIG INJUN	2319	2319	2467	2467
SAND/SHALE	2467	2467	2672	2672
GANTZ	2672	2672	2754	2754
50F	2754	2754	2841	2840
GORDON	2841	2840	3054	3041
5TH	3054	3041	3111	3093
BAYARD	3111	3093	3513	3419
WARREN	3513	3419	3623	3502
SPEECHLEY	3623	3502	3961	3756
BALLTOWN A	3961	3756	4204	3941
BALLTOWN B	4204	3941	4351	4053
BRADFORD	4351	4053	4607	4246
RILEY	4607	4246	4948	4502
BENSON	4948	4502	5227	4712
ALEXANDER	5227	4712	5241	4723
ANGOLA	5241	4723	5999	5288
RHINESTREET UPPER	5999	5288	6097	5361
RHINESTREET	6097	5361	7126	6116
SONYEA	7126	6116	7272	6213
MIDDLESEX	7272	6213	7357	6261
GENESSEE	7357	6261	7501	6313
GENESEO	7501	6313	7614	6339
TULLY	7614	6339	7660	6347
MARCELLUS	7660	6347	14958	6368

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515885- 47-085-10220-0000- Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve		14,933	14,958	10	MARCELLUS
1	8/24/2016	14,812	14,904	32	MARCELLUS
2	8/24/2016	14,662	14,784	40	MARCELLUS
3	8/25/2016	14,512	14,634	40	MARCELLUS
3.1	8/25/2016	14,467	14,529	24	MARCELLUS
4	8/25/2016	14,317	14,439	40	MARCELLUS
5	8/25/2016	14,167	14,289	40	MARCELLUS
6	8/25/2016	14,017	14,139	40	MARCELLUS
7	8/26/2016	13,867	13,989	40	MARCELLUS
8	8/26/2016	13,717	13,839	40	MARCELLUS
9	8/26/2016	13,567	13,689	40	MARCELLUS
10	8/26/2016	13,417	13,537	40	MARCELLUS
11	8/26/2016	13,267	13,389	40	MARCELLUS
12	8/26/2016	13,117	13,239	40	MARCELLUS
13	8/27/2016	12,967	13,089	40	MARCELLUS
14	8/27/2016	12,817	12,939	40	MARCELLUS
15	8/27/2016	12,667	12,789	40	MARCELLUS
16	8/27/2016	12,517	12,639	40	MARCELLUS
17	8/27/2016	12,367	12,489	40	MARCELLUS
18	8/27/2016	12,217	12,339	40	MARCELLUS
19	8/28/2016	12,067	12,189	40	MARCELLUS
20	8/28/2016	11,917	12,039	40	MARCELLUS
21	8/28/2016	11,767	11,889	40	MARCELLUS
22	8/28/2016	11,617	11,739	40	MARCELLUS
23	8/28/2016	11,467	11,589	40	MARCELLUS
24	8/28/2016	11,317	11,439	40	MARCELLUS
25	8/28/2016	11,167	11,289	40	MARCELLUS
26	8/29/2016	11,017	11,139	40	MARCELLUS
27	8/29/2016	10,867	10,989	40	MARCELLUS
28	8/29/2016	10,717	10,839	40	MARCELLUS
29	8/29/2016	10,566	10,689	40	MARCELLUS
30	8/29/2016	10,417	10,539	40	MARCELLUS
31	8/29/2016	10,267	10,389	40	MARCELLUS
32	8/30/2016	10,117	10,239	40	MARCELLUS
33	8/30/2016	9,967	10,089	40	MARCELLUS
34	8/30/2016	9,817	9,939	40	MARCELLUS
35	8/30/2016	9,667	9,789	40	MARCELLUS
36	8/30/2016	9,517	9,637	40	MARCELLUS
37	8/31/2016	9,367	9,487	40	MARCELLUS
38	8/31/2016	9,217	9,336	40	MARCELLUS
39	9/1/2016	9,067	9,185	40	MARCELLUS
40	9/1/2016	8,917	9,039	40	MARCELLUS
41	9/1/2016	8,769	8,887	40	MARCELLUS
42	9/1/2016	8,617	8,739	40	MARCELLUS
43	9/2/2016	8,467	8,589	40	MARCELLUS
44	9/2/2016	8,317	8,439	40	MARCELLUS
45	9/2/2016	8,167	8,287	40	MARCELLUS
46	9/2/2016	8,016	8,139	40	MARCELLUS
47	9/2/2016	7,867	7,989	40	MARCELLUS
48	9/3/2016	7,717	7,839	40	MARCELLUS

515885- 47-085-10220-0000- Stimulated Stages

Stage Number	Stimulation 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)
Initiation Sleeve	8/24/2016	17	7,307	8,697	5,353	0	1,006	0
1	8/24/2016	88	8,194	8,430	2,961	250,800	5,554	0
2	8/24/2016	97	8,616	8,883	2,816	250,701	5,069	0
3	8/25/2016	42	7,894	9,028	4,933	7,280	2,565	0
3.1	8/25/2016	73	7,972	8,867	2,728	246,001	5,374	0
4	8/25/2016	85	7,864	8,143	3,064	249,901	5,379	0
5	8/25/2016	100	8,257	8,428	2,916	252,500	5,565	0
6	8/25/2016	100	8,275	8,442	2,844	251,999	5,090	0
7	8/26/2016	100	8,412	8,563	3,067	250,200	5,122	0
8	8/26/2016	93	7,874	8,390	2,822	250,000	5,238	0
9	8/26/2016	97	8,060	8,589	2,825	249,901	5,067	0
10	8/26/2016	98	7,802	8,199	3,020	250,099	5,010	0
11	8/26/2016	100	8,126	8,376	3,000	249,901	5,036	0
12	8/26/2016	100	7,967	8,219	3,210	249,799	5,094	0
13	8/27/2016	100	8,128	8,511	3,313	250,500	5,084	0
14	8/27/2016	101	8,242	8,465	3,586	250,000	5,051	0
15	8/27/2016	101	7,973	8,154	3,223	251,001	4,930	0
16	8/27/2016	101	7,950	8,179	3,594	250,200	5,026	0
17	8/27/2016	100	8,378	8,580	3,374	249,901	5,027	0
18	8/27/2016	100	7,900	8,069	3,586	247,800	5,021	0
19	8/28/2016	90	8,437	8,711	3,380	249,799	5,321	0
20	8/28/2016	100	7,844	8,002	3,517	250,300	5,004	0
21	8/28/2016	101	7,708	7,878	3,380	251,001	4,948	0
22	8/28/2016	101	7,444	7,591	3,397	252,299	4,889	0
23	8/28/2016	100	7,664	7,894	3,478	249,901	4,854	0
24	8/28/2016	100	7,528	7,769	3,480	249,901	4,904	0
25	8/28/2016	100	7,538	7,621	3,292	250,000	4,821	0
26	8/29/2016	100	7,519	7,753	3,342	248,000	4,875	0
27	8/29/2016	101	7,359	7,541	3,599	250,200	4,766	0
28	8/29/2016	100	8,077	8,289	3,514	249,901	4,744	0
29	8/29/2016	101	7,340	7,625	3,822	250,099	4,688	0
30	8/29/2016	100	7,491	7,764	3,448	249,200	4,868	0
31	8/29/2016	100	7,467	7,686	3,742	250,099	4,860	0
32	8/30/2016	100	7,372	7,515	3,388	249,001	4,741	0
33	8/30/2016	101	7,368	7,581	3,768	255,300	4,720	0
34	8/30/2016	100	7,321	7,502	3,374	250,200	4,772	0
35	8/30/2016	101	7,283	7,437	3,524	250,200	4,637	0
36	8/30/2016	100	7,122	7,288	3,836	249,901	4,670	0
37	8/30/2016	101	7,172	7,303	4,040	250,000	4,581	0
38	8/31/2016	97	7,333	9,005	4,024	250,780	4,931	0
39	9/1/2016	96	6,909	7,291	3,908	250,200	4,796	0
40	9/1/2016	100	7,083	7,283	3,775	250,000	4,568	0
41	9/1/2016	99	6,987	7,169	3,785	250,099	4,555	0
42	9/1/2016	99	7,069	7,371	3,943	250,000	4,771	0
43	9/2/2016	100	7,089	7,214	3,651	250,000	4,652	0
44	9/2/2016	100	7,333	7,539	3,566	250,200	4,516	0
45	9/2/2016	100	6,866	7,194	4,365	250,000	4,492	0
46	9/2/2016	100	6,872	7,081	3,458	252,599	4,702	0
47	9/2/2016	100	6,980	7,237	3,691	250,000	4,551	0
48	9/3/2016	100	6,811	7,100	3,088	250,000	4,598	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	8/24/2016
Job End Date	9/3/2016
State	West Virginia
County	Ritchie
API Number	47-085-10220-00-00
Operator Name	EQT Production
Well Name and Number	515885
Latitude	39.21107900
Longitude	-80.986607100
Datum	NAD83
Federal Well	NO
Indian Well	NO
True Vertical Depth	6,347
Total Base Water Volume (gal)	10,042,357
Total Base Non Water Volume	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Halliburton	Carrier/Base Fluid	Water	7732-18-5	100.00000	99.32422	None
FR-78	Halliburton	Friction Reducer		Listed Below			

					Listed Below				
Items above are Trade Names with the exception of Base Water Items below are the individual ingredients									
					Silica Substrate	14808-60-7	100.00000	0.14243	None
					Calcium Nitrate.4H2O	13477-34-4	100.00000	0.11910	None
					Hydrochloric Acid	7647-01-0	15.00000	0.04246	None
					Polyacrylate	Proprietary	30.00000	0.02308	None
					Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02308	
					Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02308	None
					Polyacrylate	Proprietary	30.00000	0.02308	
					Ethylene glycol	107-21-1	60.00000	0.01610	
					Ethylene glycol	107-21-1	60.00000	0.01610	None
					Contains no hazardous substances in concentrations above cut-off values according to the competent authority	Proprietary	100.00000	0.01610	None
					Sodium chloride	7647-14-5	100.00000	0.01072	None
					Fatty nitrogen derived amides	Proprietary	5.00000	0.00385	None
					Ethoxylated alcohols	Proprietary	5.00000	0.00385	None
					Fatty nitrogen derived amides	Proprietary	5.00000	0.00385	
					Ethoxylated alcohols	Proprietary	5.00000	0.00385	
					Polyacrylate	Proprietary	30.00000	0.00322	None
					Sodium chloride	7647-14-5	5.00000	0.00054	None
					Fatty nitrogen derived amides	Proprietary	5.00000	0.00054	None
					Sodium nitrate	7631-99-4	5.00000	0.00054	None
					Methanol	67-56-1	60.00000	0.00028	None
					Methanol	67-56-1	60.00000	0.00028	
					Ethoxylated alcohols	Proprietary	30.00000	0.00014	
					Ethoxylated alcohols	Proprietary	30.00000	0.00014	None

			Modified thiourea polymer	Proprietary	30.00000	0.00014	None
			Modified thiourea polymer	Proprietary	30.00000	0.00014	
			Guar gum	9000-30-0	100.00000	0.00009	None
			Guar gum	9000-30-0	100.00000	0.00009	
			Propargyl alcohol	107-19-7	10.00000	0.00005	None
			Propargyl alcohol	107-19-7	10.00000	0.00005	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



May 19, 2016

Mr. Gene Smith
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: Modification of 47-085-10220

Dear Mr. Smith,

Enclosed is an updated WW-6B, schematics, WW-6A1, mylar plat and rec plan. The lateral bore was drilled shorter than what was permitted. EQT would like to submit this correction for your files.

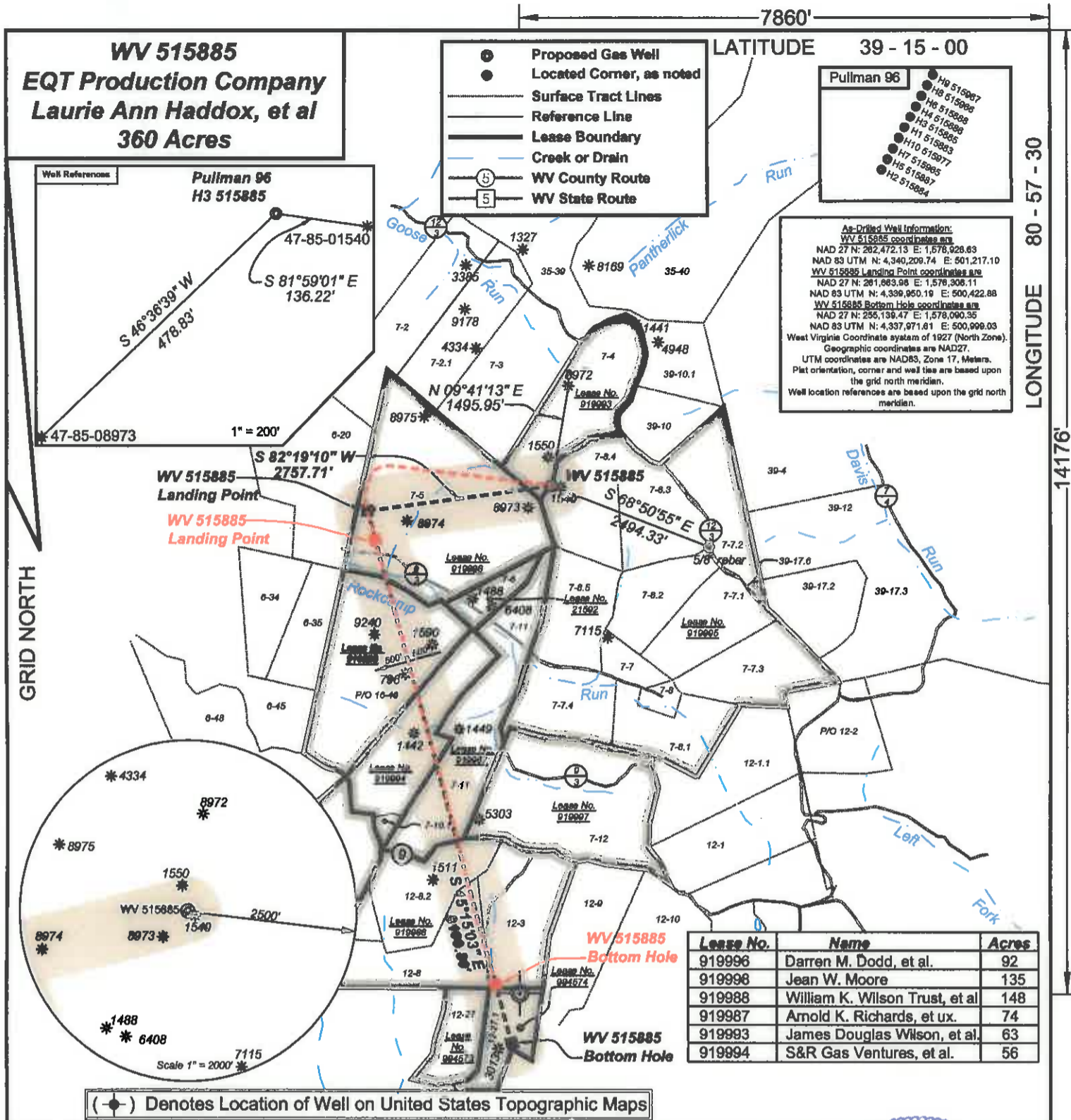
If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

A handwritten signature in black ink, appearing to read 'Vicki Roark'. The signature is fluid and cursive.

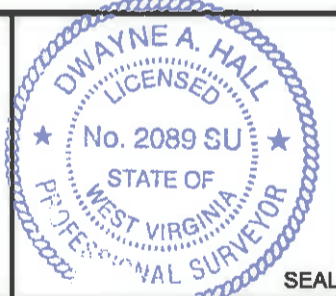
Vicki Roark
Permitting Supervisor-WV

Enc.



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.

Dwayne A. Hall
 P.S. 2089SU



FILE NO: 243-14
 DRAWING NO: 243-14 Pullman 96 H3.dwg
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 1:2500
 PROVEN SOURCE OF ELEVATION:
 NGS CORS Station

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

DATE: May 18 20 16
 OPERATOR'S WELL NO. 515885
 API WELL NO
 47 - 85 - 10220
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As Built: 1182.6' WATERSHED: Goose Run of Rockcamp Run QUADRANGLE: Pullman
 DISTRICT: Union COUNTY: Ritchie
 SURFACE OWNER: James H. & Wilma J. Wilson ACREAGE: 40.089
 ROYALTY OWNER: Laurie Ann Haddox, et al LEASE NO: 919995 ACREAGE: 360
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: TVD 6,396

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray
 ADDRESS: PO Box 280 / 115 Professional Place ADDRESS: PO Box 280 / 115 Professional Place
 Bridgeport, WV 26330 Bridgeport, WV 26330