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| 1. CMS are used to identify periods of excess emissions, assess control equipment efficiency, and monitor control equipment operation.    1. **True**    2. False |
| ANSWER:  True. In addition, CMS are used to:   * Demonstrate compliance with regulations * Generate data that can be used to develop regulations * Improve emission data bases * Monitor process operating parameters * Validate emission credits * Provide public assurance of compliance |
| 1. CMS are used to measure which of the following pollutant parameters? Select all that apply. 2. **Mercury​** 3. Hydrogen Chloride 4. Stack Flow Rate 5. Particulate matter |
| ANSWER:  A, B, C, and D (among others) |
| 1. \_\_\_\_\_\_\_\_\_\_ systems condition the sample gas before analysis. 2. In-situ 3. Opacity 4. Dilution extractive 5. **Source level extractive** |
| ANSWER:  D. Source level extractive |
| 1. Opacity is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 2. **The percentage of light that is attenuated by an optical medium** 3. The percentage of light that is transmitted through an optical medium |
| ANSWER:  A. Opacity is the percentage of light that is attenuated by an optical medium. Transmittance is the percentage of light that is transmitted through an optical medium. |
| 1. Predictive emission monitoring systems (PEMS) use\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 2. The continuous measurement of selected plant parameters and plant operating conditions 3. A software-based system of mathematical models to determine the pollutant emissions 4. **Both a and b** |
| ANSWER:  C. Both A and B. PEMS refers to all the equipment that is required to predict an emission concentration or emission rate. Unlike a CEMS which uses sampling and analytical equipment to directly measure specific pollutant concentrations, a PEMS uses the continuous measurement of selected plant parameters and plant operating conditions with a software-based system of mathematical models to determine the pollutant emissions. |
| 1. A continuous emission rate monitoring system (CERMS) is used when which of the following is required? 2. Gas concentrations 3. **Mass emission rate** 4. Both a and b |
| ANSWER:  B. A CERMS is needed to calculate the mass emission rate. |
| 1. What are the important factor(s) for the installation of CEMS? Select all that apply. 2. **Accessibility** 3. **Representativeness** 4. **Sufficient distance from flow disturbances** 5. **Protection from weather and vibration** |
| ANSWER:  A, B, C, and D. |
| 1. Performance specifications are designed to evaluate the installed continuous monitoring systems (CMS) performance\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 2. Over an extended period of time 3. **At the time of, or soon after, installation and whenever specified in the regulations** |
| ANSWER:  B. At the time of, or soon after, installation and whenever specified in the regulations |
| 1. Performance specifications for CMS are contained in Appendix F of 40 CFR, Part 60 – New Source Performance Standards. 2. True 3. **False** |
| ANSWER:  False. Performance specifications are covered under 40 CFR Part 60, Appendix B and Ongoing QA requirements are covered under 40 CFR Part 60, Appendix F. |
| 1. The source owner or operator is responsible for calibrating, maintaining, and operating the CMS properly. 2. **True** 3. False |
| ANSWER:  True |
| 1. Under performance specification 2, the relative accuracy test audit, or RATA, must be passed prior to installation of the CEMS. 2. True 3. **False** |
| ANSWER:  False. The CEMS must be installed before certification testing can begin. |
| 1. During the PS-2 7-day CD test, most plants must be operating more than \_\_\_\_\_\_\_% of normal plant load. 2. 50 3. 75 4. The plant does not have to be operating for this test 5. **No operating load is specified** |
| ANSWER:  D. No operating load is specified |
| 1. Gas chromotography is a commonly used technology for which of the following performance specifications? Select all that apply. 2. PS-1 (opacity) 3. **PS-5 (TRS)** 4. **PS-7 (H2S)** 5. **PS-9 (GC)** 6. PS-18 (HCl) |
| ANSWER:  B, C, and D. TRS, H2S, and GC use gas chromatography |
| 1. The observer of an audit should move the CEMS analyzers in order to be able to verify their model and serial numbers. 2. True 3. **False** |
| ANSWER:  False. The auditor should not have any physical contact with the monitoring system hardware. |
| 1. Which of the following activities should be done to prepare for an onsite visit? ​Select all that apply. 2. **Review records (e.g., monitoring plans, RATA, etc.) ​** 3. **Check data availability reports​** 4. Be prepared to provide technical advice or consulting on the operation of the monitors 5. **Make note of any data errors or issues​** 6. **Review previous audits​** 7. **Review performance specifications and QA procedures, where relevant​** |
| ANSWER:  A, B, D, E, F.   * Review records (e.g., monitoring plans, RATA, etc. * Check data availability reports * Make note of any data errors or issues * Review previous audits * Review performance specifications and QA procedures, where relevant.   An inspector’s role is NOT to provide technical advice or consulting. |
| 1. The following examples represent using CMS as credible evidence when it is **not** the compliance method:  * Using CMS data to initiate and support enforcement cases alleging emissions violations * Using CMS data when it is out-of-control, or not capturing valid data * Using CMS data to provide a basis to issue a Section 114 request for compliance method data * When there is no compliance method specified, use CMS data to enforce operation and maintenance, monitoring, recordkeeping, and recording requirements  1. True 2. **False** |
| ANSWER:  False. This example does not represent using CMS as credible evidence when it is not the compliance method:   * Using CMS data when it is out-of-control, or not capturing valid data |