Generic Technical Guidance

Rapid Environmental Assessment,
Environmental Management Plans
Compliance Action Plans

Prepared for Plan Bleu
Executive summary

This Guidance manual is designed to provide information for process operators, regulators, auditors and other stakeholders (e.g. local communities) on rapid environmental assessment and the preparation of environmental management plans. The guidance has been developed on the basis of work with the stone and marble products industry in the West Bank, but is designed to be generally applicable to a wide range of industries.

Generic guidance of this nature is often referred to as “horizontal” guidance in the UK and normally complements and provides a framework for any further ‘vertical’ (i.e. sector specific) guidance.

The rapid environmental assessment is a site audit to test:

- compliance with environmental legislation that has been implemented by the State of Palestine,
- to assess the potential sources of environmental risk and nuisance and
- to make an outline assessment of the ability of the facility operators to manage these risks.

The rapid environmental assessment is not an environmental impact assessment.

The environmental management plan is a site management tool to plan a set of actions to reduce environmental risk at the site, it will specific to the risk, but it is not a full environmental management system (EMS). Experience from visiting stone and marble facilities in the West Bank has shown that there are no existing EMS, so this Guidance document provides a generic EMP that can be tailored and implemented at facilities that currently lack a full EMS.

A compliance action plan is a specific document that sets out steps that need to be taken to bring a site that is currently in breach of an environmental regulation, back into a state of compliance.
# Table of contents

1 **Introduction**.................................................................................................................. 1
   1.1 Purpose of this guidance ................................................................................................. 1
   1.2 What is environmental auditing .................................................................................... 1
   1.3 What is an environmental management plan ................................................................. 1
   1.4 What is a Compliance Action Plan ................................................................................ 2
   1.5 Accreditation .................................................................................................................. 2

2 **The environmental auditing procedure** ....................................................................... 3
   2.1 Introduction ..................................................................................................................... 3
   2.2 Carrying out an audit ....................................................................................................... 3
   2.3 How to prepare for an audit ............................................................................................ 4
   2.4 Structuring the audit ....................................................................................................... 6
   2.5 Site visit .......................................................................................................................... 6
   2.6 Completing the audit report ........................................................................................... 9

3 **Environmental Management Plan** ............................................................................ 10
   3.1 Preparation of an EMP ................................................................................................... 10
   3.2 Continued monitoring and assessment ........................................................................... 12

4 **The preparation of a Compliance Action Plan** ............................................................ 12
   4.1 A template CAP ............................................................................................................. 12
   4.2 Acceptance and continued monitoring and assessment ................................................ 12

**Appendices**

- Appendix 1: Audit Template
- Appendix 2: EMP Template
- Appendix 3: CAP Template
1 Introduction

1.1 Purpose of this guidance

This Guidance manual is designed to provide information for process operators, regulators, auditors and other stakeholders (e.g. local communities) on environmental auditing and the preparation of environmental management plans. The guidance has been developed on the basis of work with the stone and marble products industry in the West Bank, but is designed to be generally applicable to a wide range of industries. The guidance covers the following three key aspects of the auditing process:

- The auditing process: identifying good practice for auditors and operators of audited processes
- Preparation of Environmental Management Plans (EMPs) to help prioritise and manage environmental risks
- Preparation of Compliance Action Plans (CAPs), designed to enable an operator to address any issues and return to compliance

Generic guidance of this nature is often referred to as “horizontal” guidance in the UK and normally complements and provides a framework for any further vertical (i.e. sector specific) guidance. Such an approach is widespread and has been shown to work well in the UK and elsewhere.

This guidance draws on experience in implementing the international environmental management standard ISO14001. This standard forms the basis by which many enterprises develop their Environmental Management Systems (EMS) and is closely related to the international quality assurance and safety standards. It is most effective where quality, safety and environmental management systems are integrated. This enables a culture to be developed which supports the development and integration of EMS within quality and safety performance management systems, with which site management and workforce are typically more familiar. A system that can be consistently audited generates confidence with management, workforce, investors, customers, regulators, and local communities and their representatives.

1.2 What is environmental auditing

Environmental auditing has been defined as: “a systematic, documented, periodic and objective evaluation of the environmental performance of an organisation, management system and processes designed to protect the environment;” (European Commission, 2009). The purpose of environmental auditing as described by the European Commission is “to promote continuous improvements in the environmental performance of organisations by the establishment and implementation of environmental management systems by organisations, the systematic, objective and periodic evaluation of the performance of such systems, the provision of information on environmental performance, an open dialogue with the public and other interested parties and the active involvement of employees in organisations and appropriate training.”

Audits are pivotal for regulator to ensure compliance and to enable the operator to maintain a viable and robust environmental management system in the face of challenges such as accidents, emergencies, changing rules, staff turnover, etc.

1.3 What is an environmental management plan

An environmental management plan can be considered as being closely related to an environmental management system, defined by the European Commission as: “the part of the overall management system that includes the organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy and managing the environmental aspects.”

---

It is important to note that the EMP is not a full EMS, but a specific plan within the overall system. Ideally a facility that has a risk of generating pollution, will be permitted to do so after these risks have been fully identified and quantified by the facility owner in commissioning an environmental impact assessment (EIA). To operate a facility there would be a documented management system in place that would have a quality management system (QMS) based on ISO9001 and an EMS based on ISO14001.

The EMS would identify if any specific management requirements are needed, such as the EMP to focus the management and monitoring of site processes to ensure the environmental risk is controlled. There can be specific types of EMP to handle key issues, such as a dust management plan (aggregates, construction), solvent management plan (chemical plant, car re-spraying business), and odour management plan (rendering plant, agricultural activities, sewage treatment).

1.4 What is a Compliance Action Plan

A Compliance Action Plan is defined for the purposes of this project as: “a plan developed following a site audit, designed to address any ongoing compliance issues and where possible, to remediate or mitigate any environmental impacts caused by past or ongoing non-compliance.”

1.5 Accreditation

Enterprises can gain accreditation to ISO/IEC 14001 for their environmental management systems. The International Standards Organization develops and publishes standards in collaboration with National Bodies (such as NEN and BSI) and other International bodies such as CEN. ISO does not provide the accreditation or certification, this is actioned by certification bodies aligned to the International Accreditation Forum (IAF) internationally and regionally by the Arab Accreditation Co-operation (ARAC), formed in 2011 and accepted at the Regional Accreditation Group Member in September 2013, Palestine is one of the 22 cooperating Nations in this group.
2 The environmental auditing procedure

2.1 Introduction

An environmental audit should be a systematic evaluation of the environmental performance of an installation. Depending on the remit of the audit, this may include an evaluation of:

- organisational structure,
- planning activities,
- allocation and management of responsibilities,
- practices,
- procedures,
- processes
- resources

These aspects of site operations and environmental performance will be evaluated in terms of their effectiveness in developing, implementing, achieving, reviewing and maintaining the environmental policy and managing the environmental aspects. Hence, the first important consideration of the audit process is to define the required extent of the audit.

Having done this, the audit can proceed to gather data sufficient to enable site performance to be evaluated against the current relevant legislation, including planning, industrial process regulation, and environmental legislation. The audit can assist the site in systematically identifying the activities on site which may have an environmental impact. For many industrial processes, the sources of environmental impacts can be summarised as:

- The use of raw materials. Is this use efficient and sustainable? Does the usage give rise to waste products and can these waste streams be minimised or turned into other useful products?
- The use of land. Does the operation of the site affect any protected area or water course, or otherwise limit or prevent the use of land in the vicinity of the site?
- The production processes, are the technique, equipment and plant used suitable, are the best available techniques (BAT) appropriate to the business sector and enterprise employing them
- The products themselves. Do the generated products and useful by-products pose a risk to the environment, including changes to the ecosystem, and risk to plant, animal, and human health
- Traffic and transportation associated with the movement of raw materials, products and personnel.

2.2 Carrying out an audit

The environmental auditing procedure set out in this guidance document is of greatest benefit once the environmental obligations and targets of a facility have been established – e.g. via an EMP (see Chapter 3) as part of an existing environmental management system. The audit then assesses whether the obligations are suitable for the facility and adequate to ensure environmental protection. The audit may also assess the performance of the facility against obligations and targets.

In the event that obligations and targets are not met, the audit process can form the basis on which a CAP can be developed for improved environmental management. It is normally straightforward for a site operator to create a simple environmental compliance system that works well and which can be integrated alongside other quality and health & safety management systems. However, if there are no management systems in place, it will be more difficult for an operators to implement.

For an audit programme, the auditor should:

- Develop audit procedures and protocols, using objective criteria where possible;
- Determine an appropriate audit frequency;
- Select and train auditors; and
- Maintain audit records.
The audit procedure should describe:

- Audit scope (areas and activities covered);
- Audit frequency;
- Audit methods;
- Key responsibilities for the audits;
- Benchmarks for assessment of site performance;
- Appropriate standards of evidence (e.g. use of accredited versus non-accredited laboratory measurements) and the weight that can be placed on different types of evidence;
- Reporting mechanisms for the audits; and
- Record keeping for audit results.

The Results of audits should be linked to the monitoring and corrective action process (see Section 4).

2.3 How to prepare for an audit

2.3.1 Decide what you need to audit

In order to identify the key features and impacts of an industrial operation for environmental audit, an understanding of the specific industry type to be audited is very important. This sector knowledge can be combined with other information (e.g. operating permits, environmental management plan) to develop an audit matrix to be completed during the course of the environmental audit.

As part of your audit, it is important that regular reviews of a site’s environmental aspects and objectives are carried out. Over time, the list of environmental aspects considered may expand and the aspects which are the focus of the audit process may need to be re-prioritised, as a site’s activities change and as new information becomes available. The following points are critical for deciding what and how to carry out an audit:

- Audit program—have previous audits revealed areas of the environmental programs that could be improved? Would this information be useful in the initial identification process or in redesigning the objective for the audit?
- Any existing EIA, EMS, EMP and/or CAP may provide useful information to enable the scope of an audit to be identified.
- New process reviews—have any changes introduced new environmental aspects?
- Worksheets from the most recent environmental aspect identification and significance determination—e.g. is there new information on chemical effects which may increase or decrease the assessment of a substance’s potential for environmental harm?
- Communication received from external stakeholders—do any comments suggest a need to re-evaluate the audit process?
- Environmental objectives and targets—what new ones will apply to the facility set for this audit period? Which are now accomplished and can be closed out or maintained?
- Pollution prevention program—has information become available from this effort that would add aspects or objectives?

2.3.2 Determine who will perform the audits

You should select and train auditors. Auditor training should be for both initial compliance auditing and ongoing audits against future management plans.

Auditors should be trained in auditing techniques and management system concepts. Familiarity with the sector to be audited, environmental regulations, facility operations, and environmental science is beneficial, and in some cases may be essential to adequately assess the environmental aspect. Auditors should be demonstrably independent of the activities being audited.
2.3.3 Determine how audit results will be used

The findings of an audit should be used to identify trends or patterns in deficiencies in environmental compliance. There is an interconnected relationship between the audits, the site procedures and, corrective action, and management reviews (Figure 1).

The following guidelines may be useful in scoping and focusing a site's audit procedure:

- Focus the compliance audits on objective evidence of conformance.
- During the scoping, site visit and information gathering stages, auditors should avoid evaluation.
- Communicate the audit scope, criteria, schedule, and other pertinent information to the people in the affected area(s) before the audit begins. This helps to avoid confusion and facilitate the audit process.
- Ensure that auditors review any identified deficiencies during the audit with appropriate managers with responsibility for the relevant aspect(s). This will help the auditors verify that their audit findings are correct. Any information provided verbally or without substantiation during this process should be treated with caution. This procedure can also reinforce employee awareness of compliance requirements.
- Be aware that a compliance audit is a check on how well the site's management system meets the established environmental requirements.
- Judge audits on the quality of findings rather than on the number of findings.

Figure 1: Interconnected relationship
2.4 Structuring the audit

In order to provide a consistent audit approach you should develop an audit template which should identify the type of information that should be reviewed during the audit. The audit will link to the appropriate objective for effective environmental management.

An example audit template as used for the Stone and Marble sector is provided in Appendix 1. The template should be amended to suit the process being audited. Many of the questions and aspects of the audit will be similar for different industries and types of facilities. However, there will be a need to tailor the audit template depending on the key environmental impacts which are expected to arise from a given industry.

When auditing an industry sector for the first time, the template will need to be modified to suit the new requirements, this can be based on the known emissions and impacts from the industry sector from any EIAs that have been completed during the site permit process and from other sources, such as the Pollution Inventory or published research. The revised, industry specific audit template may go through a number of iterations before it covers all aspects of the operation of the industry sector.

Importantly, if the industry sector to be reviewed has a large amount of operating sites throughout the West Bank, it may be prudent to undertake a pilot exercise using the modified template before rolling it out to the whole industry sector.

2.5 Site visit

A site visit is an essential component of an environmental audit, and is normally supported by the provision of further data before and/or after the site visit.

2.5.1 Preparation

Key to the audit is to consider in advance the information which is required, and the activities, equipment, systems or records that you need to witness while carrying out the audit. To achieve this, an understanding of the specific industry type to be audited is very important. This sector knowledge can be combined with other information (e.g. operating permits, environmental management system and plans) to develop an audit matrix to be completed during the audit visit.

The auditor should check with the site to be audited, well in advance of the day on which the audit is due to take place, that all is in order for the planned visit and that the contact details for the auditee are correct.

2.5.2 Approach while on site

It is also critical to understand that a lot of the details needed to complete the audit can be gathered by follow-up actions so as not to lose valuable site time during the audit. The key for the site visit is an inspection where activities can be seen first-hand. While on site, the auditor should:

- Respect site safety rules and procedures;
- Be aware of any changes made to environmental objectives and targets;
- Be aware of any complaints made by local residents to relevant authorities;
- Have copies of all site operating procedures for the site;
- Ensure that copies of up to date audit template are available;
- Ensure that they have some means of recording evidence, either by means of a sketch pad or to take photographs (e.g. a camera or smartphone with a built in camera of sufficient quality), with permission. Any portable electronic equipment taken should have sufficient battery life.
- The auditor should make sure that they have sufficient time to conduct the audit.

Specific to photography, permission should be sought in advance, the photographs should be specific to the environmental aspect and avoid where possible site staff or members of the public being recorded. It is not always possible to exclude machine or process operators from being included in photography of the machine or process on which they are working. Generally the photographs are for the audits use, but pertinent photographs may get included in the audit evidence, EMP or CAP.
2.5.3 Conduct during an audit

The auditor should arrive at the site and make their presence known to the named site contact. At the outset, the auditor should explain the reason for the audit. The auditor should state the format of the audit, which should start with the introduction, followed by a site tour where photographs may be taken. During the tour the auditor should make a draft sketch of the site and note where key processes are taking place. The auditor should manage their time on site to ensure that the audit template can be fully completed and discussed. During the introduction, the auditor should complete the general information section in the audit template:

- record the general information about the site on the audit template;
- confirm what health and safety requirements are in place for site visits;
- confirm what activities are taking place at the time of the audit;
- if available, request a copy of any site plan; and
- if available, request copies of relevant site operating procedures.

2.5.3.1 Site tour

The audit should include a tour of the site. The audit template should record which areas of the site have been included in the tour and what plant and equipment is being operated in those areas. Where necessary photographs should be taken of each item and operation, short videos of any relevant operation may also be useful. The location of each piece of equipment and operation is to be noted on the auditor’s sketch of the site. During this tour, the auditor should ask about each operation and piece of equipment seen. Site procedures relating to plant operation and maintenance, and environmental control should be inspected. It is important to understand the age of the equipment and how it is maintained for operational efficiency and safety of personnel. The auditor should inspect monitoring and maintenance records.

The auditor should be looking at the state of the fabric of any building at the site housing equipment. Where water is used, the auditor should observe how it is used (e.g. for cleaning and cooling processes, or as a raw material, or for pollution abatement) and importantly how the water is collected. The auditor should inspect infrastructure for any signs of leakage.

Where dust is a potential issue (e.g. in the stone products industry), the auditor should take note of what mitigation is in place. The auditor should ask for site operating procedures relating to treatment and management of dust. On touring the site the auditor should inspect the site for signs of deposited and windblown dust. When dealing with dust the audit template should include questions on traffic management at site and on any site specific complaints history.

Where pollution abatement is used, the auditor should carry out a visual inspection of the plant. The auditor should ask for copies of site operating procedures relating to operation, maintenance and monitoring.

When near the perimeter of the site under audit, the auditor should take the opportunity to talk about the auditee’s neighbours:

- What is the nature of the site neighbours – e.g. other industrial operations, residential or other non-industrial areas, agricultural land or natural land
- Have any of these neighbours caused issues for the auditee,
- Have any of the neighbours made a complaint about anything the auditee has done. Where complaints have been made are they informed of the outcome of complaint investigations?
To complete the site sketch whilst on the site tour it is vital that the auditor looks for any local surface water courses and asks the site representative if they are aware of any surface or subsurface water course (i.e. if they abstract water from a localised source).

These key questions set out in the audit template may prompt the auditee to divulge additional information relevant to the audit.

2.5.3.2 Main questions and answers session

During the site visit, the auditor should make sure that sufficient time is allocated to lead a question and answers session to complete the audit template. The auditor may build on what has been seen during the site tour, and may skip any questions if sufficient information has been provided during the site tour. The detail and type of questions asked will depend on the nature and complexity of the site operation and to the type of pollutants discharged from a facility.

The audit template should follow the flow of work, for a typical industry, this will start with the import of all raw materials, then how they are used, and then how they are either recycled into the process, exported from the site as product, or exported as a useable by-product or as a waste (including water, slurry, cake, dust, odour, chemical and noise emissions).

In summary the core questions should cover the following topics:

- Describe the production processes and technologies used at this site.
- What quantities of raw materials, final products and waste materials are produced?
- How are raw materials stored and transported?
- Describe the methods used for disposal of each waste stream produced.
- How much water is used at this site? How is water used, collected, recycled and disposed of?
- How is waste water managed (considering minimization, collection, treatment and discharge)?
- What methods are used to control impacts on groundwater by intercepting water flows, and what monitoring measures are in place to confirm effectiveness?
- What methods are used to control dust? Does dust from the site travel off-site?
- What methods are used to control chemical emissions from the site?
- What methods are used to control noise? Describe any evidence for environmental noise levels (e.g. monitoring data or predictions)
- What methods are used to control vibration?
- How are traffic movements to/from the site managed? How many vehicle movements take place at the site each day?
- Have complaints been received at the site in relation to any of the topics covered in the audit (e.g. noise, vibration, water pollution, odour and dust)? Provide any complaint records
- What monitoring is carried out at the site?
- Specific questions relating to Law 7 and relevant Decisions specific to the industry sector (such as Decision 25 criteria for the stone and marble sector)

2.5.3.3 Evidence and follow-up

During the questions and answers session the auditor must ask for evidence to back up the information gathered. This may take the form of site records. Any business that is managed and is successful will carry receipts and invoices for goods in and out, which will corroborate any anecdotal information given.

This information may not be accessible at the time of the audit but a summary of such information can be requested.

Following the audit, the basic information will be verified, the supporting data will be provided as an appendix to each site audit template. Where a complaints history is known, then this can be incorporated.
Plant capacity would be reviewed against site throughput to evaluate whether process or pollution control equipment has adequate capacity to control emissions.

The completed audit template and supporting evidence will provide a basis for the auditor to assess each of the sites against the relevant environmental regulations, standards and targets.

### 2.6 Completing the audit report

Having completed the audit process, the development requirements at each site will be listed and ranked in the context of the potential significance of environmental impacts. This evaluation may initially use a simple ranking on a high/medium/low basis.

Having identified the key development requirements, potential solutions to the issues will be identified where possible. These should focus on the key components of the operations where impacts have been found to arise from, with an emphasis on minimising impacts at source in preference to abating emissions or dealing with the consequences of emissions. This evaluation should not consider cost/competitiveness issues associated with the proposed solutions, and consequently these potential solutions should be highlighted as recommendations for further investigation by the operator.

The audit report should feed into the further development of the environmental management system of the operation, and (if required) the generation or revision of an EMP and/or CAP by the operator.
3 Environmental Management Plan

An environmental management plan ("EMP") is a site specific plan developed within an existing environmental management system (EMS) to ensure that appropriate environmental management practices are followed for processes that pose a risk to the environment. An EMP should ensure:

- Application of best practice environmental management to the operation of the site;
- Compliance with environmental legislation; and
- That environmental risks associated with the operation of the site are properly managed.

Once prepared, an EMP is not static. It is a working document that requires review and amendment during the operating life of the site. Making appropriate changes to an EMP is an important aspect of improving a site’s environmental management. The EMP review process is also a valuable means of continually improving the effectiveness of the EMP.

Ideally, the EMP should be integrated with the site quality, health and safety management plans and procedures, and hence an integral part for the facilities QMS/EMS. This will facilitate understanding and buy-in from all staff, including managers and operational staff.

Where a site has accreditation for, or aspires to secure accreditation to the international environmental management standard ISO 14001 for their EMS, these process would be expected. However, the situation in the West Bank makes it difficult for business to operate to these standards so the lack of an obvious framework and expectation means that there will be some significant disparity between sectors and enterprises within those sectors for a perceived need to prepare and maintain a QMS and EMS so there would be no foundation for an EMP.

If there is an existing EMS, then much of the information that goes into the EMP will already exist and can either be referenced, or copied in (making the EMP a standalone document). If there is no existing EMS, then the production of an EMP will require that these aspects will need to be specifically generated by the operator.

3.1 Preparation of an EMP

The EMP is part of any installation’s EMS and overall management plan and as such should ideally be prepared by the facility management. It may be expected that where the site management consider that they do not have the specific knowledge to complete the EMP they would engage an external expert to advise on the development of the EMP or even create the document on behalf of the site management team.

A key pre-requisite is that the EMP is an active site management document that fits within an existing EMS system, alongside and QMS system. The development of these management systems is fundamental. During the Donor Meeting for investment in the stone and marble industry of the West Bank it was identified that the sector has not implemented these management systems. The development of the capacity of industry in the West Bank to be able to develop and implement these management system is a possible investment project. This would be the first step in the process and once implemented, the adoption of EMPs and more specialised EMPs, such as a dust management plan or an odour management plant can then be expected.

3.1.1 EMP structure

The scope and function of an EMP will be a function of the significance of a site processes potential environmental impact and also the size of the site. The potential significance of a site’s environmental impact should be assessed by means of an initial site compliance audit using the methodology set out in section 2.

The detail and complexity of an EMP will depend on site specific characteristics. It is therefore not possible to prepare an EMP that will cover all sites. There are, however, common elements that should be included in all EMPs. A comprehensive generic template covering what would be typically expected in the EMP is provided in Appendix 2, this template should be used as the basis for developing a site specific EMP template. The template has been populated with guidance on what information should be provided in each section and is summarised in Table 1.
### Table 1: Information to the included in an EMP

<table>
<thead>
<tr>
<th>EMP Element</th>
<th>Information to be provided</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background</strong> (normally copied from the EMS)</td>
<td>Introduction</td>
</tr>
<tr>
<td></td>
<td>Site description</td>
</tr>
<tr>
<td></td>
<td>Operating activities</td>
</tr>
<tr>
<td></td>
<td>EMP objectives</td>
</tr>
<tr>
<td></td>
<td>Environmental policy being addressed</td>
</tr>
<tr>
<td><strong>Environmental Management</strong> (normally copied from the EMS and tailored to a specific aspect)</td>
<td>Environmental management structure and responsibilities</td>
</tr>
<tr>
<td></td>
<td>Approval and licensing requirements</td>
</tr>
<tr>
<td></td>
<td>Reporting</td>
</tr>
<tr>
<td></td>
<td>Environmental training</td>
</tr>
<tr>
<td></td>
<td>Emergency contacts and response</td>
</tr>
<tr>
<td><strong>Implementation</strong> (specific to the environmental aspect)</td>
<td>Risk assessment</td>
</tr>
<tr>
<td></td>
<td>Environmental management activities and controls</td>
</tr>
<tr>
<td></td>
<td>Environmental management plans and maps</td>
</tr>
<tr>
<td></td>
<td>Environmental procedures</td>
</tr>
<tr>
<td><strong>Monitor and Review</strong> (specific to the environmental aspect)</td>
<td>Environmental monitoring</td>
</tr>
<tr>
<td></td>
<td>Environmental auditing</td>
</tr>
<tr>
<td></td>
<td>Corrective action</td>
</tr>
<tr>
<td></td>
<td>EMP review</td>
</tr>
</tbody>
</table>

For larger sites it may be possible that a specific EMP would be required for specific plant on the site, some specialist EMPs have different names, such as an odour management plan (OMP), or solvent management plan (SMP).

For small sites the EMS is the EMP.

### 3.1.2 EMP assessment and approval

Once the EMP has been prepared this should be submitted to the relevant authority for assessment and approval. The assessment must satisfy the Authority that the environmental aspects of the facility have been identified for the industry sector and type of facility. For each industrial process there will be different methods and equipment available. There will be associated environmental management procedures with each of these.

Where there is a long history of industrial production and regulation the best available techniques have been identified that fulfil both the production efficiencies required by industry and the environmental management required by society. These are referred to as the best available technique (BAT) for the process. If an installation is using BAT for the process then it could be considered that they are doing the most environmentally responsible thing. If BAT is not applied then it will be required by the installation to clarify this in the EMP and to further explain how the environmental risk is control and mitigated.

The Authority can make comments on the Draft EMP to pass back to the authors of the EMP of action. Once addressed and only when the Authority is satisfied that the EMP is suitable and sufficient to manage the environmental aspects on the installation, then the Authority can approve the EMP.
3.2 Continued monitoring and assessment

The EMP will set targets for the installation management to undertake a periodic review of the plan as a minimum this would be 12 months but will also need to be reviewed if there is any change in the identified environmental aspects or legislation.

Within the plan there is very likely to be a requirement for site management to undertake frequent inspection of their site, plant and equipment. This will be dictated by the overall risk of the specific aspect, i.e. pollution abatement systems on a high risk process could require the identified site staff to make daily checks. Some very high risk processes, such as large combustion processes may even require continual measurement of pollution.

It is therefore possible that some installations will be recording the results of these checks and can therefore report these to the Authority on a regular basis (not less frequent than annually). The reporting frequency may be shorter at sites subject to a compliance action plan.

The authority can set a timetable for further visits to each installation to carry out further audits against the EMP. The frequency would be based on the overall risk the installation poses to the environment. A low risk operation may warrant a site audit once every three to five years, a high risk operation may require an annual or 6-monthly audit.

With a proper system of active reporting from the installation management to the Authority and actual audits the Authority can rate the risk of each site over time to adjust any formal reporting requirements, audit frequency and indeed additional audits.

4 The preparation of a Compliance Action Plan

A Compliance Action Plan (“CAP”) may be required if evidence is identified of adverse environmental impacts resulting from the operation of an industrial installation. A CAP can be prepared as part of the development of an EMP process or can be developed as a separate item.

A CAP should include the following information. This is commonly provided in a tabular format for ease of review and checking:

- Evidence for adverse environmental performance, typically by reference to an environmental audit.
- What actions are to be taken? The plan should indicate the steps to be taken to meet compliance with the environmental objective.
- Who is responsible for the action? The plan should indicate the person / position responsible for carrying through the specific action, for example site manager, environmental manager.
- What resources are required to complete the action? This may be in the form of a quotation for equipment or services provided, or may be staff time required to fulfil the action.
- What time scale has been set to achieve compliance? A column should indicate the date on which the action should be completed.
- What environmental harm was caused as a result of the non-compliance, if any, and if any action is proposed to mitigate harm.
- A space for a subsequent auditor to review and check that the required action has been carried out.

4.1 A template CAP

An example template for a CAP is presented in Appendix 3.

4.2 Acceptance and continued monitoring and assessment

The CAP is most likely to be associated with an existing EMP written under the operations EMS, and these may also need to be updated. The CAP would be assessed and approved by the Authority as well as any revision to the EMP. The CAP is a special part of the overall EMP as it sets out the specific
actions needed, very usually in the short term to bring an installation up to the standards in the EMP that comply with the current legislation for the protection of the environment.

The Authority should be satisfied that the CAP is capable of achieving the planned outcome within the timescale proposed. The timescale will depend on the complexity of the actions, in some cases the normal operations at an installation may need to be stopped until the actions are completed. These factors will dictate how reasonably long can be allowed to complete the action plan.

If the plan is acceptable to the Authority then it can be approved and the installation can begin the process. The Authority should expect to receive progress reports in line with the written CAP. The Authority would also be expected to make follow-up visits as appropriate to the CAP, the frequency and nature of the visits will be considered by the Authority based on the environmental risk and complexity of the process under the CAP. A least a completion visit should be undertaken to audit the site once the CAP has been completed by the site management.
Appendices

Appendix 1: Audit Template
Appendix 2: EMP Template
Appendix 3: CAP Template
Appendix 1 – Example Audit Template

This template is provided as a formatted excel spreadsheet, which should be used to print the audit matrix, it is reproduced here in this appendix and a picture of each page for information.
### Environment Quality Authority (EQA) Audit Template

<table>
<thead>
<tr>
<th>Task</th>
<th>Rules</th>
<th>Evidence taken</th>
<th>Further Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Auditor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of site contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licence/permit details held at site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How long has the site been operating?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the site an industrial area?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the site &gt;1000 m from any natural resource (e.g., water, sensitive habitat)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the site on a planned paved street with a width of at least 12 m?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the site have a perimeter wall of at least 1.5 m high (a neighbouring factory building will count)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the site have a tree line running alongside the boundary wall?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do the squares of the site have paving?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do the covered areas of the site have paving?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outline description of the facility</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### General Information - Part 1

- Are site plans available?
- Have site plans been provided to the auditor?

Use a site plan or sketch map to note the key features of the site, including descriptions of process areas, an itinerary of relevant plant and equipment held on site, and the location of off-site sensitive receptors such as houses, schools, hospitals or nature conservation areas. Sketch out a site conceptual plan in relation to known water courses and sensitive receptors.

What properties and land borders the site? Are any of these specifically sensitive?
<table>
<thead>
<tr>
<th><strong>General Information - Part 2</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the production processes and technologies used at this site, take photographs, list equipment and age</td>
<td></td>
</tr>
<tr>
<td>Comment on the state of repair of buildings used at site</td>
<td></td>
</tr>
<tr>
<td>Does the site have any standard operating procedures?</td>
<td></td>
</tr>
<tr>
<td>Are eating and drinking facilities and places for changing clothes available and separate from each other?</td>
<td></td>
</tr>
<tr>
<td>Are any site instructions or health and safety precaution notices posted around the site, are these clearly visible and obeyed by site staff?</td>
<td></td>
</tr>
<tr>
<td>Are there any fire points, are these clearly visible, do members of staff know where these are? Are emergency exits clearly marked and have safe access in the event of an emergency?</td>
<td></td>
</tr>
<tr>
<td>Within buildings, are ventilation and lighting adequate?</td>
<td></td>
</tr>
<tr>
<td><strong>Management and Administration</strong></td>
<td><strong>Number of management staff</strong></td>
</tr>
<tr>
<td>Production staff - Full Time</td>
<td>Day shift numbers:</td>
</tr>
<tr>
<td>Production staff - Part Time</td>
<td>Night shift numbers:</td>
</tr>
<tr>
<td>Is there evidence of staff training and does the site retain staff training records?</td>
<td>Number of part time workers:</td>
</tr>
<tr>
<td>Material</td>
<td>Question</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Are records kept for the delivery and use of materials at this site?</td>
</tr>
<tr>
<td></td>
<td>Raw materials used and quantities (stone, chemicals, oil, grease, packaging, fuels) actual values per month and maximum possible?</td>
</tr>
<tr>
<td></td>
<td>Site storage: are there areas for the safe storage of raw materials, including chemicals, oils, grease and fuels? Is there evidence that this is managed?</td>
</tr>
<tr>
<td></td>
<td>Final Products made and quantities (Production throughput?): provide actual per month and maximum possible</td>
</tr>
<tr>
<td></td>
<td>Waste Materials generated and quantities (i.e. stone chippings, oils, grease, fuel, chemicals and packaging)</td>
</tr>
<tr>
<td></td>
<td>Note that waste water, sludge and slurry are considered in the water section</td>
</tr>
<tr>
<td></td>
<td>Is solid waste collected in dedicated containers (i.e. skips, bins etc.)?</td>
</tr>
<tr>
<td></td>
<td>Describe the methods used for disposal of each solid waste stream produced (i.e. solid stone waste - chippings, powdered chemicals, packaging etc.)</td>
</tr>
<tr>
<td></td>
<td>Note that slurry or sludge is considered in the water section</td>
</tr>
<tr>
<td></td>
<td>Describe the methods used for disposal of each waste liquid stream produced (i.e. chippings, oils, grease, chemicals, etc.)</td>
</tr>
<tr>
<td></td>
<td>Note that waste water is considered in the water section</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>How much water is used at this site?</td>
<td></td>
</tr>
<tr>
<td>Is the water metered?</td>
<td></td>
</tr>
<tr>
<td>How is water delivered to site?</td>
<td></td>
</tr>
<tr>
<td>How is water used for site processes?</td>
<td></td>
</tr>
<tr>
<td>How is municipal waste water treated? Is this through sewer or septic tank? Confirm that this is kept separate from waste process water</td>
<td></td>
</tr>
<tr>
<td>How is rainwater managed? Does the site harvest rainwater for process use? Does the site have rainwater drainage? How is process waste water prevented from entering any rainwater drains?</td>
<td></td>
</tr>
<tr>
<td>How is the waste process water managed and treated (considering minimization, collection, treatment and discharge)? Does the site use sedimentation pools, thickening slabs or filter presses?</td>
<td></td>
</tr>
<tr>
<td>Identify any visible water effluent streams, note source and destination and mark them on the site sketch</td>
<td></td>
</tr>
<tr>
<td>Note, these should go to the site waste process water treatment plant</td>
<td></td>
</tr>
<tr>
<td>How much slurry, sludge or filter press cake is taken away from site each month?</td>
<td></td>
</tr>
<tr>
<td>Although waste water is not directly discharged, the site will produce slurry, sludge or filter press cake from the waste process water treatment. This will need recycling or disposal, what waste management approach is taken at this site. Are any tasks carried out on this waste? how do they know it will comply with Palestinian Standards?</td>
<td></td>
</tr>
<tr>
<td>Identify any visible slurry effluent streams, note source and destination and mark on the site sketch</td>
<td></td>
</tr>
<tr>
<td>Note, slurry should be controlled</td>
<td></td>
</tr>
<tr>
<td>Dust</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---</td>
</tr>
<tr>
<td>Describe any activities that generate dust</td>
<td></td>
</tr>
<tr>
<td>What methods are used to control dust?</td>
<td></td>
</tr>
<tr>
<td>Does dust from the site travel off-site?</td>
<td></td>
</tr>
<tr>
<td>What signs of dust deposition can be seen, such as on vegetation and surfaces?</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Question</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Noise &amp; Vibration</td>
<td>Describe any activities generating noise and vibration.</td>
</tr>
<tr>
<td></td>
<td>What methods are used to control noise? Are there any special measures for staff, visitors and neighbours?</td>
</tr>
<tr>
<td></td>
<td>Describe any evidence for environmental noise levels (e.g., monitoring data or predictions).</td>
</tr>
<tr>
<td></td>
<td>What methods are used to control vibration?</td>
</tr>
<tr>
<td>Traffic</td>
<td>Is there sufficient parking for cars and trucks for loading and unloading available within the boundary of the site?</td>
</tr>
<tr>
<td></td>
<td>How are traffic movements to/from the site managed?</td>
</tr>
<tr>
<td></td>
<td>How many vehicle movements take place at the site each day?</td>
</tr>
<tr>
<td>Complaint History</td>
<td>Does the site have a procedure for recording complaints of:</td>
</tr>
<tr>
<td></td>
<td>- Noise</td>
</tr>
<tr>
<td></td>
<td>- Vibration</td>
</tr>
<tr>
<td></td>
<td>- Water pollution</td>
</tr>
<tr>
<td></td>
<td>- Dust</td>
</tr>
<tr>
<td></td>
<td>Are there complaint records?</td>
</tr>
<tr>
<td></td>
<td>Are you aware of any complaint history about this site?</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>What self-monitoring is carried out at the site?</td>
</tr>
<tr>
<td></td>
<td>Provide all relevant monitoring data for the preceding 12 months. Self-monitoring may include suspended dust in the workplaces, suspended dust outside the perimeter of the site, testing of water run-off from site (i.e., rainwater). Any noise assessment and noise exposure assessment?</td>
</tr>
<tr>
<td>EQA Monitoring</td>
<td>EQA site dust monitoring</td>
</tr>
<tr>
<td></td>
<td>EQA site noise monitoring</td>
</tr>
</tbody>
</table>
## Appendix 2 – Example EMP template

<table>
<thead>
<tr>
<th>Section 1 - Background</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>The site location should be described and a plan indicating the location of the main site activities should be provided. A general description of the environment of the site and surroundings should be provided. Key environmental receptors (residential areas, ground and surface water) should be identified on a map.</td>
</tr>
<tr>
<td><strong>Operating activities</strong></td>
<td>A description of the operating activities undertaken should be provided. This may include: A brief description of operation processes Working or operating hours, including details of any activities required to be undertaken outside these hours The plant and equipment used and reference to site operating procedures.</td>
</tr>
<tr>
<td><strong>EMP objectives</strong></td>
<td>This should define what the EMP is trying to achieve. It may include objective that relate to general site management, specific site features and best practice environmental management, all of which should be focused on ensuring environmental compliance.</td>
</tr>
<tr>
<td><strong>Environmental Policy</strong></td>
<td>Reference should be made to the environmental policy that is relevant.</td>
</tr>
</tbody>
</table>

| Section 2 – Environmental management |
|-------------------------------------|--------------------------------------------------------------------------------|
| **Environmental management structure and responsibility** | The EMP should provide a clear organisation structure for site including the names and positions of personnel responsible for environmental management. A description of the roles and responsibility of each identified person should also be identified. The roles and responsibility of subcontractors should also be identified. A person should be nominated with the specific task of ensuring that the EMP is implement across the site and maintained. |
| **Approval and licensing requirements** | The regulatory framework for the site must be identified. The EMP should include relevant requirements to ensure that they are considered in the EMP, including:  
  - Listings of conditions of approval or consents. It may be useful to include these as a matrix indicating where in the EMP each condition is addressed;  
  - Providing a table listing the legislation relevant to the site;  |
| **Reporting** | A description of the reporting requirements should be provided and may include:  
  - A list of reports requires, for example  
    - Process monitoring  
    - Non-compliance  
    - Corrective action  
    - Complaints management  
    - Auditing  
  - A description of a typical report content  
  - Personnel responsible for preparing the report and when/how frequently they are prepared  
  - Document control procedures |
## Environmental training

All employees should undergo general environmental awareness training and training about their responsibilities under the EMP. The training should ensure that all employees (including contractors and subcontractors) understand their obligation to ensure due diligence for environmental matters.

Environmental training should include:
- A site induction for new staff and contractors
- Familiarisation with the requirements of the EMP
- Environmental emergency response training
- Targeted environmental training for specific personnel. For example, plant operators may require specific training in dust minimisation.

Records of all training should be maintained and should include:
- Who was trained
- When the person was trained
- The name of the trainer; and
- A general description of the training content.

## Emergency contracts and response

The EMP should nominate a contact person(s) for emergencies that will be available 24 hours a day, seven days a week, and who has the authority to stop or direct works. It should also document the procedures to be followed in the event of an environmental emergency. An environmental emergency is any event that causes or has the potential to cause material harm to the environment. These procedures need to include:
- The names and contract details (including all-hours telephone numbers) for emergency response personnel.
- Response personnel responsibility
- Contact details for emergency service (ambulance, fire brigade, spill clean-up services)
- The location of on-site information on hazardous materials
- Steps to follow to minimise damage and control an environmental emergency; and
- Instructions and contact details for notifying the regulator and, if necessary, nearby residents.

## Section 3 Implementation

This section of the EMP should generally follow the following steps:
1. Provide a list of the activities to be carried out. This should describe all process and support activities including those undertaken by subcontractors or suppliers together with ancillary works such as material transport to and from the site
2. Identify the actual and potential environmental impact associate with each activity
3. Identify which environmental impacts are significant. The method for the risk assessment should be selected that are appropriate to the site operation. Ideally these should be objective (i.e. quantitative) rather than subjective (i.e. qualitative)
4. Use this information to design the environmental management activities, controls and monitoring to prevent or minimise those environmental impacts appropriately;
5. State how often, and when, this risk assessment will be carried out
An EMP should specify all the environmental management activities, mitigation and control measures that will be used to prevent or minimise environmental impacts. It should include mitigation measures identified from the risk assessment. Note this is usually the largest section of an EMP. This section must assign responsibilities for control measures to specific personnel and provide timescale for their implementation. It may also specify the monitoring measures associated with the control measures. Where monitoring measures are identified the EMP should state the minimum performance level or criterion to be achieved. Qualitative criteria are preferred but this may not always be possible in which case qualitative criteria may be used.

### Environmental control plans or maps

Such plans may be useful as an on-site reference tool and may indicate the location of the following:

- Environmentally sensitive areas on and adjacent to the site
- Waterways including drains
- Erosion and sediment control measures
- Work areas, machinery or vehicle parking, soil dumps. Fuel and chemical stores
- Vegetation that requires protection
- Restrictions on traffic movement, and
- Monitoring locations

### Environmental schedules

Environmental management schedules are copies of forms, reports, records used during the site’s day to day environmental management. Examples include:

- Site inspection check lists
- Non-compliance and corrective action reports
- Complaints records
- Environmental incident reports
- Environmental training register
- Waste register; and
- Monitoring checklist.

### Section 4 monitoring and review

#### Environmental monitoring

The EMP should explain how environmental management activities and control will be monitored. A monitoring checklist should be developed specifying when the environmental control activities need to be carried out, who is responsible and what method will be used to measurement effectiveness. The checklist should also specify if, and when, follow-up action is required and who is responsible. Details of how monitoring records will be collated and stored should be provided.

#### Environmental auditing

The EMP should describe the program and procedures for period auditing of the EMP’s implementation and effectiveness. The frequency of audits should reflect the level of significance of environmental impacts and results of previous audits.

#### Correction action

The EMP should define procedures for dealing with non-compliance with environmental management controls, environmental incidents and emergency. The procedures should also define who is responsible (e.g. site manager) who is responsible and has the authority for handling and investigating non-compliance, taking action and completing corrective and prevention actions.
<table>
<thead>
<tr>
<th>EMP review</th>
<th>Schedules should be developed for recording environmental incidents, non-compliance and corrective and prevention actions.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The EMP review process should be defined, including looking at the environmental controls and procedures to make sure that they are still applicable to the activities being carried out. It should include:</td>
</tr>
<tr>
<td></td>
<td>• When/how often this will be done;</td>
</tr>
<tr>
<td></td>
<td>• Who will be responsible for reviewing the EMP, recording decisions and the reasons for then, and making subsequent changes, and</td>
</tr>
<tr>
<td></td>
<td>• How the staff will be informed of those changes.</td>
</tr>
</tbody>
</table>
Appendix 3 – Example CAP template

**Compliance ACTION PLAN**

**Action Plan Subject:** Control of dust emission  
**Action Plan Objective:** To prevent dust emission during the transport of dusty material using conveyors

<table>
<thead>
<tr>
<th>#</th>
<th>Start Date</th>
<th>Actions</th>
<th>Completion Date</th>
<th>Responsibility</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10 March</td>
<td>Investigate options for dust mitigation from conveyors</td>
<td>10 April</td>
<td>Environmental manager</td>
<td>4 man days</td>
</tr>
<tr>
<td>2.</td>
<td>10 April</td>
<td>Identify equipment supplier, prepare design specification and seek quotations</td>
<td>24 April</td>
<td>Maintenance manager</td>
<td>5 man days</td>
</tr>
<tr>
<td>3.</td>
<td>24 April</td>
<td>Review quotations and select preferred bidder. Place order</td>
<td>30 April</td>
<td>Finance director</td>
<td>1 man day, capital cost of plant and equipment</td>
</tr>
<tr>
<td>4.</td>
<td>30 May</td>
<td>Plant installation</td>
<td>14 June</td>
<td>Maintenance manager</td>
<td>2 man days</td>
</tr>
<tr>
<td>5.</td>
<td>14 June</td>
<td>Development monitoring and performance reporting mechanism</td>
<td>21 June</td>
<td>Environmental manager</td>
<td>1 day</td>
</tr>
<tr>
<td>6.</td>
<td>14 June</td>
<td>Development maintenance schedule</td>
<td>21 June</td>
<td>Maintenance manager</td>
<td>1 day</td>
</tr>
</tbody>
</table>

Mitigation is required to abatement dust emissions caused by wind blow dust during the transfer of materials using conveyor system.