

- (f) Periodic Monitoring (PM).
- (1) Periodic monitoring applies to emission units at a site that are subject to 30 TAC Chapter 122 (Federal Operating Permits Program) provided that the emission unit is subject to an emission limitation or standard for an air pollutant (or surrogate thereof) in an applicable requirement, excluding those emission limitations or standards identified in 30 TAC § 122.602(b) (Periodic Monitoring Applicability).
 - (2) When reviewing the permit tables, if the index number has a Monitoring/Testing requirement listed as “Periodic Monitoring,” then the unit requires periodic monitoring and the selection of an option from the Periodic Monitoring Options Tables in Section (g).
 - (3) [Form OP-MON](#) (Monitoring Requirements) must be submitted for each monitoring option chosen. This form must include the pollutant being monitored, control device, deviation limit, and monitoring option used. Unless the deviation limit is specifically defined by the monitoring option (for example, 1500 degrees Fahrenheit), a proposed deviation limit, and a justification for the proposed deviation limit must be submitted on the Form OP-MON. If the deviation limit changes, for example due to recent testing, the GOP application must be revised with a new Form OP-MON for that option. Additional instructions for the addition of periodic monitoring into the application may be reviewed in the Oil and Gas General Operating Permit Statement of Basis and in the Periodic Monitoring guidance document located at www.tceq.texas.gov/permitting/air/guidance/titlev/tv_fop_guidance.html.
- (g) Periodic Monitoring Option Tables.

Periodic Monitoring Option Tables

Units with a Control device: Catalytic Converters

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|------------------------------------|-------------------------------|--|----------------------|---------|------------------|
| Nitrogen Oxides (NO _x) | 1. Inlet Gas Temperature, and | Measure and record the temperature at the inlet to the catalytic converter. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per day | n/a* | PMG-OG-N-043 |
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas on a biennial calendar basis using the method specified in 30 TAC § 117.8000(b)-(d) (Stack Testing Requirements). The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once every two years | n/a | PMG-OG-N-044 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|----------------------|---------|------------------|
| NO _x | 2. Inlet Gas Temperature, and | Measure and record the temperature at the inlet to the catalytic converter. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per day | n/a* | PMG-OG-N-045 |
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas on a biennial calendar basis using Test Method 7E or 20 to stack test the unit for NO _x emissions on a biennial calendar basis. Exhaust flow rate may be determined from measured fuel flow rate and the Environmental Protection Agency (EPA) Method 19. California Air Resources Board Method A-100 (adopted June 29, 1983) is an acceptable alternate to EPA test methods. The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once every two years | n/a | PMG-OG-N-046 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------------------------|---------|------------------|
| NO _x | 3. Inlet Gas Temperature, and | Measure and record the temperature at the inlet to the catalytic converter. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per day | n/a* | PMG-OG-N-047 |
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas every 15,000 hours of operation using the method specified in 30 TAC § 117.8000(b)-(d). The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | every 15,000 hours of operation | n/a | PMG-OG-N-048 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------------------------|---------|------------------|
| NO _x | 4. Inlet Gas Temperature, and | Measure and record the temperature at the inlet to the catalytic converter. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per day | n/a* | PMG-OG-N-049 |
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas every 15,000 hours of operation using Test Method 7E or 20 to stack test the unit for NO _x emissions on a biennial calendar basis. Exhaust flow rate may be determined from measured fuel flow rate and EPA Method 19. California Air Resources Board Method A-100 (adopted June 29, 1983) is an acceptable alternate to EPA test methods. The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | every 15,000 hours of operation | n/a | PMG-OG-N-050 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|------------------|---------|------------------|
| NO _x | 5. Inlet Gas Temperature, and | Measure and record the temperature at the inlet to the catalytic converter. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per day | n/a* | PMG-OG-N-051 |
| NO _x | NO _x Concentration | Monitor and record the NO _x concentration in the exhaust stream using a portable analyzer. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method - Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). NO _x emissions shall be corrected/calculated in units of the underlying applicable emission limitation (grams per horsepower hour, pounds per MMBtu, pounds per hour). | once per quarter | n/a* | PMG-OG-N-052 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|---------------|---------|------------------|
| NO _x | 6. Inlet Gas Temperature, and | Measure and record the temperature at the inlet to the catalytic converter. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-053 |
| NO _x | Oxygen Concentration | Measure and record the oxygen concentration of the oxygen sensor in millivolts or oxygen concentration. The oxygen sensor shall be installed in the engine exhaust at the inlet to the catalyst. Establish a minimum and maximum oxygen level (measured in millivolts or oxygen concentration) using the most appropriate of the following: the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or other written procedures that provide an adequate assurance that the device is calibrated accurately. | once per week | n/a* | PMG-OG-N-054 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------|---------|------------------|
| NO _x | 7. Inlet Gas Temperature, and | Measure and record the temperature at the inlet to the catalytic converter. The inlet temperature shall remain >750 degrees Fahrenheit and <1250 degrees Fahrenheit. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-059 |
| NO _x | Pressure Drop | Measure and record the pressure drop across the catalyst bed. The pressure drop across the catalyst shall not change by more than 2 inches of water at 100 percent load or + 10 percent from the pressure drop across the catalyst measured during the initial performance test. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-060 |
| NO _x | 8. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-035 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|----------------------|---------|------------------|
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas on a biennial calendar basis using the method specified in 30 TAC § 117.8000(b)-(d). The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once every two years | n/a | PMG-OG-N-036 |
| NO _x | 9. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-055 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|----------------------|---------|------------------|
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas on a biennial calendar basis using Test Method 7E or 20 to stack test the unit for NO _x emissions on a biennial calendar basis. Exhaust flow rate may be determined from measured fuel flow rate and EPA Method 19. California Air Resources Board Method A-100 (adopted June 29, 1983) is an acceptable alternate to EPA test methods. The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once every two years | n/a | PMG-OG-N-056 |

Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------------------------|---------|------------------|
| NO _x | 10. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-037 |
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas every 15,000 hours of operation using the method specified in 30 TAC § 117.8000(b)-(d). The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | every 15,000 hours of operation | n/a | PMG-OG-N-038 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------------------------|---------|------------------|
| NO _x | 11. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-057 |
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas every 15,000 hours of operation using Test Method 7E or 20 to stack test the unit for NO _x emissions on a biennial calendar basis. Exhaust flow rate may be determined from measured fuel flow rate and EPA Method 19. California Air Resources Board Method A-100 (adopted June 29, 1983) is an acceptable alternate to EPA test methods. The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | every 15,000 hours of operation | n/a | PMG-OG-N-058 |

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Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|------------------|---------|------------------|
| NO _x | 12. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-039 |
| NO _x | NO _x Concentration | Monitor and record the NO _x concentration in the exhaust stream using a portable analyzer. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method - Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). NO _x emissions shall be corrected/calculated in units of the underlying applicable emission limitation (grams per horsepower hour, pounds per MMBtu, pounds per hour). | once per quarter | n/a* | PMG-OG-N-040 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control device: Catalytic Converters (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---------------------------|---|---------------|---------|------------------|
| NO _x | 13. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-041 |
| NO _x | Inlet Gas Temperature | Measure and record the temperature at the inlet to the catalytic converter. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-042 |

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All Emission Units

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------------------|---|---------------------|----------|------------------|
| NO _x | 1. NO _x Concentration | Monitor and record the NO _x concentration in the exhaust stream using a portable analyzer. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method - Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). NO _x emissions shall be corrected/calculated in units of the underlying applicable emission limitation (grams per horsepower hour, pounds per MMBtu, pounds per hour). | once per month | n/a* | PMG-OG-N-001 |
| NO _x | 2. NO _x Concentration | Measure and record the concentration of NO _x in the exhaust stream with a continuous emission monitoring system (CEMS). In addition, monitor the oxygen or carbon dioxide content of the flue gas with a CEMS. The CEMS shall be operated in accordance with the monitoring requirements of 40 CFR § 60.13 (Monitoring Requirements) and the performance specifications of 40 CFR Part 60, Appendix B (Performance Specifications). NO _x emissions shall be corrected/calculated in units of the underlying applicable emission limitation (grams per horsepower hour, pounds per MMBtu, pounds per hour). | four times per hour | one hour | PMG-OG-N-002 |

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Units with a Control Device: Selective Catalytic Reduction (Except for Reciprocating Engines)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|-------------------|----------------|-------------------------|
| NO _x | 1. Inlet Gas Temperature, and | Measure and record the inlet flue gas temperature to the catalyst bed. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-003 |
| NO _x | Injection Nozzle Flow Rate | Measure and record the injection nozzle flow rate. Establish a minimum flow rate using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-004 |

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Units with a Control Device: Selective Catalytic Reduction (Except for Reciprocating Engines) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------------------|--|---------------|---------|------------------|
| NO _x | 2. Inlet Gas Temperature, and | Measure and record the inlet flue gas temperature to the catalyst bed. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-005 |
| NO _x | Injection Nozzle Supply Pressure | Measure and record the injection nozzle supply pressure. Establish a minimum supply pressure using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-006 |

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Units with a Control Device: Selective Catalytic Reduction (Except for Reciprocating Engines) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|---------------|---------|------------------|
| NO _x | 3. Inlet Gas Temperature, and | Measure and record the inlet flue gas temperature to the catalyst bed. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-007 |
| NO _x | Inlet Oxygen Concentration | Measure and record the oxygen concentration using a portable analyzer to monitor oxygen concentration in the inlet flue gas to the catalyst bed. Establish a minimum and a maximum oxygen concentration using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-008 |

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Units with a Control Device: Selective Catalytic Reduction (Except for Reciprocating Engines) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|------------------------------------|---|---------------|---------|------------------|
| NO _x | 4. Injection Nozzle Flow Rate, and | Measure and record the injection nozzle flow rate. Establish a minimum flow rate using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-009 |
| NO _x | Inlet Oxygen Concentration | Measure and record the oxygen concentration using a portable analyzer to monitor oxygen concentration in the inlet flue gas to the catalyst bed. Establish a minimum and a maximum oxygen concentration using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-010 |

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Units with a Control Device: Selective Catalytic Reduction (Except for Reciprocating Engines) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--|---|---------------|---------|------------------|
| NO _x | 5. Injection Nozzle Supply Pressure, and | Measure and record the injection nozzle supply pressure. Establish a minimum supply pressure using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-011 |
| NO _x | Inlet Oxygen Concentration | Measure and record the oxygen concentration using a portable analyzer to monitor oxygen concentration in the inlet flue gas to the catalyst bed. Establish a minimum and a maximum oxygen concentration using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-012 |

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Units with a Control Device: Selective Catalytic Reduction (Except for Reciprocating Engines) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|------------------------------------|---|---------------|---------|------------------|
| NO _x | 6. Inlet Oxygen Concentration, and | Measure and record the oxygen concentration using a portable analyzer to monitor oxygen concentration in the inlet flue gas to the catalyst bed. Establish a minimum and a maximum oxygen concentration using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-013 |
| NO _x | Catalyst Bed Pressure Drop | Measure and record the pressure drop across the catalyst bed. Establish a minimum pressure drop using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-014 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Selective Catalytic Reduction (Except for Reciprocating Engines) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------|---------|------------------|
| NO _x | 7. Inlet Gas Temperature, and | Measure and record the inlet flue gas temperature to the catalyst bed. Establish a minimum and maximum temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-015 |
| NO _x | Catalyst Bed Pressure Drop | Measure and record the pressure drop across the catalyst bed. Establish a minimum pressure drop using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-016 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flue Gas Recirculation

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---|---|---------------|---------|------------------|
| NO _x | 1. Combustion Temperature/ Exhaust Gas Temperature, and | Measure and record the temperature of the combustion chamber or the exhaust gas temperature immediately downstream of the combustion chamber. Establish a minimum and maximum combustion or exhaust temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-023 |
| NO _x | Oxygen Concentration | Measure and record oxygen concentration of the exhaust gas using a portable analyzer. Establish a minimum and maximum oxygen concentration using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method-Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-024 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flue Gas Recirculation (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---|---|---------------|---------|------------------|
| NO _x | 2. Combustion Temperature/ Exhaust Gas Temperature, and | Measure and record the temperature of the combustion chamber or the exhaust gas temperature immediately downstream of the combustion chamber. Establish a minimum and maximum combustion or exhaust temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-025 |
| NO _x | Fan Motor Current | Measure and record the fan motor current. Establish a minimum current using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-026 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flue Gas Recirculation (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---|---|---------------|---------|------------------|
| NO _x | 3. Combustion Temperature/ Exhaust Gas Temperature, and | Measure and record the temperature of the combustion chamber or the exhaust gas temperature immediately downstream of the combustion chamber. Establish a minimum and maximum combustion or exhaust temperature using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-027 |
| NO _x | Recirculated Flue Gas Flow Rate | Measure and record the recirculated flue gas flow rate. Establish a minimum flow rate using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-028 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flue Gas Recirculation (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Minimum Freq. | Average | PM Option Number |
|-----------------|------------------------------|---|---------------|---------|------------------|
| NO _x | 4. Oxygen Concentration, and | Measure and record oxygen concentration of the exhaust gas using a portable analyzer. Establish a minimum and maximum oxygen concentration using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method-Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-029 |
| NO _x | Fan Motor Current | Measure and record the fan motor current. Establish a minimum current using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-030 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flue Gas Recirculation (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---------------------------------|---|---------------|---------|------------------|
| NO _x | 5. Oxygen Concentration, and | Measure and record oxygen concentration of the exhaust gas using a portable analyzer. Establish a minimum and maximum oxygen concentration using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method-Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). Any monitoring data below the minimum limit or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-031 |
| NO _x | Recirculated Flue Gas Flow Rate | Measure and record the recirculated flue gas flow rate. Establish a minimum flow rate using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-032 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Control Device: Steam/water Injection Systems

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------------------|---|---------------|---------|------------------|
| NO _x | 1. Steam or water flow rate, and | Measure and record the steam or water flow rate. Establish a minimum steam or water to fuel ratio using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-033 |
| NO _x | Fuel Consumption | Measure and record fuel consumption. Establish a minimum steam or water to fuel ratio using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-034 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Acid Gas Only Flare

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|---|------------------|---------|------------------|
| Opacity | 1. Visible emissions | <p>Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor.</p> <p>If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.</p> | once per quarter | n/a* | PMG-OG-P-001 |

Combustion Units Fueled by Pipeline Natural Gas, Liquid Petroleum Gas, or Field Gas W/ < 10GR Total Sulfur Per 100 Cubic Feet

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---------------------|---|--|---------|------------------|
| PM | 1. Fuel Type | <p>Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, for a period greater than or equal to 24 consecutive hours, it shall be considered and reported as a deviation or the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are observed. Any time an alternate fuel is fired for a period of greater than 7 consecutive days, visible emissions observations will be conducted no less than once per week. Documentation of all observations shall be maintained. If visible emissions are present during the firing of an alternate fuel, the permit holder shall either list this occurrence as a deviation or the permit holder may determine the opacity consistent with Test Method 9</p> <p>Any opacity readings that are above the opacity limit from the underlying applicable requirement shall be reported as a deviation.</p> | update reports annually or at any time an alternate fuel is used | n/a | PMG-OG-P-029 |
| PM | 2. Fuel Type | Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation. | once per year | n/a | PMG-OG-P-030 |

All Emission Units (Except Flare and Carbon Adsorption System)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|---------------------------------|----------------------------|--|---------------------|----------------|-------------------------|
| Volatile Organic Compound (VOC) | 1. VOC Concentration | Measure and record the VOC concentration using a portable analyzer to monitor VOC concentration at the outlet of the control device. The monitoring device shall meet the requirements of 40 CFR Part 60, Appendix A-7, Method 21, Sections 2.0, and 3.0 (Determination of Volatile Organic Compound Leaks). However, the words "leak definition" in Method 21 shall be the outlet concentration. Establish a maximum VOC concentration using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per month | n/a* | PMG-OG-V-001 |
| VOC | 2. VOC Concentration | Measure and record the concentration of organic compounds in the exhaust stream with a CEMS. The CEMS shall be operated in accordance with 40 CFR § 60.13 and the Performance Specifications of 40 CFR Part 60, Appendix B. Establish a maximum VOC concentration using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | four times per hour | hourly | PMG-OG-V-002 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Vapor Collection System

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------------|--|-------------------|----------------|-------------------------|
| VOC | 1. VOC Concentration, and | Measure and record fugitive emissions from the vapor collection system in accordance with 40 CFR Part 60, Appendix A-7, Method 21. | once per year | n/a | PMG-OG-V-058 |
| VOC | Visual Inspection | Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions | once per year | n/a | PMG-OG-V-059 |

Units with a Control Device: Flare

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---------------------|---|---------------|---------|------------------|
| VOC | 1. Pilot Flame | Measure and record the presence of the pilot flame or maintain records of alarm events and duration of alarm events. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame or using an alarm that uses a thermocouple or other equivalent device to detect the absence of a flame. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data which indicates the lack of a pilot flame shall be considered and reported as a deviation. | once per hour | n/a | PMG-OG-V-003 |

Units with a Control Device: Flare (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|---|--------------|---------|------------------|
| VOC | 2. Visible Emissions | <p>Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor.</p> <p>If visible emissions are observed the permit holder shall either report a deviation or determine visible emissions consistent with Test Method 22 or Test Method 9.</p> | once per day | n/a | PMG-OG-V-004 |

Units with a Control Device: Flare (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|-------------------------|---|---------------|---------|------------------|
| VOC | 3. Visible Emissions | <p>Visible emissions observations shall be made and recorded in the flare operation log. A daily notation in the flare operation log shall include the time of day and whether or not the flare had visible emissions. For flares operated less frequently than daily, the observation shall be made for each operation. The flare operator shall record at least 98 percent of these required observations. To properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes.</p> <p>If visible emissions are observed, the permit holder shall either report a deviation or determine visible emissions consistent with Test Method 22 or Test Method 9.</p> | once per day | n/a | PMG-OG-V-053 |
| VOC | 4. Inlet Flow Rate, and | <p>Measure and record the inlet flow rate. Establish a maximum inlet flow rate using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation.</p> | once per week | n/a* | PMG-OG-V-005 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flare (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---------------------|---|---------------|---------|------------------|
| VOC | Net Heating Value | Calculate and record the net heating value of the gas being combusted using the procedures and specifications of 40 CFR § 60.18(f)(3) (General Control Device and Work Practice Requirements). The sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. The minimum net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) for steam assisted or air assisted flares. The minimum net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) for nonassisted flares. The minimum net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf) for steam-assisted and nonassisted flares designed for and operated with an exit velocity equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec). Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-006 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Thermal Incinerator (Direct Flame Incinerator/Regenerative Thermal Oxidizer)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---|---|-------------------|----------------|-------------------------|
| VOC | 1. Combustion Temperature/ Exhaust Gas Temperature | Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. Establish a minimum combustion temperature using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-007 |

If the vapor combustor has been initially tested as a flare and not as a thermal incinerator, then the correct index numbers are contained in units with a control device flare.

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Vapor Combustor

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---|---|---------------|---------|------------------|
| VOC | 1. Combustion Temperature/ Exhaust Gas Temperature | Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. Establish a minimum combustion temperature using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-008 |

If the vapor combustor has been initially tested as a flare and not as a thermal incinerator, then the correct index numbers are contained in units with a control device flare.

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Catalytic Incinerator

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|--|--|---------------|---------|------------------|
| VOC | 1. Catalyst Bed Inlet and Outlet Gas Temperature | Measure and record the catalyst bed temperature across the inlet to and exit of the catalyst bed. Establish a minimum temperature difference across the inlet and outlet of the catalyst bed using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-009 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Steam Generating Unit (Boiler/Process Heater) Used as VOC Control

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---|--|---------------|---------|------------------|
| VOC | 1. Combustion Temperature/ Exhaust Gas Temperature | Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber into which the VOC is introduced. Establish a minimum combustion temperature using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-010 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Carbon Adsorption System (Regenerative)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|--|---------------------|---------|------------------|
| VOC | 1. VOC Concentration | Measure and record the concentration of organic compounds in the exhaust stream with a CEMS. The CEMS shall be operated in accordance with 40 CFR § 60.13 and the Performance Specifications of 40 CFR Part 60, Appendix B. Establish a maximum VOC concentration using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | four times per hour | hourly | PMG-OG-V-013 |

Units with a Control Device: Carbon Adsorption System (Regenerative) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|--|---------------|---------|------------------|
| VOC | 2. VOC Concentration | Use a portable analyzer to monitor exhaust gas VOC concentration at the outlet of the carbon adsorption system. The monitoring device shall be calibrated, operated, and maintained in accordance with the manufacturer's specifications or other written procedures that provide an adequate assurance that the device is calibrated, operated, and maintained accurately. The monitoring device shall meet the requirements of 40 CFR Part 60, Appendix A-7, Method 21, Sections 2.0, and 3.0. However, the words "leak definition" in Method 21 shall be the outlet concentration. The calibration gas shall either be representative of the compounds to be measured or shall be methane and shall be at a concentration associated with 125 percent of the expected organic compound concentration level for the carbon adsorber outlet vent. The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The maximum reading during that period shall be used as the measurement. A maximum VOC concentration shall be established using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-014 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Carbon Adsorption System (Regenerative) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---|--|---------------|---------|------------------|
| VOC | 3. Total Regeneration Stream Mass Flow, and | Measure and record the total regeneration stream mass flow during a regeneration cycle. Establish a minimum regeneration stream mass flow using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-015 |
| VOC | Carbon Bed Temperature | Measure and record the carbon bed temperature for the duration of the steaming cycle and to measure the actual bed temperature after regeneration and within 15 minutes of the completing the cooling cycle during a regeneration cycle. Establish a maximum temperature of the carbon bed after regeneration [and after completion of any cooling cycle(s)] using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-016 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Carbon Adsorption System (Regenerative) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---|---|---------------|---------|------------------|
| VOC | 4. Total Regeneration Stream Mass Flow, and | Measure and record the total regeneration stream mass flow during a regeneration cycle. Establish a minimum regeneration stream mass flow using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-054 |
| VOC | Carbon Bed Pressure | Measure and record the carbon bed pressure for the duration of the vacuum cycle during a regeneration cycle. Establish a minimum carbon bed pressure using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-055 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Carbon Adsorption System (Regenerative) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---|--|---------------|---------|------------------|
| VOC | 5. Total Regeneration Stream Volumetric Flow, and | Measure and record the total regeneration stream volumetric flow during a regeneration cycle. Establish a minimum regeneration stream volumetric flow using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-017 |
| VOC | Carbon Bed Temperature | Measure and record the carbon bed temperature for the duration of the steaming cycle and to measure the actual bed temperature after regeneration and within 15 minutes of the completing the cooling cycle during a regeneration cycle. Establish a maximum temperature of the carbon bed after regeneration [and after completion of any cooling cycle(s)] using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-018 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Carbon Adsorption System (Regenerative) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---|---|---------------|---------|------------------|
| VOC | 6. Total Regeneration Stream Volumetric Flow, and | Measure and record the total regeneration stream volumetric flow during a regeneration cycle. Establish a minimum regeneration stream volumetric flow using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-056 |
| VOC | Carbon Bed Pressure | Measure and record the carbon bed pressure for the duration of the vacuum cycle during a regeneration cycle. Establish a minimum carbon bed pressure using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-057 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Carbon Adsorption System (Non-Regenerative)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|--------------------------------|---|--|---------|------------------|
| VOC | 1. Carbon Replacement Interval | Monitor and record the replacement time interval of the carbon canister(s), as determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system. Establish a maximum carbon replacement interval using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. Any data, collected for a period which exceeds the maximum carbon replacement interval shall be considered and reported as a deviation. | at each replacement of a carbon canister | n/a | PMG-OG-V-019 |

Units with a Control Device: Carbon Adsorption System (Non-Regenerative) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|--|---------------|---------|------------------|
| VOC | 2. VOC Concentration | Measure and record the VOC concentration using a portable analyzer to monitor VOC concentration at the outlet of the first or second canister, but before the inlet to the second, third, or final polishing canister of the carbon adsorption system, as appropriate. The monitoring device shall meet the requirements of 40 CFR Part 60, Appendix A-7, Method 21, Sections 2.0, and 3.0. However, the words "leak definition" in Method 21 shall be the outlet concentration. The probe inlet of the monitoring device shall be placed at approximately the center of the carbon adsorber outlet vent. The probe shall be held there for at least 5 minutes during which flow into the carbon adsorber is expected to occur. The monitoring instrumentation shall be maintained and operated in accordance with manufacturer's specifications or other written procedures. Establish a maximum VOC concentration and that the carbon adsorption system will operate without breakthrough for more than two weeks using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. If the maximum reading after the outlet of the first, second, third canister (but not the final canister in the series), is above the maximum limit, that canister shall be replaced, and the event recorded before the next VOC reading is taken. If the canister is not replaced and the event not recorded, it shall be considered and reported as a deviation. If the VOC concentration from the final canister is above the maximum limit it shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-020 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Carbon Adsorption System (Non-Regenerative) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|--|---------------------|---------|------------------|
| VOC | 3. VOC Concentration | Measure and record the concentration of organic compounds in the exhaust stream with a CEMS. The CEMS shall be operated in accordance with 40 CFR § 60.13 and the Performance Specifications of 40 CFR Part 60, Appendix B. Establish a maximum VOC concentration using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | four times per hour | hourly | PMG-OG-V-021 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Condenser System

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------------|---|---------------|---------|------------------|
| VOC | 1. Exhaust Gas Temperature | Measure and record the exhaust gas temperature at the outlet to the condenser system. Establish a maximum exhaust gas temperature using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-V-022 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Passive Control Device (VOC/Water Separator with Enclosed Compartment)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|---|---------------------|---------|------------------|
| VOC | 1. VOC Concentration | <p>Measure and record the VOC concentration using a portable analyzer to monitor VOC concentration around the immediate area of the compartment in accordance with 40 CFR Part 60, Appendix A-7, Method 21. Each potential leak interface (a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include but are not limited to: the interface of the cover and its foundation mounting, the periphery of any opening on the cover and its associated closure device, and the sealing seat interface on a spring-loaded pressure relief valve. The owner or operator may choose to adjust the detection instrument readings for the background organic concentration level. For a potential leak interface other than a seal around a shaft that passes through a cover opening, the maximum deviation limit shall be 500 parts per million by volume (ppmv). For a seal around a shaft that passes through a cover opening, the maximum deviation limit shall be 10,000 ppmv.</p> <p>The monitoring instrumentation shall be maintained and operated in accordance with manufacturer's specifications or other written procedures.</p> <p>Any monitoring data greater than the maximum VOC limit indicated in the Deviation Limit above shall be considered and reported as a deviation as required by 30 TAC § 122.145(2) (Reporting Terms and Conditions).</p> | four times per year | n/a* | PMG-OG-V-049 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Passive Control Device (VOC/Water Separator with Enclosed Compartment) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---------------------------|--|---------------|---------|------------------|
| VOC | 2. VOC Concentration, and | <p>Measure and record the VOC concentration using a portable analyzer to monitor VOC concentration around the immediate area of the compartment in accordance with 40 CFR Part 60, Appendix A-7, Method 21. Each potential leak interface (a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include but are not limited to: the interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure relief valve. The owner or operator may choose to adjust the detection instrument readings for the background organic concentration level. For a potential leak interface other than a seal around a shaft that passes through a cover opening, the maximum deviation limit shall be 500 ppmv. For a seal around a shaft that passes through a cover opening, the maximum deviation limit shall be 10,000 ppmv.</p> <p>The monitoring instrumentation shall be maintained and operated in accordance with manufacturer's specifications or other written procedures.</p> <p>Any monitoring data greater than the maximum VOC limit indicated in the Deviation Limit above shall be considered and reported as a deviation as required by 30 TAC § 122.145(2).</p> | once per year | n/a* | PMG-OG-V-050 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Passive Control Device (VOC/Water Separator with Enclosed Compartment) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|---------------------|--|----------------|---------|------------------|
| VOC | Visual Inspection | <p>The oil-water separator and its closure devices shall be visually inspected by the owner operator to check for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the separator wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.</p> <p>Any monitoring data that indicates a gap or crack in a sealed opening shall be considered and reported as a deviation as required by 30 TAC § 122.145(2).</p> | once per month | n/a | PMG-OG-V-051 |

Units without a Control Device (Cold Solvent Cleaners)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|----------------------|--|----------------|---------|------------------|
| VOC | 1. Visual Inspection | Inspect equipment and record data monthly to ensure compliance with any applicable requirements in 30 TAC § 115.412(1)(A)-(F) (Control Requirements). Any monitoring data which indicates that the cold cleaner is not in compliance with the applicable requirements of 30 TAC § 115.412(1)(A)-(F) shall be considered and reported as a deviation. | once per month | n/a | PMG-OG-V-052 |

All Emission Units

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------------------|---------------------|--|---------------------|----------|------------------|
| Carbon Monoxide (CO) | 1. CO Concentration | Measure and record the CO concentration using a portable analyzer. Establish a maximum CO concentration using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method -Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). Any monitoring data below the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-C-001 |
| CO | 2. CO Concentration | Measure and record the concentration of CO in the exhaust stream of the control device with a CEMS. The CEMS shall be operated in accordance with the monitoring requirements of 40 CFR § 60.13 and the Performance Specifications of 40 CFR Part 60, Appendix B. Establish a maximum CO concentration the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | four times per hour | one hour | PMG-OG-C-002 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

All Emission Units (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------------------------|----------------------------------|---|---------------------|---------|------------------|
| CO | 3. CO Concentration | Measure and record the CO concentration using a portable analyzer. Establish a maximum carbon monoxide concentration using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method -Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). Any monitoring data below the maximum limit shall be considered and reported as a deviation. | once per month | n/a* | PMG-OG-C-003 |
| Sulfur Dioxide (SO ₂) | 1. SO ₂ Concentration | Measure and record the concentration of SO ₂ in the exhaust stream of the control device with a CEMS. In addition, measure and record the oxygen or carbon dioxide content of the flue gas with a CEMS. The CEMS shall be operated in accordance with 40 CFR § 60.13 and the Performance Specifications of 40 CFR Part 60, Appendix B. The maximum SO ₂ concentration (specified in units of the underlying applicable requirement) is the corresponding SO ₂ limit associated with the emission limitation in the underlying applicable requirement. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | four times per hour | hourly | PMG-OG-S-001 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

*All Combustion Units Using Pipeline Quality Natural Gas, Commercial Propane, or Fuel Oil.
Not for Combustion Units Burning Refinery Gas or Solid Fuel.*

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------------|---|--|----------------|-------------------------|
| SO ₂ | 1. Sulfur Content of Fuel | Measure and record the sulfur content of the fuel. Establish a maximum sulfur concentration using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | four times per year and within 24 hours of any fuel change | n/a* | PMG-OG-S-002 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: SO₂ Scrubber

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--------------------------|---|---------------|---------|------------------|
| SO ₂ | 1. Pressure Drop; and | Measure and record the pressure drop. Establish a minimum and maximum pressure drop using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-003 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: SO₂ Scrubber (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---------------------|--|---------------|---------|------------------|
| SO ₂ | Liquid Flow Rate | Measure and record the liquid flow rate. Establish a minimum liquid flow rate using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-004 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: SO₂ Scrubber (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--------------------------|---|---------------|---------|------------------|
| SO ₂ | 2. Pressure Drop; and | Measure and record the pressure drop. Establish a minimum and maximum pressure drop using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum or above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-005 |
| SO ₂ | Liquid Supply Pressure | Measure and record the liquid supply pressure. Establish a minimum liquid supply pressure using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-006 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: SO₂ Scrubber (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---------------------|--|---------------|---------|------------------|
| SO ₂ | 3. pH, and | Measure and record the pH of the scrubber liquid. Establish a minimum pH using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-007 |
| SO ₂ | Liquid Flow Rate | Measure and record the liquid flow rate. Establish a minimum liquid flow rate using the most recent performance test data, the manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-008 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: SO₂ Scrubber (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|------------------------|---|---------------|---------|------------------|
| SO ₂ | 4. pH, and | Measure and record the pH of the scrubber liquid. Establish a minimum pH using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-009 |
| SO ₂ | Liquid Supply Pressure | Measure and record the liquid supply pressure. Establish a minimum liquid supply pressure using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-010 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: SO₂ Scrubber (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|------------------------------------|--|---------------|---------|------------------|
| SO ₂ | 5. pH, and | Measure and record the pH of the scrubber liquid. Establish a minimum pH using the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-011 |
| SO ₂ | Liquid Flow Rate and Gas Flow Rate | Measure and record the liquid flow rate and gas flow rate. Establish a minimum liquid-to-gas ratio using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be calibrated, maintained, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-012 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Incinerator (Sulfur Recovery Unit) (SRU)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---|---|---------------------|---------|------------------|
| SO ₂ | 1. Combustion Temperature/ Exhaust Gas Temperature, and | Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. The minimum combustion temperature is 1200 degrees Fahrenheit (649 Celsius). The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | four times per hour | daily | PMG-OG-S-013 |
| SO ₂ | SO ₂ Mass Emissions in Pounds per Hour | Use a CEMS that measures and records the mass emissions rate of SO ₂ expressed in pounds per hour in the exhaust stream of the control device. The CEMS shall be operated in accordance with the monitoring requirements of 40 CFR § 60.13 and the Performance Specifications of 40 CFR Part 60, Appendix B. The maximum SO _x mass emission rate is the applicable or corresponding emission limit. Any monitoring data above the limit from the underlying applicable requirement shall be considered and reported as a deviation. | four times per hour | hourly | PMG-OG-S-014 |

Units with a Control Device: Incinerator (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--|--|---------------|---------|------------------|
| SO ₂ | 2. H ₂ S Inlet Concentration, and | <p>Measure and record the inlet concentration of H₂S to determine the minimum sulfur reduction efficiency. Establish the inlet concentration of H₂S using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The inlet concentration shall be used to compute the sulfur feed rate as follows:</p> <p>Sulfur Feed Rate = $3.707 \times 10^{-7}(\text{Inlet Flow Rate})(\text{H}_2\text{S Concentration})$ Sulfur Feed Rate = Long tons/day; Inlet Flow Rate = Flow rate of acid gas feed, dry standard cubic foot (dscf)/day; H₂S Concentration = H₂S inlet concentration as measured; 3.707×10^{-7} = Conversion constant.</p> <p>The sulfur reduction efficiency shall be computed using the sulfur feed rate and the sulfur accumulation. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum sulfur reduction efficiency shall be considered and reported as a deviation.</p> | once per week | n/a* | PMG-OG-S-015 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Incinerator (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------|---|---------------|---------|------------------|
| SO ₂ | Inlet Flow Rate, and | <p>Measure and record the inlet flow rate to determine the minimum sulfur reduction efficiency. Establish the inlet flow rate using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The inlet flow rate shall be used to compute the sulfur feed rate as follows:</p> <p>Sulfur Feed Rate = $3.707 \times 10^{-7} (\text{Inlet Flow Rate})(\text{H}_2\text{S Concentration})$ Sulfur Feed Rate = Long tons/day; Inlet Flow Rate = Flow rate of acid gas feed, dscf/day; H₂S Concentration = H₂S inlet concentration as measured; 3.707×10^{-7} = Conversion constant.</p> <p>The sulfur reduction efficiency shall be computed using the sulfur feed rate and the sulfur accumulation. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum sulfur reduction efficiency shall be considered and reported as a deviation.</p> | once per week | n/a* | PMG-OG-S-016 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Incinerator (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--------------------------|--|---------------|---------|------------------|
| SO ₂ | Sulfur Accumulation, and | <p>Measure and record the accumulation of sulfur product to determine the minimum sulfur reduction efficiency. Establish the accumulation of sulfur product by measuring and recording sulfur production or by measuring and recording the liquid level in the storage tanks.</p> <p>The sulfur reduction efficiency shall be computed using the sulfur feed rate and the sulfur accumulation as follows:</p> <p>Reduction Efficiency = (100)(Sulfur Accumulation)/(Sulfur Feed Rate) Reduction Efficiency = Percent, %; Sulfur Accumulation = Total Sulfur, long tons, accumulated over 24 hours (day); Sulfur Feed rate = Long tons/day.</p> <p>The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum sulfur reduction efficiency shall be considered and reported as a deviation.</p> | once per week | n/a* | PMG-OG-S-017 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Incinerator (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--|---|---------------|---------|------------------|
| SO ₂ | Combustion Temperature/ Exhaust Gas Temperature | Measure and record the combustion temperature in the combustion chamber or immediately downstream of the combustion chamber. The minimum combustion temperature is 1200 degrees Fahrenheit (649 degrees Celsius). The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-S-018 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flare (SRU)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--|--|---------------|---------|------------------|
| SO ₂ | 1. H ₂ S Inlet Concentration, and | <p>Measure and record the inlet concentration of H₂S to determine the minimum sulfur reduction efficiency. Establish the inlet concentration of H₂S using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The inlet concentration shall be used to compute the sulfur feed rate as follows:</p> <p>Sulfur Feed Rate = $3.707 \times 10^{-7} (\text{Inlet Flow Rate}) (\text{H}_2\text{S Concentration})$ Sulfur Feed Rate = Long tons/day; Inlet Flow Rate = Flow rate of acid gas feed, dscf/day; H₂S Concentration = H₂S inlet concentration as measured; 3.707×10^{-7} = Conversion constant.</p> <p>The sulfur reduction efficiency shall be computed using the sulfur feed rate and the sulfur accumulation. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum sulfur reduction efficiency shall be considered and reported as a deviation.</p> | once per week | n/a* | PMG-OG-S-019 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flare (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------|---|---------------|---------|------------------|
| SO ₂ | Inlet Flow Rate, and | <p>Measure and record the inlet flow rate to determine the minimum sulfur reduction efficiency. Establish the inlet flow rate using the most recent performance test, manufacturer's recommendations, engineering calculations, and/or historical data. The inlet flow rate shall be used to compute the sulfur feed rate as follows:</p> <p>Sulfur Feed Rate = $3.707 \times 10^{-7} (\text{Inlet Flow Rate})(\text{H}_2\text{S Concentration})$ Sulfur Feed Rate = Long tons/day; Inlet Flow Rate = Flow rate of acid gas feed, dscf/day; H₂S Concentration = H₂S inlet concentration as measured; 3.707×10^{-7} = Conversion constant.</p> <p>The sulfur reduction efficiency shall be computed using the sulfur feed rate and the sulfur accumulation. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum sulfur reduction efficiency shall be considered and reported as a deviation.</p> | once per week | n/a* | PMG-OG-S-020 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flare (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--------------------------|---|---------------|---------|------------------|
| SO ₂ | Sulfur Accumulation, and | <p>Measure and record the accumulation of sulfur product to determine the minimum sulfur reduction efficiency. Establish the accumulation of sulfur product by measuring and recording sulfur production or by measuring and recording the liquid level in the storage tanks.</p> <p>The sulfur reduction efficiency shall be computed using the sulfur feed rate and the sulfur accumulation as follows:</p> <p>Reduction Efficiency = (100)(Sulfur Accumulation)/(Sulfur Feed Rate) Reduction Efficiency = %; Sulfur Accumulation = Total Sulfur, long tons, accumulated over 24 hours (day); Sulfur Feed rate = Long tons/day.</p> <p>The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data below the minimum sulfur reduction efficiency shall be considered and reported as a deviation.</p> | once per week | n/a* | PMG-OG-S-021 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Flare (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---------------------|---|---------------|---------|------------------|
| SO ₂ | Pilot Flame | Measure and record the presence of the pilot flame. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data which indicates the lack of a pilot flame shall be considered and reported as a deviation. | once per hour | n/a | PMG-OG-S-022 |

Units with a Control Device: Flare (SRU) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|------------------------------|---|---------------|---------|------------------|
| SO ₂ | 2. Automatic Ignition System | Measure and record the presence of the pilot flame. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data which indicates the lack of a pilot flame shall be considered and reported as a deviation. | once per hour | n/a | PMG-OG-S-023 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Control Device: Selective Non-Catalytic Reductions (SNCR)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|----------|--------------------------|--|---------------------|---------|------------------|
| Ammonia | 1. Ammonia Concentration | Measure and record the ammonia concentration in exhaust gas with a portable analyzer. The ammonia concentration limit is the maximum ammonia concentration limit in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per month | n/a* | PMG-OG-A-001 |
| Ammonia | 2. Ammonia Concentration | Use a CEMS that measures and records the concentration of ammonia in the exhaust stream. The CEMS shall be operated in accordance with 40 CFR § 60.13 and the Performance Specifications of 40 CFR Part 60, Appendix B. The ammonia concentration limit is the maximum ammonia concentration limit in the underlying applicable requirement. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | four times per hour | hourly | PMG-OG-A-002 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Stationary Gas Turbines with a Control Device Other Than Water or Steam Injection

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---------------------------------------|---|---------------------|----------------|-------------------------|
| NO _x | 1. NO _x Concentration | Monitor and record the NO _x concentration in the exhaust stream using a portable analyzer. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method - Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). NO _x emissions shall be corrected/calculated in units of the underlying applicable emission limitation (grams per horsepower hour, pounds per MMBtu, pounds per hour). | once per month | n/a* | PMG-OG-N-061 |
| NO _x | 2. NO _x Concentration, and | Monitor and record the NO _x concentration in the exhaust stream using a portable analyzer. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method - Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). NO _x emissions shall be corrected/calculated in units of the underlying applicable emission limitation (grams per horsepower hour, pounds per MMBtu, pounds per hour). | four times per year | n/a* | PMG-OG-N-062 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Stationary Gas Turbines with a Control Device Other Than Water or Steam Injection (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--------------------------|---|---------------|---------|------------------|
| NO _x | Fuel Consumption | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-063 |
| NO _x | 3. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-064 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Stationary Gas Turbines with a Control Device Other Than Water or Steam Injection (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------|---------|------------------|
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas on an annual calendar basis using the method specified in 30 TAC § 117.8000(b)-(d). The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per year | n/a* | PMG-OG-N-065 |
| NO _x | 4. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-066 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Stationary Gas Turbines with a Control Device Other Than Water or Steam Injection (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|---|----------------------|---------|------------------|
| NO _x | NO _x Concentration | Measure and record the NO _x concentration of the exhaust gas on a biennial calendar basis using the method specified in 30 TAC § 117.8000(b)-(d). The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once every two years | n/a* | PMG-OG-N-067 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Stationary Gas Turbines with a Control Device Other Than Water or Steam Injection(continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|---------------------------------------|--|---------------------|---------|------------------|
| NO _x | 5. NO _x Concentration, and | Monitor and record the NO _x concentration in the exhaust stream each quarter that the emission unit is operational using a portable analyzer. The portable analyzer shall be operated in accordance with the EPA's, Office of Air Quality Planning & Standards, Emission Measurement Center Conditional Test Method - Determination of Oxygen, Carbon Monoxide, and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) [CTM-034] (September 8, 1999). NO _x emissions shall be corrected/calculated in units of the underlying applicable emission limitation (grams per horsepower hour, pounds per MMBtu, pounds per hour). | four times per year | n/a* | PMG-OG-N-068 |
| NO _x | Fuel Consumption | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-069 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Stationary Gas Turbines with a Control Device Other Than Water or Steam Injection(continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|-------------------------------|--|---------------------------------|---------|------------------|
| NO _x | 6. Fuel Consumption, and | Measure and record fuel consumption. Establish a maximum fuel consumption limit using the most appropriate of the following: the most recent performance test data, manufacturer's recommendations, engineering calculations, and/or historical data. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | once per week | n/a* | PMG-OG-N-070 |
| NO _x | NO _x concentration | Measure and record the NO _x concentration of the exhaust gas every 15,000 hours of operation using the method specified in 30 TAC § 117.8000(b)-(d). The maximum NO _x concentration (specified in units of the underlying applicable requirement) is the corresponding NO _x limit associated with the emission limitation in the underlying applicable requirement. The monitoring instrumentation shall be maintained, calibrated, and operated in accordance with the manufacturer's specifications or other written procedures. Any monitoring data above the maximum limit shall be considered and reported as a deviation. | every 15,000 hours of operation | n/a* | PMG-OG-N-071 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Passive Control Device (Submerged Fill Pipe) For Storage Tanks (Not Transport Vehicle Loading)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|----------------------------------|---|--|----------------|-------------------------|
| VOC | 1. Liquid Level, and | Regardless of the location of the fill pipe, the fill pipe must be submerged at all times. Establish the depth of the highest point of the fill pipe. Soundings, gauging, liquid level gauges including sight gauges, or the use of an infrared (IR) camera shall be made and recorded to determine the depth of the liquid. This determination will be compared to the depth of the fill pipe. It shall be considered and reported as a deviation any time the liquid level falls below the fill pipe level. | every time liquid is unloaded to another storage vessel or by pipeline or at the end of each unloading operation | n/a* | PMG-OG-V-043 |
| VOC | Structural Integrity of the Pipe | Inspect to determine the structural integrity of the fill pipe and record each time before the storage vessel is filled. If the structural integrity of the fill pipe is in question, repairs shall be made before the storage vessel is refilled. It shall be considered and reported as a deviation if the repairs are not completed prior to refilling the storage vessel. | every time the tank is emptied and degassed | n/a* | PMG-OG-V-044 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Passive Control Device (Submerged Fill Pipe) For Storage Tanks (Not Transport Vehicle Loading) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Minimum Freq. | Average | PM Option Number |
|-----------------|----------------------------------|---|---|----------------|-------------------------|
| VOC | 2. Liquid Level, and | Regardless of the location of the fill pipe, the fill pipe must be submerged at all times. Establish the depth of the highest point of the fill pipe. Monitor and record the depth of the liquid using an automated/remote sounding device or liquid level sensing alarm/monitor or gauging or by the use of an infrared camera. It shall be considered and reported as a deviation any time the liquid level falls below the fill pipe level. | once per day | n/a* | PMG-OG-V-045 |
| VOC | Structural Integrity of the Pipe | Inspect to determine the structural integrity of the fill pipe and record each time before the storage vessel is filled. If the structural integrity of the fill pipe is in question, repairs shall be made before the storage vessel is refilled. It shall be considered and reported as a deviation if the repairs are not completed prior to refilling the storage vessel. | every time the tank is emptied and degassed | n/a* | PMG-OG-V-046 |
| VOC | 3. Liquid Level, and | Regardless of the location of the fill pipe, the fill pipe must be submerged at all times. Establish the volume of liquid at the depth of the highest point of the fill pipe. Record the volume of liquid loaded and unloaded so that the amount of liquid being stored is known. It shall be considered and reported as a deviation anytime the liquid volume falls below the amount of liquid volume that is needed to keep the discharge of the fill pipe submerged. | at the end of each loading or unloading operation | n/a* | PMG-OG-V-047 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Passive Control Device (Submerged Fill Pipe) For Storage Tanks (Not Transport Vehicle Loading) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Minimum Freq. | Average | PM Option Number |
|----------|----------------------------------|---|---|---------|------------------|
| VOC | Structural Integrity of the Pipe | Inspect to determine the structural integrity of the fill pipe and record each time before the storage vessel is filled. If the structural integrity of the fill pipe is in question, repairs shall be made before the storage vessel is refilled. It shall be considered and reported as a deviation if the repairs are not completed prior to refilling the storage vessel. | every time the tank is emptied and degassed | n/a* | PMG-OG-V-048 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.

Units with a Passive Control Device (Submerged Fill Pipe) For Storage Tanks (Not Transport Vehicle Loading) (continued)

| Emission | Indicator Monitored | Periodic Monitoring Requirement | Min. Freq. | Average | PM Option Number |
|-----------------|--|---|---|----------------|-------------------------|
| VOC | 4. Record of Tank Construction Specifications, and | Keep a record of tank construction specifications (e.g. engineering drawings) that show a fill pipe that extends from the top of a tank to have a maximum clearance of six inches (15.2 centimeters) from the bottom or, when the tank is loaded from the side, a discharge opening entirely submerged when the pipe used to withdraw liquid from the tank can no longer withdraw liquid in normal operation. | n/a | n/a* | PMG-OG-V-060 |
| VOC | Structural Integrity of the Pipe | Inspect to determine the structural integrity of the fill pipe and record each time before the storage vessel is filled to ensure that it continues to meet the specifications in the above requirement. If the structural integrity of the fill pipe is in question, repairs shall be made before the storage vessel is refilled. It shall be considered and reported as a deviation if the repairs are not completed prior to refilling the storage vessel. | every time the tank is emptied and degassed | n/a* | PMG-OG-V-061 |

*The permit holder may elect to collect monitoring data on a more frequent basis than is required by the Periodic Monitoring guidance option and calculate the average as specified by the minimum frequency, for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis and shall not be collected and used in particular instances to avoid reporting deviations.