

Appendix 1

Summary of Relevant Environmental Legislation

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Introduction

Industrial pollution control has been addressed in many Laws and regulations which has had implications on the level of enforcement scattered between many authorities. Therefore the need arose for a legal set-up that would co-ordinate all these regulations. The most recent of these is Law 4/1994 which designated the Egyptian Environment Affairs Agency (EEAA) as the highest national co-ordinating body for the environment in Egypt. As stated in the Law EEAA main responsibilities include:

- Establishing of norms and conditions to be complied with by owners of projects and establishments before the start of construction and during the operation of these projects.
- Carrying out field inspections of compliance with norms and conditions to be followed by agencies and establishments. Also it shall undertake the procedures stated in the Law against those who violate these norms and conditions.
- Establishing of necessary norms and standards to assure compliance with the permissible limits of pollutants and to ensure that these norms and standards are followed.
- Setting of principles and measures for environment impacts assessment of projects.

Relevant Environmental Laws and Regulations

The following are the laws and regulations concerning environmental protection. These concern the following:

- A. Wastewater
- B. Air pollution
- C. Solid waste
- D. Hazardous waste
- E. Occupational health and safety
- F Licenses

A. Wastewater

1. Law 48/1982 concerning protection of the River Nile and Egypt waterways from pollution:

Regulates the discharge of wastes to the River Nile its branches and the marine environment by a permit from the Ministry of Public Works and Irrigation after fulfilling certain criteria monitored by periodic analysis.

2. Minister of Irrigation Decree 8/1983 implementing Law 48/1982 (the Executive Regulations of Law 48/1982):

Section 6 sets regulations standards and specifications for treating wastewater before discharge to surface waters.

Article 60 indicates the quality of fresh water to which discharge of wastewater is allowed.

Articles 61 and 62 describe criteria of treated industrial wastewater to be discharged to fresh surface water and ground water.

Articles 66, 67, 68 and 69 set criteria for domestic and industrial wastewater before being discharged to non-fresh surface waters and the quality of the receiving water body.

This Decree was amended by the following Decrees:

- **Minister of Irrigation Decree 140/1984:**
Amending some rules of the Minister Decree 8/1983 implementing Law 48/1982.
- **Minister of Irrigation Decree 225/1984:**
Amending some rules of the Minister Decree 8/1983 implementing Law 48/1982.
- **Minister of Irrigation Decree 43/1985:**
Amending some rules of the Minister Decree 8/1983 implementing Law 48/1982.
- **Minister of Housing and Utilities Decree 9/1988:**
Amending some rules of the Minister Decree 8/1983 implementing Law 48/1982.
- **Minister of Housing and Utilities Decree 106/1991:**
Amending some rules of the Minister Decree 8/1983 implementing Law 48/1982.

3. Law 93/1962 concerning sewage disposal:

Sewage disposal in public sewers is prohibited except by special permits and on condition of observing the specifications and standards decided by the Minister of Housing. Samples from commercial and industrial facilities are to be analysed in special laboratories designated by the Ministry of Housing to ensure fulfilment of the required criteria.

4. Minister of Housing and Utilities Decree 463/1962 implementing Law 93/1962:

Section 6 sets the specification and standards that must be fulfilled for wastewater discharge into public sewers.

Section 7 describes the methods and frequency of taking samples of wastewater for analysis.

B. Air Pollution

Presidential Decree 864/1969:

Establishes the Supreme Committee to Protect Air from Pollution chaired by the Minister of Health. The committee role include:

- a) studying sources of air pollution
- b) formulating a general policy for preventing air pollution
- c) Setting standards for air quality and
- d) Preparing legislation for air quality.

Minister of Health Decree 470/1971:

Sets standards for permissible pollution loads for ambient and workplace air and was later amended by Decree 240 of 1979.

Minister of Housing Decree 380/1975:

Specifies the general conditions for public commercial and industrial buildings and comprises rules for ventilation and avoiding severe heat cold and humidity.

Minister of Housing Decree 600/1982 implementing Law number 3/1982 for Urban Planning:

Sets the specifications for establishing the new industrial areas.

Minister of Industry Decree 380/1982 implemented by Minister of Housing Decree 60 of 1982:

Necessitates the utilisation of air pollution abatement equipment in industry.

Decree 2/1996 which confined the location of heavy industries in specific locations nationwide.

Law 4/1994 for the environment and its Executive Regulations promulgated by the Prime Minister Decree 338/1995:

Article 34 prerequisites for granting a permit for the establishment of a project that the site chosen should be appropriate for its activity to ensure compliance with the accepted limits of air pollutants.

Article 35 the establishments should ensure that while practising their activities no leaked or emitted air pollutants shall exceed the maximum permissible levels specified in laws and decrees that are in force and stated in the executive regulations of this Law.

Article 36 prohibits the use of machines engines or vehicles that emit exhaust fumes exceeding limits set by the executive regulations of this Law.

Article 40 states that during burning of any fuel the resulting smoke gases and harmful vapours are within permissible levels. The executive regulations of this Law shall define these precautions and permissible limits as well as the specifications of chimneys and other means to control emissions.

Article 42 sets permissible limits of sound intensity and the permissible time limits for exposure to said noise.

Article 43 sets permissible limits of leakage or emission of air pollutants inside the work premises.

C. Solid Waste

Law 38/1967 amended by Law 31/1976:

Concerns public cleanliness regulates collection and disposal of solid waste from houses public places and commercial and industrial establishments.

Minister of Housing Decree 134/1968 implementing Law 38/1967:

Define garbage and solid waste including domestic and industrial waste.

Identifies garbage containers method of transport schedules for solid waste collection.

Sets specifications and locations of dumping places and methods of treatment (sanitary dumps composting incineration).

D. Hazardous Waste

Law 4/1994 for the environment and its Executive Regulations promulgated by the Prime Minister Decree 338/1995:

Articles 25-27 of the executive regulations: outline of regulations permitting authorities and procedures as well as permit cancelling/suspension conditions.

Article 28 sets (regulations/guidelines procedures and policies controlling hazardous waste management ,generation , collection and storage , transportation , treatment and disposal).

Article 29 assigns specific responsibilities relevant to permitting hazardous waste treatment facilities.

Article 30 prohibits hazardous waste import and defines license procedures for trans-boundary movement of hazardous wastes.

Articles 31 and 32 outline general guidelines/precautions for those generating handling producing and importing hazardous materials (gases liquids solids) to ensure that no harm occurs to the environment.

Article 33 requires that owners of establishments whose activities result in the production of dangerous wastes must keep a register for these wastes and the methods of disposal and the quarters receiving these wastes.

E. Occupational Health and Safety

Law 137/1981 (Labour and Workplace Safety)

Requires industries to take special precautions for occupational safety and health in the work place and it deals with physical danger including noise. Section 5 presents the required standards of occupational health and safety.

Minister of Manpower Decree 55/1983

The Decree grants the industrial safety inspectors the right to check the types and composition of the chemicals used.

Article 6 of chapter 3 sets the precaution measures for exposure to chemicals used in the workplace. It also sets the standards for noise in working locations.

Minister of Industry Decree 91/1985 for implementing Law 21/1985

Regulates the production handling and importing of dangerous chemicals. It also regulates the conditions of the production and storage area.

Law 4/1994 for the environment and its Executive Regulations promulgated by the Prime Minister Decree 338/1995:

Article 43 sets permissible limits of leakage or emission of air pollutants inside the work premises.

F. Licenses

Law 453/1954 which gives relevant powers to local administration as the competent enforcement authorities.

Minister of Housing Decrees 380/1975 and 140/1976: implementing Law 453/1954.

Law 21/1956: deals with the industry organisation and the presidential Decree 449/1958 implementing Law 21/1958.

Appendix 2

Industrial Audit Checklist

Industrial Audit Checklist

This Checklist should be used as an aide memoire to assist the gathering of relevant information. Not all sections will be relevant to each site.

| | | Name | Action |
|------------------------------------|---|------|--------|
| SECTION A - COMPANY DETAILS | | | |
| 1.0 | Site | | |
| 1.1 | Visual impact | | |
| 1.2 | Previous land use | | |
| 1.3 | Plans for expansion | | |
| 1.4 | Geological / hydrogeological information | | |
| 1.5 | Protection of sensitive environments on-site and adjacent to site | | |
| 1.6 | Alternative sites considered | | |
| 1.7 | Site security | | |
| 1.8 | Location of any sites of special scientific or historical interest | | |
| 1.9 | Surroundings including habitation, surface waters, neighbouring industries etc. | | |
| 1.10 | On-site laboratories and capabilities, considering laboratory management and expertise, methods used, standards and calibration techniques, sampling methods. | | |
| 2.0 | General | | |
| 2.1 | Person(s) responsible for environmental issues | | |
| 2.2 | Person(s) responsible for health and safety issues | | |
| 2.3 | Person(s) responsible for product quality | | |
| 2.4 | Pollution incidents in the last 5 years | | |
| 2.5 | Major health and safety incidents in the last 5 years | | |
| 2.6 | Government / local controls and checks - type and frequency | | |
| 2.7 | Government permits and certificates held | | |
| 2.8 | Complaints in the last 5 years | | |
| 2.9 | Written procedures for dealing with incidents | | |
| 3.0 | Costs | | |
| 3.1 | Cost of water (Piasters [Pt] per cubic metre) | | |
| 3.2 | Cost of energy: electricity (Pt per kilowatt), oil (Pt per kg), gas (Pt per m ³) | | |
| 3.3 | Cost of discharge of waste to a public sewer (Pt per cubic metre) | | |
| 3.4 | Cost of the disposal of other wastes including solids, process materials, etc. | | |
| 3.5 | Cost of raw materials and process consumables | | |
| 3.6 | Cost of manpower | | |

| | | Name | Action |
|--|--|------|--------|
| SECTION B - ENVIRONMENTAL TOPICS - HIGH PRIORITY | | | |
| 4.0 | Environmental Management and Housekeeping | | |
| 4.1 | General tidiness of site | | |
| 4.2 | Losses through spillage, handling procedures etc. | | |
| 4.3 | Spill and loss control procedures | | |
| 4.4 | Presence of documented good housekeeping practices | | |
| 4.5 | Other areas such as laboratories, maintenance shops, transportation etc. | | |
| 5.0 | Resource Usage | | |
| Resource usage associated with each process unit, factory unit and overall should be investigated. | | | |
| 5.1 | Raw materials: | | |
| | Quantity and quality of raw materials used in process | | |
| | Quantity and quality of cleaning materials | | |
| | Quantity and quality of packaging material | | |
| | Potential for reduction in wastage, reuse, rework or recycling | | |
| 5.2 | Water: | | |
| | Sources | | |
| | Quantities used | | |
| | Quality of public and private potable water supplies | | |
| | Sufficiency of public and private potable water supplies | | |
| | Results of laboratory analysis | | |
| | Quality of process water | | |
| | Sufficiency of process water | | |
| | Abstraction licences | | |
| | Treatment of water on site | | |
| | Cost of on-site treatment | | |
| | Potential for reuse of water (with or without treatment) | | |
| 5.3 | Energy: | | |
| | Quantity of oil used | | |
| | Quantity of electricity | | |
| | Quantity of natural gas | | |
| | Potential for reduction | | |
| | Potential for alternative energy sources | | |
| | Checks on boiler efficiency | | |
| Frequency of power disruptions and effect on production, wastage, etc. | | | |

| | | Name | Action |
|-------------|---|------|--------|
| 6.0 | Wastewaters | | |
| 6.1 | Details of effluent discharges (human and process waste) | | |
| 6.2 | Details of surface water drainage | | |
| 6.3 | Details of receiving water or sewerage system | | |
| 6.4 | Typical effluent composition: | | |
| | Volume | | |
| | Analysis | | |
| | Discharge conditions | | |
| 6.5 | Details of wastewater treatment systems | | |
| 6.6 | Costs associated with effluent discharge | | |
| 6.7 | Potential for recycling or reuse of Wastewaters | | |
| 6.8 | Potential for a reduction in wastewater volumes by: | | |
| | Process changes | | |
| | Segregation of effluent streams | | |
| 6.9 | Details of any planned changes | | |
| 7.0 | Emissions to Air | | |
| | Consideration should be given to point and fugitive (vapours and dusts from low level leakage, evaporation etc.) emissions. | | |
| 7.1 | Types of gaseous emissions | | |
| 7.2 | Consent conditions for discharges | | |
| 7.3 | Sources of dust and whether a nuisance | | |
| 7.4 | Sources of odour and whether a nuisance | | |
| 7.5 | Potential for the reduction of emissions to air | | |
| 7.6 | Details of emission control equipment (if any) | | |
| 8.0 | Solid and Hazardous Waste | | |
| 8.1 | Handling, storage and treatment of solid waste | | |
| 8.2 | Details of hazardous and toxic wastes | | |
| 8.3 | Waste minimisation studies | | |
| 8.4 | Recycling and reuse of waste | | |
| 8.5 | Details of landfill sites or other disposal routes | | |
| 9.0 | Hazardous Materials on Site | | |
| 9.1 | Details of hazardous chemicals used on site | | |
| 9.2 | Availability of hazardous materials data sheets | | |
| 10.0 | Storage Tanks | | |
| | Note should be made of operational and redundant storage tanks. | | |
| 10.1 | Location and condition of above ground storage tanks and vessels | | |
| 10.2 | Suitable bunding of storage vessels | | |
| 10.3 | Location and condition of below ground storage tanks and vessels | | |
| 10.4 | Frequency and method of checking tank integrity | | |
| 10.5 | Presence of records of storage inventories | | |
| 10.6 | Drum storage, condition and spill containment | | |

| | | Name | Action |
|--|---|------|--------|
| 11.0 | Fire Precautions and other Environmental Incident Emergency Procedures | | |
| 11.1 | Documented and suitable fire control procedures | | |
| 11.2 | Availability and suitability of fire fighting equipment | | |
| 11.3 | Availability and suitability of fire fighting personnel | | |
| 11.4 | Evacuation procedures and fire drills | | |
| 11.5 | Containment of water used in fire fighting if contaminated | | |
| 11.6 | Fire certificates | | |
| 11.7 | Correct storage of flammable materials | | |
| 11.8 | Identification of other environmental risks and control procedures | | |
| 12.0 | Land Contamination | | |
| 12.1 | Evidence of contamination, visible pollution, vegetation die-back etc. | | |
| 12.2 | Previous site history | | |
| 12.3 | Presence of dumps, stockpiles, buried wastes etc. | | |
| 13.0 | Other Hazardous Materials on Site | | |
| 13.1 | PCBs | | |
| 13.2 | CFCs | | |
| 13.3 | Asbestos | | |
| 13.4 | Pesticides | | |
| 13.5 | Radioactive materials | | |
| 13.6 | Laboratory wastes - chemical and microbiological | | |
| 14.0 | Noise | | |
| 14.1 | Assessment of noise levels and details of noise surveys | | |
| 14.2 | Compliance with noise regulations | | |
| 14.3 | Noise and vibration control measures | | |
| 15.0 | Other Considerations | | |
| 15.1 | Aesthetics of the plant, blending with surroundings | | |
| 15.2 | Damage to the ecology of area | | |
| 15.3 | Damage to historical sites | | |
| SECTION D - HEALTH, SAFETY AND QUALITY FACTORS | | | |
| 16.0 | Health and Safety | | |
| Obvious deviations from good working practices are to be recorded. | | | |
| 16.1 | Documentation of hazards and presence of safety data sheets | | |
| 16.2 | Compliance with regulations | | |
| 16.3 | Issue and use of personal protective equipment | | |
| 16.4 | Safe place of work provisions | | |
| 16.5 | Safe systems of work including guarding of equipment | | |
| 16.7 | Ventilation and indoor air quality | | |
| 16.8 | Exposure to heat | | |

| | | Name | Action |
|---|---|-------------|---------------|
| 16.9 | Sickness and accident records | | |
| 16.10 | Health monitoring of employees | | |
| 16.11 | Outstanding claims against the company | | |
| 16.12 | Medical staff, first aid, emergency services | | |
| 16.13 | Staff training | | |
| 16.14 | Safety checks on boilers, pressure vessels, lifting equipment, etc. | | |
| 17.0 | Quality | | |
| Factors which affect the quality and safety of products should be noted. Particular care must be taken to ensure that changes to production practices do not compromise the quality and safety of products. | | | |
| 17.1 | Documented good manufacturing practices | | |
| 17.2 | Quality management systems e.g. ISO 9000 | | |
| 17.3 | Quality assurance system | | |
| 17.4 | Effects of changing environmental practices on product quality | | |
| SECTION E - OTHER FACTORS | | | |
| 18.0 | Miscellaneous | | |
| 18.1 | Ways in which the facility is enhancing the environment or improving the local infrastructure | | |
| 18.2 | Future plans | | |
| 18.3 | Assistance required | | |
| 18.4 | Information required | | |

Appendix 3

Case Studies from the SEAM Project

Reduction of Milk Losses

Water and Energy Conservation

Recovery of Cheese Whey for Use as Animal Feed

Integrated Quality Assurance and HACCP Approach to Waste Reduction in

Food Processing
