

Table 1
(OAR 340-228-0631(1))

Missing Data Procedures for Hg CEMS

| Trigger conditions | | Calculation routines | |
|-------------------------------------|--|---|--------------------------------------|
| Monitor data availability (percent) | Duration (N) of CEMS outage (hours) ¹ | Method | Look back period |
| 90 or more | $N \leq 24$ | Average | hour before/hour after |
| | $N > 24$ | Greater of average; or 90 th percentile | hour before/hour after 720 hours* |
| ≥ 80 but < 90 | $N \leq 8$ | Average | hour before/hour after |
| | $N > 8$ | Greater of average; or 90 th percentile | hour before/hour after 720 hours* |
| ≥ 70 but < 80 | $N > 0$ | Maximum value** | 720 hours* |
| Below 70 | $N > 0$ | Maximum potential concentration*** or % | None |

¹ During unit operating hours.

*Quality-assured, monitor operating hours, during unit operation. Use data from no earlier than 3 years prior to the missing data period.

**Where a unit with add-on Hg emission controls can demonstrate that the controls are operating properly during the missing data period, as provided in 40 CFR 75.34, the unit may use the maximum controlled concentration from the previous 720 quality-assured monitor operating hours.

*** Alternatively, where a unit with add-on Hg emission controls can demonstrate that the controls are operating properly during the missing data period, as provided in 40 CFR 75.34, the unit may report the greater of: (a) the maximum expected Hg concentration or (b) 1.25 times the maximum controlled value from the previous 720 quality-assured monitor operating hours.

Table 2
(OAR 340-228-0627(8))

Quality Assurance/Quality Control Criteria for Sorbent Trap Monitoring Systems

| QA/QC test or specification | Acceptance criteria | Frequency | Consequences if not met |
|---|--|--|--|
| Pre-test leak check..... | ≤4% of target sampling rate.. | Prior to sampling... | Sampling shall not commence until the leak check is passed. |
| Post-test leak check..... | ≤4% of average sampling rate. | After sampling..... | * |
| Ratio of stack gas flow rate to sample flow rate..... | No more than 5% of the hourly ratios (which-ever is less restrictive) may deviate from the reference ratio by more than + 25%. | Every hour throughout data collection period. | * |
| Sorbent trap section 2 breakthrough. | ≤ 5% of Section 1 Hg mass..... | Every sample..... | * |
| Paired sorbent trap agreement... | ≤10% Relative Deviation (RD) if the average concentration is > 1.0 µg/m ³ . Results are also acceptable if absolute difference between concentrations from paired traps is ≤ 0.03 µg/m ³ . | Every sample..... | Either invalidate the data from the paired traps or report the results from the trap with the higher Hg concentration. |
| Spike recovery study..... | Average recovery between 85% and 115% for each of the 3 spike concentration levels. | Prior to analyzing field samples and prior to use of new sorbent media. | Field samples shall not be analyzed until the percent recovery criteria has been met. |
| Multipoint analyzer calibration... | Each analyzer reading within ± 10% of true value and r ² ≥ 0.99. | On the day of analysis, before analyzing any samples. | Recalibrate until successful. |
| Analysis of independent calibration standard..... | Within ± 10% of true value..... | Following daily calibration, prior to analyzing field samples. | Recalibrate and repeat independent standard analysis until successful. |
| Spike recovery from section 3 of sorbent trap..... | 75–125% of spike amount..... | Every sample..... | * |
| RATA..... | RA ≤ 20.0% or mean difference ≤ 1.0 µg/dscm for low emitters. | For initial certification and annually thereafter. | Data from the system are invalidated until a RATA is passed. |
| Gas flow meter calibration..... | Calibration factor (Y) within ± 5% of average value from the initial 3-point calibration. | At three settings prior to initial use and at least quarterly at one setting thereafter. For mass flow meters, initial calibration with stack gas is required. | Recalibrate the meter at three orifice settings to determine a new value of Y. |

Table 2
(OAR 340-228-0627(8))

Quality Assurance/Quality Control Criteria for Sorbent Trap Monitoring Systems

| | | | |
|-----------------------------------|---|---|---|
| Temperature sensor calibration... | Absolute temperature measured by sensor within $\pm 1.5\%$ of a reference sensor. | Prior to initial use and at least quarterly thereafter. | Recalibrate. Sensor may not be used until specification is met. |
| Barometer calibration..... | Absolute pressure measured by instrument within ± 10 mm Hg of reading with a mercury barometer. | Prior to initial use and at least quarterly thereafter. | Recalibrate. Instrument may not be used until specification is met. |

* Note: If both traps fail to meet the acceptance criteria, the data from the pair of traps are invalidated. However, if only one of the paired traps fails to meet this particular acceptance criterion and the other sample meets all of the applicable QA criteria, the results of the valid trap may be used for reporting under this part, provided that the measured Hg concentration is multiplied by a factor of 1.111. When the data from both traps are invalidated and quality-assured data from a certified backup monitoring system, reference method, or approved alternative monitoring system are unavailable, missing data substitution must be used.

Table 3
(OAR 340-228-0635)

Codes for Method of Emissions and Flow Determination

| Code | Hourly emissions/flow measurement or estimation method |
|-------------|---|
| 1 | Certified primary emission/flow monitoring system. |
| 2 | Certified backup emission/flow monitoring system. |
| 3 | Approved alternative monitoring system. |
| 4 | Reference method: |
| | SO ₂ : Method 6C. |
| | Flow: Method 2 or its allowable alternatives under appendix A to 40 CFR part 75. |
| | NOX: Method 7E. |
| | CO ₂ or O ₂ : Method 3A. |
| 5 | For units with add-on SO ₂ and/or NOX emission controls: SO ₂ concentration or NOX emission rate estimate from preapproved parametric monitoring method. |
| 6 | Average of the hourly SO ₂ concentrations, CO ₂ concentrations, O ₂ concentrations, NOX concentrations, flow rates, moisture percentages or NOX emission rates for the hour before and the hour following a missing data period. |
| 7 | Initial missing data procedures used. Either: (a) the average of the hourly SO ₂ concentration, CO ₂ concentration, O ₂ concentration, or moisture percentage for the hour before and the hour following a missing data period; or (b) the arithmetic average of all NOX concentration, NOX emission rate, or flow rate values at the corresponding load range (or a higher load range), or at the corresponding operational bin (non-load-based units, only); or (c) the arithmetic average of all previous NOX concentration, NOX emission rate, or flow rate values (non-load-based units, only). |
| 8 | 90th percentile hourly SO ₂ concentration, CO ₂ concentration, NOX concentration, flow rate, moisture percentage, or NOX emission rate or 10th percentile hourly O ₂ concentration or moisture percentage in the applicable lookback period (moisture missing data algorithm depends on which equations are used for emissions and heat input). |
| 9 | 95th percentile hourly SO ₂ concentration, CO ₂ concentration, NOX concentration, flow rate, moisture percentage, or NOX emission rate or 5th percentile hourly O ₂ concentration or moisture percentage in the applicable lookback period (moisture missing data algorithm depends on which equations are used for emissions and heat input). |
| 10 | Maximum hourly SO ₂ concentration, CO ₂ concentration, NOX concentration, flow rate, moisture percentage, or NOX emission rate or minimum hourly O ₂ concentration or moisture percentage in the applicable lookback period (moisture missing data algorithm depends on which equations are used for emissions and heat input). |
| 11 | Average of hourly flow rates, NOX concentrations or NOX emission rates in corresponding load range, for the applicable lookback period. For non-load-based units, report either the average flow rate, NOX concentration or NOX emission rate in the applicable lookback period, or the average flow rate or NOX value at the corresponding operational bin (if operational bins are used). |
| 12 | Maximum potential concentration of SO ₂ , maximum potential concentration of CO ₂ , maximum potential concentration of NOX maximum potential flow rate, maximum potential NOX emission rate, maximum potential moisture percentage, minimum potential O ₂ concentration or minimum potential moisture percentage, as determined using 40 CFR 72.2 and section 2.1 of appendix A to 40 CFR part 75 (moisture missing data algorithm depends on which equations are used for emissions and heat input). |
| 13 | Maximum expected concentration of SO ₂ , maximum expected concentration of NOX, maximum expected Hg concentration, or maximum controlled NOX emission rate. (See 40 CFR 75.34(a)(5)). |

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Codes for Method of Emissions and Flow Determination

| | |
|----|--|
| 14 | Diluent cap value (if the cap is replacing a CO ₂ measurement, use 5.0 percent for boilers and 1.0 percent for turbines; if it is replacing an O ₂ measurement, use 14.0 percent for boilers and 19.0 percent for turbines). |
| 15 | 1.25 times the maximum hourly controlled SO ₂ concentration, Hg concentration, NOX concentration at the corresponding load or operational bin, or NOX emission rate at the corresponding load or operational bin, in the applicable lookback period (<i>See</i> 40 CFR 75.34(a)(5)). |
| 16 | SO ₂ concentration value of 2.0 ppm during hours when only “very low sulfur fuel”, as defined in 40 CFR 72.2, is combusted. |
| 17 | Like-kind replacement non-redundant backup analyzer. |
| 19 | 200 percent of the MPC; default high range value. |
| 20 | 200 percent of the full-scale range setting (full-scale exceedance of high range). |
| 21 | Negative hourly CO ₂ concentration, SO ₂ concentration, NOX concentration, percent moisture, or NOX emission rate replaced with zero. |
| 22 | Hourly average SO ₂ or NOX concentration, measured by a certified monitor at the control device inlet (units with add-on emission controls only). |
| 23 | Maximum potential SO ₂ concentration, NOX concentration, CO ₂ concentration, NOX emission rate or flow rate, or minimum potential O ₂ concentration or moisture percentage, for an hour in which flue gases are discharged through an unmonitored bypass stack. |
| 24 | Maximum expected NOX concentration, or maximum controlled NOX emission rate for an hour in which flue gases are discharged downstream of the NOX emission controls through an unmonitored bypass stack, and the add-on NOX emission controls are confirmed to be operating properly. |
| 25 | Maximum potential NOX emission rate (MER). (Use only when a NOX concentration full-scale exceedance occurs and the diluent monitor is unavailable.) |
| 26 | 1.0 mmBtu/hr substituted for Heat Input Rate for an operating hour in which the calculated Heat Input Rate is zero or negative. |
| 32 | Hourly Hg concentration determined from analysis of a single trap multiplied by a factor of 1.111 when one of the paired traps is invalidated or damaged (<i>See</i> OAR 340-228-0627(8)). |
| 33 | Hourly Hg concentration determined from the trap resulting in the higher Hg concentration when the relative deviation criterion for the paired traps is not met (<i>See</i> OAR 340-228-0627(8)). |
| 40 | Fuel specific default value (or prorated default value) used for the hour. |
| 54 | Other quality assured methodologies approved through petition. These hours are included in missing data lookback and are treated as unavailable hours for percent monitor availability calculations. |
| 55 | Other substitute data approved through petition. These hours are not included in missing data lookback and are treated as unavailable hours for percent monitor availability calculations. |