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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3010A
Plant ID No.: 103-00056
Applicant: EQT Production Company (EQT)
Facility Name: BIG-190
Location: Wetzel County
NAICS Code: 211111
Application Type: Modification
Received Date: January 14, 2014
Engineer Assigned: Jerry Williams, P.E.
Fee Amount: \$1,000.00
Date Received: February 3, 2014
Complete Date: February 6, 2014
Due Date: May 7, 2014
Applicant Ad Date: January 22, 2014
Newspaper: *Wetzel Chronicle*
UTM's: Easting: 533.9 km Northing: 4,378.2 km Zone: 17
Description: Modification of a natural gas production facility.

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3010A:

This modification involves the construction and operation of support facilities associated with a natural gas production well pad operation. The well pad consists of multiple wells, each well with the same basic operation. The BIG-190 well pad currently consists of six (6) wells. EQT is proposing to add six (6) more wells over the next year. The incoming gas stream from the underground wells will pass through a separator. The liquid condensate in the separator will be transferred to one (1) of six (6) new storage vessels. Emissions from the storage vessels are controlled by one (1) of two (2) enclosed combustors (one (1) existing, one (1) proposed). Once the tanks are filled, the contents are loaded into trucks for transport. Heat and electricity are provided by line heaters and thermoelectric generators, respectively.

SITE INSPECTION

On December 3, 2012, Joe Kessler of the DAQ Permitting Section conducted a site inspection of the BIG-190 natural gas production facility. The BIG-190 site is located in a remote and rural area of Wetzel County approximately 4.0 miles east of Pine Grove, WV along a new access road created off of CR 15/2 (N. Fork of Richmond Run Road). The wells had been “top-holed” at the time of the inspection but had not yet been hydraulically fractured and were not producing gas. No occupied residences were visible from the site and the nearest was estimated to be approximately 0.75 miles away along CR 15/2. The following is a picture of the BIG-190 well-pad taken on the day of the inspection:



Directions: [Latitude: 39.55281, Longitude: -80.60542] From the junction of WV State Route (SR) 20 (Galmish Road) and County Route 76 (North Fork Road), travel north on CR 76 for approximately 1.9 miles to the CR 76/CR 15/2 and turn left onto CR 15/2 (N. Fork of Richmond Run Road). Travel for approximately 0.3 miles to the BIG-190 access road on the left. Then proceed 1.1 miles on the access road to the facility.

AIR EMISSIONS AND CALCULATION METHODOLOGIES

EQT included in Attachment N of the permit application air emissions calculations for the equipment and processes at the BIG-190 natural gas production facility. The following will summarize the calculation methodologies used by EQT to calculate the potential-to-emit (PTE) of the proposed modification.

Gas-Fired Line Heaters

Criteria Pollutant emissions from the natural gas-fired line heaters (E021 through E026) were based on the emission factors provided for natural gas combustion as given in AP-42 (AP-42 is a database of emission factors maintained by USEPA) Section 1.4. Emissions of Greenhouse Gases (GHGs) were based on Tables C-1 and C-2 of 40 CFR 98 - Federal GHG Reporting Rule.

Hourly emissions were based on the maximum design heat input (MDHI) of each unit and annual emissions were based on an annual operation of 8,760 hours. A heat content of the gas of 1,050 Btu/scf was used in the calculations.

Storage Tanks

Working and breathing emissions from the six (6) condensate/produced-water storage tanks were based on the TANKS 4.09d program as provided under AP-42, Section 7. Emissions from flashing in the tanks were calculated using CHEMCAD - a chemical process simulation software. Input and summary sheets for both programs were included in the permit application. As all uncontrolled emissions from the storage tanks are routed to the vapor combustor for control, the controlled emissions from the tanks are based on the vapor combustor's minimum 95% control efficiency. An annual throughput of 2,222,000 gallons of condensate/produced-water was used in the calculations for each storage tank.

Truck Loading

Air emissions from condensate truck loading operations occur as fugitive emissions generated by displacement of vapors when loading trucks. The emission factor used to generate the VOC emissions is based on AP-42 Section 7.1. EQT used variables specific to the liquids loaded and to the method of loading - in this case "submerged filling - dedicated normal service." Additionally, worst-case annual emissions were based on a maximum loading rate of 26,664,000 gal/year of condensate/produced-water. As no maximum hourly pumping rate was provided, hourly emissions were based on 1,000 hours of loading per year.

Fugitives

EQT based their fugitive equipment leak calculations on emission factors taken from the document EPA-453/R-95-017 - "Protocol for Equipment Leak Emission Estimates." Emission factors were taken from Table 2-4 and no control efficiency, as based on a Leak Detection and Repair (LDAR) protocol, was applied. Emissions of Greenhouse Gases (GHGs) were based on Subpart W of 40 CFR 98 - Federal GHG Reporting Rule.

Vapor Combustor

The vapor combustor will receive captured vapors from the storage tanks. The amount of emissions received is determined by the calculation methodologies described above. A 95% control was applied to the uncontrolled VOC/HAP/methane emissions received by the vapor combustor to determine the amount of pass-through emissions of the combustor. The emissions of NO_x, CO, particulate matter, SO₂, and GHGs from the combustion of the vapors were based on emission factors taken from AP-42 Section 1.4 and the MDHI of the unit.

Emissions Summary

Based on the above estimation methodology, which is determined to be appropriate, the PTE of the BIG-190 natural gas production facility is given in the following tables:

Table 1: Pre-Modification Facility-Wide Aggregate Hourly (lb/hr) Criteria Pollutant PTE Summary.

Source	CO	NO _x	PM ⁽¹⁾	SO ₂	VOCs	HAPs
Process Heaters/Generator ⁽²⁾	0.74	0.88	0.07	<0.01	0.05	0.02
Vapor Combustor ⁽³⁾	0.93	1.11	0.08	0.01	14.92	0.47
Fugitive Emissions	0.00	0.00	0.00	0.00	1.63	0.00
Truck Loading ⁽⁴⁾	0.00	0.00	0.00	0.00	21.88	0.08
Facility-Wide Totals	1.67	1.99	0.15	0.02	38.47	0.56

(1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.

(2) Aggregate emission rate of all such units.

(3) Includes both pass-through emissions generated by storage tanks and products of combustion.

(4) As a maximum hourly pump rate was not provided, hourly emissions based on 1,000 hours/year.

Table 2: Post-Modification Facility-Wide Aggregate Hourly (lb/hr) Criteria Pollutant PTE Summary.

Source	CO	NO _x	PM ⁽¹⁾	SO ₂	VOCs	HAPs
Process Heaters/Generator ⁽²⁾	1.48	1.78	0.14	0.12	0.10	0.04
Vapor Combustor ⁽³⁾	1.86	2.22	0.16	0.02	2.57	0.12
Fugitive Emissions	0.00	0.00	0.00	0.00	3.21	0.12
Truck Loading ⁽⁴⁾	0.00	0.00	0.00	0.00	21.88	0.08
Facility-Wide Totals	3.34	4.00	0.30	0.14	27.76	0.36

- (1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.
- (2) Aggregate emission rate of all such units.
- (3) Includes both pass-through emissions generated by storage tanks and products of combustion.
- (4) As a maximum hourly pump rate was not provided, hourly emissions based on 1,000 hours/year.

Table 3: Pre-Modification Facility-Wide Aggregate Annual (ton/yr) Criteria Pollutant/GHG PTE Summary.

Source	CO	NO _x	PM ⁽¹⁾	SO ₂	VOCs	HAPs	CO _{2e}
Process Heaters/Generator ⁽²⁾	3.23	3.86	0.29	0.02	0.21	0.07	4,744.64
Vapor Combustor ⁽³⁾	4.09	4.86	0.37	0.03	65.34	2.04	6,206.58
Fugitive Emissions	0.00	0.00	0.00	0.00	7.13	0.00	493.20
Truck Loading	0.00	0.00	0.00	0.00	10.94	0.33	0.00
Facility-Wide Totals	7.32	8.72	0.66	0.05	83.62	2.44	11,445

- (1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.
- (2) Aggregate emission rate of all such units.
- (3) Includes both pass-through emissions generated by storage tanks and products of combustion.

Table 4: Post-Modification Facility-Wide Aggregate Annual (ton/yr) Criteria Pollutant/GHG PTE Summary.

Source	CO	NO _x	PM ⁽¹⁾	SO ₂	VOCs	HAPs	CO _{2e}
Process Heaters/Generator ⁽²⁾	6.47	7.71	0.59	0.05	0.43	0.15	9,470.35
Vapor Combustor ⁽³⁾	8.17	9.73	0.74	0.06	11.24	0.53	12,035.0 2
Fugitive Emissions	0.00	0.00	0.00	0.00	14.07	0.00	1,413.42
Truck Loading	0.00	0.00	0.00	0.00	14.86	0.49	0.00
Facility-Wide Totals	14.64	17.44	1.33	0.11	40.60	1.17	22,919

- (1) Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.
- (2) Aggregate emission rate of all such units.
- (3) Includes both pass-through emissions generated by storage tanks and products of combustion.

Table 5: Facility-Wide Annual (ton/yr) Summary.

Pollutant	R13-3010A Pre-Modification (tpy)	R13-3010A Post-Modification (tpy)	Change in Emissions (tpy)
Carbon Monoxide	7.32	14.64	7.32
Nitrogen Oxides	8.72	17.44	8.72
Particulate Matter	0.66	1.33	0.67
Sulfur Dioxide	0.05	0.11	0.06
Volatile Organic Compounds	83.62	40.60	-43.02
Total Hazardous Air Pollutants	2.44	1.17	-1.27
Carbon Dioxide Equivalents (GHG)	11,445	22,919	11,474

REGULATORY APPLICABILITY

The proposed EQT natural gas production facility is subject to substantive requirements in the following state and federal air quality rules and regulations: 45CSR2, 45CSR6, 45CSR13, and 40 CFR 60 Subpart OOOO. Each applicable rule (and ones that have reasoned non-applicability), and EQT’s compliance therewith, will be discussed in detail below.

45CSR2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

The proposed line heaters (S015 to S020) each have been determined to meet the definition of a “fuel burning unit” under 45CSR2 and are, therefore, subject to the applicable requirements therein. However, pursuant to the exemption given under §45-2-11, as the MDHI of the units are less than 10 mmBtu/hr, they are not subject to sections 4, 5, 6, 8 and 9 of 45CSR2. The only remaining substantive requirement is under Section 3.1 - Visible Emissions Standards.

Pursuant to 45CSR2, Section 3.1, the line heaters are subject to an opacity limit of 10%. Proper maintenance and operation of the units (and the use of natural gas as fuel) should keep the opacity of the units well below 10% during normal operations.

45CSR6: To Prevent and Control Particulate Air Pollution from Combustion of Refuse

EQT has proposed an enclosed combustor for controlling the working/breathing/flashing emissions produced from the condensate/produced-water storage tanks. The vapor combustor meets the definition of an “incinerator” under 45CSR6 and is, therefore, subject to the requirements therein. The substantive requirements applicable to the vapor combustor are discussed below.

45CSR6 Emission Standards for Incinerators - Section 4.1

Section 4.1 limits PM emissions from incinerators to a value determined by the following formula:

$$\text{Emissions (lb/hr)} = F \times \text{Incinerator Capacity (tons/hr)}$$

Where, the factor, F, is as indicated in Table I below:

Table I: Factor, F, for Determining Maximum Allowable Particulate Emissions

<u>Incinerator Capacity</u>	<u>Factor F</u>
A. Less than 15,000 lbs/hr	5.43
B. 15,000 lbs/hr or greater	2.72

While particulate matter emissions from the combustor are expected to be nominal, for a conservative estimate, EQT calculated potential particulate matter emissions from the unit based on an emission factor taken from AP-42, Section 1.4. Using this emission factor, the hourly particulate matter emission rate from the combustor is 0.08 lbs/hr. Based on information included in the application, the maximum vapor mass sent to the combustor will be 500 lb/hr (0.25 tons/hour). Based on the above, the aggregate particulate matter limit of the combustor is 1.36 lbs/hr. As the hourly particulate matter emission rate from the combustor is 0.08 lbs/hr, the unit is in compliance with this emission limit.

45CSR6 Opacity Limits for - Section 4.3, 4.4

Pursuant to Section 4.3, and subject to the exemptions under 4.4, the combustor has a 20% limit on opacity during operation. As the primary constituent in the vapors combusted in the unit shall be clean burning methane/ethane, particulate matter emissions from the combustor are expected to be nominal. Therefore, the vapor combustor should easily meet this requirement.

45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides (non-applicability)

45CSR10 has requirements limiting SO₂ emissions from “fuel burning units,” limiting in-stack SO₂ concentrations of “manufacturing processes,” and limiting H₂S concentrations in process gas streams. The only potential applicability of 45CSR10 to the BIG-190 natural gas production facility is the limitations on fuel burning units. Pursuant to the exemption given under §45-10-10.1, as the MDHI of the Line Heaters (S015 to S020) - each of which have been determined to meet the definition of a “fuel burning unit” under 45CSR10 - are less than 10 mmBtu/hr, the units are not subject to the limitations on fuel burning units under 45CSR10.

45CSR13: Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation

The modification of the BIG-190 natural gas production facility has a potential to emit a regulated pollutant in excess of six (6) lbs/hour and ten (10) TPY and, therefore, pursuant to §45-13-2.24, the facility is defined as a “stationary source” under 45CSR13. Pursuant to §45-13-5.1, “[n]o person shall cause, suffer, allow or permit the construction . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct” and is subject to a substantive requirement of an emission control rule (45CSR6). Therefore, EQT is required to obtain a permit under 45CSR13 for the modification and operation of the natural gas production facility.

EQT has published the required Class I legal advertisement notifying the public of their permit application, and paid the appropriate application fee (modification).

45CSR14 (NON APPLICABILITY)

The facility-wide potential-to-emit of the BIG-190 natural gas production facility (see Table 5 above) is below the levels that would define the source as “major” under 45CSR14 and, therefore, the construction evaluated herein is not subject to the provisions of 45CSR14.

Potential Source Aggregation

Classifying multiple facilities as one “stationary source” under 45CSR13, 45CSR14, and 45CSR19 is based on the definition of "Building, structure, facility, or installation" as given in §45-14-2.13 and §45-19-2.12. The definition states:

“Building, Structure, Facility, or Installation” means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities are a part of the same industrial grouping if they belong to the same “Major Group” (i.e., which have the same two (2)-digit code) as described in the Standard Industrial Classification Manual, 1987 (United States Government Printing Office stock number GPO 1987 0-185-718:QL 3).

The proposed BIG-190 natural gas production facility will be located approximately 2.11 miles from the known nearest other EQT facility (BIG-7 well-pad and production facility). BIG-7 shares the same SIC code as BIG-190 and is owned by EQT. Therefore, the potential classification of the BIG-190 facility as one stationary source with BIG-7 depends on the determination if these stations are considered “contiguous or adjacent properties.”

"Contiguous or Adjacent" determinations are made on a case by case basis. These determinations are proximity-based, and it is important to focus on this and whether or not it meets the common sense notion of one stationary source. The terms "contiguous" or "adjacent" are not defined by USEPA. Contiguous has a dictionary definition of being in actual contact;

touching along a boundary or at a point. Adjacent has a dictionary definition of not distant; nearby; having a common endpoint or border.

The BIG-190 natural gas production facility is not located contiguous with, or *directly* adjacent to the BIG-7 facility. As noted above, the facilities are 2.11 miles apart. Facilities separated by this distance do not meet the common sense notion of a single plant. Therefore, the BIG-190 and BIG-7 facilities are not considered to be on contiguous or adjacent property.

45CSR30: Requirements for Operating Permits - (NON APPLICABILITY)

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. The proposed facility does not meet the definition of a "major source under § 112 of the Clean Air Act" as outlined under §45-30-2.26 and clarified (fugitive policy) under 45CSR30b. However, as the facility is subject to a New Source Performance Standard (NSPS) - 40 CFR 60, Subpart OOOO - the facility would, in most cases, be subject to Title V as a "deferred source." However, pursuant to §60.5370(c), as a non-major source, EQT is not required to obtain a Title V permit for the proposed facility. Therefore, the BIG-190 natural gas production facility is not subject to 45CSR30.

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 - (NON APPLICABILITY)

Pursuant to §60.110b, 40 CFR 60, Subpart Kb applies to "each storage vessel with a capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984." The storage tanks located at the BIG-190 facility are each 8,820 gallons, or 34 m³. Therefore, Subpart Kb does not apply to the storage tanks.

40 CFR 60, Subpart OOOO: Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

On April 27, 2012 the USEPA issued a final rule (published in the Federal Register on August 16, 2012) that consists of federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level. Pursuant to §60.5365(a) each "gas well affected facility, which is a single natural gas well" that is constructed after August 23, 2011 is subject to the applicable provisions of Subpart OOOO as well as "[e]ach storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment."

Gas Wells - §60.5370

EQT has drilled gas wells at the BIG-190 well-pad and, therefore, these are defined as "affected facilities" under Subpart OOOO and subject to applicable provisions. The substantive requirements for gas wells drilled prior to January 1, 2015 are given under §60.5375(a)(3) of the rule. It requires that flowback emissions (gas produced from the well after fracturing) must be

directed to the flow line or a completion combustion device. EQT shall direct all gas from wells during flowback at the BIG-190 site into the flow line. Other requirements pertaining to the gas wells include:

EQT must maintain a log for each well completion operation at each gas well affected facility. The log must be completed on a daily basis for the duration of the well completion operation and must contain the records specified in §60.5420(c)(1)(iii).

[40CFR§60.5375(b)]

EQT must demonstrate initial compliance with the standards that apply to gas well affected facilities as required by §60.5410.

[40CFR§60.5375(c)]

EQT must demonstrate continuous compliance with the standards that apply to gas well affected facilities as required by §60.5415.

[40CFR§60.5375(d)]

EQT must perform the required notification, recordkeeping and reporting as required by §60.5420.

[40CFR§60.5375(e)]

Storage Tanks - §60.5395

Under §60.5395, the requirements for storage tanks take effect on October 15, 2013. However, as the site is expected to be in production at that time, the storage tank requirements will be reviewed. The substantive requirement for storage tanks is given under §60.5395(a) of the rule. It requires that for each storage vessel “emitting more than 6 tpy VOC, [the permittee] must reduce VOC emissions by 95.0 percent or greater. . .” Based on a letter from USEPA to the American Petroleum Institute dated September 28, 2012, applicability of storage vessels to Subpart OOOO is based on individual tank PTE - which includes federally enforceable control devices.

The storage vessels located at the BIG-190 pad are controlled by a vapor combustor device and emit less than 6 tpy of VOC. Therefore, EQT is not required by this section to further reduce VOC emissions by 95 %.

Pneumatic Controllers

Pursuant to §60.5365(d)(2), “[f]or the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants), each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh” that is constructed after August 23, 2011 is subject to the applicable provisions of Subpart OOOO. The substantive requirements for pneumatic controllers are given under §60.5390. EQT will be required to meet the bleed rate for the applicable pneumatic controllers.

TOXICITY ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS

This section provides an analysis for those regulated pollutants that may be emitted from the BIG-190 natural gas production facility and that are not classified as “criteria pollutants.” Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO_x), Ozone, Particulate Matter (PM), Particulate Matter less than 10 microns (PM₁₀), Particulate Matter less than 2.5 microns (PM_{2.5}), and Sulfur Dioxide (SO₂). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal programs designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) standards promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs were discussed above under REGULATORY APPLICABILITY.

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. EQT included the following HAPs as emitted in substantive amounts in their emissions estimate: Benzene, n-Hexane, Toluene, and Xylenes. The following table lists each HAP’s carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

Table 4: Potential HAPs - Carcinogenic Risk

HAPs	Type	Known/Suspected Carcinogen	Classification
n-Hexane	VOC	No	Inadequate Data
Benzene	VOC	Yes	Category A - Known Human Carcinogen
Toluene	VOC	No	Inadequate Data
Xylenes	VOC	No	Inadequate Data

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health affects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. For a complete discussion of the known health effects of each compound refer to the IRIS database located at www.epa.gov/iris.

AIR QUALITY IMPACT ANALYSIS

The estimated maximum emissions from the proposed BIG-190 natural gas production facility are less than applicability thresholds that would define the proposed facility as a “major stationary source” under 45CSR14 and, therefore, no air quality impacts modeling analysis was required. Additionally, based on the nature of the proposed construction, modeling was not required under 45CSR13, Section 7.

MONITORING, COMPLIANCE DEMONSTRATIONS, REPORTING, AND RECORDING OF OPERATIONS

The following substantive monitoring, compliance demonstration, and record-keeping requirements (MRR) shall be required:

For the purposes of demonstrating compliance with maximum limit for the aggregate production of condensate/liquids from the wells set forth in 4.1.3 of the draft permit, EQT shall be required to monitor and record the monthly and rolling twelve month total of condensate/produced-water (in gallons) produced in the wells. Monitoring and recording the monthly and rolling twelve month total of condensate/liquids (in gallons) unloaded from the storage tanks can be used to show compliance with this requirement.

For the purposes of demonstrating compliance with visible emissions limitations set forth in 4.1.2(d) of the draft permit, EQT shall be required to:

- (1) Conduct an initial Method 22 visual emission observation on the line heaters to determine the compliance with the visible emission provisions. EQT shall be required to take a minimum of two (2) hours of visual emissions observations on the line heaters.
- (2) Conduct monthly Method 22 visible emission observations of the line heaters stack to ensure proper operation for a minimum of ten (10) minutes each month the line heaters are in operation.
- (3) In the event visible emissions are observed in excess of the limitations given under 4.1.2(d) of the draft permit, EQT shall be required to take immediate corrective action.

EQT shall be required to maintain records of all startups, shutdowns, and/or malfunctions of the vapor combustors. These records shall include the date, time, and duration of each event.

EQT shall be required to maintain records of the date, time, and duration each time the permittee does not detect the presence of a pilot flame in the vapor combustors.

For the purposes of demonstrating compliance with visible emissions limitations set forth in 4.1.6(f) of the draft permit, EQT shall be required to:

- (1) Conduct an initial Method 22 visual emission observation on the vapor combustors to determine the compliance with the visible emission provisions. EQT shall be required to take a minimum of two (2) hours of visual emissions observations on the vapor combustor.
- (2) Conduct monthly Method 22 visible emission observations of the vapor combustor stacks to ensure proper operation for a minimum of ten (10) minutes each month the vapor combustor is in operation.
- (3) In the event visible emissions are observed in excess of the limitations given under 4.1.6(f) of the draft permit, EQT shall be required to take immediate corrective action.

EQT shall be required to maintain records of all visual emission observations pursuant to the monitoring required under 4.2.2 and 4.2.3(c) of the draft permit including any corrective action taken.

EQT shall be required to report any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 or 22 to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of the occurrence and shall include at least the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

EQT shall be required to meet all applicable Monitoring, Compliance Demonstration and Source-Specific Recordkeeping Requirements as given under 40 CFR 60, Subpart OOOO.

PERFORMANCE TESTING OF OPERATIONS

The following substantive performance testing requirements shall be required:

EQT shall be required to meet all applicable Testing Requirements as given under 40 CFR 60, Subpart OOOO.

RECOMMENDATION TO DIRECTOR

The information provided in permit application R13-3010A indicates that compliance with all applicable regulations will be achieved. Therefore, I recommend to the Director the issuance of Permit Number R13-3010A to EQT Production Company for the modification and operation of the BIG-190 natural gas production facility located near Pine Grove, Wetzel County, WV.

Jerry Williams, PE
Engineer

Date