



west virginia department of environmental protection

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

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

October 6, 2015

CERTIFIED MAIL
91 7199 9991 7035 6611 2995

Barry Schatz
1615 Wynkoop Street
Denver, CO 80202

RE: Approved Registration G70-A143A
Antero Resources Corporation
Estlack Pad
Facility ID No. 095-00057

Dear Mr. Schatz:

The Director has determined that the submitted Registration Application and proposed modification 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. 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.

Sincerely,

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

Enclosures: Registration G70-A143A

*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-A143A

Issued to:

Antero Resources Corporation

Estlack Pad

095-00057

A handwritten signature in blue ink, appearing to read "William F. Durham", is written over a horizontal line.

William F. Durham

Director

Issued: October 6, 2015

This General Permit Registration will Supersede and Replace G70-A143.

Facility Location: Middlebourne, Tyler County, West Virginia
Mailing Address: 1615 Wynkoop Street, Denver, CO 80202
Facility Description: Natural Gas Production
NAICS Code: 211111
SIC Code: 1311
UTM Coordinates: 510.546 km Easting • 4,362.693 km Northing • Zone 17
Longitude Coordinates: -80.877492
Latitude Coordinates: 39.413694
Directions to Facility: From Middlebourne, WV, head south on WV-18S for 11.1 miles. Turn right onto Purgatory Run and continue for 2.5 miles. Take a sharp right onto the facility entrance.
Registration Type: Modification
Description of Change: Increase in condensate production, addition of fourteen GPU's, twenty line heaters, five engines, four low pressure towers, four enclosed combustors and removal on one engine and one enclosed combustor.

Subject to 40CFR60, Subpart OOOO? Yes

Subject to 40CFR60, Subpart JJJJ? Yes, Certified

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.

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 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-H020	EP-H001-H020	(20) GPU Heaters	--	2015	1.5	mmBtu/hr	7
LH001-LH020	EP-LH001-LH020	(20) Line Heaters	--	2015	2.0	mmBtu/hr	7
TANKCOND 001-010	EC001-004	(10) Condensate Tanks	EC001-004	2015	400	Bbl	6 & 14
TANKPW001-002	EC001-004	(2) Produced Water Tank	EC001-004	2015	400	Bbl	6 & 14
ENG001-003	EP-ENG001-003	Zenith ZPP428	--	2015	72	hp	10, 13 & 15
ENG004-005	EP-ENG004-005	Zenith ZPP644	--	2015	98	hp	10, 13 & 15
L001	EP-L001	Cond. Loading	N/A	2015	24,282,720	Gal/year	11
L002	EP-L002	P. Water Loading	N/A	2015	54,697,440	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	
EC001-004	98	(4) Cimmaron Model No. 48 HV ECD	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?							Yes

2.0 Oil and Natural Gas Wells Table

API number	API number	API number
(14) Wells Not Yet Permitted		
047-095-02272-00		
047-095-02254-00		

3.0 Emission Limitations

Emission Unit ID	Emission Point ID	Emission Unit Description	Regulated Pollutant	Maximum Potential Emissions	
				Hourly (lb/hr)	Annual (tpy)
H001-H020	EP-H001-H020	(20) 1.5 mmBtu/hr GPU Heaters	Nitrogen Oxides	2.41	10.54
			Carbon Monoxide	2.02	8.85
			Volatile Organic Compounds	0.13	0.58
LH001-LH020	EP-LH001-LH020	(20) 2.0 mmBtu/hr Line Heaters	Nitrogen Oxides	3.21	14.05
			Carbon Monoxide	2.69	11.80
			Volatile Organic Compounds	0.18	0.77
TANKCO ND1-10	EC001-004	(10) 400 BBL Condensate Tanks & Enclosed Combustor	Volatile Organic Compounds	4.21	18.45
			Total HAPs	0.33	1.46
ENG001-003	EP-ENG001-003	(3) Zenith ZPP428 Compressor Engines	Nitrogen Oxides	0.96	4.19
			Carbon Monoxide	1.56	6.84
			Volatile Organic Compounds	0.07	0.10
			Formaldehyde	0.05	0.21
ENG004-005	EP-ENG004-005	(2) Zenith ZPP644 Compressor Engines	Nitrogen Oxides	0.87	3.80
			Carbon Monoxide	1.42	6.21
			Volatile Organic Compounds	0.06	0.25
			Formaldehyde	0.04	0.18
L001	EP-L001	Condensate Truck Loading	Volatile Organic Compounds	7.91	9.52
			Total HAPs	0.05	0.06

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	24,282,720 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)	Yes
ENG002	2013	Yes	Yes (JJJJ Only)	Yes
ENG003	2013	Yes	Yes (JJJJ Only)	Yes
ENG004	2013	Yes	Yes (JJJJ Only)	Yes
ENG005	2013	Yes	Yes (JJJJ Only)	Yes