



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 5, 2015

CERTIFIED MAIL
91 7199 9991 7035 6611 2988

Barry Schatz
1615 Wynkoop Street
Denver, CO 80202

RE: Approved Registration G70-A043A
Antero Resources Corporation
Robert Williams Wellpad
Facility ID No. 017-00099

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 Taylor 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-A043A

*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-A043A

Issued to:

**Antero Resources Corporation
Robert Williams Pad
017-00099**

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

*William F. Durham
Director*

Issued: October 5, 2015

This General Permit Registration will supersede and replace G70-A043.

Facility Location: Greenwood, Doddridge County, West Virginia
Mailing Address: 1615 Wynkoop Street, Denver, CO 80202
Facility Description: Natural Gas Production
NAICS Code: 211111
SIC Code: 1311
UTM Coordinates: 511.853 km Easting • 4,343.161 km Northing • Zone 17
Longitude Coordinates: -80.862266
Latitude Coordinates: 39.237678
Directions to Facility: From Clarksburg, head west on US-50 for 28.5 miles. Turn left on County Road 50/30/Old US 50 E and continue for 1.9 miles. Turn left on Oxford Road and continue 2.0 miles. Turn right on County Route 21/1 and the facility will be on the right.
Registration Type: Construction
Description of Change: Modification to increase condensate production, add two wells, two GPUs, ten line heaters, and three enclosed combustors.

Subject to 40CFR60, Subpart OOOO? Yes

Subject to 40CFR60, Subpart JJJJ? Yes

Subject to 40CFR63, Subpart ZZZZ? Yes, 40CFR60 Subpart JJJJ Requirements for new engine.

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 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 | H001 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H002 | H002 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H003 | H003 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H004 | H004 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H005 | H005 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H006 | H006 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H007 | H007 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H008 | H008 | Heater Treater | None | 2014 | 1.5 | mmBtu/hr | 7 |
| H009 | H009 | Heater Treater | None | 2015 | 1.5 | mmBtu/hr | 7 |
| H010 | H010 | Heater Treater | None | 2015 | 1.5 | mmBtu/hr | 7 |
| LH001 | LH001 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH002 | LH002 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH003 | LH003 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH004 | LH004 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH005 | LH005 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH006 | LH006 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH007 | LH007 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH008 | LH008 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH009 | LH009 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| LH010 | LH010 | Line Heater | None | 2015 | 2.0 | mmBtu/hr | 7 |
| TANKCOND 001 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 002 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 003 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 004 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 005 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 006 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 007 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 008 | EC001-004 | Condensate Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| TANKCOND 009 | EC001-004 | Condensate Storage Tank | EC001-004 | 2015 | 400 | bbl | 6 & 14 |
| TANKCOND 010 | EC001-004 | Condensate Storage Tank | EC001-004 | 2015 | 400 | bbl | 6 & 14 |

| TANKPW001 | EC001-004 | Produced Water Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
|--|----------------------|---|---------------------------|----------------------|---------------------------------|---------------------------|---------------------------|
| TANKPW002 | EC001-004 | Produced Water Storage Tank | EC001-004 | 2014 | 400 | bbl | 6 & 14 |
| E001 | E001 | Kubota DG972-E2 Compressor 4SRB Engine | NSCR | 2014 | 23.6 | HP | 10, 13 & 15 |
| L001 | L001 | Cond. Loading | N/A | 2014 | 22,995,000 | gal/year | 11 |
| L002 | L002 | Produced Water Loading | N/A | 2014 | 45,990,000 | 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 | |
| EC001-004 | 98 | (4) Cimmaron Model 48" HV ECD Flare | 2014-15 | 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 | NA |
| Was a low pressure tower(s) used to determine emission limits? | | | | | | No | NA |

2.0 Oil and Natural Gas Wells Table

| API number | API number | API number |
|-----------------|-----------------|-----------------|
| 47-017-06289-00 | 47-017-06290-00 | 47-017-06292-00 |
| 47-017-06293-00 | | |
| | | |
| | | |

3.0 Emission Limitations

| Emission Unit ID | Emission Point ID | Emission Unit Description | Regulated Pollutant | Maximum Potential Emissions | |
|---|-------------------|--|----------------------------|-----------------------------|--------------|
| | | | | Hourly (lb/hr) | Annual (tpy) |
| H001-H010 | H001-H010 | (10) 1.5 mmBtu/hr Heater Treaters | Nitrogen Oxides | 1.20 | 5.27 |
| | | | Carbon Monoxide | 1.01 | 4.43 |
| | | | Volatile Organic Compounds | 0.07 | 0.29 |
| LH001-LH010 | LH001-LH010 | (10) 2.0 mmBtu/hr Line Heaters | Nitrogen Oxides | 1.60 | 7.03 |
| | | | Carbon Monoxide | 1.35 | 5.90 |
| | | | Volatile Organic Compounds | 0.09 | 0.39 |
| TANKC OND001-010, TANKP W001-002, EC001-004 | EC001-004 | (10) 400 bbl Condensate Tanks, (2) 400 bbl Produced Water Tanks & Enclosed Combustor | Nitrogen Oxides | 0.55 | 2.42 |
| | | | Carbon Monoxide | 0.46 | 2.03 |
| | | | Volatile Organic Compounds | 9.25 | 40.53 |
| | | | Total HAPs | 0.36 | 1.57 |
| E001 | E001 | 23.6 HP Compressor Engine | Nitrogen Oxides | 0.32 | 1.38 |
| | | | Carbon Monoxide | 5.64 | 24.72 |
| | | | Volatile Organic Compounds | 0.01 | 0.03 |
| L001 | EP-L001 | Condensate Truck Loading | Volatile Organic Compounds | 10.14 | 11.56 |
| | | | Total HAPs | 0.03 | 0.03 |

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 |
|------------------|-------------------|---------------------------|-------------------------|
| L001 | L001 | Condensate Truck Loading | 22,995,000 gal/yr |

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

| Emission Unit ID | Engine Manufacture Date | Subject to 40CFR60, Subpart JJJJ? | Subject to 40CFR63, Subpart ZZZZ? | Subject to Sections 10.1.4 / 10.2.1 (Catalytic Reduction Device) |
|------------------|-------------------------|-----------------------------------|---|--|
| E001 | 2013 | Yes | Yes (40CFR60 Subpart JJJJ Requirements) | No |