



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

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DEC 07 2009

OFFICE OF
AIR, WASTE AND TOXICS

Rosanne F. Paris
Environmental Lead
ConocoPhillips Company
Ferndale Refinery
P.O. Box 8
Ferndale, Washington 98248

Dear Ms. Paris:

Re: Opacity Alternative Monitoring Plan Proposal for the Fluid Catalytic Cracking Unit (FCCU) Wet Gas Scrubber (WGS) for the Ferndale Refinery

This is in response to your letter of August 17, 2009, requesting approval of a revision to the previously approved alternative monitoring plan (AMP) dated March 31, 2006. After review of the information ConocoPhillips submitted, EPA approves your request.

ConocoPhillips requested that the approved AMP be modified as follows:

- Update the AMP to reflect the most recent physical modifications. As required by the March 31, 2006 AMP, the additional Belco filtration modules have been installed.
- Allow alternative flow calculation methodologies (Equation 2) per 40 CFR 63 Subpart UUU (40 CFR § 63.1573 (a) (2)).

EPA approves the following AMP modification for opacity:

This alternative monitoring plan (AMP) is to be implemented in place of the requirement to install and operate a continuous opacity monitoring system (COMS) required by NSPS Subpart J [40 CFR § 60.105(a)(1)] and by reference from MACT Subpart UUU (Table 2).

The ConocoPhillips Fluid Catalytic Cracking Unit (FCCU) Wet Gas Scrubber (WGS) is not a venturi scrubber, so the requirements of Tables 2 and 3 of MACT Subpart UUU apply. Because a WGS is being used and as the result of the presence of condensed water in the stack, a COMS will not accurately measure opacity. An appropriate continuous parameter operating system (CPMS) for the ConocoPhillips FCCU WGS includes monitoring the WGS liquid-to-gas (L/G) ratio and the weight percent solids in the scrubber recirculation liquid. The value for L will be determined by measuring the amperage to each WGS recirculation pump motor that is operating, calculating the power generated by the pump motor at the measured amperage using a standard equation from the Chemical Engineers Handbook, determining the liquid flow rate at the calculated power input from the pump manufacturer's Centrifugal Pump Characteristics

Curve and summing the liquid flow rate from each operating pump. The value for G will be measured by a gas flow meter or calculated in accordance with 40 CFR § 63.1573(a)(2)(iii) using control room instrumentation for air flow into the regenerator, and continuous gas analyzers on the exhaust from the regenerator. As described in the guideline of 40 CFR § 63.1564(b)(2) and (3), the L/G ratio will be calculated and recorded at least once every operating hour. ConocoPhillips has established a minimum L/G ratio of 1.25 calculated on a three-hour block average based on performance testing.

The weight percent solids in the WGS liquid must be sampled and analyzed weekly. ConocoPhillips has established a maximum weight percent value of 1.0 based on data taken during performance testing.

ConocoPhillips has developed and must maintain a written monitoring plan which describes the specific CPMS for this AMP including the measurement equipment, equations, centrifugal pump characteristics curves or algorithms, sampling methods, analytical methods and operation and maintenance requirements. This monitoring plan must be reviewed annually and revised, if necessary, and made available to EPA and NWCAA upon request. This CPMS will meet the requirements of 40 CFR §63.1572(c) and (d).

If you have any questions about this approval, please contact Madonna Narvaez at 206-553-2117, or electronically at narvaez.madonna@epa.gov.

Sincerely,



Nancy Helm, Manager
Federal and Delegated Air Programs Unit

cc: Tim Hall, ConocoPhillips
Annie Naismith, NWCAA