west virginia department of environmental protection

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

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

PERMIT MODIFICATION APPROVAL

September 10, 2013

ANTERO RESOURCES APPALACHIAN CORPORATION
1625 17TH STREET, SUITE 300
DENVER, CO 80202

Re: Permit Modification Approval for API Number 3305710 , Well #: CLARK UNIT 1H
extended lateral

Oil and Gas Operator:
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.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

for Gene Smith
Regulatory/Compliance Manager
Office of Oil and Gas

33-571

ANTERO RESOURCES

Antero Resources
1625 17th Street
Denver, Colorado 80202
Office 303.357.7310
Fax 303.357.7315

September 4, 2013

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

Ms. Laura Cooper:

Antero Resources Corporation (Antero) would like to submit the following permit modification for an approved well on the Corder East Pad. We are requesting to extend the horizontal lateral length which will change the bottom hole location of the Clark Unit 1H (API# 47-033-05710). Issued 1/29/13

Attached you will find the following documents:

- REVISED Mylar Plat, which shows the new bottom hole location
- Please note that the Measured Depth and Casing Program will be the same as originally permitted and no new leases will be drilled into from what was originally permitted.

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

Thank you in advance for your consideration.

Sincerely,

Ashlie Mihalcin
Permit Representative
Antero Resources Corporation

Enclosures

RECEIVED
Office of Oil & Gas
SEP 05 2013
WV Department of
Environmental Protection

10,745' to Bottom Hole

3,527' to Top Hole

LATITUDE 39 - 15 - 00

LONGITUDE 80 - 32 - 30

10,026' to Top Hole

2,765' to Bottom Hole

Tax Map 8 Parcels				
	Par	Owner	DB/Pg	Acres
1	13	Lucille Devericks Billy J. Devericks	WB42/159	23.0
2	3	Clarence & Mary Mutschelknaus	267/726	22.86
3	10.5	Butterfly Evolution Trust	250/468	0.41
4	10	Butterfly Evolution Trust	250/468	18.05
5	10.4	Butterfly Evolution Trust	250/468	0.76
6	10.1	Barbara Ann Templeton	206/575	12.67
7	3.1	Darrell R. Richards	281/289	9.35
8	10.6	Butterfly Evolution Trust	250/468	10.66

Tax Map 361 Parcels				
	Par	Owner	DB/Pg	Acres
9	4	Lucille Devericks	WB167/23	9.84
10	3	Lucille Devericks	WB167/23	9.70
11	11	Roger M. Corder	1206/364	110.0
12	10	Gerald & Louella Corder	1206/378	82.0

Antero Resources Well No. Clark Unit 1H

Antero Resources Corporation

Notes:

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

Well No. Clark Unit 1H Top Hole coordinates are
N: 264,849.31 Latitude: 39°13'20.50"
E: 1,701,478.86 Longitude: 80°33'13.34"
Bottom Hole coordinates are
N: 272,090.86 Latitude: 39°14'31.22"
E: 1,694,260.84 Longitude: 80°34'46.16"

UTM Zone 17, NAD 1983

Top Hole Coordinates:	Bottom Hole Coordinates:
N: 4,341,557.512m	N: 4,343,726.976m
E: 538,539.873m	E: 536,304.082m

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

Line	Bearing	Distance
L1	S 08°29' E	829.7'
L2	N 09°48' E	1127.9'
L3	N 84°37' W	998.9'
L4	N 38°07' W	925.9'
L5	N 22°49' E	1296.6'

Scale: 1" = 200'

Proposed Well No. Clark Unit 1H

AZ 248° 252'

AZ 11° 252'

5/8" Rebar w/ Cap set

5/8" Rebar w/ Cap set

Well Location References

Wellhead Layout
Detail Not To Scale

Truman Unit 1H 47-033-5714
Truman Unit 2H 47-033-5715
Hildred Unit 1H 47-033-5711
Hildred Unit 2H 47-033-5709
Proposed Clark Unit 1H 47-033-5710
Oneacre Unit 1H 47-033-5708
Maude Unit 1H 47-033-5706
Maude Unit 2H 47-033-5704
Cleta Unit 2H 47-033-5651
Cleta Unit 1H 47-033-5669
Opie Unit 1H 47-033-5677

N 70°56' W 10.0'

Notes: It appears 5 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

(11) Gas Wells. See Wellhead Layout Detail Above

Proposed Well No. Clark Unit 1H

3000'

47-033-3171 Water Well
47-033-2233 47-033-2882 Water Water Well
47-033-2169
47-033-2533
47-033-2976
47-033-2667 47-033-2901
47-033-2532 Water Well
Water Well 47-033-2168
47-017-4002 47-033-2668

Scale: 1" = 2000'

GRID NORTH

(✦) Denotes Location of Well on United States Topographic Maps

KENNETH J. PLUM LICENSED No. 2216 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

SEAL

TOP HOLE DETAIL (No Scale)

Proposed Well No. Clark Unit 1H

Steve C. Kovar Jr. 1140/150 77.87 Ac.

361/5

361/10 Corder 1206/378 82 Acres

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.

Kenneth J. Plum, P.S. 2216

Legend

- Proposed gas well
- Found corner, as noted
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)
- Existing Fenceline

ALLEGHENY SURVEYS, INC.

FILE NO: 231-30-G-12
DRAWING NO: 231-12 Clark 1H Well
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: September 4 20 13
OPERATOR'S WELL NO. Clark Unit 1H
API WELL NO: MOD
47 - 033 - 5710 MOD
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: 1405' WATERSHED: Turtletree Fork of Tenmile Creek QUADRANGLE: Big Isaac
DISTRICT: Union COUNTY: Harrison
SURFACE OWNER: Gerald & Louella Corder — Billy J. Devericks, et ux; DNR & Public Land Corp. — Diana Rupert Livingston — Robert L. Oneacre, et ux; Robert Oneacre, et ux — Howard D. Nicholson, et al (2) — 20-361-2 DAD34959; 21224 — 20-361-1.1; DAD65332/001 DV005329 & DV019188 — ACREAGE: 82 — 54; 23; 18.5 127 165; 35.5; 23
ROYALTY OWNER: Maude D. Day, et al; Orie Mitchell; Arnold Krafft, et al; John P. Golden, et ux LEASE NO: DAD038064; 038347 ACREAGE: 147; 48.69; 79; 59
PROPOSED WORK: ☒ DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☒ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Modification - BHL
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: TVD 7,700' MD 18,700'

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1625 17th Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313