

SUMMARY

UNIT/TEAM : SEWAGE TREATMENT PLAN

RFT No: KUANTAN / 006

**PROPOSED MONTHLY SERVICE FOR SEWAGE TREATMENT PLANT
AT INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA KUANTAN CAMPUS**

| ITEM | DESCRIPTIONS | AMOUNT (RM) |
|--|----------------------------------|----------------|
| 1.0 | Total 1.0 Preliminaries | |
| 2.0 | Total 2.0 Sewage Treatment Plant | |
| TOTAL AMOUNT (RM) | | |
| TOTAL AMOUNT FOR ONE YEAR (RM) (X 12 MONTHS) | | |

Remarks:

- 1) The tendered price in this RFT No: KUANTAN / 006 will be the contract price during the contract period.
- 2) We (Authorised DBSB person) do not hesitate to decrease or cut any value of contract without any prejudice if the contractor were not follow the specification in the contract. The decrease amount is depends on current value.

THE TOTAL AMOUNT OF THE TENDER FOR 1 YEAR IN WORDS:
RINGGIT MALAYSIA:

I hereby certify that all descriptions are correct and all the offered price included the costs involved in refining the scope of services required by this tender.

Signature of Tenderer:

Signature of Witness:

.....

.....

Name:

Name:

Designation:

Designation:

Date:

Date:

Company Stamp:

Company Stamp:

BILL OF QUANTITY (BQ)

UNIT/TEAM : SEWAGE TREATMENT PLANT

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|------------|---|------|-----|-----------|-------------|
| 1.0 | <u>PRELIMINARIES</u> | | | | |
| A | Mobilization and demobilization of personnel, equipment, support facilities and materials required to complete the work | | | | |
| B | Apply PTW (Permit To Work) details and worker pass by liaise with related authorities and DBSB representative for reporting procedure before work commencement. | | | | |
| C | Apply Confined Space Permit by liaise with related authorities and DBSB representative for reporting procedure before commencement the work | | | | |
| D | Contractor should obtain the following guideline imposed for servicing and maintenance works: i) Obtain valid pass for workers at DBSB office before starting the work and always display the pass during working hour. Workers should wear uniform which approved by DBSB during performing the works. ii) Workers should comply with the safety regulations and guideline imposed by Safety and Health Department of DBSB and OSHBE. Fully cover COVID-19 vaccine also up to date tetanus diphtheria protection to be submitted conv to DBSB. iii) Wearing suitable PPE and uniforms. iv) Contractor should estimate the quantity of workers to completed the above services within the required frequency and time frame by DBSB. v) Contractor should provide adequate machineries for the above services and ensure the machineries is always in good condition. The machineries should be stored in proper space during rest time and after working hour. vi) To ensure all debris to be transported outside IIUM Kuantan Campus and make good of IIUM properties if any and keep record. | L/S | | | |
| E | Insurance coverage for contractor all risks (CAR) and Public Liability within the duration of the Contract or others Public Insurances and shall be submitted to DBSB before starting work. (as required) | | | | N/A |
| | TOTAL 1.0 PRELIMINARIES - B/F | | | | |
| | TOTAL 1.0 PRELIMINARIES - C/F | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|------------|--|----------------------------|---------|-----------|-------------|
| 1.0 | PRELIMINARIES (CONT'D) | | | | |
| F | To supply manpower as per requirement in <i>Attachment 1</i> . Working days and hour for servicing and maintenance works as follows: i) Monday until Friday - 8:00am-5:30pm ii) Saturday - 8:00am-1:00pm iii) Weekend / Public holiday Standby <i>(please attach competent person qualification or certification)</i> iv) Contractor should provide workers with necessary tools and equipment (as per required) v) Any requirement for work during Public Holiday and Weekend should be informed to the Supervisor or Person In-Charge vi) In such emergency or any requested by DBSB or by Authority Request, the contractor should come to requested place or site within one(1) hour and standby not less two(2)hour to carry out; any meeting, inspection or others related to contractor. Please provide specific hotline number for that purpose. vii) The Contractor should prepare the worker attendant all the work time refer to work scope. The Contractor must all the time meet our minimum required manpower, if any leave should be replace or will be deducted with any cost by DBSB. viii) The Contractor must prepare all document, attendant list, service report, work equipment, transportation, uniform, pass, at their own cost | | | | N/A |
| G | Lab test effluent and sampling and result must be submitted every month to DBSB as per following Parameter: i) pH ii) Biochemical Oxygen Demand@ 20°C 5days (BOD5) iii) Chemical Oxygen Demand (COD) iv) Suspended Solids (SS) v) Oil & Grease O&G vi) Ammonical Nitrogen (AN) <i>according PPKAS(Kumbahan)2009 Jadual Kedua (iii) Standard A, and accredited SAM every sampling</i> | 3 3 3 3 3 3 | monthly | | |
| | TOTAL 1.0 PRELIMINARIES - B/F | | | | |
| | TOTAL 1.0 PRELIMINARIES - C/F | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|-------------------------------------|---|------|--|-----------|-------------|
| H | PRELIMINARIES (CONT'D) Company must comply with Employment Act. Operation and maintenance (O&M) contractor must comply with SPAN requirement as per IPA Type D permit (O&M contractors) to carry out maintenance service for a sewage system but does not involve the operation of such system. <i>(shall attach the valid registration certificate)</i> | | | | |
| I | Reporting Procedures: a) Prepare bimonthly schedule for yearly servicing and maintenance works or PPM programmed (Comprehensive PPM schedule) for all departments and should check for approval b) Preparation and submission of monthly report performance c) Preparation of Monthly report for billing purposes should attached with pictures affixed with timestamp. d) Prepare report on defective unit for any damages | l/s | Monthly Monthly Monthly Monthly | | |
| J | To attend any meeting required by DBSB Representative / Management (as required) | | When necessary | | N/A |
| K | To ensure all chemical items is well kept, tagging, and follow the regulation required by DBSB and related authorities. (as required) | | | | |
| L | Contractor should provide First Aid Kits to be used during any emergencies. | | | | |
| M | Contractor should responsible any damages done to the property of IIUM Kuantan Campus or property inside the IIUM Kuantan Campus and compensate the payment if any. | | | | |
| TOTAL 1.0 PRELIMINARIES (RM) | | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|--------------|---|------|-------------|-----------|-------------|
| 2.0.0 | <u>SERVICES AND MAINTENANCE WORKS FOR SEWAGE TREATMENT PLANT(STP)</u> | | | | |
| 2.0.1 | Pump sump & Screening | | | | |
| | i. Lubricate & open / close penstock & gate valves. Apply grease to the sliding part and shaft. Tighten gland packing if found leaking. | | Bimonthly | | |
| | ii. Clear debris and dirt attached on the wall of coarse screen chamber. | | | | |
| | iii. Lift up and clean up the float switch. | | | | |
| | iv. Clear floating materials in the pumps or sump. | | | | |
| | v. Clear fine screen & grit chamber | | | | |
| | vi. Clear blockage at pumps. | | | | |
| | vii. Clean dry well of value chambers. | | | | |
| | viii. To ensure all the pumps are running in correct sequence and check / recorded any pump trip. | | Fortnightly | | |
| | ix. To ensure the pumps are running smoothly and no abnormal noise. | | | | |
| | x. To check / recorded the pump & coarse screen basket lifting chain and make sure it is hung properly. | | | | |
| | xi. To check / recorded discharge and of the pump to detect any blockage. | | | | |
| | xii. To remove oil & grease trapped in the grease | | | | |
| 2.0.2 | Sewage Treatment Plant House Keeping | L/S | Monthly | | |
| | i. Cutting grass inside the fencing. | | | | |
| | ii. To ensure cleanliness all the discharge channel (effluent) at sampling point. | | Fortnightly | | |
| | iii. Check and report on grating, hand rail, chequer plates, stairs, platforms, concrete slabs etc | | | | |
| 2.0.3 | Secondary Screening Channel | | | | |
| | i. Clean and clear debris on the head work. | | | | |
| | ii. High pressure water on dirty area. | | Fortnightly | | |
| | iii. Clear blockage prevent uneven flow. | | | | |
| | iv. Manual test equipment, lubricate, service unit. | | | | |
| 2.0.4 | Grit Chamber | | | | |
| | i. Clean and clear debris on the head work. | | | | |
| | ii. High pressure water on dirty area. | | Fortnightly | | |
| | iii. Clear blockage prevent uneven flow. | | | | |
| | iv. Manual test equipment, lubricate, service unit. | | | | |
| | v. Observe bubbler operation and calibrate foaming. | | | | |
| 2.0.5 | Grease Chamber | | | | |
| | i. Clean and clear debris on the head work. | | | | |
| | ii. High pressure water on dirty area. | | Fortnightly | | |
| | iii. Clear blockage prevent uneven flow. | | | | |
| | iv. Manual test equipment, lubricate, service unit. | | | | |
| | TOTAL SEWAGE TREATMENT PLANT - B/F | | | | |
| | TOTAL SEWAGE TREATMENT PLANT - C/F | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|---|--|------|---|-----------|-------------|
| 2.0.6 | Grit Classifier i. Clean and clear debris on the head work. ii. High pressure water on dirty area. iii. Clear blockage prevent uneven flow. iv. Manual test equipment, lubricate, service unit. | | Fortnightly | | |
| 2.0.7 | Control Room i. To keep the floor clean and dry ii. To clean the drain around the building iii. Take measurement and record. | | Fortnightly Fortnightly Daily | | |
| 2.0.8 | Electrical Switchboard and Wiring i. To clean the switch boards ii. To check for any loose or faulty electrical connection iii. To check and record the ammeters and hour run iv. To check the alarm system v. Check wiring, cables, fuses, testing auto tripping & vi. To ensure the air blower, raw & treated sewage vii. To check operating cycle of pumps to ensure that the pumps are properly set for intermittent sequential operation viii. Open pumps to check and clear blockage if any pumps is trip, high current, low flow or experiencing high vibration or sound ix. Check and report condition of electrical switches, panel, emergency light, beacon light, lights, lightning arrester, exhaust fan , and rubber mat. | L/S | Fortnightly Fortnightly | | |
| 2.0.9 | Others i. To clean the pumps ii. To check for any loose or faulty to the raw sewage pumps, air blowers treated sewage pumps iii. To check and record the ammeters and hour run meters reading for all the mechanical equipment in operation iv. Check wiring, cables, fuses, testing auto tripping & alarm system at the Main Control Panel with Client representative v. To ensure the air blower, raw & treated sewage pumps running & the change over sequence operable | | Fortnightly Fortnightly Fortnightly Fortnightly Fortnightly | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|---|--|-------------|-------------|-----------|-------------|
| 2.0.10 | vi. Open pumps to check and clear blockage if any pumps is trip, high current, low flow or experiencing high vibration or sound | L/S | Fortnightly | | |
| | vii. Measured Insulation resistant | | Yearly | | |
| | viii. Measured operating current | | Yearly | | |
| | ix. Measured supply voltage | | Yearly | | |
| | x. Measured any drop of performance | | Yearly | | |
| | xi. Check air valve operation | | Fortnightly | | |
| | xii. Oil Inspections | | Fortnightly | | |
| | xiii. Oil Change | | Bimonthly | | |
| | xiv. Change mechanical seal, packing, O-ring, Labyrinth Ring, Shaft Sleeve | | Quarterly | | |
| | xv. All reports have to be justified and recommended by competent Chargeman. | | Monthly | | |
| | Air blower and electric Motor –Driven | | | | |
| | i. Turn on each blower to check for unusual noise & vibration | | Fortnightly | | |
| | ii. Carry out servicing by checking / replace drive belting, clean air filters, check valves, pressure gauge, pilot gear, shaft seal bearing & general cleaning of engine / motor body | | Fortnightly | | |
| | iii. Change lubrication oil and do grease as per | | Bi-annual | | |
| | iv. Exchange the whole quantity of used oil and grease | | Bi-annual | | |
| 2.0.11 | Sewage Distribution Chamber | | | | |
| | i. Clean and clear debris on the chamber. | Fortnightly | | | |
| | ii. High pressure water on dirty area. | | | | |
| | iii. Clear blockage prevent uneven flow. | | | | |
| | iv. Manual test equipment, lubricate, service unit. | | | | |
| 2.0.3 | Anoxic Tank | | | | |
| | i. Clean and clear debris on chamber | Fortnightly | | | |
| | ii. High pressure water on dirty area. | | | | |
| | iii. Clear blockage prevent uneven flow. | | | | |
| | iv. Manual test equipment, lubricate, service unit. | | | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|---|--|------|-------------|-----------|-------------|
| 2.0.3 | <p>Aeration Tank</p> <ul style="list-style-type: none"> i. Ensure smooth inflow ii. Check / adjust appropriate return activated sludge operation. Check & adjust appropriate MLSS operation iii. Check air pipes system & ensure no leaks iv. Adjust ball valve to ensure sufficient air bubbles in the aeration tank v. To observe the growth of the biomass and test the Sv30 in the aeration tank and record. vi. Physical check on sewage color and foaming vii. To check any leakage in distribution pipe work and valve. viii. Observe water condition and record. ix. Clean debris and dirt attached on the wall of the tank. | | Fortnightly | | |
| 2.0.8 | <p>Aeration Distribution Chamber</p> <ul style="list-style-type: none"> i. Clean and clear debris on the chamber. ii. High pressure water on dirty area. iii. Clear blockage prevent uneven flow. iv. Manual test equipment, lubricate, service unit. | | Fortnightly | | |
| 2.0.8 | <p>Clarifier</p> <ul style="list-style-type: none"> i. Ensure no blockages to the inlet & outlet pipes ii. To clean the overflow weir plate and effluent channel ii. To clean side walls of the clarifiers iii. To check sufficient flow return sludge iv. Check / adjust air inlet valve of the scum skimmer to ensure it works v. Physical check on scum formation. vii. Basket screen-removal & disposal of screened material and cleaning viii. Mechanical screen-removal & disposal of screened material from bins & cleaning ix. Sump cleaning – settled material (grit sand etc.) x. Clear and clean level control / float switch xi. Clear pump blockage | | Fortnightly | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|---|---|------|----------------------|-----------|-------------|
| 2.0.5 | Activated Pump Chamber i. Clean and clear debris on the chamber. ii. High pressure water on dirty area. iii. Clear blockage prevent uneven flow. iv. Manual test equipment, lubricate, service unit. | | Fortnightly | | |
| 2.0.5 | Sludge Holding Tank & Desludging i. Check sludge level and record ii. Observe the appearance & amount of overflow into Raw Sewage Pump Sump iii. Check / adjust appropriate inflow / waste sludge iv. Desludging operation to send drying bed | | Fortnightly | | |
| 2.0.6 | Disinfection Chamber/ Final Effluent i. Clean deposits on the well, floor, inlet & outlet ii. Record water discharge | | Fortnightly Daily | | |
| 2.0.7 | Drying Bed i. Dried sludge removal from drying ii. Replenish top layer sand with new sand of same i. Growing weed in sand drying beds removed and do not used any chemical treatment to the grass or weeds ii. To sure the splash pad is located directly beneath the discharge nozzle | L/S | Fortnightly | | |
| 2.0.10 | Float Switches i. Clean off attached materials off the float switch ii. Check operational function or condition of float switches and their cables iii. Check level of float switches to ensure it is properly set iv. Check the operating start of the pump (by activating float switches via manual lifting of float switches) v. Check the operating cycle of the pump to ensure that the pumps are properly set of intermittent sequential operation. vi. Report is screen operating sequence is off | | Fortnightly | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|---------------|--|------|-------------|-----------|-------------|
| 2.0.13 | Sampling and Report | | | | |
| | i. Discharge treated effluent, BOD5 pada 20°C, SS, COD, Ph, Ammonical Nitrogen, O&G, with water discas report <i>*PPKAS 2009 Jadual Kedua (Peraturan &)(iii) Standard A</i> <i>*Every sampling shall comply lab SAM accredited</i> | 3 | Monthly | | |
| 2.1.0 | <u>Remote Pumping System 1 (RPS 1)</u> | | | | |
| 2.1.1 | Main Switch Board | | | | |
| | i. To carry out inspection, cleaning, servicing maintenance, repair and refurbishment work. | | Fortnightly | | |
| | ii. Take measurement and record | | Daily | | |
| 2.1.2 | Electrical Chain Hoist | | | | |
| | i. To carry out inspection, cleaning, servicing maintenance, repair and refurbishment work. | | Fortnightly | | |
| 2.1.3 | Mechanical Coarse Screen | | | | |
| | i. To carry out inspection, servicing maintenance, lubricate, repair and refurbishment work. | | Fortnightly | | |
| 2.1.4 | RAW sewage pump No.1 & No.2 and Drain pump | | | | |
| | i. Check the operation of the pumps and motor. | L/S | | | |
| | ii. Check for excessive vibration, unusual noises, lubricant, leakage and over heating | | Fortnightly | | |
| | iii. Maintenance pumping unit by manufacturer instruc. | | | | |
| | iv. Check operation of any pump controls and instrumentation. | | | | |
| 2.1.5 | Penstop & Manual Screen | | | | |
| | i. Inspect for proper operation | | Fortnightly | | |
| | ii. Remove debris and service unit. | | | | |
| | iii. Perform routine washdown and cleaning work. | | | | |
| 2.1.6 | Compund Area & Others | | | | |
| | i. Trim and uproot grass serounding unit. | | Fortnightly | | |
| | ii. Well maintenance road, drain, gate, signage & fencing | | | | |
| | iii. Maintain manhole entering to NPS and headline. | | | | |
| | iii. Check, maintain gate, valve in good practice. | | | | |
| | iv. Remove debris outside IIUM in proper method. | | | | |
| | TOTAL SEWAGE TREATMENT PLANT - B/F | | | | |
| | TOTAL SEWAGE TREATMENT PLANT - C/F | | | | |

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| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|---|---|------|-------------|-----------|-------------|
| 2.1.7 | Float Switches i. Clean off attached materials off the float switch ii. Check operational function or condition of float switches and their cables iii. Check level of float switches to ensure it is properly set iv. Check the operating start of the pump (by activating float switches via manual lifting of float switches) v. Check the operating cycle of the pump to ensure that the pumps are properly set of intermittent sequential operation. vi. Report is screen operating sequence is off | | Fortnightly | | |
| 2.2.0 | Remote Pumping System Talhah | | | | |
| 2.2.1 | Main Switch Board i. To carry out inspection, cleaning, servicing maintenance, repair and refurbishment work. ii. Take measurement and record | L/S | Daily | | |
| 2.2.2 | RAW sewage pump No.1 & No.2 i. Check the operation of the pumps and motor. ii. Check for excessive vibration, unusual noises, lubricant, leakage and over heating iii. Maintenance pumping unit by manufacturer instruc. iv. Check operation of any pump controls and instrumentation. | | Fortnightly | | |
| 2.2.3 | Penstop & Manual Screen i. Inspect for proper operation ii. Remove debris and service unit. iii. Perform routine washdown and cleaning work. | | Fortnightly | | |
| 2.2.4 | Compound Area & Others i. Trim and uproot grass surrounding unit. ii. Well maintenance road, drain, gate, signage & fencing iii. Maintain manhole entering to NPS and headline. iii. Check, maintain gate, valve in good practice. iv. Remove debris outside IIUM in proper method. | | Fortnightly | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |

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|---|--|------|-------------|-----------|-------------|
| 2.1.7 | Float Switches | | | | |
| | i. Clean off attached materials off the float switch | | | | |
| | ii. Check operational function or condition of float switches and their cables | | | | |
| | iii. Check level of float switches to ensure it is properly set | | | | |
| | iv. Check the operating start of the pump (by activating float switches via manual lifting of float switches) | | Fortnightly | | |
| | v. Check the operating cycle of the pump to ensure that the pumps are properly set of intermittent sequential operation. | | | | |
| | vi. Report is screen operating sequence is off | | | | |
| 2.3.0 | Remote Pumping System Masjid | | | | |
| 2.3.1 | Main Switch Board | | | | |
| | i. To carry out inspection, cleaning, servicing maintenance, repair and refurbishment work. | | Fortnightly | | |
| | ii. Take measurement and record | | Daily | | |
| 2.3.2 | RAW sewage pump No.1 & No.2 | | | | |
| | i. Check the operation of the pumps and motor. | | | | |
| | ii. Check for excessive vibration, unusual noises, lubricant, leakage and over heating | | | | |
| | iii. Maintenance pumping unit by manufacturer instruc. | | Fortnightly | | |
| | iv. Check operation of any pump controls and instrumentation. | | | | |
| 2.3.3 | Penstop & Manual Screen | | | | |
| | i. Inspect for proper operation | | | | |
| | ii. Remove debris and service unit. | | Fortnightly | | |
| | iii. Perform routine washdown and cleaning work. | | | | |
| 2.3.4 | Compound Area & Others | | | | |
| | i. Trim and uproot grass surrounding unit. | | | | |
| | ii. Well maintenance road, drain, gate, signage & fencing | | | | |
| | iii. Maintain manhole entering to NPS and headline. | | Fortnightly | | |
| | iii. Check, maintain gate, valve in good practice. | | | | |
| | iv. Remove debris outside IIUM in proper method. | | | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |

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|---|--|------|-------------|-----------|-------------|
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |
| 2.1.7 | Float Switches | | | | |
| | i. Clean off attached materials off the float switch | | | | |
| | ii. Check operational function or condition of float switches and their cables | | | | |
| | iii. Check level of float switches to ensure it is properly set | | | | |
| | iv. Check the operating start of the pump (by activating float switches via manual lifting of float switches) | | Fortnightly | | |
| | v. Check the operating cycle of the pump to ensure that the pumps are properly set of intermittent sequential operation. | | | | |
| | vi. Report is screen operating sequence is off | | | | |
| 2.4.0 | <u>Sewage Treatment Plant Maimunah</u> | | | | |
| 2.4.1 | Main Switch Board | | | | |
| | i. To carry out inspection, cleaning, servicing maintenance, repair and refurbishment work. | | Fortnightly | | |
| | ii. Take measurement and record | | Daily | | |
| 2.4.2 | RAW sewage pump No.1 & No.2 | | | | |
| | i. Check the operation of the pumps and motor. | | | | |
| | ii. Check for excessive vibration, unusual noises, lubricant, leakage and over heating | | | | |
| | iii. Maintenance pumping unit by manufacturer instruc. | | Fortnightly | | |
| | iv. Check operation of any pump controls and instrumentation. | | | | |
| 2.4.3 | Penstop & Manual Screen | | | | |
| | i. Inspect for proper operation | | | | |
| | ii. Remove debris and service unit. | | Fortnightly | | |
| | iii. Perform routine washdown and cleaning work. | | | | |
| 2.4.4 | Air blower and electric Motor -Driven | | | | |
| | i. Turn on each blower to check for unusual noise & vibration | | Fortnightly | | |
| | ii. Carry out servicing by checking / replace drive belting, clean air filters, check valves, pressure gauge, pilot gear, shaft seal bearing & general cleaning of engine / motor body | | Fortnightly | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |

BILL OF QUANTITY (BQ)

UNIT/TEAM : SEWAGE TREATMENT PLANT

RFT No: KUANTAN / 006

**PROPOSED MONTHLY SERVICE FOR SEWAGE TREATMENT PLANT
AT INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA KUANTAN CAMPUS**

| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|---|---|------|-------------|-----------|-------------|
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |
| 2.4.5 | iii. Change lubrication oil and do grease as per Exchange the whole quantity of used oil and grease Float Switches | | Bimonthly | | |
| | i. Clean off attached materials off the float switch | L/S | Fortnightly | | |
| | ii. Check operational function or condition of float switches and their cables | L/S | Fortnightly | | |
| | iii. Check level of float switches to ensure it is properly set | L/S | Fortnightly | | |
| | iv. Check the operating start of the pump (by activating float switches via manual lifting of float switches) | L/S | Fortnightly | | |
| | v. Check the operating cycle of the pump to ensure that the pumps are properly set of intermittent sequential operation. | L/S | Fortnightly | | |
| | vi. Report is screen operating sequence is off | L/S | Fortnightly | | |
| 2.4.5 | Compound Area & Others | | | | |
| | i. Trim and uproot grass serounding unit. | L/S | Fortnightly | | |
| | ii. Well maintenance road, drain, gate, signage & fencing | L/S | Fortnightly | | |
| | iii. Maintain manhole entering to NPS and headline. | L/S | Fortnightly | | |
| | iii. Check, maintain gate, valve in good practice. | L/S | Fortnightly | | |
| 2.5.0 | Sewage Treatment Plant JHC | | | | |
| 2.5.1 | Main Switch Board | | | | |
| | i. To carry out inspection, cleaning, servicing maintenance, repair and refurbishment work. | L/S | Fortnightly | | |
| | ii. Take measurement and record | L/S | Daily | | |
| 2.5.2 | RAW sewage pump No.1 & No.2 | | | | |
| | i. Check the operation of the pumps and motor. | L/S | Fortnightly | | |
| | ii. Check for excessive vibration, unusual noises, lubricant, leakage and over heating | L/S | Fortnightly | | |
| | iii. Mainteance pumping unit by manufacturer instruc. | L/S | Fortnightly | | |
| | iv. Check operation of any pump controls and instrumentation. | L/S | Fortnightly | | |
| 2.5.3 | Penstop & Manual Screen | | | | |
| | i. Inspect for proper operation | L/S | Fortnightly | | |
| | ii. Remove debris and service unit. | L/S | Fortnightly | | |
| | iii. Perform routine washdown and cleaning work. | L/S | Fortnightly | | |
| TOTAL SEWAGE TREATMENT PLANT - B/F | | | | | |
| TOTAL SEWAGE TREATMENT PLANT - C/F | | | | | |

BILL OF QUANTITY (BQ)

UNIT/TEAM : SEWAGE TREATMENT PLANT

RFT No: KUANTAN / 006

**PROPOSED MONTHLY SERVICE FOR SEWAGE TREATMENT PLANT
AT INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA KUANTAN CAMPUS**

| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) | AMOUNT (RM) |
|--|--|------|-------------|-----------|-------------|
| 2.5.4 | Air blower and electric Motor –Driven | | | | |
| | i. Turn on each blower to check for unusual noise & vibration | L/S | Fortnightly | | |
| | ii. Carry out servicing, clean air filters, check valves, pressure gauge, pilot gear & general cleaning | L/S | Fortnightly | | |
| 2.5.5 | Float Switches | | | | |
| | i. Clean off attached materials off the float switch | L/S | Fortnightly | | |
| | ii. Check operational function or condition of float switches and their cables | L/S | Fortnightly | | |
| | iii. Check level of float switches to ensure it is properly set | L/S | Fortnightly | | |
| | iv. Check the operating start of the pump (by activating float switches via manual lifting of float switches) | L/S | Fortnightly | | |
| | v. Check the operating cycle of the pump to ensure that the pumps are properly set of intermittent sequential operation. | L/S | Fortnightly | | |
| | vi. Report is screen operating sequence is off | L/S | Fortnightly | | |
| 2.5.4 | Compund Area & Others | | | | |
| | i. Trim and uproot grass serounding unit. | L/S | Fortnightly | | |
| | ii. Well maintenance road, drain, gate, signage & fencing 2 feet out | L/S | Fortnightly | | |
| | iii. Maintain manhole entering to NPS and headline. | L/S | Fortnightly | | |
| | iii. Check, maintain gate, valve in good practice. | L/S | Fortnightly | | |
| Total 2.0 SEWAGE TREATMENT PLANT (RM) | | | | | |

BILL OF QUANTITY (BQ) (ATTACHMENT I)
UNIT/TEAM : MECHANICAL TEAM

RFT No: KUANTAN / 006

**PROPOSED MONTHLY SERVICE FOR SEWAGE TREATMENT PLANT
AT INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA KUANTAN CAMPUS**

| ITEM | DESCRIPTION | DBSB MINIMUM REQUIREMENT |
|------|--|---|
| | <p><u>MANPOWER SUPPLY FOR SERVICING SEWAGE TREATMENT PLANT</u></p> <p><u>SUPERVISOR/LEADER</u></p> <p>a) Malaysian, male age 18 years old and not exceeding 60 years old b) Certificate or Diploma in technical course related to fire fighting system c) Good communication and have leadership skills d) Can speak, write, read and understand well in Malay and English e) Possess own transportation and mobile phone</p> <p><u>Competant Person</u></p> <p>a) Malaysian, male age 18 years old and not exceeding 60 years old b) Certificate Environmental Professional in Sewage Treatment Plant Operation c) Good communication and have leadership skills d) Can speak, write, read and understand well in Malay and English e) Possess own transportation and mobile phone</p> <p><u>Wireman</u></p> <p>a) Malaysian Male have a certificate by Suruhanjaya Malaysia as Wireman PW4 level, monitoring, plan and maintenance operation. b) Mentally and physically fit with no criminal records, not under drug abuse or under police patrol c) Working age: 18 years and not exceeding 60 years old can lifting heavy item not less then 2kg.</p> | <p>1 (all the time on site)</p> <p>1 (minimum once a month)</p> <p>1 (all the time on site)</p> |
| | <p><u>GENERAL WORKERS</u></p> <p>a) Malaysian Male have a relevant certificate related sewage work, ie: confined space training for authorised entrant(AE) & standby person , certified first aider, CIDB Green Card, b) Mentally and physically fit with no criminal records, , not under drug abuse or under police patrol c) Working age: 18 years and not exceeding 60 years old can lifting heavy item not less then 2kg.</p> | <p>3 (all the time on site)</p> |
| | <p>TOTAL 3.0: MANPOWER FOR SERVICING SEWAGE TREATMENT PLANT</p> | <p>6</p> |

*Note: 1) If contractor agreed with first option, please state comply

2) If contractor not agreed with first option, please state not comply and fill in the second option

Signature of Tenderer:

Signature of Witness:

.....
Name:
Designation:
Date:
Company Stamp:

.....
Name:
Designation:
Date:
Company Stamp:

SCHEDULE OF RATE

UNIT/TEAM : SEWAGE TREATMENT PLAN

RFT No: KUANTAN / 006

**PROPOSED MONTHLY SERVICE FOR SEWAGE TREATMENT PLANT
AT INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA KUANTAN CAMPUS**

| ITEM | DESCRIPTION | UNIT | QTY | RATE (RM) |
|------|---|------|-----|-----------|
| | <u>Pump</u> | | | |
| A | Supply and Install Submersible Pump 1kW 3phase | Nos. | 1 | |
| B | Supply and Install Submersible Pump 1.9kW 3phase | Nos. | 1 | |
| C | Supply and Install Submersible Pump 2.0kW 3phase | Nos. | 1 | |
| D | Supply and Install Submersible Pump 3kW 3phase | Nos. | 1 | |
| E | Supply and Install Submersible Pump 5.0kW 3phase | Nos. | 1 | |
| F | Supply and Install Submersible Pump 6.0kW 3phase | Nos. | 1 | |
| G | Supply and Install Submersible Pump 7.0kW 3phase | Nos. | 1 | |
| G | Supply and Install Submersible Pump 22.0kW 3phase | Nos. | 1 | |

I hereby certify that all descriptions are correct and all the offered price included the costs involved in refining the scope of services required by this tender.

Signature of Tenderer:

Signature of Witness:

Name:
Designation:
Date:
Company Stamp:

Name:
Designation:
Date:
Company Stamp: