

PERKHIDMATAN PENYELENGGARAAN BERJADUAL DAN PEMBAIKAN SISTEM LOJI RAWATAN KUMBAHAN, TANGKI SEPTIK, PERANGKAP LEMAK DAN SALURAN PEMBENTUNGAN UNTUK TEMPOH SATU (1) TAHUN DI UiTM SHAH ALAM, SELANGOR DARUL EHSAN

SCOPE OF SERVICES

1.0 IDENTIFICATION OF FACILITIES

- a) General ~ UiTM Shah Alam is responsible for operating and maintaining 8 mechanical sewage treatment plant, 1 sewer lift stations, about 18 km of sewer line, and 1,345 inspection chamber and manholes that comprise the Wastewater Collection System. Pipe size ranges from 100 mm to 300 mm in diameter, and collectively they transport the 600,000 gallons of wastewater generated each day in UiTM. After rehabilitation of the campus's pipelines and structures, the oldest age of the collection system is now 36 years.
- b) The treatment plant and sewage facility is identified in "**APPENDIX-1**", Waste Water Facility, or equipment other than specified as directed by Superintending Officer (S.O) or Superintendent Officer Representatives (S.O.R).
- c) Sewer lines to be cleaned are Vitrified Clay Pipe (VCP), Ductile Iron Pipe (DIP), and Polyvinyl chloride (PVC) pipe and range in sizes from 100 mm up to 300 mm in diameter. Lengths shown are approximate. Payment will be for actual footage cleaned.

100 mm dia. = 2,600 meter
150 mm dia. = 7,300 meter
225 mm dia. = 7,500 meter
300 mm dia. = 600 meter
- d) Work crews shall be on site between 8:00 a.m. to 6.00 p.m., Monday through Friday. Sewers are the property of UiTM Shah Alam and located in the campus shown on maps provided in the Tender Document. However, any job in the Maintenance Schedule which cannot be done during the normal working hours, the contractor shall carry out at any other day including Saturday, Sunday and Public Holidays **without** any other additional charges.
- e) To carry out repair works inclusive spare parts during normal working hours and after office hour when required by S.O/S.O.R.

2.0 OPERATIONAL REQUIREMENTS

Operational requirements are as follows:

- a) Provide only experienced personnel necessary to satisfactorily operate the UiTM's sewerage treatment plants and sewage facilities. The labor shall include competent operators, supervisor, technicians and mechanics which to the knowledge of contractor as adequate to cater normal operation and emergency situation of the plants. Vehicles must be available for employees as needed.
- b) The Contractor's supervisor/mechanic/operator shall have competency certificate from IWK Training Centre or any recognized agency to operate/service/maintain the wastewater treatment plants and sewage

treatment facilities. The Contractor shall obtain JPP license/approval to operate/service/maintain all the UiTM's facilities.

- c) Perform all service and maintenance, testing and reports required by the UiTM as identified in "**APPENDIX-2**", Testing and Reports as required by the Federal Environmental Protection Agency (DOE) and Municipal/County Utility and Sewage Authorities or as required by State and Federal laws and regulations in effect as of the date of the contract and as amended.
- d) Prepare and submit a monthly report that shall include, but not necessarily be limited to, the following:
 - i. Operating conditions, process controls and laboratory analysis as identified in the Contractor's proposal.
 - ii. Details of service report on the particular month.
 - iii. Number of complaints received on the particular month and description of the complaint
 - iv. Repairs and maintenance completed.
 - v. Other matters as required by State and Federal laws or regulations.
- e) UiTM is responsible for operating the sewage treatment facilities in compliance with discharge permit requirements issued pursuant to JPP/JAS. The Contractor shall provide in a timely manner to the UiTM, all necessary periodic reports such as final effluent water sampling lab test result as required by State and Federal laws and regulations if required.

3.0 PREVENTIVE MAINTENANCE

- a) The Preventive Maintenance should focus on cleaning, lubrication, and correcting deficiencies found through testing and inspections. When there is a need to adjust or replace components, it should be done by highly trained competent professionals. Lubrication points should be clearly marked with bright red circles to ensure that lubrication tasks are not missed. Cleaning should be carried out to remove dust, dirt, and grime because these things mask defects that can cause unplanned maintenance.
- b) A quality preventive maintenance program requires a highly motivated preventive maintenance crew. To provide proper motivation, the following activities are suggested:
 - Establish inspection and preventive maintenance as a recognized, important part of the overall maintenance program.
 - Assign competent, responsible people to the preventive maintenance program.
 - Provide training (if necessary) in precision maintenance practices and training in the right techniques and procedures for preventive maintenance on specific equipment.

4.0 SCHEDULE MAINTENANCE OF PLANTS

The Contractor shall be required, at a minimum, to:

- a) Maintain the physical facilities and grounds at treatment plants and sewage treatment facilities on a month-round basis including, but not necessarily limited to, cleaning of floors, walls, ceilings, windows, restrooms and litter control.

- b) Provide grounds keeping for treatment plants and sewage treatment facilities, including grass cutting.
- c) Maintain a current inventory of all spare parts, maintenance supplies and chemicals in sufficient quantities to insure the uninterrupted operations of the facilities.
- d) Perform and/or arrange for the performance of preventive maintenance, and calibration of flow meters and final effluent quality monitoring system (if provided) at UiTM treatment plants and sewage treatment facilities as outlined in the operation and maintenance manuals provided by the equipment suppliers a minimum once per year.
- e) Maintenance shall consist of regular, routine recurring work necessary to keep equipment and plant structures in a condition that ensures proper functioning, at designed capacity and efficiency, for their intended use. Maintenance on equipment shall be recorded in a maintenance log-book, with references. Routine painting of interior and exterior equipment surfaces shall be performed by Contractor personnel; including hand scraping and wire brushing surface preparation.
- f) Provide all necessary tools and equipment to accomplish the above in accordance with the equipment supplier's operational and maintenance manuals and in strict compliance with the equipment manufacturer's requirements for their use. Where maintenance standards differ, the Contractor shall be held to the higher standard.
- g) Cost of all routine maintenance work shall be included in the compensation under the Contract. The Contractor shall provide labor for all routine repair work with the cost of parts and materials paid for by the UiTM. The UiTM shall have the option of performing emergency, major, extraordinary and unusual repairs. Major repairs would include structural, electrical or mechanical repairs to the treatment equipment, pumps, piping and buildings or the cost of filter media replacement. The Contractor shall promptly notify the UiTM when the need arises for performing emergency, major, extraordinary and unusual.
- h) Equipment to be maintained in this Contract consists of all flow meters, water and sewage processing and pumping equipment, as well as ventilation, lighting, electrical, plumbing, pipes, meters, and appurtenances.
- i) Any repairs deemed necessary and recommended by the contractor for efficient operation of the installation are to be authorized by the S.O/S.O.R unless these recommendation are accepted the authorized is given to perform these service, the contractor will not performed.
- j) Maintenance of roads, buildings and fences is considered the responsibility of the UiTM, cooperate with outside contractors retained by the UiTM to complete repair work and supervise work performed by subcontractors or others in connection with the treatment plants and sewage treatment facilities. The Contractor may be required to work in conjunction with the UiTM's General Environmental Contractor. Should this work not be covered in the scope of work as outlined herein, the cost will be borne by the UiTM.
- k) Supply a repair/replace analysis upon request for major equipment items.
- l) Regularly review the equipment's operation and maintenance manuals and periodically make written recommendations to the UiTM for the better use of personnel and maintenance of equipment in accordance with applicable manufacturer's standards.

5.0 ADMINISTRATIVE SERVICES

The Contractor shall be required to:

- a) Provide the necessary professional and technical assistance and support to enable its employees to efficiently and economically operate and maintain the treatment plants and sewage treatment facilities. Supervisory personnel shall make periodic visits and maintain regular telephone communications between its personnel at the plants and the Contractor's headquarters.
- b) Provide assistance and information to the UiTM as may be necessary for the development of the utility budget (if requested).
- c) Provide the necessary training to enable UiTM staff to efficiently and economically operate and maintain the water supply and treatment plants and sewage treatment facilities. If necessary, the Contractor shall provide package of Technical Training Courses for 2 persons of UiTM staffs at IWK Training Centre (or any recognized agency) consist of the following competency:

Package

- * Introduction to Sewage Treatment
- * Preliminary Treatment and On-Site System
- * Secondary Treatment
- * Solids Handling, Treatment and Disposal
- * Sewer Network Maintenance
- * Sampling Techniques and records
- * On-Site Measurement & Testing of Process Control Parameters

6.0 SUBMITALS

The Contractor shall provide:

- a) Written monthly reports to the UiTM summarizing and describing the operations of the water treatment plants and sewage treatment facilities. The reports shall include a copy of all reports and analysis submitted to the JPP and/or DOE (if requested). The reports shall also note any deficiencies in the operation of the facilities and/or their equipment and recommendations for correction thereof. It will also include totals of processing chemicals used or additions to water and sewage treatment systems.
- b) Immediate notification of any emergent condition shall be made to the UiTM's representative. The Contractor shall be prepared and provide prompt emergency service at any time in connection with the work required under this Contract.
- c) Emergency repairs and/or service shall be coordinated with the UiTM on a best effort basis to alleviate the emergent condition as soon as possible.
- d) The quality and quantity of the influent the water treatment plants shall not be the responsibility of the Contractor. The existing treatment facilities were designed and constructed to provide treatment for the wastewater. The existing systems have been identified by the UiTM as capable of treating the wastewater to potable wastewater standards as defined by the relevant authority.

- e) The Contractor shall provide supervision of its forces to ensure that the wastewater treatment plants are operating at all times to peak efficiency.

Scum, sludge and grease collected during servicing will be disposed by the Contractor.

- f) To conduct and submit Inventory/Equipment Condition Audit including hardcopy and softcopy of Schematic Drawing (A3 size) and UiTM Site Plan Layout (AO size) for all relevant equipment in Sewage Treatment Plant System once within the contract period.

The number of drawing will be determined by S.O/S.O.R during the contract period.

7.0 NOTIFICATION

All notices and non-routine work estimate and/or requests shall be submitted in writing with detailed scope of work and cost estimate breakdown delivered either in person or by express mail or other expedited means to:

Pengarah
Bahagian Pengurusan Fasiliti
Jabatan Pembangunan,
Universiti Teknologi MARA,
40450 Shah Alam.

Prior to commencement of work, the UiTM must authorize all non-routine work estimates and/or requests, in writing.