

## **APPENDICES**

SITE ENVIRONMENTAL AUDIT

ITEM	YES	NO	COMMENT
1.1 SITE INFORMATION			
Name & address	✓		Putrajaya wetlands, Kajang, Selangor
Tel. number	✓		None at site
Fax number	✓		None at site
Environmental Manager	✓		Dr. Tay Tian Hock
1.2 OPERATIONAL DETAILS			
What are the main processes at the site?			Plant sourcing, preparation, nursery planting, planting of wetlands, plant maintenance & monitoring
What is the number of staff at the site?			30
1) permanent staff			100
2) contract workers supplied by contractors			attached table.
What is the work schedule?			since Feb. 1997
How old is this facility?			construction site, oil palm estates
What are the immediate adjacent landuses?			
1.3 SITE HISTORY			
What was the previous existing landuse in the area?			oil palm estate
2.0 ENVIRONMENTAL MANAGEMENT			
2.1 How is the Management Structure ?			Planting Operations Manager → Nursery Manager → supervisors → Asst. supervisors
Does the company have a site environmental policy?	✓		
2.3 Are there any environmental training programs? If any,	✓		No environmental Training Program - not implemented
how many personnel involved?			
How regular are the programs?			
What is the scope of the program?			

ITEM	YES	NO	COMMENT
2.4 Is there any internal Environmental Auditing Program?	✓		
If any...			
by whom?			Internal Environmental Unit.
What is the scope of the program?			Water and Topsoil Monitoring only.
What is the frequency of the program?			Water - every fortnight. Soil - every month.
What are the reports held?			Water Quality Report Soil -
2.5 Are there any Internal Environmental Monitoring Programs?	✓		
Are there any ambient environmental monitoring programs?	✓		
for air	✓		Baseline - Before construction & After construction of the well heads.
water			
noise	✓		
land	✓		Topsoil.
What are the techniques used?			Grids sampling for water. Random for soil.
What are the calibration techniques?			None.
What are the analytical standards used?	✓		
What are the data acceptance criteria?			Class II B parameter limits.
Are the laboratory services			
in-house?			
external?	✓		
What are the quality control procedures?			Accredited laboratory - 10 days for date of sampling.
What are the documentation?			None.
How is the data retention and distribution?			To J.V. (Joint Venture) partners, client, Wetlands International
2.6 Internal Inspections			
Are there any authorities involved?	✓		Internal by MHSB staff.
Independent companies?	✓		
2.7 Product Life Cycle Analyses			
Have an internal lifecycle analyses been performed?	✓		No product l:to cycle analyses
Have life cycle analyses been performed by external organizations?	✓		have been performed
Are there any reports held of external inspection?	✓		

ITEM	YES	NO	COMMENT
<b>3.0 PROCESS REVIEW</b>			
<b>3.1</b> Definition of Operations From an Environmental Perspective			
Flow-diagrams of operations undertaken at the site	✓		Attached.
Materials in : chemicals, water, energy	✓		Pest, pots, plywood, water, energy, fuel/diesel.
wastes out : gaseous, liquid, solid	✓		Aggregates, plastics, wood, polyfoam, wash water
wastes to disposal, wastes to reuse	✓		Plastic Temp. (reused).
<b>4.0 GASEOUS EMISSIONS</b>			
<b>4.1</b> Identification of Sources Of Gaseous Emissions	✓		Only for air compressor & vehicles.
discharges requiring a permit	✓		
discharges not requiring a permit	✓		None.
discharge arrangements			
<b>4.2 Compliance Status</b>			
Are the permit dates recorded? (issue and expire)	✓		
Are there any exemptions?	✓		
Is there any special arrangements for start up?	✓		
Has there been any violations in the last 3 years?	✓		
What are the actions taken by the authorities?	✓		
What are the action taken at the site?	✓		
What are the outstanding actions?	✓		
Have there been any public complaints?	✓		
<b>4.3 Gaseous Emissions Control?</b>			Air filter in compressor.
Are there any mandatory gas cleaning techniques performed?	✓		
What are the types of installation?	✓		
What is the date of installation?	✓		
Are there any performance checks?	✓		
Are there any maintenance program?			Air filter at compressor - changed every 100hrs of operation.
<b>4.4 Forthcoming Developments</b>			
What are the intended process changes?	✓		None needed - not significant.

ITEM	YES	NO	COMMENT
What are the legislative changes?			
What are the intended investment in gas cleaning, monitoring equipment?			Recommended Mission guidelines for Air Pollutants. None.
5.0 WASTEWATER			
5.1 Identification of Sources of Liquid Effluent			
What are the discharges requiring a permit?	✓		stormwater, washwater for. masonry.
What are the discharges not requiring a permit?	✓		
What are the discharge arrangements?	✓		None. - go back to hyper-wet wetland - cleared up by wetlands.
5.2 Drainage Network Details			
What is the nature of construction material used for the drains?			earth drains
What is the technique of emplacement?		✓	None
Are there any special features:		✓	
retention tanks		✓	At outlet of wetland cell only.
weirs and separators	✓		
soakaways		✓	
septic tanks	✓		Mobile toilets and masonry toilet.
pumps	✓		To pump up water for upper wet wet.
5.3 Treatment onsite			
What is the age of facility?	✓		Wetlands.
What is the capacity of the facility?	✓		
Is the facility licensed?	✓		
What is the date of issue and expire?	✓		
Who are the competent authority?	✓		
What are the treatment performed?	✓		Not relevant as the constructed wetlands will cleanse the water.
Are there any effluent monitoring programs (in-house)	✓		
Are there any effluent monitoring programs (external)	✓		
What is the regularity of monitoring?	✓		
What is the extent of monitoring?	✓		
What are the monitoring techniques?	✓		
How is the retention of information?	✓		
What is the distribution of information?	✓		

ITEM	YES	NO	COMMENT
What are the procedures in the event of failure?			
What are the procedures in the event of accidental releases?			
Are there any violations?	✓		None.
Are there any outstanding legal actions?	✓		Wetland is a flood protection system.
What are the future plans?	✓		
Is there a license to discharge?	✓		
What are the receiving watercourse / treatment works?			
Are there any violations?	✓		Sq. dargat.
Are there any outstanding legal actions?	✓		
<b>5.4 Treatment off-site</b>			
Is there any possession of a license to discharge?	✓		None - off-site.
Is the facility public or privately operated?	✓		
Is there a license?	✓		
What are the treatment techniques performed?	✓		
Is the facility inspected?	✓		Not applicable.
What are the receiving watercourse?	✓		
Is there any monitoring performed (in-house, external)?	✓		
Is there a recourse in the event of problems?	✓		
Are there any violations?	✓		
What are the on-going action?	✓		
<b>5.5 Internal Monitoring Programs</b>			
Details of existing programs	✓		Monitoring at wetlands.
at source: frequency	✓		Fortnightly.
parameters	✓		See Attachment.
pre-treatment, prior to discharge from site			
at discharge	✓		No more treatment.
receiving watercourse	✓		
	✓		No monitoring at Sq. dargat. MHSB is not the contractor at Potteryage.
<b>5.6 External monitoring programs</b>			
by authorities?	✓		
by other organizations?	✓		

only

ITEM	YES	NO	COMMENT
<b>5.7 Compliance Status</b>			
What are the permit dates, issues & expire	✓		
What are the exemptions?	✓		
Are there any violations in the last 3 years?	✓		
Are there any action taken by authority?	✓		
What are the actions taken at site?	✓		
What are the outstanding actions?	✓		
Has there been any public complaints in the last 3 years?	✓		
Are there any other (upstream and downstream) discharges?			Other contributors at Patungnya.
<b>5.8 Forthcoming Developments</b>			
Are there going to be new treatment facilities?	✓		
Are new processes being introduced?	✓		
Are new regulations being imposed?	✓		
<b>6.0 SOLID WASTE MANAGEMENT</b>			
<b>6.1 Itinerary of the general wastes produced with :</b>			
quantity	✓		See attachment. (Ampo - 1 ton, etc).
quality (i.e. analyses performed)			116 envelopes carried out.
and disposal routes			landfill of recycled food wrapper.
Is there any domestic waste?	✓		
Is there any commercial waste?	✓		
Is there any inert waste?	✓		plastic.
Is there any hazardous / special waste?	✓		discarded, pesticide cans.
Is there any radioactive waste?			
Is there any bio-hazardous waste?	✓		
Is there any other waste?	✓		Agriculture waste.
<b>6.2 Specific Waste Types Generated : Volume, Analyses, Disposal Routes</b>			
Are there any solvents waste?	✓		
Are there any PCBs waste?	✓		
Are there any paints waste?	✓		
Are there any oils or asbestos waste?	✓		

ITEM	YES	NO	COMMENT
Are there any CFCs waste?		✓	
Are there any halons waste?		✓	
Are there any other waste?		✓	
6.3 On-site Treatment Facilities			
What are the treatment processes being operated?	✓		
What is the date of installation and its capacity?	✓		
Are there any permits involved?	✓		
How are the residues disposed?	✓		
What are the solid residues - quality analyses & disposal?	✓		Not relevant as there is no treatment on-site.
Are there any gaseous emissions?	✓		
Is there any monitoring carried out?	✓		
Is there any liquid effluent monitoring?	✓		
Is there any incidents of non-compliance in the last three years?	✓		
6.4 Storage of Wastes			
How are the waste stored? : Type & quantity	✓		Only agriculture waste is stored on-site
description of storage area for each		✓	Other waste were disposed off
drainage		✓	immediately
enclosure		✓	
segregation		✓	
secure		✓	
6.5 Transportation of Waste			
Is there any in-house transportation?	✓		Vehicle to collect the waste (agriculture, etc)
Are they registered?	(don't posses) →	✓	To take to landfill.
Are there any external companies used?		✓	
Are they registered?			Not relevant
6.6 On-site Disposal			
What is the nature of disposal facilities?		✓	None - no on-site disposal.
Does it need a license?		✓	
Is it monitored?		✓	



ITEM		YES	NO	COMMENT
<b>6.7 Off-site Disposal</b>				
What is the nature of disposal facilities used?		✓		landfill.
Is it licensed? (privately or publicly operated?)			✓	private pond.
Is it audited / inspected?			✓	
<b>6.8 Reuse and Recycling</b>				
What are the waste types reused on-site?		✓		Plastic trap and sometimes polybags.
What are the waste types segregated for recycling?			✓	No.
<b>6.90 Forthcoming Developments</b>				
What are the new processes coming on stream			✓	None.
What are the new disposal options?		✓	✓	Composting.
What are the new recycling opportunities?			✓	
<b>7.0 Accident and Emergency</b>				
<b>7.1 Emergency Planning</b>				
Is there any emergency plans in existence?			✓	Not a written one.
What is the date of preparation and the frequency of revisions?			✓	
What is the regularity of practice?			✓	
Is it mandatory or voluntary?			✓	
Are there any emergency plans in preparation?				First aid kits, fire extinguishers, sand buckets.
Are there any emergency training programs?			✓	
<b>7.2 Incident Report</b>				
Have there been any occurrence of spills / leaks in the last 3 years?			✓	
Is there any action taken on-site?			✓	
Was there any action taken by the authorities?			✓	
Was there any non-compliance on the last 3 years?			✓	
Was any action taken on-site?			✓	
Was there any action taken /to be taken by the authorities?			✓	
Was any documentation maintained?			✓	
Have any actions been taken by the authorities?			✓	

ITEM		YES	NO	COMMENT
10.0	Packaging			
	What sort of packaging is used as raw material?	✓		glass bottles, steel drums, boxes, cart
	Is the packaging returned for reuse?	✓		Only outside cars, etc.
	What are the measures taken to			
	minimize the use /quantity of packaging?	✓		No measures taken.
	change of packing material?	✓		
	What are the environmental effects of the packaging?			Just waste for plastic boxes.
11.0	Compliance Status			
	What are the applicable statutory regulations, guidelines?			OSHA, EPA, etc.
	Are there any permits?	✓		
	What are the action taken by authority?	✓		
	What are the action taken at site?	✓		
	Are there any public complaints?	✓		
	Are there any other noise source in the vicinity?	✓		Construction noise.

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*For Environmental Committee's use only*

Date received:

Opinion No. 1

Head of Department (name)

Date received:

Date replied:

Comments:

Signature

Opinion No. 2

Name of implementer:

Date received:

Date replied:

Comments:

Signature

Opinion No. 3

Finance Manager (name)

Date received:

Date replied:

Comments: (on cost savings per year)

Signature

### Evaluation / Grading

Suggestion Criteria	Maximum Points	Head of Department	Implementer	Environmental Committee
1. Innovative & Creativity				
2. Efficiency / Work System Improvement				
3. Achieve environmental objectives and targets				
4. Practicality				
5. Cost savings				
6. Beneficial				
Total				

Implementable

Reasons:

Target date of implement:

Person to follow up (name)

Department:

Award:

1. Cash incentive (RM)
2. Coupon (No.)
3. Others (specify)
4. Bonus points

Remarks:

Not Implementable / Suggestion Rejected

Reasons:

- 1. Not practical
- 2. Conflict with MHSB's environmental policy and objectives
- 3. Duplication
- 4. No overall benefit to department and MHSB
- 5. Is a form of complaint

Comments:

Name of Environmental Committee	Position	Signature
	Chairman	
	Secretary	
	Committee Member	
	Committee Member	

## EMERGENCY (SPILL) PREVENTION AND RESPONSE PLAN

MHSB have the potential for causing accidental pollution of air, land or water or endangerment of public health and safety through accidental releases of toxic, hazardous or other polluting materials. The types of these releases are as follows:

- Spillage or leaks
- Waste disposal discharges
- Plant site stormwater runoff
- Drainage from raw material storage

Spill Prevention and Response Plans are developed to encourage the use of preventive approaches to deal with unnecessary releases of toxic materials. In general, a Spill Plan includes procedures for

- Preventing a spill or release
- Containing and controlling contamination (i.e. countermeasures) in the event of an accidental release and
- Notifying site personnel and the proper authorities of hazards associated with the release.

The fundamental concept of a Spill Plan is determining the potential for toxic or hazardous chemicals to be released from the site and taking appropriate preventive measures. Countermeasures are considered "reactive". They generally describe after-the-fact actions and can only be expected to mitigate the effects of a spill after it occurs. Therefore, spill prevention and spill control systems are given priority consideration in a Spill Plan.

An employee familiar with day-to-day operations of the plant (i.e., the material storage, handling, usage and waste management practices) usually is in charge of implementing the plan when a release occurs. This employee, or "coordinator", should have the full approval of the management at level of authority to commit the necessary resources.

Operational errors and equipment failures are the primary cause of spills; therefore, a Spill Plan should contain measures designed to avoid these errors and failures. Operational errors can be minimized through adequate supervision of facility process, personnel training and operator awareness of the importance of spill prevention. Management must be committed to spill prevention and must develop and enforce techniques for safe and efficient operation. Equipment failures can be minimized through proper initial selection, construction, maintenance of structural integrity and function, and frequent inspections (visual and mechanical). Sound engineering practices dictate the proper course of action in each of these areas.

A list of pollution incident prevention practices is included in Table 1 below. Pollution Incident Prevention practices are a series of activities aimed at identifying potential sources of pollution at a particular site and selecting and implementing measures that prevent or control possible discharges. In addition, the plan should be indexed or tabbed in such a way that the key portions which pertain to emergency response can be quickly referred to.

Table 1      Pollution Incident Prevention Practices

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## 1. Prevention

### Daily Visual Observations of :

- Storage facilities
- Waste handling and storage areas
- Hazardous Materials Storage

### Detailed Inspections of :

- Pipes, pumps, valves and fittings for leaks
- Tanks for corrosion (internal and external)
- Dry material or waste stockpiles for windblowing
- Tab supports or foundation deterioration
- Housekeeping practices
- Material of waste conveyance systems for leaks, spills or overflows
- Integrity of stormwater collection systems
- Waste storage, treatment, or disposal sites for leaks, seeps and overflows
- Direction of flow of potential spills and surface runoff

### Monitoring

- Liquid-level detectors
- Alarm systems
- Pressure and temperature gauges
- Analytical testing instrumentation
- Pressure drop shut-off devices
- Flow meters
- Valve positioning indicators
- Equipment operational lights
- Excess-flow valves
- Automatic runoff diversion devices
- Routine sample collection

- Records (all monitoring results/ findings)

## 2. Containment

### Secondary Containment

- Dikes
- Curbs
- Retaining walls
- Depressed areas
- Diversion pond
- Storage basins
- Sumps
- Sewer collection systems

### Flow Diversion

- Trenches
- Drains
- Overflow Structures
- Sewers
- Culverts

## 3. Mitigation

### Physical Clean-up

- Brooms
- Shovels
- Plows

### Labeling

- Label designation on tanks and pipelines
- Color coding of tanks and pipelines
- Warning signs

### Vehicle Positioning

- Physical barriers
- Underlying drains
- Designated loading and unloading areas



## Covering

- Tarpaulins over outdoor dry waste or material stockpiles
- Buildings or roofs over outside processes or stockpiles
- Vegetation, rock or synthetic covering on surface impoundment

## Preventive Maintenance

- Periodic inspections
- Identification of equipment and systems that need to be upgraded, repaired or replaced
- Appropriate adjustment, repair or replacement of parts
- Complete recordkeeping of all repairs, upgrading, replacements, adjustments and test results after system modifications were made

## Good housekeeping

- Neat and orderly storage of chemicals
- Prompt removal of small spillage
- Regular garbage disposal
- Maintenance of dry, clean floors by use of brooms, etc.
- Maintenance of proper spacing for pathways and walkways between containers and drums
- Minimum accumulation of liquid and solid chemicals on the ground or floor
- Stimulation of employee in good housekeeping

## Employee Training Programs

- Materials Inventory Systems
- Material Safety Data Sheets
- Spill notification protocols

## Mechanical Clean-up

- Vacuum systems
- Pumps

## Chemical Clean-up

### Sorbents

- Activated Carbon
- Clay
- Sawdust

#### 4. Ultimate Disposal

- Land disposal
- Recycle
- Recover
- Reuse
- Detoxification
- Compost

## ENVIRONMENTAL MANAGEMENT SYSTEM AUDIT PROTOCOL

### OVERVIEW & GENERAL INFORMATION

#### 1.1 Site Information

Name & address, tel. number and fax number  
environmental manager (delegated person)

#### 1.2 Audit History

Date and issues carried forward from previous audits

### ENVIRONMENTAL MANAGEMENT

#### 2.1 Environmental Management system

Is there a functioning environmental management system?

Does the environmental management system include any pertinent code of practice?

#### 2.2. Environmental Policy

Has an environmental policy been defined, recorded in writing and endorsed by management?

Does the policy indicate which business activities, products and services and the associated environmental impacts the environmental care system relates to ?

Has the environmental policy been communicated, implemented and maintained at all levels within the organisation?

Is the policy familiar to all employees of the organisation?

Is the environmental policy publicly available?

Has the management committed itself to continual improvement of environmental performance in the short and long term plans?

Is the continual improvement based on the EVABAT principle ("economically viable application of the best available technology")?

Does the environmental policy provide for the establishment and publication of environmental objectives?

### 2.3 Organisation and Personnel

Are the responsibilities, competencies and mutual relationships (organisation structure) established of the officials with the organisational freedom and authority which is required to :

- provide sufficient resources and personnel for the implementation of the environmental management system
- ensure that the environmental policy is implemented
- identify and record environmental problems
- initiate, recommend or provide solutions for these problems through designated channels
- verify whether the solutions have been implemented
- co-ordinate activities until a deficiency or unwanted situation in the environmental field has been corrected
- act in emergency situations

Are the demands and procedures for internal control (verification activities) recorded?  
Have adequate resources been provided for the implementation of the internal control?  
Has a competent personnel been designated to perform internal control?

Has a management representative been designated who, besides other responsibilities, is responsible and authorised for the implementation and maintenance of the requirements of this standard?

Have procedures been established for communication to personnel of :

1. the importance of complying with the environmental policy, the environmental objectives and the requirements of this standard
2. the significant environmental effects (actual or potential) of their activities and the benefits for the environment
3. their roles and responsibilities in complying with the environmental policy, the environmental objectives and the requirements of this standard
4. the possible consequences of deviations from the established procedures and working instructions

Have procedures been formulated to determine training requirements and to provide appropriate training, for personnel who perform activities with significant environmental effects?

Have supplementary education, training and/or experience requirements been established for special environmental tasks such as required by legislation and/or internal regulations?

Do the relevant personnel satisfy the educational requirements?

Is the education and training which has been followed registered?

Have procedures been formulated for informing contractors about relevant requirements and provisions of the environmental management system?

#### 2.4 Environmental Effects

Have procedures been formulated for dealing with (receipt, filing and answering) communications from both internal and external interested parties about the environmental effects and organisation's management?

Are these procedures implemented?

Have the procedures been formulated and implemented for identifying , examining and evaluating the direct and indirect environmental effects of the organisation's activities?

Has a register been started of environmental effects which are considered significant?

Do the procedures (where applicable) relate to :

1. controlled and uncontrolled (occasional) emissions to air
2. controlled and uncontrolled discharges to water
3. solid waste and other waste products
4. pollution of ground and groundwater
5. use of land, water , fuels and energy and other natural resources
6. noise, smell, dust , vibration and landscape pollution (visual)
7. impacts on specific parts of the environment, including ecosystems?

Do the procedures take account of environmental impacts as a result of

1. normal operating conditions
2. unusual (abnormal) operating conditions inc. start-up and shut-down
3. incidents, accidents and potential emergency situations
4. activities in the past, the present and the future

Have procedures been formulated to identify and record all environmental legislation, rules and regulations and government and corporate policy which relate to the environmental impacts of the business activities?

Are these procedures maintained and implemented?

## 2.5 Environmental Objectives and Terms of Reference

Have procedures been formulated to establish quantitative and qualitative environmental objectives and consequent targets at all relevant levels in the organisation?

Are these procedures maintained and implemented?

Do the environmental objectives involve:

- a) compliance with environmental legislation and permit requirements
- b) other objectives and terms of reference, including
  - the register of environmental impacts
  - the financial, operational and business requirements of the organisation and
  - the views of important interested parties

Are the environmental objectives and targets consistent with the environmental policy?

Do the environmental objectives and targets quantify the commitment to continual improvement, where possible?

## 2.6 Environmental Management Program

Has a programme been formulated which establishes the way in which qualitative and quantitative environmental objectives can be achieved?

Will this programme be implemented?

Does the programme include:

- a) the designation of responsibilities for achieving targets at each relevant level within the organisation
- b) the methods and the available resources?

Are separate programmes formulated for the environmental management of

- a) projects within the scope of new developments
- b) new or modified products, services or processes (if that leads to significantly different environmental effects)?

Are the following recorded in these programmes:

- a) the environmental objectives
- b) the way in which these objectives will be realised (mechanisms)
- c) procedures for dealing with changes and modifications during the course of the project
- d) measures of internal control (corrective mechanisms) and feedback?

## 2.7 Environmental Management Manual and Documentation

Has a manual or manual been produced which describe the environmental management system?

Does this include:

- a) the environmental policy, the environmental objectives and the programme
- b) a description of the key roles and responsibilities
- c) the relationship between the system elements
- d) references to related documentation and to other management aspects, where appropriate?

Does the manual take into account of the state of affairs under :

- a) normal operating circumstances
- b) abnormal operating conditions
- c) incidents, accidents and potential emergency situations
- d) activities from the past, in the present and planned activities?

Has an emergency plan been formulated with relevant environmental information and instructions?

Has the emergency plan been tested (practised) to check its effectiveness?

Have procedures been formulated to control the documents which are required for this standard?

Are these procedures maintained and implemented?

Do the procedures provide for:

- a) designation of the relevant organisation, division, function or activity?
- b) the regular evaluation, possible review and approval by authorised personnel before the reviewed procedures at all locations where activities take place and where environmental care is important?
- c) the immediate removal of outdated documents?
- d) determining the availability of the procedures inside and outside the organisation?

Is the documentation:

- a) legible
- b) dated (with revision dates)
- c) identifiable
- d) kept in an orderly fashion

e) kept for a specified period of time

## 2.8 Operational Control

Are responsibilities defined so that control, verification, measuring and testing within organisational units is adequately co-ordinated and performed effectively?

Are functions, activities and processes performed in a planned and controlled manner?

Within the scope of process control is attention paid to :

- a) documented procedures and working instructions (in accordance with and with reference to the manual) for the situations in which the lack of procedures and working instructions can result in operations which are not in accordance with the environmental policy?
- b) documented procedures for purchasing and for the contracting out of activities to third parties
- c) the measurement, registration and control of relevant process parameters
- d) the approval of intended (planned) processes and capital equipment
- e) the written standards which the performance must satisfy?

Are procedures formulated for the testing of (or where applicable, the internal control of) compliance with the applicable regulations (from the programme, the environmental objectives, the manual and the working instructions) and for the recording of the results of this supervision?

Are these procedures maintained and implemented?

For each relevant activity or each relevant area is / are:

- a) the necessary information for verification activities identified and recorded?
- b) the accuracy required specified?
- c) verification procedures to be followed described?
- d) the places and times of required measurements recorded?
- e) procedures established to control the quality of the measurements, including calibration and quality control charts?
- f) registrations maintained of the quality of the measurements?
- g) procedures established for data processing and interpretation?
- h) acceptance criteria which must be satisfied, established and described?
- i) the validity of data determined in the case of malfunctioning of the verification system?
- j) measurement and testing facilities safeguarded from unauthorised modifications or damage?



Is the responsibility for and the authority to initiate an investigation and take corrective measures established, should the requirements of the environmental management system, its implementation and / or results not be complied with?

Are procedures formulated for such investigation and corrective measures?

Do these procedures include:

- a) determination of the cause
- b) drawing up a plan of action
- c) starting corrective and preventive measures which are in line with the nature of the non-compliance
- d) checking the effectiveness of the preventive measures
- e) recording changes in the procedures as a result of corrective measures?

## 2.9 Environmental Management Records

Has a recording system been set up in order to demonstrate whether the organisation fulfils the requirements of the environmental management system?

Does the recording system note the extent to which the environmental objectives and targets have been achieved?

Have procedures been established for the identification, collection, indexing , filing and maintenance and the deletion of environmental management records (including registrations of purchase and contracting out, audit and review results and education and training)?

Are these procedures implemented and maintained?

Are the environmental records legible and categorised by activity, product or service?

Are the environmental records stored in such a way that they are easily accessible and protected against damage or loss, with retention times recorded?

Has the availability of the environmental records, both internally and externally, been arranged?

## 2.10 Environmental Management Audits

Have procedures for the implementation of environmental audits been established?

Are these procedures implemented and maintained?

Do the audits review whether:

- a) environmental management activities are implemented in compliance with the environmental manual, the program, the procedures and the working instructions and whether they have been implemented effectively;
- b) the environmental management system fulfils the environmental policy effectively?

Has an audit programme been determined?

Is this program implemented?

Are the following items included in the audit program:

- a) the activities / areas which are to be audited (organisation structure, administrative and operational procedures , areas of work, operations and processes)
- b) the frequency and planning of the audits on the basis of environmental relevance and/or the results of previous audits
- c) the persons responsible for the audits in the various areas/activities?

Do audit protocols and procedures refer to :

- a) documentation, reports and records
- b) environmental performance
- c) the personnel requirements (independence, expertise required, support from internal and external specialists where necessary)
- d) the audit approach and methodology
- e) the procedures for reporting the audit results (meeting the requirements of system elements, the effectiveness of the environmental care system in achieving the environmental objectives, implementation and effectiveness of corrective measures from previous audits, conclusions and recommendations)

## 2.11 Environmental Management Reviews

Does the management periodically review the environmental management system to ensure its continuing suitability and effectiveness?

Are the results recorded?

Is there an assessment of the need to change the policy and objectives, in view of changed circumstances and/or the commitment to continual improvement?