

## **Standard Operating Procedure for Civil Engineering**

FEMS SOP(C)-001	Sewage Treatment Plant (STP), Sewer Network & Operation
FEMS SOP(C)-002	Water Supply System
FEMS SOP(C)-003	Sanitary Plumbing System
FEMS SOP(C)-004	Contingency Plan During Water Disruption
FEMS SOP(C)-005	Ground Maintenance
FEMS SOP(C)-006	Pest Control

# **FEMS SOP(C)-001 SEWAGE TREATMENT PLANT (STP), SEWER NETWORK & OPERATION**

## **1.0 INTENTION**

- 1.1 To ensure the Sewage Treatment Plant (STP) including septic tank and imhoff tank are operated and maintained according to design specification and operation requirements.
- 1.2 To ensure the grease traps are operated and maintained according to the requirement and guidelines set by relevant body.
- 1.3 To ensure sewer networks and appurtenances is functioning and maintained accordingly.
- 1.4 To ensure the effluent from STP well treated and its operation is adhere to the statutory requirement.

## **2.0 SCOPE**

- 2.1 All type of sewage treatment plant (STP) including septic tank and imhoff tank, at Contract Hospital.
- 2.2 All type of grease traps at Contract Hospital.
- 2.3 All type of sewer networks at Contract Hospital.

## **3.0 DEFINITION**

- 3.1 Sewage treatment plant (STP) is a physical plant which uses various physical, mechanical, biological, chemical and energy to reduce sewage properties such as Biological Oxygen Demand (BOD), suspended solids (SS), bacteria and other sewage constituents so the discharge treated effluent will be safe for discharge to the environment.
- 3.2 Grease traps is a tool that serves to separate food waste and oil, grease, fat and scum from wastewater before the water is discharged into inland waters.

- 3.3 Influent means wastewater flowing into a sewage treatment plant. Effluent means water that has received primary, secondary, or advanced treatment to reduce its pollution or health hazards and is subsequently released from a sewage treatment plant (STP) after treatment. Effluent is treated wastewater.
- 3.4 Flow measurement means the accurate measurement and documentation of the rate of influent and effluent flows past a given point.
- 3.5 Desludging means a process of removing accumulated sludge from sewage treatment plant.
- 3.6 Wastewater or sullage / gray water is residual water from the sink in the form of a liquid or semi-liquid resulting from the activities of washing / cleaning materials, cooking utensils and tableware for the preparation of any food from the food premises.

#### **4.0 REFERENCES**

- 4.1 Technical Requirements and Key Performance Indicators (TRKPI)
- 4.2 Master Agreed Procedures (MAP)
- 4.3 Akta Industri Perkhidmatan Air 2006 (Akta 655)
- 4.4 Suruhanjaya Perkhidmatan Air Negara (SPAN) – Malaysian Sewerage Industry Guidelines
- 4.5 Environmental Quality Act 1974: Environmental Quality (Sewage) Regulations 2009
- 4.6 Occupational Safety and Health Hazard Act 1994 (OSHA)
- 4.7 Garis Panduan Pemasangan Perangkap Minyak, Jabatan Kerajaan Tempatan, Kementerian Kesejahteraan Bandar, Perumahan dan Kerajaan Tempatan
- 4.8 Relevant Local Authority
- 4.9 Operation & Maintenance Manual (O&M) of the designated STP

## **5.0 RESPONSIBILITIES**

### **5.1 Government:**

- 5.1.1 To ensure that the Company carries out the maintenance according to the Hospital Engineering Planned Preventive Maintenance (HEPPM).
- 5.1.2 To verify maintenance activities and records carried out by the Company.
- 5.1.3 To verify existing Population Equivalent (PE) of the STP data from the Company and ensure Contract Hospital operation requirement are met.
- 5.1.4 To ensure that any additional PE from new developments can be catered by the existing STP, else propose for upgrading / new plant.
- 5.1.5 To ensure the newly handed over STP can be operated according to the design and statutory requirement.
- 5.1.6 To review and verify the schedule maintenance for STP, grease traps and sewer network included in Hospital Specific Implementation Plan (HSIP).
- 5.1.7 To ensure that STP, grease traps and sewer network are functioning and maintained by the Company.
- 5.1.8 To ensure no obstruction or restriction on accessing grease traps installed.
- 5.1.9 To review and verify effluent test result submitted monthly by the Company.
- 5.1.10 To install flow meter and ensure the flow measurement is carried out by the Company.
- 5.1.11 To ensure that flow meter are functioning and maintained by the Company.
- 5.1.12 To notify the Company any incident / outbreak related to effluent non-conformity immediately.
- 5.1.13 To review submitted rehabilitation and replacement plans.

5.1.14 To verify the flow test, leakage test and CCTV inspection for sewer networks and appurtenances carried out by the Company.

5.1.15 To provide approved as-built drawings of sewer networks and appurtenances of all newly installed facilities by third party.

## **5.2 Company:**

5.2.1 To provide existing Population Equivalent (PE) of the STP data to the Government and ensure Contract Hospital operation requirement are met.

5.2.2 To advice Government on any new connection and additional PE to the existing system.

5.2.3 To advice Government on the newly handed over STP can be operate according to the design and statutory requirement.

5.2.4 To provide and ensure proper safety signage and signage indicating the component and equipment of the STP.

5.2.5 To be responsible and provide competent personnel for the operation of the STP.

5.2.6 To engage permit holder to carry out maintenance and desludging work.

5.2.7 To supervise permit holder during the maintenance and desludging work carried out.

5.2.8 To maintain records on the disposal of sludge. To ensure the effluent discharged or released into any inland waters or Malaysian waters comply with standard and requirement.

5.2.9 To set schedule maintenance of STP, grease trap and sewer network in the Hospital Specific Implementation Plan (HSIP) and submit to the Government.

5.2.10 To conduct maintenance of STP, grease trap and sewer network according to operation and maintenance manual and implement PPM

as per Hospital Engineering Planned Preventive Maintenance (HEPPM).

5.2.11 To assist the Government in obtaining the relevant license / certification from authorised bodies pertaining to the operation of STP.

5.2.12 To report malfunction of plant to the Government.

5.2.13 To maintain maintenance records.

5.2.14 To carry out effluent test at accredited lab and submit test report to the Government.

5.2.15 To carry out flow measurement at effluent outlet and recorded.

5.2.16 To install and maintain flow recording system and calibrate flow recording device.

5.2.17 To engage licensed operators to carry out desludging operation and manage desludging operation for all various types of sewage treatment plants including imhoff tanks and septic tank.

5.2.18 To perform any immediate corrective action when the effluent test result does not meet the standard and requirement.

5.2.19 To carry out continuous or intermittent disinfection by common methods such as chlorination or ultraviolet light or ozone.

5.2.20 To monitor effluent closely during incident / outbreaks and to notify the Government and carry out disinfection as required.

5.2.21 To regularly clean and clear all grease traps from grease and scum.

5.2.22 To be responsible for the entire scope of maintenance and operation of sewer networks and appurtenances.

5.2.23 To submit rehabilitation and replacement plans by competent / technical persons.

5.2.24 To establish and update the existing sewer networks and appurtenances drawings and to indicate the sewage treatment plant/ septic tanks location, manhole location and flow direction.

5.2.25 To carry out flow test, leakage test and CCTV inspection for sewer networks and appurtenances when required and submit the results or report to the Government.

## **6.0 PROCEDURES**

- 6.1 The Company shall assign competent personnel and permit holder to oversee and maintains the STP system to ensure continuous operation of the plant.
- 6.2 The Company shall maintain the housekeeping of all plant rooms and update the log book daily. This includes ensuring room cleanliness and keeping all things in proper order.
- 6.3 The Company shall ensure all plant room to be securely locked at all time, unless it is attended by competent personnel and permit holder. This is to ensure safety to all non-authorised personnel and also to avoid any tampering on the equipment.
- 6.4 Competent personnel and permit holder or any authorised personnel entering the STP shall wear appropriate PPE provided by the Company.
- 6.5 The Company shall carry out desludging operation to comply with the STP's desludging frequency requirement and the sludge disposal to comply with standard and requirement.
- 6.6 The Company shall carry out disinfection to meet the standard and requirement.
- 6.7 Sludge settlement test shall be carried out periodically by the Company to determine the desludging effectiveness.
- 6.8 The Company shall carry out effluent testing monthly to comply with the parameters stipulated in Second Schedule (Regulation 7); Environmental Quality (Sewage) Regulations 2009, Environmental Quality Act 1974
- 6.9 The Company shall maintain flow records periodically for future reference, especially when plant expansion and flow pattern due to population growth.

- 6.10 The Company shall carry out clean and clear of grease traps to comply with *Garis Panduan Pemasangan Perangkap Minyak, Jabatan Kerajaan Tempatan, Kementerian Kesejahteraan Bandar, Perumahan dan Kerajaan Tempatan* and relevant local body requirements.
- 6.11 The Government shall help reduce the quantity of waste oil into the oil trap by doing initial separation of oil and food scraps from cooking utensils and cutlery before doing the washing.
- 6.12 The Company shall perform the emptying and cleaning the basket filter and trap oil in accordance with operational requirements of such grease traps.
- 6.13 The Company shall ensure the use of a liquid solvent or emulsifier in oil traps are not used to avoid oil and water mix on a temporary basis causing the process of separation in grease traps not achieved.
- 6.14 The Company shall ensure all collected grease and scum in grease trap are disposed accordingly.
- 6.15 The Company shall ensure maintenance of a sewer networks and appurtenances done by competent / qualified / technical maintenance personnel and verified by competent person.
- 6.16 The Company shall assist the Government in obtaining / renewing permit from SPAN or relevant authorities to maintain the STP.

## **7.0 RECORDS**

- 7.1 Hospital Engineering Planned Preventive Maintenance (HEPPM)
- 7.2 Hospital Specific Implementation Plan (HSIP)
- 7.3 Work Order.
- 7.4 Log book.
- 7.5 Technical advice (when required)
- 7.6 Test Report
- 7.7 Desludging and disposal Records.



- 7.8 Disinfection records.
- 7.9 Flow measurement data.
- 7.10 Population Equivalent (PE) data (when required).

## **FEMS SOP(C)-002 WATER SUPPLY SYSTEM**

### **1.0 INTENTION**

- 1.1 To ensure the water supply system is functioning and well-maintained.

### **2.0 SCOPE**

- 2.1 Scheduled and unscheduled maintenance of water supply system for premises comprising below:
  - 2.1.1 Internal pipeline / plumbing system
  - 2.1.2 External water reticulation (within building compound)
- 2.2 Internal pipeline / plumbing system for water supply to the building consist of the following:
  - 2.2.1 Communication pipe
  - 2.2.2 Service pipe
  - 2.2.3 Distribution pipe
  - 2.2.4 Fitting, fixture and valve
  - 2.2.5 Building water tank / storage tank
- 2.3 External water reticulation (within building compound) for water supply to the premises consist of the following:
  - 2.3.1 Reticulation pipe
  - 2.3.2 Suction tank and pump system
  - 2.3.3 Main water tank / storage tank

### **3.0 DEFINITION**

- 3.1 Internal pipeline / plumbing system for clean water supply system is defined as a piping system that supplies water from main pipe / supply main / public pipe to the user building i.e. ward block, administration building, etc.

- 3.2 Internal pipeline / plumbing system for water supply system encompasses of all the communication pipe, service pipe, distribution pipe, fittings, fixtures and valve, and water tank within the Contract Hospital compound. This include any internal pipeline / plumbing system from rain water harvesting system or other collection method presence.
- 3.3 Communication pipe is a pipe section between main pipe / supply main / public pipe and water meter.
- 3.4 Service pipe is a section of the pipe that supplies water from the meter to the premises water tank / storage tank or kitchen tap under pressure main pipe.
- 3.5 Distribution pipe is a section of the pipe that supplies water from water tank / storage tank to the outlet i.e. water taps, shower, etc.
- 3.6 Fitting and fixture means piping accessories and outlet such as tee, elbow, basin, and water tap, etc. Valve means a device that regulates, directs or controls the flow of a fluid by opening, closing, or partially obstructing various passageways.
- 3.7 Building water tank / storage tank refers to individual tank that store clean water from service pipe for the usage of that building.
- 3.8 Reticulation pipe for external water reticulation (within building compound) is a piping system from the main pipe / supply main / public pipe to the suction tank or bulk meter or water meter.
- 3.9 Suction tank with pumping system for external water reticulation is a tank installed in combination with a pump. That required energy for the system is provided by the pump itself.
- 3.10 Main water tank / storage tank is a water tank for the storage of water from the main pipe / supply main / public pipe or from suction tank before distributed to other water tank / storage tank.

## **4.0 REFERENCES**

- 4.1 Technical Requirements and Key Performance Indicators (TRKPI)
- 4.2 Master Agreed Procedures (MAP)
- 4.3 Suruhanjaya Perkhidmatan Air Negara (SPAN) - Uniform Technical Guidelines for Water Reticulation and Plumbing
- 4.4 Other Relevant Local Authority

## **5.0 RESPONSIBILITIES**

### **5.1 Government:**

- 5.1.1 To verify the conducted scheduled and unscheduled maintenance work on the water supply systems.
- 5.1.2 To review and verify technical advice from the Company on any observed deficiency in the installed system.
- 5.1.3 To provide approved as-built drawings of water supply systems of all newly installed facilities by third party.

### **5.2 Company:**

- 5.2.1 To schedule water supply system maintenance in Hospital Specific Implementation Plan (HSIP).
- 5.2.2 To conduct scheduled and unscheduled water supply system maintenance when required.
- 5.2.3 To advise the Government in providing the approved as-built drawings of water supply systems of all newly installed facilities by third party.
- 5.2.4 To provide approved as-built drawings of water supply systems of all newly installed facilities by the Company to the Government.

- 5.2.5 To ensure the material use during maintenance including its installation is correct and accordance with SPAN requirement and the material is approved by SPAN and SIRIM.
- 5.2.6 To provide technical advice to Government on any observed deficiency in the installed system for upgrading works.
- 5.2.7 To establish and update the existing water supply system drawings and to indicate the valve and piping distribution.
- 5.2.8 To label or mark location of valves for water supply system.
- 5.2.9 To report malfunction or deterioration of the system to the Government.
- 5.2.10 To assist the Government in monitoring and recording the water meter reading.
- 5.2.11 To perform relevant test such as pressure test and leakage test for conformance if there is evidence of non-conformance or loss in performance.

## **6.0 PROCEDURES**

- 6.1 The Company to schedule and conduct periodic water supply systems maintenance in accordance to Hospital Engineering Planned Preventive Maintenance (HEPPM) requirements.
- 6.2 The Company to conduct corrective repairs on problems identified with the existing water supply system installations.
- 6.3 The Company shall conduct test if there is non-conformance or loss in performance as below:
  - 6.3.1 Pressure Test
    - 6.3.1.1 The minimum static air pressure according to the type of pipes installed, typically are as follows;
      - 6.3.1.1.1 Pipe metal types such as mild steel,

stainless steel, others: test pressure of 15 bar or 220 psi at minimum of 10 minutes

- 6.3.1.1.2 Non-metal pipes such as PVC-U, HDPE, others: test pressure of 12 bar or 180 psi at minimum of 10 minutes

*\*subject to the latest requirement by relevant authorities*

#### 6.3.2 Leakage Test

- 6.3.2.1 After passing the pressure test, the leakage test will be conducted and carried out for 24 hours in accordance with the type of pipe being tested.

- 6.3.2.2 If there is a pressure drop from the original, water will be pump until the original pressure allowed.

- 6.3.2.3 Water leakage is permitted where the amount of water pumped must not exceed the permissible quantity of water through leakage calculation as follows;

$$\frac{0.34 \text{liter} \times \text{IntPipeDia}(\text{mm}) \times \text{PipeLength}(\text{mm}) \times \text{Duration}(\text{hours}) \times \text{Result}(\text{Bar})}{10\text{mm} \times 1000\text{mm} \times 24\text{hours} \times 1\text{bar}}$$

- 6.3.2.4 If the quantity of water (liter) which is pumped back to the original pressure in excess of the permissible quantity of water (liter), then the test is considered failed.

*\*subject to the latest requirement by relevant authorities*

- 6.4 Government to verify all conducted scheduled and unscheduled maintenance work.

## 7.0 RECORDS

- 7.1 Hospital Specific Implementation Plan (HSIP)
- 7.2 Work Order.
- 7.3 Test report
- 7.4 Log book

## **FEMS SOP(C)-003 SANITARY PLUMBING SYSTEM**

### **1.0 INTENTION**

- 1.1 To ensure the wastewater from buildings are discharged into the external wastewater reticulation.
- 1.2 To ensure proper operation and efficiency of sanitary and plumbing system.

### **2.0 SCOPE**

- 2.1 To carry out the maintenance work on sanitary and plumbing system on all installations below at Contract Hospital:
  - 2.1.1 Sanitary piping
  - 2.1.2 Sanitary and plumbing fittings and fixtures

### **3.0 DEFINITION**

- 3.1 Sanitary plumbing system in this document refers to internal system within the buildings premises that enable wastewater to be discharged and drained out from fixtures to the external wastewater reticulation (sewer network).
- 3.2 Sanitary plumbing system comprises of sanitary piping, sanitary and plumbing fittings and fixtures. Piping in this document refers to all piping that conveys wastewater in the building premises to the external wastewater reticulation. Fittings refer to all components used to connect sanitary tubes or piping. Fixtures or 'ware' refers to components attached to the piping system such as sinks, wash basin, bowls, etc.
- 3.3 Wastewater or sanitary sewage or sullage / gray water is residual water from the sink in the form of a liquid or semi-liquid resulting from the activities of washing / cleaning materials, cooking utensils and tableware for the preparation of any food from the food premises.

## **4.0 REFERENCES**

- 4.1 Technical Requirements and Key Performance Indicators (TRKPI)
- 4.2 Master Agreed Procedures (MAP)

## **5.0 RESPONSIBILITIES**

### **5.1 Government:**

- 5.1.1 To verify the conducted scheduled and unscheduled maintenance work on the sanitary and plumbing systems.
- 5.1.2 To review and verify technical advice from the Company on any observed deficiency in the installed system.
- 5.1.3 To provide approved as-built drawings of sanitary and plumbing systems newly installed by third party.

### **5.2 Company:**

- 5.2.1 To schedule sanitary and plumbing systems maintenance in Hospital Specific Implementation Plan (HSIP).
- 5.2.2 To conduct scheduled and unscheduled sanitary and plumbing systems maintenance when required.
- 5.2.3 To provide technical advice to Government on any observed deficiency in the installed system for upgrading works.
- 5.2.4 To establish and update the existing sanitary and plumbing systems drawings and to indicate the valve and piping distribution.
- 5.2.5 To report malfunction of the system to the Government.
- 5.2.6 To ensure that no wastewater or sanitary sewage shall be allowed to be deposited on the surface of the ground and exposed to the public.
- 5.2.7 To ensure all installations, repairs and maintenance are properly sized, aligned, supported and graded.



## **6.0 PROCEDURES**

- 6.1 The Company to schedule and conduct periodic sanitary and plumbing systems maintenance in accordance to Hospital Engineering Planned Preventive Maintenance (HEPPM) requirements.
- 6.2 The Company to conduct corrective repairs on problems identified with the existing sanitary and plumbing systems installations.
- 6.3 The Company to obtain installation, reference and maintenance manuals for all parts.
- 6.4 To ensure each plumbing fixture shall be connected to sanitary and plumbing systems and shall be provided with a water-sealed trap.
- 6.5 To ensure that trap shall be separately and effectively vented to a vent pipe extending to the outer air if exposed to the atmosphere using vent cowl. The vent pipe should be installed and maintained that no drainage or sewage from any fixtures may be deposited in or conveyed through.
- 6.6 To ensure that vent pipe installed shall not terminate at a point adjacent to any window or other opening in the building intended or used for ventilation purposes.
- 6.7 To ensure that suitable and readily accessible cleanouts shall be placed at convenient points.
- 6.8 The Company to verify that shut-off valves and backflow devices are fully operational for all equipment.
- 6.9 The Company to check seals and valves for leaks and deterioration.
- 6.10 The Company to run plumbed and self-contained eyewash and shower equipment to flush the line.
- 6.11 The Company provides user training for metering and low-flow devices.
- 6.12 The Company to avoid standing water by keeping outdoor faucets, roof and pavement drains, and sprinklers in good condition.

- 6.13 To remove any blockage build up (clogged), the Company shall use acceptable and safe method such as clearing and cleaning the traps, using plunger or plumbing snake or drain chemical (with cautious).
- 6.14 For any new installation or repair work done, the Company must perform test such as leakage test or other necessary test before closing any work order.

## **7.0 RECORDS**

- 7.1 Hospital Specific Implementation Plan (HSIP)
- 7.2 Work Order.

# **FEMS SOP(C)-004 CONTINGENCY PLAN DURING WATER DISRUPTION**

## **1.0 INTENTION**

- 1.1 To provide a comprehensive contingency plan (inclusive of flow charts and options / alternative actions) during water disruption in the Contract Hospital to ensure continuity of water supply for critical areas such operation theatre, haemodialysis unit, kitchen, ICU, laboratory, labour room and any other critical area defined in Hospital Specific Implementation Plan (HSIP).

## **2.0 SCOPE**

- 2.1 Provide a comprehensive contingency plan for water disruption in the Contract Hospital.
- 2.2 Forming a Water Disruption Committee.
- 2.3 Provide training and training schedule.
- 2.4 Assess and improve the contingency plan as and when necessary.

## **3.0 DEFINITION**

- 3.1 Water Disruption

A shortage or no water supply in the Contract Hospital due to various causes such as disruption in water supply, leakages or burst in pipelines, malfunction of water pumps, damages of water storage tanks, power failures, floods and fire outbreaks.

## **4.0 REFERENCES**

- 4.1 Technical Requirements and Key Performance Indicators (TRKPI)
- 4.2 Master Agreed Procedures (MAP)

## **5.0 RESPONSIBILITIES**

### **5.1 Government:**

- 5.1.1 To approve contingency plan proposed by the Company at Contract Hospital.
- 5.1.2 To nominate its own staff and personnel to be among the member in water disruption committee and participate in training.
- 5.1.3 To form water disruption committee and appoint nominated staff to be among the member.
- 5.1.4 To establish 'Bilik Gerakan' in the event of water disruption and update the current status.
- 5.1.5 To communicate with the local authority for alternative supply.

### **5.2 Company:**

- 5.2.1 To propose to the Government a comprehensive contingency plan.
- 5.2.2 To nominate among its personnel to be a member in water disruption committee.
- 5.2.3 To conduct user training.
- 5.2.4 To assess and document after the conducting each training or meeting
- 5.2.5 To implement the approved contingency plan during water supply disruption.
- 5.2.6 To review and improve the implementation and procedures in the contingency plan periodically.
- 5.2.7 To assist the Government during water disruption or crisis.
- 5.2.8 To assist the government in obtaining water supply from agencies related.
- 5.2.9 To identify and advise the Government in prioritizing location or area in supplying water.

5.2.10 To ensure that all equipment used in water supply works such as portable generator set are available and functioning.

## **6.0 PROCEDURES**

### **6.1 Establish a Contingency Plan for water disruption**

6.1.1 The Company provides a written contingency plan which has been agreed by the Government. The plan must include name and contact person of water authority and related government bodies, alternative water sources, prioritized locations and evacuation procedures if the needs arises.

### **6.2 Forming a water supply disruption committee**

6.2.1 Government forms a water supply disruption committee.

6.2.2 The Company select staff to be a member of the committee and advises on technical issues, safety, process and procedures as well as evacuation if the need arises.

6.2.3 Government nominates its staff to become a member in the committee.

6.2.4 The committee assigns roles and responsibility of each member.

6.2.5 The committee to identify critical areas to ensure channelling of water to priority area

6.2.6 The Company to brief the committee on the situation in the event of water disruptions, e.g. the extent of the anticipated length of water disruptions, or evacuation of patients if required.

### **6.3 Conduct training and meeting**

6.3.1 The Company provides training to the Government and briefing on implementation of the contingency plan to committee members as and when necessary.

6.3.2 The committee members participate in training and to give feedbacks if any for further improvement in the contingency plan.

#### 6.4 Assessing and review

6.4.1 The Committee assess and review for further improvement of the contingency plan from time to time.

6.4.2 The Company documents the improvement made and make necessary changes in the original written plan

6.4.3 Government endorses the revised the contingency plan.

#### 6.5 Water Supply Works

6.5.1 The Government shall identify critical location or area to supply water.

6.5.2 The Company shall identify critical location and area and advise the Government in managing and supplying water.

6.5.3 The Company shall contact and liaise with local water supply agencies to supply water to the hospital.

6.5.4 The Company shall mobilise and install such equipment to ensure the delivery of water.

6.5.5 The Company shall record water supply usage and delivered to the hospital and inform the Government of such consumption.

6.5.6

6.5.7

### **7.0 RECORDS**

7.1 Approved contingency plan

7.2 List of water disruption committee members

7.3 Incident report and record on actual incident

## **FEMS SOP(C)-005 GROUND MAINTENANCE**

### **1.0 INTENTION**

- 1.1 To ensure that the grounds within the Contract Hospital compound are maintained as requirements.

### **2.0 SCOPE**

- 2.1 To conduct scheduled and unscheduled ground maintenance activities within the compound of the Contract Hospital.

### **3.0 DEFINITION**

- 3.1 Ground maintenance includes the maintenance of softscape and hardscape.
- 3.2 Softscape refers to the elements of a landscape that comprise live, horticultural elements. Softscaping can include, flowers, plants, shrubs, trees, flower beds, etc.
- 3.3 Hardscape represents inanimate objects of a landscape such as pavers, stones, rocks, fish pond, etc.

### **4.0 REFERENCES**

- 4.1 Technical Requirements and Key Performance Indicators (TRKPI)
- 4.2 Master Agreed Procedures (MAP)
- 4.3 Hospital Engineering Planned Preventive Maintenance (HEPPM)

## **5.0 RESPONSIBILITIES**

### **5.1 Government:**

- 5.1.1 To review and verify ground maintenance schedule in Hospital Specific Implementation Plan (HSIP).
- 5.1.2 To verify the ground maintenance activities carried out by the Company.

### **5.2 Company:**

- 5.2.1 To schedule ground maintenance activities in Hospital Specific Implementation Plan (HSIP).
- 5.2.2 To conduct schedule according to Hospital Engineering Planned Preventive Maintenance (HEPPM).
- 5.2.3 To conduct unscheduled ground maintenance activities as and when required.

## **6.0 PROCEDURES**

- 6.1 The Company shall conduct periodic ground maintenance activities such as the following:
  - 6.1.1 Grass cutting and maintenance of lawns.
  - 6.1.2 Trimming, pruning, watering and fertilising of all trees, shrubs, planting in the Contract Hospital compound.
  - 6.1.3 Providing and changing the indoor plotted plants.
  - 6.1.4 Sweeping and removal of litter from lawns and hardscape furnitures / fixtures
  - 6.1.5 Repainting of road kerb, bump and marking
  - 6.1.6 Repairing of drains, road pavement, road kerb, signage within Contract Hospital compound.
  - 6.1.7 Cleaning and repair of fish pond and arbitrary



- 6.2 Government shall verify all conducted scheduled and unscheduled ground maintenance activities.

## **7.0 RECORDS**

- 7.1 Work Order.
- 7.2 Hospital Specific Implementation Plan (HSIP)
- 7.3 Hospital Engineering Planned Preventive Maintenance (HEPPM)

## **FEMS SOP(C)-006 PEST CONTROL**

### **1.0 INTENTION**

- 1.1 To ensure that pest control activity is conducted and managed at the Contract Hospital.

### **2.0 SCOPE**

- 2.1 To conduct scheduled and unscheduled pest control activities within the compound of the Contract Hospital.

### **3.0 DEFINITION**

- 3.1 Pest control includes the extermination and/or control of: unwanted insects (ants, termites, cockroaches, mosquitoes, fly, and etc.), rodents (rats) and stray animals (bats, goats, snakes, and etc.).

### **4.0 REFERENCES**

- 4.1 Technical Requirements and Key Performance Indicators (TRKPI)
- 4.2 Master Agreed Procedure (MAP)
- 4.3 Akta Racun Makhluk Perosak 1974

### **5.0 RESPONSIBILITIES**

#### **5.1 Government:**

- 5.1.1 To verify the conducted scheduled and unscheduled pest control activities.
- 5.1.2 To verify Hospital Specific Implementation Plan (HSIP).

## **5.2 Company:**

- 5.2.1 To schedule pest control activities in Hospital Specific Implementation Plan (HSIP).
- 5.2.2 To conduct unscheduled pest control activities, when required.
- 5.2.3 To remove and dispose of exterminated and dead animals.
- 5.2.4 To ensure all pest control work is conducted by certified or licensed contractor / personnel.
- 5.2.5 To supervise certified or licensed contractors / personnel during the work.
- 5.2.6 To monitor the effectiveness of pest control work done.
- 5.2.7 To redo or proposed other method of control work if the result unsuccessful.

## **6.0 PROCEDURES**

- 6.1 The Company shall ensure pest control work carried out effectively but not limited to method as stated below:
  - 6.1.1 Termite and ants – spot treatment, preventive soil treatment
  - 6.1.2 Mosquitoes and flies – removal of all breeding area, sprating of appropriate pesticide at least once in two weeks.
  - 6.1.3 Rats and cockroaches – monthly baiting using appropriate approved poisons.
  - 6.1.4 Trapping and removal of stray animals (at least once a month) and other unwanted and / or nuisance animals such as bats, goats, snakes, bees, birds, etc. (as and when required).
- 6.2 Government shall verify all conducted scheduled and unscheduled pest control activities.
- 6.3 Chemical used in the pest control activities shall be those that have been approved by relevant regulating agency.

## **7.0 RECORDS**

- 7.1 Work Order.
- 7.2 Hospital Specific Implementation Plan (HSIP)
- 7.3 Hospital Engineering Planned Preventive Maintenance (HEPPM)
- 7.4 Certificate of Warranty
- 7.5 Material Safety Data Sheet (MSDS)