



west virginia department of environmental protection

Division of Air Quality
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Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

January 19, 2016

CERTIFIED MAIL
91 7199 9991 7035 6665 8271

Barry Schatz
1615 Wynkoop Street
Denver, CO 80202

RE: Antero Resources Corporation
John Richards Wellpad
Permit Application G70-A071A
Plant ID No. 085-00037

Dear Mr. Schatz:

Your application for a permit as required by Section 5 of 45CSR13 - "Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permit, General Permit, and Procedures for Evaluation" has been approved. The enclosed permit G70-A071A is hereby issued pursuant to Subsection 5.7 of 45CSR13. Please be aware of the notification requirements in the permit which pertain to commencement of construction, modification, or relocation activities; startup of operations; and suspension of operations.

The source is not subject to 45CSR30.

In accordance with 45CSR22 - Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the Certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

Should you have any questions or comments, please contact me at (304) 926-0499, extension 1212.

Sincerely,


Thornton E. Martin Jr.
Permit Engineer

c: Manuel Bautista, GHD Services Inc.

*West Virginia Department of Environmental Protection
Division of Air Quality*

*Earl Ray Tomblin
Governor*

*Randy C. Huffman
Cabinet Secretary*

**Class II General Permit
G70-A Registration to Modify**



for the
Prevention and Control of Air Pollution in regard to the
Construction, Modification, Relocation, Administrative Update and
Operation of Oil and Natural Gas Production Facilities
Located at the Well Site

*The permittee identified at the facility listed below is authorized to
construct the stationary sources of air pollutants identified herein in accordance
with all terms and conditions of General Permit G70-A.*

G70-A071A

Issued to:

**Antero Resources Corporation
John Richards Wellpad
085-00037**

A blue ink signature of William F. Durham, written in a cursive style, positioned above a horizontal line.

*William F. Durham
Director*

Issued: January 19, 2016

This registration will supersede and replace G70-A071.

Facility Location: near Pullman, Ritchie County, West Virginia
Mailing Address: 1615 Wynkoop Street, Denver, CO 80202
Facility Description: Natural gas production facility
NAICS Code: 211111
SIC Code: 1311
UTM Coordinates: 506.9554 km Easting • 4,339.5728 km Northing • Zone 17
Longitude Coordinates: -80.919443
Latitude Coordinates: 39.205393
Directions to Facility: *Go 1.2 miles North West, from the intersection of Right Fork-White Oak Creek and Sugar Run. The facility will be towards the right*
Registration Type: Modification
Description of Change: The modification will facilitate increased production and include: the addition of two (2) wells, addition of two (2) gas production unit heaters, addition of six (6) line heaters, addition of four (4) condensate tanks and the addition of three (3) Cimarron enclosed combustors.

Subject to 40CFR60, Subpart OOOO? Yes, Gas Wells

Subject to 40CFR60, Subpart JJJJ? Yes, Engine certified to meet 40 CFR Part 90

Subject to 40CFR63, Subpart ZZZZ? Yes, Compliance with NSPS Subpart JJJJ

Subject to 40CFR63, Subpart HH? No TEG Dehydration Unit

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit or registration issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

The source is not subject to 45CSR30.

Permit Section Applicability for the Registrant

All registered facilities under General Permit G70-A are subject to Sections 1.0, 2.0, 3.0, and 4.0 of General Permit G70-A.

The following additional sections of General Permit G70-A apply to the registrant:

Section 5	Natural Gas Well Affected Facility	<input checked="" type="checkbox"/>
Section 6	Storage Vessels*	<input checked="" type="checkbox"/>
Section 7	Gas Production Units, In-Line Heaters, Heater Treaters, and Glycol Dehydration Reboilers	<input checked="" type="checkbox"/>
Section 8	Pneumatic Controllers Affected Facility (NSPS, Subpart OOOO)	<input checked="" type="checkbox"/>
Section 9	Reserved	<input type="checkbox"/>
Section 10	Natural Gas-Fired Compressor Engine (s) (RICE)**	<input checked="" type="checkbox"/>
Section 11	Tank Truck Loading Facility***	<input checked="" type="checkbox"/>
Section 12	Standards of Performance for Storage Vessel Affected Facilities (NSPS, Subpart OOOO)	<input type="checkbox"/>
Section 13	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (NSPS, Subpart JJJJ)	<input checked="" type="checkbox"/>
Section 14	Control Devices not subject to NSPS, Subpart OOOO	<input checked="" type="checkbox"/>
Section 15	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40CFR63, Subpart ZZZZ)	<input checked="" type="checkbox"/>
Section 16	Glycol Dehydration Units	<input type="checkbox"/>
Section 17	Dehydration Units With Exemption from NESHAP Standard, Subpart HH § 63.764(d) (40CFR63, Subpart HH)	<input type="checkbox"/>
Section 18	Dehydration Units Subject to NESHAP Standard, Subpart HH and Not Located Within an UA/UC (40CFR63, Subpart HH)	<input type="checkbox"/>
Section 19	Dehydration Units Subject to NESHAP Standard, Subpart HH and Located Within an UA/UC (40CFR63, Subpart HH)	<input type="checkbox"/>

* The registrant may also be subject to the applicable control device requirements of Section 12 if the registrant is subject to the NSPS, Subpart OOOO control requirements or may be subject to the control device requirements of Section 14.

** The registrant may also be subject to the applicable RICE requirements of Section 13 and/or Section 15.

*** The registrant may also be subject to the applicable control device requirements of Section 14.

1.0 Emission Units Table

Emission Unit ID	Emission Point ID	Emission Unit Description (Mfg., Model, Serial No., Engine type 2SLB, 4SLB, 4SRB, etc.)	Control Device ID	Year Installed / Modified	Max. Design Capacity	Design Capacity Unit of Measure	G70-A Applicable Sections
LH001 LH006	LH001- LH006	Line Heaters	N/A	2016	2.0	MMBtu/hr	Section 7
H001, H002, H003, H004	H001, H002, H003, H004	3-Phase Gas Processing Unit Heaters	N/A	2014	1.5	MMBtu/hr	Section 7
H005, H006	H005, H006	3-Phase Gas Processing Unit Heaters	N/A	2016	1.5	MMBtu/hr	Section 7
TANKPW001 -002	EC001, EC002, EC003, EC004	PW Tank F/W/B	EC001, EC002, EC003, EC004	2014	400	bbbl (each)	Section 6 Section 14
TANKCOND 001-006	EC001, EC002, EC003, EC004	Condensate Tank F/W/B	EC001, EC002, EC003, EC004	2014	400	bbbl (each)	Section 6 Section 14
TANKCOND 007-010	EC001, EC002, EC003, EC004	Condensate Tank F/W/B	EC001, EC002, EC003, EC004	2016	400	bbbl (each)	Section 6 Section 14
ENG001	ENG001	Compressor Engine (Kubota DG972-E2)	N/A	2014	24	HP	Section 13 Section 15
L001	L001	Loading (Condensate)	N/A	2016	200	bbbl (each)	Section 6 Section 14
L002	L002	Loading (Water)	N/A	2016	200	bbbl (each)	Section 6 Section 14
F001	F001	Fugitives	N/A	2016	N/A	N/A	Section 5
EC001	EC001	Flare (Cimmaron 48", Model 700-TI-603-D-31C)	N/A	2014	12	MMBtu/hr	Section 6 Section 14
EC002, EC003, EC004	EC002, EC003, EC004	Flare (Cimmaron 48", Model 700-TI-603-D-31C)	N/A	2016	12	MMBtu/hr	Section 6 Section 14
PCV	PCV	Pneumatic CV	N/A	2016	6.6	scf/day/PC V	Section 8
HR001	HR001	Haul Truck	N/A	2016	40	Ton	Section 5
Control Devices (If applicable)							
Control Device ID	Control Efficiency %	Control Device Description (Mfg, Model)	Year Installed / Modified	Max. Design Capacity	Design Capacity Unit of Measure	G-70A Applicable Sections	
EC001	98%	Cimarron, Model No. 48" HV ECD Vapor Combustor	2014	90	scf-waste gases/min	Section 14	
EC002, EC003, EC004	98%	Cimarron, Model No. 48" HV ECD Vapor Combustor	2016	90	scf-waste gases/min	Section 14	
Emission Reduction Systems						Yes or No	G-70A Applicable Sections
Was a vapor recovery system (VRU) used to determine emission limits?						No	N/A
Was a low pressure tower(s) used to determine emission limits?						No	N/A

2.0 Oil and Natural Gas Wells Table

API number	API number	API number
47-085-10102-00		
47-085-10103-00		
47-085-10138-00		
47-085-10139-00		
47-085-TBD		
47-085-TBD		

3.0 Emission Limitations

Pollutant		Controlled Emissions
CO	lb/hr	7.255
	ton/yr	31.777
NO _x	lb/hr	2.233
	ton/yr	9.780
PM	lb/hr	2.019
	ton/yr	2.167
PM _{2.5}	lb/hr	0.144
	ton/yr	0.629
SO ₂	lb/hr	0.010
	ton/yr	0.045
VOCs	lb/hr	6.304
	ton/yr	32.239
Total HAPs	lb/hr	0.409
	ton/yr	1.802
CO _{2e}	lb/hr	2,878.536
	ton/yr	12,609.965
Lead	ton/yr	4.20E-05
Benzene	ton/yr	0.044
Formaldehyde	ton/yr	0.027
Xylene	ton/yr	0.144
Other HAPs	ton/yr	1.587

4.0 Throughput Limitations

Throughput limits are on a 12-month rolling total basis.

Emission Unit ID	Emission Point ID	Emission Unit Description	Annual Throughput Limit
LH001 – LH006	LH001 – LH006	2.0 MMBtu/hr Heater	84.30 MMscf/yr
H001 – H006	H001 – H006	1.5 MMBtu/hr Heater	63.18 MMscf/yr
TANKCOND001 – TANKCOND010	EC001, EC002, EC003, EC004	400 bbl Condensate Tanks	9,198,000 gal Condensate/yr ⁽¹⁾
TANKPW001 – TANKPW002	EC001, EC002, EC003, EC004	400 bbl Produced Water Tanks	18,396,000 gal Produced-Water/yr ⁽¹⁾
L001	EP-L001	Condensate Loading	9,198,000 gal Condensate/yr
L002	EP-L002	Produced Water Loading	18,396,000 gal Produced Water/yr
EC001, EC002, EC003, EC004	EC001, EC002, EC003, EC004	Vapor Combustor	79.95 MMscf/yr (waste gas)

(1) Aggregate Limit of all Tanks.

5.0 Reciprocating Internal Combustion Engines (R.I.C.E.) Information

Emission Unit ID	Engine Manufacturing Date	Subject to 40CFR60, Subpart JJJJ?	Subject to 40CFR63, Subpart ZZZZ?	Subject to Sections 10.1.4 / 10.2.1 (Catalytic Reduction Device)
ENG001	2013	Yes	Yes	No