

Implementing Environmental Management Plans for Emissions Management

Goal: effective emission management to minimise impacts on ambient air quality.

Topics:

- Compiling an effective EMP
- Implementing the EMP
- Internal compliance monitoring
- External compliance monitoring



1) Compilation:

a) Emissions / impact source identification – use a risk assessment approach:

- i. Identify all possible emission sources – point and fugitive.
- ii. Base this on knowledge of inputs, process, outputs; fuel combustion. Include storage (fuel & inputs, inputs & outputs & waste, e.g. boiler ash).
- iii. Input from the emitter and abatement system design engineer critical.
- iv. Compile a source map / tree / flow to help focus necessary interventions.
- v. Look at the 80 / 20 principal where appropriate (CAPEX).



1) Compilation (contd):

a) Emissions / impact source identification – use a risk assessment approach (contd):

- vi.** If part of an EIA, or for ISO compliance purposes or for due diligence, also address other environmental risks, e.g. contamination risk; noise; risk of fire and explosion (MHI).
- vii.** There will be some logical overlap with H&S documentation – i.e. the EMP is likely to have sections where reference is made to documents needed in the H&S file.



1) Compilation (contd):

b) Receptor identification:

- i. Generally, impact we're concerned with is on ambient air quality.
- ii. Occupational hygiene / indoor air quality – sections may deal with this, but should then refer to the H&S file.
- iii. ID specific sensitive receptors where over-and-above measures may be needed, e.g. zoning / land use conflicts.
- iv. If specific sensitive receptors have been ID'ed, note the possible need for stakeholder engagement.



1) Compilation (contd):

c) Formulating management measures:

- i. Specific, concise, measurable internally and externally.
- ii. Which source / aspect of source is measure aimed at.
- iii. What stage of life cycle should measure be applied.
- iv. How frequently must measure be applied.
- v. Duration of application & deadline for application.



1) Compilation (contd):

c) Formulating management measures (contd):

vi. Does management measure require its own documentation beyond the EMP:

- Standard Operating Procedures;
- Preventative Maintenance Schedules;
- Work Instruction;
- Logbooks;
- Inventory sheet for critical spare parts.
- Examples: SOP for operating a chemical scrubber for odour control. Work instruction for loading chemicals into process tanks. Logbooks for maintenance checks on equipment and infrastructure.

vii. Who applies the measure during each stage of the life cycle.



1) Compilation (contd):

c) Formulating management measures (contd):

viii. Example measures:

- How often to service bag filter.
- Calibration of equipment –emitting and abating.
- Monitoring air flow / pressure.
- Chemical scrubbers: monitoring dosing frequency, solution pH, and hardware: sprayer nozzles, pall rings, etc.
- Boilers: firing efficiently, according to manufacturer spec? Boiler operator fully trained?



1) Compilation (contd):

c) Formulating management measures (contd):

ix. Emissions monitoring should be included – method, frequency.

x. Emissions reporting should be included – format, frequency, recipient, means of submission.



1) Compilation (contd):

- d) The EMP should align with the conditions of any authorisations / permits / licences in place for the facility.
- e) Relevant legislation to be complied with should be listed. Staff should take ownership of adhering to any other relevant legislation (e.g. heritage permit).
- f) Can use the NEMA EIA regulations as a guideline. Or other best practice documents.



2) Implementation

- a) Operations manager / SHEQ manager / risk manager / etc. should take ownership of the EMP – ensure that the correct staff are implementing each measure as required; that internal monitoring of implementation is undertaken (by a member of the SHEQ team?), and that an external auditor as required is hired.
- b) Environmental register to be kept with the H&S file can be useful – includes EMP, all authorisations, records to show compliance, e.g. safe disposal certificates for haz waste; purchase agreement showing SANS certifications for equipment; etc.



3) Internal compliance monitoring

- a) EMP will contain requirements for compliance monitoring by an appropriate staff member who has adequate time and knowledge and is able to keep records up to date.
- b) EMP should contain a checklist for internal auditor to utilise.
- c) Frequency of monitoring should be specified.
- d) Frequency of reporting to external auditor and / or authority if required, should be specified in EMP.



4) External compliance monitoring

- a) Independent and suitably qualified.
- b) EMP should contain a checklist for external auditor to utilise.
- c) Frequency of monitoring should be specified.
- d) Frequency and format of reporting to authority should be specified in EMP.

