



August 12, 2011

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50 West Town Street, Suite 700  
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Re: Draft Shale Drilling Site Air Pollution General Permit Comments

These comments are submitted by Anadarko Petroleum Corporation ("Anadarko" or the "Company") as an interested party to the Ohio Environmental Protection Agency (OEPA) in response to its proposed General Permit for a natural gas extraction well site production line.

Anadarko's mission is to deliver a competitive and sustainable rate of return to shareholders by exploring for, acquiring and developing oil and natural gas resources vital to the world's health and welfare. Anadarko is one of the world's largest independent exploration and production companies with major areas of operation located on-shore in the United States and the deepwater Gulf of Mexico, as well as exploration and/or production in Algeria, China, Brazil, Indonesia, Mozambique, Qatar and West Africa. The Company actively markets natural gas, oil and natural gas liquids ("NGLs") and owns and operates gas gathering and processing systems. At the same time, Anadarko manages and operates its assets in a manner consistent with our core values to protect the environment, health and safety, and to comply with applicable environmental, health and safety laws, regulations and internal standards

Anadarko appreciates the opportunity to comment on the Draft General Permit and the willingness of the OEPA to work with industry in developing the General Permit. It is Anadarko understands that the General Permit seeks to accomplish two goals: (1) protect the environment and public health and (2) develop a more expeditious permitting mechanism. Anadarko respectfully submits the following comments and welcomes any questions or further discussion concerning each with the OEPA.

#### **I. Interested Party Cover Letter Information**

The General Permit Cover Letter in designating this GP as a "true minor" facility is confusing in that throughout the General Permit Terms and Conditions there are references to required control equipment for various sources (e.g. glycol dehydrators controlled by an enclosed combustion or vapor recovery device). A "true minor" source is typically defined as a source with no controls. Clarification on this definition and the OEPA expectation on controls is needed.

The cover letter references that industrial roadways may be eliminated from the final General Permit. Anadarko believes that Unpaved Roadways should not be part of the General Permit and should not require permitting associated with natural gas production sites. Truck loading rack emissions still seems to be a point of confusion between the OEPA and industry. Anadarko believes that truck loading emissions may still need to be included in the GP, but that the process and corresponding calculation method needs to be better understood by the OEPA. The use of the term truckloading “rack” should be revised due to its reference to high volume transfer stations and does not properly describe the typical natural gas production facility loading process from individual natural gas production facilities. The OEPA states that truck loading emissions will be included with the storage tank emissions, but tank emission calculation methods do not include truck loading emissions. Again, a better understanding of the process, corresponding emissions and emission calculation methodology is needed.

OEPA will need to provide a definition for “stand-alone gathering stations”, “gas clean-up operations”, and “gas compressor operations” to reduce confusion on what natural gas facilities can utilize the proposed General Permit. Similar processes and emission calculations may be utilized for these types of facilities as a natural gas production facility. Therefore, there may not be the need to exclude these types of facilities from the General Permit.

## **II. Model General Permit Qualifying Criteria Document**

### Unit Description: Storage Tanks and Truck Loading Rack

Truck Loading Rack terminology needs to be revised to remove the reference to “rack” as this terminology describes high volume transfer stations.

The reference to psi content needs to be better understood. The anticipated vapor pressure for any gas production associated condensate will be higher than the proposed pressures. Does the psi content reference the vapor pressure of the condensate or the pressure to be held on the tanks?

Clarification of the condensate volume 12 month limitation is needed. Is this limit on a per tank basis or on a total facility basis?

### Unit Description: Unpaved roadways and parking areas with a maximum of 10,000 vehicle miles traveled per year

Anadarko believes that no unpaved road emissions should be a part of the general permit. This is not typically included in oil and gas permitting as dust emissions are not part of the natural gas extraction process. The GP is being designed to permit a stationary facility at a specific location and therefore transportation related issues along roadways should not be included in the GP. In addition, roads associated with natural gas production facilities will not be isolated from the general public. Monitoring of non-oil and gas related traffic on public roads would be burdensome to the industry and should not be the responsibility of the oil and gas company.

Unit Description: Natural gas internal combustion engine(s) with a total combined horsepower of 1,555 HP or less and manufactured on/after 7/1/07.

Condition 5 that the operating manual be maintained on site is not always possible or practical given the particular location of the site. The condition should only require that the manual or instructions be readily available which includes maintaining at a local office or electronically.

Anadarko will comment on the stack height once the OEPA completes the referenced modeling.

Condition 7 requires at least 20 feet distance from the fence line. Since some natural gas production facilities may not have a fence, an alternative description may be appropriate. Unit Description: Gas Production, Dehydration and Equipment Leaks

Condition 1 is confusing in that the unit description suggests that gas production units are included in the criteria basis yet the condition only references dehydration and fugitives. Gas production units will have external combustion unit emissions and need to be included as emission points of the gas handling system. The heaters/boilers are referenced in Condition 2.

In addition to the sources mentioned in the qualifying criteria, Anadarko requests that the OEPA also include micro-turbine powered generators that operate on natural gas. These turbines offer a low emission alternative to diesel powered generators.

### **III. Natural Gas Well Site General Permit Terms and Conditions**

The “Natural Gas Well Site General Permit” terminology needs to also be used as the source description for the Qualifying Criteria Document which currently uses “Natural gas extraction well site production line”. Production “line” is commonly used in the manufacturing industry and not in the oil and gas industry.

Condition 2 of the Facility-Wide terms should read that the emission units are *potentially* subject to the regulations and not “are” subject to the listed regulations. Emission units that are exempt from 40 CFR Par 60 and 63 per the particular regulation should be able to maintain those exemptions.

Condition 6 requires an annual record of the equipment in use at the site and to submit an annual report describing the equipment in use during the year. Anadarko is not sure the value of this requirement as the permit itself authorizes the equipment in use at the site.

### **IV. Emission Unit Terms and Conditions**

Dehydration System: This section should have conditions listed that are consistent with Subpart HH. In particular, exemptions, controls, recordkeeping, etc. for certain size dehydrators. References to flare

requirements should be listed in the flare combustion device section. References to and requirements for leak detection should be listed in the equipment/pipeline leak section. The proposed terms and condition requires initial notification of HH to EPA in addition to OEPA as the delegated authority. Notification to EPA should not be required since OEPA has delegated authority.

Spark Ignition Internal combustion engines: this section only addresses the emission limits from the first phase of 40 CFR Par 60 Subpart JJJJ and not the stage 2 emissions standards. As to records of engine certification being maintained, the OEPA needs to be aware that typical engines used in natural gas production facilities may not be certified.

Unpaved Roadways: This section should be removed from the GP. The requirements are not only burdensome but could have contradictory requirements in regards to dust control depending on the County.

Storage tanks: Record keeping of annual through put should be on a facility basis and not on a tank basis. Requirement is not clear if the annual record keeping is per tank or facility wide.

Tank Truck Loading Rack: As stated before loading rack terminology needs to be revised. The equation given does not contain a maximum pump capacity even though it was referenced in multiply loading loss factor by the maximum pump capacity. Industry standard annual loading loss emission calculations do not typically include maximum pump capacity. Truck pump rate is only used to *estimate* a pound per hour emission rate.

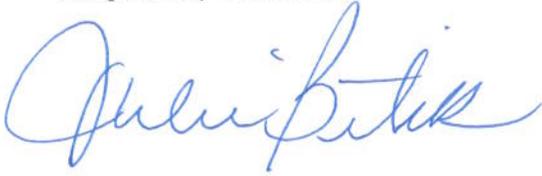
Flare/Combustion Device: Clarification needed to determine if the referenced limits include pilot emissions as well as process emissions. Monitoring requirements include the use of flame detection using a thermocouple, however if an auto ignition device is used a thermocouple is not applicable.

Equipment/Pipeline Leaks: The requirements of this section appear to be overly burdensome to a typical natural gas operating facility. Only natural gas *processing* facilities should have the KKK requirements and this GP is not for processing facilities. This section needs reconsideration as to requirements versus including fugitive emissions as an emissions source. At the maximum, only sources with VOC content greater than 10% should have requirements. The section also references closed vent systems on compressors as well as barrier fluid systems. At the GP horsepower limits and corresponding compressor size, this fugitive source would be minimal. In the event of electric compression, barrier fluid systems are typically not found in natural gas production facilities.

In conclusion, Anadarko hopes the OEPA will consider the comments and we welcome further dialog and explanation of the comments in regards to the General Permit. We would also welcome an explanation of the origin of the permit limits and compliance methods contained in the General Permit to better understand the Department's goals for permitting natural gas production facilities.

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Michael E. Hopkins  
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Respectfully Submitted,

A handwritten signature in blue ink, appearing to read "Julie Betik". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

Julie Betik  
EHS Manager