west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for MANZAREK UNIT 1H
47-017-06775-00-00

Top Hole Coordinates changed

ANTERO RESOURCES CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: MANZAREK UNIT 1H
Farm Name: FOSTER, YVONNE
U.S. WELL NUMBER: 47-017-06775-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: 09/23/2016

Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

September 22, 2016

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: Mrs. Laura Adkins
601 57th Street
Charleston, WV 25304

Mrs. Adkins:

Antero Resources Corporation (Antero) is submitting the following permit modifications for two approved wells on the Yvonne Pad. We are requesting to slightly shift the surface hole locations of the Manzarek Unit 1H (API# 47-017-06775) and Manzarek Unit 2H (API# 47-017-06776) as shown on the attached survey plats.

The Yvonne Pad will not change from what was originally approved, and there will be no additional disturbance associated with these requested modifications. Please note that the casing program is the same as submitted and approved in the original permit application.

Attached you will find the following documents:

- REVISED Mylar Plats, which show the new surface hole locations
- REVISED Exhibit 7: Well Pad Surface Diagram, which shows the changes to the Yvonne Pad surface configuration

If you have any questions please feel free to contact me at (303) 357-7323.

Thank you in advance for your consideration.

Sincerely,

Ashlie Steele

Ashlie Steele
Permitting Supervisor
Antero Resources Corporation

Enclosures

RECEIVED
Office of Oil and Gas

SEP 23 2016

WV Department of
Environmental Protection

Antero Resources
Well No. Manzarek Unit 1H
Antero Resources Corporation

Well Location References

Scale: 1" = 300'

5/8" Rebar w/ Cap

Az 94° 285' Az 231° 308'

5/8" Rebar w/ Cap

Proposed Well No. Manzarek Unit 1H

Yvonne Drill Pad

Notes:

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.

Well No. Manzarek Unit 1H Top Hole coordinates are
N: 311,679.52' Latitude: 39°20'55.61"
E: 1,640,995.27' Longitude: 80°46'10.23"

Bottom Hole coordinates are
N: 317,479.07' Latitude: 39°21'52.52"
E: 1,638,115.38' Longitude: 80°46'47.93"

UTM Zone 17, NAD 1983

Top Hole Coordinates	Bottom Hole Coordinates
N: 4,355,516.806m	N: 4,357,268.995m
E: 519,875.368m	E: 518,968.528m

Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Notes:

Well No. Manzarek Unit 1H
UTM Zone 17, NAD 1927

Top Hole Coordinates
N: 14,289,009.77'
E: 1,705,577.14'

Point of Entry Coordinates
N: 14,288,727.24'
E: 1,705,037.01'

Bottom Hole Coordinates
N: 14,294,758.47'
E: 1,702,601.93'

	Bearing	Dist.
L1	S 63°20' W	609.4'
L2	S 36°41' E	759.6'
L3	N 87°28' W	590.6'
L4	N 66°35' W	2,144.2'
L5	N 36°10' W	2,750.5'

(-●-) Denotes Location of Well on United States Topographic Maps

ID	Mineral Owners
A	Ed Broome Inc, Memorandum of Oil & Gas Lease
B	Ed Broome Inc, Memorandum of Oil & Gas Lease
C	Joseph C. Moffatt, et al Lease

ID	TM/Par	Owner	Bk / Pg	Acres
1	2/16	David & Lucy Mae Sparling	219/213	20.95
2	4/4.2	David & Lucy Mae Sparling	219/213	10.69
3	4/4	David & Lucy Mae Sparling	219/213	20.75
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Legend

- Proposed gas well
- Found corner, as noted
- Existing Well, as noted
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
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ALLEGHENY SURVEYS, INC.

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 prescribed by the Department of Environmental Protection.

Bradley D. Miller, P.S. 2167

BRADLEY D. MILLER LICENSED No. 2167 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

SEAL

FILE NO: 264-30(54)-M(G)-14
DRAWING NO: Manzarek 1H Well Plat_09-22-16
SCALE: 1" = 1500'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

DATE: September 22 20 16
OPERATOR'S WELL NO. Manzarek Unit 1H

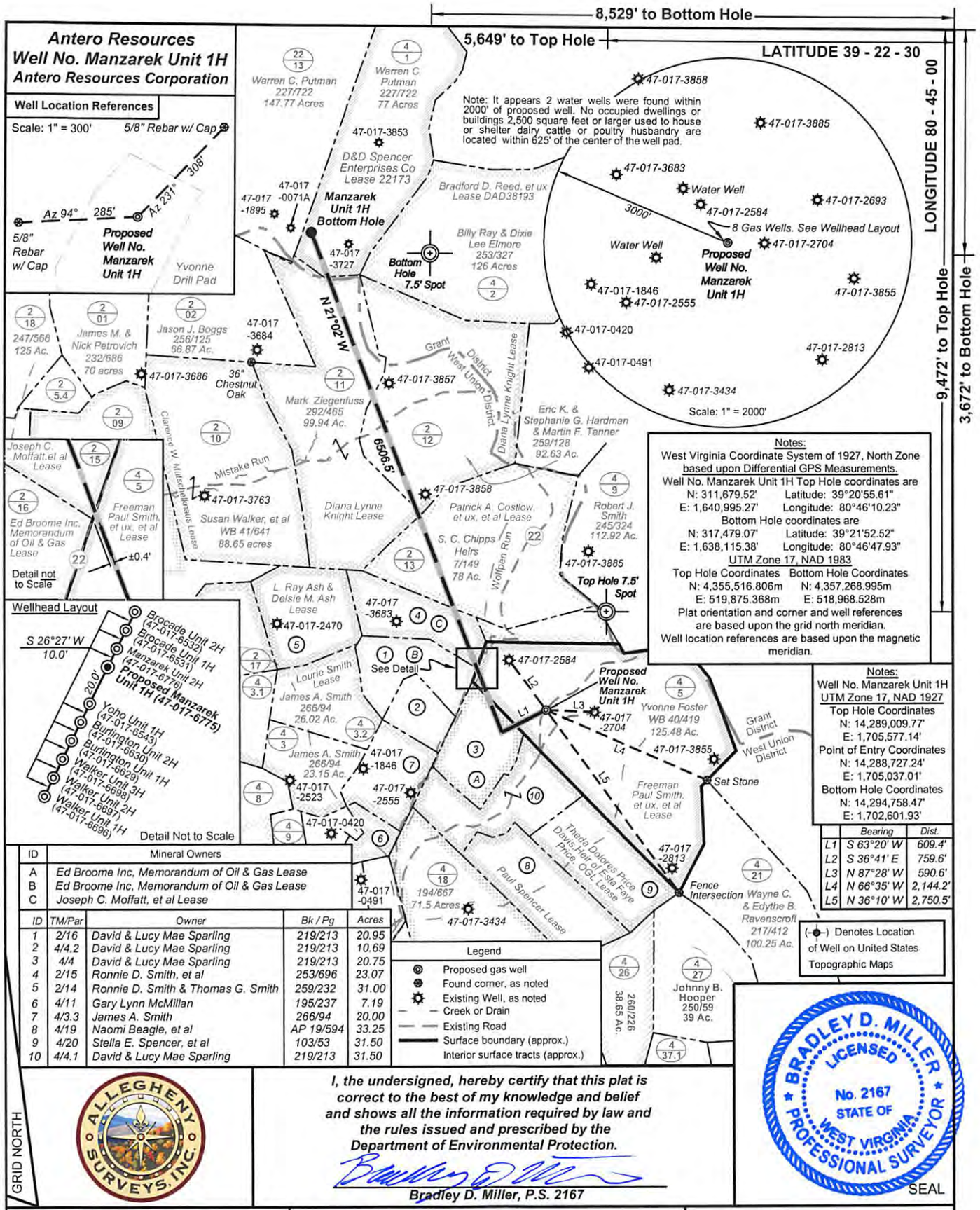
API WELL NO
47 - 017 - 6775
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION: ☐ STORAGE ☐ DEEP ☒ SHALLOW

LOCATION: ELEVATION: Proposed Grade-1227' Original Grade-1253' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
DISTRICT: West Union COUNTY: Doddridge
SURFACE OWNER: Yvonne Foster ACREAGE: 125.48
ROYALTY OWNER: Patrick A. Costlow, et ux, et al; D&D Spencer Enterprises Co; Ed Broome Inc, Memorandum of Oil & Gas Lease; Freeman Paul Smith, et ux, et al; Joseph C. Moffatt, et al; Diana Lynne Knight LEASE NO: 22173 ACREAGE: 78.973; 73; 23; 20.75; 125; 283
PROPOSED WORK: ☒ DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☒ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) SHL-MOD
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,400' TVD; 15,300' MD

WELL OPERATOR: Antero Resources Corporation
ADDRESS: 1615 Wynkoop Street, Denver, CO 80202
DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 5400 D Big Tyler Road, Charleston, WV 25313

Antero Resources
Well No. Manzarek Unit 1H
Antero Resources Corporation



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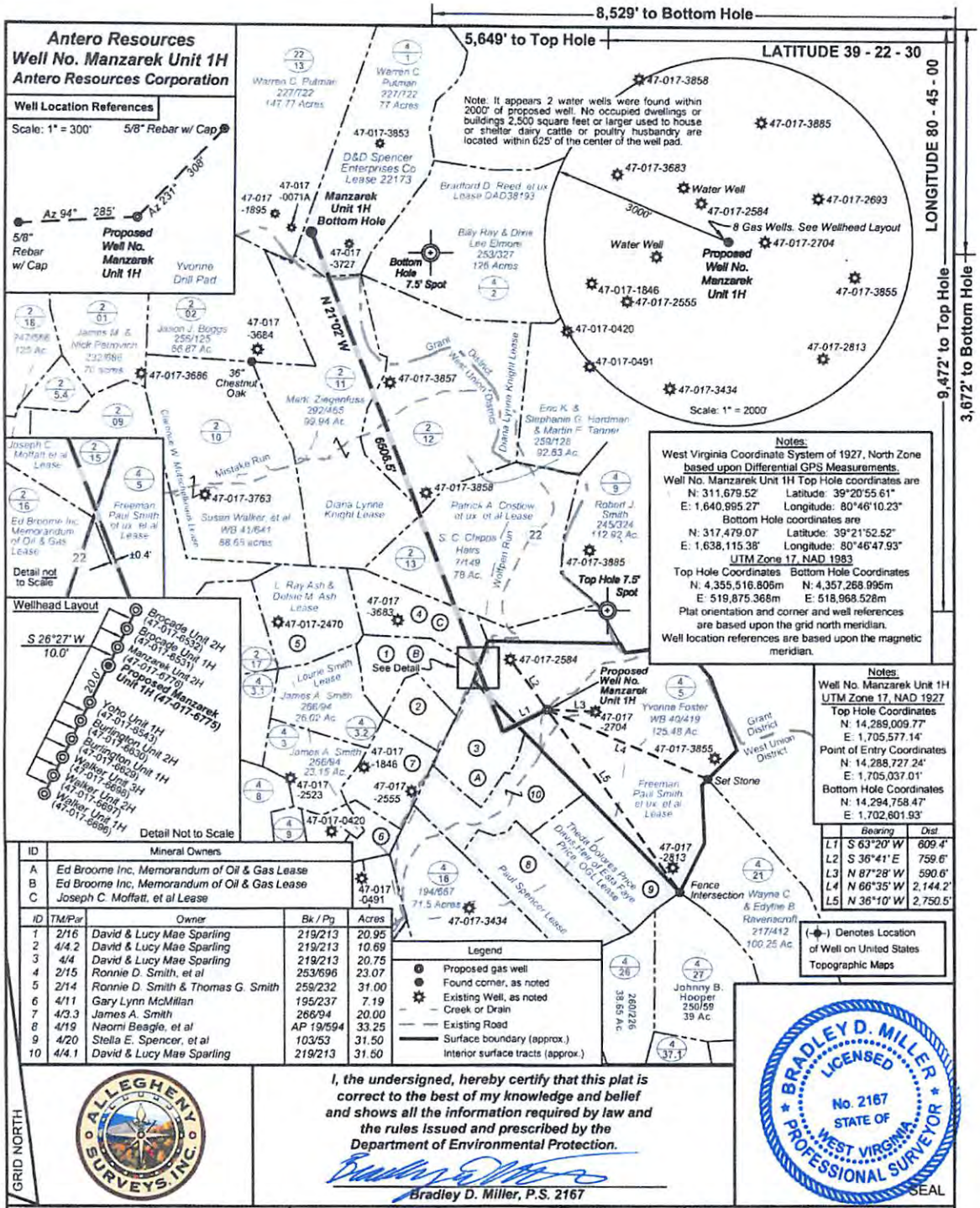

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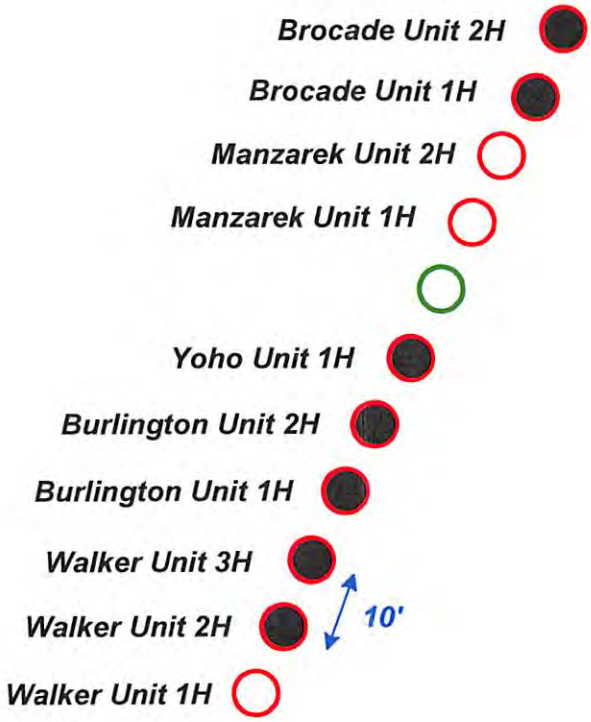
Yvonne Pad



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WELL NAME	API NUMBER	WELL STATUS
Brocade Unit 2H	47-017-06532	Permitted Well
Brocade Unit 1H	47-017-06531	Permitted Well
Manzarek Unit 2H	Proposed Well	Permitted Well
Manzarek Unit 1H	Proposed Well	Permitted Well
Skipped Location		
Yoho Unit 1H	47-017-06543	Permitted Well
Burlington Unit 2H	47-017-06630	Permitted Well
Burlington Unit 1H	47-017-06629	Permitted Well
Walker Unit 3H	47-017-06696	Permitted Well
Walker Unit 2H	47-017-06697	Permitted Well
Walker Unit 1H	47-017-06696	Permitted Well

Legend

- Existing Well
- Permitted Well
- Proposed Well
- Skipped Well

Updated: 09/22/2016

Not to Scale