

# Quality Control Measures for Air Monitoring Site of Environmental Protection Engineering

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## Abstract:

*The purpose of environmental protection engineering construction is to better protect the water, soil, atmosphere and other environmental factors in the region, and comprehensive air monitoring on the site of environmental protection engineering can prompt the air pollution problems in the site of environmental protection projects, and provide effective atmospheric environment data basis for the construction and operation of environmental protection projects.*

## Keywords:

*Environmental protection; Air monitoring; Quality control; Measure*

## I. Significance of implementing ambient air quality monitoring

At present, there are still many imperfections in the effective environmental air quality monitoring management system, which requires relevant professional and technical personnel to continuously conduct in-depth analysis and research on the problems existing in the effective environmental air quality monitoring management system, and constantly improve the effective monitoring and management mode of the overall quality of the entire environmental air. Through the continuous progress of China's air monitoring and remote control technology, to explore and find the best node of air quality remote monitoring and control, with the progress of air quality remote monitoring technology to achieve the most accurate remote monitoring of air quality in China, will also greatly improve the level of air pollutant quality monitoring in China and the monitoring ability to master and monitor the whole process of atmospheric environment monitoring and management. Especially for the air monitoring and control of local rural ambient air quality, it is necessary to establish a suitable local rural ambient air quality monitoring station according to the actual local weather conditions, and the rural air monitoring station itself can produce better air effects through monitoring and control, which can fully meet the actual needs of relevant rural monitoring work. Therefore, we need to continuously and gradually strengthen the monitoring and control of rural air quality, which is the key to improving the ambient air quality in modern China, and also the key to ensuring the health and safety of modern Chinese citizens.

## II. The current situation of quality control of environmental protection project air monitoring site

### 1. Lack of air monitoring site quality control system

The first problem in the quality management of environmental protection project air monitoring site: environmental protection project air monitoring site quality management system is not sound. Air quality monitoring as one of the relatively new projects in our country, in our country, the application of the content of the cycle is relatively short, because most of our country has not been innovative environmental protection project air monitoring quality management system, in the operation of the air monitoring quality management is very likely to have certain problems, and these problems to our environmental protection project has caused a serious impact. Therefore, comprehensive improvement is needed to ensure effectiveness.2. Insufficient air monitoring site quality control equipment In the environmental protection project air monitoring site quality control problems, the second element is that the environmental protection project air monitoring site quality control does not have good equipment, mainly because of insufficient funds. China's environmental protection engineering project is one of the more important project works in China, but due to the vastness of our country, the demand for resources is huge, which requires funds from all over the world. Due to the limited use of funds, the equipment is naturally very poor and not up to the world level, which is also a more important problem.

## **2. Insufficient on-site quality control equipment for air monitoring**

Among the problems existing in the on-site quality control of air monitoring of environmental protection projects, the second content is that there is no good equipment for on-site quality control of air monitoring of environmental protection projects, and the main reason is insufficient funds. China's environmental protection engineering project is one of the projects that China attaches more importance to, but due to China's vast territory and huge resource demand, it needs to obtain funds from all over the world, and its actions are the most effective. Due to the limited use of funds, the equipment is naturally very poor and does not reach the world level, which is also a more important issue.

## **3. Lack of talents in on-site quality control of air monitoring**

Among the problems existing in the on-site quality control of air monitoring in environmental protection projects, the third content is the lack of on-site quality control talents for air monitoring in environmental protection projects. The main reason is that the content of on-site quality control of air monitoring in environmental protection projects is relatively far away and is one of the emerging contents. In China, there are relatively few professional learning talents in this area. As a result, there will be few specialists in air monitoring and quality control in environmental protection projects.

### **III. On-site quality control measures for air monitoring**

The air monitoring work carried out in the construction of environmental protection projects provides scientific and reasonable reference data for the increasingly severe air pollution control in China. Therefore, in the process of environmental protection project construction, the relevant departments must do a good job in the on-site quality control of air monitoring in strict accordance with the requirements of environmental governance, and integrate the on-site quality control management of air monitoring into the air monitoring work, which not only helps to effectively improve the quality of air quality monitoring of environmental protection projects, but also provides more rigorous and professional data for the development of air monitoring on-site sampling and sample protection, and improves the efficiency and quality of on-site operation of air monitoring. Due to the traditional manual monitoring method, it is inevitable that it will be affected by various internal and external factors in the actual operation process, resulting in errors in air monitoring data. Therefore, when carrying out air quality monitoring, relevant departments must adjust and optimize the focus of on-site air monitoring operations in strict accordance with the operating specifications and requirements. Fixed-point or regular air monitoring methods are adopted to ensure the rigor and comparability of air quality monitoring data. As more and more cities have set up and equipped automatic air quality monitoring devices in accordance with the requirements of air monitoring, the error of manual monitoring has been reduced, the quality and efficiency of air monitoring have been effectively improved, and a solid foundation has been laid for the environmental protection department to carry out environmental air monitoring data analysis and comparison and the development of environmental governance in the later stage.

## **IV. Methods for monitoring the air quality of the project site**

### **1. Control the sampling time and frequency**

China's environmental monitoring technology regulations stipulate the specific time and frequency of air pollutant monitoring work sampling, in the actual field sampling operation must refer to the national standards to strictly control the sampling time and frequency of air samples, in order to strictly detect targeted pollutants in specific areas, It is also necessary to adjust and optimize the sampling time and frequency according to the current air pollutant monitoring technology and the change of the approximate concentration of pollutants. For example, when determining air particle pollutants, it is necessary to ensure that the sampling time is above 12h to ensure the rigor of sampling monitoring and the authenticity of air monitoring results.

### **2. Scientific management of the sampler**

Field sampling quality has a great influence on the monitoring results in air monitoring work, and an important factor affecting the quality of air sampling is the cleanliness and operation effect of the air sample sampler. For example, a commonly used instrument in air monitoring is the laser dust meter, which has a filter membrane structure in the internal sampler, which can collect particles in the air and then provide a basis for air monitoring and research analysis. Researchers can read the mass concentration of dust particles in the air through the analysis of its main components and the scientific calculation of

mass concentration. At present, the instrument can detect and analyze important dust pollutants such as PM<sub>2.5</sub> and PM<sub>10</sub>, and a powerful air pump will be equipped in this kind of detection instrument to ensure the collection efficiency of air samples and provide guarantee for the optimization of particle concentration monitoring results in the later stage. However, in the actual operation of monitoring equipment, the operation and quality maintenance of sampling module are also very important. First of all, monitoring technicians should record the status of the sampling and monitoring equipment, and should also mark the status according to the actual situation, and archive the equipment information to provide basic information guarantee for long-term high-quality sampling operation. Secondly, we should do a good job of inspection and comprehensive review and inspection of the instrument performance. Before sampling, check the content of the sampling record, and save the sampling information according to the requirements of the process. The collection quality of each sample should meet the requirements of the process. Finally, regular maintenance and maintenance of sampling and monitoring instrument equipment should be done to ensure the operation effect of equipment to ensure the accuracy of air monitoring results.

### **3. Good sampling and transportation control**

The scientificity of samples in air monitoring affects the authenticity of monitoring results. Therefore, it is necessary to do a good job in the collection, transportation and protection of air samples in actual monitoring and management work. After sampling, samples should be classified and stored according to monitoring requirements. Therefore, if long-term storage is required, sample protection and management should be done. When the sampling work is completed, the sample must be sent to the laboratory in time. When the sample is handed over, the handover procedures must be formulated. If the sample cannot be monitored in time, the stability of the sample should be considered. Under normal circumstances, when storing the sample, to ensure the quality, it should be placed in the refrigerator, usually the refrigerator temperature should be controlled at 2~4 ° C, to prevent sample deterioration, so that the monitoring results are more accurate.

### **4. Actively improve the comprehensive capabilities of the air monitoring and sampling technical team**

Since air monitoring sampling is the basic work of overall monitoring and has a great impact on air monitoring results, comprehensive training should be conducted for on-site air sampling technicians, and technical training should not only be paid attention to the technical operation of sampling equipment, sampling operation process, and air monitoring sampling standardization operation. The quality responsibility awareness of air monitoring and sampling technicians should also be ensured through quality training. A special training organization level should be set up in the air monitoring management department to train the comprehensive capacity of sampling operators.

### **Conclusion**

At present, air quality monitoring technology is of great significance for in-depth research and analysis of on-site quality control of air monitoring. From the above analysis, it can be seen that in the environmental engineering air monitoring work, the traditional air monitoring technology is obviously not suitable for the development of the times. In this case, in the process of ambient air monitoring, through deepening the scientific concept of development, implementing the concept of sustainable development, effectively control the quality of on-site air monitoring of environmental projects, laying a good foundation for improving the quality of ambient air monitoring, so as to ensure the quality of residential ambient air, create more economic benefits, and promote the society to fully realize the goal of sustainable development.

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