

The 10 Key Factors in Selecting a Stack Sampling Firm

Summary: This document is a summary of the key factors that you should take into consideration when hiring a stack testing firm. This has been prepared in conjunction with the ASTM criteria for standard practice of testing companies. The ASTM criteria has been supplemented, based on 125 years of direct testing experience, which is the combined years of experience of the individuals that contributed to the preparation of this document.

1. Organization/Management: The testing body or company shall have in place a structure that includes a quality system that enables it to continually monitor and improve its ability to deliver the defined data quality. The testing activities shall be conducted in accordance with local, state and federal laws and regulations. The testing body shall provide its employees with the resource and authority to take corrective actions and to verify and document their effectiveness. The ability of the testing firms management to provide superior guidance, training, supervision and to oversee the testing services is very much dependent on the number of years of first hand experience in conducting testing. The organization shall have a technical manager or director and a quality manager, both having a minimum of 7 years of personal testing experience with 12 years total years association with testing and a technical education.

2. Experience and Certified Technically Degreed Staff: Staff performing actual field testing shall be qualified on the basis of appropriate education, qualifications, training, experience and demonstrated skills. The testing body shall have a policy and the procedures for identifying training needs and provide training as needed. Each project shall be managed by two seasoned staff members, which are typically a program manager and a field team leader. It is recommended that the program manager have at least 10 years experience and the team leader that has a minimum of five years experience with the specific method used for that project. Both of these individuals must be qualified by passing an exam, issued in the applicable method groups by the Source Evaluation Society or equivalent third party.

3. Instrumentation/ Sampling Equipment and Facility: The real time testing instrumentation shall be shock mounted in a mobile laboratory, which is temperature controlled. The equipment, instrumentation and software shall meet accuracy and performance criteria for applicable test methods. Calibration programs shall be in place for all equipment and completed on a yearly basis. Records shall be maintained for each piece of equipment. The test body shall provide for safe handling, transport, storage, use and planned maintenance for all equipment to ensure proper functioning, accuracy and to prevent potential sample contamination.

The test firm shall operate from a facility that is of adequate size to allow for separate areas designed as following: 1.) Staging area for outgoing project 2.) Equipment storage area 3.) Calibration Gas Storage Area 4.) Glassware cleaning area 5.) Staging area for

return projects 6.) Sample recovery area 7.) Equipment repairs area 8.) Parking area for mobile laboratories 9.) Equipment Calibration area 10.) Record Storage area 11.) Water Purification System. The importance of having designated areas is increased as the number of test projects completed per month increases. The data quality objectives are substantially easier to maintain at a facility that is properly designed, operated in accordance with an approved QA/QC plan and have personnel compensation incentives in place.

4. Quality Assurance/ Quality Control Systems: The testing body shall develop and disseminate a quality policy, which is a statement signed by top management documenting the commitment to provide data of known and documented quality. The testing body shall ensure that the policy is understood, implemented and maintained at all levels within the organization. A quality system shall be established, maintained and operated under the quality policy as a means of ensuring that operations are appropriate for providing air emission testing services and to meet the degree of completeness, representativeness, comparability and uncertainty needed to meet the data quality objectives. A quality assurance/quality control manual shall be prepared to document all components as defined in the ASTM standard practice. The testing body shall at a minimum conduct quarterly internal audits of its activities to verify that its operations continue to conform to the requirements of the quality system. The testing firm shall participate in third party proficiency testing program for all field staff.

5. Health and Safety Program: The testing firm shall have in place a written Health and Safety Program that consists of the following components: 1.) New Hire Safety Training Program 2.) Stack Sampling Safety Manual 3.) Medical Monitoring Program 4.) Personal Protective Program 5.) Site Specific HSP for Project with Higher Risk 6.) Fall Protection Awareness Program 7.) Periodic Safety Review Sessions 8.) Cylinder Gas Safety Program.

6. Test Methods: The testing body shall use only previously developed and validated test methods for all testing performed. The methods used for demonstration of compliance are currently defined by the applicable state or federal regulations. Any alternatives or deviations from these methods shall be detailed in the test protocol and the test report, along with authorization for use by regulatory agency. A site specific test plan shall be used for each test project. It is highly recommended that all diagnostic or informational testing be completed with the same test methods anticipated for compliance testing. The test plan shall be the primary source of information on testing and quality procedures for the test project. Any use of non-standard test methods shall be subject to agreement with the client and any relevant regulating authority. The test body shall use procedures for estimating the uncertainty of measurements. The use of approved test protocols, which documents the specified published literature uncertainty for given methods is recommended.

7. Records and Reporting: The testing body shall establish and maintain procedures for handling and storage of quality and technical records. The quality records shall include reports for customers, regulatory feedback, internal audits, management reviews and corrective and preventive actions. All records shall be legible, retrievable, secure and confidential as well as stored in a suitable environment to prevent damage or loss. The records shall retain records of original observations, derived data sufficient for information to establish an audit trail, calibration records, staff records, identity of field staff, internal and external audits, personnel training records, performance feedback and chain-of-custody records.

The results of each test, calibration, or series of tests or calibrations conducted by the test body shall be reported accurately, clearly, unambiguously, objectively and in accordance with test methods used. Each test report shall contain a standard list of information germane to the individual project, which is not limited to the signed statement by a responsible official of the testing firm, identification of methods, test results, any deviations from the methods and technical discussion of results.

It is strongly recommended that the test firm be required to provide all supporting test data into the report (field data sheets, lab analytical reports, observations, emission calculations, etc), which allows for independent calculation of the emission results. The final report shall be signed by the field team leader, report preparer, program manager and a professional engineer or Certified Industrial Hygienist.

8. Written Guarantee of Services: The test firm shall provide a written guarantee of services that states: If the test crew or testing firm makes a mistake or error that compromises the validity of the test results, the test company will pay for a retest at their expense.

9. Proper Insurance Secured: The test body or company shall provide an insurance certificate, documenting the necessary insurance coverage is in place. The insurance should include general liability, professional errors and omissions, auto, inland marine and workmen's compensation.

10. Guaranteed Response Time: The test firm shall provide a guarantee to meet the following commitments: 1.) will always return your calls within 24 hours 2.) will always provide a price quotation within 48 hours of the request 3.) will always prepare and submit your final report within the time frame specified in the quotation 4.) will always strive to meet your schedule changes, to accommodate unexpected process delays and to complete your project on the first mobilization.