

**Air Pollution Control  
Audit Protocol**

<b>Audit Information</b>
<b>Facility Name:</b>
<b>Date(s) of Audit:</b>
<b>Auditor's Name:</b>
<b>Period Under Review:</b>

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# **Air Pollution Control Audit Protocol**

## **A. Introduction**

**Auditor's  
Comments**

**Working  
Paper  
Reference**

1. Review background information obtained from the facility to develop a general understanding of operations at the facility which produce/use materials or effects potentially impacting air. (Refer to Table 1 for a list of potential air pollution control management records)
2. Tour the facility to gain a general understanding of areas of air pollution control concern. (Use Table 2 as appropriate for this and subsequent tours.)

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### ***Table 1: List of Records to Review***

The following list is an example of the records that should be reviewed during an audit of air pollution control practices and procedures at the facility. Some of these documents may be reviewed during pre-audit preparation activities, while others may be reviewed during on-site audit activities conducted as part of Step 1: Understand Management Systems and Step 3: Gather Audit Evidence. Not all records may be applicable to each facility.

- \_\_\_\_\_ Organisational chart/job descriptions for environmental personnel
- \_\_\_\_\_ Process descriptions
- \_\_\_\_\_ Material Safety Data Sheets (MSDSs)
- \_\_\_\_\_ Inventory of air emissions (direct and fugitive), including plan(s) of emission points
- \_\_\_\_\_ Data on emissions, e.g., tonnes/year, concentrations.
- \_\_\_\_\_ Monitoring techniques and results
- \_\_\_\_\_ Description of abatement system(s)
- \_\_\_\_\_ Maintenance records for pollution control and monitoring equipment (calibration checks)
- \_\_\_\_\_ Regulatory permits/authorisations
- \_\_\_\_\_ Regulatory authority inspections and correspondence
- \_\_\_\_\_ Past audit reports
- \_\_\_\_\_ Documentation of corrective actions

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**Table 2: Tour Tick list**

This tick list is provided as a reference for things to look for during the orientation tour.” The list is not all inclusive; it is meant to serve as an aid or tool to remind the auditor of the major considerations during the tour.

- Stacks, ventilators, wall fans, exhaust ports, etc.
- Fugitive dust
- Process losses
- Fuel oil storage (VOCs)
- Visible emissions
- Toxic pollutants
- Odours
- Furnaces, boilers, incinerators, unit heaters, hoods
- Paint spray booths
- Vapour recovery systems
- Cyclones
- Scrubbers
- Baghouses
- Monitoring equipment
- Stack heights
- Proximity to residential areas
- Corrosion on circulating pumps or scrubbers

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### B. Step 1: Understand Management Systems

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*Note: The purpose of Step 1: Understand Management Systems is to develop a detailed understanding of the facility's overall approach to managing its regulatory obligations. After completing this section of the protocol, the auditor should understand:*

- *How and why the facility has evaluated the applicability of existing regulatory and other standards to facility operations.*
- *Types of facility procedures that exist to implement compliance activities and the general scope of such procedures.*
- *Methods used by the facility to assist in the implementation of compliance programmes.*
- *Whether compliance management roles and responsibilities are clearly understood.*
- *Types of programmes or activities engaged in to familiarise staff with air pollution control information.*
- *How the facility maintains and documents the effectiveness of its air pollution control programme activities.*

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### C. Step 2: Assess Strengths and Weaknesses of Management Systems

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Reference

*Note: Once the auditor has developed an understanding of how the facility manages its air pollution control programmes, the next step is to evaluate the soundness of these management and control systems in the context of the potential environmental, health and safety impacts. The purpose of this assessment is to determine verification priorities for Step 3: Gather Audit Evidence activities. Spending the time to evaluate priorities will enable the auditor to maximise the effectiveness and efficiency for gathering the evidence needed to achieve the objectives of the audit.*

3. Determine the range of potential impacts if a particular air pollution control issue is not managed appropriately.
4. Evaluate the management systems and controls to determine if they are designed soundly, i.e., consider if the systems, coupled with the control systems, are appropriate given the potential impacts.
5. Set verification priorities so as to provide the optimum allocation of available team resources to ensure that issues representing high risk and weak management/control systems receive sufficient attention. That is, complete the matrix provided in Table 3 that links the management systems assessment with potential impacts to determine your prioritisation scheme.

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**Table 3: Determining Verification Priorities**

For each protocol topic listed below, graph the strength of the management system on the Y axis against the potential impacts on the X axis.

- Emission Identification and Assessment
- Local Authority or other Authorisation
- Conformance with Air Emission Standards
- Emission Reduction Programme
- Recordkeeping and Reporting

The completed matrix will be the basis for prioritising your time for the balance of the audit, with those protocol topics in Area 1 receiving highest priority and those in Area 4 lowest priority.

		Potential Impacts	
		Low	High
y a x i s	Management Systems Weak	3	1
	Strong	4	2

**x axis**

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### D. Step 3: Gather Audit Evidence

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*Note: The results of Step 2: Assess Strengths and Weaknesses of Management Systems activities (i.e., setting the verification priorities) provide the basic framework for the auditor to use in developing a sound and defensible verification strategy. Once the auditor has determined where the audit priorities lie for their protocol assignment(s), he/she develops a verification strategy based on available resources, what needs to be done, how to gather the information, where to apply verification testing and what sampling strategies to employ. It is important to remember that the auditor develops this strategy in general to help ensure that the verification strategy is representative of the assessment made in Step 2: Assess Strengths and Weaknesses of Management Systems and that the types of information gathered are appropriate for the protocol topics being examined. When gathering audit evidence, each auditor should ensure that the most appropriate type(s) of information will be representative and will be sufficient to verify compliance, as well as to substantiate non-compliance.*

#### **Emission Identification and Assessment**

6. Review site plans and note all process operations points of continuous and periodic emission (stacks, ventilators, wall fans, exhaust ports, etc.). Use information gathered on the site tour to confirm/supplement this.
7. Review facility emissions characterisation and loading information (if available).
8. Confirm that the facility has identified all the significant emission discharges and points in use at the site (chimney stacks, vents, fugitive) and developed an inventory.
9. Confirm that the facility has characterised the nature and volume of all emissions.

#### **Local Authority or Other Authorisation**

10. Confirm that the facility holds a valid authorisation or permit from a local authority or other authority
11. Where an authorisation or permit is not held, verify that any furnaces or chimneys have been approved.

***Conformance with Air Emission Standards***

12. Verify facility conformance with authorisation limits and conditions, and any other regulatory standards. Review operational data and, if available, monitoring records to determine whether all applicable standards and other conditions have been met (check against the requirements and emission limits from authorisations and permits).

***Emission Reduction Programme***

13. Through inquiry and review of documentation and data, confirm that the facility has developed and implemented an emission reduction programme.

***Recordkeeping and Reporting***

14. Confirm that the facility has developed and maintains a written inventory of air emission sources and the nature and quantity of pollutants emitted, as per good management practice.
15. Through interviewing appropriate facility personnel and reviewing records (if available), determine whether there have been any abnormal emissions during the audit review period. Confirm that these emissions were reported internally and externally in the required timescales, and that corrective action was taken (verify against requirements in any Authorisations held by the site or permit).
16. Verify that analytical records and maintenance records are being retained in accordance with good management practices, and any requirements stipulated in the facility's Authorisation or permit.

**E. Step 4: Evaluate Audit Findings**

17. Review actions taken to complete each step of the protocol. For each protocol step assigned, summarise your conclusions regarding the facility's compliance status. (Use Table 4 to summarise your opinion regarding the level of compliance being achieved for each topical area.)

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18. Review actions taken to complete each step of the protocol. For each protocol step assigned, summarise your conclusions regarding the facility's compliance status. (Use Table 4 to summarise your opinion regarding the level of compliance being achieved for each topical area.)
19. Review and discuss any unresolved compliance issues with appropriate facility personnel. Note explanations and disposition of such issues in the working papers.
20. Develop a written list of your exceptions and observations and use as a basis for discussion with other team members prior to the exit meeting. As a team, evaluate the data used to substantiate the audit results and identify any patterns or trends in the results. In addition, evaluate your findings and observations based on the information gathered during Step 1: Understand Management Systems.
21. As a team, develop a complete list of exceptions and observations, which are clearly and concisely written and substantiated by audit data gathered.

### **F. Step 5: Report Audit Findings**

26. Review all exceptions and observations with the facility environmental, health and safety contact and present them to facility management during the close-out meeting.

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Table 4: Audit Opinion**

For each protocol topic under Step 3: Gather Audit Evidence, develop an opinion as to the compliance status of the facility using the guidance provided on the following page. Place a tick (√) in the most appropriate category or record N/A (not applicable). Document your opinion in your working papers.

Protocol Topic	Audit Opinion				
	Meets	Substantially Meets	Generally Meets	Requires Improvement to Meet	Requires Significant Improvement to Meet
Emission Identification and Assessment					
Local Authority or other Authorisation					
Conformance with Air Emission Standards					
Emission Reduction Programme					
Recordkeeping and Reporting					
<b>Description of Audit Opinion Categories</b>					
<p><b>Meets Governmental and Internal Requirements</b> This opinion applies when, based on the audit team’s review, the facility is judged to be in compliance with all (or virtually all) of the applicable requirements included in the audit scope. For those very few requirements where isolated exceptions are noted, these departures are determined to be occasional and anomalous, and are considered to be inconsequential in comparison to the overall level of compliance achieved. It is intended for locations that are found to be in full compliance with applicable requirements.</p> <p><b>Substantially Meets Governmental and Internal Requirements</b> This opinion is given when the audit results substantiate a high degree of compliance. It applies when, based on the audit team’s review, the facility is in compliance with most of the applicable requirements reviewed but only a few requirements were not satisfied. These departures are considered to represent isolated exceptions in an otherwise effective compliance program.</p> <p><b>Generally Meets Governmental and Internal Requirements Except as Noted</b> This opinion applies when, based on the audit team’s review, several exceptions to applicable requirements are noted. These exceptions are more than isolated anomalies and reflect weaknesses in the design and/or implementation of compliance programs.</p> <p><b>Requires Improvement to Meet Governmental and Internal Requirements</b> This opinion applies when, based on the audit team’s review, several exceptions to applicable requirements are noted and some of the exceptions reflect the absence of required programs, significant departures from established criteria, or lapses in program implementation.</p> <p><b>Requires Significant Improvement to Meet Governmental and Internal Requirements</b> This opinion applies when, based on the audit team’s review, many exceptions to applicable requirements are noted, including several significant departures from established criteria, the absence of several required programs, or prolonged inattention to the resolution of previously identified compliance or liability issues.</p>					

