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west virginia department of environmental protection

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Division of Air Quality  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone 304/926-0475

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

October 6, 2015

CERTIFIED MAIL  
91 7199 9991 7035 6611 3008

Barry Schatz  
1615 Wynkoop Street  
Denver, CO 80202

RE: Approved Registration G70-A172  
Antero Resources Corporation  
Annie Horizontal Pad  
Facility ID No. 085-00033

Dear Mr. Schatz:

The Director has determined that the submitted Registration Application and proposed construction and operation of an oil and natural gas production facility demonstrates eligibility and compliance with the requirements, provisions, standards and conditions of General Permit G70-A and hereby grants General Permit registration authorizing the proposed activity.

General Permit G70-A can be accessed electronically at [www.dep.wv.gov/daq/permitting/Pages/airgeneralpermit.aspx](http://www.dep.wv.gov/daq/permitting/Pages/airgeneralpermit.aspx). Hard copies are available upon request by contacting Danielle Wentz at (304)926-0499 ext. 1193.

Please be aware of the actions required in Monitoring Requirements, Testing Requirements, Recordkeeping Requirements, and the Reporting Requirements.

Should you have any questions, please contact the undersigned engineer at (304)926-0499 ext. 1222 or [Roy.F.Kees@wv.gov](mailto:Roy.F.Kees@wv.gov).

Sincerely,

Roy F. Kees, P.E.  
Engineer - NSR Permitting

Enclosures: Registration G70-A172

*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-A172**

Issued to:

**Antero Resources Corporation  
Annie Horizontal Pad  
085-00033**

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

*William F. Durham  
Director*

*Issued: October 6, 2015*

Facility Location: Pennsboro, Ritchie County, West Virginia  
Mailing Address: 1615 Wynkoop Street, Denver, CO 80202  
Facility Description: Natural Gas Production  
NAICS Code: 211111  
SIC Code: 1311  
UTM Coordinates: 506.420 km Easting • 4,353.107 km Northing • Zone 17  
Longitude Coordinates: -80.925514  
Latitude Coordinates: 39.327350  
Directions to Facility: From Clarksburg, head west on US-50 W for approximately 36 miles. Turn right onto WV-74N and continue for approximately 6 miles. The pad is on the right approximately 0.6 miles east of the intersection of Haddux Run and WV-74N.  
Registration Type: Modification  
Description of Change: Increase in condensate production, addition of one well, one GPU, seven line heaters, three enclosed combustors, four condensate tanks and conversion to G70.

Subject to 40CFR60, Subpart OOOO? Yes

Subject to 40CFR60, Subpart JJJJ? Yes

Subject to 40CFR63, Subpart ZZZZ? Yes, JJJJ Req's

Subject to 40CFR63, Subpart HH? No

*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.*

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*The source is not subject to 45CSR30.*

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### 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 type="checkbox"/>
Section 9	<i>Reserved</i>	<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 checked="" 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
H001-H007	EP-H001-H007	(7) Heater Treaters	--	(3) 2014 (4) 2015	1.5	mmBtu/hr	7
LH001-LH007	EP-LH001-LH007	(7) Line Heaters	--	2015	2.0	mmBtu/hr	7
TANKCOND001-010	EC001-004	(10) Condensate Tank	EC001-004	(6) 2014 (4) 2015	400	Bbl	6 & 14
TANKPW001-002	EC001-004	(2) Produced Water Tank	EC001-004	2014	400	Bbl	6 & 14
ENG001	EP-ENG001	Kubota DG972-E2	--	2014	23.6	hp	10, 13 & 15
L001	EP-L001	Cond. Loading	N/A	2014	32,193,000	Gal/year	11
L002	EP-L002	P.W. Loading	N/A	2014	64,386,000	Gal/year	11
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-EC004	98	(4) Cimarron Model No. 48" HV ECD	(1) 2014 (3) 2015	90	Scfm	14	
Emission Reduction Systems						Yes or No	G-70A Applicable Sections
Was a vapor recovery system (VRU) used to determine emission limits?						No	
Was a low pressure tower(s) used to determine emission limits?						No	

**2.0 Oil and Natural Gas Wells Table**

API number	API number	API number
047-085-10027-00	047-085-10144-00	
047-085-10028-00	(2) Wells Not Yet Permitted	
047-085-10029-00		
047-085-10143-00		

### 3.0 Emission Limitations

Emission Unit ID	Emission Point ID	Emission Unit Description	Regulated Pollutant	Maximum Potential Emissions	
				Hourly (lb/hr)	Annual (tpy)
H001-H007	EP-H001-H007	(7) 1.5 mmBtu/hr Heater Treaters	Nitrogen Oxides	0.84	3.69
			Carbon Monoxide	0.71	3.10
LH001-LH010	EP-LH001-LH010	(7) 2.0 mmBtu/hr Heater Treaters	Nitrogen Oxides	1.12	4.92
			Carbon Monoxide	0.94	4.13
TANKCO ND1-10	FL-001	(10) 400 BBL Condensate Tanks & Flare	Volatile Organic Compounds	9.64	42.24
			Total HAPs	0.24	1.06
			Nitrogen Oxides	0.68	2.97
			Carbon Monoxide	0.57	2.49
ENG001	EP-ENG001	Kubota DG972-E2 Compressor Engine	Nitrogen Oxides	0.32	1.38
			Carbon Monoxide	5.64	24.72
			Volatile Organic Compounds	0.01	0.03
			Formaldehyde	--	0.02
L001	EP-L001	Condensate Truck Loading	Volatile Organic Compounds	6.28	10.03
			Total HAPs	0.01	0.02

### 4.0 Throughput Limitations

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

Emission ID	Unit	Emission Point ID	Emission Unit Description	Annual Throughput Limit
L001		EP-L001	Condensate Truck Loading	32,193,000 gal/yr

### 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 (JJJJ Only)	No