

STATEMENT OF BASIS

To: Reviewers
Through: Lori Bocchino, Operating Permit Program Manager
From: Donovan Benton, Operating Permit Program
Subject: Draft Chapter 6, Section 3 Operating Permit 3-1-230
WGR Asset Holding Company LLC, Flying Creek-Bridge Draw Compressor Station
Date: June 18, 2014

Introduction

Attached for your review is the draft renewal Wyoming Air Quality Standards and Regulations (WAQSR) Ch 6, Sec 3 operating permit for the WGR Asset Holding Company LLC, Flying Creek-Bridge Draw Compressor Station. The facility compresses coal-bed methane gas to transmission line pressure. Permitted emission sources at the facility include: six Waukesha and eight Caterpillar compressor engines; two dehydration units with reboilers; and two 400-barrel produced water storage tanks.

Note: As of 2/8/11, ownership of the facility changed from Western Gas Resources to WGR Asset Holding Company LLC.

Permitting History

All permits are listed to document the permitting history. The permits and waivers listed in this first section have no applicable requirements.

CT-2369 (6/6/01): was issued to Western Gas Resources, Inc. to construct the Flying Creek-Bridge Draw Compressor Station. No engines were constructed under this permit.

MD-969 (1/13/04): modified the original engine configuration to allow three engines of any combination of Caterpillar G3606LE or Waukesha 7044GSI engines, one Caterpillar 3516LE or one Waukesha 7042GSI engine, three engines of any combination of Caterpillar G3512LE or Waukesha 3524GSI engines, and two Ajax DPC-2802LE engines. The permit also allowed the addition of one dehydration unit and one produced water storage tank. Sources constructed under this permit include two engines (E1 and E6) and one dehydration unit (D1).

MD-1262 (11/15/05): modified the engine configuration to allow five engines of any combination of Waukesha L7044GSI or Caterpillar G3606LE engines, three engines of any combination of Waukesha F3524GSI or Caterpillar G3512LE engines, one engine of either a Caterpillar G3516LE or Waukesha 7042GSI, and one additional Caterpillar G3516LE engine. The permit also allowed one additional dehydration unit and one additional produced water storage tank. Sources constructed under this permit include three engines (E2, E7 and E8) and one storage tank (T1).

AP-6130 (5/11/07): was issued to allow the installation of one Kohler 60RZG generator engine. This engine was never installed.

MD-1589 (6/5/07): was issued to modify the engine configuration by the addition of four Waukesha F3524GSI compressor engines. The permit also extended the authorization to install the engines previously permitted under MD-1262. This permit superseded all previous WAQSR Ch 6, Sec 2 permits and waivers for this facility. Sources constructed under this permit include: five engines (E3, E4, E9, E11 and E12), one dehydration unit (D2), and one storage tank (T2).

The following permit and letter have remaining applicable requirements:

MD-6832 (3/3/08): was issued to modify the engine configuration by replacing one Caterpillar G3516LE compressor engine with either a Caterpillar G3606LE engine or a Waukesha L7044GSI engine. Additionally, the permit revised the NO_x emission limits for the previously permitted, but not yet constructed, Waukesha engines. Requirements include: limiting the facility to a configuration of 14 compressor engines, NO_x and CO emission limits for all engines, formaldehyde limits for the Caterpillar engines, annual testing, and monitoring and maintaining the engines, air pollution control equipment, and monitoring equipment according to good air pollution control practices at all times. Catalyst monitoring requirements include operation of a thermocouple to measure the inlet catalyst temperature and operation of a device to measure pressure drop across the catalyst. This permit supersedes all other previously issued WAQSR Ch 6, Sec 2 permits and waivers for this facility. Under this permit, four engines (E5, E10, E13 and E14) were constructed and all initial performance tests were completed as required. The permittee must also comply with all applicable requirements of the subparts listed below.

Division Letter (7/14/11): granted permission to WGR Asset Holding Company LLC to utilize the 21-minute EPA Method 320 test for formaldehyde emissions for specific engines with prior approval for each test.

Applicable Requirements

In addition to the permit requirements listed above, the sources at the facility are subject to the visible emission limits set forth in WAQSR Ch 3, Sec 2. The dehydration unit reboilers (D1b and D2b) are limited to NO_x emissions of 0.20 lb/MMBtu heat input under Ch 3, Sec 3.

The permittee must comply with any applicable requirements from the following Ch 5, Sec 2 New Source Performance Standards, and 40 CFR 60:

Subpart JJJJ – *Stationary Spark Ignition Internal Combustion Engines* – Engine E10 is currently the only engine subject to the requirements of 40 CFR 60 Subpart JJJJ. Due to the dates construction was commenced and/or dates the engines were manufactured, engines E1-E9 and E11-E14 are subject to Subpart JJJJ, however they have no applicable requirements under the subpart.

Subpart OOOO – *Crude Oil and Natural Gas Production, Transmission, and Distribution* – The facility may have applicable requirements from this subpart, or may become subject to the standard during the term of the permit.

The permittee shall also comply with any applicable requirements from the following Ch 5, Sec 3 National Emission Standards for Hazardous Air Pollutants, and 40 CFR 63:

Subpart HH – *Oil and Natural Gas Production Facilities* – The dehydration units (D1 and D2) are subject to any applicable requirements from Subpart HH.

Subpart ZZZZ – *Stationary Reciprocating Internal Combustion Engines* – All engines are subject to any applicable requirements from Subpart ZZZZ.

Periodic Monitoring and CAM

For periodic monitoring of visible emissions from the engines and reboilers, the permittee shall monitor the type of fuel used to ensure natural gas is the sole fuel source for these units. Testing of NO_x and CO emissions from all compressor engines (E1-E14), and of formaldehyde emissions from each Caterpillar engine (E2-E4 and E6-E10), shall be conducted annually.

WAQSR Ch 7, Sec 3, Compliance Assurance Monitoring (CAM) applies to the Waukesha L7044GSI engines (E1 and E5) for NO_x and CO emissions and the Waukesha F3524GSI engines (E11-E14) for CO emissions. In addition, the inlet temperature into the catalyst shall be monitored and recorded at least once daily, and the pressure differential across the catalyst shall be monitored and recorded at least once per calendar month. The effectiveness of the CAM monitoring parameters shall be evaluated and verified during the required annual NO_x and CO testing. Though CAM does not apply to NO_x emissions from the Waukesha F3524GSI engines (E11-E14), the permittee shall conduct monitoring for these engines in accordance with the monitoring specified in the CAM plan.

For all Caterpillar engines (E2-E4 and E6-E10) engine catalyst systems shall be monitored for inlet temperature into the catalyst and pressure drop across the catalyst on a monthly basis.

The dehydration unit reboilers (D1b and D2b) are fuel burning equipment as defined in WAQSR Ch 1. These uncontrolled units emit oxides of nitrogen (NO_x) in relatively small quantities (each less than 1 ton per year). In the absence of more stringent permit limits, the NO_x emission limit for fuel burning equipment defaults to 0.20 pounds per million BTUs (lb/MMBtu) for sources constructed after April 9, 1973. Generally, small fuel burning sources like these units operate at a steady state; emission variations are not likely. AP-42 emission factors were developed by the EPA to help estimate the quantity of a pollutant from a given source type. In developing an AP-42 emission factor, emission data is averaged from sources of similar size and type, and the emission factor is then assigned a reliability rating based on quality and quantity of the data used. The rating scale runs from A to E with an A rating providing the highest quality. The AP-42 emission factor for small gaseous fuel burning sources (less than 100 MMBtu/hr) is 0.1 lb/MMBtu with a B rating. Considering the amount of data evaluated to develop the AP-42 emission factor and that the WAQSR Ch 3, Sec 3 emission limit is twice the AP-42 value, the Division feels it is extremely unlikely these sources will operate out of compliance and considers further testing of these sources to be uneconomical.

